



Arboricultural Impact Assessment to BS5837:2012

Boom Developments Ltd.

**Low Farm,
Wakefield Road,
Grange Moor,
Wakefield,
WF4 4BB.**

4 July 2023

Alan Thompson FdSc (Arb) MArborA

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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

Barton Hyett Associates received written instruction in February 2022 from Boom Developments Ltd to attend Low Farm, Wakefield Road, Grange Moor, Wakefield, West Yorkshire, WF4 4BB 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 and Arboricultural Impact Assessment.

ArbtechConsulting Limited (Arbtech) received written instruction in April 2023 from Boom Developments Ltd to produce the Arboricultural Method Statement and Tree Protection Plan for the project.

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.



Figure 1: OS Map (Bing Maps) showing site location.



Figure 2: Aerial Image of Survey Area (Google Earth) illustrating site boundary.

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

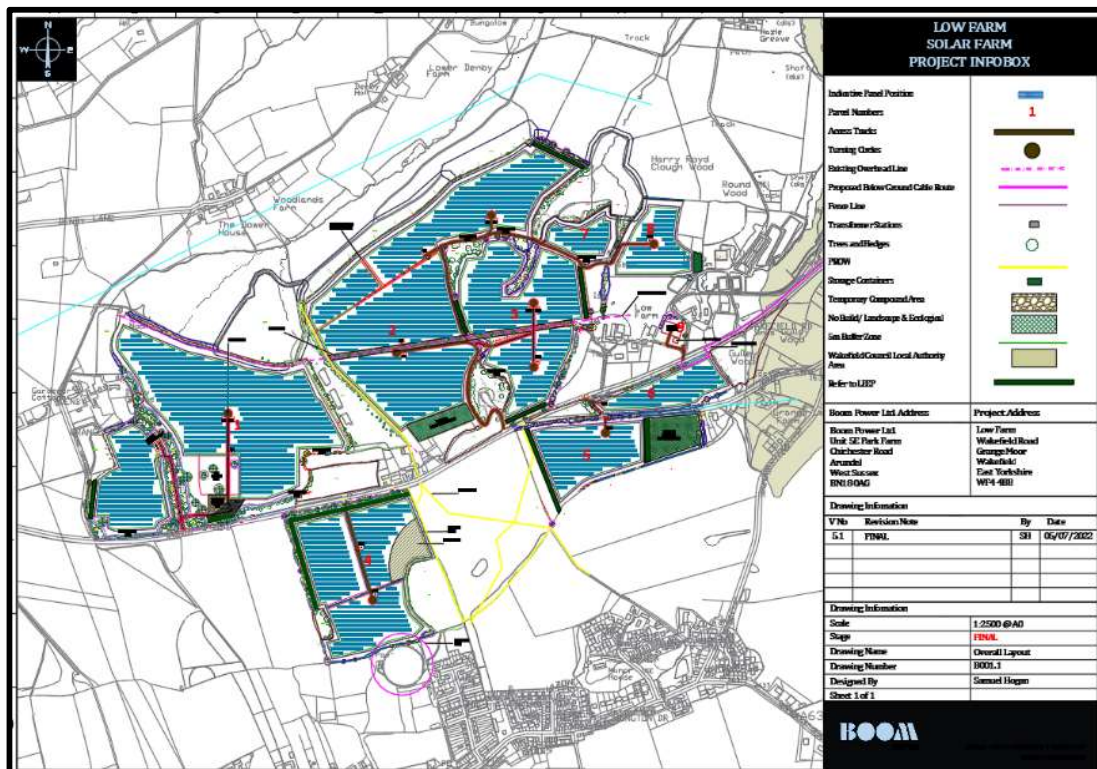
Subsequently, this report has been produced, balancing the layout of the proposed development against the competing needs of trees. This report comprises all of the requisite elements of an arboricultural implications assessment, method statement and supporting plans.

Checklist for Submission to Local Planning Authority

Tree survey	☒
Tree constraints plan	☒
Arboricultural impact assessment	☒
Arboricultural method statement	☒
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.

Proposal



N.B. It is noted that the masterplan may be altered slightly as the development design progresses. However, the intention that infrastructure will not be located within any tree RPAs and no new access tracks will be proposed will be adhered to in any future iteration of the scheme design so that the findings of this report remain valid.

General Information

Client: Boom Developments Ltd.

Site: Low Farm, Wakefield Road, Grange Moor, Wakefield, West Yorkshire, WF4 4BB

Brief proposal description: Construction of solar power farm with associated access tracks, transformer compounds, ancillary infrastructure & fencing.

Table 1: Documents referred to.

Document	Reference No.
Topographical Survey	31351 NGLS
Proposed layout drawing	LOFA – B001 v5.1
Landscape master plan drawing	N/A
LPA pre-app comments	N/A
British Standard 5837:2012	“BS5837”
Arboricultural Impact Assessment	LOFA-KIRK-APRVD-AIA-Rpt-v1.0
Tree Protection Plan	Arbtech TPP 01 Rev A

Tree Survey

Survey: An arboricultural survey to BS5837 of all trees within impacting distance of the site was undertaken by Dave Holmes of Barton Hyett Associates on 9th & 10th of March 2022.

A total of 101No. individual trees, 33No. hedges, 67No. groups of trees and 16No. wooded areas were surveyed. Details for each of the trees surveyed are provided in the Schedule of Trees (see Appendix 3)

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

Document	Originator	Reference Number	Title
Topographical Survey	Survey Solutions	31351NGLS	LOFA Topo

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 Barton Hyett Associates, Tree Survey Schedule (Appendix 1).

Arboricultural Impact Assessment

Table 3: Documents upon which this assessment has been based

Document	Originator	Reference Number	Title
Topographical Survey	Survey Solutions	31351NGLS	LOFA Topo
Proposal	Boom Developments Ltd.	LOFA – B001 v5.1	Overall Planning Layout

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
T7	Sycamore	Access Track	RPA
T23	Sycamore	Access Track	RPA
T24	Beech	Access Track	RPA
T35	Oak	Access Track	RPA
T36	Sycamore	Access Track	RPA
T39	Ash	Access Track	RPA
T77	Sycamore	Access Track	RPA
T91	Oak	Access Track	RPA
G39	Various	Access Track	RPA
G40	Ash	Access Track	RPA

Tree Number	Species	Structure	Incursion
G59	Various	Access Track	RPA
G62	Various	Access Track	RPA
G63	Various	Access Track	RPA
W7	Various	Access Track	RPA

Trees to be removed.

The proposal requires the removal of one category C tree, and the partial removal of a small section of category B hedgerow.

Table 5: Number of individual trees to be removed.

U	A	B	C
0	0	0	1

Table 6: Number of groups to be removed. Indicates partial removal of hedge/group () represents partial removal of a group or hedge.

U	A	B	C
0	0	0 (1)	0

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
Topographical Survey	Survey Solutions	31351NGLS	LOFA Topo
Proposal	Boom Developments Ltd.	LOFA – B001 v5.1	Overall Planning Layout

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
T22	Sycamore	Fell to ground level; remove stump	C ₁
G59	Various	Crown lift to 4m above access road to give clearance for site traffic & plant machinery.	A ₁₂
H7	Hawthorn	Removal of small section of hedge to facilitate construction of access track into southern field in zone 4.	B ₂

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.

Tree removal

A tree should be felled in one piece only when there is no significant risk of damage to people, property or protected species (see Annex A).

Where restrictions (e.g. lack of space, buildings, other features, land ownership or use, or other trees which are to be retained) cannot be overcome, trees should be dismantled in sections.

This also applies where a tall stump is being retained but where branches are to be removed/pruned.

Extensively decayed trees can be unpredictable when they are being felled, and special precautions should therefore be taken, such as the use of a winch to guide the direction of fall.

Stump removal – stump grinding

Stump grinding should be to a minimum of 300mm deep or to extend through the base of the stump leaving the major roots disconnected if the intention is to reduce the potential for the spread of Honey fungus.

The grinding residue should be treated as arising's and removed from site.

NOTE Mechanical destruction of a stump by stump grinding is less disruptive to the site than digging out.

The hole left by stump removal, should be filled with soil or other material. The filling should be appropriate for future site usage, and for any surface treatment that is to be installed.

Where future plant growth is desired, the backfill material should be firmed in 150 mm layers by treading, avoiding excessive compaction and destruction of the soil structure.

Stump removal - digging

Stump removal by digging out should include disposal/utilisation of woody material (see Clause 13).

NOTE Whether done by hand or machine, digging out can cause severe disturbance of the site.

Where possible, when winching out a stump, a ground or other type of anchor should be used rather than a tree to be retained. If there is no alternative to using such a tree as an anchor, appropriate protective measures should be adopted.

After stump removal

The hole left by stump removal, whether by digging out or grinding, should be filled with soil or other material. The filling should be appropriate for future site usage and for any surface treatment that is to be installed.

Where future plant growth is desired, the back fill material should be firmed in 150mm layers by treading, avoiding excessive compaction and destruction of the soil structure.

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 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.
- 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 banksmen 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	Compound/Site set up
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 from 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 sited and aligned in accordance with the tree protection plan TPP 01 (Appendix 1) prior to the commencement of any works or the introduction of any machinery or material to site.

In the event that the protective measures and their positions do not comply with this arboricultural method statement document number Arbtech AMS 01 (04-07-23) 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 (04-07-23) 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

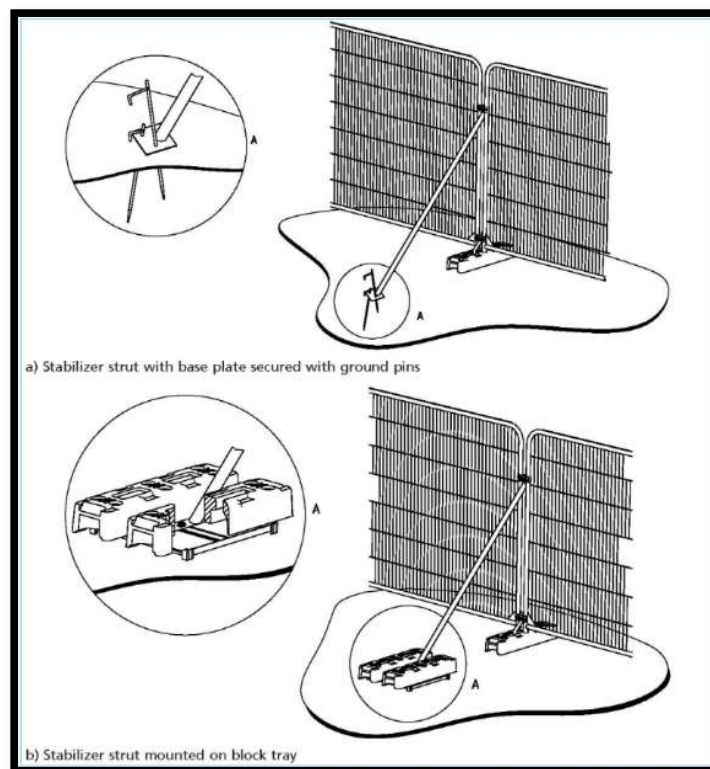
To be erected prior to the commencement of all works on site and retained in place throughout construction.

Due to the large size of the site & the low impact nature of the proposal, protective fencing has only been specified for trees/groups of trees/hedges in proximity of high use zones such as the site access road, site tracks, the site compound and transformers compounds.

The proposed perimeter fencing, once installed, will also act a protective barrier for the trees/hedges at the site during construction.

Protective 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.

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



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.

Access Tracks

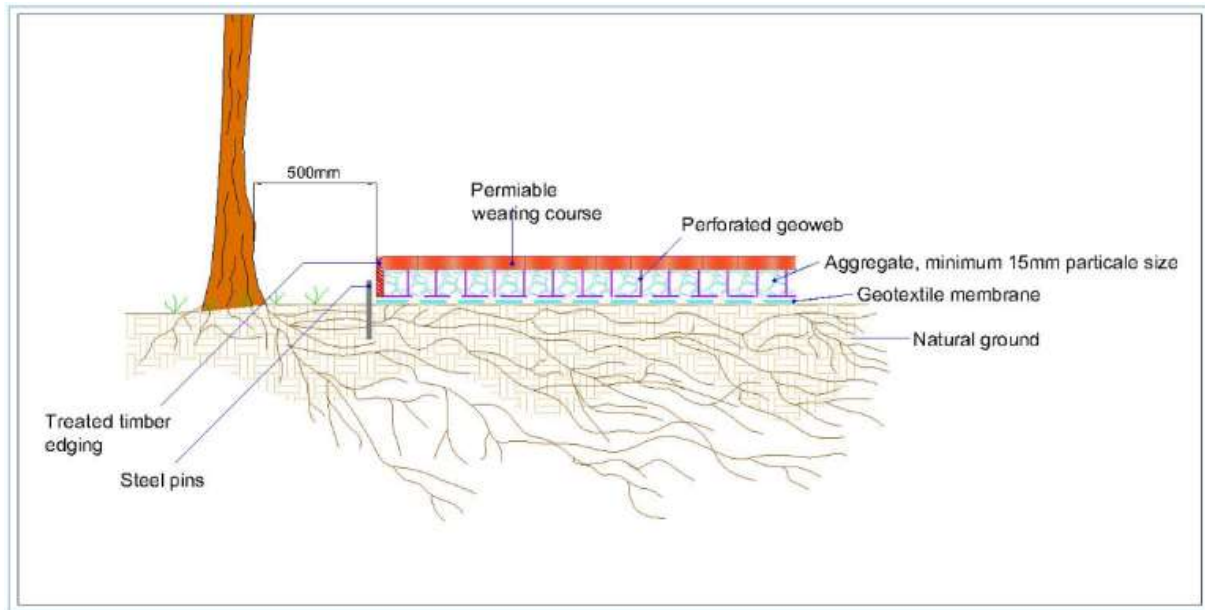
New hard surfacing to be situated within the RPAs of trees T7, T23, T24, T35, T36, T39, T77, T91, groups G39, G40, G59, G62, G63 & woodland W7 is to be designed in conjunction with arboricultural advice to accommodate the likely loading. The removal of the turf layer or other surface vegetation may be acceptable if necessary, but ideally the construction will be situated entirely above the existing ground level..

Multi-dimensional confinement system

A multi-dimensional confinement system (such as CellWeb™ or similar) will be used, it is to be laid entirely above the existing soil surface over a geo textile 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 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 a permeable geotextile fabric and the finished wearing course 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 should be set above ground level and should 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.



Typical 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 edges of the required area by 300mm;
- Overlap any joints by 300mm 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 center cell at one end of the panel and secure it into the ground;
- Pull out the MDC to its full length (see manufacturers specifications), place a steel pin in the center at the opposite end and secure it into the ground;
- Pull out the MDC to its full width (see manufacturers specifications), and secure each corner into the ground with steel pins;
- Create a panel to the correct size using the required number of steel pins (as per the manufacture specifications);
- Make sure all cells are fully extended (as per manufactures specifications);
- Staple adjacent panels together (as per manufacturers 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 or loimestone) angular stone (as per manufactures 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;
- No compaction is requires of the infill. Do not use a whacker plate, roller or any other means of compaction.

e) Edge restraints

- All kerb edging should 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 top soil and or mulch.

f) Wearing course

- Install a permeable geotextile membrane, over lapping any joints by 300mm before laying the wearing course;
- Surfaces will be loose gravel,
- Within RPAs the wearing course shall be permeable to both water and air.

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 4).

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

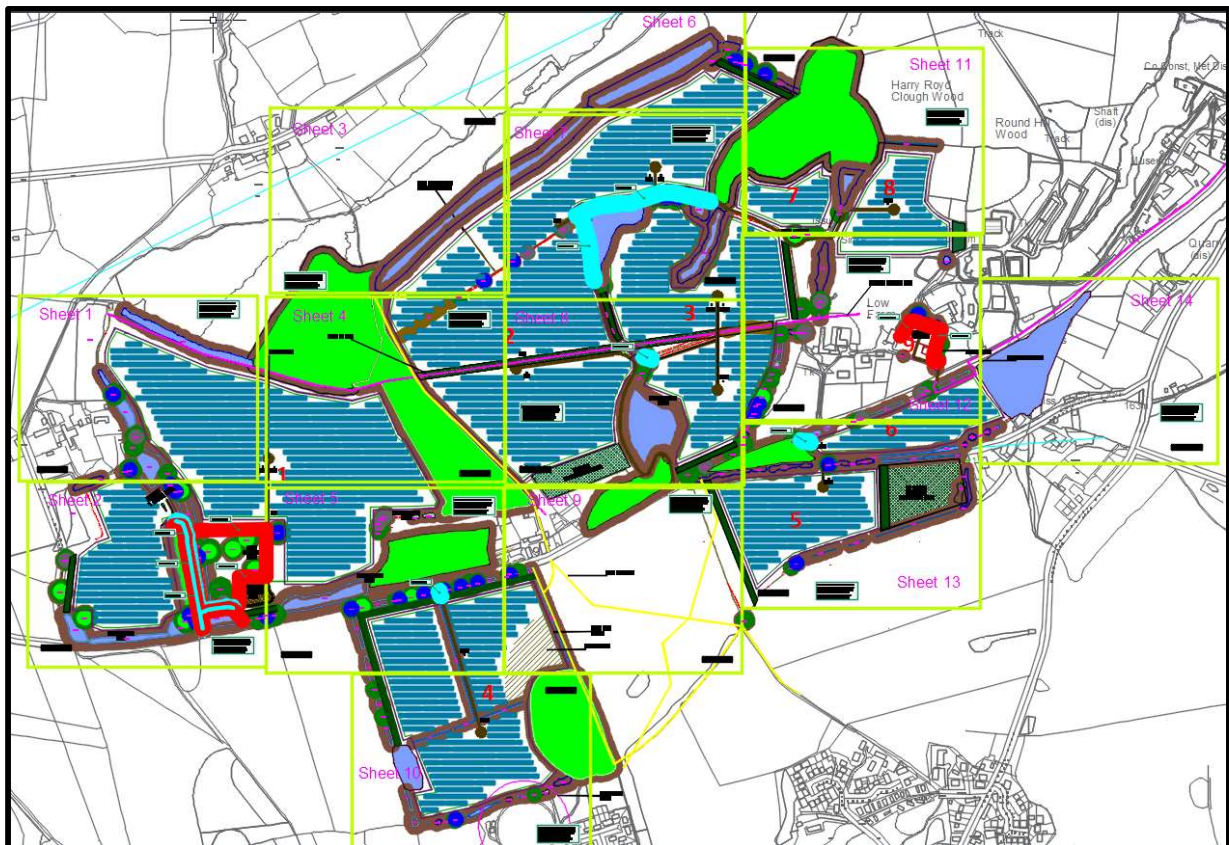
The arboricultural consultant will be required to attend site to directly supervise all demolition and construction works that are to be undertaken within or adjacent to the RPAs of all retained trees and will be advised a minimum of 72 hours prior to the commencement of any works that require his attendance,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

1. Pre-commencement site meeting.
2. Location of protective measures.
3. Installation of no-dig surfacing within RPAs.
4. 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.

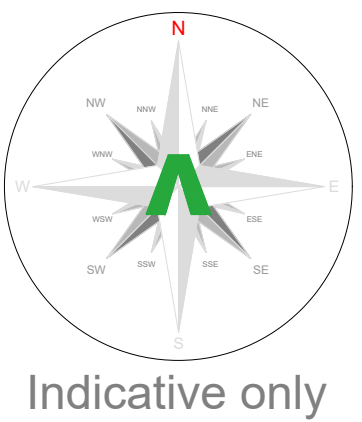
Appendix 1: Tree Protection Plan



TPP 01 – Sheet-plan

Sheet 1

Note: No unauthorised excavations are to be carried out within the RPAs of any retained trees. Any level changes must form part of a construction method statement & must protect the rooting environments of all retained trees.



Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

Category 'U' - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.

Category 'V' - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

Category 'W' - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

Category 'X' - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 100mm.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Area (RPA) should be defined around each of the category U, W and X trees. This is a minimum area in which should be left undisturbed around each retained tree.

The RPA is calculated using the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.
The calculated RPA is capped to 707mm, which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Protective Fencing

To be erected prior to the commencement of all works on site, and retained in place throughout construction.
Fencing has only been specified for trees in proximity of high usage zones such as the site access road, site tracks, the site compound and transformers compounds.
The proposed perimeter fencing, once installed, will also act as a protective barrier for the trees/hedges at the site during construction.
Specification: To comprise of 2m tall welded mesh panels on rubber or concrete feet. Panels are to be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate and secured with ground pins.
All weather notices should be erected at regular intervals on the wind mesh panels with words such as "Construction exclusion zone - Keep out".

Tree Protection Area
KEEP OUT
Do not move this fence

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND ARE THE SUBJECT OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION.
ANY ENCROACHMENT INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

'No Dig' Surfacing

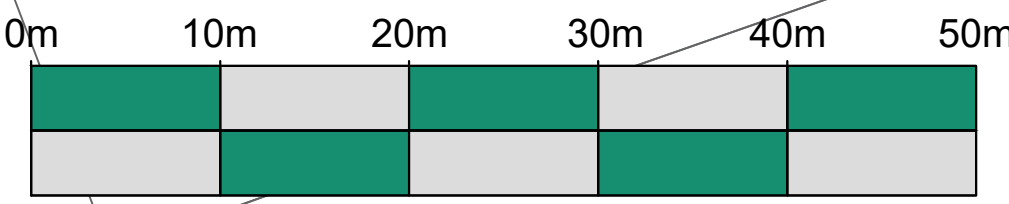
Multi-dimensional confinement system
Existing vegetation may be removed with hand tools or sprayed with an approved non residual herbicide such as 'Glyphosate'. The new hard surfacing will be constructed using a 'No Dig' surfacing situated entirely above the existing soil surface and where needed using a proprietary cellular confinement system (GeoWeb or similar) laid over a geotextile geogrid (Tensar TriAx or similar). Prior to this any small hollows on the surface may be filled with clean sharp sand (not building sand) to a maximum depth of 100mm. 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 marked up with clean top soil.
NB: 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. Installation of no dig surfacing above RPAs.
4. Any demolition and/or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).

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 site development may be implemented without detriment to retained trees.



TX3



Project:

Low Farm, Wakefield Road, Grange Moor, Wakefield, WF4 4BB.

Client:

Boom Developments Ltd.

Drawing:

Tree Protection Plan

Based on:

LOFA - Overall Layout B001 v5.1

Drawing No:

Arbtech TPP 01 Sheet 1 of 14

Date:

May 2023

Scale:

1:400 @ A0

Drawn:

AST

Key:

Tree No.:	T01	Tree Category:	Category 'U' trees	RPA:	
Category 'A' group:		Category 'W' trees:		Category 'X' trees:	
Category 'B' group:		Category 'C' trees:		Category 'D' trees:	
Category 'E' group:		Category 'F' trees:		Category 'G' trees:	
Category 'H' group:		Category 'I' trees:		Category 'J' trees:	
Category 'K' group:		Category 'L' trees:		Category 'M' trees:	
Category 'N' group:		Category 'O' trees:		Category 'P' trees:	
Category 'Q' group:		Category 'R' trees:		Category 'S' trees:	
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Sheet 2

TX1/EOP & Storage Cont.

Protective fencing

No Dig Surfacing

TREE SHADING AREA

Temporary Compound Area

Note: No unauthorised excavations are to be carried out within the RPAs of any retained trees. Any level changes must form part of a construction method statement & must protect the rooting environments of all retained trees.

Tree Categories

Category A - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.

Category B - Trees of moderate quality with an estimated remaining life expectancy of at least 40 years.

Category C - Trees of low quality with an estimated remaining life expectancy of at least 20 years.

Category D - Trees of fair quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Areas (RPAs) should be planted around each of the category A, B and C trees. This is a minimum area in m² which should be left undisturbed around each retained tree.

The RPA is calculated using the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.

The calculated RPA is capped to 707m², which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is redefined to more accurately reflect the likely distribution of the roots.

Protective Fencing

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

Fencing has only been specified for trees in proximity of high usage zones such as the site access road, site tracks, the site compound and transformers compounds.

The proposed perimeter fencing, once installed, will also act as a protective barrier for the trees/hedges at the site during construction.

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 end-tamper couplers, installed so that they can only be removed from outside the fence. The gates should be supported on the inner side by stabilizer struts, which should be attached to a base plate and secured with ground pins.

All weather notices should be erected at regular intervals on the windward panels with words such as "Construction exclusion zone - Keep Out".

'No Dig' Surfacing

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 3-level geogrid (similar 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 100mm. The 'GeoWeb®' is to be back-filled by hand with a no-fines aggregate of 20mm - 25mm. 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 backed up with chain link rail.

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:

- Pre-commencement site meeting.
- Location of protective measures.
- Installation of no-dig surfacing above RPAs.
- Any demolition and/or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).

Arboricultural Method Statement

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

arbrech

Unit 3, Well House Barns, Checkley, CH4 6DH
https://arbrech.co.uk, 01244 661170

Project:
**Low Farm,
Wakefield Road,
Grange Moor,
Wakefield,
WF4 4BB.**

Client:
Boom Developments Ltd.

Drawing:
Tree Protection Plan

Based on:
LOFA - Overall Layout B001 v5.1

Drawing No:
Arbrech TPP 01 Sheet 2 of 14

Date:
May 2023

Scale:
1:400 @ A0

Drawn:
AST

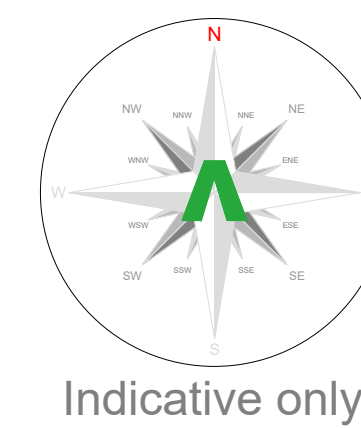
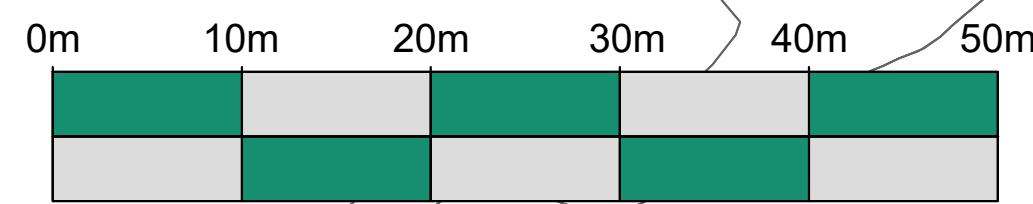
Key:

Tree Nos.	Tree Category	RPA	Site
T01	Category A group	Category A group	Category A group
	Category B group	Category B group	Category B group
	Category C group	Category C group	Category C group

Protective Fencing

Arboricultural Supervision
No Dig FBS
Temporary Site Compound

Sheet 3



Indicative only

Woodlands

Farm

Field Access Point -
North of Built Wall

W12 -B2

Note: No unauthorised excavations are to be carried out within the RPAs of any retained trees. Any level changes must form part of a construction method statement & must protect the rooting environments of all retained trees.

Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

Category 'U' - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.

Category 'V' - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

Category 'W' - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

Category 'X' - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 100mm.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Area (RPA) should be defined around each of the category A, B and C trees. This is a minimum area in which should be left undisturbed around each retained tree.

The RPA is calculated using the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.

The calculated RPA is capped to 707m², which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Protective Fencing

To be erected prior to the commencement of all works on site, and retained in place throughout construction. Fencing has only been specified for trees in proximity of high usage zones such as the site access road, site tracks, the site compound and transformers compounds.

The proposed perimeter fencing, once installed, will also act as a protective barrier for the trees/hedges at the site during construction.

Specifications: To comprise of 2m tall welded mesh panels on rubber or concrete feet. Panels are to be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate and secured with ground pins. All weather notices should be erected at regular intervals on the wind mesh panels with words such as "Construction exclusion zone - Keep out".

Tree Protection Area

KEEP OUT

Do not move this fence

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED ON THIS MAP ARE PROTECTED BY PLANNING CONDITIONS IMPOSED AND 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
Tree Protection Specialist
Unit 3, Well House Barns, Chester, CH4 0DH
Tel: 01244 681170
http://arbttech.co.uk

'No Dig' Surfacing

Multi-dimensional 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 150mm geo-grid (Tensar TriAx or similar). Prior to this any small hollows on the surface may be filled with clean sharp sand and (if build on 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 marked up with clean top soil.

NB: 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. Installation of no dig surfacing above RPAs.
4. Any demolition and/or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).

Arboricultural Method Statement

Please refer to Arbttech Consulting Ltd. Tree Schedule and Arboricultural Method Statement, for full details on all surveyed trees and how all aspects of the site development may be implemented without detriment to retained trees.



Unit 3, Well House Barns, Chester, CH4 0DH
http://arbttech.co.uk, 01244 681170

Project:

Low Farm,
Wakefield Road,
Grange Moor,
Wakefield,
WF4 4BB.

Client:

Boom Developments Ltd.

Drawing:

Tree Protection Plan

Based on:

LOFA - Overall Layout B001 v5.1

Drawing No:

Arbttech TPP 01 Sheet 3 of 14

Rev:

Date:

May 2023

Scale:

1:400 @ A0

Drawn:

AST

Key:

Tree No.:	T01	Tree Categories:	RPAs	
Category 'A' groups:		Category 'A' trees:	Category 'B' trees:	Category 'C' trees:
Category 'B' groups:		Category 'B' trees:	Category 'C' groups:	Category 'C' trees:
Protective fencing:	Arboricultural 'No Dig' v5:	Temporary Site Compound:		

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This drawing is the property of Arbttech Consulting Ltd. and is not to be used for any other purpose without the written consent of Arbttech Consulting Ltd.
This drawing is to be used as a reference only and is not a substitute for a detailed design or method statement.
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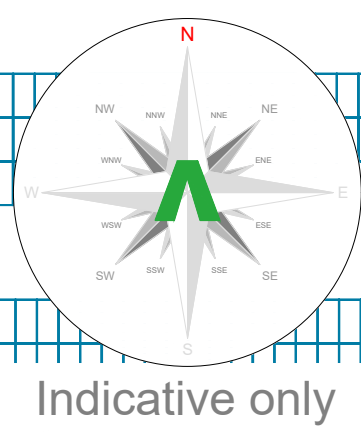
Sheet 4

W14 -A2

Refer to LEEP

Planning Circle

Note: No unauthorised excavations are to be carried out within the RPAs of any retained trees. Any level changes must form part of a construction method statement & must protect the rooting environments of all retained trees.



Indicative only

Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

Category 'U' - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.

Category 'V' - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

Category 'W' - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

Category 'X' - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 100mm.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Area (RPA) should be plotted around each of the category 'U', 'V' and 'W' trees. This is a minimum area in which should be left undisturbed around each retained tree.

The RPA is calculated using the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.
The calculated RPA is capped to 7.07m, which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Protective Fencing

To be erected prior to the commencement of all works on site, and retained in place throughout construction.
Fencing has only been specified for trees in proximity of high usage zones such as the site access road, site tracks, the site compound and transformers compounds.
The proposed perimeter fencing, once installed, will also act as a protective barrier for the trees/hedges at the site during construction.
Specification: To comprise of 1m tall white-topped panels on rubber or concrete feet. Panels are to be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate and secured with ground pins.
All weather notices should be erected at regular intervals on the windward panels with words such as "Construction exclusion zone - Keep out".

Tree Protection Area
KEEP OUT

Do not move this fence

(TOWN & COUNTRY PLANNING ACT 1990)
TREES EXCLUDED FROM THE ACT ARE PROTECTED BY PLANNING CONDITIONS IMPOSED AND ARE THE SUBJECT OF A TREE PRESERVATION ORDER. CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION.
ANY ENCROUSMENT INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

ARBTECH

'No Dig' Surfacing

Multi-dimensional 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 150mm geo-grid (terraz Trak or similar). Prior to this any small hollows on the surface may be filled with clean sharp sand (not building sand) to a maximum depth of 100mm. 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 marked up with clean top soil.
NB: 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. Installation of no dig surfacing above RPAs.
4. Any demolition and/or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).

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 site development may be implemented without detriment to retained trees.

arbtech

Unit 3, Well House Barns, Chester, CH4 0DH
http://arbtech.co.uk, 01244 681170

Project:

Low Farm,
Wakefield Road,
Grange Moor,
Wakefield,
WF4 4BB.

Client:

Boom Developments Ltd.

Drawing:

Tree Protection Plan

Based on:

LOFA - Overall Layout B001 v5.1

Drawing No:

Arbtech TPP 01 Sheet 4 of 14

Date:

May 2023

Scale:

1:400 @ A0

Drawn:

AST

Key:

Tree Nos.

Tree Categories

RPAs

Category 'A' trees

Category 'B' trees

Category 'C' trees

Category 'U' trees

Category 'V' trees

Category 'W' trees

Category 'X' trees

Category 'Y' trees

Category 'Z' trees

Category 'AA' trees

Category 'BB' trees

Category 'CC' trees

Category 'DD' trees

Category 'EE' trees

Category 'FF' trees

Category 'GG' trees

Category 'HH' trees

Category 'II' trees

Category 'JJ' trees

Category 'KK' trees

Category 'LL' trees

Category 'MM' trees

Category 'NN' trees

Category 'OO' trees

Category 'PP' trees

Category 'QQ' trees

Category 'RR' trees

Category 'SS' trees

Category 'TT' trees

Category 'UU' trees

Category 'VV' trees

Category 'WW' trees

Category 'XX' trees

Category 'YY' trees

Category 'ZZ' trees

Category 'AAA' trees

Category 'BBB' trees

Category 'CCC' trees

Category 'DDD' trees

Category 'EEE' trees

Category 'FFF' trees

Category 'GGG' trees

Category 'HHH' trees

Category 'III' trees

Category 'JJJ' trees

Category 'KKK' trees

Category 'LLL' trees

Category 'MMM' trees

Category 'NNN' trees

Category 'OOO' trees

Category 'PPP' trees

Category 'QQQ' trees

Category 'RRR' trees

Category 'SSS' trees

Category 'TTT' trees

Category 'UUU' trees

Category 'VVV' trees

Category 'WWW' trees

Category 'XXX' trees

Category 'YYY' trees

Category 'ZZZ' trees

Category 'AAA'

Category 'BBB'

Category 'CCC'

Category 'DDD'

Category 'EEE'

Category 'FFF'

Category 'GGG'

Category 'HHH'

Category 'III'

Category 'JJJ'

Category 'KKK'

Category 'LLL'

Category 'MMM'

Category 'NNN'

Category 'OOO'

Category 'PPP'

Category 'QQQ'

Category 'RRR'

Category 'SSS'

Category 'TTT'

Category 'UUU'

Category 'VVV'

Category 'WWW'

Category 'XXX'

Category 'YYY'

Category 'ZZZ'

Category 'AAA'

Category 'BBB'

Category 'CCC'

Category 'DDD'

Category 'EEE'

Category 'FFF'

Category 'GGG'

Category 'HHH'

Category 'III'

Category 'JJJ'

Category 'KKK'

Category 'LLL'

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Category 'NNN'

Category 'OOO'

Category 'PPP'

Category 'QQQ'

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Category 'BBB'

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Category 'GGG'

Category 'HHH'

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Category 'RRR'

Category 'SSS'

Category 'TTT'

Category 'UUU'

Category 'VVV'

Category 'WWW'

Category 'XXX'

Category 'YYY'

Category 'ZZZ'

Category 'AAA'

Category 'BBB'

Category 'CCC'

Category 'DDD'

Category 'EEE'

Category 'FFF'

Category 'GGG'

Category 'HHH'

Category 'III'

Category 'JJJ'

Category 'KKK'

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Category 'MMM'

Category 'NNN'

Category 'OOO'

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Category 'YYY'

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Category 'AAA'

Category 'BBB'

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Category 'QQQ'

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Sheet 5

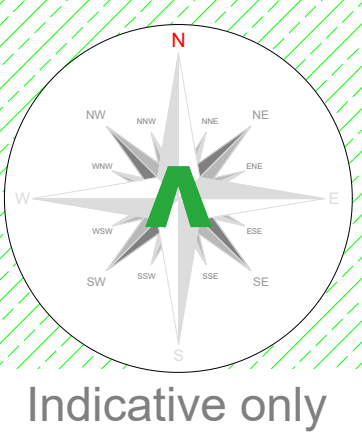
TX2

TREE SHADING
AREA

TREE SHADING
AREA

No Dig Surfacing

Note: No unauthorised excavations are to be carried out within the RPAs of any retained trees. Any level changes must form part of a construction method statement & must protect the rooting environments of all retained trees.



Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

Category 'U' - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.

Category 'V' - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

Category 'W' - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

Category 'X' - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 100mm.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Area (RPA) should be defined around each of the category 'U', 'W' and 'X' trees. This is a minimum area in which should be left undisturbed around each retained tree.

The RPA is calculated using the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

The calculated RPA is capped to 707m², which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Protective Fencing

To be erected prior to the commencement of all works on site, and Fencing has only been specified for trees in proximity of high usage zones such as the site access road, site tracks, the site compound and transformers compounds.

The proposed perimeter fencing, once installed, will also act as a protective barrier for the trees/hedges at the site during construction.

Specification: To comprise of 4ft tall white mesh panels on rubber or concrete feet. Panels are to be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate and secured with ground pins.

All weather notices should be erected at regular intervals on the white mesh panels with words such as "Construction exclusion zone - Keep out".

Tree Protection Area

KEEP OUT

Do not move this fence

(TOWN & COUNTRY PLANNING ACT 1990)

TREES EXCLUDED FROM REMOVAL ARE PROTECTED BY PLANNING CONDITIONS IMPOSED AND 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

No Dig' Surfacing

ARBTECH

ARBTECH CONSULTING LTD. 1000 Wakefield Road, Wakefield, WF4 4BB. Tel: 01242 681170. Email: info@arbtech.co.uk

Multi-dimensional 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 raised geo-grid (Tensar Triax or similar). Prior to this any small hollows on the surface may be filled with clean sharp sand (not building sand) to a maximum depth of 100mm. 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 marked up with clean top soil.

SB: 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. Installation of no dig surfacing above RPAs.
4. Any demolition and/or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).

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 site development may be implemented without detriment to retained trees.

arbtech

Unit 3, Well House Barns, Chester, CH4 0DH
http://arbtech.co.uk, 01242 681170

Project:

Low Farm,
Wakefield Road,
Grange Moor,
Wakefield,
WF4 4BB.

Client:

Boom Developments Ltd.

Drawing:

Tree Protection Plan

Based on:

LOFA - Overall Layout B001 v5.1

Drawing No:

Arbtech TPP 01 Sheet 5 of 15

Date:

May 2023

Scale:

1:400 @ A0

Drawn:

AST

Key:

Tree Nos.	T01	Tree Compiles		RPAs	
Category 'A' groups		Category 'A' trees		Category 'B' trees	
Category 'B' groups		Category 'B' trees		Category 'C' trees	
Protective Fencing		Arboricultural 'No Dig' H&S		Temporary Site Compound	

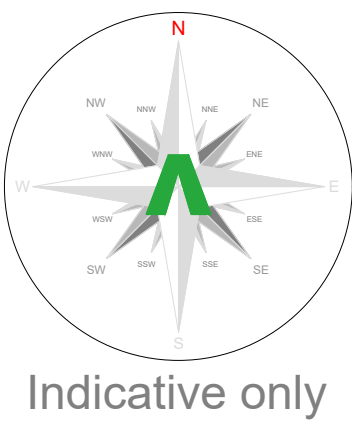
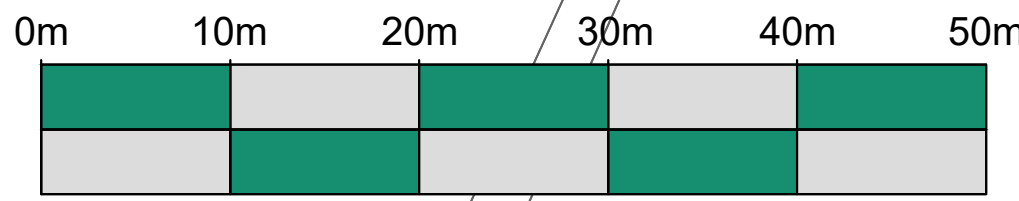
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Sheet 6

Lower Denby

Farm

Note: No unauthorised excavations are to be carried out within the RPAs of any retained trees. Any level changes must form part of a construction method statement & must protect the rooting environments of all retained trees.



Indicative only

Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

Category 'U': Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.

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Category 'X': Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 100mm.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Area (RPA) should be defined around each of the category A, B and C trees. This is a minimum area in which should be left undisturbed around each retained tree.

The RPA is calculated using the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.

The calculated RPA is capped to 707m², which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Protective Fencing

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

Fencing has only been specified for trees in proximity of high usage zones such as the site access road, site tracks, the site compound and transformers compounds.

The proposed perimeter fencing, once installed, will also act as a protective barrier for the trees/hedges at the site during construction.

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

All weather notices should be erected at regular intervals on the wind mesh panels with words such as "Construction exclusion zone - Keep out".

Tree Protection Area
KEEP OUT

Do not move this fence

(TOWN & COUNTRY PLANNING ACT 1990)

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECT OF A TREE PRESERVATION ORDER. ANY 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

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Unit 3, Well House Barns, Chester, CH4 0DH
Tel: 01244 681170
www.arbtech.co.uk

'No Dig' Surfacing

Multi-dimensional 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 geotextile (Geotext Trak or similar). Prior to this any small hollows on the surface may be filled with clean sharp sand (not building 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 should 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 marked up with clean top soil.

NB: 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. Installation of no dig surfacing above RPAs.
4. Any demolition and/or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).

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 detriment to retained trees.

arbtech

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http://arbtech.co.uk, 01244 681170

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Wakefield,
WF4 4BB.

Client:
Boom Developments Ltd.

Drawing:
Tree Protection Plan

Based on:
LOFA - Overall Layout B001 v5.1

Drawing No:
Arbtech TPP 01 Sheet 6 of 16

Date:
May 2023

Scale:
1:400 @ A0

Rev:
AST

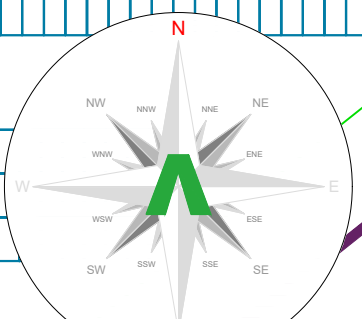
Key:

Tree Nos.:	T01	Tree Categories:	RPAs:	
Category 'A' groups:		Category 'A' trees:	Category 'B' trees:	
Category 'B' groups:		Category 'C' trees:	Category 'D' trees:	
Protective Fencing:	Arboricultural 'No Dig' H&S:	Temporary H&S Compound:		

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Sheet 7

Note: No unauthorised excavations are to be carried out within the RPAs of any retained trees. Any level changes must form part of a construction method statement & must protect the rooting environments of all retained trees.



Indicative only

Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

Category 'U' - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.

Category 'V' - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

Category 'W' - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

Category 'X' - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 100mm.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Area (RPA) should be defined around each of the category 'U', 'W' and 'X' trees. This is a minimum area in m which should be set out and maintained around each retained tree.

The RPA is calculated using the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

The calculated RPA is capped to 707m², which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Protective Fencing

To be erected prior to the commencement of all works on site, and Fencing has only been specified for trees in proximity of high usage zones such as the site access road, site tracks, the site compound and transformers compounds.

The proposed perimeter fencing, once installed, will also act as a protective barrier for the trees/hedges at the site during construction.

Specification: To comprise of 1m tall welded mesh panels on rubber or concrete feet. Panels are to be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate and secured with ground pins.

All weather notices should be erected at regular intervals on the wind mesh panels with words such as "Construction exclusion zone - Keep out"

Tree Protection Area

KEEP OUT

Do not move this fence

(TOWN & COUNTRY PLANNING ACT 1990)

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND ARE THE SUBJECT OF A TREE PRESERVATION ORDER. ANY 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

'No Dig' Surfacing

Multi-dimensional 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 coarse geo-grid (linear TriAx or similar). Prior to this any small hollows on the surface may be filled with clean sharp sand (not building sand) to a maximum depth of 100mm. 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 marked up with clean top soil.

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. Installation of no dig surfacing above RPAs.

4. Any demolition and/or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).

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 site development may be implemented without detriment to retained trees.

ar**tech**

Unit 3, Well House Barns, Chester, CH4 0DH
http://arbtech.co.uk, 01244 661170

Project:

Low Farm, Wakefield Road, Grange Moor, Wakefield, WF4 4BB.

Client:

Boom Developments Ltd.

Drawing:

Tree Protection Plan

Based on:

LOFA - Overall Layout B001 v5.1

Drawing No:

Arbtech TPP 01 Sheet 7 of 15

Date:

May 2023

Scale:

1:400 @ A0

Drawn:

AST

Key:

T01

Tree Categories

Category 'A' trees

Category 'B' trees

Category 'C' trees

Category 'U' trees

Category 'V' trees

Category 'W' trees

Category 'X' trees

Root Protection Area

Protective Fencing

Arboricultural Method Statement

No Dig H&S

Temporary Compound

ar**tech**

Unit 3, Well House Barns, Chester, CH4 0DH
http://arbtech.co.uk, 01244 661170

Project:

Low Farm, Wakefield Road, Grange Moor, Wakefield, WF4 4BB.

Client:

Boom Developments Ltd.

Drawing:

Tree Protection Plan

Based on:

LOFA - Overall Layout B001 v5.1

Drawing No:

Arbtech TPP 01 Sheet 7 of 15

Date:

May 2023

Scale:

1:400 @ A0

Drawn:

AST

Key:

T01

Tree Categories

Category 'A' trees

Category 'B' trees

Category 'C' trees

Category 'U' trees

Category 'V' trees

Category 'W' trees

Category 'X' trees

Root Protection Area

Protective Fencing

Arboricultural Method Statement

No Dig H&S

Temporary Compound

2

Sheet 8

3

TX11

TX12

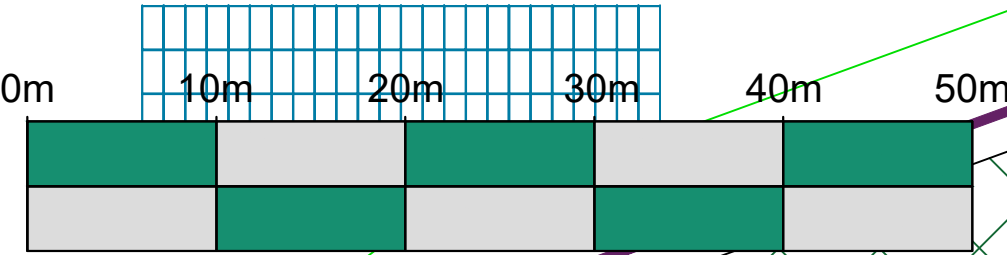
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TX5

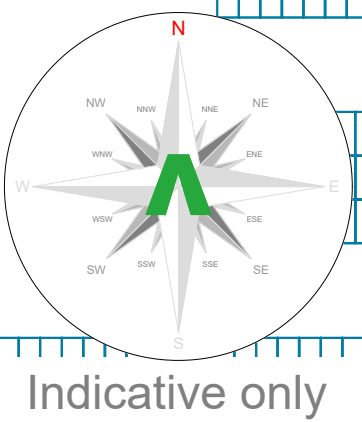
TX10

TREE SHADING
AREA

Note: No unauthorised excavations are to be carried out within the RPAs of any retained trees. Any level changes must form part of a construction method statement & must protect the rooting environments of all retained trees.



No Build/
Proposed Landscaping



Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

Category 'U' - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.

Category 'V' - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

Category 'W' - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

Category 'X' - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 100mm.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Area (RPA) should be defined around each of the category 'U', 'W' and 'X' trees. This is a minimum area in which should be left undisturbed around each retained tree.

The RPA is calculated using the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.

The calculated RPA is capped to 707m², which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Protective Fencing

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

Fencing has only been specified for trees in proximity of high usage zones such as the site access road, site tracks, the site compound and transformers compounds.

The proposed perimeter fencing, once installed, will also act as a protective barrier for the trees/hedges at the site during construction.

Specification: To comprise of 1.8m welded mesh panels or timber or composite felt. Panels are to be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate and secured with ground pins.

All weather notices should be erected at regular intervals on the wind main panels with words such as "Construction exclusion zone - Keep out".

Tree Protection Area
KEEP OUT

Do not move this fence

(TOWN & COUNTRY PLANNING ACT 1990)

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND ARE THE SUBJECT OF A TREE PRESERVATION ORDER. ANY CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION.

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

'No Dig' Surfacing

Multi-dimensional 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 coarse geo-grid (lessen Truak or similar). Prior to this any small hollows on the surface may be filled with clean sharp sand (not building sand) to a maximum depth of 100mm. The GeoWeb is to be back filled by hand with a no-fines aggregate of 20/40 - 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 marked up with clean top soil.

NB: 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. Installation of no dig surfacing above RPAs.
4. Any demolition and/or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).

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 site development may be implemented without detriment to retained trees.

arbtech

Unit 3, Well House Barns, Chester, CH4 0DH
http://arbtech.co.uk, 01244 681170

Project: Low Farm, Wakefield Road, Grange Moor, Wakefield, WF4 4BB.

Client: Boom Developments Ltd.

Drawing: Tree Protection Plan

Based on: LOFA - Overall Layout B001 v5.1

Drawing No: Arbtech TPP 01 Sheet 8 of 15 Rev:

Date: May 2023 Scale: 1:400 @ A0 Drawn: AST

Key:

Tree Nos.	T01	Tree Categories	Category 'U' trees	Category 'V' trees	Category 'W' trees	Category 'X' trees
Category 'U' groups		Category 'U' groups				
Category 'V' groups		Category 'V' groups				
Category 'W' groups		Category 'W' groups				
Category 'X' groups		Category 'X' groups				
Protective Fencing		Arboricultural 'No Dig' v5.1				

These notes are not a substitute for the Arboricultural Method Statement or the Arboricultural Method Statement. The Arboricultural Method Statement is the primary document for the design and construction of the project. The Arboricultural Method Statement is the primary document for the design and construction of the project. The Arboricultural Method Statement is the primary document for the design and construction of the project.

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Sheet 10

Note: No unauthorised excavations are to be carried out within the RPAs of any retained trees. Any level changes must form part of a construction method statement & must protect the rooting environments of all retained trees.

Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

Category 'U' - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.

Category 'V' - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

Category 'W' - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

Category 'X' - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 100mm.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Area (RPA) should be defined around each of the category 'U', 'V' and 'W' trees. This is a minimum area in which should be left undisturbed around each retained tree.

The RPA is calculated using the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.

The calculated RPA is capped to 707m², which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Protective Fencing

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

Fencing has only been specified for trees in proximity of high usage zones such as the site access road, site tracks, the site compound and transformers compounds.

The proposed perimeter fencing, once installed, will also act as a protective barrier for the trees/hedges at the site during construction.

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

All weather notices should be erected at regular intervals on the wind mesh panels with words such as "Construction exclusion zone - Keep out".

Tree Protection Area

KEEP OUT

Do not move this fence

(TOWN & COUNTRY PLANNING ACT 1990)

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS IMPOSED AND 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

'No Dig' Surfacing

Multi-dimensional 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 geotextile geo-grid (Larsen TriAx or similar). Prior to this any small hollows on the surface may be filled with clean sharp sand and not loaded sand to a maximum depth of 100mm. 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 marked up with clean top soil.

NB: 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. Installation of no dig surfacing above RPAs.

4. Any demolition and/or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).

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 site development may be implemented without detriment to retained trees.

arbtech

Unit 3, Well House Barns, Chester, CH4 0DH
http://arbtech.co.uk, 01244 681170

Project:

Low Farm,
Wakefield Road,
Grange Moor,
Wakefield,
WF4 4BB.

Client:

Boom Developments Ltd.

Drawing:

Tree Protection Plan

Based on:

LOFA - Overall Layout B001 v5.1

Drawing No:

Arbtech TPP 01 Sheet 10 of 15

Rev:

Date:

May 2023

Scale:

1:400 @ A0

Drawn:

AST

Key:

Tree Nos.

Tree Categories

RPAs

Category 'U' trees

Category 'V' trees

Category 'W' trees

Category 'X' trees

Category 'U' trees

Category 'V' trees

Category 'W' trees

Category 'X' trees

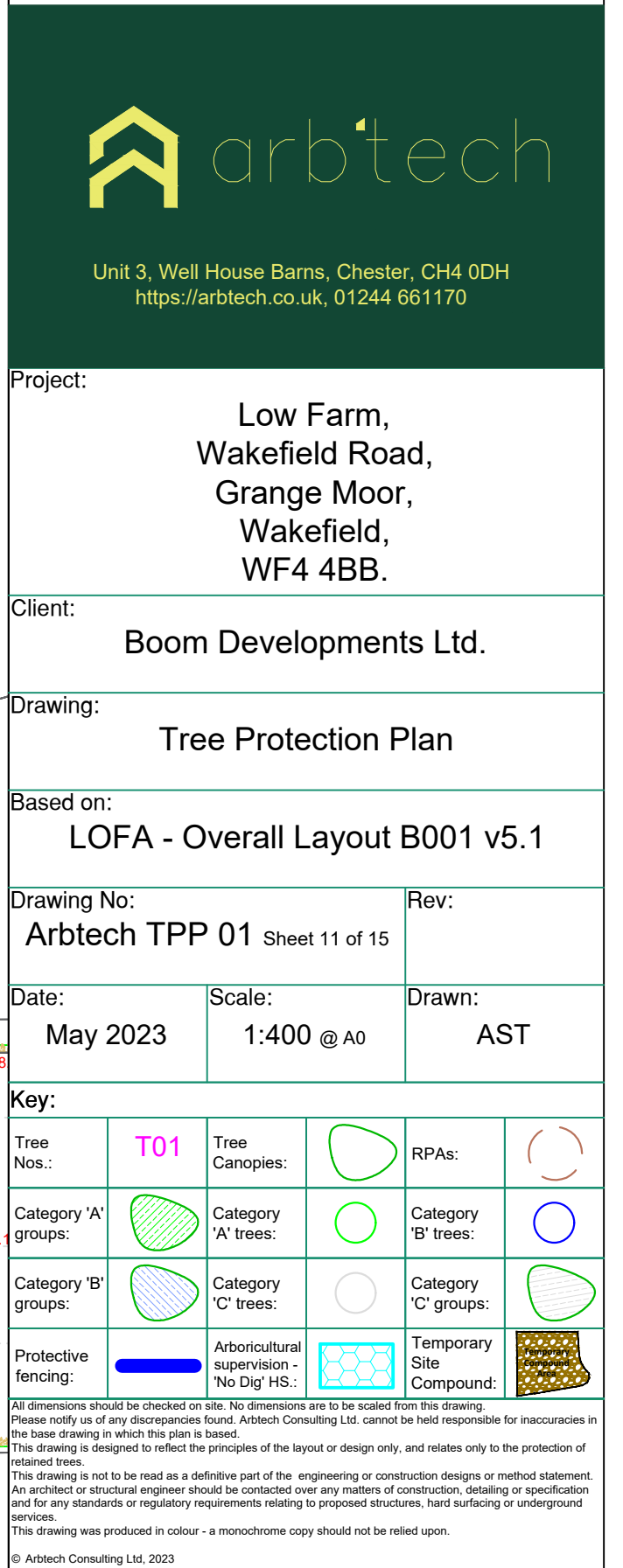
Protective Fencing

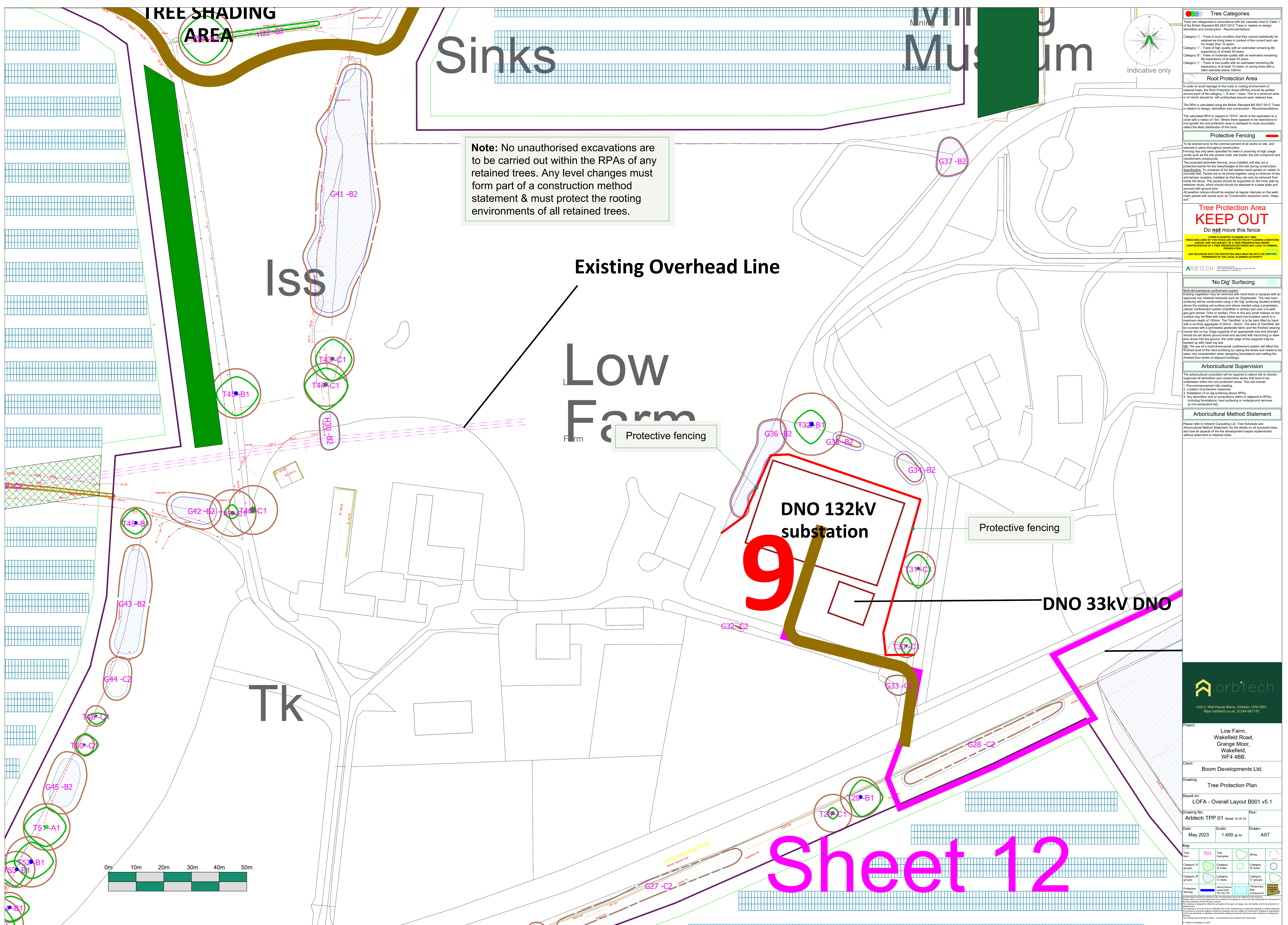
Arboricultural Supervision

Temporary Compound

Arbtech Consulting Ltd.

© 2023





Tree Categories

Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

Category 'U' - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.

Category 'V' - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

Category 'W' - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

Category 'X' - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter <100mm.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Area (RPA) should be defined around each of the category U, W and X trees. This is a minimum area in which should be left undisturbed around each retained tree.

The RPA is calculated using the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.

The calculated RPA is capped to 707m², which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Protective Fencing

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

Fencing has only been specified for trees in proximity of high usage zones such as the site access road, site tracks, the site compound and transformers compounds.

The proposed perimeter fencing, once installed, will also act as a protective barrier for the trees/hedges at the site during construction.

Details: To comprise of 1m tall welded steel panels on rubber or concrete foot. Panels are to be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate and secured with ground pins.

All weather notices should be erected at regular intervals on the windward panels with words such as "Construction exclusion zone - Keep out".

Tree Protection Area

KEEP OUT

Do not move this fence

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS UNDER AND 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

Arbtech Consulting Ltd

Unit 3, Well House Barns, Chester, CH4 4DH

01244 681170

'No Dig' Surfacing

Multi-dimensional 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 base geo-grid (linear Triak or similar). Prior to this any small hollows on the surface may be filled with clean sharp sand and build sand to a maximum depth of 150mm. The GeoWeb is to be back filled by hand with a no-fines aggregate of 20/30 - 30mm. The area of GeoWeb should 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 marked up with clean top soil.

NB: 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 area. This will include:

1. Pre-commencement site meeting.

2. Location of protective measures.

3. Installation of no dig surfacing above RPAs.

4. Any demolition and/or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).

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 site development may be implemented without detriment to retained trees.

arbtech

Unit 3, Well House Barns, Chester, CH4 4DH

01244 681170

Project:

Low Farm, Wakefield Road, Grange Moor, Wakefield, WF4 4BB.

Client:

Boom Developments Ltd.

Drawing:

Tree Protection Plan

Based on:

LOFA - Overall Layout B001 v5.1

Drawing No:

Arbtech TPP 01 Sheet 12 of 15

Date:

May 2023

Scale:

1:400 @ A0

Drawn:

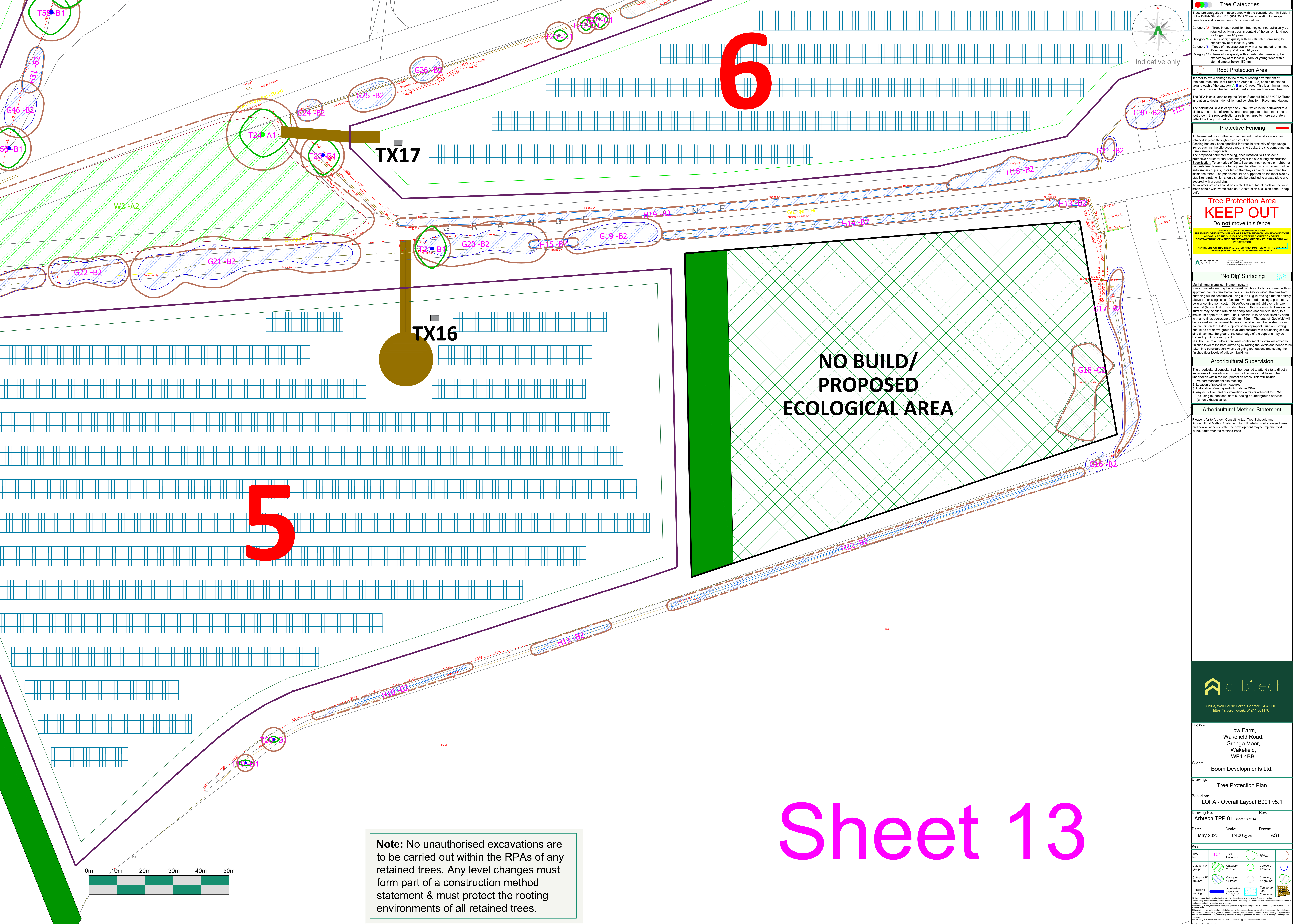
AST

Key:

Tree No.:	T01	Tree Categories:	Category 'U' trees:	Category 'W' trees:	Category 'X' trees:
Category 'U' groups:	Category 'U' groups:	Category 'U' groups:	Category 'U' groups:	Category 'U' groups:	Category 'U' groups:
Category 'W' groups:	Category 'W' groups:	Category 'W' groups:	Category 'W' groups:	Category 'W' groups:	Category 'W' groups:
Category 'X' groups:	Category 'X' groups:	Category 'X' groups:	Category 'X' groups:	Category 'X' groups:	Category 'X' groups:
Protective Fencing:	Arboricultural 'No Dig' H&S:	Temporary Site Compound:	Temporary Site Compound:	Temporary Site Compound:	Temporary Site Compound:

Arbtech Consulting Ltd. 2023

Arbtech Consulting Ltd. 2023



Note: No unauthorised excavations are to be carried out within the RPAs of any retained trees. Any level changes must form part of a construction method statement & must protect the rooting environments of all retained trees.

Sheet 13

Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

Category 'U' - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.

Category 'V' - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

Category 'W' - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

Category 'X' - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 100mm.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Area (RPA) should be defined around each of the category A, B and C trees. This is a minimum area in m which should be left undisturbed around each retained tree.

The RPA is calculated using the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.

The calculated RPA is capped to 757m², which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Protective Fencing

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

Fencing has only been specified for trees in proximity of high usage zones such as the access road, site tracks, the site compound and transformers compounds.

The proposed perimeter fencing, once installed, will also act as a protective barrier for the trees/hedges at the site during construction.

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

All weather notices should be erected at regular intervals on the wall mesh panels with words such as "Construction exclusion zone - Keep out".

Tree Protection Area

KEEP OUT

Do not move this fence

TOWNS & COUNTRY PLANNING ACT 1990

TREES INCLUDED IN THIS PLAN ARE PROTECTED BY PLANNING CONDITIONS AND ARE THE SUBJECT OF A TREE PRESERVATION ORDER. ANY CONTRAVENTION OF THE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION.

ANY INQUIRY INTO THE PROCEEDINGS MUST BE WITHIN THE PERMITS OF THE LOCAL PLANNING AUTHORITY

'No Dig' Surfacing

Multi-dimensional 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 coarse geo-grid (less than 100mm). Prior to this any small hollows on the surface may be filled with clean sharp sand and build sand to a maximum depth of 100mm. The GeoWeb is to be back filled by hand with a no-fines aggregate of 20/40mm - 30/60mm. 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 marked up with clean top soil.

NB: 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. Installation of no dig surfacing above RPAs.

4. Any demolition and/or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).

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 site development may be implemented without detriment to retained trees.

arbtech

Unit 3, Well House Barns, Chester, CH4 0DH
http://arbtech.co.uk, 01244 681170

Project:

Low Farm, Wakefield Road, Grange Moor, Wakefield, WF4 4BB.

Client:

Boom Developments Ltd.

Drawing:

Tree Protection Plan

Based on:

LOFA - Overall Layout B001 v5.1

Drawing No:

Arbtech TPP 01 Sheet 13 of 14

Date:

May 2023

Scale:

1:400 @ A0

Drawn:

AST

Key:

Tree Nos.: T01

Tree Categories: Category 'A' trees, Category 'B' trees, Category 'C' trees, Category 'U' trees, Category 'V' trees, Category 'W' trees, Category 'X' trees

Protective Fencing: Arboricultural, No Dig' H&S, Temporary (Site Compound)

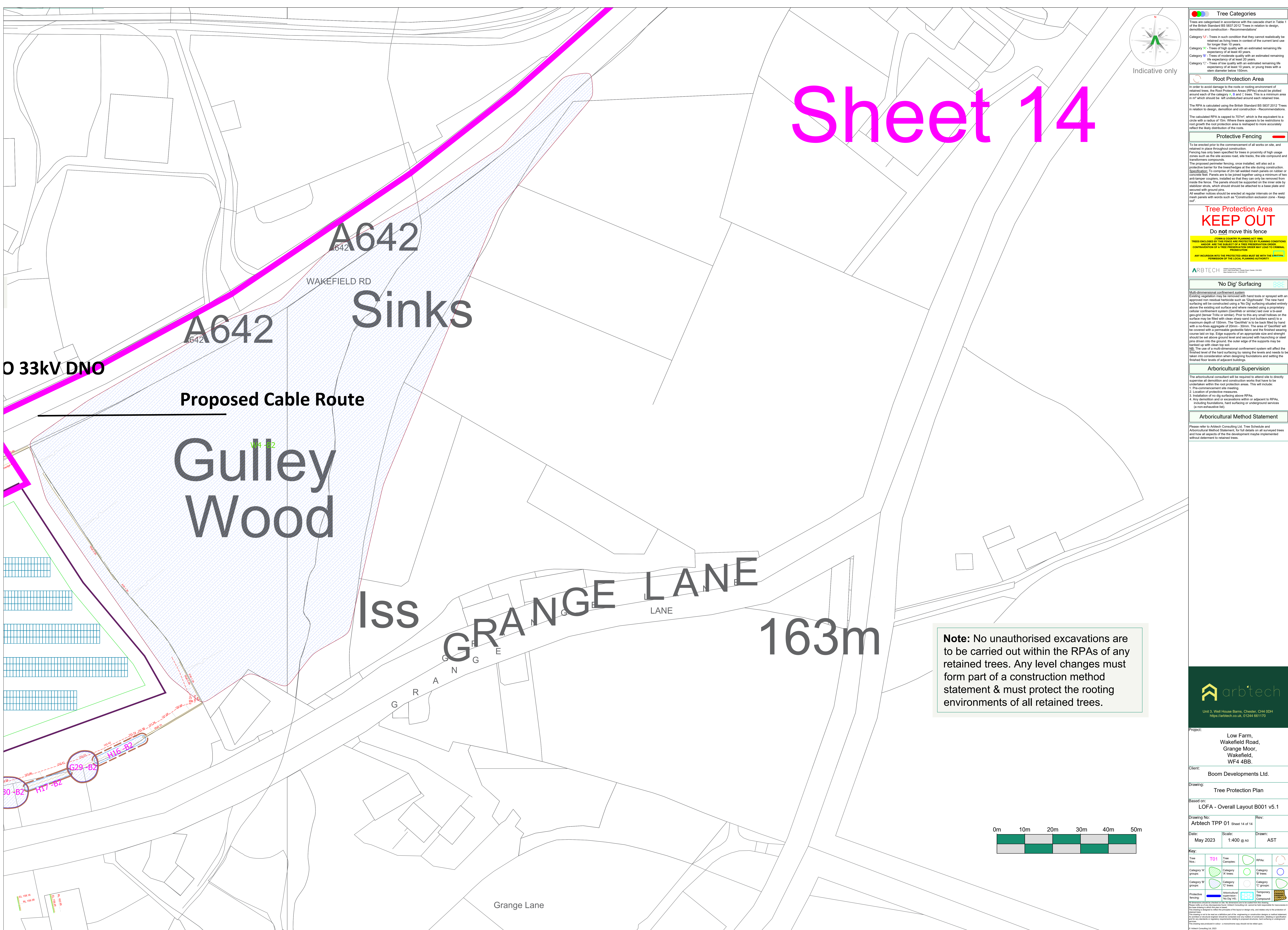
These notes are for information only and do not constitute a contract. The user of these notes is responsible for ensuring that the notes are used in accordance with the relevant standards and specifications. The user of these notes is responsible for ensuring that the notes are used in accordance with the relevant standards and specifications. The user of these notes is responsible for ensuring that the notes are used in accordance with the relevant standards and specifications.

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Appendix 3: Tree Survey Schedule

INDIVIDUAL TREES

Ref	Species	On / off site	Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Canopy Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²	TPO?
T1	Oak (English)	On	10	1	None	480.0	5-6-4-6	1	1.0	W	EM	None	Loss of main leader; heavily pruned to south	Good	Fair	20+	B1	6	104	Yes
T2	Oak (English)	On	11	1	None	640.0	6-6-7-6	1	2.0	E	EM	None	Loss of main leader; including cavity to north east of main stem @1.5m	Good	Fair	20+	B1	8	185	Yes
T3	Sycamore	On	6	1	None	300.0	4-5-3-4	0	0.0	None	SM	None	Self-seeded beneath oak	Fair	Fair	10+	C1	4	41	Yes
T4	Oak (English)	On	14	1	Yes	600.0	6-5-6-7	0	1.0	N	EM	None	Heavily swathed in ivy	Good	Fair	20+	B1	7	163	Yes
T5	Oak (Turkey)	On	20	1	None	930.0	8-8-9-10	0.5	1.5	S	M	None	Good example of species; historic storm damage to upper crown; pruning work to south of lower canopy	Good	Fair	40+	A1	11	391	Yes
T6	Sycamore	On	15	1	None	680.0	5-6-7-6	0	0.0	None	M	None	Sub-dominant limb to west forming cohesive crown with main stem	Good	Fair	20+	B1	8	209	Yes
T7	Sycamore	On	12	2	None	560.0	4-5-5-5	2	2.0	E	EM	None	Stem to west pruned to allow clearance above gateway	Good	Fair	20+	B1	7	142	Yes
T8	Oak (English)	On	16	1	Yes	800.0	8-7-7-9	3	5.0	S	M	None	Old beefsteak fungus to south east corner of root collar; excavations to south of root plate; heavily pruned to south	Good	Fair	20+	B1	10	290	Yes
T9	Oak (English)	On	13	1	Yes	850.0	6-9-8-7	1	2.0	N	M	Emerging Veteran	Damage to south of main stem @3-4m; decay/bark loss to first scaffold limb east; visible woodpecker activity to south west of main stem @5m; burred lower main stem; wind swept form to north east	Good	Fair	40+	A1	10	327	Yes
T10	Sycamore	On	14	1	None	570.0	5-6-7-6	2.5	2.5	W	M	None	Typical for species	Good	Fair	20+	B1	7	147	Yes
T11	Elder	On	5	3	None	220.0	2-2-1-2	0.5	0.25	W	EM	None	Typical for species	Fair	Fair	10+	C1	3	22	Yes
T12	Oak (English)	On	16	1	None	850.0	8-8-8-9	2	2.0	W	M	None	Good example of species; historic storm damage & pruning to south of crown; forks into 2 stems @5m	Good	Fair	40+	A1	10	327	Yes

Ref	Species	On / off site	Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Canopy Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²	TPO?
T13	Sycamore	Off	15	1	None	750.0	6-7-6-7	2.5	2.5	N	M	None	Sun dominant limb to south west forming cohesive crown with main stem	Good	Fair	20+	B1	9	254	Yes
T14	Sycamore	Off	13	1	None	600.0	5-7-6-6	2.0	2.0	N	M	None	Forks into 2 stems @3.5m; barbed wire embedded to east of stem	Good	Fair	20+	B1	7.2	163	Yes
T15	Sycamore	Off	13	1	Yes	500.0	5-5-6-5	2.0	2.5	S	M	None	Moderate dieback in upper crown; small elder to south of root plate	Fair	Fair	10+	C1	6.0	113	Yes
T16	Oak (English)	On	5	1	None	370.0	4-2-6-6	1.0	1.5	N	SM	None	Typical for species	Good	Fair	20+	B1	4.4	62	None
T17	Sycamore	Off	12	12	None	480.0	2-2-2-2	0.0	0.0	None	EM	None	Re-gen from mature boles	Fair	Fair	10+	C1	5.8	104	None
T18	Oak (English)	On	9	1	None	660.0	4-6-4-5	0.5	0.5	E	M	None	Historic occluding @2m to west of main stem; heavily crown lifted; forks into 2 stems @2.5m; parts of old fence affixed to lower stem	Good	Fair	20+	B1	7.9	197	None
T19	Hawthorn	On	4	1	None	250.0	1-2-1-2	0.0	0.0	None	EM	None	Diameter recorded @0.5m	Good	Fair	20+	B1	3.0	28	None
T20	Hawthorn	On	4	1	Yes	350.0	1-2-1-2	0.0	0.0	None	EM	None	Diameter estimated @0.5m	Good	Fair	20+	B1	4.2	55	None
T21	Oak (English)	On	9	2	None	550.0	8-5-7-6	0.5	0.5	W	EM	None	Sub dominant limb to south forming cohesive crown with main stem	Good	Fair	20+	B1	6.6	137	None
T22	Sycamore	On	8	8	None	590.0	4-3-2-2	0.0	0.0	None	SM	None	Had been partially cut back to clear gateway	Fair	Fair	10+	C1	7.1	157	None
T23	Sycamore	On	16	1	None	640.0	6-6-7-5	3.0	4.0	W	M	None	Typical for species	Good	Fair	20+	B1	7.7	185	None
T24	Beech (Common)	On	20	1	None	1060.0	9-10-8-8	1.0	3.0	N	M	None	Good example of species; forks into 2 stems @3m; main stems heavily swathed in ivy	Good	Fair	40+	A1	12.7	508	Yes
T25	Cypress (Lawson)	On	7	1	None	400.0	2-3-2-2	0.0	0.0	None	EM	None	Topped @7m	Fair	Fair	10+	C1	4.8	72	Yes
T26	Cypress (Leyland)	On	8	5	None	270.0	2-2-2-2	0.0	0.0	None	EM	None	Topped @8m	Fair	Fair	10+	C1	3.2	33	Yes
T27	Elm (English)	On	9	4	Yes	310.0	2-3-3-2	0.0	0.0	None	EM	None	Dead standing	None	Poor	<10	C1	3.7	43	Yes
T28	Elm (English)	On	8	10	None	570.0	2-2-2-2	0.0	0.0	None	EM	None	Multi stemmed	None	Poor	<10	C1	6.8	147	Yes

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T29	Ash (Common)	On	14	2	None	600.0	6-8-7-4	1.0	2.0	N	EM	None	Typical for species	Good	Fair	20+	B1	7.2	163	Yes
T30	Willow (Goat)	On	8	5	None	350.0	3-2-3-2	0.0	0.0	None	EM	None	Multi stemmed; within Conservation Area	Good	Fair	10+	C1	4.2	55	None
T31	Ash (Common)	On	10	4	None	510.0	5-4-7-4	0.0	0.0	None	EM	None	Multi stemmed; within Conservation Area	Good	Fair	10+	C1	6.1	118	None
T32	Willow (Goat)	Off	14	6	None	930.0	5-5-7-6	0.0	0.0	None	EM	None	Multi stemmed; within Conservation Area	Good	Fair	20+	B1	11.2	391	None
T33	Sycamore	On	14	1	Yes	400.0	5-5-6-5	0.0	0.0	None	EM	None	Difficult to access owing to ditch & thorn thicket	Good	Fair	20+	B1	4.8	72	None
T34	Oak (English)	On	17	1	None	820.0	8-8-9-9	1.0	1.5	N	M	None	Good example of species; pruning work to north & west of lower canopy	Good	Fair	40+	A1	9.8	304	None
T35	Oak (English)	On	16	1	None	800.0	9-9-8-9	4.5	4.5	E	M	None	Historic storm damage with loss of upper crown; pruning work to south of lower canopy; delaminated limb @8m to south east of crown; hung-up limb to east of crown @5m	Fair	Fair	20+	B1	9.6	290	None
T36	Sycamore	On	16	1	None	720.0	6-5-7-8	4.5	4.5	S	M	None	Occluding would to west of main stem @1.5m; pruning work to north; west & south of canopy	Good	Fair	20+	B1	8.6	235	None
T37	Sycamore	On	14	1	None	620.0	6-5-6-6	1.5	2.0	N	M	None	Occluding would to south of main stem @0.5m; pruning work to remove basal shoots	Good	Fair	20+	B1	7.4	174	None
T38	Sycamore	On	8	1	None	370.0	3-4-2-2	0.0	0.0	None	EM	None	Extensive decay throughout main stem; significant basal shoots; good habitat stem	Fair	Poor	10+	C1	4.4	62	None
T39	Ash (Common)	On	15	2	Yes	1060.0	7-7-8-6	5.0	4.5	N	M	None	Forks into 2 stems @2m; small cavity to south of root collar; historic storm damage/ damaged limbs with associated decay & visible woodpecker activity; pruning work to improve clearance above gateway	Good	Fair	20+	B1	12.7	508	None
T40	Sycamore	On	8	5	Yes	480.0	2-1-3-4	0.0	0.0	None	EM	None	Extensive decay to upper crown	Fair	Poor	10+	C1	5.8	104	None

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T41	Oak (English)	On	13	1	None	620.0	5-3-4-7	1.0	2.0	W	M	None	Heavily pruned to south east leaving unbalanced form	Good	Fair	20+	B1	7.4	174	None
T42	Sycamore	On	15	2	None	570.0	6-5-7-6	0.0	0.0	None	EM	None	Sub dominant limb to south forming cohesive crown with main stem	Good	Fair	20+	B1	6.8	147	None
T43	Sycamore	On	16	1	Yes	650.0	7-7-8-6	5.0	5.0	N	M	None	Extensive fire damage to lower stem; recommend reducing tree to habitat stem in mid to long-term	Fair	Poor	10+	C1	7.8	191	None
T44	Sycamore	On	16	1	Yes	650.0	6-8-9-7	0.0	0.0	None	M	None	Extensive bark damage to northern side of tree - possibly fire damage as per adjacent sycamore; wounds are occluding; prolific basal shoots	Good	Fair	10+	C1	7.8	191	None
T45	Sycamore	On	15	1	None	740.0	6-8-8-7	4.5	5.0	S	M	None	Pruning work to crown lift above track/land with associated decay around pruning points	Good	Fair	20+	B1	8.9	248	None
T46	Sycamore	On	7	1	None	730.0	1-1-1-1	4.5	0.0	None	M	None	Topped @7m	Poor	Fair	10+	C1	8.8	241	None
T47	Oak (English)	On	5	1	Yes	700.0	3-2-2-3	1.5	0.0	None	M	None	Topped @5m	Fair	Fair	10+	C1	8.4	222	None
T48	Sycamore	On	13	1	None	460.0	5-4-4-5	4.0	2.0	W	EM	None	Pruning work to crown lift above track/land	Good	Fair	20+	B1	5.5	96	Yes
T49	Sycamore	On	7	1	None	310.0	1-4-3-3	5.5	5.5	S	EM	None	Extensive decay to main stem; recommend reducing to habitat stem	Fair	Poor	<10	C1	3.7	43	Yes
T50	Sycamore	On	10	1	None	300.0	4-5-4-3	3.0	3.0	S	EM	None	Minor decay in upper crown/stems from historic storm damage; pruned to south west for crown lift leaving pruning pegs	Fair	Fair	10+	C1	3.6	41	Yes
T51	Sycamore	On	18	1	None	700.0	7-7-7-8	3.0	3.0	W	M	None	Pruning work to crown lift above land	Good	Fair	40+	A1	8.4	222	Yes
T52	Sycamore	On	18	1	None	760.0	7-8-6-6	1.0	1.5	W	M	None	Large 'hazard beam' to north of crown @7m	Good	Fair	20+	B1	9.1	261	Yes
T53	Sycamore	On	15	1	None	540.0	3-3-6-6	4.5	4.5	E	M	None	Suppressed by adjacent tree	Good	Fair	20+	B1	6.5	132	Yes

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T54	Beech (Common)	On	14	1	None	450.0	4-7-5-6	2.0	2.0	S	EM	None	Typical for species	Good	Fair	20+	B1	5.4	92	Yes
T55	Sycamore	On	18	1	None	850.0	8-7-8-8	3.0	3.0	S	M	None	Large 'hazard beam' to north of crown @6m	Good	Fair	20+	B1	10.2	327	Yes
T56	Oak (English)	On	15	1	None	660.0	7-6-7-7	2.0	2.0	N	M	None	Forks into 2 stems @3m; pruning work to crown lift above land	Good	Fair	20+	B1	7.9	197	None
T57	Sycamore	On	16	1	None	570.0	7-6-7-7	3.0	3.0	W	M	None	Typical for species	Good	Fair	20+	B1	6.8	147	Yes
T58	Sycamore	On	12	1	None	480.0	4-4-5-6	4.0	4.0	W	EM	None	Write fence affixed to lower stem causing tourniquet effect; short extension growth throughout a sparse crown	Fair	Fair	10+	C1	5.8	104	Yes
T59	Sycamore	On	16	1	None	700.0	8-8-7-8	2.0	2.0	N	M	None	Typical for species	Good	Fair	20+	B1	8.4	222	Yes
T60	Sycamore	Off	17	1	Yes	850.0	7-9-9-8	0.0	0.0	None	M	None	Typical for species	Good	Fair	20+	B1	10.2	327	None
T61	Ash (Common)	On	18	1	None	960.0	10-11-9-8	2.0	2.0	N	M	None	Large cavity to south of main stem @2m; large wound site to west of main stem @2.5m; pocket of connective decay appears to run through main stem; inonotus brackets to 1st significant limb	Good	Fair	20+	B1	11.5	417	None
T62	Hawthorn	Off	4	1	Yes	300.0	1-1-2-2	0.0	0.0	None	EM	None	Typical for species	Good	Fair	20+	B1	3.6	41	None
T63	Sycamore	Off	17	1	Yes	950.0	8-10-10-9	0.0	0.0	None	M	None	Minor deadwood; slightly sparse crown	Fair	Fair	20+	B1	11.4	408	None
T64	Sycamore	Off	18	1	Yes	900.0	8-10-9-9	0.0	0.0	N	M	None	Typical for species	Good	Fair	20+	B1	10.8	366	None
T65	Rowan	On	4	6	None	200.0	1-2-2-1	0.0	0.0	None	SM	None	Typical for species	Fair	Fair	10+	C1	2.4	18	None
T66	Hawthorn	On	6	12	Yes	310.0	1-2-2-2	0.0	0.0	None	EM	None	Typical for species	Good	Fair	20+	B1	3.7	43	None
T67	Whitebeam	On	5	10	None	320.0	1-3-2-2	0.0	0.0	None	EM	None	Typical for species	Good	Fair	20+	B1	3.8	46	None
T68	Whitebeam	On	5	10	None	320.0	1-3-2-2	0.0	0.0	None	EM	None	Typical for species	Good	Fair	20+	B1	3.8	46	None
T69	Oak (English)	Off	15	2	Yes	710.0	8-10-9-6	2.0	2.0	N	M	None	On boundary; pruning work to crown lift leaving pruning pegs	Good	Fair	20+	B1	8.5	228	Yes

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T70	Chestnut (Horse)	Off	18	1	None	1220.0	8-6-8-8	2.0	2.5	W	M	None	Large indiscriminate pruning wounds to east with associated decay; mazegill fungal brackets to east of stem around decay site; recommend tree be reduced to habitat monolith in mid to long term	Fair	Fair	<10	C1	14.6	673	Yes
T71	Sycamore	On	17	1	None	480.0	6-7-6-5	1.0	1.0	S	EM	None	Typical for species	Good	Fair	20+	B1	5.8	104	Yes
T72	Sycamore	On	18	1	None	790.0	9-10-8-7	0.0	0.0	None	M	None	Typical for species	Good	Fair	20+	B1	9.5	282	None
T73	Chestnut (Horse)	On	14	1	None	660.0	8-7-6-6	2.0	2.5	W	M	None	Indiscriminate pruning wounds to east with associated decay; decayed wound to south east of main stem @2.5m; radial cracks to bark of main stem; recommend tree be reduced to habitat monolith in mid to long term	Fair	Fair	<10	C1	7.9	197	None
T74	Beech (Common)	On	20	1	None	990.0	10-10-10-8	4.0	4.5	W	M	None	Good example of species; good stem taper; wound site to east of main stem @3.5m	Good	Fair	40+	A1	11.9	443	Yes
T75	Oak (Turkey)	On	20	1	None	990.0	9-11-10-10	4.0	4.0	W	M	None	Good example of species; heavy crown lift to clear land leaving pruning pegs throughout lower crown	Good	Fair	40+	A1	11.9	443	Yes
T76	Beech (Common)	On	20	1	None	1230.0	10-12-11-9	2.5	3.0	S	M	None	Good example of species; good stem taper; wound site to north of main stem @2.5m with small ganoderma bracket forming; pruning work to crown lift above land to north of crown	Good	Fair	40+	A1	14.8	684	Yes

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T77	Sycamore	On	20	1	None	880.0	9-9-9-8	0.0	0.0	None	M	None	Large cavity to south of main stem from root collar to 3m showing good occlusion/reactionary growth; old pruning work in past to crown lift above entranceway to north & east of lower canopy	Good	Fair	20+	B1	10.6	350	Yes
T78	Chestnut (Horse)	On	20	1	None	880.0	7-7-7-7	2.0	5.5	S	M	None	Old wound from failed limb to north of main stem @5m; recent minor bark damage to south of main stem from machinery @1.5m	Good	Fair	20+	B1	10.6	350	Yes
T79	Sycamore	On	14	1	None	380.0	5-5-6-6	5.0	5.0	S	EM	None	Heavy crown lift to clear land; multiple pruning wounds with associated decay	Good	Fair	20+	B1	4.5	65	Yes
T80	Sycamore	On	14	1	None	660.0	6-7-8-6	0.0	0.0	N	M	None	Pruning wound to north of main stem @2m with associated decay	Good	Fair	20+	B1	7.9	197	Yes
T81	Chestnut (Horse)	On	15	1	None	570.0	6-5-6-6	2.0	2.0	N	M	None	Old wound to north of main stems @2m with associated decay	Good	Fair	20+	B1	6.8	147	Yes
T82	Beech (Common)	On	20	1	None	820.0	8-9-8-7	3.0	3.0	W	M	None	Pruning wound to south of main stem @2.5m & to north @3.5m with associated decay; good stem taper	Good	Fair	40+	A1	9.8	304	Yes
T83	Sycamore	On	15	1	None	520.0	7-6-7-7	2.5	2.5	N	EM	None	Typical for species	Good	Fair	20+	B1	6.2	122	Yes
T84	Oak (English)	On	18	1	None	820.0	8-10-9-10	5.0	5.0	E	M	None	Large area of basal damage to east; various old wounds throughout crown with associated decay & woodpecker activity	Good	Fair	20+	B1	9.8	304	Yes
T85	Oak (Turkey)	On	20	1	None	1050.0	11-12-10-10	5.0	5.0	S	M	None	Good example of species; heavy crown lift to clear land leaving pruning pegs throughout lower crown; old wound to northern most scaffold limb with visible cavity @6; woodpecker activity to north of main stem @5m	Good	Fair	40+	A1	12.6	499	Yes

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T86	Lime (Small-leaved)	On	20	1	Yes	1000.0	7-6-8-6	0.0	0.0	None	M	None	Dense basal shoots; debris from ploughing piled around root collar; small elder growing within canopy dripline	Good	Fair	40+	A1	12.0	452	Yes
T87	Oak (Turkey)	On	20	1	None	920.0	10-12-11-10	5.0	5.0	S	M	None	Good example of species; heavy crown lift to clear land leaving pruning pegs throughout lower crown; debris from ploughing piled around root collar	Good	Fair	40+	A1	11.0	383	Yes
T88	Sycamore	On	16	1	None	970.0	7-9-7-9	4.0	4.0	S	M	None	Old wound to south of main stem @4.5m; crown lift to clear land leaving large pruning pegs to lower stem; debris from ploughing piled around root collar; small elder growing within root plate	Good	Fair	20+	B1	11.6	426	Yes
T89	Oak (Turkey)	On	20	1	None	1120.0	8-13-11-10	5.0	5.5	S	M	None	Good example of species; heavy crown lift to clear land leaving pruning pegs throughout lower crown; debris from ploughing & deadwood piled around root collar	Good	Fair	40+	A1	13.4	567	Yes
T90	Sycamore	On	20	1	Yes	850.0	10-9-9-10	0.0	0.0	None	M	None	Dense basal shoots; debris from ploughing piled around root collar; small elder growing within canopy dripline	Good	Fair	40+	A1	10.2	327	Yes
T91	Oak (Turkey)	On	20	1	None	1030.0	10-11-10-9	5.0	6.0	W	M	None	Good example of species; heavy crown lift to clear land leaving pruning pegs throughout lower crown; debris from ploughing piled to north east of root collar	Good	Fair	40+	A1	12.4	480	Yes
T92	Elder	On	4	3	None	300.0	2-4-3-2	0.0	0.0	None	SM	None	Typical for species	Fair	Fair	10+	C1	3.6	41	None

Ref	Species	On / off site	Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Canopy Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²	TPO?
T93	Chestnut (Horse)	On	16	1	None	790.0	9-8-8-9	0.0	1.0	W	M	None	Bark necrosis to north of main stem from root collar to 1st union; radial cracks evident throughout scaffold limbs; consider reducing to habitat stem in mid to long term	Good	Fair	20+	B1	9.5	282	Yes
T94	Sycamore	On	12	1	None	330.0	2-2-3-2	0.0	0.0	None	SM	None	Typical for species	Fair	Fair	10+	C1	3.9	49	Yes
T95	Chestnut (Horse)	On	18	1	None	900.0	10-9-9-8	1.0	1.5	N	M	None	Old wound to north of main stem @1.5m with associated decay	Good	Fair	20+	B1	10.8	366	Yes
T96	Chestnut (Horse)	On	16	1	None	720.0	9-9-8-9	0.0	1.5	N	M	None	Occluded bark damage to north of main stem @1m	Good	Fair	20+	B1	8.6	235	Yes
T97	Oak (English)	On	4	2	None	230.0	2-2-1-1	0.0	0.0	None	SM	None	Typical for species	Good	Fair	10+	C1	2.8	24	None
T98	Oak (English)	On	5	3	Yes	700.0	4-5-3-3	0.0	0.0	None	EM	None	Topped @3m	Good	Fair	10+	C1	8.4	222	None
T99	Oak (English)	On	4	3	None	250.0	2-2-2-1	0.0	0.0	None	SM	None	2x small trees forming cohesive crown	Good	Fair	10+	C1	3.0	28	None
T100	Oak (English)	On	4	2	None	140.0	1-1-2-1	0.0	0.0	None	SM	None	Typical for species	Good	Fair	10+	C1	1.7	9	None
T101	Sycamore	On	6	7	Yes	660.0	3-3-3-3	0.0	0.0	None	EM	None	Topped @2m	Good	Fair	10+	C1	7.9	197	None

GROUPS OF TREES

Ref	Species	On / off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	TPO?
G1	Elm	On	12	40	None	340	4.0	0.0	SM	None	Thicket of elm to field edge	Good	Fair	20+	B2	4.1	Yes
G2	Sycamore; oak	On	12	6	Yes	600	5.0	0.0	EM	None	Stand of 5x sycamore & 1x oak to field edge; heavily swathed in ivy	Good	Fair	20+	B2	7.2	Yes
G3	Sycamore; oak	On	13	2	None	600	5.0	0.0	EM	None	Early mature sycamore with small self seeded oak growing to west	Good	Fair	20+	B2	7.2	Yes
G4	Elm; elder; hawthorn	On	12	40	None	280	2.0	0.0	SM	None	Thicket to field edge; predominantly elm; upper crown dieback & bark necrosis	Fair	Poor	10+	C2	3.3	Yes
G5	Sycamore; oak; ash; elm	On	5 - 16	10	None	710	6.0	1.0	M	None	5x sycamore; 3x ash; 1x elm; 1x oak; stand of trees at field edge consisting of 1x mature oak & 2x mature ash with other stems early	Good	Fair	20+	B2	8.5	Yes
G6	Sycamore	Off	8 - 14	10	None	490	5.5	1.0	M	None	Stand of trees at field edge consisting of 5x mature stems & 5x early mature stems	Good	Fair	20+	B2	5.9	Yes
G7	Sycamore	Off	10 - 14	7	None	520	5.5	1.0	M	None	Stand of trees at field edge consisting of 2x mature stems & 5x early mature stems	Good	Fair	20+	B2	6.2	Yes
G8	Sycamore	Off	10 - 12	4	Yes	600	5.5	1.0	M	None	Stand of trees at field edge consisting of 2x mature stems & 2x early mature stems	Good	Fair	20+	B2	7.2	Yes
G9	Sycamore	Off	10 - 12	7	Yes	600	5.5	1.0	M	None	Stand of trees at field edge consisting of 1x mature stem & 6x early mature stems; minor crown dieback within northern most tree	Good	Fair	20+	B2	7.2	Yes
G10	Sycamore	Off	8 - 12	8	None	410	5.0	1.0	EM	None	Stand of early mature trees at field edge	Good	Fair	20+	B2	4.9	Yes
G11	Sycamore	Off	12 - 16	4	None	660	5.0	1.0	M	None	Stand of trees at field edge; 2x mature stems; 1x early mature & 1x young stem	Good	Fair	20+	B2	7.9	Yes
G12	Sycamore	Off	12	2	None	440	4.5	0.0	EM	None	Two stems at field edge; stem to west offsite; stem to west onsite	Good	Fair	20+	B2	5.3	None
G13	Sycamore; ash	On	12	3	None	150	3.0	0.0	EM	None	Three stems at field edge; re-gen from mature boles	Fair	Fair	10+	C2	1.8	None
G14	Hawthorn; oak; elder	Off	5 - 8	8	None	280	2.0	0.0	SM	None	Group of remnant parts of hedge & self seeded trees	Good	Fair	10+	C2	3.3	None
G15	Oak; sycamore; hawthorn; hazel	Off	6 - 12	15	None	710	5.0	1.0	M	None	Stand of trees at field edge	Good	Fair	20+	B2	8.5	None
G16	Hazel; holly	On	9	3	Yes	200	5.0	1.0	M	None	Group of trees spanning drainage ditch	Good	Fair	20+	B2	2.4	None
G17	Ash; hawthorn; elder	Off	1 - 11	6	Yes	350	5.0	1.0	EM	None	Offsite group in private garden	Good	Fair	20+	B2	4.2	None
G18	Goat willow; ash; hawthorn	On	1 - 11	10	None	250	3.5	0.5	SM	None	Self seeded trees colonising scrubby corner of field	Good	Fair	10+	C2	3.0	None

Ref	Species	On / off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	TPO?
G19	Oak; sycamore; ash; hawthorn	On	5 - 15	5	None	460	4.0	0.0	EM	None	1x oak; 2x ash & 2x sycamore with sporadic thorn hedge; all trees multi stemmed	Good	Fair	20+	B2	5.5	None
G20	Oak; sycamore; birch; hawthorn	On	4 - 15	14	None	590	4.0	0.0	EM	None	Copse on road side/field edge with sporadic thorn hedge	Good	Fair	20+	B2	7.1	None
G21	Oak; birch; goat willow; sycamore; hawthorn; blackthorn	On	4 - 15	25	None	620	4.5	0.0	EM	None	Copse on road side/field edge	Good	Fair	20+	B2	7.4	None
G22	Oak; sycamore; ash; blackthorn	On	4 - 15	6	None	520	5.0	0.0	EM	None	Copse on road side/field edge	Good	Fair	20+	B2	6.2	None
G23	Oak; ash; sycamore; hawthorn	On	4 - 15	18	None	410	5.0	0.0	EM	None	Copse on road side/field edge	Good	Fair	20+	B2	4.9	None
G24	Sycamore; elm	On	4 - 12	5	None	250	3.0	0.0	SM	None	Copse on road side/field edge; crown dieback & bark necrosis to elm	Good	Fair	20+	B2	3.0	Yes
G25	Lime	On	16	2	Yes	600	6.0	0.0	M	None	Typical for species	Good	Fair	20+	B2	7.2	Yes
G26	Lime	On	12 - 14	2	Yes	450	4.5	0.0	EM	None	1x stem to west with extensive basal shoots; 1x multi stemmed tree to east	Good	Fair	20+	B2	5.4	Yes
G27	Elm; ash; goat willow; cypress	On	2 - 14	40	None	390	4.5	0.0	EM	None	Several dead standing elm; cypress is an unlikely choice to re-gap a rural copse/	Fair	Fair	20+	C2	4.7	Yes
G28	Elm; goat willow; ash	On	2 - 14	50	None	290	4.5	0.0	EM	None	Several dead standing elm	Fair	Fair	20+	C2	3.5	Yes
G29	Elm	Off	14	2	Yes	400	4.5	0.0	EM	None	2x multi stemmed trees	Good	Fair	20+	B2	4.8	None
G30	Ash; goat willow	Off	15	2	Yes	600	7.0	0.0	M	None	2x multi stemmed trees	Good	Fair	20+	B2	7.2	None
G31	Birch	Off	12	3	Yes	350	5.0	1.0	EM	None	Typical for species	Good	Fair	20+	B2	4.2	None
G32	Goat willow; elder	On	2 - 6	3	None	120	2.5	0.0	SM	None	2x willow; 1x elder; within Conservation Area	Fair	Fair	10+	C2	1.5	None
G33	Goat willow; birch	Off	8	6	Yes	250	3.0	0.0	EM	None	Self seeded group adjacent to existing entranceway/field edge; within Conservation Area	Fair	Fair	10+	C2	3.0	None
G34	Ash	On	15	2	None	490	7.0	1.0	EM	None	Typical for species; within Conservation Area	Good	Fair	20+	B2	5.9	None
G35	Ash; hawthorn	On	10 - 14	2	None	430	6.5	1.0	EM	None	2x trees forming cohesive crown; within Conservation Area	Good	Fair	20+	B2	5.2	None
G36	Ash; goat willow; hawthorn; elder	On	8 - 12	14	None	420	4.5	0.0	EM	None	Remnant sections of hedge/self seeded group; within Conservation Area	Good	Fair	20+	B2	5.0	None
G37	Oak	On	14	3	None	470	6.0	1.0	EM	None	Group forming cohesive crown; 1x tree onsite; 2x trees offsite; within Conservation Area	Good	Fair	20+	B2	5.6	None

Ref	Species	On / off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	TPO?
G38	Oak; sycamore; holly; hawthorn; elder	On	16	40	None	1000	7.0	1.0	M	None	Group forming cohesive crowns; flanking drainage ditch; predominantly oak & sycamore	Good	Fair	20+	B2	12.0	None
G39	Sycamore; oak; birch; hornbeam	On	16	17	None	720	6.0	1.0	M	None	Group forming cohesive crowns; predominantly oak & sycamore	Good	Fair	20+	B2	8.6	None
G40	Ash	On	15	2	None	820	7.0	2.5	M	None	Trees adjacent to flooded pit hole; hollowing to stems - basal cavity visible to east of root collar on eastern tree & visible woodpecker activity; pronounced hollowing to western most tree; upper crown of western most tree formed by re-gen from decayed bole	Good	Fair	20+	B2	9.8	None
G41	Oak; ash; hawthorn; elder	On	16	50	None	630	6.0	1.0	M	None	Group forming cohesive crowns; flanking drainage ditch; predominantly oak; ash &	Good	Fair	20+	B2	7.6	None
G42	Oak; elder	On	17	4	None	640	6.0	1.0	M	None	2x mature oak; 2x early mature elder; tree to east has been pruned leaving a large pruning peg & unbalanced crown	Good	Fair	20+	B2	7.7	None
G43	Sycamore; beech	On	12 - 16	10	None	610	5.5	1.0	EM	None	8x sycamore & 2x beech; building materials stored within plot	Good	Fair	20+	B2	7.3	Yes
G44	Sycamore; beech	On	8 - 14	3	None	510	5.0	1.0	EM	None	All 3 stems show decay to main stems	Fair	Fair	10+	C2	6.1	Yes
G45	Sycamore	On	14 - 16	2	None	700	6.0	2.0	M	None	Pruning work to crown lift above land	Good	Fair	20+	B2	8.4	Yes
G46	Oak; hawthorn	On	12	4	None	630	5.0	1.0	EM	None	2x oak with 2x remnant thorn; decay to main stem of northern most oak	Good	Fair	20+	B2	7.6	None
G47	Sycamore; elder	On	2 - 15	10	None	560	5.0	1.0	EM	None	6x sycamore with 4x elder; growing within sunken pit	Good	Fair	20+	B2	6.7	None
G48	Sycamore; oak; ash; elm; holly; elder	Off	2 - 12	14	None	390	4.0	1.0	EM	None	Sample area; scrubby end of woodland feature abutting survey site	Good	Fair	20+	B2	4.7	None
G49	Sycamore; ash	On	14	11	None	490	5.0	1.0	M	None	Stand of trees at field edge; predominantly sycamore	Good	Fair	20+	B2	5.9	None
G50	Sycamore; oak; Corsican pine; elder; rhododendron	On	2 - 14	150	None	540	5.0	1.0	M	None	Stand of trees at field edge flanking forest ride; trees occur to both sides of ha-ha wall; standing water within ditch in places; beehives to east of plot	Good	Fair	20+	B2	6.5	None
G51	Oak; birch; sycamore	Off	8 - 10	10	Yes	300	3.0	1.5	EM	None	Scrubby group of young trees on adjacent site; area appears to have been recently	Good	Fair	20+	B2	3.6	None
G52	Horse chestnut; sycamore; elder	On	2 - 16	10	None	790	6.0	1.5	M	None	Stand of trees at field edge; predominantly sycamore with 1x chestnut to south; elder occurs as understory	Good	Fair	20+	B2	9.5	Yes

Ref	Species	On / off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	TPO?
G53	Horse chestnut; sycamore; oak; beech; elder	On	2 - 16	33	None	810	6.0	1.5	M	None	Stand of trees at field edge with access track running through group; predominantly sycamore; elder occurs as understory	Good	Fair	20+	B2	9.7	Yes
G54	Ash; elm	On	10 - 12	3	None	430	5.0	0.0	EM	None	Stand of trees at field edge	Fair	Fair	20+	B2	5.2	None
G55	Oak; ash; elm	Off	8 - 14	20	None	410	6.0	0.0	EM	None	Stand of trees at field edge on adjacent site	Fair	Fair	20+	B2	4.9	None
G56	Sycamore; beech; horse chestnut; cherry; lime	On	8 - 16	30	None	980	6.0	1.0	EM	None	Stand of trees at field edge; predominantly early mature sycamore; mature beech; sycamore & chestnut (1 of each) to west of	Good	Fair	20+	B2	11.8	Yes
G57	Lime; beech; elm; elder	On	8 - 16	38	None	560	5.5	1.0	EM	None	Stand of trees at field edge/roadside; predominantly early mature lime & beech with multi stemmed elm; sporadic elder	Good	Fair	20+	B2	6.7	Yes
G58	Sycamore; beech; elm; cherry; elder	On	6 - 16	30	None	960	6.0	1.0	M	None	Stand of trees at field edge/roadside; predominantly mature sycamore; 1x mature beech to north west of plot; cherry; elm & elder occur as understory	Good	Fair	20+	B2	11.5	Yes
G59	Sycamore; horse chestnut; beech; elder	On	6 - 17	41	None	1100	6.0	1.0	M	None	Stand of trees forming avenue along access track; elder occurs as limited understory	Good	Fair	40+	A2	13.2	Yes
G60	Horse chestnut; sycamore; elder	On	2 - 16	17	None	620	6.0	1.5	M	None	Stand of trees forming avenue along access track; predominantly sycamore	Good	Fair	20+	B2	7.4	Yes
G61	Elm; goat willow	On	2 - 15	20	None	440	4.5	0.0	EM	None	Small stand of predominantly elm; dead stems to south east of plot	Fair	Fair	10+	C2	5.3	Yes
G62	Sycamore; beech; horse chestnut; elder	On	2 - 18	18	None	1000	7.0	2.0	M	None	Stand of trees forming avenue along access track; predominantly sycamore; Japanese knotweed stems within plot & to east	Good	Fair	20+	B2	12.0	Yes
G63	Sycamore; beech; cherry; horse chestnut; holly; elder	On	2 - 18	40	None	880	6.0	1.0	M	None	Stand of trees at field edge/roadside; predominantly sycamore; 1x mature horse chestnut to west of plot showing heavily decayed main stem; holly & elder occur as	Good	Fair	20+	B2	10.6	Yes
G64	Sycamore; horse chestnut; elm	On	4 - 14	3	None	600	6.0	0.0	M	None	Closely grown sycamore & chestnut forming cohesive crown; small elm growing beneath canopy dripline	Good	Fair	20+	B2	7.2	Yes
G65	Beech; sycamore; oak; ash; horse chestnut; cherry; elm; elder; hawthorn	On	2 - 18	70	None	1000	6.0	1.5	M	None	Stand of trees at field edge/roadside; predominantly sycamore & beech with elm; thorn & elder occurring as understory	Good	Fair	20+	B2	12.0	Yes
G66	Sycamore; goat willow	On	4	2	None	90	3.0	0.0	SM	None	1x multi stemmed willow & 1x sycamore which is young re-gen from old bole	Fair	Fair	10+	C2	1.1	None

Ref	Species	On / off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	TPO?
G67	Birch; goat willow; oak	On	2 - 8	11	None	150	3.0	0.0	SM	None	1x early mature multi stemmed willow; 1x semi mature birch; remaining stems made up of young willow; birch & oak	Fair	Fair	10+	C2	1.8	None

HEDGES

Ref	Species	On / off site	Av. Height (m)	Av. width (m)	Av. Stem diam (mm)	Avg. Canopy Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
H1	Hawthorn; blackthorn; elder	On	4.5	2.5	90.0	0.0	EM	Outgrown hedge; sporadic gaps to west; sides flailed & top growth left unchecked	Good	Good	20+	B2	1.1
H2	Hawthorn; blackthorn; elder; hazel	On	5	3.0	80.0	0.0	EM	Outgrown hedge; sides flailed & top growth left unchecked	Good	Fair	20+	B2	1.0
H3	Hawthorn; hazel	On	4.5	2.5	90.0	0.0	EM	Outgrown hedge; sides flailed & top growth left unchecked	Good	Good	20+	B2	1.1
H4	Hawthorn	On	4	2.0	80.0	0	EM	Outgrown hedge; sides flailed & top growth left unchecked	Good	Fair	20+	B2	1.0
H5	Hawthorn; elder	On	2	1.5	90.0	0	M	Predominantly thorn; partially choked with brambles; sporadic gaps where elder occurs	Good	Fair	20+	B2	1.1
H6	Hawthorn	On	2	1.5	90	0	M	3x mature remnant stems to far west of hedge; maintained by flail	Good	Fair	40+	B2	1.1
H7	Hawthorn	On	2	1.5	70	0	EM	Maintained by flail	Good	Fair	40+	B2	0.8
H8	Hawthorn; elder	On	2	1.5	70	0	EM	Maintained by flail; predominantly thorn	Good	Fair	40+	B2	0.8
H9	Hawthorn	On	2	1.5	70	0	EM	Maintained by flail	Good	Fair	40+	B2	0.8
H10	Hawthorn; oak	On	5	5.0	90	0	EM	Remnant stems of hedgerow forming sporadic group which spans drainage ditch; 1x oak stem	Good	Fair	20+	B2	1.1
H11	Hawthorn	On	5	5.0	90	0	EM	Remnant stems of hedgerow forming sporadic group which spans drainage ditch	Good	Fair	20+	B2	1.1
H12	Hawthorn; oak; goat willow	On	5	5.0	90	0	EM	Hedge spans drainage ditch; predominantly thorn	Good	Fair	20+	B2	1.1
H13	Hawthorn; lilac	On	5	3.0	90	0	M	Remnant section of hedge at scrubby field corner	Good	Fair	20+	B2	1.1
H14	Hawthorn; holly; sycamore	On	5	3.0	90	0	M	Sides flailed & top growth left unchecked; predominantly thorn; 2x sycamore approx 7m in height	Good	Fair	20+	B2	1.1
H15	Hawthorn	On	5	3.0	90	0	M	Sides flailed & top growth left unchecked	Good	Fair	20+	B2	1.1
H16	Hawthorn	Off	6.0	4.0	110	0.0	M	Outgrown/derelict hedge; heavily swathed in ivy	Good	Fair	20+	B2	1.3
H17	Hawthorn	Off	6.0	3.0	90	0.0	M	Outgrown/derelict hedge; swathed in ivy	Good	Fair	20+	B2	1.1

Ref	Species	On / off site	Av. Height (m)	Av. width (m)	Av. Stem diam (mm)	Avg. Canopy Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
H18	Hawthorn; holly; goat willow; sycamore; ash	On	5.0	3.0	90	0.0	EM	Outgrown hedge	Good	Fair	20+	B2	1.1
H19	Hawthorn; holly; goat willow; sycamore; ash	On	5.0	3.0	90	0.0	M	Sides flailed & top growth left unchecked; predominantly thorn	Good	Fair	20+	B2	1.1
H20	Hawthorn; elder; sycamore; elm	On	4.5	2.5	70	0.0	EM	Sides flailed & top growth left unchecked; predominantly thorn; 2x small trees within west of hedge approximately 8m in height (1x sycamore & 1x elm)	Good	Fair	40+	B2	0.8
H21	Blackthorn; goat willow; hazel	On	6.0	5.0	90	0.0	EM	Outgrown hedge forming dense thicket; predominantly thorn	Good	Fair	20+	B2	1.1
H22	Hawthorn; holly; elder	On	2.0	1.5	70	0.0	EM	Maintained by flail; predominantly thorn; gaps appearing where elder is present	Good	Fair	20+	B2	0.8
H23	Hawthorn	On	1.5	1.0	70	0.0	EM	Maintained by flail; sporadic gaps	Good	Fair	20+	B2	0.8
H24	Hawthorn; elder	On	1.5	1.0	70	0.0	EM	Maintained by flail; sporadic gaps; predominantly thorn	Good	Fair	20+	B2	0.8
H25	Hawthorn; elder	On	1.5	1.0	70	0.0	EM	Maintained by flail; sporadic gaps; predominantly thorn	Good	Fair	20+	B2	0.8
H26	Hawthorn; holly	On	4.5	3.0	110	0.0	M	Remnant part of hedge; mature thorn with young thorn & holly	Good	Fair	20+	B2	1.3
H27	Hawthorn	On	3.5	2.0	220	0.0	EM	Remnant parts of derelict hedge	Good	Fair	20+	B2	2.6
H28	Hawthorn	On	1.5	1.0	50	0.0	SM	Maintained by flail; sporadic gaps	Good	Fair	20+	C2	0.6
H29	Hawthorn; elder	On	1.5	1.0	50	0.0	SM	Maintained by flail; sporadic gaps; predominantly thorn	Good	Fair	20+	C2	0.6
H30	Hawthorn	On	4.5	3.0	100	0.0	M	Remnant parts of hedge; topped to south adjacent to 11kv overhead power lines	Good	Fair	20+	B2	1.3
H31	Hawthorn	On	4.5	3.5	120	0.0	M	Remnant parts of derelict hedge	Good	Fair	20+	B2	1.5
H32	Hawthorn; sycamore	On	4.0	2.5	80	0.0	M	Remnant parts of derelict hedge	Fair	Fair	10+	C2	1.0
H33	Hawthorn; sycamore; elder	On	4.0	2.5	50	0.0	Y	Sporadic linear feature; young re-gen from early mature stems; predominantly sycamore	Fair	Fair	10+	C2	0.6

WOODLAND

Ref	Species	On / off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	ASNW Buffer	TPO?
W1	Oak; sycamore; holly; hazel; elder	On	2 - 15	80	None	690	6.0	1.0	M	None	Covert to field edge; predominantly oak with sycamore; other species occur as understory which is dominated by elder; stems to far west of plot are offsite (to west of wall); Japanese knotweed to northern boundary of plot; potential badger sett to north	Good	Fair	40+	B2	8.3	N/A	Yes
W2	Oak; Scot's pine; ash; sycamore; holly; hawthorn	On	2 - 15	500	Yes	550	5.5	1.0	EM	None	Hillhouse Wood. Predominantly oak with Scot's pine; sporadic ash & sycamore; other species occur as limited understory; buildings within plot at approximate centre; remnant sections of derelict thorn hedge around perimeter of plot	Good	Good	40+	A2	6.6	N/A	None
W3	Oak; beech; sweet chestnut; ash; birch; sycamore; elder	On	2 - 18	60	None	730	6.0	1.0	M	None	Predominantly oak; beech & chestnut; sporadic ash; birch & sycamore; elder occurs as limited understory; unmettled track to east of plot	Good	Good	40+	A2	8.8	N/A	Yes
W4	Sycamore; oak; birch ash; hawthorn; elder	On	2 - 16	500	Yes	600	5.0	1.0	M	None	Gulley Wood. Predominantly oak & sycamore; thorn & elder occurs as limited understory; old workings to north west corner of plot; Japanese knotweed at south west corner of plot; overlapped by Conservation Area	Good	Fair	40+	B2	7.2	N/A	Yes
W5	Oak; sycamore; birch; elm; hornbeam; holly; elder; rhododendron	On	2 - 18	600	None	660	6.0	1.0	EM	ASNW	Harry Royd Clough Wood. Predominantly oak & sycamore with birch; elm & hornbeam; other species occur as understory	Good	Good	40+	A2	7.9	11.0	None
W6	Sycamore; oak; birch; elm; holly; elder	On	2 - 18	50	None	630	5.0	1.0	EM	None	Predominantly sycamore with birch; elm & oak; other species occur as understory	Good	Fair	40+	B2	7.6	N/A	None
W7	Oak; sycamore; elder	On	16	65	None	750	5.0	1.0	EM	None	Predominantly oak; with elder as limited understory	Good	Fair	40+	B2	9.0	N/A	None

Ref	Species	On / off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	ASNW Buffer	TPO?
W8	Oak; sycamore; birch; goat willow ; hawthorn; elder	On	16	250	None	990	6.0	2.0	EM	None	Pit Hill Plantation. Predominantly oak & sycamore with birch & willow; thorn & elder occur as limited understory; old workings within site; recent mechanical excavations; burning of detritus & storage of surplus building materials; access track direct from road (temporarily blocked)	Good	Fair	40+	B2	11.9	N/A	Yes
W9	Oak; sycamore; hornbeam; ash; elm; beech; birch; holly; elder	On	16	200	None	630	6.0	2.0	EM	None	Predominantly oak & sycamore with birch; beech; ash elm & hornbeam; holly & elder occur as limited understory	Good	Fair	40+	A2	7.6	N/A	Yes
W10	Sycamore; ash; elm; oak; sweet chestnut; holly; elder; hawthorn; yew	On	16	300	None	660	6.0	2.0	M	None	The Rookery. Predominantly oak & sycamore with sporadic sweet chestnut; holly & elder occur as limited understory; group abuts lake on northern boundary	Good	Fair	40+	A2	7.9	N/A	Yes
W11	Oak; sycamore; Scot's pine; beech; elm; blackthorn; holly; elder; rhododendron	On	16	400	None	740	6.0	2.0	M	None	Fishponds Plantation. Predominantly oak; Scot's pine; beech & sycamore; other species occur as understory; Japanese knotweed located to eastern boundary & also adjacent to ponds within plot; derelict structure to north west 'nib' of plot	Good	Fair	40+	A2	8.9	11.0	None
W12	Larch; birch; sycamore; elm; holly; elder	On	16	400	None	410	4.5	0.5	EM	ASNW	Denby Wood. Predominantly larch with birch & sycamore; other species occur as understory; sample area of group edge	Good	Fair	20+	B2	4.9	9.5	None
W13	Beech; Corsican pine; sycamore; elm; elder	On	16	250	None	480	5.0	2.0	EM	ASNW	Denby Wood. Predominantly beech & pine with occasional sycamore; other species occur as limited understory; sample area of group edge	Good	Fair	40+	B2	5.8	10.0	None
W14	Oak; sycamore; Norway spruce; Scot's pine; larch; holly; rhododendron	Off	2 - 18	400	None	640	6.0	1.0	EM	ASNW	Grange Wood. Predominantly oak; sycamore; spruce; pine & larch; other species occur as understory; ha-ha wall to southern boundary; outlying oak to south have been topped for 11kv overhead power line	Good	Good	40+	A2	7.7	11.0	None

Ref	Species	On / off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	ASNW Buffer	TPO?
W15	Corsican pine; Norway spruce; oak; sycamore; elder; rhododendron	On	16	400	None	410	4.5	0.5	EM	None	Predominantly pine & oak; other species occur as understory	Good	Fair	20+	B2	4.9	N/A	None
W16	Sycamore; birch; oak; larch; holly; rhododendron	On	16	400	None	440	5.0	2.5	EM	None	Predominantly larch with birch & sycamore; occasional oak; other species occur as understory	Good	Fair	20+	B2	5.3	N/A	None

Appendix 4: Contact Details

Name	Position	Company	Contact
Sarah Cullen	Client	Boom Developments Ltd.	
	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		

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