

TREE SURVEY, ARBORICULTURAL IMPACT ASSESSMENT AND ARBORICULTURAL METHOD STATEMENT

A report to accompany a planning application for the construction of a two-storey side extension at 126 Durley Avenue, Waterlooville, PO8 8TZ

Report by Philip Walker
Professional Tree Inspector

On the instructions of Tree Assist Ltd

8th May 2026

PW reference A49



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1. Instructions

- 1.1 Philip Walker Arboricultural Consultancy (PWAC) was instructed by Tree Assist Ltd on 28th April 2026 to carry out a BS5837: 2012 compliant survey of trees at 126 Durley Avenue, Waterloooville, PO8 8TZ, and prepare a tree survey schedule and tree constraints plan, to inform architects of potential tree-related constraints on the site. PWAC was further instructed to prepare an arboricultural impact assessment to consider potential impacts of the proposal to construct a two-storey side extension, and to recommend suitable mitigation for any impacts identified. The final instruction was to prepare a tree protection plan and an arboricultural method statement to provide a specification for tree protection during the proposed development.
- 1.2 The documents that have been provided for reference are as follows:
- 1) Architect's drawing – B J H Property Services – Proposed Plan – Drawing number 43/2526-2
 - 2) Piled foundation drawing – Cowan Consultancy – Drawing number 487066/301P1

2. Introduction

- 2.1 The British Standard 5837: 2012 *Trees in relation to design, demolition and construction – Recommendations* provides a framework for considering trees in the planning process. It gives guidance on categorising the qualities of trees in order to enable decisions to be made as to which trees are appropriate for retention within a development. It then advises on options for protecting trees to be retained during the development (at all stages including demolition, construction and hard landscaping), and the means of incorporating trees into the developed landscape. This report has been prepared with reference to the recommendations of BS5837: 2012.
- 2.2 The proposed development that is considered in this report is for the construction of a two-storey side extension.
- 2.3 Trees that are assigned a BS5837: 2012 category of A or B, are considered to be of high value and should be considered for retention. Trees in category C should be retained where possible, but should not be considered a material constraint to development. Trees categorised as U are unsuitable for retention, usually because they are dead or dangerous, or have a very short safe useful life.
- 2.4 Trees T1 oak and T2 ash are protected by a Tree Preservation Order – (TPO Number 1437) and this means that no work can be carried out to them (including cutting roots or branches or felling) without an application to the local planning authority. However, the granting of planning permission allows trees to be removed if they are shown as being removed on approved plans.
- 2.5 At the time of the tree survey the proposed extension was partially constructed, including foundations, floor slab and exterior walls, which I have been informed were constructed using a piled foundation as per the specification provided by Cowan Consultancy. This report makes recommendations for methods to ensure that retained trees will be protected from harm from this point forward only.

3. Tree survey

- 3.1 The tree survey was carried out by Philip Walker on 2nd May 2026. Tree heights and crown spreads were measured using a Nikon Range Finder or Trupulse laser and trunk diameters were measured at 1.5m above ground level using a diameter tape. Dimensions were estimated where access or visibility was restricted (e.g. if the tree was on neighbouring land).
- 3.2 Appended at **PW1** is the tree survey schedule which provides details of the two trees present within or immediately adjacent to the property.
- 3.3 The site survey drawing appended at **PW2**, based on an Ordnance Survey Mastermap and GPS location shows the positions of the surveyed trees and gives a reasonable indication of their comparative branch spreads. The drawing has been colour coded as follows:

A trees (high quality and value, minimum 40 years useful life) **LIGHT GREEN**

B trees (moderate quality and value, minimum 20 years useful life) **MID BLUE**

C trees (low quality and value, minimum 10 years useful life) **GREY**

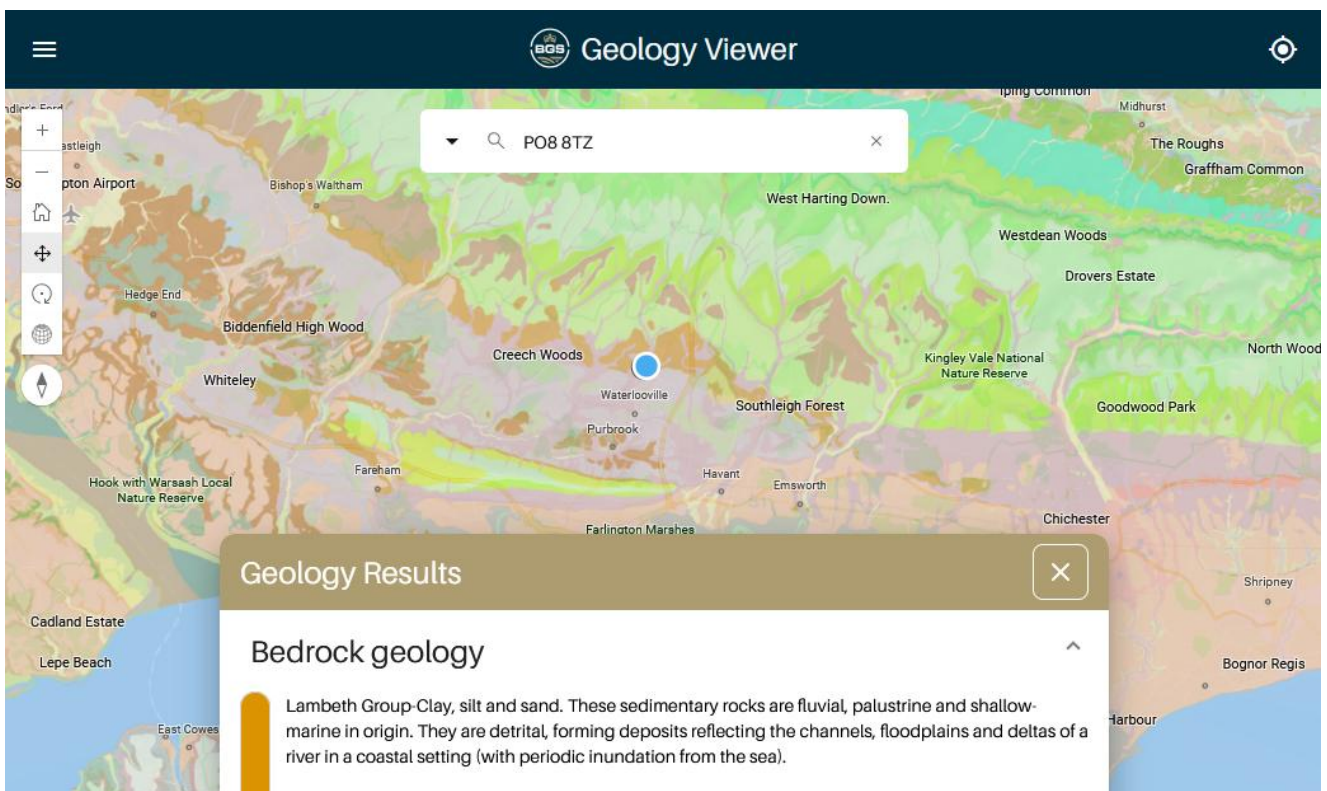
U trees (unsuitable or dead/dying/dangerous, less than 10 years useful life) **RED**

- 3.4 It should be understood that no individual safety inspection has been carried out on any tree. Similarly, any suggestions for tree work should not be taken as a specification for tree works.
- 3.5 Both trees surveyed are considered to be category B and of moderate value (T1 oak and T2 ash).
- 3.6 Adequate protection, both above and below ground, is essential for trees that are to be retained as part of a development. The British Standard BS5837: 2012 *Trees in relation to design, demolition and construction - Recommendations* advises that there should be a root protection area (RPA) around trees which is kept free of construction activities by means of an exclusion zone enforced by protective fencing and/or ground protection. The RPA is calculated as the area equivalent to a circle with a radius of 12 times the trunk diameter at a height of 1.5 m above ground level. Based on the tree survey data root protection areas (and radial distances from the trunk to be protected) have been calculated and these are shown as circles around the trees on the tree constraints plan at **PW2** and are tabulated at **PW3**.

4. Soil assessment

- 4.1 BS5837: 2012 advises that soil properties should be considered as part of a tree survey report. This is necessary because trees can cause damage to structures founded on soils that shrink and swell with changes in moisture content (principally clays). Such movement is exacerbated by the influence of trees and therefore if a shrinkable soil is suspected foundations should be designed to extend below the likely zone of seasonal moisture change.
- 4.2 The British Geological Survey 1: 50,000 scale map indicates that the underlying geology of the site is shrinkable Lambeth Group-Clay, silt and sand (Figure 1). Thus, foundations will need to be deepened to take account of trees. If site specific investigations confirm shrinkable clay then foundations should be designed with reference to the National House Building Council's Standards Chapter 4.2 *Building near trees*.

Figure 1. British Geological Survey 1: 50,000 scale map showing that the site is underlain by the Lambeth Group-Clay, silt and sand



5. Arboricultural impact assessment

- 5.1 The purpose of an arboricultural impact assessment (AIA) is to evaluate the direct and indirect effects of proposed development on trees and, where necessary, to consider appropriate mitigation. It should set out which, if any, trees are to be removed to facilitate the development and should consider the possible effects on retained trees of potentially damaging activities on the site (for example changes in ground level and installation of below ground services). Requirements for access around trees should be considered and potential conflicts identified, for example, where branches overhang the development area and may require pruning.
- 5.2 Mitigation for any issues identified should be proposed and addressed in the arboricultural method statement (AMS).

Tree removals

- 5.3 No tree removals are required to facilitate the proposed development.

Tree pruning

- 5.4 No pruning work is required to facilitate the proposed development as there is sufficient space between the buildings and retained trees for all works to take place without conflicts arising.

Tree protection

- 5.5 Both trees are to be retained and will be protected from mechanical damage to their trunk, branches and roots by the installation of 2m high protective fencing to create a construction exclusion zone (CEZ) to exclude site workers, machinery and storage of materials. There is sufficient space outside the CEZ for all construction activities to take place without creating pressure on tree protection.
- 5.6 Space will be needed for construction workers to access the building and therefore parts of the RPAs will be protected by ground protection rather than fencing. The purpose of ground protection is to create a physical barrier between the soil and construction activities and to create a load-suspension platform to prevent compaction of the underlying soil.

6. Arboricultural method statement and tree protection plan

- 6.1 Trees can very easily be damaged during construction activities through their branches being broken by construction traffic passing close to the canopy or by root severance during the digging of foundation or service trenches. The majority of roots are to be found in the upper 600mm of soil and so even relatively shallow trenches can sever a significant number of roots growing across the direction of the trench. Similarly, the diameter of tree roots tapers sharply within a few metres of the trunk of a tree, so that what might seem to an uninitiated site worker to be an insignificant root (perhaps only a few centimetres in diameter) may actually be highly important.
- 6.2 Tree roots can also be damaged indirectly, often inadvertently, through soil compaction, which disrupts soil structure and can lead to root death through the development of anaerobic soil conditions. Spillage of toxic materials (e.g. oil or diesel) can also result in root damage and ultimately the death of a tree. Protection of the soil around trees by means of a construction exclusion zone (CEZ) is therefore vitally important in order to preserve roots undamaged.

Fencing and ground protection

- 6.3 Tree protection will comprise of 2m tall fencing installed in the positions shown at **PW4** before construction continues. The fencing will consist of a scaffold framework, well braced to resist impacts, with vertical tubes spaced at a maximum interval of 3m (Figure 2). Onto this, weld mesh panels or 2m high shuttering board will be securely fixed with wire or scaffold clamps. Un-braced weld mesh panels on unsecured rubber or concrete feet will not be used as these are not resistant to impact and are too easily removed by site operatives. An alternative system of bracing which does not require a scaffold framework is shown in Figure 3.

Figure 2. Diagram to illustrate design of protective fencing with scaffolding anchored into the ground.

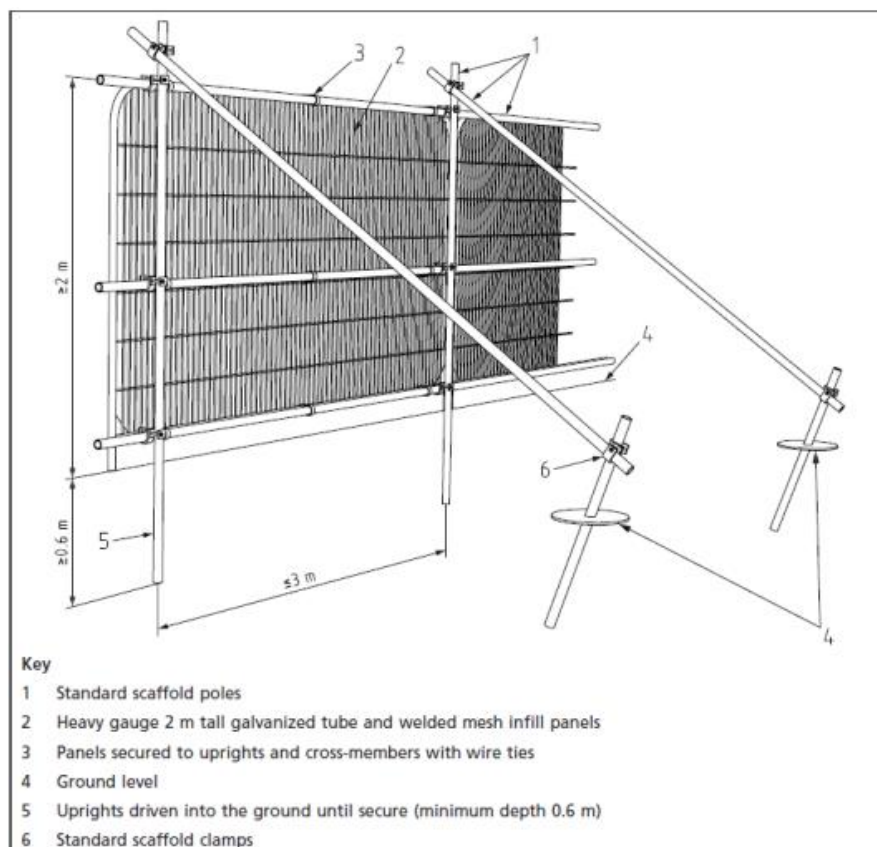


Figure 3. Diagram to illustrate alternative design of protective fencing.

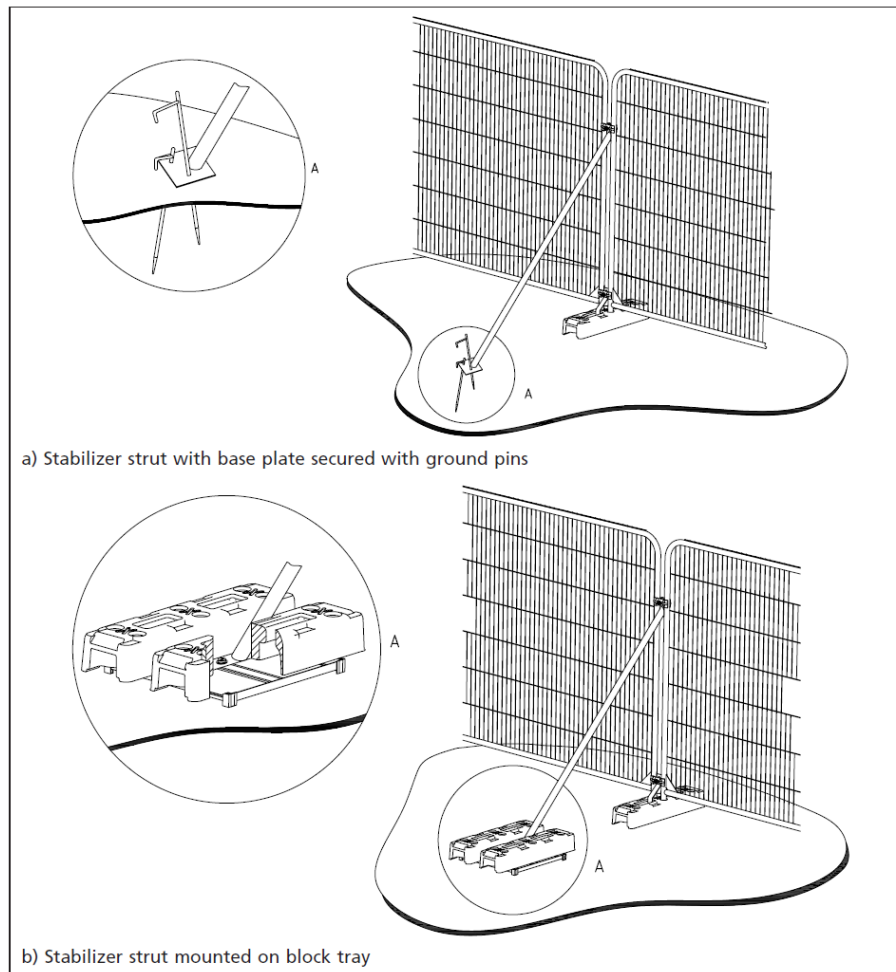


Figure 4. Photograph to illustrate installed protective fencing.



- 6.4 High visibility all weather notices at a size no less than A3 will be securely attached to every second panel of the barrier around the CEZ with wording as shown in Figure 5.

Figure 5. Wording to be included in high visibility all-weather sign attached to protective fencing



- 6.5 In order to allow access for construction workers around the development it is proposed that part of the RPA will be protected by ground protection. This area, shaded blue on the tree protection plan (**PW4**), will be covered by a permeable geotextile such as Terram. Onto this will be placed treated timber (100mm x 80mm) at spacings of no more than 1 m. The area between the timber bearers will be filled with a compressible material such as woodchips and will then be covered by 20mm thick marine ply which will be screwed down onto the timber (Figures 6 and 7). The plywood may need to be coated with a non-slip paint.

Figure 6. Specification for ground protection

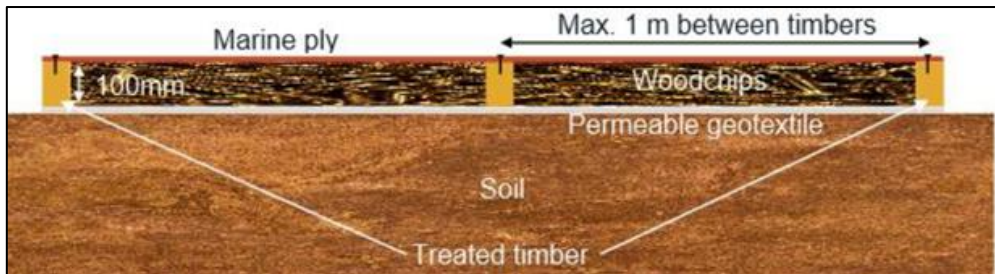


Figure 7. Plywood sheeting supported by timber bearers with woodchip infill used as ground protection for parts of the RPA outside fencing.



Arboricultural supervision

- 6.6 It is recommended that a project arboricultural consultant is appointed to oversee tree protection for the remainder of the construction contract. The project arboriculturist will be consulted on any issues that may arise concerning trees and will visit the site as often as necessary to ensure that trees are protected and/or at the following key stages:
- Prior to contractors continuing works on site in order to meet with the supervising architect and/or the contractor's site manager to ensure that the principles of tree protection are understood and the procedure, timescale and materials for installation of tree protection are agreed;
 - Following installation of tree protection but prior to any works continuing on site to confirm that it is fit for purpose (which may coincide with the above);
 - At any time that there are potential conflicts with tree protection.

- 6.7 A pre-start meeting will be held on site during which the site manager will be fully briefed on tree protection measures and procedures before any workers or sub-contractors are permitted onto the site. Following induction, a copy of the Induction Sheet (**PW5**) will be provided to and be signed by the site manager/foreman in recognition of acceptance of their role in enforcing day to day tree protection.
- 6.8 All contractors involved in the project have a duty to comply with all the specified tree protection measures and all workers will be provided with induction by the site manager/foreman and be required to sign an Induction Sheet confirming they have understood the protection measures. Signed sheets will be kept on site for inspection.
- 6.9 No further works will take place until after the meeting has been held and tree protection has been installed, inspected and approved as fit for purpose.
- 6.10 Fencing and ground protection will not be removed under any circumstances during construction unless with the express approval of the local authority. If in any doubt the site manager must contact the project arboricultural consultant.

Burning of waste

- 6.11 No fires will be lit on site within 3 m of root protection areas due to the danger of scorching of leaves and branches of overhanging trees.

Space for machinery, parking of vehicles, storage of materials and site huts

- 6.12 All machinery required on site will operate outside of root protection areas or from the ground protection or the driveway. Site accommodation, if required, will be located outside root protection areas.
- 6.13 Delivery vehicles will park in the drive or off site and storage of materials will be outside root protection areas. At each delivery, where materials are unloaded by crane, a banksman will be present to ensure that sufficient clearance is allowed for to avoid conflict with branches of T1. Any incidents must be reported to the project arboriculturist.

Services

- 6.14 The proposed layout of incoming (water, gas and electricity) and outgoing (foul sewer) services is not yet established but they should be installed outside root protection areas. If it is necessary for a trench to be dug through an RPA a specific method statement will be required which will need to specify that the trench will be hand dug and that care will be taken to preserve all roots encountered which are larger than 25mm diameter.

Landscaping

- 6.15 Once construction has demonstrably finished (to the satisfaction of the project arboriculturist) fencing may be removed in order to allow final landscaping to be undertaken. Landscaping plans will not involve any changes in soil levels, digging of any trenches or construction of masonry or retaining walls within root protection areas.

7. Conclusions

- 7.1 A BS5837: 2012 survey of two trees has been carried out on land at 126 Durley Avenue, Waterloooville, PO8 8TZ. Both trees are considered to be category B and of moderate value (T1 oak and T2 ash).
- 7.2 The trees to be retained will be protected for the remainder of the development and methods for ensuring their protection have been described.

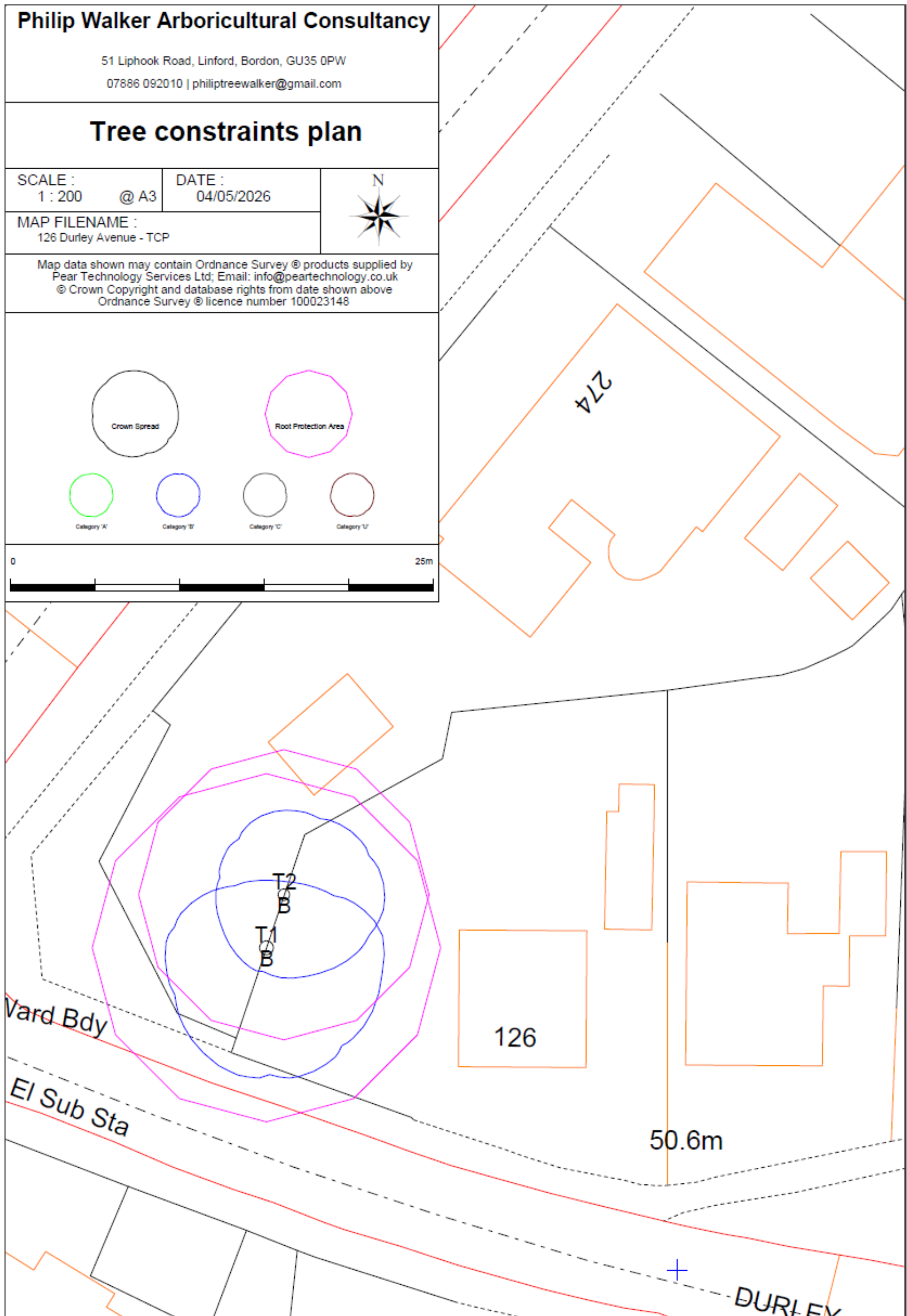
APPENDIX PW1

Tree survey schedule (BS5837: 2012).

Tree No.	Species	Height (m)	Trunk diameter (mm)	Crown spread				Height of crown clearance (m)	Age class	Physiological condition	Structural condition	Useful life	BS5837 Category	Comments
				N (m)	E (m)	S (m)	W (m)							
T1	Oak	17	840	4	7	8	6	S3	Mature	Decline	Fair	20 to 40 yrs	B	Significant dieback to the east. Minor dieback in other parts of crown.
T2	Ash	18	700	5	6	5	4	E2	Mature	Good	Fair	20 to 40 yrs	B	

APPENDIX PW2

Tree constraints plan (TCP) showing existing plot layout with tree numbers, BS5837: 2012 colour codes (A – Green, B – Blue, C – Grey, U – Red) and root protection areas (magenta circles). The plan has been provided separately as a PDF at a scale of 1: 200 @ A3.



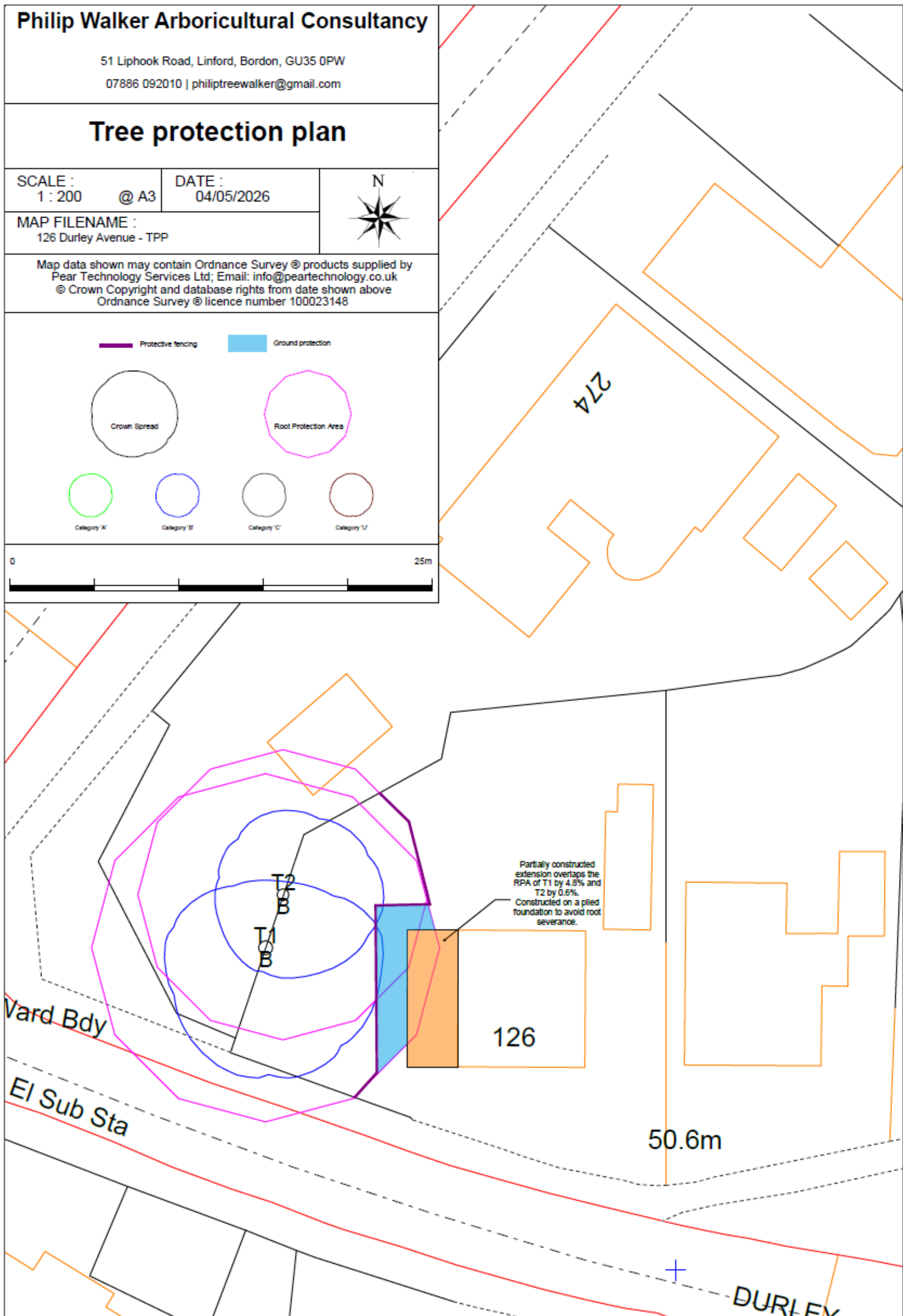
APPENDIX PW3

BS5837: 2012 schedule of root protection areas.

Tree No.	Species	Trunk diameter (mm)	BS5837: 2012 Root protection area, RPA, (m ²)	BS5837: 2012 Radial protection distance (m)
T1	Oak	840	319.2	10.1
T2	Ash	700	221.7	8.4

APPENDIX PW4

Tree protection plan (TPP) showing retained trees, tree numbers and root protection areas (magenta circles). The location of protective fencing is shown as purple lines and ground protection as blue shading. The plan has been provided separately as a PDF at a scale of 1: 200 @ A3.



APPENDIX PW5

TREE AWARENESS – SITE INDUCTION SHEET

SITE NAME: 126 Durley Avenue, Waterlooville, PO8 8TZ

Trees are an important part of this development and all trees noted on the Tree Protection Plan are protected by planning conditions and by virtue of having a Tree Preservation Order. Trees must not be damaged in any way, including indirectly through compaction/contamination of soil, so that they can fully integrate into the finished project and stay healthy well into the future. All persons working on this site have a responsibility to be aware of trees and to abide by tree protection procedures.

How can trees can be damaged?

Above the ground – contacts and impacts with branches and trunk (for example by machine operations: piling rigs, high-sided vehicles, crane use, fixings to trunk, unauthorised cutting back of branches). Make sure there is adequate clearance under the tree canopy and don't stray close to the trunk. Damage to bark allows infections to enter the tree.

Below the ground – roots spread out from the trunk horizontally at shallow depth and are therefore easily damaged. Vehicle and pedestrian movements and storage of materials on unprotected ground causes compaction, especially in wet weather, and must be avoided. Soil stripping during site clearance or landscaping is prohibited in root protection areas. The effects of root damage may take some time to become obvious, but can result in disfiguring dieback of leaves and branches, or even death.

Tree protection procedures

Provided that the simple steps below are followed most tree protection is straightforward:

- Stay out of tree Construction Exclusion Zones (CEZs). These are the areas of ground surrounding retained trees that are protected by barriers and/or ground protection. If you need to go into a CEZ, you must first gain authorisation from the Site Manager.
- No construction activity of any description within CEZs, e.g. soil stripping, cement mixing, services installation, storage of materials etc.
- No fires within 20m of trunk of any retained tree.
- If authorised to work within a CEZ, for example, for installation of an above-ground no-dig driveway you must follow the procedures set out in the **Arboricultural Method Statement**.
- If damage occurs, you must inform the Site Manager who must, in turn, inform the project arboriculturist.

Planning Authority enforcement action needs to be avoided:

- 'Breach of Conditions' notices can prevent a site from being signed-off.
- 'Temporary Stop Notices' halt site operations and result in associated high costs.
- Wilful damage/destruction of TPO/Conservation Area trees can result in company and/or individual prosecutions - fines can be anything up to £20,000 (County Court fines are unlimited). Remember that fines may apply to the person committing the offence as well as the site owner and main contractors!

I have received site induction in tree awareness and tree protection procedures

PRINT NAME

SIGN

DATE

APPENDIX PW6

Qualifications and Experience

Philip worked as a climbing arborist from 2009 for the first ten years of his career, specializing in the removal of diseased and dangerous trees, as well as the pruning and maintenance of trees in the urban environment. This provided a foundation and fundamental experience for the understanding of physiology and structural integrity of trees.

In 2020 Philip started working as an associate of Martin Dobson Associates Ltd with Dr Martin Dobson. The arboricultural consultancy practice specialises in planning and development, and tree safety and disease diagnosis. In this practice he studied the BS5837: 2012 Trees in relation to design, demolition and construction procedures, carried out surveys and produced reports under the guidance of Dr Martin Dobson. He continues to work as an associate consultant for Martin Dobson Associates Ltd.

In 2023 Philip completed the LANTRA Professional Tree Inspection qualification and provides a standalone tree safety inspection service.

In 2025 Philip started Philip Walker Arboricultural Consultancy, providing services for planning and development and tree safety.