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**ARBORICULTURAL IMPLICATIONS ASSESSMENT
FOR PROPOSED MUGA AND PERIMETER FENCING**

AT

**MCCORMACK HOUSE
56A EAST STREET
HAVANT
PO9 1BS**

BY

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1. INTRODUCTION

- 1.1 Broad Oak Tree Consultants Ltd. received instructions from Outcome First Group to undertake an inspection of trees located on and immediately adjacent to the site referred to as McCormack House, 56a East Street, Havant, PO9 1BS. The purpose of the inspection was to produce a base inventory of the tree stock and an Arboricultural Implications Assessment of redevelopment proposals.
- 1.2 The proposals are for internal refurbishments to the existing building; the construction of a new MUGA and new 2.4m closeboard perimeter fencing to the grounds to provide a secure pupils outdoor area. Details of the proposals will have been submitted by MH Architects and others.
- 1.3 The trees were inspected on 8th September 2023 by Tim Laddiman, BSc.(Hons) M.I.C.For. M.Arbor.A., Chartered Arboriculturist and Principal Consultant of Broad Oak Tree Consultants Ltd.
- 1.4 Checks with Havant Borough Council have confirmed that there are no Tree Preservation Orders relating to the site. However, it is apparently within a Conservation Area. Any tree works, other than removal of dead trees or deadwood, would require six weeks' notice to be given to the Council.

2. GENERAL SITE DESCRIPTION

- 2.1 The site is located on the south side of East Street, comprising an office complex with open grounds to the east and south containing numerous trees and hedges of varying ages and dimensions. To the east levels fall beyond a timber retaining wall to a Council run car park with parking for the site to the south. This appears to be on the alignment of an old railway, with a tunnel to the north under East Street, a tree lined embankment to the east and a cycle/footpath exiting to the south.
- 2.2 Adjoining to the west is The Spring Heritage Centre, with a footpath along the western boundary of the grounds and residential properties beyond. To the south end of the grounds is a gated entrance onto Grove Road.

3. SCOPE OF TREE SURVEY

- 3.1 All trees and shrubs of 75mm diameter or more at 1.5m above ground level were included in the survey. This included trees immediately adjacent to the site.
- 3.2 For the offsite trees estimates of location, dimensions and condition had to be made.

4. DATA COLLECTION

- 4.1 All trees were inspected from the ground and no climbing or specialist investigations were undertaken. Only those trees within the site boundary could be basally inspected, with the structural integrity of the trees located outside the site unconfirmed. Each tree was inspected to the requirements of Section 4.4 "Tree Survey" of BS 5837:2012 "Trees in Relation to Design, Demolition and Construction - Recommendations".

- 4.2 The tree survey followed the numbered sequence from T1 to G63 inclusive. Tree numbers, together with BS recommended colour coding of condition, have been added to the Tree Constraints Plan, our drawing no. J64.70/01 in Appendix 2. This drawing also includes crown spreads based on four compass points and BS calculated root protection areas.
- 4.3 The following categories of information were obtained for each tree. Separate detailed tree survey sheets are attached in Appendix 1, together with comprehensive explanatory sheets which cover the details of the categories listed below.

- (1) Tree reference number
- (2) Species
- (3) Height in metres
- (4) Stem count
- (5) Stem diameter or equivalent in millimetres
- (6) Branch spread in metres
- (7) Age class
- (8) Height of crown clearance in metres
- (9) Physiological condition
- (10) Estimated remaining contribution in years
- (11) Category grading
- (12) Structural condition
- (13) Preliminary management recommendations

- 4.4 Within the assessment of physiological condition and remaining contribution, a visual inspection of each tree was undertaken to assess the crown and stem for any weak structures, deadwood, hollows, forks or other defects that might affect its stability and safety. The base of each tree was also visually inspected, together with tapping and probing, to search for signs of root lifting, bark death or decay. Where stems were heavily ivy clad, no full assessment of structural integrity could be undertaken. Clearance of the ivy would be necessary for confirmation of tree condition.

5. RISK ASSESSMENT - INFORMATIVES

- 5.1 Although the potential risk to someone passing beneath a tree when the tree or part of it fails is relatively remote, the risk is present. This increases significantly in areas of consistent and regular usage on a year round basis, such as footpaths, gardens and roadways. Where static structures exist, the risks become constant and an assessment is made as to whether complete or partial failure of a tree could potentially cause physical damage to such structures.
- 5.2 Within the scope of any tree survey it is a fact that not all risks of stem or crown failure can be covered, particularly in relation to freak occurrences of weather when even healthy trees can suffer stem snap or windblow. There is also a well known propensity for mature trees to occasionally shed limbs for no discernible reason, even on calm days. Although relatively rare, limbs may occasionally be shed and this should be acknowledged as a risk that cannot entirely be mitigated.

6. RESULTS OF TREE INSPECTIONS

- 6.1 A total of 63 individual trees and groups were inspected, ranging from young landscape planting of less than ten years of age through to a mature Pine, Lime and Horse Chestnut of upto 90 years of age. These appear to be original landscape components of what was present prior to the office building, with numerous secondary Sycamore having developed, along with landscape planting over several phases.
- 6.2 Primarily along the east bank of the car park is a belt of maturing Ash and Sycamore with occasional Oak and Field Maple and one older, squat crowned Yew.
- 6.3 The Ash and Sycamore within the private section of the car park have all been crown reduced in the last 1-2 years for reasons unknown. It is possible the works were to remove dying canopy elements of Ash with the Sycamores also cut for continuity appearance.
- 6.4 Overall the majority of the trees are in a reasonable condition, though some of the Sycamores/Maples within the grounds of the offices and to the north were noted to have structurally defects/canopy decline/deadwood. Some of these represent hazards to users of the car park and grounds of the offices and should be actioned. Recommended safety works are included in a later section.
- 6.5 Of the trees inspected, the following is a breakdown of the various numbers of trees and groups in each BS category.

BS Category	Tree No.
A	1
B	14
C	46
U	2
TOTAL	63

6.6 *Interpretation of table*

- Category A** Retention most desirable. Of high quality and value and in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).
- Category B** Retention desirable. Of moderate quality and value and in such a condition as to make a significant contribution (a minimum of 20 years is suggested).
- Category C** Could be retained – of low quality and value. Poor crown form, heavily asymmetric, large numbers of similar species/size. Currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested) or young trees with a stem diameter below 150mm.

Category U	Trees for removal. Dead/dying/dangerous trees due to structural defects, fungal decay or root plate uplift. Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.
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7. BS CALCULATED ROOT PROTECTION AREAS (RPAs)

- 7.1 To provide an indication of the critical areas of root plate necessary for tree survival and longevity, BS 5837:2012 requires the calculation of RPAs for trees in the BS Categories A, B and C. Calculations are not made for Category U trees which will require removal on safety grounds within 10 years.
- 7.2 The table in Appendix 3 has been calculated using the measured stem diameters and the formula as described in Section 4.6 in BS 5837:2012. These are represented as basic circles on the Tree Constraints Plan. Where buildings, walls, services and hard surfacing exist within the indicated RPAs it is likely that the architecture of root systems will have been affected. Foundations to walls and buildings can completely obstruct root development, depending on their depth and the nature of the underlying soils. In the absence of detailed site investigations the indicated RPA circles should be used for guidance only within any redevelopment proposals.

ARBORICULTURAL IMPLICATIONS ASSESSMENT

8. REDEVELOPMENT PROPOSALS

- 8.1 The proposals are for internal refurbishments to the existing building; the construction of a new MUGA and new 2.4m closeboard perimeter fencing to the grounds to provide a secure pupils outdoor area. Details of the proposals will have been submitted by MH Architects and others.
- 8.2 The supplied proposed site layout produced by MH Architects has been used as the base for the Broad Oak Tree Consultants Ltd. Tree Protection Plan, drawing no. J64.70/02 in Appendix 4. This indicates trees for removal and measures to protect retained trees in accordance with BS5837:2012 requirements.

9. TREES FOR REMOVAL – REDEVELOPMENT

- 9.1 Based on the supplied proposed layout the following trees would require removal

Table: Trees for removal – redevelopment

Tree No.	Species	BS Category	Comments
T5	Ash	C	Small, young tree.
T6	Sycamore	C	Crowded, drawn up crown.
T7	Wild Cherry	C	Crowded. Heavily asymmetric crown.
T8	Pine	C	Leaning heavily W. Thinning crown. No future.

- 9.2 All of the above are BS category C and as such should not represent a significant constraint, according to BS5837:2012. Their removal will not have a noticeable impact on public visual amenity with tree T9, T10 and T11 retained. The removal of T6 and T7 will allow more space for future development of the canopies of T9 and T10.
- 9.3 The majority of the trees that frame the site are retained.
- 9.4 The trees for removal for redevelopment purposes are indicated as such with blue dashed crown outlines on the Tree Protection Plan.

10. TREE SAFETY WORK RECOMMENDATIONS

- 10.1 Based on the tree inspections the following tree safety works are recommended. It should be noted that the BS5837:2012 inspections undertaken are not specific safety assessments and not all safety issues may have been identified.

Table: Tree Work Recommendations

Tree No.	Species	Works required
T1	Norway Maple	Fell or deadwood crown and reduce.
T14	Sycamore	Deadwood crown.
T16	Sycamore	Deadwood crown and reduce back long limbs to W. to 4m.
G42	Sycamore	Remove hung up dead branches to W. in tree to S.

- 10.2 All tree work will need to be carried out by a competent tree surgeon to comply with BS3998:2010 "Tree Work - Recommendations".
- 10.3 All trees recommended for felling or tree surgery works will need to be checked for the presence of bats or nesting birds prior to works commencing. Disturbance to bats or nesting birds could contravene the Wildlife and Countryside Act 1981 and result in prosecution.

11. POTENTIAL IMPACT OF PROPOSALS ON RETAINED TREES

- 11.1 The proposed MUGA is positioned such that it will not impact on any retained trees.
- 11.2 The proposed close board perimeter fence passes through numerous tree RPAs. However, potential impacts on tree root systems are limited to the post holes for the uprights.
- 11.3 To minimise potential root disturbance the post locations should be planned to be positioned as far from the tree stems as practical, even if this results in short bays to accommodate.
- 11.4 The post holes will be manually excavated to the minimum dimensions necessary.
- 11.5 If roots over 25mm diameter are encountered the post holes will need to be relocated to avoid root severance.
- 11.6 The post holes will be plastic lined to avoid leachates from the curing concrete entering the soils. Any accidental spills will be immediately cleared up.
- 11.7 The above methodology is included on the Tree Protection Plan.
- 11.8 Foot access only for the installation of the fencing will be allowed to minimise ground protection.
- 11.9 Overall the proposals should not have an adverse impact on the retained trees.

12. TREE PROTECTION MEASURES – FENCING

12.1 *Location of fencing*

- 12.1.1 The Tree Protection Plan indicates the proposed location of protective fencing based on the calculated tree protection areas and space available.

12.2 *Design of fencing*

- 12.2.1 The protective fencing is to be constructed of scaffold uprights driven into the ground to a minimum depth of 0.6m and at no greater than 3m spacing. Uprights to be braced with angled scaffold poles and anchors. On to the uprights weldmesh panels such as "Heras" or a similar product will be securely mounted with all weather notices attached to every 5th panel reading "Keep Out – Protected Area". The fencing will form enclosed areas to which no access will be allowed, except for temporary foot access only for the perimeter fence installation. This design of fencing is considered appropriate to the site and scale of redevelopment proposed.

12.2.2 Examples of the fencing specification and signage required are included in Appendix 5.

12.3 *Timing of fencing*

12.3.1 Protective fencing is to be erected prior to commencement of site works and remain in place until completion of construction. The location and suitability of the fencing can be confirmed to the local authority by an arboricultural consultant prior to commencement of construction. Any tree felling will need to be undertaken prior to fence installation to minimise risks to operatives. All tree surgeons' vehicles will be kept outside the indicated protection zones utilising existing areas of hard standing and drive.

12.4 *Additional precautions*

12.4.1 Potentially injurious materials such as fuels, oils, chemicals and cement will be stored at least 20m from any stem, or in a bunded storage vessel. No fires will be lit within 5m of the drip line of any retained tree. No level changes will occur, either raising or lowering within the protected areas. A list of these additional precautions are included on the Tree Protection Plan.

13. GROUND PROTECTION MEASURES

13.1 The areas shown hatched on the Tree Protection Plan are to be covered in a geotextile, over which 100mm of woodchip is to be placed, topped with minimum 12mm thickness non slip surfaced OSB/plywood boards or side butting scaffold boards.

13.2 For machinery access these should comprise interlocking, specifically designed load bearing temporary roadway plates, commonly made of steel or specialised plastics. They will minimise any risk of compaction whilst providing a running platform for machinery.

13.3 Installation of the ground protection measures should take place at the same time as the protective fencing and remain in place until completion of construction.

14. SITE OPERATIONS AND MATERIALS STORAGE

14.1 Details of site zoning cannot be specified by an Arboriculturalist as these are commonly determined by contractors on the basis of Health & Safety Assessments. However, the robust protective fencing will define the remaining site space available for storage and operations.

14.2 It is presumed that a temporary compound for materials and welfare will be formed in the car park with a temporary access utilising the existing steps and gate between T5 and T6.

14.3 Any machinery access required within indicated tree RPAs will require ground protection measures to be installed with no vehicle/machinery passage over bare ground allowed.

15. ARBORICULTURAL METHOD STATEMENT

- 15.1 A separate Arboricultural Method Statement is not considered necessary for this site. Details of the protective fencing and ground protection specification, timing and location are indicated on the Tree Protection Plan, which can be referred to in a specifically worded condition.

16. SUMMARY

- 16.1 The proposed works would require the removal of four BS category C trees which should not represent a significant constraint to the proposals, according to BS5837:2012. Their removal will not have an adverse impact on the public visual amenity of the site.
- 16.2 The proposed MUGA will not impact on any retained trees.
- 16.3 Measures to ensure the installation of the proposed perimeter fence does not impact on retained trees are included on the Tree Protection Plan.
- 16.4 The Tree Protection Plan can be referred to as an approved drawing or in a specifically worded condition to ensure that the retained trees are appropriately protected during the construction works.

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APPENDIX 1

TREE SURVEY EXPLANATORY SHEET

Height	in metres (estimated where ground uneven or access restricted).
Stem count	number of stems
Stem diameter	in mm. at 1.5m. above ground level.
Branch spread	radial spread in metres at four main compass points (estimated where no access).
Age class	Young - Y Semi Mature - SM Mature - M Over mature - OM Veteran - V
Height of crown clearance	in metres. Normally range of heights of outer branches above ground level, e.g. 2-4m.
Physiological condition	Good, Fair, Poor, Dead, Variable
Estimated remaining contribution	in years e.g. less than 10, 10-20, 20-40, 40+
Category grading	see attached sheet
Structural condition	comment on presence of defects, decay, crown form, past management, deadwood, other features worthy of note. N.B. If trees are ivy clad, no full structural assessment will have been possible.
Preliminary management recommendations	requirements of further investigations, works necessary to alleviate potential hazards based on current setting and levels of access. NB: Works that may be necessary in relation to development are not included here

CASCADE CHART FOR TREE QUALITY ASSESSMENT

TREES FOR REMOVAL				
Category and definition	Criteria			Identification on plan
Category U Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management	- 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 R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate and irreversible overall decline. - 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 trees suppressing adjacent trees of better quality NOTE Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree.)			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria - Subcategories			Identification on plan
	1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural values, including conservation	
Category A Those of high quality and value: in such a condition as to be able to make a substantial construction (a minimum of 40 years is suggested)	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees 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 of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
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 woodland, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	MID BLUE
Category C Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm.	Trees not qualifying in higher categories	Trees present in groups or woodland, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit.	Trees with very limited conservation or other cultural benefits	GREY
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 150mm should be considered for relocation				

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
T1	Norway Maple	10	1	390	3.5	5.5	3	7	SM	1.5+	Poor	<10	U	Three stems from 1.9m. N stem virtually dead. Dieback in crown. Extensive bark death up W stem	Fell or deadwood crown and reduce
T2	Sycamore	13	MS	490	4	4	6	5	SM	3+	Poor	10-20	C1	Multi-stemmed from ground level. Thin crown. Small leaf size	
T3	Ornamental Cherry	6	1	120	2	2	3	2.5	Y	1.2+	Fair	20-40	C2	Multi-stemmed at 1.6m	
G4	2no Sycamore	<14	MS	350	<5	<6	<4	<5	SM	1.8+	Fair	20-40	B2	Two twin stemmed trees from ground level, forming one crown	
T5	Ash	5	1	90	2.5	2.5	2.5	2	Y	0.5+	Fair	10-20	C1	Curved base to E	
T6	Sycamore	14	2	260	4.5	1.5	1.5	3	SM	4+	Fair	20-40	C2	Crowded, drawn up. Twin stemmed from ground level	
T7	Wild Cherry	14	1	410	8	2	6.5	7	SM	1.3+	Fair	20-40	C2	Ivy clad lower stem. Crowded. Minor upper crown thinning	
T8	Pine	6	1	150	2.5	0	1.5	4	Y	1.6+	Poor	10-20	C1	Leaning heavily W. Thinning crown	
T9	Sycamore	15	2	400	6.5	5.5	2.5	4.5	SM	3+	Fair	20-40	C2	Twin stemmed from ground level, crowded. Minor deadwood	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
T10	Sycamore	15	3	450	4.5	6.5	2.5	6	SM	2.8+	Poor	10-20	C1	Three stems from ground level. Minor deadwood. Hung up snapped limb. One weak stem union	
T11	Sycamore	15	3	420	3.5	1.5	3	6.5	SM	3+	Poor	10-20	C1	Three stems from ground level. Decayed surface roots to E. Lean to W. Previously crowded	
T12	Horse Chestnut	19	1	840	6	6.5	7	7.5	M	2+	Fair	20-40	B1	Buttressed base. Extensive buttress wounding and localised decay. Leaf miner. Vertical strips of dead bark. Twin stemmed at 3.5m, four stems <8m	
T13	Sycamore	16	1	390	8	2.5	1	6	SM	4+	Poor	10-20	C1	Crowded. Bowed to N. Minor crown thinning	
T14	Sycamore	17	1	440	3	4	2.5	6	SM	8+	Poor	10-20	C1	Crowded. Drawn up crown. Deadwood	Deadwood crown
T15	Lime	19	1	640	4	8	4.5	6	M	1+	Fair	20-40	B2	Minor deadwood. Thinning upper crown. Slight lean to E. Crowded to N	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
T16	Sycamore	18	1	490	4	2.5	2	8	M	2+	Poor	10-20	C1	Slight lean to NW. Previously crowded. Crown dieback and snapped limbs. Twin stemmed at 5-6m	Deadwood crown and reduce back long limbs to W to 4m
T17	Bay	8	2	340	3	1.5	2.5	4.5	M	1+	Fair	10-20	C1	Three stems near ground level, two dominant. Crowded. Dense basal epicormics. Past limb snaps and deadwood. Decay in W stem at 1m to N. Overtopped	
G18	Shrubs, Cherry Laurel, Sycamore	<5	MS	<100	<1	<2.5	<1	<2	Y	0+	Variable	10-40	C2	Overgrown hedging. Sycamore emergent	
T19	Sycamore	12	1	350	3.5	1	5	8	SM	3+	Fair	20-40	C2	Lean to W	
T20	Sycamore	10	1	170	3.5	2	3	5	Y	2.5+	Poor	10-20	C1	Crowded. Squirrel damage to upper stem. Growing through fence	
T21	Sycamore	17	1	530	7.5	6.5	5.5	8	M	3+	Fair	20-40	B2	Lean to W. Twin stemmed at 4-5m. Minor thinning	
T22	Monterey Pine	19	1	1020	7	7	6	8	M	3.5+	Fair	40+	A2	Crown raised in past and limbs removed within crown structure	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
T23	Mulberry	5	1	390	6	5.5	3.5	8	M	1.3+	Fair	10-20	C2	Overtopped. Leaning NW. Multi-stemmed at 1.8m. Decayed stem wounds. Pruned in past. Deadwood	
T24	Ornamental Cherry	5	1	390	7.5	2	1	5.5	M	1.5+	Fair	20-40	C2	Lean to NW. Crowded. Part overtopped. Multi-stemmed at 1.8m	
T25	Ornamental Cherry	5	1	270	6.5	5.5	1	5	M	1.5+	Poor	10-20	C1	Crowded. Leaning NW. Multi-stemmed at 1.7m. Weak unions	
T26	Ornamental Cherry	5	1	240	3	3	5	1	M	3.5+	Poor	10-20	C1	Twin stemmed at 1.7m. Weak union. Crowded. Deadwood. Lean to SE	
T27	Ornamental Cherry	5	1	340	5	5.5	1.5	0.5	M	1.7+	Fair	10-20	C2	Twin stemmed at 1.6m. Crowded. Lean to NE	
T28	Walnut	9	7	360	7.5	5	4	4	SM	2+	Fair	20-40	B2	Lean to NE. Minor deadwood	
T29	Mulberry	7	MS	400	8	7	c3	6	M	1.7+	Unconfirmed	10-20	C2	Multi-stemmed near ground level. Located in adjoining garden	
T30	Sycamore	13	MS	530	6	4	4	4	SM	1.5+	Fair	20-40	B2	Multi-stemmed from ground level. Bases part buried	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
T31	Sycamore	12	1	290	0	3	4.5	3	SM	1.5+	Poor	<10	U	Heavily crowded. Dead bark at base to N and NW. Decay	
T32	Silver Birch	7	1	90	1.5	1.5	2	2.5	Y	0.5+	Fair	20-40	C2		
T33	Sycamore	14	1	300	3	1	2	5	SM	3+	Fair	20-40	C2	Crowded	
T34	Common Oak	13	1	260	1	2	4	4	Y	3+	Fair	20-40	C2	Crowded. Lean to SW	
T35	Common Oak	17	1	360	6	7	1.5	4	SM	3+	Fair	20-40	B2	Crowded	
T36	Sycamore	15	1	170	2	1	2	3.5	Y	2+	Poor	10-20	C1	Crowded. Slender stem	
T37	Sycamore	17	2	310	3	3.5	1	4	SM	2+	Fair	20-40	C2	Twin stemmed from ground level. Base part buried. Crowded	
T38	Sycamore	17	1	310	3	5	3	2.5	SM	2+	Fair	20-40	C2	Crowded. Twin stemmed from ground level	
T39	Sycamore	15	2	320	4	0	5	5	SM	4+	Fair	20-40	C2	Crowded. Upper crown lean to NW	
G40	2no Sycamore	<17	MS	<400	<3	<6	<5	<6.5	SM	3+	Fair	20-40	B2	Two trees twin stemmed from ground level forming one crown. Crowded	
G41	Sycamore	<19	1/MS	<430	<5	<6	<3	<6.5	SM	2+	Fair	20-40	B2	Crowded group. Multi-stemmed from ground level	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
G42	Sycamore	<19	1	<450	<3	6	<4	<7	SM	3+	Variable	20-40	B2	Crowded group. Multi-stemmed from ground level. Minor crown thinning in some. Hung up snapped branches to W in S end of group	Remove hung up dead branches to W in tree to S
T43	Sycamore	16	1	c350	2	5	5.5	4	SM	2.6+	Unconfirmed	20-40	B2	Twin stemmed at 3-4m. No access. Minor crown thinning	
T44	Yew	8	1	820	6	c6	6	8	SM	0.5+	Fair	20-40	B2	Large root mass and fluted stem. Decay strip to SW to 1.5m. Minor deadwood	
T45	Ash	14	1	460	3	3.5	0.5	1.5	M	5+	Poor	10-20	C1	Leaning NE. Twin stemmed at 5m. High crown. Reduced in last 1-2 years	
T46	Ash	12	1	260	3	5	1	1.5	SM	2+	Poor	10-20	C1	Leaning NE. High crown. Reduced in last 1-2 years	
T47	Ash	14	3	500	2	5	3	2.5	SM	1+	Poor	10-20	C1	Three stems near ground level. Crowded. Leaning E. Crown reduced in last 1-2 years	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
T48	Ash	16	1	420	2	2.5	2	2.5	SM	10+	Poor	10-20	C1	Twin stemmed at 6m. Crowded. High crown. Reduced in last 1-2 years	
T49	Sycamore	15	2	460	3.5	6	5	2.5	SM	2.5+	Fair	20-40	C2	Twin stemmed near ground level. Crowded. Crown reduced in last 1-2 years	
T50	Ash	16	1	350	1	2.5	2.5	2	SM	1+	Poor	10-20	C1	Crowded. High crown. Crown reduced in past 1-2 years	
T51	Ash	15	1	c400	4	c5	2	1.5	SM	1+	Unconfirmed	10-20	C2	Crowded	
T52	Sycamore	19	1	c450	5	c6	5	4	SM	2.5+	Unconfirmed	20-40	B2		
T53	Sycamore	7	2	210	1.5	4	4	3	Y	1+	Poor	10-20	C1	Twin stemmed near ground level. Crowded. Limb snaps	
T54	Ash	13	1	330	2	3.5	3.5	2.5	SM	1.5+	Poor	10-20	C1	Crown reduced in last 1-2 years	
T55	Ash	16	1	380	3	5	2	2	SM	2+	Poor	10-20	C1	2nd Stem removed to W at base in past. Twin stemmed at 3-4m. Lean to E. Crowd reduced in last 1-2 years	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
G56	2no Sycamore	<14	2	<410	<4	<5	<4	<3	SM	0+	Fair	20-40	C2	Two trees twin stemmed near ground level. All crown reduced in last 1-2 years	
T57	Field Maple	6	MS	150	3.5	3	3	3	Y	2+	Fair	20-40	C2	Crowded. Multi-stemmed <1m	
T58	Field Maple	7	2	230	4.5	0.5	2	4	Y	1.3+	Fair	20-40	C2	Twin stemmed at 1m. Crowded. Leaning W	
T59	Ash	6	1	160	1.5	2.5	3	2.5	Y	2+	Poor	10-20	C1	Twin stemmed at 2.2m. Overtopped	
G60	2no Sycamore	<20	1/2	<450	<4	<6	<5	<7	SM	4+	Unconfirmed	20-40	B2	Form one crown. One twin stemmed near ground level	
T61	Field Maple	6	1	200	3	c4	3	3	Y	1.2+	Fair	20-40	C2	Part overtopped	
T62	Sycamore	16	MS	700	4	c7	6	2.5	SM	2+	Fair	20-40	C2	Three stems near ground level. Weak stem unions. Crown reduced in past 1-2 years	
G63	Ash	14	MS	<500	2.5	c9	7	4.5	SM	4+	Poor	10-20	C2	Five stems forming one crown. Vertical decayed wound to S in N stem from ground level to 2m. Stems leaning out. All reduced in last 1-2 years	

APPENDIX 2

APPENDIX 3

TABLE OF BS CALCULATED ROOT PROTECTION AREAS (RPAs)
AT
MCCORMACK HOUSE, 56A EAST STREET, HAVANT PO19 1BS

Tree no.	Species	BS Category	Stem diameter or calculated equivalent (mm.)	BS calc. radial equiv. root protection area (m.)	BS calc. total RPA (m ²)
T1	Norway Maple	U	-	-	-
T2	Sycamore	C1	490	5.9	109
T3	Ornamental Cherry	C2	120	1.4	6
G4	2no Sycamore	B2	350	4.2	55
T5	Ash	C1	90	1.1	4
T6	Sycamore	C2	260	3.1	30
T7	Wild Cherry	C2	410	4.9	75
T8	Pine	C1	150	1.8	10
T9	Sycamore	C2	400	4.8	72
T10	Sycamore	C1	450	5.4	92
T11	Sycamore	C1	420	5	79
T12	Horse Chestnut	B1	840	10.1	321
T13	Sycamore	C1	390	4.7	69
T14	Sycamore	C1	440	5.3	88
T15	Lime	B2	640	7.7	186
T16	Sycamore	C1	490	5.9	109
T17	Bay	C1	340	4.1	53
G18	Shrubs, Cherry Laurel, Sycamore	C2	<100	<1.2	<5
T19	Sycamore	C2	350	4.2	55
T20	Sycamore	C1	170	2	13
T21	Sycamore	B2	530	6.4	129
T22	Monterey Pine	A2	1020	12.2	468
T23	Mulberry	C2	390	4.7	69
T24	Ornamental Cherry	C2	390	4.7	69
T25	Ornamental Cherry	C1	270	3.2	32
T26	Ornamental Cherry	C1	240	2.9	26
T27	Ornamental Cherry	C2	340	4.1	53
T28	Walnut	B2	360	4.3	58
T29	Mulberry	C2	400	4.8	72
T30	Sycamore	B2	530	6.4	129
T31	Sycamore	U	-	-	-
T32	Silver Birch	C2	90	1.1	4
T33	Sycamore	C2	300	3.6	41
T34	Common Oak	C2	260	3.1	30
T35	Common Oak	B2	360	4.3	58
T36	Sycamore	C1	170	2	13

TABLE OF BS CALCULATED ROOT PROTECTION AREAS (RPAs)
AT
MCCORMACK HOUSE, 56A EAST STREET, HAVANT PO19 1BS

Tree no.	Species	BS Category	Stem diameter or calculated equivalent (mm.)	BS calc. radial equiv. root protection area (m.)	BS calc. total RPA (m²)
T37	Sycamore	C2	310	3.7	43
T38	Sycamore	C2	310	3.7	43
T39	Sycamore	C2	320	3.8	45
G40	2no Sycamore	B2	<400	<4.8	<72
G41	Sycamore	B2	<430	<5.2	<85
G42	Sycamore	B2	<450	<5.4	<92
T43	Sycamore	B2	c350	c4.2	c55
T44	Yew	B2	820	9.8	302
T45	Ash	C1	460	5.5	95
T46	Ash	C1	260	3.1	30
T47	Ash	C1	500	6	113
T48	Ash	C1	420	5	79
T49	Sycamore	C2	460	5.5	95
T50	Ash	C1	350	4.2	55
T51	Ash	C2	c400	4.8	72
T52	Sycamore	B2	c450	c5.4	c92
T53	Sycamore	C1	210	2.5	20
T54	Ash	C1	330	4	50
T55	Ash	C1	380	4.6	66
G56	2no Sycamore	C2	<410	<4.9	<75
T57	Field Maple	C2	150	1.8	10
T58	Field Maple	C2	230	2.8	25
T59	Ash	C1	160	1.9	11
G60	2no Sycamore	B2	<450	<5.4	<92
T61	Field Maple	C2	200	2.4	18
T62	Sycamore	C2	700	8.4	222
G63	Ash	C2	<500	<6	<113

APPENDIX 4

APPENDIX 5

BS5837:2012: FENCING SPECIFICATIONS

Figure 2 Default specification for protective barrier

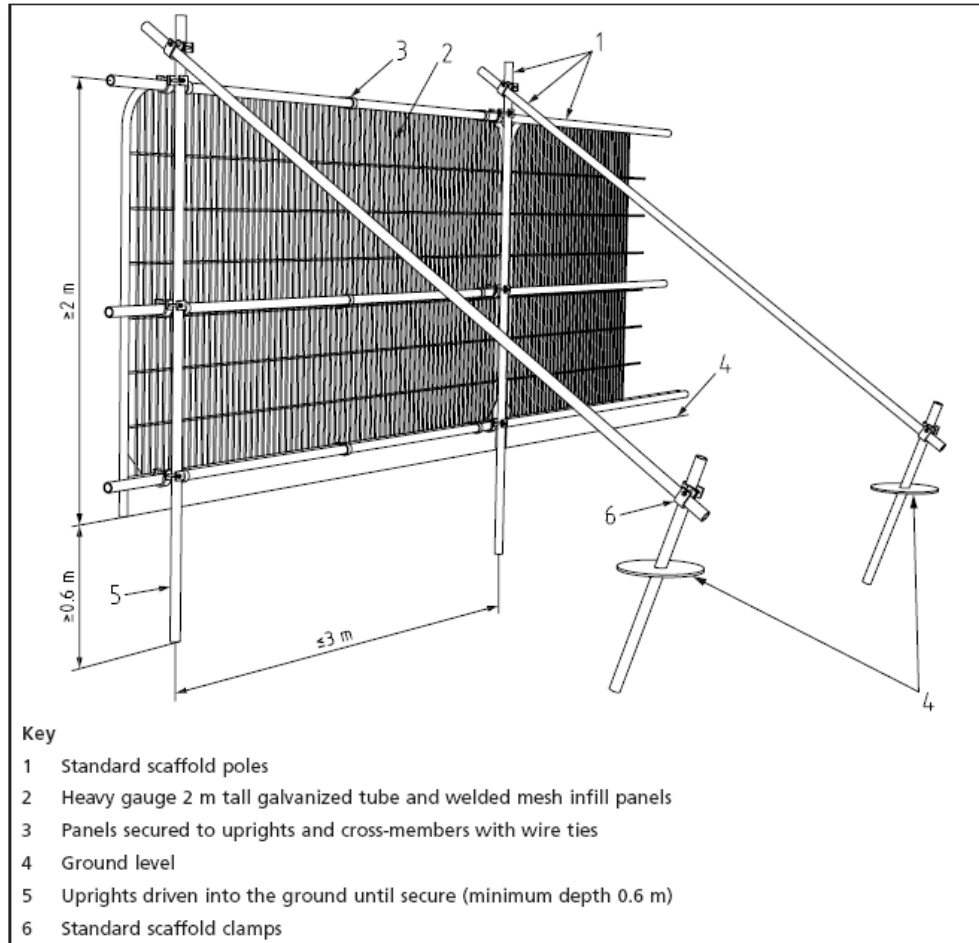
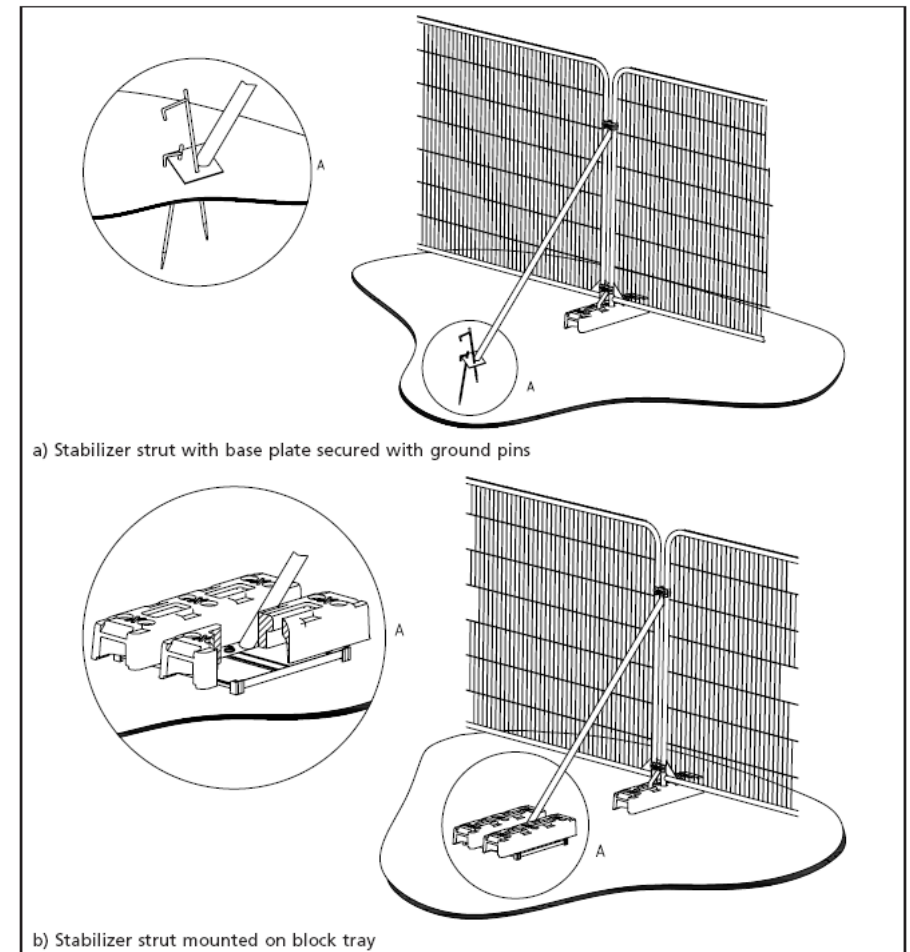


Figure 3 Examples of above-ground stabilizing systems



EXAMPLE OF FENCING SIGNAGE

