

Tree Protective Fencing

- Trees for removal to be identified from the drawing and marked by an arboriculturist.
- No vehicles to enter the grass verge or root protection zone during tree removal or fencing installation/removal.
- Fencing to be installed prior to any construction works (including demolition, materials delivery, works compound installation).
- The location of the tree protective fencing is indicative only and must not be directly measured from this plan. Its true location must be surveyed accurately on site and where applicable be measured from the tree centre by the stated dimension value.
- Fencing to remain in place until all construction works have ceased.

BS5837: 2012 Recommendations (extract)

6.2.2 - Barriers

6.2.2.1 - Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s). Barriers should be maintained to ensure that they remain rigid and complete.

6.2.2.2 - The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in Figure 2. The vertical tubes should be spaced at a maximum interval of 3m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed.

Fencing Specification

The fencing will comprise of standard G57Heras styled steel self-supporting security fencing panels. The panels must be securely clamped together. They must be secured to the ground with robust steel stakes to a depth of 600mm. These are securely clamped to the panels.

The use of steel mesh panels in conjunction with just clamps and self supporting bases is not acceptable for use. They must be secured to the ground with stakes to prevent movement. Where stated, additional bracing of the panels must use angled scaffolding poles to prevent further movement (see diagram).

Key

- 1 Standard scaffold pole
- 2 Heavy gauge 1.6m galvanneal tube and welded mesh 1835 panels
- 3 Posts secured to uprights and cross members with wire ties
- 4 Internal bracing
- 5 Uprights driven into the ground and secured by means of 60mm dia
- 6 Standard scaffold clamp

Why Is Fencing Erected Around Trees?

- The major cause of damage to trees on construction sites is due to soil compaction.
- Roots use the spaces between soil particles to obtain Oxygen, Water and Nutrients.
- Heavy plant and machinery compresses (compacts) the soil, squeezing out the air spaces and preventing root function.
- A compacted soil structure will stay compacted.
- Consequently the tree suffers and will show signs of branch die-back.
- Symptoms such as die-back may take several years to appear.
- Soil compaction over roots can be prevented by maintaining a fenced exclusion zone over the tree roots.
- The exclusion zone is calculated using British Standard 5837.
- Protective Fencing is installed around the calculated area.
- Protective Fencing is a condition of planning approval, if it is removed or repositioned the construction firm is in breach of a condition and may be subjected to legal action.

2.) Tree Surgery Work - G2 - 19 by 6 metre area - Fell, Coppice and Lay trees and scrub to form a boundary hedgerow line to the proposed property. Tree area consisting of small multi-stemmed trees. Infill boundary hedgerow planting of whips, with a double staggered row of native hedgerow species (40% hawthorn, 40% blackthorn, 20% hazel).

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0 5 10 15
Scale Bar - Metres

Key : Tree Protection Methods

Temporary Tree Protective Fencing
(Not to be altered without prior approval from the Local Planning Authority)

Construction Exclusion Zone
(No access, storage of any building material or equipment at any time for the entire construction period)

Trees to be removed to facilitate construction work
All Low or Poor quality trees -
G1 - 4 small hawthorn (C)
T4 - Sessile Oak (C)
G3 - Leylandii group (C)
T7 - 1 conifer (U)
(All these trees can be readily mitigated for with a scheme for landscaping scheme)

Trees surgery operations required - to BS3998:2010
Tree works Recommendations

Excavation work to be carried out under the supervision of an Arboriculturist (Clean root pruning, use of hand tools, airspade and toothless bucket on small excavator (2500kg))

Please Note:
Arboricultural Method Statement:
MUST be followed in sequence, include site supervision by an Arboriculturist where specified and adhered to at all times. Noncompliance with this method statement may result in planning enforcement action or prosecution.

Tree Protection Plan

Site - Llys Wern III

Project Ref - 815.2

Scale 1:500 @ A3

KEY BS 5837:2012 Tree Quality (Colour Coded)
(Individual Tree)

Category A (High)
(*Highly desirable for retention*)

Category B (Moderate)
(*Desirable for retention*)

Category C (Low)
(*Optional for retention*)

Category U (Poor)
(*Unsuitable for retention*)

Tree Key - Individual Trees

Branch Spread (Measured on the North, East, South and West side of Tree)

Tree Species (Common Tree Name Shown)

Tree ID# (T- Individual Tree)

Root Protection Area (RPA) (A layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.)

Tree Key - Group/Area/Woodland/Hedgerow

Tree ID# (G-Tree Group, A-Tree Area, W-Woodland, H- Hedgerow)

Tree Species (Common Tree Name Shown)

Average Branch Spread

BS 5837:2012 Tree Quality (Colour Coded as for individual trees)

Shade Pattern - shade pattern not shown on plan (Early morning shade starting North West through to evening shade to the East)

Definitions of BS5837:2012 Categories for Trees, Woodlands and Hedgerows (Colour Coded):

A - Those of high quality with an estimated remaining life expectancy of at least 40 years. (*Highly desirable for retention*)

B - Those of moderate quality with an estimated remaining life expectancy of at least 20 years. (*Desirable for retention*)

C - Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm. (*Optional for retention*)

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. (*Unsuitable for retention unless provides high conservation value*)

Arboricultural Method Statement

The Tree Protection Plan must comply with all of the following:

Be regarded as sacrosanct and follow the sequence of events as detailed in the table below

Be installed before commencement of any demolishing or construction works on site

Must not be removed or altered without prior approval of the local planning authority

The following table below provides a detail sequence of events that must occur in order to ensure the protection of the retained trees during all stages of the construction process. These methods must be clearly communicated to the entire construction team prior to commencement of any work on site.

Stage	Arboricultural Method Statement (In sequence of events)
1.)Preconstruction (Prior to any construction work on site including demolition work, site material storage etc.)	1.1-Tree surgery work to be carried out as detailed on the Tree Protection Plan to the British Standard 3998:2010. Recommendation for tree works. 1.2-Tree protective fencing installed in the position and form as detailed in the Tree Protection Plan. Installation to be supervised by the appointed Arboriculturist. All weather tree construction exclusion zone posters to be secured to fencing at regular intervals. 1.3-Appointed Arboriculturist to document all tree protection methods in situ and photographs taken for reference purposes. Copy of document report sent to all parties.
2.)Construction	2.1-Site supervisor to be briefed by the appointed Arboriculturist regarding the Tree Protection Plan/Methods and a laminated copy of the plan/methods to be secured onto the wall in the site supervisor's office. Contact details of the appointed Arboriculturist, Council's Tree Officer to be included. Emphasis made to site supervisor on the importance of the Tree Protection Plan/Methods and possible planning enforcement action (Stop Notice) and/or legal action of noncompliance with these tree protection methods. 2.2-All contractors to be briefed by site supervisor and/or the appointed Arboriculturist regarding the tree protection plan and methods before starting work on site. Emphasis made to contractors on the importance of the Tree Protection Plan/Methods and possible planning enforcement action (Stop Notice) and/or legal action of noncompliance with these tree protection methods. 2.3-Excavation work to be carried out. This work to be carried out with the use of hand tools, air spade and possible use of a small excavator (no greater than 2500kg) with a toothless bucket under the constant supervision of the appointed Arboriculturist. Any roots discovered less than 25mm in diameter to be pruned cleanly with securer or pruning saw. Careful excavation working method as follows: • Digging started from outside of the Root Protection Area towards the retained tree. • No roots found to be ripped, pulled or crushed during excavation • Any exposed roots to be covered with wet Hessian material • Any roots less than 25mm in diameter to be cut with a sharp knife/secateurs covered with wet Hessian material • If any roots greater than 25mm in diameter are discovered Arboriculturist to instruct further action. Innovative engineer methods will be sort to retain these roots. 2.4-Construction phase begin 2.5-Tree Safe Construction (Throughout Site)-areas outside of the construction exclusion zones as shown on the tree protection plan must adhere to the following • Building materials and fuels such as oil, bitumen or cement should not be stacked or discharged within 20 metres of the trees stem. • Fires will not be lit beneath any tree or in a place where flames could extend to within 10 metres of the tree. • Trees that are to be retained and be protected should not be used as anchorage for services or equipment. • The use of cranes and large machinery on site should be planned and care taken not to damage the trees during the process. 2.6-Unforeseen Issues which require the alteration of the Tree Protection Plan/Methods, required tree surgery work or immediate remedial work will be submitted to the Local Planning Authority for approval in writing.
3.)Post Construction (Once all construction work has been completed, this includes all utility services)	3.1-Removal of all tree protection fencing 3.2-Hard and soft landscaping commence All landscape team members to be briefed regarding tree protections by an Arboriculturist. 3.3-Any required remedial tree action taken, such as Leaf Mulch Application, soil de-compaction methods, contamination clean up etc. to be carried out.