Arboricultural Impact Assessment & Preliminary Method Statement

Land adjacent to:
The Gables
Leeds Road
Sutton Valence
Kent

26th September 2016

PJC ref: 4149/16-01

This report has been prepared by

PJC Consultancy Ltd

on behalf of

Consillium Town Planning Services Ltd

Prepared by	**Owen Allpress BSc(Hons) M.Arbor.A** Owen has received both an FdSc and a BSc (Hons) in Arboriculture and is a professional member of the Arboricultural Association. Working in the industry for nearly 10 years, Owen has extensive experience in arboricultural contracting, consultancy and business management.
Checked by	**Peter Davies FdSc Arboriculture M.Arbor.A** Peter has a Foundation Degree in Arboriculture and is a professional member of the Arboricultural Association. He has ten years experience in the arboricultural industry, originally working as a groundsman and feller, and progressing into consultancy. He is a Lantra accredited professional tree inspector.

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1 EXECUTIVE SUMMARY

1.1 **Proposal:** A proposal has been outlined to construct a detached residential dwelling at the site.

1.2 **Site location:** The site is situated outside Sutton Valence close to Maidstone at the junction of Maidstone Road and Leeds Road. The surrounding land use is comprised primarily of residential housing with small commercial units to the north and agricultural land to the east. The location of the site within its environs is shown in figure 1.

Figure 1: Location of Site and Environs

1.3 **Tree removals:** Eight trees will be required to be removed to facilitate the proposed development. These consist of a mix of CAT B and CAT C trees within the northern boundary of the site. Further information can be found in the Tree Retention plan located within the appendix.

1.4 **Access facilitation pruning:** Based on the information available at the time of this report, no access facilitation pruning will be required to facilitate the proposal.

1.5 **Works within root protection areas:** All proposed buildings and hard surfacing are positioned to avoid the root protection areas of retained trees.

2 INTRODUCTION

2.1 **Instruction:** PJC Consultancy has been instructed by Consillium Town Planning Services Ltd to provide an arboricultural impact assessment for proposed construction works at The Gables, (Land Adjacent). The proposal is to construct a detached residential dwelling.

2.2 **Brief:** PJC Consultancy has been commissioned to carry out a tree survey and to compile an arboricultural impact assessment in accordance with guidelines set out in BS5837: 2012 '*Trees in relation to design, demolition and construction – Recommendations*'.

2.3 **Scope of this report:** This report is concerned with all significant trees located within the site boundary and those located around the curtilage of the site with the potential to impact or be impacted by the proposed construction works (in relation to root or crown protection or foundation design).

2.4 **Contents of report:** This report has been produced to provide a schedule trees to be removed or pruned for the proposed development, as well as to evaluate the implications of the development on retained trees. The report includes the following:

- A schedule of existing trees at the site including an assessment of their condition and value based on the existing land use.
- A schedule of trees to be retained/removed.
- A schedule of access facilitation pruning required for development.
- An assessment of the impact construction works will have on retained trees and mitigation measures to be implemented.
- An assessment of post development pressures on trees.
- Recommendations for post development arboricultural management.
- Tree Constraints Plan and Tree Protection Plan.

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

- Drawing ref. Site layout
- Drawing ref. Current proposal

3 INITIAL TREE SURVEY SUMMARY

3.1 **Site visit:** A site visit was carried out on 22nd September 2016. The weather conditions at the time were dry and bright. The visibility was suitable to carryout a comprehensive tree survey. The initial survey assessed the trees in the context of the existing land use, not in consideration of development proposals.

3.2 **Tree information:** The following measurements and information were recorded in the Tree Survey Schedule for each tree or tree group:

- 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 trees with 6 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.
- 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.
- Tree categorisation (see below).
- Root protection area (m^2).
- Root protection radius (m).

3.3 **Tree categorisation:** 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.

3.4 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.

3.5 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.

3.6 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.

3.7 **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.

3.8 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.

3.9 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.

3.10 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.

3.11 **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. All tree positions indicated as part of this report are approximated as no topographical survey was provided.

3.12 **Site layout:** The Gables is positioned within a corner plot at the junction of two main roads. The garden has mature trees focused predominantly around the premier. Several of the trees within the garden are of a large size the most notable of which is a mature oak, (T11), located at the southern most corner of the property.

3.13 **Statutory tree protection:** Maidstone Borough Council Planning Department's online mapping was accessed on 26th September to ascertain restrictions relating to trees. No Tree Preservation Order (TPO) protects the trees on this site on the date of this report and the site is not located within a Conservation Area. However, 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.

3.14 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.

3.15 **Tree categorisation summary table:** The table below summarises the mix of trees recorded on site by their category. Further information about each tree can be found within the Tree Survey Schedule located within the appendix.

Categorisation	Individual tree	Tree group
A	2	0
B	11	0
C	5	3
U	0	0
Total	18	3

Table 1: Tree categorisation summary

4 ARBORICULTURAL IMPACT ASSESSMENT

4.1 **Tree removals:** Trees to be removed for the proposed development are shown with dashed outlines on the Tree Protection Plan in Appendix 1. These include T1, T2, T3, T4, T5, T6, T7, and T8. The trees are a mix of category C and B trees.

4.2 The loss of trees should be mitigated by planting during the soft landscaping phase of development. Further details of planting type, stock size and species should be confirmed as part of the proposal.

4.3 **Access facilitation pruning:** Based on the information currently available, no access facilitation pruning will be required to facilitate the proposed development. Any requirements for access facilitation pruning that cannot be predicted at this stage in the design process (e.g. for contractor compound or movement of large plant) should be discussed at the pre-commencement meeting with the project arboriculturalist and agreed with the local authority arboricultural officer.

4.4 **Works within root protection areas:** All proposed buildings and areas of new surfacing will be located outside the root protection areas of retained trees. Provided the exclusion zones and methodologies described in the arboricultural method statement and Tree Protection Plan are followed, trees proposed for retention should not be adversely affected by the construction works. To create a working area close to T10 temporary ground protection will be required to enter the construction exclusion zone. Details of this are located within the Tree protection plan and within the Arboricultural Method statement.

4.5 **Privacy and screening:** The trees located along Maidstone road are planned to be retained in order to provide screening for the site post development.

4.6 **Services:** Details of the routing of services for the proposed development are not currently available. Once details of the routing of new services become available, prior to commencement, these shall be reviewed by the project arboriculturalist. The arboriculturalist shall then confirm to the local authority arboricultural officer either that no works will be carried out within root protection areas, or provide details of the methodology required to ensure the works are carried out in accordance with NJUG10 '*Guidelines for the planning, installation and maintenance of utilities in proximity to trees*' and BS5837: 2012.

4.7 **Post development tree management summary:** Although not requiring removal to facilitate the proposed development, tree T12 (a mature Japanese larch) should be considered to have limited scope for retention based on its condition and long term will require removal.

4.8 **Conclusions:** Based on the above assessment, trees recommended for retention in this report can be protected during the proposed construction works and successfully integrated into the site post development.

4.9 Provided the approaches and methodologies and exclusion zones described in the arboricultural method statement are followed, trees proposed for retention in this report should not be adversely affected by the proposed construction works.

5 ARBORICULTURAL METHOD STATEMENT

5.1 **General requirements:** The arboricultural method statement and Tree Protection Plan shall remain on site for the duration of demolition, construction and landscaping works and be available to site operatives at all times. All operatives at the site shall be briefed about tree related factors as part of their site induction.

5.2 Any variation from the methodology described in this method statement shall be discussed with the supervising arboriculturalist and agreed with the local authority arboricultural officer.

5.3 **Initial tree works:** The tree works listed in the management column of the Tree Survey Schedule shall be carried out as the first stage of development. Tree stumps and vegetation located within the root protection areas of retained trees shall cleared with controlled hand tools (e.g. stump grinder/brush cutter). Plant machinery shall not be used to scrape vegetation within root protection areas or access the site until the tree protection barriers have been installed.

5.4 Due to the restricted space on site and proximity to retained tree canopy, bonfires shall not be permitted to dispose of tree waste.

5.5 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.

5.6 The tree works contractors should carry out all tree works to BS3998: 2010 '*Tree works – recommendations*'. They should also carry relevant, adequate and up to date insurance.

5.7 It is recommended that an Arboricultural Association approved contractor carry out all tree works. Approved contractors are expected to work to industry best standards. The Arboricultural Association website contains contact details and information on engaging a suitable contractor.

5.8 **Tree protection barriers:** The root protection areas of retained trees must be left free from disturbance, and protected from contamination or compaction during the proposed works. Protection shall comprise a combination of tree protection fencing and temporary ground protection.

5.9 The tree protection fencing shall be installed in the locations shown on the Tree Protection Plan. The specification for fencing is included in Appendix 5. Signs shall be affixed to the fencing as shown in Appendix 6 to explain its purpose.

5.10 To create a usable workspace around the new building, temporary ground protection shall be installed in the locations shown on the Tree Protection Plan. To be fit for purpose, the ground protection needs to prevent compaction or rutting of the ground beneath. The final specification for ground protection should be agreed at the pre-commencement meeting with the project arboriculturalist.

5.11 Where ground protection is required for pedestrians or lightweight plant up to 2 tons gross weight, example specifications include:

- A single thickness of scaffold boards on a compressible layer of wood chip or sharp sand (100mm for pedestrians or 150mm for small plant), spread across a geotextile membrane.
- A single thickness of scaffold boards on a driven scaffold frame.

5.12 Tree protection barriers shall be installed following the initial tree works, prior to construction traffic entering the site. They shall remain in place for the duration of construction and hard landscaping works.

5.13 The areas protected by fencing or ground protection shall be referred to as the construction exclusion zones. The following actions shall be prohibited within the construction exclusion zones:

- Vehicular access unless on suitable ground protection.
- Regular pedestrian access unless on suitable ground protection.
- Storage of construction materials.
- Storage or handling of harmful chemicals.
- Any change in ground level unless otherwise stated in this report or under supervision of project arboriculturalist.
- Construction activities including hard surfacing unless otherwise stated in this report.

5.14 **Storage and handling of harmful chemicals:** Provision needs to be made to avoid the storage and handling of harmful chemicals in proximity to trees. Harmful chemicals include fuels, oils, builder's sand (which has a high salt content) and cement. Cement mixing shall only occur where there is no potential for cement washings to leech into a root protection area. Provision shall also be made to prevent fuelling or the handling of cement from occurring in areas proposed for further planting.

5.15 **Contractor facilities:** A suitable location for site cabins, contractor parking and site facilities for operatives shall be agreed with the project arboriculturalist during a pre-commencement meeting. These facilities should be located outside the root protection areas of retained trees (unless on retained tarmac surfaces). Provision must also be taken to prevent exhaust fumes or hot air from generators or kitchen facilities from damaging the canopies of retained trees.

5.16 **Services:** When details of the routing of services become available, prior to commencement of construction works, they shall be reviewed by the project arboriculturalist. The arboriculturalist shall then confirm to the local authority arboricultural officer either that no works will be carried out within root protection areas, or provide details of the methodology required to ensure the works are carried out in accordance with NJUG10 '*Guidelines for the planning, installation and maintenance of utilities in proximity to trees*' and BS5837: 2012.

5.17 **Soft landscaping within root protection areas:** New soft landscaping within the root protection areas of retained trees shall occur at the final phase of development. The final specification for soft landscaping is to be confirmed but may include turfing and tree/shrub planting within root protection areas.

5.18 Where new turf is to be laid within the root protection areas of retained trees, topsoil will likely need to be imported. The existing soil may be lightly tilled by hand but use of rotavators will be prohibited. A maximum increase of 100mm of topsoil may be introduced to avoid suffocating root growth. Care must be taken to prevent soil be piled against tree buttresses or buttress roots. When soil or other materials are transported across a root protection area, scaffold board pathways must be used to prevent compaction of the rooting medium. It should be noted that even light pedestrian use could compact the soil, particularly in wet conditions.

5.19 All planting pits within root protection areas shall be individually hand excavated (no trench planting). Care must be taken to avoid severing or damaging roots with a diameter greater than 25mm.

5.20 If significant root growth is disturbed during construction activities that are not within the scope of this report, the work shall cease until the project arboriculturalist has been consulted. Roots greater than 25mm in diameter or dense/matted fibrous roots shall be considered significant root growth. It should be remembered that whilst root protection areas are part of industry best practice, tree root growth is influenced by a number of factors and may not conform to expected ideals.

5.21 If at anytime during the construction process, damage is inadvertently caused to a tree, the project arboriculturalist shall be notified to assess the likely implications and to prescribe potential remedial measures to be implemented. Damage can be in the form of chemical or fuel spillage, mechanical damage to either the above ground parts of the tree or the roots, fire or any other unforeseen circumstance.

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Author: Owen Allpress

Date: 26th September 2016

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APPENDIX 1

Tree Constraints Plan and Tree Protection Plan

RPA for CAT A* tree

RPA for CAT B* tree

RPA for CAT C* tree

Tree canopy

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

Appendix 2, (Tree Survey Schedule) contained within the arboricultural re ref. no. PJC/4149/16-01 contains further information for each tree.

This drawing should be viewed in colour.

Drawing no: PJC/4149/16/A **Rev:** 00 **Sheet number:** 1 of 1

Client and site:
Andrew Street
Land Adjacent:
The Gabels
Leeds Road
Kent

Drawing title: Tree Constraints Plan

Date drawn: 23/09/2016

Scale: 1:500 at A3

Drawn by: OA **Checked by:** NB

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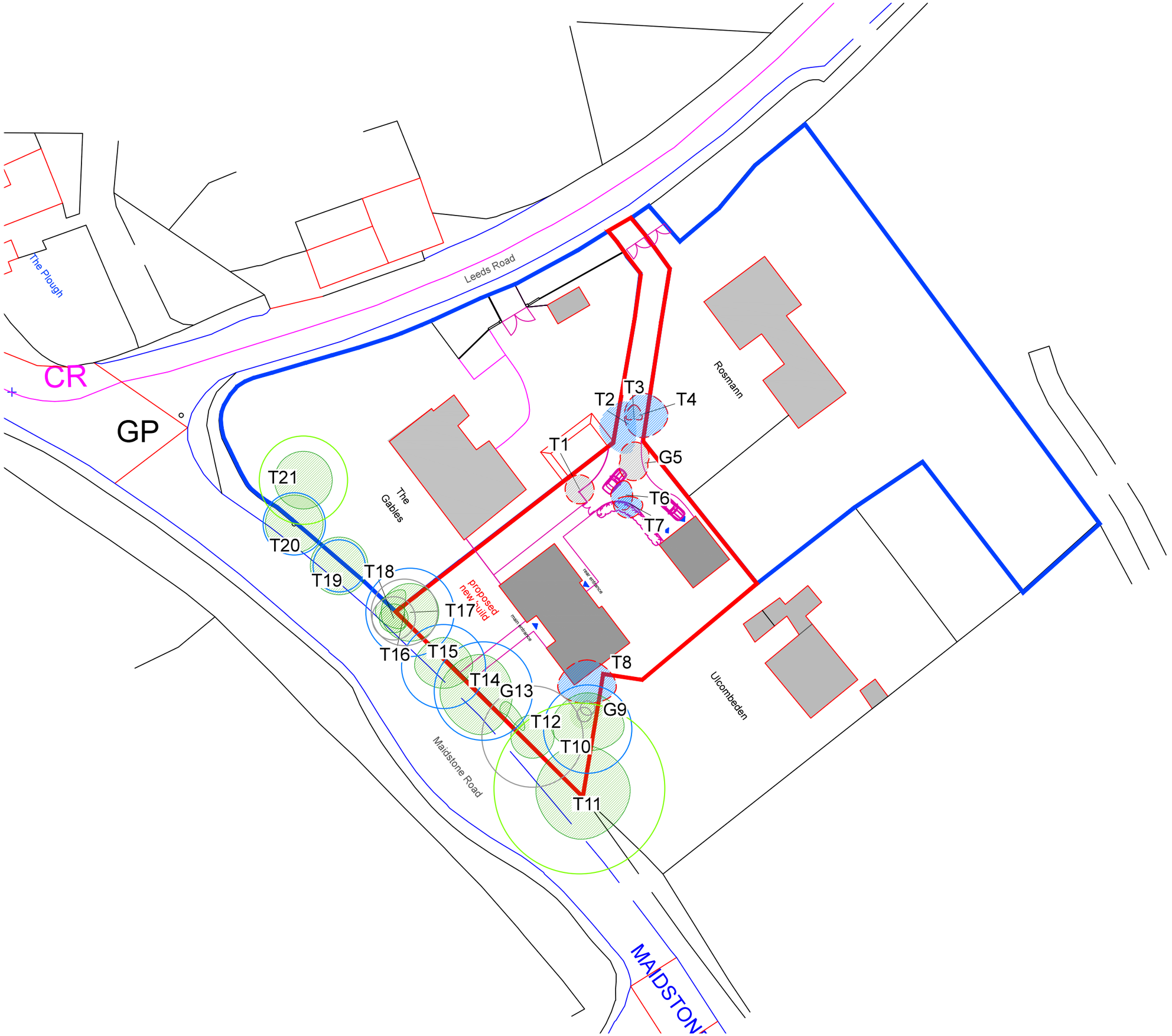

RPA for CAT A* tree to be retained

RPA for CAT B* tree to be retained

RPA for CAT C* tree to be retained

Canopy of tree to be retained

Canopy of CAT B* tree to be removed

Canopy of CAT C* tree to be removed

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

Appendix 2, (Tree Survey Schedule) contained within the arboricultural re ref. no. PJC/4149/16-02 contains further information for each tree.

This drawing should be viewed in colour.

Drawing no: PJC/4149/16/B **Rev:** 00 **Sheet number:** 1 of 1

Client and site:
Andrew Street
Land Adjacent:
The Gabels
Leeds Road
Kent

Drawing title: Tree Retention Plan

Date drawn: 23/09/2016

Scale: 1:500 at A3

Drawn by: OA **Checked by:** NB

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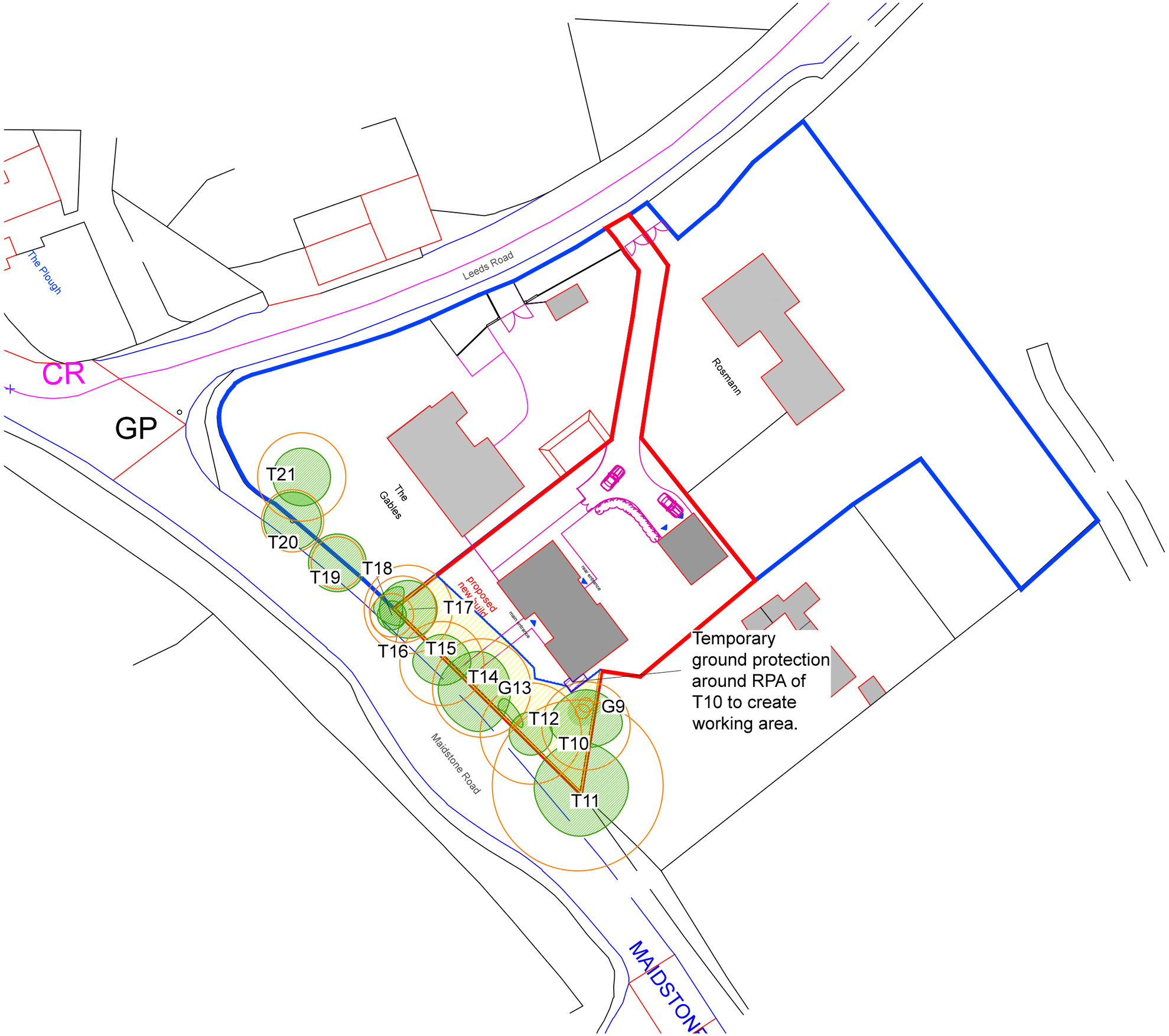


RPA for tree to be retained

Canopy of tree to be retained

Tree protection fencing

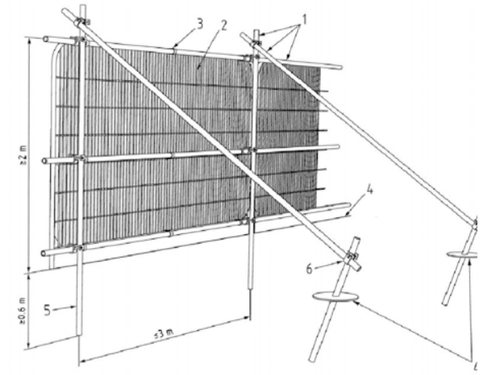
Temporary ground protection

Construction exclusion zone

Appendix 2, (Tree Survey Schedule) contained within the arboricultural re ref. no. PJC/4149/16-02 contains further information for each tree.

This drawing should be viewed in colour.

Specification for Tree Protection Fencing:



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Example protective fencing signage:

Drawing no: PJC/4149/16/C **Rev:** 00 **Sheet number:** 1 of 1

Client and site:
Andrew Street
Land Adjacent:
The Gabels
Leeds Road
Kent

Drawing title: Tree Retention Plan

Date drawn: 23/09/2016

Scale: 1:500 at A3

Drawn by: OA **Checked by:** NB

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APPENDIX 2
Tree Survey Schedule

Tree Survey Schedule

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Client: Andrew Street
Site: Land adjacent to the Gables, Maid stone Rd
Survey date: 22nd September 2016
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)
T1	Lawson cypress, *(Chamaecyparis lawsoniana)*	6.00	300.00 Ms avg	N	2	Crown 1S Branch 2S	Mature	Good	Good	Remove to facilitate construction.	C1	40.8	3.6
				E	2								
				S	2								
				W	2								
T2	English oak, *(Quercus robur)*	8.00	380.00	N	3	Crown 3W Branch 4W	Mature	Good	Good	Remove to facilitate construction.	B2	65.4	4.6
				E	1								
				S	4								
				W	4								
T3	English oak, *(Quercus robur)*	6.00	200.00 est	N	2	Crown 3N Branch 3N	Early mature	Fair	Good	Remove to facilitate construction.	C2	18.1	2.4
				E	1								
				S	0								
				W	1								
T4	Sycamore, *(Acer pseudoplatanus)*	9.00	520.00	N	3	Crown 4E Branch 5E	Semi-mature	Good	Good	Remove to facilitate construction.	B2	122.5	6.2
				E	4								
				S	3								
				W	2								
G5	Lawson cypress, *(Chamaecyparis lawsoniana)* x 2	6.00	200.00 avg	N	2	Crown 2 Branch 2	Early mature	Good	Good	Remove to facilitate construction.	C2	18.1	2.4
				E	2								
				S	2								
				W	2								
T6	Sweet chestnut, *(Castanea sativa)*	8.00	360.00	N	2	Crown 3W Branch 4W	Semi-mature	Good	Good	Remove to facilitate construction.	B2	58.7	4.3
				E	1								
				S	2								
				W	2								

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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)
T7	Sweet chestnut, *(Castanea sativa)*	8.00	360.00	N	1	Crown	Semi-mature	Good	Good	Remove to facilitate construction.	B2	58.7	4.3
				E	2	3W							
				S	2	Branch							
				W	2	4W							
T8	Ash, *(Fraxinus excelcior)*	10.00	340.00	N	4	Crown	Semi-mature	Good	Good	Remove to facilitate construction.	B2	52.4	4.1
				E	4	4N							
				S	2	Branch							
				W	4	5N							
G9	Hawthorn, *(Crataegus monogyna)* x 2	4.00	80.00	N	2	Crown	Early mature	Good	Good	Small trees at corner boundary. No action required at time of survey.	C2	2.9	1.0
				E	2	2							
				S	2	Branch							
				W	2	2							
T10	Ash, *(Fraxinus excelcior)*	10.00	510.00	N	5	Crown	Semi-mature	Fair	Good	Tree over hangs neighbouring garden, limbs previously removed over third party drive. No action required at time of survey.	B2	117.8	6.1
				E	5	4E							
				S	3	Branch							
				W	3	5E							
T11	English oak, (quercus robur)	11.00	980.00	N	6	Crown	Mature	Good	Good	Several damaged and hanging branches over road and neighbouring drive. Remove dead hanging branches.	A1	435.1	11.8
				E	7	5W							
				S	7	Branch							
				W	6	6W							
T12	Japanese Larch, *(Larix Kaempferi)*	9.00	580.00	N	3	Crown	Mature	Poor	Fair	Sparse foliage for time of year, significant tear out wound along stem at 5m. No action required at time of survey.	C1	152.4	7.0
				E	3	5N							
				S	3	Branch							
				W	3	5n							

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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	Ash & Holly	3.00	150.00 est avg	N	1	Crown 2 Branch 2	Juvenile	Fair	Fair	Trees overhang Maidstone road. No action required at time of survey.	C2	10.2	1.8
				E	1								
				S	1								
				W	1								
T14	English oak, *(Quercus robur)*	9.00	570.00	N	5	Crown 3E Branch 4S	Mature	Good	Good	Large limb removed to crown lifted over garden. No action required at time of survey.	B2	147.2	6.8
				E	4								
				S	6								
				W	6								
T15	English oak, *(Quercus robur)*	6.00	480.00	N	4	Crown 3E Branch 4S	Mature	Good	Good	Third party roadside tree. No action required at time of survey.	B2	104.4	5.8
				E	4								
				S	3								
				W	4								
T16	Sweet chestnut, *(Castanea sativa)*	8.00	380.00	N	3	Crown 3W Branch 5W	Mature	Good	Good	Overhangs Maidstone road boundary. No action required at time of survey.	C2	65.4	4.6
				E	0								
				S	2								
				W	4								
T17	Japanese Larch, (larix Kaempferi)	10.00	510.00	N	4	Crown 4E Branch 4E	Mature	Good	Fair	Minor deadwood over gardens. No action required at time of survey.	B2	117.8	6.1
				E	4								
				S	4								
				W	4								
T18	Ash, *(Fraxinus excelcior)*	5.00	250.00 est	N	2	Crown 2 Branch 3	Early mature	Fair	Fair	Dual stem suppressed ash. Third party roadside tree. No action required at time of survey.	C2	28.3	3.0
				E	2								
				S	2								
				W	2								

Tree Survey Schedule

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Client: Andrew Street
Site: Land adjacent to the Gables, Maid stone Rd
Survey date: 22nd September 2016
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)
T19	English oak, *(Quercus robur)*	6.00	300.00	N	4	Crown	Early mature	Good	Fair	Oak tree on road frontage. Damaged branches from vehicle strikes. Remove damaged ranches and clean cuts.	B1	40.8	3.6
				E	4	3N							
				S	4	Branch							
				W	4	4N							
T20	English oak, *(Quercus robur)*	7.00	360.00	N	4	Crown	Early mature	Good	Good	Oak tree on road frontage. No action required at time of survey.	B1	58.7	4.3
				E	4	3N							
				S	4	Branch							
				W	4	4N							
T21	Scots pine, *(Pinus sylvestris)*	8	510	N	4	Crown	Mature	Good	Good	Front garden tree within lawns. No action required at time of survey.	A1	117.8	6.1
				E	4	2N							
				S	4	Branch							
				W	4	2N							

APPENDIX 3
Cascade Chart for Tree Quality Assessment

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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 *Note Category U trees can have existing or potential conservation value which it might be desirable to preserve*	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

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APPENDIX 4
Root Protection Area Formulas

CALCULATING THE RPA

For single stemmed trees

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

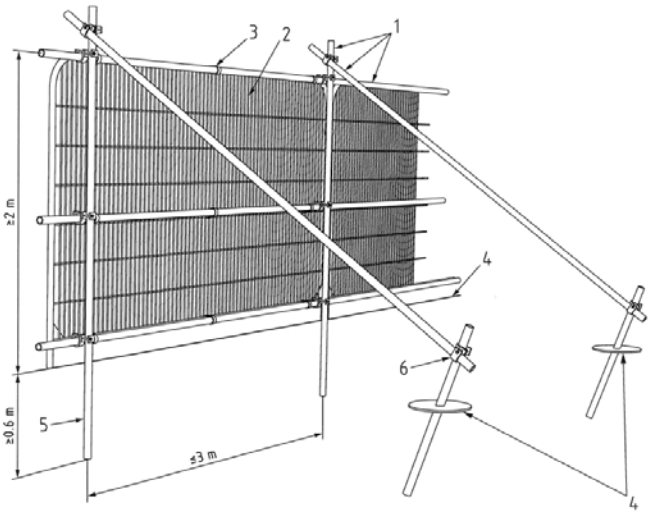
For trees with two to five stems, a combined stem diameter is calculated as follows:

$$\mathbf{\sqrt{(stem\ diameter\ 1)^2 + (stem\ diameter\ 2)^2 \ldots + (stem\ diameter\ 5)^2}}$$

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

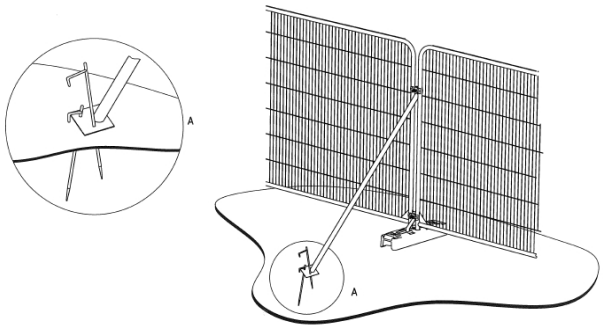
$$\mathbf{\sqrt{(mean\ stem\ diameter)^2 \times number\ of\ stems}}$$

APPENDIX 5
Tree Protection Fencing Specification

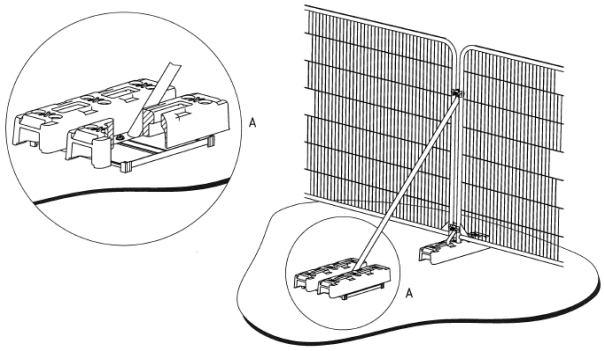


Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

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APPENDIX 6
Example Protective Fencing Signs