THAMES YOUNG MARINERS, RIVERSIDE DRIVE, RICHMOND, GREATER LONDON

ARBORICULTURAL METHOD STATEMENT

A Report to: Pick Everard

Report No: RT-MME-158839-01

Date: August 2022



Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ Tel: 01676 525 880

E-mail: admin@middlemarch-environmental.com Web: www.middlemarch-environmental.com

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	' I lista I ('Amhlatad hi/'		Checked and Approved by:
Final	31/08/2022	Luke Webb BSc (Hons) M Arbor A (Senior Arboricultural Consultant)	Duncan Smith BSc (Hons) M.Arbor.A (Arboricultural Manager)

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.	INT	RODUCTION	. 3
	1.1	PROJECT BACKGROUND	3
	1.2	SITE DESCRIPTION	
	1.3	DEVELOPMENT PROPOSALS	. 3
	1.4	DOCUMENTATION PROVIDED	. 3
2.	ME	THODOLOGY	. 4
	2.1	DESK STUDY	1
	2.2	SURVEY SCOPE	
	2.3	ROOT PROTECTION AREA (RPA)	
	2.4	Tree Schedule	
	2.5	HEDGEROWS	
	2.6	ASSESSMENT LIMITATIONS	
	2.7	CONDITIONS OF TREE SURVEY	
	2.8	Tree Survey Plan	
	2.9	TREE RETENTION PLAN	
	2.10	TREE PROTECTION PLAN	. 6
3.	ST/	ATUTORY PROTECTION	. 7
	3.1	Tree Preservation Order and Conservation Area Designations	. 7
	3.2	PROTECTED SPECIES	. 7
4.	RE:	SULTS SUMMARY	. 8
	4.1	PRELIMINARY ARBORICULTURAL ASSESSMENT	Ω
	4.2	ARBORICULTURAL IMPACT ASSESSMENT	_
	4.2.1	TREE RETENTION AND REMOVAL	
5.	AR	BORICULTURAL METHOD STATEMENT	
		Introduction	
	5.1 5.2	INTRODUCTION TREE PRUNING	
	5.2 5.3	CONSTRUCTION EXCLUSION ZONE	
	5.4	PROTECTIVE BARRIERS	
	5.5	PERMANENT AND TEMPORARY GROUND PROTECTION MEASURES	
	5.6	ACCESS DETAILS	
	5.7	SITE COMPOUND, MATERIALS STORAGE AND CONTRACTORS' CAR PARKING	
	5.8	INFRASTRUCTURE REQUIREMENTS	12
	5.9	DEMOLITION, HARD SURFACE REMOVAL & REMOVAL OF STRUCTURES	
	5.10	New Hard Surfaces	
	5.11	SITE GRADIENTS	
	5.12 5.13	CONSTRUCTION OF STRUCTURES WITHIN THE RPA/CONSTRUCTION EXCLUSION ZONE	
	5.13	USE OF HERBICIDES	
	5.14	ON SITE MONITORING REGIME & CONTACT DETAILS	
	5.16	USE OF SUBCONTRACTORS.	
	5.17	RESPONSIBILITIES	_
	5.18	GENERAL PRECAUTIONS	
6.	RF	FERENCES AND BIBLIOGRAPHY	14
o. 7.		AWINGS & APPENDICES	
-			-

1. INTRODUCTION

1.1 PROJECT BACKGROUND

Middlemarch Environmental Ltd were commissioned by Pick Everard to produce an Arboricultural Method Statement as part of a planning application for redevelopment at Thames Young Mariners, Riverside Drive, Richmond, Greater London. A survey of the trees on site and within influencing distance of the boundaries was undertaken on the 23rd and 25th March 2022 as part of a Preliminary Arboricultural Assessment (PAA) (RT-MME-157100-01), which was completed to identify the existing trees and hedgerows on the site to aid design and avoid unnecessary tree removal.

An Arboricultural Impact Assessment (AIA) (RT-MME-157100-02) was undertaken in accordance with British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations' (hereafter referred to as BS5837). BS5837 sets out a structured assessment methodology to assist in determining which trees would be considered suitable or unsuitable for retention in the context of the proposed development. The Impact Assessment detailed the potential impact that the proposed development will have upon the site's existing tree stock and set out recommendations for the subsequent mitigation or avoidance of impact.

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

1.2 SITE DESCRIPTION

The site under consideration is located off of Richmond Drive, Ordnance Survey Grid Reference TQ 1648 7232.

The location of the trees surveyed can be found on Tree Survey Plan (C157100-01-01). The Tree Retention Plan (C157100-02-01), 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 of an existing building and construction of new buildings, as well as associated soft and hard landscaping which includes a widened access road and enhanced parking facilities.

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
Pick Everard	Landscape Masterplan	PR-200-PEV-XX-XX-DR-L-00200 P05	02/08/2022

Table 1.1: Documentation Provided

2. METHODOLOGY

2.1 DESK STUDY

Consultation with the Local Planning Authority 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 and hedgerows within the site, a full arboricultural survey has been undertaken, assessing the species and status of all trees and hedgerows 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 and hedgerows 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, and hedgerows 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 and hedgerows were assessed and assigned one of the following categories:

- <u>Category U:</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.
- <u>Category B</u>: 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. 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 British Standard 5837:2012.

2.4 TREE SCHEDULE

Appendix A details the individual trees, groups and hedgerows 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 HEDGEROWS

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 or from an ecological perspective.

2.6 ASSESSMENT LIMITATIONS

This survey has been undertaken in accordance with BS5837 recommendations only. Trees under 75mm in diameter 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*.

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

2.7 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.

2.8 TREE SURVEY PLAN

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

2.9 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. The positions of trees and hedgerows and their current crown spread that are to be removed have been shown on the Tree Retention Plan with a dashed outline.

2.10 TREE PROTECTION PLAN

The Tree Protection Plan attached to this report identifies only those trees and hedgerows 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. Further confirmation of tree and hedgerow locations through a topographical survey of the site is recommended to ensure future design accuracy.

3. STATUTORY PROTECTION

3.1 TREE PRESERVATION ORDER AND CONSERVATION AREA DESIGNATIONS

It is understood following consultation with Richmond and Wandsworth Council, that there are no Tree Preservation Orders or Conservation Area designations that would apply to any trees present on, or in close proximity to the assessment site and therefore no statutory constraints would apply to the development in respect of trees.

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 and hedgerows 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

Thirty-six individual trees, nineteen groups of trees and two hedgerows were surveyed as part of the Preliminary Arboricultural Assessment. Trees assessed during the survey are listed as individual trees and groups of 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/ Group/ Hedgerow Reference	
U	T25, T26.	
Α	T21, T22, T24.	
В	T1, T3, T6, T8, T9, T10, T12, T13, T14, T15, T17, T19, T20, T23, T34, G2, G4, G7, G8, G9, G10, G19.	
С	T2, T4, T5, T7, T11, T16, T18, T27, T28, T29, T30, T31, T32, T33, T35, T36, G1, G3, G5, G6, G11, G12, G13, G14, G15, G16, G17, G18, H1, H2.	

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

The 25-acre outdoor activity centre is situated between Richmond and Kingston, alongside the River Thames and comprises a 10-acre lake nestled within a mixture of open green space and tree cover. The site supported a diverse range of planted tree specimens as well as self-seeded and closed-canopy tree cover which offered a range of arboricultural and conservation value to the site.

The site contained three high value English Oak trees located on the southern site boundary. These specimens (T21, T22, T24) were considered noteworthy and as such, Retention Category A trees. All three trees presented good structure and vigour, with only a small number of noted defects which include – minor deadwood, pruning wounds and historic branch stubs.

Fifteen individual trees and seven groups of trees assessed on site exhibited moderate value and were categorised as 'Retention Category B'. These trees presented good retention value due to their arboricultural and landscape qualities which are likely to continue for at least 20 years. Tree groups G7 and G10 were particularly prominent as together they provide tangible arboricultural and cultural value which is clearly visible through the presence of a sustainable and well-managed forest school located within these areas. Another stand-out specimen which delivered high amenity value to the site was a mature Lombardy Poplar (*Populus nigra 'italica'*) which was visible from almost any part of the site.

Two trees (T25, T26) identified during the survey were considered to be unsuitable to retain due to the presence of a combination of major defects as well as their reduced remaining life expectancy of less than 10 years. Therefore, these trees – a mature crack willow (*Salix fragilis*) and a mature sycamore (*Acer pseudoplatanus*), which were both located along the Northern site boundary were categorised as 'U'.

The remaining trees, groups of trees and hedgerows that were identified within the survey (See Table 4.1) were all considered to present a low retention value and designated Retention Category C. These trees were broadly spread across the site and either exhibited low quality due to a combination of defects or their juvenility. Moreover, they were deemed to provide little beneficial impact to the site with an estimated remaining contribution timescale of approximately ten to twenty years.

4.2 ARBORICULTURAL IMPACT ASSESSMENT

Several trees require removal as part of the approved planning application. Trees to be removed are identified on the Tree Retention Plan (C157100-02-01) and listed in Table 4.2. All tree removal should be undertaken prior to the installation of tree protection measures and site occupation.

4.2.1 TREE RETENTION AND REMOVAL

The proposed development has been designed so that, where possible, existing trees are retained, however, to accommodate the proposed development, it will be necessary to partially remove one group.

The trees to be removed are detailed within Table 4.2 and are identified on the Tree Retention Plan, attached to this report. All trees, groups and hedgerows not featured within Table 4.2 are to be retained within the proposed development.

Group Reference	Species	Retention Category	Reason for Removal				
G8* Bird cherry Wild cherry		В	Entrance widening.				
<u>Key</u>							
*: Partial ren	*: Partial removal of trees within group.						

Table 4.2: Tree Removal

The proposed development will require the partial removal of one group (G8) to facilitate the widening of the existing entrance, this group was located behind an outgrown hedgerow and its loss is unlikely to result in an impact to the visual amenity of Richmond Drive. The partial loss of tree group G8 should not cause objection as new planting and management of the site can provide suitable mitigation.

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

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.

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).

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*.

Tree/ Group/ Hedgerow Reference	Species	BS5837 Category	Pruning Works
T21	Oak	А	Tie back any lower branches if applicable to prevent damage from construction access. Only reduce crown to provide sufficient access where tying back of branches is ineffective. Lower canopy to the north can be raised to a maximum of 5.50m to prevent damage from construction access only if necessary.

Table 5.1: Trees to be Pruned

The extent of pruning required will be identified 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 where 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).

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 PERMANENT AND TEMPORARY GROUND PROTECTION MEASURES

The current design plans do not significantly impact any retained trees onsite and so at this stage there are no ground protection measures that are recommended. Should the proposed plans be revised then an assessment should be conducted for the requirement of any permanent or temporary ground protection. If it is required then the project arboriculturist should be consulted and the installation must be completed following Structural Engineers recommendations so that it is capable of supporting the expected loads and avoid permanent compaction and damage to the soil.

If further temporary access is required to the exclusion zone or the RPA of a retained tree, then such access will only be gained after consultation with Project Arboriculturist and/or the Local Planning Authority (see contact details).

5.6 ACCESS DETAILS

It is understood that construction access to the site will be provided through the existing access from Richmond Drive and it may therefore be necessary to undertake access facilitation pruning works to low-hanging branches to minimise the potential for vehicular impact.

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.

5.7 SITE COMPOUND, MATERIALS STORAGE AND CONTRACTORS' CAR 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 site compound outside of Construction Exclusion Zones and its establishment is unlikely to result in harm to retained trees.

Material deliveries to the site will utilise the existing entrance off Richmond Drive. Retained trees will be protected from harm by the prior installation of tree protection barriers and the completion of access facilitation pruning works (if required).

Materials storage and contractor's car parking is to be provided within the site compound which will be outside of the CEZ and will therefore not cause harm to retained trees. Should the demand for car parking exceed the available area alternative offsite parking arrangements will be made.

5.8 INFRASTRUCTURE REQUIREMENTS

Any underground services will be located outside of Root Protection Areas of retained trees. Connections will be made into existing services outside of the Construction Exclusion Zones surrounding 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.

5.9 DEMOLITION, HARD SURFACE REMOVAL & REMOVAL OF STRUCTURES

T1 is located close to demolition works. However, these works are not located within its RPA and as such no direct impact is likely. This tree should be protected during demolition works and Tree Protection Barriers should be erected prior to undertaking these works.

There are no other existing buildings, structures or hard surfaces present on site that require demolition or removal that are within the Construction Exclusion Zone defined by protective fencing, or within the Root Protection Areas (RPAs) of retained trees.

5.10 New Hard Surfaces

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

5.11 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.

5.12 CONSTRUCTION OF STRUCTURES WITHIN THE RPA/CONSTRUCTION EXCLUSION ZONE

The current plans show that there are no proposed construction works within the RPA's of any retained trees, this includes excavation of foundation trenches, erection of fencing and the construction of boundary walls within the Root Protection Areas of retained trees.

5.13 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.

5.14 USE OF HERBICIDES

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

5.15 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: Luke Webb

Position: Senior Arboricultural Consultant Company: Middlemarch Environmental Ltd

Address: Triumph House, Birmingham Road, Coventry, CV5 9AZ

Telephone: 01676 525 880 Mobile: 07485 903868

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.

Works Requiring Arboricultural Supervision

Based on the proposed plans there are currently no aspects of the development that will require supervision of the Project Arboriculturist.

5.16 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.

5.17 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.

5.18 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 metres 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

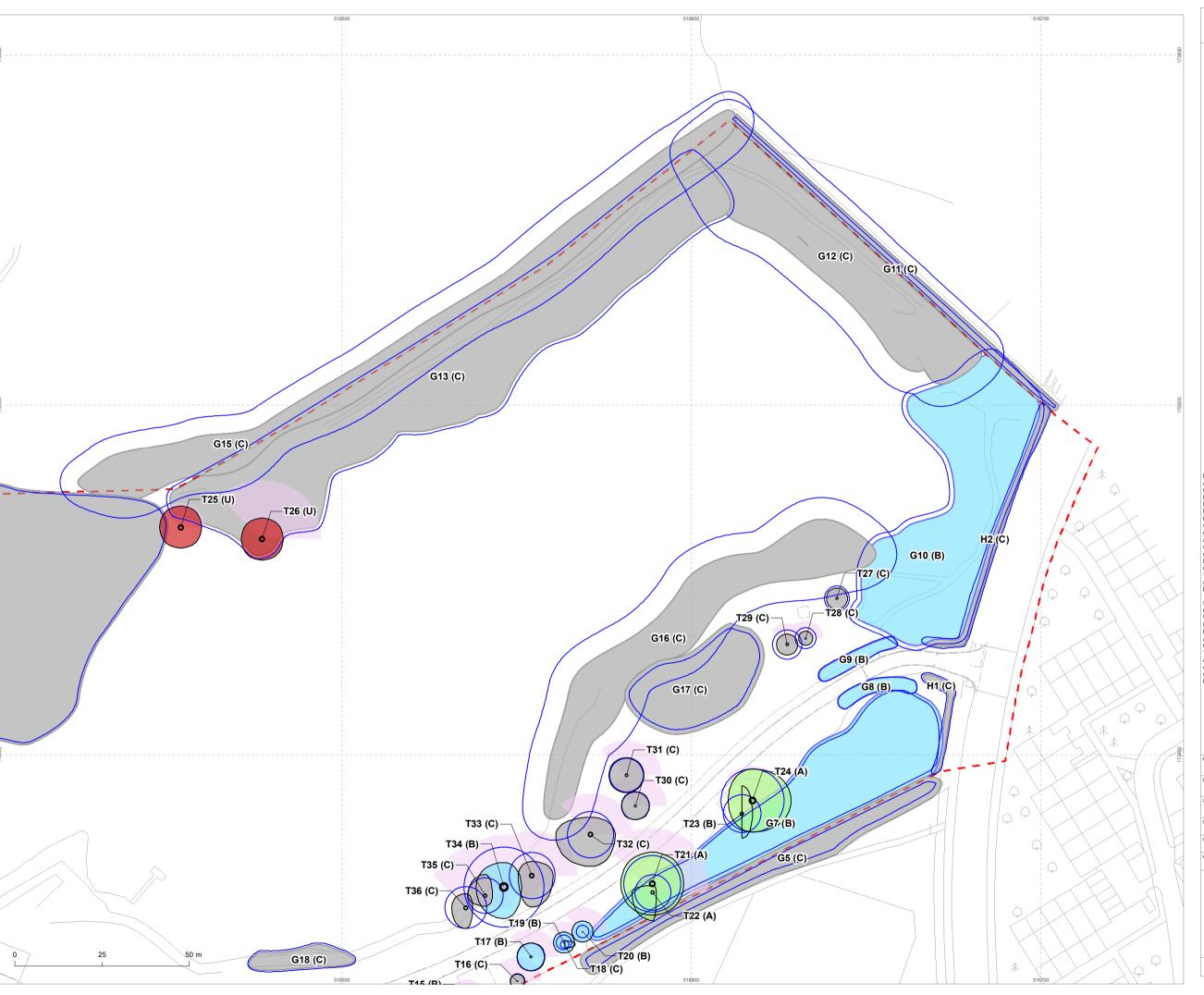
Drawing Number C157100-01-01- Tree Survey Plan

Drawing Number C157100-02-01 – Tree Retention Plan

Drawing Number C158839-01-01- Tree Protection Plan

Appendix A: Tree Schedule

Appendix B: Tree Protection Fencing Sign



C157100-01-01

Legend

• Tree location and stem diameter

Current canopy extent

- Root Protection Area

Category A Category B

Category C

Category U

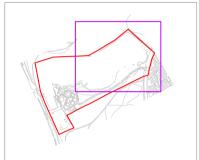
Indicative tree shadow

Site boundary

T - Tree H - Hedgerow

G - Tree group

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.

Futther 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 Arboriculturallst 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.

CONSENT.

This drawing is the property of Middlemarch Environmental Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of Middlemarch Environmental Ltd. Middlemarch Environmental Ltd. Middlemarch Environmental Ltd.

Thames Young Mariners,

Tree Survey Plan - Page 1

Pick Everard C157100-01-01 00 1:1000 March 2022



MIDDLEMARCH



C157100-01-01

Legend

• Tree location and stem diameter

Current canopy extent

Root Protection Area

Category A

Category B

Category C

Category U Indicative tree shadow

Site boundary

T - Tree H - Hedgerow

G - Tree group

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.

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.

This drawing is the property of Middlemarch Environmental Ltd.

CONSENT.
This drawing is the property of Middlemarch Environmental Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of Middlemarch Environmental Ltd. Middlemarch Environmental Ltd.

Thames Young Mariners, Riverside Drive, Richmond

Tree Survey Plan - Page 2

Pick Everard C157100-01-01 00

1:1000 March 2022 LW CD





C157100-01-01

Legend

• Tree location and stem diameter

- Current canopy extent

Root Protection Area

Category A

Category B Category C

Category U

Indicative tree shadow

Site boundary

T - Tree H - Hedgerow

G - Tree group

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.

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.

This drawing is the property of Middlemarch Environmental Ltd.

CONSENT.

This drawing is the property of Middlemarch Environmental Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of Middlemarch Environmental Ltd. Middlemarch Environmental Ltd. Middlemarch Environmental Ltd.

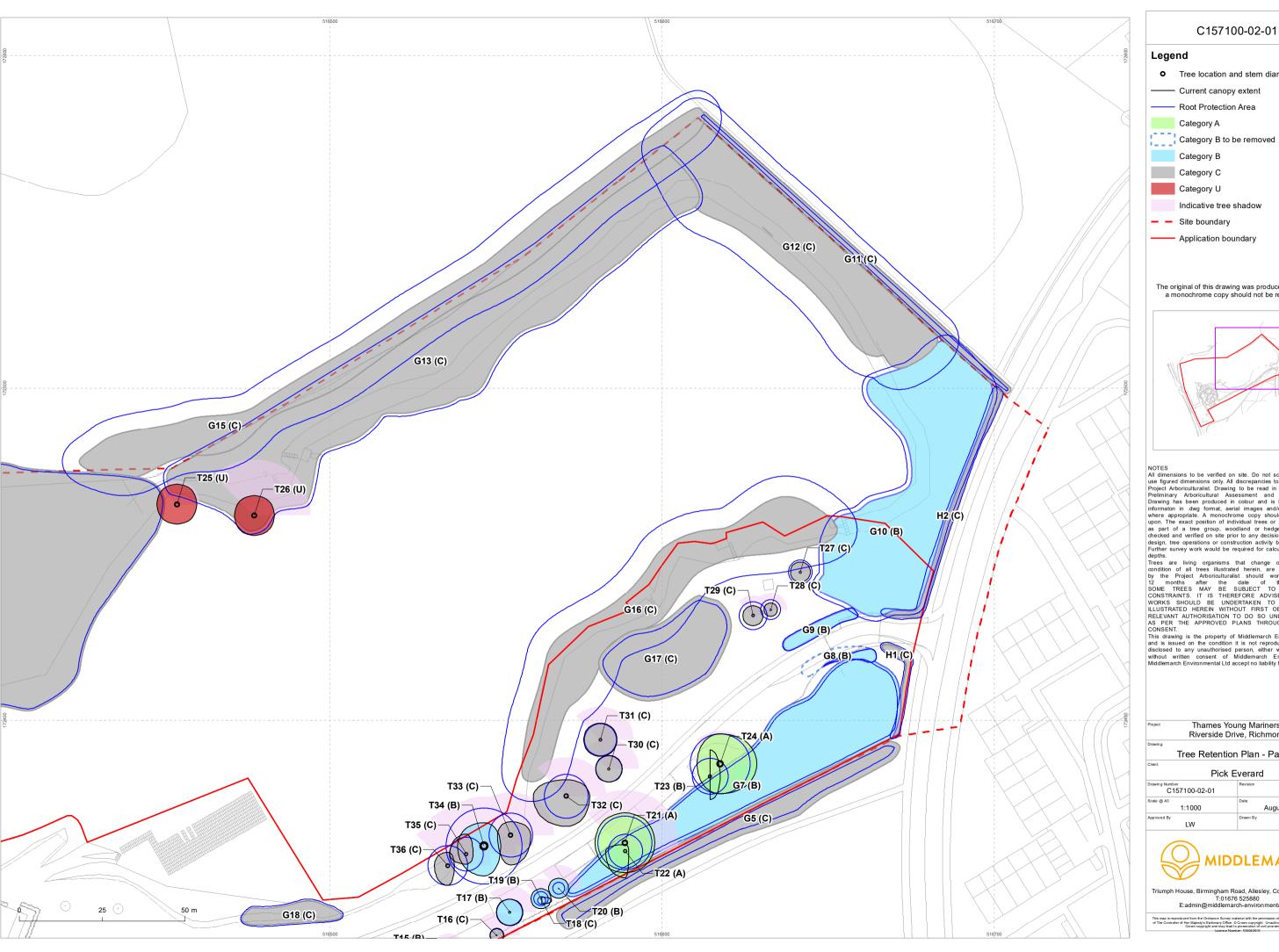
Thames Young Mariners,

Tree Survey Plan - Page 3

Pick Everard

C157100-01-01 00 March 2022 LW





C157100-02-01

Legend

• Tree location and stem diameter

Current canopy extent

Root Protection Area

Category A

Category B

Category C

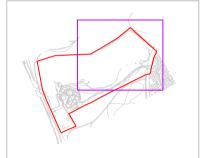
Category U

Site boundary

Application boundary

Indicative tree shadow

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 werlfied on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation

design, free operations of construction accuracy being uncertaken. 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.

This drawing is the property of Middlemarch Environmental Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of Middlemarch Environmental Ltd. Middlemarch Environmental Ltd.

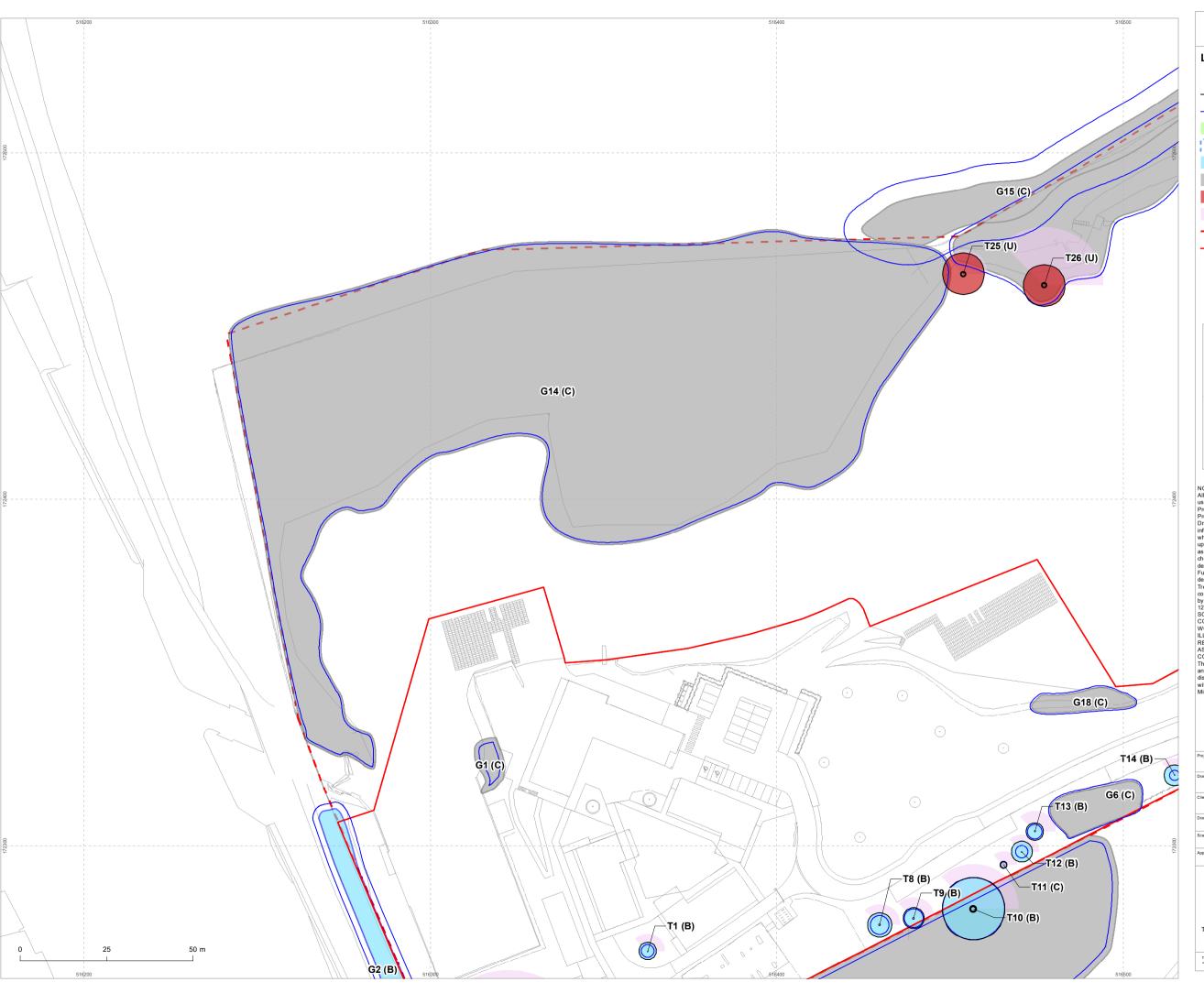
Thames Young Mariners, Riverside Drive, Richmond

Tree Retention Plan - Page 1

Pick Everard

C157100-02-01 00 1:1000 August 2022 GT LW





C157100-02-01

Legend

• Tree location and stem diameter

Current canopy extent

Root Protection Area

Category A

Category B to be removed Category B

Category C Category U

Indicative tree shadow

Site boundary

- Application boundary

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 Arboriculturals. Drawing to be read in conjunction with Preliminary Arboricultural Assessment and Tree Schedule. Drawing has been produced in colour and is based on digital information 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.

design, free operations of construction accuracy being uncertaken. 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.

This drawing is the property of Middlemarch Environmental Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of Middlemarch Environmental Ltd. Middlemarch Environmental Ltd.

Thames Young Mariners, Riverside Drive, Richmond

Tree Retention Plan - Page 2

Pick Everard

C157100-02-01 00 August 2022 1:1000 LW GT



Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ

T:01676 525880 E:admin@middlemarch-environmental.com



C157100-02-01

Legend

• Tree location and stem diameter

Current canopy extent

Root Protection Area

Category A

Category B to be removed

Category B

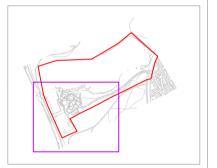
Category C Category U

Indicative tree shadow

Site boundary

- Application boundary

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 Arboriculturals. Drawing to be read in conjunction with Preliminary Arboricultural Assessment and Tree Schedule. Drawing has been produced in colour and is based on digital information 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.

design, tiee operations of 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 THROUP PLANNING CONSENT.

This drawing is the property of Middlemarch Environmental Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of Middlemarch Environmental Ltd. Middlemarch Environmental Ltd.

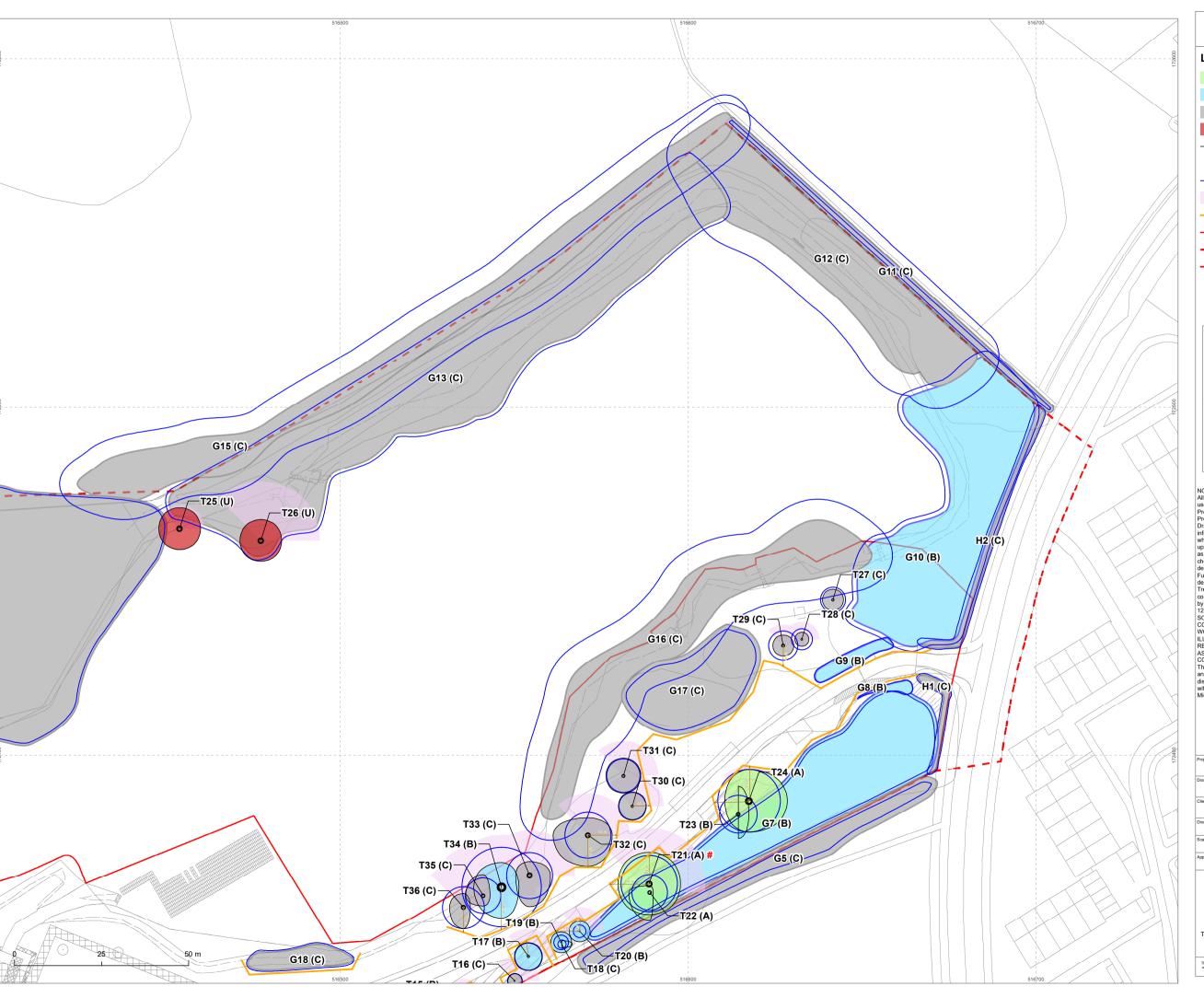
Thames Young Mariners, Riverside Drive, Richmond

Tree Retention Plan - Page 3

Pick Everard

C157100-02-01 00 August 2022 LW





C158839-01-01

Legend

Category A

Category B

Category C

Category U

 Current canopy extent Tree location and stem diameter

Root Protection Area

Indicative tree shadow

Tree protection barrier BS5837:2012

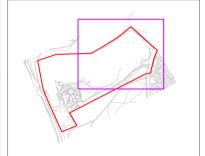
Application boundary

Site boundary

- Application boundary

Tree pruning works required

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.

Gespir, liee operations of constitution 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.

This drawing is the property of Middlemarch Environmental Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of Middlemarch Environmental Ltd. Middlemarch Environmental Ltd.

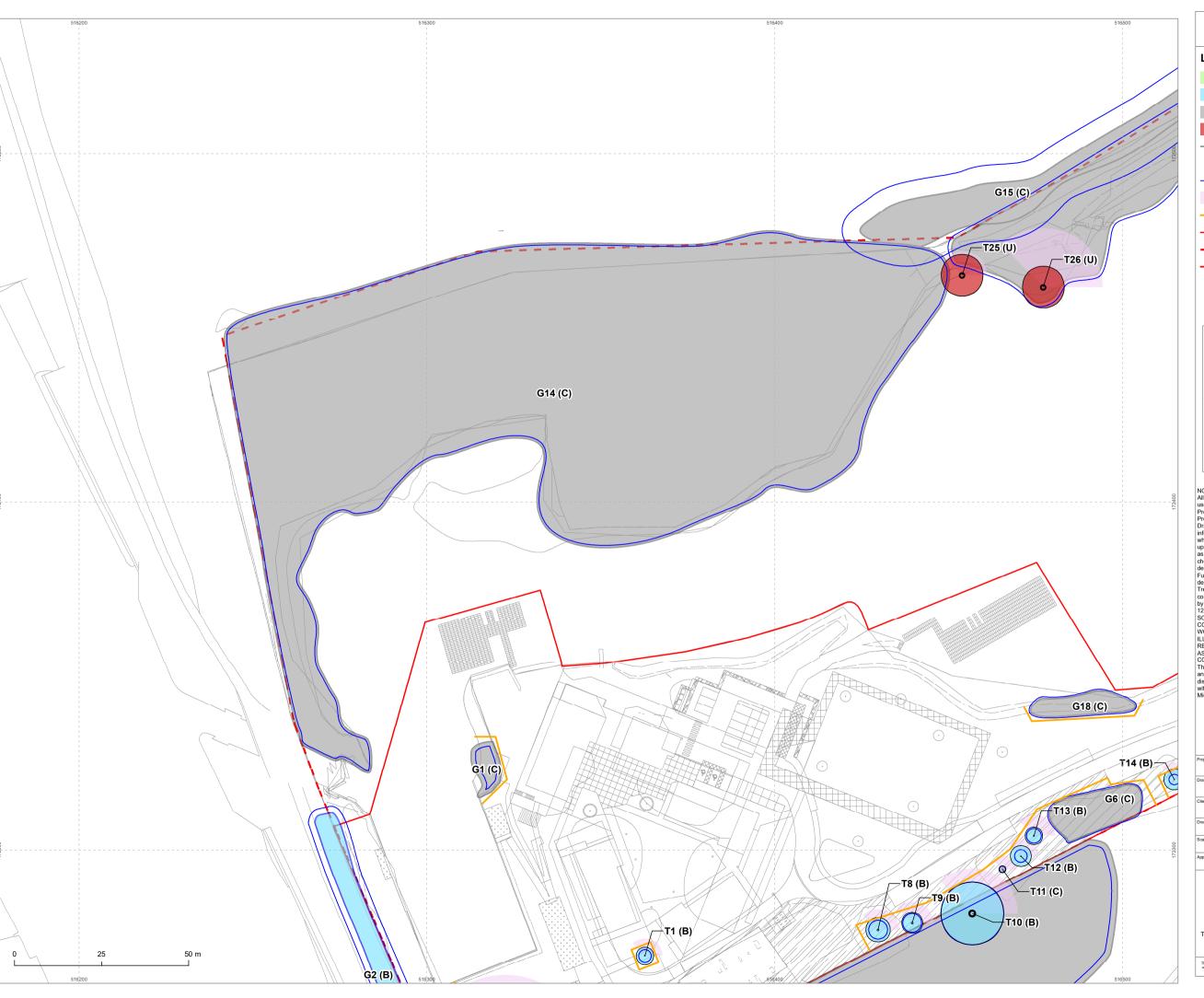
Thames Young Mariners, Riverside Drive, Richmond

Tree Protection Plan - Page 1

Diale December	
Pick Everard	

1 101	i ion Evoluid			
Drawing Number	Revision			
C158839-01-01	00			
Scale @ A3	Date			
1:1000	August 2022			
Approved By	Drawn By			
LW	l vo			





C158839-01-01

Legend

Category A



Category C

Category U

- Current canopy extent • Tree location and stem diameter

Root Protection Area

Indicative tree shadow

Tree protection barrier BS5837:2012

Application boundary

Site boundary

- Application boundary

Tree pruning works required

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.

Gespit, nee operations of constitutions activity being intertainers. 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.

This drawing is the property of Middlemarch Environmental Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of Middlemarch Environmental Ltd. Middlemarch Environmental Ltd.

Thames Young Mariners, Riverside Drive, Richmond

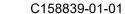
Tree Protection Plan - Page 2

Pick Everard

Drawing Number	Revision
C158839-01-01	00
Scale @ A3	Date
1:1000	August 2022
Approved By	Drawn By
LW	VO







Legend Category A

Category B

Category C Category U

- Current canopy extent

Tree location and stem diameter

Root Protection Area

Indicative tree shadow

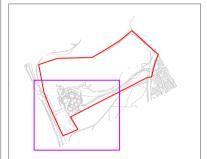
Tree protection barrier BS5837:2012 Application boundary

Site boundary

Application boundary

Tree pruning works required

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.

Gespit, nee operations of constitutions activity being intertainers. 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.

This drawing is the property of Middlemarch Environmental Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of Middlemarch Environmental Ltd. Middlemarch Environmental Ltd.

Thames Young Mariners, Riverside Drive, Richmond

Tree Protection Plan - Page 3

Pick Everard C158839-01-01 00 August 2022



VO

LW

Appendix A - Tree Schedule

Measurements	Age Class	Overall Condition	Root Protection Area (RPA)	
Height - estimated from ground level (m).	YNG: Young trees up to ten years of age.	G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention.	 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 	
Stem Dia Diameter measured (mm) in accordance with Annex C of the BS5837.	SM: Semi-mature, trees less than 1/3 life expectancy.	F - Fair: Trees with minor, but rectifiable, defects or in the early stages of stress from which it may recover.	5837: 2012 and is indicative of the required rooting area in order for a tree to be retained.	
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 Est - Estimated stem diameter Avg - Average stem diameter Max - Maximum stem diameter	M: Mature trees, over 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 • 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		
	V: Veteran, tree possessing certain attributes relating to veteran trees.	Age class Life expectancy		

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.

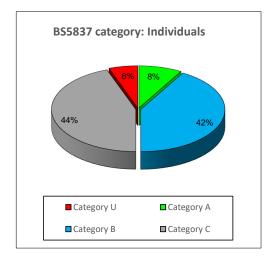
Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

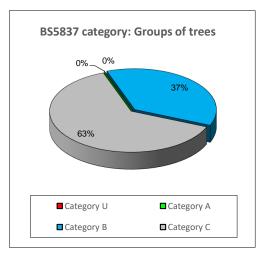
Category B - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

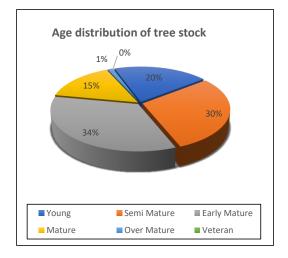
Category C - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

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	T25, T26	2		0
Category A	T21, T22, T24	3		0
Category B	T1, T3, T6, T8, T9, T10, T12, T13, T14, T15, T17, T19, T20, T23, T34	15	G2, G4, G7, G8, G9, G10, G19	7
Category C	y T2, T4, T5, T7, T11, T16, T18, T27, T28, T29, T30, T31, T32, T33, T35, T36		G1, G3, G5, G6, G11, G12, G13, G14, G15, G16, G17, G18	12
	Total	36	Total	19

	Hedgerows		Totals	Woodlands	Totals
Category U			0		0
Category A			0		0
Category B			0		0
Category C	H1, H2		2		0
		Total	2	Tota	0

Tree		Height	Crown	No. of	Stem	C	Crown	Radiu	ıs	Age			RPA	RPA		
No	Species	(m)	Clearance (m)	Stems	Dia. (mm)	N	Е	s	w	Class	Structure	Vigour	(m)	Radius (m)	Cat	Comments
T1	Indian horse chestnut	5.0	1.5	1	140	2.5	2.5	2.5	2.5	SM	G	G	10	1.8	В1	Basal epicormic growth observed Typical crown form No obvious defects observed
T2	Sycamore	5.0	1.0	11	170	2.0	2.0	2.0	2.0	Y	Р	G	14	2.1	C 1	Regeneration growth from felled stump
Т3	Lombardy poplar	23.0	2.0	1	760	3.0	3.0	3.0	3.0	М	G	G	272	9.3	B 1	Minor deadwood in the crown Typical crown form No obvious defects observed Area of included bark observed
T4	Hawthorn	5.0	2.0	1	320	3.0	3.0	3.0	3.0	М	F	G	48	3.9	C 1	No obvious defects observed Branch stubs observed Typical crown form
T5	Hawthorn	6.0	2.0	2	300 170	3.0	3.0	3.0	3.0	М	F	G	55	4.2	C 1	Branch stubs observed Pruning wounds observed Minor deadwood in the crown Major deadwood in the crown Exposed heartwood
T6	Hybrid black poplar	21.0	5.0	1	750	8.0	8.0	8.0	8.0	М	F	G	255	9.0	B 1	Branch stubs observed Branch socket cavity observed Minor deadwood in the crown Major deadwood in the crown Typical crown form Pruning wounds observed
T7	Sycamore	12.0	2.0	1	410	5.0	5.0	5.0	5.0	EM	F	F	81	5.1	C 1	Apical dieback Branch stubs observed Minor deadwood in the crown
T8	Field maple	6.0	1.8	1	220	3.5	3.5	3.5	3.5	EM	G	G	23	2.7	B 1	Branch stubs observed No obvious defects observed Typical crown form
Т9	Field maple	6.0	2.0	1	210	3.0	3.0	3.0	3.0	EM	G	G	23	2.7	B 1	Typical crown form No obvious defects observed Epicormic growth on the main stem
T10	Sycamore	13.0	2.0	1	750	9.0	9.0	9.0	9.0	М	F	G	255	9.0	B 1	Dense ivy on the stem Pruning wounds observed Minor deadwood in the crown Major deadwood in the crown Typical crown form Branch stubs observed Area of included bark observed

Tree		Height	Crown	No. of	Stem	C	rown	Radiu	s	Age			RPA	RPA		
No	Species	(m)	Clearance (m)	Stems	Dia. (mm)	N	Е	s	w	Class	Structure	Vigour	(m)	Radius (m)	Cat	Comments
T11	Crab apple	4.0	2.0	1	70	1.0	1.0	1.0	1.0	Y	F	G	3	0.9	C 1	Typical crown form Weak form with limited future potential
T12	Indian horse chestnut	5.0	2.0	1	140	3.0	3.0	3.0	3.0	SM	F	G	10	1.8	B 1	Typical crown form No obvious defects observed
T13	Field maple	6.0	1.5	1	160	2.5	2.5	2.5	2.5	EM	G	G	14	2.1	B 1	Branch stubs observed Minor deadwood in the crown Typical crown form
T14	Indian horse chestnut	5.0	2.0	1	110	3.0	3.0	3.0	3.0	EM	G	G	7	1.5	B 1	Basal epicormic growth observed Typical crown form No obvious defects observed
T15	Field maple	5.0	2.0	1	170	3.0	3.0	3.0	3.0	EM	G	G	14	2.1	B 1	Typical crown form Basal wound
T16	Ash	7.0	2.0	1	160	2.0	2.0	2.0	2.0	EM	G	F	14	2.1	C 1	Typical crown form No obvious defects observed
T17	Ash	8.0	2.0	1	320	4.0	4.0	4.0	4.0	SM	G	G	48	3.9	B 1	Typical crown form Damage to surface roots
T18	Crab apple	3.0	1.5	1	90	1.0	3.0	1.0	0.0	EM	Р	F	5	1.2	C 1	Heavy lean by 30%
T19	Field maple	6.0	2.0	1	170	3.0	3.0	3.0	3.0	EM	G	G	14	2.1	B 1	Typical crown form No obvious defects observed
T20	Field maple	7.0	2.0	1	140	3.0	3.0	3.0	3.0	EM	G	G	10	1.8	B 1	Typical crown form No obvious defects observed
T21	English oak	16.0	2.0	1	670	9.0	9.0	9.0	9.0	М	G	G	206	8.1	A 1	Branch stubs observed Pruning wounds observed Typical crown form
T22	English oak	16.0	3.0	1	420	2.0	1.0	8.0	6.0	М	G	G	81	5.1	A 1	Branch stubs observed Typical crown form Minor deadwood in the crown
T23	English oak	7.0	2.0	1	430	8.0	3.0	7.0	0.0	SM	F	G	92	5.4	B 1	Branch stubs observed Minor deadwood in the crown
T24	English oak	10.0	1.0	1	740	9.0	11.0	9.0	7.0	M	G	G	255	9.0	A 1	Branch stubs observed Conservation value lapsed pollarded form Minor deadwood in the crown Pruning wounds observed

Tree		Height	Crown	No. of	Stem	C	Crown	Radiu	ıs	Age			RPA	RPA		
No	Species	(m)	Clearance (m)	Stems	Dia. (mm)	N	Е	s	w	Class	Structure	Vigour	(m)	Radius (m)	Cat	Comments
T25	Crack willow	7.0	1.0	1	630	6.0	6.0	6.0	6.0	М	Р	F	191	7.8	U	Branch socket cavity observed Exposed heartwood lapsed pollarded form Large hanging branches in the crown Lateral dieback observed Major deadwood in the crown Storm damage observed Tear wounds present Tree is showing signs of decline Wound present on main stem
T26	Sycamore	17.0	2.0	1	640	6.0	6.0	6.0	6.0	М	F	F	191	7.8	U	Branch socket cavity observed Branch stubs observed Exposed heartwood Major deadwood in the crown Minor deadwood in the crown Tree is showing signs of decline Epicormic growth observed in the crown Large open wound on main stem from 0-2m
T27	Hawthorn	3.0	1.5	4	190 150 130 120	3.0	3.0	3.0	3.0	М	F	F	41	3.6	C 1	Branch stubs observed Minor deadwood in the crown Pruning wounds observed
T28	Hawthorn	5.0	2.0	1	230	2.0	2.0	2.0	2.0	SM	G	G	28	3.0	C 1	Typical crown form No obvious defects observed
T29	Hawthorn	6.0	2.0	3	250 180 150	3.0	3.0	3.0	3.0	SM	G	G	55	4.2	C 1	Pruning wounds observed Typical crown form
T30	Ash	9.0	2.0	1	320	4.0	4.0	4.0	4.0	EM	G	G	48	3.9	C 1	Typical crown form Pruning wounds observed Minor deadwood in the crown
T31	Pear	10.0	1.5	3	260 145 220	5.0	5.0	5.0	5.0	SM	F	G	72	4.8	C 1	Included unions observed Minor deadwood in the crown
T32	Wild cherry	12.0	2.0	3	310 310 330	5.0	7.0	9.0	10.0	SM	Р	G	137	6.6	C 1	Included unions observed Damaged surface roots
T33	Sycamore	13.0	3.0	1	530	4.0	6.0	9.0	4.0	М	G	G	137	6.6	C 1	Branch stubs observed Branch socket cavity observed Pruning wounds observed

Tree		Height	Crown	No. of	Stem	C	rown	Radiu	ıs	Age	_		RPA	RPA		
No	Species	(m)	Clearance (m)	Stems	Dia. (mm)	N	E	s	w	Class	Structure	Vigour	(m)	Radius (m)	Cat	Comments
T34	Sycamore	15.0	2.0	1	950	7.0	5.0	9.0	8.0	М	G	G	408	11.4		Branch socket cavity observed Exposed heartwood Pruning wounds observed lapsed pollarded form
T35	Ash	15.0	2.0	1	410	6.0	2.0	3.0	5.0	SM	G	G,F	81	5.1		Minor deadwood in the crown Branch stubs observed
T36	Robinia	13.0	3.0	3	400 220 180	4.0	2.0	6.0	4.0	SM	F	F	113	6.0		Minor deadwood in the crown Included unions observed Pruning wounds observed

T		11.2.14	Crown	No. of	Stem	C	rown	Radiu	ıs	•			224	RPA		
Tree No	Species	Height (m)	Clearance (m)	No. of Stems	Dia. (mm)	N	E	s	w	Age Class	Structure	Vigour	RPA (m)	Radius (m)		Comments
G1	Ash Hawthorn Crack willow Elder	4.0	0.0	-	140	3.0	3.0	3.0	3.0	SM	F,P	G	10	1.8	C 2	Branch stubs observed Conjoined canopy Self seeded trees present
G2	English oak Hawthorn Holly Holm oak Elder Sweet chestnut Ash	15.0	2.0	-	650	6.0	6.0	6.0	6.0	M SM EM Y	F	G	191	7.8	B 2	Branch socket cavities Branch stubs observed Minor deadwood in the crowns Major deadwood in the crowns Typical crown forms
G3	Elder Ash Hawthorn	7.0	1.0	-	260	3.0	3.0	3.0	3.0	SM Y	F	G	34	3.3	C 2	Self seeded trees present Light ivy on stems Minor deadwood in the crowns
G4	Robinia	16.0	2.0	-	590	5.0	5.0	5.0	5.0	M EM	F	G	163	7.2	B 2	Branch stubs observed Conjoined canopy Minor deadwood in the crowns Typical crown forms
G5	Elder Sycamore Hawthorn Crack willow	19.0	0.0	-	450	7.0	7.0	7.0	7.0	M SM EM Y	F	G	92	5.4	C 2	Conjoined canopy Branch stubs observed Branch socket cavities No obvious defects observed Dense ivy on the stems Dense ivy in the crowns Typical crown forms
G6	Apple Elder Goat willow Holm oak	6.0	1.0	-	280	3.0	3.0	3.0	3.0	M OM SM	F,P	F,P	41	3.6	C 2	Conjoined canopy Dense ivy on the stems Dense ivy in the crowns Branch stubs observed Typical crown forms

T		Hataki	Crown	No. of	Stem	C	rown	Radiu	ıs	•			RPA	RPA		
Tree No	Species	Height (m)	Clearance (m)	Stems	Dia. (mm)	N	E	s	w	Age Class	Structure	Vigour	(m)	Radius (m)	Cat	Comments
G7	English oak Hawthorn Ash Sycamore Cherry Crab apple Blackthorn Plum Norway maple Purple leaved plum Silver birch Goat willow	10.0	1.0	-	340	5.0	5.0	5.0	5.0	SM EM Y	G,F	G	55	4.2	B 2	Conjoined canopy Light ivy on stems Minor deadwood in the crowns Provides screening Self seeded trees present Typical crown forms Wildlife conservation value
G8	Bird cherry Wild cherry	4.0	1.0	-	90	1.0	1.0	1.0	1.0	Y EM	G	G	5	1.2	B 1	Typical crown forms No obvious defects observed
G9	Bird cherry Cherry Wild cherry	4.0	1.5	-	100	1.0	1.0	1.0	1.0	Y EM	G	G	5	1.2	B 1	Typical crown forms No obvious defects observed
G10	Ash Blackthorn Elder Goat willow Field maple Hawthorn Norway maple Sycamore Apple Holm oak Purple leaved plum Plum Holly	12.0	1.0	-	550	5.0	3.0	5.0	8.0	Y EM SM M	G,F	G,F	137	6.6	B 2	Branch socket cavities Branch stubs observed Conjoined canopy Dead and dying trees present Included unions observed Light ivy on stems Minor deadwood in the crowns Provides screening Pruning wounds observed Self seeded trees present Typical crown forms Wildlife conservation value
G11	Ash Hawthorn Sycamore Cherry English oak	12.0	2.0	-	350	5.0	5.0	5.0	5.0	Y EM SM	G,F	G	55	4.2	C 2	Branch stubs observed Branch socket cavities Conjoined canopy Light ivy on stems Minor deadwood in the crowns Typical crown forms

T		lla:mb4	Crown	No. of	Stem	C	rown	Radiu	IS				RPA	RPA		
Tree No	Species	Height (m)	Clearance (m)	Stems	Dia. (mm)	N	E	s	w	Age Class	Structure	Vigour	(m)	Radius (m)	Cat	Comments
G12	Ash Elder Goat willow Hawthorn Sycamore Cherry Crack willow Plum Golden weeping willow	16.0	2.0	-	700	2.0	2.0	2.0	2.0	Y EM SM M	G,F	G,F	222	8.4	C 2	Branch socket cavities Branch stubs observed Conjoined canopy Included unions observed lapsed pollarded form present Light ivy on stems Dense ivy on the stems Pollarded forms Minor deadwood in the crowns Pruning wounds observed Self seeded trees present Typical crown forms Wildlife conservation value
G13	Ash Hawthorn Cherry Crab apple Sycamore Crack willow Yew Holm oak Holly Elder Goat willow	16.0	2.0	-	500	5.0	5.0	5.0	5.0	Y EM SM M	G,F	G,F	113	6.0	C 2	Branch socket cavities Branch stubs observed Conjoined canopy Dead and dying trees present Dense ivy on the stems Group is sparse in areas lapsed pollarded form present Light ivy in the crowns Minor deadwood in the crowns Pruning wounds observed Self seeded trees present Typical crown forms Wildlife conservation value
G14	Sycamore Goat willow Hawthorn Elder Crack willow Ash	16.0	2.0	-	450	6.0	6.0	6.0	6.0	Y EM SM M	G,F,P	G,F,P	92	5.4	C 2	Branch socket cavities Conjoined canopy Dead and dying trees present Dense ivy in the crowns Dense ivy on the stems Ivy restricts inspection lapsed pollarded form present Limited inspection due to access Limited inspection due to dense vegetation Pollarded forms Wildlife conservation value

Tues		Haimba	Crown	No. of	Stem	C	rown	Radiu	ıs	A			RPA	RPA		
Tree No	Species	Height (m)	Clearance (m)	Stems	Dia. (mm)	N	E	s	w	Age Class	Structure	Vigour	(m)	Radius (m)	Cat	Comments
G15	Ash Elder Hawthorn Cherry Sycamore	15.0	2.0	-	420	5.0	5.0	5.0	5.0	Y EM SM M	G,F	G	81	5.1	C 2	Branch stubs observed Conjoined canopy Dense ivy on the stems Group is located off site but overhangs the study area Limited inspection due to access Minor deadwood in the crowns
G16	Ash Crack willow Hybrid black poplar English oak Sycamore Purple leaved plum	14.0	2.0	-	750	3.0	3.0	3.0	3.0	EM SM M	G	G	255	9.0	C 1	Limited inspection due to access Pollarded forms Pruning wounds observed Minor deadwood in the crowns Typical crown forms
G17	Elder Sycamore Hawthorn Crab apple	12.0	2.0	-	330	4.0	5.0	7.0	5.0	EM SM M	G,F	G	55	4.2	C 1	Branch stubs observed Conjoined canopy Group is sparse in areas Included unions observed Minor deadwood in the crowns Pruning wounds observed Typical crown forms
G18	Sycamore	5.0	1.0	-	200	2.0	2.0	2.0	2.0	Y EM	F	G	18	2.4	C 1	Included unions observed Coppice regrowth on bank edge
G19	Sycamore Hawthorn Elder	13.0	2.0	-	360	5.0	5.0	5.0	5.0	SM EM	F	G	64	4.5	B 2	Conjoined canopy Branch stubs observed Minor deadwood in the crowns Pruning wounds observed

Tree	Species	Height	Crown Clearance	No. of	Stem Dia.	C	rown	Radiu	ıs	Age	Structure	Vigour	RPA	RPA Radius	Cat	Comments
No	Ореолог	(m)	(m)	Stems	(mm)	N	Е	s	w	Class	ou dotaio	rigoui	(m)	(m)		Comments
H1	Plum Purple leaved plum Holm oak Elder Blackthorn	6.0	1.0	-	200	2.0	2.0	2.0	2.0	Y EM	G,F	G	18	2.4		Outgrown hedgerow Provides screening Limited inspection due to ivy
H2	Blackthorn Elder Plum Purple leaved plum	5.0	1.0	-	200	2.0	2.0	2.0	2.0	Y EM	G,F	G	18	2.4		Outgrown hedgerow Provides screening Limited inspection due to ivy



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