

**ARBORICULTURAL
METHOD STATEMENT
to BS 5837:2005
at
A629
Ingbirchworth WwTW
Penistone
South Yorkshire**

Client:

ETM

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10156/AB

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1. Introduction

1.1 Purpose of the Method Statement

- 1.1.1 This Method Statement has been prepared to ensure good practice in the protection of trees during the proposed development at land adjacent to **A629 WwTW, Ingbirchworth, Penistone, South Yorkshire.**

1.2 Terms of Reference

- 1.2.1 We are instructed by Kate Williams of ETM to prepare a Method Statement for the proposed development, based on our arboricultural report dated 2nd June 2011 , (JCA Ref: 10156/AB). This survey and report conforms to the most recent specifications outlined in BS 5837: 2005 *Trees in Relation to Construction*.
- 1.2.2 It is proposed to construct a new water treatment works with a new access road joining the A629 Huddersfield Road which is located immediately to the north.
- 1.2.3 The development layout has been provided by our client and is the basis for the Tree Protection Plan at **Appendix 5.**

1.3 Status of the Method Statement

- 1.3.1 This Method Statement should be included as part of the specification and schedule of works issued to the building contractor, and can form part of the contract.
- 1.3.2 This Method Statement should be available on site for inspection by the local authority, contractors and other relevant persons.

2. Tree Works During and Post Construction

2.1 Tree Works During Construction

- 2.1.1 Damage to trees during the construction phase should be entirely prevented by the erection of protective fencing in order to create a Construction Exclusion Zone (CEZ). All persons on site must be aware of limitations that apply within the CEZ (please refer to **Section 3.1.2**).
- 2.1.2 If any trees on site are damaged, it should be immediately reported to JCA to agree on appropriate remedial action. Contact numbers for all parties can be found at **Section 7**.

2.2 Tree Works Post Construction

- 2.2.1 When the construction phase is complete and the protective fencing has been removed some minor remedial works may be required. This may be for aesthetic purposes; to give clearance for new paths or to provide ground clearance for landscaping schemes.
- 2.2.2 No post construction remedial works should be carried out on trees until prior permission has been granted by the Local Planning Authority.

2.3 Recommendations for Tree Works

- 2.3.1 All work must be to BS 3998: 2010 - *Recommendations for tree work* and should be carried out by qualified, experienced and, ideally, Arboricultural Association approved contractors who should be adequately insured.
- 2.3.2 Any defects seen by a contractor or the client that were not apparent to the consultant must be brought to the attention of JCA immediately.
- 2.3.3 No liability can be accepted by JCA in respect of the trees unless the recommendations of this Method Statement are carried out under our supervision.

3. Protective Fencing Prior, During and Post Construction

3.1 Protective Fencing Prior to Construction

- 3.1.1 The erection of the protective fencing will be the very first job on site following completion of the tree works. The protective fencing should protect the Root Protection Areas (RPAs) of the trees (as shown on the Tree Protection Plan at **Appendix 5**). No other work, including soil stripping, excavation, or the bringing onto site of materials or machinery, shall commence until the fencing is installed and inspected. In exceptional circumstances, where construction activity is deemed necessary, a representative from JCA may be informed so that they may be present to oversee such operations.
- 3.1.2 The protective fencing should be constructed in accordance with BS 5837: 2005 *Trees in Relation to Construction*, and should be located as shown on the Tree Protection Plan at **Appendix 5**. The area enclosed by the fencing is referred to as the Construction Exclusion Zone (CEZ); this area should be considered a restricted area. No pedestrians, vehicles, storage of materials, equipment or machinery should be allowed within the CEZ unless specified within this Method Statement.
- 3.1.3 The protective fencing will be appropriate to the degree and proximity of likely construction works. British Standard BS 5837: 2005 recommends a vertical and horizontal, scaffold framework, well braced to resist impacts, with vertical tubes at no more than 3m intervals. These should be driven into the ground. The use of rubber or concrete feet is not acceptable as these will move upon impact. Weld mesh panels should be affixed to this framework with scaffold clamps, see **Appendix 2** for protective fencing details. A similar, sturdy, wooden construction would be acceptable.
- 3.1.4 Once the fencing is erected, waterproof signs with the sentence '*Protected tree zone, no storage or operations within this area*' should be placed at 3m intervals to ensure that all personnel are aware of the restrictions that apply to the fenced-off area. A prepared sign is available at **Appendix 2**.
- 3.1.5 No work shall commence until JCA or the Local Planning Authority are satisfied that the protective fencing meets all requirements and gives the go ahead for construction to commence.

3.2 Protective Fencing During Construction

- 3.2.1 No operations shall take place which require the removal of part of the protective fencing without prior agreement with the Local Planning Authority or JCA.
- 3.2.2 The protective fencing should be inspected for faults or damage by the site manager or other responsible named person on a regular basis and a written record kept. Any faults or defects should be repaired or replaced as soon as is reasonably practicable. Details of the site manager and relevant contact details can be found at **Section 7**.

3.3 Removal of the Protective Fencing

- 3.3.1 When the development phase is complete and the main site machinery has been removed, JCA should be invited to inspect the site to give approval for the removal of protective fencing.
- 3.3.2 When this approval has been given the protective fencing may be dismantled and removed from site.
- 3.3.3 It should be noted the same restrictions apply to all RPAs as the CEZ (please refer to **Section 3.1.2**).

4. Construction Phase

4.1 Movement on Site

- 4.1.1 Restrictions for arboricultural reasons are to be enforced around the site during the construction phase. Therefore, temporary surfaces have been suggested for routes over which site traffic may pass. Site traffic may include both vehicular and pedestrian.
- 4.1.2 Site traffic, including vehicles and machinery together with pedestrians, is expected to pass over the RPA of **T2, T9, T13, T14, T15** and **T18**. In order to avoid possible root damage and the compaction of the soils, the RPAs require robust ground protection which will distribute the vehicle and machinery weight (e.g. interlinking, non-slip metal road plates, placed on top of crushed, bedded down, sandstone).

4.2 Demolition Works

- 4.2.1 It is proposed to demolish/remove the existing water treatment facility located to the east of the surveyed trees, close to the RPA of trees **T2** through to **T17**. This must be carried out in a cautious fashion avoiding the use of heavy machinery where possible. Only hand tools are permitted when removing hard surfaces within the RPAs of trees. Buildings should be collapsed onto their existing footprint in a direction away from the tree, a method referred to as '*top down, pull back*'.

4.3 Ground Level Changes

- 4.3.1 No ground level changes are required within the vicinity of any RPA of any tree on site.

4.4 Location of the Site Compound

- 4.4.1 It is vital that the site compound that typically includes the site office, mess facilities, toilets, storage of materials and parking, is located away from trees. Care should also be taken to prevent contamination with chemical spillages, including petrol, diesel and oils. Cement mixers and toxic materials should not be permitted close to trees.

4.5 Excavations and Services

- 4.5.1 Drainage and utilities are to be directed away from trees. Where this is not possible guidance and methodologies on the installation of underground services whilst minimising damage to tree roots is provided at **Appendix 3**.

4.6 Exposed Roots

- 4.6.1 Any tree roots exposed within the RPA should be left as intact as careful digging with hand tools will allow. Roots can become desiccated quickly and should be covered with a dry cloth to prevent freezing overnight or a wet cloth on warm days.
- 4.6.2 If roots are to be severed then clean, straight cuts must be made, in order to minimise the extent of wounding. If roots with a diameter of greater than 50mm are encountered, then a representative from JCA must first be informed before any further work is undertaken.

4.7 Construction of Hard Surfaces

- 4.7.1 Hard surfaces, in the form of an access walkway, are proposed within the RPA of **T2**, **T9** and **T15**.
- 4.7.2 It is recommended that for **T2**, **T9** and **T15** a minimum dig method of construction be utilised. The finished surface should be porous to allow air and water to reach the tree root, whilst at the same time is able to withstand the load applied. Please refer to **Appendix 4** for suggested construction methods.

4.8 Construction of New Buildings

- 4.8.1 The proposed storm overflow chamber and two manhole covers encroach into the RPA of **T13**, **T15** and **T18**. In order to minimise root damage to these trees, exploratory trial holes should be sunk at critical locations to determine the incidence and extent of any live root material. If significant root material is found, the new constructions must be constructed upon pile and beam foundations, or a similar foundation type, instead of the more traditional trench/strip foundation.
- 4.8.2 The rooting activity at the point where the piles are proposed should be investigated by hand excavation in the presence of an arboricultural consultant. Consultations should first be undertaken with a structural engineer to ensure that this method of construction is viable and to assess the minimum diameter piles that would suffice for the development.

5. Post Construction Phase

5.1 Completion Meeting

- 5.1.1 Upon completion of the works specified above, a JCA consultant will invite the Local Planning Authority representative to meet with them on site to agree on any remedial works required.
- 5.1.2 Any necessary remedial works will be confirmed in writing and should be carried out to BS 3998: 2010 - *Recommendations for tree work*.
- 5.1.3 Due to the large potential penalties for illegally carrying out work to protected trees, JCA recommend that a further check is carried out prior to any works being undertaken post development.

5.2 Post Construction Landscaping

- 5.2.1 Many of the trees on site may be subject to some form of landscaping or seeding beneath their canopy's after the development phase. At this stage the protective fencing will have been removed and the property may be operational.
- 5.2.2 Landscaping works should be carried out in such a way as to avoid ground level changes or deep digging. Tractor mounted rotovation or other mechanised cultivation methods must not be used.
- 5.2.3 No heavy machinery should be brought into the vicinity of retained trees.
- 5.2.4 Herbicides should be appropriate for the purpose and should not be used in such a way as to damage any retained trees or vegetation.

5.3 Mycorrhizal Fungi Inoculation

- 5.3.1 As the proposed development will encroach into the RPA of **T2, T9, T13, T14** and **T15**, possibly resulting in some root loss, it would be prudent to apply *Mycorrhizal fungi* to the soils around these trees after the construction phase is complete.
- 5.3.2 *Mycorrhiza* is a fungus that forms a symbiotic relationship with the tree roots. A tree root associated with *Mycorrhiza* takes up nutrients more effectively than a non associated root. The application of *Mycorrhiza* will therefore be beneficial for **T2, T9, T13, T14** and **T15**.

6. Timescale of Works

6.1.1 The timescale for arboricultural requirements are summarised below:

Timescale	Action	✓	Initial
Stage 1	All requirements listed in the planning consent are approved by the Local Authority planning office.		
Stage 2	Undertake the tree works (as detailed at Appendix 1).		
Stage 3	Install protective fencing around the trees (as detailed at Appendix 2 and as shown on the Tree Protection Plan at Appendix 5).		
Stage 4	Install ground protection within the RPAs of those trees which are not fully protected by the fencing (as detailed in Section 4).		
Stage 5	Have the Local Planning Authority inspect the fencing and ground protection measures prior to any on site construction. Once inspected, the protective fencing and ground protection must not to be moved or breached.		
Stage 6	Undertake the demolition of the existing building/removal of existing hard surfaces (as detailed in Section 4).		
Stage 7	Undertake the construction of the new water treatment works. Pile foundations possibly to be used where the building encroaches into the RPA of T13, T15 and T18 .		
Stage 8	Install permanent hard surfaces whilst undertaking suitable measures to avoid root damage and soil compaction (as detailed in Section 4 and at Appendix 4).		
Stage 9	Following the completion of the construction phase and when all site traffic and machinery has left, the protective fencing and ground protection can be removed.		
Stage 10	Post construction remedial tree works to be undertaken including <i>Mycorrhizal</i> inoculation.		

7. Relevant Contact Details

Contact Name	Organisation/Detail	Contact Number
Andrew Bagshaw FDS (Arboriculture)	JCA Limited	01422 376335
Edward Jowett	Barnsley Metropolitan Borough Council	01226 772557
Kate Williams	ETM	0113 212 2206
Site Manager		

Appendices

Appendix 1: Tree Works Schedule

Tree Ref.	Age Species Latin Name	Height (m)	Crown Height (m)	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
G 1	Mature Elder & Hawthorn <i>Sambucus nigra & Crataegus monogyna</i>	To 4.5	From 0.5	34 & est. 35	2 1 2 1.5	Two specimens. Elder is twin-stemmed at ground level with a balanced crown. and Hawthorn is multi-stemmed at ground level with an unbalanced crown. No evidence of previous pruning. No major visible defects.	No action required.	GOOD	FAIR	LOW	10-20	C
T 2	Mature Sycamore <i>Acer pseudoplatanus</i>	13	0.5 +	39	2.5 2.5 3 2.5	Crown overhangs the boundary. Single stemmed and vertical with a balanced crown. Occasional pruning wounds, (healing well). No major visible defects.	No action required.	GOOD	GOOD	MOD	20-40	B
T 3	Early-mature Beech <i>Fagus sylvatica</i>	12	1 +	27	0 1 5 3	Crown overhangs the boundary. Single stemmed and leaning with an unbalanced crown. Occasional pruning wounds, (healing well). No major visible defects.	No action required.	GOOD	GOOD	MOD	20-40	B
T 4	Mature Sycamore <i>Acer pseudoplatanus</i>	13	1 +	48	5 3 5 4	Crown overhangs the boundary. Single stemmed and vertical with a well-developed crown, good branch junctions throughout. Multiple pruning wounds due to crown lifting, (healing well). No major visible defects. A few stubs noted.	No action required.	GOOD	GOOD	MOD	20-40	B
T 5	Mature Sycamore <i>Acer pseudoplatanus</i>	9	2 +	31	3 1 4 2	Crown overhangs the boundary. Single stemmed and vertical with a balanced crown. Occasional pruning wounds, (healing well). No major visible defects.	No action required.	GOOD	GOOD	MOD	20-40	B
T 6	Mature Sycamore <i>Acer pseudoplatanus</i>	12	1.5 +	46	4 2 7 3	Crown overhangs the boundary. Single stemmed and vertical with a well-developed crown, good branch junctions throughout. Multiple pruning wounds due to crown lifting, (healing well). No major visible defects. Epicormic growth to base.	No action required.	GOOD	GOOD	MOD	20-40	B
T 7	Mature Sycamore <i>Acer pseudoplatanus</i>	12	4 +	32	2 2 3 2	Crown overhangs the boundary. Single stemmed and leaning with a balanced crown. Multiple pruning wounds due to crown lifting, (healing well). No major visible defects. Self righting. Cavity developing at 1.5m. Good formation of wound wood.	No action required.	GOOD	GOOD	MOD	20-40	B
T 8	Early-mature Beech <i>Fagus sylvatica</i>	12	1.5 +	31	0 1.5 4 4	Crown overhangs the boundary. Single stemmed and vertical with an unbalanced crown. Occasional pruning wounds, (healing well). No major visible defects.	No action required.	GOOD	GOOD	MOD	20-40	B
T 9	Mature Sycamore <i>Acer pseudoplatanus</i>	12	0.5 +	52	5 3 7 4	Crown overhangs the boundary. Single stemmed and vertical with a well-developed crown, good branch junctions throughout. Occasional pruning wounds due to crown lifting, (healing well). No major visible defects. One torn branch at 4m. Broken branch at 2m.	Tidy broken branch.	GOOD	GOOD	MOD	20-40	B
T 10	Early-mature Sycamore <i>Acer pseudoplatanus</i>	9	2 +	25	1.5 3 2 1.5	Crown overhangs the boundary. Single stemmed and vertical with a slightly unbalanced crown. Occasional pruning wounds, (healing well). No major visible defects. Cavity developing at 1m.	No action required.	GOOD	GOOD	MOD	20-40	B

Tree Ref.	Age Species Latin Name	Height (m)	Crown Height (m)	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
T 11	Early-mature Silver Birch <i>Betula pendula</i>	9	0.5 +	25	1.5 4 2 2	Crown overhangs the boundary. Single stemmed and vertical with a balanced crown. Occasional pruning wounds, (healing slowly). No major visible defects. Epicormic growth at base.	No action required.	FAIR	GOOD	MOD	10-20	C
T 12	Semi-mature Beech <i>Fagus sylvatica</i>	4.5	0.5	14	3 3 3 2	Crown overhangs the boundary. Single stemmed and vertical with a balanced crown. No evidence of previous pruning. No major visible defects. Suppressed specimen.	No action required.	GOOD	GOOD	LOW	10-20	B
T 13	Mature Sycamore <i>Acer pseudoplatanus</i>	12	2 +	44	2 3 5 3.5	Crown overhangs the boundary. Single stemmed and vertical with a balanced crown. Multiple pruning wounds due to crown lifting, (healing well). No major visible defects. Remove hay bale from around base.	No action required.	GOOD	GOOD	MOD	20-40	B
T 14	Mature Silver Birch <i>Betula pendula</i>	13	0.5	32	1.5 2 2.5 0.5	Crown overhangs the boundary. Single stemmed and vertical with a balanced crown. Multiple pruning wounds due to crown lifting, (healing well). No major visible defects. Remove hay bale from around base.	No action required.	GOOD	GOOD	MOD	20-40	B
T 15	Mature Sycamore <i>Acer pseudoplatanus</i>	13	1 +	52	4.5 3.5 6 3	Crown overhangs the boundary. Single stemmed and vertical with a well-developed crown, good branch junctions throughout. Multiple pruning wounds due to crown lifting, (healing well). No major visible defects. Remove hay bale from around base.	No action required.	GOOD	GOOD	MOD	20-40	B
T 16	Early-mature Sycamore <i>Acer pseudoplatanus</i>	9	2 +	29	2 0 5 2	Crown overhangs the boundary. Single stemmed and vertical with a slightly unbalanced crown. Multiple pruning wounds due to crown lifting, (healing slowly). Large stem removed at 3m, large stub remains. Remove hay bale from around base.	Remove stub.	GOOD	FAIR	MOD	10-20	C
T 17	Mature Sycamore <i>Acer pseudoplatanus</i>	11	4	35	2 2 5 3	Crown overhangs the boundary. Single stemmed and vertical with a balanced crown. Multiple pruning wounds due to crown lifting, (healing well). No major visible defects. Minor deadwood to lower crown. Remove hay bale from around base.	No action required.	GOOD	GOOD	MOD	20-40	B
T 18	Mature Sycamore <i>Acer pseudoplatanus</i>	12	3	52	6 3 5 4	Crown overhangs the boundary. Single stemmed and vertical with a well-developed crown, good branch junctions throughout. Occasional pruning wounds due to crown lifting, (healing well). No major visible defects. Remove hay bale from around base.	No action required.	GOOD	GOOD	MOD	20-40	B

Appendix 2: Protective Fencing

- A2.1 The protective fencing will be appropriate to the degree and proximity of likely construction works. British Standard BS 5837: 2005 recommends a vertical and horizontal, scaffold framework, well braced to resist impacts, with vertical tubes at no more than 3m intervals. These should be driven into the ground. The use of rubber or concrete feet is not acceptable as these will move upon impact. Weld mesh panels should be affixed to this framework with scaffold clamps - See figure 1. A similar, sturdy, wooden construction would be acceptable.

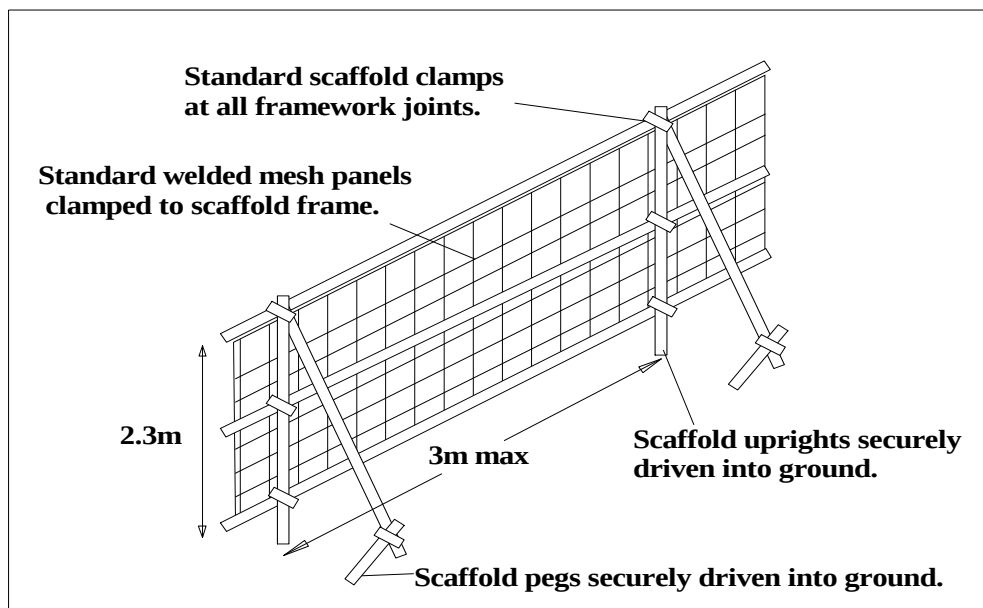


Figure 1: 'Fencing to BS 5837: 2005'.

- A2.2 In certain circumstances, site buildings, such as a Portakabin, may be used in place of protective fencing where space is at a premium. JCA must be consulted before such action is taken.

TREE PROTECTION ZONE

NO STORAGE OR OPERATIONS WITHIN THIS AREA

KEEP OUT

RESTRICTED ACCESS

NO VEHICLES

NO STORAGE OF MATERIALS

REPORT TREE DAMAGE TO JCA LTD ON

01422 376 335

Appendix 3: Utilities and Drainage

- A3.1 Over-ground services should ideally be routed away from areas where they are likely to interfere with the crowns of mature trees. Similarly any landscaping should take account of over-ground services and mature tree size.
- A3.2 *NJUG 10: Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees* is a principle set of guidelines on working near trees for the utilities sector and should be considered when installing services.
- A3.3 New underground services should be grouped together and routed away from Root Protection Areas. Where this is not possible, techniques should be adopted which avoid the severance of many roots. Some examples are listed below:

Radial trenching: This is illustrated in Figure 2. Trenches should be hand-dug and kept as narrow as possible. They should not extend to within 1m from the base of the tree trunk. Exposed roots larger than 25mm in diameter should be retained with their bark intact. A mechanical mole should ideally be used for the section beneath the tree. Our representative should be informed in advance of such operations so that monitoring arrangements can be made.

Mechanical Mole: Pits are excavated beyond the RPA and the mechanical device is sent through the protected area at a depth of no less than 0.6m. Machinery should be selected which can be externally lubricated by water rather than oil etc.

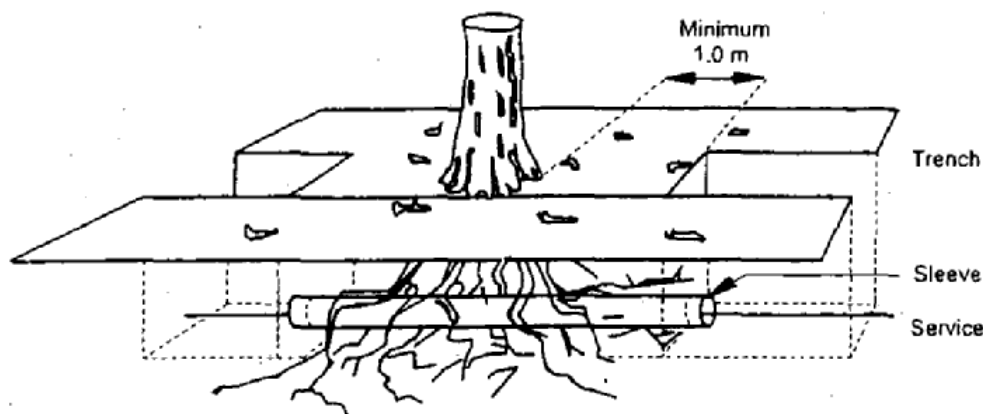


Figure 2: Radial Trenching

Appendix 4: Permanent Hard Surfaces

- A4.1 This Appendix outlines the options available for constructing hard surfaces within the RPA of a tree. Two methods are acceptable; the No-Dig Method and the Minimum Dig Method. The design of such a construction needs to be sensitive to the requirements of tree roots, substantial enough to withstand the expected levels of traffic and practicable in terms of ease of fabrication.
- A4.2 We are not qualified to recommend any particular construction method in terms of durability or structural integrity and any proposed construction should be approved by a qualified structural engineer prior to implementation, however, with regards to trees, we make the following comments:
- Severance of roots and soil compaction should be avoided. However, if it is necessary to sever roots or if they are severed accidentally we must be informed so that we are able to assess and recommend accordingly.
 - Air and water must be able to diffuse into the soil beneath the engineered surface. Toxic substances which could leach into the ground must be avoided, as should substances which affect the pH value of the soil, for example limestone.
- A4.3 **The No-Dig Method:** This involves construction of a surface with no excavation, soil stripping or site grading (see Figure 3). All construction takes place above ground level. Preparation is as follows:
- A4.4 Ground vegetation is killed using a suitable herbicide. Care must be taken to select a herbicide which does not damage the tree roots within the treated area. Once the vegetation has died, the dead organic matter should be removed. This helps prevent the future build up of anaerobic conditions or settlement due to decomposition.

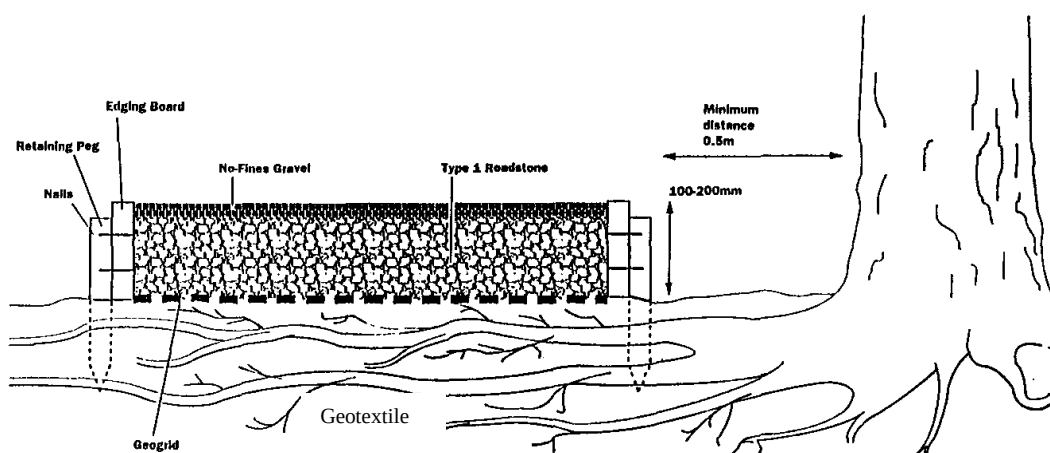


Figure 3. A light duty drive constructed using the *No Dig Method*.

Appendix 4: Permanent Hard Surfaces (Continued)

- A4.5 **The Minimum Dig Method:** It is acceptable to excavate a small amount of soil where site conditions allow (see Figure 4). The relative distance from the trees to the surface, and the size and vigour of the trees must be considered.
- A4.6 Preparation should be the same as for the *No Dig Method*. Then layers of soil should then be removed carefully and in the presence of an arboricultural consultant. No more than 10cm of soil should be removed before the ground is inspected by the consultant. Depending on the presence of roots it may then be acceptable to remove a further 10cm of soil.

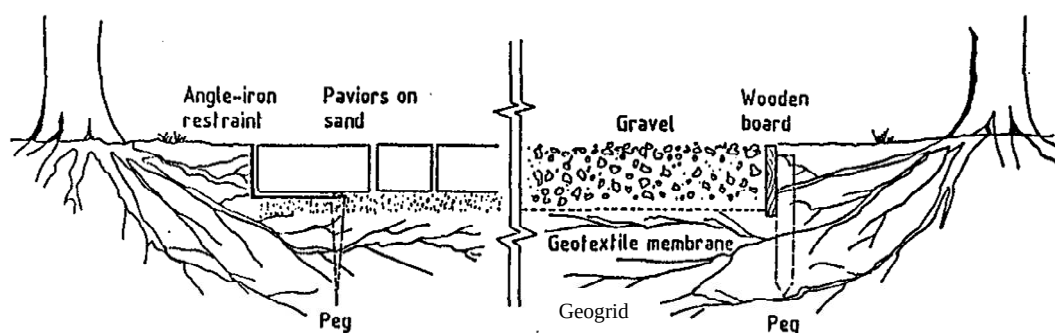


Figure 4. A light duty drive constructed using the *Minimum Dig Method*.

Appendix 5: Tree Protection Plan

Standard scaffold clamps at all framework joints

Standard welded mesh panels clamped to scaffold frame

2.3 metres

3 metres maximum

Scaffold uprights securely driven into the ground

Scaffold pegs securely driven into the ground

The diagram illustrates the installation of a Cellular Confinement System (CCS) in a road embankment. A cross-section shows a road surface (Finished Surface) above a layer of Cellular Confinement System (CCS). The CCS is a rectangular block with a textured, cellular interior and a dashed line representing a Geotextile Membrane at its base. The system is secured by a Sharp Sand layer and a Peg. A dimension line indicates a Minimum Distance of 0.5 metres between the CCS and the edge of the embankment. Another dimension line shows the height of the CCS as 100-300mm. The embankment below the CCS is composed of soil and roots, with a Peg driven into it to anchor the system.

The diagram illustrates two cross-sectional views of road construction. The left view shows a road with 'Angle-iron Restraint' and 'Pavions on Sand'. The right view shows a road with 'Gravel', 'Wooden Board', and 'Geotextile Membrane'. Both views show a 'Peg' at the bottom.

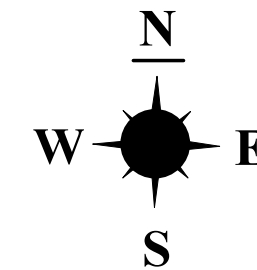
Diagram illustrating the RPA (Root Protection Area) for a tree. The diagram shows a tree trunk and its root system. A horizontal line marks the 'Edge of RPA'. A vertical line indicates the 'Protective fencing'. The area between the tree and the fence is labeled 'Ground levels undisturbed and protected by butted scaffold boards over a compressible layer (eg woodchip) and geotextile membrane'. The area beyond the fence is labeled 'Area of construction activity'.

Protective fencing

Ground levels undisturbed and protected by butted scaffold boards over a compressible layer (eg woodchip) and geotextile membrane

Platform level at first lift of brickwork

Area of construction activity



TITLE: A629 Huddersfield Road WwtW, Ingbirchworth, Penistone, South Yorkshire. JCA Ref: 10156/AB		
SCALE: 1:500		PAPER SIZE : A2
DRAWN BY: AB	APPROVED BY: PH	SURVEYED BY: A

	TREE TO BE RETAINED
	TREES TO BE REMOVED
	CENTRE OF TREE TO BE RETAINED
	CENTRE OF TREE TO BE REMOVED
	ROOT PROTECTION AREA (RPA)
	AREA OF RPA NOT PROTECTED BY FENCING. NO MATERIALS SHOULD BE STORED HERE. GROUND COMPACTION MUST BE AVOIDED. SPECIAL SURFACES CONSTRUCTION TECHNIQUES MUST BE CONSIDERED WHEN WORKING/CONSTRUCTING WITHIN THESE AREAS AND ONLY HAND EXCAVATIONS ARE PERMITTED
	PROTECTIVE FENCE LINE (CEZ)
	PROPOSED NEW DEVELOPMENT
	PROPOSED NEW PLANTING

THE ROOT PROTECTION AREA (RPA) INDICATES THE LIKELY ROOTING ZONE OF A TREE. THE RPA SHOULD IDEALLY REMAIN UNDISTURBED IF A TREE IS TO BE RETAINED.

THE DEVELOPMENT PROPOSALS SHOULD THEREFORE BE DESIGNED TO AVOID THE RPA OF ANY TREE WHICH IS TO BE RETAINED.

IF IT IS NECESSARY FOR THE DEVELOPMENT TO ENCROACH INTO THE RPA OF A TREE WHICH IS TO BE RETAINED THEN SPECIALIST CONSTRUCTION TECHNIQUES AND MATERIALS MUST BE CONSIDERED.

I hope that this report provides all the necessary information, but should any further advice be needed please do not hesitate to contact the author.

Signed

.....

Andrew Bagshaw FDS (Arboriculture).

3rd June 2011

For and on behalf of **JCA Ltd**

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