Invicta Arboriculture
Tree and Woodland Consultancy

Pre-development Tree Survey and Report

Land at Freemans Way
Deal
Kent
CT14 9DH

11th January 2019

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Table of Contents

		Page
1	**INTRODUCTION**	3
2	**SITE VISIT AND OBSERVATIONS**	4
3	**APPRAISAL**	5
4	**TREE CONSTRAINTS PLAN**	7
5	**ARBORICULTURAL IMPACT ASSESSMENT**	8
6	**ARBORICULTURAL METHOD STATEMENT AND TREE PROTECTION PLAN**	10
7	**RECOMMENDATIONS**	15
8	**BIBLOGRAPHY**	15

Appendices

A **Tree schedule and explanatory notes**

B **Tree constraints plan**

C **Tree protection plan**

1 INTRODUCTION

1.1 **Brief:** I am instructed by Rachel Humber of Hume Planning Consultancy Ltd to provide a pre-development arboricultural report in accordance with BS5837:2012 in respect of trees on land at and adjacent to Freemans Way, Deal, Kent, to accompany a planning application for a residential development.

1.2 **Qualifications and experience:** I have based this report on my site observations and the information provided, and I have come to conclusions in the light of my experience as an arboriculturist.

I am a professional member of the Consulting Arborist Society.

1.3 **Documents and information provided:** I was provided with the following documents:

- A topographical plan of the site as existing.
- A plan of the site as proposed.

1.4 **Report limitations:** This report is only concerned with the nineteen trees and four tree groups as shown on the site plan**.** It takes no account of any other trees. It includes a detailed assessment based on the site visit and the documents provided, listed in 1.3 above.

This report has been prepared on the basis of the proposed development and should not be interpreted as a report on tree health and safety. Whilst reasonable effort has been made to identify visible structural and physiological defects whilst undertaking the survey, trees and shrubs are living organisms; the health and stability of which can change rapidly; especially in the event of extreme weather conditions, therefore all recommendations given are valid for a period of twelve months from the date of this report.

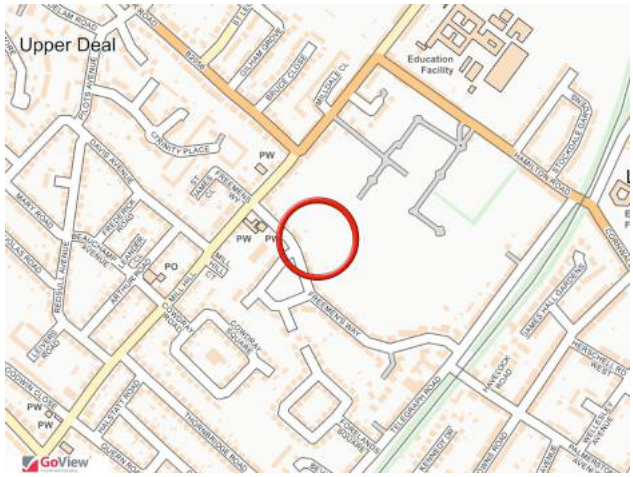
1.5 **Collection of data:** The survey was carried out using the following inspection aids:

- Digital clinometer- To calculate the height of the trees
- Girthing tape- To measure stem diameter

2 SITE VISIT AND OBSERVATIONS

2.1 **Site visit:** I carried out a single, unaccompanied site visit on the 11th of January 2019. All of my observations were from ground level within the application site and I estimated all dimensions unless otherwise indicated. The weather at the time of inspection was sunny and mild with good visibility.

2.2 **Brief site description:** The application site is located off Freemans Way, Deal between Hamilton Road Cemetery and Mill Hill and comprises a large, grass open space. The topography of the site is flat. The site is exposed from all four cardinal points.



2.3 **Identification and location of the trees:** The trees subject to this report are located around the boundaries of the application site. I have illustrated the approximate location of the trees on the tree constraints plan included at Appendix B. This plan is for illustrative purposes only and it should not be used for directly scaling measurements. All of the relevant information and measurements on it are contained within this report and the provided documents.

2.4 **Collection of basic data:** I collected information on species, height, diameter, maturity and potential for contribution to amenity in a development context. I have recorded this information in the tree survey schedule included at Appendix A. I stress that my inspection was of a preliminary nature, and did not involve any climbing or detailed investigation beyond what was visible from accessible points at ground level within the application site.

3 APPRAISAL

3.1 **Relevant references:** This inspection was undertaken in accordance with *B.S.5837:2012 Trees in relation to design, demolition and construction - Recommendations*. The trees were inspected using the Visual Tree Assessment method as documented by Mattheck and Breloer in *'The Body Language of trees'*, ODPM Research for Amenity Trees number 4, 1994.

3.2 **British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations:** This report is set out according to the recommendations within B.S. 5837:2012 and contains the following information relating to the trees within and adjacent to the application site.

- Tree survey schedule (included at Appendix A)
- Tree Constraints Plan (included at Appendix B)
- Arboricultural implications assessment
- Arboricultural method statement
- Tree protection plan (included at Appendix C)

3.3 **Table 1: Tree quality assessment**

B.S. 5837:2012 Category	Survey Numbers	Total
U	----------	0
A	T1	1
B	T4, T10, T11, T15, T16, T17, T18, T19	8
C	T2, G3, T5, G6, T7, T8, G9, T12, T13, T14, G20, T21, T22, G23	14

3.3 The trees subject to this report are located around the boundaries of the application site. The majority of the trees are located off-site on land adjoining the application site within private gardens and Hamilton Road Cemetery.

3.4 T1, T2, T5, T7, T8, G9 and G20 stand within the application site. T1 (Turkey Oak) is the largest, most dominant tree present and poses the largest constraint in terms of its root protection area.

T2 and T5 are small, seedling origin Sycamores with low visual amenity value along with the two, seedling origin Plum trees recorded as T7 and T8. None of these four trees should pose any serious constraint on the development proposal.

G9 (Bay) forms a large, unmanaged shrub mass in the far south eastern corner of the application site and does not pose any serious constraints on the development proposal.

G20 comprises a dense hedgerow of Privet and Elder located along the north western boundary with Mill Hill and poses no constraints on the development proposal.

3.5 Tree numbers G3 (Leyland Cypress hedge), T4 (Eucalyptus), G6 (Western Red Cedar hedge) along with T21 (Cherry), T22 9Eucalyptus and G23 (Leyland Cypress hedge) are all off-site trees located within private gardens along Freemans Way. None of these trees are considered to pose any serious constraint on the development proposal.

3.6 Tree numbers T10 to T19 are all off-site trees located along the southwestern boundary of Hamilton Road Cemetery. All ten trees display good form and vitality with no significant visible structural or physiological defects.

None of the trees should pose any serious constraints on the development proposal, however recommendations are made at section five of this report (Arboricultural Impact Assessment) for remedial works to the south western sides of their respective canopies (T11 to T19) in order to remove encroachment and increase headroom above the application site to enable adequate construction access.

4 TREE CONSTRAINTS PLAN

4.1 The tree constraints plan is primarily a design tool which shows the below ground constraints represented by the calculated root protection area and the above ground constraints represented by the current and ultimate heights of the trees and the potential effects of shade on any proposed development. The tree constraints plan is included at Appendix B.

4.2 **Below ground constraints:**

- The root protection area (RPA) is the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the trees viability and where the protection of the roots and soil structure is treated as a priority. The RPA is measured in m^2. The RPA is shown as a red circle on the tree constraints plan.

- The root protection area relates to the stem diameter of each tree when measured at a height of 1.5m from ground level. For single stem trees the RPA is calculated as an area equivalent to a circle with a radius of twelve times the stem diameter (or the mean diameter of the total number of stems in the case of multi-stemmed trees).

- T1 (Turkey Oak) poses the greatest below ground constraint and will have implications for the positioning of proposed units and infrastructure closest to it.

4.3 **Above ground constraints:**

- The canopies of T1 and T11 to T19 extend low across the application site. Recommendations are made at sections five of this report (Arboricultural Impact Assessment) for remedial works to prune back and raise the height of these canopies to minimise the above ground constraints.

5 ARBORICULTURAL IMPLICATIONS ASSESSMENT

5.1 **Presence of TPOs or conservation area designations:** The application site is not located within a conservation area. The trees are not subject to a tree preservation order.

5.2 **Effects of new buildings on amenity value on or near the site:** The effects of the proposed development are not envisaged to have any detrimental effect on the amenity value of the trees to be retained or surrounding landscape providing all advice given in this report is adhered to.

5.3 **Above and below ground constraints:** The above and below ground constraints are discussed in section four above and shown on the tree constraints plan at Appendix B.

5.4 **Construction processes of the proposed development or demolition needs:** The application site comprises a vacant plot of land. There are no requirements for demolition.

5.5 **Modifications proposed to accommodate trees – Ground protection:** There are currently no requirements for ground protection.

5.6 **Modifications proposed to accommodate trees –tree pruning/felling:** The canopies of T1 and T11 to T19 extend low over the application site and as such the following prescriptions are made:

- T1 (Turkey Oak) – Raise the north and north eastern side of the canopy to a height of six metres above ground level by removing the north facing branches arising at a height of four and five metres above ground level.

- T11 (Raywood Ash) – Raise the canopy of the tree to give six metres clearance above the application site by removing the first four south west facing branches arising at a height of 3, 5 and 6 metres above ground level back to the parent stem.

- T12 (Raywood Ash) – Raise the canopy of the tree to a height of six metres above the application site by removing the first three south west facing branches arising at a height of 3, 5 and 6 metres above ground level back to the parent stem.

- T13 (Raywood Ash) - Raise the canopy of the tree to a height of six metres above the application site by removing the first four south west facing branches arising at a height of 3, 3.5 and 4 metres above ground level back to the parent stems.

- T14 (Whitebeam) – No works required.

- T15 (Norway Maple) – Reduce the length of all south west facing branches by three metres to remove encroachment from over the application site and create adequate construction access.

- T16 (Norway Maple) – No works required.

- T17 (Norway Maple) – Reduce the length of all south west facing branches by three metres to remove encroachment from over the application site and create adequate construction access.

- T18 (Caucasian Elm) – Remove the lowest south west facing limb arising at a height of 2.5 metres above ground level back to the parent stem. Reduce the length of all other south west facing branches by two metres to remove encroachment from over the application site and create adequate construction access.

- T19 (Norway Maple) – Reduce the length of all south west facing branches by three metres to remove encroachment from over the application site and create adequate construction access.

5.7 **Infrastructure requirements – highway visibility, lighting, CCTV, services etc:** The installation of services within the rooting zones of trees can have a detrimental impact on the long-term survival of retained trees leading to their unnecessary loss or root failure in high winds. The installation of services within RPA's should be avoided where possible. Where this is not possible it may be necessary to utilise a trenchless solution such as micro tunnelling, surface-launched directional drilling, impact moling or where the relative expense on low cost projects makes the use of such trenchless systems unviable, hand digging may be acceptable over short distances.

Undisclosed siting of above ground services, CCTV cameras, electrical sub-stations, refuse stores, lighting and other infrastructure requirements can lead to unnecessary pruning of tree crowns or root loss during or post development.

The trees subject to this report do not have any impact on highway visibility.

5.8 **End use of space:** A residential development is proposed.

5.9 **Mitigating tree loss/ new planting:** A landscaping plan will be required by way of planning condition attached to the subsequent planning consent. Details of proposed landscaping are outside the scope of this report.

5.10 **Veteran trees:** None of the trees subject to this report are considered to be veterans.

5.11 **Impact of trees on buildings and vice versa and allowance for future growth:** The impact of the trees on the proposed development and vice versa and allowance for future growth has been considered. Tree size, future growth, light/shading, leaf and fruit nuisance etc. have received due attention and are not currently considered to be a significant issue.

6 ARBORICULTURAL METHOD STATEMENT AND TREE PROTECTION PLAN

Arboricultural Method Statement (AMS) includes a Tree Protection Plan (TPP) to identify:

- Protective fence positions therefore the Construction Exclusion Zones (CEZ) shown as a blue line on the TPP at Appendix C.
- Measurements to identify fence positioning in relation to the centre of the tree are recorded in the tree survey schedule at Appendix A.
- The tree protection plan is included at Appendix C.

1.0 Construction Exclusion Zone

1.1 The Construction Exclusion Zone (CEZ) as required by the current edition (2012) BS 5837 relates to the stem diameter of each retained tree when measured at a height of 1.5m from ground level or the mean diameter of the total number of stems in the case of multi-stemmed trees. No works will be undertaken within any CEZ that causes compaction to the soil or severance of tree roots.

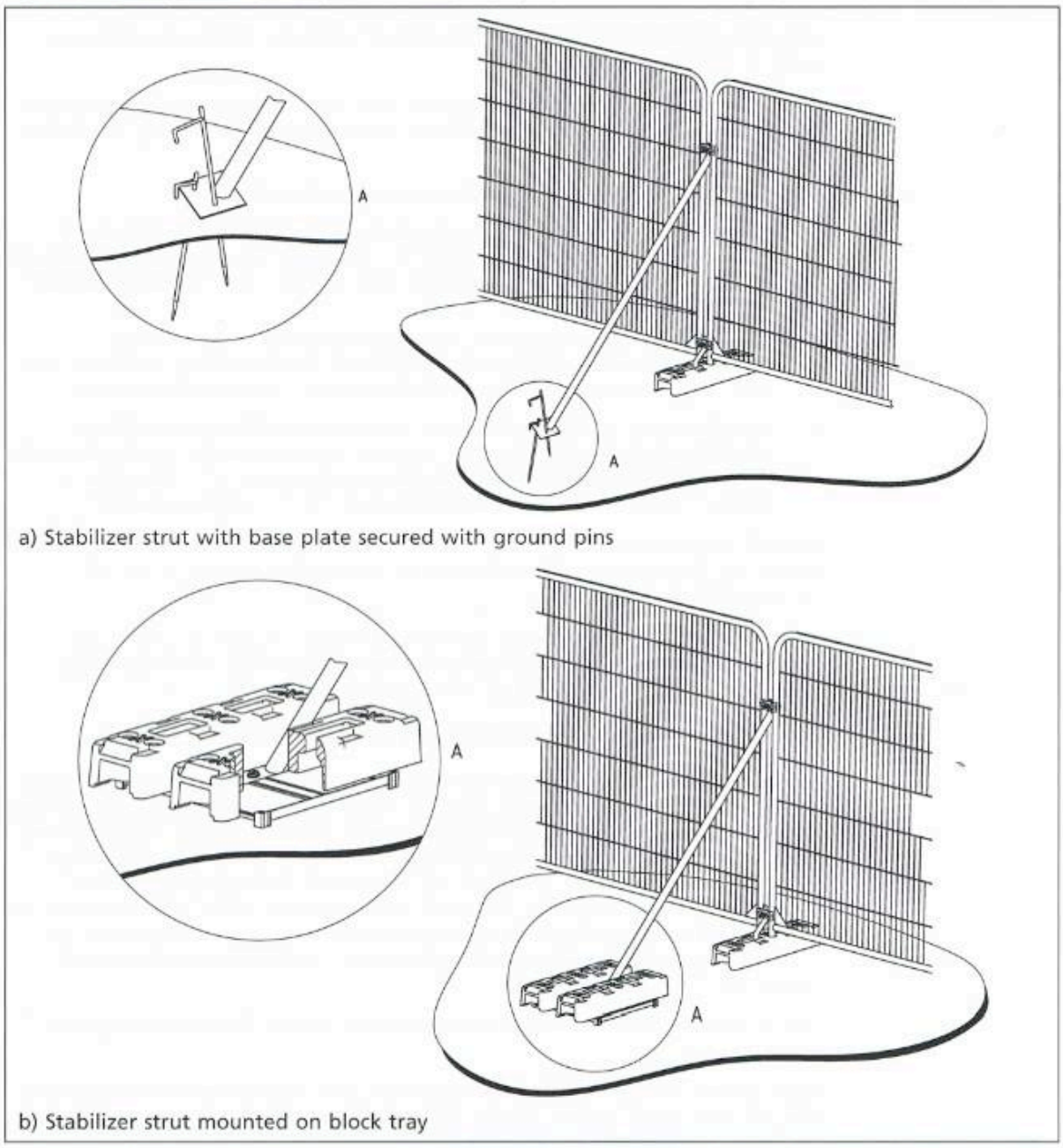
2.0 Protective Fencing

2.1 A protective fence is required to be erected around all retained trees prior to the commencement of any site works e.g. before any materials or machinery are brought on site, development or the stripping of soil commences. The fence should have signs attached to it stating that this is a Construction Exclusion Zone and that **NO WORKS are Permitted** within the fence. The protective fencing may only be removed following completion of all construction works.

2.2 The fencing is required to be sited in accordance with the Tree Protection Plan enclosed within this method statement at Appendix C. The fencing shall be constructed as per figure 3 - B.S.5837: 2012 and be fit for the purpose of excluding any construction activity.

2.3 An example of protective fencing: Figure 3 - B.S.5837: 2012, is shown below...

Figure 3 **Examples of above-ground stabilizing systems**



3.0 Precautions in respect of temporary works

3.1 There are no requirements in respect of temporary works.

4.0 Access Details

4.1 Construction traffic will access the site via Freemans Way through the existing site access.

5.0 Contractors car parking

5.1 Adequate parking provision is available within the application site away from all retained trees.

6.0 Site Huts and Toilets

6.1 Adequate space is available within the application site for all site huts and toilets away from all retained trees.

7.0 Storage Space

7.1 Adequate space is available on site and away from all retained trees for the storage of all plant, machinery and materials.

8.0 Additional Precautions

8.1 The installation of services near any tree will be undertaken in accordance with the National Joint Utilities Group Guidance Note 4 (NJUG 4): Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees. A copy of this document can be provided on request.

8.2 No storage of materials or lighting of fires will take place within the CEZ. No mixing or storage of materials will take place up a slope where they may leak into a CEZ.

8.3 No fires should be lit within 20 metres of any tree stem and will take into account fire size and wind direction so that, no flames come within 5m of any foliage.

8.4 High-sided vehicles will have access to the site. Their movements around the site will be in no way detrimental to the health or stability of the retained trees.

8.5 No notice boards, cables or other services will be attached to any tree.

8.6 Materials that may contaminate the soil should not be discharged within 10m of any tree stem. When undertaking the mixing of materials it is essential that any slope of the ground is taken in to consideration so that it does not allow contaminates to run towards a tree root area.

9.0 Site Gradients

9.1 I am not currently aware of the need to alter site gradients.

10.0 Demolition

10.1 Demolition operations are not required on this site.

11.0 **Hard Surfaces**

11.1 New hard surfacing will be created as part of the proposal. All new hard surfacing should be constructed outside of the RPA's of all retained trees.

A large concrete slab is located in the far north western corner of the application site and extends part way in to the RPA of T19 (Norway Maple). The concrete base will need to be removed as part of the development of the site and the following methodology is recommended for its removal where it extends in to the RPA of T19:

The concrete base will need to be broken up using a hand held pneumatic drill in order to minimise damage to any tree roots that may have extended beneath it. The debris will need to be removed by hand in a wheelbarrow.

A recommendation s made for the above operation to be undertaken under arboricultural supervision.

12.0 Soft landscaping

12.1 Full details of soft landscaping are outside of the scope of this report.

13.0 Use of Herbicides

13.1 I am not aware of the need to use herbicides on the site.

14.0 On site Monitoring Regime

14.1 All operations will be monitored by the main contractor.

15.0 Use of subcontractors

15.1 The main contractor will be responsible for ensuring sub-contractors do not carry out any process or operation that is likely to adversely impact upon any trees adjacent to the application site.

16.0 Contingency Plan

16.1 Water should be made readily available on site and should be used to flush spilt materials through the soil and avoid contamination to tree roots. At the time of any spillage the main contractor will contact the project arboriculturist for advice.

17.0 Remedial Tree Works

17.1 Full details of all remedial tree work are contained within section five of this report (Arboricultural impact assessment) at paragraph 5.6.

18.0 Responsibilities

18.1 It is the responsibility of the main contractor to ensure that the planning conditions attached to planning consent are adhered to at all times and that a monitoring regime in regards to tree protection is adopted on site if required.

18.2 The main contractor will be responsible for contacting the project arboriculturist or Local Planning Authority (Dover District Council) at any time issues are raised in relation to the trees adjacent to the site.

7 RECOMMENDATIONS

7.1 **Implementation of works:** All tree works should be carried out in accordance with the 2010 revision of BS 3998 *Recommendations for Tree Work,* or as modified by more recent research. It is advisable to select a contractor from the local authority list and preferably one approved by the Arboricultural Association. Their Register of Contractors is available free from The Malthouse, Stroud Green, Standish, Stonehouse, Gloucestershire GL10 3DL; Telephone 01242 577766; Website. http://www.trees.org.uk/find-a-professional/Directory-of-Tree-Surgeons.

7.2 **Statutory wildlife obligations:** The Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000 provides statutory protection to birds, bats and other species that inhabit trees. All tree work operations are covered by these provisions and advice from an ecologist must be obtained before undertaking any works that might constitute an offence.

7.3 **Trees subject to statutory controls:** If these trees are covered by a tree preservation order or located in a conservation area, it will be necessary to consult the relevant Local Planning Authority (Dover District Council) before any pruning works other than certain exemptions can be carried out. The works specified above are necessary for reasonable management and should be acceptable to the Local Planning Authority. However, tree owners should appreciate that they may take an alternative point of view and have the option to refuse consent.

7.4 **Future considerations:** The remaining trees should be inspected on a regular basis by a qualified arboriculturist.

8 BIBLIOGRAPHY

8.1 Claus Mattheck and Helge Breloer, The Body Language of Trees. Office of the Deputy Prime Minister, Research for Amenity Trees No 4, 1994.

David Lonsdale, Principles of Tree Hazard Assessment and Management. Department for Transport, Local Government and the Regions, 1999.

British Standard 3998:2010 Recommendations for tree work

British Standard 5837:2012 Trees in relation to design, demolition and construction-Recommendations.

Mr David Sephton **Tech Cert (Arbor. A)**

Appendix A:

Tree Schedule and Explanatory Notes

- **Number:** Number of tree as shown on site plan.
- **Species:** Tree name is given using its commonly known English name.
- **Hgt:** Height is estimated using a clinometer and given to the nearest metre.
- **St Dia:** Stem Diameter. Estimated stem diameter, measured 1.5 metres above ground level and given in millimetres.
- **N-E-S-W:** Crown Spread, estimated by pacing and given in metres.
- **Cr Cl:** Crown Clearance above ground level, given in metres.
- **AC:** Age Class. young (Y), semi mature (SM), mature (M), over mature (OM), veteran(V).
- **PC:** Physiological Condition. Good (G), fair (F), poor (P), dead (D).
- **SC:** Structural Condition. Good (G), fair (F), poor (P).
- **Recommendations:** Preliminary management recommendations/ general comments.
- **ERCY:** Estimated remaining contribution in years (0-10, 10-20, 20-40, 40+).
- **Cat:** Retention Category. See table 2 below.
- **RPA Radius:** Root Protection Area Radius, given in meters.

Table 2: Retention Category's (as per cascade chart, Table 1, B.S. 5837:2012)

U	Those trees in such a condition that they cannot be realistically be retained as living trees in the context of the current land use for longer than ten years. Shaded Red on site plan.
A	High quality and value (40yrs +) 1: Mainly arboricultural values, 2: Mainly landscape values, 3: Mainly cultural values i.e. conservation. Shaded Green on site plan.
B	Moderate quality and value (20yrs +) 1: Mainly arboricultural values, 2: Mainly landscape values, 3: Mainly cultural values i.e. conservation. Shaded Blue on site plan.
C	Low quality and value (10yrs +) 1: Mainly arboricultural values, 2: Mainly landscape values, 3: Mainly cultural values i.e. conservation. Although category C trees would not be retained where they would pose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation. Shaded Grey on site plan.

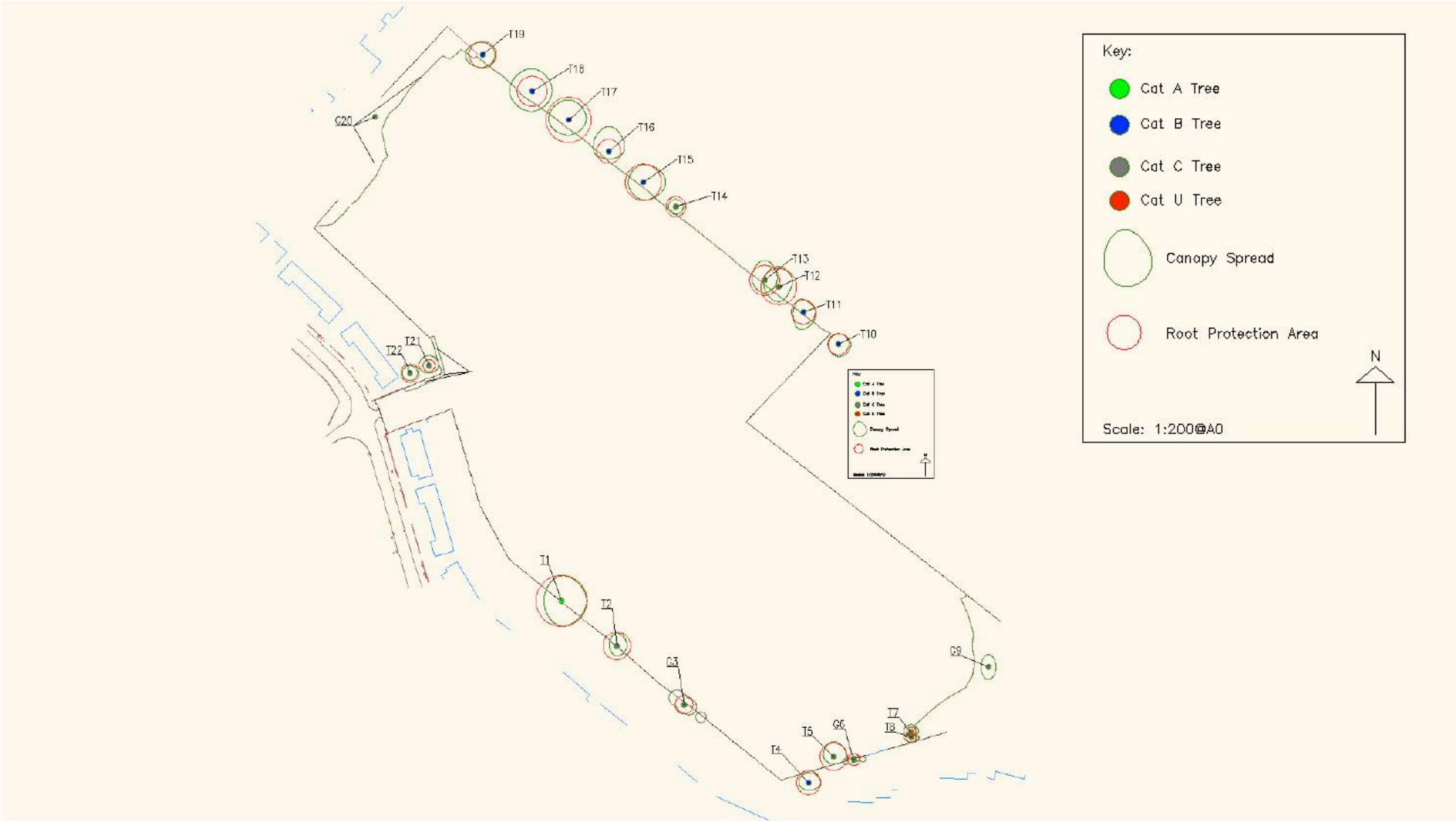
Appendix A:

B.S. 5837:2012- Tree Survey Schedule: Land at Freemans Way, Deal, Kent, CT14 9DH.

Number	Species	HGT	St Dia	N-E-S-W	CC	Age	PC	SC	Recommendations	E.R.C.Y	Cat	RPA Radius	RPA M^2
1	Turkey Oak	16	850	10-10-10-7	4	M	G	G	Crown lift to six metres above application site	40+	A1	10.2	326.9
2	Sycamore	10	460	5-4-4-3	0	M	G	G	Seedling origin tree - Remove	10+	C1	5.5	95.7
G3	Leyland Cypress x8	8	300	5-4-5-5	0	M	G	G	Off site tree group - None	10+	C1	3.6	40.7
4	Eucalyptus	14	400	4-3-5-4	3	M	G	G	Off site tree not shown on topo - None	20+	B1	4.8	72.4
5	Sycamore	12	450	6-3-5-4	0	M	G	G	None	10+	C1	5.4	91.6
G6	Western Red Cedar x 10	12	200	3-3-3-3	0	M	G	G	Off site tree group - None	10+	C1	2.4	18.1
7	Plum	6	170	3-1-3-3	1	M	G	G	Not shown on topo - None	10+	C1	2.0	13.1
8	Plum	6	185	1-2-3-3	1	M	G	G	Not shown on topo - None	10+	C1	2.2	15.5
G9	Bay	7	300	5-5-3-3	0	M	G	G	None	10+	C1	3.6	40.7
10	Norway Maple	10	350	4-5-5-4	3	M	G	G	Off site tree not shown on topo - None	20+	B1	4.2	55.4
11	Raywood Ash	13	400	5-7-5-4	3	M	G	G	Off site tree - Crown lift to six metres above application site	20+	B1	4.8	72.4
12	Raywood Ash	13	600	8-6-5-6	3	M	G	F	Off site tree - Crown lift to six metres above application site	10+	C1	7.2	162.9
13	Raywood Ash	13	500	8-5-5-5	2.5	M	G	F	Off site tree - Crown lift to six metres above application site	10+	C1	6.0	113.1
14	Whitebeam	7	330	3-3-3-3	2.5	M	G	G	Off site tree not shown on topo - None	10+	C1	4.0	49.3
15	Norway Maple	14	600	7-7-9-6	4	M	G	G	Off site tree - Prune back canopy from application site	20+	B1	7.2	162.9
16	Caucasian Elm	13	400	10-3-6-6	3	M	G	G	Off site tree - None	20+	B1	4.8	72.4
17	Norway Maple	14	750	8-6-7-8	4	M	G	G	Off site tree - Prune back canopy from application site	20+	B1	9.0	254.5
18	Caucasian Elm	14	500	9-8-8-9	2.5	M	G	G	Off site tree - Prune back canopy from application site	20+	B1	6.0	113.1
19	Norway Maple	14	450	5-5-5-7	3	M	G	G	Off site tree - None	20+	B1	5.4	91.6

G20	Privet/ Elderberry	4	150	3-3-3-3	0	M	G	G	Remove to enable proposed development	10+	C1	1.8	10.2
21	Cherry	7	200	4-3-4-4	1.5	M	G	G	Off site tree - None	10+	C1	2.4	18.1
22	Eucalyptus	7	300	3-3-3-3	1.5	M	G	G	Off site tree - None	10+	C1	3.6	40.7
G23	Leyland Cypress	2	100	1-1-1-1	0	M	G	G	Off site tree group - None	10+	C1	1.2	4.5

Appendix B: Tree Constraints Plan.



Appendix C: Tree Protection Plan.