

Arboricultural Impact Assessment & Method Statement

Cedar Hall, Gresford, Wrexham, LL12 8RG

Prepared for:

MR & MRS STEGGLES
C/o Raise Architects

Our Ref: 21/AIA/WXM/267

June 2021

Tree Solutions Ltd

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1.0 INSTRUCTION

- 1.1 We have been instructed by Mr & Mrs Steggles to carry out an Arboricultural Impact Assessment (AIA) in order to assess the development proposal in relation to trees in accordance with the principles of British Standard 5837 'Trees in Relation to Design, Demolition & Construction - Recommendations' 2012.
- 1.2 We are instructed to prepare a report in order to provide information to assist all parties involved in the planning process to make balanced judgements regarding arboricultural features in relation to the proposed development at Cedar Hall, Gresford, LI12 8RG. As such, all significant trees within influencing distance to the development proposal both on and adjoining the site have been surveyed and are listed within a Tree Survey Schedule (**Appendix 1**) and plotted on all accompanying plans.
- 1.3 The stage 1 tree survey was carried out on 12 January 2021 by Alistair Henderson, Principal Consultant to Tree Solutions Ltd. Our appraisal of the mechanical integrity of trees on the site is enough to inform the current project. The assessment of trees is carried out from ground level without invasive investigation and the disclosure of hidden defects cannot therefore be expected. Whilst the survey is not specifically commissioned to report on matters of tree safety, we report obvious defects that are significant in relation to the existing and proposed land use. We do not carry out detailed safety inspections unless specifically instructed to do so in writing and have not carried out such inspections of trees on the proposal site.
- 1.4 Twenty individual trees (T1–T20) and four groups (G1–G4) were surveyed and mapped on a Preliminary Tree Constraints Plan and Impact Assessment Plan Ref: 21/AIA/WXM/267 Drawing No. 1&2 at **Appendix 2/3**. All arboricultural information recorded during the survey is presented within a schedule at **Appendix 1**.
- 1.5 The Arboricultural Impact Assessment is based on the proposed site layout plan, Drawing No: TH.CRS.DSL.01 provided by Raise Architects.

2.0 STATUTORY CONTROLS

- 2.1 All trees are subject to a Tree Preservation Order.

2.2 Protected Species

- 2.2.1 Mature trees often contain cavities, crevices and hollows that offer potential habitat for species such as bats and barn owls. Both are afforded protection under the Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Bats are also protected under The Conservation of Habitats and Species Regulations 2010 (as amended). Refer to Ecology report for further details.

2.3 Wildlife Habitats

- 2.3.1 Trees and hedgerows of most species provide valuable nesting sites for a wide range of birds and it is likely that nesting birds will be present on the site during the period March to September.

3.0 THE SITE

- 3.1 The site contains an existing detached residential dwelling with stable block to the rear. It is set within large grounds that contain many mature trees predominantly along the southern boundary.

4.0 DEVELOPMENT PROPOSAL

- 4.1 Proposed conversion and single-storey extension of stable block and proposed double garage/carport.

5.0 GENERAL CONSTRAINTS DATA - CONSTRUCTION EXCLUSION ZONES (CEZ's)

5.1 GENERAL

5.1.1 The three phases of an AIA were outlined in Section 1. In addition, during the development process for retention trees, there may be three and even four constraints to consider: Construction Exclusion Zone (CEZ's):

- CEZ 1: Root Protection Area (see 5.2)
- CEZ 2: Tree Crown Protection (see 5.3)
- CEZ 3: Tree Dominance (see 5.4)
- CEZ 4: New Tree Planting Zone (see 5.5)

CEZ's are explained below:

5.2 CEZ 1: ROOT PROTECTION AREA (RPA)

5.2.1 The RPA, calculated in m², should be protected before and during any demolition/construction works. This ensures the effective retention of trees by safeguarding a reliable quantum of functioning tree roots. The RPA is based on a radial measure from the centre of the tree stem, which is calculated by multiplying the stem diameter by a factor of twelve or by the (mean stem diameter²) x number of stems for multi-stemmed trees. With the AIA 1, the RPA is only shown indicatively on the preliminary TCP, as its shape may be subject to amendment as the design progresses.

5.2.2 During the AIA 2, the derived radial measure is converted by the arboriculturalist into the actual area to be protected, having due regard to prevailing site conditions and how these may have affected the tree(s), particularly in relation to factors affecting their likely rooting disposition. The RPA for each tree should initially be plotted as a circle centred on the base of the stem. Where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution.

5.2.3 The means of protecting the RPA will include the installation of tree protective fencing prior to the start of any demolition or construction work on site. The prohibition of various activities within the RPA must be adhered to (e.g. mechanical excavation, soil stripping, fire lighting, material storage, lowering levels and creating excessive sealed surfacing) and may include the use of temporary ground protection and/or special engineering solutions where construction is proposed near to retention trees or within the RPA.

5.3 CEZ 2: TREE CROWN PROTECTION ZONE

5.3.1 This is the area above ground occupied by the crown (branches) of the tree, along with allowances for working space (safe working area) and if appropriate, for future growth. The extent of CEZ 2 is determined by considering the existing and future crown spread of the tree(s), bearing in mind the possibility of this being modified by an acceptable quantum of pruning.

5.4 CEZ 3: TREE DOMINANCE ZONE

5.4.1 This is the area above ground dominated by the tree in relation to issues of shading, seasonal debris and safety apprehension. This area is calculated by considering the height and spread of the tree relative to the proposed buildings, cross referenced with intended end use. As such, what is assessed is the likely psychological effect of the tree on the end user.

5.4.2 The purpose of identifying CEZ 3 is to protect trees from post development pressure (resentment) by the site's end users, who may, if resentful of the trees, seek to procure excessive pruning treatments or even to have them removed. This is a common Planning Service concern, which has led on many occasions both to refusals of consent and to dismissed Appeals against those refusals

5.4.3 The means of protecting CEZ 3 is likely to include optimising the site layout and room type (especially in relation to new residential dwellings), such that any adverse psychological impacts of the trees are reduced to an acceptable minimum. Key principles include ensuring adequate separation distances between trees and new buildings, in the context of the buildings' end use relative to the location of the tree(s) and avoiding excessive obstruction by trees of critical solar access.

5.5 CEZ 4: NEW PLANTING ZONE

5.5.1 No new tree planting is proposed.

6.0 SURVEY METHODOLOGY

6.1 The method used in the preparation of this report is based on the principles of BS 5837: 2012.

1. Tree heights were surveyed to the nearest 1m.
2. Trunk diameters were measured by use of forestry girth tape
3. The category assessment (Table 1) on which the trees is based include current and long-term arboricultural, landscape, cultural and conservation values (BS5837: 2012). This table can be found at **Appendix 1**
4. For clarity, the grading system is summarised from **Table 2** of the BS as follows:

U grade – trees for removal, effective for less than 10 years

A grade – trees of high quality and value, effective for more than 40 years

B grade – trees of moderate quality and value, effective for more than 20 years

C grade – trees of low quality and value, effective for 10 years

Note: We have indicated colour coding on the drawing and therefore a monochrome copy should not be relied on.

6.2 SOIL ASSESSMENT

6.2.1 N/A due to nature of development

7.0 JUXTAPOSITION OF TREES AND STRUCTURES

7.1 Below ground constraints

- 7.1.1 The below ground constraints are generally summarised as the root protection area (RPA). The shape of the RPA and its exact location will depend upon arboricultural considerations including likely tolerance of the tree to root disturbance; morphology and disposition of the roots when known influenced by past or existing site conditions; soil type and structure; and topography and drainage.
- 7.1.2 The purpose of the RPA is to prevent physical damage to tree roots and to prevent damage to the soil structure. Tree roots are damaged by soil compaction, changes in soil levels or soil contamination which could reduce tree health and/or stability.
- 7.1.3 Root patterns are affected by topography and characteristics of the soil or substrate. Where trees are located within proximity to existing hard standing or underground physical barriers, they are unlikely to have an even distribution of lateral roots due to restrictions in root growth created by compacted sub-grades beneath. The RPA of all trees have been plotted unmodified as there were no significant underground barriers present to prevent good radial root spread.

7.2 Above ground constraints

- 7.2.1 There are no issues with shading or overdominance from retained trees as the development proposal is just an extension to the existing building and a garage.

7.3 Underground Services

- 7.3.1 Existing services will be utilised.

8.0 DEVELOPMENT IMPACT TO TREES

- 8.1 Tree Solutions carried out a stage one preliminary tree survey and provided the project architect with a report in which all existing trees and their respective Root Protection Areas (RPA) were identified and plotted on a tree constraints and impact assessment plan. The architect has incorporated the design and layout advice contained within the stage 1 survey and input from Tree Solutions and the layout has been amended to ensure the best quality trees can be retained with no adverse construction impacts. We are satisfied that the proposal has taken the long-term future of the most important trees and into account and the layout is therefore in accordance with Wrexham Council Planning Policy EC4, LPG 17 and recommendations contained with BS5837: 2012.
- 8.2 In order to accommodate the proposed new driveway it will be necessary to remove tree number 14 and 15. These are small insignificant trees located internal to the site. The amenity/landscape value they afford is confined to the landowners as they are not visible from any location beyond the site boundary. As such, their removal will have no adverse impact on the landscape character and setting of the locale.
- 8.3 There is one construction impact to retained trees as listed below:
1. The new access road encroaches marginally within the RPA of tree numbers 5, 13 and 17. This encroachment $\leq 2.5\text{m}$ on the outer extremities of the RPA where we are confident no significant tree roots will be present. Furthermore, it is less than the acceptable 20% tolerance specified at para. 7.4.2.3 of BS5837: 2012. As a precautionary measure, the small sections that encroach the RPA will be installed to a no-dig design specification using a three-dimensional cellular confinement system such as 'Infraweb' or 'Cellweb' which will involve the removal of the existing turf layer and installation of a 75mm layer of plastic cells. The cells will be back filled with a free draining washed stone that contains no fines in order to help maintain adequate gaseous diffusion for tree roots below. The top dressing will be a porous material to be agreed with the LPA. This specification complies with recommendations contained within para. 7.2 of BS5837: 2012. Details of installation are at point 5 of the Method Statement at **Appendix 4**.



P1 – Tree numbers 1-10 viewed from west

9.0 PROPOSED REVISIONS TO THE SCHEME

- 9.1 We advise that all proposed revisions having implications for trees should be referred to us for review.

10.0 CONCLUSIONS

10.1 BS 5837: 2012 contains clear and current recommendations for a best practice approach to the assessment, retention and protection of trees on development sites. The proposed development has followed this guidance by:

- Seeking arboricultural advice and undertaking a phase 1 preliminary tree survey in order to inform the layout and design of the proposed development
- Respecting the constraints posed to development of the site by high or moderate quality trees
- Acting upon arboricultural advice throughout the design process in order to obtain the best development proposal whilst considering the current and future tree requirements
- No trees of any significant value are to be removed
- Important trees have been considered using special engineering solutions in order to ensure their long-term retention and maintain the amenity value they afford to the locale

10.2 The protection of retained trees will be in accordance with recommendation contained within the BS and as detailed on the Tree Protection Plan at **Appendix 4**.

11.0 LIMITING CONDITIONS

Unless stated otherwise:

Information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of the inspection.

The inspection is limited to visual examination of the subject trees from ground level only and without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.

This report has been prepared for the sole use and benefit of the client. Any liability of Tree Solutions shall not be extended to any third party.

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Appendix One

Tree Survey Schedule

TREE SURVEY SCHEDULE (BS5837: 2012)

SITE:	CEDAR HALL, GRESFORD
CLIENT:	MR & MRS STEGGLES
BRIEF:	ARBORICULTURAL IMPACT ASSESSMENT & METHOD STATEMENT

SURVEYOR:	A. HENDERSON
ASSESSMENT DATE:	12/01/2021
VIEWING CONDITIONS:	CLEAR
JOB REFERENCE:	20/AIA/WXM/267

TREE NO. T - Tree G - Group H - Hedge	SPECIES (COMMON NAME)	AGE	HEIGHT (m) + CROWN CLEARANCE/ DIRECTION OF GROWTH (N.S.E.W)	RADIAL CROWN SPREAD (m)				STEM/ MULTI-STEM* DIA. (mm)	VITALITY	COMMENTS	MANAGEMENT	CATEGORY & SUB-CATEGORY GRADING BS 5837	BS 5837 RADIUS (m) RPA (m²)
				N	S	E	W						
T1	Sycamore	M	18 2E	4	3	4.5	2	650	G	- Part of distinctive linear group - No visual defects - E.R.C. 40	No works required	A2	7.8 191m²
T2	Sycamore	M	19 3N	4	4	2.5	2.5	480	G	- Centre tree in closed canopy group - Appears in good health & vigour - E.R.C. 40	No works	A2	5.7 104m²
T3	Horse Chestnut	M	18 2N	5.5	4	3	4	740	G	- Crown reduced in past leaving multiple pruning wounds - E.R.C. 40	No works	A2	8.9 247m²
T4	Beech	EM	15 1.5N	6	3	3	4	330	G	- Crown bias north - Co-dominant stems from 9m - E.R.C. 20	No works	B2	4 49m²
T5	Sycamore	M	18 6N	9.5	3.5	3.5	5	690	G	- Crown lifted to 12m – multiple pruning wounds on stem - Co-dominant from 9m - Crown bias north due to suppression by T6 - E.R.C. 40	No works	A2	8.3 215m²
T6	Beech	M	20 5N	5	6	6	8.5	750	G	- Large prominent tree - E.R.C. 40	No works	A2	9 215m²
T7	Elm	EM	10	1.5	2	2.5	1.5	250	M	- Reduced vigour - Dead wood & dieback throughout crown - E.R.C. 10	Remove	C1	3 28m²

HEADINGS & ABBREVIATIONS

TREE NO.
SPECIES:
AGE RANGE/LIFE STAGE:
HEIGHT:
CROWN SPREAD:
CROWN CLEARANCE & DIRECTION OF GROWTH:
STEM DIA/MULTI-STEM DIA:
VITALITY:
E.R.C. = ESTIMATED REMAINING CONTRIBUTION:
BS 5837 CATEGORY & SUB-CATEGORY GRADING:
BS 5837 RADIUS & BS 5837 RPA:

REFERENCE NUMBER. REFER TO PLAN OR NUMBERED TAGS WHERE APPLICABLE (T = TREE, G = GROUP, H = HEDGE)
COMMON NAME (LATIN NAMES AVAILABLE ON REQUEST)
Y = YOUNG, SM = SEMI MATURE, EM = EARLY MATURE, M = MATURE, PM = POST MATURE
ESTIMATED AND RECORDED IN METRES. APPROXIMATELY 1 IN 10 TREES ARE MEASURED USING A CLINOMETER AND THE REMAINDER ESTIMATED AGAINST THE MEASURED TREES
MAXIMUM CROWN RADIUS MEASURED TO THE FOUR CARDINAL COMPASS POINTS FOR SINGLE SPECIMENS ONLY (MEASUREMENT FOR TREE GROUPS - MAXIMUM RADIUS OF THE GROUP)
HEIGHT IN METERS OF CROWN CLEARANCE ABOVE ADJACENT GROUND LEVEL (TO INFORM ON GROUND CLEARANCE, CROWN/STEM RATIO AND SHADING)
STEM DIAMETER - MEASURED AT APPROXIMATELY 1.5 METRES ABOVE GROUND LEVEL OR A COMBINATION OF STEMS FOR MULTI-STEMMED TREES
A MEASURE OF PHYSIOLOGICAL CONDITION. D = DEAD, MD = MORIBUND, P = POOR, M = MODERATE, G = GOOD
RELATIVE USEFUL LIFE EXPECTANCY (YEARS)
A = HIGH QUALITY AND VALUE, B = MODERATE QUALITY AND VALUE, C = LOW QUALITY AND VALUE, U = UNSUITABLE FOR RETENTION (SUB-CATEGORY REFERS TO ARBORICULTURAL, LANDSCAPE AND CULTURAL/CONSERVATION VALUES)
PROTECTIVE DISTANCE - RADIUS FROM THE CENTRE OF THE STEM TO THE LINE OF TREE PROTECTION (CONSTRUCTION EXCLUSION ZONE - CEZ) AND PROTECTIVE BARRIER ROOT PROTECTION AREA - BS 5837 (2012) ANNEX D (THE RECOMMENDATIONS STATE THAT THE RPA SHOULD BE CAPPED AT 707 M²) NOTE - ALL CALCULATIONS ROUNDED TO NEAREST DECIMAL

TREE SURVEY SCHEDULE (BS5837: 2012)

Tree Solutions

Arboricultural Consultants

SITE:	CEDAR HALL, GRESFORD
CLIENT:	MR & MRS STEGGLES
BRIEF:	ARBORICULTURAL IMPACT ASSESSMENT & METHOD STATEMENT

SURVEYOR:	A. HENDERSON
ASSESSMENT DATE:	12/01/2021
VIEWING CONDITIONS:	CLEAR
JOB REFERENCE:	20/AIA/WXM/267

PAGE 2 OF 3

TREE NO. T - Tree G - Group H - Hedge	SPECIES (COMMON NAME)	AGE	HEIGHT (m) + CROWN CLEARANCE/ DIRECTION OF GROWTH (N.S.E.W)	RADIAL CROWN SPREAD (m)				STEM/ MULTI-STEM* DIA. (mm)	VITALITY	COMMENTS	MANAGEMENT	CATEGORY & SUB-CATEGORY GRADING BS 5837	BS 5837 RADIUS (m) RPA (m²)
				N	S	E	W						
T8	Elm	EM	15 2.5W	6.5	3	3	2.5	280x3 (485)	G	3 stems from base – past coppice - E.R.C. 10	No works required	B2	5.8 106m²
T9	Elm	EM	14 2.5N	5	2.5	1.5	3	370	G	- No visual defects - E.R.C. 10	No works	B2	4.4 62m²
T10	Elm	EM	16 2S	3	8	6	3	590	G	- No visual defects - E.R.C. 10	No works	B2	7 157m²
T11	Oak	EM	16 1.5N	9	8	4	4.5	660	G	- No visual defects - E.R.C. 40	No works	B2	7.9 197m²
T12	Oak	EM	15 2N	7	7	3	3.5	570	G	- No visual defects - E.R.C. 40	No works	B2	6.8 147m²
T13	Sycamore	M	18 1.5N	7.5	9.5	7	6.5	760	G	- Large prominent tree - E.R.C. 40	No works	A2	9 261m²
T14	Eucalyptus	EM	9 4E	3	1.5	3	1.5	220x3 (381)	G	- No significant defects - Small multi-stemmed tree – not visually prominent outside site boundary - E.R.C. 20	Remove for new driveway	B2	4.8 72m²
T15	Laburnum	M	6 1.5E	2.5	2.5	3	1.5	380	M	- Extensive dead wood in crown - Decay evident in stem - E.R.C. 0	Remove for new driveway	C1	4.5 66m²
T16	Beech	SM	12	3.5	2	2.5	1.5	260	G	- Small insignificant tree - E.R.C. 10	No works	C2	3 31m²
T17	Ash	FM	20	7	6	8.5	8.5	900	G	- Crown reduced in past - Reduced vigour - E.R.C. 20	Monitor for Ash Dieback	B2	10.8 366m²

TREE SURVEY SCHEDULE (BS5837: 2012)

Tree Solutions

Arboricultural Consultants

SITE:	CEDAR HALL, GRESFORD
CLIENT:	MR & MRS STEGGLES
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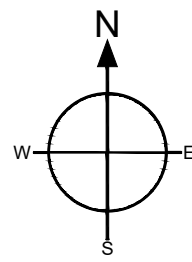
TREE NO. T - Tree G - Group H - Hedge	SPECIES (COMMON NAME)	AGE	HEIGHT (m) + CROWN CLEARANCE/ DIRECTION OF GROWTH (N.S.E.W)	RADIAL CROWN SPREAD (m)				STEM/ MULTI-STEM* DIA. (mm)	VITALITY	COMMENTS	MANAGEMENT	CATEGORY & SUB-CATEGORY GRADING BS 5837	BS 5837 RADIUS (m) RPA (m²)
				N	S	E	W						
T18	Ash	EM	13	2	3	3	2	460	G	3 stems from past coppice & 1m - Ivy clad - Largest tree in boundary group - E.R.C. 10	Monitor for Ash Dieback	C2	5.5 96m²
T19	Ash	EM	16	3	3	3	5	350 300 (451)	M	2 stems from 0.5m - Past large diameter crown failures leaving tear out wounds - E.R.C. 10	Monitor for Ash Dieback	C2	5.4 92m²
T20	Horse Chestnut	FM	21	3.5	6.5	5	5	920	G	- Large prominent tree - E.R.C. 40	No works	A2	11 383m²
G1	Elm	SM	≤10	2.5	6	2.5	2.5	≤200	G	- Closed canopy group - E.R.C. 10	No works	C2	2.4 18m²
G2	Sycamore	EM	≤16	4	8	3	3	≤300	M	- Entirely Ivy clad impeding inspection - Reduced vigour – dead wood & dieback in crown - E.R.C. 10	Consider coppicing	C2	3.6 41m²
G3	Elm, Ash, Beech	EM	≤13	3	3	2.5	2.5	≤300	G	- Linear group around field boundary - Coppiced/layed in past & now overgrown from past hedgerow - E.R.C. 20	No works	B2	3.6 41m²
G4	Sycamore	M	≤15	3	4.5	4	4	≤500	M	2 trees with decay cavities in stem & centre tree with major crown asymmetry due to location beneath T20 - Group detracts amenity & landscape value of T20 & would be best removed to leave this tree as a standalone feature - E.R.C. 10	Consider removing to enhance visual appeal/value of T20	C1 & 2	6 113m²

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall 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 <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			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

Appendix Two

Impact Assessment Plan



Legend

- Root Protection Area
Modified to Account for
Site Features
- Category
- Root Protection Area
- Crown Spread
Tree Number
- Category A
(High Quality)
- Category B
(Moderate Quality)
- Category C
(Low Quality)
- Category U
(Dead/Dying/In Decline)

Client: ---

Project:
Cedar Hall, Gresford, Wrexham, LL12 8RG

Title:
Preliminary Tree Constraints Plan

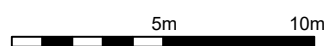
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Drawn By: LI Revision: -

Job Ref: 21/AIA/WXM/267 Drawing No: 01

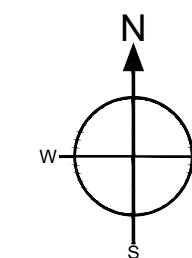
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Appendix Three

Tree Protection Plan



Legend

Root Protection Area
Modified to Account for
Site Features

Category

Root Protection Area

Crown Spread

Tree Number

Category A (High Quality)

Category B (Moderate Quality)

Category C (Low Quality)

Category U (Dead/Dying/In Decline)

Tree Proposed for Removal

Client: Mr & Mrs Steggle

Project: Cedar Hall, Gresford, Wrexham, LL12 8RG

Title: Arboricultural Impact Assessment

Scale: 1:250 @ A1

Date: June 2021

Drawn By: LI & AM

Revision: -

Job Ref: 21/AIA/WXM/267

Drawing No: 02

Do not scale from this drawing all dimensions to be checked on site.

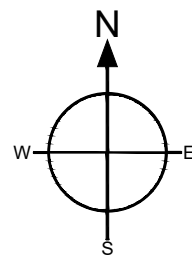
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Tree Solutions

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Company Registration No: 5648851

Appendix Four
Tree Protective Measures/Method Statement



Tree Protective Fencing Specification

PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

**TREE PROTECTION AREA
KEEP OUT!**
(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION.
ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY.

- Proposed studio with flat green roof
- Proposed pergola
- Proposed single storey extension
- Proposed solar shading
- Indicative planting layout

'No-Dig' Hard Surface Construction

The new hard surface section identified by hatching shall be constructed over the existing ground without excavation other than removal by hand, of surface vegetation and minor (<75mm high) surface irregularities or loose soil to a depth of not more than 150mm

Any excavation of ground within the hatched area shall be by hand and shall be supervised by the consulting Arboriculturalist

The new surfacing in the hatched area shall be constructed using the 'Geoweb' Cellular Confinement System to enable adequate loadbearing capacity to be achieved with minimal depth of construction

All aggregates used in the construction shall contain no-fines, crushed gritstone or sandstone. Limestone shall not be used

The surface wearing course shall be material agreed with the Local Planning Authority

The construction will be an Engineer designed specification

Edge restraints or kerbs to the 'no-dig' sections or hard standing shall be constructed without excavation of ground other than that described at 1 above

Final surface levels at either end of the 'no-dig' sections shall be dictated by the final surface levels of the 'no-dig' section, and not vice-versa



Legend

Root Protection Area Modified to Account for Site Features

Category

Root Protection Area

Crown Spread

Tree Number

Category A (High Quality)

Category B (Moderate Quality)

Category C (Low Quality)

Category U (Dead/Dying/In Decline)

2.0M high Heras (with extra central support bar) mounted on scaffold poles (driven in to the ground) and secured with anti tamper bolts - as illustrated.

No-Dig Surface Installation Areas - see Method Statement

Client: Mr & Mrs Steggles	
Project: Cedar Hall, Gresford, Wrexham, LL12 8RG	
Title: Tree Protection Plan	
Scale: 1:250 @ A1	Date: June 2021
Drawn By: LI & AM	Revision: -
Job Ref: 21/AIA/WXM/267	Drawing No: 03

Do not scale from this drawing all dimensions to be checked on site.

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SEQUENCE OF OPERATIONS

From commencement of the above development, the following methodology shall be implemented in the manner and sequence described:

1. Tree surgery works
2. Erect temporary protective fencing
3. Installation of 'No-Dig' driveway sections
4. Main construction phase
5. Removal of temporary fencing
6. Landscaping within RPA's
7. Arboricultural site supervision

1. Tree Surgery Works

1. Before the erection of the temporary protective fencing, all tree removal shall be implemented in accordance with the approved Tree Survey Schedule at **Appendix 1**
2. All possible efforts must be made to prevent damage to retained trees including potential root incursion or compaction caused by vehicle access.
3. All arboricultural works shall conform to the recommendations of BS 3998 (2010) 'Recommendations for Tree Work'
4. All operatives shall be equipped with and use personal protective equipment (PPE) in accordance with current Health & Safety Executive current directives and industry codes of practice.
5. Performance of all arboricultural operations and use of equipment shall be in accordance with current Health & Safety Executive current directives and industry codes of practice
6. Any additional access facilitation pruning required shall be undertaken by qualified tree contractors and conform to the recommendations of BS 3998 (2010) 'Recommendations for Tree Work'

2. Erect Temporary Tree Protective Fencing

1. Prior to commencement of any construction, preparation, excavation or material deliveries the main contractor shall erect the temporary protective fencing as detailed in the 'Tree Protection Specification' and in the location indicated on the Tree Protection Plan.
2. Tree Solutions are to be given 5 days written notice as soon as all protective fencing has been erected in order to inspect the specification and location. An inspection report will be completed and returned to the LPA Tree Officer for approval. Any damage occurring to protective fencing during the demolition or construction phase shall be made good by the main contractor

3. Installation of No Dig Driveway Sections

1. The no-dig sections as indicated with a blue hatch on the Tree Protection Plan shall be constructed using a three-dimensional cellular confinement system in accordance with the project engineers and manufacturers recommendations.
2. Construction shall ideally be undertaken in dry weather when ground is driest and least prone to compaction
3. Ground vegetation should be killed using a translocated herbicide such as glyphosate. To prevent severe oxygen depletion in the soil during the process of decomposition, all dead organic material shall be removed
4. All major protrusions such as rocks and demolition material shall be removed minimizing ground disturbance. All hollows will be filled with sharp sand
5. Permeable matting will then be laid, and the cellular confinement system laid on top and pegged in place.
6. The cellular confinement system will then be installed in accordance with the manufacturer's guidelines using **no-fines** aggregate. Fill the cells working from the area furthest from the tree first. Further filling should be carried out using the filled Cellweb as a platform
7. Edging will be constructed with tandalised boards attached to pegs driven into the ground. Pegs should be long enough to give adequate support during construction
8. Install a permeable wearing course, e.g. porous tarmac or block paving or porous tarmac placed on the aggregate.
9. **Under no circumstances is limestone aggregate to be used**

4. Main Construction Phase

1. Tree protective fencing to be erected prior to any construction plant or materials entering the site
2. Tree protective barriers in accordance with BS 5837: 2012 will be erected to prevent damage to the tree stems and any movement of plant with the RPA
3. There shall be no storage of construction material, site parking, site accommodation or equipment in any area designated as the Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) and enclosed by Temporary Protective Fencing
4. No materials that are likely to have an adverse effect on tree health such as oil, bitumen or cement will be stored or discharged within 10 metres of the trunk of a tree that is to be retained. No fires will be lit
5. The site agent shall supervise deliveries by self-loading crane, with vehicles positioned in such a manner that retained trees are not at risk of damage

Cement Mixing

- The cement mixer will be laid on top of plywood boards in a position outside the RPA of any trees. The mixer will be kept in this position throughout all development work.

Avoiding Damage to Stems and Branches

- Care shall be taken when planning site operations in proximity to trees to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious injury resulting in safe retention impossible

On Site Storage of Spoil and Building Materials

- Prior to and during all site construction works no spoil will be stored and no cement mixing will take place within the Root Protection Area of any tree on or adjacent to the site even if proposed site work is to be within the crown spread. Any encroachment within this protected area will only be with the prior agreement of the LPA Arboricultural Officer

5. Remove all Temporary Tree Protective Fencing

1. Tree Protective fencing will only be removed upon completion of all construction work and once all machinery associated with the works has left site.

6. Landscaping within RPA of Trees

1. There shall be **no rotovating** of ground within any area designated as a Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) and enclosed by Temporary Protective Fencing.
2. No hard-landscaping works or excavation for cables or any other service should be installed within the Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) without the written consent of the LPA

7. ARBORICULTURAL SITE SUPERVISION

- 1 The erection of all tree protection measures outlined in this AMS and as indicated on the Tree Protection Plan will be inspected by the contract Arboricultural Consultant immediately after erection. Photographic evidence of the location and specification of all protective fencing will be forwarded to the LPA Tree Officer upon completion.
- 2 Any proposed work within any designated RPA will be overseen by contract Arboricultural Consultant with photographic records taken and signed inspection report emailed direct to the LPA for approval

Useful Contacts

Arboricultural Consultant

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LPA Arboricultural Officer

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TREE PROTECTIVE FENCING

- 1 Before the commencement of any site excavations and subsequent construction works (other than those set out in the schedule of tree works contained in this document), protective fencing will be erected as detailed on the Tree Protection Plan and as specified below. The LPA Tree Officer will be given 5 days' notice upon completion of the fencing in order to inspect and approve prior to the commencement of any site works.
- 2 The fencing will consist of a scaffold framework in accordance with Figure 2 of BS 5837 – 2012 (illustration below) comprising a metal framework, both vertical and horizontal, well braced to resist impacts. Vertical tubes will be spaced at a maximum interval of 3m. Onto this, weldmesh panels shall be securely fixed with wire or scaffold clamps. Weldmesh panels on rubber or concrete feet are not considered resistant to impact and for this reason will not be used. The site manager or other suitably qualified appointed person will be responsible for inspecting the protective fencing on a daily basis; any damage to the fencing or breaches of the fenced area will be rectified immediately.
- 3 Clearly legible weatherproof signage, stating "Protected Trees – Exclusion Zone" shall be attached to the fencing 1.5m from the ground, facing out of the Tree Protection Zone located at regular intervals along the fence line.
- 4 The fencing will remain in place until completion of all site works and then only removed when all site traffic is removed from site
- 5 Other than works detailed within this method statement or approved in writing by the Local Planning Authority (LPA), no works including storage or dumping of materials shall take place within the exclusion zones defined by the protective fencing.

Protective Fencing Detail

The fence types are shown on the Tree Protection Plan with the following colour key: -

1. **Magenta** (Trees)

2.0M high heavy-duty Heras panels (with extra central support bar) mounted on scaffold poles (driven into the ground) and secured with anti-tamper bolts – as illustrated below.



Tree Protective Fencing Specification