

RYBURN VALLEY HIGH SCHOOL

ARBORICULTURAL IMPACT ASSESSMENT

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Ryburn Valley High School
Arboricultural Impact
Assessment
V1
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REPORT

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Prepared by:



Thomas Flood
Principal Arboriculturist

Prepared for:



Wes Bugg
Design Consultant

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1 EXECUTIVE SUMMARY

Scope

An arboricultural survey has been undertaken and this report prepared in support of an Artificial Grass Pitch (AGP) development at Ryburn Valley High School, St Peter's Ave, Sowerby Bridge HX6 1DG.

All trees within the development site 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*.

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

Findings & Recommendations

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

A total of 25 individual trees were surveyed during the visit in addition to 5 groups of trees.

Two tree groups, G2 and G3, which contain a number of sycamore trees are subject to Tree Preservation Orders (TPO) along the southern boundary of the proposed development site.

No trees will require removal to facilitate the development.

It is not envisaged that there should be a requirement to prune any tree crowns to enable the development, but this must be reassessed prior to commencement.

Minor RPA encroachments will be incurred in the RPA of one tree within G4 to allow for the connection of the soakaway to the existing manhole outside the edge of the treeline. This amounts to an approximate 9% incursion into the trees RPA and considered tolerable for the tree provided appropriate working methods are used.

By following guidance set out within this report all retained trees should be protected during the works.

2 INTRODUCTION

RPS were instructed in August 2023 on behalf of Surfacing Standards Limited to provide an Arboricultural Survey and Arboricultural Impact Assessment in support of a planning application to South Cambridgeshire District Council, as the 'Local Planning Authority', for a proposed AGP development at Ryburn Valley High School.

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

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 700) that could be used to assess any potential impacts of the development.

The 'Survey Methodology' guidance at Appendix A explains the process of interpreting the plan and how it is used during the design and assessment process.

This report has been prepared to support and expand upon the data presented on the Tree Constraints Plan, in addition to summarising the quality and condition of the tree stock present in the site.

This report should be read in conjunction with the supplied Tree Constraints Plan (see drawing 700) and the Tree Protection Plan (see drawing 710) and all other relevant Tables and Appendices as detailed within the table of contents.

During the site tree survey, tree positions were plotted using the Topographical Survey provided by the client, as well as Axciscape 4.02 software. The data was then collated and presented using AutoCAD in the forms of the Tree Constraints Plan and Tree Protection Plan attached to this report.

The survey was carried out by now retired Technical Director Brian Wallis and this assessment were carried out by RPS Principal Arboriculturist Thomas Flood who is a Chartered Arboriculturist and Professional Member of the Arboricultural Association.

Limitations

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.

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

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." Please refer to the book in question for more information.

3 SITE INFORMATION

The site in which the development is proposed comprises an existing stadia pitch within the grounds of Ryburn Valley High School, St Peter's Ave, Sowerby Bridge HX6 1DG.

The site is roughly centred on the OS grid reference: SE 04730 23008.

The site can also be located using the 'What3Words' co-ordinates: elects.elections.skewed.

The trees within the development site were found to be situated to the boundaries on all sides of the playing field where the AGP is to be located. The primary trees recorded during the survey formed linear groups on the east, south and west boundaries, and these were recorded as all being sycamore (*Acer pseudoplatanus*).

Statutory Protection

A check was made via the online interactive map provided by Calderdale Metropolitan Borough Council, the 'Local Planning Authority' (LPA), to assess any statutory protection currently enforced on the development site.

It was revealed that two tree groups, G2 and G3, which contain a number of sycamore trees are subject to Tree Preservation Orders (TPO) along the southern boundary of the proposed development site.

4 RETENTION VALUES

All trees inspected were categorised using BS5837:2012 and the attached Tree Constraints Plan (see drawing 700) shows tree positions, numbers and retention categories. Trees were recorded as individuals and as groups.

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).

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.

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.

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.

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.

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

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.

A total of 25 individual trees were surveyed during the visit in addition to 5 groups of trees. Their category distribution is as follows.

Trees: 3 Category A, 8 Category B, 13 Category C, 1 Category U

Groups: 4 Category A, 1 Category B

Physiological Condition

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.

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.

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.

The distribution of physiological condition across the 25 individual trees and 5 groups was:

Trees: 3 'good', 14 'fair', 1 'poor/fair', 7 'poor'

Groups: 5 'fair'

It can be seen that the majority of individual trees and tree groups recorded were considered to be in good physiological condition. This is relatively consistent with the expectations of age and species for the trees which were surveyed.

Structural Condition

There were variations in the structural condition of the trees surveyed within the development site; however, tree condition is largely consistent with expectations for the age, management and species of the tree. 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

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.

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.

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.

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.

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.

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 hazardous trees.

The distribution of age classes recorded across the 25 individual trees and 5 groups was:

Trees: 2 young (Y), 12 semi-mature (SM), 1 early-mature (EM), 10 mature (M)

Groups: 5 mature (M)

Species

The species recorded during the survey are listed below:

BOTANICAL NAME	COMMON NAME
<i>Acer platanoides</i>	Norway maple
<i>Acer pseudoplatanus</i>	Sycamore
<i>Carpinus betulus</i>	Hornbeam
<i>Fagus sylvatica</i>	Beech
<i>Fraxinus excelsior</i>	Common Ash
<i>Prunus avium</i>	Wild cherry

Sorbus aria

Whitebeam

Sorbus intermedia

Swedish whitebeam

5 CONSTRUCTION REQUIREMENTS

The proposed development is the creation of an Artificial Grass Pitch (AGP) within the grounds of Ryburn Valley High School. A summary of the main elements of the proposed development is set out below:

- Earthworks
- The new AGP surface
- Footpaths and areas of hard standing around the AGP perimeter
- Dugouts and technical areas
- An access track from AGP to main access route
- Fences around the AGP
- Soakaway in south-west corner of site and connection to nearby manhole

Access to the development site will be from the internal access track off St Peter's Ave.

The full 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.

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 have been shown on the Tree Protection Plan (see drawing 710) by way of the creation of a Construction Exclusion Zone (CEZ) comprised of Heras-style tree protection fencing, to help in the production of these statements.

The following sections detail the below and above ground constraints concerning trees that will be encountered during the development.

6 ARBORICULTURAL IMPACT ASSESSMENT

Introduction

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.

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.

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.

Development has the potential to impact upon the above ground and below ground parts of trees.

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.

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.

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.

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.

In particular the establishment of a Construction Exclusion Zone (CEZ) by erection of Tree Protection Fencing (Heras-style) will minimise the potential for harm to occur to retained trees. These protected CEZ can be seen on the Tree Protection Plan (see drawing 710).

Brief Description of Proposed Development

The proposed development is for the installation of an Artificial Grass Pitch (AGP) at Ryburn Valley High School with associated hard surfaces, fencing, soakaway and manhole connection.

Tree Removal

There should be no requirement to remove any of the existing trees in order to facilitate the development proposals.

Arboricultural Implications

To ensure that the trees can be successfully integrated within the proposed development the following factors have been considered or require consideration.

Root Protection Areas (RPA)

Root Protection Areas (RPA) for each tree surveyed have been determined in accordance with BS5837:2012 Section 4.6 Root Protection Area in the Standard and a schedule of RPA is attached to this report as Table 2.

Initial RPA for the trees were plotted onto the Tree Constraints Plan (see drawing 700) and has been used to produce all relevant tree plans in this statement. Areas where trees are located on site have been identified and the RPA information of these trees has been used in the design of the tree protection.

There is one instance where an encroachment of an RPA has been identified and this relates to the required connection between the proposed soakaway at the south-west corner of the site to an existing manhole to the west. It will require installation through the periphery of the RPA of the north-westernmost tree in the Category A group G4 (amounting to an incursion of approximately 9% of the RPA). This appears unavoidable, however it should be well within the tolerances of the tree to withstand given the species, age and condition of the tree. The connection should allow for working methods that will minimise damage to trees. For example, reference to documents such as NJUG Volume 4 - Guidelines for the planning, installation and maintenance of drainage in proximity to trees. (National Joint Utilities Group 2007) may be suitable.

A site-wide Construction Exclusion Zone (CEZ) will be installed to protect the RPA of trees adjacent works during construction. Heras style fencing should be used to provide this barrier, the locations of which can be seen on the Tree Protection Plan (see drawing 710).

Existing Canopy Spreads

A preliminary assessment has been carried out regarding the requirement to prune any retained trees on site. This has been done by cross referencing potential conflict between tree canopies and site works shown on the Tree Protection Plan with the recorded canopy heights for the trees. It is considered at this point that there should not be a need to prune any of the trees at the site, but this will need to reassessed prior to commencement.

All pruning requirements should be checked prior to the implementation of the development to ensure that there remains suitable clearance from the erection of the protective fencing shown on the Tree Protection Plan and the proposed construction works.

Level Changes

Trees can be profoundly impacted by changes to ground levels within their RPA, both cutting and filling, and this is a factor that has been considered in this assessment and would be mitigated for through the retention of existing ground levels within this new proposed use of the land.

Therefore, it is a requirement that no earthworks be undertaken within the RPA of trees as indicated on the Tree Protection Plan (see drawing 710). It is considered that this should be feasible given the nature of the development and the positioning of the majority of trees to the boundaries of the fields. However, should this become unfeasible then it would require further assessment by the Arboricultural Consultant.

Planning of Site Operations

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.

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.

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

No trees will require removal to facilitate the development.

Tree Pruning

It is considered at this stage that there should be sufficient canopy clearance to protective fencing and access routes to not require any crown pruning.

Pruning works should be reassessed prior to the construction phase beginning and in the event that any further tree works are required, these can follow the following guidance. If for whatever reason more significant pruning works are required, this should be assessed by the Arboricultural Consultant.

Standard of Work

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

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

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

Burning of any green waste is not an acceptable form of waste disposal and is not permitted within the site.

Timing of Works

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

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

Ideally tree pruning works should not be undertaken during the springtime period, when the 'sap is rising' to enable the leaves to flush (come out) and photosynthesis to begin, and during the autumn, when the tree is drawing nutrients back into itself from the leaves as they go brown. Outside these periods most trees can be pruned at any time of the year.

Tree Protection Barriers

All tree protection fencing (Heras-style) should be erected to the position shown on the Tree Protection Plan (see drawing 710) during the pre-commencement period.

To ensure successful tree protection during this process, all operatives should be briefed on the need to pay full regard to existing trees and all operations adjacent to trees should be properly supervised. This will ensure the works will not adversely affect the trees.

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Once the protective barriers are in place they must remain in situ throughout the course of the development until the completion of all works associated with that section of the site.

Copies of the Tree Protection Plans (see drawing 710) shall be placed in the site office for reference by all site staff.

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

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 D. Signs must be replaced as necessary should they be removed or become illegible.

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 Protection Plans and any relevant conditions that may be attached to a grant of planning consent for the development.

8 CONSTRUCTION WORKS

Construction Exclusion Zone

The Construction Exclusion Zone (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.

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.

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

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

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.

The offices, parking of site and contractor vehicles, along with secure storage will be provided in an area away from retained trees and this area will be directly controlled by the Site Manager who will seek advice from the site Landscape Manager before allocating the area for these purposes.

Monitoring

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 Protection Plan (see drawing 710).

It is also recommended that further monitoring visits be carried out following commencement of the works on site, ideally on at least a monthly basis to ensure ongoing functionality of the CEZ and to check on tree condition.

Reporting

During the construction phase of the development, the Site Manager will be responsible for liaising with the Council Tree Officer on all arboricultural issues. 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 1: TREE SCHEDULE

TABLE 2: GROUP SCHEDULE

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

Table 1: Tree Data Schedule

Tree No.	Species	Diameter (mm)*	Height	Crown Spread				Crown Height	First Branch Height and Direction	Age Class	Vigour	Life Expectancy	Structural Condition/Comments	BS5837 Category	
				N	S	E	W								
T1	Sorbus aria (Whitebeam)	170	5	2	2	2	2	2	2	SW	SM	Fair	20+	Not Plotted on original survey. Pruning wounds to stem. Crossing branches.	C2
T2	Acer platanoides (Norway Maple)	300	7	3	3	3	3.5	2	1.5	SW	SM	Fair	20+	Hard surface in RPA. Not Plotted on original survey. Pruning wounds to stem. Included bark present in stem union. Minor deadwood in the crown. Crossing branches.	B1
T3	Acer platanoides (Norway Maple)	310	8	3	3	3	3	2	2	NW	SM	Fair	20+	Hard surface in RPA. Not Plotted on original survey. Pruning wounds to stem. Included bark present in stem union. Minor deadwood in the crown. Crossing branches.	B1
T4	Acer platanoides (Norway Maple)	290	8	3	3	3	3	2	2	E	SM	Fair	20+	Hard surface in RPA. Not Plotted on original survey. Pruning wounds to stem. Included bark present in stem union. Minor deadwood in the crown. Crossing branches.	B1
T5	Sorbus intermedia (Swedish Whitebeam)	150	5	2	2	2	2	2	2	NW	SM	Fair	20+	Not Plotted on original survey. Major bark wounding on stem. Pruning wounds to stem. Crossing branches.	C2
T6	Fraxinus excelsior (Ash)	210	7	2	2	2	2	2	2.5	E	SM	Poor	10+	Hard surface in RPA. Included bark present in stem union. Minor deadwood in the crown. Epicormic growth in crown. Ash Die Back - Moderate extent.	C2
T7	Sorbus intermedia (Swedish Whitebeam)	160	5	2	2	2	2	1.5	1	E	SM	Fair	20+	Pruning wounds to stem. Crossing branches.	C2
T8	Sorbus intermedia (Swedish Whitebeam)	80	4	1	1	1	1	1.5	1	W	Y	Poor	10+	Poor shape & form. Pruning wounds to stem. Crossing branches.	C1
T9	Fraxinus excelsior (Ash)	240	8	2	2	2	2	2	2	W	SM	Poor	10+	Hard surface in RPA. Included bark present in stem union. Minor deadwood in the crown. Epicormic growth in crown. Ash Die Back - Moderate extent.	C2
T10	Carpinus betulus (Hornbeam)	180	5	2.5	2	2.5	2.5	1.5	2	N	SM	Good	40+	Hard surface in RPA. Not Plotted on original survey. Crossing branches.	A1
T11	Prunus avium (Wild Cherry)	180	7	3	2.5	3	3	2	2	S	SM	Fair	20+	Hard surface in RPA. Not Plotted on original survey. Low bud/leaf density. Minor deadwood in the crown.	B2

* Where the tree is multi-stemmed the conventions within BS5837:2012 are applied



Tree No.	Species	Diameter (mm)*	Height	Crown Spread				Crown Height	First Branch Height and Direction	Age Class	Vigour	Life Expectancy	Structural Condition/Comments	BS5837 Category	
				N	S	E	W								
T12	Fraxinus excelsior (Ash)	110	5	2	2	2	1.5	2	3	W	Y	Poor	<10	Not Plotted on original survey. No long term potential. Stem wounds. Minor deadwood in the crown. Crossing branches. Epicormic growth in crown. Ash Die Back - Moderate extent.	U
T13	Acer pseudoplatanus (Sycamore)	540	15	5	6	5	3.5	3	6	SE	M	Fair	20+	Hard surface in RPA. Built structure in RPA. Not Plotted on original survey. Leaning East. Pruning wounds to stem. Epicormics on stem. Previous branch failures. Minor deadwood in the crown. Unbalanced crown shape.	B2
T14	Acer pseudoplatanus (Sycamore)	670	15	3	6	3	3.5	3	6	E	M	Fair	10+	Declining. Hard surface in RPA. Built structure in RPA. Leaning East. Pruning wounds to stem. Low bud/leaf density. Previous branch failures. Moderate deadwood in the crown. Unbalanced crown shape.	C2
T15	Acer pseudoplatanus (Sycamore)	490	15	3	6	3	3.5	3	4	W	M	Fair	20+	Poor shape & form. Hard surface in RPA. Built structure in RPA. Leaning East. Pruning wounds to stem. Epicormics on stem. Previous branch failures. Minor deadwood in the crown. Heavily suppressed crown form. Epicormic growth in crown.	B2
T16	Acer pseudoplatanus (Sycamore)	620	16	4	7	4	4	5	6	S	M	Good	40+	Hard surface in RPA. Built structure in RPA. Leaning East. Pruning wounds to stem. Previous branch failures. Minor deadwood in the crown. Crown distorted due to group pressure.	A2
T17	Acer pseudoplatanus (Sycamore)	390	11	3	6	3	2.5	3	3.5	E	M	Fair	10+	Hard surface in RPA. Built structure in RPA. Leaning East. Pruning wounds to stem. Epicormics on stem. Previous branch failures. Moderate deadwood in the crown. Heavily suppressed crown form.	C2
T18	Fraxinus excelsior (Ash)	490	16	4	4	4	4	3	8.5	N	M	Poor/Fair	10+	Hard surface in RPA. Built structure in RPA. No long term potential. Pruning wounds to stem. Epicormics on stem. Minor deadwood in the crown. Previous crown reductions. Ash Die Back - present.	C2
T19	Acer pseudoplatanus (Sycamore)	440	11	3	3.5	3	6	3	3	W	M	Fair	20+	Hard surface in RPA. Built structure in RPA. Pruning wounds to stem. Epicormics on stem. Previous branch failures. Minor deadwood in the crown. Crown distorted due to group pressure. Pruning wounds to crown.	B2
T20	Fraxinus excelsior (Ash)	520	17	5	5	5	5	2	12	N	M	Poor	10+	Hard surface in RPA. Built structure in RPA. No long term potential. Epicormics on stem. Stem divides above 1.5m. Included bark present in stem union. Moderate deadwood in the crown. Ash Die Back - present.	C2

* Where the tree is multi-stemmed the conventions within BS5837:2012 are applied



Tree No.	Species	Diameter (mm)*	Height	Crown Spread				Crown Height	First Branch Height and Direction	Age Class	Vigour	Life Expectancy	Structural Condition/Comments	BS5837 Category	
				N	S	E	W								
T21	Acer pseudoplatanus (Sycamore)	470	11	3	3.5	3	6	2	3.5	N	M	Fair	20+	Hard surface in RPA. Built structure in RPA. Pruning wounds to stem. Epicormics on stem. Previous branch failures. Minor deadwood in the crown. Crown distorted due to group pressure. Pruning wounds to crown.	B2
T22	Acer pseudoplatanus (Sycamore)	270	9	2	2.5	2	4	2	4	W	SM	Poor	10+	Poor shape & form. Built structure in RPA. Stem wounds. Epicormics on stem. Previous branch failures. Minor deadwood in the crown. Heavily suppressed crown form.	C2
T23	Fagus sylvatica (Beech)	670	20	6	5	6	4	4	7	W	M	Good	40+	Hard surface in RPA. Pruning wounds to stem. Minor deadwood in the crown. Crown distorted due to group pressure.	A2
T24	Acer pseudoplatanus (Sycamore)	310	11	2.5	2.5	2.5	3	2.5	6	E	EM	Poor	10+	Stem wounds. Epicormics on stem. Minor deadwood in the crown. Heavily suppressed crown form.	C2
T25	Prunus avium (Wild Cherry)	172	5	2	2	2	2	1.5	1.5	E	SM	Fair	10+	Poor shape & form. Pruning wounds to stem. Stem wounds. Stem divides at ground level. Minor deadwood in the crown. Crossing branches.	C1

* Where the tree is multi-stemmed the conventions within BS5837:2012 are applied



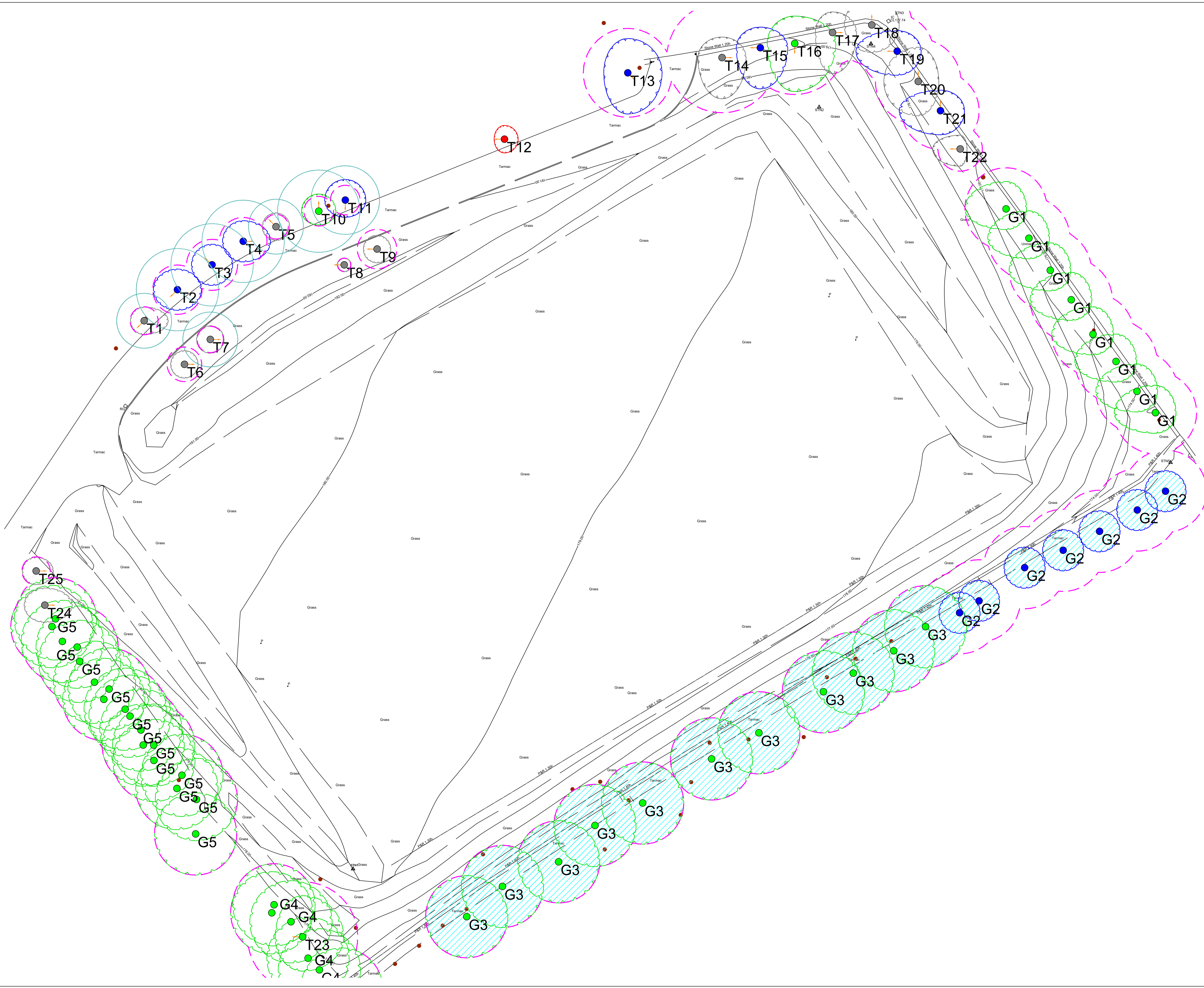
Table 1: Group Data Schedule

Group No.	Species	Max Diameter (mm)	Average Height (m)	Average Crown Spread	Ave. Crown Height	Max. Age Class	Vigour	Life Expectancy	Structural Condition/Comments	BS5837 Category
G1	Acer pseudoplatanus (Sycamore)	500	15	4	2	M	Fair	40+	Compaction in RPA. Built structure in RPA. Part of linear group. Epicormics on stem. Previous branch failures. Minor deadwood in the crown.	A2
G2	Acer pseudoplatanus (Sycamore)	500	14	3	5	M	Fair	20+	Restricted inspection due to vegetation. Hard surface in RPA. Built structure in RPA. Not Plotted on original survey. Estimated values due to access. Part of linear group. Epicormics on stem. Previous branch failures. Minor deadwood in the crown. TPO group.	B2
G3	Acer pseudoplatanus (Sycamore)	500	16	6	5	M	Fair	40+	Hard surface in RPA. Built structure in RPA. Not Plotted on original survey. Estimated values due to access. Part of linear group. Previous branch failures. Minor deadwood in the crown. Previous crown reductions. TPO group.	A2
G4	Acer pseudoplatanus (Sycamore)	500	16	6	4	M	Fair	40+	Hard surface in RPA. Pruning wounds to stem. Previous branch failures. Minor deadwood in the crown. Previous crown reductions.	A2
G5	Acer pseudoplatanus (Sycamore)	500	16	6	3	M	Fair	40+	Pruning wounds to stem. Previous branch failures. Minor deadwood in the crown. Crown distorted due to group pressure. Epicormic growth in crown.	A2

Figures

JSL4956_700: TREE CONSTRAINTS PLAN

JSL4956_710: TREE PROTECTION PLAN



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Key

- Tree with numbered reference. Canopy spread and BS5837:2012 tree quality category as shown below.
- Vegetation group with numbered reference. Average canopy extent and BS5837:2012 tree quality category as shown below.
- Dense Vegetation Group with numbered reference. Average canopy extent and BS5837:2012 tree quality category as shown below.
- Woodland Group with numbered reference. Average canopy extent and BS5837:2012 tree quality category as shown below.
- Hedge/Shrubs/Saplings with numbered reference.

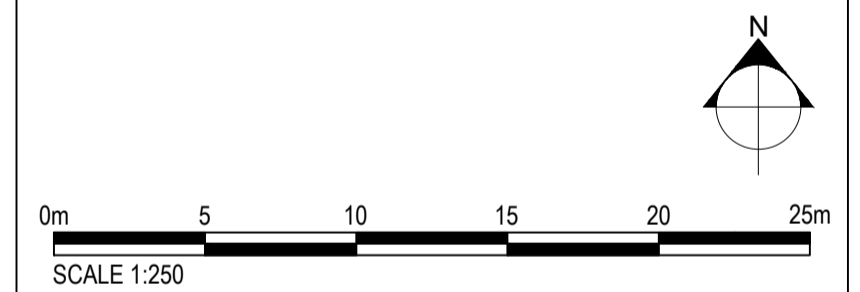
BS 5837:2012 Tree Quality Categories - Table 1

- 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
- Veteran Root protection area (VRPA) calculated in accordance with NE/FC Guidance
- First Significant Branch Direction
- TPO Tree

NOTES:

- Refer to RPS Tree 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 carried out using Topographical Survey information produced by the Client.



Rev	Description	By	CB	Date

Lakesbury House, Hittingbury Road, Chandlers Ford, Hampshire SO53 5SS
 T: 02380 810 440 E: rpsso@rpsgroup.com

Client

Project **Ryburn Valley High School Artificial Grass Pitch**

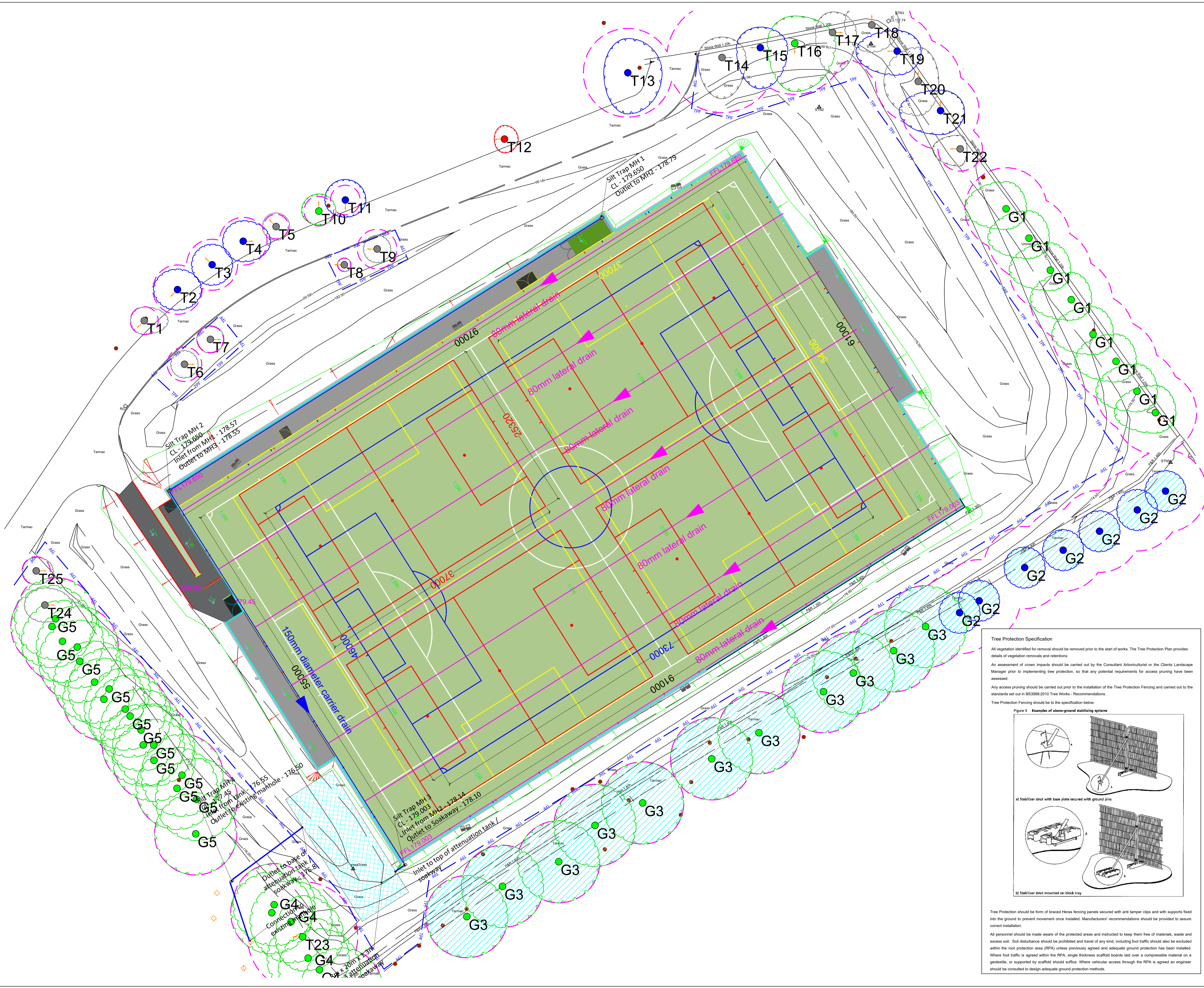
Title **TREE CONSTRAINTS PLAN**

Status	Drawn By	PM/Checked by
For Information	BW	-

Job Ref	Scale @ A1	Date Created
JSL4956	1:250	September 2023

RPS Drawing / Figure Number	Rev
700	P01

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Key

- Tree with numbered reference. Canopy spread and BS5837:2012 tree quality category as shown below.
- Vegetation group with numbered reference. Average canopy extent and BS5837:2012 tree quality category as shown below.

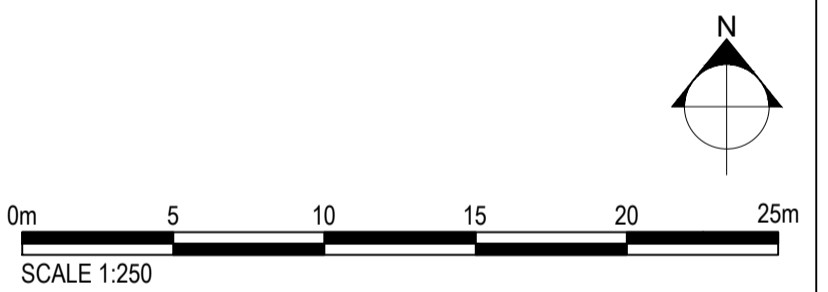
BS 5837:2012 Tree Quality Categories - Table 1

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

- Root protection area (RPA) calculated in accordance with Section 4.6 - BS5837:2012
- First Significant Branch Direction
- TPO Tree
- 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 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 carried out using Topographical Survey information produced by the Client.



P01	First issue	TF	-	11.10.23
Rev	Description	By	CB	Date

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 Client's 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 1 Examples of above-ground stabilising 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.

Lakesbury House, Hittingbury Road, Chandlers Ford, Hampshire SO53 5SS
 T: 02380 810 440 E: rpsso@rpsgroup.com

Client **SSL**
Surfacing Standards Limited
 SPORTS PITCH CONSULTANTS

Project **Ryburn Valley High School**
Artificial Grass Pitch

Title **Tree Protection Plan**

Status **For planning** Drawn By **TF** PM/Checked by **-**

Job Ref **JSL4956** Scale @ **A1** Date Created **Oct 2023**
 1:250

RPS Drawing / Figure Number **710** Rev **P01**

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Appendix A

Survey Methodology

General

This report was authored by Thomas Flood, Principal Arboriculturist at 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 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 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.

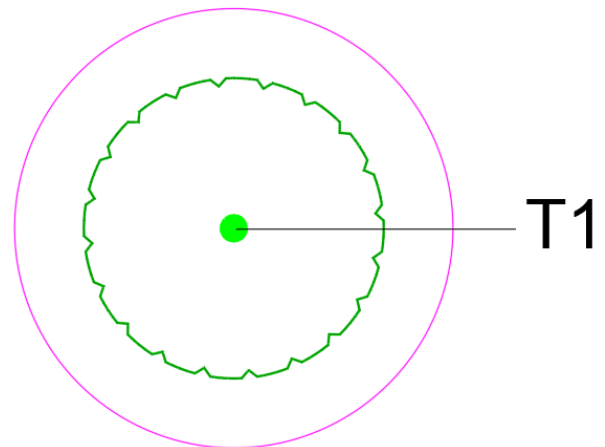
REPORT

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

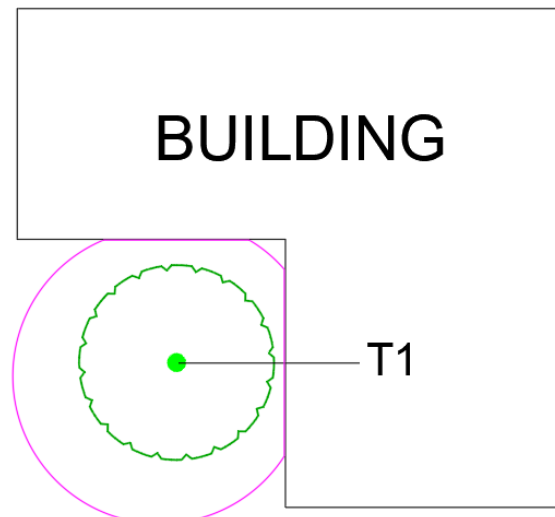
Root Protection Areas for each tree and group of trees surveyed have been determined in accordance with BS5837:2012 and a schedule of Root Protection Areas is attached to this report as Table 2.

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.

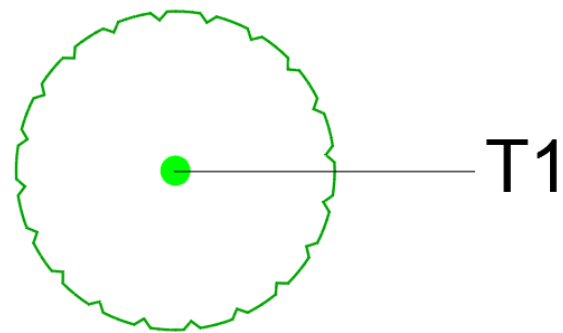
Existing Canopy Spreads

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 B

BS5837 Cascade Chart for Tree Quality Assessment

REPORT

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	<input type="checkbox"/> 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) <input type="checkbox"/> Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline <input type="checkbox"/> 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>			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

Cascade chart for tree quality assessment

Appendix C

Tree Protection Barriers (CEZ)

Root Protection Area Barrier Details

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 1 & 2 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 1

Figure 2 Default specification for protective barrier

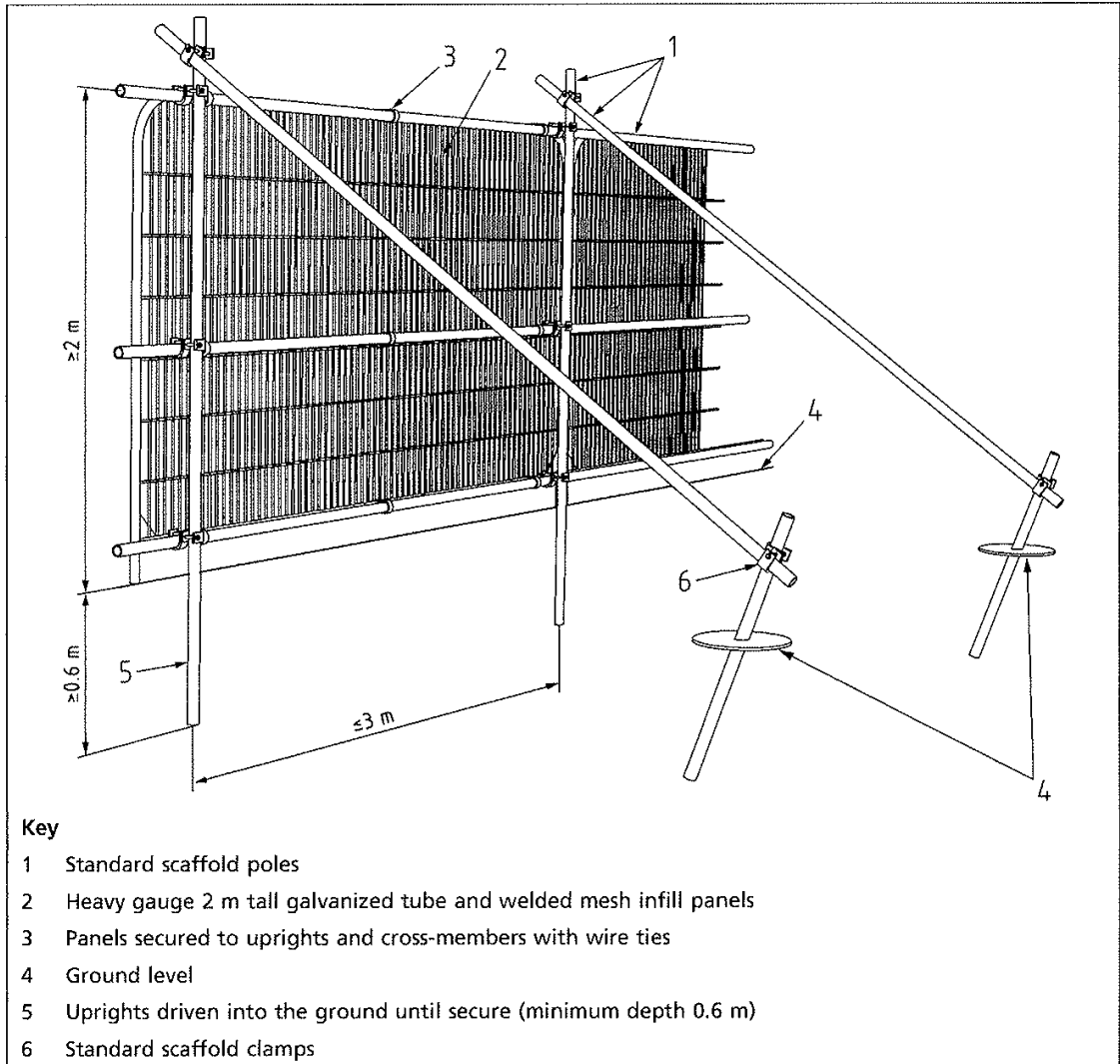
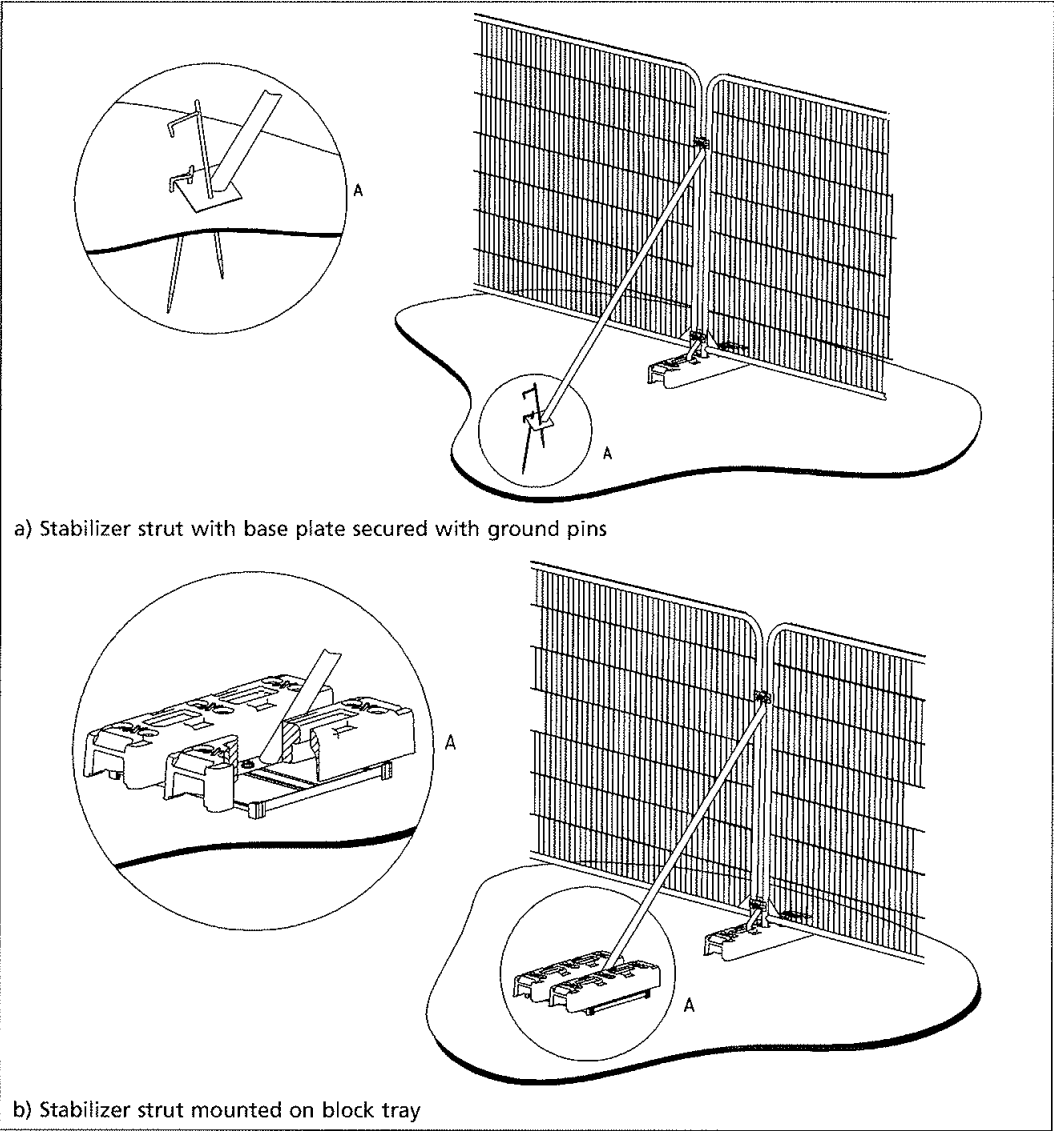


Figure 2.

Figure 3 Examples of above-ground stabilizing systems



Appendix D

Construction Exclusion Signage – Example



Appendix E

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 Impact 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, immovable 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 Protection Plan (TPP) – 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.