



ARBORICULTURAL REPORT

**Pound Place
Roundstone Lane
Angmering
West Sussex**

5th April 2018

Prepared by:

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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 site in relation to the proposal to demolish the existing building and construct a care home with associated parking and landscaped gardens. Providing advice on how the trees could be impacted on and protection measures to be implemented for those to be retained 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 Hallmark Healthcare, to provide advice on the arboricultural constraints regarding the trees located on site, which could potentially be impacted during works to demolish the existing property and construct the new care home and gardens. Identifying which trees will need to be removed to facilitate the development layout and protection measures for those to be retained to safe guard the trees 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:

Planning permission has already been granted for a development of 18 dwellings on the site, Ref: A/154/14/OUT. The implementation of this shows all the trees on the southern and western boundary removed and most of the trees along the northern boundary.

The officers report also comments that the none of the trees on site are worthy of a tree preservation order (TPO).

I have been informed that a recent TPO has been placed on the conifer trees along the southern, western and northern boundaries of the site.

I am of the opinion that the worthiness of the TPO could be brought into question not only because in a previous officer report it was commented that the trees are not worthy of protection, instead the condition of some of the trees means that their safe useful life expectancy is limited for reasons discussed in 2.2 below. Also, the practicality of enforcing the amount of possible TPO breaches and applications, should residents on the southern boundary undertake pruning works to maintain some clearance to the small back gardens could cause a significant administrative imposition, especially as these would likely be separate applications or breaches. The management company who will be responsible for the maintenance of the verges in Lambert way are likely to want to undertake management to the overhang. This will then result in further administrative work or a similar fashion. Especially if contracts change and workers are not informed of their protection status.

1.5 Scope of this report:

This report is only concerned with trees located on site and those in adjacent land 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 consists of a detached residential property set far back from the road and accessed via a private drive that leads off of Roundstone Lane. The front garden is laid to lawn with a group of Silver Birch in a central location, other individual trees are present closer to the parking area and detached garage in front of the house. The boundaries of the property on the southern, western and northern boundary consist of a mix of Conifer and Pine trees, some 15m high. The rear garden is also laid to lawn with some shrub specimens grouped in an area central to the rear garden. New properties as part of a larger development are present to the north, south and east of the site, with residential properties that have been present for many years to the west.

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. One of the Silver Birch in G4 was in terminal decline and indicated as red on the tree protection plan in **Appendix 5**.

Although the conifers in G1, G2 & G3 appear in a healthy condition, there is evidence of biomechanical weakness and previous limb failure as a result. Many of the specimens have tall, multiple leader stems emanating from congested and tight forks, commonly referred to as compression forks that have weak unions where they fuse. With most of the weight to the top end there is more risk of 'rip out' during times of extreme weather. This then presents a risk of harm to persons or property. There is already evidence on some of the specimens in the group having already suffered from storm damage resulting in this type of limb failure. Those on the southern boundary are more prone to this because of their size and deterioration of the foliage lower down and where the stems have been reduced back where they overhang the neighbouring gardens. Cracks were noted on some specimens with compression forks present on most of them, these are more susceptible to biomechanical failure. Some of the Pine trees are growing at a 45-degree angle over the gardens, although no signs of root plate movement were visible, these trees are at more risk of falling into the gardens if heavy rain fall or snow were to occur. Some browning of the foliage is present in some areas and could be due to Coryneum canker, this is likely to spread and have a notable impact on the foliage of these trees and their future mortality.

A more detailed analysis of the trees can be found in **Appendix 3**.

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

In my opinion the Conifer and Pine trees in G1, G2 & G3 are unsuitable for long term retention, given their size, safe useful life expectancy and proximity to neighbouring roads and properties. The trees in G1 on the southern boundary are an over dominating feature for the small rear gardens. Its likely that residents are having trouble in establishing lawns and have problems from bird mess accumulating below the overhang. This could create an environmental health concern or nuisance to constantly clear up, especially if small children are present in the household. Some of the Pines in G1 leaning over the gardens should be removed. As should the declining tree in G4.

As for the trees in G3, these are already causing a notable amount of shade to the properties opposite. Although it may not seem a problem at present, in time the shade could impact on habitable rooms resulting in a possible high hedge complaint. Or the shade could aggravate problems such as damp, frost in the winter or moss accumulation where slip hazards could be more probable.

No management works are required at present. Consideration should be given into reducing G1, G2 & G3 in height by about 50% of their existing height and faced back to get them back into more of a hedge management that I'm sure they were planted for. This will help reduce the risk of stem rip out.

2.4 Potential effects of development on the trees:

To implement the planning permission being sought, the following trees will need to be removed:

The eastern part of G1 & G3, please see the tree protection plan in **Appendix 5** that shows the line where the trees will be removed and where the other will be retained.

G4 – Silver Birch

T1 – Laburnum

T2 – Sycamore

T3 – Alder

T4 – Western Red Cedar

T5 - Cherry

The western part of G1 & G3 will be retained. I suggest works to reduce their height and bring them back into some form of management as a hedging feature should be undertaken. This extent of the work can be discussed with the tree officer and surrounding residents to achieve a result that suits everyone. This work does not need to be undertaken, I feel that it would be beneficial to the scheme and surrounding residents to do this if these trees are to be retained for the long term. This would begin to create good relations with the surrounding residents, to allow more light to properties and making them less dominating on the small gardens.

The footprint of the care home will be set outside of the RPA and crown spread of the trees to be retained. These trees can be suitably protected from construction pressures by erecting protective fencing to prevent collision damage and access into the RPA (Root Protection Area). Only a minor breach to part of the RPA of G1 & G3 will occur to facilitate the layout of the drive and pedestrian paving. It is possible that no significant roots will be impacted when excavating in these areas to install these features. To determine if this is the case a hand dug assessment trench will need to be opened to a depth of at least 600mm or shallower if the base of the path and drive is less, and under arboricultural supervision. Most tree roots are present in the top 600mm of the soil where moisture and air are more abundant. If roots less than 250mm in diameter are present, then it's possible these can be pruned clear or manoeuvred to avoid conflict. If not, then a 'no dig' surface will need to be used to prevent the need for excavation works where roots could be directly damaged or impacted by soil compaction. Some ground levelling may be permissible to even the ground out, but no excavation where roots could be impacted.

This specialised surface construction allows for a subbase to be laid across the RPA on the existing ground level, with the desired surface finish put on top. The use of the 'No Dig' surface will also have an effect on the levels across the site, effectively raising the drive level so this will need to be considered in relation to the rest of the scheme. The tree officer is unlikely to be sympathetic later if it is found the levels do not tie in. The project architect / engineer will provide details in respect to the design of the surface. An example of such a system and a generic method statement for its installation, to be adapted as required by the project engineer can be found in **Appendix 3**. Given the minimum incursion into the RPA I don't think this should cause a problem.

Because of the design of the layout to avoid conflict with the trees to be retained where possible, this will be easily achievable by erecting protective fencing in the locations shown on the tree protection plan in **Appendix 5**. There should be no reason to cross this fence line during the demolition and construction process, so the trees will be well protected. Areas intended for new planting will be suitably worked to ensure the soil conditions are agreeable to the species going back in. The conifers are likely to have made the soil conditions more acidic and only suitable for them and certain species to survive.

To compensate for the tree removal of G1 & G3 along the boundary line, new trees can be planted of a size and species that will not only replicate the screen but will also provide seasonal interest and be more beneficial to wildlife habitat creation. If Hornbeam planted with stem girths of 16cm – 18cm were planted at 5m spacings along the southern boundary, these trees would be approximately 6m in height with a 2m crown clearance meaning the canopy screening would be present above the fence line. This species of tree is native and can be managed easily to form a pleasant hedging feature for the residents and site. This would be less dominating than the conifers already present and offer a more diverse habitat for wildlife. The picture below illustrates how the Hornbeam could develop and be managed along this boundary to form this screening.



The conifer line of G2 can be 'faced up' on both sides and reduced to form a more distinctive hedging feature and get the group back into a more formal style of management. However, with new planting proposed behind this group, consideration could be given into removing them to allow the new planting to provide a better outlook in the street scene that would offer better long-term amenity. This can be discussed with the council once a planning permission has been decided upon as part of a robust and structured landscape scheme.

For the area along the northern boundary to compensate for the tree removal here, *Pyrus Calleryana* Chanticleer can be used, in a similar fashion to the Hornbeam. This will offer seasonal interest from the street scene of the new estate, that will be more pleasing than the current dark, green wall of foliage currently present. This species can also be easily managed to be retained at a size to offer the screening and not impact on the site or surrounds. The Picture below illustrates how screening of this species could look from Lambert way.



The scheme as a whole provides a fantastic opportunity to have new tree and shrub planting to enhance this site not only as an amenity asset within the local landscape, but also for providing a diverse species mix that will be more beneficial to wildlife. Retaining the conifer specimens is not a long-term strategy to provide screening or amenity. As previously mentioned, there is browning of the foliage in areas within the groups, likely because of *Coryneum* canker. If this spreads, as it is likely to then it will impact on health and longevity of the trees.

The actual construction of the care home and parking sits outside of the constraints offered by the trees. Therefore, the proposed construction of these will not have a direct impact on the trees to remain.

The other risks associated with construction activities and this development proposal, in relation to the trees will be via indirect actions from construction activities such as, inconsiderate material storage, manoeuvring of materials, scaffold erection etc. There is space on site on the existing hard surfaces and outside the RPA to accommodate such actions. As long as the protection measures highlighted within this report are adhered to, then it is possible that the tree will not be detrimentally impacted by the development proposal. However, this will need to be strictly policed by the site manager as it could result in conflict with the council.

In this case the potential impact of the proposal in relation to the trees to be retained is moderate, with specific measures being able to be implemented to

ensure that construction pressures do not adversely affect its 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 from new planting / 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 because those retained will cast a shadow over the parking areas and off site. The new planting on the southern boundary is unlikely to be an issue because they can be maintained at a height of the houses, which will have a shadow cast effect to a certain degree anyway.

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

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

2.6.1 Protective fencing

Protective fencing will be 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 and will be heras panels as shown in **Diagram 1**.

2.6.2 Services

No details relating to service runs have been provided to me. The location of the service runs will be confirmed by the project architect. Service trenches will be located outside of the RPA of the trees where possible, this should be achievable given the space on site outside of the RPA. 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 site manager will provide details on this aspect of the project and will demonstrate how care and attention will be applied to protect the trees from direct and indirect construction activities.

2.6.4 Works within RPA

The excavation works within the RPA will be undertaken with arboricultural supervision present with hand tools. Any roots encountered will be recorded and discussions had with the tree officer as to retention status or pruning. Where pruning is permitted, the supervising arborist will undertake this and ensure they are covered to prevent drying out or contact with concrete etc. If roots are to be retained, then the project engineer will provide details of how a 'No Dig' solution will be worked into the design. If a 'No Dig' surface is used, this type of surface will raise the surface level, and this must be accounted for in the rest of the design to tie in. The local authority is unlikely to be sympathetic later if this has not been factored into the overall design.

2.6.5 Site supervision

The site manager will provide a timetable of works on the site, listing all 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 on a monthly basis until the completion of the project, and at key stages in the development such as erection of the protective fencing, excavation works in the RPA.**

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 tree is 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. Failure to do so could result in legal action taken against the person responsible and the site owner, including any financial remuneration involved.

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 tree or the protective areas in any way. Suggestions have been provided for possible tree species that can be used to replicate the screening effect of the conifers, but to enhance and be better suited to the site constraints both on site and off. If the planners are minded to approve the scheme, a condition can be included to provide a robust landscaping scheme to address screening, seasonal interest, security via design and species diversity to provide a sustainable environment for residents and wildlife.

3 CONCLUSIONS

- To implement this development proposal, the following trees will need to be removed:

The eastern part of G1 & G3, please see the tree protection plan in Appendix 5 that shows the line where the trees will be removed and where the other will be retained.

G4 – Silver Birch

T1 – Laburnum

T2 – Sycamore

T3 – Alder

T4 – Western Red Cedar

T5 – Cherry

- A small portion of the RPA of G1 & G3 will be partially breached by the line of the drive and a pedestrian path. It's feasible that roots will not be a constraint by not being present or can be pruned clear. An assessment trench will be opened first to determine this. Discussion with the tree officer will be had in regard of the possibility of root pruning before it takes place.
- New hard surfacing within the RPA will use a 'No Dig' construction method, if roots are found that cannot be pruned clear. Details of how this will be installed and tie in with levels will be provided by the project engineer / architect.
- The foot print of the care home and parking areas is outside of the constraints of the trees to be retained and therefore will not be directly impacted by the proposal.
- Protective fencing will be installed in the locations shown on the tree protection plan in **Appendix 5** to prevent the trees to be retained being damaged by construction pressures.
- 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**.
- New planting will be incorporated to replicate the screening of the trees lost along the southern and northern boundaries. Other planting will be established on site that be better suited to the site and neighbouring property constraints. Planting will look to focus on suitability, screening, seasonal interest and habitat for wildlife.
- The development will facilitate new planting that will enhance the amenity and biodiversity of the site in relation to the surrounding landscape.

4 OTHER CONSIDERATIONS

4.1 Trees subject to statutory controls:

I have been told that a TPO has been placed on the conifer groups I have numbered G1, G2 & G3. Therefore, no works can be undertaken to these trees unless permission by the council has been given or certain exemptions apply. I suggest that the local authority is kept updated with any proposed tree works to form a good working relationship and to prevent misunderstandings or contravention of protection measures. This is an advisory for readers of this report and not meant as a confirmation as to the protection status of the trees commented on.

*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 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 issues. I was approached by 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 G1, G3 & G4	Showing T1 – T4
	
Showing compression fork and branches falling over into gardens on tree within G4	Showing stem rip out wound from compression fork and crack in remaining stem on tree within G4

SITE SPECIFIC INFORMATION

Explanatory Notes

Tree Survey

Tree Protection Method Statement and Protection Criteria

Hand dig method statement

Example of 'No Dig' Surface construction

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	Laburnum anagyroides (Laburnum)	EM	200	4(2)	2	3	3	2	1	2	10+	Leans to north, no sign of root plate movement to suggest instability. No works required at present.	C3	2.4	18.1
T2	Acer pseudoplatanus (Sycamore)	M	400	12(2)	2	2	4	4	4	4	20+	No works required at present.	B3	4.8	72.39
T3	Alnus glutinosa (Common Alder)	EM	150	12(3)	3	3	1	2	3	1	20+	No works required at present.	C3	1.8	10.18
T4	Thuja plicata (Western Red Cedar)	M	200	15(2)	2	3	2	2	2	2	20+	No works required at present. Compression fork where stems join, potential biomechanical weak point in the trees structure.	C3	2.4	18.1
T5	Prunus avium (Wild Cherry)	M	300	15(7)	7	7	2	6	6	5	20+	No works required at present.	C2	3.6	40.72
G1	X Cupressocyparis leylandii (Leyland Cyp)	M	400	15(2)	2	2	3	3	3	3	20+	No works required at present.	C2	4.8	72.39
G2	X Cupressocyparis leylandii (Leyland Cyp)	M	200	15(2)	2	2	4	4	4	4	20+	No works required at present.	C2	2.4	18.1
G3	X Cupressocyparis leylandii (Leyland Cyp)	M	200	15(2)	2	2	4	4	4	4	20+	No works required at present.	C2	2.4	18.1
G4	Betula pendula (Silver Birch)	EM	250	15(3)	3	3	2	2	2	2	20+	No works required at present. 5 trees within the group. tree on south western end in terminal decline, remove this tree.	C2	3	28.28

Method Statement for Tree Protection Measures

PROJECT: Pound Place, Roundstone Lane, Angmering, West Sussex

CLIENT: Hallmark Healthcare

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 tree 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 of the building and hard surfaces 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.
- Where hard surfacing is to be placed in the RPA if roots are encountered and need to be retained, a 'No Dig' construction methodology will be used. Any levelling will be done by hand and overseen by the supervising arborist. **Please note, Levelling is only minor works and will not involve extensive scrapping of the ground.**
- 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. It will be the responsibility of the site manager to ensure that the arboricultural supervision schedule is formulated and carried out.

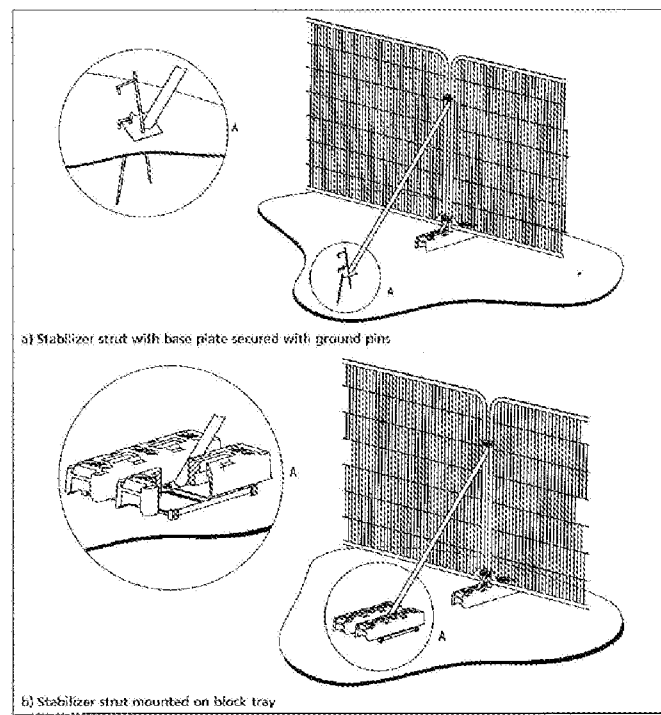
1.2.1

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 1.8 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 works 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 **Where 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 mechanical diggers etc. The supervising arborist will be present at all times.**
- 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 foundation design for the building and hard surfaces etc. 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.
- 1.5.5 If tree roots present a constraint to the hard surfacing, then an engineering design that shows how the root(s) will be constructed around and retained will be provided, such as a 'No Dig' surface.

1.6 Excavation within the RPA

- 1.6.1 Excavation works within the confines of the RPA will be undertaken using hand tools and in accordance with the hand dig method statement provided, and only occur if specific permission is granted by the local authority to do so either as part of a planning permission or any other criteria. Where excavation works are required in this protected area, the supervising arborist will be present at all times.**
- 1.6.2 Only hand tools will be used to carefully excavate the areas within the RPA of G1 & G3 to see if significant roots will be impacted by the installation of hard surfacing.
- 1.6.3 At no point will roots be damaged, pruned or left uncovered unless the local authority tree officer has specifically given permission.
- 1.6.4 A suitably qualified arborist will be present to ensure that if roots are encountered that are not allowed to be pruned clear, they are not damaged, and any exposed roots are covered and treated accordingly to prevent stress to the tree.
- 1.6.5 Any roots encountered to be retained will be carefully worked around using hand tools and airspade. Damp hessian or another suitably way of protecting the roots from damage and drying out will be applied to the roots while they are exposed.
- 1.6.6 The exposure time of the roots being uncovered and wrapped will be limited as much as practically possible. The ground workers will ensure that the wrapping around the roots is prevented from drying out or freezing. The supervising arborist will advise accordingly.
- 1.6.7 Roots that can be pruned will be cut back to clear the construction zone with a sharp, clean hand saw or secateurs. The roots will then be suitably covered to prevent drying out or contamination by materials. This will be over seen by the supervising arborist.
- 1.6.8 Root pruning will not take place unless this has been agreed with the tree officer and no other option is available. The future management of the tree(s) involved will be discussed with the tree officer, agreed and undertaken by a competent arborist in accordance with BS3998:2010 within an agreed timescale.
- 1.6.9 If considered necessary by the supervising arborist or tree officer, the soil will be de-compacted by either forking over or with an air spade or similar, depending on the degree of de-compaction required. This will be agreed with and carried out within a time period acceptable to the tree officer.

1.7 Material storage / site parking

- 1.7.1 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.
- 1.7.2 **At no point will materials be allowed to be stored in the RPA without the appropriate measures being taken to ensure this does not have a detrimental impact on the trees. This will be strictly policed by the site manager.**

1.8 Ground Protection

- 1.8.1 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.

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

1.9 Completion

- 1.9.1 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: Pound Place, Roundstone Lane, Angmering, West Sussex

- 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.

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 planner and other members of the design team. Table 2 shows the contact details of the project planner who is to be contacted if any enquires relating to this project need answering.

Table 2

Name	Relation to Site	Contact Details
Wolf Bond	Project Planner	01189 884923

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 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)

