arbtech

Arboricultural Method Statement to BS5837:2012

Northwood Cricket Club

Jubilee Field, Land adj. Northwood Cricket Club,
Ducks Hill Road,
Northwood,
Middlesex,
HA6 2NP

10 June 2023

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Table of Contents

1. Introduction

Arbtech Consulting Limited (Arbtech) received written instruction on 7th December 2022 from Colin Hulott to attend Jubilee Field, Land adj. Northwood Cricket Club, Ducks Hill Road, Northwood, Middlesex, HA6 2NP; grid reference, TQ079917 (site) to undertake an arboricultural survey a to BS5837:2012 guidance to assess trees, hedges and major shrub groups growing on and within influencing distance of the site and to produce a Schedule of trees and a Tree Constraints Plan. Arbtech received further instruction on 1st March 2023 to produce an Arboricultural Impact Assessment, Arboricultural Method Statement and Tree Protection Plan.

2. Executive Summary

This report describes the extent and effect of the proposed development at Jubilee Field, Land adj. Northwood Cricket Club, Ducks Hill Road, Northwood, Middlesex, HA6 2NP ("site") on individual trees and groups of trees within and adjacent to the site.

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

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

Figure 1: Aerial Image of site with ***approximate*** red line boundary (Google Earth)

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.

It is the conclusion of this report that the overall quality and longevity of the amenity contribution provided for by the trees and groups of trees within and adjacent to the site will not be adversely affected as a result of the local planning authority consenting to the proposed development. It is considered that any issues raised in this report, or beyond the scope of it can be dealt with by planning conditions.

3. General Information

Client: Northwood Cricket Club

Site: Jubilee Field, Land adj. Northwood Cricket Club, Ducks Hill Road, Northwood, Middlesex, HA6 2NP

Brief proposal description: The proposal is to remove the tree & hedging to the north boundary, appropriately maintain the remainder of the tree & hedge perimeter, erect appropriate NMT perimeter fencing to all boundaries, regrade the entire field area improving land drainage and to provide a limited single storey structure to the North West corner to provide dedicated toilet, changing & shower facilities for the area of Jubilee Field to become a dedicated 'Colts Cricket Grounds' for use in conjunction with Northwood Cricket Club.

Planning application reference: N/A

Table 1: Documents referred to.

Document	Reference No.
Topographical / Site survey drawing	2022-1417-001-Survey Plan
Proposed layout drawing	20220617 PL03&4
LPA pre-app comments	Pre-app response, ref number 77394/PRC/2022/149, dated 25.11.22
British Standard 5837:2012	"BS5837"
Arboricultural Impact Assessment	Arbtech AIA 01
Tree Protection Plan	Arbtech TPP 01

4. Tree Survey

Survey: An arboricultural survey to BS5837 of all trees within impacting distance of the site was undertaken by Jim Green on 13th January 2023.

A total of 17 (seventeen) individual trees, 6 (six) groups of trees and 1 (one) hedge were surveyed. Details for each of the trees surveyed are provided in the Schedule of Trees (see Appendix 1).

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

Document	Originator	Reference Number	Title
Topo	The Survey House	2022-1417-001-Survey Plan	Topographical Survey

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

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

Legal Status: No statutory protection check has been performed. BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order ("TPO"), and those trees without. This is principally because a detailed planning consent overrides any TPO protection. Consequently, we do not seek to offer any comparison between or infer any difference in the quality or importance of TPO trees and other trees.

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

5. Arboricultural Impact Assessment

Table 3: Documents upon which this assessment has been based.

Document	Originator	Reference Number	Title
Topo	The Survey House	2022-1417-001-Survey Plan	Topographical Survey
Ground Facilities	Abstrkt Design	20220617 PL05	Proposed Colts Ground Facilities
Site Plan	Abstrkt Design	20220617 PL03&4	Proposed Topographical and Arboricultural Plans

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	Proposed structure	Incursion
T6	Common Oak	Fence	RPA & Crown
T7	Common Horse Chestnut	Fence	RPA & Crown
T8	Aspen	Fence	RPA & Crown
T9	Common Ash	Fence	RPA & Crown
T10	Goat Willow	Fence	RPA
H1	Various	Fence	Crown
G2	A Group	Fence	Crown
G3	A Group	Fence	RPA & Crown
G4	A Group	Fence	RPA & Crown

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

Trees to be removed

A total of 3No. individual trees and 1No. group require removal to facilitate the proposed scheme.

A breakdown of all tree removals and pruning works can be seen in Table 8: Summary of Tree Works

Table 5: Number of individual trees to be removed.

U	A	B	C
0	0	1	2

Table 6: Number of groups to be removed.

U	A	B	C
0 (0)	0 (0)	0 (0)	1 (0)

() = partial removal of a group

Canopy cover is ecologically important and the loss of canopy cover by these trees will be mitigated with planting within the development.

6. 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
Topo	The Survey House	2022-1417-001-Survey Plan	Topographical Survey
Ground Facilities	Abstrkt Design	20220617 PL05	Proposed Colts Ground Facilities
Site Plan	Abstrkt Design	20220617 PL03&4	Proposed Topographical and Arboricultural Plans

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
G1	A Group	Fell to ground level, grind stumps	C12
G2	A Group	Prune; eastern edge to facilitate fence installation. This will be achieved by pruning of second order or further sub-ordinate branches only	C12
G3	A Group	Prune; northern edge back to the boundary line to facilitate fence installation. This will be achieved by pruning of second order or further sub-ordinate branches only	B12
G4	A Group	Prune; to facilitate fence installation. This will be achieved by pruning of second order or further sub-ordinate branches only	C12
H1	Various	Prune; southern edge to the boundary line to facilitate fence installation. This will be achieved by pruning of second order or further sub-ordinate branches only	C1
T3	Common Hawthorn	Fell to ground level; remove stumps	C12
T4	Common Ash	Fell to ground level; remove stumps	C12
T5	Common Oak	Fell to ground level; remove stumps	B12
T6	Common Oak	Prune; south eastern crown to facilitate fence installation. This will be achieved by pruning of second order or further sub-ordinate branches only	B12
T7	Common Horse Chestnut	Prune; south eastern crown to facilitate fence installation. This will be achieved by pruning of second order or further sub-ordinate branches only	C12
T8	Aspen	Prune; northern crown to facilitate fence installation. This will be achieved by pruning of second order or further sub-ordinate branches only	B12
T9	Common Ash	Prune; eastern crown to facilitate fence installation. This will be achieved by pruning of second order or further sub-ordinate branches only	C12

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.

Protected Species

Conservation Status of British Bats

The general consensus in Britain and Europe is that virtually all bat species are declining and vulnerable. Our understanding of population status is poor as there is very little historical data for most bat species. Certain species, such as the horseshoe bats, are better understood and have well documented contractions in range and population size.

Given this general picture of decline in UK Government within the UK Biodiversity Action Plan has designated five species of bats as priority species (greater and lesser horseshoe bats, barbastelle, Bechstein's and pipistrelle). These plans provide an action pathway whereby the maintenance and restoration of the former populations levels are investigated.

Legal Status of British Bats

Given the above position all British bats as well as their breeding sites and resting places enjoy national and international protection.

All bat species in the UK are fully protected under the Wildlife and Countryside Act 1981 (as amended) through inclusion in Schedule 5. All bats are also listed on Annex IV (and some on Annex II) of the EC Habitats Directive giving further, European protection. Taken together the act and Conservation of Habitats and Species Regulations 2012 (as amended)* make it an offence to; intentionally or deliberately kill, injure or capture (take) bats;

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

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

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

Breeding birds

All nesting birds are protected under the Wildlife and Countryside Act (as amended) 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. Furthermore, a number of birds enjoy further protection under that Act and are listed on Schedule 1 of the Act. These further protected birds are also protected from disturbance and it may be necessary to operate "no-go" buffer zones around such nests – typically out to 100m.

Planning policy guidance on the treatment of species identified as priorities under the biodiversity action programme suggests that local authorities should take measures to protect the habitats of these species from further decline through policies in local development documents and should ensure that they are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. The conservation of these species should be promoted through the incorporation of beneficial biodiversity designs within developments.

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	Carry out tree works as specified within the summary of tree works
Stage 2	Installation of protective measures in accordance with the approved tree protection plan
Stage 3	Pre-commencement site meeting
Stage 4	Construction 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	Arboricultural approval to dismantle and remove tree protection measures
Stage 9	Dismantle and removal of protective measures
Stage 10	Undertake external landscaping works within the construction exclusion zones
Stage 11	Sign off from project arboriculturist

Protective Measures

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

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

In the event that the protective measures and their positions do not comply with this arboricultural method statement document number Arbtech AMS 01 (10 June 2023) 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 (10 June 2023) 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), there after they will be carefully dismantled only with the agreement of the project arboriculturist and or the local authority tree officer.

The proposed site boundary measures are to be installed and retained for the duration of the development. If for any reason the proposed boundary measures are not to be used protective barrier fencing is to be installed along the line of the boundaries and is only to be removed upon the written permission of the project arboriculturist 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.

Construction exclusion zone

A construction exclusion zone (CEZ) is a designated area where there is to be no construction activity what-so-ever. Access to the area for construction personnel or machinery is strictly prohibited and there is no scope for materials or waste storage etc. There may be some construction activities planned for these areas (e.g., the installation of service trenches) these activities will be undertaken under direct, on-site arboricultural supervision.

Protective Barrier Fencing

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

The proposed site boundary fencing is to be installed prior to construction of the retaining wall and ground facility to act as protective fencing.

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

Trunk Protection

Protective trunk wrapping:

Protective trunk wrapping is to comprise of a minimum of three wrappings of clean dry hessian around the trunk from ground level up to 2.4m high and held in place with sisal. Onto the hessian there is to be a minimum of three wraps of chestnut paling around the trunk; the chestnut paling is to be held in place by 2.50mm galvanized mild steel wire at the top, middle and bottom of each wrap of chestnut paling. The wire is to be secured to the chestnut paling by fencing staples; Or

Protective barrier hoarding:

Protective barrier hoarding should be appropriate for the intensity and proximity of the development to protect trees where development activity is in close proximity. To comprise of 2.4m high wooden site hoarding constructed upon a timber framework situated around the outside of the planting pit. Where the timber frame is constructed around the tree trunk a minimum of four layers of clean dry hessian is to be wrapped around the trunk to protect the bark.

Trunk protection is to be removed ONLY with the written permission of the arboricultural consultant and approval of the local planning authority (LPA).

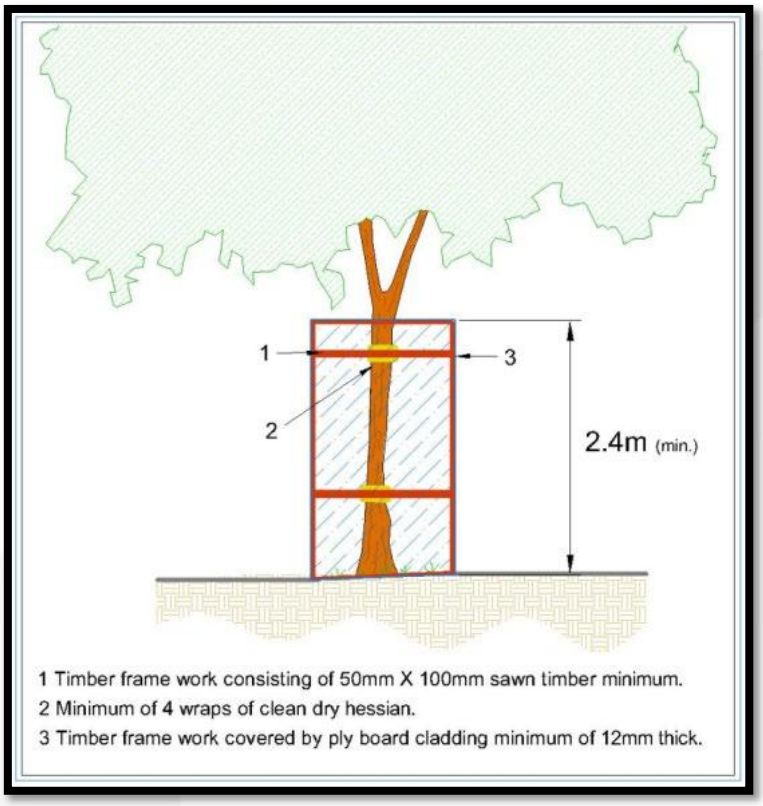

Figure 2: Example image of Protective barrier hoarding

Ground boarding

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

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

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

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

a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, as to form a suspended walkway, or on top of a compression-resistant layer (e.g., 100mm depth of woodchip), laid onto a geotextile membrane;
b) for pedestrian-operated plant up to a gross weight of 2t, proprietary inter-linked ground protection boards placed on top of a compression-resistant layer (e.g., 150mm depth of woodchip), laid onto a geotextile membrane;

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

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

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

Due to the various sizes of demolition and construction plant available and the potential requirements for material storage within the site the final specifications for the ground boarding is to be designed and supplied to the LPA tree officer for their approval by the project engineer a minimum of ten (10) working days before its installation.

Construction

Prior to the construction of the proposed development, 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.

All 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.

Foundations design

The proposed retaining wall and ground facility does not impact upon any of the retained trees and as such will require no specialist construction methodology.

Boundary fences

Proposed fence posts are to be located so that they will not damage or require the removal of roots important to the stability of any trees. This may require individual posts to be relocated which will increase or decrease the spacing between the posts (bay lengths). The fence will be installed at a minimum of a 500mm offset from any trunk.

All posts within the RPAs of tree numbers T6, T7, T8, T9, T10, G3 and G4 are to be excavated manually, using handheld tools (spade, shovel, rabbiting spade, shove holer's / post hole digger), no mechanised equipment (handheld or plant mounted post borer) is to be used.

Prior to concrete being poured to form the fence post pits within or immediately adjacent to the RPAs of retained trees, the excavation is to be lined and sealed with a non-permeable membrane to prevent any leaching of the concrete into the soil and causing desiccation of retained roots by concrete run off.

The fence panels are to be installed under arboricultural supervision so that the adequate location and size of cut-out windows within the fence are implemented in order to allow the retention of primary branches for trees T6, T7, T8 and G4. The cut outs will leave a 100mm offset minimum around the branches to allow for natural movement and growth.

Supervised excavation

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

Any roots that are to be cut will be cleanly severed by the project arboriculturist using a suitable hand saw or secateurs. The edge of all excavation closest to the retained trees will be covered over with damp hessian to prevent drying out, and where necessary be shuttered to prevent soil collapse or contamination by concrete.

Manual excavation:

Excavations within the RPAs will be initially undertaken by hand under direct on-site arboricultural supervision to a minimum of 600mm deep (to be confirmed by the project arboriculturist), whether it is for proposed foundations, hard surfacing or underground services. The soil is to be loosened with the use of a fork or pick and or air-spade and then cleared with a shovel and or the aid of an air-spade and air-vac.

Prohibition

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

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 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 prestart 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.

Services

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

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

Final positions of any proposed services should be verified and approved by the arboricultural consultant and local authority tree officer before implementation.

New Underground services

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

Where it has been impossible to keep underground services from passing through RPAs or within close proximity to trees, these sections are to be installed in one of three ways in accordance with the guidance set out in National Joint Utilities Group guidelines (NJUG 4), under on-site arboricultural supervision.

Trenchless Techniques

There are three main types of trenchless techniques, these include, guided and unguided boring and pipe replacement by lining or bursting. These allow for the installation, maintenance or renewal of underground services, without the disturbance of soil in which roots are likely to be growing. Starting and receiving pits for the boring machinery are to be located outside of the RPAs of any retained trees, with the bore depth being maintained at a minimum depth of 600mm below the existing ground level.

Techniques involving external lubrication of the equipment shall use no material other than water as other lubricants could contaminate the soil (e.g., oil, bentonite, etc.).

Manual Excavation

Excavation within RPAs will be undertaken by hand under direct on-site arboricultural supervision of the required depth of the foundation; Or to a minimum of 600mm deep of any excavation, whether for proposed foundations, hard surfacing or underground services. The total depth of the manual excavation will be determined by the arboriculturist whilst on site.

The soil is to be loosened with the aid of a fork or pickaxe and then cleared with the aid of an Air-spade, Air-vac and or shovel. Any roots found will be cleanly severed by the arboricultural consultant with either a hand saw or secateurs.

Any roots found with a diameter of less than 25mm shall be cleanly severed by the arboricultural consultant. Any roots of 25mm and above shall be excavated around without damaging them; the arboricultural consultant shall decide if it's feasible or necessary to retain the root, if not it shall be severed.

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

Soil beneath the depth may be sheet piled, regular piled or excavated deeper. Machinery may be used for this providing that it is situated outside of the RPA or has appropriate ground protection in place to move around on and work upon.

Broken Trench – Hand Dug

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

Landscaping

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

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

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

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

Monitoring and Supervision

Where trees have been identified within this method statement and tree protection plan drawing number Arbtech TPP 01 for retention, there should be an auditable system of arboricultural monitoring. This is to extend to arboricultural supervision whenever demolition or construction activity is to take place within or adjacent to any canopy or RPA.

The development's tree protection measures are to be monitored and all demolition and construction works to be undertaken within or adjacent to the RPAs of retained trees are to be supervised by project arboriculturist, who should be retained to record and report observations to the council at appropriate intervals.

Pre-commencement site meeting

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

Monitoring and supervision schedule

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

There after monitoring visits are to take place at regular intervals, to ensure that tree protection measures are in place and are functioning as designed or whenever necessary to undertake works to be carried out under arboricultural supervision. The frequency of the monitoring visits is to be determined with the LPA tree officer at the pre-commencement site meeting.

A record of all arboricultural monitoring and supervision visits will be kept and any faults will be logged, this will then be copied to the site agent, developer and local planning authority in a digital format.

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

Supervision

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

1. Pre-commencement site meeting.
2. Location of protective measures.
3. Supervised excavations for fence posts within RPAs of tree nos. T6, T7, T8, T9, T10, G3 and G4.
4. Supervised installation of fence panels within proximity to the crowns of tree nos. T6, T7, T8 and G4.
5. Any demolition and or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).
6. Arboricultural sign off and removal of protective measures.

Completion meeting

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

Appendix 1: Tree Survey Schedule

BS5837:2012 Tree Survey

Arbtech Consulting Ltd
Unit 3, Well House Barns
Chester Road
Chester
Cheshire
CH4 0DH
Phone: 01244661170

Client: Northwood Cricket Club
Project: Jubilee Field, Land adj. Northwood Cricket Club
Survey Date: 13/01/2023
Surveyor: Jim Green

Tree and Tag No / Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations / Survey Comment	Cat ERC
G1											
A Group *See comments for details*	7	1	70	N 1 E 1 S 2 W 1	0 0 0 0	SM	A: 2.2 R: 0.83	Good	C: Good S: Good B: Good	Linear screening group. Species include maple, hawthorn and oak. Dimensions recorded for largest member of group.	C.1.2 10+ yrs
G2											
A Group *See comments for details*	7	1	50	N 2 E 1 S 1 W 1	0 0 0 0	SM	A: 1.1 R: 0.59	Good	C: Good S: Good B: Good	Linear screening group. Species include maple, hawthorn and willow. Dimensions recorded for largest member of group.	C.1.2 10+ yrs
G3										Estimated Measurements	
A Group *See comments for details*	16	1	350	N 2 E 2 S 2 W 2	2 2 2 2	SM	A: 55.4 R: 4.19	Good	C: Good S: Good B: Not visible	Off site linear group of leyland cypress. Dimensions estimated for largest member of group.	B.1.2 20+ yrs
G4										Estimated Measurements	
A Group *See comments for details*	12	1	340	N 5 E 4 S 5 W 3	3 3 2 3	SM	A: 52.3 R: 4.08	Good	C: Good S: Fair B: Good	Off site group of five ash and one oak. Constriction wounds from occlusion of barbed wire to stems. Possible early signs of Ash Dieback. Dimensions estimated for largest member of group.	C.1.2 10+ yrs

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

Condition: C Crown; S Stem; B Basal area

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

ERC: Estimated Remaining Contribution

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
G5											
A Group *See comments for details*	7	1	40	N 2 0 E 2 0 S 2 0 W 2 0		SM	A: 0.7 R: 0.47	Good	C: Good S: Good B: Good	Linear boundary screening group. Species predominantly maple. Dimensions recorded for typical member of group.	C.1 10+ yrs
G6											
A Group *See comments for details*	10	1	300	N 4 3 E 4 3 S 4 3 W 4 3		SM	A: 40.7 R: 3.59	Good	C: Good S: Good B: Good	Off site linear group of five oak. Stem diameters in mm from south to north: 150, 160, 120, 110, 300. Dimensions recorded for largest member of group.	B.1.2 20+ yrs
H1											
A Hedge *See comments for details*	4	1	40	N 2 1 E 2 1 S 2 1 W 2 1		SM	A: 0.7 R: 0.47	Good	C: Good S: Good B: Good	Linear boundary hedge. Species include hazel, maple and hawthorn. Dimensions recorded for typical member of hedge.	C.1 10+ yrs
T1											
Common Horse Chestnut *Aesculus hippocastanum*	7	1	350	N 4 2 E 3 2 S 5 2 W 3 2		SM	A: 55.4 R: 4.19	Good	C: Good S: Fair B: Good	No significant features.	C.1.2 10+ yrs
T2											
Common Horse Chestnut *Aesculus hippocastanum*	12	1	630	N 7 3 E 7 5 S 7 2 W 6 2		SM	A: 179.6 R: 7.56	Good	C: Good S: Good B: Good	No significant features.	B.1.2 20+ yrs
T3											
Common Hawthorn *Crataegus monogyna*	7	5	234 (Eq)	N 2 2 E 2 2 S 2 2 W 2 2		SM	A: 24.7 R: 2.8	Good	C: Good S: Fair B: Good	Multi-stemmed from 1m, ivy-clad to apex.	C.1.2 10+ yrs

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

Condition: C Crown; S Stem; B Basal area

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

ERC: Estimated Remaining Contribution

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T4											
Common Ash *Fraxinus excelsior*	10	1	310	N 4 E 3 S 3 W 3	4 4 3 3	SM	A: 43.5 R: 3.72		C: Fair S: Good B: Good	Ivy encroaching mid crown. Crown somewhat sparse.	C.1.2 10+ yrs
T5											
Common Oak *Quercus robur*	9	1	330	N 4 E 4 S 3 W 4	2 2 2 2	SM	A: 49.3 R: 3.96	Good	C: Good S: Good B: Good	No significant features.	B.1.2 20+ yrs
T6											
Common Oak *Quercus robur*	13	1	810	N 9 E 9 S 7 W 8	6 5 6 2	SM	A: 296.9 R: 9.72	Good	C: Good S: Fair B: Good	See Comment :: See Comment Slime flux emanating from stem at 1.7m to north, staining to ground level. Bifurcation at 2m into codominant stems, union has partially failed, open crack coaelescing with point of flux emanation and probably to ground: Recommend EITHER: removal of western stem ASAP, OR: crown reduction of up to 2m and install rod braces to stem and cable bracing to crown.	B.1.2 20+ yrs
T7										Estimated Measurements	
Common Horse Chestnut *Aesculus hippocastanum*	10	4	728 (Eq)	N 4 E 4 S 4 W 4	3 2 3 3	SM	A: 239.9 R: 8.73	Good	C: Good S: Not visible B: Not visible	Pond, dense understorey and fallen tree restricting detailed inspection. Multi-stemmed from base, ivy encroaching mid crown.	C.1.2 10+ yrs
T8										Estimated Measurements	
Aspen *Populus tremula*	17	1	460	N 8 E 8 S 8 W 8	3 6 6 8	SM	A: 95.7 R: 5.51	Good	C: Good S: Not visible B: Not visible	Off site tree viewed from afar through fence. Ivy encroaching mid crown. First primary limb at 5m to west partially failed, tip resting on ground to west.	B.1.2 20+ yrs

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

Condition: C Crown; S Stem; B Basal area

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

ERC: Estimated Remaining Contribution

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T9											
Common Ash *Fraxinus excelsior*	15	1	390	N 6 E 4 S 4 W 6	6 4 5 5	SM	A: 68.8 R: 4.67	Good	C: Good S: Fair B: Good	Off site tree, constriction wounds from wire to lower stem.	C.1.2 10+ yrs
T10										Estimated Measurements	
Goat Willow *Salix caprea*	10	2	594 (Eq)	N 1 E 4 S 5 W 5	6 3 2 2	SM	A: 159.7 R: 7.12	Dead	C: Poor S: Poor B: Poor	Standing-dead tree.	U n/a
T11										Estimated Measurements	
Common Oak *Quercus robur*	10	1	350	N 5 E 5 S 5 W 5	2 3 2 2	SM	A: 55.4 R: 4.19	Good	C: Good S: Good B: Good	Off site tree. No significant features.	B.1.2 20+ yrs
T12										Estimated Measurements	
Common Ash *Fraxinus excelsior*	10	4	411 (Eq)	N 3 E 3 S 3 W 3	3 2 3 4	SM	A: 76.3 R: 4.92	Fair	C: Fair S: Not visible B: Not visible	Off site tree. Dense understorey restricting detailed inspection. Lesions to stems and early signs of Ash Dieback.	C.1.2 10+ yrs
T13										Estimated Measurements	
Corsican Pine *Pinus nigra var.maritima*	14	1	550	N 5 E 7 S 7 W 6	10 8 9 10	SM	A: 136.9 R: 6.6	Good	C: Good S: Not visible B: Not visible	Off site tree. Ivy encroaching mid stem and dense understorey restricting detailed inspection. Bifurcation at 6m into codominant stems.	B.1.2 20+ yrs
T14										Fell :: Fell to safe height Estimated Measurements	
Corsican Pine *Pinus nigra var.maritima*	14	1	650	N 3 E 1 S 8 W 4	10 12 9 9	SM	A: 191.2 R: 7.8	Fair	C: Fair S: Poor B: Poor	Off site tree. Degraded fungal fruiting bodies to base consistent with Sparassis crispa and Phaeolus schweinitzii. Fluting to lower stem and woodpecker "trial" holes. Crown suppressed to east due to adjacent dominant tree. First primary limb at 9m to southwest forming secondary crown. Storm damage to upper central crown leaving dead stubs up to 80mm diameter and 3m long. Recommend: Fell tree to height of 6m.	U <10 yrs

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

Condition: C Crown; S Stem; B Basal area

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

ERC: Estimated Remaining Contribution

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T15										Estimated Measurements	
Corsican Pine *Pinus nigra var.maritima*	14	1	860	N 8 E 8 S 8 W 7	10 9 5 10	SM	A: 334.6 R: 10.32	Good	C: Good S: Good B: Good	Off site tree. Stem lean to southeast of 15° from upright. Bifurcation at 10m into codominant stems.	**B.1.2** 20+ yrs
T16										Estimated Measurements	
Corsican Pine *Pinus nigra var.maritima*	10	1	390	N 3 E 4 S 1 W 2	5 4 9 9	SM	A: 68.8 R: 4.67	Poor	C: Poor S: Good B: Good	Fell :: Fell to safe height Off site, standing-dead tree. Stem lean to east of 15° from upright. Recommend: Fell tree to height of 6m.	**U** <10 yrs
T17										Estimated Measurements	
Aspen *Populus tremula*	17	1	460	N 8 E 8 S 8 W 8	3 6 6 8	SM	A: 95.7 R: 5.51	Good	C: Good S: Not visible B: Not visible	Off site tree viewed from afar.	**B.1.2** 20+ yrs

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

Condition: C Crown; S Stem; B Basal area

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

ERC: Estimated Remaining Contribution

Appendix 2: Tree Protection Notice

(To be printed at A3 or larger)

Tree Protection Area

KEEP OUT

Do **not** move this fence

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

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

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

Appendix 3: Contact Details

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

Document Production Record

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