ANDREW DAY ARBORICULTURAL CONSULTANCY LTD

REDUCING COSTS BY DELIVERING PRACTICAL SOLUTIONS

ARBORICULTURAL METHOD STATEMENT FOR TREE PROTECTION

87 Rayleigh Avenue
Rayleigh
Essex

9th October 2009

Prepared by: Andrew Day HND Arb. M.Arbor.A, CEnv

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Creg Na Baa, Brook Road, Tillingham, Essex CM0 7SG

Scope

The purpose of this method statement is to provide advice and practical measures to prevent unnecessary damage occurring to trees to be retained during the construction of the new dwellings.

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Appendices

1 INTRODUCTION

1.1 Brief:

To provide a method statement for tree protection measures to be instigated for trees to be retained on site during construction works.

The site was visited on 6th October 2009, the weather was clear, dry with average visibility, but information relating to the dimensions of the tree and other data is taken from the accompanying arboricultural report ref:09993sv/CJO/0901.

1.2 Qualifications and experience:

I have based this report on my site observations and the provided information, and I have come to conclusions in the light of my experience. I have experience and qualifications in arboriculture and list the details in **Appendix 1.**

1.3 Documents and information provided:

A topographical survey of the site.

A plan showing the proposed layout of the site. Job No: 9.04, dwg No 01r2

A copy of the Arboricultural Report ref:09993sv/CJO/0901

1.4 Relevant background information:

Some of the trees are the subjects of Tree preservation Orders in particular T16 (Sweet Chestnut) and T17 (Holly) which are close to proposed development avtivity.

1.5 Scope of this report:

This method statement only concerns trees identified for retention by the arboricultural report and the proposed layout provided.

2 APPRAISAL

2.1 Condition of tree:

From my initial observations on site I have no reason to disagree with the comments and data relating to the trees included within the arboricultural report.

2.2 Schedule of Tree Works

The following trees will need to be removed to facilitate the development:

T2, T3, T10, T19 – T21, T39 – T42

3 OTHER CONSIDERATIONS

3.1 Trees subject to statutory controls:

Two of the trees (T16 & T17) are the subjects of a preservation order and permission apart from certain exemptions will be required prior to any works being undertaken to them.

The works specified within the report are considered to be necessary in order to implement the proposed development and should be acceptable to the local authority. However, tree owners should appreciate that they may take an alternative point of view and have the option to refuse consent.

Andrew Day HND Arb M.Arbor. A C.Env
For Andrew Day Arboricultural Consultancy Ltd.

Brief qualifications and experience of Andrew Day

I hold a Higher National Diploma in Arboriculture. I have been working in the field of arboriculture for approximately 10 years, spending time as a contracting arborist undertaking all aspects of practical arboriculture both in the UK and Europe. I have also worked within local government as a tree officer working for a variety of local authorities. I have a broad experience of both the practical and theoretical aspects of arboriculture having worked within the public and private sector. I am currently a consulting arborist for Andrew Day Arboricultural Consultancy.

1. Qualifications:

Higher National Diploma in Arboriculture (1996)

NPTC (National Proficiency Training Council) units 20,21 and 22

Lantra professional tree Inspection certificate

2. Practical experience:

Prior to establishing my company I worked for a private Arboriculture company for three years undertaking many practical aspects of Arboriculture. I moved on from this to become a local authority tree officer for five years, my duties included consultation on planning matters with regard to trees, advice to the general public, managing the council's tree stock and liaising with other professionals on Arboricultural related issue. I was approached by EssexArb an established tree contracting and consulting company in Essex to develop and run their consultancy department as their principle consultant for three years.

SITE PHOTOGRAPHS

View of protected tree T16

View of Protected tree T17

Showing T1 – T3

Showing T14, T15 & T35

SITE SPECIFIC INFORMATION

Protective Fencing Method Statement

Root Protection detail

No Dig Method Statement

Notices for Protective Fencing

PROJECT: **87 Rayleigh Avenue, Rayleigh, Essex**

CLIENT: **Martin Day**

1.1 Brief

Provide protective measures specification for the trees to be retained on site and using the guidelines and principles prescribed in BS5837: 2005 'trees in relation to construction'.

1.2 Protective Fencing and Site Supervision

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

- The protective fencing will be placed around the perimeter of the RPA or as close as practically possible to prevent access or storage of materials in this sacrosanct area.

- An arborist will inspect the fencing to ensure that it is in the correct location and adequately installed. Key site personnel will also be briefed about the need for the fencing and how the trees could be affected by their actions.

- Once the tree protection requirements have been installed a construction timetable will be compiled indicating the key construction phases that are to remain on the project. This will be used to manage activities on site to prevent excessive and unnecessary actions that could affect the rooting zone and contribute to damage to the tree. This timetable will also be used to coordinate site supervision by an arborist at these key stages. A log of these visits and any mitigation works such as root pruning and correct work practices to ensure tree protection are being carried out. Details of these visits will be recorded and available for viewing by the local authority at any time.

The placing of tree protection measures has been noted by the contractor and will be instigate immediately.

A temporary protective fencing line will be put in place as close as practically possible around the trees during the demolition work if it is not possible to implement the correct line of protective fencing shown on the plan in **APPENDIX 5**. If a 360 digger is to be used, this will sit outside of the RPA and pull the building in on itself if practically possible and away from the trees. A competent operator will be used to perform these actions and under the supervision of an arborist. If collision damage to the trees occurs the local authority will be informed immediately and mitigation works agreed and implemented as soon as practically possible. If dust accumulates on the trees this is to be washed of with clean water as soon as possible.

Ground protection will be placed where access is required across the RPA of any retained tree, this will consist of scaffold boards or plywood placed on a geotextile membrane with a layer of sharpe sand or wood chip 30cm – 45cm thick, to prevent ground compaction from pedestrian or light vehicle traffic. If heavier vehicles are required a method of protection suitable to disperse the weight of the load required will be provided, this will be agreed with the local authority before access is permitted.

The property has an existing in/out driveway and track to the east side of the property, at no point will this be taken up by mechanical means where it breaches the RPA of any trees, unless hand excavation shows no significant roots will be affect and an arborist is on site to supervise the works.

Where new hard surfacing is to be laid within the RPA, a 'no dig' method of construction will be used incorporating a cellular confinement system. Please refer to APPENDIX **3** for a generic method statement for installation of such a system and **Diagram 3** for an example. Please note, that an engineer will need to approve an end design capable of supporting the load required to travel over it and ensure that it is sufficient to prevent soil compaction in the protected area.

1.3 Table 1 shows the root protection area as designated in the guidelines of BS5837 2005.

Table 1

Area of root protection required in accordance with BS5837 2005 for the trees to be retained

Tree No	Root protection Area (m2)	Circle Radius (m)	Square Sides (m)
T1	52.29	4.08	7.23
T2	0	0	0
T4	32.97	3.24	5.74
T5	10.17	1.80	3.19
T6	11.58	1.92	3.40
T7	30.58	3.12	5.53
T8	28.27	3.00	5.31
T9	55.41	4.20	7.44
T10	n/a	n/a	n/a
T16	83.64	5.16	9.14
T17	83.64	5.16	9.14
T18	14.65	2.16	3.82
T32	58.62	4.32	7.65
T33	28.27	3.00	5.31
T34	28.27	3.00	5.31

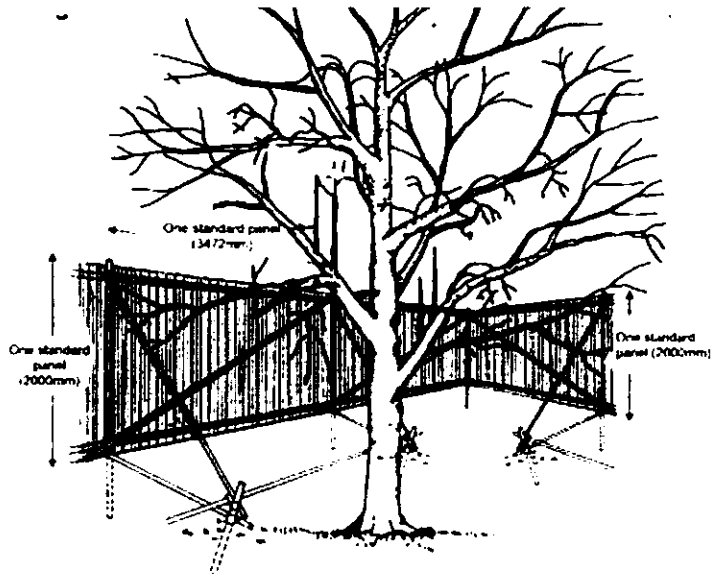
Note: where no information provided within the arboricultural report relating to DBH, I have estimated these from my visits to site to enable a protection area to be formulated.

1.4 Protective fencing shall be in accordance with industry best practice BS5837 2005 and placed in the locations as shown on the tree protection plan in **Appendix 5**.

The informatives provided will be placed on the fencing to reiterate the reason for its presence, and placed at a height of approximately 1.5m on all sides of the fencing. Fencing is to be of the herras style and then secured in place by scaffold supports.

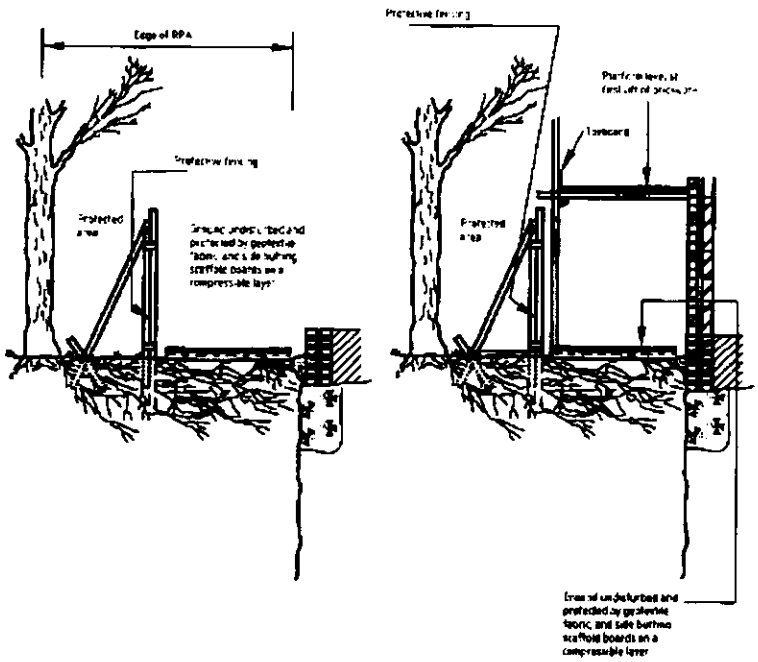
Diagram 1 following illustrates how the scaffold frame will be erected. Where space constraints are limited, the scaffold is to be incorporated as part of the protective fencing and low lifts installed in the scaffolding where pedestrian access is required within the RPA to prevent ground compaction. This will be placed onto scaffold boards to prevent the poles from sinking into the soil and damaging any roots that might be present, see **Diagram 2** following.

Diagram 1



SCAFFOLD FRAMEWORK REQUIRED TO BRACE HERAS TYPE PANELS

Diagram 2



1.5 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

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

1.6 Storage of chemicals will be placed in a sealed 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, an 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.

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

1.8 Should the line of fencing need to be altered in any way or replaced by alternative materials then written permission is sought from the local authority, and a qualified arborist is to be consulted and the appropriate action taken in accordance with this advice.

1.9 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 trees in close proximity. The site manager will provide the precise location of these areas. Prior to any changes to these locations an arborist will be consulted and agreed by the local authority.

1.11 Where machinery or vehicles are required to access the RPA, a tracking material suitable to disperse the weight of machinery used will be laid down to prevent compaction of the soil. Any tree surgery works to be undertaken, it will be in accordance with BS3998 'Recommendations for Tree Works'.

1.12 Protective fencing will only be removed once all of the construction activities on the site have been completed and a qualified arborist has assed the trees and any mitigation works deemed necessary have been carried out. If de-compaction of the soil with the RPA is required, this will be done by lightly forking the soil over by hand. Any laying of turf or other landscape works will be undertaken by hand using good quality top soil to ascertain levels if needed.

3 HAND DIG METHOD STATEMENT

PROJECT: 87 Rayleigh Avenue, Rayleigh, Essex

3.1 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.

3.2 If hand digging is not possible a method of excavation will be agreed and undertaken by a suitably qualified person for example a competent digger operator etc, in the presence of a qualified arborist.

3.3 During excavation great care will be taken to minimize damage to retained roots, including the bark around the roots.

3.4 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.

3.5 Roots with a diameter in excess of 25mm must not be severed without permission from an Arboriculturist.

3.6 If roots are encountered, the Arboriculturist 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.

3.7 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.

3.8 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.

3.9 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.

3.10 All levels are to be returned to the original plane l after any excavation, unless specific design and relevant permission has been authorized.

3.11 A qualified Arboriculturist is to be on site to supervise during any operations within the protection zone.

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. Diagram 3 shows an example of a cellular confinment system.

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

2.1 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.

2.2 Remove the dead or organic material from the site and ensure that large stones and shrub stumps are removed from the proposed route.

2.3 Any stumps should be ground rather than excavated to minimise soil disturbance.

2.4 The resulting hollows and any other holes in the path should be filled with sharp sand.

2.5 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.

2.6 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.

2.7 The surface is to be supported against the geo web matting by 150 x 20 mm tantalized softwood boarding and 200mm long tantalized soft wood pegs, driven into the ground at 1500 mm centres

2.8 Using hand shovels; carefully push 100 mm gravel chippings (no fines) into the Geo matting to form an aggregate sub-base.

2.9 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.

2.10 Carefully compact the sub base by hand to ensure binding with the geogrid and to minimise future rutting.

2.11 Lay second layer of a geotextile matting across the full width of the path. This will prevent the intrusion of fines into the gravel chippings.

2.12 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.

2.13 Place proposed surface treatment (Pavers etc) 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.

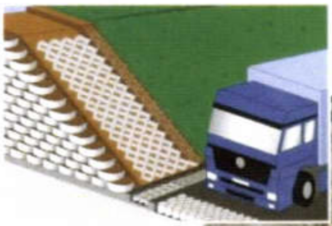
Diagram 3

BODCELL™ Cellular Confinement

BODDINGTONS

Bodcell™ Cellular Confinement System

[illegible]



[illegible]

U-Pins

[illegible]

Technical Specifications

LENGTH	WIDTH	DIAMETER	MATERIAL	PACK SIZE	PART NO	LIST PRICE per pack £
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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 £
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Pedestrian Loads	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Light Vehicles	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N/A	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N/A	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	N/A	Heavy Vehicles	[illegible]	[illegible]	[illegible]

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

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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**

4 Site Personnel Contact Information

The persons to contact in relation to planning issues with this site are as follows.

Table 2

Name	Relation to Site	Contact Details
DC Planning	Town Planner	01206 272597
Mark Metson	Project Architect	01702 549588

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.

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 in accurate.

This report will remain valid for one year from the date of inspection, but will become invalid if any tree works not recommend within the report are undertaken, soil levels around the trees are altered in any way and if any building works which where not disclosed during the inspection are undertaken.

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 practise 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

KEY

- Tree Position with Canopy Spread plus BS5837 Category A1, A2 or A3
- Tree Position with Canopy Spread plus BS5837 Category B1, B2 or B3
- Tree Position with Canopy Spread plus BS5837 Category C1, C2 or C3
- Tree Position with Canopy Spread plus BS5837 Category R
- Root Protection Area (RPA) - Based on Simple Radius from Tree
- Protective Fence Line

TREE PROTECTION PLAN

CLIENT: Mr M Day

PROJECT: 87 Rayleigh Avenue, Rayleigh Essex

DATE: 15th January 2009

SCALE: 1:250 A3

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EMAIL ANDREWDAYCONSULTANCY@TISCALI.CO.UK

KEY

Tree Position with Canopy Spread plus BS5837 Category A1, A2 or A3

Tree Position with Canopy Spread plus BS5837 Category B1, B2 or B3

Tree Position with Canopy Spread plus BS5837 Category C1, C2 or C3

Tree Position with Canopy Spread plus BS5837 Category R

Root Protection Area (RPA) - Based on Simple Radius from Tree

- Protective Fence Line

TREE PROTECTION PLAN

CLIENT: Mr M Day

PROJECT: 87 Rayleigh Avenue, Rayleigh Essex

DATE: 15th January 2009

SCALE: 1:250 A3

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