

MASTERING FSC WOOD IN GREEN BUILDING

THE EVOLUTION OF LEED AND NEW RULES FOR FSC WOOD

By C.C. Sullivan and Brad Kahn

Progress is the hallmark of the green building movement. From energy performance to occupant health, every aspect of design and operations is evolving with a focus on better outcomes and greater environmental benefits. Nowhere is this more evident than in the forest products arena where products from responsibly managed forests are central pillars of green building.

Forests are critical to life on earth. They are complex ecosystems that support nearly 80 percent of the world's terrestrial species and the livelihoods of 1.6 billion people. Forests protect the earth's soils, provide much of our fresh water and regulate and stabilize the climate. Today, forests comprise 31 percent of our land area, yet during the past 50 years almost half the world's original forest cover has been lost.

In the southeastern U.S. alone, forests are home to more than 3,000 species of plants, 504 birds, 158 mammals and 187 reptiles, making the region a cornerstone of North American biodiversity.

Progress in the way we manage and conserve forests worldwide is coming

LEARNING OBJECTIVES

Reading this article provides professional education in green building, including Green Building Certification Institute (GBCI) and Health, Safety and Wellness (HSW) credits. Upon finishing, the reader should be able to:

- Explain why Forest Stewardship Council (FSC)-certified wood is key to green building, and why building professionals play an important role in promoting good forest management and conservation in North America and beyond.
- Gain insight into the fundamentals of a leading forest certification system with benefits for LEED certification.
- Master the new rules for how FSC-certified wood works in the LEED green building rating system, clarify the differences between LEED 2009 standards and LEED v4 as it relates to FSC, and understand how FSC is credited in other leadership green building programs in North America.
- Understand the tools, strategies and resources that green building professionals can use to encourage market transformation to sustainability of the forest products industry.

from both ends of the marketplace. On the supply side, the acreage of forest land managed and certified to the environmental and social standards of the Forest Stewardship Council (FSC) continues to grow, as does the number of companies committed to bringing certified wood to market. In the U.S. and Canada, 175 million acres and 5,000 companies are certified to FSC standards.

And on the demand side, leadership standards in green building—notably the U.S. Green Building Council's LEED rating systems—are evolving to address opportunities as well as challenges in the use of certified wood products.

Following several years of work by USGBC staff and LEED working groups, LEED v4 was ratified in the summer of 2013 with support from 86 percent of voting USGBC members. In the new LEED v4 standard the key credit addressing certified wood is MRc3, "Building Product Disclosure and Optimization: Sourcing of Raw Materials." With the future of responsible forest management hanging in the balance, wood products have been the subject of much consideration for this credit. In LEED v4, as in LEED 2009, products that are certified according to the policies and standards set by FSC are recognized along with products that meet other

environmental criteria such as materials reuse and recycled content. LEED v4 represents a thorough overhaul of LEED 2009, and this includes the Materials and Resources section where there are now significant differences between LEED 2009's Certified Wood Credit (MRc7) and the new MRc3. The changes occur both at the high level of credit language and structure, and in the details of calculating and documenting the use of FSC-certified wood contained in LEED Reference Guides.

LEED v4's continued recognition of FSC and the updates to how FSC contributes value in LEED projects reflects a strong commitment in the green building community to driving progress in the forest products industry.

"There are many parallels between FSC and LEED," says Corey Brinkema, president of the U.S. office of the Forest Stewardship Council (FSC U.S.). "Most significantly, LEED and FSC are both designed to transform their respective marketplaces to higher levels of environmental and social performance." By specifying and using FSC-certified wood, green building professionals help protect forests, wildlife habitat, the health of global ecosystems and support market transformation to sustainability in the forest products industry.

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This course has been approved by GBCI for 1 CE hour. LEED Professionals may submit their hours to Green Building Certification Institute (GBCI) under the "Education" delivery method at www.gbci.org. For those who pass the quiz with a minimum score of 80 percent, a certificate of completion will be available for immediate download.

FSC: A Growing Family of Certified Products and Companies

<u>Softwood lumber</u>	<u>MDF</u>	<u>Flooring</u>
<u>Hardwood lumber</u>	<u>OSB</u>	<u>Doors</u>
<u>Timbers</u>	<u>Particle board</u>	<u>Windows</u>
<u>Engineered wood products</u>	<u>Veneers</u>	<u>Siding</u>
<u>Plywood</u>	<u>Moldings</u>	<u>Furniture</u>

There are hundreds more, too. For a list of available products, visit www.marketplace.fsc.org.

A KEY GREEN BUILDING MATERIAL

According to one of the world's largest environmental organizations, the World Wildlife Fund (WWF), FSC-certified wood is a key component of green building. "Credible third-party forest certification is an important way to promote forest management that is environmentally and socially responsible. This in turn supports our overall goals of conserving nature and protecting biological diversity," says Kerry Cesareo, WWF's managing director for forests. Along with other respected environmental groups like the Natural Resources Defense Council and Rainforest Alliance, WWF recommends products from FSC-certified, responsibly managed forests as a building material for other reasons in addition to forest conservation:

- *Low Carbon Footprint.* Wood products have a low carbon footprint relative to many other materials, and their use can help reduce carbon emissions. Throughout their lives, trees remove carbon dioxide from the atmosphere and store it in wood (which is about 50 percent carbon). Therefore, wood building materials sequester carbon not only for the life of a tree but also for the life of a building. Not only does using wood products help remove carbon from the atmosphere, but using wood in place of other, more greenhouse gas (GHG)-intensive building materials, "can reduce GHG emissions of a typical house by up to 18 tons over its life."¹ Some new research suggests that well-managed forests may store more carbon in soil and vegetation than do poorly managed ones. Finally, promoting responsible forest manage-

ment is recognized as one of the keys to combating deforestation, which is the second-largest source of manmade GHG emissions outside of the energy sector—more than all forms of transportation combined, according to EPA and Meridian Institute.² In this way, developing markets for the products of responsible forest management is an important strategy for addressing the climate crisis.

- *Renewable and Natural.* Unlike many products credited in green building, forest products are the only major material category that are renewable and can be produced on a sustained basis from natural ecosystems. The overall wood supply from managed forests is considerable, renewable and sustainable over the long term when responsible forestry techniques are employed. Well-managed forests also provide important ecosystem services such as carbon sequestration (in forest soils as well as growing trees), wildlife habitat, erosion control, watershed maintenance and nutrient cycling. These services are "traditionally viewed as free benefits to society," says the USDA Forest Service.³ "Lacking a formal market, these natural assets are ... often overlooked in public, corporate and individual decision-making."
- *Green Manufacturing.* FSC-certified manufacturers include some of the most innovative companies in the world. Along with addressing forest issues, many have taken steps to design and manufacture products that satisfy other concerns of the sustain-

able design community, including indoor air quality (IAQ), recycling and chemicals of concern.

On the Green Building Certification Institute website, current statistics show that 41 percent of LEED projects achieve the Certified Wood credit.⁴ These include many projects that earn an additional point by making exemplary use of FSC-certified products.

Once project teams understand the value of FSC-certified wood in sustainable design and construction, many go above and beyond the minimum requirements of LEED and other green building programs. A virtuous circle has been developing whereby increased demand for FSC-certified wood encourages more landowners to become certified, more manufacturers to produce certified products, and more distributors and retailers to stock them. This improves availability and tends to reduce costs, which stimulates further demand and eventually leads to more acres of forest managed and certified to the standards of FSC. "FSC has changed the international dialogue around forest management and has led to improved management on hundreds of millions of acres in the U.S., Canada and worldwide," according to Fran Price of The Nature Conservancy.

THE GROWTH OF FSC IN NORTH AMERICA

The supply of FSC-certified building products has increased dramatically in the last decade. As noted earlier, there are more than 175 million acres of FSC-certified forest land and at least 5,000 companies manufacturing and trading FSC-certified products in the U.S. and Canada. The growth in FSC-certified forest acreage in North America has tracked the growth of LEED, which has exploded in the last decade to cover more than 2 billion square feet of building area.

WHAT SETS FSC APART?

The Forest Stewardship Council is not the only forest certification system operating in North America, but it is unique among them. There are important differences between FSC and these other forest certification systems on a wide range of key environmental and social issues. These differences manifest in the ways real forests

are managed, as well as the benefits they provide to society and the environment.

The table on this page and the next highlights some key components of forest certification, why they matter and how FSC delivers on-the-ground results.

HOW FSC WORKS

Forest Management Certification. Forest management standards and certification are at the core of the FSC system. To monitor specific forestry operations, FSC accredits independent certification bodies that send teams of experts—foresters, ecologists and social scientists—who conduct annual onsite audits based on FSC standards. Forests and plantations with management that meets FSC standards provide the certified timber that is the raw material for FSC-certified products.

FSC's forest management standards are global in scope. Because of the wide variety of ecosystems to which they are applied—for example, natural forests in tropical, temperate and boreal regions as well as plantations—the standards are designed to be globally consistent while still allowing for regional applicability. This is achieved through Principles & Criteria that apply universally and provide the framework for detailed indicators that are developed and applied at a national or subnational level.

Around the world, FSC standards are designed to uphold the integrity of natural forest ecosystems, protect rare old-growth forests, preserve soil and water quality, maintain wildlife habitat and prohibit highly hazardous chemicals. FSC also requires forest managers to engage local community members and protect the rights of indigenous people.

Chain-of-Custody Certification. Certification of responsible forest management is at the heart of FSC, but the certification program has a second critical component: chain-of-custody (CoC) certification. CoC certification is available to all companies that process or sell forest products, from sawmills and fabricators to distributors and retailers. FSC requires chain-of-custody certification for all companies in the supply chain that take legal possession of FSC-certified products and wish to use FSC trademarks in sales and promotions.

Key Component	Why It Matters	How FSC and FSC Standards Work
1. FSC is governed democratically	Who makes decisions and how decisions are made shapes every aspect of a certification system.	Membership-based organization, open to all organizations and individuals. Members elect the board of directors at the national and international levels and decide on policy and governance motions at a triennial General Assembly. A minority of members on the U.S. board only may be appointed to balance expertise. High-level decisions, such as global policy motions or changes to the Principles & Criteria, are made by a vote of the membership. A majority vote of each chamber is required to pass a motion or major standard revision.
2. FSC prohibits deforestation	Conversion of natural forest to plantation or non-forest use, also called deforestation, can cause substantial harm to biodiversity, atmospheric carbon levels, water quality, ecosystem function and the rights of people who depend on the forest.	Prohibits deforestation, including conversion of natural forest to plantations. Exceptions may be approved in limited cases where there is very clear and lasting environmental benefit, such as where conversion and sale of a very small part of a management unit leads to investment and protection of higher conservation values on the rest of the land.
3. FSC requires forest growth to meet or exceed harvest	If harvest exceeds growth, biodiversity and ecological values associated with older forests and more complex forest ecosystems are typically diminished over time.	Requires forest growth to meet or exceed harvest at the planning unit level over a rolling average of no more than 10 years to prevent cumulative depletion. There are exceptions allowed for small ownerships that harvest on a generational basis and for restoration purposes (e.g. on lands affected by a catastrophic fire or where poor past management has led to an ecologically problematic species mix).
4. FSC protects rare old growth and High Conservation Values	High Conservation Value Forests include rare old growth, large intact forests and areas important to public health or traditional cultural identity.	Requires protection of ecological values associated with High Conservation Values (HCVs), including rare old growth. This includes a requirement to identify and protect the following: • Large intact forests and areas of concentrated biodiversity • Large forests with most or all species in natural patterns of abundance • Rare, threatened or endangered ecosystems • Areas providing critical ecosystem services • Areas critical to basic needs, such as subsistence or public health • Areas important to traditional cultural identity of local communities Requires managers to map, maintain and monitor defining attributes of HCVs, and to use the "precautionary approach" to prevent loss of defining attributes where there is uncertainty. Requires public consultation about HCVs and managers must provide a public summary of their HCV assessment and proposed management for conservation of identified HCVs.
5. FSC protects rare, threatened and endangered species	Federal and state laws protect only a portion of vulnerable species, typically not offering protections to species at risk of becoming threatened or endangered.	Requires protection of rare, threatened and endangered (RTE) species, based on credible scientific analysis, assessments of potential impacts to RTE species prior to any harvest, and safeguards to protect and enhance RTE species. The definition of "rare" is extended beyond state and federal listings to include a broader suite of vulnerable species. This includes not just formally identified threatened and endangered species, but also species at risk of becoming threatened or endangered.

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Key Component	Why It Matters	How FSC and FSC Standards Work
6. FSC limits clearcut size to protect forest ecology	Clearcuts—openings with few trees retained—that are larger than natural processes typically create (such as by wildfires or windstorms) can disrupt ecological processes and harm biodiversity.	Ecological functions and values must remain intact after harvest. Size limits for clearcuts exist in five of nine eco-regions in the U.S. and are based on forest types and the natural disturbance regimes associated with those forest types. In regions where there are no explicit size limits, FSC requires protecting or restoring forest stand habitat components, including large live trees, in an abundance and distribution associated with natural disturbance processes. Large clearcuts are never allowed where they threaten ecological integrity of the forest. For plantations, clearcuts are limited to a 40-acre average and an individual maximum of 80 acres in the U.S. <i>Note: Allowable opening sizes are significantly larger in the Boreal forest of Canada, where wind and fire naturally cause large landscape level disturbances.</i>
7. FSC restricts use of highly hazardous pesticides	Many toxic chemicals proven to harm human health and ecosystem function are legal and common in U.S. forestry, even when applied by aerial spraying from helicopters or airplanes.	Prohibits pesticides known to be highly hazardous, including specific pesticides that exceed thresholds of persistence, toxicity, carcinogenicity, bioaccumulation and other human health and environmental concerns not covered by law. Based on site-specific justification, limited exceptions for some chemical applications are granted when no viable alternatives exist. Requires application by trained and qualified workers.
8. FSC protects indigenous peoples' rights	Native peoples' use forests for traditional and cultural reasons that may not be protected by state or federal laws.	Requires protection of indigenous peoples' resources, rights—both legal and traditional—and areas of cultural significance. Requires outreach to tribal representatives. This applies to both public and private lands.
9. FSC requires stakeholder consultation on public and private lands	People in communities adjacent to forests—public and private—are impacted by forestry activities and have a stake in how they are managed.	Requires proactive stakeholder engagement and consultation—including community meetings and targeted outreach—and a public summary of the management plan on all lands, public and private. Includes a mandatory list of categories of stakeholders to consult for medium-to-large-scale forest operators.

CoC audits of company practices and procedures are vital to ensure that only raw materials meeting FSC standards are used in FSC-certified product lines; that certified and non-certified materials are properly tracked and segregated; and that FSC trademarks are properly used in labeling and invoicing.

CoC certification is essential to the integrity of the FSC system. If a single link in the supply chain between the forest and the end of the chain is not CoC certified, then the chain is broken and products cannot be sold as FSC certified.

Companies that undergo audits and obtain FSC CoC certificates have the right to sell and promote FSC-certified products, but this does not mean that all of the products they offer are FSC certified. Most

companies that have FSC CoC offer both certified and non-certified products. According to FSC's Corey Brinkema, "A CoC certificate is like a driver's license. It shows that you know how to drive a car and gives you the right to drive, but it doesn't necessarily mean that you are doing so!"

FSC LABELS AND CLAIMS

There are two ways to determine if a product is FSC certified. The first way is to look for an FSC label on the product itself. The FSC chain-of-custody standard dictates which products are eligible to bear which FSC labels. The two main labels that building professionals are likely to see are the FSC 100% and the FSC Mix labels. (See "FSC Labels" on the next page.) There is also an FSC Recycled label, which can be

applied to products from building salvage or other approved sources.

FSC does not require FSC labels to be used on certified products, and it is not always practical to individually label FSC-certified wood products—such as 2x4s—used in building construction. Whether or not they bear a label, FSC-certified wood products must be identified as such by a claim on an invoice. An FSC invoice claim should only come from a company with a valid FSC CoC certificate, and like an FSC label, this claim is proof that a product is FSC certified.

There are several different types of FSC claims. Three of the most common for wood building products are:

- ☐ FSC 100%
- ☐ FSC Mix [NN]% (where [NN] is usually a number between 70 and 100)
- ☐ FSC Mix Credit.

FSC claims provide more detail about how the product was made than do the more basic FSC labels found on products. FSC-certified products may also bear "FSC Recycled" claims.

CHANGES TO HOW FSC WORKS IN LEED v4 VERSUS LEED 2009

In LEED 2009, the Certified Wood Credit (MRc7) offers a single point if at least 50 percent of permanently installed wood products are FSC certified. Projects that use wood sparingly can earn a point by sourcing relatively small quantities of FSC-certified wood, as long as it's at least half of the total amount of wood used. There is also an available innovation credit for using 95 percent FSC-certified wood.

LEED v4 takes a very different approach to incentivizing the use of FSC-certified products, introducing a new Building Product Disclosure & Optimization: Sourcing of Raw Materials credit (MRc3) whose intent is "to encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically and socially preferable life-cycle impacts," as well as "to reward project teams for selecting products verifiably extracted or sourced in a responsible manner."

There are two means for receiving points under MRc3: (1) Using at least 20 different permanently installed products from at least five different manufacturers that

have publicly released a report from their raw materials suppliers addressing certain environmental impacts of raw material extraction; or (2) Using products that meet “Leadership Extraction Practices” for at least 25 percent, by cost, of the total value of permanently installed building products in the project. Under this option, FSC-certified wood is one of a number of products that can count toward the 25 percent threshold. Others include recycled-content products, reused materials and bio-based materials meeting the Sustainable Agriculture Network’s Sustainable Agriculture Standard. Also, products sourced within 100 miles of a project site are valued at 200 percent of their cost, and products sourced within 500 miles are valued at 150 percent.

While FSC-certified wood is now one of a list of qualifying products in the MRc3, there is now an incentive for project teams to source as much FSC-certified wood as possible, regardless of whether the overall amount of wood used is large or small. Any and all FSC-certified wood sourced will get the project team closer to the goal of 25 percent of all building materials used. On the other hand, for commercial projects where wood often accounts for only 5 or 10 percent of the overall cost of materials, even if all of the wood used is FSC certified it won’t be sufficient to earn a point, and the project team will need to source other qualifying materials to reach the 25 percent threshold.

DOCUMENTING FSC-CERTIFIED WOOD IN LEED 2009 AND LEED v4

Because of the differences between the LEED 2009 MRc7 credit and the LEED v4 MRc3 credit, there are some minor differences in how the use of FSC-certified wood is calculated, but the similarities outweigh the differences.

Here are the rules that apply across all versions of LEED:

1) Wood product vendors—including manufacturers, distributors and offsite fabricators such as cabinetmakers and millworkers who sell wood products into a LEED project—must be CoC certified in order for the FSC-certified wood products they supply to count toward earning a point. General contractors and subcontractors, such as framers and flooring installers, do not need CoC certification as long as they do not modify

FSC labels

The FSC 100% label identifies certified products that originate entirely from FSC-certified forests. Products with the FSC 100% label will not include any reclaimed material or controlled wood—wood that has been screened to avoid controversial sources.

The FSC Mix label identifies FSC-certified products manufactured with a combination of FSC-certified virgin fiber—from FSC-certified forests—controlled wood or reclaimed materials wood or fiber, or a combination of those.



the products away from the project site.

2) Vendor invoices for FSC-certified wood products purchased by the project contractor and subcontractors must be compiled. Each invoice must conform to the following requirements:

- Each wood product must be identified by line item.
- FSC-certified products must be identified as such with their FSC claim by line item.
- The dollar value of each line item must be shown.
- The vendor’s chain-of-custody (CoC) certificate number must be shown on any invoice that includes FSC-certified products.

3) Wood products that are identified on invoices as “FSC 100%” and “FSC Mix Credit” are valued at 100 percent of cost. Wood products identified as “FSC Mix [NN]” are valued at the indicated percentage of their cost, e.g., a product identified as “FSC Mix 75%,” is valued at 75 percent of the cost. Wood products that have an “FSC Recycled” claim are classified as recycled content.⁵

The main difference between the calculations for LEED 2009 and LEED v4 is that, for the LEED 2009 MRc7 credit, invoices for all wood (non-certified and certified) must be compiled in order to calculate if at least 50 percent of the wood used is FSC certified, while in LEED v4 only the invoices with

FSC claims are required as the MRc3 credit compares the cost of certified products to the overall total value of permanently installed building products on the project.

NEW RULES FOR RECYCLED CONTENT AND WOODWORKER COMPLIANCE

FSC and Recycled Content. FSC allows for a variety of inputs into the FSC Mix product category. Products identified as FSC Mix Credit or FSC Mix [NN%] may contain pre- and/or post-consumer recycled materials, which are both eligible inputs into an FSC-certified product. Recycled material is commonly reported separately by the manufacturer of FSC Mix products, and in these instances the project team must choose whether to classify the product as FSC certified or as recycled content. The material cannot be double-counted in the LEED v4 MRc3 or contribute simultaneously to the LEED 2009 MRc4 (Recycled Content) and MRc7 (Certified Wood) credits.

It should be noted that this represents a change in policy that applies not only in LEED v4 but also—through updated LEED Reference Guides—to MRc7 in previous versions of LEED. For example, it supersedes the prior version of the LEED 2009 Reference Guide, which stated that only “new” wood products could count toward achieving the Certified Wood credit. Instead, FSC Mix products that



The Green Hammer Home was the winner of FSC's Design & Build Awards Residential 2011.

IMAGE BY T.S. WHALEN, COURTESY OF FSC

have recycled content can contribute their value to achieving MRc7 per the above, and the recycled content does not have to be “backed out” of the credit calculation.

ALTERNATIVE COMPLIANCE PATHWAY FOR WOODWORKERS

An alternative documentation process is available for woodworkers who supply custom wood products to LEED projects, including fabricators of millwork, case-

work and furniture. Custom architectural woodworkers face unique challenges in producing FSC-certified products due to short turnaround times and the variety and specificity of the materials they often use. Depending on architectural specifications, seasonal harvesting, manufacturer lead times and other factors, these shops may not be able to access 100 percent of the raw materials required for a given building project as “eligible inputs” under FSC rules

within the time constraints of the project. In such cases, under FSC rules, a woodwork package cannot be invoiced as FSC certified even if the majority of the raw materials used are FSC certified.

In recognizing these unique challenges for architectural woodworkers in providing FSC-certified wood contributions to LEED projects, USGBC has provided an alternative documentation process for woodworkers who are able to source FSC-certified raw materials but are unable to meet FSC invoicing requirements. In choosing to work with this alternative documentation process, woodworkers must provide a document, separate from the project invoice, detailing FSC-certified wood materials used as well as the total cost of wood materials. Woodworkers do not need to submit itemized material cost calculations to LEED project teams, but they must maintain their calculation records for review by their FSC certification body. This alternative pathway requires woodworkers to be FSC CoC certified and install the custom products (millwork, casework, furniture) on the project site. The full details of this alternate pathway can be found in the LEED v4 Reference Guide as well as in the addenda to the LEED 2009 Reference Guide, dated October 1, 2013.

In summary, while the credit language for FSC-certified wood in LEED v4 and LEED 2009 is very different, the overall documentation and calculation strategy has been harmonized. The USGBC has recognized the importance of remaining consistent in the FSC calculations for both LEED v4 and LEED 2009, especially given the long period during which both standards will coexist.

BEYOND LEED

Of course, FSC is recognized well beyond LEED. All credible green building programs acknowledge and incorporate FSC, including model green building codes as well as other voluntary standards. The Living Building Challenge, for example, requires FSC-certification as an “imperative” for all virgin wood used in the building construction.

Regional green building programs that focus on residential construction provide additional market incentives for FSC-certified products. Examples include California's Build It Green, Earth Advantage based in Portland, Oregon, the Seattle area's Built

Green program, the Chicago Green Home Program, and Minnesota Green Star. Additionally, many major companies have policies that state a strong preference for FSC-certified products, including The Home Depot, Office Depot, Kimberly-Clark and HP. Increasingly, end-users and consumers are also requesting FSC-certified products in retail stores across the country.

Research shows that FSC-certified wood products are among the most-specified green building products in the world, according to McGraw Hill Construction. That's a lion's share of green building, which in 2012 was estimated at 25 percent of all commercial and institutional building and 20 percent of residential construction, according to McGraw Hill Construction.

Recent examples of projects that showcase the use of FSC-certified wood include the Bullitt Center, the first heavy-timber office building in Seattle since the early 20th century and the first commercial building in the U.S. to obtain full FSC Project Certification—and going beyond that standard's requirements in using 100 percent FSC-certified wood. “The Bullitt Center is about doing everything right, from the solar array on the roof to the geothermal wells in the ground,” said Bullitt Foundation CEO Denis Hayes when the building opened last year. “When we looked at the wood, FSC was the only way to go.”

Not far from the Bullitt Center are residential projects by design-build firm Green Hammer, which also only use wood from responsible sources. According to the Portland-based company, the client asked for the homes “to be built only with wood harvested from local or responsibly managed forests, [and] Green Hammer suggested aiming for 100 percent Forest Stewardship Council certified wood.” Home construction typically involves many sources and types of wood, so Green Hammer considers this a major achievement, according to Stephen Aiguier, president.

Building teams can turn to a number of tools and resources in sourcing FSC-certified wood products. These include the FSC Marketplace⁶ and the U.S. Green Building Council's Green Building Information Gateway, a web-based tool launched in 2012 “to accelerate market transformation by providing greater



Hawaii Preparatory Academy won the FSC's Design & Build Awards Commercial 2011.

IMAGE COURTESY OF FLANSBURGH ARCHITECTS AND FSC

transparency and understanding of the green dimensions of the built environment,” known as G-BIG.⁷ Other tools available include the FSC Certificate Database.⁸ There is also an FSC U.S. Product Inquiry form,⁹ which allows building designers and owners to submit a request for specific types and quantities of FSC-certified wood products that is distributed to an extensive list of CoC-certified vendors. At annual and regional green building events, notably Greenbuild, FSC-certified companies are always well represented among exhibitors.

While all of the above-mentioned tools are useful, the top-level strategies for successfully incorporating FSC-certified wood into green building are for building teams to (a) identify manufacturers or FSC-certified products that meet project requirements, (b) contact local distributors early to specify FSC products that are available, and (c) ensure that all key links in the supply chain are FSC CoC certified.¹⁰

Forests are critical for people, wildlife and climatic stability. Approximately 32

million acres of natural forest are degraded or cleared each year, an area almost as big as the state of Montana. This deforestation and degradation is one of the greatest threats to biodiversity, jeopardizing as much as half of the earth's plant and animal species. And lest we forget, the clearing and burning of forests generate a fifth of the world's greenhouse gas emissions.

But the green building professional truly can help rewrite this story. Through specification and material sourcing decisions, the design and construction community is uniquely positioned as a driver of market transformation in the forest sector—there's every reason to do your part. **edc**

1 <http://makeitwood.org/about>

2 Meridian Institute. 2011. “Guidelines for REDD+ Reference Levels: Principles and Recommendations,” <http://www.REDD-OAR.org>.

3 www.fs.fed.us/ecosystemservices

4 Green Building Information Gateway

5 This means that under LEED 2009, the products contribute to MRc4, not MRc7, and in LEEDv4 they count as recycled content under MRc3.

6 www.marketplace.fsc.org

7 www.gbig.org

8 www.info.fsc.org

9 <https://us.fsc.org/product-inquiry-form.231.htm>

10 <https://ic.fsc.org/chain-of-custody-certification.39.htm>

MASTERING FSC WOOD IN GREEN BUILDING — SELF-STUDY TEST

LEED v4 changes the approach to incentivizing the use of FSC-certified products used in LEED 2009, by introducing a new Building Product Disclosure & Optimization: Sourcing of Raw Materials credit (MRc3). All of the following statements about MRc3 are true, EXCEPT:

- A. MRc3's intent is to encourage the use of products and materials with life-cycle information available and environmentally, economically and socially preferable life-cycle impacts.
- B. MRc3 is also meant to "reward project teams for selecting products verifiably extracted or sourced in a responsible manner."
- C. Under MRc3, there is no incentive for project teams to source FSC-certified wood unless the overall amount of wood used is very large.
- D. Using products that meet "Leadership Extraction Practices" for at least 25 percent, by cost, of the total value of permanently installed building products in the project, is one of two ways to earn the MRc3 credit.

FSC-labeled products can be part of a sustainable and environmentally friendly building design. Which of the following statements about wood and lumber as a green building material is FALSE?

- A. Once project teams understand the value of FSC-certified wood in sustainable design and construction, many go above and beyond the minimum requirements of LEED.
- B. Wood building materials sequester carbon for the life of a tree, but only for part of the life of a building.
- C. Forest products are the only major material category that are renewable and can be produced on a sustained basis from natural ecosystems.
- D. Some new research suggests that well-managed forests may store more carbon in soil and vegetation than do poorly managed ones.

All of the following statements about the FSC are true, EXCEPT:

- A. FSC is a membership-based organization, open to all organizations and individuals.
- B. Members elect the board of directors at the national and international levels and decide on policy and governance motions at a triennial General Assembly.
- C. FSC's forest management standards, being global in scope, are designed to be globally consistent while still allowing for regional applicability—because of the wide variety of ecosystems to which they are applied.
- D. In order to pass the FSC claim, the presence of the FSC label on the product is sufficient in place of an invoice.

Which of the following statements about FSC documentation and LEED is FALSE?

- A. FSC-certified wood products on vendor invoices must be identified by line item, the dollar value of each line item must be shown and the invoice must include the vendor's CoC certificate number.
- B. Wood products identified as "FSC Mix [NN]%" are valued at the indicated percentage of their cost, e.g., a product identified as "FSC Mix 70%," is valued at 70 percent of the cost.
- C. Wood product vendors must be CoC certified in order for their FSC-certified products to count toward a point, but GCs and subcontractors do not need CoC certification as long as they do not modify the products offsite.
- D. None of the above.

Which of the following is NOT a change in requirements from previous iterations of FSC?

- A. FSC requires chain-of-custody certification for all companies in the supply chain that take legal possession of FSC-certified products.
- B. FSC Mix Credit or FSC Mix [NN%] products may contain pre- and/or post-consumer recycled materials, which are both eligible in FSC-certified products.
- C. Woodworkers sourcing FSC-certified raw materials but unable to meet FSC invoicing requirements can follow a USGBC-provided alternative.
- D. None of the above.

Which of the following statements regarding FSC labels and invoice claims is TRUE?

- A. Products with the FSC 100% label may include controlled wood—wood that has been screened to avoid controversial sources.
- B. FSC-certified wood products do not need to be identified by an FSC invoice claim, as long as they have an FSC label.
- C. FSC does not require FSC labels to be used on certified products, since individual labeling wood products is not always practical.
- D. The most common labels that building professionals are likely to see is the FSC Recycled label.

The FSC works to protect North American forests, which are critical to life on our planet. Which of the following statements about the role of forests in the ecology is TRUE?

- A. Forests protect the earth's soils, provide much of our fresh water, and regulate and stabilize the climate.
- B. Today, forests comprise 31 percent of our land area, yet over the past 50 years almost half the world's original forest cover has been lost.
- C. Forests support nearly 80 percent of the world's terrestrial species and the livelihoods of 1.6 billion people.
- D. All of the above.

True or False: Chain-of-custody (CoC) certification is available to all companies that process or sell forest products, from sawmills and fabricators to distributors and retailers, and FSC requires CoC certification for all companies in the supply chain that take legal possession of FSC-certified products.

- A. True
- B. False

True or False under LEED v4: For commercial projects where wood accounts for only 5 or 10 percent of the overall cost of materials, if all of the wood used is FSC certified it will be sufficient to earn a point, and the project team need not source other qualifying materials to reach the 25 percent threshold.

- A. True
- B. False

The Forest Stewardship Council (FSC), in the United States and Canada, has certified at least...

- A. 4 million acres and 500 companies.
- B. 30 million acres and 1,500 companies.
- C. 175 million acres and 5,000 companies.
- D. 750 billion individual trees only.

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