**Outline Trees, Arboricultural Consultancy**

**Report Reference: JH1225WATERSMEAD**

**December 2025**



# British Standards 5837:2012 Tree Survey, Arboricultural Impact Assessment & Arboricultural Method Statement

**(including Tree Protection Plan)**

**at**

**Watersmead, The Park, Tamworth Street, Duffield**
**Derbyshire DE56 4ER**

| QUALITY ASSURANCE | | | |
|---|---|---|---|
| **Client:** | Mr A Whitehead | | |
| **Project:** | Watersmead, The Park, Tamworth Street, Duffield Derbyshire DE56 4ER | | |
| **Project Ref:** | JH1225WATERSMEAD | | |
| **Report Content:** | British Standards 5837:2012 Tree Survey, Arboricultural Impact Assessment & Arboricultural Method Statement including a Tree Protection Plan | | |
| **Written, Checked & Issued by:** | Jason Humphreys FdSc (Arb) MArborA |  | 11th December 2025 |

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**CONTENTS**


**1 EXECUTIVE SUMMARY ..... 4**
1.1 The Project, Purpose and Scope of this Report ..... 4
1.2 Findings and Recommendations ..... 4
**2 LIMITATIONS, REGULATIONS & LOCATION ..... 5**
2.1 Tree Survey & Report Limitations ..... 5
2.2 Regulatory and Policy Framework ..... 5
2.3 Site Location ..... 6
**3 SURVEY METHODOLOGY ..... 7**
3.1 Tree Survey Methods ..... 7
3.2 Survey Personnel ..... 7
**4 RESULTS ..... 8**
4.1 Statutory Tree Protection ..... 8
4.2 Tree Survey ..... 8
**5 ARBORICULTURAL IMPACT ASSESSMENT ..... 10**
5.1 Tree Survey Schedule & Management Recommendations ..... 10
5.2 Tree Retention & Arboricultural Constraints ..... 10
5.3 Shading ..... 10
5.4 Direct Damage ..... 10
5.5 Root Protection Areas (RPAs) ..... 11
5.6 Demolition, Excavation, Ground Works & Construction Activities ..... 11
5.7 Hard Surfacing Within the Root Protection Area ..... 12
5.8 Future Pressure for Tree Pruning/Removal ..... 12
5.9 Seasonal Nuisance ..... 12
5.10 Infrastructure ..... 12
5.11 Miscellaneous ..... 12
5.12 Recommended Tree Works ..... 12
5.13 Trees to be Pruned ..... 13
5.14 Landscaping ..... 13
5.15 Tree Loss Evaluation ..... 13
5.16 Issues to be Addressed by an Arboricultural Method Statement ..... 13
5.17 Tree Protection Plan ..... 13
**6 SITE SPECIFIC ARBORICULTURAL METHOD STATEMENT (AMS) ..... 14**
6.1 AMS Content ..... 14
DS1 – Appoint Site Arboriculturalist (SA) ..... 14
DS2 – Pre-Commencement Site Meeting ..... 14
DS3 – Pre-Commencement Tree Works ..... 15
DS4 – Identification & Marking out of RPAs and Tree Protection Measures (TPMs) ..... 15
DS5 – Installation of Ground Protection Measures (GPM) ..... 15
DS6 – Erection of Tree Protection Fencing (TPF) ..... 16
DS7– Demolition, Excavation, Ground Works & Construction ..... 16
DS8 – No-Dig Surfacing ..... 17
DS9 – Miscellaneous ..... 17
DS10 – Tree Planting ..... 17
DS11 – Landscaping ..... 18
DS12 – TPM Removal ..... 18
DS13 – Tree Maintenance ..... 18
DS14 – Completion ..... 19
6.2 Tree Works ..... 19
6.3 Contacts ..... 19

**FIGURES**

Figure 2.1: Site Location Map 6
Figure 6.1: Suggested Protective Fencing Specification 16

**APPENDICES**

Appendix A Tree Survey Schedule
Appendix B Current Layout & Tree Survey Plan
Appendix C Proposed Layout & Tree Protection Plan
Appendix D Protective Fencing Signage
Appendix E References
Appendix F Life Stage & Condition Key
Appendix G NJUG Operatives Hand Out
Appendix H BS5837:2012 Cascade Chart for Tree Quality Assessment
Appendix I Glossary of Terms & Definitions
Appendix J Arboricultural Supervision Record

# 1 Executive Summary

## 1.1 The Project, Purpose and Scope of this Report

The primary purpose of this report is to provide, site-specific arboricultural detail, in respect of determining the arboricultural impact of planning application AVA/2025/0783, which is associated with a single storey side extension to create a home gym.

An existing scale, site plan in .dwg format has provided the basis for the Tree Survey Plan, whilst a full suite of plans, drawings and elevations provided by the client's architect, have been used to ascertain the impact of the proposals and subsequently produce the following documents:

- BS 5837:2012 Tree Survey Schedule (TSS) - Appendix A
- Current Tree Survey Plan (TSP) - Appendix B
- Proposed Layout & Tree Protection Plan (TPP) - Appendix C
- Site-Specific Arboricultural Impact Assessment (AIA) - Section 5
- Site-Specific Arboricultural Method Statement (AMS) - Section 6

## 1.2 Findings and Recommendations

The Tree Survey Schedule at Appendix A, records the details of 13 individual trees and 2 tree groups. The surveyed trees are those, which are reasonably considered most likely to be impacted by the proposals and/or those, which might place constraints on how the practical aspects of the project will be carried out. Full details are provided in the Tree Survey Schedule (Appendix A).

The removal of 2 unremarkable trees, which are detailed in Section 5.12 and shown clearly on Appendix C, have been recommended to faciliate the proposals and to provide a more desirable layout juxtaposition, than their retention would allow.

The use of tree protection measures, has been recommended in order to minimise the potential for any foreseeable detrimental impact occurring to several of the retained trees, throughout the duration of the project (See Appendix C and Sections DS5 & DS6). Provided that the protective measures are put in place prior to the commencement of the project and maintained throughout its duration, the projected RPAs of the retained trees, their locations and immediate growing environments and the likelihood of them being detrimentally impacted by the proposals are not considered to present any significant constraints to the proposals.

Whilst not anticipated, site-specific construction methodology will be adopted where works and/or access within the projected RPAs of retained trees is considered necessary to implement the planning consent; this approach is considered to be reasonable and proportionate. Section 6 identifies, summarises and provides detail on those potential works and activities, which are based on either BS 5837, or other recognised and adopted industry practice and recommendations. An auditable record of these and other key activities will be maintained and kept at the site. Appendix J has an appropriate template for this specific purpose.

A Site Arboriculturist (SA), will be appointed and retained for the duration of the project and will be available to provide advice, instruction and if necessary, oversee the supervision of any key aspects, and activities, which might have cause to detrimentally impact the retained trees.

Tool box talks and briefing sessions are encouraged and will be delivered by the Main Contractor, Site Manager, or the Site Arboriculturalist as appropriate. All documents referred to in this report, including the Tree Survey Schedule, Tree Survey Plan and the Tree Protection Plan, will be kept on site throughout the duration of the project and made available for any contractors, as necessary.

It is considered that provided the recommendations, measures and guidance detailed within this report are followed and adhered to throughout the duration of the project, there are no objective and demonstrable arboricultural reasons as to why this project cannot be implemented.

# 2 Limitations, Regulations & Location

## 2.1 Tree Survey & Report Limitations

Recommendations included within this report are the professional opinion of an experienced Arboriculturist[1] and are the view of the Author (see Section 3.2). This is based on a review of the information provided by The Client, the brief and a survey of the site. This report pertains to these results only. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information.

Whilst not definitive, the findings and any associated recommendations detailed within this report are considered to be reasonable, practicable and in the interests of promoting sensible arboricultural management.

No liability can be accepted by the Author in respect of the trees, unless the recommendations of this report are carried out under his supervision and within his timescale. Acceptance of this report represents an agreement to adopt the recommendations and guiding principles detailed within.

The findings and recommendations contained within this report are, assuming its recommendations are observed, valid for a period of twelve months from the date of the report. Trees are living organisms and their condition can change significantly over a relatively short period of time – good practice dictates they are inspected on a regular basis for reasons of safety.

Tree rooting characteristics and soils are both enormously variable as are their interactions. This makes attempts to quantify subsidence risk assessment impossible. No effort has been made to assess subsidence risk potential nor should any be construed.

The report relates only to the trees referred to in this report, which are recorded in the attached tree survey schedule (Appendix A) and shown on the annotated plans at Appendices B & C.

Where trees were extensively ivy clad, this was recorded in the survey schedule. It is not possible to ascertain the presence of cavities or other defects beneath the ivy and, therefore, ivy should be removed and a re-inspection carried out.

## 2.2 Regulatory and Policy Framework

Tree Preservation Orders (TPOs) and Conservation Areas place various statutory restrictions on the felling, pruning or damaging of trees, subject to various exemptions (Department for Communities and Local Government, 2014). See section 4.1 for site-specific information.

Tree felling on non-residential land is also controlled by the need to obtain a Felling Licence from the Forestry Commission before felling more than $5m^3$ of timber in any calendar quarter, subject to various exemptions and variations (Forestry Commission, 2007).

There is an overriding exemption for the above statutory controls for tree felling and pruning for works where it has been deemed necessary to implement development that has already received full planning permission.

[1] As per the Terms and Definitions detailed in British Standards 5837:2012-*Trees in relation to design, demolition and construction – Recommendations.*

## 2.3 Site Location

The site is Watersmead, The Park, Tamworth Street, Duffield Derbyshire DE56 4ER.

What3Words https://w3w.co/barks.goal.allow

The location of the site is shown in Figure 2.1 below, indicated by the Magenta line.

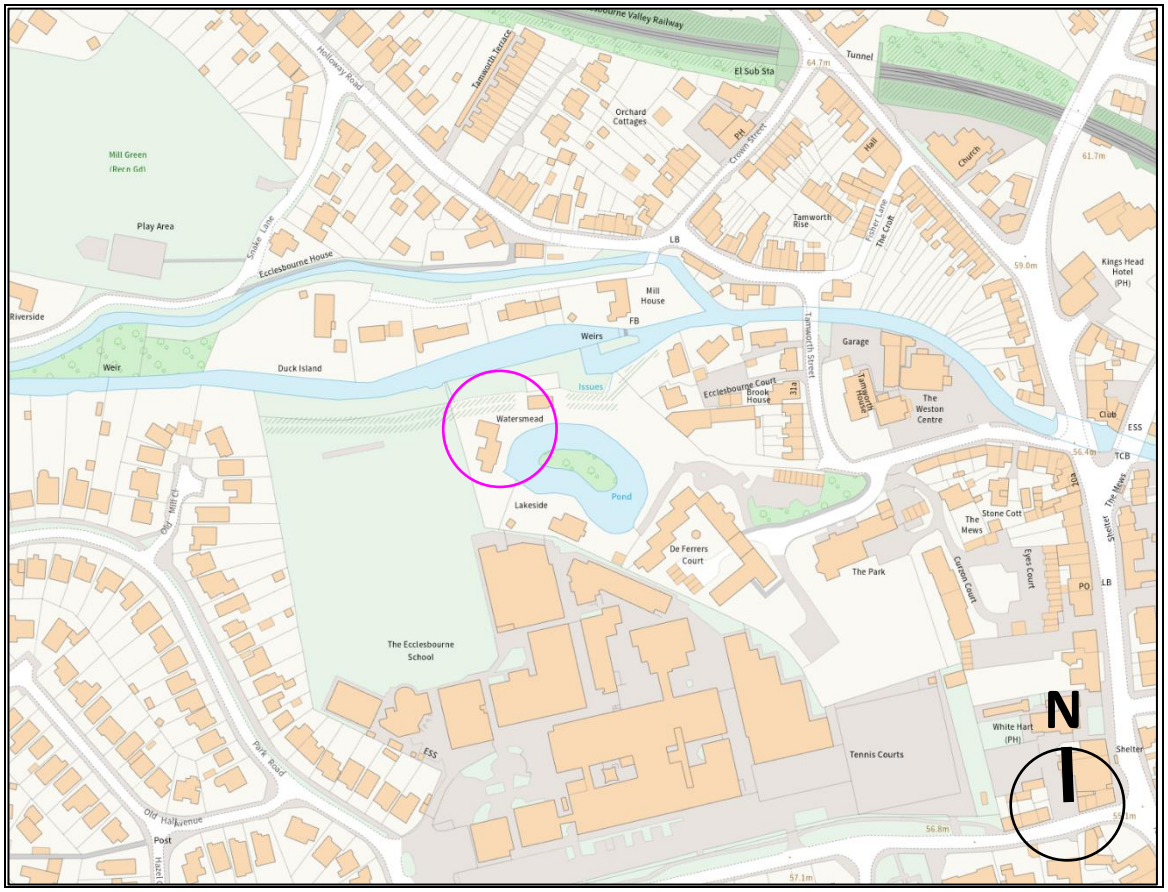



Figure 2.1: Map view of the Site © Crown Copyright and Database rights 2025

# 3 Survey Methodology

## 3.1 Tree Survey Methods

The site was visited on Wednesday 3rd December 2025, to carry out an assessment of the relevant trees in accordance with BS 5837:2012 – Trees in relation to Design, Demolition and Construction - Recommendations.

Each of the surveyed trees and/or groups has been plotted and recorded as an individual tree or a tree group, in accordance with the criteria detailed in section 4.4.2.5 of BS 5837:2012. Where trees were not shown on the site plan, their locations were accurately plotted using a Leica Disto X4 laser measure, which is designed for providing accurate measurements in an outdoor environment.

Any survey work undertaken, will have been subject to limitations, including seasonal and phenological aspects.

Trees were assessed from ground level using the Visual Tree Assessment (VTA) method (Mattheck 2007). No climbed inspection, removal of ivy or detailed investigation of decay, beyond the use of any methodology described in the Tree Survey Schedule, was made.

The weather on the day of the survey was sunny and clear, relatively still and adequate for conducting the survey during which, the following information was collected for each tree/group:

- Sequential reference number;
- Species;
- Height;
- Stem diameter @ 1.5m height;
- Branch/Canopy spread (North, East, South & West);
- Lowest recorded crown height;
- Existing height above ground level of the first significant branch (FSB) and its direction of growth (*e.g. 3 NW*);
- Life stage (See Key at Appendix F):
  - **Y** – Young,
  - **SM** – Semi Mature,
  - **EM** – Early Mature,
  - **M** – Mature,
  - **OM** – Over Mature;
- General observations, particularly of structural and physiological condition (See Key at Appendix F);
- Estimated remaining contribution;
- Retention category 'U' or 'A' to 'C' grading with the subcategory 1, 2 or 3 reflecting arboricultural, landscape or cultural values, respectively (See Table at Appendix H).

## 3.2 Survey Personnel

The Author, Jason Humphreys FdSc (Arb) MArborA is a former Local Planning Authority Arboricultural Officer and experienced Arboriculturalist with over 23 years of experience in the Horticultural and Arboricultural Industry.

He is a professional member of the Arboricultural Association (MArborA), and holds a Foundation Degree in Science (Arboriculture), the Technician's Certificate in Arboriculture and the LANTRA Professional Tree Inspection certificate.

# 4 Results

## 4.1 Statutory Tree Protection

Results from an informal check (11/12/25) using Amber Valley Council's interactive search map https://maps.derby.gov.uk/webmap/Map.aspx?MapName=PublicMaps confirmed that the site is located in the Duffield Conservation Area.

Consequently, it should therefore be understood that no tree pruning works to trees with a stem diameter >75mm diameter (or >100mm to promote the development of other trees) are to be carried out, unless the works are considered exempt and/or prior consent for tree works has first been granted by the LPA (following a formal 6-week notification), or the submission of a 5-day notice under section 198(6)(a) of the Town and Country Planning Act 1990, where works are considered exempt; https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas

An informal check (11/12/25) using Derbyshire County Council's interactive search map https://maps.derbyshire.gov.uk/connect/analyst/mobile/#/main?mapcfg=Ordnance_Survey_Maps confirmed that the presence of TPO Number 43.

TPO Number 43 is an Area type TPO, made in 1955. Government guidance https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general advises that '*Authorities only use this category as a temporary measure until they can fully assess and reclassify the trees in the area*.' They are also '*encouraged to resurvey existing orders which include the area category*'.

Based on the above and upon consideration of the estimated age of the surveyed trees, it appears likely that a number of the surveyed trees are not afforded protection by the TPO, as it's unlikely that they would have been growing at the time the order was made in 1955.

However, with regard to recommended tree removals (see Section 5.12) it's more than likely that the yew tree T8 is afforded protection from the TPO, although it has limited amenity value, displays poor shape and form, has been subject to past pruning and is considered to a poor example of its species.

Regardless of any protected status, it is the Author's understanding that the anticipated works, which are detailed in Section 5.12 and shown in Appendix C, will be determined by the LPA as part of the planning application and that subject to receiving planning consent, which may detail specific conditions, no further recourse to the LPA, is considered necessary.

Whilst it is considered unlikely, the LPA may however, subsequently consider that there is expediency for making some of the surveyed trees, the subject of a new TPO.

## 4.2 Tree Survey

The tree survey recorded the details of 13 individual trees and 2 tree groups. The surveyed trees are considered to be those, which are reasonably considered most likely to be impacted by the proposals and/or those trees, which might place constraints on how the construction methodology will be carried out. Full details are provided in the Tree Survey Schedule (Appendix A).

The overall condition of the trees can overall, be described as fair/poor (see Life Stage & Condition Key at Appendix F) and whilst the any tree works detailed in the Tree Survey Schedule, at Appendix A, have been identified **solely** in the context of the sites current use, they should be considered **regardless** of any development proposals.

The surveyed trees generally display evidence of significant past pruning, including the removal of lower, secondary branches.

No trees, of high quality and value (Category ‘A’), were recorded during the survey. Trees assigned to this category would include attractive trees with high visibility and no significant defects, which are able to make a substantial contribution for a minimum of 40 years.

Two trees and 1 tree group, of moderate quality and value category (Category ‘B’), were identified during the survey. Trees assigned to this category include healthy attractive trees with remediable defects that are in a condition as to be able to make a significant contribution for a minimum of 20 years.

Eleven individual trees, and 1 tree group, of general low quality and value category (Category ‘C’), were identified during the survey. Trees in this category include unremarkable trees of limited merit that are easily replaced, small-growing, young species which have a relatively low potential amenity value, and low landscape benefits. Trees assigned to this category typically also include self-seeded trees of limited life span, small and young trees and trees of poor form and limited amenity value.

No trees were identified as being unsuitable for retention (Category ‘U’). Trees assigned to this category are in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years and/or are considered to be unsuitable for retention in the proximity of new development or areas of public open space.

# 5 Arboricultural Impact Assessment

## 5.1 Tree Survey Schedule & Management Recommendations

Preliminary management recommendations shown in bold text, in the Tree Schedule (Appendix A) have been identified **solely** in the context of the current layout and existing site use and whilst they should be considered regardless of any proposed development, they should not be interpreted as being necessary to directly implement any proposed development.

Tree works, which have been recommended to either faciliate the proposals and to provide a more desirable layout juxtaposition than their retention would allow, are detailed in Section 5.12, and indicated clearly on Appendix C.

## 5.2 Tree Retention & Arboricultural Constraints

Where possible, it is generally considered desirable for Category 'A' and Category 'B' trees to be retained and incorporated into new developments and layouts. Category 'U' trees are not considered to be appropriate for retention.

In assessing the arboricultural impact on the trees of the proposed development and which trees might be suitable for retention in the context of the proposed layout, the following factors have all been considered:

- Shading
- Future Pressure for Tree Removal and Pruning
- Seasonal Nuisance
- Infrastructure
- Direct Damage
- Root Protection Areas
- Future Management
- Anticipated Demolition, Excavation, Ground Works & Construction Activities

## 5.3 Shading

Shading can be represented using drawn segments, with radii equivalent of the current tree height, taken from the centres of those surveyed tree stems that are considered to be relevant, drawn from due north-west to due-east. These segments, which are shown on Appendices B & C, represent a basic illustration of the shade pattern, cast through the main part of the day and are based on advisory comments detailed in section 5.22, Note 1 of BS 5837:2012.

Following consideration of the above and in the context of the proposed layout and the favourable orientation, the subject of shading is not considered to be a constraint and no further investigation or consideration has been made.

## 5.4 Direct Damage

Any proposed layout should consider the likelihood of direct damage occurring from incremental root and stem growth *e.g., above-ground damage can occur to built structures by the whipping of branches against the fabric of a building*.

Upon consideration of the above aspect and following the completion of the tree works detailed in Section 5.12, the likelihood of direct damage occurring in the manner described, is not considered to be a foreseeable issue.

## 5.5 Root Protection Areas (RPAs)

The projected RPAs of the surveyed trees shown in the Tree Survey Plan (Appendix B), were drawn as circles, with their diameters calculated as per section 4.6 of BS5837:2012 and are shown on the Tree Survey Plan at Appendix B.

Following consideration of the site, its topography and the immediate growing environment, the RPAs of the retained trees are generally considered to be a relatively useful reflection and for the purpose of assessing the arboricultural impact, have been considered at their full projections, which are shown on the Tree Survey Plan at Appendix B.

No incursions into the projected RPAs of the retained trees, are not anticipated as being necessary.

Upon consideration of the proposed layout and the anticipated movement of plant & machinery associated with the demolition, groundworks, construction and other activities associated with the practical delivery of the project, the adoption of Tree Protection Measures (TPM) has been recommended, specifically the use of protective fencing (see Appendix C & Section DS6), in order to faciliate necessary access, without foreseeable detriment occurring to the nearby, retained trees.

Following the erection of the protective fencing, it is the Author's considered opinion that the proposals can be achieved, by using traditional construction techniques, without detrimentally impacting the retained trees.

## 5.6 Demolition, Excavation, Ground Works & Construction Activities

The potential for foreseeable, detrimental damage occurring to the retained trees, will be minimised throughout the duration of the project, provided that any necessary tree protection measures are adopted prior to the commencement of any works on site and then retained, until the foreseeable risk of damage, has passed.

All plant, vehicles and machinery engaged in demolition, ground works, excavation or construction works will either operate outside the projected RPAs of the retained trees and fenced-off areas, or if necessary, use temporary ground protection, to faciliate access within projected RPAs, where necessary to implement the development.

Where the use of temporary ground protection is anticipated as being necessary and/or proves to be a more practical option to facilitate access within any unprotected areas of the retained trees' RPAs, an appropriate specification (dependent on the anticipated nature of the necessary incursions), will be adopted (Section 6 - DS5).

During any excavation works, should any tree roots be exposed then they will be dealt with in accordance with the recommendations, principles and guidance detailed in NJUG4, a summary of which is provided as an operative's handout at Appendix G and will therefore be made available to the contractors prior to work commencing.

Where necessary, any unplanned pruning works, to either branches or roots, will be limited **only** to the extent, which is **absolutely** necessary to implement full planning consent and then carried out in the presence and/or under the supervision of the appointed Site Arboriculturalist, who will be able to assess the impact.

The template provided in Appendix J will be used to record any results of unplanned pruning and to record the diameters, density and frequency of the roots pruned. It will also be used to record any other events or details, that might have an effect on the retained trees *e.g., unforeseen incursions within the RPAs.* The Site Arboriculturist will provide further guidance on this aspect.

## 5.7 Hard Surfacing Within the Root Protection Area

Arboricultural Practice Note (APN) No. 12 and Arboricultural Guidance Note (AGN) No. 12 describe in detail the requirements of a 3-dimensional, cellular confinement type of 'no-dig' type installation and also identify 3 principles of no-dig surfacing, which are:

**No** Digging,

**No** Soil Level Changes &

**No** Compaction.

Following an appraisal of the proposed layout, the use of 'no-dig' surfacing has not been recommended and its use is not considered necessary.

## 5.8 Future Pressure for Tree Pruning/Removal

Whilst the presence of retained trees can often enhance the immediate environment upon completion, any proposed layout should provide sufficient space that will allow for future tree growth and to provide a subsequently reduced need for future, frequent remedial pruning.

Upon consideration of the above aspect and following the completion of the works detailed in Section 5.12, no foreseeably significant pruning pressures from the retained trees, are anticipated.

## 5.9 Seasonal Nuisance

Foliage, seed, fruit and cone fall can be considered by some to be a nuisance and requests to Local Planning Authorities to carry out pruning works to negate these issues are often refused, due in part to their brief, seasonal nature of the problem. Seasonal leaf, seed/fruit fall from the retained trees will likely be evident, but at no greater levels than those which currently exist and will have no discernible impact on the proposals, or on the anticipated levels of use that the client might reasonably come to expect, following completion of the project.

## 5.10 Infrastructure

No new drainage runs or service runs are anticipated within the RPAs of the retained trees and existing below ground infrastructure will be utilised and/or connected to, beyond the projected RPAs of the retained trees.

Where the installation of new underground apparatus and/or drainage is considered necessary then particular care should be taken in its routeing and methods of installation and wherever possible, be routed outside of areas, where the new trees and shrubs might reasonably be expected to have an influence. In this respect, consideration should be given to Annex A and Table A.1 of BS 5837:2012.

British Standards 5837:2012, Section 7.7.2 suggests that, in the event roots can be retained and appropriately protected during exposure, then excavation using hand-held tools might be acceptable for shallow service runs.

Upon consideration of the proposed layout, there is no evidence to suggest that there will be an impact on lighting, signage, CCTV sightlines or visibility splays from the retained trees.

## 5.11 Miscellaneous

No other aspects to consider, at this stage.

## 5.12 Recommended Tree Works

The removal of 2 unremarkable, Category C trees (T8 & T9) which are shown clearly on Appendix C, have been recommended to faciliate the proposals and to provide a more desirable layout juxtaposition, than

their retention would allow. Both trees have been heavily pruned in the past and display unbalanced crowns and general poor shape and structure.

Whilst not necessary to implement the proposals, the removal of the poplar tree T14 has also been recommended, in the interests of sound arboricultural management, which will allow the development of nearby trees in the group G15.

## 5.13 Trees to be Pruned

No other pruning works, are anticipated.

Any facilitation pruning works, identified at the pre-commencement site meeting (see Section DS2) will be limited only to the extents, which are absolutely necessary to implement full planning consent and then carried out in the presence and/or under the supervision of the appointed Site Arboriculturalist.

## 5.14 Landscaping

Whilst not anticipated, the landscaping of any areas within the projected RPAs of the retained trees, will be carried out by hand and where practical, the existing ground levels will remain unchanged and work will be carried out in accordance with Sections DS7, DS10 & DS11.

The reinstatement of any areas, within the projected RPAs of the retained trees, will be carried out by hand and any voids created, will be filled with good quality topsoil, which will be added sparingly and lightly tamped to appropriate points/levels which will allow a natural integration with the adjacent areas and if necessary, to facilitate grass seeding or the laying of turf by hand.

## 5.15 Tree Loss Evaluation

Whilst the potential longevity of the yew tree T8, is likely to be in excess of 20 years, its retention category has been downgraded due to its poor shape, form, and structure and history of significant pruning. Any impact on the perceived amenity value that it provides, is negligible and is not considered to be detrimental to the character of the area, or the immediate street scene and consequently, is considered to be acceptable.

The trees T9 & T14 are not protected by TPO Number 43 and their poor shape and form, past pruning history (T9) and limited amenity value, makes the them unsuitable candidates, for protection by a TPO, were one to be considered.

## 5.16 Issues to be Addressed by an Arboricultural Method Statement

The Arboricultural Method Statement (Section 6) is site-specific and details a recommended sequence and methodology for the implementation of those aspects of the project and its associated activities, that have the potential to result in loss or damage to the retained trees. By carefully following and adopting the detailed recommendations and guidance, foreseeable detriment to the retained trees will be minimised.

## 5.17 Tree Protection Plan

The TPP (Appendix C), when read in conjunction with Section 6 of this report, will inform on and describe the recommended tree protection and precautionary measures, recommended for this project in the context of the proposed layout.

# 6 Site Specific Arboricultural Method Statement (AMS)

## 6.1 AMS Content

This section of the report summarises, identifies and provides details on those roles, works and activities that are anticipated as being key to successful tree retention. The detailed steps are considered to have a degree of arboricultural importance and connectivity and have been set out in a logical, recommended sequence, which all contractors must follow.

Consequently, it is important that the appointed Main Contractor (who along with the Client), will likely fulfil the role of Project/Site Manager (SM) and/or the Site Arboriculturalist (SA), communicates with the appointed sub-contractors, the recommendations detailed within this report, specifically the projected extents of the retained trees' projected RPAs and how ordinarily, tree roots could be damaged from unplanned incursions within them.

In doing so contractors and site operatives will be clear on how any necessary demolition, ground works, construction and landscaping activities will be carried out, particularly where a foreseeable risk of detrimental harm occurring has already been identified.

Tool box talks and briefing sessions will be delivered by the Site/Project Manager and/or the Site Arboriculturalist as appropriate. Operative handouts will be made available for reference *e.g., NJUG handout* (Appendix G).

Other relevant plans and tables for reference including the Tree Survey Schedule (TSS), Tree Survey Plan (TSP) & Tree Protection Plan (TPP) will be kept on site and made available for all contractors, as necessary.

The following activities have been assigned a sequential 'Development Stage' (DS) number, to help enable an auditable record to be maintained and kept at the site. Appendix J has an appropriate template for this specific purpose.

### DS1 – Appoint Site Arboriculturalist (SA)

The appointed Site Arboriculturalist, will be available to provide site-specific guidance and instruction on and where necessary and/or appropriate, supervise those specific elements of the development, which have the potential to cause detrimental damage to the retained trees directly and/or indirectly *e.g., checking Tree Protection Measures, or evaluating the extent of any facilitation pruning works, necessary to implement the proposals.*

### DS2 – Pre-Commencement Site Meeting

An assessment of the site has been made and following consideration of the scale of the project and the anticipated ground works and subsequent construction activities, no other tree works beyond those detailed in Section 5.12, are foreseeable. This will be confirmed at this early stage of the project, which is also a final opportunity to identify and discuss the constraints of the site and to determine whether or not additional TPMs, not detailed in the TPP, which may not have not been anticipated, will prove necessary.

The meeting will be used to establish approximate project timescales to identify the sequence of the key stage dates, where the presence of the SA and/or the provision of technical advice, or guidance, will likely be required *i.e., checking Tree Protection Measures.*

To provide the SM with any information, handouts or specific details to facilitate the delivery of tool box talks and the education of ALL contractors and deliveries associated with the project, on how their activities might affect the retained trees. Operative handouts will be made available to the SM for distribution *e.g., NJUG handout* (Appendix G).

Plans and tables for reference including the TSS, TSP & TPP will be checked for accuracy and then kept on site throughout the duration of the project and be made readily available as hard copies, for contractors, if necessary.

Confirm the locations and extents of any necessary specific areas, which will house any necessary welfare facilities and will also be used for the receipt and storage of materials, plant and spoil and will provide space for mixing outside of the projected RPAs of the retained trees, without placing significant constraints on the working space available for any proposed excavation, construction and/or associated activities.

## DS3 – Pre-Commencement Tree Works

All tree works, including any unforeseen facilitation pruning works, identified at the pre-commencement site meeting, will be carried out by an appointed specialist Tree Works Contractor. Whilst considered unlikely, the installation of temporary ground protection may prove necessary to facilitate access for this aspect; see Section DS5 below.

All tree works will be carried out in accordance with and adherence to, the recommendations detailed in BS 3998:2010. Further considerations, including those which should be given to wildlife, are detailed in section 6.2.

## DS4 – Identification & Marking out of RPAs and Tree Protection Measures (TPMs)

The SM and/or the SA, will communicate to the appointed contractors the projected extents of the retained trees' RPAs and if necessary, mark them clearly on the ground, using a non-toxic line marking paint, as per the TSP at Appendix B. A hard, to scale copy of the TSP will be made available and used to help communicate this aspect.

Following confirmation of any necessary contractor's compound/storage requirements, the erection of protective fencing, to create construction exclusion zones, will allow unrestricted access around the site.

## DS5 – Installation of Ground Protection Measures (GPM)

All plant and machinery engaged in the practical activities associated with the delivery of the project will operate outside the projected RPAs and/or fenced-off areas. However, should the use of temporary ground protection to facilitate access, within the projected RPAs of any retained trees, prove necessary, then an appropriate specification, proportionate to those incursions and as per BS 5837:2012, will be used; see example specifications detailed below.

The use of ground protection should also ensure that any plant/vehicles using it will not damage any branches that extend beyond/above the ground protection.

*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., 100 mm depth of woodchip), laid onto a geotextile membrane;*

*b) for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g., 150 mm depth of woodchip), laid onto a geotextile membrane;*

*c) for wheeled or tracked construction traffic exceeding 2 t 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.*

## DS6 – Erection of Tree Protection Fencing (TPF)

The use of protective fencing, has been recommended to protect the soil within its excluded areas, from potential compaction and limit any access within these areas to pedestrian movement only, which will allow the client continued use of the garden and access around the perimeter of the building.

The locations for the protective fencing are clearly indicated on the TPP at Appendix C and fencing will be erected prior to the commencement of any construction works on site; its final specification should be robust and adequately fit for purpose, as per Section 6.2.2.1 of BS5837:2012. It is considered reasonable that the erection of protective fencing should not restrict access to the rear garden area by the client and family members, or other visitors to the site.

Following consideration of the scale of the project and the anticipated activities, a suggested specification as illustrated in Figure 6.1 below, is considered to be an appropriate specification, which meets the criteria above as well as being practical and proportionate for its location.



Figure 6.1 (L) Suggested specification for protective fencing © https://allcargos.com/

This aspect will be confirmed at the pre-commencement site meeting and the final specification will be agreed with the SA, prior to its erection.

Once the protective fencing has been erected and the excluded areas defined, the SA will confirm that its specification is fit for purpose and the locations, in accordance with the TPP at Appendix C. It will then remain in place and serve as tree protection throughout the duration of the project and will not be moved or altered, without prior agreement from the SA.

All-weather notices will be clearly attached to the most prominent fencing panels; a suitable example for use has been attached at Appendix D.

## DS7– Demolition, Excavation, Ground Works & Construction

All plant and machinery engaged in any demolition work, ground works and construction will operate outside the projected RPAs and beyond the fenced-off/excluded areas. Excavation works will be limited to areas outside of the projected RPAs of the retained trees, with unobstructed access made freely around the site, but if necessary by using temporary ground protection (Appendix C).

The use of an Air-Ex™ airspade, will be considered as the preferred method for any unforeseen but necessary incursions located within the projected RPAs of the retained trees, where excavation might prove necessary *e.g. to remove any rocks or solid substrate*, whereupon it will be carried out by hand only and exclude the use of mechanised excavation.

Should there prove to be a requirement for below ground infrastructure, located within the projected RPAs of the retained trees, then due to the highly alkaline leachate produced during the curing of wet concrete, they should not be poured, unless an impermeable liner has first been installed.

Should tree roots be exposed and if their severance proves **absolutely necessary** to implement the proposals, then any root pruning to the exposed roots on those trees that can be safely retained, should

be cut so that the final wound is as small as possible and free from ragged torn ends, as per Section 8.6 of BS3998:2010 and strictly in accordance with the principles and guidance, detailed in NJUG4, which is provided as an operative's handout at Appendix G, which will be made available to the contractors prior to work commencing.

The template provided in Appendix J will be used to record any results of root pruning and to record the diameters and frequency of the roots pruned. The SA will provide further guidance on this aspect.

Any variations to this anticipated construction methodology, will be discussed in detail by the SA and the SM, during the pre-commencement site meeting, with any modifications made accordingly.

## DS8 – No-Dig Surfacing

The use of no-dig surfacing has not been specified and no recommendations for its use have been made. Should a subsequent requirement for its use prove necessary and its use is considered to be a practical and appropriate solution, then specific advice and instruction from the appointed SA should be sought, regarding an appropriate product, its use, preparation and installation.

The practical constraints, site topography and ground levels will determine whether or not the use of no -dig surfacing can be successfully installed. If necessary, these aspects will be discussed at the Pre-Commencement Site Meeting (DS2) and will influence the decision on whether or not, it might prove to be a suitable solution… then the appointed SA should be consulted with regard to the selection of an appropriate product *e.g., Cellweb™, Abweb TRP™, Sudspave™* and the manufacturer's recommendations for its installation.

## DS9 – Miscellaneous

No other aspects to consider, at this stage.

## DS10 – Tree Planting

There are limited practical opportunities for new planting to take place, although indicative areas for potential planting are shown in Appendix C.

Where new tree, or more realistically, shrub planting takes place, then where possible the selected species should have a bias for UK natives (or derivatives) but should also be appropriate for their locations in respect of Sections 5.3 & 5.4 and have regard to their ultimate, size, shape, form and management requirements as per section 5.6.2 of BS 5837:2012. Further consideration in respect of Chapter 4.2 of NHBC Standards (2010), may also influence the final choice of species and/or cultivars.

Any new trees/shrubs shall where possible, be obtained with local provenance and will be supplied container grown. Tree planting should be carried out under the supervision of the appointed project Arboriculturalist, having regard to the advice and recommendations detailed within section 10 and reference to Table 1 of BS 8545:2014 Trees: From Nursery to Independence in the Landscape – Recommendations.

New planting locations should be prepared and if necessary, they should be cleared of vegetation, which might suppress subsequent growth and establishment. Any necessary improvements to the soil should be made prior to planting *e.g. decompaction measures, adding organic matter etc…*

All tree planting and ground preparations, under and around retained trees and/or within their projected RPAs will be carried out by hand to protect roots.

For any 'Standard' sized trees, the dimensions for the planting pits should ensure that the pit is at least 75mm diameter greater than that of the root system whilst the depth of the pit should ensure that the root collar or 'tidemark' is at ground level.

Tree pit sides should be scarified upon the glazing, smoothing or compaction, which might have been caused during the pit digging process. The tree's rooting system should be wetted prior to planting and immediately upon planting the tree pit should be saturated to field capacity[2].

Stake the standard sized trees; some of the methods, which are considered to be most appropriate in this instance, used widely to support young trees are: angled stake, upright single stake and double stake and bridge;

The following points overleaf summarise good after care for the newly planted trees:

- Water immediately after planting and weekly in first growing season (10 – 20 litres) if the weather is dry.
- Do not allow weeds or grass to grow within a 500mm radius of the stem and maintain any mulch applied to a depth of approximately 50mm.
- Ensure support canes remain firm and shelters clear of detritus.
- Remove dead or crossing branches, suckers arising from the roots or weak shoots on the stems.

The SA will provide specific guidance and recommendations in all of these aspects.

## DS11 – Landscaping

Whilst not anticipated, any necessary reinstatement and/or landscaping of the areas within the projected RPAs of the retained trees (see Appendix C) will be carried out by hand whilst retaining existing and natural ground levels.

The reinstatement/landscaping of those areas, will be carried out by hand with any voids within them to be filled with good quality topsoil, which will be added sparingly and lightly tamped to appropriate points/levels which will allow a natural integration with the adjacent areas and if necessary, to facilitate grass seeding or the laying of turf by hand.

Where practical, newly landscaped areas will be excluded from activity and access during the subsequent 6 – 8 weeks, until successful establishment of those areas has taken place. For this reason, it is recommended that the landscaping is carried out following completion of all other works associated with the proposals.

## DS12 – TPM Removal

All tree protection measures used, will remain in situ throughout the duration of the project and removed only when their use is considered unnecessary by the SA and foreseeable risk of damage to the retained trees and/or its RPA (*e.g., soil compaction from the movement of plant or machinery),* has passed.

## DS13 – Tree Maintenance

The SA will survey the retained trees for any obvious signs of ill health, damage *e.g., soil compaction*, stress or other physiological aspects that might reasonably be attributed to any activities associated with the proposals.

If necessary, the SA will also survey any newly planted trees and shrubs for any obvious signs of ill health, damage, stress or other physiological aspects that might be evident upon delivery of the plants, or those which might have been caused during the panting process.

Water new plants immediately (saturate to field capacity[3].) after planting and weekly in the first growing season (10 – 20 litres), if the weather is dry. Do not allow weeds or grass to grow within a 500mm radius of the stem. Maintain mulch to a depth of approximately 50mm. Ensure any ties used are not damaging

[2] Field Capacity – Maximum amount of water a soil can hold after free drainage has occurred (BS 8545:2014)
[3] Field Capacity – Maximum amount of water a soil can hold after free drainage has occurred (BS 8545:2014)

the stems and loosen, if necessary. Ensure any stakes remain firm and remove when stem can support itself, usually after 1 -3 years.

Remove any dead or crossing branches, suckers arising from the roots or weak shoots on the stems. Formative pruning should be carried out in accordance with BS 3998. Where appropriate, hedge species might be pruned to up to one third, to promote bushy growth. The appointed SA will be consulted in order to advise on this aspect.

### DS14 – Completion

Notification to LPA of completion, if necessary.

## 6.2 Tree Works

Recommended tree works (Section 5.12), and any unforeseen tree works identified in the pre-commencement site meeting, will be carried out by an appointed Tree Works Contractor, in accordance with BS3998:2010.

The Wildlife and Countryside Act 1981 as amended, the Countryside and Rights of Way Act 2000 and the Conservation (Natural Habitats) Regulations 1994 protect ALL wild birds, their nests (whether in use or being built) and eggs and other wild animals including bats and their roosts in or adjacent to trees.

In simple terms, you should make sure that there are no wild birds nesting in or bats roosting in or adjacent to the tree[s] that you are proposing to work on. It is a criminal offence to recklessly or intentionally destroy any bird, its nest or its eggs or any bat or its roost (even if the roost is not occupied at the time). Even if your trees are protected, obtaining consent from the LPA will not override your responsibilities under the above wildlife acts.

## 6.3 Contacts

Site Arboriculturalist: To be appointed by the Client.
Project Manager/Main Contractor: To be appointed by the Client.