



DUCKWORTHS
ARBORICULTURE LTD.

BS:5837 ARBORICULTURAL REPORT

ARBORICULTURAL SURVEY, IMPACT ASSESSMENT &
METHOD STATEMENT

WARREN CREEK
THE WARREN
CAVERSHAM
READING
BERKSHIRE
RG4 7TQ

CLIENT: MR. R. ARNOLD

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Ref: AIA/AMS 06560 / 2024

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EXECUTIVE SUMMARY

This report details the steps which will be undertaken to ensure retained trees are not harmed during the proposed construction of a replacement dwelling at Warren Creek, The Warren, Caversham, Reading, RG4 7TQ.

Previous planning submission for the demolition of the existing dwelling and outbuildings and the erection of a 4-bed detached dwelling with garage as detailed under application Ref. PL/23/1270 was refused on 13th September 2024 due to matters relating to flood sustainability and biodiversity. Application PL/23/1270 was however considered acceptable as it relates to trees.

This revised scheme seeks to address the issues raised by the Council in relation to flooding and sustainability by reducing the build footprint and associated areas of hard landscaping. As a consequence, the scheme creates an even more sustainable relationship between the dwelling and the trees / tree canopies.

The proposed new dwelling and detached garage is outside of the root protection areas of all retained trees. The removal of a significant area of hard landscaping will greatly improve the growing conditions for T5 – Ash-Leaf Maple which is subject to a Tree Preservation Order. A robust scheme of landscaping on completion of the build will increase tree canopy cover.

I am satisfied that the application has no adverse impact on trees. The proposed development will be undertaken in accordance with the guidelines and recommendations in BS:5837 2012 – Trees in Relation to Design, Demolition and Construction and is therefore acceptable as it relates to trees.

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1. INTRODUCTION

1.1 INSTRUCTION

This Arboricultural report has been prepared by Sarah Duckworth, Arboricultural Consultant and provides an Arboricultural Impact Assessment and Method Statement relating to trees growing within the garden of Warren Creek, The Warren, Caversham, Reading, RG4 7TQ.

The Arboricultural Impact Assessment looks at any short or longer-term impact the proposed building works might have on the surrounding trees and to make recommendations for amendments or mitigation where appropriate.

This report includes a site-specific Arboricultural Method Statement and Tree Protection Plan. The Arboricultural Method Statement details the steps which will be taken to ensure significant trees growing within the property can be successfully protected and retained during and on completion of the building works.

1.2 SCOPE

The British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction' is designed to assist those concerned with trees in relation to construction to form balanced judgments. This report does not therefore seek to put arguments for or against development but provides a means of protecting the trees which may be affected during development.

The report is for the sole use of the client and its reproduction or use by anyone else is forbidden unless written consent is given by the author.

1.3 DOCUMENTS

I have been provided with a CAD drawing of the build proposals on which this report has been based. The topographical survey included the location of the three larger trees on site. The position of smaller trees and offsite trees has been plotted by eye, their locations measured and triangulated against fixed boundaries and structures on site. The position of the smaller and offsite trees should not therefore be taken as exact but is a good representation of their locations in relation to the build site.

The Tree Protection Plan which accompanies this report is illustrative and should be used for dealing with tree issues only. The precise location of all tree protection measurements should be confirmed with a pre-commencement site meeting before any demolition or construction activity takes place.

1.4 CAVEATS

The report is not a Tree Risk Management Report or a Hazard Analysis Report and its use as such is invalid.

The report refers to the condition of tree(s) and an assessment of the site on the day the evaluation was undertaken. The trees were assessed from ground level only and not climbed. My assessment of third-party trees was limited where direct access was not available to the adjoining properties.

This report is valid for a period of two years from the date of issue being 14th November 2024 and will expire on 14th November 2026.

DISCLAIMER: This is an independently produced Arboricultural Report. I have no connection with any of the parties involved in this site or application that could influence or bias the opinions expressed in this report.

2. ARBORICULTURAL IMPACT ASSESSMENT

2.1 INTRODUCTION

The purpose of the Arboricultural Impact Assessment (AIA) is to evaluate the direct and indirect effects of the proposed building works on the surrounding trees and where necessary recommend solutions or means of mitigation to protect the trees as appropriate.

This assessment will take account of the effects of any tree loss required to implement the design and any potentially damaging activities proposed in the vicinity of the retained trees.

2.2 PLANNING CONSTRAINTS

TREE PRESERVATION ORDERS

Three trees on site are the subject of Tree Preservation Order 97/07. These are understood to be T3 (Oak), T5 (Ash-Leaf Maple) and T7 (Ash) of this survey.



Photo 1 - T3 (Oak) growing adjacent to the access drive.



Photo 2 – T4 (Lawson Cypress) & T5 (Ash-leaf maple).



Photo 3 – T7 (Ash)

CONSERVATION AREA

Warren Creek is not within a Conservation Area.

ANCIENT WOODLAND

Warren Creek is not located within Ancient Woodland or within Ancient Woodland Buffer Zone.

2.3 SOIL

The soil on site was assessed by an appraisal on the British Geological Drift Survey Map only. According to the 1:50,000 scale map records, the bedrock geology for Warren Creek is Seaford Chalk Formation and Newhaven Chalk Formation - Chalk. Superficial deposits of Alluvium, consisting of clay, silt, sand and gravel are also expected in the area.

Borehole records close to the property confirm the presence of clay within the top 1m of soil which has been deposited onto a layer of gravel beneath which is sand and then the chalk bedrock.

The soil at Warren Creek is therefore expected to be shallow and free-draining. Where clay is present the nutrient levels may be higher and the water holding capacity greater. Clay can also give the soil capacity to shrink and swell with changing moisture levels which can lead to property subsidence damage.

Foundation depths should be calculated in accordance with NHBC Chapter 4.2 following a detailed on-site soil analysis, taking into account the presence of any clay and future growth of the adjacent trees.

2.4 PLANNING POLICY

READING BOROUGH COUNCIL PLANNING POLICY EN13: MAJOR LANDSCAPE FEATURES AND AREAS OF OUTSTANDING NATURAL BEAUTY

Planning permission will not be granted for any development that would detract from the character or appearance of a Major Landscape Feature. The following areas, as shown on the Proposals Map, are defined as Major Landscape Features:

- *The Thames Valley;*
- *The Kennet and Holy Brook Meadows;*
- *The West Reading wooded ridgeline;*
- *The East Reading wooded ridgeline; and*
- *The North Reading dry valleys and Chilterns Escarpment.*

Development which affects the setting of an Area of Outstanding Natural Beauty (AONB) will be accompanied by a Landscape and Visual Impact Assessment that demonstrates that there is no detrimental impact on the North Wessex Downs or Chilterns AONBs in terms of scale, design, layout or location. None of Reading Borough falls within an AONB, but where the urban area meets the Chilterns AONB is shown on the Proposals Map.

READING BOROUGH COUNCIL PLANNING POLICY EN14: TREES, HEDGES AND WOODLANDS

Individual trees, groups of trees, hedges and woodlands will be protected from damage or removal where they are of importance, and Reading's vegetation cover will be extended. The quality of waterside vegetation will be maintained or enhanced.

New development shall make provision for tree retention and planting within the application site, particularly on the street frontage, or off-site in appropriate situations, to improve the level of tree coverage within the Borough, to maintain and enhance the character and appearance of the area in which a site is located, to provide for biodiversity and to contribute to measures to reduce carbon and adapt to climate change. Measures must be in place to ensure that these trees are adequately maintained.

2.5 TREES APPRAISAL

Total Number of individual trees surveyed:	19
Total Number of tree groups surveyed:	7
Number of category 'A' trees / groups:	1
Number of category 'B' trees / groups:	3
Number of category 'C' trees / groups:	17
Number of category 'U' trees:	5

Figure 1 - Tree quality summary

The principal tree in relation to Warren Creek is T3, a large Oak located in a prominent position towards the front of the site and visible in wider views from The Warren. The tree is situated down a steep bank at the foot of the raised access ramp. The topography of the site will provide good protection of the Oak and will not be foreseeably impacted by the proposed development.

Of note is T5, a large Ash-leaf maple which is of a significant age and size for the species. The tree has no wider amenity value and is not highly visible from a public viewpoint. The rooting area of this tree will be protected with the temporary retention of the existing concrete driveway during the course of the build. On completion of the build, the concrete will be removed and replaced with a porous driveway set further away from the tree which improve the quality of the tree's rooting environment.

T7 is a mature Ash growing on the bank of the creek. Although a well-formed tree, the tree has apical (tip) dieback indicative of early Ash Dieback Disease and a limited safe, useful life expectancy. The tree is not expected to be rooting north of the creek as the adjacent stream would prevent the spread of tree roots.

Despite its limited life expectancy, Mr. Arnold wishes to retain the tree and will ensure the Ash is adequately protected during the build. The replacement footpath to the new property will be porous and of a no-dig construction .

2.6 TREE WORKS AND REMOVAL

One tree group has been identified for removal in order to facilitate the proposed building works. This is G10 – a shrubby group of Willow and Pyracantha growing adjacent to the existing garage unit. The removal of this category 'C' tree group will not detract from the amenity provided by trees to the property or the wider local area.

Tree removal will be mitigated with 5 standard native trees planted on site as part of the enhanced landscaping scheme.



Photo 4 – G10 (Willow & Pyracantha).



Photo 5 - G10 as viewed from The Warren.

2.7 APPLICATION ASSESSMENT

The new dwelling and garage footprints are outside of the root protection areas of all trees.

The dwelling will be south facing and well fenestrated therefore shade trees will not be an unacceptable nuisance in this location.

There will be a good and sustainable distance between the trees' canopies on completion of the building work without the foreseeable need for major pruning work in the future. Hedgehog gutter guards can be installed if blocked gutters become an unacceptable nuisance.

2.8 TREE PROTECTION DURING BUILDING WORKS

The rooting areas of all retained trees can be protected during the build with fit for purpose Tree Protection Barriers and Temporary Ground Protection set out as shown in the Tree Protection Plan and in accordance with BS:5837 (2012).

The existing concrete driveway will be retained as ground protection during the build. The concrete surface at the foot of the ramp will be removed and replaced on completion of the building works with a no-dig porous surface and soft landscaping.

2.9 SERVICES

I have not received any drainage or service plans for the site. However, following discussions with the client, I am advised that services will connect to those of the existing property and outside of the identified rooting areas of the retained trees.

Soakaways, where required can be constructed 5m from the new dwelling and outside of the rooting area of all trees.

As a matter of course, the Local Authority may request confirmation on services and routes, including the locations of any new soakaways to be submitted for approval in support of any future application to ensure it does not conflict with the retained trees on site.

2.10 CONCLUSIONS

This report demonstrates that the trees growing on and adjacent to Warren Creek have been properly considered in accordance with Arboricultural and Planning best practice - (BS:5837 2012 Trees in Relation to Design, Demolition and Construction').

Temporary tree protection measures will be installed to protect the rooting areas of retained trees in accordance with the guidelines and recommendations in BS:5837 2012 - Trees in Relation to Design, Demolition and Construction.

On completion of the build, the areas of hard standing at the front of the property will be reduced and replaced with soft landscaping. An overall reduction of hard standing will greatly enhance the growing conditions for the adjacent trees.

Provided the methodology within the Arboricultural Method Statement (which accompanies this report) is followed and adhered to during the building works, I am satisfied that this application will not compromise the health of trees and the proposed building works are acceptable in arboricultural terms.

3. ARBORICULTURAL METHOD STATEMENT (AMS)

3.1 INTRODUCTION

The correct and timely installation of tree protection measures such as tree protection fencing is critical to ensure the long-term retention of a healthy tree stock on and adjacent to the development.

This method statement will be read, approved and agreed to by all key personnel prior to the commencement of works within the site.

WARNING: FAILURE TO FOLLOW THE ARBORICULTURAL METHOD STATEMENT ONCE APPROVED CAN CAUSE IRREPARABLE HARM TO PROTECTED TREES IN CONTRAVENTION OF THE TREE PRESERVATION ORDER AND MAY INVALIDATE YOUR PLANNING CONSENT.

3.2 SITE SUPERVISION AND MONITORING.

In accordance with BS:5837 'Trees in Relation to Design, Demolition and Construction' 2012, there will be an auditable system of arboricultural site monitoring in place within during the build.

A site visit will be held once the Tree Protection Fencing and Temporary Ground Protection is installed as shown on the Tree Protection Plan. The Local Authority Tree Officer will be given a minimum of five days' notice of the time and date of the meeting so that they may attend should they wish to do so.

The purpose of the pre-commencement meeting will be for the appointed Arboricultural Consultant to confirm the location and construction of the Tree Protection Measures and ensure a common understanding of the requirements for Tree Protection within the site. If the Local Planning Authority is unable to attend, photographic evidence of the tree protection fencing will be emailed to the appointed planning officer once it has been erected.

The project arboriculturist will monitor site activity during the following phases of development:

1. During removal of the existing hard standing within the root protection area of T5 Ash-leaf Maple.

In addition, the Arboricultural Consultant will visit the site at a maximum of 8-week intervals during active construction works to confirm the condition and location of the protection measures.

A signed copy of the inspection report will be sent to Reading Borough Council's Natural Environment and Planning Team within 5 days following each visit.

A copy of the Arboricultural Method Statement and Tree Protection Plan will be available on site for reference.

3.3 ON SITE TREE SUPERVISOR

In addition to the appointed Arboriculturist, there will be a designated on-site 'tree supervisor', a member of the build team who is responsible for ensuring no works are undertaken on site except in complete accordance with the approved Arboricultural Method Statement when the Arboricultural Consultant is not present.

The on-site tree supervisor will:

- Be present on site most of the time.
- Be aware of the arboricultural responsibilities relating to the protected / retained trees on site.
- Have the authority to stop any work that will, or has the potential to, cause harm to any tree.
- Be responsible for ensuring that all site personnel are aware of their responsibilities towards trees on site and the consequences of the failure to observe those responsibilities.
- Make immediate contact with the Council and/or the retained arboriculturalist in the event of any related tree problems occurring whether actual or potential.
- To ensure a commitment from all parties to the healthy retention of the trees. These details will be passed on to any contractors working on site, so that the practical aspects of the above precautions are included in their method statements, and financial provision made for these.

The on-site Tree supervisor will also notify the Local Authority Tree Officer 5 days prior to the tree protection measures being removed on completion of development.

3.4 TREE WORKS

The following **essential** tree works will take place prior to the commencement of any building works on site:

Ref:	Species	BS:5837 category	Comments
T5	Ash-leaf maple	B3	Crown-lift to give 4m clearance above ground level over parking / driveway area <u>by pruning secondary branches only</u>
G10	Willow & Pyracantha	C1	Fell to ground level and remove stumps

Figure 2 – Schedule for essential tree work

3.5 TREE WORKS BEST PRACTICE

All tree works shall be undertaken in accordance with BS:3998 2010 'Tree Work Recommendations'.

No vehicles will be driven beyond the existing driveway onto unprotected ground during the course of the tree work operations.

Chippings arising from the work will not be piled around the bases of trees on or off the site. Wood and any other arisings from the tree work will not be burnt on site.

3.6 PROTECTED SPECIES

In accordance with the Wildlife and Countryside Act - 1981, Conservation - Natural Habitats -Regulations 1994 and Countryside Rights of Way Act - 2000, the property owner will consider the timing and type of tree work operations to avoid causing disturbance to any nesting or breeding birds or bat roosts that may be present within trees.

It is an offence (subject to exceptions) to intentionally kill, injure, or take, possess, or trade in any wild animal listed, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places.

Non-urgent major tree work involving tree removal or reduction and hedge cutting operations should not be undertaken during the bird nesting or breeding season, which is considered to be from 1 March to 31 July. However, depending on seasonal temperatures, some birds continue breeding into August and September.

All wild birds, their young, their eggs and active nests are protected under law. It is an offence to damage a nest intentionally while it is in use or being built and hedge cutting is highly likely to damage nests or cause them to be deserted.

3.7 TREE PROTECTION FENCING

Following the initial tree works, no further works in relation to the build will be undertaken, including construction, excavation or demolition, prior to the Tree Protection Fencing being installed as identified in the Tree Protection Plan.

The Tree Protection Fencing will consist of a vertical and horizontal scaffold framework braced well to resist impact. The vertical tubes will be spaced at a maximum distance of 3m and driven securely into the ground. Onto this framework welded mesh – 'Heras' style fencing panels or similar will be securely fixed. (See Appendix H).

On completion of the building work and following the removal of existing areas of hard landscaping, the fencing will be realigned to exclude the Root Protection Area of T5 Ash-leaf Maple.

The fencing will be located to protect the retained trees and their rooting areas and will remain vertical, rigid and complete during development.

At no time will Tree Protection Fencing be removed or relocated contrary to the recommendations in this report, without professional arboricultural advice and without the prior consent of the Local Authority Natural Environment Officer.

The appointed Site Manager will notify the Tree Officer once Tree Protection Measures are installed on site and 5 days prior to the Protection Fencing being removed on completion of development so that a representative from the Local Authority may visit the site if considered necessary.

3.8 TEMPORARY GROUND PROTECTION

No works will commence, including construction or excavation, prior to the additional areas of ground protection being installed south of the creek to protect the rooting area of (T7 (Ash) as identified in the Tree Protection Plan. The temporary ground protection will be installed to protect soft landscaped areas (as indicated in the magenta hatch on the Tree Protection Plan).

The temporary ground protection will be constructed from rigid load bearing temporary roadway sheets such as 'euroboards' or similar or ply sheets a minimum of 15mm thick which will be connected and pinned into place to resist movement.

Existing areas of concrete hard standing north of the creek will be retained during the construction of the replacement dwelling to serve as ground protection when working within the rooting areas of the adjacent trees.

The no-dig subbase of the access path south of the creek will also be protected during the build, prior to the application of the final aesthetic surface. The filled cellular confinement subbase will be topped with an impermeable membrane and protected temporarily under ground protection sheets which can be connected together to create a fixed and rigid surface prior to prevent damage to the structure .

3.9 CONSTRUCTION EXCLUSION ZONE

The area behind the tree protection fencing and temporary ground protection is designated the Construction Exclusion Zone and is to be isolated from all activity during work on the site.

THERE WILL BE NO STORAGE, PARKING, VEHICLE MOVEMENT OR PEDESTRIAN ACTIVITY, TEMPORARY OR OTHERWISE, WITHIN THE CONSTRUCTION EXCLUSION ZONE AT ANY TIME DURING THE COURSE OF THE BUILD.

3.10 SERVICES

The services for the new dwelling will connect to those of the existing property without the need for trenching within the rooting area of the trees.

If at any time this is not found to be viable then revised plans and a methodology will need to be drawn up with Arboricultural input and agreed with the Local Planning Authority before any ground works are carried out.

3.11 POROUS PATH / ACCESS ROAD

The sub-base of the no-dig pathway south of the creek will be installed prior to any demolition or construction on site in order to create a suitable work surface within the rooting area of trees.

Existing turf within the footprint of the proposed new access – as identified on the Tree Protection Plan can be scraped back by hand or killed off using a systemic 'Glyphosate' based weed killer which when used in accordance with the manufacturer's instructions will not have any long-term detriment on tree roots or reside in the soil post application. When using herbicide, weather conditions should be dry and without wind to avoid drift. Once the grass has died back, the site will be prepared by raking back all debris and plant matter a minimum of seven days' post herbicide application.

Any ruts in the ground will be levelled with the application of a coarse pH neutral sand or clean angular stone applied by hand.

Timber or aluminium edging boards will be installed to provide an upstand of approximately 200mm between the ground level and finished driveway surface to contain the gravel as per the manufacturer's recommendations. A Geotextile Fabric will be laid across the site, overlapping adjacent rolls by a minimum of 150mm. It may be necessary to lightly pin the Geotextile in place until the overlying layers are installed.

A Cell web system minimum 150mm deep will then be opened out and pinned in place between the edging boards. Pin spacing will vary according to the site conditions but will generally be required at 1m – 2m centres on flat surfaces, mainly placed around the perimeter of the area and where adjacent sections of the cellular confinement system abut each other, with less in the middle of the area.

The open cells will be filled with clean, open graded aggregate with particles between 5 and 45mm, (no fines Type 1 Roadstone of a non-marine source) working toward the tree from the furthest point away and using the filled cells as a platform.

Once the Geo-textile grid has been installed and filled with aggregate as per the manufacturer's recommendation it will be topped with an impermeable membrane and protected temporarily under ground protection sheets which can be connected together to create a fixed and rigid surface.

This will prevent damage to the cellular confinement system and avoid contamination of the substrate. The temporary protective surface will only be removed on completion of all building works and removal of materials from site and at which point the final aesthetic porous gravel surface will be laid.

Where necessary, following completion of the development, quality topsoil will be used to grade the edge of the driveway and parking areas to meet the adjacent ground levels.

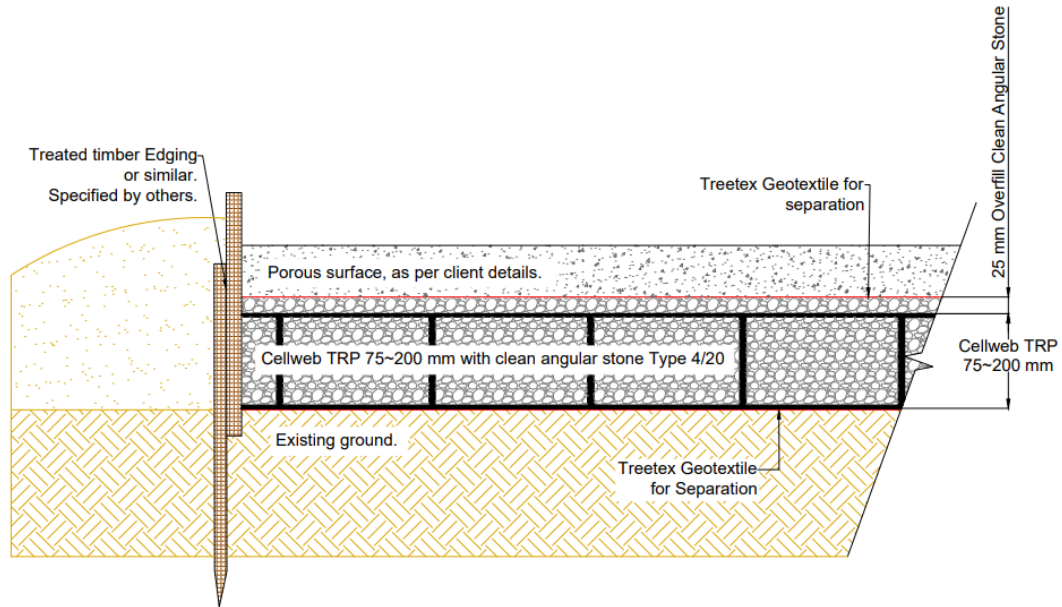


Figure 3. Indicative no-dig driveway construction using Geosynthetics Cellweb

3.12 REMOVAL OF CONCRETE WITHIN RPA of T5 – ASH-LEAF MAPLE

UNDER ARBORICULTURAL SUPERVISION

The existing areas of hard standing will be retained in situ as ground protection during the building works. Once the replacement dwelling has been constructed and following the demolition of the existing property, the existing concrete will be removed from within the root protection area of T5 – Ash-Leaf Maple and the area restored to soft landscaping.

The concrete slab will be broken up and pulled back towards the access ramp using the toothless bucket of an excavator working from an existing area of hard standing and taking care not to lower the ground levels beneath the concrete or damage any low branches.

Once the hardcore has been removed, the ground will be immediately covered with 100mm of multi-purpose screened blended topsoil and excluded from the build area with an extension to the tree protection fencing.

This soil medium will contain essential plant nutrients as well as vital trace elements and will stop any roots exposed from the removal of the concrete from drying out.

Once the hardcore has been removed and the topsoil applied, the area will be excluded from the build area with an extension to the tree protection fencing as shown in the Tree Protection Plan.

3.13 GENERAL CONSIDERATIONS

Building foundations should be constructed in accordance with the guidelines and recommendations in HNBC Chapter 4.2 considering the presence of a potentially shrinkable clay soil and the future growth of existing trees adjacent to the property.

All storage and preparation of materials, parking, skips etc. in relation to the build will be on the existing concrete driveway and outside of the identified rooting areas of all trees.

Roots can be killed by pollution of the rooting area by chemicals and leaching. Loose, granular or liquid materials, including cement mix and fuel will be stored on an impermeable membrane placed away from the creek and outside of the rooting areas of all trees.

Particular care will be taken in the planning of deliveries if they require wide or tall loads and plants with booms, rigs or counterweights which can cause serious and permanent damage to trees making their safe retention impossible.

Any transit or traverse of plant in proximity to the trees and or tree protection barriers will be conducted under the supervision of a banksman to ensure that adequate clearance from trees is maintained at all times.

Materials will be delivered to site regularly in small quantities in order to keep vehicle delivery sizes small and on-site storage to an absolute minimum.

There will be no open fires on site during the building works.

3.14 LANDSCAPING

The following rules will be followed during future landscaping works:

- Tree roots can be damaged by severance, compaction, pollution and desiccation. In view of this, there should be no excavation or changes in ground levels within the identified rooting areas of retained trees following completion of the development.
- On completion of the build, new fence panels should include holes or gaps at ground level a minimum of 100x100mm to allow small mammals such as hedgehogs to forage within the property.
- Where new fencing is proposed, post holes within the rooting areas of trees will be dug using a post hole digger to keep hole size to a minimum. Where substantial roots over 30mm diameter are encountered, the location of the hole will be moved in order to avoid them. Post holes will be fully lined in order to prevent concrete coming into direct contact with tree roots.

3.15 UNFORESEEN CIRCUMSTANCES

In the event of unforeseen circumstances whereby it is not possible to work in accordance with the Arboricultural Method Statement then advice should be sought immediately from a qualified Arboriculturist.

THERE SHALL BE NO DEVIATION FROM THIS METHOD STATEMENT WITHOUT CONSULTATION WITH A QUALIFIED ARBORICULTURIST AND / OR THE WRITTEN CONSENT OF THE LOCAL PLANNING AUTHORITY.

APPENDICES

- A. Survey Data
- B. Key
- C. Cascade Chart for Tree Quality Assessment
- D. BS:5837 Tree Data
- E. Plans
- F. Phasing of works
- G. Tree Protection Fencing
- H. Contacts
- I. Qualifications

APPENDIX A - SURVEY DATA

- The trees were surveyed on 28th April 2023 and from ground level only.
- The weather conditions were overcast. Visibility was good.
- Heights were estimated as part of a group. Soil samples were not taken.
- The tree survey identified 19 trees and 7 tree groups growing on or adjacent to the site which were relevant to this planning application.
- The trees on site were assessed for their quality and benefits within the context of the proposed development and categorised in accordance with the recommendations in the BS: 5837:2012 – 'Trees in Relation to Design, Demolition and Construction'.

APPENDIX B - KEY

Ref:	T1 = Tree 1	G1 = Group 1
	A1 = Area 1	W1 = Woodland 1
Species:	Common name (Botanical name)	
Height:	Measured with a clinometer (m) where possible or estimated when part of a group	
Stem:	Stem diameter taken at 1.5m with girth tape or rule and recorded in millimeters	
Branch spread:	Paced measurements at compass points or with a laser measure.	
Crown clearance:	Existing height above ground level of canopy and / or first significant branch direction of growth in metres e.g., 2.4 (N) where relevant.	
Epics:	Lower canopy created by epicormic growth.	
Age Class:	Newly planted - 3 years following planting. Young - Tree well established but with juvenile crown form Young Mature - Tree in first third of usual life expectancy for species Mature - Tree in second third of usual life expectancy for species Over Mature - Tree in final third of usual life expectancy for species / exhibiting signs of crown retrenchment & senescence. Veteran - Older than usual for species or with historical/ cultural / ecological value	
General Observations:	Made with reference to physiological condition (health, vigour) and structural condition, noting evidence of decay, structural weakness and physical defect and preliminary management recommendations.	
Estimated Remaining Contribution:	Estimated in years - less than 10, 10-20, 20-40, 40+	
BS: 5837:2012 category rating:	In accordance with the guidelines of the British Standard.	
	 Category 'A' tree (Green)  Category 'C' tree (Grey)  Category 'B' tree (Blue)  Category 'U' tree – Fell (Red)	
RPA Area	BS:5837 (2012) Root Protection Area calculation in square metres	
RPA Radius	BS:5837 (2012) Root Protection Area calculation circle radius in metres. ¹	

¹ The root protection area radius is for information only and may not be appropriate in every case. BS:5837 advises that *'the RPA for each tree should initially be plotted as a circle centered on the base of the stem. Where pre-existing site conditions or other factors indicate that rooting may have occurred asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distributions.'*

APPENDIX C - BS:5837 (2012) TABLE 1: CASCADE CHART FOR TREE QUALITY ASSESSMENT

Category & Definition	Criteria (including sub-categories where appropriate)		
• Trees unsuitable for retention			
Category U 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.	Trees that have a serious, irremediable, structural defect such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U 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 overall decline. Trees infected with pathogens of significance to the health and / or safety of other trees nearby or very low-quality trees suppressing adjacent trees of better quality. NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve.		
	<u>Mainly Arboricultural Qualities</u>	<u>Mainly Landscape Qualities</u>	<u>Mainly cultural values including conservation</u>
• Trees considered suitable for retention			
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 conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture)
Category B Trees of Moderate Quality with an estimated remaining life expectancy of 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 remedial 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 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 contribution to the wider locality.	Trees with material conservation or other cultural value.
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 150mm.	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 value.

APPENDIX D – BS:5837 TREE DATA

Ref:	Species	Height (m)	Dia. at 1.5m (mm)	Canopy				Crown Clearance	Life-stage	General Observations & Recommendations	Remaining Contribution	BS:5837 Category	RPA Radius	RPA Area
				N	E	S	W							
G1	4x Ash (<i>Fraxinus excelsior</i>)	7	160	1.8	1.8	1.8	1.8	2	Y	Cankers and dieback in canopy	<10	U	1.9	11.6
T2	Ash (<i>Fraxinus excelsior</i>)	8	170	2.4	3	0	0	2.5	Y	Base / trunk obscured by dense vegetation & prolific ivy. Tree has been topped. Limited live growth.	20-40	C2	2	13.1
T3	Oak (<i>Quercus robur</i>)	16-18	810	8.2	6	7.1	8.5	1.5	M	Ivy clad tree, fair form vitality. Works required to sever ivy and relocate compost pile	40+	A1	9.7	267
T4	Lawson Cypress (<i>Chamaecyparis</i>)	14-16	380	2.6	2.6	2.6	2.6	FEA	M	Foliage slightly sparse, lower branches aborted due to lack of light.	40+	B2	4.6	65
T5	Ash leaf maple (<i>Acer negundo</i>)	12-14	600	7	6	8	7.3	1	M	Large tree, asymmetrical canopy. Minor deadwood in canopy.	20-40	B3	7.2	163
G6	Ash (<i>Fraxinus excelsior</i>)	7	160	1.8	1.8	1.8	1.8	2	Y	Cankers and dieback in canopy. Vertical shoots in central canopy indicative symptoms of Ash Dieback	<10	U	1.9	11.6
T7	Ash (<i>Fraxinus excelsior</i>)	14-16	570	5.7	7.2	5	7	2	M	Historically topped at 3m. Cnty at base from previous stem removal. Localised deadwood in crown but overall reasonable vitality.	10-20	C2	6.7	147
G8	2x Ash (<i>Fraxinus excelsior</i>)	10	240, 150(e)	3	4	5	4	3	Y	Offsite tree on far side of creek. Early dieback in canopy.	20-40	C2	3.4	36.2
T9	Ash (<i>Fraxinus excelsior</i>)	14-16	340(e)	4	4	4	4	4	M	Twin stem tree with tight stem fork. No access to base. Good vitality.	40+	B1	4.1	52
G10	Willow, Pyracantha	6	Unknown	4	4	4	4	3	M	Shrubby group growing directly adjacent to shed.	<10	C1	-	-
T11	Plum (<i>Prunus spp.</i>)	6	90, 50, 50, 40	2	2	2.3	2	2	M	Small fruit tree.	20-40	C2	1.5	6.7
T12	Holly (<i>Ilex aquifolium</i>)	5.5	90	1.5	1.5	1.5	1.5	1.5	Y	Young tree, fair form and vitality.	40+	C1	1.1	3.7
G13	3x Ash (<i>Fraxinus excelsior</i>)	9	140	2	2	2	2	4	Y	Slender trees 1.5m spacing. Ash dieback in canopy	<10	U	2.9	26.6

Ref:	Species	Height (m)	Dia. at 1.5m (mm)	Canopy				Crown Clearance	Life-stage	General Observations & Recommendations	Remaining Contribution	BS:5837 Category	RPA Radius	RPA Area
				N	E	S	W							
T14	Blackthorn (<i>Prunus spinosa</i>)	7	350	3.5	3.5	3.5	3.5	2	M	Multi stem tree 3.5m off boundary	20-40	C2	4.2	55.4
T15	Blackthorn (<i>Prunus spinosa</i>)	8	380	4.5	4.5	4.5	4.5	1	M	Swept stem <i>Phellinus</i> fungal decay at base	10-20	C/U	4.6	65.3
G16	5x Sycamore (<i>Acer pseudoplatanus</i>)	6.5	200	3	3	3	3	0.5	M	Regenerated from felled stump	20-40	C2	2.4	18
T17	Ash (<i>Fraxinus excelsior</i>)	17	270 / 440	4	2	4	9	3	M	Multi stem. Ivy clad. Early Ash dieback.	10-20	C1	6.2	121
T18	Ash (<i>Fraxinus excelsior</i>)	17	430	4	4	4	4	8	M	Ivy - clad slender tree.	10-20	C1	5.2	84
T19	Ash (<i>Fraxinus excelsior</i>)	18	440	3	2	4	4	4	M	Swept stem. Evidence of root instability. Swelling lower base as tree adapts to compensate lean. Ash dieback in canopy.	10-20	C1	5.3	88
T20	Ash (<i>Fraxinus excelsior</i>)	18	560	3	1	4	7.5	5	OM	Scars on trunk from cut Ivy, Ash dieback, Deadwood in canopy. Tree in decline. Lesions on lower trunk.	10-20	C1	6.7	142
W2 1	Sycamore (<i>Acer pseudoplatanus</i>) Hawthorn (<i>Crataegus monogyna</i>) Willow (<i>Salix spp.</i>), Ash (<i>Fraxinus excelsior</i>)	18-20	-	-	-	-	-	-	M	TPO tree group. Small trees on woodland edge. Larger trees set back from boundary. RPAs do not extend within garden of Warren Creek. Squirrel damage on young Sycamores. Young sycamore, multi stem willow central in site.	20-40	C1	-	-
T22	Sycamore (<i>Acer pseudoplatanus</i>)	5	120	1.5	1.5	1.5	6	1.5	Y	Small tree, suppressed, asymmetrical crown	10+	C2	1.4	6.5
T23	Apple (<i>Malus domestica</i>)	7	460	4	4	4	4	1.5	M	Small mature fruit tree	20+	C2	5.5	96
T24	Apple (<i>Malus domestica</i>)	6	130	2.5	2.5	2.5	2.5	1	M	Small mature fruit tree	20+	C2	1.6	7.6
T25	Apple (<i>Malus domestica</i>)	6	240	2	3.5	4	3.5	1	M	Small mature fruit tree	20+	C2	2.9	26
T26	Elm (<i>Ulmus spp.</i>)	6	200	3	3	3	3	1	OM	Dead Elm	-	U	2.4	18

APPENDIX E - PLANS

Attached as separate pdf documents

Tree Protection Plan

- Ref: [WARREN CREEK TPP 06560 2024](#)

APPENDIX F – PHASING OF WORKS

STAGE 1 (PRE-COMMENCEMENT)

TREE WORKS



ERECTION OF TEMPORARY TREE PROTECTION FENCING
& TEMPORARY GROUND PROTECTION



PRE-COMMENCEMENT SITE MEETING
(NOTIFY LOCAL AUTHORITY -MIN 5 DAYS)



STAGE 2 (DEMOLITION & CONSTRUCTION)

INSTALLATION OF SUBBASE FOR NO-DIG ACCESS
SOUTH OF THE CREEK



ONGOING ARBORICULTURAL MONITORING



STAGE 3 (POST DEVELOPMENT)

REMOVAL OF CONCRETE PARKING AREA AND
REALIGNMENT OF TREE PROTECTION FENCING



REMOVE TREE PROTECTION FENCING / TEMPORARY GROUND PROTECTION
(NOTIFY LOCAL AUTHORITY -MIN 5 DAYS)



LANDSCAPING / TREE PLANTING OPERATIONS

APPENDIX G – TREE PROTECTION FENCING

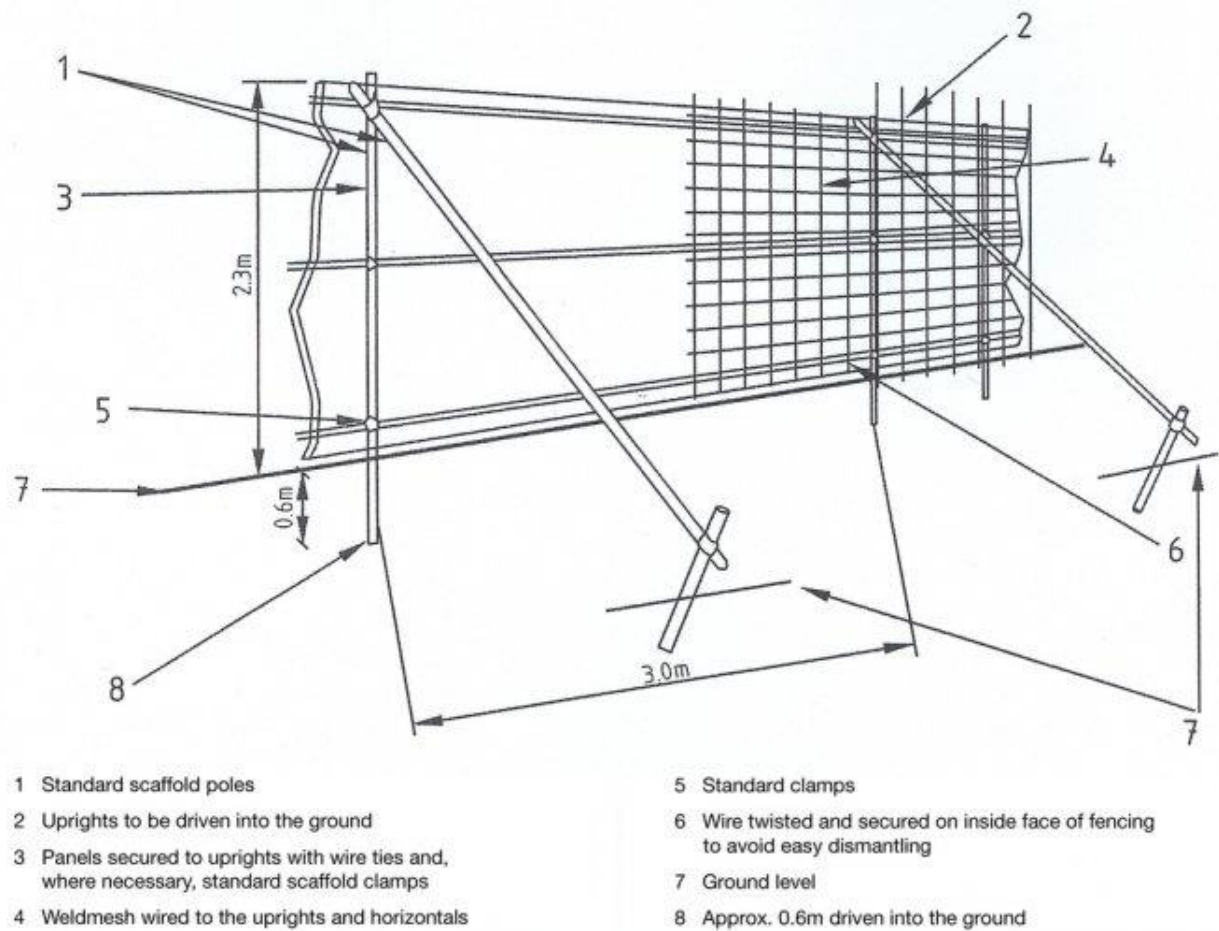


Figure 2. – Protective fencing for RPA

APPENDIX H - CONTACTS

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APPENDIX I - QUALIFICATIONS

This Arboricultural report has been prepared by Sarah Duckworth, Independent Arboricultural Consultant, trading as Duckworth's Arboriculture Limited.

I have over 19 years' experience working in the field of Arboriculture and for the past 16 years I have worked as a Local Authority Tree Officer both directly and independently providing contracted support. Since 2010 I have worked as a private consultant carrying out a range of Arboricultural Reports and Assessments for private clients.

I hold the Royal Forestry Society's Professional Diploma (Level 6) for which I received the Lockhart Garrett Award.

I also hold the Arboricultural Association's Technicians Certificate (with Distinction) and am a LANTRA qualified Professional Tree Inspector.

I am a Professional Member of the Arboricultural Association.