BY SAMANTHA TISDEL WRIGHT

It's Not Easy Being Green

The Eco-Lumber Conundrum

A few years ago, a globetrotting couple decided to build a new home for their family in rural, southwestern Colorado. It was a big decision, a big investment. They wanted to do it right.

They chose an idyllic setting on a country road near the little town of Ridgway, surrounded by lush, irrigated ranch land, with the Uncompahgre River flowing nearby and gorgeous mountain views in all directions. Then, they engaged a family friend who happened to be a noted architect to help them design their house.

The three of them got together to discuss the project, and the couple described their vision for their new home. They wanted something beautifully located, and beautifully designed, of course. But it was also important to them for their new home to be as environmentally friendly as possible — energy efficient, small carbon footprint, and built from sustainable, responsibly sourced materials.

Surely there must be someplace where they could get FSC certified lumber at a reasonable cost.

Their architect encouraged them to look into using certified lumber — lumber that has earned a seal of approval from a third-party organization certifying that it comes from responsibly managed forests.

That sounded like a great idea. So the couple did a little research about the Forest Stewardship Council, one of the best-known and most widely respected organizations that certifies lumber and other wood products. Then they called a large lumberyard in nearby Montrose to see if it stocked FSC certified lumber.

The guy they talked to didn't know what they were talking about.

The next lumberyard they tried didn't stock FSC certified lumber, but could truck it in from an affiliate store in Durango…at three-and-a-half times the cost as the uncertified equivalent.

"Um, no thanks," said the couple.

By now, they were obsessed with solving this problem. Surely there must be someplace where they could get FSC certified lumber at a reasonable cost. They expanded their search to the Front Range. It was the same story everywhere they looked: the lumberyards they checked with used to stock FSC lumber, but had stopped carrying it because it was too expensive and nobody was buying it.

The whole experience left this well-intentioned couple, who has asked to remain anonymous for this story, with more questions than answers about the Forest Stewardship Council.

"Who are they, and did they really create this standard with business in mind?" they wondered. "Has the system become irrelevant for all but the wealthiest home-builders?" And, perhaps most importantly, "What other avenues are available to homeowners who want to build a house in an environmentally responsible way?"

DOWN THE RABBIT HOLE

The Forest Stewardship Council coalesced 25 years ago in the wake of the 1992 Rio Earth Summit. Alarmed by the Summit's failure to deal with the escalating rate of global deforestation, a group of environmentalists, indigenous groups, human rights organizations and timber users and traders gathered in 1993 to set ambitious global ecological standards for the timber industry with the goal of advancing responsible forest management.

Together, they pioneered the FSC certification program and product label to assure consumers those standards were being met. Originally headquartered in the forested region of Oaxaca, Mexico, the organization is now headquartered in Bonn, Germany, but has offices in the U.S.

Rather than taking a regulatory approach like the Clean Water Act or Endangered Species Act, the FSC is a voluntary, market-based system that tries to use demand to create an incentive for land managers to adopt a higher environmental standard.

The whole system hinges on the assumption that conscientious consumers will be willing to pay a premium for more sustainable wood products while boycotting others.

FSC has three certification systems that accomplish its mission: Forest Management certification, Chain-of-Custody certification and Product Label certification. Together, these three systems work together to trace the journey of a tree from stump to shelf.

Forest Management certification dissects what it means to manage a forest well: protecting habitat for rare and endangered species; leaving buffers of trees at the forest's edges to keep waterways from being destroyed by logging activities; restricting the use of herbicides that the timber industry sometimes uses on tree plantations to kill off species that compete with their trees of choice. FSC also seeks to change the way logging companies work with communities living in and around forests in resource-rich developing countries to prevent human rights violations.

A variety of auditors, such as the Rainforest Alliance, carefully examine the work of FSC forestry members, and make the call about whether landowners are meeting FSC standards.

If the landowners make the grade, the wood they produce receives FSC's Forest Management certification.

ABLE TO LABEL

As soon as the harvested wood changes hands, it goes into FSC's Chain-of-Custody certification standard. That's where things start getting complicated.

The paperwork-heavy CoC standard traces the path of wood products step by step from forests through the entire supply chain, verifying that FSC-certified material is identified and quarantined from non-certified wood every step of the way. Any company along the journey, from harvesters to retailers, needs to be FSC-certified itself in order to label or promote their products as FSC-certified.

If all of the steps have been properly followed, and all the paperwork has been properly filed, the end product — from a dining table to a box of tissues to a plank of lumber — then wins the FSC stamp of approval.

The FSC logo — a green checkmark and tree — lets the consumer know that a wood-derived product has been tracked throughout its entire supply chain, guaranteeing that it comes from a responsibly managed forest that has been independently monitored by credible third party auditors.

As of January 2019, FSC reported that 84 countries across the world had FSC-certified forestland, with approximately 484 million acres certified in total. This represents some 10 percent of the working forestland on the planet. In the US and Canada, almost 160 million acres of forest are FSC-certified: 124 million acres in Canada, and the remaining 35 million or so in the U.S.

In addition to wood, a vast swath of pulp and paper products bear the FSC label, from Patagonia's first FSC-certified wetsuit (made from latex that comes from FSC-certified forests) to Ben & Jerry's ice cream cartons, and much more. Huge companies like Unilever, Proctor & Gamble and Ikea all use FSC certification for at least some of their products.

"In the U.S. the pulp and paper sector is growing more dramatically than the solid wood sector, but we are working hard to grow the solid wood side," said Brad Kahn, communications director for Forest Stewardship Council US. "FSC has reached the point now where it is in every major store. You can find FSC products wherever you are shopping."

Well, maybe not everywhere — especially when it comes to lumber.

LOST ITS PIZZAZZ?

Strait Lumber was the first FSC-certified lumber yard in the Denver Metro area,

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but dropped its certification and stopped carrying the product in 2016.

"The value is just not there, and it is kind of a headache, to be honest with you," said Strait Lumber general manager Tyler Korbe.

The FSC Chain of Custody certification is work-intensive to obtain and expensive to maintain, Korbe explained, because FSC inventory can't be co-mingled with non-FSC-certified products. This leads to price markups that many consumers find untenable, especially when it comes to big purchases such as the lumber package for a new house.

While Korbe says there is still is a local market in the commercial construction sector in the Denver Metro area driven by the U.S. Green Building Council's "Leadership in Energy and Environmental Design" (LEED) point system, he believes FSC-certified lumber could go by the wayside in the future.

"All indications I witness point in that direction," he said. "It is something that has definitely lost its pizzazz. I used to do two or three orders a week and now I don't even get an inquiry all year."

Ridgway-based building contractor Clint Estes used to make a point of offering the option of FSC-certified lumber to his clients, but has recently phased it out due to lack of demand and difficulty finding local sources for the product.

"The most driving factor is the Chain-of-Custody documentation," he said. "Five years ago, my main lumber supplier was selling 10 percent FSC, and now that has gone down to zero because of the headaches (caused by) Chain-of-Custody paperwork. Any break within the Chain-of-Custody paperwork causes the product to lose its certification. It's a bureaucratic nightmare."

Estes confesses he's become a little bit cynical about the whole eco-certification thing. "These systems are well intended, and they give the final consumer some concrete piece of mind, but bureaucracy ends up muddying the waters," he said.

Alpine Lumber Telluride manager Karl Wagner said he has a random selection of boards from FSC-certified forests and mills that have found their way into the mix in his lumberyard, even though Alpine Lumber Telluride is not Chain-of-Custody certified. But his customers don't ask for it.

These days, he's seeing more local demand for Laminated Strand Lumber, or LSL, a new engineered wood product that is part of the so-called mass timber craze sweeping the nation. LSL is made by shredding wood from fast-growing, low-value trees such as aspen, birch and poplar into thin strands and compressing it with adhesive to produce a variety of wood components for construction.

"Forest management is a whole other

JT Thomas's house in Ridgway was framed with salvaged timber from beetle killed spruce, logged in southwestern Colorado and milled into dimensional lumber in Montrose, but transported to Ridgway from a lumber yard in Durango. The house is clad in cedar siding from a sustainable cedar company in the Pacific Northwest. Thomas, his architect John Baskfield and his contractor Clint Estes worked with Kim Wheels of Lotus Energy Solutions to do an energy audit on the house in its design phase to make the house as energy-efficient as possible. Solar panels on the roof reduce the house's longterm carbon footprint.
(Photo by JT Thomas)

"The problem is that there simply isn't enough demand for FSC-certified products."

issue, but for us, I would happily go to all engineered wood products," Wagner said. "They're straight, there's less cull, there's less waste. It's very efficient and produces tight houses and buildings because it's perfectly square and level and straight. I'm seeing the future in that."

COVERED IN COBWEBS

Indroneil Ganguly has seen up close how FSC certification works, from the timber plantations of the Pacific Northwest to the jungles of southeast Asia.

An assistant professor at the University of Washington's School of Environmental and Forest Sciences and associate director of the school's Center for International Trade in Forest Products, Ganguly says that the FSC system is viable only if there is consumer demand.

When it comes to Chain-of-Custody certification, he said, most facilities such as sawmills or furniture factories in the developing world process both certified and uncertified timber on the same machinery. They tend to run separate lines and maintain physical separation between certified and uncertified wood by keeping the certified wood in a shed until a special order comes in.

"If people in the developed world demand FSC, then the guy with the sawmill in Vietnam will run an FSC line," Ganguly said. "The problem is that there simply isn't enough demand for FSC-certified products. They have the shed, and it's covered in cobwebs."

Ganguly points to lack of awareness among consumers as a fundamental problem.

"I teach this class of undergrads who have some environmental interest," he said. "And when I ask 'How many of you have heard of FSC?' perhaps only ten percent of them raise their hands. If that's the awareness level of the 'environmentally aware' population, what would be the awareness of the general population who don't think about the environment so much?"

Generally speaking, Ganguly said, consumers who do know about FSC focus more on products they buy every day, like toilet paper, facial tissue and office paper, than on lumber.

A CLEAR-CUT ALTERNATIVE

Perhaps the biggest challenge FSC has faced in North America is the commercial timber industry's own more lenient certification system, allowing its forest products to bear the rival Sustainable Forestry Initiative (SFI) label.

While SFI requires forest management plans to include conservation principals, it has few specific requirements (and no third-party oversight), essentially allowing the industry to regulate itself. With less bureaucratic overhead, SFI lumber tends to be cheaper and more abundant in North America than its FSC counterpart.

Many environmentalists have denounced SFI as a fake eco-label that greenwashes forest-degrading timber-cutting practices such as larger clear cuts, monocultures/plantations, and the application of hazardous chemicals such as the endocrine-disrupting herbicide Atrazine.

SFI supporters, meanwhile, counter that the program is a more practical way to support the continued use of forests to produce timber. Timber companies must earn profits, they say, to keep the industry thriving, and in order to do so, they need to rely on practices such as clear-cutting and herbicide application, in order to produce ongoing jobs in the woods and revenues from timber-cutting while thwarting pressure to convert forest lands into subdivisions or other developments.

"There has been a lot of infighting. The politics is brutal. It's a full-on turf war between certification lobbies," said Ganguly, though the battle has settled to a simmer in recent years. "If you ask an environmentalist, 'Is FSC better than SFI?' they will probably say yes. But, the difference in how much good they are doing for the environment is minimal here in the US, and more significant in the tropics."

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"That's where most of the environmental damage comes from — trucking and moving stuff around."

In spite of its drawbacks, even some opponents acknowledge that the timber industry's SFI system has improved over time and is at least a step in the right direction, promoting the overall benefits of sustainable forest products compared to their nonrenewable alternatives. SFI-certified lumber has gained a broad market share in the U.S. and an international seal of approval from the industry-friendly umbrella program, Programme for the Endorsement of Forest Certification (PEFC).

SFI has also won the seal of approval over FSC from more and more budget-conscious and environmentally conscientious homeowners, as Tyler Korbe of Strait Lumber can attest.

"A board is a board is a board, and once you put it on paper, people ask themselves, 'Should I pay 30 percent more for the exact same thing?' Most people aren't going to do that," he said.

In a further blow, FSC has recently lost its coveted status as the only certification that is fully accepted by the prestigious and lucrative LEED program. In its latest revision, LEED is allowing not only FSC but SFI and PEFC-certified lumber as incentives to earn points toward certification.

GOING LOCAL-ISH

Of course, eco-certified lumber isn't the only consideration when it comes to building an environmentally friendly house. In some cases, the greenest choice (with the smallest carbon footprint) might be to opt for lumber that has been locally or regionally harvested and processed, if you can get it.

One potential source of local lumber in southwestern Colorado would be Montrose Forest Products, a lumber manufacturing facility owned by parent company Neiman Enterprises Inc. which logs both beetle-killed and healthy forests throughout southwestern Colorado and manufactures dimensional lumber at its stud mill in Montrose.

Ironically, due to a strange loop of corporate pre-sale agreements and supply chain vagaries, much of Montrose Forest Products' lumber ends up in Texas and Kentucky, while lumber from wholesalers in the Pacific Northwest travels by train to Colorado's Western Slope and stocks the shelves of lumber stores in Montrose and Telluride.

Estes found this out the hard way when he was building a house for his friend JT Thomas in Ridgway a few years ago.

Thomas was highly motivated by environmental concerns. Initially he wanted his house to be constructed out of a recycled building product called Earth Block, but says he ran into a barrier when the Town of Ridgway's building inspector refused to certify it. Thomas's "Plan B" was to go with a traditional stick-built home, using local lumber from the Uncompahgre Plateau, even if it meant paying a little extra.

Estes set about trying to get his hands on some. His first stop was the mill in Montrose, which wouldn't sell its product to him directly. He couldn't find any of the locally milled product in lumberyards in Montrose, either. Finally, after working his contacts, Estes found a lumberyard in Durango that stocked some lumber from the Montrose mill.

"It just seemed so weird to go through Durango to get locally harvested wood milled in Montrose," Estes said. The lumber then had to be trucked over three mountain passes for delivery to Thomas's building site in Ridgway, driving up its cost both dollar-wise, and in terms of its carbon footprint.

Montrose Forest Products General Manager Mike Kusar said that a small percentage of his sawmill's product is currently sold at local lumberyards. "We produce 12 tractor-loads a day, and our lumber goes all over," Kusar said. "Probably less than one percent is sold locally. We would love for people to request local, but we do not sell directly to the public."

Going local is also possible on a micro scale, for certain timber products. For example, a small saw mill in Colona processes beetle killed white fir from the Ouray area and turns it into decorative wood materials like siding.

And in Ridgway, Phil Gould has carved out a specialty niche logging and milling local beetle-killed trees and turning them into custom timber-framed homes and cabins.

Q&A with Home Depot

Home Depot was the first national retailer to carry FSC-certified wood, and claims on its website to sell more FSC certified wood than any retailer in America, but a cold-call to the Pro Desk at the Montrose Home Depot outlet got a "never heard of it" response. So this author followed up with Home Depot corporate communications manager Amy Bennet:

Q: Does Home Depot stock FSC and/or SFI certified lumber?

A: We stock FSC and SFI wood in various markets. The combination of the woods that are harvested to the two standards accounts for over 80% of our wood purchases.

Q: Does there seem to be much of a demand for certified lumber? And, what is the price difference to go with FSC or SFI versus uncertified lumber?

A: The main demand for these types of lumber is when someone is completing a LEED-certified project. The FSC and SFI wood in our stores is sold pretty close to the average market cost of uncertified wood.

Q: Where does the lumber that is stocked at the Home Depot in Montrose, Colo. come from?

A: The pressure treated wood at that store comes from the southeast U.S. The dimensional lumber is from Idaho and Washington. The redwood is from California.

Phil Gould and his crew at Handcrafted Log and Timber in Ridgway built this custom timber-framed home on Dallas Divide using locally salvaged Douglas Fir. **(Photo by Phil Gould)**

While his clients aren't necessarily driven by environmental motives, "I do think they prefer kind of the whole package, both wood and craftsmanship, being local," Gould said. He argues that this is better for the environment than trucking in a load of eco-certified lumber from far-away forests in Canada or the Pacific Northwest.

"The best analogy would be organic food," Gould said. "You can get a lot of stuff that is labeled organic, but it's not the same as going down to the farmers market and buying fruits and vegetables that were grown right in this area."

Gould points to transportation as a significant environmental culprit in today's timber market.

"That's where most of the environmental damage comes from — trucking and moving stuff around," he said. "It seems like the closer to the source, the better. People did that for hundreds of years until huge mills opened up in the Northwest and that became a standard."

Another, lesser-known benefit Gould has found in harvesting local beetle kill for lumber is that it is already quite dry, so it doesn't have to be dry-kilned prior to the milling process. "That's a huge savings in resources," Gould pointed out. "All that stuff in the Northwest is incredibly wet and has to be kiln-dried using millions of gallons of propane or wood burners."

THE CARBON QUESTION

For many green-minded prospective homeowners, their new home's carbon footprint and energy efficiency are more important considerations than where their lumber came from. And those considerations can be just as complex and bewildering as the certified wood conundrum.

No matter which way you slice it, building a house is a resource-intensive process that is going to have a lasting impact on the skin of the planet.

"When I have a client driving a Prius and they say they want their house to be environmentally neutral, it is not feasible," said Ridgway contractor Brad Wallis, a proponent of a high-efficiency super-insulated European design criteria known as Passive House. (*See related article on Page 32.*)

"Cement, polystyrene foam and wood, they are all products of a consuming process, not a neutral process," Wallis said. "But if it's done well, and it conserves energy and doesn't need to be replaced in 30 years, you are doing the best you can in a generally consumptive process."

Estes, who used to maintain LEED accreditation, prefers these days to approach a building project from an embodied energy carbon footprint standpoint rather than pure efficiency.

"If you are building to a high efficiency standard, that doesn't mean you are lowering your carbon footprint," Estes pointed out. "Instead of using two inches of foam board, you have four to five inches under the slab — more and more foam and petroleum products. It would be interesting to do a carbon calculation of a LEED certified home. How many years would it take to offset?"

Then there's the opposite end of the spectrum — building with recycled concrete blocks, for example, or straw bales. "All of those products have limitations, but they are 100 percent post consumer byproducts or recycled products," Estes said. "There is a lot to it, a lot of facets to consider."

In order to reduce his own business's carbon footprint, Estes recently decided to

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"Things are evolving and moving in the right direction."

only accept construction projects within a five-mile radius of his home in Ridgway. But in the end, it has become a zero-sum game. Most of his former local employees now commute to more lucrative construction jobs in Telluride so that they can continue to afford to live in Ridgway (where housing costs have recently soared) while his current employees commute to Ridgway from Montrose where the cost of living is lower.

"If I really wanted to reduce my carbon footprint," Estes sighed, "I'd be building in Montrose."

FULL CIRCLE

On a macro scale, the growing urgency of the global climate crisis has sparked new interest from the commercial construction sector in finding ways to reduce embodied carbon in construction materials, and a new appreciation for the carbon (and branding) benefits of FSC-certified forestry.

In response, FSC has recently launched its Climate Smart Wood Group to support architects, contractors and developers looking to use climate-smart wood. High-profile corporate projects are driving this new demand, said FSC spokesman Kahn.

"Microsoft and Google, for example, are key advocates of using wood from responsibly managed forests as a way to reduce embodied carbon in construction over concrete and steel," he said. "There has been a huge amount of media coverage of tall wood buildings, so perhaps consumer awareness is growing."

As an industry expert, the University of Washington's Ganguly has been observing this new emphasis on embodied carbon with interest. He thinks it's a big step in the right direction.

Ganguly is also closely tracking the LEED program's new Life Cycle Assessment, which gives credits to construction projects that document their carbon and other environmental impacts of building materials over the entire lifespan of the building. The program may ultimately give a boost to locally sourced wood, he said, "since local sourcing contributes significantly to lowering a project's environmental footprint."

While he still sees some serious weaknesses in FSC's eco-certification system, "Things are evolving and moving in the right direction," he said.

In the meantime, what is a budget-conscious homeowner who just wants to build an environmentally friendly house supposed to do?

To help balance their own cost-versus-environment equation, the Ouray County couple featured in the beginning of this story decided to put solar panels on their house — expensive, yes, but over the long term they anticipate the panels will pay for themselves in saved energy costs. They also looked into using reclaimed wood from midwestern barns, which was super environmentally conscious, but aesthetically unsuitable for the clean, modern look of the house that they were building.

In the end, they decided to go with SFI-certified lumber instead of the more expensive FSC.

"It's a much lower standard," they acknowledged. "But we thought it was still better than nothing. The guy at the local lumberyard told us all their stuff is SFI-certified. Maybe that is a common standard now. It seemed very reasonably priced."

All in all, they said, they're very happy with the way their house turned out. As they put it, "We have done a good job of balancing things we care about, without going way over budget."

Ask an Expert

Telluride-based energy efficiency expert Kim Wheels of Eco Action Partners and Lotus Energy Solutions offers the following advice to prospective homeowners who want to build a house that is as energy-efficient as possible. (Much of her advice resonates with Passive House standards).

SMART GLAZING

In general, Wheels says, reducing the overall glazing (windows/glass doors) area with respect to the house floor area and wall area, will help the home be energy efficient. Smart glazing design, i.e. orienting and shading windows and choosing solar heat gain values for the windows that's appropriate for the direction of the windows, is very important, in addition to energy efficient windows with low U-values.

CONTINUOUS INSULATION

Beyond windows, continuous insulation on the walls and ceiling, in addition to optimizing the R-value of insulation within the framing cavities, is key. Alternatively, Structural Insulated Panels (SIP panels) reduce thermal bridging of framing, and help create a tighter home.

ENERGY-EFFICIENT LIGHTING & APPLIANCES

Other energy efficiency items are also important: LED lighting, Energy Star certified appliances, water-efficient plumbing and efficient mechanical system design all impact overall energy use of the home. Providing appropriate, controlled outdoor air through an HRV (which exchanges heat between incoming and outgoing air) is very helpful, as well as being critical to a healthy indoor environment.

THINK HOLISTICALLY

There is no "biggest bang for the buck," Wheels says. "The house works as a system, and one aspect isn't independent of another."