

Hard Surfacing

Where hard surfacing must be removed and/or resurfaced within the RPAs of retained trees, it is to be undertaken under the direct supervision of the Project arboriculturists during the landscaping phase of the development.

The wearing course will be broken up using a handheld pneumatic breaker, hand tools, and wheelbarrows to remove the surfacing. Where the subbase must be removed, a fork will be used to loosen the material, and shovels and wheelbarrows will be used to move it.

In some situations, and at the discretion of the Project arboriculturists, an excavator using a hydraulic breaker and a suitably sized toothless grading bucket may be possible. If an excavator is to be used, it must be situated outside of the RPAs, on top of the hard surfacing, working away from the RPAs or from suitable ground boarding capable of withstanding the expected loading.

Whichever system is used, there is to be **NO** disturbance of the underlying soil. If roots are found, they are to be covered over with damp hessian, and a layer of either sharp sand, wood chip, or topsoil will be applied as soon as practicably possible to prevent desiccation.

Existing Underground Services

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

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 arboriculturists 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.

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.

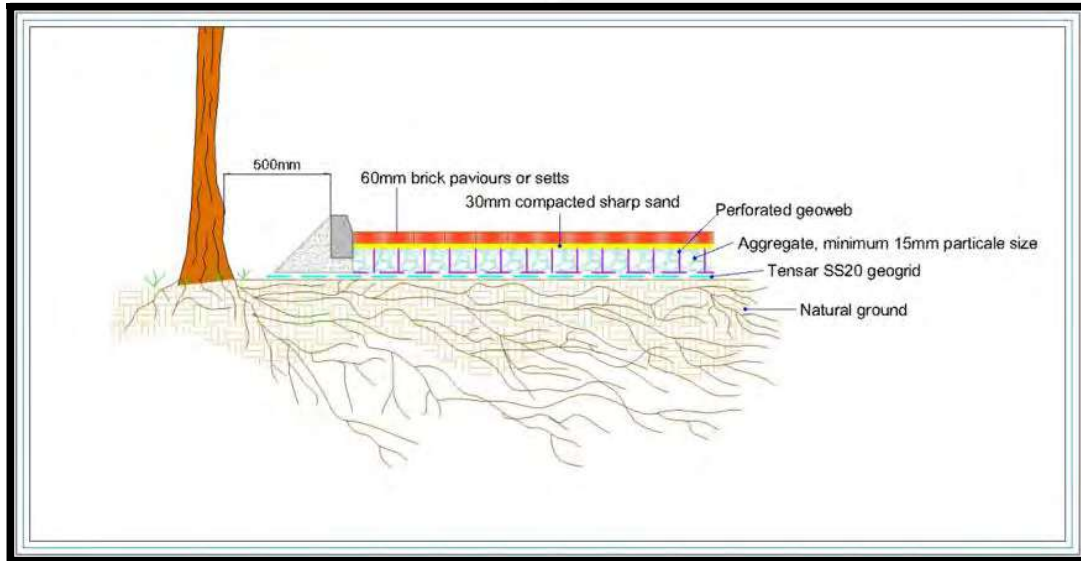


Figure 3: Example cross-section for multi-dimensional confinement system using kerb edging

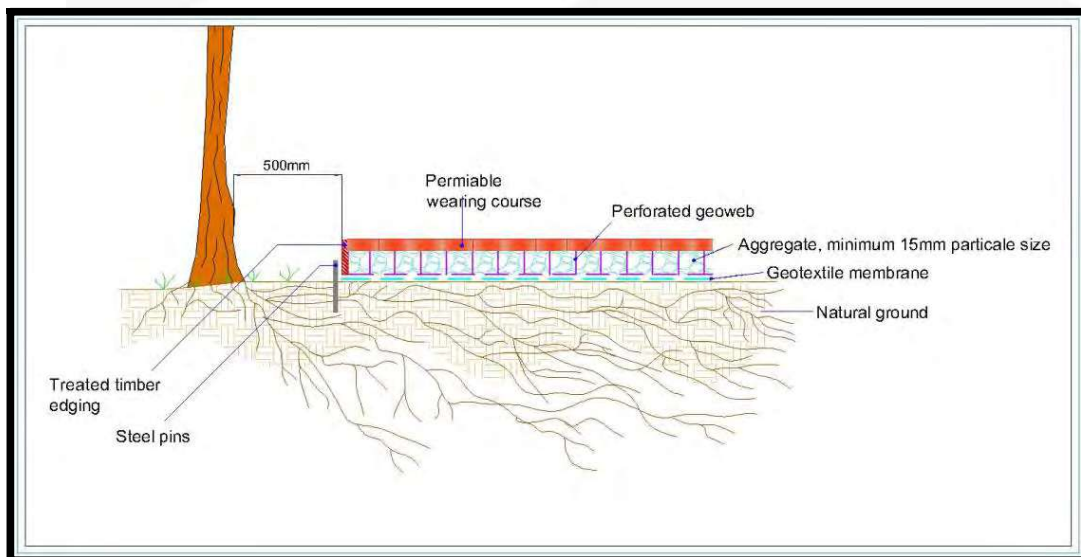


Figure 4: Example cross-section for multi-dimensional confinement system using timber edging

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.

Planting Pits & Decompaction

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

As such, there are two possible options on how to proceed with the planting areas

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 to a minimum depth and width of three times the root ball. Ideally, the entire planting zone would be excavated. 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 arboriculturists 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(02)) and Tree Protection Plan (Arbtech TPP 01_A); 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 arboriculturists 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 Arboriculturist 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 Arboriculturist 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 Arboriculturist 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 Arboriculturists 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 Arboriculturist 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(02)) and Tree Protection Plan (Arbtech TPP 01_A) 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 Arboriculturist, 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 no greater than weekly (during demolition phase) and then increasing to monthly (every 4 weeks) thereafter.

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 Arboriculturist 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 demolition of the structures, walls, hard surfacing, kerb edging and associated foundations within or immediately adjacent to the canopies and RPAs of all retained trees;
4. Re-location of protective measures;
5. Installation of 'No Dig' hard surfacing;
6. Any excavations within and immediately adjacent to RPAs, including foundations, hard surfacing, or underground services (a non-exhaustive list);
7. 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 Arboriculturist 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 [REDACTED]

Yours Sincerely,

Phil Gower Dip Arb Lv4 (ABC)

Technical Manager (Arboriculture)

A large, light green, stylized house icon that serves as a background for the central section of the page. It is composed of several geometric shapes forming a roof and walls.

Appendix 1: Tree Schedule

BS5837:2012 Tree Survey										Arbtech consulting ltd		
Client: Eastmere Paddocks Ltd Project: Hill View and Wayside, Eastergate Lane, PO203SJ Survey Date: 19/08/2024 Surveyor: Chris Poppett										Unit 3 Well House Barns Chester Road Chester Cheshire CH4 0DH		
arbtech										Preliminary Recommendations		Cat ERC
										Survey Comment		
G01										Estimated Measurements		B.2
Various										20+ yrs		
see comments for details										Off site mixed species group comprising of sycamore, ash, leyland cypress, common holly, goat willow and Lombardy poplar. Vegetation obscuring observations of stems and base. Dimensions recorded are the largest represented within the group. Historical pruning works to raise canopy height to current dimensions on southern aspect.		
G02										Estimated Measurements		B.2
Leyland Cypress										20+ yrs		
X Cupressocyparis leylandii										Off site group. Historical pruning works to raise canopy height over workshops to current dimensions. Dead stems amongst group up to 200mm diameter X 5m length. Access restricting observations of stems and base. Dimensions recorded are the largest represented within the group.		
G03										Estimated Measurements		C.2
Cherry										20+ yrs		
Prunus sp.										X2 individual trees within the group. Historical pruning works to raise canopy height over workshops to current dimensions. 200x100mm opening at base of tree on western aspect. Vegetation obscuring observations of stems and base. X2; 1m length x 80mm stubs from base on western aspect. Dimensions recorded are the largest represented within the group.		
Age Classifications:		N	Newly planted	EM	Early Mature	Condition:		C	Crown	Stems:	Ø	Diameter
	Y	Young	M	Mature				S	Stem	ERC:	(Eq)	Equivalent stem diameter using BS5837:2012 definition
	SM	Semi-mature	OM	Over Mature				B	Basal area		Estimated Remaining Contribution	

Tree and Tag No Species		Hght (m)	Stems		Crown			Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
Estimated Measurements													
G04	Cherry <i>Prunus sp.</i>	4	1	200	N	1	1	M	A: 18.1 R: 2.4	Fair	C: Fair S: Poor B: Poor	X2 individual trees within the group. Historical pruning works to reduce canopy height to 1.6m. approximately 10mm diameter regrowth from points of wounding. Extensive decay to stems and base.	U <10 yrs
Estimated Measurements													
G05	Various <i>see comments for details</i>	20	1	1000	N	10	2	M	A: 452.4 R: 12	Good	C: Good S: Not visible B: Not visible	Mixed species group comprising of common oak, holly, hawthorn, goat willow and Leyland cypress. Vegetation obscuring observations of stems and base. Dimensions recorded are the largest represented within the group. No significant features have been observed.	B.2 40+ yrs
Estimated Measurements													
G06	Cultivated Apple <i>Malus domestica</i>	3	3	266 (Eq)	N	2	1.5	M	A: 31.9 R: 3.18	Good	C: Good S: Good B: Good	Three individual orchard trees. Historical pruning works to reduce canopy height and spread. Approximately 10mm diameter regrowth from points of wounding.	C.2 10+ yrs
Estimated Measurements													
G07	Cultivated Apple <i>Malus domestica</i>	2.5	3	266 (Eq)	N	2	1.5	M	A: 31.9 R: 3.18	Good	C: Good S: Good B: Good	Four individual orchard trees. Historical pruning works to reduce canopy height and spread. Approximately 10mm diameter regrowth from points of wounding.	C.2 10+ yrs
Estimated Measurements													
G08	Cultivated Apple <i>Malus domestica</i>	4	3	266 (Eq)	N	2	1.5	M	A: 31.9 R: 3.18	Good	C: Good S: Good B: Good	Three individual orchard trees. Historical pruning works to reduce canopy height and spread. Approximately 10mm diameter regrowth from points of wounding.	C.2 10+ yrs
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