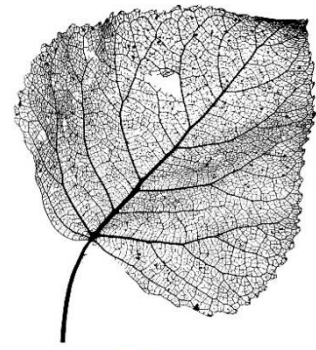




Sharon Hosegood
ASSOCIATES

ARBORICULTURAL IMPACT ASSESSMENT REPORT

SITE

Temple Dinsley, School Lane, Preston, Hertfordshire, SG4 7RT

CLIENT

The Door PHC Ltd

Sharon Durdant-Hollamby

FICFor FARborA BSc (Hons) Tech Cert (ArborA)

DATE: July 2024

OUR REF: SHA 1676

OUR CONTACT DETAILS: 01245 210 420
sharon@sharonhosegoodassociates.co.uk

Executive summary

This report is submitted in connection with a planning application to North Herts District Council (NHDC) as follows:- *‘Applications for Full Planning Permissions and Listed Building Consent for the change of use of the former Princess Helena College to residential use, comprising the conversion of Grade II* Listed Building to apartments, the replacement of existing sports hall and science block with 22no. new-build dwellings, the conversion of existing Tank House and Pump House to two further dwellings and the provision of 2no. new dwellings located within the summerhouse plantation and associated partially covered car park for residents and visitors. Associated reinstatement of Grade II* Listed Parks and Gardens and provision of new community Cricket Pitch, together with replacement Cricket Pavilion’.* There are no Tree Preservation Orders and the site is within a Conservation Area. It is a Registered Parks and Garden, and has a high landscape value.

This report includes detailed tree survey sheets, plans and the Arboricultural Impact Assessment. All information is in accordance with the British Standard (BS 5837: 2012 *‘Trees in relation to design, demolition and construction. Recommendations’* (referred to as BS). The proposals have been carefully designed to minimize impact to trees and follows close design team collaboration. The vast majority of trees will be retained, although two discrete areas of the mid last century plantation ‘Summerhouse Plantation’ will be removed. Tree planting will exceed the NHDC Tree Strategy Policy of requiring two trees for every one tree removed, including new woodland planting of a greater species diversity than the relatively poor-quality, self-sown sycamore dominated parts of the plantation which is required for removal for development. The existing landscape screens all of the proposals, and will be enhanced by planting which is appropriate for the biodiversity and landscape setting.

Categorisation of tree features - trees/groups/hedges/woodlands	Total	Trees/groups to be retained	Trees/groups to be removed
Category A	28	28	0
Category B	391	380	11
Category C	511	413	98
Category U	123	74	49
Total	1053	895	109+49 U

Table 1– tree numbers by category – (U categories exclude tree works required for safety reasons)

Trees/groups to be retained	Trees/groups to be removed	Trees to be planted	Net gain
895	109 (excluding U)	335	226 plus woodland planting

Table 2 – tree numbers

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1. Introduction:

1.1. This report accompanies a planning application as described in the executive summary to North Herts District Council at Temple Dinsley, School Lane, Preston, Hertfordshire, SG4 7RT. The work is in accordance with BS 5837:2012 '*Trees in relation to design, demolition and construction. Recommendations*' (referred to as BS).

1.2. This report details tree condition, the impact of the proposal on, and from, the existing trees and the measures taken to protect trees to be retained. It also includes tree surgery recommendations.

1.3. The survey has resulted in a layout as shown in the tree protection plan at Appendix 3. Where technical terms are used, explanations are found in the glossary.

2. Statement of instructions and the issues addressed:

2.1. I was instructed by SCABAL Architects on behalf of The Door PHC Ltd to:-

2.1.1. Carry out a tree survey in accordance with BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*' (BS);

2.1.2. Analyse the proposals and the impact on trees to be retained;

2.1.3. Produce a tree protection plan, showing the location of the tree protection fencing in accordance with the BS and a specification for the protection of the existing trees;

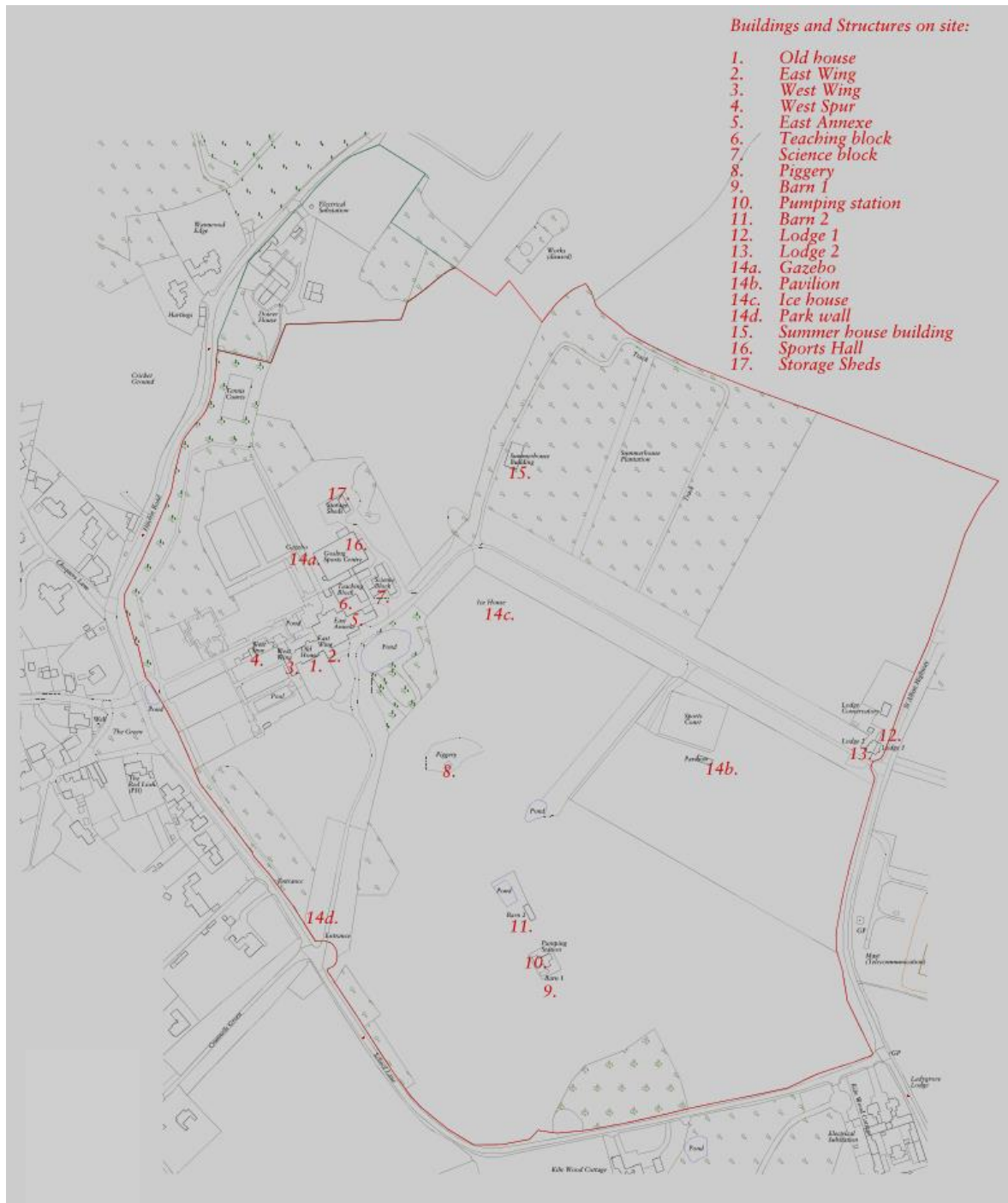
2.1.4. Provide a tree surgery schedule which includes work to facilitate construction, based on the layout of, and works to, trees due to their condition or previous management;

2.1.5. Provide arboricultural method statements in as much detail as is practical at this stage.

2.2. The issues addressed are tree condition, and how the proposal impacts on the site and vice versa.

3. The site:

- 3.1. The Temple Dinsley, listed grade II*: “a country house of early C18 origin, substantially enlarged by Edwin Lutyens 1908-13, at which time he and Gertrude Jekyll collaborated on the creation of the formal garden around the house. The house and garden are surrounded by C18 parkland” (Historic England, List Entry 1000919). This is found in full at appendix 7.



Plan 1 – extract from Existing site plan 641 0001 by SCABAL. Do not scale north is vertical.

3.2. The site area is 27.8 Ha and comprises formal parkland. It is accessed from the south from School Lane by a sweeping drive towards the main building. A dense line of trees is adjacent to the western boundary by School Lane, leading to Preston Lane to the northern part of the Western boundary. The application site is bordered by open countryside to the north and St Albans Way to the east.

3.3. *Site soils:* An assessment of soils on-site was carried out by a desktop analysis using the National Soil Resources Institute website which identified the soils as likely to be slightly acid loamy and clayey soils with impeded drainage. This is a guide only and detailed on-site soil analysis should be undertaken by the project engineer to inform the foundation design.

4 The trees:

4.1. *Generally:* There are 888 individual trees, 75 groups, 3 woodlands, 1 shrub group and 4 hedges which form the subject of this survey. Full details are found in the survey sheets at appendix 1 and their location on the tree survey plan *SHA 1676TSP* at appendix 2. Note the two parts of Summerhouse Plantation proposed for development have been surveyed in great detail, but the remainder of the woodland will be unaffected and is therefore not surveyed in detail. The trees either side of the main north-south track in the woodland will be surveyed for hazards prior to works commencing.

4.2. *Legislation:* No Tree Preservation orders (TPO) exist on site. The main part of the site is within a Conservation Area, except the woodland which is excluded. Temple Dinsley is a Historic Parkland. Further information on legislation is found at appendix 7.

4.3. *General description:* Temple Dinsley is a very high quality landscape with avenues, with strong boundary planting on the western boundary with School Lane and Preston Lane, and St Albans Way. Within the site there is an east-west avenue to St Albans Way which has some potential for enhancements. There are scattered parkland trees; 16 of which are classified as Veterans. The Summer House plantation is the largest area of woodland. There are linear amenity woodland blocks north east of the teaching blocks and near the western boundary.

4.4. Summerhouse Plantation is approximately 70 years old and contains scattered mature high quality oak and beech with exceptional straight clean stems. Amongst these are areas of denser sycamores and ash trees, and a mix of other species including hornbeam, hazel, elms, birch, pine and plum. It is edged by thorn and field maple smaller trees.

4.5. Some of the Summer House sycamores have died due to sooty bark disease (*Cryptostroma corticale*), and the ash is at varying stages of ash dieback disease (*Hymenoscyphus fraxineus*). The elms are at varying stages of decline and root rejuvenation of Dutch Elm Disease (*Ophiostoma novo-ulmi*). Many of the sycamores have inherent structural faults as described in the tree survey sheets. There is a dell in the north-eastern corner with lower quality trees. There is little woody understorey, and most of the sycamores have grown after the plantation, and are self-sown.

4.6. *Photographs*: There are hundreds of photographs of the trees and woodland available on request. Due to the size of the site, and therefore the size of this report, photographs are omitted and individual photographs of key areas not used at this stage, in case they are not considered to be truly representative. Photographs are available on request.

4.7. *BS retention category of trees in this survey, including offsite trees*:

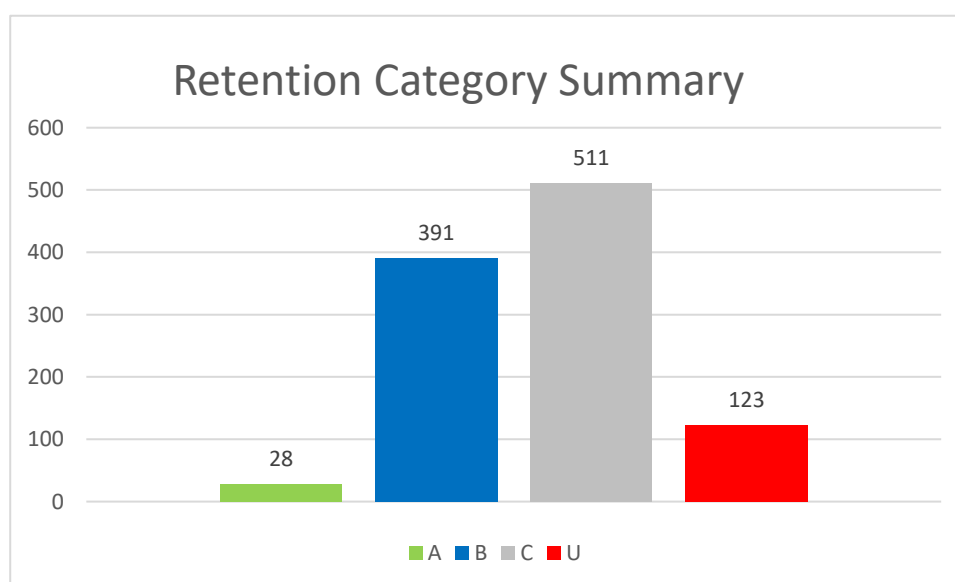


Table 3 – Retention category

A – high quality

B – moderate quality

C – low quality

U – unsuitable for retention

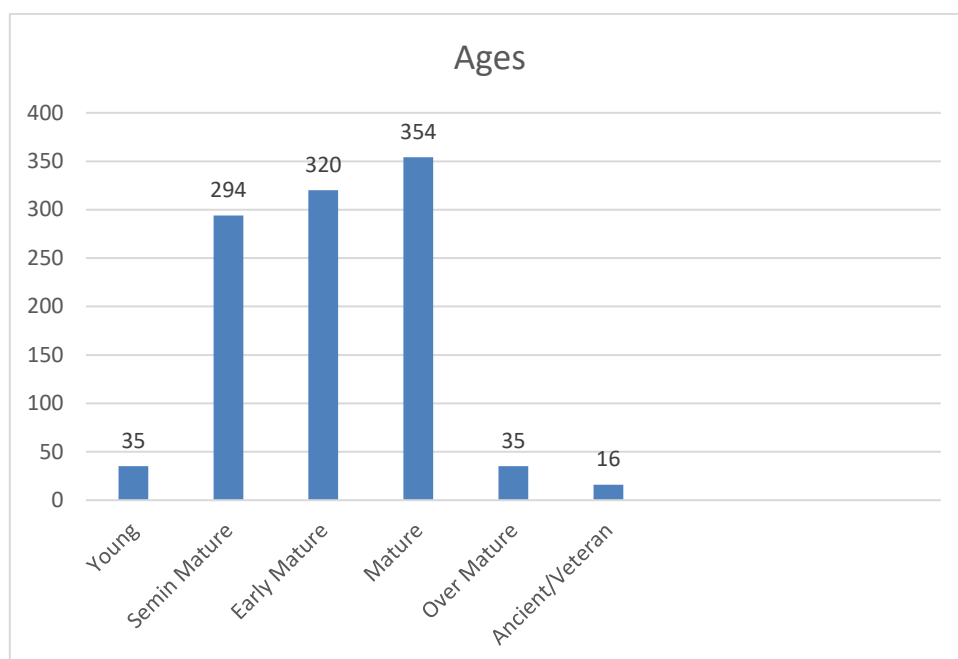


Table 4 – age classes

5.1. The Proposal

The following description is provided by the Architect: *'Applications for Full Planning Permissions and Listed Building Consent for the change of use of the former Princess Helena College to residential use, comprising the conversion of Grade II* Listed Building to apartments, the replacement of existing sports hall and science block with 22no. new-build dwellings, the conversion of existing Tank House and Pump House to two further dwellings and the provision of 2no. new dwellings located within the summerhouse plantation and associated partially covered car park for residents and visitors. Associated reinstatement of Grade II* Listed Parks and Gardens and provision of new community Cricket Pitch, together with replacement Cricket Pavilion'.*



Plan 2 – extract from Existing site plan 641 0001 by SCABAL. Do not scale north is vertical.

5.2. The site is divided into the following sections:

- The Pavilion West Spur
- Summer House
- Harwood House
- East Park
- Sports Hall locale
- Teaching block
- Tank House
- Pump House

6. Arboricultural impact assessment:

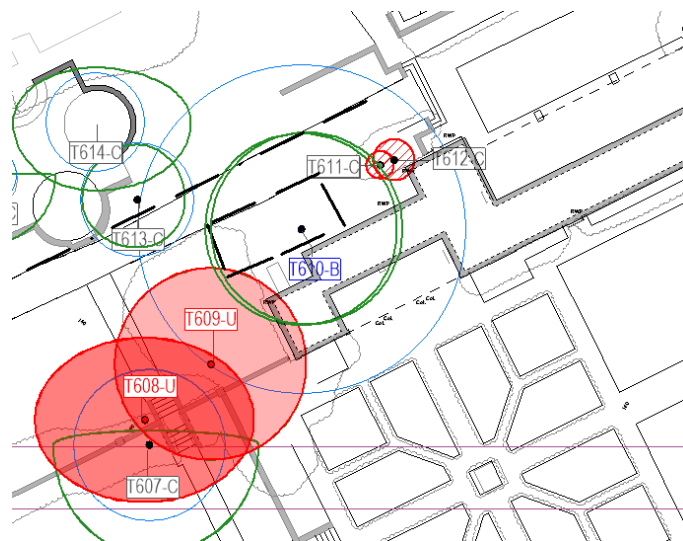
6.1. *Summary of the impact on trees:* Development can adversely impact on trees by causing them to be removed to facilitate the development, or in the future, by adversely affecting their potential for retention through disturbance in root protection areas (RPAs) or through post development pressure to prune or remove.

6.2. Tree roots can be asphyxiated and die if the rooting zone becomes compacted and soil structure damaged which can easily occur, particularly on clay soils, even with the passage of light vehicles. At the design stage, disturbance within the RPA should be avoided. If unavoidable (which may need demonstrating), consideration must be given to any construction activity such as demolition, including removal of existing hard surfaces, changing soil levels and the provision of services where within RPAs, as well as new surfaces and structures.

6.3. At the planning stage, any works proposed with RPAs must be shown to be achievable with minimal impact on retained trees. Areas should be identified where a detailed Arboricultural Method Statement will be required post planning consent.

6.4. *Tree removals (excluding tree removals for safety reasons)*

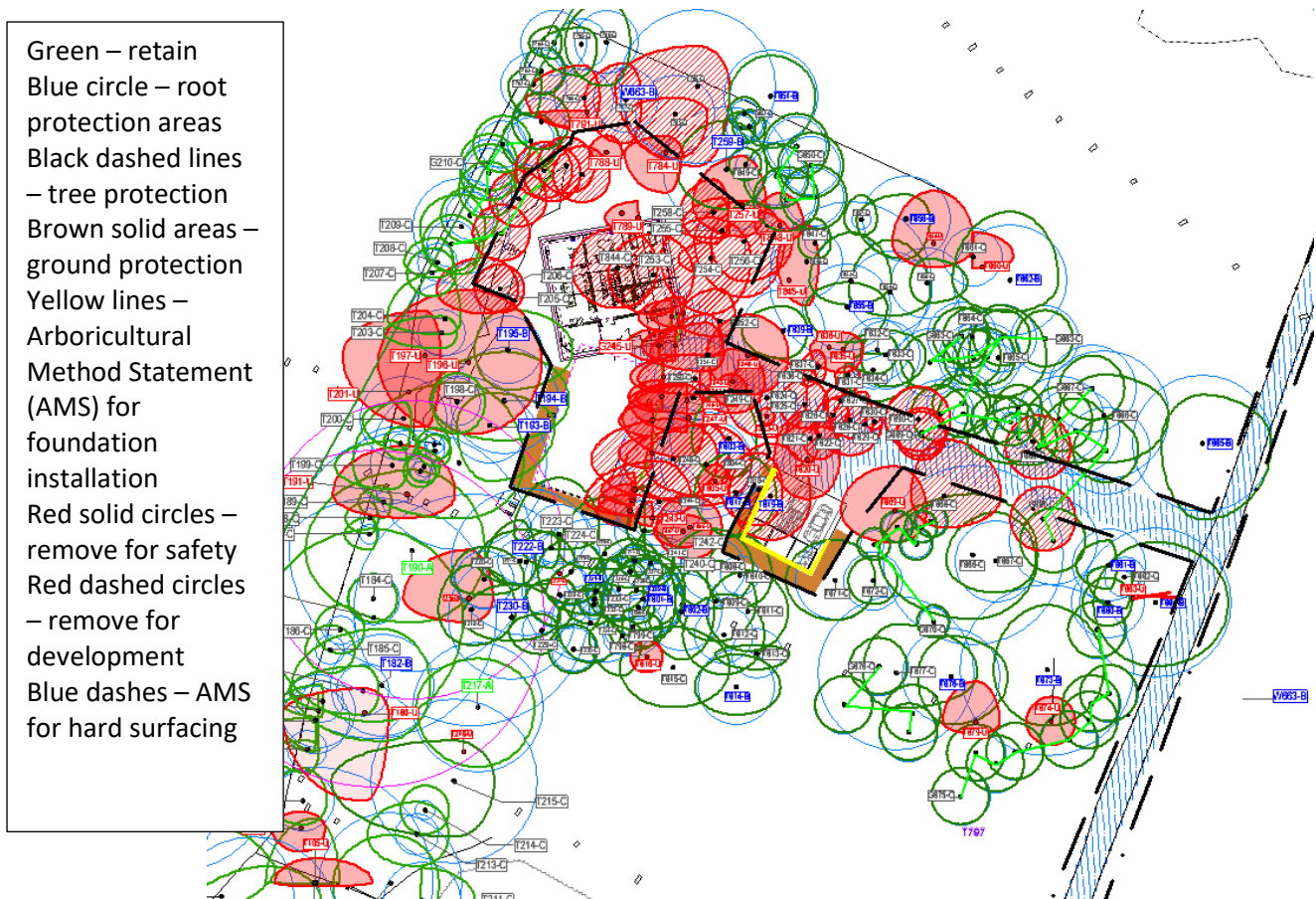
6.4.1 **The Pavilion:** 2 C category trees. Two nearby U category trees are recommended for removal due to poor condition, and not in connection with the proposal



Plan 3 – extract from SHA 1676 TPP – do not scale, north is vertical. Note this is very much a draft, but the tree T610 will be retained and protected.

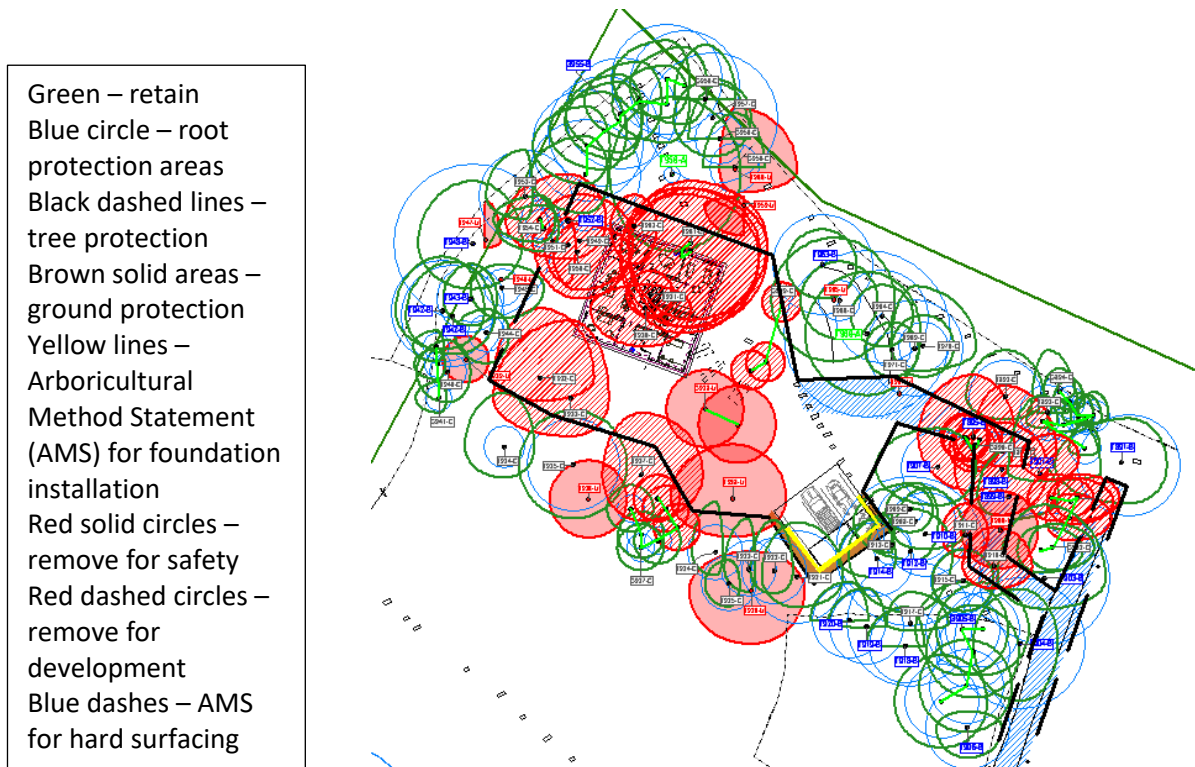
The Door PHC Ltd Temple Dinsley, School Lane, Preston, Hertfordshire, SG4 7RT SHA 1676
July 2024

6.4.2 Summer House: 2 B, 43 C and 45 U category trees



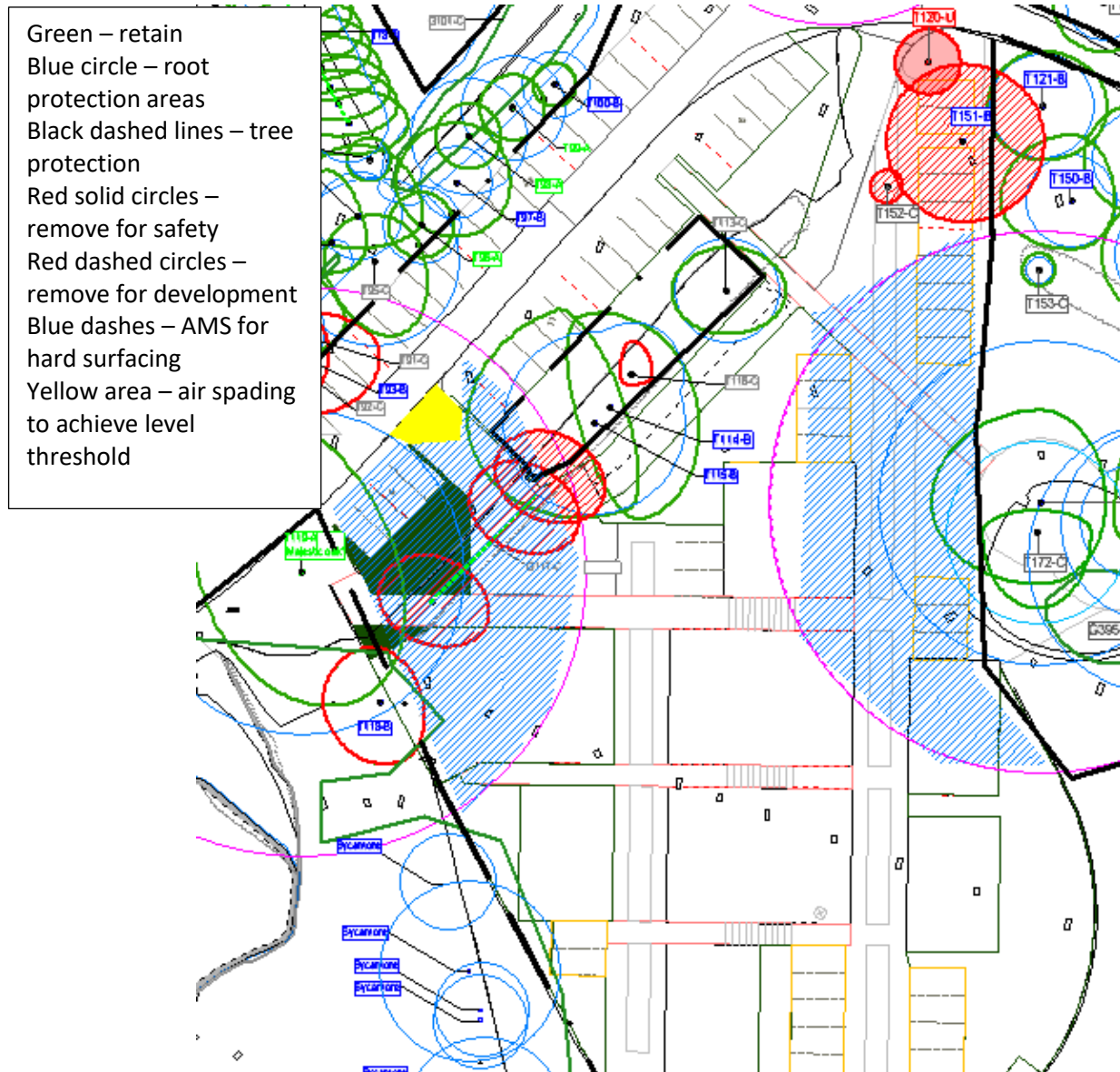
Plan 5 – extract from SHA 1676 TPP – do not scale, north is vertical.

6.4.3 Harwood House: 4 B, 25 C and 16 U category trees



Plan 6 – extract from SHA 1676 TPP – do not scale, north is vertical.

6.4.4 East park: 1 B, 5 C and 1 U category trees



Plan 7 – extract from SHA 1676 TPP – do not scale, north is vertical.

6.4.5 Sports Hall locale Housing: 3 B, 14 C and 2 U category trees



Plan 8 – extract from SHA 1676 TPP – do not scale, north is vertical.

6.4.6 The remainder of the site:

- **Teaching Block:** 5 C category trees
- **Tank House:** no removals
- **Pump House:** N/a
- **Total tree removals, excluding U category trees = 66**

Tree works are detailed in the tree surgery schedules at appendix 4. Note that the tables have been subdivided into the areas. The last table are tree works recommended for safety reasons, but will be cross referenced with the ecologist. It is maybe, as a result of this discussion, that fewer safety tree works will take place.

6.5. *Tree protection*

Trees to be retained will be protected during works by a combination of tree protection fencing and ground protection in accordance with the specification at appendix 5 at the locations shown on the draft tree protection plan SHA 1676TPP at appendix 3. This will be updated at the detailed post planning stage and submitted within an Arboricultural Method Statement. The fencing will be inspected by the arboricultural consultant immediately after installation and recorded in a Site Supervision Note which will be sent to North Herts District Council Tree Officer as a record. The fencing will be maintained and remain sacrosanct during demolition and construction

6.6. *Impact on the crowns:*

The Pavilion: No impact other than pruning back lower branches.

Summer House: Crown lifting of trees to achieve clearance over the track and internal drive.

Harwood House: Crown lifting of trees to achieve clearance over the track and internal drive.

East Park: Crown lifting of trees to achieve clearance over the track and internal drive. This will need to be maintained, all dead wood removed and an annual inspection carried out of any branches which overhang the parking area.

Sports Hall locale Housing: None.

Teaching Block: None.

Tank House: Crown lifting and pruning of the nearest tree.

6.7. *Impact on the roots*

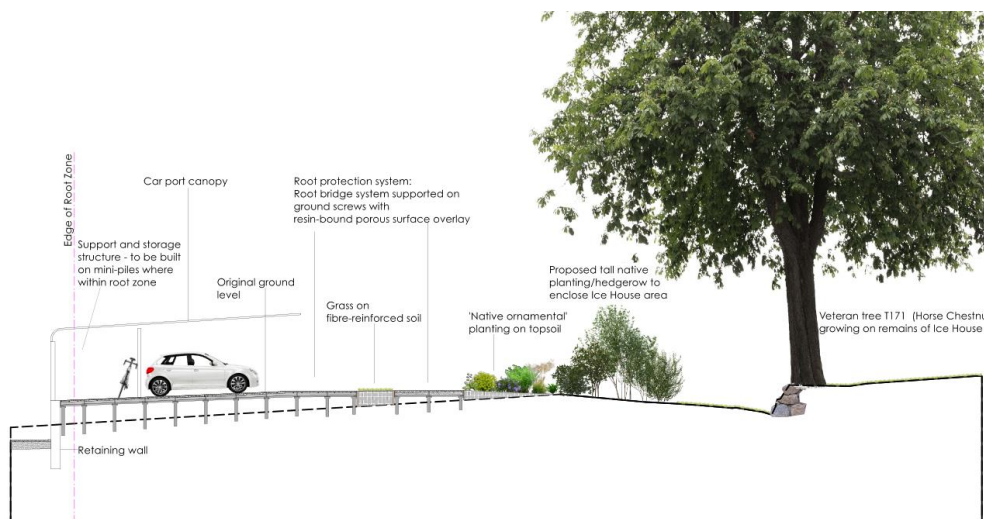
- 6.7.1 **The Pavilion:** A bespoke method statement will be produced for demolition of the shed area and construction of the new footings in a very similar footprint. It is likely that the existing building is acting as a root barrier, and therefore works within the existing footprint will not affect the tree. Foundation implementation will be carried out under arboricultural supervision.

- 6.7.2 **Summer House and Harwood House:** The foundation design for the car ports will require a bespoke foundation to ensure that roots can continue under the base with a void of 70mm to ensure gaseous exchange.

The drives to both properties and the upgrading of the existing track will be a minimal dig and porous construction to ensure root integrity and function. The access track will be 3.5m wide with occasional 5m passing spaces, only where there are no trees. The final plan will be submitted during the lifetime of the application. See appendix 6 for details of typical no-dig construction methods and all the method statements will be fully developed post planning following close design team collaboration and be submitted to North Herts District Council post planning.

At the time of writing, it is understood the existing building in the wood has water and electricity, and it is proposed to use this for Summer House. The route for Harwood will be north from this, and be subject to detailed analysis by the arboriculturist working with the engineers. Where necessary, services will be installed under arboricultural supervision

- 6.7.3 **East Park:** Due to the levels change requirements, within the root protection areas, a bespoke hard surface supported by mini piles will be used to create a void under the parking. This will be subject to a detailed method statement will ensure gaseous exchange and water infiltration. Building up with the root protection areas, especially in sensitive veteran trees, can lead to a loss of root function and decline in health. The proposed method eliminates this risk, and the piles will be carefully located to avoid structural roots. Trial pits will take place under arboricultural supervision to find the actual root spread of the veteran trees and the design adjusted accordingly.. The concept is shown below:



641-LEA-00-00-DR-L-5000 REV NO: P02

Sports Hall locale Housing: No impact

Teaching Block: No impact

Tank House: No impact.

6.8 *Visual impact and liveability:*

6.8.1 **The Pavilion:** There is no change to the existing relationship with the yew tree. It is on the northern side of the building. It will cast shade, but the historic importance of the building/tree relationship and setting is of precedence. The loss of the two small trees will have a negligible visual impact due to their small stature, and the large numbers of other, larger, trees nearby.

6.8.2 **Summer House and Harwood House:** The woodland is integral to the unique setting to the proposed properties, and living close to trees with their falling leaves, the shade they cause and the sense of enclosure they provide is part of the experience. It is highly improbable that a future purchaser would choose the properties if a woodland setting was not desirable. The location of the proposed dwellings has been set back from the boundary edges, ensuring screening and privacy. Nevertheless, building in the woodland will locally change its character, and there will be loss of canopy cover (note the lowest quality areas of the woodland have been selected). Even though many of the trees to be removed are low quality, it is important that the woodland is replaced, as prescribed by Biodiversity Net Gain Calculations.

Outside of the residential curtilages, the woodland will be managed by a management company for the estate in accordance with a woodland management plan which will be produced by a collaboration of the landscape architect, arboriculturist and ecologist. The objective of the management plan is to maximise biodiversity, and is likely to include removal of diseased trees and encouragement of a mixed native understorey. This will include dead wood retention, including fallen, standing, part of trees and habitat piles where safe to do so.

6.8.3 **East Park:** Annual inspection for tree safety by a suitably qualified arboriculturist is essential, with more informal frequent inspections by trained staff, and inspections after every weather event (high wind/heavy rain, and in the case of horse chestnut after humid hot days). The parking area will need to be regularly swept in the Autumn.

Sports Hall locale Housing: none

Teaching Block: none

Tank House: crown lifting and pruning of the nearest tree.

7. Conclusions:

- 7.1. This report includes detailed tree survey sheets, plans and the Arboricultural Impact Assessment. All information is in accordance with the British Standard (BS 5837: 2012 *"Trees in relation to design, demolition and construction. Recommendations"* (referred to as BS). The proposals have been carefully designed to minimize impact to trees and follows close design team collaboration. The vast majority of trees will be retained, although two discrete areas of the mid-last century plantation, 'Summerhouse Plantation' will be removed. The location of the two woodland properties has been based on the areas of lowest arboricultural value, and ensures that the boundary trees are retained. Harwood House is proposed in a natural hollow. Existing levels will be respected, avoiding the requirements for earth movement. All veteran trees are retained and will be protected during works.
- 7.2. The draft Arboricultural Method Statements will be developed further by the Arboricultural Consultant working with the contractor, architect, landscape architect and engineers and a separate Arboricultural Method Statement will be produced with final Tree Protection Plans for each stage. This will be submitted post planning to North Herts District Council.
- 7.3. The bat survey information will be updated during the lifetime of the planning application and this report updated accordingly.
- 7.4. Tree protection measures and the application of Arboricultural Method Statements will be supervised by the Arboricultural Consultant at key stages of demolition and construction and reported to North Herts District Council.
- 7.5. There is potential for sustainable use of non-diseased trees for timber as part of landscaping and ecology (see appendix 6 for details) and this will form part of the forthcoming woodland management plan.

7.6. Tree planting will greatly exceed the North Herts District Council. Tree Strategy Policy of requiring two trees for every one tree removed (note this policy refers to Council land and the principle will be adhered to in any case), including new woodland planting of a greater species diversity than the relatively poor quality, self-sown sycamore dominated part of the plantation, which is required for removal for development. The existing landscape screens all of the proposals and will be enhanced by planting which is appropriate for the biodiversity and landscape setting. The substantial net gain in tree numbers, the sensitive and historically relevant design of new planting and the greater mix of species will result in a positive arboricultural impact.

7.7. The scheme adheres to the following policies (see appendix 7 for further details)

Policy	Compliance demonstrated (in relation to arboriculture)
NPPF 2023 186 (c)	The scheme does not result in the loss or deterioration of ancient woodlands or ancient and veteran trees.
NHDC Local Plan	NE2 Whilst the scheme does result in the loss of area of the woodlands, the woodland is not is early to mid last century and many of the trees to be removed are low quality. There will be significant, appropriate compensatory planting. The large majority of trees will be retained and protected during works
Tree Strategy	The information in this report adheres to the requirement of the Trees and Development Section and notes that the requirement to replace 2 trees with every 1 lost which will be more than met with the replacement woodland planting. Note that whilst this policy results in trees on Council Land, and does not strictly apply here, the general principle will be exceeded by this scheme.

Table 5 – policy impact

Categorisation of tree features - trees/groups/hedges/woodlands	Total	Trees/groups to be retained	Trees/groups to be removed (for construction)
Category A	28	28	0
Category B	391	380	11
Category C	511	413	98
Category U	123	74	49
Total	1053	895	109+49 U

Table 6 – tree numbers by category

Trees/groups to be retained	Trees/groups to be removed	Trees to be planted	Net gain
895	109 (excluding U)	335	226 plus woodland planting

Table 7– tree numbers

8. Recommendations:

- 8.1. That a copy of this report, and subsequent more detailed arboricultural method statement, is kept on site, including A1 colour copies of the tree protection plans. The arboricultural documents will be part of site induction by the main contractor to all sub-contractors.
- 8.2. That the arboricultural method statements are developed further post planning into a separate Arboricultural Method Statement with updated tree protection plans which will be observed by all site personnel and supervised at key stages by the project arboricultural consultant. Short supervision reports are to be written after each inspection as a record of compliance and audit trail to the Local Authority.
- 8.3. That the foundation design takes into account trees to be retained, trees to be removed and trees to be planted.
- 8.4. That there are no ground level changes with the area shown on the plan by tree protection fencing. A meeting is to be held with the Civils team and the arboriculturist.
- 8.5. That the line of the underground services should be ideally located outside of Root Protection Areas. However, as a precaution the final service plan should be assessed by an arboriculturist. If it is unavoidable that services are to be located in RPAs, then a method statement must be produced. A meeting is to be held with the Civils team and the arboriculturist.
- 8.6. That the landscaping scheme includes a mix of trees from a cross section of species to ensure biosecurity against host specific pests and diseases. The trees must be planted and maintained in accordance with BS 8545:2014 *Trees: from nursery to independence in the landscape – Recommendations*. The landscaping scheme within the woodland setting and for new woodland planting will be designed in collaboration with the Arboriculturist and Ecologist

- 8.7. That no tree works take place until consent is granted other than the removal of dead and broken precarious branches
- 8.8. That the tree protection fencing is installed before machinery enters the site and remains in place until the soft landscaping stage.
- 8.9. That the drainage strategy detailing on and/or offsite drainage works, including SUDS, is reviewed by the arboricultural consultant to ensure minimum impact on trees to be retained and is mindful of new trees to be planted. Careful planning is required for the installation of the drainage and services for the woodland is will require non-standard installation in accordance with National Joint Utilities Group Volume 4.
- 8.10. That the tree surgery is carried out in close collaboration with the ecologist and arboriculturist.
- 8.11. That there is a tree survey along either side the track and around the cleared areas in the woodland prior to occupation.
- 8.12. That there is a woodland management plan produced by the arboriculturist, ecologist and landscape architect to manage the woodland for biodiversity and that this sets clear management guidelines and is implemented by the management company.
- 8.13. That the tree works listed for removal for safety reasons outside of the development parcels are subject assessment by North Herts District Council to see if they need a Section 211 Notice application before works. If they do need an application, works will not be applied for before approval. Note the woodland is outside the Conservation Area, and as the works are required for safety reasons as the trees are dead/hazardous, they would not need a Felling Licence from the Forestry Authority.

Sharon Durdant-Hollamby

FICFor FArborA BSc (Hons) Tech. Cert. (Arbor A)

Director

Sharon Hosegood Associates Ltd

Appendix 1

Tree survey sheets

Appendix 2

Tree survey plan SHA 1676TSP



- Category A - high quality and value
 - Category B - moderate quality and value
 - Category C - low quality and value
 - Category U - unsuitable for retention
- Crown spread of trees to be retained
 - RPA - root protection area as defined by Table 2 BS 5837:2012
 - RPA - root protection area as defined by Ancient Tree Forum for Veteran trees
 - Group
 - Group
 - Denotes multi-stem B Category Tree
 - Denotes multi-stem C Category Tree

- Notes
- Contractors to check all dimensions on site
 - Discrepancies must be reported to the Arboricultural Consultant before proceeding
 - The original of this drawing was produced in colour, a monochrome copy should not be relied upon.
 - It is the responsibility of the contractor to ensure necessary consents for tree works are in place
 - This drawing is copyright © Sharon Hosegood Associates Ltd

Rev : Description : Authorized :



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Client
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Site Address
Temple Dinsley, Preston, Hitchin, Hertfordshire, SG4 7RT

Drawing Title	Orientation	Drawn	Authorized
Tree Survey Plan		ND-H	SMD-H
Date	Drawing Number	Scale	Drawing Status
31.5.24	SHA 1676 TSP	1:1000@A0	For Issue

Revision
-

Appendix 3

Tree protection plan SHA 1676TPP



- Category A - high quality and value
- Category B - moderate quality and value
- Category C - low quality and value
- Category U - unsuitable for retention
- Crown spread of trees to be retained
- RPA - root protection area as defined by Table 2 BS 5837:2012
- RPA - root protection area as defined by Ancient Tree Forum for Veteran trees
- Group
- Group
- Denotes multi-stem B Category Tree
- Denotes multi-stem C Category Tree
- Arboricultural Method Statement for foundation design
- Tree protection fencing comprising braced Heras panels for construction phase
- Method statement for new hard surfacing
- Trees to be removed to facilitate construction
- Recommended for tree safety works
- Ground Protection

- Notes
- Contractors to check all dimensions on site
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Client
The Door PHC Ltd
Site Address
Temple Dinsley, Preston, Hitchin, Hertfordshire, SG4 7RT

Drawing Title	Orientation	Drawn	Authorized
Tree Protection Plan		ND-H	SMD-H
Date	Drawing Number	Scale	Drawing Status
10.07.24	SHA 1676 TPP	1:1000@A0	For Issue
Revision			
-			

Appendix 4

Tree surgery schedule for development

Tree surgery schedule for tree condition which is not required for development. This is subject to review with the ecologist and may require a Section 211 Notice.

Tree surgery schedule

All works to be carried out in accordance with BS 3998:2010 'Tree works – Recommendations'. All pruning cuts to be made at suitable growing points in the line with the principles of 'Natural target pruning'. An ecological check is required by a competent person prior to tree works being carried out and the ecological report referred to. Works should not take place until planning permission is granted and all pre-commencement conditions are discharged. This must be communicated to the tree surgeon and storage agreed with the demolition/main contractor.

Tree works to facilitate development are found below. Tree works required for safety reasons are found in the separate sheet following this table. Where there is a cross over (i.e. hazardous trees which require removal for safety reasons which are also required for development are included in the table below). The tables are split up into the areas below for ease of reference:

The Pavilion:

Summer House:

Harwood House:

Sports Hall locale Housing:

Teaching Block:

East Park:

Tank House:

The Pavilion

Tree no.	BS category	Species	Proposed works	Reason
T610	B	Yew	Crown lift to achieve 4m clearance on southern side	To ease works
T611	C	holly	Fell to ground level and remove stump	To facilitate construction
T612	C	Yew	Fell to ground level and remove stump	To facilitate construction

Summer House:

Tree no.	BS category	Species	Proposed works	Reason
T166	C	Horse chestnut	Fell to ground level and remove roots	To facilitate development
T191	U	Sycamore POTENTIAL BAT TREE	Fell to ground level and retain 600mm stump	Due to poor condition and not in connection with the proposal DEPENDANT ON BAT REPORT
T196	U	Sycamore POTENTIAL BAT TREE	Fell to ground level and remove roots	To facilitate development/poor condition DEPENDANT ON BAT REPORT
T197	U	Sycamore	Fell to ground level and remove roots	To facilitate development/poor condition
T201	U	Hawthorn	Dead tree – shorten to 2m	To retain habitat but reduce risk of falling
T205	C	Sycamore	Fell to ground level and remove roots	To facilitate development
T206	C	Sycamore	Fell to ground level and remove roots	To facilitate development
T227	U	Sycamore	Fell to ground level and remove roots	Dead due to sooty bark disease
T219	U	Sycamore	Fell to ground level and retain 600mm stump	Due to poor condition and not in connection with the proposal
G210	C	Elder, field maple, hawthorn	Fell to ground level (6 trees)	To facilitate development
T243	U	Sycamore	Fell to ground level	To facilitate development/ Condition. Large cavity at base.
T244	C	Sycamore	Fell to ground level	To facilitate development
G245	U	Sycamore	Fell to ground level (11 trees)	To facilitate development/ condition
T246	C	Sycamore	Fell to ground level	To facilitate development
T247	U	Sycamore	Fell to ground level	To facilitate development/ condition
T248	U	Sycamore	Fell to ground level	To facilitate development/ condition

Tree no.	BS category	Species	Proposed works	Reason
T249	C	Sycamore	Fell to ground level	To facilitate development
T250	C	Sycamore	Fell to ground level	To facilitate development
T251	C	Sycamore	Fell to ground level	To facilitate development/ condition
T253	C	Sycamore POTENTIAL BAT TREE	Fell to ground level	To facilitate development DEPENDANT ON BAT REPORT
T254	C	Sycamore	Fell to ground level	To facilitate development
T255	C	Ash	Fell to ground level	To facilitate development
T256	C	Sycamore	Fell to ground level	To facilitate development
T257	U	Sycamore	Fell to ground level and remove roots	To facilitate development/ Poor condition
T258	C	Sycamore	Fell to ground level and remove roots	To facilitate development
T784	U	Oak POTENTIAL BAT TREE	Fell to ground level and remove stump	To facilitate development/ Poor condition DEPENDANT ON BAT REPORT
T785	C	Sycamore	Fell to ground level and remove stump	To facilitate development
T786	C	Sycamore POTENTIAL BAT TREE	Fell to ground level and remove stump	To facilitate development DEPENDANT ON BAT REPORT
T787	C	Sycamore	Fell to ground level and remove stump	To facilitate development
T788	U	Sycamore	Fell to ground level and remove stump	To facilitate development/ Poor condition
T789	U	Sycamore	Fell to ground level and remove stump	To facilitate development/ condition
T789	U	Sycamore	Fell to ground level and remove stump	To facilitate development/ Poor condition
T790	C	Field maple	Fell to ground level and remove stump	To facilitate development/ condition
T791	U	Field maple	Fell to ground level and remove stump	To facilitate development/ Poor condition

Tree no.	BS category	Species	Proposed works	Reason
T804	C	Sycamore	Fell to ground level and remove stump	To facilitate development
T805	U	Sycamore	Fell to ground level and remove stump	To facilitate development/poor condition
T806	U	Sycamore POTENTIAL BAT TREE	Fell to ground level and remove stump	To facilitate development/poor Condition DEPENDANT ON BAT REPORT
T807	U	Sycamore	Fell to ground level and remove stump	To facilitate development/poor condition
T816	U	Sycamore	Fell to ground level and remove stump	Dead
T818	C	Sycamore	Fell to ground level and remove stump	To facilitate development/poor condition
T819	B	Sycamore	Fell to ground level and remove stump	To facilitate development
T820	U	Sycamore	Fell to ground level and remove stump	To facilitate development/condition
T821	C	Sycamore	Fell to ground level and remove stump	To facilitate development
T822	C	Sycamore	Fell to ground level and remove stump	To facilitate development
T823	U	Sycamore	Fell to ground level and remove stump	To facilitate development/condition
T824	C	Sycamore	Fell to ground level	To facilitate development
T825	C	Sycamore	Fell to ground level	To facilitate development
T826	C	Silver birch	Fell to ground level	To facilitate development
T827	C	Silver birch	Fell to ground level	To facilitate development
T828	C	Sycamore	Fell to ground level	To facilitate development
T829	C	Silver birch	Fell to ground level	To facilitate development
T830	C	Sycamore	Fell to ground level	To facilitate development
T831	C	Sycamore	Fell to ground level	To facilitate development

Tree no.	BS category	Species	Proposed works	Reason
T835	U	Birch	Fell to ground level and remove stump	To facilitate development/condition
T836	U	Birch	Fell to ground level and remove stump	Dead
T837	C	Birch	Fell to ground level and remove stump	To facilitate development/condition
T838	C	Sycamore POTENTIAL BAT TREE	Fell to ground level and remove stump	To facilitate development DEPENDANT ON BAT REPORT
T839	B	Silver birch	Fell to ground level and remove stump	To facilitate development
T840	U	Sycamore	Fell to ground level and remove stump	To facilitate development/poor condition
T841	U	Sycamore	Fell to ground level and remove stump	To facilitate development/poor condition
T842	U	Sycamore	Fell to ground level and remove stump	To facilitate development/poor condition
T844	C	Sycamore	Fell to ground level and remove stump	To facilitate development
T845	U	Silver birch	Fell to ground level and remove stump	To facilitate development
T846	C	Sycamore	Fell to ground level and remove stump	To facilitate development
T848	U	Sycamore	Fell to ground level and remove stump	To facilitate development/poor condition
T858	U	Sycamore	Fell to ground level and remove stump	To facilitate development/poor condition
T860	U	Birch	Fell to ground level and remove stump	Dead
T861	C	Sycamore	Fell to ground level and remove stump	To facilitate development
T868	C	Hornbeam	Fell to ground level and remove stump	To facilitate development
T869	U	Sycamore	Fell to ground level and remove stump	To facilitate development/poor condition
T874	U	Sycamore	Fell to ground level and remove stump	To facilitate development/poor condition
T879	U	Sycamore	Fell to ground level and remove stump	To facilitate development/poor condition

Tree no.	BS category	Species	Proposed works	Reason
T883	U	Birch	Fell to ground level and remove stump	Dead
G887	C	Sycamore x 1	Fell to ground level and remove stump	To facilitate development
T888	C	Silver birch	Fell to ground level and remove stump	To facilitate development
G889	C	Sycamore	Fell to ground level (2 trees) and remove stump	To facilitate development
T890	C	Sycamore	Fell to ground level and remove stump	To facilitate development
W663	B	Mixed	Crown lift to 4m over the track in its entire length	To facilitate development

Harwood House:

Tree no.	BS category	Species	Proposed works	Reason
T895	B	Oak	Fell to ground level and remove stump	To facilitate development
G896	C	Sycamore	Fell to ground level (5 trees) and remove stumps	To facilitate development
T897	C	Sycamore	Fell to ground level and remove stump	To facilitate development
T898	B	Sycamore	Fell to ground level and remove stump	To facilitate development
T899	B	Sycamore	Fell to ground level and remove stump	To facilitate development
T900	U	Sycamore	Fell to ground level and remove stump	Dead with sooty bark disease (spores hazardous to health)
T901	B	Oak	Fell to ground level and remove stump	To facilitate development
G902	U	Sycamore	Fell to ground level 4 trees, retain 2 trees	To facilitate development/poor condition
T911	C	Sycamore	Fell to ground level and remove stump	To facilitate development/poor condition
T916	C	Sycamore	Fell to ground level and remove stump	To facilitate development/poor condition
T926	U	Ash POTENTIAL BAT TREE	Reduce tree to the satisfaction of the ecologist in terms of bats and arboricultural consultant in terms of safety	For safety Condition (decay fungi) DEPENDANT ON BAT REPORT
G927	C	Sycamore	Fell to ground level 3 trees	To facilitate development/poor condition

Tree no.	BS category	Species	Proposed works	Reason
G928	U	Dead oaks 2	Fell to ground level and remove stumps	To facilitate development/dead
G929	C	3 x elder	Fell to ground level and remove stumps	To facilitate development
T930	C	Hazel	Fell to ground level and remove stumps	To facilitate development
T931	C	Sycamore	Fell to ground level and remove stumps	To facilitate development
T932	C	Field maple	Fell to ground level and remove stumps	To facilitate development
T933	C	Ash	Fell to ground level and remove stumps	To facilitate development
T936	U	Sycamore	Fell to ground level and remove stump	Dead with sooty bark disease (spores hazardous to health)
T937	C	Ash	Fell to ground level and remove stumps	To facilitate development
T938	U	Sycamore	Fell to ground level and remove stump	Poor condition
T939	U	Sycamore	Fell to ground level and remove stump	Dead with sooty bark disease (spores hazardous to health)
T946	U	Ash	Fell to ground level and remove stump	Dead
T947	U	Hazel	Fell to ground level and remove stump	Poor condition
T949	C	Ash POTENTIAL BAT TREE	Fell to ground level and remove stumps	To facilitate development DEPENDANT ON BAT REPORT
T950	C	Sycamore POTENTIAL BAT TREE	Fell to ground level and remove stumps	To facilitate development DEPENDANT ON BAT REPORT
T951	C	Sycamore	Fell to ground level and remove stumps	To facilitate development
T952	C	Sycamore	Fell to ground level and remove stumps	To facilitate development
T959	U	Holly	Fell to ground level and remove stumps	Dead
T960	U	Field maple	Fell to ground level and remove stumps	To facilitate development/poor condition
T961	C	Ash	Fell to ground level and remove stumps	To facilitate development
T962	C	Field maple	Fell to ground level and remove stumps	To facilitate development
T967	U	Unknown	Fell to ground level and remove stumps	Dead

Sports Hall Locale Housing

Tree no.	BS category	Species	Proposed works	Reason
G43	C	Laurel	Fell to ground level and remove roots	To facilitate development
T61	C	Goat willow	Fell to ground level and remove roots	To facilitate development
T62	U	Goat willow	Fell to ground level and remove roots	To facilitate development/condition
T63	C	Sycamore	Fell to ground level and remove roots	To facilitate development
T65	C	Sycamore	Fell to ground level and remove roots	To facilitate development
T66	C	Leyland cypress	Fell to ground level and remove roots	To facilitate development
T67	C	Leyland cypress	Fell to ground level and remove roots	To facilitate development
G68	C	Leyland cypress group	Fell to ground level and remove roots	To facilitate development
T69	B	Sycamore	Fell to ground level and remove roots	To facilitate development
T70	C	Ash	Fell to ground level and remove roots	To facilitate development
T71	C	Goat willow	Fell to ground level and remove roots	To facilitate development
T72	C	Hawthorn	Fell to ground level and remove roots	To facilitate development
G76	C	Hornbeam	Fell to ground level and remove roots	To facilitate development
T77	B	Hornbeam	Fell to ground level and remove roots	To facilitate development
T80	C	Sycamore	Fell to ground level and remove roots	To facilitate development
T81	U	Walnut	Fell to ground level and remove roots	Very poor condition
T92	C	Cherry	Fell to ground level and remove roots	To facilitate development
T93	B	Oak	Fell to ground level and remove roots	To facilitate development
G94	C	Hawthorn	Fell to ground level and remove roots the south western half of the hedge and retain the remainder	To facilitate landscaping

Teaching block

Tree no.	BS category	Species	Proposed works	Reason
G86	C	Ash, elder group	Fell to ground level and remove roots	To facilitate development
G87	C	Cherry laurel group	Fell to ground level and remove roots	To facilitate development
G88	C	Goat willow, ash, hawthorn	Fell to ground level and remove roots	To facilitate development
T89	C	Sycamore	Fell to ground level and remove roots	To facilitate development
G90	C	Sycamore, elder, hawthorn, hazel	Fell to ground level and remove roots	To facilitate development

East Park

Tree no.	BS category	Species	Proposed works	Reason
T116	C	Hawthorn	Fell to ground level and remove roots	To facilitate development
T118	B	Horse chestnut	Fell to ground level and remove roots	To facilitate development
G117	C	Hawthorn	Fell to ground level x 3	To facilitate development
T120	U	Rowan	Fell to ground level and remove roots	To facilitate development /condition
T151	B	Sycamore	Fell to ground level and remove roots	To facilitate development
T152	C	Hawthorn	Fell to ground level and remove roots	To facilitate development

Pump House

Tree no.	BS category	Species	Proposed works	Reason
T345	C	Lime	Crown lift to 3m and prune back by 1m on southern aspect	To facilitate development

The following tree works are not required for planning consent but are recommended due to their poor condition (all category U). It is anticipated that a Section 211 Notice will be required for this work. This will be reviewed by the ecologist which may result in lesser works.

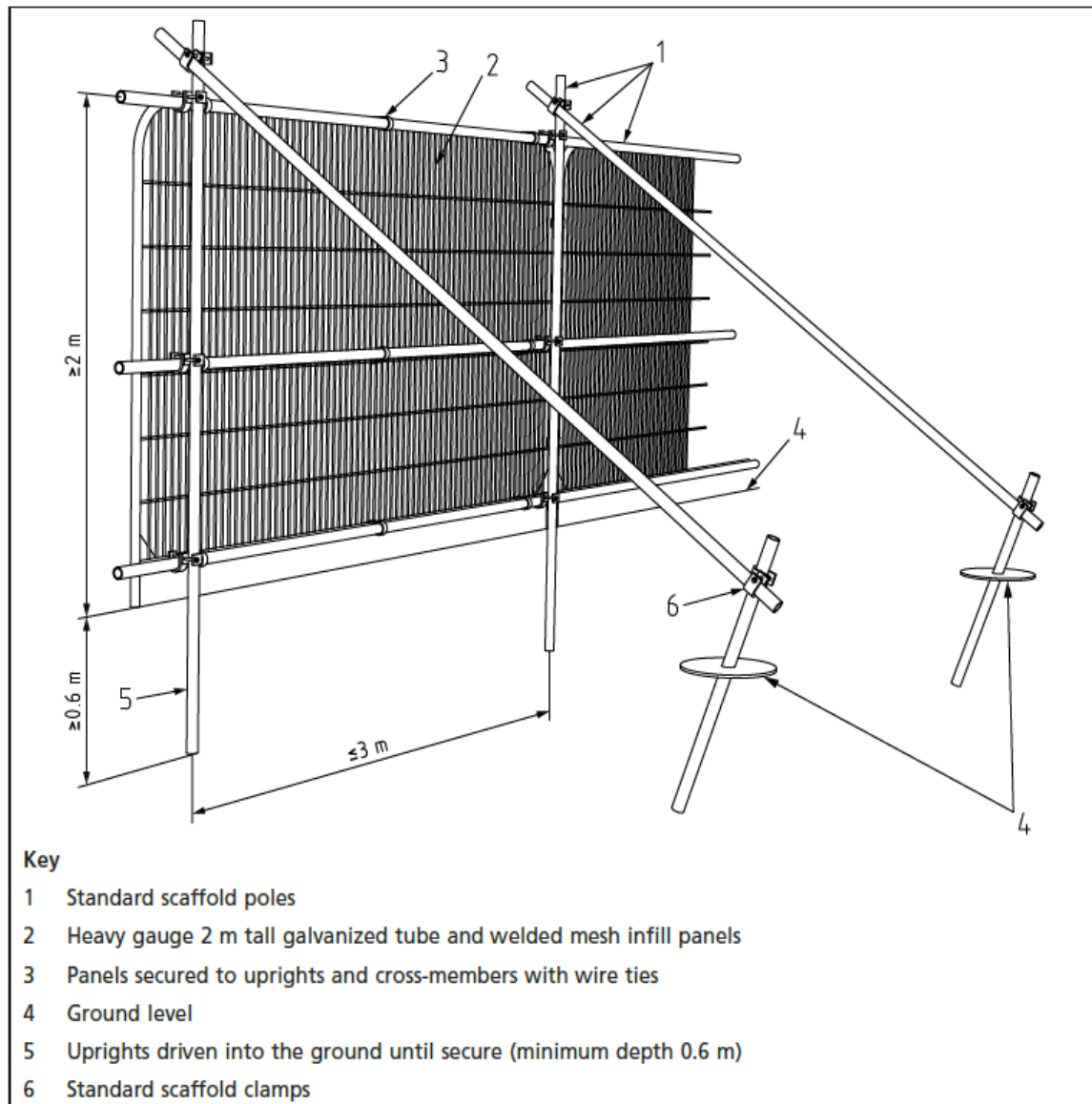
Tree no.	BS category	Species	Proposed works	Reason
T411	U	Horse chestnut	Remove tree and roots	In terminal decline. Removal enables replacement planting
T451	U	Horse chestnut	Remove tree and roots	In terminal decline. Removal enables replacement planting
T477	U	Hawthorn	Remove tree and roots	In terminal decline. Low priority
T553	U	Hawthorn	Shorten to 1m	Nearly dead. To retain habitat but reduce risk of failure
T556	U	Elm	Shorten to 1m	Dead. To retain habitat but reduce risk of failure
T576	U	Birch	Shorten to 1m or remove	Dead. To retain habitat but reduce risk of failure
T579 Tag 3083	U	Leyland cypress	Remove tree and retain stump	Very poor condition
T582	U	Ash	Remove tree and retain stump	In terminal decline and poor structural form
T588	U	Ash	Remove tree and retain stump	Hazardous condition due to extensive decay. Partially collapsed.
T608	U	Unknown	Shorten to 1m	Dead. To retain habitat but reduce risk of failure
T609	U	Laurel	Remove shrub	Very poor structural form

Tree no.	BS category	Species	Proposed works	Reason
T611	C	Holly	Remove tree and stump	To facilitate refurbishment
T612	C	Yew	Remove tree and stump	To facilitate refurbishment
T625	U	Laburnum	Remove tree and root	Poor condition and in terminal decline
T626	C	Laburnum	Remove tree and root	Poor condition and in decline

Appendix 5

Tree protection specification

Figure 2 Default specification for protective barrier



Tree protection fencing specification from BS 5837:2012 Figure 2

Section 6.2.2 of BS.

Barriers should be fit for purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained trees(s). Barriers should be maintained to ensure that they remain rigid and complete.

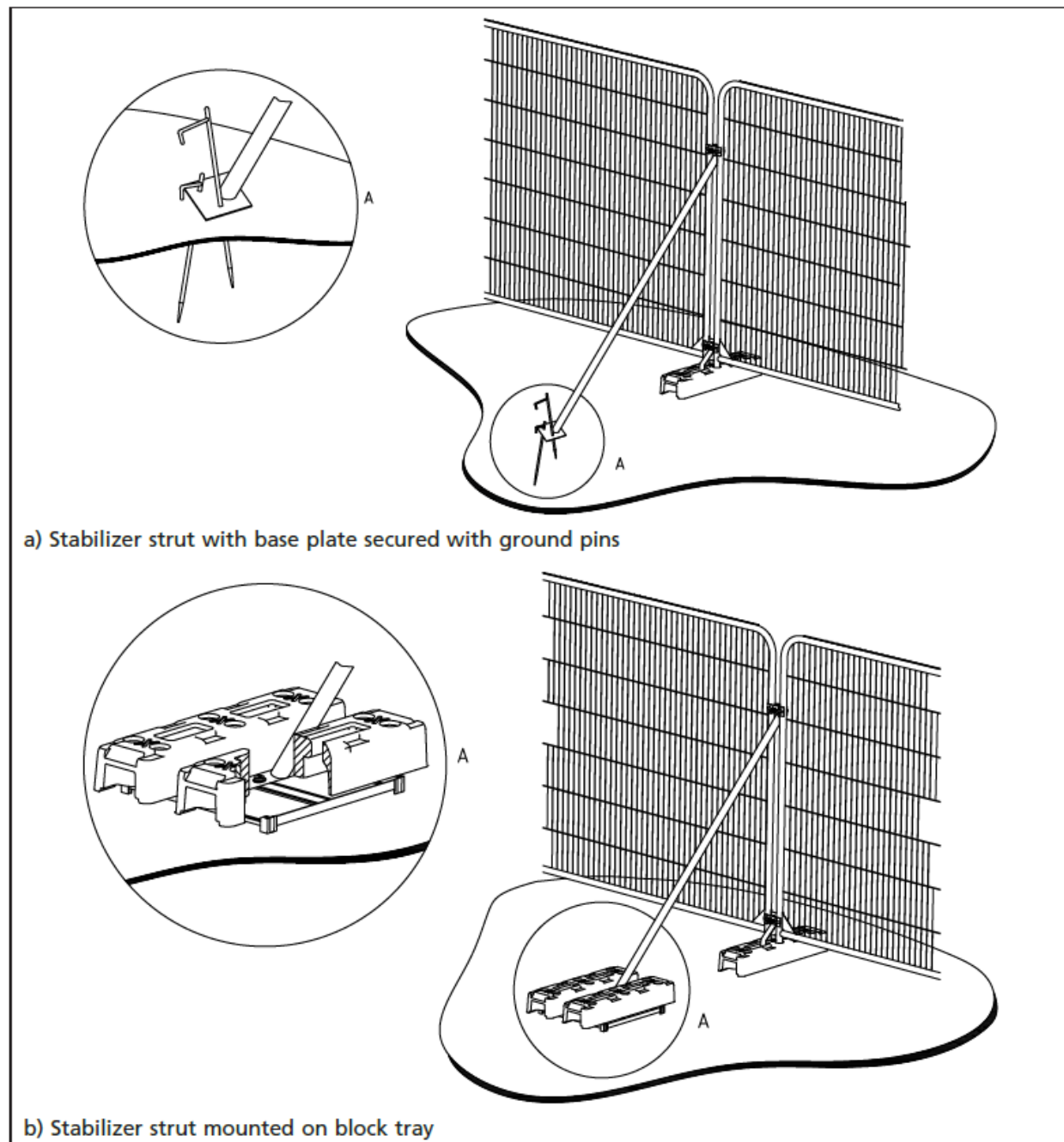
The default specification is shown above at Figure 2. Care should be taken when locating the vertical poles to avoid underground services and structural roots. Where it is not possible to drive a pole into the ground, for example on hard surfacing, figure 3 overleaf, applies.

The location for the tree protection fencing is shown on the tree protection plan delineated by a black dashed line. The location of the fencing is on the outer edge of the root protection area and the dimensions from fixed points are shown on the drawings. All weather signs should be affixed to the barriers, no more than 12m apart.

BRITISH STANDARD

BS 5837:2012

Figure 3 Examples of above-ground stabilizing systems



Suggested site warning sign format



Ground protection during demolition and construction

Where working space 'temporary access' is needed within the root protection area during works, fencing should be set back the minimum amount to achieve the required room. If there is existing hard surfacing in this area, it should remain during the works as ground protection. The suitability of this surfacing for ground protection, and whether it needs to be reinforced to bear the weight of machinery, should be assessed by an engineer and discussed with an arboriculturist.

Where the set back of the fencing exposes unmade ground, the ground must be protected before any works take place on site. This is to prevent root damage and soil compaction.

The ground protection might comprise of one of the following: (section 6.2.3.3 of BS)

- A) For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so 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 2 tonnes, 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;
- C) For wheeled or tracked construction traffic exceeding 2 tonnes gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

The location for ground protection is shown on the tree protection plan by brown solid identified in the key and is required near the pump house, and the cart lodge for the Summer House.

Ground protection is also required along the track in the woodland serving the Summer House and Harwood House. Cell web (over leaf) would be suitable.



SGN 3-02

Heavy-duty plywood set onto a compressible woodchip layer and pinned into position is suitable to spread the loading from pedestrian access.



SGN 3-05

A scaffold framework attached to the main scaffold fencing can be used to support either scaffold planks or plywood to create an elevated platform with a gap beneath.



SGN 3-06

Cellular products are a very effective means of providing ground protection where heavy vehicle use is expected. Here, it is being used to temporarily widen an existing road, to be removed once the construction is finished.

<https://www.barrelltreecare.co.uk/assets/Uploads/SGN-3-Ground-Protection-V3.pdf>

Appendix 6

Draft arboricultural method statement

1.0 Tree works:

1.1 Recommendations for tree works can be found in the tree surgery schedule in Appendix 4. All works shall be in accordance with BS 3998:2010 '*Tree work. Recommendations*'. The use of a competent and insured tree surgery contractor is necessary to comply with this. The main contractor and tree surgery contractor must ensure that any necessary consents have been received from the local authority and that no protected species are harmed whilst carrying out site clearance or tree surgery works. Within root protection areas, stumps, shrubs and other vegetation must be removed by hand or using stump grinding machinery to minimize root damage of retained trees. Where poisoning of stumps is specified, this must be carried out by competent operatives. Only chemicals approved for this purpose and used in accordance with the manufacturer's instructions will be used.

1.2 The following information must be sought:

- Current employers, public and product liability insurance
- Waste carriers' licence
- Qualification and experience of key personnel, including relevant NPTC certificates
- COSHH assessment
- Tool and task based risk assessment, including a Working at Height Risk Assessment
- Site specific risk assessment
- Emergency procedure plan
- Method Statement

1.3 A list of suitable tree surgeons is found at:

<http://www.trees.org.uk/find-a-professional/Directory-of-Tree-Surgeons>

Bio security measures are important and found at:

<https://www.forestry.gov.uk/biosecurity>

Potential use of timber:

Consideration could be given to the use of timber from trees felled for construction. The following hierarchy ranks from easiest and cheapest to most effort and cost:

- Use of woodchip for ground protection during construction (consult tree surgeon, contractor and arboriculturist for use and storage)
- Use of small branches and logs for habitat piles (consult tree surgeon, contractor and ecologist for use and storage)

- Use of larger logs (either sectioned or entire) for play (consult tree surgeon, contractor and landscape architect)
- Use of larger logs for simple benches (consult tree surgeon, contractor and landscape architect)
- Use of timber for bespoke artwork (consult tree surgeon and commission an artist to work offsite and work with landscape architect/client to determine best location)
- Use of timber for bespoke artwork to be created by the community/school under the guidance of an artist.

Things to consider:

- Durability of timber based on tree species (consult arboriculturist)
- Where it will be stored during construction (consult contractor and artist/other professionals)
- What the community want
- Is there any spin off benefits? PR, working with disadvantaged groups, carbon storage kept on site.

2.0 Fires: Fires on site should be avoided if possible. If unavoidable, they should be situated far enough so that there is no risk of damage to the trees, taking into consideration the wind direction.

3.0 Site and fuel storage, cement mixing and washing points: All site storage areas, cement mixing and washing points for equipment and vehicles and fuel storage areas should be outside root protection areas unless otherwise agreed with the Local Planning Authority. No discharge of potential contaminants should occur within 10m of a retained tree stem or where there is a risk of run off into Root Protection Areas.

4.0 Temporary buildings for site use: Site cabins, trailers and other temporary buildings can sometimes be used in root protection area if consent is agreed by the local planning authority. This can be very useful if there is a robust existing hard surfacing in place. The method for installing the buildings, and assessment of whether ground protection is needed is to be agreed with the Arboriculturist and specified prior to installation.

5.0 **Protection of tree canopies:** Piling rigs and cranes are often used close to trees. Work must be carefully planned so that there is sufficient room to avoid hitting the canopy during transportation or operation. Arboricultural supervision may be required, however, it is the responsibility of the contractor to assess and plan the work. Any access facilitation pruning required is detailed in the tree surgery schedule.

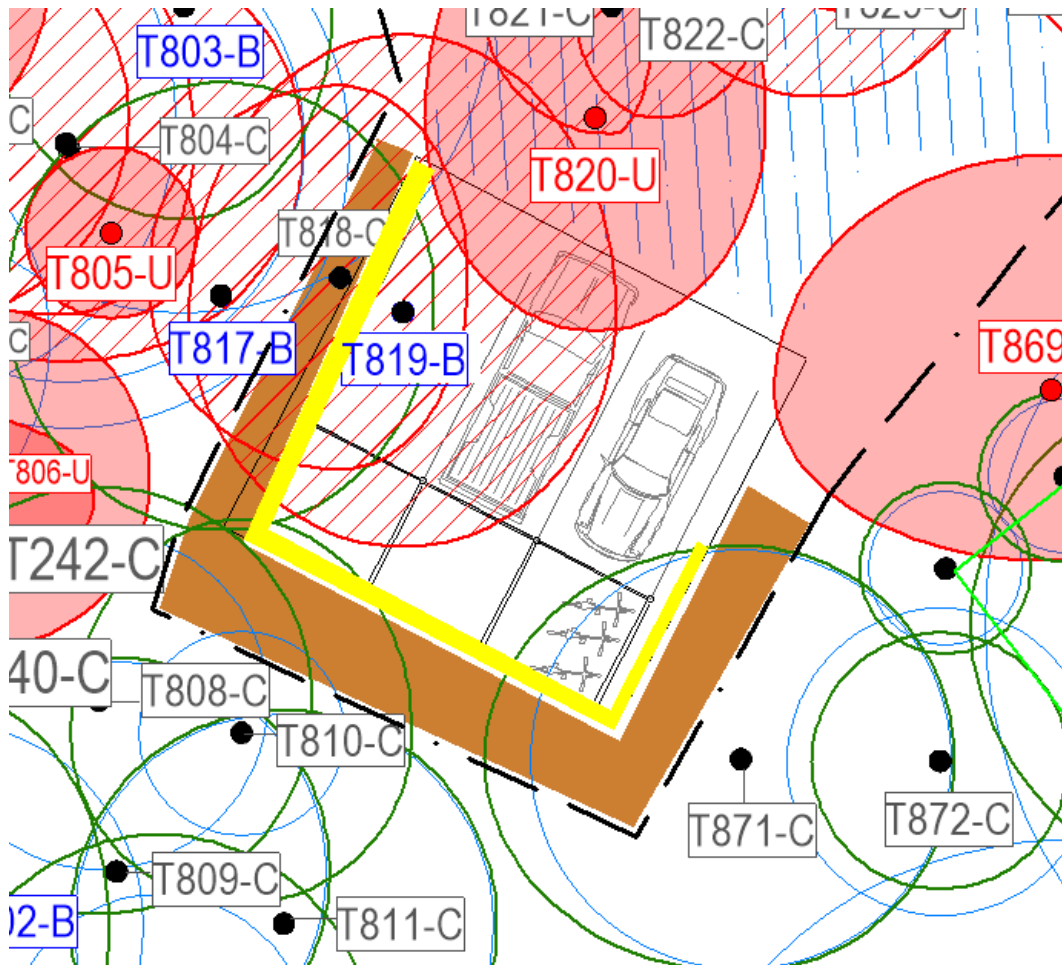
6.0 The following bespoke method statements will be developed further post planning:

The following are draft and detailed in the Arboricultural method statement post planning which will be developed with close team working.

7.0 Demolition:

- Carry out the internal and soft strip
- Pull back the building from top down and pulling back working from outside the root protection area where possible. Remove debris away from the root protection area.
- If this creates dust, and the trees are in leaf, hose down until dust is no longer visible.
- Consider if the underground structures within the root protections can remain to avoid any root interference. Tracking down the soil/foundation interface with the foundations. When/if the slabs are removed, roots with a larger diameter will be gently pulled away from the foundation (where possible) and wrapped in damp hessian. This will be carried out in the presence of the arboriculturist. The digging will be carried out very carefully so that roots will be retained. Roots just under the slab will be protected temporarily with damp hessian and a blinding layer of soil. Great care will be taken to avoid scuffing any roots and attempts will be made to retain bundles of fibrous roots.
- Hard surfacing near trees to be retained until the external works phase
- The arboricultural consultant will record the numbers, diameters and depths of roots found.
- The foundation excavation work will not take place in frost or hot dry weather.
- The tree side of the trench exposed by demolition will be backfilled with topsoil from site.

8.0 Construction of the footings cart lodges for Summer House and Harwood House: Within the yellow line area on the tree protection plan, the footings are to be bespoke designed to ensure that larger roots can continue underneath and there is a void of c.70mm to enable gaseous exchange. This means that the drive will need to slope up to the car park. The foundation will be designed with collaboration with the engineer, architect and arboriculturist and submitted to NHDC in the form of an updated method statement. Any excavation will take place using a compressed air lance.



Plan 9 – extract from SHA 1676 TPP. Do not scale, north is vertical. Area to which the method statement applies is yellow. Ground protection is brown and black dashed lines are the tree protection fencing.

9.0 Services and drainage: The final service plan will be reviewed by the arboriculturist to ensure that the principle of no new excavation in the root protection areas of trees to be retained is observed. If this is not possible, then this report will be updated and sent to North Herts District Council for approval and the principle of National Joint Utilities Council Volume 4 will be followed which is likely to require trenchless techniques. Any excavations within the root protection area will be observed by the arboricultural consultant. Particular care and attention must be given to the route of drainage and services along the track to serve Summer House and Harwood House. It is likely that underground moling will be required along the track (north/south) from Summer House to Harwood house due to the large quantities of tree roots. The details of methodology will be submitted to NHDC in the form of an Arboricultural Method Statement following collaboration with the arboriculturist, contractor and engineers.

10.0 Removal of hard surfacing within the root protection areas: Lift the concrete surface using handheld tarmac spade or a digger pulling backwards to lift the hard surfacing whilst keeping the ground underneath intact. In my experience, using a smooth bucket digger carefully can lift large slabs relatively easily without disrupting the ground beneath. There may be a sheath of fine feeder roots and main structural roots beneath the concrete. Great care must be taken to avoid scuffing and damaging these roots. Once removed, the exposed soil must be immediately covered with a suitable backfill medium such as good quality top soil.

The works should not take place in frosty or hot sunny dry weather as this can harm fine roots. If roots are accidentally damaged, then the arboricultural consultant must be contacted immediately.

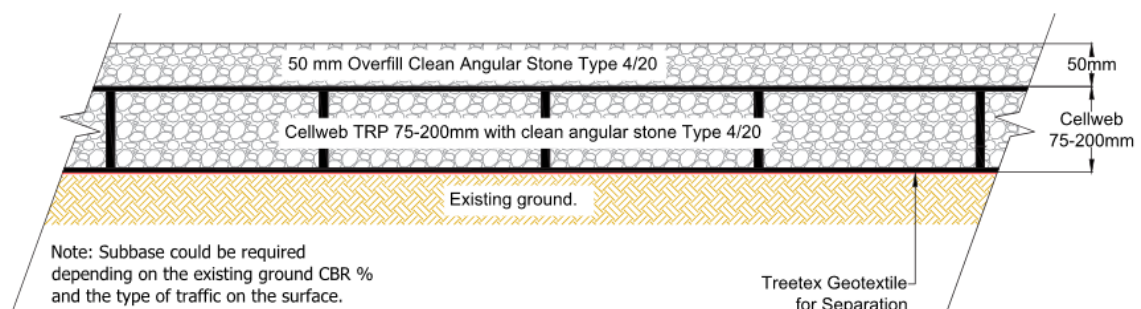
11.0 New Hard landscaping:

11.1 The areas to which this apply are shown on the tree protection plan *SHA 1676 TPP* at appendix 3 by blue shading for the hard surface. The principle is that the roots will be unaffected by level changes and lack of opportunities for gaseous exchange and water infiltration. All hard surfacing within the site boundary adjacent to trees to be retained will be porous. The purpose of the method statement is to ensure that tree roots are retained and that they can function. Therefore, digging down, compacting the soil and creating an impermeable surface will be prevented. A method to spread and support the load of the hard surface and anticipated usage without causing compaction of the soil structure beneath will be used.

11.2 For the track and drive in the woodland:

The sub-base will be porous to enable gaseous exchange and water infiltration. A suitable material is washed angular stone with a diameter between 20 – 40mm with no fines. Aggregates or stones must have a near neutral PH. The surface material will be permeable paving. The exact specification of the hard surface is a matter for the engineer and architect; however, the principles are as follows overleaf:

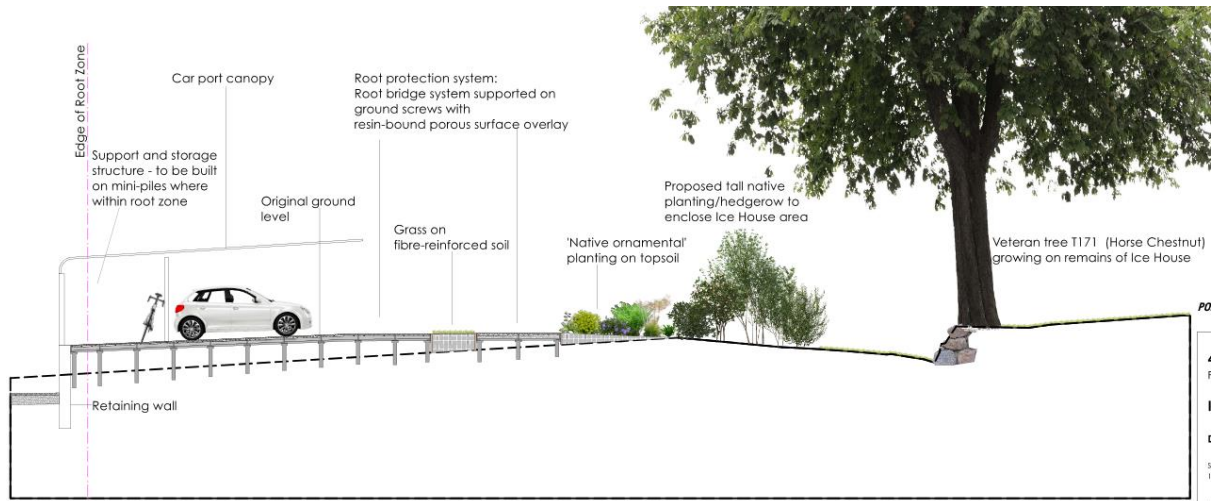
- Under arboricultural supervision skim off the grass/surface litter using a spade cutting horizontally under the turf. Remove the turf/surface litter from the root protection area. The depth of the excavation will be determined by the arboriculturist, and gentle scraping by a spade will continue until the shallowest root with a diameter greater than 25mm, or a matt of fine fibrous tree roots, are encountered.
- Immediately after an even soil grading has been achieved, a geo textile membrane will be laid flat on the surface. The use of a geotextile membrane (such as Tree Tex T300) will help support the sub-base and be a partial filter (a last line of defense) for contaminants such as oil and road salt. This works by laterally diffusing the contaminants over a wider surface area so that the effect is minimized.
- Lay a cellular confinement system such as <http://www.geosyn.co.uk/product/cellweb-tree-root-protection> – cross section below. Install as per the manufacturers specification and to the engineers prescribed depth. Typically, this is likely to be 100 - 150mm deep. An installation method is found at <https://www.geosyn.co.uk/wp-content/uploads/2016/05/Installation-Guide-Cellweb-Installation-Guide-81-3.pdf>.



- This cellweb can then be used as a base for machinery to create the dropped kerb, crossover and remove the wall foundations.
- A second geotextile layer to be added
- Porous surface to be laid in the normal way
- The edge treatment within the areas hatched blue will comprise treated timber laid on end pegged every 500mm with a wooden peg on the outside. The top of the peg will be flush with the top of the board. A small amount of topsoil will grade down from the top of the board to the soil to prevent a trip hazard.

11.3 For the East Park

Due to levels, the ground needs to be built up. To avoid raising the soil level over the root protection areas, a raised platform on mini piles will be used with a void underneath. A suitable product is <https://greengridsystems.com/> and others will be considered on the same principle. In order to assess the actual extent of the root protection areas, trial pits will be dug in the presence of the arboriculturist to plot the edge of the actual rooting. The extent of this support system will be based on this method, but not exceeded from the 15 x stem diameter recommended by the Ancient Tree Forum of the two veteran trees either side of the parking.



Cross section 1 – extract from 641-LEA-00-00-DR-L-5000 REV NO: P02

12.0 New soft landscaping: Within the root protection areas of trees to be retained, the preparation of soil for planting and turfing will be carried out by hand. Cultivation will be kept to a minimum and new topsoil must not exceed 100mm in depth in the root protection areas, with no increase within 300mm of the stem. Top soil and other materials will be transported by wheelbarrow on running boards when working near trees. Enriched biochar to supplier's recommendations (typically 5% of soil volume) is advised to assist the establishment of new planting.

13.0 Arboricultural site supervision

An initial site meeting:

Before works have started, but after the tree surgery and tree protection measures are in place. At this meeting the site manager, contractor, arboricultural consultant should discuss methodology and the tree protection measures will be examined. A 'What you need to know about working near trees at Temple Dinsley, School Lane, Preston, Hertfordshire, SG4 7RT' sheet will be issued which includes contact details.

After each site supervision, a short report will be sent to the contractor, client and local authority as a record of compliance within 5 working days.

Appendix 7

Tree related legislation and National Policy

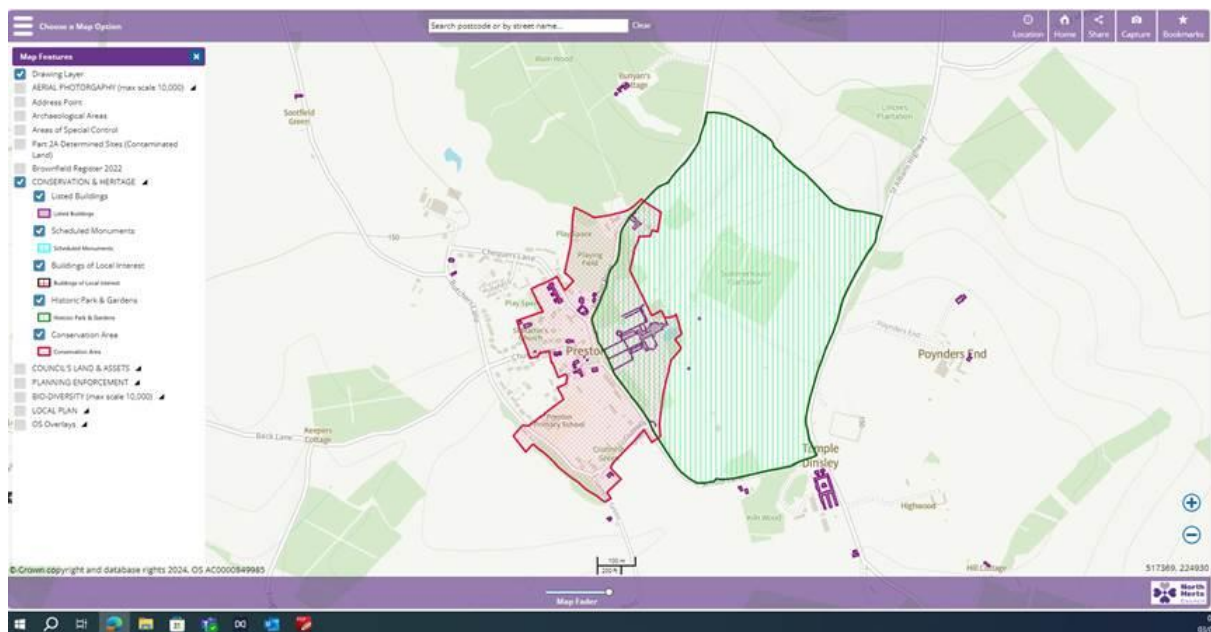
1. Tree preservation orders

The Town and Country Planning (Tree Preservation) (England) Regulations 2012.

No tree preservation orders affect the site.

2. Conservation Area

The site lies in the Preston Conservation Area, apart from the woodland. This means that no work can take place to trees (over 75mm at 1.5m) unless 6 weeks' notice of intent to carry out work is sent to the Local Planning Authority (LPA). The LPA can either raise no objection, or if they consider that the proposed works are detrimental to the visual amenity of the area, they will serve a Tree Preservation Order. Works listed in this report do not require separate consent, provided that all the pre-commencement conditions have been discharged from a full planning approval relating to this report.



Plan 9— extract from North Herts mapping

3. Ecological considerations

The Wildlife and Countryside Act 1981, as amended, The Conservation of Habitats and Species Regulations 2010 and the Countryside and Rights of Way Act 2000, provide statutory protection to species of flora and fauna including birds, bats and other species that are associated with trees.

4. Occupiers Liability Act 1957 and 1984

The Occupiers Liability Act (1957 and 1984) places a duty of care to ensure that no reasonably foreseeable harm takes place due to tree defects. Therefore, this report includes recommendations within the tree tables for work required for safety reasons. ‘Common sense risk management of tree (National Tree Safety Group 2012)’ states that *‘The owner of the land on which a tree stands, together with any party who has control over the tree’s management, owes a duty of care at Common Law to all people who might be injured by the tree. The duty of care is to take reasonable care to avoid acts or omissions that cause a reasonably foreseeable risk of injury to persons or property’*.

5. Felling licence

A felling licence is required to fell more than 5 cubic metres of timber in a calendar quarter. Applications typically take 13 weeks to process and are administered by the Forestry Commission.

Exemptions include:

- Tree surgery other than felling.
- Trees smaller than 8cm at 1.3m.
- Trees growing in a garden, orchard, and churchyard or designated open space.
- Works to facilitate full planning permission once all pre-commencement conditions are discharged and the subject trees are shown to be removed on the approved tree protection plans.
- Works to dangerous trees.

6. Hedgerows

1997 Hedgerow Regulations protects hedges if it meets the following criteria for:

- Length (more than 20m long with gaps of 20m or less in its length, or Less than 20m long, but meets another hedge at each end)
- Location
- Importance based on age (more than 30 years old), or of historical or ecological importance.

Further details are found at <https://www.gov.uk/guidance/countryside-hedgerows-regulation-and-management>

7. Veteran Trees

“The term veteran tree is one that is not capable of precise definition but it encompasses trees defined by three guiding principles: trees of interest biologically, aesthetically or culturally because

of their age; trees in the ancient stage of their life; trees that are old relative to others of the same species.”*

The veteran trees are as follows:

- T119 oak (named by the Arboricultural consultant as the ‘Majestic Oak’ as it is an important tree in terms of landscape setting and historical context)
- T171 Horse chestnut
- T173 Horse chestnut
- T183 oak
- T190 oak
- T331 lime
- T332 lime
- T333 lime
- T334 oak
- T336 lime
- T340 lime
- T358 oak
- T359 oak
- T390 lime
- T621 holm oak
- T721 oak

*(English Nature (200) Veteran Trees – A Guide to Good Management. [Online]. [Accessed 21st March 219]. Available from: <http://publications.naturalengland.org.uk/publication/75035>)

Their root protection areas (RPA) are shown as an outer pink circle in accordance with the Ancient Tree Forum Veteran Tree RPA calculation of 15 x stem diameter on the tree protection plan at appendix 3.

8. Registered Garden

Temple Dinsley, listed grade II*: “a country house of early C18 origin, substantially enlarged by Edwin Lutyens 1908-13, at which time he and Gertrude Jekyll collaborated on the creation of the formal garden around the house. The house and garden are surrounded by C18 parkland” (Historic England, List Entry 1000919).

The entry is below:

HISTORIC DEVELOPMENT

The manor house of Temple Dinsley was rebuilt by Benedict Ithell in 1714, following his purchase of the manor in 1712. Before this there appears to have been little garden surrounding the C17 house, which had a walled entrance forecourt largely surrounded by a paling fence enclosed by a line of trees (Chauncy 1700, reproduced in CL 1911). The manor passed through several hands during the remainder of the C18 and C19, being in the possession of H G Fenwick by the early C20. In 1908 Fenwick employed Edwin Lutyens (1869-1944) to enlarge the house substantially and remodel it. At this time Lutyens collaborated with Gertrude Jekyll (1843-1932) in creating formal gardens to the west and north of the house, providing a further extension to the house in 1911. The house became a school in 1935, in which use it remains (1999).

DESCRIPTION

LOCATION, AREA, BOUNDARIES, LANDFORM, SETTING Temple Dinsley lies adjacent to the east side of the village of Preston, 5km south of the centre of Hitchin, at the north-east end of the Chiltern Hills. The c 50ha site is bounded to the east, south and west by lanes, that to the west, School Lane, being one of the main village streets of Preston which is partly marked to the south of the house by a red-brick wall (E L Lutyens c 1908, listed grade II). To the north the boundary is marked by agricultural land. The ground is gently undulating, rising to the north-west of the house, with a pronounced valley extending north-east from the north side of the gardens, down which distant views of Letchworth are visible. The setting is rural, with further buildings by Lutyens for Fenwick lying adjacent to the south boundary, these being the former model farm, Ladygrove Stud Farm (also known as Minsden Farm, now converted to domestic use) and Kiln Wood Cottage (both E L Lutyens 1912-13, listed grade II). Lutyens and Jekyll were also working on the gardens at Putteridge Bury (qv), 6km to the west, at around the time Lutyens was employed in further extensions at Temple Dinsley.

ENTRANCES AND APPROACHES The main approach enters off School Lane, 250m south of the house, set back off the road between two brick-built gate piers with stone dressings flanked by a brick park wall (E L Lutyens c 1908, all listed grade II). The northern section of the wall extends north alongside School Lane; the southern section leads south, with a further gateway (E L Lutyens c 1908, listed grade II) set into it close to, and in similar style to the main gateway. The southernmost of the two gateways, opening into the south park, led to the former Temple Farm Homestead (now gone). The south drive curves northwards across the park, down a slope to the gravel forecourt lying on the south, entrance front, enclosed by brick walls. The south end of the drive was formerly (OS C19) flanked by an avenue of trees. The lowered south wall of the forecourt supports wrought-iron railings, at the centre of which lies the entrance to the forecourt, flanked by wrought-iron gates and piers with an overthrow (listed grade II with the house), giving access to the main door at the centre of the south front. Iron pedestrian gates are set into the west and east walls where they meet the south sides of Lutyens' cross wings. In the early C20 (CL 1911) the southern half of the forecourt was laid to lawn divided by the gravel*

drive leading to a carriage sweep in the northern half. Luxuriant herbaceous borders ran along the inner sides of the west and east walls.

The east drive enters at a two-storey lodge standing 450m east of the house, adjacent to the St Paul's Walden to Gosmore lane. From here a straight drive extends north-west, flanked by an avenue set in strips of mown grass, along the south-west side of Summerhouse Plantation. Views extend from the eastern section north-east towards Letchworth. At the west corner of the Plantation the drive turns south-west down a slope, passing two oval pools at the edge of the park, giving access to the service yard on the east side of the house. The drive continues south to join the south drive 50m from the house. In the C18 and C19 (Dury and Andrews, 1766; OS C19) the east drive was flanked by a straight avenue, replanted in the late C20.

PRINCIPAL BUILDING Temple Dinsley (1714, enlarged and remodelled by E L Lutyens 1908-9, listed grade II) stands towards the west side of the site. The early C18 core of the two-storey brick building is flanked by Lutyens' cross-wings, with a kitchen wing (1908) and nursery extension (1911) both attached to the east. The extension links with the C18 former stable block adapted by Lutyens and since converted to domestic accommodation. In the late C19 (OS), a substantial wing projected south from the south-east corner of the house along the outer side of the east forecourt wall; this was demolished before 1900 (OS C19).*

GARDENS AND PLEASURE GROUNDS The gardens are divided into a series of interconnected compartments largely related to the west and north fronts of the house, laid out by Lutyens with planting designs by Gertrude Jekyll, c 1909-10. The garden structures are listed grade II with the house.*

A doorway at the centre of the west front opens out into the formal Paved Rose Garden. A stone-paved path, flanked by narrow borders and beyond this panels of lawn, leads to a square parterre laid out with a geometric pattern of rose beds surrounded by further stone paving. The south side of the garden is bounded by a brick retaining wall, beyond and above which lie the Diamond Garden and Pool Garden. The north side is bounded by a brick wall into which is set a covered loggia, overlooking the centre of the rose beds, separating two garden houses. The loggia is supported on the south side by white pillars and flanked to west and east by the garden houses: square, brick garden pavilions with pyramidal roofs, each with a door opening out into the loggia. The west side of the Paved Rose Garden is bounded by a low, brick retaining wall with a flight of stone steps at the centre leading up to an open lawn enclosed by brick walls, the former Herbaceous Garden. In the early C20 this area contained broad herbaceous borders running west from the steps to the west wall along the north and south walls. The borders flanked a central path aligned on the door in the west front. The contours of the path are still visible (1999). The garden wall enclosing the former Herbaceous Garden is of C18 origin, and enclosed the former walled kitchen garden, the east wall of which stood close to the site of the west front of the adjacent cross wing of the house.

A second east to west axis runs parallel and adjacent, overlooking the Paved Rose Garden and Herbaceous

Garden from the south. At the east end of this axial layout, the Diamond Garden is entered from the western forecourt gate, and also from the south-east corner of the Paved Rose Garden. From a stone path connecting these two entrances a broad flight of stone steps with tile risers leads south up to a raised lawn flanked by rose borders. This lawn overlooks the forecourt to the east, and the park to the south, being bounded on these two sides by brick retaining walls. From the top of the steps a stone path leads west between raised brick and stone rose beds to a further short flight of stone steps up to the Pool Garden. This is dominated by a swimming pool with a concrete surround set in lawn overlooking the Paved Rose Garden and loggia, below to the north. Formerly, as laid out by Lutyens, the body of water was an informal ornamental reflecting pool, and was enclosed by stone paths set in grass. At the west end of the Pool Garden a flight of steps set in a low, brick retaining wall leads up to the Spring Garden, laid to lawn with a stone path leading west into the Small Herbaceous Garden, now (1999) laid to lawn and partly enclosed by clipped hedges. Formerly a path led west across the Small Herbaceous Garden, flanked by herbaceous borders. The west side of the Garden is bounded by a stone cross path which leads north into and across the Herbaceous Garden, and west of the path the Garden is bounded by the tall, brick garden wall standing adjacent to the village green.

A stone cross path at the east side of the Spring Garden gives access via a gateway to the park to the south, and to the Herbaceous Garden to the north down stone steps set into the dividing wall. The cross path continues north across the Herbaceous Garden, leading down stone steps between brick gate piers set into the north wall and down to the Side Path, which connects the west garden boundary with the Pergola Garden to the east. The cross path from the Spring Garden crosses the Side Path, leading north to the curved, stone Magnolia Steps which lead down to a stone-paved area. Here, two circular beds containing mature bush magnolias flank to west and east a small paved area, with a further flight of curved stone steps leading down to the north into the Rose Garden. The Rose Garden is laid to lawn and largely enclosed by clipped yew hedges with entrances set at the centre of each side. Formerly (early C20) this was planted with a pattern of rose beds. The northern entrance leads into woodland, the western entrance gives onto stone steps leading up to the informal Top Lawn, and the eastern entrance leads to a lawn set with several mature trees including a large holm oak overlooking the formal Pergola Garden.

A doorway at the centre of the north front opens out onto the formal North Terrace. Stone steps lead down to a stone terrace with a pattern picked out in bricks, flanked by Lutyens' west and east cross wings and bounded to the north by a terracotta balustrade on top of a brick retaining wall supporting the terrace above. Two flights of stone steps oppose each other as they lead down from either end of the stone terrace, to a further stone terrace bounded to the south by the brick retaining wall which here has a hemispherical arch in which a small circular pond is partly recessed. To the south of this lies a narrow rectangular formal lawn flanked by herbaceous borders, these in turn flanked by retaining walls supporting stone paths leading north from the steps which lead down from the top terrace. These paths are bordered by lawns leading along the north front of the projecting cross wings.

A flight of stone steps leads down from the central lawn of the North Terrace to the Pergola Garden, a rectangular sunken lawn surrounded by raised brick terraces on the north, east and south sides, and by a grass bank on the west side. A grass path runs along the top of the west and north terraces, and a stone path along the east and south terraces. A flight of stone steps leads down to the lawn from the centre of the west side, with a broader, central flight on the north side aligned on the centre of the house, and a further, narrower flight to the west of this. The east terrace is covered by a pergola with brick piers, with alternate circular and square piers and wooden cross members linking the tops of the piers. At the south end of the pergola a flight of stone steps leads south up to the easternmost of the two lawns flanking the central North Terrace Lawn. A further flight of stone steps leads up from the south side of the sunken lawn in the Pergola Garden, to the western of these two flanking lawns.

At the north end of the pergola stone steps lead up to the Belvedere (Lutyens c 1908), a small, square stone building with a pyramidal roof, which is offset to the east of the pergola, overlooking to the south the Small Orchard which bounds the Pergola Lawn below to the east. The Belvedere overlooks the park to the east, with long views to the north-east along a valley, beyond the park towards Letchworth. The broad steps on the north side of the Pergola Garden lead north up to the Orchard, which itself slopes up to the north, overlooking the Pergola Garden and north front, and bounded to the west and north by woodland and to the east by a clipped yew hedge covering a brick retaining wall. It is now (1999) laid to rough grass, having lost almost all of the orchard trees. Views extend east and north-east, as from the Belvedere, which stands at the south-east corner.

In the late C19 (OS), a small garden lay immediately north of the house, covering the area now occupied by Lutyens' cross wings and North Terrace. The Side Path led west alongside the kitchen garden on the west front, giving access to a path through a narrow belt of wooded pleasure grounds on the west boundary which led northwards to the Dower House. South of the kitchen garden lay a rectangular compartment containing a rectangular pool on the site of that in the C20 Pool Garden. The Orchard, the Pergola Garden and other compartments north of the Side Walk, together with much of the enclosing woodland, were created on land taken in from the park by Lutyens and Jekyll.

PARK The park, laid to pasture and woodland, bounds the house and gardens to the east and south, and is divided by the east drive into north and south halves. At the centre lies Summerhouse Plantation, planted in the early to mid C20. The southern half of the park contains some mature specimen trees, with the remains of an avenue leading south-west from the east drive 200m east of the house, aligned on the site of the former Temple Farm Homestead (now gone). A brick icehouse (C18, listed grade II) lies 250m east of the house, south of the east drive. The Piggery (E L Lutyens c 1908, listed grade II) stands 240m south-east of the house. It is a small, red-brick farm building with a steep, pyramidal tiled roof, built as an eyecatcher within the park, particularly from the house and south drive.

The northern half of the park contains the Dower House (early C18 and early C19, listed grade II), a large,

irregular, red-brick house of two storeys standing 300m north of Temple Dinsley house on lower ground.

In the late C19 (OS) the south park contained the remains of several avenues, including a fragment of a double avenue lying c 150m south-east of the house, on which it was aligned, together with the avenue flanking the south end of the south drive, and the avenue extending south-west from the east drive to the former Temple Farm Homestead. This farm, demolished in the early C20, formerly occupied a prominent position c 250m south-east of the house (Dury and Andrews, 1766; OS C19).

KITCHEN GARDEN The brick-walled, rectangular former kitchen garden, converted in the early C20 into Lutyens' Paved Rose Garden and Herbaceous Garden, extends west from the house, still largely enclosed by the remains of the C18 and C19 walls (OS 1884).

National Policy**National Planning Policy Framework December 2023**

186. When determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁶⁷ and a suitable compensation strategy exists; and
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

Policy NE2: Landscape

Planning permission will be granted for development proposals that:

- a) Respect the sensitivities of the relevant landscape character area and have regard to the guidelines identified for built development and landscape management;
- b) Do not cause unacceptable harm to the character and appearance of the surrounding area or the landscape character area in which the site is located, taking account of any suitable mitigation measures necessary to achieve this;
- c) Are designed and located to ensure the health and future retention of important landscape features; and
- d) Have considered the long-term management and maintenance of any existing and proposed landscaping.

North Hertfordshire District Council Tree Strategy

TREES AND DEVELOPMENT

This policy addresses only those tree related issues which may have a bearing on the future maintenance responsibilities of the Council. These general policies are:

- 1) All trees identified for retention on development sites shall be properly surveyed and protected in accordance with British Standard BS5837: 2005: Building in Relation to Construction - Recommendations.
- 2) The Council, through its Planning Services, shall seek agreement with the developers under Section 106 Agreements to secure, where appropriate, provision for new tree planting or works to maintain or conserve important trees and other arboricultural features. All such works must be carried out in accordance with the Council's Framework Agreement For Tree Maintenance and monitored by the Council's arboricultural or landscaping staff.
- 3) Where there is no alternative but to remove trees on land managed by the Council, the developer will be required to replace two trees for each one lost.

Appendix 8

Statement of methodology and reference material

Statement of methodology

Review of supplied plans and information

Site visits made by SHA and Tracey Clark Tree Consultancy between January and June, 2023 and 2024 in multiple visits.

Tree survey using Visual Tree Assessment carried out in accordance with BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*' (BS). All investigations were from ground level only and binoculars were used when necessary. All trees with a trunk diameter of 75mm or above were surveyed. Obvious hedges and shrub masses were identified where appropriate. Information collected is in accordance with recommendations in subsection 4.4.2.5 of BS and include species, height, diameter, branch spread, crown clearance, age class, physiological condition, structural condition and remaining contribution. Each tree was then allocated one of four categories (U, A, B or C).

Series of Teams and in person site meetings with key consultants

Meeting on 2 July with key design team and Arboricultural Officer and Ecology Officer from North Herts District Council

Additional information received from design team

Received material

All drawings by SCABAL in connection with the application, Drawings by the Landscape Architect Livingston Eyre Associates and other relevant plans.

Reviewed text

BSI. BS 3998:2010 *Tree work-Recommendations*.

BSI. BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*

R.G.Strouts and T.G.Winter 'Diagnosis of ill-health in trees' TSO 1994

North Herts District Council website

C. Mattheck 'The body language of trees' 2015

Arboricultural Association Guidance Note 12 'The use of Cellular Confinement Systems Near Trees

Appendix 9

Caveats & Exclusions

Specific report caveats

1. At the time of writing this report, the protected tree status is correct. However, this can change. Therefore, I advise that a further check is made with North Herts District Council before any works to trees take place.
2. No internal diagnostic equipment was used other than a sounding mallet and probe and all inspections were from ground level only, with the aid of binoculars where necessary.
3. The survey is concerned solely with arboricultural issues.
4. Any changes in ground level, or excavations near to tree roots not discussed within this report may change the stability and condition of the trees and a further examination would be required.
5. As trees are a dynamic living organism this report is only valid for a period of 12 months, in respect to their health and condition.
6. Only the trees listed in this report have been examined.
7. Dense ivy and undergrowth prevent a full condition survey being carried out. The vegetation may be hiding structural defects.
8. The tree information is from the time of the survey. Some pests, diseases and fungi only appear seasonally, therefore it is possible not all issues that may affect the health of the trees could be observed.

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Appendix 10

Experience and qualifications of author



Sharon Durdant-Hollamby

FICFor FArbor A BSc (Hons) Tech Cert Arbor A



Profile

Sharon is an Expert Witness, chartered arboriculturist and Director of Sharon Hosegood Associates Ltd. Sharon had eleven years' experience as a local government tree and landscape officer before joining a contractor as a tree consultant in 2005. In 2007 she formed an environmental practice in Essex with the owner. As managing director, she built up the ecological and arboricultural consultancy to a team of 20. She is a past President of the Institute of Chartered Foresters (May 2021 – April 2023). She joined Essex Quality Review Panel in May 2023 as an arboricultural expert and has been awarded an Honorary Fellowship of Myerscough College. She is the host of Tree Lady Talks podcast and a regular speaker home and abroad.

Specialties: Trees in relation to development, including appeals and planning hearings

Tree root investigations, including TreeRadar

Tree hazard evaluation

Tree preservation orders

Trees and well-being with community engagement

Professional bodies: Immediate Past President of the Institute of Chartered Foresters
Fellow of the Institute of Chartered Foresters (ICF)
Fellow of the Arboricultural Association

Qualifications: Cardiff University Law School Bond Solon Civil Expert Certificate
Arboricultural Associations Technicians Certificate
BSc (Hons) Geography and Landscape Studies
Managing Safely IOSH (2017)

Awards: Top student award for the Technician's certificate in 2005

The Broomfield Hospital Woodland Management project she has managed between 2009 -2015 won the following awards:

The Essex Biodiversity Awards (nomination)

The Excellent Community Engagement Award (NHS Forest)

Green Flag and Green Apple Award

Highly commended for the Health Sector Journal Award 2013

Honorary College Fellow (Services to Arboriculture and Forestry) University Centre, Myerscough

Appendix 11

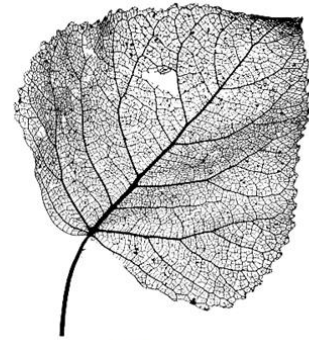
Glossary

Arboriculture	Formerly all aspects of the culture of trees, especially for forestry. Latterly, the art and science of cultivating and managing trees as groups and individuals, primarily for amenity and other non-forestry purpose.
Arboricultural method statement	Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.
Arboriculturist	Person who has, through relevant education, training and experience in the field of trees in relation to construction.
Architecture	In a tree, a term describing the pattern of branching of the crown or root system.
Biochar	Biochar is charcoal used as a beneficial soil amendment enabling nutrient uptake and assisting the trees defense mechanism
Biodiversity	The variability among all living organisms of an ecological complex.
Biomechanical	Pertaining to the mechanical functions and properties of living organisms, such as trees.
Body language	In trees, the outward display of growth responses and/or deformation in response to mechanical stresses.
Branch	A limb extending from the main stem or parent branch of a tree.
Branch bark ridge	The raised arc of bark tissues that forms the acute angle between a branch and its parent stem
Branch collar	The swelling or roughened bark often found at the base of a branch which should be left intact if the branch is to be pruned off.
Canker	A lesion in which bark and cambium have been killed, sometimes exposing the wood and often showing a swollen appearance owing to the encircling growth of new tissues.
Canopy	The topmost layer of twigs and foliage in a tree.
Co-dominant	In trees, a similarity between two or more stems or branches with regard to their size and their position within the canopy.
Column	In the wood or phloem of a tree, an axially elongated zone of tissue that is distinguished from the surrounding tissue; e.g. Live versus dead or decayed versus non-decayed.
Construction exclusion zone	An area based on the root protection area from which access is prohibited for the duration of the project.
Crown	In arboriculture, the main foliage-bearing portion of a tree.
Crown lifting	The removal or shortening of the branches that form the lower part of the crown of a tree.
Crown reduction	Pruning in order to reduce the size of the crown of a tree.
Crown thinning	Pruning inside the crown of a tree in order to reduce its density.
Defect	In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment.
Dieback	The death of part of a plant, usually starting from a distal point and often progressing proximally in stages.
Direct damage	Direct physical damage to a structure of surface from pressure exerted by the trunk or growing roots.

Ecosystem services	The benefits that a particular species or range of species bestow upon others (including humans) through ecological relationships. Such services can sometimes be estimated in a form that allows them to be included in financial accounting.
Epicormic	Pertaining to shoots or roots which are initiated on mature woody stems; shoots can form in this way from dormant buds or they can be adventitious.
Failure	In connection with tree hazards, a partial or total fracture within woody tissues or loss of cohesion between roots and soil.
Flush cut	A pruning cut close to the parent stem which removes part of the branch bark ridge.
Foreseeable	In hazard assessment, pertaining to failure and associated injury of damage which are predictable on the basis of evidence from a tree and its surroundings.
Fungi	Organisms of several evolutionary origins, most of which are multicellular and grow as branched filamentous cells within dead organic matter or living organisms.
Hazard	A thing, a process or a potential event that has the potential to cause harm.
Heartwood	The dead or predominantly dead central wood of various tree species whose outer living wood, sapwood, has a finite and pre-determined lifespan.
Independent in the landscape	Point at which a newly planted tree is no longer reliant on excessive or abnormal management intervention in order to grow and flourish with realistic prospects of achieving its full potential contribute to the landscape.
Level arm	A mechanical term denoting the length of the lever represented by a structure that is free to move at one end, such as a tree or an individual branch.
Landscape character	A distinct, recognisably and consistent pattern of elements in the landscape that make one landscape different from another, rather than better or worse.
Mulch	Material laid down over the rooting area of a tree or other plant to help conserve moisture, suppress weeds and encourage a beneficial microflora.
Mycorrhizal	Pertaining to an intimate symbiotic association between plant roots and specialised fungi.
PICUS	The Picus Sonic Tomograph is a non-invasive tool for assessing decay in trees. It works on the principle that sound waves passing through decay move more slowly than sound waves traversing solid wood. By sending sound waves from a number of points around a tree stem to a number of receiving points, the relative speed of the sound can be calculated and a two-dimensional image of the cross-section of the tree can be generated
Pollard	A term for a pollarded tree
Pollarding	The complete or partial removal of the crown of a young tree so as to encourage the development of numerous branches; also, further cutting to maintaining this growth pattern.
Probability	A statistical measure of the chance that a particular event (e.g. a specific failure of a tree or specific kind of harm to persons or property) might occur.
Resistograph	

	The IML-RESI system is based on the measurement of drilling resistance. The IML-RESI operates in a similar manner to a normal drill. A drilling needle with a diameter of 1.5mm is inserted into the wood under constant drive. While drilling, the resistance is measured as a function of the drilling depth of the needle. The data is printed and stored electronically at a scale of 1:1 simultaneously. Although invasive the relatively small needle diameter causes very little damage, testing is normally only undertaken to confirm the remaining stem wall thickness in decaying trees.
Retrenchment	Progressive reduction in the size of the crown of an old tree, by means of the dieback or breakage of twigs and small branches, accompanied by the enhanced development of the lower or inner parts of the crown.
Risks	The likelihood of the potential harm from a particular hazard becoming actual harm.
Root protection area	A layout tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. BS 5837:2012 ' <i>Trees in relation to design, demolition and construction – Recommendations</i> '.
Root flare	Thickened and expanded base of a tree stem at ground level from which buttress roots form.
Rootplate	The central part of the root system of a tree, consisting of the large-diameter main roots and a dense mass of smaller roots and soil.
Service	In construction, any above-or below-ground structure or apparatus for utility provision.
SULE	Safe useful life expectancy of a tree (Barrell)
Stag-headed	In a tree, a state of dieback in which dead branches protrude beyond the current living crown.
Stress	In plant physiology, a condition under which one or more physiological functions are not operating within their optimum range, for example owing to lack of water, inadequate nutrition or extremes of temperature.
Stub cut	A pruning cut which is made at some length distal to the branch bark ridge.
Target pruning	The pruning of a twig or branch so that tissues recognisably belonging to the parent stem or branch are retained and not damaged.
Targets	In tree hazard assessment, persons or property or other things of value which might be harmed by mechanical failure of the tree or by objects falling from it.
Tree Preservation Order	In Great Britain, an order made by a local authority, whereby the authority's consent is generally required for the cutting down, topping or lopping of specified trees.
Tree protection plan	Scale drawing, informed by descriptive text where necessary, based upon the finalized proposal, showing trees for retention and illustrating the tree and landscape protection measures.
Utility	An undertaker by statute that has a legal right to provide customer services (e.g. communication, electricity, gas and water).

Veteran tree	<i>'A tree that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species'.</i> Ancient Tree Guide No. 4 (ATF, 2008).
Vigour	In tree assessment, an overall measure of the rate of shoot production, shoot extension or diameter growth.
Vitality	In tree assessment, an overall appraisal of physiological and biomechanical processes, in which high vitality equates with near-optimal function, in which high vitality equates with healthy function.
Visual Tree Assessment (VTA)	In addition to the literal meaning, a system expounded by Matlack and Breloer (1995) to aid the diagnosis of potential defects through visual signs and the application of mechanical criteria.
White-rot	Various kinds of wood decay in which lignin, usually together with cellulose and other wood constituents, is degraded.
Wound	Injury caused to a tree by a physical force.



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