



Risk Assessment

A Consulting Arborist may be requested to perform a risk assessment for an individual or many trees (e.g., 2000). Should and how would the evaluations differ, and is there any relevant language to include in contracts or other methods of managing the differences to be employed?

The assignment determines the level of work needed. One assignment may be to do preliminary observations over a wide area, while another assignment may be to determine if a given tree is likely to fail under certain circumstances. In an observational assignment, an area may be observed without rendering an opinion as to how unsafe a particular tree is. The assignment is to identify number of trees in an area that might be at risk of failure. In all cases, the assignment must spell out what is to be opined in order to fulfill the assignment. In my practice, this is always spelled out in the consulting contract.

—Marty Shaw, RCA #470

I provide the quality of work that I would expect if I were the client. In the case above: I would explain to the client that a close inspection of 2,000 trees would cost 2,000 x \$X and I would be happy to do it. If the prospective client goes pale as to the cost, I would explain to them the time involved and costs.

“Human nature” dictates that budgets are work-limiting factors. Many clients are willing to drive a Ford Taurus rather than a Hummer when it gets them to the same place.

One hundred percent tree inventory would be necessary, but maybe only 5%

of those trees would require close, time consuming, risk assessment. I explain the difference in cost and efficiency, suggesting that 100% inventory can be followed with thorough risk assessment of less than 2,000 trees for substantially less cost to the client.

Communication between the client and the consultant is essential. Oral communication is necessary, but written communication allows the client and consultant to re-evaluate and confirm the terms of the agreement. The client may want to amend the agreement. This reduces the possibility of the: “I thought you said” argument when it comes time to be paid.

Every agreement must be stated in writing and signed by all parties involved.

—Dan Howell

It is absolutely essential to include specific language regarding the assignment. I recommend starting with a Visual Tree Assessment from the ground for each tree, with no probing, climbing, excavation, etc. If the VTA turns something up that requires further investigation, then further work should be recommended with the estimated cost.

—Peter R. Torres, RCA #372

There are a number of considerations. First, do we actually have an industry standard? Or, only a variety of more or less generally accepted sources? Second, “assessment”—if that’s what we are proposing to perform—is not by definition an “inspection.” Any given assessment may range from brief, cursory observation or tally to a detailed and time consuming inspection. Third, it is essential that proposals and contracts

include specific language describing the level or thoroughness of assessment to be completed either in a particular assignment or a range of dissimilar assignments.

—Scott Cullen, RCA #348

This is one of the issues that the A300 committee is working on in developing a risk assessment standard. At this point, I expect there will be several levels of inspection that are standardized. They will range from a very cursory type review, that might not even require a walk around of the tree, to a very specific type of assessment that may require specialized testing. It is up to the management of the resource, in consultation with the arborist, to determine what level of assessment is appropriate. It should be defined contractually. It is acceptable on very large populations to use some method for stratifying based on target proximity or other factors. I do not think that this in any way compromises an arborist’s diligence. If a client can’t afford complete visual tree assessment of every tree in the population, but can afford to have you drive through the community and look for situations that need more intense evaluation, it is their diligence that is relevant. As consulting arborists, we are not obligated to perform any tasks the client is unwilling to pay for. If the task they can afford is insufficient, we may have a duty to inform them that it is insufficient. It is for the client to decide whether what they can afford will be sufficient to reduce tree risks on their property to levels they are comfortable with. This should create no liability for the arborist.

—Don Zimar, RCA #446

There may well may or may not be. It, as always, is critical to define the assignment before implementation. Typically, it is not practical to do a thorough evaluation for large numbers of trees, but it is not always appropriate to do so for an individual tree, either. Conversely, a limited visual or drive-by exam is typically not appropriate for an individual tree of significance. There are many factors effecting a decision about level of evaluation and reporting, and the resulting descriptions and limitations must always be spelled out in agreements (Assignment). An example of limiting language for a minimal inspection might be something like: "The inspection of these trees consisted solely of a visual inspection from the ground. While more thorough techniques are available for inspection and evaluation, they were neither requested nor considered necessary or appropriate at this time." A more thorough exam may include a variety of techniques, and each should be detailed in agreements, as well as limitations of those methods. Example:"

Perform Resistograph® testing of basal (root crown) area of selected tree(s) and/or other sites throughout the tree as deemed appropriate; number of testing (drill) sites to be determined dependent upon on-site testing results and observations, at the discretion of the consultant. Resistograph® testing provides information only, that is subject to interpretation, and therefore, the significance of testing results or evaluation of results cannot be anticipated or otherwise guaranteed."

—Torrey Young, RCA #282

A Consulting Arborist has been charged with estimating the potential for failure of a large tree in a busy urban setting. The several mathematical models he employed, for each tree, unanimously illustrated that the tree is a hazard. However, the arborist also considers that the species, local conditions and high value of the tree to the community, and feels that the tree may be retained. Is it ever reasonable for an arborist to disregard strength loss models or other statis-

tics and rely primarily on his or her own professional judgment?

A seasoned tree risk assessor should not rely on mathematical models. The collapse of a tree is stochastic: there is no way to include all parameters in the assessment because they are not known. I do not use mathematical models at all.

—Peter R. Torres, RCA #372

Strength loss formulae, as well as tree evaluation forms and systems, are only tools—and are subjective and typically result from models with significant limitations. Conversely, trees and their environments are dynamic and endlessly varied. Therefore, while formulas and forms have some value in illustration and support of judgment, they are not reasonably applicable in all circumstances. The job of the Consulting Arborist is to select the appropriate tools to assist him/her and interpret the resulting information, but his/her judgment remains the deciding factor in tree evaluation.

—Torrey Young, RCA #282

If the assignment is simply to determine the potential for failure—that is one assignment—and does not include any other factors. If the consultant knows that there are extenuating circumstances, that could give reason for further investigation into methods of mitigating that risk, he/she should let the client know. Evaluating extenuating circumstances is another assignment where a very different opinion is rendered. Professional judgment should always come into play when rendering an opinion, but should only be applied within the confines of completing a well-defined assignment. Keep in mind that you may be called upon to defend your opinion.

—Marty Shaw, RCA #470

Who concluded that the tree is significantly weakened and should be removed? The mathematical models or the seasoned and capable tree risk assessor? If the assessor concluded—based on any model or information and using professional judgment—that

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the tree should be removed, then it is not reasonable to alter than conclusion based on "community value." It may be reasonable for the seasoned and capable tree risk assessor to disregard the initial removal indication of the mathematical models, based on professional judgment about the species and local conditions, or based on reduction of the risk by measures other than removal. The mathematical models are not precise and some authorities question their reliability. In fact, their use is highly debated even by the authors of "competing" models. The final determination about the acceptance or tolerance of risk remains with the tree owner.

—Scott Cullen, RCA #348

It is unreasonable for an objective arborist to disregard any facts that are substantive to the task assigned. It is also unreasonable for that arborist not to report facts that may undermine his own opinions. The facts, significant strength loss by various computations, high traffic area, suggest a high risk. It should be left to the ownership of the tree whether the risk is so high as to require removal. If the task is for a recommendation by the arborist, he is obligated to form an opinion supported by the facts, or do more testing to improve the data before writing his opinion. It is irresponsible for any arborist to discount the evidence in favor of a subjective opinion contrary to that evidence. The owners of the tree, in this case the public, must make this decision via their elected officials and staff. What they do with the information is their business. They are free to disregard any recommendations or information, and make a purely political decision—as they should choose.

—Don Zimar, RCA #446

The assignment was to estimate the potential for failure not to make the decision if the tree should stay or go. Present the data, species assessment and probability of harm, so that the client can make the decision regarding removal, based on their tolerance of risk.

—A. Wayne Cahilly

No. Public Safety is the most important factor.

—Dan Howell

A Consulting Arborist accepts an assignment to perform a risk assessment of all the trees in a city zoological park. During his inspection, he observes that the park is frequented by numerous school groups and mothers with children of all ages. In consideration of this potential liability, his report states that virtually every tree in the park offers some degree of risk and requires attention. Reporting that every tree needs immediate attention diminishes the practical usability of the report by the client. How should an arborist best deal with this scenario?

An arborist who does not realize, going in, that a city zoo is filled with school groups, mothers, babies and valuable exotic animals perhaps has other issues to consider besides the conundrum posed by every tree needing work. That aside, the function of a risk assessment, by its very nature, is to quantify and stratify risk so that the "risk manager" of the site has guidance. Not all risks are of the same magnitude, and the final assessment should be a tool that allows those trees that have the greatest probability of doing harm to be identified and to be dealt with first. It is the responsibility of the client to determine how much risk they are willing to tolerate.

—A. Wayne Cahilly

This would require 100% tree risk assessment, with the urgency of recommendations clearly stated in the report. For example, a photo of the tree with the single dead limb would be included in the report calling for immediate removal of the limb, tree identification number and its location.

If every tree demands attention, it demands attention. There is no getting around it when public safety is involved. Zoo management is concerned for public safety, or would not have contracted the work.

My reports state that all trees are associ-

ated with some degree of risk. I don't think this makes the report any less useful.

—Dan Howell

While site use must be considered in relation to management of trees, the evaluation should remain objective, i.e., the target does not determine the potential for the tree to fail. Prioritizing of recommendations, including additional investigation when required, sets the stage for management decisions, and can be designed to be applicable and variable according to the needs of each tree's individual location.

—Torrey Young, RCA #282

A seasoned and capable tree risk assessor would not have been surprised that a public place was busy in the summer. A rushed and reactive report that is not useful to the client is hardly the answer. The seasoned and capable tree risk assessor would have communicated with the client to structure the assignment and scope of service before accepting it. Maybe every tree does need immediate attention. Maybe not. The client needs to communicate what its risk tolerance is and what it wants the assessment to accomplish. A useful assessment must scale the risks, and just what the client does about them is a function of the number and magnitude of risks and the available resources. Pick up any newspaper and read about towns and cities struggling not to lay off police officers, fire fighters and teachers. Read about hospitals closing. Availability of resources is a real and valid constraint on tree risk management. Help the client prioritize the risks.

—Scott Cullen, RCA #348

Again, the facts are what they are. If a large dead limb over a high traffic area is a high risk in the arborist's opinion, he is obligated to report such. If every tree in the zoo is a high risk in his opinion, he is obligated to report it. The arborist is not obligated to write a report based on usefulness to the owners, particularly if it understates these risks. It is hard for me to understand how this could dilute the usefulness to the client? Why

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did he commission this report? To tell him everything was fine when it is not? Seems that would be much less useful. It would seem far more useful to develop a method of categorizing the risks so that the highest can be dealt with first, and there is a plan to deal with all the unacceptable levels of risk over time.

—Don Zimar, RCA #446

Of course every tree in the park has a risk associated with it. Every tree that requires risk reduction must be included in the immediate needs category. Then, the risk assessor should make a priority list of which trees pose the greatest hazard and assign first priority. It is up to the owner of the park what happens next. The risk assessor's responsibility ends.

—Peter R. Torres, RCA #372

Usability to the client is an important factor to consider when taking on any assignment. The consultant should have the knowledge and experience to guide the client in creating the assignment so that it will best meet the client's needs/requirements.

When performing a risk assessment, each tree should be evaluated on its own merits (or lack of them). If the potential liability is huge, then that must be made clear to the client—that is the assignment and that is what the client wants to know. The opinion will tell the client how much risk there is—one tree at a time. If a tree has a dead limb that hangs over a sidewalk, with children walking under it continuously, then that is what gets reported to fulfill the assignment.

—Marty Shaw, RCA #470

In general, when undertaking the evaluation of the relative risk trees pose to their environment, isn't it always better to err on the side of caution when reporting one's findings?

One's finding should not "err" either way, but report clearly what is observed, calculated, determined, how judgment is rendered and the limitations of all methodologies employed and the resulting judgment.

—Torrey Young, RCA #282

First of all, trees do not pose a risk to the environment. They pose a risk to people and their property. In this regard, it is best to report one's findings truthfully and objectively and not to bias them one way or the other. It is best not to err. Ultimately, it is up to the arborist to report the level of risk associated with a tree and allow the ownership to make the decision regarding its retention or removal. If an arborist is asked for his opinion, he should give it honestly and objectively based on the facts. If he thinks that the risk to people or property is severe, and removal is the only way to reduce it to a level acceptable to the owner, then this is his opinion. The owner is free to accept it or disregard it. But, it is always the owner's decision on what, if any, action to take.

—Don Zimar, RCA #446

It is not better to err on the side of caution. To deliberately introduce error is an ethical violation. There are degrees of risk that the owner will or will not accept. That is the owner's call, not the risk assessor's. Do not let your judgment be swayed by fears of being sued. Bring that fear into the open in the contract and the report. Defuse it. If there is an injury or even property damage from a tree you evaluated, you will be sued regardless of what you said. That is why you have insurance. If you do not lose the lawsuit, you still have to pay the deductible (\$5000?). Charge accordingly.

—Peter R. Torres, RCA #372

Absolutely not. One should always remain objective and report findings defensibly. Using the ISA Tree Hazard Evaluation form, there is already a scale of certainty/uncertainty built in. As a consultant, your opinion does not necessarily have to be black or white—in the case of risk assessments, there is often some grey. In many cases, uncertainty is vast. If the stakes are high, it may be good to give an opinion as to how uncertain the risk of failure is within limits of the information in the report; it may be that a more rigorous investigation is needed to make a more definitive determination. IMO, to skew findings one-way or

the other arbitrarily is a violation of the ASCA SPP.

—Marty Shaw, RCA #470

What does that mean? If it means that no risk is understated, that is useful caution. If it means that generous "safety factors," in an engineering sense, are incorporated, that's useful caution. If it means run in fear of any condition that is not textbook perfection—that is not meaningful and useful to a client. To provide useful and meaningful data to clients we must identify risk of failure as carefully as we can, so that clients can make appropriately cautious decisions with available resources.

—Scott Cullen, RCA #348

Public safety is always the number one concern. From my point of view, it is better to be safe, than sorry.

—Dan Howell 🌱

IN MEMORIAM

Ken Six



We were saddened by the passing of Ken Six on January 20, 2009. Ken fought bravely against the aggressive form of cancer with which he was diagnosed just 35 days before his death. Services were held on January 26, 2009.

A Consulting Arborist for 29 years, Ken had a deep love for trees, and was a well-respected advocate for the tree care industry. He will be greatly missed!

Ken is survived by his wife Gloria; children Dezeray, Kenneth and Tyler; grandchildren, Nikko and Christian.

Donations can be made to the Ken Six Donation Fund at any Wells Fargo Bank.

WELCOME NEW MEMBERS

Andrew B. Arzaga

San Francisco, CA 94118
(415) 722-2008
andrewarzaga00@comcast.net

Alan M. Baratta

West Palm Beach, FL 33401
(561) 506-8156
sloopboat@juno.com

Juan J. Barba

Tucson, AZ 85719
(520) 622-6938
juanbarba@earthlink.net

Joseph C. Beatty

Louisville, KY 40203
(973) 479-4351
jcbeatty@gmail.com

James Cadorette

Red Hook, NY 12571
(845) 758-1498
james@integraltreeandlandscape.com

Thomas R. Carman

Minnetonka, MN 55343
(952) 922-3810
tcarman@rainbowtreecare.com

David Cooper

Grand Lake, NS B2T 1B3 Canada
(902) 223-4028
arbor@ns.sympatico.ca

Elizabeth L. Davison

Tucson, AZ 85716
(520) 621-1582
edavison@ag.arizona.edu

John J. Griffiths

West Des Moines, IA 50266
(515) 987-3711
jgriffiths@wrightoutdoorsolutions.com

William F. Harrington

Medford, OR 97501
(541) 774-2690
bill.harrington@cityofmedford.com

Eric H. Hoyer

San Antonio, FL 32576
(352) 588-2580
erich@nrpsforesters.com

Grant E. Jones

West Chicago, IL 60185
(630) 797-8581
grant.jones@davey.com

Chris Kovach

Delta, BC V4K 3N3 Canada
(604) 591-9010
info@bcplanthealthcare.com

James LeGette

Ft. Lauderdale, FL 33314
(954) 583-1888
jim@lauderdalreeservice.com

Mario R. Llanos

Rancho Santa Fe, CA 92067
(858) 759-5940
arborist@southcoastgrowers.com

Tracey MacKenzie

Truro, NS B2N 5E3 Canada
(902) 893-6687
tmackenzie@nsac.ca

Jeremiah G. Nelson

Tahoe City, CA 96145
(530) 581-1945
jeremiah.tahoe.arborist@gmail.com

William Owen

Oakland, CA 94610
(925) 260-6865
bowen@arborwell.com

Mark Christopher Petitgout

Linwood, NJ 08221
(609) 457-7475
limbwalkers@comcast.net

Karen Robbins

Loon Lake, WA 99148
(703) 254-6021
harmony.clover@gmail.com

Ted Safford

San Diego, CA 92117
(858) 272-1566
tsarborgolf@yahoo.com

Zachary Smith

San Jose, CA 95124
(408) 771-6428
zacharysmith@earthlink.net

Lee Steigerwaldt

Tomohawk, WI 54487
(715) 453-3274
lee@slstomahawk.com

Al Suarez

Venus, FL 33960
(954) 444-1379
aquaticplantmanagement@hotmail.com

R. Keith Valentine

Palatka, FL 32178
(386) 684-2042
keith@floridalandscapedoctor.com