

LOVEDEAN PHASE 2 WATERLOOVILLE

ARBORICULTURAL IMPACT ASSESSMENT & METHOD STATEMENT

for



Ecology
Archaeology
Arboriculture
Landscape Architecture

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Checked By:	T Grayshaw
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1. Introduction

- 1.1. Linden Homes instructed ACD Environmental in April 2020 to visit site to validate the supplied Ecourban tree survey data and then to prepare the following impact assessment and tree protection strategy. In the process of validating the tree data it was noted a number of trees along the western boundary were not recorded. Following a revised topo being produced in July 2020 ACD attended site again to survey these additional trees. New tree survey data can be seen at appendix 3.
- 1.2. An Arboricultural Method Statement has been compiled in conjunction with a Tree Protection Plan. These detail any mitigation which will be necessary to ensure the protection of retained trees throughout the development, as requested in condition 5 of planning consent ref: APP/13/00804
- 1.3. For details of trees to be retained, and locations and types of special protection methods, reference should be made to the latest revision of Tree Protection Plan (ref: LIN22888-03).
- 1.4. A Tree Preservation Order reference TPO1931 covers many trees on this site, a copy of the TPO plan is appended for reference.
- 1.5. The controlling authority is Havant Borough Council, who can be contacted at: Public Service Plaza, Civic Centre Road, Havant, Hampshire, PO9 2AX, Tel: 023 9247 4174.
- 1.6. The Tree Protection Plan was based on the supplied layout reference: 2740-A-1005-H, 1002-B, 1006-G, 1007-G, 1008-F_Site Layouts6
- 1.7. Any questions relating to the content of this report should be directed in the first instance to: ACD Environmental, The Old Mill, Fry's Yard, Bridge Street, Godalming, Surrey GU7 1HP, 01483 425 714/07796 832 490, quoting the site address and report reference number.
- 1.8. **This report has been revised (A) to show the consented drainage works located to the west of the application area. The consent was given by Winchester City Council on the 3rd of May 2018 under reference 17/03040/FUL. As part of this consent there is to be a roadway to though the line of trees along the western boundary resulting in the removal of one tree and a section of boundary hedgerow, these have been shown in blue on the appended tree protection plan.**
- 1.9. **Havant Borough Council where consulted on this application and on the 1st of February 2020 formally responded with tree issues being raised.**

2. Arboricultural Impact Assessment

- 2.1. There is already an existing consent for the wider site that includes this smaller subject area.
- 2.2. A report by Ecourban (ref: 11210 - AIA 2, dated 12 July 2013) was submitted with the wider existing consent. This included tree protection proposals. The subject layout varies slightly in some places. To accommodate these changes the tree protection has been adjusted.
- 2.3. Overall the Ecourban protection strategy has been adhered to but where there are minor layout changes to the layout additional tree protection has been recommended.
- 2.4. ACD visited site in April 2020 to verify that the Ecourban tree data was still current and suitable to use as baseline for this tree protection strategy. Of the trees within Ecourban survey only minor changes were recorded, none of which were significant enough to warrant influencing this document. A copy of the tree data is appended for reference. Where several trees along the western boundary of the site were not included in the original survey, ACD added site to survey these trees in July 2020 and the additional data has been included within the tree protection strategy.
- 2.5. This impact assessment is intended to evaluate the direct and indirect impacts on the trees on the site in relation to the proposed development. Any potential tree impacts are identified as per BS5837:2012 section 5.4, and details are given of proposed mitigation.
- 2.6. Any potentially damaging activities proposed in the vicinity of retained trees are identified, such that mitigation to significantly reduce or avoid this impact can be detailed in the Arboricultural Method Statement and Tree Protection Plan as recommended in BS5837:2012 section 5.4.2.
- 2.7. The development proposals are in accordance with BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'. Adequate protection can be provided to ensure all retained trees are protected throughout the development.

2.8. Additional tree removals

2.8.1. Whilst the Ecourban tree removals have been mirrored in this document. Additional trees are proposed to be removed.

- T43 due to conflict with plot 108
- Sections of H37 due to proximity to plots 108, 145, 165, 166 & 176

2.8.2. These further removals are inconsequential low quality and value trees and hedge. Any loss that may be felt as a result of their removal will be more than mitigated through the new planting proposed for this site.

2.9. Trees to be pruned

2.10. The table below details pruning works that are proposed to better the relationship between the proposed and the existing trees that were not within the Ecourban report.

Tree number	Species	Operation
T303	Oak	Crown lift to give a 3.5m crown clearance over the site
T306	Oak	Crown lift to give a 3.5m crown clearance over the site
T310	Ash	Crown lift to give a 3.5m crown clearance over the site
T311	Ash	Crown lift to give a 3.5m crown clearance over the site

2.11. Tree Protection Barriers

An alternative tree protection fencing specification has been already agreed with the local planning authority Tree Officer. This differs slightly to the default specification stated within BS5837:2012, and is detailed within the statement.

2.12. Demolition

To ensure damage does not occur to trees highlighted for retention, tree protection fencing must be erected prior to any plant machinery entering site whatsoever. This will be subject to a pre-commencement site meeting between the developer and the Local Authority Tree Officer. No special demolition procedures need be observed on this site, other than respecting the tree protection fencing.

2.13. New Hard Surfaces within RPAs

Proposed hard surfacing within the RPA's of retained trees is similar to that shown within the Ecourban protection strategy. In some areas, the proposed is slightly larger area than previously shown such as within the RPA of T89 or smaller such as within the RPA of T86. In all cases, sensitive surfacing construction has been proposed to minimise the disturbance to the rooting environment.

2.14. Pre-Start Meeting

As per condition 5, a pre-development meeting with the Local Authority Tree Officer and site manager is to take place. This is to be conducted following the installation of the tree protection fencing and before any development works starts on the site.

3. Arboricultural Method Statement

TO BE READ IN CONJUNCTION WITH THE APPENDED TREE PROTECTION PLAN REFERENCE: LIN22888-03

3.1. Phasing of operations for tree protection

3.1.1. Implementation of tree protection measures on the site must be carried out in the following order

- 1) Tree removals and tree surgery
- 2) Line of tree protection fence to be set out to node points by surveyor
- 3) Accurate erection of tree protection fence and ground protection
- 4) **Pre-commencement site meeting with Local Authority Tree Officer and site manager**
- 5) Site accessible to construction/demolition traffic
- 6) Site clearance
- 7) No-dig surfacing installation
- 8) Construction
- 9) Removal of tree protection fencing
- 10) Remedial tree surgery (if required)

3.1.2. The above phasing must not be changed without approval from the project arboriculturist and agreement with the Council.

3.2. Tree protection areas

3.2.1. Based on tree survey data, tree protection areas have been determined for every retained tree. These areas are designed to protect at least a functional minimum of tree root mass in order to ensure that the trees survive the construction process.

3.2.2. Some trees on this site are subject to statutory protection by Tree Preservation Order. Damaging them is a criminal offence and is also contrary to planning conditions that, if breached, could lead to all work on site being stopped by the local authority.

3.2.3. 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 them.

3.3. Restrictions within tree protection areas

3.3.1. Inside the exclusion area of the fencing, the following shall apply:

- No mechanical excavation whatsoever
- No excavation by any other means without arboricultural site supervision
- No hand digging without a written method statement having first been approved by the project arboriculturist.

- 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 fire lighting

3.3.2. In addition to the above, further precautions are necessary adjacent to trees:

- No substances injurious to tree health, including fuels, oil, bitumen, cement (including cement washings), builders' sand, concrete mixing and other chemicals shall be stored or used within or directly adjacent to the protection area of retained trees
- No fire shall be lit such that flames come within 5m of tree foliage.

3.4. **Avoiding damage to stems and branches**

3.4.1. Care shall be taken when planning site operations in proximity of retained 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 to them and might make their safe retention impossible.

3.4.2. Consequently, any transit or traverse of plant in proximity of trees shall be conducted under the supervision of a banksman, to ensure that adequate clearance from trees is at all times maintained. In some circumstances, it may be impossible to achieve this without pruning works known as 'access facilitation pruning'.

3.4.3. Access facilitation pruning shall be kept to the barest minimum necessary to facilitate development and shall be carried out in strict accordance with the guidance below (Tree Surgery). Under no circumstances shall construction personnel undertake any tree pruning operations.

3.5. **Tree protection fencing**

3.5.1. The Tree Protection Plan (see the latest revision of: LIN22888-03) shows the alignment of Tree Protection Fencing (TPF), which is to be installed prior to any of the following taking place:

- Demolition
- Plant and material delivery
- Soil stripping
- Utility installation
- Construction works
- Landscaping

3.5.2. Stages for installation of TPF:

- 1) Hand clearance of any vegetation to allow clear working access.
- 2) Setting out of fencing points
- 3) Fencing erected

4) Site accessible to demolition/construction traffic

- 3.5.3. To ensure accuracy and avoid future costly adjustments, the Tree Protection Fence must be set out by a surveyor with all node points being marked clearly on site for the fencing contractor to work to.
- 3.5.4. Once erected, all TPF will be regarded as sacrosanct, and will not be removed or altered without prior recommendation by the project arboriculturist and approval of the local planning authority.
- 3.5.5. The typical TPF construction is suitable for areas of high intensity development, and shall comprise of interlocking weld-mesh panels, well braced to resist impacts by attachment to a scaffold framework that is set firmly into the ground. A detailed specification can be found on the TPP.
- 3.5.6. Should any alternative method of barrier construction be proposed, consultation with the project arboriculturist will be obtained to clarify the efficacy of the revised design prior to informing the local planning authority and obtaining their consent.
- 3.5.7. Once the exclusion zone has been protected by barriers and/or ground protection, construction work can commence.
- 3.5.8. All weather notices should be erected on the barriers (for example see figure below).



Specification agreed by LAP Tree Officer tree protection fencing



Figure 1: Tree Protection Sign (digital copies available for download at: www.acdenviromental.co.uk)

3.6. Tree surgery and removal

- 3.6.1. Those trees which are to be removed are shown with a red dashed canopy outline, on the Tree Protection Plan ACD reference LIN22888-03
- 3.6.2. The surgery works to be carried out are shown in table 4.10
- 3.6.3. If any further surgery works are proposed, it will be submitted to, and approved by Local planning authority, before being carried out.
- 3.6.4. All work will be carried out in accordance with BS 3998:2010 Recommendations for Tree Work, industry best practice and in line with any works already agreed with the Council.
- 3.6.5. The tree surgery contractor is responsible for carrying out any relevant health and safety risk assessment, and insurance, prior to any work being carried out.
- 3.6.6. The statutory protection afforded by the Wildlife and Countryside Act and Countryside and Rights of Way Act will be adhered to. If further advice is required, particularly if bats are discovered during tree work, it will be obtained from Natural England or other competent persons and recommendations adhered to.
- 3.6.7. The stumps of any trees removed from within the Construction Exclusion Zone or the RPAs of retained trees will be either; cut flush to ground level and left in situ or ground out using a stump grinder. They will not be winched out.
- 3.6.8. All operations shall be carefully carried out to avoid damage to the trees being treated or neighbouring trees. No trees to be retained shall be used for anchorage or winching purposes.

3.7. Soft landscaping within RPA

- 3.7.1. All landscaping and associated ground preparation within exclusion zones will be carried out sensitively to ensure root damage is mitigated as much as is practicable. At no time is any heavy plant to be used within any protected area. Removal of existing vegetation will be carried out by hand; turf may be removed using a mechanical turf stripper or by hand.

Turfing

- 3.7.2. Stages for turfing gardens and open spaces:

No plant machinery¹ to be used in the area for whatever reason

- 1) Remove TPF to allow access to area.
- 2) Do not reduce any high spots or excavate in any way.
- 3) Existing poor quality turf may be removed with a turf stripper.
- 4) Use good quality top-soil to level any low-lying areas and hollows and provide a fine tilth to lay turf on. This imported soil must not result in a level increase of more than 100mm in any area.
- 5) Import turves by hand in wheelbarrow.
- 6) Lay turves.

Planting

- 3.7.3. Should the soil be compacted or have a poor structure which may hinder the development of any new planting, soil decompaction techniques may be used upon consultation with the project arboriculturist.

- 3.7.4. Stages for planting within tree protection areas:

No plant machinery to be used in the area for whatever reason

- 1) Remove TPF to allow access to area.
- 2) Remove existing vegetation by hand, turf may be removed using a mechanical turf stripper.
- 3) Do not reduce any high spots or excavate in any way.
- 4) Import good quality top-soil by hand (with wheelbarrow) into area.
- 5) Level to a depth of no more than 100mm with hand tools.
- 6) Dig individual planting pits for each plant by hand (including hedging which must not be trench planted).
- 7) Any mulch should also be imported and spread by hand.

- 3.7.5. No works will be carried out within any protected areas if the soil moisture is of a level likely to allow compaction to occur.

¹ Including rotovators

3.8. Installation of no-dig road surface

- 3.8.1. To ensure that tree roots, within the ground under this proposed surface, continue to survive during and after construction a cellular system such a CellWeb (Geosynthetics Ltd, 01455 617139, www.geosyn.co.uk) of 200mm depth is to be used².

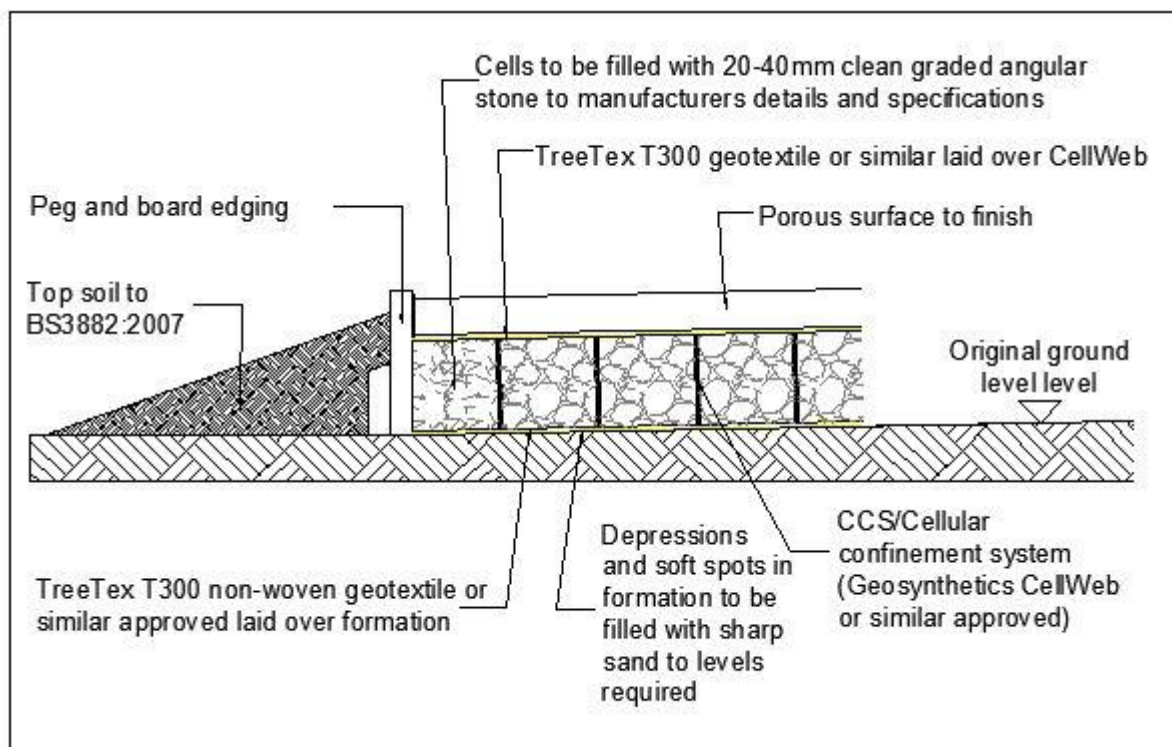


Figure 2: Cellular system profile

3.8.2. Stages for Installation of the cellular confinement surface:

- 1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work.
- 2) Dismantle TPF and re-erect in secondary location as shown on TPP.
- 3) Remove existing vegetation by using a specific herbicide (as advised by a specialist) or manual removal with hand tools only. Agreed removal of shrubs, saplings or trees, within the protected areas of retained trees are to be cut or ground out to just below ground level rather than grubbed or winched out, which can damage roots of retained trees.
- 4) Retain all original ground levels after vegetation removal. No excavation whatsoever.
- 5) Remove any existing hard surfaces (paving, tarmac etc.) Hand tools should be used if possible. If machinery is required for this operation, it must be used only on existing surfaces or outside the protection areas and tree canopies (approval from project arboriculturist must be sought before using machinery). The subbase of

²This approach describes installation of a typical no-dig surface. The author of this report is not an engineer and therefore detailed engineering design and analysis must be carried out before installation.

existing surfaces or foundations should be left in situ where possible to avoid unnecessary root disturbance and provide a base for the new surface.

- 6) Install a non-woven Geotextile (such as Fibretex F4M) directly over soil grade level (levelled where necessary, by non-compacted washed sand) and fix in place.
- 7) Lay the cellular system over the Geotextile, which is secured open under tension during the infill process with steel staples or wooden pegs.
- 8) Install kerbs and edgings directly on top of existing soil grade level. For light structures, a treated peg and board may be acceptable. For more substantial structures, railway sleepers, haunched concrete with road pins, drilled kerbstones, gabions or cast in situ kerbs will be appropriate.
- 9) Fill the cellular system ensuring any machinery works only on already filled areas. Typical infill consists of no fines angular granular material 20-40mm, which will remain un-compacted.

10) Install porous wearing surface.

- Small Block Paving
 - Lay a second layer of Geotextile separation fabric over the infill.
 - Lay a sharp sand-bedding layer to recommended depth.
 - Place block pavements as per manufacturer's instructions.
- Washed Gravel
 - Place second layer of Geotextile separation fabric over the filled cellular confinement system.
 - Place pea shingle/ gravel to required depth.
- Porous Asphalt

3.8.3. Any variation to the above specification must meet the following design criteria for low-invasive surfaces to provide the conditions for continued tree survival and growth:

- Maintain oxygen diffusion through new surface to rooting area (5-12% by volume³).
- Maintain sufficient passage of water to the rooting area (12-40% by volume⁴).
- Maintain existing ground levels to avoid root damage (severance and/or asphyxiation).
- Avoid compaction by maintaining a soil structure sufficient to sustain root growth (soil bulk density below 1.4g/cc⁵).

3.8.4. Site analysis of the soil type and its structural characteristics will be required prior to determining the specific depth of products to be adopted for example, footpaths normally require a depth of 100mm and, 150mm to 200mm depths are used for residential driveways, while greater depths may be required for the passage of heavier traffic such as for construction access and delivery vehicles.

3.8.5. If ground levels are to be raised more than 150mm this should be achieved by the use of a granular material, which does not inhibit vertical gaseous diffusion. For example: no-fines gravel, washed aggregate, structural soil (min. 20% sand content) or cobbles.

³ Tree Roots in the Built Environment 2006, Roberts Jackson Smith HSO

⁴ Tree Root Growth Requirements, Dr Kim. D. Coder, University of Georgia. July 2000

⁵ Arboriculture, Tree Management of Shade Trees and Vines 2004, Harris, Clarke, Matheny

3.8.6. Ideally, the surface should be installed between May and October when the ground is driest and least prone to compaction. The approved wearing course is to be laid over the Cellular System. Where it covers in excess of 20% of the RPA or is wider than 3m within the RPA, the new surface should be constructed in a manner to permit infiltration of moisture and gaseous diffusion (pervious). Where the wearing course is in excess of 20% of the RPA or wider than 3m, a specially engineered surface will need to be designed to meet the above criteria.

3.9. No-dig footpath construction

3.9.1. To ensure that tree roots, within the ground under this proposed surface, continue to survive during and after construction a cellular system such a CellWeb (Geosynthetics Ltd, 01455 617139, www.geosyn.co.uk) of 200mm depth is to be used⁶.

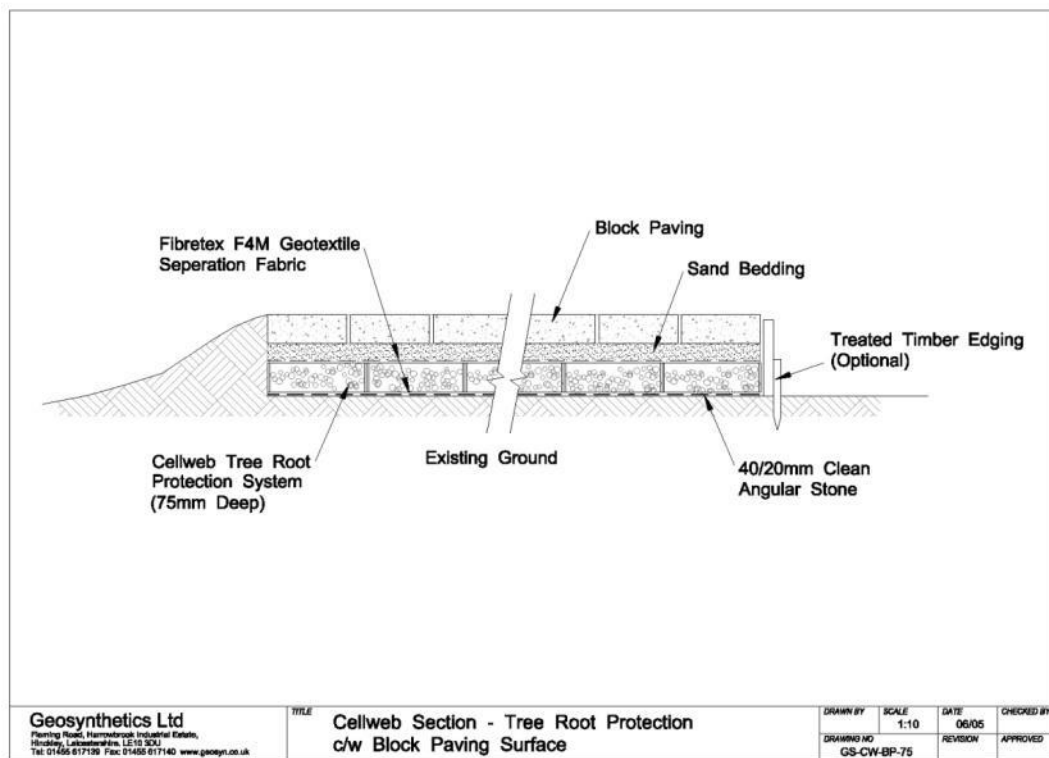


Figure 3 Cellular system profile

3.9.2. Stages for Installation of the cellular confinement surface:

- 1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work.
- 2) Dismantle TPF and re-erect in secondary location.
- 3) Remove existing vegetation by using a specific herbicide (as advised by a specialist) or manual removal with hand tools only. Agreed removal of shrubs,

⁶This approach describes installation of a typical no-dig surface. The author of this report is not an engineer and therefore detailed engineering design and analysis must be carried out before installation.

saplings or trees, within the protected areas of retained trees are to be cut or ground out to just below ground level rather than grubbed or winched out, which can damage roots of retained trees.

- 1) Retain all original ground levels after vegetation removal. No excavation whatsoever.
- 2) Install a non-woven Geotextile (such as Fibretex F4M) directly over soil grade level (levelled where necessary, by non-compacted washed sand) and fix in place.
- 3) Lay the cellular system over the Geotextile, which is secured open under tension during the infill process with steel staples or wooden pegs.
- 4) Install kerbs and edgings directly on top of existing soil grade level. For light structures, a treated peg and board may be acceptable. For more substantial structures, railway sleepers, haunched concrete with road pins, drilled kerbstones, gabions or cast in situ kerbs will be appropriate.
- 5) Fill the cellular system ensuring any plant machinery stands only on already filled areas. Typical infill consists of angular granular material of 20-40mm with no fines, which will remain un-compacted.
- 6) Install porous wearing surface.
 - Small Block Paving
 - Lay a second layer of Geotextile separation fabric over the infill.
 - Lay a sharp sand-bedding layer to recommended depth.
 - Place block pavements as per manufacturer's instructions.
 - Washed Gravel
 - Place second layer of Geotextile separation fabric over the filled cellular confinement system.
 - Place pea shingle/ gravel to required depth.
 - Porous Asphalt

3.9.3. Any variation to the above specification must meet the following design criteria for low-invasive surfaces to provide the conditions for continued tree survival and growth:

- Maintain oxygen diffusion through new surface to rooting area (5-12% by volume⁷).
- Maintain sufficient passage of water to the rooting area (12-40% by volume⁸).
- Maintain existing ground levels to avoid root damage (severance and/or asphyxiation).
- Avoid compaction by maintaining a soil structure sufficient to sustain root growth (soil bulk density below 1.4g/cc⁹).

3.9.4. Site analysis of the soil type and its structural characteristics will be required prior to determining the specific depth of products to be adopted, for example: footpaths normally require a depth of 100mm and, 150mm to 200mm depths are used for residential driveways, while greater depths may be required for the passage of heavier traffic such as for construction access and delivery vehicles.

⁷ Tree Roots in the Built Environment 2006, Roberts Jackson Smith HSO

⁸ Tree Root Growth Requirements, Dr Kim. D. Coder, University of Georgia. July 2000

⁹ Arboriculture, Tree Management of Shade Trees and Vines 2004, Harris, Clarke, Matheny

- 3.9.5. If ground levels are to be raised more than 150mm this should be achieved by the use of a granular material, which does not inhibit vertical gaseous diffusion. For example: no-fines gravel, washed aggregate, structural soil (min. 20% sand content) or cobbles.
- 3.9.6. Ideally, the surface should be installed between May and October when the ground is driest and least prone to compaction. The approved wearing course is to be laid over the cellular confinement system. Where it is in excess of 20% of the RPA or is wider than 3m within the RPA, the new surface should be constructed in a manner to permit infiltration of moisture and gaseous diffusion (pervious). Where the wearing course is in excess of 20% of the RPA or wider than 3m, a specially engineered surface will need to be designed to meet the above criteria.

3.10. Installation of boundary fencing within protected areas

3.10.1. Stages for installing wooden fence posts:

No plant machinery to be used in the area for whatever reason

- 1) Remove TPF to allow access to area.
- 2) Dig post holes using hand tools, avoiding damage to the protective bark covering larger roots. Roots smaller than 25mm diameter may be pruned back using either secateurs or a hand saw, leaving a clean cut.
- 3) Damage or severance of roots above 25mm diameter must be avoided. If roots of this size are discovered, the hole should be relocated. If there are a large number of such roots it may be necessary to relocate the hole by half a fence panels length and adjust the fence panels accordingly.
- 4) Line hole with non-porous lining, for example durable polythene bag.
- 5) Insert post and fill post hole with concrete to ground level.
- 6) Trim polythene to ground level.

Robert Anderson FdSc, Nd Arb, MArbor
Arboriculturist

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14 July 2020

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Appendix 1: Summary of Categories BS5837:2012

BS5837:2012 Table 1 -Cascade chart for tree quality assessment			
Category and definition		Criteria (including subcategories where appropriate)	
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>	
	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
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years		Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	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
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 150mm		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 with material conservation or other cultural value
		Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees with no material conservation or other cultural value
		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	

SITE: Lovedean Phase 2, Waterlooville
CLIENT: Linden Homes
DATE: 8/7/2020

SURVEYOR: R. Anderson

TAGGED? No

Appendix 2: Tree Survey Schedule from ACD survey July 2020

No.	Name	Ht (crown)	Dia (stems)	Crown spread (NESW)	Life stage	ERC	Comments & preliminary recommendations	BS Cat
G301	Fraxinus excelsior (Ash)	11(3)	300(3)	4, 4, 4, 4	EM	10+	Multiple stems at ground level. Diameter is estimated average. Linnea off site group decay in lower stems	C2
T302	Ilex aquifolium (Holly)	9(2)	400(1)	6, 6, 4, 4	OM	10+	Ivy in the crown.	C2
T303	Quercus robur (Common Oak)	15(4)	610(1)	10.5, 10.5, 4, 10.5	M	20+	Ivy in crown. One sided crown: suppressed by the adjacent specimen. Diameter measured over ivy.	B2
T304	Quercus robur (Common Oak)	16(5)	650(1)	3, 10, 4, 9	M	20+	Ivy in crown. Diameter measured over ivy. Slightly sparse crown for spp	B2
T305	Fraxinus excelsior (Ash)	15(3)	630(1)	5.5, 7, 9, 7	M	20+	Diameter measured over ivy. Cavity at base of stem between forks	C2
T306	Quercus robur (Common Oak)	12(2)	640(1)	4.5, 7, 8.5, 8	M	10+	Diameter measured over ivy. Low squat crow with ivy growing within canopy	C2
T307	Fraxinus excelsior (Ash)	9(3)	390(1)	3, 3, 3, 3	EM	10+	Growing within hedgerow	C2
T308	Salix caprea (Goat Willow)	8(3)	170(5)	5, 5, 5, 5	EM	10+	Multiple stems at ground level. Diameter is estimated average.	C2
T310	Fraxinus excelsior (Ash)	10(3)	200(3)	4, 7, 7, 4	EM	10+	One sided crown: suppressed by an adjacent specimen.	C2
T311	Fraxinus excelsior (Ash)	9(3)	210(3)	6, 7, 6, 6	EM	10+	Multiple stems at ground level.	C2
T312	Fraxinus excelsior (Ash)	16(4)	640(1)	8, 9, 10, 8	M	20+	Dead ivy obscuring stem spare than normal canopy	C2
T313	Fraxinus excelsior (Ash)	14(2)	700(1)	4, 8, 8, 9	M	20+	Diameter is an estimated maximum. Small cavity within lower stem sparser than normal crown	C2
T314	Quercus robur (Common Oak)	12(3)	490(1)	5, 5, 5, 5	M	20+	Ivy in crown. Diameter measured over ivy.	B2
T315	Quercus robur (Common Oak)	8(2)	300(3)	7, 8.5, 6, 5	M	20+	Multiple stems at ground level. Diameter is estimated average.	C2
G316	Quercus robur (Common Oak),Fraxinus excelsior (Ash)	12(3)	320(1)	4.5, 4.5, 4.5, 4.5	EM	10+	Linnea group that look to have grown from neglected hedgerow	C2

Notes: **Dia (stems):** trunk diameter in mm at 1.5m above ground level (number of stems) | **HT (crown):** Tree height (crown clearance) | **Life stage:** **Y:** Young (obviously planted within the last three years (unless as a heavy or extra-heavy standard)). **SM:** Semi mature (recently planted and yet to attain mature stature; up to 25% of attainable age.). **EM:** Early mature (almost full height, crown still developing and seed bearing; up to 50% of attainable age.). **M:** Mature (full height, crown spread, seed bearing; over 50% of attainable age.). **OM:** Over mature (full size, die-back, small leaf size, poor growth extension.). | **FSB:** First significant branch (& compass bearing) | **ERC:** Expected remaining contribution in years- <10, 10+, 20+, 40+ (assuming that there will be no physical changes to its immediate environment.) | **BS Category:** Refer to appendix 1 of this report or BS5837:2012 Table 1 for detailed descriptions.

Appendix 3: Tree Preservation order Plan

Appendix 4: Ecourban tree survey schedule

Appendix 5: Tree Protection Plan



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**ECOLOGICAL SURVEYS * PROTECTED SPECIES LICENSING * MITIGATION *
IMPACT ASSESSMENT * ARBORICULTURAL SITE MONITORING AND
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