

POUND NURSERY
ROUNDSTONE LANE
ANGMERING

**ARBORICULTURAL
IMPACT
ASSESSMENT**
(INC. TREE SURVEY &
METHOD STATEMENT)

PREPARED BY
ACD
ARBORICULTURE

ACD

Ecology

Arboriculture

Landscape Architecture

FOR



BARRATT
HOMES

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1. EXECUTIVE SUMMARY

- 1.1. The proposed layout is in line with recommendations of BS5837 (BSI 2012 British Standards Institute). Adequate protection can be provided to ensure all retained trees are protected throughout development.
- 1.2. The development proposals for the site are residential in nature. The existing Wholesale Plant Nursery is to be replaced with forty-six residential dwellings. A revised site entrance from Roundstone Lane is proposed approximately ten metres to the north of the existing entrance. Trees to be removed are limited to low quality trees, which have reduced life expectancy and current landscape value.
- 1.3. Site supervision will be restricted to a pre-start meeting prior to demolition/construction phase to review tree protection measures.
- 1.4. The relationship between the buildings and retained trees is sustainable and should not result in any circumstances that could result in unreasonable pressure of tree surgery requests from future occupants.
- 1.5. The arboricultural method statement and tree protection plan include details of all tree protection measures required, including provision for site supervision where required.
- 1.6. Any fencing and other tree protection measures should be erected after tree surgery but before any demolition or construction contractor enter the site, and before any soil stripping takes place.
- 1.7. There must be no changes in levels, service routing, machine activity, storage of materials or site hut positioning within areas to be protected and the protective fencing must remain in position for the duration of the construction process.

2. INTRODUCTION

- 2.1. Barratt Homes instructed ACD Arboriculture in October 2014 to prepare the following arboricultural report which contains impact assessment and method statement elements.
- 2.2. Following the recommendations of BS5837:2012 Trees in relation to design, demolition and construction- Recommendations (BSI 2012 British Standards Institute), this report includes the necessary information to support a planning application. It demonstrates that the impact, both direct and indirect, of the proposed development within the site, has been assessed and where appropriate, mitigation and tree protection proposed.
- 2.3. The implementation of any protection methods and special construction details recommended within this report are critical for ensuring the retained trees are successfully protected through the construction process and must be implemented prior to any work on site.
- 2.4. This assessment is based upon the supplied layout drawing reference plan Planning Layout dated October 2014 and topographical site survey reference plan 36RS001 dated December 2010.
- 2.5. The controlling authority is Arun District Council, who can be contacted at:

Arun Civic Centre, Maltravers Rd, Littlehampton, West Sussex BN17 5LF (01903) 737756.
- 2.6. This assessment considers the impact of the development on the constraints posed by the retained trees (both beneath ground: the root protection area (RPA), and above ground: the canopy).
- 2.7. Direct impact from development comes in six main forms:
 - 1) Surface installation within RPAs
 - 2) Root loss from excavation for foundations, drainage and other utilities within RPAs
 - 3) Soil stripping, removal and level changes within RPAs
 - 4) Excessive access facilitation pruning to retained trees
 - 5) Soil compaction from storage and vehicle movements within RPAs
 - 6) Soil contamination
- 2.8. Indirect impact can come from changes to the site hydrology, future pressure to prune or fell, failure of trees exposed by removal of neighbouring trees, and other environmental changes which can take several years to manifest.

- 2.9. The RPA for each tree represents a minimum area in m² that should be left undisturbed around each retained tree. This is initially represented by a circle but is often adjusted to account for constraints to root growth within the site (primarily highways and buildings). It is therefore important to ensure the protection of trees both above and below ground. Recommendations are provided in the British Standard as to the protection of existing trees before, during and after development. This is achieved by ensuring the tree protection plan and arboricultural method statement are implemented before any commencement on site.
- 2.10. Submissions from others will cover the nature and detail of the redevelopment which is residential in character



Figure 1 Site overview

3. SCOPE AND METHOD OF SURVEY

- 3.1. The survey schedule can be found at Appendix 2.
- 3.2. The survey has been carried out following the recommendations of The British Standard and the trees are assessed objectively and without reference to any site layout proposals. Categories are based on each tree's health and condition, together with an assessment of its life expectancy if its surroundings were to be unchanged.
- 3.3. No discussions took place between the surveyor and any other party.
- 3.4. The reference numbers of surveyed trees and groups of trees are shown on the draft tree constraints plan, which is appended to this report and based on the supplied survey drawing. The prefix G has been used to indicate a group of trees, and H for hedges. Stem locations within groups may be estimated, and indicative of canopy only.
- 3.5. The tree survey was carried out from ground level only, with the aid of binoculars as necessary, following the VTA tree assessment method (Mattheck and Breloer 1995 HMSO)
- 3.6. Where trees are located on neighbouring land an estimated appraisal has been made of their quality and dimensions. All estimated dimensions are noted in the comments.
- 3.7. Where stems or branches are obscured by ivy or other materials a full assessment of those parts will not be possible.
- 3.8. Tree heights were measured with a clinometer, or estimated in relation to those measured with the clinometer. If individual tree heights are of particular concern, for example in shading calculations, then they are measured using a clinometer.
- 3.9. Trunk diameters were measured or, where inaccessible, estimated. Single stemmed trees are measured at 1.5m above ground level.
- 3.10. Tree canopies, where markedly asymmetrical, were measured (or estimated by pacing) in four directions using a laser measure. Symmetrical canopies are measured in one direction only, with dimensions in the remaining directions assumed to be similar. For the canopies of groups of trees the maximum radius for each compass point is measured (more complicated groups will have further notes taken and an accurate representation will be shown on the plan).

4. TREES AND SITE OVERVIEW

- 4.1. For individual details of the trees see the survey at appendix 2.
- 4.2. The site covers a single parcel of land with an area of approximately 1.6 hectares. Historically used as a wholesale plant nursery, the site is covered in associated nursery beds, greenhouse and areas of hard surfacing.
- 4.3. No soil assessment was carried out at the time of surveying the tree stock. According to the National Soil Resources Institute online mapping service at <http://www.landis.org.uk/soilscapes> the soil on-site is expected to be: freely draining slightly acid loamy soils.
- 4.4. A total of eight individual trees with stem diameters of 75mm and above at 1.5m from ground level were surveyed and recorded. In addition five boundary groups were surveyed and recorded.
- 4.5. No individual trees were surveyed as category 'A' trees. However, Hybrid Black Poplar boundary group no. G5 are recorded as category 'A'. Trees of high value and equality they are the predominant specimens on the site and are readily visible in all directions.
- 4.6. Five individual trees and two groups were surveyed and recorded as category 'B' trees. Predominately made up of the individuals within groups nos. G3 and G4 on the northern and southern boundaries respectively, these trees are readily visible from surrounding views and provide dense screening of the site. Category 'B' trees are those that might be included in the high category, but are downgraded because of impaired condition (e.g. the presence of significant though remediable defects, including unsympathetic past management and minor storm damage).
- 4.7. There are three individual and two groups of trees on or immediately adjacent to the site which are surveyed as category 'C' trees. These are category 'C' either due to their low inherent value due to low overall physiological vigour or structural faults or their diameter is 150mm or less at 1.5m above ground level.
- 4.8. Where there are category 'C' trees near the boundaries of the site, it is recommended that these are retained where they have landscape value as screening.
- 4.9. The below ground constraints posed by the trees are represented by Root Protection Areas (RPAs) and shown on the Tree Constraints Plan. The RPA of a tree is calculated as advised by BS5837:2012. For a tree growing in an apparently unconstrained rooting environment a circular RPA is shown. When constraints to root growth appear to be present the RPA is adjusted to reflect the likely root growth pattern.

5. ARBORICULTURAL IMPACT ASSESSMENT

5.1. OVERVIEW OF PROPOSED DEVELOPMENT

5.1.1. The development proposals for the site are residential in nature. The existing Wholesale Plant Nursery is to be replaced with forty-six residential dwellings. A revised site entrance from Roundstone Lane is proposed approximately ten metres to the north of the existing entrance. Trees to be removed are limited to low quality trees, which have reduced life expectancy and current landscape value.

5.2. TREES PROPOSED FOR REMOVAL & SURGERY

5.2.1. The following trees are proposed for removal:

No.	Name	BS Cat
G1	Mixed species	C
G2	Mixed species	C

5.2.2. Mixed species groups no. G1 and G2, are of low quality & value which have only limited wider landscape significance. To accommodate the proposed entrance roadway and levels requirement these trees will need to be removed. Whilst providing some element of boundary screening, they have a very limited useful life expectancy, being predominately English elm, and would require replacing in the near future, regardless of any development proposals. Therefore it is proposed to remove them and replace them within the landscape replanting proposals. It is proposed to remove and replace these individuals with more suitable species ensuring a continued long term contribution to the overall character of the area.

5.2.3. All individual trees of moderate/high quality and value are to be retained. Every effort has been made to ensure the development proposals incorporate these trees into the design.

5.3. DEMOLITION, SITE CLEARANCE & ARCHAEOLOGY

5.3.1. To ensure damage does not occur to trees highlighted for retention, tree protection fencing must be erected before ANY plant/vehicles entering site whatsoever. This should be subject to a pre-commencement site meeting between the developer, their project arboriculturist and a representative from the Local Authority.

5.3.2. No special demolition procedures need be observed on this site, other than respecting the tree protection fencing.

5.4. PROTECTION FENCING

5.4.1. Figure 2 of the British Standard recommends a standard fencing design for tree protection. This is a weld mesh panel design, mounted upon a well-braced scaffold framework. This is perfectly adequate for this site and all the retained trees can be suitably protected by its erection before any works start on site whatsoever.

5.1. CONSTRUCTIONS AND PERMANENT HARD SURFACES WITHIN RPAS

5.1.1. The constructions of all proposed buildings are sited outside the RPAs of all retained trees.

5.1.2. In section 7.4 of the British Standard, permanent hard surfacing within the RPAs of retained trees is addressed, and recommendations made.

5.1.3. The construction space required for the proposed roadway encroaches into the RPAs of the groups on the southern boundary; these incursions amount to less than 1% of total area of the RPAs of individual trees within the group. The limited areas of incursion have been of historical use for the nursery either in the form of the existing glass house or planting beds which have been routinely cultivated. It is reasoned that whilst some rooting activity is expected on the periphery of the RPAs it is unlikely to be significant. The trees are of good physiological condition and the trees should be able to compensate for the small loss of footing area. To ensure minimal impact the excavations shall be carried out by hand manually and under the on-site supervision of the project arboriculturist.

5.2. SHADE AND FUTURE PRESSURE TO PRUNE

5.2.1. The site layout has been assessed in terms of shading and future pressure to prune. In terms of the orientation of the site, and the relationship between the proposed buildings and the retained trees, the juxtaposition is viable for long-term tree retention and not dissimilar to many other relationships between trees and buildings in the surrounding area of properties. It is considered unlikely that there would be any undue pressure to remove trees, or excessively prune from any future occupants.

5.3. SERVICES

5.3.1. Full details of the service and utility provisions for the site remain to be finalised. However, there is adequate space for utility trenches to access the site whilst avoiding RPAs and exclusion zones.

5.3.2. It is fundamental to tree protection that infrastructure design is sensitively approached, as trenching close to trees may damage roots and affect tree health and stability. Details of services have not been provided at the time of writing. The Tree Protection Plan, showing the constraints posed by retained trees will be passed to the infrastructure engineers to inform their design, ensuring that all services avoid areas of potential conflict. As per BS5837:2012 Figure 1, once further details become available as part of the detailed/technical design for the site, the TPP and AMS may need to be revised to incorporate service details for inclusion in the tender documentation.

6. ARBORICULTURAL METHOD STATEMENT

TO BE READ INCONJUNCTION WITH THE APPENDED TREE PROTECTION PLAN REF: PRI19528-03

6.1. PHASING OF OPERATIONS, SITE SUPERVISION & MONITORING

6.1.1. Given the small nature of this development and minimal tree protection measurements required to implement the design, frequent site monitoring visits are not considered necessary. However, input and supervision from the project arboriculturist will be required at the following stages:

- 1) Pre-start site meeting with groundwork contractors, site manager and LPA arboricultural officer/landscape officer.
- 2) Excavations for roadway adjacent to southern boundary trees

6.1.2. Supervision is also required should any unplanned access and/or work be required in the construction exclusion zone.

6.1.3. Supervision will require the arboriculturist to be present throughout the task, to ensure all the arboricultural objectives are met. If the task is to take a long period of time, provided the arboriculturist is satisfied, and after an initial 'tool-box talk', the supervision may be reduced to telephone contact between the site foreman/contractor and arboriculturist.

6.2. TREE PROTECTION AREAS

6.2.1. Based on tree survey data, tree protection areas have been determined for every retained tree. These areas are designed to protect at least a functional minimum of tree root mass in order to ensure that the trees survive the construction process.

6.2.2. Some trees on this site are subject to statutory protection by Tree Preservation Order. Damaging them is a criminal offence and is also contrary to planning conditions that, if breached, could lead to all work on site being stopped by the local authority.

6.2.3. It is the responsibility of everyone engaged in the construction process to respect the tree protection measures and observe the necessary precautions within and adjacent to them.

6.2.4. Inside the exclusion area of the fencing, the following shall apply:

- No mechanical excavation whatsoever
- No excavation by any other means without arboricultural site supervision
- No hand digging without a written method statement having first been approved by the project arboriculturist.
- No lowering of levels for any purpose (except removal of grass sward using hand tools)
- No storage of plant or materials
- No storage or handling of any chemical including cement washings
- No vehicular access
- No fire lighting

6.3. TREE PROTECTION FENCING

6.3.1. The tree protection plan (see the latest revision of: PRI19528-03) shows the alignment of tree protection fencing (TPF), which is to be installed prior to any of the following taking place:

- Demolition
- Plant and material delivery
- Soil stripping
- Utility installation
- Construction works
- Landscaping

6.3.2. Stages for installation of TPF:

- 1) Hand clearance of any vegetation to allow clear working access.
- 2) Setting out of fencing points
- 3) Fencing erected
- 4) Site meeting with project arboriculturist to 'sign-off' tree protection fencing.
- 5) Site accessible to demolition/construction traffic

6.3.3. Once erected, all TPF will be regarded as sacrosanct, and will not be removed or altered without prior recommendation by the project arboriculturist and approval of the local planning authority.

6.3.4. The typical TPF construction is suitable for areas of high intensity development, and shall comprise of interlocking weld-mesh panels, well braced to resist impacts by attachment to a scaffold framework that is set firmly into the ground. A detailed specification can be found on the TPP.

6.3.5. If any alternative method of barrier construction is proposed, consultation with the project arboriculturist will be obtained to clarify the efficacy of the revised design prior to informing the local planning authority and obtaining their consent.

6.4. SITE STORAGE, PARKING, WELFARE FACILITIES, ETC.

6.4.1. The site will require provision for; site storage, contractor parking, welfare facilities, temporary services/drainage, material drop of points, etc.

6.4.2. No details of these provisions are available at the time of writing of this report.

6.4.3. None of the above provisions will be sited within RPAs of retained trees without the input or the project arboriculturist and the consent of the Local Authority.

6.5. TREE SURGERY AND REMOVAL

6.5.1. Tree surgery works are not anticipated at the time of writing this report; however should surgery works be required, it will be submitted to and approved by The Council before being implemented on-site.

6.5.2. All trees to be removed are indicated on the TPP.

6.5.3. All work will be carried out in accordance with BS3998 (BSI 2010 British Standards Institute) industry best practice and in line with any works already agreed with the Council.

6.5.4. The Tree Surgeon shall ideally be chosen from The Arboricultural Association's Approved Contractor list. All work shall be undertaken at the appropriate time and with the consent and approval of the Site Agent.

6.5.5. The statutory protection afforded by the Wildlife and Countryside Act (1981) and Countryside and Rights of Way Act (2000) will be adhered to. If further advice is required, particularly if bats are discovered during tree work, it will be obtained from Natural England or other competent persons and recommendations adhered to.

6.5.6. The stumps of any trees removed from within the Construction Exclusion Zone or the RPAs of retained trees will be either; cut flush to ground level and left in situ or ground out using a stump grinder. They will not be winched out.

6.5.7. All operations shall be carefully carried out to avoid damage to the trees being treated or neighbouring trees. No trees to be retained shall be used for anchorage or winching purposes.

6.6. SOFT LANDSCAPING

6.6.1. All landscaping and associated ground preparation within exclusion zones will be carried out sensitively to ensure root damage is mitigated as much as is practicable. At no time is any heavy plant to be used within any protected area. Removal of existing vegetation will be carried out by hand, turf may be removed using a mechanical turf stripper or by hand.

Turfing

6.6.2. Stages for turfing gardens and open spaces:

- 1) No plant/machinery to be used in the area for whatever reason
- 2) Remove TPF to allow access to area.
- 3) Do not reduce any high spots or excavate in any way.
- 4) Existing poor quality turf may be removed with a turf stripper.
- 5) Use good quality top-soil to level any low-lying areas and hollows, and provide a fine tilth to lay turf on. This imported soil must not result in a level increase of more than 100mm in any area.
- 6) Import turves by hand in wheelbarrow
- 7) Lay turves

Planting

6.6.3. Should the soil be compacted or have a poor structure that may hinder the development of any new planting, soil decompaction techniques may be used upon consultation with the project arboriculturist.

6.6.4. Stages for planting within tree protection areas:

- 1) No plant machinery to be used in the area for whatever reason
- 2) Remove TPF to allow access to area.
- 3) Remove existing vegetation by hand, turf may be removed using a mechanical turf stripper.
- 4) Do not reduce any high spots or excavate in any way.
- 5) Import good quality top-soil by hand (with wheelbarrow) into area.
- 6) Level to a depth of no more than 100mm with hand tools
- 7) Dig individual planting pits for each plant by hand (including hedging which must not be trench planted)
- 8) Any mulch should also be imported and spread by hand.

6.6.5. No works will be carried out within any protected areas if the soil moisture is of a level likely to allow compaction to occur.

6.7. INSTALLATION OF UNDERGROUND SERVICES

6.7.1. Mechanical trenching for the installation of underground apparatus and drainage severs any roots present and can change the local soil hydrology in a way that adversely affects the health of the tree. For this reason, particular care should be taken in the routeing and methods of installation of all underground apparatus. Wherever possible, apparatus should be routed outside RPAs. Where this is not possible, it is preferable to keep apparatus together in common ducts. Inspection chambers should be sited outside the RPA.

6.7.2. Where underground apparatus is to pass within the RPA, detailed plans showing the proposed routeing should be drawn up in conjunction with the project arboriculturist. In such cases, trenchless insertion methods should be used: Microtunnelling, Surface-launched directional drilling, Pipe ramming or Impact moling (see BS5837:2012 Table 3), with entry and retrieval pits being sited outside the RPA. Provided that roots can be retained and protected, excavation using hand-held tools might be acceptable for shallow service runs. If this is the case, the following methodology must be followed:

6.7.3. Stages for installing services by hand within tree protection areas:

No plant machinery to be used in the area for whatever reason

- 1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work
- 2) Remove just enough tree protection fencing to allow access to area and facilitate trenching
- 3) Remove any surface vegetation or existing hard surfaces using hand tools
- 4) Using an air-pick excavate the trench, keeping to minimum dimensions required
- 5) Roots occurring in clumps of 25 mm diameter and over are encountered they will be retained, and kept damp by covering with hessian (re-wetted as required). If required, these should be severed only following consultation with an arboriculturist, as such roots might be essential to the tree's health and stability
- 6) Feed in services.
- 7) Back fill trench with 200-300mm depth of excavated soil, or a mixture of excavated and imported top-soil to BS3882 (BSI 2007 British Standards Institute), firming down with heels
- 8) Repeat step 7 until trench is filled
- 9) Re-erect tree protection fencing as per approved plan

6.7.4. The method of excavation above, for trenching within RPA's, is using air excavation. This tool utilises compressed air to remove soil from around tree roots causing minimal damage and can be run off a typical site compressor. ACD can provide details of contractors supplying air excavation services if required.

6.7.5. Alternatively trenchless technology, such as thrust boring can be used in some instances and is particularly effective as it can pass directly under the tree, at a depth which is likely to avoid almost all impact on roots of the subject tree. As no access/thrust pits will be located within the RPAs of the subject trees, the need for arboricultural supervision is limited.

6.8. EXCAVATION WITHIN RPAS

6.8.1. Stages for excavation within RPAs:

- 1) Contact project arboriculturist to hold pre-start site meeting, 'toolbox' talk and supervise the operation.
- 2) Remove TPF to allow access to area (if required).
- 3) Identify sensitive area.
- 4) Remove hard surface if necessary (see relevant section of this report).
- 5) Excavate with no-tines bucket, or by hand, under close supervision.
- 6) If roots are found, clear by hand around them.
- 7) If roots found are greater than 25mm diameter then cover with damp hessian and keep moist until backfilled. If excavation requires all roots to be severed then proceed as below.
- 8) Cleanly sever roots with bypass secateurs, loppers or pull cut saw at right angles to root. Avoid tearing or ripping the root.
- 9) Backfill as soon as possible to cover cut root ends.

24.2. If, for whatever reason, the project arboriculturist feels that a tree's stability has been compromised during the operation, then the LPA shall be contacted and the arboricultural officer (or appropriate landscape officer) notified. A decision can then be made as to the best way forward.

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23rd October 2014

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APPENDIX 1: TREE CATEGORIES EXPLAINED

BS5837:2012 Table 1 -Cascade chart for tree quality assessment			
Category and definition		Criteria (including subcategories where appropriate)	
Trees unsuitable for retention (see Note)			
Category U 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		*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 <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>	
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation
Trees to be considered for retention			
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years		Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years		Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	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
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm		Trees with material conservation or other cultural value	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

APPENDIX 2: TREE SURVEY SCHEDULE

CLIENT: Barratt Homes
SITE: Pound Nursery, Roundstone Lane, Angmering
DATE: December 2010

SURVEYOR: A Bigg

TAGGED? No

TREE SURVEY SCHEDULE

No.	Name	Height (Crown clearance)	Dia (No. of stems)	Canopy spread N E S W				Age class	Life exp	Phys Cond	Comments	BS Cat
T1	Silver Birch (<i>Betula pendula</i>)	4 (0.5)	160 (1)	1	1	1	1	Y	20-40	G	Small self-seeded specimen of little potential. Recommendations: None.	C1
T2	Maritime Pine (<i>Pinus pinaster</i>)	12 (0.5)	500 (MS)	2	4	4	6	SM	20-40	G	Dominant off-site specimen, one-sided canopy overhanging proposed site. Recommendations: None.	B2
T3	Maritime Pine (<i>Pinus pinaster</i>)	5 (0.5)	500 (MS)	2	4	4	6	SM	20-40	G	Dominant off-site specimen, one-sided canopy overhanging proposed site. Recommendations: None.	B2
T4	Silver Birch (<i>Betula pendula</i>)	7 (2)	100 (1)	3	2.5	2.5	1	Y	20-40	G	Tree of low quality but of moderate value. Of increased landscape value if boundary screening removed. Recommendations: None.	C2
T5	Scots Pine (<i>Pinus sylvestris</i>)	14 (5)	310 (1)	6	3	3.5	4	SM	20-40	G	Component of internal garden group, fair tree of moderate quality and value. Recommendations: None.	B2
T6	Scots Pine (<i>Pinus sylvestris</i>)	12 (5)	180 (1)	2	1.5	1.5	1	SM	20-40	G	Component of internal garden group, of low quality but of moderate value. Recommendations: None.	C2
T7	Maritime Pine (<i>Pinus pinaster</i>)	12 (5)	410 (1)	3.5	4	4	2.5	SM	20-40	G	Component of internal garden group, fair tree of moderate quality and value. Leaning South. Recommendations: None.	B2
T8	Scots Pine (<i>Pinus sylvestris</i>)	14 (5)	280 (1)	5	1	2	3	SM	20-40	G	Component of internal garden group, fair tree of moderate quality and value. Leaning South. Recommendations: None.	B2
G1	English Elm, Beech (<i>Ulmus procera</i> , <i>Fagus sylvatica</i>)	8 (1)	200 (1)	3	3	3	3	Y	20-40	G	Mixed species group growing on boundary. Of low quality but moderate value as boundary screening. Understorey of dead and dying English elm Recommendations: None.	C2
G2	Common Alder (<i>Alnus glutinosa</i>)	6 (1)	200 (1)	3	3	3	3	SM	20-40	G	Of low quality but moderate value as boundary screening. Recommendations: None.	C2

Notes: **Dia (stems):** trunk diameter in mm at 1.5m above ground level (number of stems) | **HT (crown):** Tree height (crown clearance) | **Life stage:** **Y:** Young (obviously planted within the last three years (unless as a heavy or extra-heavy standard)). **SM:** Semi mature (recently planted and yet to attain mature stature; up to 25% of attainable age.). **EM:** Early mature (almost full height, crown still developing and seed bearing; up to 50% of attainable age.). **M:** Mature (full height, crown spread, seed bearing; over 50% of attainable age.). **OM:** Over mature (full size, die-back, small leaf size, poor growth extension.). | **FSB:** First significant branch (& compass bearing) | **ERC:** Expected remaining contribution in years- <10, 10+, 20+, 40+ (assuming that there will be no physical changes to its immediate environment.) | **BS Category:** Refer to appendix 1 of this report or BS5837:2012 Table 1 for detailed descriptions.

CLIENT: Barratt Homes
SITE: Pound Nursery, Roundstone Lane, Angmering
DATE: December 2010

SURVEYOR: A Bigg

TAGGED? No

No.	Name	Height (Crown clearance)	Dia (No. of stems)	Canopy spread N E S W				Age class	Life exp	Phys Cond	Comments	BS Cat
G3	Lawson Cypress (<i>Chamaecyparis lawsoniana</i>)	14 (1.5)	500 (MS)	3	3	3	3	M	20-40	G	Mixed species group growing on boundary. Recommendations: None.	B2
G4	Lawson Cypress (<i>Chamaecyparis lawsoniana</i>)	16 (0.5)	450 (1)	3	3	3	3	M	20-40	G	Off-site boundary group with meshing crowns forming single linear group. Recommendations: None.	B2
G5	Hybrid Black Poplar (<i>Populus serotina</i>)	17 (3)	450 (1)	3.5	3.5	3.5	3.5	M	>40	G	Dominant specimen growing on boundary. Recommendations: None.	A2

Notes: **Dia (stems):** trunk diameter in mm at 1.5m above ground level (number of stems) | **HT (crown):** Tree height (crown clearance) | **Life stage:** **Y:** Young (obviously planted within the last three years (unless as a heavy or extra-heavy standard)). **SM:** Semi mature (recently planted and yet to attain mature stature; up to 25% of attainable age.). **EM:** Early mature (almost full height, crown still developing and seed bearing; up to 50% of attainable age.). **M:** Mature (full height, crown spread, seed bearing; over 50% of attainable age.). **OM:** Over mature (full size, die-back, small leaf size, poor growth extension.). | **FSB:** First significant branch (& compass bearing) | **ERC:** Expected remaining contribution in years- <10, 10+, 20+, 40+ (assuming that there will be no physical changes to its immediate environment.) | **BS Category:** Refer to appendix 1 of this report or BS5837:2012 Table 1 for detailed descriptions.

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APPENDIX 3: TREE PROTECTION PLAN

PRI19528-03

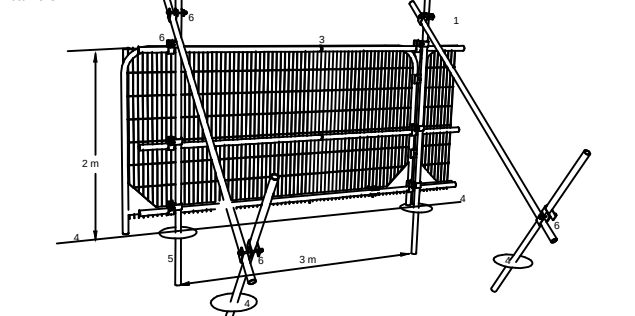


Changes in levels required to implement construction of units and private drive will necessitate the removal of off-site low category trees. Replacement screening planting.

WHY TREE PROTECTION IS NEEDED
1) **Soil compaction kills roots**-caused by plant movement and storage of materials within protected areas.
2) **Trenching severs roots**-many small roots grow within the top 600mm of soil. Even the removal of the top 200mm can cause damage.
3) **Soil pollution kills roots**-Dripping fuel storage or cement washings can contaminate the soil resulting in root death.
4) **Raising & lowering levels kills roots**-the soil used to increase levels can compact the underlying soil (see point 1). Lowering levels will remove roots causing damage to the tree.
5) **Bark and branch damage**-bark removal and branch damage can allow disease and fungi into the tree.
The impact of any of the above can take years to show-trees can have huge reserves of food and water.

LEGEND
- TREE PROTECTION FENCING & EXCLUSION ZONE
- All fencing shall be installed prior to any plant activity on site
- photographs, including: demolition, utility installation, groundworks, and soil stripping

Once erected, all TPF will be regarded as sacrosanct, and will not be removed or altered without prior recommendation and approval of the local planning authority. The TPF is suitable for areas of high intensity development, and shall comprise of reinforcing with mesh panels, well braced to resist impacts by adjustment to a scaffold framework that is set firmly into the ground. Should any alternative method of barrier construction be proposed, consultation with the project arboriculturist will be obtained to clarify the efficacy of the revised design prior to informing the local planning authority and obtaining their consent. Once the exclusion zone has been protected by barriers and/or ground protection, construction work can commence. All weather notices may be erected on the barriers.



- 1 Standard scaffold poles
 - 2 Heavy gauge 2 m tall galvanized tube and welded mesh mill 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
- TREE TO BE RETAINED**
TREE TO BE REMOVED
A CATEGORY TREE
C CATEGORY TREE
U CATEGORY TREE
ROOT PROTECTION AREA (RPA) FOR RETAINED TREES

PHASING & MONITORING OF DEVELOPMENT
The arboricultural protection on this site must be carried out in the following order:
1. Tree removal and access facilitation permit
2. Accurate erection of tree protection fencing
3. Site accessible to construction/demolition traffic
4. Demolition/clearance
5. Construction
6. Removal of tree protection fencing
7. Remedial tree surgery

The above phasing must not be changed without approval from the project arboriculturist and agreement with the Council.



Rev	Date	Details	Drawn
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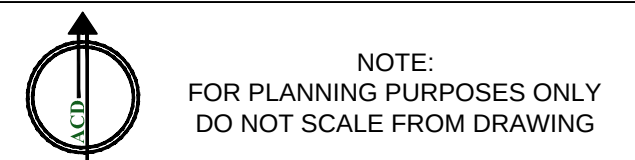
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NOTE:
FOR PLANNING PURPOSES ONLY
DO NOT SCALE FROM DRAWING

scheme: Pound Nursery,
Roundstone Lane, Angmering

client: Barratt David Wilson
Southampton

drawing: Tree Protection Plan

date: October 2014
scale: 1:250@A1
dwg no: BSH19528-03
drawn: AJB checked: MW

The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

TO BE READ IN CONJUNCTION WITH ARBORICULTURAL REPORT BSH19528aia



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