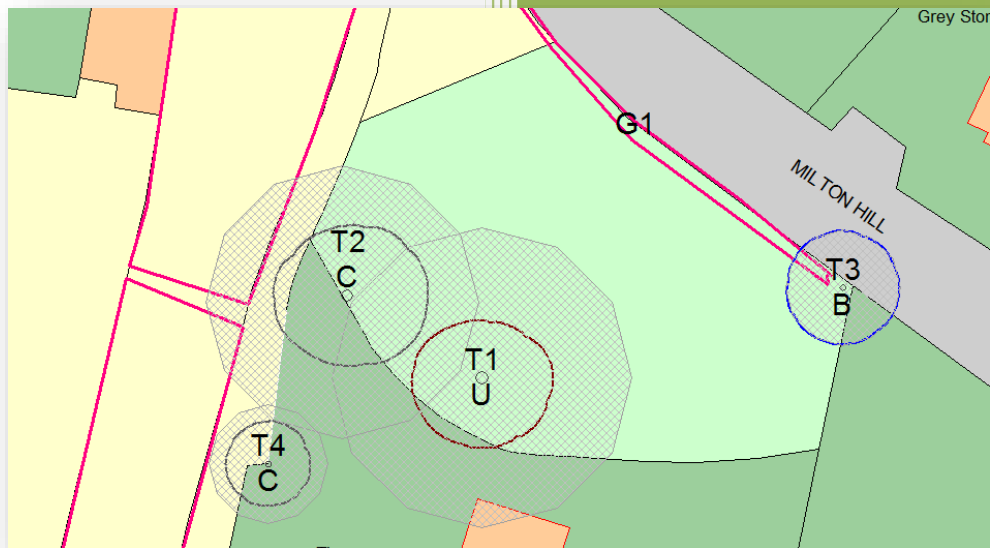




6-Nov-24

The Fields, Llanwern, BS5837 2012 Tree Information



Site:

Land adjacent to:
The Fields
Milton Hill
Llanwern

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Instruction

Following a verbal instruction from the client, I have been commissioned to provide a document (BS5837 2012 report) to display tree data on site and outline basic tree protection measures for land within the boundary of The Fields. This is to enable a site layout plan to be created for the The Fields that does not conflict with trees suitable for long term retention.

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 it on development sites. I have over 15 year's practical experience surrounding the planning process and trees during my work as an arboricultural consultant and contractor. My aim is to bring my knowledge and experiences into the report which then aims to help the planning process.

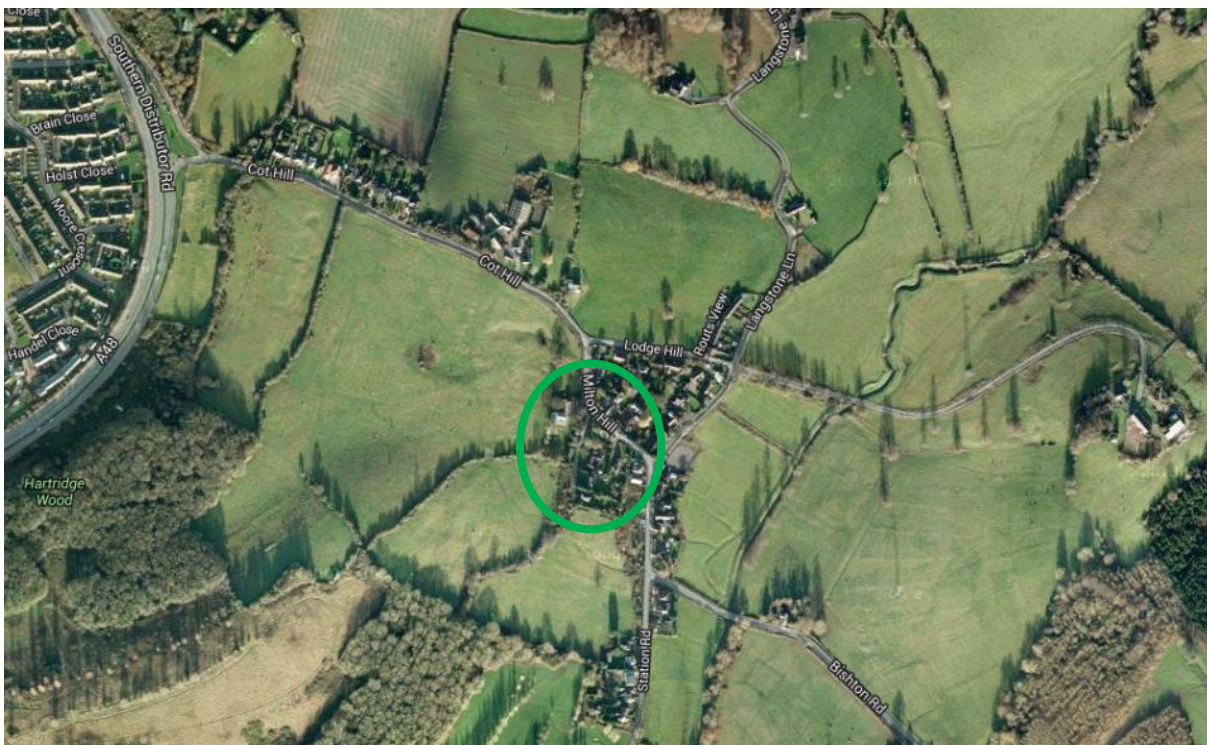
By utilising the guidelines of BS 5837 2012, data is taken of tree features, such as specie, height, stem diameter measured at 1.5m above ground level (to give an even sized stem taper) for single stemmed trees or an average stem diameter for multi stemmed trees. Further data is collected to assess the 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 tree's surroundings. Once a building is placed next to trees it is also important to understand the long-term effects 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 case's 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.

Site Location/descriptions

- The Fields is a private residence to the east of Newport City in the rapidly expanding village of Llanwern.
- The Fields is accessed from a private lane at the top of Milton Hill which leads of the highway to the south.
- The M4 Motorway lies to the north.
- The local area has many older properties which are being renovated, replaced or re designed. There is also significant new development within the adjacent agricultural land and local area.
- Many original properties have large mature gardens.
- Many trees within the gardens have various age related structural and physiological condition problems. Tree should be renewed/replaced as required to suit the changing environment with more suitable species where required.
- Tree preservation orders are present in the local area and the appropriate checks should be made.



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. All comments relating to tree management are for wind speeds less than 40mph. Should winds in excess of 40mph be applied it is likely tree component parts may fail.
- 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.

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 area 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.

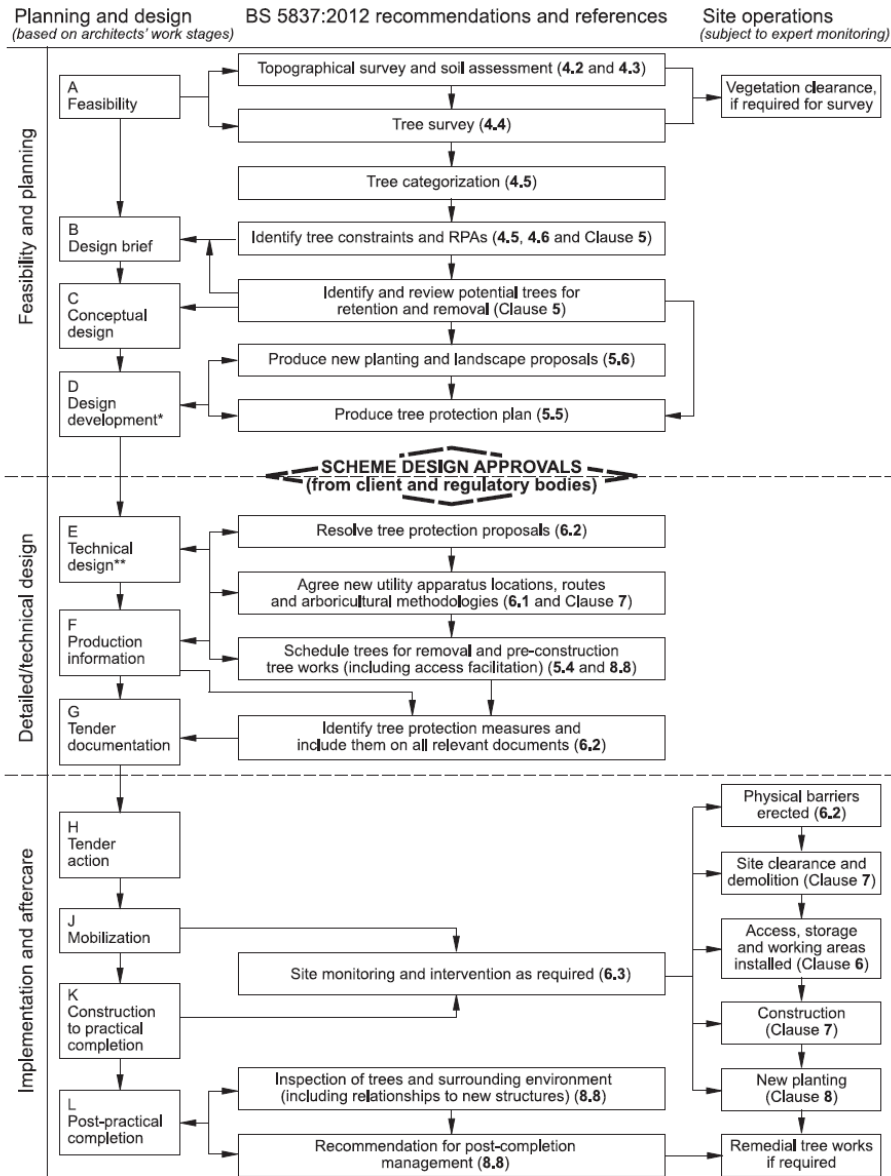
Special engineering

Designing of a structure with the physiological requirements of trees as the primary concern.

Avoiding damage to trees during construction

The flow diagram below shows the process that should be followed to help reduce the risk of damaging trees during the design and construction process. Due consideration to retained trees and their rooting areas must be given. Where any confusion lies or something 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.



Trees on development sites are commonly destroyed by construction processes such as the stripping and adding of soils around the site. The knowledge and experience of the arboriculturist should be used to minimize this.

Damage occurs by many differing ways. There is indirect and direct damage. Indirect damage such as raising or lowering soil levels can take time to have an effect on long term tree health unless toxic substances are involved, direct damage such as impacts from mechanical plant or root severance by trenching can be instant and will 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 will reduce oxygen levels within 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.



Trees 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.

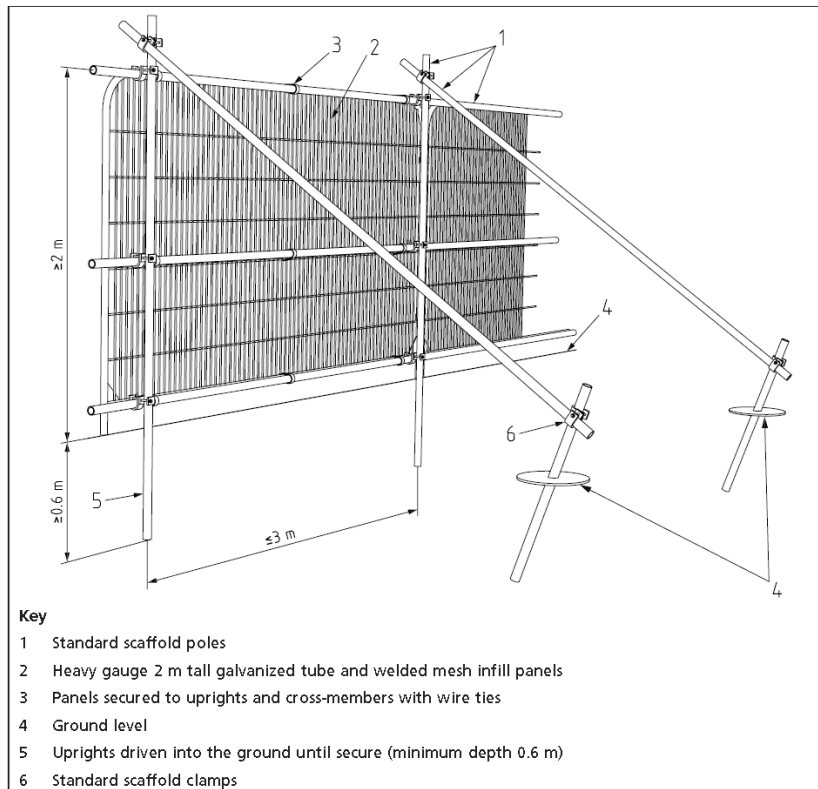
If adequate protection is not given the disaster below is not far behind!



Rooting areas and how to protect trees from preventable damage

The BS 5837 2012 document provides various diagrams on how to protect tree rooting areas. The fence needs to be erected prior to construction traffic presence & site occupation and often with the arboriculturist present to ensure correct placing.

Figure 2 Default specification for protective barrier



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.

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 such mulch 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 75mm 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.

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 to be advised 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.

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

Type and Depth of engineered infill material

Cellular Confinement

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.

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.

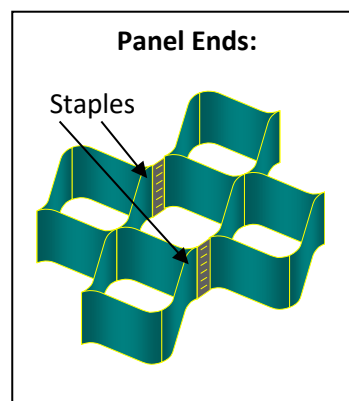
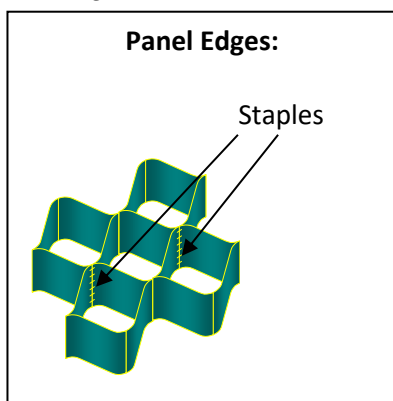
NOTE: A treated timber edge should be provided to restrict gravel movement.

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;



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 arboriculturist.
 - 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.

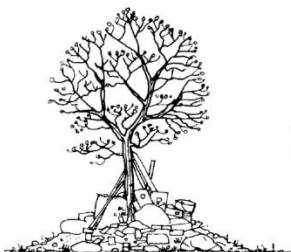
RPA dos & don'ts



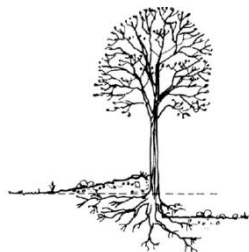
Don't use site vehicles within the root system, this will compact the soil and can lead to root suffocation.



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.

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:

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 | <ul style="list-style-type: none"> 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 decline 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 <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i></p> | | | See Table 2 |
| | 1 Mainly arboricultural qualities | 2 Mainly landscape qualities | 3 Mainly cultural values, including conservation | |
| Trees to be considered for retention | | | | |
| 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 |

Data Sheets - site survey carried October 2013, updated November 23

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 to resolve the matter.

Survey data

| Tree Number | Species | 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 | Oak | 12 | 7375 | 4 | 5 | 5 | 5 | 2 | S | 1 | 860 | Dangerous | Poor | NOW FELLEED. | Fell and replace tree. | Over mature | Dangerous 0 | U Un-gradable in 5837 | 3 Cultural/Conservation | None |
| T2 | Cedar | 15 | 7376 | 5 | 5 | 5 | 6 | 3 | S | 1 | 780 | Within survey tolerance | Normal | Dead wood in crown | Remove dead wood and crown clean tree. Tree in limited soil volume area. Conflict with existing third-party driveway, access road and services. Consider fell and replace but instructed by NCC planning to retain the tree against sound arboricultural advice. | Semi mature | 40+ | C Low Quality | 2 Landscape value | Design foundations accordingly. Make annual checks for structural damage to third party structures. |
| T3 | Field maple | 10 | None | 4 | 4 | 4 | 4 | 2 | All round | 1 | 330 | Within survey tolerance | Good | No major defects | None | Mature | 20+ | B Moderate Quality | 2 Landscape value | None |

The Fields – BS5837 – Tree Data

| Tree Number | Species | 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 |
|-------------|---------------------------|--------|------------|----------|----------|----------|----------|-----------------|--------------------|-------|-----------------------|-------------------------|-------------------------|------------------|----------------------------|-------------|-----------------|---------------|-------------------|-------|
| T4 | Lawson cypress – off site | 10 | 7378 | 3 | 3 | 3 | 3 | 2 | All round | 1 | 340 | Requires remedial work | Good | Pruning stubs | No action | Semi mature | 20+ | C Low Quality | 2 Landscape value | None |
| T5 | Willow – off site | 3 | None | 2 | 2 | 2 | 2 | 1 | All round | 1 | 280 | Requires remedial work | Good | Outgrown pollard | No action | Old Pollard | 10+ | C Low Quality | 2 Landscape value | None |
| T6 | Cherry – off site | 3 | None | 2 | 2 | 2 | 2 | 2 | All round | 1 | 190 | Within survey tolerance | Good | No major defects | No action | Mature | 10+ | C Low Quality | 2 Landscape value | None |

Groups

| Group Number | Species | Tag Number | 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 |
|--------------|------------------------|------------|-----------------|--------------------|----------------------------|-------------------------|-------------------------|---|---|-----------|-----------------|---------------|-------------------|-------|
| G1 | Mixed broadleaf | None | 1 | All round | 2 | Within survey tolerance | Good | Rural verge hedge re growth, dead and dying sections | Reduce to 3.5m height. Removal dead/dying ash and elm from hedge. Continue with annual flail trimming | Mature | 20+ | C Low Quality | 2 Landscape value | None |
| G2 | Mixed broadleaf | None | 1 | All round | Mark out under direction | Requires remedial work | Good | Ivy growth, dead wood and laurel growth. Tag 7377 is an outgrown pollard. | No action. Off-site group on adjacent land. Adjacent drive provides buffer to tree rooting areas. | Mature | 20+ | C Low Quality | 2 Landscape value | None |
| G3 | Fruit trees and shrubs | None | 1 | All round | Mark out under direction | Within survey tolerance | Good | Characteristic defects for species in area. | No action | Mature | 20+ | C Low Quality | 2 Landscape value | None |
| G4 | Fruit trees and shrubs | None | 2 | All round | Mark out under direction | Within survey tolerance | Good | No major defects | No action | Mature | 10+ | C Low Quality | 2 Landscape value | None |

Outline basic arboricultural method statement for The Fields

1. The site has a several mature trees which are suitable for retention and several C class trees that can be managed or removed without significant loss to the site if re planting takes place.
2. Retain T2 against sound arboricultural advice to fulfil NCC planning requirements. Carryout work as listed within tree schedules.
3. Protect RPA of T3.
4. The U category oak tree had extensive decay and stem weakening so it has already been felled on safety grounds as per permission by NCC.
5. Any management work listed in this document which is required to be carried out to trees should only be carried out by trained tree work professionals. Poor quality pruning cuts or pruning cut in the wrong place will damage trees.
6. Upon completion of all tree pruning work the site can be fenced off as per the Tree Protection Plan.

Process stages

- A. Site is signed and secured to prevent unwanted access. No construction traffic and equipment should enter the site at this point.
- B. Arboricultural contractor is employed to carry out all works to trees and vegetation to include pruning and transplanting operations if required. Specific method statements may be required or these operations can take place with an arboricultural watching brief.
- C. Well signed and robust tree protective fencing around T2, G1 and T3 must be erected to prevent access by construction equipment and processes to the groups and individual retained tree's rooting areas. This fence needs to be marked as "Construction Exclusion Zone" with laminated A4 signs at 3m centers placed at eye level.
- D. Construction traffic can now safely enter site and start the construction process without risk to retained tree roots or crowns.

Site Plans – Key

Scale plans will be submitted by the client’s architect. The indicative plans in this document are solely 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 tree by tree.

Grey = C Class trees (low value)

Blue = B Class trees (moderate value)

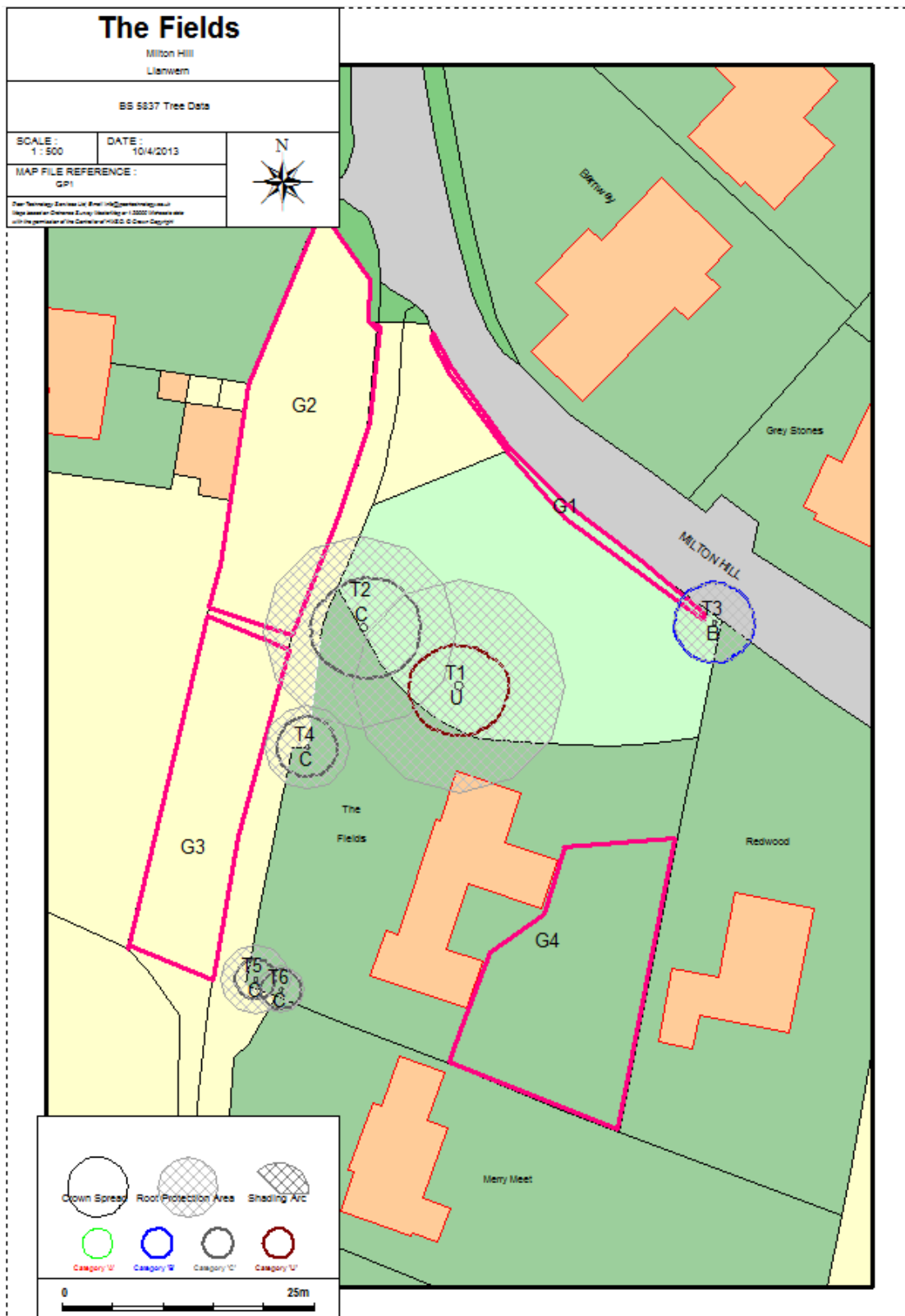
Green = A Class trees (high value)

Dark Red = U class tree (un-gradable in 5837)

Grey Hatching polygons = Rooting areas

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

Indicative Site Plan –



**DETAILED SCALE SITE DRAWINGS WILL BE SUPPLIED BY ARCHITECT
THIS DRAWING IS PURELY INDICATIVE FOR LOCATION PURPOSES**