

Arboricultural Impact Assessment & Method Statement v1  
The Grange

15<sup>th</sup> July 2022

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## 1.0 Scope of The Report

1.1 *Instruction:* Instructed by Helen Phillips of CJ Architects to prepare an Arboricultural Impact Assessment (AIA) to BS5837:2012 section 5.4 for trees likely to be a constraint to development at The Grange. The AIA is to include an Arboricultural Method Statement (AMS – section 3.0) that details mitigation recommendations to allow for the proposed development of the site while safely retaining selected trees.

1.2 *Tree identification:* The trees are those detailed in The Grange BS5837 Tree Survey dated 24<sup>th</sup> May 2022.

1.3 Prioritising – recommendations made in the AIA/AMS are prioritised as:

- D – Desirable – for the general long-term benefit of the trees
- E – Essential – to ensure the compliance with the AIA/AMS

## 2.0 Arboricultural Impacts Assessment

2.1 The trees surveyed are within the boundary of the site. There is a moderate likelihood of root and canopy damage through development:

- Roots and Rhizosphere – high likelihood of damage through compaction and root severance
- Stem – moderate potential for impact damage
- Canopy – low potential for impact damage

2.2 *Site access* – the site will be accessed via the existing driveway off Newtown Lane, no impact on retained trees.

2.3 Arboricultural Supervision – wherever trees on or adjacent to the site have been identified within the tree protection process, there should be an auditable system of Arboricultural site monitoring and supervision (BS5837 section 6.3)

*Recommend (1) – the Project Arboriculturalist to deliver a prework toolbox talk to contractors, inspect and approve all pre-development tree works, the installation of tree protection fencing, excavations within 5m of TPZ's. Compliance with the requirements for Arboricultural supervision and monitoring shall be confirmed in-writing to the LPA Tree Officer on-going through the individual key stages of the project within 72 hours of each site visit:*

- *Pre-commencement tree work*
- *Pre-commencement installation of fencing, signage*
- *Pre-commencement toolbox talk with the appointed building contractors*
- *Supervision of groundworks/foundation installation and below ground services*

**3.0 Arboricultural Method Statement**

**3.1 Tree Protection Fencing** – retained trees should be protected by temporary, fixed barriers (BS5837 section 6.2.2 Figure 1 below). The TPZ beyond the barriers should be considered sacrosanct, once installed the barriers should not be removed or altered without consultation with the Arboriculturist. Construction work, excavations or storage of materials should not take place within the TPZ. Extent of TPZ's set out in Table 2 below.

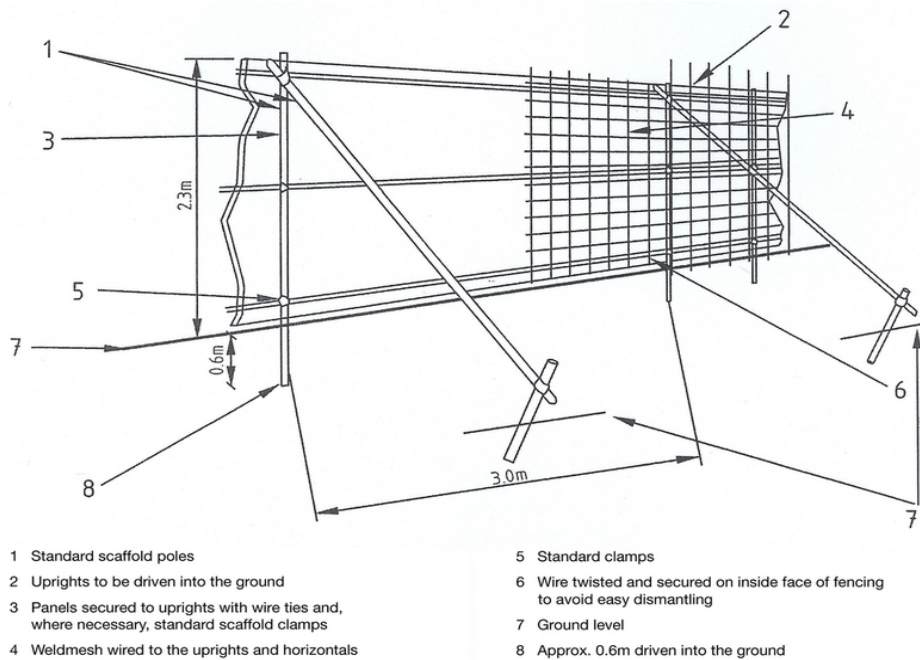


Figure 2. – Protective fencing for RPA

Tree protection fences should be clearly signed with all-weather notices stating:



**3.2 Tree Protection Zones** - trees and hedges selected for retention should be protected within a Tree Protection Zone (TPZ). This must be a construction exclusion zone of temporary fixed fencing (*BS5837 section 6.2.2 Figure 2 as appropriate*) that provides for a minimum RPA for each tree as Table 1 below (from BS5837 Annex D, table D1) and shown on the Tree Protection Plan.

<b>Tree No.</b>	<b>DBH (mm)</b>	<b>Radius of TPZ (m)</b>	<b>RPA (m<sup>2</sup>)</b>
1	630	7.5	177
2	360	4.2	55
3	510	6.0	113
4	810	9.6	290
5	310	3.6	41
6	50	0.9	3
7	210	2.4	18
8	390	4.8	72
9	310	3.6	41
10	610	7.2	163
11	240	3.0	28
12 (G)	350	4.20	55
13	120	1.5	7
14	230	2.7	23
15	340	4.2	55
16	120	1.5	7
17	390	4.8	72
18	670	8.1	206
19	600	7.2	163
20	550	6.6	137
21	550	6.6	137
22	250	3.0	28
23	230	2.7	23
24 (G)	340 (av)	4.2	55
25	120	1.5	7
26	390	4.8	72
27 (G)	670 (av)	8.1	206

Table 1 (*BS5837 Table D.1*)

**3.3 Access Facilitation** – high likelihood of lower branch damage through impact by construction machinery and delivery vehicles.

*Recommend (2) – raise low canopies over the entrance drive to 3.6m prior to the commencement of works, cutting to sound pruning points limiting cuts to 50mm diameter as practicable (ref: BS3998). Access facilitation pruning works to be supervised by the Project Arboriculturist (E).*

**3.4 Special Measures for Ground protection** – root zones and their associated rhizosphere are a complicated and fragile place. Many complex interactions take place here that have far reaching effects on the health and wellbeing of trees. Trees may have root zones extending many metres beyond the canopy. These zones are vulnerable to damage from, but not limited to, compaction (foot fall, vehicles, rain), nitrification (*fertilizer application, slurries & farm waste, compost heaps*), soil disturbance (*excavation, burrowing*), water logging and pollution. Damage to the rhizosphere though apparently minor may take many years to manifest and be of great consequence.

3.4.1 Temporary ground protection - where access or construction work is required within TPZ ground protection will be required. Ground protection should take the form of a temporary surface to reduce ground compaction (Fig 2). This should take the form of a multi-layered protective barrier (BS5837.2012 Section 6.2.3) as follows:

Base Layer – Undisturbed soil containing tree roots.

Layer 1 – Sharp sand loosely tipped and lightly tamped to level uneven ground

Layer 2 – Geo-textile membrane (e.g., Terram 1000)

Layer 3 – Cellular confinement system back filled with no fines aggregate



Fig 2 Example of Cellular Confinement System

<http://www.terram.com/products/geocells/>

3.4.2 *Permanent Surface within Tree Protection Zones* – this should be a sub-base of uncompacted, no fines aggregate over a suitable geotextile membrane such as Terram 1000, installed using no-dig methods with an air/water permeable surfacing such as loose, ornamental aggregate or KBI Flexipave (<https://www.kbiuk.co.uk/>):



#### **4.0 Construction Exclusion Zone Statement**

It is the responsibility of everyone engaged in the construction process to respect the tree protection measures and observe the necessary precautions within and adjacent to the retained trees. Inside the exclusion zone, the following shall apply:

- No mechanical excavation whatsoever without LPA approval & Arboricultural supervision
- No excavation by any other means, to include hand digging, without a written method statement having first been approved by the Project Arboriculturalist
- No lowering of levels for any purpose (except removal of grass sward using hand tools)
- No storage of plant or materials
- No storage or handling of any chemical including cement washings
- No vehicular access
- No fires

In addition to the above, further precautions are necessary adjacent to all site trees:

- No substances injurious to tree health, including fuels, oil, bitumen, cement (including cement washings), builder's sand, concrete mixing and other chemicals shall be stored or used directly adjacent to the retained trees
- No fire shall be lit such that flames come within 10m of tree foliage.

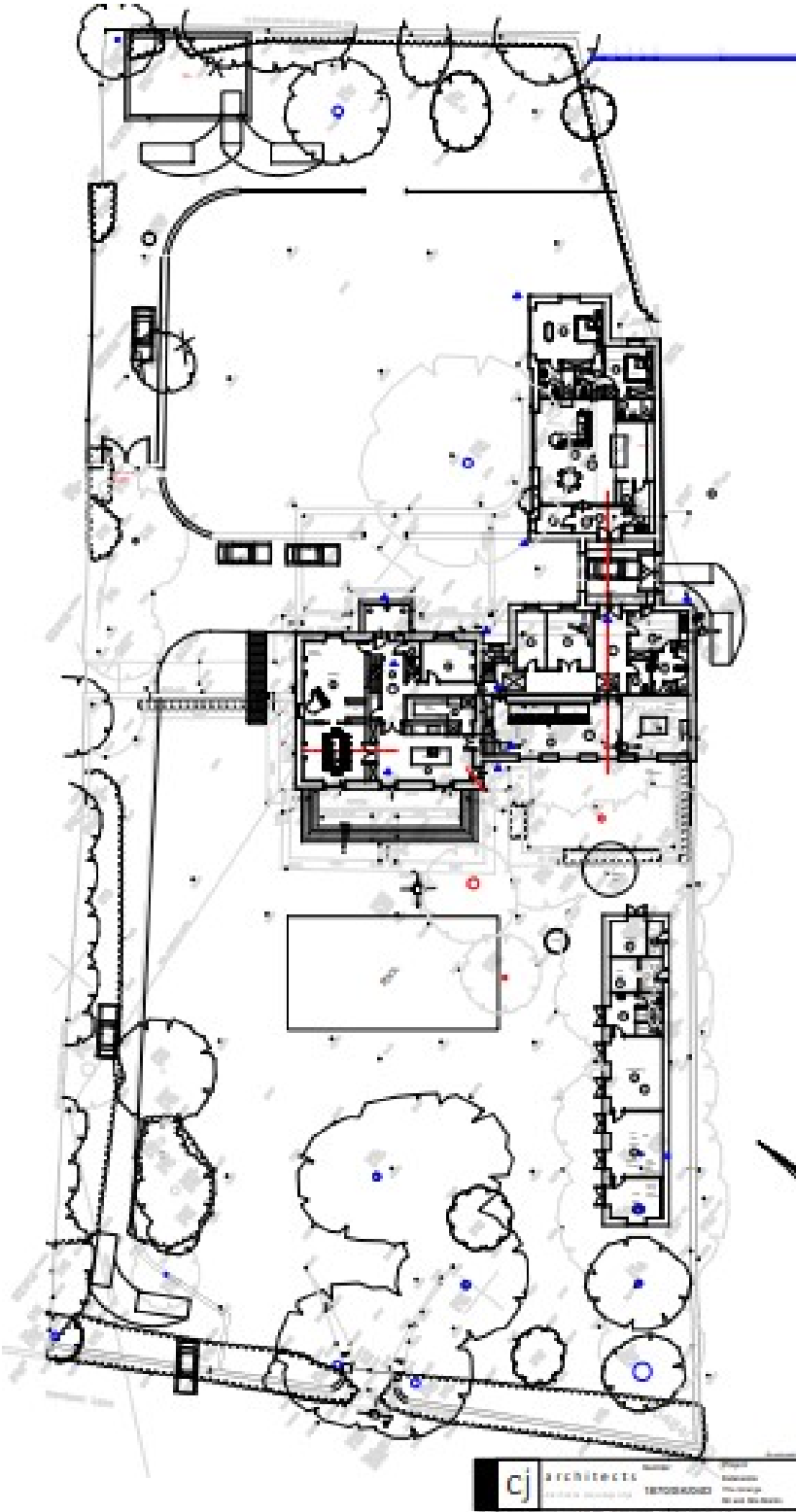
**There will be no variation in tree protection measures unless approved by the Local Authority.**



**5.0 Arboricultural Method Statement Summary (Table 2)**

<i>Task</i>	<i>Impact</i>	<i>Management Proposals</i>
Arboricultural works	As section 6.0 (below)	Tree works to be carried prior to commencement of development, to be approved by the Project Arboriculturist
Access facilitation	Low canopies that maybe damaged through the construction process	Raise low canopy to 3.6m as section 3.3
Ground Protection	Prevention of root damage through compaction	Install ground protection as section 3.4 to be approved by the Project Arboriculturist
Post construction	Improve rooting environment	Treat root zones of retained trees with <i>Trichoderma harzianum</i> (Avengulus) as a biocontrol for root decay fungi (600ml/50m <sup>2</sup> )
Site Monitoring	Potential damage to retained trees through inappropriate pruning works, incorrect position of barriers, encroachment into TPZ or excavation works	The Project Arboriculturist to carry out site visits to monitor tree works, installation of barriers & excavation works reporting satisfactory conformance to the LPA by email within 72 hours of each visit (as Section 2.3 above). Site visits scheduled at: <ol style="list-style-type: none"> <li>1. <i>Pre-commencement tree work</i></li> <li>2. <i>Pre-commencement installation of tree protection fencing, signage, and ground protection</i></li> <li>3. <i>Pre-commencement toolbox talk with the appointed contractors</i></li> <li>4. <i>Supervision of groundworks, foundation installation and below ground services</i></li> </ol>

6.0 Proposed Site Layout (Indicative Only):



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7.0 Schedule of Tree Removals/Arboricultural Works (Ref: The Grange BS5837 24/5/22)

Tree No.	Tree Species	Height (M)	No. of Stems	Diameter at 1.5m	Schedule of Works	BS5837 Category
1	Common Walnut	14	1	630	Impediment to development – fell prior to commencement of proposed works	B1
5	Downy Birch	10	1	310	Impediment to development – fell prior to commencement of proposed works	B2
6	Purple Maple	3	1	50	Impediment to development – fell prior to commencement of proposed works	B1
7	Apple	3	1	210	Fell	U
8	Common Pear	8	1	390	Impediment to development – fell prior to commencement of proposed works	C2
9	Sorbus “Joseph Rock”	12	1	310	Impediment to development – fell prior to commencement of proposed works	C2
11	Common Laburnum	5	1	240	Fell	C2
12 (G)	Lawson Cypress	14	Multi	350	Fell	U
12	Bay	6	10	120	Impediment to development – fell prior to commencement of proposed works	C3
13	Western Red Cedar	16	1	690	Impediment to development – fell prior to commencement of proposed works	B2
14	Common Yew	7	1	230	Impediment to development – fell prior to commencement of proposed works	B2
15	Common Yew	8	4	340	Impediment to development – fell prior to commencement of proposed works	B2
16	Common Yew	6	6	120	Raise low canopy over lawn, sensitive canopy reduction (1.2m – 2.4m) to improve shape & scale	B2
17	Irish Yew	8	7	390	Selective thin to recreate fastigate appearance	B3
18	Atlas Cedar	16	1	670	Remove low level dead wood	B1
19	Norway spruce	12	1	600	Raise low canopy to 2.4m as practicable	B1
20	Common Yew	8	1	550	Raise low canopy over lawn, sensitive canopy reduction (1.2m – 2.4m) to improve shape & scale	B3
21	Common Yew	8	1	550	Raise low canopy over lawn, sensitive canopy reduction (1.2m – 2.4m) to improve shape & scale	B3
23	Irish Yew	10	5	200	Selective thin to recreate fastigate appearance	B3
24	Lawson Cypress	12	1	340	Remove dead & moribund stems,	C2 - 3
26	Leyland cypress	12	3	390	Impediment to development – fell prior to commencement of proposed works	C2

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Appendix 1 – Tree Protection and Removals Plan v1

