Quantified Tree Risk Assessment Ltd
tree risk management systems

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By Email

CONSULTATION RESPONSE TO DRAFT BRITISH STANDARD BS 8516:2008 – RECOMMENDATIONS FOR TREE SAFETY INSPECTION

Dear Mick

In addition to the consultation mechanism on the BSI website, you advised, with reference to the above Standard, that if people consider they are unable to adequately express their opinion through the formal consultation process they should write directly to you. In this regard, I have set out here my observations and opinions along with a schedule of my comments and recommendations, the latter being uploaded to the consultation area of the BSI website. I wish all of my comments here to be treated as a formal response to BSI in respect of the consultation draft.

Introduction

The response of the arboricultural industry to BS 5816 (the draft Standard) has been considerable and perhaps reflects the concerns of many that this is a disjointed and technically ill-informed document. The draft Standard is poorly presented and difficult to comment upon partly due to the confusing use of language and the sometimes incoherent nature of the text. It is apparent that editing in some form was carried out prior to publication and this has perhaps contributed to the disjointed structure. This is of particular concern in light of the statement "*If no comments are received to the contrary, this draft may be implemented unchanged as a British Standard.*" It is surely reasonable to expect that BSI would ensure that any consultation draft is at least intelligible and free from obviously confusing misuse of language. Very basic proof reading by BSI could have made commenting a much less onerous task.

The draft Standard comes at a time when interested parties headed by Sir Henry Studholme of the Forestry Commission are seeking, under the banner of the Tree Safety Group, to establish a common position on the matter of tree safety

management. There have been various comments from members of the Tree Safety Group and elsewhere to the effect that the timing of the draft Standard is inappropriate and that BSI should await the deliberations of the Tree Safety Group before proceeding. I am not convinced that the undertakings of the Tree Safety Group should have any particular bearing on the development of the draft Standard and consider that such arguments against publication of the Standard only serve to obscure the reality of the situation that, to my mind at least, a National Standard of recommendations for tree inspection, tree survey or tree risk assessment is neither necessary nor desirable.

There are multiple facets to tree safety management. Individuals and organisations influence and are affected by the process in different ways. On one hand, for the majority of land owners and occupiers with responsibility for trees, tree safety is a peripheral issue of limited concern and as they become aware of significant risks from trees, action is usually taken to control the risk. On the other hand, tree professionals are expected to understand the science of the tree and its environment and it is perhaps this intimate knowledge and expertise that lies at the root of the conflict between knowledge and proportionality, with individuals proclaiming that, in the event of harm arising from tree failure, the competent arboriculturist could or should have looked at the tree in more and more detail and prevented the harm. For whatever reason, tree specialists appear to be seeking to impose an onerous burden upon both their peers and tree managers when recent advances in tree risk assessment have demonstrated that the risks from trees are often very low and in some situations require no survey of trees whatsoever. At first glance, the onlooker could be forgiven for perceiving this Standard as a 'cash cow' to be milked by arboriculturists; a concept that I for one am very uncomfortable with.

What is a Standard?

BS0-1:2005 – A standard for standards, defines a 'standard' as a "*document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context*". This statement is subject to a note that "*Standards should be based on the consolidated results of science, technology and experience, and aimed at the promotion of optimum community benefits*". It is apparent from the current debate within the arboricultural industry that this Standard cannot be established *"by consensus"*. The draft Standard fails at every turn. It is neither established by consensus nor does it achieve order of any kind; it serves only to confuse. The draft Standard appears to be based on the views of a few and most certainly not on consolidated results of science, technology and experience. The optimisation of community benefits from trees in respect of safety is best served by considering the wide ranging benefits of trees and importantly by proportionate risk assessment, which informs the need to survey or inspect trees but the draft Standard does not even consider a proportionate approach to tree risk assessment.

The British Standards Consultation Process

BS0-1:2005 states that *"During the preparation of standards of national origin, European and international standards, there shall be two public announcements: the first, at the initiation of a project, to promote awareness of the work, i.e. so the standards project becomes transparent to the public at large, and to provide the opportunity for anyone to contribute; the second, when the standard is available as a draft for public comment (DPC), to provide further opportunity for public consultation."* How was the first public announcement made and was it publicised in an appropriate forum where those who might reasonably be expected to have an interest in it would have an opportunity to contribute? It seems that it was not. Further, BS0-1:2005 states that *"Technical Committee and Subcommittee members shall consult their nominating organizations' members at all stages of standards development through the machinery of those organizations."* As a member of the Arboricultural Association I might therefore reasonably expect to have been advised of the development of the draft Standard, but I was not. I became aware of it through an informal posting on an internet discussion forum.

Further, BS0-1:2005 states *"Standards shall be developed if there is a genuine need for standardization and a willingness among the parties concerned to agree on the standards required. There shall at least be sufficiently wide support to give confidence that consensus can be reached."* How was the need for standardisation established as having sufficiently wide support without consulting the parties that might reasonably be expected to have an interest? Now that the process has proceeded to the consultation stage, it has become evident that there is no consensus.

The Purpose of the Draft Standard

In the Foreword, the draft Standard states *"This is a new British Standard that has been prepared in order to provide authoritative recommendations and guidance on tree inspection for health and safety purposes."* Whilst at first glance it may seem quite reasonable to provide guidance on the assessment of tree safety and that, if in the form of a National Standard, the **guidance** should indeed be authoritative, but it is by no measure appropriate to claim to provide authoritative **recommendations** in a field so broad and with such diverse interests as that of tree safety management. Those involved in managing tree safety might, at one end of the scale, be considering small trees of no particular value in a remote area of low public access and at the other end large, old, decaying trees located in an area of high public access and of immense value for their many attributes. Between are many and complex combinations of tree size, stability and value located within a whole range of land uses. Standardised, authoritative recommendations cannot reasonably account for the diversity of the subject and for this reason have no place in tree safety management.

Tree 'Inspection'

With any standard, recommendations or guidance, the appropriate use of language and definition of terminology is important and in his regard the very premise of the draft Standard is flawed. The term 'inspection' is used not only in the proposed title but repeatedly throughout the draft Standard. Whilst a definition is not provided for 'inspection' per se, 'tree inspection' is defined at 3.10 of the draft Standard as "visual assessment to determine various attributes of trees as determined by the level of arboricultural knowledge of the person concerned".

The Concise Oxford English Dictionary (2002) defines 'inspect' as "look at closely – ORIGIN C17 (earlier (ME) as an *inspection*): from L. *inspect-inspicere* 'look into, examine', or from its frequentative, *inspectare*." The Collins Concise Dictionary accords with this definition as do the four results returned by a quick internet search, using the Google search engine. What the Standard seeks to define as 'tree inspection' is not an inspection -which carries connotations of close scrutiny or examination- but is a more general assessment of the status of the tree that might reasonably be described as a 'survey' or perhaps more loosely an 'assessment'. That tree 'inspections' are required and are indeed carried out by arboriculturists and others seem to be beyond question but a 'tree inspection' is a detailed examination of the tree or part thereof when the need for closer examination has been identified during a less rigorous assessment or perhaps by a chance observation.

At 3.4 it is stated "*Tree inspection is a process of hazard identification*." This statement does not sit comfortably with the inclusion of references to risk assessment and the exclusion, at section 1 (Scope), of hazards other than structural failure of trees

Tree Risk Assessment

It appears that the authors of the draft Standard do not understand the process of tree risk assessment beyond the consideration of a specific tree in isolation and that they are not familiar with current trends in this field.

The focus of the draft Standard is on the various proposed levels of inspection but very little consideration is given to the matter of risk assessment or risk management and the little that is presented is ill-informed. Equally, there are various references to defects and the structure of trees but none of it is related to the context of risk assessment or risk management. Risk assessment informs the prioritisation and implementation of tree surveys and inspections but the draft Standard advises that the converse is true with the primary recommendation for quantifying risk being that quantification should take place when a tree of poor structural condition is being considered for retention.

Section 1 (Scope) of BS8516 states "*This British Standard addresses considerations arising from the need to inspect trees in order to assess, and if necessary reduce their potential for*

structural failure. This standard does not apply to other risks associated with trees (such as obstruction of highway visibility, slip and trip hazards and tree root damage to buildings). It is aimed at tree owners and managers, and at all those designing tree inspection regimes and undertaking tree inspections." When the tree assessor is on site assessing trees it is inappropriate to suggest that the standard applied to the consideration of tree failure should not be applied to other tree related risks.

Benchmarking Tree Safety Surveys

Any guidance on tree safety management that is seen or perceived to receive support from those most closely affected by it will provide a benchmark or series of benchmarks against which performance will be measured by others. In this regard, it is unfortunate that the Arboricultural Association's Guidance Note No. 7 – Tree Surveys: A guide to good practice (2004) has not been promoted as the best practice that it evidently represents. The document is not without its flaws and is rapidly becoming dated but it is produced by the arboricultural industry and with appropriate consultation could be updated to provide guidance on the subject without recourse to the development of a National Standard.

When considering what is required to discharge the duty of care of tree owners, managers and their advisors, it is useful to refer the guidance set out in HSE SIM 01/2007/05 (Anon 2007), which advises Health and Safety Inspectors and Enforcement Officers and "*outlines guidance on the standard of risk management of trees, including risk assessment and where appropriate, routine checks by a competent person*". This guidance does not seek to impose upon tree managers and arboriculturists the onerous duty that is inferred in the draft Standard and moreover states explicitly that "*Doing all that is reasonably practicable does not mean that all trees have to be individually examined on a regular basis*" In this document, the Health and Safety Executive acknowledges that "*A good deal of relevant guidance is produced by various organisations, including the Arboricultural Association and Forestry Commission. Their guidance provides advice to help duty holders comply with the Occupiers Liability Acts and other legislation. It is also likely to be helpful to investigating inspectors, however it should be remembered that it represents best practice guidance for managing trees, not the minimum standard required by Section 3 HSW Act outlined above.*"

Conclusions

The purpose of a Standard as set out in BS0-1:2005 is not reflected in the content of the draft Standard, nor does BSI appear to have complied with the process for consultation set out in therein. In this regard, both the document and the process of the BS 5816 consultation are seriously flawed.

The title of the draft Standard suggests one thing whilst the body of its text suggest that it is something else. Even in the event that, contrary to its title, the draft Standard is intended to provide recommendations and guidance on tree risk assessment more generally, it is confused and wrongly focussed on the detail of the tree whilst the land use affected by the tree is barely considered and even then only as a side issue.

If this is a Standard for tree-failure risk assessment then that intention should be made clear and the text revised accordingly. If it is a standard for tree inspection then it should be limited to the technical issues of tree inspection.

The draft Standard will perhaps be welcomed by those individuals and organisations who are uncomfortable with tree risk management, those who perhaps have difficulty making decisions beyond the black and white of 'dangerous' and 'safe', yes or no. If making decisions within a general framework –at whatever level- sits uneasily with you then using a checklist or some form of prescription is a tool by which to limit the influence of your own personal input and therefore culpability for the final management decision. "I did it by the book; therefore I have discharged my duty of care". In short, the problem with this approach is that this particular book is ill-informed and unnecessarily onerous and its application will result in the diminution of the very asset that we are charged with maintaining. Those who are prepared to make reasonable decisions outside the recommendations and guidance of this Standard are at serious risk of being disenfranchised by it, the fallout from which is likely to be increased risk intervention.

Guidance on the assessment of trees should originate from within and be managed by the arboricultural industry and indeed it is in the form of the Arboricultural Association's Guidance Note No. 7. The matter of guidance on risk management is quite a different one and should be informed by a broader church, but again this is an issue of general guiding principles and not the recommendation of specific processes.

The following tabulated comments on the text are made out of necessity. If published, this proposed Standard would have a significant and unwelcome influence on both the quite adequate services provided by my businesses and on my clients' perceptions of their duty. It is therefore necessary that I comment on the text and bring to the attention of the Drafting Panel and BSI the errors and shortcomings

both in the text and the very confused concept that the Standard seeks to force onto tree managers and arboriculturists alike. I am wholly opposed to the Standard, which I consider follows an illogical sequence, is ill conceived and ill informed. It is my opinion that this Standard should not be published without substantial revision and further consultation and should more appropriately be withdrawn

Michael J. Ellison

Quantified Tree Risk Assessment Limited

cc. Mike Hodson, BSI
Guy Watson, Arboricultural Association
Sir Henry Studholme, Forestry Commission

References

Anon. 2002. The Concise Oxford English Dictionary. 2002. Tenth edition, revised. Oxford University Press, Oxford. 733 pp.

Anon. 2005. BS0-1. A standard for standards –Part 1: Development of standards. BSI, London. 36 pp.

Anon. 2007. Management of the risk from falling trees - SIM 01/2007/05. Health & Safety Executive. 6 pp.

Fay, N., Dowson, D. and Helliwell, R. 2004. Guidance Note No. 7 - Tree Surveys, A guide to good practice.

Arboricultural Association, Romsey. 30 pp.

Section	**Comment** (comments in bold text with quotes from the Standard in *italics)*	**Proposed change**
Foreword Para. 2	**Unless 'tree inspection' is to operate in isolation and without reference to the complex matter of context, it is inappropriate to state that the Standard provides authoritative recommendations or even authoritative guidance. For this reason amongst others, the recommendations and guidance set out in this Standard are for the most part unreasonable.**	Remove '*authoritative*'
Para. 4	**Neither tree inspection nor the more general assessment of tree safety -the latter being barely considered in the Standard- can be codified in such a way that it might be reasonable to require that a person or entity should justify their deviation from the course set out in the Standard.**	Remove this paragraph.
Para. 5	**The assumption that the provisions of the Standard will be entrusted to "appropriately qualified <u>and</u> experienced people" precludes the provisions of the Standard being applied by the lay person and is therefore in conflict with clauses 3.10.1 and 4.3.1. Herein lies the heart of the problem of attempting to codify a process that in realty pervades the management of land upon which trees stand. To codify the process is to restrict the consideration of tree safety to a series of clearly defined parameters, which would necessitate the casting of a finer net -to catch the exceptions- than as a rule would ordinarily be required.**	Insert ', or' after '*and*'
Introduction	**Whilst those involved in tree safety management will understand the thrust of this section, it is badly worded and would require substantial editing or re-writing.**	
Para. 1	**What do these statements mean?** **- "*failure rate even among intact trees*"** **- "*by their very nature trees cannot be considered entirely free of risk*"**	Clarify.
Para. 2	**Is the use of a loose conversational phrase such as "*the elements*" appropriate in a National Standard?**	Revise to provide an unambiguous meaning such as that at 4.4.
Para. 2	**The process of degrading dead tissue and destroying the "*structural integrity*" (structure) of trees is not disease therefore the agents of the degradation are not necessarily pathogens and it is inaccurate to describe them as such.**	Replace '*structural integrity'* with 'structure'. Replace '*pathogens'* with 'organisms'.

Para. 2	**Last sentence makes little sense.** **Why "*microenvironmental*" rather than 'environmental'; what is the distinction in the context of this sentence? What is meant by "*this integrity may be innately uncertain*"?**	Clarify Delete last sentence.
Para. 3	**1) This description should take account of natural features, livestock and other property and possessions that might be harmed by the mechanical failure of trees.** **2) "*can potentially*" is a tautology**	1) Revise to take account of natural features, livestock and other property and possessions that might be harmed by the mechanical failure of trees. 2) Revise to either 'can' or 'has potential to'.
Para. 4	**1) What does "*could have implications for tree management*" mean in the context of this sentence?** **2) In this context, the term '*inspection*' is inappropriate**	1) Clarify. 2) Replace '*proactive inspection*' with 'periodic assessment'
Para. 5	**1) Why is it "*important that people having or taking ownership of or responsibility for trees (collectively termed 'tree owners') are aware of their condition*"? Tree safety is a matter of context and only in the presence of something of significance that might sustain harm should there be any expectation that a tree owner or manager need know the condition of their trees.** **2) People having or taking ownership of or responsibility for trees are not necessarily "*tree owners*" and cannot collectively be referred to as such.**	1) Revise to a factually correct statement or delete. 2) Revise to 'Tree owners and managers'
Para. 6	1) "*The inherent risks associated with trees mean that it is a mistake to manage them in an overly risk-averse manner.*" **This sentence makes little sense and requires revision. As a starting point, in the context of the sentence "*the inherent risks associated with trees*" is an oxymoron.** **2) The risk is either inherent –which in the case of trees it is most certainly not- or it is associated.** **3) The adverb '*overly'* adds nothing to the meaning of '*risk averse'*.** **4) The term 'risk' is normally used when describing the likelihood and quantum of potential harm associated with a hazard. Therefore, The term '*hazards*' should be replaced with 'risks'**	Revise generally and particularly with regard to points 1 & 2 3) delete 'overly' 4) Replace '*hazards'* with 'risks'.

Para. 7	1) "*Finally, attractive and/or notable trees can be severely damaged by structural failure so as to threaten their viable retention: in such case,*" 2) '*Inspection*'? 3) '*viable retention*' should be substituted with 'viability' if this section is to be retained.	1) replace with – Trees of particular value can be damaged by structural failure to the extent that their retention is no longer viable and resulting in the loss of associated benefits. In such cases management may be appropriate to limit the risk of losing these benefits irrespective of the risk of harm to people and property. 2) Replace 'inspection' with 'assessment' 3) Replace '*viable retention*' with 'viability'.
1. Scope		
Para. 1	"*This British Standard addresses considerations arising from the need to inspect trees in order to assess, and if necessary reduce their potential for structural failure*." **This statement is based on the premise that there is a need to inspect trees yet a justification for such an approach has not been established or even proposed. The purpose of this Standard is unclear. Is it a standard for tree inspection, a standard for the risk assessment of trees or an all encompassing standard for tree safety assessment? The text is so contradictory that it is not clear.**	It is not possible to propose a change to this statement, because it is based on a false premise.
Para. 2	**If this Standard is intended to be for the inspection of trees for safety, it is important to recognise that an appropriate definition of 'inspection' precludes risk assessment and the general survey of trees from the scope. Inspection is nothing more than the process of detailed examination. If this is the purpose of the Standard, why are applications for inspection such as "*obstruction of highway visibility, slip and trip hazards and tree root damage to buildings*" specifically excluded? Do they each deserve their own national standard? Prudent land owners and managers seek to manage risks proportionally and consistently and if a national standard for tree inspection were to be published, they would most probably expect to be able to apply it consistently to a range of tree-related risks.**	Establish the purpose of the Standard and revise accordingly. If this is a standard for tree-failure risk assessment then make it clear and revise it accordingly. If it is a standard for tree inspection then limit it to issues of tree inspection.
Para. 3	**What is meant by "*designing tree inspection Regimes*"? Does this involve consideration of an organisation's strategy or policies for tree safety management or is it a reference to the step by step procedure for inspecting a tree? This is particularly unclear due to the persistent misuse of the term 'inspection'.**	Clarify.

2. Normative references	"*The following referenced documents are **indispensable** for the application of this **document**.*" **1) Although the cited documents may be useful or helpful, they are not indispensable.** **2) Is it not the standard that would be applied and not the document?**	1) Amend to: The following documents may be helpful in the application of this Standard. 2) Replace '*document*' with 'standard'.
3 Terms and definitions	**'Arboriculturist' should be defined using the definition from BS5837:2005 with minor modification as underlined.**	Insert: "*arboriculturist – person who has, through relevant education, training and experience, gained recognised qualifications and expertise in the field of*" tree safety assessment.
3.1 competent person	"*person (e.g. an arboriculturist) who has training and experience relevant to the matter being addressed and can demonstrate competence to undertake systematic expert tree inspection, in order to identify and recommend remediation for hazards arising from impaired structural integrity in trees*" **The reference to arboriculturist is misleading and unnecessary. A competent person will have experience but not necessarily training and should most certainly not need to "*demonstrate competence to undertake systematic expert tree inspection*" as suggested here.**	Replace with the definition of competent person from BS5837:2005 with the substitution of 'or' for '**and**'. "*person who has training and* (or) *experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached*"
3.2 decay	**This description of decay is unnecessary and factually incorrect as in the context of trees, decay may be caused by bacteria although this is not usually of significance with regard to structural strength.**	Remove clause 3.2.
3.3 decay mapping	**Decay mapping is not an examination, it is a mapping process by whatever means. The assessment of decay and significance is another process.**	Replace with: the two or three dimensional plotting of both decayed and unaltered wood.
3.4 hazard	"*source or situation with a potential for harm in terms of death, ill health or injury, or a combination of these (BS 8800:2004, 2.5) NOTE Tree inspection is a process of hazard identification.*" **1) Source of what? It is not necessary to redefine the term 'hazard' when it is defined adequately elsewhere.** **2) If 'tree inspection' is going to be defined in this Standard then the definition should not be hidden away in the definition of 'hazard'. Surely tree inspection can be more clearly defined than this.**	1) Use a standard definition from Health and Safety Executive. 2) Appropriately define tree inspection and then rename the Standard because this definition describes neither tree inspection nor the content of this Standard.

3.5 hazard tree	1) **It should not be necessary to define 'hazard tree'. What is meant by*" tree in such a condition that structural failure is expected"*? Expected when? All trees are hazardous to some extent and it is the matter of likelihood and consequence that should be considered in tree risk assessment. This statement infers that to identify a hazardous tree, one must posses a special power of crystal ball gazing.** 3) "*Trees can have wholly internalized structural weaknesses, including decay, which are not apparent on visual inspection, such that their failure, should this occur, is not reasonably foreseeable*". **This is an ambiguous statement requiring considerable qualification if it is to be retained. Reasonable foreseeability is a matter of context and where tree failure is concerned it must at the very least be considered in the terms of timescale.**	1) Remove this definition. 2&3) Clarify or remove.
3.6 risk	**No comment**	None
3.7 risk assessment	**No comment**	None
3.8 risk control	**No comment**	None
3.9 target	**In tree safety management, a 'target' is more than*" persons or objects"*. The definition must allow for the consideration of livestock.**	Replace '*objects'* with 'property' Remove '*the latter having variable value and vulnerability, present, perhaps temporarily, within falling distance (or impact radius) of a tree or its branches*'
3.10 tree inspection	**1) Tree inspection is a detailed examination more than just visual assessment of the tree and might involve invasive investigation of the mechanical state of the tree or its tissues.** **2) What are described as "*Different levels of inspection*" are in fact different levels of assessment but not necessarily of inspection.**	1) Rename clause to: 'Tree survey' and the text to 'Tree survey is the general assessment of a tree or trees and their immediate environment. 2) Delete note.
3.10.1 lay	**1) What is described is an assessment and not an inspection. The likelihood of harm occurring is a matter of risk and should not be loosely inferred by use of "*potential*".** **2) The note is superfluous and should be deleted**	1) Replace '*inspection*' with 'assessment' and delete '*potential*'. 2) Delete the note.

3.10.2 basic	**1) What are described as "*inspection*" and "*inspector*" would be more properly described as 'assessment' and 'assessor'.** **2) *"(possibly using binoculars, mallet and probe)"* is superfluous and if retained might be extended to list all sorts of paraphernalia for investigating and recording trees. If lists of equipment are to be included they should be separate from the definitions of different levels of tree assessor.** **2) The note is superfluous and should be deleted**	1) Replace '*inspection*' and '*inspector*' with 'assessment' and 'assessor'. 2) Delete *'(possibly using binoculars, mallet and probe)'* 3) Delete the note.
3.10.3 expert	**By virtue of the reference to "*a competent person*" there is a distinct inference that those people listed at 3.10.1 and 3.10.2 are incompetent whereas in reality they are not. By accepting the task they are affirming their competence to carry it out.** **"***systematic and diagnostic process of visual inspection by a competent person as necessary in order to gain sufficient understanding of a tree's structural condition, so as to inform, where appropriate, 'reinspection' interval and management recommendations (risk control measures) including detailed inspection (see 3.10.4)"*	Suggested rewording – "systematic process of visual assessment of trees and their immediate environment carried out from ground level by an arboriculturist using whatever equipment is appropriate without extending the assessment to the detailed level of an inspection."
3.10.4 detailed	**This clause is referring to detailed examination and might reasonably be entitled 'Inspection'**	Re-name this clause 'Inspection' Suggested rewording – 'Assessment or examination of a tree or part thereof identified during a lower level assessment as requiring further investigation.'
	"*NOTE 1 Those undertaking basic, expert and detailed inspection need to have professional indemnity insurance*." **Is it appropriate for a National Standard to state that insurance is "*needed*"?** *"NOTE 2 The practice of inspecting trees in the United States from a moving vehicle with two people (one driving, one inspecting, known as "windshield inspection") has proved an efficient and economical way to cover many miles of tree-lined roads. However, the practicalities are greatly reduced when carried out in an urban environment. Research of the efficacy of this approach has demonstrated an 89% correlation of hazard assessment given to trees based on defects found, when the same trees were subsequently assessed by an inspector on foot"* **The drive-by or windshield survey is certainly relevant if this Standard is to venture away from 'tree inspection' and into the wider practice of 'tree assessment' and 'risk assessment'. To loosely refer to a published paper in this manner is in fact confusing. If the topic is to be introduced, it should be considered at an appropriate level of detail and in the context of a more clearly structured general guidance. The location of**	Remove Notes 1 and 2.

	this note highlights the confused nature of the document; the drive-by/windshield <u>'survey'</u> being at a lower level in the assessment hierarchy than that which is described here as 'detailed'	
3.11 visual tree assessment (VTA) [1]	"*method of tree inspection used by arboriculturists to evaluate the structural integrity of a tree, relying on observation of biomechanical and biological features including decay and fungal structures*" **It is not arboriculturists alone who carry out visual tree assessment.** **Is this clause necessary? Should not this matter be considered in a clause in a clause relating to assessment techniques more generally?**	Consider in a separate clause or delete Delete '*by arboriculturists'*
4 Factors to consider		
4.1 Timing of inspections	1) *"Due to the reliance of expert inspection on visually apparent symptoms as diagnostic aids, inspections undertaken at differing times of the year present a variety of benefits and obstacles. For example, inspecting a tree in full leaf assists in determining physiological condition from foliage quality, but is hindered by leaves obscuring the tree's structure. Conversely, inspecting a deciduous tree in bare branch condition allows a good view of the structure but no assessment of foliage".* **Clumsily worded and requires some clarification.** 2) "*Successive expert inspections should, where practicable, be undertaken at differing times of year (unless there are indications to the contrary; see Clause 7), as this facilitates inspection under a range of conditions (albeit over time)."* **'albeit over time' is superfluous.** 3) *NOTE It is important that inspection regimes are implemented and reviewed, and that records are maintained.* **If this is a reference to tree managers/owners doing what they say they will do (implementing their policy) and maintaining records of same then it may be a valid issue but the place for it is not a clause entitled 'Timing of inspections'.** **4) This clause should be headed 'Timing of assessments'**	1) Delete '*of expert inspection'*, replace '*visually apparent'* with 'visual', replace '*foliage quality'* with foliage colour, size and density', replace '*in bare branch condition'* with 'without leaves', after '*good view of the structure*' insert 'and bud distribution' 2) delete '*albeit over time'* 3) Delete this note and consider these points elsewhere 4) Rename this clause 'Timing of assessments'

4.2 Prioritising inspections	1) "*People or organisations with responsibility for large numbers of trees might need to prioritize their inspections (however this does not negate the recommendation for quinquennial inspection: see Clause 7).*" **People with very few trees might wish to prioritise their assessments, indeed it is reasonable that all assessments be prioritised and that as a result some trees are not assessed at all.** 2) "*A prioritized inspection schedule should be undertaken based on levels of access (i.e. exposure of people to hazard) and arboricultural advice, taking account of relevant factors (where known) that affect safety such as the age class, condition, size and species of the trees.*" **To suggest that prioritising tree assessments should be informed by arboricultural advice makes no sense. It is land managers and owners who understand the usage of their land and it is this first and foremost that should inform the prioritisation of tree safety assessments. <u>Consideration of tree hazards is irrelevant if there is nothing of significance to be harmed.</u> This clause considers only harm to people and ignores property and possessions.** 3) "*Where exposure increases, for example an outdoor concert held in a normally unoccupied park, the inspection regime should respond to the changed demands of the site usage, to ensure that appropriate and effective risk controls are provided (see Clause 6 and Clause 8). BS 8800:2004, 3.5.3, states (in part):*" **This matter should be discussed in the context of tree-failure risk assessment framework. To discuss prioritisation of assessments in this abstract way without even basic consideration of risk assessment is inappropriate. The reference to clause 6 is spurious to say the least because the limited comments and guidance there relate only to the risk assessment of an individual tree that has already been identified as hazardous whereas a risk assessment of the tree population may have identified that tree (perhaps along with thousands of others) as requiring no individual assessment at all. The examples of target management given in clause 8 do not really relate to the situation described above and the reference is likely to leave many readers guessing what is the link with risk assessment in these "*authoritative recommendations*" (see Forward).** 4) "*A risk assessment should always be carried out, and the control measures implemented, before changes are made to work activities or before new activities commence.*" **It might be appropriate to make reference to workplace risk assessment and HSAW Regulations.** **5) This clause should be renamed 'Prioritising assessments'**	1) Delete 2) Amend to take full account of land use, including property value, in the context of risk assessment and remove the reference to '*arboriculturist*' 3) Develop a section on tree-failure risk assessment which should set the framework for the whole document. Alternatively, limit the standard to the process of inspecting (examining in detail) the tree 4) Make reference to workplace risk assessment and HSAW Regulations 5) Rename this clause 'Prioritising assessments'

4.3 Data recording

4.3.1 General

"The data to be recorded varies with the level of inspection and should reflect the findings.

Lay and basic inspections need not be as exhaustive as expert inspections, though any observations giving rise to concern over tree safety should be recorded (together with the date) and referred for expert inspection in a timely manner (i.e. as soon as can reasonably be arranged)."

The very concept behind clause 4.3 is flawed. The expectation that tree managers should collect specific data as set out in a National Standard is wholly disproportionate to the risks represented by trees generally and is contrary to the guidance set out in SIM 01/2007/05 'Management of the risk from falling trees', which provides guidance to HSE Inspectors and Local Authority Enforcement Officers when considering enforcement in respect of section 3 of the Health and Safety at Work Act.

There is one particular issue that cannot be overlooked and that is the suggestion that the surveyor/ inspector should set a "*timescale for implementing the recommendations (based on the risk posed)*" this is a matter for the land or tree manager who controls (often limited) budgets for tree safety management and not for the tree assessor, who, given the recommendations of this Standard has an incentive to pass the liability back to the tree manager in he form of a management recommendation..

Provide reasonable (as opposed to onerous) guidance on what the end objective might be and guidance on how this might reasonably be achieved. A list of absolute requirements is not appropriate.

4.3.2 Basic inspection	*Those undertaking or managing basic inspections should retain a written record of:* *a) date of inspection;* *b) name of person undertaking the inspection;* *c) trees inspected (listed by common name, or identification number referenced to a tree tag or a plan) and/or the specific location or area (zone) in which trees were inspected;* **only those trees identified as presenting significant risk or requiring further assessment or inspection should be listed. Also, how are the significant risks assessed because there is no guidance here?** *d) any obvious hazards observed;* *e) any limitations preventing inspection to the required level;* *f) species (listed by common name) and location or identification number of the hazard trees concerned;* *g) action taken (including referring the trees concerned for timely expert inspection).*	Rename clause 'Basic Assessment' Replace '*inspected*' with 'assessed' c) modify to advise recording only those trees identified as presenting significant risk or requiring further assessment or inspection following the principles set out in clause 4.3.3
4.3.3 Expert inspection	*For expert inspection, the minimum data recorded (and retained) should be:* **this is assessment and not inspection** *j) timescale for implementing the recommendations (based on the risk posed);* **The timing of tree management is for tree managers to consider and should not be prescribed by a tree assessor. Most tree managers would welcome some form of prioritisation for risk control measures, perhaps in the form of a risk assessment but this is discounted at clause 6 in favour of *'the judgment of competent person'* presumably in the form of prescription described here, but this is not at all clear.**	Rename clause 'Expert Assessment' Replace references to' *inspection*' with 'assessment'

	"NOTE 1 Optional data could include, for example, tree dimensions. " **Most of the above 'data' fields should be optional.** *"NOTE 2 Trees not found to have significant defects, and/or not directly threatening an identified target, need not be recorded during the inspection [2]: providing that the date of inspection and the area inspected are recorded, it can be assumed by implication that all trees present within the area have been inspected. This may be appropriate particularly where large numbers of trees are involved and the practicalities of identifying each tree are unrealistic and uneconomical."* **This note is poorly phrased and ambiguous. "*Trees not found to have significant defects*" should this not be '***Trees found not to have significant defects'***? What is the reference [2]? It should be considered whether or not it is the place of a National Standard to advise a land owner what is and is not "*uneconomical*" in respect of tree safety assessment when in the current low risk climate the majority of tree owners seem to do little more than casually observe the state of their trees?**	Delete Note 1 and make all data fields optional Delete note 2 and structure the guidance informed by risk assessment and proportionality from the top down staring with an overview of the relationships between targets and trees.
	"Recommendations for risk control measures (see Clause 8) should be reported to the level of management or person with the authority to initiate the necessary action." **This statement makes no sense on its own and less sense when considered in the context of clause** 8.	Delete
4.4 Climatic considerations	*COMMENTARY ON 4.4* *Severe weather conditions can damage and so weaken the structure of trees, causing primary failure, thereby predisposing them to secondary failure (i.e. collapse).* *Consideration should be given to implementing at least basic inspections in the aftermath of storm events, especially for trees previously identified as being particularly vulnerable, and/or for those standing adjacent to high-value targets (e.g. trunk roads).* *Trees known to have been struck by lightning should be inspected as soon as is practicable thereafter.* **All trees struck by lightning? What about the context of land use? If there are assumptions regarding the land use context (which there don't appear to be here) they should be set out early in the document**	Replace references to' *inspection*' with 'assessment'

4.5 Ivy and other climbing plants	*Ivy and other climbing plants can obscure the structure of a tree preventing thorough inspection. The target and risk should determine the need for inspection via aerial access (climbing inspection or inspection from a hydraulic work platform), or the removal of the plants concerned prior to inspection. Ivy and other climbing plants can provide [a] valuable wildlife habitat and may harbour protected species (attention is drawn to relevant legislation, summarized in Tree Damage Alert No. 123 [3]).* **This is an incomplete summary of issues to be considered when assessing trees upon which climbing plant are growing. The isolated reference to risk is introduced without any reference relating targets and risk.** *Such plants should, therefore, only be removed where this is essential to allow thorough inspection (usually at expert level).* **This is a ridiculous statement and presumes that all climbing plants have particular merit in terms of wildlife habitat, which they do not and infers that climbing plants would not be removed or severed to facilitate a lower level assessment.**	Replace references to' *inspection*' with 'assessment' Expand to list the problems encountered and provide options for dealing with the problems Delete [a] Remove *'Such plants should, therefore, only be removed where this is essential to allow thorough inspection (usually at expert level)'*
5 Legal and related considerations	*The following documents should be considered when planning and/or undertaking tree inspections:* • *Government Circular 90/73 (reproduced in part in Annex B), Inspection, Maintenance and Planting of Roadside Trees.* • *Government Circular Roads 52/75 (reproduced in full in Annex C), Inspection of Highway Trees.* **The Circulars are superseded** *NOTE 1 See also the Network Maintenance Manual (Highways Agency 2007) [4] and Well Maintained Highways: Code of Practice for Highway Maintenance Management, (Department for Transport 2005) [5] (see Annex A).* *NOTE 2 See Annex A to Annex C for detailed information on legal considerations, including statutes and case law.* **Both of the quoted Circulars are superseded by the Network Maintenance Manual**	Remove references to the Circulars

6 Quantifying the risk from hazard trees	**This clause should be one of the first and should appropriately consider the principles of quantifying the risk from tree failure including the possible inputs to and outputs of the process. The principles of risk assessment should frame the entire tree safety management process.** *Where consideration is being given to the retention of a hazard tree in identifiably poor structural condition, a detailed assessment should be undertaken to quantify the associated risk and a written record retained.* **This statement misses the purpose of risk assessment. If a proportionate risk assessment procedure is implemented at an early stage of assessing the tree population it is likely that, for many landowners, most '*hazard tree*[s] *in identifiably poor structural condition'* would not even be assessed because there is nothing of significance to be harmed by them. The purpose of this statement is unclear** *Where tree risk is to be quantified, the following factors should be considered:* *a) likelihood that an identified defect (including decay) will lead to structural failure;* *b) nature of the target (see also 4.2);* *c) consequences for the target concerned of an impact from the defective part (i.e. scale of impact relative to durability of target).* **The target should always be the first consideration because, where safety is the matter at hand, without a significant target there is little meaningful purpose in assessing the mechanical state of trees.** *These three factors should be systematically assessed and considered in combination in order to determine the risk posed by the tree concerned, and to confirm its suitability for retention, including where this is only acceptable through implementation of risk control measures (see Clause 8).* *NOTE Various proprietary methods are available for use by arboriculturists in analysing the inter-relationships of the factors referred to above. Whilst such methods can assist in managing hazard trees, the judgement of a competent person (e.g. an arboriculturist) remains the most reliable analytical tool.* **Aside from the fact that personal judgment is not an '*analytical tool*', this is an inappropriate statement for inclusion in a British Standard and seeks to devalue the use at least one risk assessment method (to my knowledge there is only one 'proprietary' method of risk or hazard assessment, all others being freely available without their authors exercising any degree of ownership or control.**	Re write to appropriately consider the principles of risk assessment from tree failure including the possible inputs to and outputs of the process in a way that Obtain guidance on the matter of tree risk assessment and management Clarify the purpose of '*NOTE Such quantified risk assessments can also be employed in other cases'* Remove *' NOTE regarding Various proprietary methods*

7 Frequency of inspections		Replace reference to' *inspection*' with 'assessment'
7.1 Lay inspection	*It is generally accepted that layman tree owners should be familiar with the condition of their trees, most suitably facilitated by regular observation and/or annual inspection.* **See comments at 7.3**	Replace references to' *inspection*' with 'assessment' See proposed changes at 7.3
7.2 Basic inspection	*In the case of basic tree inspection, the interval between inspections should be driven by site usage, though annual inspection is usually appropriate for targets such as well-used highways.* *NOTE A two to three year cycle may be appropriate for less frequented sites.* **See comments at 7.3**	Replace references to' *inspection*' with 'assessment' See proposed changes at 7.3

7.3 Expert inspection	*The maximum interval between expert inspections where a target is or foreseeably may be present should be five years.* **This statement not only fails to consider proportionality but seems to ignore the concepts of lay and basic inspection (or survey) that are advanced earlier in the Standard. This means that the Standard is recommending that all trees should be inspected (or perhaps assessed) at least every five years where there is a likelihood of *'persons or objects'* being *'present'*. There is no reasonable place for such a statement in a National Standard or for that matter any other purportedly authoritative guidance. The suggestion that review periods can be recommended in the absence of case specific facts such as, for a start, the nature of the land-use, nature of the tree/s availability of and demands upon management resources.** *NOTE Departure from this recommendation may be justified where there is identifiably infrequent access, recorded as such at a strategic level.* **What does this mean?** *Within this maximum parameter,* **What does this mean, is this the maximum 5 year review period that we have been advised that we can deviate from?** *the interval between systematic expert inspections should be varied in order to take account of a tree's condition and context, including site usage and changes in circumstances and growing conditions. The interval should also take account of the findings of each previous expert inspection, and those of any lesser inspections undertaken in the meantime.* *The precise timing of inspections should reflect the nature of any defects known to be present (e.g. seasonally occurring fungal structures; see also 4.1), and should also address, where possible, any limitations that formerly reduced the effectiveness of a prior inspection (e.g. dense foliage; see also 4.5).* *The competent person (e.g. arboriculturist) undertaking an expert inspection should identify the appropriate interval to, and preferred time of year for, the next scheduled expert inspection.*	Replace references to' *inspection*' with 'assessment' Remove any reference to recommendation of review period should be removed
8 Remedial action		

8.1 Target management (non-arboricultural intervention)	*Where defects are identified that are assessed as posing an unacceptable risk, thereby requiring risk control measures, consideration should firstly be given to modifying the target, including:* **Why? What about the situations where the tree is of low value or one of many but the target is of great value or great rarity?** *a) exclusion (e.g. erection of barriers or establishment of deterrent plants such as blackthorn);* *b) diversion (e.g. re-routing paths away from the tree);* *c) relocation (e.g. moving benches from under the canopy spread).*	Delete or revise to provide reasonable advice Replace **'***deterrent plants such as blackthorn)'* with 'thorny plants'
8.2 Tree work (arboricultural intervention)	*Due to the various benefits conferred by trees (including habitats protected by law), risk control measures should be directed specifically at remediating the identified potential hazards. For example, a large dead branch identified as hazardous but also having habitat value should be considered for partial retention by truncation rather than complete removal (see BS 3998:2008 para.???)* **This situation does arise and in some circumstances the 'guidance' might be appropriate but the clause is worded as though it should always apply, which is of course nonsense.** *NOTE Options for arboricultural intervention are set out in BS 3998:2008*	Replace '*should*' *with* 'might*'*