arbtech

Arboricultural Method Statement to BS5837:2012

Steven Heighway

Queensbridge Farm
Overton
Wrexham
LL13 0LE

25 March 2026

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If this report has been released electronically the appendices referred to herein can be found in the annexed zip folder/s as .pdf files. If this report has been released in hard copy the appendices will be bound into the back of this report. Plans are annexed separately as A0, A1, A2 or A3 as appropriate.

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Introduction

Arbtech Consulting Limited (Arbtech) received written instruction on 19th December 2024 from Steven Heighway to attend Queensbridge Farm, Overton, Wrexham, LL13 0LE; grid reference, SJ 37212 40093 (site) to undertake an arboricultural survey 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, Tree Constraints Plan, Arboricultural Impact Assessment, Arboricultural Method Statement and Tree Protection Plan.

Site location



Figure 1: OS Map (Bing Maps)

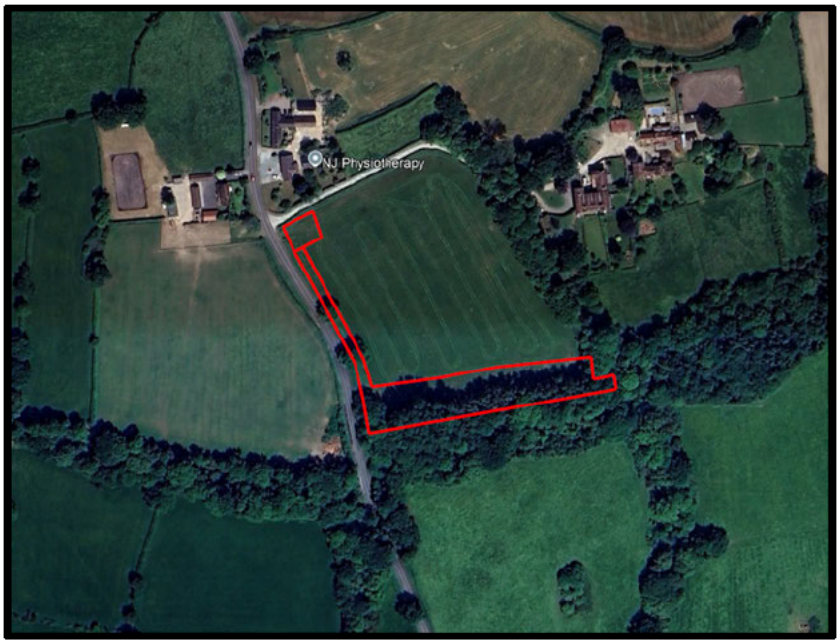


Figure 2: Tree Survey red line boundary

Executive Summary

This report describes the extent and effect of the proposed development at the site on individual trees and groups of trees within and adjacent to the site.

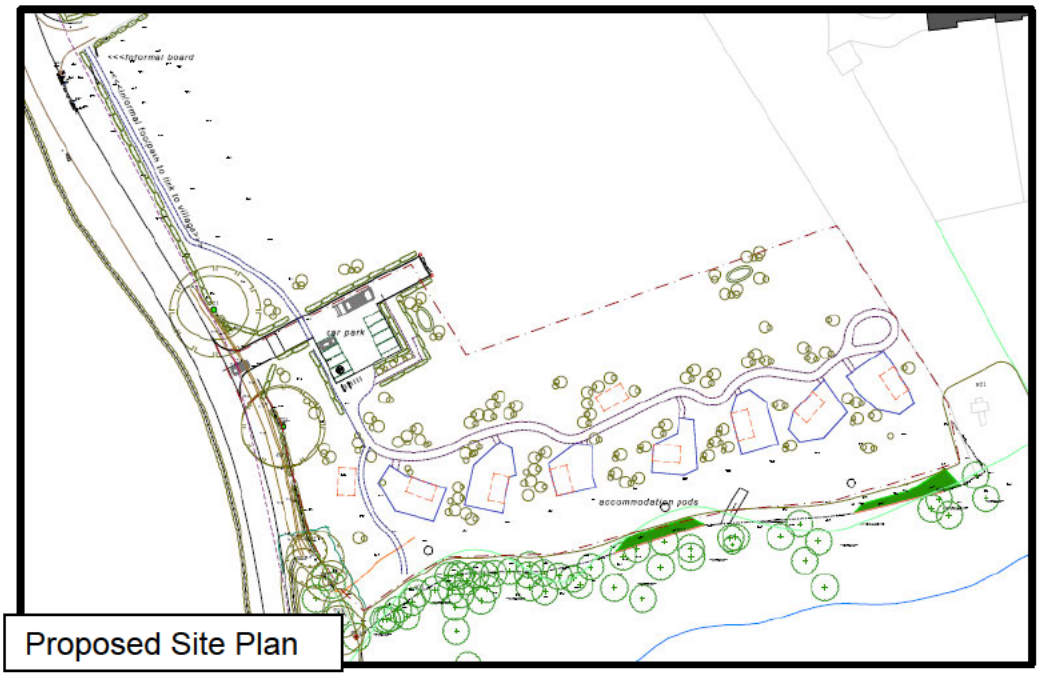
Trees within the site were surveyed; using a methodology guided by British Standard 5837:2012 'Trees in relation to design, demolition and construction – Recommendations' ("BS5837").

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

Checklist for Submission to Local Planning Authority

Tree survey	☒
Tree constraints plan	☒
Arboricultural method statement	☒
Arboricultural impact Assessment	☒
Tree protection plan	☒

This report and its appendices follow precisely the strategy for arboricultural appraisal intended to provide local planning authorities with evidence that trees have been properly considered throughout the development process.



Proposed Site Plan

General Information

Client: Steven Heighway

Site: Land at Queensbridge Farm, Overton, Wrexham, LL13 0LE.

Brief proposal description: Construction of 7 No. glamping pod plots with associated access, footpaths, drainage & storage/vending sheds.

Table 1: Documents referred to.

Document	Reference No.
Topographical Survey	25017 - 25 – 01
Proposed layout drawing	360MWT01 - Planning
Landscape master plan drawing	N/A
LPA pre-app comments	N/A
British Standard 5837:2012	“BS5837”
Arboricultural Impact Assessment	Arbtech AIA 01
Tree Protection Plan	Arbtech TPP 01

Tree Survey

Survey: An arboricultural survey to BS5837 of all trees within impacting distance of the site was undertaken by Alan Thompson of Arbtech Consulting.

A total of 23 (No.) individual trees and 7 (No.) groups of trees were surveyed. Details for each of the trees surveyed are provided in the Schedule of Trees (see Appendix 1)

Table 2: Documents upon which this tree survey has been based

Document	Originator	Reference Number	Title
Survey base drawing	The Survey House	25017-25-01	Topographic Site Survey

Limitations: The survey was made at ground level using visual observation only. Detailed examinations, such as climbing inspections and decay detection equipment were not employed, though may form part of the survey's management recommendations. Measurements were taken using specialist tapes, laser and GPS devices. Where this was not possible, measurements are estimated.

Scope: Pre-development tree surveys make arboricultural management recommendations based exclusively upon the individual tree or group of trees condition 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. This is principally because a detailed planning consent overrides any TPO protection. 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.

* For more information on the surveyed trees please see Arbtech Consulting Ltd, Tree Survey Schedule (Appendix 1), Tree Survey Report and Tree Constraints Plan.

Arboricultural Impact Assessment

Table 3: Documents upon which this assessment has been based

Document	Originator	Reference Number	Title
Survey base drawing	The Survey House	25017-25-01	Topographic Site Survey
Proposals	Matt Wood Architect	360MWT01	Proposed Site Layout Plan

There are a number of issues that 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 which would have been scheduled as a part of usual management.

Table 4: Impacts upon the RPAs of retained trees

Tree Number	Species	Structure	Incursion
T3	Ash	Access Road	RPA
T5	Field maple	Access Road	RPA
T10	Ash	Driveway	RPA
T12	Sycamore	Driveway	RPA

These impacts can be seen on the Arboricultural Impact Assessment drawing number
Arbtech AIA 01.

Trees to be removed.

The proposal requires the removal of two sections of hedgerow to facilitate construction of the proposed site entrance/access & associated visibility splays.

A breakdown of all tree works can be seen in Table 7: Summary of Tree Works

Table 5: Number of individual trees to be removed.

U	A	B	C
0	0	0	0

Table 6: Number of hedges to be removed. () Represents partial removal of a hedge

U	A	B	C
0 (0)	0 (0)	0 (0)	0 (2)

Replacement Hedgerow Planting:

The replacement hedge will be planted using a native countryside hedgerow mix, consistent with traditional rural hedgerows found throughout the surrounding landscape.

1. Proposed Species Mix

• Hawthorn (Crataegus monogyna) – 40%
• Blackthorn (Prunus spinosa) – 20%
• Hazel (Corylus avellana) – 10%
• Field Maple (Acer campestre) – 10%
• Dog Rose (Rosa canina) – 10%
• Holly (Ilex aquifolium) – 10%

This species composition provides:

• strong hedge structure
• biodiversity benefits
• seasonal landscape interest
• dense hedge formation

The species mix also reflects the character of typical countryside hedgerows within the local area.

Proposed Species Mix

• Hawthorn (Crataegus monogyna) – 40%

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2. Plant Specification

To ensure rapid establishment and early visual screening, the hedge will be planted using larger transplants rather than small standard whips.

Plant Sizes at Installation

Species	Initial Plant Size
Hawthorn	80–100cm bare-root
Blackthorn	80–100cm bare-root
Hazel	80–100cm bare-root
Field Maple	80–100cm transplant
Dog Rose	60–80cm
Holly	80–100cm container grown

These sizes provide strong establishment potential and enable the hedge to develop height quickly.

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3. Planting Density

The hedge will be planted in a double staggered row configuration.

Planting Layout

• 6 plants per linear metre

• Double staggered rows

• Row spacing: approximately 400mm

• Plant spacing within rows: approximately 450mm

This density encourages rapid thickening and the development of a dense hedge structure.

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4. Immediate Boundary Screening – Post and Rail Fence

To ensure the site boundary remains visually defined immediately following hedge removal, a timber post and rail fence will be installed along the hedge alignment.

Fence Specification

• Timber post and rail construction

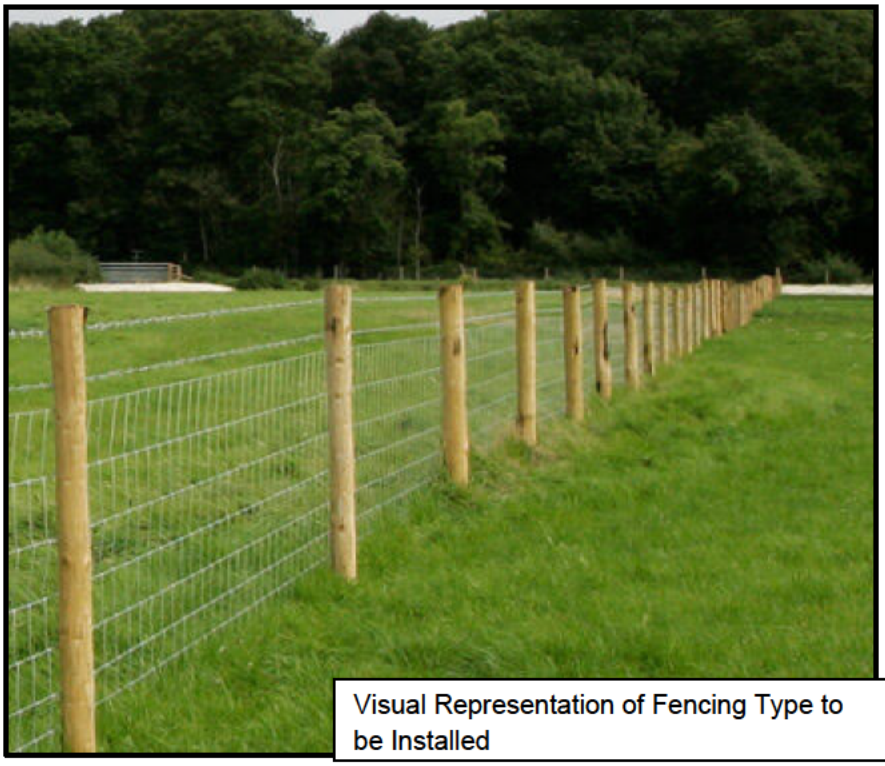
• Approximate height: 1.2m

The fence will:

• provide immediate boundary definition

• maintain the visual structure of the site edge

• protect the young hedge plants during establishment



Visual Representation of Fencing Type to be Installed

As the hedge establishes, vegetation will grow through and behind the fence, creating a natural boundary feature.

5. Plant Protection

Each hedge plant will be protected during the establishment period.

Protection Measures

Each plant will be fitted with:

• 60cm spiral guard

• 1.2m bamboo cane support

Guards will be secured to the cane to prevent wind movement.

These measures will:

• protect plants from rabbit and small mammal browsing

• support young plants during early growth

• improve establishment success rates.

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6. Soil Preparation and Planting

Prior to planting:

• the planting trench will be cultivated to approximately 300mm depth

• compacted soil will be loosened

• organic soil improver will be incorporated where necessary

During planting:

• roots will be spread naturally within the planting trench

• soil will be firmly backfilled around the root system

Following planting:

• the hedge line will be mulched using woodchip to retain moisture and suppress weed growth.

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7. Expected Hedge Growth and Establishment

The selected species are well suited to rapid hedgerow establishment and are widely used in countryside hedge creation.

The existing hedge currently reaches a height of approximately 1.5 metres.

Based on the plant sizes and species selected, the replacement hedge is expected to reach a comparable height within approximately two growing seasons.

Hedgerow Establishment Table

Species	Initial Plant Size	Typical Annual Growth	Estimated Time to Reach 1.5m
Hawthorn (40%)	80–100cm	30–45cm per year	1–2 years
Blackthorn (20%)	80–100cm	30–40cm per year	1–2 years
Hazel (10%)	80–100cm	25–35cm per year	~2 years
Field Maple (10%)	80–100cm	25–35cm per year	~2 years
Dog Rose (10%)	60–80cm	30–50cm per year	1–2 years
Holly (10%)	80–100cm container	15–25cm per year	2–3 years

Notes

• Hawthorn and blackthorn represent 60% of the mix, ensuring rapid hedge formation.

• Dog rose quickly grows through the hedge structure, increasing density and screening.

• Holly provides evergreen structure, strengthening winter screening over time.

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8. Visual Impact During Establishment

The site boundary will remain clearly defined throughout the establishment period.

Immediately following hedge removal the boundary will be defined by a timber post and rail fence, ensuring the site edge remains visually contained within the landscape.

The replacement hedge will be planted using larger transplants at a density of five plants per metre, providing a strong vegetative framework from the first growing season.

Due to the species selection and planting density, the hedge will rapidly thicken and increase in height and is expected to achieve a height comparable to the existing hedge within approximately two growing seasons.

Over time the hedge will mature into a dense native hedgerow consistent with the surrounding rural landscape character.

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9. Maintenance and Establishment

The hedge will be maintained during the early establishment period to ensure successful growth.

Maintenance will include:

• replacement of failed plants during the following planting season

• weed control along the planting strip

• inspection and adjustment of guards and supports

With appropriate maintenance the hedge will establish quickly and develop a dense structure.

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10. Long-Term Management

Once established the hedge will be managed as a traditional countryside hedgerow.

Management will include:

• periodic trimming to encourage dense growth

• maintenance of hedge height and structure

• retention of the native species composition

Over time the hedgerow will develop into a mature and visually effective boundary feature providing ecological and landscape benefits.

Arboricultural Method Statement

The purpose of this method statement is to demonstrate how any aspect of the development that has potential to result in loss or damage to a tree may be implemented and provide an adequate level of protection for those trees that are to be retained during the proposed works.

Details of key site personnel, including site / project manager will be submitted to the Council's Tree Officer prior to the commencement of site works.

This method statement is to be approved and agreed to in writing by all key personnel prior to the commencement of site works.

No site personnel are to be present and no demolition, site clearance, building work or delivery of materials is to occur until the protective measures are in accordance with this method statement and the Tree Protection Plan drawing number Arbtech TPP 01.

Protective measures should be in accordance with this method statement and the Tree Protection Plan; drawing number Arbtech TPP 01 will remain unaltered and in situ, unless otherwise specified, for the entire duration of the construction.

Table 7: Documents upon which this assessment has been based

Document	Originator	Reference Number	Title
Survey base drawing	The Survey House	25017-25-01	Topographic Site Survey
Proposals	Matt Wood Architect	360MWT01	Proposed Site Layout Plan

Tree Works

For reasons of public safety, all tree works referred to herein must be carried out prior to any site personnel commencing works or any building materials being delivered.

Table 8: Summary of Tree Works

No.	Species	Works	Category
H01	Various	Removal of section of hedgerow to facilitate construction of the proposed site entrance/access & associated visibility splays	C2
H02	Various	Removal of section of hedgerow to facilitate construction of the proposed site entrance/access & associated visibility splays	C2
T1	Oak	Crown lift to 4m above proposed access Sever Ivy	A1
T2	Oak	Crown lift to 4m above proposed access Sever Ivy	A1

Notes

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

Protected Species

Conservation Status of British Bats

The general 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 UK Government within 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 whereby the maintenance and restoration of the former populations levels are investigated.

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 on Annex IV (and some on 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

The legislation although not strictly affording protection to foraging grounds 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 a number of 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.

Site Management

The site manager will be responsible for briefing and inducting all personnel who will be working on any stage of this development and 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 method statement and tree protection plan drawing number Arbtech TPP 01; this is to include but not exclusively of 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 arborist about any tree related matters and prior to 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.

Any incidents of damage to retained trees or of tree protection measures will be documented by the site manager who will then report these incidents to the project arboriculturist immediately and make sure that works within this area cease until the project arborist has had an opportunity to inspect the damage and where appropriate, agree a mitigation plan with the local planning authority tree officer.

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

If the site manager is replaced or is absent from site for more than three consecutive working days the project arborist will be informed and a 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 the 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 at any time pruning works are required other than those previously approved, permission must be sought from the LPA tree officer and once permission is granted they are to be carried out by a suitably qualified person in accordance with BS3998:2010 Tree work – Recommendations.

Prohibition

- Mechanical digging or scraping is not permitted within a defined root protection area or within 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 of 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 within areas cordoned off by protective barrier fencing.
- Cement silos, mixing site to be situated within a bunded area to prevent pillage/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.
- It is essential that allowance should be made for the slope of the 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 whilst setting up, moving or operating within this distance of retained trees canopies.
- Storage of all caustic material and chemicals are to be situated well clear of protected areas and preferably on lower ground if slopes are present, or to be situated within a bonded area to prevent any spills or leaks entering the ground.

Sequencing of works

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

Table 9: Sequence of Events

Stage	Event
Stage 1	Pre-commencement site meeting
Stage 2	Carry out tree works as specified within the summary of tree works
Stage 3	Installation of protective measures in accordance with the approved tree protection plan/s
Stage 4	Site set up for construction
Stage 5	Undertake and complete construction works
Stage 6	Undertake external landscaping works outside of the construction exclusion zones
Stage 7	Removal of all machinery and materials form site
Stage 8	Dismantle and removal of protective measures
Stage 9	Undertake external landscaping works within the construction exclusion zones
Stage 10	Sign off from project arboriculturist

Protective Measures

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

Upon installation of the protective measures around the retained trees the project arboriculturist will visit the site to inspect and document the position and specifications of the protective measures.

In the event that the protective measures and their positions do not comply with this arboricultural method statement document number Arbtech AMS 01 (25-03-26) and tree protection plan drawing number Arbtech TPP 01, the project arboriculturist shall inform the client and fencing contractor so adjustments can be made.

When the protective measures comply with document number Arbtech AMS 01 (25-03-26) and tree protection plan drawing number Arbtech TPP 01, the project arboriculturist will sign off the protective measures in writing to the client and will send a copy to the fencing contractor, site agent and local authority tree officer.

If the protective measures become damaged or there is any accident or emergencies 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 and all work within in this area is to cease until the project arboriculturist has made a visit to the site. Any and all 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, mixing of concrete or other products, accessed by 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 8 (see Sequencing of Works), thereafter they will be carefully dismantled only with the agreement of the project arboriculturist and or the local authority tree officer.

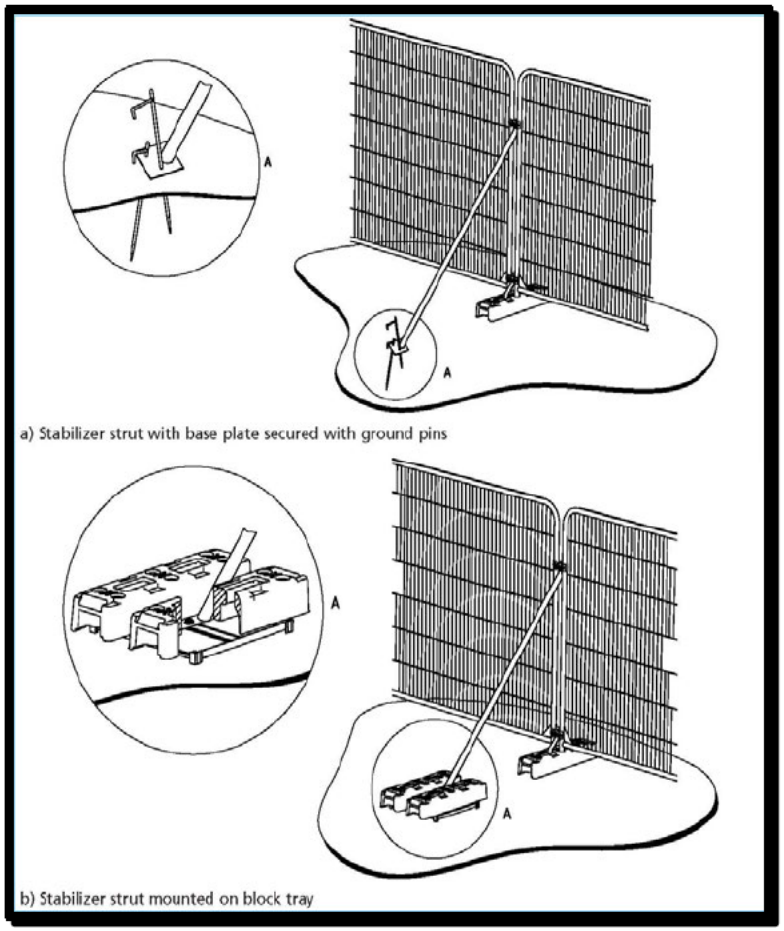
The existing site boundary measures are to be retained for the duration of the development. If for any reason the existing boundary measures are not to be used protective barrier fencing is to be installed along the line of the boundaries and is only to be removed upon the written permission of the project arboriculturist or LPA tree officer upon the completion of the development or immediately prior to 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 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 banks man. Damage to trees will be considered a breach of this tree protection plan, which in turn could be a breach of planning permission.

Protective Barrier Fencing

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

Figure 3: BS5837:2012 - Figure 3, Examples of above-ground stabilising systems.



Signage denoting the words "*tree protection area*" at 5.0m intervals should be fixed to the protective barrier fencing (See Appendix 2).

Ground boarding

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.

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

Where machinery will be stored or used from the ground boarding within the RPAs of the retained trees an impervious barrier and or bunding to prevent oils, fuel or

chemicals is to be installed to prevent leaching into the soil within or adjacent to the RPAs.

Note The ground protection might comprise of 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;

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

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

Construction

Prior to the construction of the proposal, a copy of the construction method statement should have been submitted and approved by the project arboriculturist and LPA tree officer, to ensure that there is no conflict with this method statement.

Any excavations and construction work within or immediately adjacent to RPAs or canopies of retained trees is to be undertaken under the direct on-site supervision of an arboriculturist.

Hard Surfacing

The proposed access road partially situated within the RPAs of tree nos. T3 & T5 is to be designed in conjunction with arboricultural advice to accommodate the likely loading.

Geosynthetics site-specific construction specification:

Queensbridge – Access Road Construction (Cellweb System)

Site-Specific Design & Arboricultural Method Statement

1. Introduction

This document sets out the proposed construction methodology and design approach for the formation and improvement of the access road at Queensbridge.

The design has been developed to:

- Respond sensitively to the existing ground conditions and rural character
- Minimise excavation and disturbance within the root protection areas (RPAs) of adjacent trees
- Provide a robust, low-impact access solution suitable for occasional construction and operational traffic
- Integrate drainage and long-term durability considerations

The approach follows a no-dig / reduced-dig philosophy, consistent with arboricultural best practice and guidance within:

- BS5837:2012 – Trees in Relation to Design, Demolition and Construction
- DMRB CD255 (Pavement Foundations)
- MCHW Specification for Highway Works

2. Existing Site Conditions

- Ground conditions assumed to be cohesive soil with low bearing capacity (CBR ≈ 1.0%)
- Existing access comprises informal track with variable surface condition
- Sections of the route pass within influencing distance of existing tree root systems
- Localised soft ground and potential for seasonal saturation

The design therefore prioritises:

- Load distribution rather than excavation
- Separation of structural layers from subgrade

- Protection of soil structure and tree roots

3. Design Parameters

The proposed design has been developed based on the following realistic usage assumptions:

- Maximum vehicle weight: ≤ 30 tonnes (construction traffic)
- Maximum axle load: ≤ 100 kN/axle
- Maximum wheel load: ≤ 50 kN/wheel

These parameters reflect:

- Temporary construction use
- Occasional service and maintenance access
- Long-term light vehicular use

4. Proposed Construction Build-Up

The proposed access road build-up (as illustrated in the cross-section drawing) comprises:
Surface Layer

- Porous/Permeable Asphalt wearing course (final specification and thickness to be confirmed)
- Alternative: bound gravel or reinforced gravel finish if required for visual sensitivity

Upper Structural Layer

- 25mm overfill: clean angular stone (4/20mm)
- Geotextile (Treetex) for separation

Primary Load Distribution Layer

- Cellweb TRP system (200mm depth) filled with clean angular stone (4/20mm)
- Additional layers used locally where required to achieve finished levels

Lower Structural Layer

- 70mm sub-base (clean angular stone 4/20mm)
    - Note: may be reduced where surface thickness exceeds 70mm

Formation Interface

- Geotextile (Treetex) separating sub-base from subgrade

Subgrade

- Existing ground retained in situ (CBR ~1.0%)

This build-up is confirmed within the supplied cross-section drawing .

5. Arboricultural Considerations

The design has been specifically developed to ensure compliance with tree protection principles:

5.1 Minimal Excavation

- Construction follows a reduced-dig approach, with only minor surface preparation
- No significant excavation within RPAs

- Existing soil profiles retained to preserve root function

5.2 Load Distribution

- The Cellweb system distributes loads laterally, reducing:
    - Soil compaction
    - Root damage risk
    - Long-term degradation of rooting environment

5.3 Soil Protection

- Geotextile layers prevent:
    - Contamination of subgrade
    - Migration of fines
    - Loss of structural integrity

5.4 Construction Controls

- Hand excavation used where required near sensitive areas
- No storage of materials within RPAs
- No tracking of heavy machinery directly on exposed ground

5.5 Supervision

We would welcome a planning condition requiring an Arboricultural Clerk of Works (ACoW) to:

- Monitor installation
- Ensure compliance with approved methodology
- Provide reassurance to the Local Planning Authority

6. Drainage Strategy

The proposed construction inherently supports drainage through:

- Free-draining granular materials (4/20mm stone)
- Permeable structural layers
- Optional integration of a drainage pipe beneath the formation (as indicated in the cross-section)

In line with the wider site strategy:

- Surface water will be directed toward the existing ditch network
- A defined outfall (e.g. 225–300mm pipe to manhole and ditch) will provide a clean, controlled discharge point
- This represents a significant improvement over current unmanaged runoff

7. Construction Methodology

1. Site Preparation
    - Light vegetation clearance only where required
    - No stripping of topsoil within RPAs unless agreed
2. Geotextile Installation
    - Treetex layer laid directly onto existing ground
3. Sub-base Placement
    - Clean angular stone placed and levelled
4. Cellweb Installation
    - Panels expanded and fixed in position
    - Filled with clean angular stone
5. Surface Formation
    - Overfill placed and compacted
    - Final wearing course installed
6. Drainage Installation (if required)
    - Pipe installed within formation zone
    - Connected to outfall system

8. Maintenance and Longevity

- The system is designed for long-term structural stability
- Compared to loose gravel:
    - Reduced rutting
    - Reduced displacement
    - Lower maintenance requirements

Where a gravel finish is used:

- Periodic top-up and regrading will be undertaken as part of site management

9. Verification and Site-Specific Adaptation

This design is based on initial assumptions. In line with best practice:

- Ground conditions will be verified on site prior to installation
- Any significant variation will be:

- Reviewed
- Adjusted in consultation with engineers and arboricultural advisors

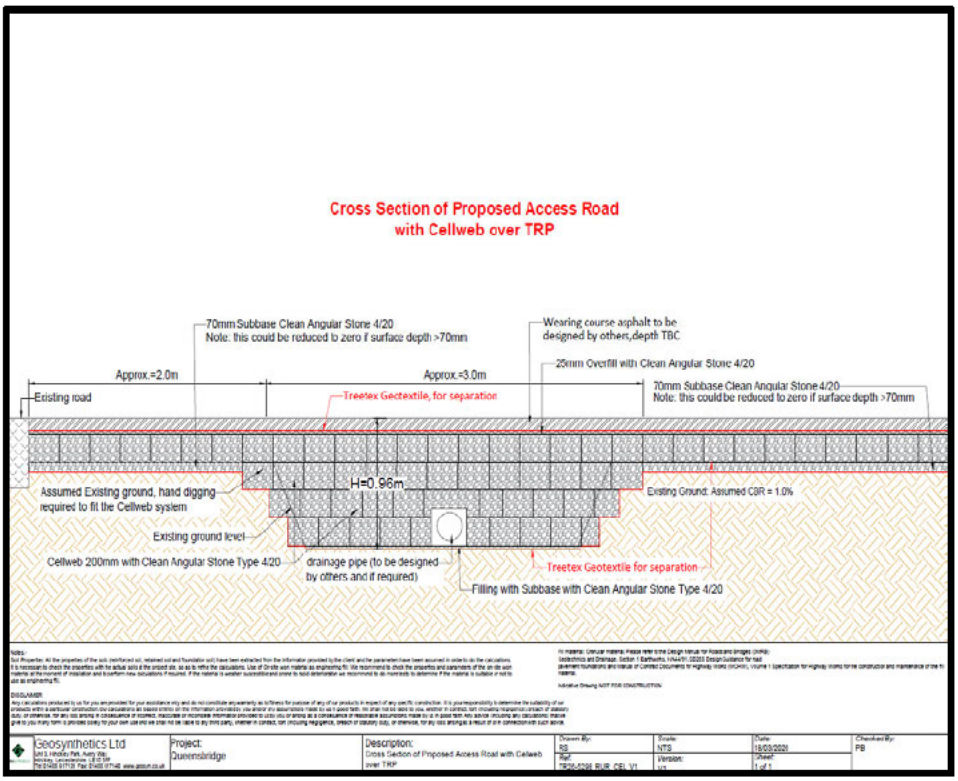
10. Conclusion

The proposed access road design represents a **balanced, site-responsive solution** that:

- Minimises impact on existing trees and root systems
- Avoids unnecessary excavation
- Provides a structurally sound access for intended use
- Improves drainage and long-term resilience of the lane
- Aligns with both highways and arboricultural best practice

Overall, the scheme demonstrates a **holistic design approach**, integrating:

- Engineering requirements
- Arboricultural protection
- Landscape sensitivity



Calculation Access Road build up with Cellweb

PARAMETERS-INFORMATION:

- Soil info: Assumed Cohesive
- Assumed CBR 1.0%
- Undrained Shear strength = 23Kpa (value used for calculation)
- Type of Traffic: Trucks/Std Construction Traffic up to 30Ton
- Assumed maximum Gross Vehicle Weight GVW ≤ 30,000 kg
- Assumed maximum axle load ≤ 100kN/axle
- Assumed Wheel Load ≤ 50kN/wheel

SOLUTION-BUILD-UP:

- Surface: Asphalt wearing course, as per cleint details, depth TBC.
- 1 layer Geotextile Treetex ,for separation.
- 25mm Overfill with Clean Angular Stone Type 4/20mm.
- Min: 1 Layers of Cellweb TRP 200mm infill with Clean Angular Stone Type 4/20mm.(Multi-layer apply to achieve the levels).
- 70mm Subbase with Clean Angular Stone Type 4/20mm.(This can be reduced to zero if surface depth > 70mm).
- 1 layer Geotextile Treetex, for separation

Landscaping

Any tree planting should take into consideration the available space for tree growth and development in order to ensure the trees are physically suited to the site at maturity. A specification for and notation relating to the precise alignment of replacement trees will be contained in the landscape proposals.

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

All excavations within the Root Protection Areas shall be undertaken by hand and without reducing current ground levels unless it is agreed in writing with the LPA. At no time is the use of a rotavator permitted within the RPAs of retained tree.

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

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

Monitoring and Supervision

Where trees have been identified within this method statement and tree protection plan drawing number Arbtech TPP 01 for retention, there should 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 to be undertaken within or adjacent to the RPAs of retained trees are to be supervised by project arboriculturist, who should be retained to record and report observations to the council at appropriate intervals.

Pre-commencement site meeting

Prior to the commencement of any works or machinery and materials arriving on site a pre-commencement site meeting involving the project arborist, landowner or agent, site manager, contractors and engineer (as appropriate) and the relevant LPA officers will be held to ensure that all aspects of the arboricultural method statement and tree protection are understood and for all parties to swap contact details (see Appendix 3).

Monitoring and supervision schedule

The initial monitoring visit will be to check that the tree protective measures are in the correct location and as specified within the approved method statement; if so to sign off their installation.

There after 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 determined with the LPA 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 during the course of the development it is necessary for areas to be re-designed so that they would require changes to the approved arboricultural method statement or tree protection plan and so affecting retained trees the project arborist and LPA tree officer will be invited to attend a site meeting with all relevant parties. Prior to any changes being implemented these must have been approved in writing by the LPA tree officer.

Supervision

The arboricultural consultant will be required to attend 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 prior to the commencement of any works that require his attendance, these will include:

1. Pre-commencement site meeting & location of protective measures.
2. Supervised installation of the cell-web access road within the RPAs of tree nos. T01 & T02.
3. Any demolition and or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).

Completion meeting

Once all construction works have been completed all materials and machinery has been removed from site the project arborist shall be informed and will invite the LPA tree officer to meet on site to discuss the process and discuss any final remedial works that may be required and to sign the development off so that the protective measures may be removed.

Appendix 1: Tree Survey Schedule

BS5837:2012 Tree Survey

Arbtech Consulting Ltd.
Chester Road
Chester
Cheshire
CH4 0DH
Phone: 01244661170
Mobile: N/A

Client: Steven Heighway
Project: Queensbridge Farm, Overton, Wrexham, LL13 0LE
Survey Date: 13/01/2025
Surveyor: Shaun Rowe

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	6	1	150	N	2	1	SM	A: 10.2	Good	C: Good	C.2
See comments for details				E	2	1		R: 1.8		S: Good	10+ yrs
				S	2	1				B: Not visible	
				W	2	1				Group plotted indicatively to GPS and site features. Group comprised of field maple and hawthorn. Stem diameter is a maximum estimate. Ivy growth throughout.	
G02										Estimated Measurements	
Various	16	1	350	N	4	4	EM	A: 55.4	Good	C: Good	B.2
See comments for details				E	4	4		R: 4.19		S: Good	20+ yrs
				S	4	4				B: Not visible	
				W	4	4				Group plotted indicatively to GPS and site features. Group comprised of early mature trees, individual locations not included within topographical survey. Species include poplar, silver birch, hazel and elder. Stem diameter is a maximum estimate.	
H01										Estimated Measurements	
A Hedge	1.5	1	75	N	0.5	0	SM	A: 2.5	Good	C: Good	C.2
See comments for details				E	0.5	0		R: 0.89		S: Good	10+ yrs
				S	0.5	0				B: Not visible	
				W	0.5	0				Well maintained, small section of hedge that continues to east. Stem diameter is a maximum estimate.	
H02										Estimated Measurements	
A Hedge	1.5	1	75	N	0.5	0	SM	A: 2.5	Good	C: Good	C.2
See comments for details				E	0.5	0		R: 0.89		S: Good	10+ yrs
				S	0.5	0				B: Not visible	
				W	0.5	0				Well maintained hedgerow. Stem diameter is a maximum estimate.	

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

Condition: C Crown; S Stem; B Basal area

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

ERC: Estimated Remaining Contribution

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
T01										Estimated Measurements	
Common Oak *Quercus robur*	12	1	1300	N 8 E 8.5 S 7.5 W 9	6 6 6 6	M	A: 707 R: 15	Good	C: Good S: Ivy B: Not visible	Tree growing within gap in hedge. Dense ivy from base into lower crown. Low level deadwood scattered around crown, typical for species. Surveyed from within field to east. Ganoderma bracket at base to southeast. Excellent landscape value.	A.1 40+ yrs
T02										Estimated Measurements	
Common Oak *Quercus robur*	14	1	1400	N 9.5 E 9 S 10 W 10	6 6 6 6	M	A: 707 R: 15	Good	C: Good S: Ivy B: Good	Tree growing to east of hedge. Dense ivy from base into lower crown. Low level deadwood scattered around crown, typical for species. Major deadwood to southeast overhanging field. Surveyed from within field to east. Excellent landscape value.	A.1 40+ yrs
T03										Estimated Measurements	
Field Maple *Acer campestre*	8	3	308 (Eq)	N 3 E 5.5 S 2 W 0.5	4 4 4 4	EM	A: 42.9 R: 3.69	Good	C: Good S: Good B: Good	Tree growing within group. Naturally suppressed crown. Multistemmed with natural bracing present.	C.1 10+ yrs
T04										Estimated Measurements	
Common Oak *Quercus robur*	12	1	480	N 6 E 5 S 4 W 6	6 6 6 6	M	A: 104.2 R: 5.75	Good	C: Good S: Good B: Good	Dominant tree within group. Ivy from base into central crown. Fungi fruiting c. 2 m north east of base, likely mycorrhizal.	B.1 20+ yrs
T05										Estimated Measurements	
Common Ash *Fraxinus excelsior*	15	1	550	N 6 E 6 S 6 W 4	8 6 8 8	M	A: 136.9 R: 6.6	Good	C: Good S: Ivy B: Good	Dominant tree within group. Ivy from base into central crown.	B.1 20+ yrs

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

Condition: C Crown; S Stem; B Basal area

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

ERC: Estimated Remaining Contribution

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
T06										Estimated Measurements	
Poplar *Populus sp.*	18	4	1072 (Eq)	N 6 E 6 S 6 W 6	10 10 10 10	M	A: 519.8 R: 12.86	Good	C: Good S: Good B: Not visible	Tree location plotted indicatively to GPS and site features. Multistemmed from base, no access to or view of basal area. Deadwood within lower crown, typical of species.	**B.1** 20+ yrs
T07										Estimated Measurements	
Unknown - -	8	1	350	N 0.5 E 0.5 S 0.5 W 0.5	0 0 0 0	EM	A: 55.4 R: 4.19	Dead	C: Poor S: Poor B: Poor	Standing dead tree.	**U** <10 yrs
W01										Estimated Measurements	
Various *See comments for details*	18	1	280	N 4 E 4 S 4 W 4	3 3 3 3	EM	A: 162.9 R: 7.2	Good	C: Good S: Good B: Good	Woodland located to the south of field. Stem diameter is an average estimate. Unmanaged woodland that is comprised mainly of poplar, Lawsons cypress and fir. Elder, larch and ash less common throughout. Few hung up and fallen trees within woodland. Dense ivy growth throughout. Limited access due to post and wire fence and ground conditions.	**B.2** 20+ yrs

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

Condition: C Crown; S Stem; B Basal area

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

ERC: Estimated Remaining Contribution

Appendix 2: Tree Protection Notice

(To be printed at A3 or larger)

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 3: Contact Details

Name	Position	Company	Contact
Steven Heighway	Client		
	Tree Officer		
Alan Thompson	Arboricultural Consultant	Arbtech Consulting Ltd.	01244 661170 07703 676216 at@arbtech.co.uk https://arbtech.co.uk
	Site Manager		
	Main contractor		

Document Production Record

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