MIDDLEMARCH

Arboricultural Impact Assessment

FLEET STREET, HOLBEACH

A Report To: Stoas Architects
Report Number: RT-MME-159040-01 REV A
Date: October 2022



Middlemarch Environmental Ltd, Triumph House, Birmingham Road, Allesley, Coventry, CV5 9AZ
www.middlemarch.eco
Tel: 01676 525880

Report Verification

Report Version	Date	Completed by:	Checked and Approved by:
Final	23/09/2022	Stefan Harrison BSc (Hons) M.Arbor.A (Arboricultural Consultant)	Duncan Smith BSc (Hons) M.Arbor.A (Arboricultural Manager)
Revision A	25/10/2022	Stefan Harrison BSc (Hons) M.Arbor.A (Arboricultural Consultant)	Duncan Smith BSc (Hons) M.Arbor.A (Arboricultural Manager)

Declaration of Compliance

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

Disclaimer

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

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

Validity of Data

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

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

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

Contents

1. Introduction 4
   1.1 Project Background 4
   1.2 Site Description 4
   1.3 Development Proposals 5
   1.4 Documentation Provided 5
2. Survey Methodology 6
   2.1 Survey Scope 6
   2.2 Root Protection Area (RPA) 7
   2.3 Tree Schedule 7
   2.4 Assessment Limitations 7
   2.5 Conditions of Tree Survey 8
   2.6 Tree Survey Plan 8
   2.7 Tree Retention Plan 8
3. Statutory Protection 9
   3.1 Tree Preservation Order and Conservation Area Protection 9
   3.2 Protected Species 9
4. Results Summary 11
   4.1 Preliminary Arboricultural Assessment 11
5. Arboricultural Impact Assessment 13
   5.1 Introduction 13
   5.2 Tree Retention and Removal 13
   5.3 Works within Root Protection Areas (RPA) 14
   5.4 Tree Pruning 15
   5.5 Trees and Foundations 15
   5.6 New Tree Planting 15
6. Conclusion 16
   6.1 Summary of Impacts 16
7. Arboricultural Method Statement 17
   7.1 Introduction 17

1. Introduction

1.1 Project Background

This Arboricultural Impact Assessment was commissioned by Stoas Architects to accompany a planning application for commercial development at Fleet Street, Holbeach. A survey of the trees on site and within influencing distance of the boundaries was undertaken on the 11th March 2022 as part of a Preliminary Arboricultural Assessment to aid design and avoid unnecessary tree removal.

This Arboricultural Impact Assessment has been carried out in accordance with British Standard 5837:2012 *'Trees in Relation to Design, Demolition and Construction - Recommendations'*[1] (hereafter referred to as BS5837). BS5837 sets out a structured assessment methodology to assist in determining which trees could be integrated into any future development of the site.

The purpose of this report is to:

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

1.2 Site Description

Attribute	Description
Location	Fleet Street, Holbeach, Lincolnshire
National Grid Reference	TF 36418 24725
Topography	Flat
Tree Cover	The trees recorded during the survey were typically of low quality and were primarily situated adjacent around the boundaries of the site.
Drawings attached	Tree Survey Plan – C157409-01-01 Rev A Tree Retention Plan – C159040-01-01
Appendices	Appendix A – Tree Schedule

Table 1.1: Summary of Site and Surroundings

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

1.3 Development Proposals

The proposed development of the site includes the demolition of existing buildings located on site and the construction of a new Aldi store with associated landscaping.

1.4 Documentation Provided

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

Author	Document	Drawing Number	Date
STOAS Architects Ltd	Proposed Site Plan	J21A89-STO_ZZ_XX_DR_A_0003_A2_P01	May 2022
Middlemarch Environmental Ltd	Detailed Soft Landscaping	MEL-535-001	Aug 2022

Table 1.2: Documentation Provided

2. Survey Methodology

2.1 Survey Scope

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

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

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

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

Trees were assessed and assigned one of the following categories:

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

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

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

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

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

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

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

2.2 Root Protection Area (RPA)

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

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

2.3 Tree Schedule

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

2.4 Assessment Limitations

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

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[3] or from an ecological perspective.

[2] National House Building Council. (2022). *NHBC Standards 2022: Chapter 4.2 - Building Near Trees*. NHBC, Milton Keynes.

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

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

2.5 Conditions of Tree Survey

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

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

2.6 Tree Survey Plan

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

2.7 Tree Retention Plan

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

3. Statutory Protection

3.1 Tree Preservation Order and Conservation Area Protection

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

Statutory Constraint	Present ✓ ✗	Source	Trees Affected	Details
TPO	✓	Local Authority Website	Covers several trees potentially including T2, T3, T4, T5, T10 and G1	HOLBEACH TPO No08 1977 TPO/009/08/1977 Tree Preservation Order made in respect of trees at Mattimore House – Town and Country Planning Act 1971 Section S60
Conservation Area	✗	Local Authority Website	None	None Present
Ancient Woodland	✗	MAGIC	None	None Present

Table 3.1: Summary of Statutory Constraints that Affect the Site

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

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

3.2 Protected Species

Bats

Mature trees often contain cavities, hollows, peeling bark or woodpecker holes which provide potential roosting locations for bats. Bats and the places they use for shelter or protection (i.e. roosts) receive European protection under The Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017)[4]. They receive further legal protection under the

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

Wildlife and Countryside Act (WCA) 1981[5], 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.

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

4. Results Summary

4.1 Preliminary Arboricultural Assessment

The Assessment identified fourteen individual trees, eight groups of trees and a hedgerow as detailed below and in Appendix A Tree Schedule.

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

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

The site comprised a disused commercial site and a waste disposal site situated off Fleet Street in Holbeach. The trees recorded during the survey were typically of low quality and primarily situated adjacent around the boundaries of the site.

The highest value specimen recorded during the survey was a mature English oak (T11) situated adjacent to the eastern site boundary and considered to be of high retention value. T11 tree was in good condition and was one of the largest specimens included in the assessment, however, a small fungal fruiting body (*Ganoderma* sp.) was observed at the base of the tree which will need to be monitored over future years. *Ganoderma* spp. are wood decay fungi which feed on the wood of the host tree and overtime degrade the structural integrity of the tree. However, English oak is a decay resistant species, and the tree displayed no signs of decline related to the fungi, nevertheless, as due diligence it is recommended that regular safety assessments are undertaken to ensure any potential risk is minimised.

An English oak (T10) and a field maple (T14) identified during survey were considered to be of moderate retention value. T10 was in good condition, however, both its crown and stem were clad in dense ivy, and epicormic growth was observed on its stem which is generally considered an indicator for stress. T14 was in good condition with a good crown form and structure.

Seven trees identified during the survey were considered unsuitable to retain (Retention Category U) due to the presence of defects which led their useful remaining life expectancy to be less than ten years. T1, cherry, had exposed heartwood on a wound on its main stem and displayed poor vigour. T3 and T4 were both elder trees which were densely ivy clad and were in decline with large quantities of deadwood and poor vigour. T7, a purple leaved plum, had poor vigour and a *Ganoderma* sp. fruiting body was observed on the stem at the base and the fruiting bodies of *Chondrostereum purpureum* were also observed on the stem. T8, another purple leaved plum, had poor vigour and structure with multiple wounds in the canopy with exposed heartwood, *Phellinus pomaceus* fruiting bodies observed in the crown and structurally weak unions with bark inclusions observed in the crown.

T9, apple, displayed poor vigour with apical dieback observed in the crown and multiple bark inclusions observed at the unions in the crown. T12, a Lombardy poplar, had three stems from ground level with the eastern most stem swaying visibly in the wind down to the base with a suspected crack at the base. The western most stem of T12 was functionally dead and therefore

this specimen was considered a health and safety hazard, and its immediate removal would be recommended.

The remaining trees, groups of trees and hedgerow identified during the survey (see Table 4.1) were all considered to be of low retention value. These specimens were typically in fair condition; however, they were either too juvenile to be considered higher value or had defects which limited their likely future potential.

5. Arboricultural Impact Assessment

5.1 Introduction

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

5.2 Tree Retention and Removal

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

Tree/Group/ Hedgerow Reference	Species	Retention Category	Reason for Removal
T1	Cherry	U	Unsuitable for retention due to poor condition.
T3	Elder	U	Unsuitable for retention due to poor condition.
T4	Elder	U	Unsuitable for retention due to poor condition.
T6	Barberry	C	Within footprint of proposed access road.
T7	Purple leaved plum	U	Unsuitable for retention due to poor condition.
T8	Purple leaved plum	U	Unsuitable for retention due to poor condition.
T9	Apple	U	Unsuitable for retention due to poor condition.
T12	Lombardy poplar	U	Unsuitable for retention due to poor condition.
T13	Crack willow	C	Within close proximity of proposed building.
G1	Mixed species	C	Within footprint of proposed parking.
G2	Mixed species	C	Within footprint of proposed parking.
G3	Mixed species	C	Within footprint of proposed access road.
G4	Elder	C	Within footprint of proposed parking.
G5	Mixed species	C	Within footprint of new landscaping and removal required to facilitate acoustic fence installation.
G6	Lawson cypress	C	Species unsuitable for retention, within footprint of new landscaping and removal required to facilitate acoustic fence installation.
G7*	Elder	C	Species unsuitable for retention, within footprint of new landscaping and removal required to facilitate acoustic fence installation.
G8	English elm	C	Within footprint of proposed building.
H1	Privet	C	Within footprint of proposed access road and parking.
Key ***: Partial removal of trees within group**			

Table 5.1: Tree Removal

The proposed development will require the removal of nine individual trees, seven groups of trees and one hedgerow as well as the partial removal of one group of trees.

Seven trees (T1, T3, T4, T7, T8, T9 & T12) identified for removal were considered to be unsuitable for retention (Retention Category U) during the Preliminary Arboricultural Assessment and therefore the removal of these trees would be required, irrespective of the proposed development, due to their poor condition.

The remaining two individual trees, eight groups of trees and the hedgerow (see Table 5.1) that are to be removed or partially removed were considered to be of low retention value during the Preliminary Arboricultural Assessment. The proposed removal of these trees should be considered acceptable as new tree planting of higher quality trees more suited to the new development will make a lasting contribution to the visual amenity value and canopy coverage of the site.

5.3 Works within Root Protection Areas (RPA)

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

Tree/Group/ Hedgerow Reference	Species	Retention Category	RPA Affected by Hard Surfacing (%)	Proposed Works
T2	Bay laurel	C	n/a	Fence installation.
T5	Yew	C	16	Proposed parking and fence installation.
T10	English oak	B	28	Proposed parking and fence installation.
T11	English oak	A	33	Proposed parking, walkway, access road and fence installation.
T14	Field maple	B	n/a	Fence installation.

Table 5.2: Works in RPAs and Canopy Spreads

New hard surfaces require installation within the RPAs of T5, T10 and T11 for the provision of new vehicle parking, a new access road and a pedestrian walkway. The new access road will only affect 2% of the RPA of T11 and as such, it is unlikely that the works to construct the road will significantly impact the tree. The remaining incursions into the RPAs of T5, T10 and T11 are 16%, 28% and 31% of the RPAs, respectively and the works have the potential to impact trees. Consequently, all works to install new hard surfaces within the RPAs of trees, aside from the new access road, should be undertaken according to a no-dig methodology. If a no-dig methodology is utilised, the works will be unlikely to significantly impact the trees.

The proposed fence installation within the RPAs of retained trees is unlikely to significantly impact the trees subject to the adoption of an appropriate works methodology.

All works within the RPAs or beneath the canopies of retained trees should be detailed as part of an Arboricultural Method Statement to ensure the method of construction is suitably considered.

5.4 Tree Pruning

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

All tree pruning works should be detailed as part of an Arboricultural Method Statement and completed in accordance with the current best practice guidance set out within BS3998:2010 *"Tree Work – Recommendations"*[6] by suitably competent, qualified, and insured arboricultural contractors. The extent of pruning should be identified to contractors in a pre-commencement site meeting as part of enabling works.

5.5 Trees and Foundations

Any structures built on the site should comply with current building regulations and NHBC Chapter 4.2 - *Building near Trees* (2022)[8]. Foundation depths for buildings near or adjacent to trees should consider the potential size of the trees at maturity and their subsequent water demand. The soil types throughout the site should be fully investigated and appropriate measures taken. If trees are removed across the site, the potential for soil heave should be assessed and foundations designed accordingly.

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

5.6 New Tree Planting

As part of the development proposals, an adequate quantity of tree planting has been demonstrated on the Detailed Soft Landscaping plan (Drawing Reference: MEL-535-001). It is understood that sixteen new trees will be planted as well as 132m of mixed native species hedgerow. The purpose and function of the new tree planting should be carefully considered so that key objectives from a wildlife habitat and landscape perspective can also be achieved.

---

[6] British Standards Institution. (2010). *British Standard 3998:2010, Tree Work – Recommendations*. British Standards Institution, London.
[8] National House Building Council. (2022). *NHBC Standards 2022: Chapter 4.2 - Building Near Trees*. NHBC, Milton Keynes.

6. Conclusion

6.1 Summary of Impacts

The proposed development of the site is unlikely to significantly impact the visual amenity of the local area as a result of the proposed tree removal because all of the trees to be removed are either unsuitable for retention or low retention value and the new tree planting of higher quality specimens will be an improvement to the site in terms of arboriculture.

Whilst some works are to be undertaken within the RPAs of retained trees, the nature of those works are such that they can be completed without causing significant impact, subject to the adoption of appropriate working practices as detailed in a future Arboricultural Method Statement following approval of the current planning application.

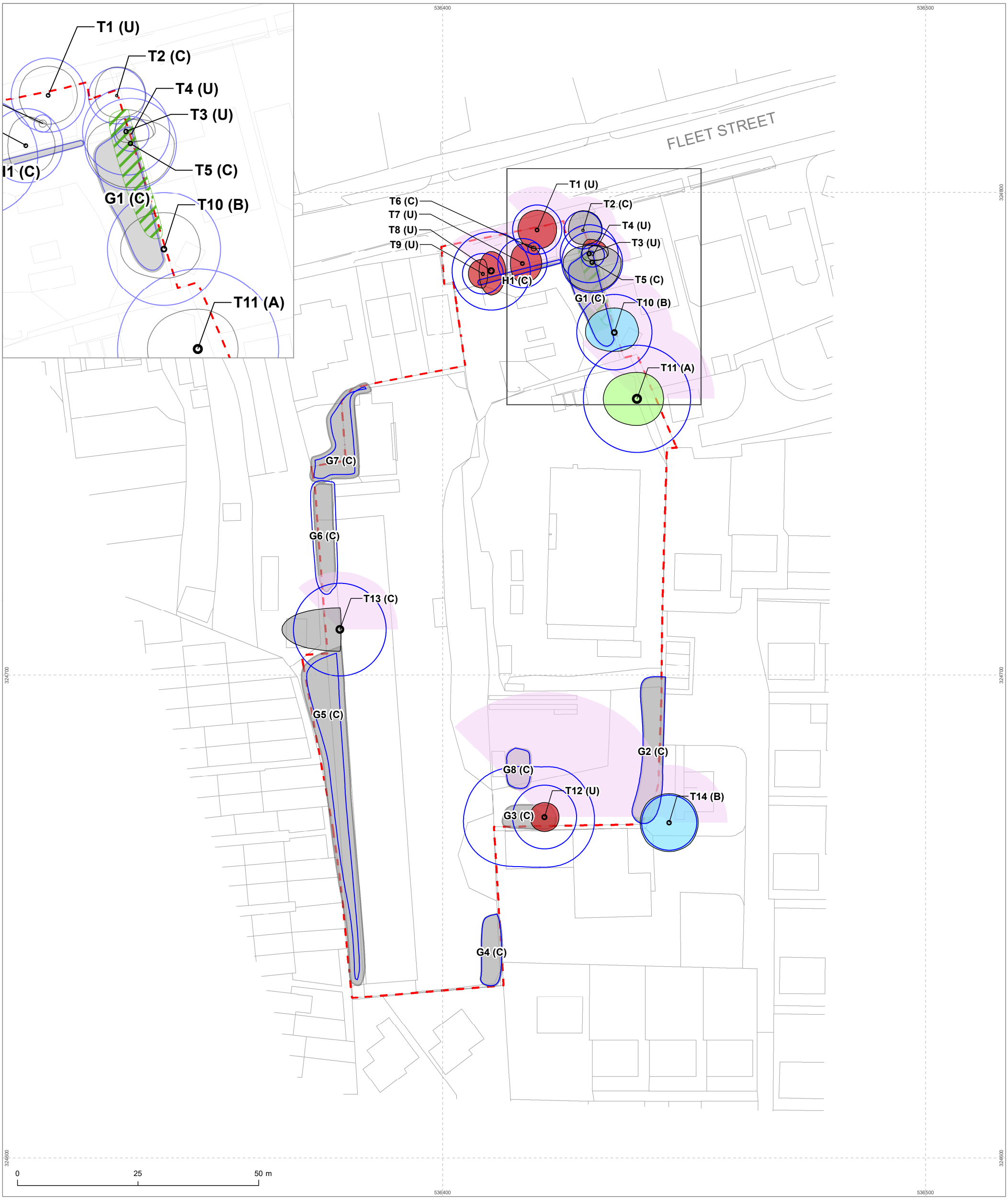
7. Arboricultural Method Statement

7.1 Introduction

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

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

Action	Required
Tree Surgery	✓
Site set up and logistics	✓
Removal of hard surfaces within RPAs	✓
Installation of utilities within RPAs	✓
Site access, material storage contractor's parking and site compound location	✓
Protective barrier location and specification	✓
Pre-commencement site meeting	✓
Arboricultural Clerk of Works supervision	✓
Audit timetable	✓



Legend

- Tree location and stem diameter
- Category A
- Category B
- Category C
- Category U
- Current canopy extent
- Root Protection Area
- Indicative tree shadow
- Trees subject to TPO
- 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.
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 accept no liability for third party use.

N

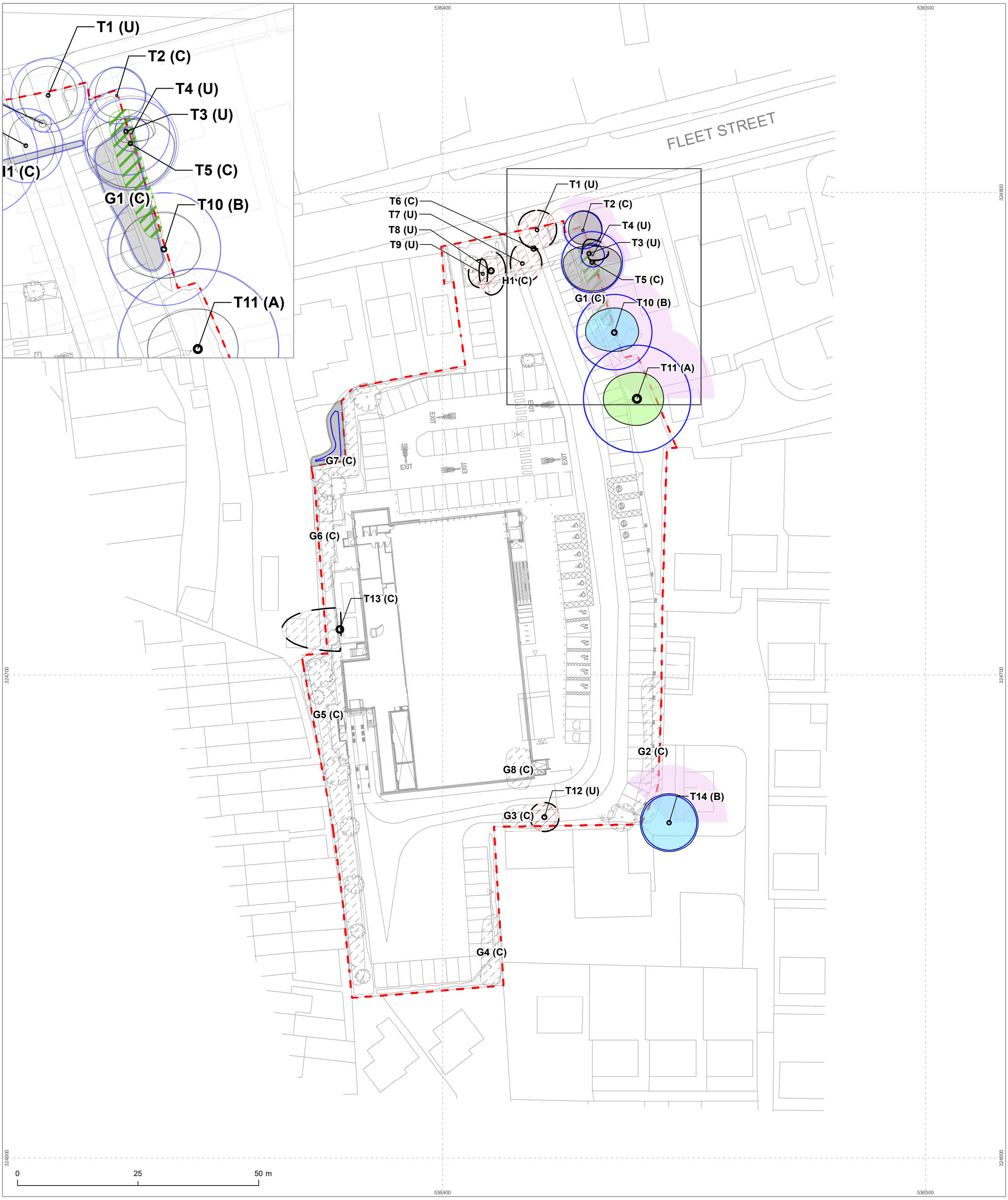
Project: Fleet Street, Holbeach
Drawing: Tree Survey Plan
Client: Stoas Architects

Drawing Number	Revision
C157409-01-01-RevA	Rev A
Scale @ A3	Date
1:750	October 2022
Approved By	Drawn By
SH	CD

MIDDLEMARCH
Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ
T:01676 525880
E:admin@middlemarch-environmental.com

This map is reproduced from the Ordnance Survey material with the permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationary Office. © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution of civil proceedings.
Licence Number: 100040519

C157409-01-01-RevA



Legend

- Tree location and stem diameter
- Category A
- Category B
- Category C - removed
- Category C
- Category U - removed
- Category U
- Current canopy - tree to be removed
- Current canopy - tree to be retained
- Root Protection Area
- Indicative tree shadow
- Trees subject to TPO
- Site 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 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.
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 accept no liability for third party use.

N

Project: Fleet Street, Holbeach
Drawing: Tree Retention Plan
Client: Stoas Architects

Drawing Number	Revision
C159040-01-01	00
Scale @ A3	Date
1:750	October 2022
Approved By	Drawn By
SH	CD

MIDDLEMARCH
Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ
T:01676 525880
E:admin@middlemarch-environmental.com

This map is reproduced from the Ordnance Survey material with the permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationary Office. © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution of civil proceedings.
Licence Number: 100040519

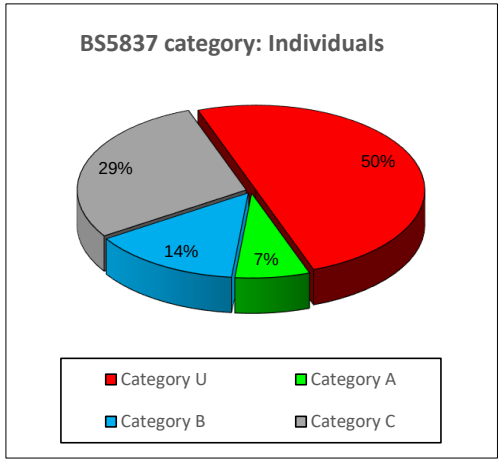
C159040-01-01

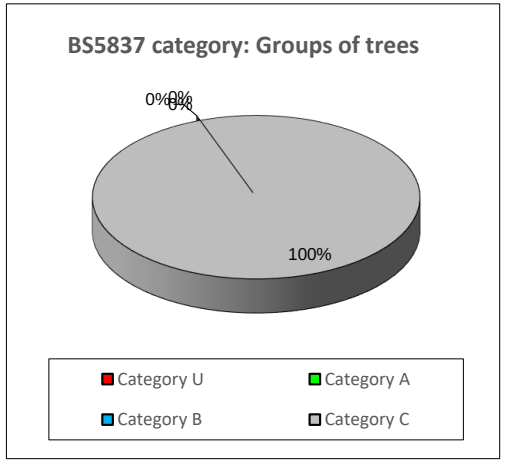
Appendix A - Tree Schedule

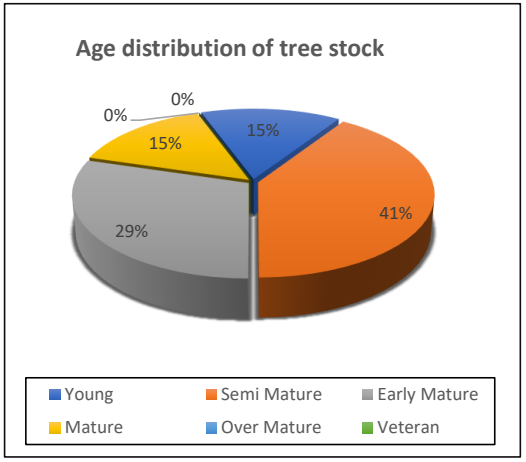
<table>
<tr><th>Measurements</th><th>Age Class</th><th>Overall Condition</th><th>Root Protection Area (RPA)</th></tr>
<tr><td>Height - estimated from ground level (m).</td><td>YNG: Young trees up to ten years of age.</td><td>G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention.</td><td rowspan="5">• 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	T1, T3, T4, T7, T8, T9, T12	7		0
Category A	T11	1		0
Category B	T10, T14	2		0
Category C	T2, T5, T6, T13	4	G1, G2, G3, G4, G5, G6, G7, G8	8
	Total	14	**Total**	8

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

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
T1	Cherry	9.0	2.5	1	410	4.0	4.0	4.0	4.0	M	P	P	81	5.1	U	Branch stubs observed Exposed heartwood Wound present on main stem Pruning wounds observed Tree is showing signs of decline Sap bleeding from pruning wounds
T2	Bay laurel	7.0	0.0	20	320	4.0	4.0	3.0	3.0	EM	F	G	48	3.9	C 1	Limited inspection due to dense vegetation Estimated dimensions Typical crown form Multi stemmed from base
T3	Elder	7.0	2.0	2	270 390	3.0	4.0	1.5	1.5	M	F	P	113	6.0	U	Dense ivy on the stem Dense ivy in the crown Included unions observed Limited inspection due to ivy Lateral dieback observed Tree is showing signs of decline Suppressed by ivy
T4	Elder	6.0	2.0	1	180	2.0	3.0	1.0	1.0	SM	F	P	18	2.4	U	Dense ivy in the crown Dense ivy on the stem Limited inspection due to ivy Tree is showing signs of decline Suppressed by ivy
T5	Yew	8.0	0.5	3	360 250 250	3.5	6.0	6.0	6.0	SM	F	F	124	6.3	C 1	Limited inspection due to dense vegetation Limited inspection due to ivy Dense ivy on the stem Dense ivy in the crown Branch stubs observed Minor deadwood in the crown Typical crown form
T6	Barberry	1.5	0.0	6	80	0.5	0.5	0.5	0.5	SM	F	F	5	1.2	C 1	Typical crown form
T7	Purple leaved plum	9.0	3.0	1	410	4.0	4.0	4.0	2.5	EM	P	P	81	5.1	U	Pruning wounds observed Typical crown form Branch stubs observed Tree is showing signs of decline Ganoderma sp. fruiting at base of stem Silver leaf fruiting bodies observed on stem

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
T8	Purple leaved plum	9.0	2.0	1	660	4.0	3.0	5.0	2.5	M	P	F	206	8.1	U	Typical crown form Pruning wounds observed Exposed heartwood Epicormic growth on the main stem Tree is showing signs of decline Weak unions with included bark Multiple wounds in canopy with exposed heartwood Cushion bracket fruiting bodies observed in crown
T9	Apple	9.0	4.0	1	350	3.0	1.0	3.0	3.0	EM	P	P	55	4.2	U	Apical dieback Branch stubs observed Area of included bark observed Included unions observed Dense ivy on the stem Limited inspection due to ivy Tree is showing signs of decline Pruning wounds observed Minor deadwood in the crown
T10	English oak	12.0	2.0	1	650	5.0	5.0	4.0	6.0	EM	F	G	191	7.8	B 1	Dense ivy in the crown Dense ivy on the stem Estimated dimensions Epicormic growth on the main stem Limited inspection due to ivy Typical crown form
T11	English oak	16.0	3.0	1	910	5.5	5.5	5.5	7.0	M	G	G	387	11.1	A 1	Hard surfaces within the rooting area Epicormic growth observed in the crown Tear wounds present Typical crown form Pruning wounds observed Storm damage observed Branch stubs observed Ganoderma sp fruiting body observed at base Hazard assessment recommended
T12	Lombardy poplar	26.0	1.0	3	300 350 300	3.0	3.0	3.0	3.0	EM	P	P	137	6.6	U	Limited inspection due to dense vegetation Limited inspection due to ivy Limited inspection due to safety concerns Three stems from base Eastern most stem visibly swaying in wind with suspected crack at base Western most stem is functionally dead
T13	Crack willow	12.0	0.0	6	790	4.5	0.3	4.5	12.0	EM	F	G	290	9.6	C 1	Included unions observed Self seeded tree growing out from base of building Building within rooting area

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							
T14	Field maple	12.0	2.0	1	470	6.0	6.0	6.0	6.0	EM	F	G	102	5.7	B 1	Pruning wounds observed Hard surfaces within the rooting area Tree is located off site but overhangs the study area Typical crown form

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
G1	Holly Elder Plum English oak Sycamore	7.0	0.0	-	150	2.0	2.0	2.0	2.0	Y SM	F	F	10	1.8	C 2	Dead and dying trees present Branch stubs observed Included unions observed Conjoined canopy Limited inspection due to dense vegetation Self seeded trees present Typical crown forms
G2	Lawson cypress Elder English oak Hawthorn Cherry laurel	8.0	0.0	-	260	3.0	3.0	3.0	3.0	SM Y	F	F	34	3.3	C 2	Conjoined canopy Self seeded trees present Typical crown forms Provides screening Dense ivy on the stems Dense ivy in the crowns Branch stubs observed Limited inspection due to dense vegetation Limited inspection due to ivy
G3	Hawthorn Lombardy poplar	26.0	1.0	-	1000	4.0	4.0	4.0	4.0	M EM	P,F	F	452	12.0	C 2	Conjoined canopy Dead and dying trees present Dense ivy on the stems Dense ivy in the crowns Branch stubs observed Ivy restricts inspection Included unions observed Limited inspection due to safety concerns Limited inspection due to ivy Typical crown forms Hazard inspection recommended
G4	Elder	7.0	1.0	-	160	2.0	2.0	2.0	2.0	SM	F	F,P	14	2.1	C 2	Conjoined canopy Dense ivy in the crowns Dense ivy on the stems Dead and dying trees present Hard surfaces within the rooting area Typical crown forms Self seeded trees present Limited inspection due to ivy
G5	Holly Ash Elder	8.0	0.0	-	160	3.0	3.0	3.0	3.0	Y SM	F	F	14	2.1	C 2	Conjoined canopy Branch stubs observed Dense ivy on the stems Dense ivy in the crowns Limited inspection due to access Limited inspection due to dense vegetation Self seeded trees present Estimated dimensions due to limited inspection

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							
G6	Lawson cypress	8.0	0.0	-	300	3.0	3.0	3.0	3.0	SM	F	F	41	3.6	C 2	Conjoined canopy Typical crown forms Some trees off site and some on site as group runs along boundary fence
G7	Elder	6.0	0.0	-	180	3.0	3.0	3.0	3.0	SM	F	F	18	2.4	C 2	Conjoined canopy Dense ivy on the stems Dense ivy in the crowns Dead and dying trees present Ivy restricts inspection Limited inspection due to dense vegetation Typical crown forms Self seeded trees present Estimated dimensions due to limited inspection
G8	English elm	7.0	2.0	-	150	2.0	2.0	2.0	2.0	SM Y	F	F	10	1.8	C 2	Conjoined canopy Self seeded trees present Typical crown forms Limited inspection due to access Estimated dimensions due to limited inspection

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
H1	Privet	1.0	0.0	-	40	0.5	0.5	0.5	0.5	SM	F	F	3	0.9	C 2	Managed