arbtech

Arboricultural Method Statement

Mrs Capelin

Land Opposite Codmore Field House
Hill Farm Lane
Codmore Hill
West Sussex
RH20 1BJ

04 April 2025

Phil Gower Dip Arb Lv4 (ABC)

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Introduction

Instruction

Arbtech Consulting Limited (Arbtech) received written instruction on 12 November 2024 from Mr Oguzhan Denizer to attend Land Opposite Codmore Field House, Hill Farm, Lane, Codmore Hill, West Sussex, RH20 1BJ (the site) to undertake an arboricultural survey guided by British Standard 5837:2012: Trees in Relation to Design, Demolition and Construction – Recommendations of all trees, hedges and major shrub groups growing on and/or within influencing distance of the site and to produce a Schedule of Trees, Tree Constraints Plan (TCP), Arboricultural Impact Assessment (AIA), Tree Protection Plan (TPP) and Arboricultural Method Statement (AMS).

Executive Summary

A tree survey guided by British Standard 5837:2012 'Trees in relation to design, demolition and construction – Recommendations' ("BS5837") was carried out to include all trees within influencing distance of the proposed area for development.

This report has subsequently been produced, balancing the layout of the proposed development against the competing needs of retained trees. This report comprises all of the requisite elements of an arboricultural implications assessment, method statement, and any required supporting plans.

It is the conclusion of this report that if followed, the overall quality and longevity of the amenity contribution provided for by retained trees within and adjacent to the site will not be adversely affected as a result of the local planning authority consenting to the proposed development.

Table 1: Documents referred to

Document	Originator	Reference Number	Title
Survey base drawing	Medlams Surveys Ltd	S3027	Topo Survey
Proposed layout drawing	Manorwood	2411C0_R1_004	Block Plan
Tree Schedule (TS)	Arbtech Consulting Ltd	Arbtech TS 01	Tree Schedule
Arboricultural Impact Assessment (AIA)	Arbtech Consulting Ltd	Arbtech AIA 01	Arboricultural Impact Assessment
Tree Protection Plan (TPP)	Arbtech Consulting Ltd	Arbtech TPP 01	Tree Protection Plan

Tree Survey

An arboricultural survey guided by British Standard 5837:2012: Trees in Relation to Design, Demolition and Construction - Recommendations of all trees within impacting distance of the site was undertaken by Chris Poplett on 02 December 2024.

A total of 26no. individual trees and 5no. groups of trees were surveyed.

For full details of all the trees surveyed, see Appendix 1: Tree Schedule.

Survey Limitations

The survey was made at ground level using visual observation only. Detailed examinations, such as climbing inspections and advanced decay detection equipment, were not employed, though they may form part of the survey's management recommendations. Measurements were taken using specialist tapes, lasers, and GPS devices. Where this was not possible, measurements are estimated. Inaccessible trees will have the best estimates made about their location, physical dimensions, and characteristics. Trees have been grouped where BS5837 guides us that it is expedient to do so. Trees have been excluded from the survey if they are found by us to be sufficiently far away from the proposed developable area or if they are outside of the red line boundary plan showing the expectations of our client for the extent of the survey.

Scope

Pre-development tree surveys make arboricultural management recommendations based exclusively upon the condition of the individual tree or group of trees relative to their present context (*i.e., not in relation to the proposed development*).

Legal Status

No statutory protection check has been performed. BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order ("TPO"), and those trees without, starting at Annex B:

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. Consequently, we do not seek to offer any comparison between or infer any difference in the quality or importance of TPO trees and other trees.

Arboricultural Impact Assessment

An Arboricultural Impact Assessment (AIA) guided by British Standard 5837:2012: Trees in Relation to Design, Demolition and Construction - Recommendations was undertaken by Phil Gower on 13 March 2025 to determine the potential conflicts between the proposed development scheme and existing trees located on and near the site and has subsequently produced this Arboricultural Method Statement to demonstrate how the proposed scheme can be successfully implemented without causing harm to retained trees.

Several issues may need to be addressed in an Arboricultural Impact Assessment between the trees and the proposed development; these are as follows:

- The effect and extent of the proposed development within the root protection areas (RPAs) of retained trees;
- The potential conflicts of the proposed development with canopies of retained trees and;
- The likelihood of any future remedial works to retained trees beyond those that would have been scheduled as part of usual management.

Table 2: Impacts upon the RPAs of retained trees

Tree Number	Species	Structure	Incursion	
			(m2)	(%)
T01	Common Oak	Hard Surfacing	0.4	0.1
T04	Common Hazel	Hard Surfacing	5.6	35.8
T06	Common Hazel	Hard Surfacing	4.1	14.3
T07	Common Hazel	Hard Surfacing	0.2	1.3
T08	Field Maple	Hard Surfacing	5.7	3.7
G01	Various	Hard Surfacing	0.4	2.2

These impacts can be seen on the Arboricultural Impact Assessment (Arbtech AIA 01). See Appendix 2: Arboricultural Impact Assessment.

Trees to be Removed

A total of 6no. individual trees will require removal as part of this proposed scheme.

A breakdown of all tree works can be seen in Table 6: Summary of tree works.

Table 3: Number of individual trees to be removed

U	A	B	C
2	0	1	3

Table 4: Number of groups to be removed

U	A	B	C
0 (0)	0 (0)	0 (0)	0 (0)

() = partial removal of a group

Arboricultural Method Statement

This Arboricultural Method Statement (Arbtech AMS 01) demonstrates how any aspect of the development that could potentially result in tree loss or damage may be implemented and provides an adequate level of protection for trees that are to be retained during the proposed works.

Details of key site personnel, including the Site/Project Manager, will be submitted to the Council's Tree Officer before site works commence. This Arboricultural Method Statement (Arbtech AMS 01) is to be approved and agreed to in writing by all key personnel before the commencement of any site works.

No site personnel are to be present, and no demolition, site clearance, building work, or material delivery is to occur until the protective measures are in accordance with this Arboricultural Method Statement (Arbtech AMS 01) and the Tree Protection Plan (Arbtech TPP 01). Unless otherwise specified, protective measures will remain unaltered and in situ for the entire duration of the construction.

Sequencing of works

A logical sequence of events is to be observed and shall be phased as follows:

Table 5: Sequencing of works

Stage	Event
Stage 1.	Undertake and complete tree works as specified within Table 6: Summary of tree works
Stage 2.	Installation of protective measures in accordance with the approved Tree Protection Plan(s) (Arbtech TPP 01).
Stage 3.	Pre-commencement site meeting.
Stage 4.	Undertake and complete ground works.
Stage 5.	Undertake and complete construction works
Stage 6.	Undertake and complete hard landscaping.
Stage 7.	Removal of all machinery and materials from the site.
Stage 8.	Dismantle and removal of protective tree measures.
Stage 9.	Undertake and complete soft landscaping.
Stage 10.	Site completion and sign-off from Project Arboriculturalist.

Tree Work

For reasons of public safety, all tree works referred to herein must be carried out before site personnel commence work or building materials are delivered.

Table 6: Summary of tree works

Tree Number	Species	Works	Category
T02	Leyland Cypress	Remove; grind stump	B1
T03	Leyland Cypress	Remove; grind stump	U
T04	Common Hazel	Coppice at 0.5m	C1
T05	Common Hawthorn	Remove; grind stump	C1
T06	Common Hazel	Coppice at 0.5m	C1
T07	Common Hazel	Coppice at 0.5m	U
T09	Goat Willow	Remove; grind stump	U
T10	Goat Willow	Remove; grind stump	C1
T24	Norway Spruce	Remove; grind stump	C1
G03	Various	Coppice at 0.5m	C2

Notes

All tree work is to be undertaken in accordance with British Standard BS 3998:2010 - Recommendations for tree work. All arising's are to be removed, and the site is to be left as found. Care is to be taken of the ground around retained trees to make sure that it does not become compacted as a result of tree surgery operations. No equipment or vehicles such as timber Lorries, tractors, excavators, or cranes shall be parked or driven beneath the crowns of any retained trees to prevent subsequent compaction and root death.

Protected Species (general informative for tree works)

Conservation Status of British Bats

The consensus in Britain and Europe is that virtually all bat species are declining and vulnerable. Our understanding of population status is poor as there is very little historical data for most bat species. Certain species, such as the horseshoe bats, are better understood and have well-documented contractions in range and population size. Given this general picture of decline in the UK Government, the UK Biodiversity Action Plan has designated five species of bats as priority species (greater and lesser horseshoe bats, barbastelle, Bechstein's, and pipistrelle). These plans provide an action pathway for investigating the maintenance and restoration of the former populations' levels.

Legal Status of British Bats

Given the above position, all British bats, as well as their breeding sites and resting places, enjoy national and international protection. All bat species in the UK are fully protected under the Wildlife and Countryside Act 1981 (as amended) through inclusion in Schedule 5. All bats are also listed in Annex IV (and some in Annex II) of the EC Habitats Directive, giving further European protection. Taken together, the Act and Conservation of Habitats and Species Regulations 2012 (as amended)* make it an offence to intentionally or deliberately kill, injure or capture (take) bats;

- Deliberately disturb bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts;
- Possess or transport a bat or any part of a bat unless acquired legally;
- Sell, barter or exchange bats or parts of bats

Although the legislation does not strictly protect foraging grounds, it does protect roost sites. Bat roosts are protected at all times of the year, whether or not bats are present. Any disturbance of a roost due to development must be licenced.

**the regulations that delivered by the UK's commitments to the Habitats Directive.*

Breeding Birds

All nesting birds are protected under the Wildlife and Countryside Act (as amended) 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. Furthermore, several birds enjoy further protection under that Act and are listed on Schedule 1 of the Act. These further protected birds are also protected from disturbance and it may be necessary to operate "no-go" buffer zones around such nests – typically out to 100m. Planning policy guidance on the treatment of species identified as priorities under the biodiversity action programme suggests that local authorities should take measures to protect the habitats of these species from further decline through policies in local development documents and should ensure that they are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. The conservation of these species should be promoted through the incorporation of beneficial biodiversity designs within developments.

Protective Measures

Protective measures are to be installed immediately following the completion of the tree works and sited and aligned in accordance with the Tree Protection Plan (Arbtech TPP 01) before the commencement of any works or the introduction of any machinery or material to the site.

Upon installing the protective measures around the retained trees, the client will instruct on a pre-commencement site meeting, during which the Project Arboriculturist will visit the site to inspect and document the position and specifications of the protective measures.

If the protective measures and their positions do not comply with this Arboricultural Method Statement (Arbtech AMS 01) dated: 04 April 2025 and Tree Protection Plan (Arbtech TPP 01), the Project Arboriculturist shall inform the client and Fencing Contractor so adjustments can be made.

When the protective measures comply with this Arboricultural Method Statement (Arbtech AMS 01) and Tree Protection Plan (Arbtech TPP 01), the Project Arboriculturist will sign-off the protective measures in writing to the client for which a copy can be sent to the Fencing Contractor, Site Agent and Local Authority Tree Officer.

If the protective measures become damaged or there is an accident or emergency involving trees, these areas are to be cordoned off immediately with high-visibility plastic mesh fencing. The site agent is to photograph and document the damage and inform the Project Arboriculturist immediately after the incident. All work within this area is to cease until the Project Arboriculturist has visited the site. Any damaged sections of protective measures shall be replaced within 48 hours of the initial incident.

The protected area is sacrosanct and will not be invaded by the storage of materials, the mixing of concrete or other products, the access of machinery, equipment, or pedestrians, or any other way disturbed by construction activity.

The protective measures will remain in place until the completion of Stage 7 (see Table 5: Sequencing of works) thereafter, they will be carefully dismantled only with the agreement of the Project Arboriculturist and or the Local Authority Tree Officer.

The proposed site boundary measures are to be installed and retained for the duration of the development. If, for any reason, the proposed boundary measures are not to be used, protective barrier fencing is to be installed along the line of the boundaries and is only to be removed upon the written permission of the Project Arboriculturist upon the completion of the development or immediately before the installation of the permanent boundary measures.

The proposed hard surfacing is to be installed immediately to act as ground protection. Where it is decided that this is not a viable option, these areas are to be covered by ground boarding as designed by the Project Engineer to cope with any likely loading.

No equipment, vehicles, or plant shall operate beyond the tree protection fencing. Booms, hoists, and rigs should be kept as far away from the canopies of retained trees as possible at all times. Where it is necessary to operate within 5m of a tree canopy, it will be done with the utmost caution and under the control of a banksman. Damage to trees will be considered a breach of this Tree Protection Plan and Arboricultural Method Statement, which in turn could be a breach of planning permission.

Construction Exclusion Zone

A construction exclusion zone (CEZ), as designated by the protective barrier fencing, is an area where there is to be no construction activity. Access to the area for construction personnel or machinery is strictly prohibited unless detailed in the tree protection plan, and there is no scope for materials or waste storage, welfare facilities, etc. There may be some construction activities planned for these areas (e.g. the installation of service trenches) these activities will be undertaken under the direct supervision of the Project Arboriculturalist.

Protective Barrier Fencing

Protective barrier fencing should be appropriate for the intensity and proximity of the development to protect trees where development activity is nearby.

The protective barrier fencing will be fixed with signage denoting the words “tree protection area” at 5.0m intervals. See Appendix 4: Tree Protection Notice

Secondary specification: The fence will comprise 2m tall welded mesh panels on rubber or concrete feet. The panels are to be joined together using a minimum of two anti-tamper couplers installed so that they can only be removed from inside the fence. The panels will be supported on the inner side by stabiliser struts, which will be attached to a base plate and secured with ground pins.

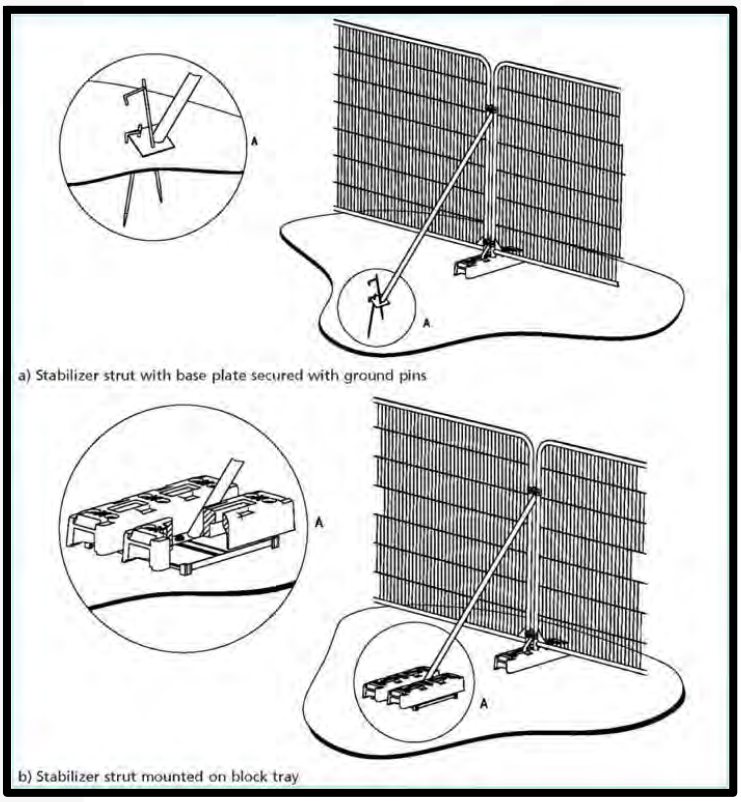

Figure 1: Example of protective barrier fencing with above-ground stabilising system (BS5837)

Ground Protection

New temporary ground protection will be capable of supporting any traffic entering or using the site without being distorted or causing compaction of the underlying soil.

Where the Project Engineer determines that any hard surfacing is not adequate protection from any expected loading, ground boarding is to be installed to the engineer's specification on top of the hard surfacing within the root protection areas of retained trees.

Where machinery will be stored or used on the ground boarding within the RPAs of retained trees, an impervious barrier and/or bunding to prevent oils, fuel, or chemicals from leaching into the soil within or adjacent to the RPAs is to be installed.

Note: The ground protection might comprise one of the following:

a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame to form a suspended walkway or on top of a compression-resistant layer (e.g. 100mm depth of woodchip), laid onto a geotextile membrane;

b) for pedestrian-operated plant up to a gross weight of 2t, proprietary inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150mm depth of woodchip), laid onto a geotextile membrane;

c) for wheeled or tracked construction traffic exceeding 2t gross weight, an alternative system (e.g. proprietary system or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice to accommodate the likely loading to which it will be subjected.

For any situations other than those described in a) or b) (as above), the ground boarding is to be designed by a suitably qualified person to an engineering specification in conjunction with arboricultural advice to be suitable for supporting the expected loading to be placed upon it.

In all cases, the objective of the ground boarding is to avoid compaction of the soil beneath so that tree root functions remain unimpaired.

At this stage, no contractors have been approached, so it is not possible to know exactly what equipment they have available and will be using.

Due to the various sizes of demolition and construction plant available and the potential requirements for material storage within the site, the final specifications for the ground boarding must be designed and supplied to the Project Arboriculturist for their approval by the Project Engineer a minimum of ten (10) working days before its installation.

Construction

Before the proposed development is constructed, a copy of the construction method statement will be submitted and approved by the Project Arboriculturist to ensure that it does not conflict with this Arboricultural Method Statement.

All excavations and construction work within or immediately adjacent to the RPAs or canopies of retained trees is to be undertaken under the direct supervision of the Project Arboriculturist.

Foundations Design

The proposed development does not impact any of the retained trees and, as such, will not require a specialist construction methodology.

Hard Surfacing

New hard surfacing situated within the RPAs of retained trees is to be designed in conjunction with advice from the Project Engineer and Arboriculturalist to ensure it can accommodate the likely loading required. The design will not require excavation; however, the removal of the turf layer or other surface vegetation may be acceptable if necessary. Ideally, the construction will be situated entirely above the existing ground level.

Appropriate options for the sub-base of hard surfacing situated within the RPAs of retained trees include multi-dimensional confinement systems (CellWeb™ or similar). Alternatively, piles, pads or elevated beams can be used to bridge over the RPAs or, following exploratory investigations to determine location, provide support within the RPAs while allowing retention of roots of 25mm or greater in diameter.

Before the installation of the hard surfacing within the RPAs, vegetation may be removed using hand tools or sprayed with an approved non-residual herbicide such as 'Glyphosate'.

NB: *The use of a multi-dimensional confinement system will raise the finished level of the hard surfacing, which needs to be considered when designing foundations and setting the finished floor level of adjacent buildings.*

Multi-dimensional confinement system: If a multi-dimensional confinement system (such as CellWeb™ or similar) is to be used, it is to be laid entirely above the existing soil surface over a geotextile membrane and or a bi-axel geo-grid (such as Tensar TriAx). Prior to this, any small hollows on the surface may be filled with clean, sharp sand (not builders' sand) to a maximum depth of 150mm. The 'CellWeb' is to be backfilled by hand with a no-fines aggregate of 20mm – 30mm. The use of an excavator/machinery to fill the confinement system may be possible at the discretion of the Project Arboriculturist.

The area of 'CellWeb' shall be covered with permeable geotextile fabric, and the finished wearing course shall be laid on top. The wearing course shall be permeable to both water and air to comply with 'SUDS' regulations.

Edge supports of an appropriate size and strength will be set above ground level and will be secured with either haunching or steel pins driven into the ground. The outer edge of the supports may be banked up with clean topsoil.

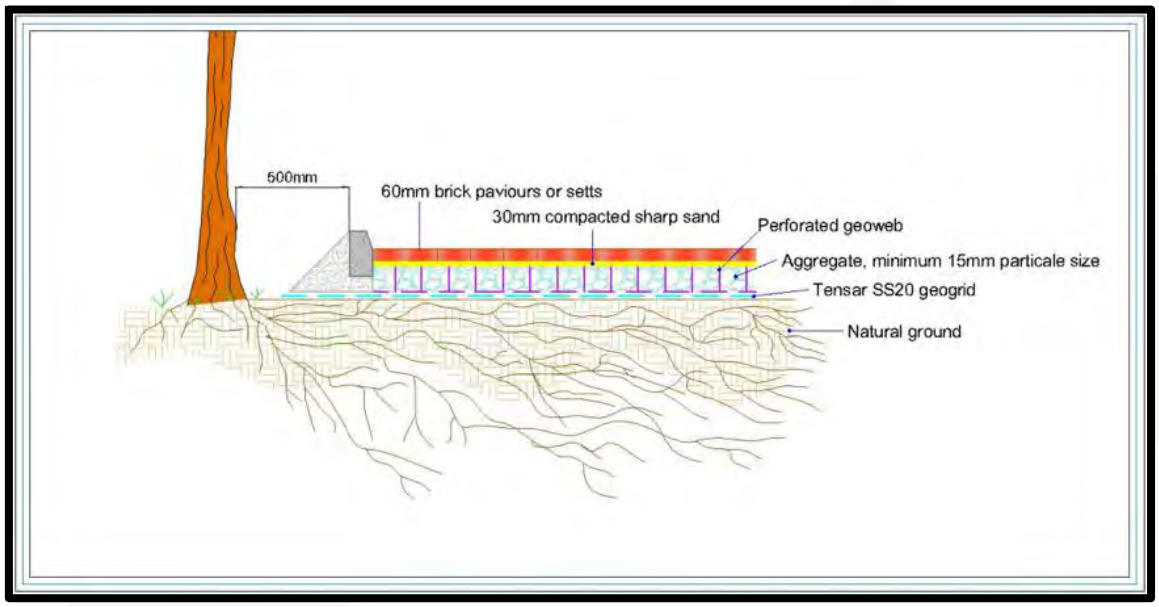

Figure 2: Example cross-section for multi-dimensional confinement system using kerb edging

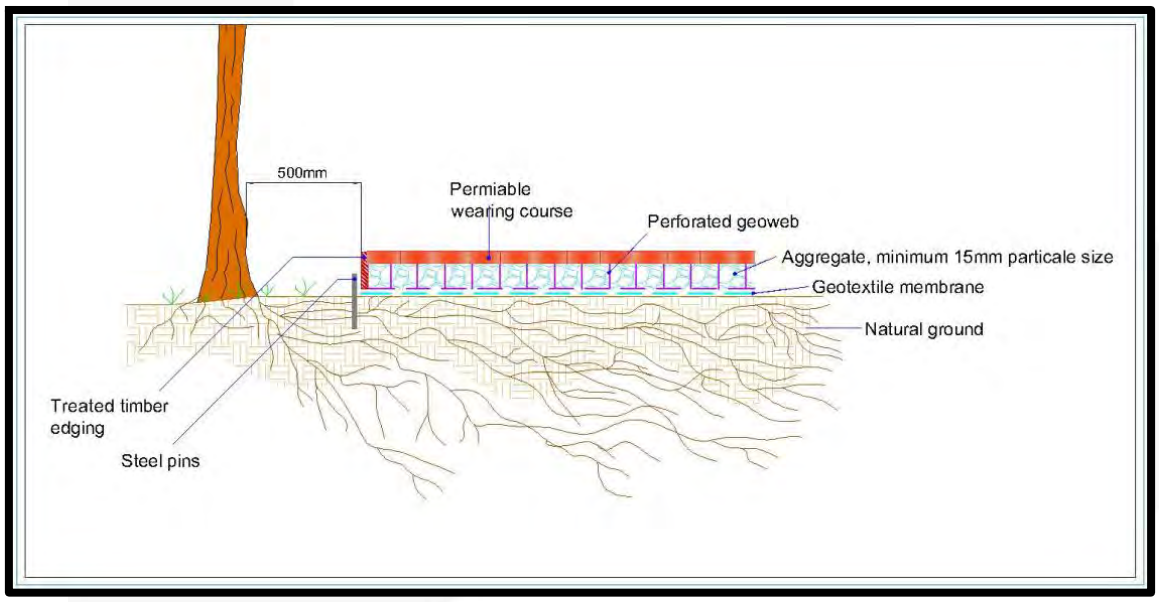

Figure 3: Example cross-section for multi-dimensional confinement system using timber edging

Based on the design of the hard surfacing, the proposed use is for a footpath (pedestrian access) and a road (vehicular access); Geosynthetics Limited recommends, within the product data sheet 'CellWeb® TRP weight capabilities', that a cell depth of 75mm (pedestrian use) to 200mm (vehicular access to include emergency access vehicles and HGVs) of their product CellWeb® TRP would possibly be suitable for the proposed use.

As a part of the design process and to allow Geosynthetics Limited to be able to calculate the exact correct depth of CellWeb® TRP please contact the Geosynthetics engineers.

Installation of a multi-dimensional confinement system

a) Prepare the surface

- Remove any surface rocks and debris;
- Create a level surface by filling in any hollows with clean, angular stone or sharp sand;
- Do not level off any high spots or compact the soil through rolling.

b) Layout Geotextile membrane

- Layout the permeable Geotextile membrane, overlaying the edges of the required area by 300mm;
- Overlap any joints by 300m or more.

c) Layout multi-dimensional confinement system (MDC)

- Layout the collapsed MDC system on top of the Geotextile membrane;
- Place one steel pin into the centre cell at one end of the panel and secure it into the ground;
- Pull out the MDC to its full length (see manufacturer specifications), place a steel pin in the centre at the opposite end and secure it into the ground;
- Pull out the MDC to its full width (see manufacturer specifications), and secure each corner into the ground with steel pins;
- Create a panel of the correct size using the required number of steel pins (as per the manufacturer's specifications);
- Makes sure all cells are fully extended (as per manufacturer specifications);
- Staple adjacent panels together (as per manufacturer specifications);
- If a curved shape is required, the panels are to be cut down to the required size and shape (once the MDC is pinned out. Do not curve or bend panels into place).

d) Infill with clean angular stone

- The infill material must be a clean (no fines) angular stone (as per manufacturer specifications)
- Do not use M.O.T type 1 or crushed stone with fines within or adjacent to RPAs;
- Infill the MDC cells with clean angular stone, working towards the tree using the infilled panels as a platform;
- The infill does not require compaction. Do not use a whacker plate, roller, or any other means of compaction.

e) Edge restraints

- All kerb edging will be situated on top of the MDC within RPAs; do not excavate within RPAs to install kerb edging;
- Where edging is required for light structures, a peg and treated timber board edging is normally acceptable;
- Other options include wooden sleepers, plastic, or metal edging;
- The outer edges of the supports may be banked up with clean topsoil and or mulch.

f) Wearing course

- Install a permeable geotextile membrane, overlapping any joints by 300mm before laying the wearing course;
- Surfaces can include block paving, asphalt, loose gravel, resin-bound gravel, concrete, etc.;
- Within RPAs, the wearing course shall be permeable to both water and air.

Fencing

Proposed and/or replacement boundary fence posts are to be located so that they will not damage or require the removal of significant roots 25mm or greater in diameter. This may require individual posts to be relocated.
Note: *this will increase or decrease the spacing between the posts (bay lengths).*

All posts within the RPAs of retained trees are to be excavated manually using handheld tools (spade, shovel, rabbiting spade, post hole digger); no mechanised equipment (handheld or plant-mounted post borer) is to be used.

Planting Pits & Decompaction

Due to the new development's proximity to some of the proposed planting positions, it is not practical to physically protect all of these areas.

As such, there are two possible options on how to proceed with the planting areas immediately north of the proposed dwelling within the construction exclusion zone:

1. A specifically designed planting pit to include the use of a crate system or structural soil module (or similar). These need to be considered early enough in the project so that they can be appropriately designed and installed during the civil or groundwork stages of work.

   As a part of this design process, the following items will be considered:

   - Available rooting space – *The soil volume requirements for that specific tree*;
   - Root management – *Root barriers or similar to prevent the roots from interfering with proposed services and prevent lifting or heave of the finished surface by roots;*
   - Irrigation – *It is very important to incorporate the means to irrigate efficiently, particularly for the first three years, as a lack of water and nutrients will kill a newly planted tree;*
   - Drainage – *Waterlogged tree pits can become anaerobic, which can kill a tree;*
   - Aeration – *Soils and roots need air to live. If the roots of the tree are covered with impervious paving, vital gaseous exchange in the root zone cannot take place. Appropriate tree pit design will include a means of facilitating air supply below ground;*
   - Pollution control – *Capture and or prevention of chemicals (oils, fuels, etc.) and salt runoff contaminating the planting pit;*
   - Support – *How will you ensure the tree is securely located?*
     Underground guying is widely favoured for urban areas as it is unobtrusive. Staking and tying is an alternative, but this will require maintenance;
   - Above ground - *Consideration for the environment the tree will be planted into can become critical to the survival of the tree(s), and some locations may well require above-ground tree protection to prevent damage from carelessness or gratuitous vandalism. A decision will need to be made to determine what or even if above-ground tree protection is required and, if so, what type of tree protection (tree grills, vertical guards, bollards, or other tree protection) is necessary for the various areas the trees will be planted in.*

If, for whatever reason, the option of an engineered tree planting pit is not desired, then the following option will need to be implemented.

2. Decompaction of the soil within the area of the new tree plantings that are situated outside of the physically protected tree planting zones to be undertaken after the completion of the construction of the development.

   This decompaction will consist of excavation of the existing soil (outside of the recently developed area) to be excavated to a minimum depth and width of three times the root ball. Ideally, the entire planting zone would be excavated.

   Where planting pits are to be located within the RPAs of existing retained trees, they are to be excavated manually and under the direct supervision of the Project Arboriculturist.

   Upon the completion of a successful excavation, the planting area is to be refilled and firmed (not compacted) with clean soil suitable for tree planting and root growth.

Manual excavation

Excavation within RPAs will be undertaken by hand under the direct supervision of the Project Arboriculturalist to the required depth of the foundations or to a minimum of 600mm deep of any excavation, whether for proposed foundations, hard surfacing, or underground services. The Project Arboriculturist will determine the total depth of the manual excavation while on site.

The soil is to be loosened with a fork or pickaxe and then cleared with an air spade, air vac, or shovel. The Project Arboriculturist will cleanly sever any roots found with either a hand saw or secateurs.

The Project Arboriculturist shall cleanly sever any roots found with a diameter of less than 25mm. Roots of 25mm and above shall be excavated around without damaging them; the Project Arboriculturist shall decide if it is feasible or necessary to retain the root; if not, it shall be severed.

The edge of the excavation closest to the trees will be covered with damp hessian to prevent soil collapse or contamination by concrete.

The soil beneath the depth may be sheet piled, regular piled, or excavated deeper. Machinery may be used for this, provided that it is situated outside of the RPAs of retained trees or has appropriate ground protection in place to move around and work upon.

Prohibition

- Mechanical digging or scraping is not permitted within a defined root protection area or areas cordoned off by protective barrier fencing.
- No access will be permitted within the protected areas;
- No materials, equipment or debris will be stored within any of the fenced areas or against the fencing;
- Fires are not permitted within 10m of any vegetation.
- Leaning objects against or attaching objects to a tree is not permitted.
- Machinery, plant, and vehicles are not permitted to be washed down within 10m of vegetation.
- Chemicals and materials are not to be transported, stored, used, or mixed within a root protection area or areas cordoned off by protective barrier fencing.
- Cement silos and mixing sites are to be situated within a bunded area to prevent spillage/leaking of chemicals harmful to trees. These areas are to be sited well clear of protected trees.
- Refuelling of plant or machinery is prohibited within 10m of the construction exclusion zones.
- An allowance must be made for sloping ground so that damaging materials such as concrete washings, mortar, or diesel oil cannot run towards trees.
- Where machinery is to be used within 5m of retained tree canopies, a banks man will be required at all times while setting up, moving, or operating within this distance of retained tree canopies.
- All caustic material and chemicals must be stored well clear of protected areas and preferably on lower ground if slopes are present or within a bonded area to prevent spills or leaks from entering the ground.

Site Management

The Site Manager will be responsible for briefing and inducting all personnel who will be working on any stage of this development, especially those who will be working within or adjacent to the canopies or RPAs of retained trees, and will make them aware of and provide a copy of this Arboricultural Method Statement (Arbtech AMS 01) and Tree Protection Plan (Arbtech TPP 01); this is to include but not exclusively the movement and or operation of plant, excavations, unloading deliveries, mixing and or pouring of cement and concrete.

The Site Manager will be responsible for the day-to-day running and protection of all retained trees and for liaising with the Project Arboriculturalist about any tree-related matters and before any works that may or will affect the RPAs or canopies of retained trees; this is to include but not exclusively the movement and or operation of plant, excavations, unloading deliveries, mixing, pouring and storage of all caustic materials that may cause harm to retained trees.

The Site Manager will document any incidents of damage to retained trees or tree protection measures. Then, the Site Manager will report these incidents to the Project Arboriculturist immediately and ensure that works within this area cease until the Project Arboriculturalist has had an opportunity to inspect the damage and, where appropriate, agree on a mitigation plan with the Local Planning Authority Tree Officer.

The Site Manager may designate another person to take charge of the briefing and inducting process of new site personnel or visitors in his absence.

If the Site Manager is replaced or is absent from the site for more than three consecutive working days, the Project Arboriculturalist will be informed, and a new pre-start meeting will be held with the new or acting Site Manager.

It is the responsibility of the Site Manager to ensure that the planning conditions attached to any granted planning consent are adhered to at all times and that a monitoring regime and supervision of any works within or adjacent to the RPAs are adopted.

If pruning works other than those previously approved are required at any time, permission must be sought from the Local Authority Tree Officer. Once permission is granted, they are to be carried out by a suitably qualified person in accordance with BS3998:2010 Tree work—Recommendations.

Services

Detailed drawings of proposed underground services are not available at this time; hence it is not possible to identify any specific potential impacts associated with the scheme at this stage.

Existing services within the site will be retained wherever possible. Where existing services within RPAs require upgrading, the utmost care must be taken to minimise disturbance. Where feasible, trenchless techniques are to be employed, and only where necessary should open excavations be considered.

Where new services are to be introduced into the site, they will be located outside of RPAs so that they do not interfere with tree roots. If any excavations are required within the RPAs, all trenches are to be excavated by hand radially to the tree trunks under the direct supervision of the Project Arboriculturalist and carried out under NJUG guidelines.

The final positions of any proposed services will be verified and approved by the Project Arboriculturist and Local Authority Tree Officer before implementation.

New Underground services

Trenching for the installation of underground services and drainage routes could sever any roots that may be present and, as such, adversely affect the tree's health. For this reason, particular care will be taken in routing and installation methods of all underground services. All underground services and drainage routes will be located so that no excavations are required within RPAs.

Where underground services have been impossible to prevent from passing through RPAs or within proximity to trees, these sections are to be installed in one of three ways and under the direct supervision of the Project Arboriculturalist and in accordance with the National Joint Utilities Group guidelines (NJUG 4).

Trenchless Techniques

There are three main types of trenchless techniques: guided and unguided boring and pipe replacement by lining or bursting. These techniques allow for the installation, maintenance, or renewal of underground services without disturbing soil in which roots are likely to grow. Starting and receiving pits for the boring machinery are to be located outside of the RPAs of any retained trees, with the bore depth maintained at a minimum depth of 600mm below the existing ground level. Techniques involving external lubrication of the equipment shall use only water, as other lubricants (e.g., oil, bentonite, etc.) could contaminate the soil.

Broken Trench – Hand Dug

This technique combines both trenchless techniques and manual excavation, where excavation is unavoidable. Excavations will be limited to where there is clear access around and below the roots. All trenches shall be excavated by hand with the same precautions taken as for manual excavation. The open section of the trench will only be large enough to allow access for linking to the next section.

Manual Excavation

Excavation within RPAs will be undertaken by hand under the direct supervision of the Project Arboriculturalist to the required depth of the foundations or to a minimum of 600mm deep of any excavation, whether for proposed foundations, hard surfacing, or underground services. The Project Arboriculturist will determine the total depth of the manual excavation while on site.

The soil is to be loosened with a fork or pickaxe and then cleared with an air spade, air vac, or shovel. The Project Arboriculturist will cleanly sever any roots found with either a hand saw or secateurs.

The Project Arboriculturist shall cleanly sever any roots found with a diameter of less than 25mm. Roots of 25mm and above shall be excavated around without damaging them; the Project Arboriculturist shall decide if it is feasible or necessary to retain the root; if not, it shall be severed.

The edge of the excavation closest to the trees will be covered with damp hessian to prevent soil collapse or contamination by concrete.

The soil beneath the depth may be sheet piled, regular piled, or excavated deeper. Machinery may be used for this, provided that it is situated outside of the RPAs of retained trees or has appropriate ground protection in place to move around and work upon.

Landscaping

Landscaping, such as planting, turfing, fencing, etc., around retained trees may only be carried out once all tree protection measures have been removed.

All excavations within the RPAs of retained trees shall be undertaken by hand and without reducing current ground levels unless it is agreed in writing with the Local Planning Authority. At no time is the use of a rotavator permitted within the RPAs of retained trees.

Any tree roots discovered will be left in situ and shall not be cut or otherwise damaged. Where possible, the soil structure within the RPA shall be preserved.

No works will be carried out within the RPAs of any trees if the soil moisture is at a level where soil compaction may be likely. Should the soil become compacted or have a poor structure that would hinder the development of the existing trees and plants or any new plantings, the arboriculturist will be consulted about soil decompaction techniques.

Monitoring and Supervision

Where trees have been identified within this Arboricultural Method Statement (Arbtech AMS 01) and Tree Protection Plan (Arbtech TPP 01) for retention, there will be an auditable system of arboricultural monitoring. This is to extend to arboricultural supervision whenever demolition or construction activity is to take place within or adjacent to any canopy or RPA.

The development's tree protection measures are to be monitored, and all demolition and construction works are to be undertaken within or adjacent to the RPAs of retained trees. The Project Arboriculturist will supervise the work and record and report observations to the Council at appropriate intervals.

Pre-commencement site meeting

Before the commencement of any works or machinery and materials arriving on site, a pre-commencement site meeting involving the Project Arboriculturalist, Landowner or Agent, Site Manager, contractors and Engineer (as appropriate) and the relevant Local Planning Authority Officers will be held to ensure that all aspects of the Arboricultural Method Statement and Tree Protection Plan are understood and for all parties to swap contact details. See Appendix 5: Contact Details.

Monitoring and supervision schedule

The initial monitoring visit will check that the tree protection measures are in the correct location and as specified within the approved Arboricultural Method Statement, and if so, to sign off on their installation.

Thereafter, monitoring visits are to take place at regular intervals to ensure that tree protection measures are in place and are functioning as designed or whenever necessary to undertake works to be carried out under arboricultural supervision. The frequency of the monitoring visits is to be agreed upon with the Local Authority Tree Officer at the pre-commencement site meeting.

A record of all arboricultural monitoring and supervision visits will be kept, and any faults will be logged; this will then be copied to the Site Agent, Developer, and Local Planning Authority in a digital format.

If areas must be redesigned during the development so that they would require changes to the approved Arboricultural Method Statement or Tree Protection Plan and so affect retained trees, the Project Arboriculturalist and Local Authority Tree Officer will be invited to attend a site meeting with all relevant parties. Before any changes are implemented, they must have been approved in writing by the Local Authority Tree Officer.

Supervision

The Project Arboriculturist will be required to attend the site to directly supervise all demolition and construction works that are to be undertaken within or adjacent to the RPAs of all retained trees and will be advised a minimum of 72 hours before the commencement of any works that require his attendance; these will include:

1. Pre-commencement site meeting;
2. Location of protective measures;
3. Manual / Supervised excavation for the installation of fence posts and planting pits within and immediately adjacent to the RPAs of retained trees;
4. Installation of 'No Dig' hard surfacing;
5. Any excavations within and immediately adjacent to RPAs, including foundations, hard surfacing, or underground services (a non-exhaustive list);
6. Removal of protective measures and sign-off.

Completion meeting

Once all construction works have been completed and all materials and machinery have been removed from the site, the Project Arboriculturalist shall be informed and will invite the Local Authority Tree Officer to meet on-site to discuss the process, final remedial works that may be required and sign the development off so that the protective measures may be removed.

Appendices

The following documents were released to the Client as appendices to this report:

- Appendix 1: Tree Schedule
- Appendix 2: Arboricultural Impact Assessment
- Appendix 3: Tree Protection Plan
- Appendix 4: Tree Protection Notice
- Appendix 5: Contact Details

If you require clarification of the information contained herein, please do not hesitate to contact us via 01244 661170.

Yours Sincerely,

Phil Gower Dip Arb Lv4 (ABC)

Principal Arboricultural Consultant

07842 416721

philgower@arbtech.co.uk

Appendix 1: Tree Schedule

BS5837:2012 Tree Survey

Arbtech consulting ltd
Unit 3 Well House Barns
Chester Road
Chester
Cheshire
CH4 0DH
Phone: 01244661170

Client: Mrs Capelin
Project: Land opp Codmore Field House, Codmore Hill, RH201BJ
Survey Date: 02/12/2024
Surveyor: Chris Poplett

Tree and Tag No / Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations / Survey Comment	Cat ERC
G01										Estimated Measurements	
Various *see comments for details*	5	1	200	N 3 E 3 S 3 W 3	0 0 0 0	M	A: 18.1 R: 2.4	Good	C: Good S: Not visible B: Not visible	Mixed species group comprising of cherry laurel, common holly, yew, hawthorn, hazel and English elm. Vegetation obscuring observations of stems and bases. Dimensions recorded are the largest represented within the group. No significant features have been observed.	C.2 10+ yrs
G02										Estimated Measurements	
Various *see comments for details*	16	1	320	N 8 E 8 S 8 W 8	2 2 3 2	M	A: 46.3 R: 3.83	Good	C: Good S: Not visible B: Not visible	Off site road side group comprising of common ash, oak, holly, hazel and goat willow. Vegetation obscuring observations of stems and bases. Dimensions recorded are the largest represented within the group.	B.1.2 20+ yrs
G03										Estimated Measurements	
Various *see comments for details*	9	3	180 (Eq)	N 5 E 4 S 1 W 4	2.5 2.5 2.5 2.5	EM	A: 14.7 R: 2.16	Good	C: Good S: Not visible B: Not visible	Group comprising of one individual hazel and on hawthorn tree. Base of trees approximately 200mm apart. Vegetation obscuring observations of stems and bases. Dimensions recorded are the largest represented within the group. No significant features have been observed.	C.2 20+ yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

ERC: Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
G04										Estimated Measurements	
Various *see comments for details*	10	1	300	N 5 1 E 5 1 S 5 1 W 5 1		M	A: 40.7 R: 3.59	Good	C: Good S: Not visible B: Not visible	Mixed species group situated on and off site, along boundary line. Group comprising of field maple, leyland cypress, silver birch, goat willow and common oak. Vegetation obscuring observations of stems and bases. Dimensions recorded are the largest represented within the group. No significant features have been observed.	**B.1.2** 20+ yrs
G05											
Various *see comments for details*	16	1	280	N 4 1 E 4 1 S 4 1 W 4 1		EM	A: 35.5 R: 3.36	Good	C: Good S: Good B: Good	Group comprising of fifteen individual silver birch trees, four goat willow trees, one common elder and two common oak trees. Dimensions recorded are the largest represented within the group. No significant features have been observed.	**B.2** 20+ yrs
T01											
Common Oak *Quercus robur*	16	1	810	N 10 5 E 10 5 S 10 5 W 10 5		M	A: 296.9 R: 9.72	Good	C: Good S: Good B: Good	Dead wood in crown up to 100mm diameter X 3m length. Historical pruning works to raise canopy height to current dimensions. Over head power cable runs east to west through the canopy.	**A.1** 40+ yrs
T02											
Leyland Cypress *X Cupressocyparis leylandii*	11	2	488 (Eq)	N 4 2.5 E 4 2.5 S 4 2.5 W 4 2.5		M	A: 107.7 R: 5.85	Good	C: Good S: Fair B: Good	800mm length x 200mm diameter wound to stem 1m from ground level on northern aspect. Approximately 100mm thick callous wood concealing wound. 300mm of bark inclusion where stems bifurcate at 1m from ground level.	**B.1** 20+ yrs
T03											
Leyland Cypress *X Cupressocyparis leylandii*	7	1	280	N 2 2 E 3 2 S 2 2 W 2 2		M	A: 35.5 R: 3.36	Good	C: Good S: Poor B: Good	Branch tear out equal to the stem diameter at 2m from ground level on south eastern aspect. Approximately 60% of the bark has been removed exposing a 300mm diameter wound.	**U** <10 yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

ERC: Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T04											
Common Hazel *Corylus avellana*	6	3	186 (Eq)	N 2 E 2 S 2 W 2	3 3 2 2	M	A: 15.7 R: 2.23	Good	C: Good S: Not visible B: Not visible	Vegetation obscuring observations of stem and base. No significant features have been observed.	C.1 20+ yrs
T05											
Common Hawthorn *Crataegus monogyna*	5	2	166 (Eq)	N 3 E 2 S 1 W 2	1 2 2 2	EM	A: 12.5 R: 1.99	Good	C: Good S: Not visible B: Not visible	Vegetation obscuring observations of stem and base. Asymmetrical crown shape due to presence of partner trees.	C.1 10+ yrs
T06											
Common Hazel *Corylus avellana*	8	3	252 (Eq)	N 7 E 5 S 4 W 4	2 2 2 2	M	A: 28.7 R: 3.02	Good	C: Good S: Good B: Good	Base of tree situated on top of 1m high bank. 2m depth of Ivy colonising canopy up to 5m.	C.1 10+ yrs
T07											
Common Hazel *Corylus avellana*	4	3	186 (Eq)	N 7 E 2 S 1 W 2	0 0 0 0	EM	A: 15.7 R: 2.23	Good	C: Poor S: Poor B: Not visible	Main stem has collapsed north onto corrugated out building. Dense Ivy and vegetation obscuring observations of stems and base.	U <10 yrs
T08											
Field Maple *Acer campestre*	10	2	524 (Eq)	N 7 E 5 S 1 W 4	6 6 8 5	M	A: 124.4 R: 6.29	Good	C: Good S: Not visible B: Not visible	Vegetation obscuring observations of stem and base. Asymmetrical crown shape due to presence of partner trees. Dead wood In Crown up to 100mm diameter X 2m length.	B.1 20+ yrs
T09											
Goat Willow *Salix caprea*	10	1	480	N 7 E 7 S 7 W 7	1 2 3 4	M	A: 104.2 R: 5.75	Good	C: Poor S: Fair B: Good	Multiple areas of exposed sap wood to branch structure resembling squirrel damage. Wounds have girdled a number of branches. Dead branches hung up in canopy up to 80mm diameter X 2m length. High potential for future branch fails up to 150mm diameter in the upper canopy.	U <10 yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

ERC: Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T10											
Goat Willow *Salix caprea*	10	2	241 (Eq)	N 3 E 6 S 4 W 1	1 1 1 4	M	A: 26.2 R: 2.88	Good	C: Good S: Fair B: Good	100mm stem angles away from partner trees to the eastern aspect. 100mm of bark inclusion where stems bifurcate at 800m from ground level.	C.1 20+ yrs
T11											
Leyland Cypress *X Cupressocyparis leylandii*	13	1	360	N 4 E 4 S 4 W 4	1 1 1 1	M	A: 58.6 R: 4.31	Good	C: Good S: Good B: Good	No significant features have been observed.	B.1 20+ yrs
T12											
Goat Willow *Salix caprea*	5	1	90	N 3 E 4 S 2 W 2	0 0 0 0	EM	A: 3.7 R: 1.08	Good	C: Good S: Good B: Good	No significant features have been observed.	C.1 20+ yrs
T13											
Goat Willow *Salix caprea*	7	3	313 (Eq)	N 5 E 5 S 5 W 5	0 0 0 0	EM	A: 44.4 R: 3.75	Good	C: Good S: Fair B: Good	Wounds to base up to 200mm x 80mm. Stems resembling historical regrowth from coppiced stool.	C.1 20+ yrs
T14											
Common Oak *Quercus robur*	8	1	220	N 3 E 3 S 3 W 3	4 1 1 3	EM	A: 21.9 R: 2.64	Good	C: Good S: Good B: Good	No significant features have been observed.	C.1 40+ yrs
T15											
Silver Birch *Betula pendula*	11	2	255 (Eq)	N 3 E 3 S 2.5 W 2.5	2 2 2 2	EM	A: 29.4 R: 3.05	Good	C: Good S: Fair B: Good	100mm of bark inclusion where stems bifurcate from ground level. 300mm length x 20mm diameter wound to stem at 2m from ground level on northern aspect.	C.1 20+ yrs

Age Classifications: N Newly planted; EM Early Mature; Y Young; M Mature; SM Semi-mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

ERC: Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T16											
Silver Birch *Betula pendula*	11	1	280	N 4 E 4 S 4 W 4	1 1 1 1	EM	A: 35.5 R: 3.36	Good	C: Good S: Good B: Good	No significant features have been observed.	**B.1** 20+ yrs
T17										Estimated Measurements	
Leyland Cypress *X Cupressocyparis leylandii*	12	1	540	N 5 E 5 S 5 W 5	0 0 0 0	M	A: 131.9 R: 6.47	Good	C: Good S: Good B: Good	Young 80mm diameter understory, variegated Leyland tree under the canopy. Base of trees approximately 1m apart. No significant features have been observed.	**B.1** 20+ yrs
T18											
Gum *Eucalyptus sp.*	15	1	780	N 6 E 6 S 6 W 6	3 3 3 3	M	A: 275.3 R: 9.36	Good	C: Good S: Good B: Good	No significant features have been observed.	**A.1** 40+ yrs
T19										Estimated Measurements	
Lawson Cypress 'Ellwoodii' *Chamaecyparis lawsoniana 'Ellwoodii'*	5	1	120	N 1 E 1 S 1 W 1	0 0 0 0	EM	A: 6.5 R: 1.43	Good	C: Good S: Not visible B: Not visible	Vegetation obscuring observations of stem and base. No significant features have been observed.	**C.1** 20+ yrs
T20											
Gum *Eucalyptus sp.*	15	1	300	N 5 E 4 S 3 W 3	9 9 9 9	M	A: 40.7 R: 3.59	Good	C: Good S: Good B: Good	100mm stem diameter understory Common hazel tree situated approximately 100mm from base of tree.	**B.1** 20+ yrs
T21											
Goat Willow *Salix caprea*	10	3	356 (Eq)	N 5 E 6 S 4 W 5	1 1 1 1	EM	A: 57.4 R: 4.27	Good	C: Good S: Fair B: Good	200mm of bark inclusion where stem divides at 1.5m from ground level.	**B.1** 20+ yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

ERC: Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T22											
Spruce *Spruce sp.*	6	1	270	N 2.5 2 E 2.5 2 S 2.5 2 W 2.5 2		M	A: 33 R: 3.24	Dead	C: Poor S: Poor B: Poor	Dead tree.	**U** n/a
T23											
Common or Black Elder *Sambucas nigra*	3	3	142 (Eq)	N 2 1 E 2 1 S 2 1 W 2 1		EM	A: 9.1 R: 1.7	Dead	C: Poor S: Poor B: Poor	Dead tree.	**U** n/a
T24											
Norway Spruce *Picea abies*	14	1	260	N 2 2 E 2 2 S 2 2 W 2 2		M	A: 30.6 R: 3.12	Good	C: Good S: Fair B: Fair	200 x 20mm wound at 1.5m from ground level on northern aspect. Lateral and vertical cuts up to 100mm in length have been made into the base of the tree on northern aspect. Wounds resemble vandalism.	**C.1** 10+ yrs
T25											
Norway Spruce *Picea abies*	14	1	290	N 2 2 E 2 2 S 2 2 W 2 2		M	A: 38.1 R: 3.48	Good	C: Good S: Fair B: Fair	Lateral cut into the cambium approximately half way across the stem diameter resembling vandalism. 50mm diameter wound to stem at 1m from ground level on northern aspect.	**C.1** 10+ yrs
T26											
Leyland Cypress *X Cupressocyparis leylandii*	7	1	220	N 3 0 E 3 0 S 3 0 W 3 0		EM	A: 21.9 R: 2.64	Good	C: Good S: Not visible B: Not visible	Vegetation obscuring observations of stem and base. No significant features have been observed.	**C.1** 20+ yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

ERC: Estimated Remaining Contributio

Appendix 2: Arboricultural Impact Assessment

Indicative only

T17 T18 T19 T20 T21 T22 T23 T24 T25 T26 T16 T15 T14 T13 T12 T11 T10 T09 T08 T07 T06 T05 T04 T03 T02 T01 G01 G02 G03 G04 G05

Impact: Proposed tree planting situated within the existing RPAs of trees T17 & T18.
Mitigation: Excavation of planting pits for proposed tree planting within the RPAs of retained trees are to be undertaken manually and under the direct supervision of the Project Arboriculturalist; roots in excess of 25mm diameter are to be retained whereever possible, if significant roots can not be avoided the planting is to be re-located.

Impact: Proposed hard surfacing situated within the RPAs of trees T01, T04, T06, T07, T08 & G01.
Mitigation: Hard surfacing located within the RPAs of retained trees is to utilise a 'no dig' sub-base designed to an engineering specification in conjunction with the advice of the Project Engineer and Arboriculturalist so that it can be constructed entirely above the existing soil level.

Impact: Proposed fencing situated within the RPAs of trees T01 & G01.
Mitigation: Excavation of post holes within the RPAs of retained trees are to be undertaken manually and under the direct supervision of the Project Arboriculturalist; posts will be relocated to avoid roots in excess of 25mm diameter.

Impact: Proposed fencing situated within the RPAs of trees T04, T06, T07 & T08.
Mitigation: Excavation of post holes within the RPAs of retained trees are to be undertaken manually and under the direct supervision of the Project Arboriculturalist; posts will be relocated to avoid roots in excess of 25mm diameter.

Upper Terrace

The Deck House

0m 1m 3m 5m 10m 15m 20m

Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standards (BS)5837:2012 Trees in Relation to Design, Demolition and Construction - Recommendations.

Category '**U**' - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.
Category '**A**' - Trees of high quality with an estimated remaining life expectancy of at least 40 years.
Category '**B**' - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
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.

Root Protection Area (RPA)

In order to avoid damage to the roots or rooting environment of retained trees, the RPA should be plotted around each of the category **A**, **B** & C trees. This is a minimum area (m^2) which should be left undisturbed around each retained tree.

The RPA is calculated using the British Standard (BS)5837:2012 Trees in Relation to Design, Demolition and Construction - Recommendations. The calculated RPA is capped at 707m^2, which is the equivalent to a circle with a radius of 15m.

Tree Survey Report

Please refer to Arbtech Consulting Ltd. Tree Survey Report (TSR) and Tree Schedule (TS) for full details on all surveyed trees, hedgerows and major shrub groups.

All trees were surveyed and categorised in accordance with the guidance as set out in British Standards (BS)5837:2012 Trees in Relation to Design, Demolition and Construction - Recommendations.

Arboricultural Impacts

Impacts	No. of Trees
Trees to be removed	6
Groups / Hedges to be removed (Partial removal)	0 (0)
Trees with proposed incursions into the RPAs	5
Groups / Hedges with proposed incursions into the RPAs	1
Trees that require pruning	3
Groups / Hedges that require pruning	1
Trees to be transplanted	0
Groups / Hedges to be transplanted	0

Arboricultural Impacts - RPAs (Area)

No.	Species	Proposed Structure	Incursion (m^2)	Incursion (%)
T01	Common Oak	Hard Surfacing	0.4	0.1
T04	Common Hazel	Hard Surfacing	5.6	35.8
T06	Common Hazel	Hard Surfacing	4.1	14.3
T07	Common Hazel	Hard Surfacing	0.2	1.3
T08	Field Maple	Hard Surfacing	5.7	3.7
G01	Various	Hard Surfacing	0.4	2.2

Tree Work Schedule

No.	Species	Works	Category
T02	Leyland Cypress	Remove; grind stump	B1
T03	Leyland Cypress	Remove; grind stump	U
T04	Common Hazel	Coppice at 0.5m	C1
T05	Common Hawthorn	Remove; grind stump	C1
T06	Common Hazel	Coppice at 0.5m	C1
T07	Common Hazel	Coppice at 0.5m	U
T09	Goat Willow	Remove; grind stump	U
T10	Goat Willow	Remove; grind stump	C1
T24	Norway Spruce	Remove; grind stump	C1
G03	Various	Coppice at 0.5m	C2

All tree work is to be undertaken in accordance with British Standards (BS)3998:2010 Tree Work - Recommendations. All arisings's are to be removed and the site left as it was found. Care is to be taken to ensure that the ground around retained trees does not become compacted as a result of tree surgery operations. No equipment or vehicles such as (but not limited to) timber lorries, tractors, excavators, or cranes are to be parked or driven beneath the crowns of any retained trees to prevent subsequent compaction and root death.

No. Individual Trees to be Removed			
U	A	B	C
2	0	1	3

No. Groups / Hedges to be Removed			
U	A	B	C
0 (0)	0 (0)	0 (0)	0 (0)

( ) = Partial removal.

Hard Surfacing

Trees can be affected by construction within the RPAs either through the direct damage caused by the removal of roots or compaction of the rooting environment; or through secondary damage such as poisoning through leaks and spills (oils, fuels, etc.,) including such activities as de-icing (road salt, etc.,)

Proposed hard surfacing within the RPAs of retained trees is therefore to be designed so that it can be constructed above the existing soil level and minimise any adverse impacts upon the trees RPAs. As the use of traditional foundations and sub-bases can result in excessive root loss through the direct removal of roots during excavations and by compaction of the soil beneath the excavation; as such the 'traditional' methodology must be avoided.

When designing hard surfacing that is to be situated within the RPAs of retained trees, the design team need to pay particular attention to the proposed usage (pedestrian, domestic traffic, delivery vans, emergency services, HGVs, etc.,) the existing and proposed levels of hard surfacing and finished floor levels, edging types and details, proximity to tree trunks and surface rooting, contamination capture and SUDs, etc.,

Possible sub-bases (foundation systems) for new hard surfacing situated within the RPAs of retained trees could include:

-- A proprietary system such as a multi-dimensional confinement system (CellWeb TRP or similar);
-- Engineered solution such as a road deck, bridge, etc.,

An engineered solution is likely to require a level of excavation for site specific investigations to locate roots to aid in foundation design so that a suitable foundation can be designed to avoid roots and for the installation of the structure.

NB: The use of a multi-dimensional confinement system and or engineered solution will affect the finished levels of the hard surfacing by raising the levels and needs to be considered when designing foundations and setting the finished floor levels of adjoining buildings.

Site Investigations

Site investigations are to be undertaken within the RPAs of retained trees to determine the size, depth and location of any roots which may be present for the purpose of informing foundation design.

All excavations within the RPAs are to be initially undertaken manually to a minimum depth of 800mm deep for any excavation or to the full depth of the proposed foundations, hard surfacing or service trench. The soil is to be loosened with the use of a folk or pick-axe and then cleared with the aid of an air-spade and air-vac using a specialist Arboricultural Contractor; if an air-spade is not used and all excavations are to be undertaken using hand tools (folks, shovel, trowel, brush, etc.,); soil will be loosened with the aid of a folk or trowel and the spoil removed with the aid of a shovel. All excavations are to be carried out under the direct supervision of a suitably qualified Arboricultural Consultant except under the circumstances of a specialist Arboricultural Contractor being employed.

All roots are to be retained in situ; the Project Arboriculturalist will record and photograph the size, depth and location of any roots present. The Project Arboriculturalist may be able to cut specific roots with the use of a hand saw or sharpe secateurs. The edge of the excavation closest to the retained trees and all uncovered roots will be covered over with a minimum of two layers of damp hessian to prevent the roots from frying out, and where necessary be shuttered to prevent soil collapse or contamination. If appropriate, soil beneath the depth of 800mm may be sheet piled with any deeper excavations being undertaken by an excavator with an appropriate bucket and under the direct supervision of the Project Arboriculturalist. If the decision if made for an excavator to be used it must work from outside of the RPAs or have suitable ground protection installed to move and work upon.

Upon the completion of the site investigations, all trial excavations are to be back filled with the original material or inert fill. It may be suitable to insert a root barrier in locations where the proposed roots are not present or are beginning to enter, to prevent root activity within areas deemed to be root free.

Utility Apparatus

Underground utility apparatus:

Mechanical trenching for the installation of underground apparatus and drainage severs any roots present and can change the local hydrology in a way that adversely affects the health of trees. For this reason, particular care should be taken in the rout and methodology of installation for all underground apparatus. Wherever possible, apparatus should be routed outside of the RPAs; where this is not possible, it is preferable to keep apparatus together in common ducts. All inspection chambers should be sited outside of RPAs.

Where underground apparatus is to pass within the RPAs, detailed plans showing the proposed route should be drawn up in conjunction with the Project Arboriculturalist. In such cases trenchless insertion methods should be used with entry and retrieval pits being located outside of the RPAs. If this option is not feasible and providing roots can be retained and protected, manual excavations using hand held tools (air-spade, folks, shovels etc.,) or a combination of trenchless and manual excavations (broken trench) should be used.

Any design and installation must be undertaken in accordance with National Joint Utilities Guidelines (NJUG).

Above-ground utility apparatus:

Above-ground apparatus (including CCTV cameras and lighting) should be sited to avoid the need for detrimental tree pruning, as such the current and future crown size of the tree should be assessed.

Tree branches can be pruned back with care to provide space, though it is not appropriate for repetitive and significant tree works to an initial design solution unless this is a suitable management outcome for the tree. Any pruning must be undertaken in accordance with BS3998:2010.

Arboricultural Method Statement

All tree works must be undertaken in accordance with British Standards. Please refer to the Tree Schedule, Arboricultural Method Statement & Tree Protection Plan, for full details of all surveyed trees and how the development maybe implemented without detriment to retained trees.

Rev:	Date:	Notes:
--	01/04/2025	Initial assessment.

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Project:
Land opposite Codmore Field House
Hill Farm Lane
Codmore Hill
West Sussex
RH20 1BJ

Client:
Mrs Capelin

Drawing:
Arboricultural Impact Assessment

Based on:
2411CO_R1_004

Drawing No: Arbtech AIA 01
Rev: --

Date: Apr-2025
Scale: 1:100@ A0
Drawn: PDG

Key:

Existing Site Layout: | Proposed Site Layout: | Tree Numbers: T01
Tree Trunks: | Root Protection Area: | Tree Canopy
Category 'A' Tree: | Category 'A' Group: | Category 'B' Tree:
Category 'B' Group: | Category 'C' Tree: | Category 'C' Group:
Category 'U' Tree: | Category 'U' Group: | Trees to be Removed: T02
Trees to be Coppiced: T04 | Incursion - Hard Surfacing:

All dimensions should be checked on site. No dimensions are to be scaled from this drawing. Please notify us of any discrepancies found. Arbtech Consulting Ltd. cannot be held responsible for inaccuracies in the base drawing in which this plan is based.
This drawing is designed to reflect the principles of the layout or design only, and relates only to the protection of retained trees.
This drawing is not to be read as a definitive part of the engineering or construction designs or method statement. An architect or structural engineer should be contacted over any matters of construction, detailing or specification and for any standards or regulatory requirements relating to proposed structures, hard surfacing or underground services.
This drawing was produced in color - a monochrome copy should not be relied upon.

Appendix 3: Tree Protection Plan

Indicative only

Arboricultural Supervision: Manual excavations of planting pits within within the RPAs of retained trees T17 & T18.

Arboricultural Supervision: The 'no dig' sub-base within the RPAs of retained trees T01, T04, T06, T07, T08 & G01 will utilise a cellular confinement system which will be installed in-line with manufactures guidelines for the expected loading. If the new surfacing is not to be installed until later in the program of works, temporary ground boarding will be used in the interim to protect the area against compaction.

Protective Fencing

Ground Protection
Temporary ground boarding.

Arboricultural Supervision: Manual excavation for the installation of posts within the RPAs of retained trees; posts will be relocated to avoid roots in excess of 25mm diameter.

The Deck House

0m 1m 3m 5m 10m 15m 20m

Protective Fencing (Trees)

Protective fencing is to be erected prior to the commencement of any and all works on site and retained in place for the duration of the development.

Secondary Specification: To comprise of 2m tall welded mesh panels on rubber or concrete feet. Panels are to be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate and secured with ground pins.

All weather notices are to be attached at regular intervals on the weld mesh panels with words such as "Construction Exclusion Zone - KEEP OUT".

Tree Protection Area

KEEP OUT

Do **not** move this fence

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECT OF A TREE PRESERVATION ORDER. CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

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Ground Protection

New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

Note: The ground protection might comprise one of the following:

Pedestrian movments only: A single thickness of scaffold boards placed either on top of a driven scaffold frame, as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100mm depth of woodchip), laid onto a geotextile membrane;

Pedestrian-operated plant up to 2t (gross weight): Proprietary inter-linked ground protection boards placed on top of a compression-resistant layer(e.g.150mm depth of woodchip), laid onto a geotextile membrane;

Wheeled/Tracked traffic exceeding 2t (gross weight): An alternative system (e.g. proprietary system or pre-cast reinforced concrete slabs) to be designed by a suitably qualified person to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

In all cases, the objective of the ground boarding is to avoid compaction of the soil beneath, so that tree root function remains unimpaired.

Supervised Excavation

All excavations situated either partially of completely within the RPAs of retained trees are to be undertaken manually; unless other wise permitted and under the direct supervision of the Project Arboriculturalist.

Any roots that are to be cut will be cleanly severed by the Project arboriculturist using a suitably sharp hand saw or secateurs. The edge of all excavations closest to the retained trees will be covered with damp hessian to prevent drying out, and where necessary be shuttered to prevent soil collapse or contamination by concrete. If appropriate soil beneath the depth of the excavation may be sheet piled, regular piled or have individual piles installed.

Manual excavation: Excavations within the RPAs of retained trees will initially be undertaken by hand under the direct supervision of the Project Arboriculturalist to a minimum depth of 600mm (to be confirmed by the Project Arboriculturist), whether its for proposed foundations, hard surfacing or underground services. The soil is to be loosened with the use of a fork or pick and/or air-spade and then cleared with a shovel and/or the aid of an air-vac.

'No-dig' Surfacing

Multi-dimensional confinement system: Prior to the installation of the new 'no-dig' surfacing, existing vegetation may be removed either with hand tools or sprayed with an approved non-residual herbicide such as 'Glyphosate'. Any small hollows on the surface may be filled with clean sharp sand (not builders sand) to a maximum depth of 150mm.

The new hard surfacing will utilise a 'No-dig' sub-base such as a a proprietary cellular confinement system (GeoWeb or similar) laid over a bi-axel geo-grid (tensar TriAx or similar) so that it can be constructed entirely above the existing soil level. The 'GeoWeb' is to be back filled by hand with a no-fines aggregate of 20mm - 30mm. The area of 'GeoWeb' will be covered with a permeable geotextile fabric and the finished wearing course laid on top. Edge supports of an appropriate size and strength are to be set above ground level and secured with haunching or steel pins driven into the ground. the outer edge of the supports may be banked up with clean top soil.

Note: The use of a multi-dimensional confinement system will affect the finished level of the hard surfacing by raising the levels and needs to be considered when designing foundations and setting the finished floor levels of adjacent buildings.

Arboricultural Method Statement

All tree works must be undertaken in accordance with British Standards. Please refer to the Tree Schedule, Arboricultural Method Statement & Tree Protection Plan, for full details of all surveyed trees and how the development maybe implemented without detriment to retained trees.

Arboricultural Supervision

The Project Arboriculturalist will be required to attend site to directly supervise all demolition and construction works that have to be undertaken within the root protection areas. This will include:

1. Pre-commencement site meeting;
2. Location of protective measures;
3. Manual / Supervised excavation for the installation of fence posts and planting pits within and immediately adjacent to the RPAs of retained trees;
4. Installation of 'No Dig' hard surfacing;
5. Any excavations within and immediately adjacent to RPAs, including foundations, hard surfacing, or underground services (a non-exhaustive list);
6. Removal of protective measures and sign-off.

Rev:	Date:	Notes:
--	01/04/2025	Initial assessment.

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Project:
Land opposite Codmore Field House
Hill Farm Lane
Codmore Hill
West Sussex
RH20 1BJ

Client:
Mrs Capelin

Drawing:
Tree Protection Plan

Based on:
2411CO_R1_004

Drawing No:	Rev:
Arbtech TPP 01	--

Date:	Scale:	Drawn:
Apr-2025	1:100@ A0	PDG

Key:

Existing Site Layout:		Proposed Site Layout:		Tree Numbers:	T01
Tree Trunks:		Root Protection Area:		Tree Canopy	
Category 'A' Tree:		Category 'A' Group:		Category 'B' Tree:	
Category 'B' Group:		Category 'C' Tree:		Category 'C' Group:	
Category 'U' Tree:		Category 'U' Group:		Trees removed:	T02
Trees Coppiced:	T04	Incursion - Hard Surfacing:			

Appendix 4: Tree Protection Notice

Tree Protection Area

KEEP OUT

Do **not** move this fence

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECT OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

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Appendix 5: Contact Details

Name	Position	Company	Contact
	Client		
	Agent / Project Manager		
	Tree Officer		
	Project Arboriculturist	Arbtech Consulting Ltd.	01244 661170 https://arbtech.co.uk
	Site Manager		
	Main contractor		

Document Production Record

Document number	Editor	Signature	Position	Issue number	Date
Arbtech AMS 01	Phil Gower		Principal Arboricultural Consultant	01	04/04/25

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