

Simon Pryce Arboriculture

Report

Client: Dr Jagdip Sandhu

Site: Trevonen, The Clump, Rickmansworth, WD3 4BD

Subject: Trees and proposed rear extension

Inspection date: 12th March 2024

Report date: 8th May 2024

Reference: 23/108

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1 Introduction

- 1.1 This report has been prepared for Dr Jagdip Sandhu in connection with the proposed construction of an extension across the rear of the house.
- 1.2 I have been asked to inspect trees growing nearby and to prepare a report impact assessment, and tree protection plan, as set out in British Standard 5837: 2012, Trees in relation to design, demolition and construction.
- 1.3 I have prepared two previous reports:
- 14/135 of 23rd January 2015 was a tree survey assessment of potential risks to the house.
 - 16/092 of 22nd December 2016, was in connection with the construction of new gates.

This report is not directly connected with either of those and, given the passage of time, the trees concerned in the front garden were reinspected, together with the two to the rear that might be directly affected.

Survey method

- 1.4 This report is based on a site visit and inspection of the trees on 12th March 2024. The inspections were visual and made from ground level within the site or the road to the front.
- 1.5 Their maturity, health and structural condition were assessed and each was assigned to one of the four retention categories [A,B,C,U] specified by BS5837. The individual descriptions and other relevant information are contained in the attached schedule and they are shown on the attached plans.
- 1.6 The attached plans show:
1. The current site layout.
 2. The proposed layout and tree protection measures. This is the tree protection plan (TPP) specified by BS5837.

2 Background

The site

- 2.1 Trevonen is on the north west side of The Clump and is a two storey detached house with a separate newer garage to the left. It is set about 15m back from the frontage, which is about 30m long with vehicle entrances at each end. The area in front of the house is gravel surfaced and used for parking and there is a belt of trees and shrubs up to about 8m wide between the two entrances.
- 2.2 Behind the house is a swimming pool, which is being removed.

Proposed extension

- 2.3 This is shown on the plans produced by Plan Studio Architecture to build an extension 4m deep across the rear elevation of the house, stepping back to 1.8m from the house at the rear right. This is illustrated on the

3 Trees

- 3.1 The garden contains a range of trees and shrubs, but the most significant ones as far as this project is concerned are a mature horse chestnut and ash growing on the right hand side boundary behind the house.

- 3.2 Most of the trees to the front are growing in a belt just behind the front boundary wall. These include two mature Lawson cypresses that probably date from about the time the house was built, together with a false acacia, sycamore and beech, with some smaller evergreens that provide lower level screening. These are described in more detail in the schedule.

Restrictions

- 3.3 The local planning authority is Three Rivers District Council (TRDC). Their online interactive map shows that several of the trees are protected by their tree preservation order (TPO) no.740, made on 1st January 2010 and confirmed on 30th July 2010. These are indicated on the schedule and include the ash and horse chestnut near the proposed extension.

4 General comments

- 4.1 The two main functions of tree roots are 1) physical support and 2) the supply of water and nutrients from the soil. Roots are opportunist and grow wherever conditions are favourable i.e. there is a suitable supply of air and water. Many are in about the top metre of the soil, but they can and do grow much deeper if conditions are favourable. The small water absorbing roots die each winter, then new ones develop in spring and grow according to the tree's needs. This allows trees to recover from damage to the fine network of small roots, possibly with some short term reduction in vitality. However damage to larger roots close to the trunk can lead to instability, either immediately or in the longer term, if the wounds are colonised by decay fungi.

Root protection

- 4.2 Construction near trees can damage roots directly, by excavation, and indirectly by soil compaction due to heavy machinery and contamination from things like diesel oil and cement. BS5837 recommends measures to avoid or minimise this, the main one being that root protection areas (RPAs) are established round retained trees and fenced to exclude access. No ground work should take place within these without suitable safeguards, such as protecting soft ground against compaction or contamination.
- 4.3 The starting point is that a single trunked tree's RPA has an area equivalent to a circle with a radius 12 times the trunk diameter measured at 1.5m above ground. The 12x figure is not based on research, but it has proven effective in most cases. In fact most root systems spread well beyond that and significantly deeper than 1m. Where trees have more than one well defined trunk the RPA is based on the diameter of a single trunk that would have the same cross sectional area. That is not practical with hazels which have too many small stems, so their RPAs are based on the average crown spread.
- 4.4 Under open ground roots spread more or less uniformly, but they are affected by obstructions and variations in ground conditions, so depth and spread are far less predictable near roads and buildings. Where there is evidence that the root system is irregular the RPA shape should be adjusted accordingly. That can also compensate for work within the original circle, but must be based on a sound arboricultural assessment of the extent and shape of the root system and equivalent rooting space should be allowed in other directions.

5 Discussion

Direct implications

- 5.1 The only trees that might be affected directly are a horse chestnut and an ash to the rear right. They are well clear of both of the houses and there are no other obstructions to root spread, so the circular RPAs shown on the plan will be suitably accurate reflections of actual root spread.

- 5.2 The rear right hand corner of the proposed extension takes up about 5m² of the horse chestnut RPA, i.e. about 3% of the circle area. This tree and the ash both have good growing conditions under the gardens in every other direction and are in good health, so this is well within what they will tolerate with no need for piling or specialised foundations unless there are other technical reasons.

Indirect implications

- 5.3 The horse chestnut's RPA can be fenced off during the works, but some access and working space will be needed onto the soft ground round the new extension. Roots could be harmed indirectly by soil compaction or contamination, but they can be safeguarded during the works by a protective layer on the soft ground in the RPA. That can be done with heavy duty plywood over a layer of compressible material and geotextile membrane, or there are numerous proprietary systems available.
- 5.4 The tree to the front are well away from the work area and roots under the front drive and parking area will be protected by the existing surface. There is ample space for storage and site facilities during the work near the existing garage and in the back garden where the pool is being removed. However it would be advisable to fence off the soft ground under the trees inside the front boundary and along the left hand side of the garden in order to prevent those areas being used.

Tree protection

- 5.5 These measures are illustrated on the second drawing, which is the tree protection plan (TPP) recommended by BS5827:2012. If required these can be specified in more detail in an arboricultural method statement.



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Tree no.	Species	Age / vitality	Ht. m	Spread				Dia. mm	RPA rad m	RPA area m ²	Crwn ht. m	Comments and recommendations	Cat
				N	S	E	W						
The trees are described in sequence as shown on the plan, starting to the rear right of the house and going anti clockwise. Trees in the 2016 survey have been renumbered, original numbers are in brackets. Asterisks in the first column denote trees in other ownership.													
1	Ash	MA/N	19	7	7	5	8	480	5.7	103	6	TPO T34. One sided due to growing close to the chestnut. Was carrying heavy ivy, which has been cut, some dead stems are still present. Has been reduced in the past and regrown.	C
2	Horse chestnut	M/N	18	7	8	8	4	600	7.2	163	4	TPO T35. One sided and leans towards the house due to growing near the ash. Has also been reduced at about the same time as the ash and grown on.	C
3 (11)	Ash	MA/N	15	5	3	4	7	350	4.2	56	4	Contains some dead wood, still reasonably sound and healthy looking.	C
4 (10)	Lawson cypress	M/N	18	3.5	5	2	6	5 av. 390	10.6	355	5	Large multiple trunked specimen. Little change since 2016, still has some dead wood in the crown but is sound and healthy.	B
5	Holly	D	10	2.5	3	4	2	220	-	-	2	Dead and heavily covered in ivy - should be removed.	U
6 (8)	Portugal laurel	M/L	5	4	4	2	5	5 av. 150	3.9	49	1	Lower foliage is generally healthy and provides screening but has some dead wood.	C
7 (7)	Sycamore	MA/N	16	6	6	6	6	400	4.8	72	6	TPO T42. Trunk leans slightly to the SW but the tree is sound and healthy.	B
8 (6)	Magnolia	M/N	6.5	4	4	4	4	160	1.9	11	2.5	Growing in a raised planting bed, starting to flower when inspected, sound and healthy.	C
9 (5)	False acacia	MA/N	15	7	6	3	4	350	4.2	56	6	TPO G17. Has a sinuous trunk, typical of false acacias, top sparser than in 2015 but fair otherwise.	C
10 (2)	Beech	MA/N	17	5	5	6	4	510	6.1	117	4	TPO G18. Appears to be right on the boundary. Has been topped in the past, but has regrown and is in good condition, with no signs of decay, which can be problem in older beeches.	B
11	Lawson cypress	M/N	18	3	3	3	3	480	5.7	103	5	Has been topped in the past and grown on but is sound and healthy.	B



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Notes

Observations are made from ground level unless stated otherwise.

Trunk diameters are measured in millimetres at 1.5m above ground or at the narrowest point between the root buttresses and branch flare in multiple trunked trees; in such cases this is indicated by [C].

Crown spreads are taken from the trunk centre to the end of the longest live branches in the directions indicated [usually the four cardinal compass points]

Crown height is the clearance under the lowest significant branches.

Tree ages are estimated as below, based on the normal life expectancy of a tree of the species concerned on the site:

Immature.	[IM]	Newly planted or self-set tree.
Young	[Y]	Young tree that is established but has not yet attained the size or form of a fully developed example of its type.
Middle aged	[MA]	Between one third and two thirds of its estimated lifespan.
Mature	[M]	Over two thirds of its estimated life span.
Veteran	[V]	Old tree with characteristic features including hollow trunk, old wounds etc. that give high landscape, ecological and cultural value.
Ancient	[A]	Exceptionally old tree, typically has short, wide hollow trunk and low squat shape due to the crown retrenching over many years.
Dying/Dead	[D]	Dead/dying or so badly decayed that it should be removed without delay if a potential threat.

Vitality is assessed on the basis of what is normal for the species concerned as:

High	[H]
Normal	[N]
Low	[L]
Dead / dying	[D]

Root protection areas [RPAs] - BS5837:2012

For single trunked trees these are calculated as an area equivalent to a circle with a radius 12 times the trunk diameter at 1.5m. For multiple trunked trees it is based on the diameter of a single trunk that would have the same cross sectional area at 1.5m.

Any deviation from a circular plot should take into account the following factors whilst still providing adequate protection for the roots.

- The shape and disposition of the root system when known to be influenced by past or existing site conditions, such as the presence of roads, structures and underground services.
- Topography and drainage.
- The soil type and structure.
- The likely tolerance of the tree to root disturbance based on factors such as species, age and past management.

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Tree categories – based on BS5837: 2012, Trees in relation to design, demolition and construction - Recommendations

Trees for removal				
Category and definition				Colour code
Category U				Red
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	<ul style="list-style-type: none"> Trees that have a serious, irremediable structural defect, such that their early loss is expected due to collapse in the foreseeable future, including any that will become unviable after the removal of other U category trees. (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning.) Trees that are dead or showing signs of significant immediate and irreversible decline. Trees infected with pathogens significant to the health and/or safety of other trees nearby, or very low quality trees suppressing better ones nearby. <p><i>NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve.</i></p>			
Trees for retention				
Category and definition	Criteria – sub categories			Colour code
	1 – mainly arboricultural values	2 – mainly landscape values	3 – mainly cultural / conservation values	
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 historical, commemorative or conservation value. (e.g. veteran trees or wood -pasture)	Green
Category B				
Trees of moderate quality with an estimated remaining life expectancy 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 benefits.	Blue
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 benefit.	Grey