

Arboricultural Impact Assessment and Method Statement Report

for ADI Architects, in relation to construction at rear of 140 Maida Vale, London.

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SUMMARY

This report focuses on the potential impacts to trees at the rear of 140 Maida Vale (The Islamic Centre of England) W9 1 QB, in relation to the re-construction of a boundary wall which has collapsed.

Most of the trees surveyed grow beyond the site boundary and it is understood these cannot be removed. Further, if traditional construction methods are used then root severance will occur to these trees.

A method statement has been prepared which aims to lessen impacts and it is believed the wall can be rebuilt whilst avoiding unnecessary root severance. Details of envisaged tree impacts can be seen <u>here</u> and details of methods to limit impacts are provided at Section 6, <u>here</u>.

1. INTRODUCTION

- 1.1. I have been instructed by Mr Hadi Shubber, to prepare this arboricultural method statement in relation to proposed re-construction of a listed boundary wall. A tree survey was carried out in February 2020, and this was completed in accordance with the British Standard, BS 5837:2012¹, and identified all trees close to proposed works.
- 1.2. My professional qualifications include the Arboricultural Association Technical Certificate, Level 3 National Certificate in Arboriculture. I hold the International Society of Arboriculture Tree Risk Assessment Qualification (TRAQ) and am a Lantra Certified Professional Tree Inspector with over 15 years of industry experience. My professional memberships include the Arboricultural Association, Institute of Chartered Foresters, International Society of Arboriculture and Small Woods Association. I hold professional indemnity and public liability insurances for appropriate values and can provide these certificates upon request, along with my professional qualifications.
- 1.3. The purpose of this report is to:
 - Record the current condition of the trees found on the site and categorise them using the criteria outlined in BS5837:2012.
 - Provide a Tree Constraints Plan that identifies constraints to development presented by the trees and their root protection areas, as described in the British Standard.
 - Assess and detail any impacts to trees that may occur as part of the proposed development, and;
 - Provide protection measures for trees and working methods to limit tree damage.
- 1.4. Trees were inspected from ground level only. Prominent and significant tree defects have been identified, and recommendations are given to reduce risk where present. However; detailed hazard assessment, soil analysis and decay mapping are beyond the scope of this report, and as such, it should not be viewed as a substitute for an assessment of tree risk on site.
- 1.5. The efficacy of this report relies on it being viewed not just as a document to achieve planning permission, but as guidance for construction near trees to be followed during the project. Because of this, it should be circulated to all relevant parties involved with site management and works, including prospective contractors, and any other disciplines that will be involved in groundworks near trees. The contents within should be checked with them, and they should be satisfied that the guidance is workable from a buildability point of view and accept the guidance must be followed. No liability is accepted for recommendations that cannot be implemented unless they are highlighted prior to submission for planning.

¹ British Standards Institute (2012) *BS5837:2012 Trees in Relation to Design, Demolition and Construction-Recommendations.* British Standards Publications Ltd.

2. SITE DETAILS

- 2.1. This report focuses on a small area of land at the rear of 140 Maida Vale, W9 1QB. This area comprises a small rectangle space of open ground and hard surfaces. Brick walls border this area and the northeastern wall has collapsed in the past. The walls on the southeastern boundary were also noted as being in poor condition and whilst an assessment of their structure is beyond my professional capabilities some parts of the wall did appear to be somewhat precarious.
- 2.2. A garden is present to the north-east and a small number of trees are present along this boundary.
- 2.3. This link to Google Street View ² shows the front of the property: <u>https://goo.gl/maps/xQQD5ZQbsurGHEtE8</u> although the trees are all obscured from view.
- 2.4. The underlying soil types and their relationship between trees will affect structural foundation depths and designs for the wall re-construction. An engineer's advice must be sought in relation to this aspect and the information provided within the survey data tables (*Table 1*) may aid their calculations.
- 2.5. Although a detailed analysis of soils has not been undertaken, information taken from the British Geological Survey Data web site³ indicates that the site may sit on bedrock layers of London Clay with no superficial deposits recorded.
- 2.6. Trees can be afforded statutory protection in a number of ways, including; Tree Preservation Orders (TPO); planning conditions; Felling Licenses; and being in a designated Conservation Area. Protected trees can only be removed or pruned if permission is granted either as part of planning permission, or if a separate application is made to the Local Authority (or the Forestry Commission).
- 2.7. The existence of a tree preservation order or conservation area does not automatically mean that a tree deserves to be a material constraint in a planning context. A formally protected tree can be in poor physiological or structural condition, making it unsuitable for retention. In that case it is inappropriate that it should influence the future use of a site.
- 2.8. Furthermore, planning consent takes precedent over these forms of protection, making them of secondary importance. For this reason, we do not routinely check for statutory protection. However, if any tree works or removals are required prior to planning consent, the local authority should be contacted to check if any statutory designations exist.

² Map Data © 2019 Google Inc. Image date: Aug 2014

³ <u>http://mapapps.bgs.ac.uk/geologyofbritain/home.html</u>

3. TREE SURVEY – METHOD AND BACKGROUND

- 3.1. This section briefly describes the methodology behind the recording and categorisation of trees.
- 3.2. All trees and tree groups inspected were categorised using the British Standard, BS5837:2012 and the attached Tree Constraints Plan (*Appendix C*) shows tree positions, numbers, retention categories and Tree Root Protection Areas (RPA). A schedule of the trees is included in *Appendix B*, which include species, physiological and structural condition, age, recommendations and quality categories. The survey methodology is described in *Appendix A*.
- 3.3. Tree and group locations were recorded without the use of a topographical survey but positions were estimated using fixed features around the area. If greater accuracy is required a topographical survey should be carried out; tree positions can then be placed at the points identified.
- 3.4. Trees have been recorded as individuals or as groups. The British Standard sets out the description of a group as follows: "The term "group" is intended to identify trees that form cohesive arboricultural features either **aerodynamically** (e.g. trees that provide companion shelter), **visually** (e.g. avenues or screens) or **culturally** including for biodiversity (e.g. parkland or wood pasture), in respect to each of the tree subcategories."
- 3.5. Where a tree in a group has characteristics that distinguish it from the rest of the group, it is generally recorded as an individual. Such trees may include but are not limited to, veteran trees, trees with significant defects, and specimen trees of different species that stand out from within the group.
- 3.6. The trees surveyed were categorised using the method explained in BS5837:2012. This method categorises individual trees, groups and woodlands in a systematic way. Each tree, group or woodland is identified on an attached plan.
- 3.7. Initially, it is determined if the tree should be regarded as a U category tree. U category trees are those that are of low value, which has little future due to poor physiological and structural condition. There may be instances where retention of a U category tree is appropriate, such as habitat enhancement, but this should be carefully considered and adequate space given to such retained features.
- 3.8. Other trees are graded A, B or C. The initial category should reflect the value of the trees in making an important contribution to the amenity of the site over a period of time. The higher the category, the longer the perceived time period.
- 3.9. A subcategory is included 1, 2 or 3. This subcategory reflects the type of value the surveyor feels the tree presents in regards its value to 1 arboricultural, 2 landscape, 3 cultural or conservation. Unfortunately, the allocation of two or more subcategories does not increase the quality category but does indicate that it has a broader range of benefits.

The table below reflects the BS:5837 cascade chart.

BS5837:2012 Categories	Definitions	Retention implications to a site		
Category A (Shown as green on the plans)	Trees of high quality and value able to make a substantial contribution to the site.	Efforts should be made to retain trees and amendments to a proposed scheme should be identified in preference to tree removal.		
Category B (Shown blue on the plans)	Trees of moderate quality and value able to make a significant contribution to the site.	Where possible amendments to a proposed scheme should be considered in preference to tree removal.		
Category C (shown as grey on the plans)	Trees of low quality and value in an adequate condition until new planting can be established, trees with impairments downgrading them from A or B category OR young trees with a stem diameter of less than 150mm.	The retention of trees may be advantageous in the short term, but they should not be seen as a constraint to development.		
Category U (shown as red on the plans)	Trees that have limited condition that will fail or die within 10 years and/or should be removed for reasons of arboricultural best practice	Not a material consideration in the planning process but may have other benefits that should be considered.		

3.10. The survey data and tree positions help inform the extent of tree Root Protection Areas (RPA) to ensure that development activities do not harm trees. BS5837 defines the root protection area as *'the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability'*. This area is usually enclosed by a construction exclusion zone for the duration of works and is shown on the plans as a purple line.

4. TREE SURVEY - RESULTS

- 4.1. A total of 12 individual trees and most of these grow (T3-T10) to the south-east of the open space, in a small corner of the outdoor area at the rear of the property. The remaining trees grow within the garden to the north of the property (Trees T1, T2, T11, T12) and these are the main focus of this report.
- 4.2. Tree T1 is a relatively young Sweet Gum which has developed a poorly formed, asymmetric crown due to suppression by the adjacent lime tree (T2). It has been classed as category C specimen because of its poor form, although it does offer some positive screening and landscape benefits for the property associated with the garden.
- 4.3. Tree T2 is a category B semi-mature Lime also growing within the garden to the north. It stands at around 15m height and makes a good contribution to the surrounding canopy and, as it is visible from a number of properties, offers good visual amenity.
- 4.4. Tree T11 is a very small and suppressed category C Maple variety which appears to be planted in recent years. It is unlikely to thrive in its current position because of adjacent suppression.
- 4.5. Tree T12 appears to be a Judas Tree and, again, this is likely to provide positive landscape value for the garden and associated property although it the upper parts of its crown do appear to be declining somewhat.
- 4.6. All of the trees above grow beyond the line of the boundary wall and in the case of T12 a close assessment could not be made. Apart from tree T2, and to lesser degree T12, they are relatively well obscured from wider public view.
- 4.7. Trees T3-T10 all grow in close proximity to each other in a confined area to the south-east of the open space at the rear of a telephone exchange, adjacent to 140 Maida Vale. They are all Sycamore and although individually they are unremarkable in form they do offer a collective value and provide positive environmental benefits to the area.

5. IMPACT ASSESSMENT

- 5.1. The proposal is to rebuild the northern boundary wall which collapsed, on the existing course and to its original height (c. 1.8 m) and 18 m long. The foundations for the wall have been backfilled and as I did not make any assessment prior to its collapse I cannot comment on the cause of its failure. However, a surface root was noted as extending from tree T1 and this tracked directly toward the wall. As such it is feasible that the demise of the wall could be partially attributed to tree root activity, either directly (through contact) or indirectly (through abstraction of moisture beneath foundation levels).
- 5.2. However, as the causal agent of the wall collapse is not the subject of this report, it serves no benefit to go into any further detail or draw conclusions on this aspect.
- 5.3. Instead the focus of this report is on how the wall can be rebuilt, how this process may affect trees, and what measures can be taken to lessen tree impacts.
- 5.4. The proposed works are small scale in nature and whilst I have not been given any details on its reconstruction or the requirements, it is fair to assume that it will not require a large work force, significant plant machinery or large amounts of materials.

TREE REMOVALS

5.5. No tree removals are required and as the trees grow beyond the property boundary the owners of the wall have no right to remove them without consent of the tree owner. Further, damage that may result in tree death or instability, as a result of construction or other ground works, may place the owners of 140 Maida Vale liable.

PRUNING

5.6. No pruning is required to enable the wall to be rebuilt as there is adequate crown clearance.

POSSIBLE ROOT IMPACTS

- 5.7. The two largest trees, T1 and T2 (a Lime and Sweet Gum), grow within 1 m of the boundary wall to be rebuilt and it was clear during my site inspection that at least one surface root from the young Sweet Gum (T1) tracks toward the foundations. Unfortunately, the existing foundations had been backfilled with soil and so I could make no assessment of their depth or if roots grow in close proximity. However, given the shrinkable nature of soils and the need to rebuild the wall to around 1.8m height, it is likely that substantial foundations will be required to avoid future ground movement. An engineer will be required to give further details on foundation design and depths.
- 5.8. If traditional construction methods are followed then it is highly likely that the trees would suffer further root severance, particularly as it is likely the engineers would specify foundations to go to greater depths than were present in the original foundations. However, if foundation depths are only required to match what was previously present, then impacts will be minimal and I believe the wall could be constructed with limited impacts to trees by creating a small bridged section over the exposed surface root of tree T2.

- 5.9. Given the likelihood that greater foundation depths will be required I suggest an alternative method be followed, so that tree root damage can be kept at a minimum and to reduce the likelihood of further damage to the wall due to volumetric changes in soils beneath foundation depths.
- 5.10. To achieve this a series of bridged sections constructed from suspended lintels supported by helical screwed piles⁴ could be used. These helical piles can be installed by hand and result in a 150mm diameter hole being bored into the ground at 2m spacings, to the depths informed by engineers advice and water levels. The lintel can be supported from the pile by a 'U' bracket and can sit at ground level.
- 5.11. The small diameter holes required, distance between them and lack of any concrete or plant machinery to install means this is the least impacting solution to rebuild the wall, as the trees are in good health and not particularly old, they are unlikely to be significantly affected by these works, and as works are carried out without the need for large plant and by individual operatives, the surface root from tree T1 can be avoided.
- 5.12. I recommend that a bridged section be constructed over the area closest tree T1 and T2, to allow for expansion of the buttress and avoid damage by direct contact in maturity. This also has the added benefit of allowing wildlife, such as hedgehogs, to pass through the areas.
- 5.13. If helical screw piles cannot be used, or are not desired, then I still believe the wall could be constructed from small diameter concrete piles and providing these are not sited within 2 m of the stems of tree T1 and T2, impacts are likely to be minimal.

SITE STORAGE AND WELFARE

5.14. No impacts in relation to site storage or welfare are envisaged

CONCLUSIONS

- 5.15. The proposed works do not require removal of any trees and it is considered that the wall can be rebuilt with minimal impacts to the trees on the adjoining land. Given the small scale nature of the works (rebuilding an 18m length of 1.8m high wall) there will be no need for large plant, or materials. Works can be undertaken by a small works team and as access to the rear area is very limited it is possible that excavation will be undertaken by hand.
- 5.16. Care will need to be taken during works but no specific physical protection measures to trees, which lie on third party land, are recommended. However, working methods to construct wall will need to be adhered to, as detailed in the following section.

⁴ <u>http://www.ukhelix.com/</u>

6. PROTECTION OF RETAINED TREES AND METHOD STATEMENT

- 6.1. No protection fencing is required but any site operatives should be made aware of the need to respect nearby trees as well as the following precautions which should be observed on site.
 - No fires to be lit on site
 - No storage of any materials, spoil, mixers, vehicles, plant or any other items related to construction or demolition to be stored within the fenced area.
 - No materials, fuel or chemicals to be discharged or mixed where they are likely to flow toward trees in the event of spillage.

CONSTRUCTION

- 6.2. Helical screw piles or excavated concrete piles will be used at circa. 2m spacings (to be confirmed by engineer). After the area has been checked for underground services the screw piles can be installed by hand using long crowbars to twist the piles into the ground to the required depth and 'U' brackets mounted on top of the piles as per manufacture recommendations.
- 6.3. If plant machinery is to be used then it should only operate from the south side of the wall on a layer of 100mm woodchip with ply boards on top to act as a load spreader and ground protection. The same approach should be taken if a small piling rig is required. It would be feasible to construct the piles (depending on depth) by hand and so if this method is followed then holes should be hand dug using post spades, digging bars and clam shell diggers.
- 6.4. If excavation methods, as opposed to helical screw piles, are followed then if roots (>25mm diameter, or thumb sized) are exposed they should not be damaged with a spade. If roots are prolific or large (>30mm) then the hole should backfilled and post site shifted slightly to avoid them.
- 6.5. Roots <25mm can pruned to the tree side of the pit, using clean and sharp bypass loppers or secateurs to leave a clean horizontal cut, parallel to the parent root. Where roots have been pruned a plastic sleeve, such as damp-proof membrane, should be placed around the edge of the pit and the post then can be concreted into the hole. Post holes with no roots present do not require sleeving and can be concreted in as normal.
- 6.6. Once the piles have been installed lintels can then be fixed to' U' brackets, or beam, mounted on the piles and normal construction of the wall can then be carried out.
- 6.7. All materials and mixing for construction of the wall should be carried out from the south (property) side, and ground protection, in the form of tarpaulin and plyboards on the open soil, should be used to prevent contamination of any soil.

APPENDIX A

SURVEY METHODOLOGY

On site data was recorded without the aid of a topographical survey, positions were triangulated using existing fixed features and OS data.

The data recorded includes:

- Height gathered using tru-pulse laser clinometer or estimated in metres.
- Diameter measurements taken at 1.5 metres above ground level (complying with requirements for BS5837). Girth data was gathered using a metric diameter tape, callipers or estimated where access was restricted.
- Tree crown spread estimated measurement of the four cardinal points to provide information to be used with the arboricultural constraints plan
- Age class estimated from an examination of the tree in question.

Age Classification

The following classification is employed:

- Y Young: Saplings and young trees under 10 years of age
- EM Early Mature: Trees older than 10 years but less than one-third of the life expectancy of their species, normally making substantial extension growth.
- SM Semi Mature: Trees between one third and two-thirds of the life expectancy of their species. More or less full height and large girth, increasing only slowly.
- M Mature: Trees beyond two-thirds of the life expectancy of their species. No significant extension growth.
- V Veteran: Trees that shows features of biological, cultural or aesthetic value that are characteristic of an individual surviving beyond the typical age range for the species.

Structural Condition

Trees were assessed, from ground level only, for any structural defects including, but not limited to, cracks, cavities, decay, previous wounding and root movement. The categories given for structural condition are:

- Good No visible significant defects noted;
- Fair Minor defects noted that could be remedied through tree surgery works;
- Poor Significant defects noted that predispose the tree to structural failure.

Physiological Condition

Trees were assessed for vigour and any signs of stress or ill health including, but not limited to, the presence of pests, diseases or pathogens and expected tree growth rates for species and age of a tree. The categories given for physiological condition are:

- Good Growth rates as expected for species and no signs of pests or disease
- Fair Growth rates appear below average for species and age, the presence of minor pest or disease that can be remedied.
- Poor Growth rates well below expected for species and age with the possibility of infestation of pests or pathogen present.
- Dead Little or no live growth. Unlikely tree will survive into following growing season.

Tree Condition/Comments.

Structural condition is also commented on and this will include such items as the presence of decay and structural defects.

Groups of similar trees were identified and treated in a similar way as the individual trees. Trees are generally plotted as groups where they form cohesive landscape features such as avenues, planting schemes in landscaped beds or shelterbelts

Trees are living organisms and their condition can change rapidly in response to environmental variables. Condition remarks refer to the date of survey and cannot be assumed to remain unchanged. While there is no such thing as a safe tree, regular inspection of trees is recommended to reduce the foreseeable risks associated with trees.

Estimated Remaining Contribution in Years

This is an estimate based on currently known factors of the possible remaining life of the tree. Clearly, it is impossible to predict changes in condition which may occur in the future, and this reflects what is considered reasonable under existing circumstances.

The estimated remaining contribution in years will be dependent on the interaction of the typical longevity of the species, its current age and condition with prevailing environmental factors. The estimated remaining contribution in years is also dependent on future tree management that can extend useful life in some instances.

Tree Categorisation Using BS 5837 Methodology

The trees surveyed were categorised using the method explained in BS5837 Trees in Relation to Construction 2012. This method categorises individual trees, groups and woodlands in a systematic way. Each tree, group or woodland is identified on an attached plan. Groups are identified as those trees forming a single arboricultural feature with trees that provide companion shelter, are avenues or screens or cultural.

Initially, the surveyor will determine if the tree should be regarded as a U category tree. U category trees are those that are low-value trees that have little future due to physiological and structural condition.

Other trees are graded A, B or C. The first category should reflect the value of the trees in making an important contribution to the amenity of the site over a period of time. The higher the category, the longer the perceived time period.

A subcategory is included 1, 2 or 3. This subcategory reflects the type of value the surveyor feels the tree presents in regards its value to 1 – arboricultural, 2 – landscape, 3 – cultural or conservation.

TREE DATA TABLE

Key to Inspection Report Form

Ref No.	Tree, group or hedge number, to correspond with all tree plans
Species	Genus and variety, common names are given.
Ht	Height in metres, top height given for group features. Either estimated or measured using Trupulse laser clinometer.
Dia	Stem diameter at 1.5m from ground level in millimetres. Estimated or measured using calipers. An average value is presented for group features.
N,S,E,W	Crown spreads at cardinal points, north, south, east and west. Estimated in metres. Average spread shown for group features
LcH	Height of lower crown, estimated.
PC, SC	Physiological (PC) and Structural Condition (SC). Based on assessment of tree/group and recorded as Good, Fair, Poor or Dead.
Age Class	Y – Young EM – Early mature
	SM – Semi Mature, M – Mature V – Veteran
Cat and Sub Cat	BS 5837:2012 categories and subcategories, please see section 3 for methodology and details.
ULE	Estimated useful life expectancy

Ref No.	Species	Ht (m)	Dia (mm)	N	s	E	w	Lc H (m)	SC	PC	Age Class	Comments	Cat	Sub Cat	ULE (years)	Root Protection Radius (m)
Τ1	Sweet gum	7	240	6	4	3	6	2	Fair	Good	EM	10m, from wall edge to west, 7m to east. 600mm from wall line. Large exposed surface root on south side tracking toward course of old wall. Suppressed form due to larger lime to east.	С	1	20-40	2.9
Т2	Common lime	15	540	5	4	5	6	3	Good	Good	SM	4m from wall to east, 11m from wall to west, 1.2m from course of old wall. Some old pruning wounds, but not in poor condition.	В	1	40+	6.5
Т3	Sycamore	14	250	2	1	1	3	8	Fair	Poor	EM	Ivy clad, drawn up form. Limited live growth at apex and limited amenity value.	U		<10	3.0
Т4	Sycamore	15	320	2	5	2	5	3	Fair	Fair	EM	Dense ivy restrict assessment. Poor shoot extension noted. Unremarkable.	С	1	'10-20	3.8
T5	Sycamore	17	360	3	1	5	4	5	Fair	Fair	SM	Part of a cluster of half dozen sycamore growing in small area of open ground near east wall. All individually unremarkable in terms of form, but collectively they do provide a positive green feature. This particular tree has a lower bow sweep of stem to north. Visible damage to adjacent wall also noted, reasons unclear.	В	2	20-40	4.3
Т6	Sycamore	17	360	3	1	6	4	4	Fair	Fair	SM	As previous.	В	2	20-40	4.3
Т7	Sycamore	18	420	2	1	7	3	3	Fair	Fair	SM	As previous, crown bias to east. In very close proximity to adjacent wall - likely to cause direct damage in near future.	В	2	20-40	5.0
Т8	Sycamore	18	370	3	4	0	8	5	Fair	Fair	SM	As previous. Distinct crown bias to east.	В	2	20-40	4.4
Т9	Sycamore	18	360, 140	2	4	7	2	3	Fair	Fair	SM	As previous. Twin stemmed from 1.2m. Large wound on north side, no advanced decay. Apical dieback on smaller, eastern stem.	В	2	20-40	5.0
T10	Sycamore	17	360	2	0	0	3	4	Fair	Fair	SM	As previous. Slender drawn up form.	С	1	'10-20	4.3
T11	Norway maple	4	50	0	1	0	2	2	Good	Fair	Y	Small young suppressed sapling. Numerous stem wounds. Unlikely to develop into well formed tree. 1m from base of wall.	С	1	20-40	0.6
T12	Judas tree	4	200	4	3	2	4	1	Fair	Fair	м	In adjacent garden, dimensions estimated and inspection restricted. Apical leader appears to be thinning and suffering dieback. C.3.5m from course of wall.	С	1	20-40	2.4

APPENDIX C

TREE CONSTRAINTS AND PROPOSED WORKS PLAN



APPENDIX D

SITE PHOTOGRAPHS



Tree T1 (left) and T2 (right.)



Tree T1, viewed from south east



Trees T1 (right), T2 (left of centre) and rubble from old collapsed wall.



View from, approximately, north east. Approximate course of wall shown adjacent trees T1 and T2, by red line



Poor condition of wall near trees T3 and T4.



Trees T5-T10 in south east corner of site