

Arboricultural Survey

Land at Burfield Valley
Reef Way
Hailsham

4th May 2018



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This report has been prepared by
PJC Consultancy Ltd
on behalf of
Persimmon Homes South East

**Prepared
by**

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1 INTRODUCTION

1.1 **Instruction:** PJC Consultancy has been instructed by Persimmon Homes South East to provide an initial arboricultural survey of land at Burfield Valley in Hailsham. The survey is to be undertaken in accordance with BS5837: 2012 '*Trees in relation to design, demolition and construction – Recommendations*'.

1.2 **Survey objectives:** This survey has been undertaken with the following objectives:

- To record a schedule of significant trees (dimensions and locations) situated at the prospective development site.
- To assess the quality and value of the existing tree stock in terms of arboricultural, landscape, historical/conservation, or public amenity value.
- To provide information relating to planning constraints that may restrict works to trees at the site.
- To provide an assessment of the material constraints posed by the existing tree stock on potential future developments at the site.
- To aid the design process, ensuring prospective developments integrate appropriately with the existing tree stock, to maximise the potential of the proposed development site.

1.3 **Scope of this report:** This report is concerned with all significant trees and arboricultural features located within the site boundary. 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 **Contents of report:** This report includes the following:

- A summary of the existing tree stock and notable arboricultural features.
- Tree Constraints Plan in accordance with BS5837: 2012.
- Tree Survey Schedule containing the relevant measurements and information for each tree or tree group as required in BS5837: 2012.

1.5 **Documents and information provided:** The following documents were used to aid the preparation of this report:

- Drawing ref. 6491_201 – Location Plan
- Drawing ref. 6491_202 – Site Layout Plan

2 SITE VISIT AND SURVEY METHODOLOGY

2.1 **Site visit:** A site visit was carried out on 1st May 2018. The weather conditions at the time were clear and dry. The visibility was adequate for visual tree inspection from ground level.

2.2 **Tree survey 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, H=hedgerow). Tree numbers suffixed with PA on the Tree Constraints Plan indicate the trees location was not included on the site plans provided so the tree's position was approximated on site and using aerial imagery.
- 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(s) including any notable features).
- Preliminary management recommendations (prescriptions for tree management processes based on the current land use and not related to the prospective 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 and high arboricultural, landscape or conservation value. Must have a potential life span in excess of forty years.
- B – Trees of moderate condition, with minor defects or sub-optimal form but are still of modest arboricultural, landscape or conservation value. Must have a potential life span in excess of twenty years.
- C – Unremarkable trees of poor condition or form with limited arboricultural, landscape or conservation value, or trees with a stem diameter under 150mm. Must have a potential 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. These trees do not need to be removed if they are not dangerous and do not conflict with the proposed development, but should not be considered a constraint to development.

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. Also trees present in groups that attain higher collective rating than they would as individuals.
- 3 – Trees with mainly cultural value including conservation, e.g. commemorative trees, trees of historical 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:** A root protection area represents the minimum amount of root growth required to support a tree. It is a standardised calculation based on the stem diameter(s) measured at 1.5m and is not necessarily representative of the actual or total rooting area. The formulas used to calculate root protection areas are shown below:

Table 1: Root protection area formulas

For single stemmed trees

$$\text{Root protection area (m}^2\text{)} = \frac{(\text{stem diameter (mm)} \times 12)^2 \times \pi}{1000}$$

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 combined stem diameter is calculated as follows:

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

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 (unless significant rooting constraints are present), and are colour coded depending on the category the tree has been awarded. Where existing site conditions/features are present that are deemed likely to have affected the root morphology, the root protection areas have represented as a polygon of equivalent area.

2.9 The proposed layout should avoid level changes or the placement of new buildings and areas of hard surfacing within the root protection areas of retained trees. In certain situations, engineered solutions are available to allow construction within the root protection areas however further input from an arboriculturalist should be sought regarding their site-specific viability before these methods are relied upon.

2.10 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 as well as the absorption of moisture and nutrients from the soil. They also act as storage and transport for water and nutrients.

2.11 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.

2.12 The majority of root growth is usually found within the top 600mm-1000mm of soil. As such, even shallow disturbance within root protection areas can potentially have a significant impact on the trees.

2.13 The root protection areas must be left free from excavation and disturbance, and protected from compaction or contamination during any proposed works. Any construction works within a root protection area required for the proposed layout must be justifiable within the arboricultural impact assessment.

2.14 **Limitations of survey:** 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.

2.15 This survey represents a preliminary overview of the condition and value trees at the site. It is not a detailed assessment of any individual tree and although preliminary management recommendations are included, this report will not be sufficient to be used as a detailed condition and safety survey.

2.16 The information and measurements in this report are representative of the date of the site visit. The tree survey data will need to be updated to reflect tree growth and changes in the condition of trees after prolonged periods.

3 SITE DETAILS AND SURVEY FINDINGS

3.1 Site location: The site is situated on the south side of Reef Way, more broadly to the north-east of Hailsham Town Centre. It has a central OS national grid reference of TQ590100. The surrounding land use is comprised of residential properties on Reef Way to the north-west and east, and grass fields to the south and west. An unmanaged nature area is located on the opposite side of Reef Way to the north-east. The location of the site within its environs is shown in figure 1.

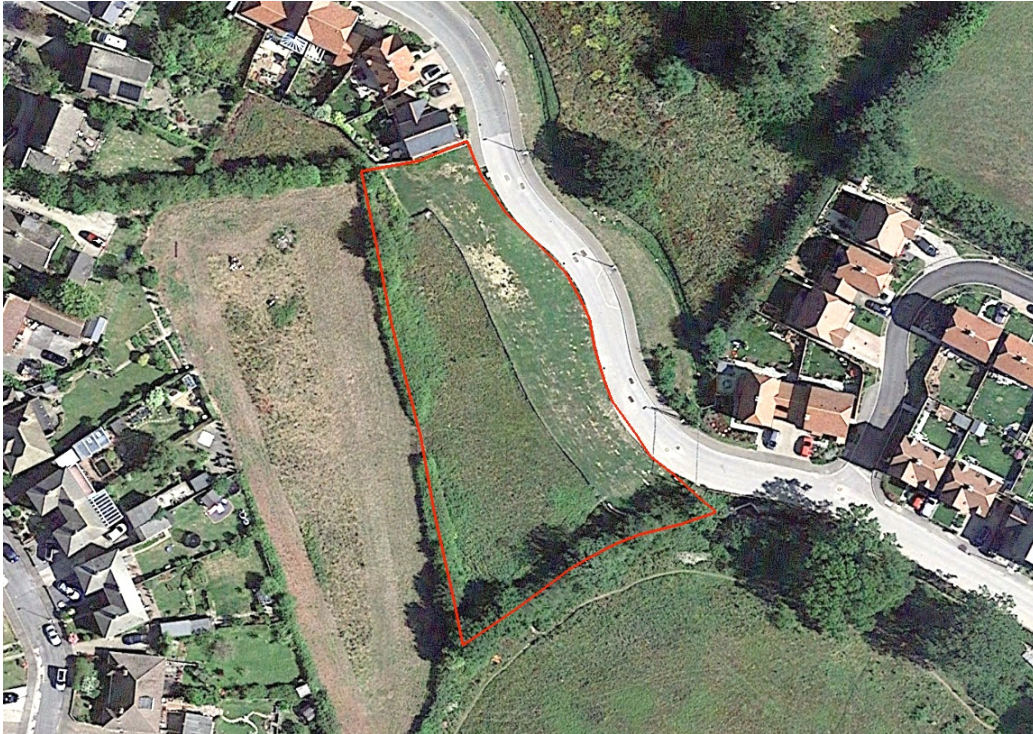


Figure 1: Location of Site and Environs

3.2 Site layout: The site is comprised of a rectangular plot formed predominantly of grass but also scrub areas. The site slopes down from west to east, towards the road. There is a belt of scrub and tree saplings on the western boundary and an established hedgerow containing a number of trees on the southern boundary. The southern hedgerow surrounds and existing ditch.

3.3 Appraisal of tree stock: The only trees on the western boundary comprise a young ash sapling in the north-west corner and a belt of small hawthorns. There is also a linear belt of bramble situated along the majority of this boundary.

3.4 The southern boundary is formed of a broad, unmanaged native hedgerow comprised predominantly of hawthorn and blackthorn. The hedgerow surrounds the ditch and contains a number of trees.

3.5 Tree T5 is a lime located in the ditch at the southern extent of the site. It comprises vigorous, multi-stemmed regrowth from an old stump from what appears to be a windblown tree, so has been categorised as U. Although this tree is not expected to mature into a high quality specimen, it is not considered imminently dangerous so despite its categorisation as U it does not need to be removed unless it poses a constraint to development.

3.6 Tree T6 is an early mature sycamore located in the centre of the hedgerow. The density of the hedgerow and ivy cover on the tree prevents a through structural assessment. The crown is exhibiting significant dieback, which has resulted in the trees categorisation as U.

3.7 Tree T8 is a multi-stemmed sycamore located on the frontage of Reef Way, just outside the site boundary. Although this tree is not a notably high quality or prominent specimen, it is connected to a door mouse bridge that connects hedgerow H3 to the nature area on the opposite side of Reef Way. T8 has therefore been awarded category B3 for its conservation value.

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

3.9 **Tree categorisation summary:** A total of six trees trees, one tree group and one hedgerow were surveyed and recorded in the Tree Survey Schedule.

Table 2: Tree categorisation summary

Categorisation	Individual tree	Tree group	Hedgerow
A	-	-	-
B	1	-	-
C	3	1	1
U	2	-	-
Total	6	1	1

3.10 **Statutory tree protection:** Wealden District Council Planning Department was contacted by e-mail to establish restrictions to tree works at the site. It was reported on 2nd May 2018 that no tree preservation order or conservation area protects the trees at this site, however a tree restriction imposed by planning application ref. 2009/2705 affects this site, and an application must be made to the local authority to undertake tree works on the land.

3.11 Any persons proposing to undertake tree works should therefore check the status of the trees with the local authority, and gain the necessary consent before the works are undertaken. 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 RECOMMENATIONS

4.1 **Arboricultural input to planning application:** To comply with BS5837: 2012, an arboricultural impact assessment should be produced when the proposed layout has been fixed. The arboricultural impact assessment should include a schedule of trees to be retained or removed as well as access facilitation 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.

4.2 It is recommended that input is sought from the project arboriculturalist into the proposed layout before it is fixed. This will help ensure the proposed layout integrates well with the retained tree stock, and will allow potential areas of conflict that may not be identified by non-arboricultural professionals to be rectified whilst the layout is being developed.

4.3 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.

4.4 **Arboricultural considerations for proposed layout:** The proposed layout should take into account the following considerations related to trees:

- The proposed layout should seek to retain higher quality trees, particularly those that cannot easily be replaced. 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. A net loss in tree cover within a development site will not be looked on favourably when determining a planning application.
- The proposed layout should take into account the root protection areas of retained trees. These should be left free of construction activities including hard landscaping unless the project arboriculturalist confirms engineered solutions or sympathetic construction methodology will be a viable option to mitigate the encroachment.
- The proposed layout should take into account the shade cast by trees. Over-shading of gardens and buildings (notably habitable rooms) can result in future pressures to prune or remove additional trees post development and will be a material consideration for the local authority when determining a planning application.
- The proposed layout should also take into account other common potential nuisances resulting from trees including 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.
- 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 (as well as who would be responsible for undertaking the works) should be considered.

4.5 If further tree planting does occur within the development site, 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. Recommendations for mitigation tree planting may be included in the arboricultural impact assessment, or a more thorough landscaping strategy may be provided by a landscape designer/architect.

4.6 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.

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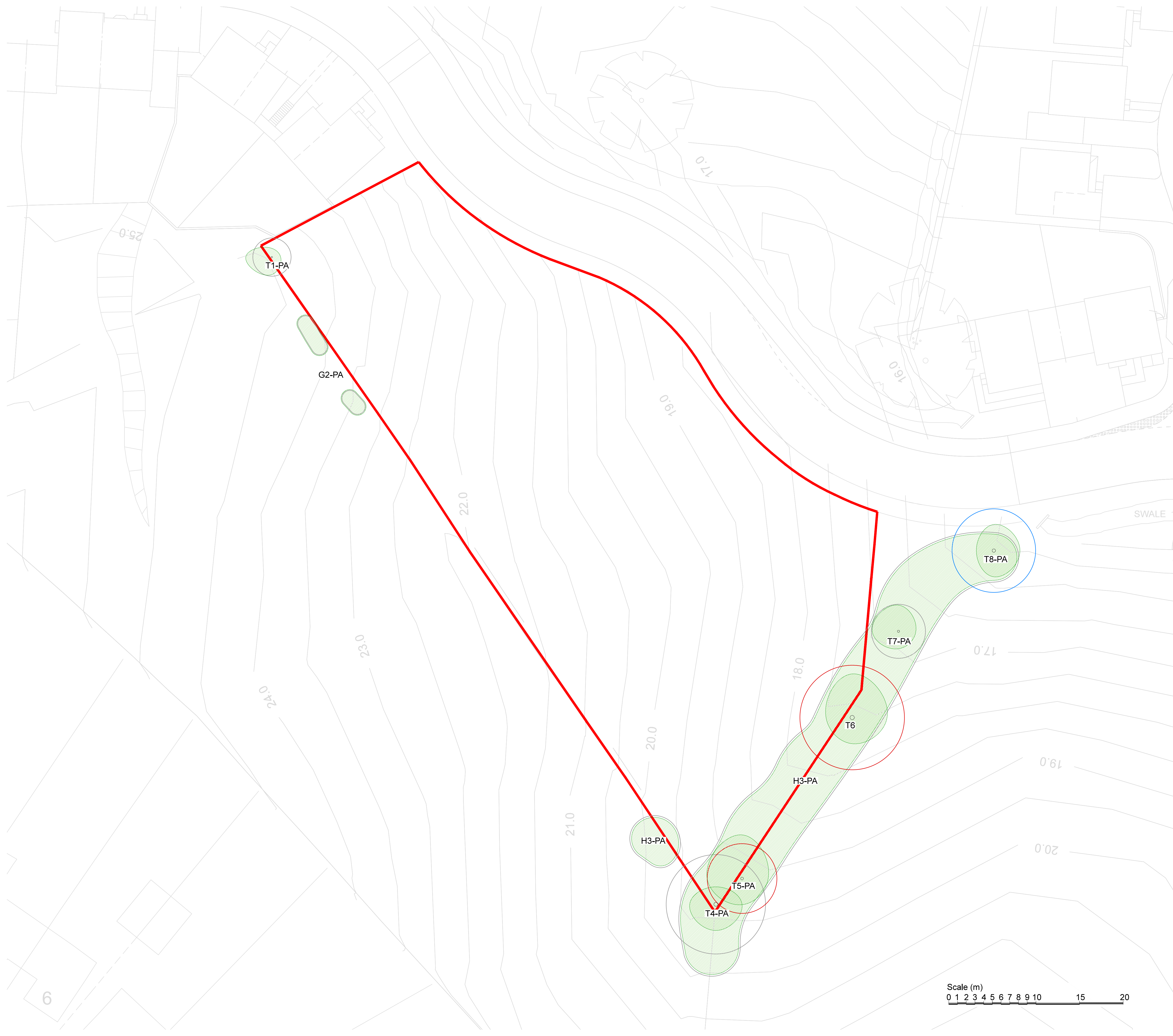
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APPENDIX 1

Tree Constraints Plan



- Key:**
- 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. PJC/4830/18-01 contains further information for each tree.

This drawing should be viewed in colour.

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

Drawing no: PJC/4830/18/A Rev: - Sheet number: 1 of 1

Client and site:
Persimmon Homes South East

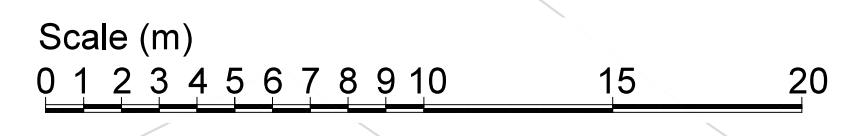
Land at Burfield Valley
Reef Way
Hailsham

Drawing title: Tree Constraints Plan

Date drawn: 04/05/2018

Scale: 1:200 at A1

Drawn by: PD **Checked by:** LW



APPENDIX 2

Tree Survey Schedule

Client: Persimmon Homes South East

Tree Survey Schedule

Site: Reef Way

Survey date: 01/05/2018

Surveyor: Peter Davies



Tree ref.	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	Ash (<i>Fraxinus excelsior</i>)	6	180	N: 1 E: 1 S: 2 W: 3	Crown: 1 south Branch: 2 south	Young	Good	Good	Located at top of bank with signs of recent excavation at base. Board nailed to stem. Lightly ivy clad.	No action required on date of survey.	C1	14.7	2.2
G2	Hawthorn (<i>Crataegus monogyna</i>)	1-4 average	Under 75 average est	0-1 average	0-1 average	Semi mature	Good	Good	Dense bramble at base. Linear group of approximately 5 specimens.	No action required on date of survey.	C2	2.5 average	0.9 average
H3	Mixed (blackthorn and hawthorn dominant, field maple, bramble)	1-5 average	Up to 100 average est	1-3 average	0-1 average	Young	Good	Good	Broad native hedgerow (generally unmanaged) around ditch on the southern site boundary.	No action required on date of survey.	C2	2.9 average	1.0 average
T4	Ash (<i>Fraxinus excelsior</i>)	9	270, 340, 150, 110	N: 2 E: 3 S: 3 W: 3	Crown: 3 east Branch: 4 average	Early mature	Good	Fair	Co-dominant stems with additional smaller secondary stems, two of which are fused. Dense ivy cover.	No action required on date of survey.	C1/2	100.9	5.7
T5	Lime (<i>Tilia cordata</i>)	10	90 average x14 stem est	N: 5 E: 3 S: 3 W: 4	Crown: 2 average Branch: 1 north	Semi mature	Good	Poor	Young regen from old wind blown stump in ditch. Typical prolific basal growth.	No action required on date of survey.	U	51.3	4.0
T6	Sycamore (<i>Acer pseudoplatanus</i>)	8	500 est	N: 5 E: 4 S: 3 W: 3	Crown: 3 east Branch: 2 south	Early mature	Good	Poor	Significant deadwood in upper crown and severe crown dieback. Dense ivy and under-storey prevents close inspection.	No action required on date of survey.	U	113.1	6.0

Client: Persimmon Homes South East

Site: Reef Way

Survey date: 01/05/2018

Surveyor: Peter Davies

Tree Survey Schedule



Tree ref.	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)
T7	Pedunculate oak (Quercus robur)	7	260	N: 3 E: 2 S: 2 W: 3	Crown: 2 south Branch: 1 south	Semi mature	Good	Fair	Under-storey inhibits inspection & has created a suppressed canopy form. Significant stem wound at 1m from branch wound.	No action required on date of survey.	C1/2	30.6	3.1
T8	Sycamore (Acer pseudoplatanus)	8	400 est	N: 3 E: 3 S: 3 W: 2	Crown: 4 average Branch: 2 north	Early mature	Good	Fair	4x stems from 0.5m. Dense ivy inhibits inspection. Branch resting on door mouse rope bridge.	Retain tree for ecological connectivity.	B3	72.4	4.8

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.	<ul style="list-style-type: none"> 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. <p>Note Category U trees can have existing or potential conservation value which it might be desirable to preserve</p>	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.	<p>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).</p> <p>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.</p>	Green
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.	<p>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.</p>	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 150mm.	<p>Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.</p> <p>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.</p>	Grey

APPENDIX 4 Photographs



Photograph 1 – Tree T1



Photograph 2 – Trees T1 and G2



Photograph 3 – Trees H3-T7



Photograph 4 – Tree T5



Photograph 5 – Tree T6



Photograph 6 – Trees T6 and T7



Photograph 7 – Tree T7



Photograph 8 – Tree T8