



Barrack Lane

Tree Condition Survey

Report for Roger Nield

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Executive Summary

Arbeco Ltd was commissioned by Roger Nield to undertake a ground level tree condition assessment at 149 Barrack Lane, Aldwick to determine tree health, management history and a nuisance caused by the trees in the property.

The main findings of the survey are as follows:

- ❖ There were four individual trees surveyed each described in Appendix 1 of this report.
- ❖ A tree constraints check was carried out with the Arun District Council and it was confirmed that all four trees surveyed were subject to a Tree Preservation Order (Bognor 2) but not Conservation Area restrictions.
- ❖ The trees surveyed formed a linear group extending along the north-west boundary of the property adjacent to the Barrack Lane.
- ❖ In general, the four trees surveyed were in fair/good condition however, a number of defects and hazards were observed and are detailed in section 4 of this report.
- ❖ Historic and continuing damage to an existing boundary wall was also observed in this survey, which has been caused over the years as a result of continued tree growth.
- ❖ Any work to trees should consider the potential presence of protected species, including breeding birds and roosting bats. It is recommended that a suitable qualified ecologist is present on site prior to the commencement of any tree works.

1 Introduction

BACKGROUND

- 1.1 Arbeco Ltd was commissioned on 14 June 2019 by Roger Nield to carry out an Arboricultural Condition Survey of trees at 149 Barrack Lane and provide a report to inform the client and local planning authority of their overall condition and suitability for retention. The trees have undergone previous management in the form of heavy crown reductions to restrict their growth and damage caused to the adjacent listed boundary wall. The client is concerned that ultimately the trees will grow too large for their current location and will damage the wall further even with tree management

SITE CONTEXT AND STATUS

- 1.2 The site is situated in the civil parish of Aldwick, in the district of Arun in West Sussex. The site is a private dwelling with associated gardens and driveway located to the east which services the clients and a neighbouring property. The trees are located along this north-west boundary adjacent to the driveway and the boundary wall. There is a large garden to the west and the surrounding area is generally tree lined with a high canopy cover. The Ordnance Survey National Grid reference for the centre of the site is SZ 90487 98067.

2 Methodology

TREE SURVEY

- 2.1 The tree survey was conducted in accordance with Arboricultural Association and International Society of Arboriculture (ISA) best practice the results of which are presented in the Schedule of Trees (Appendix 1) and include a sequential numbering of each tree, species listed by common name; tree dimensions including overall height, canopy spreads; age class, life expectancy; target area observations, additional comments, hazard rating and preliminary management advice.
- 2.2 The site was visited on 14 May 2019, weather conditions were dry and sunny.
- 2.3 All trees surveyed as part of this report were visually assessed using the Visual Tree Assessment Method (VTA) (Mattheck and Beloer, 1994).
- 2.4 Stem diameters were measured using diameter tape. Canopy spreads were estimated by pacing and where possible, verified using a laser range finder. Height measurements were taken using a laser clinometer.
- 2.5 Formal assessments of topography, drainage, service conduits and soil conditions including specific laboratory investigations of soil properties (i.e. plasticity index, moisture content, suction pressure) were not undertaken and are beyond the scope of this report.

DESK STUDY

- 2.6 A tree constraints check was undertaken with Arun District Council to search for Tree Preservation Order and Conservation Area restrictions to tree works in and adjacent to the site.

SUPPORTING DOCUMENTS

- 2.7 At the time of the site visit, no topographical survey of the site was available. As such, an Ordinance Survey map was used in conjunction with GPS tracking to plot the locations of the trees.

PERSONNEL

- 2.8 The tree survey was carried out by Chris Agnew FdSc TechArborA an Arboricultural Consultant with over 16 years' experience within the sector, working as both a contractor and private consultant.

LIMITATIONS

- 2.9 The trees were inspected at ground level and no decay detection equipment was used. There is therefore a risk that any internal decay that may be present has gone undetected.
- 2.10 Trees are living organisms and their health and condition change with time. Therefore, this assessment remains valid for 12 months from the date of inspection, or until a severe storm is experienced, after which time a new inspection is required. For the purpose of this report, a severe storm is defined as a period of violent weather, involving rain, hail, wind, snow, lightning or any combination of these, likely to cause damage to trees.

3 Results

TREE SURVEY

- 3.1 The results of the tree survey are provided in the Schedule of Trees in Appendix 1 and photographs of the site are provided in Appendix 4.
- 3.2 The survey recorded four individual sycamore *Acer pseudoplatanus*, each classified to be at a mature life stage¹,
- 3.3 A summary of the condition and value of the most noteworthy trees is provided below, based on information presented in Appendix 1.

- ❖ Sycamore T1 was situated to the north east corner of the site and was located adjacent to the existing driveway entrance and parking area. The tree was mature, 9m in height, had a single stem and a maximum canopy radius extending 6m from east to west. The tree appeared to be in fair structural and physiological condition, however significant bark and cambium damage caused by vehicles accessing the property was observed at 1.5m on the southern aspect of the stem. This defect feature was approximately 20cm x 30cm in size, the wound has part occluded and epicormic growth has regenerated from below the wound.

The upper canopy is dense and obstructs phone wires, this tree has been managed in the past and heavily reduced and this has resulted in strong reactive growth.

The tree roots have protruded along the soil border area and under the boundary wall, where cracks have started to appear. There are signs of recent repairs to the wall by the previous land owner where roots have caused some damage.

- ❖ Sycamore T2, was situated adjacent to T1 along the existing boundary wall to the north of the site. This tree is part of the group of four sycamore trees in this area.

The tree is 10m in height, has a crown spread of 5m and has had the same management as T1 resulting in a dense canopy obstructing the phone wires.

¹ Young. Establishing; usually with good vigour, but as of limited significance within the landscape.
Semi-Mature. Established; normally vigorous and increasing in height. Of increasing landscape significance.
Early Mature. Fully established trees around the middle half of their life span retaining good vigour. Not yet achieved full height and retaining apical dominance.
Mature. Fully established trees retaining moderate vigour. Apical dominance lost but crown still spreading.
Over Mature. Fully mature trees in the last quarter of their usual life expectancy; vigour declining.

Damage to the wall was also observed at the base of this tree where recent wall repairs were present

- ※ Sycamore T3 and T4 was situated to the north of the site as part of the group adjacent to the boundary wall. The tree height was 11m and 9m respectively with T4 having been extensively reduced in the past. These trees have similar attributes as T1 and T2 where their dense canopy obstructs phone wires and aphids are causing a nuisance, damaging cars parked under the canopy. Recent wall repairs were also observed in this area. T3 had a minor lean towards the driveway and property causing its root system to protrude northwards under the wall foundation and potentially causing damage in this area. A cavity was observed on T4 approximately 2.5m in height on the north west aspect of the stem, this cavity was approximately 20cm x 20cm with a depth of 7cm.

DESK STUDY

- 3.4 It was confirmed that all four trees surveyed situated in the site were subject to Tree Preservation Order (Bognor 2). The site was not subject to conservation area regulations.

4 Recommendations

SITE SPECIFIC ISSUES

- 4.1 Trees T1, T2, T3 and T4 have all been subject to extensive crown reductions in the past. For this management to continue the landowner will be required to prune the trees on a reduction cycle of three to five years. This pruning regime will help to limit the trees canopy, stem and root growth. However, trees are living organisms and will continue to grow even with such intensive tree management. In time tree pruning will become ineffective due to continued incremental growth of the main stem and structural buttress roots and as a result, will likely cause significant structural damage to the listed boundary wall which has been quoted in the region of £5,000 to repair in its current state.
- 4.2 In addition, the continued pruning of tree canopies will have a negative impact on the trees overall physiological and structural conditions and does not accord with industry best practice. This may lead to potential risks in the future which brings into question the trees suitability for retention.
- 4.3 Management of the tree canopies in order to prevent structural damage to the listed wall is therefore considered unsustainable. A longer-term solution, the phased felling of trees T1-T4 is recommended over a period of two years. This can be achieved by the initial felling and replanting of trees T1 and T2, followed by the trees T3 and T4 after a period of two years. By phasing the removal of the trees over this period and undertaking mitigation tree planting, the visual impact of their removal can be significantly minimised.
- 4.4 It is considered that it would be unreasonable for the landowner to continue to pay for the management of trees which will ultimately cause significant damage to the listed wall, in spite of any mitigation pruning works undertaken.
- 4.5 Additionally, the encroachment of the tree's crowns into the adjacent telephone lines has caused significant disruption to local households, with home based businesses being without telephone services for several weeks.
- 4.6 Trees T1, T2, T3 and T4 were subject to Tree Preservation Order ref. (Bognor 2) Any works to these trees must first have the prior written consent of the Council². Consent

² This restriction does not apply to trees protected by Tree Preservation Orders if the tree in question is dead, if

the works are necessary to remove an immediate risk of serious harm or for the removal of dead branches from a living tree. In these situations, written notice should be given to the council at least five working days prior to the date of the commencement of works. For full details on Tree Preservation order restrictions and exceptions, see The Town and Country Planning (Tree Preservation)(England) Regulations 2012.

should be sought by the submission of a tree works application, details of which can be found on The Planning Portal national planning application service.

TREE WORKS

- 4.7 The following tree works operations are recommended and should be completed after written approval from the Local Planning Authority.
- ✧ Trees T1, T2, T3 and T4 are recommended for removal to prevent further damage to the listed boundary wall.
 - ✧ Tree T1, T2, T3 and T4 stumps will require removal using a stump grinding machine or similar. The tree stumps should not be dug or pulled out by excavator machines as this will seriously damage the boundary wall foundations.
- 4.8 All tree felling should be carefully planned and undertaken in accordance with BS 3998:2010 Recommendations for Tree works.

MITIGATION

- 4.9 It is recommended that a scheme of tree planting details is submitted which address the loss of visual public amenity where tree removal is unavoidable. The tree selection should be appropriate to the site and chosen from a species palette in accordance with local tree planting policies.
- 4.10 The design of any new planting and landscaping proposals should be based upon a soil analysis which considers pH and any nutrient deficiencies or imbalances as well as planting location and tree species.
- 4.11 The local soils are described as loamy and mostly drained with shallow groundwater (Soilscapes, 2019). Taking the soil attributes into account, and the likely necessity for new planting to accommodate the listed boundary wall and overhead telephone cables, a smaller species of tree such as Manchurian cherry would be appropriate. The existing trees should be replaced on a 1:1 basis.
- 4.12 It is recommended that root barriers are installed on the wall side of any new planting in order to prevent future damage to boundary wall.
- 4.13 It is recommended that specifications on aftercare and maintenance, including irrigation, as well as protection and formative pruning during establishment are included as part of the finalised tree planting proposals. Recommendations should be appropriate to the proposed planting and should be in compliance with of *BS 8545:2014 Trees from nursery to establishment in the landscape- Recommendations*.

References

British Standard Institute (BSI) (2010). *BS 3998:2010 Recommendation for Tree Works*. BSI, London.

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Department for Communities and Local Government (2014). *Planning Practice Guidance on Tree Preservation Orders and trees in conservation areas*.

Lonsdale, D. (1999). *Research for Amenity Trees No.7: Principles of Tree Hazard Assessment and Management*. HMSO

Mattheck and Beloer (1994). HMSO London. Research for Amenity Trees No 4; *The Body Language of Trees*.

Soilscapes (2019) *Soilscapes Interactive Map*. Retrieved from <http://www.landis.org.uk/soilscapes/index.cfm>

Town and Country Planning Act 1990 (as amended).

Town and Country Planning (Tree Preservation) (England) Regulations 2012.

Appendix 1: Schedule of Trees

Tree Number	Tree Species	Height (M)	Spread (M)	DBH (mm)	Age class	Remaining contribution	Principal Target	Comments	Additional Comments	Recommended Action	Re-inspection frequency
T1	Sycamore	9	6	500	M	20	Road, driveway, property and wall	Fair specimen, reduced in past, phone wire cross through the canopy aphids causing a nuisance	Significant bark damage at 1.5m on eastern aspect of stem. Causing nuisance and damaging wall, nesting bird in crown	Fell and replant	NA
T2	Sycamore	10	5	320	M	20	Road, driveway and property wall	Fair specimen, phone wire cross through the canopy aphids causing a nuisance	Ivy covering stem, reduced in past, causing a nuisance and damaging wall	Fell and replant	NA
T3	Sycamore	11	6	460	M	20	Road, driveway, property and wall	Fair specimen, reduced in past, phone wire cross through canopy aphids causing a nuisance	Lean towards driveway and property	Fell and replant	NA
T4	Sycamore	9	6	550	M	20	Road, driveway, property and wall	Fair specimen, reduced in past, phone wire cross through canopy aphids causing a nuisance	Large cavity on stem 2.5m on	Fell and replant	NA

Table 3: Key Schedule of Trees

Column Heading	Explanation
Tree No	Sequential number corresponding to number on plan.
Species	English names.
Ht.	Height in metres.
St. 1.5 (Stem Diameter)	Stem diameter when measured in accordance with Annex C of BS 5837:2012.
Ls.	Life stage definitions. Y= Young. SM = Semi-mature. EM = Early mature. M = Mature. OM = Over mature.
Target area	Area surrounding the tree which is likely to be damaged by defects
Hazard rating 1-3	Risk assessment and value given to the tree or defect and like hood of failure.
Preliminary Advice	Preliminary tree works advice and recommendations.
LE	Estimated remaining useful life contribution in years. <10, 10+, 20+ and 40+ yr.

Appendix 2: Tree Location Plan



Appendix 3: Glossary of Terms

Glossary of Terms

Term	Explanation
Branch structure	Qualitative description of formation of main framework of limbs and branches.
Canopy face	Orientation of canopy relative to cardinal points of the compass
Canopy radius	A measurement taken from the centre of a tree to the furthest radial extension of tree canopy relative to the cardinal points of the compass.
Competent Person	Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached.
Conservation Area	Local Planning Authority special designation generally prohibiting tree works without 6 weeks prior written notification.
Cavity	Open and exposed aperture where wood tissue has internally degraded.
Constraints check	Formal search of local authority records to determine legal and statutory constraints on tree works.
Crown lifting	Removal of lower branches to achieve a stated vertical clearance above ground level or other surface.
Crown reduction	Pruning of a trees canopy in both height and width.
Decay	Deterioration and breakdown of tree wood fibres resulting in structural and/or physiological dysfunction of a tree.
Dieback	Continual decline and death of wood tissue including twigs and branches.
Failure	Description of structural failure or wood fibres including fracture of branches, limbs and main stems.
Fork	Area or point of union between one or more limbs or branches.
Hazard Risk Assessment	Qualitative and quantitative appraisal of the potential for tree failure and the possible risk of harm or damage to persons or property.
Local Planning Authority	Body responsible for the administration of Statutory duties relating to Development Management.
Multi-stem	A single tree formed from 2 or more codominant main stems
Occlusion	Wood development enclosing an extant wound or pruning cut.
Pruning	The targeted removal of branches or limbs using saws or other tools.
Physiological Condition	Observation relating to a trees physiology for example vigour, leaf area, growth rate, the presence of pests or disease.
Root Protection Area	Root Protection Area (RPA). Indicative area around a tree deemed to contain sufficient rooting volume to maintain the viability of a tree.
Shelter belt	A wind break normally made up of one or more trees planted in such a way to provide cover from the wind.
Structural Condition	Observation relating to a trees structural integrity and the presence of any physical defects.

Glossary of Terms

Term	Explanation
Suppressed	Where a trees development has been influenced or effected by the presence of competing vegetation.
Tree Constraints Plan	A scaled plan indicating above and below ground constraints relating to the protection of trees
Tree Preservation Order	A legal order made by the local planning authority protecting specific trees in the interests of amenity.
Visual Tree Assessment (VTA)	A method of assessment based upon the research developed to recognise dynamic responses of a tree to its surroundings.
'V' Shaped Branch Union	The union point between two branches that have grown at a tight angle, forming the 'V' shape. This structure is inherently weaker than the 'U' shaped union.
'U' Shaped Branch Union	The union point between two branches that have grown at a wider angle, forming the 'U' shape. This structure is considered to be the strongest and most optimised shape that a union can form.

Appendix 4 Photographs

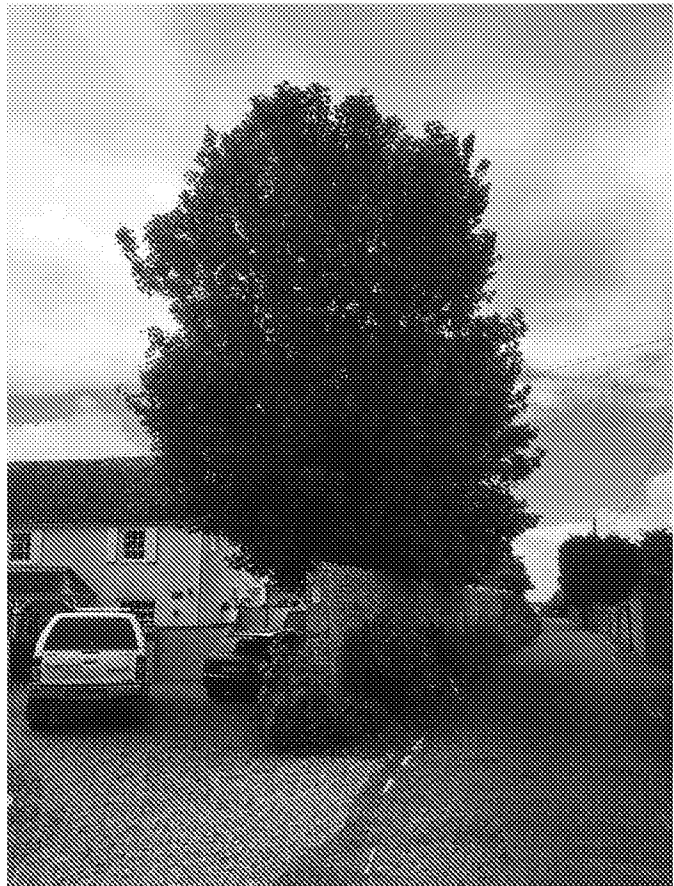
Photograph 1

T1 Sycamore, southern aspect of stem at 1.5m. Bark and stem damage caused by vehicles accessing driveway.



Photograph 2

View looking west towards sycamore group T1, T2, T3, and T4.



Photograph 3

View of tree group T1-T4 and boundary wall.



Photograph 4

T3 sycamore view looking west showing leaning towards driveway. towards box elder T27.



Photograph 5

T4 sycamore showing cavity in the stem at 2.5m on the eastern aspect. .



Photograph 6

View looking west towards sycamores T1-T4 showing canopies obstructing the phone wires





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