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**BS5837:2012 ‘TREES IN RELATION TO DESIGN,  
DEMOLITION AND CONSTRUCTION -  
RECOMMENDATIONS’**

**INITIAL ARBORICULTURAL SURVEY REPORT**

**SITE OF SURVEY**

Land off 24 Gelligaer Road  
Trelewis Treharris

**CLIENTS**

Chris Reilly

**ARCHITECT/PLANNING  
CONSULTANT**

**SURVEYED BY:**

G.M. Ayres BSc (Hons) M. Arbor A Dip Biol ND Arb.  
T.A. Seymour BA (Hons) M. Arbor A. Dip Geog ND Arb  
Arboricultural Consultants  
Cardiff Treescapes  
17 Ravenscourt Close  
Penylan  
Cardiff CF23 5EN  
02920 481284  
07831 109904

**DATE SURVEYED**

18<sup>th</sup> December 2018 **Revised 18/01/2021**  
Report valid for 60 months (Tree health notes 12 months)

## **SUMMARY**

The development proposal will necessitate the removal of two street trees planted in grass verge and the protection of street trees planted outside of the site to avoid damage to branches and roots. Tree planting and hedgerow planting have been included to mitigate for the loss previously removed trees and hedges and details of this are included in the soft landscape schedule.

Street trees have been planted in the grass verge outside of the property which have the potential for significant future growth providing continued tree cover

## **1. INTRODUCTION**

### **1.1 ASSIGNMENT**

We have been instructed to carry out a tree survey in accordance with BS5837:2012 'Trees in relation to design, demolition and construction - recommendations' at a potential development site located at Land off 24 Gelligaer Rd Treharris Trelewis Mid Glamorgan

**This report has been revised following a site visit on the 14<sup>th</sup> January 2021**

### **1.2 REPORT METHODOLOGY**

The methodology for preparing this report is in accordance with BS5837:2012 'Trees in relation to design, demolition and construction - recommendations' is as follows:-

#### **Tree Survey Plan**

The purpose of the Tree Survey is to identify significant trees on site that may be within influential distance of any proposed development. The plan will record the condition of the trees, their quality and benefits within the context of the development and their above and below ground constraints in relation to both the site and any proposed development.

### **1.3 NEXT STAGE**

This document is intended to be used as an aid for the site design and layout.

Following the finalised design, and any further arboricultural consultation that this may require, the next stage is the drawing up of an Arboricultural Implications Assessment followed by an Arboricultural Method Statement.

#### **Arboricultural Impact Assessment**

The purpose of this part of the report is to identify, evaluate and possibly mitigate the extent of any direct and indirect impacts on the trees. It will also identify any potential impacts of the trees on the proposed development.

#### **Arboricultural Method Statements and Tree Protection Plan**

The Arboricultural Method Statement and Tree Protection Plan outline all necessary aspects of arboricultural work and tree protection that is required during the development process.

#### **1.4    LEGAL CONSTRAINTS**

If these trees are located in a Conservation area or designated with a Tree Preservation Order, the Local Planning Authority will need to be consulted before any work commences.

#### **1.5    IMPLEMENTATION OF TREEWOR**

All tree work should be carried out to BS 3998:2010 'Tree work - Recommendations'.

#### **1.6    SOILS**

No soil analysis has been undertaken at this site

# APPENDIX 1

## TREE SCHEDULE KEY

The trees and groups of trees at the site have been assessed as per the recommendations set out in BS 5837 2012.

|                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Type</b>                                                                                             | Represents the type of vegetation being assessed. These are Tree ( <b>T</b> ), Group ( <b>G</b> ), Stump ( <b>S</b> ), Woodland ( <b>W</b> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Tag No</b>                                                                                           | Each tree has been marked by a numbered tag for on-site identification. Where possible this number is related to, or similar to the given tree number. There may be occasions when the tag number bears no relationship to the tree number, but is still useful for on-site identification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Common Name<br/>Botanical Name</b>                                                                   | The tree species have been identified and both common and botanical names are given.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Age</b>                                                                                              | <p><b>Young</b> – (Shown as <b>Y</b> in the schedule) juvenile tree with dominant leading shoot growth and short side branches. Vigorous growth and often of conical form.</p> <p><b>Semi-mature</b> – (Shown as <b>SM</b> in the schedule) young adult tree, leading shoot growth may not always be dominant but side branches are usually ascending. Vigorous growth, flower and seed production. Minimal deadwood.</p> <p><b>Early maturity</b> – (Shown as <b>EM</b> in the schedule) adult tree with the main framework of the crown formed. Not yet at full dimensions. Vigorous growth and some shedding of inner branches and deadwood. Horizontal side branches.</p> <p><b>Mature</b> – (Shown as <b>M</b> in the schedule) adult tree at full crown volume and dimensions. Maximum flower and seed production. Dead wood likely within the crown and reiteration growth in the lower canopy.</p> <p><b>Over mature</b> – (Shown as <b>OM</b> in the schedule) loss of overall vigor and reduction of full dimensions due to limb loss and branch tip die back. Major dead wood within the crown and possible hollowing and cavities. Retrenchment of the crown through increased reiteration growth on the lower branches.</p> <p><b>Veteran / Ancient</b> – (Shown as <b>V</b> in the schedule) a tree that has passed beyond maturity and is old in comparison with other trees of the same species. They often have decayed or hollow stems and branches and abundant deadwood. They are important for heritage, landscape and ecological value.</p> |
| <b>Height (m)</b>                                                                                       | Where site lines allow, tree height has been calculated by means of a laser clinometer and recorded in metres. If the use of a laser clinometer is restricted due to confined space or obscuring vegetation, the height of the tree may be estimated based on the surveyor's experience. Adjacent trees or buildings with a clear view may be measured and used as a height scale. Where several trees are located in close proximity, one tree may be measured and the other trees estimated using the measured tree as a reference.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Diameter (mm)</b>                                                                                    | The stem diameter is measured in millimetres in accordance with Annex C of BS5837 2012.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Crown Height (m)</b>                                                                                 | Is the distance from the lowest point of the crown from ground level.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>FSB Height (m) /Direction</b>                                                                        | The height of the First Significant Branch (FSB) is recorded in metres and the direction of growth is in relation to the cardinal points of the compass.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>North (m)</b><br><b>South (m)</b><br><b>East (m)</b><br><b>West (m)</b><br><br><b>(Crown Spread)</b> | As it is rare that a tree's crown is asymmetric, the crown spread is measured at the four cardinal points of the compass to give an estimated representation of the crown spread which is then recorded on the tree survey plan.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Condition</b>                          | <p><u>Physiological Condition</u></p> <p>Each tree has undergone a brief preliminary visual inspection from ground level. This information is only relevant at the time of inspection because circumstances influencing a tree's condition can change rapidly. This section is divided into two separate sections:</p> <p><b>G = Good</b> – fully foliated/twigged canopy for the tree's situation with an indication of natural vigor from shoot extension growth and signs of good vitality throughout the tree's system.</p> <p><b>F = Fair</b> – signs of adequate vigour and vitality up to 70% canopy coverage. May show signs of slight stress such as branch tip die back, slightly sparse foliage, yellow or small foliage. Stress may be alleviated by prescribed maintenance.</p> <p><b>P = Poor</b> – obvious signs of advance stress including less than 70% canopy coverage, crown die back, significant deadwood. Sparse and discoloured foliage.</p> <p><b>D = Dead</b> – moribund or dead trees</p>                                                                                                               |
| <b>Comments</b>                           | <p><u>Structural Condition</u></p> <p>Any structural defects are noted such as splits, cracks, tight forks, rubbing branches, cavities, decay and the presence of pests or diseases. These may compromise the mechanical integrity of the tree's structure.</p> <p>(Veteran trees may pose many physiological and structural faults yet still be considered in good condition for their age.)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Recommendations</b>                    | Following visual inspection preliminary recommended action, further detailed inspection, or maintenance may be prescribed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>RPR (m)<br/>Root Protection Radius</b> | This is calculated from Annex D of BS 5837 2012 'Trees in relation to construction - Recommendations'.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>RPA (m)<br/>Root Protection Area</b>   | This measurement is the total area of root protection. This can be modified if necessary by the Arboricultural Consultant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Category</b>                           | <p>The tree's overall value is categorised in accordance to the cascade chart (table 1) of BS 5837 2005, see Appendix 2 of this report.</p> <p>In brief, the purpose of the tree categorisation is to identify and quantify the value of the existing tree stock. This will allow informed decisions to be made concerning which trees should be removed or retained should the development occur.</p> <p><u>Category A</u>      Trees of high quality and value that make a substantial contribution. Marked in <b>light green</b> on the tree survey plan.</p> <p><u>Category B</u>      Trees of moderate quality and value that make a significant contribution. Marked in <b>mid blue</b> on the tree survey plan.</p> <p><u>Category C</u>      Trees of low quality and value that provide only an adequate contribution. Marked in <b>grey</b> on the tree survey plan.</p> <p><u>Category U</u>      Trees in such a condition that any existing value would be lost within ten years. This includes trees that should be removed for good arboricultural reasons. Marked in <b>dark red</b> on the tree survey plan.</p> |

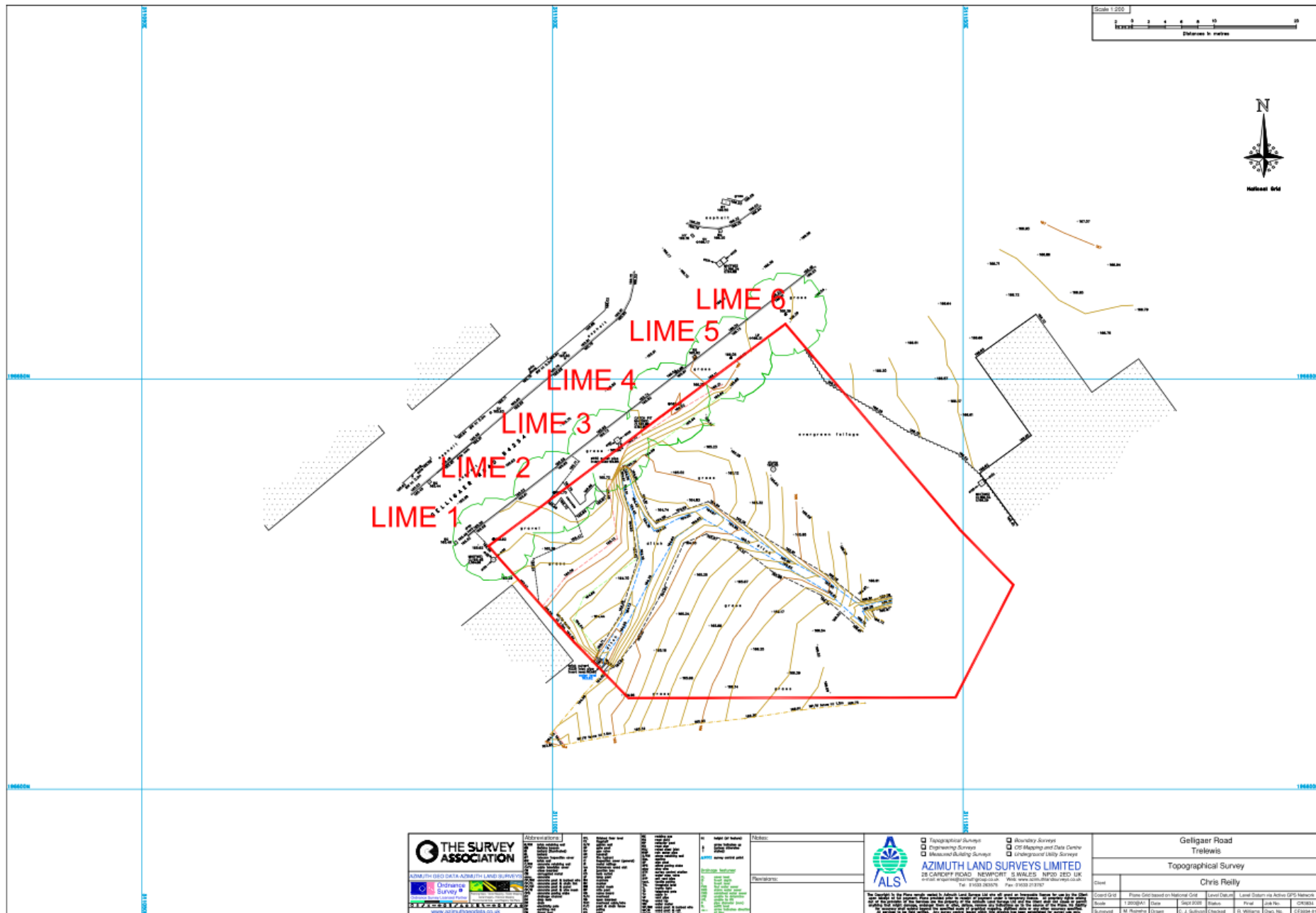
## 2 TREE SCHEDULE

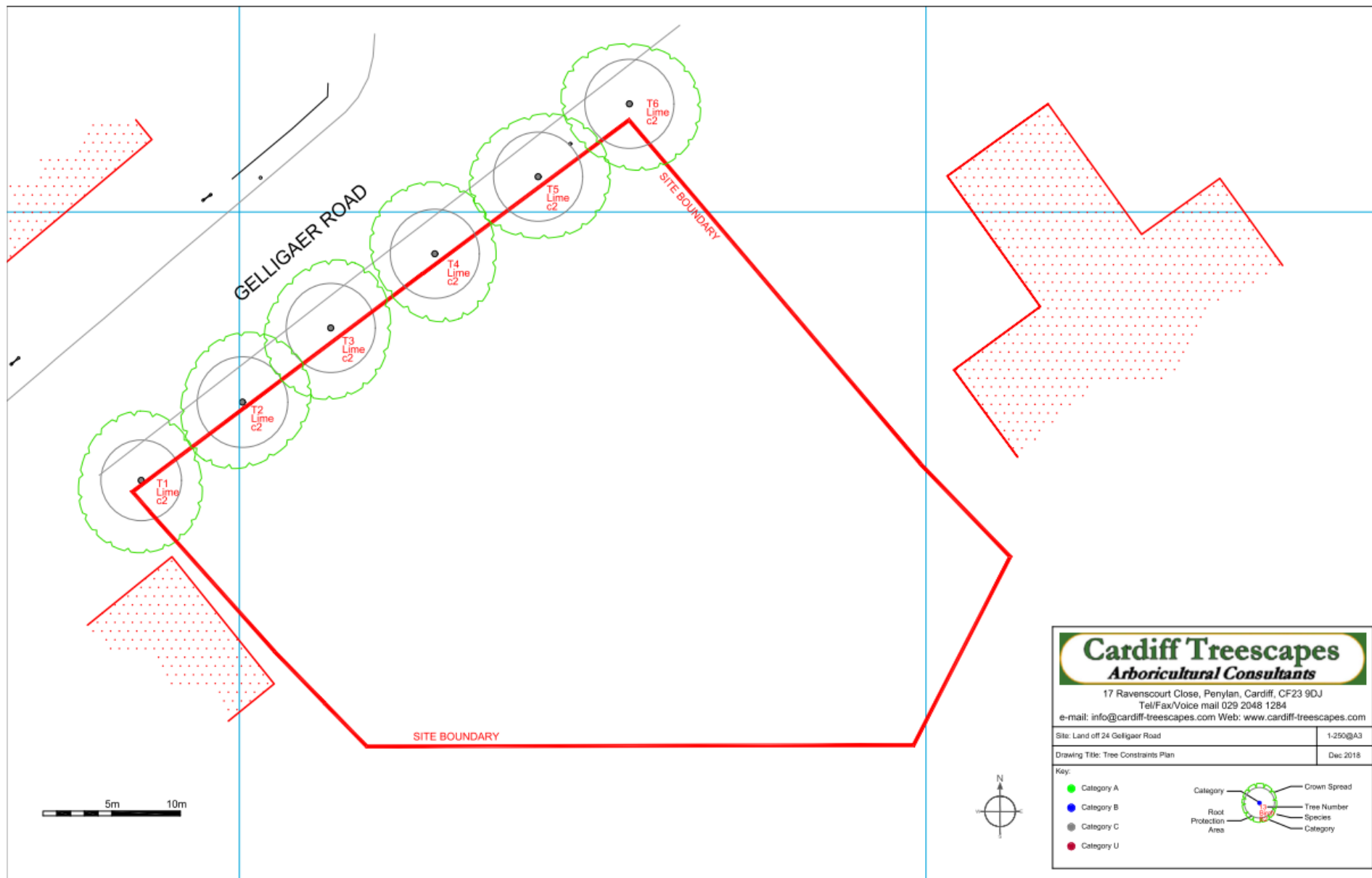
| Tree Number | Tag number | Type | Age | Tree Name (Common name) | Tree name (Botanical)                      | Condition | Crown height | Height | Trunk Dia. (mm) | Single stem (1) or multi-stem (m) * | North (m) | South (m) | East (m) | West (m) | BS Cat. | RPA Radius (m) | RPA Area (m2) | Comments                                                                                                               | Action                        | ERC |  |
|-------------|------------|------|-----|-------------------------|--------------------------------------------|-----------|--------------|--------|-----------------|-------------------------------------|-----------|-----------|----------|----------|---------|----------------|---------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----|--|
| 1           |            | T    | SM  | Lime                    | <i>Tilia cordata</i><br><i>Green Spire</i> | Good      | 2N / S       | 10     | 270             | 1                                   | 3.5       | 2         | 3.5      | 3.5      | c2      | 3.24           | 33.0          | Street tree growing in grass verge outside of site boundary. Some damaged limbs in lower crown and surface root damage | Prune to remove damaged limbs | 40+ |  |
| 2           |            | T    | SM  | Lime                    | <i>Tilia cordata</i><br><i>Green Spire</i> | Good      | 2 s          | 8      | 340             | 1                                   | 4         | 3.5       | 2.5      | 4.5      | C2      | 4.08           | 52.3          | Street tree growing in grass verge outside of site boundary. Several broken limbs in lower crown and bark wounds       | Prune to remove damaged limbs | 40+ |  |
| 3           |            | T    | SM  | Lime                    | <i>Tilia cordata</i><br><i>Green Spire</i> | Good      | 2N / S       | 8      | 270             | 1                                   | 2.5       | 2.5       | 2.5      | 2.5      | C2      | 3.24           | 33.0          | Street tree growing in grass verge outside of site boundary. Generally balanced crown with some ivy growth             | Formative prune               | 40+ |  |

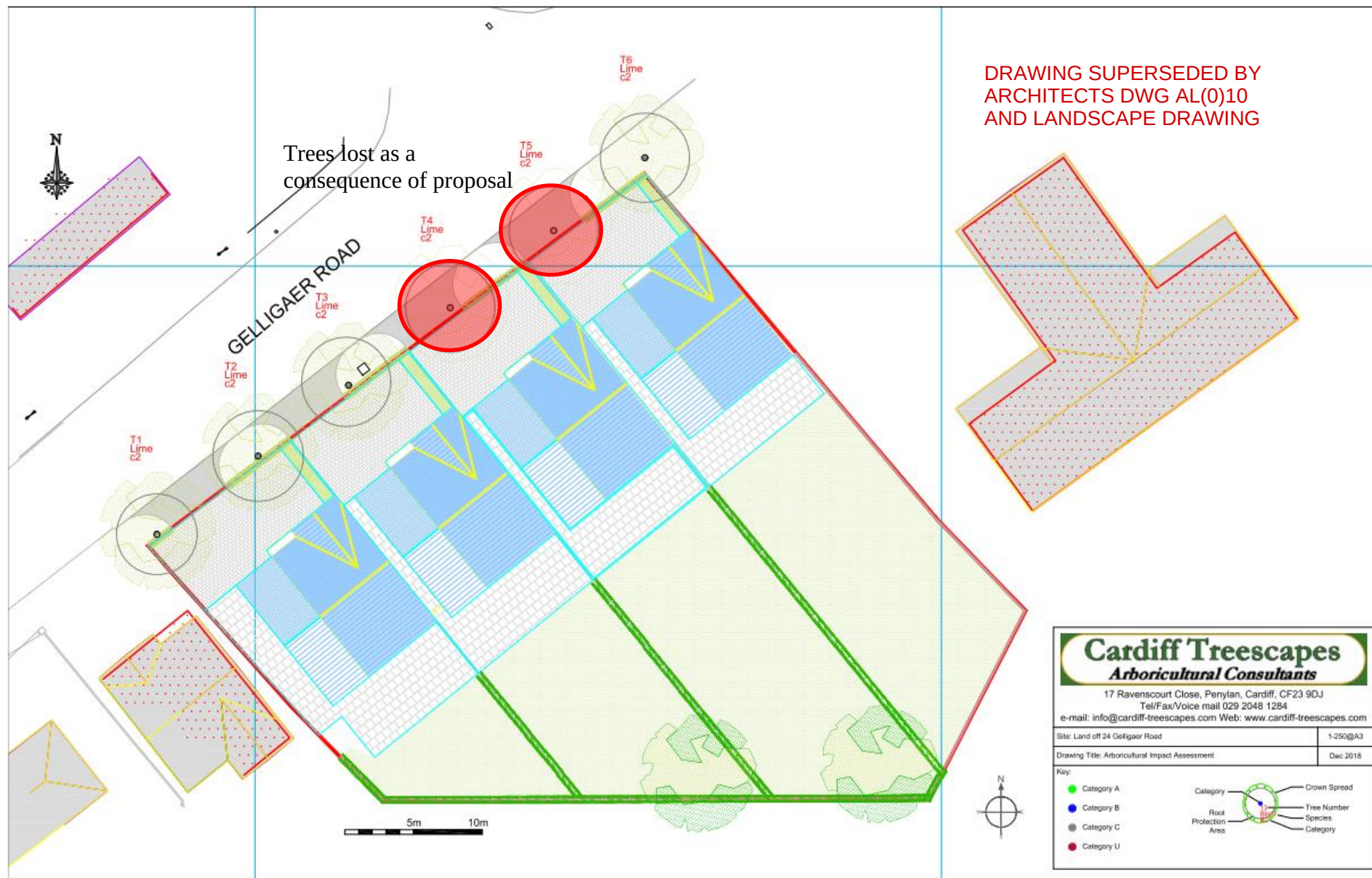
|   |  |   |    |      |                                            |      |      |   |     |   |   |     |   |     |    |      |      |                                                                                                  |     |  |  |
|---|--|---|----|------|--------------------------------------------|------|------|---|-----|---|---|-----|---|-----|----|------|------|--------------------------------------------------------------------------------------------------|-----|--|--|
| 4 |  | T | SM | Lime | <i>Tilia cordata</i><br><i>Green Spire</i> | Good | 1.6N | 9 | 180 | 1 | 3 | 2   | 2 | 1.5 | c2 | 2.16 | 14.7 | Slightly leaning stem with ivy growth. Street tree planted in grass verge outside of site        | N/a |  |  |
| 5 |  | T | SM | Lime | <i>Tilia cordata</i><br><i>Green Spire</i> | Good | 1.6N | 9 | 250 | 1 | 3 | 2.5 | 3 | 2   | c2 | 3.00 | 28.3 | Street tree growing in grass verge outside of site with some minor crossing limbs in lower crown | N/a |  |  |
| 6 |  | T | SM | Lime | <i>Tilia cordata</i><br><i>Green Spire</i> | Good | 1.7N | 9 | 240 | 1 | 2 | 3   | 2 | 2   | c2 | 2.88 | 26.1 | Street tree growing in grass verge outside of site                                               | N/a |  |  |

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)                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                   |                                                                                                                                       |                        |
| <b>Category U</b><br>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"><li>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)</li><li>Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</li><li>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</li></ul> <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i></p> |                                                                                                                                                                                                                                                                   |                                                                                                                                       | See Table 2            |
|                                                                                                                                                                           | 1 Mainly arboricultural qualities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2 Mainly landscape qualities                                                                                                                                                                                                                                      | 3 Mainly cultural values, including conservation                                                                                      |                        |
| Trees to be considered for retention                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                   |                                                                                                                                       |                        |
| <b>Category A</b><br><b>Trees of high quality</b> 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) | See Table 2            |
| <b>Category B</b><br><b>Trees of moderate quality</b> 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                                                                              | See Table 2            |
| <b>Category C</b><br><b>Trees of low quality</b> 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                                                                           | See Table 2            |







**DRAWING SUPERSEDED BY  
ARCHITECTS DWG AL(0)10  
AND LANDSCAPE DRAWING**

crossover and access drive  
entrance constructed using no dig  
method in these areas

GELLIGAER ROAD



DRAWING SUPERSEDED BY  
ARCHITECTS DWG AL(0)10  
AND LANDSCAPE DRAWING

5m 10m

|                                                                                                                                                                                                                                                              |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>Cardiff Treescapes</b><br><i>Arboricultural Consultants</i>                                                                                                                                                                                               |          |
| 17 Ravenscourt Close, Penylan, Cardiff, CF23 9DJ<br>Tel/Fax/Voice mail 029 2048 1284<br>e-mail: <a href="mailto:info@cardiff-treescapes.com">info@cardiff-treescapes.com</a> Web: <a href="http://www.cardiff-treescapes.com">www.cardiff-treescapes.com</a> |          |
| Site: Land off 24 Gelligaer Road                                                                                                                                                                                                                             | 1-200@A3 |
| Drawing Title: Crossover and Access Drive                                                                                                                                                                                                                    | Dec 2018 |



Ground Floor  
House 1 and 2



First Floor  
House 1 and 2



Roof Plan  
House 1 and 2



Section AA  
House 1 and 2



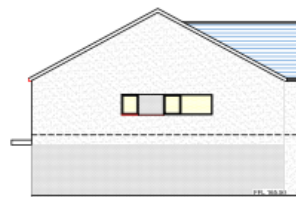
Section BB  
House 1 and 2



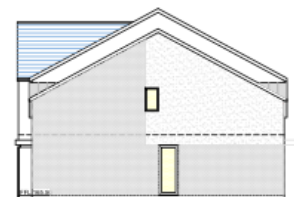
Front Elevation  
House 1 and 2 (note House 2 ffl 165.60)



Rear Elevation  
House 1 and 2 (note House 2 ffl 165.60)



Side Elevation  
House 1 and 2 (note House 2 ffl 165.60)



Side Elevation  
House 1 and 2 (note House 2 ffl 165.60)



Part Street Elevation



Site Section AA

**DRAWING SUPERSEDED BY  
ARCHITECTS DWG AL(0)11**

The existing residential plot  
is a small plot of land, and  
any proposed development  
must be in accordance with  
the planning regulations  
and the local planning  
authority's requirements.

Project:  
Land adjacent Catts Farm  
Shop CF45 6DN  
Proposed Plans, elevations,  
and sections  
Oct 2020  
AL(0)23

## 3.0 IMPACT ASSESSMENT

### THE DEVELOPMENT PROPOSAL

We have been supplied with a Pre-application development proposal plan (Drawing No AL(0)02 Not Dated; Titled; *PROPOSED SITE PLAN LAND ADJACENT CATHS FARM SHOP GELLIGAER ROAD*).

This Plan shows the outline and development footprint of the proposed 4 residential properties and has been used to overlay the surveyed trees detailed above to illustrate the constraint below and above ground (

### 3.1 DIRECT LOSS OF TREES

**The following trees will be lost as a direct consequence of the proposal**

| Tree No | Species | Category | Reason and                   |
|---------|---------|----------|------------------------------|
| T 4 T5  | Lime    | C        | Construction of access drive |

**Loss of amenity street trees of semi mature age class**

**Mitigate loss with replanting of similar trees in verge at local authority discretion**

### 3.2 CONSTRUCTION WITHIN ROOT PROTECTION AREAS

The proposed development will conflict below ground level with the following 6 trees:

| Tree No      | Species | Category | Reason and approximate % of RPA affected                         |
|--------------|---------|----------|------------------------------------------------------------------|
| T 1 T2 T3 T6 | Lime    | C        | 30% of RPA likely to be affected by entrance drive and crossover |

The construction of hard surfacing to form a crossover and driveway will be within the root protection area of the three Lime trees listed above. The construction of this surface will need to be undertaken using a no dig technique, for which an outline method statement is detailed in the appendices below. The entrance to the site will also be used for construction traffic and it is imperative that a no dig temporary access road is formed in the first instance to avoid compaction of soils and root damage to trees 2 ,3 and 4.

#### 3.2.1 BELOW GROUND

As detailed above the access to the site prior to, and during, the construction phase, and for the finished driveway, will impact on roots of trees T1 T2 T3 T6.

Services including drains may also impact on these trees. Service trenches will ideally be routed outside of the RPAs of these trees or a method of excavating either by hand and air spade, or by thrust boring will need to be employed to avoid damage to the roots of these trees guidance for which has been included below. (3.6)

#### 3.2.2 ABOVE GROUND

None.

### **3.3 CONFLICT WITH BRANCHES AND FACILITATIVE PRUNING**

The following works may be required:

| Tree No      | Species | Category | Facilitative Works Required                           |
|--------------|---------|----------|-------------------------------------------------------|
| 1T1 T2 T3 T6 | Lime    | C        | Remove minor limbs to lift crown to give 3m clearance |

### **3.4 ON SITE STORAGE OF SPOIL, BUILDING AND TOXIC MATERIALS**

Access to the site for construction vehicles would require a hard-surfaced driveway and it is advised that this is put in to place before construction on the dwellings commences. This would ensure no unnecessary compaction of un protected ground occurs.

Prior to and during construction works on site, no spoil or construction materials will be stored within the root protection area of any tree on site or within the adjacent land.

Any facilities for the storage of oils, fuels or chemicals will have to be sited on impervious bases and surrounded by impervious bund walls. The volume of the bund compound will have to be at least equivalent to the capacity of the tank plus 10%. In case of accidental leakage, the compound will have to be at least equivalent to the capacity of the largest tank, or the combined capacity of interconnected tanks plus 10%. All filling points, vents, gauges and sight glasses will have to be located within the bund. The drainage system of the bund will have to be sealed with no discharge to any watercourse, land or underground strata. Associated pipe-work will have to be located above ground and protected from accidental damage. All filling points and tank overflow pipe outlets will have to be detailed to discharge downwards into the bund.



**Pollution image 1:** Where fuel or other chemicals are stored on site, it is now standard practice to have emergency spillage kits available to restrict the environmental impact of accidents.



**Pollution image 2:** Soil bunding or a supporting framework covered in heavy-duty plastic sheeting is essential where there is a risk of spillages contaminating RPAs. This specifically applies to cement mixing areas and vehicle washing facilities.

### **3.5 CHANGES IN GROUND LEVEL**

Ground level changes must be avoided within the root protection area of any retained tree on site.

### **3.6 INSTALLATION OF SERVICES**

Ideally routes for services should be kept outside of the root protection zones but where this is not possible the following methods will minimise the potential for root damage, although it should be considered that some root disturbance and minor damage may occur:

The preferred method of installing the services through Root Protection Areas is to employ trenchless techniques in the form of guided thrust boring. This system uses a steerable drilling head and above

ground detector to bore a pathway below ground for ducts and pipes. The following tree protection methods shall be adhered to when employing this system:

- Pits will be required to insert and retrieve the boring equipment. If these pits are to be located within a Root Protection Area, they must be excavated with the use of hand tools and an air spade under the supervision of a competent Arboriculturalist. Where possible all roots over 25mm in diameter will be retained. The Arboriculturalist will be consulted if roots over 25mm require removal and will, if agreed, prune these roots using proprietary tools.
- The thrust boring will take place at a depth of below 650mm from the surface level, to avoid the principal rooting horizon.
- In order to avoid contamination of the soils, it is recommended that water is used for lubrication of the drilling head and boring equipment. No toxic substances will be used for lubrication.

Where boring is not possible, incursions into the Root Protection Areas for the provision of services installation may be achieved by careful excavation techniques. This will involve excavating the service trenches with the use of an air spade and hand tools to minimise any damage to significant tree roots.

Where it is necessary to excavate service trenches within the Root Protection Area of any trees, the following procedures will be employed:

- The trench will be excavated using an air spade and hand tools by a suitably qualified operator experienced in ground excavations around tree roots. Care must be taken to avoid any form of damage to any retained tree roots.
- All tree roots 25mm in diameter and over will be retained. An attempt must be made to retain all tree roots below 25mm in diameter but where this cannot be achieved these smaller roots can be pruned by the Arboriculturalist using sharp secateurs.
- The service pipes, cables or ducts will be installed into the trench using a method that will prevent any damage to the retained tree roots.
- An Arboriculturalist will be employed to carry out a watching brief of all trenching operations within the Root Protection Area of any trees.

It should be noted that there may be restrictions in the use of both these services installation methods due to poor compacted soil conditions, density of roots and the presence of underground debris and structures. The feasibility of using these methods, in relation to the site conditions, should be fully assessed prior to any work taking place.

A site-specific Arboricultural Method Statement will be prepared by the Arboriculturalist and approved by the Local Planning Authority prior to any installation of underground services within a tree root protection area.

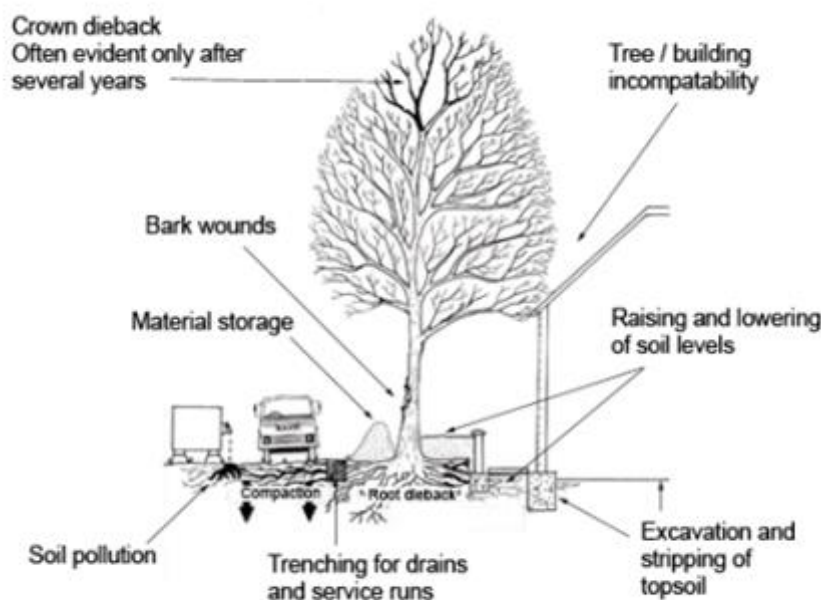
### 3.7 **TREE PROTECTIVE BARRIERS**

The following trees will require protecting during construction and demolition works:

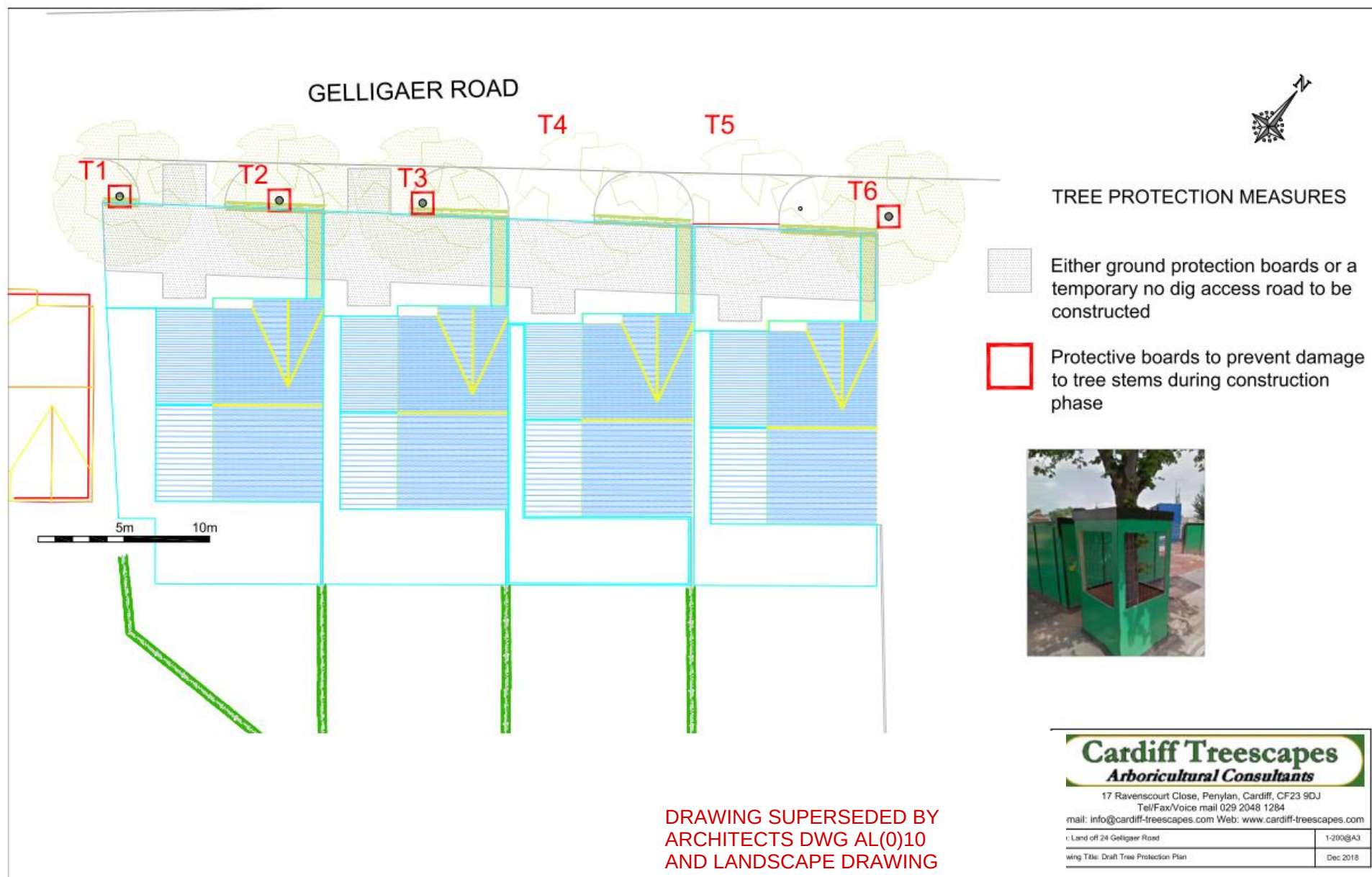
| Tree No     | Species | Category | Type                          |
|-------------|---------|----------|-------------------------------|
| T1 T2 T3 T6 | Lime    | c        | Fencing and ground protection |

Trees are often damaged both above and below ground level and soils compacted as a result of construction activity. In order to minimise this risk, there will be a requirement for tree protective barriers to be erected to prevent construction activities that may have a detrimental effect on trees listed above.

Potential causes of damage to trees on development sites.



The draft Tree Protection Plan below illustrates the approximate position for the protective barriers. The method statements below indicate how to construct ground protection areas.



## 4. PROGRAMME FOR ARBORICULTURAL MONITORING INPUT

| FINALISING TREE MANAGEMENT PRIOR TO CONSTRUCTION                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACTION                                                                                           | ARBORICULTURAL INPUT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Review of tree protection with construction team and any issues that arise that may affect trees | <ul style="list-style-type: none"> <li>• Discussions/meetings with relevant construction personnel to discuss extent of tree constraints</li> <li>• Review working space requirements to discuss any adjustments to barrier or ground protection</li> <li>• Review drainage proposals and any RPA conflicts</li> <li>• Review any post consent layout changes affecting trees</li> <li>• Review all works within RPAs</li> <li>• Identify potential conflicts and means of reducing impact</li> <li>• Prepare working drawings as required</li> </ul> |
| Review consented tree protection proposals for discussion at pre-commencement meeting            | <ul style="list-style-type: none"> <li>• Revise plans if necessary</li> <li>• Discuss and agree revisions with LAPD</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Pre-commencement site meeting with developer and LAPD representative                             | <ul style="list-style-type: none"> <li>• Meeting on site</li> <li>• Agree details of supervision requirements</li> <li>• Review updated proposals</li> <li>• Review tree protection if already installed</li> </ul>                                                                                                                                                                                                                                                                                                                                   |

| SITE OPERATIONS BEFORE WORK STARTS ON SITE        |                                                                                                                                                                                                                                                                     |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACTION                                            | ARBORICULTURAL INPUT                                                                                                                                                                                                                                                |
| Tree works                                        | <ul style="list-style-type: none"> <li>• Review site requirements with tree work contractor</li> </ul>                                                                                                                                                              |
| Installation of tree protection as agreed by LAPD | <ul style="list-style-type: none"> <li>• Revise plans and specification if required for agreement with LAPD</li> <li>• Photograph relevant aspects of installed tree protection</li> <li>• Liaise with contractor installing protection until compliance</li> </ul> |
| Demolition / site clearance                       | <ul style="list-style-type: none"> <li>• Liaise with contractor to discuss tree protection requirements on site</li> </ul>                                                                                                                                          |
| Removal of spoil                                  | <ul style="list-style-type: none"> <li>• Agree date for supervised works with contractor and consultant</li> </ul>                                                                                                                                                  |

| OPERATIONS THAT COULD AFFECT TREES DURING CONSTRUCTION |                                                                                                                                                                                                                 |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACTION                                                 | ARBORICULTURAL INPUT                                                                                                                                                                                            |
| Installation of new services                           | <ul style="list-style-type: none"> <li>• Meeting with contractor to discuss relevant method statement and any alterations and to supervise operation as required</li> </ul>                                     |
| Removal of barriers and ground protection              | <ul style="list-style-type: none"> <li>• Meeting with contractor for briefing prior to works</li> <li>• NB This should only occur once all operations likely to impact on trees have been completed.</li> </ul> |

## **5. ARBORICULTURAL METHOD STATEMENTS**

The function of the Arboricultural Method Statements and Tree Protection Plan is to provide the construction contractors with a clear and concise instruction on how to carry out tree related work. This includes the type and position of protective fencing and ground protection. General good practice and excavation close to trees. The method statements have been attached to this report as appendices, so they can readily be reproduced as work sheets for the contractors.

# **ARBORICULTURAL METHOD STATEMENT 1**

## **THE CONSTRUCTION OF TREE GROUND PROTECTION AREAS**

### **1.0. INTRODUCTION**

Where it has been agreed at the design and planning stage that vehicle and pedestrian access for the construction operations may take place within the root protection area, special ground protection measures should be taken. Protective fencing may be positioned within a tree's root protection area at the edge of the agreed working zone but the soil structure beyond the barrier should be protected with ground protection. Please refer to accompanying Tree Protection Plan, which clearly shows the working zones that require protection.

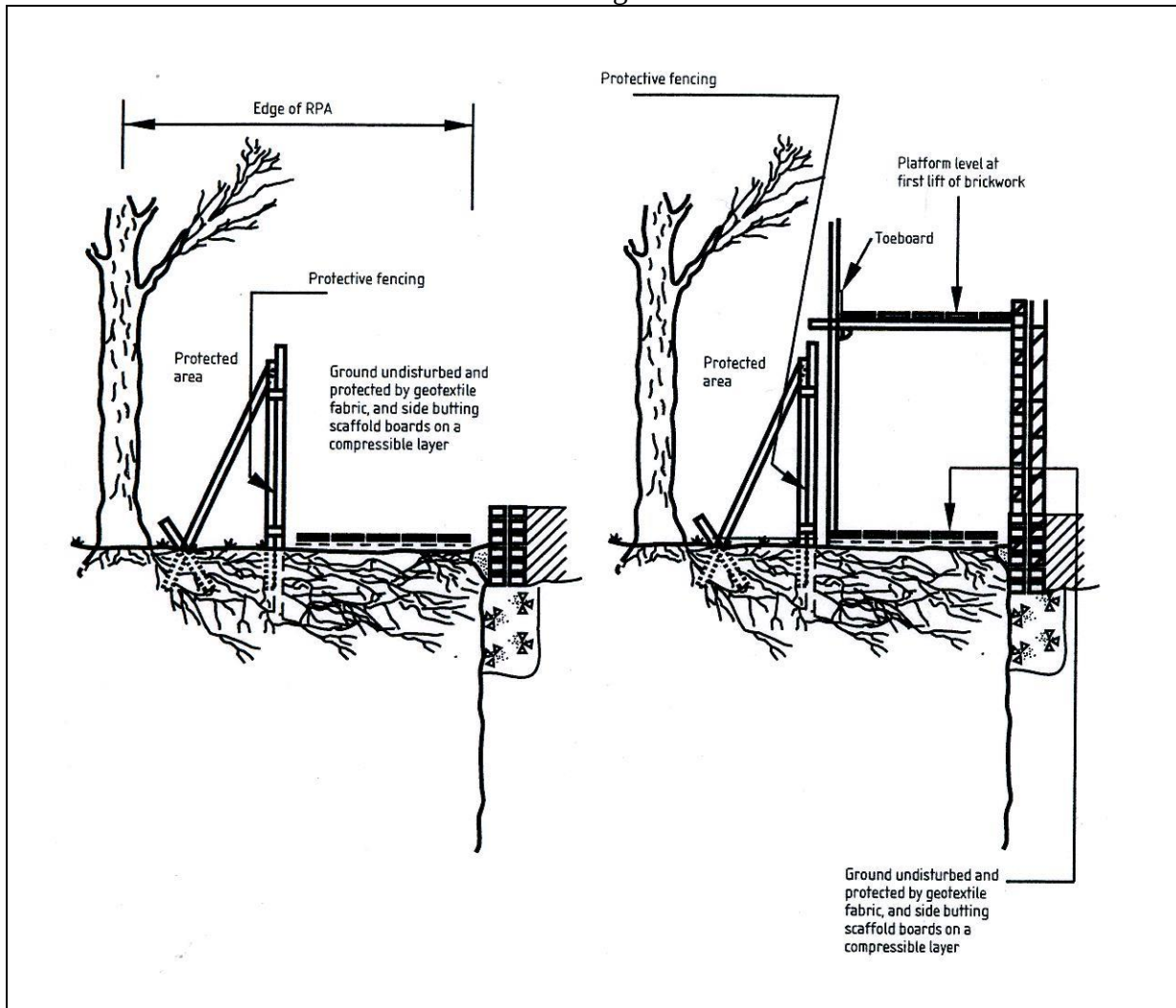
The purpose of protecting the surface and below ground within the root protection zone is to

- a) Prevent physical damage to the roots during construction (such as soil compaction or severing).
- b) Make provision for water and oxygen to reach the roots.
- c) Allow for the future growth of the root system.
- d) Preserve the soil structure at a suitable bulk density for root growth and function (for soils of a high fines content).

### **2. METHODOLOGY**

- a) The soil surface should not be skimmed to establish a level surface. Loose organic matter or turf should be removed carefully using hand tools. The new level surface should be established above the former ground level using a granular fill where required.
- b) If temporary ground levels are to be raised within the root protection area this should be achieved by using granular materials that do not inhibit vertical gaseous diffusion such as no fines gravel, washed aggregate or cobbles.
- c) Prior to the installation of the temporary ground protection, any existing ground cover should be cut back to as near ground level as possible. This should not involve ground compaction, excavation or stripping of the soil. An acceptable method would be the use of a manually operated brush cutter operated by a competent person trained to NPTC A012 level and in accordance with industry best practice AFAG leaflet 203. The cut organic material should be raked away from the protection area to prevent the buildup of anaerobic conditions which might otherwise occur as vegetation begins to decompose.
- d) All ground protection should be installed prior to the commencement of any operations within the root protection area with the exception of the erection of protective fencing.
- e) All vehicles and/or plant involved in the laying of the temporary protective surfacing should operate outside the root protection area. The temporary ground protection should be laid so that it is sighted as close to the protective fence line as possible and extends to at least the outer edge of the root protection area (see figure1 below ref BS 5837 2005)

Figure 1



- f) Once in place, the temporary ground protection should not be removed or altered without prior recommendations from an arboriculturalist and approval from the local planning authority.
- g) An arboriculturalist should supervise the laying and removal of the temporary protective surfacing.
- h) Any system used for temporary protective surfacing should be designed specifically for the purpose intended and be able to withstand all loads likely to be placed on it whilst achieving its purpose of ground protection. A specialist engineer may be required to advise on this matter.
- i) On final removal of the temporary protective surfacing, amelioration of the underlying surface should be implemented using a system where compressed air is injected into the ground at regular intervals of 0.50m at a depth of 0.15m.

This temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soils. The ground protection might comprise one of the following:

- a) *for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;*
- b) *for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;*
- c) *for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.*

All weather notices should be erected on the protective barriers with the words:-

**Protected Tree – Construction Exclusion Zone KEEP OUT**



**Ground protection image 1:** Heavy-duty plywood set onto a compressible woodchip layer and pinned into position is suitable to spread the loading from pedestrian access.



**Ground protection image 2:** Spreading soil excavated from footings is an effective way of buffering the plywood surface from the wear of light vehicles.



**Ground protection image 3:** Plywood fixed to a wood frame is another effective method of protecting soil from pedestrian compaction.



**Ground protection image 4:** A scaffold framework attached to the main scaffold fencing can be used to support either scaffold planks or plywood to create an elevated platform with a gap beneath.



**Ground protection image 5:** Cellular products are a very effective means of providing ground protection where heavy vehicle use is expected. Here, it is being used to temporarily widen an existing road, to be removed once the construction is finished.



**Ground protection image 6:** Custom designed sectional tracks can be joined to support very heavy traffic use through sensitive areas.

## **ARBORICULTURAL METHOD STATEMENT 2**

**24 Gelligaer Road Trelewis Treharris**

### **NO DIG' CONSTRUCTION OF A POROUS DRIVE WAY WITHIN THE ROOT PROTECTION AREA OF TREES T1-6**

#### **1. INTRODUCTION**

- 1.1 This method statement describes the procedure required to undertake the **NO DIG** construction of a driveway/hard-standing area whilst minimising any adverse effects on underlying tree roots. The proprietary cellular confinement system, Cellweb 100, is formed by ultrasonically welding polyethylene (perforated) strips / panels together to create a three-dimensional network of interconnecting cells. A high degree of frictional interaction is developed between infill and the cell wall, increasing the stiffness of the system product. It is employed to create a structurally sound layer which confines the aggregate particles allowing free drainage, permeability and efficient dissipation of loading. An appropriate specialist should be employed to design and install the surface this method statement is indicative only.
- 1.2 This method statement must be read in conjunction with the manufacturer's installation instructions and an appropriate site-specific risk assessment.
- 1.3 Conventional methods of the construction of hard surfacing involve the scraping and removal of top soil and compaction of the sub base materials onto the sub soil in order to stabilise the structure. This conventional method is detrimental to tree roots, in that it causes root severance and prevents the penetration of water and oxygen to the underlying soils.

Although the prescribed Cellweb system is designed to dissipate surface loading, it is laid on non-compacted soils and therefore distortion of the surface make-up can occur from continual heavy vehicular traffic movement. It may be necessary to repair or re-lay this system in the future if major distortion occurs.

When looking at site conditions and use, the following information should be considered to enable a load bearing structure capable of supporting traffic to be proposed:

- Depth of engineered infill material
- Californian Bearing ratio (CBR) – Standard test method for measuring soil strength
- Soil types
- Water table
- Maximum load (vehicles)
- Acceptable rut depth
- Reinforcement type
- Type and Depth of engineered infill material

## 2. METHODOLOGY

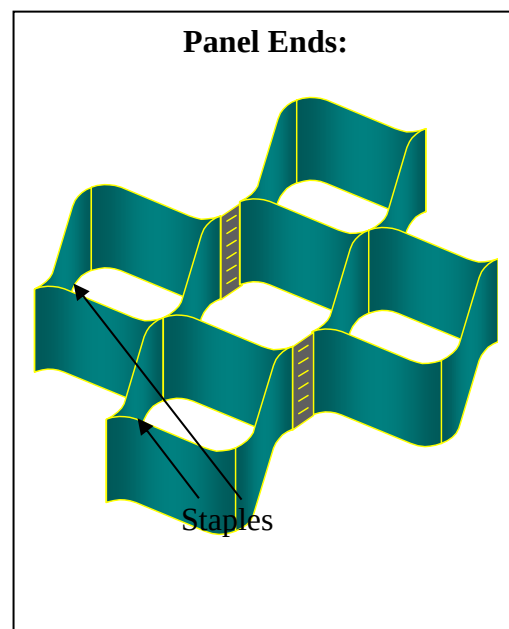
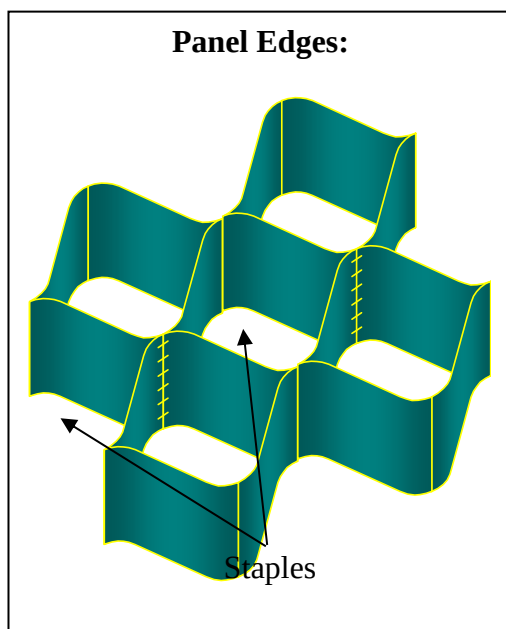
- 2.1 Construction of the road will preferably be undertaken when the ground is reasonably dry with no water logging of the underlying soils.
- 2.2 Kill surface ground vegetation using a translocated herbicide. Care should be taken in the selection of herbicide so that desirable vegetation is not affected. This will be carried out by a suitably qualified and competent person.
- 2.3 All dead organic material will be removed using hand tools to prevent severe oxygen depletion in the soil during the process of decomposition.
- 2.4 All major protrusions such as rocks, large stones etc. will be removed from the root protection area by hand.
- 2.5 Fill major hollows using clean sharp sand – **DO NOT COMPACT OR SCRAPE THE SURFACE TO GRADE OFF HIGH SPOTS.**
- 2.6 The use of no-dig construction methods and materials, elevates the structure above the existing ground level. Protective edging is therefore required to contain and support the construction materials. Timber edgings are an ideal support and are installed by:
  - Carefully hammering treated softwood stakes into the ground at suitable distances to enable the support required for edging boards. If it is apparent that the pegs are coming into contact or are likely to contact roots, the installer must **STOP** immediately and re-position the peg or seek advice from the Arboricultural Consultant
  - The final levels of the stakes shall be positioned lower than the edging boards to accommodate the finishing surface.
  - Treated softwood edging rails shall be fixed to the outside edge of the timber pegs. The rails will be of an appropriate size as to leave a finished height equal to or above that of the finished surface level of the driveway.

- The timber rails must be seated directly onto the existing ground level without any surface excavation or soil scraping to enable leveling.

The dimensions and positioning of the support stakes and edging rails will be specified by the Project Engineer.

- 2.7 If service cables are to be incorporated into the sub base structure, they can be installed at this stage, along the inside edge of the timber rails above ground level.
- 2.8 Lay a non-woven geotextile separation fabric over the prepared surface between the edgings, making sure it is taut and that there are no folds.
- 2.9 Overlap the adjoining geotextile, as to the manufacturer's instructions and considering the soil strength (CBR) and temporarily retain it with weights. This overlap must be a minimum of 300mm on dry soils.
- 2.10 Expand the Cell web 2.56m wide panels to the full 8.1m length.
- 2.11 Pin the Cell web panels with the staking pins to anchor open the cells.
- 2.12 Staple the adjacent Cellweb panels together to create a continuous mattress. This will be carried out to the manufacturer's instructions.

Below are illustrations of the correct stapling procedure for joining both edges and ends of panels together;



- 2.13 Where necessary, cut the Cellweb panels to size using a sharp craft knife.
- 2.14 The infill material and its placement will be to the following method

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • | Infill the expanded Cellweb panels with a 40/20mm, <b>no fines</b> , clean angular aggregate.                                                                                                                                                                                                                                                                                                                                                                                                                       |
| • | The specified infill material shall be placed into the expanded cells, making sure that each individual cell is filled to its full depth.                                                                                                                                                                                                                                                                                                                                                                           |
| • | The filling of the Cellweb cells must be carried out by working in a direction from previously filled panels, so as to prevent any ground compaction and distortion of the unfilled panels. The maximum drop height of the specified infill into the cells will be limited to 1m to avoid damage or displacement of the cell walls. The gross weight of any machinery or vehicles used to infill the panels will not exceed the load bearing capacities of the Cellweb structure, as specified by the manufacturer. |

2.15 The finished surfacing will be of a porous material to allow moisture and gas filtration to the underlying soils and tree roots. If using concrete block pavers or slabs, the joints will be filled with a porous material or left open.

2.16 The finishing surfacing will be laid to the following specifications:

### **Surfacing Options**

#### **Block Paving:**

- Lay second layer of Fibretex F4M Geotextile separation fabric over the infilled Cellweb sections
- Lay sharp sand bedding layer compacted with a vibro compaction plate to recommended depth.
- Place block paviors as per manufacturer's instructions.

#### **Tarmac (porous):**

- Place 25mm surcharge of the granular material above the Cellweb system and lay the bitumen base and wearing courses.
- **Both the wearing surface course and the underlying binder course must be porous**, in order to allow both surface water and oxygen to penetrate through to the underlying sub base materials.

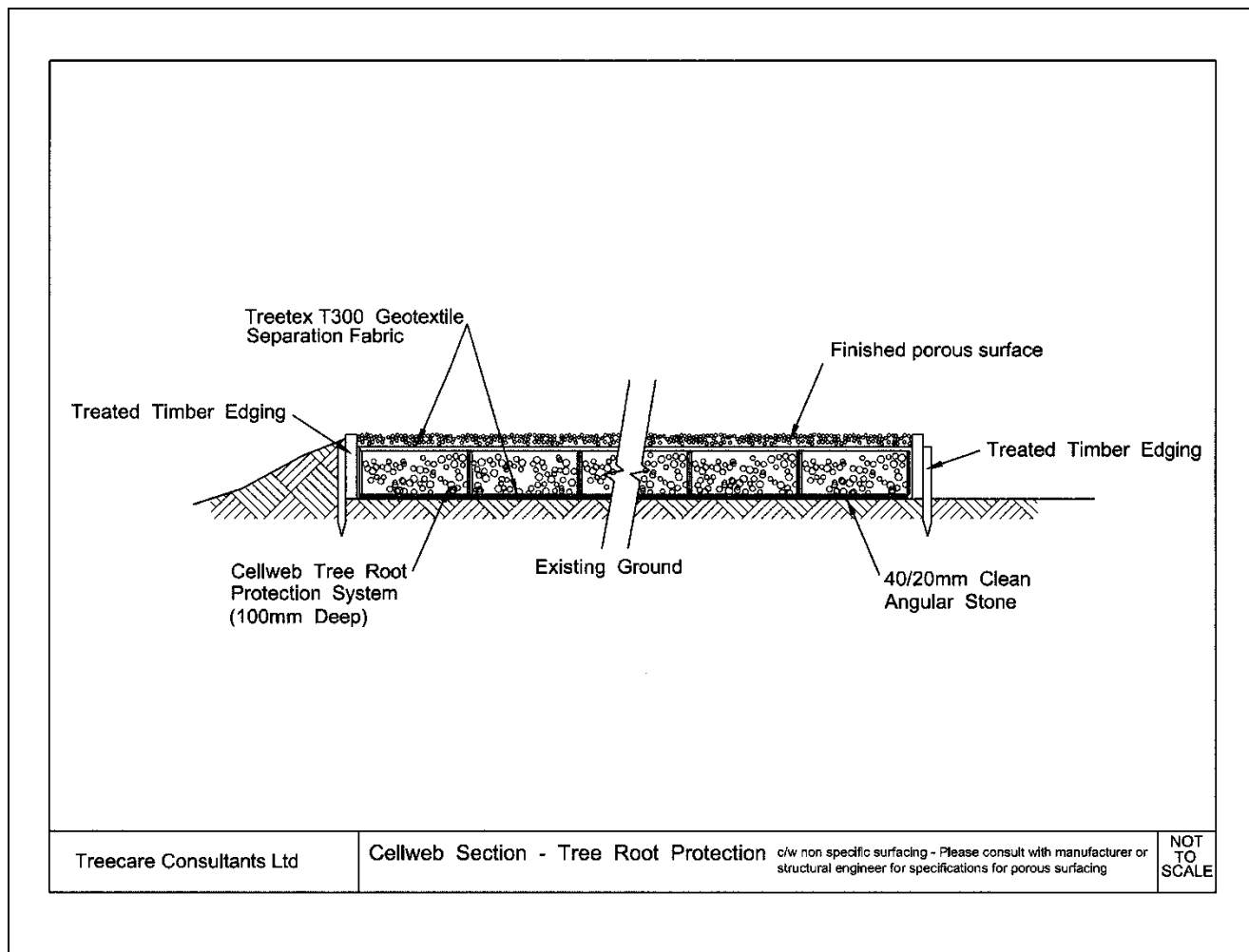
### Loose Gravel:

- Place second layer of Fibretex F4M Geotextile separation fabric over the infilled Cellweb sections
- Place decorative aggregate to required depth
- NOTE: A treated timber edge should be provided to restrict gravel movement. A gravel confinement system can also be incorporated to retain the gravel.

### Grass Blocks:

- Place second layer of Fibretex F4M Geotextile separation fabric over the infilled Cellweb sections
- Place 50/50 rootzone bedding layer to the required depth
- Lay recycled Duo Block 500 Grass Protection System infilled with 50/50 rootzone mix.
- Seed as per architects' instructions.
- (Alternatively, the Grass Blocks may be infilled with gravel.)

2.17 The edges of the trackway can be banked from the top of the edging boards to existing ground levels using a good quality top soil to recommendations in BS3882 "Specifications for Top Soil" 1994.





### 3. MATERIALS

#### **Cellweb 100 Cellular Confinement System and Treetex T300 Geotextile Separation Layer**

|             |                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------|
| Contact:    | Geosynthetics Ltd<br>Fleming Road<br>Harrowbrook Industrial Estate<br>Hinckly<br>Leicestershire<br>LE10 3DU |
| Tel:        | 01455 617139                                                                                                |
| Fax:        | 01455 617140                                                                                                |
| Web Address | <a href="http://www.geosyn.co.uk">www.geosyn.co.uk</a>                                                      |
| Email:      | <a href="mailto:sales@geosyn.co.uk">sales@geosyn.co.uk</a>                                                  |



## **ARBORICULTURAL METHOD STATEMENT 3**

### **GENERAL TREE PROTECTION OUTSIDE THE EXCLUSION ZONE**

#### **1. INTRODUCTION**

Trees that have been protected by constructing an exclusion zone, erecting protective fencing and ground protection can still be detrimentally affected from activities outside these areas. The following additional precautions should be taken outside the exclusion zone.

#### **2. METHODOLOGY**

- a) Care should be taken when planning site operations to ensure that wide or tall loads, or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible. Consequently, any transit or traverse of plant in proximity to trees should be conducted under the supervision of a banks man to ensure that adequate clearance from trees is maintained at all times.
- b) Material which will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings should not be discharged with 10m of tree stems.
- c) Fires should not be lit in a position where their flames can extend to within 5m of foliage, branches or trunk. This will depend on the size of the fire and wind direction.
- d) Notice boards, telephone cables or other services should not be attached to any part of the tree.
- e) It is essential that allowances should be made for the slope of the ground so that damaging materials such as concrete washings, mortar or diesel oil cannot run towards the trees.

## 6. FUTURE CONSIDERATIONS

If the proposed development goes ahead there are several factors that should be considered.

### **Implementation of works**

We advise that any tree works be carried out by Qualified Arboricultural Contractors. The contractor should carry out all tree works to BS 3998 *Recommendations for Tree Work (2010)* and as modified by research that is more recent.

### **Trees subject to statutory controls**

Most works to trees covered by a preservation order or within a conservation order require consent to remove or prune. This can be obtained by writing to the local authority tree protection team. Other legislation such as covenants and conditions under felling licenses exist that will need to be fully researched prior to any removals.

### **Replacement Planting:**

In order to ensure continuity of tree cover and enhance the development a soft landscape scheme has been prepared below which specifies the supply and planting of 2 Extra Heavy Standard English Oak trees and the planting of a native hedgerow around the rear gardens. This will ensure both the continuity of tree cover and the provision of enhanced habitat and a green corridor to link with surrounding land.

# TREE PLANTING AND MAINTENANCE SCHEDULE

**SITE OF SURVEY**

Land off 24 Gelligaer Road Trelewis  
Treharris

**CLIENT**

Chris Reilly

**SURVEYED BY:**

G.M. Ayres BSc (Hons) M Arbor ADip  
Biol  
T.A. Seymour BA Hons M Arbor A Dip  
Geog ND Arb  
Arboricultural Consultants  
Cardiff Treescapes  
17 Ravenscourt Close  
Penylan  
Cardiff CF23 5EN

**DATE**

18<sup>th</sup>. December 2018  
Report valid for 12 months

Reference documents BS 8545 2014  
BS 3882 2015  
BS 8601 2012  
BS 3998 2010  
BS 5837 2012  
BS 4043 1989  
BS 4428 1989  
BS 3936-1 1992

Defra leaflet: *CONSTRUCTION CODE OF PRACTICE FOR THE  
SUSTAINABLE USE OF SOILS ON CONSTRUCTION SITES*

# **1. INTRODUCTION**

## **1.1 DEVELOPMENT SITE LANDSCAPING**

This document is being prepared in relation to a development proposal at 24 Gelligaer Road Trelewis Treharris. The aim of the planting scheme is to provide guidelines for the planting of 2 trees around the grounds of the site and a length of mixed species indigenous hedgerow to mitigate for potential loss and to enhance the potential for habitat and visual amenity of the site.

## **1.2 ASSIGNMENT**

We have been instructed by Chris Reilly to:

Prepare an outline landscape schedule for the site above in accordance with BS5837:2012 It should be noted that the hard landscaping scheme, including detail on paving, and surfaces for parking is detailed in plans from Chris Reilly. This plan includes details on finished ground levels and has been used as a basis for the soft landscaping plan provided with this report.

## **1.3 SCOPE OF WORKS**

The scope of the soft landscape works will include:

The supply and planting of the specified trees;

A programme for maintenance of new trees;

A condition for replacement of plants that fail within the first five years of completion of the project.

The specification for plants included within this report is subject to the use of approved top and sub soil soils for planting beds which will be filled with subsoil to BS 8601:2013 and topsoil to BS 3882:2015 to a depth of no less than 300mm for trees and shrubs being brought to site. Imported top soil should supplied with certificate of compliance with BS3882 : 2015. A cross section and soil profile has been included as part of this proposal.

## **1.4 LIMITATIONS AND USE OF COPYRIGHT**

All rights in this report are reserved. No part of it may be reproduced or transmitted, in any form or by any means without our written permission. Its contents and format are for the exclusive use of Chris Reilly and his associates. It may not be sold, lent out or divulged to any third party not directly involved in this situation without the written consent of Cardiff Treescapes.

We have no connection with any of the parties involved in this situation that could influence the opinions expressed in this report

## 2. THE SITE

### 2.1 SITE DESCRIPTION AND LOCAL CONTEXT

The site is currently undeveloped and is on the edge of agricultural land at the edge of an area of residential housing.

### 2.2 SOIL EVALUATION AND IMPROVEMENTS REQUIRED

It seems unlikely that the area has been used for anything other than agricultural use and soils are likely to be mainly undisturbed. It is advised to have some assessment of soils undertaken to ensure their suitability for use in amenity planting and if found to be unsuitable planting beds for trees shrubs and the grassed area will need to be formed with imported certificated sub soil and top soil compliant with BS 3882 2015 and to BS 8601 2013. Plant beds will need to have a profile of 300mm of free draining top soil over de-compacted sub soil. If soils on site are to be stripped there will be a need for a soil resource plan, this must state whether the soils will be removed or stored on site and how this will be achieved.

### 2.1 Selection of plants:

Trees have been selected for their suitability to fit in to the local landscape and as replacement for tree(s) lost as a result of the development. The selection of plants also takes consideration of manageability for owners, suitable for location, sourced locally, and where possible provision of potential habitat or foraging opportunity for wildlife.

If plants are stored, they will need to be regularly watered to avoid drying out. The plants selected have been chosen for their drought tolerance and low maintenance.

### 2.4 TABLE 1: The Shrubs

| Species                                                                                                                                                                                   | Size                                                                  | Supplier                                    | Photograph |                                                                                       | Attributes                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------|------------|---------------------------------------------------------------------------------------|--------------------------------|
| 2 no. <i>Quercus robur</i>                                                                                                                                                                | Extra heavy standard<br>4.5- 5.5m Ht<br>12-14 cms Girth<br>Bare root. | Wyevale Nurseries<br>Kings Acre<br>Hereford |            |  | Native broadleaf tree          |
| 1500* 2-3 yr old hedging whips of Mixed species ( <i>Hazel</i> , <i>Hawthorn</i> Field <i>Maple</i> <i>Viburnum opulus</i><br>* Numbers have been estimated and should be checked on site | 2-3 yr old bare root whips 45-90cms                                   | Wyevale Nurseries<br>Kings Acre<br>Hereford |            |  | Foraging and habitat potential |

# AMS 1

## PLANTING NURSERY STANDARD TREES, AND POST MAINTENANCE

### **1.0 INTRODUCTION**

- 1.1 This method statement describes the procedure required for the planting and post maintenance of trees and shrubs.
- 1.2 Bare root trees must be planted in the dormant season between November and early March.
- 1.3 The recommendations for tree and shrub species and dimensions are detailed below and were available at the time of this report but will be subject to availability:

### **2.0 METHODOLOGY**

- 2.1 The Planting pits for trees will be no less than 0.75m.x 0.75 wide and dug to a depth of no less than 450mm. The soil resource survey and soil resource plan will determine whether existing soils or imported soils are used and planting pits will be filled with subsoil to BS 8601:2013 and topsoil to BS 3882:2015 to a depth of no less than 950mm for trees.
- 2.2 Mark out the size of the planting pit with a spade by scraping the edge along the ground surface. The planting pit will be square in shape and be a minimum of 40cms larger than the diameter of the containerised root ball. Hedge planting areas should be marked out on site and if required turf removed to create planting bed.
- 2.3 The final depth of the planting pits will be the same as the height of the root ball of the tree/shrub.
- 2.4 Loosen the base and sides of the planting pit with a garden fork and lightly firm the base of the pit. The trees will be supported with a single 1.8m tanolised tree stake driven into the base of the planting pit at this point and tied to this stake with individual tree ties allowing good space between the tree and stake. Hedging plants may require support and protection either by plastic tuley tubes or rabbit fencing



- 2.5
- 2.6 Prune any damaged branches and formative prune the crown as per to BS3998 “Recommendations for Tree Work” (2010). No heavy pruning or crown reduction will take place at this time.
- 2.7 Transfer the trees/shrubs into the planting pit; centrally position it with the stake(s) to ensure ties can be applied and check the pit dimensions against the root ball.
- 2.8 Ensure that the root ball is not disturbed but that roots are teased out to aid their spread and that the final soil levels do not cover the root collar.

- 2.9 Any weed growth will be removed from the surface of the root ball and disposed of.
- 2.10 The approved backfill soil mix as determined by the SRP will be placed into the planting pit, filling the void between the root ball and the sides of the planting pit. The approved top soil will be used for topping up, if required. The backfill shall be worked around the root ball in layers of 10 – 15 cms with each layer being carefully firmed using the sole of the foot without damaging the root ball.
- 2.11 During the process of backfill, the trees/shrubs will continually be checked for straightness.
- 2.12 Any leftover soil and debris arising from the planting will be removed and disposed of accordingly.
- 2.13 The trees and shrubs will be mulched with a well composted organic mulch such as woodchip to a depth of 8cms when settled. The mulch will be placed around the base of the tree to a diameter of no less than 1m to form a bund for water retention. No build-up of mulch will be situated around the base of the stem as any heat produced by the mulch may kill the cambium and also prevent respiration.
- 2.14 The trees/shrubs will be watered immediately by slowly filling the mulch bund with ten litres of water allowing for the water to soak into the root ball and planting pit.

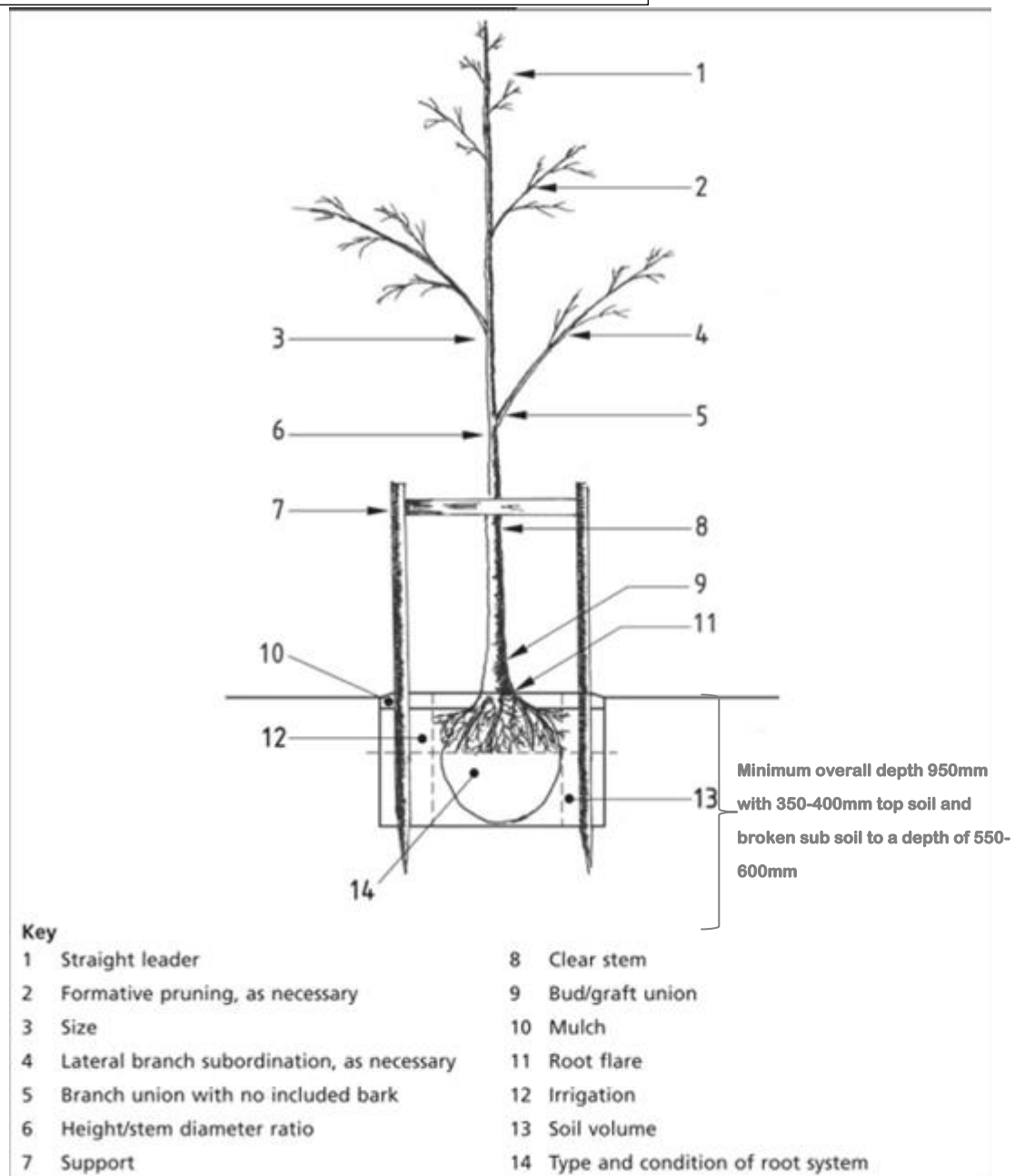
## **2. MAINTENANCE**

- 3.1 During the first two growing seasons after planting, the trees/shrubs will be watered regularly especially during dry periods from March to October. The amount of water required will be dependent on the soil type but water logging will be avoided. Any water should be applied slowly avoiding run off away from the root ball. An ideal way to achieve this is with a seep hose placed in a spiral pattern around the base of the tree. Tree stakes can be removed at this point or if the root system has not sufficiently established the tree should be assessed for replacement or re staking.
- 3.2 All grass and weed compaction around the base of the tree to a minimum of 1m diameter shall be eliminated in the first three growing seasons.
- 3.3 The mulch shall be topped up to maintain a depth of 8cm during the first three growing seasons.
- 3.4 The ties and stake can be removed once the root system has established in the ground and the tree is firmly rooted within the first two years. Shrubs will require clipping annually once established at required height.
- 3.5 Any trees or shrubs dying within the first 5 years of completion will be removed and replaced with similar size and species.

## **4.0 MATERIALS**

- 4.1 Subject to the outcome of the Soil Resource Survey and Soil Resource Plan  
Imported Subsoil: Handled stored and of quality to comply with specifications in guideline BS8601 ; 2013  
Imported top soil should supplied with certificate of compliance with BS3882 : 2015 (if required )  
Contact: *Crown Hill Top soil supplies*
- 4.2 Organic Matter (if soil condition poor), Mulch,
- 4.3 Tree stakes 4 no. round 1.8m treated <80mm dia

## TREE PIT SECTION



Please note the final tree pit profile and soil specification design will be determined by the findings of the soil resource survey and sub soil conforming to BS 8601:2013 and topsoil to BS 3882:2015 will be used as a planting medium

**TREE PLANTING SCHEDULE:**  
Lasnd off 24 Gelligaer Road Trelewis  
Treharris

