

Arboricultural Survey

Angels Nursery
Yapton Road
Barnham
West Sussex

7th June 2016



PJC ref: 4040/16-01

This report has been prepared by
PJC Consultancy Ltd
on behalf of
West Sussex County Council

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1 INTRODUCTION

1.1 **Instruction:** PJC Consultancy has been instructed by West Sussex County Council to provide an arboricultural survey of Angels Nursery in Barnham.

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. BHP10/92 – Topographical Survey

2 SITE VISIT AND SURVEY METHODOLOGY

2.1 Site visit: A site visit was carried out on 31st May 2016. The weather conditions at the time were light cloud but dry with no wind. The visibility was adequate for visual tree inspection from ground level.

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

- Tree reference number. (T=tree, G=group, H=hedgerow). 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 on the south side of Yapton Road, more broadly to the south of Barnham Train Station. It has a central OS grid reference of SU962040. The surrounding land use is comprised residential properties beyond Yapton Road to the north, 'Lilies Caravan Park' to the east, plant nurseries to the south and Barnham Community Centre and 'The Murrells' to the west. The location of the site within its environs is shown in figure 1.



Figure 1: Location of Site and Environs

3.2 Site layout: Site comprises a former garden nursery with all glasshouses now removed. A dilapidated residential dwelling is located adjacent to the site entrance on the northern boundary. Trees and hedgerows are located around the curtilage of the site and in belts running adjacent to drainage ditches at the southern end. A small number of further trees are scattered around the centre of the site.

3.3 Tree categorisation summary: A total of sixty-four trees, eighteen tree groups and five hedgerows were surveyed and recorded in the Tree Survey Schedule. Details of each tree or tree group can be viewed in the Tree Survey Schedule in Appendix 2.

Table 1: Tree categorisation summary

Categorisation	Individual tree	Tree group	Hedgerow
A	1	0	0
B	32	4	0
C	27	13	5
U	4	0	0
Total	64	18	5

3.4 Statutory tree protection: Tree Preservation Order ref. TPO/BN/1/10 protects two oaks, a pine and a group of poplars at the site (trees T64, T65, T75, T76, T85, T86 and T87). The site is not located in a Conservation Area. 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.

3.5 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 finalised. 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, evaluate the likely effects of construction works on retained trees including post development pressures and provide recommendations on mitigation measures to be implemented. It should also include a Tree Retention Plan. An arboricultural method statement accompanied by a dimensioned Tree Protection Plan should also be produced 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 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.

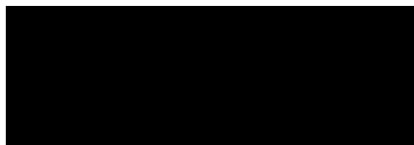
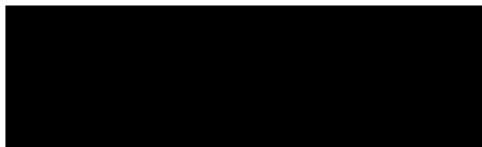
5.3 It is also recommended that all tree works be carried out by an Arboricultural Association approved contractor. Approved contractors are expected to work to industry best standards, and the Arboricultural Association website contains contact details and information on engaging a suitable contractor.

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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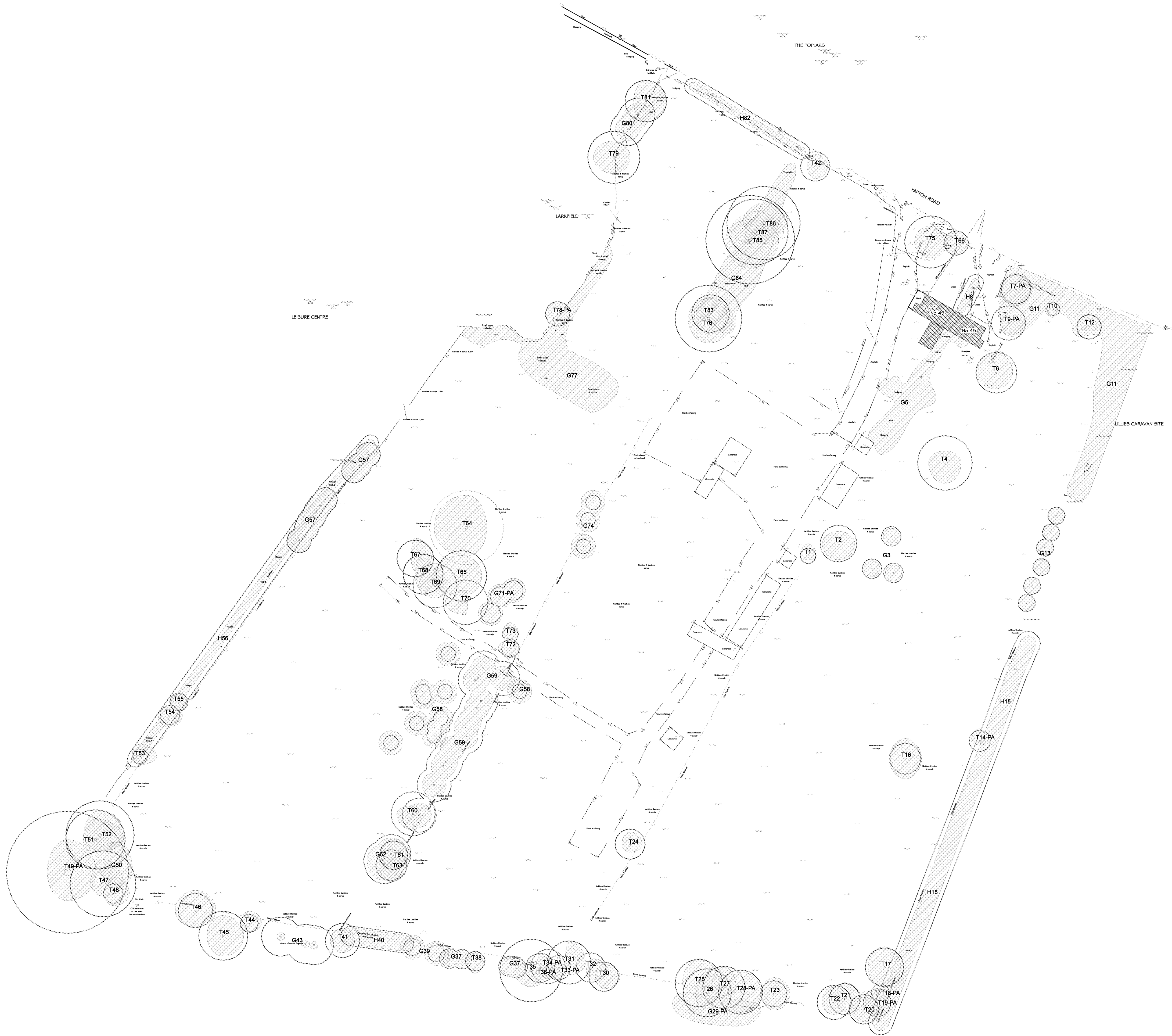


Author: Peter Davies

Date: 7th June 2016

APPENDIX 1

Tree Constraints Plan



Key:

- RPA for CAT A* tree
- RPA for CAT B* tree
- RPA for CAT C* tree
- RPA for CAT U* tree
- Tree canopy

*** Tree categorised in accordance with BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.**

Appendix 2, (Tree Survey Schedule) contained within the arboricultural report re: no. PJC/4040/16-01 contains further information for each tree.

This drawing should be viewed in colour.

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

Drawing no: PJC/4040/16/A Rev: 01 Sheet number: 1 of 1

Client and site:
West Sussex County Council

Angels Nursery
Yapton Road
Barnham

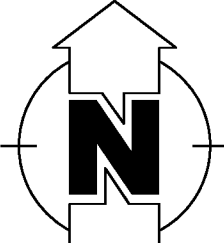
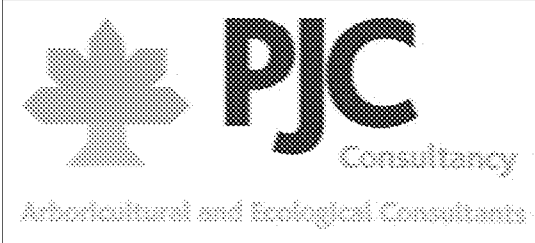
Drawing title: Tree Constraints Plan

Date drawn: 07/06/2016

Scale: 1:500 at A1

Drawn by: PD

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APPENDIX 2

Tree Survey Schedule

Tree Survey Schedule

				Client: West Sussex County Council Site: Angels Nursery, Barnham Date: 31/05/2016 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 (m ²)	Root Protection Radius (m)
T1	Elder (Sambucus nigra)	4	158.1 combined stem diameter	N: 3 E: 2 S: 1 W: 2	2 north	Over mature	Poor	Poor	Virtually dead tree (not health and safety threat).	No action required on date of survey.	U	11.3	1.9
T2	Walnut (Juglans regia)	6	374.2 combined stem diameter	N: 3 E: 4 S: 4 W: 4	2 south	Mature	Fair	Fair	Multi-stemmed form, dense under-storey inhibits inspection.	No action required on date of survey.	C1	63.3	4.5
G3	Pear (Pyrus communis)	4 average	200 average	2 average	1 average	Early mature	Fair	Fair	Fair condition, minor crown dieback.	No action required on date of survey.	C1	18.1 average	2.4 average
T4	Apple (Malus spp.)	5	558.7 combined stem diameter	N: 3 E: 4 S: 5 W: 4	1 south	Over mature	Good	Fair	Multi-stemmed with low forking habit, small decay cavities in stem.	Remove deadwood and low epicormic growth if frequency of land use increases.	C1	141.2	6.7
G5	Elder, ash, blackthorn, Euonymus japonica and lilac	4-5 average	N/A	Refer to drawings	0 average	Semi mature	Fair	Fair	Former garden shrubs, overgrown.	No action required on date of survey.	C1	N/A	1 from face of group
T6	Sweet chestnut (Castanea sativa)	5	420	N: 5 E: 4 S: 4 W: 5	1 east	Mature	Good	Fair	Formerly multi-stemmed, 1x stem remains, dense ivy prevents inspection of base.	Strip ivy from buttress to allow comprehensive inspection.	C1	79.8	5

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T7	Cherry (<i>Prunus avium</i>)	6	300 estimate	N: 4 E: 4 S: 4 W: 4	1 west	Early mature	Good	Fair	Dense vegetation inhibits inspection, no major visible defects.	Sever ivy to allow comprehensive future inspection.	B1	40.7	3.6
H8	Lilac (<i>Syringa vulgaris</i>)	4	N/A	1 average	0 average	Early mature	Good	Fair	Unmanaged hedgerow.	No action required on date of survey.	C2	N/A	1 from face of hedge
T9	Goat willow (<i>Salix caprea</i>)	5	350 estimate	N: 2 E: 4 S: 3 W: 2	1 south	Mature	Fair	Fair	Unable to view stem, minor dieback, smothered by ivy.	Sever ivy to allow comprehensive future inspection.	C1	55.4	4.2
T10	Swedish whitebeam (<i>Sorbus intermedia</i>)	5	130	N: 1 E: 1 S: 2 W: 2	1 south	Semi mature	Good	Fair	Unbalanced crown due to suppression from scrub area.	No action required on date of survey.	C1	7.6	1.6
G11	Blackthorn, hazel, apple and elder	3-6	N/A	Refer to drawings	0 average	Semi mature	Fair	Fair	Area of shrubs.	No action required on date of survey.	C2	N/A	1 from face of group
T12	Poplar (<i>Populus canadensis</i>)	7	250 estimate	N: 2 E: 2 S: 1 W: 2	2 south	Semi mature	Poor	Poor	Standing dead tree.	No action required on date of survey.	U	28.3	3

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 (m ²)	Root Protection Radius (m)
G13	Mixed fruit trees.	4 average	178.9 combined diameter average	2 average	0 average	Early mature	Fair	Fair	Poor quality trees with good landscape value (visual screen for adjacent property).	No action required on date of survey.	C2	14.5 average	2.1 average
T14	Hawthorn (Crataegus monogyna)	5	220	N: 3 E: 2 S: 1 W: 2	1 north	Early mature	Good	Good	Unbalanced crown due to suppression, no major visible defects.	No action required on date of survey.	C1	21.9	2.6
H15	Wild privet (dominant) and hawthorn	4-5 average	N/A	2 average	0 average	Mature	Good	Fair	Unmanaged hedgerow, good amenity value.	Prune to formal hedgerow.	C2	N/A	1 from face of hedge
T16	Goat willow (Salix caprea)	6	316.2 combined stem diameter	N: 5 E: 4 S: 5 W: 4	1 north	Early mature	Fair	Fair	Multi-stemmed stand with low forking habit.	No action required on date of survey.	C1	45.2	3.8
T17	English oak (Quercus robur)	10	390	N: 5 E: 4 S: 5 W: 4	1 north	Mature	Good	Good	Ivy clad. Good overall condition.	Sever ivy to allow comprehensive future inspection.	B1	68.8	4.7
T18	Lawson cypress (Chamaecyparis lawsoniana)	6	180	N: 1 E: 2 S: 2 W: 1	0 south	Early mature	Good	Good	Narrow habit due to suppression.	No action required on date of survey.	C1	14.7	2.2

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T19	Cherry (Prunus avium)	7	282.8 combined stem diameter	N: 3 E: 3 S: 3 W: 3	1 north	Mature	Good	Fair	Dual leaders, smothered by ivy.	Sever ivy to allow comprehensive future inspection.	C1	36.2	3.4
T20	Poplar (Populus canadensis)	14	300 estimate	N: 3 E: 4 S: 3 W: 3	2 east	Early mature	Good	Good	Unable to view base of tree.	Sever ivy to allow comprehensive future inspection.	B2	40.7	3.6
T21	Cherry (Prunus avium)	7	320.1 combined stem diameter	N: 4 E: 4 S: 3 W: 2	3 north	Mature	Good	Good	Dual leaders, no major visible defects.	Sever ivy to allow comprehensive future inspection.	B1	46.4	3.8
T22	Poplar (Populus canadensis)	15	350 estimate	N: 4 E: 3 S: 3 W: 3	3 north	Mature	Good	Good	Unable to view base of tree.	Sever ivy to allow comprehensive future inspection.	B2	55.4	4.2
T23	Cherry (Prunus avium)	6	269.3 combined diameter estimate	N: 4 E: 4 S: 4 W: 3	3 north	Mature	Good	Fair	Regrowth from failed stem.	No action required on date of survey.	C1	32.8	3.2
T24	Silver birch (Betula pendula)	8	310	N: 3 E: 3 S: 2 W: 2	0 east	Mature	Good	Good	Typical habit for species, no major visible defects.	No action required on date of survey.	B1	43.5	3.7

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T25	Poplar (Populus canadensis)	20	480	N: 6 E: 5 S: 3 W: 4	0 north	Mature	Good	Good	Typical habit for species, no major visible defects.	No action required on date of survey.	B2	104.2	5.8
T26	Poplar (Populus canadensis)	20	489.9 combined stem diameter	N: 5 E: 5 S: 4 W: 3	2 north	Mature	Good	Fair	Multi-stemmed, top of east stem snapped out.	No action required on date of survey.	B2	108.6	5.9
T27	Poplar (Populus canadensis)	20	430	N: 5 E: 3 S: 2 W: 3	3 north	Mature	Good	Good	Unbalanced crown due to suppression, no major visible defects.	No action required on date of survey.	B2	83.6	5.2
T28	Poplar (Populus canadensis)	20	450 estimate	N: 5 E: 5 S: 5 W: 3	0 north	Mature	Fair	Fair	Multi-stemmed, unable to view buttress.	No action required on date of survey.	B2	91.6	5.4
G29	Poplar (Populus canadensis)	10-15 average	Up to 300 average	4 average	1 average	Early mature	Good	Good	Self set group .	No action required on date of survey.	B2	40.7 average	3.6 average
T30	Scots pine (Pinus sylvestris)	5	300 estimate	N: 3 E: 4 S: 3 W: 2	0 south	Early mature	Good	Fair	Small snapped limbs, no major visible defects.	No action required on date of survey.	B2	40.7	3.6

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T31	Poplar (<i>Populus canadensis</i>)	15	445.5 combined stem diameter	N: 5 E: 4 S: 3 W: 1	4 north	Mature	Good	Good	Dual stemmed with low forking habit.	No action required on date of survey.	B2	89.8	5.3
T32	Scots pine (<i>Pinus sylvestris</i>)	5	300 estimate	N: 2 E: 4 S: 3 W: 1	0 east	Early mature	Fair	Fair	Suppressed by adjacent poplars.	Sever ivy to allow comprehensive future inspection.	C2	40.7	3.6
T33	Poplar (<i>Populus canadensis</i>)	12	250 estimate	N: 1 E: 2 S: 3 W: 2	3 north	Early mature	Good	Good	Typical habit for species, no major visible defects.	No action required on date of survey.	B1	28.3	3
T34	Leyland cypress (<i>Cupressocyparis leylandii</i>)	6	350 at 1m estimate	N: 2 E: 3 S: 3 W: 2	0 south	Mature	Fair	Fair	Fair condition, good visual screen.	No action required on date of survey.	C2	55.4	4.2
T35	Poplar (<i>Populus canadensis</i>)	15	640.3 combined diameter estimate	N: 2 E: 4 S: 4 W: 4	1 north	Mature	Good	Fair	1x stem pollarded to 3m, poor access to view stem.	No action required on date of survey.	B2	185.5	7.7
T36	Leyland cypress (<i>Cupressocyparis leylandii</i>)	6	300 estimate	N: 3 E: 3 S: 3 W: 1	2 east	Early mature	Good	Fair	Unbalanced crown due to suppression, no major visible defects.	No action required on date of survey.	C2	40.7	3.6

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G37	Poplar (<i>Populus canadensis</i>)	5 average	200 average estimate	2 average	0 average	Semi mature	Good	Good	Poor access to survey, visual screen.	Sever ivy to allow comprehensive future inspection.	C2	18.1 average	2.4 average
T38	Leyland cypress (<i>Cupressocyparis leylandii</i>)	5	200 estimate	N: 2 E: 2 S: 3 W: 2	0 average	Semi mature	Good	Fair	Poor access to survey, visual screen.	No action required on date of survey.	B2	18.1	2.4
G39	Silver birch (<i>Betula pendula</i>)	6 average	173.2 combined diameter estimate	3 average	2 average	Semi mature	Good	Fair	Multi-stemmed trees, poor access to survey, visual screen.	No action required on date of survey.	C2	13.6	2.1
H40	Poplar (<i>Populus canadensis</i>)	4-6 average	200 average estimate	2 average	0 average	Semi mature	Good	Fair	Unmanaged hedgerow.	No action required on date of survey.	C2	18.1 average	2.4 average
T41	Leyland cypress (<i>Cupressocyparis leylandii</i>)	8	350 estimate	N: 3 E: 3 S: 3 W: 3	0 north	Mature	Good	Good	Poor access to survey, no major visible defects.	No action required on date of survey.	B2	55.4	4.2
T42	Field maple (<i>Acer campestre</i>)	6	300 estimate	N: 3 E: 3 S: 3 W: 2	1 north	Early mature	Fair	Fair	Fair condition, no major visible defects.	No action required on date of survey.	C2	40.7	3.6

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				Client: West Sussex County Council Site: Angels Nursery, Barnham Date: 31/05/2016 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 (m ²)	Root Protection Radius (m)
G43	Lombardy poplar (Populus nigra 'italica')	15 average	400 average	1 average	0 average	Mature	Fair	Fair	Ivy clad, no major visible defects.	Sever ivy to allow comprehensive future inspection.	B2	72.4 average	4.8 average
T44	Cherry (Prunus avium)	6	180	N: 3 E: 3 S: 2 W: 2	1 north	Semi mature	Good	Good	Typical habit for species, no major visible defects.	No action required on date of survey.	B1	14.7	2.2
T45	White poplar (Populus alba)	14	500 estimate	N: 5 E: 5 S: 5 W: 4	4 north	Mature	Good	Good	Only viewed from site, no major visible defects.	No action required on date of survey.	B2	113.1	6
T46	Goat willow (Salix caprea)	8	346.4 combined stem diameter	N: 5 E: 5 S: 4 W: 5	0 north	Over mature	Good	Fair	Multi-stemmed stand with low forking habit.	No action required on date of survey.	C2	54.3	4.2
T47	Poplar (Populus canadensis)	14	673.6 combined stem diameter	N: 6 E: 5 S: 3 W: 3	4 east	Mature	Good	Fair	Dual stemmed, decaying branch wound at 3m on east stem.	Sever ivy to allow comprehensive future inspection.	B2	205.3	8.1
T48	Hawthorn (Crataegus monogyna)	5	200 combined stem diameter estimate	N: 4 E: 4 S: 3 W: 2	1 north	Semi mature	Fair	Fair	Suppressed by adjacent poplar.	No action required on date of survey.	C1	18.1	2.4

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 (m ²)	Root Protection Radius (m)
T49	Poplar (Populus canadensis)	15	1749.3 combined diameter estimate	N: 8 E: 7 S: 7 W: 5	4 north	Mature	Good	Fair	Multi-stemmed, large stem previously snapped out, ivy clad.	Sever ivy to allow comprehensive future inspection.	C1	707	15
G50	Field maple (Acer campestre)	5 average	120 average	3 average	1 average	Semi mature	Good	Good	Young trees of good condition.	No action required on date of survey.	C2	6.5 average	1.4 average
T51	Poplar (Populus canadensis)	15	610.3 combined stem diameter	N: 5 E: 7 S: 3 W: 3	1 east	Mature	Good	Fair	Unbalanced leaning form due to suppression, heavily ivy clad.	Clear ivy and understorey from around base of tree and re-inspect.	B1	168.5	7.3
T52	Poplar (Populus canadensis)	15	700 estimate	N: 6 E: 6 S: 4 W: 4	2 east	Mature	Good	Fair	Unbalanced leaning form due to suppression, heavily ivy clad.	Clear ivy and understorey from around base of tree and re-inspect.	B1	221.7	8.4
T53	Sycamore (Acer pseudoplatanus 'spaethii')	7	150 estimate	N: 3 E: 4 S: 2 W: 2	3 east	Semi mature	Good	Good	Tree growing from hedgerow.	No action required on date of survey.	C2	10.2	1.8
T54	Goat willow (Salix caprea)	5	200 estimate	N: 2 E: 3 S: 3 W: 3	1 east	Semi mature	Good	Fair	Fair condition, no major visible defects.	No action required on date of survey.	C2	18.1	2.4

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 (m ²)	Root Protection Radius (m)
T55	Sycamore (<i>Acer pseudoplatanus</i>)	7	180 estimate	N: 2 E: 2 S: 2 W: 2	0 east	Semi mature	Good	Good	Tree growing from hedgerow.	No action required on date of survey.	C2	14.7	2.2
H56	Hawthorn and cherry	2-4 average	N/A	1 average	0 average	Semi mature	Good	Good	Hawthorn hedgerow with cherry saplings.	No action required on date of survey.	C2	N/A	1 from face of hedge
G57	Poplar (<i>Populus canadensis</i>)	12-14 average	250 average	3 average	1 average	Early mature	Good	Good	Typical habit for species, no major visible defects.	No action required on date of survey.	B2	28.3 average	3 average
G58	Poplar (<i>Populus canadensis</i>)	8-10 average	150 average	3 average	1 average	Early mature	Good	Good	Metal strips through 1x tree's stem union.	No action required on date of survey.	C1	10.2 average	1.8 average
G59	Poplar (<i>Populus canadensis</i>)	14 average	350 average	3 average	0 average	Mature	Good	Fair	Ivy clad, previously pollarded to 5m.	No action required on date of survey.	C2	55.4 average	4.2 average
T60	Leyland cypress (<i>Cupressocyparis leylandii</i>)	6	450 estimate	N: 2 E: 2 S: 4 W: 4	0 south	Mature	Good	Fair	Previously topped at 5m, unbalanced crown due to suppression.	No action required on date of survey.	C1	91.6	5.4

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 (m ²)	Root Protection Radius (m)
T61	Silver birch (Betula pendula)	14	290	N: 4 E: 4 S: 3 W: 3	1 east	Mature	Good	Good	Typical habit for species, no major visible defects.	No action required on date of survey.	B1	38	3.5
G62	Leyland cypress (Cupressocyparis leylandii)	7 average	Up to 400 average	4 average	0 average	Mature	Fair	Fair	Minor crown dieback.	No action required on date of survey.	C1	72.4 average	4.8 average
T63	Poplar (Populus canadensis)	14	320	N: 2 E: 4 S: 4 W: 3	4 east	Mature	Good	Fair	Ivy clad, previously pollarded to 5m.	No action required on date of survey.	C1	46.3	3.8
T64	English oak (Quercus robur)	11	760	N: 8 E: 5 S: 7 W: 8	1 west	Mature	Good	Good	Good condition and arboricultural value. TPO designation.	No action required on date of survey.	A1	261.3	9.1
T65	English oak (Quercus robur)	12	520	N: 5 E: 5 S: 5 W: 7	4 east	Mature	Good	Good	Good condition and arboricultural value. TPO designation.	No action required on date of survey.	B1	122.3	6.2
T66	Lime (Tilia spp.)	5	N/A	N: 3 E: 3 S: 3 W: 3	0 south	Semi mature	Good	Fair	Regrowth from old stump.	No action required on date of survey.	C2	28.3	3

Tree Survey Schedule

				Client: West Sussex County Council Site: Angels Nursery, Barnham Date: 31/05/2016 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 (m ²)	Root Protection Radius (m)
T67	Apple (Malus sylvestris)	5	377.4 combined stem diameter	N: 5 E: 4 S: 3 W: 1	0 north	Over mature	Fair	Poor	Partially collapsed. Smothered by mixed under-storey.	No action required on date of survey.	U	64.4	4.5
T68	Apple (Malus sylvestris)	4	412.4 combined stem diameter	N: 4 E: 3 S: 4 W: 2	0 west	Over mature	Fair	Poor	Partially collapsed. Smothered by mixed under-storey.	No action required on date of survey.	U	76.9	4.9
T69	Apple (Malus sylvestris)	5	447.2 combined stem diameter	N: 4 E: 3 S: 3 W: 4	0 west	Over mature	Fair	Poor	Bark and crown dieback, stem decay.	No action required on date of survey.	C1	90.5	5.4
T70	Apple (Malus sylvestris)	5	454.5 combined stem diameter	N: 3 E: 0 S: 3 W: 5	0 west	Over mature	Fair	Poor	Bark and crown dieback, stem decay.	No action required on date of survey.	C1	93.4	5.5
G71	Apple (Malus sylvestris)	4 average	200 average	3 average	1 average	Mature	Fair	Fair	Fair condition, minor crown dieback.	No action required on date of survey.	C1	18.1 average	2.4 average
T72	English oak (Quercus robur)	5	180	N: 2 E: 2 S: 2 W: 3	2 west	Semi mature	Good	Fair	Young tree of reasonable condition.	No action required on date of survey.	C1	14.7	2.2

Tree Survey Schedule

				Client: West Sussex County Council Site: Angels Nursery, Barnham Date: 31/05/2016 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 (m ²)	Root Protection Radius (m)
T73	Hawthorn (Crataegus monogyna)	5	160	N: 3 E: 2 S: 1 W: 2	0 north	Semi mature	Good	Fair	Typical habit for species, no major visible defects.	No action required on date of survey.	C1	11.6	1.9
G74	English oak (Quercus robur)	5 average	150 average	3 average	0 average	Semi mature	Good	Good	Young trees of reasonable condition.	No action required on date of survey.	C1	10.2 average	1.8 average
T75	Pine (Pinus nigra)	9	530	N: 4 E: 4 S: 4 W: 4	2 north	Mature	Good	Good	Ivy clad, good amenity value. TPO designation.	Sever ivy to allow comprehensive future inspection.	B2	127.1	6.4
T76	Poplar (Populus canadensis)	15	680	N: 5 E: 6 S: 6 W: 5	0 south	Mature	Good	Good	Dual leaders, no major visible defects. TPO designation.	No action required on date of survey.	B2	209.2	8.2
G77	Elder, blackthorn and holly	3-5 average	N/A	Refer to drawings	0 average	Semi / early mature	Fair	Fair	Sporadic area of scrub.	No action required on date of survey.	C2	N/A	1 from face of group
T78	Norway spruce (Picea abies)	6	250 estimate	N: 3 E: 3 S: 3 W: 3	1 over site	Early mature	Good	Good	Third party tree overhanging site.	No action required on date of survey.	B2	28.3	3

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 (m ²)	Root Protection Radius (m)
T79	Sycamore (Acer pseudoplatanus)	12	529.2 combined stem diameter	N: 4 E: 4 S: 4 W: 5	2 east	Mature	Good	Good	Multi-stemmed, low forking habit.	No action required on date of survey.	B2	126.7	6.4
G80	Sycamore (Acer pseudoplatanus)	14 average	350 average estimate	3 average	2 average	Early mature	Good	Fair	Multi-stemmed, low forking habit.	No action required on date of survey.	B2	55.4 average	4.2 average
T81	Sycamore (Acer pseudoplatanus)	15	427.2 combined stem diameter	N: 5 E: 5 S: 5 W: 3	2 east	Mature	Good	Fair	Multi-stemmed, low forking habit.	No action required on date of survey.	B2	82.6	5.1
H82	Hawthorn and blackthorn	2 average	N/A	1 average	0 average	Early mature	Good	Fair	Unmanaged, intermittent hedgerow.	Prune to formal hedgerow.	C2	N/A	1 from face of hedge
T83	Horse chestnut (Aesculus hippocastanum)	8	380 at 1m	N: 4 E: 4 S: 5 W: 4	0 south	Mature	Good	Fair	Suppressed by T91, no major visible defects.	Sever ivy to allow comprehensive future inspection.	B1	65.3	4.6
G84	Wild privet (dominant), blackthorn and hawthorn	Up to 4 average	N/A	Refer to drawings	0 average	Early mature	Good	Fair	Former hedgerow, now area of scrub.	No action required on date of survey.	C1	N/A	1 from face of group

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 (m ²)	Root Protection Radius (m)
T85	Poplar (Populus canadensis)	15	905.5 combined diameter estimate	N: 5 E: 7 S: 7 W: 6	2 south	Over mature	Good	Fair	Multi-stemmed, low forking habit. TPO designation.	Sever ivy to base, clear adjacent understorey and re-inspect.	B2	370.9	10.9
T86	Poplar (Populus canadensis)	15	750 estimate	N: 5 E: 6 S: 3 W: 5	8 north	Over mature	Good	Fair	Dense ivy and understorey inhibits inspection. TPO designation.	Sever ivy to base, clear adjacent understorey and re-inspect.	B2	254.5	9
T87	Poplar (Populus canadensis)	15	672.7 combined stem diameter	N: 5 E: 7 S: 3 W: 6	3 north	Over mature	Good	Fair	Dual stemmed, low forking habit, ivy clad. TPO designation.	Sever ivy to base, clear adjacent understorey and re-inspect.	B2	204.7	8.1

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 value 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	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

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

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 – Tree T76 and T83-T87



Photograph 2 – Tree T64



Photograph 3 – Group G57



Photograph 4 – Trees T43-T46



Photograph 5 – Western site boundary (T1-T28)



Photograph 6 – Trees T48-T52