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# 78 Dawstone Road, Heswall, CH60 8ND TREE SURVEY BS5837:2012

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### 1 SUMMARY

The proposed plans are for a new dwelling and smaller building on the site. In total there are 8 individual trees and one group on the site. There are Tree Preservation Orders on the following trees – **T2: Norway Spruce** (WR0358/T2), **T7: Beech** (WR0358/T3), **T8: Spruce** (WR0358/G2), **G1 and T3: Beeches** (WR0358/G1).

T2 (Norway Spruce) and T1 (Conifer) are located in the driveway which is bare earth at present. To accommodate a new driveway a cellular confinement system would be used to protect the Root Protection Area of the tree and left in situ with appropriate final surfacing.

The smaller proposed building located in the car parking area incurs into the Root Protection Area of the Beech tree (T7). Pile foundations are proposed to be used as an alternative to strip foundations. This is in accordance with the BS5837:2012 guidelines *'The insertion of specially engineered structures within RPAs may be justified if this enables the retention of a good quality tree that would otherwise be lost.'* Furthermore, Temporary Ground Protection will be laid within the RPAs of T7 and T8 for protection throughout development. In addition, there is minimal incursion into the RPA of the Norway spruce (T8) of 2.3%. This is considered negligible and should not affect the health of the tree.

To prevent compaction and to protect the root radial areas of the trees, all trees which are not affected by development will be afforded protection (see Arboricultural Method Statement and Tree Protection Plan). Such trees shall be retained and shall not be lopped, topped, felled, pruned, have their roots severed or be uprooted without prior approval of the Local Planning Authority

### 2 INTRODUCTION

2.1 Guy Smallthwaite is an Arboricultural Consultant with Treesure. He has been awarded a Foundation degree in Arboriculture with the University of Central Lancashire in



conjunction with Myerscough College. He is a Professional Member of the Arboricultural Association. He has 20 years of experience within the industry.

- 2.2 Treesure have been instructed by Mr Peter Burns to produce a Tree Survey Plan in accordance with BS5837:2012. The survey was carried out on the 11<sup>th</sup> of March 2021. The weather conditions were overcast with a light breeze.
- 2.3 For the purposes of carrying out the tree survey, Treesure were provided with the following documents: A topographical survey, existing and proposed plans in PDF and CAD format.
- 2.4 Some trees on the site are protected by a Tree Preservation Order (see Fig 3).
- 2.5 This report details the arboricultural implication of development, recommendations and protective measures.
- 2.6 This report provides the results of the survey and includes:
  - Tree Survey Schedule
  - An Assessment of Tree Quality based on BS5837: 2012
  - Arboricultural Impact Assessment
  - Arboricultural Method Statement
  - Tree Constraints Plan
  - Tree Protection Plan
- 2.7 The location of individual trees were located using a topographical survey. Tree locations not included on the topographical survey were estimated.

### 3 SCOPE AND LIMITATIONS OF THE SURVEY

- 3.1 The scope of the survey includes a visual inspection from ground level using the 'Visual Tree Assessment Methodology'. One site was surveyed. The brief was to conduct a Tree survey in accordance with BS5837:2012 Recommendations.
- 3.2 Any legal descriptions or information given by Treesure are understood to be accurate.



- 3.3 No responsibility is assumed by Treesure for legal matters that may arise from this report, and the consultant shall not be required to give testimony or to attend court unless subsequent contractual arrangements are made.
- 3.4 Any alteration or deletion from this report will invalidate it as a whole.
- 3.5 Trees are large dynamic organisms whose health and condition can change rapidly, therefore due to the changing nature of trees and other site considerations, this report and any recommendations made are only valid for a 1 year period.
- 3.6 Any operational practices recommended in this report are to be undertaken by the appropriate specialist company. Operatives are to carry out the relevant risk assessment and record such information, prior to commencement of tasks and work in accordance with current Health and Safety standards, practices and legislation.
- 3.7 A topographical survey was supplied which located the existing individual trees on site.Tree locations not included on the topographical survey were estimated.

### 4. SURVEY METHODOLOGY

- 4.1 The tree survey was carried out using the methodology set out in BS5837:2012 'Trees in relation to design, demolition and construction recommendations'.
- 4.2 Tree canopies or branch spread was measured in four directions N-S-E-W using a Leica Disto. This gives an accurate representation of the tree crown.
- 4.3 Trunk diameters are measured at breast height in mm and rounded to the nearest 10mm.
- 4.4 Crown clearance is the existing height above ground level of the first significant branch along with its direction of growth (e.g. 3.5 S). Measurements are recorded to the nearest half metre for dimensions up to 10m and the nearest whole metre for dimensions over 10m.



- 4.5 Height was measured using a Nikon Forestry Pro Laser Rangefinder. All were recorded to the nearest half metre for dimensions up to 10m and the nearest whole metre for dimensions over 10m. Stem diameter was recorded in millimetres and rounded to the nearest 10mm.
- 4.6 Photographs were taken on site recording any structural defects or decay/disease.
- 4.7 Life Stage is recorded as either Y- young, SM Semi Mature, EM Early Mature, M
   Mature or OM Over Mature
- 4.8 Observations record the condition of the tree noting any decay/disease or physical defects
- 4.9 Category rating is given to all the trees surveyed. Category A (Green) Trees of high quality with an estimated remaining life expectancy of 40 years. Category B (Blue) Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. Category C (Grey) Trees of low quality with an estimated life expectancy of at least 10 years. Category U (Red) Trees that are unsuitable for retention. Trees in such poor condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
- 4.10 A, B and C trees are also given a sub category of 1, 2 or 3 which reflects their arboricultural, landscape or cultural values respectively.
- 4.11 Life expectancy is the length of time that the tree is estimated to make a useful contribution is expressed in years as: <10, 10+, 20+, and 40+.
- 5.0 <u>Proposal</u> Application for a new dwelling and smaller building to be constructed.



## 6. TREE DETAILS

### 6.1 <u>Land</u>

This is a plot of land with an entrance off Dawstone Rd which also borders Well Lane (see Tree Constraints Plan). Details of all the trees can be found in the Tree Survey Schedule in Appendix 1 and their location can be found on the Tree Constraints Plan in Appendix 2. All remaining trees are to be protected in accordance with BS: 5837 (2012) guidelines.



Fig 1. Aerial view of 78 Dawstone Rd



Fig 2. OS Map of location of 78 Dawstone Rd.



### 6.2 <u>Statutory Protection</u>



Fig 3. Wirral Borough Council Interactive Map. There are four Tree Preservation orders on trees at 78 Dawstone Rd CH60 8ND.

### 7. Legal Protection for Wildlife

- 7.1 Any tree work should be undertaken outside of the nesting season (1st March 31st July inclusive), although the nesting period may start before this and extend beyond it, in many cases (e.g. barn owls can breed at any month of the year in the UK). This is to avoid impact to nesting birds and infringement of the Wildlife and Countryside Act 1981.
- 7.2 The quality and value of the tree stock has been broken down by BS5837 quality grade in Table 5.4 below. The grading system can be summarised as follows: For a tree to qualify under any given category, it should fall within the scope of that category's definition (U, A, B, C) and for trees in categories A to C, it should qualify under one or more of the three subcategories (1, 2, and 3). Subcategories 1, 2 and 3 are intended to reflect arboricultural and landscape qualities, and cultural values, respectively.





### Table 7.4 Quality of Existing Trees (Removal and Retention)

Total No	A Grade	B Grade	C Grade	U Grade
of				
Individual				
Trees				
No of	NA	4	5	NA
Individual				
Trees				
Remove	NA	0	0	NA
Retain	NA	4	5	
Groups	NA	1	NA	NA
of Trees				
Remove	NA	0	NA	NA
Retain	NA	1	NA	NA

### 8.0 Soil Details

The visual soil assessment revealed freely draining slightly acid sandy soils.





Plate 1. Group of beeches protected by Tree Preservation Order G1 and T3: Beeches (WR0358/G1).



Plate 2. T2: Norway spruce protected by Tree Preservation Order (WR0358/T2).



Plate 3. T8: Norway spruce protected by Tree Preservation Order (WR0358/G2).



Plate 4. T7: Beech protected by Tree Preservation Order (WR0358/T3).

### 10. Arboricultural Impact Assessment

The purpose of the assessment is to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of the site layout proposals.

The smaller proposed building located in the car parking area incurs into the Root Protection Area of the Beech tree (T7). Pile foundations are proposed to be used as an alternative to strip foundations. The use of traditional strip footings can result in extensive root loss and should be avoided. The insertion of specially engineered structures within RPAs may be justified if this enables the retention of a good quality tree that would otherwise be lost (usually categories A or B). Designs for foundations that would minimize adverse impact on trees should include particular attention to existing levels, proposed finished levels and cross-sectional details. In order to arrive at a suitable solution, site-specific and specialist advice regarding foundation design should be sought from a specialist engineer. Root damage can be minimized by using piles, with site investigation used to determine their optimal location whilst avoiding damage to roots important for the stability of the tree, by means of hand tools or compressed air soil displacement, to a minimum depth of 600 mm.

#### 10.1 <u>Site access</u>

The proposed site access point would be directly off Dawstone Rd.

#### 10.2 Parking area

The area directly in front of the proposed build will require a driveway and parking area. To prevent compaction and to protect the root radial areas of the trees (T1 and T2) a 'cellular confinement system' driveway, otherwise known as a 'no dig' driveway will be installed within these areas (see Tree Protection Plan). Successful retention of trees even when adopting a no dig method, depends upon the condition (health and vigour) of the trees and on adherence to four simple conditions.

- Roots must not be severed, cut or broken no digging
- Ground levels must not be changed no digging, no soil raising



- Soil must not be compacted- no tracking of vehicles
- Oxygen must be able to diffuse into the soil beneath the engineered surface no tracking of vehicles





\*Cellweb has only been used as an example. Other companies produce cellular confinement systems

### 10.3 *Tree protection during excavation*

Before any building works commence it is essential that all tree protection fencing is in place to protect the root protection areas. There is a slight incursion into the proposed patio area and restricted working space (T7 and T8). The line would need to be 1.5m from the edge to allow for barriers and working space. This is approximately 1.5m from the edge of the RPA line (as indicated in the Tree Protection Plan). Any access within the 1.5m of exposed RPA would be limited to pedestrian access only. For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven



scaffold frame, so as to form a suspended walkway, or on top of a compressionresistant layer (e.g. 100mm depth of woodchip), laid onto a geotextile membrane.

Scatolding within the RFA



Fig 4. Protective boards and scaffolding.

### 10.4 <u>Protection of Retained Trees</u>

The successful retention of trees depends on the quality of protection and the procedures that are set in place to ensure that trees are protected. An Arboricultural Method Statement is an effective means of ensuring this protection. Details are set out in the Method Statement in section 11.

### 10.5 <u>Development will be carried out in the following order:</u>

- Cellular Confinement System
- Ground Protection
- Tree protection fencing
- Development of site
- The removal of Tree Protection Fencing.

### 10.6 Mitigation Planting

New planting is recommended to mitigate the loss of any trees to development.



The extent of mitigation planting will ultimately be determined in agreement with Wirral Borough Council. Native tree species should be increased by planting native broadleaf trees that are of local provenance to the site and appropriate size. Examples are: Birch *Betula pendula* or *Betula pubescens*, Rowan *Sorbus aucuparia*, Hawthorn *Crataegus monogyna*, Wild Cherry *Prunus avium* and Alder *Alnus glutinosa*. Larger species such as Oak *Quercus robur* or Ash *Fraxinus excelsior* can be planted if space permits.

#### 10.7 <u>Tree Dominance Zone</u>

If new trees are to be planted for screening or boundary it is important that the land is assessed to determine where new trees will not be subject to post development pressure for planning or removal. Consideration needs to be given to their ultimate height and spread, form, habit and colour, density of foliage and maintenance implications. It is advisable that new tree planting is kept at distances from structures of at least those in Table A.1 (see BS5837:2012). BS 4428:1989 contains recommendations and guidance on general landscape operations, with sections on preliminary investigations, drainage, grading and cultivation, tree planting, and woodland planting. Establishment of new planting can be maximised by good planting practice.



## 11 ARBORICULTURAL METHOD STATEMENT

- 11.1 The information contained within the Arboricultural Method Statement conforms to BS5837:2012. The controlling authority is Wirral Borough Council.
- 11.2 For details of the trees to be retained, their location, ground protection and Tree Protection Fencing, reference should be made to the Tree Protection Plan.
- 11.3 Any development activity which affects the adaptation of trees to a site could be detrimental to their health, future growth and safety. Tree species differ in their ability to tolerate change, but all tend to become less tolerant after they have reached maturity or suffered previous damage. Planning and subsequent site management aims need to minimise the effect of change.
- 11.4 The implementation, supervision and monitoring of a Tree Protection Plan is necessary to ensure the continued well- being of trees and to comply with BS583:2012.

### 12.0 Schedule of Specific Site Events

12.1 Whenever trees on or adjacent to a site have been identified within the tree protection plan for protective measures, there should be an auditable system of arboricultural site monitoring. Effective tree protection relies on following a logical sequence of events and arboricultural inspection and supervision

### 12.2 <u>Pre-Commencement meeting</u>

Before any start to development a meeting should be scheduled with the site manager, tree officer and the arboricultural consultant. The extent of the tree constraints will be discussed. Working space requirements will be reviewed to consider barrier and ground protection with regard to site functionality. Any potential conflicts should be addressed and a resolution worked towards.

### 12.3 Tree Works



All tree works are to be carried out before there is any commencement of work for reasons of public safety and adhere to recommendations set out in BS: 3998 (2010)

Stage	Action	Involved parties	Reference
1	Issue Arboricultural	Client/Contractor	N/A
	survey to site manager		
2	Notify Arboricultural	Client/Contractor	N/A
	Consultant (AC) of date		
	of pre-development		
	meeting		
3	Pre-development	Site Manager	N/A
	meeting		
4	Installation of Tree	Contractor	13.0
	Protection Fencing		
5	Development	Contractor	8.0
6	Remove tree protection	Contractor	N/A
	once development is		
	completed		

### 12.4 Schedule of Specific Site Events (Table 12.4)

### **13.0** TREE PROTECTION PLAN

- 13.1 In accordance with BS5837:2012 the Tree Protection Plan is superimposed on to the proposed site layout plan and based on the topographical survey. In addition the Tree Protection Plan shows the following information accompanied by descriptive text as required.
- 13.2 The Tree Protection measures shown in the Tree Protection Plan demonstrate the feasibility of the proposed development in relation to the retained trees. The tree Protection Plan must always be read in conjunction with the Arboricultural Method Statement (see attached Tree Protection Plan).

### 13.3 <u>Construction Exclusion Zones</u>

Construction exclusion zones are fenced areas of the site that protect soil, surfaces and roots in the proximity of retained trees. The area of these zones (the root protection area) is calculated as an area equivalent to a circle with a radius 12x the stem diameter in accordance with Annexe C and determined from Annexe D in the BS standards.



## 14.0 TREE PROTECTION FENCING

14.1 All trees that are being retained on site should be protected by barriers and /or ground protection before any materials or machinery is brought on to the site and before any demolition or development. The barrier fencing to be used would be the default type which has uprights that are driven into the ground (see Tree Constraints Plan or Fig 2 in BS5837:2012 guidelines) All weather notices should be attached to the barrier with words such as: "CONSTRUCTION EXCLUSION ZONE- NO ACCESS'

### 14.2 Stages for installation of Tree Protection Fencing

- Hand clearance of any vegetation to allow clear working access
- Setting out of fencing
- Site meeting with arboriculturist to sign off Tree Protective Fencing
- Site now accessible for vehicular access
- 14.3 Once installed Tree Protection Fencing will be regarded as sacrosanct and not removed without approval of the Local Planning Authority.
- 14.4 Protective fencing is a condition of planning approval, if it is removed or repositioned the construction firm is in breach of a condition and may be subject to legal action.

### 15.0 Precautions inside the Construction Exclusion Zone

- No mechanical excavation
- No excavation without arboricultural site supervision
- No hand digging without a written method statement approved by the arboriculturist
- No lowering or raising of levels
- No storage of plant or materials
- No storage of handling of any chemicals including waste from cement mixing
- No vehicular access



### 15.1 <u>Underground services</u>

15.2 Mechanical trenching for the installation of underground apparatus and drainage severs any roots present and can change the local soil hydrology in a way that adversely affects the health of the tree. Wherever possible apparatus should be routed outside Root Protection Areas. Where this is not possible it is preferable to keep apparatus together in common ducts. Inspection Chambers should be sited outside the Root Protection Areas. NJUG guidelines for the planning, installation and maintenance of utility services in proximity to trees can be followed.

### 16.0 PRECAUTIONS OUTSIDE THE CONSTRUCTION EXCLUSION ZONE

- 16.1 Planning of site operations should take sufficient account of wide loads, tall loads and plant with booms, jibs and counterweight. Such contact can result in serious damage to the trees and might make their safe retention impossible.
- 16.2 Fires on site should be avoided.
- 16.3 Material whose spillage could cause damage to a tree should be stored and handled away from the outer edge of the RPA, downhill and at least 10m away.

### 17.0 CONCLUSION

17.1 Providing that the methodology prescribed on this Arboricultural Method Statement and Tree Protection Plan is strictly adhered to I would expect there to be no harmful effects on the retained trees, their health and condition should be as if there had been no development.



### 17.2 <u>Contact Details for all Relevant Parties</u>

Name	Contact Details
MR PETER BURNS (OWNER)	07739044379
ERIK BOWMAN (COUNCIL TREE OFFICER)	0151 691 8193
GUY SMALLTHWAITE (ARBORICULTURAL	0151 336 5060 /07765195443
CONSULTANT)	

### **19. R**EFERENCES

BS5837:2012 Trees in Relation to Design Demolition and Construction

BS4428:1989 Code of Practice for General Landscape Operations

Patch D, Holding B. 2007. Through the Trees to Development APN 12. Arboricultural

Advisory and Information Service.



Appendix 1

Survey Schedule

Classification Key



	SURVEY SCHEDULE COMPLIANT TO BRITISH STANDARD 5837: 2012 DATE 11/03/2021												
Ref No	Species	Height (m)	Stem diameter (mm)	N	S	E	W	First sig branch and direction (m)	Canopy height (m)	Life stage	Estimated remaining contribution (years)	Category grading	Observations and Management recommendations
T1	Conifer (Chamaecyparis Iawsoniana)	8.5m	140mm x3	1	1	1	1	NA	4	S/M	20+	C2	Good condition with no apparent defects. Columnar structure.
T2	Norway spruce (Picea abies)	19m	796mm	5	5	5	5	NA	2	Μ	40+	B1	Good condition. Canopy has been raised. (Covered by a TPO).
T3	Beech (Fagus sylvatica)	11m	200mm	2	2	2	2	1(E)	1	Μ	20+	C2	Good condition. <b>Prune back extending</b> <b>branches over Dawstone</b> <b>Rd.</b> (Covered by a TPO).
Τ4	Conifer (Chamaecyparis lawsoniana)	11m	286mm	2	2	2	2	3 (E)	2	S/M	20+	C2	Good condition, in hedge line.
T5	Holly Ilex aquifolium	8m	140mm	1	1	1	1	3 (E)	1	S/M	20+	C2	Good condition with no apparent defects.



	SURVEY SCHEDULE COMPLIANT TO BRITISH STANDARD 5837:2012 11/03/2021												
Ref no	Species	Height (m)	Stem diameter (mm)	Ν	S	E	W	First sig branch and direction (m)	Canopy height (m)	Life stage	Estimated remaining contribution (years)	Category grading	Observations and Management recommendations
T6	Beech (Fagus sylvatica)	11m	200mm	2	2	2	2	S (2)	1	S/M	20+	C2	Moderate condition with contorted shape and exhibiting signs of decay. <b>Monitor.</b>
T7	Beech (Fagus sylvatica)	19m	710mm	7	6	6	6	S (3)	4	Μ	40+	B1	Good condition with heavier foliage on north side. Crown appears healthy. (Covered by a TPO).
T8	Norway spruce (Picea abies)	18m	732mm	2	4	4	4	S (1)	1	Μ	40+	B1	Good condition. Has had canopy raised. (Covered by a TPO).
Т9	Silver Birch (Betula pendula)	13m	450mm	5	6	6	6	S (4)	2	Μ	40+	B2	Located on third party land to the south. Measurements are approximate.

G1	3 x Beech	16.5m	468mm	5	6	6	6	(S) 3	2	S/M	40+	B2	Group of 3 trees. Good
	(Fagus sylvatica)												condition with no
													apparent defects.
													(Covered by a TPO).



## Key: Survey Classification key

Tree no.	Numerical reference for tree on survey plan and tag number						
Species.	Scientific name and common name						
Height	In metres						
RPA	Root Protection Area						
ТРР	Tree Protection Plan						
ТСР	Tree Constraints Plan						
Stem diameter	In millimetres						
Branch spread	Branch spread in metres taken at four cardinal points to give an accurate representation of the crown						
First significant branc	h and direction First large limb and its cardinal direction						
Canopy	Clearance in metres until the start of the canopy						
Life stage	Y = Young MA = Middle Aged M = Mature OM = Over Mature V = Veteran						
Estimated remaining	contribution This is measured in years (<10, 10+, 20+, 40+)						
Category rating	Category A (Green) Trees of high quality with an estimated life expectancy of at least 40 years						
	Category B (Blue) Trees of moderate quality with an estimated remaining life expectancy of at least 20 years						
	Category C (Grey) Trees of low quality with an estimated remaining life expectancy of at least 10 years						
	Category U (Dark Red) Tree of such condition that cannot be realistically retained						
Subcategories	1 Mainly arboricultural qualities 2 Mainly landscape qualities 3 Mainly cultural values, including conservation						
Observations	Structural and physiological condition						

Management recommendations Remedial work needed to either improve the condition of the tree or to protect the canopy from access during development



**APPENDIX 2** 

**TREE CONSTRAINTS PLAN** 

**TREE PROTECTION PLAN** 







Drawing Title								
Tree Constraints Plan								
Peter	Burns							
Site/Project	Barrio							
Dawst	one Ro	ł						
		-						
Scale/Sheet Date								
1:250 - A3	12	2/03/202	21					
Drawing No	Rev Drawn By Chked By							
TS TCP 12 3 2021	1	CS	GS					
	Troo	0117	~					
	Tree	sur	Ε.					
Arl	oorio	culti	ıral					
C	onsi	ıltar	nts					
Puddington Wi	rral CF	aru La 164 59	ne,					
		104 00						
Tel: 0151 353 8453 Mob: 07765195443								





Drawing Title Tree Protection Plan								
Client Peter Burns.								
Site/Project Dawstone Rd								
Scale/Sheet 1:250 - A3	Date 17/03/2021							
Drawing No TS_TPP_12_3_2021	Rev 1	Drawn By CS	Chked By GS					
Treesure Arboricultural Consultants								
The Old Chapel, Orchard Lane, Puddington, Wirral CH64 5SG.								