

Arboricultural Survey

43-45 Pevensey Road
Bognor Regis
West Sussex
PO21 5NY

14th July 2017



PJC ref: 4524/17-01

This report has been prepared by
PJC Consultancy Ltd
on behalf of
John Parsons

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1 INTRODUCTION

1.1 **Instruction:** PJC Consultancy has been instructed by John Parsons to provide an arboricultural survey of 43-45 Pevensey Road in Bognor Regis.

1.2 **Brief:** PJC Consultancy has been commissioned to undertake an initial arboricultural survey following the guidelines set out in BS5837: 2012 '*Trees in relation to design, demolition and construction – Recommendations*'.

1.3 **Scope of this report:** This report is concerned with all significant trees located within the property boundaries of the site. Additionally, trees located around the curtilage of the site have also been surveyed when they are considered likely to have the potential to impact on the development (in relation to root and crown protection or foundation design).

1.4 **Purpose of report:** This survey has been undertaken to record the condition and value of all significant trees at the site as well as the material constraints they pose on the development. The information in this report should be used to guide the design proposals.

1.5 **Documents and information provided:** The following documents were provided by the client to produce this report:

- Drawing ref. 15907 – Topographical Survey
- Tree Preservation Order ref. TPO/2/08/BR

2 SITE VISIT AND SURVEY METHODOLOGY

2.1 Site visit: A site visit was carried out on 13th July 2017. The weather conditions at the time were fine and dry. The visibility was adequate for visual tree inspection from ground level.

2.2 Tree information: The following information was recorded in the Tree Survey Schedule for each individual tree (average dimensions are recorded for groups):

- Tree reference number. (T=tree, G=group). Tree numbers suffixed with PA on the Tree Constraints Plan indicate the trees location was not included on the site plan provided so the tree's position was approximated on site.
- Species (common and scientific name).
- Overall tree height (m).
- Stem diameter (mm) per stem or average diameter for multi-stemmed trees with six or more stems.
- Branch spread (m) measured to the four cardinal points.
- Existing height (m) above ground level of lowest significant branch and direction of growth (for individual trees only).
- Existing height (m) above ground level of canopy.
- Age class (young, semi mature, early mature, mature, over mature or veteran).
- Physiological condition (good, fair, poor).
- Structural condition (good, fair, poor).
- Comments (general description of tree including any notable features).
- Preliminary management recommendations (prescriptions for tree management processes based on the current land use and not related to the proposed development).
- Tree categorisation (see below).
- Root protection area (m²).
- Root protection radius (m).

2.3 Tree categorisation: The condition and value of each tree was evaluated based on the current land use. Each tree or tree group has been awarded either category A, B, C or U and a sub category of either 1,2 or 3 or a combination of the sub categories.

2.4 Tree categorisation summary:

- A – Trees of good condition or high value, with a predicted life span in excess of forty years.
- B – Trees of moderate condition or value, with a predicted life span in excess of twenty years.
- C – Trees of poor condition or low value, with a predicted life span in excess of ten years.
- U – Trees of such impaired condition that they cannot realistically be retained as living trees in the context of the current land use for more than ten years.

2.5 Tree sub categorisation summary:

- 1 – Trees have mainly arboricultural value, e.g. trees of good condition, form and vitality or rare tree species.
- 2 – Trees have mainly landscape value, e.g. trees of landscape prominence, that serve to screen unsightly views or that are required for privacy.
- 3 – Trees with mainly cultural value including conservation, e.g. commemorative trees, trees of historical significance, trees of ecological significance or veteran trees.

2.6 Each tree can only be categorised as A, B or C but may comply with more than one sub category. A cascade chart further explaining how tree categorisation is decided is included in Appendix 3.

2.7 **Root protection areas:** Each tree's stem diameter was recorded, and applied to the formula found in Appendix 4 to establish its root protection area. A root protection area represents a calculation of the minimum area of root growth required to support the tree, not the total rooting area.

2.8 The root protection areas are plotted onto the Tree Constraints Plan in Appendix 1, and recorded in the Tree Survey Schedule in Appendix 2. These are represented as a circle on the plan and are colour coded depending on the category the tree has been awarded.

2.9 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 the 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.

2.10 The root protection areas must be left free from excavation and disturbance, and protected from compaction or contamination during any proposed works. The majority of root growth is usually found within the top meter of soil. As such, even shallow disturbance within root protection areas can potentially have a significant impact on the trees.

2.11 **Limitations of site visit:** The survey methodology was restricted to a visual tree assessment from ground level. No tree climbing or ground investigation was carried out for this report. Where existing site constraints are present such as ivy covered trees, a very dense under-storey, or where trees are located on third party land to which access was not granted, tree dimensions were estimated by eye as accurately as possible.

3 SITE DETAILS AND SURVEY FINDINGS

3.1 Site location: The site is situated to the south-west of Pevensey Road in Bognor Regis, more broadly to the south of Regis School. It has a central OS national grid reference of SZ922998. The surrounding land use is comprised of residential properties in all directions. The location of the site within its environs is shown in figure 1.



Figure 1: Location of Site and Environs

3.2 Site layout: The site comprises two adjacent residential properties with front driveways and relatively large rear gardens. Trees and shrubs are located throughout both gardens, and in adjacent properties.

3.3 Trees T1 and T11 comprises a mature field maple and cherry tree on the eastern site boundary. The stems of both trees straddle both sides of the boundary fence, therefore ownership of the trees is unclear.

3.4 Tree T2 is a third party ash tree located within the garden of No. 39. It was only viewed from within the site boundary. T2 is multi-stemmed with the majority of the crown bias over the neighbours garden. One stem was observed as having a significant decay cavity near the base, however the stem leans away from the site and is not therefore considered a safety concern from the proposed development area. T2 is also exhibiting minor dieback at its branch tips. It is not considered a high quality specimen and has been categorised as C. As a third party tree, (and covered by a TPO), T2 will still require all standard protection measures when the site is developed, regardless of its condition.

3.5 Tree T12 is a third party walnut located within the garden of No. 39. As with T2, it was only viewed from within the site boundary. T12 is also a multi-stemmed tree, and the north stem has previously snapped at around 6m. Despite this defect, the tree exhibits good vitality and has been awarded category B.

3.6 The three most prominent trees located within the garden of No. 45 are T13, T19 and T20. T19 is a multi-stemmed horse chestnut. It is of reasonable form without any major visible defects. It is exhibiting some leaf damage associated with the leaf miner moth, which will reduce its visual amenity value in the latter half of the growing season, but despite this has been categorised as B.

3.7 T20 is a large oak (protected by the TPO) located on the site boundary. This tree has an uneven crown, heavily bias to the north (likely as a result of light suppression from the horse chestnut and a large willow, which was reported to have been removed during the past few years). T20 is also heavily ivy clad which inhibited a thorough assessment of its structural condition. It is recommended that the ivy be severed around the base of this tree to facilitate a more comprehensive assessment of its condition.

3.8 T13 is a mature Scots pine located in the centre of the garden. It is of an open grown habit and possesses no major visible defects. There is a small amount of deadwood in its lower crown, which is recommended for removal on aesthetic grounds, and the ivy should be severed to facilitate a more comprehensive assessment of its buttress.

3.9 Tree T16 is an early mature ash located on the southern boundary of No. 45. It is of reasonable form and condition, and has the potential to mature into a prominent, high quality specimen. The remaining trees at the site are either small or of poor quality and potential longevity, so have been categorised as C and should not be considered a constraint to development.

3.10 Measurements and further information for each tree can be viewed in the Tree Survey Schedule in Appendix 2.

3.11 **Tree categorisation summary:** A total of twenty trees and five tree/shrub groups were surveyed and recorded in the Tree Survey Schedule.

Table 1: Tree categorisation summary

Categorisation	Individual tree	Tree group
A	-	-
B	8	-
C	11	5
U	1	-
Total	20	5

3.12 **Statutory tree protection:** Arun District Council's online mapping tool was utilised on 7th July 2017 to establish restrictions to tree works at the site. The site is not located within a Conservation Area, however Tree Preservation Order ref. TPO/2/08/BR protects trees T2, T12, T13 and T20. 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.

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

4 CONCLUSIONS

4.1 To comply with BS5837: 2012, it is recommended that an arboricultural impact assessment be produced when the proposed layout has been fixed. The arboricultural impact assessment should include a schedule of trees to be retained and removed as well as pruning required to enable the construction works. It should also evaluate the likely effects of the construction works on retained trees including post development pressures and provide recommendations on mitigation measures to be implemented. The arboricultural impact assessment should be accompanied by an arboricultural method statement and a dimensioned Tree Protection Plan to show how retained trees will be protected whilst the development is constructed.

4.2 As far as possible new buildings and areas of hard surfacing should be located outside of the root protection areas of retained trees. In certain situations, engineered solutions are available to allow construction within the root protection areas. Further input from an arboriculturalist should be sought regarding their site-specific viability before these methods are relied upon.

4.3 Over-shading of gardens and dwellings for prolonged periods, nuisance caused by leaf/fruit drop or honeydew drip (particularly onto footpaths, parking areas or roof guttering) and an over-bearing presence of large trees can result in significant pressure from future residents to carry out harsh remedial pruning works or to remove trees post development. All of these factors should be considered at the design stage.

4.4 Allowance should be made for future canopy growth of both existing and newly planted trees. Trees growing in areas of limited space may require regular future pruning works. The suitability of different species for regular crown reductions, the affect on their amenity value and the cost of future tree works should be considered.

4.5 The final design should show service locations and their routing. New utilities should be located outside of the trees root protection areas where they are underground and outside of the anticipated area of mature crown spread where above ground. If this is not possible, recommendations outlined in NJUG10 '*Guidelines for the planning, installation and maintenance of utilities in proximity to trees*' should be followed. Advice should also be sought from the project arboriculturalist.

4.6 Due to the frequency of trees located throughout the site, it is highly likely that tree removal will be required to facilitate redevelopment. Where tree removal is necessary to facilitate the wider regeneration benefits associated with development, a tree replacement strategy could be implemented to mitigate tree loss. If further tree planting does occur, consideration should be given to species selection (in relation to form and potential size) and planting locations to ensure their successful integration into the new development.

5 OTHER CONSIDERATIONS

5.1 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.

5.2 The tree works contractors should carry out all tree works to BS3998: 2010 '*Tree works – recommendations*', as modified by research that is more recent. They should also carry relevant, adequate and up to date insurance.

5.3 It is also recommended that all tree works be 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.

5.4 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.

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

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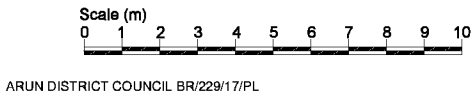


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Date: 14th July 2017

APPENDIX 1

Tree Constraints Plan



Tree numbers suffixed with PA indicate the tree position is approximate.

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APPENDIX 2

Tree Survey Schedule

Tree Survey Schedule

				Client: Mr John Parsons Site: 43-45 Pevensey Road, Bognor Regis Survey date: 13/07/2017 Surveyor: Peter Davies						T: Individual tree or shrub G: Group of 2 or more trees H: Hedgerow W: Woodland block			
Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Crown clearance (m)	Age class	Physiological condition	Structural condition	Comments	Preliminary management recommendation	Category grading	Root Protection Area (m2)	Root Protection Radius (m)
T1	Field maple (Acer campestre)	10	500 est	N: 5 E: 3 S: 4 W: 4	Crown: 0 south Branch: 3 south	Over mature	Good	Fair	Previously crown lifted. North lean to 3m. Stem straddles boundary fence. Elder under-storey inhibits inspection.	No action required on date of survey.	B2	113.1	6.0
T2	Ash (Fraxinus excelsior)	12	450, 400, 150 est	N: 4 E: 5 S: 5 W: 3	Crown: 7 west Branch: 2 average	Mature	Fair	Fair	Third party tree only viewed from site. Multi-stemmed. Decay cavity in main stem. Minor crown dieback.	TPO - No action required on date of survey.	C2	174.2	7.4
G3	Mixed (including elder, ash, sycamore, sumac, Griselinia)	2-6 average	Up to 150 average est	1-3 average	0 average	Young-semi mature	Good	Fair	Dense, unmanaged shrubs and self set tree saplings.	No action required on date of survey.	C2	10.2 average	1.8 average
T4	Hazel (Corylus avellana)	7	100 average x6 stems	N: 5 E: 4 S: 3 W: 3	Crown: 0 north Branch: N/A	Mature	Good	Fair	Third party shrub overhanging site boundary. Ivy clad.	No action required on date of survey.	C2	27.1	2.9
G5	Mixed (including buddleia, elder and mixed garden ornamentals)	1-3 average	Under 75 average	1-3 average	0 average	Semi mature	Fair	Fair	Mixed shrubs. Some ivy clad.	No action required on date of survey.	C1	2.5 average	0.9 average
T6	Indian bean tree (Catalpa bignonioides)	2	110 above root flair	N: 1 E: 1 S: 2 W: 2	Crown: 0 average Branch: 0 average	Young	Good	Fair	Sapling. Multi-stemmed at 0.5m.	No action required on date of survey.	C1	5.5	1.3

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Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Crown clearance (m)	Age class	Physiological condition	Structural condition	Comments	Preliminary management recommendation	Category grading	Root Protection Area (m2)	Root Protection Radius (m)
T7	Common pear (Pyrus communis)	4	70, 120	N: 2 E: 1 S: 0 W: 1	Crown: 1 north Branch: 1 west	Young	Good	Fair	Crown previously heavily reduced from shed. (Shed not shown on topo so assumed to be relatively new feature).	No action required on date of survey.	C1	8.7	1.7
T8	Japanese maple (Acer palmatum)	3	50, 30, 30, 60	N: 2 E: 1 S: 1 W: 1	Crown: 1 average Branch: 0 average	Semi mature	Good	Good	Typical example of species.	No action required on date of survey.	C1	3.6	1.1
T9	Yucca (Yucca spp.)	4	270	N: 1 E: 1 S: 1 W: 1	Crown: 2 average Branch: N/A	Mature	Good	Good	Typical example of species.	No action required on date of survey.	C2	33.0	3.2
G10	Mixed (including Photinia, cherry laurel, buddleia)	1-2 average	Under 75 average	1-2 average	0 average	Semi mature	Good	Good	Managed shrub group.	No action required on date of survey.	C1	2.5 average	0.9 average
T11	Cherry (Prunus avium)	10	560 over ivy	N: 5 E: 5 S: 4 W: 2	Crown: 2 east Branch: 4 east	Mature	Good	Fair	Stem straddles boundary and is ivy clad. Previously heavily reduced over site.	Sever ivy around stem (above fence).	B2	141.9	6.7
T12	Walnut (Juglans regia)	12	300, 450 est	N: 3 E: 4 S: 4 W: 3	Crown: 1 average Branch: 1 average	Mature	Good	Fair	Third party tree only viewed from site. 1x stem failed/pollarded.	TPO - No action required on date of survey.	B1/2	140.9	6.7

Tree Survey Schedule

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Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Crown clearance (m)	Age class	Physiological condition	Structural condition	Comments	Preliminary management recommendation	Category grading	Root Protection Area (m2)	Root Protection Radius (m)
T13	Scots pine (<i>Pinus sylvestris</i>)	16	600 over ivy	N: 4 E: 5 S: 4 W: 3	Crown: 4 east Branch: 5 east	Mature	Good	Good	Ivy clad stem. Deadwood in lower crown. No major visible defects.	TPO - Remove deadwood for aesthetics. Sever ivy around base.	B1	162.9	7.2
T14	Hazel (<i>Corylus avellana</i>)	7	50 average x25 stems est	N: 5 E: 4 S: 3 W: 4	Crown: 1 average Branch: 0 average	Early mature	Good	Fair	Typical example of species.	No action required on date of survey.	C1	28.3	3.0
T15	Elder (<i>Sambucus nigra</i>)	5	100, 100, 100 est	N: 1 E: 3 S: 3 W: 2	Crown: 0 east Branch: 1 average	Early mature	Good	Poor	Multi-stemmed, ivy clad shrub.	Sever ivy around base.	C1	13.6	2.1
T16	Ash (<i>Fraxinus excelsior</i>)	9	340	N: 4 E: 3 S: 3 W: 3	Crown: 1 north Branch: 1 north	Early mature	Good	Good	Reasonable form. Small deadwood due to suppression. No major visible defects.	No action required on date of survey.	B1/2	52.3	4.1
T17	Yucca (<i>Yucca</i> spp.)	6	190	N: 2 E: 1 S: 0 W: 0	Crown: 3 average Branch: N/A	Early mature	Good	Good	Typical example of species.	No action required on date of survey.	C1	16.3	2.3
T18	Apple (<i>Malus</i> spp.)	3	120, 130, 80	N: 2 E: 2 S: 2 W: 2	Crown: 2 average Branch: 1 average	Semi mature	Poor	Fair	Previously crown lifted. Sparse foliage throughout crown.	No action required on date of survey.	U	17.1	2.3

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Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Crown clearance (m)	Age class	Physiological condition	Structural condition	Comments	Preliminary management recommendation	Category grading	Root Protection Area (m2)	Root Protection Radius (m)
T19	Horse chestnut (Aesculus hippocastanum)	15	390, 260, 330, 410 over ivy	N: 4 E: 6 S: 5 W: 5	Crown: 1 east Branch: 1 south	Mature	Good	Good	Multi-stemmed from 1m. Ivy clad stem. Leaf miner moth. No major visible defects.	Sever ivy around base.	B1/2	224.7	8.5
T20	Pedunculate oak (Quercus robur)	17	700 over ivy	N: 7 E: 4 S: 2 W: 5	Crown: 4 north Branch: 2 north	Mature	Good	Good	Crown bias north due to suppression from T19. Ivy inhibits inspection. Crown lifted over neighbours garden.	TPO - Sever ivy around base.	B1	221.7	8.4
T21	Hazel (Corylus avellana)	7	200 est	N: 3 E: 3 S: 2 W: 2	Crown: 1 north Branch: N/A	Mature	Fair	Fair	Dense under-storey prevents close inspection. Some crown dieback.	No action required on date of survey.	C2	18.1	2.4
G22	Field maple (Acer campestre)	6-8 average	Up to 150 average est	2 average	1-3 average	Semi mature	Fair	Poor	Dense ivy and bindweed prevent thorough inspection. Some crown dieback and small split limbs.	No action required on date of survey.	C2	10.2 average	1.8 average
T23	Yucca (Yucca spp.)	5	210	N: 1 E: 2 S: 2 W: 1	Crown: 3 average Branch: N/A	Early mature	Good	Fair	Typical example of species. Crown encroached by field maple and hazel.	Strip out climbers and reassess suitability for retention.	C1	20.0	2.5
G24	Mixed (including ash, hazel, cherry laurel, bramble)	1-5 average	Under 75 average	Refer to drawing	0 average	Young-semi mature	Fair	Poor	Unmanaged shrubs and tree saplings. Smothered by bramble.	If retained, clear out bramble and climbers and reassess.	C1	2.5 average	0.9 average

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Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Crown clearance (m)	Age class	Physiological condition	Structural condition	Comments	Preliminary management recommendation	Category grading	Root Protection Area (m2)	Root Protection Radius (m)
T25	Quince (Cydonia oblonga)	4	300, 150, 80, 80	N: 2 E: 3 S: 3 W: 2	Crown: 2 average Branch: 1 south	Mature	Good	Good	Third party, managed fruit tree only viewed from site. Appears of good condition.	No action required on date of survey.	B1	56.7	4.2

APPENDIX 3

Cascade Chart for Tree Quality Assessment

Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of their current land use for longer than 10 years.	• 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 the removal of other category U trees (e.g. 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, or very low quality trees suppressing adjacent trees of better quality. <i>Note Category U trees can have existing or potential conservation value which it might be desirable to preserve</i>			Red
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years.	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue).	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).	Green
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remedial defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation.	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.	Trees with material conservation or other cultural value.	Blue
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm.	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.	Trees with no material conservation or other cultural value.	Grey

APPENDIX 4

Root Protection Area Formulas

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 trees with two to five stems, a combined stem diameter is calculated as follows:

$$\sqrt{(\text{stem diameter 1})^2 + (\text{stem diameter 2})^2 \dots + (\text{stem diameter 5})^2}$$

For trees with more than five stems, the combine stem diameter is calculated as follows:

$$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$$

APPENDIX 5

Photographs



Photograph 1 – Trees T1, T2 and T4



Photograph 2 – Trees T11-T12



Photograph 3 – Tree T13, T14 and T16



Photograph 4 – Trees T19-T20



Photograph 5 – Trees G22-T23



Photograph 6 – Trees T13 and T18-T21