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Arboricultural Method Statement

Orion Homes Ltd.

Denby Grange Lane,
Grange Moor,
Wakefield,
West Yorkshire,
WF4 4BJ

22 May 2025

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Introduction

Instruction

Arbtech Consulting Limited (Arbtech) received written instruction on 02 May 2024 from Orion Homes Ltd to attend Denby Grange Lane, Grange Moor, Wakefield, West Yorkshire, WF4 4BJ; grid reference, SE223162 (site) to undertake an arboricultural survey a to BS5837:2012 guidance to assess trees, hedges and major shrub groups growing on and within influencing distance of the site and to produce a Schedule of trees and Tree Constraints Plan (TCP).

A further written instruction was received on 17 April 2025 from Orion Homes Ltd. to produce an 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	Stamford Geomatics Ltd	2795/001 - a	Topographical Survey
Proposed layout drawing	Orion Homes Ltd.	SK001-Rev.U	Site layout
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 Tom Barron on 08 May 2024.

A total of 3 No. 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 Jon Hartley on 02 May 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	
			(m^2)	(%)
G03	Various	Fences	Negligible	0.0
G03	Various	Garage	9.7	8.6
G03	Various	Hard surcace - Bin store	2.1	2.1

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

Trees to be Removed

The implementation of the proposed development is not predicated on the removal of existing trees.

A summary 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
0	0	0	0

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 external landscaping outside of the construction exclusion zones (CEZs).
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 external landscaping within the construction exclusion zones (CEZs).

Stage	Event
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
N/A	N/A	N/A	N/A

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: 27 May 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 in 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 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.

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

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.

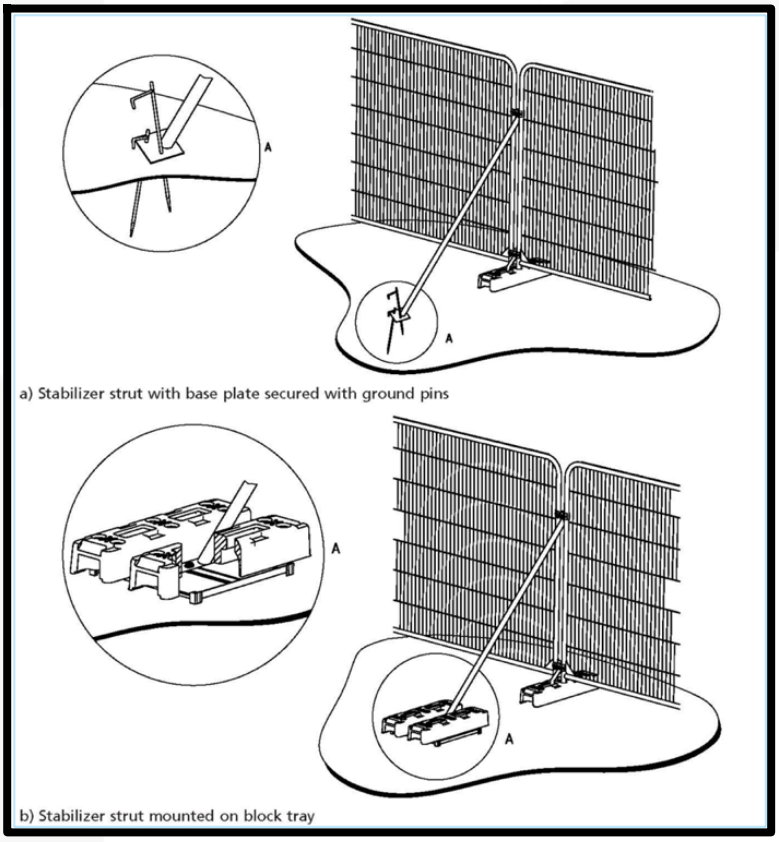

Figure 1: Example of protective barrier fencing with above-ground stabilising system (BS5837)

Ground Protection

New temporary ground protection 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:

a) for pedestrian movements 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;

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 2 t 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 situations other than those described in a) or b), the ground boarding is to be designed by a suitably qualified person to an engineering specification in conjunction with arboricultural advice, to be able to support 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 function remains 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.

Demolition

Not applicable.

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

New foundations for buildings, structures, and hard surfacing situated within the RPAs of retained trees are to be designed in conjunction with arboricultural advice to accommodate the structure's likely loading. The foundations will be designed to limit the amount of excavation required within RPAs to retain significant roots, as identified during the site investigations.

The use of strip foundations within the RPAs of retained trees can cause extensive root loss and, as such, must be avoided.

The foundation design for the garage within the RPAs of retained trees G03 is to be designed to minimise the adverse impact upon trees and should pay particular attention to the existing ground levels and proposed finished floor level. Foundation design will be undertaken using site-specific information in conjunction with the Project Arboriculturist and Engineer.

Root damage can be minimised using:

- Piles, with a site investigation it is possible to determine their optimal location whilst avoiding damage to roots important for the stability of the tree. Investigative excavations are to be undertaken with the use of hand tools or compressed air displacement to a minimum depth of 600mm;
- Beams laid at or above ground level and or cantilevered as necessary to avoid tree roots identified by the site investigation;
- Multi-dimensional confinement systems.

These are just an example of a few types of foundations that can be used to minimise root damage. To arrive at a suitable solution, site-specific and specialist advice regarding foundation design should be sought from the Project Arboriculturist and Engineer.

<u>Large structures:</u> Slabs for larger structures, such as garages, should be designed and constructed with a ventilated air space between the underside of the slab and the existing soil surface. A specialist irrigation system, e.g., rainwater runoff from the roof, is to be installed underneath the slab.

Small structures: Slabs for smaller structures (less than 20% of the total area of the un-surfaced RPA), such as bin stores, may be formed/constructed directly onto the existing soil surface. A multi-dimensional confinement system such as CellWebTM or similar may be possible as the foundation for these structures (specialist advice should be sought from the manufacturer).

Where piling is to be installed near trees, the smallest practical pile diameter will be used, as this reduces the possibility of striking major tree roots and the size of the rig required to sink the piles. If a piling mat is required, it will conform to the specification for ground boarding.

All and any excavations required for foundations within the RPAs of retained trees will initially be undertaken manually and under the direct supervision of the Project Arboriculturalist. See manual excavation.

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.

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.

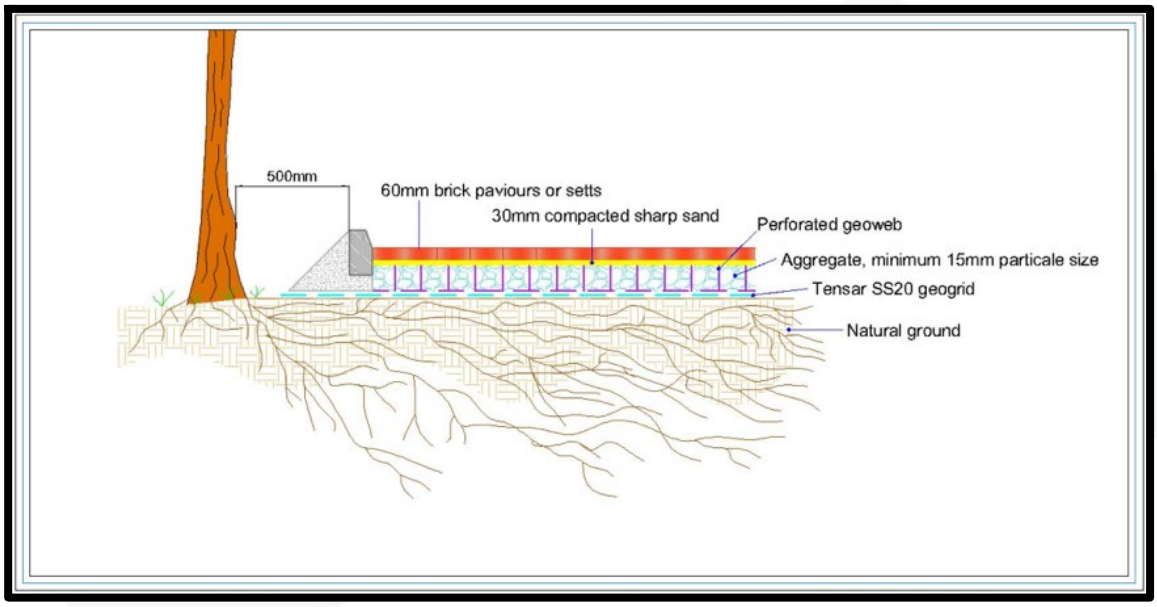

Figure 2: Example cross-section for multi-dimensional confinement system using kerb edging

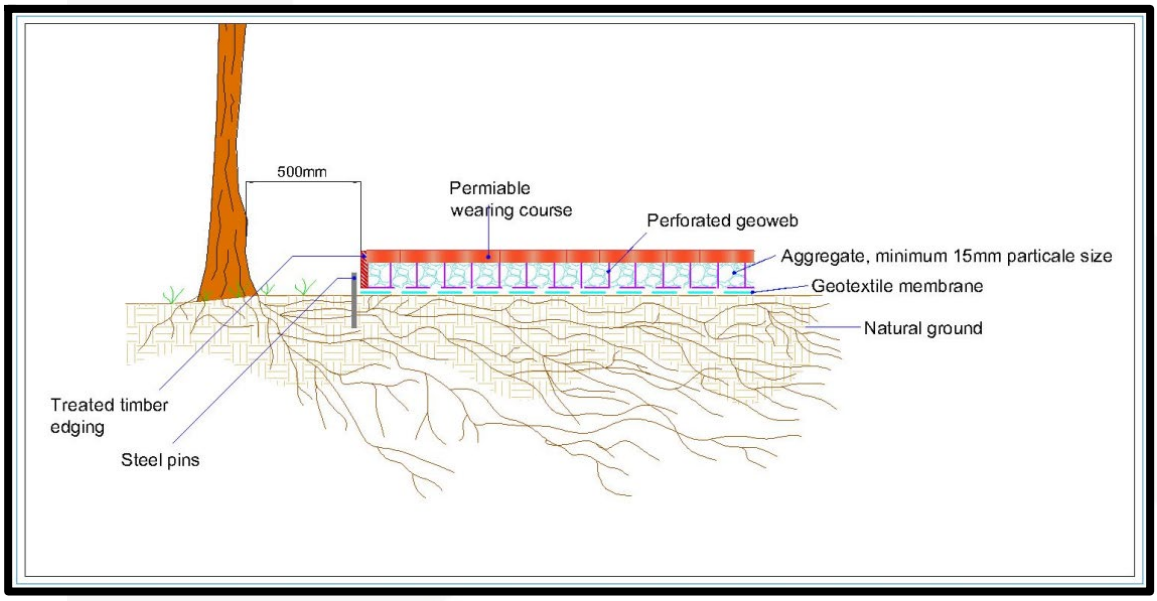

Figure 3: Example cross-section for multi-dimensional confinement system using timber edging

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.

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.

Boundary fences

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.

Concrete use within RPAs

Before concrete is poured to form the foundations within or immediately adjacent to the RPAs of retained trees, the excavation is to be lined and sealed to prevent any leaching of the concrete into the soil and causing desiccation of retained roots by concrete runoff.

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

A specification for and notation relating to the precise alignment of additional trees will be contained in the landscape proposals.

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. Supervised excavations for site investigations to inform garage foundation design within the RPAs of the trees of G03.
4. Supervised excavations for the installation of foundations for the garage within the RPA of the trees of G03.
5. Supervised excavations for fence posts within the RPA of tree G03.
6. Installation of 'No Dig' hard surfacing - Bin Store within the RPA of tree G03.
7. Any demolition and or excavations within or adjacent to RPAs, including foundations, hard surfacing, or underground services (a non-exhaustive list).
8. Arboricultural sign off and removal of protective measures.

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.

Arboricultural Monitoring & Supervision Sign-Off Checklist

Denby Grange Lane, Grange Moor, Wakefield, West Yorkshire, WF4 4BJ

Tree Number	Task	Date Completed	Signed (Arboriculturalist)	Signed (Site Manager)
All	Pre-commencement site meeting			
All	Sign-off of the location and specification of the protective measures			
All	Additional excavations (if required)			
All	Completion of groundworks			
G03	Manual excavation of site investigations for garage foundation design			
G03	Manual excavation for garage foundation installation			
G03	Manual excavation fence post hole installation			
All	Completion of construction			
All	Removal of machinery and materials from site			
All	Dismantle & removal of protective measures			
All	Completion of Landscaping			

Tree Number	Task	Date Completed	Signed (Arboriculturalist)	Signed (Site Manager)
All	Sign-off from Project Arboriculturist			

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,

Jon Hartley BSc (Hons) MArborA

Principal Arboricultural Consultant

Jh@arbtech.co.uk

Appendix 1: Tree Schedule

BS5837:2012 Tree Survey

Client: Orion Homes Ltd
Project: Denby Lane, Grange Moor
Survey Date: 08/05/2024
Surveyor: Tom Baron

Arbtech Consulting Ltd.
Unit 3 Well House Barns
Chester
Cheshire
CH4 0DH
Phone: 01244661170
Mobile: N/A

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*	7	1	450	N 4 E 4 S 4 W 4	2 2 2 2	SM	A: 91.6 R: 5.39	Fair	C: Poor S: Good B: Fair	3 off-site trees within residential garden - not assessed in detail; species including copper beech, silver birch and pear; all trees recently topped at various heights; dimensions recorded are the largest within the group.	C.2 10+ yrs
G02										Estimated Measurements	
Various *See comments for details*	11	1	300	N 5 E 5 S 5 W 4	1 1 1 1	SM	A: 40.7 R: 3.59	Good	C: Good S: Good B: Good	Off-site; part of a larger, linear group comprising mixed broadleaves - ash, bird cherry, oak, rowan, alder, field maple, blackthorn, birch and sycamore; minor overhang of up to 2m at southern extent, with only minor shrub overhang as the group progresses north; dimensions recorded are the largest within the group.	B.2 20+ yrs
G03										Estimated Measurements	
Various *See comments for details*	15	1	500	N 4.5 E 4.5 S 5 W 5	2 2 2 2	EM	A: 113.1 R: 6	Good	C: Good S: Good B: Good	Off-site group within residential garden - not assessed in detail; significant individual stems and RPAs plotted on TCP; species including larch, Leyland cypress, silver birch, poplar, pine, hazel, oak and goat willow; overhanging into the site on the eastern side by up to 3m in areas with an overall 2-3m ground clearance; dimensions recorded are the largest within the group.	B.2 20+ yrs

Age Classifications:					Condition:			Stems:		
	N	Newly planted	EM	Early Mature		C	Crown		Ø	Diameter
	Y	Young	M	Mature		S	Stem		(Eq)	Equivalent stem diameter using BS5837:2012 definition
	SM	Semi-mature	OM	Over Mature		B	Basal area	ERC:		Estimated Remaining Contributio

Appendix 2: Arboricultural Impact Assessment

Arboricultural Impacts

Impacts	Nos. of trees
Trees to be removed	0
Groups / Hedges to be removed (Partial removal of groups)	0 (0)
Trees with proposed incursions into RPAs	0
Groups / Hedges with proposed incursions into RPAs	1
Trees that will require pruning	0
Groups / Hedges that will require pruning	0
Trees to be transplanted	0
Groups / Hedges to be transplanted	0

No.	Species	Proposed structure	Incursion
G03	Various	Fences	RPA
G03	Various	Garage	RPA
G03	Various	Hard surface - Bin store	RPA

Arboricultural Impacts - RPAs (Area)

No.	Species	RPA	Incursion	
			(m^2)	(%)
G03	Various	113.1	Negligible	0.0
G03	Various	113.1	9.7	8.6
G03	Various	101.5	2.1	2.1

Tree Work Schedule

No.	Species	Works	Category
N/A	N/A	N/A	N/A

All tree work is to be undertaken in accordance with British Standard BS 3998:2010 Tree work - Recommendations.
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.

No. of individual trees to be removed

U	A	B	C
0	0	0	0

No. of groups / hedges to be removed

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

( ) = Partial removal of a groups

Arboricultural Method Statement

All tree work is to be undertaken in accordance with British Standard
Please refer to Arbtech Consulting Ltd. Tree Schedule, Arboricultural Method Statement and Tree Protection Plan, for full details of all surveyed trees and how all aspects of the development maybe implemented without detriment to retained trees.

Foundations within RPAs

The use of traditional strip foundations can result in excessive root loss and as such should be avoided.
Designs for foundations that would minimize the adverse impact upon trees should include particular attention to the existing levels, proposed finished levels and cross sectional details. Site specific and specialist advice should be sought from the project engineers and arboriculturist.

Root damage can be minimised by using:

- Piles with site investigation used to be determined their optimal location whilst avoiding damage to roots important for the stability of the tree, by means of hand tools or compressed air soil displacement, to a minimum depth of 600mm;
- Beams, laid at or above ground level, and cantilevered as necessary to avoid tree roots identified by site investigation.

Where a slab for minor structures (e.g. shed base) is to be formed within the RPA, it should bear on the existing ground level, and should not exceed an area greater than 20% of the existing unsurfaced ground.

Slabs for larger structures (e.g. dwellings) should be constructed with a ventilated air space between the underside of the slab and the existing soil surface (to enable gas exchange and venting through the soil surface. In such cases, a specialist irrigation system should be employed (e.g. roof run-off redirected under the slab). The design of the foundation should take into account of the effect on the load bearing properties of the underlying soil from the redirected roof run-off. Approval in principle for a foundation that relies on topsoil retention and roof run-off under the slab should be sought from building control authority prior to this approach being relied upon.

Where piling is to be installed near to trees, the smallest practical pile diameter should be used, as this reduces the possibility of striking major tree roots, and reduces the size of the rig required to sink the piles. If a piling mat is required, this should conform to the parameters for ground boarding. Use of the smallest practical piling rig is also important where piling within the branch spread is proposed, as this can reduce the need for access facilitation pruning. The pile type should be selected bearing in mind the need to protect the soil and adjacent roots from the potentially toxic effects of uncured concrete, e.g. sleeved bored piles or screw piles.

This information is compliant with British Standard BS5837:2012 Trees in relation to design demolition and construction - Recommendations, section 7.5 Special engineering for foundations within the RPA.

'No Dig' Surfacing

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

Proposed hard surfacing within the RPAs of retained trees is to be designed so that it can be situated above the existing soil level and to minimise any adverse impact upon the tree RPAs, as the use of traditional foundations can result in excessive root loss through direct removal of roots during excavation and by compaction of the soil beneath the excavation, as such this 'traditional' type of foundation should be avoided.
When designing hard surfacing that is to be situated within RPAs, the design team need to pay particular attention to the proposed usage (pedestrian, domestic traffic, delivery vans, Emergency vehicles, 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, SUDs, etc.

Possible sub-bases (foundations systems) for 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 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 the structure.

NB: The use of a multi-dimensional confinement systems and or an engineered solution will affect the finished level of the hard surfacing by raising the levels and needs to be taken into consideration when designing foundations and setting the finished floor levels of adjacent buildings.

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 the tree. For this reason, particular care should be taken in the rout and methods of installation of all underground apparatus. Wherever possible, apparatus should be routed outside of RPAs. Where this is not possible, it is preferable to keep apparatus together in common ducts, all inspection chambers should be sited outside of the 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 arboriculturist. 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 excavations should be undertaken using hand held tools (air-spade, forks, shovels) or a combination of trenchless and manual excavation (broken trench).
Any design and installation should be undertaken in accordance with the 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 work to bean initial design solution unless this is a suitable management outcome for the tree. Any pruning should be undertaken in accordance with BS3998:2010

Rev:	Date:	Notes:

arbtech

Unit 3, Well House Barns, Chester, CH4 0DH
https://arbtech.co.uk, 01244 661770

Project:
Denby Grange Lane,
Grange Moor,
Wakefield,
West Yorkshire,
WF4 4BJ

Client:
Orion Home Ltd.

Drawing:
Arboricultural Impact Assessment

Based on:
SK001-Rev.U

Drawing No:	Rev:
Arbtech AIA 01	--

Date:	Scale:	Drawn:
May 2025	1:250 @ A0	JCH

Key:

Tree Nos.:	T01	Tree Canopies:		Trunks:	
RPAs:		Category 'B' groups:		Category 'C' groups:	
Existing Site Plan:		Proposed Site Plan:		Incursion - Structures:	
Incursion - Fences:					

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 information provided by other parties.
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 treat 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 colour; a monochrome copy should not be relied upon.

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Appendix 3: Tree Protection Plan

Tree Work Schedule

No.	Species	Works	Category
N/A	N/A	N/A	N/A

All tree work is to be undertaken in accordance with British Standard BS 3998:2010 Tree work - Recommendations.
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.

Protective Fencing

To be erected prior to the commencement of all works on site, and retained in place throughout construction.

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 should be attached to a base plate and secured with ground pins.
All weather notices should be erected at regular intervals on the weld mesh panels with words such as "Tree Protection Area - 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

Arbtech Consulting Limited
Unit 3, Well House Barns, Chester, Cheshire, CH4 0DH
https://arbtech.co.uk, 01244 661770

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:

a) for pedestrian movements 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;
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 2 t 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 situations other than those described in a) or b), the ground boarding is to be designed by a suitably qualified person to an engineering specification in conjunction with arboricultural advice, to be able to support 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 function remains unimpaired.

Foundations within RPAs

New foundations for buildings, structures, and hard surfacing situated within the RPAs of retained trees are to be designed in conjunction with arboricultural advice to accommodate the structure's likely loading. The foundations will be designed to limit the amount of excavation required within RPAs to retain significant roots, as identified during the site investigations.

The use of strip foundations within the RPAs of retained trees can cause extensive root loss and, as such, must be avoided.
The foundation design for the garage within the RPAs of retained trees G03 is to be designed to minimise the adverse impact upon trees and should pay particular attention to the existing ground levels and proposed finished floor level. Foundation design will be undertaken using site-specific information in conjunction with the Project Arboriculturist and Engineer.

Root damage can be minimised using:

- Piles, with a site investigation it is possible to determine their optimal location whilst avoiding damage to roots important for the stability of the tree. Investigative excavations are to be undertaken with the use of hand tools or compressed air displacement to a minimum depth of 600mm;
- Beams laid at or above ground level and or cantilevered as necessary to avoid tree roots identified by the site investigation;
- Multi-dimensional confinement systems.

These are just an example of a few types of foundations that can be used to minimise root damage. To arrive at a suitable solution, site-specific and specialist advice regarding foundation design should be sought from the Project Arboriculturist and Engineer.
Large structures: Slabs for larger structures, such as garages, should be designed and constructed with a ventilated air space between the underside of the slab and the existing soil surface. A specialist irrigation system, e.g., rainwater runoff from the roof, is to be installed underneath the slab.

Small structures: Slabs for smaller structures (less than 20% of the total area of the un-surfaced RPA), such as bin stores, may be formed/constructed directly onto the existing soil surface. A multi-dimensional confinement system such as CellWebTM or similar may be possible as the foundation for these structures (specialist advice should be sought from the manufacturer).

Where piling is to be installed near trees, the smallest practical pile diameter will be used, as this reduces the possibility of striking major tree roots and the size of the rig required to sink the piles. If a piling mat is required, it will conform to the specification for ground boarding. All and any excavations required for foundations within the RPAs of retained trees will initially be undertaken manually and under the direct supervision of the Project Arboriculturist. See manual excavation.

This information is compliant with British Standard BS5837:2012 Trees in relation to design demolition and construction - Recommendations, section 7.5 Special engineering for foundations within the RPA.

Supervised Excavation

All excavations within and immediately adjacent to RPAs are to be undertaken under direct on-site arboricultural supervision.

Any roots that are to be cut will be cleanly severed by the project arboriculturist using a suitable hand saw or secateurs. The edge of all excavation closest to the retained trees will be covered over 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, tegular piled or have individual piles installed.

Manual excavation:
Excavations within the RPAs will be initially undertaken by hand under direct on-site arboricultural supervision to a minimum of 600mm deep (to be confirmed by the project arboriculturist), whether its is 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-spade and air-vac.
Mechanical excavation:
Excavation within the RPAs will consist of a mixture of mechanical and manual excavation.
Where an excavator is used it will be fitted with a suitably sized toothless grading bucket; using a grading / scrapping motion rather than digging. During each motion the excavator will not be permitted to removing no more than 10 - 20mm deep of soil in any any one pass.
If any roots are discovered, mechanical excavation will immediately be stopped and manual excavation will take over to expose the root. Upon the root being uncovered and either severed or protected the excavations can then continue.
Any excavator or other machinery that is to be used will be situated outside of the RPAs of all retained trees or on top of a suitable ground protection.
Where an excavator or any other machinery is to be used within RPAs or beneath canopies the project arboriculturist will clearly instruct the operator about what they want and expect to happen prior to any works may commence.

'No Dig' Surfacing

Multi-dimmensional confinement system
Existing vegetation may be removed with hand tools or sprayed with an approved non residual herbicide such as 'Glyphosate'. The new hard surfacing will be constructed using a 'No Dig' surfacing situated entirely above the existing soil surface and where needed using a proprietary cellular confinement system (GeoWeb or similar) laid over a bi-axiel geo-grid (tensar TriAx or similar). 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 '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 should 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 taken into consideration when designing foundations and setting the finished floor levels of adjacent buildings.

Arboricultural Supervision

The arboricultural consultant 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. Supervised excavations for site investigations to inform garage foundation design within RPAs of trees of G03.
4. Supervised excavations for installation of foundations for garage within RPA of trees of G03.
5. Supervised excavations for fence posts within RPA of tree G03.
6. Installation of 'No Dig' hard surfacing - Bin Store within the RPA of tree G03.
7. Any demolition and or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).
8. Arboricultural sign off and removal of protective measures.

Arboricultural Method Statement

Please refer to Arbtech Consulting Ltd. Tree Schedule and Arboricultural Method Statement, for full details on all surveyed trees and how all aspects of the the development maybe implemented without determent to retained trees.

Rev:	Date:	Notes:

arbtech

Unit 3, Well House Barns, Chester, CH4 0DH
https://arbtech.co.uk, 01244 661770

Project:
Denby Grange Lane,
Grange Moor,
Wakefield,
West Yorkshire,
WF4 4BJ

Client:
Orion Home Ltd.

Drawing:
Tree Protection Plan

Based on:
SK001-Rev.U

Drawing No:	Rev:
Arbtech TPP 01	--

Date:	Scale:	Drawn:
May 2025	1:250 @ A0	JCH

Key:

Tree Nos.:	T01	Tree Canopies:		Trunks:	
RPAs:		Category 'B' groups:		Category 'C' groups:	
Existing Site Plan:		Proposed Site Plan:		Protective fencing:	
Ground protection:		Arboricultural supervision – Excavations:		Arboricultural supervision – 'No Dig' HS.:	

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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

Arbtech Consulting Limited.
Unit 3, Well House Barn, Chester Road, Chester, CH4 0DH
https://arbtech.co.uk - 01244 661170

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	Jon Hartley		Principal Arboricultural Consultant	01	27/05/25

Report Limitations

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