

Elevating
Your
Environmental
Knowledge



sappi

Driving success. Sustainably.

Our industry is emerging from one of the deepest recessions any of us has ever experienced. We at Sappi can look back at some of the difficult decisions we were forced to make, including cost cutting and restructuring, and appreciate that these actions have made us stronger and better positioned for a sustainable future. But key to our current and future success is staying true to our core principles, including continued investment in people, products and assets that create value for our customers. So we have been steadfast in our commitment to our sustainability platform. We do not see our investment in sustainability—people, planet and prosperity—as a form of corporate philanthropy, but as core to how we will succeed and prosper as a business. It is an inextricable part of our overall business strategy. And for good reason.

Having a robust sustainability strategy, in good times as well as in down markets, has proven to significantly reduce our operating costs, eliminate waste, create energy efficiency, lower costs, strengthen our company's brand value and open up new markets.

So yes, environmental responsibility is not just great for the planet—it makes good sense for business. Which is what this issue of eQ is all about. Hopefully, you'll discover new and inspiring information to either embolden or validate your company's position around the financial benefits of sustainability.

You'll also be able to hear firsthand from four industry leaders who, in spite of recent tough economic times, have strengthened their business by continuing to champion sustainability.

As always, we at Sappi are eager to hear your thoughts. Please share your views with us at eQ@sappi.com

Laura M. Thompson, PhD
Director of Technical Marketing
and Sustainable Development
Sappi Fine Paper North America

3 important questions about the financial benefits of a strong sustainability strategy.

Does sustainable development cost more?

One of the keys to implementing a successful sustainability strategy is to find those projects that make good sense environmentally and economically. For example, earlier this year we announced a \$36 million investment in our assets at our Somerset mill, which will increase our capacity to use biofuels (black liquor) and reduce our reliance on fossil fuels. This upgrade will provide renewable energy capacity equivalent to 100,000 barrels of oil per year—and with the volatility of oil prices, even in down markets the project

provides a significant return on our investment. In other cases, companies may find certain efforts harder to measure in financial terms. Much like trying to measure the ROI of a marketing initiative, it is important to look for metrics other than dollars. For example, the payback of a strong commitment to sustainability in terms of employee engagement may be measured through reduction in turnover or improved employee satisfaction.



Do I pay more for Sappi products because of your sustainability investments?

In general terms, no. We are committed to bringing you competitively priced products that have the features and benefits you request, including an excellent environmental platform. We do this by reducing waste in all of our operations, utilizing Lean Six Sigma principles to drive productivity and efficiency, and lowering all energy costs. Again, environmental performance and low cost often go hand in hand. One exception is recycled

content. De-inked pulp derived from post-consumer waste costs us more than manufacturing virgin fiber from trees. So for some of our grades, we ask for an up-charge to add this fiber, and our customers can weigh the value vs. cost.

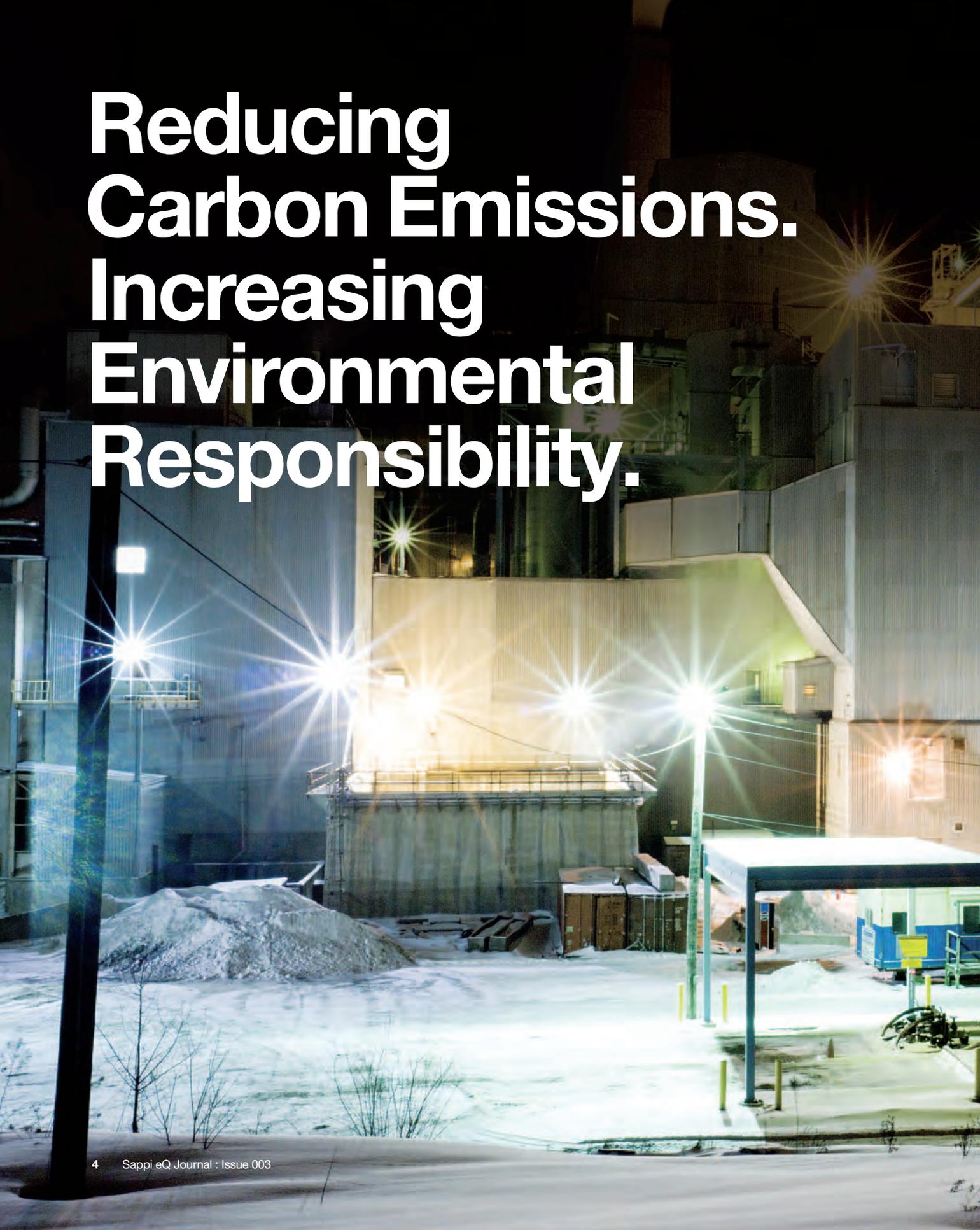


How does a company's sustainability platform reflect on its overall business strategy?

They really do go hand in hand. Companies that have robust sustainability platforms generally embrace the same transparency, commitment to reliable reporting, goal-setting and accountability principles that underlie the

strongest corporate governance structures—making them companies that customers trust, that employees want to work for and that investors are interested in investing in.

Reducing Carbon Emissions. Increasing Environmental Responsibility.



All too often manufacturing sites are miscast in an unfair light as it relates to environmental responsibility. However, when there is a corporate culture to continuously unearth new and innovative ways to be more sustainable, paper mills have the potential to serve as industry beacons for sustainable development. Case in point: **Sappi's Somerset Mill in Skowhegan, Maine.**





01

The kraft pulping process produces a high strength pulp by cooking wood chips in a digester with white liquor. The chemical reaction in the digester converts the white liquor to black liquor by dissolving the organic compounds, or lignin. Lignin is the material in trees that binds wood fibers together and makes them rigid, and it must be removed from wood fibers to create fine paper.

02

The resulting mixture from the digester is washed to separate the black liquor from the pulp.

03 & 04

Water is removed from “weak” black liquor by the evaporator system and resulting “heavy” black liquor is burned in the recovery boiler. During this process, the organic compounds are burned off to produce steam, while the inorganic compounds are reduced to a “smelt” in the bottom of the recovery boiler.

05

The smelt is dissolved in weak white liquor and becomes green liquor.

06

Green liquor is chemically converted back into white liquor by adding lime. The lime mud solids are settled out of the white liquor and recovered in the lime kiln for reuse. This completes the recovery cycle.

This year, Sappi Fine Paper North America has implemented a \$36M capital improvement project to upgrade the mill’s evaporators and recovery boiler—equipment that is essential to pulp and renewable energy production. This upgrade allows the mill to reduce consumption of chemicals and to generate renewable energy equivalent to 100,000 barrels of fuel oil. The energy generated is used throughout the operations in the form of steam and electricity.

The increase in renewable energy generation is a result of the boiler’s ability to recover more black liquor from the pulping process. While the process is complex (see diagram), the most salient takeaway is that black liquor is a renewable, carbon neutral fuel. When the heavy black liquor is “fired” in the recovery boiler, cooking chemicals are removed and steam is generated from the organic portion of the black liquor.

In short, the more black liquor that we can process and burn, the less fossil fuel we need to support the mill. The goal is to continue to find new ways to reduce our reliance on fossil fuels. Independence from fossil fuels not only lowers greenhouse gas emissions but helps to isolate the mill from fluctuations in energy prices—making us a more profitable and sustainable business.

Carlton County Goes from Ashes to Riches





In an attempt to reduce the amount of material sent to landfill and help make the local agricultural community more sustainable, Sappi's Cloquet Mill has partnered with the University of Minnesota Extension Service, Carlton County By-Products Program. Thanks to this partnership, bottom ash and fly ash by-products from pulp and paper manufacturing are being diverted from landfills and are beneficially reused by neighboring farmers who capitalize on the ash's alkaline pH content to make their soil viable for dairy farming. The partnership helps farmers remain in business during these challenging economic times and Sappi significantly reduces the volume to the landfill. In addition to providing the ash, Sappi also pays for the hauling and spreading of the material—another boon to a community that is highly dependent on animal agriculture.

The dairy industry is a major farming component in Carlton County. Dairy farms are in desperate need of alfalfa hay, which has more protein than native grasses. The soil in the area currently has a standard pH of 5.0–6.3, whereas alfalfa requires a soil pH of at least 6.5. Fortunately, with the help of the ash from the Cloquet Mill, the soil's pH increases to 6.9 and becomes receptive to growing alfalfa—which, in turn, can be used to feed the local dairy cows.



“

It's nice to see that the beneficial reuse of these industrial by-products can help sustain the local farming community. This has been a great source of pride for all of us.

”

Bob Anderson
Environmental Engineer
Cloquet Mill

The program at Cloquet is emblematic of Sappi's determination to reduce the amount of material sent to landfills. From 2004 to 2009—thanks to this program and other reuse and recycling initiatives—the Cloquet Mill has reduced its landfill volume by 75% and has significantly extended the life of the on-site landfill.

Perhaps the greatest by-product of the Cloquet ash story is that so many farmers on the brink of survival have been able to continue farming because of the program. It's truly a win-win for both Sappi and the farming community.



“

The folks of Cloquet and Sappi have gone above and beyond in their support of a program that is saving farms and livelihoods.

”

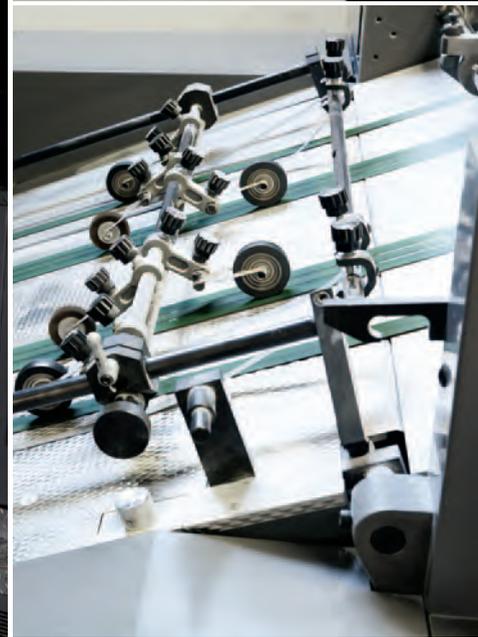
Troy Salzer
Carlton County
By-Products Program

Profiting from Sustainability

Savvy leaders are embedding an ethic of sustainability in the foundations of their businesses, finding that far from being a frill that can't survive hard times, it delivers on the bottom line.







Ask Marilyn K. Jones, a businesswoman clearly committed to sustainability, if she had to dial back her company's pro-environmental efforts when the economy tightened, and the answer is a resounding "no."

Not only has Jones, president of Consolidated Printing Company of Chicago, won national and regional acclaim for her innovative, earth-friendly industrial practices, their benefits shine in the revenue, cost and profit columns of her business.

It's the business plan for the 21st century: Take actions that boost workplace health and sustain the planet, and reap their benefits on the bottom line. Far from being a PR gesture, sustainability strengthens the business plan, even during tough economic times.

The most obvious way Consolidated benefits is in its clientele. "I would say probably 20 percent of our customers are here because we're green," Jones said.

But it also shrinks expenses: In service to workplace health, Consolidated uses Crisco[®] for instance, instead of a \$50 bottle of lubricant, and they end up with more breathable air. A similar strategy deploys strips of the fabric softener Bounce[®] to dispel static, instead of using a chemical spray.

Marilyn K. Jones
President
Consolidated
Printing Company
Chicago, Illinois

Sustainability is literally built into Consolidated—recycled ceiling tiles, recycled aluminum studs, formaldehyde-free insulation, and low VOC paints.



Another original idea reduces absenteeism. “We had a parts washer whose inhalant side effects are headache, nausea, dizziness and far worse. But now our parts washer utilizes used restaurant grease—we worked with our supplier for two years to refine it enough so that it actually works on washing parts. And so, the only side effect our employees get is a craving for french fries,” because of the aroma, she said. Jones makes clear that performance is her only measure: Every substitute has to work as well as or better than its more widely used industrial counterpart. After all, this is still a business.

When Jones purchased her printing business with her mother’s life savings in 1973, it was a typical small shop, with three people on staff. Through its insistence on quality reproduction and on-time delivery, along with its focus on making the workplace environment more attractive and comfortable to its employees, Consolidated now employs a dozen people and boasts a stable of high-profile work, such as all the printed materials for the opening of the Clinton Presidential Library and for Illinois’s two most recent gubernatorial inaugurations.

Dana Macek
Creative Writing and
Printing Buyer
Ford Motor Company

“Environmental, economical and social sustainability are all part of the products we sell and our process; it’s also what drives our people and the relationships they make.”

Basing one’s business on a sustainable foundation isn’t working only for smaller companies. Dana Macek, a creative writing and commercial printing buyer at Ford Motor Co., sees it contributing to the Blue Oval’s bottom line, too.



“Sappi is a great partner for Ford because they offer so many environmentally responsible options across their paper brands—whether it’s McCoy, Opus or Flo.”

Dana Macek

“We sell the Fusion Hybrid and Escape Hybrid and will be bringing out an electric version of the Focus next year. And there’s our eco-boost technology, a family of turbocharged and direct-injected gasoline engines that achieves 20 percent better fuel efficiency and 15 percent reduced greenhouse emissions,” she said. “We’re putting soy foam in seats. We’re using recycled fabrics for seat covers.”

Although Ford’s green ethos derives from founder Henry Ford—famously, he designed shipping cartons that could be pulled apart and repurposed into running boards on early models—Macek cited the leadership of Alan Mulally, Ford’s president and CEO since September 2006. His “One Ford” initiative, for example, helped get employees of the far-flung automaker working in the same direction and to convey that sense of purpose to customers:

“Anyone who goes into a dealership and picks up a dealer catalog or brochure, they’re going to see the four pillars on the back,” four principles that underpin the company’s approach, including a commitment to environmental responsibility, Macek said. “We want to be environmentally friendly, economically friendly and socially friendly.”



“As a nation, we’ve got to have woods for what they produce for us. And that’s where you have the greater good. The greater good of clean water, wildlife, and oxygen.”

Jo and Kathy Pierce

Although it’s impossible to attribute financial performance in such a large enterprise to any one thread, Ford’s stock price has increased more than 60 percent since Mulally assumed its leadership. In October 2010, Ford reported quarterly income of \$1.7 billion, 70 percent higher than the year-ago quarter, its sixth straight quarter in the black. Its 16.7 percent share of the U.S. market moved it past Toyota into second place, and it said it would hire 500 workers in Chicago, its first significant hires in years, according to the Associated Press.

When the economy soured, was Ford tempted to pull back from its environmental commitments until times improved? Not only was it never a goal, “It was never an issue because it’s so much a part of our corporate philosophy,” Macek said.

That spirit of integration also infuses the mission that Jo Pierce, a sixth-generation tree farmer, has set for his 850 acres in Baldwin, Maine: He wants the land to sustain itself. “My goals and objectives are to be cutting wood almost every year, to make enough money to see that my taxes are paid, plus a little return.” To ensure its continual health, he works with a forester to maintain different age classes of trees and different types of vegetation.



Trees have been growing on Pierce land going back to 1785, but for decades leading to about 1960, the family wasn't managing its land as it does now. "We were just letting it grow," said Pierce, who shares his first name, Josiah, with two previous generations of farmers. But then a forester for S.D. Warren got the logs rolling again.

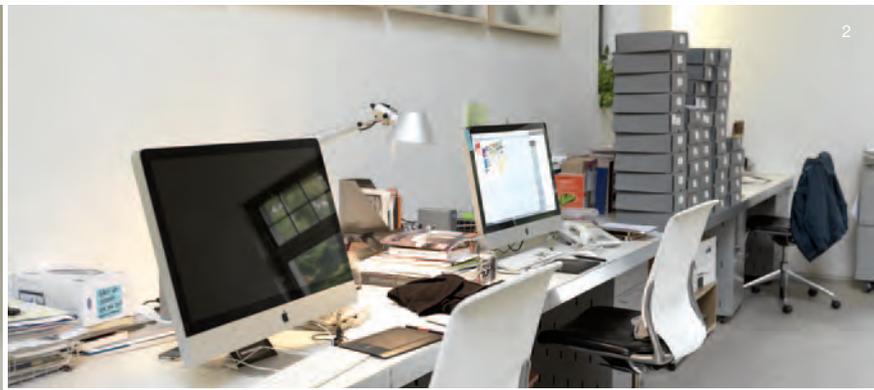
"Steve Orach was an amazing salesman in that he came here two, three, I don't know, a number of times and convinced my father that cutting trees was OK, that it was more healthy for the forest." Culling trees lets light reach the forest floor, fostering not only younger trees but health throughout the ecosystem.

Pierce said he continues to apply that principle, even as he has responded to the slower economy of the past couple of years. "We've been going after a low-quality wood for pulp and biomass," instead of his white pine and red oak. "That's sort of weeding your garden—taking out the junk, the crooked trees, the red maples that will take over our forests if we don't get rid of them."

Jo and Kathy Pierce
Tree Farmers
Baldwin, Maine

Jo's cousin, Josiah Pierce, sold his trees to a Mr. Warren. That Mr. Warren turned out to be Samuel Dennis Warren, the founder of the S.D. Warren Company.

Pierce and his wife, Kathy, were named Outstanding Tree Farmers of the Year for 2007 by the American Tree Farm System, which works to give family-forest landowners access to affordable forest certification. Recently, a paper-industry consortium including Sappi,



Hearst Corp., and Time, Inc. devised a way to extend ATFS certification to small- and medium-sized landowners in Maine, earning praise from the Forest Stewardship Council, one of the world’s most recognized certification systems for forest management.

Marilyn Jones, the printer, said a growing realization about the long-term health of forests has influenced her advice to customers over time on paper choice. “I was a big believer in 100 percent post-consumer and I don’t think that’s the way to go anymore.

“If you’re buying your paper responsibly, you’re buying it from companies that grow trees to sell them for paper. If we stopped using paper, those owners would have to use that land for something—either to grow another crop like corn or soybeans, or heaven help us, another strip mall.”

It’s almost as if Pierce is speaking. When you ask what action he’s recently taken in the name of sustainability, he says, “I bought land! I bought land because I want it to continue like this, the way it’s been, without being paved over.”

William Drenttel
Jessica Helfand
Winterhouse
Connecticut

1 These bird cages, designed by Helfand, are made from world maps. Each of the sticks denotes a different city.
2 Everyone at Winterhouse works in a collaborative space.
3 Drenttel and Helfand bottle their own syrup from their maple trees. 4 Helfand collects uniquely designed coffee mugs.



Drenttel and Helfand edit the leading international design blog, *Design Observer*. The blog demonstrates how designers can make sustained contributions to solving large social and environmental problems.

The growing sophistication about the value of paper is quite evident to William Drenttel and Jessica Helfand, the husband-wife duo behind the Winterhouse agency, based in northwestern Connecticut. But then, sophistication is standard at Winterhouse, and not only because it is the home of *Design Observer* (designobserver.com), the highly elegant and influential blog on responsible design.

Perhaps even more significantly, Winterhouse is transforming itself from a typical design shop, concentrating less on typeface choices and message shaping and more on social initiatives that crisscross international borders. A current example is Teach For All, a network of independent social enterprises in 18 countries that recruit college graduates to commit two years to teaching in high-need areas.

On this new path, Drenttel said, “design is being defined as a way to organize work to create effective solutions.” Although this change in direction was initially aided by a two-year grant from the Rockefeller Foundation, Drenttel said the change is permanent.

The prospect has Helfand all but gushing over the possibilities. “It’s really a humanitarian concern. Once you start to think about those kinds of opportunities, your mind is really fully engaged in a way it just isn’t engaged in



In addition to being named Outstanding Tree Farmers of the Year, the Pierces have garnered numerous certifications for their environmental endeavors.

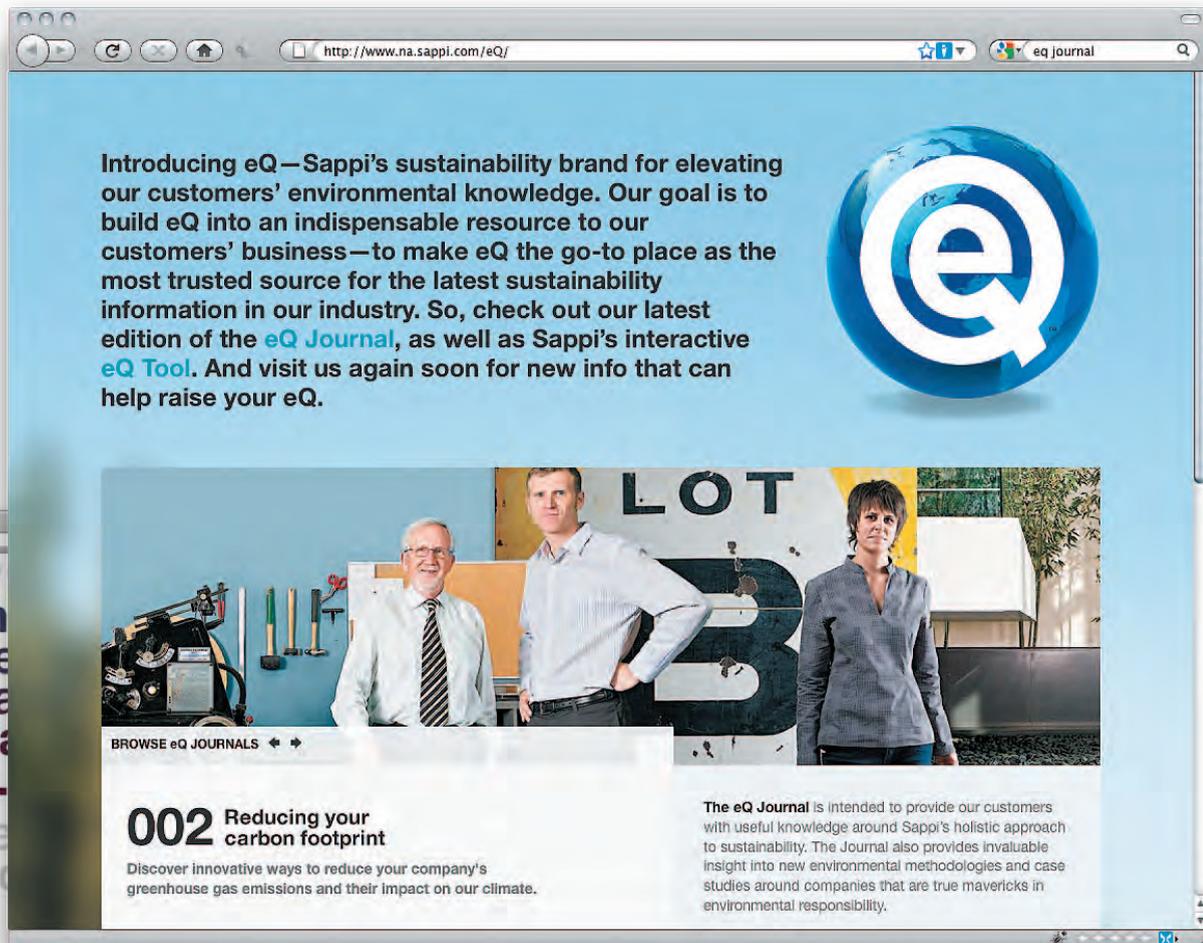
the studio. I think it also connects with who you are, in your community and in your relationships to people older than you, different than you, younger than you, disabled, disadvantaged.”

Helfand was a judge this year in Sappi’s 11th annual “Ideas That Matter” design competition, which is not unlike Winterhouse’s new gambit: It is the design contest that awards grants to designers who go beyond good design to good problem-solving, responding to a particular nonprofit’s particular needs. She said it’s exciting for designers to have a more substantive role than generations past.

Is this the future of design? Drenttel says the question is open: “I think the design profession is ready, in the larger sense of the word, for the kind of deep, long-term engagements that participate in creating better education or solving world health care delivery. On one hand, that’s challenging, and kind of frightening. On the other, it’s such a giant opportunity,” which, for designers like Winterhouse, includes the chance to find a reliable future for their business services.

Enterprises across the range of commerce are seeking the same, and a growing number are finding that a robust sustainability platform can prove to be profitable in every sense of the word.

eQ online



Introducing eQ—Sappi's sustainability brand for elevating our customers' environmental knowledge. Our goal is to build eQ into an indispensable resource to our customers' business—to make eQ the go-to place as the most trusted source for the latest sustainability information in our industry. So, check out our latest edition of the [eQ Journal](#), as well as Sappi's interactive [eQ Tool](#). And visit us again soon for new info that can help raise your eQ.



BROWSE eQ JOURNALS ◀ ▶

002 Reducing your carbon footprint

Discover innovative ways to reduce your company's greenhouse gas emissions and their impact on our climate.

The **eQ Journal** is intended to provide our customers with useful knowledge around Sappi's holistic approach to sustainability. The Journal also provides invaluable insight into new environmental methodologies and case studies around companies that are true mavericks in environmental responsibility.

Visit Sappi's eQ site for the latest info and tools for elevating your environmental knowledge. Browse the newest edition of the *eQ Journal*—as well as past issues. Explore our new, interactive eQ Tool. Learn how Sappi continues to push the sustainability envelope in our industry. And, of course, uncover new ways to make more responsible choices and win more business. sappi.com/eq

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A holistic approach to sustainable development leads to more responsible choices. The following seven points frame Sappi's environmental position.

Your choice of paper supplier has the greatest impact on greenhouse gas emissions from

CERTIFIED FIBER PROGRAMS

Select a year to view the progress of forestry certification

Program	Certified (%)
Controlled Wood	48.3%
Certified	77.6%
Sappi NA	84.2%
North America	83.7%
Global Forest	8.3%

Map (PDF) | Info (PDF)

2007 2008 2009 2010 2012 goal

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Renewable energy

Energy use plays a critical role in the emissions created during paper production. Today, more than 80% of Sappi Fine Paper North America's total energy—including what we generate and what we purchase from power plants—comes from renewable resources. We generate the bulk of our energy from carbon neutral biofuels, reducing our reliance on fossil fuels. Renewable fuels are considered carbon neutral and do not contribute to the carbon footprint.

← CLOSE

← Summary | More Info (PDF)

EMISSIONS FROM ENERGY SOURCES

Use the "calculator" feature to enter your own data. Many companies share this information online as in published sustainability reports.

Category	Value	Unit
Sappi NA	0.17	Tons CO ₂
NA Paper Industry Average	0.11	Tons CO ₂

Oil 8.6% Oil 8.5%

To protect the health of our forests, we only use sustainably harvested wood

Tell us your story.

eQ is not designed to function simply as a repository of information. Our goal is for eQ to emerge as a dynamic forum where members of our industry can share their ideas around sustainability. To this end, we invite you to submit your own environmental stories so that we can all benefit from your innovative thinking and inspirational actions.

[Email us at eQ@sappi.com.](mailto:eQ@sappi.com)

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Outside Front and Back Cover

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Inside Front and Back Cover

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Interior Pages

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