

Method Statement for Tree Protection Measures

PROJECT: Land rear of adjacent to 17 Kingsmead, Cuffley EN6 4AN

CLIENT: Mr G Frendo

1.1 Brief

Provide protective measures specification for trees to be retained using the guidelines and principles prescribed in BS5837: 2012 'trees in relation to design, demolition and construction'.

1.2 Protective Fencing and Site Supervision

An important factor in providing protection for the trees during the construction works is the chronological order in which development tasks are undertaken. Before work continues on site, the following issues will be addressed and submitted to the council for approval.

- A suitably qualified arborist will be retained to oversee tree protection measures where required and liaise with the tree officer as required. The contact information of this arborist will be made available to the council tree officer prior to works starting on site.
- The new surface within the RPA of the remaining trees will be of a 'No Dig' construction design and all levels considered and will tie in to the overall layout.
- The foundation of the buildings will be suitable to address any potential influence the trees may have on it. Location of services and details of their installation will have been provided, with any arboricultural protection measures or methodologies of working programmed in the works schedule and approved by the council.
- A pre- commencement meeting with a suitably qualified arborist will take place with the site manager and other relevant site personnel, to debrief them on the importance of the protection measures and to assist in setting up of the protection fencing etc. before work commences on site.
- The arboricultural site supervision schedule will be compiled at the pre commencement meeting and will be the responsibility of the site manager to ensure that it is carried out and maintained for the duration of the works.

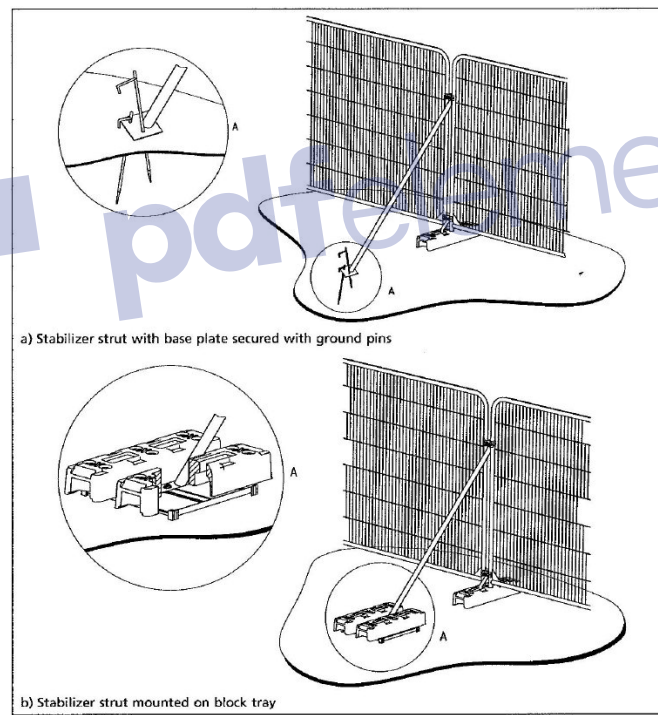
1.2.1

Protective fencing will be as shown in **diagram 1** or similar that is fit for purpose will be placed in the locations as shown on the tree protection plan in **Appendix 5**, prior to works commencing on site. Any tree surgery works required will have taken place prior to the fencing being erected. Once erected the fencing will not be removed unless permission has been given by the tree officer or the works on site have been completed. The informatives provided will be attached to the fencing to highlight its importance at a height of 1.5m and at 5m intervals along the line of fencing, or in locations that can demonstrate they are clearly visible to identify the purpose of the fencing in relation to the project.

1.2.2

If access is required within the RPA, ground protection will be installed as set out in 1.7 before access into the protected area is allowed.

Diagram 1



1.2.3

A pre commencement inspection by the supervising arborist will take place to ensure the protective measures are understood and a schedule of arboricultural site monitoring is formulated at the start of the project, this will consist of a visit by a suitably qualified arborist on a monthly basis, or at times when works to undertake excavations in the RPA or other periods where the tree is more likely to be at risk of damage. A log of these visits and any actions required will be kept and made available to the council on request. **It will be the responsibility of the site manager or other named person to ensure this is maintained for the duration of the project.**

1.2.4

The placing of tree protection measures works within the construction timescale will not be altered and it is re-emphasised that this is to take place prior to any other activities.

1.2.5

All personnel inducted on site will be made aware of the tree protection measures and will be responsible for their own actions in maintaining these and ensuring that they do not cause any damage to the trees.

1.3 Forbidden activities within RPA

1.3.1 Within the root protection area the following activities will be prohibited, unless the local authority in writing grants specific permission:

No storage of chemicals or other substances likely to leach and cause harm to the trees to be stored.

No storage of heavy plant or materials likely to cause further soil compaction.

No ground disturbance works, apart from what has been approved by any planning permissions or specifically from the council.

No activities that could indirectly affect the trees such as bonfires etc.

1.3.2 No ground disturbance work apart from those granted in the planning permission is to be undertaken within the confines of the RPA without the written permission of the local authority.

The protected area is not to be breached at any time, unless the local authority has granted permission and a qualified arborist has been consulted and supervises any work activities that need to take place.

1.4 Storage of chemicals / mixing of materials

1.4.1 Storage of chemicals will be placed in a sealed bund / area, with no discharge allowed onto the ground or watercourses. The area containing these materials will have an impervious surface and stored **if possible** 10m away from the RPA. If accidental spillage of chemicals or other damage to the trees takes place the local authority is to be notified as soon as possible and a suitably qualified arborist is consulted as to the best actions to take to mitigate any damage that may have occurred as a result of the accident and these works to be undertaken to mitigate the situation as soon as possible.

1.5 Works in the RPA

1.5.1 **No excavation / ground disturbance works will take place within the RPA unless permission is granted by the local authority to do so.**

1.5.2 **If excavation works are required in this protected area, the arboricultural hand dig method statement provided will be adhered to, and if allowed by the tree officer, the works can continue using a mechanical diggers etc. The supervising arborist will be present at all times. It is reiterated that the consent of the LPA (local planning authority) is required prior to any excavation / ground disturbance works taking place in the RPA**

1.5.3 A suitably qualified arborist will be present to ensure any roots encountered are not damaged and any exposed roots are covered and treated accordingly to prevent stress to the tree(s).

1.5.4 The new drive surface within the RPA of T4 will be of a 'No Dig' construction design. An example is shown in **Diagram 2** below, with a generic method statement for installation. A suitably qualified engineer would need to review this and provide an installation method statement that demonstrates that every effort is made to protect the trees.

1.5.5 Attention to the edging detail of this surface in the confines of the RPA will be given ensuring no excavation works are required if possible to install them within this protected area. If kerb edgings do require excavation works to install them, hand dug assessment trenches will be opened to the depth required to install them, and only with the permission of the tree officer. Alternatively a method which does not require excavation to install kerb edgings will be provided and approved.

1.5.6 If significant roots are discovered, the project architect will provide a design to prevent conflict with roots where possible or the supervising arborist will advise on root pruning works.

- 1.5.7 Where fence posts are proposed to be installed in the RPA, the holes will be dug by hand in accordance with the hand dig method statement provided. If when opening the holes roots are discovered, the post hole will be moved to prevent conflict with roots.
- 1.5.8 All post holes will be sheathed with a non-porous material to prevent leaching of cement etc. into the soil.
- 1.5.9 Where hard surfacing is present within or directly adjacent to the RPA that requires removal, this will be carefully broken up using a hand operated tool such as a kango or similar device. If felt appropriate by the supervising arborist a mechanical digger can be used by a competent operator. This work will be undertaken with the supervising arborist present.

1.6 Material storage / site parking

- 1.6.1 Particular attention will be made to the type of materials to be stored and the type of machinery needed to move them, ensuring that sufficient protection measures in accordance with this method statement and space are provided to prevent damage to the trees to remain. The details outlined in 1.4 above will be adhered to.
- 1.6.2 **At no point will materials be allowed to be stored in the RPA or any area where the tree could be impacted. This will be strictly policed by the site manager.**

1.7 Ground Protection

- 1.7.1 If access across the RPA is required that is not currently covered in hard surfacing, the following ground protection measures will be implemented as required.

For pedestrian traffic:

A single thickness of scaffold boards placed on top of a scaffold frame so as to form a suspended walkway (similar to diagram 2), or boards laid on to a geotextile membrane with a layer of wood chips 100mm in thickness.

For pedestrian operated plant up to 2 tonnes:

Interlinked ground protection boards of plywood or similar at least 2.5cm thick, laid onto a geotextile membrane on a bed of wood chip 150mm in depth.

For wheeled or tracked traffic exceeding 2 tonnes gross weight:

Metal tracking designed and fit for purpose, pre-cast concrete slabs or similar, laid to an engineering specification on a compression resistant layer e.g. wood

chips that will likely spread the weight of the load and prevent compression of the soil underneath.

1.7.2 AT NO POINT WILL THE GROUND WITHIN THE RPA BE LEFT UNPROTECTED IF ACCESS IS REQUIRED IN THIS AREA.

1.8 Completion

1.8.1 Once all of the construction activities on the site have been completed and a suitably qualified arborist will assess the condition of the trees and liaise with the local authority accordingly if any works are considered necessary. Any proposed landscaping works will be discussed with the supervising arborist to ensure there could be no detrimental impact on the tree.



2 HAND DIG METHOD STATEMENT

PROJECT: 16 High Street, Halstead, Essex

- 2.1** The area to be excavated will be inspected by a professional arborist to assess the likely proximity of root activity and concentration prior to the commencement of any works. All relevant authorized personnel to be informed and required permissions gained before work commences.
- 2.2** If hand digging is not possible/practicable a method of excavation will be agreed and undertaken by a suitably qualified person for example air spading or a competent digger operator etc., in the presence of a qualified arborist.
- 2.3** During excavation great care will be taken to minimize damage to retained roots, including the bark around the roots.
- 2.4** All roots greater than 25mm diameter should be retained and worked around. Where clumps of smaller roots (including fibrous roots) are found these are to be retained.
- 2.5** Roots with a diameter in excess of 25mm must not be severed without permission from an Arborist.
- 2.6** If roots are encountered, the Arborist must conduct the root pruning and inform the relevant person to suggest mitigation works to the tree(s) if required. If severance is unavoidable roots must be cut back using a sharp tool, leaving the smallest wound possible.
- 2.7** If there is a possibility of infection being passed from one specimen to another, tools will be sterilized in an appropriate method to reduce the risk of cross contamination.
- 2.8** When backfilling an inert granular material mixed with top soil or sharp sand (not builder's sand) is to be used around the retained roots. Unless an alternative backfill substrate has been agreed with in writing by the appropriate authorized personnel.
- 2.9** If roots are to be left exposed for a period of longer than 1 hour (dependent on weather conditions), then a covering of dampened Hessian or similar material is to be used to cover the exposed roots. Any changes to this practice are to be authorized by a qualified arborist.
- 2.10** All levels are to be returned to the original plane after any excavation, unless specific design and relevant permission has been authorized.
- 2.11** A qualified Arborist is to be on site to supervise during any operations within the protection zone.

Diagram 2

BODCELL™ Cellular Confinement

Bodcell™ Cellular Confinement System

Bodcell™ is a cellular confinement system for slope protection and stabilisation applications.

Manufactured from dark grey PE/PP, the material is permeable and allows water to flow between cells encouraging drainage and vegetation growth. The cell structure confines soil or aggregate material, greatly improving resistance to erosive forces such as rainwater run-off on steep or unstable slopes, or slopes exposed to severe hydraulic or mechanical stresses.

A variety of infills can be used depending on the application, providing a means of fully vegetating slope surfaces where this would not otherwise be possible. Seeded topsoil provides protection for less exposed areas, small shrubs offer improved protection, whilst granular infill offers the highest protection. The cellular system is normally suitable for slopes up to 45 deg (1:1 Slope).

Bodcell™ is supplied in flat panel form and expanded on site to the desired dimensions and shapes. The panels are flexible enough to go round trees and other obstacles. The cellular structure should be fixed on every single cell on the perimeter and at 1m centres throughout using fixing U-pins. Bodcell™ is also suitable for ground stabilisation and can be used as a tree root protection system.

U-Pins

Fixing U-pins can be used to fix the perimeter of cell and 1m centres throughout.

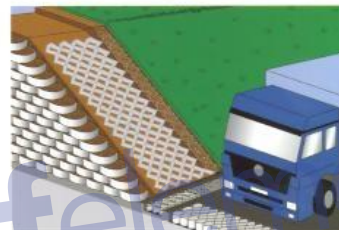
Technical Specifications

LENGTH	WIDTH	DIAMETER	MATERIAL	PACK SIZE	PART NO	LIST PRICE per pack £
550mm	100mm	8mm	Steel Rod	100	051038	80.00

Technical Specifications

PRODUCT REFERENCE	PANEL SIZE	CELL DIAMETER	CELL DEPTH	SLOPE APPLICATION MAXIMUM SLOPE ANGLE	GROUND REINFORCEMENT APPLICATION - LOAD CAPACITY	MATERIAL	PART NO	LIST PRICE per panel £
Bodcell 250/100	5m x 7m	250mm	100mm	1:1 Slope (45°)	Pedestrian Loads	PP/PE	051397	250.00
Bodcell 250/150	5m x 7m	250mm	150mm	1:1 Slope (45°)	Light Vehicles	PP/PE	051403	345.00
Bodcell 350/100	5m x 7m	350mm	100mm	1:2 Slope	N/A	PP/PE	051311	155.00
Bodcell 350/150	5m x 7m	350mm	150mm	1:2 Slope	N/A	PP/PE	051410	225.00
Bodcell 220/200	6m x 3m	220mm	200mm	N/A	Heavy Vehicles	PP/PE	051380	275.00

- Cell wall tensile strength: 20.7kN/m
- Cell wall permeability: 45 l/m.sec
- Material : 70% Polypropylene, 30% Polyethylene



Applications include slope protection and ground reinforcement.



EROSION CONTROL

METHOD STATEMENT FOR 'NO DIG' CONSTRUCTION

Incorporating the principles set out in Arboricultural Practice Note 12 for Hard surfaces Within the Root Protection Area of Trees.

Prior to commencing any construction on site, erect protective fencing around trees to form an exclusion zone (see attached tree constraints plan). This will ensure that roots will not be severed during the construction work and the soil in the area of the exclusion zone will not be compacted, enabling oxygen to continue to diffuse into the soil beneath.

Construction of the surface should be undertaken in dry weather between May and October when the ground is driest and least prone to compaction.

- 3.1** Kill ground vegetation where hard surface is to be placed using a translocated herbicide such as glyphosate, ensuring that the selected herbicide does not damage the root of the tree/s below the new surface.
- 3.2** Remove the dead or organic material from the site and ensure that large stones and shrub stumps are removed from the proposed route.
- 3.3** Any stumps should be ground rather than excavated to minimise soil disturbance.
- 3.4** The resulting hollows and any other holes in the path should be filled with sharp sand.
- 3.5** Lay geotextile matting across the full width of the access. This will prevent the intrusion of roots into the sub-base whilst still allowing nutrients and gaseous exchange.
- 3.6** Lay a cellular confinement system suitable to support the loads needed by the surface. This can be cut on site to the length, width and profile of the surface required.
- 3.7** The surface is to be supported against the geo web matting by 150 x 20 mm tannalized softwood boarding and 200mm long tannalized soft wood pegs, driven into the ground at 1500 mm centres
- 3.8** Using hand shovels; carefully push 100 mm gravel chippings (no fines) into the Geo matting to form an aggregate sub-base.

- 3.9** The type 1 chippings should be placed at one end of the matting and pushed/spread across the matt to prevent compacting the soil, working on either side of the surface.
- 3.10** Carefully compact the sub base by hand to ensure binding with the geogrid and to minimise future rutting.
- 3.11** Lay second layer of a geotextile matting across the full width of the path. This will prevent the intrusion of fines (small pieces of gravel which can be compacted and restrict or close air pores) into the gravel chippings.
- 3.12** Add layer of 'no fines, sharp sand' and compact if using pavers as surface treatment. Again, care is to be taken when compacting takes place and by hand.
- 3.13** Place proposed surface treatment on top of the compacted sub-base to form the finished surface to the path and bank up the edging with topsoil, which is to be grass seeded in spring/autumn. This will form a gentle slope from the edging back onto the existing ground level.

TREE PROTECTION ZONE

**DO NOT CROSS WITHOUT
PERMISSION**

**BREACHING THIS BARRIER CAN
RESULT IN THE FOLLOWING:**

- **SHUT DOWN OF THE JOB**
- **FINANCIAL IMPLICATIONS**
- **CRIMINAL PROCEEDINGS**

ARBORICULTURAL SITE CONSIDERATIONS

THIS NOTICE IS TO BE DISPLAYED IN THE SITE OFFICE OR A SUITABLE LOCATION WHERE IT IS CLEARLY VISIBLE AND ISSUED TO ALL PERSONNEL INDUCTED ONTO SITE

The following site considerations must be observed at all times during the development process, from site preparations through to completion.

- ❖ The protected area of the RPA must be regarded as sacrosanct and not breached except where to implement the planning permission granted, without prior consultation with either the local planning authority or the supervising arborist.
- ❖ Ground protection must not be lifted or removed without prior consultation with either the local planning authority or the supervising arborist.
- ❖ Damage caused to ground protection must be reported to the site manager to ensure suitable repair or actions are taken.
- ❖ No materials, chemicals, machinery or vehicles to be stored within the RPA (root protection area) as defined on the tree protection plan and on site by fencing and ground protection.
- ❖ No materials etc. must be rested against or machinery chained to trees.
- ❖ No pruning of trees may be undertaken by anyone other than a qualified arborist and approved by the supervising arborist and local authority tree officer.
- ❖ Any physical damage caused to a tree to be retained must be reported to the site manager immediately so that suitable remedial works can be commissioned without delay.
- ❖ Builder's sand (which contains high levels of salt) must not be used to back fill excavations within or in close proximity to tree roots, as it has a toxic effect and can cause root desiccation. Sharp sand must be used under such circumstances.
- ❖ Soil contaminants such as concrete mixings, diesel oil and vehicle washings must be kept suitably contained, preferably within bunded areas. Any spillages within 2m of a fenced area must be reported to the site manager and supervising arborist immediately so that suitable mitigation works can be commissioned.
- ❖ Fires must not be lit in positions where their flames can extend to within 5m of foliage, branches or trunks. Wind direction and size of fires will impact on this.
- ❖ Notice boards, telephone cables or other services etc. must not be attached to any part of a tree.

Remember the tree officer can turn up at any time or neighbours may report any poor practice or threats to the trees.

LIMITATIONS AND QUALIFICATIONS



LIMITATIONS AND QUALIFICATIONS

Unless specifically mentioned the report will only be concerned with ground inspections. No below ground inspections will be carried out without prior confirmation from the client that such works should be undertaken. This report is for the purposes of identifying the constraints of trees in relation to development and not a health and safety assessment of the trees. A cursory assessment of the trees health and condition will be recorded, but this is not to be taken as a detailed assessment of its structural condition, health and management recommendations in relation to this. A separate tree inspection regime focusing on these aspects will need to be undertaken if this is required.

The validity, accuracy and findings of this report will be directly related to the accuracy of the information made available during the inspection process. No checking of independent data will be undertaken, Andrew Day Arboricultural Consultancy will not be responsible for the recommendations within this report where essential data are not made available, or are inaccurate.

This report will remain valid for one year from the date of inspection, but will become invalid if any tree works not recommended within the report are undertaken, soil levels around the trees are altered in any way and if any building works which were not disclosed during the inspection are undertaken. If extreme weather changes occur such as heavy winds, snow etc., the trees will need to be re-inspected to ensure their condition has not been affected or has altered from the initial inspection details obtained.

If any of the above occurs then it is strongly recommended that a new tree inspection is carried out.

It will be appreciated, and deemed to be accepted by the client that the formulation of the recommendations for the management of the trees will be guided by the following:

1. The need to avoid reasonable foreseeable damage
2. The arboricultural considerations – Tree safety, good Arboricultural practice and aesthetics.

The client is deemed to have accepted the limitation placed on the recommendations by the sources quoted in the attached report. Where time constraints or the client limits sources, this may lead to an incomplete quantification of the risk.

TREE PROTECTION PLAN

