



Ecology Consultancy



9 Nestles Avenue

Arboricultural Impact Assessment

Report for Healey Development Solutions (Hayes) Ltd

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Executive Summary

The Ecology Consultancy was commissioned by Healey Development Solutions (Hayes) Ltd to undertake a ground level and Arboricultural Impact Assessment of trees that could be affected by future works associated with the development of land at 9 Nestles Avenue, Hayes. A qualitative assessment of each tree was carried out according to British Standard BS 5837:2012, Trees in Relation to Design, Demolition and Construction– Recommendations, focusing on arboricultural values (categories A1, B1, C1)¹ and landscape values (categories A2, B2, C3)².

The main findings of the survey are as follows:

- There were nine individual trees, three groups³ and five hedgerows in and adjacent to the proposed development site each described in Appendix 1 of this report.
- A tree constraints check was carried out with the London Borough of Hillingdon and it was confirmed that no trees located adjacent to or in the proposed development site were the subject to Tree Preservation Order, however the eastern boundary of the site was subject to the Nestles Conservation Area.
- Of the trees surveyed, two individuals and one group were attributed Category B status, six individuals, one group and five hedges were attributed Category C status and one individual and one group were attributed Category U status.
- Root protection areas were calculated in accordance with BS 5837:2012 for each of the surveyed trees, groups, and hedges ranged from 2.2m² to 72.4m² for H1 and T8 respectively.
- Any work to trees should consider the potential presence of protected species, including breeding birds and roosting bats. The Preliminary Ecological Appraisal (The Ecology Consultancy, 2018) and any subsequent ecological reports should be consulted prior to the commencement of works.

¹ Categorisation grading in accordance with BS 5837 2012. Trees suitable for retention: - Category A. Trees of high quality with an estimated remaining life expectancy of at least 40 years.
Category B. Trees of moderate quality with an estimated life expectancy of at least 20 years.
Category C. Trees of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm.
Category U. Trees of very low quality normally with a life expectancy of less than 10 years or requiring immediate removal due to health and safety concerns.

² British Standard BS 5837 2012 recommends that these categories may be further broken down into sub categories A1 A2 A3 pertaining to Arboricultural, Landscape or Cultural values respectively.

³ 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).

1 Introduction

BACKGROUND

- 1.1 The Ecology Consultancy was commissioned on 16 July 2018 by Healey Development Solutions (Hayes) Ltd to carry out an arboricultural survey of trees at 9 Nestles Avenue, Hayes and provide a report to inform future design proposals and tree protection. The survey is required to assess the condition of trees that could be affected by future development of the site and provide sufficient information for the development of site layouts and construction exclusion zones to enable the protection of existing trees.

SCOPE OF REPORT

- 1.2 This report has been produced in accordance with British Standard BS 5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations (hereafter referred to as BS 5837:2012). It provides information on the current condition of trees at the site, their suitability for retention, and the above and below ground constraints to development.
- 1.3 Any clear flaws or hazards have been identified in the Schedule of Trees provided in Appendix 1. Preliminary recommendations for the management of retained trees are provided, but a full hazard risk assessment comprising a more comprehensive analysis of tree condition and potential risk to target areas is beyond the scope of this report. Any recommendations relating to the management of potentially hazardous trees should be carried out as soon as possible⁴.

SITE CONTEXT AND STATUS

- 1.4 The site is situated in the London Borough of Hillingdon approximately 220m south-east of Hayes and Harlington Rail station and 910m north of the M4 motorway. The site comprises an old warehouse building with an area of hardstanding to the south and measures 0.2ha. The northern and western boundaries of the site are formed by commercial properties, with the Nestle Conservation Area located immediately to the south east of the site, Nestles Avenue to the south and an area of scattered trees and

⁴ All tree works should be undertaken by a suitably qualified Arboricultural Contractor. No arboricultural works to trees subject to planning constraints shall be carried out without the written consent of the relevant Local Planning Authority (LPA). Any proposed tree works should be undertaken in accordance with British Standard BS 3998:2010 Treework - Recommendations. Works to trees that are the subject of a Tree Preservation Order or within a Conservation Area which are deemed to be dangerous under Regulation 14 of the Town and Country Planning (England) (Regulations) 2012 may under certain circumstances be undertaken without needing to seek the prior written consent of the LPA.

scrub to the east. The Ordnance Survey National Grid reference for the centre of the site is TQ 09851 79228.

DESCRIPTION OF THE PROPOSALS

- 1.5 The proposals comprise the demolition of the existing structure on site, followed by the erection of a ten storey residential building.

2 Methodology

TREE SURVEY

- 2.1 The tree survey was conducted in accordance with BS 5837:2012 the results of which are presented in the Schedule of Trees (Appendix 1) and include a sequential numbering of each tree, species listed by common name; tree dimensions including overall height, canopy spreads measured against the cardinal compass points; crown height; age class; physiological condition; structural condition, life expectancy; root protection areas and preliminary management advice.
- 2.2 Each tree has been assigned a category grade in accordance with BS 5837:2012 categories A, B, C and U ranging from high to low quality. Definitions of tree quality are provided in Table 3, Appendix 1.
- 2.3 For the purposes of this report, arboricultural as well as landscape sub-categories have been used in the Schedule of Trees. BS 5837:2012 points out that each sub-category should be given equal weighting when grading trees against these criteria.
- 2.4 A tree constraints plan is presented in Appendix 2 showing the recommended root protection areas (RPA) for all surveyed trees and highlighting each grading category using the colour key system as described in BS 5837:2012.
- 2.5 The site was visited on 20 July 2018, weather conditions were dry and sunny. All trees likely to be affected by works inside the red line boundary of the site were visually assessed using the Visual Tree Assessment Method (VTA) (Mattheck and Beloer, 1994)
- 2.6 Stem diameters were measured using diameter tape. Canopy spreads were estimated by pacing and where possible, verified using a laser range finder. Height measurements were taken using a laser clinometer.
- 2.7 No soil samples or soil analysis were undertaken.

DESK STUDY

- 2.8 A tree constraints check was undertaken using the London Borough of Hillingdon online mapping system to search for Tree Preservation Order or Conservation Area restrictions to tree works in or adjacent to the site.

SUPPORTING DOCUMENTS

- 2.9 Drawing Reference: 30977_T *Topographical Survey* (Greenhatch Group, 2018) and *Proposed First Floor Plan 1820-0473 revA First Flr Plan* (Brimelow McSweeney

Architects, 2018) were provided for the purposes of compiling this report. They include the layout of existing site features, along with a footprint overlay of the proposed development.

PERSONNEL

- 2.10 The tree survey was carried out by Alex Page Level 3 National Cert in Forestry and Arboriculture, an arboriculturalist with over 10 years' experience in the industry.
- 2.11 This report was produced by James Potts BSc (Hons), MArborA, an Arboriculturalist at The Ecology Consultancy with over 5 years' experience within the sector, working as both a contractor and private consultant.

LIMITATIONS

- 2.12 Only preliminary recommendations for tree management are provided. A full hazard risk assessment comprising a more comprehensive analysis of the condition and potential risk to target areas is beyond the scope of this report.
- 2.13 The trees were inspected at ground level and no decay detection equipment was used. There is therefore a risk that any internal decay that may be present has gone undetected.
- 2.14 Trees T1, T2 and T3 were situated in areas where access to the main stem was not possible. As such, assumptions have been made relating to dimensions of the main stem, and the overall condition is based upon the visible parts of the tree only.

3 Results

TREE SURVEY

- 3.1 The results of the tree survey are provided in the Schedule of Trees in Appendix 1. A Tree Constraints Plan illustrating the BS 5837:2012 categories of each tree, their crown spread and RPA is presented in Appendix 2.
- 3.2 The survey recorded nine individual trees, five hedgerows and three groups which could potentially be affected by future development. These comprised: cherry laurel *Prunus laurocerasus*, common lime *Tilia x europaea*, European hornbeam *Carpinus betulus*, European pear *Pyrus communis*, Norway maple *Acer platanoides* wild cherry *prunus avium* and one unknown dead species.
- 3.3 The distribution of each species is provided in Table 1 below.

Table 1: Species key and site frequency for trees potentially affected by development

Species	Frequency		
	Tree	Group	Hedge
Cherry Laurel	-	-	1
Common lime	1	-	
European hornbeam	1	-	1
European pear	5	-	-
Mixed Species	-	1	3
Norway maple	1	1	-
Unknown	1	-	-
Wild cherry	-	1	-

- 3.4 Physiological and structural condition⁵ of the majority of surveyed trees was consistent with Category C status (six individuals, five hedgerows and one group), with two

⁵ Physiological and structural condition are terms used to differentiate between a trees physiological condition i.e. annual growth, vigour, presence of disease etc. as opposed to structural condition relating to branch formation, mechanical strength and integrity.

individuals and one group assigned Category B status and one individual and one group assigned Category U status.

3.5 Of the trees surveyed, two individuals and one group were classified to be at a mature life stage⁶, three individuals, one group and one hedgerow were classified as semi mature and three individuals, one group and four hedgerows were classified as early mature. One tree surveyed was dead and unidentifiable and therefore not attributed with an age category.

3.6 A summary of the number of trees surveyed corresponding to BS 5837:2012 tree quality assessment definitions is provided below in Table 2 below.

Table 2: Grade Classifications

BS 5837:2012 Grades A to U	Trees attributed to each grade	Frequency		
		T	G	H
B	T6, T8, G3	2	1	-
C	T1, T2, T3, T4, T5, T7, H1, H2, H3, H4, H5, G1	6	1	5
U	T9, G2	1	1	-

3.7 Trees T6, T8 and G3 should be given priority consideration for retention during any future development which should take full account of above and below ground constraints, as shown on the Tree Constraints Plan (Appendix 1).

3.8 A summary of the condition and value of the most noteworthy trees is provided below, based on information presented in Appendix 1.

- Norway maple T6, was situated off site adjacent to the southern boundary on the footpath. The tree was mature, 7.5m in height, had a single stem and a maximum canopy radius extending to 5m in all directions. The tree appeared in fair structural

⁶ Young. Establishing; usually with good vigour, but as of limited significance within the landscape.
Semi-Mature. Established; normally vigorous and increasing in height. Of increasing landscape significance.
Early Mature. Fully established trees around the middle half of their life span retaining good vigour. Not yet achieved full height and retaining apical dominance.
Mature. Fully established trees retaining moderate vigour. Apical dominance lost but crown still spreading.
Over Mature. Fully mature trees in the last quarter of their usual life expectancy; vigour declining.

and physiological condition but was affecting the footpath by deforming its surface by tree root expansion.

- Common lime T8, was situated off site adjacent to the southeast site boundary 15m south of the existing structure. The tree was mature, was 12m in height, had a single stem and a maximum canopy radius extending to 5m in all directions. Access to the main stems was restricted however the tree appeared in fair structural and poor physiological condition with some localised foliage dieback in its northern canopy. The tree was situated inside Nestles Conservation Area.
- Norway maple group G3, was situated off site adjacent to the northeast site boundary. The trees were mature, 11m in height, had a single stem and a maximum canopy radius extending to 4m in all directions. The trees appeared in fair structural and good physiological condition. The group was situated inside Nestles Conservation Area.

DESK STUDY

- 3.9 A tree constraints check was carried out with London Borough of Hillingdon and it was confirmed that no trees surveyed had Tree Preservation Orders in place. However common lime T8 and Norway maple group G3 were situated inside and subject to the Nestles Conservation Area.

ARBORICULTURAL IMPACT ASSESSMENT

- 3.10 Since the time of the initial tree survey, it is understood that enabling works for development proposals on the site adjacent to the south-east boundary of 9 Nestles Avenue have begun and that all trees situated on this site have been removed. As such, tree group G8 has been discounted from this Arboricultural Impact Assessment since it has already been felled as part of a separate scheme.
- 3.11 Based upon Drawing Reference: *820-0473 revA First Flr Plan* (Brimelow McSweeny Architects, 2018) received from the client on the 22 November 2018, the impact of the proposal on the existing trees has been assessed and all trees that will potentially be affected by the development are listed below in Table 3. Tree numbers in the table correspond to the Schedule of Trees in Appendix 1 and Tree Constraints Plan described in Appendix 2.
- 3.12 It has been assumed that the height of all construction traffic or goods vehicles accessing the site will be within the standard minimum carriageway clearance of 5m (HSE, 2017).

Table 3: Summary of trees possibly affected by the development

Impact	Reason	BS Cat B	BS Cat C	BS Cat U
Trees to be removed	Located within development footprint.	-	T1, T2, T3, T4, T5, T7, G1, H1, H2, H3, H4, H5	T9, G2
Trees which could sustain damage to RPA	Excavation for new hardstanding.	T6, T8	-	-
Trees which could sustain damage to stem or canopy	Impact by construction traffic.	T6, T8	-	-
Trees to be pruned	Access facilitation	T6, T8	-	-

Tree removal

- 3.13 Based upon the design proposal, a total of seven individual trees, two groups and five hedgerows will require removal in order to facilitate access for construction.
- 3.14 Of the trees to be removed, a total of six individuals, one group and five hedgerows were attributed Category C status and one individual and one group were attributed Category U status.

Trees which could potentially sustain damage to stem, canopy or RPA

- 3.15 Construction access for demolition and construction works have the potential to impact with the northern canopy extents of T6 and the western canopy extents of T8.

Incursions into RPA of trees effected by the development proposal.

- 3.16 The proposed development will involve resurfacing works inside the RPAs of two trees to be retained as displayed in Table 4 below.

Table 4: Proposed incursions in RPAs of trees to be retained.

Tree ID	Stem Diameter	Total RPA (m ²)	Area of incursion (m ²)	Area of Incursion (%)
T6	350	55.4	13.8	24.9

Table 4: Proposed incursions in RPAs of trees to be retained.

Tree ID	Stem Diameter	Total RPA (m ²)	Area of incursion (m ²)	Area of Incursion (%)
T8	400	72.4	20.4	28.2

3.17 The level of incursion by the proposed resurfacing works into the RPAs of trees T6 and T8 was calculated to be 24.9% and 28.2% respectively as displayed in Table 4. These RPA incursions have the potential to result in significant impacts to the structural and physiological conditions of both trees. The drafting of specialist root protection measures as part of an Arboricultural Method Statement will be required to enable their satisfactory retention.

Impact on visual amenity and local character

3.18 All trees to be removed as described in Table 3 were attributed C or U status for their small size, low quality and minimal estimated life expectancy. As such, their removal in order to facilitate access for construction is considered to be of negligible impact to visual public amenity.

3.19 Trees T6 and T8 were both attributed Category B status for their moderate size and quality. Any loss or decline in the structural or physiological condition of these trees as a result of impacts to their canopies or RPAs, would represent a significant impact to visual public amenity. Specialist protection measures to be implemented over the course of the development will be required to enable their safe retention.

4 Recommendations

SITE SPECIFIC ISSUES

- 4.1 Common lime T8 and group G3 were situated inside Nestles Conservation Area, The Local Planning Authority must be formally notified in writing in accordance with a Section 211 Notification of any intended works to these trees including damage or disturbance to RPA's, unless full planning permission, clearly outlining works to trees as part of the larger scheme has been approved and still remains valid. The Section 211 Notification will be reviewed by the Local Planning Authority and must be submitted six weeks prior to the proposed commencement of the works.

TREE WORKS

- 4.2 The following tree works operations should be undertaken prior to the commencement of works in order to facilitate unobstructed access for demolition and construction works.
- Trees T1, T2, T3, T4, T5, T7 and T9, groups G1 and G2, and hedgerows H1, H2, H3, H4 and H5 should all be removed.
 - Norway maple T6 should have lower lateral branches overhanging the southern boundary of the site crown lifted to a height of 5m above ground level.
 - Common lime T8 should have lower lateral branches overhanging the eastern boundary of the site crown lifted to a height of 5m above ground level. Works to this tree would be subject to formal written consent being received from the Local Planning Authority.
- 4.3 All tree works, should give due consideration to the potential presence of protected species, including breeding birds and roosting bats. The Preliminary Ecological Appraisal (The Ecology Consultancy, 2018) and any subsequent ecological reports should be consulted prior to the commencement of works.
- 4.4 Arisings from tree works (e.g. wood piles and standing dead trunks) can provide valuable habitats for wildlife. As such, consideration should be given to their retention on site in areas unlikely to cause issues to public health and safety.
- 4.5 It is recommended that building and road footprints are carefully planned to generally avoid excessive tree surgery and ensure that there is sufficient space between the

canopy and the building line to allow construction buffers, scaffolding, future building maintenance and access ensuring a satisfactory spatial quality.

- 4.6 All tree pruning should be carefully planned and undertaken in accordance with *BS 3998: 2010 Recommendation for Tree Works*.

MITIGATION

- 4.7 A scheme of soft landscaping has been submitted, which includes tree planting details which addresses the potential loss of visual public amenity where tree removal has been found to be unavoidable. The tree selection should be appropriate to the site and chosen from a species palette in accordance with local tree planting policies and in accordance with any recommendations provided in the PEA and any subsequent ecology reports.
- 4.8 Often the need for future remedial pruning or tree removal can be avoided through careful species selection and planning during the design of the mitigation planting scheme.
- 4.9 The location of mitigation planting in relation to new or existing buildings should take full account of the final canopy height and spread of all trees included in the planting scheme. Buildings should ideally be located a sufficient distance from the predicted canopy line and RPA to avoid future pressure to undertake remedial pruning or tree removal.

References

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Town and Country Planning Act 1990 (as amended).

Town and Country Planning (Tree Preservation) (England) Regulations 2012.

Appendix 1: Schedule of Trees

Table 1: Schedule of Trees and Tree Quality Assessment*

* See Table 3 for key to terms

** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5 m	Canopy Spread				Cr. CI	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm 2	RPA r
					N	S	E	W										
T1	European pear	9	1	140	3	3	3	3	0	EM	Fair	Fair	Base inaccessible.	No immediate works required.	20-40	C1	8.9	1.7
T2	European hornbeam	9.5	1	160	1.5	1.5	1.5	1.5	0	SM	Fair	Fair	Base inaccessible.	No immediate works required.	20-40	C1	11.6	1.9
T3	European pear	9	1	190	2	2	2	2	0	EM	Fair	Fair	Base inaccessible.	No immediate works required.	20-40	C1	16.3	2.3
T4	European pear	6	1	100	1	1	1	1	1.5	SM	Fair	Fair	Suppressed by Norway maple T6.	No immediate works required.	20-40	C1	4.5	1.2
T5	European pear	6	1	100	1	1	1	1	1.5	SM	Fair	Fair	Suppressed by Norway maple T6.	No immediate works required.	20-40	C1	4.5	1.2
T6	Norway maple	7.5	1	350	5	5	5	5	3	M	Fair	Fair	Surface roots lifting footpath.	No immediate works required.	40+	B2	55.4	4.2
T7	European pear	8	1	160	2	2	2	2	2	EM	Fair	Fair	-	No immediate works required.	20-40	C1	11.6	1.9
T8	Common lime	12	1	400	5	5	5	5	1	M	Fair	Poor	Foliage dieback in north of canopy.	No immediate works required.	20-40	B2	72.4	4.8
T9	Unknown	5	1	120	1	1	1	1	0				-	Remove.	0-10	U	6.5	1.4
G1	Mixed Species	8	1	100	1	1	1.5	1.5	0	EM	Fair	Fair	Mix of laurel and hornbeam.	No immediate works required.	20-40	C2	4.5	1.2

Table 1: Schedule of Trees and Tree Quality Assessment*

* See Table 3 for key to terms

** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5 m	Canopy Spread				Cr. CI	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm 2	RPA r
					N	S	E	W										
G2	Wild cherry	3.5	1	70	0.5	0.5	0.5	0.5	0	SM	Poor	Fair	-	No immediate works required.	10-20	U	2.2	0.8
G3	Norway maple	11	1	280	4	4	4	4	2	M	Fair	Fair	-	No immediate works required.	20-40	B2	35.5	3.4
H1	European hornbeam	4	1	70	1.5	1.5	1.5	1.5	0	EM	Fair	Fair	-	No immediate works required.	10-20	C2	2.2	0.8
H2	Mixed Species	3	1	70	2	2	2	2	0	EM	Fair	Fair	Species mix of laurel and hornbeam.	No immediate works required.	10-20	C2	2.2	0.8
H3	Mixed Species	2.5	1	70	0.5	0.5	0.5	0.5	0	SM	Fair	Fair	Species mix of hornbeam and holly.	No immediate works required.	10-20	C2	2.2	0.8
H4	Cherry Laurel	1.5	1	70	1	1	1	1	0	EM	Fair	Fair	-	No immediate works required.	10-20	C2	2.2	0.8
H5	Mixed Species	2.5	1	70	0.5	0.5	0.5	0.5	0	EM	Fair	Fair	Species mix of laurel and hornbeam.	No immediate works required.	10-20	C2	2.2	0.8

Table 2: BS: 5837 2012 Tree Quality Assessment Definitions

TREES FOR REMOVAL		
Category & Definition	Criteria	Identification on Plan
Category U Those in such a condition that they cannot realistically be retained as a 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 (i.e. Where for whatever reason the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant immediate or irreversible overall decline. - Trees infected with pathogens of significance to the health and or safety of other trees nearby by or very low quality trees suppressing adjacent trees of better quality.	RED

TREES TO BE CONSIDERED FOR RETENTION				
Category & Identification	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values including conservation	Identification on plan
Category A Trees of High Quality with an estimated remaining life expectancy of at least 40 years	Trees that are a particularly good example of their species, especially if rare or unusual, or essential components of groups or of formal or semi-formal arboricultural features e.g. the dominant and/or principal trees in an avenue)	Tree groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Tree groups or woodlands of significant conservation historical commemorative or other value (e.g. veteran trees or wood pasture)	GREEN
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 minor storm damage).	Trees present in numbers, usually 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 benefits.	BLUE

TREES TO BE CONSIDERED FOR RETENTION				
Category & Identification	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values including conservation	Identification on plan
Category C Trees of a low quality 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 benefits.	GREY

Table 3: Key Schedule of Trees

Column Heading	Explanation
Tree No	Sequential number corresponding to number on plan.
Species	English names.
Ht.	Height in metres.
S	Number of main stems.
St. 1.5 (Stem Diameter)	Stem diameter when measured in accordance with Annex C of BS 5837:2012.
NSEW	Crown radius in metres to cardinal points of the compass.
Cr. Cl. (Crown Clearance)	Height in metres between the ground and underside of canopy.
Ls.	Life stage definitions. Y= Young. SM = Semi-mature. EM = Early mature. M = Mature. OM = Over mature.
SC	Brief description of structural condition.
PC	Brief description of physiological condition.
Preliminary Advice	Preliminary tree works advice and recommendations.
LE	Estimated remaining useful life contribution in years. <10, 10+, 20+ and 40+ yr.
Cat. (Category)	Categorisation grading in accordance with BS 5837 2012. Trees suitable for retention: - Category A trees of high quality and amenity value. Category B trees of moderate quality and amenity value. Category C trees of low quality or amenity value. British Standards BS 5837:2012 recommends that these categories may be further broken down into sub-categories A1 A2 A3 pertaining to Arboricultural, Landscape or Cultural values respectively.
RPA m²	Root Protection Area (RPA). Indicative area around a tree measured in m ² and calculated in accordance with Annex C of BS 5837:2012 deemed to contain sufficient rooting volume to maintain the viability of a tree and where the protection of roots and soil structure is treated as a priority.
RPA r	Root Protection Area (RPA) radius calculation centred on the base of the tree and calculated in accordance with Annex C of BS 5837:2012

Appendix 2: Tree Constraints Plan



Appendix 3: Tree Retention and Removal Plan



Job title 9, Nestle Avenue TEC Job no. ET7383		
Client Healey Development Solutions (Hayes) Ltd		
Map title Tree Retention and Removal Plan		
Section: N/A	Scale (at A3) 1:350	
Date of survey 20/07/2018		
Surveyor Alex Page		
Drawn JD	Approved AP	Date 30/11/2018



- Legend**
- Crown spread of category U - Trees with significant overall decline
 - Crown spread of category B - Trees with moderate quality and value
 - Crown spread of category C - Trees with low quality and value
 - Trees to be removed
 - Area of incursion
 - Root Protection Area (RPA)
 - Trees removed under separate application

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This plan is provided solely for the purpose of supporting the description of the ecological features of the site as contained in the accompanying report.

Appendix 4: Glossary of Terms

Glossary of Terms

Term	Explanation
Arboricultural Impact Assessment (AIA)	Evaluation of direct and indirect effects of a proposed design and/or construction.
Arboricultural Method Statement (AMS)	Methodology for the implementation of any aspect of development that is in the root protection area or has the potential to result in the loss of or damage to a tree to be retained.
Branch structure	Qualitative description of formation of main framework of limbs and branches.
Canopy face	Orientation of canopy relative to cardinal points of the compass
Canopy radius	A measurement taken from the centre of a tree to the furthest radial extension of tree canopy relative to the cardinal points of the compass.
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.
Conservation Area	Local Planning Authority special designation generally prohibiting tree works without 6 weeks prior written notification.
Construction Zone (CEZ) Exclusion	Area based upon the calculated root protection area prohibiting access.
Cavity	Open and exposed aperture where wood tissue has internally degraded.
Constraints check	Formal search of local authority records to determine legal and statutory constraints on tree works.
Crown lifting	Removal of lower branches to achieve a stated vertical clearance above ground level or other surface.
Crown reduction	Pruning of a trees canopy in both height and width.
Decay	Deterioration and breakdown of tree wood fibres resulting in structural and/or physiological dysfunction of a tree.
Dieback	Continual decline and death of wood tissue including twigs and branches.
Failure	Description of structural failure or wood fibres including fracture of branches, limbs and main stems.
Fork	Area or point of union between one or more limbs or branches.
Hazard Risk Assessment	Qualitative and quantitative appraisal of the potential for tree failure and the possible risk of harm or damage to persons or property.
Local Planning Authority	Body responsible for the administration of Statutory duties relating to Development Management.
Multi-stem	A single tree formed from 2 or more codominant main stems
Occlusion	Wood development enclosing an extant wound or pruning cut.
Pruning	The targeted removal of branches or limbs using saws or other tools.
Physiological Condition	Observation relating to a trees physiology for example vigour, leaf area, growth rate, the presence of pests or disease.

Glossary of Terms

Term	Explanation
Root Protection Area	Root Protection Area (RPA). Indicative area around a tree deemed to contain sufficient rooting volume to maintain the viability of a tree.
Shelter belt	A wind break normally made up of one or more trees planted in such a way to provide cover from the wind.
Structural Condition	Observation relating to a trees structural integrity and the presence of any physical defects.
Suppressed	Where a trees development has been influenced or effected by the presence of competing vegetation.
Tree Constraints Plan	A scaled plan indicating above and below ground constraints relating to the protection of trees
Tree Preservation Order	A legal order made by the local planning authority protecting specific trees in the interests of amenity.
Visual Tree Assessment (VTA)	A method of assessment based upon the research developed to recognise dynamic responses of a tree to its surroundings.
'V' Shaped Branch Union	The union point between two branches that have grown at a tight angle, forming the 'V' shape. This structure is inherently weaker than the 'U' shaped union.
'U' Shaped Branch Union	The union point between two branches that have grown at a wider angle, forming the 'U' shape. This structure is considered to be the strongest and most optimised shape that a union can form.



Ecology Consultancy

The Ecology Consultancy is part of the Temple Group.

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