

ARBORICULTURAL IMPLICATIONS ASSESSMENT and METHOD STATEMENTS

SITE OF SURVEY

Greenacres Brondeg
Heolgerrig Merthyr Tydfil
CF48 1TP

CLIENT

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8/1/2020 Revised 10/6/2020

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Summary

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1. INTRODUCTION

1.1 ASSIGNMENT

We have been instructed by Mr Paul Thomas BSc. (Hons) of Utopia Design Architectural Services to prepare the following documents

- a) Arboricultural implications assessment
- b) Chronology of events
- c) Site specific arboricultural method statements for:-
 - The construction of NO DIG Driveway.
 - The placement of ground protection boards
 - General tree protection outside the exclusion zone...
 - General tree protection while working inside the exclusion zone.

1.2 ARBORICULTURAL IMPLICATIONS ASSESSMENT

An arboricultural implications assessment is a type of tree survey that considers how a proposed development will impact on the existing trees. This report follows the pre-development tree survey undertaken in February 2013 which contains data on the affected trees details of which have not significantly altered. The pre-development tree survey reports on the trees' positions, dimensions, condition and suitability for retention.

The arboricultural implications assessment adds to the information gathered in the pre-development survey and considers the tree losses, damage, protection, future issues and mitigation of the proposed development site.

1.3 QUALIFICATIONS AND EXPERIENCE

We have based this report on site observations and have come to conclusions in the light of documented experience. We have qualifications and experience in arboriculture and list the details in Appendix 1.

1.4 DOCUMENTS AND INFORMATION PROVIDED

We were provided with a formal instruction to undertake this work along with an outline plan showing the area affected by the proposed development.

1.5 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 Mr. J Coccimiglio and Paul Thomas BSc. (Hons) of Utopia Design Architectural Services. 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

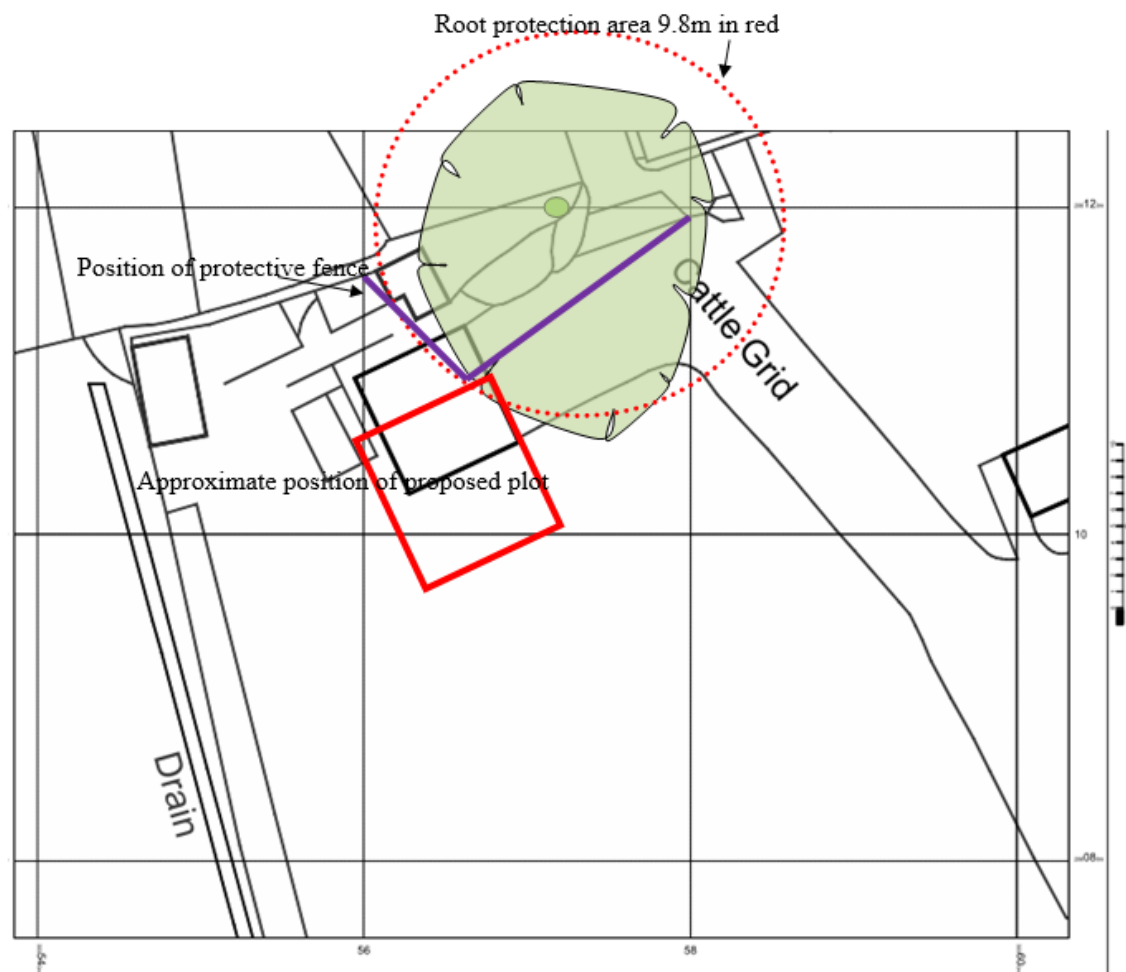
2.1 IDENTIFICATION LOCATION OF TREES

The tree affected has been previously surveyed and the essential dimensions have not changed significantly. The tree has not been assessed for hazard risk or condition. It should be noted that Tree 1 Oak has been reassessed as Category B2.

Tree No: 1		Tag No: n/a		Species: English Oak <i>Quercus robur</i>			
Height: (m) 20m		Crown Spread: (m)		N 6.0	S 10.0	W 7.0	E 5.5
Stem Diameter: (mm) 820est At 1m		Crown Height (m): 23.0s			Life stage: Mature		
Life Expectancy: (years) 40+				Radius Root Protection Area: (m) 9.8m			
Estimated Mature Tree Dimensions (m)				Height: 26m		Crown Radius: 18m	
Form: Open grown tree							
Tree Category: A							
Condition:							
Physiological		Good					
Structural		Single main that divides into two at 3.0m stem appears sound, normal amount of dead and dysfunctional limbs in upper crown rooting in raised area behind retaining wall					
Preliminary Recommendations:							
May require minor crown lifting to raise low limbs						Priority:	

The tree surveyed has been illustrated on the Tree constraints plan and impact assessment plan Feb 2013). A supplementary tree constraints plan can be found on page 48 of this report

TREE CONSTRAINTS AND PROTECTION PLAN: GREENACRES BRONDEG
MERTHYR TYDFIL 1:200 @ A4 PLANNING REF: P/09/0127

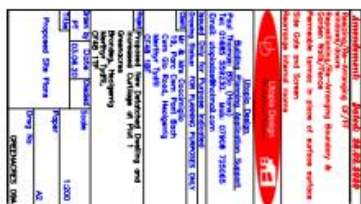


2.2 DESIGNATION RELATING TO THE SITE

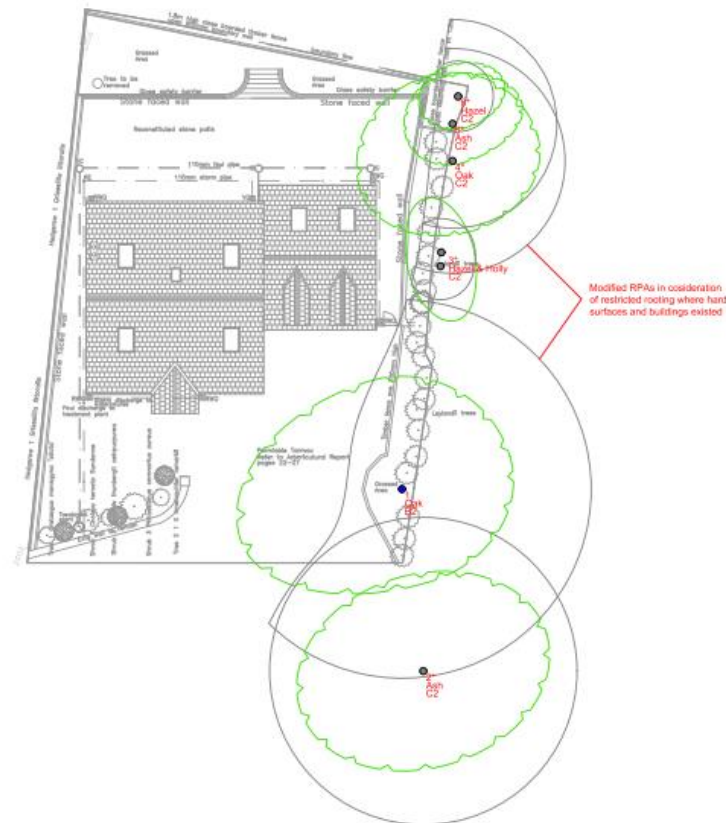
It is understood that the tree is subject to a tree preservation order managed by Merthyr Tydfil Council.

3. ARBORICULTURAL IMPLICATIONS ASSESSMENT

We have received the following revised plans that illustrate the development proposal layout and elevations



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Cardiff Treescapes

Arboricultural Consultants

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Tel/Fax/Voice mail 029 2048 1284
e-mail: info@cardiff-treescapes.com Web: www.cardiff-treescapes.com

Site: Greenacres, Brondog, Morthyr Tydfil	1:200@A2
Drawing Title: Arboricultural Impact Assessment	Rev A, June 2020

Key:

- Category A
- Category B
- Category C
- Category U

NOTE: Tree group numbers marked with an * have approximate locations.

3.1 DIRECT LOSS OF TREES

From the above plans it is clear that no trees will be lost as a result of this proposal.

3.2 ROOT SEVERANCE

There is unlikely to be any major root severance as a result of the proposal.

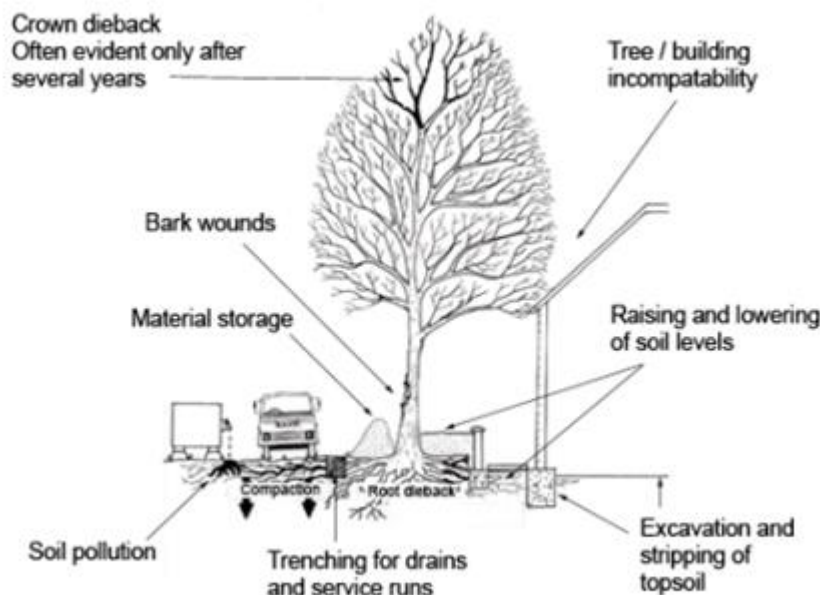
3.3 CONSTRUCTION WITHIN ROOT ZONES

It is understood that the surface of the existing driveway which at present is comprised of a tarmac surface is to be removed and renewed. The removal of the existing surface and resurfacing with tarmac will need to be undertaken with great care as much of it is within the root protection area of Tree 1. We have included with this report a method statement which is for guidance only for the removal of the existing surface and for the installation of the new surface.

3.4 TREE PROTECTIVE 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, tree protective barriers will be placed to prevent construction activities that may have a detrimental effect on any retained trees as well as open soil within influential distance of the construction area.

Potential causes of damage to trees on development sites.



Although it is not considered necessary to provide fencing for trees T1 as it currently surrounded by hard surfacing and is situated in a raised bed behind a retaining wall ground protection may be required to avoid soil compaction once the existing surface is removed and prior to the finished porous driveway being installed.

The access to the development area is assumed to be via existing hard surfaced access roads and possible compaction of soils elsewhere by construction traffic is not thought to be a consideration.

3.5 INSTALLATION OF SERVICES

To be kept outside of tree root protection areas

3.6 LANDSCAPING

A specification will need to be drawn up if required

3.7 GENERAL CONSTRUCTION OUTSIDE RPA

- 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 close proximity to trees should be conducted under the supervision of a banksman 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 within 10m of the tree root protection area.
- 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.

3.8 ON SITE STORAGE OF SPOIL, BUILDING AND TOXIC MATERIALS

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.

4. SITE MONITORING

4.1 Arboricultural Supervision.

An Arboricultural consultant (AC) should be appointed by the developer to advise on the tree management for the site and to attend:

- A pre-commencement meeting before any works start
- Regular supervision site visits to oversee the agreed tree and soil protection
- Further site visits to supervise any unexpected issues arising affecting trees on site

Specifically, the pre-commencement meeting should be scheduled for before any site clearance or construction begins. This should be attended by the developer the arboricultural consultant and a representative from the Local Authority Planning Department (LAPD). In the event of the LAPD declining the discussion from the meeting will need to be documented. The meeting should include discussions of all measures required for tree protection and agreeing the form and location of tree protective measures. Any agreed clarifications or modifications to the consented details will be documented and details circulated to all involved parties. The aim of the meeting is to agree and finalize details of the tree protection programmed and will form the basis for supervision arrangements between the developer and the Arboricultural Consultant (AC).

4.2 General site management

It is the developer's responsibility to ensure that the details of the arboricultural method statement and any agreed amendments are known and understood by all site personnel. Copies of the agreed documents should be available on site and the site manager will brief all personnel who could be involved in operations that may impact on trees or on specific protection requirements. This should be part of site induction procedures and be written into appropriate site management documents.

4.3 Supervision of operation affecting trees

Once construction or ground clearance commences the Arboricultural Consultant will visit at an agreed at the pre-commencement meeting (Normally every 2-4 weeks but potentially longer). An arrangement needs to be sufficiently flexible to allow supervisor of sensitive works as they occur, and it is important that an open line of communication is maintained between the Contractors, the appointed Arboriculturalist and the Local Planning Authority. The Arboricultural consultants' role is to ensure protective measures are fit for purpose and in place prior to any works commencing on site and to keep LAPD informed. As the construction phase continues the AC will need to comply with monitoring schedule and advise on any arising tree problems.

SUMMARY

Arboricultural input will be required for the following operation

1. Pre-Commencement meeting
2. Preliminary tree works
3. Installation of tree protection
4. Pollution control near trees.

5. 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	• Discussions/meetings with relevant construction personnel to discuss extent of tree constraints • Review working space requirements to discuss any adjustments to barrier or ground protection • Review construction method proposals and any RPA conflicts • Review any post consent layout changes affecting trees • Review all works within RPAs • Identify potential conflicts and means of reducing impact • Prepare working drawings as required
Review consented tree protection proposals for discussion at pre-commencement meeting	• Revise plans if necessary • Discuss and agree revisions with LAPD
Review landscape and tree planting plans	• Discuss with developer requirements for protecting soils on site and locations for soft landscaping
Pre-commencement site meeting with developer and LAPD representative	• Meeting on site • Agree details of supervision requirements • Review updated proposals • Review tree protection if already installed

OPERATIONS THAT COULD AFFECT TREES DURING CONSTRUCTION	
ACTION	ARBORICULTURAL INPUT
Access of plant and machinery on to site	• Meeting with contractor to discuss relevant method statement and to supervise operation as required • Assess any likely losses to hedgerows and their replacement
Removal of ground protection	• Meeting with contractor for briefing prior to works • NB This should only occur once all operations likely to impact on trees have been completed.

6. 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.

7. FUTURE CONSIDERATIONS

- Maintenance – Retained trees will require regular maintenance for hazard risk, size control and good husbandry reasons.

SITE SPECIFIC ARBORICULTURAL METHOD STATEMENT 1

REMOVAL OF TARMAC SURFACING AND TREATMENT OF UNDERLYING GROUND BY SOIL AMELIORATION WITHIN THE ROOT PROTECTION

1. INTRODUCTION

- 1.1 This method statement describes the procedure to remove tarmac surfacing whilst exerting no adverse effects on underlying tree roots. It also includes a method of amelioration and de-compaction of the underlying soil.
- 1.2 This method statement must be read in conjunction with an appropriate site-specific risk assessment.

2. METHODOLOGY

- 2.1 All vehicles, machinery or plant will remain outside the root protection area. The tarmac roadway adjacent to the tree may be used as access for light plant such as dumpers and compressors.
- 2.2 Materials which will contaminate the soil, e.g. diesel oil and petrol, will not be discharged within 10m of the tree stem or stored within the root protection area.
- 2.3 The existing tarmac surface will be broken up with extreme care using light machinery such as a hand-held breaker. The chisel end of the breaker must not enter the underlying base material or soil
- 2.4 The broken tarmac surface may be carefully loosened with hand tools such as a mattock. The loosened sections can then be lifted by hand and disposed of accordingly to an area outside of the root protection area.
- 2.5 The sub surface base material will be broken up with the use of a specialised soil pick. This is designed to use high pressure air to loosen and remove soil and granular sub-base material from around tree roots whilst avoiding physical damage to these roots. This will be carried out by an arboriculturalist experienced in below ground tree practices.
- 2.6 An experienced arboriculturalist will then remove as much of the sub-base material as possible using small light weight hand tools.
- 2.7 Any small damaged roots below 10mm in diameter will be pruned using appropriate sharp secateurs by an experienced arboriculturalist.
- 2.8 The excavated sub-base material will be disposed of accordingly outside the root protection area.
- 2.9 Any exposed fine surface roots will be covered immediately with damp Hessian to avoid drying out.

- 2.10 Any surface roots will be covered to a depth of no more than 10mm with a good quality graded top-soil. This will be to recommendations in BS 3882 ‘specifications for top-soil’ 2005.
- 2.11 This soil will be spread by hand without tramping on exposed roots.
- 2.12 The area will then be aerated by an experienced arboriculturalist using a high air pressure soil pick designed for the purpose. These air injections will be at a distance of 1m apart on a grid pattern and to a depth of 40-60cms
- 2.13 Prior to carrying out the soil aeration, the client will inform the operator of any underground services located in the treatment area. Service plans will be made available to the operator by the client.
- 2.14 The operator will plan the works so as to avoid re-entering the previously treated area and establish an exit point prior to completion.
- 2.15 When aeration is completed, the area may be treated with a slow release nitrogen fertiliser to the Landscape Architect’s specifications. A mulch may also be used such as well composted woodchips to a depth of no more than 3cms.
- 2.16 Further soil compaction of the prepared area from foot traffic, vehicles or machinery shall be avoided.

3. MATERIALS

3.1 Topsoil Backfill

4. CONTACTS

TREE CONSULTANTS	G.M. Ayres BSc (Hons) M Arbor ADip Biol T.A. Seymour BA Hons M Arbor A Dip Geog ND Arb
MAIN CONTRACTOR	
PROJECT ARCHITECTS	Mr. Paul Thomas BSc. (Hons) Utopia Design Architectural Services
CHARTED LANDSCAPE ARCHITECTS	
CONSULTING ENGINEERS	
LOCAL PLANNING AUTHORITY TREE OFFICER	

SITE SPECIFIC ARBORICULTURAL METHOD STATEMENT 2 THE CONSTRUCTION OF TREE GROUND PROTECTION AREAS

1. 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

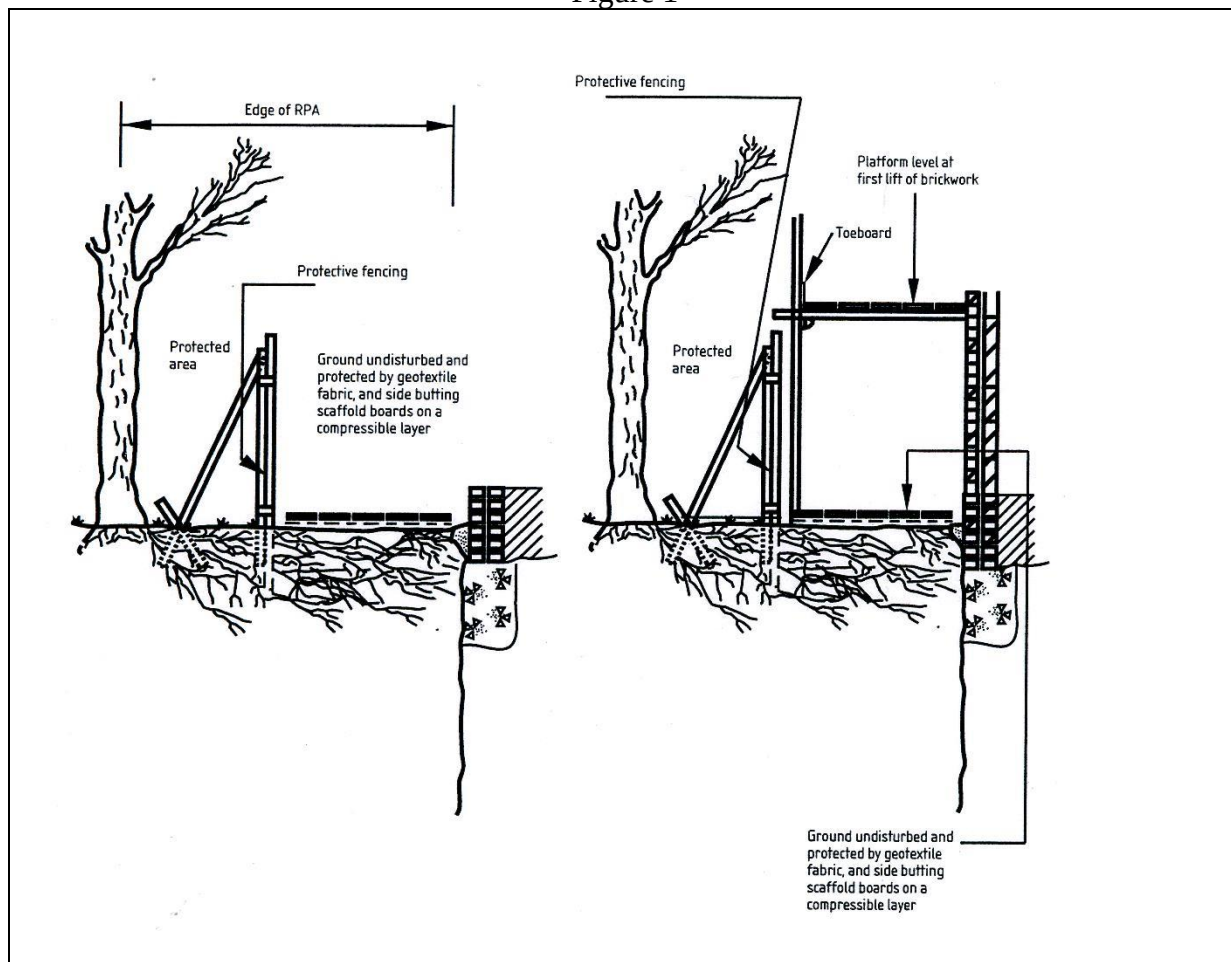
- a) Prevent physical damage to the roots during construction (such as soil compaction or severing).
- b) Make provision for water and oxygen to reach the roots.
- c) Allow for the future growth of the root system.
- d) Preserve the soil structure at a suitable bulk density for root growth and function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

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

SITE SPECIFIC ARBORICULTURAL METHOD STATEMENT 3

WORKING WITHIN THE ROOT PROTECTION AREA AND CONSTRUCTION EXCLUSION ZONE

1. INTRODUCTION

The root protection area and construction exclusion zones are indicated on the tree protection plan. Where access is required through these zones contractors should be made aware of the measures required to avoid causing damage to the trees during construction.

METHODOLOGY

- a) The construction zone and root protection area will be a **NO DIG ZONE**. No dig means that **no excavation whatsoever including scraping of the surface** can take place. NB Refer to NJUG Guidelines Volume 4 Issue 2 (2007) on *The Planning and Maintenance of utility apparatus in proximity to trees*
- b) Existing ground levels will not be altered in any way.
- c) No plant, vehicles or machinery will be allowed in the construction exclusion zone at any time unless suitable approved ground protection is used. Refer to previously submitted method statement "The construction of tree ground protection areas".
- d) Existing protective barriers required to be removed for access will be done so by hand.
- e) No materials including protective fencing, or any construction materials will be stacked within the construction exclusion zone.
- f) Any area within the construction exclusion zone not requiring access for work will require protective fencing to be erected as per previously submitted method statement "Construction of tree exclusion zones and erection of protective fencing".
- g) All construction exclusion zones, if not demarcated by protective fencing will be clearly outlined with temporary fluorescent fencing and signed with all-weather notices stating, "Protected Tree – Construction Exclusion Zone".
- h) 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 close 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. .
- i) Material which will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings should not be discharged with 10m of the tree stem.

- j) 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.
- k) Notice boards, telephone cables or other services should not be attached to any part of the tree.
- l) 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.
- m) Slight hollows or holes within the ground surface should be filled with sharp sand to allow Geotextile material or ground protection to be laid if required.
- n) Any tree stumps to be removed will be done so carefully with the use of a stump grinder ensuring that no roots from existing trees are damaged.
- o) Any ground vegetation requiring removal will be killed using a translocated herbicide, ensuring that the selected herbicide does not damage the roots of the retained trees. This will be carried out by a suitably qualified person holding a PAI, PA6 certificate.
- p) Any hard surfacing to be constructed will be laid on a permeable Geoweb material designated specifically to dissipate loading and prevent soil compaction. A separate method statement will be required for the specific system to be used.
- q) If it has been agreed by the Local Planning Authority that any excavation work can take place, this will be supervised by the appointed Arboricultural Consultant as a watching brief. See attached methodology for specialist method for excavating foundation trenches and pits within tree root protection areas

SITE SPECIFIC ARBORICULTURAL METHOD STATEMENT 4

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

- f) 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 close proximity to trees should be conducted under the supervision of a banksman to ensure that adequate clearance from trees is maintained at all times.
- g) Material which will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings should not be discharged within 10m of the tree stem.
- h) 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.
- i) Notice boards, telephone cables or other services should not be attached to any part of the tree.
- j) 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.

APPENDIX I

QUALIFICATIONS AND PROFESSIONAL DEVELOPMENT

Mr G.M. Ayres M Arbor A BSc Hons ND Arb

1. **QUALIFICATIONS**

- BSc (Hons) Biological Sciences & Environmental studies
- Diploma in Biological Sciences
- Surrey County Diploma in Arboriculture 1981 – Merrist Wood College
- Ordinary National Diploma in Arboriculture – 1981 Merrist Wood College, Surrey
- Professional member of the Arboricultural Association

2. **PROFESSIONAL AFFILIATIONS**

- Arboricultural Association

Mr .T.A.SEYMOUR BA Hons M Arbor A ND Arb

1. **QUALIFICATIONS**

- BA Geog/Enviro
- Diploma in Geography and Environment
- Professional member of AA
- Diploma in Supervisory Studies
- Surrey County Diploma in Arboriculture 1981 – Merrist Wood College
- Ordinary National Diploma in Arboriculture – 1981 Merrist Wood College, Surrey

5. **PROFESSIONAL AFFILIATIONS**

- Arboricultural Association

APPENDIX II

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.

Type	Represents the type of vegetation being assessed. These are Tree (T), Group (G), Stump (S), Woodland (W)
Tag No	Each tree has been marked by a numbered tag for onsite 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 onsite identification
Common Name Botanical Name	The tree species have been identified and both common and botanical names are given.
Age	Young – (Shown as Y in the schedule) juvenile tree with dominant leading shoot growth and short side branches. Vigorous growth and often of conical form. Semi-mature – (Shown as SM 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. Early maturity – (Shown as EM 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. Mature – (Shown as M 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. Over mature – (Shown as OM 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. Veteran / Ancient – (Shown as V 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.
Height (m)	Where site lines allow, tree height has been calculated by means of a laser clinometer and recorded in meters. 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.
Diameter (mm)	The stem diameter is measured in millimeters in accordance with Annex C of BS5837 2012.
Stems	The number of stems is recorded, e.g. 1, 2, 3 etc.
Crown Height (m)	Is the distance from the lowest point of the crown from ground level?
FSB Height (m) /Direction	The height of the First Significant Branch (FSB) is recorded in meters and the direction of growth is in relation to the cardinal points of the compass.
North (m) South (m) East (m) West (m) (Crown Spread)	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.
Condition	<u>Physiological Condition</u> 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: G = Good – 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. F = Fair – signs of adequate vigor 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 = Poor – obvious signs of advance stress including less than 70% canopy coverage, crown die back, significant deadwood. Sparse and discolored foliage. D = Dead – moribund or dead trees
Comments	<u>Structural Condition</u> 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. (Veteran trees may pose many physiological and structural faults yet still be considered in good condition for their age.)
Recommendations	Following visual inspection preliminary recommended action, further detailed inspection, or maintenance may be prescribed.
RPR (m) Root Protection Radius	This is calculated from Annex D of BS 5837 2012 'Trees in relation to construction - Recommendations'.
RPA (m) Root Protection Area	This measurement is the total area of root protection. This can be modified if necessary, by the Arboriculturalist.
Category	The tree's overall value is categorized in accordance to the cascade chart (table 1) of BS 5837 2005, see Appendix 2 of this report. In brief, the purpose of the tree categorization 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. <u>Category A</u> Trees of high quality and value that make a substantial contribution. Marked in light green on the tree survey plan. <u>Category B</u> Trees of moderate quality and value that make a significant contribution. Marked in mid blue on the tree survey plan.

<u>Category C</u>	Trees of low quality and value that provide only an adequate contribution. Marked in grey on the tree survey plan.
<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 dark red on the tree survey plan.

Appendix IV
**SOFT LANDSCAPING, PLANTING AND
MAINTENANCE SCHEDULE**

SITE OF SURVEY

Greenacres Brondeg
Heolgerrig Merthyr Tydfil
CF48 1TP

CLIENT
Architect

Mr. J Coccimiglio
Mr Paul Thomas BSc. (Hons) of Utopia
Design Architectural Services

SURVEYED BY:

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DATE

10th Jan 2020
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 support of a planning Application for a development proposal at Greenacres Brondeg Heolgerrig Merthyr Tydfil CF48 1TP. The aim of the planting scheme is to provide guidelines for the planting of trees and shrubs around the grounds of the site to enhance the visual amenity of the site and provide screening and a resource for wildlife.

1.2 ASSIGNMENT

We have been instructed by Mr. J Coccimiglio 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 the developers' architect. 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 shrubs;

A programme for maintenance of new plants;

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

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 Mr. J Coccimiglio. 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 within a residential area of Merthyr Tydfil and the house is overlooked by other properties on Brondeg, the main road. There are several mature trees in the general area and many properties have large mature gardens

2.2 SOIL EVALUATION AND IMPROVEMENTS REQUIRED

The garden has not been used for any other purpose likely to affect the soils with no contaminants harmful to human health thought likely to be present.

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2.4 SPECIFICATION FOR PLANT BEDS AND TREE PITS

The specification for plants included within this report is subject to the use of existing soils for full extent of planting beds. If there is a need to import soils these will conform to BS 8601:2013 which for subsoil and BS 3882:2015 for topsoil. Beds must have a depth of no less than 300mm top soil and 450mm subsoil for trees and shrubs.

Imported Topsoil shall not contain weed seeds in quantities that cause noticeable weed infestations in the final planting beds. Imported Topsoil shall meet the following physical and chemical criteria:

1. Soil texture: loam, sandy clay loam or sandy loam with clay content between 15 and 25%. And a combined clay/silt content of no more than 55%.
2. pH value shall be between 5.5 and 7.0.
3. Percent organic matter (OM): 2.0-5.0%, by dry weight.
4. Soluble salt level: Less than 2 mmho/cm.
5. Soil chemistry suitable for growing the plants specified.

Imported Topsoil shall be a harvested soil from fields or development sites. The organic content and particle size distribution shall be the result of natural soil formation. Manufactured soils where Coarse Sand, Composted organic material or chemical additives has been added to the soil to meet the requirements of this specification section shall not be acceptable. Retained soil peds shall be the same color on the inside as is visible on the outside.

Imported top soil to BS 3882 2015 and sub soil to BS 8601 2013 must be supplied with Product data and certificates:

Imported sub soils must not contain contaminants or excessive weed seeds and shall meet the following criteria:

6. Combined clay/silt content of no more than 55%.
7. pH value shall be between 5.5 and 7.0.
8. Soil chemistry suitable for growing the plants specified

Plant beds will need to have a profile of 300mm of free draining top soil over de-compacted sub soil

Planting pits for trees will need to be no less than .75m x .75m x 450mm depth, and will need to be subjected to percolation tests as set out in BS 8545 B.2.4 and table B1.

2.5 Selection of plants:

Plants will need to be manageable for owners, suitable for location, sourced locally, and where possible provide potential habitat or foraging opportunity for wildlife. If plants are stored

2.5.1 TABLE 1: The Trees and Shrubs

Species	Size	Supplier	Photograph	Attributes
HEDGE 1 120 Grisselinia littoralis* (New Zealand Privet)	60-90cms Container Grown	Hedges Direct		Broad leaf evergreen hedge with light glossy green leaves
TREE 1 <i>Cretaeus monogyna</i> 'stricta'	30L pot size / 2.4-3.5m	Chew Valley trees		Upright tree enjoys full or partial sun Bee and Bird friendly
TREE 2 1 x Amelanchier lamarkii **	1.5-2.4m Nursery standard tree container grown 10-15 Litre Pot	Wyevale Nurseries Kings Acre Hereford		Small flowering tree with good autumn colour
SHRUB 1 Species: <i>Choisya ternata</i> Sundance	1.0m Ht Container grown	Wyevale Nurseries Kings Acre Hereford		Evergreen foliage of bright yellow colour

SHRUB 2 Berberis thunbergii atro purpureum	1.0m Ht Container grown	Wyevale Nurseries Kings Acre Hereford		Deciduous shrub with dark red leaves
SHRUB3 Philadelphus coronarius aureus	1.0m Ht Container grown	Wyevale Nurseries Kings Acre Hereford		Deciduous shrub with scented flowers

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PLANTING NURSERY STANDARD TREES CONTAINERISED SHRUBS, AND POST MAINTENANCE

1.0 INTRODUCTION

- 1.1 This method statement describes the procedure required for the planting and post maintenance of containerised trees and shrubs.
- 1.2 Although containerised trees can be planted throughout the year, we would recommend planting in the dormant season between November and early March. Planting outside this period would require careful watering management.
- 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
Preparation of Tree Pits

The Contractor shall excavate tree pits of the following dimensions, and in the positions shown on the Drawings:-

TREE TYPE	TREE PIT SIZE (mm)
Semi Mature	1500 x 1500 x 1200 (depth)
Extra Heavy Standard	1200 x 1200 x 1000 (depth)
Heavy Std. / Selected Standard	1000 x 1000 x 800 (depth)
Standard	750 x 750 x 600 (depth)
Feathered	500 x 500 x 300 (depth)

Pits shall be excavated so as to avoid compaction/smearing of the sides and the bottom of each pit shall be broken up to allow for free drainage.

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 450mm for shrubs and 950mm for trees.

Hedge planting

Pit planting to be employed for all container grown stock. Plants shall be planted in a hole large enough to contain the root mass without distortion. The method used in forming the hole shall avoid smearing the sides and causing compaction. Soil shall be carefully returned and firmed in around the root mass. Surplus material may be distributed around the planting station, unless otherwise directed.

- 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
- 2.3 The final depth of the planting pits will be the same as the height of the root ball of the tree/shrub from the base of the container to the inner compost level. This can be

measured by holding the spade or cane against the container and transferring the measurement to the planting pit.

- 2.4 Loosen the base and sides of the planting pit with a garden fork and lightly firm the base of the pit. Any wrapping material other than wire mesh or degradable material holding the root ball together, such as plastics, polypropylene containers etc., should be removed and responsibly disposed of, recycled or re-used. The trees will be supported with either a single or 3 untreated tree stakes as required driven into the base of the planting pit at this point and tied to this stake with hessian tree ties or other suitable bio degradable material if the option of adhering to a commitment of maintaining or adjusting and removing a standard tree tie made of compostable or bio degradable composites is not practicable. The individual tree ties will be applied allowing sufficient space between the tree and stake. Hedging plants of the specified size are unlikely to require support.
- 2.5 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.
- 2.6 Transfer the trees/shrubs, removed from containers without disturbing the root ball, 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.
- 2.7 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.
- 2.8 Any weed growth will be removed from the surface of the root ball and disposed of.
- 2.9 The approved backfill soil mix as 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. The back fill will either comprise of soil taken and re used from site maintaining the exact soil profile on site only if deemed wholly appropriate by a soil scientists interpretive report. The backfill will need to comprise of imported soils as specified in the report (2.2) if soils on site are found to be unsuitable, heavily contaminated, compacted etc., as deemed by the soil scientists interpretive report. During the process of backfill, the trees/shrubs will continually be checked for straightness.
- 2.10 Any leftover soil and debris arising from the planting will be removed and disposed of accordingly.
- 2.11 The trees and shrubs will be mulched with 2.5m diameter ring 50mm depth tapering to 25mm of composted organic mulch such as woodchip or leaf mould. 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
- 2.12 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.

3. 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 at specified depth (2.12).
- 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

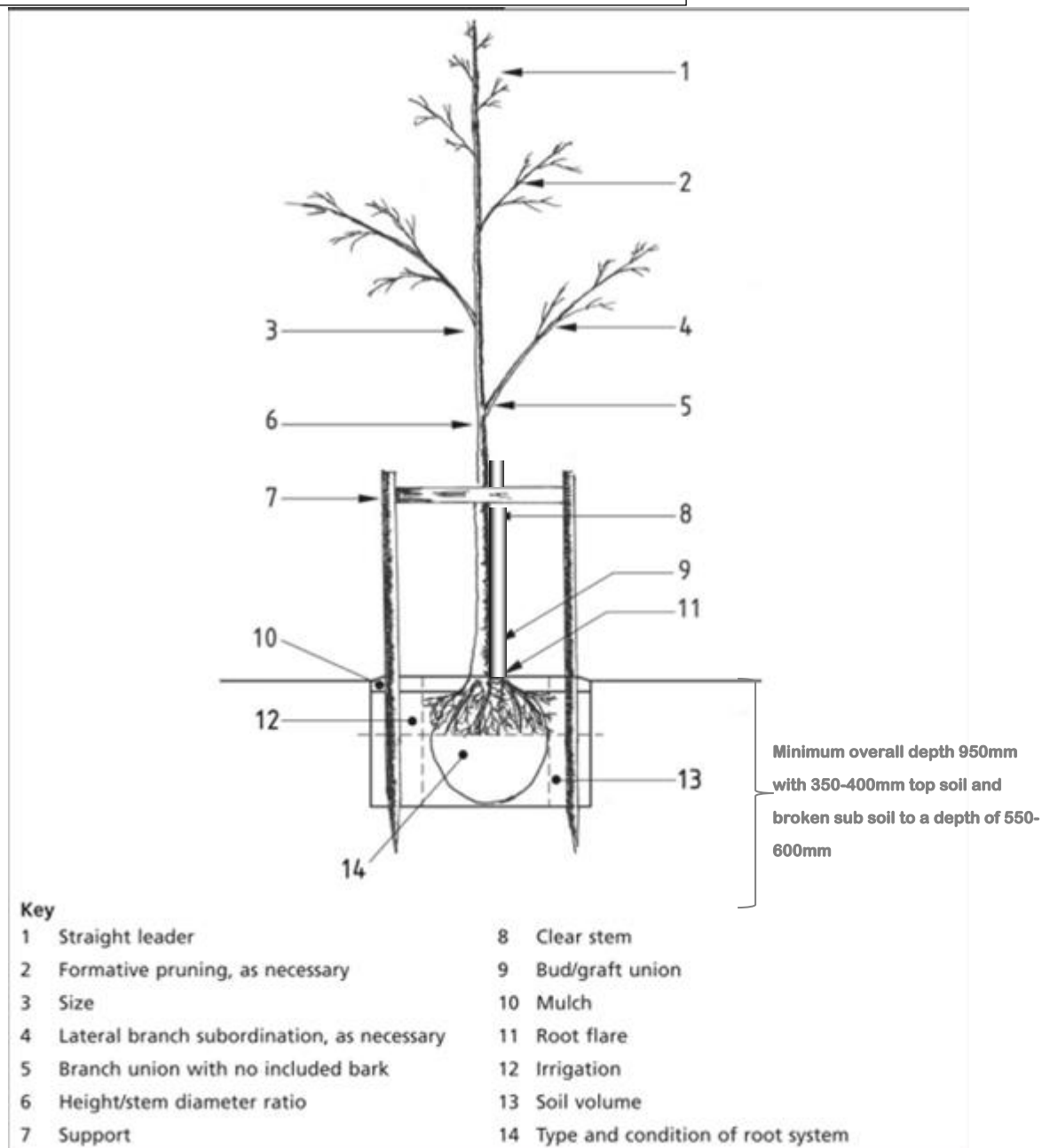
- 4.1 Only if required :Imported Subsoil: Handled stored and of quality to comply with specifications in guideline BS8601 ; 2013

Imported top soil should supplied with certificate of compliance with BS3882 : 2015 (if required)

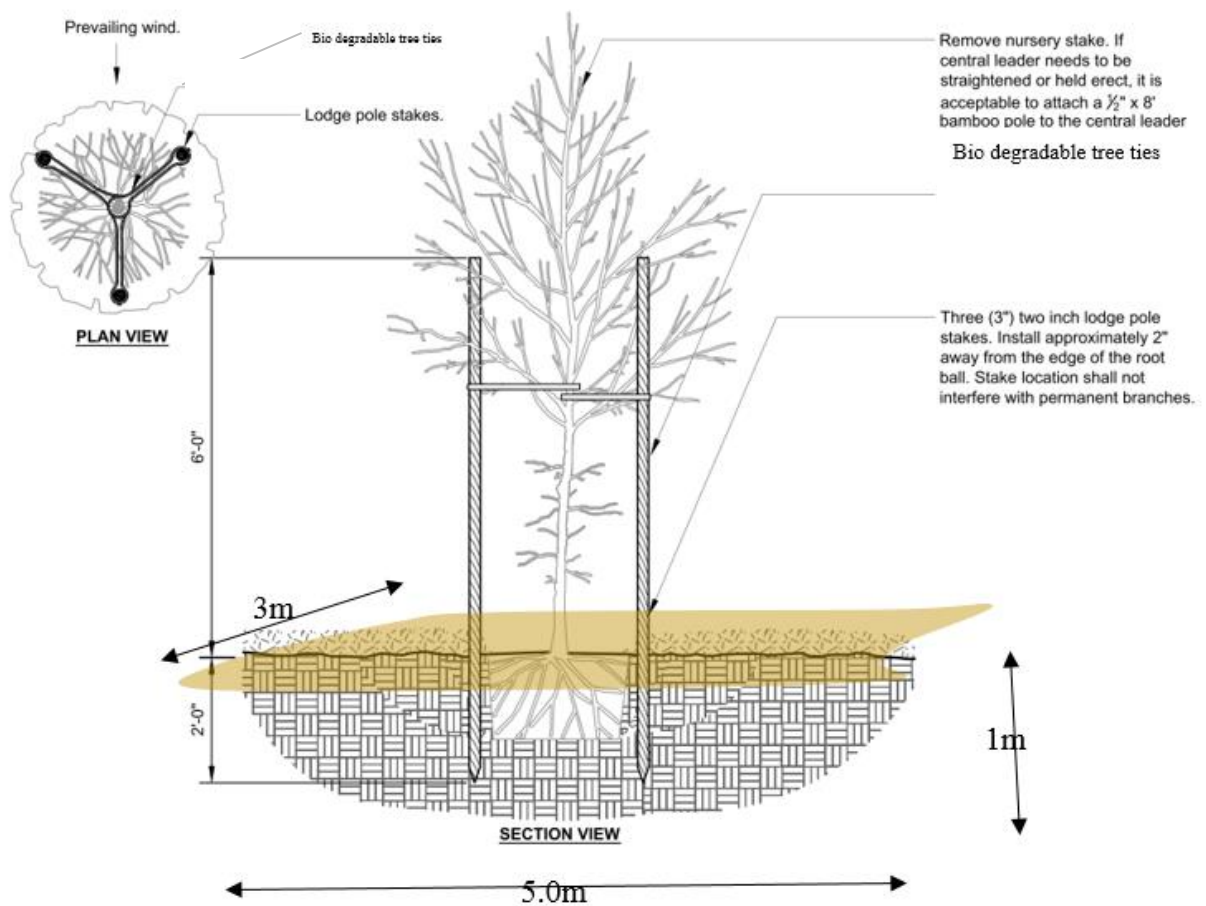
Contact: *Crown Hill Top soil supplies*

- 4.2 Organic Matter (if soil condition poor), Mulch,
- 4.3 Tree stakes 3 no. round 1.8m un-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



Specification	Tree Girth	Girth (cm)	Height (metres)
Light Standard (LS)	6-8cm	8-10	2.0-3.0m
Standard (S)	8-10cm	10-12	2.5-3.5m
Select Standard (SS)	10-12cm	12-14	3.00-4.0m
Heavy Standard (HS)	12-14cm	16-18	4.0-4.5m
Extra Heavy Standard (EHS)	14-16cm	18-20	4.0-5.0m
Advanced Heavy Standard (AHS)	16-18cm	20-25	4.5-5.5m
		25-30	5.0-6.0m
		30-35	5.5-6.5m
		35-40	6.0-7.0m
		40-45	6.5-7.5m
Semi mature	18-20cm +	45-50	7.0-8.0m

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GROUND PREPARATION AND LAYING TURF

When to lay turf

Turf is best laid in mid-autumn, but can be laid any time between mid-autumn and late winter whenever the soil is not too wet or frosty. In spring and autumn little mowing is needed so newly-laid turf can be left relatively undisturbed for several weeks.

Turf laid in spring often needs watering in dry spells over summer. Both dry soils and mowing before grass is fully rooted, stresses turf and delays rooting.

Turf-laying is best avoided from mid-spring until early autumn to avoid the need to repeated watering.

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Turf-laying is best avoided from mid-spring until early autumn to avoid the need to repeated watering.

Laying turf

Good seed bed preparation is the key to establishing a successful lawn. Pay particular attention to clearing weeds and cultivating the surface to a fine tilth.

Complete all site preparation before buying, or taking delivery of turves. Bought turves may vary in both size and thickness. Check dimensions when planning the lawn.

Soil preparation

- Eliminate perennial weeds such as couch grass or bindweed well before beginning to prepare the soil. Use weedkiller, or hand weed. Do not use residual weedkiller, as it can remain in the soil and will prevent the grass from establishing.
- The site should be dug or rotovated to a depth of 20-25cm (8-10in).
- Dig in some well-rotted manure or other organic matter (especially on a sandy soil) to hold moisture. Make sure it is well-rotted, as un-rotted organic matter will cause the soil surface to sink unevenly as it decays.
- After cultivation leave for several days to settle - the longer the better, ideally five to six weeks or more.
- Before the next stage of preparation, remove any weeds that have germinated. Hand-removal is best, or use a contact weedkiller. Do not use a residual weedkiller, as it will prevent the grass from establishing.
- To get the level surface that is crucial for the best lawns, tread the area several times in different directions and then rake several times also in different directions.
- Apply and rake in 70g per sq m (2oz per sq yd) of general purpose fertiliser

Preparing the turf

If laying is delayed, then the turves should be laid out flat to avoid any discolouring and weakening, but where possible laying should be done within 24 hours of delivery.

Gardeners sometimes need to lift turf themselves using a spade or 'turfing iron' and then trim each turf to a regular size and depth. To do this, place the turf upside down in a prepared wooden box and slice off soil at the correct depth. The thinner the turf is (within reason) the better the rooting; a 2cm ($\frac{3}{4}$ in) turf roots better than a 7.5cm (3in) turf. Avoid turf that contains a lot of weed.

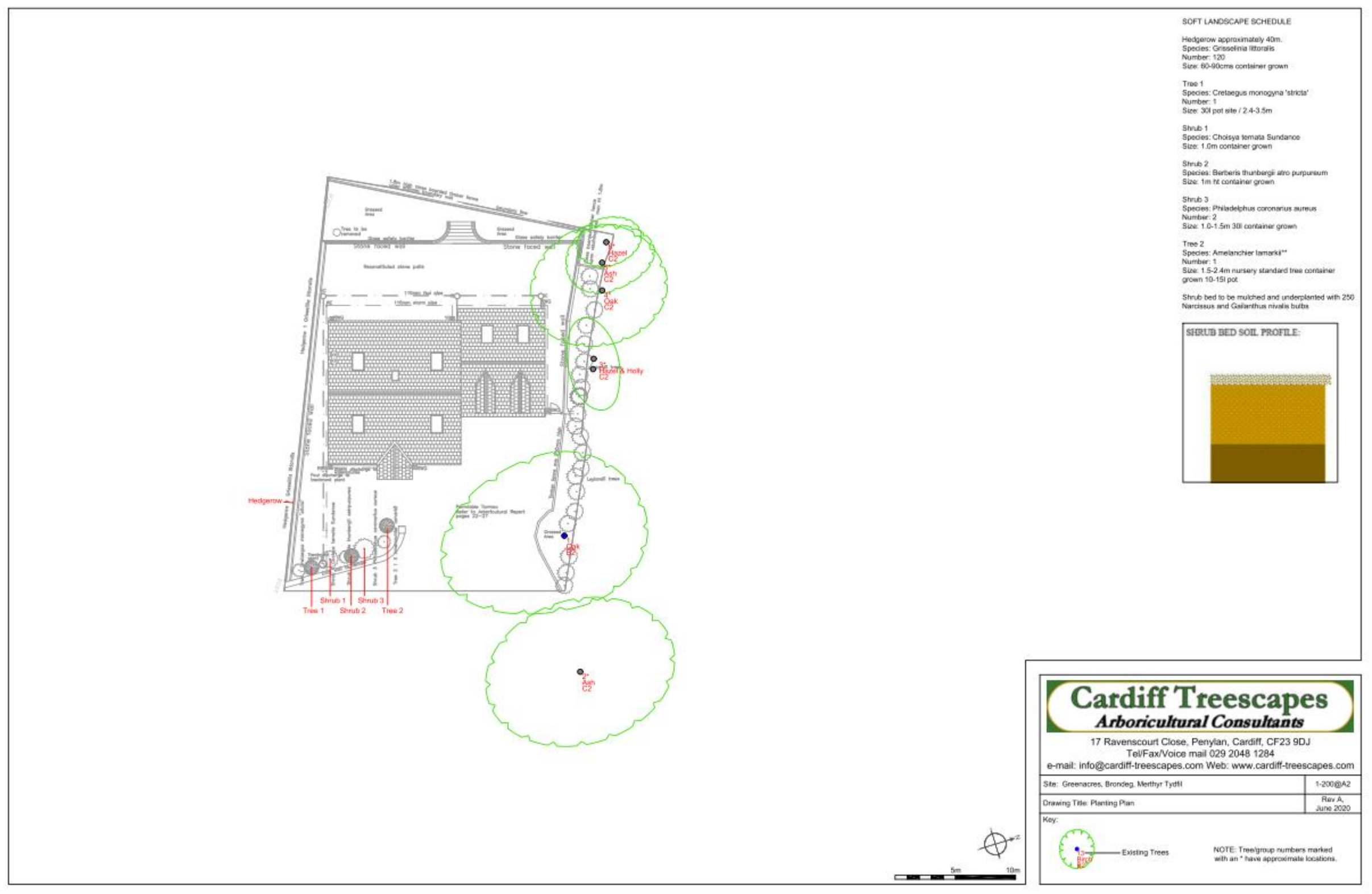
Laying the turf

- Begin at one side or one corner and work across so that the person laying the turf faces the bare soil.
- Avoid foot indentations in the newly laid turf by working from boards.
- Lay sods with staggered joints as in the pattern of a brick wall and closely butted together avoiding gaps.
- Ensure the turves are level by having a bucket of sandy soil at hand and adding or removing soil as necessary.
- Once all the turf has been laid it can be firmed lightly with a light roller or a home-made 'tamper' consisting of a piece of flat wood attached at right angles to a broom handle.
- When laying is complete, lightly spread a mixture of sand and soil or compost and work into the joints, using a rake or brush. This top-dressing fills any minor hollows and also helps the turves knit together and become established more quickly.
- After top-dressing, leave the turf undisturbed; the first few days are critical for root development.

Where disturbed soil, such as old flower beds, are being turfed, the new turf should be laid slightly higher than the rest to prevent a hollow developing as the soil settles.

Aftercare

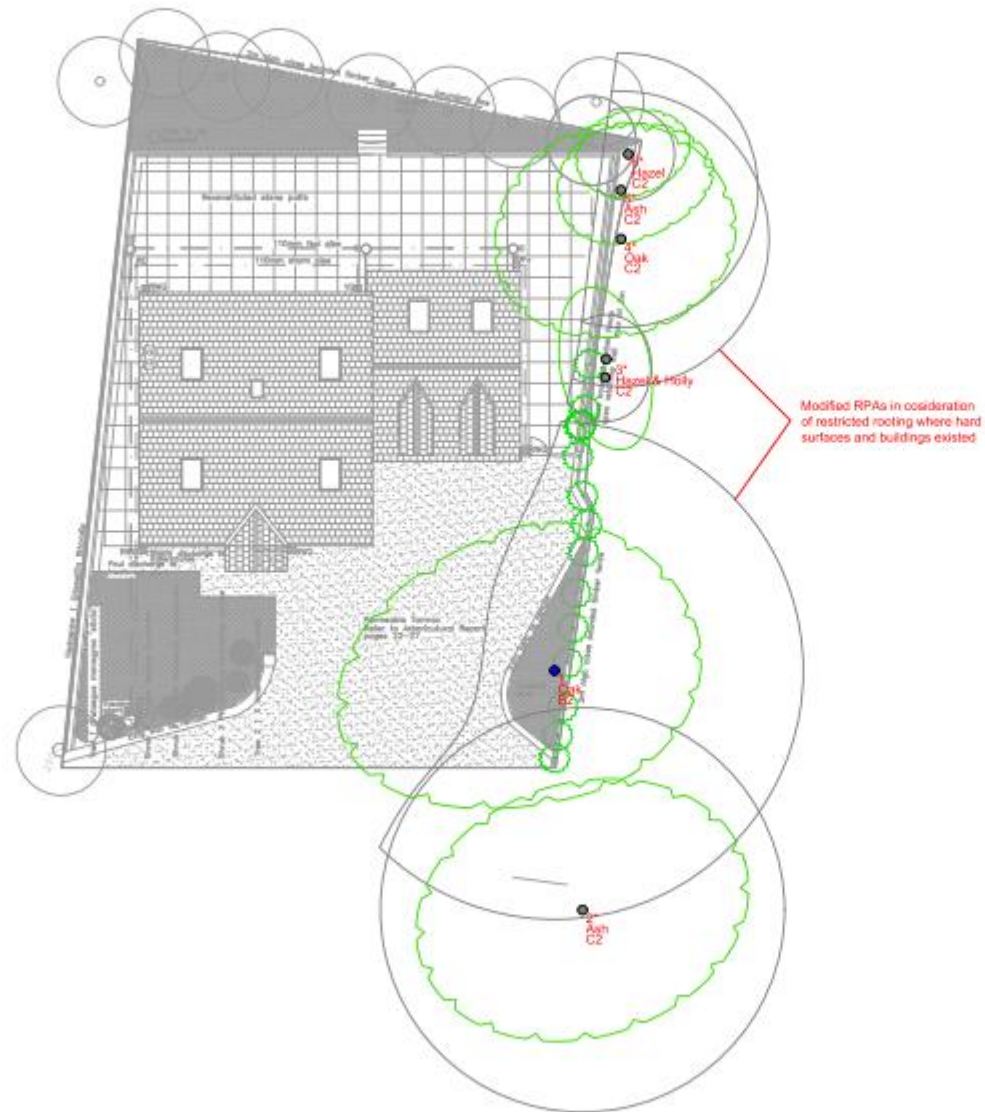
- In dry weather, frequent watering may be necessary to keep the new turf constantly moist. During dry periods in mid- to late summer, water every five to 10 days. At other seasons water during dry periods every 14 days.
- Be careful not to over-water, as this can lead to shallow rooting and encourages the weed grass, annual meadow grass.
- Mow, with the blades set high, as soon as the grass has grown to about 5cm (2in).



DRAWING NO. GREENACRES 06A

Tree No.	Type	Age	Tree Name (species)	Species (Botanical name)	Height	Crown height. (m)	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	EM	Oak	<i>Quercus robur</i>	20m	5.5m S	820	1	7	10.5	6	7	B2	9.84	304.2	Open grown tree with restricted rooting on southern side where hard surfaced previously. Stem divides in to two main parts at approximately 0.4m. Ivy on lower stem. Several heavily end loaded limbs in crown over site with numerous large diameter dead limbs or parts of limbs in crown.	To reduce risk of limb failure some pruning will be required to reduce limbs over site by up to 2.0m Remove dead and vulnerable limbs.	40+
2	T	EM	Ash	<i>Fraxinus excelsior</i>	19m	5.0 S	795	1	8	8	6	6	C2	9.54	285.9	Open grown tree with restricted rooting on southern side. Several heavily end loaded limbs in crown and significant deadwood present. Some ivy on lower stem, and pruning pegs present	To reduce risk of limb failure some pruning will be required to reduce limbs over site by up to 2.0m Remove dead and vulnerable limbs. Monitor for signs of Ash Die Back	20+
3	Group	EM	Hazel & Holly	<i>Corylus avellana</i> and <i>Ilex aquifolium</i>	5	0	200	m	2	2	3.5	3.5	C2	2.00	12.6	Group of multi stemmed trees growing on steep bank edge with some exposed roots	Coppice at 2m or lower and maintain at this height	20+

4	T	EM	Oak	<i>Quercus robur</i>	12m	4.0S	460	1	5.5	6	4.5	5.5	C2	5.52	95.7	Growing on edge of embankment with very limited rooting over site. Tree appears to have been pruned hard in the past with clear stem to 4m	Reduce in height to 6.0m due to potential instability of roots	40	
5	T	SM	Ash	<i>Fraxinus excelsior</i>	8	4.0 S	420	1	4.5	3	2.5	3	C2	5.04	79.8	Former pollard, with re-growth arising from single stem at 3m. Some decay evident at base of stem	Either remove or reduce to 2m pollard Maintain by pollarding every 3 years. Monitor future growth.	10-20YRS	
6	Group	EM	Hazel	<i>Corylus avellana</i>	5.5	0	200	m	3	2.5	2	2	C2	2.00	12.6	Small clump of multiple stems	Coppice and Maintain at present dimensions by pruning annually. Monitor future growth	20+	



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Site: Greenacres, Bronddeg, Merthyr Tydfil	1-200@A2
Drawing Title: Arboricultural Impact Assessment	March 2020

Key:

- Category A
- Category B
- Category C
- Category U

NOTE: Tree/group numbers marked with an * have approximate locations.



TREE 1 Oak



Tree 2 Ash



Group 3 Hazel and Holly



Tree 4 Oak



Tree 6 Hazel

Tree 5 Ash