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Hayling Island Builders Ltd

**Land at Station Road and Furniss Way
Hayling Island**

ARBORICULTURAL IMPACT ASSESSMENT

November 2013

Ref: 12076-AIA



Instructions

We are instructed to provide an arboricultural impact assessment (AIA) in connection with an application for planning permission at the above site. This assessment describes the direct and indirect effects of the design proposals on existing trees and outlines how retained trees would be properly protected, in accordance with recognised standards, for the period of site clearance, preparation and construction. This document will normally be supplemented by an arboricultural method statement (AMS) and tree protection plan (TPP) required by planning conditions. These proposals have been prepared in accordance with the guidance of BS5837:2012 'Trees in relation to design, demolition and construction - Recommendations', other relevant standards, codes of practice and government circular advice.

Client: Hayling Island Builders Ltd
c/o Gillenden Developments
15 Coombe Road
Kingston
KT2 1AB

Survey Date: 26 March 2013

Surveyed By: R D D Grainger DipArb(RFS) MICFor FArborA

Our Ref: 12076-AIA

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- 2 Proposed Development
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Attachments

- AIA1 Tree Survey Schedule and Constraints Table
- AIA2 Tree Survey Plan and Tree Constraints
Draft Tree Protection Plan

1 Tree Survey

- 1.1 I surveyed all significant trees at the site on 26 March 2013. This tree survey was undertaken to the recommendations of British Standard 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'. Unless otherwise instructed the survey includes all significant individual and groups of trees and woodlands. Shrubs, bushes and other vegetation have not been included.
- 1.2 The attached tree survey schedule (**AIA1**) indicates the species, size and condition of individual and groups of trees on and adjacent to the application site. The tree survey and constraints plan (**AIA2**) numbers the individual and groups of trees and corresponds with the tree survey schedule. Additionally, the trees have been colour-coded on the plan to indicate their categories in accordance with the Standard¹. The sub-categories in the tree survey schedule provide a quality assessment and reason for their inclusion in a particular category.
- 1.3 The tree survey has been used to inform site layout and design, taking into account the many other constraints imposed by the planning system. There are no trees in the high (A – green) category. Those in the moderate (B – blue) category, which are the better quality trees at the site, and those in the low category (C - grey) have been considered for retention. There are no trees unsuitable for retention (Category U - red).

2 Proposed Development

- 2.1 I have seen the plans and various documents accompanying the current application prepared by CSA Environmental Planning. To assess the effect of these proposals on existing trees I have applied the criteria of BS5837:2012 and my own experience in the retention of trees on development sites. The trees that would be retained and removed are indicated on the tree constraints plan (TCP - **AIA2**).

¹ BS5837:2012: Clause 4.5 - Table 1

- 2.2 The root protection area (m²) (RPA) for individual and groups of trees has been calculated using the tree survey data² in conjunction with the advice of the Standard³. Where tree root growth has been restricted by deep ditches adjacent to the site boundaries, the shape of the RPA has been adjusted to reflect the most likely rooting pattern and distribution.
- 2.3 The RPA is the prescribed minimum area (m²) that should be left undisturbed around each individual or group of trees. The dimensions of the RPA are listed in the tree constraints table (**AIA1**) and plotted as a circle or polygon on the tree constraints plan (**AIA2**). The plan indicates both the above and below ground constraints and has been used as a design tool in preparing the proposed site layout.
- 2.4 All the trees are adjacent to the site boundary and would be retained. The proposals comply with the guidance of the Standard and, provided they are properly protected during development, the retained trees would not be adversely affected by the proposals.

3 Structures

- 3.1 All structures, roads, access drives and other hard surface features would be outside the RPA of the retained trees.

4 Services and Drainage

- 4.1 Where possible, all piped and ducted below ground infrastructure would be located outside the protected root area of retained trees. This includes the supply of mains water, electricity, gas, fibre-optics and telecommunications. Where this is not possible they would be installed in accordance with the National Joint Utilities Council⁴ recommendations.

² Tree Survey Schedule: Page 6

³ BS5837:2012: Clause 4.6 - Root protection area

⁴ NJUG: Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees (Issue 2)

- 4.2 All foul, storm and rainwater drains, soakaways and allied buried structures would be located outside the RPA of retained trees. Details of any special precautions for the installation of below ground pipes or structures would be provided in an AMS and shown on a services plan.

5 Tree Protection

- 5.1 All trees to be retained would be protected to the recommendations of BS5837:2012⁵. Tree protection would be provided as barriers or ground protection to properly protect the RPA of all retained trees. All barriers would be installed before site works commence and maintained for the period of development. Where deep drainage ditches are between the trees and the site, the construction exclusion zone is not accessible from the site and tree protection unnecessary.
- 5.2 Protective Barriers
- Protective fencing would be located at the distances from the trees prescribed by the Standard and set out in the tree constraints table (AIA1) and tree constraints plan (AIA2). The protected area would be designated the 'Construction Exclusion Zone' (CEZ) and would remain undisturbed for the period of site clearance, preparation and construction. Only approved operations would be permitted within the CEZ.
- 5.3 As recommended by the Standard, the barriers would be at least 2 metres in height, comprising weld mesh sections supported by a secure vertical and horizontal framework and well-braced to resist impacts.
- 5.4 All tree protection measures are shown on the attached draft tree protection plan (**AIA2**) which has been prepared by overlaying the tree survey plan on the proposed site layout. An Arboricultural Method Statement (AMS) would be prepared detailing the methodology for the implementation of all tree protection measures.

⁵ BS5837:2012: Clause 6.2 - Barriers and ground protection

6 Tree Maintenance

- 6.1 Where access facilitation pruning is necessary to provide safe access and adequate clearance from the proposed buildings, this would be undertaken in accordance with the recommendations of BS3998:2010⁶. All necessary tree work would be detailed in a schedule of work and would be undertaken, initially, to provide safe access to the site and, on completion, as part of the landscape proposals. All tree pruning would reflect the character of the species and would not reduce the amenity value of retained trees.

7 Tree Planting

- 7.1 Indicative landscape proposals, including tree planting, have been prepared by CSA and are shown on the submitted application site layout plan. The proposed tree planting would introduce a significant number of new trees to this open site and provide long term tree cover which will enhance the landscape of the local area.

8 Conclusions

- 8.1 The proposed development is fully in accordance with the recommendations of BS5837:2012. The trees shown to be retained would be properly protected for the period of development and their health and safe life expectancy would not be adversely affected by the proposed development.

⁶ BS3998:2010: Tree Work - Recommendations.

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Hayling Island Builders Ltd

Tree Survey

**Land at
Station Road and Furniss Way
Hayling Island**

March 2013

Ref: 12076-S



Instructions

We are instructed to undertake a condition survey of trees on and immediately adjacent to the site. The purpose of the tree survey is to record information about trees that will inform site layout and design. This tree survey has been undertaken to the recommendations of British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'. Unless otherwise instructed the survey includes all significant individual and groups of trees and woodlands likely to be affected by any proposed development or building operations. Shrubs, bushes and other vegetation have not been included. The tree survey data allows the application of the Standard¹.

The trees included in the survey have been assessed from ground level using the informal visual tree assessment method (VTA). Where structural defects, symptoms of decay or disease are noted a detailed tree inspection is recommended. Where access is restricted to off-site trees or by site conditions, vegetation or structures, a distant assessment is made and the measurements may be approximated.

As no topographical survey was available the trees have been plotted on the tree survey plan as accurately as possible but are indicative only.

Site: Land at Station Road and Furniss Way
Hayling Island

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Gillenden Developments
15 Coombe Road
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KT2 1AB

Survey Date: 26 March 2013

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- 5 Tree Survey Schedule
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¹ BS5837:2012

1 Tree Survey Codes

The codes used in the description of each individual or group of trees included in the tree survey schedule (page 8):

NO	Tree number on survey plan
SPECIES	Common/English name
#	Estimated dimensions for off-site or inaccessible trees.
HEIGHT	Height (metres) T Height to top of tree B Height to first significant branch C Canopy height
RAD	Crown spread radius (metres)
STEM	Number of stems Stem diameter (centimetres)
AGE	Age class Y Young - Less than one third life expectancy MI Middle aged - One to two thirds life expectancy M Mature - More than two thirds life expectancy OM Over mature - Limited safe life expectancy V Veteran tree
EXP	Estimated remaining safe life expectancy (years) Less than 10 10 – 20 20 – 40 More than 40
CAT	Tree Categories ² A – High Quality B – Moderate Quality C – Low Quality U – Unsuitable for retention Subcategories 1 – Mainly arboricultural values 2 – Mainly landscape values 3 – Mainly cultural values, including conservation

² BS5837:2012 - Table 1

Category A Green on plan

Trees of high quality with an estimated remaining life expectancy of at least 40 years.

Subcategories		
1	2	3
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)

Trees in this category should be considered for retention as individuals or groups.

Category B Blue on plan

Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

Subcategories		
1	2	3
Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention 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

Trees in this category should be considered for retention as individuals or as groups but where possible preference should be given to the retention of category A trees.

Category C Grey on plan

Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

Subcategories		
1	2	3
Unremarkable trees of very limited merit or such impaired condition that they do not qualify in the 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

Trees in this category will not normally be considered for retention as individuals but may be considered for retention as part of a group of, preferably, better quality (Category A or B) trees. They will usually not be retained where they would impose a significant constraint on development.

Category U Red on plan

Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

Criteria
• 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 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: <i>Category U trees can have existing or potential conservation value which it might be desirable to preserve</i>

Trees in this category will normally not be retained. However, they may be considered for retention in the short term only where they are not a safety hazard and can be properly managed.

COMMENTS General observations on the physiological and structural condition of the tree. In some cases a more detailed inspection may be recommended to determine the tree's safety and suitability for retention. Preliminary management may be recommended. Where trees have been included in a Tree Preservation Order the TPO number may be indicated.

2 Tree Survey and Constraints Plan (TCP)

The tree survey plan indicates the tree number, crown size and shape and has been colour coded to indicate the condition of individual and/or groups of trees. Where trees are scheduled under a Tree Preservation Order (TPO) the TPO number may be shown on the plan. Additionally, the plan indicates the root protection area (RPA) as recommended in BS5837:2012.

Where the plan is provided in electronic format (CAD) the following layers are used:

TMC-Tree No	Tree number in survey
TMC-Code A	Category A trees - Green
TMC-Code B	Category B trees - Blue
TMC-Code C	Category C trees - Grey
TMC-Code U	Category U trees - Red
TMC-TPO	Tree preservation order number
TMC-RPA	Root protection area - Magenta

3 Root Protection Area (RPA)

The root protection area (m²) for individual or groups of trees has been calculated as prescribed by the Standard³.

Using the stem diameter (STEM) as listed in the tree survey data⁴ the RPA area (m²) is calculated as 12 times the trunk diameter and shown on the tree constraints plan as a circle (magenta) centred on the base of the stem.

For multi-stemmed trees a combined stem diameter is calculated as described in the Standard⁵.

The size of the RPA is capped at 707m² (i.e. stem diameter 125cm = 15m radius). The calculated RPA for high, moderate and low quality trees is shown in the tree constraints table.

Where tree root growth may have been restricted by pre-existing site conditions, the shape of the RPA has been adjusted to reflect the most likely rooting pattern and distribution. In this case the overall size of the RPA has been maintained.

³ BS5837:2012 – Clause 4.6 Root protection area (RPA)

⁴ Tree survey schedule - page 8

⁵ BS5837:2005 - Clause 4.6.1 (a & b)

The RPA for the high (Category A) and moderate (Category B) quality trees, which are the main tree constraints on a site, are plotted on the tree constraints plan (colour – magenta). This is the minimum area (m²) that should be left undisturbed around each retained tree. In some instances the RPA for low (Category C) quality trees may also be plotted (e.g. where there is a high proportion of trees in this category).

4 Using the Tree Survey and Constraints Plan (TCP)

The Standard advises the tree survey should be used as a design tool in preparing the site layout plan. The tree survey data identifies the quality and value of the existing tree stock allowing informed decisions to be made concerning which trees should be removed or retained.

Trees to be retained and removed:

- The tree survey plan can be used as the base plan for all design work or overlaid onto the site layout plan. It is helpful if the TMC layers (TMC-) are retained unaltered within the drawing.
- The high (Category A - green) and moderate (Category B - blue) quality trees are the best trees on the site and should be considered for retention. If this is not possible it is better to remove category B trees in order to retain category A trees.
- Trees of low (Category C – grey) quality can be retained but they should not be retained where they would impose a significant constraint on development. It is preferable to remove low (Code C) quality trees in order to retain high and moderate quality trees (Categories A & B).
- Trees unsuitable for retention (Category U - red) have a short safe life expectancy. However, where they form part of a large group or woodland their retention could be considered in some circumstances (e.g. where there would be minimal risk of injury or damage).

Levels:

- The feeding roots of trees are generally concentrated in the uppermost 600mm of the soil. It is therefore important not to raise or lower soil levels within the RPA of any retained trees.

Minimum distance to buildings:

- All proposed buildings and structures requiring foundations, where possible, should be located outside the RPA of any retained trees.
- Where foundations are unavoidable within the RPA, it may be possible to use an alternative type of footing as recommended in the Standard⁶. Site specific and

⁶ BS5837:2012 - Clause 7.5 Special engineering for foundations within the RPA

specialist advice regarding foundation design should be provided by a qualified arboriculturist and engineer.

- Where possible buildings should be sited outside the crown spread radius of retained trees, leaving sufficient clearance for future growth and movement in windy conditions. Additional distance from buildings will be required in the case of young and middle-aged trees.

Hard surface areas:

- Hard surface areas such as drives, parking spaces and footpaths or bin and cycle stores may be incorporated within the RPA provided they are of a no-dig construction and do not cover more than 20% of the existing un-surfaced ground.
- Where hard surface areas are close to trees there should be a minimum clearance of 0.5m between the stem and any above ground buttress roots to allow for growth and movement.
- Sufficient headroom should be provided above hard surface areas depending on the intended use of the area.

Tree protection:

- The RPA should also be applied in the siting of tree protection around all trees to be retained. The Standard⁷ advises this should be in the form of barriers and/or ground protection that should be maintained for the period of development. The tree protection barriers should be located at the edge of the RPA or the perimeter of the crown spread, whichever is the greater.

5 Tree Preservation Orders and Conservation Areas

From 6 April 2012 all Tree Preservation Orders (TPO) and Conservation Areas with regard to trees, are regulated by the Town and Country Planning (Tree Preservation) (England) Regulations 2012.

Tree Preservation Orders

The new regulations cancel the provisions in every existing TPO, except for the information necessary to give the orders legal effect and identify the trees protected, and replace them with provisions in the new regulations.

Before any trees are removed or tree works are undertaken it is strongly recommended that checks are made with the local planning authority (LPA) to ensure the trees are not scheduled under a TPO or sited in a conservation area. It is not the responsibility of Tree Management Consulting llp to undertake such checks.

⁷ BS5837:2012 – Clause 6.2 Barriers and ground protection

Conservation Areas

Within a conservation area all trees of greater than 75mm in trunk diameter are protected by the regulations. The LPA must be notified, in writing, and given six week's notice of any intended works. The LPA cannot refuse consent and if they have not replied within the six week period the proposed works may be undertaken within 2 years. If the LPA do not wish the works to be undertaken they must make a TPO.

Planning Permission

Where a full planning permission has been granted and the trees shown to be removed on the approved plan are scheduled under a TPO or are within a conservation area, normally they are exempt from the TPO and may be removed so far as it is necessary to implement the planning permission. Additionally, all notifications and works to trees must be in accordance with the conditions attached to the planning permission. This exemption does not apply to outline planning permissions.

6 Tree Survey Schedule

NO	SPECIES	HEIGHT m			RAD m	STEM		AGE	EXP	CAT			COMMENTS
		T	B	C		no	cm						
1	Crack willow	14	1.5	3	5.5	3	33 18 34	MI	20-40	C	1		End of line of trees
2	Ash	9	0	3.5	5.5	4	18 14 15 20	MI	20-40	C	1		Ivy covered
3	Oak	10	1.5	2.5	8	1	54	M	20-40	C	1		Cut back, one-sided crown
4	Sycamore	11	4	4	4	1	33	M	20-40	C	1		Forked trunk, one stem removed
5	Oak	10	3	3	6	1	#38	MI	20-40	B	1		Ivy covered
6	Sycamore	6	1	3	2.5	1	14	Y	20-40	C	1		Self-seeded
7	Sycamore	6	1	2	2	1	20	Y	10-20	C	1		Growing from building foundations
8	Ash	12	1	2.5	3	1	22	Y	10-20	C	1		Growing from building foundations
9	Oak	12	3	3.5	6	2	39 26	MI	20-40	B	1		Ivy covered
10	Oak	9	2.5	4	5.5	1	34	MI	20-40	B	1		Ivy covered
11	Oak	10	2	3	7.5	1	68	M	20-40	B	1		Some crown die-back
12	Oak	10	2.5	2.5	4.5	1	#56	M	20-40	B	1		
13	Oak	10	3	3	4	1	#52	M	20-40	B	1		Pollarded

Tree Constraints Table

Tree Management Consulting LLP

21 Burpham Lane

Guildford

Surrey GU4 7LN

Site: Land at Station Road and Furniss Way, Hayling Island
Date: 26-Mar-13
Ref: 12076-RPA

BS 5837:2012 - Trees in relation to design, demolition and construction - Recommendations

Stem No: Number of stems per tree

Stem Dia: Diameter of stem (cm)

Mean Dia: Calculated stem diameter (cm)

RPA: Root Protection Area (sq.m)

Circle radius: RPA radius measured from the centre of the trunk (m)

For further explanation see the tree survey schedule

Root Protection Area (RPA)

Tree No.	No	Dia 1	Dia 2	Dia 3	Dia 4	Dia 5	Mean Dia. cm	RPA sq.m	Circle Radius
1	3	33	18	34	0	0	51	116	6.1
2	4	18	14	15	20	0	34	52	4.1
3	1	54	0	0	0	0	54	132	6.5
4	1	33	0	0	0	0	33	49	4.0
5	1	38	0	0	0	0	38	65	4.6
6	1	14	0	0	0	0	14	9	1.7
7	1	20	0	0	0	0	20	18	2.4
8	1	22	0	0	0	0	22	22	2.6
9	2	39	26	0	0	0	47	99	5.6
10	1	34	0	0	0	0	34	52	4.1
11	1	68	0	0	0	0	68	209	8.2
12	1	56	0	0	0	0	56	142	6.7
13	1	52	0	0	0	0	52	122	6.2