43 FIELDGATE LANE, KENILWORTH, WARWICKSHIRE

ARBORICULTURAL METHOD STATEMENT

A Report to: Jonathan Holland Architects

Report No: RT-MME-156179-02

Date: October 2021

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REPORT VERIFICATION

This study has been undertaken in accordance with British Standard 5837:2012 “Trees in relation to design, demolition and construction - Recommendations”.

Report Version	Date	Completed by:	Checked by:	Approved by:
Final	15/10/2021	Stefan Harrison BSc (Hons) M.Arbor.A (Arboricultural Consultant)	Duncan Smith BSc (Hons) M.Arbor.A (Arboricultural Manager)	Tom Docker CEcol MCIEEM (Managing Director)

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. 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 Environmental Ltd 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 based upon the survey data produced as part of the Preliminary Arboricultural Assessment which is valid for a period of 12 months from the date of survey. If a planning application has not been submitted 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 and hedgerows on site 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 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 ensure all practices described herein are relevant and suitable for the provision of tree protection.

CONTENTS

1. INTRODUCTION

1.1 PROJECT BACKGROUND

Middlemarch Environmental Ltd were commissioned by Jonathan Holland Architects to compile an Arboricultural Method Statement as part of an approved planning application for residential development at 43 Fieldgate Lane in Kenilworth, Warwickshire. A survey of the trees on site and within influencing distance of the boundaries was undertaken on the 27th September 2021 as part of a Preliminary Arboricultural Assessment (PAA) (RT-MME-156179-01), which was completed to identify the existing trees and hedgerows on the site to aid design and avoid unnecessary tree removal.

This Arboricultural Method Statement (AMS) confirms the mitigation measures and sets out the method of impact avoidance in accordance with BS5837:2012.

Planning consent in respect of a planning application for the demolition and replacement of the existing dwelling, with the front facade retained, (Application Reference W/20/1858) was granted, subject to condition. This document has been prepared to provide the information necessary for discharge of Condition 3 of the Planning Permission which states:

"3. The development hereby permitted shall not commence unless and until tree protection / mitigation measures have been submitted to and approved in writing by the LPA and the approved measures have been put in place. The approved measures must remain in place for the duration of the works. The measures are to be submitted for all of the trees that will be influenced by the proposed demolition and re-development and must include:

a] an arboricultural method statement and tree protection plan in accordance with British Standard BS 5837:2012 Trees in relation to WARWICK DISTRICT COUNCIL NOTICE OF DECISION W/20/1858 design, demolition, and construction – Recommendations, Clause 7 in particular

b] an arboricultural site monitoring protocol that will confirm to the local planning authority by independent examination that the agreed tree protection measures are in place for the duration of the development."

This statement details the specific measures to be adopted to ensure the protection of retained trees during the proposed development in accordance with the above Condition agreed as part of the planning consent for the site (Town and Country Planning Act 1990). Once approved, by the Local Authority Arboricultural Officer, the methods of work described herein will be a requirement of all relevant contractors associated with the development proposals.

1.2 SITE DESCRIPTION

The site under consideration, hereinafter referred to as the study area, is located at 43 Fieldgate Lane in Kenilworth, Warwickshire, centred at Ordnance Survey Grid Reference SP 28497 72821.

Tree cover across the site was generally found to be of fair quality and was located adjacent to the site boundaries.

The location of the trees surveyed can be found on Middlemarch Environmental Ltd Tree Survey Plan (C156179-01-01). The Tree Retention Plan (C156179-02-01), provided in Section 7 of this report, shows those trees proposed to be removed as part of an approved planning application. Confirmation of the proposed tree removal should be sought from the Project Arboriculturist or Local Authority prior to undertaking any tree felling or tree work.

1.3 DEVELOPMENT PROPOSALS

The proposed development of the site includes the demolition and replacement of the existing dwelling, with the front facade retained, along with associated landscaping works.

The proposed development has been designed so that safe and healthy existing trees are retained wherever possible and that those trees to be retained are not significantly impacted upon by the development.

1.4 DOCUMENTATION PROVIDED

This assessment is based upon the information provided by the client in addition to information collected by Middlemarch Environmental Ltd during the Preliminary Arboricultural Assessment and Arboricultural Impact Assessment. The documents and drawings considered are detailed within Table 1.1.

Author	Document	Drawing Number	Date
Jonathan Holland Architects	Proposed Site Plan	2033-AL04 Rev A	Sept 2020
Jonathan Holland Architects	Proposed Site Plan with Site Compound	2033-AL100	Oct 2021

Table 1.1: Documentation Provided

2. METHODOLOGY

2.1 DESK STUDY

A desk-based study was undertaken to identify if any of the trees present within or near the site are protected by Tree Preservation Orders (TPOs) or if the site is situated within a Conservation Area.

An online search using the Multi Agency Geographical Information for the Countryside (*MAGIC)* website for statutory conservation sites was also undertaken (where appropriate) to determine the presence of Ancient Woodland within 15.0 metres of the site boundary.

2.2 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 British Standard 5837:2012 '*Trees in Relation to Design, Demolition and Construction – Recommendations'*.

All trees have been assigned a unique reference number. Individual trees above 75 mm in diameter (at 1.5 m above ground level) have had their position plotted to the Tree Survey Plan. Trees were visually assessed and a schedule prepared listing:

- Tree number,
- Species,
- Tree height,
- Stem diameter at 1.5 m above ground level (or in accordance with Annex C of BS5837:2012),
- Crown spread (cardinal points where necessary),
- Minimum crown clearance,
- Age class,
- Condition and;
- Preliminary management recommendations (where required).

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 or management recommendations 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:

1: Mainly arboricultural qualities.
2: Mainly landscape qualities.
3: Mainly cultural values, including conservation.

N.B. Certain category U trees 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).

2.3 ROOT PROTECTION AREA (RPA)

In order 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. This is a minimum area around a tree which is deemed to contain sufficient roots and rooting volume to maintain the tree's viability..

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 British Standard 5837:2012.

2.4 TREE SCHEDULE

Appendix A details the individual trees found during the assessment 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. Preliminary management recommendations have also been recorded where appropriate.

2.5 ASSESSMENT LIMITATIONS

This survey has been undertaken in accordance with BS5837 recommendations only. Trees under 75mm in diameter have not been identified in accordance with the guidance.

The exact position of individual trees should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken.

2.6 CONDITIONS OF TREE SURVEY

The survey was completed by a suitably qualified and experienced Arboriculturist from ground level only 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.

2.7 TREE SURVEY PLAN

The Tree Survey Plan seeks to act as a design tool that shows potential opportunities for inclusion of the existing trees across the site as well as the above and below ground constraints which should be considered during the design process.

2.8 TREE RETENTION PLAN

The Tree Retention Plan identifies which trees are to be retained and incorporated as part of the site development and which are to be removed. The positions of trees and their current crown spread that are to be removed have been shown on the Tree Retention Plan with a dashed outline.

2.9 TREE PROTECTION PLAN

The Tree Protection Plan attached to this report identifies only those trees that are to be retained and incorporated as part of the site development. The Tree Protection Plan identifies the various protection measures required to prevent damage to trees that are to provide long term benefits to the completed site. The Tree Protection Plan also identifies the various working elements of a construction site to confirm any potential impacts are minimised.

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.

3. STATUTORY PROTECTION

3.1 TREE PRESERVATION ORDER AND CONSERVATION AREA DESIGNATIONS

No direct consultation with the Local Planning Authority, Warwick District Council, has taken place, however, it is understood having used the online search facility on the website for the Local Planning Authority, that a tree subject to TPO No. 63 (1983) is situated immediately adjacent to the western site boundary tree and that the site is situated within the Kenilworth Conservation Area and therefore statutory constraints would apply to the development in respect of trees. Prior to any tree works being undertaken, confirmation of the online information should be sought from the Local Authority.

Trees covered by the Tree Preservation Order and conservation area are detailed in Table 3.1 and are also shown on the Tree Survey Plan.

Middlemarch Tree no.	TPO Reference no.	Conservation Area
T1	-	The Kenilworth Conservation Area
T2	T173 of TPO No. 63 (1983)	-
T3	-	The Kenilworth Conservation Area
T4	-	The Kenilworth Conservation Area
T5	-	The Kenilworth Conservation Area
T6	-	The Kenilworth Conservation Area

Table 3.1: Summary of Statutory Constraints that Affect the Site

No works to any trees within the Kenilworth Conservation Area (see Table 3.1) are to be carried out without prior submission of a Section 211 notice to the Local Planning Authority (LPA) giving six weeks' notice of the proposed works unless authorised as part of an approved planning application.

No works must be undertaken on the trees protected by Tree Preservation Order No. 63 (1983) 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. If works are not included within the planning application, a separate TPO application should be submitted to the Local Authority for permission to undertake any works (approximately an 8-week process).

Reference to the Multi Agency Geographical Information for the Countryside (MAGIC) website indicates that no ancient woodland is present within a 15.0 m buffer of the survey area.

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). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, 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.

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

Six individual trees were surveyed as part of the Preliminary Arboricultural Assessment. Trees assessed during the survey are listed as individual trees in the Tree Schedule (Appendix A) in accordance with BS5837:2012 recommendations. Table 4.1 provides a summary of the survey results in terms of categorisation.

BS5837:2012 Category	Tree Reference
U	T2.
A	T1.
B	-
C	T3, T4, T5, T6.

Table 4.1: Summary of Trees in BS5837:2012 Categories

The highest value tree identified during the survey was the Cedar of Lebanon (T1) which was located in the rear garden of the property adjacent to the northern boundary. The tree was in good condition and was a prominent feature within the rear garden and the gardens of the adjacent properties. As such, T1 was considered to be of high retention value.

The ash (T2) which was situated offsite adjacent to the western site boundary was considered to be of limited retention value (Category U) during the survey of the site. Inspection was limited due to the tree being offsite, however, two fruiting bodies of *Inonotus hispidus* were observed within the crown of the tree. *Inonotus hispidus* is a pathogenic fungus that decays the wood of its host tree weakening the structural integrity of the affected areas and often resulting in the failure of stems and limbs.

The remaining four trees (see Table 4.1) were all considered to be of low retention value due to their juvenile age.

4.2 TREE REMOVAL

Two trees require removal as part of the approved planning application. The trees to be removed are identified on the Tree Retention Plan (C156179-02-01) and are listed in Table 4.2. All tree removal should be undertaken prior to the installation of tree protection measures and site occupation.

Tree Reference	Species	BS5837 Category
T4	Magnolia	C
T5	Dappled willow	C

Table 4.2: Trees to be Removed

Before any tree works are undertaken confirmation of the agreed tree removal and confirmation of the presence of the statutory constraints should be sought from the Local Authority. All tree works are to be completed by suitably qualified and insured arboricultural in accordance with BS3998:2010 *'Tree Work – Recommendations'*.

5. ARBORICULTURAL METHOD STATEMENT

5.1 INTRODUCTION

The following sections of this report detail the specific measures to be adopted to ensure the protection of retained trees during the proposed development and should be read in conjunction with the Tree Survey Plan, Tree Retention Plan and Tree Protection Plan. This document also details the specific pruning requirements for the site and identifies the correct method of working near trees in accordance with BS5837:2012 *'Trees in relation to design, demolition and construction – Recommendations'*.

The site contractor must ensure that they read and understand all the following sections prior to commencement of any onsite works.

5.2 TREE PRUNING

Access facilitation pruning works will be required at the site delivery area to minimise the potential for vehicular impact. Furthermore, pruning will aim to remove any potentially hazardous branches that could result in injury to contractors working on site throughout the course of the development.

Tree Reference	Species	BS5837 Category	Pruning Works
T6	Rowan	C	Raising of southern canopy extents to the south of the protective barrier to provide 3.0 m clearance from ground level.

Table 5.1: Trees to be Pruned

Pruning of mature trees should only be undertaken where essential, to prevent open wounds that allow the ingress of decay and fungal spores that have the potential to infect the tree. Temporary tying back of branches while works are completed should be the preferred approach and avoids the need to prune trees. However, any pruning work required should ideally be undertaken during the winter and summer months and pruning during autumn (when fungal spores are abundant) 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 in accordance with BS3998:2010 *Tree work – Recommendations* & BS8545:2014 *Trees: from nursery to independence in the landscape- Recommendations*.

All tree work should be completed prior to the installation of the tree protection measures detailed in this report and before site occupation unless delayed, to coincide with the seasons or to allow nesting birds to fledge in accordance with the Wildlife and Countryside Act WCA 1981 (as amended).

The extent of pruning required should be confirmed in a pre-commencement site meeting involving the Project Arboriculturist, Site Manager and Contractors. All tree pruning works should be completed in accordance with the current best practice guidance set out within BS3998:2010 *'Tree Work – Recommendations'* by suitably qualified and insured arboricultural contractors.

5.3 CONSTRUCTION EXCLUSION ZONE

The Construction Exclusion Zone (CEZ) is the area considered necessary to ensure that the tree roots and canopy are protected from damage during the construction processes. The extent of the CEZ is based upon guidance within BS5837:2012 *'Trees in relation to design, demolition and construction – Recommendations'*, and encompasses the Root Protection Area (RPA) and or tree canopy (whichever is the greatest).

The Construction Exclusion Zones are always to be afforded protection and no works that cause compaction of the soil or severance of tree roots, except when undertaken in accordance with the guidance provided within this document, will be undertaken within any exclusion zone.

The exclusion zones are to be defined on site throughout the course of the development using protective barriers based upon guidance within BS5837:2012 *'Trees in relation to design, demolition and construction – Recommendations'*.

5.4 PROTECTIVE BARRIERS

Protective barriers will be erected prior to the commencement of any site works (e.g., before any materials or machinery are brought on site or the stripping of topsoil commences) and signs will be installed on the protective barriers to inform site contractors of the importance of the tree protection measures in accordance with the Conditions agreed as part of the planning consent for the site (Town and Country Planning Act 1990).

The protective barriers are to be constructed in accordance with the specification detailed in BS5837:2012 *'Trees in relation to design, demolition and construction – Recommendations'*. Fencing should be erected prior to site occupation and inspected by the Project Arboriculturist to ensure they are complete, robust, and sufficiently protect the CEZ for the retained trees present on site. Any variation to the specification of the protective barrier will be agreed with the Local Planning Authority Arboricultural Officer.

The proposed location of the protective barriers is identified on the Tree Protection Plan attached to this Arboricultural Method Statement. The Local Planning Authority will be notified in writing once this inspection has been undertaken (if required).

It should be noted that due to the need to provide space for deliveries to site and the presence of existing hard surfacing within the Root Protection Area of T6 the protective barrier identified on the Tree Protection Plan does not completely encompass the RPA. The RPA outside of the protective barrier will be protected from compaction by the existing hard surfacing.

The barriers will remain in place until completion of the construction phase of the development. Barriers will only be removed in agreement with the Project Arboriculturist or Local Planning Authority once the main construction works have been completed and prior to soft landscaping works. Other than works detailed within this method statement or approved in writing by the Local Planning Authority no works, including storage or dumping of materials, shall take place within the Construction Exclusion Zone as defined by the protective barrier.

5.5 ACCESS DETAILS

Pedestrian and construction traffic will access the site via the existing road and footpath network. Tree protection barriers will be installed adjacent to the proposed access point to protect nearby trees from potential impact damage and to prevent vehicles from accidentally encroaching onto areas of unprotected ground.

5.6 SITE COMPOUND, MATERIALS STORAGE AND CONTRACTORS' CAR PARKING

It is understood that the site compound and materials storage area will be located at the front of the existing property. Contractors' parking will likely need to be provided off site as there is limited space at the front of the property.

The location of the site compound and materials storage area are shown on the Tree Protection Plan, found in Section 7 of this report.

5.7 INFRASTRUCTURE REQUIREMENTS

It is understood that services will connect to the existing services on site and will be situated outside of the RPAs of retained trees.

If any underground services are to be installed within the RPA of a retained tree, then the Project Arboriculturist will be consulted. The methodology for the installation, maintenance or removal of any services within a RPA will be in accordance with NJUG Volume 4 *'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees'*. This will include hand-dug "broken" trenches to ensure that maximum protection is given to tree roots.

5.8 DEMOLITION, HARD SURFACE REMOVAL & REMOVAL OF STRUCTURES

The removal of the existing shed and the demolition of the existing dwelling will require works adjacent to retained trees. To minimise the potential for harm to the existing trees as a result of the demolition works all machinery involved in the demolition or removal of the buildings will work from land outside of the

Construction Exclusion Zone and a 'top-down, pull-back' demolition methodology will be followed to prevent the potential for accidental damage to trees. A dust suppression unit, which emits a fine water spray, may be utilised during the works but should be sited outside of the Construction Exclusion Zone.

5.9 NEW HARD SURFACES

No new hard surfaces are to be constructed within the RPA of any retained tree.

5.10 SITE GRADIENTS

No alterations of soil level will take place within the Construction Exclusion Zones as defined by the protective barriers to prevent damage to retained trees.

If site gradient alterations within the RPA of any retained tree are required, then the Project Arboriculturist will be consulted for advice.

5.11 CONSTRUCTION OF STRUCTURES WITHIN THE RPA/CONSTRUCTION EXCLUSION ZONE

The following details will be adhered to for the construction of the proposed shed within the Root Protection Areas of retained trees.

Proposed Shed
The proposed shed is situated within the RPAs of T1 and T2. The portion of the RPAs affected is comparatively small and due to the lightweight nature of the structure no significant excavation will be required the construction of the shed. As such, no protection measures other than the use of protective barriers will be required for the works.

5.12 SOFT LANDSCAPING

All soft landscaping within the exclusion zone will be undertaken by hand and in accordance with BS8545:2012 *Trees: from nursery to independence in the landscape- Recommendations*.

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. A propriety mulch will be applied to a depth of 50mm to 100mm to inhibit weed and growth, reduce groundwater evaporation during the drier months, resist and mitigate soil compaction, reduce maintenance requirements and act as a slow-release fertilizer.

5.13 USE OF HERBICIDES

Any herbicide used during the development works shall be systemic, spot applied, and mixed according to manufacturers' recommendations.

5.14 ON SITE MONITORING REGIME & CONTACT DETAILS

All operations will be monitored by the main contractor. The main contractor will ensure that all works within this document are followed (this will be built into the contract specification).

If any issues arise in relation to the retained trees the Project Arboriculturist will be contacted for advice. The Project Arboriculturist for the development is:

Name: Stefan Harrison
Position: Arboricultural Consultant
Company: Middlemarch Environmental Ltd
Address: Triumph House, Birmingham Road, Coventry, CV5 9AZ
Telephone: 01676 525 880
Mobile: 07538 111 990
Email: Stefan.harrison@middlemarch-environmental.com

Induction and Personnel Awareness
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
A pre-commencement site meeting will be arranged between the contractor, Project Arboriculturist, and any other interested party. During this meeting, all outstanding items will be finalised, and these will be communicated to the Local Planning Authority upon request.

An inspection audit will be undertaken by the Project Arboriculturist once the protective measures have been installed 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.

5.15 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 tree on site. If any issues arise in relation to the retained trees the Project Arboriculturist will be contacted for advice.

5.16 RESPONSIBILITIES

It will be 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 works must be carried out in accordance with BS3998:2010 *Tree Work - Recommendations*.

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.

5.17 GENERAL PRECAUTIONS

No materials that are likely to have an adverse effect on tree health such as fuel oil, bitumen or cement will be stored or discharged within 10.0 m of any retained tree.

6. REFERENCES AND BIBLIOGRAPHY

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

British Standards Institution. (2010). *British Standard 3998:2010, Trees work– Recommendations.* British Standards Institution, London.

British Standards Institution. (2014). *British Standard* 8545:2012 *Trees: from nursery to independence in the landscape- Recommendations, London.*

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

National House Building Council. (2020). *NHBC Standards 2020: Chapter 4.2 - Building Near Trees*. NHBC, Milton Keynes.

NJUG Volume 4 *'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees'*

7. DRAWINGS & APPENDICES

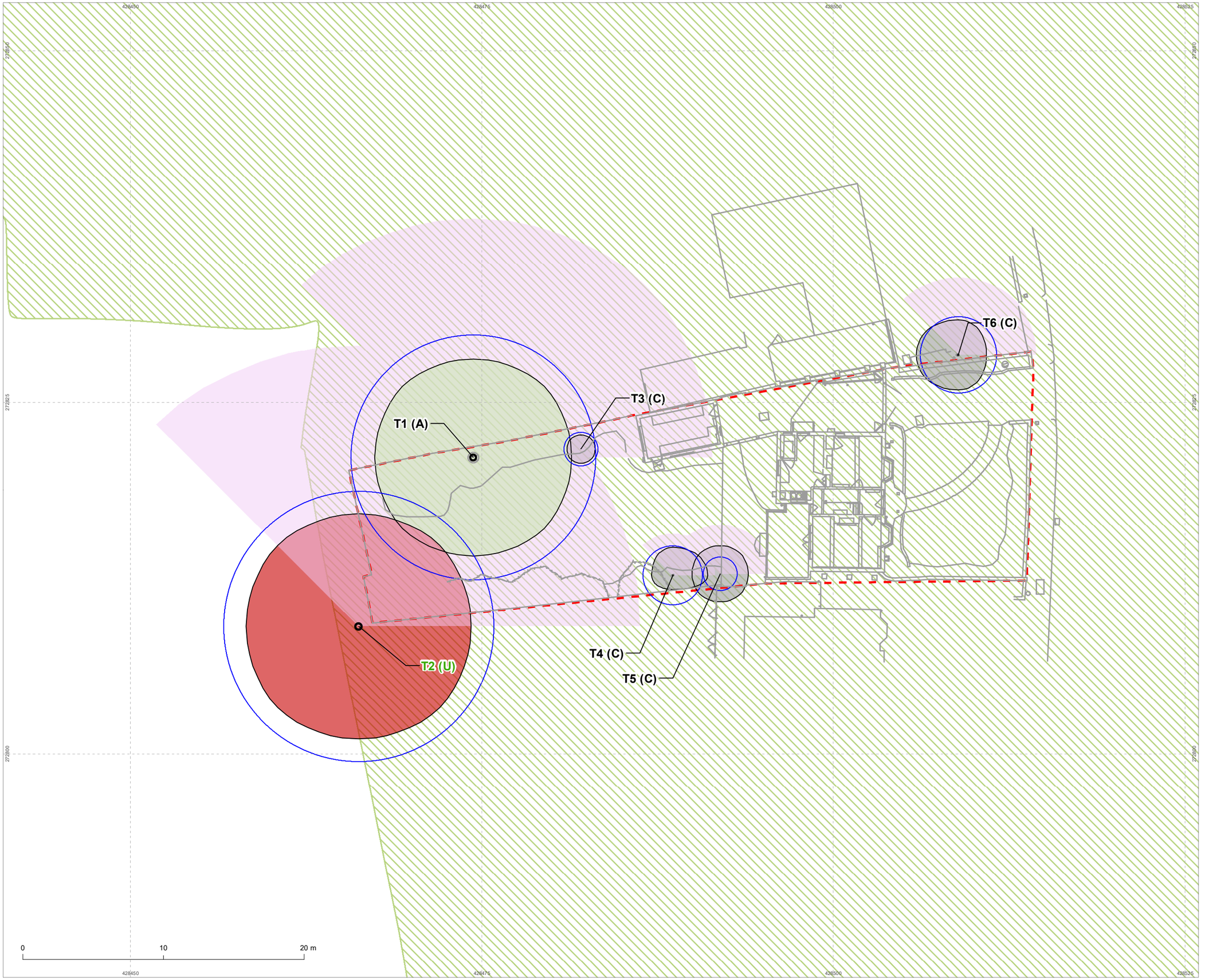
Drawing Number C156179-01-01 – Tree Survey Plan

Drawing Number C156179-02-01 – Tree Retention Plan

Drawing Number C156179-02-02 – Tree Protection Plan

Appendix A: Tree Schedule

Appendix B: Tree Protection Fencing Sign



C156179-01-01

Legend

- Tree location and stem diameter
- Root Protection Area
- Current canopy extent
- Indicative tree shadow
- Category A
- Category C
- Category U
- Kenilworth conservation area
- Site boundary
- 00 — Tree subject to Tree Preservation Order (TPO)

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

NOTES

All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with Project Arboriculturalist. Drawing to be read in conjunction with Preliminary Arboricultural Assessment and Tree Schedule. Drawing has been produced in colour and is based on digital informaton in .dwg format, aerial images and/or GPS location where appropriate. 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.

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

SOME TREES 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.

N

Project
43 Fieldgate Lane, Kenilworth, Warwickshire

Drawing
Tree Survey Plan

Client
Jonathan Holland Architects

Drawing Number	Revision
C156179-01-01	00
Scale @ A3	Date
1:250	September 2021
Approved By	Drawn By
SKH	JR

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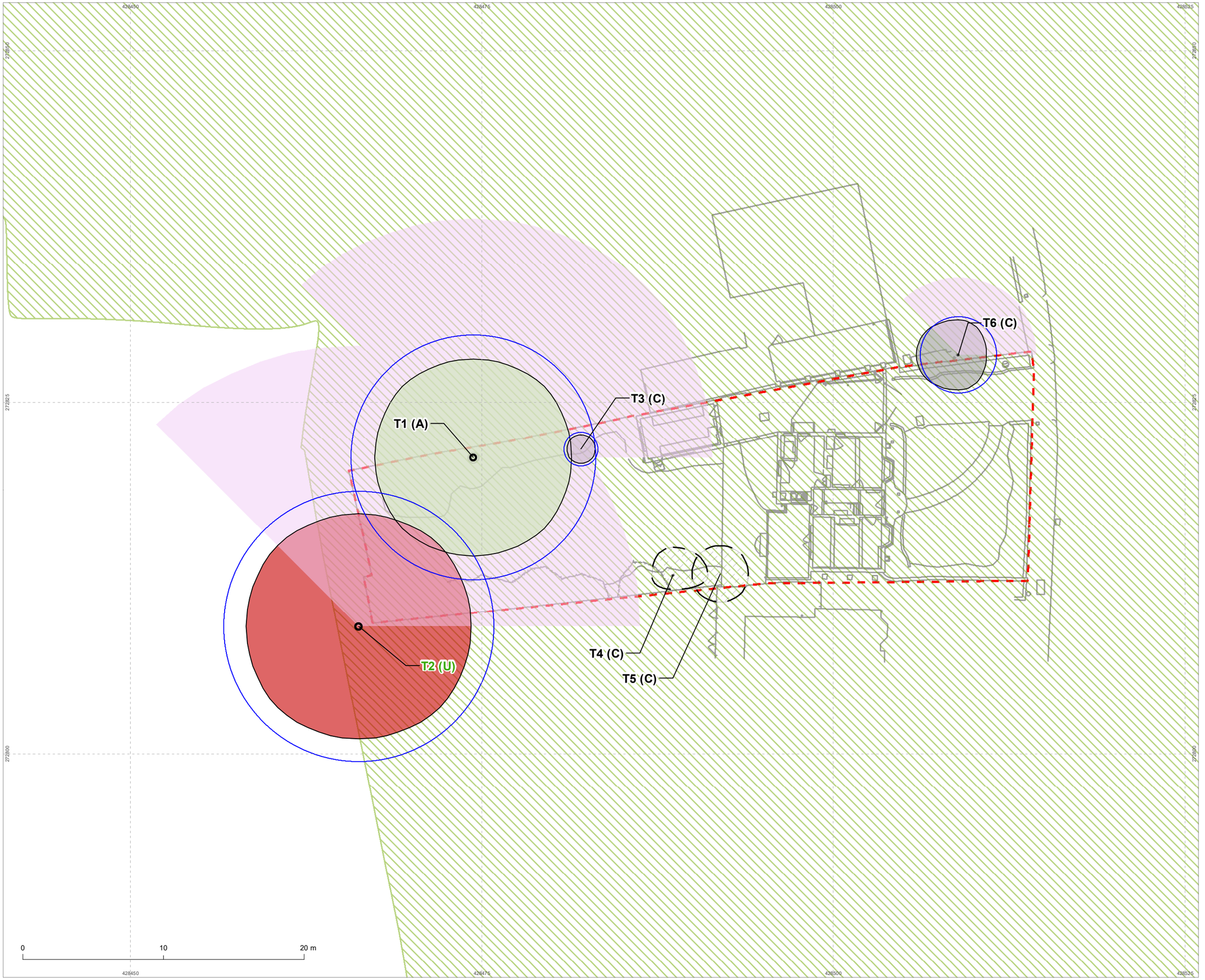

C156179-02-01

Legend

- Tree location and stem diameter
- Root Protection Area
- Current canopy - tree to be removed
- Current canopy - tree to be retained
- Indicative tree shadow
- Category A
- Category C
- Category C tree to be removed
- Category U
- Kenilworth conservation area
- Site boundary
- 00 — Tree subject to Tree Preservation Order (TPO)

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

NOTES

All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with Project Arboriculturalist. Drawing to be read in conjunction with Preliminary Arboricultural Assessment and Tree Schedule. Drawing has been produced in colour and is based on digital informaton in .dwg format, aerial images and/or GPS location where appropriate. 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.

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

SOME TREES 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.

N

Project
43 Fieldgate Lane, Kenilworth, Warwickshire

Drawing
Tree Retention Plan

Client
Jonathan Holland Architects

Drawing Number	Revision
C156179-02-01	00
Scale @ A3	Date
1:250	October 2021
Approved By	Drawn By
SKH	JR

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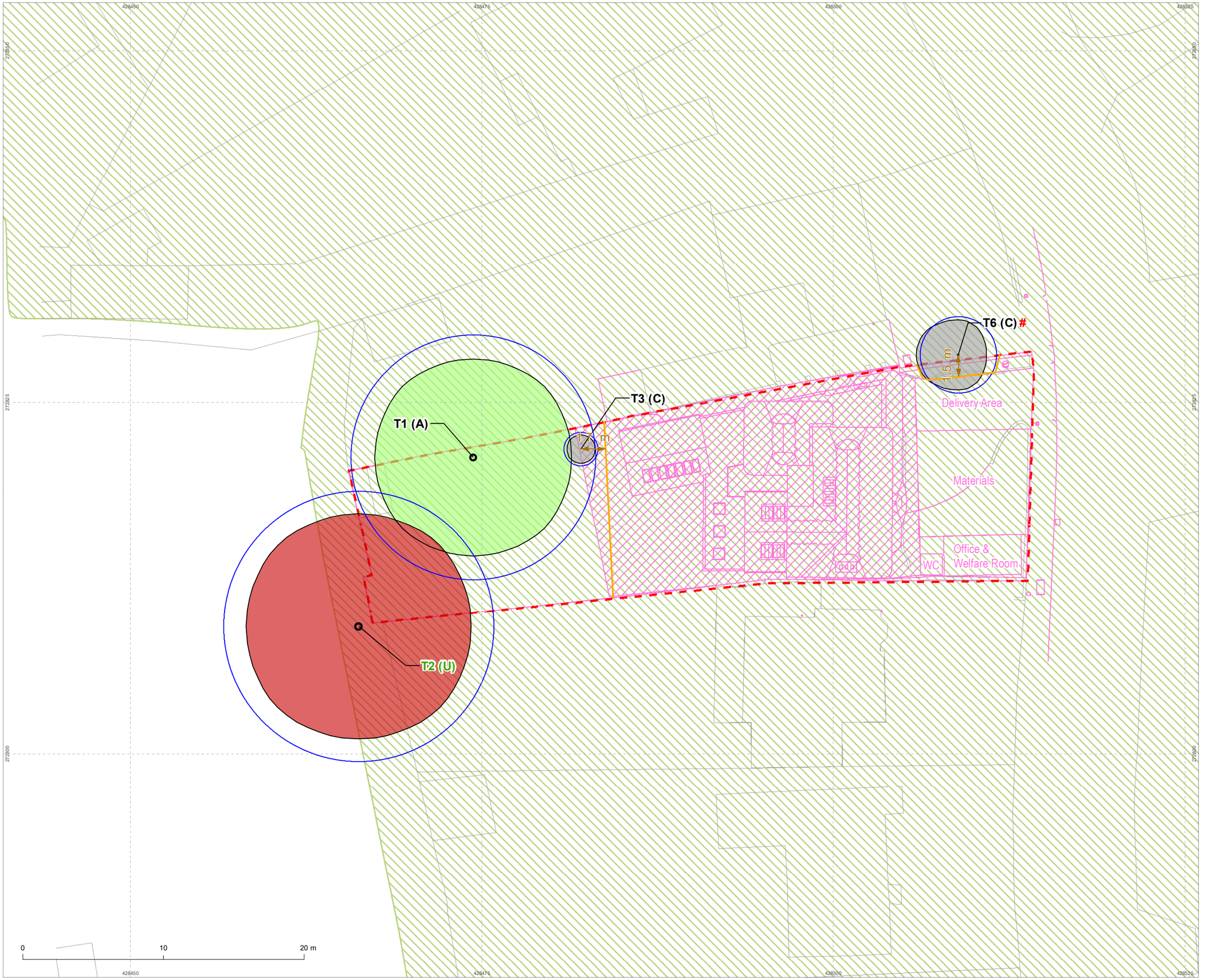

C156179-02-02

Legend

- Tree location and stem diameter
- Category A
- Category C
- Category U
- Current canopy - tree to be retained
- Root Protection Area
- Tree Protection Barrier (BS5837: 2012)
- Kenilworth conservation area
- Site boundary
- Proposed site layout

00 Tree subject to Tree Preservation Order (TPO)

\# Tree pruning works required

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Appendix A - Tree Schedule

<table>
<tr><th>Measurements</th><th>Age Class</th><th>Overall Condition</th><th>Root Protection Area (RPA)</th></tr>
<tr><td>Height - estimated from ground level (m).</td><td>YNG: Young trees up to ten years of age.</td><td>G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention.</td><td rowspan="4">• The RPA column gives the required area (m²).
• The RPA Radius column gives the radius (m) of an equivalent circle.
• 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.</td></tr>
<tr><td>Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837.</td><td>SM: Semi-mature, trees less than 1/3 life expectancy.</td><td>F - Fair: Trees with minor, but rectifiable, defects or in the early stages of stress from which it may recover.</td></tr>
<tr><td>Crown - crown spread estimated radially from the main stem (m).</td><td>EM: Early mature, trees 1/3 – 2/3 life expectancy.</td><td>P - Poor: Trees with major structural and/or physiological defects such that it is unlikely the tree will recover in the long term.</td></tr>
<tr><td rowspan="2">Abbreviations
Est - Estimated stem diameter
Avg - Average stem diameter
Max - Maximum stem diameter</td><td>M: Mature trees, over 2/3 life expectancy.</td><td>D - Dead: Trees no longer alive. This could also apply to trees that are dying and unlikely to recover.</td></tr>
<tr><td>OM: Over mature, declining or moribund trees of low vigour.</td><td colspan="2" rowspan="2">In the assessment, of the BS category, particular consideration has been given to the following
• The health, vigour and condition of each tree
• The presence of any structural defects in each tree and its future life expectancy
• The size and form of each tree and its suitability within the context of a proposed development
• The location of each tree relative to existing site features e.g. its screening value or landscape features
• Age class
• Life expectancy</td></tr>
<tr><td></td><td>V: Veteran, tree possessing certain attributes relating to veteran trees.</td></tr>
</table>

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

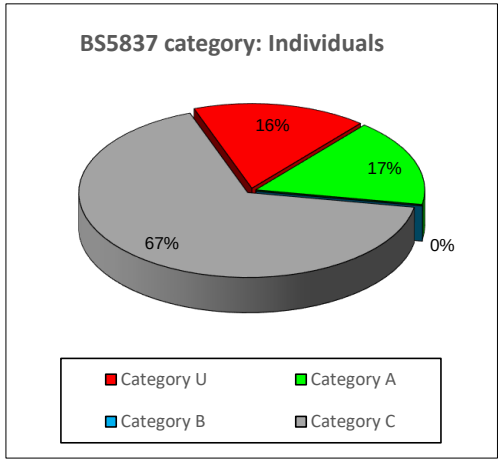
Category U - Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

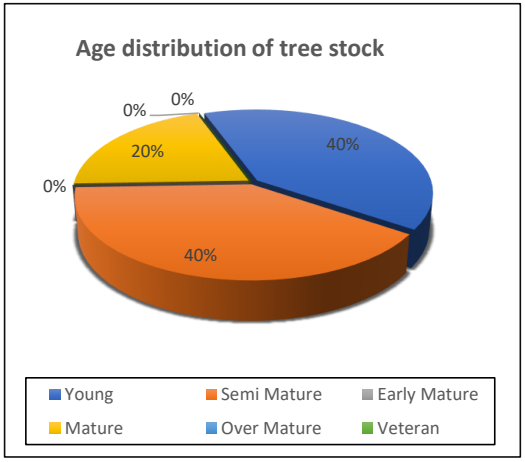
Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

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





Appendix A - Summary

	Individual Trees	Totals	Tree Groups	Totals
Category U	T2	1		0
Category A	T1	1		0
Category B		0		0
Category C	T3, T4, T5, T6	4		0
	Total	6	**Total**	0

	Hedgerows	Totals	Woodlands	Totals
Category U		0		0
Category A		0		0
Category B		0		0
Category C		0		0
	Total	0	**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	Cedar of Lebanon	17.0	4.0	1	720	7.0	7.0	7.0	7.0	EM	G	G	238	8.7	A 1	Included unions observed Branch stubs observed Pruning wounds observed Typical crown form
T2	Ash	20.0	4.0	2	600 500	8.0	8.0	8.0	8.0	M	P	F	290	9.6	U	Branch stubs observed Included unions observed Limited inspection due to access Dense ivy on the stem Limited inspection due to ivy Minor deadwood in the crown Typical crown form Inonotus hispidus fruiting bodies observed in the crown Estimated dimensions due to limited inspection
T3	Dappled willow	2.5	1.0	1	80	1.0	1.0	1.0	1.0	Y	F	F	5	1.2	C 1	Included unions observed Typical crown form
T4	Magnolia	3.0	1.0	3	90 100 80	2.0	2.5	1.0	1.5	SM	F	F	14	2.1	C 1	Branch stubs observed Included unions observed Pruning wounds observed Typical crown form
T5	Dappled willow	3.5	1.0	1	100	2.0	2.0	2.0	2.0	Y	F	F	5	1.2	C 1	Typical crown form Included unions observed
T6	Rowan	5.5	2.0	2	150 150	2.5	2.0	2.5	3.0	SM	F	F	23	2.7	C 1	Hard surfaces within the rooting area Included unions observed Branch stubs observed Typical crown form Pruning wounds observed