



Portakabin[®]

**Tree Survey and
Arboricultural Impact Assessment**

Eldwick Primary School, Bingley

Produced by:



CRESTWOOD ENVIRONMENTAL LTD

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1 INTRODUCTION

1.1 INSTRUCTION

- 1.1.1 Crestwood Environmental Ltd. ('CEL') have been commissioned by Portakabin (the 'Client') in relation to proposed development at Eldwick Primary School, Bingley ('the Site'), to provide an Arboricultural Impact Assessment which will form part of a Planning submission to the Planning Authority (Bradford Council).
- 1.1.2 The instruction is to produce an Arboricultural Impact Assessment (AIA) that accords with the methodology and guidance in BS5837:2012 *Trees in Relation to design, demolition, and construction: recommendations*, to inform layout design and minimize impact on existing tree cover.
- 1.1.3 This report supplements and should be read in conjunction with all other Tree and Hedge Protection Plans, whether produced by CEL or by others.

1.2 BRIEF

- 1.2.1 A single Site visit was undertaken by CEL's Arboricultural Consultant on 28th September 2023. Information relating to existing tree presence was gathered.
- 1.2.2 3 individual trees and 2 groups were identified as potential constraints on development. The size of the trees varied from a young tree less than 7m in height to large mature trees 18m along the southern and western boundaries of the sports field.
- 1.2.3 General observations were recorded for physiological and structural condition of the trees, with preliminary management recommendations supplied if appropriate.
- 1.2.4 Photographs were collected for illustrative purposes and to aid reporting.
- 1.2.5 Each individual tree, tree group and woodland has been categorised in accordance with the criteria provided in BS5837:2012.
- 1.2.6 A Tree Data Schedule has been compiled and can be found in (Appendix TI).
- 1.2.7 Based on a proposed layout plan supplied by the Client, a Tree Constraints Plan (i.e. drawing CE-ES-2450-ADW01-FINAL_Fig 1) has been produced which identifies the locations, dimensions and overall quality of the 5 trees and tree groups (using the BS 5837: 20212 categorization Method). The TCP forms part of a suite of documents comprising the Tree Protection Scheme.
- 1.2.8 A Tree Protection Plan (hereby referred to as 'the TPP') has been produced separately (i.e. drawing CE-ES-2450-ADW01-FINAL_Fig 2) by CEL to inform suitable tree protection measures and provide guidance on appropriate methods of working.
- 1.2.9 Taken together, the TCP and TPP form the basis of the Arboricultural Impact Assessment (AIA). The AIA aims to provide detailed advice on the protection of retained trees and an evaluation of the impact on tree cover which will be delivered by the development of the Site as currently proposed.

1.3 SCOPE OF THE REPORT

- 1.3.1 The purpose of this report is to provide a Tree Protection Scheme based on an evaluation of the tree cover currently present on the Site, and to evaluate, in an Arboricultural Impact Assessment, the overall tree impact associated with the development as proposed.
- 1.3.2 Under the UK planning system, local authorities have a statutory duty to consider the protection and planting of trees when granting planning permission for the development. The potential effect of development on trees, whether statutorily protected (e.g. by a Tree Preservation Order or by their inclusion within Conservation Area) or not, is a material consideration that is considered in dealing with planning applications.

- 1.3.3 The nature and level of detail of information required for the Local Planning Authority (LPA) to properly consider the impacts and effects of development proposals varies between stages and in relation to what is being proposed. Box 1 (below) contains an extract from BS5837:2012 which provides advice to both developers and LPA's on the level of information required at varying stages of planning and development processes. This is the minimum detail that LPA's are expected to seek.

Box 1 - Extract from BS5837:2012 – Tree Information Detail

Stage of process	Minimum detail	Additional information
Pre-application	Tree survey	Tree retention/removal plan (draft)
Planning application	Tree survey (in the absence of pre-application discussions) Tree retention/removal plan (finalized) Retained trees and RPAs shown on proposed layout Strategic hard and soft landscape design, including species and location of new tree planting Arboricultural impact assessment	Existing and proposed finished levels Tree protection plan Arboricultural method statement – heads of terms Details for all special engineering within the RPA and other relevant construction details
Reserved matters/ planning conditions	Alignment of utility apparatus (including drainage), where outside the RPA or where installed using a trenchless method Dimensioned tree protection plan Arboricultural method statement – detailed Schedule of works to retained trees, e.g. access facilitation pruning Detailed hard and soft landscape design	Arboricultural site monitoring schedule Tree and landscape management plan Post-construction remedial works Landscape maintenance schedule

1.4 LIMITATION, EXCLUSIONS AND COPYRIGHT

- 1.4.1 This report is solely for the purpose of development proposal assessment in relation to trees and does not seek to address any risk the trees may pose to people and/or property. This report is not a tree risk management report and should not be treated as such.
- 1.4.2 The Tree Constraints Plan (TCP drawing) and Tree Protection Plan (TPP drawing) for the project are appended to this report (Appendix 3 and 4).
- 1.4.3 This report does not refer to protected species (e.g. Bats and breeding birds), this being outside the scope of this report, and being covered by separate ecology studies; however, this report should be read in conjunction with related reports provided by others.
- 1.4.4 No samples of any description were taken from the Site for laboratory analysis or other purpose.
- 1.4.5 No provision for soil sampling or the assessment of shrinkable soil types has been undertaken. Analysis of this type should be conducted by a specialist to ensure building foundations are adequate and in accordance with current National House Building Council Guidelines NHBC, if required.
- 1.4.6 Trees are influenced by a variety of biotic and abiotic activities (e.g. construction activities, pathogens or climatic events) which can affect the biomechanical and physiological condition of trees. The author cannot take responsibility for changes in condition once any relevant fieldwork has been completed.
- 1.4.7 It should be noted that felling of trees prior to receiving full planning permission may require a felling license from the Forestry Commission under the Forestry Act 1967. The felling of trees of more 5m³ within any three-month period requires a felling license from the Forestry Commission unless an exemption applies.

- 1.4.8 This report does not cover any future tree protection or management measures that may be required by third parties following construction, for example, easement and access by utilities companies at a future date.
- 1.4.9 Should any part of the report be altered or tampered with in any way after being issued to the Client then this will invalidate the entire document.

2 THE SITE AND PROPOSALS

2.1 LOCATION AND DESCRIPTION

- 2.1.1 The Site is currently an active school site. The site comprises a main building complex in the west of the site with a car park to the south, alongside the entrance road.
- 2.1.2 The site is extensive, and the survey site is located on the edge of one tiered sports pitch area towards the southeast of the site
- 2.1.3 To the south of the survey site are numerous residential properties, with the remainder of the adjacent areas being part of the school.
- 2.1.4 The boundaries of the locations identified by the Client for survey (red lines) are shown on Plate 1:



Plate 1 – showing area requiring AIA bounded by red lines

- 2.1.5 The proposals involve the installation of a number of modular classrooms and associated footways / ramps within the area currently used as a sports field in the eastern area of the site.

3 EXISTING TREE PRESENCE

- 3.1.1 Tree data was collected during Arboricultural site visit 28th September 2023. This was subsequently used to schedule on-site trees located within red line boundaries and/or closely adjacent to them. The trees were plotted during the site visit as no topographical survey was available and used tape measure to obtain adequate tree locations.
- 3.1.2 All trees surveyed were within the school and on or adjacent to the playing field.
- 3.1.3 Each tree surveyed by Crestwood has been given a sequential (T) number for purposes of identification.

Each tree has been recorded with the common and botanical names. Where groups formed a cohesive assemblage, they have been recorded as (G) Groups, with largest trees recorded to reflect RPA's and crown spreads. Where trees appear exceptional to the existing group or woodland they are recorded as individuals.

- 3.1.4 General observations have been recorded for physiological and structural condition of the trees, with preliminary management recommendations-supplied if appropriate.
- 3.1.5 Each individual tree, tree group and woodland has been categorised in accordance with the criteria provided in BS5837:2012, reproduced as an Appendix to this report.
- 3.1.6 It has been confirmed via a search on Bradford Council's website (search dated 27/09/23) that the site does not lie within a Conservation Area but there are trees on the site that are protected by a Tree Preservation Order. Tree Preservation Order 0129 dated 1973 covers two particular areas subject to the survey.
- 3.1.7 Group G5 within the order identifies Beech Sycamore & Elm. These trees are within the **group G3** identified during the survey. Area A6 within the order identifies Sycamore, Hawthorn and Weeping Oak. A number of these trees are identified during the survey, notably **Sycamore T1** and **Sycamore, Hawthorn & Turkey Oak in group G4**.
- 3.1.8 Should any tree work be considered necessary then a formal application process must be made to Bradford Council prior to work taking place.

4 TREE SURVEY RESULTS

4.1 SUMMARY

- 4.1.1 A total of 3 individual trees and 2 groups were identified as potential constraints on development. All information on tree species can be found in the Tree Data Schedule.
- 4.1.2 In relation to the Proposed Development, there are:
 - 1 individual tree and 1 group considered to belong in the high quality 'A category'.
 - 1 individual tree and 1 group considered to belong in the medium quality 'B category'.
 - 1 individual tree considered to belong in the low retention priority 'C category'.
- 4.1.3 Appendix T2 defines the 'Retention Categories' as per BS5837:2012.
- 4.1.4 The mature and dominant landscape features identified are along the southern boundary and also west of the sports pitch. Both these features are protected by Tree Preservation Orders.
- 4.1.5 **Sycamore T1** is a large broad spreading tree located on the southern boundary and is next to an existing access from the access driveway into the sports pitch area. There is clear evidence of vehicular access into this area some, part of which is within the root protection of the tree. The tree is considered to be in good condition and has high crown clearance. This tree has been rated category A status.
- 4.1.6 **Group G3** is located immediately west of the sports pitch, in a fenced area near to a school car parking area. This consists of a number of close growing mature trees of significant prominence. One particularly large Beech tree within this group is approximately 3m from the boundary with the sports pitch. This is probably the most dominant tree in this group and the root protection area and canopy spread constraints are derived from this tree. This group has been rated category A status.
- 4.1.7 **Group G4** is along the southern boundary and the trees are a significant mature screen whilst being located on ground that slopes downwards to the east and is much lower than the plateau of the sports pitch. Owing to the limited life expectancy of the mature Hawthorn trees within this group the group has been downgraded to category B status.
- 4.1.8 The other two trees identified in the survey consist of **Silver Birch T5**, a well-formed early mature tree

on the south-east corner of the sports pitch (rated category B status) and **Goat Willow T2** a self-set tree located directly adjacent to the boundary fence with the sports pitch, which has been rated category C status and is of little value to the site.

Table 1 Tree and Group Quality Assessment Summary

Category:	A	B	C	U
Tree ID Reference:	T1, G3	G4, T5	T2	n/a
Total No:	2	2	1	0

5 TREE CONSTRAINTS

5.1 GENERAL INFORMATION

- 5.1.1 Trees impose below-ground constraints represented by their Root Protection Areas (RPAs), and above ground constraints by their current and future size, i.e. height and spread and species characteristics, particularly their foliage density, branch and fruit drop, production of honey dew etc.
- 5.1.2 The RPA is calculated using the tree's stem diameter measured at 1.5 m height and represents the minimum area which should be protected and left undisturbed around each retained tree, during and following development.
- 5.1.3 The above ground attributes can also have a significant effect on land use and living conditions, particularly the effect of trees on sunlight. Sunlight or shade may be desirable depending on the particular site but unreasonable light obstruction should be avoided at the design stages.
- 5.1.4 An assessment should be made at the design stages of development for any incompatibilities between the design and tree retention, the effects on amenity value provided by existing trees, working space required during construction, infrastructure requirements for underground and/or above ground apparatus and highway visibility requirements.
- 5.1.5 The morphology and distribution of tree roots is influenced by past land use or existing land use (e.g. the presence of roads, structures and underground services, topography, drainage, soil type and structure). The likely tolerance of a tree, to root disturbance or damage, will depend on factors such as species, age, structural and physiological condition, and past management. Any of these factors may result in non-uniform root growth. This issue can be dealt with in greater detail at the Tree Protection Planning stage.
- 5.1.6 Any alterations made within the trees' rooting environment that cause damage can lead to visible progressive abnormalities in the crown of the trees affected, including reduced vigour, or increased deadwood production. Trees may decline acutely or become hazardous within a short period of time.
- 5.1.7 As a general rule, Tree protection fencing should be installed around the RPA of retained trees or extended to the edge of the crown spread, whichever is greatest, to ensure no alterations to soil levels or damage occurs to their roots, and to ensure no overhanging branches are damaged by construction activity.
- 5.1.8 No traditional construction methods should be used within the RPA of retained trees, unless overriding circumstances dictate. In such circumstances, appropriate construction methods and materials should be used in accordance with a specification from appropriately qualified and competent person, to prevent damage and ensure tree retention.
- 5.1.9 Where aerial parts of the tree crowns extend beyond the edge of the RPA, it may be appropriate to consider pruning for construction purposes and/or to abate future nuisance, in accordance with a project arboriculturist and the Local Planning Authority.

5.2 GENERAL RECOMMENDATIONS

- 5.2.1 It is recommended that development should seek to avoid all unnecessary tree loss and impacts on trees.
- 5.2.2 With regard to tree removal, none of the trees present would be suitable for relocation and if there are proposals to undertake replacement tree planting then this should be shown as replaced within a proposed landscaping scheme associated with this development proposal.

6 IMPACT ASSESSMENT

6.1 TREE REMOVALS

- 6.1.1 The proposals do not require any tree removal.

6.2 TREE PRUNING

- 6.2.1 The proposals do not require any tree pruning.

6.3 ROOT PROTECTION AREA ENCROACHMENT

- 6.3.1 Whilst being located close to group **G3** there is no encroachment into the RPA of the trees or underneath the tree canopies. The sloping ground towards the trees will also help prevent any desire to encroach into that area.
- 6.3.2 It is noted that the likely access into the sports pitch area will be through the existing access gateway in the southwest corner of the site. This will result in the passage of vehicles within a small part of the root protection area of **T1**. There is currently evidence of the passage of vehicles in this area, so the impact is considered very low, however the area is still vulnerable to further ground compaction from heavy vehicles, of the type that is likely to be used to transport the classroom buildings.
- 6.3.3 To avoid significant ground compact temporary ground protection will be required in the area shown on the TPP **Appendix T4**.

6.4 TREE PROTECTION FENCING

- 6.4.1 It would be expected that prior to implementation of the project that a Construction Exclusion Zone would be identified around retained trees to prevent any damage of harm to the retained trees. The use of Tree Protection Fencing located at the edge of the Root Protection Area (RPA) or at locations shown on the TPP (**Appendix T4**) would be expected to the standard defined within BS5837:2012.
- 6.4.2 In some parts of the site it will not be possible to implement the proposals with protective fencing installed as stated as there will be required access within the RPAs of some trees. There will be temporary ground protection required in these areas if there is any access for machinery of any type.. This will be to prevent any ground compaction.

6.5 TEMPORARY GROUND PROTECTION

- 6.5.1 To enable access to implement the development there is a requirement to access a small proportion of the RPA of **T1**. Access requires the use of construction vehicles and MEWPs to facilitate safe access. All of this has the potential to lead to ground compaction unless suitable ground protection methods are adopted.
- 6.5.2 To prevent ground compaction from the use of vehicles there will be a requirement to install temporary ground protection mats within the root protection areas outside the protective fencing.
- 6.5.3 Temporary ground protection would need to be of a type suitable to facilitate temporary vehicle access within the rooting areas without leading to ground compaction or contamination. This would need to

be installed prior to any work commencing on site and after the protective fencing is installed. Details of suitable ground protection is detailed in **Appendix T5**.

6.6 UNDERGROUND UTILITIES

6.6.1 There can be no routing of any new underground utilities through the RPAs of any retained trees unless further information and advice is sought regarding appropriate excavation techniques. Excavation outside the RPA to install services is considered acceptable.

7 ARBORICULTURAL PROTECTION METHODS & SPECIFICATION

7.1 TREE PROTECTIVE FENCING

7.1.1 Tree protective fencing is required to be in place, as per an applicable Tree Protection Plan (TPP), prior to commencement of any construction related groundworks. Given that much of the existing site contains hard surfacing in the form of tarmac, there is a much-reduced requirement for Protective Fencing around exposed root protection areas (RPAs). The location of the protective fencing is shown on the TPP **Appendix T4**.

7.1.2 It is recommended that the fencing specification used at Eldwick Primary School should be that set out in BS 5837: 2012 at point 6.2.2.2 and shown as Figure 2 'Default specification for protective barrier'. This will require the sinking of uprights into the ground which may have the risk of damaging some of the root systems of adjacent retained trees, however such fence designs are very secure and will ensure this important area is securely fenced. Figure 2 from BS 5837: 2012 is reproduced below as Diagram 1 for reference:

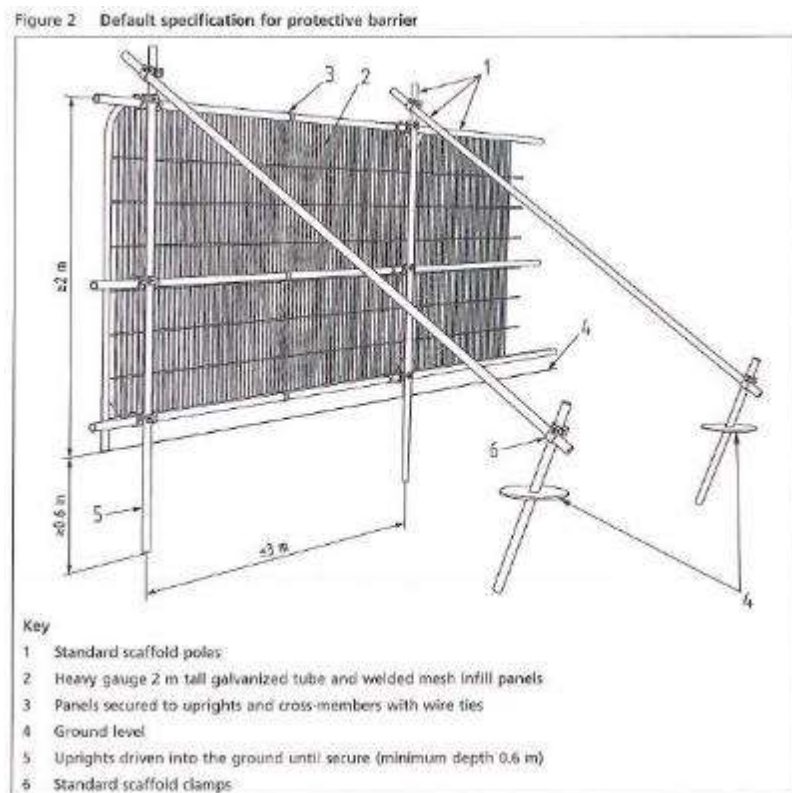


Diagram 1: Tree Protection Fencing Specification as per BS 5837:2012

7.1.3 Fencing must be fixed into position, at the locations shown on the TPP, prior to any development activity, site deliveries or construction of site compound. The project's supervising Arboricultural Consultant may be required to verify, on site, that the fencing is correctly located and fit-for-purpose. Such verification, in the form of an Arboricultural Certificate of Compliance, can be provided for the LPA

Tree Officer, if required.

- 7.1.4 Signage is required to be fixed to the outside of the fencing at 20m min intervals, saying 'Construction Exclusion Zone – No Entry' or similar.
- 7.1.5 Should any Tree Protection fencing require realignment, or temporary removal FOR ANY REASON during the construction works, the project's supervising Arboricultural Consultant must be notified and must assess the requirement. Justification for adjustment or movement of the fence, along with an evaluation of possible tree impact and any associated mitigation measures, may require to be notified to and approved by the LPA Tree Officer, for agreement, prior to fence adjustment. Generally, when such incidences occur, the Arboricultural Consultant will be required to supervise movement of the fence and to produce a photo-based Activities Record of operations subsequently taking place in proximity to retained trees. This Activities Record shall be provided to the LPA upon request.
- 7.1.6 The purpose of Tree Protection Fencing is to create a CEZ or Construction Exclusion Zone. A CEZ is a part of the development site from which all pedestrian and vehicular movements are excluded during site works by protective fencing, typically to ensure the wellbeing of trees. Where temporary construction working space is justified within any CEZ on unmade ground, temporary ground protection measures must be used. Such ground protection will comply with BS 5837:2012 (section 6.2.2.3) and may require a specific AMS, agreed with the LPA Tree Officer, prior to installation.
- 7.1.7 Fencing that becomes damaged or non-functional during construction works must be replaced immediately. Construction works must not be allowed to continue in locations where tree protection fencing is non-functional.

7.2 TEMPORARY GROUND PROTECTION

- 7.2.1 Temporary ground protection is required to be in place, as per an applicable Tree Protection Plan (TPP), immediately following the installation of the Tree Protective Fencing and prior to commencement of any construction related groundworks.
- 7.2.2 It is recommended that appropriate ground protection be secured in place until the point at which the Portakabin buildings are to be installed. At this point, working away from the trees, the Temporary Ground Protection shall be removed ensuring that no machinery or vehicles access any of the unprotected ground.

7.3 UNDERGROUND SERVICES

- 7.3.1 Underground services must not be routed through the RPAs of any retained trees.

7.4 REMOVAL OF TREE PROTECTION FENCING

- 7.4.1 No Tree Protection fencing can be moved, reconfigured or taken down without notification being given to the supervising Arboricultural Consultant to the project, who in turn will notify the LPA 'Tree Officer' if required. Final dismantling of tree protection fencing following completion of phased construction works may require to be signed-off by the supervising Arboricultural Consultant.

7.5 LANDSCAPING

- 7.5.1 Landscaping will take place as set out in the Client's submitted and approved Landscaping Proposals if required.
- 7.5.2 A Method Statement should be sought from the appointed Landscaping Contractor(s) to cover activities such as erection of permanent fencing close to or within RPA's, cultivation of planting areas, planting generally and any construction of footpaths/paving close to or within RPAs across the site and grounds.

7.6 GENERAL TREE PROTECTION INFORMATION

7.6.1 Prohibited Activities Within Construction Exclusion Zones:

Entry of machinery.

Storage of building materials.

Parking of any kind.

Erection or placement of site facilities.

Removal or stockpiling of soil or site debris.

Disposal of liquid waste including paint and concrete wash.

Lighting of fires.

Excavation or trenching of any kind (including irrigation or electrical connections).

Attaching any signs or any other objects to the trees.

Placement of waste disposal or skip bins.

Pruning and removal of branches, except by a qualified Arborist.

In order to avoid root damage caused by toxic materials e.g. oil, fuel, hardcore, cement, mortar, bitumen, there should be no materials discharge within 10m of any tree trunk. Neither should mixing of concrete take place within 10m of a tree trunk unless an impermeable membrane can be used and waste disposed of appropriately. Sloping ground must be considered to avoid run off in the direction of trees; and

Trees must not be used as anchorage, nor have signs, boards, cables or wires attached to them.

7.6.2 Extreme care must be exercised when using heavy plant (i.e. cranes, excavators or other lifting equipment) in the vicinity of retained trees. If accidental damage does occur, this must be reported to site management and the Arb Monitor immediately, so that remedial action can be taken.

8 CONCLUSIONS

8.1 GENERAL

8.1.1 The proposals involve the installation of a significant cluster of modular classrooms, ancillary buildings and footways.

8.1.2 None of the classrooms or associated footpaths are within the Root Protection Areas (RPAs) or crown spreads of any trees.

8.1.3 There will be a requirement to access the installation site via an existing access point that is partly within the RPA of one tree and ground protection for this will need to be installed prior to installation.

8.1.4 In summary the proposals are low to negligible impact upon the trees if the defined protection measures are installed.

REFERENCES:

BS5837:2012. Trees In Relation to Design, Demolition, and Construction – Recommendations. British Standards Institute. London, UK.

BS 3998:2010. Tree work. Recommendations. British Standards Institute. London, UK

Veteran Trees – A Guide to Good Management – Helen Read et al - Natural England (IN13) Published Record 2000

Management of the Risk from Falling Trees (HSE 2007)

Managing Deadwood in Forests and Woodlands – Forestry Commission Practice Guide (2012)

ABBREVIATIONS:

For the avoidance of confusion, abbreviations used have the meanings given below:

AGL	Above Ground Level	NPPG	National Planning Policy Guidance
AIA	Arboricultural Implications Assessment	OS	Ordnance Survey
AMS	Arboricultural Method Statement	POS	Public Open Space
AOD	Above Ordnance Datum	TCP	Tree Constraints Plan
c.	Circa	TPO	Tree Preservation Order
CA	Conservation Area	TPP	Tree Protection Plan
CEZ	Construction Exclusion Zone	VTA	Visual Tree Assessment
DEM	Digital Elevation Model		
DSM	Digital Surface Model		
DTM	Digital Terrain Model		
GEA	Gross External Area		
GIS	Geographical Information System		
LPA	Local Planning Authority		
NGR	National Grid Reference		
NPPF	National Planning Policy Framework		

APPENDIX T1 - TREE DATA SCHEDULE

Tree No.	Species (Common name)	Height (m)	Stem diam @1.5m (mm)	Crown spread (m)	Crown clearance (m) & direction of lowest growth	Maturity	Vigour	Est remaining contribution (yrs.)	Condition/ Comments	Preliminary Management recommendations	RPA radius (m)	RPA area (m ²)	BS5837 quality ref
T001	Sycamore (<i>Acer pseudoplatanus</i>)	17.0	1100	N:10 E:10 S:10# W:10	5.0 4.5(NW)	M	G	40+ Years	Broad mature tree close to the boundary of the school. Existing passage of vehicles approximately 10m from tree base. Part of protected line of trees	No work required	13.2	547	A1
T002	Goat Willow (<i>Salix caprea</i>)	6.0	179 (80,80,80,80,80)	N:3 E:3 S:3 W:3	1.0 1(S)	Y	G	10+ Years	Next to fence bordering car park, self-set will become problematic for due to location	No work required	2.1	14	C2
G003	Common Beech x4 (<i>Fagus sylvatica</i>) Sycamore x2 (<i>Acer pseudoplatanus</i>)	18.0	1400#	N:13 E:12 S:10 W:9	0.5 6(E)	M	G	40+ Years	Fenced area adjacent to the site, numerous close growing mature trees. Ground is elevated by approximately 1m above level of sports field with shallow gradient extending 4.5m into sports field. Largest beech 3m from boundary, stem diameter approx. 1.4m and a 12m spread to east	No work required	0.0	882	A2
G004	Sycamore x6 (<i>Acer pseudoplatanus</i>) Turkey Oak x3 (<i>Quercus cerris</i>) Common Hawthorn x2 (<i>Crataegus monogyna</i>)	18.0	800	N:10 E:10 S:10 W:10	1.0 3.5(N)	M	G	20+ Years	Mature tree line adjacent to the boundary. On sloping ground significantly lower than playing field. Trees are generally reliant on each other for durability	No work required	0.0	1127	B2
T005	Silver Birch (<i>Betula pendula</i>)	11.0	300	N:4 E:4 S:4 W:4	1.5 2(N)	EM	G	20+ Years	Well-formed feature tree on the corner of raised sports pitch area	No work required	3.6	41	B1

Key:

Maturity – This is a categorisation of the age class or life stage of a tree. There are 5 categories as follows:

Young (Y) – Newly planted or self-set trees; **Semi-mature (SM)** – Large nursery stock or self-set trees in their early life stages.; **Early-mature (EM)** – Trees that are in their first third life cycle with significant increases in size.; **Mature (M)** – Trees in their second third life cycle reaching full size potential and slowing growth rates.; **Late-mature (LM)** – Trees in their final third their life cycle showing signs of decline.; **Veteran (V)** - Trees showing signs of retrenchment and deadwood habitat irrespective of their age.

Vigour – An assessment of the biological function of the tree by visually observing the leaf colour, size, crown density, general shoot extension and live crown. There are 4 categories as follows:

Good – attributes considered normal for species and variety; **Fair** -minor reductions within the tree crown of any of the categories listed from that of a normal example; **Poor** - significant reductions within the tree crown of at least two categories listed accompanied by extensive crown dieback (in excess of 33% of crown volume); **None** - this is when a tree is dead

Est remaining contribution (yrs.) - This is an estimation of how long the particular trees is likely to survive in a similar form, size, shape etc in the current location, measured in years. Issues such as reduced vigour, pathogen infection or a likelihood of structural failure are major factors reducing this value (categories are **40+**, **20+**, **10+**, **<10**).

RPA radius (m) – This is the radius, in metres, of the root protection area (RPA) being expressed as a circle around each tree.

RPA area (m²) – This is the equivalent cross-sectional area of the root protection area (in square metres) which is deemed large enough to contain sufficient volume of roots to maintain the tree's viability.

BS5837 quality ref: This is a grading based on Table 1 within the standard and has 4 categories and 3 subcategories. The 4 main categories are:

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

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

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

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

APPENDIX T2 TREE ASSESSMENT CATEGORIES

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)		
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	<ul style="list-style-type: none"> Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collision, 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 <p><i>NOTE</i> Category U trees can have existing or potential conservation value which it might be desirable to preserve see 4.5.7.</p>		
	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-pastures)
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
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

APPENDIX T3 TREE CONSTRAINTS PLAN

APPENDIX T4 TREE PROTECTION PLAN

APPENDIX T5 PHOTOS



Photo 1 (left): Sycamore TI, with the existing access point at the right hand edge of the photograph.

Photo 2 (below): A closer view of the existing access and the current evidence of usage, partly within the RPA.



Photo 3 (above): Group G3 immediately west of sports pitch showing prominence.

Photo 4 (right): Outer edge of G3 with measured extent of RPA from largest Beech (15m radius) indicated with survey bag.

Photo 5 (bottom right): Group G4 located on the southern boundary on ground significantly lower than the sports pitch area



APPENDIX T6 TEMPORARY GROUND PROTECTION

Ground Protection

There is a requirement to install temporary ground protection prior to the installation of the modular classrooms in the western area of the site as indicated on the Tree Protection Plan. Below are two methods that will protect ground from compaction and to prevent soil contamination.

1. The simplest example is to use temporary ground protection plates

