June 2016
CBA10608 v1

Mr and Mrs Gladstone

ARBORICULTURAL DEVELOPMENT STATEMENT

Site:
17 Boscastle Road,
London

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The Complete Arboricultural Consultancy

CBA10608

ARBORICULTURAL DEVELOPMENT STATEMENT

Arboricultural Implications Assessment and Method Statement

guided by recommendations within BS5837:2012

Client:	Mr and Mrs Gladstone
Site:	17 Boscastle Road, London
Arboricultural Consultant:	Dominic Poston *F.Arbor.A.MICFor, CEnv, Prof Dip (RFS), BSc (Hons)*
Date:	June 2016

SUMMARY

The proposal is for the demolition of an existing detached garage and construction of a new residential dwelling at 17 Boscastle Road, London, NW5 1EE.

This Arboricultural Development Statement (ADS) will demonstrate the protection measures for the trees and should be read in association with the Tree Protection Plan CBA10608.02 TPP, which identifies tree retention measures. It follows the initial tree survey, implications assessment and on-going discussions to minimise the impact upon the existing tree stock.

The emphasis of the report is predominantly that of preservation and tree protection. It identifies methodologies to provide protection for trees, to ensure their healthy and safe retention during and post development, as guided by BS5837:2012 and current best practice.

A total of six (6) individual trees can be retained within the development as detailed within this report.

There are no trees that will be lost to facilitate the development.

CBA Trees believes that the trees highlighted for retention within this report can be retained without undue stress on their long-term health.

PART 1
ARBORICULTURAL IMPLICATIONS ASSESSMENT

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PART 1
ARBORICULTURAL IMPLICATIONS ASSESSMENT

1.0 INTRODUCTION

1.1 There is a development proposal for the site of 17 Boscastle Road, London, NW5 1EE.

1.2 The proposal is for the demolition of the existing garage which is located to the rear and the construction of a new residential dwelling in its place.

1.3 Document disclosure provided:

- Existing and proposed layouts by vPPR Architects

1.4 vPPR Architects provided the original site plans and locations of the trees, and these have been the basis for the production of subsequent plans. Whilst CBA Trees has had a limited input in defining the contents of the development plan, it broadly conforms to the requirements of BS5837:2012 *"Trees in Relation to Design, Demolition and Construction – Recommendations"* and current best practice advice.

1.5 Our advice has been sought on the principles of the development in relation to the potential impact on the existing tree stock, to inform and to facilitate the development layout that is acceptable in arboricultural terms.

2.0 CLIENT'S BRIEF

2.1 In line with our written quotation and verbal instructions, information has been compiled in accordance with BS5837:2012 and current best practice advice.

- To undertake a Tree Survey (schedule including Root Protection Areas appended at CB1).
- To produce an AutoCAD compliant Tree Survey Plan that relies on the accuracy of the plans provided by the client. (Plan CBA10608.01 TSP appended at CB2).
- To provide Tree Constraints advice.
- To undertake an Arboricultural Implications Assessment (AIA) of the proposed development provided by the client to identify which trees will be lost, which can be retained and suggest mitigating build techniques in order to retain trees.
- Based on the above and further on-going discussions, to provide an Arboricultural Development Statement detailing the methodologies for the retention of the tree stock where feasible, in relation to the approved development layout including a Tree Protection Plan (CBA10608.02 TPP) appended at CB3.

2.2 The advice provided is in support of the current planning application and has been formulated without discussion with the main construction contractors who at this stage have not been appointed. Once the main contractors are appointed, amendments to the enclosed Method Statement may be required for construction purposes. All amendments will be assessed by the retained arboricultural consultant and approved in writing by the Local Authority.

3.0 DESCRIPTION OF THE SITE

3.1 The site is formed of an existing garage and garden associated with 17 Bostock Road. The garage appears to be brick built and entered from a private (concrete) driveway to the rear of the property. The remainder of the garden is made up of grass, shrub beds, areas of patio and ornamental planting.

4.0 THE TREE STOCK

4.1 A tree survey was undertaken by CBA Trees on 24th May 2016 that identified 6 (six) individual trees. The Tree Survey Schedule is appended at CB1 and Tree Survey Plan (CBA10608.01 TSP) is appended at CB2.

4.2 ***Tree Categorisation Method***

Category U = Trees in such a condition that any value would be lost within 10 years, or should be removed for reasons of sound arboricultural management. There were no 'U' grade trees on or adjacent to the site at the time of surveying.

Note: BS5837:2012 states -
"Category U trees are 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."

Category A = Trees of high quality and value: in such a condition as to make a substantial contribution, (40 years or more is recommended). There was 1 (one) individual 'A' grade tree adjacent to the site at the time of surveying (Tree 1).

Category B = Trees of moderate quality and value, capable of making a significant contribution for in excess of 20 years. There were no individual 'B' grade trees on or adjacent to the site at the time of surveying**.**

Category C = Trees of low quality and value which might remain for a minimum of 10 years or young trees with stems of less than 150mm diameter. There were 5 (five) individual 'C' grade trees in total on or adjacent to the site at the time of surveying (Trees 2-6).

Note:
Trees under these categories are trees that should be a material consideration in the development process; the subcategories are intended to reflect arboricultural, landscape and cultural values respectively.

4.3 For more details of the existing tree stock, refer to the Tree Survey Schedule (appended at CB1).

5.0 TREE PRESERVATION ORDER/CONSERVATION AREA

5.1 Following consultation with the Local Authority CBA Trees has been made aware that the site is located within the Dartmouth Park Conservation Area. If it is intended to carry out works to trees on site prior to the granting of Full Planning Consent and Discharge of Planning Conditions or, in excess of those shown within this development statement, it will be necessary to provide written notification to the Local Authority six weeks prior to the commencement of works.

6.0 PROPOSED TREE RETENTION AND TREE LOSS

6.1 In accordance with the recommendations contained within BS5837:2012, an experienced arboriculturist has assessed the requirements for tree protection and the Root Protection Area (RPA). The implications of the proposed development are detailed below, along with any mitigating measures to ensure the retention of these trees.

6.2 As part of the assessment, dimensions have been scaled from the proposed development drawing 03-A-011 prepared and modified, to include the relevant Tree Survey data and the information as shown on Plan CBA10608.02 TPP, appended at CB3.

7.0 SUMMARY OF ARBORICULTURAL IMPLICATIONS

7.1 The following summary of implications relates to only those trees that will require mitigation measures to allow for construction operations. Trees not listed below can be fully protected in accordance with BS5837:2012 as indicated on Plan CBA10608.02 TPP.

Tree No.	*Species*	*BS 5837:2012 Cat*	*Potential cause of harm*	*Implication*	*Mitigation*
1	London Plane	A	• RPA encroachment (Root severance)	• Loss of absorptive function and anchorage	• Modified structural engineering (above ground raft)
3	Apple	C	• RPA encroachment (Root severance)	• Loss of absorptive function and anchorage	• Modified structural engineering (above ground raft)

8.0 PRE-COMMENCEMENT SITE MEETING

8.1 It is recommended that a pre-commencement site meeting should be held prior to any works commencing on site, to agree all approved processes with the arboricultural consultant, the construction personnel and Camden Council. This meeting could be used to formally agree the methods of work, position of site offices, material storage, compounds, parking and tree protection measures prior to commencement of the development and the associated clearance work.

9.0 ADDITIONAL ARBORICULTURAL ADVICE FOR SITE PERSONNEL

9.1 To provide site personnel with additional information regarding the requirements of Tree Protection, a leaflet (appended at CB5) shall be issued to all staff at the time of their site induction. Spare copies of this leaflet shall be available in the site office as replacements.

9.2 In order to inform site personnel of the purpose of the barriers, information notices shall be fixed to the barriers. These notices shall be of all-weather construction and shall be substantially in the form of the specimen provided at appendix CB5 and replaced as and when necessary.

10.0 TREE PROTECTION MEASURES

10.1 *Reasons for Tree Protection*

The correct and timely installation and maintenance of tree protection measures is the most important action necessary to ensure retained trees, groups, woodlands and hedgerows on and adjacent to the site, remain unaffected by development operations. Exclusion of construction activity from the outset of site preparation will ensure those trees identified for retention are maintained in a safe and healthy condition.

Although aerial parts of the tree, trunk, branches and twigs are obvious, extensive and irreparable damage can be caused to the roots and rooting environment without any immediately noticeable effect. Severance of large roots in close proximity to the stem can result in the immediate loss of stability and/or rapid death whilst damage to more distal parts of the root system or rooting environment will result in a slow decline in tree health over a period of several years, resulting in premature loss.

10.2 *Damage to Trunks Stems and Branches*

Impact damage to the crown of the tree can result in the loss of leaves that produce starch and sugars (carbohydrates) and a reduction in the visual amenity that established trees provide. These carbohydrates are necessary for maintaining all biological functions within the tree, including growth, reproduction and defence. Extensive crown damage will reduce the tree's ability to produce carbohydrates and increase physiological stress on the tree.

The bark protects the underlying vascular tissue and cells responsible for growth from drying, disease and decay. Bark is loosely attached to the underlying tissue and can be easily damaged or removed through direct contact. It is particularly susceptible to damage when trees are young or in early spring following the onset of growth.

Impact damage which removes bark, results in dysfunction of the underlying vascular tissue preventing transport of water, mineral nutrients and carbohydrates to parts of the tree to which they are connected. If damage to the bark extends around the whole circumference, the root, branch or trunk the section beyond the damage will be killed.

Branches which are either broken or are torn from the trunk of the tree, create wounds which are prone to colonization by wood destroying organisms. These organisms cause internal decay, which result in future tree failure and premature loss.

10.3 *Purpose of Tree Protection*

All site operations will be planned, implemented and supervised to prevent the following:

- Root severance
- Damage to the bark, branches and trunks
- Compaction of the soil within the Construction Exclusion Zone
- Alterations in soil level
- Soil contamination by phytotoxic materials such as herbicides, petrol, oils, diesel, cement and concrete washings or other construction additives

10.4 *Tree Protection*

Before starting demolition works tree protection will be installed in accordance with Tree Protection Plan (CBA10608.02 TPP appended at CB3). This will occur immediately following the completion of tree works and prior to any site preparation works starting.

During the demolition process it will be necessary to install ground protection at the identified location so as to allow demolition of the existing garage.

A copy of the Tree Protection Plan will be displayed in the site office and canteen as agreed with Camden Council.

10.5 *Tree Protective Barrier*

Tree 4, is adjacent to areas of significant construction activity or areas of minor or low risk demolition and will be protected by installing protective barrier at the location indicated on Tree Protection Plan (CBA10608.02 TPP). The barrier is to comprise of a vertical and horizontal framework, well braced to resist impacts. Onto this a suitable panel should be securely fixed; details are to be finalised at the pre-commencement meeting.

Once the barriers are in place they must remain *in-situ* throughout the following list:

- Contractor occupancy
- Plant and Materials delivery
- Construction works
- Installation of porous surfacing
- Utility installation
- Completion of development
- Landscaping

The area within the CEZ will be regarded as **sacrosanct**, and the tree protective barriers shall not be taken down or relocated at any time without the written approval of the Local Authority. An example of a CEZ notice is appended at CB5.

Tree no 3 is also immediately adjacent to the proposed demolition and construction, however stands on third party land and the existing boundary fence will act as the protective barrier.

11.0 EXISTING SERVICES

11.1 No information has been provided on the location and size of existing services. However, existing services within the RPA and CEZ of retained trees will not be chased out, but cut at the edge of any structure and left *in- situ.*

11.2 Cabling will only be recovered from beneath a CEZ where it is located in ducting, and can be removed by winching from an existing service manhole beyond the CEZ.

11.3 Service pipes and ducts, where they are located within the CEZ or RPA of retained trees, will be made redundant either by pipe bursting or by filling with an inert material such a foamed concrete.

12.0 AVOIDING DAMAGE TO STEMS AND BRANCHES

12.1 Care shall 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 could result in serious damage to them, and might make their safe retention impossible. Consequently, any transit or traverse of plant in close proximity to trees, will be conducted under the supervision of a banksman, in order to ensure adequate clearance from trees is maintained at all times.

13.0 VEHICULAR MOVEMENTS

13.1 Vehicular movement will be restricted to the metalled driveway to the west, given that there is established access/areas of existing hard surface within the site that are suitable for the purpose.

14.0 SITING OF TEMPORARY OFFICES, TOILETS AND MATERIAL STORAGE COMPOUNDS

14.1 It is anticipated that all storage materials and deliveries shall make use of the existing access and hard surfaces within the site confines, in order to avoid unnecessary damage to tree roots.

14.2 The locations shall be agreed in writing with the Local Authority prior to the commencement of works on site, and will remain in only those agreed locations throughout the construction phases. If an alternative location is required, this must be agreed in writing with the Local Authority. This will also include the delivery; storage and movement of all essential facilities, as well as aspects such as temporary contractor vehicle parking and site location of chemical mixing (e.g. concrete). All such locations will be outside of the RPAs, and avoid areas where 'run off' of chemicals may flow into RPAs.

14.3 ***Site Huts***

All site huts (if required) that are to be situated on ground that is not existing hard surfacing, shall have appropriate footings or be situated on a temporary surface, which will aid in reducing the potential for compaction of the ground, where they are in close proximity to the existing tree protective barrier line. Site huts can be used as part of the protective barrier boundary, and in some cases, can be beneficial where installation does not conflict with the aerial parts of the tree.

If it is proposed that site huts, ground protection or stores are to be located within the RPA of retained trees for more than 3 months, a temporary irrigation and aeration system will be installed to ensure that the rooting environment is maintained in a good condition. The system will include a compressible layer of composted wood chip or forest bark over a geotextile separation layer, on which ground protection or site huts can be placed. Watering will depend on permeability of the soil, weather conditions, and the extent of the area covered, but should include weekly watering from April to September, when no rainfall has occurred for more than four consecutive days.

14.4 ***Material Storage***

This shall be accommodated outside of the CEZ, particularly to avoid harmful spillages of fuel, or phytotoxic substances that may damage the health of retained trees.

15.0 GENERAL CONSIDERATIONS WITHIN AND OUTSIDE THE CONSTRUCTION EXCLUSION ZONE

15.1 Inside the CEZ formed by the protective barrier and ground protection measures, the following prohibitions shall apply:

- No construction activity will occur within the CEZ unless otherwise stated in this report, or agreed in writing with the Local Authority prior to the specific activity taking place.

15.2 In addition to the above, further precautions are necessary adjacent to trees outside the CEZ:

- Materials, which will contaminate the soil e.g. concrete mixing, diesel oil and vehicle washings, shall not be discharged within 10 metres of the tree stem. This should take into consideration the topography of the site and slopes, to avoid materials such as concrete washings running towards trees.

- Fires shall not be lit in a position where their flames can extend to within 5 metres of foliage, branches or trunk. This will depend on the size of the fire and the wind direction.

- Notice boards, telephone cables or other services shall not be attached to any part of the tree. (See appendix CB5 Common Causes of Damage During Construction Works)

16.0 UTILITY SERVICE CONNECTIONS

16.1 Details of service location proposals have not been forwarded to CBA Trees at the time of compiling this assessment. It is however assumed, given the location of the trees, that services will be installed outside the RPAs of retained trees, and connected to the existing where practicable, this will avoid disturbance of tree roots and ensure their healthy retention.

16.2 Where such techniques are not practical or cost affective services will be installed in accordance with the following specification:

All required excavation for service installation within the CEZ of must be carried out by hand using non-metallic tools. Preferably, a compressed air lance (Soil Pick) will be used to loosen soil around existing roots. Any large roots greater than 25mm diameter or clusters of smaller roots will be retained and protected using damp Hessian before proceeding with further excavation.

17.0 FOUNDATION DESIGN AND CONSTRUCTION

17.1 Building foundations are proposed within the calculated RPA of Trees 1 and 3.

17.2 It has been recognised that traditional trench fill foundations cannot be installed within these locations, and that specialist foundations as advocated within BS5837:2012 will be required.

17.3 Final construction details are not yet available but will be engineer designed, assessed by the retained arboricultural consultant and submitted for approval in writing to the Local Authority prior to the commencement of works on site.

17.4 Foundations will be designed to:

- Minimise direct damage and severance of roots within the RPA of retained trees
- Maintain soil structure
- Prevent compaction of rooting environment during construction
- Minimise ground level increases within the RPA
- Maintain soil moisture beneath the structure
- Maintain aeration beneath the structure
- All for future root growth
- Be sufficient to withstand soil volumetric change as a result of future growth or loss of adjacent trees.

17.5 ***Construction Considerations***

Ground beams and floor slabs will be designed so as not to require excavation of the existing ground level.

Where piles are to be used, these will be as small as possible to reduce the need for the use of heavy machinery within the RPA, and to minimise the risk of root damage. Pile layout will be designed to allow 150mm movement each way from their centre line, to avoid damage to any roots discovered at the time of construction.

Consideration will be given to the type of machinery required for pile installation and necessary operating clearance, particularly where the crown overhangs the work area. Crown heights are given within the attached tree survey information appended at CB1.

Piles located within the RPA of retained trees should be sheathed to protect the soil and adjacent roots from the potential toxic effects of the concrete. Bored and poured piles are preferential to driven piles, as these require smaller machines that have a reduced risk of soil compaction and root disturbance

Prior to commencement of construction works, the arboricultural consultant in association with structural engineer will carry out a root mapping exercise. This will determine the location of roots greater than 25mm diameter or clusters of smaller roots that, if severed, will have a detrimental impact on the health and longevity of retained trees. This root mapping will be carried out using either ground penetrating radar (GPR), physical excavation using a compressed air lance, or hand excavation using non-metallic tools. Piles will then be positioned to minimise root damage.

Provision will be made for the venting of the void beneath the floor slab either through the installation of ventilation bricks or by the incorporation of ducts connected to external grills.

Subject to the agreement of the local Building Control Officer, perforated pipe will be installed beneath the floor slab and connected to building rainwater discharge pipes. The purpose will be to maintain the current levels of soil hydration and assist soil aeration. Care will be taken when designing the system, so as not to provide excess water that can waterlog the rooting environment resulting in root death.

Voids beneath ground beam/ floor slab may be filled with 20-40mm gravel or similar no fines material to prevent the ingress of pests.

18.0 GROUND LEVEL ALTERATIONS

18.1 A key element of the engineer specified foundation solution will be to ensure that existing levels within the RPA of Trees 1 and 3 will be retained.

19.0 SITE MONITORING AND SUPERVISION

19.1 It is recommended that on-going arboricultural site monitoring takes place for the duration of the proposed development, to be carried out by a qualified and experienced arboriculturist at pre-determined and agreed time intervals, and governed by the type, timing, location and intensity of site works. This can be effectively managed through condition.

19.2 If Conditioned, it will take the form of regular inspections (to be agreed, but at least one visit per month during the construction phase of the development is advised, together with additional visits to supervise works with the CEZ of retained tree(s)). The aim of the visits is to maintain on-going liaison with all personnel involved in the site development, Camden Council and its Tree Officer.

19.3 Any defects requiring rectification shall be notified to the Contractor/Site Manager and the client.

19.4 In addition, a site logbook for tree protection measures is kept to record all stages of the development from the erection of the protective barriers, right through to the completion of the project. This will be made available to the arboricultural consultant and the Local Authority if required, to show evidence of continuous site monitoring.

Example pro-forma:

Date	Activity	Checked	Comments/ damage noted	By whom	Signed	Action taken
	Erection of protective barriers					
	Inspection of protective barriers					
	Foundation installation (piles)					
	Demolition					

19.5 The Camden Council Tree Officer (or appropriate representative) will have agreed access to the site, and will report on any problem areas directly to the developer's retained arboriculturist, who will then visit the site and make recommendations to the developer on how best to rectify the situation and ensure the implementation.

20.0 REPORT DAMAGE TO TREES AND TREE PROTECTION BARRIERS

20.1 Should any damage be caused to trees noted for retention, either by the above works or as the result of any other action, the damage should be reported to the site supervisor immediately. The site supervisor shall report up the chain of responsibility to the retained consultant arboriculturist, or in the absence of such an appointment, to an appropriately qualified arboriculturist, to enable remedial measures to be implemented as necessary and as agreed with the Local Authority.

20.2 Should damage occur to a protective barrier to impair its function in protecting trees, all work will cease near the damage, until the barrier has been returned to standard.

21.0 REMOVAL OF PROTECTIVE BARRIERS

21.1 When the development phase is complete, all drainage and service runs are in place, all site machinery has been removed and any landscaping for the principal area of the site has been implemented, the protective barriers will be dismantled.

21.2 This barrier dismantling must be undertaken with great care, and will need to be supervised to avoid heavy machinery being used within the Root Protection Areas. Hoarding, scaffolding and other barrier materials will need to be removed from site immediately.

22.0 CONCLUSIONS

22.1 The development proposals for the construction of a new residential dwelling at 17 Boscastle, London, NW5 1EE have been assessed broadly in accordance with BS5837:2012 *"Trees in Relation to Design, Demolition and Construction – Recommendations"*.

22.2 Provided the recommendations included within this report are strictly adhered to, CBA Trees believes all existing trees identified within this report can be retained without undue stress on their long-term health.

23.0 CONTACT LIST

23.1 It is suggested that points of contact and lines of communication are established prior to commencement of the works on site including:-

- Arboricultural Consultant
- Project Architect
- Highways Engineer
- Structural Engineer
- Drainage Engineer
- Landscape Architects
- Camden Council's Tree Officer
- Camden Council's Planning Case Officer
- Site Supervisor and Foreman

23.2 It is advised that the site supervisor establishes their own listing of contact details at the pre-start site meeting, and displays this in their office for general use as necessary.

24.0 BIBLIOGRAPHY

- British Standard 5837:2012 –
  "Trees in Relation to Design, Demolition and Construction - Recommendations"
- British Standard 3998:2010 –
  "Recommendations for Tree Work"
- National Joint Utilities Group Publication Volume 4 –
  "Guidelines for the planning, installation and maintenance of utility services in proximity to trees"
- Wildlife and Countryside Act 1981
- Town and Country Planning Acts


CB1

The Professional Arboricultural Consultancy

TREE SURVEY NOTES

This Tree Survey has been undertaken within the recommendations of British Standards 5837:2012 and current arboricultural best practice.

- Each tree has been numbered and, where instructed, for future identification on site, has been tagged using small durable metal or plastic tags.
- Due to variations of existing ground levels through the site, height dimensions are estimated and are given in metres. Accurate heights, measured with the aid of optical instruments can be provided where instructed.
- Trunk/stem diameters are measured in mm at 1.5 metres above ground level, using a standard measuring tape as defined by British Standards, unless otherwise stated.
- Estimated branch spread is taken in metres from the centre of the trunk, at the four cardinal points of a compass, to achieve an accurate representation of the crown shape which will be recorded on the tree survey plan.
- An assessment of a tree's age classification is made in terms of its maturity within the site's landscape and defined as:

  Y = young trees
  SM = semi-mature trees
  EM = early mature trees
  M = mature trees
  OM = over-mature trees

- An assessment of a tree's physiological condition is defined as:

  Good = fully functioning biological system showing average vitality i.e. normal bud growth, leaf size, crown density and wound closure
  Fair = fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure
  Poor = a biological system with limited functionality showing significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure
  Dead = dead

- An assessment of a tree's structural condition is defined as:

  Good = no significant structural defects
  Fair = structural defects which could be alleviated through remedial tree surgery or management practices
  Poor = structural defects which cannot be alleviated through tree surgery or management practices
  Dead = dead

- An assessment of a tree's future life expectancy is defined as: **<10, 10+, 20+ or 40+ years.**

Categorisation of Trees

The category for each tree is assessed using the recommendations of BS5837:2012. The assessment has not considered any site-specific development proposals, but will have considered any changes on or off-site which may have an effect on the conditions surrounding the surveyed trees.

The trees have been classified into one of the following categories (and one or more sub-categories [this will however not increase the value of the tree]) and are indicated on the associated drawings by colours as indicated.

Category U				Identification colour on plan
Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• 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			**DARK RED**
Category A	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
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	Trees, groups or woodlands, of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	**LIGHT GREEN**
Category B	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are down-graded 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 value or other cultural value	**MID BLUE**
Category C	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	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**

Clients are advised that Tree Surveys are a basic data collection exercise and record of tree condition at the time of survey. This will identify any visible signs of ill-health or major defects, advising a further detailed investigation where appropriate. This will most often take the form of a request for either "*full ground level inspection"* or "*climbing inspection required".* There may also be a further reference to the need for "*decay detection equipment"* to aid diagnosis. A tree survey does not include a comprehensive schedule or specification of remedial tree works, but may contain a guide to the work which might be undertaken by a prudent tree owner, purely for reasons of health and safety.

A Tree Survey should not be confused with a Tree Inspection or Arboricultural Implication Assessment, which are totally separate exercises.

CBA10608

	BS5837:2012 TREE SURVEY REPORT	
	Site:	17 Boscastle Road, London
	Date:	24 May 2016
	Consultant:	Dominic Poston *F.Arbor.A, MICFor, CEnv, Prof Dip (RFS), BSc (Hons), HND*
	Tagged:	No

Notes:

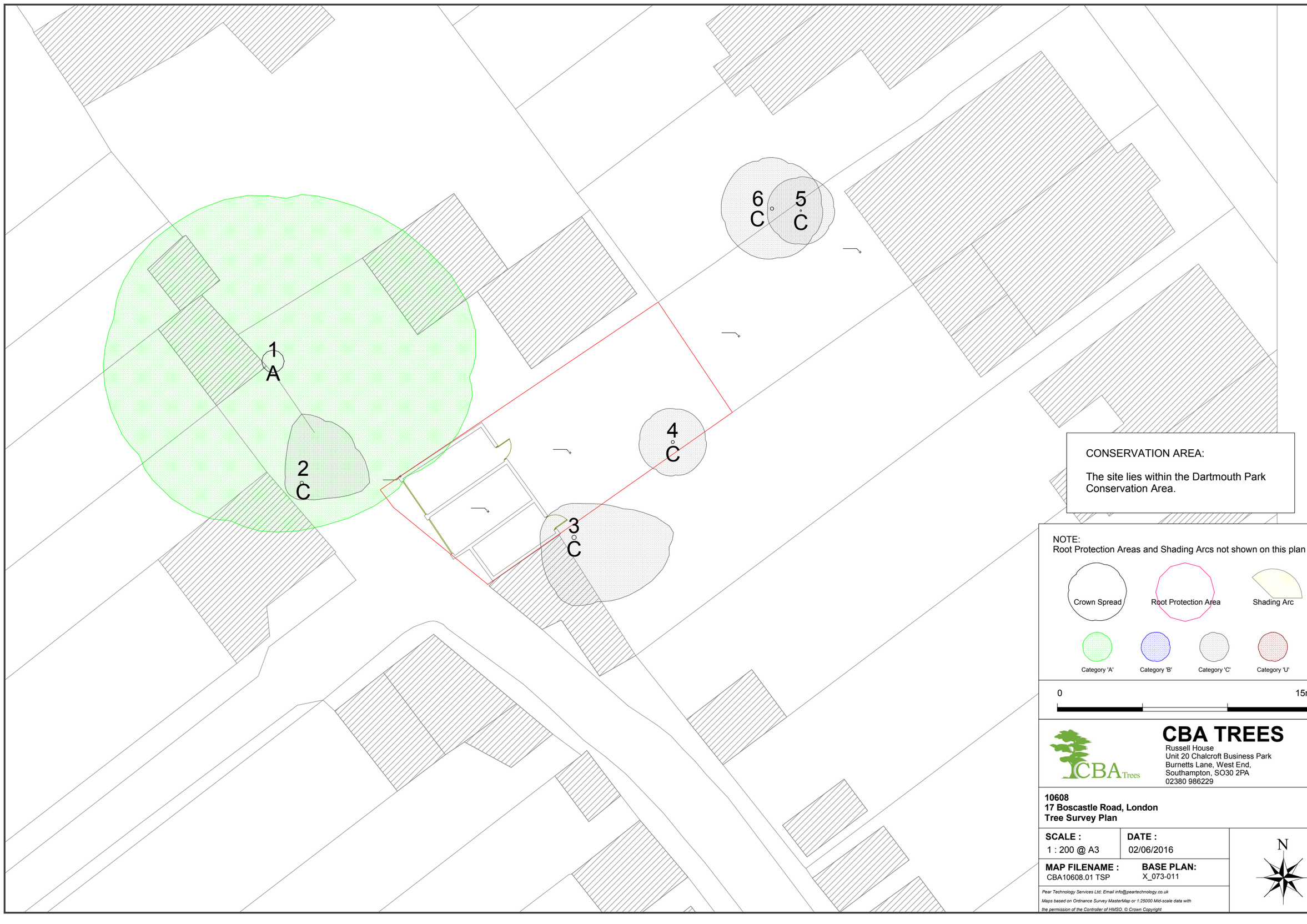
1. It may be advised that some trees should have the ivy removed to enable a re-survey to be carried out. This would also alleviate the tree from becoming suppressed; carrying additional weight that increases the chance of windthrow due to a larger dense crown area; and only receiving restricted light. Unless otherwise stated, in order to prevent regrowth, it is only necessary to remove a 300mm section of ivy and clear around the base.
2. It may be advised that it was only possible to estimate the diameter of some trees because of ivy smothering, dense vegetation, or trees located off-site with no access.
3. The estimated remaining contribution in years, and the tree grading category have been calculated for the current situation and may alter where further investigation works are advised.
4. Some trees or groups may have been given an interim grade. The reason for the interim grading is addressed in the timescales given as this may have a bearing on health and safety and/or any development proposals.
5. Tree Groups have been assessed with estimated and representative data.
6. This is not a Tree Works Schedule. Any preliminary management recommendations are listed in the interests of health and safety and should be carried out by a prudent tree owner.
7. Any management recommendations are suggested for reasons of health and safety only, regardless of development proposals at this stage. However, the defects requiring remedial tree surgery are by their very nature potential wildlife habitats, including protected species which needs consideration prior to any tree surgery works commencing.
8. a) At this stage the Root Protection Area (RPA) information is for your guidance and ongoing discussion purposes only as it assumes that all but the 'U' grade trees will be retained, which may not be the case.
   b) For all single stem trees with a stem diameter greater than 1250mm, and multi-stem trees with a stem diameter greater than 1500mm, the calculated RPA has been capped at 707m2 in accordance with Section 4.6.1 of BS5837.2012.

TREE PRESERVATION ORDER/CONSERVATION AREA:

CBA Trees has been instructed to investigate whether trees on or adjacent to the site are protected by a Tree Preservation Order or located within a Conservation Area. The Local Authority has confirmed that no trees are protected by a Tree Preservation Order (TPO). However, the site lies within the Dartmouth Park Conservation Area.

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
1	London Plane *Platanus x hispanica*	17	S	1330	707	15	N 10 E 12 S 10 W 10	N 5 E 5 S 5 W 5	Mature	Good	Structural Condition - Poor Previously pollarded Minor deadwood in crown Offsite tree Lapsed pollard	None required at time of survey	40+	A1
2	Common Ash *Fraxinus excelsior*	5	S	200	18	2.4	N 4 E 4 S 1 W 1	N 2 E 2 S 2 W 2	Young	Fair	Structural Condition - Fair Offsite tree growing unsustainably close to boundary wall	None required at time of survey	20+	C1
3	Apple *Malus sp.*	4	MS	180 190	31	3.1	N 2 E 6 S 4 W 2	N 3 E 2 S 1 W 2	Over Mature	Fair	Structural Condition - Fair Offsite tree	None required at time of survey	10+	C1
4	Apple *Malus sp.*	2	MS	100 150	15	2.2	N 2 E 2 S 2 W 2	N 2 E 2 S 2 W 2	Mature	Fair	Structural Condition - Fair Previously crown reduced Managed at reduced dimensions	None required at time of survey	20+	C1
5	Apple *Malus sp.*	3	S	100	5	1.2	N 2 E 2 S 2 W 2	N 2 E 2 S 2 W 2	Mature	Good	Structural Condition - Fair Previously crown reduced Managed at reduced dimensions	None required at time of survey	20+	C1
6	Portugese Laurel *Prunus lusitanica*	6	S	200	18	2.4	N 3 E 3 S 3 W 3	N 2 E 2 S 2 W 2	Mature	Fair	Structural Condition - Fair Previously crown reduced Offsite tree managed at reduced dimensions	None required at time of survey	20+	C1


CB2



CONSERVATION AREA:

The site lies within the Dartmouth Park Conservation Area.

NOTE:
Root Protection Areas and Shading Arcs not shown on this plan

Crown Spread | Root Protection Area | Shading Arc

Category 'A' | Category 'B' | Category 'C' | Category 'U'

0 — 15m

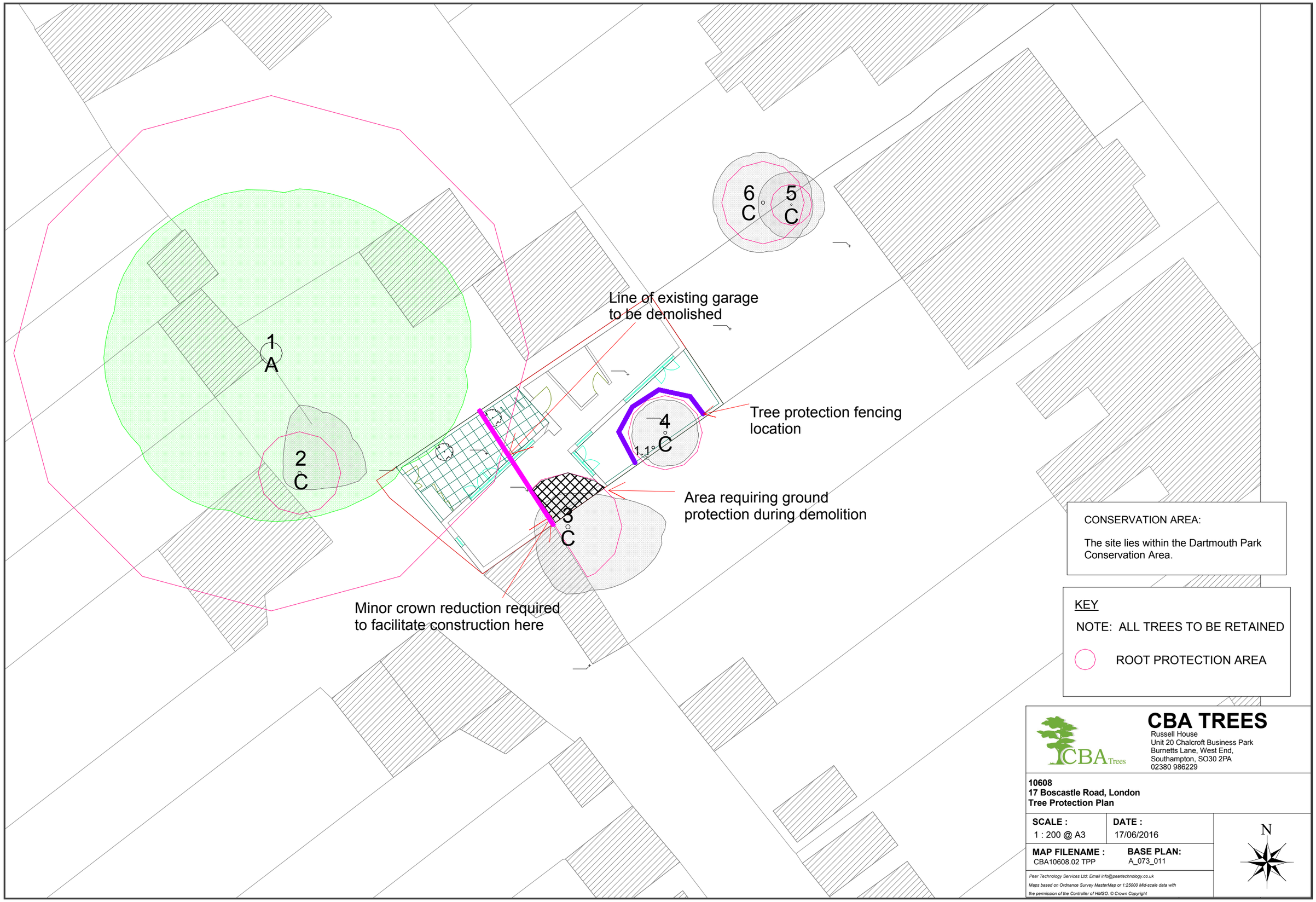
CBA TREES
Russell House
Unit 20 Chalcroft Business Park
Burnetts Lane, West End,
Southampton, SO30 2PA
02380 986229

10608
17 Boscastle Road, London
Tree Survey Plan

SCALE :	DATE :
1 : 200 @ A3	02/06/2016
MAP FILENAME : CBA10608.01 TSP	**BASE PLAN:** X_073-011

N


CB3



CONSERVATION AREA:

The site lies within the Dartmouth Park Conservation Area.

KEY

NOTE: ALL TREES TO BE RETAINED

ROOT PROTECTION AREA

CBA TREES

Russell House
Unit 20 Chalcroft Business Park
Burnetts Lane, West End,
Southampton, SO30 2PA
02380 986229

10608
17 Boscastle Road, London
Tree Protection Plan

SCALE :	DATE :
1 : 200 @ A3	17/06/2016
MAP FILENAME : CBA10608.02 TPP	**BASE PLAN:** A_073_011

N


CB4

CBA Trees	**TREE WORKS SCHEDULE**			
	Client:	Mr and Mrs Gladstone	**Site:**	17 Boscastle Road, London, NW5 1EE
	Date:	June 2016	**Consultant:**	Dominic Poston *F.Arbor.A, MICfor, CEnv, Prof Dip (RFS), BSc (Hons)*

Tree No.	Species	Recommended Works
3	Apple	• Linear crown reduction (to suitable growing point) back to site boundary in order to facilitate development.

- All tree works are advised to be carried out between July and September or November and February. Tree works should also avoid the season for nesting birds.
- All tree works should be carried out in accordance with current best practice guidelines and BS3998:2010 – Tree Work Recommendations.
- We recommend the use of an Arboricultural Association Approved Contractor or an ISA Certified Arborist/Tree Worker suitably insured and experienced to carry out the tree works.


CB5

TREES AT_____:

SUMMARY OF

TREE PROTECTION MEASURES

Introduction

This leaflet shall be issued to all site personnel as part of their induction briefing.

It describes in summary form the precautions that site personnel shall at all times follow, to ensure that the existing trees on the site come to no harm.

The precautions described are neither arbitrary nor reducible and must be adhered to in full.

These precautions are necessary because unprotected trees are very vulnerable to damage during demolition and construction works.

Furthermore, many of the trees on the site are under **LEGAL PROTECTION** and damaging them can result in heavy fines.

Two common misconceptions about trees:

MYTH: Trees have deep taproots and so shallow excavations will not harm the tree.
FACT: 90% of all tree's roots are found in the top 600mm of soil; all excavations near to trees are likely to cause root damage which can kill the tree.
MYTH: Trees will quickly heal over any bark wound, with no ill effect.
FACT: Bark wounds take years to heal and larger ones never do; missing bark can lead to disease and even the death of the tree.

Tree Protection

All trees adjacent to unsupervised work areas have been protected by tree protection barriers.

These barriers must be respected at all times and no attempts shall be made to damage, bypass or ignore them.

In areas designated for supervised working, no works shall be undertaken without the supervisor being present or without him/her issuing a "carry on" chit.

Prohibitions Adjacent to Trees

Inside the exclusion area of the tree protection, the following prohibitions shall apply.

- **No** digging or scraping
- **No** storage of plant or materials
- **No** vehicular access
- **No** fire lighting
- **No** handling, discharge or spillage or any chemical substance
- **No** water-logging

In addition to the above, further precautions shall be taken near to trees.

- A 10m separation distance shall be observed between trees and any substance injurious to their health, including fuels, oil, bitumen, cement (including washings) builders' sand, concrete mixing and other chemicals.

- No fire shall be lit such that flames come within 5m of any foliage; this shall be taken to mean a fire separation distance to the leaved of 20m.

Avoiding Damage to Stem and Branches

Care shall 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 trees.

Consequently, any transit or traverse of plant in proximity to trees shall be conducted under the supervision of a spotter to ensure that adequate clearance is at all times maintained.

In some circumstances, it may be impossible to achieve this, necessitating the pruning of the tree.

If this is necessary, a specialist team shall be called in following referral to the project Arboriculturist.

No tree pruning shall be undertaken by demolition or construction personnel.

Asking for Help

If you see any damage to a tree or its protective fencing, or if you need a tree pruning for plant clearance, contact **CBA Trees** as follows:

Office Telephone: 020 8098 6229

REMEMBER:

ALL TREE DAMAGE IS AVOIDABLE –

SO AVOID IT!

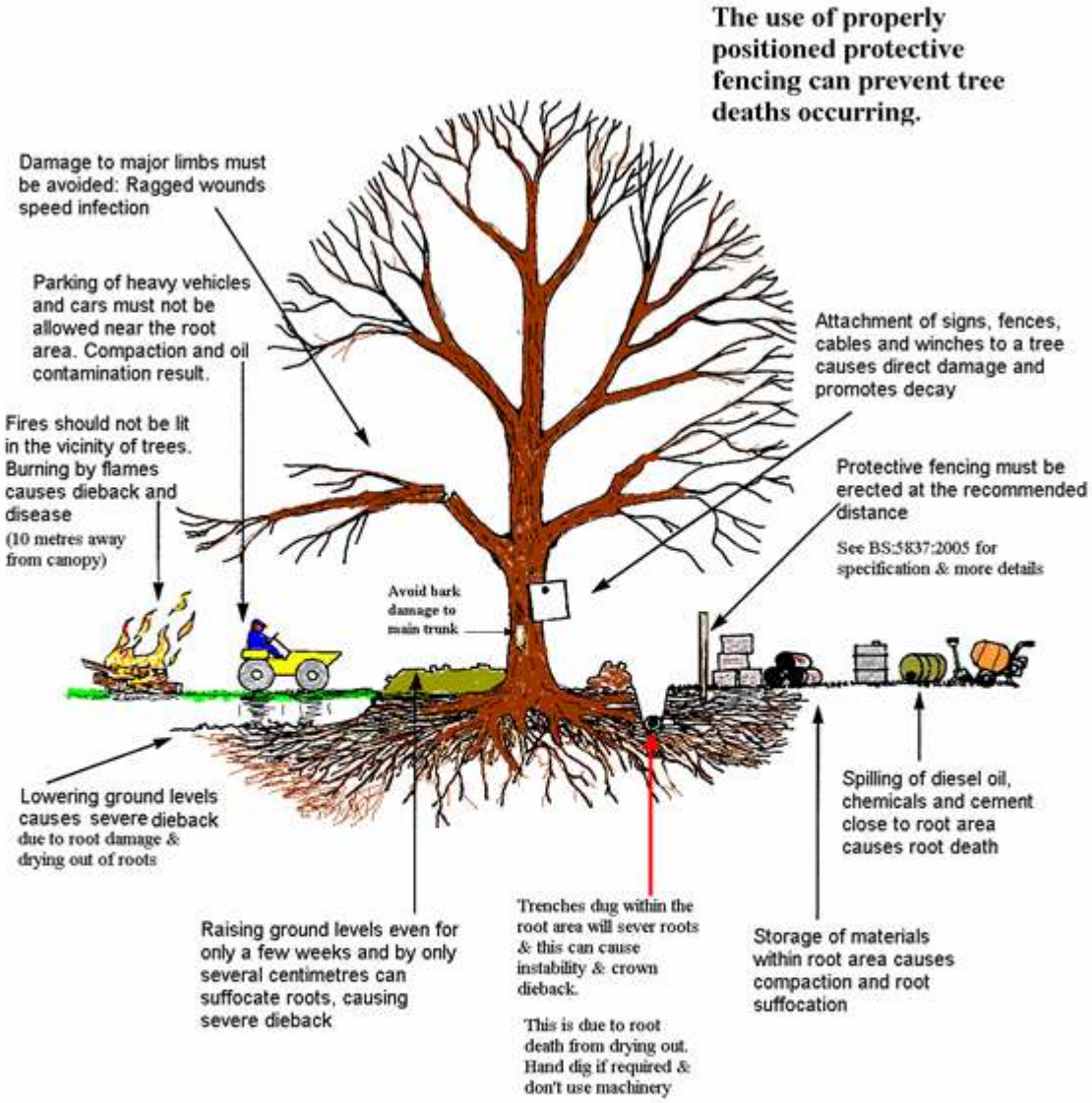
PROTECTIVE BARRIERS.
THESE BARRIERS MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

TREE PROTECTION AREA
KEEP OUT !

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

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

Common causes of Tree Death



Please use copies of this as an on-site poster for personnel

(Source: Arboricultural Information Exchange website, 2005)


CB6

The Professional Arboricultural Consultancy

Qualifications of
Dominic Poston
Senior Consultant

Dominic Poston F.Arbor.A. MICFor, CEnv, Prof Dip (RFS), BSc (Hons), HND has recently joined CBA Trees as a Senior Consultant and brings with him a wealth of knowledge and experience. He has over 15 years' experience of undertaking a variety of arboricultural assessments for a wide range of public, corporate and private clients.

Having attained a Bachelor of Science Degree in Horticulture, a Higher National Diploma in Landscape Management and the prestigious Royal Forestry Society's Professional Diploma in Arboriculture, Dominic is now a fellow of the Arboricultural Association, a Chartered Arboriculturist and Chartered Environmentalist and has attained Registered Consultant status with the Institute of Chartered Foresters.

He has considerable experience as an advisor to planning teams, currently acting as lead arboriculturist on three high volume (<1000units) active development sites in East Anglia as well as several smaller developments nationwide.

Dominic has appeared numerous times at planning related Public Inquiries, and also undertakes advocacy at Inquiries on behalf of Rule 6 parties. Additionally he has been instructed as an expert witness on several occasions to assist local authorities with prosecutions for offences under Tree Preservation Order legislation, and has appeared at Crown Court.