



## **ArbTS - Arboricultural Technician Services**

(Tree Consultancy Services)

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# **Arboricultural Report**

Including:

Tree Protection Plan and Arboricultural Method Statement

To the British Standard 5837:2012  
*(Trees in relation to design, demolition*  
*and construction. Recommendations)*

Date – 5<sup>th</sup> May 2017

Site – Land off AlltyGrugFarmRoad, Ystalyfera

Project Reference – ArbTS\_320.3

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## 1.0 Introduction

- 1.1 The purpose of this report is to provide details regarding the protection of retained trees during construction work at Land off AlltyGrugFarmRoad, Ystalyfera. This report is to be read in conjunction with tree report project reference ArbTS\_303.1\_AlltyGrugFarmRoad.

## 2.0 Arboricultural Method Statement

- 2.1 The Tree Protection Plan to facilitate the construction of the development design can be found in Appendix 1 of this report. The Tree Protection Plan must comply with all of the following:
- Be regarded as sacrosanct and follow the sequence of events as detailed in the table below
  - Be installed before commencement of any demolishing or construction works on site
  - Must not be removed or altered without prior approval of the local planning authority
- 2.2 The following table below provides a detail sequence of events that must occur in order to ensure the protection of the retained trees during all stages of the construction process. These methods must be clearly communicated to the entire construction team prior to commencement of any work on site.

| Stage                                                                                                                        | Arboricultural Method Statement (In sequence of events)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1.) Preconstruction</b><br>(Prior to any construction work on site including demolition work, site material storage etc.) | <b>1.1 – Design</b> areas for <b>construction site storage</b> by site supervisor and the appointed Arboriculturist.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                              | <b>1.2 – Design</b> position, form and construction methods of <b>all utility services</b> with Arboricultural consideration. All underground service designs <b>MUST</b> conform to the NJUG Volume 4 Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees. The full document is available at <a href="http://www.njug.org.uk/">http://www.njug.org.uk/</a> . Local Planning Authority to be consulted on utility service design details and if satisfied to be approved in writing prior to installation during the construction phase. |
|                                                                                                                              | <b>1.3– Tree surgery work – Felling of 5 trees to one metre high stump (TreeID# 567 – 571)</b> to be carried out as detailed on the Tree Protection Plan (Appendix 1) of this report and to the <i>British Standard:3998:2010: Recommendation for tree works</i> .                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                              | <b>1.4 – Tree protective fencing/Temporary and permanent ground protection</b> installed in the positions as detailed in the Tree Protection Plan (Appendix - 1). Installation to be supervised by the appointed Arboriculturist. All weather tree construction exclusion zone posters to be secured to fencing.                                                                                                                                                                                                                                                                          |
|                                                                                                                              | <b>1.5 – Site storage area containers</b> etc. installed as designed and supervised by site supervisor and the appointed Arboriculturist.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                              | <b>1.6 – Appointed Arboriculturist to document</b> all tree protection methods in situ and photographs taken for reference purposes. Copy of document report sent to all parties. Any required preconstruction tree protection planning conditions to be discharged.                                                                                                                                                                                                                                                                                                                      |

|                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2.) Construction</b>                                                                                                 | <b>2.1 – Site supervisor</b> to be <b>briefed</b> by the appointed Arboriculturist regarding the Tree Protection Plan/Methods and a laminated copy of the plan/methods to be secured onto the wall in the site supervisor's office. Contact details of the appointed Arboriculturist, Council's Tree Officer to be included. Emphasis made to site supervisor on the importance of the Tree Protection Plan/Methods and possible planning enforcement action (Stop Notice) and/or legal action of noncompliance with these tree protection methods.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                         | <b>2.2 – All contractors</b> to be <b>briefed</b> by site supervisor and/or the appointed Arboriculturist regarding the tree protection plan and methods before starting work on site. Emphasis made to contractors on the importance of the Tree Protection Plan/Methods and possible planning enforcement action (Stop Notice) and/or legal action of noncompliance with these tree protection methods.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                                                                         | <p><b>2.3 – Excavation work</b> to be carried out within RPA. This work to be carried out with the use of hand tools, air spade and possible use of a small excavator (no greater than 1000kg) with a toothless bucket under the constant supervision of the appointed Arboriculturist. Any roots discovered less than 25mm in diameter to be pruned cleanly with securer or pruning saw. Careful excavation working method as follows:</p> <ul style="list-style-type: none"> <li>• Digging started from outside of the Root Protection Area towards the retained tree.</li> <li>• No roots found to be ripped, pulled or crushed during excavation</li> <li>• Any exposed roots to be covered with wet Hessian material</li> <li>• Any roots less than 25mm in diameter to be cut with a sharp knife/ secateurs covered with wet Hessian material</li> <li>• If any roots greater than 25mm in diameter are discovered Arboriculturist to instruct further action. Innovative engineer methods will be sort to retain these roots.</li> </ul> <p>Immediately after excavation work has been carried out area to be covered with permeable surfacing.</p> |
|                                                                                                                         | <b>2.4 – Construction phase begins</b> with regular <b>site inspection visits</b> from the appointed Arboriculturist (Once per month for the full duration) to ensure all tree protection methods are being adhered to. Arboriculturist to document findings from the site visits including any issues identified, how to resolve and photographic evidence. Document report to be sent to all parties within 1 week after the site visit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                         | <p><b>2.5 - Tree Safe Construction</b> (Throughout Site) – areas outside of the construction exclusion zones as shown on the tree protection plan must adhere to the following:</p> <ul style="list-style-type: none"> <li>• Building materials and fuels such as oil, bitumen or cement should not be stacked or discharged within 20 metres of the trees stem.</li> <li>• Fires will not be lit beneath any tree or in a place where flames could extend to within 10 metres of the tree.</li> <li>• Trees that are to be retained and be protected should not be used as anchorage for services or equipment.</li> <li>• The use of cranes and large machinery on site should be planned and care taken not to damage the trees during the process.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                                                                         | <b>2.6– Unforeseen issues</b> which require the alteration of the Tree Protection Plan/Methods, required tree surgery work or immediate remedial work will be submitted to the Local Planning Authority for approval in writing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>3.) Post Construction</b> <i>(Once all construction work has been completed, this includes all utility services)</i> | <b>3.1 – Removal of all tree protection fencing and temporary ground protection</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                         | <b>3.2 – Hard and soft landscaping commence</b> All landscape team members to be briefed regarding tree protections by an Arboriculturist.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                         | <b>3.3 – Any required remedial tree action taken</b> , such as Leaf Mulch Application, soil de-compaction methods, contamination clean up etc. to be carried out.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

### **3.0 Conclusion**

- 3.1 Adhering to the tree protection details as found within this report the proposed development could be constructed without any significant long-term adverse impact onto the retained trees or the amenity of the area.

### **4.0 Further Information & Qualifications**

Stephen Lucocq has been involved in Arboriculture within South Wales for the last fifteen years. He has worked as an Arborist for many of these years and has a good working knowledge of the practical side of the profession. He has always taken an active interest in all areas of Arboriculture and kept up to date with current research and developments.

#### **Qualifications**

- First Class BSc (Hons) Degree – Combined Studies - Biology and IT
- Arboricultural Association Technicians Certificate – Level 4 - (Merit)
- PTI - Professional Tree Inspection (Lantra Awards)
- 2D Computer Aided Design (City and Guilds - Level 3)
- Quantified Tree Risk Assessment (QTRA) – Mike Ellison
- Visual Tree Assessment (VTA) – Mike Ellison
- Arboriculture and Bats (Lantra)
- Industrial Rope Access Trade Association (IRATA)
- Practical Arboriculture Qualifications (NPTC)

#### **Membership**

- Arboricultural Association Professional Member (M.Arbor.A)

## 5.0 Web Information & Bibliography

### Web Information

- Arboricultural Association  
<http://www.trees.org.uk/>
- Cellular Confinement System  
**GeoWeb** - [GreenFix](#)  
**CellWeb** - [Geosynthetics](#) [Cellweb](#)
- Underground Utilises Installation  
<http://www.njug.org.uk/>

### Bibliography

- British Standards 3998 (2010) Recommendations for Tree Work UK; British Standards Intuition
- British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations UK; British Standards Intuition
- Coombes, A.J (1992) Trees London; Dorling Kindersley
- Lonsdale, D (1999) Principle of Tree Hazard Assessment and Management Edinburgh; Forestry Commission
- Mattheck, C (2007) Field Guide for Visual Tree Assessment Germany; Karlsruhe Research Centre
- Shigo, A.L (1991) Modern Arboriculture USA; Shigo and Trees, Association
- Sterry, P (2007) Collins Complete British Trees London; Collins
- Strouts, R.G (2000) Diagnosis of ill-health in trees Edinburgh; Forestry Commission
- Weber, K & Mattheck, C (2003) Manual of wood decay UK; Arboricultural Association

## **6.0 Appendix 1 – Tree Protection Plan**

## Tree Protective Fencing

- Trees for removal to be identified from the drawing and marked by an arboriculturist.
- No vehicles to enter the grass verge or root protection zone during tree removal or fencing installation/removal.
- Fencing to be installed prior to any construction works (including demolition, materials delivery, works compound installation).
- The location of the tree protective fencing is indicative only and must not be directly measured from this plan. Its true location must be surveyed accurately on site and where applicable be measured from the tree centre by the stated dimension value.
- Fencing to remain in place until all construction works have ceased.

### BS5837: 2012 Recommendations (extract)

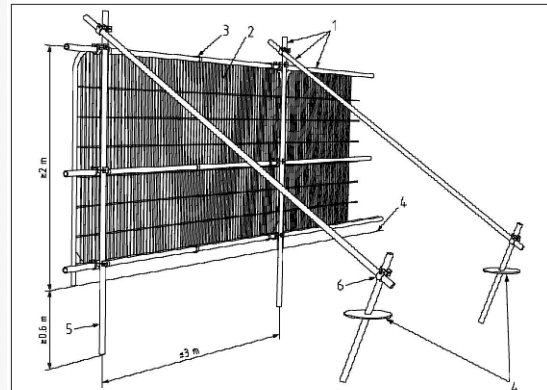
#### 6.2.2 - Barriers

6.2.2.1 - Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s). Barriers should be maintained to ensure that they remain rigid and complete.

6.2.2.2 - The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in Figure 2. The vertical tubes should be spaced at a maximum interval of 3m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed.

#### Fencing Specification

The fencing will comprise of standard GS7/Heras styled steel self-supporting security fencing panels. The panels must be securely clamped together. They must be secured to the ground with robust steel stakes to a depth of 600mm. These are securely clamped to the panels. **The use of steel mesh panels in conjunction with just clamps and self supporting bases is not acceptable for use.** They must be secured to the ground with stakes to prevent movement. Where stated, additional bracing of the panels must use angled scaffolding poles to prevent further movement (see diagram).



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

#### Why Is Fencing Erected Around Trees?

- The major cause of damage to trees on construction sites is due to soil compaction.
- Roots use the spaces between soil particles to obtain Oxygen, Water and Nutrients.
- Heavy plant and machinery compresses (compacts) the soil, squashing out the air spaces and preventing root function.
- A compacted soil structure will stay compacted.
- Consequently the tree suffers and will show signs of branch die-back.
- Symptoms such as die-back may take several years to appear.
- Soil compaction over roots can be prevented by maintaining a fenced exclusion zone over the tree roots.
- The exclusion zone is calculated using British Standard 5837.
- Protective Fencing is installed around the calculated area.
- Protective Fencing is a condition of planning approval, if it is removed or repositioned the construction firm is in breach of a condition and may be subjected to legal action.

Mitigative Hedgerow planting along south western boundary line (consisting of hawthorn whips double staggered row), retain high stumps with potential for regeneration. Subsequently manage hedgerow with periodic pruning

Existing fencing to remain in situ

RAISED GARDEN AREA (SUPPORTED WITH STONE FACED GABION WALLING)

RAISED TERRACE TO ACCESS RAISED GARDEN

G1-Tree Group of Low Quality Sycamore, Holly

T1-Ash

T574-Ash

T570-Ash

T569-Ash

T568-Common Alder

T567-Common Alder

28.6 Metres of planted hedgerow

RAIN TO CONNECT TO GE VIA NEW MANHOLE

Existing track surface to remain in situ

0 5 10 N  
Scale Bar - Metres



### Key : Tree Protection Methods

Tree Protective Fencing  
(Not to be altered without prior approval from the Local Planning Authority)

Construction Exclusion Zone  
(No access, storage of any building material or equipment at any time for the entire construction period)

5 Low quality Trees to be felled to one metre high stump to facilitate construction work (TreeID # T567 - T571)

Permanent Ground protection - NO DIG - 3D Geoweb system  
(For site specific details please contact Greenfix / Geosynthetics (www.Greenfix.co.uk www.geosyn.co.uk))

Excavation work to be carried out under the supervision of an Arboriculturist (Clean root pruning, use of hand tools, airspade and toothless bucket on small excavator (1000kg))

Temporary Ground protection within RPA - Layer of geotextile fabric laid onto the grass, 150mm of Clean wood chip applied on top and inter-linked ground protection boards secured in place

Please Note:  
**Arboricultural Method Statement:**  
**MUST** be followed in sequence, include site supervision by an Arboriculturist where specified and adhered to at all times. Details can be found in Section 6 of this report. Noncompliance with this method statement may result in planning enforcement action or prosecution.

## Tree Protection Plan

Site - Alltygrug Farm Road

Project Ref - 320.3

Scale 1:250 @ A3

### KEY

#### BS 5837:2012 Tree Quality (Individual Tree)

- Category A (High) (\*Most desirable for retention\*)
- Category B (Moderate) (\*Desirable for retention\*)
- Category C (Low) (\*Optional for retention\*)
- Category U (Poor) (\*Unsuitable for retention\*)

#### Tree Key

- Branch Spread (Measured on the North, East, South and West side of Tree)
- Tree Species (Common Tree Name Shown)
- Tree ID# (T - Individual Tree, G - Tree Group, A - Tree Area, W - Woodland, H - Hedgerow)
- Root Protection Area (RPA) (A layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.)
- Shade Pattern - shade pattern not shown on plan (\*Varies depending on height and crown spread of tree\*)

#### Definitions of BS5837:2012 Categories for Trees, Woodlands and Hedgerows (Colour Coded):

**A** - Those of high quality with an estimated remaining life expectancy of at least 40 years. (\*Most desirable for retention\*)

**B** - Those of moderate quality with an estimated remaining life expectancy of at least 20 years. (\*Desirable for retention\*)

**C** - Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm. (\*Optional for retention\*)

**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. (\*Unsuitable for retention unless provides high conservation value\*)

Please Note:  
Barriers and Ground Protection must be designed by an arboriculturist, installed before materials or machinery is brought onto site and before any demolition, development or stripping of soil commences. Once erected, barriers and ground protection should be regarded as sacrosanct, and should not be removed or altered without prior recommendation by an Arboriculturist and approval of the Local Planning Authority (LPA).