SOUTH HAMPSTEAD JUNIOR SCHOOL, LONDON

ARBORICULTURAL METHOD STATEMENT

A Report to: The Girls' Day School Trust

Report No: RT-MME-154145-03

Date: June 2021

MIDDLEMARCH ENVIRONMENTAL

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	Date	Completed by:	Checked by:	Approved by:
Final	15/06/2021	Ben Jones MSc Dip Arb Tech.Arbor.A (Arboricultural Consultant)	Duncan Smith BSc (Hons) MArborA (Arboricultural Manager)	Tom Docker CEcol MCIEEM (Managing Director)

DISCLAIMER

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

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

VALIDITY OF DATA

The findings of this study are based upon the survey data produced as part of the Preliminary Arboricultural Assessment which is valid for a period of 12 months from the date of survey. If a planning application has not been submitted by this date, an updated site visit should be carried out by a suitably qualified and experienced arboriculturist to assess any changes to the trees and hedgerows on site to inform a review of the conclusions and recommendations made.

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

This Arboricultural Method Statement has been produced following a review of a proposed development layout for the site based on data provided by the client. Should the development proposals change, this report will need to be updated to ensure all practices described herein are relevant and suitable for the provision of tree protection.

CONTENTS

1. INTRODUCTION

1.1 PROJECT BACKGROUND

Middlemarch Environmental Ltd were commissioned by The Girls' Day School Trust to provide an Arboricultural Method Statement as part of an outline planning application for various hard and soft landscaping works at South Hampstead Junior School in London. A survey of the trees on site and within influencing distance of the boundaries was undertaken on the 12th January 2021 as part of a Preliminary Arboricultural Assessment (PAA) (RT-MME-154145-XX), 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-154145-02) 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 consider 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.

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

1.2 SITE DESCRIPTION

The site under consideration is divided between two playgrounds associated with South Hampstead Junior School and South Hampstead High School respectively off Netherhall Gardens in London, Ordnance Survey Grid Reference TQ 26377 84847.

The site is located within a predominantly residential area in Chalk Farm, North London. Tree cover across the site was generally found to be of low quality and is located along the site boundaries.

The location of the trees surveyed can be found on Middlemarch Environmental Ltd Tree Survey Plan (C154145-01-01). The Tree Retention Plan (C154145-02-01), 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 reconfiguration of existing playground areas associated with the Junior and High Schools.

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
N/A	Proposed Site Layout	BD 0271_X Land R04	N/A

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:

- **Category U:** Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
- **Category A:** Trees of high quality with an estimated remaining life expectancy of at least 40 years.
- **Category B:** Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
- **Category C:** Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm.

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

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

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

2.3 ROOT PROTECTION AREA (RPA)

In order to avoid damage to the roots or rooting environment of retained trees, the RPA has been calculated for each of the Category A, B and C trees in accordance with section 4.6 of BS5837. This is a minimum area around a tree which is deemed to contain sufficient roots and rooting volume to maintain the tree's viability. 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.

2.6 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, hedgerow or woodland should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken.

2.7 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

Camden Borough Council confirmed through consultation that the site is within the Fitzjohn Netherhall Conservation Area, and therefore statutory constraints apply to the development in respect of trees. Additionally, it is understood that none of the trees on site or immediately adjacent to the site are subject to Tree Preservation Orders.

Reference to the Multi Agency Geographical Information for the Countryside (MAGIC) website indicates that an area of ancient woodland has not been recorded within 15.0 metres 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

Nine individual trees, four groups of trees and one hedgerow 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	-
A	-
B	T1, T7, G3.
C	T2, T3, T4, T5, T6, T8, T9, G1, G2, G4, H1.

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

The majority of trees recorded during the survey were situated outside the boundaries of the two playgrounds associated with South Hampstead Junior and High Schools. The majority of trees surveyed were relatively immature pioneer specimens (e.g., Sycamore, Ash, European Lime) which offer limited contribution to visual amenity.

Tree crowns overhanging the site had been pruned back beyond the boundary line which had resulted in several trees having asymmetric forms, which partly account for the majority of trees being assessed as low retention value.

Existing offsite trees had uplifted asphalt play surfaces through incremental root growth, however, these trees have since been removed and while they are no longer a cause for concern, it should be noted that the continued growth of other existing trees along the boundaries of both playgrounds will need to monitored and taken into consideration with regard to any future development.

4.2 ARBORICULTURAL IMPACT ASSESSMENT

The proposed development will not require the removal of any existing trees or groups within or adjacent to the site.

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.

Juvenile trees should be formatively pruned in their early years to reduce the presence of potential defects into maturity that would reduce their lifespan in accordance with BS3998:2010 *Tree work – Recommendations* & BS8545:2014 *Trees: from nursery to independence in the landscape- Recommendations*.

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

At time of writing, there are no areas on site where the completion of access facilitation pruning works will be required to facilitate the approved development.

Should the need for pruning works be required in the future, these shall be confirmed in a pre-commencement site meeting involving the Project Arboriculturist, Site Manager and Contractors. Any 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

Permanent ground protection will be created through the installation of new surfacing and paving areas within the Root Protection Areas of retained trees. In this respect, the installation of new clay paving, rubber crumb surfacing and other associated play surfaces will provide permanent ground protection for T1-T5 (inclusive), G1 and G3.

All ground protection installed must be capable of supporting the expected loads in accordance with Structural Engineers recommendations and avoid compaction and damage to the soil.

5.6 ACCESS DETAILS

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

5.7 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.

Materials storage and contractor's car parking is to be provided within the site compound 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.

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

5.8 DEMOLITION, HARD SURFACE REMOVAL & REMOVAL OF STRUCTURES

Shed Buildings
The demolition of existing shed buildings along the southern site boundary will require works within the RPAs of trees forming G1. These works will require machinery movement and operation near to several trees that are to be retained and incorporated as part of the development.

To minimise the potential for harm to the existing trees as a result of the demolition works all machinery involved in the demolition or removal of the buildings will work from land outside of the Construction Exclusion Zone and a 'top-down, pull-back' demolition methodology will be followed to prevent the potential for accidental damage to trees.

Removal of Existing Hard Surfaces
The following guidance will be adhered to for the removal of any hard surfaces within the RPAs of retained trees:

1. The initial 'breaking-up' of the asphalt or concrete will be undertaken using an excavator mounted breaker or handheld pneumatic tool.

2. Removal of the surface will occur in 0.5 m bands working from the undisturbed surface. Any exposed roots will be covered with damp hessian sheet to avoid desiccation.

3. The debris resulting from breaking-up the hard surface and the exposed sub-base will be removed by excavator using a suitable bucket with no teeth. No reduction in levels of the underlying soil will occur.

4. If any roots are damaged during the removal of hard surfaces, then they will be cut using secateurs or a sharp knife to leave a clean wound with as small a surface area as possible.

5. Work will not be carried out if the ambient air temperature is below + 4°C.

Additionally, all demolition works are to be carried out under supervision of the Project Arboriculturist.

5.9 NEW HARD SURFACES

New hard surfaces are to be installed within the Root Protection Areas (RPAs) of T1-T5 (inclusive), G1 and G2. It should be noted that the areas affected by these works are already hard surfaced and that works to break out existing hardstanding, as detailed in Section 5.8, will identify the extent of root activity and any likely impacts of proposed works.

Nonetheless, wherever it is intended to construct new hard surfaces within the Root Protection Areas of trees, precautions must be taken to maintain the condition and health of tree roots. The use of a three-dimensional cellular confinement system should be considered as they provide load-spreading of point pressure over a wide area thus reducing compaction on the underlying soils. Further:

- Works shall be completed with care to prevent physical damage to roots during demolition or construction, such as soil compaction or root severance. Contamination of soils by demolished material shall be avoided through the use of geotextile material.

- Provision for water and oxygen to reach the roots must be made and the underlying soil structure must not be disturbed.

- Provision must be made for future root growth and precautions taken to ensure that such root growth does not cause damage to the finished construction.

- The underlying soil must not be compacted, and soil bulk density must be maintained at suitable levels for tree root growth and function. In this respect a soil bulk density of over 1.8 g/cm^3 is likely to impede root growth and function.

To achieve the above requirements for tree root growth and function the proposed new hard surfaces shall be designed so that:

- The load spreading system can be installed without compaction of the existing underlying soils; thus, ensuring damage to the soil structure does not occur.

- The surface is permeable; thus, ensuring that oxygen and water can reach the root system and that CO_2 can diffuse vertically out of the soil as high concentrations can cause root asphyxiation.

5.10 SITE GRADIENTS

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

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

5.11 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.

5.12 USE OF HERBICIDES

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

5.13 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: Ben Jones
Position: Arboricultural Consultant
Company: Middlemarch Environmental Ltd
Address: Triumph House, Birmingham Road, Coventry, CV5 9AZ
Telephone: 01676 525 880
Mobile: 07483 104 086

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
The following aspects of the development will be completed under supervision of the Project Arboriculturist:

- Demolition of existing shed buildings within the RPAs of trees forming G1.
- Removal of existing hard surfaces within the RPAs of T1-T15 (inclusive), G1, G2 and G3.

5.14 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.

5.15 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.

5.16 GENERAL PRECAUTIONS

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

6. REFERENCES AND BIBLIOGRAPHY

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

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

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

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

Middlemarch Environmental Ltd. (2021). *Report Number RT-MME-154145-01*. Preliminary Arboricultural Assessment.

Middlemarch Environmental Ltd. (2021). *Report Number RT-MME-154145-02*. Arboricultural Impact Assessment.

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

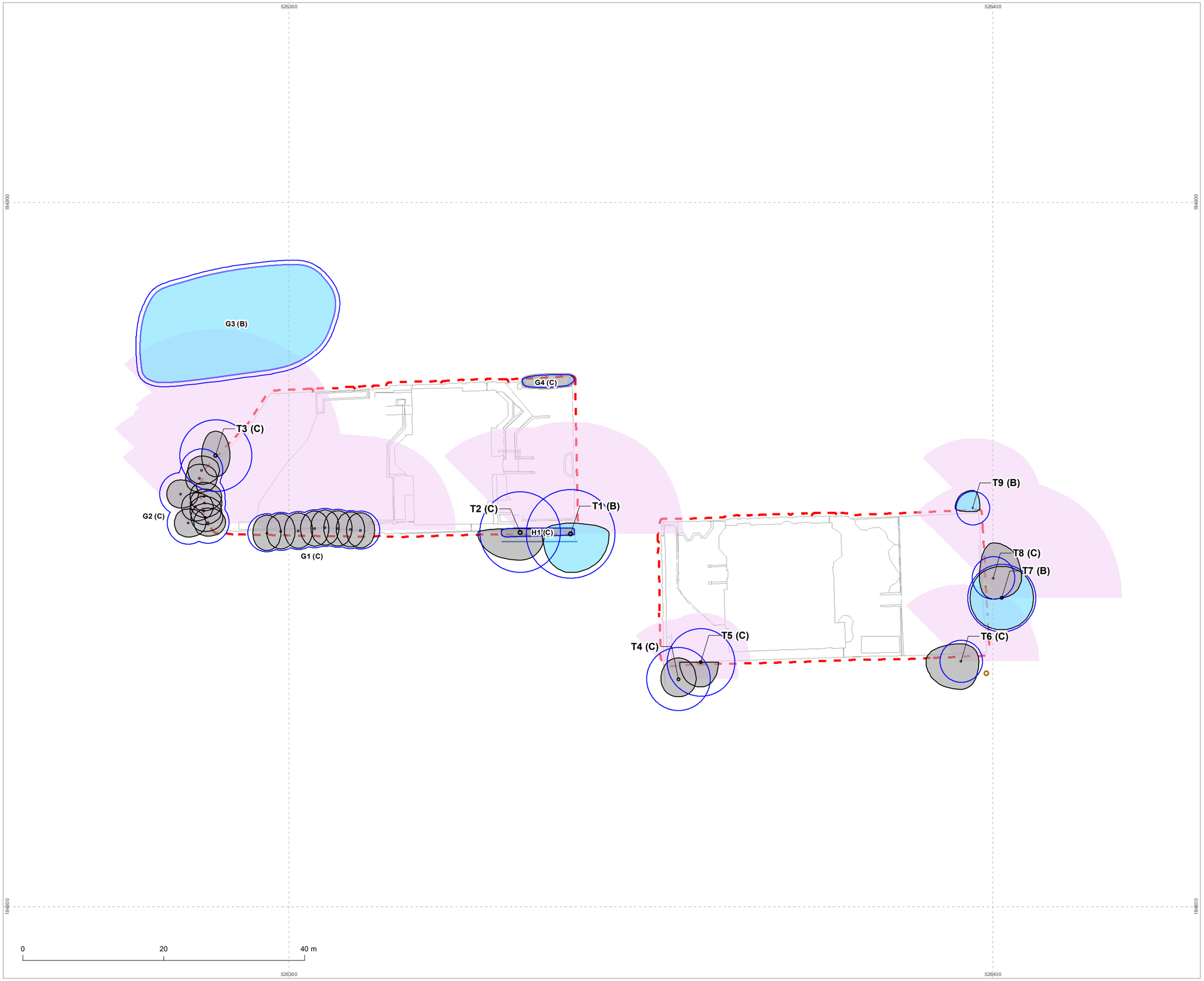
Drawing Number C154145-01-01 – Tree Survey Plan

Drawing Number C154145-02-01 – Tree Retention Plan

Drawing Number C154145-03-01 – Tree Protection Plan

Appendix A: Tree Schedule

Appendix B: Tree Protection Fencing Sign



C154145-01-01

Legend

- Tree location and stem diameter
- Tree stump
- Root Protection Area
- Current canopy extent
- Category B
- Category C
- Indicative tree shadow
- Site boundary

T - Tree
H - Hedgerow
G - Tree group

Note: tree locations are approximate, based on combined field observations and aerial imagery

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

NOTES

All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with Project Arboriculturalist. Drawing to be read in conjunction with Preliminary Arboricultural Assessment and Tree Schedule. Drawing has been produced in colour and is based on digital informaton in .dwg format, aerial images and/or GPS location where appropriate. A monochrome copy should not be relied upon. The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths.

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

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

N

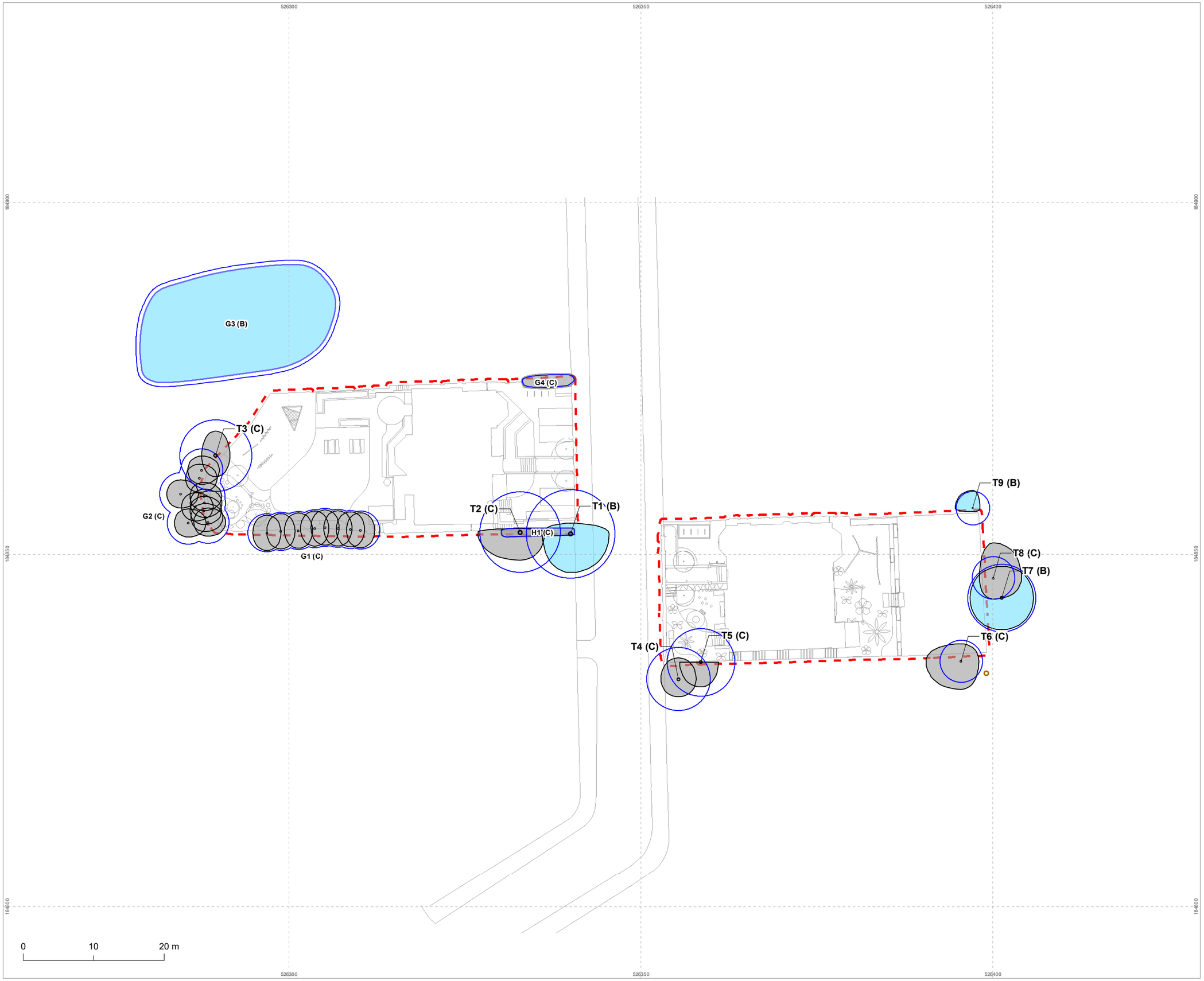
Project
South Hampstead Junior School, London

Drawing
Tree Survey Plan

Client
GDST (The Girls' Day School Trust)

Drawing Number	Revision
C154145-01-01	00
Scale @ A3	Date
1:500	January 2021
Approved By	Drawn By
BJ	VO

MIDDLEMARCH ENVIRONMENTAL
Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ
T:01676 525880 F:01676 521400
E:admin@middlemarch-environmental.com



C154145-02-01

Legend

- Tree location and stem diameter
- Tree stump
- Category B
- Category C
- Current canopy - tree to be retained
- Root Protection Area
- Site boundary

T - Tree
H - Hedgerow
G - Tree group

Note: tree locations are approximate, based on combined field observations and aerial imagery

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

NOTES
All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with Project Arboriculturalist. Drawing to be read in conjunction with Preliminary Arboricultural Assessment and Tree Schedule. Drawing has been produced in colour and is based on digital informaton in .dwg format, aerial images and/or GPS location where appropriate. A monochrome copy should not be relied upon. The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths.
Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by the Project Arboriculturalist should works commence 12 months after the date of this survey. SOME TREES MAY BE SUBJECT TO STATUTORY CONSTRAINTS. IT IS THEREFORE ADVISED THAT NO WORKS SHOULD BE UNDERTAKEN TO ANY TREES ILLUSTRATED HEREIN WITHOUT FIRST OBTAINING THE RELEVANT AUTHORISATION TO DO SO UNLESS AGREED AS PER THE APPROVED PLANS THROUGH PLANNING CONSENT.

N

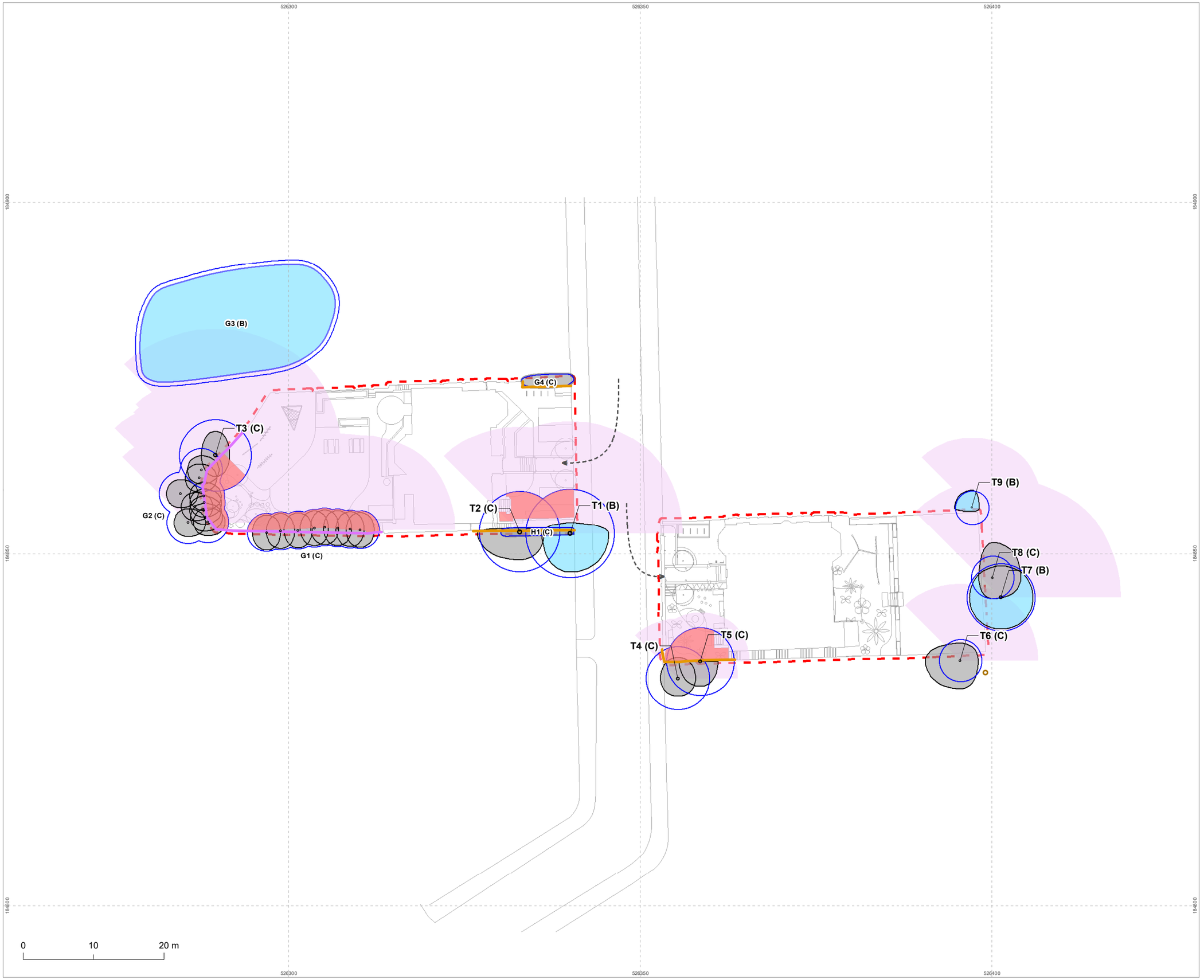
Project
South Hampstead Junior School, London

Drawing
Tree Retention Plan

Client
GDST (The Girls' Day School Trust)

Drawing Number	Revision
C154145-02-01	00
Scale @ A3	Date
1:500	June 2021
Approved By	Drawn By
BJ	RP

MIDDLEMARCH ENVIRONMENTAL
Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ
T:01676 525880 F:01676 521400
E:admin@middlemarch-environmental.com



C154145-03-01

Legend

- Tree location and stem diameter
- Tree stump
- Category B
- Category C
- Current canopy - tree to be retained
- Root Protection Area
- Indicative tree shadow
- Existing wall retained for tree protection
- Existing fence retained for tree protection
- Demolition and construction works requiring arboricultural supervision
- Site access
- Site boundary

T - Tree
H - Hedgerow
G - Tree group

Note: tree locations are approximate, based on combined field observations and aerial imagery

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

NOTES
All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with Project Arboriculturalist. Drawing to be read in conjunction with Preliminary Arboricultural Assessment and Tree Schedule. Drawing has been produced in colour and is based on digital informaton in .dwg format, aerial images and/or GPS location where appropriate. A monochrome copy should not be relied upon. The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths.
Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by the Project Arboriculturalist should works commence 12 months after the date of this survey. SOME TREES MAY BE SUBJECT TO STATUTORY CONSTRAINTS. IT IS THEREFORE ADVISED THAT NO WORKS SHOULD BE UNDERTAKEN TO ANY TREES ILLUSTRATED HEREIN WITHOUT FIRST OBTAINING THE RELEVANT AUTHORISATION TO DO SO UNLESS AGREED AS PER THE APPROVED PLANS THROUGH PLANNING CONSENT.

N

Project
South Hampstead Junior School, London

Drawing
Tree Protection Plan

Client
GDST (The Girls' Day School Trust)

Drawing Number	Revision
C154145-03-01	00
Scale @ A3	Date
1:500	June 2021
Approved By	Drawn By
BJ	RP

MIDDLEMARCH ENVIRONMENTAL
Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ
T:01676 525880 F:01676 521400
E:admin@middlemarch-environmental.com

Appendix A - Tree Schedule

<table>
<tr><th>Measurements</th><th>Age Class</th><th>Overall Condition</th><th>Root Protection Area (RPA)</th></tr>
<tr><td>Height - estimated from ground level (m).</td><td>YNG: Young trees up to ten years of age.</td><td>G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention.</td><td rowspan="4">• The RPA column gives the required area (m²).
• The RPA Radius column gives the radius (m) of an equivalent circle.
• The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the required rooting area in order for a tree to be retained.</td></tr>
<tr><td>Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837.</td><td>SM: Semi-mature, trees less than 1/3 life expectancy.</td><td>F - Fair: Trees with minor, but rectifiable, defects or in the early stages of stress from which it may recover.</td></tr>
<tr><td>Crown - crown spread estimated radially from the main stem (m).</td><td>EM: Early mature, trees 1/3 – 2/3 life expectancy.</td><td>P - Poor: Trees with major structural and/or physiological defects such that it is unlikely the tree will recover in the long term.</td></tr>
<tr><td rowspan="2">Abbreviations
Est - Estimated stem diameter
Avg - Average stem diameter
Max - Maximum stem diameter</td><td>M: Mature trees, over 2/3 life expectancy.</td><td>D - Dead: Trees no longer alive. This could also apply to trees that are dying and unlikely to recover.</td></tr>
<tr><td>OM: Over mature, declining or moribund trees of low vigour.</td><td colspan="2" rowspan="2">In the assessment, of the BS category, particular consideration has been given to the following
• The health, vigour and condition of each tree
• The presence of any structural defects in each tree and its future life expectancy
• The size and form of each tree and its suitability within the context of a proposed development
• The location of each tree relative to existing site features e.g. its screening value or landscape features
• Age class
• Life expectancy</td></tr>
<tr><td></td><td>V: Veteran, tree possessing certain attributes relating to veteran trees.</td></tr>
</table>

Structural Condition

The following has been considered when inspecting structural condition:

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

Quality Assessment of Retention Category

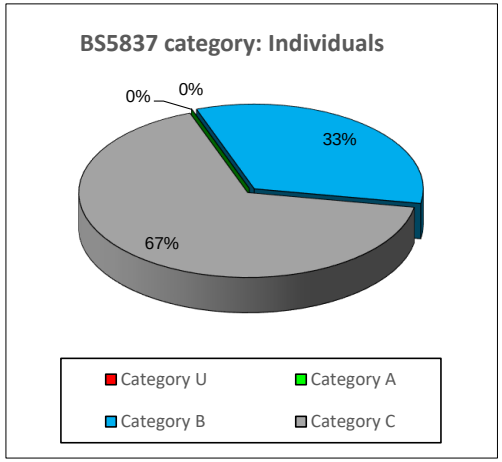
Category U - Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

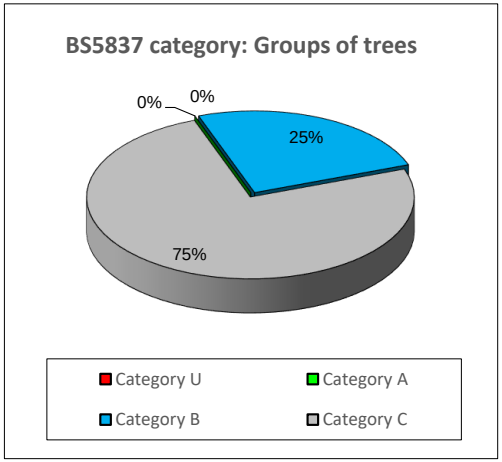
Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

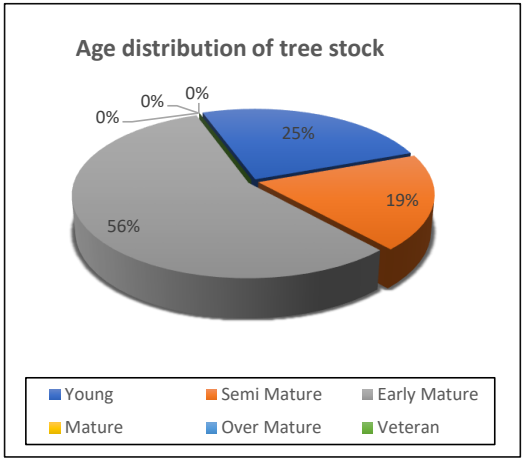
Category B - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

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

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







Appendix A - Summary

	Individual Trees	Totals	Tree Groups	Totals
Category U		0		0
Category A		0		0
Category B	T1, T7, T9	3	G3	1
Category C	T2, T3, T4, T5, T6, T8	6	G1, G2, G4	3
	Total	9	**Total**	4

	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				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
T1	Sycamore	16.0	4.0	1	520	1.5	5.5	5.5	4.0	EM	F	G	124	6.3	B 1	Branch stubs observed Limited inspection due to dense vegetation Limited inspection due to access Hard surfaces within the rooting area Building within the rooting area Minor deadwood in the crown Pruning wounds observed Tag 2653
T2	Sycamore	15.0	3.0	5	130 140 280 200 230	0.5	3.5	4.0	6.0	EM	F	F	102	5.7	C 1	Branch stubs observed Building within the rooting area Hard surfaces within the rooting area Limited inspection due to access Limited inspection due to dense vegetation Minor deadwood in the crown Pruning wounds observed
T3	Lombardy poplar	18.0	5.0	1	410	3.5	2.0	3.0	2.0	EM	F	G	81	5.1	C 1	Branch stubs observed Hard surfaces within the rooting area Limited inspection due to access Limited inspection due to ivy Minor deadwood in the crown Typical crown form
T4	Holly	8.5		5	130 100 170 110 250	3.0	2.5	2.5	2.5	EM	F	G	64	4.5	C 1	Branch stubs observed Hard surfaces within the rooting area Epicormic growth on the main stem Typical crown form Growing on sloped bank. Tree is separated from the study area by retaining wall (growing on lower side)

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
T5	Privet	7.0	3.0	2	290 230	0.0	2.5	3.5	3.0	EM	F	G	72	4.8	C 1	Branch stubs observed Hard surfaces within the rooting area Epicormic growth on the main stem Typical crown form Growing on sloped bank. Tree is separated from the study area by retaining wall (growing on lower side)
T6	Sycamore	11.0	4.0	3	140 160 110	2.5	2.5	4.0	5.0	SM	F	G	28	3.0	C 1	Branch stubs observed Hard surfaces within the rooting area Limited inspection due to access Pruning wounds observed Light ivy on stem Minor deadwood in the crown Tree growing on lower side of retaining wall within RPA
T7	Walnut	17.0	5.0	1	380	4.5	4.5	4.5	4.5	EM	F	G	72	4.8	B 1	Branch stubs observed Hard surfaces within the rooting area Limited inspection due to access Limited inspection due to ivy Dense ivy on the stem Minor deadwood in the crown Typical crown form
T8	Lawson cypress	14.0		1	230	5.0	4.0	3.0	2.0	EM	F	G	28	3.0	C 1	Branch stubs observed Hard surfaces within the rooting area Limited inspection due to access Minor deadwood in the crown No obvious defects observed Typical crown form Form partly suppressed by neighbouring tree

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
T9	Bay laurel	10.0	2.0	1	200	2.5	1.0	0.5	2.5	EM	F	G	18	2.4	B 1	Branch stubs observed Limited inspection due to ivy Limited inspection due to access No obvious defects observed Pruning wounds observed Typical crown form Lateral reduction of crown from school fence

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
G1	Ash Sycamore	13.5	5.0	-	210	2.5	2.0	2.5	2.0	Y EM SM	F	G	23	2.7	C 1,2	Branch stubs observed Conjoined canopy Building within the rooting area Dead and dying trees present Dense ivy on the stems Group is sparse in areas Group is located off site but overhangs the study area Hard surfaces within the rooting area Limited inspection due to access Limited inspection due to ivy Ivy suppressing a number of trees Minor deadwood in the crowns Self seeded trees present Typical crown forms
G2	Ash European lime Sycamore	13.0	4.0	-	250	2.0	2.5	2.0	2.0	Y SM	F	G	28	3.0	C 1,2	Branch stubs observed Group is sparse in areas Hard surfaces within the rooting area Dense ivy on the stems Dead and dying trees present Conjoined canopy Group is located off site but overhangs the study area Ivy suppressing a number of trees Limited inspection due to access Limited inspection due to ivy Minor deadwood in the crowns Pruning wounds observed Pollarded forms Self seeded trees present

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
G3	Sycamore	18.0	4.0	-	550	6.0	6.0	6.0	6.0	EM	F	G	137	6.6	B 1,2	Branch stubs observed Conjoined canopy Building within the rooting area Hard surfaces within the rooting area Group is sparse in areas Limited inspection due to access Minor deadwood in the crowns No obvious defects observed Typical crown forms Group located off-site but potentially within influencing distance of the study area
G4	Ash Elder Viburnum Snowberry	4.0	0.0	-	70	1.0	1.0	1.0	1.0	Y	F	G	3	0.9	C 1,2	Branch stubs observed Conjoined canopy Hard surfaces within the rooting area Dead and dying trees present Limited inspection due to access Minor deadwood in the crowns Typical crown forms Self seeded trees present Limited contribution

Tree No	Species	Height (m)	Crown Clearance	No. of Stems	Stem Dia.	Crown				Age Class	Structure	Vigour	RPA (m)	RPA Radius	Cat	Comments
						N	E	S	W							
H1	Privet	2.5	0.0	-	40	0.5	0.5	0.5	0.5	Y	F	G	3	0.9	C 1	Managed

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