ARBORICULTURAL SURVEY AND IMPLICATION ASSESSMENT



THE BRIDGE INN CHILDWALL VALLEY ROAD CHILDWALL

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1.0 Introduction

- 1.1 We Know Trees were instructed by Condy and Lofthouse Limited on behalf of CLAMCO Limited, to carry out an arboricultural survey of trees on land at The Bridge Inn, Childwall.
- 1.2 This report details the arboricultural implications of developing the site, including:
 - a survey of the trees on and near the development which may impact the proposal- from ground level, noting their location, species and all relevant parameters, i.e. stem diameter, height, crown spread, condition etc;
 - providing advice on the removal, retention and management of trees;
 - assessment of the potential effects of the proposal on retained trees and vice versa;
 - assessment of the requirement for tree protection for the duration of the works;
 - mitigation for any loss;
 - preparation of a tree schedule;
 - and report on the above matters.
- 1.3 The survey was carried out on 10 April 2015 by means of inspection from ground level by an experienced and qualified arboriculturalist. The inspection can be restricted in cases where trees were Ivy clad or surrounded by vegetation.
- 1.4 Under *BS5837: 2012 Trees in Relation to Construction -Recommendations*, the assessment of trees is made objectively. The tree categorisation method identifies the quality and value of the existing tree stock, allowing informed decisions to be made concerning development design layout.
- 1.5 The following documents have been made available by the client:
 - Drawing- Existing Site Plan
 - Drawing- Proposed Site Layout
- 1.6 The supplied drawing included tree positions plotted, however it did not include all tree positions, they have therefore been added to the drawing indicatively. Any dimensions regarding tree positions and protective fencing must be checked on site.
- 1.7 Weather conditions during the survey were dry and still.
- 1.8 The survey was carried out noting the conditions of the trees at the time of inspection. As trees are part of the natural environment, conditions can naturally change; therefore the contents of this report are valid for one year only. After this period, re-inspection may be necessary.

2.0 Survey Methodology

- 2.1 The trees were surveyed (prefixed T, or G for group) and recorded in the tree schedule in appendix one. Where groups are recorded, average height and diameter at breast height (DBH) of the trees in the group are reported. Where access to the base of any trees was limited, stem size was estimated.
- 2.2 All the trees were assessed using: a grading A to C (retention) and U (removal); condition and age class as defined in appendix two.
- 2.3 Where appropriate, canopy spread for each tree was recorded at four cardinal points in order to reproduce an accurate representation of the crown shape of the tree on the tree plan in appendix three.
- 2.4 The survey included all trees within the proposal area and trees near to the proposal.

3.0 Development Proposals

- 3.1 Due to the proposed development and its associated infrastructure there are a number of locations where the proposals are in close proximity to the trees surveyed. The site layout plan within appendix three identifies the trees in relation to the proposed development.
- 3.2 In order to fully assess the impact of the proposals an Impact Table has been created detailing each tree, which shows the proximity of the associated works to the tree.
- 3.3 This can then be assessed in accordance with BS 5837:2012 to determine whether the development will have a detrimental impact on the health of each tree. Once this has been determined remedial measures can be detailed to reduce the impact the proposals will have on the treescape.

3.4 Impact Table:-

	Root Pr Area ide table BS583	otection ntified in 2 of 7:2012	Distance to	Distance to	Con the tree /e he				
Tree No.		Equal to a	proposed car parking/footpath	proposed development	successfully				
	Area	circle	(m)	(m)	retained?				
	(m ²)	with							
	~ /	radius							
		(m)							
T1	1400	15.00		Fell Due to Con	dition				
Т2	400	4 80	3.60	20.00	Yes as outlined in				
12	400	4.00	5.00	20.00	section 5.1 below.				
тз	250	3.00	4 00	11 70	Yes as outlined in				
	200	0.00	4.00	11.70	section 5.2 below.				
T4	305	3.66		Fell Due to Con	dition				
T5	680	8.16	4.20	42.90	Yes				
G1	500	6.00	0.20	13.90	No				
G2	120	1.44		dition					
					Retention of 13				
					trees as outlined in				
G3	400	4.80	0.20	19.00	section 5.2 below				
					and the loss of 14				
					trees				
G4	400	4.80	Fell Due to Development						

4.0 Impact Assessment

4.1 To assess the implications of the Impact Table each tree can be categorised in the following way: -

	Trees to b	e retained	Trees to be removed			
	With no	With detailed	Due to	Due to		
	impact	construction	condition	development		
Tree	Τo	T2, T5 & G3		G1, G3 (14 trees)		
No.	15	(13 trees)	11, 14 & GZ	& G4		

5.0 Mitigation Proposals

- 5.1 Property Construction
- 5.1.1 As shown above, the Impact Table raises concern of the proximity of the development to T2 and the effect the proposals would have on the safe useful life expectancy of the tree.

- 5.1.2 This impact can be reduced should the following design principal be implemented: -
 - The extension should have a designed foundation to reduce the amount of excavation required for its construction. This can be achieved by constructing the extension with a pile and beam foundation.
- 5.1.3 If the above foundation is implemented and in general the ground levels remain the same the only detrimental effect the proposals would have on this tree would be slight root severance in localised areas which would allow the successful retention of the trees.
- 5.2 Car Parking Construction
- 5.2.1 As shown above, the Impact Table raises concern of the proximity of the developments car parking to T5 & G3 and the effect the proposals would have on the safe useful life expectancy of the trees.
- 5.2.2 If ground levels remain the same, the detrimental effects the driveway would have on this tree would be: -
 - Compaction, resulting in oxygen depletion, caused from creating the access way.
 - The loss of a permeable surface.
- 5.2.3 It is now possible with the use of a cellular confinement system to be able to create road surfaces very close to trees without having a detrimental effect.
- 5.2.4 A cellular confinement system provides a load transfer mattress which prevents direct loads on tree roots and reduces the bearing pressure on subsoil's by stabilising aggregate surfaces against rutting under wheel loads.
- 5.2.5 A proposed methodology and cross-sectional diagram for the construction of the access way can be found in appendix four of this report. Should this be used for the car parking, in the area effecting T5 & G3 then the proposals should not have a detrimental effect on the trees.

6.0 Conclusions and Arboricultural Recommendations

6.1 The tree categorisation method identifies the quality and value of the existing tree stock but it is not meant to be interpreted rigidly and is presented in order to form a balanced judgement on tree retention and removal.

- 6.2 A precautionary method of working near trees is detailed in the accompanying Arboricultural Method Statement.
- 6.3 Following site development, regular (annual or biannual) inspections of all retained trees should be undertaken by a qualified arboricultural consultant.
- 6.4 It is considered that in following the advice in this document, any negative factors affecting trees on the site will be minimised.

Appendix One

Tree Survey Schedule

TREE SURVEY SCHEDULE

Arboric	ultural Data Sheet:	The Brid	dge Inn, C	hildwall	Date of Survey: 10/04/15						Surveyor: J. Barnes		
Troo		ПВН	Height		Cro	Crown Spread			Стомп	Condition	Comments and preliminary management	Estimated	Tree
No.	Species	(mm)	(m)	Age	N	E	S	W	clearance	rating	recommendations	remaining contribution	category rating
T1	Lombardy poplar	1400	25	ОМ	4	4	4	4	5	3	An individual specimen with reasonable form covered with ivy situated in an area of scrub adjacent to domestic property. Mallet sounding indicated that the stem is hollow. Fell subject to ecological assessment	0-10	
T2	Hawthorn (off-site)	120 Est.	12	М	6	5	4	4	1.5	2	An individual specimen with reasonable form situated in the garden of an adjacent property separated from the site by a wall, with low branches hanging into the footpath and part of the site. Crown lift to 3m.	20-40	C1
Т3	Pear (off-site)	250 Est.	4	EM	1	1	1	1	2	3	An individual specimen with poor form situated in the garden of an adjacent property separated from the site by a wall. Tree has been previously heavily reduced to 3m.	0-10	C2
T4	Silver Birch	200, 230	14	SM	4	4	4	1	2	3	An individual tree that appears to be self- seeded as it has established in a thin layer of soil on the surface of the tarmacked area. Extensive root damage was evident therefore future stability compromised. Fell	0-10	

Arboric	Arboricultural Data Sheet: The Bridge Inn, Childwall Date									Date of Survey: 10/04/15 Surveyor: J. Barnes				
Tree No.	Species	DBH	Height	Ane	Cr	own Sp	oread (m)	Crown	Condition	Comments and preliminary management	ninary management ndations Estimated remaining contribution ra		
	Opeoleo	(mm)	(m)	Age	Ν	E	S	W	clearance	rating	recommendations			
Τ5	Oak	680	10	М	5	5	5	5	3	2	An individual specimen with reasonable form situated on the south boundary adjacent to a tarmacked area and neighbouring domestic property. An old wound was located at 4m with no significant decay present. Dead wood was present in the upper crown. Crown clean and monitor annually.	40+	B1	
G1	Lime x3	500 Avg.	18 Avg.	М	-	-	-	-	1.5	2	A single species linear group with reasonable form situated on the west boundary in scrub with low branches. The inspection was limited as the stems could not be accessed due to dense bramble. Crown lift to 3m.	20-40	B1	
G2	Hawthorn	120 Avg.	6 Avg.	М	-	-	-	-	0	2/3	A single species group with poor form situated on the west boundary. The trees are suppressed by extensive ivy growth. Fell.	0-10	U	

Arboricultural Data Sheet: The Bridge Inn, Childwall						Date of Survey: 10/04/15					Surveyor: J. Barnes		
Tree No.	Species	DBH (mm)	Height (m)	Age	Cro N	own Sp	oread (S	m) W	Crown clearance	Condition rating	Comments and preliminary management recommendations	Estimated remaining contribution	Tree quality category rating
G3	Lime x26 & Hawthorn x1	400 Avg.	18	М	_	_	-	-	1.5	2/3	A mostly single species linear group with reasonable form situated in scrub along the south boundary also adjacent to domestic property. Some trees have co- dominant stems and cankers that do not yet present structural concern. Two dead trees were noted- one Lime to the west of the group and one Hawthorn noted on the plans. Many of the trees had low branches and epicormic growth. Fell two dead trees. Crown lift group to 3m, remove epicormic growth and monitor trees annually.	20-40	B1
G4	Sycamore x3	400 Avg.	16 Avg.	М	-	-	-	-	4	2	A single species group with reasonable form situated in scrub and adjacent to parking and neighbouring properties. Again, the inspection was limited as the stems could not be accessed due to dense bramble.	40+	C1

Appendix Two

Tree Survey Key

Category and definition Criteria											
Category U Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will h	ecome										
Those in such a condition that any existing unviable after removal of other R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by p	runing)										
value would be lost within 10 years and Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline											
which should, in the current context, be Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality	ty trees										
removed for reasons of sound suppressing adjacent trees of better quality											
arboricultural management Note – Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree).											
Trees to be considered for retention											
Category and definition	Criteria - Subcategories										
Category and definition 1 Arboriculture values 2 Landscape values 3 Conservation values											
Category ATrees that are particularly good examplesTrees, groups or woodlands which provide a definiteTrees, groups or woodlandsThose of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum 40 years is suggested)Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of arboriculture features (e.g. the dominant and/or principal trees within an avenue)Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)Trees, groups or woodlands screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance groups)Trees, groups or woodlands screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance groups)Trees, groups or woodlands screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance groups)Trees, groups or woodlands screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance groups)Trees, groups or woodlands screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance groups)Trees, groups or woodlands screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance groups or softening effect to the locality in relation to views into or out of the s	ds of istorical, alue d										
Category B Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)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, 	ble iral										
Category C Trees not qualifying in higher categories Trees present in groups or woodlands, but without this Trees with very limited Those of low quality and value: currently In adequate condition to remain until new Trees not qualifying in higher categories Trees present in groups or woodlands, but without this Trees with very limited In adequate condition to remain until new planting could be established (a minimum In additional and/or trees offering low or only temporary screening benefit Trees with very limited	ıral										
Note - Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees stem diameter of less than 150 mm should be considered for relocation	Note - Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation										
Age Class											
Y Young Trees that have not vet established Condition											
SM Semi-Mature Established trees up to 1/3 of expected height and crown 1 Good											
EM Early mature Between 1/3 and 2/3 expected height and crown 2 Fair											
M Mature Between 2/3 and full expected height and crown 3 Poor											
EM Fully Mature Full expected height and crown 4 Dead											

Crown beginning to break up and decrease in size Crown in advanced stage of break-up

Over-Mature

Senescent

OM S

Appendix Three

Plans





Appendix Four

Construction of Special Surface

METHODOLOGY FOR THE CONSTRUCTION OF CAR PARKING

The following methodology supports the drawing indicating the construction of the proposed car parking. The methodology is prepared on the basis of the sequence of operations necessary to complete the construction of the driveway with the minimum damage to the trees proposed for retention.

- Surface layer to be scraped off. This can be done either by hand or by very small machinery.
- Erect protective fencing to the edge of the construction area.
- Spread a sub grade material over the length of the driveway to fill any small ruts.
- Construct edging using treated timber if required.
- Lay geotextile mat over smoothed area.
- Extend the Geoweb perforated tree root protection system over the area of the driveway with sufficient overlap such that kerbs can be constructed on top of the Geoweb.
- Fill the voids within the Geoweb with reduced fines Type 1 material working into the site over the top of the Geoweb.
- Lay kerbs and surface over the Geoweb such that the construction binds itself together.
- Construct finished surface as required in line with guidance illustrations below.

Geoweb Based Construction – (Indicative Only)

Depth of confinement system variable according to use- refer to manufacturer

Tarmac Surface



Block Paved Surface



Gravel Surface

