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## Report Verification

| Report Version | Date       | Completed by:                                                             | Checked & Approved by:                                           |
|----------------|------------|---------------------------------------------------------------------------|------------------------------------------------------------------|
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| Rev A          | 21/04/2023 | Luke Webb BSc (Hons)<br>MArborA<br>Senior Arboricultural Consultant       | Duncan Smith BSc (Hons)<br>MArborA<br>Arboricultural Manager     |
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| Rev C          | 01/11/2023 | Luke Webb BSc (Hons)<br>MArborA<br>Senior Arboricultural Consultant       | Duncan Smith BSc (Hons)<br>MArborA<br>Arboricultural Manager     |
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## Declaration of Compliance

This study has been undertaken in accordance with British Standard 5837:2012 '*Trees in Relation to Design, Demolition and Construction – Recommendations*'.

## Disclaimer

The contents of this report are the responsibility of Middlemarch. It should be noted that, whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

## Validity of Data

The findings of this study are valid for a period of 12 months from the date of survey. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified and experienced arboriculturist to assess any changes to the trees, groups, and hedgerows on site and to inform a review of the conclusions and recommendations made.

It should be noted that trees are dynamic living organisms that are subject to natural changes as they age or are influenced by changes in their environment. As such following any significant meteorological event or changes in the growing environment of the trees they should be re-assessed by a suitably qualified and experienced arboriculturist.

This Arboricultural Method Statement has been produced following a review of a fixed approved development layout for the site based on data provided by the client. The methods of work described herein will be a requirement of all relevant contractors associated with the development proposals.

## On Site Monitoring Regime & Contact Details

All operations detailed within this AMS will be monitored by the Principal Contractor. The Principal Contractor will ensure that specifications within this document are followed (this will be built into the contract specification) and that the Project Arboriculturist will be contacted for advice in relation to works near to retained trees, as required. The Project Arboriculturist for the site is:

Name: Andrew Hastings

Mobile: 07485 903 943

Position: Senior Arboricultural Consultant

Email: [andrew.hastings@middlemarch.eco](mailto:andrew.hastings@middlemarch.eco)

## Responsibilities

It is the responsibility of the Principal Contractor to ensure that the planning conditions attached to the planning consent are always adhered to and that a monitoring regime regarding tree protection is adopted on site.

The Principal Contractor will be responsible for contacting the Local Planning Authority should any issues are raised related to the trees on site.

If pruning works to trees beyond the agreed scope within this Method Statement are required at any time, then permission must be sought from the Local Planning Authority prior to commencement. All tree surgery works must be carried out in accordance with BS3998.

The Principal Contractor will ensure the build sequence is appropriate to ensure that no damage occurs to retained trees during the construction processes. Protective measures will remain in position until completion of the construction phase of development and will only be removed to allow the commencement of soft landscaping works.

The protection measures and signs will always be maintained in position and checked daily by a designated person on site under the responsibility of the Principal Contractor.

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# 1. Introduction

## 1.1 Project Background

This Arboricultural Method Statement was commissioned by Reading Borough Council to accompany a planning application for residential development at Dwyer Road, Reading. A survey of the trees on site and within influencing distance of the boundaries was undertaken on the 15<sup>th</sup> December 2022 as part of a Preliminary Arboricultural Assessment (PAA) to aid design and avoid unnecessary tree removal.

An Arboricultural Impact Assessment (AIA) was subsequently undertaken to identify the potential impact of the development on the existing trees surveyed during the PAA in accordance with British Standard 5837:2012 *'Trees in Relation to Design, Demolition and Construction - Recommendations'* (hereafter referred to as BS5837).

Planning Consent for development (application reference 230612) was granted on the 28<sup>th</sup> March 2024, subject to Condition 18 which states:

*"18. No development shall commence on site (including demolition or preparatory works) until an Arboricultural Method Statement and Tree Protection Plan in accordance with the relevant recommendations of appropriate British Standards or other recognised Codes of Good Practice for all existing trees that are not shown as being removed on the approved drawings, both within and adjacent to the site, has been submitted to and been approved in writing by the Local Planning Authority. The development shall not be carried out other than in accordance with the approved Arboricultural Method Statement and Tree Protection Plan.*

*REASON: In order to ensure that appropriate protection is given to trees of amenity value within and adjacent to the site in accordance with Policy EN14 of the Reading Borough Local Plan 2019."*

This Arboricultural Method Statement has been compiled to provide the information necessary to discharge Condition 18 and RIBA Stage 5 including:

- Audit schedule
- Specific tree protection measures
- Specific tree-friendly construction operations
- Tree pruning specification
- Arboricultural Clerk of Works (ACoW) supervision

## 1.2 Site Description, Drawings and Appendices

| Attribute               | Description                              |
|-------------------------|------------------------------------------|
| Location                | Dwyer Road, Reading, Berkshire, RG30 3LN |
| National Grid Reference | SU 682 718                               |
| Topography              | Flat with sloping ground to the north    |

|                   |                                                                                                                                                                                               |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tree Cover        | Medium to low quality individual trees and groups of self-seeded and planted specimens.                                                                                                       |
| Drawings attached | Tree Survey Plan – C159536-01-01<br>Tree Retention Plan – C158951B-02-01_RevC<br>Tree Protection Plan – C160031-01-01_RevC                                                                    |
| Appendices        | Appendix A – Tree Schedule<br>Appendix B - Tree Protection Fencing Sign<br>Appendix C - Tree Protection Fencing Diagram<br>Appendix D Arboricultural Impact Assessment RT-MME-158951B-02_RevC |

**Table 1.1: Summary of Site and Surroundings**

### 1.3 Development Proposals

The proposed development of the site includes the construction of fifteen new houses and fifteen apartments with twenty-four parking spaces as well as associated hard and soft landscaping.

### 1.4 Documentation Provided

This statement is based upon the information provided by the client, in addition to information collected by Middlemarch during the Preliminary Arboricultural Assessment, as detailed below.

| Author                  | Document                      | Drawing Number                | Date       |
|-------------------------|-------------------------------|-------------------------------|------------|
| <b>Survey Solutions</b> | Utilities and Drainage Survey | 43955BWUG-01 Rev F            | 05.10.2022 |
| <b>HTA Design LLP</b>   | Design & Access Statement     | RBC-DRR_HTA-A_RP010           | 30.05.2023 |
| <b>HTA Design LLP</b>   | Landscape General Arrangement | RBC-DRR_HTA-L_DR_0901 Rev A   | 17.04.2023 |
| <b>Hydrock</b>          | Dwyer Rd Drainage Strategy    | 26888-HYD-00-ZZ-DR-C-7010 P06 | 17.07.2023 |
| <b>HTA Design LLP</b>   | Landscape Hardworks Plan      | RBC-DRR_HTA-L_DR_2903 Rev B   | 28.07.2023 |
| <b>HTA Design LLP</b>   | Proposed Site Plan            | RBC-DRR_HTA-A_DR_0100 Rev M   | 25.10.2023 |

**Table 1.2: Documentation Provided**

## 2. Statutory Designation

### 2.1 Tree Preservation Order and Conservation Area Protection

A desk-based study was undertaken to identify if any of the trees present within or near the site are affected by statutory constraints as detailed below.

| Statutory Constraint | Present<br>✓ ✗ | Source                    | Trees Affected | Details                             |
|----------------------|----------------|---------------------------|----------------|-------------------------------------|
| TPO                  | ✓              | Reading Planning Services | 3 Trees        | TPO 12/08<br>Refer to C159536-01-01 |
| Conservation Area    | ✗              | Online                    | None           | N/A                                 |
| Ancient Woodland     | ✗              | MAGIC                     | None           | N/A                                 |

**Table 2.1: Summary of Statutory Constraints that Affect the Site**

Where a tree preservation order, conservation area or ancient woodland applies to trees within the assessment area, statutory constraints will apply to the development in respect of trees.

No works must be undertaken on the protected trees without prior permission from the Local Authority unless authorised as part of an approved planning application. Works include pruning, topping, lopping, uprooting or wilful damage or wilful destruction of these trees. Any proposed pruning works not currently approved will need to be fully specified and agreed within a future planning application.

### 2.2 Protected Species

#### *Bats*

Mature trees often contain cavities, hollows, peeling bark or woodpecker holes which provide potential roosting locations for bats. Bats and the places they use for shelter or protection (i.e. roosts) receive European protection under The Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017)<sup>1</sup>. They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981<sup>2</sup>, as amended. Consequently, causing damage to a bat roost constitutes an offence.

Generally, should the presence of a bat roost be suspected whilst completing works on any trees on site then an appropriately licensed bat worker should be consulted for advice.

<sup>1</sup> HM Government – The National Archives (2017) [online] The Conservation of Habitats and Species Regulations 2017. Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents/made>

<sup>2</sup> HM Government – The National Archives 2017. *Wildlife and Countryside Act 1981*. [online] Available at: <http://www.legislation.gov.uk/ukpga/1981/69/contents>

### *Birds*

Trees offer potential habitat for nesting birds which are protected under the Wildlife and Countryside Act (WCA) 1981, as amended. Some species (listed in Schedule 1 of the WCA) are protected by special penalties. This legislation makes it an offence to intentionally or recklessly damage or destroy an active bird nest or part thereof.

As the trees on, and adjacent, to the site provide potential habitat for nesting birds all tree work should ideally be completed outside the nesting bird season (Generally March to September).

If this is not possible then the vegetation should be subject to a nesting bird inspection by a suitably experienced ecologist prior to commencement of works. If any active nests are identified then the vegetation, and a defined buffer zone, will need to remain in place until the young have naturally fledged.

## 3. Arboricultural Method Statement

### 3.1 Introduction

The following sections of this report detail the specific protection measures, working methodologies and pruning requirements to be adopted throughout all construction phases of the project.

The principal contractor must ensure that they read and understand all the following sections prior to commencement of site occupation.

#### *Pre-commencement site meeting and site inductions*

A pre-commencement site meeting involving the Project Arboriculturist and Principal Contractor should be undertaken at the beginning of the Enabling Works Phase, Main Construction Phase, Post Construction Phase.

Details of tree protection and methods of working around trees will be included within site inductions to new members of site staff. A copy of this document and the related Tree Protection Plan will be kept on site and referred to by operatives working near retained trees.

#### *Monitoring/Audits/Supervision*

An inspection audit will be implemented by the Project Arboriculturist once the protective measures have been installed and prior to construction commencement to ensure they provide the level of protection required for retained trees. Feedback will be provided to the Local Planning Authority Arboricultural Officer on completion of this visit and monthly audits of the tree protection measures will be undertaken by the Project Arboriculturist to ensure they remain in position and fit for purpose.

The works requiring arboricultural supervision are listed below:

- Installation of utilities within RPAs
- Installation of new hard surfaces according to a no-dig methodology within the RPAs of T2, T7 and G6.
- Installation of play equipment within the RPA of T14.
- Installation of proposed walls within RPAs.

Each visit, both for audits and supervision, will result in a written and photographic report to be provided to the LPA (Natural Environment Team) within 5 days of the visit.

#### *Use of Subcontractors*

The Principal Contractor will be responsible for ensuring sub-contractors do not carry out any process or operation that is likely to adversely impact upon any retained tree. If any issues arise in relation to the retained trees, then the Project Arboriculturist will be contacted for advice.

### 3.2 Enabling Works

#### *Tree Work*

All tree work should conform to BS3998:2010 and be completed prior to the installation of the tree protection measures and site occupation by demolition or construction contractors.

| Tree/ Group/<br>Hedgerow<br>Reference | Species                      | BS5837<br>Category | Canopy<br>Clearance | Comments                                                                                                                                                           |
|---------------------------------------|------------------------------|--------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| T2                                    | Leyland cypress              | B                  | 3m                  | Undertake crown lifting works to the southern side of the canopy to a maximum of 5.50m to allow sufficient highway clearance for the proposed access road.         |
| T5 (TPO)                              | Silver birch                 | B                  | 2.5m                | Tying back (if possible) or minor pruning of lower branches only where sufficient working space is required to enable the construction of proposed parking spaces. |
| T7 (TPO)                              | Small leaved lime            | B                  | 2.5m                | Undertake crown lifting works to the eastern side of the canopy to a maximum of 4.50m to allow sufficient clearance for the proposed pedestrian footpath.          |
| T10                                   | Rowan                        | C                  | 1.0m                | Raising crown to provide 2.5m clearance from ground level to allow sufficient clearance for the proposed pedestrian footpath.                                      |
| T11                                   | Wild cherry                  | C                  | 2.0m                | Raising crown to provide 3m clearance from ground level to enable the construction of proposed parking spaces.                                                     |
| T12                                   | Silver birch                 | C                  | N/A                 | Remove tree                                                                                                                                                        |
| T13                                   | Norway maple                 | C                  | N/A                 | Remove tree                                                                                                                                                        |
| T14                                   | Norway maple                 | B                  | 2.0                 | Raise crown to provide 3.5m clearance from ground level to provide adequate clearance for path construction and play equipment installation.                       |
| T15                                   | Tree of heaven               | C                  | N/A                 | Remove tree                                                                                                                                                        |
| G1                                    | Beech, Wild cherry, Sycamore | C                  | N/A                 | Remove tree                                                                                                                                                        |
| G2                                    | Beech                        | C                  | N/A                 | Remove tree                                                                                                                                                        |
| G3                                    | Blackthorn                   | C                  | N/A                 | Remove tree                                                                                                                                                        |
| G4                                    | Beech                        | C                  | N/A                 | Remove tree                                                                                                                                                        |
| G5                                    | Beech, Horse chestnut        | C                  | 2.0m                | Raising of southern canopy extents to provide 3m clearance from ground level where they overhang the protective barrier.                                           |

| Tree/ Group/<br>Hedgerow<br>Reference | Species                                                            | BS5837<br>Category | Canopy<br>Clearance | Comments                                                                                |
|---------------------------------------|--------------------------------------------------------------------|--------------------|---------------------|-----------------------------------------------------------------------------------------|
| <b>G6 (TPO)</b>                       | Silver birch                                                       | C                  | 2.0m                | Tie back lower branches to facilitate the erection of protection fencing (If required). |
| <b>G7</b>                             | Silver birch,<br>Crack willow,<br>English oak,<br>Ash, Goat willow | C                  | N/A                 | Remove group of trees                                                                   |
| <b>H1</b>                             | Cotoneaster                                                        | C                  | N/A                 | Remove hedgerow                                                                         |

**Table 3.1: Trees to be Removed or Pruned**

Where specified it is recommended that the overhanging branches of trees are tied back to allow construction access beneath canopies where required without branch removal, which will allow the trees to retain their form. This should be conducted under arboricultural supervision and once the works have been completed, branches must be untied, which may require arboricultural supervision.

The branches to be pulled back from the proposed development are highlighted on the Tree Protection Plan (C160031-01-01-RevD) but should also be clearly identified in a pre-commencement site meeting prior to any works commencing.

Aside from the specified tree removals which have been proposed in order to implement the development, all other tree pruning works that are specified in Table 3.1 are considered to be of a minor extent. As such it is not considered that they will have a significant impact upon the long-term health, or visual quality, of the trees. However, the extent of works required would be best determined during a pre-commencement site meeting.

#### Site Setup, Compound, Materials Storage and Vehicle Parking

At the time of writing, the location of the site compound had not been formally identified, however, sufficient space is present within the site to accommodate the compound outside of Construction Exclusion Zones and its establishment is unlikely to result in harm to retained trees.

The site compound is to be located outside of the Root Protection Areas (RPAs) of retained trees and its establishment is unlikely to result in harm to retained trees. The location of the site compound is shown on the Tree Protection Plan.

#### Topsoil Stripping / Subsoil Regrading

Topsoil stripping and regrading of subsoils will not occur within the RPA of any retained tree. Stored soil created from topsoil stripping will not be stored within any RPA or Construction Exclusion Zone.

If any regrading works are proposed within the RPAs of retained trees, these must be supervised by the Project Arboriculturist. No machinery must be located or stored within the RPAs of retained trees and all work must be carried out from the perimeter of RPA, working towards the trees where necessary in a precautionary manner. The spoil created from these works will not be stored within the RPA. Uncovered roots need to be assessed by the Project Arboriculturist. If deemed necessary, minor roots (<25 mm in diameter) uncovered by the works shall be pruned using clean, sterilised pruning saw or secateurs, leaving as small a pruning wound as possible. If

a major root (>25 mm in diameter) is found, then works will be redesigned to accommodate any large roots found.

#### Demolition of Structures and Removal of Hard Surfaces

There are no structures or hard surfaces that require demolition or removal within the RPAs of retained trees and no impact upon the existing trees is therefore anticipated.

### 3.3 Main Works (Construction)

#### Construction Exclusion Zone

Protective barriers will be positioned to define the Construction Exclusion Zone (CEZ). Signs will be installed on the barriers to inform site contractors of the importance of the tree protection measures and no works that cause physical damage to retained trees, compaction of the soil or severance of tree roots will occur within any exclusion zone. The extent of the CEZ encompasses the Root Protection Area (RPA) and / or tree canopy where possible, whichever is the greatest.

No works, including storage of construction materials shall take place within the Construction Exclusion Zone as defined by the protective barriers.

The proposed location of the protective barriers surrounding the CEZ is identified on the Tree Protection Plan attached (C160031-01-01-RevC). The barriers will remain in place throughout the project phases and will be only be removed once the project is complete or to undertake final soft landscaping, but must be confirmed by the Project Arboriculturist.

#### Permanent Ground Protection Measures

Permanent ground protection will be utilised to construct the proposed access road which passes through the RPA of a retained tree (T2) as well as for proposed pedestrian footpaths within the RPAs of T7 and G6. The ground protection shall be specified to support the expected loads in accordance with Structural Engineers recommendations to avoid permanent compaction and soil.

The proposed new areas of hard surfacing to be installed within the Root Protection Areas (RPAs) of retained trees will be installed according to a no-dig construction methodology, as detailed below:

1. Prior to works commencing, the areas of 'no-dig' hardstanding will be marked out.
2. The existing ground cover and vegetation present within the area will be carefully stripped / trimmed.
3. The exposed soil will be covered with a permeable geotextile membrane. The geotextile layer shall be laid in accordance with manufacturer's recommendations and temporarily retained with pins, stakes, or weights.
4. A cellular confinement system will then be installed and fixed in position in accordance with the manufacturer's recommendations. The cellular confinement system used should be specified by the manufacturer or engineer, appropriate for weight capacity required.
5. The cellular confinement system will then be filled with the manufacturer's specified aggregate.

6. All plant movements involved in filling the cellular confinement system with aggregate shall be undertaken while supported by the filled system.
7. The infill aggregate will then be lightly rolled or whacked to ensure cohesion with the cellular confinement system.
8. The desired permeable and gas porous finished surface shall then be installed.

All works to install new hardstanding according to no-dig methodology shall be carried out under supervision of the Project Arboriculturist.

Proposed parking, footpaths and paving are proposed at the utmost peripheries of the RPAs of T10, T11 and G5 and affect comparatively small areas.

A proposed informal path is to be located within the RPA of T14 and will comprise bark chips or a similar low impact no dig solution. The likelihood of the tree being impacted by the installation is low. Nevertheless, the works will be undertaken under arboricultural supervision, and only hand tools and wheelbarrows will be used to transport and lay the bark chips (or alternative material) within the RPA.

#### Construction of Fencing within the RPA/Construction Exclusion Zone

The following details will be adhered to for the erection of fencing within the Root Protection Areas of retained trees.

The following guidance will be adhered to for any fencing works undertaken within the site:

1. The exact route of the proposed fencing shall be marked out in conjunction with the Project Arboriculturist avoiding all significant trees of note.
2. The location of fence posts will be carefully considered, to ensure the potential for root damage to the adjacent trees is minimised. Particular attention will be given to the location of all fence posts to ensure that no fence posts are sited within 2.0 m of the stem of any retained tree.
3. Excavation for the fence post holes within the RPA of any retained tree will be completed manually using handheld tools. Care should be taken not to damage tree roots that may be present to avoid ingress of decay.
4. If large roots (>25 mm) are identified, then the fence post location will be relocated where possible to avoid damage and / or severance of roots. Special construction techniques may be used where fence posts are likely to sever significant roots to 'bridge' these areas and avoid severance of any significant roots.
5. If any roots are damaged during the excavation for the fence posts, they will be cut using sharp cutting tools such as bypass secateurs or handsaws to leave a clean wound with as small a surface area as possible. No roots of greater than 25 mm in diameter will be cut without the agreement of the Project Arboriculturist.
6. The holes excavated for the fence posts shall be lined with an impermeable membrane to prevent concrete leaching into the surrounding soil.

7. The fence posts and panels shall be installed, and the post holes backfilled with concrete. All fence posts and other materials will be brought to the working area by hand

All works to install new fencing within the RPAs of retained trees should be carried out under supervision of the Project Arboriculturist.

#### Installation of Play Equipment

New play equipment will be installed within the RPA of T14. The play equipment comprises stepping logs, climbing boulders and balancing logs. The foundations will not be substantial and will require minimal excavation. Nevertheless, the installation of the play equipment will be undertaken under arboricultural supervision and any excavation will be hand-dug. No plant will enter the RPA.

#### Walls within RPAs

A new wall will be constructed partially within the RPA of T6, and another wall will be constructed within the RPA of G5. The location of the wall piers will be determined in consultation with the Project Arboriculturist, to ensure that the potential for harm to occur to the roots of retained trees is minimised.

The final specification for the construction of the walls should be determined in consultation with the Project Arboriculturist and the Site Engineer. At this stage it is recommended that where walls will traverse the RPA of retained trees the sections between the piers should be suspended above existing ground level upon beams.

The works shall be completed in accordance with the following methodology:

1. The location of the new wall including pad foundations shall be set out by the Site Engineer and the areas investigated to establish if any large roots are present in the presence of the Project Arboriculturist.
2. Temporary ground protection measures will have already been installed in the applicable area adjacent to the proposed wall location to prevent soil compaction and contamination of the ground through the spilling of concrete or mortar. Materials for the wall construction are to be brought to the working area by hand by using the temporary ground protection. All works involved in the construction of the walls shall be undertaken from the installed ground protection and no materials are to be transported, loaded, or stored on areas of unprotected ground within the Root Protection Areas of retained trees.
3. The pad foundations will be excavated mechanically with a toothless bucket under supervision of the Project Arboriculturist. Where roots of less than 25 mm in diameter are encountered, they may be pruned back to the edge of the excavation, using clean, sharp tools. Where roots of greater than 25 mm in diameter are encountered, the proposed foundation location should be adjusted, if possible, to avoid the roots present. Where the foundation location cannot be moved any roots of greater than 25 mm in diameter must be retained and protected during the works.
4. If applicable, retained roots should be wrapped in damp hessian sacking to prevent desiccation and to minimise the risk of mechanical damage as foundation excavation is completed. Following this any retained roots shall be encased in a suitably sized plastic

pipe filled with a compressible inert material, to permit future expansion growth, which will then be wrapped with an impermeable membrane.

5. If large tree roots are found during supervised excavation works, brick piers supported by pad foundations or piles will be constructed either side of the root, providing sufficient space for lateral root growth.
6. The foundation pit shall then be lined with an impermeable membrane to prevent the leaching of concrete into the surrounding soil. Once lined the pad foundation can be formed in accordance with the Structural Engineers specifications.
7. Once all pad foundations have been installed, brick piers will be built and tied into the proposed wall.

All works to install new walls within the RPAs of retained trees should be carried out under supervision of the Project Arboriculturist.

#### Installation of utilities within RPAs

The installation of a new foul water pipe will require works within the RPA of T7, a new water main connection to the west of the site beneath the existing hard standing will also require works within the RPA of T2. Where the works are to occur within the RPAs of retained trees the protection of tree roots is imperative and as such traditional trenching should be avoided where possible. The proposed utility installation should be achieved using directional drilling, thrust boring or micro-tunnelling to prevent damage to root systems of retained trees, several methodologies are outlined below to ensure minimal impacts to trees are caused by utilities installation.

#### *Directional Drilling:*

1. The locations of launch pits and receiver pits should be marked out. The pits are to be located outside of the RPAs of retained trees wherever possible. It is understood that these pits are going to be formed using standard excavation methods unless these are located within Arboricultural sensitive areas then either a hang-dug or vacuum excavation methodology shall be used.
2. The launch and receptor pits will be dug to a depth of at least 750mm but should conform to the engineers' specifications, relevant industry guidance and manufacturers specifications.
3. The excavation of the launch and receiver pits should then be undertaken. If any roots smaller than 25 mm in diameter are uncovered these can be pruned back, using clean sharp secateurs. If roots that exceed 25 mm are found these are to be covered with hessian and for the directional drill to work around these roots.
4. The methodology of the excavation and use of the Directional Drill shall adhere to the Method Statement produced by the Client.
5. At no point, will products or substances that could potentially harm trees be used. It is recommended that Bentonite is used (or something similar), this is a highly absorbent clay that is used as a lubricant and borehole stabilising solution.

6. Upon completion of the works, the pits will be backfilled with the excavated spoil and reinstated to a suitable finish. Prior to the backfilling hessian should be removed from any roots that have been covered.

#### *Vacuum Excavation*

If it is not possible to use directional drilling methods due to site constraints, then the proposed excavation works will be completed using an Airspade and soil vacuum excavator to prevent damage to root systems of retained trees and will be supervised by the Project Arboriculturist. The following methodology must be adhered to:

1. The route of the proposed trench shall be determined in discussion with the Project Arboriculturist and marked out on site.
2. Pruning of lower branches to provide clearance for the vacuum excavator will be undertaken by a suitably qualified and experienced tree surgeon under supervision of the Project Arboriculturist prior to commencement of the works.
3. Upon commencement of the works, the aim will be to excavate the soil along the route of the proposed service trench to a suitable depth to permit the installation of new pipes beneath the network of retained roots (typically 750 mm below ground level) whilst retaining as many tree roots as feasible.
4. Whilst roots smaller than 25 mm in diameter may be pruned back to permit access for the vacuum excavator nozzle / utilities, roots larger than 25mm in diameter will be retained.
5. All exposed roots must be wrapped or covered with damp hessian or similar material, as soon as possible, to prevent desiccation and to protect them from rapid temperature changes.
6. Once the trench is complete the proposed service can be inserted into the trench through or below the network of retained tree roots.
7. Prior to backfilling all root coverings shall be removed and retained roots shall, where possible, be surrounded with topsoil and lightly compacted sharp sand, or other loose inert granular fill, before soil or other suitable material is replaced into the excavated area. The fill material shall be free of contaminants and other foreign objects potentially injurious to tree roots.

#### *Manual Excavation:*

If there is an area where both directional drilling and vacuum excavation are not viable due to access constraints and then the area the route will be hand-dug under arboricultural supervision. The following methodology must be adhered to:

1. The route of the proposed trench shall be determined in discussion with the Project Arboriculturist and marked out on site.
2. Where required, pruning of lower tertiary branches to provide clearance for the excavator and other plant will be undertaken by a suitably qualified and experienced tree surgeon under supervision of the Project Arboriculturist prior to commencement of

the works. The type of machinery needs to be confirmed before works commence to confirm extent of pruning works.

3. Whilst roots smaller than 25 mm in diameter may be pruned back to permit access for the excavator and laying of the new pipeline, roots larger than 25 mm in diameter will be retained unless otherwise agreed by the Project Arboriculturist.
4. All exposed roots to be retained must be wrapped or covered with damp hessian or similar material, as soon as possible, to prevent desiccation and to protect them from rapid temperature changes.
5. All spoil will be stored away from retained trees and on existing hard surfacing.
6. Once the trench is complete, the proposed pipeline can be inserted into the trench, and if roots are present, below the network of retained tree roots.
7. Prior to backfilling all root coverings shall be removed and retained roots shall, where possible, be surrounded with topsoil and lightly compacted sharp sand, or other loose inert granular fill, before soil or other suitable material is replaced into the excavated area. The fill material shall be free of contaminants and other foreign objects potentially injurious to tree roots.

Works will not occur where the ambient air temperature is less than +4 °C. Roots shall be temporarily recovered with soil where the ambient temperature exceeds 14 °C or completion of the works is not foreseen within 24 hours of the finished excavation.

## 3.4 Post Construction Works

### Removal of Protective Barriers

Protective barriers will be removed once all external main construction works have been completed to allow the completion of hard and soft landscaping. Barriers shall be removed carefully to ensure no damage to retained trees occurs.

### Hard Landscaping

Hard landscaping works that have the potential to cause physical damage to retained trees, compaction of the soil or severance of tree roots shall not occur within the precautionary zones (RPA / canopy) unless under supervision of the Project Arboriculturist. Any hard landscaping works taking place within the precautionary zones surrounding retained trees should be completed in accordance with this AMS following advice from the Project Arboriculturist.

No unsupervised works or storage of hard landscaping construction materials shall occur within the Precautionary Zones (former CEZ).

### Soft Landscaping

All soft landscaping within the exclusion zone will be undertaken by hand and in accordance with BS8545<sup>3</sup>.

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<sup>3</sup> British Standards Institution. (2014). *British Standard 8545:2014, Trees: from nursery to independence in the landscape – Recommendations*. British Standards Institution, London.

A 500 mm radius from any tree stem will remain uncovered by turf or other planting to allow penetration of water and air into the soil. It is recommended that a propriety mulch is applied around retained trees to a depth of 100mm to inhibit weed and growth, reduce groundwater evaporation, resist, and mitigate soil compaction, reduce maintenance requirements and act as a slow-release fertilizer.

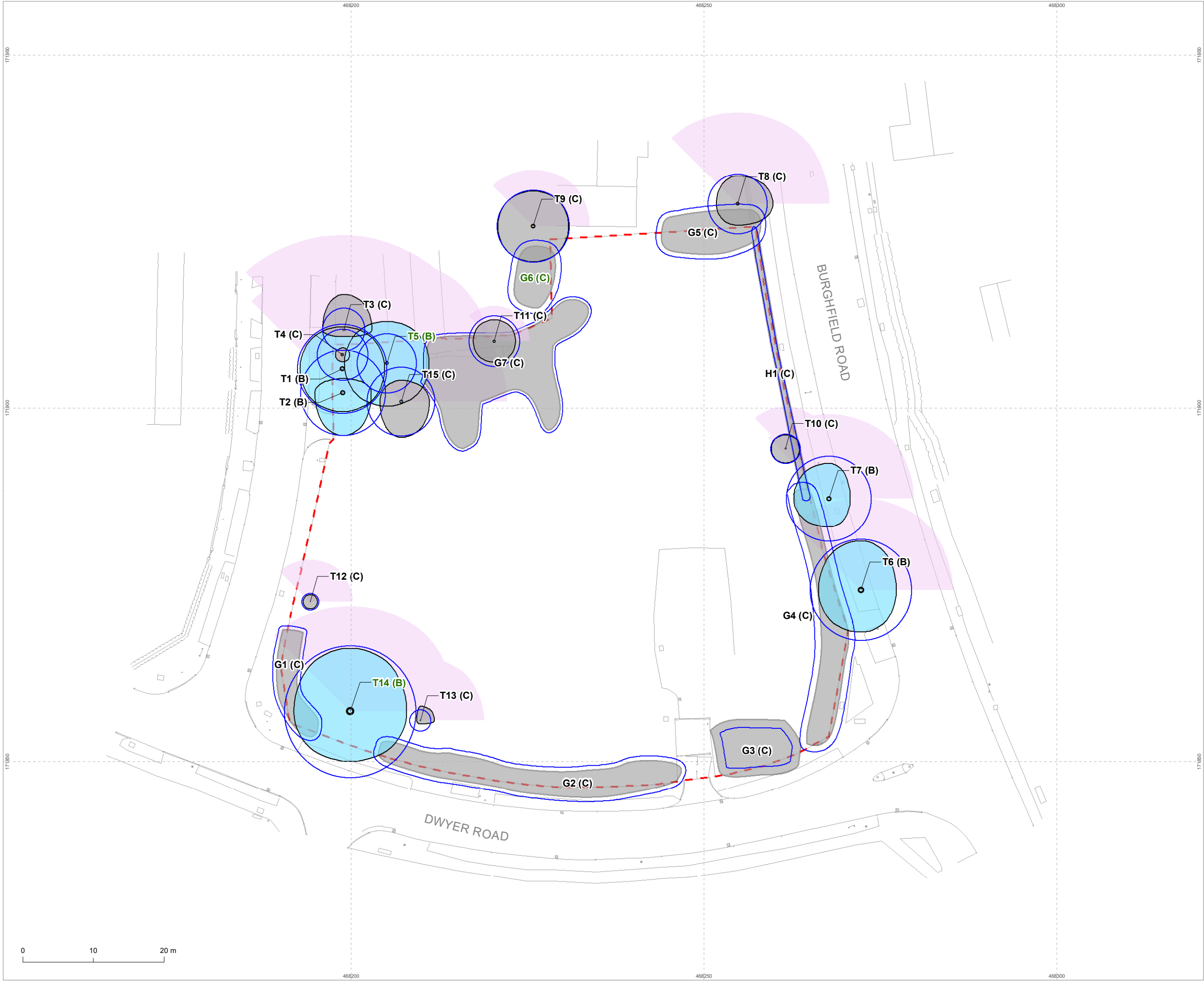
Any proposed tree planting should be conducted in accordance with BS8545:2014. Where any planting is proposed within the RPAs of retained trees it should be completed in consultation with the Project Arboriculturist to ensure that the root systems of existing trees are not damaged.

## 3.5 Handover and Close Out

### Tree Safety Assessment

A tree safety assessment will be required prior to handing over the site to the client for final site use to ensure all retained trees are in good condition and any potential hazards are mitigated sufficiently. All retained trees should positively contribute to the new development and should be included as part of a management plan to ensure the long-term safety of site users.

This BS5837:2012 survey is not a full or thorough assessment of the health and safety of the trees on or adjacent to the site; and therefore, it is recommended that detailed tree inspections are undertaken on a regular basis with the express purpose of complying with the landowner's duty of care to satisfy health and safety requirements.



C159536-01-01

Legend

Tree location and stem diameter

Root Protection Area

Current canopy extent

Category B

Category C

Indicative tree shadow

Site boundary

00

Tree subject to Tree Preservation Order (TPO)

NOTES

All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with Project Arboriculturist. Drawing to be read in conjunction with Preliminary Arboricultural Assessment and Tree Schedule.

The positions of trees and their current crown spread, root protection area and shade pattern (where appropriate) have been shown on the Tree Survey Plan.

All survey data is based on a topographical survey where possible, supplied by the client.

Where topographical information has not identified tree positions or Ordinance Survey mapping has been utilised, trees have been positioned using GPS and aerial photography to provide approximate locations in relation to existing surrounding features. Further confirmation of tree and hedgerow locations through a topographical survey of the site is recommended to ensure future design accuracy.

The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken.

Further survey work would be required for calculating foundation depths in accordance with current Building Regulations requirements.

Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by the Project Arboriculturist should works commence 12 months after the date of this survey.

TREES INCLUDED DURING THE ASSESSMENT MAY BE SUBJECT TO STATUTORY CONSTRAINTS. IT IS THEREFORE ADVISED THAT NO WORKS SHOULD BE UNDERTAKEN TO ANY TREES ILLUSTRATED HEREIN WITHOUT FIRST OBTAINING THE RELEVANT AUTHORISATION TO DO SO UNLESS AGREED AS PER THE APPROVED PLANS THROUGH PLANNING CONSENT.

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Project

Dwyer Road, Reading, Berkshire

Drawing

Tree Survey Plan

Client

Reading Borough Council

Drawing Number

C159536-01-01

Revision

00

Scale @ A3

1:500

Date

December 2022

Approved By

LW

Drawn By

JR

MIDDLEMARCH

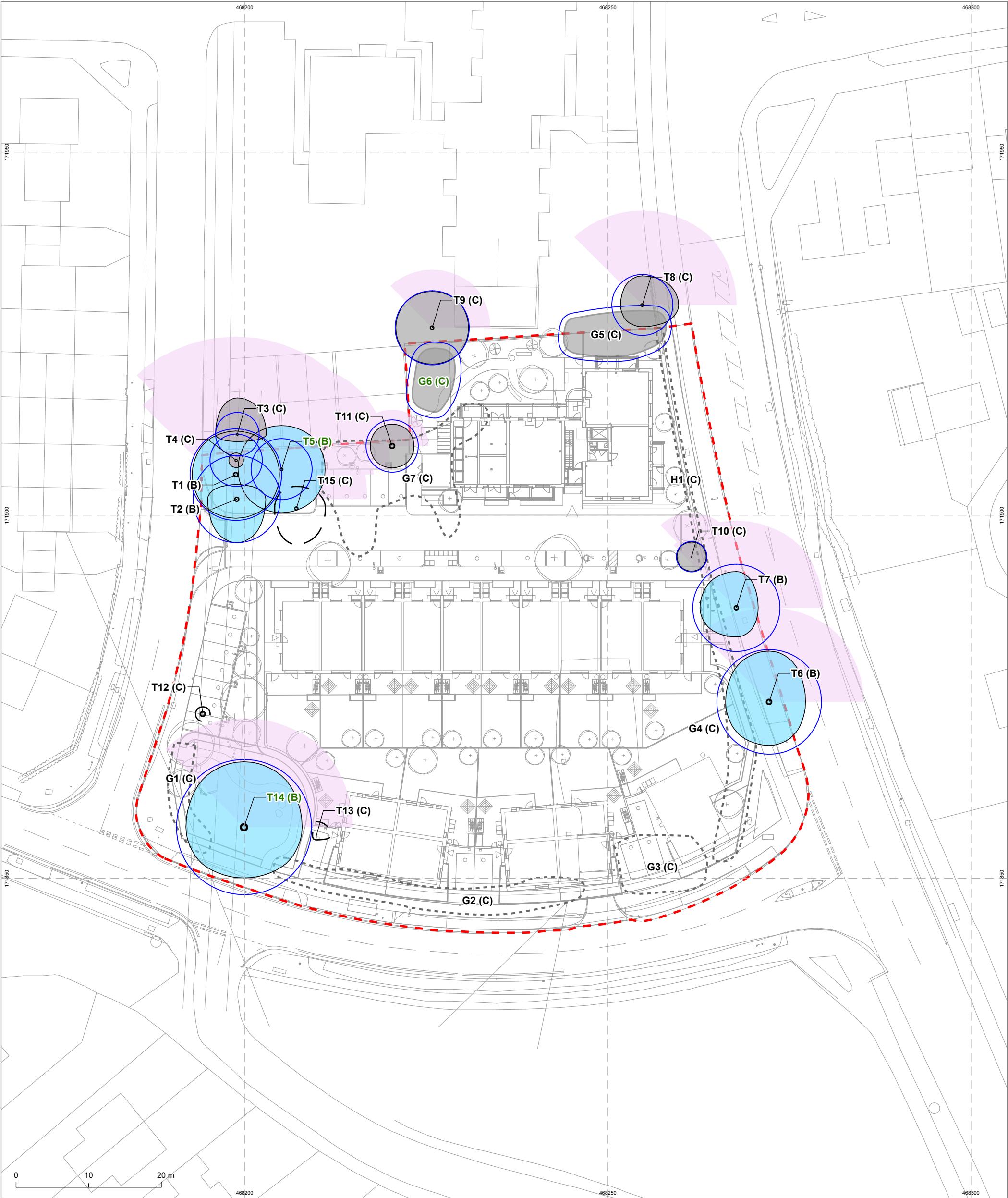
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- Legend**
- Tree location and stem diameter
  - Category B
  - Category C
  - Category C group to be removed
  - Current canopy - tree to be retained
  - Current canopy - tree to be removed
  - Root Protection Area
  - Indicative tree shadow
  - Site boundary
  - Tree subject to Tree Preservation Order (TPO)

**NOTES**

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The positions of trees and their current crown spread, root protection area and shade pattern (where appropriate) have been shown on the Tree Survey Plan.

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Further survey work would be required for calculating foundation depths in accordance with current Building Regulations requirements.

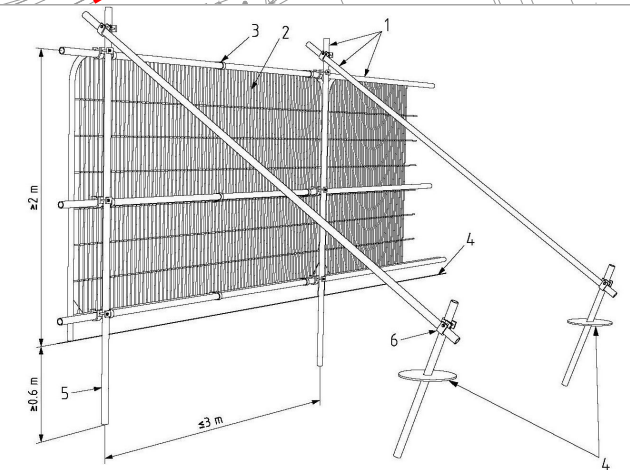
Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by the Project Arboriculturist should works commence 12 months after the date of this survey.

TREES INCLUDED DURING THE ASSESSMENT MAY BE SUBJECT TO STATUTORY CONSTRAINTS. IT IS THEREFORE ADVISED THAT NO WORKS SHOULD BE UNDERTAKEN TO ANY TREES ILLUSTRATED HEREIN WITHOUT FIRST OBTAINING THE RELEVANT AUTHORISATION TO DO SO UNLESS AGREED AS PER THE APPROVED PLANS THROUGH PLANNING CONSENT.

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|                                                                                                                                                                                                                                                                                                                                       |                         |          |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------|----------------|
| Project                                                                                                                                                                                                                                                                                                                               | Dwyer Road, Reading     |          |                |
| Drawing                                                                                                                                                                                                                                                                                                                               | Tree Retention Plan     |          |                |
| Client                                                                                                                                                                                                                                                                                                                                | Reading Borough Council |          |                |
| Drawing Number                                                                                                                                                                                                                                                                                                                        | C159851B-02-01-RevD     | Revision | Rev D          |
| Scale @ A3                                                                                                                                                                                                                                                                                                                            | 1:500                   | Date     | September 2024 |
| Approved By                                                                                                                                                                                                                                                                                                                           | SH                      | Drawn By | JR/CD/AW/BD    |
| <div> <b>MIDDLEMARCH</b></div>                                                                                                                                                                                                                   |                         |          |                |
| Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ<br>T:01676 525880<br>E:admin@middlemarch-environmental.com                                                                                                                                                                                                                 |                         |          |                |
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C159851B-02-01-RevD



- Key**
- 1 Standard scaffold poles
  - 2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
  - 3 Panels secured to uprights and cross-members with wire ties
  - 4 Ground level
  - 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
  - 6 Standard scaffold clamps

**Legend**

- Tree location and stem diameter
- Category B
- Category C
- Current canopy - tree to be retained
- Root Protection Area
- Tree Protection Barrier (BS5837:2012)
- Protective barrier to be temporarily removed prior to installation of adjacent no-dig hard surface construction or installation of informal non-invasive footpath. To be reinstated upon completion of those works and to be retained until completion of the development.
- Protective barrier to be temporarily installed prior to installation of adjacent no-dig hard surface construction or installation of informal non-invasive footpath. To be removed upon completion of those works.

- Protective barrier to be temporarily removed prior to installation of proposed play equipment. To be reinstated upon completion of play equipment installation and to be retained until completion of the development.
- Protective barrier to be temporarily installed prior to play equipment installation. To be removed upon completion of play equipment installation.
- Informal non-invasive pedestrian path constituting woodchip or similar material
- No dig hard surface installation
- Site boundary
- Tree subject to Tree Preservation Order (TPO)
- Tree pruning works required

**NOTES**

All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with Project Arboriculturist. Drawing to be read in conjunction with Preliminary Arboricultural Assessment and Tree Schedule.

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|                         |                |
|-------------------------|----------------|
| Project                 |                |
| Dwyer Road, Reading     |                |
| Drawing                 |                |
| Tree Protection Plan    |                |
| Client                  |                |
| Reading Borough Council |                |
| Drawing Number          | Revision       |
| C160031-01-01-RevD      | Rev D          |
| Scale @ A3              | Date           |
| 1:500                   | September 2024 |
| Approved By             | Drawn By       |
| SH                      | JR/AW/BD       |

**MIDDLEMARCH**

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C160031-01-01-RevD

## Appendix A - Tree Schedule

| Measurements                                                                                                 | Age Class                                                                 | Overall Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Root Protection Area (RPA)                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Height - measured from ground level at base of stem/s (m).                                                   | YNG: Juvenile trees that have been recently planted.                      | G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention.                                                                                                                                                                                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"><li>• The RPA column gives the required area (m²).</li><li>• The RPA Radius column gives the radius (m) of an equivalent circle.</li><li>• The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the required rooting area in order for a tree to be retained.</li></ul> |
| Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837.                                 | SM: Semi-mature, trees upto 1/3 life expectancy.                          | F - Fair: Trees with minor, but rectifiable, defects or in the early stages of stress from which it may recover.                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                |
| Crown - crown spread estimated radially from the main stem (m).                                              | EM: Early mature, trees 1/3 – 2/3 life expectancy.                        | P - Poor: Trees with major structural and/or physiological defects such that it is unlikely the tree will recover in the long term.                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                |
| Abbreviations<br>Est - Estimated stem diameter<br>Avg - Average stem diameter<br>Max - Maximum stem diameter | M: Mature trees, upto 2/3 life expectancy.                                | D - Dead: Trees no longer alive. This could also apply to trees that are dying and unlikely to recover.                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                              | OM: Over mature, declining or moribund trees of low vigour.               | In the assessment, of the BS category, particular consideration has been given to the following <ul style="list-style-type: none"><li>• The health, vigour and condition of each tree</li><li>• The presence of any structural defects in each tree and its future life expectancy</li><li>• The size and form of each tree and its suitability within the context of a proposed development</li><li>• The location of each tree relative to existing site features e.g. its screening value or landscape features</li></ul> |                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                              | V: Veteran, tree possessing certain attributes relating to veteran trees. | <ul style="list-style-type: none"><li>• Age class</li><li>• Life expectancy</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                |

### Structural Condition

The following has been considered when inspecting structural condition:

- The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay.
- Soil cracks and any heaving of the soil around the base.
- Any abrupt bends in branches and limbs resulting from past pruning.
- Tight or weak 'V' shaped forks and co-dominant stems.
- Hazard beam formations and other such biomechanical related defects (as described by Claus Mattheck, Body Language of Trees HMSO Research for Amenity Trees No. 4 1994).
- Cavities as a result of limb losses or past pruning.
- Broken branches or storm damage.
- Canker formations.
- Loose or flaking bark.
- Damage to roots.
- Basal, stem or branch / limb cavities.
- Crown die-back or abnormal foliage size and colour.
- Any changes to the timing of normal leaf flush and leaf fall patterns.

### Quality Assessment of Retention Category

Category U - Trees 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.

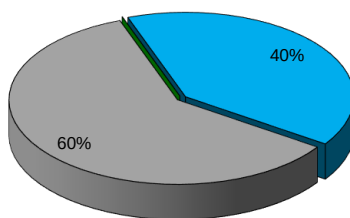
Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

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

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

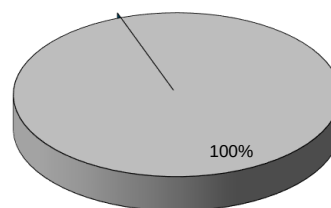
Sub-categories: (i) - Mainly arboricultural value  
(ii) - Mainly landscape value  
(iii) - Mainly cultural or conservation value

BS5837 category: Individuals



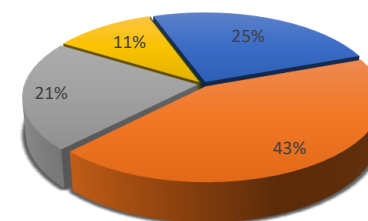
■ Category U    ■ Category A  
■ Category B    ■ Category C

BS5837 category: Groups of trees



■ Category U    ■ Category A  
■ Category B    ■ Category C

Age distribution of tree stock



■ Young    ■ Semi Mature    ■ Early Mature  
■ Mature    ■ Over Mature    ■ Veteran

## Appendix A - Summary

|            | Individual Trees                        | Totals | Tree Groups                | Totals |
|------------|-----------------------------------------|--------|----------------------------|--------|
| Category U |                                         | 0      |                            | 0      |
| Category A |                                         | 0      |                            | 0      |
| Category B | T1, T2, T5, T6, T7, T14                 | 6      |                            | 0      |
| Category C | T3, T4, T8, T9, T10, T11, T12, T13, T15 | 9      | G1, G2, G3, G4, G5, G6, G7 | 7      |
|            | Total                                   | 15     | Total                      | 7      |

|            | Hedgerows | Totals | Woodlands | Totals |
|------------|-----------|--------|-----------|--------|
| Category U |           | 0      |           | 0      |
| Category A |           | 0      |           | 0      |
| Category B |           | 0      |           | 0      |
| Category C | H1        | 1      |           | 0      |
|            | Total     | 1      | Total     | 0      |

| Tree No | Species         | Height (m) | Crown Clearance (m) | No. of Stems | Stem Dia. (mm) | Crown Radius |     |     |     | Age Class | Structure | Vigour | RPA (m) | RPA Radius (m) | Cat | Comments                                                                                                                                                                                                                                                                                                                                     |
|---------|-----------------|------------|---------------------|--------------|----------------|--------------|-----|-----|-----|-----------|-----------|--------|---------|----------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                 |            |                     |              |                | N            | E   | S   | W   |           |           |        |         |                |     |                                                                                                                                                                                                                                                                                                                                              |
| T1      | Leyland cypress | 19.0       | 3.0                 | 1            | 520            | 6.0          | 6.0 | 6.0 | 6.0 | M         | F         | F      | 124     | 6.3            | B 1 | Branch stubs observed<br>Estimated dimensions<br>Hard surfaces within the rooting area<br>Limited inspection due to access<br>Limited inspection due to dense vegetation<br>Minor deadwood in the crown<br>Pruning wounds observed<br>Estimated dimensions                                                                                   |
| T2      | Leyland cypress | 18.0       | 3.0                 | 1            | 480            | 2.0          | 4.0 | 6.0 | 4.0 | M         | F         | F      | 113     | 6.0            | B 1 | Branch stubs observed<br>Estimated dimensions<br>Hard surfaces within the rooting area<br>Limited inspection due to access<br>Limited inspection due to dense vegetation<br>Minor deadwood in the crown<br>Pruning wounds observed<br>Estimated dimensions                                                                                   |
| T3      | Norway maple    | 8.0        | 3.0                 | 1            | 230            | 5.0          | 4.0 | 1.0 | 3.0 | SM        | F         | G      | 28      | 3.0            | C 1 | Estimated dimensions<br>Hard surfaces within the rooting area<br>Limited inspection due to access<br>Minor deadwood in the crown<br>Tree is located off site but overhangs the study area<br>Crown biased towards North<br>Estimated dimensions                                                                                              |
| T4      | Beech           | 9.0        | 3.0                 | 1            | 280            | 1.0          | 1.0 | 1.0 | 1.0 | SM        | F         | F      | 41      | 3.6            | C 1 | Branch stubs observed<br>Epicormic growth observed in the crown<br>Hard surfaces within the rooting area<br>Limited inspection due to access<br>Topped tree<br>Tree is showing signs of decline<br>Pruning wounds observed<br>Estimated dimensions                                                                                           |
| T5      | Silver birch    | 15.0       | 2.5                 | 1            | 350            | 6.0          | 6.0 | 6.0 | 6.0 | EM        | F         | G      | 55      | 4.2            | B 1 | Branch socket cavity observed<br>Dense ivy on the stem<br>Estimated dimensions<br>Building within the rooting area<br>Light ivy in the crown<br>Limited inspection due to access<br>Limited inspection due to dense vegetation<br>Limited inspection due to ivy<br>Minor deadwood in the crown<br>Typical crown form<br>Estimated dimensions |

| Tree No | Species           | Height (m) | Crown Clearance (m) | No. of Stems | Stem Dia. (mm) | Crown Radius |     |     |     | Age Class | Structure | Vigour | RPA (m) | RPA Radius (m) | Cat | Comments                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------|-------------------|------------|---------------------|--------------|----------------|--------------|-----|-----|-----|-----------|-----------|--------|---------|----------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                   |            |                     |              |                | N            | E   | S   | W   |           |           |        |         |                |     |                                                                                                                                                                                                                                                                                                                                                                                                              |
| T6      | Small leaved lime | 13.0       | 3.0                 | 1            | 590            | 7.0          | 5.0 | 6.0 | 6.0 | EM        | F         | G      | 163     | 7.2            | B 1 | Basal epicormic growth observed<br>Branch socket cavity observed<br>Exposed heartwood<br>Hard surfaces within the rooting area<br>Area of included bark observed<br>Included unions observed<br>Minor deadwood in the crown<br>Pruning wounds observed<br>Tree is located off site but overhangs the study area<br>lapsed pollarded form<br>Epicormic growth observed in the crown<br>Girdling root observed |
| T7      | Small leaved lime | 12.0       | 2.5                 | 1            | 500            | 5.0          | 3.0 | 4.0 | 5.0 | EM        | F         | F      | 113     | 6.0            | B 1 | Branch socket cavity observed<br>Exposed heartwood<br>Hard surfaces within the rooting area<br>Included unions observed<br>Area of included bark observed<br>Minor deadwood in the crown<br>Tree is located off site but overhangs the study area<br>Storm damage observed<br>Pruning wounds observed<br>Tree is showing signs of decline<br>Wound present on main stem<br>Major deadwood in the crown       |
| T8      | Sycamore          | 13.0       | 3.0                 | 1            | 330            | 4.0          | 5.0 | 3.0 | 3.0 | SM        | F         | G      | 55      | 4.2            | C 1 | Pruning wounds observed<br>Wound present on main stem<br>Tree is located off site but overhangs the study area<br>Codominant union at approximately 2m                                                                                                                                                                                                                                                       |
| T9      | Wild cherry       | 8.0        | 3.0                 | 1            | 410            | 5.0          | 5.0 | 5.0 | 5.0 | EM        | F         | F      | 81      | 5.1            | C 1 | Branch socket cavity observed<br>Branch stubs observed<br>Hard surfaces within the rooting area<br>Minor deadwood in the crown<br>Pruning wounds observed<br>Topped tree<br>Tree is located off site but overhangs the study area<br>Wound present on main stem                                                                                                                                              |

| Tree No | Species        | Height (m) | Crown Clearance (m) | No. of Stems | Stem Dia. (mm) | Crown Radius |     |     |     | Age Class | Structure | Vigour | RPA (m) | RPA Radius (m) | Cat | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------|----------------|------------|---------------------|--------------|----------------|--------------|-----|-----|-----|-----------|-----------|--------|---------|----------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                |            |                     |              |                | N            | E   | S   | W   |           |           |        |         |                |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| T10     | Rowan          | 6.0        | 1.0                 | 1            | 170            | 2.0          | 2.0 | 2.0 | 2.0 | SM        | F         | F      | 14      | 2.1            | C 1 | Apical dieback<br>Estimated dimensions<br>Limited inspection due to dense vegetation<br>Minor deadwood in the crown                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| T11     | Wild cherry    | 5.0        | 2.0                 | 1            | 280            | 3.0          | 3.0 | 3.0 | 3.0 | EM        | F         | G      | 41      | 3.6            | C 1 | Minor deadwood<br>Small hanging branches                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| T12     | Silver birch   | 6.0        | 1.0                 | 1            | 100            | 1.0          | 1.0 | 1.0 | 1.0 | Y         | G         | G      | 5       | 1.2            | C 1 | No obvious defects                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| T13     | Norway maple   | 9.0        | 2.0                 | 1            | 110            | 2.0          | 2.0 | 0.5 | 0.5 | Y         | F         | F      | 7       | 1.5            | C 1 | Minor deadwood in the crown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| T14     | Norway maple   | 15.0       | 2.0                 | 1            | 770            | 9.0          | 8.0 | 7.0 | 8.0 | M         | F         | F      | 272     | 9.3            | B 1 | Branch stubs observed<br>Epicormic growth observed in the crown<br>Lateral dieback observed<br>Major deadwood in the crown<br>Minor deadwood in the crown<br>Light ivy on stem<br>Light ivy in the crown<br>Numerous girdling roots, Soil erosion around base                                                                                                                                                                                                                                                                                                                          |
| T15     | Tree of Heaven | 15.0       | 2.0                 | 1            | 390            | 3.0          | 4.0 | 5.0 | 3.0 | EM        | P         | F      | 72      | 4.8            | C 1 | Basal epicormic growth observed<br>Branch socket cavity observed<br>Dense ivy in the crown<br>Dense ivy on the stem<br>Estimated dimensions<br>Large hanging branches in the crown<br>Lateral dieback observed<br>Limited inspection due to access<br>Limited inspection due to dense vegetation<br>Limited inspection due to ivy<br>Limited inspection due to safety concerns<br>Minor deadwood in the crown<br>Major deadwood in the crown<br>Storm damage observed<br>Tear wounds present<br>Tree is showing signs of decline<br>Wound present on main stem<br>Estimated dimensions |

| Tree No | Species                          | Height (m) | Crown Clearance (m) | No. of Stems | Stem Dia. (mm) | Crown Radius |     |     |     | Age Class | Structure | Vigour | RPA (m) | RPA Radius (m) | Cat | Comments                                                                                                                                                                                                                                                                                                                                          |
|---------|----------------------------------|------------|---------------------|--------------|----------------|--------------|-----|-----|-----|-----------|-----------|--------|---------|----------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                                  |            |                     |              |                | N            | E   | S   | W   |           |           |        |         |                |     |                                                                                                                                                                                                                                                                                                                                                   |
| G1      | Beech<br>Wild cherry<br>Sycamore | 10.0       | 2.0                 | -            | 200            | 2.0          | 3.0 | 2.0 | 0.5 | SM<br>Y   | G,F       | F,G    | 18      | 2.4            | C 2 | Branch stubs observed<br>Conjoined canopy<br>Hard surfaces within the rooting area<br>Limited inspection due to access<br>Provides screening<br>Pruning wounds observed<br>Dense ivy on the stems<br>Some stems with dense ivy                                                                                                                    |
| G2      | Beech                            | 11.0       | 1.0                 | -            | 210            | 3.0          | 2.0 | 0.5 | 2.0 | SM<br>Y   | F         | G,F    | 23      | 2.7            | C 2 | Branch stubs observed<br>Conjoined canopy<br>Hard surfaces within the rooting area<br>Limited inspection due to access<br>Limited inspection due to dense vegetation<br>Provides screening<br>Pruning wounds observed<br>Topped trees present<br>Majority of trees have had their Southern canopy removed<br>Estimated dimensions                 |
| G3      | Blackthorn                       | 6.0        | 1.0                 | -            | 120            | 4.0          | 3.0 | 0.5 | 3.0 | SM<br>Y   | F         | F      | 7       | 1.5            | C 2 | Branch stubs observed<br>Conjoined canopy<br>Dense ivy on the stems<br>Hard surfaces within the rooting area<br>Ivy restricts inspection<br>Limited inspection due to access<br>Limited inspection due to dense vegetation<br>Provides screening<br>Pruning wounds observed<br>Southern side of canopies has been removed<br>Estimated dimensions |

| Tree No | Species                 | Height (m) | Crown Clearance (m) | No. of Stems | Stem Dia. (mm) | Crown Radius |     |     |     | Age Class | Structure | Vigour | RPA (m) | RPA Radius (m) | Cat | Comments                                                                                                                                                                                                                                                                                                                                                                                               |
|---------|-------------------------|------------|---------------------|--------------|----------------|--------------|-----|-----|-----|-----------|-----------|--------|---------|----------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                         |            |                     |              |                | N            | E   | S   | W   |           |           |        |         |                |     |                                                                                                                                                                                                                                                                                                                                                                                                        |
| G4      | Beech                   | 10.0       | 1.0                 | -            | 180            | 2.0          | 0.5 | 0.5 | 2.0 | Y SM      | F         | G,F    | 18      | 2.4            | C 2 | Branch stubs observed<br>Conjoined canopy<br>Hard surfaces within the rooting area<br>Limited inspection due to access<br>Provides screening<br>Pruning wounds observed<br>Self seeded trees present<br>Estimated dimensions                                                                                                                                                                           |
| G5      | Beech<br>Horse chestnut | 15.0       | 2.0                 | -            | 310            | 3.0          | 3.0 | 3.0 | 3.0 | SM        | G,F       | F,G    | 48      | 3.9            | C 2 | Conjoined canopy<br>Dense ivy on the stems<br>Dense ivy in the crowns<br>Group is located off site but overhangs the study area<br>Included unions observed<br>Ivy restricts inspection<br>Limited inspection due to access<br>Limited inspection due to dense vegetation<br>Limited inspection due to ivy<br>Minor deadwood in the crowns<br>Provides screening<br>Stems fused to boundary fence line |
| G6      | Silver birch            | 14.0       | 2.0                 | -            | 320            | 3.0          | 3.0 | 3.0 | 3.0 | SM        | F         | G,F    | 48      | 3.9            | C 2 | Conjoined canopy<br>Dense ivy on the stems<br>Dense ivy in the crowns<br>Group is located off site but overhangs the study area<br>Included unions observed<br>Ivy restricts inspection<br>Limited inspection due to access<br>Limited inspection due to dense vegetation<br>Limited inspection due to ivy<br>Minor deadwood in the crowns<br>Tear wounds observed<br>Estimated dimensions             |

| Tree No | Species                                                           | Height (m) | Crown Clearance (m) | No. of Stems | Stem Dia. (mm) | Crown Radius |     |     |     | Age Class | Structure | Vigour | RPA (m) | RPA Radius (m) | Cat | Comments                                                                                                                                                                                                                                                    |
|---------|-------------------------------------------------------------------|------------|---------------------|--------------|----------------|--------------|-----|-----|-----|-----------|-----------|--------|---------|----------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                                                                   |            |                     |              |                | N            | E   | S   | W   |           |           |        |         |                |     |                                                                                                                                                                                                                                                             |
| G7      | Silver birch<br>Crack willow<br>English oak<br>Ash<br>Goat willow | 8.0        | 0.5                 | -            | 100            | 2.0          | 2.0 | 2.0 | 2.0 | Y<br>SM   | G,F       | G,F    | 18      | 2.4            | C 2 | Conjoined canopy<br>Group is sparse in areas<br>Included unions observed<br>Light ivy in the crowns<br>Limited inspection due to dense vegetation<br>Limited inspection due to safety concerns<br>Minor deadwood in the crowns<br>Self seeded trees present |

| Tree No | Species     | Height (m) | Crown Clearance (m) | No. of Stems | Stem Dia. (mm) | Crown Radius |     |     |     | Age Class | Structure | Vigour | RPA (m) | RPA Radius (m) | Cat | Comments                                                |
|---------|-------------|------------|---------------------|--------------|----------------|--------------|-----|-----|-----|-----------|-----------|--------|---------|----------------|-----|---------------------------------------------------------|
|         |             |            |                     |              |                | N            | E   | S   | W   |           |           |        |         |                |     |                                                         |
| H1      | Cotoneaster | 3.0        | 0.0                 | -            | 80             | 1.0          | 1.0 | 1.0 | 1.0 | SM        | F         | G      | 5       | 1.2            | C 2 | Unmanaged<br>Limited inspection due to dense vegetation |



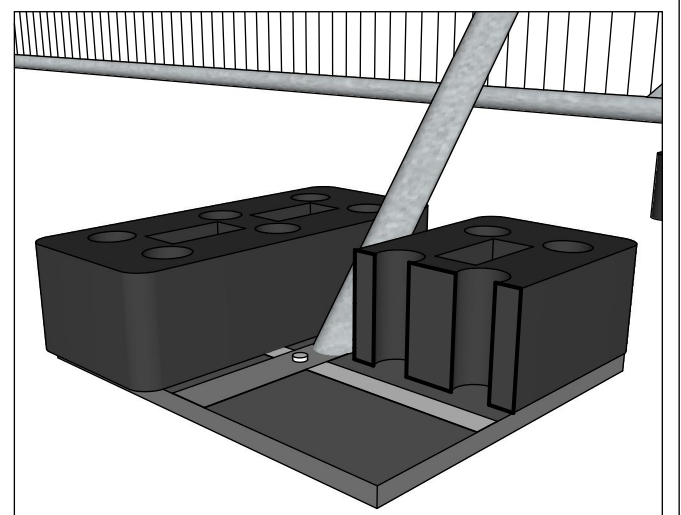
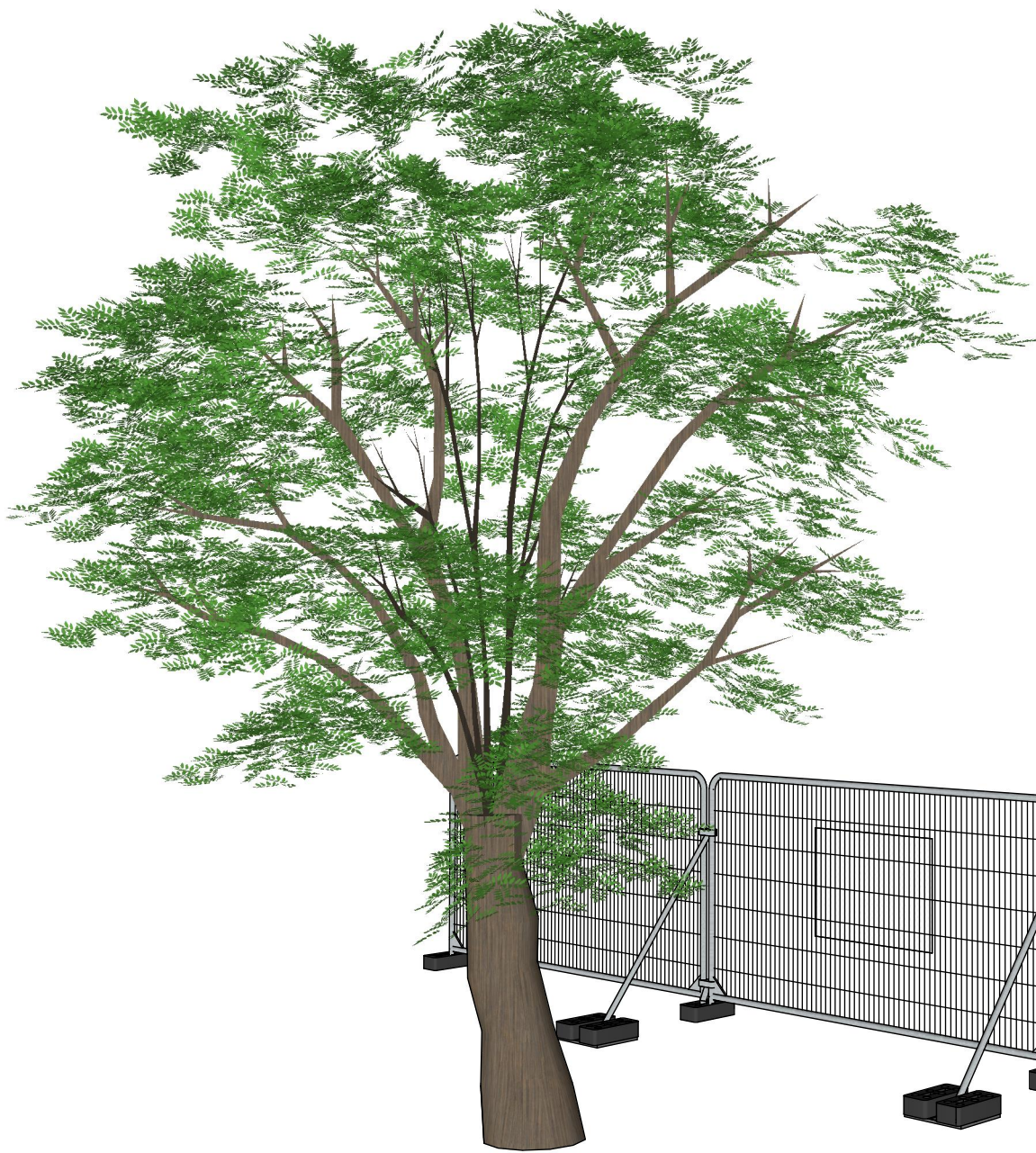
**PROTECTIVE FENCING. THIS  
FENCING MUST BE  
MAINTAINED IN ACCORDANCE  
WITH THE APPROVED PLANS  
AND DRAWINGS FOR THIS  
DEVELOPMENT.**



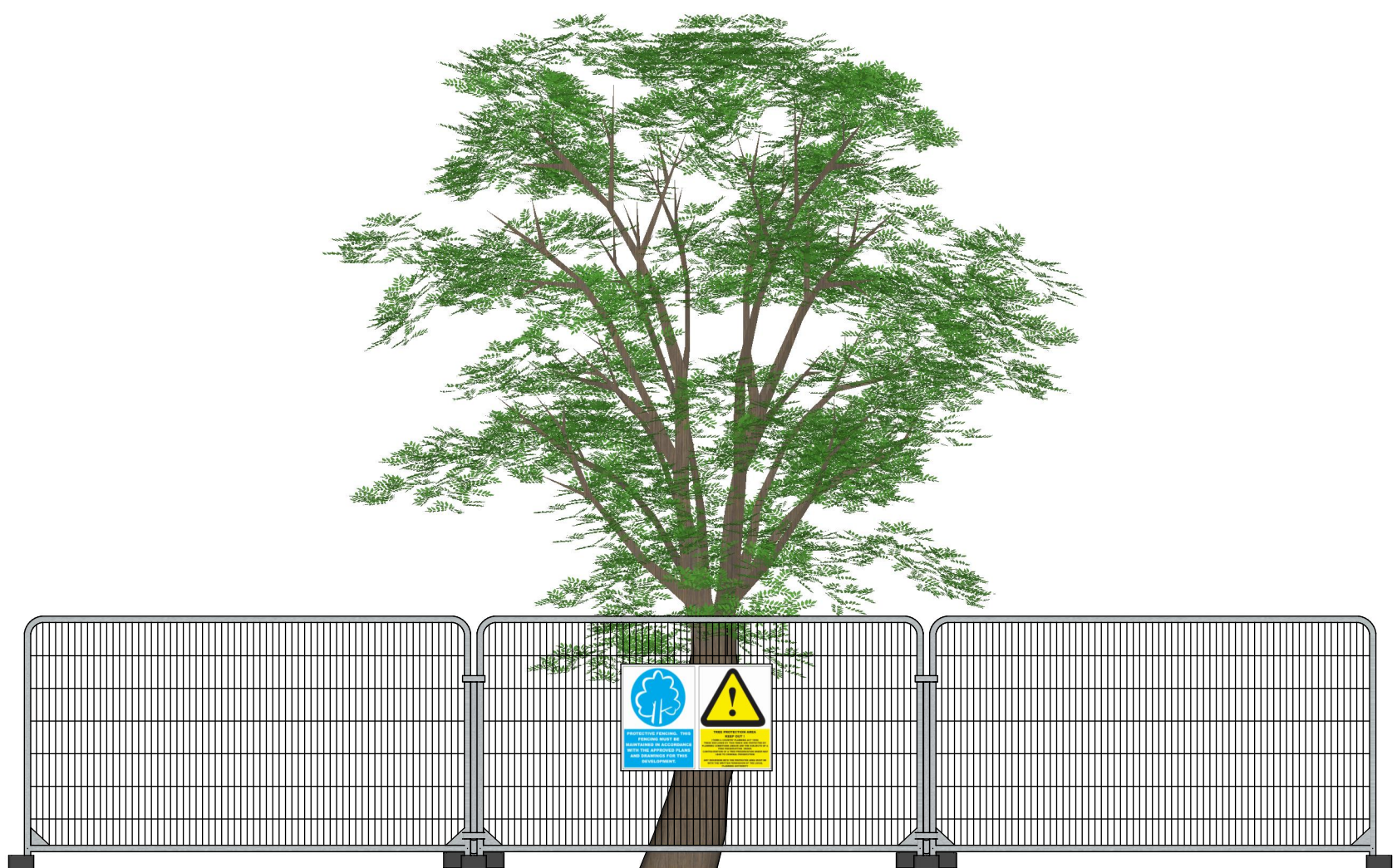
**TREE PROTECTION AREA  
KEEP OUT !**

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

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



Block tray and block cross-section



#### Tree Protection Barrier in Accordance with BS 5837:2012 Figure 3b.

Tree protection barrier consists of 2 metre tall meshed panels that span up to 3 metres wide. The panels are supported with stabilizer struts mounted on block trays.



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# Arboricultural Impact Assessment

RIBA Stage 4

Dwyer Road, Reading, Berkshire

A Report To: Reading Borough Council  
Report Number: RT-MME-158951B-02 Rev C  
Date: November 2023



## Report Verification

| Report Version | Date       | Completed by:                                                       | Checked and Approved by:                                     |
|----------------|------------|---------------------------------------------------------------------|--------------------------------------------------------------|
| Final          | 02/03/2023 | Luke Webb BSc (Hons)<br>MArborA<br>Senior Arboricultural Consultant | Duncan Smith BSc (Hons)<br>MArborA<br>Arboricultural Manager |
| Rev A          | 20/04/2023 | Luke Webb BSc (Hons)<br>MArborA<br>Senior Arboricultural Consultant | Duncan Smith BSc (Hons)<br>MArborA<br>Arboricultural Manager |
| Rev B          | 19/09/2023 | Luke Webb BSc (Hons)<br>MArborA<br>Senior Arboricultural Consultant | Duncan Smith BSc (Hons)<br>MArborA<br>Arboricultural Manager |
| Rev C          | 01/11/2023 | Luke Webb BSc (Hons)<br>MArborA<br>Senior Arboricultural Consultant | Duncan Smith BSc (Hons)<br>MArborA<br>Arboricultural Manager |

## Declaration of Compliance

This study has been undertaken in accordance with British Standard 5837:2012 '*Trees in Relation to Design, Demolition and Construction – Recommendations*'.

## Disclaimer

The contents of this report are the responsibility of Middlemarch. It should be noted that, whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

## Validity of Data

The findings of this study are valid for a period of 12 months from the date of survey. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified and experienced arboriculturist to assess any changes to the trees, groups, and hedgerows on site and to inform a review of the conclusions and recommendations made.

It should be noted that trees are dynamic living organisms that are subject to natural changes as they age or are influenced by changes in their environment. As such, following any significant meteorological event or changes in the growing environment of the trees they should be re-assessed by a suitably qualified and experienced arboriculturist.

This Arboricultural Impact Assessment has been produced following a review of a proposed development layout for the site based on data provided by the client. Should the development proposals change, this report will need to be updated to assess the impact of the amended development.

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# 1. Introduction

## 1.1 Project Background

This Arboricultural Impact Assessment was commissioned by Reading Borough Council to accompany a planning application for development at Dwyer Road, Reading. A survey of the trees on site and within influencing distance of the boundaries was undertaken on the 15<sup>th</sup> December 2022 as part of a Preliminary Arboricultural Assessment to aid design and avoid unnecessary tree removal.

This Arboricultural Impact Assessment has been carried out in accordance with British Standard 5837:2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*'<sup>1</sup> (hereafter referred to as BS5837).

The purpose of this report is to:

- Review the relationship between the proposed development and the existing trees and hedgerows identified during the Preliminary Arboricultural Assessment.
- Provide a Tree Retention Plan to determine trees and hedgerows to be retained and removed in the context of the proposed development.
- Identify mitigation to offset any tree or hedgerow loss as part of the development proposals.
- Identify all areas where specific working methods are required to ensure protection of retained trees and hedgerows as part of an Arboricultural Method Statement.

## 1.2 Site Description, Drawings and Appendices

| Attribute               | Description                                                                            |
|-------------------------|----------------------------------------------------------------------------------------|
| Location                | Dwyer Road, Reading, Berkshire, RG30 3LN                                               |
| National Grid Reference | SU 682 718                                                                             |
| Topography              | Flat with sloping ground to the north                                                  |
| Tree Cover              | Medium to low-quality individual trees and groups of self-seeded and planted specimens |
| Drawings attached       | Tree Survey Plan – C159536-01-01<br>Tree Retention Plan – C158951B-02-01 Rev C         |
| Appendices              | Appendix A – Tree Schedule                                                             |

**Table 1.1: Summary of Site and Surroundings**

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<sup>1</sup> British Standards Institution. (2012). *British Standard 5837:2012, Trees in relation to design, demolition, and construction – Recommendations*. British Standards Institution, London.

## 1.3 Development Proposals

The proposed development of the site includes the construction of fifteen new houses and fifteen apartments with twenty-four parking spaces as well as associated hard and soft landscaping.

## 1.4 Documentation Provided

This assessment is based upon the information provided by the client in addition to information collected by Middlemarch during the Preliminary Arboricultural Assessment, as detailed below.

| Author           | Document                      | Drawing Number              | Date       |
|------------------|-------------------------------|-----------------------------|------------|
| Survey Solutions | Utilities and Drainage Survey | 43955BWUG-01 Rev F          | 05.10.2022 |
| HTA Design LLP   | Design & Access Statement     | RBC-DRR_HTA-A_RP010         | 30.05.2023 |
| HTA Design LLP   | Landscape General Arrangement | RBC-DRR_HTA-L_DR_0901 Rev A | 17.04.2023 |
| HTA Design LLP   | Landscape Hardworks Plan      | RBC-DRR_HTA-L_DR_2903 Rev B | 28.07.2023 |
| HTA Design LLP   | Proposed Site Plan            | RBC-DRR_HTA-A_DR_0100 Rev M | 25.10.2023 |

**Table 1.2: Documentation Provided**

## 2. Survey Methodology

### 2.1 Survey Scope

To determine the status of the trees within the site, a full arboricultural survey has been undertaken, assessing the species and status of all trees present. This survey has been carried out in accordance with BS5837.

All individual trees with a stem diameter greater than 75 mm are shown on the Tree Survey Plan and have been assigned a unique reference number. Trees were visually assessed and a schedule prepared listing:

- Tree number
- Species
- Tree height
- Minimum crown clearance
- Stem diameter
- Crown spread
- Age class
- Vigour
- Structural condition

Measurements for tree height, minimum crown clearance and crown spread were taken to an accuracy of 0.5 m. Stem diameter measurements were recorded to the nearest 10 mm. Any specific observations were also noted. All observations and measurements are included in Appendix A Tree Schedule.

Trees were assessed and assigned one of the following categories:

#### Category U:

Trees 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.

#### Category A:

Trees of high quality with an estimated remaining life expectancy of at least 40 years.

#### Category B:

Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

#### Category C:

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

Categories A, B and C have further sub-categories with regards to the reasons for tree retention:

- Mainly arboricultural qualities.
- Mainly landscape qualities.
- Mainly cultural values, including conservation.

*N.B. Certain trees considered unsuitable to retain in their current context (Retention Category U) may possess existing or potential conservation value which make them desirable to preserve in the context of wildlife habitat (e.g. areas with limited public access).*

## 2.2 Root Protection Area (RPA)

To avoid damage to the roots or rooting environment of retained trees, the RPA has been calculated for each of the Category A, B and C trees in accordance with section 4.6 of BS5837. BS5837 recommends this as the minimum area around a tree that contains sufficient roots and rooting volume to maintain viable tree vigour and structure. Where groups of trees have been assessed, the Root Protection Area has been shown based on the maximum sized tree stem in each group and so may exceed the Root Protection Area required for some of the individual specimens within the group. Further detailed inspection of the individual trees forming a group may be required where development impacts upon individual trees forming the combined group.

Protection of the roots and soil structure within the RPA should be treated as a priority. These figures have been calculated utilising the formulas within Section 4.6 and Annex D of BS5837.

## 2.3 Tree Schedule

Appendix A details the individual trees, groups, hedgerows, and woodlands (where present) and includes the relevant information for each at the time of inspection. General observations of any structural and physiological condition and the presence of any decay or physical defects have also been included.

## 2.4 Assessment Limitations

This survey has been undertaken in accordance with BS5837 and trees with a stem diameter of less than 75mm and the specific location of species within a hedgerow have not been identified in accordance with the guidance. It may therefore be necessary during detailed design to undertake further assessment and accurate positioning of juvenile trees or woody species within hedgerows and tree groups to assist structural calculations for foundation design of structures in accordance with current building regulations and NHBC Chapter 4.2 *Building near Trees*<sup>2</sup>.

This survey is not a full or thorough assessment of the health and safety of the trees on or adjacent to the site; and therefore, it is recommended that detailed tree inspections are undertaken on a regular basis with the express purpose of complying with the landowner's duty of care to satisfy health and safety requirements.

For the purposes of this assessment, a hedgerow is described as a line of trees or shrubs with canopies less than 5m wide which is regularly managed through pruning. Where trees are present within a hedgerow that are significantly different in character from the remainder, these have been identified and recorded separately. A tree survey in accordance with BS5837 does not assess hedgerows against the Hedgerow Regulations 1997<sup>3</sup> or from an ecological perspective.

---

<sup>2</sup> National House Building Council. (2022). *NHBC Standards 2022: Chapter 4.2 - Building Near Trees*. NHBC, Milton Keynes.

<sup>3</sup> Department of the Environment, Transport, and the Regions: London. (1997). *The Hedgerows Regulations 1997: A Guide to the Law and Good Practice*.

The exact position of individual trees or species included as part of a tree group, hedgerow or woodland should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken.

## 2.5 Conditions of Tree Survey

The survey was completed by a suitably qualified and experienced Arboriculturist from ground level and from within the boundary of the site. Aerial tree inspections or the internal condition of the stem/s or branches was not undertaken at this stage. Evaluation of tree condition given within this assessment applies to the date of survey and cannot be assumed to remain unchanged. It may be necessary to review these within 12 months, in accordance with sound arboricultural practice.

All survey data is based on a topographical survey where possible, supplied by the client. Where topographical information has not identified tree positions or Ordnance Survey mapping has been utilised, trees and hedgerows have been positioned using GPS and aerial photography to provide approximate locations in relation to existing surrounding features. Further confirmation of tree and hedgerow locations through a topographical survey of the site is recommended to ensure future design accuracy.

## 2.6 Tree Survey Plan

The Tree Survey Plan identifies the existing trees including above and below ground constraints which should be considered during the design process.

## 2.7 Tree Retention Plan

The Tree Retention Plan identifies which trees and hedgerows are to be retained and incorporated as part of the site development and which are to be removed.

## 3. Statutory Protection

### 3.1 Tree Preservation Order and Conservation Area Protection

A desk-based study was undertaken to identify if any of the trees present within or near the site are affected by statutory constraints as detailed below.

| Statutory Constraint | Present<br>✓ ✗ | Source                    | Trees Affected | Details                             |
|----------------------|----------------|---------------------------|----------------|-------------------------------------|
| TPO                  | ✓              | Reading Planning Services | 3 Trees        | TPO 12/08<br>Refer to C159536-01-01 |
| Conservation Area    | ✗              | Online                    | None           | N/A                                 |
| Ancient Woodland     | ✗              | MAGIC                     | None           | N/A                                 |

**Table 3.1: Summary of Statutory Constraints that Affect the Site**

Where a tree preservation order, conservation area or ancient woodland applies to trees within the assessment area, statutory constraints will apply to the development in respect of trees.

No works must be undertaken on the protected trees without prior permission from the Local Authority unless authorised as part of an approved planning application. Works include pruning, topping, lopping, uprooting or wilful damage or wilful destruction of these trees. Any proposed pruning works not currently stated in a approved arboricultural method statement will need to be fully specified and agreed within a future planning application.

### 3.2 Protected Species

#### Bats

Mature trees often contain cavities, hollows, peeling bark or woodpecker holes which provide potential roosting locations for bats. Bats and the places they use for shelter or protection (i.e. roosts) receive European protection under The Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017)<sup>4</sup>. They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981<sup>5</sup>, as amended. Consequently, causing damage to a bat roost constitutes an offence.

Generally, should the presence of a bat roost be suspected whilst completing works on any trees on site then an appropriately licensed bat worker should be consulted for advice.

<sup>4</sup> HM Government – The National Archives (2017) [online] *The Conservation of Habitats and Species Regulations 2017*. Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents/made>

<sup>5</sup> HM Government – The National Archives 2017. *Wildlife and Countryside Act 1981*. [online] Available at: <http://www.legislation.gov.uk/ukpga/1981/69/contents>

### *Birds*

Trees offer potential habitat for nesting birds which are protected under the Wildlife and Countryside Act WCA 1981 (as amended). Some species (listed in Schedule 1 of the WCA) are protected by special penalties. This legislation makes it an offence to intentionally or recklessly damage or destroy an active bird nest or part thereof.

As the trees on, and adjacent, to the site provide potential habitat for nesting birds all tree work should ideally be completed outside the nesting bird season (Generally March to September).

If this is not possible then the vegetation should be subject to a nesting bird inspection by a suitably experienced ecologist prior to commencement of works. If any active nests are identified then the vegetation, and a defined buffer zone, will need to remain in place until the young have naturally fledged.

## 4. Results Summary

### 4.1 Preliminary Arboricultural Assessment

The assessment identified 16 individual trees, 8 groups of trees and 1 hedgerow as detailed in Appendix A Tree Schedule and Table 4.1 below.

| BS5837:2012<br>Category | Tree/ Group/ Hedgerow<br>Reference                                               |
|-------------------------|----------------------------------------------------------------------------------|
| U                       | -                                                                                |
| A                       | -                                                                                |
| B                       | T1, T2, T5, T6, T7, T15                                                          |
| C                       | T3, T4, T8, T9, T10, T11, T12, T13, T14, T16, G1, G2, G3, G4, G5, G6, G7, G8, H1 |

**Table 4.1: Summary of Trees, Groups and Hedgerows in BS5837:2012 Categories**

The study area comprised a rectangular-shaped parcel of land situated just off Dwyer Road in Reading. The site itself was disused at the time of the survey and consisted of mostly open greenspace bounded by tree cover and hoarding. Although some trees around the periphery of the study area provided screening to the surrounding residential area, most trees within the site were only partially visible from the main road and neighbouring land due to the restricted access. It should be noted that three trees on site are subject to Tree Preservation Order 12/08 (refer to drawing C159536-01-01), therefore statutory constraints are present in relation to trees - T5, T14 & G6.

Generally, the tree stock varied in age and species, but the general condition of the trees surveyed was good. Six trees consisting of Small leaved lime, Silver birch, Norway maple and Leyland cypress were assessed as moderate quality and Retention Category B specimens. These trees were mostly in good health with the majority exhibiting minor defects that did not significantly affect their estimated remaining contribution to the site. These defects included: minor and major deadwood, branch stubs, pruning wounds, included areas of bark at branch unions and branch socket cavities (refer to Appendix A – Tree Schedule). It should also be noted that due to access restrictions of internally fenced off areas, it was not possible to thoroughly inspect every tree, and, in some cases, it was necessary to estimate dimensions due to access impedance.

Two small leaved lime trees (*Tilia cordata*) T6 and T7 were located beyond the application boundary but stood within influencing distance of the site. Both trees were located on the pedestrian footpath to the east of the site and were considered good examples of their species. As such, T6 and T7 were both considered to be of moderate quality (Retention Category B) with an estimated remaining contribution of at least 20 years.

The remaining tree stock (see Table 4.1) was categorised as low quality (Retention Category C). Generally, these trees and groups of trees displayed fair vigour and fair to poor structural condition, with many considered either to be too juvenile to present a higher retention value or signs of decline within the tree crowns. Many of these specimens had structural defects such as wounds on main stems, topped canopies, notable decay, exposed heartwood, branch socket cavities, deadwood and outgrown pollarded forms. These specimens offered limited contribution to the site and are unlikely to significantly constraint the site development.

## 5. Arboricultural Impact Assessment

### 5.1 Introduction

This section of the report details the potential impacts that the proposed development may have upon the site's tree stock. The assessment has been based upon the documents detailed in Table 1.1 with reference to the results of the Preliminary Arboricultural Assessment.

### 5.2 Tree Retention and Removal

The trees to be removed are detailed below and are identified on the Tree Retention Plan. All trees, groups and hedgerows not featured within the table below, are to be retained within the proposed development.

| Tree/Group/<br>Hedgerow<br>Reference                        | Species                                                   | Retention<br>Category | Reason for Removal                                                                                |
|-------------------------------------------------------------|-----------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------------|
| <b>G1</b>                                                   | Beech, Wild cherry, Sycamore                              | C                     | Within footprint of proposed landscaping                                                          |
| <b>G2</b>                                                   | Beech                                                     | C                     | Within footprint of proposed dwellings, landscaping, and parking spaces                           |
| <b>G3</b>                                                   | Blackthorn                                                | C                     | Within footprint of proposed dwelling, landscaping, and parking spaces                            |
| <b>G4</b>                                                   | Beech                                                     | C                     | Within footprint of proposed dwelling and landscaping                                             |
| <b>G7</b>                                                   | Silver birch, Crack willow, English oak, Ash, Goat willow | C                     | Within footprint of proposed dwellings, outbuilding, landscaping, parking spaces and turning area |
| <b>H1</b>                                                   | Cotoneaster                                               | C                     | Within footprint of proposed landscaping                                                          |
| <b>T12</b>                                                  | Silver birch                                              | C                     | Within footprint of proposed parking bays                                                         |
| <b>T13</b>                                                  | Norway maple                                              | C                     | Within footprint of proposed landscaping and parking space                                        |
| <b>T15</b>                                                  | Tree of heaven                                            | C                     | Within footprint of proposed access road, landscaping, and parking spaces                         |
| Key<br>*: Partial removal of trees within group or hedgerow |                                                           |                       |                                                                                                   |

**Table 5.1: Tree Removal**

The proposed development will ensure the retention and incorporation of numerous trees across the site alongside new tree planting as part of the wider landscape strategy which is illustrated on drawing HTA-A\_DR\_0100. However, the proposed development will require the removal of three individual trees, five groups of trees and one hedgerow.

All of the trees proposed for removal were considered to be of a low value (Retention Category C) during the Preliminary Arboricultural Assessment. The proposed removal of these trees should be considered acceptable as new tree planting of higher quality trees more suited to the

new development will make a lasting contribution to the visual amenity value and canopy coverage of the site.

It should be noted that particular design attention has been made to ensure the retention of all Retention Category B trees on site so that they can continue to bring amenity value to the new development and surrounding area into the future. In addition, the proposed development will ensure the retainment and protection of all trees on site that are currently affected by tree preservation order legislation.

### 5.3 Works within Root Protection Areas (RPA)

Some aspects of the proposed development will require works within the RPAs of retained trees as detailed below.

| Tree/<br>Group/<br>Reference | Retention<br>Category | Species               | Works<br>Beneath<br>Canopy | Proposed Works                                                                 |
|------------------------------|-----------------------|-----------------------|----------------------------|--------------------------------------------------------------------------------|
|                              |                       |                       | ✓ ✗                        |                                                                                |
| T2                           | B                     | Leyland cypress       | ✓                          | Proposed access road into site                                                 |
| T5                           | B                     | Silver birch          | ✓                          | Proposed car parking spaces                                                    |
| T6                           | B                     | Small leaved lime     | ✓                          | Proposed footpath, entrance steps and boundary wall                            |
| T7                           | B                     | Small leaved lime     | ✓                          | Proposed landscaping and footpath                                              |
| T10                          | C                     | Rowan                 | ✓                          | Proposed footpath and soft landscaping                                         |
| T14                          | B                     | Norway maple          | ✓                          | Proposed play features, soft landscaping and informal footpath                 |
| G5                           | C                     | Beech, Horse chestnut | ✓                          | Proposed communal area, building foundations, soft landscaping and garden wall |
| G6                           | C                     | Silver birch          | ✓                          | Proposed footpath and soft landscaping                                         |

**Table 5.2: Works in RPAs**

It should be noted that the RPAs affected by works to construct the footpath and landscaping towards the east of the site and within the RPAs of T6 and T7 are already hard-surfaced and root development from the surrounding trees in the affected areas may have been restricted. T6 and T7 are located outside of the site and are situated within the existing pedestrian footpath and the potential for significant impact upon the trees as a result of the proposed works is therefore considered unlikely, however, further investigation through the use of root radar may be required to inform decision-making.

The proposed communal area and external wall within the RPA of G5 will be located at the periphery of the RPA of the retained group and most of the proposed works only include small features such as fencing and minor areas of soft landscaping. Although the majority of works are considered unlikely to cause significant harm, arboricultural supervision will be required for the

foundation excavation to ensure works are completed in accordance with BS5837. Moreover, it should be noted that foundation design should account for NHBC recommendations for building in proximity to trees.

The installation of the proposed access road and parking spaces will require works beneath the canopies of retained trees T2 and T5. It should be noted that pruning works may be required to implement these design features and specialist construction methods may be necessary to provide adequate protection for retained trees.

All works within the RPAs or beneath the canopies of retained trees will be detailed as part of an Arboricultural Method Statement for the proposed development to ensure the method of construction is suitably considered and appropriate working methodologies in accordance with BS5837 are specified.

## 5.4 Trees and Foundations

Any structures built on the site should comply with current building regulations and NHBC Chapter 4.2 - *Building near Trees* (2022)<sup>6</sup>. Foundation depths for buildings near or adjacent to trees should consider the potential size of the trees at maturity and their subsequent water demand. The soil types throughout the site should be fully investigated and appropriate measures taken. If trees are removed across the site, the potential for soil heave should be assessed and foundations designed accordingly.

This survey has been undertaken in accordance with BS5837 and further assessment in accordance with current building regulations will be required to inform foundation design.

## 5.5 Tree Pruning

Pruning of mature trees should only be undertaken where essential, to prevent open wounds that allow the ingress of decay and provide opportunity for fungal spores to infect the tree. Pruning works should ideally be undertaken during the winter months when the tree is dormant or during the summer months when the tree is fully active. Autumn pruning (when fungal spores are abundant in the surrounding atmosphere) should be avoided if possible. Juvenile trees should be formatively pruned in their early years to reduce the presence of potential defects into maturity that would reduce their lifespan.

All tree pruning works should be detailed as part of an Arboricultural Method Statement and completed in accordance with the current best practice guidance set out within BS3998:2010 *“Tree Work – Recommendations”*<sup>8</sup> by suitably competent, qualified, and insured arboricultural contractors. The extent of pruning should be identified to contractors in a pre-commencement site meeting as part of enabling works.

## 5.6 New Tree Planting

As part of the development proposals, an adequate quantity of tree planting has been demonstrated as part of the Landscape General Arrangement Plan (RBC-DRR\_HTA-

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<sup>6</sup> National House Building Council. (2022). *NHBC Standards 2022: Chapter 4.2 - Building Near Trees*. NHBC, Milton Keynes.

<sup>8</sup> British Standards Institution. (2010). *British Standard 3998:2010, Tree Work – Recommendations*. British Standards Institution, London.

L\_DR\_0901). The purpose and function of the new tree planting should be carefully considered so that key objectives from a wildlife habitat and landscape perspective can also be achieved.

## 5.7 Shading

The shade from trees can be considered both a constraint and opportunity and therefore its effect upon the new development should be fully considered to ensure a sustainable relationship can be achieved. Where residential development is proposed, the position and orientation of new buildings in relation to existing trees, primary living areas should receive the largest proportion of natural sunlight. BRE<sup>9</sup> guidelines recommend *“at least half of the garden or open space should receive at least two hours sunlight on March 21 (Spring Equinox)”*.

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<sup>9</sup> Littlefair P. (2011). *Site layout planning for daylight and sunlight: a guide to good practice* (BR 209). British Research Establishment, Watford.

## 6. Conclusion

### 6.1 Summary of Impacts

The proposed development of the site is unlikely to significantly impact the visual amenity of the local area as a result of the proposed tree removal. The proposed development will only require the removal of low-quality BS5837 'Retention Category C' trees that will result in transient impact on the visual amenity of the site and local area. Their removal should not be seen as a constraint as many of the trees were successional species that had self-seeded and grown whilst the site was vacant. The new development offers an opportunity to plant higher-quality and better suited tree species that can provide benefits to the site into the future.

Whilst some works are to be undertaken within the RPAs of retained trees, the nature of those works are such that they can be completed without causing significant impact, subject to the adoption of appropriate working practices which will be detailed in an Arboricultural Method Statement.

## 7. Arboricultural Method Statement

### 7.1 Introduction

An Arboricultural Method Statement has been prepared for the site as various aspects of the proposed development affect retained trees. The purpose of an Arboricultural Method Statement is to ensure that all site operations occur with minimal risk of adverse impact upon trees that are to be retained.

In relation to this development the Arboricultural Method Statement will address the following:

| Action                                                                        | Required |
|-------------------------------------------------------------------------------|----------|
| Tree Surgery                                                                  | ✓        |
| Site set up and logistics                                                     | ✓        |
| Building demolition and removal of hard surfaces within RPAs                  | ✗        |
| Working space to construct new buildings within RPAs                          | ✗        |
| Installation of utilities within RPAs                                         | ✗        |
| Site access, material storage contractor's parking and site compound location | ✓        |
| Protective barrier and ground protection location and specification           | ✓        |
| Pre-commencement site meeting                                                 | ✓        |
| Arboricultural Clerk of Works supervision                                     | ✓        |
| Audit timetable                                                               | ✓        |