ARBORICULTURAL IMPACT ASSESSMENT

BS 5837:2012 Trees in Relation to Design, Demolition and Construction-Recommendations

Arboricultural Survey and Impact Assessment Report

at

Land at Verlon Farm, Montgomery, Powys

for
Hughes Architects

April 2024 ref 3149 rev A

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TREE CONDITION AND ARBORICULTURAL IMPACT ASSESSMENT

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1.0 INTRODUCTION

1.01 Lingard Farrow Styles were by commissioned by Hughes Architects in March 2024 by to carry out a tree survey and assessment of the existing trees and prepare an Arboricultural Impact Assessment (AIA) and a Tree Protection Plan (TPP) to support a planning application for a proposed residential development. The tree inspection was carried out on the 5th April 2024 and proceeded in line with the recommendations outlined in the British Standard **'Guide for Trees in Relation to Design, Demolition and Construction' (BS 5837:2012) section 'Tree Surgery, Tree Categorisation and Tree Constraints Plan'.**

1.02 The issues to be addressed in this report include:

- The condition and amenity value of the tree within the site.
- The relevant Planning Policy.
- The impact of the proposed development on the tree resource.

1.03 The survey involved a visual inspection of 21no specimen trees, tree groups and hedges, all in accordance with BS 5837:2012. The visual inspection was carried out from ground level and aided by the use of binoculars to assist in the high-level condition assessment of the trees. Trees were not climbed.

1.04 Tree dimensions were measured using a combination of a Richter Diameter Tape, Leica Disto Laser Rangefinder, and a Nikon 550 Forestry Pro Laser Rangefinder. Trees were recorded with a stem diameter of 75mm plus (measured at a height of 1.5m above ground level unless otherwise stated in the tree schedules). Trees less than this stem diameter were recorded as shrubs or hedges. Any multistem tree diameters were measured and recorded as an aggregate diameter in accordance with BS 5837:2012. The visual inspection was carried out from Trees were not tagged.

1.05 This report is to be read in conjunction with Lingard Farrow Styles Tree Survey and Tree Protection Plans (TPP) dwgs no 3149-010A and 3149-011A.

1.06 Weather conditions at the time of the assessment were overcast and wet.

1.07 Hughes Architects latest layout drawing informs this assessment.

2.0 SITE DESCRIPTION

2.01 The site is currently grazing farmland with mature native hedges and specimen trees along the site boundaries. The site is accessed from an existing entrance off the B4388 Forden Road to the east. The Montgomery Castle Ancient Monument lies approx. 250 metres to the south. Existing residential land borders the site to the south and the east together with a veterinary surgery and an industrial complex to the east. To the north, south and west of the site is mainly agricultural grassland.
The wider landscape comprises a typical Montgomeryshire agricultural field pattern, with fields bounded by mature hedgerows and specimen trees, and extending north across the plain, rising up to meet Long Mountain beyond.

2.02 All specimen trees, tree groups and hedges were assessed within 5m of the site. There are 22no specimen trees, tree groups and hedges within the site boundary.

2.03 There are a two significant over mature specimen trees (T17and T18)) within the site which although poor quality, have substantial wildlife habitat potential and should be retained if possible as reduced main stems.

3.0 EXISTING TREES

3.01 The quality and value of each tree or group of trees is recorded in the attached tree schedules. Each tree is allocated to one of four categories each of which is explained under the headings 'Tree Categorisation' in Section 4.0, and the Cascade Chart for Tree Quality Assessment shown in table 1 (appendix 11.2)

A	Good	Retain at all costs.
B	Medium	Retain
C	Fair	Retain
U	Dead	Remove from site

The position of the trees is indicated on the attached Lingard Farrow Styles identification plan dwg.no 3149-010A.

3.02 Although this is not a safety inspection, the general condition of the trees is recorded and management recommendation may be made particularly where safety issues may be of concern from this brief ground level inspection. Trees should be subject to regular tree condition inspections and appropriate management and a full tree condition inspection is recommended and particularly on completion of any development.

3.03 The survey involved recording each tree or group within the site boundary with a stem diameter of above 75mm when measured at a height of 1.5m above ground level. In addition, trees over this size growing on land adjacent to the site, which are at or within a distance equal to 12 times their stem diameter from the boundary (or 10 times the stem diameter in the case of multistemmed trees). This is to ensure that adequate consideration is given during site development planning to root zones and canopies from adjacent trees which may impact on the site.

3.04 Additional information recorded in the tree schedules includes the following:-
Number (No) The tree number provides reference to an individual tree whether by way of T1, T2 (tree 1 or tree 2) and relates to an attached plan showing their proximate positions or through a series of numbers.
Species The species is the given name of the tree which is usually provided both in common and scientific names.

Height (H) The height of the tree is measured in metres and is usually approximate. If the abbreviation 'Clinom' appears after the given measurement, it indicates the tree has been measured with an optical measuring instrument, a Clinometer and is accurate to within 5 metres

Diameter (D) The diameter for each tree is in millimetres based on the diameter or circumference of a height of approximately 1.5 metres above ground level unless otherwise stated. All measurements are approximate.

Crown Spread (CS) The crown spread of the tree is measured as the radius (from the centre of the stem) in metres and in most cases covering the four points of the compass.

Crown Clearance (CC) The height of the first significant branch above ground.

Age The age of the tree is given based on its life expectancy. For example, an oak tree at the age of 100 years is perceived as early mature when a hawthorn at 100 years would be considered old. Age classes are given as follows

Young (age less than 1/3 life expectancy)

Semi mature (age between 1/3 – 2/3 life expectancy). Still growing vigorously but not as fast as a younger tree)

Early mature (age between 2/3 – 3/3 life expectancy).

Mature trees (above 3/3 life expectancy). Growth rates beginning to slow down at this stage)

Over mature tree (growth rates slow and possibly beginning to display signs of decline)

Veteran (decline is well set in but the tree may be of specific ecological value. The tree is likely to contain sufficient deadwood and decay that is a specific habitat for many rare invertebrates that are considered to be at risk from extinction)

Condition Column notes any defects, signs or symptoms of ill health, structural weakness or other problems that are easily and visibly recognised that may affect the physiology or structural integrity of the tree.

Recommendations The recommendations include the mitigating action appropriate action required for the specimen tree or group which includes considerations for future elements which may possibly risk or improve the physiology of the tree.

Estimated The estimated remaining life of each tree is recorded in four categories as follows:-

- less than 10 years
- between 10 - 20 years
- between 20 - 40 years
- more than 40 years

4.0 TREE CATEGORISATION

4.01 The primary purpose of this report is to provide an assessment of the trees and to determine their suitability for retention on the proposed development. To assist in this assessment the trees are categorised and given an appropriate grading. This grading is recorded in the attached tree schedules (appendix 11.1), by colour code the tree survey LFS dwg. no 3149-010A and the Cascade Chart for Tree Quality Assessment shown in table 1 (appendix 11.2)

4.02 Where young trees occur as individual specimens i.e. trees with stems less than 150mm diameter at 1.5m above ground level they are graded as C trees. Although these trees may have the potential to develop into mature specimens, they should not be allowed to dominate site layout considerations. In such cases there would be an opportunity to lift and transplant smaller trees to other locations.

4.03 The number of trees/tree groups and mature shrubs in each category are:

Cat. A High		**nil**		
Cat. B Medium	**T05, T12, TG19, TG20,**	**4**		
Cat. C Low	**H01, H02, H03, TG04, H06, H07, SG08, TG09, H10, H11, T13, H14, T15, H16, T17,T18, T21,T22**	**18**		
Cat. U unsuitable		**0**		

5.0 ARBORICULTURAL IMPACT ASSESSMENT

5.01 Arboricultural impacts are a predicated change in condition as a result of a proposed development activity. This assessment provides an evaluation of the probable direct and indirect effects on the existing trees and the effect of the trees on the development. The assessment considers the condition and character of the trees and includes, where required, impact mitigation. recommendations.

5.02 Impact of the Proposed Development on Trees

In all the total number of trees and part hedges removed to facilitate the proposed development will be 4no.

Fig 1. Tree losses & management required to implement the proposals.

T Spec. TG/SG Group H Hedge				
BS 5837 Cat.	**A High quality**	**B Moderate**	**C Low quality**	**U Unsuitable**
Trees Removed	**nil**	**TG19,TG20**	**Part H16, TG09, part H03, part H10,H11,H14**	**nil**
Trees Managed	**nil**	**nil**	**T17,T18**	**nil**

5.03 The medium /long term impacts of the proposed development on amenity, landscape character and screening are therefore considered to be **moderate**.

5.04 Potentially damaging construction activities adjacent to trees.

Fig 2. Trees that require to be protected by special precautions.

T Spec. TG/SG Group H Hedge				
BS 5837	**A High**	**B Moderate**	**C Low**	**U Unsuitable**

Trees protected by special precautions other than fencing and/or ground protection	**nil**	**nil**	**nil**	**nil**

The proposed development impact on retained trees is considered to be **low**. All potentially damaging construction activities can be controlled by arboricultural supervision, RPA fence protection, and appropriate construction method statements.

6.0 BUILD PRACTICABILITY

6.01 The potentially damaging effects of construction activities have been. considered as follows:

Fig 3. Potential effects of construction activity

Activity	Scope of Activity	Impact
1.Site access	The proposal utilizes existing site gate access from the Forden Road for its main site access and all of the construction activities	Nil
2.Contractor parking	Provided on site outside of the Root Protection Areas of all retained trees	Nil
3.Workspace	Provided within the site and outside of the Root Protection Areas of all retained trees .	Nil
4.Storage	Storage areas can be provided on site and outside of the Root Protection Areas of all retained trees	Nil

6.02 Future pressure for tree removal

Trees retained in close proximity to structures and hard surfacing have the potential to cause damage. Where these impacts are perceived as high there is likely to be pressure to remove retained trees. The assessment of how proposed development will be affected by retained trees is as follows:

Fig 4. Potential effects of future growth

Activity	Outcome	Impact
1.Shading	The proposal will have no shading effects during the day therefore no future pressure on retained trees.	Nil
2.Structural damage	The proposal is sufficiently distanced from retained trees to prevent damage from root activity.	Nil

6.03 Protection and Construction

All excavation, soil-stripping or site grading within the protected area must be monitored by an ACW (Arboricultural Clerk of Works). Passage of vehicles across the unprotected soil surface must also be avoided, especially when the soil is wet, as this will cause breakage of the surface roots, soil compaction and consequently reduced soil aeration. Surviving roots may not be able to grow through the compacted soil.

6.04 Conclusions on Impacts

Given that the specified protection is implemented to protect the retained trees (as specified in the Arboricultural Method Statement section 7.0), the development proposal will have no significant impact on the value of the existing trees to the local public amenity or landscape character. Tree removal will be mitigated by the replanting of a range of native trees in a new landscape scheme. (Lingard Farrow Styles Landscape and Biodiversity Plan).

7.0 ARBORICULTURAL METHOD STATEMENT

7.01 Once layout proposals have been finalized the British Standard recommends a Tree Protection Plan (TPP) is prepared. (LFS dwg.no 3149-011A)
All retained trees will be protected with existing fencing and warning signs in accordance with BS 5837:2012 prior to commencement of site construction works (see appendices 11.4) and in agreement with the Local Planning Authority Arboricultural Officer.
Site supervision during any proposed tree work operations is to be undertaken by a suitably qualified person in conjunction with the Local Authority Arboriculture Officer. All tree work is to be carried out in accordance with BS 3998:2010 Tree Work Recommendations.

7.02 The Root Protection Area (RPA)

This is established using Table 2 from the standard BS 5837:2012 which is a 12 x multiplier of the stem diameter when measured at a height of 1.5m

above ground level or 10 x in the case of multi stemmed trees. The precise distance required by each tree as a Root Protection Area expressed as a radius is indicated on the attached tree schedules and will be shown on the survey drawing which supports the layout proposals. These distances provide an Exclusion Zone for site construction works. The erection of a substantial temporary barrier is required at these distances and the type of suitable fencing is indicated in Figure 1. These measurements or distances are provided in metres as a radial measurement, unless otherwise stated, which is taken from the centre of the stem.

7.03 Rationale for Tree Protection

The part of the tree most susceptible to damage is the root system, which because it is not immediately visible, is most frequently ignored, although the stem and branches are also vulnerable. Damage or death of the root system will affect the health, growth, vigour, life expectancy and safety of the rest of the tree. This is because the majority of the tree's root system is found within the top 600mm of the soil profile, extending radially for a distance frequently in excess of the tree's height.

The parts of the root system which are active in water and nutrient uptake are very fine, typically less than 0.5mm diameter. It is essential that the conditions in the soil remain conducive to healthy growth of these fine roots so that water and nutrients necessary for healthy tree growth can be absorbed, in addition to water and nutrients, roots, in order to function, require oxygen from the soil for the purpose of respiration. Diffusion between the soil and the atmosphere is essential. Anything which disturbs this balance will affect the condition of the root system and in turn the health of the tree. Compaction of the soil within the rooting zone of a tree will create long term damage through preventing respiration and the percolation of water. Vehicles tracking over the soil are responsible for such damage and such action must be reduced or avoided during construction works.

7.04 Construction Exclusion Notices

On completion of the exclusion zone protection by barriers and/or ground protection construction works can commence. All weather notices should be erected on the barrier with words such as 'Construction Exclusion Zone – Keep Out' (see appendix 11.3). A qualified and experienced person will visit the site to check the tree protection and signs until the protection is removed.

7.05 Additional Considerations

In addition, the following should be addressed or avoided:

a) Care should be taken when planning site operation to ensure that wide or tail loads, or plant with booms such as 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 of trees is maintained at all times. In some circumstances it may be impossible to maintain adequate clearance thus necessitating access facilitation pruning.

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 stem.

c) Fires should not be lit in a position where their flames can extend to within 5m of foliage, branches, or stem. This will depend on the size on the size of the fire and the wind direction.

d) Notice boards, telephone cables or other services should not be attached to any part of the tree.

e) Trees to be felled that are adjacent to, or that lie within a continuous canopy of trees to be retained will be removed with particular care. In some cases, a tree may have to be removed in section to avoid damage.

7.06 Maintaining the Protective Barrier

Special attention should be given to maintain the 'Protective Barrier' during the construction phase ensuring that it remains rigid and complete. In order to avoid disturbances to the Protective Barrier once it is installed it should be inspected on a daily basis. Repairs shall be made immediately should it be damages or not fit for the purpose intended.

7.07 Site Construction Area

Position to be outside the Root Protection Areas (RPA's) with access to be agreed with the contractor prior to commencement.

7.08 Contractors Car Parking

Position to be outside the Root Protection Areas (RPA's) with access to be agreed with the contractor prior to commencement.

7.09 Intensity and nature of Construction Activity

It is anticipated that construction activity will be low. All Construction Exclusion Zones must be fenced off prior to commencement.

7.10 Phasing of Construction Works

Any phasing plan must include reference to the maintenance of tree protection zones particularly with material storage and service runs.

7.11 Space required for all Foundation Excavation and Construction Works

All proposed excavated materials are to be stored well outside the RPAs of the retained trees. Position to be agreed prior to site works commencement.

7.12 Underground Service Routes

All service runs to include foul water and surface water drains, land drains, soakaways, gas, oil, electricity, telephone, television, or other communication cables will be kept outside all established RPAs of any retained trees. It is anticipated that all service runs will enter from the adjoining highway in any event. All service runs should be routed so to avoid the RPA and in the unlikely event that this is not possible work should not commence with any service installation until such time a 'Method Statement' is produced offsetting the likelihood of damage occurring to major roots.

Any new services lines within the RPA's will be routed beneath tree roots without damaging them utilizing hand dug trenches or a 'mole'. To avoid damage to shallow feeder roots all changes of level will be minimized and monitored during site operations. Vegetation to be removed on the existing soil surface will be eliminated utilizing hand cultivation.

All excavations close to retained trees will be undertaken by hand to avoid damage to bark and roots. All exposed roots with a diameter of greater than 50mm are to be surrounded with sharp sand and backfilled and temporarily protected with damp hessian.

7.13 Changes in Ground Level

There are no significant level changes proposed within any of the established RPA's of retained trees at the time of writing this report.

7.14 Space for Cranes, Plant and Scaffolding

The limited factors in terms of these considerations are the trees and the size and weight of the equipment. Often tall vehicles collide and cause collision injury to trees environment and the tree's physiology. For this reason, care must be taken when operating cranes to avoid collision injury occurring. All plant must be tracked on, off and around the site avoiding the established RPA's. Where there is no alternative and with acceptance of a Method Statement by the LAP tracking over root plates may be possible, if load bearing ground plates are used and are sufficient to support the spread and load of the plant equipment.

7.15 Space for site Huts, Temporary Latrines, and other Structures.

Site huts and latrines are to be located within an area of the site that is outside the RPA's.

7.16 The Type and Extent of Landscaping Works required within Tree Protection Areas.

Any landscape design should take account of the existing trees and any proposed planting within their RPA's should be notched planted to avoid conflict. There is no new planting proposed as part of this development work.

7.17 Space for Storing Materials, Spoil and Fuel and for the Mixing of Cement and Concrete.

Such activities can have implications on tree health if they occur within the established RPA or if they have the ability to run into an RPA. All such activities will be kept clear of such special areas. A 'Cement Washing Zone' should be created at least 15m away from any retained tree.

7.18 The Effects of Slope on the Movement of Potentially Harmful Liquid Spillage on or into Protected Areas.

It is essential that allowances will be made for the slope of the ground so that damaging material such as concrete washings, mortar or diesel oil cannot run towards tree root zones. In such areas a ground level barrier of timbers covered with heavy duty PVC dug into the ground outside of the tree root zones will be required. This barrier will require daily inspection to monitor its integrity. In all cases site operations are to take account of this requirement in site planning, set up and operation.

7.19 Summary of Arboricultural Considerations During Construction Stage.

a) Construction Exclusion Zone Fencing

- Timing for setting out, construction and completion of fencing or ground protection in accordance with phasing plan.
- Specification for fencing and/or ground protection to be in accordance with BS5837:2012

b) Storage of Materials/Offices/Fuels

- Identification and reservation of land for storage of materials
- Parking of vehicles, location of offices, welfare facilities and fuels.

c) Removal of Hard Surfacing

- Existing surface to be removed by hand working from the closest point to the tree working outwards.
- Material is to be broken with hand tools.

d) Services

- Location of services including sewerage, gas, water, electricity, and their impact on any RPA's.
- Timing of excavation where they pass within or close to retained trees in accordance with phasing plan.

e) Review/Site Inspection of Existing Trees

- Review of trees and Method Statement to be undertaken prior to the commencement of development to address phasing and land use.
- Arrangements for review/monitoring of method Statement.
- Review to allow for amendment /variation by agreement.

7.20 Precautionary Area (PA)

Precautionary areas protect RPAs outside of CEZs, where limited construction activities are proposed. These activities must be carried out with care to minimise any impact on the tree roots.
Precautions required for works within the RPA of retained tree will be required for trees nos T05, T17 and T18 where there will be acceptable incursions into the RPA's.

8.0 IMPACT OF PROPOSALS ON EXISTING TREES

IMPACT 1. Construction Phase Tree Protection

8.1 The root protection area (RPA) and canopy of the key trees can be protected during construction phase by establishing a Construction Exclusion Zone (CEZ). A specification of the tree protection is given in appendix 11.4.

8.2 Given the protection methods as described and the proposed mitigation the impact on existing trees will be **low.**

9.0 LEGAL AND PLANNING CONSTRAINTS REGARDING TREES ON SITE

9.01 The legal considerations referred to are general constraints that relate to arboriculture and do not cover any other legal matters that may be relevant on this site.

9.02 National Planning Policy Framework (NPPF):

This sets out national planning policy.

Paragraph 170 requires that planning policies and decisions should. contribute to and enhance the natural and local environment by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland.

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

Paragraph 175 requires that:

c) Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused unless there are wholly exceptional reasons and a suitable compensation strategy.

9.03 The Wildlife and Countryside Act 1981 protects nesting birds and to disturb nesting birds can be a criminal off offence. Therefore, if tree works are programmed during the nesting season, between March and August. Should nesting birds be present then all but essential works will be postponed. If in undertaking essential works a nest or nests are found to be present, then further advice will be sought from the relevant authority.

9.04 Tree Preservation Orders and Conservation Area Status.

The law on TPOs is in **Part Viii of the Town and Country Planning Act Town and Country Planning (Trees) Regulations 1999.** When any tree is protected by a TPO or are situated within a Conservation Area it is an offence (1) cut down (2) uproot (3) top (4) lop (5) wilfully damage or (6) wilfully destruct a tree without the express written permission from local Planning Authority (LPA), there are exceptions;

- Cutting down trees in accordance with one of Natural Resources Wales grant schemes, or where the Natural Resources Wales has granted a felling licence.
- Cutting down or cutting back a tree which is dying, dead, or dangerous.
- In line with an obligation under an Act of Parliament.

- At the request of certain organisations specified in the order.
- A tree which is directly in the way of development that is about to start for which detailed planning permission has been granted.
- In a commercial orchard or pruning fruit trees in accordance with good horticultural practice.
- To prevent or control a legal nuisance.

9.05 Wildlife and Countryside Act (as amended) Conservation (Natural Habitat) Regulations (1994) 5.1 In Britain, all bats and their roost sites are currently protected by law. The part that protects them is found within the Wildlife and Countryside Act 1981 and as amended by schedule 12 of the Countryside and Rights of Way Act 2000 and by the conservation Regulations 1994 under Section 39 (1).

The legislation makes it an offence to intentionally or recklessly damage, destroy or obstruct access to a site used by bats whether bats are present at the time or not. This can include work on trees whether it is surgery, felling, the covering or filling of cavities or the installation of rod braces and flexible cable braces where a bat roost is present.

There are some 16 species of bat native to the British Isles, all are insectivorous and depend to some extent on habitat in which trees are a significant element. Bats are a protected species and are in decline both globally and nationally. Therefore, they are to be fully considered before any tree work commences and particularly if the trees are mature. If a bat roost is known to be in any tree that is to be removed or worked on, a licence must be obtained from Natural Resources Wales..

Where there is a risk that bat roosts may be present, it is incumbent upon the owner to commission a specialist bat survey to identify bat roosts before instruction for tree surgery to commence. Failure to do so and in the event of disturbing a roost site and upon conviction is an offence. Maximum penalties for committing offences relating to bats or their roosts can amount to imprisonment for a term not exceeding six months or to fines of up to Level 5 on the standard scale under the Criminal Justice Act 1982/1991 (i.e. £5,000 in April 2001) per roost or bat disturbed or killed or both.

9.06 Forestry Act 1987

A felling licence is required wherever an excess of 5 cubic meters of timber is felled per calendar quarter. Exceptions to the Act include felling trees which when measured at 1.3m above ground level have a stem diameter of 8cm or below.

Other exceptional felling includes:

- Thinning of trees with a stem diameter of 10cm or below
- Coppicing of trees with a diameter of 15cm or below

Exceptions are also afforded to work carried out by statuary undertakers i.e. removal of dangerous/dead trees, prevention of abatement of a nuisance and to prevent the spread of quarantined pests or diseases in accordance with a notice served by a Forestry Commission Plant Health Officer.

When full planning permission is authorised, both statutory obligations described above are no longer applicable and are transcended by the Town and Countryside Planning Act of 1990, which permits tree removal for the purpose of development.

The site will not be subject to the provisions of the Forestry Act.

9.07 Statute and Common Law

A landowner should be aware that both statute and common law dictates regular inspections of trees on land in their control are necessary where such trees could cause injury or damage in the event they should fall or shed any parts. A person suitably qualified in arboriculture should undertake such routine inspections and any remedial tree works recommended within the time constraint specified, to prevent injury or damage occurring. A landowner should retain records of all inspections and any remedial tree works that have resulted from such inspections.

10.0 REPORT LIMITATIONS

10.01 This report is a pre-development survey and is not a risk assessment or a detailed report on the health and condition of the trees.

10.02 Every attempt has been made to provide a realistic and accurate assessment of trees and their condition at the time of this inspection. No responsibility can be accepted for a damage or injury as a result of the failure of any tree or its parts due to faults not apparent upon a visual inspection carried out at this session, or for faults developing subsequent to the survey. Similarly, no liability can be accepted for the condition of the trees that are obscured in part or whole e.g. neither by dense ivy or other foliage nor for any that proved inaccessible. Certain features which might provide evidence of ongoing decay or decline e.g. seasonal fruiting bodies, damage to foliage, insect emergence holes may not be in evidence. Only those features present at the time of the inspection could be assessed.

10.03 Reference is made in this report for the possibility of additional assessment of specimen trees particularly with reference to long term safety and stability. This assessment could be assisted by the use of a Tomograph such as the PICUS sonic Tomography which assesses the internal condition of the tree by using sonic waves. The standard technology involves the attachment of sensors to measuring mails.

10.04 This report is based on the tree circumstances and condition at the time of the survey. It must be recognized that the circumstances may be altered radically over the course of any developmental process and that such changes cannot be accurately predicted, i.e. such a change could be the effect of localised wind turbulence created by the new development. As trees grow they respond and mechanically adapt to their surroundings and exposure limits.

Unless stated in writing the inspection shall not include any underground parts of the tree. It does not consider damage resulting from the extraction of moisture from shrinkable clay soils by tree root causing subsidence or by heave occurring through soil rewetting following removal trees on the site. Recommendations relating to foundation design or material specification are beyond the scope of this report.

11.0 APPENDICES

11.1 Tree Schedules

11.2 Category Cascade Chart

11.3 Tree Protection Signs

11.4 Tree Protection Fence and Ground Protection

11.5 Photographs 1-6

11.6 Glossary of Terms

11.7 Bibliography

11.8 Tree Survey and Tree Protection Plans 3149-010A and 3149-011A

11.1 TREE SCHEDULES

CLIENT: **Hughes Architects** **PROJECT:** **Land at Verlon Farm** **Montgomery, Powys** **Ref 3149**	**SURVEY DATE: 5 April 2024** **DWGS NOS: LFS: 3149-010A and 3149-011A Tree Survey and TPP**	**COLUMN KEY:** **#** Estimated dimension **CS** Crown Spread **H** Height **SD** Stem diameter & type **CC** First significant branch **Age** Life stage **YR** Life expectancy **GR** Grade /category **RPA Rad/m²** Root Protection Area	**AGE:** **Y** Young **SM** Semi mature **EM** Early mature **M** Mature **OM** Over mature **V** Veteran	**CA–Category:** **A – Good quality.** **B – Moderate quality.** **C – Low quality** **U – Unsuitable. Remove.**

No.	Name (Common & Scientific)	H m	SD mm	Branch Spread (m)				CC m	AGE	YR	CA	COMMENTS/CONDITION	RECOMMEND	RPA Rad.	RPA M²
				N	S	E	W								
H01	Mixed hedge	1.5	n/a	n/a	n/a	n/a	n/a	n/a	M	20	**C2**	Predominately Hawthorn with Holly, Ivy, and Blackthorn	Maintain@1.5m height	2m from edge of hedge canopy	n/a
H02	Mixed hedge	6.0	n/a	n/a	n/a	n/a	n/a	n/a	M	20	**C2**	Overgrown Holly, Hawthorn, and Ivy hedgerow with emergent Ash saplings.	Maintain @6.0m height	2m from edge of hedge canopy	n/a
H03	Mixed hedge	1.5	n/a	n/a	n/a	n/a	n/a	n/a	SM	20	**C2**	New highway hedge planting with Hawthorn, Holly, Ivy, and Beech forming	Maintain @6.0m height Part removal to facilitate development.	2m from edge of	n/a

												visual screen to site.		hedge canopy	
TG04	Mixed tree group	10.0	n/a	n/a	n/a	n/a	n/a	n/a	M	20 +	**C2**	Overgrown Holly, Hawthorn, Rose, and Ivy hedgerow with emergent Ash saplings.	No work	4m from edge of hedge canopy	n/a
T05	Pedunculate Oak *(Quercus robur)*	21.0	1,000	12.0	8.5	10.5	10.5	4.0	M	40 +	**B2**	Significant specimen on fence line. Die back. Occluded wounds. Recently pruned. Poor crown architecture.	No work	12.00	452
H06	Beech hedge	1.8	n/a	n/a	n/a	n/a	n/a	n/a	M	30	**C2**	Clipped hedge to residential site boundary	Maintain @1.8m	2m from edge of hedge canopy	n/a
H07	Mixed hedge	2.0	n/a	n/a	n/a	n/a	n/a	n/a	M	20	**C2**	Ornamental hedge/shrub group with Cupressus, Privet, Lonicera, Holly Rose, Willow, Cotoneaster.	Maintain @2m.	2m from edge of hedge canopy	n/a
SG08	Mixed scrub group	1.8	n/a	n/a	n/a	n/a	n/a	n/a	M	20	**C2**	Drainage ditch with Bramble, Ivy, and emergent Ash saplings	No work	2m from edge of hedge canopy	n/a
TG09	Mixed tree group	10.0	n/a	n/a	n/a	n/a	n/a	n/a	M	20	**C2**	Overgrown Holly, Hazel, Hawthorn, Maple, and Ivy	Part removal to facilitate development.	4m	n/a

												hedgerow. with emergent Ash saplings.		from edge of hedge canopy	
H10	Mixed hedge	3.0	n/a	n/a	n/a	n/a	n/a	n/a	M	20	**C2**	Predominately Hawthorn with Holly, Hazel, Elderberry, Bramble, Ivy, and emergent Ash saplings.	Part removal to facilitate development.	2m from edge of hedge canopy	n/a
H11	Mixed hedge	2.0	n/a	n/a	n/a	n/a	n/a	n/a	M	20	**C2**	Predominately Hawthorn with Holly, Ivy, and Hazel.	Remove to facilitate development and replace with tree/native shrub replanting mitigation scheme.	2m from edge of hedge canopy	n/a
T12	Common Ash *(Fraxinus excelsior)*	17.0	700	6.0	6.0	6.0	6.0	2.0	SM	30 +	**B2**	Significant specimen on boundary. Die back.	No work	8.40	222
T13	Pear *(Pyrus sp.)*	10.0	3 x 250	3.0	3.0	3.0	3.0	3.0	M	20	**C2**	Multistem specimen in third party garden.	No work	9.00	255
H14	Mixed hedge	10.0	n/a	n/a	n/a	n/a	n/a	n/a	M	20	**C2**	Overgrown Holly, Hawthorn, Hazel, Blackthorn, and Ivy hedgerow with emergent Ash saplings.	Remove to facilitate development and replace with tree/native shrub replanting mitigation scheme.	2m from edge of hedge canopy	n/a
T15	Hawthorn *(Crataegus*	8.00	400	2.0	2.0	2.0	2.0	n/a	SM	20	**C2**	Specimen on fence line with ivy growth.	No work	4.80	72

	monogyna)														
H16	Mixed hedge	6.0	n/a	n/a	n/a	n/a	n/a	n/a	M	20	**C2**	Predominately Hawthorn with Holly, Hazel, Blackthorn, Elderberry, Bramble, Ivy, and emergent Ash saplings.	Part removal to facilitate development.	2m from edge of hedge canopy	n/a
T17	Crack Willow *(Salix fragilis)*	20.0	#1250	5.5	5.5	8.5	5.5	n/a	OM	20 +	**C2**	Prominent specimen on drainage ditch in poor condition. Collapsed and decayed tree bole but with good wildlife potential. Ivy growth	Reduce main stem to 4m. Retain for wildlife.	15.00	707
T18	Crack Willow *(Salix fragilis)*	22.0	#1250	11.5	10.5	11.5	10.5	n/a	OM	20 +	**C2**	Prominent specimen on drainage ditch in poor condition. Collapsed and decayed tree bole but with good wildlife potential. Ivy growth. 20% incline to W.	Reduce main stem to 4m. Retain for wildlife.	15.00	707
T19	Mixed tree group	8.0	n/a	n/a	n/a	n/a	n/a	n/a	SM	30 +	**B2**	Withy bed on water course edge with specimen Hawthorn up to 10m height. Individually the trees are not significant specimens but as a group their value is enhanced.	Remove to facilitate development and replace with tree/native shrub replanting mitigation scheme.	4m from edge of tree group	n/a
T20	Mixed tree group	16.0	n/a	n/a	n/a	n/a	n/a	n/a	M	30 +	**B2**	Mixed tree group on water course edge with Salix, Ash, Oak, Hazel, Hawthorn, and dead Elm. Large specimen Salix with ivy collapsed into	Remove to facilitate development and replace with tree/native shrub replanting mitigation	4m from edge of hedge	81

												water. Individually the trees are not significant specimens but as a group their value is enhanced.	scheme.	canopy	
T21	Hawthorn *(Crataegus monogyna)*	12.0	600	4.5	4.5	4.5	4.5	2.0	SM	30 +	**C2**	Specimen on fence line with ivy growth	No work	7.200	163
T22	Mixed tree group	16.0	n/a	n/a	n/a	n/a	n/a	n/a	M	30 +		Mixed tree group on water course edge with Salix, Ash, Oak, Hazel, Hawthorn, and dead Elm. Individually the trees are not significant specimens but as a group their value is enhanced.	No work		

11.2 TABLE 1 from BS 5837:2012
Trees in relation to design, demolition & construction – Recommendations. 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 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 *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve.*			RED
	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)	GREEN
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	BLUE
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	GREY

11.3 TREE PROTECTION SIGNS

No equipment, machinery or materials shall be brought onto the site for the purposes of the development until fencing has been erected in accordance with the plans and particulars which shall have been previously approved by the local planning authority in writing.

The areas forming the Construction Exclusion Zone are to be protected by Tree Protection Barriers as per the recommendations in BS 5837:2012 (Figure 2) or as specified below.

This fencing is to be erected before any work commences on site and is to remain in place undamaged for the duration of all work or each phase. It will only to be removed once all work is completed and if required by planning condition, with the formal consent of the local planning authority.

If the fencing be broken or removed during the course of carrying out the development, it shall be promptly repaired or replaced to the satisfaction of the local planning authority.

Within any area fenced in accordance with this condition, nothing shall be stored, placed or disposed of on the above or below ground, the ground level shall not be altered, no excavations shall be made, nor shall any fires be lit, without the prior written consent of the local planning authority.

Other than works detailed within this method statement or approved in writing by the local planning authority, no works at all (including storage or dumping of materials) shall take place within the exclusion zones defined by the protective fencing.

The fencing is to carry waterproof warning notices denying access within the RPA. The following signs or similar will be attached to the fence panels.

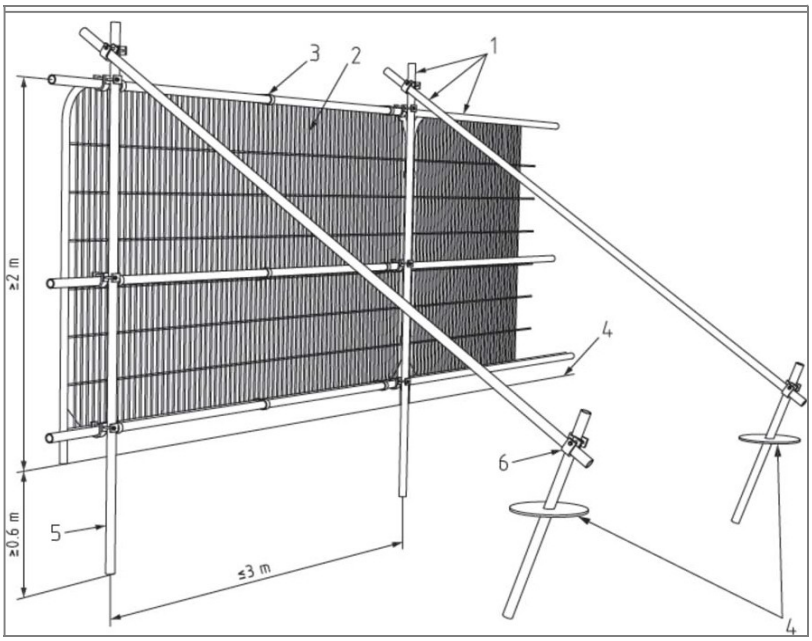
Arboricultural Site Considerations – To be displayed in a prominent place.

1. Tree Protective Barriers must be regarded as sacrosanct and must not be removed or altered without prior consultation with either the Local Planning Authority (LPA) or the arboricultural consultant responsible for the site supervision.
2. Ground protection must not be lifted or removed without prior consultation with either the LPA or the arboricultural consultant responsible for the site supervision.
3. Damage caused to protective fencing or ground protection must be reported to the site supervisor immediately to ensure efficient repair.
4. No materials, chemicals, machinery, or vehicles must be stored within the Construction Exclusion Zone as defined on the Tree Protection Plan (TPP) and identified on site by fencing and above ground root protection.
5. No materials must be rested against a tree's trunk or machinery chained to it.
6. No pruning of trees may be undertaken by anyone other than an arborist, and all work must be approved by the supervising arboricultural consultant.
7. Any physical damage caused to a tree retained on site must be reported to the site manager so remedial work can be undertaken without delay.
8. Builder's sand, which contains salt, must not be used to back fill excavation within or in close proximity to tree roots, as this can have a toxic affect. Sharp sand can be used instead.
9. Material that will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, must not be discharged within 10 metres of a tree stem.
10. Fires must not be lit in a position where their flames can extend to within 5 m of foliage, branches, or trunk. This will depend on the size of the fire and wind direction.
11. Notice boards, telephone cables or other services must not be attached to any part of a tree.

11.4 SPECIFICATION FOR TREE AND ROOT PROTECTION BARRIERS

Fencing specification reproduced from BS 5837:2012 Trees in relation to design, demolition, and construction – Recommendations.

1.High Construction Pressure

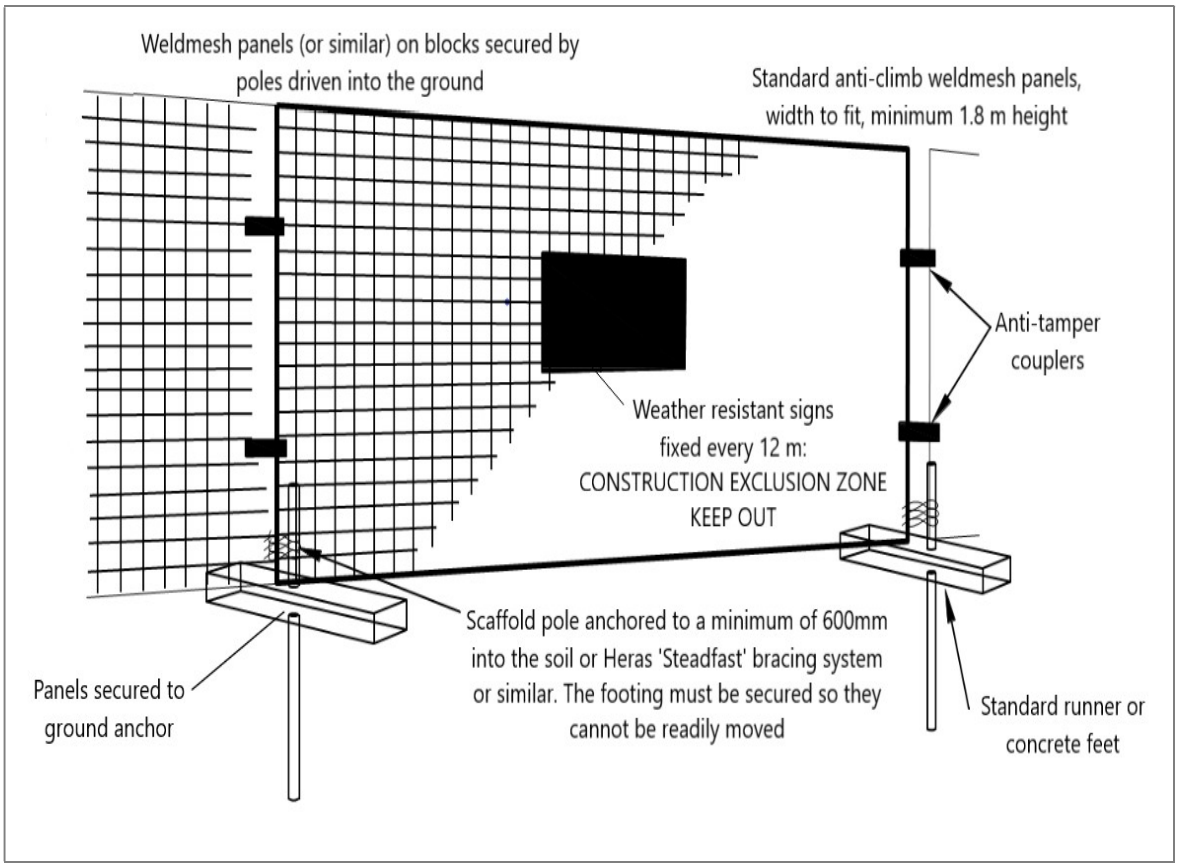


Key.

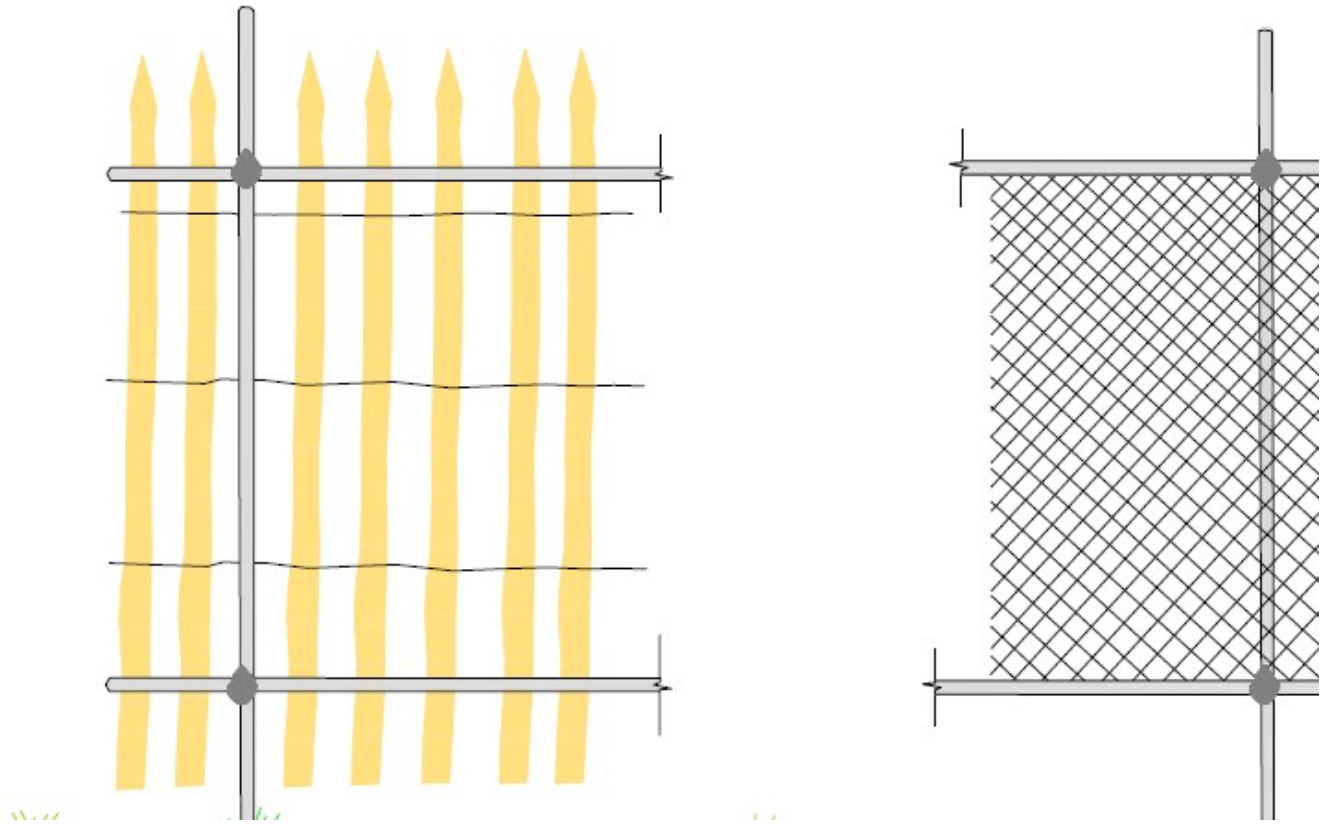
1. Standard scaffold poles
2. Heavy gauge 2 m tall. galvanized tube and welded mesh infill panels
3. Panels secured to uprights and cross-members with wire ties
4. Ground level
5. Uprights driven into the ground until secure (minimum depth 0.6 m)
6. Standard scaffold clamps

2. Medium Construction Pressure

Fencing specification reproduced from BS 5837:2012 Trees in relation to design, demolition, and construction – Recommendations.



3. Low Construction Pressure Secondary Tree Protection Barrier

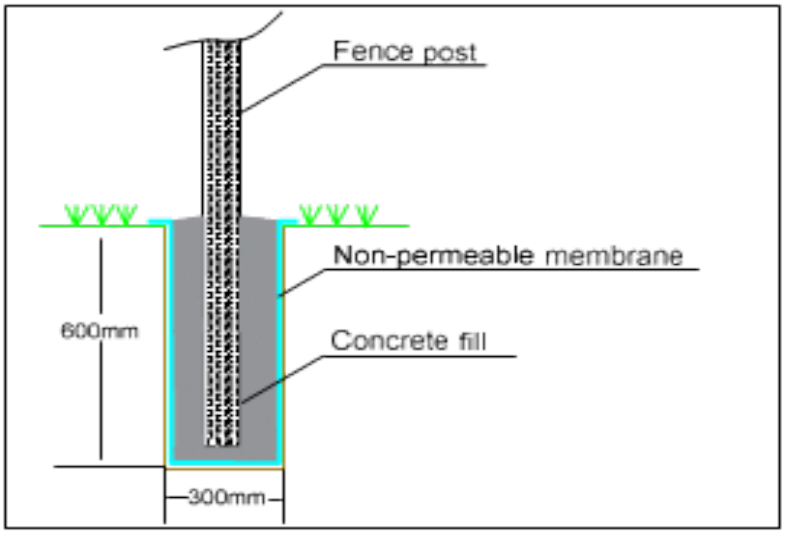


Cleft chestnut pale or chain link fencing attached to scaffold framework. Uprights driven well (min 0.6 m) into the ground with bracing as required by ground conditions.

4. Ground Protection

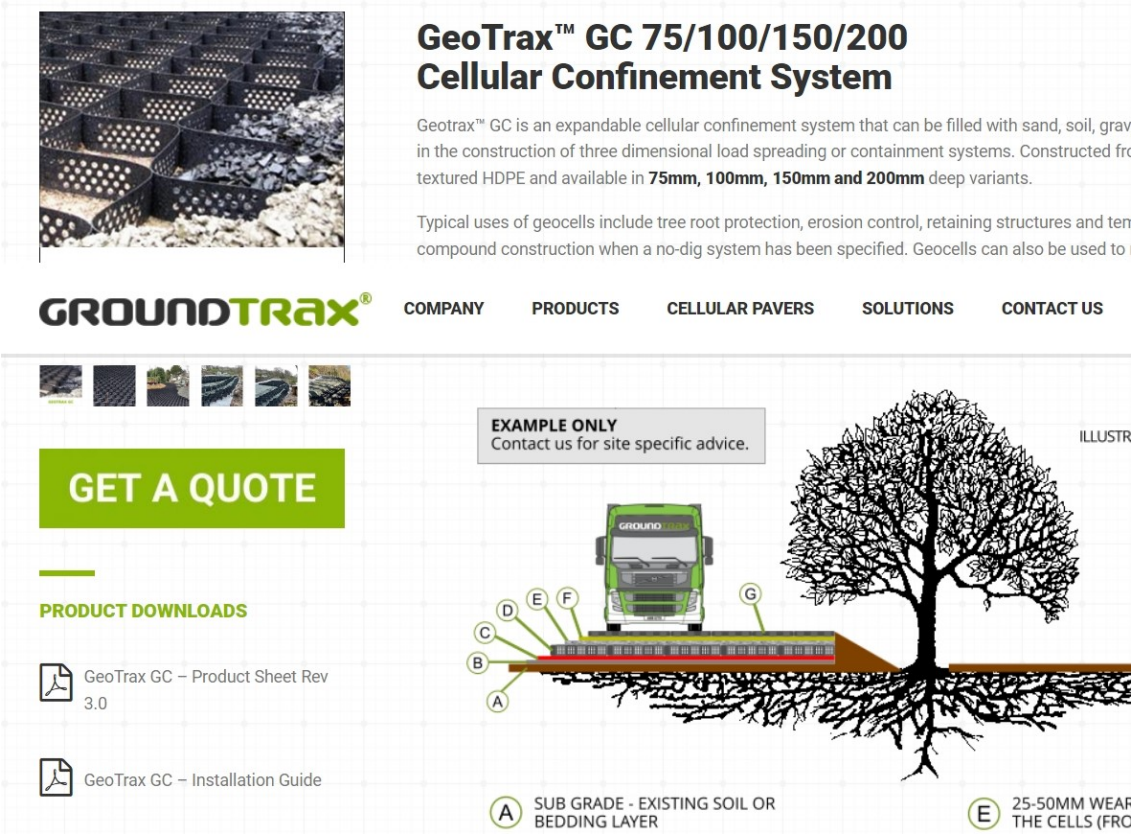
- Ground protection to protect underlying soil and roots in the RPA to consist of sheets of heavy gauge exterior plywood laid over 50mm bed of compressible woof chip. Plywood to be secured to ground with steel pins.
- Ground protection to be installed at locations shown on the Tree Protection Plan (TPP).
- Ground protection locations will not be altered without the approval of the Arboricultural Clerk of Works (ACW).
- Ground protection will not be removed at the end of the construction phase without the approval of the Arboricultural Clerk of Works (ACW).

5. Post Hole Installation



Suitable for screen, sign or fence posts with varying depths.

6. Detail of GeoTrax Cellular Confinement System GC 150/200



11.5 PHOTOGRAPHS

1. View looking South to Oak T05 and tree group TG04

2. View looking Southwest to hedges H02 and H03 Cottage boundary

3. General view looking Southeast across site and to hedge H03

4. General view looking West to hedge H03

5. View looking West to Hawthorns T15 and T21 and hedge H16

6. General view of Salix tree bole T18

11.6 GLOSSARY OF TERMS

Arboriculture:	The culture and management of trees as groups or individuals, primarily for amenity and urban forestry excluding commercial purposes.
Aerial inspection:	The crown is assessed by a climber who inspects defects at close range.
Architecture:	In a tree, a term describing the pattern of branching of the crown or root system.
Arboricultural Implication Assessment (AIA):	Study undertaken by an arboriculturist to identify, evaluate and possibly manage the extent of direct and indirect impact on existing trees that may arise as a result of the implementation of the site layout.
Arboricultural Method Statement:	Methodology for the implementation of any aspects of development that has the potential to result in the loss or damage to a tree.
Assessment:	In relation to tree hazards, the process of estimating the risk which a tree or group of trees poses to persons or property
Branch:	A limb extending from the main stem or parent branch of the tree
Construction Exclusion Zone:	Area based on the RPA (metres as a radial measurement and sometimes a m^2). Identified by the use of barriers and/or ground protection for the purpose to ensure the successful; long term retention of a tree.
Crown:	Total volume occupied by the foliage
Crown thinning:	Removal, pruning of selected branches throughout the crown of the tree.
Crown reduction:	Pruning the height and overall crown spread to achieve a smaller crown size.
Crown cleaning:	Removal of all dead twigs and small dead branches, diseased wood, cracked and damaged wood and rubbing branches.
Defect:	In relation to tree hazards, any feature of a tree that detracts from the uniform distribution of mechanical stress or which makes the tree mechanically unsuited to its environment.
Dysfunction:	In woody tissues, the loss of physiological function, especially water conduction.
Epicormic sprouts:	New branches that grow from dormant buds just beneath the bark. They are usually associated with lopping or topping cuts.
Failure:	In connection with tree hazards, a partial or total fracture within woody tissues or loss of cohesion between roots and soil.
Flush Cuts:	Where a branch has been cut very close to the stem,

	removing the branch collar. This can also be very injurious, allowing decay to enter.
Fluted stem:	A stem that has distinct raised ribs at the buttress.
Group:	The term 'group' is intended to identify trees that form cohesive arboricultural features either **aerodynamically** (e g trees that provide companion shelter), **visually** (e.g. avenues or screens or **culturally** including for biodiversity (e.g. parkland and wood pasture).
Hanger:	A branch that has completely broken and is hanging in the crown.
Heave:	In relation to a shrinkable clay soil, expansion due to re-wetting , sometimes after felling or root severance of a tree which was previously extracting moisture from the deeper layers; also in relation to root growth, the lifting of pavements and other structures by radial expansion; also, in relation to trees stability, the lifting of one side of wind-rocked root plate.
Included bark:	Where a branch and stem or two stems have a very tight union, bark presses on bark and becomes ingrown. The result is structurally a weak junction.
Internal inspection:	Can be undertaken by invasive drilling techniques or by the use of ultrasound technology
Leader:	Leading shoot or stem – usually applied to a single stemmed tree.
Occluded:	A cavity or wound where new bark has completely sealed the wound.
Preventative action:	In a tree hazard management, action that helps to prevent injury to persons or damage to property,
Pruning:	The removal or cutting back of twigs, branches or roots; in some contexts applying only to twigs or small branches only, but more often used to describe all kinds of work involving cutting.
Retained Tree:	A tree that has been considered suitable by an Arborist for retention and which during the design stage is selected for retention and incorporated within the development.
Risk:	The likelihood of the potential harm from a particular hazard becoming actual harm.
Ribs:	A protrusion of reactive wood growth that has formed over a crack or other anomaly.
Root Protection Area:	Layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree shown in plan form in m^2.
Sprouts:	These are re-growth branches that grow rapidly from large wounds, more so on some species such as poplar and lime.

	They do not have a strong union with the stem and tend to break out when they grow large.
Stem	The single main stem of a tree.
Subsidence:	In relation to soil or structures resting in or on soil, a sinking due to shrinkage when clay soils dry out sometimes due to extraction of moisture by tree roots.
Suppression:	A tree which is beneath the crown(s) of another canopy and is being restricted by it.
Sucker:	Shoots that grow from roots, often at the base of the tree
Targets:	In a tree hazard assessment (and with somewhat incorrect technology), persons or property or other things of value, which might be harmed by mechanical failure of the tree or by objects falling from it.
Tipping:	Cutting the ends of branches between nodes.
Topping:	Indiscriminate reduction of height leaving a large wound. Can be very injurious to tree health.
Tree constraint Plan (TCP):	Plan prepared by an arboriculturalist or similar qualified person for the layout design showing the RPA and representing the effect that the mature height and spread of retained trees will have layouts through shade dominance etc.
Tree Preservation Order:	In Great Britain, an order made by a local authority, whereby the authority's consent is generally required for the cutting down, topping or lopping of specified trees.
Tree Protection Plan:	Scale drawing prepared by an arboriculturalist showing the final layout proposals, tree retention and tree and landscape protection measures detailed within the arboricultural method statement (AMS) which can be shown graphically.
Vigour:	In tree assessment, an overall measure of the rate of shoot production, shoot extension or diameter of growth.
Visual tree Assessment (VTA):	In addition to the literal meaning, a system expounded by Mattheck & Breloer (1995) to aid the diagnosis of potential defects through visual signs and the application of mechanical criteria.
Wind exposure:	The degree to which a tree of other object is exposed to wind, with regard both to duration and velocity.
Wind pressure:	The force exerted by wind on a tree or other object.
Wind snap:	The breaking of a tree by a stem by wind.
Wind throw:	The blowing over of a tree at its roots.

11.7 BIBLIOGRAPHY

References for the recommendations contained in this report are from the following publications:-

- Modern Arboriculture.
  Shigo A.L.

- Hazards from Trees – A General Guide: Forestry Commission Practice Guide.
  Lonsdale D.

- Principles of Tree Hazard Assessment and Management.
  Lonsdale D.

- BS 5837:2012: Trees in Relation to Construction.
- British Standards Institute.

- BS:3998:2010 Recommendations for Tree Work.
  British Standards Institute.

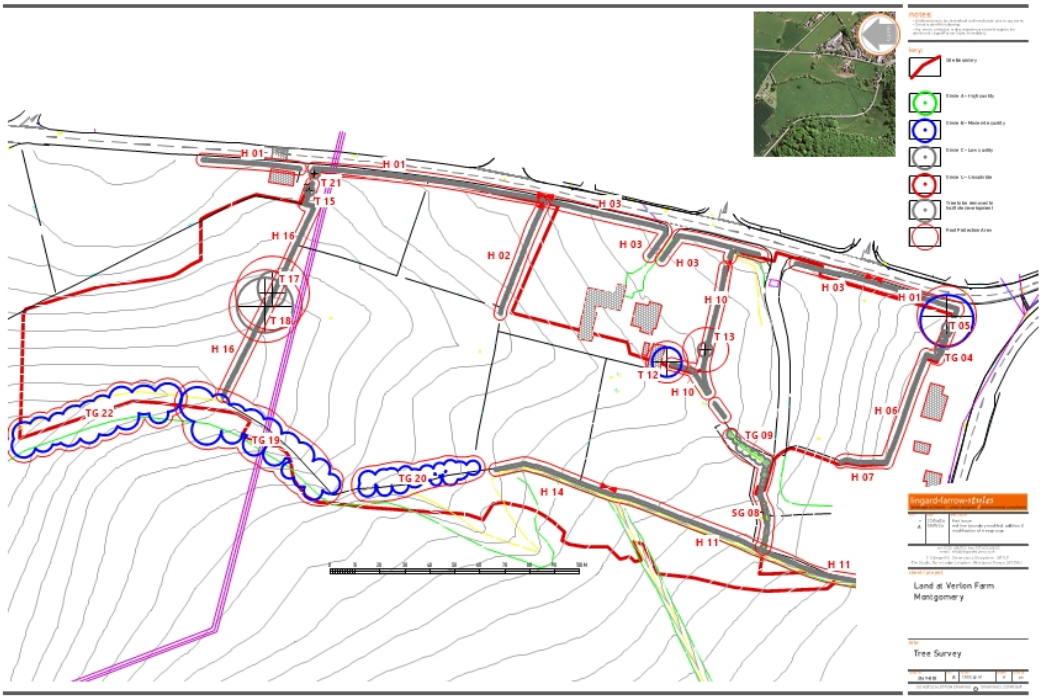
- Veteran Trees – A Guide to Risk and Responsibility.
  English Nature.

- Alan Mitchell's Trees of Britain.
  Mitchell A.

- Practice Note April 12 (Through the Trees to Development).
  Derek Patch and Ben Holding.

- Standard Advice for Ancient Woodland and Veteran Trees
  April 2014
  Forestry Commission/Natural England

11.8 TREE SURVEY AND TREE PROTECTION PLANS



Tree Survey Plan Dwg no 3149 -010A

Tree Protection Plan (TPP) Dwg no 3149-011A