

Communicating the Green Advantages of Wood to Your Customers

A marketing guide for manufacturers

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Target audience

This publication summarizes the favorable environmental profile of wood and shows how this information can be included in communications with customers. It is intended primarily as an aid to wood products manufacturers, but will also be of interest to architects, policy makers and anyone with concern for how his or her materials choices impact the environment.

Note: words in the text that are [highlighted and underlined](#) are hyperlinks that can be clicked on in the Web-based version to connect to the related Web site.

Learning objectives

The reader should be aware that

- The environmental impact of products is becoming increasingly important to customers and final consumers.
- Marketing is an important part of business and includes communication with customers.
- Wood is a green material option. North American wood is a local, legal, renewable and sustainable product of forests that provides many additional social benefits. The use of wood consumes less energy during the manufacturing processes and results in less pollution than alternatives such as steel and concrete.
- The favorable environmental impact of a product can be used to help create a competitive advantage.

Wood is good – and why you need to tell your customers

Wood is versatile, beautiful and, as will be shown, abundant. Wood is also a material with a very favorable environmental profile. This last ‘green’ characteristic is becoming more important in today’s world, as concern about environmental impact becomes widespread.

To some people, it makes intuitive sense that wood is environmentally friendly because it is natural and renewable. On the other hand, wood production involves cutting trees, and this is troubling for some individuals. There are tradeoffs with the use of any material, but the use of wood often

Environmental impact is becoming an important product attribute, alongside appearance, cost, and availability. Examples of this concern are being expressed in the marketing of many products, e.g., [energy star ratings](#) for appliances. It is also beginning to show up as an issue in the world of wood products. Examples include forest certification and building rating programs.



Forest certification programs are intended to promote good forestry. By establishing management guidelines and processes for monitoring compliance, these programs seek to provide assurance that ‘certified’ wood products have come from well-managed forests. There are [many programs](#) around the world, but the Forest Stewardship Council ([FSC](#)) and the Sustainable Forestry Initiatives ([SFI](#)) are two of the more well-known programs in the U.S. Participation in these (voluntary) programs allows for the use of the associated ‘eco-label’ with wood products – and this label can help to differentiate your product in the marketplace or attract customers for whom the label is important. A [comparison of these programs](#) finds many similarities; however, there can be differences in how the programs are perceived by customers. Rightly or wrongly, some people associate FSC with the environmental movement and SFI with the wood industry.

Building rating programs are intended to promote ‘green’ construction. By assigning points for a number of factors related to the materials used, design and energy efficiency, these programs rate the building as a whole for its environmental impact and assign progressively better ratings for more ‘eco-friendly’ structures. The [LEED](#) and [GreenGlobes](#) programs are two of the more well-established programs in the U.S. A [comparison of LEED and GreenGlobes](#) shows that these rating programs address many of the same considerations. The details of these systems are complex and subject to change; however, because each program considers the materials used, the benefits of using wood in construction can receive credit to some extent.

has fewer negative environmental impacts than competing materials such as steel, plastic or concrete. Furthermore, the continued production of wood requires maintaining forests – forests that provide many benefits to society.

Currently, times are tough in the wood products industry. The housing market, to which the wood industry is closely linked, has slumped. There is increased competition from low-wage and raw-material-cost competitors overseas. In addition, the steel and plastics industries have made targeted efforts to substitute their products for wood in key areas (e.g., steel studs and wood-plastic decking). These challenging times require innovative actions to maintain and expand opportunities. One possible competitive advantage is the positive environmental story connected to using North American wood products. Developing this competitive advantage will require communication with your customers.

Marketing 101

Communication about green products must be based on a fundamentally sound, green-focused marketing strategy. The combination of the product you choose to make, the customer you choose to target and the market area you focus on – along with the appropriate core competencies (unique skills or attributes your firm has that allows it to differentiate itself) – are what lead to the development of a competitive advantage for your company. Pursuing a sustainable competitive advantage is the essential goal of strategic marketing.

Environmentally oriented communication must be based on the integration of environmental ideals in all components of your marketing strategy.

- The product itself should be environmentally friendly. While wood products have many inherent advantages in this area, these can be quickly neutralized if your supply comes from a questionable source, if your mill is polluting the environment, etc.
- The customers must be open to the concept. Green communication only works with customers who have green tendencies. Green-oriented customers are more common in some geographical areas than others. Thus, selecting the right venues and locations for your communication is essential.
- Green-related core competencies are an important component. For example, companies with salespeople well-versed in certification requirements for buildings (e.g., LEED) or that can offer certified wood products (e.g., FSC or SFI) may have a core competency in this area.

Tools are available to help assure that an organization is pursuing a green strategy in a holistic way. Larger companies typically have extensive environmental management systems, many using the 14000 series from the International Organization for Standardization. Smaller companies often use less bureaucratic tools. For example, some wood products companies are using [The Natural Step Program](#) (see example below) as a means to help manage their environmental impact. Without these sorts of systems in use to guide environmental management, making green claims becomes more difficult.

What is marketing?

Marketing can be defined as

1. Identifying the needs of a customer,
2. Providing a product or service that meets those needs, and
3. Obtaining a profit in the process.

Marketing is often talked about but seldom practiced within many firms. Forest industry firms in particular have a tendency to focus on production efficiency, and to hire sales staff who can push their products into the marketplace. This approach to business does not embrace the principles of marketing. A market-oriented company focuses first on the customer and develops a product or service to meet the customer's need. With this in mind, successful communication of the green benefits of wood products must originate from a green-focused marketing strategy.

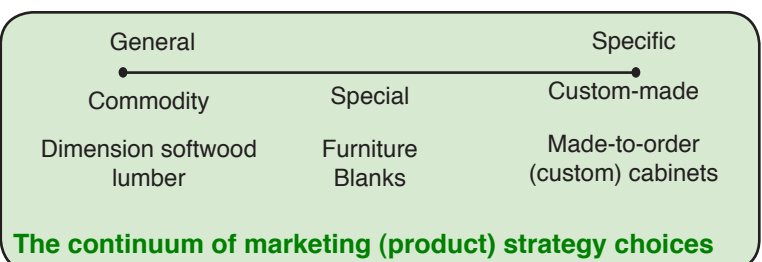
Pursuing a sustainable competitive advantage is the essential goal of strategic marketing. One task of marketing, regardless of company size, is to develop understanding of the business environment of the company (especially customer needs, market trends and demand). This information is used to formulate appropriate marketing strategies.

Marketing strategies

The essence of strategic marketing is making good choices about strategy components and recognizing the differences this may mean in the design of other aspects of marketing, such as communications. There are four strategy components:

1. Products
2. Customers
3. Market area
4. Core competencies

- 1) **Product strategy** ranges over a continuum from commodity to custom-made items. As you might guess, the product strategy must be specific for the company.



- 2) **Customer strategy** is based on the type of products. Alternatives include:

- All possible customer groups. Appropriate for commodity products such as dimension lumber.
- A few, targeted customer groups. For example, parts for door and window companies.

- Known (individuals/companies) end-users. For example, custom homes.

3) **Market area** is another key strategy decision. Market area strategies also range over a continuum: local, regional, national and global. The basic concept is that a market area can be narrow or wide.

4) **Core competencies** are skills that provide a competitive advantage. These are things that a company can do better than the competition, thereby differentiating itself and its products. The following are examples of core competencies:

- Product/service quality
- Unique products or raw materials
- Customer relationships
- Marketing communication
- Fast delivery
- Being a local producer of a quality product

Marketing communication

Marketing functions are tools that enable a company to carry out its chosen strategies. For example, if a competitive advantage is based on high-quality products and services, the most important marketing functions might be product development and close contact with customers. In this case, there is a particular interest in customer communication, because decisions regarding communication should flow directly from the strategies. If a key core competency is environmental friendliness, then this should be emphasized throughout the communications effort.

Green communications can be thought of as a portfolio of the following complementary tools. This portfolio should be carefully planned, holistic and synergistic.

- **Personal selling** – salespeople need to believe in the green story and be well-versed in the environmental aspects of their product as well as environmental issues in general, including any differing requirements of certification agencies.
- **Advertising** – company advertising should always emphasize the core competencies, including those that are focused on green, such as environmental certification.
- **Public relations** – because green is a hot topic in society, free exposure in the media is less difficult to obtain. A change in product composition and an accompanying press release can result in news coverage and potentially free stories in key trade journals.
- **Sales promotion** – there are many types of sales promotion. Trade show participation is typically the

area of largest sales promotion investment in the forest sector. The green theme should be carried throughout the trade show booth design and supporting direct marketing communication.

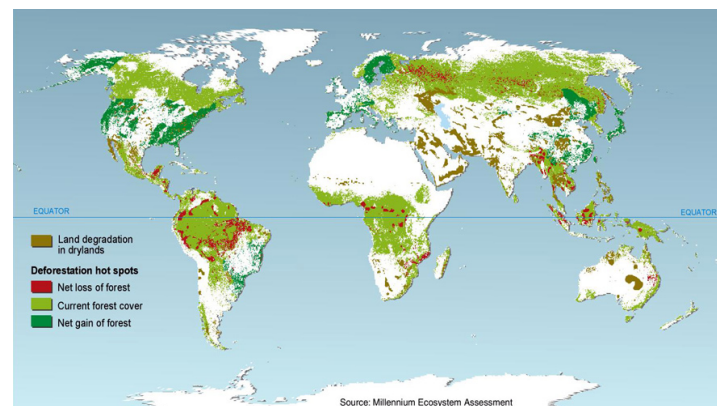
- **Direct marketing** – mailers and brochures, as well as e-mails, Web pages and other e-based forms of communication are types of direct marketing communication. Faxing is more traditional, but is still a very important form of communication in the wood products industry; for many firms this is the most common method of placing or receiving orders. All these methods of communication should help to carry the green theme.

The Green Advantages of Wood

Renewable and Sustainable

Most people enjoy forests and see them as valuable assets that provide wildlife habitat, recreational opportunities and beauty for society as a whole. Some people dislike it when trees are cut, fearing that these benefits will be lost. However, it is important to know that cutting one tree provides the opportunity for another to grow and that harvesting trees as a part of forestry is not the same as deforestation. Deforestation is a serious problem in tropical countries results mainly from conversion of the forest for unsustainable food production. Fortunately, deforestation is [not a problem in the U.S.](#) In fact, according to the U.S. Forest Service, [forests in the United States](#) are both expanding in area and growing faster than they are being cut (a 36 percent increase in inventory from 1953 to 1997).

Money generated from wood products can help to ensure the continued existence of the forest by providing the private landowner an incentive not to convert forestland to another use. The population of the United States is growing. Many rural landowners are being tempted to sell their forestland for development. We can encourage private landowners to maintain their forests by using their timber as the raw material for wood products.



Deforestation is a problem that is concentrated in tropical regions. As seen in this figure, forests are showing net gains in the United States.

Wood Products Can Prevent Deforestation

The link between financial reward for forest products and the conservation of forest resources exists around the world. An [example from Africa](#) shows that the production of high-value carved wooden items is encouraging forest protection. In this case, the people are receiving a greater benefit from harvesting trees for forest products than they would from clearing the land for agriculture, so they have a clear incentive to protect their forest resources.

This link also exists here at home. The forest products industry is a major component of our economy. The industry depends on – and pays for - raw material (logs) from many small private landowners providing an incentive for landowners to maintain their working forests. Unfortunately, the market for forest products is currently quite weak and the prices paid for logs are low compared to other possible uses for the land, e.g., conversion for development for new housing and commercial development. The growth of our population is providing an incentive for many landowners to sell their forestland for development.

The forests of the United States are abundant and provide society with many benefits. Continuing to value wood products and support our local forest products industry may be one of the best ways to save the trees.

Lower life cycle environmental impacts

Cutting down trees and turning them into useful products takes energy and releases pollution, as does the mining and manufacturing processes associated with producing concrete or steel. So how can we figure out which is better in terms of environmental impacts?

Life cycle assessment (LCA) is a technique that attempts to account for all of the inputs and outputs in the manufacture, use and (end-of-life) disposal of a product. LCA allows us to evaluate the total environmental impacts of a product or process. LCA can be used to compare products that perform similar functions, such as wood '2x4s' and steel studs used to build walls.

The process for conducting an LCA is described in internationally accepted standards ([ISO14000 series](#)). The procedure is detailed, quantitative and subject to peer review. All assumptions must be made obvious to the reviewer. Thus, the results from LCA provide a fair and objective basis for comparing materials.

The LCA process has four parts:

Scope definition The product or *functional unit* is defined. This could be a window, a stud or a whole house.

Life cycle inventory (LCI) The heart of the LCA process, which involves calculating all of the energy and material inputs and outputs throughout the manufacture, use and disposal of the functional unit.

Interpretation The data collected in the LCI are organized into meaningful measures, such as the embodied energy (total life cycle energy), water pollution index, air pollution index and global warming potential. The various indices are used to account for the fact that some types of water and air pollution are worse than others. The global warming potential (GWP) summarizes the release of greenhouse gases such as methane and carbon dioxide (CO₂). Usually

the most important contributor to the GWP is the CO₂ that is released when fossil fuels are used.

Assessment The results of the life cycle inventory and interpretation phases are examined to see how products or processes could be improved to reduce environmental impact, or to make comparisons between different functional units

The Consortium on Research on Renewable Industrial Materials ([CORRIM](#)) is a group of researchers who has conducted LCAs for a number of wood products, including lumber and plywood. Their findings have demonstrated repeatedly that choosing wood over substitutes such as steel and concrete results in lower environmental impacts in a number of areas. Complete details can be found on the [CORRIM Web site](#) as well as on the national database of [life cycle inventories](#) maintained by the National Renewable Energy Laboratory.

One of CORRIM's projects was to compare the life cycle environmental impacts of houses made with wooden, concrete or steel framing. In this case the functional unit was the whole house, and each house was designed to "perform" equivalently in terms of size, insulation, heating costs, etc. Because the framing constitutes only a fraction of the materials used in a house, using this whole-house-comparison approach puts the differences amongst the materials into a realistic context.

A summary of CORRIM's house comparison results are shown in the following table. The wood option had significantly less environmental impact than the steel or concrete options in almost every category. These large differences exist even though the only difference among the houses is in the framing material; the other components of the houses were the same. The data show that using wood uses less energy overall and releases much less CO₂ (global warming potential). The large difference between embodied energy and global warming potential is due to the wood industry's use of biofuels (wood residues). Using wood for energy doesn't count towards global warming potential because burning wood only releases CO₂ that

was recently trapped by the tree during photosynthesis. Because the wood products industry gets about half of its energy needs from burning wood, wood products in general contribute much less to global warming than substitutes such as steel or concrete.

use less energy – and much less fossil fuel energy – than alternative materials that can be substituted for wood products. Wood products also trap in solid form (sequester) a significant amount of carbon that in gas form (as CO₂) would contribute to climate change.

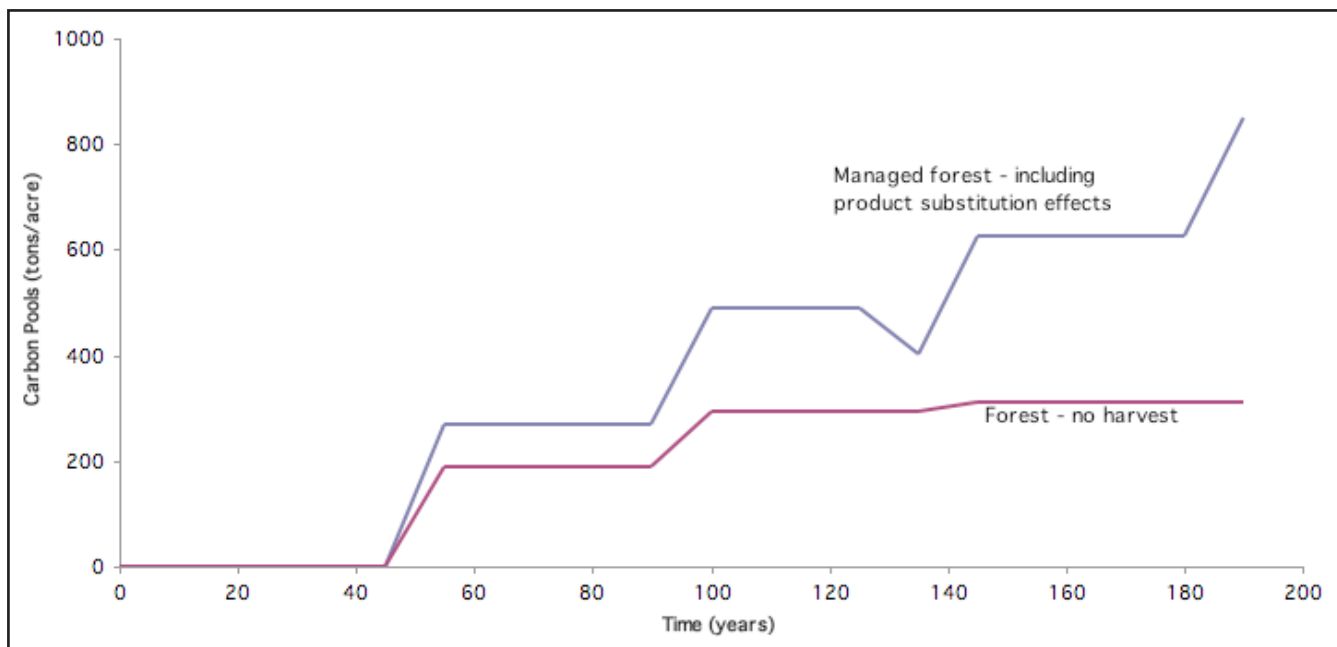
A life-cycle assessment summary for whole houses framed with wood, steel or concrete. The data are the total environmental impacts of steel or concrete compared to the wood option. From CORRIM.

Impact compared to wood...	Steel	Concrete
Embodied energy (GJ)	+17%	+16%
Global warming potential (CO ₂ kg)	+26%	+31%
Air emission index (index scale)	+14%	+23%
Water emission index (index scale)	+312%	0%
Solid waste (total kg)	-0.90%	+51%

Mitigates climate change

Recently, amid growing concern about climate change, there has been discussion of paying private forest landowners *not* to cut trees because the trees trap carbon. However, it is unclear how this might impact the overall carbon equation. If such policies discourage the use of wood products, this effort could actually be counterproductive to the aim of reducing atmospheric CO₂ levels. As shown by the CORRIM data, wood products

The following figure illustrates one scenario where a long-term reduction in CO₂ emissions could result from using wood products (expressed as carbon *on a per-acre of forest basis*). If you add up the savings of carbon from using fossil-fuel-efficient wood products instead of substitutes such as carbon and steel, and the carbon trapped in the wood, it suggests that we can support the use of trees for forest products, instead of trying to trap carbon in forests (shown as the no-cutting line in the graph).



Carbon sequestration by forests if the impact of forest products is considered compared with not cutting trees. This example is from the Pacific Northwest region and is based on information compiled by CORRIM.

The 'home-grown' advantage

[Illegal logging](#) is an important problem globally, not only because of the lost revenue for local people and governments and the distorting effects on wood trade but also because of the negative impacts on the environment. Recent changes to the [Lacey act](#) require proof of the origin of raw materials and provide for substantial penalties for the use of illegally sourced wood. A [recent study](#) has concluded that, in general, there is very little risk that wood products from the United States were harvested illegally. This can be an important selling point for customers here and around the world who are concerned about illegal forest harvesting.

Locally produced wood products also don't have to be shipped as far to be used. This reduces the environmental impacts associated with trucks, trains and ships. Some of the green building systems that are discussed later specifically give credit to materials that are produced locally. Because the United States is the world's largest producer of wood products, chances are good that 'local' wood products are available to many customers.

An Example of the Use of Green in Marketing

The Collins Companies: Green leadership

The Collins Companies were one of the earliest entrants into the green forest products marketplace. In the early 1990s, the company was known as Collins Pine and was operating softwood lumber mills in California and Oregon and a hardwood lumber mill in Pennsylvania. The company had a long tradition of serving commodity markets with industrial and construction lumber (i.e., commodity product strategy & targeting as many customer groups as possible). However, Wade Mosby, vice president for marketing and sales, observed changes in the European industry along with domestic trends and believed the company could gain a competitive advantage by differentiating its products through forest certification.

Collins was the first timber products company in the United States to be certified by Scientific Certification Systems under the Forest Stewardship Council (FSC). This certification meant the company could sell "green" wood products from its well-managed forest. Collins was also the first forest products company in the U.S. to integrate the principles of [The Natural Step](#) into all of its

manufacturing and office facilities. The Natural Step is an international environmental organization dedicated to moving people and businesses toward cyclical resource-preserving methods. As a result, Collins is the first North American forest products company to grow, manufacture and market a full line of FSC-certified wood products while implementing sustainable practices in its facilities. As a result of following The Natural Step philosophy, the company has already conducted inventories and audits to quantify its carbon footprint and the carbon flows that result from its various operations, including corporate headquarters. Company emissions have been audited for two years under the California Climate Action Registry. On multiple fronts, the company is moving ahead with becoming a greener company. Examples include extensive recycling; use of supplies with recycled content; and close scrutiny of paper, water and energy usage.

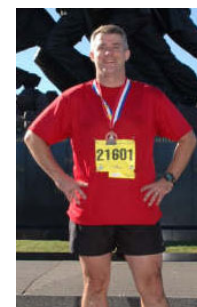
As Collins began integrating certification into its marketing efforts, a number of challenges were experienced. At first, demand was low because few companies or people were aware of certified products or those who were aware sometimes had negative perceptions of product quality. There were challenges with distribution that complicated the challenge of matching supply and demand. Still, the company continued its focus on developing markets for certified products. This eventually resulted in a significant shift in the nature of marketing strategy within the company. There has been a focus on fewer, targeted customers – especially industrial end-users, retailers and specifiers such as architects. There has also been a shift in marketing communication.

Collins Pine works to maintain a respected company image. The company shares its story by providing tours, giving talks and encouraging interviews (i.e., public relations). Company foresters have become expert public relations people and much of their job involves communicating with the public. Certification has been a boon to the company image, as demonstrated by the many positive newspaper and magazine articles covering the issue. Articles have appeared in everything from forest industry sources to environmental organization publications. In addition, the company has gained credibility from certification, which has played a large part in its ability to actively work with local and international environmental organizations. "CollinsWood[®]," the company's brand name, has gained recognition in the marketplace.

Collins emphasizes green in its communication portfolio. The following provides examples:

Personal Selling – Salespeople in the company tend to be environmentally oriented and are happy to emphasize the green values of their company. One way this is emphasized is through the company's Web site. The following is a picture and text excerpt connected to salesperson Chris Bailey and is from a section of the Web site titled "Meet our Sales Team."

"My green confession: I drive a 2006 Ford F-150 Lariat. It has all the fun bells and whistles but it gets terrible gas mileage. When I bought my first F-150 in 2004 it was snowing and slick. Having 4WD in Klamath Falls helped justify the truck, but I did have qualms about the footprint the truck would leave. Then last year a fully loaded semi slammed into me going 45 mph and left quite a "footprint" on my old truck. I got myself out of the remains of that truck. I did not have any qualms buying the second F-150. I do bike to work when I can. It's 23 miles roundtrip, so that helps some."



Advertising – environmental aspects of their company and products are emphasized throughout the advertising efforts. The advertisement here is an example from their certified softwoods line. As described by Cami Waner, communications manager for Collins, the advertisement is designed with the following ideas in mind:



LEED Credits. FSC-certified. Assures that the softwood you specify meets and, in the case of Collins, exceeds the highest standards in the world for protecting our forests.

Vision. Nurture our forest's biodiversity. Leave the Earth better for our being here. And know that Collins' FSC-certified softwood forests have never seen a clear-cut. Ever.

Relationship. Foster loyalty and trust simply by being loyal and trustworthy – to our customers, our employees, our communities.

Heritage. Stable. Responsible. Personally committed. Family-owned for more than 150 years and will be for another 150 with the 4th & 5th generations now working in the mill, forest and leading the Board.

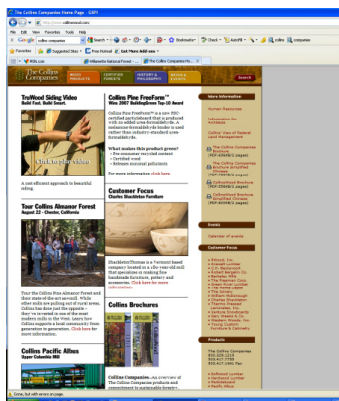
Public Relations – the company has won many awards associated with positive environmental performance. The following is the first paragraph from a company press release outlining a recent award:

Collins Pine FreeForm™ receives Top-10 Green Product Award
 Klamath Falls, Oregon – Collins Product's new line of particleboard – Collins Pine FreeForm™ – has just been chosen as one of the "Top-10 Green Building Products" at the sixth annual U.S. Green Building Council's Conference in Chicago. The Council recognizes the most exciting products listed in their GreenSpec database, the leading national directory of green building products with more than 2,000 listings. "Our policy of not accepting money from manufacturers allows us to be objective in our review of products," noted Alex Wilson, GreenSpec coeditor and BuildingGreen president.

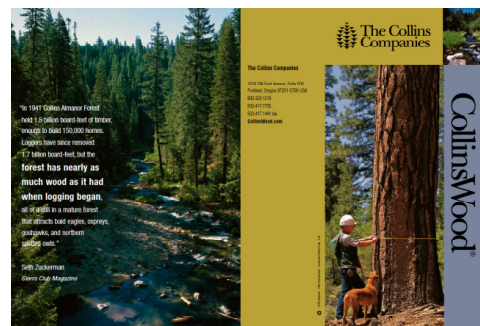


Sales Promotion – When Collins has a booth at trade show, the emphasis on green is readily evident. For example, FSC-certified forests are highlighted in the top text of the CollinsWood trade show booth.

Direct Marketing Communication – Pictured is an example brochure for the brand CollinsWood.



Another method of direct communication is through the company's Web site. It is designed to have a different customer focus each time someone visits. It also highlights upcoming tours of company forestlands.



As can be seen from the examples above, Collins is comprehensive in integrating a green message across its communication portfolio. This consistency of approach is necessary to build and maintain a green image.

Don't "greenwash" your products!

In recent years, there has been a tremendous proliferation of companies claiming to have "green" products. Claims such as "environmentally safe," "recyclable," "eco-safe" and "post-consumer waste" are now commonplace on products. According to a recent report by TerraChoice, green advertising has nearly tripled since 2006; however, they found more than 98 percent of advertisements for green products made at least one false claim.

Greenwashing is when a company dishonestly says its products and/or policies are environmentally friendly. TerraChoice has created a list of the "seven sins of greenwashing," which includes common greenwashing techniques such as hidden trade-offs, no proof, vagueness, irrelevance and false labels.

As stated in the Marketing 101 section, a successful green marketing strategy must include truly green products. Greenwashing can pose serious risks to a company's brand image. Trust is a major component of brand image, so a false claim by a company violates the customer's trust. When customers feel they can no longer trust a company, they are less likely to purchase their products. Companies caught or even accused of greenwashing run the risk of negative press. Tools such as the Greenwashing Index (www.greenwashingindex.com) have been created to allow consumers to police greenwashing. Consumers can post and rate ads on a scale of 1 to 5, with 5 being absolutely false. This tool was recently highlighted in an article in Time Magazine.

How can companies avoid the pitfalls of greenwashing? Here are some suggestions:

- Make greener products. Wood has some inherent advantages, but maybe your products could be even better. Can you reduce pollution from your process? Can you improve your efficiency? Can you use energy sources that are renewable?
- Know the facts. It is important that the communication about a product be based on a thorough understanding of all environmental impacts of the product through its lifecycle.
- Provide support. When a claim is made about a product, make the evidence readily available to the consumer. From the consumer's perspective, third-party certifications provide the highest level of assurance.
- Be specific. It is important that communication about a product clearly defines how the product is green. Avoid the use of vague terms.
- Always tell the truth!

"Green" according to architects and engineers

Architects, engineers and others in the building industry are important customers of the forest products industry, because they play a large role in selecting the structural systems used in buildings. Because building construction is the largest use of wood in the U.S., it is important to understand how wood is viewed by building professionals.

Green building is a movement that is happening across the U.S. This is largely driven by green building programs such as [LEED](#) and [Green Globes Design](#). These green building programs have the primary objective of reducing the environmental impacts of buildings. According to the World Business Council for Sustainable Development, buildings account for 40 percent of the global energy consumption and produce more CO₂ than the transportation sector. Consequently, green building programs focus on creating more energy-efficient, high-performance buildings.

Concrete and steel are often used by architects and engineers for large-scale building projects. As a result, many in the forest products industry have the impression that building professionals and the green building movement are biased against wood. This impression is a misconception! A research project in Oregon examining attitudes about green building programs has found that there are many architects who view wood in a positive light.

Building professionals use several criteria when deciding the structural systems of a building, but the decision is driven by three main criteria: building codes, building type and cost. As one Eugene, Oregon-based engineer put it, "The system for a building is usually determined by the function of the building, building codes and budget. Then we work green around that."

Wood is not an option for many building types because local building codes do not allow for its use. Building height, occupancy and fire codes can limit the potential to use wood. This point is illustrated by one Portland, Oregon-based engineer, "...when we get up about 4 or 5 stories we're automatically not talking about wood." Code drives building professionals to have preferences for structural systems based on the size of the building.

However, green building professionals generally view wood as a green material. Often, wood is their structural material of choice. However, their preference for wood can sometimes be over-ruled by code restrictions. As demand for green buildings increases, and as building codes evolve, we could see increased use of wood in building to take advantage of its environmental advantages.

GreenGlobes and LEED - 'Green-building' programs

As concern for the environment increases, new ways of promoting 'green' practices are being developed. Forestry certification movements such as the Forest Stewardship Council (FSC) and the labeling of the recycled fiber content in paper are two examples that involve forest products. New "green building" certification systems have also been developed with big implications for wood.

The Leadership in Energy and Environmental Design ([LEED](#)) Green Building Rating System evaluates the design, construction and operation of buildings. The LEED system awards points in five areas: site development, water savings, energy efficiency, materials selection and indoor environmental quality. Developers who want a 'green' building can demand a building with a certain number of LEED points. The LEED program can involve wood products in a couple of ways:

- Locally produced materials receive credit. Many forest products used in housing fit this requirement; for example, hardwood flooring and framing lumber.
- Recycled and FSC-certified wood also receive points.

Buildings use a lot of wood, and using wood can mean a lower impact on the environment than using materials such as concrete or steel. The LEED program does not yet account for this, but it is reflected in the 'life-cycle' approach incorporated in another green building program: [Green Globes](#).

As LEED, Green Globes and other building systems develop and gain acceptance, the 'green' benefits of building with wood may become more important.

Can Bamboo Replace Hardwood Flooring?

Bamboo flooring is growing in availability and popularity in the United States. Although bamboo has a number of attributes that make it a suitable flooring option, one of the primary marketing points has been its perceived environmental benefits. But is bamboo greener than wood?

Thousands of species of bamboo grow all around the world, including some in the United States. Some species of bamboo can grow well on poor and unstable sites, which makes it a useful crop alternative. Bamboo has the potential for rapid growth: shoots have been observed to grow more than 3 feet in a single day. Stands of bamboo establish quickly and harvest can take place in less than 10 years. Bamboo also will sprout readily from the cut stems, so regenerating stands is easy. Parts of the bamboo shoot are very hard, which makes these tissues suitable for the surface of flooring products. Bamboo also has edible parts, which can provide food for people or – famously – for wildlife such as panda bears.

It is the rapid growth and natural regeneration properties of bamboo that are primarily responsible for the "green" reputation for bamboo. However, many of the environmental benefits of bamboo are shared by wood. Natural regeneration is not limited to bamboo stands; it is a viable and widely used practice in forestry also. The longer rotation times for trees compared to bamboo can actually be considered as an advantage for wood. Some tree species produce as much biomass per year as bamboo, but trees store this production for longer (in the living tree) so fewer harvesting resources (fuel, machinery, labor, etc.) are required for each ton of crop collected. Most bamboo harvested for commercial use is cultivated and there are concerns about replacement of natural tree forests with bamboo plantations in some areas. Also, as with many short-rotation crops, applications of fertilizer and pesticides to bamboo may be required for optimal growth.

Finally, it's easier to make flooring from trees than from bamboo. Bamboo stems are hollow, so bamboo flooring panels are made from layers of sliced bamboo that have been glued together. Hardwood flooring consists of solid pieces of wood that are sawn directly from trees, so less processing energy and fewer materials are required. Solid hardwood flooring also provides more material that can be sanded off in future refinishing steps; the hard surface layer of bamboo flooring is relatively thin and so it cannot be sanded and re-finished like solid wood.

Bamboo is a versatile and renewable material. The same is true of wood. For environmental impact, performance and price, it is hard to beat hardwood flooring from the U.S.

Wood Can Work!

Some architects and contractors believe that wood cannot be used in many applications – especially bigger buildings. This is not the case! For example, [The Murray Grove building](#) in the UK, at eight stories, is the tallest inhabited wooden-framed structure in the world.

Furthermore, wood is not restricted to 'old-fashioned' designs. The *Timber Research and Development Association* (TRADA) has put together a nice collection of [case studies](#) that demonstrate the effective use of wood in beautiful, modern buildings.

Take-home message

The environmental impact of products is becoming an important concern for many companies and consumers. This can be an important advantage for wood because it is very 'green': it is typically available locally from legal sources, it is renewable and sustainable, and its use consumes less energy and results in less pollution than many alternative materials.

Marketing is an important part of business and includes communication with customers. Clear, consistent and honest information about the favorable environmental aspects of wood products can help create and maintain a competitive advantage.

Resources

Forest Certification Programs

Forest Stewardship Council (FSC) <http://www.fsc.org/>

Programme for the Endorsement of Forest Certification (PEFC) <http://www.pefc.org>

Sustainable Forestry Initiative (SFI) <http://www.sfiprogram.org/>

American Tree Farm System (ATFS) <http://www.treefarmssystem.org>

Green Building Programs

Green Globes - <http://www.thegbi.org>

LEED - <http://www.usgbc.org>

Living Building Challenge <http://lbi.org/>

Information about "Greenwash"

Eco-Buyer Beware: Green Can Be Deceiving. Time Magazine. Thursday, September 11, 2008. <http://www.time.com/time/magazine/article/0,9171,1840562,00.html>.

TerraChoice. 2009. The seven sins of greenwashing. Environmental claims in consumer markets. Summary report: North America. April 2009. 22p. <http://sinsofgreenwashing.org/findings/greenwashing-report-2009/>

The greenwashing index. <http://www.greenwashingindex.com/>.

Understanding and Preventing Greenwash: A Business Guide http://www.bsr.org/reports/Understanding_Preventing_Greenwash.pdf

Life-Cycle Assessment Resources

CORRIM - <http://www.corrim.org/>

[US Life-Cycle Inventory Database](#)

[Athena Institute](#) – LCA information about buildings, including [calculators](#) for estimating environmental impacts

Wood-Related Associations

American Hardwood Export Council - <http://www.ahec.org/>

American Forest & Paper Association - <http://www.afandpa.org/>

Canadian Wood Council - <http://www.cwc.ca/>

TRADA – The Timber Research and Development Association - <http://www.trada.co.uk/>

US Forest Service Forest Products Laboratory - <http://www.fpl.fs.fed.us/>

Visit the UT Extension Web site at
<http://www.utextension.utk.edu/>

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