CWM GWYDDON SCHOOL

ARBORICULTURAL SURVEY REPORT

Caerphilly County Borough Council

February 2021

Mae'r ddogfen hon ar gael yn Gymraeg, ac mewn ieithoedd a fformatau eraill ar gais.
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Caerphilly County Borough Council

February 2021

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P01	**04/02/2021**	**-**	**ZS**	**08/02/2021**	**PMC**	**09/02/2021**
P02	**16/06/2021**	**-**	**ZS**	**16/06/2021**	**PMC**	**16/06/2021**

The final revision will be deemed as accepted by the client if no comments are received within two weeks of issue.

CONTENTS

FIGURES

APPENDICES

1 INTRODUCTION

TACP (UK) Ltd was appointed by Caerphilly County Borough Council (CCBC) to carry out an Arboricultural survey on the old Cwmcarn High School Site in Cwmcarn, Caerphilly, hereafter referred to as the Site. The proposals are for construction of a new Cwm Gwyddon Primary school on the site, including a new building, outdoor play, new access from the north, and car and coach parking. One existing building is to be retained in the centre of the site (outside the current site boundary).

The Site is located north of Crosskeys, to the west of the A467 road. It is sited on flat ground within the Cwm Gwyddon valley, with wooded slopes enclosing it. The residential area of Cwmcarn is mainly to the south, and also alongside with the main road. An industrial estate sits to the north east, screened by a boundary of trees. There is a large playing field with car park and changing rooms to the north. The western boundary is wooded, with a river running north/south.

The site comprises mostly grassed playing fields, with an area of compacted rubble from the demolition of the old school buildings in the south east corner. The existing trees are mostly located around the perimeter of the fields, providing visual screening from the road and industrial estate, as well as biodiversity value relating to the woodland areas. There is a garden area to the south of the retained building which includes several ornamental tree species in an arrangement of beds raised above the current ground level post demolition.

In compliance with BS 5837:2012 'Trees in relation to design, demolition and construction', this report records the location of each tree along with its size and an assessment of its quality. The life expectancy of each tree is also assessed to help identify those that may be expected to provide long lasting benefits. The report is intended to provide recommendations and guidance in selecting trees for retention and protection during the design and development of the site.

1.1 Scope

This report identifies all trees on the Site over 75mm in diameter. The trees are shown on the Arboricultural Survey Plan with their Root Protection Areas (RPA) and assessed quality (A,B,C or U) to help guide the design and understand the extent of tree removal that may be required. Once the design is developed further a Tree Protection Plan shall be produced from this data to enable the necessary tree protection to be installed, to protect retained trees throughout the demolition and construction phases. Trees outside of the boundary to the north were also recorded. Aside from these, trees adjacent to, but outside of the boundary, where root protection areas will not be within the site area were excluded from the survey scope. Tree numbers are not consecutive due to a number of trees being recorded during the survey which are outside the current site boundary and now excluded as they will not be affected by the development.

The survey was carried out in accordance with BS 5837:2012 and the following elements are included within this report:

- Statutory protections identified from desk survey
- Schedule of survey data
- Tree Constraints Plan showing tree locations and root protection areas (RPA)

1.2 Survey Limitations

The tree survey was undertaken from ground level and assessment was based on visual, non-invasive inspection of the trees. This assessment was carried out in terms of planning and development. It does not evaluate the degree of risk that may be posed by trees. Trees are living organisms and their physiological and structural condition can change rapidly in response to different factors. They also have the potential to fail structurally without displaying previously observable symptoms. It is recommended that the trees are re-surveyed following site clearance and development. It is expected that an ongoing, regular tree risk assessment is carried out on this site once it is in use as a school.

Any management recommendations in this report are of a preliminary nature and relate to current site context. Further physical alterations to site conditions have the potential to change the findings and recommendations of this report.

2 STATUTORY PROTECTION

The Caerphilly CBC Interactive planning map (accessed 05/02/2021) shows no Tree Preservation Orders on the site. Neither is it within a Conservation Area.

On many non-residential sites (excluding specific exemptions) there is also a statutory restriction on the quantity of timber ($5m^3$) that can be felled in any one calendar quarter. This is managed by the Forestry Commission, who can provide a felling licence. This restriction is superseded where planning permission has been granted.

3 ARBORICULTURAL SURVEY

3.1 Methodology

The site was visited on the 1st February 2021. The weather was overcast, but visibility was sufficient to assess the trees. All observations were made from ground level and, unless otherwise stated as estimated in the survey data, all dimensions were measured.

Tree locations on the survey plan are based on the topographical survey provided by Caerphilly CBC. Tree crowns are shown to the dimensions recorded during arboricultural survey, particularly where trees are asymmetrical in form.

The survey was undertaken in accordance with BS5837:2012 and the methodology is described within Appendix A of this report.

3.2 Findings

The detailed tree survey data schedule is in Appendix B of this report.

Overall, the trees present are of generally moderate quality and young to early mature age groups. Visual screening from adjacent industrial and transport land use is mainly provided by surrounding, off site trees.

The small ornamental group associated with the retained building to the west, adjacent to the site, provides some interest, but would need some work to rejuvenate the surrounding planting which is dominated by bamboo and weed species. The demolition of adjacent buildings and hard surfaces has left two of these trees exposed to root damage, and impacts of this sort must be considered if this group is to be retained in the proposed design.

There is limited species diversity, although the majority are native. Alder and hawthorn dominate, followed by oak and birch. These will provide increasing biodiversity value as they age.

The table below includes all trees surveyed by category. Offsite trees are highlighted yellow. Criteria for categorisation are explained in full in the methodology Appendix A. Full details are found in the Survey schedule Appendix B.

Table 3-1 Summary of Findings

BS 5837 Category	Reasons	Individual Trees (T)	Groups (G)
Category A	A1: Excellent or unusual arboricultural specimen	none	
	A2: Landscape feature of high quality and intrinsic value	none	
	A3: High cultural value	none	

Category B	B1: Moderate quality arboricultural specimens.	T23, T32	
	B2: Trees providing landscape value as part of a group or as visual screening.	T1, T15, T17, T19, T21, T22, T25, T29, T30	
	B3: Trees with cultural or conservation value – primarily wildlife habitat value in this case.	T26, T27	
Category C	C1: Trees of little merit or limited life expectancy due to impaired condition. Includes very young trees that would be easy to replace.	T2	
	C2: Trees of little individual merit forming part of a landscape feature (boundary)	T16, T18, T20, T24, T28	
Category U	Trees with an expected life expectancy of less than 10 years in current situation.	T3, T9, T31	

The following discussion covers the different tree groups on the site. Refer to the Tree Constraints Plan in Appendix C.

3.2.1 South Entrance T1-T3

A small row of blossom trees providing visual interest and structure, sited on a raised verge near the entrance gate. The two cherry plum, *Prunus cerasis,* are mature for the species and T3 is showing the early signs of structural failure, hence U category. No works are anticipated in this location – but the need to retain the localised ground levels should be considered in any design if the trees are to be retained.

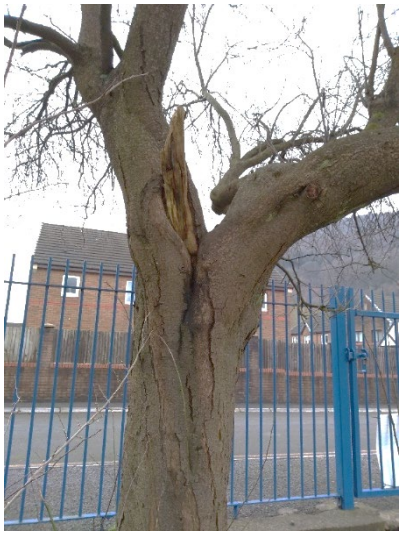


Figure i T3 with decay and lost branches from main union

3.2.2 Garden group by art block (retained building) T9

This group sits among wider groundcover and shrub planting within beds in what was a courtyard style garden. T9, an ornamental cherry, is very mature and in poor condition with damage to the stem and poor branch structure. It has had the ground surface removed very close to its root system, which raises concerns about future health and stability.

Figure ii T9 with stem damage and exposed roots

3.2.3 Northern boundary group T15-T25

An unmanaged and thus slightly overcrowded line of primarily native species which would benefit from some selective thinning to allow tree crowns to develop to their best form. It does provide a useful function of screening the sports pitch beyond and defining the school site as well as integrating the site with the wider landscape. The spruce, *Picea spp*. T22, in the middle, forms an interesting large feature tree.

There appears to be some Japanese Knotweed amongst T24 and T25 in the NW corner. This should be confirmed in the growing season. Treatment of this would need to avoid excavating tree roots or undirected use of herbicide which could affect the trees via their leaves.

Figure iii Northern boundary group with T22 in foreground

3.2.4 Offsite trees – also northern boundary, T26-T32

The trees on the other side of the fence effectively form part of the same overall boundary group. These are generally more mature and established specimens. Notably the hawthorns T26 and T27, and hollies T29 and T30, are at a stage where they provide good wildlife habitat as well as dense foliage. The birch T32 is also very large and a feature tree for amenity and shade due to its location in the centre of the lawn. Measurements for these trees were visually estimated from the school site.

Figure iv Hawthorns T26 and T27

3.3 Recommendations

The results of this survey should be used to inform the design of the new school buildings and grounds. Specifically, impacts on trees should be considered when laying out roads and car parks, but also in designing service runs, changes to ground levels and SuDS features which will affect tree rootzones. Designers must also consider the mature size of younger retained trees to ensure they have sufficient space to grow and flourish without causing conflicts with built infrastructure or land uses. In principle, trees and groups identified as category B should be retained wherever reasonably practicable. These will bring benefits including biodiversity, shade, boundary screening and landscape continuity that would take many years to replace with newly planted specimens.

Retained trees should be protected throughout the construction period, including during demolition. The Root Protection Areas (RPA) indicated on the plans are the minimum area around the tree required to be protected to ensure its survival.

Once the design is finalised a detailed Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP) should be developed based on professional arboricultural advice setting out constraints on specific construction activities in relation to retained trees on site. It will also address mitigation measures where works are required within RPAs or in proximity to retained tree crowns.

There is an opportunity to greatly increase the number and diversity of trees within the site as part of the landscape proposals. These would enhance the educational and amenity experience for students as well as providing environmental benefits to the wider area.

4 ARBORICULTURAL CONSTRAINTS PLAN

The Tree Constraints Plan in Appendix C has been drawn to show the recommended RPA in square metres around individual trees. RPAs on the plan are shown as simple circles. Where tree roots are adjacent to hard surfaces or other barriers (as indicated on the topo survey), the reality is likely to be somewhat different. This will be reviewed in the development of the Tree Protection Plan (TPP).

The RPA helps identify which trees can be retained at the edge of the works area and guides the siting of protective barriers during the construction phase for retained trees. The TPP will be produced when the design is agreed, which will set out in detail the location and type of protection measures required.

The tree numbering on the plan relates to the trees shown on the schedule. The trees on site have not been physically tagged with numbers as part of this survey.

5 SUMMARY

The Site contains a small number of tree species in moderate condition around the boundary. As many of these as possible should be retained in the proposed development. A small number of trees are reaching the end of their useful life or provide limited value in balance with the constraints they impose, therefore replacement would be appropriate.

Impacts or work to trees outside the boundary, including to their RPA, must be avoided unless by agreement with the relevant landowner.

APPENDICES

APPENDIX A

Survey Methodology

The following tables set out and define the terminology used in the survey schedules:

Table 6-1 Tree Life stage

Life Stage	Definition
Young (Y)	Recently planted or establishing tree
Semi Mature (SM)	An established tree, but with some growth to make before reaching its potential maximum size. Within its first third of lifespan.
Early Mature (EM)	A tree that is reaching its ultimate potential height, who's growth rate is slowing down but if healthy, will still increase in stem diameter and crown spread. Within its second third of lifespan.
Mature (M)	A mature specimen with limited potential for any significant increase in size, even if healthy. Within its final third of expected lifespan.
Over Mature (OM)	A senescent or moribund specimen of low vigour within its final third of expected lifespan. Also containing sufficient structural defects with safety and/or duty of care implications.
Veteran (V)	Specimens exhibiting features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to individuals surviving beyond the typical age range for the species concerned.
Dead (D)	The tree is dead and cannot be clarified as a veteran tree. Its age up until death is of no significance.

Table 6-2 Tree Condition

Condition	Definition
Good (G)	Generally in good health typical of the species needing little, if any attention. Few minor defects of little overall significance such as physical damage or suppressed branches. Showing no adverse risk of failure/defects.
Fair (F)	A tree or trees with minor but rectifiable defects or in the early stages of stress, from which it may recover. Showing minor signs of deterioration. This could include a major defect in an early life stage, or multiple minor defects. A tree that may require work to remove or improve a defect.
Poor (P)	A tree or trees with major structural and physiological defects or stressed such that it would be a risk to retain in its current or future known situation. Unlikely to return to good condition given time or remedial work.
Dead (D)	A tree or trees no longer alive. However, this could also apply to those trees that are dying and will be unlikely to recover, or are becoming or have become dangerous.

Table 6-3 Deadwood

Deadwood	Definition
Twigs	Small branch material up to 10mm diameter
Minor deadwood	Dead wood 10-50mm diameter
Major deadwood	Dead wood > 50mm diameter

Table 6-4 Tree Quality Assessment

Trees unsuitable for retention		**Criteria**		
Cat **U** Cannot realistically be retained as living trees under the current land use for longer than 10 years		- Trees that have a serious irremediable structural defect, or will become unviable after removal of other Cat U trees. - Trees that are dead or showing signs of significant, immediate and irreversible overall decline. - Trees infected with pathogens of significance to the health and/or safety of other trees. - Very low quality trees supressing adjacent trees of better quality.		
Trees to be considered for retention		**Criteria and sub-categories**		
		1: Mainly Arboricultural qualities	**2: Mainly Landscape qualities**	**3: Mainly Cultural values incl. conservation**
Cat **A** Trees of high quality with an estimated 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 Arboricultural features.	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.
Cat **B** Trees of moderate quality with an estimated life expectancy of at least 20 years		Trees that are downgraded from Cat A because of impaired condition (presence of significant though remediable defects or unsympathetic past management), such that they are unlikely to be suitable for retention beyond 40 years; or trees lacking the special quality necessary to merit Cat 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 making little visual contribution to the wider locality.	Trees with material conservation or other value.
Cat **C** Trees of low quality with an estimated 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 collective landscape value; and/or trees offering low or only transient landscape benefits.	Trees with no material conservation or other cultural value

APPENDIX B

Survey Schedule

T: Tree, G: Group, RPA: Radius of Root Protection Area in metres

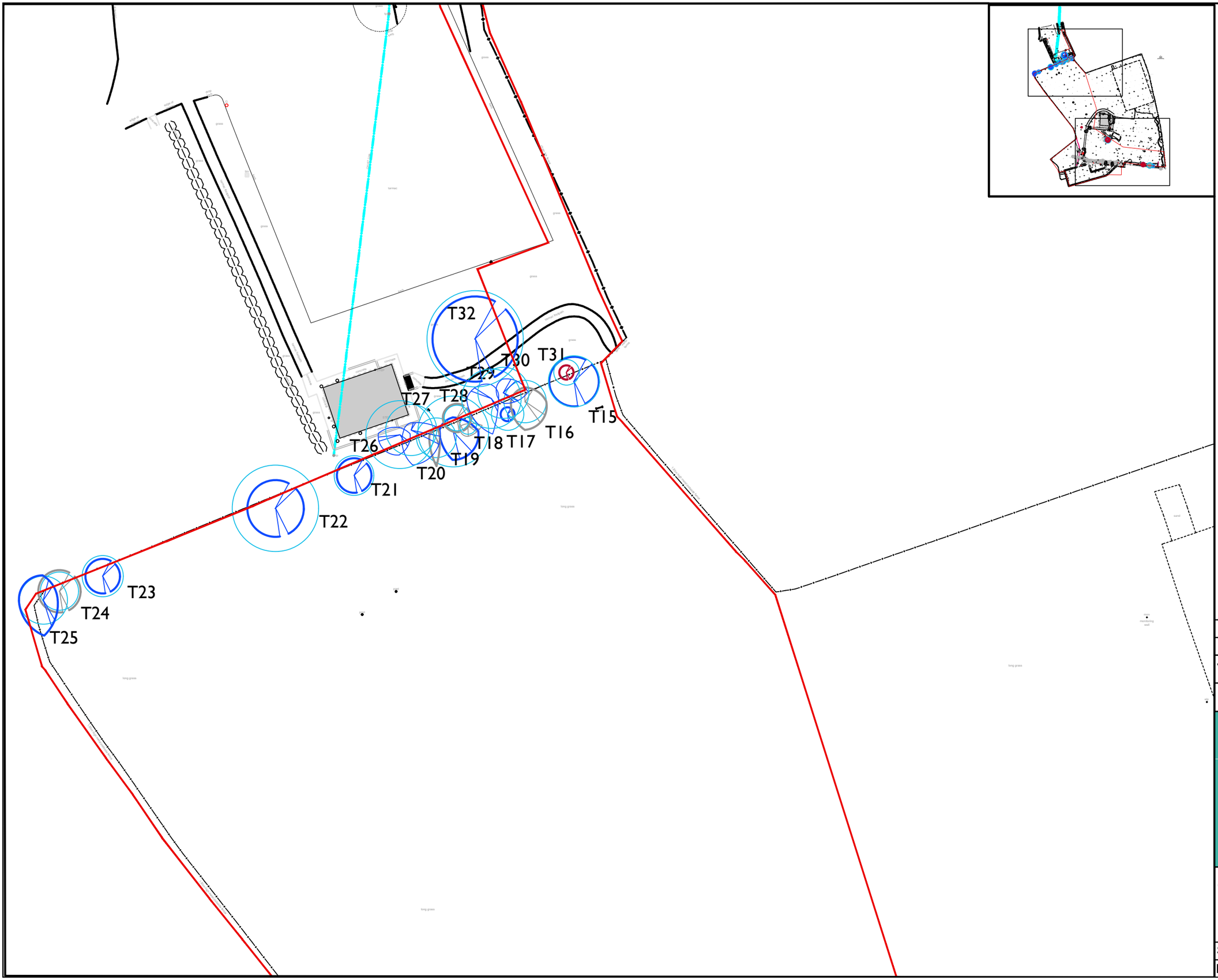
Life Stage: Y:Young, SM:Semi Mature, EM:Early Mature, M: Mature

Tree no.	Species	Height (m)	Estimated diameter	Stem 1 (mm)	Stem 2 (mm)	Stem 3 (mm)	Stem 4 (mm)	Stem 5 (mm)	Stem 6 (mm)	N. Crown Spread (m)	E. Crown Spread (m)	S. Crown Spread (m)	W. Crown Spread (m)	Lowest branch height (m) & Direction	Life stage	Condition	Life expectancy	BS 5837 category	RPA radius (m)	Comments and Recommendations
T1	Hawthorn	8		260						2.5	2.5	1.5	1.5	2/N	EM	Good	40+	B2	3.1	Stem measured below main fork at 1.5m
T2	Cherry plum	10		465						3.5	2.5	3.5	2.5	2/W	M	Good	10+	C1	5.6	Sucker growth around root area to be removed
T3	Cherry plum	9		395						3	3	3.5	3.5	2/NW	M	Fair	<10	U	4.7	Two limbs removed/broken from main fork with decay evident
T9	Cherry	8		545						4	4	4	4	1.2/NW	M	Poor	<10	U	6.5	Included union in main fork at 1.2m contains water pocket. Mechanical damage to cambium 600x300mm lower stem S side. Ground excavated to within 1m this side during demolition.
T15	Alder	9		170	170	180				3.5	3.5	3.5	3.5	2/E	SM	Good	20+	B2	3.6	
T16	Alder	9		250						2	3	4	2	0.8/S	SM	Fair	20+	C2	3.0	Suckers on lower stem and asymmetrical crown
T17	Hawthorn	6		190						1	1	2	1	0.8/W	EM	Good	40+	B2	2.3	
T18	Hawthorn	3		100						0	2	1.5	1	1/S	Y	Fair	20+	C2	1.2	Supressed by crown of T19
T19	Oak	11		420						2	3.5	4	2	0.5/S	SM	Fair	20+	B2	5.0	Congested main union
T20	Oak	9		230						1.5	0.5	4	1	0.5/S	SM	Fair	20+	C2	2.8	Supressed by T19, suggest remove to allow T19 to develop full crown
T21	Alder	9		230						1.5	1.5	2.5	2	2.5/S	SM	Fair	20+	B2	2.8	Suckers on lower stem
T22	Spruce	14		505						4	4	4	4	ground	M	Fair	20+	B2	6.1	Foliage a little sparse N side
T23	Erman's Birch	8		240						2.5	2.5	2	2.5	1.6/W	EM	Fair	20+	B1	2.9	Minor branch tip dieback and witches broom
T24	Alder	7		110	195					3	3	3.5	2	1.5/E	SM	Fair	20+	C2	2.7	Suspected Japanese knotweed present
T25	Oak	10		280						3.5	2	5	3.5	1/E	SM	Fair	20+	B2	3.4	Suspected Japanese knotweed present
T26	Hawthorn	8	est.	400						1	1.5	3	3	2/SW	M	Fair	20+	B3	4.8	Forms a group with T27 - habitat value, ivy
T27	Hawthorn	6.5	est.	300						1	4	5	1	2/S	M	Fair	20+	B3	3.6	dominated by T26

Tree no.	Species	Height (m)	Estimated diameter	Stem 1 (mm)	Stem 2 (mm)	Stem 3 (mm)	Stem 4 (mm)	Stem 5 (mm)	Stem 6 (mm)	N. Crown Spread (m)	E. Crown Spread (m)	S. Crown Spread (m)	W. Crown Spread (m)	Lowest branch height (m) & Direction	Life stage	Condition	Life expectancy	BS 5837 category	RPA radius (m)	Comments and Recommendations
T28	Hawthorn	6.5	est.	150						2	2	1.5	2	1.5/N	SM	Good	20+	C2	1.8	Within 300mm of boundary fence
T29	Holly	8	est.	350						2	1	5	3.5	2/S	M	Good	20+	B2	4.2	Forms group with T30
T30	Holly	8	est.	300						2	3.5	1.5	1	2.5/S	M	Fair	20+	B2	3.6	large dead stem supported in crown
T31	Ash	5	est.	150						1	1	1	1	3/N	Y	Poor	<10	U	1.8	Growing through fence close to T15
T32	Birch	12	est.	450	350					6	6	4	6	4/N	M	Good	20+	B1	6.8	

APPENDIX C

Tree Constraints Plan



NOTES:

1. DO NOT SCALE ANY ITEMS OR INFORMATION FROM THIS DRAWING.
2. REFER TO ARBORICULTURAL SURVEY REPORT

KEY:

Tree number and category:

A T1

B T2

C T3

U T4

Tree Number T1
Group Number G1

Estimated Root Protection Area (RPA)

Approximate Canopy size

Vers.	Suit.	Date	Description	Drawn	Chk.
P02	S4	16/06/21	omit trees	ZS	PMC
P01	S3	08/02/21	First issue	ZS	PMC

S4:For Approval

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Caerphilly County Borough Council
Cwm Gwyddon School
Arboricultural Report
Constraints Plan 2 of 2

Scale @A3: 1:500

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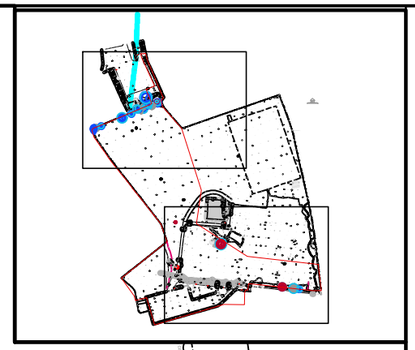

T9

T3

T2

T1

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Caerphilly County Borough Council
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Arboricultural Report
Constraints Plan Sheet 1 of 2

Scale @A3: 1:500

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