

Ash Fraxinus excelsior Aspen Populus tremula Beech Fagus sylvatica Blackthorn Prunus spinosa Black poplar Populus nigra Box elder Acer negundo Catalpa Catalpa bignonioides Coast redwood Sequoia sempervirens Dawn redwood Metasequoia glyptostroboides Deodar cedar Cedrus deodara Douglas fir Pseudotsuga menziesii Elder Sambucus nigra False acacia Robinia pseudoacacia Field maple Acer campestre Goat willow Salix caprea Hawthorn Crataegus monogyna Hazel Corylus avellana Holm oak Quercus ilex Holly Ilex aquifolium Hornbeam Carpinus betulus Horse chestnut Aesculus hippocastanum Indian bean tree Catalpa bignonioides Japanese cedar Cryptomeria japonica Judas tree Cercis siliquastrum Lawson cypress Chamaecyparis lawsoniana Leyland cypress x Cupressocyparis leylandii Liquidambar Liquidambar styraciflua Lombardy poplar Populus nigra 'Italica' London plane Platanus x hispanica Maidenhair Ginkgo biloba Mimosa Acacia dealbata Monkey puzzle Araucaria araucana Monterey cypress Cupressus macrocarpa Monterey pine Pinus radiata Norway maple Acer platanoides Norway spruce Picea abies Oak Quercus robur Persian ironwood Parrotia persica Red horse chestnut Aesculus carnea Red oak Quercus rubra Rowan Sorbus aucuparia Scots pine Pinus sylvestris Sitka spruce Picea sitchensis Swedish whitebeam Sorbus intermedia Sweet chestnut Castanea sativa Sycamore Acer pseudoplatanus Tulip tree Liriodendron tulipifera Turkey oak Quercus cerris Walnut Juglans regia Western Hemlock Tsuga heterophylla Western red cedar Thuja plicata Whitebeam Sorbus aria Wild cherry Prunus avium Wellingtonia Sequoiadendron giganteum White poplar Populus alba White willow Salix alba Wild Cherry Prunus avium Yew Taxus baccata Ash Fraxinus excelsior Aspen Populus tremula Beech Fagus sylvatica Blackthorn Prunus spinosa Black poplar Populus nigra Box elder Acer negundo Catalpa Catalpa bignonioides Coast redwood Sequoia sempervirens Dawn redwood Metasequoia glyptostroboides Deodar cedar Cedrus deodara Douglas fir Pseudotsuga menziesii Elder Sambucus nigra False acacia Robinia pseudoacacia Field maple Acer campestre Goat willow Salix caprea Hawthorn Crataegus monogyna Hazel Corylus avellana Holm oak Quercus ilex Holly Ilex aquifolium Hornbeam Carpinus betulus Horse chestnut Aesculus hippocastanum Indian bean tree Catalpa bignonioides Japanese cedar Cryptomeria japonica Judas tree Cercis siliquastrum Lawson cypress Chamaecyparis lawsoniana Leyland cypress x Cupressocyparis leylandii Liquidambar Liquidambar styraciflua Lombardy poplar Populus nigra 'Italica' London plane Platanus x hispanica Maidenhair Ginkgo biloba Mimosa Acacia dealbata Monkey puzzle Araucaria araucana Monterey cypress Cupressus macrocarpa Monterey pine Pinus radiata Norway maple Acer platanoides Norway spruce Picea abies Oak Quercus robur Persian ironwood Parrotia persica Red horse chestnut Aesculus carnea Red oak Quercus rubra Rowan Sorbus aucuparia Scots pine Pinus sylvestris Sitka spruce Picea sitchensis Swedish whitebeam Sorbus intermedia Sweet chestnut Castanea sativa Sycamore Acer pseudoplatanus Tulip tree Liriodendron tulipifera Turkey oak Quercus cerris Walnut Juglans regia Western Hemlock Tsuga heterophylla Western red cedar Thuja plicata Whitebeam Sorbus aria Wild cherry Prunus avium Wellingtonia Sequoiadendron giganteum White poplar Populus alba White willow Salix alba Wild Cherry Prunus avium Yew Taxus baccata Ash Fraxinus excelsior Aspen Populus tremula Beech Fagus sylvatica Blackthorn Prunus spinosa Black poplar Populus nigra Box elder Acer negundo Catalpa Catalpa bignonioides Coast redwood Sequoia sempervirens Dawn redwood Metasequoia glyptostroboides Deodar cedar Cedrus

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ARBORICULTURAL

Arboricultural Implications Assessment and Method Statement for

Land to the north of 'The Hollies', Hill Street, Calmore

Arboricultural Implications Assessment and Method Statement

Land to the north of 'The Hollies', Hill Street, Calmore

Produced by:

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Report Ref: **211369 - AIA 2**

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1 INTRODUCTION

- 1.1 **Instruction:** I am instructed by Atlas Planning Group to report on trees which could be affected by a development proposal for land to the north of 'The Hollies', Hill Street, Calmore and prepare an Arboricultural Implications Assessment (AIA) and preliminary Arboricultural Method Statement (AMS) to support a planning application on the site.
- 1.2 **Document disclosure:** Initially, I was provided with a topographical survey (drawing reference 'ADS-0706'). This showed the positions of the significant trees on or near the site, together with the existing buildings and other important features. Subsequently, I was supplied with a copy of the proposed landscape plan, (drawing reference '345_PN_01 - LANDSCAPE PLAN - REVB) showing a new site configuration.
- 1.3 **Scope of report:** All my tree observations are of a preliminary nature, with the tree survey carried out from ground level without any investigations using invasive or diagnostic equipment. I was not able to fully view all the trees detailed in this report from all directions, as some were located on adjacent private property. I have therefore confined observations of them to what was visible from within the site. I have not checked the accuracy of the positions of the trees shown on the provided plans and I have estimated all dimensions unless otherwise indicated.
- 1.4 **The Tree Protection Plan:** This is included in Appendix 1 and is a composite drawing derived from the information provided. It shows the existing landscape features (from the land survey) in grey superimposed over the proposed layout shown in colour. This allows the relationship between the two to be clearly seen and an appropriate analysis of the implications of the proposed site changes to be undertaken. The Tree Protection Plan has also been annotated to show protection measures for the trees which could realistically be affected by the proposed development. It shows any activities in Root Protection Areas (RPAs) and if trees/hedges are to be removed, they are shown with a red dashed outline.
- 1.5 **Qualifications and experience:** This report is based on my site observations and I have come to my conclusions in the context of my experience as a former local government tree officer and a private practice arboricultural consultant. I have qualifications in both arboriculture and forestry and details of these, together with a career summary are provided in Appendix 6.

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- 1.6 **Ecological issues and statutory tree protection:** Providing guidance on ecological issues is not within my sphere of expertise. However, trees and other vegetation can often provide nesting, roosting and feeding opportunities for protected species. Therefore, before any tree work proceeds on site, I advise that appropriate advice is sought to see whether the trees to be removed are being utilised by any protected species. At the time of writing, I have made no checks to ascertain whether any of the trees discussed are covered by tree preservation orders, or if the site is located within a conservation area. Therefore, any person intending to carry out any operations involving trees (before a formal planning consent is issued) should consult the council before any such works are undertaken.
- 1.7 **Relevant background information:** This report is an updated version of an earlier document (ecourban reference '211369 - AIA') which has been revised following changes to the proposed site layout.

2 SITE VISIT, DESCRIPTIONS, OBSERVATIONS AND SURVEY METHODOLOGY

- 2.1 **Site visit and description:** I visited the site on 21 April 2021 to gather my tree data. The site is located in Hill Street, which is situated in the village of Calmore. It is positioned on the western side of the road and consists of a broadly rectangular shaped piece of land, which is currently under grass. Scattered groups and individual trees are located around (or close to) the boundaries, with the site also subdivided to some extent by a small number of linear tree groups/hedges running in a north/south orientation.
- 2.2 **Description of proposed development:** This development proposal is to construct nine new dwellings on the site.
- 2.3 **Soil assessment:** British Standard BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations advocates that a soil assessment should be carried out to inform decisions relating to Root Protection Areas (RPAs), tree protection, new planting and foundation design. I have consulted the British Geological Survey (BGS) website and their Geology of Britain viewer and this advises that the bedrock geology for the site is Wittering Formation - Sand, Silt and Clay. I did not undertake any excavations on site to confirm this and a full geotechnical site investigation may need to be undertaken to provide a more in-depth level of information regarding soil type for the site.
- 2.4 **Tree survey methodology:** My inspection of the trees was visual and did not involve any climbing or exploratory investigations. During my visit, I identified individual trees and obvious groups/hedges where this was appropriate and I assigned an identification number to each, as shown on the plan in Appendix 1. I then collected the tree data included in Appendix 2 and placed the vegetation in one of four categories (U, A, B or C), as set out in British Standard BS 5837:2012. I have included the BS categorisations in Appendix 5 for easy reference. Where of relevance, I also estimated the crown spreads for each tree/group at the appropriate cardinal compass points and this information is also shown in the tree schedule in Appendix 2. Although this document is not a full and detailed report on tree health and safety, any significant visible structural defects or physiological conditions identified, together with preliminary tree works, are also noted in the appropriate columns in the tree schedule. However, this report is not a tree condition survey and a full post development tree inspection is recommended to establish that the trees retained pose acceptable levels of risk once the development has been completed.

2.5 **Data interpretation:** The Root Protection Area (RPA) figures are included in Appendix 2. As set out in paragraphs 4.6.2 and 4.6.3 of the BS, the RPAs may have been adjusted as a matter of arboricultural judgement to indicate the estimated likely position of important tree roots. These modified (or unmodified) RPAs dictate the location of the tree protection barriers and also determine the position of any ground protection measures. Tree protection details are shown on the plan included in Appendix 1. Where there is a need for incursions into RPAs, an assessment of the implications of these activities is set out in Section 3 (Arboricultural Implications Assessment) of this report. Where appropriate, details of suitable work methodologies to protect trees and also mitigate any impact are set out in Section 5 (Arboricultural Method Statement).

3 ARBORICULTURAL IMPLICATIONS ASSESSMENT

3.1 **Introduction to the implications of the development proposal on trees:** BS 5837:2012 sets out in some detail how trees on development sites should be managed. It is usually accepted amongst arboriculturists that Category A (high quality) and Category B (moderate quality) trees are potential constraints on any development proposal, whereas vegetation belonging to Category C (low quality) is considered to be generally less important. Category U trees/hedges are in such poor condition that they are considered unsuitable for retention. This is because they cannot realistically be retained as living entities in respect of the current land use for longer than 10 years. Therefore, these can be effectively discounted in the context of a planning application. On this site a total of twenty four individual trees, groups and hedges were recorded during the tree survey and were assigned to the BS 5837:2012 categories, as set out in Table 1 below:

Category A and B trees	Category C trees	Category U trees
A total of EIGHT trees/groups (T3, T4, T6, G8, T12, T14, T15 and T20) were rated Category A and B	A total of FIFTEEN trees, groups and hedges (G1, T2, G5, H7, H9, H10, H11, H13, T16, H17, G18, G19, G21, G22 and H24) were rated Category C	A total of ONE group (G23) was rated Category U

Table 1: Tree numbers and BS categories

I have focussed on the implications of the development proposal mainly on the more important trees on or near the site (Category A and B) in terms of tree loss/retention and by the extent of any incursions into and/or disturbance within Root Protection Areas (RPAs). Of the total of twenty four trees, groups and hedges surveyed, only sections of four hedges are scheduled to be removed to facilitate this development proposal. Additionally, four trees/groups will have activities arising from the development occurring within their RPAs. I have summarised the development related implications on trees in Table 2 below and set these aspects out in more detail in the following paragraphs.

Trees to be removed for development		Activities in RPAs arising from the development proposal	
Category A and B	Category C	Category A and B	Category C
None	H7, H10, H11 and H24 (sections to be removed)	T6 and T20 (new surfacing within RPAs)	G19 (garage within RPAs) and G22 (new surfacing within RPAs)

Table 2: Trees lost and activities in RPAs arising from the development proposal

3.2 **Direct implications of the development proposal - Tree retention and tree loss**

3.2.1 **BS Category A and B trees to be retained (trees of high and moderate quality):** All the Category A and B trees surveyed will be retained and protected in accordance with the guidance set out in BS 5837:2012. Consequently, no high or moderate category trees will need to be removed to facilitate this development proposal.

3.2.2 **BS Category C vegetation to be removed (low quality):** As discussed, vegetation belonging to Category C is not normally retained where this would impose a significant constraint on the development or redevelopment of a site. In this instance, parts of hedges H7, H10, H11 and H24 are indicated to be removed to allow the new access drive and other surfacing to be formed. Apart from H7, the sections to be removed are quite short in length, with the bulk of each hedge being retained. Consequently, I do not believe that there is likely to be any particular implications arising from this issue. With regard to hedge H7, this runs along the site frontage and the loss of this will be noticeable in the locality. However, this could be compensated by the ‘stopping up’ of the existing entrance, which could then be planted with new trees and shrubs, along with the provision of additional planting, as shown on the proposed landscape drawing.

3.3 **Additional implications arising from the development proposal**

3.3.1 **Activities arising from the development proposal:** T6, G19, T20 and G22 will have activities arising from the development occurring within their RPAs. My comments on these issues are as follows:

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- **New surfacing:** Various elements of new surfacing are indicated within the RPAs of T6, T20 and G22. In principle, the sub base for these areas of surfacing could be a cellular confinement system. This could negate the need for significant excavation and excessive disturbance to the RPAs of the nearby trees. The use of cellular confinement systems is supported in BS 5837:2012, together with bespoke suspended engineered solutions (paragraph 7.4.2.7). Provided the new surfacing is appropriately specified and the work proceeds with care, then I feel that the risk of implications for the nearby trees is likely to be relatively low. Full engineering details could be secured by way of a suitably worded planning condition and approved by the council before any construction activity occurs on site.

 - **New garage:** A small number of trees within group G19 will have incursions within their RPAs as a result of the position of a new garage. The RPA incursions are shown on the plan in Appendix 1. These are quite small and so I feel that this is unlikely to have significant implications for the closest nearby trees. The protective barriers around the trees will need to be set back to allow some room for the movement of materials and personnel around the new garage during its construction. The protective barrier positions around the trees are shown on the plan in Appendix 1. The area of the RPAs that is outside of the barriers will need to be covered in ground protection and this will need to be installed after the erection of the barriers, but before any clearance or construction work starts on site.

3.4 **Additional site issues**

3.4.1 **BS Category U trees normally removed for management reasons:** Category U trees are in such poor condition that they are considered unsuitable for retention. Therefore, these trees can be effectively discounted in the context of the planning process. On this site, I have assessed trees in group G23 as falling into Category U. Consequently, these trees are scheduled for removal for management reasons. As they are unsuitable for retention in the context of the current site use, I do not believe that their loss should be a consideration in respect of the current planning application.

3.4.2 **Tree protection during development:** A preliminary Arboricultural Method Statement is included in Section 5 and it details the various issues associated with successful tree protection in a development context on this site. If deemed appropriate by the council, this can be specifically referred to in a suitably worded planning condition attached to any subsequently issued planning consent.

4 SUMMARY OF THE IMPLICATIONS OF THE DEVELOPMENT ON TREES

- 4.1 **Summary:** Of the total of twenty four trees, groups and hedges surveyed, only sections of four hedges are scheduled to be removed to facilitate this development proposal. Additionally, four trees/groups will have activities arising from the development occurring within their RPAs. The hedge sections to be removed are generally quite short in length and where appropriate any implications could be mitigated with new planting. Therefore, any impact arising from the removal of this vegetation is likely to be quite limited. The incursions within RPAs of trees by the position of a garage are small in size and in principle any new surfacing proposed within RPAs could be achieved using a low invasive construction technique. Consequently, the risk of potential tree implications arising from these issues are likely to be quite low. Provided the tree protection measures set out in this report are realised and care is taken during the sensitive works within tree RPAs, then the proposal is acceptable from an arboricultural perspective.

5 PRELIMINARY ARBORICULTURAL METHOD STATEMENT

5.1 Tree protection issues

5.1.1 **Tree Protection Plan (TPP):** The plan in Appendix 1 is illustrative, but is based on the layout drawings and topographical survey provided. Therefore, all scaled measurements should be checked against the original design documents. The attached plan and all other information in this report should only be used for dealing with the tree protection issues and all other uses are prohibited, unless authorised by **ecourban** Ltd. All the existing trees will have been numbered, with any higher categories (A and B) highlighted in green and blue rectangles and any low categories (C and U) highlighted in grey and red respectively. The plan also shows the locations of the proposed protective measures and any vegetation to be removed is indicated with a red dashed outline. The TPP is an important document and a copy of it should be kept on site for reference whilst the development is under construction.

5.1.2 **Protective barriers:** The approximate location of the barriers is illustrated on the plan in Appendix 1 and information on barrier design based on BS 5837:2012 guidance is included in Appendix 3. The protective barriers will be erected before any materials or machinery are brought onto the site, and before any clearance or construction activities occur. With the exception of the barrier positions around trees/groups T6, T20 and G22 (see below), once the protective barriers have been positioned, these will stay in situ for the duration of the construction, unless previously agreed with the arboricultural consultant or council's tree officer. There will be no access into the protected areas and the storage of excavated debris and building materials will be prohibited, unless authorised by the arboricultural consultant, after discussion with the council's tree officer. No fires or fuel storage will be allowed within (or near to) protected areas under any circumstances.

5.1.3 **Temporary repositioning of barriers:** With regard to tree trees/groups T6, T20 and G22, the barriers around these trees encompass areas where new surfacing is indicated. The barriers in this location will be redeployed to the edge of the construction zone to allow this activity to commence and then returned to the positions indicated on the TPP once the work has been completed. However, the movement of the barriers will only occur immediately prior to the commencement of these tree sensitive works, so as to reduce the risk of any incidental construction related damage occurring to trees scheduled for retention.

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- 5.1.4 **Ground protection measures:** Where the positioning of tree protection barriers is not feasible due to the need for construction access, then ground protection measures will be needed to safeguard RPAs. The position of ground protection is shown on the plan included in Appendix 1, with guidance for ground protection design included in Appendix 4 and an helpful installation video for proprietary ground protection is available to view at <https://www.youtube.com/watch?v=QiaRgNUackY>. The ground protection will also be installed before any materials or machinery are brought onto the site and prior to any clearance or construction activities occurring. Again, once the ground protection has been positioned, it will stay in situ for the duration of the construction phase, unless previously agreed with the project arboricultural consultant or council's tree officer.
- 5.2 **Additional tree-related issues**
- 5.2.1 **Site supervision:** Site personnel will be properly briefed regarding the tree protection issues before any work starts, and the tree protection will be inspected periodically to ensure the retained trees are protected in accordance with this document and any conditions imposed by the council.
- 5.2.2 **Installation of new services or upgrading of existing provision:** Where practicable, all new services will be outside the protected areas indicated on the plan in Appendix 1, but where existing services within RPAs require upgrading or new provision is needed, great care will be taken to minimise any disturbance. Trenchless installation will be the preferred option, but if this is not feasible, any excavation will be carried out by hand in accordance with the guidelines set out in NJUG Volume 4 - Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.
- 5.2.3 **Material storage areas and site compounds:** All construction material storage areas, cement silos or cement mixing areas, fuel storage points and compounds for machinery etc. will be outside protected areas, unless otherwise agreed with the council.
- 5.2.4 **Contractors car parking, site offices and welfare facilities:** Whilst it is possible to have site offices and welfare facilities within RPAs, care is needed in their positioning and also in the connection of water, electricity and drainage to service them. Therefore, these will generally be sited outside the tree RPAs, unless agreed previously with the council. Contractor's car parking facilities will also be located away from retained trees.

5.2.5 **Tree/hedge works:** Any tree/hedge pruning or removal operations are set out in the tree schedule included in Appendix 2. Additionally, any vegetation scheduled for removal is also shown on the Tree Protection Plan included in Appendix 1.

5.2.6 **Planning, communication and preliminary timing of events:** It is not unusual for the details of timing of operations that could impact on important trees to only be finalised once planning consent has been given. Site managers, clearance and construction teams, and other important personnel are normally only appointed at this stage and it is these people who will be crucial in delivering the tree protection detailed in this report. My experience is that the pre commencement site meeting is critical in terms of avoiding damage to trees and this particular aspect, along with tree protection issues can be specifically referenced in a suitably worded planning condition imposed by the council. In the intervening time, I propose the following preliminary cascading timetable of events to help minimise any risk of impact on important trees. However, the following schedule may be modified at the pre-commencement meeting, subject to discussion with all parties and agreement with the council:

1. Pre-commencement site meeting
2. Extent of any arboricultural supervision agreed
3. Tree works undertaken
4. Protective barriers erected before any clearance or construction activities occur on site and notification to the council that this is in place
5. Ground protection installed before any clearance or construction activities occur on site and notification to the council that this is in place
6. Redeployment of tree protection barrier to edge of construction zones to allow new low invasive surfacing to be installed and barriers then returned to original positioning
7. Tree protection only removed at the end of the construction phase when there is no longer any risk to trees

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Date: **14 June 2022**

Appendix 1: Tree Protection Plan

1 A1 plan

Appendix 2: Tree Schedule and Inventory

Tree No.	Species	Ht (m)	Single stem dia. at 1.5m (cm)	Est. Dia. *	STEM DIAMETERS (MULTIPLE)								Branch spread (m)				Ht above ground (m)	Age class	Notes	Management proposals	BS cat	RPA area (m ²)	RPA radius (m)
					Multi stemmed trees with 1 - 5 stems (cm)					Multi stemmed trees with 1 - 5 stems combined (cm)	Multi stemmed trees >5 stems		N	E	S	W							
					1	2	3	4	5		Mean stem dia. (cm)	No. of stems											
G5	Fruit	7	-	*	15	17	-	-	-	23	-	-	-	3	3	4	3	MA	Small fruit trees.		C1	23	2.7
T6	Oak	23	191	-	-	-	-	-	-	-	-	-	12	13	14	11	4	OM	Veteran tree. <i>Inonotus dryadeus</i> fruit body west side lower stem. Some storm damaged limbs and deadwood in canopy.		A3	1650	15.0
H7	Blackthorn and hawthorn	4	10	* Avg at base	-	-	-	-	-	-	-	-	2	2	1	3	2	Y	Linear grouping of small trees/shrubs. Undermanaged hedging.	Remove hedge section (as shown on plan in Appendix 1).	C2	5	1.2
G8	Oak	23	125	* Lgst	-	-	-	-	-	-	-	-	12	12	-	11	5	M	Closely spaced offsite trees, no direct access to survey. Some crown asymmetry due to proximity.		A2	707	15.0
H9	Leyland cypress	9	15	* Avg at base	-	-	-	-	-	-	-	-	2	2	2	-	2	Y	Linear grouping of offsite trees, no direct access to survey. Unremarkable domestic conifer type planting.	Cut back as required for construction access.	C2	10	1.8

Appendix 2: Tree Schedule and Inventory

Tree No.	Species	Ht (m)	Single stem dia. at 1.5m (cm)	Est. Dia. *	STEM DIAMETERS (MULTIPLE)								Branch spread (m)				Ht above ground (m)	Age class	Notes	Management proposals	BS cat	RPA area (m ²)	RPA radius (m)
					Multi stemmed trees with 1 - 5 stems (cm)					Multi stemmed trees with 1 - 5 stems combined (cm)	Multi stemmed trees >5 stems		N	E	S	W							
					1	2	3	4	5		Mean stem dia. (cm)	No. of stems											
H10	Blackthorn and hawthorn	3	-	* Avg	-	-	-	-	-	-	8	8	2	2	1	2	n/a	MA/M	Linear grouping of small trees/shrubs. Undermanaged hedging.	Remove hedge section (as shown on plan in Appendix 1). Cut top and sides to form regular hedge shape.	C2	23	2.7
H11	Mixed species including goat willow, hawthorn and blackthorn	6	-	* Lgst	35	15	-	-	-	38	-	-	2	2	1	2	n/a	MA	Linear grouping of small trees/shrubs interspersed with bramble. Undermanaged hedging.	Remove hedge section (as shown on plan in Appendix 1). Cut top and sides to form regular hedge shape.	C2	66	4.6
T12	Oak	11	32	*	-	-	-	-	-	-	-	-	5	5	3	5	3	Y/MA	Some crown asymmetry.		B1	46	3.8
H13	Blackthorn and hawthorn	4	-	* Avg	-	-	-	-	-	-	6	9	2	2	-	2	n/a	Y	Linear grouping of small trees/shrubs interspersed with bramble. Undermanaged hedging.	Cut top and sides to form regular hedge shape.	C2	15	2.2

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Tree No.	Species	Ht (m)	Single stem dia. at 1.5m (cm)	Est. Dia. *	STEM DIAMETERS (MULTIPLE)								Branch spread (m)				Ht above ground (m)	Age class	Notes	Management proposals	BS cat	RPA area (m ²)	RPA radius (m)
					Multi stemmed trees with 1 - 5 stems (cm)					Multi stemmed trees with 1 - 5 stems combined (cm)	Multi stemmed trees >5 stems		N	E	S	W							
					1	2	3	4	5		Mean stem dia. (cm)	No. of stems											
T14	Oak	14	88	-	-	-	-	-	-	-	-	-	5	5	-	4	4	M	Offsite tree, limited access to survey. Influenced by proximity to adjacent tree. Some deadwood in canopy and dieback of branch extremities. Onset of decline.		B1	350	10.6
T15	Oak	21	121	-	-	-	-	-	-	-	-	-	8	10	-	9	4	M	Offsite tree, limited access to survey. Some crown asymmetry. Some deadwood and storm damage in canopy.		A1	662	14.5
T16	Oak	11	34	*	-	-	-	-	-	-	-	-	5	2	-	-	3	Y/MA	Small, offsite tree, no direct access to survey unbalanced.		C1	52	4.1
H17	Hazel and hawthorn	6	45	* Lgst	-	-	-	-	-	-	-	-	2	2	2	-	2	Y/MA	Linear grouping of small trees/shrubs interspersed with bramble. Undermanaged hedging.	Cut top and sides to form regular hedge shape.	C2	92	5.4

Appendix 2: Tree Schedule and Inventory

Tree No.	Species	Ht (m)	Single stem dia. at 1.5m (cm)	Est. Dia. *	STEM DIAMETERS (MULTIPLE)								Branch spread (m)				Ht above ground (m)	Age class	Notes	Management proposals	BS cat	RPA area (m ²)	RPA radius (m)
					Multi stemmed trees with 1 - 5 stems (cm)					Multi stemmed trees with 1 - 5 stems combined (cm)	Multi stemmed trees >5 stems		N	E	S	W							
					1	2	3	4	5		Mean stem dia. (cm)	No. of stems											
G18	Field maple	13	-		50	22	18	10	-	58	-	-	-	3	6	1	3	MA/M	Linear grouping of boundary trees with similar attributes. Some multi stemmed with poor form due to proximity to one another. Not all trees shown on land survey.		C2	154	7.0
G19	Hawthorn	7	48	* Lgst	-	-	-	-	-	-	-	-	-	4	5	2	3	M	Linear grouping of small sized boundary trees, some declining. Limited access to survey due to brambles.		C2	104	5.8
T20	Oak	16	94	-	-	-	-	-	-	-	-	-	7	9	9	4	M	Boundary tree, some crown asymmetry. Some deadwood in canopy.		A1	400	11.3	
G21	Hawthorn	8	-	* Lgst	-	-	-	-	-	-	12	7	3	4	3	3	3	MA/M	Clump of small trees. Not all trees shown on land survey.		C2	46	3.8
G22	Mainly hawthorn	7	-	* Lgst	-	-	-	-	-	-	16	8	-	0	3	2	3	MA/M	Linear grouping of small sized boundary trees, some declining. Limited access to survey due to brambles. Not all trees shown on land survey.		C2	93	5.4

Appendix 2: Tree Schedule and Inventory

Tree No.	Species	Ht (m)	Single stem dia. at 1.5m (cm)	Est. Dia. *	STEM DIAMETERS (MULTIPLE)								Branch spread (m)	Ht above ground (m)	Age class	Notes	Management proposals	BS cat	RPA area (m ²)	RPA radius (m)				
					Multi stemmed trees with 1 - 5 stems (cm)					Multi stemmed trees with 1 - 5 stems combined (cm)	Multi stemmed trees >5 stems										N	E	S	W
					1	2	3	4	5		Mean stem dia. (cm)	No. of stems												
G23	Oak	21	121	* Lgst	-	-	-	-	-	-	-	-	6	7	8	5	MA/M	Central tree historic stem failure and advanced decay in remaining portion of trunk. Trees east and west severely unbalanced and/or decayed with limb failure.	Fell and leave high stumps for habit/ conservation value.	U	662	14.5		
H24	Hazel and hawthorn	6	-	* Avg	-	-	-	-	-	-	4	8	1	1	1	1	Y/MA	Linear grouping of small trees/shrubs. Declining. Undermanaged hedging.	Remove hedge sections (as shown on plan in Appendix 1). Cut top and sides to form regular hedge shape.	C1	6	1.4		

Appendix 2: Tree Schedule and Inventory

Abbreviations:

Abbreviations	Meaning	Abbreviations	Meaning	Abbreviations	Meaning
T	Individual tree	M	Mature	>	More than
G	Groups of trees	MA	Maturing	<	Less than
H	Hedge	Y	Young	Lgst	Largest tree diameter within group
W	Woodland	RPA	Root Protection Area	Avg	Average tree diameter within group

Tree Schedule Notes:

Tree number	Assigned during the site visit and also referenced on the plan in Appendix 1.
Species	Common name and referenced to scientific name in the above list. Where I have some doubt over the actual tree species, the genus will have been noted followed by sp. Where trees are numerous and present in groups, not every individual species may have been noted.
Height	Measurement of total tree height using a laser hypsometer to nearest metre or where clear line of site is not possible then an estimate based on interpolation of heights of nearby measured trees.
Stem diameters	Measurement of stem diameter either at 1.5m above ground (or in accordance with BS guidance where trees have multiple stems) with a forester's girth measuring tape. Diameters followed by asterisk symbol indicate estimated diameters because of access difficulties, presence of ivy or other obstructions. Where trees are present in a group, the tree with the largest stem diameter within the group will have been measured/estimated.
Est. Dia.	Estimated diameters due to access restrictions are indicated with an asterisk
Branch spread	Where appropriate and where ground conditions allow, an estimate of the crown spread at each of the cardinal compass points. Where only part of the site is affected by trees, measurement may be in one or two directions only
Existing height above ground level	Distance in metres to first significant branch or canopy or a height above which crown lifting operations would not be appropriate
Age class	Simplistic estimate of tree age in one of FOUR categories (young, maturing, mature or over mature).



Appendix 2: Tree Schedule and Inventory

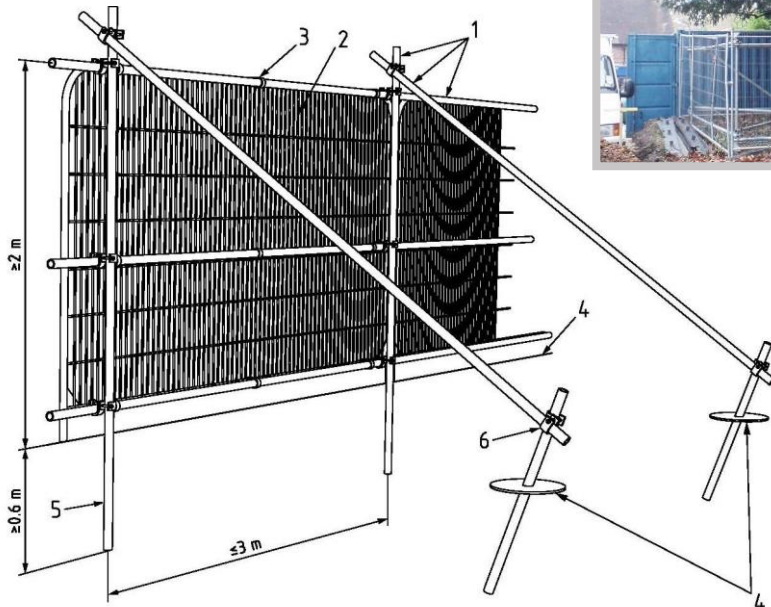
Notes	Although this document is not intended to be a full and detailed report on tree health and safety, any significant structural defects or physiological conditions have been identified where these were visible. Where no entries are recorded, this indicates no observable issues were identified. Where there is restricted access to the base of a tree, its attributes are assessed from the nearest point of access. Climbing inspections are not carried out during a walkover tree survey and, if heavy ivy is present, tree condition is assessed from what can be seen from the ground.
Management proposals	The inspection of all trees was of a preliminary nature and only defects visible from the ground have been identified. Each individual tree may not have been inspected closely because of access difficulties and only defects visible from the inspection point have been identified. Monitoring may be indicated where tree risk can be adequately managed by increased frequency of site inspections. Further investigation may be indicated where additional data may be required beyond a purely visual assessment. However, a full post development tree inspection is recommended to establish that the trees retained during construction pose acceptable levels of risk once the development has been completed.
BS 5837:2012 Category	Either U, A, B or C based on the BS 5837:2012 guidance.
RPA and RPA radius	RPA and RPA radius calculations have been undertaken in accordance with the guidance set out in BS 5837:2012.

Tree Inventory:

Common Tree Names	Scientific Tree Names		Common Tree Names	Scientific Tree Names
Atlas cedar	<i>Cedrus libani atlantica</i>		Hawthorn	<i>Crataegus monogyna</i>
Beech	<i>Fagus sylvatica</i>		Hazel	<i>Corylus avellana</i>
Blackthorn	<i>Prunus spinosa</i>		Lawson cypress	<i>Chamaecyparis lawsoniana</i>
Field maple	<i>Acer campestre</i>		Leyland cypress	x <i>Cupressocyparis leylandii</i>
Goat willow	<i>Salix caprea</i>		Oak	<i>Quercus robur</i>
Atlas cedar	<i>Cedrus libani atlantica</i>			

Appendix 3: Illustrative Specification for Tree Protection Barriers



Key

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

Illustration taken from British Standard 5837 (2012): Trees in relation to design, demolition and construction – Recommendations.

The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts. The vertical tubes should be spaced at a maximum interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed.

– BS 5837:2012

Ref: Tree Protection Barriers (Type 1)	Drawing No. TPB1
Scale: N/A	

Appendix 4: Illustrative Specification for Ground Protection in RPAs



New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

NOTE The ground protection might comprise one of the following:

a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;

b) for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards, placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;

c) for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

- BS 5837:2012

Ref: Ground Protection	Drawing No. GP1
Scale: N/A	

Appendix 5: BS 5837:2012 – Assessment Categories

TREES FOR REMOVAL				
Category and definition	Criteria			Identification on plan
<p><u>Category U</u></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"> • 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 <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve.</i></p>			RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria — Subcategories			Identification on plan
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
<p><u>Category A</u></p> <p>Trees of high quality with an estimated remaining life expectancy of at least 40 years</p>	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	GREEN
<p><u>Category B</u></p> <p>Trees of moderate quality 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	BLUE
<p><u>Category C</u></p> <p>Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm</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	GREY

Appendix 6: Qualifications and Experience of Barrie Draper

- 1** **Qualifications:** I have a BSc degree (with Honours) in Arboriculture from the University of Central Lancashire. I also hold a BTEC Higher National Diploma (HND) in Forestry (Lowland Management), the Arboricultural Association's Technician's Certificate in Arboriculture (Tech Cert), the Royal Forestry Society's Certificate in Arboriculture (Cert Arb) and the National Examinations Board Certificate in Forestry.

- 2** **Career experience:** I began my arboricultural career in 1993 as an arborist with Portsmouth City Council. During my time with the council I worked for both the direct labour organisation and for a private contractor where I obtained valuable hands on experience in all aspects of arboriculture. From 1999 to 2002 I was employed as Senior Arborist by Parchment Housing Group, a housing association based near Portsmouth. I managed the Groups' tree stock on their behalf, carrying out tree inspections and practical management operations. I have also worked in local government, spending time with Thurrock Borough Council in Essex where I was the Tree and Landscape Officer, and with Winchester City Council, where I was Arboricultural Officer for a period of 2 years. During my time working in local government I was responsible for making Tree Preservation Orders, administering applications to work on protected trees and advising on planning applications when trees were considered material constraints on development. Working within a planning environment allowed me to gain valuable experience in the management of trees in development situations and an understanding of the planning process and how it relates to trees. From January 2005 I worked for Barrell Tree Consultancy Ltd advising clients on a wide range of tree related issues. I left the company in September 2008 and set up ecourban ltd.



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