



Arboricultural Impact Assessment

Land off Llay New Road, Rhosrobin, Wrexham

Prepared for: CASTLEMEAD GROUP LTD

Our Ref: 14/AIA/WXM/136

02 June 2014

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1.0 INSTRUCTIONS

- 1.1 We have been instructed by Castlemead Group Ltd 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 with regard to arboricultural features in relation to the proposed residential development on land off Llay New Road, Rhosrobin, Wrexham. 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 phase 1 tree survey was carried out on 11 March 2014 by Alistair Henderson, Principal Consultant to Tree Solutions Ltd. Our appraisal of the mechanical integrity of trees on the site is sufficient only 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 Six individual trees (T1 – T6), 1 group (G1) and 6 hedgerows (H1) were surveyed and mapped on Preliminary Tree Constraints Plan and Impact Assessment Plan Ref: 14/AIA/WXM/136 Drawing Nos. 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 Ref: CGL.1/TMJ-04 dated May 2014 provided by Axis Architectural Services Ltd.

2.0 STATUTORY CONTROLS & PLANNING POLICY

- 2.1 In terms of impacts on trees, the planning application will be assessed against Policy EC4 of the Wrexham County Borough Council Unitary Development Plan (2005) and Local Planning Guidance Note 17 'Trees & Development' (2010).
- 2.1.2 We have not checked if any trees are subject to a Tree Preservation Order or if any hedgerows are considered as important under the Hedgerow Regulations 1997. You are advised to seek this information in writing prior to undertaking any works.

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), as well as The Conservation (Natural Habitats, &c) (Amendment) Regulations 2007.

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 is vacant grassland that contains a number of hedgerows and trees. There are residential dwellings to the south and west, crematorium to the north and commercial units to the east.

4.0 DEVELOPMENT PROPOSAL

4.1 Residential development with associated vehicular access and parking.

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 $\sqrt{(\text{mean stem diameter}^2) \times \text{number of stems}}$ 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 In some cases, it may be appropriate to identify and protect areas intended for new landscape planting, which can fail to establish if the soil has been heavily compacted or contaminated during the demolition/construction process. The means of protecting CEZ 4 will either be by fencing it off prior to the start of works on site, or by soil remediation once construction has finished (and prior to the start of planting). Topsoil protection in areas destined for new planting is frequently an economy measure, saving on plant replacement and soil structure remediation.

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 A soil assessment should be undertaken by a competent person to inform decisions relating to:

- the root protection area (RPA)
- tree protection
- new planting design; and
- foundation design to take account of retained, removed and new trees (potential soil subsidence/heave)

Tree Solutions do not undertake soil assessments and the client is advised to seek specialist advice in this respect.

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 close 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. All RPA's have been plotted unmodified as there were no below ground barriers to prevent good radial root growth.

7.2 Underground Services

- 7.2.1 We have considered the broad implications of the provision of underground services but the locations of existing and proposed were not identified on the plans supplied by the Project Architect and in this regard, our advice is of a general nature.
- 7.2.2 Drainage and service runs may need to be constructed within the rooting areas of retained trees. If this is a requirement of the development it will be necessary to retain significant roots and methods of excavation, such as thrust boring or hand digging, may need to be adopted to ensure that these impacts are acceptable.
- 7.2.3 As with foundation design, low impact construction methods for services installation are now well established. For more information regarding underground services, reference should be made to the National Joint Utilities Group (NJUG) Publication No. 10. Volume 4 *'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees'* 2007

8.0 DEVELOPMENT IMPACT TO TREES

- 8.1 Tree Solutions carried out a phase one preliminary tree survey in March 2014 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 Plan. A subsequent design team meeting was held on site in order to discuss the most appropriate layout taking into consideration the plot numbers, site access and trees. As a result, the layout has been amended to ensure minimum construction impact to trees and hedgerows and as such the principles of BS5837: 2012 have been adhered. Every effort at the design stage has been made to retain the best quality trees on and adjoining the site in order to maintain the mature tree cover whilst having a minimal impact on the landscape character and setting of the locale.
- 8.1.2 The principle construction impact is the installation of car parking bays 50-58 that encroach within the RPA of tree numbers 2 and 3. The parking bays will be installed upon completion of the residential dwellings in order to avoid any ground disturbance from construction plant and development within the construction exclusion zones. As the ground levels along the proposed route are level it will be possible to construct parking bays within the RPA's to a no-dig design specification using a three dimensional cellular confinement system such as 'Cellweb' which will involve the removal of approximately 100mm of top soil in order to install a 100mm layer of plastic cells which 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 Bitmac.

This specification complies with recommendations contained within para. 7.2 of BS5837: 2012 and we are confident that with all works overseen by Tree Solutions the parking bays can be installed with no adverse impact to the future health and vigour of the trees. Details of installation are at point 5 of the Method Statement at **Appendix 6**.

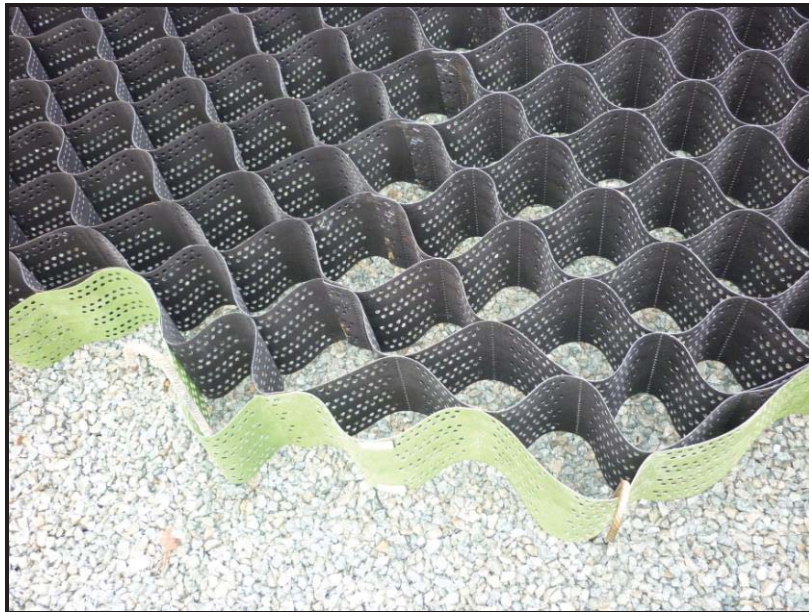


Plate 1 – Example of Cellweb laid above ground level on washed stone containing no fines

- 8.1.3 In order to accommodate the access road within the housing site it will be necessary to remove a small section of hedgerow 4. The impact of this will be minimal as it is not a prominent landscape feature. The hedgerows will be surveyed for nesting birds prior to any works commencing. Hedgerow 2 will be removed entirely as discussed and agreed in principle at pre-application discussions.
- 8.1.4 In order to accommodate the proposed new roundabout on Llay New Road, a section of H6 will be removed. This is not a mature or species rich hedge and the impact of removing the small section will have no long-term adverse impact on the streetscape along Llay New Road particularly as the remainder of the hedge on either side will be retained.

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
 - The rural landscape character will be radically enhanced by the extensive new tree and hedge planting

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)

TREE SOLUTIONS LTD

SITE:	LAND OFF LLAY NEW ROAD, RHOSROBIN, WREXHAM
CLIENT:	CASTELMEAD GROUP LTD
BRIEF:	ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	A. HENDERSON
ASSESSMENT DATE:	11 MARCH 2014
VIEWING CONDITIONS:	GOOD
JOB REFERENCE:	14/AIA/W/XM/135

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) N S E W				STEM/ MULTI-STEM* DIA.(mm)	VITALITY	COMMENTS	MANAGEMENT	CATEGORY & SUB- CATEGORY GRADING BS 5837	BS 5837 RADIUS (m) RPA (m ²)
H1	Hawthorn	M	1.8					≤70	G	- Well maintained boundary hedgerow 1.5m wide - E.R.C. 20+	N/A	B2	0.8 2m ²
H2	Hawthorn	M	≤4					≤90	G	- Unmanaged field boundary hedge - Layed in past with decayed & brittle stems at base 3m wide - E.R.C. 20+	Remove for development	B2	1.2 4m ²
H3	Leyland cypress	M	2					≤150	G	- Domestic garden boundary hedge - Pruned to north but left unmanaged to south - E.R.C. 20	N/A	B2	1.8 10m ²
H4	Hawthorn Elder	FM	2					≤180	G	- As H2 - E.R.C. 20	Remove section for access road	B2	2.2 15m ²

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 5837CATEGORY & 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 CUNOMETER 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)

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				N	S	E	W						
H5	Hawthorn	FM	5					≤200	M/G	- As H2 4m wide - E.R.C.20	As H2	B2	2.4 18m ²
H6	Hawthorn	EM /M	3					90	G	- Good quality roadside boundary hedge offering excellent screening - E.R.C. 20+	Remove sections for access road/ roundabout	B2	1.1 4m ²
T1	Oak	EM	7 0	4.5	4.5	4.5	4.5	380	G	- Small hedgerow Oak with no significant defects - E.R.C. 20+	Formative prune	B2	4.6 65m ²
T2	Oak	M	13 3N	5	5	5	5	660	G	- Good quality tree with no defects - E.R.C. 20+	N/A	B2	7.9 197m ²
T3	Oak	M	16 2E	7.5	5	7	8.5	750	G	- Small cavity at base to east - Lowest limn to north hanging in crown - E.R.C. 20+	Remove hanger	A2	9 255m ²
T4	Oak	FM	16 1E	7	6	7	7	950	G	- Main scaffold lost to north leaving tear out wound - E.R.C. 20+	N/A	A2	11.4 408m ²
T5	Oak	EM	7 0.5N	4.5	6	5	5	520	G	- Low stunted form located outside eastern boundary on former railway embankment - E.R.C. 20	N/A	B2	6.2 122m ²

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T6	Oak	M	8 0.5N	4.5	6	5	5	540	G	- As T5 - E.R.C. 20	N/A	B2	6.5 132m ²
G1	Hawthorn 1 No Oak	M	≤6 1N	2	2	2	2	≤260	G	- Overgrown trees from past boundary hedgerow - E.R.C. 20	N/A	B2	3 31m ²

Table 1 Cascade chart for tree quality assessment

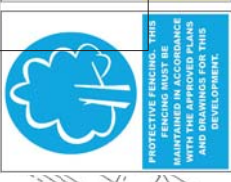
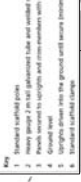
Category and definition	Criteria (including subcategories where appropriate)	Identification on plan
Trees unsuitable for retention (see Note)		
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- 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)	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	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	See Table 2
	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

Appendix Two
Preliminary Tree Constraints Plan

Appendix Three

Impact Assessment Plan

Appendix Four
Tree Protection Plan



Appendix Four
Tree Protective Measures/Method Statement

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. Main construction phase
4. Realign Temporary Tree Protective Fencing
5. Installation of 'No-Dig' parking bays
6. Removal of temporary fencing
7. Landscaping within RPA's

1. Tree Surgery Works

1. Before the erection of the temporary protective fencing, all tree removal shall be implemented in accordance with the 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

2. Temporary Tree Protective Fencing Erection

1. Following completion of the tree felling and prior to commencement of any site demolition, 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.

3. Main Construction Phase

1. 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
2. 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.
3. 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.

Avoiding Damage to Stems and Branches

4. 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

5. Prior to and during all site construction works no spoil will be stored within the crown spread on 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.

4. **Realign 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.
2. The protective fencing shall be moved to the secondary position as indicated on the Tree Protection Plan 2 at **Appendix 5** prior to installation of the access road and car park
3. The fencing shall remain in place for the duration of all work

5. **Installation of 'No-Dig' parking bays**

1. Upon completion of all construction work and movement of all plant and material from on site, the vehicular access shall be constructed using a no-dig three dimensional cellular confinement system in accordance with the engineers and manufacturers recommendations see example drawing below.
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 tanned 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. block pavements or porous tarmac placed on the aggregate. Paving slabs or brick pavements should be dry-bedded on the sub-base and joints left unsealed
9. Tree Solutions will be responsible for monitoring all excavation works and issuing a certificate of practical completion
10. **Under no circumstances is limestone aggregate to be used**

6. **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.

7. **Landscaping within the RPA of trees**

1. Landscaping works will be implemented in accordance with a scheme approved by the LPA
2. There shall be **no rotovation** of ground within any area designated as a Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) and enclosed by Temporary Protective Fencing.
3. 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.

8. 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 All 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
- 3 The contract Arboricultural Consultant to make visits to site to inspect all tree protection measures during all key development work within close proximity to retained trees

Useful Contacts

Arboricultural Consultant

Name: Alistair Henderson (Tree Solutions Ltd)
Tel: 01244 389114
Mobile: 07766 774508
Email: alistair@tree-solutions.co.uk

LPA Arboricultural Officer

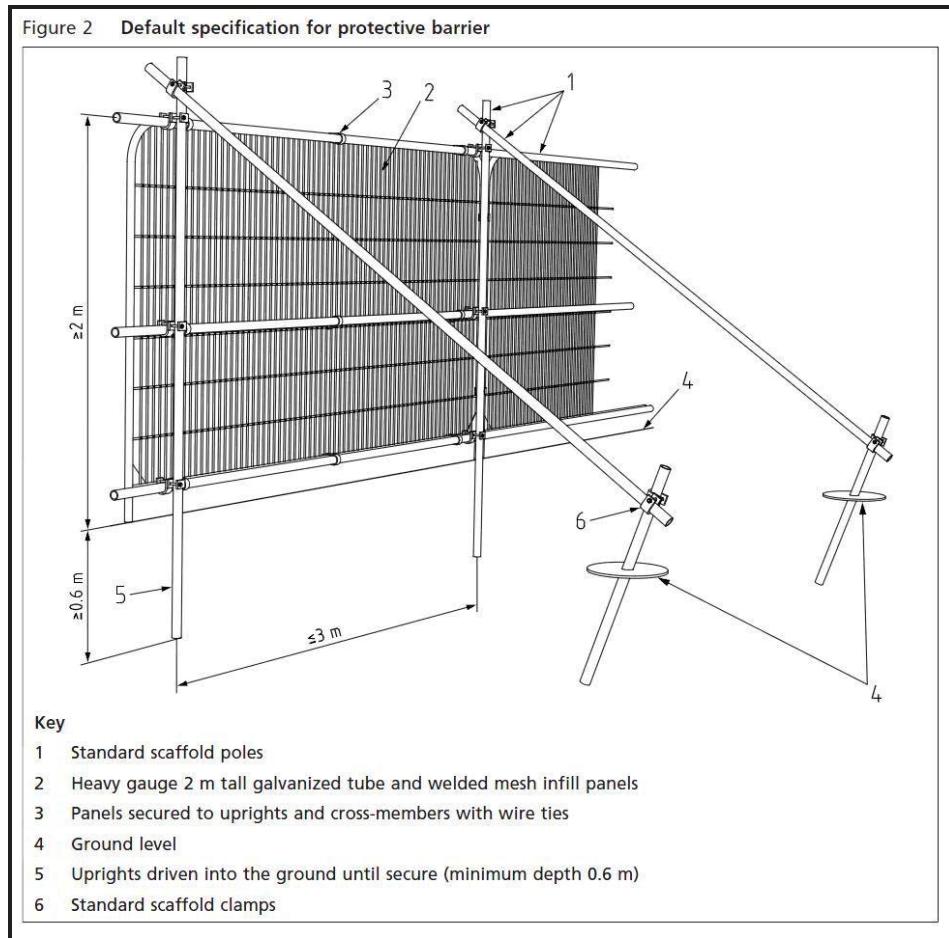
Name: Moray Simpson
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TREE PROTECTIVE FENCING

- 1 Before the commencement of any demolition and subsequent construction works on site (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

1. Magenta



2. Orange

1000mm x 50m medium duty plastic temporary barrier mesh fencing mounted on 1.3m steel fencing pins driven in to the ground and secured with cable ties.



PLASNET - Plastic temporary barrier mesh fencing

- Grade : **Medium duty** (160g/M² 8kgs per roll)
- Roll size : **1000mm x 50M**