LAND AT WICKHURST GREEN BROADBRIDGE HEATH HORSHAM

ARBORICULTURAL IMPACT ASSESSMENT & METHOD STATEMENT

for

VISTRY GROUP

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Revision:	
Ref:	VYH24567aia_ams

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1.1. For the Arboricultural Method Statement see section 4.

1.2. The site is currently two open fields separated by a belt of trees, bordered by existing housing areas. The proposed development is the construction of 89 residential dwellings, with associated infrastructure.

1.3. This impact assessment is intended to evaluate the direct and indirect effects of the proposed design on the trees on site, and where necessary recommends mitigation.

1.4. 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 development in the form of barriers and/or ground protection.

1.5. Given the number of trees on the site, the development proposals incorporate the majority of the better, more sustainable specimens.

1.6. All of the 'A' and 'B' category trees are to be retained and protected throughout the development.

1.7. All of the trees proposed for removal are in the lower two categories, 'C' and 'U', and are not of a quality that should represent any constraint to development.

1.8. Where proposed new hard surfaces encroach into the RPA of trees highlighted for retention, sensitive surface construction will be required.

1.9. Number of trees to be removed as a direct result of the current design (see section 4 for details):

BS Category	Number of individual trees	Tree Groups
U	1	~
A	~	~
B	~	~
C	23	2

1.10. The Arboricultural Method Statement (AMS) has been compiled in conjunction with the Tree Protection Plan (TPP) for the purpose of feasibility and planning, as per Figure 1 of BS5837:2012. These detail any mitigation which will be necessary to ensure the protection of retained trees throughout the development.

2. Introduction

2.1. ACD Environmental was instructed in May 2024 to prepare the following Arboricultural Impact Assessment and Method Statement by Vistry Group. Reference should be made to the appended Tree Protection Plan (VYH4567-03).

2.2. This Method Statement is to be made available to all operatives on site during the construction process, so that they understand the scope and importance of the measures set out for tree protection. Implementation of the protection methods and other details within this report are integral to ensuring protection for the retained trees.

2.3. 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: VYH4567-03), which should be displayed prominently on site for all staff to see.

2.4. To ensure accuracy and avoid future costly adjustments, the Tree Protection Fence must be set out by a surveyor/engineer with all node points being marked clearly on site for the fencing contractor to work to. The AutoCAD version of the Tree Protection Plan is available on request.

2.5. This report is based on the recommendations given in BS5837:2012 ‘Trees in relation to design, demolition and construction – Recommendations’.

2.6. The controlling authority is Horsham District Council, who can be contacted at: Planning, Parkside, Chart Way, Horsham, West Sussex, RH12 1RL, Tel: 01403 215187.

2.7. According to a search on Horsham District Council’s online mapping service on 14/05/2024 no Tree Preservation Orders (TPO) were indicated, nor is the site within a Conservation Area.

2.8. Any questions relating to the content of this report should be directed in the first instance to: ACD Environmental, Unit 7, Godalming Business Centre, Woolsack Way, Godalming, GU7 1XW, 01483 425714, quoting the site address and report reference number.

2.9. The following abbreviations have been used throughout this document:

- Root Protection Area – RPA.
- Construction Exclusion Zone – CEZ.
- Tree Protection Plan – TPP.
- Tree Protection Fencing – TPF.

3. Arboricultural Impact Assessment

3.1. The site is currently two open fields separated by a belt of trees, bordered by existing housing areas. The proposed development is the construction of 89 residential dwellings, with associated infrastructure.

3.2. 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.

3.3. 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.

3.4. 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.

3.5. The tree survey for the site is at Appendix 2 of the Tree Report for the site ACD reference VYH24567ts.

3.6. This assessment is based upon the supplied layout drawing by FINC Architects ref: 24.1945.1000 rev T.

3.7. Evaluation of impact of proposed tree losses

Table 1: Trees to be removed as a direct consequence of development

BS Category	Number of individual trees	Tree Groups
U	1	~
A	~	~
B	~	~
C	24	2

3.7.1. Those trees which are to be removed are shown with a red dashed canopy outline, and a dashed emblem around the trunk on the Tree Protection Plan ACD reference VYH4567-03.

3.7.2. G1, T2, G3, T5, T6, T7, T8, T11, T12, T13, T14, T15, T16, T17, T18, T20, T21, T22, T23, T24, T25, T26, T27, T35, T46, T47 & T48 are to be removed as a result of the development proposals.

3.7.3. All the trees proposed for removal are in the two lower categories ('C' & 'U') and as such it is judged that they are not of a quality that should present any constraint to development of the site.

3.7.4. In terms of the effects of the tree loss required to implement the design, the trees to be removed are all unremarkable trees of very limited merit, such that they can be replaced with tree planting as part of the landscape proposals, (or even future residents).

3.7.5. In relation to the conception and design of development proposals, BS5837:2012 section 5.1.1 states: The constraints imposed by trees, both above and below ground should inform the site layout design, although it is recognised that the competing needs of development mean that trees are only one factor requiring consideration. Certain trees are of such importance and sensitivity as to be major constraints on development or to justify its substantial modification. However, care should be taken to avoid misplaced tree retention; attempts to retain too many or unsuitable trees on a site can result in excessive pressure on the trees during demolition or construction work, or post-completion demands for their removal.

3.7.6. It is therefore deemed acceptable to remove the listed trees and, as part of the detailed landscape design for the scheme, include suitable and sustainable replacements as and where appropriate.

3.7.7. Replacement trees will be proposed through landscape design and will more than mitigate for their removal by providing robust long term tree cover in keeping with the proposal and surrounding properties.

3.7.8. Within the site further tree removals are proposed as good arboricultural practice. These trees are all 'U' category (listed in table 2) and have a very limited life expectancy. This work would be carried out as part of good property maintenance, regardless of any development on the site.

3.8. **Trees to be pruned**

3.8.1. At this time the following tree surgery works are proposed.

Tree number	Species	Operation
G9	Various	Trim sections as shown on the Tree Protection Plan.
G30	Various	Prune/remove sections as shown on the Tree Protection Plan to facilitate new hard surfacing.
G36	Various	Prune/remove sections as shown on the Tree Protection Plan.
G37	Various	Prune/remove sections as shown on the Tree Protection Plan.
G38	Ash	Evidence of trees in decline. Monolith trees to a height of 8m (prune to leave stem) and leave for ecological purposes.
T39	Common Oak	Prune lower eastern section of crown to allow for 1.5m of working room for installation of scaffolding.
T40	Common Oak	Prune lower eastern section of crown to allow for 1.5m of working room for installation of scaffolding.
T41	Common Oak	Prune lower eastern section of crown to allow for 1.5m of working room for installation of scaffolding.
T42	Ash	Evidence of tree in decline. Monolith tree trees to a height of 8m (prune to leave stem) and leave for ecological purposes.
G49	Various	Prune sections as shown on the Tree Protection Plan to facilitate new hard surfacing.

3.9. Protection for retained trees

3.9.1. BS5837:2012 section 6.2.1. states: 'All trees that are being retained on site should be protected by barriers and/or ground protection (see 5.5) before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. The specification for this fencing shall comprise of Heras type panels on 'boots', well braced by attachment to scaffold pole uprights driven firmly into the ground. Where all activity can be excluded from the RPA, vertical barriers should be erected to create a construction exclusion zone. Where, due to site constraints, construction activity cannot be fully or permanently excluded in this manner from all or part of a tree's RPA, appropriate ground protection should be installed (see 6.2.3).' As such, protection for all retained trees is shown on the Tree Protection Plan according to this specification.

3.9.2. A secondary location of fencing has been shown on the Tree Protection Plan. This must only be applied immediately prior to the associated works. In instances where new hard surfacing is applied within the RPA, this will act as ground protection, leaving the fencing within its secondary location.

3.10. Ground protection

3.10.1. In certain areas, space required to construct buildings will require encroachment into RPAs. Potential damage cause by foot traffic and associated works can be mitigated by the use of ground protection as specified in BS5837:2012 section 6.2.3. To ensure the ongoing survival of the retained trees, this is detailed in the Arboricultural Method Statement and indicated on the Tree Protection Plan where required.

3.11. Demolition & Groundworks

3.11.1. 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. No special demolition procedures need be observed on this site, other than respecting the tree protection fencing.

3.12. New Hard Surfaces within RPAs

3.12.1. In order to minimise impact on the trees where the proposed new hard surfacing encroaches into the RPAs of trees T19 (9.5%) T31 (5.5%) T39 (7.9%) T40 (11%) & T41 (6.3%), sensitive surface construction will be required in the form of a no-dig surface. It is anticipated that using no dig surface means that installation of permanent hard surface in this area is unlikely to cause significant adverse impact on the trees to be retained.

3.12.2. As per the recommendation of BS5837:2012 section 7.4.2.3, the new permanent hard surfacing does not exceed 20% of any existing unsurfaced ground within the RPA.

3.12.3. To avoid root damage, a no-dig approach must be taken, limiting the impact on the trees:

3.12.4. The use of a three-dimensional cellular confinement system, such as 'Cellweb' is an acceptable approach, which aims to fulfil the above design criteria. This system maintains the passage of oxygen and water to root systems; avoids root loss through severance or asphyxiation and minimises the potential for soil compaction. It is achieved by laying a Geotextile membrane directly onto unchanged soil levels, with a three-dimensional cellular confinement system ('Cellweb') laid on top filled with no fines granular fill, with a porous finishing surface. See specification on Tree Protection Plan (VYH4567-03).

3.12.5. Retained trees must first be protected during all stages of the development including demolition, by the erection of fencing as specified on the Tree Protection Plan (TPP). Installing the surface may require the re-positioning of the tree protection fencing to a secondary location in line with and associated method statement.

3.12.6. The area must be protected during all stages of the development including demolition, by ensuring the surface is installed, with a sacrificial tarmac surface (or trackway) if required, prior to any construction or demolition traffic entering the site.

3.12.7. The Arboricultural Method Statement describes installation of a typical no-dig surface. This follows the recommendations set out in Section 7.4 of British Standard 5837:2012. The author of this report is not an engineer and therefore detailed engineering design, and analysis must be carried out by a suitably qualified engineer. However, any design must be approved for use by the project arboriculturist.

3.12.8. New hard surfacing also encroaches into the RPA of T29, due to the minor amount of new hard surfacing encroaching into the RPA of T29, this area will be excavated in a sensitive manner under supervision from the project arboriculturist. Full details for the methodology of sensitive excavations are found within the Arboricultural Method Statement.

3.13. Construction within RPAs

3.13.1. It is confirmed that there is no construction proposed within the RPAs of retained trees.

3.14. Services

3.14.1. It is fundamental to tree protection that infrastructure design is sensitively approached, as trenching close to trees may damage roots and affect tree health and stability. Details of services have not been provided at the time of writing. The Tree Protection Plan, showing the constraints posed by retained trees will be passed to the infrastructure engineers to inform their design, ensuring that all services avoid areas of potential conflict. As per BS5837:2012 Figure 1, once further details become available as part of the detailed/technical design for the site, the TPP and AMS will be revised to incorporate these details for services for inclusion in the Tender documentation.

3.15. Levels and Landscaping

3.15.1. Full details of any changes in ground levels on site remain to be finalised. Any alterations to levels close to trees may damage roots and affect tree health and stability. Unless no-dig methodology is proposed for installation of surfaces within RPAs the original levels in these areas must be noted, retained, and integrated into the engineering design of the site. Landscaping operations within the RPAs of retained trees must be carried out in a sensitive manner and be subject to a detailed method statement and arboricultural supervision.

3.16. Boundaries

3.16.1. All plot boundaries will need to be designed, positioned and installed to avoid damage to retained trees. When within RPAs, this will include hand excavation of all post holes, and the lining of any post holes with a non-porous membrane to stop leachates from the concrete damaging tree roots.

3.17. Supervision & monitoring

3.17.1. The development process should be subject to arboricultural supervision and monitoring, especially areas where incursion into the RPA of retained trees is required. Therefore, supervision is recommended during the installation of all special details, such as no-dig surfaces and sensitive excavations.

4. Arboricultural Method Statement

TO BE READ IN CONJUNCTION WITH THE APPENDED TREE PROTECTION PLAN REFERENCE: VYH4567-03

4.1. Phasing of operations for tree protection

4.1.1. 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 project arboriculturist, Local Authority Tree Officer, site manager and groundworkers.
5) Site accessible to construction/demolition traffic.
6) Demolition/site clearance.
7) Construction.
8) Removal of tree protection fencing.
9) Remedial tree surgery (if required).

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

4.2. Site supervision

4.2.1. The development process will be subject to arboricultural supervision where construction work inside the construction exclusion zone is required, and for the installation of any special detail (e.g., no-dig surface). Therefore, input and supervision from the project arboriculturist will be required at the following stages:

1) Accurate erection of tree protection measures.
2) Site meeting with project arboriculturist, Local Authority Tree Officer, site manager and groundworkers.
3) Installation of no-dig surfacing and sensitive excavations works.

4.2.2. Arboricultural supervision is to be carried out at all crucial stages throughout the development process to ensure detailed tasks are carried out as per the approved methodology, and during any other, unplanned incursions into protection areas, for whatever reason.

4.2.3. This supervision will require the arboriculturist to be present throughout the task, to ensure all the arboricultural objectives are met.

4.2.4. If the task is to take a long period of time, provided the arboriculturist is satisfied, and after an initial ‘tool-box talk’, the supervision may be reduced to telephone contact between the site foreman/contractor and arboriculturist.

4.3. Restrictions within tree protection areas

4.3.1. 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.

4.3.2. 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.

4.4. Avoiding damage to stems and branches

4.4.1. 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.

4.4.2. 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’.

4.4.3. 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.

4.5. Tree protection fencing

4.5.1. The Tree Protection Plan (see the latest revision of: VYH4567-03) 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.

4.5.2. 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.
5) Secondary positioning of fencing applied as shown on the Tree Protection Plan.

4.5.3. 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.

4.5.4. 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.

4.5.5. The specification for this fencing shall comprise of Heras type panels on 'boots', well braced by attachment to scaffold pole uprights driven firmly into the ground.

4.5.6. 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.

4.5.7. Once the exclusion zone has been protected by barriers and/or ground protection, construction work can commence.

4.5.8. All weather notices should be erected on the barriers (for example see figure below).

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

4.6. Site storage, parking, welfare facilities

4.6.1. The site will require provision for; site storage, contractor parking, welfare facilities, temporary services/drainage, material drop of points, etc.

4.6.2. No details of these provisions are available at the time of writing of this report.

4.6.3. None of the above provisions will be sited within RPAs of retained trees without the input or the project arboriculturist and the consent of the Local Authority.

4.7. Ground protection

4.7.1. The specification for Ground Protection is shown on the Tree Protection Plan. Any alternative specification to be installed must be capable of supporting the expected loads and avoiding rutting, compaction and damage to the soil. As advised in BS5837:2012 section 6.2.3:

4.7.2. New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil. The ground protection might comprise one of the following:

a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g., 100 mm depth of woodchip), laid onto a geotextile membrane:

b) for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g., 150 mm depth of woodchip), laid onto a geotextile membrane:

c) for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g., proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

4.7.3. Stages for ground protection installation[1]:

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

1) Discuss procedure with project arboriculturist.
2) Dismantle primary TPF and re-erect in secondary location as shown on TPP.
3) Any shrubs, saplings or trees to be removed, 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) Lay woven geotextile over existing ground surface by hand.
5) Cover the area with compressible layer, woodchip for example, using hand tools only.
6) Cover compressible layer with side butting scaffold boards or plywood boards.
7) Confirm surface is acceptable for use with project arboriculturist.
8) Area ready for construction access.

4.7.4. To ensure accuracy and avoid future costly adjustments, the Ground Protection must be set out by a surveyor with all node points being marked clearly on site for the fencing contractor to work to.

4.7.5. There is to be no-excavation within ground protection area whatsoever. This includes installation of services and associated utilities.

[1]For protection from foot traffic only

4.8. Tree surgery and removal

4.8.1. Those trees which are to be removed are shown with a red dashed canopy outline, and a dashed emblem around the trunk on the Tree Protection Plan ACD reference VYH4567-03.

4.8.2. The following surgery works are to be carried out:

Tree number	Species	Operation
G1	Various	Remove and grind resulting stumps.
T2	Ash	Remove and grind resulting stump.
G3	Goat Willow	Remove and grind resulting stumps.
T5	Common Oak	Remove and grind resulting stump.
T6	Common Oak	Remove and grind resulting stump.
T7	Common Oak	Remove and grind resulting stump.
T8	Common Oak	Remove and grind resulting stump.
G9	Various	Trim sections as shown on the Tree Protection Plan.
T11	Common Oak	Remove and grind resulting stump.
T12	Goat Willow	Remove and grind resulting stump.
T13	Goat Willow	Remove and grind resulting stump.
T14	Common Oak	Remove and grind resulting stump.
T15	Silver Birch	Remove and grind resulting stump.
T16	Common Oak	Remove and grind resulting stump.
T17	Goat Willow	Remove and grind resulting stump.
T18	Goat Willow	Remove and grind resulting stump.
T20	Common Oak	Remove and grind resulting stump.
T21	Blackthorn	Remove and grind resulting stump.
T22	Goat Willow	Remove and grind resulting stump.
T23	Common Oak	Remove and grind resulting stump.
T24	Goat Willow	Remove and grind resulting stump.
T25	Goat Willow	Remove and grind resulting stump.
T26	Common Oak	Remove and grind resulting stump.
T27	Goat Willow	Remove and grind resulting stump.
G30	Various	Prune/remove sections as shown on the Tree Protection Plan to facilitate new hard surfacing.
T35	Ash	Remove and grind resulting stump.
G36	Various	Prune/remove sections as shown on the Tree Protection Plan.
G37	Various	Prune/remove sections as shown on the Tree Protection Plan.
G38	Ash	Evidence of trees in decline. Monolith trees to a height of 8m (prune to leave stem) and leave for ecological purposes.
T39	Common Oak	Prune lower eastern section of crown to allow for 1.5m of working room for installation of scaffolding.
T40	Common Oak	Prune lower eastern section of crown to allow for 1.5m of working room for installation of scaffolding.
T41	Common Oak	Prune lower eastern section of crown to allow for 1.5m of working room for installation of scaffolding.
T42	Ash	Evidence of tree in decline. Monolith tree tree to a height of 8m (prune to leave stem) and leave for ecological purposes.
T46	Goat Willow	Remove and grind resulting stump.
T47	Goat Willow	Remove and grind resulting stump.
T48	Goat Willow	Remove and grind resulting stump.

Tree number	Species	Operation
G49	Various	Prune sections as shown on the Tree Protection Plan to facilitate new hard surfacing.

4.8.3. All trees to be removed are indicated on the Tree Protection Plan.

4.8.4. If any further tree surgery works are required, a proposed specification will be submitted to, and approved by the Local Planning Authority before any works are carried out.

4.8.5. 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.

4.8.6. 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.

4.8.7. 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.

4.8.8. 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.

4.8.9. 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.

4.9. Soft landscaping within RPA

4.9.1. 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.

4.10. Turfing

4.10.1. Stages for turfing gardens and open spaces:

No plant machinery[2] 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 topsoil 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.

4.11. Planting

4.11.1. 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.

4.11.2. 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 topsoil 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.

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

[2] Including rotovators

4.12. Installation of underground services within RPAs

4.12.1. If for whatever reason installation within RPAs is required, the project arboriculturist and local authority must be notified prior to any tree protection barrier removal and the following details adhered to.

4.12.2. Stages for installing services within tree protection areas:

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

1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work.
2) Remove just enough tree protection fencing to allow access to area and facilitate trenching.
3) Remove any surface vegetation or existing hard surfaces using hand tools.
4) Excavate the trench using hand tools only, keeping to minimum dimensions required.
5) Roots below 25mm should preferably be retained, however if required can be cut cleanly using secateurs or hand saw.
6) Roots over 25mm diameter will be retained and kept damp by covering with hessian (re-wetted as required).
7) Feed in services.
8) Back fill trench with 200-300mm depth of excavated soil, or a mixture of excavated and imported top-soil (to BS3882:2015), firming down with heels.
9) Repeat step 7 until trench is filled.
10) Re-erect tree protection fencing as per approved plan.

4.12.3. An alternative to the method of excavation above, for trenching within RPA's, is by using an 'air-spade' or similar. This tool utilises compressed air to remove soil from around tree roots causing minimal damage and can be run off a typical site compressor. ACD can provide details of contractors supplying air-spade services if required.

4.12.4. Alternatively, trenchless technology such as thrust boring can be used in some instances and is particularly effective as it can pass directly under the tree, at a depth which is likely to avoid almost all impact on roots of the subject tree. As no access/thrust pits will be located within the RPAs of the subject trees, the need for arboricultural supervision is limited.

4.12.5. Reference can be made to National Joint Utilities Group Publication Volume 4 (NJUG Vol 4) for guidance, but any approach must be approved by the project arboriculturist.

4.13. **No-dig footpath construction**

4.13.1. 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 75mm depth is to be used[3].

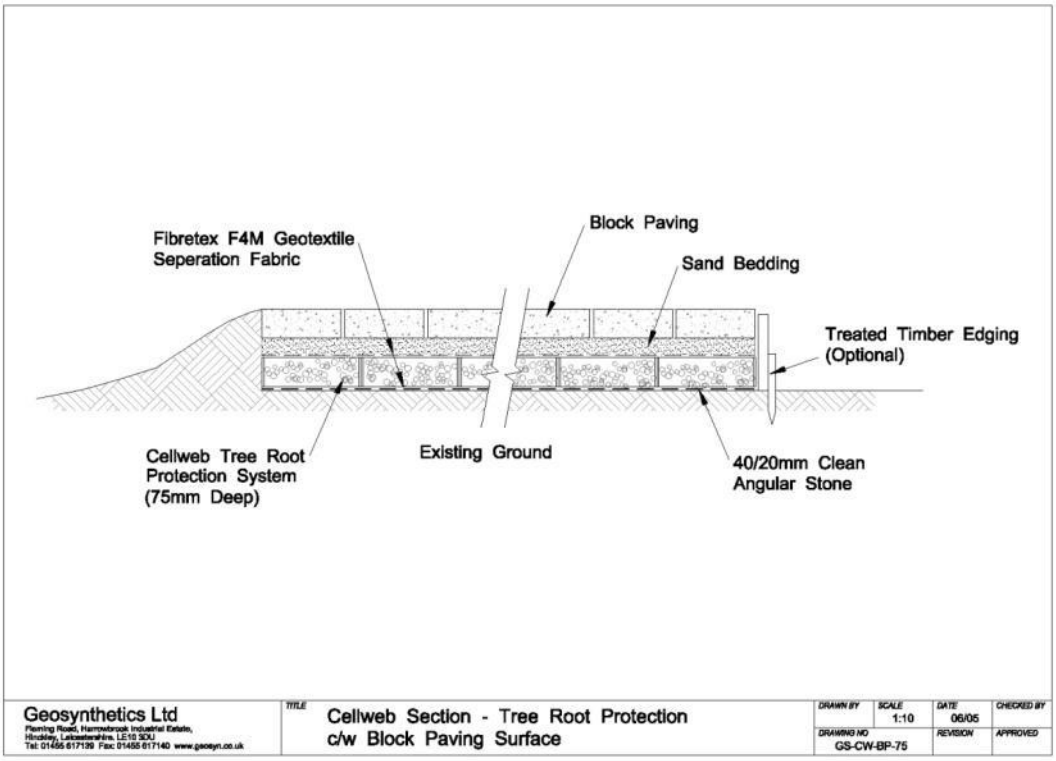

Figure 2 Cellular system profile

4.13.2. 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 to allow access to work area.
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) 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.
6) Lay the cellular system over the Geotextile, which is secured open under tension during the infill process with steel staples or wooden pegs.

[3]This 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.

7) 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.
8) Fill the cellular system ensuring any plant machinery stands only on already filled areas. Typical infill consists of no-fines angular granular material 20-40mm, which will remain un-compacted.
9) Install porous wearing surface.

4.14. Remediation for planting areas

4.14.1. Planting areas to be clearly defined prior to remedial works.

4.14.2. Area to be assessed for compaction and other damage.

4.14.3. Trial pit to be excavated to assess current soil quality.

4.14.4. If current soil quality is acceptable but compacted, then decompaction methods are to be employed. For example, rotovating to a depth equal to planting depth or tilling of soil with air excavation tool.

4.14.5. With poor quality soil in planting area, whole scale replacement of planting area soil is to be implemented. Provide as necessary to make up any removed topsoil and to complete the work. Soil grade should be Premium as advised by BS3882 and compacted under foot.

4.15. Soil remediation measures for compaction within RPAs

4.15.1. Stages for soil remediation for compaction within RPA. The following works must be undertaken by a suitably qualified and experienced soil remediation contractor:

1) Soil test to be undertaken to identify soil texture, nutrient content and pH. Based on the results, appropriate remediation measures to be undertaken.
2) Compaction test to be undertaken to identify soil compaction level.
3) Appropriate soil decompaction measures using a Terravent to reduce any compaction that may have occurred. To be used in a 1m matrix over the entire area previously covered by the fill.
4) Add layer of well composted mulch to a depth of 100-200mm over the RPA area.

4.15.2. Contamination of the soil by fuel and lubricant leaks must be avoided at all costs. If such a situation arises the project arboriculturist must be notified to assess the situation and prescribe remedial measures.

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

4.16. Installation of boundary fencing within protected areas

4.16.1. Stages for installing wooden fence posts:

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

1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work.
2) Remove TPF to allow access to area.
3) 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.
4) 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.
5) Line hole with non-porous lining, for example durable polythene bag.
6) Insert post and fill post hole with concrete to ground level.
7) Trim polythene to ground level.

4.17. Sensitive excavation within retained RPAs

4.17.1. All excavations within retained RPAs to be carried out using the following sensitive methodology:

1) Pre-start meeting between project arboriculturist and groundworkers.
2) Removal of Tree Protection Fencing where required to allow access to working area.
3) RPA radius of retained trees within proposed area of excavation to be measured and marked out with line-marker or pegs to inform areas of sensitive excavation.
4) Soil within marked out area to be excavated using hand-tools and/or air-spade.
5) Where suitable soil can be scrapped away carefully under direct supervision of project arboriculturist using an excavator located outside of the RPA with toothless bucket attachment.
6) Upon discovery of any large rooting systems (diameter of over 25mm), remaining soil will be removed using either hand tools or with use of an air-spade.
7) Once area is excavated as required an assessment is to be made in regards to any significant roots discovered as to the feasibility of root retention and significance of potential impact to vitality and stability of retained trees from root pruning.
8) If root pruning is viable, then it shall be undertaken by the project arboriculturist as access facilitation pruning and documented for review by the Local Planning Authority.
9) If impact of root pruning is considered too significant then approval must be gained for further tree removal prior to continuation of works within the RPA of affected tree.
10) During any delay between exposure of roots and agreement of either removal or pruning works, exposed rooting structures must be covered with a damp material which is to be re-wetted as required to prevent dehydration of root-hairs.
11) Re-erection of Tree Protection Fencing following completion of works or between daily work intervals.

Will Wareing *ND Arb*
Arboriculturist

17 April 2025

Appendix 1: Tree Protection Plan
(VYH4567-03)

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