FEENEY WOODLANDS

Arboriculture | Land Management | Forestry

Tree Survey Report to BS5837:2012

Site: Felin Puleston Weir, Wrexham
Prepared for: Welsh Dee Trust – Chris Meredith
Prepared by: Kevin Feeney (Director Feeney Woodlands Ltd)

Field survey date: 06/01/2025
Report completion date: 19/02/2025

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Summary

Feeney Woodlands Ltd was commissioned by Chris Meredith of Dee Rivers Trust to provide an arboricultural report in accordance with BS 5837:2012 "Trees in relation to design, demolition and construction - Recommendations" for the proposed of a river restoration project to remove Felin Puleston Weir within National Trusts Erddig Parkland.

This report has been commission to answer

Arboricultural Report

1 Introduction

1.1 Feeney Woodlands Ltd have been instructed by Dee Rivers Trust to provide arboriculture report to meet the requirements of a planning decision notice issued by Wrexham County Borough Council on 15/10/2024 to meet the requirements of decision note 6 below. Note that an arboricultural survey was carried out by Arbtech Ltd dated 16 June 2023 providing tree categorization this report will provide an Arboricultural Method Statement and Protection measures.

> 6. Reference Decision Date P/2024/0266 15/10/2024 No development shall take place until an Arboricultural Method Statement has been submitted to and approved in writing by the Local Planning Authority. No development or other operations shall take place except in strict accordance with Method Statement as is approved. The Method Statement shall include the following:
>
> 1) A specification for tree protection fencing and ground protection measures that comply with British Standard 5837:2012;
>
> 2) A Tree Protection Plan showing the location of the trees to be removed and retained with their crown spreads, Root Protection Areas, Construction Exclusion Zones, and location of protective fencing and ground protection measures accurately plotted;
>
> 3) A full specification for any access, driveway, path, underground services or wall foundations within retained tree Root Protection Areas or Construction Exclusion Zone , including any related sections and method for avoiding damage to retained trees;
>
> 4) Details of general arboricultural matters including proposed practices with regards to cement mixing, material storage and fires;
>
> 5) Details of the frequency of supervisory visits and procedures for notifying the findings of such visits to the Local Planning Authority;

6) Method for protecting retained trees during demolition works;

7) Details of all proposed tree works, including felling and pruning.

1.2 Proposed scheme

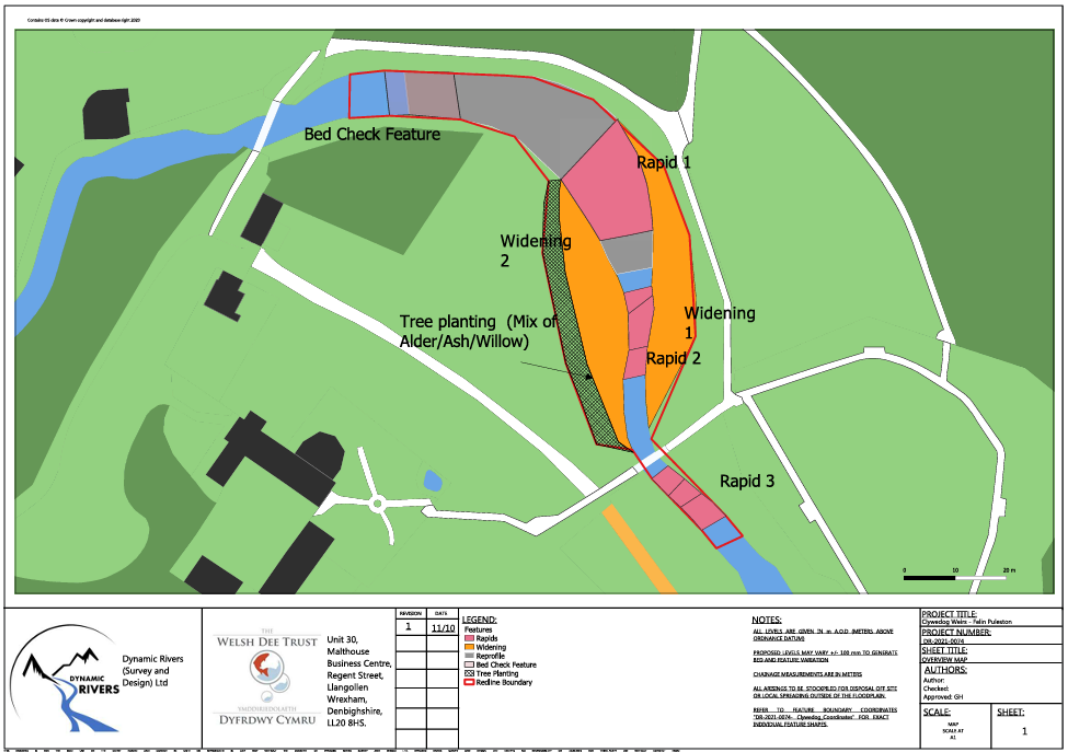


Figure 1: Clywedog Weir – Felin Puleston Design drawing provided by Welsh Dee Trust and designed by Dynamic Rivers.

1.3 The scheme involves removal of Felinm Puleston Weir which is a concrete structure within the body of the river and is supported on the river bank edges by stone gabions. The project with have arboricultural implications as the section of river in Figure 1 contains trees which will need to be removed for the landscaping of the area and for the access of large machinery to remove the weir.

1.4 Following an initial site visit, tree survey and discussion period, the following arboricultural information is provided in support of the application.

- Schedule of trees
- Tree Survey Plan
- Method statement and tree protection details
- Tree protection plan
- Photographic record

2 Limitations & Methodology

2.1 The survey is concerned with the arboricultural aspects of the site only. The trees on site have been surveyed and classified in accordance with BS 5837:2012 "Trees in relation to design, demolition and construction - Recommendations".

2.2 The survey was undertaken using the Visual Tree Assessment (VTA) methodology to conduct a preliminary assessment of the above ground portion of the tree.

2.3 Trees are large dynamic organisms whose health and condition can change rapidly, therefore due to the changing nature of trees and other site considerations, this report and any recommendations made are only valid for the 12 month period following the site survey.

Third Party Liability

2.4 The limit of Feeney Woodlands Ltd indemnity over any matter arising out of this report extends only to the instructing client. Feeney Woodlands Ltd cannot be held liable for any third party claim that arises following this report.

Survey Method

2.5 The survey was undertaken from ground level with the aid of binoculars where necessary.

2.6 No aerial inspection nor invasive probing or drilling has been undertaken. No excavations were carried out nor soil or root samples taken.

2.7 The height of each subject tree was estimated.

2.8 The canopy spread of each subject tree was measured on four compass points using measuring tape.

2.9 The locations of the trees have been taken from the Topographical Survey drawing which locates the GPS position of each tree on site. The locations were visually verified during our visit and it is confirmed their positions appear to be accurate.

2.10 The information contained within the schedule of trees includes the following for each surveyed tree:

1. **Tree reference number**
2. **Species** have been given their common and botanical name where specifically known
3. **Height** measured in meters using a clinometer
4. **Stem diameter** have been calculated by measuring the circumference at a height of 1.2m from ground level to determine the diameter
5. **Crown spread** the circles indicated on the tree survey plan are a representation of the overall spread of the crown.
6. **Height of crown clearance** given in meters above adjacent ground level
7. **Age class** young (YNG) up to 10 years, semi-mature (SM) 1/3 life expectancy, early mature (EM) 2/3 life expectancy, mature (M) over 2/3 life expectancy, over mature (OM) declining/moribund, veteran (V) exceptionally old tree at the end of its life.
8. **Condition & Comments** good (G) sound tree needing little or no attention, fair (F) minor but rectifiable defects, poor (P) major structural and/or physiological defects that would be inappropriate to retain and/or expensive, dead (D) no longer alive or those dying and unlikely to recover. General
9. **Estimated remaining contribution** in years eg less than 10, 10-20, 20-40, over 40
10. **Category grading** have been given a grade to classify the quality of each tree based on the Condition Classes and subcategories given overleaf
11. **RPA** Protective measures as per BS 5837 section 4.6 which states that an area based on a radius equal to 12 times the stem diameter should be protected against damage to roots k RPA) given in m^2. A radius has also been given shown around each tree on the drawing.

2.11 Category grading for the assessment of tree quality (in accordance with Table 1 "Cascade chart for tree quality assessment" within BS 5837:2012) is described below:

U Trees unsuitable for retention - Those in such a condition that they cannot be realistically be retained as living trees in the context of the current land use for longer than 10 years

A Trees of high quality - With an estimated remaining life expectancy of at least 40 years

B Trees of moderate quality - With an estimated remaining life expectancy of at least 20 years

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

2.12 Subcategories grading for the assessment of tree quality (in accordance with Table 1 "Cascade chart for tree quality assessment" within BS 5837:2012) is described below:

1 Mainly arboricultural qualities - Trees that are a particularly good example of their species, especially if rare or unusual

2 Mainly landscape qualities - Trees, groups or woodlands of particular visual as arboricultural and/or landscape features

3 Mainly cultural values, including conservation - Trees, groups or woodlands of significant conservation, historical, commemorative or other value eg veteran trees or wood-pasture

For full description of subcategories, refer to Table 1, page 9 of BS 5837:2012

3 Project Requirements & Site Overview

The Site

3.1 The River Clewedog runs through the center of the site, Puleston Weir is an obstacle within the center of the weir of conservation concern. The removal aims to re-naturalize the river and remove obstacles to migratory fish passage.

3.2 The project aims to remove the weir which consists of a concrete dam and steel caged stone gabions along the banks of the river. The process of removal will also landscape the banks where gabions are removed and add stone

Proposed Development

3.3 The proposal is for the removal of Puleston Weir and landscape of river edge.

4 Baseline Factors

Tree Preservation Orders (TPO) or Conservation Area (CA) Designation

4.1 The site falls within the planning jurisdiction of Wrexham and has a Conservation Area designation for the property and garden.

Existing Trees on Site

4.2 Sixteen trees or groups of trees are present on site including including individual trees and clusters of planted woodland. Woodland is likely planted bankside to reduce erosion and increase aesthetic nature of the site however the majority of these are dense and ideal for thinning.

4.3 Ash dieback is likely present on site within Ash trees which are exhibiting symptoms.

4.4 Several trees are rooted into the banks of the river and have undermining of root plates visible.

4.5 No significant or high value trees existing on site.

Summary of Significance of Site Tree Cover

4.6 The existing site tree cover is summarised as follows:

BS:5837 Category	Number of Trees/groups	% of total tree cover
A	0	0%
B	11	68%
C	5	32%
U	0	0%
Total	16	100%

4.7 The above table includes one category B tree which by definition are trees of moderate quality with a greater than 20 year life expectancy. Category C trees which has minor defects and an expectancy of less than 10 years.

Root Protection Area (RPA)

4 The Root Protection Areas (RPA's) have been calculated in accordance with BS5837 and are detailed in the Tree Schedule located in Appendix A of this report. Where ground constraints have had, or are likely to have, an effect on tree root development, for example, where level changes or changes in rooting medium (heavily compacted ground, areas of hard standing etc) have influenced tree root growth, RPA has been adjusted accordingly.

4.5 Detailed analysis of the ground conditions have not been carried out and further limitation of the RPA formula are present on site due to the presence of a river altering the water table, compaction levels and bankside undercutting of tree roots.

5 Tree Protection Measures

5.1 Avoid stacking any material within root protection area of retained trees. Use of fencing to prevent this.

5.2 Protect retained tree stems from mechanical damage. Use of fencing to prevent this.

5.3 Use of a defined vehicle/machinery access route. Signage present on site and on site induction to all operators, contractors and staff working on site to be included in RAMS.

6 Mitigating Tree Loss & New Tree Planting

6.1 New tree planting is planned on site which will include broadleaf native saplings suitable for riparian zones.

7 Post Development Pressure

7.1 The proposed construction activities on site will not have a significant impact on the local tree population however restocking is planned within the restoration project plan.

8 Conclusions

8.1 Trees to be removed and retained as follows;

	Tree ID	Summary of actions
Trees to be removed	**G03, T02, G02, T07, T08**	**Fell to ground level and remove.**
Groups for partial removal	**G01, G04**	**Partial removal to southern end of group. Protective fencing to define retained tree line.**
Trees to be retained with protection	**T01, T06, T05, T04**	**Protective fencing, defined access route for machinery.**
Trees to be retained no protection	**T11, T10, T09**	**Defined access route for machinery.**
Total trees removed	**3 trees and two groups**	
Total trees retained	**7 trees 75% retention of two groups.**	

8.2 32m of protection fencing is required for retained trees.

8.3 A defined access route will need to be signposted on site.

9 Recommendations

9.1 The tree protection measures given in section 6 above should be applied to all existing trees to be retained.

9.2 The development should be carried out in the following order:

1. Tree removal by qualified tree surgeon in a controlled and methodical manor
2. Tree protection fencing installed and evidenced.
3. Development of site

9.3 All tree work should preferably be undertaken by trained and competent personnel to current Industry standards and guidance, including full Health & Safety Risk Assessment during the removal of existing trees to safeguard the general public and site operatives alike.

Signed for and on behalf of Feeney Woodlands Ltd

Kevin Feeney (Director Feeney Woodlands Ltd.) BSC (Hons.)

Date: 19/02/2025

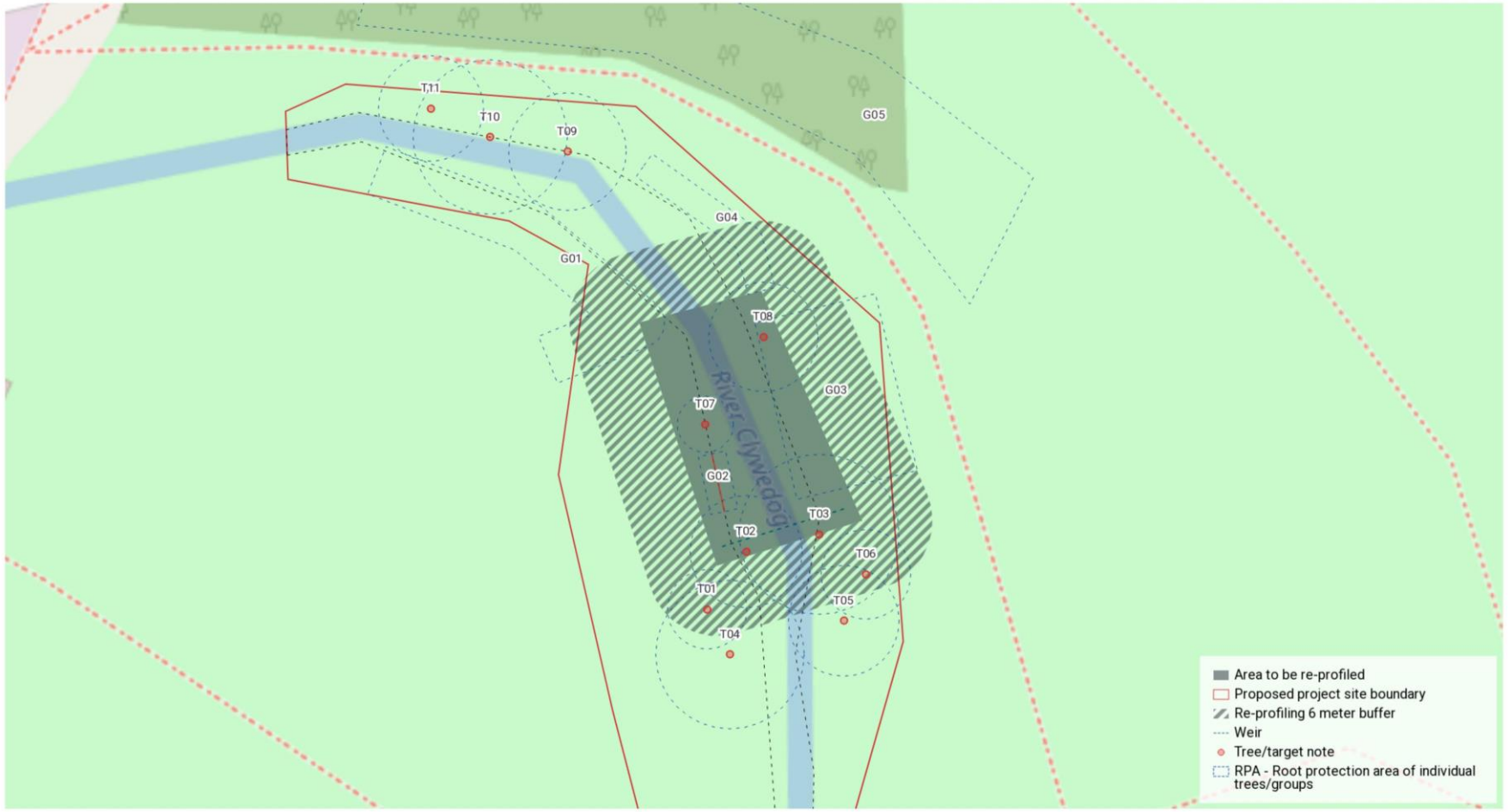
Appendix A -

Schedule of Trees

Tree ID	Species	Height (m)	Stem diameter (m)	Branch spread				Crown clearance (m)	Age class	Phys Condition	Description/ recommendations	Category grading	RPA radius (m)
				N	S	E	W						
G01	Various – bankside Alder, Willow, Hazel, Sycamore and Hawthorn.	10	0.18	2	2	2	2	1	SM	Good	Tall and slender forms due to dense planting and competition. .	**C.2**	2.16
G02	Crack Willow (*S.fraglilis*)	8	0.1	2	2	2	2	0	SM	Good	No notable features.	**C.2**	1.19
G03	Various – Sweet Chestnut, Lime sp', Hawthorn, Sycamore.	10	0.45	4	4	4	4	0	M	Good	Set back from weir next to public right of way. .	**B.2**	5.39
G04	Various – Field Maple, Ash and Sycamore	6	0.1	1	1	1	1	0	SM	Fair	Ash displaying early Ash Dieback symptoms with increasing deadwood.	**C.2**	1.19
T05	Lime *(Tilia sp')*	10	0.4	1	3	3	4	4	SM	Good	Multistemmed and suppressed by neighboring tree.	**B.2**	4.73
T06	Oak (*Q.robur)*	8	0.32	0.5	4	3	1	2	SM	Fair	Suppressed by neighboring tree, wounds on main stem and increasing deadwood in canopy.	B.2	3.83

T07	Common Alder (*A.glutinosa)*	8	0.2	3	3	3	3	0	SM	Good	None	B.2	2.4
T08	Hawthorn (*C.monogyna)*	5	0.4	3	3	3	3	0	M	Good	Adjacent to public right of way.	B.2	4.68
T09	Sycamore (*A.pseudoplatanus)*	12	0.42	5	5	5	5	5	M	Good	Growing on bank of river with undermining of buttress visible, dense basal growth and ivy on stem. Potential for failure into river.	B.2	5
G05	Various – Beech, Ash, Sycamore, Hawthorn, Field Maple, Sweet Chestnut.	16	0.55	4	4	4	4	2	M	Good	Area of woodland to east of site bordering river. Ash displaying early signs of Ash dieback with increasing deadwood.	B.1	6.6
T01	Crack Willow (*S.fragilis)*	8	0.28	3	3	3	3	2	SM	Good	Twin stemmed from base, rooted into bank of river.	C.2	3.39
T02	Sycamore *(A.pseudoplatanus)*	8	0.4	4	4	2	4	2	SM	Fair	Large cavity on main stem with internal rot visible. Lean also present on stem. Deadwood present within crown.	B.2	4.8
T03	Lime (Tilia sp')	14	0.6	6.5	4	6	4	1	M	Good	Dominant tree within work area suppressing growth of several other trees. Exposed roots due to soil runoff which is minimal.	B.2	6.84
T04	Common Alder (*A.glutinosa)*	8	0.55	4	3	3	3	1	SM	Good	Multi stemmed from base.	C.2	6.35
T10	Sycamore *(A.pseudoplatanus)*	12	0.55	6	5	5	5	2	M	Good	Growing next to weir with significant undermining of root plate.	B.2	6.6
T11	Sycamore *(A.pseudoplatanus)*	12	0.38	4	5	4	4	5	SM	Good	Growing next to weir with undermining of root plate.	B.2	4.5

Appendix B - Tree Survey Plan



Produced on Land App, Feb 19, 2025.
© OpenStreetMap contributors

10 m
Scale 1:449 (at A4)

N

Appendix C – Arboricultural Method Statement

Outline Method Statement for Tree Protection Throughout the Development & Construction Period

The following Outline Arboricultural Method Statement (AMS) includes a Tree Protection Plan (TPP) which identifies:

- Trees to be removed and retained with description
- Construction Exclusion Zones (CEZ)

1.1 Trees to be removed and retained with summary of actions.

	Tree ID	Summary of actions
Trees to be removed	**G03, T02, G02, T07, T08**	**Fell to ground level and remove.**
Groups for partial removal	**G01, G04**	**Partial removal to southern end of group. Protective fencing to define retained tree line.**
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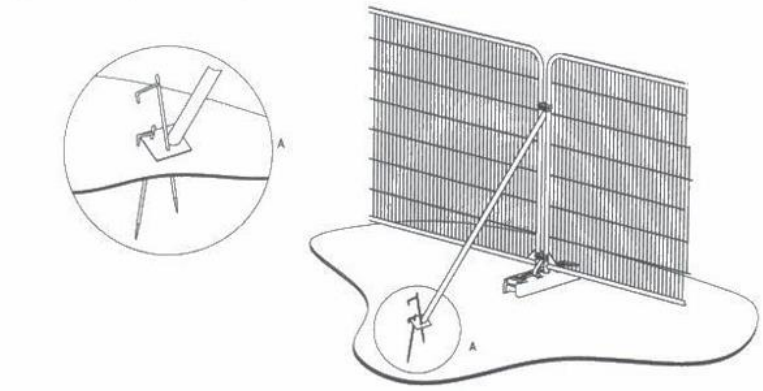
1.2 Construction Exclusion Zone

1.3 Zone defined by protective fencing and defined access route for machinery.

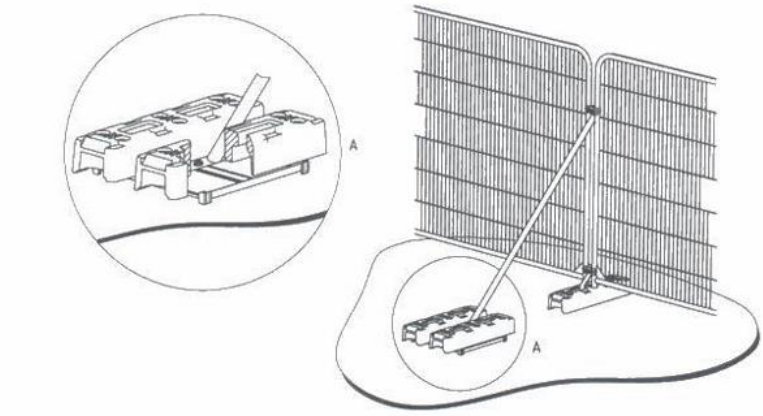
2 Protective Fencing

2.1 To be installed on retained trees in locations defined in Appendix 3 – Tree Protection Plan to the below specification.

Figure 3 **Examples of above-ground stabilizing systems**



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

2.2

3 Precautions in respect of Temporary Works

3.1 If temporary access is required to an RPA then access may only be gained after consultation with the Local Planning Authority and following placement of materials such as concrete slabs or geo-textile fabrics that will spread the weight of any vehicular load and prevent compaction to the soil. For pedestrian movements within any RPA then a single thickness scaffold board on top of a compressible layer laid onto a geotextile fabric may be acceptable.

4 4.0 **Access Details**

4.1 A defined access route for machinery and vehicle movements is available within Appendix D – Tree Protection Plan. This route utilizes existing hard standing paths and avoids the root protection areas of retained trees.

5 **Contractors Car Parking**

5.1 Parking in publicly accessible Ruabon Road car park less than 500m from the work site.

5.2 For vehicles used within the work area parking should be on the existing hard standing path outside of RPAs.

6 **Site Huts and Toilets**

6.1 Not applicable.

7 **Storage Space**

7.1 The movement of materials is expected on site including stone and metal gabions. These should be move and stored outside of the RPA of any trees.

8 **Additional Precautions**

8.1 No services should be planned to be installed within any RPA

8.2 No storage of materials or lighting of fires should take place within the RPA. No mixing or storage of materials should take place up a slope where they may leak into a RPA.

8.3 No fires to be lit within 20 metres of any tree stem and the fire size and wind direction should be taken into account so that, no flames come within 5.0m of any foliage.

8.4 No high-sided vehicles or cranes should access the site close to any trees to be retained and should not come into contact with any branches or travel within the RPA

8.5 No notice boards, cables or other services to be attached to any tree.

8.6 Materials which may contaminate the soil should not be discharged within 10m of any tree stem. When undertaking the mixing of materials It Is essential that any slope of the ground does not allow contaminates to run towards a tree root area.

9 **Site Gradients**

9.1 No alterations of soil levels to take place within the RPA of any retained trees.

10 **Demolition Works**

10.1 No demolition works to take place with the RPA of the retained trees.

11 **Hard Surfaces**

11.1 A three meter wide access road is present within the work area with a gravel and membrane construction which is historical and well walked by the public. Movement of materials and machinery should be kept to this road.

12 **Soft landscaping**

12.1 New planting is planned however is designed outside of the RPAs of retained trees.

2 **Use of Herbicides**

2.1 No herbicide use is predicted, however if used, it should be done so in strict accordance with the manufacturer's instructions and contact with any tree foliage should be avoided.

3 **On Site Monitoring Regime**

3.1 All operations to be monitored by the main contractor. The site manager shall contact the appointed specialist if there is a breach of the RPA and tree protection measures. The appointed specialist shall recommend an action plan to incorporate mitigation measures where necessary.

4 Contingency Plan

4.1 Water should be readily available on site to be used to flush spilt materials through the soil and avoid contamination to tree roots. Due to the presence of a river spill kit bunding should be available and used to prevent contamination of washed areas with the main river. At the time of any spillage the main contractor needs to contact an appointed specialist for advice.

5 Remedial Tree Works

5.1 Any recommended tree works should be undertaken prior to the commencement of construction activities. All tree works are to be carried out In accordance with BS3998 British Standard Tree Work - Recommendations 2010.

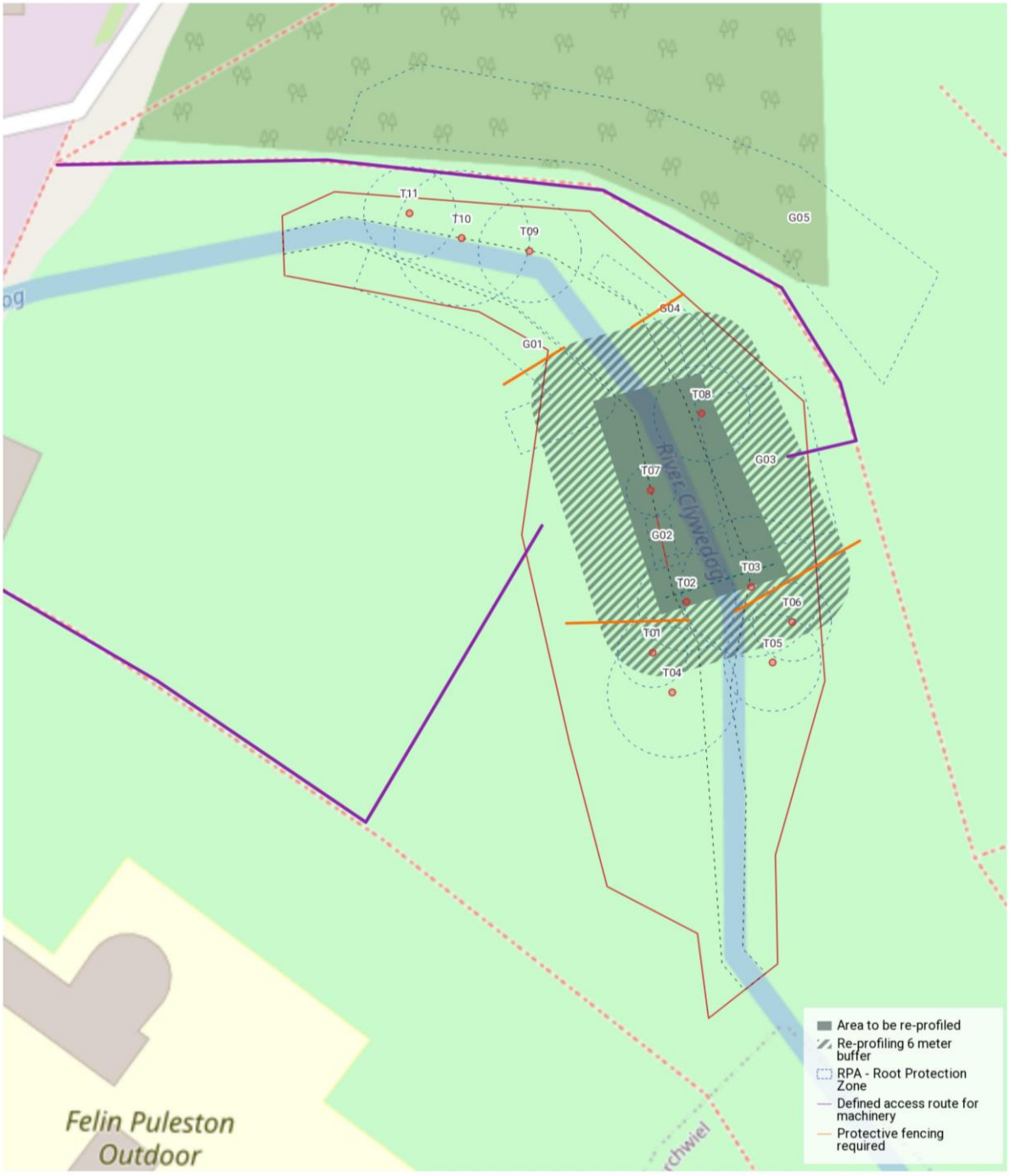
5.2 If wood chip is to be retained on site then should be done so outside of any RPAs of retained trees and to a distance of 10m from the watercourse.

6 Responsibilities

6.1 It will be the responsibility of the main contractor to ensure that the planning conditions are adhered to at all times and that a monitoring regime in regards to tree protection is adopted on site.

6.2 Evidence and supervisory considerations – actions from this report should be implemented on site ahead of works commencing, evidenced through photographs are to be provided in email format to the local council.

Appendix D - Tree Protection Plan



Appendix E Photographic Record



Area to be re-profiled.



T02 and T03 to be removed.



G01 left of photograph to be partially removed. T08 right.



G03 to be removed, marker canes indicate extent of gabions within RPA