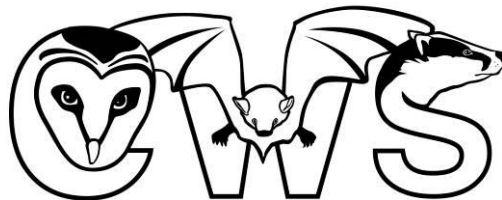


Tree Report for the Cricket Pavilion at Sibford School, Sibford Ferris, Banbury OX15 5QL



Cotswold Wildlife Surveys

17th June 2021

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SUMMARY

At Sibford School, planning permission is being sought to replace the cricket pavilion. The proposed works will include the demolition of the existing building.

On 17th June 2021, Andy Warren from Cotswold Wildlife Surveys undertook a tree survey of the site. All trees within impacting distance of the proposed construction and demolition zone were surveyed, and are considered within this report.

The aim of the report, which has been produced in accordance with British Standard 5837:2012 '*Trees in Relation to Design, Demolition & Construction - Recommendations*', is to systematically assess the arboricultural implications arising as a result of the proposed scheme, and to provide suitable recommendations regarding the potential effect on trees.

The arboricultural implications can be summarised as follows:

- ❑ There are three mature trees around the periphery of the existing pavilion, including a Sycamore *Acer pseudoplatanus* (T1), a Walnut *Juglans regia* (T2) and a Cherry *Prunus sp* (T3);
- ❑ All the trees are to be retained and protected. As such their root protection areas (RPA) have been calculated;
- ❑ It can be seen that the RPA of T3 lies under the existing pavilion by about 5-10%;
- ❑ The new pavilion will sit on the same footprint and will continue to incur the RPA of T3 by about 5-10%. Although this represents a small amount of impermeable hard surfacing over the roots, this is still well below the 20% maximum allowable under the terms of BS5837:2012;
- ❑ The new pavilion is to have a concrete raft foundation with a toe of 450 mm;
- ❑ No special protection measures are required for the excavation of the footings;
- ❑ The RPAs of the other two trees will not be impacted;
- ❑ The new pavilion will not lie under the canopies of any of the trees, so it is not anticipated that there will be any conflict over accumulating leaf litter in the gutters and/or shedding branches;
- ❑ No specific tree planting has been proposed, but any additional trees should be in keeping with the spatial constraints of the site to avoid future conflicts with the new buildings.

1.0 INTRODUCTION

This report has been prepared to accompany a planning submission by Sibford School (hereafter – client), relating to the construction of a new cricket pavilion to replace the existing building (hereafter – site).

It has been produced in accordance with British Standard 5837: 2012 '*Trees in Relation to Design, Demolition & Construction – Recommendations*', (hereafter – BS5837).

The scope of BS5837 is to provide guidance on how trees and other vegetation can be suitably integrated into construction and development schemes. The overall aim is to ensure the protection of amenity and landscape through appropriate retention of trees.

This report has been produced in accordance with BS5837, and is intended to demonstrate how trees have been properly considered in relation to the proposed scheme. The objective is to provide recommendations for tree protection (where applicable) relating to the scheme's potential impact on trees and vice versa.

Following instruction, the consultant visited the site on 17th June 2021. Pursuant to the agreed brief, a site assessment and a BS5837 tree survey were carried out. All trees within impacting distance of the proposed construction and demolition activities were surveyed.

1.1 Proposed works

The proposed works will include the construction of a new cricket pavilion. The existing pavilion is to be demolished.

1.2 Survey area

The survey site comprises the grounds of Sibford School. This consists of close mown amenity grassland with scattered trees (Figs. 1 and 2).



Figs. 1 & 2 Grounds of Sibford School around cricket pavilion

The proposed construction site is sensitive from an arboricultural perspective, due to the presence of the mature trees.

The objective assessment resulted in BS5837 categories of 'A3' and 'B2' being attributed to the trees that would be impacted upon by the proposed development.

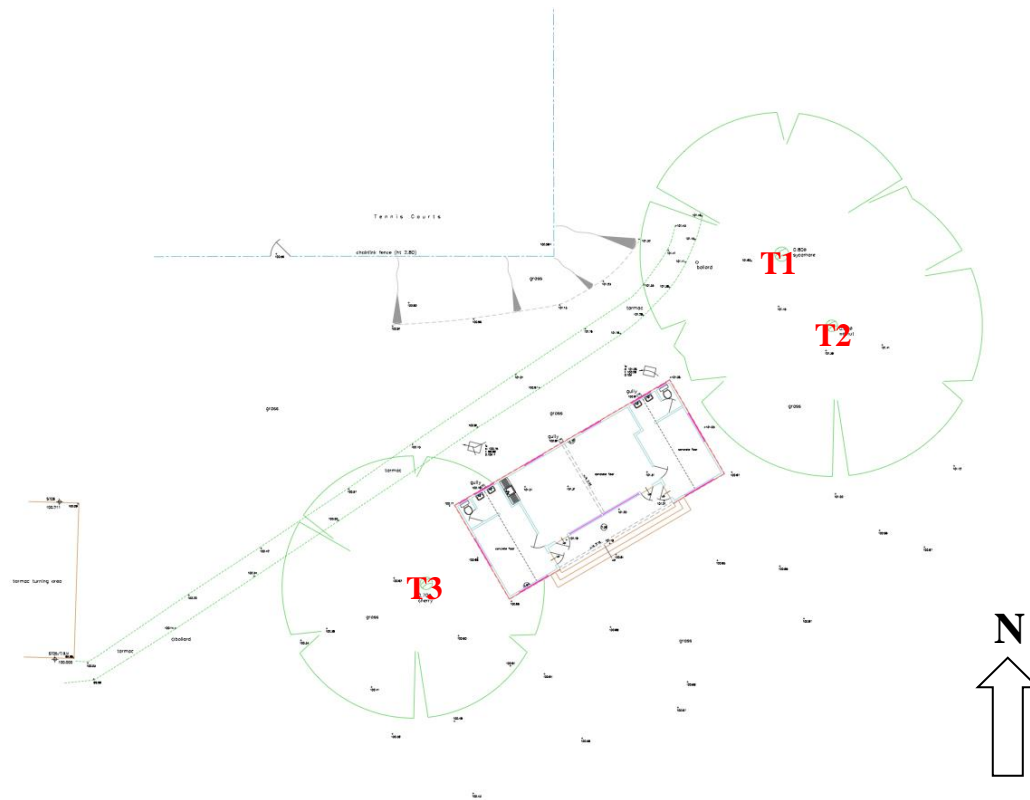
The trees provide both an individual and collective contribution to the site, and their physiological condition is good.

There are existing hard surface treatments in close proximity to the trees, and there may be underground services.

The survey data and site observations have been used to illustrate the site's arboricultural restrictions in the form of a Tree Quality Assessment and Tree Constraints Plan at Appendix II and III respectively. A provisional Tree Protection Plan is shown in Appendix IV.

2.0 TREE SURVEY

The survey focussed on three trees across the site. The locations of the trees are shown on the existing site layout plan below. Other trees were too far away to be impacted upon by the proposed works and have not been included as part of the survey.



Plan 1 Tree survey and site plan

The detailed tree survey schedule is shown in Appendix I.

3.0 TREE CATEGORISATION

Tree No.	Species	Category
T1	Sycamore	A3
T2	Walnut	A3
T3	Cherry	B2

A3: Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).

B2: Trees present in numbers, usually as groups or woodlands, such that they form distinctive landscape features, thereby attracting a higher collective rating than they might attract as individuals.

The tree quality assessment is shown in Appendix II.

4.0 ARBORICULTURAL IMPLICATIONS ASSESSMENT

The following information, as with the prior contents of this report, should be read in conjunction with the tree data table and the TCP (Appendix III).

4.1 Below ground constraints

The demolition of the existing cricket pavilion and construction of the new pavilion and access will be used in conjunction with the installation of protective barrier fencing (PBF).

The PBF will be of an appropriate specification and will be installed to exclude construction activities from the RPAs of retained trees. At the point of PBF being installed, the enclosed RPA sections become demolition and construction exclusion zones (CEZ). This is to protect the RPAs of good quality retained trees during construction. The construction restrictions, phased processes, and specification for the PBF form part of the AMS.

As such, applying BS5837 the root protection areas of the trees were calculated. These are shown on the TCP in Appendix III.

It can be seen that the RPA of T3 lies under the existing pavilion by less than 10%. The new pavilion will sit on the same footprint and will incur the RPA of T3 by the same amount. Although this represents an amount of impermeable hard surfacing over the roots, this is still well below the 20% maximum allowable under the terms of BS5837:2012.

The new pavilion will sit on a concrete raft foundation with a perimeter toe that is 450 mm deep. As such no special protection measures are required for the excavation of the footings.

The RPAs of the other two trees are well outside the proposed footprint of the new development and will not be affected.

As services will be associated with the new pavilion, any underground utilities installed within close proximity to RPAs will take account of the trees' roots and their growing environment.

As such, excavations will be carried out manually with the use of hand operated machinery and potentially an air spade.

Due to the installation of PBF for the duration of the proposed demolition and construction phase, it is not anticipated that RPA incursion will occur on any trees outside the demolition and construction zone.

However, where this need arises, it may be necessary to protect the tree roots and their growing environment. If so, the advice of the consultant should be sought and the written permission of the Local Authority may also be required.

4.2 Above ground constraints

Overall there will be little effect on the landscape when viewed from locations outside of the site, as none of the trees are to be removed, and the site is well hidden by the existing mature grounds.

The new pavilion will not lie under the canopies of any of the trees, so it is not anticipated that there will be any conflict over accumulating leaf litter in the gutters and/or shedding branches.

4.3 Replacement Planting

No specific tree planting has been proposed, but any additional trees should be in keeping with the spatial constraints of the site to avoid future conflicts with the new building.

4.4 Conclusions

The objective assessment above has resulted in the following:

- ❑ There are three mature trees around the periphery of the existing pavilion, including a Sycamore (T1), a Walnut (T2) and a Cherry (T3);
- ❑ All the trees are to be retained and protected. As such their root protection areas (RPA) have been calculated;
- ❑ It can be seen that the RPA of T3 lies under the existing pavilion by about 5-10%;
- ❑ The new pavilion will sit on the same footprint and will continue to incur the RPA of T3 by about 5-10%. Although this represents a small amount of impermeable hard surfacing over the roots, this is still well below the 20% maximum allowable under the terms of BS5837:2012;
- ❑ The new pavilion is to have a concrete raft foundation with a toe of 450 mm;
- ❑ No special protection measures are required for the excavation of the footings;
- ❑ The RPAs of the other two trees will be impacted;
- ❑ The new pavilion will not lie under the canopies of any of the trees, so it is not anticipated that there will be any conflict over accumulating leaf litter in the gutters and/or shedding branches;
- ❑ No specific tree planting has been proposed, but any additional trees should be in keeping with the spatial constraints of the site to avoid future conflicts with the new buildings.
- ❑ Construction traffic and materials storage areas will be contained on existing hard surfaced areas or land away from retained trees;
- ❑ This Arboricultural Implications Assessment (AIA) is supported by an Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP).

5. ARBORICULTURAL METHOD STATEMENT

5.1 Demolition and Construction Restrictions

The following restrictions are to be employed to ensure the suitable protection of retained trees:

- i. Tree works are to be completed prior to commencement of any and all demolition and construction processes;
- ii. No tree works not specified below are permitted;
- iii. PBF is to be installed prior to the demolition and construction works commencing;
- iv. No fires are to be lit and no machinery, plant or vehicles are to be washed down within 10.0 m of a tree's canopy;
- v. During demolition and construction activities, RPAs may not be breached, i.e. no surfacing works, no chemicals/materials to be transported or stored or used or mixed, without the prior advice of the consultant and the consent of the Local Authority;
- vi. No mechanical digging or scraping is permitted within an RPA;
- vii. Only following completion of demolition and construction can any hard surfacing used for construction traffic be removed;
- viii. Only following demolition and construction can the PBF be removed and the soft landscaping/tree planting works (if required) be undertaken.

Specific demolition and construction activities are as follows:

The demolition and removal of the existing pavilion has a potential impact on the RPA of T3.

As such, the breaking out will take place in a controlled manner, with any trenches or slabs carefully broken up with pneumatic drill, and all arisings either crushed on site for re-use or removed from site.

Any stripping and recovery of materials will be by hand.

5.2 Tree Works Specification

Tree works must only be undertaken with the full and written permission of the Local Authority and/or in accordance with detailed planning permission and to BS:3998 by a tree surgeon who is suitably qualified, experienced and insured.

The tree works listed below are the result of the AIA's recommendations.

TREE WORK SUMMARY

Tree Number	Remedial works
T1-T3	Retain and protect

Protective Barrier Fencing (PBF) Specification

Following the completion of the tree works, PBF is to be installed as illustrated on the TPP, and is to remain in situ for the entire duration of the demolition and construction phase, unless otherwise agreed in writing by the Local Authority.

The PBF, due to the degree and proximity of work taking place around the trees, is to consist of “a vertical and horizontal (scaffold) framework, well braced to resist impacts, with the vertical tubes spaced at a maximum of 3m. Onto this, weld mesh panels should be securely fixed with wire or scaffold clamps.

Weldmesh panels on rubber or concrete feet are not resistant to impact and should not be used.

The type of fence to be used is shown in Fig. 3 below.

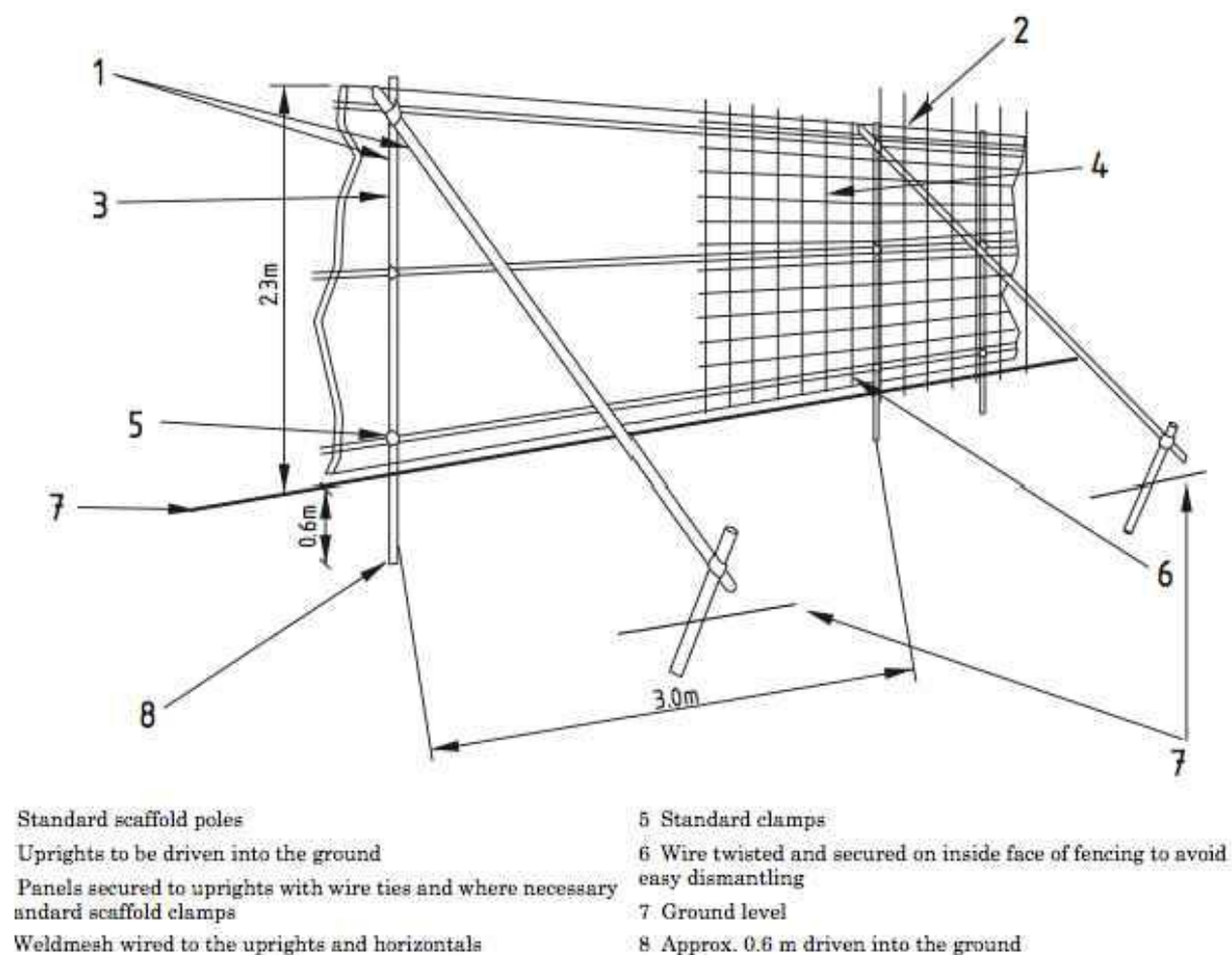


Fig. 3 Protective Barrier Fencing

The position of the PBF is shown in Appendix IV.

Tree protection signage denoting the words “*TREE PROTECTION ZONE – KEEP OUT*” is to be fixed onto every other panel of the PBF (Fig. 4).



Fig. 4 Example of signage

Sensitive RPA Excavations

Where works are proposed within an RPA, special excavation techniques are required to ensure the rooting volume, and the existing conditions for growth, are protected during both the excavations and the duration of the works. The following measures are to be implemented where said situation is present.

- ❑ Protect the soil from compaction or soil shearing (i.e. direct contact with open soil);
- ❑ Retain the soils aerobic conditions and facilitate the vertical and lateral exchange of water and air;
- ❑ Undertake the excavation works whilst complying with the construction process restrictions

The excavation of soil within an RPA is to be conducted manually with the use of manually operated (hand held) machinery such a pneumatic drill. If required thereafter, an air spade with soil suction should be used as a non-invasive means of excavation to ultimate depth.

Where rooting volume is encountered greater than 25 mm in diameter, for the duration of exposure, the roots should be wrapped in dry, clean hessian sacking. In certain circumstances roots smaller than 25 mm can be pruned back.

However, pruning of roots greater than 25 mm in diameter will require the advice of the consultant and written permission from the Local Authority.

Prior to backfilling, any hessian wrapping should be removed and roots should be surrounded/packed with sharp sand (not building sand).

Special Engineering Solutions

Where existing surfacing has been excavated/prepared within an RPA and replacement hard surfacing is to be installed, special measures may be required to ensure the rooting volume, and the existing conditions for growth, are protected.

AT Sibford School these are unlikely to be required to construct the new pavilion, but are shown here in case they become necessary.

The preparation and installation of a load bearing surface solution is to be installed within an RPA that is to:

- ❑ Be a no dig solution for the installation of hard surfacing within the RPAs of retained trees;
- ❑ Retain the soils aerobic conditions and facilitate the vertical and lateral exchange of water and air;
- ❑ Install the surface treatment whilst complying with any construction process restrictions.

A geotextile is to be laid onto the prepared ground and a cellular confinement system fixed on top and 'charged' with a washed no fines aggregate. This is to be 'dressed' using traditional gravel. This will require the installation of a thin layer of gravel bedding and a filled DuoBlock-type system with the surface material on top.

The illustration below shows this load bearing surfacing (Fig. 5).

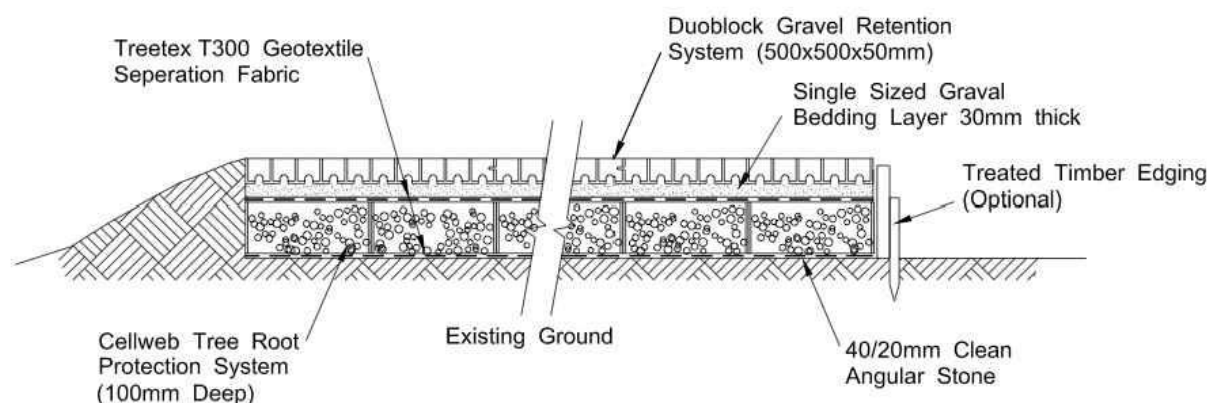


Fig. 5 Example of load bearing surfacing for use in RPAs

The installation of this system will minimise the impacts of the construction traffic and activities on the RPAs of retained trees, and will protect the RPAs for all future use. As such it is not anticipated that any additional mitigation measures will be required.

Ground protection measures should not be required when building the new pavilion, but are included here in case the situation changes and they are required:

These will consist of scaffold boards placed on top of a 50 mm layer of bark chippings (or sand or graded aggregate) spread on top of porous geotextile membrane (Fig. 6).

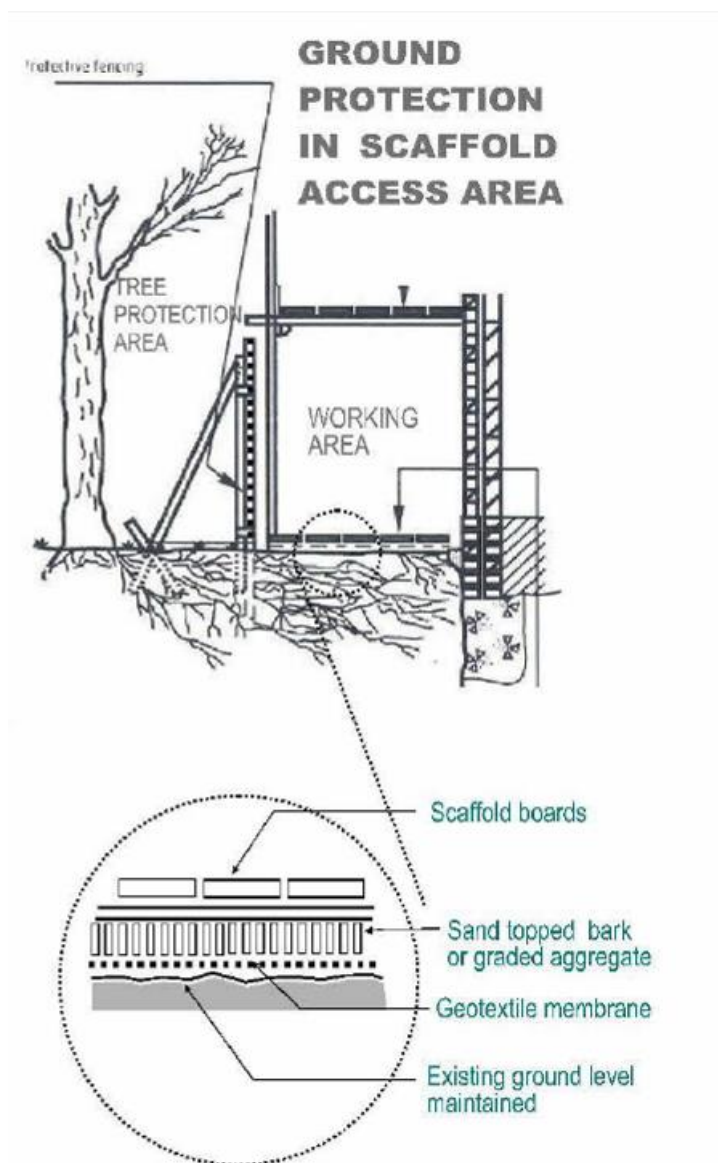


Fig. 6 Ground protection measures

5.3 Replacement Planting Specification

If any trees are to be planted, the selection of healthy specimens of a suitable species will be carried out appropriately to promote and enhance biodiversity, continuity of tree cover and suit the spatial constraints of the site.

Each new tree's location should be properly prepared with adequate drainage and room for future development. For larger specimens:

- The planting pit is to be excavated to a sufficient width and depth to accommodate the root-ball, allowing a minimum of 1.0 m clearance, with the additional breaking up of the planting pit's sides and base;

- ❑ The tree is to be planted to the same depth as existing, i.e. not above the root collar, and it should be back-filled with high grade soil and firmed in;
- ❑ The tree is to have a non-intrusive and adjustable supportive system installed in the form of either staking or above/underground guying;
- ❑ A bark/wood-chip mulch is to be applied around the base of the planted tree to at least a 2.0 m radius and < 5cm depth;
- ❑ A suitable maintenance programme, i.e. additional watering, fertilizing, weed control and mulching, is essential to ensure the tree establishes successfully.

6. RECOMMENDATIONS

This report is released to the client for them to distribute at their discretion. The consultant is available via telecom and/or email (via the methods on the back page) for any queries relating to this report and/or any other matter relating to arboriculture (which will form part of a separate contract).

The arboricultural supervision and/or monitoring is therefore recommended thus:

- ❑ On-site observation/guidance at the time of tree work operations;
- ❑ Induction of site team members regarding general and site specific arboricultural considerations and the assignment of key personnel (site manager) responsible for the AMS;
- ❑ Production of statement of delegated powers (if applicable);
- ❑ Production of written instructions for dealing with variations and/or incidents (if applicable);
- ❑ On completion of the development, sign off the site as having correctly adhered to this AMS.

Terms and Definitions

“Arboriculturist” - person who has, through relevant education, training and experience, gained recognized qualifications and expertise in the field of trees in relation to construction.

“Land survey” - an accurately measured land survey (also known as a topographical survey) should be undertaken showing all relevant existing site features.

“Tree survey” - should be undertaken by an arboriculturist and should record the information about trees on a site independently of and prior to and specific design for development. The results of a tree survey should be included in the preparation of a tree constraints plan, which should be used to assist with the site design.

“Tree categorization method” - should be applied by an arboriculturist and is to identify the quality and value of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained should development occur.

“Tree constraints plan (TCP)” - an accordingly scaled plan prepared by an arboriculturist for the purposes of layout design showing the tree stem, crown spread, root protection area and unique identification number.

“Root protection area (RPA)” - layout design tool indicating the area surrounding a tree that contains sufficient rooting to ensure the survival of the tree, shown on the TCP in m². The radius is calculated as a function of the tree stem diameter; x12 at 1.5m from ground level for single trees and up to five stems. For trees with more than five stems, the combined stem diameter should be calculated as the square root of the (mean stem diameter)² × number of stems. An arboriculturist may change the shape of an RPA but not reduce its area.

“Arboricultural implications assessment (AIA)” - study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

“Arboricultural method statement (AMS)” - methodology for the implementation of any aspect of development that has the potential to result in loss of or damage to a tree.

“Tree protection plan (TPP)” - an accordingly scaled plan prepared by an arboriculturist showing the finalised layout proposals detailed within the AMS, which can be shown graphically.

Appendix I - Tree survey schedule

Tree reference number	Species	Height m	Stem diameter mm	Branch spread m	Height of crown clearance m	Age class	Physiological condition	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	Category grading
1	Sycamore <i>Acer pseudoplatanus</i>	19	840	N 6 S 8 E 2 W 7	2.0	M	Good	Good	-	40+	A3
2	Walnut <i>Juglans regia</i>	16	717	N 7 S 9 E 10 W 2	2.0	M	Good	Fair – slightly supressed crown	-	40+	A3
3	Cherry <i>Prunus sp.</i>	7	369 / 480 Co- dominant	N 7 S 7 E 7 W 7	2.0	M	Good	Fair	-	40+	B2

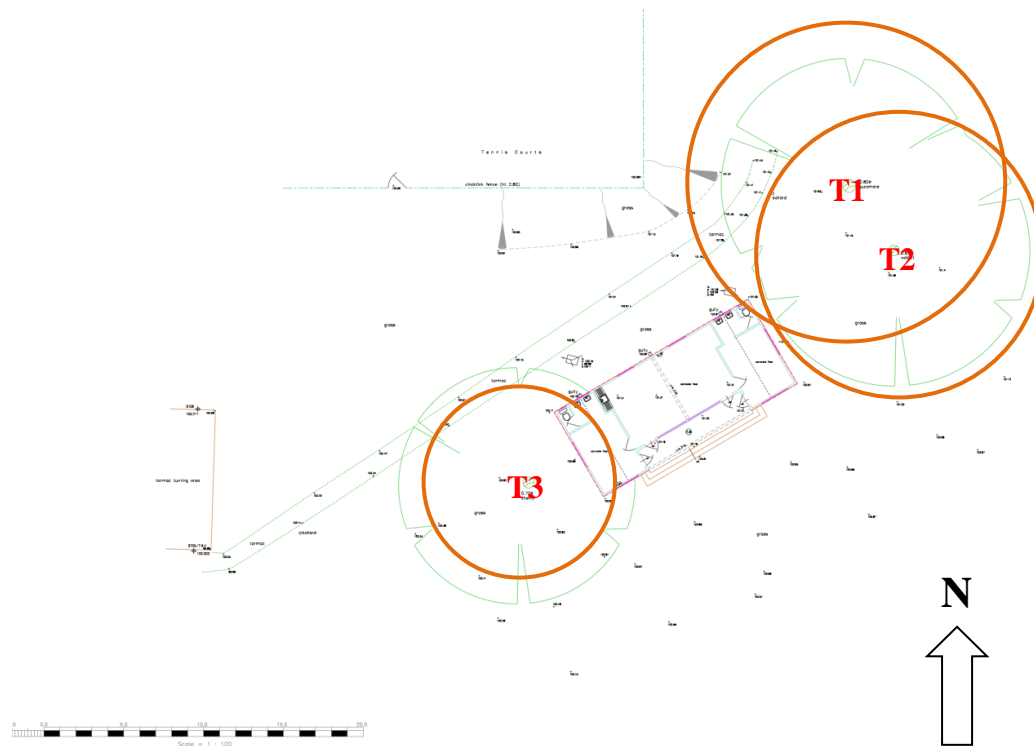
Appendix II – Tree quality assessment



Plan 2 Tree Quality Assessment & crown spreads (to scale)

- Category U – trees for removal
- Category A – high quality
- Category B – moderate quality
- Category C – low quality

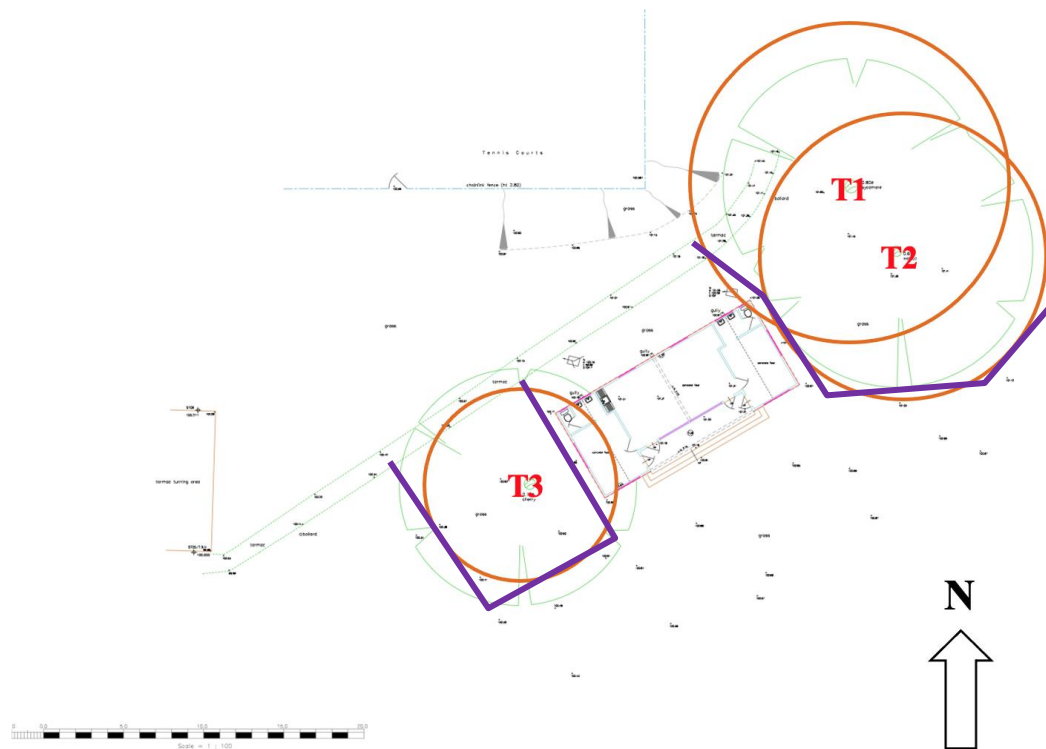
Appendix III – Tree Constraints Plan



Site plan - RPAs shown to scale

Tree No	RPA radius m
1	10.0
2	9.0
3	5.8

Appendix IV – Tree Protection Plan



Protective Barrier Fencing —

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