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ARBORICULTURAL REPORT
(BS5837:2005 'Trees in relation to construction – Recommendations' Tree Report)

For Proposed Development at

Rayleigh House
High Street
Rayleigh

On Behalf of
Autosecond Ltd



26th July 2007

Sharon Hosegood M.Arbor.A BSc (Hons) Tech Cert (Arbor A)

**ARBORICULTURAL IMPACT
ASSESSMENT (BS5837:2005 "Trees in relation to
construction – Recommendations" report)**

Development at:	Rayleigh House, High Street, Rayleigh, Essex	Job No: DFC 026
Client Name:	Autosecond Ltd	
Architect:	e + m design partnership, Rochford Office, 26/28 The Square, Rochford, Essex, SS4 1AJ.	
Presented By:	DF Clark Bionomique Ltd, Andrews Farm, Burnham Road, Althorne, Chelmsford, Essex, CM3 6DS. Tel: 01621 740876. Fax: 01621 742242.	
Delivery Date:	26 th July 2007	
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1.0 Scope Of Client Brief:

- To carry out a tree survey in accordance with the principles of BS 5837:2005
- To produce a tree constraints plan
- To identify any hazardous trees
- To recommend a developable area in arboricultural terms
- To provide generic principles for work within the root protection area of trees to be retained

2.0 Special Instructions:

- To liaise with the architect

3.0 Terms of Reference

3.1 Reference Documents:

1. BS5837:2005 'Trees in relation to construction – recommendations'
2. BS3998:89 'Tree work – recommendations'
3. 'Tree roots and buildings' TSO June 2006
4. Received drawing - Topographical survey drawing number 2090

3.2 Planning stage

This report has been commissioned to inform the design process and to support a planning application. Following a design being drawn up, it is recommended that an arboricultural impact assessment and method statement document is produced to support the application.

3.3 Appendices:

Appendix 1	Key to tree survey sheets
Appendix 2	Tree tables
Appendix 3	Tree protective fencing specification and suggested warning sign format
Appendix 4	Annotated Photographs
Appendix 5	Rochford District Council Policies relating to trees

3.4 Plans:

Plan 1	Tree Constraints Plan
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3.5 Constraint Search

Trees/Woodland	X	TPO 5/57 ECC area order	Ecology
Landscape Sensitivities			Change of use
Statutory Controls			Policy Sensitivity
High Public interest likely			Demolition X
Other			

Key: X = Yes (Note: Any box marked 'Yes' MUST be discussed with the client)
U = Unknown
NA = Not Applicable

4.0 Specific Report Caveats:

1. The trees were numbered from the topographical survey from the architect, drawing number 2090. This plan did not include the location of G1 and T18 as they are outside the area covered by the drawing. They were scaled from site measurements and from Pro map, but they may not be accurate and should be verified by a surveyor.
2. The bases of the offsite tree were not examined.
3. The trees were inspected from ground level only using the Visual Tree Assessment method (Mattheck).
4. No internal diagnostic equipment was used.
5. No samples of tree tissue were taken to a laboratory.
6. All measurements were taken with a 25m long logger's tape.
7. The survey is concerned primarily with arboricultural issues. The only non arboricultural issue is the treatment of the ditch.
8. The survey was conducted in accordance with the principles of BS5837: 2005 'Trees in relation to Construction'.
9. Any required pruning works will be carried out in accordance with BS3998:89 'Tree Work'. Any work with trees would have regard to the Wildlife and Countryside Act 1981, the European Habitat Directive 1994 and the Countryside and Rights of Way Act 2000.
10. Any changes in ground level, or excavations near tree roots not discussed in this report may change the stability and condition of the tree(s) and a further examination would be required
11. This report is valid for 24 months and it is recommended that the trees are examined by a competent person after this time.

5.0 Executive summary

Rayleigh House is set in an attractive front garden on the western end of Rayleigh High Street. The area is one of medium density residential area and there are a number of mature trees in the locality which help define the local landscape character. The site comprises of a large house, currently subdivided into smaller homes. The grounds are approximately level, however the site is above pavement level and is accessed by a drive which slopes up from the road. The soil type for the site is not known, however Surface Geology of Essex map (Essex Landscape Character Assessment document) indicates that the soil type for the area is brick earth and loams.

The most imposing trees on the site are the Deodar Cedar (T1) and two Copper Beech trees (T4 and T7). There are a number of other trees in the grounds of mixed quality and value. The site is protected by an Essex County Council Tree Preservation Order 5/57 which is an area order. This means that all trees on the site planted before 1957 are protected by the order and no work can be carried out (except to dangerous trees or to remove dead wood) without written consent from Essex County Council.

There is a Silver Birch tree (T20) on the front garden which is in a very poor condition and should be felled as soon as practically possible due to its proximity to the highway. The trees along this boundary with the pavement are in a fair condition, but are a disparate group and do little to add to the landscape character of the area or to enhance the site. The False Acacia (T3) is swamped with ivy and would benefit from this being removed and a further inspection carried out in case there are structural faults.

The trees in the rear garden are of a low visual amenity and are all young, and therefore could be replaced as part of a landscaping scheme for a new development. The most important trees off site are a Red Oak (T5) and a Horse Chestnut (T18).

The survey has resulted in a Tree Constraints plan being drawn which shows the root protection areas of the trees. This calculation is based on the diameter of the trunk, and in some cases, the circle has been offset by 20% to take into account likely rooting patterns. The root protection areas for the trees in the front garden are large, due to their age. In addition, Beech trees roots are sensitive to change. To enable useful interpretation of the tree constraints plan, a second plan has been produced to assist the design process. This shows the large areas currently under hard surfacing, and areas that could be reasonably developed subject to method statements.

In my professional opinion, I do not consider that trees in the rear garden should be a constraint on proposed development. I recommend that the existing driveway access and tarmac area is retained near the trees on the western aspect (this includes the two large beech trees). I recommend that the Deodar Cedar is in the area designated as communal garden. However, the paper bark maple (T2) is less important in terms of visual amenity and could be felled and replaced along the front boundary. Any scheme could give the opportunity to replace the poor quality trees and shrubs along the boundary with unified tree and hedge planting, thus enhancing the site and locality.

I recommend that an arboricultural impact assessment of a final proposed layout is carried out and any method statements.

6.0 Specific tree constraints table

Please see the photographs at appendix four and the individual survey sheet at appendix two. The categorisation is explained in the key at appendix one. The locations are found at the Tree Constraints Plan.

Tree number Species Classification	Description of tree, including Root protection area (RPA) defined in BS 5837:2005 as 'the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree', shown in plan form in square metres. It is calculated using the method in Table 2 of the British Standard)	Recommendation
T1 Deodar Cedar A1. 2 and 3	This is a good example of a mature Deodar cedar in good health. It has a crown spread maximum of 21 metres and a RPA of 598 square metres, shown as an offset ellipse on the plan. The RPA has been offset to reflect the likely rooting environment. The tree provides a high level of amenity to the site and the High Street, and helps create a genus loci to the site.	Retention essential Minor tree surgery works to remove dead wood, tidy broken branch and clear overhead wire Any changes in surfaces require a method statement
T2 Paper bark maple B2	A mature un common species of maple in low vigour. It has a RPA of 137 square metres, shown as a circle with a radius of 6.6m. Low visual amenity as other larger trees are dominant.	Could be felled and replaced If retained – removed dead wood and clear overhead wires
T3 False Acacia (Robinia) B2	Mature tree swamped with an ornamental ivy. RPA 12m, difficult to plot likely rooting area due to change in levels. This species has brittle branches.	Retention desirable, subject to ivy removal and inspection. Remove dead wood
T4 Copper Beech A1 and 2	A mature tree in good health growing on a raised bank next to the entrance. RPA is shown as a circle with a radius of 13.2m.	Retention essential Minor tree surgery recommended May be prudent to retain banking and entrance as it is as Beech roots are sensitive to change
T5 Red Oak B2	Off site tree, unable to examine base. RPA estimate 452 square metres. Forms part of a high canopy with adjacent trees.	Outside of control of site, apart from pruning overhanging branches (subject to TPO consent)
T6 Sycamore C2	Tall drawn up tree with a narrow crown which has been heavily crown lifted in the past. RPA 222 square metres.	Retain in the short term. As with all trees to be retained, I recommend annual monitoring.
T7 Copper Beech A1 and 2	Large tree in good health overhanging existing house. RP is largely in tarmac area and is 547 square metres	Retention essential Minor tree works recommended to remove small hazards and clear roof.
T8 Holly C2	Insignificant Holly in fair health. Small RPA. Provides a shade tolerant understory to beech.	Retention desirable

T9 Lime C2	Mature tree in neighbouring garden, recently pollarded. RPA calculations are 163 square metres, however, this is likely to reflect actual spread of roots due to pollarding and the fact that the site on this side is covered in tarmac (not a favourable rooting environment)	Outside of control of site
T10 Lawson Cypress C2	Off site insignificant tree	Outside of control of site
T11 Horse Chestnut T12 Norway Maple R	These saplings are growing immediately adjacent to the neighbouring garage and form an untidy group. They will undoubtedly cause direct physical nuisance unless removed.	Fell and poison stumps
T13, T14, T15, T16, T17 C2	These ornamental garden trees are young/ semi mature. They are in fair health, but provide no visual amenity outside the site, except to one property on the western aspect.	Retention not essential.
T18 Horse chestnut B2	Off site tree appears to be in good health. RPA intrudes in to site (RPA 222 square metres)	Outside control of site Take account of RPA and crown overhang
T19 Yew C2	This tree has been partly managed as a topiary and is in good health	Retention desirable
T20 Silver Birch R	This tree is in a poor condition and branches may fail	Fell as soon as practically possible

Constraints Item	Description Of Constraint	Protection Method
Tree works operations	<p>The tree works necessary are primarily:</p> <ul style="list-style-type: none"> • felling of T11, 12 and 20 <p>Pruning of other trees specified in sheets</p> <p>Further works will be described in next report</p>	<p>The preliminary treeworks recommended are highlighted within the tree tables in Appendix 2. The treeworks will be undertaken by qualified and insured contractors, who will make provision for working within the site, taking into account the site conditions.</p> <p>Treeworks will be undertaken in accordance with BS3998:1989 'Recommendations for treeworks' and where necessary under the supervision of a competent arboriculturist.</p> <p>The contractor will be responsible for their own method statements and site specific risk assessments. Tree operations must take into account the Wildlife due diligence inspections, in respect of nesting birds and roosting bats.</p>
Establishment & Protection of Root Protection Areas (RPA) for retained trees	<p>To prevent the damage to retained tree roots, on or adjacent to the site, an RPA is plotted around the subject tree within the site to be retained</p> <p>These should be held as sacrosanct and protected from intrusion by construction activities except by agreement with the Council Tree Officer.</p>	<p>No excavations should be undertaken or structures erected within the RPA without the situation being assessed by the Consultant Arboriculturist.</p> <p>Protective fencing will be located at the outer edge of the RPA as indicated on the tree protection plan (to be produced following design)</p>
Location of Access Drives, car parking spaces etc. adjacent to the retained trees	<p>Existing access is likely to be used, and this comprises of tarmac. Trees on this site have long been adapted to this setting.</p> <p>For any new surfaces, a protection method is required.</p>	<p>Light vehicle / pedestrian surfacing within the RPA of retained trees is not ideal, but its impact can be reduced significantly by the use of 'no-dig' surfaces.</p> <p>Permeable pavers or cellular confinement systems, as described within Appendix 4, can be used to minimise the damage caused to tree roots by enabling water infiltration and gaseous exchange, both essential for root function.</p>

<p>Changes in soil levels in close proximity to retained trees</p>	<p>The topsoil is often stripped with soil levelling required at most development sites, but not at this site.</p> <p>Retained tree root damaged / death can occur due to excavation or levelling activities, particularly due to compaction from raising of the original soil level.</p>	<p>Cambium damage at the base of tree trunks and damage to tree roots can be avoided if no levelling activities are undertaken within the RPA's of those trees to be retained.</p> <p>Adequate fencing should be installed as previously described on the outer edge of the RPA's.</p>
<p>Foundation type and design</p>	<p>The soil type across the site is often variable, and it is recommend that a soil report is produced</p> <p>Where trees are being removed, declining or heavily pruned, soil shrinkage (subsidence) and re-hydration (Heave), is likely.</p> <p>When this occurs within the influencing zone of adjacent buildings, foundation movement is possible, depending on a number of other factors, causing structural damage.</p>	<p>Pile and Beam foundations will predominantly be used in close proximity to trees, which should cause less damage to retained tree roots. However, the mode and method of constructing the piles could still cause damage to the trees, not just their roots but also their canopies by the access required and operation of piling rigs that undertake the excavations.</p> <p>Careful planning of piling operations will be necessary, method statements will need to be produced and checked and the specifications for the piling matt construction / depth / removal etc. will need to be reviewed by the arboriculturist, to ensure that the existing trees affected will not be damaged during the construction build phase.</p> <p>Where strip foundations are able to be used, they should not be located within the RPA of retained trees unless assessed by an arboriculturist, in relation to the species of tree, its rooting habit and soil conditions.</p>
<p>Site access for construction vehicles and avoidance of compaction to the RPA of retained trees during Demolition.</p>	<p>Site access prior to the installation of protective fencing, like the site clearance / Demolition phase, can cause compaction within retained trees RPA's.</p>	<p>The construction of temporary road surfaces, using cellular confinement, may need to be considered, or the construction of the main internal access roads first to ensure no access into tree RPA's occurs.</p> <p>The tree protective fencing should be installed prior to any demolition or construction activities commencing (See Appendix 3)</p>

<p>Excavation of services trenches in close proximity to retained trees</p>	<p>Excavations within the RPA of retained trees are to be avoided, due to the potential root damage likely to occur either rendering the subject trees unstable or detrimentally affecting their health & condition.</p> <p>Prior written agreement will be required with the Council tree officer in order to undertake such works, usually as part of an Arboricultural Method Statement (AMS).</p>	<p>Where possible services should be re-directed away from the trees to be retained, ie. Outside of their RPA's.</p> <p>Where excavation of trenches within RPA's is unavoidable, and where the Council tree officer is in agreement, excavation should be undertaken by hand, hand held compressed air lance equipment and / or in conjunction with a mini-excavator supervised by a competent arboriculturist.</p> <p>As an alternative, trenchless excavation techniques are an option, but the depth of excavations, soil type and species of the subject trees are all limiting factors.</p>
<p>Protection and prevention of damage to retained tree canopies during construction</p>	<p>Installation of above ground services, lighting columns etc and the construction of modern residential dwellings, often require the use of cranes when using modern methods of construction.</p> <p>Crane positioning, usage and the installation of above ground services should not necessitate the need for detrimental or repetitive pruning to enable construction activities to occur.</p> <p>High sided delivery vehicles, piling rigs and excavators also have the potential to cause damage to tree branches.</p> <p>Wilful damage to any tree subject of a Tree Preservation Order (TPO) is prohibited under the Town and Country Planning Act 1990 and is a criminal offence.</p> <p>Other trees not specifically protected by a TPO are still considered a 'material constraint' when part of a planning application.</p>	<p>The tree protective fencing will be securely positioned to resist intrusion into the RPA of retained trees at ground level, but damage can still occur to the aerial parts of the tree as discussed.</p> <p>A banksman should always be used when operating cranes on site to guide the operator regarding aerial site constraints. This will help ensure that the crane is positioned as far away from the subject trees as possible.</p> <p>Any remedial pruning required as a result of accidental crown damage should be specified by the consultant arboriculturist and implemented by a competent arborist contractor, under their supervision if necessary.</p>

<p>Generic construction site constraints:</p> <p>1 Site hut location</p> <p>2 Temporary toilets</p> <p>3 Siting of bonfires</p> <p>4 Location of contaminant storage and washout areas</p> <p>5 Location of stripped topsoil</p>	<p>Points 1 – 4 are often conditioned as part of any planning consent, in accordance with the British Standard. These are detailed opposite.</p> <p>The protection recommendations listed opposite will also often discharge the general requirements of tree protection planning policies to 'protect existing trees'</p> <p>These measures are in accordance with the principles contained within the BS5837:2005 'Trees in relation to construction – Recommendations'.</p>	<p>The need for protective fencing securely installed.</p> <p>No builders debris to be stored beneath the crown spread or within the RPA's of retained trees.</p> <p>No changes in surface level within the RPA's.</p> <p>No fires to be lit within 20 metres of existing trees and shrubs to be planted. Replanting should be undertaken to mitigate the loss of removed trees.</p> <p>Site hut location and temporary toilets can be used to help define the outer edge of the RPAs indicated on the constraints plan.</p> <p>Contaminant storage and washout areas eg. For cement / concrete and fuel / chemicals should be located well away, a minimum of 10m, from retained trees outside of their RPA's.</p> <p>Locate topsoil away from the RPA's of retained trees so as not to compact tree rooting zones.</p> <p>Where fencing needs to be inside the RPA to facilitate a 2m wide working zone, the ground should be protected by a layer of woven geotextile membrane, overlaid with sharp sand, overlaid with scaffold boards. Notice boards, telephone site cables and other temporary services should not be attached to retained trees.</p>
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8.0 Recommendations:

1. That the Silver Birch (reference T20) is felled for safety reasons as soon as practically possible.
2. That an arboricultural impact assessment is carried out on a final proposed layout.
3. Any necessary arboricultural method statements produced in consultation with the client and design team in order to produce a site specific workable method.

Conclusions:

The site contains a large number of trees, three of which are very high value to the locality. These trees, in particular the deodar cedar (due to its location on the site) pose an arboricultural constraint on proposed development. However, the communal garden could be located in this area, and any changes in surfaces could be addressed by method statement. The trees in the rear garden and along the frontage (except T3) are of a low value and could be replaced as part of a landscaping scheme. Such a scheme could enhance the frontage and strengthen the character of the development in its elevated position in this part of the High Street.

I recommend that an arboricultural impact assessment and method statements are produced. Such method statements are likely to include:

Arboricultural demolition statement.

Tree Protection during demolition and construction.

Changes in surfaces near trees to be retained (in essence a 'no dig' porous construction).

Tree surgery schedule, including a TPO application to Essex County Council.

Sharon Hosegood M Arbor A BSc (Hons) Tech Cert (Arbor A) Distinction
Arboricultural Consultant

Director
D F Clark Bionomique Ltd

26th July 2007

9.0 APPENDICES

APPENDIX 1: Key to Survey Sheets

The classifications adhere to the principles of the British Standard 5837:2005 "Trees in Relation to Construction – Recommendations". However, explanations for the terms have been changed to reflect the approach of this company to the practical aspects of categorizing trees in the field.

Age Class

Tests

NP

Trees newly planted

Y

Trees from seedling, up to Advanced Nursery Stock size (14/16cm girth) Less than a third life expectancy.

SM

More than 10 years post-establishment but capable of being moved using a large tree spade (up to 22/24cm diameter).

EM

Early indicators of maturity in bark tissue, reproductive tissue, leaf and crown morphology may be present. (Notably, excurrent shoot growth, not readily transplantable and still likely to increase significantly in size.)

M

Strong indicators of maturity in bark tissue, reproductive tissue, leaf and crown morphology will be present. Shoot growth decurrent. (Middle aged phase of growth when the tree has effectively reached up to 90% of its ultimate size for the species & location.)

FM

Bark tissue, reproductive tissue, leaf and crown morphology will all exhibit mature characteristics. Strongly decurrent shoot growth and reduced shoot extension). No specific signs of senescence. (A tree that has now achieved over 90% of its ultimate size for the species and location).

OM

Trees in senescence. NPO in decline from disease, decay, root death, structural or stability problems resulting primarily from old age. (Senescence is an ageing related category, i.e. a young tree subject to disease and decay because of say an impact injury would not be senescent. Characteristically, senescent trees are likely to be reducing in mass due to the shedding of branches.)

V

Veteran Tree (a tree older than typical age of the species and of great ecological, cultural and aesthetic value)

BS5837:2005 Tree Categorisation based upon Table 1

Category

Description

A

Green

Trees of High Quality and Value

- A1 - Mainly arboricultural values
- A2 - Mainly landscape values
- A3 - Mainly cultural values, including conservation

B

Blue

Tress of Moderate Quality and Value

- B1 - Mainly arboricultural values
- B2 - Mainly landscape values
- B3 - Mainly cultural values, including conservation

C

Grey

Tress with Low Quality and Value

- C1 - Mainly arboricultural values
- C2 - Mainly landscape values
- C3 - Mainly cultural values, including conservation

R

Red

Trees in such a poor condition, both / or physiological and structural, that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.

SITE: Rayleigh House, High Street, Rayleigh
 SURVEYOR NAME: Sharon Hosegood
 DATE: 13th July 2007

Sheet No. 1

TREE SURVEY TABLE - DF Clark Bionomique Ltd

Client:

Tree No.	Tree Common Name (Genus / species)	Tree Ht (m)	Stem Dia at 1.5m / (mm) RPA & Circle radius (m ² & m)	Crown Spread (M) N E S W	Age Class	Physiological Condition	Est. Years	BS Cat	Crown Clearance (m from Ground Level)	Structural Condition / Comments Rooting area	Preliminary Management Recommendations
T1	Deodar Cedar <i>Cedrus deodara</i>	20	1150 598m ² /13.8m	N-8.4 E-13.2 S-9.9 W-8.3	M	Good vigour	>40	A1,2,&3	Branches at 7m Tips sweep down to 1m	Good example of species, minor branch breakage at 11m on western aspect. -Tips touch overhead wires on western aspect -Very minor crown dead wood -Has been previously crown lifted Rooting - 60% lawn, 40% Tarmac	-Remove dead wood with a diameter greater than 25mm -Annual monitoring -Prune to clear lines -Cut back form wood from tear and reduce length of this branch by 1m to control weight
T2	Paper - Bark Maple <i>Acer griseum</i>	8	550 at 0.5 137m ² /6.6m	N-4 E-2.8 S-4.8 W-5	M	Low vigour	10	B2	Tips 2m	Open branched tree arising from stem which branches at 0.5m -30% crown dead wood comprising on branches with a diameter 50mm and less Rooting - 70% lawn, 30% tarmac	-Remove dead wood with a diameter greater than 25mm -Annual monitoring -Clear overhead wires
T3	Robinia	12	1000 452m ² /12m	N-5 E-5 S-5 W-4	M	Good vigour	20	B2	4m	Swamped with ornamental ivy obscuring survey -minor dead wood Rooting - lawn, shrubs and road	Sever ivy and re inspect when ivy died down -Remove dead wood with a diameter greater than 25mm
T4	Copper Beech <i>Fagus sylvatica 'Purpurea'</i>	20	1100 547m ² /13.2m	N-7.3 E-6 S-6 W-7.3	M	Good vigour	>40	A1&2	Branches at 8m Tips 1m	Typical for species -Good form, straight trunk branching into a full well balanced crown -Good buttress formation -1 dead branch with a diameter 100mm at 8m on northern aspect -Has been crown lifted Rooting - raised border next to drive	-Remove dead wood with a diameter greater than 25mm -Annual monitoring
T5	Red Oak <i>Quercus rubra</i>	20	Estimate 1000 452m ² /12m	Overhang N-2	M	Good vigour	20-40	B2	Site side 15m	Appears to be typical for species - unable to examine base as off site	-Annual monitoring
T6	Sycamore <i>Acer pseudoplatanus</i>	22	700 222m ² /8.4m	N-2.3 E-2.3 S-estimate 5 W-1	M	Fair vigour	10-15	C2	15m	This tree has been crown lifted resulting in numerous pruning wounds, some of which may have lead to decay, lower branches are dead due to shading -Epicormic shoots from old wounds at 1m -Cavity at 1.2m on northern aspect could be probed to a depth of 10cm	-Annual monitoring

SITE: Rayleigh House, High Street, Rayleigh

SURVEYOR NAME: Sharon Hosegood

DATE: 13th July 2007

CLIENT:

Sheet No. 2

TREE SURVEY TABLE - DF Clark Bionomique Ltd

Tree No.	Tree Common Name (Genus / species)	Tree Ht (m)	1100 547m ² / 13.2m	Crown Spread (M) N E S W	Age Class	Physiological Condition	Est. Years	BS Cat	Crown Clearance (m from Ground Level)	Structural Condition / Comments Rooting area	Preliminary Management Recommendations
T7	Copper Beech <i>Fagus sylvatica 'Purpurea'</i>	20		N - 10 E - 7 S - estimate 8 W - 11	M	Good vigour	>40	A1&2	Branches at 5m Tips 3.5m	Typical for species. Single stem, with good buttress formation rises to a broad spreading crown. 1 major old pruning wound at 6m on north west aspect, with some wound wood occlusion. -Crown slightly suppressed on eastern aspect by T6 -Tips of branches touch house on north west aspect <i>Rooting - raised bank with ivy</i> Becomes bifurcate at 0.5m, tight union <i>Rooting - raised bank with ivy</i>	-Prune by 2m on north western aspect to clear house, all cuts to suitable growing points Annual monitoring
T8	Holly <i>Ilex aquifolium</i>	7	300 41m ² / 3.6	Average 2	Ma	fair vigour, minor insect pest <i>Phytophthora ilicis</i> present	20-40	C2	Branches at 2m Tips 0.5m		-Annual monitoring -Sever light ivy growth
T9	Lime <i>Tilia x europea</i>	8	Estimate 600 163m ² / 7.2m	0	Ma	Good vigour Epicormic growth	20	C2	-	Has been very recently pollarded at 8m, this tree is off site and the base could not be inspected	-Annual monitoring
T10	Golden Lawson Cypress <i>Chamaecyparis lawsoniana</i>	9	Estimate 150 10m ² / 1.8m	Average 1	Y/Ma	Good vigour	20-40	C2	2m	Typical for species 300mm overhang <i>Rooting area not known</i>	-Annual monitoring
T11	Horse Chestnut <i>Aesculus hippocastanum</i>	4	M/S	Average 2	Y	Good vigour	-	R	2m	Immediately adjacent to garage - self sown	-Advise to fell due to close proximity
T12	Norway Maple <i>Acer platanoides</i>	4	M/S	Average 2	Y	Good vigour	-	R	2m	Leans north -Numerous shoots -Moderate dead wood <i>Rooting area: lawn</i>	Annual monitoring
T13	Cotoneaster waterii	4	200 18m ² / 2.4m	Average 3.5	Ma	Fair vigour	10	C2	Numerous shoots at ground level	Poor structural form with crowded inner crown comprising of numerous shoots and crown dead wood. <i>Rooting area: lawn</i>	Consider felling
T14	Honey Locust <i>Gleditsia triacanthus</i>	7	220 22m ² / 2.6m	N - 3 E - 2 S - 2 W -	Ma	Fair vigour	20-30	C2	2m	moderate crown dead wood comprising of small twigs <i>Rooting area: lawn</i>	-Annual monitoring -Remove dead wood with a diameter greater than 25mm

SITE: Rayleigh House, High Street, Rayleigh
 SURVEYOR NAME: Sharon Hosegood
 DATE: 13th July 2007
 Client:

Sheet No. 3

TREE SURVEY TABLE - DF Clark Biomimique Ltd

Tree No.	Tree Common Name (Genus / species)	Tree Ht (m)	Stem Dia at 1.5m / (mm) RPA & Circle radius (m ² & N E S W (m))	Crown Spread (M)	Age Class	Physiological Condition	Est. Years	BS Cat	Crown Clearance (m from Ground Level)	Structural Condition / Comments Rooting area	Preliminary Management Recommendations
T15	Eucalyptus Eucalyptus gumili	8	330 49m ² 4m	Average 2 Average 2 Average 2 Average 2	Y	Good vigour	20-30	C2	Tips 12m	Has been pollarded at 7m Rooting area: lawn	-Consider felling as this tree will outgrow it's situation if not managed
T16	Dove tree Davidia involucreta	8	180 15m ² 2.2	Average 2 Average 2 Average 2 Average 2	Y	Good vigour	20-40	C2	Tips 1 m	Typical for species Rooting area: lawn	-Annual monitoring
T17	Bramley Apple Malus	4	200 18m ² 2.4	Average 2 Average 2 Average 2 Average 2	Ma	Good vigour	20-40	C2	Tips 1m	Typical for species Rooting area: lawn	-Annual monitoring
G1	4x Lawson Cypress Chamaecyparis lawsoniana	18	Estimate 300 41m ² 3.6	Average 2 Average 2 Average 2 Average 2	Ma	Good vigour	20-40	C2	Tips sweep down to ground level	Unable to examine base as off site appear typical for species	-Annual monitoring
T18	Horse Chestnut Aesculus hippocastanum	17	Estimate 700 222m ² 8.4m	Average 5 S - 5	Ma	Good vigour Horse Chestnut leaf miner (Cameraria ohridella)	20-40	B2	Tips 3m	Typical for species although unable to fully examine as off site -Has been crown lifted on site side in the past Rooting area - Lawn on off site and on site, around road, covered by a base, lowest 2m managed as an oval topiary Rooting area: lawn	-Annual monitoring
T19	Yew Taxus baccata	7	-	Average 2 Average 2 Average 2 Average 2	Ma	Good Vigour	>40	C2	2m		-Annual monitoring
T20	Silver Birch Betula pendula	7	2 stems both 200 18m ² 2.4m	Average 3 Average 3 Average 3 Average 3	Ma	Low vigour	-	R	2m	Significant amount of moderately sized crown dead wood overhangs road Rooting area: raised border adjacent to pavement	-Fell
T21	Holly Weeping Ilex aquifolium	5	200 18m ² 2.4m	Average 1.5 Average 1.5 Average 1.5 Average 1.5	Ma	Good vigour	20	C2	0.5m	Typical for species Rooting area: lawn	-Annual monitoring
T22 & T23	Myrobalan Plum Prunus cerasifera 'Pissardi'	4	150 multi stemmed 7m ² 1.5m	Average 1 Average 1 Average 1 Average 1	Y	Fair vigour	20	C2	Ground level	Multi stemmed poor specimens with crowded suckers and included unions -T23 arises from old stump	-Fell and replant with a different species

APPENDIX 3

Design of Weldmesh Type Tree Protection Fence

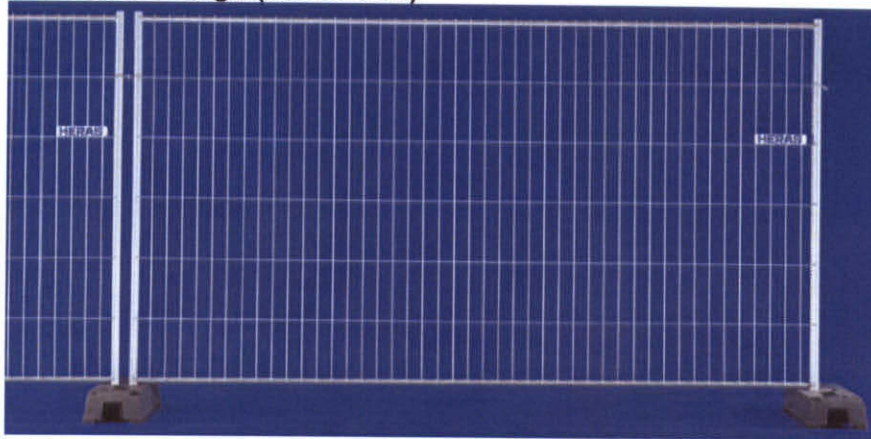
Specifications: Fence shall be 2m high x 3m in length

As 'Heras' type fencing can be easily moved, it must therefore be staked into the ground and tied in order to provide semi-permanent protection using 1.8m driven tanalised softwood stakes, or driven scaffold poles, and secured by tying wire or using 'U' bolts / clamps.

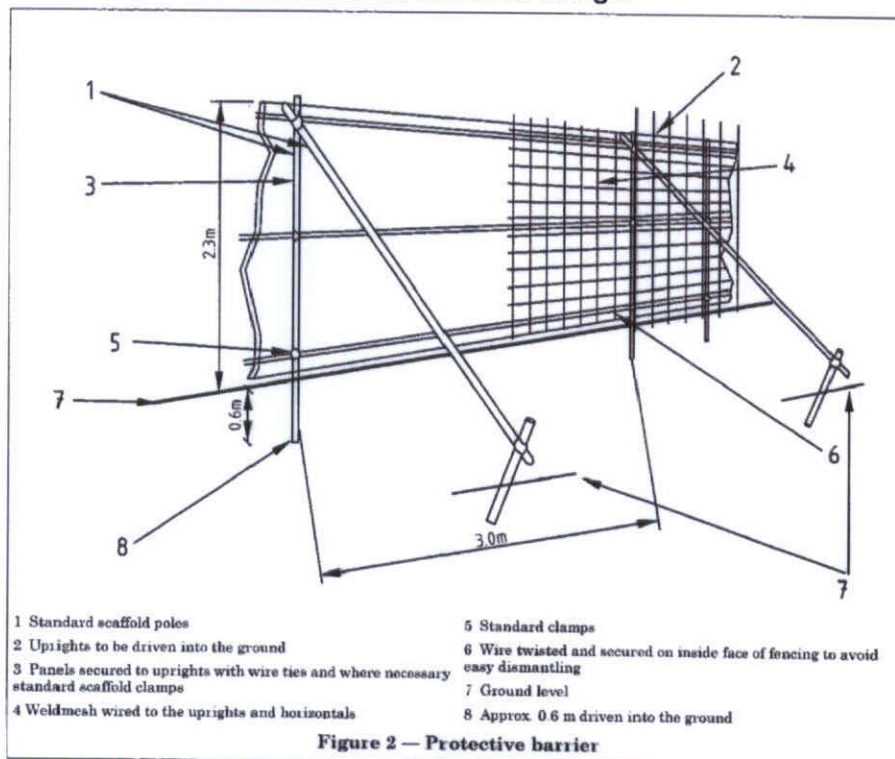
The fencing will be further identified by 'Tree Protection' warning signs.

Location: Fencing shall be positioned on the perimeter of the Root Protection Area (RPA) to define the Construction Exclusion Zone.

Example of Heras Fence Design (Unsecured)



Example of the new BS 5837:2005 Protective Barrier design



It may be appropriate on some sites to use temporary site office buildings / toilet blocks etc. as components of the tree protection barriers

Suggested protective fencing warning sign format



**TREE PROTECTION AREA
KEEP OUT !**

**(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY
PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A
TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY
LEAD TO CRIMINAL PROSECUTION**

**ANY INCURSION INTO THE PROTECTED AREA MUST BE
WITH THE WRITTEN PERMISSION OF THE PROJECT
ARBORICULTURIST**

APPENDIX 4

PHOTOGRAPHS OF TREES AT RAYLEIGH HOUSE, HIGH STREET, RAYLEIGH
TAKEN 13TH July 2007



T1 Deodar Cedar



T2 Paper bark maple



T3 False Acacia – note dense ivy growth



T4 Copper Beech looking south



T8



T18
Horse
Chestnut

T9
recently
pollarded

T7 Copper Beech and T8 Holly

Looking north west



T15

T1

Rooting area of T1

This comprises of a lawn on the northern, eastern and part of the southern aspect and tarmac on the western aspect. The tarmac is a poor rooting environment for the tree as water cannot permeate the soil.



Low quality
trees in rear
garden

T18 Horse
Chestnut

Appendix 5 – Rochford District Council Tree Policies

Natural Resources

Tree Protection

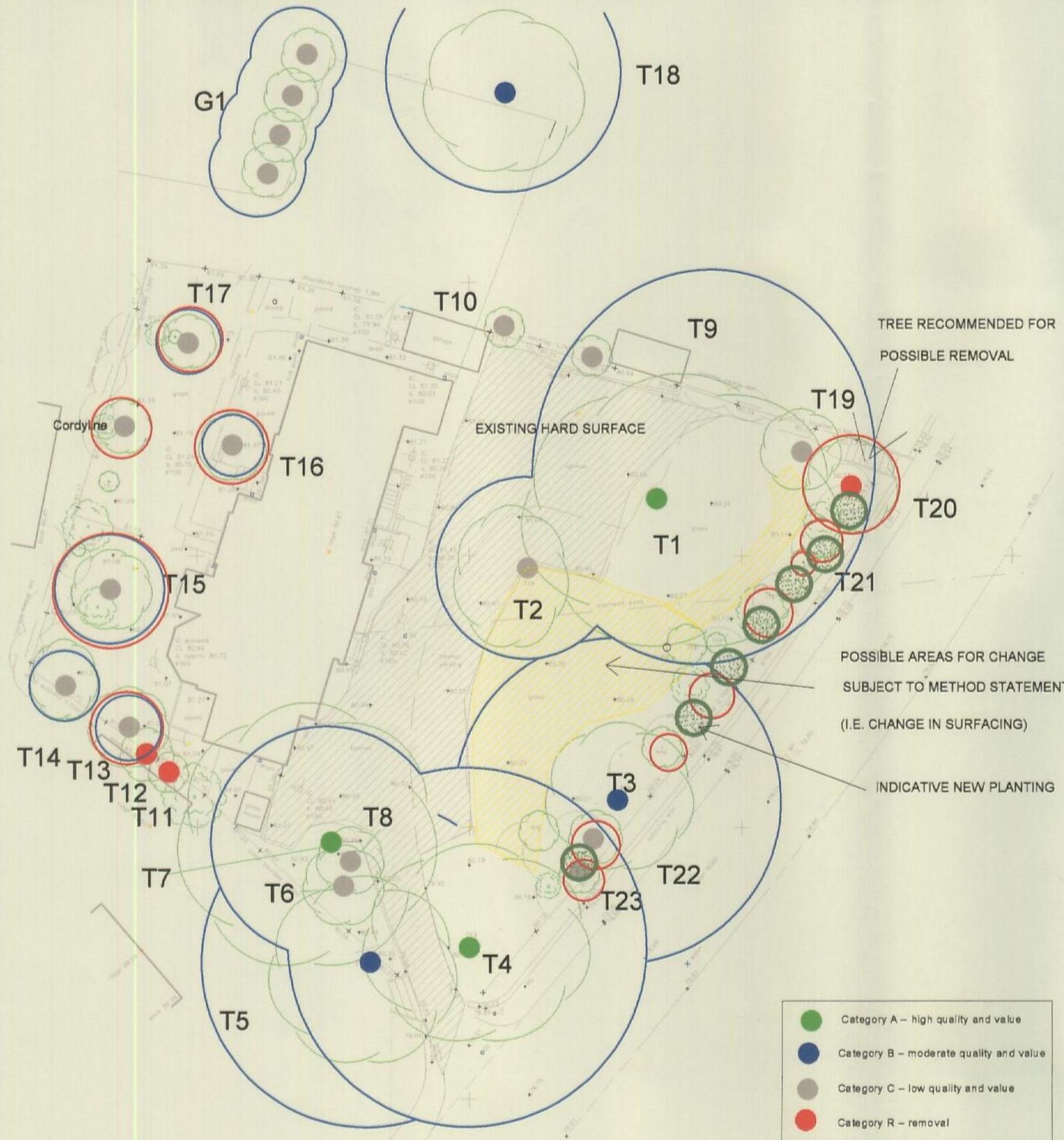
- 8.11 Trees are fundamental to the landscape, particularly in urban areas. They provide valuable visual and nature interest to the streetscape and often have a high wildlife value. The Council will serve Tree Preservation Orders (TPO's) on woodlands, groups and individual trees where they are considered to be at risk and where their removal would be considered to have an adverse effect on the local environment. Many trees in Conservation Areas are protected and intention to fell must be notified to the LPA.
- 8.12 Applicants should bear in mind that development involving buildings or any other construction works, such as hard standings, foundations, drainage works and land level changes, in close proximity to trees can effect their viability.
- 8.13 The local planning authority states that use should be made of the current British Standard BS5837 Guide for trees in relation to construction which provides assistance on development close to existing trees.
- 8.14 Applications for planning permission which involve development or associated works and which are in the vicinity of preserved trees must be accompanied by a statement of the arboricultural implications of development. This should be in the form of an arboricultural method statement showing how the development would be carried out so as to avoid any damage to trees, including full details demonstrating how the preserved tree(s) would be protected before, during and after development.
- 8.15 When the local authority considers that there is justification for the felling of a preserved tree the planting of an appropriate replacement native species of provident seed will be required.

POLICY NR3 – TREE PROTECTION

Development that adversely affects the amenity value or viability of individual trees, groups of trees or woodlands that are considered ancient or that form an important part of the landscape or townscape, will be refused.

Applicants will provide an arboricultural method statement in all cases where a development proposal could affect a preserved tree(s). Proposals for development that would adversely affect the amenity value or viability of preserved trees will be refused.

RAYLEIGH HOUSE - TREE CONSTRAINTS PLAN



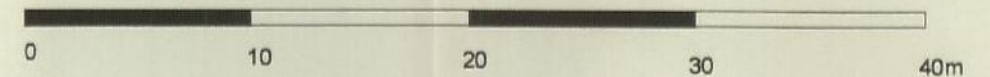
TREES AT RAYLEIGH HOUSE, HIGH STREET, RAYLEIGH.

BS 5837:2005 'Trees in relation to construction – recommendations'

TREE NUMBER	SPECIES	BS 5837: 2005 CATEGORISATION	ROOT PROTECTION AREA RADIUS
T1	Deodar Cedar	A1,2&3	R = 13.8
T2	Paper Bark Maple	B2	R = 6.6
T3	Robinia	B2	R = 12
T4	Copper Beech	A1&2	R = 13.2
T5	Red Oak	B2	R = 12
T6	Sycamore	C2	R = 8.4
T7	Copper Beech	A1&2	R = 13.2
T8	Holly	C2	R = 3.6
T9	Lime	C2	R = 7.2
T10	Golden Lawson Cypress	C2	R = 1.8
T11	Horse Chestnut	R	
T12	Norway Maple	R	
T13	Cotoneaster waterii	C2	R = 2.4
T14	Honey Locust	C2	R = 2.6
T15	Eucalyptus	C2	R = 4
T16	Dove tree	C2	R = 2.2
T17	Bramley Apple	C2	R = 2.4
G1	4x Lawson Cypress	C2	R = 3.6
T18	Horse Chestnut	B2	R = 8.4
T19	Yew	C2	-
T20	Silver Birch	R	
T21	Holly Weeping	C2	R = 2.4
T22 & T23	Myrobalan Plum	C2	R = 1.5

RPA – root protection area as defined by Table 2 BS 5837:2005

Shading arcs – current height of tree



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 ALTHORNE
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 Fax: 01621 742342
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CLIENT: Autosecond Ltd

SITE ADDRESS: RAYLEIGH HOUSE

DATE: 26TH JULY 2007 SCALE: 1:200

DRAWN: SHARON HOSEGOOD DRWG NO: DFC 026 TCP - IDEAS

Revision: Orientation

- Category A – high quality and value
- Category B – moderate quality and value
- Category C – low quality and value
- Category R – removal