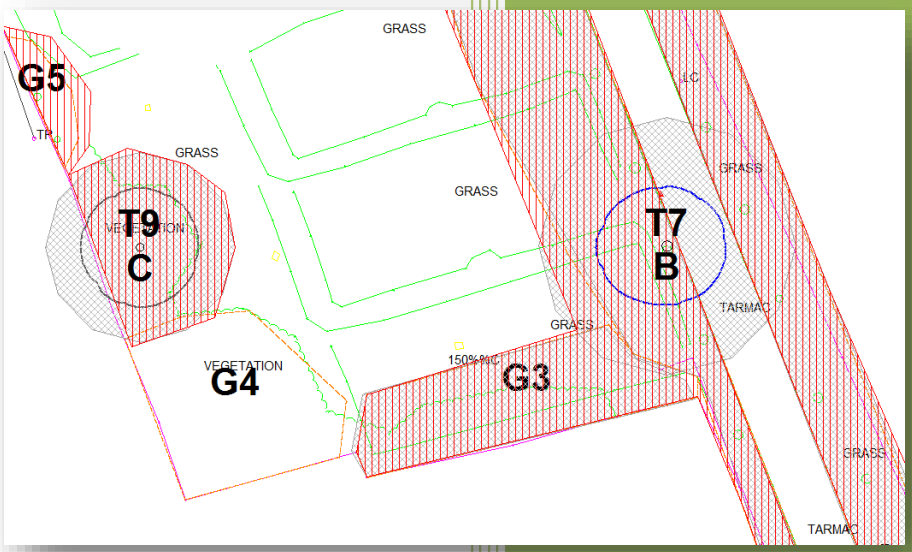
James Pinder
Treecare Consulting

1.2015

Bryneithen, Dinas Powys
BS5837 2012 Tree Information



Client:

Mr D Loosemore

Site:
Bryneithen
St Andrew's Road
Dinas Powys

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Instruction

Following an email instruction from the client, I have been commissioned to provide tree information document suitable to display tree data on site to show tree information for trees on land at the former Bryneithen Care Home Site, Dinas Powys.

I hold the ABC Awards Technical Certification in Arboriculture (AA Tech Cert) and am familiar and experienced with the British Standard 5837 2012 and working with its recommendations on development sites. I have three years practical experience surrounding the planning process during my work as a local planning authority Tree Officer. I have over 12 year's arboricultural contracting experience working with trees from root plate to foliage tip. I also provide expert witness statements and notable clients include the BBC factual programmes where I advise on tree related matters. My aim is to bring my knowledge and experiences into the report which then aims to help the planning process.

By utilising the guidelines of BS 5837 2012, data is taken of tree features, such as species, height, stem diameter measured at 1.5m above ground level (or at an even sized stem taper) for single stemmed trees or an average stem diameter for multi stemmed trees to allow a protection area to be calculated. Further data is collected to assess the trees suitability for the location which uses physiological and structural assessments to give a final opinion of the trees overall condition. Further considerations are given to the trees such as rooting area and any required arboricultural management work prior to development.

Experience in working with trees is vital when providing information in relation to a BS5837 Report. BS5837 2012 recommends the use of an arboriculturalist in order to understand the trees needs on site and the trees current and future environment. In this case the arboriculturalist is James Pinder. The arboriculturalist needs to be able work out the extent of root mass occupying the area and how placing the footprint of a building near it may change the dynamics of the trees surroundings. Once a building is placed next to trees it is also important to understand the long term affects of aerodynamic changes on trees retained and any rain shadow created by the new structure may adjust water availability to trees. Should the development be seen to have a detrimental or significant nature to the trees then changes may be required to the buildings architecture or size to ensure minimal impact on a tree. In certain cases the tree or trees may need to be removed.

By using the data gathered to compile the report and assessing the trees needs, an opinion can then be made on it is best to protect the trees from the development process. Root protection areas are calculated and these need to be adhered to when installing a protection at the extremity of the RPA. Under no circumstances should an RPA be lessened unless a specific method and reason is being used. All guidance contained within this report should be followed to ensure that the whole or part of the proposed development is not jeopardised.

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Site Location/descriptions

- I accessed the site on foot from St Andrews Road.
- The site previously had a building present which has now been removed.
- Trees are present all around the site both as woodland groups and individual specimens. This document focuses on trees that are potentially affected by development.
- Private domestic gardens adjoin the site perimeters to the east along with the tennis club. A school lies to the west with farm land to the north.
- Some management recommendations have been made regarding trees due defects that require management (tree surgery).
- Several significant defects were noted within the trees assessed within this document but the retention of these tree is worthwhile within the groups as ecological habitat features.
- The site has only one access and significant steps will need to be taken to prevent damage to existing trees and rooting systems.

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Report Limitations

- Visual inspections from ground level unless otherwise indicated.
- No invasive inspection techniques used unless indicated.
- No underground excavations will have been performed unless otherwise indicated.
- No climbing or inspection at height will have been involved unless indicated.
- Report information expires after twelve calendar months from report issue date.
- Reports and information relating to them are the property of Treecare until paid for in full. Information within reports is retained at Treecare's discretion until paid for in full. Treecare will retract reports and comments from the planning process if not paid for in full.
- Treecare will not create access to trees unless directed yet will undertake the accessing work if contracted to do so.
- Where access to a tree is not possible, best judgement will be used. Accurate information will therefore be minimal and will be checked at the earliest opportunity.
- Treecare only use suitably trained and knowledgeable persons for inspections holding the relevant qualifications for their purpose.
- Treecare has the right to remove employees from danger as they see fit.
- Verbal comments on buildings structural integrity are an opinion not fact (a structural engineer will be required for a detailed analysis).
- The diagrams and drawings provided by Treecare are not exact and should not be used for design purposes unless directed otherwise. They are however correct as a representation of site features.
- Treecare will try their very best for the client. However, conflict of interest or professional judgement and character clashes must be accepted and resolved.
- Treecare's information and advice will only last as long as current legislation and current knowledge is up to date. Should new developments supersede previous comments then a new report must be issued.
- This is a preliminary report and further more detailed aspects may be required by the LPA or client at a later stage to define exact processes.

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Definitions

BS 5837 2012 (Trees in relation to construction) was revised in 2012 and now supersedes the previous 1991 & 2005 editions.

Within the newer BS many definitions are given so the professional arboriculturists are able to give an indication to planners and architects so that a common understanding of trees and how building new structures may affect the health and support of trees can be given.

Arboriculturist
A person who through relevant training, qualifications and experience in the arboricultural world is able to form an opinion on how trees may be affected through development processes.

Competent person
A person, who has had training and experience relevant to the matter in hand and is able to recognize whether it is safe to proceed with a specific site process.

Structure
Man-made object, such as a building, carriageway, path, wall, services and built or excavated earthworks.

Root protection area (RPA)
A site layout design tool that enables a pictorial representation of trees required rooting area. This area must be protected to ensure the survival of trees.

Tree constraints plan (TCP)
A clear plan diagram showing tree locations, crown spreads and rooting areas. This allows the arboriculturist to demonstrate areas where trees will affect a proposal by tree volume, height or shade.

Construction exclusion zone (CEZ)
An area clearly marked both on site and on a site plan. This are must have no construction operations carried out within.

Tree protection plan (TPP)
A scale drawing that shows tree locations, rooting areas and fencing locations on site.

Arboricultural implications assessment (AIA)
An assessment made by the arborist to identify, evaluate and possibly mitigate affects of construction process on trees.

Arboricultural method statement (AMS)
A written or toolbox talk applied method of ensuring the contractor (construction) can implement the design adjacent to existing trees.

Services
Above or below ground pipe work, wire or ducting construction that could affect trees crowns or their roots or rooting areas.
Special engineering
Designing of a structure with the physiological requirements of trees as the primary concern.

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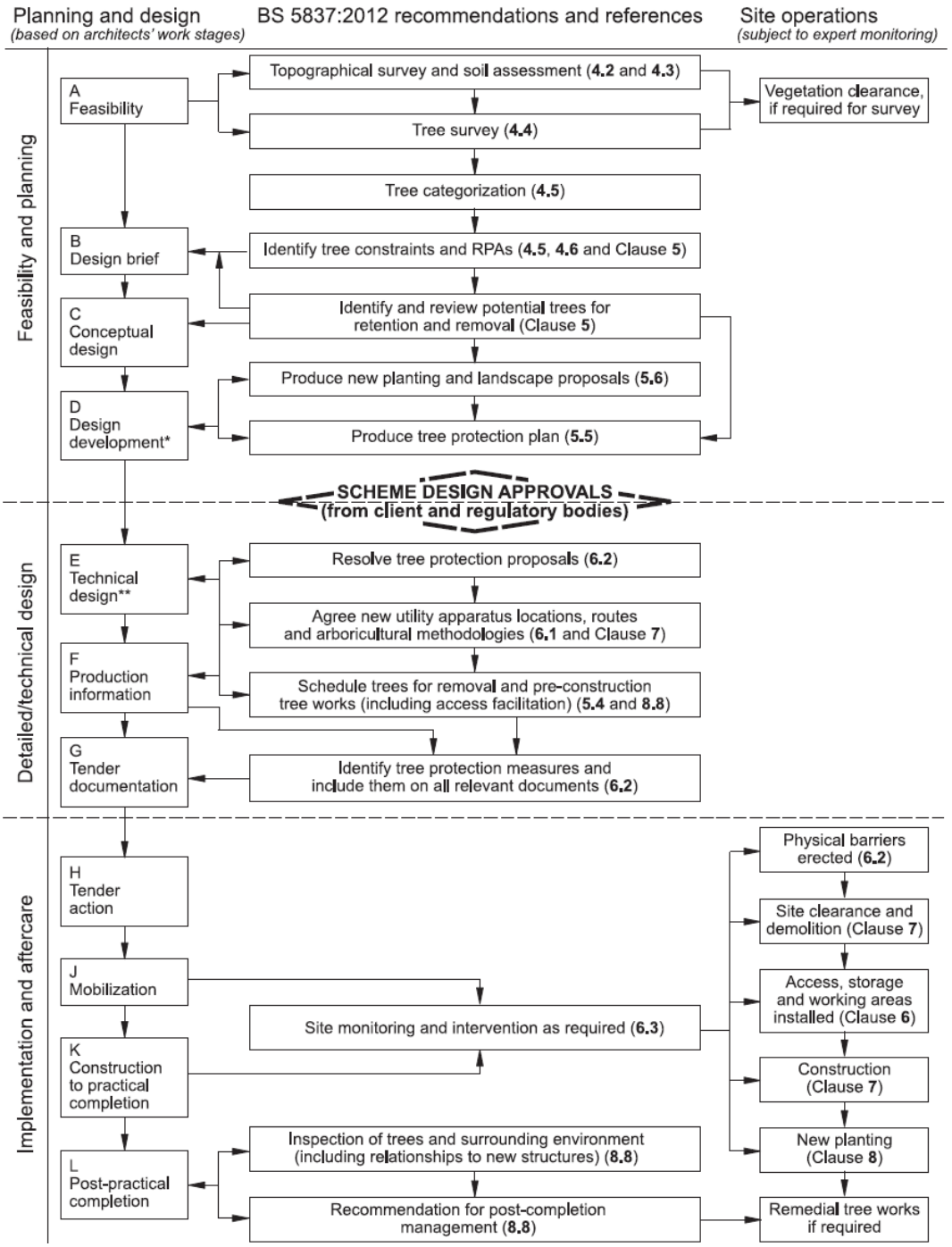
Avoiding damage to trees during construction

The flow diagram below shows the process that should be followed to help prevent any risk of damaging trees during the design and construction process and due consideration to retained trees and roots is given. Where any confusion lies or something noted is not understood it is important that the query is resolved before proceeding.

The arboriculturist should be consulted and, as a minimum a verbal discussion must take place in order to clarify any detail that is misunderstood.



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Trees on development sites are commonly destroyed by plant equipment operators feeling that their own experience of trees outweighs the knowledge and experience of the arboriculturist. In my opinion this would be a very rare occurrence.

Damage occurs by many differing ways. There is indirect and direct damage. The first takes time to have an effect on long term tree health unless toxic substances are involved, the latter can be instant but can lead to a drop in tree value or create a wound a tree finds difficult to defend.

Compaction of soils can cause many problems for trees and must be avoided at all costs. The compaction of a soil will remove the pore spaces between soil particles and thus remove oxygen from the soil that the tree would use for respiration. This then means that the tree will slowly but surely decline as it is suffocated.

This photo shows a combination of damage. The roots have been severed or damaged in such a way that stability has been lost and this tree was felled. If the same damage had not led to an immediate tree failure the tree would have been sent into an irreversible spiral of decline.

The loss of roots will have caused a lack of structural support, loss of moisture take up, loss of oxygen take up and a means of the tree storing energy as starch within root structures. This type of root damage causes a slow decline in tree foliage known as crown die back.

The picture to the right shows the die back of foliage several years after the completion of a development site. Machine operators will often mention how they have dug roots or driven over them. This is what happens once they leave site.

Tree have to have roots in order to perform their most basic but important tasks. To the tree the root system is more important than the crown. However the crown is more important to us as it is the part we can see.

The only way to avoid needless destruction is to give them the space they require and provide adequate protection from construction process.

If adequate protection is not given the disaster below is not far behind!

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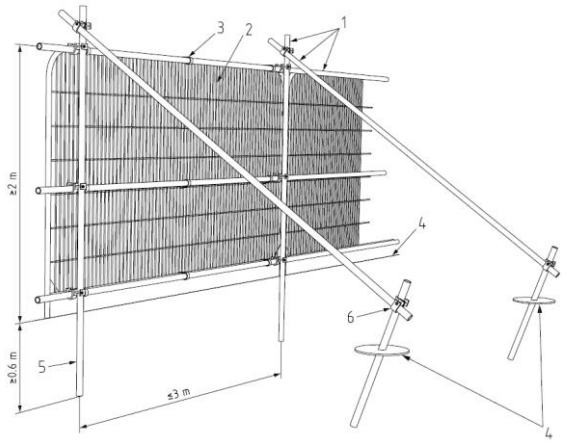
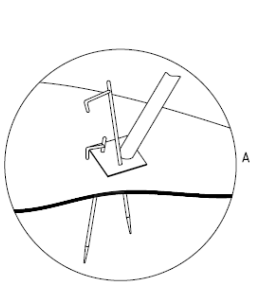
Rooting areas and how to protect trees from preventable damage

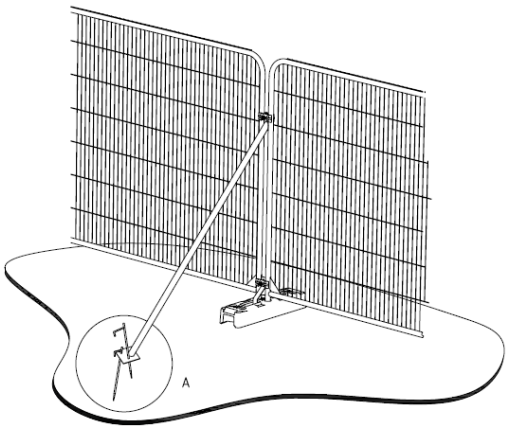
The BS document provides various diagrams on how to protect tree rooting areas. The fence needs to be erected prior to construction traffic site occupation and often with the arboriculturist present to ensure correct placing. Types for hard and soft ground surfaces are shown below.

Soft ground



Hard ground





The rooting area is calculated by using a stem measurement. For single stems trees the diameter if the stem is measured at 1.5m above ground level or point of even stem taper. This figure, in millimeters is then multiplied by twelve and this will then give the radial measurement from the stem to the edge of the rooting area. A circular area is created around the tree at the radial measurement. This is where the fencing should be located. Multi stemmed trees now require average stem size calculations based on 2-5 stems or 5+ stems. Contact the arboriculturist if in any doubt.

The design of RPA or CEZ fencing should be so that it cannot be moved during works. It must also be robust enough to withstand minor knocks and scrapes from plant equipment. The fence must be in place prior to site occupation by plant equipment and should be removed once the site has been vacated by construction traffic. Should there be a requirement to place pedestrian walkways across and RPA a suitable method of ground protection should be used. A geo textile layer, compressible material and then boards should suffice as a walkway. This specification will need to be agreed by the arboriculturist prior to installation. It should also be laid in front of the direction of travel during installation. All hedges and trees over 150mm diameter at 1.5m need root protection. If no RPA measurement is provided for a tree or hedge requiring root protection ensure the fence is set 2m from the outer edge of the tree/hedge drip line.

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Ground Protection (if required)

Existing soil structure and texture must not be destroyed or altered in the vicinity of trees. Future planting sites should also have their structure preserved by the use of ground protecting plates. This will allow mechanical plant to move around the site and transit areas of high root occupancy or planting sites of high value.

The use of ground protecting boards such as these seen in the adjacent picture should be used. Geo textile and felt may be required beneath these routes to minimize puddling of the soil surface. Should puddling occur a capped layer may well be formed which will reduce the lateral diffusion of soil gasses and cause significant problems for retained trees.

Any ground protection must be capable of withstanding the load placed upon it. An engineer must be consulted for advice on the specification of such protection.

Another method of ground protection can be utilized by using the installation of raised platforms mounted onto scaffold legs.

Platforms such as these could be used for light storage, walkways or as an area for construction workers to stand whilst carrying out operations such as block laying and pointing. Water proof sheeting on top of the boarding should be used to catch any material that could leach into soils where tree roots are present or run off could reach.

Particular attention should always be made when using ground protection to surface run off. Fuel oils, cement and water with high fines content are all very damaging to trees. Provision must be made to ensure that run off does not leach into soils.

Temporary track ways can also be constructed by using geo textile onto top of the ground and type 1 road stone with no fines be used as the surface. This method must only be used at the outer limits of an RPA.

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Methods and specifications of paths using cellular confinement systems

When considering possible damage to tree roots during the applications of vehicular access and parking, the risk to trees is from oxygen depletion caused by compaction of subsoil's and site clearance work damaging the soil structure and roots below ground.

This damage may well lead to tree failure and can be traced back to the contractor responsible for liability claims.

Risk factors include

Creating an impermeable surface
Causing a rise in the water table due to construction
Increasing ground level
Contamination of subsoil's

Compaction

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:

Californian Bearing ratio (CBR) – Standard test method for measuring soil strength	
Soil types	
Water table	
Maximum load (vehicles)	
Acceptable rut depth	
Reinforcement type	Cellular Confinement
Type and Depth of engineered infill material	Clean, angular. Usually 40mm to 20mm.

Digging surfaces (site strip)

Site stripping does damage root structures present prior to construction; however, the use of no-dig construction elevates the access road requiring edge protection.

No dig

1. Remove surface vegetation	Use a suitable herbicide suitable for the specific vegetation and not harmful to the tree root system.
2. Place geo textile separation filtration layer	Use a Fibretex F4M non woven Geo textile over the prepared sub-grade. Overlap dry joints by 300mm.
3. Cellular Confinement System	The three dimensional cell structure, 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.
4. Edge restraint	A treated timber edging is usually acceptable.

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Cellular Confinement and Backfill Material.

Expand the confinement systems 2.56m wide panels to the full 8.1 metre length. Pin the panels with staking pins to anchor open the cells and staple adjacent panels together to create a continuous mattress. Infill the cells with a no fines angular granular fill (typically 40-20mm) within each open cell. The use of cellular confinement reduces the bearing pressure on the subsoil by stabilising aggregate surfaces against rutting under wheel loads. Comparisons between cellular confinement and traditional aggregate and geo grid-reinforced structures demonstrate a 50% reduction in construction thickness of the granular material.

Surfacing Options

Block Paving:
1. Lay second layer of Fibretex F4M Geo textile separation fabric over the filled confinement sections.
2. Lay sharp sand bedding layer compacted with a compaction plate to recommended depth to consolidate but not compact.
3. Lay block pavers as per manufacturer's instructions.

Tarmac:
Place 25mm layer of the granular material above the confinement system and lay the bitumen base and wearing courses.

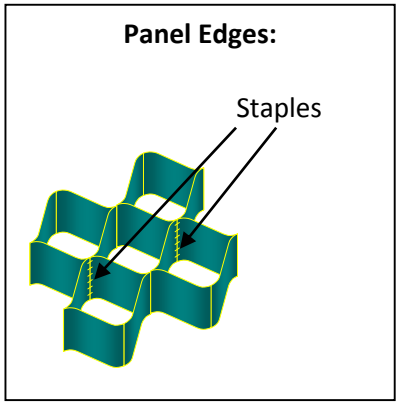
Loose Gravel:
4. Place second layer of Fibretex F4M Geo textile separation fabric over the filled confinement sections.
5. Place decorative aggregate to required depth.

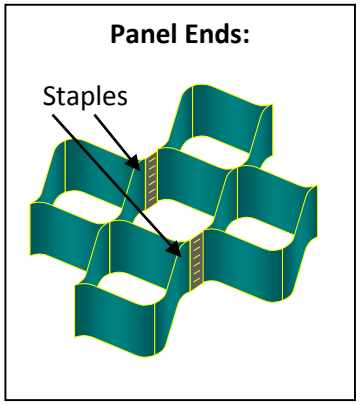
NOTE: A treated timber edge should be provided to restrict gravel movement.

Grass Blocks:
6. Place second layer of Fibretex F4M Geo textile separation fabric over the filled confinement sections.
7. Place 50/50 rootzone bedding layer to the required depth.
8. Lay recycled Duo Block 500 Grass Protection System filled with 50/50 rootzone mix.
9. Seed as per architects instructions.

(Alternatively the Grass Blocks may be filled with gravel.)

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





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Site do and Don'ts

- Do not occupy ground space within the crown spread of a tree.
- Do not work without suitable protection fencing around retained trees.
- Do not travel the site without suitable ground protection where roots exist.
- Do not break the ground near trees unless being supervised by a competent person in tree care and management.
- Do not allow builders sand to be placed near rooting areas as this is toxic to trees.
- Do not store fuels, cement or other toxic materials near trees.
- Do not light fires within 15m of a tree crown.
- Do not trench through roots above 10mm in diameter unless under direct supervision by an aboriculturist.
- Do not lean objects against tree stems or branches.
- Do not tie ropes or cables to trees unless during a temporary and authorized task.
- Do not allow plant equipment to make contact with any part of trees.
- Do not allow exhaust pipes to be directed at trees and shrubs.
- Do not place service or drain runs through an RPA.

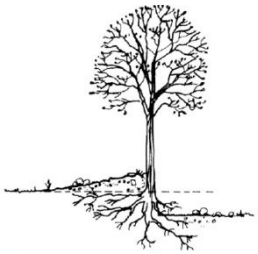
- ✓ Do discuss site operations with an arboriculturist.
- ✓ Do use toolbox talks to inform staff on site of the trees needs.
- ✓ Do liaise with the planning officer regularly to ensure full compliance at all times.
- ✓ Do erect barriers such as RPA and CEZ fencing early.

RPA dos & don'ts

***Don't** use site vehicles within the root system, this will compact the soil and can lead to root suffocation.*

***Don't** store poisons, chemicals, fuel, diesel,oil or cement beneath a tree. **Don't** light fires.*

***Don't** store or deposit building materials against or beneath a tree.*



Excavations will damage roots, whilst increasing levels will exclude air vital for healthy roots.

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Tree Data

The table on the following page is the cascade chart for capturing consistent tree data whilst carrying out BS5837 tree surveys. It allows for trees to be clearly seen in an alpha numerical grading system. The alphabetical system also allows a colour coded approach to see the trees marked on a site plan. It is important to not only tree canopy spreads marked in red are removals. All other trees are thought to have value to the site and each tree should be considered carefully.

Each tree is looked at to identify it, capture its physical dimensions, assess its physiological health and assess its structural condition. Further assessment is made to how the tree is suited to the location.

Trees which are in decline but have useful life left such as veteran trees are also included. This allows for them to be kept on sites where possible because of the high ecological, historic and cultural benefits they may bring. It is so important to remember that these trees may be several hundred years old and their loss to the area could be dramatic.

The Moccas Oak in Herefordshire has a beetle that lives within this unique thousand year old tree. The tree is located in a park with hundreds of other oak trees but the beetle only lives in one unique tree. No one would want to be known as the individual who removed such a historic and unique feature.

For the purpose of BS 5837 surveys the area surrounding trees is also looked at in order to allow for informed opinions to be given regarding the future management of where paths and light structures could be placed without harm to retained trees.

It is rare but a site can be maximised if the plans are drawn after the vegetation survey is complete. This is to allow the architect to see exactly what area is available for development. A design which is correct and that fits the landscape, without causing significant disruption would then be achievable. This is particularly important if protected trees or trees of very high value are present.

Within the data captured on site, any immediate management work is also noted within the schedule of findings. This work is to help trees with minor problems and to increase site safety to construction workers.

The construction company’s name is on the site and how the site is left is how the site will be remembered.

Key to tree data classifications overleaf:

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A separate large scale version of this can be made available should it be required.

Table 1 **Cascade chart for tree quality assessment**

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall dedine • 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 *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.*			See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

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Data Sheets - site survey carried out January 2015

The following data tables contain specific tree dimensions that are used to calculate the relevant protection from development. This protection is to ensure the long term survival of retained trees. Should any questions arise please contact Treecare Consulting.

Individual trees (group's page 19)

Tree Number	Specie	Height	Tag Number	Spread N	Spread E	Spread S	Spread W	Low Limb Height	Low Limb Direction	Stems	Diameter @ 1.5m in MM	Structural Condition	Physiological Condition	Noted defects	Management Recommendations	Age Class	Years Remaining	Tree Quality	Tree Value	Notes
T1	Sycamore	17	8098	5	5	5	5	6	All round	1	580	Normal for species	Fair	Large diameter deadwood in crown	Remove dead wood down to 15mm diameter	Mature	20+	B Moderate Quality	2 Landscape value	None
T2	Horse chestnut	17	8099	5	5	5	5	5	All round	1	595	Normal for species	Fair	Decayed pruning wounds, rubbing scaffold limbs	Assess tree bi annually	Mature	10+	C Low Quality	2 Landscape value	None
T3	Sycamore	12	8100	4	3	4	5	4	All round	1	330	Requires remedial work	Fair	Non tensile unions	Tree could be removed and stump poisoned effectively	Semi mature	10+	C Low Quality	2 Landscape value	None
T4	Norway maple	22	8101	6	6	6	6	4	All round	1	680	Requires remedial work	Fair	Ivy,living and dead. Deadwood	Remove all ivy and deadwood	Mature	20+	A High Quality	2 Landscape value	None
T5	Lime	23	8102	5	5	5	5	4	All round	1	440	Requires remedial work	Normal for species	Basal and stem suckers, dead wood and ivy	Remove all suckers up to 1st limb. Remove dead wood and dead ivy from tree	Mature	20+	B Moderate Quality	2 Landscape value	None

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Tree Number	Specie	Height	Tag Number	Spread N	Spread E	Spread S	Spread W	Low Limb Height	Low Limb Direction	Stems	Diameter @ 1.5m in MM	Structural Condition	Physiological Condition	Noted defects	Management Recommendations	Age Class	Years Remaining	Tree Quality	Tree Value	Notes
T6	Horse chestnut	22	8103	6	6	6	6	5	All round	1	910	Requires remedial work	Fair	Historic storm damaged sections, decayed pruning wounds	Remove all ivy and reduce crown sympathetically by maximum 1.5m at suitable lateral branches using natural target pruning	Mature	10+	B Moderate Quality	2 Landscape value	None
T7	Copper beech	23	8104	5	5	5	6	3	S	1	880	Requires remedial work	Normal for species	Large open stem cavity, dead wood	Remove dead wood from tree, consider picus tomogram of cavity to aid management decisions	Mature	10+	B Moderate Quality	1 Arb Values	None
T8	Lime	23	8105	5	6	5	5	5	All round	1	800	Requires remedial work	Fair	Uncharacteristic bark formations, stem cavity, non-tensile scaffold limb unions, thin crown	Detailed assessment of stem required (picus tomogram), strip all ivy, crown clean.	Over mature	less than 10	C Low Quality	2 Landscape value	None
T9	Lime	22	None	5	5	5	5	1	All round	1	650	Requires remedial work	Fair	Dense basal suckering, dense crown suckering	Remove all basal and crown suckers and dead wood to allow future inspection	Mature	10+	C Low Quality	2 Landscape value	None
T10	Copper beech	22	8106	7	7	6	6	4	N	1	1100	Normal for species	Normal for species	Ivy, dead wood	Remove ivy from tree and crown clean.	Mature	20+	B Moderate Quality	1 Arb Values	None

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Tree Number	Specie	Height	Tag Number	Spread N	Spread E	Spread S	Spread W	Low Limb Height	Low Limb Direction	Stems	Diameter @ 1.5m in MM	Structural Condition	Physiological Condition	Noted defects	Management Recommendations	Age Class	Years Remaining	Tree Quality	Tree Value	Notes
T11	Horse chestnut	17	8107	7	6	4	4	1	S	1	680	Requires remedial work	Normal for species	Cavity in low scaffold limb over field, exudates coming from top of cavity	Weight reduce crown by up to 4m in low scaffold limb over field. Continue to assess structure and physiology next inspection	Mature	10+	C Low Quality	3 Cultural/Conservation	None

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Groups

Group Number	Species	Low Limb Height	Low Limb Direction	Prelim RPA fence locations	Structural Condition	Physiological Condition	Noted defects	Management Recommend ations	Age Class	Years Remaining	Tree Quality	Tree Value	Notes
G1	Mixed broadleaf	5	All round	Mark out under direction	Requires remedial work	Fair	Characteristic age/species defects, dead wood, ivy, basal suckering	Remove all dead wood, ivy and basal suckering. Full tree condition survey advised every three years.	Mature	10+	A High Quality	2 Landscape value	None
G2	Mixed broadleaf	5	All round	Mark out under direction	Requires remedial work	Fair	Characteristic age/species defects, dead wood, ivy, basal suckering	Remove all dead wood, ivy and basal suckering. Full tree condition survey advised every three years.	Mature	10+	B Moderate Quality	2 Landscape value	None
G3	Mixed	1	All round	Mark out under direction	Requires remedial work	Normal for species	Ivy clad stems, low foliage, dead wood, climbing plants	Remove all ivy and climbing plants. Remove dead/damaged branches, fell paint marked semi mature ash, raise foliage to 3-4m	Mature	10+	C Low Quality	2 Landscape value	None
G4	Mixed	1	All round	Mark out under direction	Dangerous	Could be rectified	Dead trees, self-set stems, damaged sycamore, dense ivy on trees	Clear all stems less than 100mm diameter, remove all small diameter painted stems, prune out damaged branches from significant boundary trees, remove ivy from retained trees	Mature	20+	C Low Quality	2 Landscape value	None
G5	Sycamore	1	All round	4	Requires remedial work	Normal for species	Squirrel damaged branches	Prune out squirrel damaged branches over site and raise foliage to 3m over site	Semi mature	10+	C Low Quality	2 Landscape value	None

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Group Number	Species	Low Limb Height	Low Limb Direction	Prelim RPA fence locations	Structural Condition	Physiological Condition	Noted defects	Management Recommendations	Age Class	Years Remaining	Tree Quality	Tree Value	Notes
G6	Mixed	1	All round	Mark out under direction	Normal for species	Normal for species	Dead dangerous lime, self-set ash & outgrown laurel species	Remove dead lime stem, remove pink painted ash saplings. Coppice pink paint marked laurels.	Semi mature	10+	C Low Quality	3 Cultural/Conservation	None
G7	Mixed	1	All round	Mark out under direction	Requires remedial work	Normal for species	Dense ivy, dead wood, storm damaged branches.	Sever all ivy and remove 1m band from lower tree stems. Crown clean pines over site fully. Remove dead and damaged branches from north and east sides of pines. Remove dead stems and climbing plants, elder	Mature	40+	B Moderate Quality	2 Landscape value	None

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Arboricultural recommendations & tree work

1. Before any construction plant, vehicles and activities start on site, carry out preliminary tree pruning/management works as listed within the tree schedules (pages 16-20) subject to permissions from LPA once permission is provided in writing from LPA under the tree preservation order.

2. No mechanical plant equipment is to access tree RPA areas (marked as red hatching) as noted on the site plan at the rear of this document at any stage.

3. Layout suitable rooting area and tree protection fences in accordance with BS5837 2012 or as type agreed by the LPA around retained trees rooting areas, as defined in this document on the site plan. This temporary fence must remain until the LPA discharge the condition for protection fencing.

4. Mark RPA fences clearly to their intended use –

   "**Construction Exclusion Zone (CEZ) KEEP OUT"**

5. No work is required within a theoretical rooting area of trees on site. Ample working room is available on site. No roots should be cut.

6. Protect all trees from development processes.

Felling list
No specific felling recorded but clearance of dead and self-set saplings in groups is required.

Pruning works
Pruning will be required to trees to remove dead wood, damaged branches only. Work to be in accordance with good arboricultural practice.

Coppicing works
Coppicing of laurel species in groups 3 & 4 is required.

Transplanting works
No transplanting work noted.

Planting list
No re planting intention has been provided at this stage as the tree stock is well spaced and adds landscape character to the site. Future planting should be considered by the owner to ensure that a variation in age is present long term.

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Site Plans – Key

Scale plans can be sent as PDF files if required. The plans are to indicate locations of trees, locations of main objects on site and the location of tree protection fencing. Stem diameters found in tree and tree group data tables should be used to mark out the location of root protection fencing on site.

Dark Red U = None

Grey = C Class trees (low value).

Blue = B Class trees (moderate value).

Green = A Class trees (high value).

Grey hatched area = Root protection areas (RPA).

Red hatched area = Tree protection fencing locations around perimeter of red hatching (CEZ).

ALL SITE PLANS CAN BE PRINTED AS A3 OR BE SENT AS DXF FILES. ALTERANTIVLEY THE CSV FILE CAN BE EMAILED WITH TREE DATA ON.

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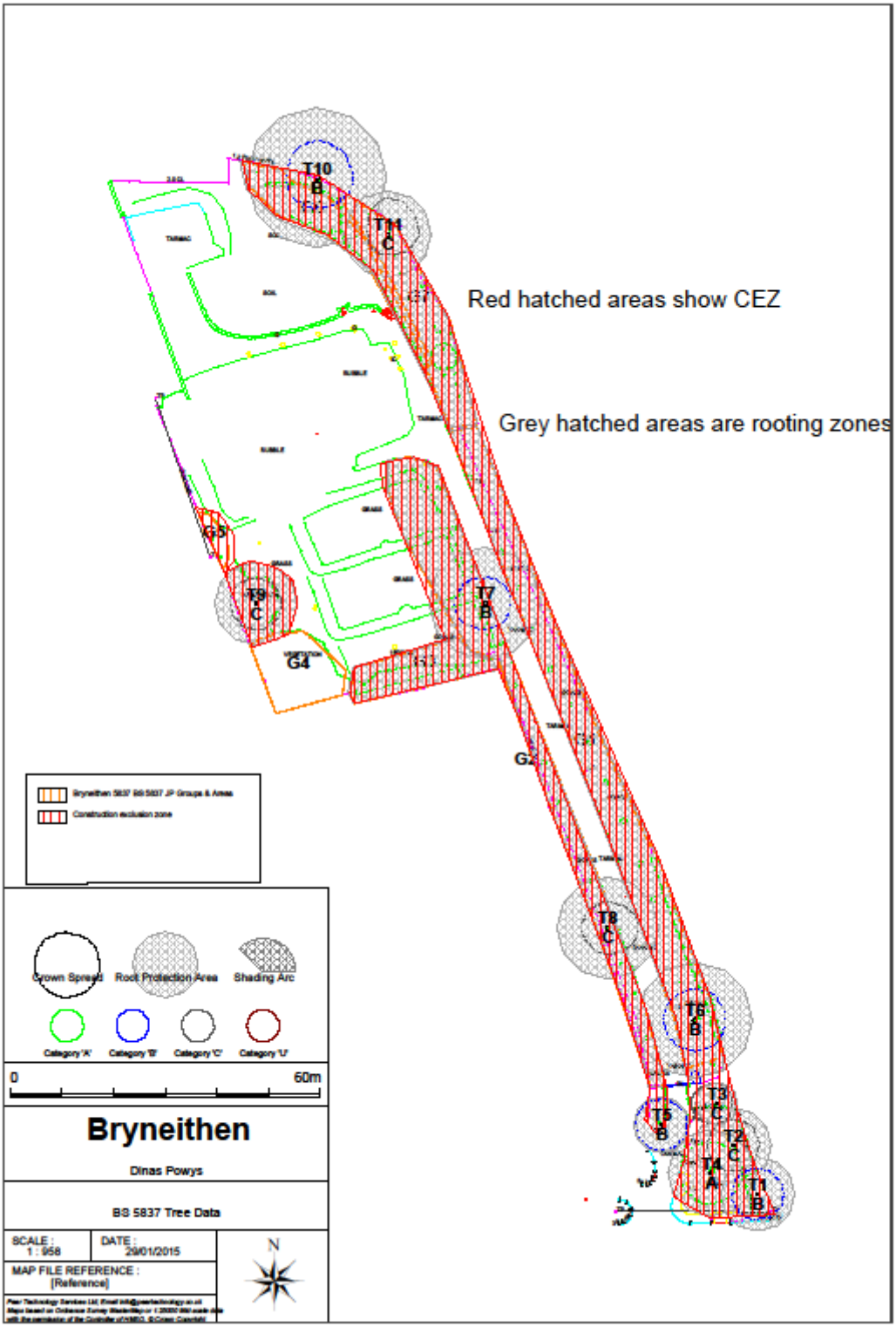
Site Plan



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