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LIGHTWOODS
Green Ltd

Independent Arboricultural Advice

Planning and Development Services

TPO advice

Safety Surveys

Tree management

Subsidence investigation

Arboricultural Advice in accordance with
BS 5837:2012 Trees in relation to design, demolition & construction –
Recommendations

Tree Survey & Constraints Advice

16 January 2023

Instruction: Church Lane
Cley next the Sea

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1. INTRODUCTION

- 1.1 **Brief:** I am instructed to carry out an arboricultural assessment of the property shown as Claia Bourne on the Ordnance Survey base map, off Church Lane, Cley next the Sea, and to provide arboricultural advice in accordance with BS5837:2012 *Trees in relation to design, demolition & construction – Recommendations* (hereafter BS5837) in relation to the potential for the alteration of the porch.
- 1.2 **Qualifications and experience:** I have based this report on our site observations and the provided information, and I have come to conclusions in the light of my experience. I have experience and qualifications in arboriculture and list the details in Appendix 1. Observations or comments on structural engineering and the law are made from an arboricultural perspective. Specialist professional advice should be sought to clarify such observations.
- 1.3 **Scope of this report:** This report includes an assessment of the trees in relation to potential development in order to:
1. Record principle attributes (species and stem diameter).
 2. Determine their quality and value.
 3. Identify their remaining contribution and retention grading.
 4. Show the collected data graphically on the Tree Constraints Plan.
- 1.4 **Purpose of the report:** The data collected and plotted is used to inform the layout and, if necessary, assist in the identification of a defensible level of tree retention/removal based on tree quality.
- 1.5 **Caveats:**
- 1.5.1 This survey has been undertaken in compliance with BS5837:2012; it is not intended to be a tree safety survey. Any notes offered on structural integrity of trees are incidental, though where trees are considered to be in immediately hazardous condition (identified by red font in the Structural condition & Notes column, see below), our recommendations given for immediate intervention should be put in hand by the owner / site manager as soon as can be arranged.
- 1.5.2 Trees are dynamic living organisms capable of achieving considerable size and structural complexity. They are exposed to and can become damaged by the elements and by human activity, and have co-evolved with decay-causing organisms that can degrade and sometimes destroy their structural integrity. Due to genetic characteristics and local micro environmental factors this integrity can be innately uncertain. The laws and forces of nature dictate a natural failure rate even among trees that are healthy and structurally sound. By their very nature, therefore, trees cannot be considered entirely hazard-free.
- 1.5.3 Tree surveys and / or tree inspections are, inherently, only a snapshot in time of the physiological and structural condition of the trees concerned.
- 1.5.4 Unless otherwise stated in our reporting material, all such surveys and inspections are undertaken from ground level and no internal inspections or tests

have been undertaken. Any structural defects present might not be visible, for example being masked by vegetation, whether the tree's foliage, plants growing round the base of the tree, or climbing plants growing on the stem and into the crown.

- 1.5.5 Unless otherwise states, the survey data should be considered time-limited for planning purposes to a maximum of three years (absent revisions of BS5837, which render pre-existing data obsolete).

2 BS5837:2012 - THE ITERATIVE PROCESS

2.1 Trees and the planning system – BS5837 Annex B

2.1.1 Under the UK planning system, local authorities have a statutory duty to consider the protection and planting of trees when granting planning permission for proposed development. The potential effect of development on trees, whether statutorily protected (e.g. by a tree preservation order or by their inclusion within a conservation area) or not, is a material consideration that is taken into account in dealing with planning applications. Where trees are statutorily protected, it is important to contact the local planning authority and follow the appropriate procedures before undertaking any works that might affect the protected trees.

2.1.2 The nature and level of detail of information required to enable a local planning authority to properly consider the implications and effects of development proposals varies between stages and in relation to what is proposed. Table B.1 provides advice to both developers and local authorities on an appropriate amount of information. The term “minimum detail” is intended to reflect information that local authorities are expected to seek, whilst the term “additional information” identifies further details that might reasonably be sought, especially where any construction is proposed within the Root Protection Area (RPA - see section 3.2).

2.1.3 Table B.1 Delivery of tree-related information into the planning system

Stage of process	Minimum detail	Additional information
Pre-application	Tree survey	Tree retention/removal plan (draft)
Planning application	Tree survey (in the absence of pre-application discussions) Tree retention/removal plan (finalized) Retained trees and RPAs shown on proposed layout Strategic hard and soft landscape design, including species and location of new tree planting Arboricultural impact assessment	Existing and proposed finished levels Tree protection plan Arboricultural method statement – heads of terms Details for all special engineering within the RPA and other relevant construction details
Reserved matters/ planning conditions	Alignment of utility apparatus (including drainage), where outside the RPA or where installed using a trenchless method Dimensioned tree protection plan Arboricultural method statement – detailed Schedule of works to retained trees, e.g. access facilitation pruning Detailed hard and soft landscape design	Arboricultural site monitoring schedule Tree and landscape management plan Post-construction remedial works Landscape maintenance schedule

3 TREE CONSTRAINTS PLANNING – INFORMATIVES

- 3.1 **General:** The constraints imposed by trees are the extent of the RPA, the current and ultimate spread of the crown and species characteristics including evergreen or deciduous, density of foliage, and susceptibility to honeydew drip, branch drop fruit fall, etc. Consideration of these in the planning of the site layout results in workable layouts likely to be considered acceptable through the planning process.
- 3.2 **RPA: Definition and constraints**
- 3.2.1 The RPA is a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. The RPA should be protected during, and preserved intact after construction, in order to facilitate the healthy retention of trees concerned by safeguarding a reliable area of functioning tree roots.
- 3.2.2 For single stem trees this is typically based on a radial measure from the centre of the stem of the tree or trees, which is found by multiplying the stem diameter of the tree concerned by a factor of twelve. Trees with low crowns are measured at the narrowest point. For trees with up to five stems the theoretical diameter of the aggregate stem area of all stems is multiplied by twelve. Whilst for trees with more than five stems the theoretical radius of the aggregate mean diameter of all stems is multiplied by twelve.
- 3.2.3 Though normally plotted as a circle pre-existing site conditions can result in a polygonal RPA. Variations in the RPA must provide adequate protection for the root system and should take into account the following factors:
- a. the morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);
 - b. topography and drainage;
 - c. the soil type and structure;
 - d. the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.
- 3.2.4 The means of protecting the RPA will include the installation of tree protection fencing prior to the start of work on site, the prohibition of various activities within the RPA (e.g. mechanical excavation, soil stripping, fire lighting, materials storage, lowering levels and creating excessive sealed surfacing), and may include the use of temporary ground protection and/or special engineering solutions where construction is proposed near to retention trees.
- 3.2.5 Conventional construction techniques are excluded from the RPA, however where construction in the RPA allows the retention of a good quality tree it can be completed with the successful retention of trees through the use of techniques

that maintain the health and condition of the root system. Examples of these construction techniques are foundations using piles located to avoid major roots or cantilevered suspended slabs and vehicle and pedestrian access constructed over no-dig installation of a three dimensional load bearing system. The input of an arboriculturist is essential to ensure the technique is appropriate to the site and an Arboricultural Method Statement must be provided detailing the implementation and timing of operations as part of the on-site tree protection regime. In all instances of construction works within RPAs it should be demonstrated the trees can remain viable and additional areas protected to compensate for the areas under construction.

3.2.6 Construction of any type covering the existing open ground in RPAs is preferably limited to an area no greater than 20% of that open ground.

3.3 **Tree crown protection**

3.3.1 This is the area above ground occupied by the crown of the tree including allowances for working space. It will also include allowance for future growth when appropriate. The extent of this area is determined by considering the existing and future crown spread of the tree(s). In certain circumstances this may be altered by an acceptable amount of pruning if considered appropriate by the arboricultural consultant and the Local Planning Authority (LPA).

3.3.2 The means of protecting the crown area is likely to include providing an adequate separation distance between retention trees and new structures where applicable, and may include pruning to allow access, where it is necessary and judged acceptable by the arboricultural consultant and the LPA. The tree protection fencing will provide the crown protection zone, though alternative and / or additional measures such as fixed and signed height limits can also be imposed.

3.4 **Proximity of trees to structures**

3.4.1 Tree characteristics vary considerably with species, these characteristics may include honeydew that may be damaging to surfaces, fruit that can cause slip hazards and leaves that block gulleys. Most of these issues can be eliminated at the detailed design stage to prevent post-development tree resentment.

4 TREE SURVEY AND PRELIMINARY CONSTRAINTS ADVICE

4.1 Tree survey methodology

4.1.1 A tree survey was carried out compliant with BS5837. The collected data is included at the tree survey schedules (Appendix 2) and the pertinent information is shown graphically on the Tree Constraints Plan. (Appendix 3). This plan is based on the Ordnance Survey base map and the tree position has been illustratively plotted using measurements from the site features. All associated dimensions must be checked on site for accuracy.

4.1.2 Trees are categorised in accordance with the cascade chart in Table 1 of BS5837:2012. The purpose of the categorisation process is to differentiate the quality and value of the existing tree stock so that informed decisions can be made on the retention or removal of trees.

4.1.3 The tree categories are summarised thus:

Category U: Trees lost within the short term for reasons of physiology or poor structural integrity.

Category A: Trees of particularly high quality in arboricultural, landscape or cultural/conservation terms

Category B: Moderate quality trees downgraded from the high category because of significant defects, groups with a collective value through numbers rather than individual tree quality or trees with identifiable cultural or conservation values.

Category C: Trees with low value in arboricultural, landscape or cultural/conservation terms. Also includes young trees with a stem diameter of less than 150mm.

For trees in categories A – C subcategories 1, 2 & 3 are given to reflect arboricultural, landscape and cultural values respectively.

4.2 Findings of the survey

4.2.1 In the course of the tree survey we identified a single tree of significance. This tree is a mature deodar cedar and categorised as a tree of moderate quality. The full detail of this tree is included in the survey schedule. The garden also contains several small trees but these are not considered to be a constraint to proposed works to the porch due variously to size, location and poor quality.

4.3 Preliminary Constraints Advice

4.3.1 The area of consideration is the garden to the west of the property and has an existing vehicular access from Holt Road which leads to a gravel parking area between the house and the tree. The tree is growing in an area of grass between the gravel parking area and the site boundary. The existing porch is triangular with one side attached to the property and a vertex towards the tree.

4.3.2 The RPA of the tree extends towards the property and just about reaches the

vertex of the existing porch. To the north of the porch the RPA, plotted as a circle, comes slightly closer to the property.

- 4.3.3 For potential layout changes to the porch it is important to minimise disruption of the RPA. This limits therefore are that the new porch should be no closer to the tree than the closest point of the current porch. A proposal for an extension north and south of the current porch and parallel to the front wall of the house but no closer to the tree than the closest point of the existing porch would be acceptable. There will be a small incursion into the RPA, but this will only be 1.4sqm (0.6% of the total RPA) and will be at the very edge of the RPA where the roots comprise exclusively of short-lived fine roots growing in compacted gravel of the drive. I do not consider this minor quantum of root loss will be deleterious to the health or long-term retention of the tree. The area suggested for the maximum extent of works is illustrated on the Tree Constraints Plan.
- 4.3.4 Any proposal with a greater incursion into the RPA will be difficult to defend on arboricultural grounds, and is unlikely to be viewed favourably by North Norfolk District Council. And the advice above is given with consideration of the works on the adjacent property that are within the RPA of the tree and without any tree protection measures.
- 4.3.5 During the course of the site visit and tree inspection I noted a couple of issues that I suggest are remediated:
- there is a fractured branch over the boundary with the adjacent property – this should be removed.
 - There are suspended branches in the crown - these appear to be relatively robustly lodged in place, but it would be prudent to remove them in case of further s

4.4 **Statutory Legal Protection**

- 4.4.1 I carried out a search using the North Norfolk District Council website on the 16th January 2023. No tree preservation orders applying to the tree were listed, but the site is within both the Cley, and the Glaven Valley conservation areas. This affords passive statutory protection to the tree and the works advised in paragraph 4.3.5 above can only be completed once the appropriate notice has been given to North Norfolk District Council.

4.5 **The full extent of the arboricultural constraints are presented on the Tree Constraints Plan at Appendix 3**

This completes my advice to date.

Chris Shortis

Chris Shortis Dip. Arb. (RFS), M. Arbor A., PG Cert MHRA

Appendix 1

Brief qualifications and experience of Chris Shortis

1. Qualifications

Qualifications:

- Royal Forestry Society Professional Diploma in Arboriculture.
- Arboriculture Association Technician Certificate (Credit).
- National Certificate in Arboriculture and Forestry (Double Distinction).
- Awarded Warwickshire College Arboriculture Student of the Year.
- LANTRA Professional Tree Inspection
- University of Twente Post-Graduate Certificate in Multi Hazard Risk Assessment

2. Practical experience:

- Bournville Landscapes and Tree Care Ltd: Arborist.
- Midland Forestry Ltd: Arboriculturalist.
- Midland Forestry Ltd: Arboricultural Consultant
- Midland Forestry Ltd: Associate Director
- Forbes Laird Arboricultural Consultancy: Deputy Head of Risk
- Lightwoods Green Ltd: Principal

3. Continuing professional development:

Sample of the seminars and conferences attended:

- International Society of Arboriculture conference 'Defensible Tree Management Systems'
- Practitioners guide to Visual Tree Assessment
- Arboriculture Association conference 'New Horizons in Arboriculture'
- Visual Tree Assessment, Tree Safety Diagnosis and Failure Analysis seminar by Dr. Claus Mattheck
- Preparing for and giving evidence at Public Local Inquiries
- 40th National Arboriculture Conference
- Fungal Decay Process & Applied Engineering
- The Institute of Chartered Foresters' conference Trees, People & the Built Environment
- Designing with Trees
- Capital Asset Value for Amenity Trees
- Dynamic Structural Analysis of Trees Subject to Wind Loading & the Biomechanical Implications

4. Membership of professional bodies:

- Professional Member of the Arboriculture Association.
- Member of the Royal Forestry Society.

APPENDIX 2 - Tree Survey Schedules

Explanatory Notes for Individual Trees

- **ID no.:** Trees are recorded using a site-specific unique identification number. This identification number is used for all references throughout the report and associated plans
- **Species:** The species identification is based on visual observations and the common English name of what the tree appeared to be is listed. In some instances, it may be difficult to quickly and accurately identify a particular tree without further detailed investigations. Where there is some doubt of the precise species of tree, it is indicated with a '?' after the name in order to avoid delay in the production of the report.
- **Estimated dimensions:** Estimated dimensions are shown in *italics*.
- **Height:** Height is to the nearest metre.
- **Stem diameter(s):** This is measured at 1.5m above ground level and recorded in millimetres. Trees with low crowns are measured just above the root flare. For trees with multiple stems see 3.2.2 in main text.
- **NSWE:** The branch spread is measured in metres at the four cardinal points of the compass to derive an accurate representation of the crown.
- **Ht 1st branch:** Height above ground in metres of attachment point of first significant branch (cardinal point may be given indicating direction of lowest branch).
- **Crown Clearance:** Height of the crown above ground level at the lowest point.
- **Life Stage:** Assessed as Young, Semi-Mature, Early-Mature, Mature, Over Mature and Veteran.
- **Phys. condition:** An assessment of the physiological condition (i.e. health/vitality) status of the tree summarised into:
 - **Good:** Generally in healthy condition
 - **Fair:** Condition satisfactory though below mean species performance
 - **Poor:** Tree in decline
 - **Dead:** Self-explanatory
- **Structural condition & Notes:** Notes on the structural integrity of the tree based on visual tree assessment, including damage, decay fungi, pests, etc as appropriate, plus other pertinent observations
- **Management recommendations:** Recommendations for intervention (e.g. tree surgery, felling, etc) prior to any development. Hazardous trees are highlighted within the survey schedule.
- **Ret. Span:** An estimate of the remaining contribution span that the tree or group of trees is expected to have, based on species, condition and context. The following longevity bands are used, categorised accordingly:
 - <10 Tree is dead, dying, has a severe structural defect, or will become exposed following inevitable loss of companion shelter. Possibly requires sanitation felling Unsuitable for retention

10+ Short-term longevity only: replacement planting generally appropriate

20+ Mid-term longevity

40+ Good longevity

- **QV Grade:** Quality & Value grade classification according to BS5837

U - Unsuitable for retention

A - High retention priority

B - Moderate retention priority

C - Low retention priority

+subcategories 1, 2 & 3 reflecting arboricultural, landscape and cultural values respectively.

- **Proposal:** The tree retention / removal balance in light of the proposal.

RET - Trees to be retained

REM - Trees to be removed to facilitate development

U - Trees identified to be unsuitable for retention

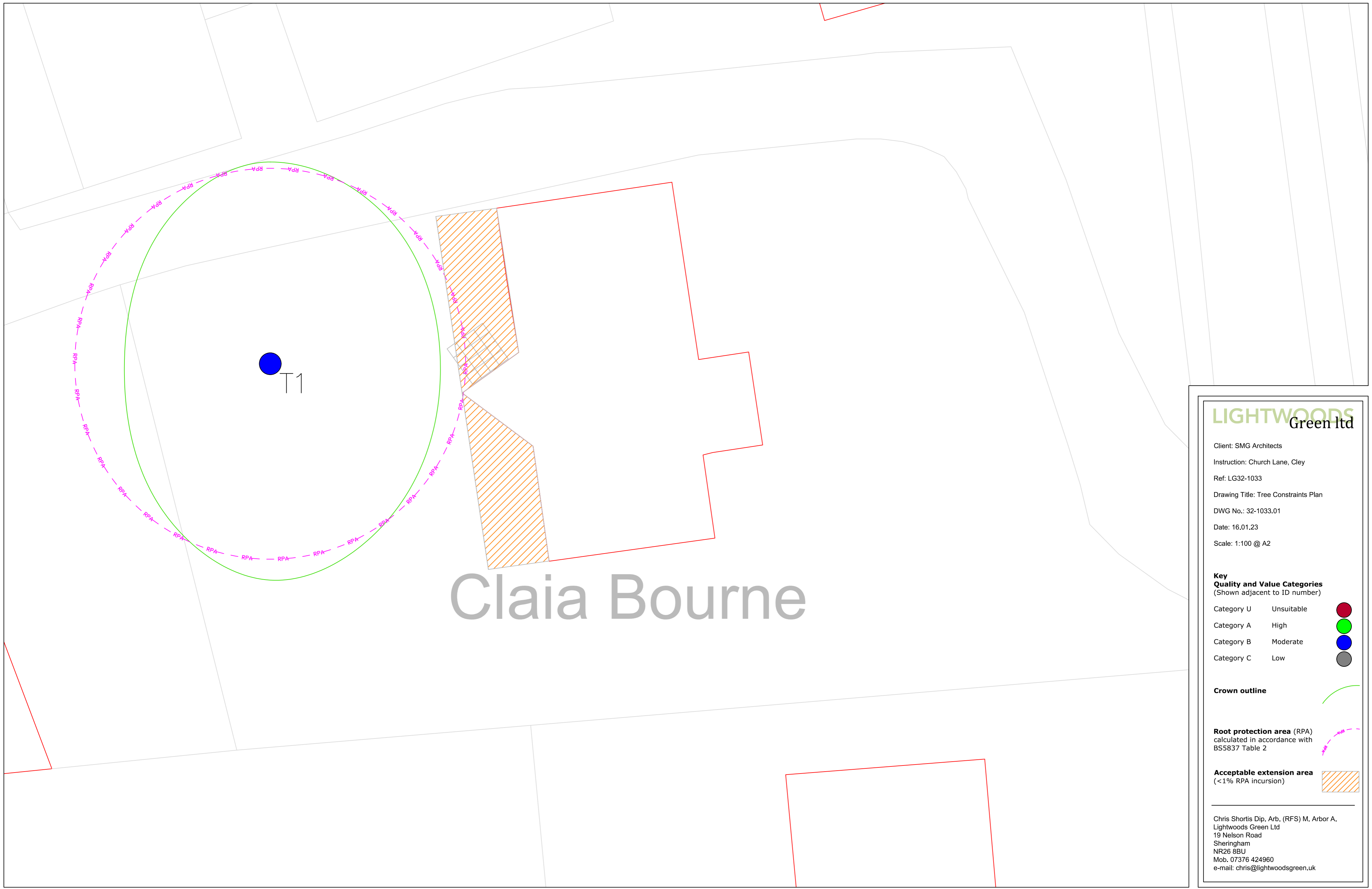
Tree Survey Data for Individual Trees

ID No.	Species	Ht.	Dia. (mm)	N	S	W	E	Ht. 1 st br.	Cr. Clr.	Life Stage	Phys. Cond	Structural condition & Notes	Management recommendations	Ret. Span	QV Grade	Proposal
1	Blue atlas cedar	16	670	8.3	8.9	6	7	4.2	3.5	M	F	Storm damage to the crown with fallen branches suspended in the centre of the crown to the west. Fractured branch over the boundary with the adjacent property. Minor deadwood through the crown typical of the species. Extended lateral branch to north.	Remove fractured branch over the boundary to west. Remove suspended branches.	40+	B1	RET

APPENDIX 3

TREE CONSTRAINTS PLAN.





Note this plan consists of one sheet and is scaled for printing at A2. It is intended to be read in colour.





LIGHTWOODS Green Ltd


Client: SMG Architects
 Instruction: Church Lane, Cley
 Ref: LG32-1033
 Drawing Title: Tree Constraints Plan
 DWG No.: 32-1033.01
 Date: 16.01.23
 Scale: 1:100 @ A2

Key
Quality and Value Categories
 (Shown adjacent to ID number)

Category U	Unsuitable	
Category A	High	
Category B	Moderate	
Category C	Low	

Crown outline 

Root protection area (RPA)
 calculated in accordance with BS5837 Table 2 

Acceptable extension area
 (<1% RPA incursion) 

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