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Mistakes were made

We’ve all made a mistake or two – or three hundred – in our personal and professional lives. While we can’t always avoid a mistake, how we atone for our errors is firmly under our control. There are good ways and very poor ways to make amends, and how we deal with these unfortunate situations may determine whether we keep a friend, retain an employee, or lose a customer.

One of the worst ways to handle the situation is to try to evade responsibility. The expression “mistakes were made” is a time-tested way to acknowledge stupidity while shifting the blame elsewhere. Who made mistakes? Some unknown and unnamed person who won’t be accountable? The expression is usually employed by a politician, and examples of presidents employing the “blame dodge” date back more than 100 years. It’s a lousy way to deal with major errors. As a leader, manager or company owner, it’s preferable to follow the expression etched into a sign on President Harry Truman’s desk: “The buck stops here.”

Somewhat better than evasion is a simple statement such as “I’m sorry” or “I apologize.” That’s a start. More importantly, however, we have to mean what we say. How many times have you received a perfunctory apology and the person delivering it is clearly just uttering the expression without even looking at you or seeming to care if the apology is accepted? The words come out of our mouths easily, but they mean nothing if we aren’t truly sorry.

Even worse than an empty apology is an insincere apology that is followed by an excuse that’s really nothing more than a justification. “I’m sorry, but you have to understand that … it really wasn’t my fault.” It is possible to apologize while also attempting to explain a mistake – and there may even be a valid reason that contributed to the error – but we shouldn’t try to make excuses for what are clearly mistakes. We should admit the mistake and own the consequences.

The next step in owning our mistakes is making an effort to remedy the situation. If someone took a morning off from work to meet you at a property and you didn’t show up, you can’t give them that day back. If your crew sprayed an herbicide instead of hort oil and killed all of the client’s shrubs, you can’t bring them back to life. But in both instances you can work with the upset person to repair the harm, offer compensation, or find some other way to put a firm foundation under the words of apology.

To start making amends, we have to understand – truly understand – how our mistakes negatively affected someone. It’s harder than it might seem to take the time to do so, especially if we are rushed or we don’t think the harm was really all that great. We need to resist thinking, “what’s the big deal?” when our mistake caused even minor harm to someone else.

Finally, before we apologize we need to think about the best way. In person is usually the best, but if you feel more comfortable on the phone or you write better than you speak, those options should be on the table too.

We all make mistakes. Lots of them. Don’t compound the number by making a second one with a lame apology.

Mark Garvin
Publisher
RC1220G

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Gasification – Another Door to Wood Waste Markets
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Learning to Burn and Make Biochar, Not Smoke
By Kelpie Wilson

A Tree Decline Disease Concept
By Glen R. Stanosz

Caring for Veteran Trees
By Christopher Roddick

Working in Winter
By Daniel Groves


Safety Corner
By Scott Jamieson
Building a safety culture … it’s personal.

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By Jill Gabrielle Klein
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From the Field
By Amara Lorch, with Phillip Kinner
Leaves or litter? And other lessons.

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“Perfect In One Pass”™
Time to add the word “gasification” to your biomass vocabulary. In the years to come, you will hear a lot about that word, being that you’re in the wood products business. And, face it – anyone who takes down as much as a limb is now in the wood products business.

Over the past decade tree debris has gone from a waste product to a resource. No longer destined solely for the firewood pile or the tree dump, tree material is now a valuable raw material, converted to chips for mulch and animal bedding. In recent years there has been a movement to use tree waste to create energy for heat or the production of electricity.

This is where gasification comes in. It may sound like a new, high-tech process. Actually, the process of turning wood and other products into a burnable gas for furnaces, stoves and vehicles has been viable since the early 1890s when the process was invented by a German scientist. By the turn of the 20th century, attempts to power vehicles with such synthetic gases met with some success, and wood gas vehicles were an alternative to gasoline and diesel vehicles during World
In its basic form, a gasifier takes materials such as wood in chips, sawdust, charcoal, coal and other fuels and burns them incompletely. The gas given off by this process is filtered to remove soot and other impurities and cooled, yielding a relatively clean-burning gas, far more efficient than burning the wood directly. The gas does not rate as high in terms of energy as does natural gas or gasoline, but it is available, it is clean and it is renewable. There are new processes, though not broadly advanced, that will improve efficiency over time.

Jerry Morey, president of Bandit Industries, says, “Gasification is an old process. Hitler ran vehicles on gas made from vegetation in WWII when he ran out of oil.”

“The concept is fairly simple. You burn material but starve it of oxygen and get methane. Already there are a lot of gasification furnace manufacturers. For example, there is one in the Upper Peninsula of Michigan and another in Vermont making what they call chip burners. These are gasifiers, heating wood in a chamber where methane comes off and is then burned to supply heat. The process is far more efficient, with less ash residue and a flame that is more like natural gas than wood combustion.

Morey says that there have been numerous attempts to take gasification to higher levels, including one in upstate New Hampshire in the 1970s that used the gas to run modified diesel generators. “They did alright, but the biggest problem than was that gas from wood is not as pure as natural gas, and there were filtration problems. Particulate got into the engine and would gum up the pistons.”

According to Morey, “Since that time, gasification has come a long way. Now we are seeing a lot of large gas units to heat large facilities – for example Central Michigan University, which was using gas from wood for 75 percent of its heat and air conditioning load – all by gasification. That’s closed now due to the low price of natural gas.” Morey’s point, however, is that gasification is viable.

“These days, we can get a more complete burn with less loss out the stack. That means more energy per chip,” he says. “This may not be true even in high-class, expensive wood boilers. I think gasification ultimately is more efficient (than burning chips directly) because it yields more BTUs per pound of material.”

Thus, the wood chip becomes a thing of greater value for the mid to long term. That is why wood chipper and grinder manufacturers are not only aware of the coming market, but are taking steps with their technology to address needs large and small.

The kind and size of chip varies depending on the facility, according to Morey. “For example, there are furnaces for a garage that are auger-fed, and if you get long stringy pieces, they can clog the
auger,” he says. “We are perfecting a chipper system to prevent oversize pieces. This is especially critical with urban tree waste pieces, which are now being accepted as feedstock because stringy pieces are removed,” he says.

According to Morey, “Oversize chip pieces are called cards, and what our system does is reduce and all but eliminate oversize chips that can clog feed systems for wood boilers and gasification systems.”

“Generally the screen size is modified to produce specific chip sizes, typically a standard three-quarter inch chip,” Morey says. “This capability is offered in hand-fed to whole-tree chippers. In the Carolinas and areas of the South, with chippers used to produce ‘micro-chips’ for pellet operations, we will install screens with smaller openings,” he adds. Addressing the growing demand by overseas markets (largely Europe) for U.S. chip material, Morey says, “Overseas specs are for ‘maxi-chips,’ two to three times larger than U.S. standards. Each chipper is now configured based on chip size requirement.”

Morey says the company is now building and experimenting with furnaces. “We are using some of our own buildings to test them,” he explains. “We are trying to produce a furnace with a feed system that will accept chips from a chipper without any reprocessing, to burn a typical chip produced by tree care activities.
“It’s a departure from what we do. We see a lot of regulation issues, and we are at least a year away from introducing our own products,” Morey says, noting that, “We are looking to provide systems that heat garages and schools.”

“For the tree care industry, I think there is nothing (either gasification or wood boilers) that the average tree care company with a good, standard chipper could not accommodate, especially as this energy market is starting to take off.”

“In areas like Virginia and North Carolina, the demand for chips is increasing quickly, and two things drive that,” according to Morey. “The first is European power companies building processing plants in the U.S. to ship wood pellets to Europe. The second is power plants using pellets to replace coal at some power plants.” One, he says, is using his company’s card breakers to make chips more easily acceptable.

Point man for Morbark in this market is Larry Burkholder, business development manager, who is involved in consulting and providing biomass marketing information. (Burkholder recently celebrated his 50th year with the company.) Morbark recently secured an equity position with an engineering company for the design, manufacture and sale of waste-to-energy gasification systems, Burkholder says.

Morbark has a customer, Gaston’s Tree Service in Gainesville, Florida, supplying chips to a Gainesville-area biomass plant that requires more than a million tons of biomass material annually. The customer’s tree material, representing about 40 percent of the Gainesville facility’s needs for gasification, is largely from tree service and municipal sources. Much of it is processed via large-throughput Morbark grinders.

“Instead of going to a landfill, material now goes to a recycling yard and ends up in a wood energy facility,” Burkholder says, adding, “this is critical in (parts of) Florida where the water table is so high that waste cannot be buried.”
Another active plant is making 110 megawatts of electricity near the University of Florida campus. It is the latest state-of-art technology and is situated next to a 70 megawatt coal-fired plant. About 47 percent of the fuel is coming from urban wood waste, somewhere in the vicinity of 437,000 tons, he says.

Burkholder goes on to illustrate the potential. He points to a facility near Vero Beach, Florida, that is making biofuel and looking at gasification as part of it process of diverting yard waste from the Indian County landfill. An outfit in the Clewiston, Florida, area is experimenting with renewable fuel using sugar cane waste, and one solid waste/green waste authority in Florida is selling upward of $2 million a month in gas products.

Another site of interest is in Grand Rapids, Michigan, says Burkholder, where Morbark has a system using wood chips and turkey litter to make steam and electricity.

“Right now,” he stresses, “Morbark does not build these systems, but we are on the verge of nailing down a couple of large systems with our partner.”

The important thing, he says, is that, “Our grinding has versatility from fine grind to pellet, from micro-chips or standard chips for pulp and paper and composition board. Today’s equipment has unique features for very broad applications.”

On the front lines of this new chip-to-energy profit stream is Bill Gaston, founder of Gaston’s Tree Service, the longtime TCIA member located in Gainesville, and now run by his son, Shawn. Bill is otherwise busy with a spin-off business called Wood Resource Recovery.

According to Bill Gaston, it became evident to him in the 1980s that something would have to be done with the growing mounds of tree debris and the growing number of laws and mandates prohibiting or restricting vegetation in landfills.

“That’s when we got involved. We were among the first in wood resource recovery,” he says. “Now, we actively collect, reduce and recycle tree material from land clearing, tree service and yard debris at 12 collection areas.”

“One of the things we do is move about 1,500 tons a day of raw material to biomass power plants. Tons of chips are exported overseas. Hundreds of tons of material go to the Gainesville Renewable Energy Center facility for a fuel supply agreement with the 100 megawatt biomass power plant.

“We operate six grinders and whole-tree chippers and 20 hand-fed chippers, and we employ about 75 people. We are heavily involved in this renewable energy,” Gaston explains.

There are some hidden benefits, even for a small tree care company, looking to dump with Gaston. Because of the vol-
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ume of incoming material, Gaston says, “We can lower the cost of disposal for a tree care company thus making them more competitive for their customers.”

“Plants are going up everywhere in the U.S.,” Gaston maintains. By his estimate, “There are about 200 power plants at some stage of permitting, and there is a large and growing demand overseas. We even send chips to China for plywood. We get contacted about once a month to supply some facility, and we continue to expand our collection centers to areas where there is a need for material.”

“It all started with our small family tree service, which we expanded into the storm cleanup business to get experience handling large volumes of tree debris. Because of that, we were selected as a major provider for the Gainesville plant.”

Conclusion

We have but to look to the European market as an example of where chip technology is headed. According to continuing reports from the European Environment Agency, the region’s goal is 10 percent renewable energy sources by 2020. With an established international market for wood chips, the EEA continues to look to higher quality biofuels and is taking steps to deliver more energy from wood raw materials to fuel that region’s economy.

One step is gasification, which delivers more energy from the raw material than burning chips. A step beyond that is to further refine the recovery process to develop a denser, easy to transport liquid fuel, all from a renewable source such as wood. The process, called biomass to liquid (BTL), has been around since the 1920s. One is known as the Fischer-Tropsch process, which can convert coal, natural gas or biomass gas to a liquid.

So, next time you talk to your chipper or grinder equipment dealer, ask about markets for your chips, and what your manufacturer can do to help you target them.

“A chip pile at Gaston’s Tree Service, dba Wood Resource Recovery, in Gainesville, Florida.”

“Plants are going up everywhere in the U.S.,” Bill Gaston maintains. By his estimate, “There are about 200 power plants at some stage of permitting, and there is a large and growing demand.”

“A Morbark 50-48 tracked, whole tree drum chipper loads a truck at Gaston Wood Recovery in Gainesville, Florida.”

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Petzl America appoints new training manager

TCIA associate member Petzl America in January appointed Oliver McLeod manager of the Petzl Technical Institute. In this role, McLeod will oversee operations at the Institute, developing and managing technical training programs for partner training organizations, independent reps, and end users.

“One of my primary goals as Technical Institute manager is to ensure that end-users, whether through Petzl America or through our network of Petzl Technical Partners, are as knowledgeable as possible,” says McLeod.

McLeod will move to the new Petzl America headquarters and training center in West Valley City, Utah, in spring 2014.

Echo names Dorsey president

Tim Dorsey has been named president of Echo Inc., a subsidiary of Yamabiko Corporation of Japan. Dorsey, only the second American to hold the position, replaces Dan Obringer, retiring president.

Dorsey has worked for Echo, a 12-year TCIA associate member company, for 18 years, including the last seven years as vice president of systems and logistics. As a member of the executive team, Dorsey played a key role in the company’s growth and profitability over the years.

“We have a great executive team and Tim has been a key member for the last seven years,” says Obringer. “Our business has grown tremendously and I expect this momentum to continue and Echo to grow and prosper under Tim’s leadership.”

Obringer will remain in an advisory capacity for the next year.

Fleetmatics launches in Australia and Netherlands

Fleetmatics, a provider of fleet management technology and a TCIA associate member, in January announced expansion into the Australian and Dutch markets.

“The timing of the launch is crucial for Australia, in particular, where petrol prices throughout the region continue to climb with local economists noting the start-of-year price increase is the biggest the nation has seen since 2004,” according to a Fleetmatics release. “Fuel saving solutions for commercial businesses will be ever more critical in this region during 2014.”

The Australia office will be based in Sydney, while the Netherlands will be served from the London office.

Kevin Crofton joins Kong USA sales team

R. Kevin Crofton of Southington, Connecticut, an independent sales representative in the tree care industry, is now representing Kong USA, LLC, in the Eastern United States. Crofton has more than 20 years of service in arborist equipment sales. “We are very pleased to have someone of Kevin’s experience representing us in the territory,” said Jack Dunn, president of Kong USA, LLC.

Kong USA, a TCIA associate member company located in Bristol, Rhode Island, is a wholly owned subsidiary of Kong, S.p.A., which has been manufacturing climbing, safety and rescue equipment in Italy since 1973.

Vermeer opens new facility in Midland, Texas

Vermeer Texas-Louisiana recently opened a new branch in Midland, Texas.

The new 8,000-square-foot facility will allow Vermeer Texas-Louisiana to provide local parts availability, in-shop and field service support to the Midland/Odessa area and customers working in the Permian Basin. The Midland location will have access to a full-line of Vermeer equipment ranging from trenchers and brush chippers to directional drills and vacuum excavators, offering both sales and rental options.

Samson appoints Bon CEO

Samson, rope manufacturer and 21-year TCIA member company, has named Tony Bon, president, to the position of CEO. After more than 41 years with Samson, Steve Swiackey retired as CEO at the end of 2013. Bon has been with Samson since 1974 starting on the manufacturing floor, and has held positions as materials manager, vice president of operations, senior vice president, chief operating officer, and president since 2007.
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BioForest TreeAzin Systemic Insecticide

BioForest Technologies Inc.’s new TreeAzin Systemic Insecticide is designed as a safe bioinsecticide treatment for emerald ash borer, providing up to two years control of EAB and other insect pests. It has proven efficacy in saving ash trees, while posing minimal risk to applicators, bystanders, other mammals, birds, bees, and soil and aquatic ecosystems. TreeAzin is listed for use in organic crops by the Organic Materials Review Institute (OMRI).

While produced from neem tree (Azadiracta indica) seed extracts, TreeAzin is NOT neem oil. The active ingredient is Azadirachtin. According to the Canadian Forest Service, the botanical origin of TreeAzin, coupled with its low risk toxicological characteristics, makes it suitable for use in urban settings and environmentally sensitive areas. In the U.S., TreeAzin is registered by the EPA as a bioinsecticide for use against EAB, gypsy moth, hemlock woolly adelgid, elm leaf beetle, tent caterpillars, leafminers, spruce budworm, jack pine budworm and sawflies. (888-236-7378; www.bioforest.ca)

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BioSafe Systems OxiPhos bactericide/fungicide

BioSafe Systems’ new OxiPhos is a dual mode of action bactericide/fungicide for use on woody ornamentals and trees such as lilacs, azaleas, roses, and conifers. OxiPhos is for both systemic and contact application, and can be used throughout the growing season to prevent and control pathogens such as Pythium, Phytophthora and downy mildew. It can be applied as a foliar spray or soil drench for ornamentals and can be applied as foliar spray, soil drench, or transplant drip for conifers. OxiPhos is designed to increase plant health and as a resistance-management tool. Two powerful active ingredients, hydrogen peroxide and phosphorus acid, work in unison to reduce and control populations of disease. It is a sustainable chemistry that gives professionals a tool for controlling pathogens. OxiPhos comes in 2.5- and 5-gallon containers. (www.biosafesystems.com; 1-888-273-3088)

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Arborjet Arbor-OTC antibiotic

Arborjet’s new Arbor-OTC delivers an antibiotic punch via trunk injection into the tree’s xylem to suppress disease-causing bacteria – a more effective and environmentally responsible delivery method than spraying. Arbor-OTC is a water-soluble injectable systemic antibiotic for the annual suppression of bacterial diseases in non-food-bearing trees and palms. If not addressed, bacterial diseases can spread rapidly and cause the decline and death of a tree. Arbor-OTC is a shelf-stable, water-soluble powder that allows the applicator to mix and go without worrying about refrigeration or expiration dates. The new easy-to-use container comes in two sizes: a 1-ounce (28 gram) jar, designed for treating 10 trees or palms at 10-inch DBH in the same day, and a 5-ounce (140 gram) container that makes enough Arbor-OTC to treat 50 trees or palms at 10-inch DBH. Use to treat bacterial leaf scorch, fire blight, lethal yellowing and Texas Phoenix palm decline (types of phytoplasma disease), and many others. Arbor-OTC is not yet registered for use in all states. Contact local extension or Department of Agriculture to verify availability for use in your area. (www.arborjet.com)

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Artistree “Name Trees”

Eric Lingenfelter, an analytical chemist-turned-painter, came up with the just the right answer for arborists looking for the perfect gift. A painter who recently dropped his day job to meet the growing demands of his artistic career, Lingenfelter spends his days creating what he calls “Name Trees,” which he exhibited at TCI EXPO 2013 in Charlotte. It is a technique of hiding names within the branches of trees he’s painted. When young, he’d sit in the woods with his father for hours watching deer and other wildlife. His imagination led him to see the branches twisting into pictures and words to pass the time. “Trees, have always been deeply symbolic of growth and life. Therefore, they make it the perfect metaphor for a new marriage or growing business that will last through time.” Eric says. “Trees make people feel hopeful and inspired.” Paintings are customized and tailored to represent interests and the personality of a person or organization by including favorite locations, pets, logos and other meaningful items. (www.artistreenames.com)

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Events & Seminars

February 5-7, 2014*  
New England Grows 2014  
Boston Convention & Exhibition Center, Boston, MA  
Contact: www.NewEnglandGrows.org

February 11-12, 2014*  
Certified Treecare Safety Professional/CTSP Workshop, Russo Power Equipment, Schiller Park (Chicago), IL  
Contact: 1-800-733-2622; peter@tcia.org

February 12, 2014  
Chipper Operator Workshop  
Butler, WI  
Contact: www.tcia.org Industry Calendar

February 12-14, 2014  
ISA Ontario’s Annual Educational Conf. & Trade Show  
Deerhurst Resort, Huntsville, Ontario, CA  
Contact: www.isaontario.com

February 15-18, 2014*  
Southern Chapter ISA Annual Conference  
Myrtle Beach, SC  
Contact: www.isasouthern.org

February 24-25, 2014*  
2014 PennDel Shade Tree Symposium  
Lancaster Convention Center, Lancaster, PA  
Contact: www.penndelisa.org

February 23-25, 2014*  
Ohio Tree Care Conference  
Sandusky, OH  
Contact: www.ohiochapterisa.org

February 26-27, 2014  
ELA Conference & Eco-Marketplace  
Springfield, MA  
Contact: ela.info@comcast.net; www.ecolandscaping.org

February 28, 2014*  
ISA International Annual Conference and Trade Show  
Milwaukee, WI  
Contact: www.isa-arbor.com

March 3-5, 2014  
Certified Treecare Safety Professional/CTSP Workshop  
Des Moines, IA  
Contact: 1-800-733-2622; peter@tcia.org

March 7-8, 2014*  
Maine Arborist Association Annual Meeting  
Portland, ME  
Contact: www.MaineArborist.org; (207) 623-6430

March 11, 2014  
Webinar: Simplifying OSHA Compliance: 2-3 p.m. EST  
Contact: dlee@tcia.org; www.tcia.org

March 13, 2014  
Chipper Operator Workshop  
Oklahoma City, OK  
Contact: www.tcia.org Industry Calendar

March 13-14, 2014*  
2014 Garden State Tree Conference  
Tropicana on the Boardwalk, Atlantic City, NJ  
Contact: NJArboristsISA@gmail.com

April 2-3, 2014  
Urban Tree Research Conference  
University of Birmingham, Edgbaston, UK  
Contact: www.charteredforesters.org

April 5-10, 2014*  
Western Chapter ISA: Arboriculture on Parade  
Pasadena, CA  
Contact: www.wcisa.net

April 16-17, 2014*  
Certified Treecare Safety Professional/CTSP Workshop  
Mauget headquarters  
Arcadia, CA  
Contact: 1-800-733-2622; peter@tcia.org

April 30-May 29, 2014 (10 days)  
Arboriculture I - Basic Tree Climbing  
Quail Hill Scout Camp, Manalapan, NJ  
Contact: (732) 833-0325; www.caanj.org

May 6, 2014  
Chain Saw Safety  
Quail Hill Scout Camp, Manalapan, NJ  
Contact: (732) 833-0325; www.caanj.org

May 13, 2014  
CPR & First Aid  
Quail Hill Scout Camp, Manalapan, NJ  
Contact: (732) 833-0325; www.caanj.org

June 8-10, 2014*  
Trees Florida  
Innisbrook Resort  
Palm Harbor  
Contact: www.TreesFlorida.com

What’s coming in TCI?  
Each issue of TCI Magazine contains a variety of articles tailored to the specific needs, concerns and interests arborists. TCI solicits a number of articles from outside writers to keep its editorial content fresh.  
Do you have a story for TCI? The editor will be happy to review your idea or manuscript and discuss it with you. Here are some of the upcoming topics for the next two issues:

March  
Machinery & Equipment:  
Log Loaders/Skid Steers  
Tools & Supplies:  
Chain Saws; Seasonal Checklist  
Services:  
Fleet Management  
Safety:  
Crane Best Practices

Special Regional Section: Northeast & Mid-Atlantic

April  
Machinery & Equipment:  
Aerial Lifts  
Tools & Supplies:  
Ropes, Pest Management  
Services:  
Lease & Financing  
Safety:  
Chipper & Ground Operations Safety

Special Supplement: TCI Equipment Locator

Contact editor@tcia.org  
Advertising: Sachin Mohan, mohan@tcia.org

July 31-August 1, 2014  
Certified Treecare Safety Professional/CTSP Workshop  
Milwaukee WI  
Contact: 1-800-733-2622; peter@tcia.org

August 2-6, 2014*  
ISA International Annual Conference and Trade Show  
Milwaukee, WI  
Contact: www.isa-arbor.com

November 13-15, 2014*  
TCI EXPO 2014  
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to what is being said, be surveying the area to see what else should be done.

Once you have addressed the needs of your customer, then see if it’s OK to address extras. Many sales training programs tell you to see about addressing extra issues at the introduction, but doing that can scare some people off, as they think right away you’re after as much as possible. If you have addressed their primary issues and they are open to a property overview, don’t throw the kitchen sink at them as this can lead to them being overwhelmed. You will have future opportunities to sell extras and you should not get greedy.

Not every RFP can result in a meeting. If a customer cannot meet with you, you should still be timely with your visit and attempt to make contact while on site.

Writing the proposal is the next part of your sales process. Your proposal should be as detailed as possible. Your proposal becomes a binding contract. You should leave no room for interpretation – or misinterpretation – as to what is being done. Your proposal should include:

Plant quantity
Plant size
Plant type
Plant location
Service to be provided
Example: (1) 36-inch DBH white oak at the far left, rear corner of the property:
Crown clean 2-inch-plus material, thin by 10 percent and elevate low-hanging limbs to a height of 12 feet to clear play set.

While there, determine the most effective way to accomplish your goal. Make sure when you bid, you are bidding with the smallest crew that will get the job done safely. Not all removals have to be a three- or four-man crew. Not all pruning jobs have to be a two- or three-man crew. Adding extra crew members or not having the appropriate equipment could make the job a loser.

Remember, all tree care providers must adhere to the ANSI Z-133.1 and the A-300s. These are the standards that cover all aspects of tree care. Not only do the standards provide guidance for you, the arborist, these are what will be used should you ever end up in court. Again, your proposal is a legal contract. In the day and age of litigation, you must protect yourself and your company.

If the proposal hasn’t been signed and return within a week, make a follow-up phone call or send an email. Many clients will interact with have very busy schedules and often forget about the proposal you gave them. Every proposal you write deserves three attempts to follow up. If a client declines to use your services, be sure to ask why. Finding out why you did not receive a bid will allow you to not repeat the same mistake twice. It will also weed out future calls from a client who is only driven by price.

For the proposal that comes back signed, either you or your administrative assistant should contact the client to alert them that the contract has been received and what they should expect next.

When it comes time to schedule the job, call your client to schedule. You are a guest on your client’s property and you should not show up unannounced. Hopefully, the clear proposal you wrote to the client also serves as a clear work order for your crew. Efficiency does not always mean fast, but it is important to ensure your crew isn’t spending time trying to figure out what you want done.

The crew should know to knock on the door to announce their arrival. As often as
possible you, the arborist, should visit the job while it is going on. This will show the client their business is important to you, and you can make sure the crew is doing what you prescribed.

Sometimes the customer will ask for small extras. If it takes five minutes, you should think about doing it. If your client asks for multiple extras, a polite way to say no is to say, “Yes, for a small fee.” This usually sends a message they have gotten all they are going to get for free, without your plainly saying no and possibly upsetting the client.

At the completion of the job, the crew should check in with the client to make sure they are happy. The property should be left neat and clean. Your client will always know what their property looks like, clean or dirty.

After a day or so, it is a good idea to call your customer to check on their satisfaction level. This will allow you to head off any delayed payment due their dissatisfaction. It is also easier to handle any discrepancies. If the client does have a complaint, you should take quick action to resolve it. The golden rule of customer service is the customer is always right. Becoming argumentative will ensure no repeat business. If it’s a simple fix, take care of it and get the payment in the door. If it’s a complicated issue, be attentive and find a resolution that fixes the issue and move on. A happy client will tell three or four people. An unhappy client will tell 10 or 12. Drama in someone’s life is always more likely to be told about.

Assuming your client is happy, you should take the opportunity to set up a future inspection. Always leave an opportunity to get back on the property when appropriate.

Any company, regardless of industry, is in the business of making money. To be successful requires effort on everyone’s part. We work in an industry that many people still do not view as a respected profession. This is perpetuated by many so-called professional companies that do not perform in a professional manner.

Your efforts should be concentrated on the clients who are not solely driven by price. This may take you outside of your comfort zone, but you will find yourself on the road less and will free up time in the day. Use this time to improve in other areas. This could be generating new leads through prospecting, training of your crews or finding ways to become more efficient. Do not disregard any lead, but do your best to find out what the motivation of your client is. Every account manager should follow every job through to completion, and completion should be defined as the check has cleared the bank.

Steve Castrogiovanni is a Board Certified Master Arborist, CTSP, Maryland Licensed Tree Expert, Tree Risk Assessment Qualified, ISA Certified Tree Worker and a Certified Tree Worker Evaluator with 17 years in the tree care industry. He is currently tree and plant health care manager for Mead Tree and Turf Care, Inc., an accredited, 24-year TCIA member company located in Woodbine, Maryland, where his duties include selling general tree work, pest and disease management, tree preservation, and consulting.
Americans are crowding back into the cities, and our urban canopy is suffering. In 2010, the U.S. Census Bureau reported that about 79 percent of the U.S. population (220 million) live on only about 3.1 percent of the landmass. This influx has helped exacerbate a recent phenomenon – called urban heat islands – in which temperatures in metropolitan areas average several degrees warmer than the surrounding countryside, creating greater stress on urban forests.

The U.S. Forest Service estimates the urban canopy contains 3.8 billion trees worth an estimated 2.4 trillion dollars. Reduced rainfall in many regions, along with extreme fluctuations in average temperatures, have increased the propensity of diseases and pests within the urban forest.

As of December 3, 2013, 30.6 percent of the country was suffering drought conditions, according to the National Oceanic and Atmospheric Administration (NOAA); in 2012, 57 percent of the country suffered moderate to extreme drought.

Although temperatures were near normal in the U.S. last year, 2012 was the 10th warmest on record and the long-term direction has been for warmer-than-average temperatures and dryer conditions. These overall trends of higher temperatures, spikes in city temperatures and the inevitable movement of citizens crowding into more narrow urban zones is adding to the stresses in the urban canopy. The American people have decided they enjoy the convenience of living in cities where ready access to stores, hospitals, jobs, schools, entertainment and social activities are more available.

These are measurable social and environmental changes. Leaders in business, industry and politics are beginning to plan how to address these sociological and climatic changes through sustainability efforts. Unfortunately, with few exceptions, arborists have not been extended an invitation to the debates.

With few exceptions, arborists have not been extended an invitation to the debates. Arborists should be an integral part of urban planning. Arborists should be an integral part of urban planning. The public needs to be informed of the many benefits of healthy trees, shrubs and plantings in the urban environment. Tree care providers must take on the responsibility of relaying this message to the public and to public officials.

The United States Conference of Mayors completed a study in 2011 titled “Clean Energy Solutions for American Cities,” in which they found that about one-third of the cities surveyed had begun adapting to climate change by budgeting their capital improvement programs with energy-efficient models including the use of LED lighting, low-energy building technologies and solar energy systems to help generate electricity. The mayors did not think to examine the urban canopy, including lawns, shrubs and trees, or how an increase or decrease in these essential resources might affect the overall natural climatic balance.

Planners have a tendency to think in terms of new technologies as being the only course of action for sustaining the environment. The reality is that arborists and horticulturalists have the technical knowhow and experience to provide invaluable assistance in areas such as proper management of herbicides, water conservation and planting designs, and that would do more than all the glass-roofed solar panels combined to better limit the adverse effects of people-pollution.

What the Mayors’ survey did find was...
that the biggest drawbacks to implementing changes are financial constraints. Cities are broke, as are the majority of county and state governments. This trend is also long term. If major environmental changes are going to occur, they will require federal funding; only Washington has the resources available and the authority to make fundamental changes in environmental policies and practices.

Broadly defined, environmental sustainability is the maintenance of resources that contribute to the quality of the environment in the long term. Arborists understand the importance of water usage, rainwater runoff and the careful monitoring of pesticides and herbicides, but arborists and horticulturists need to be cognizant of many other issues facing the urban environment. The empirical data is certain – our environment is under stress by the sheer number of us living together and our abundant use of greenhouse gases. Improved technologies and better planning will help, but part of any sustainable solution must be the input and implementation of arboricultural science and plant cultivation.

Another paper commissioned in 2011 by Siemens, Inc., “Smarter Neighborhoods Smarter City,” reported on how New York City might improve upon its gigantic carbon footprint in the near term. Their study reported that several avenues are available to reach the goal of a sustainable urban environment and yet failed to mention anything about planting trees for adequate shade or seeding empty lots to help cool the ground. They also failed to consider how to fund their proposed measures.

Without funding, these studies and reports will only serve academia and join additional volumes of data sources, collected these past 36 years, which endeavor to explain how technology can control human interaction with the environment. Few planners consider the positive effects of how adding green plantings and maintaining our urban canopy properly could make a substantial difference in lowering carbon emissions, increase oxygen in the atmosphere and help sustain a healthier environment. Indeed, the U.S. Forest Service reports that 19 of 20 cities they surveyed in 2010 were losing their tree canopy.

Ironically, the recession and economic downturn of the last few years might have a silver lining. Technologies are available to move forward with making the changes in green infrastructure that are needed, and many talented unemployed people with the skill-sets necessary to begin the tasks of creating a sustainable urban environment are available for immediate work, including razing dilapidated old houses and buildings; planting trees, shrubs and grasses; cultivating new plantings and maintaining those properties and plantings.

In Chicago, as part of their “Green Alleys Program,” the Chicago Department of Transportation teamed with city planners to install light-colored sidewalks and...
shade trees to further mitigate urban heat-island effects. They have also embraced pervious pavements, bio-swale parkways and infiltration planters to divert, clean and reuse stormwater as part of their overall plan to “green” the city. Planners hope to use this as a template for further construction.

But once again there are the halting limits to city government funding. Chicago is broke. Incorporating a 2-mile green swath inside a metro area of 22,000 square miles to curb heat-island effects is unlikely to have much impact.

The Siemens report on New York City defined nine actions by which the city government might address changes offering greater sustainability to the city and having a positive impact on their environment. Unfortunately, their report failed to include any mention of arborists, horticulturalists or their relative expertise on “greening” the environment.

New York City has constructed two types of bio-swales – what they term, Enhanced Tree Pits (ETPs) and Streetside Infiltration Swales (SSISs). In both systems rainwater is diverted into catch basin inlets, which allows excess water to be filtered through plantings and mulched soil. The city has also established a study on what they term a Mini-Wetland and Biosphere project at their Spring Street bus parking lot. While these activities are commendable, they represent only a fraction of the improvements that need to be made in a city the size of New York if sustainability is to become a reality. On Oct. 19, 2011, the city announced a $2.4 billion public/private plan to reduce storm runoff. Unfortunately, the $2.4 billion is expensed over 18-years! In a city with more than 8 million inhabitants, a paltry $13 million per year would hardly seem adequate to sustain a healthy environment.

Arborists, along with the green community of professionals, have the people and the knowledge necessary to make these great changes needed in our city environments. Siemens Inc. is a worldwide leader in engineering and energy technologies and their reports should be seriously considered if we are going to build a sustainable future. But Siemens and others will be remiss if they fail to factor in how green industry professionals can substantially contribute to environmental sustainability.

These problems are not local; sustainability issues affect everyone. The solution is not to have an industry, state or local government make recommended changes that are limited in scope and cannot be financed; the solution must be found in the ability of professionals in the green industry to mobilize through industry associations, such as TCIA, to help galvanize awareness of how arborists can better affect sustainability in metro areas. As taxpayers, and as industry professionals, arborists have a responsibility to explain the positive impact of healthy trees and shrubs upon the total urban environment. It’s your future, too.

Mike Ingles is a freelance writer and researcher living in Ohio and reporting on the green industry.
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By Kelpie Wilson

Tree care workers generate mountains of limbs and brush that must be disposed of. Chipping may be the first option, but it doesn’t always pay. Forested properties with masses of material but poor road access, and small jobs that don’t justify the cost of hauling equipment, are both candidates for a new technique – the clean biochar burn.

The clean biochar burn method is practically smoke-free. Not only that, it makes a valuable product out of waste: biochar. Biochar is just another name for charcoal that is used in soil. Biochar is a superior soil amendment for water and nutrient retention that can be left on site to help build healthy soil, or used in a client’s garden on vegetables or flowers. (see “Biochar for Arborists,” TCI Magazine, September 2012)

On a sunny weekend this past November, a crew of volunteers who wanted to “learn to burn” came together at the Enchanted Forest, 450 acres owned by Jan and Brenda Patton outside of Grants Pass, Oregon. Forest contractor Lomakatsi Restoration Project had cut small firs and pines encroaching on a 10-acre oak savannah, and piled the debris for burning – the standard protocol for forest thinning. Open burning is often the only economically viable way to dispose of this woody debris, but nobody likes all the smoke it generates.

The essence of the clean biochar burn technique is this: contrary to what you may have learned in Scouts, light your burn pile from the top, not the bottom. Standard practice for forestry contractors is to build a “kindling box” about halfway down the pile and light it there, according to the belief that kindling must lie below to ignite the larger wood because “heat rises.” But according to biochar expert and Burn School instructor Peter Hirst: “Heat does not rise and wood does not burn.”

The truth of this statement is illustrated by the diagram of a burning match:

Wood does not burn directly, rather, heated wood emits gases that burn:

- Heat transfers by radiation into the wood
- Heated wood releases gases that rise
- When hot gases rise they are exposed to air and they burn
- Heat converts remaining wood to charcoal
- Charcoal will not burn if it is protected from oxygen by the gas flare
- If rising gases cool too fast or do not get enough air, smoke results
“Heat does not rise”: A flame rises by convection, but the heat is transferred to the unburned part of the match by radiation, which proceeds in all directions. The other part of the statement, “wood does not burn,” is true because heat first liberates gas – mostly methane and carbon monoxide – and it is the gas that actually burns.

What this means for our top-lit biochar burn is two things: first, the flame at the top will burn up all smoke. You don’t see smoke from a match until you blow it out. Second, the flame acts to exclude oxygen, protecting the charcoal that is left after the gas is released from the wood.

That’s how we burn the wood gas out of a burn pile, without making smoke and without burning up the charcoal in the process. Of course we have to put the coals out with water or dirt at the end, or the charcoal will burn up as the oxygen reaches it.

At the Biochar Burn School, we started by burning two piles side by side to compare the standard practice with the top-lit method. The difference was dramatic. We spent most of the weekend trying different sizes and shapes of pile construction, and seeing how little water we could use and still save the biochar.

Our crew included forest restoration workers, U.S. Forest Service soil scientists, local landowners and gardeners, and Matt Banchero, owner Matthew Banchero’s Tree Service in Occidental, California. Banchero thought he might find a use for the technique with some of his clients. Since burning is time consuming, he thought it would be best to make the piles and leave the landowner with instructions for using the top-lit burn method.

“A lot of people we work for would love to hang out and tend a fire,” he says. “They just can’t swing the chain saws and do the heavy work we do to prepare the material.”

Tree service professionals who want to use the clean biochar burn method should check with local fire departments to learn about regulations and safety requirements. Burn school instructor Peter Hirst (www.newenglandbiochar.org) offers training workshops and does contract burning.

If you want to save the biochar, you need some water for quenching. A light mist and some shovel work will do the job.

Use a small amount of accelerant misted from a spray bottle evenly across the top of the pile and then ignite with a propane torch. Avoid drip torches that will produce flame underneath unburned material.

Kelpie Wilson is a consultant working in biochar and renewable energy. Learn more about her work at wilsonbiochar.com.

Notice all the smoke coming from one log that is sticking up from the pile, away from the heat.
Tree diseases are sometimes simple, and other times are very, very complicated. A single pathogen such as the Dutch elm disease fungus, can infect, rapidly colonize the vascular system, and kill even a large, formerly vigorous tree within one growing-season. In contrast, tree health may slowly deteriorate, with death resulting from the interaction of several different factors that occur in sequence over many years. In this latter case, the demise of the tree may be the result of what is recognized as a “decline disease.”

Trees affected by decline diseases exhibit common symptoms that become more numerous and intensify in severity with time. These symptoms often are visible first in the tree crown, which may be relatively thin with leaves that are chlorotic or smaller than normal. Leaves also may prematurely develop fall coloration, sometimes as early as mid-summer. Slowing growth may be evidenced by a reduction in length of internodes on twigs. This leads to a concentration of leaves on the tips of growing twigs that appear as “bottle brushes.” Slowing growth is also reflected by decreased width of annual rings. As the tree crown becomes less photosynthetically productive, normal root mycorrhizal relationships may deteriorate. Dieback, the death of shoots and branches from the tips toward the base, develops progressively. As dieback continues and apical dominance is lost, epicormic shoots may proliferate on tree branches and stems. Trees may exhibit reproductive abnormalities, with unusually heavy seed crops. Eventually, fungi that cause root, stem, and branch decays exploit trees in advanced stages of decline.

The occurrence of tree decline diseases in space and time is also recognizable. Expanding clusters or groups of symptomatic and dying trees is much more typical of single-pathogen diseases, such as Dutch elm disease or diseases caused by aggressive root-colonizing fungi that spread from tree to neighboring tree by root grafts or close root contact. In contrast, trees affected by decline disease are typically scattered or affected more or less at random, and not in closely spaced groups. Finally, a significant characteristic of tree decline diseases is that other symptoms, mentioned above, persist and
intensify over many years. As years and even decades pass, tree condition progressively deteriorates, often ending in tree death.

The intensification and progression of these symptoms is explained by a concept of tree decline diseases developed from many studies of deteriorating tree health and the ways trees die in forests and landscapes. One observation is that trees are altered as a result of factors that induce stress. The stress-altered tree is less able to respond to changing conditions or disturbances, including pathogens and insects. The factors that diminish the vigor of a tree from its potential optimum are called “predisposing factors” and are the first factors to act in development of tree decline diseases.

Predisposing factors may be attributes of a tree itself or characteristics of the physical environment. A tree’s inherent difficulty in sufficiently absorbing one or more nutrients, a tendency to develop girdling roots, its location outside of its natural range, nutrient-poor or compacted soil, improper planting, restricted growing space, and old age are examples of the many possible predisposing factors. Although predisposing factors, by definition, act over a long period of time, the effects of these factors alone may not be noticeable.

“Inciting factors” are next in time to affect trees during progression of decline diseases. These are particularly damaging to trees that are already predisposed. Inciting factors may be features of abiotic (nonliving) or biotic (living) environment. Construction damage to roots, storm damage to crowns, a short but intense drought, and defoliation by insects or leaf diseases are examples of common inciting factors. By definition, inciting factors act relatively quickly over days or weeks, and usually produce very visible effects on trees. The effect of an inciting factor is to further alter the tree.

Decline diseases continue to develop due to effects of “contributing factors” that perpetuate decline in further altered trees. These are third in time to affect trees, with multiple contributing factors affecting the same tree simultaneously or in succession over many years. Contributing factors are often opportunistic fungal pathogens or insects that commonly attack severely stressed trees. Obvious visible effects, including dieback or branch and stem decay, are caused by these factors. Tree death is...
sometimes blamed on contributing factors, but they can be recognized as the final factors in a gradual, prolonged process of deteriorating tree health that is typical of a tree decline disease.

The ideas of the stress-altered tree and the successive effects of predisposing, inciting, and contributing factors were incorporated into the concept of the tree decline disease spiral (Figure 1). Professor Paul Manion of the State University of New York College of Environmental Science and Forestry proposed this model, in which the decline disease is the result of one or more different factors from each ring of the spiral. The initially healthy tree is first affected by predisposing factors, further altered by inciting factors, and then subject to contributing factors with tree death as the ultimate result.

To minimize the impact of decline diseases, prevention is key. Predisposing factors should be avoided. Trees that are selected should be well-adapted to the location and specific site factors. Adequate planting space, soil preparation, and proper planting methods are important. Regular periodic addition of new trees will prevent the landscape from being dominated by trees predis-

### Table: Examples of Predisposing, Inciting, and Contributing Factors Associated with Decline Diseases of Several Important Urban and Landscape Trees

<table>
<thead>
<tr>
<th>Factors</th>
<th>Maple decline</th>
<th>Oak decline</th>
<th>Birch decline</th>
<th>Linden decline</th>
<th>Honey Locust decline</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Predisposing</strong></td>
<td>salt, compacted soil, poor soil aeration, restricted root space, girdling roots</td>
<td>age, drought, alkaline soil pH, fill, poor or excessive drainage</td>
<td>age, excessive drainage, outside natural range and natural habitat</td>
<td>salt, restricted root space</td>
<td>outside natural range and natural habitat, restricted root space</td>
</tr>
<tr>
<td><strong>Inciting</strong></td>
<td>construction damage, drought, temperature extremes, defoliating insects or diseases</td>
<td>construction damage, drought, defoliating insects or diseases, frost damage to foliage</td>
<td>sudden exposure, drought, defoliating insects, frost damage to foliage</td>
<td>construction damage, drought, temperature extremes, sun scald</td>
<td>construction damage, drought</td>
</tr>
<tr>
<td><strong>Contributing</strong></td>
<td>sugar maple borer, canker fungi, root decay fungi</td>
<td>2-lined chestnut borer, canker fungi, root decay fungi</td>
<td>bronze birch borer, sap rot fungi, root decay fungi</td>
<td>linden borer, sap rot fungi</td>
<td>canker fungi, root decay fungi</td>
</tr>
</tbody>
</table>

Examples of predisposing, inciting, and contributing factors associated with decline diseases of several important urban and landscape trees.

### Figure 4

Thin crowns with small leaves and premature fall coloration are commonly observed symptoms of tree decline diseases.
posed by old age. Construction damage, so common in urban areas, can be prevented by implementing a well-designed tree preservation plan.

Treatments may be available to minimize the effects of inciting factors. Supplemental water should be added during periods of drought. Insecticides or fungicides might be applied to prevent recurrence of a severe defoliation. Appropriate fertilization also might be recommended in response to construction damage to root systems.

Finally, treatments may be available to prevent or suppress contributing factors, such as insecticide injections that kill insect borers. Dead limbs and branches with advanced decay can be removed, along with those affected by cankers. Watering, appropriate fertilization, and other measures to improve tree vigor may also increase a tree’s ability to resist, restrict, or recover from damage by insects and pathogens. Both arborists and tree owners must recognize, however, that even if progression of symptoms is temporarily halted, a reversal of the spiral of tree decline disease is unlikely and tree health may not be restored. Changing our expectations, and making the often hard decision to remove and replace, could be the chosen course of action.

Use of “decline” to describe any unhealthy tree or a tree in poor health for which the cause has not been determined is not recommended. It is more informative to use decline to describe complex tree diseases resulting from identified predisposing, inciting, and contributing factors that act in sequence over a prolonged period, often ending in tree death.

This well-developed concept of tree decline disease can help people to recognize these factors and understand how they interact to affect tree health. Arborists can then apply the best tree health care practices to maintain the benefits provided by healthy trees.


Glen R. Stanosz, Ph.D., is a professor of Tree and Forest Health at the University of Wisconsin-Madison in Madison, Wisconsin. This article is based on his presentation on the same subject at TCI EXPO 2013 in Charlotte this past November.

Figure 5. Fruiting bodies of stem and root decay fungi are evidence of these contributing factors to tree decline diseases.
In 1978, John Benton graduated from college with a degree in plant science and founded Bayou Tree Service, Inc. in 1980 in New Orleans, Louisiana.

“I founded the company pretty much on a shoestring, like owners of other small businesses,” Benton says. “I started climbing when I started the business and I climbed for 10 years.”

A 32-year TCIA member, Bayou Tree Service covers an approximately 50-mile radius. A year and a half ago, Benton opened a second office, in Baton Rouge, which serves the Greater Baton Rouge area.

The company has a long list of residential, commercial, industrial, and municipal clients, including New Orleans Park and Parkways, Oak Alley Plantation, Tulane & Audubon Institute, St. Charles Avenue Association, and New Orleans City Park. The two largest groups of clients are residential and commercial, but the mix changes. After storms, for example, municipalities make up a larger portion.

Up to 95 percent of their business comes from repeat customers and referrals, which Benton attributes to Bayou’s philosophy: “Focus on a product and service, and good things will happen,” he says.

“Customers will refer you to people who have the same values as them. You end up with people who match yourself. Then do what’s best for the customer and the tree, be diligent and thorough, and follow up.”

They do every facet of tree care, from planting to removals to processing, selling and spreading mulch, but their general focus is on preservation, which consists of consulting, pruning, fertilizing, and bracing and cabling.

“I like the complexity of trees,” Benton says. “Because they live for a long time, it takes a long time to understand them. My philosophy is to study nature and how trees react under undisturbed conditions for 200 years, and to apply that to our everyday practices. They live a long time because of their genetics and the condition of the environment. Ninety percent of preserving old trees is not disturbing them. Most of what we do is for the structural integrity of the tree.”

Bayou Tree Service’s projects include tree valuations and construction planning and management. They have transplanted numerous large trees, some up to 53 inches in diameter.

Their tree care consists of pruning, fertilization, insect and disease control – especially for the Buckmoth caterpillar, storm damage repairs, crown restoration, root pruning, and lightning protection.
“Removals are also part of the job, even if they may not be your favorite thing to do,” he says. “Especially if the trees are hazardous. We try to preempt failure.”

They also have an online tree inventory to manage clients’ trees, which was proposed by their sales manager, Lee Stansberry. It saves customers time and money, and provides them with better service.

“We came up with criteria for what we were trying to achieve and hired a programmer to develop the software,” Benton says. “We can put together a project to identify the trees on a site, color code the trees according to which criteria is the most important to address, and put it on Google Earth.” Clients can see their tree inventory on a map on the company’s website, make a decision about each tree and then monitor the work the company has done.

For example, he says, the tree inventory can identify hazardous trees on school campuses. The schools can decide whether or not to keep each tree, and what steps to take to reduce the danger posed by the ones they decide to keep.

For customers who are concerned about lightning strikes, it identifies the tree species most vulnerable to the strikes, their height, their proximity to metal and their elevation.

A tree inventory can help property developers plan their buildings. It identifies all the trees on a site, and if any are significant, such as old oaks, the buildings can be designed to accommodate them.

The company has 40 employees, many of them long-term. “You have to take a long time finding good employees and taking care of them,” Benton says. “They’re
everything. You can’t function without skilled, dedicated people. Hire people who really like what they do. That’s a certain breed of person.”

Then, he says, “Give them the right tools. Pursue quality work. Find high-profile jobs they can take pride in. And make sure they work safe. When someone asks you to do something that doesn’t match your capabilities or expertise, or when they ask you to do something unsafe for the manpower and equipment on the job, say no.”

Bayou doesn’t advertise, but they do community service projects such as reforestation in urban areas and work on historic trees. “We like to think what we’re doing is going to benefit our city or the citizens of our city,” he says.

In March 2010, Bayou was the second company in the state to earn TCIA Accreditation.

“It was something we felt was important, to separate ourselves from the other tree care companies as far as capability, professionalism and expertise,” says Chris Fabre, Bayou Tree Service’s general manager.

The process only took about four months, partly because the company has a relatively large support staff with a lot of experience and education, he says. Jim Cuicchi, lead generation coordinator, delegated the work to the relevant people. Scott Greenfield, the production manager, did an especially large portion, says Benton.

Everything went very smoothly, Fabre says. “We were already a well-run company. There were some things we had to tweak, but for the most part everything was good to go.”

Most of the changes related to paperwork. They updated their business plan, they began documenting their processes, and they separated their personnel and medical files.

In addition to giving them a competitive advantage in some larger projects, Accreditation gave the company other benefits, Fabre says.

“Accreditation helps companies get better organized and think of things they might not have thought of, which can help them make better business decisions and protect them in liability situations. It also keeps you on your toes. You know you’re going to be checked from year to year.”

Benton adds, “I’m very proud of the tree industry. I’ve seen it grow from a somewhat primitive profession technologically to one that is very professional. That’s due mainly to professional organizations like TCIA.”
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“It’s just business, it’s not personal,” is a commonly used phrase, but a lie at the same time. We once brought in a top client who had spent a career working with Ross Perot at Electronic Data Systems (EDS). I wanted our client to talk to our sales people about business and relationships. He opened up his talk stating that in all business it really is first personal, then business. I believe he had it right and it also extends to how we look at safety.

There are many reasons to build a strong safety culture: keeping OSHA at bay, lowering insurance costs, keeping owners out of jail, etc. All of these are good business reasons and yet the most compelling argument for a culture of safety is that it is the right thing to do. We know from the research on safe companies that they are often also the most profitable companies. When you “do safety right,” you also have the systems in place to “do business right.” Yet at the heart of the best safety programs is a passionate, personal desire to ensure that no one gets hurt.

That personal desire for safety is what drives the best safety programs. It usually begins with a story, an accident or knowing someone who was killed doing tree work. When I was on the board of the National Safety Council, I listened with intensity to our board chairman talk about his safety story, his personal compelling reason for safety. He had been a young safety professional who had just joined a company and within the first couple of weeks he was called out to a jobsite where there had been a scaffold accident.

When he arrived, he saw that the scaffolding at the construction site had collapsed and there was not just a fatality, but dozens of fatalities and hundreds seriously injured. Safety had become very personal for him in that instant and created a memory that served to fuel the passion for safety within his heart for the rest of his life.

When I talk about safety I invariably talk about my personal safety story, the incident in Virginia that nearly killed one of my teammates. It’s been many years now but I remember like yesterday, still, (being in) a small 10-by-10 private waiting room in the hospital while our teammate was undergoing surgery to save his life. Ron Rubin and Scott Prophett were in that same room with me trying to comfort the wife of our teammate. The accident was traumatic on all of us yet he survived, went on to have a beautiful family, and Ron and Scott moved forward in life to be some of my safety heroes, making positive impacts in our industry.

Often when I tell my safety story people in the audience have a look in their eyes recounting their own personal story, something that has impacted them in their life. When I give people the chance to talk about their own safety story with the people sitting around them, the room erupts in vigorous discussion. I watch people using their hands to describe trees that fell the wrong way, cranes that tipped, slashes that occurred to the face, etc. There is an energy in the room when these discussions occur because these stories mean something. The stories are personal.

The purpose of this exercise isn’t to bring out the gore as much as it is to trigger some emotions deep down inside. I’ve watched people tell their story and the emotions are right at the surface. Others never really thought about it until they start telling their story to a stranger and the emotions stir. We all express and process emotions differently, but we all have them – even those people you swear don’t have an ounce of emotion.

It is the emotional attachment and experience that shapes one’s drive for safety. The emotional trigger from an accident can become the most powerful “why” someone needs for safety. The bigger the “why” the more driven one can become when it comes to building a safety culture. It is important to take some time to think about your personal safety story and, even more important, to share it with others. The people you lead need to understand where you are coming from, and telling your story is one of the best ways for them to get that.

The personal safety story is also the basis for creating your personal safety vision. This is simply taking your story and forming it into your “safety battle cry.”
Your personal safety vision doesn’t need to be fancy nor long, but it is certainly OK if it is … your vision. A personal safety vision is an important call to action for a leader and can become his or her North Star for decisions made regarding safety.

My vision statement was formed years ago when my team embarked on a process of creating a safety statement for the company. We liked something a large oil company used: “No One Gets Hurt.” Because we had a very strong family feel to our company, we added “In Our Family,” and the company safety vision statement became, “No one in our family gets hurt.” It rang true with me and became my personal statement going forward. It is still my call to action at home and on the job as it just makes sense to me and links to my personal safety story.

Many companies have safety vision statements for the organization and they can be very good. Bartlett Tree Experts used a totally company process to come up with “Safety Above All Else.” It is excellent and drives what we do in the company. It appears at the top of agendas and can be found in the email signature of many of our people.

My personal safety vision statement totally relates to our organizational vision and one enhances the other. Often, however, a safety vision created by someone else just doesn’t resonate with an individual. This is why it is so important to work on your personal safety story and your own vision statement. In the end, your actions around safety have to come from a connection you believe in and something that moves you to positive safety actions. I’m not talking about just being compliant with company policies and industry safety standards, but a personal call to action that drives you even further. Your safety vision has to push you out of your comfort zone and take you to an even higher place when it comes to safety leadership.

I watched this unfold when a number of teammates began to stop at crews from different companies and offer personal protection equipment to crews who weren’t using it. This process became somewhat of a culture of people stopping to try to help others, the industry and also themselves when it came to safety. Those who had strong safety visions felt compelled to help others and to offer a way to make them safer in the form of PPE. I’ll never forget one of our sales people stopping at another company’s jobsite to offer a couple of hard hats to the PPE-less crew. As he was taking a picture of the jobsite he screamed at a ground man who was pushing a log into the chipper with his foot to stop. The guy had no idea he was putting himself at risk by pushing a log in that way, and perhaps that salesperson saved his life that day.

One day in Chicago we were setting up an experiment with biochar in downtown Chicago and had attracted the attention of a major TV station who wanted to know what we were doing. Their cameraman set up his camera in the parking lane of the street to get the interviews. I watched our teammate, Elden LeBrun, move out into the street with his safety vest and PPE on to protect the cameraman from the oncoming traffic. It was amazing to see Elden do this on his own, driven by his own personal safety vision.

During a day of service at Arlington National Cemetery, Bartlett had donated services to install lightning protection in a large tree on the grounds. As I headed to the site, I noticed the crew getting set up and Rob Springer, one of our safety and training coordinators, sitting down with a clipboard, his PPE on. “What is he doing?” I thought as I walked up, and then he gave me the “Sshhh” sign and pointed to his phone that was laying on this clipboard. Rob was conducting a morning safety call for his entire division, something they do every week. All managers and other key leaders in his division were on that call to discuss any accidents or incidents that occurred that week. This is a weekly, you-do-not-miss call that is in addition to weekly tailgate safety sessions that happen in each office. Rob was about to be filmed by a CNN news crew at Arlington, yet his safety call was something he was not going to miss – it is that important. His personal safety vision would not allow him to deviate from what was more important that morning.

I know all three of these individuals

This was not a staged photo. The photographer yelled at the operator while taking this photo, telling him to stop what he was doing, i.e. to get his leg out of the chipper chute.

Rob Springer (seated, left) with his blue phone leading his weekly divisional safety call while at an Arlington National Cemetery day of service.
believe in the company safety vision without question, but I also believe what moved them to action was their personal safety vision. In each of these cases an individual was moved to do something a bit differently than most would. They weren’t just being compliant with safety; they were leading with safety. None of these safety actions were necessarily highly visible, in fact the opposite is more on target. Subtle little things that reduce risk are often the best path toward positive safety results. When safety leaders begin to do things others don’t, they set the tone and become role models. Yet, these positive safety behaviors need to be called out and shown for what they are, as most people may miss the subtlety. Safety leaders begin to look for the “little things” they can do to reduce risk and improve safety.

Here are some things you can do right now:

1) Think about your safety story. What would you tell if someone asked you to recount a situation that has moved you around safety? Begin to write your story down. Maybe it is just a few bullet points; maybe it is a book – whatever works for you to pull the story together and enhance its meaning for you – not for others, for you.

2) Turn your story into your personal safety vision. How does your story create a call to action for you regarding safety? Maybe it is one word. Perhaps it is a phrase or a series of phrases. Your safety vision should push you beyond compliance and toward leading with safety.

3) Share your story and personal safety vision with your team. Maybe it is your two person crew. Perhaps your branch office. Maybe your entire company. Whoever you help lead around safety needs to know where you are coming from. Your “why” will always be stronger than your “what.”

As you develop your personal safety story and vision, you may find that you become more passionate about safety leadership. You may find that when you make that very personal connection to safety, people begin listening to you in a different way, and you may discover that it is because you are now communicating in a different way. People connect to those they believe are coming from a place of the heart not just the head. People follow those who they trust and feel are sincere.

Safety leadership is highly personal, just like business is, as I was taught years ago. When the personal aspect is ignored or marginalized, you may or may not get safety compliance. If you can tap into the personal side of safety, you unlock the door to safety leadership, and those subtle safety actions few notice begin to help teammates work safely.

Scott Jamieson is vice president of corporate partnerships & national recruiting for accredited TCIA member Bartlett Tree Experts. This article is based on the presentation he made on the same subject at TCI EXPO 2013 in Charlotte this past November. To hear the entire audio recording of that presentation, go to this page in the digital version of this issue of TCI Magazine online at www.tcia.org, under Publications, and click here.

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Worker dies in fall from palm
Nicolas Obispo, a worker, died in fall from a palm tree in Los Angeles, California, December 6, 2013, according to an OSHA accidents summary at www.osha.gov.

Tree trimmer seriously hurt in fall
A tree trimmer was seriously injured December 13, 2013, when he fell about 40 feet while working in Davidsonville, Maryland. The 31-year-old man was taken by helicopter to the Maryland Shock Trauma Center in Baltimore with injuries that were serious but not life-threatening, according to a report in The Capital Gazette.

Tree worker killed in struck-by
A tree worker died December 19, 2013, in Blacklick, Ohio, after a limb from the tree he was cutting struck him, and he fell to the ground, according to an OSHA accidents summary at www.osha.gov.

Worker hurt when van hits tree truck
A Deford, Michigan, man, 28, was hurt December 27, 2013, in Marlette Township, Mich., when the tree service truck he was driving was struck by a second vehicle. Steven Walther was driving south on M-53 when a northbound van driven by Marshall Lacross Jr., 50, of Fraser crossed the center line and collided with the truck, according to a Sanilac County News report.

Man injured in tree trimming accident
A Raleigh, North Carolina, man was seriously injured December 28, 2013, while trimming a tree outside of a home, in Raleigh, according to a WRAL-TV5 and WRAL.com report.

From the video of the scene, the accident appeared to involve a homeowner using an aluminum extension ladder and an extension cord, presumably for an electric chain saw.

Editor’s note: While all accidents are serious and we want to get the number to zero, we ended 2013 on a somewhat positive note; this is one of fewest accidents reported for a month since we began reporting them by month in TCI in 2010.

Missed November accident:
Worker killed by cut tree
A worker died November 21, 2013, after he was crushed by a falling tree at a site being cleared of about six acres of trees for a parking at the University of Notre Dame in South Bend, Indiana. Mark Ellsworth, 22, of Mishawaka, Ind., an employee of a small excavating firm. It was unclear what caused the accident. Preliminary autopsy results indicated Ellsworth died from blunt-force trauma to the torso, according to a South Bend Tribune report.

Submitted by Patrick Oszuscik.
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By Christopher Roddick

Ask any arborist why people hire them and, more often than not, the number one answer is fear. People do love their trees, but most call an arborist because they are afraid of big trees that are close to their houses falling or of large branches breaking. While there are many reasons to hire a tree care professional, it’s fear that actually makes people open their wallets.

The fact is, trees do fall over and do hurt people – that’s why tree care is so important. But how afraid should we really be? The odds are much greater that a person will die falling out of bed (about 500 a year in the U.S.) than being killed by a falling tree (fewer than 50). People’s fears don’t always match the likelihood of bad things actually happening, because one of the down sides of having a large brain is also having a vast imagination. The fear of trees is just one of the challenges arborists and land managers face when they seek to preserve larger, older, and sometimes dying trees in the landscape – those we refer to as “veteran trees.”

Assessing the value of trees

In the past few years, the term “ecosystem services” has become the latest buzz-term that professionals use to convince people in towns and cities to spend money on green initiatives such as tree planting and other programs focused on young trees. Ecosystem services reflect a plant’s direct value to humanity and provide a way for us to assess a tree’s ability to do things such as reduce storm water runoff, noise, air pollution, and urban heat-island effects.

Planting new trees is a fantastic ambition; the old saying goes that the best time to plant a tree was 20 years ago, and the second best time is today. But it can take 25 to 30 years before a new tree is large enough to start giving a return on an ecosystem service investment: the environmental costs associated with growing and planting a tree are far greater than those the tree provides until the tree has reached a certain age, size, and output level. The sad truth is that the survival rate of new plantings in many cities is not great.

Studies show the average life span of a city tree in the U.S. is about 7 to 13 years. On average, suburban trees survive only around 30 years after planting. If cities and towns had better programs to preserve the older trees they already have, they could get even more benefit for the buck when it comes to the environment.

Maximal tree ecosystem services come from larger, older trees with sizeable root and canopy masses. One would think that this alone would be enough to convince people that veteran trees are worth the time and money to protect. But in our over-built, urban/suburban environment, veteran trees are competing for the same precious real estate (both above and below ground) with everyone and everything else. And that makes development another major reason we don’t see many veteran trees in our town and cities.

Urban trees

Oddly enough, tree planting initiatives themselves can sometimes be a culprit in mature tree removal. City officials and builders have a far easier (and sometimes more profitable) time removing older trees for development when they are allowed to simply plant multiple new trees to “replace” those removed. Unfortunately, given survival rates and the pace of land development, many of those new trees may never reach the point of providing a net ecological benefit, much less equaling the benefits of a mature tree.

So why are these old trees so valuable to our urban areas? We know that most peo-
ple value historical trees or those with cultural importance – they give us a sense of place and a sense of history – but we are only beginning to understand the importance of veteran trees’ biological complexity and benefit to the environment. Habitat, soil stabilization, carbon sequestration, and air quality improvement are just some of the benefits trees give us, but shade itself may be the most important for those of us in urban areas. Tree shade not only keeps soil temperatures cooler but also cools our homes and streets. As the climate warms, tree shade in cities will become only more important. Mature trees can also raise neighborhood property values, reduce airborne particulate matter, and lower local asthma rates.

Tree shade keeps us happier, healthier, and less stressed on a hot summer day. It can be 10 degrees cooler under the shade of a tree, but that’s not just from blocked the sun. The leaves of a tree are constantly transpiring a fine mist of water pulled up by the roots that then cools and freshens the air. A mature oak can transpire as much as 100 gallons of water a day in this fashion. In addition, tree shade is better ecologically than shade from a structure because leaves filter rather than block light, allowing understory plants to grow.

Adopting a new model for trees
We may require a new way of thinking about trees in cities in order to properly protect them. The textbook picture of a healthy and safe tree is often quite different from the aesthetic reality of the veteran trees around us. The fact is that even dying trees can be beautiful, in addition to environmentally beneficial – even as they die, a process that can take decades or even centuries.

As a tree senesces, its decaying wood becomes food for fungi, cavities become homes for birds and animals, and ultimately the whole tree becomes fertile soil for new trees and plants. The roots of veteran and dying trees can use up to 40-60 percent of their photosynthetic byproducts to exude nutrients into the soil, thus enriching the environment for future trees. It’s a magnificent cycle of life, and it would be wonderful to see it take place in more backyards and neighborhood parks.

More and more, we look at trees not as lone organisms but as the heart of “tree-based ecosystems.” Veteran trees provide food, shelter, and oxygen to thousands of organisms, including ourselves. One mature oak tree can supply the bulk of nut forage for many animals like squirrels, deer, raccoons, and even turkeys, if you’re lucky enough to have them living nearby. According to Douglas Tallamy, in his wonderful book Bringing Nature Home, oaks support more species of moths and butterflies than any other tree, thus providing food for all types of birds.

Age-appropriate care for trees
Still, the risk of older and dying urban trees causing damage as they fall apart is a reality, but one that can be managed. Too many mature trees are condemned due the lack of understanding of tree biomechanics and true risk of failure. What can we do?

The first step is age appropriate tree care (AATC). From a tree’s juvenile years to its later stages, each phase of life requires its own style of management, one that focuses on the tree’s needs and development at that time. For example, in a tree’s Formative Stage, proper planting and after-care (watering and mulching) are most important. Once the young tree is established, solid structural pruning and training should be the focus. The tree’s Mature Stage should involve less pruning, except for safety, and more protection and monitoring. Protecting the tree’s root zone and maintaining proper soil biology (noninvasively)
are also critical for a mature tree.

For very old or dying trees, techniques such as retrenchment pruning to reduce canopy, cabling and bracing to support limbs, root monitoring, and safety evaluations become important. Many arborists may have some of these skills, but there are situations, such as risk evaluations and organic soil work, that require specialists. The care of veteran trees in itself can be a specialization some arborists study and practice, like physicians who specialize in human geriatrics.

In the end, if we want to make our built environments healthier and more ecologically sound, we need a diversity of both tree species and ages. Veteran trees should be preferentially protected and preserved. In order to do so, we will have to convince people of their worth and invest in the resources necessary to care for them. By protecting these titans of ecology, we can bring beauty and environmental health to our landscapes for centuries to come.

Christopher Roddick is head arborist and foreman of grounds at the Brooklyn Botanic Garden in Brooklyn, New York. For more than 20 years, he has developed the garden’s tree care program and established the BBG as a leader in conservation arboriculture and veteran tree care. In addition, Roddick consults with landscape architects, designers, and private clients on mature tree preservation, tree risk assessments, and tree protection in construction and development sites, and is the author of The Tree Care Primer, a guide to care for young, mature, and vetern trees.

Roddick will speak on this same subject, Caring for Veteran Trees, at the 20th Annual ELA Conference & Eco-Marketplace, hosted by the Ecological Landscaping Association February 26-27, 2014, at the MassMutual Center in Springfield, Massachusetts. This year’s program, Sustaining the Living Landscape, will include a variety of sessions related to sustainable and ecologically sensitive tree, shrub and landscape care, including presentations by Dr. Nina Bassuk with the Urban Horticulture Institute, Cornell University; Dr. Richard Casagrande, integrated pest management coordinator and instructor at the University of Rhode Island, and many others. In addition, the Eco-Marketplace will showcase the latest products and services related to ecological landscaping. For more information, visit www.ecolandscaping.org.

This article was originally published in the January 2014 ELA newsletter (www.ecolandscaping.org).
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teach moral judgment at Melbourne Business School in Australia. The audiences I address range from MBA students to C-suite executives. Every time I present, no matter who is in the audience, there is one moment when I have the complete attention of everyone in the room. It is when I tell the story of what happened to my father when he was a 16-year-old concentration camp prisoner under the Third Reich in the late summer of 1944.

My father was a slave laborer working on a railroad construction site. He spent most of his long days carrying heavy steel rails up a hill, over and over again. After several months in the labor camp he started to doubt that he had the strength to keep going, fearing instead that he would perish along with so many others he had known.

One early morning during roll call an SS sergeant walked up to my father’s section and yelled, “Which one of you young inmates speaks German?” Acting solely on instinct, my father raised his hand into the air. He followed the officer, and saw a man waiting for him in a long leather coat. My father panicked. “What have I gotten myself into?” he wondered. The man had the dark and neatly dressed look of a Gestapo officer, and my father was sure he had made a very bad decision.

But then the man introduced himself. My father was stunned: he had been nothing but a number for months; no German had ever bothered with the basic decency of an introduction. The man explained that he was a civilian engineer who needed an assistant for his work. His job was to conduct a survey for a new road through the forest, so he needed someone to help carry the equipment. My father immediately understood that this job would be much easier than carrying steel rails. They headed off into the forest to begin their work.

As they walked side-by-side through the forest on their second afternoon of work, the engineer said to my father: “I can see what a horrible situation you are in, and I want to do something to help you.” He went on to explain that while he couldn’t assist him openly, he could obtain some food for him. He told my father that there was a barracks in the woods where he ate his lunch with the SS officers. He had hidden some food in a corner, under a bench, knowing that the building would be empty at the end of the day.

Toward evening, as they neared the perimeter of the camp, the engineer pointed to the barracks. My father hurried to the far corner of the dark building. As promised, under the bench he found foods he had not seen in months: chicken, rice, and milk. He drank the milk, took some quick bites of the food, and put the rest in his pockets to share with his friends in the camp.

For the two extraordinary weeks that he worked with the engineer, my father supplemented his daily intake of stale bread and putrid watery soup with food stolen from the SS kitchen. As the days passed, he grew sturdier. The boost to his wellbeing was more than physical: the fact that this German cared enough to take great personal risk to feed him restored some of my father’s faith in human beings. Indeed, my father credits the engineer with saving his life.

As everyone in the audience is sitting there wondering whether they would have been as brave and compassionate as that man had been, I state a critical point: the engineer was making a moral judgment about how to treat his labor.

It is unlikely that any of us will ever be faced with such a stark life-or-death decision – remember that the engineer’s generosity and courage could easily have cost him his life. Yet executives often make choices that help or harm others in significant ways. For example, when trade-offs...
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are made regarding worker safety, or when decisions are made concerning healthcare insurance for employees, lives are on the line. And sometimes, under the pressure to make our quarterly numbers or to get a task completed on time, compromises are made and corners are cut.

Bad moral judgments are commonly due to our tendency to frame problems too narrowly. Often our boss or our board provides this framing for us. But when facing moral decisions, narrow frames are dangerous. Instead, widen the frame by asking how your decision will affect the business and its reputation in the long term. Consider how your choices will affect your sense of yourself as an ethical individual and as a role model for others.

I often wonder about the final days of the civilian engineer. As he took stock of his life – the deeds he had done and the choices he had made – was he consoled by the knowledge that he had once shown such generosity to a young and desperate boy? Did he, I wonder, know that he had done something of great moral significance? Did he perhaps fear that he had not done enough? And did he, in the end, feel that he had made choices to be proud of?

We are unlikely to ever ask ourselves a more significant question than that last one. When we face real moral quandaries, we should look for the broadest of frames, and there is perhaps no larger frame than wondering how we will judge ourselves as we near the end of our lives. So when the pressures of business are pushing you toward an ethical misstep, try to remember the engineer who did his job with such extraordinary moral courage. If he could risk his life for my father, then we can overcome the constraints of tight budgets, quarterly pressures, and demanding colleagues.

Jill Gabrielle Klein, author of We Got the Water: Tracing My Family’s Path through Auschwitz, earned a doctorate in social psychology from the University of Michigan and is currently a business professor at Melbourne Business School at the University of Melbourne, Melbourne, Australia. In We Got the Water, published in April 2013 and available at www.amazon.com, Dr. Klein shares her family’s harrowing experience as prisoners at Auschwitz concentration camp. For more information, visit www.wegotthewater.com.
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ISA Cert. Arborist, NYC Metro Area

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TREE CARE INDUSTRY – FEBRUARY 2014
Arborists in northern climates often work outdoors in cold temperatures, and being prepared can make you more comfortable, more productive and, most importantly, enable you to work more safely. Here are a few tips on how to do so.

Understanding the forecast

The first step is to learn more about the weather for the day so that you can choose the appropriate clothing. The best source of weather information that I have found is the National Oceanic and Atmospheric Administration’s website (www.noaa.gov). You can find local weather forecast and statistics that are useful in planning your work day. Satellite information can help you determine what is happening in your region. Understanding the wind-chill factor, the types of precipitation that are expected, and even when during the day the weather is changing, can all be very useful information.

Clothing

Once you know what Mother Nature has in store for you, the next step is to choose the proper clothing. Think of your clothing as a system that you will constantly monitor and change as you go through the day.

To begin, you must understand that your body has its own way of managing temperature changes. As you get too warm, your body sweats, typically through sweat glands located all over your body. As your body gets cold, it limits circulation to the extremities to maintain core temperature.

The activity you are engaged in will effect whether you will be generating excess heat or not. Standing on the ground waiting for the climber could produce a chill; conversely, the climber ascending the tree could produce a sweat. These will most likely be reversed at some point as each worker either exerts enough energy to hit that tipping point or not.

Dressing in appropriate types of clothing and in layers is the key to maintaining proper body temperature. As your body becomes overheated, you can remove layers to help lower your body’s temperature. Conversely, as you cool down, you will need to add layers to maintain warmth.

Base layer: This first layer of clothing needs to be made of synthetic or natural fibers that perform a few different functions. First, it must be able to maintain warmth even if it gets wet (which it will from perspiration). “Cotton Kills” is a term commonly used by outdoor professionals and enthusiasts because cotton does not have the ability to retain heat once it gets wet. Furthermore, cotton traps moisture, holding it against your skin. Synthetics, such as polypropylene, and natural fibers, such as merino wool, actually wick moisture away from the body and retain your body heat even when wet.

An arborist well dressed for winter. Courtesy of the author.
make sure that the clothing that I choose is going to not only work properly, but is comfortable to wear.

**Middle layers:** Again, you want to stick with synthetics or wool. Try to use items that provide some additional functions such as wind proofing or water repellency, but be sure that you don’t get items that are too bulky, especially if you are climbing. Try to find clothing that has the ability to stretch and move freely as your body moves, without exposing your midriff. This can be difficult because many clothing manufacturers do not account for our aerial acrobatics! Look for gear that is specifically made for climbers.

Keep in mind that at some point during the day you will probably strip down to this layer. A fleece or quality wool jacket with cuff closures and a couple of pockets work well. I do not like “hoodies” because they are typically made of cotton, the hood itself does not work well with a helmet, and when I am chipping brush, I worry about branches snagging the large front pouch.

**Outer layer:** This consists of two primary components covering your legs and torso. A jacket acts as a shell and needs to be able to repel whatever Mother Nature is throwing at you. Windproofing and water repellency are important, but the ability to breath is critical, too. As your body perspires, your base layers are wicking that moisture away and you don’t want it to be trapped by your outer layer. Fabrics that offer breathability such as Gore-Tex are excellent choices and some technical clothing will offer options such as zippered armpit vents for fast air exchange. You can simply open up your vents without having to take off the outer layer when you are producing a short burst of heat, such as when ascending a tree.

Unlike clothing that was made specifically for rock and ice climbing, newer clothing manufactured specifically for arborists has similar functions, but much better tear resistance. I still cringe at the day, many years ago, when a branch ripped through my very expensive mountaineering jacket!

I personally am not a big fan of hoods, but if you choose to purchase a jacket with one, you should be aware that some do accommodate helmets. I do like to have a collar that can zip up to keep my neck warm.

For pants, I prefer wearing chap pants over my base layer. They come in winter and summer styles, and on warmer winter days when I know my activity level is going to be high, I will wear my summer-weight chap pants over a base layer. On days when I know my activity level is going to be lower or if the temperature is below, say, 25 degrees, I will wear my winter-weight pants. Chain-saw chap pants come in a variety of styles and you should choose ones that best fit your type of work. Those made for loggers offer great protection from wind and snow, but have less mobility; ones made for arborists have the greatest mobility, but may have somewhat less protection from the elements. Be aware that if you are using clip-style suspenders, they may be uncomfortable under your climbing harness!

**Hats:** Approximately 80 percent of heat loss occurs through your head and neck. Managing your body temperature begins with a good helmet liner, neck gator or balaclava. This is often going to be your first option in managing your body temperature. I typically carry two or three “hats” with me each day.

The first is a thin skull cap made of synthetic material that fits snugly on my head and under my helmet. I choose ones that do not have large seams because they are uncomfortable under the helmet.

I also have a balaclava that also fits nicely under my helmet, but covers much of my face and all of my neck. On extremely
cold days, I wear the two in combination. Make sure that they fit nicely under your helmet and hearing protection system.

Lastly, I bring along a thicker hat that I can put on during long breaks such as lunch, crew meetings or talking with clients.

Feet: Ah, yes, we have all had cold feet and not just from some trepidation about the job! Since our body maintains core temperature by limiting circulation to the extremities, our hands and feet are the first to get cold. Your feet should get the same treatment as the rest of your body using synthetics and layering. Make sure that your socks fit well inside your boots and are not too tight or too loose.

Hannah O’Connor, a Certified Arborist who lives and works in Saranac Lake, New York, which is often cited by meteorologists as being the coldest place in the nation, has found stockings to work well as a base layer. They are lightweight, fit snug and relatively inexpensive. Unisex compression stockings made of nylon, spandex and other wicking materials aide in circulation as well as work as a base layer for the feet and lower legs.

Warm, durable socks can be hard to find. Make sure they do not have any cotton content and be prepared to pay a small fortune!

Good boots are incredibly important for warmth and safety. There are hundreds of boots on the market and you will probably find that just one pair will not perform on every job, but there are a few things you should look for. Chain saw protection in boots is not mandatory for our industry, but in the winter time it is a good idea. You may be standing in snow while limbing trees and slippery conditions are often the norm in the winter time.

There are two main types of boots to choose from and each has its own advantages and disadvantages. Rubber boots offer excellent protection from wet and cold. They are easy to slip on, have wool felt liners and are relatively inexpensive. Most logger type boots offer the ability to apply calks (or caulks, cleats) to the bottom for added traction. The problem with rubber boots is that they are not conducive to climbing. If the soles are too flexible, they can get wedged in crotches of trees and they do not fit well with climbing spikes. They are also somewhat difficult to wear if you are doing a lot of walking on rugged terrain.

Leather boots are extremely comfortable for walking and climbing and they do come with chain saw protection. The problem with leather boots is that they do not repel moisture as well and they are often much more expensive. The moisture repel-

lency can be solved to a degree by using water repellency products to apply to the leather. This also increases the longevity of the boot. You can also use these boots in combination with a pair of gaiters, which are water repellant, highly durable short leggings that fit snugly over the boot and ankle area. They also help keep the bottoms of your pants dry.

You can add traction to any boot by purchasing a pair of crampons. Not the type that you would wear climbing Mt. McKinley, but rather a toned down version that is available at many outdoor suppliers. We have found these to be invaluable for safety on some jobs that have difficult terrain or are just plain icy.

Hands: We work with our hands and good gloves are the key to providing warmth and safety. Trial and error will eventually lead you to a combination that works well for you and your situation, but remember the basic concepts that we have already applied to the rest of the body. Use synthetics and layers whenever possible. I typically carry one pair of mittens and a couple of pairs of gloves on every job. I
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choose gloves that I can wear even while tying knots and working carabiners when I am climbing. I often choose gloves with a leather palm if I am running ropes on the ground or cutting wood and dragging brush.

Mittens are good for warming your hands in between activities and I will sometimes tuck them inside my jacket to keep them warm. When choosing mittens, you can explore options like a water proof outer shell, trigger finger for more dexterity and even a combination of mitten with a glove liner so if you need to pull the mitten off, you can tie a knot or work a connecting link without freezing your fingers!

One trick that works for some people is to use hand warmers inside your gloves or mitts or even keep them in your pockets for a quick warm up.

It makes no sense to get dressed in all of your gear, and then hop into a warm vehicle to drive to the job site. You will begin sweating before the job begins. Minimize your layers until you need them, and then add or subtract frequently to maintain optimum body temperature.

Be sure to eat healthy and drink lots of fluids. Even though you are not sweating as much as you do in July, your body is still working hard and needs rehydration.

Maintaining your gear is important. Each article of clothing should be dried each night. Boot dryers work well for drying thick heavy work boots in a hurry. Taking your boot liners out may help, too.

**Equipment**

Other gear will need special treatment in the winter as well. Climbing and rigging gear will need to be dried out each night and it is a good idea to check your carabiners and connecting links more often to be sure that they are working properly. Chain saws may need some extra attention as well. There is a cold air setting on the carburetor and you will want to switch to winter weight bar oil. Be sure that the chain brake mechanisms are clean and working properly. It is possible for these mechanisms to freeze up and not work properly if they are not maintained.

Sharpening and chain tensioning are somewhat different in the cold weather as well. Check your manufacturer’s recommendations for details.

Other considerations should be taken as well. Have you practiced an aerial rescue in the winter? If you live in a remote area, you should consider having a sleeping bag in the truck to help keep a victim warm. Have you thought about how wood reacts when frozen? Are you prepared for winter driving? Do you know the signs of hypothermia? Does your company have a policy that outlines safe working weather conditions?

Working in the winter poses challenges, but with some careful thought and preparation it can be done safely. Stay safe and stay warm!

Daniel Groves has been an arborist for more than 20 years, owns and operates a small tree care service, and is an adjunct instructor at Paul Smiths College, a private forestry college in the Adirondack Mountains of upstate New York.
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Safety on Facebook

Interesting the # of weekend vs weekday accidents. Is this a case of overworking crews? “Johnny one-truck” making an extra buck? Weekend warriors/homeowners doing the work on their own? Whatever the case it is sad and in most cases preventable? My thoughts to my fellow arborists.

Chad Turner
on TCIA Facebook page

Editor’s note: Linnie Leavines, TCIA’s Web & Marketing Assistant, publishes the “Accident Briefs” blog post on TCIA’s website each month, often also mentioning it in a post on TCIA’s Facebook page (https://www.facebook.com/TreeCareIndustryAssociation). This note was in response to the January posting.

TCIA is in the midst of summarizing the 2013 accidents, after which we may be able to provide more insight to address Chad’s point.

Send Tree News Almanac items to: editor@tcia.org

TCIA Members On the Job

About 60 tree workers and others attended a Chipper Operator Workshop January 15, 2014, in Livermore, California. Dan Kallai, CTSP and TCIA approved instructor with TCIA member NW Line JATC in Grants Pass, Oregon, led the workshop, which was hosted by Cal-Line Equipment.

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Colorado’s first biomass plant goes on-line

Colorado’s first biomass plant, which went online in December 2013, will make energy from beetle-killed trees. The $56 million facility in Gypsum, Colo., developed by Eagle Valley Clean Energy, burns wood to create heat. The resulting steam will power a turbine, generating electricity.

Colorado has millions of acres of beetle-killed trees. According to a Colorado Public Radio report, some of them in a 75-mile radius of Gypsum will be cut into wood chips and trucked to the biomass plant. The facility will burn them to create enough electricity for 10,000 homes. A local utility in the area will buy the power.

Supporters hail the plant as a way to boost renewable energy and improve forest health, potentially reducing the severity of fires by removing some beetle-killed trees from forest land in the area.

In addition to trucking in wood from forest land, the plant will rely on wood waste contributed by the Eagle County Landfill. The plant will help the utility reach the state-required goal of acquiring 20 percent of its energy from renewable sources by 2015.

A big issue has always been being able to guarantee a steady fuel supply for biomass energy production, which the volume of beetle kill in the state helped resolve. The U.S. Department of Agriculture provided a $40 million loan guarantee.

Opponents have concerns with what the 250 tons of wood that’ll be burned daily will do to air quality.

Eagle Valley is deploying state-of-the-art filters that it says will scrub all but a tiny fraction of emissions. Colorado’s Air Pollution Control Division issued a permit for the plant in October 2012.

Sen. Mark Udall (D-Colorado) is one high-profile supporter. During a tour, he called the biomass plant a win-win-win proposition, boosting renewable energy, improving forest health and creating jobs. The facility will employ about 40 people.

“This is cutting edge,” Udall said. “It’s pioneering, and we’re here to tip our hats to the owners who have invested in it.”

He says a handful of other biomass plants are in development in the state.

The one in Gypsum will slowly ramp up with full output expected this spring.

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As I was driving to the local green waste recycling center to dump logs, branches and leaves, my flip phone rang. Now, I am concerned when I see people texting and driving full speed through red lights, but a flip phone is fairly easy to answer, so I picked up. It could be important business.

Instead, on the other end of the line was an upset fellow road traveler. My dump truck was loaded with the logs from the removal. As is customary, we thoroughly raked the yard and cleared it of leaves and debris from all the trees, not just the one we removed. An extra good clean-up gets noticed! However, because our chip truck was already off site, we decided to dump the extra leaves in and around the logs on the dump truck.

The irate caller related that leaves were blowing out of a truck with the Apex name and phone number on the door, and onto the street. At that moment, looking into the mirror of my '63 Ford dump truck, I realized it must be me she was calling about. Sure enough, there were leaves blowing out of the dump bed.

She insisted that she must immediately speak with the owner of the company. I thought for a moment, then, confessed I was the owner. As she rambled on with an angry tone about these leaves littering the city, as if they were Styrofoam cups, dirty diapers and plastic bags, I resisted the urge to explain the concept of biodegradable materials. I assured her that when I got to the shop, the employee in question would be sternly reprimanded for littering the city.

It seems she was reassured and calmed by my professional conduct on the phone. My only concern today is how this woman handles the fall. So many leaves...

I strive to remain calm and just try to educate, if I can.

This encounter brought back memories of 25 years of working in the tree care industry and interacting with customers and potential customers. Often, I would get the question, “Why are you cutting down the tree??” Now, even when I had just begun cutting trees I still had years of studying and evaluating plant life. And the work can be arduous and test my patience to no end, even without questions from the sideline.

How to answer the question? Because it is dead? Because it is defective? Because it is a hazard? Am I supposed to give a seminar on tree health? I’m explaining concepts obvious to most of us in the field, and I am hot, sweaty, and wondering why my saw doesn’t run with all the juice I know it has. It is wearing me out.

I’ve been in a tree, climbing and pruning. From the ground of a commercial lot up comes a question, “Why are you killing the tree!” I am hot and sweaty. I feel too tired to explain that pruning trees helps them to live longer, healthier lives. But, I do explain.

At times like these, I think of electricians. If I tried to change out my breaker box, I might have a few dumb questions, too. We count on that electrician to be professional and conduct himself as one, just as we must. In the face of dumb and annoying questions, keep it professional.

And maybe carry an extra tarp.

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