

Arboricultural Survey

Land at:
Yapton Road
Bilsham
West Sussex

21 August 2017



PJC ref: 4451/17-01

This report has been prepared by
PJC Consultancy Ltd
on behalf of
Landlink Estates

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1 INTRODUCTION

1.1 **Instruction:** PJC Consultancy has been instructed by Landlink Estates and Gleeson homes to provide an arboricultural survey of Land at Yapton Road, Bilsham.

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:

- Topographical survey

2 SITE VISIT AND SURVEY METHODOLOGY

2.1 Site visit: A site visit was carried out on 5th June 2017. The weather conditions at the time were adequate to carry out a comprehensive assessment of trees on site.

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, W=woodland block).
- 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 Yapton. 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 consists of an arable field bordered by hedgerows to the east and south with sporadic mature trees. The majority of the trees at the site are of a mature age. A hard standing track runs along side the north-western boundary.

3.3 Further information for each tree can be viewed in the Tree Survey Schedule in Appendix 2.

3.4 **Statutory tree protection:** No information regarding TPOs was collected as part of this assessment. 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.

3.6 Tree categorisation summary: The table below summarises the category of trees recorded across the site. Further information can be found about each tree within the Tree Survey Schedule in Appendix 2.

Table 1: Tree categorisation summary

Categorisation	Individual tree	Tree group	Hedgerow
A	2	0	0
B	6	2	0
C	1	5	1
U	0	0	0
Total	9	7	1

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, 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.

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 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 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.

Contact details

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[REDACTED]

[REDACTED]

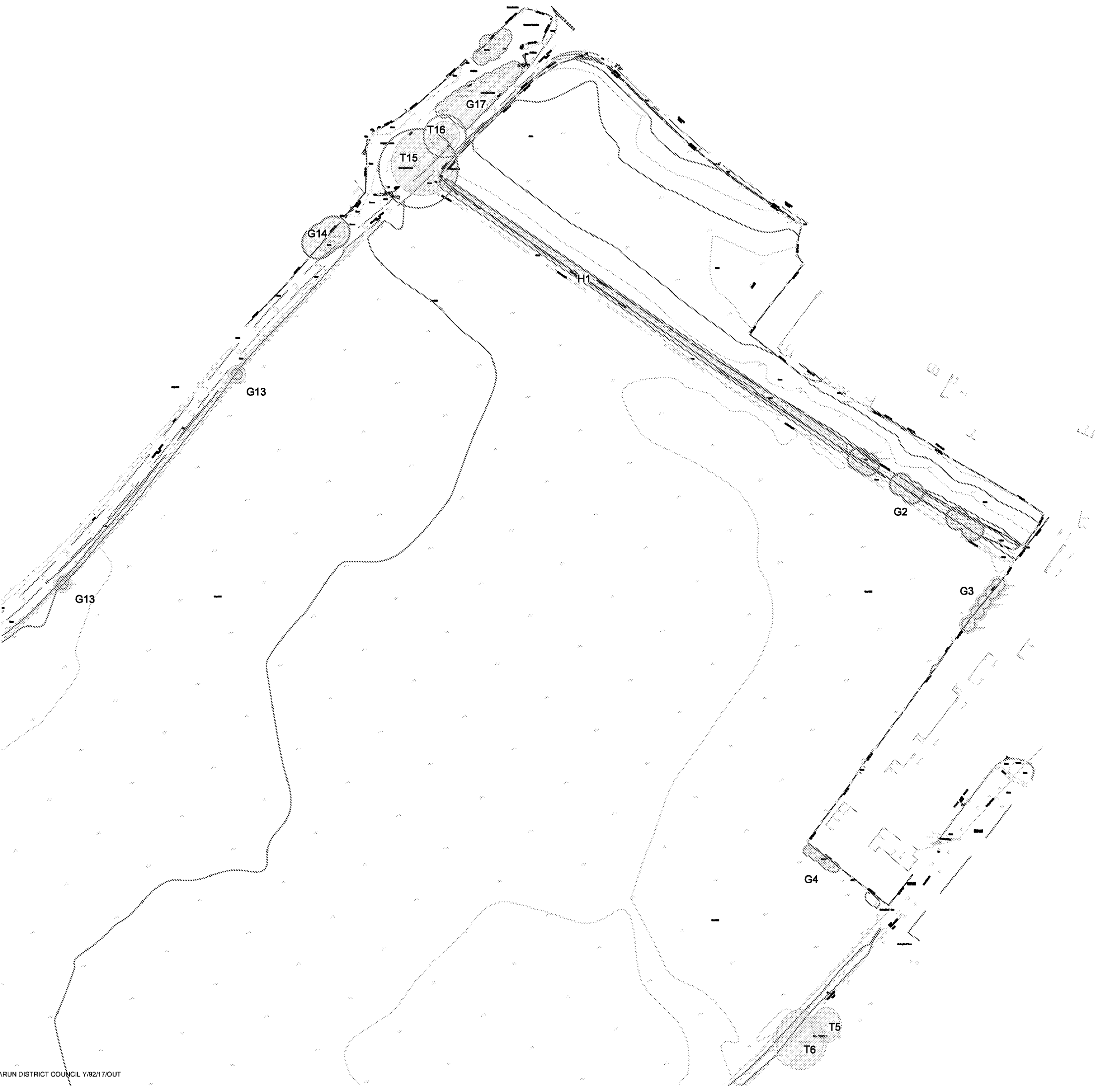
[REDACTED]

Author: Owen Allpress

Date: 21 August 2017

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 ref. no. PJC/4451/17-01 contains further information for each tree.

This drawing should be viewed in colour.

Drawing no: PJC/4451/17/A Rev: 00 Sheet number: 1 of 2

Client and site:
Landlink estates
Land adjacent Bilsham road
Yapton
West Sussex

Drawing title: Tree Constraints Plan

Date drawn: 21/08/2017

Scale: 1:1250 at A3

Drawn by: OA **Checked by:** PD



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Key:

- RPA for CAT A* tree
- RPA for CAT B* tree
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Client and site:
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APPENDIX 2

Tree Survey Schedule

Tree Survey Schedule

				Client: Landlink estates Site: Land at Yapton Road Survey date: 5th June 2017 Surveyor: Owen Allpress								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	Management recommendations	Category grading	Root Protection Area (m2)	Root Protection Radius (m)
H1	Hawthorn, (crataegus monogyna)	2	75	N	1	Crown	Semi-mature	Good	Good	Boundary hedge, regularly flailed.	None at time of survey	C2	2.5	0.9
				E	1	0								
				S	1	Branch								
				W	1	0								
G2	Hawthorn, (crataegus monogyna)	5	300	N	4	Crown	Mature	Good	Good	Field boundary group of hawthorn	None at time of survey	B2	40.8	3.6
				E	4	0								
				S	4	Branch								
				W	4	1								
G3	Hawthorn, (crataegus monogyna)	5	185	N	3	Crown	Mature	Fair	Fair	Sparse field boundary group adjacent third party boundary.	None at time of survey	C2	15.5	2.2
				E	3	0								
				S	3	Branch								
				W	3	1								
G4	Elm & Hawthorn	5	150	N	3	Crown	Semi-mature	Good	Good	Young self set field boundary group to rear of third party property.	None at time of survey	C2	10.2	1.8
				E	3	0								
				S	3	Branch								
				W	3	1								
T5	Pedunculate oak, (Quercus robur)	11	400	N	6	Crown	Mature	Good	Good	Field boundary mature trees	None at time of survey	A2	72.5	4.8
				E	5	3s								
				S	6	Branch								
				W	5	4s								
T6	Pedunculate oak, (Quercus robur)	12	740	N	11	Crown	Mature	Good	Good	Field boundary mature trees	None at time of survey	A2	248.1	8.9
				E	8	4w								
				S	9	Branch								
				W	8	3w								

Tree Survey Schedule

		Client: Landlink estates										T: Individual tree or shrub		
		Site: Land at Yapton Road										G: Group of 2 or more trees		
		Survey date: 5th June 2017										H: Hedgerow		
		Surveyor: Owen Allpress										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	Management recommendations	Category grading	Root Protection Area (m ²)	Root Protection Radius (m)
T7	Field maple, (acer campestre)	11	450 est	N	8	Crown	Mature	Fair	Obscured	No access to survey stem in detail.	None at time of survey	B1	91.7	5.4
				E	6	1								
				S	8	Branch								
				W	6	2								
T8	Common ash, (Fraxinus excelsior)	13	610 ms est	N	7	Crown	Mature	Good	Obscured	Multi-stem ash, portion of tree overhang bridleway history of limb loss.	None at time of survey	B2	168.6	7.3
				E	6	4w								
				S	6	Branch								
				W	7	5w								
T9	Pedunculate oak, (Quercus robur)	13	890	N	8	Crown	Mature	Good	Good	Lower limbs showing evidence of dieback	None at time of survey	B2	358.8	10.7
				E	7	3								
				S	7	Branch								
				W	8	5								
T10	Pedunculate oak, (Quercus robur)	13	636 Mean	N	7	Crown	Mature	Good	Good	Field boundary trees	None at time of survey	B2	183.2	7.6
				E	7	3								
				S	7	Branch								
				W	7	4								
T11	Pedunculate oak, (Quercus robur)	14	750 est	N	6	Crown	Mature	Good	Good	Field boundary trees	None at time of survey	B2	254.8	9.0
				E	6	3								
				S	6	Branch								
				W	6	5								
G12	Mixed deciduous	>6	190 est	N	2	Crown	Mature	Good	Good	Field boundary trees group as hedge row understorey.	None at time of survey	C2	16.4	2.3
				E	2	1								
				S	2	Branch								
				W	2	2								

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	Management recommendations	Category grading	Root Protection Area (m2)	Root Protection Radius (m)
G13	Hawthorn, (crataegus monogyna)	4	150	N	3	Crown	semi-mature	Good	Good	Small things on western field boundary.	None at time of survey	C1	10.2	1.8
				E	3	0								
				S	3	Branch								
				W	3	1								
G14	Leylandii	16	450	N	5	Crown	Mature	Good	No access	Third party leylandii within fenced compound. possible Seridium cardinale in upper northern portion of	None at time of survey	B2	91.7	5.4
				E	5	5e								
				S	5	Branch								
				W	5	5e								
T15	Poplar spp	18	1100	N	13	Crown	Mature	Fair	Fair	Heavily reduced now regrown, Parse re emergence from dormancy with minor crown dieback.	None at time of survey	B2	548.1	13.2
				E	13	3e								
				S	9	Branch								
				W	9	4e								
T16	Holm oak, (Quercus ilex)	13	589	N	5	Crown	Mature	Good	Poor	Dual stem tree, both stems physical damage no sign of active decay. wound wood formation appears sparse if	None at time of survey	C1	157.2	7.1
				E	5	3s								
				S	5	Branch								
				W	5	4s								
G17	Elm, (Ulmus spp)	>9	90	N	2	Crown	Juvenile - Semi-mature	Good	Good	Elm self set group toward gate with third party land.	None at time of survey	C2	3.7	1.1
				E	2	0								
				S	2	Branch								
				W	2	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 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

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

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:

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