

TREE HAZARD: RISK EVALUATION AND TREATMENT SYSTEM - THREATS

PART I: TREE INSPECTION RECORD

1] Survey details

Surveyor details (initial on completion)			
Origin, date and time of request		Survey date & time	
Weather conditions	At log	At site	
Other notes			

2] Description of tree

Owner if known													
Tree no. if applicable		Location											
Species		Age class (circle)	Y	MA	EM	M	OM	V	Size category (circle)	S	M	L	VL
Other notes													

3] Description of problems (Circle Item no. to identify defect scored in Part II; always score most hazardous defect)

Item	Defects	✓	Hazards	List defect and target details
1	Altered exposure		Tree vulnerable to windthrow/storm damage due to e.g. loss of companion	
2	Unstable root plate		Tree at imminent risk of toppling	
3	Root damage		Tree topples. Compare damage with failure criteria: $R:R_w$. Also consider health loss	
4	Root decay (fungi)		Tree vulnerable to windthrow/toppling, possibly without further warning (see 3)	
5	Stem/limb decay (fungi)		Stem/limb fracture causing crown elements to collapse (consider type of decay)	
6	Inadequate stem taper		Failure risk due to e.g. excessive crown raising or D/h deficiency	
7	Target cankers		Possible weakening/failure of affected area, especially if located on stem 'hot spot'	
8	Exudates		Indication of (internal) disorder; if from lower stem, Honey Fungus infection?	
9	Hollow/rotten stem; cavities; decay pockets		Stem fracture/buckling, causing crown to collapse. Consider $t:r$ value	
10	Lapsed pollard		Re-growth epicormic in origin & possibly weakly attached; possible decay at knuckles	
11	Overweight, subsiding, or lion-tailed limbs		Limb failure due to an excess of mass over strength or to end-loading	
12	Bark congestion		Fibre buckling of leaning/subsiding area indicating possible forthcoming collapse	
13	Reactive growth		Member fails if repair (reactive growth) unsuccessful in stabilising defect	
14	Inclusive bark		Fork fails causing leader/limb to fall	
15	Fractured limbs; storm damage		Broken limbs/hanging breaks could fall; crown destabilised: further failures likely	
16	Bark necrosis		Cambium death causing xylem dys-function: affected area dies, decays & fails	
17	Dieback; poor foliage		Dead areas become unsafe. Various biotic and abiotic causes; roots damaged?	
18	Dead wood		Branches fall	
19	Prolific ivy		Possible obscuration of defects and excessive winter sail area	
20	Other/None (specify)			

PART II: RISK EVALUATION SUM

NB: Examples given in sections 4-6 are neither prescriptive nor exclusive

4] Failure Score (Consider identified defects in relation to species/clone history, established failure criteria & time of year):

Score	✓	Likelihood of failure	Example defects
50		Imminent/Immediate	Uprooting; Extreme root loss; Collapsing structure (i.e. primary failure has already occurred)
8		Probable/Soon	Altered exposure; Primary decay fungus; Severe inclusive bark/root loss; Fragile dead wood
2		Likely, foreseeable	Lapsed pollard; Overweight/subsiding limbs; Poor stem taper; Dieback
.8		Potentially with time	Early development of inclusive bark; Robust dead wood
0		Unlikely ever	Tree generally free of defects, or insignificant defects only

5] Target Score (Consider impact radius of identified defect against potential targets. Consider forward visibility available to drivers (Poor Forward Visibility / Good Forward Visibility) & whether vehicles are likely to be stationary, e.g. at junctions. If targets liable to include unsupervised children &/or the elderly or infirm, upgrade target value by one category):

Score	✓	Value	Static target examples	Target occupancy examples
40		Very high	Building 24 hour use, railway	Constant vehicular traffic/busy playground
25		High	Building 12 hour use, ≥11Kv power lines	Frequent vehicular traffic/constant pedestrian use
20		Medium	Building/structure occasional use, <11Kv lines	Peak times traffic/intermittent use, PFV, e.g. commuter run
15		Low	Garage, Summer house, Listed wall	Occasional traffic/sporadic use, GFV e.g. quiet rural road
7		Very low	Unlisted wall, paving, garden features	Infrequently used access/public right of way/bridleway
0		None	Grass	Hardly ever used, e.g. remote path

6] Impact Score (Consider height of fall/momentum & whether eg lower branches would impede agent's descent):

Score	✓	Degree of harm and consequences (examples)	Agent: trees, mm, or branches, kg (NB size/weight for guidance only)		
10		Severe structural damage, vehicles crushed – passenger fatalities very probable	VL	> 750mm	> 500kg
6		Moderate structural/ severe vehicle damage – fatal/disabling injuries likely	L	350-750mm	50-500kg
4		Minor damage/probable disabling/hospitalising injury to pedestrians	M	100-350mm	10-50kg
1		Fragile objects destroyed, superficial/recoverable injury to pedestrians	S	< 100mm	< 10kg

7] Risk Evaluation Sum:

FAILURE SCORE _____ X TARGET SCORE _____ X IMPACT SCORE _____ =

PART III: IMPLEMENTATION OF CONTROL MEASURES

8] Appropriate Response (The use below of the word 'within' should not be taken to mean that delay is always acceptable):

Score range	✓	Threat Category	Recommended action & Completion deadline	Code
4000+		7- Extreme	Evacuate/prevent access to impact site, emergency call-out of contractors	E
2001-3999		6- Serious	Close site if practical; arrange for work to be completed within 7 days	7D
1000-2000		5- Significant	Arrange for work to be completed within one month maximum	1
350-999		4- Moderate	Remediate within 3 months, reinspect after gales in the meantime (Force 7+)	3
160-349		3- Slight	Reinspect annually/after storms (Force 10+), expect to schedule work within 2 yrs	24
50-159		2- Minimal	Reinspect within 3 yrs if public access, schedule work as required	36
0-49		1- Insignificant	Reassess within 5 yrs if public access, schedule work as required	60

9] Outline of Work Required (Consider amenity and conservation values of tree when selecting control measure):

NB: Examples given in section 9 are neither prescriptive nor exclusive

Control measure	✓	Examples	Notes / Work specification
Target management		Target value/ vulnerability reduced by exclusion, diversion or relocation: Anti-social planting / fence off & warn; re-route paths; relocate benches	
Further investigation		Decay mapping to establish significance of defect: set results against failure criteria	
Install support		Non-invasive brace to support vulnerable member / dividing union	
Localised pruning		Reduce weight loading on vulnerable limb (including shortening dead branches to retain habitat)	
Limb removal		Prune out dead/damaged/vulnerable growth	
General pruning		Reduce crown by specified amount	
Crown removal		Leave stem as a standing carcass (consider habitat-piling cord wood, preferably in dappled light)	
Tree removal		Takedown and fell to ground level (consider habitat piling & also stump-grinding as a disease reduction measure)	