



TIM HORTONS UK AND IRELAND LTD

GELDERD ROAD, BATLEY, LEEDS

ARBORICULTURAL IMPACT ASSESSMENT

MARCH 2021

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ARBORICULTURAL IMPACT ASSESSMENT

MARCH 2021

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DRAWINGS	TITLE	SCALE
LD10210-001 Rev. A	Tree Protection Plan	1:200@A2

1 INTRODUCTION

1.1 Brief

- 1.1.1 Wardell Armstrong LLP (WA) was commissioned by Tim Hortons UK and Ireland Ltd to undertake a BS 5837 tree survey on the site and to assess and report on the impacts on the trees in connection with development at Centre 27 Business Park, Gelderd Road, Batley WF17 9TB (Ordnance Survey grid reference: SE 23729 27641). For the purpose of this report this will be referred to as the 'Site' hereafter.
- 1.1.2 The purpose of this report is to provide an Arboricultural Impact Assessment (AIA), in order to evaluate the direct and indirect effects of the proposed development layout design on trees located on and within influencing distance of the Site. Where there are impacts from the development proposal, this report recommends, where feasible, mitigation measures to be taken to ensure that important trees are adequately considered during the design and construction process. Where trees must be removed to enable the development, potential mitigation/ compensation measures are proposed, where feasible.
- 1.1.3 The BS5837 tree survey was undertaken on 5th February 2021 by Ian Kennedy, an experienced arboriculturist sub-contracting for Wardell Armstrong. This, in combination with the proposed layout, supporting documents/drawing and any liaison we have had with the design team, forms the basis of our assessment. A further visit was undertaken by Ian Kennedy on 22nd February 2021 in order to undertake an assessment of trial trenches dug to determine the extent of rooting of some of the trees on Site.
- 1.1.4 If planning permission is granted for the proposal assessed in this report, it is usual for the Local Planning Authority (LPA) to condition an Arboricultural Method Statement (AMS). An AMS would set out the specifications and methodologies for the tree protection measures implementation and would also provide a methodology for any proposed works that either encroach within the root protection areas (RPAs) or retained trees and/ or that have the potential to result in loss or damage to those trees.
- 1.1.5 This AIA report and attached Tree Protection Plan (TPP) accords with the methodologies and guidance set out in British Standard BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations (The British Standards Institution, 2012).

1.2 Site Context

- 1.2.1 The Site is located within the Centre 27 Business Park, Batley, to the south of Leeds. The Site comprises of a vacant restaurant (former Pizza Hut) and is located to the south-east of Gelderd Road, within a retail park. The majority of the Site is covered by grey infrastructure comprising of the disused restaurant building and hard standing used for car parking. However, there are narrow areas of soft landscaping containing shrubs and trees located to the west, north, east and south around the edges of the Site.

1.3 Development Proposal

- 1.3.1 The development is to renovate the building discussed in this report to a Tim Horton's coffee shop with drive through facility, which includes works to create the drive through infrastructure and additional car parking.
- 1.3.2 In order to assess the impacts of the proposed developments the following plans have been overlaid to produce the Tree Protection Plan:
- Proposed Site Plan Ref. 7330-PS-0.1 produced by 'Beyond'.

1.4 Trees and the Planning Process

- 1.4.1 Under s197 of the Town & Country Planning Act 1990, LPAs have a legal duty to consider the protection of trees and the planting of new trees on development sites when granting planning permission. LPAs must also consider the potential effects, whether detrimental or positive, that proposed developments will have on retained trees, and the effect that these trees will have on the users of the development.
- 1.4.2 The Site is located within the administrative boundaries of the Local Planning Authority, Kirklees Council (KC). KC has produced the following planning policies on trees and development:

Kirklees Local Plan Strategy and Policies (Adopted 2019)

'Policy LP24 – Design

Proposals should promote good design by ensuring:

d. high levels of sustainability, to a degree proportionate to the proposal, through:

iv. where practicable, minimising resource use in the building by orientating buildings to utilise passive solar design. This includes encouraging the incorporation of vegetation and tree planting to assist heating and cooling and considering the use of renewable energy;

h. development contributes towards enhancement of the natural environment, supports biodiversity and connects to and enhances ecological networks and green infrastructure;

i. the retention of valuable or important trees and where appropriate the planting of new trees and other landscaping to maximise visual amenity and environmental benefits;

Policy LP30 – Biodiversity & Geodiversity

Local Designated Sites & Important Local Ecological Features

Proposals having a direct or indirect adverse effect on a Local Wildlife Site or Local Geological Site, Ancient Woodland, Veteran Tree or other important tree, will not be permitted unless the benefits of the development can be clearly shown to outweigh the need to safeguard the local conservation value of the site or feature and there is no alternative means to deliver the proposal. In all cases, full compensatory measures would be required and secured in the long term.

Policy LP31 – Strategic Green Infrastructure Network

Development proposals within and adjacent to the Strategic Green Infrastructure Network should:-

(i) the function and connectivity of green infrastructure networks and assets are retained or replaced;

(ii) new or enhanced green infrastructure is designed and integrated into the development scheme where appropriate, including natural greenspace, woodland and street trees;

Policy LP32 – Landscape

Proposals should be designed to take into account and seek to enhance the landscape character of the area considering in particular:

c. the patterns of woodland, trees and field boundaries;

Policy LP33 – Trees

The Council will not grant planning permission for developments which directly or indirectly threaten trees or woodlands of significant amenity.

Proposals should normally retain any valuable or important trees where they make a contribution to public amenity, the distinctiveness of a specific location or contribute

to the environment, including the Wildlife Habitat Network and green infrastructure networks.

Proposals will need to comply with relevant national standards regarding the protection of trees in relation to design, demolition and construction. Where tree loss is deemed to be acceptable, developers will be required to submit a detailed mitigation scheme’.

- 1.4.3 National Planning Policy in England is detailed in the National Planning Policy Framework (NPPF). The last revised version of the NPPF (February 2019) includes the following two paragraphs on trees and development, with the latter giving specific protection to Ancient Woodland, Veteran and Ancient trees:

‘NPPF Para. 170: Planning policies and decisions should contribute to and enhance the natural and local environment by:

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland’.

‘NPPF Para 175: When determining planning applications, local planning authorities should apply the following principles:

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists’.

- 1.4.4 Table B.1 taken from British Standard BS 5837:2012 gives guidance on the level of information required by LPAs in order to make an informed decision on the impact of development on trees. The production of an Arboricultural Constraints Report and Plan is the first stage of assessment in the context of the planning process. Even though we have not produced a standalone Arboricultural Constraints Report and Plan, WA have undertaken a tree survey in accordance with BS5837, with this data and plan being supplied to the client to enable them to consider the arboricultural constraints for the Site. We have plotted the trees on the proposed layout so that the specific impacts on the trees can be assessed, with this informing this report and the associated TPP, which fulfils the requirement to present the impacts of the proposed layout on the trees that are located on and immediately adjacent to the Site.

- 1.4.5 If the proposed scheme is approved, it is common for the LPA to condition the protection of the retained trees on Site during the proposed construction of the

proposed development. This will usually take the form of an AMS and an updated TPP. These will show how the trees and hedgerows will be protected and will provide a methodology for any works within the RPAs of retained vegetation. These steps accord with the recommendations in BS 5837:2012 as detailed in Table B.1 as shown in Figure 1.

Table B.1 Delivery of tree-related information into the planning system

Stage of process	Minimum detail	Additional information
Pre-application	Tree survey	Tree retention/removal plan (draft)
Planning application	Tree survey (in the absence of pre-application discussions)	Existing and proposed finished levels
	Tree retention/removal plan (finalized)	Tree protection plan
	Retained trees and RPAs shown on proposed layout	Arboricultural method statement – heads of terms
	Strategic hard and soft landscape design, including species and location of new tree planting	Details for all special engineering within the RPA and other relevant construction details
Reserved matters/ planning conditions	Arboricultural impact assessment	
	Alignment of utility apparatus (including drainage), where outside the RPA or where installed using a trenchless method	Arboricultural site monitoring schedule
	Dimensioned tree protection plan	Tree and landscape management plan
	Arboricultural method statement – detailed	Post-construction remedial works
	Schedule of works to retained trees, e.g. access facilitation pruning	Landscape maintenance schedule
	Detailed hard and soft landscape design	

Figure 1: BS 5837:2012 Table B.1

1.5 Statutory Legal Protection

- 1.5.1 The two main sources of protection afforded to trees are i) Conservation Area (CA) control and ii) Tree Preservation Orders (TPO).
- 1.5.2 Trees within Conservation Areas are protected under the Town & Country Planning Act 1990 (as amended), which affords blanket¹ protection to trees with a stem diameter of 75 mm and above when measured at 1.5 m from ground level.
- 1.5.3 Trees may also be protected by a TPO under the Town & Country Planning Act 1990 (as amended) and The Town and Country Planning (Tree Preservation) (England) Regulations 2012.

¹ Protection is similar to that afforded to trees protected by TPO.

- 1.5.4 It is a criminal offence to carry out any unauthorised works to trees that are either protected by a TPO or located within a CA, including:
- Cutting down, uprooting or wilfully destroying a tree, or wilfully damaging, topping or lopping a tree in such a manner as to be likely to destroy it;
 - Any works that contravene the provisions of a TPO; and/or
 - Any works in contravention to the regulations.
- 1.5.5 Penalties for non-compliance of a TPO and/or CA can be unlimited, if tried in a County Court, and up to £20,000 if tried in a Magistrate's Court. Note, if the Local Planning Authority decides to also prosecute under the Proceeds of Crime Act 2002 in addition to prosecuting under the Town and Country Planning Act 1990, the fine can be unlimited in a Magistrate's court.
- 1.5.6 It should be noted that the felling of trees prior to receiving full planning permission may also require a felling licence under the Forestry Act 1967. This requires that any persons wishing to fell 5 m³ of trees within any three-month period (i.e. January to March, April to June, July to September and October to December) apply for a felling licence from the Forestry Commission. There are a number of exemptions to this requirement, with some of the more relevant exemptions including:
- Pruning trees;
 - Felling fruit trees or trees growing in a garden, orchard, churchyard or designated public open space;
 - Felling trees that, when measured at a height of 1.3 m from the ground, have a diameter of 8 cm or less;
 - Felling trees immediately required for the purpose of carrying out development authorised by full planning permission;
 - Felling necessary for the prevention of danger or the prevention or abatement of a nuisance² (e.g. threat/danger to a third party); and
 - Felling necessary to prevent the spread of a quarantine pest or disease.
- 1.5.7 Other legislation that affords a lesser or indirect level of protection to trees includes the following:

² NB - This only applies when a real and/or immediate danger is present.

- The Wildlife & Countryside Act 1981 (as amended);
- Conservation of Habitats and Species (amendment) Regulations 2017; and
- Hedgerow Regulations (1997).

1.5.8 All of the above provide for the identification and safeguarding of flora and fauna that may be found in association with trees and woodlands.

1.6 Protected Species

1.6.1 Trees can contain features such as cavities, cracks, splits and loose bark which can offer potential habitat to species such as bats. Bats and their roosts are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) as well as the Conservation of Habitats and Species Regulations 2017 (as amended) and are also listed under Section 41 of the Natural Environment and Rural Communities Act 2006.

1.6.2 Trees provide potential nesting habitat for birds and all UK birds and their active nests are protected under the Wildlife & Countryside Act 1981 (*as amended*). Bird species that are listed on Schedule 1 of The Act are also protected against disturbance of their active nest(s).

1.6.3 The UK government has advised that following the exit of the UK from the EU, the EU Withdrawal Act 2018 will ensure that all existing EU environmental law will continue to operate in UK law³. The UK government and devolved administrations will “amend current legislation to correct references to EU legislation [...] and ensure we meet international agreement obligations”.

³ DEFRA (2018) Upholding Environmental Standards if there’s no Brexit Deal [online]. Accessed 12.04.2019. Available at: <https://www.gov.uk/government/publications/upholding-environmental-standards-if-theres-no-brexite-deal/upholding-environmental-standards-if-theres-no-brexite-deal>

2 THE SURVEY

2.1 Desk Study – Legal Constraints

2.1.1 WA utilised the Council's online mapping⁴ on the 5th of March 2021 to ascertain whether any trees within and/or immediately adjacent to the Site are protected by TPO and/or CA status. The online mapping revealed no TPO or CA's within the Site or immediately adjacent to the Site.

2.1.2 WA also conducted a search using the Woodland Trust's Ancient Tree Inventory⁵ and DEFRA's Magic Map Application⁶ on 5th March 2021 to ascertain whether any recorded veteran trees or ancient woodlands are located within influencing distance of the Site. The Ancient Tree Inventory website listed no veteran trees within the Site, which was confirmed by the survey and also none within close proximity to the Site. DEFRA's Magic Map listed no ancient woodlands within the Site or within influencing distance of the Site.

2.2 Field Survey

2.2.1 Two arboricultural surveys were undertaken by Ian Kennedy. The first was undertaken on 5th of February 2021 using the methodology set out in BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations (see Appendices 2 and 3). Details from this survey can be found in Appendix 1.

2.2.2 The second survey on 22nd February 2021 involved the assessment of the trees (T18, T19, T24, T26) that overhang the proposed drive thru lane to assess their suitability for pruning. Ian also undertook an assessment of the rooting patterns of trees (T12, T14, T15, T22) potentially impacted by the proposed drive thru lane by digging trial trench excavations to assess if the trees would be impacted. Detail of the results of these assessments can be found in Appendix 8.

2.2.3 Weather conditions during the initial survey were dry and overcast, thus conducive for surveying.

2.2.4 The trees were surveyed in accordance with the methodology outlined in Appendix 2.

2.2.5 Each individual surveyed tree (T) was given a sequential reference number.

⁴[https://mapping.kirklees.gov.uk/connect/analyst/mobile/#/main?mapcfg=Tree%20Preservation%20Orders%20\(Public\)&lang=en-gb](https://mapping.kirklees.gov.uk/connect/analyst/mobile/#/main?mapcfg=Tree%20Preservation%20Orders%20(Public)&lang=en-gb)

⁵ <https://ati.woodlandtrust.org.uk/>

⁶ <https://magic.defra.gov.uk/magicmap.aspx>

- 2.2.6 The trees were then classified in accordance with the BS5837:2012 tree quality assessment categories 'A', 'B', 'C' and 'U' (see category criteria and grading within Appendix 3). 'A' and 'B' category trees are considered as 'high' and 'moderate' quality, respectively, and are considered as a constraint to development. As such, these trees should be retained and afforded appropriate protection during development. 'C' category trees are considered to be of 'lower' quality due to their condition or 'lower' amenity value and are, therefore not usually considered a constraint to development. 'U' category trees are those in such a 'poor' condition that they cannot usually be retained within the current Site context for longer than ten years. It should be noted that in some cases, category 'U' trees may have valuable habitat/ecological value despite being in poor condition. In such cases, where it is safe to do so, these trees may be recommended for retention and/or pruning works. Where relevant, we will bring such trees to your attention. Where trees are located outside of the red and blue line Site boundaries, irrespective of their BS 5837 categorisation, these should be considered as a constraint during the Site layout design process and protected during construction, as such trees are not within the control of the Site owner.
- 2.2.7 Root Protection Areas (RPAs) are calculated for individual trees utilising the methodology set out in BS 5837:2012, which is calculated by multiplying the stem diameter (measured at 1.5 m from ground level) by twelve for single-stemmed trees and a variant on this for multi-stemmed trees. For surveys in England (and outside England where it is a Local Planning Policy requirement), individual veteran trees are given a standard BS 5837 RPA and also a secondary veteran tree RPA, to accord with government's standing advice 'Ancient woodland, ancient trees and veteran trees: protecting them from development'⁷ and local planning policy, which is based on a calculation of fifteen times the stem diameter or five metres beyond the crown spread, whichever is greater.
- 2.2.8 Further details for each tree, and the groups of trees surveyed are set out in the Arboricultural Survey Schedule (see Appendix 1) and on the Tree Protection Plan Ref. No. LD10210-001 Rev. A.

⁷ <https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences>

3 SURVEY RESULTS AND EVALUATION

3.1 Tree Population

- 3.1.1 The trees assessed and surveyed, which were located on and immediately adjacent to the Site, included 28 individual trees.
- 3.1.2 The survey revealed that, 32% (9 trees) of the individual tree population was classified as category 'B' quality and 68% (19 tree) were classified as category 'C' quality. No category 'A' and 'U' quality trees were found during the surveyed. No tree groups or woodland were found, either.
- 3.1.3 A detailed description of all trees and groups of trees surveyed and recommended works can be found in the Tree Survey Schedule in Appendix 1. Table 1 below summarises the BS 5837 quality grading of the trees found on Site, with these figures represented in graph format in Figure 2.

Table 1: Individual Trees Quality Assessment Summary				
Tree Quality	A	B	C	U
Individual Trees, Identification	None	T6, T7, T8, T9, T12, T14, T20, T21, T23	T1, T2, T3, T4, T5, T10, T11, T13, T15, T16, T17, T18, T19, T22, T24, T25, T26, T27, T28	None
Total	0	9	19	0

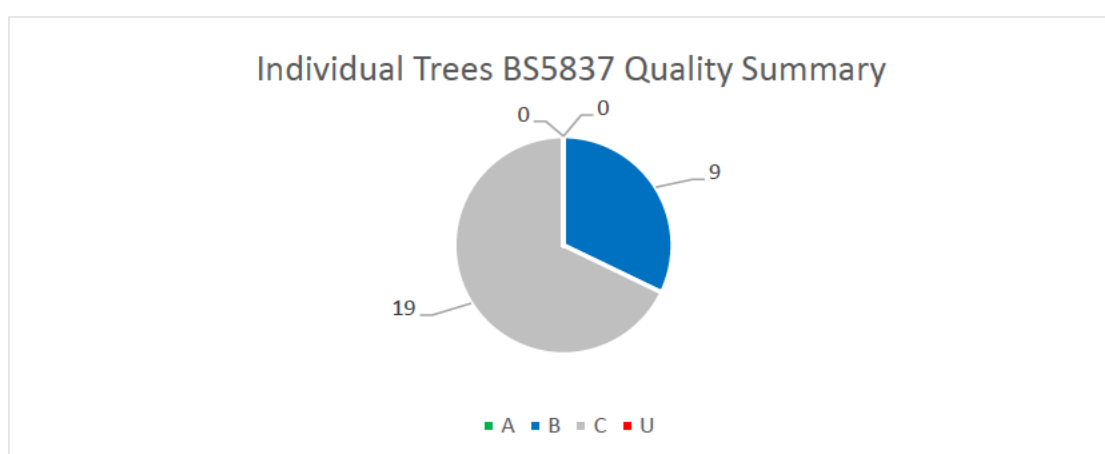


Figure 2: Overview of the BS 5837 quality of individual trees found on Site

- 3.1.4 An assessment of the age class of the individual tree population on Site, reveals that 25% of the population is made up of semi-mature trees, 43% early-mature trees, with the remaining 32% being mature. No young, mature or late-mature individual trees

were found during the survey. A summary of the age class assessment for individual trees is shown in the graph below in Figure 3.



Figure 3: Individual trees age class assessment summary.

- 3.1.5 The trees on site were likely to have been planted as part of a landscape scheme when the retail park was completed. There are some long lived species such as lime and poplars, together with mostly small growing short-lived species such as birch, cherry and rowan.
- 3.1.6 The limes are still very young but are in good health with good future prospects and we would expect them to live for many decades. We would expect that only the limes, poplars and, to some extent the cherries, will ever become significant trees.

4 DEVELOPMENT IMPACT TO RETAINED TREES

- 4.1.1 Implementation of the proposed scheme will necessitate the removal of eight individual trees, as detailed in full in Table 2.
- 4.1.2 In assessing the impacts of the proposed development on the trees on and adjacent to the Site and in proposing mitigation for these impacts, the planning application for development of the Site accords with the requirements of British Standard 5837:2012.

Table 2: Overview of Arboricultural Impacts and Proposed Mitigation

Tree/ Group No.	Proposed Works	Impact	Mitigation/Compensation	BS 5837 Quality Categorisation
T1, T9, T10, T13, T15, T17, T27, T28	The removal of trees to facilitate the proposed development	<u>Moderate Impact</u> In order to facilitate the proposed scheme, eight trees will require removal. These include one category 'B' quality tree (T9) and six category 'C' quality trees (T10, T13, T15, T17, T27, T28). These trees have to be removed to enable the new drive thru lane to be constructed and car parking and hard standing to be reconfigured. Additionally, one category 'C' quality tree (T1) is to be removed to improve site lines of the building from the adjacent highway.	Compensation for the trees lost to the development include new tree and shrub planting (See Wardell Armstrong Proposed Landscape Plan Ref. LD10210-002 for further details).	C, B
T12, T14, T18, T22, T24	Drive Thru Lane within retained tree RPAs	The proposed drive thru lane encroaches within the RPAs of five trees proposed to be retained. Trail trenches along the edge of the proposed Drive Thru lane opposite trees T12, T14, T15 and T22 were excavated, and apart from T15 (which has to be removed as the impact on the tree is deemed to great), it was deemed that the three other trees could be root pruned without long term detriment to their health and safety, as the trees are young with good vitality. In the case of two trees (T18, T24) the proposed Drive Thru lane encroaches within their RPAs and trial trenches were not excavated. The RPA encroachments of the Drive Thru lane are:	Root pruning to be undertaken by the Project Arboriculturist, in accordance with BS 3998: 2010. The RPAs of the affected trees shall be mulched with wood chip mulch and a sucrose application to be applied as a drench and Carbon Gold biochar applied at the manufacturers	C, B

Table 2: Overview of Arboricultural Impacts and Proposed Mitigation

Tree/ Group No.	Proposed Works	Impact	Mitigation/Compensation	BS 5837 Quality Categorisation
		T18: 0.9 m² area and 0.4 m lateral length RPA encroachment, which is 6% of the tree's total RPA; T24: 1.1 m² area and 0.4 m lateral length RPA encroachment, which is 3.3% of the tree's total RPA. We do not consider that these RPA encroachments will be to the long-term detriment of the affected tree's amenity value and their structural and physiological health, provided that the recommended mitigation measures are undertaken.	rates, to help the trees cope with the proposed root pruning. Details to be included in an Arboricultural Method Statement, which can be conditioned by the LPA.	
T12, T14, T18, T19, T22, T24, T26	Pruning of retained trees to provide clearance over drive thru lane	Pruning is required to be undertaken to clear the footprint of their crowns over the Drive Thru lane. As assessment was made of the impact of the pruning on the trees T18, T19, T24 and T26 on site and this concluded that the trees would require the removal of small diameter lateral and sub-lateral branches up to a diameter of 50mm. However, most branches that would need to be removed have a diameter of less than 30mm diameter. In addition to the pruning impacts on site, we have also discovered that trees T12, T14 and T22 will also require pruning, with the minimum lateral extent of branch wood required to be removed being: T12: 0.7 m; T14: 1.6 m; T22: 1.8 m.	Pruning to be specified and supervised by the Project Arboriculturist and to accord with best practice as set out in BS 3998:2010.	C, B

Table 2: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	Proposed Works	Impact	Mitigation/Compensation	BS 5837 Quality Categorisation
		We do not consider that the pruning required, which will be comprised of a mix of crown raising and lateral side reductions, will be to the long-term detriment of the trees amenity value and their health and safety. However, to ensure that the pruning accords with best practice and is minimised, it is proposed that the pruning is specified and supervised by the Project Arboriculturist.		

5 SUMMARY AND RECOMMENDATIONS

- 5.1.1 The requirements of BS 5837:2012 have been complied with during the initial tree survey and subsequently in assessing the arboricultural impacts arising from the proposed residential development in this report.
- 5.1.2 None of the trees on and immediately adjacent to the Site are protected by TPO or Conservation Area. There are no veteran trees within or immediately adjacent to the Site and there are no Ancient Woodlands near the Site.
- 5.1.3 Eight trees will have to be removed to enable the development to proceed, with all except one being categorised as category 'C' quality. New tree and shrub planting is proposed to compensate for these losses, even though the proposed tree removals will have a low impact on local amenity.
- 5.1.4 The crowns and RPAs of a small number of trees encroach within the footprint of the proposed Drive Thru lane. Trial trenches (see Appendix 8) have been excavated to assist with assessing the impacts on trees and has enabled more trees to be retained than originally envisioned. Root and crown pruning is proposed, along with mitigation measures to be taken to assist the trees to recover from the root pruning.
- 5.1.5 The trees that are to be retained on the Site will be protected during the proposed works with tree protection fencing. Unless otherwise stated in an Arboricultural Method Statement (AMS), the protective fencing will comprise the default fencing described in BS5837:2012. An example of this is included at Appendix 6, with the location of the protective fencing shown on the Tree Protection Plan LD10210-001 Rev A. Signage on the fencing will also be required and an example of this is included at Appendix 7.
- 5.1.6 An AMS and an updated TPP may be required by the LPA prior to commencement of the proposed development, to ensure tree protection measures and mitigation specifications are fully set out and implemented. This can be conditioned by the LPA if required.

6 REFERENCES

- British Standard, BS 3998:2010 Tree work. Recommendations. (The British Standards Institution, 2010).
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<https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences#veteran-trees>

Appendix 1

Tree Survey Schedule

Location:	Former Pizza Hut, Centre 27 Business Park, Bateley (Job. No. LD10210)
Estimated Stem Diameters & Other Measurements highlighted in this colour	

Surveyor:	Jan Kennedy
Weather:	Overcast, dull, dry, light winds
Survey Date:	5th February 2021



						Crown Spread (m)				Condition																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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T	8		Populus sp	7	2	1	3	1.8	2.5	170						1	EM	G	G	20+	B	2	A young tree but in good health and with good structural condition. The tree has good future prospects.	None required.	13	2.0	N/A
T	9		Tilia sp	7	1.8	3	1.8	3	2.5	270						1	SM	G	G	20+	B	1	A young tree but in good health and with good structural condition. The tree has good future prospects.	None required.	33	3.2	N/A
T	10		Prunus sp	8	2	2	3.2	3.5	3	290						1	M	G	F	10+	C	1	A healthy tree that has been previously topped at 6m.	None required.	38	3.5	N/A
T	11		Betula pendula	10	2	4	3.2	3.3	2.5	200						1	M	F	F	10+	C	1	An insignificant tree with poor form.	None required.	18	2.4	N/A
T	12		Tilia sp	8	1.8	3	3.6	3	4	250						1	SM	G	G	40+	B	1	A young tree but in good health and with good structural condition. The tree has good future prospects.	None required.	28	3.0	N/A
T	13		Prunus sp	6	2	2.3	3.4	3	2.8	200						1	EM	G	G	10+	C	1	A small and insignificant tree but in good health with good form.	None required.	18	2.4	N/A
T	14		Tilia sp	7	2	3.5	3.6	3.5	3.5	220						1	SM	G	G	40+	B	2	A young tree but in good health and with good structural condition. The tree has good future prospects.	None required.	22	2.6	N/A
T	15		Betula pendula	8	1.8	3	3	3	4	180						1	EM	F	F	10+	C	1	An insignificant tree with limited future prospects.	None required.	15	2.2	N/A
T	16		Alnus glutinosa	6	2	4	3	3.5	3	150						1	EM	G	G	10+	C	1	A small insignificant tree in good health.	None required.	10	1.8	N/A
T	17		Betula pendula	13	2.5	4	3.2	2.5	3.5	250						1	M	G	G	10+	C	1	A small insignificant tree in good health.	None required.	28	3.0	N/A
T	18		Sorbus aria	6	1.8	3	3	3.1	3	180						1	EM	G	G	10+	C	1	A small insignificant tree in good health.	None required.	15	2.2	N/A

T	19		Sorbus aria	7	2	2.5	3.3	3.5	2	150						1	EM	G	G	10+	C	1	A small insignificant tree in good health.	None required.	10	1.8	N/A
T	20		Tilia sp	8	1.8	3	3	3.8	3	220						1	SM	G	G	40+	B	1	A young tree but in good health and with good structural condition. The tree has good future prospects.	None required.	22	2.6	N/A
T	21		Tilia sp	8	1.8	3	3	3.8	2	180						1	SM	G	G	40+	B	1	A young tree but in good health and with good structural condition. The tree has good future prospects.	None required.	15	2.2	N/A
T	22		Betula pendula	10	1.8	4	3.6	4.1	1	250						1	M	G	G	10+	C	1	A small insignificant tree in good health.	None required.	28	3.0	N/A
T	23		Tilia sp	7	2	4	4	3.5	3.5	200						1	SM	G	G	40+	B	1	A young tree but in good health and with good structural condition. The tree has good future prospects.	None required.	18	2.4	N/A
T	24		Prunus sp	10	2	2.5	5.3	5	3	270						1	M	G	G	10+	C	1	A small tree in good health.	None required.	33	3.2	N/A
T	25		Betula pendula	6	2	1.8	2	2	1	160						1	M	F	F	10+	C	1	A small, poorly formed and unimportant tree.	None required.	12	1.9	N/A
T	26		Sorbus aucuparia	5	2	2	2	2	2	100						1	EM	F	F	10+	C	1	A very small insignificant tree.	None required.	4.5	1.2	N/A
T	27		Sorbus aucuparia	5	2	2	2	2	2	110						1	EM	F	F	10+	C	1	A very small insignificant tree.	None required.	5.5	1.3	N/A
T	28		Prunus sp	6	2	4	4.3	4	4	260						1	M	G	G	10+	C	1	One of the larger trees on the frontage with higher landscape value. It is healthy with good structural condition.	None required.	31	3.1	N/A

Appendix 2

Survey Methodology

Appendix 2: Survey Methodology

The following process has been followed and the features of each tree, group of trees or woodland have been recorded in the Arboricultural Data Sheets (See Appendix 1):

- Each individual surveyed tree (T), tree group (G), woodland (W) and hedgerow (H) was given a sequential reference number.
- Where a number of surveyed trees formed a cohesive feature, such as groups, woodland compartments or whole woodlands, they were recorded, assessed and plotted as groups (G) or as woodland (W). Whilst not every tree within groups are surveyed, a representative sample of the largest edge trees were measured in order to be able to plot the group or woodlands crown spreads and RPAs. Where detailed plans show development proposed within a group or woodland, all trees within influencing distance of the development proposals are usually recorded, plotted and assessed.
- The surveyed trees and hedgerows were then identified by their common and/or Latin name.
- Tree height measured in metres from the stem base using a Truepulse 200L laser. Where the ground has a significant slope, the higher ground is selected. This informs crown/stem ratio and shading.
- Crown height/ height of lowest branches is measured in metres above ground level using a Truepulse 200L laser and is an indication of the average height at which the main crown begins.
- Stem diameter is measured in millimetres at 1.5m above the adjacent ground level (upslope on sloping ground) with a standard diameter measuring tape to enable RPAs to be calculated.
- Crown spread is measured in metres using a Truepulse 200L laser and taken at the four-cardinal compass points to derive an accurate representation of the crown to be plotted on the TPP.
- Age class of the tree is described as:
 - Young – Newly planted trees and self-seeded trees;
 - Semi-mature – Large nursery stock that can be newly planted or self-seeded trees still in the early stages of establishment;
 - Early mature – Trees in the first third of their life cycle which is characterised by their quickness of growth and subsequently significant increase in size;

- Mature – Trees in the second third of their life cycle, characterised by reaching their ultimate size and slowing of annual incremental growth;
- Late mature – Trees in the final third of their life cycle, often characterised by showing signs of decline; and
- Veteran – Trees that show ancient tree characteristics irrespective of their age, such as crown retrenchment and decaying wood habitat.
- Physiological condition is assessed and classed as G (good), F (fair), P (poor) or D (dead). This is an indication of the health of the tree and takes into account vitality, presence of disease and dieback.
- Structural condition is assessed and classed as G (good), F (fair) or P (poor). This is an indication of the structural integrity of the tree and takes into account significant wounds, decay and quality of branch junctions.
- Life expectancy is classed as: less than 10 years (<10), at least 10 years (10+), at least twenty years (20+) or at least 40 years (40+). This is an indication of the number of years before the removal of the tree is likely to be required.
- The trees were then classified in accordance with the BS5837:2012 tree quality assessment categories 'A', 'B', 'C' and 'U' (see category criteria and grading within Appendix 3).
- Comments include a brief description of the tree with comments on the form, vitality, health and any significant defects that may be present.
- Recommendations for work are based on the existing land use.

Appendix 3

Tree Categorisation Method

Appendix 3: Tree Categorisation Method

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
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 category U 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 <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
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 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 wood-pasture)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though 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	See Table 2
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 150 mm	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 collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

A single tree, group or woodland can come under one or more sub-headings. This does not confer on it a higher value than a tree with a single value. For the purposes of this report.

Appendix 4

General Tree Constraints

Appendix 4: General Tree Constraints

- Trees impose a constraint to development in a variety of ways. These principally include their rooting areas, referred to as Root Protection Areas (RPAs), their current and future crown spread, and their species characteristics (e.g. branch and fruit drop, production of 'honey dew', density of foliage etc). Where located on shrinkable clay soils, trees can also contribute to subsidence damage to buildings.
- Consideration should be given during the design stage to any incompatibilities between the design and tree retention. These include (but are not limited to) the effects on the amenity value provided by existing trees, working space required during construction, infrastructure/utility requirements, highway visibility requirements and foundation design to prevent the effects of subsidence.
- The RPA is calculated using the tree's diameter at 1.5m and represents the minimum area which should be left undisturbed around each retained tree to enable its survival following development.
- Tree root morphology is influenced by many factors including, but not limited to; past land use, the presence of roads, structures and underground services, drainage and soils. Any of these factors may result in non-uniform root growth and therefore result in an RPA represented as a polygon RPA that reflects suitable protection of the root system.
- The majority of tree roots are generally found within the top 600mm of soil, depending on soil types and profiles. Any disturbance or sudden changes to the rooting environment can result in damage being caused to roots and alterations to the roots physiological ability to absorb water, nutrients and undertake gaseous exchange.
- Where alterations have been made within the trees' rooting environment, the damage can often be observed within the crown of the trees, reduced vitality and increased deadwood production. Trees are likely to decline progressively, or in some circumstances may become a hazard where stability and structural integrity has been compromised by Site operations.
- The RPA must be protected by the installation of tree protection fencing prior to the commencement of development work on Site. The fencing provides a physical barrier that is secured, to prohibit activities considered detrimental to the retention of healthy trees (e.g. excavations, soil stripping, discharge of substances harmful to trees, storage of materials, fires). In addition to this, it may be necessary to install specialist temporary

ground protection which enables access within the RPA, without causing long-term detriment to the health of the tree/s.

- No traditional construction works should take place within the RPA of retained trees. However, in some circumstances and where there is an overriding requirement for construction and the retention of trees, it may be appropriate to employ techniques and use materials that allow trees to be retained, whilst enabling the construction. For hard surfacing, such as drives, roads and footways, utilising no-dig construction techniques and using three-dimensional geogrids and permeable wearing course materials may be appropriate. For built structures within RPAs, the use of pile and above ground level beam foundations and/or cantilevered engineering solutions can enable structures to be constructed within RPAs. The project arboriculturist should be consulted on the appropriateness of building within retained tree RPAs, as this is not appropriate for all trees and soil types.
- Where aerial parts of the tree crowns extend beyond the edge of the RPA, consideration should be given to protection of these parts, allowing for protection during development processes including working space. It may be appropriate to consider pruning of aerial parts to allow construction clearances and future nuisance abatement, this however must be considered by the project arboriculturist and the LPA. Where development proposals identify a need for working within the RPA/crown spread of retained trees and it can be demonstrated that retained trees remain viable, then it is important that the project arboriculturist is contacted to advise and prepare an AMS and identify appropriate stages of supervision.

Appendix 5

Report Limitations

Appendix 5: Report Limitations

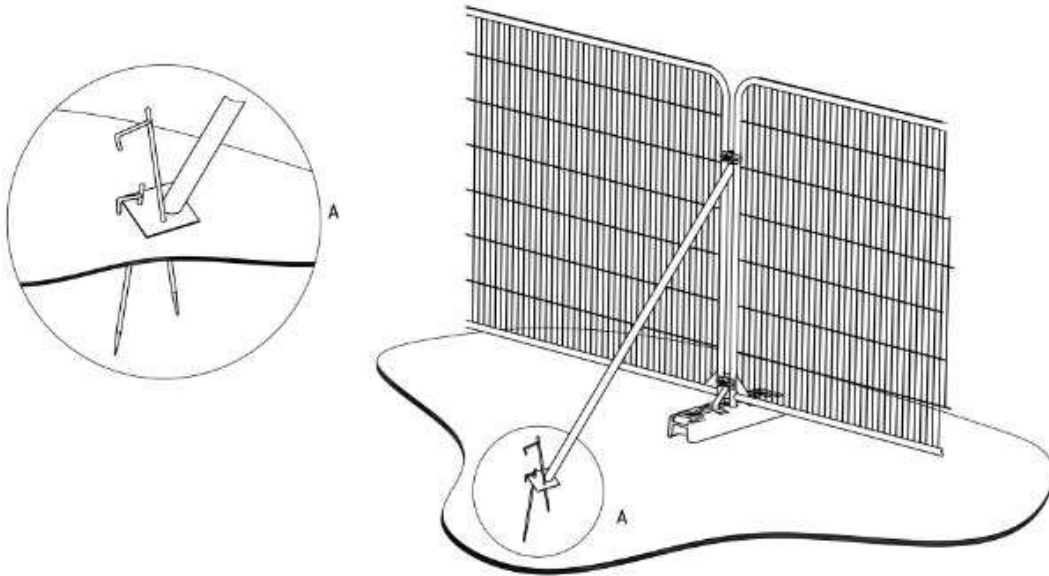
- Trees are influenced by a variety of environmental variables, which can affect the health of trees causing biomechanical and physiological changes. All comments made on tree health reflects their physical condition at the time of the survey. Due to the changeable nature of trees and other site/environmental conditions, which may influence trees, the preliminary management recommendations/ further works for the surveyed trees undertaken, which can be found in Appendix 1 of this report, are only valid for a period of 12 months from the date of the initial Site survey 5th February 2021. These recommendations relate specifically to the general maintenance of tree health and safety and do not affect the implications of this Arboricultural Impact Assessment and therefore, the results of the survey remain valid beyond the 5th February 2022.
- This AIA report and the associated TPP is based on a topographical survey plan supplied by the client. Where tree stem locations are not shown on the topographical survey, these are plotted using GPS plotting and/ or the utilisation of site features to manually plot the tree stem locations and canopy spreads for tree groups. Aerial photography is also utilised to plot tree group canopy spreads, where utilisation of GPS is not feasible. These methods provide a good representation of the surveyed trees; however, please note that the GPS used is not sub-metre accurate. WA cannot be held responsible for inaccurate tree locations, where we are not supplied with a topographical plan showing tree locations, where trees are not shown on the topographical survey plan supplied to us by the client or where the trees are plotted inaccurately on supplied plans.
- Although comments and recommendations on the safety of particular trees may have been made, this survey is not a Tree Risk Management Survey and thus should not be treated as such. All trees were surveyed from ground level only and in a solely visual nature. However, where trees have been identified as presenting an imminent safety risk due to structural defects, this has been brought to the attention of the client and treated as a separate matter. Should trees require further detailed assessment (decay detection, aerial inspections) and do not present an imminent safety risk, the information will be detailed within the survey schedules.
- Any management recommendations have been made in accordance with BS3998: 2010 Tree Works – Recommendations; and/or industry best practice. Works have been recommended in accordance with any statutory obligations on the landowners or occupiers.

- This survey did not include an ecological survey of vegetation or habitat areas. Any ecological issues incidentally observed during the survey are reported on in the tree schedule.
- For the purpose of this report no samples were obtained from Site for analysis or any other reason.
- The survey did not include soil sampling to determine whether the soil is shrinkable. Such analysis should be carried out by a specialist to ensure building foundations are adequate in accordance with current National House Building Council Guidelines (NHBC).

Appendix 6

Tree Protection Fencing

Appendix 6: Tree Protection Fencing



a) Stabilizer strut with base plate secured with ground pins

Appendix 7

Tree Protection Signage

Appendix 7: Tree Protection Signage



Appendix 8

Root Exploration Works Note

Root exploration works at Birstall Retail Park, Kirklees

These notes summarise the observations made on 22 February 2021 to assess the rooting numbers and patterns of four trees at Birstall Retail Park where a drive through lane is proposed within their root protection areas.

There are nine trees close to the proposed drive through lane with crowns and RPAs that extend up to, or into, the proposed drive through lane. These are numbered 12, 14, 15, 18, 19, 20, 22, 24 and 26 in the pre-development report. Those same tree numbers are used in these notes.

Trees 18, 19, 24 and 26 have crowns that overhang the proposed drive through lane but their RPAs either do not extend into the proposed lane or extend by such a small distance that this encroachment would be within tolerable limits.

Pruning works to the trees to lift their crowns above the new drive through lane and existing car park would require the removal of small diameter lateral and sub-lateral branches up to a diameter of 50mm. However, most branches that would need to be removed have a diameter of less than 30mm diameter. The crown lifting would be necessary to increase the height of the crowns by 1 to 2m. This crown lifting would not be detrimental to the health or amenity of the trees.

Root investigation works were carried out for Trees 12, 14, 15 and 22.

Of the four trees that the proposed drive through lane could affect the RPAs of, Tree 15 a silver birch, would need to be removed. Trees 12, 14 and 22 could be retained.

Root investigation trenches were hand dug as close to the edge of the proposed drive through lane as possible. The trees are growing in shrub beds with dense shrubs along the route of the drive through edge. These shrubs were pruned or removed to allow the digging to take place. There were many roots from the shrubs in the trial holes.

The following observations were recorded for the rooting patterns of Trees 12, 14, 15 and 22.

Tree 12

1. The Trench

A trench 0.3m wide and 2.0m long was dug along the edge of the proposed drive through. The trench was up to 0.5m deep.

2. The Roots

The following roots were found:

2 x 100mm diameter at 20mm deep.

3. Conclusion

There are no significant roots within the route of the proposed drive through. The severing of these small diameter roots would be tolerated by the tree because the tree is young.



Trench for Tree 12 showing the position of two small diameter roots from the tree and lots of roots from shrubs.

Tree 14

1. The Trench

A trench 0.3m wide and 1.5m long was dug along the edge of the proposed drive through. The trench was 0.5m deep.

2. The Roots

The following roots were found:

2 x 20mm diameter at 200mm deep.

1 x 10mm diameter at 200mm deep

There are a number of other roots present. These are believed to be from the shrubs that were cut back to allow this trench to be dug.

3. Conclusion

These are small diameter roots that are not regarded as significant. Due to the young age of the tree I believe that the tree would tolerate their loss.



Trench for Tree 14 showing the position of three roots from the tree, together with roots from shrubs.

Tree 15

1. The Trench

A trench 0.3m wide and 1.0m long was dug within 1m of the base the stem of the tree. The trench was up to 0.2m deep.

2. The Roots

The following roots were found:

A mat of fibrous roots were revealed close to the surface.

3. Conclusion

The construction of the drive through would result in a substantial number of fibrous roots being severed. This could significantly reduce the tree's ability to uptake water and cause the tree to decline. I believe that this tree would need to be removed to accommodate the drive through. This tree is in the lowest retention category and could be replaced by new planting elsewhere on the site after the work is completed.



Trench for Tree 15 showing the fibrous roots close to the surface.

Tree 22

1. The Trench

A trench 0.3m wide and 1.0m long was dug 2.0m from the stem of the tree along the line of the proposed drive through lane. The trench was 0.45m deep. At a depth of 0.45m a solid concrete base was present preventing the trench being dug any deeper.

2. The Roots

No roots from the tree were located, only roots from the shrubs that were removed to allow the trench to be dug.

3. Conclusion

The drive through lane would have no impact on this tree.



Trench for Tree 22 showing only roots from shrubs growing in the area.

Appendix 9

Glossary of Common Terms Used in Arboriculture

Appendix 19: Glossary of Common Terms Used in Arboriculture

Abscission. The shedding of a leaf or other short-lived part of a woody plant.
Abiotic. Pertaining to non-living agent's e.g. environmental factors.
Absorptive Roots. Non-woody short-lived roots, generally having a diameter less than one millimetre, the primary function of which is the uptake of water and nutrients.
Access Facilitation Pruning. One off pruning operation to provide access for development operation. Pruning that will not be detrimental to trees health or amenity.
Arboricultural Method Statement (AMS). A methodology for the implementation of development where encroachment within the RPA has the potential to cause damage or loss of retained trees.
Arboriculturist. Someone who through relevant training and experience has gained knowledge in the expertise of trees.
Adaptive Growth. The process by where wood formation rates increasing in the cambial zone, as well as wood quality, responds to gravity and other forces acting on the cambium.
Adaptive Roots. The adaptation of existing roots; or a production of new roots in response to damage or decay.
Adventitious Buds, Roots, Shoots. Which grow in other than primary apical control.
Anchorage. The process in which a tree uses its roots system to support itself within the soil structure.
Ancient: A tree that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species.
Arisings. Parts of the tree that has been removed for disposal, branches, leaves, roots etc.
Canker. Area of dead cambium killed by overlying pathogenic tissues.
Cavity. A hole in the woody structure of the tree; often caused through decay.
Cleaning Out. The removal of dead, diseased crossing branches, damaged branches and alien structures.
Competent Person. Person with training and experience in accordance with the proposed matter being addressed, having an understanding of a particular matter being approached.
Condition. An indication of the physiological vitality of a tree, but not the stability of a tree.
Construction. A Site based operation that has the potential to affect retained trees.
Construction Exclusion Zone. An area based on the RPA from which construction activity is prohibited.
Coppicing. Removal of all aerial parts of the tree leaving a stump for regeneration of new shoot.
Crown/Canopy. The parts of the tree that supports the leaves.
Crown Lifting. The removal of limbs and small branches to a specified height above ground level.
Crown Thinning. The removal of a proportion of secondary branch growth throughout the crown to produce an even density well balanced crown structure.
Crown Reduction/Reshaping. Removal in the height to a specified description to maintain a flowing crown structure.
Deadwood. Non-functional branches which no longer support natural growing conditions of the tree but may be beneficial for the support of habitats and species, possibly including rare saproxylic invertebrates. Thus, may also be referred to as 'Decaying Wood Habitat' or 'Dysfunctional wood'. Size ranges for deadwood referred to in this report and/or Appendix 1: - Small (<75 mm diameter), Medium (76 – 150 mm), Large (151-300) mm and Very large >301 mm. For some species such as oak etc, the risk of deadwood falling from the tree can be lesser than for other species, due to the variety of wood strengths of different tree species.

Defect. Any area of the tree that no longer has an optimal mechanical uniformity of stress. Defects may or may not affect the long-term retention of the tree(s), depending upon severity, the likelihood of the defect(s) failing and the location of the tree(s) (Target).
Dieback. Death of woody parts of the tree starting at distal ends of the tree.
Disease. Damage occurring to living organisms as a result of pathogenic micro-organisms.
Distal. Furthest distance away from the main body of the tree.
Dysfunction. In woody tissues, the loss of physiological function, especially water conduction, in sapwood.
Epicormic Growth. Growth from dormant or adventitious buds, not developing from the first shoot.
Girdling Roots. A circling root which constricts the stem or roots, with the potential to cause death and the restriction of flow within the phloem.
Heartwood. Dysfunctional xylem which no longer has conductive properties, but which has become an integral structural part of the tree.
Heave. The swelling of shrinkable clay soils, often when vegetation has been removed allowing soil rehydration to develop, with the potential for listing structures (e.g. walls).
Included Bark/Acute Forks. Face to face contact of bark usually at fork unions, or branch unions.
Lopping/Topping. A term used to describe the removal of large sized branches
Monolith. Removing some or most of the trees crown and sometimes the upper stem, in order to retain as much of the tree as standing deadwood habitat for ecological reasons.
Pathogen. A micro-organism that causes disease within another organism.
Phytotoxic. Toxic to plants.
Pollarding. The removal of the tree canopy to produce knuckles where new growth develops and is removed cyclically usually performed on young trees.
Pruning. Selective removal of parts of the tree to achieve a desired outcome.
Root Protection Area (RPA). An area around a tree identified by multiplying the stem diameter at 1.5 m from ground level by 12 to produce a radial area or rooting volume around a tree to be protected Ref. BS 5837: 2012.
Service. Any above and below ground structure or apparatus for utility provision.
Size of part. Relating to risk assessments, identifying the size of the hazard, or parts of a tree which may cause harm if failure occurs.
Stem(s). The main structure from the ground up supporting the crown.
Stress. In plants, the physiological depletion as a result of environmental influences.
Structure. A manufactured object, such as building, roads, path, wall or excavated structures.
Structural Roots. The primary larger diameter roots which hold and support the aerial parts of the tree.
Subsidence. The shrinkage of soil through the absorption of water via vegetation and the sinking effects on surrounding architectural structures.
Targets. In risk assessment, persons or property at risk of harm as a result of a hazard (falling tree, branch, etc.).
Transitioning Veteran Trees: Trees with some veteran features, but not sufficient veteran features to be considered full veteran trees. They contribute to the veteran tree resource and, through the ageing process are expected to become true veterans in time, before which they offer bridge and continuity habitat for important saproxylic invertebrates and fungi.

Tree Protection Plan (TPP). A scaled drawing informed by descriptive text where necessary, based upon finalised Site proposals, showing trees for retention and illustrating the tree and landscape protection measures.

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

Windthrow. The blowing over a tree at its roots.

DRAWING

KEY

RED LINE BOUNDARY
TREES REMOVED DUE TO CONDITION AND/OR
UNABLE DEVELOPMENT
TREES REQUIRING PRUNING TO ENABLE THE
PROPOSED DEVELOPMENT TO BE CONSTRUCTED.
LOCATION OF TRIAL TRENCH EXCAVATIONS ALREADY
UNDERTAKEN

LOCATION OF TREE PROTECTION FENCING

CATEGORY A CROWN SPREAD

CATEGORY B CROWN SPREAD

CATEGORY C CROWN SPREAD

CATEGORY U CROWN SPREAD

ROOT PROTECTION AREA

VETERAN TREE ROOT PROTECTION AREA

T1/G1/
W1/H1

TREE/TREE GROUP/
WOODLAND/HEDGE NUMBER

TREES QUALITY CATEGORIES BASED ON BS5837:2012 TREES IN RELATION TO DESIGN, DEMOLITION AND CONSTRUCTION - RECOMMENDATIONS

RPA - ROOT PROTECTION AREA

WHERE RPA IS NOT VISIBLE IT EXTENDS TO THE SAME DISTANCE AS THE CANOPY.

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ISSUE 104		DK E	MS02	5 B	MS

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PROJECT
DRIVE THRU
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TRAINING TITLE

TREE PROTECTION PLAN

FIG NO	LD10210-001		REV	A
FIG SIZE	A2	SCALE	1:200	DATE
DRAWN BY	DR	CHECKED BY	MS	APPROVED BY
				MS

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