



**BS5837:2012 Trees in Relation to
Design, Demolition and Construction
- Recommendations**

Arboricultural Impact Assessment

Tremeirchion Integrated Constructed Wetland Trial

DATE	ARBORICULTURALIST	APPROVED	VERSION	COMMENTS
5/10/2024	MATT BARDSLEY	RICHARD CUTTS	V1	

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Preamble

This report has been commissioned by Enfys Ecology Ltd for the purpose of providing an assessment of trees growing within and around the area proposed for the 'Tremerechion Integrated Constructed Wetland Trial' and has been prepared in accordance with the guidance specified in BS5837:2012 *Trees in Relation to Design, Demolition and Construction – Recommendations*.



Google maps image

The brief was to provide an arboricultural impact assessment based on the PDF plan provided as Appendix 6 with the area concerned highlighted in yellow on the aerial image above.

The proposed development comprises the introduction of three wetland cells, an access road, path and facilities together with the upgrading of the existing access road to the site. A headwall is proposed in the woodland to the south-east of the site.

To this end this report contains the following information.

Tree Data Tables which provide all the relevant information required when assessing trees for their retention categories.

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Tree Location Plan identifies *woodlands, groups and where appropriate, those trees with a diameter of 75mm or greater either on the site or within influencing distance of it.

Tree Constraints Plan identifies those trees considered as a constraint to development and which should be retained as either individual trees, *groups or woodlands.

The above-mentioned documentation combines to provide the client with the information required to inform the development's layout.

**BS5837, Sect. 4, sub-sect. 4.4.2.3 "...Trees growing as groups or woodlands should be identified as such where the arboriculturalist determines that this is appropriate..."*

Limitations

All tree inspections were made from ground level only and cannot be considered as tree safety or condition inspections. However, where obvious defects have been seen they have been noted.

The findings and recommendations of this report in relation to the tree categorisations are valid for a period of 2 years from its receipt by the client.

Access to some of the trees was not possible due to their being on a steep embankment or access being blocked by vegetation. Where a tree could not be measured, measurements have been estimated. This is clearly stated in the tree data tables. I am confident that the estimated sizes are realistic, and that further investigation is not needed at this point.

Associated Information used to inform the inspection

Plans showing the proposed development were supplied prior to the site visit. No other plans or levels were available.

Greenspaces take no responsibility if the information on the received plans is inaccurate.

1. Site description

The site comprises agricultural grazing land and woodland located to the west of Tremeirchion, Denbighshire with the site access being located opposite the entrance to Plas Coch Farm.

Mature mixed woodland to the west of the existing facility separates the current site from the highway to the north, with a narrow stream running east to west through the centre of the woodland.

Semi-mature woodland to the east of the existing facility follows either side of the access track and contains a large percentage of common ash trees (suffering from the disease ash dieback), together with pine and sycamore.

To the south of the woodland is the main area proposed for development which is currently agricultural fields.

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2. Tree survey

Woodlands, groups and where useful, significant trees with a diameter of 75mm or greater, have been recorded using the guidance specified in Annexe C of BS5837:2012.

A total of thirty-one individually growing trees and two woodlands have been measured, categorised and recorded for the purpose of this report (refer to Appendix 2).

Diameters and sizes have been measured using a purpose designed diameter tape or callipers, surveyor's tapes and, where appropriate, a laser measure. Where accurate measurements have not been possible, an approximate size has been given. Trees with estimated dimensions are given the abbreviation "Est." or the fact that they have been estimated has been included in the comments section of the Tree Data Tables.

Where average measurements are used, for example with woodlands or groups, this is stated in the in the comments section of the Tree Data Tables

Crown spread and height have been measured to the nearest full metre with diameters given millimetres to the nearest 5mm. However, where access has not been possible measurements have been estimated and a note made in the Tree Data Tables.

The schedule containing information for those trees on and around the site has been provided in Appendix 2 with trees locations plotted on the Tree Location Plan provided as Appendix 4.

2.1. Information recorded on site

The Tree Survey Data Sheets provided in Appendix 2 identifies the following information.

Tree No. The unique number given for each tree and used to specify trees throughout this document. The number relates to a small, circular metal tag attached to the tree at 1.5m above ground level which is used to aid identification. These numbers can also be seen on the associated plans within this report. However, the plans not only show the number but also the retention category, for example tree 7732 has been categorised as a category A tree and therefore the number on the plan is 7732A (see the following sect. 1.3 for further details).

Groups are prefixed with the letter G whilst woodlands are prefixed with the letter W. Groups and woodlands do not have identification tags attached.

Where it is thought that a tag cannot be seen, it may be fixed to a nearby fence post to aid location. This is the case with trees 7839, 7840 and 7843.

Species Common name given, for example oak, ash, sycamore etc., with botanical names provided where further clarification is needed.

Age Class Y – Young (small, newly planted and in aid of support such as stakes and ties), **IMM** – Immature (less than a third of the mature tree's dimensions), **SM** - Semi-mature (established and over a third of the mature tree's dimensions), **EM** - Early mature (over two

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thirds of the mature tree's dimensions), **M** – Mature (has reached its full growth potential), **OM** – Over mature (likely in decline or close to it).

Height measured to the nearest metre.

Crown Spread measured at the four cardinal points. Off-site trees may only have the on-site spread measured with the remaining spread being estimated. Woodlands and groups will have their crown spreads recorded as an average.

D.B.H. Diameter at breast height measured in millimetres for individual trees or specified as an average for groups and woodlands.

First Branch the height of the first branch from ground level (GL) and its direction, for example 3N would signify a branch at approximately 3m above ground level on the tree's north side.

Physiological condition a brief, general description of the tree's health/vigour described as Poor, Fair or Good. Elaborated on, where necessary, in the "Comments" box.

Structural condition a brief, general description of the tree's structural condition described as Poor, Fair or Good. Elaborated on, where necessary, in the "Comments" box.

Est. Remaining Contribution as per Appendix 1; <10yrs, 10-20yrs, 20-40years, >40yrs

Comments A brief summary of any issues or benefits identified.

Category Refers to the retention category: A, B, C or U as explained further in Sect. 2.2 below and Appendix 3.

Recommendations may include works essential for the proposed development or works necessary to retain or improve a tree's health/vigour or safe useful life expectancy.

RPA(M²) Root Protection Area as recommended in the British Standard

Radius of a circle (M) given as a radius for the protection of roots around the retained tree and shown on the associated Tree Protection Plan.

2.2. Tree Categorisations explained

Trees have been categorised as per the recommendations described in Table 1 of BS5837:2012. A copy of Table 1 has been included in this report as Appendix 3.

Categories identified in Table 1 of BS5837:2012 can be summarised as follows:

A Category Trees in good physiological and structural condition which provide a substantial contribution in terms of landscape, cultural and/or arboricultural value and with an estimated life expectancy which exceeds 40 years.

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B Category Trees of a moderate quality and value and which have an estimated life expectancy which exceeds 20 years.

C Category Trees of a moderately low quality and/or value with a life expectancy which exceeds 10 years.

U Category Trees of a size which can be easily mitigated or trees which are in poor physiological and/or structural condition and/or with a life expectancy of 10 years or less.

In addition to the categorisation, BS5837:2012 provides sub-categories to give each tree a context for its value as follows:

1. Mainly arboricultural
2. Mainly landscape
3. Mainly cultural (including conservation benefits)

Within, and within influencing distance of the proposed development there are a total of thirty-two individual trees and two woodlands which have been categorised as per the table below.

Category A	Category B	Category C	Category U
14 (including 2no. woodlands)	7	6	7

2.3. Site visit

The site was visited on the 14th September and 5th October 2024 for the tree assessment and tree plotting exercise. The weather on the days of the inspection were clear and bright allowing a good view of each tree.

3. Constraints posed by existing trees

The associated Tree Constraints Plan provides an illustrative guide to the above and below ground constraints in terms of crown spread and root protection area for the trees on site.

Development can cause both long and short-term impacts to tree health and stability particularly through inadequate protection of root protection areas. However, below ground tree constraints may alter if it can be seen that root growth may have been inhibited, for example, due to topography or drainage such as the small stream which runs through woodland W2.

BS5837:2012 para. 5.3.1 states that "...The default position should be that structures...are located outside of the RPAs of trees to be retained..." This report and associated plans should be used to inform the layout based on the retention of the better-quality trees, in this instance woodlands W1 and W2 and trees 7741 to 7744, without any impacts on their root protection areas (RPAs). Space should also be left for their future growth; BS5837:2012 para. 5.3.4 ".....A realistic assessment of the probable impact of any proposed development

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on the trees and vice versa should take into account the characteristics and condition of the trees, with due allowance and space for their future growth....”.

3.1 Impacts to trees with the current layout

The proposed layout in its current form impacts on trees as below.

Tree No.	RPA (M ²)	Volume Affected (M ²)	% Affected	Can the tree be successfully retained
7732	108.6	18.41	16.9	Yes – provided that the access road refurbishment uses the existing footprint Root protection area can be off-set into the woodland to the south
7734	81.7	7.3	8.9	Yes – provided that the access road refurbishment uses the existing footprint. Root protection area can be off set into the woodland to the north
7735	124.7	10.18	8.2	Yes - the incursion is well below 20%. Root protection area can be off-set into the woodland to the southeast. However, the proximity of the tree to the proposed unit may cause issues in terms of perceived threat and, more likely, needle drop
7737	65.3	9.14	13.9	Yes – provided that the access road refurbishment uses the existing footprint. Root protection area can be off-set into the woodland to the south
7741	68.8	8.81	12.8	Yes – the incursion is well below 20% and root protection area can be off-set into the woodland to the west
7742	68.8	0.28	0.4	Yes – the incursion is minimal, and the root protection area can be off-set into the woodland to the west
7836	19.6	5.01	25.5	Yes – provided that the access road refurbishment uses the existing footprint. Root protection area can be off set into the woodland to the north
7838	79.8	10.58	13.2	Yes, the incursion is less than 20%
7848	21.9	3.31	15.1	Yes, the incursion is less than 20% and the root protection area can be off set to the west
7851	49.3	10.10	20.4	Yes, the incursion is less than 20% and the root protection area can be off set to the east

3.2 Further details of the impacts

i) Re-profile and re-establish wheel access path from the entrance gate to gate into works

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Improvements to the existing entrance are unlikely to have an impact on trees provided that excavations are not required and that category U trees are removed prior to the works.

Tree 7732 is located 3m south of track and likely to be impacted by the proposed re-profiling works unless a no-dig type construction is adopted.

Tree 7734 is a large, early mature sycamore located 3.4m south of the access proposed for re-profiling and would be effected unless a no-dig construction is adopted.

In terms of arboricultural impacts, provided that the proposed re-profiling does not go to a depth below that of the existing stone surface and follows a no-dig type construction, there would be no foreseeable impacts beyond those already experienced.

ii) Proposed welfare facilities

The proposed welfare facilities sit close to the woodland edge and may impact on trees, particularly tree 7735.

Tree 7735 is a mature pine tree located approximately 1m east of the compound fence and conflicts with the proposed welfare facilities but not to a point that needs the layout to be reconfigured..

iii) Gravel pathway for pedestrian access

The proposed gravel pathway affects trees 7745 and 7738 only. Tree 7745 is a category U tree that should not be seen as a constraint and which should be removed prior to any development.

Tree 7838 is a mature larch that can be retained without any alteration to the layout.

iv) Gravel access road and hammerhead turning point

Large diameter oak trees follow the woodland edge from the south-west corner of the compound for approximately 75m south-west.

The largest trees in this group have been measured and used to provide the woodland edge shown in the Tree Constraints Plan.

With the exception of tree 7745, the proposed gravel access road does not impact on trees in this area.

Tree 7745 is a category C tree which has the mid-stages of the disease ash dieback. With this in mind, the tree should not be seen as a constraint and removed prior to any development.

An early mature pine tree leans into the site and is plotted as tree 7736. Tree 7736 is likely to obstruct construction and should be removed if the development uses the layout shown in Appendix 6.

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v) *Proposed headwall*

The proposed headwall will effect woodland W2 and involve the removal of smaller diameter trees together with two category U trees.

If the proposed headwall is to be constructed it is suggested that low impact methods are used such as a micro digger and tracker plates. However, the best option would be for any excavations to be hand dug or an alternative location investigated.

4. Next stage

Once a layout is finalised, a tree protection plan and an arboricultural method statement to the guidance laid out in the British Standard 5837:2012 'Trees in relation to design, demolition and construction' should be prepared and submitted with this report as part of the planning application.

Alternately, the above information may be requested as a Condition should Planning Permission be granted.

Signed



Matt Bardsley MICfor

Dated 5/10/2024

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Appendix 1 - Definitions / glossary of terms

Adaptive growth	an increase in wood in localised areas
Ash die back	disease affecting ash trees, leading to the death of many of those effected
Bacterial bleeds	often associated with root disease
Basal sweep	tree stem which curves upwards from the base but then corrects itself
Bifurcation	union producing two or more stems
Bulge	pronounced bulge in a tree's stem or limbs indicating possible internal issues such as decay
Callus	tissue introduced because of a wound, specialising over time to form a natural repair
Cambium	narrow band of cells responsible for the growth of a tree's circumference
Canker	area of damaged bark/cambium normally associated with bacterial organisms
Cavity	hole within the tree
Chlorotic	normally associated with the yellowing of leaves
Co-dominant	two stems both approximately the same age growing from the same root stock
Compartmentilisation	natural repair of a trees wound
Compaction	compaction of ground around a tree's root area preventing gaseous exchange
Compression Union	tight fork between two stems, often considered as a potential defect
Coppice	cut at the base and left to regrow
Conservation Area	in accordance with the Town & Country Planning Act protects all trees over 75mm DBH
Crown	head of foliage
Crown lift	remove or prune lower branches to raise the trees foliage
Crown reduction	reducing a trees overall canopy size
Deadwood	typically associated with branches and limbs
DBH	Diameter at Breast Height
Decay	degradation of woody tissues
Deciduous	tree that sheds its leave annually
Decline	a tree or tree component which is dying
Dieback	branch tips showing signs of poor health
Dormant	seasonally inactive tree or tree part
End weight	uneven distribution of foliage favouring the branch terminuses
Epicormic growth	shoots formed when dormant bud growth is triggered often through stress
Etiolated	reaching for light, generally resulting in a tall, unbalanced, or slender tree

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Extension growth	amount of growth put on the previous growing season suggesting vitality
Exudation	weeping, oozing
Fibrous roots	also root fibres absorbing roots normally within top 30cm of soil
Formative pruning	a tree to shape usually started at young age
Fruiting body	different fungi associated with tree decays
Hazard Beam	partially split of branch or limb
Heartwood	central core of the tree
Heave / root heave	partial movement of a tree's root plate
Hung up branch	snapped branch suspended above the ground
Hymenoscyphus fraxineus	commonly known as Ash Die Back – a disease that affects Fraxinus species
Included bark/inclusion	example; stem or branch growing into one another
Lateral	branch growing horizontally from the stem
Lion Tailing	poor pruning resulting in only foliage at branch terminals
Live crown ration	percentage of live crown able to photosynthesis
Monolith	trunk with crown removed, usually kept for ecological value
Multi-stemmed	having more than two stems
Natural bracing	where branches intertwine to support one another
Pioneer species	first species to populate an abandoned site
Primary union	first point from the ground where a trunk develops into stems or branches
Reaction Wood	secondary wood developed in response to stress such as a lean
Retrenchment Pruning	pruning method intended to emulate a trees natural aging process
Roots	underground tree component responsible for stability and water/nutrient uptake
Root plate	area around the base of the tree where the anchorage roots are formed
Root pruning	sympathetic pruning of roots
Scion	part of the tree that is grafted to a root stock
Sp./Spp.	abbreviation of species and species'
Supressed	tree or tree component affected by a neighbouring tree or
Stub	obstruction
Sweep	see 'Topping'
Tag/Tree Tag	see 'Basal sweep'
Topping	small metal numbered disk attached the tree for identification where a limb, branch or stem has been cut with little regard for its ability to compartmentalise and recover. Contrary to the British Standard
TPO/Tree Preservation Order	tree protected in accordance with the Town & Country Planning Act
Vertical shoot	normally a reaction to pruning where regrowth extends vertically rather than horizontally.

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Appendix 2 – Tree Survey Data Sheets

Tree No.	Species	*Age Class	Height (M)	Crown Spread (M)				D.B.H (MM)	First Branch (M)	Physiological Condition	Structural Condition	Est. Remaining Contribution	Comments	Category*	Recommendations	Radius of circle (M)	RPA (M ²)
				N	E	S	W										
7732	Pine	EM	17	3	3	3	3	490	1E	Good	Good	40>	No issues noted	A2	Retain and protect	5.88	108.6
7733	Pine	EM	16	3	2	2	3	345	5N	Good	Good	40>	No issues noted	A2	Retain and protect	4.14	53.8
7734	Sycamore	EM	14	3	4	5	5	425	1W	Good	Good	20>	Light die back of some peripheral branches	B2	Retain and protect	5.1	81.7
7735	Pine	EM	16	4	5	5	4	525	3W	Good	Good	40>	No issues noted	A2	Retain and protect	6.3	124.7
7736	Pine	EM	13	1	0	0	7	425	7N	Good	Good	<10	Leans heavily south	U	Not considered as a constraint to development	5.1	81.7
7737	Pine	EM	16	2	2	3	3	380	8S	Fair	Fair	<10	Ring barked from ground level to 1m	U	Not considered as a constraint to development	4.56	65.3
7738	Pine	EM	14	0	0	3	0	310	7S	Poor	Poor	<10	Dead tree	U	Not considered as a constraint to development	3.72	43.5
7739	Pine	EM	12	1	1	2	1	260	7N	Poor	Poor	<10	Dead tree	U	Not considered as a constraint to development	3.12	30.6

*Category A – High Quality Life of 40yrs+ B - Moderate Quality 20yrs+ C - Low Quality 10yrs+ U – Poor Quality <10yrs *Sub-Category 1 Arboricultural 2 Landscape 3 Cultural

*Age Class Y Young IMM Immature SM Semi-mature EM Early mature M Mature

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				N	E	S	W										
7740	Ash	EM	17	2	3	2	2	365	4E	Fair	Fair	10>	Leader lost historically; secondary stem taken over dominance	C2	Retain if possible	4.38	60.3
7741	Oak	EM	16	7	3	1	1	390	10 N	Good	Good	20>	Large dead limb on north side, crown biased north	B2	Retain and protect	4.68	68.8
7742	Oak	EM	14	6	4	3	1	390	3N	Good	Good	20>	Old vertical wound south side at 2m above ground level	B2	Retain and protect	4.68	68.8
7743	Oak	EM	15	4	6	1	1	340	6N	Good	Good	20>	Crown biased north	B2	Retain and protect	4.08	52.3
7744	Oak	M	22	8	11	9	8	1040	2E	Good	Good	40>	No issues noted	A 1/2	Retain and protect	12.48	489.3
7745	Ash	M	22	3	7	9	8	650	4W	Fair	Fair	10>	Ash dieback stage 2	C2	Retain if possible	7.8	191.1
7834	Ash	EM	15	3	3	4	3	320 280	2S	Poor	Fair	<10	Ash dieback stage 3	U	Not considered as a constraint to development	5.1	81.8
7835	Ash	SM	10	2	2	3	2	220	2S	Good	Good	10>	Ash dieback stage 1	C2	Retain if possible	5.1	21.9
7836	Sycamore	SM	10	1	2	2	3	180 105	3S	Fair	Fair	10>	Light cankering throughout upper crown	C2	Retain if possible	2.5	19.6

*Category	A – High Quality Life of 40yrs+	B - Moderate Quality 20yrs+	C - Low Quality 10yrs+	U – Poor Quality <10yrs	*Sub-Category	1 Arboricultural	2 Landscape	3 Cultural
*Age Class	Y Young	IMM Immature	SM Semi-mature	EM Early mature	M Mature			

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				N	E	S	W											
7837	Ash	SM	13	2	3	3	2	270	3E	Fair	Fair	10>	Ash dieback stage 1	C2	Retain if possible	3.24	33	
7838	Larch	EM	12	1	2	3	2	420	5S	N/A	N/A	20>	Ivy obscures stem but visible sections look healthy	B2	Retain and protect	5.04	79.8	
7839	Oak	M	17	3	5	5	3	650	6S	N/A	N/A	40>	Ivy obscures stem but visible sections look healthy, inaccessible due to bank and vegetation, diameter estimated	A2	Retain and protect	7.8	191.1	
7840	Oak	M	15	3	2	8	7	750	5S	N/A	N/A	40>	Ivy obscures stem but visible sections look healthy, inaccessible due to bank and vegetation, diameter estimated	A2	Retain and protect	9	254.5	
7841	Maple	EM	14	2	3	2	2	380	2E	Good	Good	40>	No issues noted	A2	Retain and protect	4.56	65.3	
7842	Pine	EM	10	3	2	2	2	325	7N	Good	Good	40>	No issues noted	A2	Retain and protect	3.9	47.8	
7843	Sycamore	EM	16	1	2	3	3	410	6S	Fair	Fair	20>	Crown biased west	B2	Retain and protect	4.92	76	
7844	Oak	EM	15	2	3	2	2	425	10 W	Good	Good	40>	Suppressed by neighbouring trees	A2	Retain and protect	5.1	81.7	
*Category		A – High Quality Life of 40yrs+			B - Moderate Quality 20yrs+			C - Low Quality 10yrs+			U – Poor Quality <10yrs			*Sub-Category		1 Arboricultural	2 Landscape	3 Cultural
*Age Class		Y Young			IMM Immature			SM Semi-mature			EM Early mature			M Mature				

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Planting Plans • House Buyer Reports**

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Tree No.	Species	*Age Class	Height (M)	Crown Spread (M)				D.B.H (MM)	First Branch (M)	Physiological Condition	Structural Condition	Est. Remaining Contribution	Comments	Category*	Recommendations	Radius of circle (M)	RPA (M ²)						
				N	E	S	W																
7845	Oak	EM	17	5	2	1	3	510	6N	Good	Good	40>	Suppressed by neighbouring trees	A2	Retain and protect	6.12	117.7						
7846	Oak	EM	17	7	4	1	2	490	6S	Good	Good	40>	Suppressed by neighbouring trees	A2	Retain and protect	5.88	108.6						
7847	Oak	EM	18	4	4	1	2	480	6N	Good	Good	40>	Suppressed by neighbouring trees	A2	Retain and protect	5.76	104.2						
7848	Sycamore	SM	10	3	4	1	1	220	4E	Good	Good	20>	Suppressed by neighbouring trees	C2	Retain if possible	2.64	21.9						
7849	Sycamore	M	20	4	5	3	3	560	12E	Good	Poor	<10	Significant cavity and basal decay south side	U	Not considered as a constraint to development	6.72	141.9						
7850	Maple	EM	12	1	1	1	1	310	3N	Poor	Poor	<10	In decline with approx. 50% of tree dead	U	Not considered as a constraint to development	3.72	43.5						
7851	Pine	EM	15	1	3	1	1	330	10S	Good	Fair	20>	Leans east	B2	Retain and protect	3.96	49.3						
*Category		A – High Quality Life of 40yrs+				B - Moderate Quality 20yrs+				C - Low Quality 10yrs+				U – Poor Quality <10yrs				*Sub-Category		1 Arboricultural	2 Landscape		3 Cultural
*Age Class		Y Young				IMM Immature				SM Semi-mature				EM Early mature				M Mature					

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Tree No.	Species	*Age Class	Height (M)	Crown Spread (M)				D.B.H (MM)	First Branch (M)	Physiological Condition	Structural Condition	Est. Remaining Contribution	Comments	Category*	Recommendations	Radius of circle (M)	RPA (M ²)	
				N	E	S	W											
W1	Mixed	EM	15	2	2	2	2	250	N/A	Poor	Good	40>	All measurements are an average. Predominantly ash, sycamore and pine. Ash dieback throughout woodland leaving dead trees adjacent to the highway	A 2/3	Remove the dead ash trees and inspect remainder for safety. Retain and protect	3	28.3	
W2	Mixed	M	20	4	4	4	4	500	N/A	Good	Good	40>	All measurements are an average. Occasional ash tree but woodland predominantly oak, sycamore and pine.	A 2/3	Remove dead pine stems along fence line and ash trees at stage 3 or greater Retain and protect	6	113.1	
*Category		A – High Quality Life of 40yrs+			B - Moderate Quality 20yrs+			C - Low Quality 10yrs+			U – Poor Quality <10yrs			*Sub-Category		1 Arboricultural	2 Landscape	3 Cultural
*Age Class		Y Young			IMM Immature			SM Semi-mature			EM Early mature			M Mature		OM Over mature		

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Appendix 3 – BS5837:2012 Cascade Chart for tree categorisation

BS5837:2012 Table 1 – Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	<ul style="list-style-type: none"> • Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see [BS5837:2012] 4.5.7.</i></p>			
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	

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**Tremeirchion Integrated
Constructed Wetlands Trial**

Tree Location Plan

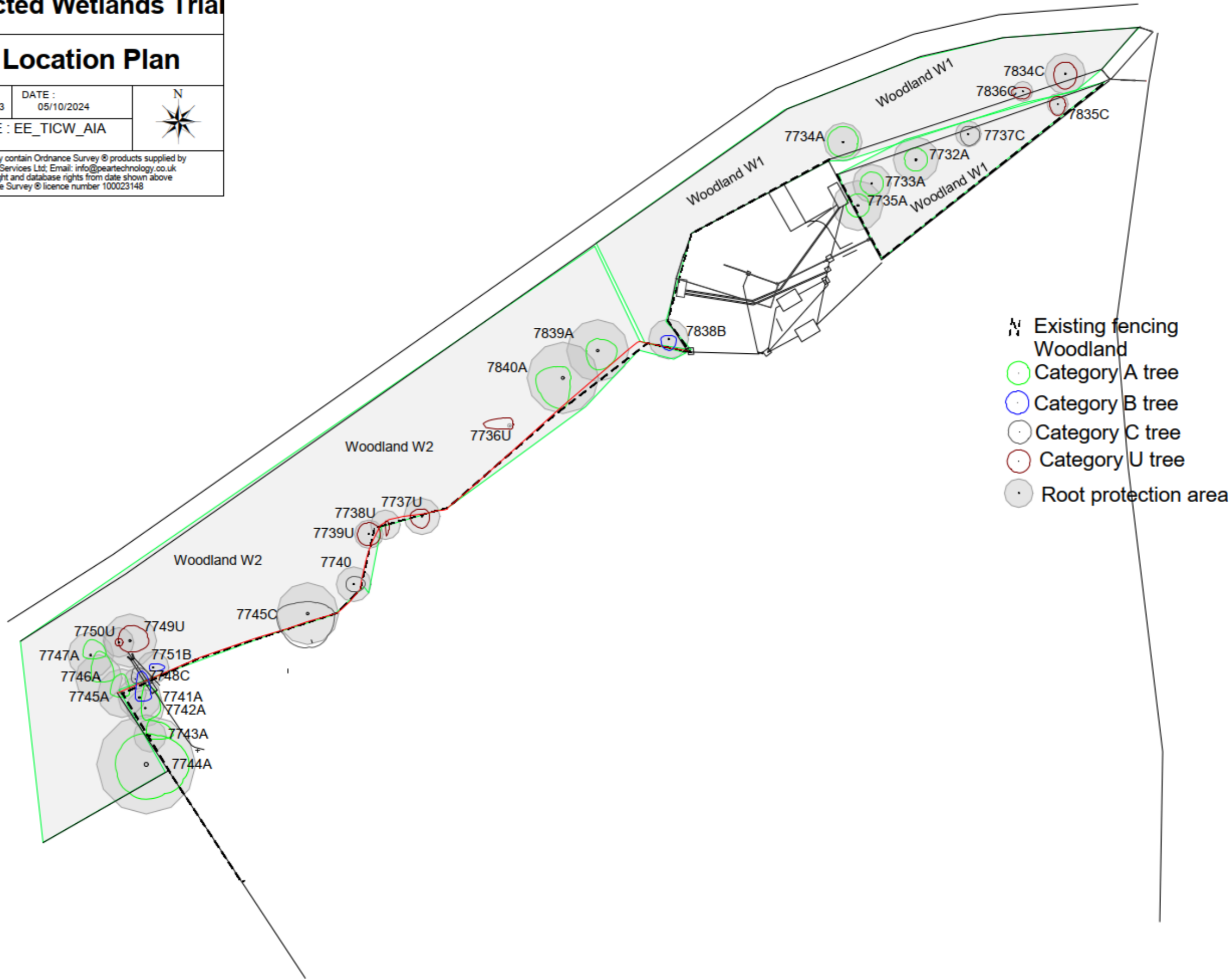
SCALE : 1 : 1000 @ A3

DATE : 05/10/2024



MAP FILENAME : EE_TICW_AIA

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**Tremeirchion Integrated
Constructed Wetlands Trial**

Tree Constraints Plan

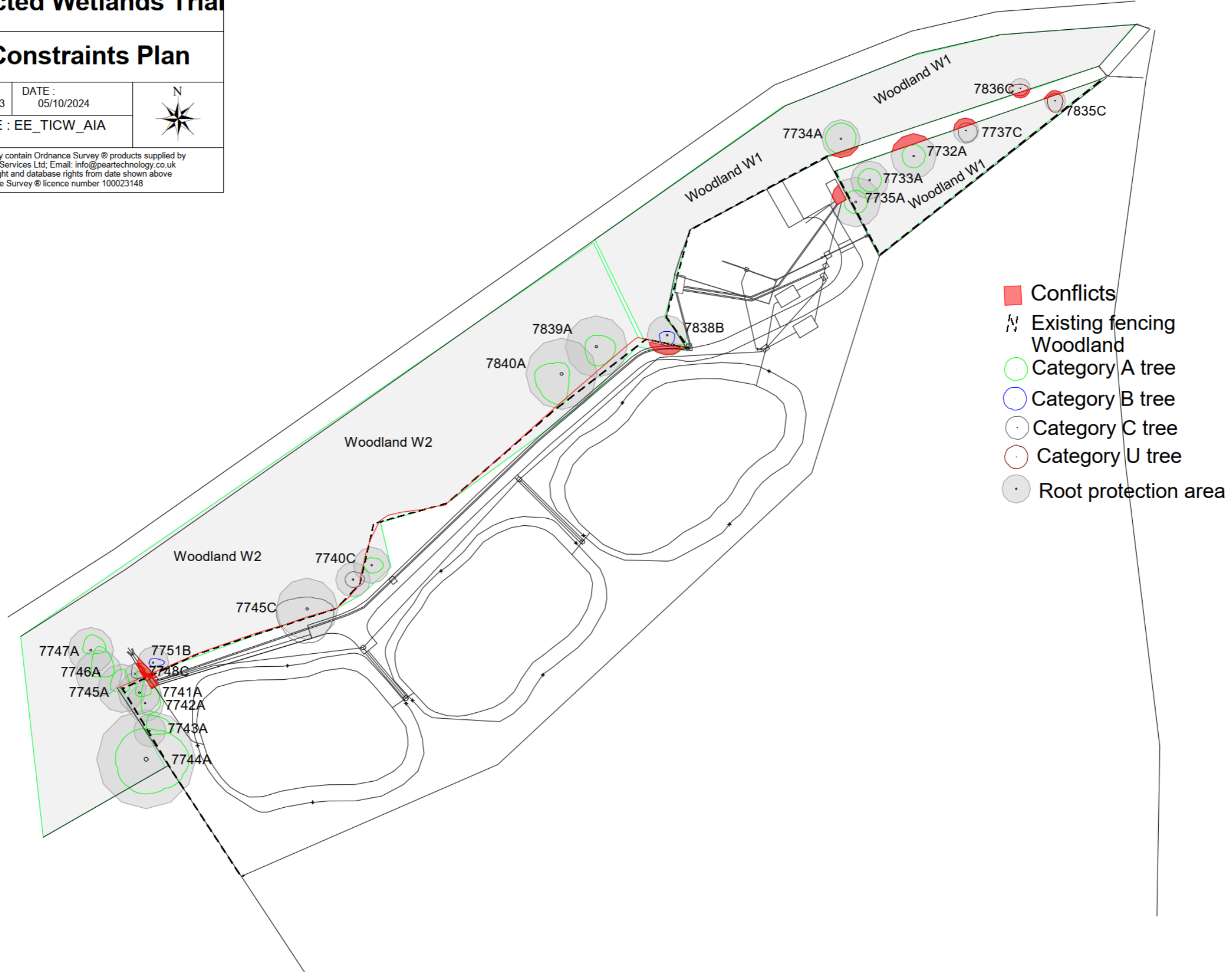
SCALE :
1 : 1000 @ A3

DATE :
05/10/2024



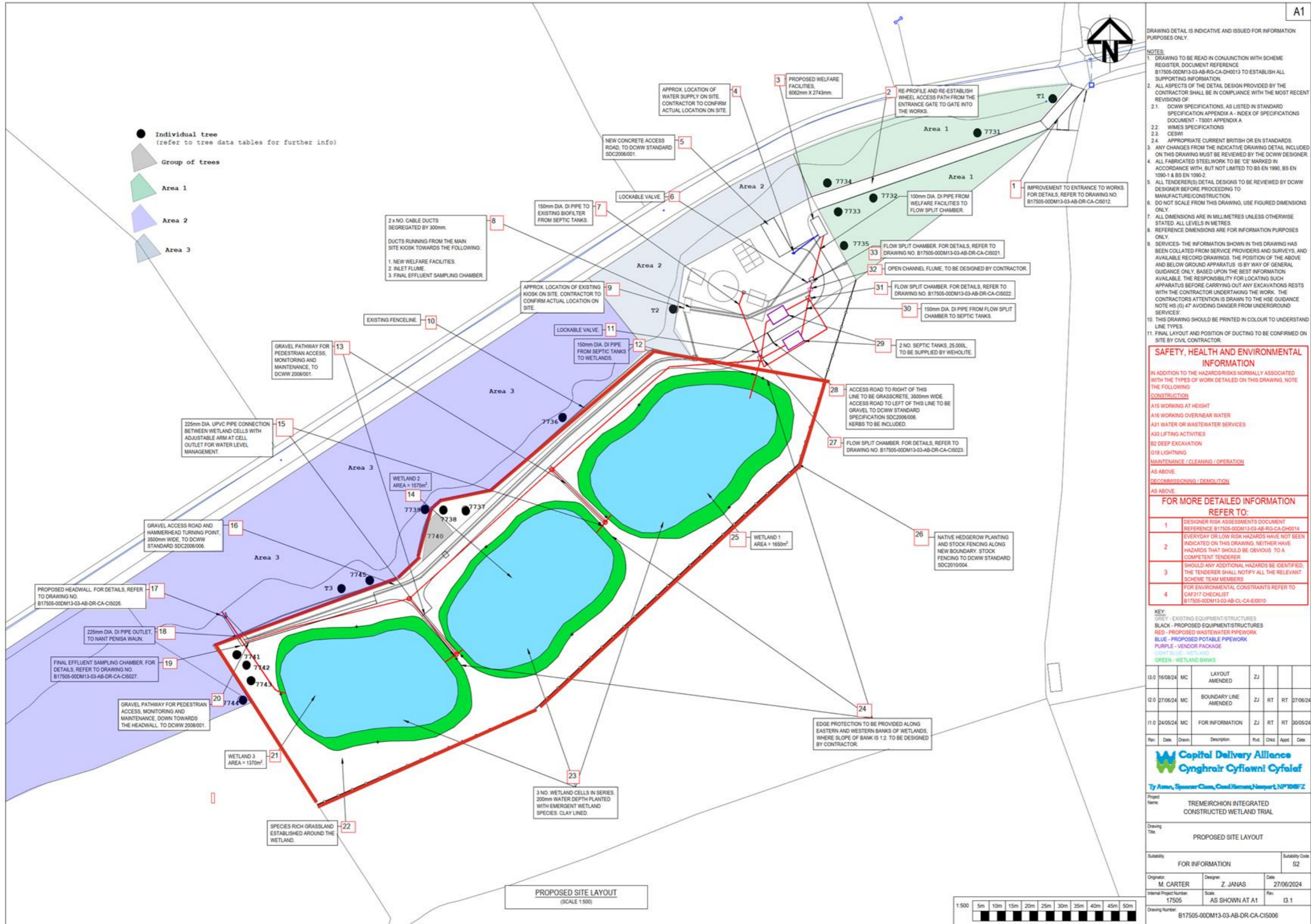
MAP FILENAME : EE_TICW_AIA

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- Conflicts
- Existing fencing
- Woodland
- Category A tree
- Category B tree
- Category C tree
- Category U tree
- Root protection area

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A1

DRAWING DETAIL IS INDICATIVE AND ISSUED FOR INFORMATION PURPOSES ONLY.

NOTES:

- DRAWING TO BE READ IN CONJUNCTION WITH SCHEME REGISTER, DOCUMENT REFERENCE B17505-00DM13-03-AB-RG-CA-DH013 TO ESTABLISH ALL SUPPORTING INFORMATION.
- ALL ASPECTS OF THE DETAIL DESIGN PROVIDED BY THE CONTRACTOR SHALL BE IN COMPLIANCE WITH THE MOST RECENT REVISIONS OF:
 - DCWW SPECIFICATIONS, AS LISTED IN STANDARD SPECIFICATION APPENDIX A - INDEX OF SPECIFICATIONS DOCUMENT - T5001 APPENDIX A
 - W8ES SPECIFICATIONS
 - CE5W
 - APPROPRIATE CURRENT BRITISH OR EN STANDARDS.
- ANY CHANGES FROM THE INDICATIVE DRAWING DETAIL INCLUDED ON THIS DRAWING MUST BE REVIEWED BY THE DCWW DESIGNER.
- ALL FABRICATED STEELWORK TO BE 'CE' MARKED IN ACCORDANCE WITH, BUT NOT LIMITED TO BS EN 1990, BS EN 1090-1 & BS EN 1090-2.
- ALL TENDER(S) DETAIL DESIGNS TO BE REVIEWED BY DCWW DESIGNER BEFORE PROCEEDING TO MANUFACTURE/CONSTRUCTION.
- DO NOT SCALE FROM THIS DRAWING, USE FIGURED DIMENSIONS ONLY.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED. ALL LEVELS IN METRES.
- REFERENCE DIMENSIONS ARE FOR INFORMATION PURPOSES ONLY.
- SERVICES - THE INFORMATION SHOWN IN THIS DRAWING HAS BEEN COLLATED FROM SERVICE PROVIDERS AND SURVEYS, AND AVAILABLE RECORD DRAWINGS. THE POSITION OF THE ABOVE AND BELOW GROUND APPARATUS IS BY WAY OF GENERAL GUIDANCE ONLY, BASED UPON THE BEST INFORMATION AVAILABLE. THE RESPONSIBILITY FOR LOCATING SUCH APPARATUS BEFORE CARRYING OUT ANY EXCAVATIONS RESTS WITH THE CONTRACTOR UNDERTAKING THE WORK. THE CONTRACTOR'S ATTENTION IS DRAWN TO THE HSE GUIDANCE NOTE HS (G) 47 AVOIDING DANGER FROM UNDERGROUND SERVICES.
- THIS DRAWING SHOULD BE PRINTED IN COLOUR TO UNDERSTAND LINE TYPES.
- FINAL LAYOUT AND POSITION OF DUCTING TO BE CONFIRMED ON SITE BY CIVIL CONTRACTOR.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING:

CONSTRUCTION

- A15 WORKING AT HEIGHT
- A16 WORKING OVERNEAR WATER
- A31 WATER OR WASTEWATER SERVICES
- A33 LIFTING ACTIVITIES
- B2 DEEP EXCAVATION
- G18 LIGHTNING

MAINTENANCE / CLEANING / OPERATION

AS ABOVE

DECOMMISSIONING / DEMOLITION

AS ABOVE

FOR MORE DETAILED INFORMATION REFER TO:

1	DESIGNER RISK ASSESSMENTS DOCUMENT REFERENCE B17505-00DM13-03-AB-RG-CA-DH014
2	EVERYDAY OR LOW RISK HAZARDS HAVE NOT BEEN INDICATED ON THIS DRAWING. NEITHER HAVE HAZARDS THAT SHOULD BE OBVIOUS TO A COMPETENT TENDERER
3	SHOULD ANY ADDITIONAL HAZARDS BE IDENTIFIED, THE TENDERER SHALL NOTIFY ALL THE RELEVANT SCHEME TEAM MEMBERS
4	FOR ENVIRONMENTAL CONSTRAINTS REFER TO CAF317 CHECKLIST B17505-00DM13-03-AB-CL-CA-E0010

KEY:

- GREY - EXISTING EQUIPMENT/STRUCTURES
- BLACK - PROPOSED EQUIPMENT/STRUCTURES
- RED - PROPOSED WASTEWATER PIPEWORK
- BLUE - PROPOSED POTABLE PIPEWORK
- PURPLE - VENDOR PACKAGE
- LIGHT BLUE - WETLAND
- GREEN - WETLAND BANKS

13.0	16/08/24	MC	LAYOUT AMENDED	ZJ			
12.0	27/06/24	MC	BOUNDARY LINE AMENDED	ZJ	RT	RT	27/06/24
11.0	24/05/24	MC	FOR INFORMATION	ZJ	RT	RT	30/05/24

Rev.	Date	Drawn	Description	Rev.	Chk.	Appr.	Date

Capital Delivery Alliance
Cynghair Cytfaeni Cymalaf

Ty Arian, Sponser Cwm, Cwmll, Hecwm, Nant, NP198FZ

Project Name: TREMEIRCHION INTEGRATED CONSTRUCTED WETLAND TRIAL

Drawing Title: PROPOSED SITE LAYOUT

Subsidiary: FOR INFORMATION Subsidiary Code: S2

Originator:	M. CARTER	Designer:	Z. JANAS	Date:	27/06/2024
Internal Project Number:	17505	Scale:	AS SHOWN AT A1	Rev.:	13.1

Drawing Number: B17505-00DM13-03-AB-DR-CA-C15006

PROPOSED SITE LAYOUT (SCALE 1:500)

EDGE PROTECTION TO BE PROVIDED ALONG EASTERN AND WESTERN BANKS OF WETLANDS, WHERE SLOPE OF BANK IS 1:2. TO BE DESIGNED BY CONTRACTOR.



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Appendix 7 - Images



Access through woodland W1 proposed for resurfacing



Trees 7741 - 7744



Tree 7745 proposed for removal

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Area for the proposed headwall



Area for the proposed access road and path



Trees 7741 – 7744 centre with area proposed for headwall to the right of image

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Appendix 8 - Credentials of the arboriculturist

This report was prepared by Matt Bardsley who holds the following qualifications and accreditations: -

Chartered Arboriculturist with Institute of Chartered Foresters

Professional member of the Arboricultural Association (PR5720)

HND Arboriculture & Woodland Management

Royal Forestry Society Certificate in Arboriculture

Lantra Professional Tree Inspection Qualification

Lantra Instructor Qualification



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Appendix 9 - Bibliography

A Guide to Good Practice: the use of cellular confinement systems close to trees, The Arboricultural Association

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Geo-tech Tree Root Protection System, geo-tech.co.uk

Hilliers Manual of Trees and Shrubs, 3rd Edition, Thomas Hillier & Son

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The consultants guide to writing effective reports, The American Society of Consulting Arborists

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