

# SOUTHAMPTON'S TREE OPERATIONAL RISK MANAGEMENT SYSTEM (STORMS)

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### **1.0 Introduction**

Trees provide a wide range of benefits to society, but as living organisms will naturally lose branches and fall. However, whilst the risk to humans is very low there is a legal duty of care on tree owners to manage this risk by using a proportionate approach to tree safety management.

Southampton City Council (SCC) has fulfilled its duty of care by adopting STORMS as its management system. STORMS is a comprehensive and detailed system of proactive tree management which requires trained staff to implement. In its current form STORMS fully complies with current best practice as advocated by the National Tree Safety Group (NTSG).

### **2.0 Scope of STORMS**

The basic principle of STORMS is that it is a defensible system where inspections and works are recorded so that they can be retrieved if necessary. The system not only manages risk effectively but also provides a clear audit trail.

STORMS specifically addresses the risk of damage or injury caused by tree failure. It does **not** address other forms of damage that may be caused by trees, e.g. subsidence or direct root damage. Additionally, trees in council tenants' gardens are

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excluded from regular inspection due to problems with access. Instead, a reactive system is employed in response to tenants' request & complaints.

### 3.0 The Benefits of Trees

Trees are important to our well being and quality of life, especially in urban areas. Their importance is recognised at all levels, from international to local settings, for the varied benefits they provide, e.g. environmental, cultural, aesthetic, health and economic. More recently, the benefits of urban trees as having a positive effect on storm water management and cleaner air have been recognised. SCC has issues with poor air quality, and the greening of the city is a positive part of the strategy to improve air quality in line with government guidelines. Research demonstrates stress levels reduce, and productivity increases with access to or views of trees in the landscape.

### 4.0 The Risk from Trees

The NTSG considers that the proper management of risk enables an organisation, among other things, to:

1. increase the likelihood of achieving its objectives
2. identify and control the risk
3. comply with relevant legal and regulatory requirement
4. improve stakeholder confidence and trust

They also state that trees are an important part of the landscape, and their presence has many different benefits, and it is important to recognise that risk management can be undertaken only by understanding the trees and their value to people in the context in which they grow. The requirement under health and safety legislation is to have a suitable and sufficient risk assessment, and to apply measures that are *reasonable and practical*.

**Risk** – is the probability of harm and severity of consequences from a particular hazard.

**Hazard** – is a situation or condition with the potential to cause harm.

**Defect** – in the context of a tree is a structural, health or environmental condition that could predispose a tree to failure.

The Health & Safety Executive (HSE) has produced a decision-making framework, known as the Tolerability of Risk (ToR) framework. It describes 3 levels of risk: whether risk is unacceptable, tolerable or broadly acceptable. There is an expectation that:

1. both the levels of individual risk and the societal concerns engendered by the activity or process must be taken into account when deciding whether a risk is unacceptable tolerable or broadly acceptable
2. a suitable and sufficient risk assessment must be undertaken to determine the measures needed to ensure that risks from the hazard are adequately controlled

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3. there is a need to guard against disproportionate activity to control risk that provides diminishing return on investment in risk reduction

The HSE has identified that an individual risk of death on one in one million per year for both workers and the public, corresponds to a very low level of risk, and this should be used as a guideline for the threshold between the broadly acceptable and tolerable regions.

The NTSG considers that because trees present a very low risk to people, owners and managers should be able to make planning and management decisions within this context and avoid unnecessary intervention and cost and that any management is proportionate and strikes a balance between the real risks and benefits. The HSE states in their document 'Management of the Risk from Falling Trees' (SIM 01/2007/05) "Given the large number of trees in public open spaces across the country, control measures that involve inspecting and recording every tree would appear to be greatly disproportionate to the risk".

The HSE Guidance 'Management of the risk from falling trees or branches' states that: *"Each year between 5 and 6 people in the UK are killed when trees or branches fall on them. Around 3 people are killed each year by trees in public spaces. Thus the risk of being struck and killed by a tree or branch falling is extremely low (in the order of one in 10 million for those trees in or adjacent to areas of high public use). However the low level of overall risk may not be perceived in this way by the public, particularly following an incident.*

*The average risk is firmly in the "broadly acceptable" region of the tolerability of risk triangle published in HSE's "Reducing Risks Protecting People". However, "Reducing Risks, Protecting People" explicitly states that "broadly acceptable" is a general guide and not a definitive statement of what is reasonably practicable in law."*

### **5.0 Legal Requirements**

Under both civil law and criminal law an owner of land on which a tree stands has responsibilities for the health and safety of those on or near the land and has potential liabilities arising from the falling of a tree or branch.

#### **5.1 Civil Law**

- Common Law

The owner of the land on which a tree stands, together with any party who has control over the tree's management owes a duty of care at common law to all people who might be injured by the tree. The duty of care is to take reasonable care to avoid acts or omissions that cause a reasonably foreseeable risk of injury to persons or property. This obligation does not extend to managing trees for neighbours' preference, such as overhang, size, TV reception, shade etc. where there is no risk of harm or damage present. In many cases, neighbours can abate a minor nuisance, such as overhang, though Common Law.

- Highways Act

A highway authority has a potential liability for fallen trees and branches for which it is responsible under section 41(1) of the Highways act 1980, which gives rise to a

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duty "to maintain the highways". The highways authority also has the power under section 154 (2) of the Highways Act 1980 to require trees growing on land adjacent to the highway that are dead, diseased, damaged or insecurely rooted, to be removed by those responsible for the trees and, in default of removal, to take action itself to have the trees removed.

- The Occupier's Liability Acts

The Occupier's Liability Act 1957 provides for the liability of an occupier of land when an accident occurs on the land to a person who is a 'visitor' to the land. The Occupier's Liability Act 1984 provides for an occupier's liability to people other than visitors, in particular trespassers.

### **5.2 Criminal Law**

The Health and Safety at Work Act 1974 places a duty on employers to ensure, so far as is reasonably practicable, that in the course of conducting their undertaking, employees and members of the public are not put at risk (sections 2(1) and 3(1) respectively).

### **6.0 Zoning**

The NTSG has identified the key steps in tree safety management and has concluded that a reasonable and balanced approach forms the basis of a tree safety strategy for sensible tree safety management. Typically, they would see a tree risk management strategy covering three aspects:

- zoning: appreciating tree stock in relation to people or property
- tree inspections: assessing obvious tree defects
- managing risk at an acceptable level: identifying, prioritising and undertaking safety work accordingly to level of risk

Whilst records provide the basis for safety management reviews and proof of reasonable tree care the NTSG state it is not necessary to record every tree inspected; however, records of trees presenting a serious risk and requiring treatment are useful, as is a record of how they have been treated. Additionally, having robust, reliable and accurate records are important when dealing with insurance claims as they can support the local authority's defence.

Zoning should be used to define areas of land according to levels of use. This practice prioritises the most used areas, and in doing so contributes to a cost-effective approach. The NTSG considers that using a minimum of two zones, high and low use, may be sufficient.

Table 1 – Risk Zones

Zone Name	Inspection frequency	Inspection type
High	Within 2.5 years	Defect recording with description.
Low	Within 5 years	Defect recording with description.

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The NTSG consider the following situations relevant in creating zones:

The greatest risk to public safety has proved to be from trees within falling distance of where people move at speed in vehicles. It is both the high usage of roads and the speed at which people travel that makes this the most likely way people will be killed by trees. However, even trees in well-used areas pose an extremely low overall level of risk to public safety. On average over the past decade, four people a year have died from roadside trees falling onto vehicles or from collisions with fallen Trees. *(This is a quote from NTSG publication)*

Not all trees alongside all roads pose a significant risk. Not all roads are busy and not all roadside trees are large enough to be a significant hazard. Nonetheless it is reasonable that certain roadside trees, particularly alongside busy public roads and railways will be inspected.

Trees in areas of high public use require an inspection regime. It is reasonable to inspect trees within falling distance of other well-used areas, such as car parks, public gardens or public open spaces. Trees with structural faults, valued for their amenity or habitat that are retained in frequently used areas may require specific assessment and management. Trees in well-used natural woodland or woodland surrounding housing or a public park may only warrant an informal ('walk-by') assessment to identify trees warranting closer inspection.

Trees in infrequently used areas, where the risk is low, should receive no formal inspections or visual check. However, owners may need to respond to any reported problems.

### **7.0 Tree Classification & Characteristics**

If no defect is present, then the record will be 'date stamped' to show when it was last inspected. The record shows only notable defects – i.e. nothing is present that poses a foreseeably increased risk.

The table below shows the type of inspections:

Table 2: inspection types

<b>Type</b>	<b>Current type of inspection</b>
Individual trees	Readily locatable as individual trees, each having a detailed inspection by a competent tree officer.
Tree groups	Area of trees with a unified canopy, normally < 0.5Ha. Visual inspection of edge trees only. Data are restricted to number of trees within the group and recording the three most dominant species.
Trees as informal hedges	Overgrown hedgerows not maintained by ground maintenance. Visual inspection only. Data are restricted to length of the hedgerow and recording the three most dominant species.
Woodlands	Generally, any group of trees with an area >0.5Ha. Visual inspection of edge trees. Data collected for the woodlands is restricted to the area of the woodland and recording the three most dominant species.

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## **8.0 Tree Inspection: Intervals and Type**

SCC uses two key inspection types: ad hoc and routine.

Ad hoc inspections are in response to reports of concerns from residents or colleagues, or tree issues seen in passing by inspectors. This type of reactive inspection can be carried out at any time on any tree regardless of any other inspection regime that tree is under.

Routine inspections are carried out at planned intervals unless exceptional circumstances apply – e.g. storm weather events which draw resources away temporarily.

An additional category is post-storm event inspections. This will be a visual drive-by inspection of the key arterial routes with a driver and inspector to check for any obvious evidence of any trees or branches that may have become dislodged in high wind or storm events. Amber or red storm events will be the trigger for such routes. A list of the routes is included at Appendix A.

### Individual tree

The inspector will assess the tree as if carrying out a detailed inspection but will not be required to record any information as long as the tree has no actionable defect. However, the visit will be recorded as a date and time stamp showing no notable defects are found.

The inspection will initially be a ground level visual assessments looking at the exterior of the tree for signs of structural failure and will record the date of inspection and any actionable defects - i.e. those defects that are hazardous to the public or cause an obstruction. Further detailed investigations may be required, involving one or more of the following: soil and root condition assessments; aerial inspection of the upper trunk and crown; or other procedures to evaluate the nature and extent of internal decay/defects.

The inspector will methodically assess the tree noting the trees' health and any abnormal signs/defects.

Actionable defects will require an appropriate job to remedy or make safe the defect. The defect job will be prioritised based on the nature of the defect and placed on an appropriate order, i.e. an order that when issued will allow the contractor a stated period of time to complete.

Any tree showing abnormal lower stem growth, cavity or fungal fruiting body, shall be sounded with the use of a hard rubber mallet to determine any significant decay/cavity. Suspect trees should be identified for further detailed investigations, such as Resistograph or Picus.

Where possible, the base should be cleared of ivy and other vegetation to allow an unimpeded assessment of the base and lower trunk of the tree.

If the tree is heavily clad in ivy this should be recorded as a defect and a job raised to have a band of ivy cut and removed. Where ivy is to be removed by the tree

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contractor, they will be required to inform the relevant officer should any significant defect be found.

### Groups

The inspector will determine the number of trees within the group with stem diameters >150mm at 1.5m above ground level and record the dominant species plus up to 3 other species, plus the average age of the group.

The inspector will assess the group as if carrying out a detailed inspection but will not be required to record any information as long as the tree has no actionable defect. However, the visit will be recorded against that record as a date and time stamp.

### Informal hedges

The inspector will record the length of the informal hedge and record the dominant species plus up to 3 other species, plus the average age of the hedge.

The inspector will assess the hedge as if carrying out a detailed inspection but will not be required to record any information as long as the tree has no actionable defect. However, the visit will be recorded against that record as a date and time stamp.

### Woodlands

The inspector will assess the woodland edge trees as if carrying out a detailed inspection but will not be required to record any information as long as the trees are not within falling distance of a house, garden, road, formal footpath etc., have no actionable defects. However, the visit will be recorded on the tree history file for that woodland as a date and time stamp

The inspector will assess the trees along the woodland edge and those adjacent to formal paths within the woodland. Where site constraints, such as waterlogged ground or dense vegetation, limit access the inspector should carry out the inspection of woodland edge trees from the closest vantage point. Formal paths are defined as those with either an all-weather hard surface or been laid with hoggin or similar all-weather hard surfacing materials. Informal paths are those with a natural surface and by their nature are often seasonal.

Any trees within the groups, informal hedges or woodlands with a stem diameter >500mm at 1.5m above ground level will be recorded as an individual tree and inspected accordingly if actionable or notable defects are present.

The following details the methodology for inspections.

The inspector will assess the trees along the woodland edge and those adjacent to formal paths within the woodland. Where site constraints, such as waterlogged ground or dense vegetation, limit access the inspector should carry out the inspection of woodland edge trees from the closest vantage point.

For all multiple tree inspections, any trees with a stem diameter >500mm at 1.5m above ground level will be recorded as an individual tree and inspected accordingly.

Woodland tree inspections will include any tree that could, if it failed, hit a significant target such as a road, surfaced footpath or house/garden.

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## **9.0 Who can inspect trees?**

The NTSG provides the following guidance:

10.1 Informal Observations. Do not require a specialist and can be done by people with good local knowledge and familiarity with trees. Reports of problems by staff are a fundamental part of informal observation and should be acted upon. There is scope to improve the reporting of other staff 'on the ground'. This will be a focus for the immediate future.

10.3 Detailed Inspections. Require an appropriately competent person. These are only carried out by suitably qualified tree officers. All our tree officers are expected to attain the Lantra Professional Tree Inspection qualification which is appropriate for this type of survey.

All STORMS inspections are currently carried out by qualified and competent tree officers using handheld tablet PC's to record the inspection data. Currently Tree Team officers have a minimum NVQ 2 level qualification in arboriculture and/or the Lantra Professional Tree Inspection qualification. Independent of STORMS the tree officers are expected to carry out site visits in response to public enquiries & complaints.

## **10.0 Risk Zones & Inspection Frequency**

The level of risk trees pose to public safety is based on public use and occupancy patterns (high, low) the type of occupants (children, vulnerable adults, static, moving). Areas of little-used woodland will be low

All individual trees under SCC management (excluding housing tenant rear gardens) will receive a recorded inspection.

High risk = 2.5 yearly recorded inspection

Low risk = 5 yearly recorded

Schools = 2 yearly. Any seasonal variation require will be achieve by brining inspections forward, not extending the inspection interval.

High risk routes (arterial A roads) post amber or red storm events.

Routine inspections are carried out at planned intervals. Inspections will be carried out at some point in this 30-month period but will not exceed this interval unless exceptional circumstances apply – e.g. storm weather events which draw resources away temporarily.

Schools and other sites where vulnerable adults or children will foreseeably congregate will still be inspected on a 2-yearly basis.

## **11.0 Review**

STORMS to be reviewed periodically and in line with industry standards.



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## **Appendix 1. Post-storm event drive by-inspection routes**

Bassett Avenue

Bassett Green Road

Bitterne Road (East & West)

Burgess Road

Bursledon Road

Cobden Avenue

Highfield Lane

Hill Lane

Lordswood Road

Mansbridge Road

Maybray Kings Way

Millbrook Road (East & West)

Mountbatten Way

Portsmouth Road

Romsey Road

Stoneham Way

The Avenue

Tebourba Way

Thomas Lewis Way

Thornhill Park Road

West End Road

Winchester Road

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### **Appendix 2. Southampton City Council Tree Team – reactive tree management policy.**

Southampton is fortunate to have as much green space and as many trees as it does. It is known that trees deliver many benefits to the city including cooling shade in the height of summer, cleaner air and less surface-water run-off. House prices in roads with trees are higher by up to 12% and a wooded backdrop makes a pleasing landscape setting. Stress levels go down and productivity goes up where trees are part of the landscape.

The City's trees are primarily managed through the STORMS policy, a proactive inspection and management regime designed to meet the Duty of Care in relation to trees.

Not all the city's trees are inspected in this way – for example trees growing in the rear gardens of housing services properties and private gardens adjoining city land that is inaccessible for inspection on a routine basis are not routinely inspected as it is impractical to do so.

For these trees, we are reliant on the tenants and owners or occupiers notifying us of actual or potential problems.

Tree officers are trained to recognise potential risk from trees, so what may constitute a danger for one person (for example, it's very big!) may in fact be a perfectly healthy tree and require no works.

Trees do not need managing for the sake of it – the best thing to do to a tree is nothing. As soon as you start cutting, you reduce the tree's ability to produce energy through photosynthesis, and you introduce an area of exposed wood that would be protected by bark if left alone. This can open pathways for pathogens to access. However, we do recognise that, on occasion, the city's management policy is not to the liking of residents who have to live near the city trees, and sometimes trees do cause problems that need to be managed.

To manage trees fairly and within the available resources, the current policy is as follows:

We will carry out reasonable pruning works where there is a safety concern.

Safety concerns include:

- Large sections of deadwood (branches or whole trees) present over a garden or other target area. 'Large' is defined as over 50mm average in diameter and over 50cms in length, or large enough to cause harm to a person, or dent a car roof if it were to fall. Most deadwood will crumble away and become lighter as it is degraded by bugs and fungi that colonise it, but sometimes several sections form on a maturing tree and pose an unacceptable threat to persons or property. Small, twiggy shedding is often a natural, seasonal feature of some species such as birch and does not constitute a hazard.
- Trees that are clearly declining in health to a point of no return
- Uprooted or newly leaning trees - perhaps as a result of extreme weather or vehicle impact - may pose a threat. Trees growing towards light or suppressed by larger trees may lean naturally and are not necessarily dangerous.
- Dead trees where there is a target below, such as a footpath, garden or play area. Dead trees in the centres of woodlands or in very low-use areas are often retained for their habitat value and low risk potential.
- Branches low over paths and drive ways.

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We will also prune where there is a foreseeable risk of direct damage being caused by the tree in the near future (the same year) or where branches or stems are actually in contact with structures such as a roofs, windows, gutters, sheds, fences or other built, permanent features.

Due to limited resources and in line with good arboricultural practice we are unable to prune for issues such as:

- Light -shading to windows or solar panels (unless so close as to foreseeably cause damage)
- Overhang
- TV reception
- Views
- Seasonal nuisance (seeds, pollen, leaves etc.)
- Bird mess
- Wasps & bugs
- General size
- Allergies or other similar conditions e.g. asthma
- Household maintenance issues such as blocked gutters or slippery surfaces

Pruning or removal for these reasons is considered an excessive response and will usually only provide a temporary solution that is unsustainable in the longer term. There are usually alternative solutions that can resolve these issues satisfactorily. Some of these issues may be mitigated by the householder under Common Law pruning, but this would be at their own expense. A standard letter laying out the provisos for this is attached at appendix 3.

Subsidence: We will respond to notifications of potential subsidence (indirect damage) but we will require agreed levels of evidence to be produced by the householder or their insurance company where a claim is made. The evidence required is in line with the London Tree Officer's Association Joint Mitigation Protocol, which SCC is looking at adopting. An initial assessment will be made by a tree officer, but the burden of proof is with the householder. Where a tree is shown to be primarily responsible the value of the tree will be considered and either removed or an alternative engineering solution proposed.

Outside Common Law parameters, we will not usually permit private individuals to prune publically-owned trees to their own preference: this sets a precedent that is hard to limit and introduces an iniquitous dimension that those who can pay get what they want. It potentially increases future risk for the city where a private individual has pruned a tree once, introducing poor attachment points or decay, then the city has the responsibility of maintaining it into the future.

As with all policies, it is impossible to cover every eventuality with one written document. There will be occasions where the standard policy is felt to be inappropriate if applied pedantically. For instances where issues are excessive or there are extenuating circumstances, further consultation may take place including other professionals relevant to the issue. A member decision may be required to work outside the policy.

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Appendix 3: Standard overhang response letter.

Dear resident,

Further to your recent enquiry about overhanging vegetation, please be advised that our policy is focused on safety or damage-related works and so we are unable to carry out pruning for issues such as overhang into private gardens or parking areas, light, general size, TV reception, views or seasonal debris such as leaves, fruit (including conkers, pollen, wasps etc.) and similar non-safety issues.

Please find the information below about how to manage encroachment or overhang to your property which you may choose to do under your Common Law Rights:

You have a Common Law Right to prune back overhang to your property subject to the following provisos:

1. You have the responsibility of checking whether the trees are covered by a Tree Preservation Order (TPO) or are growing within a Conservation Area (CA). If they are you will need to obtain permission to carry out works.
2. Deadwood is not covered by TPO's but it is possible to tell whether a branch was dead at the time of cutting so make sure it is dead before carrying out any works. See specialist advice if you are unsure.
3. You may not cut back beyond the boundary of your property. Trees will respond better if pruned back to a natural union or growth point but this does not mean you can cut substantial additional material over the boundary.
4. Large cuts or removal of significant amounts of live material may make the tree unstable or prone to problems with decay or disease in the future. We suggest you consult an arboriculturist before pruning large branches – for example branches over 75mm (3") diameter or a large number of smaller branches. If you are intending to remove large branches, we ask you to notify us first so we can take any precautionary measures should the tree become unsafe as a result.
5. We would be grateful if you will dispose of the arisings, this city council does not want them. Please do not leave them on neighbouring or council land as this will constitute fly tipping. They can be put into a green bin or taken to a waste recycling centre or added to your own compost if not too many or too large.
6. If you are carrying out Common Law pruning this should be done from within the affected property. Any work done from adjoining land will require permission of the landowner and may mean using a suitably insured professional.
7. The City Council cannot contribute or pay any costs incurred while carrying out pruning of overhang. This would be at your own expense.

In some circumstances we may be able to prune away from buildings and other structures, especially where damage is likely to occur. Branches will need to be very close – for example within 0.5m - of a structure before we will carry out any pruning.

If your complaint was not to do with overhanging branches or you are concerned about imminent or actual damage please contact the call centre on the number shown and quote your reference number.

Yours sincerely,

Etc.