THE TREE AND WOODLAND COMPANY

Web Links: Lincolnshire County Council is not responsible for any content displayed via external web links

Spalding Academy

Arboricultural Impact Assessment

March 2021

TWC-1307-R-001

Written: JP

Checked: ROS

6c Southfield Road

Southam

Warwickshire

CV470FB

United Kingdom

T: +(44) 1926 810 023

E: enquiries@treeandwoodland.co.uk

www.treeandwoodland.co.uk

Contents **Page Number**

1.0 Introduction 1

2.0 Survey Methodology 2

3.0 Tree Population and Quality Categorisation 3

4.0 Arboricultural Impact Assessment 5

5.0 Tree Protection and Recommendations 7

6.0 Statutory Obligations and Guidance 9

References 10

Appendices

1 Tree Survey Schedule: TWC1307-S-001

2 Survey Criteria and Categorisation

3 Tree Constraints Plan (A3) TWC1307-D-001

4 Tree Removal and Protection Plan (A3) TWC1307-D-002

5 Glossary of Terms

6 Tree Protection Fencing Specification

1.0 Introduction

Background

1.1 We are instructed by Kier to undertake an Arboricultural Survey and Impact Assessment in accordance with BS5837:2012 'Trees in relation to design, demolition & construction - Recommendations'.

1.2 This report provides arboricultural detail to support a planning application for the construction of a new school block at Spalding Academy, Spalding. The report assesses the specific implications of the proposed development scheme on existing trees and provides detail on appropriate protection measures and mitigation recommendations.

Site Description

1.3 The site is located approximately 1.2km south-east of Spalding Town Centre, directly to the west of Coronation Channel and is centred on OS grid reference: TF 25637 22509. The site is bounded by The Priory School and residential properties on Birch Grove and Helmsley Way to the east, Maltmore Gate to the south, Stonegate to the west and Helmer Gate to the north.

1.4 The site itself contains the main school building complex adjacent to the northern boundary with car parking adjacent to Halmer Gardens and Neville Avenue, as well as playing fields to the south and south-west.

Proposed Development

1.5 Development proposals comprise the construction of an 8 classroom school block with associated server and plant rooms, staff room, toilet facilities and store closets.

2.0 Survey Methodology

2.1 The tree survey and the report have been completed by James Potts, who holds the formal qualification BSc in Arboriculture and the LANTRA Certificate in Professional Tree Inspection. James is also a Professional member of the Arboricultural Association.

2.2 The trees have been assessed using the current recommendations, as detailed in British Standard 5837:2012, in order to arrive at a Quality Category for each individual tree, group of trees or woodland. For full details of the assessment criteria see 'Table 1. Cascade chart for tree quality assessment' of BS5837:2012, shown in Appendix 2.

2.3 A Root Protection Area (RPA) has been assigned to each tree, which is calculated as 12 times the diameter of the tree trunk measured at 1.5 metres above ground level. The RPA of all trees and groups have been plotted on the Tree Constraints Plan in addition to stem locations, canopy spreads and quality categories (attached as Appendix 3).

2.4 Although the RPA attempts to identify the area of each tree's root system which should be protected, the simplistic circles do not take account of constraints such as structures or roads, or factors such as topography, soil structure, tree health etc., which may have restricted or influenced root development. Circular RPA's are considered to provide a reasonable guide to the extent of the likely rooting areas which should ideally be protected. It will be the professional judgement of the arboricultural consultant to adjust the RPA's if thought to be appropriate.

2.5 All surveyed trees and groups, have been given an identification reference T1-T27 and G1-G10. All collected survey data is presented in the survey schedule which forms Appendix 1 to this report.

2.6 The scope of the survey was based on the extent of the Topographical survey provided Ref: *TSA-20-0839_201-208_Issue01* (Tower Surveys 2020). Where trees were not shown their position was approximated using on-site observations and measurements. Groups have been defined by their similar characteristics such as species and age composition, condition and quality. Individual trees with a stem diameter below 75mm have not been recorded during the survey.

2.7 All tree features have been surveyed to record species, age class, diameter at breast height (DBH), height, crown spread, condition, estimated remaining contribution, recommendations, Quality Category and RPA.

2.8 All trees surveyed have been inspected from ground level only. Although the survey was not a hazard survey, where there was a concern for the potential risk of harm to people or property due to a defect on a particular tree, this will be highlighted in the survey schedule. Trees are dynamic living organisms, whose health and condition can be subject to rapid change, depending on a number of external and internal factors. The conclusions and recommendations contained in this report relate to the trees at the time of inspection.

2.9 A tree constraints check was undertaken with South Holland District Council to establish the presence of Tree Preservation Order, Conservation Areas, or other statutory restrictions to tree works either on or adjacent to the site.

3.0 Tree Population and Quality Categorisation

3.1 Trees form a material consideration in the planning process. The tree categorisation identifies the quality and value of the existing tree stock; however, it is not meant to be interpreted rigidly, and therefore forms the basis for an informed judgement on tree retention and removal.

3.2 Foremost consideration should be given to the retention of Category A and B trees (high and moderate quality) in relation to any new development. These trees are largely irreplaceable in the short to mid-term, and the requirement to remove them must be justified by sound design rationale.

3.3 Category A trees/groups are of high value by virtue of their large size, mature age, good condition, ecological importance, landscape significance and/or potential long-term contribution. Trees are downgraded to B Category if they are in impaired condition, have a reduced life expectancy or lack the special quality necessary to merit Category A. These trees/groups will still afford arboricultural, landscape or ecological importance.

3.4 Category C trees/groups that are of low value due to their young age, small size, impaired condition, limited life expectancy/landscape significance and/or conservation value. These tree features should not represent a significant constraint to a design brief; nevertheless, they should not be considered totally unsuitable for incorporation within proposals. In many cases, low quality trees can be suitably mitigated with replacement tree planting.

3.5 Category U trees/groups are unsuitable for retention due to their poor health and reduced life expectancy and should be removed prior to development. U Category trees can sometimes be retained where they offer particular conservation value to the site.

3.6 Trees under the ownership of third parties but within influencing distance of the site may present a constraint to development activities in terms of overhanging branches and encroaching roots. These trees must be considered during design preparation and must be retained and protected.

3.7 Hedgerows recorded have not been categorised in accordance with BS5737:2012 but assessed to record general information on species, condition, size and location.

Tree Population

3.8 A total of 27no. Trees, 10no. Groups and 1 Hedgerow have been recorded as part of the survey. A breakdown of the numbers of tree features in each quality category is shown in the Table 1 (overleaf).

3.9 The tree cover surveyed comprises a mix of small to medium sized ornamentals, interspersed with the occasional mature specimen. The majority of mature trees are located along the eastern edge of the site and include several third-party specimens with canopies and/or RPAs extending over the site boundary.

3.10 The site entrance from Neville Avenue to the north is flanked by a number of small ornamental trees i.e. T5-T11 and G1, comprising a mix of birch, cherry, ash and maples.

3.11 The most notable tree on the site is False acacia T13 located adjacent to the main school playground near the western boundary.

3.12 Further south from the main playground is a fenced off area of allotments which contains a range of self-set and planted trees of varying quality and condition (T14-T20), interspersed with overgrown scrubby trees and shrubs (G3 and G4).

3.13 Towards the eastern boundary is a disused courtyard/playground area which has become overgrown with scrubby regeneration (G6). To the north of this courtyard is a trio of early mature Lawson cypress (G7 and a naturally regeneration Alder bush grown from the stump of a previously removed tree. The trees in this area are generally of low quality and value.

3.14 A row of third party moderate quality trees and groups (T25-T27 and G8-G10) follow the eastern boundary and overhangs the access route to the school playing fields from the staff car-park to the north.

Table 1: Quality Categorisations

Quality Category	Trees	Groups	Totals
A (trees of high quality with an estimated remaining life expectancy of at least 40 years)	-	-	**0**
B (trees of moderate quality with an estimated remaining life expectancy of at least 20 years)	T1, T11, T12, T13, T14, T15, T17, T20, T22, T25, T26, T27	G1, G8, G10	**15**
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)	T2, T3, T4, T5, T6, T7, T8, T9, T10, T18, T19, T21, T23	G2, G4, G5, G7, G9	**18**
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)	T16, T24	G3, G6	**4**
Totals	**27**	**10**	**37**

4.0 Arboricultural Impact Assessment

4.1 The development proposals comprise the construction of a new classroom block with associated facilities located on an area of disused hardstanding in the south-east corner of the school site.

4.2 The proposals for the site have been developed through arboricultural consultation and the use of the tree constraints information by the planning and design team. Arboriculture is one of many factors that ultimately determine development design layout and where valuable trees require removal, there must be in-depth consideration and justified decision making. For all retained trees, appropriate tree protection and management will be required to minimise unnecessary impacts during development.

4.3 This Arboricultural Impact Assessment (AIA) is based on the layout design shown on the proposed site plan by Ref: *32094-DBS-XX-XX-M3-A-0001-SpaldingAcademyExtension* (Kier 2021) which is shown on the Tree Removal and Protection Plan (Appendix 4).

Tree Removal

4.4 The current proposals will require the removal of 1 tree and 2 groups. Table 2 below lists the reference and quality of trees/groups that require removal in order to facilitate the development.

4.5 Category C group G7 is comprised of three early mature Lawson cypress trees located on the northern side of the disused area. As indicated by their narrow spacing, the group was likely planted as a small screening feature when the area was in use. The trees have since grown significantly and now dominate the area. They are not considered appropriate for the location or future usage and will require removal to facilitate the proposed works.

4.6 Category U tree T24 and group G6 are both located within or directly adjacent to the proposed building footprint. Both are considered unsuitable for retention with T24 comprising regenerative growth from an old, felled stump and G6 comprising scrubby mixed trees and shrubs slowly colonising the site as a result of its lack of use. Both T24 and G6 are recommended for removal as part of development proposals.

Table 2: Arboricultural Implications

*** Denotes trees with multiple impacts.**

Impact to existing trees	Quality Category			
	A	B	C	U
Trees/Groups to be removed	-	-	G7	T24, G6
New surface within Root Protection Areas	-	T25*	-	-
Potential pruning for construction access.	-	T25* T26, T27, G10	G9	-
Total Impacts	**0**	**4**	**1**	**2**

Tree Retention

4.7 Based on the proposed site plan, a total of 3 individual trees and 2 groups have the potential to be impacted by development proposals as detailed in Table 2.

4.8 Under the proposals, the RPA of one tree T25 will be impacted by the installation of the proposed new hardstanding on the eastern side of the new building. The hardstanding will encroach 2m inside the RPA of the tree, approximately 10% of its total RPA. The existing ground in this area comprises heavily compacted gravel track which appears to be a service/maintenance route for the school playing fields. While works are considered unlikely to significantly impact its structural or physiological condition, sensitive excavation/construction methodologies for this area are recommended to ensure the tree is safely retained over the course of the proposed development.

4.9 The proposed new building will be constructed in close proximity to the canopy extents of T25 which will require minor pruning works in order to facilitate unobstructed access for construction.

4.10 Under the proposals, the canopies of 2 third party trees and 2 third party groups, i.e. T26, T27, G9 and G10, may also require minor crown lifting/pruning works to facilitate unobstructed access for construction vehicles/traffic accessing the worksite. Pruning works to these trees will be very low impact and will not detract from their overall condition.

4.11 Generic and site-specific details on the protection of retained trees during proposed demolition and construction works are provided below in Section 5 and in the Tree Removal and Protection Plan provided in Appendix 4.

4.12 Overall, impacts form proposals to the sites tree stock are considered to be minimal, with only 1 tree and 2 groups requiring removal and all other trees and groups surveys being retained and protected. The trees requiring removal are of lower quality and value and as such, are not a significant loss to the sites overall treescape.

5.0 Tree Protection and Recommendations

5.1 All trees that have been selected for retention should receive any remedial works recommended in Appendix 1 and should be suitably protected with appropriate temporary tree protection fencing for the duration of the construction phase of the development.

5.2 The Root Protection Area (RPA) represents the minimum area around each tree that should be left undisturbed to ensure their survival. The RPA and/or crown spread of individual trees, groups, woods will generally form a Construction Exclusion Zone (CEZ). Where construction is necessary within the CEZ of trees selected for retention, sensitive and controlled working procedures must be implemented.

Tree Work

5.3 All approved tree work should be carried out prior to fencing installation. Care must be taken to ensure during tree removal that damage to retained trees and disturbance to their RPA's is avoided.

5.4 All tree works should be carried out by suitably qualified and experienced contractors and should conform to guidelines set out in British Standard 3998: 2010 'Tree work – Recommendations'.

5.5 Following site development, regular inspections (annual or biennial) of retained trees, should be undertaken by a qualified Arboriculturalist.

5.6 Prior to the commencement of works, a pre-start meeting should be arranged between the site contractors, the project arboriculturalist and relevant project members. The meeting will help to reinforce the importance of the required tree protection measures, ensure they are fit for purpose and approve any required pruning and tree removal specifications.

Tree Protection Fencing

5.7 The stem of T25 should be suitably protected with appropriate fencing for the duration of the construction phase of the development (suitable protective fencing will comprise 2 metre high Heras® type galvanized weldmesh panels, which must be secured to the ground and appropriately braced to prevent lateral movement). The alignment of the protective fencing is shown on the Tree Removal and Protection Plan (Appendix 4) and standard specification is shown on Appendix 5.

5.8 Where fencing is required it should be erected immediately after the completion of any tree works but prior to bringing any demolition/construction vehicles or materials onto site and should not be removed until construction has been completed and all machinery has been removed from site.

5.9 Ground protection boards will be required for access inside the RPA of T25 as displayed on the TRPP. Heavy duty inter-linking trackway boards should be placed over the existing surface to protect the underlying soil from damage or disturbance from vehicles, machinery or pedestrians. Ground protection to be installed at the same time as tree protection fencing to prevent root zone impacts.

Construction Mitigation Measures

5.10 It will be necessary to remove the existing surface from inside a section of the RPA of tree T25 to allow construction on the new area of hardstanding that will surround the proposed building. This area is indicated by the pink hatching on the Tree Removal and Protection Plan in Appendix 4. Removal of existing hard surfaces should adhere to the following methodology:

- The existing surface should be broken up using manual operated machinery (pneumatic drill) or hand tools only.
- Broken sections/excavated materials will be moved outside of the RPAs and be removed from site. If a mini excavator is required, then it must operate by tracking on unbroken hard surface or ground protection boards and working away from the tree's RPA to avoid any damage or compaction.
- During excavations, any roots encountered will be pruned back to the edge of the excavation using secateurs or a handsaw.

5.11 The remaining existing surface inside the RPA of T25, marked as a light blue grid on the TRPP will be retained and protected with heavy duty ground protection boards to ensure no damage or disturbance to the surface or underlying soil occurs from vehicles, machinery or pedestrians accessing the area. If required, the retained surface may be dressed with a final course of porous gravel or similar.

6.0 Statutory Obligations and Guidance

6.1 Works to trees which are covered by Tree Preservation Orders [TPOs] or are within a Conservation Area [CA] require permission or consent from the Local Planning Authority [LPA].

6.2 It was confirmed by South Holland District Council that no trees surveyed are subject to Tree Preservation Order and the site is not within a Conservation Area.

6.3 The Forestry Commission should be informed if more than 5 cubic metres of timber in any one calendar quarter is being felled however, a felling licence is not required for felling to immediately facilitate a development authorised by full planning permission. Pre-emptive or enabling works undertaken prior to obtaining planning permission may require a felling licence.

6.4 Trees and woodland provide valuable habitat for nesting birds and roosting bats and it is a criminal offence under normal circumstances to disturb or destroy – whether intentional or unintentional – the nesting or roost sites of bats. They are afforded protection under the 'Wildlife & Countryside Act 1981' and the 'Conservation of Species and Habitats Regulations 2010'. Therefore, avoid carrying out significant tree works during the bird nesting season [1st March to 31st July] and ensure that trees are professionally surveyed for signs of bat roosts and/or bat activity before starting any tree work. Further advice should be sought from an Ecologist.

6.5 The National Planning Policy Framework (NPPF) 2019 assumes protection of all ancient woodland and veteran trees unless it can be clearly demonstrated that the need of, or benefits of, development outweigh the loss. In this respect ancient woodland is defined as an area which has been wooded continuously since at least 1600 AD and a veteran as a tree of exceptional value for wildlife, in the landscape, or culturally because of its great age, size or condition. There are no veteran trees or ancient woodland within the site.

6.6 The Hedgerow Regulations 1997 provides protection by prohibiting the removal of countryside hedgerows if they are assessed as 'important' according to a specific set of criteria. In particular, older hedges, species diverse hedges and those associated with large trees, water or public rights of way are more likely to meet the criteria for Importance. The assessment of hedgerows should form part of an Ecological Assessment.

References

British Standard Institute (BSI) (2012). *BS 5837:2012 Trees in Relation to Design Demolition and Construction-Recommendations*. BSI, London.

British Standard Institute (BSI) (2010). *BS 3998:2010 Recommendation for Tree Works*. BSI, London.

Department for Communities and Local Government (2014). *Planning Practice Guidance on Tree Preservation Orders and trees in conservation areas*.

Kier, (2021). *32094-DBS-XX-XX-M3-A-0001-SpaldingAcademyExtension*

Lonsdale, D. (1999). *Research for Amenity Trees No.7: Principles of Tree Hazard Assessment and Management*. HMSO

Ministry of Housing, Communities & Local Government, (2019). *The National Planning Policy Framework (NPPF)*.

Mattheck and Beloer (1994). HMSO London. *Research for Amenity Trees No 4; The Body Language of Trees*.

Tower Surveys, (2020). *TSA-20-0839_201-208_Issue01*.

Town and Country Planning Act 1990 (as amended).

Town and Country Planning (Tree Preservation) (England) Regulations 2012.

Appendices

1. **Tree Survey Schedule TWC1307-S-001**
2. **Survey Criteria and Categorisation**
3. **Tree Constraints Plan (A3) TWC1307-D-001**
4. **Tree Removal and Protection Plan (A3) TWC1307-D-002**
5. **Glossary of Terms**
6. **Tree Protection Fencing Specification**

Appendix 1 Tree Survey Schedule: TWC1307-S-001

Tree No	Species	Height	Spread				C.CI	DBH	Life Stage	Struc Cond	Phys Cond	ERC	Comments	Recommendations	Quality Category	RPA Rad
			N	E	S	W										
TREES																
T1	Sycamore	15	5	5	6	6	5	400	EM	Fair	Fair	40+	Third party tree, off site within the bounds of adjacent school, minor branches overhanging boundary.	Possible crown lift to 5m to facilitate construction access	B1/2	4.8
T2	Common ash	14	5	3	2.5	5	3.5	500	EM	Fair	Fair	10-20	Third party tree, located on adjacent school site, western crown overhanging boundary. Trifurcate fork at 3m, south-east stem pruned back to 0.5m stub. Long leggy north-west facing lateral.	Possible crown lift to 5m to facilitate construction access	C1/2	6.0
T3	Common ash	14	4	5	5	5	3.5	300, 250, 200, 200	EM	Fair	Fair	10-20	Pruned into high pollard form with 3-5 years regrowth, base inaccessible, east crown slightly overhangs school access road.	Possible crown lift to 5m over access road.	C1/2	5.8
T4	Field maple	7	2	2	2	2	1.5	150	SM	Fair	Fair	40+	Small ornamental tree planted in grass verge.	-	C1	1.8
T5	Silver birch	8	3	1.5	2.5	2	2.5	210	SM	Fair	Fair	20-40	Previously topped tree, poor form/structure, fenced off in small area of turf.	-	C1	2.5
T6	Common ash	12	4	4.5	4	4	4	590	EM	Fair	Fair	10-20	Previously pruned into high pollard form with 3-5y regrowth, south side of stem has *Inonotus* bracket associated with minor stub and cavity above.	Possible crown lift to 5m over access road.	C1/2	7.1
T7	Sycamore	7	2	2	2	1.5	2.5	250	SM	Fair	Good	40+	Planted in small clump with 2 cherry to west of driveway, west crown previously reduced.	-	C1/2	3.0
T8	Wild cherry	6	1.5	1.5	1.5	1.5	2	210	EM	Fair	Fair	20-40	Planted in small clump with adjacent sycamore and cherry, previously topped, asymmetric crown.	-	C1	2.5
T9	Wild cherry	6	1.5	1.5	1.5	1.5	2	210	EM	Fair	Fair	20-40	Planted in small clump with adjacent sycamore and cherry, previously topped, asymmetric crown.	-	C1	2.5
T10	Cherry plum	6	1.5	2.5	1.5	1	2	330	EM	Poor	Fair	10-20	Poor form, 3 primary limbs removed from poorly pruned/cut flush, no occlusion, minor internal decay. Asymmetric unbalanced crown.	-	C1/2	4.0
T11	Box elder	9	5	4	4	2.5	2	420	M	Fair	Fair	40+	Asymmetric crown, secondary branches heavily pruned on west side of tree for access, minor stem epicormics indicating possible stress.	-	B1/2	5.0
T12	Midland hawthorn	7	2	2	2	2	2	380	M	Good	Good	20-40	Good form, eastern crown has minor overhang onto access road.	-	B1	4.6

Tree No	Species	Height	Spread				C.CI	DBH	Life Stage	Struc Cond	Phys Cond	ERC	Comments	Recommendations	Quality Category	RPA Rad
			N	E	S	W										
T13	False Acacia	16	5	5	5	5	3	880	M	Good	Fair	20-40	Recently pruned into high pollard 2-4y regrowth from stubs, Spiny lower stem epicormics. Large Ganoderma bracket on north side of stem just below crown break.	Remove lower stem epicormics, hazard assess main stem, sounding around crown break for decay extents to inform future management.	B1	10.6
T14	Common alder	9	3.5	3.5	3	1.5	2.5	650	EM	Fair	Fair	20-40	Multi stem from 1.5m bole, asymmetric canopy to east, stem and lower crown ivy clad.	Sever ivy at base.	B2	7.8
T15	Common alder	9	3.5	3.5	3	1.5	2.5	650	EM	Fair	Fair	20-40	Multi stem from 1.5m bole, asymmetric canopy to east, stem and lower crown ivy clad.	Sever ivy at base.	B2	7.8
T16	Common apple	7	3	3	3	1.5	1.5	200, 150	EM	Poor	Poor	10-20	Long leggy extension growth, moderate basal decay.	Fell	U	3.0
T17	Norway maple	12	5	5	4	6	2	600	EM	Good	Fair	40+	Stem and mid crown ivy clad, good form and vigour.	Sever ivy at base	B2	7.2
T18	Common ash	13	6	4	5	5	3	500, 600	EM	Fair	Fair	10-20	Tight fork at base, heavily ivy clad stem and lower crown.	Sever ivy at base	C1/2	9.4
T19	Monterey cypress	6	2	2	2	2	1	350	SM	Fair	Fair	20-40	Suppressed by adjacent ash, poor form.	-	C1	4.2
T20	Hybrid poplar	20	5	8	5	5	4	900	M	Fair	Fair	40+	Tall tree with large eastern laterals and minor lean. Base inaccessible, stem ivy clad.	Clear access to base and sever ivy.	B1	10.8
T21	Swedish whitebeam	7.5	2	2	1.5	2	2	360	EM	Good	Good	20-40	Good form and condition.	-	C1/2	4.3
T22	Sycamore	10	3	3	3	3	2.5	390	SM	Fair	Fair	40+	Asymmetric canopy, forks at 1.8m, basal epicormics.	-	B1/2	4.7
T23	Maidenhair tree	10	3	3	3	3	2.5	200, 150, 100	SM	Good	Good	40+	Multi stem from base, planted close to adjacent school block and likely to grow to significant size, overhanging adjacent building.	-	C1/2	3.2
T24	Common alder	5	2	1.5	2	2.5	0	75	SM	Fair	Fair	20-40	Small multi stem alder shrub, naturally regenerating from felled stump.	Remove regrowth and stump-grind.	U	0.9
T25	Common ash	13	5	5	5	5	3	500	EM	Good	Good	10-20	Good form and vigour, moderate bark wounding on lower stem to south, low canopy overhanging access route to west.	Crown lift south and west of canopy to 5m and fence off stem.	B1	6.0

Tree No	Species	Height	Spread				C.CI	DBH	Life Stage	Struc Cond	Phys Cond	ERC	Comments	Recommendations	Quality Category	RPA Rad
			N	E	S	W										
T26	Common lime	15	6	6	6	6	3	600, 550, 450, 400, 350	M	Fair	Good	40+	Third party tree located on adjacent school site, base inaccessible. Good form and condition, multi stem from base, west crown overhanging potential access route.	Possible crown lift of west canopy to 5m if construction access is required.	B1	12.9
T27	Sycamore	18	5	6	6	6	4	400, 600, 400	M	Fair	Fair	40+	Third party tree located on adjacent school site. Multi stem x3 from base, ivy clad, base inaccessible, west canopy overhanging potential access route.	Possible crown lift of west canopy to 5m if construction access is required.	B1/2	9.9
GROUPS																
G1	Mixed species	9	3	-	-	-	2	430, 420, 410	EM	Good	Fair	20-40	Group of 3 trees 1 cherry, 1 beech and 1 birch planted north and east of access road in area of turf. The canopies of the cherry and beech slightly overhang access road.	Possible minor pruning of south and east canopies for construction traffic access	B2	0.3m outside canopy extents
G2	Mixed species	5-10	-	-	-	-	2	70, 140, 340, 300	SM	Fair	Fair	20-40	Small group of 4 trees planted in turf area next to playground. Comprising 1 Lawson cypress, 1 sycamore and 2 silver birch, moderate form and condition.	Retain and fence off from access route.	C2	Follows edging of turf area
G3	Mixed species	5	-	-	-	-	0	75	Y	Poor	Dead	10-20	Low scrubby natural regeneration comprising elder, bramble, ash and sycamore within area of overgrown/unmanaged allotments.	Clear scrub and bramble	U	N/A
G4	Mixed species	5-10	-	-	-	-	2	150-300	EM	Fair	Fair	20-40	Overgrown area of cypress and poplar trees with mixed shrub and bramble scrub understorey.	-	C1	1m outside of canopy extents
G5	Mixed species	7	-	-	-	-	1	250 x3	SM	Good	Good	20-40	Group of 3 trees planted in clump comprising 1 cherry, 1 apple, 1 alder. Generally good form condition.	-	C1/2	3
G6	Mixed species	5	-	-	-	-	0	75	Y	Poor	Poor	0-10	Scattered scrubby natural regeneration including birch, field maple, dogwood, alder and buddleia.	Clear scrub/remove group.	U	N/A
G7	Lawson cypress	20	-	-	-	-	2	550	EM	Fair	Good	40+	Group of 3 tightly spaced cypress, minor basal fluting/bark damage and deadwood, likely planted as small hedge or low specimen trees but since grown very large, dominating their locality. East canopy of eastern tree overhangs potential access road.	Fell/Remove	C1/2	6.6

Tree No	Species	Height	Spread				C.CI	DBH	Life Stage	Struc Cond	Phys Cond	ERC	Comments	Recommendations	Quality Category	RPA Rad
			N	E	S	W										
G8	Mixed species	12	-	-	-	-	6	450	EM	Good	Good	40+	Third party stand of mixed broadleaf woodland located off site to east. Some of western crowns/limbs overhanging potential access road at northern end.	Possible crown lift of west canopy to 5m if construction access is required.	B2	1.5m outside of canopy extents
G9	Hazel	8	-	-	-	-	3.5	75-300	SM	Good	Good	20-40	Third party trees located on adjacent school site. Small group of 3 hazel coppice and 1 ash. Western canopies of hazel stools overhangs site boundary.	Possible crown lift of west canopy to 5m if construction access is required.	C1/2	3.6
G10	Common lime	16	-	-	-	-	5	650-800	M	Good	Good	40+	Third party row of 4 lime trees planted on adjacent site extending along boundary, bases inaccessible, generally good condition. Minor overhang of western crowns but should not present obstruction if construction access required.	-	B1/2	7.8
H1	Beech	3	-	-	-	-	0	140	SM	Good	Good	40+	Beech hedgerow following site boundary, well maintained.	-	N/A	N/A

Appendix 2: Survey Criteria and Categorisation

Table 1: Quality Categorisations

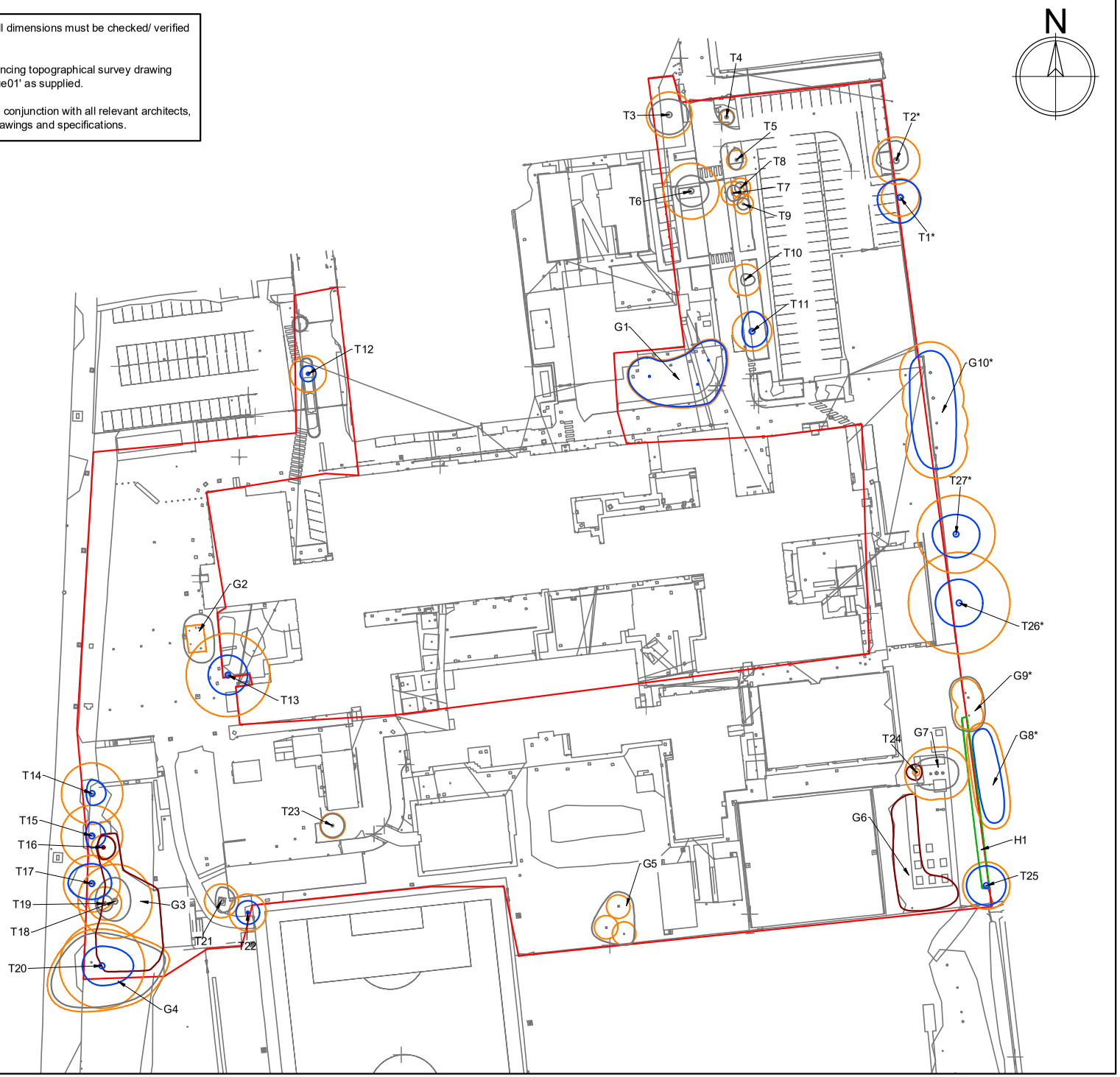
Quality Category	Trees
Tree No.	Reference ID given to each tree or group of trees (unless tagged).
Species	Common name. Botanical name may be given if clarification is required.
Age Class	Young, early mature, middle mature, mature or over-mature.
Height	Estimated in metres.
Crown Spread	Crown spread (North / East / South / West) measured from centre of trunk, in metres.
Crown Clearance	Approximate height between lowest part of canopy and ground level (metres).
Stem dia	Trunk diameter/s (mm) measured at 1.5m above ground level, or other height as specified.
Structural/Physiological Condition	Good, Fair, Poor or Dead based on the general physiological health and structural condition of the tree.
Estimated Remaining Contribution (ERC)	An estimation of the life expectancy in years, if the natural cycle of the tree is allowed to run its full course. (<10, 10-20, 20-40, 40+ years).
Comments	A brief description of the tree or group relating to its form, vitality and presence of any significant defects.
Recommendations	All tree work is based on current tree condition and the existing land use and will include work such as hazard abatement, encroachment pruning, thinning of groups/woods and good arboricultural practice.
Quality Category	Categorisation grading in accordance with BS 5837 2012. Trees suitable for retention: - Category **A** trees of high quality and amenity value. Category **B** trees of moderate quality and amenity value. Category **C** trees of low quality or amenity value. Trees unsuitable for retention: - Category **U** trees. British Standards BS 5837:2012 recommends that these categories may be further broken down into sub-categories A1 A2 A3 pertaining to Arboricultural, Landscape or Cultural values respectively.
RPA	Root Protection Area is based on stem diameter (mm) and is provided as the radius of circle measured in metres from centre of tree, or may be expressed as an area (m^2)

Table 1: Quality Categorisations

Trees unsuitable for retention				
Category and Definition	**Criteria (including subcategories where appropriate)**			**Identification on Plan**
Category U Those in such a condition that they cannot realistically be retained as a living tree in the context of the current land use for longer than 10 years.	• Trees that have a serious, irremediable structural defect such that their early loss is expected due to collapse, including those that will become unviable after removal of other U category trees (i.e. 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 or irreversible overall decline. • Trees infected with pathogens of significance to the health and or safety of other trees nearby by or very low-quality trees suppressing adjacent trees of better quality.			Red
Trees to be considered for retention				
Category and Definition	**1. Mainly arboricultural values**	**2. Mainly landscape values**	**3. Mainly cultural values**	**Identification on Plan**
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are a particularly good example of their species, especially if rare or unusual, or essential components of groups or of formal or semi-formal arboricultural features.	Tree groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Tree groups or woodlands of significant conservation historical, commemorative or other value	Green
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.	Trees that might be included in the high category but are downgraded because of impaired condition.	Trees present in numbers, usually 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 benefits.	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 150mm.	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 landscape value and/or trees offering low or only temporary/transient landscape benefits.	Trees with no material conservation or other cultural benefits.	Grey

Appendix 3: Tree Constraints Plan (A3) TWC1307-D-001

- Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
- Tree locations plotted referencing topographical survey drawing TSA-20-0839_201-208_Issue01' as supplied.
- This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.



KEY

Tree Categorisation:
(Tree quality assessment based on BS 5837:2012 Trees in relation to design, demolition and Construction - Recommendations)

- **Crown spread of category A** Trees/groups of high quality and value
- **Crown spread of category B** Trees/groups of moderate quality and value
- **Crown spread of category C** Tree/groups of low quality and value
- **Crown spread of category U** Trees/groups unsuitable for retention
- **Root Protection Area (RPA)** To be used to inform design proposals and assess potential tree impacts. It represents the minimum area around each tree that should be left undisturbed to ensure their survival.
- **Survey Boundary**
- **Indicates Third Party Tree**
- **Hedgerows** (Not categorised)

NOTES

- To be read in conjunction with Tree Survey Schedule 1307-S-001

PROJECT INFO

Project:	Spalding Academy
Title:	Tree Constraints Plan
Client:	Spalding Academy
Project No:	1307
Drawing No:	1307-D-001
Rev:	
Scale:	1:1,000 @ A3
Date:	08.03.21
Drawn:	CA
Checked:	JP
Figure No:	

The Tree and Woodland Company

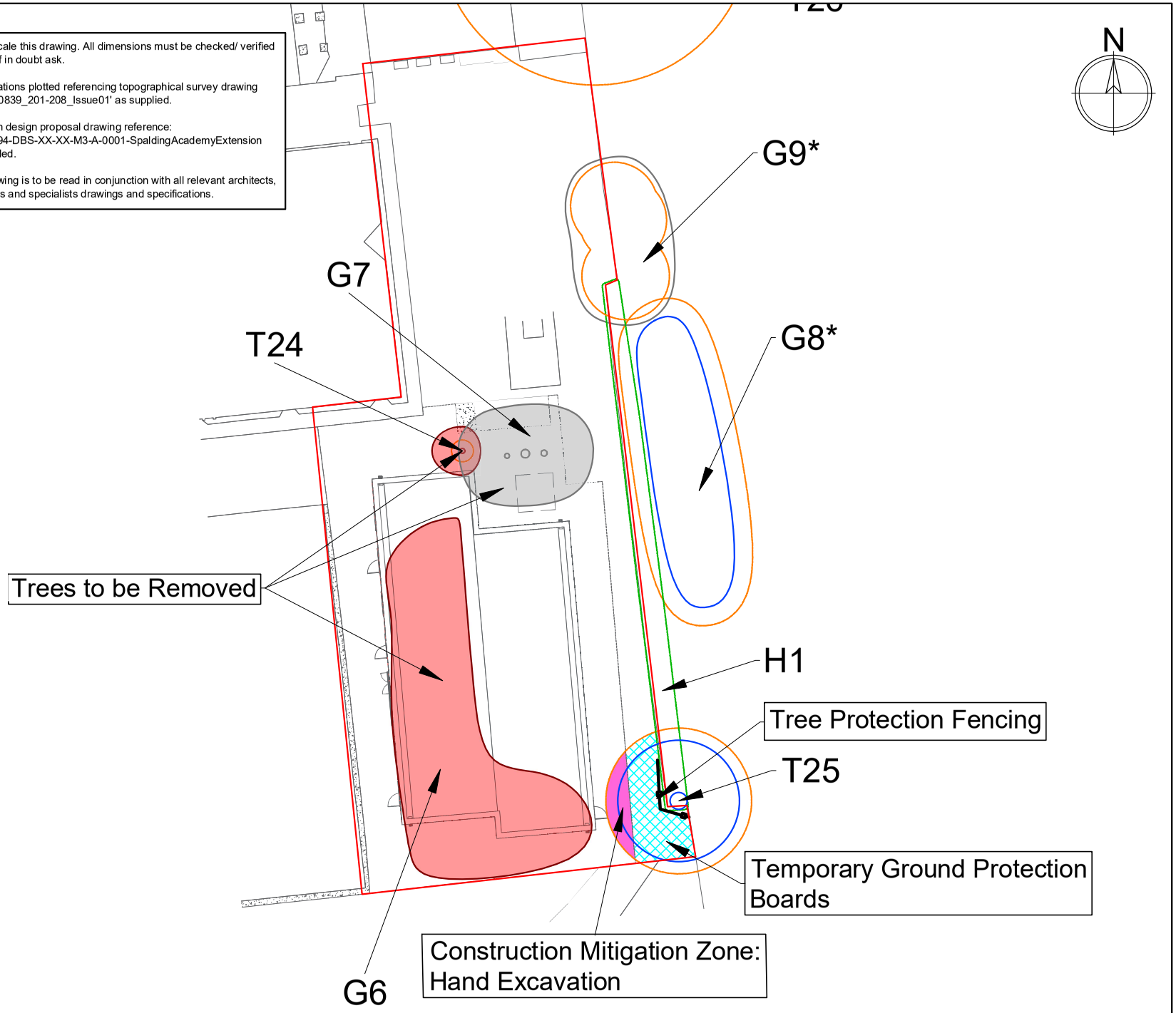
The Hall
Rugby Road
Wolston
Coventry
CV8 3FZ

Tel: 0247 693 7399
Email: enquiries@treeandwoodland.co.uk
www.treeandwoodland.co.uk

DO NOT SCALE FROM THIS DRAWING
- The Tree and Woodland Company

Appendix 4: Tree Removal and Protection Plan (A3) TWC1307-D-002

- Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
- Tree locations plotted referencing topographical survey drawing TSA-20-0839_201-208_Issue01' as supplied.
- Based on design proposal drawing reference: XR_32094-DBS-XX-XX-M3-A-0001-SpaldingAcademyExtension as provided.
- This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.



KEY

Tree Categorisation:
(Tree quality assessment based on BS 5837:2012 Trees in relation to design, demolition and Construction - Recommendations)

- **Crown spread of category A** Trees/groups of high quality and value
- **Crown spread of category B** Trees/groups of moderate quality and value
- **Crown spread of category C** Tree/groups of low quality and value
- **Crown spread of category U** Trees/groups unsuitable for retention
- **Root Protection Area (RPA)** To be used to inform design proposals and assess potential tree impacts. It represents the minimum area around each tree that should be left undisturbed to ensure their survival.
- **Development Boundary**
- * **Indicates Third Party Tree**
- **Hedgerows** (Not categorised)

Tree Removal

- **Category C Tree/Group to be Removed**
- **Category U Tree/Group to be Removed**

Construction Mitigation

- **Tree Protection Fencing** This outlines the Construction Exclusion Zone (CEZ) and is defined by the Root Protection Area.
- **Construction Mitigation Zone** Refer to section 5 of AIA report
- **Temporary Ground Protection** Refer to section 5 of AIA report

NOTES

- To be read in conjunction with Tree Survey Schedule 1307-S-001

PROJECT INFO

Project:	Spalding Academy
Title:	Tree Removal and Protection Plan
Client:	Spalding Academy
Project No:	1307
Drawing No:	1307-D-002
Rev:	
Scale:	1:500 @ A3
Date:	08.03.21
Drawn:	CA
Checked:	JP
Figure No:	

THE TREE AND WOODLAND COMPANY

The Hall
Rugby Road
Wolston
Coventry
CV8 3FZ

Tel: 0247 693 7399
Email: enquiries@treeandwoodland.co.uk
www.treeandwoodland.co.uk

DO NOT SCALE FROM THIS DRAWING
- The Tree and Woodland Company

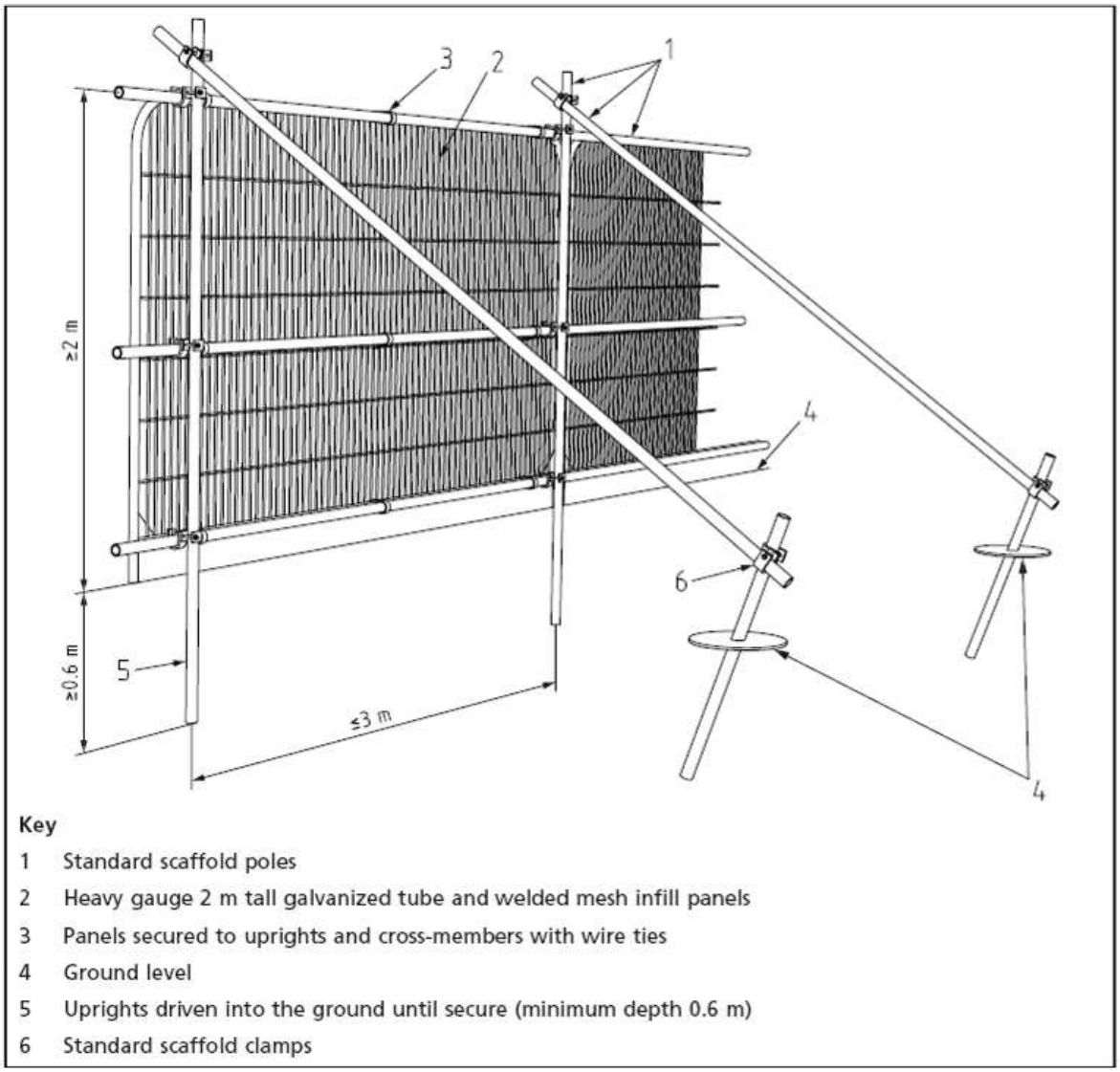
Appendix 5: Glossary of Terms

Glossary of Terms

Term	Definition
Adaptive Growth	The process of wood formation by which a tree maintains uniform distribution of mechanical stress.
Apical Growth	Growth promoted by an apical meristem enabling the lengthening of roots and shoots.
Arboricultural Impact Assessment	Evaluation of direct and indirect effects of a proposed design and/or construction on an existing tree population.
Arboricultural Method Statement	Methodology for the implementation of any aspect of development that is within the root protection area or has the potential to result in loss of or damage to a tree to be retained.
Arboriculturist	A person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.
Canopy Spread	A measurement taken from the centre of a tree to the furthest radial extension of tree canopy relative to the cardinal points of the compass.
Co-dominant	The growth of two or more arising branches emerging from the same junction of near equal diameter.
Conservation Area	Local Planning Authority special designation generally prohibiting tree works without 6 weeks prior written notification.
Construction Exclusion Zone (CEZ)	Area based on the root protection area of a tree from which access is prohibited for the duration of a project.
Crown Lift	The selective removal of limbs and small branches to achieve a stated vertical height above ground level.
Crown Reduction	A specified reduction in crown size whilst preserving, as far as possible, the natural shape of the tree.
Crown Thin	The removal of a proportion of secondary branch growth throughout the crown to produce an even density of foliage around a well-balanced branch structure.
DBH	(Diameter at Breast Height). Stem diameter measured at a height of 1.5m or the nearest measurable point.
Deadwood	Dead branch wood.
Dieback	The death of parts of a woody plant, starting at the shoot tips or root tips.
Epicormic Growth	The stimulation and growth of dormant young buds within the trees bark, often onset following pruning or physiological stress.
Fibrous Root	A root system made up of numerous branching roots of more or less equal length.
Included Bark	Bark of adjacent parts of the tree (usually forks, acutely joined branches or basal flutes) which is in face to face contact.
Lateral Limb/Branch	Second order branch, subordinate to a primary branch or stem and bearing sub-lateral branches.
Local Planning Authority	The local government body that is empowered by law to exercise urban planning functions for a particular area.

Term	Definition
Occlusion	Wood development enclosing a wound or pruning cut.
Physiological Condition	Observation relating to a trees physiology for example vigour, leaf area, growth rate, the presence of pests or disease.
Pollarding	The removal of the tree canopy back to the stem or primary branches, usually to a point just outside of that of the previous cutting.
Primary Limb/Branch	First order branch arising from a stem.
Pruning	The targeted removal of branches or limbs, most often using saws or other cutting tools.
Root Protection Area (RPA)	Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
Stress	A condition under which one or more physiological function are not operating within their optimum range, for example, due to a lack of water, inadequate nutrition or extremes in temperature.
Structural Condition	Observation relating to a trees structural integrity and the presence of any physical defects.
Structural Root	Roots generally having a diameter greater than 10mm and contributing significantly to the structural support and stability of the tree.
Sub-Lateral Limb/Branch	Third order branch, subordinate to a lateral, or primary branch, or stem and usually bearing only twigs.
Tree Constraints Plan	A scaled plan indicating above and below ground constraints relating to the protection of trees.
Tree Preservation Order	An order made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity.
Tree Protection Plan	A scaled plan, informed by descriptive text where necessary, based upon the finalized proposals, showing trees for retention and illustrating the tree and landscape protection measures.
Understorey	Woodland layer consisting of younger individuals of the dominant trees, together with smaller trees and shrubs which are adapted to grow under lower light conditions.
Union	The point of attachment between two stems, a stem and a limb, or two limbs.
Veteran Tree	A tree that, by virtue of its great age, size or condition, is of exceptional cultural, landscape or nature conservation value.
Vigour	A measure of the trees capacity for growth.
Visual Tree Assessment	A method of assessment based upon the research developed to recognise dynamic responses of a tree to its surroundings.
Vitality	A measure of the physiological condition of the tree.
Wind-Throw	The blowing over of a tree at its roots.

Appendix 6: Tree Protection Fencing Specification



Key

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



The Tree and Woodland Company

The Hall, Priory Road

Wolston

Coventry

CV83FZ

United Kingdom

T: +(44) 2476 920217

E: enquiries@treeandwoodland.co.uk

www.treeandwoodland.co.uk