



AllAboutTrees

Arboricultural & Ecological Consultancy
Chartered Arboriculturalists & Environmentalists

Arboricultural Method Statement

For Trees At St James' Church

Castle Eden




For

Beaumont Brown Architects



Document Verification

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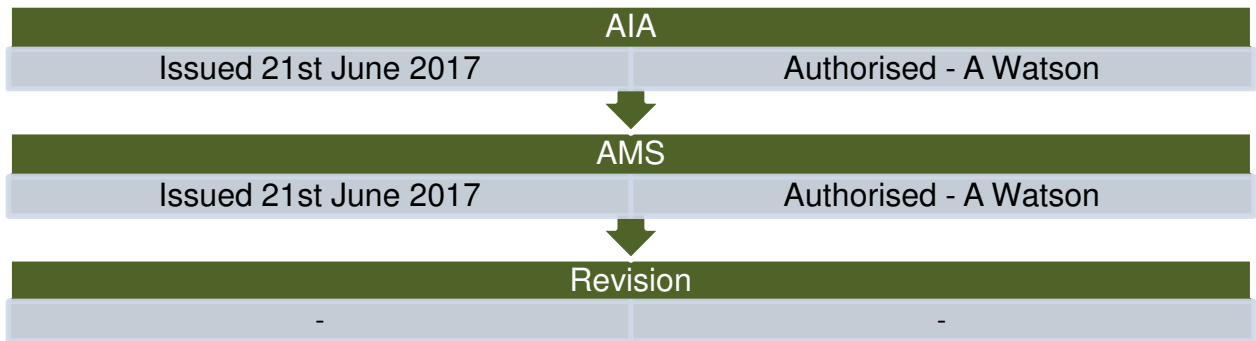


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1. Introduction

1.1 We are instructed by Beaumont Brown Architects to provide an Arboricultural Method Statement (AMS) regarding the protection and management of the significant trees located within a specified area at St James' Church, Castle Eden.

1.2 This method statement is a reference document produced to ensure best practice in the management of the trees during the demolition and construction phases of the development and brings together all of the relevant information including the recommendations set out in British standard 5837:2012 – Trees in relation to design, demolition and construction. The method statement must be read in conjunction with our Arboricultural Impact Assessment dated 21st June 2017.

1.3 The method statement forms part of the specification and schedule of works to be issued to the contractor and may form part of the contract documentation.

1.4 This document should be kept on file at the site office and be available for inspection by relevant parties.

2. Protected Status Of Trees

2.1 Trees may be legally protected, this may either be in the form of a Tree Preservation Order (TPO) or that the trees are located within a Conservation area. In addition some tree felling may require a felling licence from the Forestry Commission.

2.2 Potentially large penalties may be enforced for illegally carrying out works on protected trees. It is recommended that checks are made before any works are undertaken and no work should commence until permission has been granted. Please note that there are a number of exemptions from the requirement to obtain a felling licence including land on which full planning permission has been granted by the local authority, however this exemption does not cover land where only outline planning permission has been granted, or on land which has been allocated for residential development within local authority urban and local development plans.

2.3 AllAboutTrees has been able to ascertain with Durham County Council (the Local Planning Authority) on 4th April 2017 that there are restrictions on works to trees in the site. The site is within a Conservation area. The site is also within the Easington District 1 Tree Preservation Order 1947. Formal planning consent will be required for any works to trees covered by a TPO and 6 weeks' notice will be required to Durham County Council for all other works to trees which are outside the TPO area.

3. Site Operations Prior To Any Construction Works

3.1 Tree Works

3.1.1 The first arboricultural works on site will be the removal of all the conflicting trees

- Group 2 will need to be removed to facilitate the construction of the new parking bays.

which are identified on the Tree Protection Plan (TPP) by the broken black ring surrounding the tree centre and referred to in appendix 1 of this report. It may also be appropriate to remove trees 1,2,5,12,13 and group 1 at this time although this is not essential to facilitate the development and is for arboricultural management purposes.

3.1.2 The stumps should be ground out.

3.1.3 Details of any prescribed pruning works are included within Appendix 1 of this report. The tree works should wherever possible be carried out in accordance with BS3998:2010 Tree Work – Recommendations.

3.2 Wildlife Habitats

3.2.1 Consideration must be given to wildlife when conducting tree works, particularly birds and bats.

Bats

3.2.2 All UK bats and their roosts are protected by law. The legislation protecting bats are:

- The Wildlife & Countryside Act 1981 (WCA)
- Conservation of Habitats and Species Regulations 2010

For all countries of the UK, the legal protection for bats and their roosts may be summarised as follows:

3.2.3 You will be committing a criminal offence if you:

1. Deliberately* capture, injure or kill a bat
2. Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats
3. Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time)

4. Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat
5. Intentionally or recklessly obstruct access to a bat roost

**In a court, 'deliberately' will probably be interpreted as someone who, although not intending to capture/injure or kill a bat, performed the relevant action, being sufficiently informed and aware of the consequence his/her action will most likely have.)*

3.2.4 Penalties on conviction - the maximum fine is £5,000 per incident or per bat (some roosts contain several hundred bats), up to six months in prison, and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.

3.2.5 No visual signs were found to indicate the presence of bats in the surveyed trees though a number of the mature trees within the site display characteristics found favourable to bats and as such caution must be exercised.

3.2.6 When carrying out tree works it is essential that the contractor or other competent person carries out a specific 'bats in trees risk assessment' which can be obtained from the 'Arboricultural Association' or the 'Bat Conservation Trust' (BCT). If evidence of bats is found work must stop immediately and Natural England Batline contacted (0845 1300 228). A further inspection may well be required by a licensed bat handler or roost visitor.

Birds

3.2.7 In the UK, all wild birds, their nests and their eggs are protected by law.

In England, Scotland and Wales the legislation that protects wild birds is:

- The Wildlife and Countryside Act 1981
- The Countryside (or CRoW) Act 2000

3.2.8 No nesting birds were present at the time of inspection though given the scope of the site and the extent of vegetation potential exists for birds to nest and as such caution must be exercised.

3.2.9 As with bats the contractor has an obligation to carry out visual checks prior to works. Where possible tree works should be carried out in the period from August to the end of February in order to avoid the bird nesting season.

3.3 Protective Barrier Erection

3.3.1 The protective barriers are to be erected prior to the commencement of site works including demolition, soil stripping or movement, bringing onto site of materials, supplies or machinery. Tree works can be undertaken prior to the erection of the barriers.

3.3.2 The barriers must be erected in the position indicated on the Tree Protection Plan (TPP) by the dark blue line and be constructed as per the following specification.

3.3.3 The barriers should be considered essential and should not be removed or altered without prior recommendation by an Arboriculturalist and approval of the local planning authority.

3.3.4 The barrier should consist of a vertical and horizontal framework of scaffold tubing which is adequately braced to resist impacts. The vertical scaffold tubes need to be placed at a distance not exceeding 3m apart and driven securely into the ground for a minimum depth of 0.6m. Care should be taken when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid any structural roots. The weldmesh or Heras panels need to be a minimum 2.0m tall and are securely attached to the scaffold framework with wire or scaffold clamps. The wire or scaffold clamps should be secured on the inside of the barrier to avoid easy dismantling. Panels on rubber or concrete feet are not resistant to impact and should not be used.

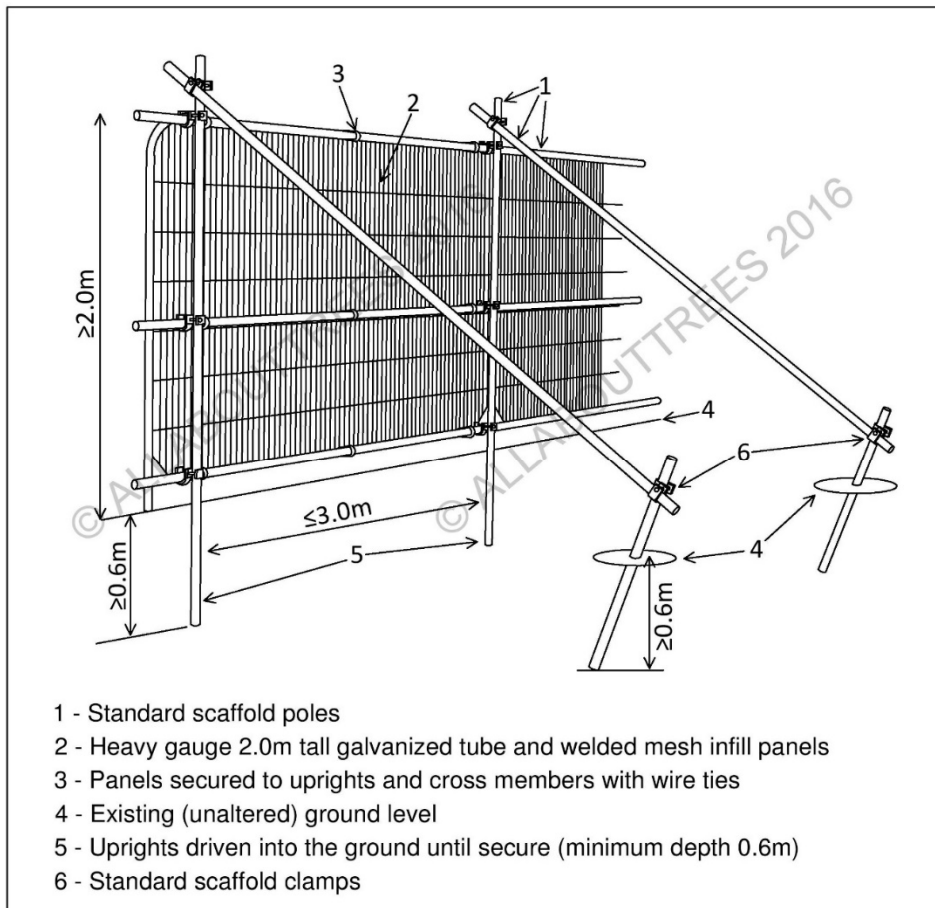


Figure 1- Protective barrier diagram



Figure 2- Example of a barrier erected on a site

3.3.5 No fixing shall be made to any tree and all possible care must be taken to prevent damage to tree roots when locating the posts.

3.3.6 All types of barriers must be firmly attached to prevent movement by site personnel or vehicles and all weather signs with the wording "Construction exclusion zone- keep out" should be attached.

3.4 Location Of Site Compound & Storage Areas

3.4.1 The contractor's site compound, storage & parking areas must be located outside of the root protection areas (RPAs) of the retained trees.

3.4.2 All site storage areas, especially cement mixing and washing points for plant and vehicles must also be situated outside of the root protection areas (RPA). Where there is a possible risk of polluted water runoff heavy duty plastic sheeting and sand bags must be used to contain spillages and contamination.

4. Construction Methodology

4.1 Service Runs

4.1.1 It is assumed that the existing service runs will be exploited where possible, but if new works are required it is important that they comply with the National Joint Utilities Group (NJUG) 'Guidelines for the planning, installation, and maintenance of utility services in proximity to trees' and BS 5837:2012. The excavation of open trenches by machine will be unacceptable within the protective zone of any of the retained trees.

4.1.2 Wherever possible, services should be routed outside of any retained trees RPA. When this is not possible apparatus should be routed together in a common duct and any inspection chambers sited outside the RPA.

Acceptable techniques for the laying of services in order of preference are:

- **Trenchless-** by use of thrust boring or similar techniques. The pit excavations for starting and receiving the machinery should be located outside of the root protection area. To avoid root damage, the mole should run at a depth of at least 600mm. Use of external lubricants on the mole other than water (eg oil or bentonite) should be avoided.

Trenchless Solutions For Installation Of Underground Services					
Method	Accuracy (MM)	Bore ^(A) diameter (MM)	Maximum subterranean length (M)	Applications	Not suitable for
Micro tunnelling	<20	100 to 300	40	Gravity-fall pipes, deep apparatus, watercourse/ roadway under crossings	Low-cost projects due to relative expense
Surface-launched directional drilling	≈100	25 to 1200	150	Pressure popes, cables including fibre optic	Gravity fall pipes, e.g. drains and sewers ^(B)
Pipe ramming	≈150	150 to 2000	70	Any large-bore pipes and ducts	Rocky and other heavily obstructed soils
Impact moling ^(C)	≈50 ^(D)	30 to 180 ^(E)	40	Gas, water and cable connections, e.g. from street to property	Any application that requires accuracy over distances in excess of 5m.

Figure 3- Services

- (A) Dependant upon strata encountered
 (B) Pit-launched directional drilling can be used for gravity fall pipes up to 20m in subterranean length

- (C) Impact moling (also known as thrust-bore) generally requires soft, cohesive soils.
- (D) Substantial inverse relationship between accuracy and distance
- (E) Figures given relate to single pass: up to 300mm bore achievable with multiple passes

4.1.3 If trenchless insertion is not feasible the alternatives are detailed below in order of preference.

- **Broken trench-** by using hand dug trench sections together with trenchless techniques. It should be limited to practical access and installation around or below the roots. The trench must be dug by hand (see following comments re continuous trenching) and only be long enough to allow access for linking to the next section. The open sections should be kept as short as possible.
- **Continuous trench-** the trench is excavated by hand and retains as many roots as possible. The surface layer is removed carefully and hand digging of the trench takes place. No roots over 2.5cm diameter or clumps of smaller roots (including fibrous) should be severed. The bark surrounding the roots must be maintained. Cutting of roots over 2.5cm diameter should not be attempted without the advice of a qualified Arboriculturalist.

If roots have to be cut, a sharp tool (defined as spade, narrow spade, fork, breaker bar, secateurs, handsaw, post hole shoveller, hand trowel) should be used.

Backfilling

4.1.4 Reinstatement of street works must comply with the code of practice New Roads and Streetworks Act 1991 (Specification for the reinstatement of openings in highways), but where tree roots are involved backfilling should be carefully carried out to avoid direct damage to retained roots and excessive compaction of the soil around them.

4.1.5 The backfill should incorporate an inert granular material mixed with top soil or sharp sand (not builder's sand) around the retained roots. This will allow a measure of compaction for resurfacing whilst creating an aerated zone around the roots.

4.1.6 Roots and in particular fine roots, are vulnerable to desiccation on exposure to air. The roots are at greatest risk when there are rapid fluctuations in the air temperature around them (especially winter diurnal temperatures). It is vitally important that the roots are covered with sacking whilst the trench is open. The sacking should be removed once the trench is backfilled.

5. Arboricultural Supervision

5.1 The following programme of supervision is proposed to assist in the preservation and protection of the retained trees during all aspects of the proposed development.

5.2 The supervision arrangements must be sufficiently flexible to allow for the supervision of all sensitive works as they occur. The Arboricultural Consultant's initial role is to liaise with the developer and the council to ensure that the appropriate protective measures are in place before any works commence on site and once the site is active monitor compliance with the Arboricultural conditions and advise on any tree problems that may arise.

Action	Programming	Extent of supervision	Nature of supervision
Pre-commencement meeting with site manager & Council tree officer	Before any site activity commences	Meeting on site Review any updates to the proposal Confirm extent of tree works and protective barrier position.	Site meeting & letter or email confirming results of meeting distributed to relevant parties.
Tree works meeting with tree works contractor	Prior to commencement of tree works	Meeting on site to confirm tree works specification and method of working	Site meeting & letter or email confirming results of meeting distributed to relevant parties.
Tree works undertaken Finalising tree protection barrier	Before any plant enters site or demolition/construction work commences.	Confirm position of the protective barriers have been installed and comply with the Tree Protection Plan (TPP) Provide photographs indicating completed tree protection	Site meeting & letter or email confirming results of meeting distributed to relevant parties.
Removal of protective barriers	Once construction activities have finished	Meeting with contractor for briefing before removal commences	Site meeting & letter or email confirming results of meeting distributed to relevant parties.

Figure 4- Site supervision

5.3 Site Management

5.3.1 It is the developer's responsibility to ensure that the details of the Arboricultural method statement and any agreed amendments are known and understood by all relevant site personnel. Copies of the agreed documents must be kept on site at all times and the site manager or other appropriate person must brief all personnel who could impact the trees on the specific tree protection requirements.

5.3.2 This should form part of the site induction procedure and be written into the appropriate site management documents.

For and on behalf of
AllAboutTrees Ltd

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-Chartered Arboriculturalist & Registered Consultant

Appendix 1

Tree No.	Species Common Name <i>Latin Name</i>	Height (M)	Crown Spread (M)				Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiological Condition	Structural Condition	Root Prot Area Radian (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Bat Roost Potential	Ultimate Size For Species (M)		Priority
			N	S	E	W														Height	Spread	
1	Ilex aquifolium (Holly)	13	2	0	2	1	410	2	2	3(W)	Mature	Poor	Fair	4.92	10+	C-Low	One stem snapped out at 5m and flushed. Stem divides at ground level. Included bark present in fork. Dieback in crown.	Remove tree	Low	13	12	C
2	Ilex aquifolium (Holly)	13	2	0	2	2	310	1	2	3(W)	Mature	Poor	Fair	3.72	10+	C-Low	Dieback in crown.	Remove tree	Low	13	12	C
3	Aesculus hippocastanum (Horse Chestnut)	23	9	9	6	9	1400	1	2.5	3(W)	Mature	Good	Good	15	20+	B-Moderate	Characterful old tree. Rare to see such an old chestnut in such good condition. Pruned well. Stumps of felled chestnuts adjacent. Stem divides above 1.5m.	No works required. This tree is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP.	Low	20	20	-
4	Quercus robur (Common Oak)	3	1	1	1	1	50	1	1.5	1.5(W)	Young	Fair	Fair	0.6	40+	C-Low	Leaning East.	Needs higher stake	Low	25	20	C
5	Quercus robur (Common Oak)	3	1	1	1	1	50	1	1.5	1.5(W)	Young	Dead	Dead	0.6	0	U-Unsuitable for retention	Newly planted	Replace with new tree	Low	25	20	C
6	Quercus ilex (Holm Oak)	13	4.5	4.5	4.5	4.5	880	1	1	3(N)	Middle aged	Fair	Fair	10.56	20+	B-Moderate	Decay wound in stem probably initiated by historic tear out wound. Significant tree well sheltered. Ivy on tree. Decay present on stem. Cavity on stem. Broken branches in crown.	Carry out further aerial inspection. Carry out further decay detection	Low	20	16	B

Tree No.	Species Common Name <i>Latin Name</i>	Height (M)	Crown Spread (M)				Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiological Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Bat Roost Potential	Ultimate Size For Species (M)		Priority
			N	S	E	W														Height	Spread	
7	Nothofagus obliqua (Roble Beech)	27	4	7.5	5	5	710	1	1.5	2.5(S)	Mature	Good	Fair	8.52	40+	A-Good	Surface rooting. Broken branches in crown. Exceptional specimen of County significance	No works required This tree is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP.	Low	30	16	-
8	Cupressus macrocarpa (Monterey Cypress)	20.5	5	7	7.5	4.5	820	1	1.5	3.5(S)	Middle aged	Good	Fair	9.84	40+	A-Good	Leaning East. Multiple stems above 1.5m.	No works required This tree is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP.	Low	30	16	-
9	Chamaecyparis lawsoniana (Lawson Cypress)	15	2.5	3	3.5	3	782	3	1.8	0.5(S)	Middle aged	Fair	Fair	9.38	40+	B-Moderate	Leaning East. Multiple stems below 1.5m.	No works required This tree is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP.	Low	25	12	-
10	Chamaecyparis lawsoniana (Lawson Cypress)	15	2	2	2	2	690	1	2.5	3(N)	Middle aged	Fair	Fair	8.28	20+	B-Moderate	Stem divides above 1.5m. Included bark present in fork.	No works required This tree is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP.	Low	25	12	-
11	Taxus baccata Fastigiata (Yew)	10	3.5	4	3.5	3.5	350	1	3	1(N)	Middle aged	Fair	Fair	4.2	20+	B-Moderate	Multiple stems at ground level. Broken branches in crown.	No works required This tree is retainable and will be adequately protected	Low	12	10	-

Tree No.	Species Common Name <i>Latin Name</i>	Height (M)	Crown Spread (M)				Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiological Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Bat Roost Potential	Ultimate Size For Species (M)		Priority
			N	S	E	W														Height	Spread	
																	by the position of the protective barrier as indicated by the blue line on the TPP.					
12	Ilex aquifolium (Holly)	5	1	1.5	1	1	220	1	1	1.5(S)	Young	Poor	Poor	2.64	<10	C-Low	Decay present on stem. Dieback in crown.	Remove tree	Low	12	12	C
13	Ilex aquifolium (Holly)	5.5	1	1	1	1.5	270	1	1	1.5(S)	Middle aged	Poor	Poor	3.24	<10	U-Unsuitable for retention	Decay present on stem. Dieback in crown.	Remove tree	Low	12	12	B
Hedges																						
Hedge 1	Crataegus monogyna (Hawthorn)	1.5	0.5	0.5	0.5	0.5	50	-	0	0(N)	Middle aged	Fair	Fair	0.6	20+	B-Moderate	Trimmed	No works required	Low	10	8	--
Groups																						
Group 1	Ilex aquifolium (Holly), Sambucus nigra (Elder)	10	4	4	4	4	220	-	0	0(N)	Mature	Fair	Fair	2.64	20+	B-Moderate	Mother stems died and thrown up suckers	Remove group	Low	10	12	C
Group 2	Ilex aquifolium (Holly), Sambucus nigra (Elder)	10	3	3	3	3	220	-	0	0(N)	Mature	Fair	Fair	2.64	20+	B-Moderate	4 clumps. Several dead stems. Multiple stems at ground level. Dieback in crown.	Remove group to facilitate the development	Low	10	12	A

Appendix 2(1)

Glossary of Terms

- 1 Reference number:** An individual identifying number
- 2 Species:** Species identification is based on visual field observations and lists the common name. In some cases the botanical name will be used where there is no common alternative. On in-depth surveys the botanical name only may be used
- 3 Height:** Height is estimated to the nearest metre. On computerised surveys this may be within a range of heights. When measured height is required, a clinometer is used to measure to the nearest metre
- 4 Diameter:** Trunk diameter measured at 1.5 metres from ground level to the nearest centimetre. In some surveys this is indicated as a range
- 5 Spread:** Measurement of canopy from the trunk to the nearest metre in four directions, North, South, East, and West in metres
- 6 Lower crown Clearance:** Height in metres of crown clearance above adjacent ground level
- 7 Age:** Either an estimate (or statement if accurately known) of the age of the tree, classified as:
 - Y** = Young tree, established tree usually up to one third of expected ultimate height & spread
 - MA** = middle aged, usually between one third and two thirds of ultimate height & spread
 - M** = Mature, more or less at full height but still increasing in girth & spread
 - OM** = Over mature, grown to full size and becoming senescent,
 - V** = Veteran tree, individuals surviving beyond the typical age range for the species
- 8 Physiological Condition:** Good = Healthy tree with good vitality,
Fair = Moderate health and vitality normal or slightly less for species and age
Poor = Poor shape or form - signs of decline in crown, may have structural weakness.
Dead = dead or dying tree
- 9 Structural Condition:** Good = No visible structural defects
Fair = Only minor structural defects
Poor = Defects which may need to be rectified or regularly monitored
Remove = Severe defects which may result in imminent failure or collapse
- 10 Management Recommendations:** General comments on the condition of the tree or group and any action required. potential for wildlife habitats
- 11 Estimated Remaining Contribution:** Safe Useful Life Expectancy (SULE): in some cases the age ranges are modified
Short: 0 – 10years Medium: 10– 20 Years
Intermediate: 20-40 Long: 40 + years
- 12 Tree Quality:** Assessment of tree quality see following cascade chart for details
- 13 Priority:** A - Works to achieve an acceptable level of safety or required to facilitate the development
B - Works to achieve higher levels of arboricultural management.
C - To improve the aesthetic appearance.
- 12 Ultimate Size:** Taken from Arboriculture Research Note 8490ARB or NHBC Standards Chapter 4.2 as appropriate The Normal Ultimate Height in an Urban Situation in metres. Ultimate spread of the Crown in metres.
- 13 Root Protection Area:** The distance at which the protective barrier should be erected measured in radii from the centre of the trunk in metres.

- 14 Pruning:** Pruning shall be defined as the removal of living or dead parts of a plant by the Contractor. Such parts may be soft growth, twigs, branches, limbs or sections of the tree trunk. The cut material may vary from small to large in size.
- 15 Crown Cleaning:** Cleaning out is defined as the removal of dead, dying or diseased branchwood, broken branches or stubs left from previous tree surgery operations (see also 16 Deadwooding) together with all unwanted objects, which may include ivy (if specified) and/or other climbing plants, nails, redundant cable bracing, rope swings, tree houses and windblown rubbish from the tree, and any such debris from any cavities within the tree.
- 16 Deadwood Removal:** Dead-wooding shall be defined as the removal of all dead and dying branches and limbs from the tree.
- 17 Crown Lifting:** Crown lifting shall be defined as the removal of all soft growth and branches or parts thereof which are below or which extend below the height specified in the tender documents. It is recognised that the resultant canopy base might not be one single level but might be stepped to allow for different clearances, for example where a tree overhangs both the footway and the road where different height clearances are required.
- 18 Crown Reduction:** Crown reduction shall be defined as the reduction of the complete outline dimension of the canopy, from the tips of limbs and branches to the main trunk, by pruning growth to an acceptable branch, twig or but to leave a flowing silhouette.

Appendix 2(11) Cascade Chart For Assessing Tree Quality

Category and definition Trees to be considered for retention	Criteria – Subcategories			Identification on plan
	1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural values, including conservation	
<p><u>Category High = 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 of 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 Moderate = 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 Low = 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 150mm</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 benefits	Yellow
<p><u>Category = U Trees unsuitable for retention</u></p> <p>Those of 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>	<p>NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation</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 U category trees (i.e. 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 (e.g. Dutch elm disease) or very low quality trees suppressing adjacent trees of better quality • Habitat reinstatement may be appropriate (e.g. U category trees used as a bat roost- installation of bat box in nearby tree) 			Red



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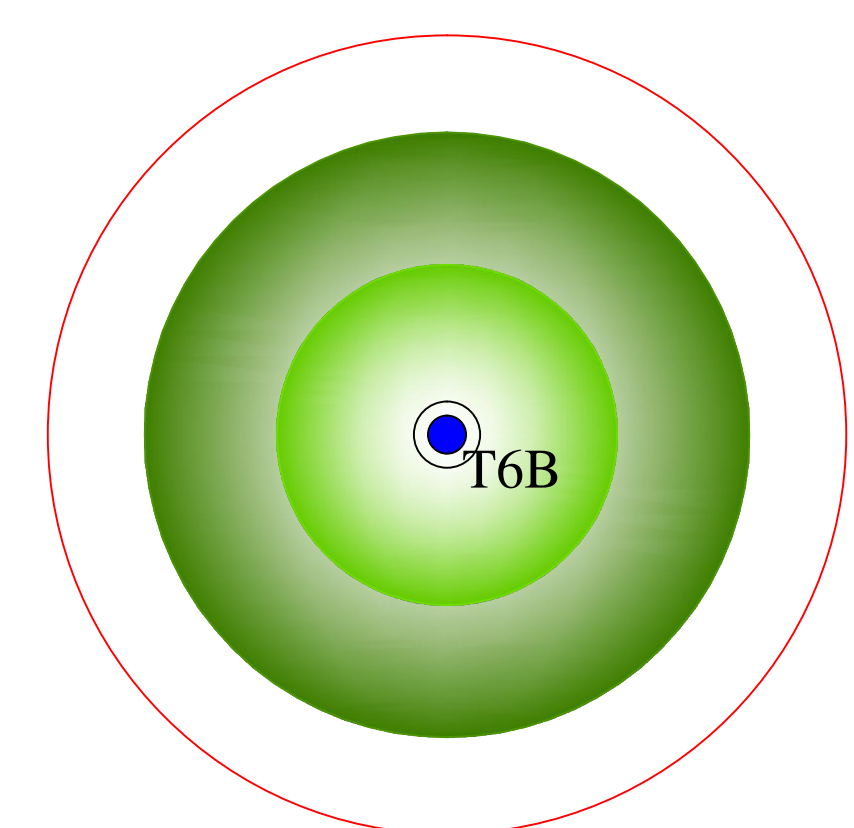
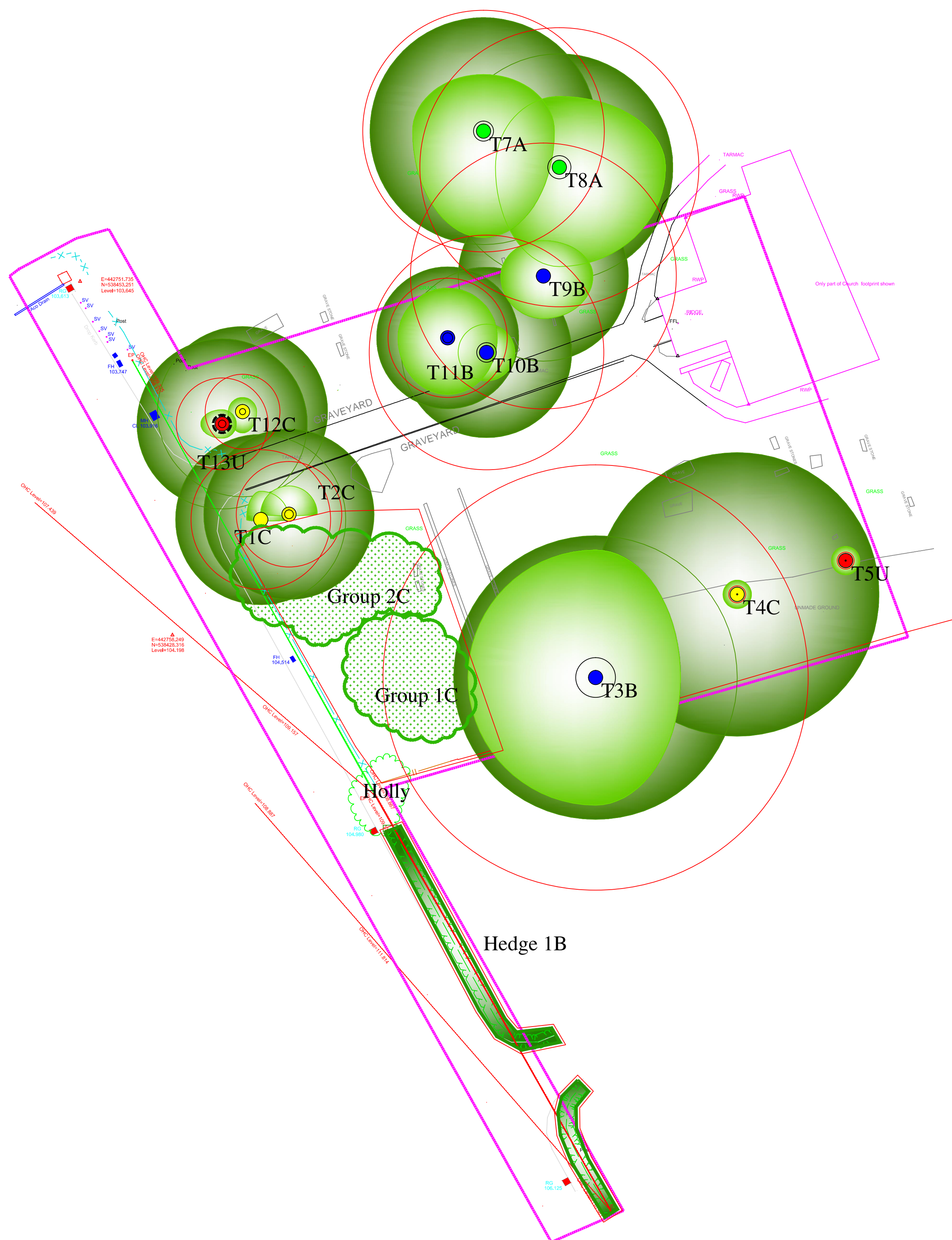
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Key:	
	Tree Number
	Tree Crown Tree Shape (Shaded Light Green)
	Predicted Future Growth Of Canopy (Shaded Dark Green & Surrounding Current Crown Shape)
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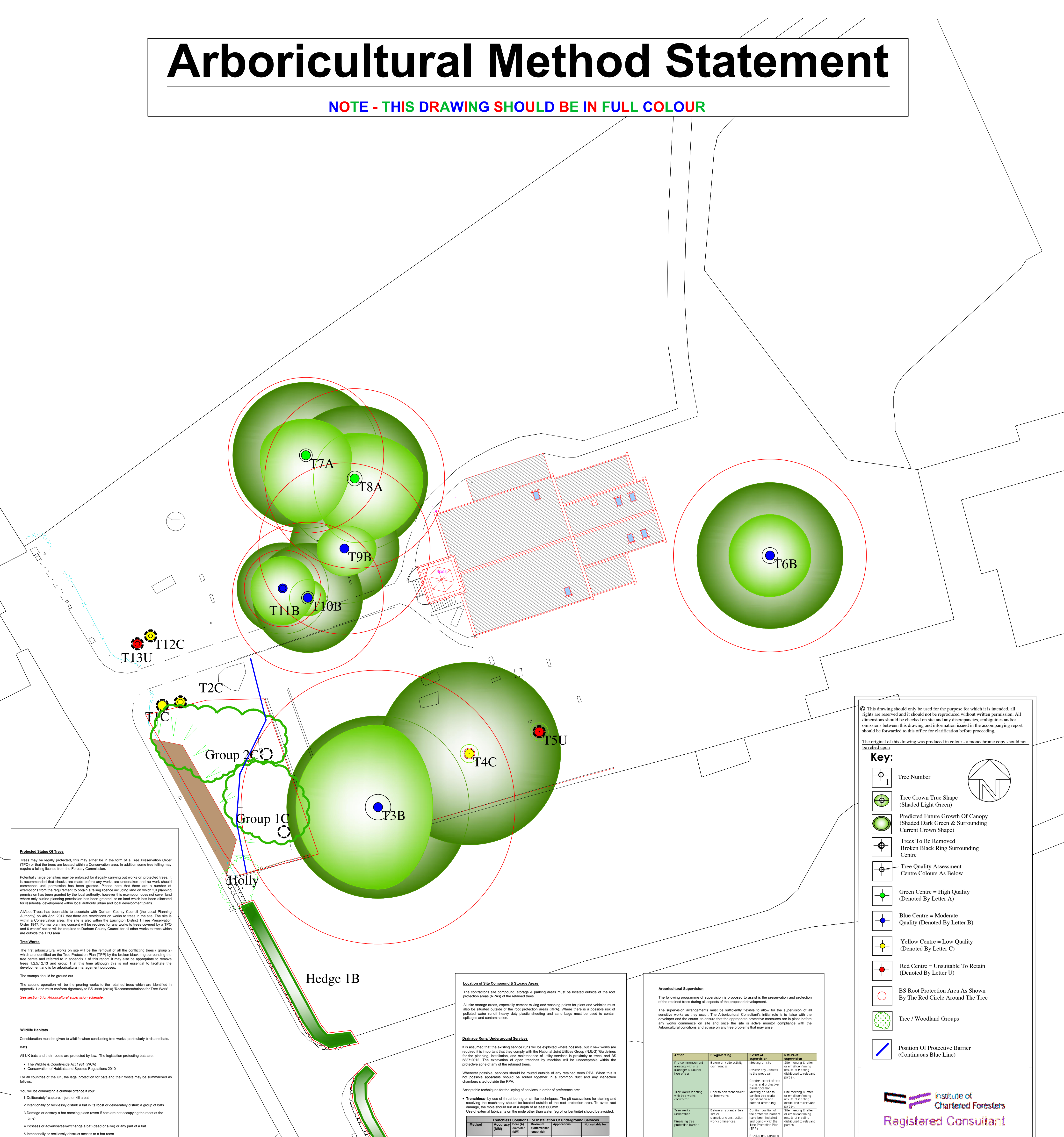
Arboricultural Impact Assessment
 Existing Trees Shown On Existing Layout
 St. James' Church, Castle Eden
 For
 Beaumont Brown Architects

AllAboutTrees Ltd
 Arboricultural & Ecological Consulting
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Drawn at Durham Office	By RL	Checked by AW
Scale A1 @ 1:200	Date 04.04.17	
Registered Chartered Arboricultural Consultants -Arboricultural Consultants -Planning & Development -Urban Forestry -Ecological Consultants	Drawing Ref. AIA EXI	Revision -

Arboricultural Method Statement

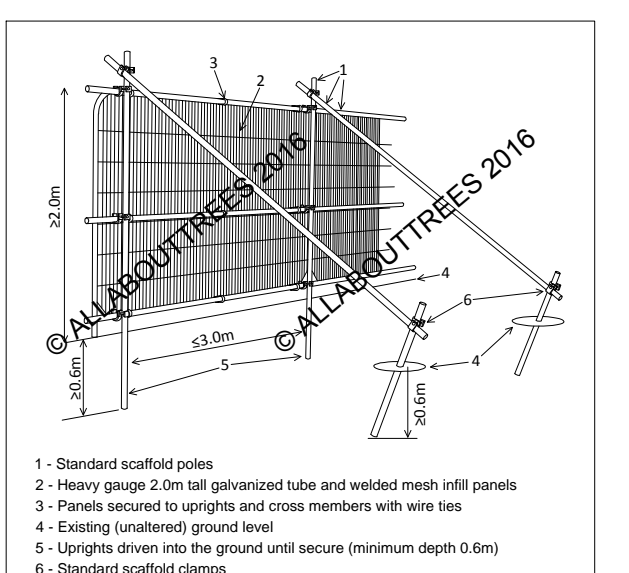
NOTE - THIS DRAWING SHOULD BE IN FULL COLOUR



Protected Status Of Trees
Trees may be legally protected, this may either be in the form of a Tree Preservation Order (TPO) or that the trees are located within a Conservation area. In addition some tree felling may require a felling licence from the Forestry Commission.
Potentially large penalties may be enforced for illegally carrying out works on protected trees. It is recommended that checks are made before any works are undertaken and no work should commence until permission has been granted. Please note that there are a number of exemptions from the requirement to obtain a felling licence including land on which full planning permission has been granted by the local authority, however this exemption does not cover land where only outline planning permission has been granted, or on land which has been allocated for residential development within local authority urban and local development plans.

Tree Works
The first arboricultural works on site will be the removal of all the conflicting trees (Group 2) which are identified on the Tree Protection Plan (TPP) by the broken black ring surrounding the tree centre and related to in appendix 1 of this report. It may also be appropriate to remove trees 1,2,5,12,13 and group 1 at this time although this is not essential to facilitate the development and for arboricultural management purposes.
The stumps should be ground out.
The second operation will be the pruning works to the retained trees which are identified in appendix 1 and must conform rigorously to BS 3998 (2010) Recommendations for Tree Work.
See section 5 for Arboricultural supervision schedule.

Wildlife Habitats
Consideration must be given to wildlife when conducting tree works, particularly birds and bats.
Bats
All UK bats and their roosts are protected by law. The legislation protecting bats are:
• The Wildlife and Countryside Act 1981 (WCA)
• Conservation of Habitats and Species Regulations 2010
For all countries of the UK, the legal protection for bats and their roosts may be summarised as follows:
You will be committing a criminal offence if you:
1. Deliberately capture, injure or kill a bat
2. Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats
3. Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time)
4. Possess or advertise/exchange a bat (dead or alive) or any part of a bat
5. Intentionally or recklessly obstruct access to a bat roost
It is a court, 'sufficiently' all probably be interpreted as someone who, although not intending to capture/injure or kill a bat, performed the relevant act, being sufficiently informed and aware of the consequences after the act will most likely have.)
Penalties on conviction - the maximum fine is £5,000 per incident or per bat (some roosts contain several hundred bats), up to six months in prison, and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.
No visual signs were found to indicate the presence of bats in the surveyed trees though a number of mature trees within the site display characteristics found favourable to bats and as such caution must be exercised.
When carrying out site works it is essential that the contractor or other competent person carries out a specific bats in trees risk assessment which can be obtained from the 'Arboricultural Association' or the 'Bat Conservation Trust (BCT)'. If evidence of bats is found work must stop immediately and Natural England Hotline contacted (0845 1300 228). A further inspection may be required by a licensed bat handler or roost visitor.
Birds
In the UK, all wild birds, their nests and their eggs are protected by law.
In England, Scotland and Wales the legislation that protects wild birds is:
• The Wildlife and Countryside Act 1981
• The Countryside (City) Act 2000
No nesting birds were present at the time of inspection though given the scope of the site and the extent of vegetation potential exists for nests and as such caution must be exercised.
As with bats the contractor has an obligation to carry out visual checks prior to works. Where possible tree works should be carried out in the period from August to the end of February in order to avoid the bird nesting season.
Protective Barrier Erection
The protective barriers are to be erected prior to the commencement of site works including demolition, soil stripping or movement, bringing onto site of materials, supplies or machinery. Tree works can be undertaken prior to the erection of the barriers.
The barriers must be erected in the position indicated on the Tree Protection Plan (TPP) by the dark blue line and be constructed as per the following specification.
The barriers should be considered essential and should not be removed or altered without prior recommendation by an Arboriculturist and approval of the local planning authority.
The barrier should consist of a vertical and horizontal framework of scaffold tubing which is adequately braced to resist impacts. The vertical scaffold tubes need to be placed at a distance not exceeding 3m apart. The wallposts or H-section posts need to be 2.3m tall and are securely attached to the scaffold framework with wire or scaffold clamps. The wire or scaffold clamps should be secured on the inside of the barrier to avoid any snagging. Panels on rubber or concrete feet are not resistant to impact and should not be used.
No fixing shall be made to any tree and all possible care must be taken to prevent damage to tree roots when erecting the posts.
All types of barriers must be firmly attached to prevent movement by site personnel or vehicles and all weather signs with the wording "Construction exclusion zone- keep out" should be attached.
See section 5 for Arboricultural supervision schedule.



Location of Site Compound & Storage Areas
The contractor's site compound, storage & parking areas must be located outside of the root protection areas (RPAs) of the retained trees.
All site storage areas, especially cement mixing and washing points for plant and vehicles must also be situated outside of the root protection areas (RPAs). Where there is a possible risk of polluted water runoff heavy duty plastic sheeting and sand bags must be used to contain spillages and contamination.
Drainage Runs/ Underground Services
It is assumed that the existing service runs will be exploited where possible, but if new works are required it is important that they comply with the National Joint Utilities Group (NJUG) Guidelines for the planning, installation, and maintenance of utility services in proximity to trees and BS 5832:2012. The excavation of open trenches by machine will be unacceptable within the protection zone of any of the retained trees.
Wherever possible, services should be routed outside of any retained trees RPA. When this is not possible apparatus should be routed together in a common duct and any inspection chambers sited outside the RPA.
Acceptable techniques for the laying of services in order of preference are:
• **Trenchless** - by use of thrust boring or similar techniques. The pit excavations for starting and receiving the machinery should be located outside of the root protection area, but where root damage, the hole should not be a depth of at least 600mm.
Use of external lubricants on the other than water (oil or bentonite) should be avoided.

Method	Accuracy (mm)	Service (mm)	Maximum Substrate Length (m)	Applications	Not suitable for
Manhole jacking	<±50	100 to 300	40	Gravelly fill pipes, pipe relining, watermain, sewerage, drainage, cable, conduits	Low cost projects due to reduce expense
Surface trenching	+/-100	25 to 1200	150	Pressure pipes, cables including fibre optic	Gravelly fill pipes, pipe relining, water (B)
Horizontal directional drilling	+/-100	150 to 2000	70	Any large bore pipe and ducts	Rocky and heavily obstructed soils
Impact boring (IC)	<±50 (B)	30 to 180 (B)	40	Gas, water and cable connections, e.g. fibre optic to property	Any situation that requires accuracy over distance or, means of flow.

Broken trench - by using hand dug trench sections together with trenchless techniques. It should be limited to practical access and installation around or below the roots. The trench must be dug by hand (see following comments in continuous trenching) and only be long enough to allow access for linking to the next section. The open sections should be kept as short as possible.
Continuous trench - the trench is excavated by hand and remains as many roots as possible. The surface layer is removed carefully and hand digging of the trench takes place. No roots over 2.5cm diameter or clumps of smaller roots (including fibrous) should be severed. The bank surrounding the roots must be maintained. Cutting of roots over 2.5cm diameter should not be attempted without the advice of a qualified Arboriculturist.
If roots have to be cut, a sharp tool (defined as spade, narrow spade, fork, breaker bar, secateurs, hand saw, post hole shovel, hand trowel) should be used.
Backfilling
Reinstatement of street works must comply with the code of practice New Roads and Streetworks Act 1991 (Specification for the reinstatement of openings in highways), but where tree roots are involved backfilling should be carefully carried out to avoid direct damage to retained roots and excessive compaction of the soil around them.
The backfill should incorporate an inert granular material mixed with top soil or sharp sand (not builders sand) around the retained roots. This will allow a measure of compaction for resurfacing whilst creating a sealed zone around the roots.
Roots and in particular fine roots, are vulnerable to desiccation on exposure to air. The roots are at greatest risk when there are rapid fluctuations in the air temperature around them (especially water diurnal temperature). It is vital that the roots are covered with sackings whilst the trench is open. The sackings should be removed once the trench is backfilled.

Arboricultural Supervision
The following programme of supervision is proposed to assist in the preservation and protection of all sensitive works as they occur. The Arboriculturist's initial role is to liaise with the developer and the council to ensure that the appropriate protective measures are in place before any works commence on site and once the site is active monitor compliance with the Arboricultural conditions and advise on any tree problems that may arise.

Action	Programming	Extent of supervision	Nature of supervision
Pre-work site visit to establish location of tree work	Before site work commences	Meeting on site	Site meeting to visit and confirm results of meeting distributed to relevant parties
Tree works meeting with the works contractor	Before commencement of tree works	Confirmation of tree work and protective measures to be taken	Site meeting to visit and confirm results of meeting distributed to relevant parties
Tree works meeting with the works contractor	Before any plant enters site or commencement of work commences	Confirmation of tree work and protective measures to be taken	Site meeting to visit and confirm results of meeting distributed to relevant parties
Final check of protective barrier	Once construction activities have finished	Meeting on site	Site meeting to visit and confirm results of meeting distributed to relevant parties

Site Management
It is the developer's responsibility to ensure that the details of the Arboricultural method statement and any agreed amendments are known and understood by all relevant site personnel. Copies of the agreed documents must be kept on site at all times and the site manager or other appropriate person must brief all personnel who could impact the trees on the specific tree protection requirements.
This should form part of the site induction procedure and be written into the appropriate site management documents.

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

Key:

- Tree Number
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- Tree / Woodland Groups
- Position Of Protective Barrier (Continuous Blue Line)

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Registered Consultant

Arboricultural Method Statement
Tree Protection Plan (TPP)
Retained Trees Shown On Proposed
Layout With Protective Measures Indicated

St. James' Church Castle Eden
For
Beaumont Brown Architects

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-Registered Chartered -Arboricultural Consultants -Planning & Development -Urban Forestry -Ecological Consultants	Drawing Ref. Revision AMS TPP -