

**Arboricultural Impact Assessment**  
**&**  
**BS5837 Tree Survey**  
**at**  
**Land to the south of Romsey Avenue, Portchester**  
**for**  
**Foreman Homes Limited**



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 Institute of  
Chartered Foresters



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1 **Instruction**

To inspect the trees on and adjacent to the site in relation to British Standard 5837:2012 Trees in relation to design, demolition and construction - Recommendations. To give recommendations to reduce the impact of such development where feasible.

I have been instructed due to my qualifications and experience in Arboriculture. I am a qualified member of the Institute of Chartered Foresters, Royal Institute of Chartered Surveyors, a Chartered Environmentalist and have a Professional Diploma in Arboriculture awarded by the Royal Forestry Society, Technicians' Certificate awarded by the Arboricultural Association, HNC in Forestry and a member of the Arboricultural Association, International Society of Arboriculture and the Royal Forestry Society. I started in the industry as a forestry contractor in 1995, progressing to the surveying and management of arboricultural contracts for a national forestry company, the running of the arboricultural part of a horticultural business overseas. From 2000 I worked in Local Government, initially at a Borough Council and subsequently at Hampshire County Council. Since August 2006 I have been practicing as an independent Arboricultural Association Registered Consultant; providing arboricultural advice to private individuals, companies, developers, architects, structural engineers, landscape architects and local authorities.

2 **Site survey**

The survey of the trees was of a preliminary nature carried out from ground level. Detailed investigations were not carried out and no tree climbed. The conclusions are based on my own observations, qualifications and experience in arboriculture. All dimensions recorded are estimated. No soil assessments have been undertaken.

3 **Site details**

The site is on the south side of Romsey Avenue. The site is effectively flat with hedgerows around the perimeter with occasional trees.

4 **Proposals**

Hybrid planning application seeking outline permission for the erection of 167 dwellings with all matters reserved (except for access) and full planning permission for 58 dwellings, associated landscaping, amenity areas and access from Romsey Avenue

5 **Drawings**

Drawings were produced by HGP Architects and received on the 8<sup>th</sup> August 2018. The drawings have been provided by the client for the purposes of this assessment and they are:

Site Plan, 16.140.10 Revision L dated November 2017

6 **Tree Preservation Orders and Conservation Areas**

No details have been sought from the Local Planning Authority (LPA) on whether the trees on or adjacent to the site are protected by Tree Preservation Order (TPO) or within a Conservation Area. This impact assessment has been carried out to assess which trees are worthy of retention and how the proposed scheme may affect them.

## 7 **Summary**

The main arboricultural feature of the site and locality is the perimeter hedge and occasional trees. These trees are to be retained and industry standard construction methods and tree protection methods (tree protection barriers, ground protection, site monitoring) should be used to reduce the impact of the works upon them.

The removal of trees T8/B to T17/B is to be sought, in liaison with the Local Planning Authority, to aid compliance with the Solent Waders and Brent Goose Strategy (draft for Local Planning Authorities issued March 2018).

Provided the trees to be retained are protected throughout the development in accordance with this Arboricultural Impact Assessment and Appendix 1: Method Statement the impact upon the retained trees is likely to be insignificant. As the impact upon the trees is likely to be insignificant there is unlikely to be any arboricultural impact upon the character of the local area.

## 8 **Findings**

Please see Appendix 2: BS5837 Tree Survey Sheet for specific details.

### 8.1 Proposed development

The proposed dwellings, access road, footways and car parking are distant from the root protection areas and canopy spread of trees within and adjacent to the site such that no significant impact is anticipated for the trees.

8.2 Two pedestrian access points are proposed to the east through H4/C to access the adjacent public open space. The removal of these two parts of the hedge is unlikely to have a significant impact on the remainder of the hedge or the local character of the area. Consequently, no specific protection or mitigation is recommended.

### 8.3 Solent waders and Brent goose strategy

On the recommendations provided in the Ecological Assessment by Ecosupport, the removal of trees T8/B to T17/B is to be sought, in liaison with the Local Planning Authority, to aid compliance with the Solent Waders and Brent Goose Strategy (draft for Local Planning Authorities issued March 2018). Prior to the implementation of the tree removals, consent from the tree owner will need to be obtained.

### 8.4 Services

New services must avoid the RPAs of retained trees. If this is not possible then the services must be designed by an Engineer in consultation with the Arboricultural Consultant (NQF level 4 or higher in Arboriculture). Further advice is available in Appendix 1: Method Statement and NJUG Volume 4 "Guidance for the planning, installation and maintenance of utility services in proximity of trees".

### 8.5 Site monitoring and tree protection measures

BS5837:2012 Trees in relation to design, demolition and construction - Recommendations states in paragraph 6.3:

*Wherever trees on or adjacent to a site have been identified within the tree protection plan for protective measures, there should be an auditable system of arboricultural site*

*monitoring. This should extend to arboricultural supervision whenever construction and development activity is to take place within or adjacent to any RPA.*

- 8.6 Therefore, it is necessary for site monitoring by an Arboricultural Consultant (qualified in Arboriculture to NQF Level 4 or higher) to occur for the proposed works. Details of the occasions and frequency of site monitoring will be given in Appendix 1: Method Statement, Arboricultural Method Statement Summary table: Timing of operations.
- 8.7 Tree protection measures are necessary to aid the retention of the trees. The details of these tree protection measures are specified in Appendix 1: Method Statement and Tree Protection Plan.
- 8.8 Site compound  
The site compound can be located within the site and distant (>1m) from tree protection measures. If there is insufficient space within the site for storage materials will need to be delivered to site on an 'as required basis' and the use of an offsite storage compound may be necessary.
- 8.9 Soft landscaping  
Within the RPA of retained trees there must be no changes of grade (up or down) and the amount of new planting limited to reduce the impact upon the retained trees through severance or damage to tree roots.
- 8.10 Post development  
Due to the design of the site layout, there is no significant adverse post development pressures anticipated.
- 8.11 Falling branch debris is a regular maintenance issue and should be treated as such. A routine of tree survey and inspection will identify foreseeable failures allowing them to be resolved prior to them becoming an issue.
- 8.12 Falling leaves, seed and needles debris is a regular maintenance issue and should be treated as such. If desired, then [www.suraflo.co.uk](http://www.suraflo.co.uk) (which prevents debris falling in the gutter through the coanda effect), mesh ([www.guttergrid.co.uk](http://www.guttergrid.co.uk) or similar) or 'hedgehog' ([www.hedgehoggutterbrush.com](http://www.hedgehoggutterbrush.com) or similar) inserts can be used to filter out tree debris. Down pipes can also be installed with traps that are easily cleaned or chains used as the down pipe (which requires no cleaning).
- 8.13 Soils  
In the event of shrinkable soils being found on the site, it will be for an engineer to design the foundations in accordance with the current industry guidance to reduce any potential risk of tree related subsidence to an acceptable level.
- 8.14 Other trees  
This report considers the trees that may significantly be affected by the proposed development. Any trees not mentioned or not surveyed are sufficiently distant that the proposed works are unlikely to have an influence upon them.

## 9 **Conclusion**

The main arboricultural features of the site are to be retained and tree protective measures must be utilised to minimise the impact of the proposals upon the trees.

Removal of the trees in the south west corner is only due to the recommendations detailed in the Ecological Assessment by Ecosupport and (Draft) Solent Waders and Brent Goose Strategy issued March 2018.

The principles and details of the Arboricultural Impact Assessment and Appendix 1: Method Statement and Tree Protection Plan should be followed to reduce the impact upon the retained trees.

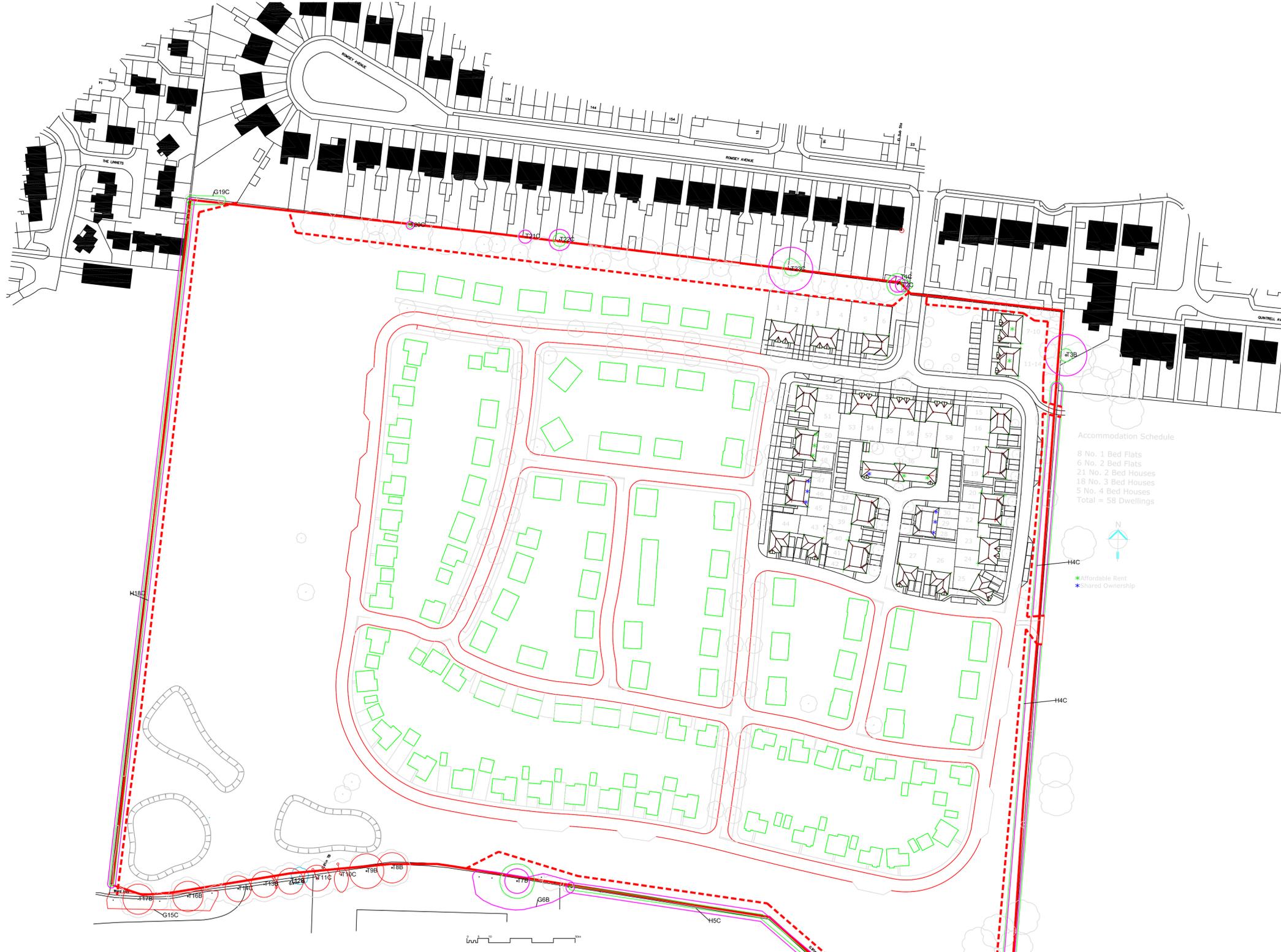
## 10 **Recommendations**

That, following any permission from the Local Planning Authority, the principles and details of the Arboricultural Impact Assessment and Appendix 1: Method Statement and Tree Protection Plan are followed to reduce the potential for harm to the retained trees during development.

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**Appendix 1: Method Statement (for protection of trees during development) and Tree Protection Plan**



**Accommodation Schedule**

8 No. 1 Bed Flats
6 No. 2 Bed Flats
21 No. 2 Bed Houses
18 No. 3 Bed Houses
5 No. 4 Bed Houses
<b>Total = 58 Dwellings</b>

**Appendix 1: Method Statement**

1. A pre-commencement meeting prior to the start of any works between the Local Planning Authority (LPA) Arboricultural Officer, appointed Arboricultural Consultant and Site Manager must take place to clarify any additional protection measures required.

The purpose of the pre-commencement site meeting is to:

- confirm the position of the tree protective fencing and / or ground protection on site;
- discuss any potential conflict with the tree protection measures and identify acceptable solutions;
- understand the timeframe for the site clearance, demolition and construction phases;
- identify and agree the frequency of Arboricultural site monitoring, recording process and reporting procedure to the Local Planning Authority to aid discharge of relevant planning conditions (appointed Arboricultural Consultant to issue written report to Site Manager and Local Planning Authority discussing findings from site monitoring).

To aid the site clearance, demolition and construction phase for the development of the site an Arboricultural Consultant (NQF Level 4 or higher in Arboriculture) must be appointed to inspect and monitor the site at the start of the works and on an as required basis throughout the construction works to ensure that the protection procedures are adhered to and to assist with addressing further arboricultural issues that may arise.

2. Tree works may be required in the interest of good arboricultural practice and to facilitate the use of the site once development is complete. These works are listed in the recommendations of Appendix 2: BS 5837 Tree Survey. All tree works should be carried out according to BS3998: 2010 'Recommendations for tree works' and carried out by an appropriately competent, experienced, qualified and insured arboricultural contractor and preferably under the supervision of the Arboricultural Consultant.

3. The protective measures, as shown on the drawing 'Tree protection plan' must be erected after the tree works and prior to any demolition or construction works. Once erected, barriers and ground protection must be considered sacrosanct, and must not be removed or altered without prior recommendation by the appointed Arboricultural Consultant and written approval by the LPA.

The protective barriers and ground protection must be erected according to drawings 'Tree protection plan' and Appendix 2: BS5837 survey sheet which is based upon the guidelines in BS5837: 2012 'Trees in relation to construction'. Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained trees. On all sites, special attention should be paid to ensure that the barriers remain rigid and complete. Barriers must consist of a 1.8 high scaffold framework comprising a vertical and horizontal framework, well braced to resist impacts, with vertical tubes spaced at a maximum interval of 3m. Onto this 1.8m high weldmesh panels should be securely fixed with wire or scaffold clamps. Weldmesh panels on rubber or concrete feet are not resistant to impact and must not be used. If an alternative specification is preferred then it must be agreed in writing with the Local Planning Authority prior to installation.

Ground protection for pedestrian movements (and scaffolding activities) within the root protection area (RPA) must be a single thickness of scaffold boards on top of a compressible layer (for instance bark mulch) laid onto a geotextile membrane, or supported by scaffold (see drawing on Tree Protection Plan). If an alternative specification is preferred then it must be agreed in writing with the Local Planning Authority prior to installation.

Ground protection for wheeled or tracked construction traffic movements within the root protection area (RPA) must be designed by an engineer and Arboricultural Consultant to accommodate the likely loading and may involve the use of proprietary systems (for instance www.evetrakway.co.uk) or reinforced concrete slabs or a series of railway sleepers pinned together or other suitable system to ensure that the bulk density of the soil remains lower than 1.5g/cm3. If an alternative specification is preferred then it must be agreed in writing with the Local Planning Authority prior to installation.

These tree protective measures shall be identified and marked on the 'Tree protection plan' and all the approved engineering drawings to be used on site.

Any encroachment within the RPA or breaches of the tree protection measures must be reported to the appointed Arboricultural Consultant to enable them to provide recommendations to mitigate the encroachment / breach and to allow the issue and mitigation to be reported to the Local Planning Authority for their written approval.

4. All site personnel must be briefed by the Site Manager or the Arboriculturalist on the importance of the trees to be retained and the protective measures implemented to aid their retention into the future. The Site Manager is responsible for the implementation of all tree protection measures.

5. Once the construction exclusion zone has been protected by barriers then construction work can commence. All weather notices should be erected on the barriers with words such as 'Construction exclusion zone - keep out' (see recommended sign on the Tree Protection Plan).

6. Care should be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious damage to the equipment and retained trees, and might make the safe retention of the retained trees impossible. Consequently, any transit or transverse of plant in close proximity to trees should be conducted under the supervision of a banksman to ensure that adequate clearance from trees is maintained at all times. In some circumstances it may be impossible to maintain adequate clearance thus requiring tree works to clear the necessary access.

Material which will contaminate the soil, e.g. concrete (dry or mixed), diesel, oil, vehicle washings, etc. must not be discharged within the root protection area. It is essential that an allowance should be made for the slope of the ground so that damaging materials such as concrete washings, mortar, diesel or oil cannot run towards the trees.

There must be no fires on the site.

Notice boards, telephone cables or other services must not be attached to any part of the tree.

7. The advice of the appointed Arboricultural Consultant must be sought where underground structures present within the RPA are / will become redundant. In general it is preferable to seal these off as this avoids the need for significant excavation.

8. Any excavations in proximity of retained trees will require certain precautions to avoid unnecessary damage to trees to be retained, and should be undertaken as follows:

- All excavations should avoid damage to the protective bark covering larger roots. Roots, whilst exposed, should be wrapped in dry, clean hessian sacking to prevent desiccation (drying) and to protect from temperature changes.
- Roots smaller than 25mm diameter may be pruned back, preferably to a side branch, using a proprietary clean cutting tool such as bypass secateurs or handsaw.
- Roots larger than 25mm diameter should only be severed following consultation with the appointed Arboricultural Consultant, as the roots may be essential to the tree's health and stability.
- Prior to backfilling, any hessian wrapping should be removed and retained roots should be surrounded by sharp sand (bulker's sand should not be used because of its high salt content which is toxic to tree roots), or other loose granular fill, before soil or other material is replaced. This material, e.g. general purpose grade topsoil to BS3882, should be free of contaminants and other foreign objects potentially injurious to tree roots.
- Further details are available in NJUG Volume 4 'Guidance for the planning, installation and maintenance of utility services in proximity of trees'.
- Any excavation within the RPA of retained trees must be subject to Arboricultural Consultant supervision.

9. There are no services to be installed within the RPA of the retained trees or their protection measures, other than as described in the Arboricultural Impact Assessment or shown on the Tree Protection Plan.

10. There should be no changes in grade within the RPA or their protection measures without prior recommendation by the appointed Arboricultural Consultant and written approval of the LPA.

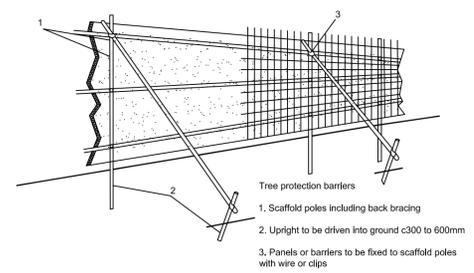
11. Following completion of the construction and hard landscaping works a site meeting between the Local Planning Authority Arboricultural Officer, appointed Arboricultural Consultant and Site Manager must take place to assess whether the protective barriers and ground protection can be removed to allow soft landscaping works.

12. Following the completion of the soft landscaping works a tree survey must be undertaken to identify whether additional tree works are required for the safe use of the site and adjacent land users.

**Method Statement Summary / Timing of operations**

Activity	Date complete
01 Pre-commencement meeting with Local Authority Arboricultural Officer, appointed Arboricultural Consultant (NQF Level 4 or higher in Arboriculture) and Site Manager prior to construction works to discuss the tree protection measures.	
02 Tree works to facilitate development.	
03 Installation of tree protection measures (barriers / ground protection) to facilitate development.	
04 Written approval by the appointed Arboricultural Consultant of the correct installation of the Tree Protection measures to allow development.	
05 Development works with Arboricultural site supervision as determined at the pre-commencement meeting.	
06 Written approval by the appointed Arboricultural Consultant for the removal of the tree protection measures following the completion of the construction and hard landscaping to allow soft landscaping.	
07 Soft landscaping works	
08 Tree survey for remedial works	
09 Remedial tree works	
10 Occupancy	

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**CONSTRUCTION EXCLUSION ZONE**

**KEEP OUT!**

THE FOLLOWING MUST BE OBSERVED BY ALL PERSONS:

- THE PROTECTIVE FENCING MUST NOT BE MOVED
- NO PERSON SHALL ENTER THE PROTECTED AREA
- NO MACHINE OR PLANT SHALL ENTER THE PROTECTED AREA
- NO MATERIALS SHALL BE STORED IN THE PROTECTED AREA
- NO SPOIL SHALL BE DEPOSITED IN THE PROTECTED AREA
- NO EXCAVATION SHALL OCCUR IN THE PROTECTED AREA

ANY ACCESS INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

A3 sign on laminated all weather material at 1.8m on the protective fencing every 10m.

**General / Key:**

- Root protection area
- Indicative canopy
- Barrier fencing
- Tree to be removed

**Site:** Land to the south of Romsey Avenue, Postlemer

**Data:** Site layout and survey data provided by Client. Ordnance survey data provided under licence 100022432. Crown copyright. All rights reserved.

This drawing is produced in colour. Please ensure that you use a colour printing to ensure that the drawing is correctly interpreted.

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**Item reference (TIG/HW)**  
Item number (1, 2, etc.)  
BS5837 category (A/B/C/U)  
For instance: T1C

**Drawing title:** Tree protection plan

**Drawing reference:** J994.03

**Revision:** -

**Date:** August 2018

**Scale:** 1 to 1000 on A1 (site layout only)

**Sheet:** 1 of 1

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Appendix 2: BS5837 tree survey

Tree no.	BS5837 category	Species	Height (m)	Trunk diameter at 1.5m (mm)	Canopy spread (NESW)	Crown Height (m)	Age class	Condition	Recommendations	Useful remaining life expectancy	Root Protection Area (radius in m)	Development related tree works	Tree protection measures
T1	C2	Sycamore <i>Acer pseudoplatanus</i>	8.4	c300	5 5 5 5	2	Mature	<b>FAIR</b> Dominant canopy. Good vitality shown by twig size, structure and density. Short form. On boundary. Epicormic growth inhibits access.	No works required.	>20	3.6	No works required.	Install tree protective fencing.
T2	C2	Field Maple <i>Acer campestre</i>	6	c250	2 5 2 0	1	Middle Aged	<b>FAIR</b> Suppressed canopy. Good vitality shown by twig size, structure and density.	No works required.	>20	3.0	No works required.	Install tree protective fencing.
T3	B2	Poplar <i>Populus</i>	23	c800	3 3 3 3	3	Mature	<b>GOOD</b> Dominant canopy. Good vitality shown by twig size, structure and density. Offsite.	No works required.	>20	9.6	No works required.	Install tree protective fencing.
H4	C2	Hedge of Hawthorn <i>Crataegus monogyna</i> , Sycamore, Willow <i>Salix</i> , Hazel <i>Corylus avellana</i> , Bramble	2-6	c200	3 3 3 3	0	Mature	<b>GOOD</b> Good vitality shown by twig size, structure and density. Managed as a hedge. Gaps sporadically.	Maintain as a hedge.  Plant up gaps.	>20	2.4	Remove two sections of the hedge to allow footway construction into the adjacent open space.	Install tree protective fencing.
H5	C2	Hedge of Hawthorn	2	c200	1 1 1 1	0	Mature	<b>FAIR</b> Good vitality shown by twig size, structure and density. Managed as a hedge. Gaps sporadically.	Maintain as a hedge.  Plant up gaps.	>20	2.4	No works required.	Install tree protective fencing.
G6	B2	Copse of Field Maple, Hazel, Ash <i>Fraxinus excelsior</i>	14	c250	3 3 3 3	0	Middle Aged to Mature	<b>GOOD</b>	No works required.	>20	3.0	No works required.	Install tree protective fencing.
T7	B2	Ash	15	478	8 8 8 8	4	Mature	<b>GOOD</b> Intermediate canopy. Good vitality shown by twig size, structure and density.	No works required.	>20	5.7	Seek consent from tree owner to remove in line with recommendations detailed in the Ecological Assessment by Ecosupport and (Draft) Solent Waders and Brent Goose Strategy issued March 2018.	None required.
T8	B2	Ash	15	c500	7 7 7 7	4	Mature	<b>GOOD</b> Intermediate canopy. Good vitality shown by twig size, structure and density. Two stems from c1.5m with minor included bark union. Bramble impedes survey. Offsite.	No works required.	>20	6.0	Seek consent from tree owner to remove in line with recommendations detailed in the Ecological Assessment by Ecosupport and (Draft) Solent Waders and Brent Goose Strategy issued March 2018.	None required.

Tree no.	BS5837 category	Species	Height (m)	Trunk diameter at 1.5m (mm)	Canopy spread (NESW)	Crown Height (m)	Age class	Condition	Recommendations	Useful remaining life expectancy	Root Protection Area (radius in m)	Development related tree works	Tree protection measures
T9	B2	Ash	15	c500	8 8 8 8	4	Mature	<b>GOOD</b> Intermediate canopy. Good vitality shown by twig size, structure and density. Two stems from c1.5m with good 'U' shaped tension union. Bramble impedes survey. Offsite.	No works required.	>20	6.0	Seek consent from tree owner to remove in line with recommendations detailed in the Ecological Assessment by Ecosupport and (Draft) Solent Waders and Brent Goose Strategy issued March 2018.	None required.
T10	C2	Ash	15	c450	3 3 8 3	4	Mature	<b>POOR</b> Intermediate canopy. Good vitality shown by twig size, structure and density. Stem on North side failed / removed. Bramble impedes survey. Offsite.	No works required.	>20	5.4	Seek consent from tree owner to remove in line with recommendations detailed in the Ecological Assessment by Ecosupport and (Draft) Solent Waders and Brent Goose Strategy issued March 2018.	None required.
T11	C2	Ash	22	c600	6 6 6 6	6	Mature	<b>GOOD</b> Intermediate canopy. Good vitality shown by twig size, structure and density. Ivy impedes survey. Bramble and hedge impedes survey. Offsite.	No works required.	>20	7.2	Seek consent from tree owner to remove in line with recommendations detailed in the Ecological Assessment by Ecosupport and (Draft) Solent Waders and Brent Goose Strategy issued March 2018.	None required.
T12	B2	Ash	17	2 x c350	6 6 6 6	4	Mature	<b>GOOD</b> Intermediate canopy. Good vitality shown by twig size, structure and density. Two stems from base with minor included bark union. Hedge impedes survey. Offsite.	No works required.	>20	4.9	Seek consent from tree owner to remove in line with recommendations detailed in the Ecological Assessment by Ecosupport and (Draft) Solent Waders and Brent Goose Strategy issued March 2018.	None required.
T13	B2	Ash	17	c400	6 6 6 6	4	Mature	<b>GOOD</b> Intermediate canopy. Good vitality shown by twig size, structure and density. Ivy and hedge impedes survey. Offsite.	No works required.	>20	4.8	Seek consent from tree owner to remove in line with recommendations detailed in the Ecological Assessment by Ecosupport and (Draft) Solent Waders and Brent Goose Strategy issued March 2018.	None required.
T14	C2	Ash	14	c450	6 6 6 6	4	Mature	<b>FAIR</b> Intermediate canopy. Abnormal twig distribution. Moderate deadwood (25 – 100mm diameter) throughout. Hedge impedes survey. Offsite.	Remove deadwood more than 25mm diameter.	>10	5.4	Seek consent from tree owner to remove in line with recommendations detailed in the Ecological Assessment by Ecosupport and (Draft) Solent Waders and Brent Goose Strategy issued March 2018.	None required.

Tree no.	BS5837 category	Species	Height (m)	Trunk diameter at 1.5m (mm)	Canopy spread (NESW)	Crown Height (m)	Age class	Condition	Recommendations	Useful remaining life expectancy	Root Protection Area (radius in m)	Development related tree works	Tree protection measures
G15	B2	Group of Ash, Field Maple	c14	c250	3 3 3 3	3	Middle Aged	<b>GOOD</b> Intermediate canopy. Good vitality shown by twig size, structure and density. Offsite.	No works required.	>20	3.0	Seek consent from tree owner to remove in line with recommendations detailed in the Ecological Assessment by Ecosupport and (Draft) Solent Waders and Brent Goose Strategy issued March 2018.	None required.
T16	B2	Ash	18	491	7 7 7 7	4	Mature	<b>GOOD</b> Intermediate canopy. Good vitality shown by twig size, structure and density. Typical occasional moderate deadwood (25 – 100mm diameter). Offsite.	Remove deadwood more than 25mm diameter.	>20	5.9	Seek consent from tree owner to remove in line with recommendations detailed in the Ecological Assessment by Ecosupport and (Draft) Solent Waders and Brent Goose Strategy issued March 2018.	None required.
T17	B2	Ash	16	443	7 7 7 7	4	Mature	<b>GOOD</b> Intermediate canopy. Good vitality shown by twig size, structure and density. Typical occasional moderate deadwood (25 – 100mm diameter). Offsite.	Remove deadwood more than 25mm diameter.	>20	5.3	Seek consent from tree owner to remove in line with recommendations detailed in the Ecological Assessment by Ecosupport and (Draft) Solent Waders and Brent Goose Strategy issued March 2018.	None required.
H18	C2	Hedge of Hawthorn	2	c150	1 1 1 1	0	Mature	<b>GOOD</b> Good vitality shown by twig size, structure and density. Managed as a hedge. Gaps sporadically.	Maintain as a hedge.  Plant up gaps.	>20	1.8	No works required.	Install tree protective fencing.
G19	C2	Group of Bramble, Apple ( <i>Malus</i> ), Cherry ( <i>Prunus</i> )	1-4	-	2 2 2 2	0	Young – Mature	<b>POOR</b> Poor form.	No works required.	>20	-	No works required.	Install tree protective fencing.
T20	C2	Holly	4	c150	1 1 1 1	0	Mature	<b>FAIR</b> Dominant canopy. Good vitality shown by twig size, structure and density. Poor form.	No works required.	>20	1.8	No works required.	Install tree protective fencing.
T21	C2	Birch <i>Betula</i>	6	c250	3 3 3 3	2	Mature	<b>FAIR</b> Dominant canopy. Good vitality shown by twig size, structure and density. Poor form. Offsite.	No works required.	>20	3.0	No works required.	Install tree protective fencing.
T22	C2	Apple	5	2 x c350	3 3 3 3	2	Mature	<b>GOOD</b> Maintained in reduced height form for fruit production. Offsite.	No works required.	>20	4.9	No works required.	Install tree protective fencing.

Tree no.	BS5837 category	Species	Height (m)	Trunk diameter at 1.5m (mm)	Canopy spread (NESW)	Crown Height (m)	Age class	Condition	Recommendations	Useful remaining life expectancy	Root Protection Area (radius in m)	Development related tree works	Tree protection measures
T23	B2	Poplar	23	c850	5 5 3 3	6	Mature	<b>FAIR</b> Dominant canopy. Good vitality shown by twig size, structure and density. Previously reduced to c10m with mature regrowth. Offsite.	No works required.	>20	10.2	No works required.	Install tree protective fencing.

## General notes

We have not checked whether the site is within a Conservation Area or whether the trees are under Tree Preservation Order (TPO). Prior to any tree works confirmation of whether these legal restrictions apply to the site or trees ought to be sought from the Local Planning Authority (LPA). If the trees stand within a Conservation Area designated under the Town and Country Planning Act the LPA will normally require 6 weeks notice of intention to carry out any tree works as detailed in the survey. If the trees are under TPO then the LPA will normally require an application for any tree works. Some tree works are exempt, for instance if the trees are dead or dangerous, and certain works can be carried out without application. It is necessary to give the LPA at least five days notice prior to carrying out any of these tree works under these exemptions. This survey, with recommendations, can be used to support any such application or notice.

Wildlife issues are of significant concern to the general public. A balance has to be found between the protection of wildlife and the need for safety when managing trees. The Wildlife and Countryside Act (1980) and Countryside Rights of Way Act (2000) give statutory protection to wild birds, bats, mammals, some invertebrates and plants. It is important to ensure that this legislation is properly considered when carrying out any works to trees.

Bird nests were not identified whilst on site. However, any Arborist carrying out the tree works should ensure that there is no disturbance to nesting birds prior to the works being carried out. Further guidance upon the appropriate timing of the works can be sought from DEFRA, if necessary. Where nesting birds are found further information should be sought from DEFRA 08459 33 55 77 or [helpline@defra.gsi.gov.uk](mailto:helpline@defra.gsi.gov.uk). Prior to any works being implemented the tree contractor must identify whether there are any bats or birds using the tree as roost or nest. If such habitation is identified, then the tree contractor must obtain the necessary licence from Natural England (0845 601 4523 [www.naturalengland.org.uk](http://www.naturalengland.org.uk)) to carry out the works.

In this instance, considering the size of the trees, their location and features I believe that there is a medium potential of bats using the mature trees as a roost site. A bat survey prior to tree works is not recommended as it would be difficult to determine the location of any exit point from the roost within the tree by a bat survey and also confusion may also arise from bats travelling from other roosts. Any such exit could more easily be identified by a competent tree worker. During the tree works the contractor should carry out the tree works with bats as an active consideration and follow the current industry best practice, e.g. Arboricultural Association Guidance Note 1 Bats in the context of tree work operations 2011, which a competent tree contractor should be familiar with.

Typical significant defects that are to be identified can be referred to in "Hazards from Trees, a general guide", "Principles of tree hazard assessment and management" both by David Lonsdale and "The body language of trees" by Claus Mattheck published by the Forestry Commission and the Department of the Environment respectively.

Trees are dynamic structures and as such their condition and health may change in a short period of time, particularly in relation to changes in their immediate environment and circumstances, as such the survey relates to the visible condition found on the day of the survey.

All tree works to be carried out to BS3998: Recommendations for Tree Works (including the biosecurity measures). Biosecurity measures: To minimise the potential for contamination of the tree from other tree works it is appropriate to sterilise tools to be used before and after the works are implemented. Appropriate disinfectant includes Propellar or Cleankill Sanitizing spray. Loose debris is to be brushed off prior to treating with disinfectant to ensure appropriate application. See [http://www.forestry.gov.uk/pdf/FCMS028-guidance.pdf/\\$file/FCMS028-guidance.pdf](http://www.forestry.gov.uk/pdf/FCMS028-guidance.pdf/$file/FCMS028-guidance.pdf) for further information on Biosecurity and <http://www.forestry.gov.uk/forestry/infd-9fjd2d> for disinfectant information.

### Appendix 3: Key to BS5837 tree survey

<b>No</b>	Tree number.	
<b>Species</b>	Species of tree.	
<b>Height</b>	Height measured in metres and rounded to the nearest metre.	
<b>Stem Ø</b>	Stem diameter at 1.5metres following normal Forestry conventions or immediately above the root flare for multiple stemmed trees, in millimetres.	
<b>Canopy spread and context</b>	Canopy spread in metres is taken at the four cardinal points to derive a reasonable representation of the canopy shape in plan view.	
	Canopy context relates to the form and context of the canopy in relation to adjacent trees and how this relates to the development and form of the tree and potential issues that may arise as a result.	
<b>Height of crown</b>	Height in metres of crown clearance above adjacent ground level.	
<b>Age class</b>	<b>Young</b>	A tree considered to be less than approximately 20 years old.
	<b>Middle aged</b>	A tree in approximately the first 1/5th of its normal life span with apical dominance (rapidly growing with a clear main leader) and not yet fully at its environmental potential full height.
	<b>Mature</b>	A tree in its 2/5ths to 5/5ths of its normal life span with apical dominance lost and at its environmental potential full height.
	<b>Veteran</b>	A tree of interest biologically, aesthetically or culturally because of its age and is old relative to others of the same species.
<b>Condition</b> (Physiological and Structural)	<b>Good</b>	A tree of typical physiological and structural condition that requires only general tree works to facilitate its retention in the landscape.
	<b>Fair</b>	A tree of impaired physiological and / or structural condition that may require remedial and general tree works to facilitate its retention in the landscape.
	<b>Poor</b>	A tree of significantly impaired physiological and / or structural condition that will require remedial and general tree works to facilitate its retention in the landscape if feasible.
<b>Preliminary management recommendations</b>	As per BS3998: 2010 Recommendations for Tree Works.	
<b>Category grading</b>	See below: Table 1.	
<b>Estimated remaining contribution (years)</b>	Estimated remaining contribution in years (e.g. < 10, 10-20, >20).	
<b>Root protection area</b>	See below: Extract from BS5837:2012.	

All measurements in metres are approximate and rounded to the nearest metre.

**Table 1 - Cascade chart for tree quality assessment, BS5837: 2012 Trees in relation to construction - Recommendations**

<b>TREES UNSUITABLE FOR RETENTION</b>			
<b>CATEGORY AND DEFINITIONS</b>	<b>CRITERIA</b>		
<p><b>Category U</b></p> <p>Those 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</p>	<ul style="list-style-type: none"> <li>• 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).</li> <li>• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline.</li> <li>• 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.</li> </ul> <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5 of BS5837:2012</i></p>		
<b>TREES TO BE CONSIDERED FOR RETENTION</b>			
<b>CATEGORY AND DEFINITIONS</b>	<b>CRITERIA - SUBCATEGORIES</b>		
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation
<p><b>Category A</b> <b>Trees of high quality</b> 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).	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)
<p><b>Category B</b> <b>Trees of moderate quality</b> with an estimated remaining life expectancy of at least 20 years</p>	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 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
<p><b>Category C</b> <b>Trees of low quality</b> with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm</p>	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.

## Root protection area (RPA)

Extract from BS5837:2012.

**4.6.1** For single stem trees, the RPA (see **3.7**) should be calculated as an area equivalent to a circle with a radius 12 times the stem diameter. For trees with more than one stem, one of the two calculation methods below should be used. In all cases, the stem diameter(s) should be measured in accordance with Annex C, and the RPA should be determined from Annex D. The calculated RPA for each tree should be capped to 707 m<sup>2</sup>.

a) For trees with two to five stems, the combined stem diameter should be calculated as follows:

$$\sqrt{(\text{stem diameter } 1)^2 + (\text{stem diameter } 2)^2 \dots + (\text{stem diameter } 5)^2}$$

b) For trees with more than five stems (not illustrated in Annex C), the combined stem diameter should be calculated as follows:

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

**4.6.2** The RPA for each tree should initially be plotted as a circle centred on the base of the stem. Where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution.

**4.6.3** Any deviation in the RPA from the original circular plot should take account of the following factors whilst still providing adequate protection for the root system:

- a) the morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);
- b) topography and drainage;
- c) the soil type and structure;
- d) the likely tolerance of the tree to root disturbance or damage.



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