



ARBORICULTURAL REPORT

**Badgers
53 Rayleigh Avenue
Eastwood
Essex**

9th February 2015

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

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Scope

The purpose of this report is to provide Arboricultural advice in relation to identifying the constraints of trees which are present on the site to implement the proposed development layout, and advice on how the trees could be impacted on and protection measures to be implemented using the guidelines and principles of BS5837:2012.

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1 INTRODUCTION

1.1 Brief:

This report has been prepared at the request of BGA Architects on behalf of the site owners, to provide advice on the arboricultural constraints regarding the trees present on site which could potentially be impacted during works to implement the extension of the building as well as what protection measures will need to be implemented to safe guard the trees to be retained from construction pressures.

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 plan of the proposed layout.

1.4 Relevant background information:

The trees on site are the subject of a Tree Preservation order as I understand it. This will need to be confirmed with the local authority.

1.5 Scope of this report:

This report is only concerned with trees located on site that could be impacted by construction works to implement the proposed layout, and the measures required to provide protection for them as best prescribed in the guidance of BS5837: 2012 'trees in relation to design, demolition and construction'. Any issues regarding construction methods etc. is outside the remit of an Arborist and remedy should be sought with suitably qualified persons, for example builder, engineer etc. For the purposes of this report an Arborist / Arboriculturalist is someone who through training and experience has the knowledge to assess trees and their condition in a competent manner. Trees with a dbh of less than 75mm have not been included as per the guidance in BS5837:2012 or species considered to be shrub specimens.

2 APPRAISAL

2.1 Brief site description:

The site is a detached building used for residential care of special needs adults. A car park is present to the front, with small grass areas to either side with trees present. The garden to the property extends down both sides and to the rear and is a mixture of hard surfaces and grass. The property is surrounded by residential properties.

2.2 Condition of trees:

The trees appear to be generally in a healthy condition with no signs of pests or diseases normally associated with the species, apart from T3 that has a small fungal bracket at the base of the stem, which I suspect to be a young *Ganoderma Spp* bracket. This type of fungus develops to cause internal decay that could compromise the trees structural integrity and longevity.

A more detailed analysis of the trees on an individual basis and as a group can be found in **Appendix 3**.

2.3 Suitability of tree for location and management requirements at present:

In my opinion the trees are fairly suited to the site, but not noteworthy amenity trees within the landscape or site. No management is required at present, but consideration should be given to removing T3 before decay establishes making the tree a liability.

2.4 Potential effects of development on the trees:

To implement the planning permission being sought, T1 & T2 will need to be removed. These are low quality trees that do not have an amenity merit in terms of the surrounding landscape or site.

T3 could be retained, but because of the decay fungus developing on the main stem and to provide more space for the development works, I think it would be better off to remove this tree.

The main risk this development proposal presents to the trees to be retained, especially the Cedar on the opposite side of the car park, is via indirect actions from construction activities such as, inconsiderate material storage, contractor parking etc. However, this can be addressed by careful planning of work procedures and installing protection measures prior to works commencing on site. There is space on site for accommodating construction works without the need to impact on the trees, so care and consideration for these aspects will be required to afford the trees as much protection as practically possible. This will need to be strictly policed by the site manager.

In this case the potential impact of the proposal in relation to the trees to be retained is considered to be moderate, with specific measures being able to be implemented to ensure that construction pressures do not adversely affect their health or longevity.

The trees can be sufficiently protected by following the principles and measures contained within this report and those within the method statement in **Appendix 3**.

2.5 Potential effects of the trees to be retained on the development:

Leaf litter / needle drop could become a problem if it causes drains or gutters to become blocked, that could impact in other ways on the building, or if left on access surfaces where they could become a slip hazard. To address this gutter guards could be installed to prevent build-up of leaf litter that could become a problem, or regular cleaning of the gutters employed. Regular clearing of falling leaves on the access route, especially in times of wet weather will address any potential slip hazards caused by this seasonal occurrence.

Shadow cast caused by the trees is unlikely to be an issue, as the site already experiences this from the trees.

The conflicts normally encountered with having buildings near to trees can be addressed with scheduled maintenance.

2.6 Proposed solutions to safe guard the trees to remain during construction works:

2.6.1 Protective fencing

Protective fencing will be as shown in **diagram 1** in **Appendix 3**, and placed in the locations shown on the tree protection plan in **Appendix 5** prior to works commencing on site. The fencing will be retained at times. Access beyond the fence line will only be allowed with good reason and with the tree officer's permission. It is important to ensure that construction activities **do not occur beyond the extents of the protective fence line**.

2.6.2 Services

No details relating to service runs have been provided to me, but I expect that the existing services will be used to a certain degree. This will be confirmed by the project architect. Any new service trenches will be located outside of the RPA of the trees where possible. If this is not possible hand digging / air spade works will be used within the RPA with an arborist on site to supervise proceedings. Alternatively trenchless techniques to install the services will be used and approved by the local authority.

2.6.3 Site facilities and material storage

Care will have to be taken to identify the type of materials required and the access of any machinery, vehicles or plant needed to move them, as these can cause collision damage to aerial parts of the trees as well as soil contamination or compaction. The Cedar on the other side of the car park could be especially susceptible to this type of damage due to its position on site. At no point will materials be stored within the RPA of trees. The site manager will provide details on this aspect of the project if felt necessary by the local authority, but as long as the RPA is not breached then this should not present a problem.

2.6.4 Works within RPA

No works are proposed within this protected area.

2.6.5 Site supervision

The site manager will provide a timetable of works on the site, listing all of the key stages of development, starting with the placing of protection fencing / hoarding around the trees, establishing site facilities, through to completion of the site. Arboricultural supervision will take place prior to works commencing on site to ensure protection measures are understood and implemented with a pre-commencement meeting with the site manager and other relevant personnel. Site supervision will be undertaken by a suitably qualified arborist once at the start of the project, once midway through and once toward the end. If this is not to the tree officer's satisfaction, arboricultural supervision visits will be on a monthly basis until the completion of the project.

Prior to work, all key personnel connected with the site will be briefed by an arborist with regard to the importance of the tree protection and methods of ensuring that the trees are protected during the construction period. A record of all arboricultural related site meetings will be made, signed off and available for inspection by the local authority if required. Any personnel inducted on site will be made aware of the tree protection measures and will be responsible for their own actions in maintaining them and not breaching them in any way.

2.6.6 Site completion

Once work has been completed, an arborist will inspect the trees and comment on their condition and prescribe any mitigation works required. The tree protection measures are expanded upon in **Appendix 3**. Any proposed landscaping scheme or works will be discussed with the supervising arborist to ensure that this will not conflict with the trees or the protective areas in any way.

3 CONCLUSIONS

- To implement this development T1 & T2 will need to be removed. These are low quality trees.
- I have shown for T3 to be removed also. This tree does not need to be removed to implement the development, but its future longevity could be questioned due to a decay fungi present on the base of the main stem. Removal of this tree would provide more space for construction activities and allow better protection for the other trees.
- The Cedar on the opposite side of the car park could be vulnerable to collision damage to the crown over hanging the car park. Particular care will need to be taken to ensure damage does not occur by careless actions.
- Protective fencing can be installed to prevent access into the protected areas to prevent construction activities impacting on the trees.
- The trees can be adequately protected from construction pressures by implementing and adhering to the protection measures provided in the method statement in **Appendix 3**.

4 OTHER CONSIDERATIONS

4.1 Trees subject to statutory controls:

I believe that the trees might be the subject of a tree preservation order. I suggest that the local authority is contacted to confirm this and kept updated with any proposed tree works so as to form a good working relationship and to prevent misunderstandings or contravention of protection measures.

*Andrew Day HND Arb
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 Essex Arboriculture.

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 issues. I was approached by EssexArb an established tree contracting and consulting company in Essex to develop and run the consultancy department as their principle consultant which I did for three years.

SITE PHOTOGRAPHS



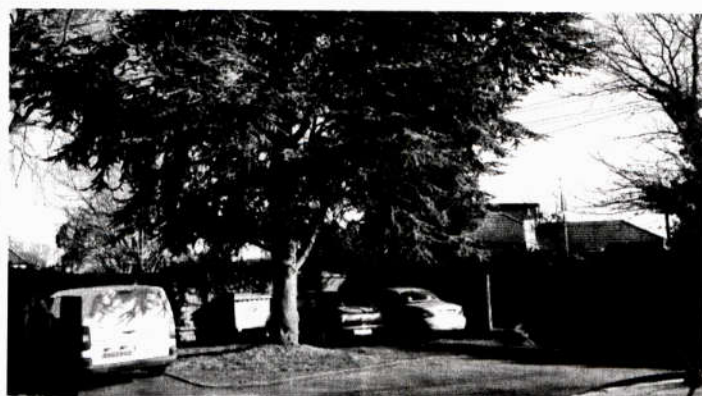
Showing T1 & T2



Showing T2- T5



Showing fungal bracket at the base of T3



Showing Cedar on the opposite side of the car park

SITE SPECIFIC
INFORMATION

Explanatory Notes

Tree Survey

Tree Protection Method Statement and Protection Criteria

Informatives for protection fencing

Arboricultural Considerations notice for site hut and inducted personnel

Explanatory Notes

Measurements/estimates: All dimensions are estimates unless otherwise indicated. Measurements taken with a tape or clinometer are indicated with a '*'. Less reliable estimated dimensions are indicated with a '?'.

Species: The species identification is based on visual observations and the common English name of what the tree appeared to be is listed first, with the botanical name after in brackets. In some instances, it may be difficult to quickly and accurately identify a particular tree without further detailed investigations. Where there is some doubt of the precise species of tree, it is indicated with a '?' after the name in order to avoid delay in the production of the report. The botanical name is followed by the abbreviation sp if only the genus is known. The species listed for groups and hedges represent the main component and there may be other minor species not listed.

Height: Height is estimate height to the nearest metre.

Spread: The maximum crown spread is visually estimated to the nearest metre of the total crown spread diameter. It should be noted that the crown of some trees can be one side, however this usually indicated within the report.

Diameter: These figures relate to 1.5m above ground level and are recorded in centimetres. Estimate measurements are banded 0-10cm, 11-20, 21-30 etc. If appropriate, diameter is measure with a diameter tape. 'M' indicates trees or shrubs with multiple stems. 'AV' indicates average and is the average of two stems when dealing with twin stem trees.

Estimated Age: Age is assessed as **M** mature (last one third of life expectancy), **EM** early-mature (one third to two thirds life expectancy) and **Y** young (less than one third life expectancy).

FSB: First significant branch from ground level (direction shown on tree protection / constraints plan)

SULE: This is the estimated Safe Useful Life Expectancy of the tree. Trees can live longer than this value, but can pose a risk to persons or property.

RPR: Radius of root protection area around the tree /group

RPA: Root protection area for tree or group

BS 5837 2012 - On the basis of this assessment, trees can be divided into one of the following categories:

- A** - Trees whose retention is most desirable; High category
- B** - Trees where is desirable; Moderate category
- C** - Trees which could be retained; Low category
- U** - Trees that cannot realistically be retained; Fell category

Tag	Name	Age	Diameter	Height	Crown Hgt	FSB Hgt	Crown Spread (N S E W) (m)				Life Exp	Recommendations	Category	RPR	RPA
T1	Prunus cerasifera (Cherry Plum)	M	300	10	2	2	5	4	4	5	20+	No works required at present.	C2	3.6	40.72
T2	Malus sylvestris (Crab Apple)	M	180	10	3	3	1	2	1	2	20+	No works required at present.	C3	2.16	14.66
T3	Prunus cerasifera (Cherry Plum)	M	200	10	2	2	2	3	2	2	20+	Small fungal bracket forming at base, I suspect to be Ganoderma Spp. Remove	C3	2.4	18.1
T4	Prunus cerasifera (Cherry Plum)	M	200	10	2	2	2	3	2	2	20+	No works required at present.	C3	2.4	18.1
T5	Prunus avium (Wild Cherry)	M	400	10	3	3	3	7	5	4	20+	No works required at present.	C1	4.8	72.39

Method Statement for Tree Protection Measures

PROJECT: Badgers 53 Rayleigh Avenue, Eastwood, Essex

CLIENT: BGA Architects

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 foundation design for the structure will be suitable to address any potential influence that the trees may have on them. 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.
- All tree surgery works will be completed before the tree protection measures are set up.
- 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.

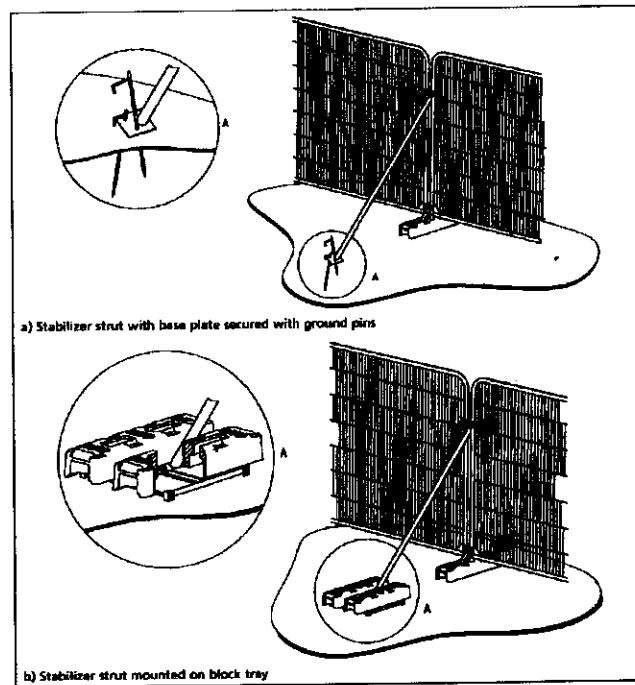
1.2.1

Protective fencing will be as shown in **diagram 1** or similar that demonstrates that it 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. 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.

1.2.3

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

Diagram 1



1.2.4

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 once at the start of the project, once mid-way through and once at the end. If this is not to the council's satisfaction, then visits arboricultural visits will take place once a month for the duration of the project. A log of these visits and any actions required will be available to the council on request and kept on site.

1.2.5

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.

1.2.6

All personnel inducted on site will be made aware of the tree protection measures and will be responsible for their own actions in maintain 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 form 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 The foundation design for the building will demonstrate how it is fit for purpose to ensure that the trees will not indirectly impact on the structure, resulting in pressures to remove the trees in the future.

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 contractor parking or materials be allowed to be parked or stored under close to the trees, even if outside the RPA where collision damage could occur. This will be strictly policed by the site manager.**

1.7 Ground Protection

- 1.7.1 If access into the RPA is required, 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 trees.

ANDREW DAY
ARBORICULTURAL CONSULTANCY LTD

REDUCING COSTS BY DELIVERING PRACTICAL SOLUTIONS

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.

Site Personnel Contact Information

As far as I am aware the only personnel associated with this site at the time of writing this report is the project architect. Table 2 shows the contact details of the project architect who is to be contacted if any enquires relating to this project need answering.

Table 2

Name	Relation to Site	Contact Details
BGA Architects	Project Architect	(0)1702 471057

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 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 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

(This plan is for reference only; please refer to the separate A3 plan for scaling if required)

