



BS5837:2012

**Trees in relation to design, demolition and construction –
Recommendations**

Arboricultural Impact Assessment

Hadji Osman Cikkicioglu

Land at the rear of St. Ann's Mosque,
277 St Ann's Road,
London,
N15 5RG

12 January 2022

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1. Introduction

Arbtech Consulting Limited (Arbtech) received written instruction on 13th October 2021 from Hadji Osman Cikkicioglu to attend Land at the rear of St. Ann's Mosque, 277 St Ann's Road, London, N15 5RG; grid reference, TQ 32796 88580 (site) to undertake an arboricultural survey a to BS5837:2012 guidance to assess trees, hedges and major shrub groups growing on and within influencing distance of the site and to produce a Schedule of Trees, Tree Constraints Plan, and Arboricultural Impact Assessment.

2. Executive Summary

This report describes the extent and effect of the proposed development at Land at the rear of St. Ann's Mosque, 277 St Ann's Road, London, N15 5RG ("site") on individual trees and groups of trees within and adjacent to the site.

Trees within the site were surveyed; using a methodology guided by British Standard 5837:2012 'Trees in relation to design, demolition and construction – Recommendations' ("BS5837").



Figure 1: Aerial Image of Site with blue line denoting surveyed area (Google Maps)

Checklist for Submission to Local Planning Authority

Tree survey	✓
Tree constraints plan	✓
Arboricultural impact assessment	✓

This report and its appendices follow precisely the strategy for arboricultural appraisal intended to provide local planning authorities with evidence that trees have been properly considered throughout the development process.

It is the conclusion of this report that the overall quality and longevity of the amenity contribution provided for by the trees and groups of trees within and adjacent to the site will not be adversely affected as a result of the local planning authority consenting to the proposed development. It is considered that any issues raised in this report, or beyond the scope of it can be dealt with by planning conditions.

3. General Information

Client: Hadji Osman Cikkicioglu

Site: Land at the rear of St. Ann's Mosque, 277 St Ann's Road, London, N15 5RG

Brief proposal description: Proposed detached house of up to 3 storeys including a driveway to the front and garden to the rear.

Planning application reference: VOID/2021/2927

Table 1: Documents referred to.

Document	Reference No.
Site survey drawing	OS Tile
Proposed layout drawing	20201261-PL03
British Standard 5837:2012	"BS5837"
Arboricultural Impact Assessment	Arbtech AIA 01
Tree Protection Plan	Arbtech TPP 01

4. Tree Survey

Survey: An arboricultural survey to BS5837 of all trees within impacting distance of the site was undertaken by Chris Wren on 16th November 2021.

A total of 7No individual trees and 1No groups of trees were surveyed. Details for each of the trees surveyed are provided in the Schedule of Trees (see Appendix 1)

Table 2: Documents upon which this tree survey has been based.

Document	Originator	Reference Number	Title
Ordnance Survey	-	-	-

Limitations: The survey was made at ground level using visual observation only. Detailed examinations, such as climbing inspections and decay detection equipment were not employed, though may form part of the survey's management recommendations. Measurements were taken using specialist tapes, laser and GPS devices. Where this was not possible, measurements are estimated.

Scope: Pre-development tree surveys make arboricultural management recommendations based exclusively upon the individual tree or group of trees condition relative to their present context (*i.e. not in relation to the proposed development*).

Legal Status: No statutory protection check has been performed. BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order ("TPO"), and those trees without. This is principally because a detailed planning consent overrides any TPO protection. Consequently, we do not seek to offer any comparison between or infer any difference in the quality or importance of TPO trees and other trees.

* For more information on the surveyed trees please see Arbtech Consulting Ltd, Tree Survey Schedule (Appendix 1), Tree Survey Report and Tree Constraints Plan.

Table 3: Documents upon which this assessment has been based.

Document	Originator	Reference Number	Title
Ordnance Survey	-	-	-
Proposed Location Plan	Studio 47 Architects	20201261-PL03	New Detached House
Elevations	Studio 47 Architects	20201261-PL06	New Detached House

There are a number of issues that may need to be addressed in an arboricultural impact assessment between the trees and the proposed development, these are as follows:

- The effect and extent of the proposed development within the root protection areas (RPAs) of retained trees;
- The potential conflicts of the proposed development with canopies of retained trees; and
- The likelihood of any future remedial works to retained trees beyond which would have been scheduled as a part of usual management.

Table 4: Impacts upon the RPAs of retained trees.

Tree Number	Species	Proposed structure	RPA	Incursion	
T05	Common Ash	Dwelling	374.6	53.7	14.3
T05	Common Ash	Hard surfacing	374.6	21	5.6
T06	Common Ash	Dwelling	157.5	4.4	2.8
T06	Common Ash	Hard surfacing	157.5	7.8	5.0

These impacts can be seen on the Arboricultural Impact Assessment drawing number Arbtech AIA 01.

Trees to be removed

The total number of trees to be removed for this scheme is 2 No. individual trees, which have been prior approved as part of a Section 211 notice, application number CON/2021/0271, which was determined on 26th June 2021.

A breakdown of all tree removals and pruning works can be seen in Table 7: Summary of Tree Works

Table 5: Number of individual trees to be removed.

U	A	B	C
0	0	0	2

Table 6: Number of groups to be removed.

U	A	B	C
0 (0)	0 (0)	0 (0)	0 (0)

() = partial removal of a group

Canopy cover is ecologically important and the loss of canopy cover by this tree will be mitigated with planting within the development.

Tree Works

For reasons of public safety, all tree works referred to herein must be carried out prior to any site personnel commencing works or any building materials being delivered.

Table 7: Summary of Tree Works.

No.	Species	Works	Category
T02	Wild Cherry	Fell to ground level, grind stump	C1
T03	Norway Maple	Fell to ground level, grind stump	C1
T05	Common Ash	Prune; west of canopy to facilitate construction access.	B1

Notes

All tree work is to be undertaken in accordance with British Standard BS 3998:2010, Recommendations for tree work. All arising's are to be removed and the site is to be left as found. Care is to be taken of the ground around retained trees to make sure that it does not become compacted as a result of tree surgery operations. No equipment or vehicles such as timber Lorries, tractors, excavators or cranes shall be parked or driven beneath the crowns of any retained trees, to prevent subsequent compaction and root death.

Stump removal – stump grinding

Stump grinding should be to a minimum of 300mm deep or to extend through the base of the stump leaving the major roots disconnected if the intention is to reduce the potential for the spread of Honey fungus.

The grinding residue should be treated as arising's and removed from site.

NOTE Mechanical destruction of a stump by stump grinding is less disruptive to the site than digging out.

The hole left by stump removal, should be filled with soil or other material. The filling should be appropriate for future site usage, and for any surface treatment that is to be installed.

Where future plant growth is desired, the backfill material should be firmed in 150 mm layers by treading, avoiding excessive compaction and destruction of the soil structure.

Stump removal - digging

Stump removal by digging out should include disposal/utilisation of woody material (see Clause 13).

NOTE Whether done by hand or machine, digging out can cause severe disturbance of the site.

Where possible, when winching out a stump, a ground or other type of anchor should be used rather than a tree to be retained. If there is no alternative to using such a tree as an anchor, appropriate protective measures should be adopted.

After stump removal

The hole left by stump removal, whether by digging out or grinding, should be filled with soil or other material. The filling should be appropriate for future site usage and for any surface treatment that is to be installed.

Where future plant growth is desired, the back fill material should be firmed in 150mm layers by treading, avoiding excessive compaction and destruction of the soil structure.

Protected Species

Conservation Status of British Bats

The general consensus in Britain and Europe is that virtually all bat species are declining and vulnerable. Our understanding of population status is poor as there is very little historical data for most bat species. Certain species, such as the horseshoe bats, are better understood and have well documented contractions in range and population size.

Given this general picture of decline in UK Government within the UK Biodiversity Action Plan has designated five species of bats as priority species (greater and lesser horseshoe bats, barbastelle, Bechstein's and pipistrelle). These plans provide an action pathway whereby the maintenance and restoration of the former populations levels are investigated.

Legal Status of British Bats

Given the above position all British bats as well as their breeding sites and resting places enjoy national and international protection.

All bat species in the UK are fully protected under the Wildlife and Countryside Act 1981 (as amended) through inclusion in Schedule 5. All bats are also listed on Annex IV (and some on Annex II) of the EC Habitats Directive giving further, European protection. Taken together the act and Conservation of Habitats and Species Regulations 2012 (as amended)* make it an offence to; intentionally or deliberately kill, injure or capture (take) bats;

- Deliberately disturb bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts;
- Possess or transport a bat or any part of a bat, unless acquired legally;
- Sell, barter or exchange bats, or parts of bats

The legislation although not strictly affording protection to foraging grounds does protect roost sites. Bat roosts are protected at all times of the year whether or not bats are present. Any disturbance of a roost due to development must be licenced.

**the regulations that delivered by the UK's commitments to the Habitats Directive.*

Breeding birds

All nesting birds are protected under the Wildlife and Countryside Act (as amended) 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. Furthermore a number of birds enjoy further protection under that Act and are listed on Schedule 1 of the Act. These further protected birds are also protected from disturbance and it may be necessary to operate “no-go” buffer zones around such nests – typically out to 100m.

Planning policy guidance on the treatment of species identified as priorities under the biodiversity action programme suggests that local authorities should take measures to protect the habitats of these species from further decline through policies in local development documents and should ensure that they are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. The conservation of these species should be promoted through the incorporation of beneficial biodiversity designs within developments.

Appendix 1: Tree Survey Schedule

BS5837:2012 Tree Survey

Arbtech Consulting Ltd.

Client: Hadji Osman Cikkicioglu
 Project: Land at the rear of St. Ann's Mosque, 277 St Ann's Road,
 London, N15 5RG

Survey Date: 16/11/2021

Surveyor: Chris Wren



Unit 3, Well House Barns
 Chester Road
 Chester
 Cheshire
 CH4 0DH
 Phone: 01244 661170

Tree and Tag No Species		Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC	
			No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment				
G01												Estimated Measurements			
Lawson Cypress <i>Chamaecyparis lawsoniana</i>		20	1	550	N	5	5	M	A: 136.9 R: 6.6	Good	C: Good S: Not visible B: Not visible	Stems obscured by canopy. Stems physically inaccessible due to proximity of fencing and outbuildings. Basal area and lower 2m of stems obscured by 2m fencing and single story outbuildings. Dimensions recorded represent the average for the group. Works have been planned for this group with a Section 211 notice for the St Anns conservation area retuning with no objection. Further details in appendix 4			B.1 20+ yrs
T01															
Myrobalan Plum 'Nigra' <i>Prunus cerasifera 'Nigra'</i>		8	1	280	N	4	3	M	A: 35.5 R: 3.36	Good	C: Good S: Good B: Not visible	Asymmetrical crown due to proximity of companion trees. Physical wound on western side of stem just above ground level, wound approx. 420mm tall and 200mm wide with callus wood to 90mm. Basal area obscured by playground hard surface, which is in contact with the whole circumference of the stem.			C.1 10+ yrs
T02															
Wild Cherry <i>Prunus avium</i>		12	1	450	N	5	3	M	A: 91.6 R: 5.39	Good	C: Good S: Ivy B: Not visible	Asymmetrical crown due to historical presence of companion trees. Ivy on stem to apex. Basal area obscured by playground hard surface which is in physical contact with the whole circumference of the stem. Works have been planned for this tree with a Section 211 notice for the St Anns conservation area retuning with no objection. Further details in appendix 4			C.1 10+ yrs
Age Classifications:		N	Newly planted	EM	Early Mature		Condition:		C	Crown	Stems:		Ø	Diameter	
		Y	Young	M	Mature				S	Stem			(Eq)	Equivalent stem diameter using BS5837:2012 definition	
		SM	Semi-mature	OM	Over Mature				B	Basal area	ERC:		Estimated Remaining Contributio		

Tree and Tag No Species		Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC
			No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
T03														
Norway Maple <i>Acer platanoides</i>		12	1	360	N	4	6	M	A: 58.6	Fair	C: Good			C.1
					E	3.5	4		R: 4.31		S: Fair	Crimson king variety. Stem constricted at 3m by rope. Constriction old, with approx. 20mm of horizontal growth above and below the point of constriction. Basal area obscured by playground hard surface up to 1m from the stem. Works have been planned for this tree with a Section 211 notice for the St Anns conservation area retuning with no objection. Further details in appendix 4	10+ yrs	
					S	5	4				B: Not visible			
					W	6	3							
T04														
Leyland Cypress <i>X Cupressocyparis leylandii</i>		9	1	200	N	2	2	EM	A: 18.1	Good	C: Good			C.1
					E	2	2		R: 2.4		S: Good	Basal area obscured by debris.	20+ yrs	
					S	2	2				B: Not visible			
					W	2	2							
T05														
Common Ash <i>Fraxinus excelsior</i>		20	1	910	N	6.5	7	M	A: 374.7	Good	C: Good			B.1
					E	9	10		R: 10.92		S: Fair	Crown raised to current dimensions, wounds up to 170mm diameter with callus wood to 60mm. Major deadwood (>75mm diameter and/or longer than 2m) throughout crown. Multiple physical wounds throughout crown, wounds up to 130mm diameter with callus wood visible to 70mm. Fungal fruiting body at 13m on southern side of dominant stem. Fungal fruiting body consistent with Inonotus sp.. Works have been planned for this tree with a Section 211 notice for the St Anns conservation area retuning with no objection. Further details in appendix 4	20+ yrs	
					S	7	10				B: Not visible			
					W	7	4							
T06														
Common Ash <i>Fraxinus excelsior</i>		20	1	590	N	2	2	M	A: 157.5	Good	C: Good			B.1
					E	8	4		R: 7.08		S: Fair	Cause of asymmetrical crown unclear at time of survey. Physical wound on northern stem at 13m. Wound approx. 800mm tall and 230mm wide with callus wood to 100mm. Wound appears to lead to internal cavity. Cavity extent and size is not visible from ground level. Basal area obscured by single story outbuildings and debris. Works have been planned for this tree with a Section 211 notice for the St Anns conservation area retuning with no objection. Further details in appendix 4	20+ yrs	
					S	3	15				B: Not visible			
					W	8	4							
Age Classifications:		N	Newly planted	EM	Early Mature	Condition:			C	Crown	Stems:	Ø	Diameter	
		Y	Young	M	Mature				S	Stem		(Eq)	Equivalent stem diameter using BS5837:2012 definition	
		SM	Semi-mature	OM	Over Mature				B	Basal area	ERC:		Estimated Remaining Contributio	

Appendix 2: Arboricultural Impact Assessment Plan

Designs for foundations that would minimize the adverse impact upon trees should include particular attention to the existing levels, proposed finished levels and cross sectional details. Site specific and specialist advice should be sought from the relevant arborists and arboriculturalists.

- Piles with site investigation used to be determined their optimal location whilst avoiding damage to roots important for the stability of the tree, by means of hand tools or compressed air soil displacement, to a minimum depth of 800mm;
- Beams, laid at or above ground level, and cantilevered as necessary to avoid tree roots identified by site investigation.

Where a slab for minor structures (e.g. shed base) is to be formed within the RPA, it should bear on the existing ground level, and should not exceed an area greater than 20% of the existing unsurfaced ground.

Slabs for larger structures (e.g. dwellings) should be constructed with a ventilated air space between the underside of the slab and the existing soil surface (to enable gas exchange and venting through the soil surface). In such cases, a specialist irrigation system should be employed (e.g. roof run-off redirected under the slab). The design of the foundation should take into account of the effect on the load bearing properties of the underlying soil from the redirected roof run-off. Approval in principle for a foundation that relies on topsoil retention and roof run-off under the slab should be sought from building control authority prior to this approach being relied upon.

Where piling is to be installed near to trees, the smallest practical pile diameter should be used, as this reduces the possibility of striking major tree roots, and reduces the size of the rig required to sink the piles. If a piling mat is required, this should conform to the parameters for ground boarding. Use of the smallest practical piling rig is also important where piling within the branch spread is proposed, as this can reduce the need for access facilitation pruning. The pile type should be selected bearing in mind the need to protect the soil and adjacent roots from the potentially toxic effects of uncured concrete, e.g. sleeved bored piles or screw piles.

This information is compliant with British Standard BS5837:2012 Trees in relation to design, demolition and construction - Recommendations, section 7.5 Ground engineering for foundations within the RPA

Trees can be affected by construction within the RPAs either through the direct damage caused by the removal of roots, compaction of the rooting environment or secondary damage such as poisoning through leaks and spills (oils, fuels, etc.) or through de-icing (road salt, etc.).

Proposed hard surfacing within the RPAs of retained trees is to be designed so that it can be situated above the existing soil level and to minimise any adverse impact upon the tree RPAs, as the use of traditional foundations can result in excessive root loss through direct removal of roots during excavation and by compaction of the soil beneath the excavation, as such this 'traditional' type of foundation should be avoided.

When designing hard surfacing that is to be situated within RPAs, the design team need to pay particular attention to the proposed usage (pedestrian, domestic traffic, delivery vans, Emergency vehicles, HGVs etc.), the existing and proposed levels of hard surfacing and finished floor levels, edging types and details, proximity to tree trunks and surface rooting, contamination capture, SUDs, etc.

Possible sub-bases (foundations systems) for hard surfacing situated within the RPAs of retained trees could include:

- A proprietary system such as a multi-dimensional confinement system (Cellweb TRP or similar);
- Engineered solution such as a road deck, bridge, etc.

An engineered solution is likely require a level of excavation for site specific investigations to locate roots to aid in foundation design so that a suitable foundation can be designed to avoid roots and for the installation the structure.

NB: The use of a multi-dimensional confinement systems and/or an engineered solution will affect the finished level of the hard surfacing by raising the levels and needs to be taken into consideration when designing foundations and setting the finished floor levels of adjacent buildings.

Underground utility apparatus
Mechanical trenching for the installation of underground apparatus and drainage serves any roots present and can change the local hydrology in a way that adversely affects the health of the tree. For this reason, particular care should be taken in the rout and methods of installation of all underground apparatus. Wherever possible, apparatus should be routed outside of RPAs. Where this is not possible, it is preferable to

Keep apparatus together in common units, all inspection chambers should be sited outside of the RPAs.

plans showing the proposed route should be drawn up in conjunction with the project arboriculturist. In such cases trenchless insertion methods should be used with entry and retrieval pits being located outside of the RPAs. If this option is not feasible and providing roots can be retained and protected excavations should be undertaken using hand held tools (air-spade, forks, shovels) or a combination of trenchless and manual excavation (broken trench). Any design and installation should be undertaken in accordance with the National Joint Utilities Guidelines (NJUG).

Above-ground aerial apparatus (including CCTV cameras and lighting) should be sited to avoid the need for detrimental tree pruning, as such the current and future crown size of the tree should be assessed. Tree branches can be pruned back with care to provide space, though it is not appropriate for repetitive and significant tree work to be an initial design solution unless this is a suitable management outcome for the tree. Any pruning should be undertaken in accordance with BS3998:2010

Issue: Proposed hard surface situated within the RPA of trees T05 and T06.

Solution: A cellular confinement system or other approved no-dig engineering system should be designed in conjunction with arboricultural advice so that it can be constructed entirely above the existing soil level.

Issue: Proposed dwelling situated within the RPAs of trees T05 and T06.

Solution: Foundations are to be designed to an engineering specification in conjunction with arboricultural advice and site investigations.

Issue: Proposed dwelling situated within influencing distance of the canopies of tree nos. T05. Roof and surfaces will be subject to seasonal nuisance from falling debris such as leaves and small branches.

Solution: Roof and rainwater management to be designed to minimise nuisance and enable ease of maintenance by the use of gutter guards, rodding points etc.

T02 and T03 are approved for removal in accordance with the Section 211 notice, application number: CON/2021/0271.



Arboricultural Impacts			
Impacts			Nos. of trees
Trees to be removed			
Grassie / Hedges to be removed (partial removal of groups)			0 (0)
Trees with proposed incursions into RPAs			2
Trees with proposed incursions into RPAs			1
Trees with proposed incursions into RPAs			2
Trees that will require pruning			1
Grassie / Hedges that will require pruning			1
Trees to be transplanted			0
Grassie / Hedges to be transplanted			0

No.	Species	Proposed structure	Incursion
T05	Common Ash	Dwelling + hard surfacing	RPA
T06	Common Ash	Dwelling + hard surfacing	RPA

Arboricultural Impacts - RPAs (A/ratio)			
No.	Species	RPA (m ²)	Incursion (%)
T05	Common Ash	374.6	55.7
T06	Common Ash	274.5	21
T06	Common Ash	157.5	4.4
T06	Common Ash	157.5	7.8

Tree Work Schedule

No.	Species	Works	Category
T02	Willow Cherry	Patio ground level, stump	C1
T03	Norway Maple	Patio ground level, grind	C1
T05	Campanula	Prune, weed canopy to facilitate contact	B1

All tree work is to be undertaken in accordance with British Standard BS 3968:2010 Tree work - Recommendations.

All airwork is to be done, completed and the site to be left safe.

As care is to be taken of the ground around retained trees to make sure that the ground is not damaged, compacted or that there is no tree surgery operations. No equipment or vehicles such as timber lorrys, tractors, excavators or cranes shall be parked or driven beneath the crowns of any retained trees, to prevent subsequent compaction and root death.

No. of individual trees to be removed

U	A	B	C	D
0	0	0	0	2

No. of groups / hedges to be removed

U	A	B	C	D
0	0	0	0	0

All tree work is to be undertaken in accordance with British Standard
Please refer to Arbrech Consulting Ltd. Tree Schedule, Arboricultural
Method Statement and Tree Protection Plan, for full details of all
surveyed trees and how all aspects of the development may be
implemented without detriment to retained trees.



Project:
Land at the rear of St. Ann's Mosque,
277 St Ann's Road, London,
N15 5RG

Client:	Hadji Osman Cikkicioglu
Drawing:	Arboricultural Impact Assessment

Based on: 20201261-PL04

Drawing No:	Rev:
Arbtech AIA 01	

Date:	Scale:	Drawn:
Jan 20221	1:100 @ A0	EK

Key:					
Tree Nos.	T01	Tree Canopies:		Trunks:	
RPAs:		Category 'A' trees:		Category 'B' trees:	
Category 'B' groups:		Category 'Y' trees:		Trees to be removed:	T02 
Existing Site (OS file):		Inclusion - Structures:		Inclusion - Hard surfacing:	

All dimensions should be checked on site. No dimensions are to be scaled from this drawing.



Appendix 3: Contact Details

Name	Position	Company	Contact
	Client		
	Agent / Project Manager		
	Tree Officer		
	Arboricultural Consultant	Arbtech Consulting Ltd.	01244 661170 https://arbtech.co.uk
	Site Manager		
	Main contractor		

Document Production Record

Document number	Editor	Signature	Position	Issue number	Date
Arbtech AIA 01	Emily Kempson		Consultant	01	12/01/22

Limitations

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