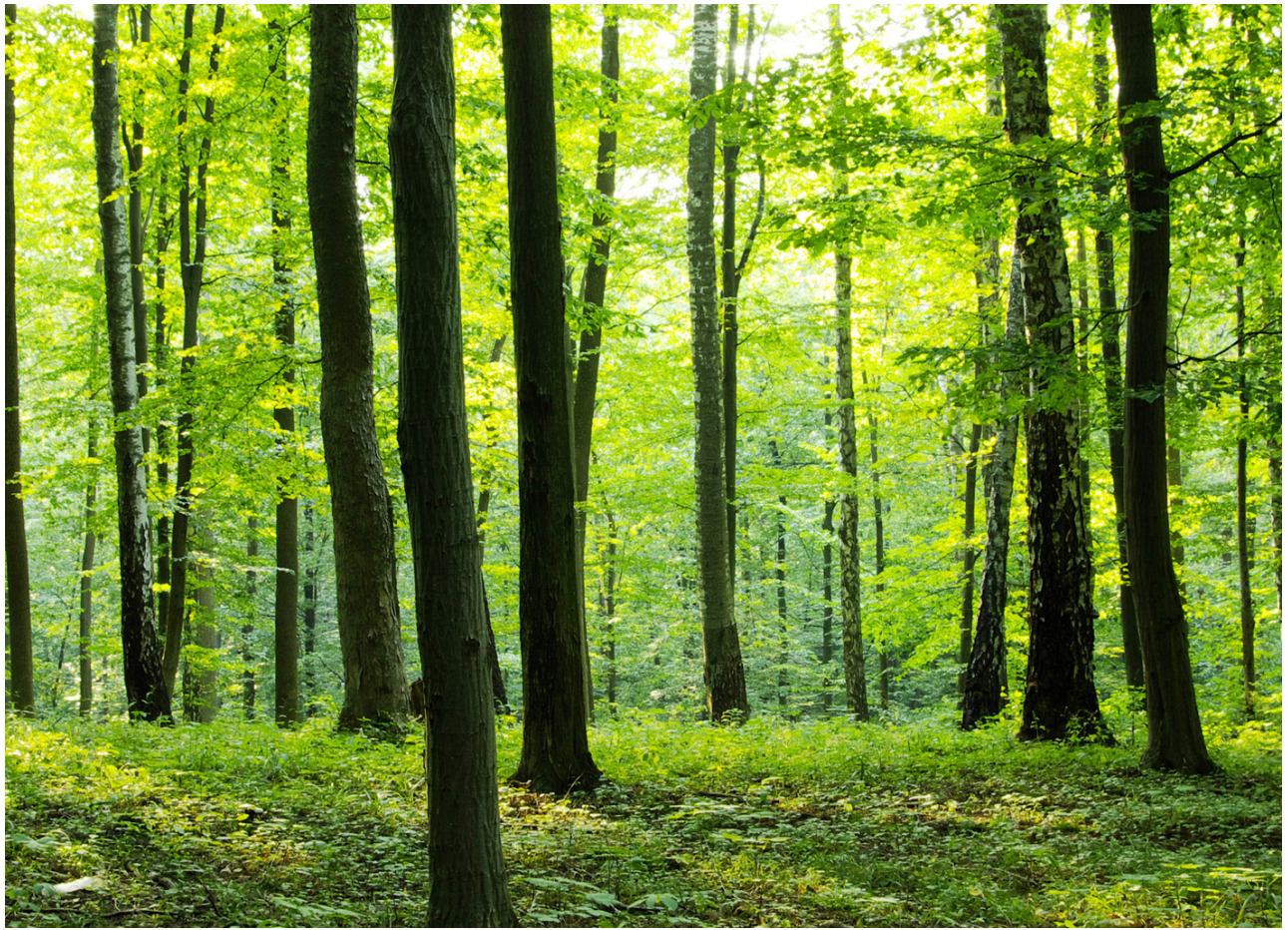




NHS Manchester University

**Withington Hospital
Stage 1 and 2 Arboricultural Impact
Assessment Report**

2485237

Status: Rev 2

Project manager	J Butler	
Signature		
Date:	28.06.23	

This work has been undertaken in accordance with the quality management system of RSK Biocensus Ltd.

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1 INTRODUCTION

1.1 General

This report describes the results of a survey of trees at land Withington Hospital off Fielden Road, West Didsbury, Manchester M20 2LR. The work was commissioned by Manchester University NHS Foundation Trust ('MFT') in February 2023. The survey was completed by Rob Fear on behalf of RSK Biocensus in March 2023, with the report written in June 2023.

1.2 Purpose of the Report

The survey was carried out in connection with proposed development, in accordance with criteria outlined in the British Standard BS5837:2012¹. The aim was to:

- identify the quality and value of the trees;
- categorise them in respect of their suitability for retention; and
- identify the impacts of the development on the arboricultural features present.

This report is principally concerned with trees in relation to the proposed development. Although obvious structural defects and the condition of trees have been noted, this survey was not undertaken with health and safety in mind, and a detailed hazard assessment was not carried out.

The results and recommendations in this report are valid for a maximum of two years.

1.3 Site Context

1.3.1 General

The survey covered an area of land approximately 0.66 Ha in size, this is made up predominantly of a densely vegetated area of land between the existing hospital building and Fielden Road to the south.

The site is bounded by Fielden Road to the south, Burton Road to the east, both residential roads, with further hospital land to the north and west.

1.3.2 Soil

The underlying soil types will affect structural aspects of building designs and foundation depths, and this will need to be considered in relation to existing, proposed and removed trees. To avoid conflicts between trees and built structures, engineering advice will be required, and foundations will need to be designed with due regard for trees and shrinkable soils.

British Geological Society data indicates that the survey area may be sited on Wilmslow Sandstone Formation with superficial deposits of glaciofluvial sheet deposits of

¹ British Standards Institute (2012) *BS5837:2012 Trees in Relation to Design, Demolition and Construction-Recommendations*. British Standards Publications Ltd.

Devensian sand and gravel². This is only a best estimate, as no soil samples were taken or lab analysis carried out for the purpose of this report.

If shrinkable clays are present, foundation design will need to take into account mature tree heights of existing and proposed trees.

1.3.3 Protected Species

The Wildlife and Countryside Act 1981 (as amended), The Conservation of Habitats and Species Regulations 2017 (as amended) and the Countryside and Rights of Way Act 2000 provide statutory protection to species of flora and fauna including birds, bats and other species that are associated with trees.

A licence will be required where there will be impacts on protected species that could result in an offence under the above legislation. Although features suitable for roosting bats or nesting birds may have been noted, this report is not intended to assess the suitability of trees for protected species.

If the presence of a legally protected species is suspected while undertaking any tree work, then the task should be halted immediately, and appropriate advice should be obtained from an ecologist.

1.4 Statutory Designations

Trees can be afforded statutory protection in a number of ways, including;

- a tree preservation order (TPO);
- planning conditions;
- felling licences; and
- location within a designated conservation area (CA).

Protected trees can only be removed or pruned if permission is granted, either as part of a planning permission or in response to a separate application to the local authority (or the Forestry Commission).

The existence of a TPO or CA does not automatically mean that a tree deserves to be a material constraint in a planning context. A formally protected tree can be in poor physiological or structural condition, making it unsuitable for retention. In that case, it is inappropriate that it should influence the future use of a site.

On 27/3/23 the Manchester City Council [web-search](#) indicates **that all trees** surveyed are protected by an area TPO reference 10/00357/TPO.

A TPO can be applied at any time, so it is important to check for the latest information. Where a statutory designation applies, if any tree works or removals are required prior to planning consent, the local authority should be contacted in advance.

1.5 Root Protection Area (RPA)

To ensure that a tree is not harmed by development activities, a theoretical RPA is calculated. The British Standard (BS5837) defines the RPA as *'the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the*

² <http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html>

tree's viability'. It is initially plotted as a simple circle on the tree constraints plan (TCP) with roots assumed to have colonised the ground around the tree radially.

The design layout should aim to retain and avoid the RPAs of the higher category (A and B) trees altogether, so that they may continue to provide benefits without being impacted by construction. Once a design layout has been completed and tree removals agreed, the retained trees should be subject to a fenced zone encompassing the RPA or tree crown (whichever is larger) for the duration of works. No construction, level changes, installation of services, storage of spoil or materials, discharge of chemicals or any other activity which may affect tree health negatively should take place within this area.

In some instances, root growth may have been impeded by inhospitable ground conditions and so a simple circular root protection area may not be relevant to its protection. This may apply near roads, building foundations, retaining walls or water courses and, providing there is suitable rationale, the RPA can be adjusted to reflect this. A similar overall area should be allocated to the tree so that it can continue to thrive.

Where sites are heavily constrained by trees which can be embraced into the development, there may be a need to build very close to their RPA and protective fencing. This often leads to issues at the construction build stage, particularly where extreme changes in levels are required. It is therefore prudent to observe a buffer from the edge of an RPA to allow for safe working space. A 5-metre buffer should be sufficient to avoid conflicts at construction stage.

1.6 Supplied Documents

This report was prepared using data collected on site and the following reports and plans:

- LP00900_231024

2 METHOD

2.1 General

All inspected trees and tree groups were categorised using BS5837:2012, and the attached TCP (Appendix 2) shows tree positions, numbers and retention categories. A schedule of the trees is included in Appendix 1, which includes species, physiological and structural condition, age, recommendations and retention values.

The survey followed the method described in Appendix 4 in accordance with guidance in BS5837:2012. The life expectancy and condition of each tree or tree group informs its suitability for retention.

2.2 Tree Categorisation

Trees were categorised in terms of their useful life expectancy and condition as summarised below. Full details of categorisation criteria are given in Appendix 5. Each category has three sub-categories relating to arboricultural (1), landscape (2) and cultural and conservation (3) qualities. Trees that have been categorised as A, B or C should be considered in the planning process, whereas trees categorised as U are not a consideration in the planning process.

Table 1: Tree categorisation table

BS5837:2012 Categories	Definitions	Retention implications to a site
Category A (marked light green on the TCP)	Trees of high quality and value able to make a substantial contribution to the site.	Every effort should be made to retain trees, and amendments to a proposed scheme should be identified in preference to tree removal.
Category B (marked mid-blue on the TCP)	Trees of moderate quality and value able to make a significant contribution to the site.	Where possible, amendments to a proposed scheme should be considered in preference to tree removal.
Category C (marked in grey on the TCP)	Trees of low quality and value in an adequate condition until new planting can be established; trees with impairments downgrading them from A or B category; OR young trees with a stem diameter of less than 150mm.	The retention of trees may be advantageous in the short term, but they should not be seen as a constraint to development.
Category U (marked in dark red on the TCP)	Trees that have limited condition that will fail or die within 10 years and/or should be removed for reasons of arboricultural best practice	Not a material consideration in the planning process but may have other benefits.

2.3 Distinction Between Individual Trees and Tree Groups

Trees have been recorded as individuals or as groups. BS5837:2012 sets out the description of a group as follows: *“The term “group” is intended to identify trees that form cohesive arboricultural features either aerodynamically (e.g. trees that provide*

companion shelter), **visually** (e.g. avenues or screens) or **culturally** including for biodiversity (e.g. parkland or wood pasture), in respect to each of the tree subcategories.”

Where a tree in a group has characteristics that distinguish it from the rest of the group, it is generally recorded as an individual. Such trees may *inter alia* include veteran trees, trees with significant defects, and specimen trees that stand out within the feature.

2.4 Constraints and Limitations

The trees were viewed from ground-level and from within the site boundary only. The trees were inspected using the Visual Tree Assessment method (Mattheck & Breloer 2015³) and guidance given in *Principles of Tree Hazard Assessment* (Lonsdale 2007⁴). Detailed inspections such as decay detection, soil assessment or aerial inspections have not been carried out. Inspection may have been restricted in some instances by dense ivy cover, being within third-party gardens or behind security fencing with restricted access.

Trees are living organisms and their health and condition is not static. Findings and recommendations in this report are therefore only valid for one year. The health and condition of the trees may also change with other factors such as extreme weather or development work.

The presence of shrinkable soils, and their relationship between tree root activity and volumetric changes in soils that may cause structural damage to buildings, is beyond the scope of this report and has not been investigated.

Where tree positions were not shown on the supplied topographical survey, trees were plotted using a handheld GPS device (a note has been made within the tree data tables).

³ Mattheck, C. Breloer, H. (2015) *The Body Language of Trees, Encyclopaedia of Visual Tree Assessment*. Karlsruhe Institute of Technology.

⁴ Lonsdale, D. (2007) *Principles of Tree Hazard Assessment and Management*. The Stationery Office

3 RESULTS

3.1 Summary

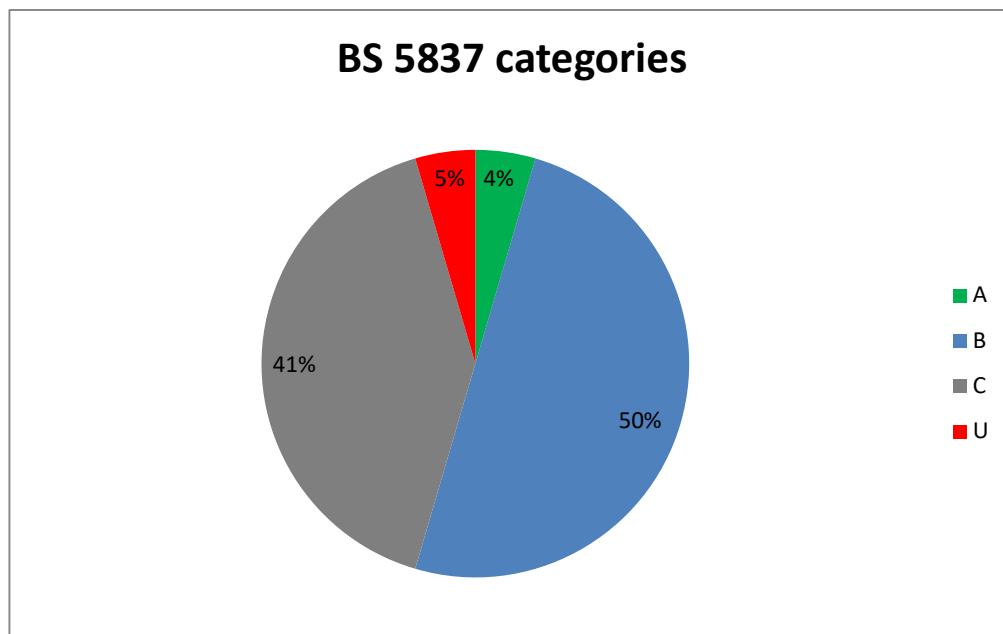
A total of 18 individual trees and four groups of trees were recorded.

Of the 22 features recorded: one was Category A, (features of high quality and value), 11 were Category B, (features of moderate quality and value), nine were Category C (limited amenity value or longevity) and one was Category U (Unsuitable for retention).

Chart 1 below, shows the distribution of BS5837 quality categories recorded on site.

Further details on the individual trees and tree groups can be found in Appendix 1- Tree Survey Data.

Chart 1: Distribution of BS 5837 categories recorded



General Observations

The most significant features recorded are the boundary roadside trees that line Fielden Road to the south and Burton Road to the east.

In addition, G001 (Cat B) is a row of tall maturing Sycamore (*Acer pseudoplatanus*) that forms the western boundary of the survey area. Although this is an internal hospital boundary, this row of trees forms a significant feature that is mainly visible from within the hospital grounds.

G002 (Cat C) is a large group of young and semi mature trees that is a significant feature due to the quantity of trees although none are of significance due to their small size, stature and all appear to be self-set.

T1- T5 and T7 (Cat B) are the line of maturing to mature trees that border Fielden Road along the site boundary. These are significant specimens with diameters ranging from

500mm to 900mm (when measured at 1.5m height). They are predominantly Sycamore species with a lesser number of Lime (*Tilia sp.*) and Oak (*Quercus sp.*).

T010 is a Category A Lime measuring 800mm diameter (when measured at 1.5m height) and in a prominent position near the corner of Fielden and Burton Road offering high amenity value.

T011 and T013 are two maturing Horse Chestnut (*Aesculus hippocastinum*) that form prominent specimens as part of the Burton Road street scene. They have been given Category B due to their species and also as they have suffered from historic crown lifting and pruning wounds previously.

The remaining Category C trees are generally of lesser value, due to their small stature, and poorer structural or physiological condition. However, they still offer some amenity value as components of the street scene they are associated with. Their loss would have less significance locally and would be easier to replace and compensate for.

T012 (Cat U) is an Ash (*Fraxinus excelsior*) that has been reduced in height heavily in the past and has a short useful life from an amenity perspective.

4 PROPOSALS AND IMPACTS

4.1 Development Proposal

Development of a two-storey building comprising a Community Diagnostics Centre (use class E(e)), with associated external landscaping, patient and delivery drop off area and 6 no. accessible parking spaces.

4.2 Tree Removals

Under the current proposed layout, one partial group (G002) and one whole group (G004) will need to be removed to facilitate its implementation. These are both Category C features.

Table 2: Tree removals and impacts

Tree id	BS5837:2012 Categories	Species	Reason for removal and impact
G002	C1	Willow (Salix sp.), Common Holly (Ilex aquifolium), Blackthorn (Prunus spinosa)	Removal required due to facilitate building footprint
G004	C1	Cherry species (Prunus sp.)	Removal required due to facilitate building footprint
T9	C2	European Lime (Tilia x europaea)	Minor impacts to RPA to facilitate construction works area
T10	A2	European Lime (Tilia x europaea)	Minor impacts to RPA to facilitate construction works area

4.3 Retained Trees

4.3.1 General

The retained trees around the proposed layout will require protective fencing and this should be to a sufficiently robust specification to ensure protection of its surrounding ground conditions. Site hoarding around the development footprint will provide suitable protection for other trees adjacent to the site.

Some further woodland management operations may be required to the retained sections of G002, in the form of thinning and pruning to soften the transition between new layout and retained group edges.

4.3.2 Root Protection Areas (RPA)

The proposed construction works area overlaps a small proportion of the RPA of T009 and T010. All work within their RPA's must be undertaken using hand tools and under arboricultural supervision, so that any roots found during excavation can be pruned neatly and cleanly.

4.3.3 Facilitation Pruning

Some facilitation pruning is likely to be required to provide clearance from construction activity. This will affect the following trees: T14, T15 and T16.

Only minor crown lifting, and minor lateral growth pruning is expected to be required.

4.3.4 Services

Details of proposed drainage/services have not been provided, however there is ample space around the proposed building footprint (once G002 removals have been completed) and, providing all excavation is located outside of RPA's this will be acceptable.

4.3.5 Post-development Pressure

As an adequate buffer has been provided between the proposed building and the existing trees (specifically T001-T010), no significant post-development pressure is expected.

Foundations will need to take account of all trees (including those proposed in landscape schemes), and their mature heights, irrespective of the need to prune, to ensure that risk of below-ground damage is reduced as this may result in pressure to remove trees in the future.

4.4 Impact Assessment Summary

The most significant impacts are through the partial loss of the dense group G002.

This loss of trees represents a notable reduction in canopy cover and a loss of some local environmental benefits associated from tree presence. However, as the majority were immature self-trees, and a portion is being retained, the proposal is considered acceptable from an arboricultural perspective.

New planting is shown on the landscape design and this will go some way to mitigate for the losses on the site.

5 GENERAL PROTECTION MEASURES

5.1 Pre-construction

5.1.1 Arboricultural Method Statement (Stage 3)

Once the construction details are provided, a detailed AMS should be compiled, detailing the exact location and nature of protective fencing, tree pruning, signage, timings and methods of works and other protection measures. All site operatives must be made aware of the nature of the protection detailed in the AMS and it should remain in place throughout construction.

5.1.2 Tree Works

Any tree works or tree removals required to facilitate the development should be carried out before construction begins and be in accordance with the British Standard, BS 3998:2010 Tree Work – Recommendations, once planning approval has been granted.

5.1.3 Tree Protection Measures

Any site offices, welfare units, and storage areas must respect the trees and their RPA, shown in purple on the supplied plans. These should be sited outside tree protection areas.

Tree protection fencing should be installed prior to demolition and any construction. This is to avoid damage to trees and preserve soil structure. The default BS5837 specification for fencing should be used for the large part of the site.

The fenced area will form a Construction Exclusion Zone and must remain undisturbed for the duration of demolition and construction unless approved works are required within it, such as removal of hard surfaces or installation of boundary treatments. Such works should be undertaken under arboricultural supervision and in line with an approved method statement. All site operatives should be made aware of the need to respect the fencing, and signage should be affixed to every third panel to ensure it is not moved.

Service runs and installation of utility cables also need to respect trees and their root protection areas. If any conflicts are highlighted, then the advice of either a consultant arboriculturist or the council Arboricultural Officer should be obtained.

The following precautions should be observed when working near to the Construction Exclusion Zone.

- No fires should be lit on site.
- No spoil, plant, machinery, construction materials or vehicles should track or be stored within the fenced area or leant against the fence panels.
- No fuel, chemical or other contaminated liquids must be discharged in proximity to trees or where it may flow toward tree RPAs.
- No construction activity of any kind should take place within the fenced areas and fencing must not to be moved.
- No spoil or materials to be stored or leant against fencing.
- Damage to fencing must be reported to the site manager and rectified as soon as possible. All fencing should be maintained so that it is fit for purpose.

5.2 Post-construction

5.2.1 Replacement Planting

A suitable landscaping scheme incorporating replacement planting will go some way to mitigate for the losses on the site. This should aim to integrate trees of differing sizes appropriate for the space afforded to them.

Suitable ground conditions and aftercare are vital to the success of new trees, and the recommendations provided in the British Standard, BS 8545⁵ and the Trees and Design Action Group publication – *Trees in the hardscape*⁶ should be followed. This includes ensuring that soils are not compacted prior to planting and that adequate below-ground space is provided with suitable volume requirements to support mature root growth and withstand compaction. Aftercare in the form of watering and sympathetic formative pruning in the first five years after planting will also help to ensure that the replacement trees thrive.

⁵ British Standards Institute (2014) *BS 8545:2014 Trees: from nursery to independence in the landscape – Recommendations*. British Standards Publications Ltd.

⁶ Trees and Design Action Group (2014) *Trees in Hard Landscapes: A Guide for Delivery*. TDAG Publication.

6 APPENDICES

APPENDIX 1: TREE SURVEY DATA

BS5837 Report

RSK Biocensus
CDC Withington



Ref.	Species	Measurements	General Observations	Comments	Retention Category	RPA	Measurements2
G001	Sycamore (<i>Acer pseudoplatanus</i>)	Height (m): 16 Stem Diam(mm): 450 Spread (m): 3N, 3E, 3S, 3W Life Stage: Early Mature Rem. Contrib.: 10 - 20 Years	Group of sycamore along fencing boundary.	Unable to inspect stem due to undergrowth - data estimated Unable to inspect stem due to Ivy - data estimated Bat box in trees	C2	Area: 457 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G002	Willow (<i>Salix sp.</i>) Common Holly (<i>Ilex aquifolium</i>) Blackthorn (<i>Prunus spinosa</i>)	Height (m): 10 Stem Diam(mm): 100 Spread (m): 1.5N, 1.5E, 1.5S, 1.5W Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years		Unable to inspect stem due to undergrowth - data estimated	C2	Area: 4460 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G003	Sycamore (<i>Acer pseudoplatanus</i>) Prunus (<i>Prunus sp.</i>)	Height (m): 12 Stem Diam(mm): 400 Spread (m): 1.5N, 1.5E, 1.5S, 1.5W Life Stage: Semi Mature	Multiple stems at ground level Small group of multi-stemmed trees on fence line	Unable to inspect stem due to undergrowth - data estimated	C2	Area: 141 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G004	Prunus (<i>Prunus sp.</i>)	Height (m): 8 Stem Diam(mm): 300 Spread (m): 3N, 3E, 3S, 3W Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Two prunus	Ivy on tree Unable to inspect stem due to Ivy - data estimated	C2	Area: 52 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
T001	European Lime (<i>Tilia x europaea</i>)	Height (m): 12 Stem Diam(mm): 600 Spread (m): 3N, 3E, 3S, 3W Life Stage: Mature Rem. Contrib.: 20 - 40 Years	Epicormics on stem	Unable to inspect stem due to epicormic growth - data estimated Not plotted on topo, position estimated	B2	Radius: 7.2m. Area: 163 sq m.	Other Reference: 0032 tag Physiological Cond: Fair Structural Cond: Fair

Ref.	Species	Measurements	General Observations	Comments	Retention Category	RPA	Measurements2
T002	Sycamore (<i>Acer pseudoplatanus</i>)	Height (m): 10 Stem Diam(mm): 900 Spread (m): 5N, 5E, 5S, 5W Life Stage: Mature Rem. Contrib.: 20 - 40 Years	Epicormics on stem	Unable to inspect stem due to undergrowth - data estimated Unable to inspect stem due to fencing - data estimated Not plotted on topo, position estimated	B2	Radius: 10.8m. Area: 366 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
T003	Sycamore (<i>Acer pseudoplatanus</i>)	Height (m): 16 Stem Diam(mm): 800 Spread (m): 5N, 5E, 5S, 5W Life Stage: Mature Rem. Contrib.: 20 - 40 Years	Epicormics on stem	Unable to inspect stem due to fencing - data estimated Not plotted on topo, position estimated Ivy on tree Bat box on tree	B2	Radius: 9.6m. Area: 290 sq m.	Other Reference: 0030 tag Physiological Cond: Fair Structural Cond: Fair
T004	Pedunculate Oak (<i>Quercus robur</i>)	Height (m): 10 Stem Diam(mm): 650 Spread (m): 1N, 1E, 4S, 4W Life Stage: Mature Rem. Contrib.: 20 - 40 Years	Crown distorted due to group pressure	Unable to inspect stem due to fencing - data estimated Not plotted on topo, position estimated	B2	Radius: 7.8m. Area: 191 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
T005	Sycamore (<i>Acer pseudoplatanus</i>)	Height (m): 16 Stem Diam(mm): 700 Spread (m): 5N, 5E, 5S, 5W Life Stage: Mature Rem. Contrib.: 20 - 40 Years		Unable to inspect stem due to fencing - data estimated Not plotted on topo, position estimated Ivy on tree Unable to inspect stem due to Ivy - data estimated	B2	Radius: 8.4m. Area: 222 sq m.	Other Reference: 0027 tag Physiological Cond: Fair Structural Cond: Fair
T006	Sycamore (<i>Acer pseudoplatanus</i>)	Height (m): 14 Stem Diam(mm): 500 Spread (m): 4N, 4E, 4S, 3W Life Stage: Early Mature Rem. Contrib.: 10 - 20 Years		Unable to inspect stem due to fencing - data estimated Not plotted on topo, position estimated Ivy on tree Unable to inspect stem due to Ivy - data estimated	C2	Radius: 6.0m. Area: 113 sq m.	Other Reference: 0026 tag Physiological Cond: Fair Structural Cond: Fair
T007	Sycamore (<i>Acer pseudoplatanus</i>)	Height (m): 14 Stem Diam(mm): 500 Spread (m): 4N, 4E, 4S, 4W Life Stage: Early Mature Rem. Contrib.: 10 - 20 Years		Unable to inspect stem due to fencing - data estimated Not plotted on topo, position estimated Ivy on tree Unable to inspect stem due to Ivy - data estimated	B2	Radius: 6.0m. Area: 113 sq m.	Other Reference: 0024 tag Physiological Cond: Fair Structural Cond: Fair

Ref.	Species	Measurements	General Observations	Comments	Retention Category	RPA	Measurements2
T008	Pedunculate Oak (<i>Quercus robur</i>)	Height (m): 14 Stem Diam(mm): 250 Spread (m): 3N, 3E, 3S, 3W Life Stage: Semi Mature Rem. Contrib.: 20 - 40 Years			B1	Radius: 3.0m. Area: 28 sq m.	Other Reference: Physiological Cond: Good Structural Cond: Good
T009	European Lime (<i>Tilia x europaea</i>)	Height (m): 15 Stem Diam(mm): 600 Spread (m): 4N, 3E, 4S, 4W Life Stage: Mature Rem. Contrib.: 10 - 20 Years	Included bark present in fork Stem divides above 1.5m Minor deadwood in crown	Unable to inspect stem due to Ivy - data estimated Ivy on tree	C2	Radius: 7.2m. Area: 163 sq m.	Other Reference: 0023 tag Physiological Cond: Fair Structural Cond: Fair
T010	European Lime (<i>Tilia x europaea</i>)	Height (m): 15 Stem Diam(mm): 800 Spread (m): 5N, 3.5E, 5S, 5W Life Stage: Mature Rem. Contrib.: 20 - 40 Years		Unable to inspect stem due to Ivy - data estimated Ivy on tree Unable to inspect stem due to epicormic growth - data estimated	A2	Radius: 9.6m. Area: 290 sq m.	Other Reference: 0022 tag Physiological Cond: Fair Structural Cond: Fair
T011	Horse Chestnut (<i>Aesculus hippocastanum</i>)	Height (m): 12 Stem Diam(mm): 600 Spread (m): 3N, 5E, 5S, 2W Life Stage: Early Mature Rem. Contrib.: 20 - 40 Years	Previous pruning wounds present	Unable to inspect stem due to Ivy - data estimated Ivy on tree	B2	Radius: 7.2m. Area: 163 sq m.	Other Reference: 0021 tag Physiological Cond: Fair Structural Cond: Fair
T012	Common Ash (<i>Fraxinus excelsior</i>)	Height (m): 8 Stem Diam(mm): 600 Spread (m): 1.5N, 1.5E, 1.5S, 1.5W Life Stage: Early Mature Rem. Contrib.: <10 years	Previous pruning wounds present Previously reduced in height major	Unable to inspect stem due to Ivy - data estimated Ivy on tree Bat box on tree	U	No RPA due to Retention Category of U.	Other Reference: 0020 tag Physiological Cond: Fair Structural Cond: Poor
T013	Horse Chestnut (<i>Aesculus hippocastanum</i>)	Height (m): 14 Stem Diam(mm): 700 Spread (m): 5N, 5E, 5S, 5W Life Stage: Early Mature Rem. Contrib.: 20 - 40 Years		Unable to inspect stem due to Ivy - data estimated Ivy on tree	B1,2	Radius: 8.4m. Area: 222 sq m.	Other Reference: 0020 tag Physiological Cond: Good Structural Cond: Fair
T014	Common Beech (<i>Fagus sylvatica</i>)	Height (m): 14 Stem Diam(mm): 300 Spread (m): 3N, 3E, 1.5S, 3W Life Stage: Semi Mature	Crown distorted due to group pressure	Not plotted on topo, position estimated	B2	Radius: 3.6m. Area: 41 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair

Ref.	Species	Measurements	General Observations	Comments	Retention Category	RPA	Measurements2
T015	Sycamore (<i>Acer pseudoplatanus</i>)	Height (m): 12 Stem Diam(mm): 450 Spread (m): 3N, 3E, 3S, 3W Life Stage: Early Mature Rem. Contrib.: 10 - 20 Years			C2	Radius: 5.4m. Area: 92 sq m.	Other Reference: Physiological Cond: Poor Structural Cond: Fair
T016	Sycamore (<i>Acer pseudoplatanus</i>)	Height (m): 12 Stem Diam(mm): 350 Spread (m): 3N, 3E, 4S, 3W Life Stage: Semi Mature		Unable to inspect stem due to undergrowth - data estimated	C2	Radius: 4.2m. Area: 55 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
T017	River Birch (<i>Betula nigra</i>)	Height (m): 8 Stem Diam(mm): 150 Spread (m): 2N, 2E, 2S, 2W Life Stage: Young		Unable to inspect stem due to fencing - data estimated	B1	Radius: 1.8m. Area: 10 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
T018	River Birch (<i>Betula nigra</i>)	Height (m): 6 Stem Diam(mm): 100 Spread (m): 1.5N, 1.5E, 1.5S, 1.5W Life Stage: Young			C1	Radius: 1.2m. Area: 5 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair

APPENDIX 2: TREE CONSTRAINTS PLAN



Legend

- Tree Group BS5837 Category A
- Tree Group BS5837 Category B
- Tree Group BS5837 Category C
- Tree Group BS5837 Category U
- Tree BS5837 Category A
- Tree BS5837 Category B
- Tree BS5837 Category C
- Tree BS5837 Category U
- Root Protection Area
- Tree or tree group number



Rev.	Date	Amendment	Drawn	Chkd.	Appl.
RF	270323		JB	270323	JB
Scale	1:666	Orig Size	A0	Dimenstone	METRES
Project No.	2485237	Drawing File			
Drawing No.	1	Rev.		0	

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Client
NHS Manchester University

Project Title
Withington Hospital

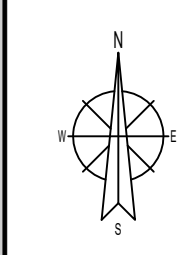
Drawing Title
TREE CONSTRAINTS PLAN

APPENDIX 3: TREE RETENTION PLAN



- Legend**
- Groups Retained
 - Groups Removed
 - Trees Retained
 - Trees Removed
 - Root Protection Area
 - Tree or tree group number

Arboricultural Supervision Required



Rev.	Date	Amendment	Drawn	Chkd.	Appl.
RF	24/10/23		JB	24/10/23	JB
Scale	1:666	Orig Size	A0	Diminution	METRES
Project No.	2485237	Drawing File			
Drawing No.	2	Rev.			1

Client: NHS Manchester University

Project Title: Withington Hospital

Drawing Title: TREE RETENTION PLAN

APPENDIX 4: TREE SURVEY KEY

Reference

Each tree or group has been assigned a sequential number.

T- Tree

G - Group

Species

Represents the genus, species and, if appropriate, cultivar of the tree. The common name is provided first, with the scientific name in brackets.

Stems

Number of stems present.

Measurements

- DBH - Stem diameter in millimetres measured at 1.5m above ground level. Where the stem is divided below 1.5m, measurement is taken as directed by BS5837 Annex C.
- Height – Tree height measure in metres to the nearest half-metre,
- Lower crown height – Lower crown height above ground in metres of the first lowest significant branch.

Age Classification

The following classification is employed:

- Y - Young: saplings and young trees under 10 years of age
- SM – Semi Mature: trees older than 10 years but less than one-third of the life expectancy of their species, normally making substantial extension growth.
- EM – Early Mature: trees between one-third and two-thirds of the life expectancy of their species. More or less full height and large girth, increasing only slowly.
- M – Mature: trees beyond two-thirds of the life expectancy of their species. No significant extension growth.
- OM – Over Mature - a tree having reached its maximum life span and is declining in health and size due to old age.
- V – Veteran: trees that shows features of biological, cultural or aesthetic value that are characteristic of an individual surviving beyond the typical age range for the species.

Structure Condition

An assessment of the structural/safe condition of the tree categorised into:

- GOOD - a tree in a safe condition with no significant defects,

- FAIR - a tree in a safe condition at present but with defects or with significant defects that can be remediated,
- POOR - a tree with significant defects that cannot be remediated.

Physiological Condition

An assessment of the physiological condition (i.e., health/vitality) of the tree categorised into:

- GOOD - a tree in a healthy condition with no significant problems
- FAIR - a tree generally in good health with some problems that can be remediated
- POOR - a tree in poor health with significant problems that cannot be remediated
- DEAD - a tree without sufficient live material to sustain life

General Observations

Observations made by the assessor relating to the category classification and arboricultural merits or concerns.

Estimated Remaining Contribution in Years

The estimated remaining contribution in years is an estimate based on currently known factors of the possible remaining life of the tree as an asset. Clearly, it is impossible to predict changes in condition which may occur in the future, and this reflects what is considered reasonable under existing circumstances; the classification that has been used is in accordance with BS5837.

The estimated remaining contribution in years will be dependent on the interaction of the typical longevity of the species, its current age and condition with prevailing environmental factors. The estimated remaining contribution in years also dependent on future tree management that can extend useful life in some instances.

Tree Categorisation Using BS 5837 Methodology

The trees surveyed were categorised using the method explained in BS5837. This method categorises individual trees, groups and woodlands in a systematic way. Groups are identified as those trees forming a single arboricultural feature with trees that provide companion shelter, are avenues or screens or cultural. Initially the surveyor will determine if the tree should be regarded as a U category tree. U category trees are those that are of low value that have little future due to physiological and structural condition.

Other trees are graded A, B or C. The initial category should reflect the tree's value in making an important contribution to the amenity of the site over a period of time. The higher the tree category, the longer the perceived time-period.

A subcategory is included 1, 2 or 3. This subcategory reflects the type of value the surveyor feels the tree presents in regard to its value to 1 – arboricultural, 2 – landscape, 3 – cultural or conservation context.

The cascade chart used is included as Appendix 5 of this report.

APPENDIX 5: BS5837:2012 CASCADE CHART



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Registered office
Spring Lodge, 172, Chester Road, Helsby, Frodsham, England, WA6 0AR, UK
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Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those 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	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>	See Table 2		
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
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	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2