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SURVEY MANAGE IMPROVE

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FAO Dave Wood
DW Tree Services
425 Wakefield Road,
Denby Dale,
Huddersfield,
HD 88QD

Ref. BA10416

Date: 16/01/2021

Dear Dave,

RE: ASSESSMENT OF SYCAMORE ADJACENT TO THE REAR WESTERN BOUNDARY AT 9 CHURCH LANE, SOUTH CROSSLAND, HUDDERSFIELD, HD4 7DB

Following your emailed instruction, please find below, my assessment of the problem trees close to the boundary.

Based on my site observations, I have come to the conclusions considering my experience. I have experience and qualifications in Arboriculture and list the details in Appendix A.

The statements made in this report do not take account of the effects of extremes of climate, vandalism or accident, whether physical, chemical or fire. Therefore, Barnes Associates Ltd cannot accept any liability about these factors, nor where prescribed work is not carried out correctly and professionally following current good practice.

The trees' general assessment is based upon a ground-based visual appraisal of the site only and should be regarded as a preliminary overview. Unlike built structures, trees are a dynamic structure and offer several specific management issues that need to be considered. Good risk management generally aims to provide trees that can be regarded stable in a normal/foreseeable, storm event. I have included further general information upon the tree Assessment & Risk Management of trees in Appendix B.

Trees are living organisms whose health and condition can change rapidly. This assessment is valid for 12 months from the date above. The health, condition and safety of trees should be checked on a regular basis, by a qualified arborist. Preferably, trees should be assessed on an eighteen-monthly cycle alternating in and out of leaf. These periods may be reduced in the case of any change in conditions in proximity to the trees or buildings. Ideally, trees should be assessed following extreme weather events.

The authority of this report ceases at any stated time limit within it, or if none stated after two years from the date of the survey, or when any site conditions change, or pruning or other works unspecified in the report are carried out to, or affecting, the subject tree(s), whichever is the sooner.

If these trees are covered by a Tree Preservation Order or located in a Conservation Area, works may be restricted. The works specified above are necessary for reasonable management and should be acceptable to the local authority.

Where trees are on neighbouring land, you have no right to undertake the recommended works without the tree's owner's consent, other than trimming the canopy to the boundary, providing that the tree has no other form of legislative protection. The effect of none compliance requires legal interpretation, which is beyond the scope of this report.

I would always suggest that you get at least three quotes for any such works. You must ensure that any contractor employed for the above works is suitably qualified, experienced and familiar with current best practice and covered by current, public, products and employee liability insurance, to an adequate level. Contractors must also abide by all relevant legislation for health and safety, including highway requirements.

To provide continuity of tree cover any tree planting should ideally try and limit avoid problems seen when trees are located close to above-ground services or structures, by selecting species that will remain smaller or have compact conical canopies, requiring less maintenance. Further advice can be provided upon request.

Should you require any further assistance with this matter, please do not hesitate to contact me.

Yours Sincerely

Ian Barnes
Arboricultural Association Registered Consultant
Chartered Environmentalist - Chartered Horticulturalist

INTRODUCTION

Undertake a ground-level assessment of 2no. Elm trees located in the Holy Trinity Church Graveyard ground and next to the next to the eastern boundary wall, with 9 Church Lane, South Crosland, Huddersfield, HD4 7DB.

Site Address:	9 Church Lane, South Crosland, Huddersfield, HD4 7DB		
Tree Location:	I have noted the position of the trees is shown on the aerial image below in yellow.		
Exposure:	The trees are growing as part of a group and assumed to be partially sheltered from the prevailing winds.		
Legislative Protection:	Information on the Kirklees Council online mapping indicates that both trees T1 & T2 are part of an Area Tree Preservation Orders Ref. 18/85/a1 and is not in a Conservation Area.		
Weather Conditions:	Clear and bright with good visibility.	**Assessment Method:**	Visual assessment from ground level
Assessor:	Ian Barnes – details in appendix A.	**Date of Assessment:**	12/01/2021

Aerial Images of the site.

Image downloaded and used courtesy of ©Google and ©third-party suppliers notated on the image.

Tree No.	Species	Height (m)	Canopy Hgt (m)	Diameter @ 1.5m (mm)	Canopy Radius (m)				Vitality	Age	Tree Life Stage	Safe Life Expectancy (Years)
					North	South	East	West				
T1	Wych Elm	11	4	330	2	1	3	3	Fair	EM	5C	<20

Potential for Direct damage	TRAQ Risk Assessment of Root plate failure	TRAQ Risk Assessment of main stem failure	TRAQ Risk Assessment Main leader failure	TRAQ Risk Assessment of branch failure
Moderate	Low	Low	Low	Low

Observations / Comments

The tree outlined yellow on the image opposite is located close to a stone wall; damage appears to have occurred.

The tree has a single stem with trunk shooting which typically indicates internal physiological stress.

The canopy is suppressed by trees to both the north and south and has little potential.

High lifted canopy has left wounding on the stem.

Dutch Elm Disease is known to be endemic locally and typically affects maturing trees once the bark begins to develop the fissures becomes attractive to the Elm Bark Beetle.

On a general point, the trees stem diameter of 330mm suggests that the tree is probably younger than 18 years of age assuming a mean incremental growth of 1cm per year. This suggests this tree is not covered by the TPO which is an Area Tree Preservation Order and based upon the reference number is assumed to date from 1985 which equates to the TPO being 36 years old. Trees not present on the date of the order, i.e. younger than 36 years of age are not covered by the TPO 18/85/a1.

Conclusion

Based upon the stem diameter and estimated age it is unlikely this tree is protected by the TPO 18/85/a1.

This tree is growing close enough to the stone boundary wall that if allowed to fully mature may result indirect damage to the wall.

The tree is likely to succumb to Dutch Elm Disease and trees which have been infected and declined/died can be seen locally. The disease is likely to compromise the tree's future; therefore, the expense of wall repairs and alterations are not thought to be worthwhile.

This is a poorly located tree with limited potential; due to the combination of poor location in relation to built structures in addition to other trees and its potential for infection by Dutch Elm Disease.

Recommendations

Ideally, this tree should be removed and replaced by a more appropriate long-living species such as Lime, Oak, Sweet Chestnut or Maple, which can be located in a more suitable location both in relation to the property 9 Church Lane, the boundary wall and internal structures and headstones.

Please let me know if you need any further information in relation to this option.

Tree No.	Species	Height (m)	Canopy Hgt (m)	Diameter @ 1.5m (mm)	Canopy Radius (m)				Vitality	Age	Tree Life Stage	Safe Life Expectancy (Years)
					North	South	East	West				
T2	Wych Elm	14	4	400	6	2	4	3	Fair	EM	5C	<20

Potential for Direct damage	TRAQ Risk Assessment of Root plate failure	TRAQ Risk Assessment of main stem failure	TRAQ Risk Assessment Main leader failure	TRAQ Risk Assessment of branch failure
Moderate	Low	Low	Low	Low

Observations / Comments

The tree outlined yellow on the image opposite is located close to the stone wall; damage appears to have occurred.

The tree has a single stem with trunk shooting which typically indicates internal physiological stress.

The lower section of the tree is swamped with Ivy and partially obscures the buttress and stem.

The canopy is suppressed by trees to the south and as a result, suffers significant asymmetry.

High lifted canopy has left wounding on the stem.

Dutch Elm Disease is known to be endemic locally and typically affects maturing trees once the bark begins to develop fissures and becomes attractive to the Elm Bark Beetle.

On a general point, the trees stem diameter of 400mm suggests that the tree is probably younger than 22 years of age assuming a mean incremental growth of 1cm per year. This suggests this tree is not covered by the TPO which is an Area Tree Preservation Order, and based upon the reference number is assumed to date from 1985 which equates to the TPO being 36 years of age. Trees not present on the date of the order i.e. younger than 36 years of age are not covered by the TPO 18/85/a1.

Conclusion

Based upon the stem diameter and likely age of this tree it is unlikely that this tree is protected by the 1885 TPO.

This tree is growing close enough to the stone boundary wall that if allowed to fully mature may result indirect damage to the wall.

Left unmanaged the Ivy is expected to swamp the tree and result in decline.

The tree is likely to succumb to Dutch Elms Disease and trees which have been infected and declined/died can be seen locally. The tree's future is likely compromised by the disease; therefore, the expense of wall repairs and alterations are not thought to be worthwhile.

This is a poorly located tree with limited potential; due to the combination of poor location with built structures and other trees and its potential for infection by Dutch Elm Disease.

Recommendations

Ideally, this tree should be removed and replaced by a more appropriate long-living species such as Lime, Oak, Sweet Chestnut or Maple, which can be located in a more appropriate location both in relation to the property 9 Church Lane, the boundary wall and internal structures and headstones.

Please let me know if you need any further information in relation to this option.

APPENDIX B – BRIEF QUALIFICATIONS AND EXPERIENCE

Mr Ian Barnes - Director
RCArbor.A, F.Arbor.A, C.Hort, CEnv,
Arboricultural Association Registered Consultant, Fellow Arboricultural Association, Chartered Horticulturalist, Chartered Environmentalist.
Professional member Consulting Arborist Society.
BSc(Hons) Arb,HND Arboriculture,NDHt/Arb, Tech.Cert (ArborA), ISA TRAQ Qualified, QTRA Licensed

Ian has been in the horticulture and Arboricultural industry since 1985, he has experience in commercial horticulture, local authority and highway authority tree surveying. He has been a commercial Arboricultural climber. He ran in partnership a tree and landscape contracting business for over 15 years. He has been a full time Arboricultural consultant since 2007. His main area of works are trees and development (BS5837) and advanced tree assessments using various advanced techniques. He is also director of a hi-tech arborist/ landscape equipment and training company Tree Diagnostics Ltd providing training in advanced assessments.

Mrs Sue Barnes- Director
CMLI, F.Arbor.A, C.Hort, CEnv, MBALI
Chartered Landscape Architect, Fellow Arboricultural Association, Chartered Horticulturalist, Chartered Environmentalist, Registered Designer BALI
FdSc Arboriculture, NDHt/Arb
Professional Member Consulting Arborist Society, Affiliate member RIBA,

Sue has been in the horticulture / Arboricultural industry since 1986. She has experience in amenity parks and gardens and she has been a head gardener for local health authority. In partnership she ran a tree and landscape design and build company for 15 years, she has been a tree and landscape consultant full time since 2007. Her main area of works are detailed planting design and Arboricultural and landscape management.

Mr Matt Metcalfe - Consulting Arborist:
M.Arbor.A
Professional member of the Arboriculture Association, City and Guilds NPTC assessor/ Instructor
FdSc Arboriculture,National Diploma in Arboriculture, Level 5 Certificate in Education.
VALID Tree Risk Operator.

Practical experience:
Matt has worked in the Arboricultural Industry since 2000. Firstly, as a climbing arborist in both the public and private sector. He became a teacher at a land-based college in York in 2009 where he taught Arboriculture at level 2/3 and then course manager in Arborist apprenticeships and internal verifier. He became a City and Guilds NPTC Assessor in 2012, in ground based and aerial Arboriculture and NPTC City and Guilds Instructor/Assessor in land-based industries. In 2018 he became a fulltime consulting arborist and provides advanced tree assessment training assistance and is a trained tree risk assessor.

APPENDIX B – EXPLANATORY NOTES

Assessments are typically undertaken using visual assessment from ground level without any detailed investigation unless stated. Observations are based upon the body language of the trees and any visual indicators present at the time of inspection. This survey should be regarded as a preliminary overview; ongoing inspections will be required as specified individually. In most situations the health, condition and safety of trees should be checked on a cyclic basis, alternating between early and late seasons to ensure a full picture of tree health is established. Inspections should only be carried out by a suitably qualified arborist.

Similarly, numerous potential defects may not be detectable dependent upon timing of inspection, in particular, wood decay fungi, which may only occasionally produce external fructifications annually (rather than perennially), or may not provide external symptoms until an advanced state is achieved.

Reasonable risk management generally aims to provide a tree that can be regarded stable in a normal/foreseeable, regularly experienced storm events i.e. force 10 storms. The level of risk offered by the tree will be significantly greater as the wind speed that the tree is exposed to increases beyond this level. Additionally the threat from aerial parts i.e. Tight unions may remain even following works, although failures of such parts are likely to be limited to small diameter branches and to periods of extreme weather.

As an arborist, I am a tree specialist and use my knowledge, education, training and experience to examine trees, recommend measures to enhance their beauty and health, and attempt to reduce the risk of living near trees. As a client, you may choose to accept or disregard these recommendations, or seek additional advice.

As an arborist I cannot detect every condition that could possibly lead to a tree or limb failure. Trees are living organisms that may fail in many ways, some of which we do not fully understand.

Conditions are often hidden within the tree and below the ground. As arborists, we cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Sometimes trees may appear "healthy," but may be structurally unsound. Likewise remedial treatment, like any medicine, cannot be guaranteed.

Treatment, pruning and removal of trees may involve considerations beyond the arboricultural perspective, such as property boundaries and ownership, disputes between neighbours, planning issues, sight lines, landlord-tenant matters etc. Arborists cannot take such issues into account unless complete and accurate information is given to them. Likewise, as an arborist I cannot accept any responsibility for the authorisation r non-authorisation of any recommended treatment or remedial measure.

Furthermore, certain trees are borderline cases as to whether they should remain or be removed. If conditions change a tree may need further monitoring in the future to determine its health and structure. Trees can be managed, but they cannot be controlled, and to live near a tree is to accept some degree of risk.

Mathematical abbreviations: > = Greater than, < = Less than.

Measurements / estimates: All dimensions are estimates unless otherwise indicated. Measurements taken with a tape or clinometer are indicated with a '#'. Less reliable estimated dimensions are indicated with a '?'.

Tree number: Numbered Tag (when used) is typically attached to each stem usually on the inside face of the stem at roughly 2.5 metres. Where the number is followed by a C, G, H, S or W this demotes that the tag refers to a Compartment, Group, Hedge, Stump or Woodland.

Name: Tree species are detailed by their common name- Latin can be provided upon request.

Height: I estimate height to the nearest metre to the mean height.

Height to underside: I estimate height to the nearest half metre to the mean underside of the canopy.

Diameter: These figures relate to a measurement of the stem at 1.5m above ground level recorded in millimetres, measured with a rounded down diameter tape. Figures prefixed with MS denote trees or shrubs with multiple stems.

Canopy (N S E W): I estimate the distance of the canopy radius to the nearest metre to provide a mean distance of separation between the stem and the outer canopy.

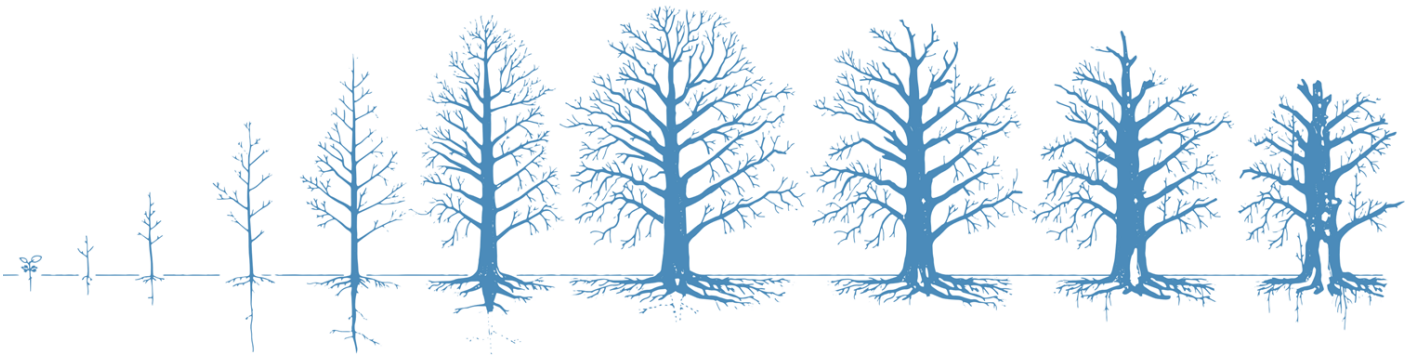
Vitality: Is a personal assessment of the tree's growth rate in the current season, in comparison to other trees within the locality, region and an indicator of the **tree likely response to site change.**

High	A tree of high vitality
Normal	A tree of typical vitality
Fair	A tree of lower vitality
Low	A tree in noticeable poor state
Poor	A tree of low vitality
None	A dead or very low vitality tree

Age: I record the age as an estimate of the tree likely span for guidance only i.e:

Y	Young	Recently established/planted tree.
SM	Semi Mature	Fully established and growing with high vigour
EM	Early Mature	The first third of its likely expected life span
M	Mature	The middle one third of its likely expected life span
EOM	Early Over Mature	Clear reduction in vitality, typically small deadwood early canopy retrenchment.
OM	Over Mature	The later one third of its likely expected life span with sign of canopy retrenchment.
V	Veteran	An aged example of the species, typically with defects & conservation value
S	Senescent	Beyond its expected Life span possible of historical interest or in a state of decline

Morpho-physiological stages of development: Developmental stages of (a) aerial & root systems through the ageing process corresponding to (b) trunk decay habitat (after Raimbault 1995; Lonsdale 1999; Fay 2002)

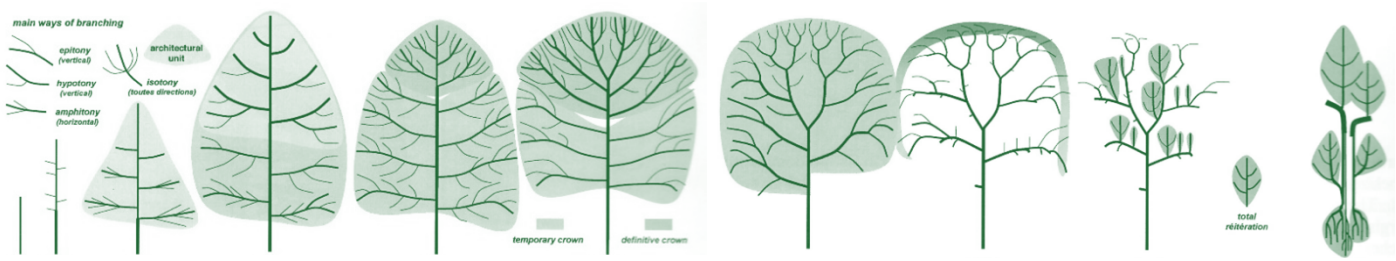


Stage 1 Stage 2 Stage 3 Stage 4 Stage 5 Stage 6 Stage 7 Stage 8 Stage 9 Stage 10

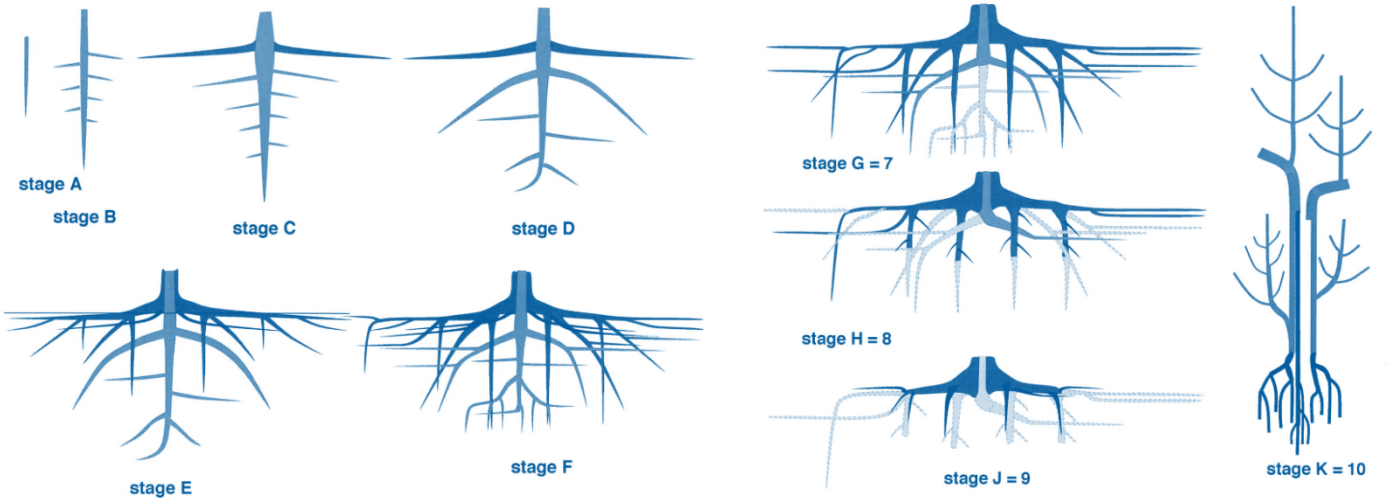
Young Phase - Life Stages 1-4
Hormonal Primacy
Growth in height
Apical dominance

Mature Phase - Life Stages 5-7
Mechanical Primacy
Lower units break free of apical dominance,
Increase in volume.
Stage 5-6 Building the crown
Stage 7 Crown renewal

Ancient Phase - Life Stages 8-10
Energy Primacy
Early-, mid- & late-ancient Crown/root retrenchment, decay, hollowing, functional columns and reiterative growth.
Stage 8 Crown renewal / Stage 9 Crown Reduction /
Stage 10 Crown Reconstitution.



Stage 1 Stage 2 Stage 3 Stage 4 Stage 5 Stage 6 Stage 7 Stage 8 Stage 9 Stage 10



Safe Life: Is a personal assessment of the trees likely expected remaining safe life span in years, assuming the site management continues as it is at present or the tree is protected from significant environmental change. Trees can reverse even enter into serious decline with site changes, likewise the expected safe life can be significantly improved following changes / improvements to site management and following remedial works.

- **40+** Normal vitality a tree a tree with a long potential.
- **20+** Compromised vitality a tree in good health but early decline expected.
- **10+** Early reduction in vitality / reducing foliage cover.
- **<10** Marked decline / reduced foliage cover.
- **<5** Serious decline or very low vitality tree
- **<1** A dead or almost dead, unstable tree with very low vitality.

Category: A a method-adapted from BS5837 to enable rapid user assessment of a trees quality detailed below.

Category and definition	Criteria (including subcategories where appropriate)			Colour Code
Trees unsuitable for retention (see Note)				
Category U Trees that 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 and are not expected to respond to pruning. Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline or infected with pathogens of significance to the health ***NOTE*** *Category U trees can have existing or potential conservation value, which it might be desirable to preserve though canopy reduction or removal.*			Red on Plan
Trees to be considered for retention	**1 Mainly arboricultural qualities**	**2 Mainly landscape qualities**	**3 Mainly cultural & conservation values**	
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups.	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)	Green on Plan
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Downgraded because of impaired condition, or having remediable defects, such as unsympathetic past management or damage.	Usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals	Trees with material conservation or other cultural value	Blue on Plan
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands,	Trees with no material conservation or other cultural value	Grey on Plan

Comments / Observations: General comments referring to tree health, structure and condition.

Management Options: Comments detailing remedial works required improving immediate safety or improve the management of the tree.

Priority: Guidance for the time scale in which works should be completed, from the date of the report.

Tree Risk Assessment: The International Society of Arboriculture (ISA) Tree Risk Assessment Qualification (TRAQ) takes a qualitative rather than quantitative approach to risk assessment. It uses matrices to compare the likelihood of failure of a tree or tree part, the likelihood that it will impact the target and the potential consequences of failure. **Unless stated otherwise the risk assessment assumes the risk offered over the next year.**

Matrix 1. Likelihood of failure

Likelihood of failure	Likelihood of Impacting Target			
	Very low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Matrix 2. Risk Rating matrix

Likelihood of failure & impact	Consequences of Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate.	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

Safety Factor. Safety factor is the ratio of the wood strength from the species database as shown at "Strength" and this computed maximal stress, multiplied by a correction factor of 70%. The formula is: (SF=0.7 $Strength$ / $MaxStress$). The rationale behind this approach is that given all the parameters above the software tries to estimate the stress in the wood and if this exceeds the maximum limit the material can resist, then the trunk would break. This is based upon several key elements including:

- Expected wind speed will not breach 33m/s or 72 mph.
- Drag factor is the drag coefficient of the crown, taken from the tree species database.
- Strength is the yield strength of the trunk wood, also taken from the species database.
- Wind force the calculated force acting on the crown size & centre at a given wind speed.
- The estimated total weight of tree that is above the selected layer.
- The torque resulting from the wind and gravity forces.
- Max stress is the maximal stress resulting from the torque and mass of the tree, taking into consideration the tomogram. The Layer Details section shows the details for the selected layer. Decayed area is the percentage of the decayed region on the selected layer compared to the total layer area.

Safety Factor	SF >1.5 (150%)	SF 1.5 - 1 (150% - 100%)	SF 1 – 0.5 (100% - 50%)	SF <0.5 (50%)
Risk Rating	Low Risk	Moderate Risk	High Risk	Extreme Risk

Wind Speed. In general, the windiest parts of the UK are the north and west. This is because the revailing west to south-westerly winds across the UK lead to northern and western areas being typically more exposed than the south and east. There are also a lot of localised effects with most hills, mountains and coasts being windier than low-lying inland areas. Wind speed increases as you go upwards away from the friction caused by the earth's surface. This also explains the windier coasts as the sea surface produces less friction than the land. The map opposite is based upon information published in the UK National Annex to Eurocode 1 - Actions on structures Part 1-4: General actions - Wind actions and provide design wind speed for area in the UK and are adjusted to consider the effects of altitude changes.