Appeal against the decision of
Reigate and Banstead Borough Council
to refuse consent to construct one
detached house at
Site at Land Parcel at Merrywood Park,
Reigate Hill, Reigate, Surrey, RH2 9PA

STATEMENT OF CASE (ARBORICULTURE)
on behalf of the appellant
Racemoor Limited

Statement Date:  5th May, 2011

References:

PINS Ref:  APP/L3625/A/11/2146721/WF
LPA Ref:  P/10/01818/F
Quaife Woodlands Ref:  AR/2448/jq
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Subject</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Reasons for Refusal</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Tree Preservation Order</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Principles of the Landscape Context</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><em>(To be read as the Arboricultural Impact Statement)</em></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Tree Protection</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td><em>(To be read as the Arboricultural Method Statement)</em></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Post Development Pressure</td>
<td>11</td>
</tr>
<tr>
<td>7</td>
<td>Summary and Conclusions</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Appendices</td>
<td></td>
</tr>
<tr>
<td>Appendix QWA</td>
<td>Schedule of Trees</td>
<td>3 pages A4</td>
</tr>
<tr>
<td>Appendix QWB</td>
<td>Site Plan – Existing Layout</td>
<td>1 page A3</td>
</tr>
<tr>
<td>Appendix QWC</td>
<td>Site Plan – Proposed Layout</td>
<td>1 page A3</td>
</tr>
<tr>
<td></td>
<td><em>(To be read as the Tree Protection Plan)</em></td>
<td></td>
</tr>
<tr>
<td>Appendix QWD</td>
<td>The Tree Preservation Order</td>
<td>3 pages A4</td>
</tr>
<tr>
<td>Appendix QWE</td>
<td>Letter to the Tree Officer and e-mail reply</td>
<td>3 pages A4</td>
</tr>
<tr>
<td>Appendix QWF</td>
<td>RPA Radii Table</td>
<td>1 page A4</td>
</tr>
<tr>
<td>Appendix QWG</td>
<td>BS5837 Extract – Figure 2, TPB</td>
<td>1 page A4</td>
</tr>
<tr>
<td>Appendix QWH</td>
<td>BS5837 Extract – Figure 3, Ground Protection</td>
<td>1 page A4</td>
</tr>
<tr>
<td>Appendix QWI</td>
<td>Principles of No-Dig Surface Construction</td>
<td>1 page A4</td>
</tr>
<tr>
<td>Appendix QWJ</td>
<td>Example of a Cellular Confinement System</td>
<td>2 pages A4</td>
</tr>
<tr>
<td>Appendix QWK</td>
<td>No-Dig Kerb Edging</td>
<td>1 page A4</td>
</tr>
<tr>
<td>Appendix QWL</td>
<td>Stationing of Site Cabins within an RPA</td>
<td>1 page A4</td>
</tr>
<tr>
<td>Appendix QWM</td>
<td>Summary of author’s credentials</td>
<td>1 page A4</td>
</tr>
</tbody>
</table>
1. Introduction

1.1 I am instructed by:
Mr M. Quintner of C. Janes and Co., 94 Endlebury Road, London, E4 6QQ on behalf of the appellant Racemoor Limited to provide a statement in response to the reason for refusal (No. 4) contained within the Council’s Decision Notice dated 16th December 2010.

1.2 I visited the site on the 26th January 2011 in the company of the Council’s Principal Arboricultural Officer and again on my own on the 2nd May 2011. My field of expertise is Arboriculture and my qualifications and experience are summarised at Appendix QWM.

1.3 Declaration of Truth
The evidence which I have prepared and provide for this appeal reference APP/L3625/A/11/2146721/WF in this statement is true and has been prepared and is given in accordance with the guidance of my professional institution and I confirm that the opinions expressed are my true and professional opinions.

1.4 My Summary and Conclusions are at Section 8 on page 12.

1.5 Abbreviations:
N.B. abbreviations introduced in [square brackets] are used throughout the report.

i) Reigate and Banstead Borough Council [RBBC]

ii) Root Protection Area [RPA]

iii) Construction Exclusion Zone [CEZ]

iv) Tree Protection Barrier [TPB]

1.6 Publications and Documents Referred to:

i) BOROUGH OF REIGATE AND BANSTEAD TREE PRESERVATION ORDER No. 596/1990
RE: LAND AT LOCHINVAR LODGE AND MERRYWOOD PARK, REIGATE HILL, REIGATE, SURREY [TPO]


iii) British Standard 3998:2010 Tree work - Recommendations [BS3998]


v) Underground services near to trees will need to be installed in accord with the guidance given in BS5837 together with the National Joint Utilities Group Publication Volume 4 ‘Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees’, August 2007 [NJUG 4].
2. Reasons for Refusal.

2.1 The refusal notice (ref: P/10/01818/F of 16/12/10) issued by RBBC contains four reasons for refusal of which the fourth relates to arboriculture, which I have reproduced (scanned) below:

4. The proposed development is adjacent to and would affect protected trees that make a significant contribution to the character and visual amenity of this locality. In the absence of an arboricultural impact assessment (AIA), arboricultural method statement (AMS) or tree protection plan (TPP) to show that tree retention, health and amenity could be maintained to an acceptable standard and that occupancy conflict can be avoided, the proposal is contrary to policy Pc4, Ho9 of the Reigate and Banstead Borough Local Plan 2005, and the advice and recommendations set out in British Standard 5837: 2005 "Trees in Relation to Construction - Recommendations."

2.2 In the Officer Recommendation Report (undated but subsequent to a sit visit on 12th November 2010), the reason for refusal 4 is set out at the end with the same wording, and there is a section (on page 5) containing the tree officer’s comments, which I have reproduced (scanned) below:

**TREES**

The council’s tree officer was consulted on this application and in order to assess the proposed development in respect of the potential impact on trees and vegetation. The tree officer commented that the current application was supported by an arboricultural submission, closer inspection of the submitted arboricultural details revealed that these details were not produced for this current scheme, but for an earlier scheme relating to the construction of 6 two bedroom flats and therefore this submission is mis-leading and irrelevant to this current development. The arboricultural submission in some areas is generic and lacks details in places and requires greater emphasis in respect of the arboricultural supervision and monitoring of the proposed development, whilst some of the arboricultural data is useful (mainly survey information and the calculated root protection areas) the majority is irrelevant.

The report fails to sufficiently deal with the incursion into root protection areas in any detail and the proposed development would be within the RPAs of off site trees T17 and T16 and within the RPA of T9 an on site tree categorised A/B (a sub divided category not recognised by British Standard 5837:2005). The patio area would be in direct shade from the nearby yew tree (T9) and the expected normal use of the patio would be severely curtailed. The application would result in the loss of a number of small insignificant trees as shown on the submitted drawing. The proposed development would result in the indirect loss of a lawson cypress of mediocre quality. The proposed development would also result in incursions into the root protection areas of T9, T16 and T17 all of which are protected trees.

The submitted arboricultural information does not sufficiently demonstrate that the proposed development can be achieved without unacceptable damage to, or loss of protected trees, avoiding future occupancy conflict with the proposed dwelling, some of the trees are located off site and are outside of the control of the applicant. Further discussion in respect of this application in respect of the unresolved arboricultural issues are required. At the moment there is insufficient arboricultural information submitted in order to reach an informed and balanced decision.
2.3 The tenor of the reason for refusal 4 and the tree officer’s comments is that there was insufficient arboricultural information submitted with the planning application. Specific information was missing and such information that was submitted was incomplete.

2.4 The reason for refusal does not state that the scheme is unacceptable in terms of arboricultural principles, but just that the tree officer could not support it on the basis of the information submitted, specifically in respect of “unresolved arboricultural issues” and him being unable to form an “informed and balanced decision”.

2.5 The tree numbering referred to in the tree officer’s comments (paragraph 2.2 above) is based on the previous survey which omits some of the trees, and consequently I have modified it for the purposes of my survey. The numbering of the previous survey is listed at Appendix QWA to reconcile it with my own.

The trees specifically referred to are:

<table>
<thead>
<tr>
<th>Tree Number</th>
<th>Tree Type</th>
<th>My Tree Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>T9</td>
<td>Yew</td>
<td>T8</td>
</tr>
<tr>
<td>T16</td>
<td>Western Red Cedar</td>
<td>T18</td>
</tr>
<tr>
<td>T17</td>
<td>Yew</td>
<td>T19</td>
</tr>
</tbody>
</table>

2.6 I use my numbering throughout this statement.

3. The Tree Preservation Order.

3.1 The TPO (see Appendix QWD) was made in 1990 and covers a wider area than the appeal site (see Appendix QWD, page 2). There are only two individually identified TPO trees within and adjacent to the appeal site; TPO T1 (QW tree T13) and TPO T3 (QW tree T27) respectively (see Appendices QWA and QWC).

3.2 The remainder of the appeal site is within the southern part of TPO Area A1 (see Appendix QWC). This protects all trees including the species listed (see Appendix QWD, page 3) although the smaller saplings that have grown since 1990 are not protected. I note that the species Laurel and Portuguese Laurel are included and although they grow large enough to attain the stature of a small tree, they are shrub species and their inclusion in a TPO is a matter of contention. However in the circumstances of this site, the inclusion of these species is not contested in view of the Principal Arboricultural Officer’s comments (see Appendix QWE).
3.3 An Area category of TPO is one that is used to protect trees on a site indiscriminately where the LPA regards immediate protection to be appropriate without having time to carry out individual assessments. In this instance individual assessments have been made of specific trees and one may suppose that there was not time to survey the remainder of the site.

3.4 In practical terms, whilst every tree within an Area may be protected, it does not necessarily mean that each one is sacrosanct, and one can anticipate the TPO being re-made to protect those retained trees worthy of a TPO on an Individual or Group basis.

4. **Principles of the Landscape Context. (To be read as the Arboricultural Impact Statement)**

4.1 I met with Mr James, the Principal Arboricultural Officer, on site on the 26th January 2011 when we discussed various matters to do with the shortcomings of the previous survey and the potential to integrate the proposal in arboricultural terms.

4.2 I wrote to Mr James following our meeting to summarise the main points, and I have included my letter and Mr James’ reply at Appendix QWE.

4.3 There are two fundamental facets to the arboricultural landscape considerations. The first is the retention of the Reigate Hill road frontage screening. As this is not in the ownership of the appellant and is external to the appeal site, all the trees are to be retained (see Appendix QWC, 10 trees: T15, 16, 17, 18, 19, 21, 22, 23, 24 and 25). Similarly the Cypress T27 (TPO T3) is not in the appeal site and is retained.

4.4 We did agree, although I did not state it in my letter, that the TPO tree T13 (TPO T1) is to be retained, hence my comment that the only two trees of particular merit are the two Yews T7 and T8.

4.5 I also refer to the Ash T24 that is to be retained (last paragraph of page 1, Appendix QWE), but it was not apparent during our visit that this was not in the appeal site. At our meeting we also did not take notice of the Sycamore T26 (see Appendix QWB), which is in the appeal site and is to be retained.
4.6 In arboricultural landscape terms therefore, of the 27 trees that I surveyed, only 10 are proposed for removal (trees T1, 2, 3, 4, 5, 9, 10, 11, 12 and 20). Although there are only 17 surveyed trees within the appeal site, the ten to be removed are of little landscape merit (one, T10, being windblown and would be removed in any event irrespective of any development proposal – grade ‘R’ in terms of BS5837, see panel at Appendix QWB).

4.7 As a consequence, the loss of the trees proposed for removal will have no significant impact upon the landscape as the site will remain largely screened from the main road, and these same trees will provide a verdant backdrop when viewed from within Merrywood Park. The two Yews T7 and T8 together with the Cypress T27 (TPO T3) will provide substantial screening to the east, and the retained trees including the two Yews G14, the Laurel and Yew T15 at the southern corner of the site will provide screening to oblique views from the south-west (see Appendix QWC). The design of the proposed house will be commensurate with the architectural character of the other properties on Merrywood Park.

4.8 In summary the impact of the proposal upon the arboricultural landscape will be minimal and in accordance with the discussion I had with Mr James.

4.9 The opportunities for new tree planting are limited simply because so many trees will remain, but the bund (see Appendices QWB and QWC) has scope for evergreen shrub planting to augment the roadside screening.

5. Tree Protection. (To be read as the Arboricultural Method Statement)

5.1 The BS5837 gives a Root Protection Area [RPA] for each retained tree by reference to Table 2 in the BS. The RPA is an estimation of the area of the root system that would need to be retained to sustain the well-being of the tree if all the other roots outside it were to be severed.

5.2 The RPA is usually described as a circle with a radius of the prescribed distance within which no unspecified activity should occur, although the shape and position of the RPA can be modified by an arboriculturist to meet individual site conditions according to the probable distribution of the tree roots. Intrusion into the RPA can take place only where the ground is adequately protected in accord with the requirements of section 9.3 of BS5837 or where work is carried out to an agreed design and working method.
5.3 Quaife Woodlands uses a tabular method to derive rounded-up RPA radii in half-metre graduations (Appendix QWF) and these are listed for the subject trees at Appendix QWA. At Appendix QWC I have only plotted those RPAs that extend the furthest toward the proposed house and have omitted lesser RPAs encompassed within them.

5.4 I have given consideration to the shape of the RPAs and for the most part the only major existing feature that might alter their shape is the main road, Reigate Hill. This is the A217 trunk road and will have a substantial sub-base. This does mean that the rooting environment underneath will be an impediment to root growth, but from experience I doubt that all roots are excluded. Whilst the main bulk of assimilative root mass (fibrous roots which absorb water and nutrients) is generally understood to be relatively close to the surface in, on average, the top 60 centimetres under the surface, this is usually where soil is undisturbed. As is evidenced by subsidence damage to buildings associated with the influence of tree roots, where soil has been disturbed roots can grow much deeper.

5.5 The trees along the roadside strip will have some root mass under the road and the extension of roots into the site will also have been limited, albeit probably to a lesser extent, by growth competition with trees’ root systems on the appeal site. As far as the RPAs of trees to the west of the proposed house are concerned, these are likely to have been restricted to some extent by the trees T10, T12 and T20 that are proposed to be removed.

5.6 Accordingly in the specific site circumstances I am satisfied that the circular RPAs are appropriate, particularly in view of our tabulated method of RPA calculation being more generous than BS5837.

5.7 The combined RPAs forming the Construction Exclusion Zone [CEZ] are to be protected by a Tree Protection Barrier [TPB] comprising steel mesh panels of 1.8 metres in height (‘Heras’). These panels can be mounted on a scaffolding frame as shown at Figure 2 of BS5837 (Appendix QWG). This TPB is to be erected immediately after the trees identified for removal have been removed and before any other work commences on site, is to remain in situ undamaged for the duration of all work, and only to be removed once all work is completed. The only exception is the completion of soft landscaping, but if any excavations however minor, are to be carried out as part of soft landscaping within RPAs, an arboricultural assessment must be carried out beforehand and any additional arboricultural protection measures incorporated. The TPBs are to carry waterproof warning notices denying access within the CEZ.
5.8 The area shaded pink at Appendix QWC is the zone within RPAs where scaffolding will need to be erected. The ground will be protected in accord with Figure 3 of BS5837 as shown at Appendix QWH. Where the TPB is shown at the edge of the ground protection the TPB will be brought forward to protect the full RPA until the ground protection is installed.

5.9 The area next to T13, TPO T1, will be covered by the crown of the tree. Consequently the TPB fencing is angled to the corner to allow access, and the scaffolding will span this zone at a higher level. The crown branches will be kept at the other edge of the scaffolding with plastic netting (to maintain aeration). The branches are small enough and flexible enough for this to be achieved without damaging them (see Appendix QWC).

5.10 Critical to the specification of tree protection measures is the soil type. The appeal site is ringed in white on this extract reproduced from the Geological Survey Drift Map, Sheet 286, Reigate (by permission of the British Geological Survey ©NERC. All rights reserved). The indicated soil parent material shown blue is Gault Clay.

5.11 Gault Clay is a highly shrinkable soil, which means that its volume alters with moisture content variation. This has three arboricultural effects;
   a, this soil type does not impede normal tree root growth,
   b, the house will need to have foundations constructed in accordance with NHBC, and
   c, the soil is susceptible to compaction, which is highly detrimental to tree roots.

5.12 The footprint of the proposed house encroaches into five RPAs and I shall deal with each in turn with reference to Appendix QWC. The foundation type for the house has yet to be determined. It could be a ring beam on piles or a concrete strip, but in any event I have stipulated that the foundation will not extend outward from the footprint of the house.
5.12.1 **Yew T8.** The north-eastern corner of the house will just clip the RPA of T8 to an extent that is insignificant, being approximately 2 square metres of the RPA of 154 square metres. However the hard standing for parking encroaches into the same RPA by about 13 square metres. Combined these encroachments would amount to about 15 square metres or 10% of the RPA. Despite the zone of compensatory rooting area to the east, this would be a significant depletion of the RPA and consequently the parking area will be constructed using a No-Dig method with a permeable surface. The principles of this are set out at Appendix QWI, with some illustrative details at Appendices QWJ and QWK. There is to be a doorway to this hard standing area from the north-eastern flank elevation of the house, and to ensure compatibility of levels the surface will be constructed following the slight slope down to the road.

5.12.2 **Pencil Cedar T21.** The RPA of this tree is not quite encroached upon by the house footprint, but it does represent a continual root zone along the north-western elevation of the house. The house foundation design will need to be in accordance with NHBC, either with the use of piles or a concrete strip to the required depth. If the latter the strip foundation will be constructed with eccentric loading as illustrated in Figure 1. This may not necessarily be an ‘L’-shape but the principle is that the outer face of the foundation is in perpendicular alignment with the outer face of the wall so that the foundation does not extend beyond the house footprint.

5.12.3 **Yew T19.** The proximity of this RPA to the house is the same as for T21 (it only has a tiny and insignificant encroachment) and exactly the same principles apply with the eccentric loading of a strip foundation along the entire north-western and south-western elevations.

5.12.4 **Western Red Cedar T18.** This RPA is encroached upon by the two corners of the house of about 2 and 4 square metres. The combined encroachment of approximately 6 square metres is about 3% of the RPA of 227 square metres. With the foundation not extending beyond the house footprint this encroachment is small enough to be disregarded.
5.12.5 **Cypress T13, TPO T1.** The encroachment of the south-eastern corner of the house into the RPA is about 3 square metres, which is about 8% of the RPA of 38 square metres. This is on the borderline of being acceptable, but with provision for irrigation I doubt that this healthy tree would suffer any discernable harm, and is certainly capable of adaptive growth. (Note the TPB arrangement at paragraph 5.9 above and Appendix QWC).

5.13 The ground under the two Yews T7 and T8 will be manually cleared of surface vegetation and the zone shown hatched in brown at Appendix QWC will be mulched. This will be composted woodchip mulch laid to a depth not exceeding 100 millimetres. This provides an ideal rooting environment and will be carried out to the benefit of both trees as a direct consequence of Mr James’ concerns about the health of these two trees in the context of his observations of Yews in the vicinity.

5.14 Where hard surfacing is to be installed permeable materials will be used, including the small surfaced area at the south-western corner of the house which will be constructed onto the ground surface with a No-Dig slab.

5.15 Permeable surfaces are beneficial to roots underneath any surfacing, but the general requirement to use permeable surfacing wherever possible to increase rainwater absorption into the soil to reduce flooding risks (Sustainable Drainage Systems), means that the two objectives can be achieved simultaneously.

5.16 The No-Dig surface of the parking area is in fact a tree protection measure and consequently the drive should be installed initially. The laying of the final wearing surface can be postponed so as to avoid damage or disfigurement and also to provide an opportunity for temporary reinforcement should that prove to be necessary.

5.17 The surface water run-off and soil drainage has not been studied. However, due to the site topography and soil type, I do not foresee any detrimental effects on the trees in hydrological terms as a result of this development.

5.18 I have not been advised of the underground service routes, but it seems logical to suppose that they will run out of the site to the south-east. This being the case they will not compromise any RPAs. Clearly if any underground service routes should need to enter an RPA, the provisions of BS5837 and NJUG 4 should be employed and if necessary, further arboricultural advice sought.
5.19 The space available for construction operations is limited, particularly for the stationing of site huts and cabins. It is permissible to station a site cabin within an RPA as it then forms part of the ground protection. The area north of the parking hard standing partially within the RPA of T8 would be suitable provided that the site cabin installation is in accordance with the method at Appendix QWL.

5.20 The protection of the trees will also include recognition of other types of potentially damaging activities, such as the storage of materials (and other substances likely to be toxic to plants), parking, site-building requirements, and the use and parking of plant. Particular care and planning is necessary to accommodate the operational arcs of excavation and lifting machinery, including their loads, especially large building components such as beams and roof trusses. Operations like these have the potential to cause incidental damage and logistical planning will be done to avoid conflicts.

5.21 The protection of the retained trees and incorporated design features will need to be managed from an arboricultural perspective. The tree officer’s comments included a request for greater emphasis upon site supervision during construction and to that end I have set out below a condition that is appropriate to ensure that effective arboricultural site management takes place. The wording is as it appears in the draft of Arboricultural Planning Conditions for the revision of Circular 11/95.

\[
\text{No works or development shall take place until a scheme of supervision for the arboricultural protection measures required by condition [2] has been approved in writing by the local planning authority. This scheme will be appropriate to the scale and duration of the works and will include details of: (select as appropriate)}
\]

a. Induction and personnel awareness of arboricultural matters
b. Identification of individual responsibilities and key personnel
c. Statement of delegated powers
d. Timing and methods of site visiting and record keeping, including updates
e. Procedures for dealing with variations and incidents.
f. The scheme of supervision shall be carried out as agreed.
g. The scheme of supervision will be administered by a qualified arboriculturist instructed by the applicant and approved by the local planning authority.

5.22 The sequence of works will be as follows:

i) initial tree works – tree removal and pruning
ii) installation of TPB
iii) installation of underground services
iv) construction of parking area with No-Dig surfacing
v) main construction, including hard landscaping
vi) removal of TPB
vii) soft landscaping

1 This document was part of the PINS consultation document on revised planning conditions but the 11/95 revision has been put on hold since the 2010 General Election. However it is used by many LPAs and will be incorporated into a National Guidance Note on Arboricultural Site Management to be published in due course by the Arboricultural Association.
6. Post Development Pressure.

6.1 The concept of post development pressure upon trees is not that routine maintenance work to maintain clearances and the proportionality of trees is unacceptable. The term should more accurately be one of irresistible post development pressure where the spatial or physical relationship of a protected tree to a structure or feature demands pruning or removal that is inappropriate, but to which the local planning authority could not reasonably refuse consent.

6.2 The crowns of the retained trees have a good spatial relationship with the proposed house and the crown of the Cypress T13, TPO T1, will in effect be on the corner and not in front of windows.

6.3 Although the crown of the Yew T8 is not too close to the proposed house, I suggest that it is pruned back laterally to the approximate extent of about 2 metres indicated with the green shading at Appendix QWC. The crown is asymmetric in form to the north-east and the south-eastern spread is much sparser and higher. This pruning will enhance good ambient light and space to the rear of the house but without causing any physiological harm to the tree or diminishing its landscape presence to any discernible extent.

6.4 The Yew T7 will also be pruned in a similar manner, but the extent will be determined to in agreement with RBBC once the house is constructed and the spatial qualities can be assessed.

6.5 The rear amenity area will be shaded by trees, but with the pruning of Yews T7 and T8 there will be reasonable ambient light and the spatial relationship will in fact be much better than the building 31 and 32 to the north.

6.6 As there are crowns of trees close to the proposed house, it would be prudent to include filtration for rainwater guttering of either mesh or bristle inserts. The maintenance of rainwater goods will include the incorporation of discrete ladder rest points under the eaves and the provision of sufficient clearance between the edge of the roof and the guttering to facilitate ease of cleaning. In addition, the downpipes will be fitted with easily cleanable traps.
6.7 In consideration of these matters, there will be no appreciable post development pressure, and certainly none that would oblige the Council to give consent to inappropriate tree works.

7. **Summary and Conclusions.**

7.1 The proposal will require the removal of ten trees, but they are less significant specimens and the other 17 trees of direct landscape significance will be retained. Consequently the arboricultural character and appearance of the site will not be adversely affected.

7.2 The house will have a reasonable spatial relationship with the trees and together with design features to ease tree-related maintenance there will be no irresistible post development pressure upon the trees.

7.3 All the retained trees can be protected in accordance with current standards and guidance and all pruning will be carried out in accordance with BS3998.

7.4 The scope for new tree planting within the landscape scheme is limited but the bund will be planted with shrubs to improve the screening to the road.

7.5 The arboricultural management of the construction operations can be carried out in accordance with the condition suggested at paragraph 5.21 above.

7.6 I have taken account of the information given to me and my own observations on site and I am satisfied that the proposed development can be achieved in an arboriculturally sound manner and that the long term well being of the retained trees can be safeguarded sustainably.

7.7 The ground of refusal relates to the previous arboricultural survey not providing adequate information and not being relevant to this proposal. The details I have set out provide the requisite information to demonstrate that the proposal is sound and sustainable in arboricultural terms and that all the arboricultural issues are resolved (see paragraph 2.4 above).

7.8 I have indicated the feasibility of the various measures of design and tree protection and the actual technical details can be secured by conditions.

Jim Quaife  5th May, 2011
Arboricultural Survey AR/2448/jq – Land at Merrywood Park, Reigate, RH2 9PA

Appendix QWA

KEY

Pre: Prefix: T = Tree G = Group H = Hedge

No Tree reference number.

Ht Tree Height in metres.

SD Stem diameter in centimetres at 1.5 metres above ground level or immediately above the root flare for multi-stemmed trees.
* Estimated.  m Multi-stemmed.

Cr Ø Average crown diameter in metres.

CrB Height in metres of crown clearance above adjacent ground level.


PC Physiological Condition G – Good F – Fair P – Poor D – Dead

SC Structural Condition G – Good F – Fair P – Poor D – Dangerous

BS Category grading

R – Existing condition is such that any existing value would be lost within 10 years and should therefore be removed for reasons of sound arboricultural management.

A – High quality and value (40 + yrs).
1) Mainly arboricultural values 2) Mainly landscape values 3) Mainly cultural values incl. conservation.

B - Moderate quality and value (20+ years)
1) Mainly arboricultural values 2) Mainly landscape values 3) Mainly cultural values incl. conservation.

C – Low quality and value (10+ years).
Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a SD of less than 15cm should be considered for relocation.

Rad Root Protection Radius in metres.

RPA Root Protection Area in square metres.
### Arboricultural Survey AR/2448/jq – Land at Merrywood Park, Reigate, RH2 9PA

<table>
<thead>
<tr>
<th>Pre No</th>
<th>PS No</th>
<th>Species</th>
<th>Ht</th>
<th>SD</th>
<th>Cr. Ø</th>
<th>CrB</th>
<th>AC</th>
<th>PC</th>
<th>SC</th>
<th>BS</th>
<th>Rad</th>
<th>RPA</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>T 1</td>
<td>1</td>
<td>Sycamore</td>
<td>17</td>
<td>54*</td>
<td>10.0</td>
<td>2.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>6.5</td>
<td>133</td>
<td>Ivy. Crown asymmetric to north</td>
</tr>
<tr>
<td>T 2</td>
<td>2</td>
<td>Field Maple</td>
<td>17</td>
<td>42*</td>
<td>8.0</td>
<td>2.0</td>
<td>M</td>
<td>G</td>
<td>F</td>
<td>C</td>
<td>5.0</td>
<td>79</td>
<td>Ivy. Slender form</td>
</tr>
<tr>
<td>T 3</td>
<td>3</td>
<td>Field maple</td>
<td>18</td>
<td>44*</td>
<td>9.0</td>
<td>2.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>5.5</td>
<td>95</td>
<td>Ivy. Crown asymmetric to north-east</td>
</tr>
<tr>
<td>T 4</td>
<td>4</td>
<td>Ash</td>
<td>9</td>
<td>N/A</td>
<td>4.0</td>
<td>2.0</td>
<td>M</td>
<td>P</td>
<td>P</td>
<td>C</td>
<td>4.0</td>
<td>50</td>
<td>Secondary asymmetric stem from truncated stump</td>
</tr>
<tr>
<td>T 5</td>
<td>5</td>
<td>Field Maple</td>
<td>16</td>
<td>42*</td>
<td>9.0</td>
<td>2.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>5.0</td>
<td>113</td>
<td>Ivy</td>
</tr>
<tr>
<td>T 6</td>
<td>7</td>
<td>Blue Spruce</td>
<td>18</td>
<td>30</td>
<td>7.0</td>
<td>3.0</td>
<td>M</td>
<td>F</td>
<td>P</td>
<td>C</td>
<td>4.0</td>
<td>50</td>
<td>In declining condition</td>
</tr>
<tr>
<td>T 7</td>
<td>8</td>
<td>Yew</td>
<td>13</td>
<td>62</td>
<td>10.0</td>
<td>2.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>B1</td>
<td>7.5</td>
<td>177</td>
<td></td>
</tr>
<tr>
<td>T 8</td>
<td>9</td>
<td>Yew</td>
<td>13</td>
<td>58</td>
<td>10.0</td>
<td>2.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>B1</td>
<td>7.0</td>
<td>154</td>
<td></td>
</tr>
<tr>
<td>T 9</td>
<td>10</td>
<td>Lawson Cypress</td>
<td>13</td>
<td>22</td>
<td>4.0</td>
<td>2.0</td>
<td>M</td>
<td>F</td>
<td>F</td>
<td>C</td>
<td>3.0</td>
<td>28</td>
<td>Poor specimen</td>
</tr>
<tr>
<td>T 10</td>
<td>10a</td>
<td>Lawson Cypress</td>
<td>n/a</td>
<td>m</td>
<td>n/a</td>
<td>n/a</td>
<td>M</td>
<td>P</td>
<td>P</td>
<td>R</td>
<td>-</td>
<td>-</td>
<td>Windblown</td>
</tr>
<tr>
<td>T 11</td>
<td>11</td>
<td>Apple</td>
<td>5</td>
<td>34</td>
<td>4.0</td>
<td>2.0</td>
<td>O</td>
<td>F</td>
<td>P</td>
<td>C</td>
<td>4.5</td>
<td>64</td>
<td>Crown asymmetric to north</td>
</tr>
<tr>
<td>T 12</td>
<td>12</td>
<td>Box Elder</td>
<td>12</td>
<td>40</td>
<td>9.0</td>
<td>2.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>5.0</td>
<td>79</td>
<td>Crown asymmetric to south</td>
</tr>
<tr>
<td>T 13</td>
<td>13</td>
<td>Lawson Cypress</td>
<td>10</td>
<td>28</td>
<td>5.0</td>
<td>2.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>3.5</td>
<td>38</td>
<td>TPQ tree T1</td>
</tr>
<tr>
<td>G 14</td>
<td>T14</td>
<td>Yew</td>
<td>7.0</td>
<td>40m</td>
<td>7.0</td>
<td>1.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>4.0</td>
<td>50</td>
<td>Group of two trees</td>
</tr>
<tr>
<td>T 15</td>
<td>-</td>
<td>Yew</td>
<td>7.0</td>
<td>35m</td>
<td>7.0</td>
<td>2.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>3.5</td>
<td>38</td>
<td>OFF SITE</td>
</tr>
</tbody>
</table>

*PS No* is the tree number from the previous survey.

2nd May 2011 AR/2448/jq – Land at Merrywood Park, Reigate, RH2 9PA
<table>
<thead>
<tr>
<th>Pre No</th>
<th>PS No</th>
<th>Species</th>
<th>Ht</th>
<th>SD</th>
<th>Cr. Ø</th>
<th>CrB</th>
<th>AC</th>
<th>PC</th>
<th>SC</th>
<th>BS</th>
<th>Rad</th>
<th>RPA</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>T 16</td>
<td>-</td>
<td>Yew</td>
<td>8</td>
<td>50m</td>
<td>9.0</td>
<td>1.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>5.0</td>
<td>79</td>
<td>Possibly more than one tree, OFF SITE</td>
</tr>
<tr>
<td>T 17</td>
<td>15</td>
<td>Yew</td>
<td>6</td>
<td>28</td>
<td>6.0</td>
<td>1.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>2.5</td>
<td>20</td>
<td>OFF SITE</td>
</tr>
<tr>
<td>T 18</td>
<td>16</td>
<td>Western Red Cedar</td>
<td>20</td>
<td>70</td>
<td>8.0</td>
<td>1.0</td>
<td>M</td>
<td>F</td>
<td>F</td>
<td>B1</td>
<td>8.5</td>
<td>227</td>
<td>Ivy, OFF SITE</td>
</tr>
<tr>
<td>T 19</td>
<td>17</td>
<td>Yew</td>
<td>14</td>
<td>60</td>
<td>10.0</td>
<td>1.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>7.5</td>
<td>177</td>
<td>OFF SITE</td>
</tr>
<tr>
<td>T 20</td>
<td>17a</td>
<td>Lawson Cypress</td>
<td>16</td>
<td>25</td>
<td>6.0</td>
<td>1.0</td>
<td>M</td>
<td>F</td>
<td>F</td>
<td>C</td>
<td>3.0</td>
<td>28</td>
<td>Slender form</td>
</tr>
<tr>
<td>T 21</td>
<td>18</td>
<td>Pencil Cedar</td>
<td>22</td>
<td>90</td>
<td>10.0</td>
<td>2.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>B1</td>
<td>11.0</td>
<td>380</td>
<td>OFF SITE</td>
</tr>
<tr>
<td>T 22</td>
<td>19</td>
<td>Yew</td>
<td>6</td>
<td>30</td>
<td>5.0</td>
<td>1.0</td>
<td>S</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>4.0</td>
<td>50</td>
<td>OFF SITE</td>
</tr>
<tr>
<td>T 23</td>
<td>20</td>
<td>Sycamore</td>
<td>18</td>
<td>60/60*</td>
<td>7.0</td>
<td>1.0</td>
<td>M</td>
<td>G</td>
<td>F</td>
<td>C</td>
<td>10.5*</td>
<td>346*</td>
<td>Forked x 2 at base,* equivalent SD 85cms, crown asymmetric to north, OFF SITE</td>
</tr>
<tr>
<td>T 24</td>
<td>21</td>
<td>Ash</td>
<td>16</td>
<td>60*</td>
<td>11.0</td>
<td>2.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>7.5</td>
<td>177</td>
<td>OFF SITE</td>
</tr>
<tr>
<td>T 25</td>
<td>22</td>
<td>Lawson Cypress</td>
<td>13</td>
<td>65*</td>
<td>8.0</td>
<td>2.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>8.0</td>
<td>201</td>
<td>Ivy, leans to south-west, OFF SITE</td>
</tr>
<tr>
<td>T 26</td>
<td>-</td>
<td>Sycamore</td>
<td>15</td>
<td>52</td>
<td>10.0</td>
<td>2.0</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>6.5</td>
<td>133</td>
<td>Ivy</td>
</tr>
<tr>
<td>T 27</td>
<td>TP3</td>
<td>Lawson Cypress</td>
<td>12</td>
<td>35*</td>
<td>6.5</td>
<td>GL</td>
<td>M</td>
<td>G</td>
<td>G</td>
<td>C</td>
<td>4.5</td>
<td>64</td>
<td>OFF SITE TPO tree dT3</td>
</tr>
</tbody>
</table>

*PS No* is the tree number from the previous survey
Appendix QWC

**Quaife Woodlands Arboricultural Survey AR/2448/jq**

Land at Merrywood Park, Reigate, Surrey, RH2 9PA

Site Plan - Proposed Layout with Tree Protection Measures

Scale 1:200 approximately @ A3 2nd May, 2011

Scaling accuracy is sufficient for planning purposes but this drawing should not be used for construction

**Retained Tree**

**Removed Tree**

**Root Protection Area**

**Tree Protection Barrier**

**CONSTRUCTION**

**Ground Protection**

**No-Dig Surfacing**

**Boundary of part of TPO Area A1**

**Boundary of Subject Site**

**Area Proposed for Mulching**

**Proposed lateral reduction of crown of T9**

**TPB alignment at ground level with scaffolding above head height to accommodate the crown of T13 (see paragraph 5.9 of the statement)**

**Appendix QWC**

---

**MERRYWOOD PARK**

**REIGATE HILL**

**NORTH**
THE COUNCIL OF THE BOROUGH OF REIGATE AND BANSTEAD

TOWN AND COUNTRY PLANNING ACT 1971 (AS AMENDED)

TOWN AND COUNTRY PLANNING (TREE PRESERVATION ORDERS) REGULATIONS 1969 (AS AMENDED)

BOROUGH OF REIGATE AND BANSTEAD TREE PRESERVATION ORDER 
NO. 596/1990

RE: LAND AT LOCHINVAR LODGE AND MERRYWOOD PARK,
REIGATE HILL, REIGATE, SURREY

E.Y.C. Goring, 
Borough Solicitor, 
Town Hall, 
Reigate, 
Surrey, RH2 0SH

CMM/PL.T.01/596 
D.12/1
Plan (scanned from a photocopy) of Borough of Reigate and Banstead Tree Preservation Order No. 596/1990
Re: Land at Lochinvar Lodge and Merrywood Park, Reigate Hill, Reigate, Surrey

### TREE PRESERVATION ORDER NO. 596
Lochinvar Lodge and Merrywood Park
Reigate Hill
Reigate

<table>
<thead>
<tr>
<th>Grid Ref</th>
<th>TQ 2551</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drawn by</td>
<td>HLB</td>
</tr>
<tr>
<td>Date</td>
<td>9.1.90</td>
</tr>
<tr>
<td>Scale</td>
<td>1:1250</td>
</tr>
<tr>
<td>Plan No</td>
<td>TPO - 596</td>
</tr>
</tbody>
</table>

**BOROUGH OF REIGATE AND BANSTEAD PLANNING DEPARTMENT**

- Miss D M H Rice M A (Cantab)Dip TP MRTPI
- DIRECTOR of PLANNING
- Town Hall,
- Reigate, Surrey, RH2 0SH

Appeal Site
T2 not present

Reproduced from the Ordnance Survey maps with the sanction of the Controller of Her Majesty's Stationery Office, Crown Copyright Reserved.
Extracts (scanned from a photocopy) from the Listing of
Borough of Reigate and Banstead Tree Preservation Order No. 596/1990
Re: Land at Lochinvar Lodge and Merrywood Park, Reigate Hill, Reigate, Surrey

FIRST SCHEDULE

TREES SPECIFIED INDIVIDUALLY

(Encircled in black on the map)

<table>
<thead>
<tr>
<th>No. on Map</th>
<th>Description</th>
<th>Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>Cypress</td>
<td>In the north-west section of Merrywood Park, Reigate, adjacent to the access road.</td>
</tr>
<tr>
<td>T2</td>
<td>Cypress</td>
<td>In the north-west section of Merrywood Park, Reigate, adjacent to the access road.</td>
</tr>
<tr>
<td>T3</td>
<td>Golden Cypress</td>
<td>In the north-west section of Merrywood Park, Reigate, adjacent to the access road.</td>
</tr>
<tr>
<td>T4</td>
<td>Golden Cypress</td>
<td>In the north-west section of Merrywood Park, Reigate, adjacent to the access road.</td>
</tr>
<tr>
<td>T5</td>
<td>Cedar</td>
<td>In the northern part of Merrywood Park, Reigate, adjacent to the access road.</td>
</tr>
<tr>
<td>T6</td>
<td>Cypress</td>
<td>In the grounds of Lochinvar Lodge, Reigate Hill, Reigate.</td>
</tr>
</tbody>
</table>

N.B. The Individual tree section contains a total of 21 trees.
Also note that tree T2 was removed many years ago

{Trees specified by reference to and Area}

TREES SPECIFIED BY REFERENCE TO AN AREA
(with a dotted black line on the map)

<table>
<thead>
<tr>
<th>No. on Map</th>
<th>Description</th>
<th>Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Those trees with A1 including: Portuguese Laurel, Yew, Cypress, Sycamore, Laurel, Holly</td>
<td>In the north-western section of Merrywood Park adjacent to the west and north boundaries; also in the front garden of Lochinvar Lodge.</td>
</tr>
</tbody>
</table>

[Those trees with A1 including: Portuguese Laurel, Yew, Cypress, Sycamore, Laurel, Holly]

N.B. The Area section contains a total of 2 areas.

The Group section contains 6 groups.
There are no entries in the Woodland section
7th February, 2011,
Our Ref: AR/2448L1/jq
Mr M. James,
Principal Arboricultural Officer,
Reigate and Banstead Borough Council,
Development Department,
Town Hall,
Reigate,
Surrey. RH2 0SH
By e-mail only
malcolm.james@reigate-banstead.gov.uk

Land at Merrywood Park, Reigate, Surrey – Site Visit on the 26th January 2011

Dear Malcolm,

Thank you for meeting me on this site. The background to the planning history from your perspective was certainly very useful and I have a much clearer picture of your concerns.

I just wanted to confirm the matters we discussed and I appreciate that your comments were made without prejudice.

The existing screening to the site from the main roads is vital. The road frontage land is not in the ownership of my client and accordingly all the trees are to be retained. I did remark that some maintenance is overdue, but that is not a matter over which I have any influence. The group of trees at the junction with Merrywood Park in the ownership of my client is also an important visual feature and will be retained.

Internally the only two trees of significance are the pair of Yews. These are not only significant in the landscape but also provide screening to the maisonette block to the north. They are in a slightly stressed condition (you mentioned that this is the case for many Yews in the Borough) and I would be happy to suggest that we clean and mulch the ground underneath them. We also noted the asymmetric disposition of the crowns to the east and it should be possible to prune the crowns laterally to the west to create enhanced headroom and ambient light, without having a detrimental impact on their landscape presence.

None of the other trees is of particular merit. I appreciate that currently they provide a verdant landscape mass, but if the development of this site is to take place they should all be removed (apart from the Ash at the northern end). This would provide the opportunity to design a layout that uses the site efficiently and with scope to plant new trees compatible with the spatial qualities of the site and with a sustainable future. The removal of all the trees other than the Ash, the corner clump and the two Yews may appear drastic, but the remaining backdrop of trees on the main road frontage provides substantial mitigation and careful landscape design would create a building that sits congruously with the other properties in the road.
The boundary with the roadside land has a bund along its northern length within the subject site. It seems to me that this could be planted with evergreen shrubs for all-year-round screening, with the advantage that they will be positioned almost a metre above the ambient ground level for greater immediate effect.

These are the general principles of the arboricultural considerations of this project but subject to the more detailed design that will ensue. I will provide a full supporting statement for the application and I will conduct my survey from scratch with no reliance upon historical tree data.

I would be grateful if you could acknowledge this letter and of course including or modifying any points that I have missed.

Regards,

Jim Quaife

Copy to:  Mr M. Quintner of C. Janes and Company  quintner@btinternet.com
From: Malcolm James [Malcolm.James@reigate-banstead.gov.uk]
Sent: 09 February 2011 11:03
To: Jim Quaife
Cc: Darren Williams
Subject: Re: Land at Merrydown Park

Dear Jim,

Your letter appears to provide an accurate reflection of the discussions which took place on site. I'm not quite sure of the route being taken by the agent, but the primary objective is to ascertain whether the current refused planning application and your input can resolved the arboricultural issues in respect of the reason for refusal. By the way the address is Merrywood Park. We may require further discussion in respect of resolving the arboricultural issues, but hopefully this should result in a positive outcome.

Malcolm James
Senior Tree and Landscape Officer
01737-276179
malcolm.james@reigate-banstead.gov.uk

>>> "Jim Quaife" <j@quaife-woodlands.co.uk> 07/02/11 12:44:47 >>>
Dear Malcolm,

After a delay for which I apologise I have attached a follow-up letter to our site visit.

Best wishes,

Jim

*******************************************************************************
This e-mail is for the use of the intended recipient. It may contain confidential or privileged information. If you are not, or suspect that you are not the intended recipient you should contact the sender immediately.
You should note that we cannot guarantee that this message or any attachment is virus free or has not been intercepted and amended. The views of the author of this e-mail may not necessarily reflect those of the Authority. Please note: Incoming and outgoing e-mail messages and content are routinely monitored to maintain system performance and appropriate business usage. The usual Government Protective Marking rules and handling procedures apply (as defined by www.cabinetoffice.gov.uk in their Security Policy Framework)

Reigate & Banstead Borough Council
Reigate Town Hall, Castlefield Road, Reigate, Surrey RH2 8SH Telephone : +44 (0)1737 276000 Website : http://www.reigate-banstead.gov.uk
*******************************************************************************

Email the way you want it - scanned for viruses and spam by emailsystems

If you believe this email is spam, please forward to spam@emailfiltering.com
The ½ metre graduations of RPA radii have been calculated back to produce diameter dimensions, which in turn have been rounded down to the nearest centimetre. If the BS5837 multiplier factor is plotted on a graph it produces a straight gradient and if the ½ metre steps are plotted they are all above that line, thus ensuring that the RPA radii err on the generous side.

<table>
<thead>
<tr>
<th>Multiple Stems up to diameter (mm)</th>
<th>Single Stem up to diameter (mm)</th>
<th>RPA Radius (m)</th>
<th>RPA (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500</td>
<td>1250</td>
<td>15.0</td>
<td>707</td>
</tr>
<tr>
<td>1450</td>
<td>1210</td>
<td>14.5</td>
<td>660</td>
</tr>
<tr>
<td>1400</td>
<td>1170</td>
<td>14.0</td>
<td>616</td>
</tr>
<tr>
<td>1350</td>
<td>1120</td>
<td>13.5</td>
<td>573</td>
</tr>
<tr>
<td>1300</td>
<td>1080</td>
<td>13.0</td>
<td>531</td>
</tr>
<tr>
<td>1250</td>
<td>1040</td>
<td>12.5</td>
<td>491</td>
</tr>
<tr>
<td>1200</td>
<td>1000</td>
<td>12.0</td>
<td>452</td>
</tr>
<tr>
<td>1150</td>
<td>960</td>
<td>11.5</td>
<td>416</td>
</tr>
<tr>
<td>1100</td>
<td>920</td>
<td>11.0</td>
<td>380</td>
</tr>
<tr>
<td>1050</td>
<td>870</td>
<td>10.5</td>
<td>346</td>
</tr>
<tr>
<td>1000</td>
<td>830</td>
<td>10.0</td>
<td>314</td>
</tr>
<tr>
<td>950</td>
<td>790</td>
<td>9.5</td>
<td>284</td>
</tr>
<tr>
<td>900</td>
<td>750</td>
<td>9.0</td>
<td>255</td>
</tr>
<tr>
<td>850</td>
<td>710</td>
<td>8.5</td>
<td>227</td>
</tr>
<tr>
<td>800</td>
<td>670</td>
<td>8.0</td>
<td>201</td>
</tr>
<tr>
<td>750</td>
<td>620</td>
<td>7.5</td>
<td>177</td>
</tr>
<tr>
<td>700</td>
<td>580</td>
<td>7.0</td>
<td>154</td>
</tr>
<tr>
<td>650</td>
<td>540</td>
<td>6.5</td>
<td>133</td>
</tr>
<tr>
<td>600</td>
<td>500</td>
<td>6.0</td>
<td>113</td>
</tr>
<tr>
<td>550</td>
<td>460</td>
<td>5.5</td>
<td>95</td>
</tr>
<tr>
<td>500</td>
<td>420</td>
<td>5.0</td>
<td>79</td>
</tr>
<tr>
<td>450</td>
<td>370</td>
<td>4.5</td>
<td>64</td>
</tr>
<tr>
<td>400</td>
<td>330</td>
<td>4.0</td>
<td>50</td>
</tr>
<tr>
<td>350</td>
<td>290</td>
<td>3.5</td>
<td>38</td>
</tr>
<tr>
<td>300</td>
<td>250</td>
<td>3.0</td>
<td>28</td>
</tr>
<tr>
<td>250</td>
<td>210</td>
<td>2.5</td>
<td>20</td>
</tr>
<tr>
<td>200</td>
<td>160</td>
<td>2.0</td>
<td>13</td>
</tr>
</tbody>
</table>
Appendix QWG

Extract from British Standard 5837: 2005, Trees in relation to construction

Figure 2. Indicated framework support as the usual method of support for steel mesh panels ('Heras'). Some variation as described in the Report text can be employed if appropriate.
Extract from British Standard 5837: 2005, Trees in relation to construction

Figure 3. Scaffolding within the Root Protection Area [RPA]
No-Dig Surfacing Construction Method within a Root Protection Area [RPA] (based on Arboricultural Practice Note 12 [APN12] and BS5837)

The construction works should progress in the following order;

- Kill ground vegetation using a systemic herbicide and gather dead organic material. Care must be taken to select (by reading the product label) a herbicide that will not affect the roots of retained trees and vegetation. This must be carried out by an appropriately trained operative.

- Remove major protrusions such as rocks and stumps (stumps should be ground out to minimise ground disturbance). Fill significant hollows with sharp sand.

- Lay a geotextile membrane directly onto the soil over the whole of the parking area or drive.

- Edging to the surfacing will be as detailed in Appendix QWK.

- Lay the Three Dimensional Cellular Confinement System [TDCCS] (e.g. CellWeb by Geotechnics [Appendix QWJ] or similar). The specification will be prepared by an engineer.

- Cover the TDCCS with a no fines aggregate infill. This will be installed progressively so that machinery only moves on the laid sub-base. The aggregate will not tipped straight onto the TDCCS.

- Compact the sub-base to ensure binding with the TDCCS and to minimise future rutting of the surface.

- Lay a geotextile membrane directly onto the sub-base over the parking area or drive.

- If the proportion of RPA covered by No-Dig surfacing is more than 20% or the surface exceeds 3 metres in width within the RPA, the surfacing must be porous. This can be achieved with brick pavours on a dry bed and grouted with kiln-dried sand, or porous or perforated asphalt or concrete.

Schematic Diagram of a No-Dig Surface (Block wearing surface)
CellWeb
Tree Root Protection System

Problems associated with the construction of new developments around mature or any existing trees is well documented. BS5837 (1991) and later APN1 (1996) offer guidelines to those concerned with the protection of trees during the construction process.

The provision of car parking facilities and access roads around trees can lead to problems culminating in the premature loss of the tree itself unless preventative measures are taken to protect the tree roots during and after construction. (fig. 1)

Vehicular traffic above tree roots creates compaction of unconfined sub-soils causing oxygen depletion and even a loss of vital nutrients. Creating an impermeable surface above tree roots by installing a compacted sub base for load support also adds to these problems.

The solution is CellWeb, a three dimensional Cellular Confinement System that provides a load transfer blanket significantly reducing vertical loads on unprotected tree roots. (fig. 2)

Please contact:
Geosynthetics Limited
Heming Road,
Harrovbrook Ind. Estate,
Hinckley, LE10 3DU.

Telephone: 01455 617139
Facsimile: 01455 617140 Email: sales@geosyn.co.uk

www.geosyn.co.uk
CellWeb

The CellWeb System uniquely prevents rutting action of sub-soils by confining infill material within the hoop structure of the panel, increasing the infills shear strength. The use of a CellWeb System increases the load capacity of granular infill by up to 50% reducing the overall construction depth required. Perforated cell walls permit through drainage and also provides frictional interlock of the infill again increasing the shear strength of the system.

A non woven geotextile filtration/separation membrane is used beneath the system to prevent migration of materials and also to aid with drainage vertically through the system.

The CellWeb panels are infilled with a clean angular gravel which provides load support and permits air and moisture transfer to the roots ensuring the long term preservation of the tree root structure. (fig. 5)

Surfacing materials are at the discretion of the client, however for specific advice please contact our sales office.

Benefits of using CellWeb

- **Reduction in construction depth.**
- **Prevent compaction of sub-soils.**
- **Prevent oxygen/nutrient depletion.**
- **Environmentally friendly option.**
- **Fast and economic installation.**
- **Technical support available.**

**CellWeb is available in four cell depths;**
75mm, 100mm, 150mm and 200mm.

The cell depth required is dependant upon specific site conditions. For specification details or project specific design assistance please contact our sales office.

Telephone: 01455 617139
Facsimile: 01455 617140 Email: sales@geosyn.co.uk

www.geosyn.co.uk
No-Dig Surfacing edge retention details

Based on Arboricultural Practice Note 12, 2007

Figure 1. Installation of independent kerb edging

N.B. Maximum width of No-Dig with a non-porous surface INCLUDING edges within a Root Protection Area is 5 metres
Method Statement for the placing of a site cabin within a Root Protection Area (RPA)

1. The cabin must be able to be moved into position without causing damage to nearby trees. In the case of lifting, there should be suitable clearance for the lifting machinery. If there is not, or significant tree pruning is required, the cabin must be placed elsewhere or be of a type that can be wheeled into position.

2. The ground must be protected with boarding or other suitable material to dissipate ground loading and avoid compaction.

3. Where the ground is sloping the cabin must be supported on a scaffolding frame or other appropriate structure that does not cause excessive disturbance of the ground.

4. The access to the building should ideally be from ground outside the Root Protection Area. However, if that is not possible, the access ground should be protected with side-butted scaffolding boards on a compressible layer as described in BS5837 at Figure 3.

5. If there is a void underneath the cabin it should be blocked off to deny access and use. (There is a potential for stored materials to leak substances toxic to trees).

6. Tree Protection Barriers should abut the cabin and associated access route.

7. Removal of the cabin is to be a reversal of the process.
I am a Fellow and Registered Consultant of the Arboricultural Association and hold the Royal Forestry Society’s Professional Diploma in Arboriculture. I am an Arboricultural Inspector for the Planning Inspectorate for the determination of Tree Preservation Order appeals and I am a Chartered Environmentalist with the Society for the Environment.

I have worked in woodland management and arboriculture since 1973 and following six years with English Woodlands Ltd. I was appointed as woodland manager at the Squerryes Estate in Westerham. My work has covered all aspects of lowland forestry and woodland management, land use integration and conservation, as well as the establishment of a successful arboricultural service.

I began my own business in 1991, which is now a busy consultancy practice for arboriculture and woodlands.

In addition to clients ranging from regional and local authorities, corporations and private individuals, I have experience of acting as an expert witness at Planning Inquiries and for Litigation. I was also a member of the panel of approved consultants over a period of three years acting for the Welsh Assembly through the Welsh Development Agency in the implementation of the country’s “Timber II” woodland regeneration programme. I am the arboricultural advisor to the States of Guernsey and additionally have assisted the Island Development Committee with the formulation of new tree protection ordnance (legislation). I was the arboricultural advisor to the Liverpool King’s Dock redevelopment as part of that City’s preparations for their year as European Capital of Culture for 2008. The practice is Law Society approved and listed in their Directory of expert witnesses.

I was a co-presenter of the national series of seminars run by the Arboricultural Association about British Standard 5837, 2005, and am involved in the current review. Over the years I have also presented various other lectures at colleges, seminars and conferences, together with writing arboricultural articles and television and radio interviews.

I am an examiner for the Royal Forestry Society’s Professional Diploma in Arboriculture. I am a Trustee Director and past Chairman of the Arboricultural Association for two separate periods of office and am the lead assessor for the Arboricultural Association’s Registered Consultant scheme. I served on planning committees as an elected councillor for 24 years since 1983 and my past chairmanships at Sevenoaks District Council include Development Control.