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## ***Andrew Harker Associates***

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Consultants in Arboriculture

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*Professional Tree & Woodland Management Services*

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# **Trees and Construction**

## **BS5837 Arboricultural Report**

Site: Land at Garston Park Church (Garston Old Road Liverpool L19 1QL)

Ref: GPC/ChCou/RB/13

Client:

The Church Council of Garston Park Church

### **ANDREW HARKER ASSOCIATES**

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Arboricultural Consultant (Author):
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10/10/13

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The Church Council of Garston Park Church | CLIENT

Land at Garston Park Church | SITE

GPC/ChCou/RB/13 | REF

07/10/2013 | DATE

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## 1. INTRODUCTION

- 1.1 Instruction: This report has been prepared for The Church Council of Garston Park Church (hereafter; client) in respect of the arboricultural related planning considerations to Garston Park Church (Garston Old Road Liverpool L19 1QL (hereafter; site).

As the proposal relates to new construction at site, the advice herein is produced in accordance with the British Standard 5837: 2012 'Trees in Relation to Design, Demolition and Construction - Recommendations' (hereafter; BS5837).

- 1.2 BS5837: The scope of BS5837 is to provide guidance on how trees and other vegetation can be suitably integrated into construction and development design schemes. The aim is to ensure the protection of amenity, i.e. retention and protection of such trees which are appropriate for retention and/or mitigation measures to ensure the continuation of tree cover and amenity contribution.
- 1.3 Scope of this report: This report has been produced in accordance with BS5837 and is intended to demonstrate how trees have been properly considered throughout the design process. The objective is to systematically assess and provide suitable recommendations regarding the proposal's potential impact on trees and vice versa.
- 1.4 Following instruction the consultant visited the site on the Apr 2013. Pursuant to the agreed brief a site assessment and a BS5837 tree survey were carried out; all trees within impacting distance of the proposed construction processes and application boundary were surveyed from ground level.
- 1.5 This advice is subject to caveat at Appendix I, outlines relevant terms and definitions at Appendix II and constitutes the findings of the preliminary site assessment and associated arboricultural recommendations.
- 1.6 The survey data and site observations have been used to illustrate the site's arboricultural constraints in the form of a tree survey plan (hereafter; plan); the plan and the tree survey data table are at Appendix III.

2. SITE & APPLICATION INFORMATION

2.1 The site is currently derelict and is dominated by self sown Sycamores and rubble from building demolition. to the rear of the site is a bowling green to the right is a row of garages and to the left is car parking hardstanding.

2.2 Proposal: A number of schemes are being explored by the client it is likely that a scheme to build new row of houses facing onto Garston Park Road will be the outcome.

2.3 The site requires consideration from an arboricultural perspective due to the presence of trees contained within and on the application boundary of which the proposed works are within impacting distance.

2.4 Tree Summary

2.4.1 The objective assessment resulted in a range of BS5837 categories of 'B' 'C' and 'U' being attributed to the individual trees within influencing distance of the site.

2.4.2 The surveyed trees appear to be mostly self sown trees on the actual site itself. Off site there is a Red Horsechestnut. A group of trees G2 has been extensively damaged by fire in the past

2.4.3 Generally speaking the trees viewable from public areas contribute little to the local amenity of the area. The most significant tree is situated outside the boundary of the property under the care of the Local Authority

2.4.4 The most significant trees are classed as 'B' (T19).

2.4.5 The remainder of the trees were classed as either 'C' or 'U'

2.4.6 Trees with 'U' rating should be removed for Arboricultural or safety reasons these are: G2

### 3. ARBORICULTURAL ASSESSMENT

- 3.1 The following information, as with the prior contents of this report, should be read in conjunction with the tree data table and appended tree survey plan (Garston Old Road /TCP/01).
- 3.2 Where possible, the design and layout of the site should incorporate the components of the surveyed trees (crowns and rooting areas) and provide a suitable level of clearance to allow for their long term safe retention, i.e. RPA protection and crown clearance from the trees.

#### Tree Works

The currently structural and physiological condition of some trees may benefit from a degree of tree pruning [depending on the increased use of close proximity surrounds], e.g. T1 removal of deadwood. Any trees which are to be removed should be well indicated to ensure that the retained trees are suitably protected. Hence, all trees being removed are too marked by a suitably qualified person [spraying the stems with a cross].

#### Tree Crowns

Consideration, not just for existing trees but for newly planted trees also, should take account of trees reaching their full growth potential. It is always prudent to provide adequate clearance from a tree's current crown for future growth, i.e. to allow a tree adequate space to reach maturity without conflicts with structures.

These issues are less important in relation to the retained building as the trees' relationship with the building remains constant. This requirement applies more importantly to the introduction or increase of tree to building encroachment. Future Pressures for Tree Removal/Pruning The layout of the proposed development should consider the issues of:

- The potential dominance or overbearing nature from trees. Large trees in very close proximity to structures or amenity space may be considered as overly dominating buildings; this can lead to an ongoing and detrimental requirement for crown pruning and/or tree removal;
- Any light or shading issues on buildings or amenity space. Where the loss of light becomes a potential concern, a detailed shading assessment of the retained tree may be considered necessary if the new buildings are in the immediate vicinity retained trees; and the potential leaf litter.
- It is a likely occurrence that leaf litter will fall and cause ongoing and increased maintenance requirements where in proximity to buildings and parking areas etc. Consideration for proximity and design, specifically for designing roofs, gutters and drainage systems, should aim to alleviate this concern.

### Root Protection Areas (RPA)

Consideration for the retained tree's RPAs should avoid any works from said areas in order to ensure the protection of existing growing conditions. Specific attention must be paid to tree protection measures, i.e. Heras barrier fencing.

In this instance, and in taking advantage of the grouped nature of the trees and the existing hard surfaced access routes, fencing could be installed to prohibit access to RPAs for the duration of construction which would provide adequate protection. It is sometimes possible to undertake construction activities within the rooting areas of retained trees which will require greater attention to the tree protection measures, foundation designs, phasing of works and construction processes etc. If it is proposed to undertake works within these areas, more specific advice should be sought from a qualified arboriculturalist with a view to forming a judgment on suitability and a method statement.

### Demolition/Excavation Works

Any removal of existing built structures (including small outbuildings, walls etc.) or hard surfacing such as the onsite fenced compounds will need to be undertaken with great care where this occurs within or near to the rooting areas of retained trees. Said works should adhere to the BS5837 RPA restrictions.

### Hard Landscape Works

As with previously mentioned arboricultural restrictions to demolition/construction, the proposed works should avoid retained trees' RPAs. However, where works are proposed within RPAs, construction methods [for hard surfacing, bin stores etc.] should retain the existing ground levels, be undertaken sensitively and using a no dig design. This process ensures that the existing conditions for tree root growth and development remain and the incorporation of a suitably applied permeable surface will ensure no loss of water, nutrients of and gaseous exchange. All trees on site have been subject to a detailed inspection and their potential conflicts with the proposals addressed in this advice.

This concludes our advice.

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The Church Council of Garston Park Church | **CLIENT**

Land at Garston Park Church | **SITE**

GPC/ChCou/RB/13 | **REF**

07/10/2013 | **DATE**

## Appendix I

### Caveat

Any and all information supplied to AHA by/on behalf of the client is assumed to be accurate unless otherwise informed. | This report is limited to the observations made on the date of inspection as detailed herein and any deletion, editing or alteration will result in the report being null and void in its entirety. | This report in its entirety may be deemed null and void if remedial works are undertaken on any area of the site, on or after the date of the survey. | No liability is assumed by the author or by AHA for any misuse, misinterpretation or misrepresentation of this report. | This report is not valid in adverse or unpredictable weather conditions or for any failure due to 'force majeure' or unpredictable events. | No responsibility is assumed either by the author of this report or by AHA for any legal matters that may arise as a consequence. | Neither the author nor AHA will be required to attend court or give testimony as part of this agreement. | The responsibility for any works undertaken on the basis of the recommendations of this report does not form part of this agreement.

## Appendix II

### Terms and Definitions

"Arboriculturist" - person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.

"Competent Person" - person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached.

"Topographical survey" - an accurately measured land survey undertaken to show all relevant existing site features. A method of carrying out topographical surveys is given in RICS specification Surveys of land buildings and utility services at scales of 1:500 and larger.

"BS5837 Tree survey" - should be undertaken by an arboriculturist to record information about the trees on or adjacent to a site. The results of the tree survey, including material constraints arising from existing trees that merit retention, should be used (along with any other relevant baseline data) to inform feasibility studies and design options. For this reason, the tree survey should be completed and made available to designers prior to and/or independently of any specific proposals for development.

"Tree categorization method" - trees should be categorised in accordance with the BS5837 cascade chart by an arboriculturist. This is to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained in the event of development occurring.

"Root protection area (RPA)" - layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority, shown as an arboricultural constraint in m<sup>2</sup>. The radius is calculated using the BS5837 calculation method. An arboriculturist may change the shape of an RPA but not reduce its area.

"Arboricultural implications assessment" - a study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

"Arboricultural method statement" - methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.

"Tree protection plan" - a scale drawing, informed by descriptive text where necessary, based upon the finalized proposals, showing trees for retention and illustrating the tree and landscape protection measures.



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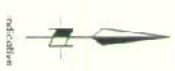
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### Appendix III

Data Table: As appended (BS5837 Tree Survey Key & Table)

Tree Survey Plan: As appended (Garston Old Road/TCP/01)



**KEY**

- Tree Crown Spread
- Root Protection Area (RPA)
- Tree Stem
- T1 Tree No.
- Tree Condition Category

A

B

C

D

E

F

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CLIENT The Church Council  
of Garston Park Church

PROJECT  
Garston Church  
Garston Old Road  
Liverpool

Tree Constraints Plan (TCP)

ANDREW HARKER ASSOC  
ANDREW HARKER ASSOCIATES  
321 Park Road  
Warrington  
WA5 3RG  
Telephone 01566 411141

Drawing Number	A2
ICP-01	REV

**TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'**

SITE: Garston Park Church, Garston

ARBOR CONSULTANT: Rod Berris

CLIENT: The Church Council of Garston Park Church

SURVEY DATE: October 2013

TREE REF. #	SPECIES	AGE	HEIGHT (in m)	CANOPY N - S - E - W	STEM (in mm)	RPA (in m <sup>2</sup> )	CLEARANCE (in m)	LIFE & VITALITY	NOTES	BS CAT.	MANAGEMENT
T1	Caucasian Elm, <i>Zelkova carpinifolia</i> , <i>Ulmaceae</i>	EM	3	3 3 3 3	120-100-25; 50-110	17.9	2.4	0	Multi stem tree set to the frontage of the property	C 1	None at this time
T2	Sycamore, <i>Acer psuedoplatanus</i> , <i>Aceraceae</i>	EM	10	2 3 2 1	140-130	16.5	2.3	1	Self seeded multi stemmed tree	C 1	None at this time
T3	Sycamore, <i>Acer psuedoplatanus</i> , <i>Aceraceae</i>	EM	8	3 2 1 1	140	8.9	1.7	2	Self seeded tree	C 1	None at this time
T4	Sycamore, <i>Acer psuedoplatanus</i> , <i>Aceraceae</i>	EM	8	2 2 1 1	170	13.1	2.0	2	Self seeded tree	C 1	None at this time
T5	Poplar, <i>Populus (species)</i> <i>Salicaceae</i>	LM	6	2 2 2 2	550	136.9	6.6	2	Pollarded tree set in an adjacent park area	C 1	None at this time
T6	Sycamore, <i>Acer psuedoplatanus</i> , <i>Aceraceae</i>	EM	8	2 2 2 2	170	13.1	2.0	2	Bowed main stem	C 1	None at this time
T7	Sycamore, <i>Acer psuedoplatanus</i> , <i>Aceraceae</i>	EM	8	2 2 3 3	200	18.1	2.4	2	Bowed main stem	C 1	None at this time
T8	Sycamore, <i>Acer psuedoplatanus</i> , <i>Aceraceae</i>	EM	8	2 2 2 2	180	14.7	2.2	2	Bowed main stem	C 1	None at this time
T9	Sycamore, <i>Acer psuedoplatanus</i> , <i>Aceraceae</i>	Y	8	1 1 2 1	100	4.5	1.2	2	Self seeded tree	C 1	None at this time
T10	Sycamore, <i>Acer psuedoplatanus</i> , <i>Aceraceae</i>	M	16	5 4 4 6	450	91.6	5.4	2	Damaged stem. Co-dominant branch structure	C 1	None at this time
T11	Sycamore, <i>Acer psuedoplatanus</i> , <i>Aceraceae</i>	M	6	3 1 1 2	200	18.1	2.4	2	Self seeded tree	C 1	None at this time
T12	Hybrid Holly, <i>Ilex alterclarensis</i> , <i>Aquifoliaceae</i>	EM	8	1 1 2 1	140	8.9	1.7	2	Self seeded tree	C 1	None at this time



TREE REF. #	SPECIES	AGE	HEIGHT (in m)	CANOPY (in m) N - S - E - W	STEM (in mm)	RPA (in m³) AVERAGE OF	CLEARANCE (in m)	LIFE & VITALITY	NOTES	BS CAT.	MANAGEMENT	
T13	Hybrid Holly, <i>Ilex alticolaensis</i> , <i>Aquifoliaceae</i>	M	7	2 2 2 3	300	40.7	3.6	1	Norm	Major limbs emanate from below 1.5m in height. Situated within neighbouring property	C 1	None at this time
T14	Sycamore, <i>Acer pseudoplatanus</i> , <i>Aceraceae</i>	M	15	6 5 3 4	440	87.6	5.3	2	Norm	Bowed main stem. Fire damaged	C 1	None at this time
T15	Sycamore, <i>Acer pseudoplatanus</i> , <i>Aceraceae</i>	M	10	3 4 3 3	170,75,120; 130-140	38.7	3.5	1.5	Norm	Self seeded multi stemmed tree	C 1	None at this time
T16	Sycamore, <i>Acer pseudoplatanus</i> , <i>Aceraceae</i>	M	14	3 4 3 2	270,260	63.6	4.5	2	Norm	Self seeded multi stemmed tree	C 1	None at this time
T17	Sycamore, <i>Acer pseudoplatanus</i> , <i>Aceraceae</i>	M	17	4 5 4 4	220,230,240	71.9	4.8	2	Norm	Embedded object/or fence in main stem. Multi stem	C 1	None at this time
T18	Sycamore, <i>Acer pseudoplatanus</i> , <i>Aceraceae</i>	M	14	3 3 3 3	230,240	50.0	4.0	1	Norm	Self seeded multi stemmed tree	C 1	None at this time
T19	Red Horse Chestnut, <i>Aesculus x carnea</i> , <i>Hippocastanaceae</i>	LM	15	3 4 2 5	550	136.9	6.6	2.5	Low	Local authority maintained tree. Major bud proliferation burrs. Bark wounding at base	B 1	None at this time

TREE REF. #	SPECIES	AGE	HEIGHT (in m)	CANOPY (in m) N - S - E - W	STEM (in mm)	RPA (in m <sup>2</sup> )	DBH (in m) at 1.3 m	CLEARANCE (in m)	LIFE & VITALITY	NOTES	BS CAT.	MANAGEMENT
G1	Sycamore, <i>Acer pseudoplatanus</i> , <i>Acetaceae</i>	EM	10	0 0 0 0	140	8.9	1.7	0	Norm	Natural regeneration	C 2	None at this time
G2	Sycamore, <i>Acer pseudoplatanus</i> , <i>Acetaceae</i>	M	16	0 0 0 0	280	35.5	3.4	0	Low	Group with extensively fire damaged with dead hanging branches.	U	Fell to ground level
G3	Privet, <i>Ligustrum vulgare</i> , <i>Oleaceae</i>	EM	3	0 0 0 0	50	1.1	0.6	0	Norm	Managed boundary hedge	C 2	None at this time
FIELD KEY:												
TREE REF. #	Tree reference number; tag or plan number; (T - individual tree; G - group of trees/shrubs; H - hedge).											
SPECIES	Genus, species and/or common name.											
AGE	Age classification (Y - young; EM - early mature; M - mature; LM - late mature; OM - over mature).											
HEIGHT (in m)	Approximate height of tree in metres.											
CANOPY (in m) N - S - E - W	Approximate branch spread in metres of the four principal compass points.											
STEM (in mm)	Stem diameter in millimetres, measured in accordance with s.4.6 of BS5837.											
RPA (in m <sup>2</sup> )	Root Projection Area calculated as a function of the STEM measurement (single stem/multiple stem variant, as outlined within BS5837).											
CLEARANCE (in m)	Height in metres of brown clearance above the adjacent ground level.											
VITALITY	A measure of physiological condition, typically judged from annual extension growth (normal, poor, dead).											
NOTES	Structural and physiological condition observations.											
BS CAT.	BS5837 tree quality assessment category, resulting from structural/physiological condition and remaining contribution (approximate useful life expectancy).											
	Standard retention category U, in such a condition that any existing value would be lost within 10 years.											
	Standard retention category A, high quality and value, in such a condition as to be able to make substantial contribution of 40+ years.											
	Standard retention category B, moderate quality and value, in such a condition as to make a significant contribution of 20+ years.											
	Standard retention category C, low quality and value, currently in adequate condition to remain until new planting could be established 10+ years.											
	Standard retention sub-category mainly due to: 1. Arboricultural values; 2. Landscape values; 3. Cultural values, including conservation.											
MANAGEMENT	Preliminary management recommendations (as appropriate).											
...	Within the survey schedule denotes an estimate.											