MANCHESTER COMMUNICATIONS ACADEMY

Arboricultural Impact Assessment

JSL5177_770

Manchester Communications Academy
V3

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1 EXECUTIVE SUMMARY

Scope

1.1 An arboricultural survey and Arboricultural Impact Assessment (AIA) have been undertaken to assist a planning application to Manchester City Council (as the 'Local Planning Authority'). This planning application seeks permission for the construction of a new 3G Synthetic Turf Pitch (STP) at the Manchester Communications Academy.

1.2 During the arboricultural survey, on which this report is based, trees were recorded, and information was gathered, to allow them to be considered using guidance contained within BS5837:2012 - *Trees in Relation to Design, Demolition and Construction – Recommendations*.

1.3 An AIA identifies any vegetation requiring removal, pruning and how retained trees are to be protected during the implementation of the proposals.

Findings & Recommendations

1.4 The principles in BS5837:2012 were used to fully assess the impacts of the proposed works on the trees and other vegetation.

1.5 A total of 28 individual trees, 12 groups of trees and 1 woodland group were surveyed during the visit.

1.6 Category C group (G6) will need to be removed entirely for the development. The remaining trees needing to be removed (comprising 7 trees from G2 and T15-18) from the site will be translocated elsewhere within the wider area.

1.7 Particular trees/groups will require pruning in order to provide adequate clearance for the development proposals. Please refer to paragraph 6.18 and Tree Removal and Protection Plan for more details.

1.8 The trees adjacent the works area will be afforded protection by implementing a Construction Exclusion Zone (CEZ) using tree protection fencing (Heras-style). This must be erected in the position shown on the Tree Removal & Protection Plan (see drawings JSL5177_710) attached to this report.

2 INTRODUCTION

2.1 RPS were instructed in May 2024 by McArdle Sport Tec to undertake an arboricultural survey and then to prepare an Arboricultural Impact Assessment (AIA) in respect of the proposed construction of a new 3G Synthetic Turf Pitch (STP) at the Manchester Communications Academy.

2.2 V1 of this report included the assessment of both the STP in the northern section of the site and a new car park in the southern section of the site. V2 of this report now only deals with the STP element of the original proposals as the car park has now been occluded from this application. Therefore, while the Tree Constraints Plan (see drawing JSL5177_700) shows the entire survey area, the Tree Removal & Protection Plan (see drawing JSL5177_710) only shows the northern section dealing with the STP.

2.3 The arboricultural survey was undertaken in accordance with BS5837:2012, as described within the 'Survey Methodology' attached to this report at Appendix A.

2.4 The site tree survey was undertaken in May 2024. The purpose of the survey was to gather data on the trees present within the site and to prepare a Tree Constraints Plan (see drawing JSL5177_700) that could be used to assess any potential impacts of the development. 'Survey Methodology' guidance at Appendix A explains the process of interpreting the plan and how it is used during the design and impact assessment process.

2.5 This report should be read in conjunction with the supplied Tree Constraints Plan (see drawing JSL5177_700), Tree Removal & Protection Plan (see drawing JSL5177_710) and all other relevant Schedules and Appendices as detailed within the table of contents.

2.6 During the site tree survey, tree positions were plotted using the Topographical Survey provided by the client and data capture software. The data was then collated and presented using AutoCAD and Microsoft Excel software in the form of the Tree Constraints Plan (see drawing JSL5177_700) and its accompanying Tree Data Schedules attached to this report.

2.7 The proposed layout design of the new development as well as any other associated constructions and developments have been superimposed onto the Tree Protection Plan, enabling the arboricultural impact of the development to be assessed.

2.8 The survey was undertaken by former RPS Senior Arboriculturist Jake Bailley and this assessment was carried out by RPS Associate Director Thomas Flood MICFor MArborA.

Limitations

2.9 This assessment does NOT constitute an in-depth 'Tree Condition Survey' and is for planning purposes only. For an in-depth assessment of tree health and hazards posed by trees, this would require a separate survey specific to that purpose.

2.10 The findings of this survey are not valid following adverse or unpredictable weather conditions or for any failure due to 'force majeure' or unpredictable events.

2.11 Trees were not climbed or inspected below ground level and inaccessible trees will have best estimates made about the location, physical dimensions and characteristics.

2.12 To quote Claus Mattheck in his book 'Tree Biomechanics': "Even trees expressing good strength with no decay and rooted in the best soil may still fail in extreme events. Nature has developed a natural failure rate unique to each species which is key in ensuring evolution and selection happens effectively."

3 SITE INFORMATION

3.1 The site under consideration previously comprised two separate parcels of land either side of Lathbury Road within the Manchester Communications Academy. The Northern parcel contains an existing artificial sports pitch (to be replaced) which is accessed via an existing footpath from Lathbury Road. The Southern parcel comprises an area of open space.

3.2 The Northern parcel comprises the existing surfaces associated with the artificial pitch and this is bordered by trees of variable maturity and concentration around the North-West, North-East and South-East sides.

3.3 The Southern parcel comprises an open space grassed area with scattered trees internally and a woodland along the Southern edge.

3.4 RPS are awaiting a response from the Manchester City Council in relation to whether any of the trees on site are subject to a Tree Preservation Order (TPO) and therefore this should be confirmed prior to commencement on site. There are however no Conservation Areas or ancient woodlands within the site.

3.5 It should be noted that the Southern parcel is no longer being included within the site boundary for the application (as referred to in more detail at paragraph 2.2).

4 TREE QUALITY ASSESSMENT

Retention Values

4.1 All trees inspected were categorised using BS5837:2012 and the attached Tree Constraints Plan (see drawing JSL5177_700) shows tree positions, numbers and retention categories. Trees were recorded as individuals and as groups.

4.2 Trees have been surveyed as groups where they can be considered as forming a group as they form cohesive features either aerodynamically (i.e. they form a discrete group feature providing companion), culturally (i.e. they are composed of trees of a similar size, age and species subject to the same management) or visually (i.e. where the value of the trees within the group is as a whole rather than individually).

4.3 Where trees have been surveyed as groups the details recorded with respect to condition and retention value intend to represent an average tree within the group; however, on occasion, it must be noted that there will be exceptions within any group that do not conform to the typical character of that group.

4.4 The initial stage of a tree survey in accordance to BS5837:2012 looks at the trees on the site in terms of life expectancy and condition. Trees are then categorised according to their retention value.

4.5 **Category A** trees are those that have been assessed as being of a high quality and value; significant amendments to the proposed scheme should be considered in preference to their removal. These trees are shown in Green on the Tree Constraints Plan.

4.6 **Category B** trees are those that have been assessed as being of a moderate quality and value; amendments to the proposed scheme should be considered in preference to their removal. These trees are shown in Blue on the Tree Constraints Plan.

4.7 **Category C** trees are those that have been assessed as being of a low quality and value; the loss of these specimens should not be considered as a constraint to development. These trees are shown in Grey on the Tree Constraints Plan

4.8 **Category U** trees are those that have been assessed as being in poor condition and having no retention value; these trees should not be a material consideration in the planning process. These trees are shown in Red on the Tree Constraints Plan.

4.9 A total of 28 individual trees, 12 groups of trees and 1 woodland group were surveyed during the visit.

4.10 Of the 28 individuals recorded, 1 was classed as Category A (high quality), 12 as Category B (moderate quality), 12 as Category C (low quality) and 3 as Category U (unsuitable for retention), in accordance with the retention category gradings in BS5837:2012.

4.11 The 12 groups were all recorded as 3 Category B (moderate quality) and 9 as Category C (low quality). The 1 woodland was classed as Category B.

Physiological Condition

4.12 Trees considered to be in a good physiological condition are those with crown density and shoot extension growth levels within the expected ranges for their age and species. Generally, these trees, subject to being of a suitable structural condition, can be expected to make a lasting contribution to the site. Additionally, trees within the good condition class are likely to tolerate changes within their growing environment that occur as a result of development; as such their successful retention will be easier to achieve.

4.13 Trees considered to be in a fair physiological condition are those specimens exhibiting lower shoot extension growth and reduced crown density than would typically be expected. These specimens have a lower life expectancy than those within the good condition class and will not tolerate significant changes as a result of development as well as those in the good condition class.

4.14 Trees considered to be in a poor physiological condition are those exhibiting crown and shoot dieback and significantly reduced crown density. Trees of a poor physiological condition are not likely to make a lasting contribution to the site and whilst their retention in the short term may be beneficial such retention will only be achievable if the trees are fully protected throughout development as they will not tolerate changes in their growing environment.

Structural Condition

4.15 There are variations in the structural condition of the trees surveyed; however individual tree condition is largely consistent with expectations for the age, management and species of the tree.

4.16 The majority of structural defects that were noted across most of the tree stock on the site, such as minor deadwood in tree crowns, were not considered significant and are unlikely to result in the premature failure of the tree.

Age Distribution

4.17 Trees assessed as being young (Y) in age are those considered to be less than 10 years old. These trees can generally be considered to have the potential for rapid and significant future growth. Whilst these specimens are not likely to make a substantial contribution to the landscape character

of the site at present they will, if retained, provide succession for the eventual removal of mature or over-mature trees as a result of declining physiological or structural condition.

4.18 Trees assessed as being semi-mature (SM) are those of more than 10 years old but having attained less than 40% of the maximum lifespan expected for the species. These trees will generally make some contribution to the current landscape character and appearance of the site and their retention will provide a more immediate succession of mature trees. As with young trees these specimens will have the potential for rapid and significant future growth.

4.19 Early-mature trees (EM) are those considered to have reached between 40% and 70% of their ultimate life expectancy. These trees are generally not considered to have a significant potential for future growth though they will increase in size at a slower rate than young and semi-mature trees.

4.20 Mature trees (M) are those considered to have reached between 70% and 100% of their species life expectancy. These trees will have little future growth potential and they have generally reached their maximum expected size for the location. These trees will generally make the highest contribution to the landscape character of the site at this time; however, a tree stock over dominated by mature trees will require careful management to ensure that a continuation of canopy cover can be achieved.

4.21 Over-mature trees (OM) are those considered to have existed for longer than typical of their species. They do not have the potential to increase in size and may in fact reduce in size as their crowns begin to break up. These trees will often make a significant contribution to the landscape character of the site and are likely to have ecological value. However, the retention of these trees within new development must be carefully planned as they are approaching the end of their useful life expectancy and they will often have structural defects. Where over-mature trees are to be retained in new development it is essential that access is available for their eventual removal.

4.22 Veteran trees (V) are those that show features of biological, cultural or aesthetic value that are characteristic of an individual surviving beyond the typical age range for the species. These trees have negligible potential to increase in size. Veteran trees are usually of a high ecological value and they will require sensitive management where they are to be retained in new development. As such it is again essential that they are located in areas where access is available to undertake management operations and where there is a reduced risk of harm occurring from failure of the trees.

Species Distribution

4.23 The tree species recorded during the survey can be found in the Tree Survey Schedule (see Table 751 attached to this report).

5 CONSTRUCTION REQUIREMENTS

5.1 The development of the new STP will require the demolition of the existing artificial grass pitch and the construction of these new facilities with associated changes to hard and soft surfaces. It will also require the installation of fencing, lighting masts, access, storage areas and drainage.

5.2 Access will be required for personnel / equipment to:

- Remove / translocate trees as required
- Undertake any crown pruning required
- Install Tree Protection Fencing (TPF)
- Undertake demolition works to existing pitch
- Create new formation level for pitch and install drainage
- Construct the Synthetic Turf Pitch (STP)
- Install utilities and floodlights
- Installation access points and fences
- Carry out any final landscaping

5.3 Reference to this document should form part of any method statement regarding the proposed construction works. This will show an understanding of the issues and actions required to protect the trees. Areas of machinery exclusion and special surfacing requirements have been shown on the Tree Removal & Protection Plan (see drawings JSL5177_710) to help in the production of these statements.

5.4 The construction process will need to be monitored during its progress to ensure continued protection of any retained trees.

5.5 Reference to this document should form part of any method statement regarding the proposed construction works with regard to trees. This will show an understanding of the issues and actions required to protect the trees. Areas of machinery exclusion have been shown on the Tree Removal & Protection Plan (see drawings JSL5177_710) to help in the production of these statements.

6 ARBORICULTURAL IMPACT ASSESSMENT - WORKS

Introduction

6.1 The construction process will need to be monitored during its progress and this Arboricultural Impact Assessment should be used as the document provided to guide the construction process.

6.2 Trees have finite energy reserves, developed each year throughout the growing season, which are utilised for biological processes such as growth and defence against pests or diseases throughout the following year.

6.3 Any development in proximity to trees has the potential to cause harm to those trees unless control measures are identified and acted upon; as such it is essential to consider the relationship between the proposed development and the retained trees to identify what precautions are necessary, proportionate and appropriate.

6.4 Development has the potential to impact upon the above ground as well as below ground parts of trees.

6.5 Whilst some damage that can occur, such as physical damage to the trees stems and branches from machinery movements, is clearly visible the impact from other aspects of work common on development sites which can have a significant effect upon the continued health of trees are not always immediately evident.

6.6 Damage that is not immediately evident, but which can cause long term harm to retained trees includes things such as damage to the soil structure by compaction causing root damage and levels changes altering the water table and affecting moisture availability.

6.7 To minimise the potential for harm to occur to retained trees all works should be carried out with regard to the tree protection measures detailed within this report.

6.8 In general, it can be seen that, by adopting appropriate methods of working, precautionary and protective measures, significant harm to retained trees can be avoided.

6.9 In particular, the establishment of a Construction Exclusion Zone (CEZ) by erection of tree protection fencing will minimise the potential for harm to occur to retained trees.

Brief Description of Proposed Development

6.10 The proposals are for a new STP development with floodlights, ball stop fencing, drainage, storage and access.

Tree Removal

6.11 There will be a requirement to remove trees (or translocate them) in order to facilitate this development. These removals (and translocations) can be seen on the Tree Removal & Protection Plan (see drawings JSL5177_710). Only one small Category C group (G6) will need to be removed entirely for the development. The remaining trees needing to be removed (comprising 7 trees from G2 and T15-18) from the site are of a maturity that should allow for them to be translocated elsewhere within the wider area.

Root Protection Areas

6.12 Root Protection Areas (RPAs) for each tree surveyed have been determined in accordance with BS5837:2012 Section 4.6 Root Protection Area in the Standard. Initial RPAs for the trees were plotted onto the Tree Constraints Plan (see drawing JSL5177_700) which has then been used to produce the subsequent Tree Removal & Protection Plan (see drawings JSL5177_710).

6.13 There will be a need to provide a haul road from Lathbury Road into the site where the existing pitch is to be dismantled and the new 3G STP is to be located. RPS have been informed that this will need to follow the existing path off Lathbury Road which passes T1 and T2, either side of the entrance gate, and T22 further to the North. The path will not currently accommodate the width of an 8 wheel tipper truck, the scale of the vehicle which will be needed for the works. Therefore, any areas of exposed RPA which may be impacted by the transit of vehicles / machinery must be provided adequate ground protection first. This should ideally be of proprietary quality and of sufficient load bearing capability to withstand the loads expected without compacting underlying soils.

6.14 In this instance, following tree removals / translocation, there is one minor RPA encroachment required to facilitate the development. The Category A tree T22, located adjacent the existing artificial grass pitch at its Western corner, requires an additional area of hard standing which will augment the existing footpath which already sits within the RPA. A calculation of the encroachment has revealed that this encroachment amounts to 0.59% of the total RPA and is therefore deemed negligible in terms of impact and well within the trees capability to withstand.

6.15 The remainder of the retained trees should be free from RPA encroachment provided the CEZ (Construction Exclusion Zone), which has been marked on the Tree Removal & Protection Plan (see drawings JSL5177_710), is installed in its correct position and remains in situ until the

construction of the development has taken place. The CEZ can be achieved using Heras style fence panels (also referred to in this document as TPF, or Tree Protection Fencing).

Existing Canopy Spreads

6.16 Where the RPAs for retained trees do not extend to the edge of existing canopy spreads, it is possible that those parts of a tree which extend beyond the CEZ may sustain damage during construction.

6.17 A preliminary assessment of the development proposals in relation to the above ground mass of the trees recorded has shown that there will be a requirement for pruning to certain trees and tree groups, albeit this should be reassessed prior to commencement and any minor pruning works identified and undertaken.

6.18 The following is a list of the current foreseeable tree pruning works:

- T1 & T2 – Crown reduce both trees by 20% to provide greater clearance for haul road access point of Lathbury Road.
- T19 – Crown spread slightly encroaches on proposed 4.5m fence. Recommend minor lateral reduction to tertiary growth only on South-East side of crown.
- T22 – Current average crown clearance recorded at 3m and requires clearance of haul road machinery of 3.5m. Crown lift on South-East side to provide 4m clearance over site.
- G5 – Potential encroachment of group crown spread into areas of construction. Recommend a 1m lateral reduction of any encroaching crown.

6.19 All tree work should be undertaken in accordance with current best practice such as BS3998:2010.

Services and Utilities

6.20 The drainage for the new STP will discharge at the Southern corner into an existing drain and should have no requirement to impact trees at all.

6.21 New floodlights for the STP will require electricity and this should utilise existing runs used for the existing floodlighting wherever possible. If this unfeasible for whatever reason and any new cabling excavation may impact trees, then this will need to be assessed further prior to implementing.

6.22 All service runs, utilities and similar infrastructure should take note of trees and allow for working methods that will minimise damage to trees by referring to documents such as NJUG Volume 4 - *Guidelines for the planning, installation and maintenance of utility services in proximity to trees*. (National Joint Utilities Group 2007).

Planning of Site Operations

6.23 Planning of site operations will take sufficient account of trees to ensure that no access and movement of material into and around the site impact on trees. Physical damage can result if this is not considered. Consequently, any movement of plant or materials in proximity to trees will be conducted under the supervision of a banksman, to ensure that adequate clearance from trees is always maintained.

6.24 All materials or fluids will not be stored within or near the RPA of retained trees, particularly those whose accidental spillage would cause contamination and damage to a tree. Fluids must be handled well away from the outer edge of the RPA of trees.

6.25 Correct planning of access routes and storage areas prior to start on site will ensure no impacts from these activities will occur. It is considered that there should be ample space away from trees for purposes of storage.

7 PRE-DEVELOPMENT WORKS

Tree Removal

7.1 Category C group (G6) will need to be removed entirely for the development. The remaining trees needing to be removed (comprising 7 trees from G2 and T15-18) from the site will be translocated elsewhere within the wider area.

Predevelopment Tree Pruning Works

7.2 The following trees are recommended for pruning:

- T1 & T2 – Crown reduce both trees by 20% to provide greater clearance for haul road access point of Lathbury Road.
- T19 – Crown spread slightly encroaches on proposed 4.5m fence. Recommend minor lateral reduction to tertiary growth only on South-East side of crown.
- T22 – Current average crown clearance recorded at 3m and requires clearance of haul road machinery of 3.5m. Crown lift on South-East side to provide 4m clearance over site.
- G5 – Potential encroachment of group crown spread into areas of construction. Recommend a 1m lateral reduction of any encroaching crown.

7.3 Pruning works should be reassessed and undertaken prior to commencement of the proposed development. All tree pruning should be identified by the main contractor, working to the general standards provided below.

Standard of Tree Work

7.4 All tree works should be carried out in accordance with BS3998:2010 *Tree Work - Recommendations* and latest arboricultural best practice.

7.5 All tree work should be carried out by suitably qualified, competent and insured arboricultural contractors.

7.6 All green and woody waste generated by the tree works shall be removed from site and disposed of in an environmentally sustainable manner.

Timing of Tree Works

7.7 All tree works shall be completed prior to commencement of any construction works on the site.

7.8 All works shall be timed to have regard to the phenological cycles of protected species that are associated with trees; notably birds and bats.

Tree Protection Barriers

7.9 All tree protection fencing should be erected to its final position during the pre-development periods of construction. Protective fencing shall be erected as shown on the Tree Removal & Protection Plan (see drawings JSL5177_710) . To ensure successful tree protection during this process, all operatives should be briefed on the need to pay regard the existing trees and all operations adjacent to trees be properly supervised. This will help ensure the works do not affect adversely the trees.

7.10 Once the protective barriers are in place they must remain in situ throughout the course of the development until the completion of all building works.

7.11 Copies of the Tree Protection Plans shall be placed in the site office for reference by all site staff.

7.12 The protective fencing barrier is to be constructed in accordance with the specification detailed at Appendix D.

7.13 As previously stated, where existing perimeter security fencing is present and its position protects tree RPAs, this will perform the function of the CEZ in this location.

7.14 Signs detailing the purpose of the protective fencing shall be attached to the fencing at 10m intervals. Such signs should be weatherproof and shall be substantially in the form of the specimen provided at Appendix E. Signs must be replaced as necessary should they be removed or become illegible.

7.15 Following erection of the protective fencing and prior to commencement of the development it is recommended that an inspection of the site, by either the Council's Tree Officer or the Arboricultural Consultant, is arranged to confirm fencing has been installed in accordance with the Tree Removal & Protection Plan (see drawings JSL5177_710) and any relevant conditions that may be attached to a grant of planning consent for the development.

8 CONSTRUCTION WORKS

Construction Exclusion Zone

8.1 The CEZ as defined by the protective fence line shall be regarded as sacrosanct, and the protective fencing shall not be moved or taken down at any time.

8.2 Within the CEZ there must be no mechanical digging or scraping, no alteration to existing ground levels including soil stripping, no earthworks, no handling or discharge of any chemical substance, concrete washings or of any fuels.

8.3 Furthermore, vehicular or pedestrian access and the storage of any materials is prohibited within the CEZ.

8.4 Additionally, no materials that may contaminate the soil such as concrete mixings, diesel oil and vehicle washings shall be discharged within 10m of the stem of any tree and no fires shall be lit within 10m of the maximum extent of a trees crown.

Site Compounds and Materials Stores

8.5 Activities related to the establishment of a temporary site compound have the potential to impact upon retained trees by various means. In particular the storage and mixing of chemicals and materials such as concrete can have a damaging effect on tree health if precautions are not taken.

8.6 To prevent harm occurring to trees provision for materials storage, site offices, deliveries and other related activities should be made available in areas away from retained trees.

8.7 RPS has been informed that the offices, parking of site and contractor vehicles, along with secure storage will be provided in the area of land South of Lathbury Road. This area will be directly controlled by the Site Manager.

Monitoring

8.8 Following erection of the protective fencing and prior to commencement of the construction phase an inspection of the site, by either the Council's Tree Officer or the Arboricultural Consultant, should be arranged to confirm fencing has been installed in accordance with the Tree Removal & Protection Plan (see drawings JSL5177_710) and any relevant conditions that may be attached to a grant of planning consent for the development.

8.9 Further monitoring visits should be carried out during implementation of the works on site, ideally on at least a monthly basis to ensure all planning conditions are being implemented.

Reporting

8.10 During the construction phase of the development the Site Manager will be responsible for liaising with the Council Tree Officer on all arboricultural issues.

8.11 Should any arboricultural issues become apparent during the works the site manager should immediately contact the appointed Arboricultural Consultant or the Council's Tree Officer for advice upon how to proceed.

Tables

Table 2 - Tree Survey Schedule – (Ref: JSL5177_751)

Key to Inspection Report Form

Species	Genus and variety
Height	Measured Clinometer Reading or Estimated Height in Metres
Girth (dbh @ 1.5m)	Diameter measured in cms, or estimated, where multi stemmed below 1.5m the diameter is taken as that just above the root flare
Spread (m)	Canopy height estimated in metres above ground level
Canopy height (m)	Crown Spread, radius estimated in metres
Physiological Condition	Good, Fair, Poor, Dead
Age Class	Y – Young MA – Maturing (Middle Aged) M – Mature OM - Over mature V – Veteran
Useful Life Expectancy (years)	10, 10-20, 20-40, 40+
BS Categorization	See Cascade Appendices 2

TREE SURVEY SCHEDULE

Site: Manchester Communications Academy
Project Schedule Ref: JSL5177_751
Drawing Reference: JSL5177_701
Survey date: 16th May 2024

Surveyor: Jake Bailey
Status: For Information
Revision: -
Notes: -

Ref. no	Species	Height (m)	Canopy Spread (m) N	E	S	W	RPA Area	Stem dia.* (mm)	Height of crown clearance (m)	FSB (Direction)	Age class	Condition	General Observations Management Recommendations	Estimated Remaining contribution (yrs)	Tree Quality Category (BS5837)
T1	*Tilia X europaea (Common Lime)*	12	5	4	5	5	24	230	2	NE	EM	Good	Hard surface in RPA. Part of linear group. Included branch unions.	20+	B2
T2	*Tilia X europaea (Common Lime)*	12.5	5	5	3	5	31	260	2	NE	EM	Good	Hard surface in RPA. Part of linear group. Included branch unions.	20+	B2
T3	*Tilia X europaea (Common Lime)*	12	5	4.5	4	3	24	230	2	SW	EM	Good	Hard surface in RPA. Part of linear group. Included branch unions.	20+	B2
T4	*Tilia X europaea (Common Lime)*	12	3	4	4	3	24	230	2	S	EM	Good	Hard surface in RPA. Part of linear group. Included branch unions.Adjacent to building. Occluded stem wound at 1-1.5m.	20+	B2
T5	*Tilia X europaea (Common Lime)*	10.5	3.5	4	4.5	3.5	22	220	2	SW	EM	Good	Hard surface in RPA. Part of linear group. Included branch unions.Crown overhangs adjacent building.	20+	B2
T6	*Quercus coccinea (Scarlet Oak)*	6	3	3	2	2	7	120	2	SE	SM	Fair	Part of linear group.Minor dead twigs, interior crown.	10+	C2
T7	*Quercus coccinea (Scarlet Oak)*	4.5	2.5	1.5	1.5	1.5	3	80	2	SE	SM	Fair/Poor	Part of linear group. Dieback in crown- moderate extent. Reduced leaf density.Central leader has snapped out.	10+	C2
T8	*Quercus coccinea (Scarlet Oak)*	4.5	1	1.5	0.5	1	3	80	2	E	SM	Poor	Part of linear group. Dieback in crown- major extent. Small leaves. Reduced leaf density.Basal bark stem wounding. Partially occluded at edges.	<10	U
T9	*Quercus coccinea (Scarlet Oak)*	4.5	2	2	1	1	3	80	2	W	SM	Poor	Declining. Part of linear group. Dieback in crown- major extent. Pale leaves. Small leaves. Reduced leaf density.	<10	U
T10	*Quercus coccinea (Scarlet Oak)*	4.5	3	1.5	1.5	2.5	4	90	2	N	SM	Fair/Poor	Dieback in crown- moderate extent. Pale leaves. Small leaves.	10+	C1
T11	*Quercus coccinea (Scarlet Oak)*	3	0.5	0.5	0.5	0.5	2	70	0	-	SM	Dead	Dead.	<10	U
T12	*Alnus glutinosa (Common Alder)*	7	2.5	2	3	2.5	5	100	0	-	SM	Good	Isolated tree at field boundary.	10+	C2
T13	*Betula pendula (Silver Birch)*	15	3	3	3	3.5	26	240	2	SW	EM	Good	Established tree at site boundary.	20+	B2
T14	*Alnus glutinosa (Common Alder)*	12	3	3	4	3.5	18	200	2	S	EM	Good	Established tree within belt at site boundary.	20+	B2
T15	*Alnus glutinosa (Common Alder)*	10	2	2	2	2	5	100	2	S	SM	Fair	Young trees at site boundary. Minor dieback.	10+	C2
T16	*Alnus glutinosa (Common Alder)*	10	2	2	2	2	5	100	2	S	SM	Fair	Young trees at site boundary. Minor dieback.	10+	C2
T17	*Crataegus monogyna (Hawthorn)*	4	2	2	2	2	5	100	0	-	SM	Good	Isolated trees at site boundary.	10+	C2
T18	*Crataegus monogyna (Hawthorn)*	4	2	2	2	2	5	100	0	-	SM	Good	Isolated trees at site boundary.	10+	C2
T19	*Sorbus aucuparia (Rowan)*	12	3	3	2.5	2	10	150	1	S	EM	Good	Stem divides above 1.5m. Included bark present in fork.Established. Rising junction bark ridge forming.	20+	B2
T20	*Sorbus aucuparia (Rowan)*	5	1	2	2	2	3	75	2	E	SM	Good	Recently established landscape tree.	10+	C2
T21	*Sorbus aucuparia (Rowan)*	5	1	2	2	2	3	75	3	S	SM	Good	Recently established landscape tree.	10+	C2

Note: This survey is based on a brief visual inspection from the ground.
It is not intended as a full arboricultural inspection.
*Where the tree is multi-stemmed the conventions within BS5837:2012 are applied.

Ref. no	Species	Height (m)	N	E	S	W	RPA Area	Stem dia.* (mm)	crown clearance (m)	FSB (Direction)	Age class	Condition	General Observations Management Recommendations	Remaining contribution (yrs)	Quality Category (BS5837)
T22	*Fraxinus excelsior (Ash)*	20	9	9	8	10	222	700	3	S	M	Good	Prominent tree.Minor peripheral dieback, but overall Good vitality (approx. 90-95% live crown). Compaction within RPA.	40+	A2
T23	*Quercus coccinea (Scarlet Oak)*	13	5	5	4.5	5.5	16	190	2	SE	SM	Good	Part of linear group.Well established. Good crown density.	20+	B2
T24	*Quercus coccinea (Scarlet Oak)*	11.5	5.5	5.5	5	5	10	150	2	SE	SM	Good	Part of linear group.Well established. Good crown density.	20+	B2
T25	*Quercus coccinea (Scarlet Oak)*	12.5	4	3.5	4	4	10	150	2	SE	SM	Good	Part of linear group.Well established. Good crown density. Minor broken branch in lower crown.	20+	B2
T26	*Acer platanoides (Norway Maple)*	14	9	8	8	8	113	500	2	SE	M	Fair	Hard surface in RPA. Minor deadwood in the crown.Central leader has died, but dense crown remains with compensatory growth at peripheries, giving a wide spreading crown.	20+	B2
T27	*Quercus coccinea (Scarlet Oak)*	7.5	1.5	1.5	1	1.5	5	100	2	SE	SM	Fair	Narrow crown form. Minor dead twigs/ small branches scattered within crown.	10+	C2
T28	*Salix caprea (Goat Willow)*	9	4	5	4.5	4	23	225	1	N	EM	Good	Multiple stems at ground level. Included bark present in fork.	10+	C2
G1	*Sorbus aucuparia (Rowan)*	4	-	-	-	-	-	50 (avg.)	0	-	SM	Good	Small multi-stems at boundary.	10+	C2
G2	*Quercus coccinea (Scarlet Oak)*	6.5	-	-	-	-	-	120 (avg.)	2	N	SM	Fair	10m spaced landscape trees. Linear group. Established. Generally showing good vitality, a couple of trees with paler leaves and minor dieback at time of survey.	10+	C2
G3	*Quercus robur (Common Oak),Corylus avellana (Hazel),Crataegus monogyna (Hawthorn)*	12.5	-	-	-	-	-	100 (avg.)	0	-	SM	Good	Dense group at boundary. Provides connectivity with adjacent field.	20+	B3
G4	*Crataegus monogyna (Hawthorn),Privet vulgaris (wild privet)*	6	-	-	-	-	-	75 (avg.)	0	-	SM	Good	Dense group at boundary.	10+	C2
G5	*Tilia X europaea (Common Lime),Corylus avellana (Hazel),Sorbus aucuparia (Rowan),Quercus robur (Common Oak),Crataegus monogyna (Hawthorn)*	12	-	-	-	-	-	100 (avg.)	0	-	SM	Good	Established and dense double row of mixed natives at site boundary. Group and wildlife value.	20+	B2
G6	*Prunus spinosa (Blackthorn)*	2	-	-	-	-	-	50 (avg.)	0	-	SM	Good	Dense, isolated group at boundary.	10+	C2
G7	*Fraxinus excelsior (Ash),Acer pseudoplatanus (Sycamore)*	6	-	-	-	-	-	75 (avg.)	2	S	SM	Fair/Poor	Self sown trees at fence line. Mainly Young Ash with some indications of early chalara ash dieback.	10+	C2
G8	*Salix cinerea (Grey Willow)*	5	-	-	-	-	-	100 (avg.)	2	NE	SM	Good	Dense multistemmed willow at edge of young woodland planting.	10+	C2
G9	*Betula pendula (Silver Birch),Alnus glutinosa (Common Alder)*	9	-	-	-	-	-	100 (avg.)	1	N	SM	Good	Established trees at edge of Young woodland planting area.	20+	B2

Note: This survey is based on a brief visual inspection from the ground.
It is not intended as a full arboricultural inspection.
*Where the tree is multi-stemmed the conventions within BS5837:2012 are applied.

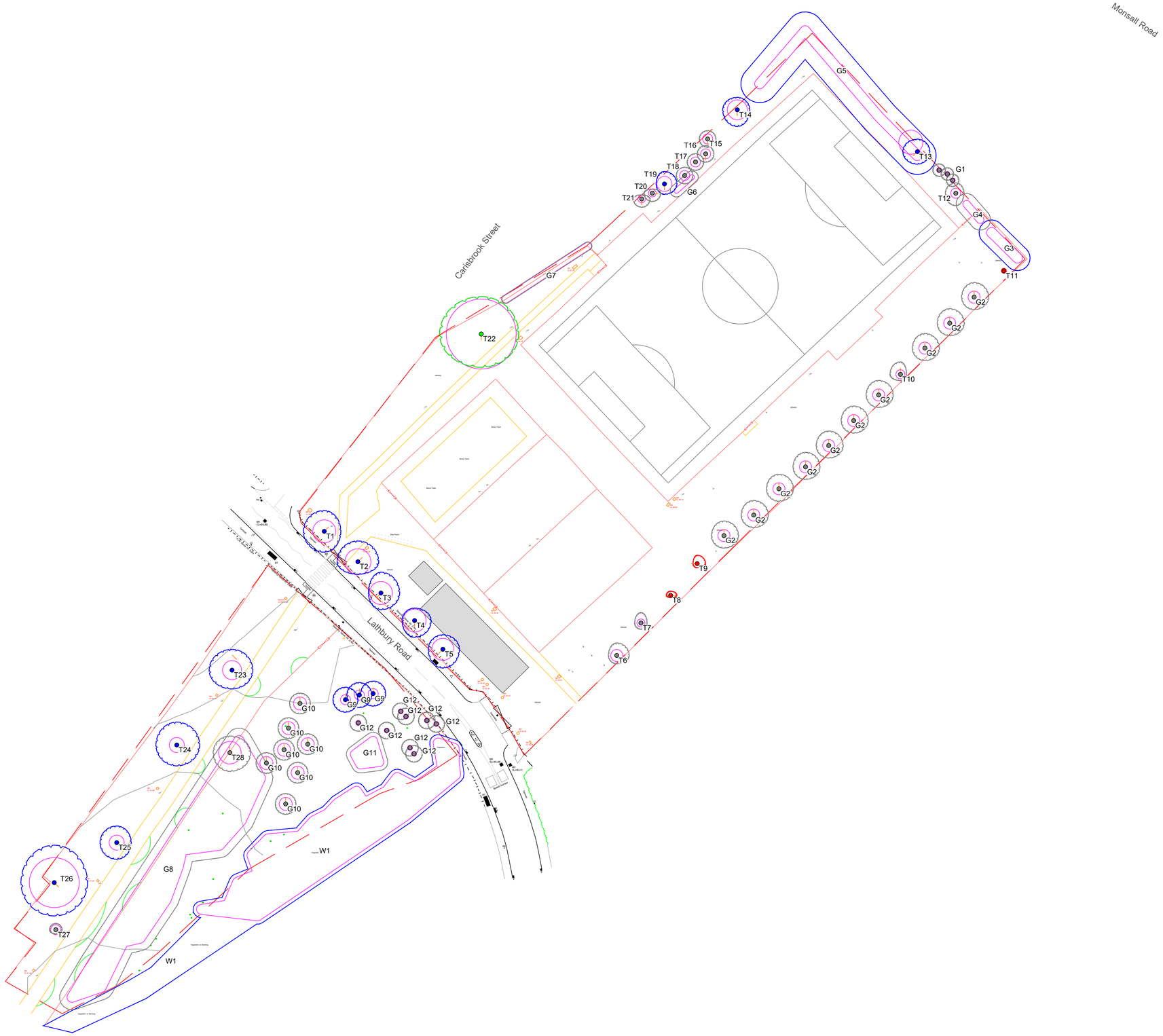
Ref. no	Species	Height (m)	N	E	S	W	RPA Area	Stem dia.* (mm)	crown clearance (m)	FSB (Direction)	Age class	Condition	General Observations Management Recommendations	Remaining contribution (yrs)	Quality Category (BS5837)
G10	*Salix cinerea (Grey Willow),Salix alba (White Willow),Salix caprea (Goat Willow),Populus tremula (Aspen),Salix fragilis (Crack Willow)*	9	-	-	-	-	-	130 (avg.)	1	N	SM	Good	Not Plotted on original survey.Predominantly willows. Sporadic planting among semi improved grassland.	10+	C2
G11	*Salix caprea (Goat Willow),Salix fragilis (Crack Willow),Salix cinerea (Grey Willow)*	5	-	-	-	-	-	87 (avg.)	0	-	Y	Good	Dense clump of willow species amongst semi improved grassland.	10+	C2
G12	*Alnus glutinosa (Common Alder),Betula pendula (Silver Birch)*	6	-	-	-	-	-	50 (avg.)	0	-	SM	Good	Sporadically spaced, recently established semi mature trees amongst semi improved grassland.	10+	C2
W1	*Alnus glutinosa (Common Alder),Salix alba (White Willow),Populus tremula (Aspen)*	14	-	-	-	-	-	100 (avg.)	1	-	SM	Good	Close spaced, dense screen of waterlog tolerant species. Alder dominant.	20+	B2

Note: This survey is based on a brief visual inspection from the ground.
It is not intended as a full arboricultural inspection.
*Where the tree is multi-stemmed the conventions within BS5837:2012 are applied.

Figures

JSL5177_700: TREE CONSTRAINTS PLAN

JSL5177_710: TREE REMOVAL & PROTECTION PLAN



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Notes

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Key

Survey boundary.

T1 — Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below.

G1 — Tree group with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below.

BS 5837:2012 Tree Quality Categories - Table 1

- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

Direction of first significant branch

Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012

NOTES:

- Refer to RPS Tree Survey Report & Schedule for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
- Due to the legal protection afforded to breeding birds vegetation removal should not take place during the bird nesting period; generally, although not restricted to, March - August inclusive.
- Survey based upon topographic survey ref. MUK3213 produced by JPP UK in May 2024 and satellite imagery.

Rev	Description	By	CB	Date
-	First Issue	JB	TF	22.05.24

MAKING COMPLEX EASY
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Client: McArdle Sport Tec

Project: Manchester Communciations Academy

Title: Tree Constraints Plan

Status	Drawn By	PM/Checked by
For Information	JB	TF

Job Ref	Scale @ A1	Date Created
JSL5177	1:500	17.05.2024

RPS Drawing / Figure Number	Rev
700	-

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Tree Protection Specification

All vegetation identified for removal should be removed prior to the start of works. The Tree Protection Plan provides details of vegetation removals and retentions.

An assessment of crown impacts should be carried out by the Consultant Arboriculturist or the Clients Landscape Manager prior to implementing tree protection, so that any potential requirements for access pruning have been assessed.

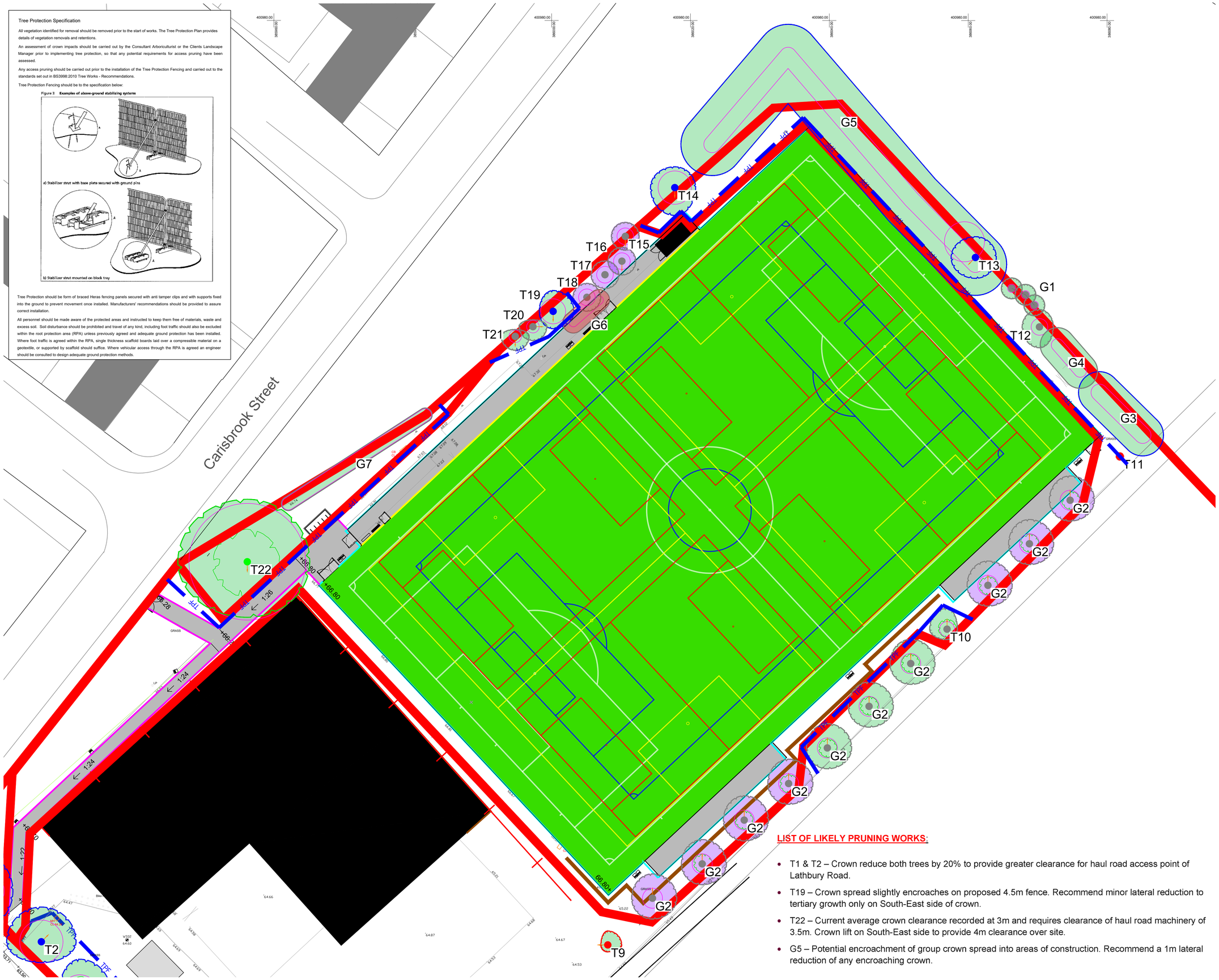
Any access pruning should be carried out prior to the installation of the Tree Protection Fencing and carried out to the standards set out in BS3998:2010 Tree Works - Recommendations.

Tree Protection Fencing should be to the specification below:

Figure 3 Examples of above-ground stabilizing systems

Tree Protection should be form of braced Heras fencing panels secured with anti tamper clips and with supports fixed into the ground to prevent movement once installed. Manufacturers' recommendations should be provided to assure correct installation.

All personnel should be made aware of the protected areas and instructed to keep them free of materials, waste and excess soil. Soil disturbance should be prohibited and travel of any kind, including foot traffic should also be excluded within the root protection area (RPA) unless previously agreed and adequate ground protection has been installed. Where foot traffic is agreed within the RPA, single thickness scaffold boards laid over a compressible material on a geotextile, or supported by scaffold should suffice. Where vehicular access through the RPA is agreed an engineer should be consulted to design adequate ground protection methods.



LIST OF LIKELY PRUNING WORKS:

- T1 & T2 – Crown reduce both trees by 20% to provide greater clearance for haul road access point of Lathbury Road.
- T19 – Crown spread slightly encroaches on proposed 4.5m fence. Recommend minor lateral reduction to tertiary growth only on South-East side of crown.
- T22 – Current average crown clearance recorded at 3m and requires clearance of haul road machinery of 3.5m. Crown lift on South-East side to provide 4m clearance over site.
- G5 – Potential encroachment of group crown spread into areas of construction. Recommend a 1m lateral reduction of any encroaching crown.

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Key

- Site Boundary
- T1/G1 — Tree (or group tree) to be retained
- G1 — Tree group to be retained
- T1 — Tree (or group tree) to be translocated
- G1 — Tree group to be removed

BS 5837:2012 Tree Quality Categories - Table 1

- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
- CEZ - Protective fencing (e.g. Heras style.) To be assembled in accordance with Section 6.2 - BS5837:2012 (see inset for example barriers)

NOTES:

- Refer to RPS Tree Survey Report & Schedule for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
- Due to the legal protection afforded to breeding birds vegetation removal should not take place during the bird nesting period; generally, although not restricted to, March - August inclusive.
- Survey based upon topographic survey ref. MUK3213 produced by JPP UK in May 2024 and satellite imagery.

Rev	Description	By	CB	Date
P01	Updated layout	NJ	TF	19.12.25
-	First Issue	TF	DC	10.10.24

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Project: Manchester Communciations Academy

Title: Tree Removal & Protection Plan

Status	Drawn By	PM/Checked by
Planning	JB	TF

Job Ref	Scale @ A1	Date Created
JSL5177	1:250	10.10.24

RPS Drawing / Figure Number	Rev
710	P01

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Appendix A

Survey Methodology

General

This report was authored by Thomas Flood MICFor MArborA, Associate Director of RPS.

The report and survey were carried out in general accordance with the requirements set out in BS 5837:2012 “Trees in Relation to Design, Demolition and Construction – Recommendations”.

Trees were inspected from ground level during a site visit. All data was recorded electronically within a AxciScape 4.02 project and then upon return to the office it was imported into an MS Access database. Individual tree numbers and locations were plotted by eye on to a drawing at the time of the survey. Tree positions were then related to a Topographical survey of the site provided, where not shown on the topographical survey tree positions have been plotted by eye only and require confirmation.

Trees were not climbed or inspected below ground level and inaccessible trees will have best estimates made about the location, physical dimensions and characteristics.

The locations of the trees were based upon topographic survey of the site provided by the client.

The survey assesses individual trees and groups of trees for quality and benefits within the context of proposed development. The quality of each tree or group of trees has been recorded by allocating it to one of four categories as described the table below. These categories have been differentiated on the Tree Constraints Plan (see drawing JSL5177_700) .

The survey information was recorded on the attached schedule (Table 1) in general accordance with the guidance contained within Section 4 of BS 5837:2012 “Trees in Relation to Design, Demolition and Construction - Recommendations".

Tree Constraints Plan

The Tree Constraints Plan (see drawing JSL5177_700) is designed to show the influence that the trees have upon the site by virtue of their size and position. The plan seeks to act as a design tool that shows both the above and below ground constraints presented by the trees.

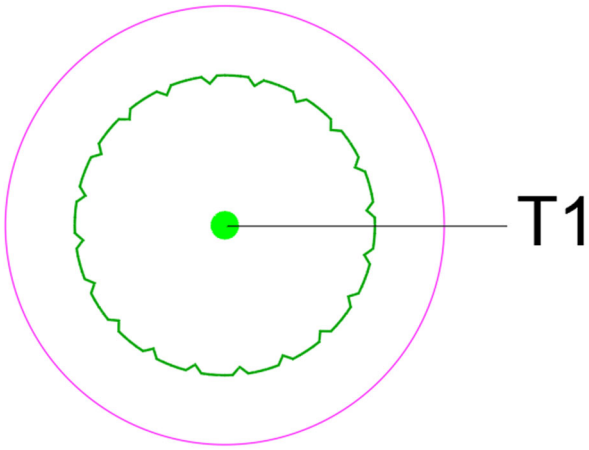
The information provided within this section of the report is to assist in the interpretation of the Tree Constraints Plan and aims to ensure that those trees selected for retention can be successfully integrated within the proposed development.

It should be noted that some of the tree positions shown on the plan have been plotted using the provided topographical survey and others by eye to an Ordnance Survey base map and as such should be considered to be of a provisional nature.

Root Protection Areas

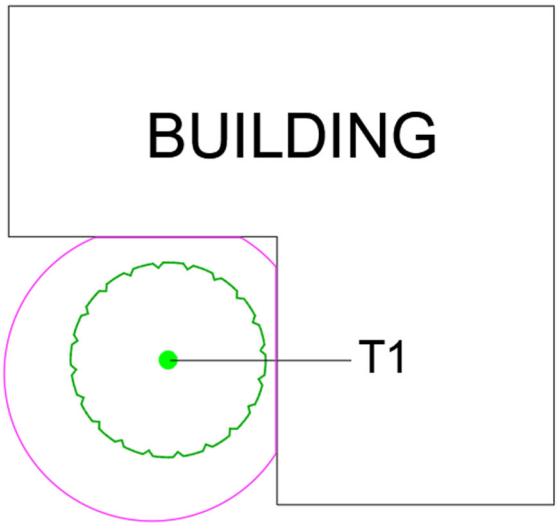
Root Protection Areas for each tree and group of trees surveyed have been determined in accordance with BS5837:2012 and a schedule of Root Protection Areas is attached to this report as Table 2.

As shown to the right, Root Protection Areas (RPA's) for the trees, where no significant constraints to root development are considered to be present, have been plotted onto the Tree Constraints Plan as circles, with the tree located centrally, extending to encompass the area of ground, and thus the rootable soil volume, required for protection.



Where tree root spread is considered to have been influenced by site conditions the trees RPA's have been plotted to the Tree Constraints Plan as a polygon. The plotted polygon is of the **same area** as it would be as a circle and its shape reflects an arboricultural assessment of likely root distribution.

An example of a polygonal RPA, considered appropriate due to the presence of a building in close proximity to a tree, is shown to the right.



Where possible all development, including new hard landscaping, shall be situated outside of the retained trees designated Root Protection Areas.

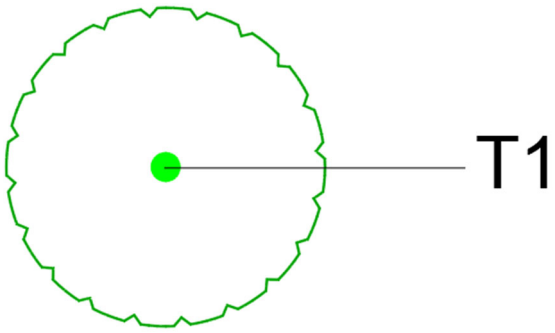
Existing Canopy Spreads

The existing canopy spreads of the trees on site are shown on the Tree Constraints Plan as depicted here.

The current spread of the tree is a constraint due to its dominance, size and movement in strong winds.

It will typically be unacceptable to design any built development within the current spread of a tree.

Where built development is proposed in close proximity to existing trees consideration should be given to the amount of working space required to allow its construction.



Canopy Height / Clearance

The height and growth direction of the lowest branch of each tree is recorded in the Tree Data Schedule contained within this report as Table 1, the lowest branch height of a tree is shown on the Tree Constraints Plan. Additionally, the vertical clearance of the trees canopy above ground level is recorded within the Tree Data Schedule.

The two figures can be used to inform the extent to which a trees crown may be at risk of damage during development as a result of vehicular or plant movements within the site and to assess the need for additional protective measures to be implemented to protect low branches.

In particular it should also be noted that where the Root Protection Areas for retained trees do not extend to the edge of existing canopy spreads it is possible that those parts of the trees extending beyond the RPA fencing may sustain damage during construction. Where this occurs, there are two primary options available to manage and minimise the potential for damage to tree canopies to occur during development and these may be used singularly or in combination. The first option is to create a Construction Exclusion Zone (CEZ), by the erection of protective fencing, around the full extent of the trees. The second is to undertake pre-development pruning works to the trees to reduce the potential for branch damage to occur.

Appendix C

BS5837 Cascade Chart for Tree Quality Assessment

APPENDICES

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 *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see **4.5.7**.*			Dark Red
	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)	Light Green
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	Mid Blue
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	Grey

Appendix D

Tree Protection Barriers

Root Protection Area Barrier Details

Protective Barrier Specifications

Since trees are living organisms which interact with their immediate environment any changes made to their surroundings may have a bearing on that trees future. Developing a site will undoubtedly place any trees within close proximity under some level of stress, which could predispose them to infection. The aim of this method statement is to limit the amount of stress induced by introducing protection measures.

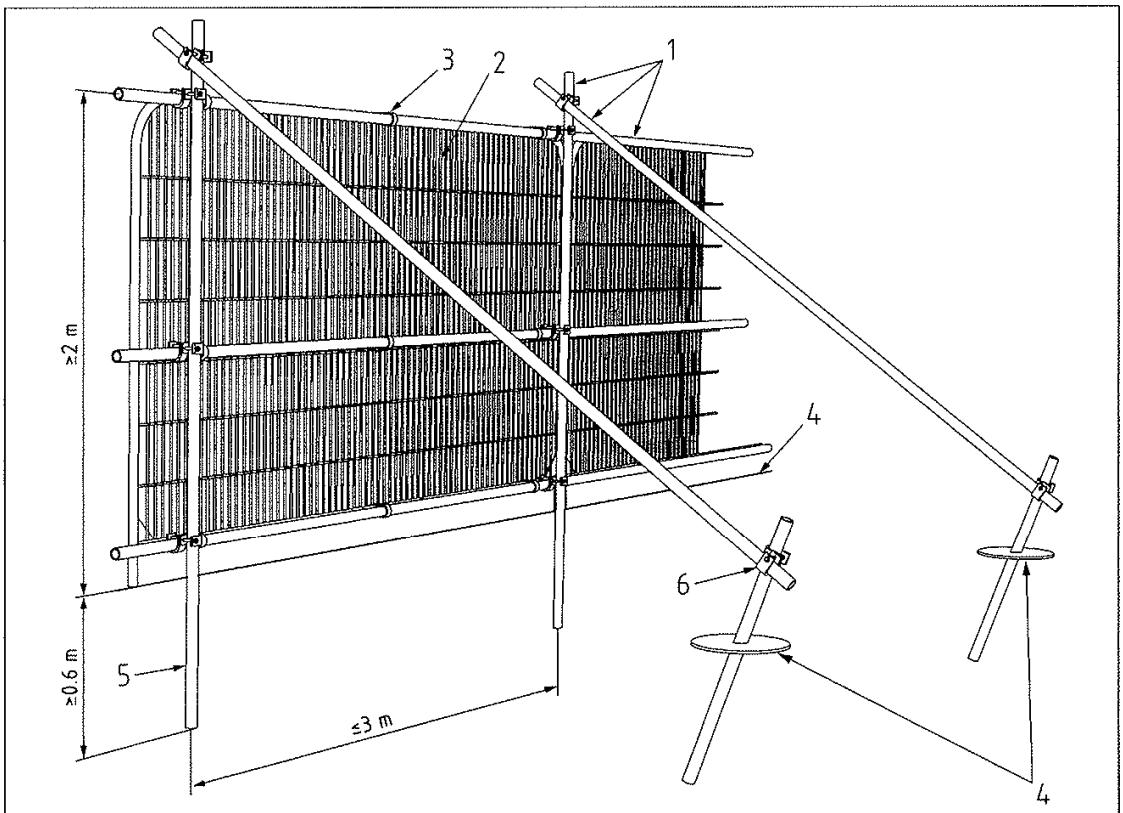
The most effective way of offering protection is by erecting protective barriers set at a distance from the tree stem using the methods given within BS 5837: 2012 Trees in Relation to Design, Demolition and Construction. Barriers should be braced and constructed to resist impacts; see figures 2 & 3 below for barrier specifications. Barriers can be of an alternative specification to that within the BS5837:2012 provided it is approved by the Local Planning Authority Tree Officer.

Barriers should be erected before any works commence on site with the exception of recommended tree work. Areas of retained and future structure planting should be similarly protected.

All personnel should be made aware of the protected areas and instructed to keep them free of materials, waste and excess soil. Soil disturbance should be prohibited and travel of any kind, including foot traffic should also be excluded within the root protection area (RPA) unless previously agreed and adequate ground protection has been installed. Where foot traffic is agreed within the RPA, single thickness scaffold boards laid over a compressible material on a geotextile, or supported by scaffold should suffice. Where vehicular access through the RPA is agreed an engineer should be consulted to design adequate ground protection methods.

Suggested Barrier Specification (as per BS5837: 2012)

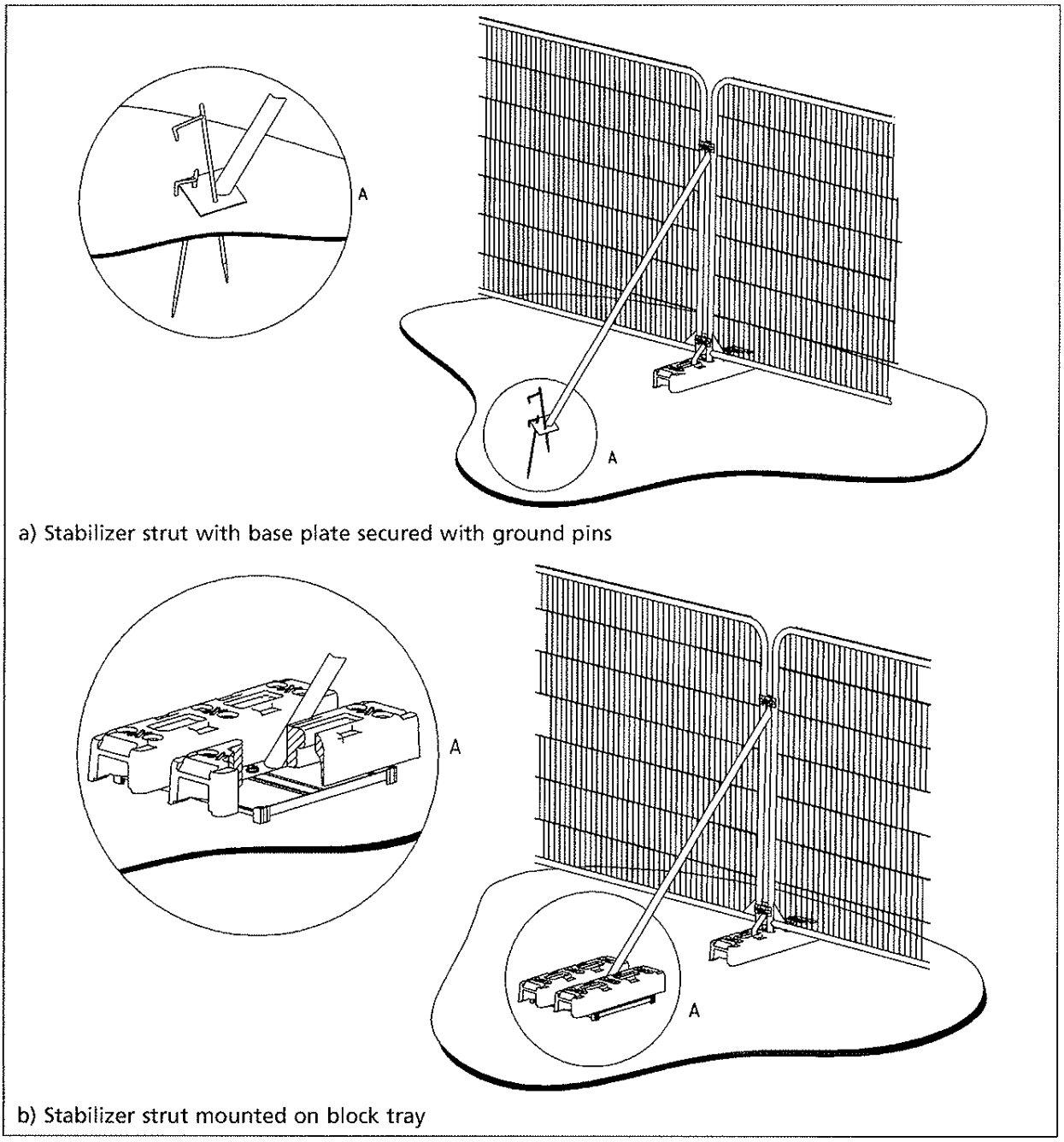
Figure 2 **Default specification for protective barrier**



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Figure 3 **Examples of above-ground stabilizing systems**



Appendix E

Construction Exclusion Signage – Example

Appendix F

Arboricultural Glossary

Abiotic Factors - Non-living factors of the environment, including temperature & wind.

Age-class - A general classification of the tree into either - young, semi-mature/maturing, mature, over-mature, or senescent.

Apical Bud/Shoot – The apical bud, also known as the leading shoot, is responsible for shoot extension and is dominant.

Apical Dominance – A singular, leading shoot remains dominant.

Arboreal - In connection with, or in relation to, trees.

Arboriculturist – Person who has, through relevant education, training and experience, gained recognised qualifications and expertise in the field of trees in relation to construction.

Arboricultural Implications Assessment (AIA) – Study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

Arboricultural Method Statement (AMS) – Methodology for the implementation of any aspect of development that has the potential to result in the loss of or damage to a tree. Note The AMS is likely to include details of an on-site tree protection monitoring regime.

Biotic factors - Living factors. For example, animals and pathogens.

Bottle Butt – Term used to describe shape of stem base, usually associated with an internal defect – refer to 'Reaction Wood' below.

Branch union/junction - The point at which a branch joins a larger stem. Can be a point of weakness, especially in certain species.

Cambium - A lateral meristem (see below) in vascular plants located just beneath the bark responsible for secondary growth, e.g. production of annual growth rings.

Canker – A clearly defined area of dead and sunken or malformed bark, caused by bacteria or fungi. Can have a bearing on structural integrity of infected limb(s) depending on size and location.

Chlorosis/Chlorotic – Abnormal yellow or yellow-green coloration of usually green leaves. Essentially a reduction of chlorophyll levels often as a result disease or nutrient deficiency.

Co-dominant stems - A growth characteristic, where two or more stems of similar size grow from the same point. Can create an inherent weakness.

Compaction - The compressing & hardening of soil around tree root systems, due to vehicular/pedestrian use etc. Loss of pore space between soil granules limits water movement and gaseous exchange, and inhibits root growth.

Competent person – Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached

Note 1 A competent person understands the hazards and the methods to be implemented to eliminate or reduce the risks that can arise. For example, when on site, a competent person is able to recognise at all times whether it is safe to proceed.

Note 2 A competent person is able to advise on the best means by which the recommendations of this British Standard may be implemented.

Condition – Assessment based on a visual and professional view giving consideration to many factors such as tree health, structural integrity and suitability of its position.

Construction Exclusion Zone – Area based on the RPA (in m²), identified by an arboriculturist, to be protected by development, including demolition and construction work, by the use of barriers and/or ground protection fit for purpose to ensure the successful long-term retention of a tree.

Coppice - The method of managing trees by cutting the stems at between 1.0 inch and 1.0 foot from the ground level on a regular cycle, the cut stumps of the trees or shrubs are allowed to re-grow many new stems.

Crown spread - Gives distances between extreme limits of the crown and the stem, usually along the four compass points. Helps to show crown symmetry.

Crown Reduction – The removal of branch ends to reduce the extreme limits of a trees branch spread and height.

Crown Thin – The removal of selected branches within the crown to thin the internal branch structure.

D.B.H. - 'Diameter at Breast Height', an industry standard to gauge tree stem size and development. Within arboriculture, breast height is taken to be 1.5m above ground level.

Dieback - The reduction in crown vigour and extension growth progressing to death of distal parts; often associated with decline.

Epicormic/adventitious growth - New growth from dormant buds that can often form tenuous attachments. Although some species readily form such shoots, it can be an indication of stress.

Feathered Whip – Size of tree for planting, usually ranging from 1.25m to 2.5m in height.

Form - A general assessment of the shape and position of the tree within its' environment.

Frass – Debris such as bore dust left by wood boring insects.

Hanger – Term used to describe a branch that has become detached and is being supported by other branches. Can be a hazard to persons and property below.

Hazard Beam – After the loss of a distal part, a limb concentrates growth upwards creating adverse end weights that can render the limb susceptible to failure.

Heavy Standard – Size of tree for planting, usually above 3.5m in height.

Included bark – Growth characteristic usually caused when two or more stems/branches growing in close proximity 'fuse' together entrapping the bark from when the parts were separate in the middle, creating a structural weakness.

Meristem - The undifferentiated plant tissue from which new cells are formed, such as that at the tip of a stem or root.

Meristematic Disorder – A growth disorder caused by a disruption of the meristem (see above) from any of a number of biotic factors (see above). Manifests as growths such as 'Witches Brooms' & 'Galls'.

Necrosis/Necrotic – Death of tissues usually characterised by a blackening in colour.

Occlusion/Occluded – Normally used to describe the overgrowth of a wound. Also, immoveable foreign objects in contact with a tree part can become encased or 'occluded' by the tree as it grows incrementally.

Pathogen - An agent that causes disease, especially a living microorganism such as a bacterium or fungus.

Plasticity index - The table used to calibrate the shrinkability of a clay soil.

Pollard – The removal and subsequent regular re-removal of the crown of a tree above animal browsing height. Can be an effective method of controlling the size of trees in urban areas. This is ideally begun in the trees early stages and maintained throughout its life.

Reaction wood - Essentially additional wood laid down by the tree to compensate for structural defects such as cavities.

Ring barking/Girdling – the removal of bark around the entire circumference of a stem or branch, causing the death of all distal parts.

Root Protection Area (RPA) – Layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m².

Saprophyte – An organism which exists on dead plant material.

Scaffold branches - The main structural branches within the crown.

Services – Any above ground and piped and/or ducted underground infrastructure including water main, electricity supply, gas supply, fibre optic utilities, telecommunications cabling, storm and foul water drainage, including temporary storage for run-off, pumping stations, interceptors and other allied buried structures.

Shrinkable clay – Clay soil which alters in volume depending on moisture content. Property sited on shrinkable clay can suffer subsidence damage due to soil desiccation; this can be due to the water uptake of nearby vegetation, including trees.

Special engineering – design of a structure with the physiological requirements of trees as the priority.

Standard – Size of tree for planting, usually ranging from 2m to 3.5m in height.

Structure – Man-made object, such as a building, carriageway, path, wall, services, and built and excavated earthworks.

Transplant – (1) size of tree for planting, usually ranges from 0.2m to 0.9m in height (2) the relocation of a tree or shrub including a given portion of the root system.

Tree Constraints Plan (TCP) – Plan prepared by an arboriculturist for the purposes of layout design showing the RPA and representing the effect that the mature height and spread of retained trees will have on layouts through shade, dominance, etc.

Tree Removal & Protection Plan – scale drawing prepared by an arboriculturist showing the finalised layout proposals, tree retention and tree and landscape protection measures detailed within the arboricultural method statement (AMS), which can be shown graphically.

U.L.E – 'Useful Life Expectancy' is an estimate based on currently known factors of the possible remaining life of the tree as an asset.

Veteran tree – Tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

Vigour - A general classification, as to the present and future potential growth and development of a tree. A comment regarding the health status of the tree specific to its species.

Water Demand - A generic classification of the water demand of specific species as outlined by the NHBC (National House Building Council).

Whip – Size of tree for planting, usually ranging from 1m to 1.75m in height.