

Arboricultural Survey

Downs Edge

Stable Lane

Findon

West Sussex

BN14 0RR

Report compiled by:
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PJC CONSULTANCY LTD

PJC Ref No: PJC/1090/11

Summary

This report was commissioned to satisfy the requirements of arboricultural issues defined by planning policy, at the request of Hillreed Homes.

This site contains trees of varying quality. Tree removal is recommended in this report, regardless of potential construction works.

Potential construction projects should not affect existing and/or retained trees on the site as long as protection measures set out in BS5837: 2005 *Trees in Relation to Construction* and outlined in this report are followed.

Objectives of this report

My involvement in this project can be defined by the following objectives:

To provide a schedule of the existing trees that are situated in areas that are likely to be potentially affected by a potential construction project.

To classify the existing trees using the process defined by BS5837: 2005 'Trees in Relation to Construction – Recommendations'.

To provide arboricultural guidance on protection measures to be implemented during the construction process, and prevent future conflict between trees and structures.

To promote the retention of trees wherever possible.

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- 2 Site visit and observations
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1 INTRODUCTION

1.1 **Brief:** I have been commissioned by Roland Roberts of Hillreed Homes LTD, to provide an arboricultural survey for the property named Downs Edge, Findon, West Sussex.

1.2 **Documents and information provided:** I was provided with the following documents relating to the site:

- Drawing ref. Topographical Survey

1.3 **Scope of this report:** This report is only concerned with the trees within the property boundaries of the site, or in areas that have the potential to be affected by site development.

1.4 **Background information:** PJC Consultancy has been commissioned to undertake an arboricultural survey following the guidelines set out in BS5837: 2005 '*Trees in Relation to Construction – Recommendations*'.

1.5 **Qualifications:** I have a Foundation Degree in Arboriculture and am a member of the Arboricultural Association at Technician Level. I have five years experience in the arboricultural industry, originally working as a groundsman and feller, and progressing into consultancy.

2 SITE VISIT AND OBSERVATIONS

2.1 **Site visit:** I carried out a site visit on 18th August 2011. The weather conditions at the time were dry and overcast. The visibility was good.

2.2 **Brief site description:** The site is situated Stable Lane in Findon. The surrounding land use consists of agricultural land to the east and residential properties on all other aspects. The site itself is comprised of an existing residential dwelling with a driveway leading to garages and a turning area. The remainder of the site comprises a garden containing numerous mature trees.

2.3 **Identification and location of trees:** The trees are not number tagged but their locations are marked on the Tree Constraints Plan in Appendix 1.

2.4 **Tree observations:** I visually inspected the trees from within the boundaries of the property. The survey methodology was restricted to a visual assessment. The height, crown spread and crown clearance for each tree was estimated to the nearest meter. The DBH (stem diameter at breast height) was measured to the nearest millimetre.

2.5 **Limitations of the Survey:** Access was not granted to neighbouring properties. All observations relating to trees were made from within the boundaries of the property or from areas of public access. The stem diameters of a number of trees were therefore estimated (noted on the Tree Survey Schedule in Appendix 2).

3 APPRAISAL

3.1 The trees were assessed and categorised using the cascade chart in BS5837: 2005 *Trees in Relation to Construction – Recommendations*. Their dimensions were recorded, and their positions plotted on the Tree Constraints Plan in Appendix 1. The Tree Survey Schedule in Appendix 2 contains more detailed information for each tree.

3.2 The categorisation of trees is based on a number of factors. The initial category is R for trees that require felling because they are dead, dying or dangerous. The remaining trees are then assessed for their arboricultural, landscape and historical, (or cultural) contribution. This assessment takes into account defects and previous pruning to put the trees into A, B and C categories. The highest categorisation is category A, with the lowest being category C. Category C trees are not normally retained if they pose a constraint to development. The cascade chart further explaining the above is included in Appendix 3.

3.3 A total of fifty six individual or groups of trees were surveyed and included in the Tree Survey Schedule. Two trees were categorised as A with twenty eight categorised as B and twenty two categorised as C. The predicted contribution of four trees is less than ten years, leading to their categorisation as R on grounds of sound arboricultural management.

3.4 The majority of trees are located along the northern, western and southern site boundaries. There is no single dominant species on the site due to the wide variety of species present.

3.5 A hard standing driveway is located parallel with the northern site boundary. A row of sycamore (*Acer pseudoplatanus*) is located between the driveway and the site boundary. These sycamores act as a visual barrier between the site and the adjacent residential properties and possess good landscape value. The sycamores located adjacent the house are positioned atop a one metre retaining wall. Due to the significant change in ground level and the hard-standing nature of the driveway, it can be assumed that root growth does not extend beneath the driveway (Photograph 1, Appendix 7).

3.6 An overhead phone line runs along the northern edge of the driveway. It passes through the crowns of several trees. Several trees in this area have previously been pruned away from the services. Additionally, access facilitation pruning has previously been performed in this area to allow access along the driveway. If retained, the trees in this area will require future pruning unless the position of the driveway and the phone line are moved.

3.7 Situated south of the site entrance is a small pond surrounded by mature and semi mature trees. The most notable tree in this area is a mature Monterey pine (*Pinus radiata*). The tree show good condition, form and vigour, with no major visible defects. It does not form a prominent landscape feature but has been categorised as A1 due to its arboricultural value (Photograph 2, Appendix 7).

3.8 Tree T18 is a mature sycamore located outside, but adjacent to, the western site boundary. It shows significant crown and bark dieback and has a short life expectancy. The tree is located within falling distance of the site and is categorised as R. This tree should be removed regardless of any potential site works.

3.9 A mature western red cedar (*Thuja plicata*) screen is located along the western site boundary (Photograph 3, Appendix 7). The trees in this screen are not of high quality. They do however form a dominant landscape feature when viewed from the adjacent residential properties. These trees have therefore been categorised as B2.

3.10 Two mature cherries are situated in the south western corner of the site, adjacent to a shed. The stems of these trees appear to have been previously cut to approximately one metre and regenerated. The resulting 'deformed' stems will be weak in nature, thereby reducing the life expectancy of the trees. These trees have therefore been categorised as C1.

3.11 Located adjacent to the two cherries is a mature Leopold's sycamore (*Acer pseudoplatanus* 'Leopoldii'). The root protection area of this tree encroaches an adjacent underground wine cellar. It is likely that significant root severance occurred during installation of the wine cellar (although no ill effects are visible on the tree). It can therefore be assumed that no root growth encroaches the wine cellar.

3.12 Several mature trees, including Leopold's sycamore, Leyland cypress (*Cupressocyparis leylandii*), holly (*Ilex aquifolium*), Norway maple (*Acer platanoides*) and ash (*Fraxinus excelsior*) are located along the southern site boundaries. Many of these trees have unbalanced crowns due to suppression from surrounding trees. A mature Leyland cypress screen located outside the southern site boundary obscures these trees from external viewpoints (Photograph 4, Appendix 7).

3.13 Two ash trees are located outside the north eastern corner of the site. Full structural assessments were not carried out due to dense ivy and a high boundary fence. The stem diameters were estimated and the resulting root protection areas encroach the site.

4 RECOMMENDATIONS

4.1 Each tree's DBH was recorded, and applied to the formula found in Appendix 4. The resulting dimensions equal each tree's Root Protection Areas that are plotted on to the Tree Constraints Plan in Appendix 1, and added to the Tree Survey Schedule in Appendix 2. These are represented as a circle on the plan, and are colour coded depending on the category they were classed in using the cascade chart in Appendix 3.

4.2 The disturbance of a tree's root system can result in crown dieback and even death of the tree. Roots are used to support the tree structurally and act as transport for water and nutrients. Direct damage such as root severance can lead to ill health, as can compaction of the soil by construction traffic, heavy plant and storage of materials. Changing the nature of the surface above growing medium, i.e. from porous to non-porous can alter the resources available to the tree, which in turn can lead to its decline.

4.3 The root protection areas must be left free from excavation and disturbance, and protected during any potential works. Protection should be in the form of fencing as defined in Appendix 5, and signs affixed as shown in Appendix 6.

4.4 All tree works listed in the preliminary management column of the Tree Survey Schedule should be carried out prior to construction works commencing. Removal of tree T18 should be performed with the permission of the tree's owner.

4.5 Although two category B trees are located in the centre of the site, retention of the trees on the site boundary should be the priority. The trees on the site boundaries, particularly the northern and western boundaries, provide visual amenity and will act as visual screens between potential site development and the adjacent residential properties.

4.6 Any final design must show service locations and their routing. These must be located outside of the tree's RPA's where they are underground and outside of the anticipated area of mature crown spread where above ground.

4.7 A pre-commencement meeting with all parties and the Local Authority Arboricultural Officer is recommended to agree working methods before any works are undertaken. All contractors should be briefed about tree related site factors as part of the site safety briefing.

4.7 A system and programme of onsite monitoring by the appointed arboricultural consultant should be agreed with the Local Authority Arboricultural Officer, if it is deemed necessary. Record sheets of monitoring site visits should be available for inspection by all parties, and forwarded to a designated employee of the Local Authority.

4.8 If significant root growth is disturbed during construction activities that are not within the scope of this report all work should cease and a suitably qualified arboriculturalist consulted. It should be remembered that whilst root protection areas are part of industry best practice, tree root growth is influenced by a number of factors and may not conform to expected ideals.

5 CONCLUSIONS

5.1 Although a number of trees have been recommended for removal to maintain health and safety standards on the site, their loss should not be significantly detrimental to the wider landscape. Their loss could be mitigated by replanting with suitable species in an appropriate location during the soft landscaping phase of construction. If this is carried out consideration should be given to their location to avoid conflict with the proposed development and associated services.

5.2 Retention of trees located on the site boundaries will increase the amenity value of a potential site development.

6 OTHER CONSIDERATIONS

6.1 Tree Preservation Order - TPO FN/1/90 relates to lime trees (*Tilia spp.*) located within the boundaries of an adjacent property (Pony Farm). The crown spreads and root protection areas of these trees may overlap the site, however will fall within the protection areas of sycamores located within the site boundary. Any persons proposing to undertake tree works must check the status of these trees with the local authority, and gain necessary consent before works are undertaken.

6.2 Financial penalties and/or criminal proceedings can result if tree works are carried out without consent. The entirety of the tree is protected, both above and below ground.

6.3 Trees should be checked for protected species before works are undertaken. It is against the law to disturb bats or their roosts under the Conservation of Habitat and Species Regulations. Nesting birds are protected by the Wildlife and Countryside Act. If protected species are discovered, Natural England should be contacted for advice.

6.4 The trees at this site were assessed for their condition and safety in relation to the average range of weather conditions that the region experiences. Any weather events that exceed the average norm cannot be predicted, and so their effects are not considered within this report.

6.5 The views and opinions contained within this report are entirely those of the author.

7 IMPLEMENTATION OF WORKS

7.1 The contractors should carry out all tree works to BS 3998 *Recommendations for Tree Works* (2010) as modified by research that is more recent. They should also carry relevant, adequate and up to date insurance.

7.2 It is also recommended that all tree works are carried out by an Arboricultural Association approved contractor. Approved contractors are expected to work to industry best standards, and the Arboricultural Association website contains contact details and information on engaging a suitable contractor.

Contact details

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Date: 23rd August 2011

APPENDIX 1 Tree Constraints Plan



Key:

-  RPA for CAT A Tree*
-  RPA for CAT B Tree*
-  RPA for CAT C Tree*
-  Tree recommended for removal
-  Tree canopy

* Trees categorised in accordance with BS 5837:2005 'Trees in relation to construction'.

Appendix 2, (Tree Survey Schedule) contained within the arboricultural report ref. no. PJC/1090/11 contains further information for each tree.



Site: Downs Edge, Stable Lane, Findon, West Sussex, BN14 0RR

Client: Hillreed Homes

Surveyor: Peter Davies

Date Drawn: 19/08/11

Drawing Number: PJC/1090/11/A

Drawing Title: Tree Constraints Plan



APPENDIX 2 Tree Survey Schedule

Tree Survey Schedule

				Client: Downs Edge Site: Hillreed Homes LTD Date: 18/08/11 Surveyor: Peter Davies						Green - Category A Tree Blue - Category B Tree Grey - Category C Tree Red - Category R Tree		
Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Height of crown clearance (m)	Age class	Physiological condition	Structural condition	Preliminary management recommendation	Category grading	Root Protection Area (m ²)	Root Protection Radius (m)
T1	Sycamore (Acer pseudoplatanus)	12	590	N5 E2 S2 W4	4	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, no major visible defects	No action required	B2	157.5	7.1
T2	Sycamore (Acer pseudoplatanus)	6	290	N2 E2 S2 W1	2	Semi mature	Good vigour, dense foliage with no evidence of pest or disease	Good, previously pollarded	Fell if tree poses constraint to development	C2	38	3.5
T3	Sycamore (Acer pseudoplatanus)	10	640	N2 E3 S2 W5	4	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, previously reduced	No action required	B2	185.3	7.7
T4	Macrocarpa (Cupressus macrocarpa)	10	470	N2 E4 S2 W5	4	Mature	Good vigour, unbalanced crown due to suppression from adjacent trees	Good, minor pruning wounds on stem	No action required	B2	99.9	5.6
T5	Leyland cypress (Cupressocyparis leylandii)	9	400 Multi-stemmed	N2 E3 S2 W3	3	Mature	Good vigour, unbalanced crown due to suppression from adjacent trees	Fair, low forking habit	No action required	B2	50.3	4
T6	Sycamore (Acer pseudoplatanus)	12	860 Multi-stemmed	N3 E2 S4 W5	3	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, no major visible defects	No action required	B2	232.4	8.6
T7	Sycamore (Acer pseudoplatanus)	11	770 Multi-stemmed	N3 E3 S3 W5	4	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, dual stemmed, no major visible defects	No action required	B1	186.3	7.7

Tree Survey Schedule

				Client: Downs Edge Site: Hillreed Homes LTD Date: 18/08/11 Surveyor: Peter Davies						Green - Category A Tree Blue - Category B Tree Grey - Category C Tree Red - Category R Tree		
Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Height of crown clearance (m)	Age class	Physiological condition	Structural condition	Preliminary management recommendation	Category grading	Root Protection Area (m ²)	Root Protection Radius (m)
T8	Sycamore (Acer pseudoplatanus)	13	440 Largest stem	N2 E3 S4 W5	3	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, dual leaders, no major visible defects	No action required	B2	87.6	5.3
T9	Ash (Fraxinus excelsior)	11	410	N2 E1 S2 W4	3	Mature	Fair vigour, adequate foliage cover with no evidence of pest or disease	Poor, old pollard, significant basal cavity	Fell to ground level	R	76	4.9
T10	Sycamore (Acer pseudoplatanus)	8	340	N1 E1 S3 W3	7	Mature	Fair vigour, minor deadwood	Good, dense ivy prevents full assessment, no major visible defects	No action required	B2	52.3	4.1
T11	Sycamore (Acer pseudoplatanus)	8	230	N2 E3 S3 W3	3	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, dense ivy prevents full assessment, no major visible defects	No action required	B2	23.9	2.8
T12	Cherry (Prunus avium)	5	150	N3 E3 S2 W1	2	Semi mature	Fair vigour, adequate foliage cover with no evidence of pest or disease	Good, no major visible defects	Fell if tree poses constraint to development	C1	10.2	1.8
T13	Western red cedar (Thuja plicata)	5	160	N1 E2 S2 W1	1	Semi mature	Good vigour, dense foliage with no evidence of pest or disease	Good, no major visible defects	Fell if tree poses constraint to development	C1	11.6	1.9
T14	Holly (Ilex aquifolium)	5	130	N1 E2 S2 W1	1	Semi mature	Good vigour, dense foliage with no evidence of pest or disease	Good, no major visible defects	Fell if tree poses constraint to development	C1	7.6	1.6

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Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Height of crown clearance (m)	Age class	Physiological condition	Structural condition	Preliminary management recommendation	Category grading	Root Protection Area (m2)	Root Protection Radius (m)
T15	Western red cedar (Thuja plicata)	12	250	N2 E1 S1 W2	1	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, no major visible defects	No action required	B1	28.3	3
T16	Holly (Ilex aquifolium)	10	210	N1 E1 S1 W1	2	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, no major visible defects	No action required	B1	20	2.5
T17	Leopold's sycamore (Acer pseudoplatanus 'Leopoldii')	12	330	N4 E4 S3 W2	3	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, no major visible defects	No action required	A1	49.3	4
T18	Sycamore (Acer pseudoplatanus)	13	430	N5 E2 S3 W4	4	Mature	Poor vigour, significant crown dieback	Poor, significant bark dieback on lower stem	Fell to ground level	R	83.6	5.2
T19	Yew (Taxus baccata)	4	150 Average per stem	N3 E3 S2 W3	0	Semi mature	Good vigour, dense foliage with no evidence of pest or disease	Fair, low forking habit, no major visible defects	Fell if tree poses constraint to development	C1	10.2	1.8
T20	Douglas fir (Pseudotsuga menziesii)	11	230	N3 E1 S1 W3	5	Mature	Fair vigour, discoloration of foliage, sparse crown	Fair, deadwood, no major visible defects	Fell if tree poses constraint to development	C1	23.9	2.8
T21	Douglas fir (Pseudotsuga menziesii)	10	90	N1 E1 S1 W1	5	Semi mature	Poor vigour, discoloration of foliage, crown dieback	Fair, deadwood, dense under growth prevents full assessment	Fell to ground level	R	3.7	1.1

Tree Survey Schedule

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Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Height of crown clearance (m)	Age class	Physiological condition	Structural condition	Preliminary management recommendation	Category grading	Root Protection Area (m2)	Root Protection Radius (m)
T22	Sycamore (Acer pseudoplatanus)	11	500 Estimate	N4 E3 S4 W2	4	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, dense ivy prevents full assessment, no major visible defects	No action required	B2	113.1	6
T23	Ash (Fraxinus excelsior)	11	500 Estimate	N3 E4 S3 W2	5	Mature	Good vigour, dense foliage with no evidence of pest or disease	Fair, dual leaders with tight stem union	No action required	B2	113.1	6
T24	Western red cedar (Thuja plicata)	8	440 Multi-stemmed	N1 E2 S1 W1	1	Mature	Fair vigour, adequate foliage cover with no evidence of pest or disease	Fair, dual leaders, included bark in stem union	No action required	B2	60.8	4.4
T25	Douglas fir (Pseudotsuga menziesii)	14	550	N5 E4 S4 W4	2	Mature	Fair vigour, discoloration of foliage	Good, no major visible defects	Fell if tree poses constraint to development	C2	136.8	6.6
G26	Holly (Ilex aquifolium)	8 Average	120 Average	Measure from middle of group N2 E3 S2 W1	0 Average	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, dense ivy prevents full assessment, no major visible defects	Fell if trees pose constraint to development	C1	6.5 Average	1.4 Average
G27	Western red cedar (Thuja plicata)	8 Average	310 Average	1 Average	0 Average	Mature	Fair vigour, adequate foliage cover with no evidence of pest or disease	Fair, numerous specimens in group with low forking habits	No action required	B2	43.5 Average	3.7 Average
T28	Ash (Fraxinus excelsior)	9	230	N3 E2 S1 W3	2	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, no major visible defects	No action required	B1	23.9	2.8

Tree Survey Schedule

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Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Height of crown clearance (m)	Age class	Physiological condition	Structural condition	Preliminary management recommendation	Category grading	Root Protection Area (m2)	Root Protection Radius (m)
T29	Silver birch (Betula pendula)	8	180	N2 E2 S1 W1	1	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, no major visible defects	Fell if tree poses constraint to development	C1	14.7	2.2
T30	Apple (Malus sylvestris)	5	110	N3 E3 S3 W1	0	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, no major visible defects	No action required	B1	5.5	1.3
T31	Eucalyptus spp.	6	120	N1 E1 S1 W1	2	Semi mature	Standing dead tree	Standing dead tree	Fell to ground level	R	6.5	1.4
T32	Sycamore (Acer pseudoplatanus)	6	190	N3 E3 S3 W3	1	Semi mature	Good vigour, dense foliage with no evidence of pest or disease	Good, no major visible defects	Fell if tree poses constraint to development	C1	16.3	2.3
T33	Cherry (Prunus avium)	4	300 Multi-stemmed	N2 E2 S4 W3	0	Mature	Good vigour, unbalanced crown due to suppression from adjacent trees	Fair, 2x stems previously cut to 1m and regenerated	Fell if trees pose constraint to development	C1	28.3	3
T34	Cherry (Prunus avium)	3	440 Multi-stemmed	N1 E2 S3 W3	1	Mature	Good vigour, unbalanced crown due to suppression from adjacent trees	Fair, 1x dead stem, 1x stem previously cut to 1m and regenerated	Fell if tree poses constraint to development	C1	60.8	4.4
T35	Sycamore (Acer pseudoplatanus)	7	120	N1 E3 S2 W2	2	Semi mature	Good vigour, dense foliage with no evidence of pest or disease	Good, no major visible defects	Fell if tree poses constraint to development	C1	6.5	1.4

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Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Height of crown clearance (m)	Age class	Physiological condition	Structural condition	Preliminary management recommendation	Category grading	Root Protection Area (m2)	Root Protection Radius (m)
G36	Elder (Sambucus nigra)	5	240 Average	2 Average	1	Mature	Fair vigour, adequate foliage cover with no evidence of pest or disease	Fair, deadwood, no major visible defects	Fell if trees pose constraint to development	C1	26.1 Average	2.9 Average
T37	Leopold's sycamore (Acer pseudoplatanus 'Leopoldii')	9	380	N4 E4 S2 W4	3	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, old pollard, no major visible defects	No action required	B1	65.3	4.6
T38	Holly (Ilex aquifolium)	7	230 Multi-stemmed	N1 E1 S2 W1	0	Semi mature	Good vigour, dense foliage with no evidence of pest or disease	Fair, previously cut to 1m and regenerated	Fell if tree poses constraint to development	C1	16.6	2.3
T39	Cotoneaster watereri	6	200	N1 E2 S5 W4	1	Mature	Fair vigour, unbalanced crown due to suppression from adjacent trees	Fair, no major visible defects	Fell if tree poses constraint to development	C1	18.1	2.4
T40	Norway maple (Acer Platanoides)	11	360	N5 E3 S4 W4	2	Mature	Good vigour, dense foliage with no evidence of pest or disease	Fair distorted stem due to potential old fire damage	No action required	B1	58.6	4.3
T41	Leyland cypress (Cupressocyparis leylandii)	14	530	N2 E2 S3 W2	2	Mature	Good vigour, unbalanced crown due to suppression from adjacent trees	Fair, included bark in stem unions	No action required	B1	127.1	6.4
T42	Leyland cypress (Cupressocyparis leylandii)	14	600 Multi-stemmed	N4 E2 S2 W3	2	Mature	Good vigour, unbalanced crown due to suppression from adjacent trees	Good, dual stemmed, tight stem union	No action required	B1	113.1	6

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T43	Ash (Fraxinus excelsior)	12	210	N2 E4 S3 W2	6	Mature	Good vigour, suppression to lower crown from adjacent trees	Fair, minor deadwood in lower crown	No action required	B1	20	2.5
T44	Leyland cypress (Cupressocyparis leylandii)	13	240	N2 E1 S2 W1	0	Mature	Fair vigour, suppression from adjacent trees	Good, no major visible defects	Fell if tree poses constraint to development	C1	26.1	2.9
G45	Leyland cypress (Cupressocyparis leylandii)	11 Average	250 Average	Up to 1m over site	0 Average	Mature	Fair vigour, unbalanced crown due to suppression from adjacent trees	Good, no major visible defects	No action required	B2	28.3 Average	3 Average
T46	Cotoneaster watereri	5	260 Multi-stemmed	N2 E3 S2 W4	2	Mature	Fair vigour, adequate foliage cover with no evidence of pest or disease	Fair, no major visible defects	Fell if tree poses constraint to development	C1	21.2	2.6
T47	Walnut (Juglans regia)	6	120	N3 E1 S3 W2	1	Semi mature	Good vigour, unbalanced crown due to suppression from adjacent trees	Good, no major visible defects	Fell if tree poses constraint to development	C1	6.5	1.4
T48	Prunus spp	5	200	N2 E3 S1 W2	1	Mature	Good vigour, dense foliage with no evidence of pest or disease	Fair, rubbing branches in crown break	No action required	B1	18.1	2.4
T49	Lawson cypress (Chamaecyparis lawsoniana)	7	390 Multi-stemmed	N3 E2 S2 W3	1	Mature	Fair vigour, adequate foliage cover with no evidence of pest or disease	Fair, minor stem damage	Fell if tree poses constraint to development	C1	47.8	3.9

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Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Height of crown clearance (m)	Age class	Physiological condition	Structural condition	Preliminary management recommendation	Category grading	Root Protection Area (m2)	Root Protection Radius (m)
T50	Midland hawthorn (Crataegus laevigata)	4	190	N2 E2 S2 W2	2	Semi mature	Fair vigour, adequate foliage cover with no evidence of pest or disease	Good, no major visible defects	Fell if tree poses constraint to development	C1	16.3	2.3
T51	Holly (Ilex aquifolium)	6	390 Multi-stemmed	N2 E3 S3 W2	2	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, dual leaders, no major visible defects	No action required	B1	47.8	3.9
T52	Purple plum (Prunus cerasifera)	6	240	N4 E3 S3 W2	2	Mature	Good vigour, dense foliage with no evidence of pest or disease	Fair, decay cavity in pollard point and stem	Fell if tree poses constraint to development	C1	26.1	2.9
G53	Lawson cypress (Chamaecyparis lawsoniana)	10 Average	260 Average	2 Average	0 Average	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, no major visible defects	No action required	B1	30.6	3.1
T54	Monterey pine (Pinus radiata)	14	590	N4 E5 S5 W4	3	Mature	Good vigour, dense foliage with no evidence of pest or disease	Good, no major visible defects	No action required	A1	157.5	7.1
T55	Ash (Fraxinus excelsior)	15	600 Estimate	N2 E4 S3 W4 Estimate	7 Estimate	Mature	Good vigour, dense foliage with no evidence of pest or disease	Unable to assess from within boundaries of site	No action required	B1	162.9	7.2
T56	Ash (Fraxinus excelsior)	15	200 Per stem average estimate	Up to 4m over site	4 Estimate	Mature	Good vigour, dense foliage with no evidence of pest or disease	Unable to assess from within boundaries of site	No action required	B1	18.1	2.4

APPENDIX 3 Cascade Chart for Tree Quality Assessment

Table 1 — Cascade chart for tree quality assessment

TREES FOR REMOVAL				
Category and definition	Criteria			Identification on plan
Category R Those in such a condition 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	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. - Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality. NOTE Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree).			DARK RED RGB code: 127-000-000 AutoCAD 246
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria – Subcategories			Identification on plan
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation	
Category A Those of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested)	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN RGB code: 000-255-000 AutoCAD 90
Category B Those trees of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	MID BLUE RGB code: 000-000-255 AutoCAD 170
Category C Those trees of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits	GREY RGB code: 91-91-91 AutoCAD 252
	NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation.			

APPENDIX 4 Root Protection Area Formula

CALCULATING THE RPA

For single stemmed trees

$$\text{RPA(m}^2\text{)} = \frac{(\text{stem diameter (mm) @ 1.5 m x 12})^2 \times 3.142}{1000}$$

For multiple stemmed trees

$$\text{RPA(m}^2\text{)} = \frac{(\text{basal diameter (immediately above root flare (mm) x10})^2 \times 3.142}{1000}$$

APPENDIX 5 Tree Protection Fencing Specification

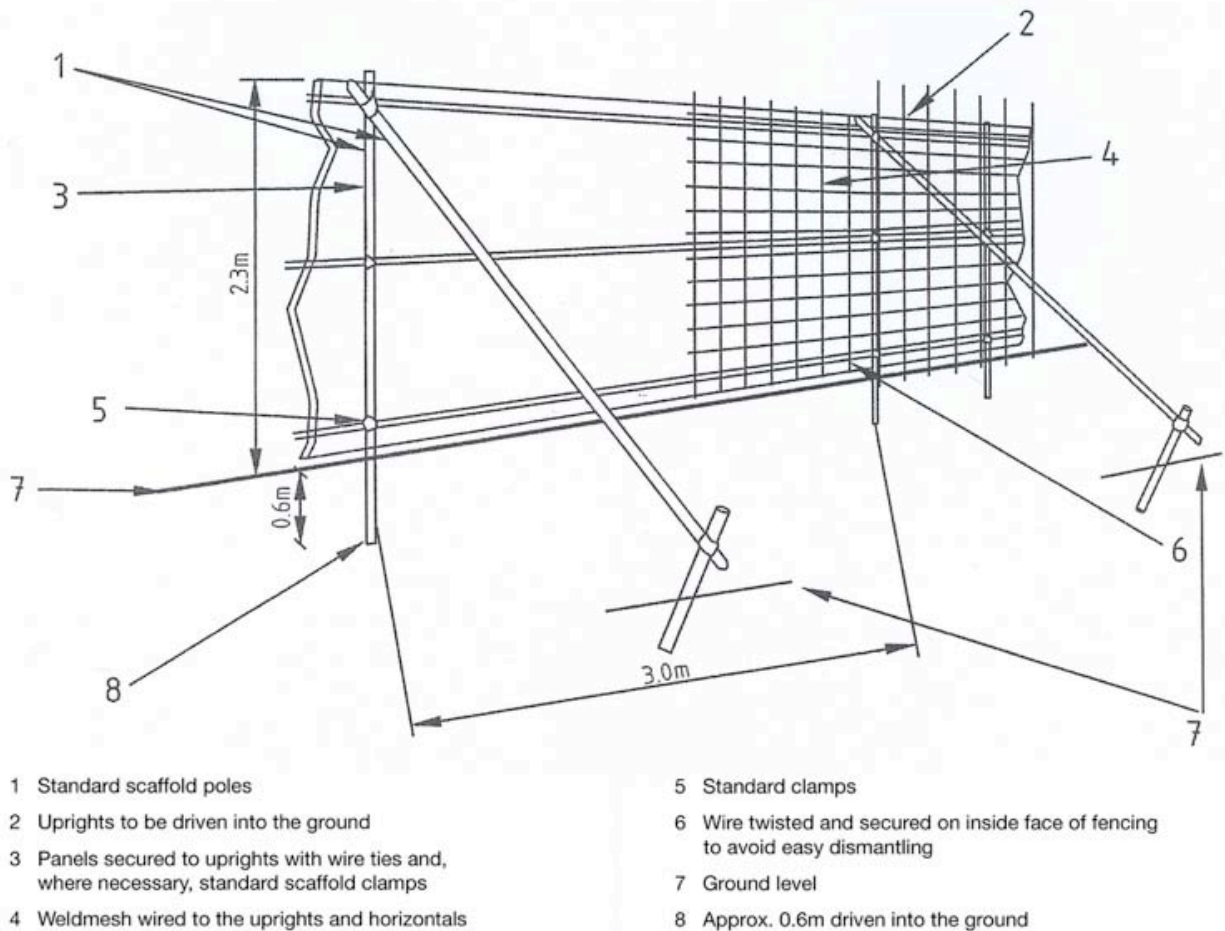


Figure 2. – Protective fencing for RPA

APPENDIX 6 Example Protective Fencing Signs



APPENDIX 7 Photographs



Photograph 1



Photograph 2



Photograph 3



Photograph 4