Arboricultural Impact Assessment

Garages off Green Walk

Ruislip

Middlesex

HA4 8NL

09th April 2018

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Document information

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Notice to Interested Parties

To achieve the study objectives stated in this report, we were required to base our conclusions on the best information available during the period of the investigation and within the limits prescribed by our client in the agreement.

No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information. Thus, we cannot guarantee that the investigations completely defined the degree or extent of e.g. species abundances or habitat management efficacy described in the report.

CONTENTS

1 INTRODUCTION

1.1 Arbeco Ltd was instructed by Ruislip Manor Cottage Society to identify and assess significant trees at Garages of off Green Walk, Ruislip, Middlesex, HA4 8NL to help inform the proposed demolition of a garage block and the construction of two dwellings.

1.2 An Arboricultural Impact Assessment was undertaken by an Arbeco Ltd qualified arboriculturalist Naomi Charman BSc (Hons) MRes on 13th March 2018.

1.3 This report provides a Tree Constraints Plan and a draft Tree Protection Plan which will be used to inform the design proposals to minimise potential damage to trees.

1.4 For the purpose of this report, the terms and definitions provided in Appendix 3 apply.

Site Description

1.5 The site is located in Ruislip, an area of the London Borough of Hillingdon (Ordnance Survey Grid Reference for the centre of the site: TQ 09710 87287). The site is approximately 0.1 ha in area and comprises 15 garage buildings, an associated area of hardstanding and parts of three neighbouring rear gardens.

Development Proposals

1.6 The development proposals comprise the demolition of a garage block and the construction of two dwellings.

2 METHODS

Arboricultural Survey

2.1 All significant trees within the site boundary and adjacent to site, where access was permitted, were surveyed and individually assessed from ground level in accordance with the British Standard 5837: 2012 Trees in relation to design, demolition and construction. A significant tree is defined as any tree with a diameter at breast height of more than 75 mm or in the case of woodlands or substantial tree groups any tree with a diameter at breast height of more than 150 mm.

2.2 Where trees grow as groups with a relatively uniform age, species mix, structural and physiological condition, these were assessed as a group unless differentiation between the individuals was deemed necessary (e.g. to highlight significant variation in attributes).

2.3 Each tree and group of trees assessed was allocated to a category (A, B, C or U) based on the age class, condition and useful life expectancy of the tree. Categories A-C have three sub-categories to reflect the arboricultural (1), landscape (2) and cultural/conservation (3) qualities of each tree or group of trees. The table below provides a summary of the categories and of their implications for the development, full details of categorisation criteria are provided in Appendix 1.

Table 2.1 Summary of tree classification and implications for the development

Category	Definition	Implications for the development
A	Trees of high quality with an estimated remaining life expectancy of at least 40 years	These trees are a material consideration in the planning process. Every effort should be made to retain these trees.
B	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	These trees are a material consideration in the planning process. Every effort should be made to retain these trees.
C	Trees of low quality and value with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm	These trees are a material consideration in the planning process. Where possible amendments to a proposed design or mitigation measures should be considered in preference to tree removal.
U	Trees in poor conditions with an estimated remaining life expectancy of at less than 10 years	These trees are not a material consideration in the planning process and they may need to be removed for reasons of sound arboricultural management.

2.4 The London Borough of Hillingdon website was consulted to obtain information about any significant trees protected by Tree Preservation Orders or located within Conservation Areas.

2.5 Each recorded tree and group was given a reference number which can be found within the Tree Survey Schedule in Appendix 3 and in Figure 3.1.

2.6 Branch spread was measured at the four cardinal points: north; east; south; west. Where possible, stem diameters were measured at 1.5m above ground using a measuring tape and current tree heights were measured using a Forestry Pro Laser Rangefinder.

2.7 Where direct access to trees was not possible due to local constraints such as impenetrable vegetation or tree location in private property, the trees' height and other parameters were estimated and marked with the symbol '#' in the tree survey schedule.

2.8 As base topographical plans were not available and/or additional trees were not recorded on the topographical plans, the approximate position of these trees was estimated and marked with the letters 'AP' (approximate position) in the Tree Constraints Plan and Tree Protection Plan.

2.9 The root protection area (RPA) of each single stem tree was defined as a circle with a radius 12 times the stem diameter.

2.10 For trees with two to five stems, the RPA was defined as a circle with a radius 12 times the sum of the stem diameters. The combined stem diameter was calculated as follows:

$\sqrt{(\text{stem diameter 1})^2 + (\text{stem diameter 2})^2 + (\text{stem diameter 3})^2 + (\text{stem diameter 4})^2 (\text{stem diameter 5})^2}$

For trees with more than five stems the combined stem diameter was calculated as follows:

$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$

2.11 The resulting calculated stem diameter was then multiplied by 12 to give the RPA.

Arboricultural Impact Assessment

2.12 The results of the Arboricultural Survey were used to evaluate the direct and indirect effects of the proposed design on the existing trees and identify appropriate mitigation measures.

2.13 The locations of the recorded trees were digitised in the Tree Plan (Figure 3.1) showing their approximate locations and BS5837 quality assessment categories.

Survey constraints and limitations

2.14 The arboricultural survey was undertaken from ground level and did not involve other specialist arboricultural inspections (e.g. root collar examination or sonic tomography). Where more detailed surveys/inspection of a tree were deemed necessary these have been recommended in the tree survey schedule.

2.15 Although obvious structural defects and the condition of trees were noted, this report does not constitute a full tree risk assessment or management plan.

2.16 Formal assessments of topography, drainage, service conduits and soil conditions including specific laboratory investigations of soil properties (i.e. plasticity index, moisture content, suction pressure) were not undertaken and are beyond the scope of this report.

2.17 Trees are living organisms and their health and condition change with time. Therefore, this assessment remains valid for 12 months from the date of inspection, or until a severe storm is experienced, after which time a new inspection is required. For the purpose of this report, a severe storm is defined as a period of violent weather, involving rain, hail, wind, snow, lightning or any combination of these, likely to cause damage to trees

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3 SURVEY RESULTS AND RECOMMENDATIONS

3.1 A total of one tree and two groups of trees were surveyed during the Arboricultural Impact Assessment at Garages off Green Walk (Appendix 4).

3.2 The London Borough of Hillingdon website was consulted to determine whether any tree preservation orders (TPOs) were present within or adjacent to the site. There are no TPOs on site but the site is within the Ruislip, Manor Way Conservation Area (CA-27).

Category A trees

3.3 No category A trees were subject to survey.

Category B trees

3.4 No category B trees were subject to survey.

Category C trees

3.5 There was one category C group on site, G1.

3.6 G1 was a group of hawthorns *Crataegus monogyna* rooted on the boundary line between the garages off Green Walk and the rear gardens of the properties on Pembroke Road.

3.7 G1 appeared to be a lapsed hedge line. It had been subject to unsympathetic past management and the existing growing environment was inhospitable as a result of vehicular activity and littering. In some areas parts of the tree's root plates were visibly damaged.

3.8 There was also an established climbing plant growing in the crowns of the trees in the west part of this group. The climber has heavily supressed growth in these areas of G1.

3.9 Due to the lapsed management of the hedge line and the damage being caused to G1 it is considered the group does not have a useful life expectancy. This group should be removed and replaced on completion of the development with species more fitting to the character of the Conversation Area (Appendix 5).

Category U trees

3.10 There was one category U tree on site, T1, and one category U group on site, G2.

3.11 T1 was a mature apple tree *Malus domesticus* in the rear garden of 23 Windmill Way.

3.12 T1 had been subject to unsympathetic past management with a large co-dominant stem having been removed leaving the crown unbalanced and the tree drawn up. Several decay pockets were present where large limbs had been removed and there was evidence of die back in the crown.

3.13 As a result of T1's poor form and evidence of decline it is recommended that this tree is removed on arboricultural grounds.

3.14 G2 was a hedge line of mixed coniferous species including Leyland cypress *Cupressus × leylandii* and Lawson cypress *Chamaecyparis lawsoniana.* G2 was rooted on the boundary of 23 and 25 Windmill Way.

3.15 G2 was subject to unsympathetic past management, some of the larger trees had been 'topped'. As a result of this whilst G2 provides some screening value its amenity value as a whole is considered to be low.

3.16 There was also an established climbing plant growing in the crowns of the trees in the east part of this group. The climber has heavily supressed growth in these areas of G1.

3.17 Due to G2's poor condition and its lack of amenity value it is considered this group should be removed and replaced on completion of the development with species more fitting to the character of the Conversation Area.

4 ARBORICULTURAL IMPACT ASSESSMENT

4.1 The development proposals comprise the proposed demolition of a garage block and the construction of two dwellings.

4.2 None of the trees subject to survey were considered suitable specimens for retention, therefore a full Arboricultural Method Statement is not considered necessary.

Tree Surgery Work

4.3 A schedule for tree surgery works can be found in Appendix 4. The schedule details the works required for each tree in accordance to the recommendations in this report including any tree removal, remedial tree works and access facilitation pruning. An assessment of such works should be made by the project arboriculturalist.

4.4 Due to T1, G1 and G2 being protected by being in a Conservation Area, any works to these trees will require written consent of the Local Planning Authority.

4.5 All works will be carried out by a competent tree surgery firm, to standards recommended in the BS 3998: 2010 “Tree works – recommendations” document.

5 SUMMARY AND CONCLUSIONS

5.1 The development proposals comprise the demolition of a garage block and the construction of two dwellings.

5.2 A total of one tree and two groups were surveyed during the Arboricultural Impact Assessment of the garages off Green Walk. Species included apple, Leyland cypress, Lawson cypress and hawthorn.

5.3 One group was categorised as C1 (G1).

5.4 One group (G2), and one tree (T1) were categorised as U.

5.5 Due to declining health, poor growth environments, lack of amenity value and unsympathetic past management it is recommended that T1, G1 and G2 are removed on arboricultural grounds.

5.6 Whilst G1 and G2 provide some screening value this is considered limited due to the above issues. It is considered that it would be of more value to the Conservation Area if these trees where replaced after the completion of the development with species more suitable to the environment and in keeping with the character of the Conservation Area.

5.7 Due to the poor condition of the trees on site and the recommendation to remove T1, G1 and G2 a full Arboricultural method Statement is not considered appropriate.

5.8 It is considered that there is no arboricultural reason why the development cannot go ahead, by taking appropriate protective and mitigation measures so that all retained trees can be adequately protected, preventing any negative impacts to those trees.

APPENDIX 1 – Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)		
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.	• 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 (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality Note: Category U trees can have existing or potential conservation value which it might be desirable to preserve.		
Category and definition	**1 Mainly arboricultural qualities**	**2 Mainly Landscape qualities**	**3 Mainly cultural values, including conservation**
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual, or those that are essential components of groups, or 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 woodpasture)
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of 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
Category C Those of low quality and value with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value,and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value

APPENDIX 2 – Glossary of terms

Arboricultural Impact Assessment (AIA) A study, undertaken by an arboriculturalist, 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 (AMS) The methodology for the implementation of any aspect of development that has potential to result in loss of or damage to a tree.

Construction Exclusion Zone Area based on the RPA (in square metres) identified by an arboriculturalist, to be protected during development, including demolition and construction work, by the use of barriers and/or ground protection fit for purpose to ensure the long-term retention of a tree.

Crown clearance The height or spread in metres of the lowest significant branches above ground level.

Diameter Trunk diameter measured at 1.5m above ground level or at the base of trees where they are twin or multi-stemmed.

DBH Diameter at breast height.

Height The height of a tree measured using a clinometer.

Management recommendations General comments on the condition of the tree, group or woodland and recommendations for future works.

Pruning The removal of living or dead parts of a tree. Such parts may be soft growth (leaves) branches limbs or sections of the trunk or stem.

Root Protection Area (RPA) Layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form, in square metres.

Species The species is based on field observation and lists the common and botanical name of the specimen.

Spread Measurement of the largest extent of the trees branch growth.

Structural condition Description of any decayed or physical defects.

Tree Constraints Plan (TCP) Plan prepared by an arboriculturalist for the purpose of layout design showing the RPA and representing the effect that mature height and spread of retained trees will have on layouts through shade, dominance etc.

Tree Protection Plan (TPP) Scale drawing prepared by arboriculturalist showing the finalised layout proposals, tree retention and tree and landscape protection measures detailed within the AMS, which can be shown graphically.

Veteran tree Tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristics of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned

APPENDIX 3 – Tree Survey Schedule

Tree number	Tree species	Age class	Estimated remaining contribution (years)	Tree Height (m)	Number of stems	Stem diameter (mm)	Crown spread (m)				Height to underside of canopy (m)	Physiological condition	Structural condition	Quality Assessment Category	Comments and observations	Recommended works	Root Protection Area Radius (m) for retained trees
							N	E	S	W							
T1	Apple *Malus domesticus*	M	<10	8	1	300	1.5	1.5	1	1.5	5	poor	poor	U	Co dominant stem has been removed, tree asymmetrical and displaying poor growth pattern. Decay pockets present where limbs have been removed. Showing signs of dieback in the crown indicating decline.	Remove	N/A
G1	Hawthorn *Crataegus monogyna*	M	<10	3-5m	Multiple	Avg. 175	N/A	N/A	N/A	N/A	Avg. 1.5	poor	poor	C1	lapsed hedge line, subject to unsympathetic past management. Inhospitable current growing environment due to vehicular	Remove	N/A

															activity and littering. Some areas tree root plates were visibly damaged. Climber growth in crown suppressing trees to the west.		
G2	Leyland cypress *Cupressus × leylandii* and Lawson cypress *Chamaecyparis lawsoniana.*	M	<10	8-10m	Multiple	Avg. 450	N/A	N/A	N/A	N/A	Avg. 0.5	poor	poor	**U**	Unsympathetic past management, amenity value low. Climber growth in crown suppressing trees to the east.	Remove	N/A

Table key: Juv = Juvenile; Em = early-mature: M = Mature; Om = over-mature, V = veteran; # = estimated parameter

APPENDIX 4 – Site photographs

Photograph 1: T1, apple.

Photograph 2: G1, lapsed hawthorn hedge line.

Photograph 3:
G2, Leyland cypress *Cupressus* × *leylandii* and Lawson cypress *Chamaecyparis lawsoniana*

APPENDIX 5 – Species list for replanting

A list of suitable hedgerow species for replanting the boundary hedge line post-development is given below.

Beech *Fagus sylvatica*

Hornbeam *Carpinus betulus*

Field maple *Acer campestre*

Hazel *Corylus avellana*

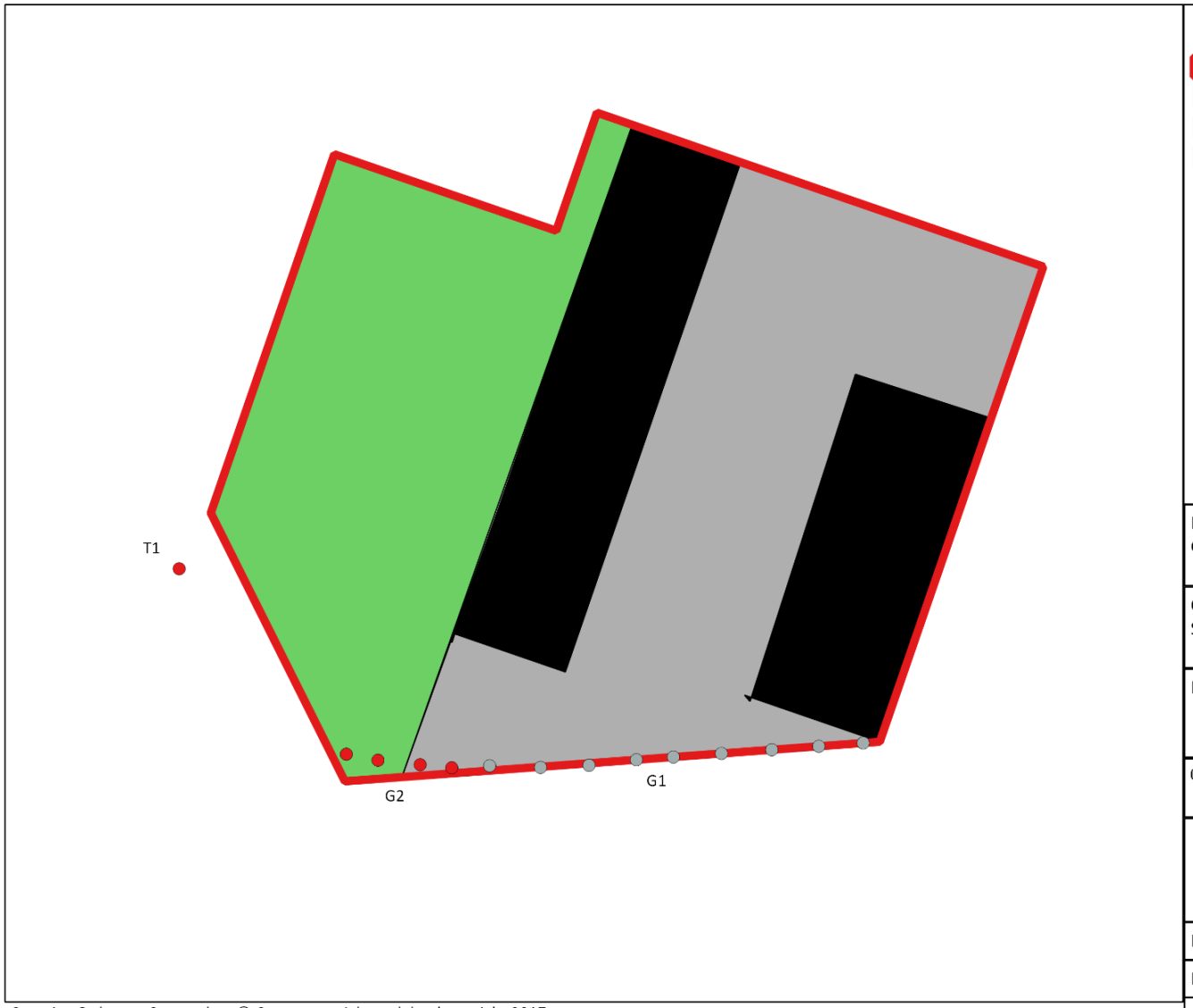
Wild privet *Ligustrum vulgare*

Holly *Ilex aquifolium*

Yew *Taxus baccata*

FIGURES

Figure 3.1: Tree Plan



LEGEND

- Site boundary
- Hardstanding
- Gardens
- Buildings
- Category U tree/group for removal
- Category C group for removal

Project: ARB1219 Garages off Green Walk

Client: Ruislip Manor Cottage Society

Figure: 3.1 Tree Plan

0 2.5 5 m

arbeco
Ecology, Tree & Habitat Services

Date: 21/03/2018

Drawing Number: 1

Drawn by: NC Checked by: RM