



Design & Access Statement

E04759

APPENDIX M

Tree Survey



Arboricultural Impact Assessment

Ranikhet Academy, Spey Road, Reading, RG30 4ED

Report by:

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Date of report:

1.02.21

Job reference:

SS WI PLAN RhnktAc AIA 1.3

Summary

HCC Highways Arboriculture have been instructed by HCC Property Services to provide tree information in the form of an Arboricultural Impact Assessment and supporting documents, in relation to a planning application for the demolition and construction of the Ranikhet Academy.

The proposal is to construct a new school on what is now a Multi Use Games Area (MUGA). Once completed the school will move in. A second phase will then demolish the existing school buildings and landscape the external space to include a new MUGA, car park and green space.

The trees on the site were surveyed on the 4th of January 2021.

I have prepared a Tree Protection Plan detailing suitable measures to protect the trees retained on the site, and I have recommended that these are approved and enforced.

Glossary

Term	Meaning
RPA	Root Protection Area
CEZ	Construction Exclusion Zone
BS5837:2012	BS5837:2012 Trees in relation to design, demolition and construction - Recommendations
BS3998:2010	BS3998:2010 Tree work - Recommendations
AIA	Arboricultural Impact Assessment
AMS	Arboricultural Method Statement
TPP	Tree Protection Plan

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1 Introduction

Instructions

- 1.1 HCC Highways Arboriculture have been instructed by HCC Property Services to provide tree information in the form of an Arboricultural Impact Assessment and supporting documents, in relation to a planning application for the construction of a replacement school facility – Ranikhet Academy.

Introduction

- 1.2 This arboricultural impact assessment describes the impacts of the proposal and makes recommendations on:

- The overall impact of the scheme in terms of those trees that need to be removed to facilitate the proposal.
- How this loss of asset may be mitigated.
- How retained trees will be safeguarded to minimise any impact of the proposal.

- 1.3 The purpose of this report is to determine any impacts that need to be considered in relation to trees – both above and below ground – during development, design and construction.

- 1.4 The report includes:

- An Arboricultural Impact Assessment.
- A Tree Survey Plan Site as Existing.
- A Tree Survey Plan Site as Proposed.
- A Tree Protection Plan.

Caveats and limitations

- 1.5 Soil type has not been determined.
- 1.6 Only trees with stem diameters greater than 75mm, and woodland groups with stem diameters of 150mm or greater are included in the survey.

- 1.7 Root Protection Areas (RPA) are calculated in line with BS5837:2012 Trees in relation to design, demolition and construction – Recommendations and are adjusted to reflect topographical constraints on site. This is based on professional experience and has not been confirmed by trial pitting. There is a level of unpredictability in calculating exact tree root locations and therefore, where there is a possibility of obstruction or damage to roots, trial holes are recommended prior to construction.

The proposal

- 1.8 The proposal is to construct a new school on what is now a Multi Use Games Area (MUGA). Once completed the school will move in. A second phase will then demolish the existing school buildings and landscape the external space to include a new MUGA, car park and green space.

Documents provided

- 1.9 I have been provided with the following drawings of the proposal, and it is on these that I have based my opinion: E04759-HCC-S-XX-DR-A-Site Plan-1005 P1 red line; E04759-HCC-S-XX-DR-A-Site Plan-1020 Site Access Phase 1; E04759-HCC-S-XX-DR-A-Site Plan-1021 Site Access Phase 2; E04759-HCC-XX-SK-L-1200 Stage C; E04759-HCC-XX-SK-L-1201 Diagrams; E04759-HCC-XX-SK-L-Series, and E04759-HCC-Z0-XX-DR-A-1510 Proposed Site Plan P1.

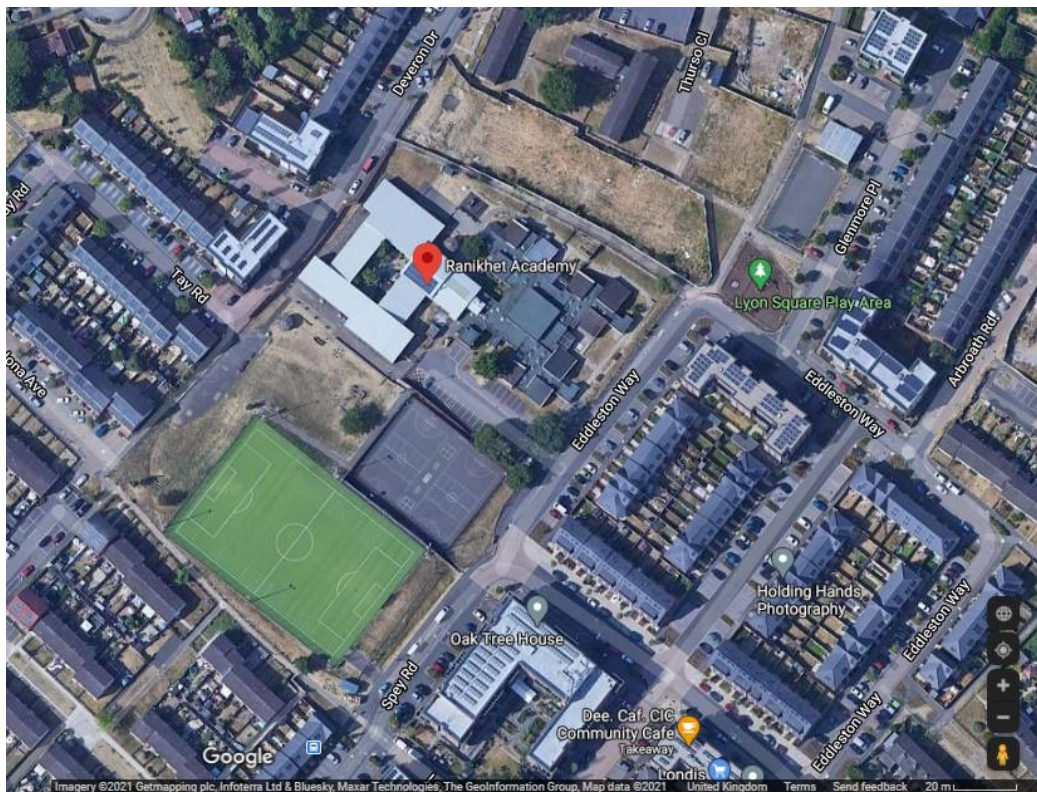
Tree Preservation Orders and other legal restrictions

- 1.10 The site has NOT been checked for the presence of any Tree Preservation Orders (TPOs). This must be checked prior to the removal of any trees on site.

2 Data collection

The site

- 2.1 The site was visited on the 4th January 2021 to survey the trees.
- 2.2 The site for the study is within the existing curtilage of Ranikhet Academy bounded by Spey Road to the south, and going clockwise, by Eddleston Way, Glenmore Place, Thurso Close and Deveron Drive. The location is midurban in character, dominated by hard landscaping and domestic dwellings.



Picture 1: Ariel view of the site and surrounding area, courtesy of Google 2021.

The trees

- 2.3 The information gathered on the site visit shows that most of the existing trees on the site are low grade and of limited value.
- 2.4 In summary there are 18 trees on the site that are significant to the development proposal.
- 2.5 This survey was carried out in line with the recommendations of British Standard BS5837:2012 Trees in relation to design, demolition and construction -

Recommendations. The overview is as follows based on estimates from the information available:

Summary of trees on site				
Tree category	Hedges	Groups	Trees	Total count
A	0	0	0	0
B	0	0	3	3
C	0	0	13	13
U	0	0	2	2

- 2.6 Trees are categorised in line with BS5837:2012 Trees in relation to design, demolition and construction – Recommendations as follows:

Table 1: Tree categories in line with BS5837:2012

A	Trees of high arboricultural value that should be retained and protected throughout the development. Ancient and Veteran trees are automatically awarded 'A' status.
B	Retention preferable. Trees of good condition and character which are appropriate for the location and in good physiological and structural condition. These trees should be retained unless they will be a severe impediment to the proposal or there is an overriding public interest that warrants their removal.
C	Trees of generally lower arboricultural value by dint of character or condition. Category 'C' trees should not be a constraint on development.
U	Trees that should be removed on arboricultural grounds. Often trees in poor condition can be left 'in situ' until a proposal means the potential target increases, making their removal more urgent or necessary.

- 2.7 Trees are further categorised into sub-categories, using a numerical suffix to denote the following perceived values:

Table 2 Tree sub-categories in line with BS5837:2012

1.	Trees of primarily arboricultural qualities. High value trees might be because they are particularly good examples of their species, because they are rare or unusual or because they are important components of a group feature such as an avenue.
2.	Trees of landscape importance – for example, trees of particular visual importance in a setting or view.
3.	Trees of cultural value. This may be due to historic links or conservation value – such as veteran trees or commemorative trees.

For example, a veteran tree of landscape importance would be categorised as A2.

3 Arboricultural Impact Assessment

Tree loss

- 3.1 The main impact of the proposal will be the removal of 11 trees. However, only one of these is categorised as category 'B'. The remaining trees to be removed are all category 'C' and 'U' so are low value and should not be considered a material constraint to development.
- 3.2 In summary the proposal will result in the loss of the following trees and groups:

Tree loss due to the proposal				
	Groups	Trees	Total tree count	Percentage of category lost
A		0	0	0
B		0	0	0
C		T1, T4, T5, T9, T11, T12, T14, T15, & T16	9	82
U		T3	1	50

- 3.3 The approximate total canopy area of the trees to be removed is around 785m². This was calculated using an average crown radius of 5m for the 10 trees to be removed.
- 3.4 However, as this is still a loss of canopy cover, an extensive planting plan including around 80 new trees has been proposed to mitigate the loss of these trees and provide a net gain in future tree cover and biodiversity.
- 3.5 A small species tree, for example, could achieve a canopy spread of 5m radius within 20 years or so (a human generation), and a medium species tree 8m. This would then provide canopy covers of 79m² and 177m² respectively. Using these forecasts as a guide it would only need around 5 medium species trees to replace the 785m² canopy cover lost, within one, human, generation.
- 3.6 For this reason, it is my opinion that the proposed scheme will provide an overall increase and benefit to future tree canopy cover.

Design and construction process

- 3.7 The construction process has the potential to cause damage to trees. To avoid damage to trees a Tree Protection Plan has been prepared and appended to this report. This provides details of protection fencing that will segregate construction works from retained trees creating construction exclusion zones.

- 3.8 If work becomes necessary within these construction exclusion zones, then there are suitable methods that can be employed to ensure that trees are not damaged. These can be detailed later if required, but at this stage, it appears unlikely that works will be required within these zones.

4 Conclusion

- 4.1 Some trees will be lost due to the development, but the proposed new planting will provide a better tree cover, and diversity, for the future.
- 4.2 Retained trees can be adequately protected from construction damage by physical protection measures such as fencing.

5 Recommendations

- 5.1 The Tree Protection Plan appended to this report should be adhered to on site.

Appendix A Tree Survey Data

Ref: SS RBC RnkhtAc sch 1.3

Appendix A

Development Site Tree Survey Schedule

Survey date	Survey Reference	Survey Plan Ref	Post Code	Site	Surveyor
04/01/2021	SS RBC RhnktAc	SS RBC RhnktAc SUE 1.3	GU30 4ED	Ranikhet Academy	Sarah Kiss

Tree No	Species	Height m	Stem dia mm	Radial Crown Spread	Crown Clearance	Height to 1st Branch	Life Stage	Condition (P) (S)		Estimated remaining contribution years	Comments	Category	RPA Radius	RPA m2
T1	Goat willow (<i>Salix caprea</i>)	4m	210mm	N=3m E=2m S=1m W=1m	2.5m	N/A	Young	Fair	Good	20+	None	C	2.5m	20m²
T2	Cherry (<i>Prunus sp.</i>)	6m	200mm 310mm	3m	2m	N/A	Early mature	Good	Fair	20+	Co joined stems at base.	C	4.4m	62m²
T3	Buddleja (<i>Buddleja davidii</i>)	3m	200mm	2m	1m	N/A	Young	Poor	Poor	<10	Close to main structure of building.	U	2.4m	18m²
T4	Cherry (<i>Prunus sp.</i>)	4.5m	380mm	4m	2m	N/A	Over mature	Good	Poor	<10	Damage to north side of stem, exposed roots and multiple pruning wounds.	C	4.6m	65m²
T5	Common beech (<i>Fagus sylvatica</i>)	2m	190mm	1m	3m	N/A	Young	Good	Fair	20+	None	C	2.3m	16m²
T6	Swedish whitebeam (<i>Sorbus intermedia</i>)	4.5m	200mm	2.5m	1.5m	N/A	Early mature	Fair	Fair	10+	Damage to stem with unoccluded strip leaving longitudinal strip of heartwood exposed around 2cms wide by 30cm long.	C	2.4m	18m²
T7	English oak (<i>Quercus robur</i>)	2.5m	120mm	0.5m	0m	N/A	Young	Fair	Poor	<10	Broken leader, damage at crown break with unoccluded wound. Very poor form. Replace.	U	1.4m	7m²
T8	Maple (<i>Acer sp.</i>)	3m	140mm	1m	1m	N/A	Young	Fair	Fair	10+	Multiple strips of damage to stem.	C	1.7m	9m²
T9	Hornbeam (<i>Carpinus betulus</i>)	6m	290mm	N=4m E=4m S=3m W=4m	1.5m	N/A	Mature	Good	Good	20+	Low over outside classroom roof. Crown lift to clear roof by 2m.	C	3.5m	38m²
T10	Hawthorn (<i>Crataegus monogyna</i>)	5m	300mm	N=2m E=4m S=2.5m W=1.5m	4.5m	N/A	Mature	Fair	Poor	20+	Moderate lean to west. Split in eastern stem. Three stems from twisted base.	C	3.6m	41m²

Tree No	Species	Height m	Stem dia mm	Radial Crown Spread	Crown Clearance	Height to 1st Branch	Life Stage	Condition		Estimated remaining contribution years	Comments	Category	RPA Radius	RPA m2
								(P)	(S)					
T11	Apple (<i>Malus sp.</i>)	2.5m	120mm	2m	0.3m	N/A	Young	Fair	Poor	20+	Small, fairly scrubby young tree, more shrub like in form. Basal growth probably from rootstock that has not been pruned out. Congested form.	C	1.4m	7m ²
T12	Apple (<i>Malus sp.</i>)	2.5m	140mm	2m	0.3m	N/A	Young	Fair	Poor	20+	Small, fairly scrubby young tree, more shrub like in form. Basal growth probably from rootstock that has not been pruned out. 4 stems from base with none forming main stem.	C	1.7m	9m ²
T13	False acacia (<i>Robinia pseudoacacia</i>)	9m	630mm	6m	2m	N/A	Mature	Fair	Fair	20+	Some moderate deadwood in mid northern canopy; Crown break congested with central dead section pruned back to stubs.	B	7.6m	180m ²
T14	Silver birch (<i>Betula pendula</i>)	11m	320mm	N=3m E=4m S=3m W=1m	3m	N/A	Mature	Fair	Fair	10+	In hedge = competition. Unable to inspect base.	C	3.8m	46m ²
T15	Silver birch (<i>Betula pendula</i>)	12m	330mm	N=5m E=2m S=4m W=3m	3m	N/A	Mature	Fair	Fair	20+	In hedge = competition. Unable to inspect base.	C	4.0m	49m ²
T16	Goat willow (<i>Salix caprea</i>)	13m	320mm 320mm 550mm	N=6m E=2m S=6m W=6m	4m	N/A	Mature	Fair	Poor	10+	Increment strips more pronounced on two outside stems - central stem probably being compressed. Basal growth, and congested crown break. Even bud density and spread.	C	8.5m	229m ²
T17	Crab apple (<i>Malus sylvestris</i>)	11m	450mm	N=5m E=5m S=7m W=5m	2m	N/A	Mature	Good	Fair	20+	Basal growth and congested crown break. Even bud density and spread.	B	5.4m	92m ²
T18	Field maple (<i>Acer campestre</i>)	9m	420mm	5m	2.5m	N/A	Mature	Fair	Fair	40+	None	B	5.0m	80m ²
END														

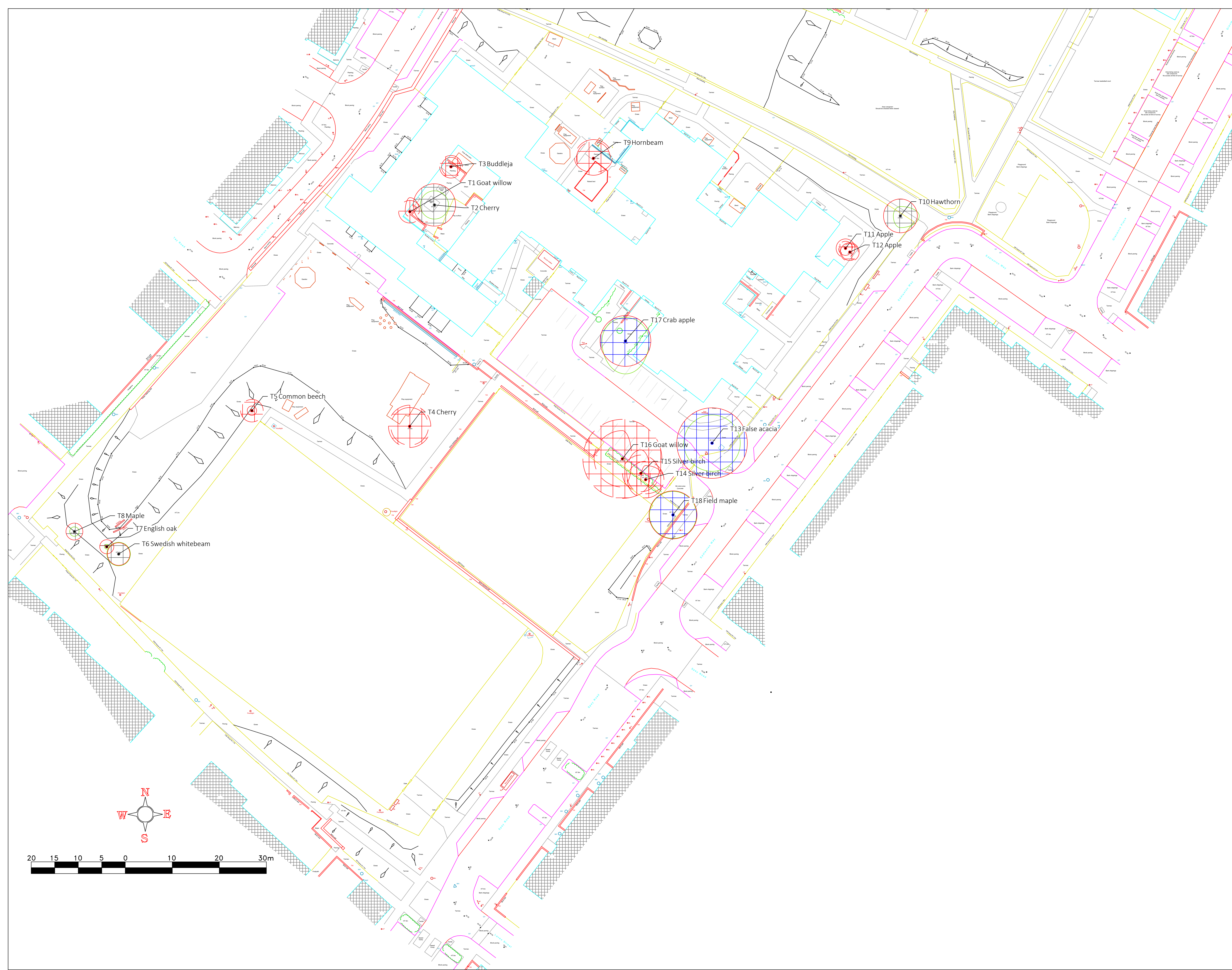
KEY TO SURVEY SCHEDULE		
Tree reference number	Each tree or group is allocated a reference number, and a metal tag with this number is attached to the specific tree or in the case of a group one tree within the group. This is to aid accurate identification of each tree either for work instructions or record keeping.	
Species	Each tree should be identified by its scientific name. In some cases, this may not be possible in the field, because the features required for accurate identification may not be present at the time of the survey. As the plans and reports will need to be used by non arboricultural professions, common names are included.	
Height	Tree height is estimated and recorded in metres.	
Stem diameter	Trunk/stem diameters are measured at 1.5m from the ground. These are rounded to the nearest 10mm. Where easy measurement is not possible (for example, multi stemmed or densely branched trees , and for off-site trees) then stem diameter is estimated.	
Radial Crown Spread	An estimation is made, to the nearest half metre, to give the radius of the tree canopy. Where possible these are recorded to at least the 4 cardinal points.	
Crown clearance	The distance between the ground and the lowest part of the existing canopy. Given in metres.	
Height to first branch	The distance from the ground, in metres to the first <u>significant</u> branch. The direction is also given where this appears important.	
Estimated remaining contribution	The remaining useful life is given as one of four categories, <10, 10+, 20+ or 40+. These are all given in years.	
Comments	Where there are notable defects or conditions, or points of interest these will be recorded under this heading. Unless required for urgent safety reasons, this will not include work recommendations as this is not part of the instructions.	
Item	Category	Description
Condition Physiological (P)	Good	Appears to be healthy and have good vitality.
	Fair	Generally in good health but with visible signs of decline or reduced vitality.
	Poor	Obviously in poor health and significant decline.
	Dead	Dead, or very little live growth.
Condition Structural (S)	Good	No significant structural defects.
	Fair	Some visible defects but no significant hazards.
	Poor	Significant defects or dangerous /potentially dangerous condition.
Age class/ Life stage	Young	Trees less than 20 years old.
	Semi-mature	Trees still having strong apical growth, and or potential for significant, future increase in size.
	Mature	Trees of normal life expectancy, reaching or having reached its probable ultimate canopy proportion. Maintaining a consistent, and not deteriorating, size and condition.
	Over mature	Trees beyond maturity, in natural retrenchment or decline.
	Veteran	Trees that are of interest culturally, aesthetically or biologically because of their age, size or features, such as damage or decay; but not qualifying as ancient.
	Ancient	Has outstanding age for its species. Will also have features consistent with old age such as large girth, decay, and crown retrenchment.

KEY TO SURVEY SCHEDULE		
Category	A	Trees of high quality, with an estimated remaining useful life of at least 40 years. Ancient and veteran trees.
	B	Trees of moderate quality. With a remaining life expectancy of at least 20 years.
	C	Trees of low quality. Likely to be removed within 10 years due to deteriorating health and/or condition; excessive nuisance to people; or for good arboricultural management. Trees that are too small to be important. Category 'C' trees are not considered to be a material constraint, but are of a suitable condition to be retained if desired.
	U	Trees that are unsuitable for retention; due to irreversible decline, causing structural damage.
RPA radius	The radius of a circle with the equivalent area of the RPA. Given in metres.	
RPA area	The minimum total area required to be retained as the RPA. Given in square metres.	

Appendix B Tree Survey Plan as Existing

Ref: SS RBC RnkhtAc SUE 1.3

Attached separately to limit file size.



Key / Legend

T1 Ash — Common name

Tree number

Stem position- based on supplied topographical survey; (where stem centre is not shown on survey, stem centre is estimated); Stem centre is colour coded as per BS:5837 Category

Root Protection Area - adjusted to factors on site

Hatched area represents Root Protection Area (RPA); hatched area is colour coded as per BS:5837 Category

Crown spread colour coded as per BS:5837 Category

BS:5837 Category Colour Codes

● A ● B ● C ● U

- Tree Protective Fencing
- Tree Ground Protection
- New Access Points
- Existing Access Points
- Site Compound / Site Hut
- Contractor Parking
- Latrine
- Storage Mixing Space
- Trial Pit
- Root Conflict
- Canopy Conflict
- No Dig Area
- Suggested Planting Areas
- Highway Boundary
- Site Boundary

Notes

Client
HCC Property Services

Project Title
SS RBC Ranikhet Academy

Drawing Title
Tree Survey Plan
Site as Existing (SUE)

Scale	Drawing issue
1:350 @ A1	1.3
Drawn By WI	Plot date 01/02/2021
Drawing status	

Hampshire Services Arboriculture

Hampshire Highways Arboriculture
Bishops Waltham Depot
Botley Road, Bishops Waltham, Hampshire, SO32 1DR
Email: arbconsult@hants.gov.uk

Revisions			
Rev no:	Rev notes:	Rev date:	Rev by:

Appendix C Tree Survey Plan as Proposed

Ref: SS RBC RnkhtAc SUP 1.3

Attached separately to limit file size.



Key / Legend

T1 Ash

Common name

Tree number

Stem position - based on supplied topographical survey; (where stem centre is not shown on survey, stem centre is estimated); Stem centre is colour coded as per BS:5837 Category

Root Protection Area - adjusted to factors on site

Hatched area represents Root Protection Area (RPA); hatched area is colour coded as per BS:5837 Category

Crown spread colour coded as per BS:5837 Category

BS:5837 Category Colour Codes

A

B

C

U

Tree Protective Fencing

Tree Ground Protection

New Access Points

Existing Access Points

Site Compound / Site Hut

Contractor Parking

Latrine

Storage Mixing Space

Trial Pit

Root Conflict

Canopy Conflict

No Dig Area

Suggested Planting Areas

Highway Boundary

Site Boundary

Notes

TREES REMOVED		
Reference	Common name	BS Category
T1	Goat willow	C
T3	Buddleja	U
T4	Cherry	C
T5	Beech	C
T9	Hornbeam	C
T11	Apple	C
T12	Apple	C
T14	Silver birch	C
T15	Silver birch	C
T16	Goat willow	C

Client

HCC Property Services

Project Title

SS RBC Ranikhet Academy

Drawing Title

Tree Survey Plan Site as Proposed (SUP)

Scale

1:350 @ A1

Drawn By

WI

Drawing status

Drawing issue

1.3

Plot date

01/02/2021

Hampshire

Services

Arboriculture

Hampshire Highways Arboriculture

Bishops Waltham Depot

Botley Road, Bishops Waltham, Hampshire, SO32 1DR

Email: arbconsult@hants.gov.uk

Revisions

Rev no:

Rev notes:

Rev date:

Rev by:

Appendix D Tree Protection Plan

Ref: SS RBC RnkhtAc TPP 1.3

Attached separately to limit file size.

METHOD OF TREE PROTECTION

Measures for Tree Protection during Construction Works.
Tree Protection Plan (TPP) to identify:

- Trees to be retained and trees to be removed.
- Protective fence positions therefore the Construction Exclusion Zone (CEZ).
- Measurements to identify fence positions.
- Area available for working and storage space.

1. Order of works

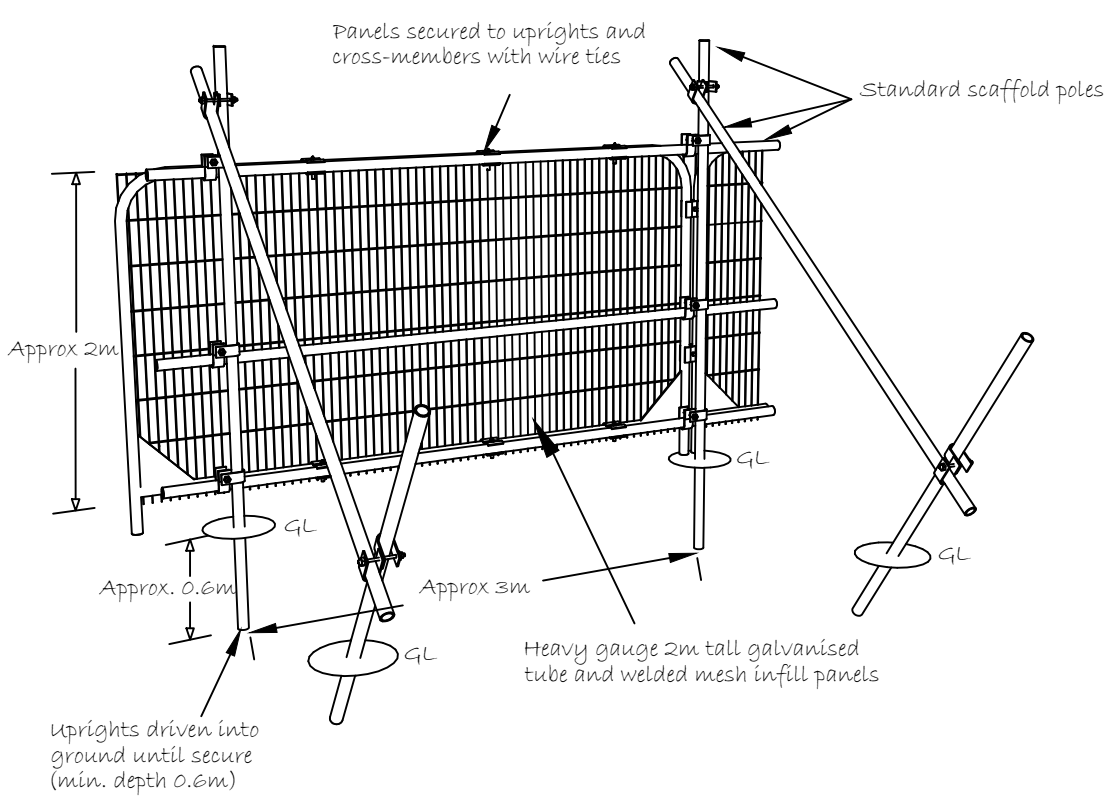
- Observe general precautions note.
- Carry out prescribed tree removals.
- Erect protective fencing as shown on this Tree Protection Plan.
- Carry out demolition in accordance with Arboricultural Method Statement (AMS).
- Construct new school in accordance with AMS.
- Only when the work is complete can the protective fencing be removed.

General precautions

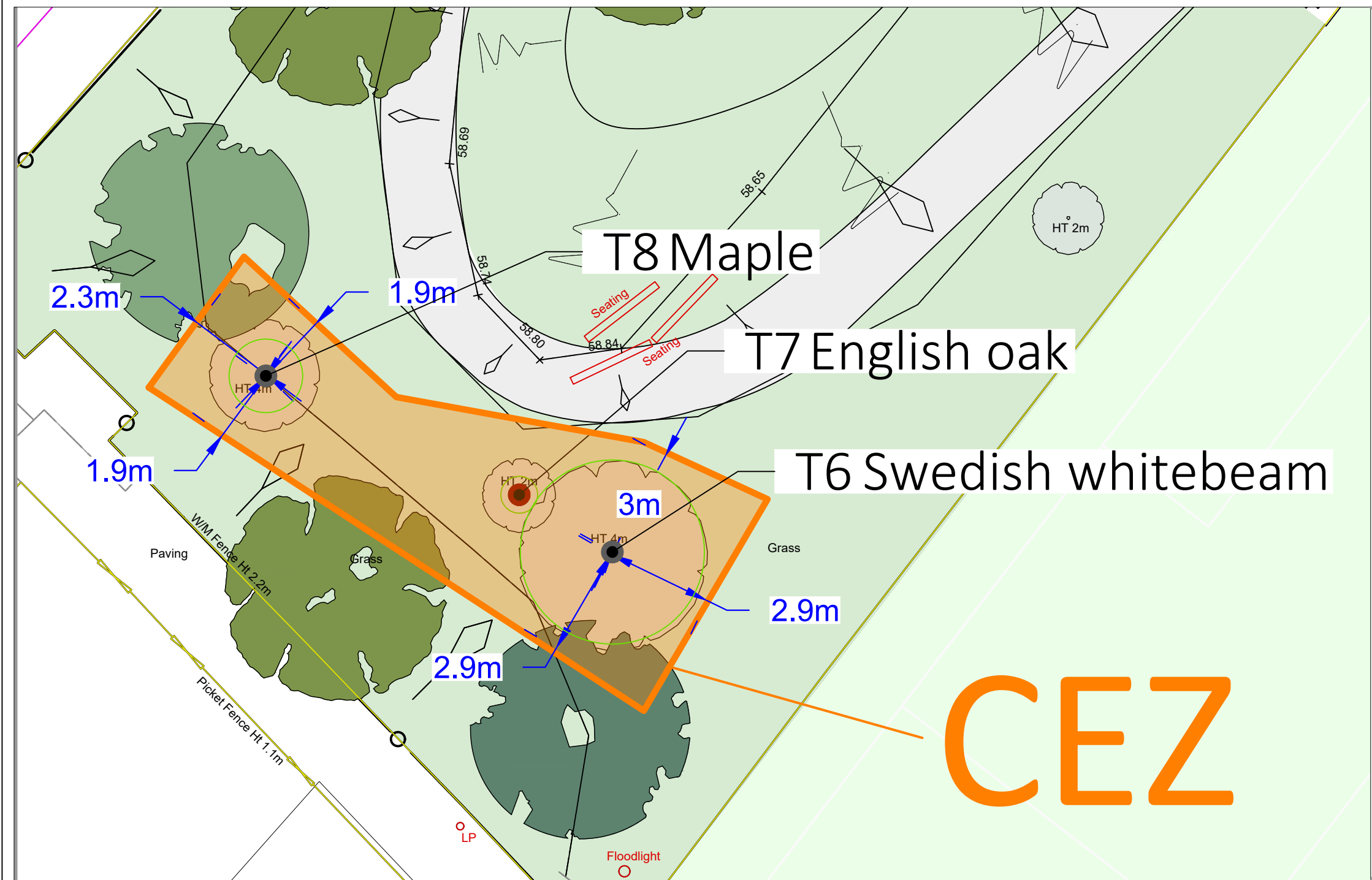
- 2. If bonfires are lit on site these must be kept 15m away from any tree. Nothing is to be attached to any tree.
- 3. The construction exclusion zones are afforded protection at all times. No works will be done within any CEZ, unless detailed in a specific Arboricultural Method Statement. Other than this, there will be no access permitted to the CEZ for construction work.
- 4. Soil levels MUST NOT be changed within the CEZ, unless detailed in an approved Arboricultural Method Statement.
- 5. A protective fence shall be erected prior to commencement of any site works. The fence shall have signs attached to it stating that it is a Construction Exclusion Zone and that NO WORKS are PERMITTED within the fence. The fence may only be removed following completion of all the works.

6. The fence is required to be sited in accordance with this Tree Protection Plan. It must be constructed as shown and be fit for the purpose of excluding construction activity. Any other type of barrier used must be fit for the purpose and agreed by the project arboriculturist.
7. Storage space can be allocated away from CEZs and provisions must be made to ensure that CEZs cannot become contaminated by stored materials, chemical leaching, or run off from storage areas.
8. The general use of herbicide is not planned on the site. Herbicides must not be used for this project, without the advice of the project arboriculturist.

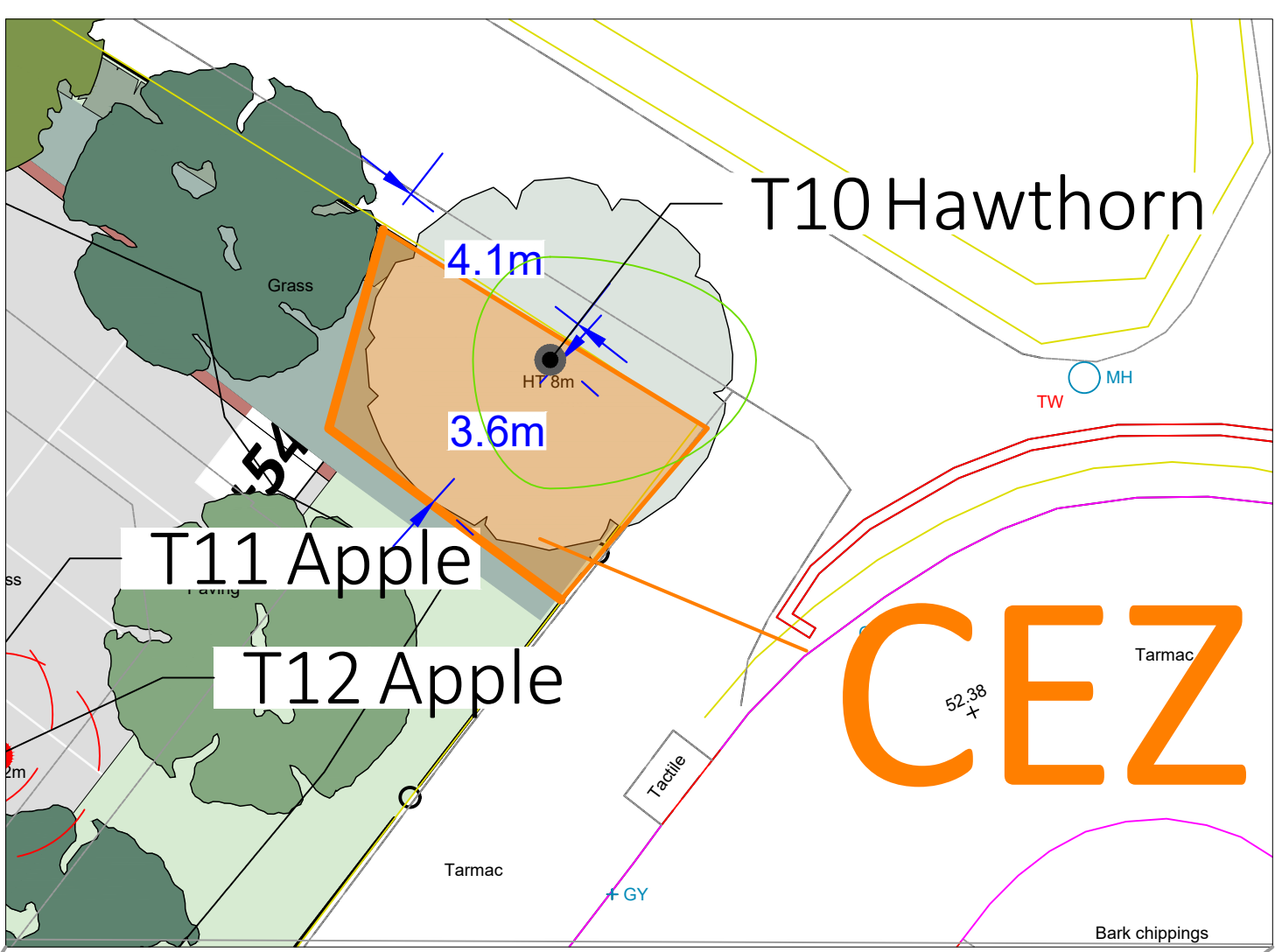
Default specification for protective barrier



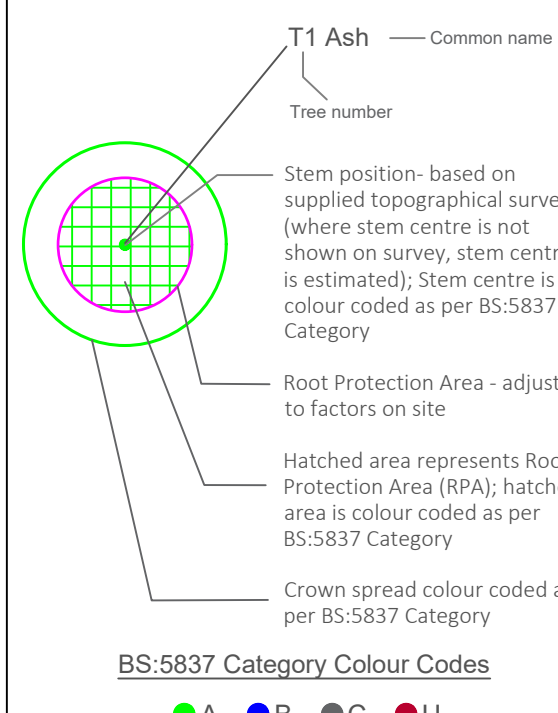
TREES TO BE REMOVED		
Reference	Common name	BS Category
T1	Goat willow	C
T3	Buddleja	U
T4	Cherry	C
T5	Beech	C
T9	Hornbeam	C
T11	Apple	C
T12	Apple	C
T14	Silver birch	C
T15	Silver birch	C
T16	Goat willow	C



EXPLODED VIEWS NOT TO SCALE



Key / Legend



BS 5837 Category Colour Codes



Tree Protective Fencing



Tree Ground Protection



New Access Points



Existing Access Points



Site Compound / Site Hut



Contractor Parking



Latrine



Storage Mixing Space



Trial Pit



Root Conflict



Canopy Conflict



No Dig Area



Suggested Planting Areas



Highway Boundary



Site Boundary



Tree to be removed



Notes

Client

HCC Property Services

Project Title

SS RBC Ranikhet Academy

Drawing Title

Tree Protection Plan (TPP)

Scale

1:350 @ A1

Drawing issue

1.3

Drawn by

WI

Print date

01/02/2021

Drawing issue

Revisions

Rev no

Rev notes

Rev date

Rev by