

oikos Sustainability Case Writing Competition 2003

3d. Prize

**Environmental Product Differentiation by the
Hayward Lumber Company**

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ENVIRONMENTAL PRODUCT DIFFERENTIATION BY THE HAYWARD LUMBER COMPANY

Magali Delmas, Erica Plambeck and Monifa Porter

For 82 years, the Hayward team has derived its wealth from the forests. Many of the forest practices that have fed our families and the company over that period were not very environmentally responsible. We have both a unique opportunity and a moral obligation to give something back to the forests from which our economic prosperity is derived, to promote wood as a responsible renewable resource, and to improve our profitability. Our pioneering work in greening the construction process will be our legacy — as a company and as individuals. It is the right thing to do for our forests and our environment. It strongly promotes our people strategy, and it is economically feasible.

—Bill Hayward, President, CEO, and Chief Sustainability Officer, Hayward Lumber Company¹

Hayward looked up to the photo of his great-grandfather hanging on his office wall. The man who started the company almost a century ago would have been intrigued by the new markets into which young Hayward was taking the family business. He glanced back to the blueprints spread across his desk and again concluded that the project was ambitious, but by no means foolhardy. Bill Hayward needed to create a real world example of the cost case for building green and in so doing, as he had written on his office wall: “be the change he hoped to see in the world.”² He hoped to capture new information on how to both build and sell green and to fortify his company’s environmental leadership position.

It was April 2003, three years after he had announced his intention to make Hayward the leading supplier of environmentally friendly building materials on the California central coast, and a model for sustainable business. He had already begun to capture the market niche by selling the most credible and trusted high-performance green building materials on the market. In addition, his company had begun to take steps to shift to procuring only green products for use within the

¹ “Our Restorative Business,” Bill Hayward. Memo to Hayward Lumber Company Management. April 27, 2000.

² Mahatma Gandhi

This case was written as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation. Numbers in the case have been modified and disguised to protect proprietary information.

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company and to mitigate waste through recycling and efficiency auditing. Now it was time to take an even bigger step in greening his company. He looked back to the construction cost estimates for what could be the world's first environmentally designed truss plant.

COMPANY OVERVIEW

Homer T. Hayward founded the Hayward Lumber Company (HLC), a privately held family business, in 1919. Headquartered in Monterey, California, the company operated six lumberyards serving the central coast region, located in Pacific Grove, Salinas, Santa Barbara, Paso Robles, San Luis Obispo, and Santa Maria, California. Bill Hayward, Jr., the founder's great-grandson, began managing the company in 1992. Hayward Lumber Company, a professional builder supply business, earned net sales of approximately \$115 million in 2002, in an industry with national annual revenues of about \$130 billion. The company was the 44th largest building supply company in the United States, the 5th largest in California, and the dominant player in the California central coast market. Hayward's team of 450 employees supplied builders of single-family homes with sawn lumber, oriented strand board (OSB)³, windows, doors, kitchen cabinets, and building materials. (See exhibit 1.) Competitors in the central coast market included Big Creek Lumber, Birk and Pace, Weirick Lumber, Terry Company, and San Rafael. With three lumberyards, San Rafael was the largest competitor.

The customers of Hayward Lumber Company were single-family residential homebuilders. About half of HLC's revenues were from custom builders that built between two and six homes annually. The other half of HLC's customers built tract housing and built up to 200 homes annually in the California central coast region. Traditionally, the construction industry is highly fragmented and specialized, and is very much relationship based. Builders contract and subcontract with architects, construction crews, plumbers, mechanical and electrical engineers, and interior designers who work separately to complete a single building. Most builders prefer tried and true building methods rather than innovative techniques because they must meet tight construction timelines and manage a complex set of relationships to complete components of the project. Using traditional methods and maintaining long-term relationships with subcontractors assures them of the quality and timeframe of each aspect of the project.

HLC added value for builders by cutting lumber to meet the specific requirements of each construction project and stacking it onto delivery trucks such that it could be removed in exactly the order it was needed at the construction site. HLC would deliver at the specific day and time requested by the builder. Early delivery would clutter the construction site and risk shrinkage and rain damage. Late delivery would cause workers to stand idle and disrupt the construction schedule. In either case, HLC would lose future business. HLC prided itself on being "on time, as promised (OTAP)," as their logo declared (Exhibit 2). Reliability commanded a premium in the construction business and the company used OTAP measures to gauge their success in meeting customer demand reliably.

HLC's volume of business was physically limited by the size of its lumberyards and the acreage available to stack inventory for pick-and-pack delivery. On average, a full service lumberyard typically required four to seven acres of land, 6,000 to 10,000 square feet of materials storage

³ Oriented strand board is a composite wood product similar to plywood.

space, access to a rail spur and \$450,000 of inventory on the ground. The capital investment required to start a full-service lumberyard in the central coast region of California was about \$12 million in 2003.

The forests that supplied HLC and most lumberyards in the Western United States were located primarily in Washington and Oregon, and the supply chain for traditional wood products, southbound from forest to final product, was mature and well established. Whole logs were cut from commercial forests and shipped by truck to nearby mills where they were milled into various lengths and sizes. The lumber was then shipped by rail from the mills to the lumberyards, and stored at the lumberyard until it was sold and trucked to a construction site. Lumberyards were regionally focused to serve area builders, usually within a one-day trucking range of the yard.

Historically HLC generated most of its revenue from selling and delivering sawn lumber and OSB to job sites. Twenty-five percent of Hayward's wood products were too specialized to be carried in stock, and the company had long-standing expertise in procuring rare products and hard-to-find materials.

BILL HAYWARD, JR.

In the early 1990s, the builder supply industry in California was devastated by restriction in the supply of lumber and economic recession. In 1990, strict environmental regulation was imposed to protect the habitat of the spotted owl and this restricted clear-cuts to at most 40 acres; the timber harvest in California dropped by 33 percent from 1989 to 1992. From 1990-1992, the number of building permits issued in California fell by 40 percent. Profit margins in the builder supply industry fell from 38 percent to 23 percent, and 22 lumber and building materials stores in the central coast market went out of business. During this time period, the Hayward Lumber Company was struggling with internal control – wildly inaccurate inventory assessments – as well as the crisis in its business environment. Hayward Lumber Company, which had remained profitable during both the Great Depression and the massive recession of the early 1970s, was headed for a \$1.8M loss in 1992, the first loss in company history.

In October of 1992, 29-year-old Bill Hayward, Jr. was appointed president and CEO of the company. Both maverick and hard-nosed fiscal manager, Hayward immediately cut labor costs and increased revenue. He replaced the entire corporate staff and all of the branch managers, and cut HLC's labor force by 25 percent. Hayward aggressively lowered prices on lumber to obtain new market share.

Hayward billed his first four-year plan as the "Arounga Strategy," named after a small staff wielded by Masai cattle herders in the East African savannah. The Masai used the staff to protect their herds from lions and other predators. Hayward hoped to use his Arounga Strategy of *product diversification* and *inventory cost control* to protect his small company from the lions of a shifting market and rapidly consolidating competitors. The strategy included selling higher margin products such as cabinets, doors, and windows in addition to basic lumber. (Even when economic conditions result in drastically fewer housing starts, remodeling tends to remain a

steady source of revenues from door, window, and cabinet sales.) Hayward implemented just-in-time inventory management. The lead-time for HLC to obtain lumber from the Northern mills was two weeks, so HLC requested that builder-customers order two weeks in advance of construction. Hayward installed computer information systems for tracking orders, changes in builders' construction schedules, and inventory. HLC would order lumber on the basis of actual orders and inventory levels. HLC aimed to take receipt of the lumber "just-in-time" to load it onto a truck and deliver it to the job site "on time as promised." The projected losses the company faced when Hayward took the helm were due in large part to weak inventory management. By tightly controlling inventory, Hayward reduced shrinkage and financial inventory costs and improved its on-time delivery performance. Space in the yard was used primarily to pick-and-pack lumber for delivery to builders, rather than for storage. Hence HLC could drive a larger volume of business through its lumberyards without acquiring more land.

By 2003, there were far fewer lumber supply firms in the market than there had been in the late 1980s, and HLC was one of them. The company survived the rapid concentration and consolidation by implementing the Arounga Strategy. Increased volume and product diversification at HLC proved key to its survival. Revenue shifted from almost entirely lumber in 1992 to about half lumber and half higher margin building materials in 2003, and sales per lumberyard grew from \$6 million to \$12 million.

TAKING AN ENVIRONMENTAL LEADERSHIP POSITION

With a lifetime in the builder supply business, Bill Hayward was well attuned to changes in the market and trends among builders. However, he was surprised to learn that a small number of renegade "dark green" builders were building to environmentally stringent building specifications and in the process, were doing business very differently from traditional builders. They were buying Forest Stewardship Council (FSC) certified lumber and holding it for months at a time, and they were seeking out and using non-traditional building materials to meet high standards of energy efficiency, health and safety, and environmental sustainability. Hayward hired a director of sustainability to investigate this trend, and she discovered a growing market opportunity to supply nontraditional environmentally friendly materials to builders in a very traditional manner: pick and pack delivery from the lumberyard.

Bill Hayward was committed to transforming his company into the central coast's supplier for environmentally sustainable building materials, to not only serve this new market, but also to protect the resource which his family had depended on for generations. Hayward also believed that the employees of the company would be invigorated by an environmental strategy. He delivered a mandate to his executive management team to expand the existing product line to include environmentally friendly products, eliminate environmentally undesirable products from the company's offerings, capture existing demand for green building supplies, and create new demand by educating key customers on the value of building green. The first step toward environmental product differentiation was to sell FSC certified lumber.

FOREST STEWARDSHIP COUNCIL CERTIFIED WOOD

In 1993, 130 representatives of environmental organizations, lumber companies, forest product retailers, indigenous peoples' groups, forestry certification groups and scientists from around the world gathered in Toronto, Canada to create the Forest Stewardship Council (FSC).⁴ This wide-ranging group of timber industry stakeholders from World Wildlife Fund to Home Depot came together in response to activists protesting in retail outlets and the increased consumer awareness of harmful lumber harvesting practices. They formed FSC to promote "sustainable" forest management, that is, to protect fragile ecosystems, ensure long-term viability of forest resources, empower indigenous people to reap the benefits of their forestlands, and maximize the economic value of the forests within the contexts of these environmental and social goals. The scope of the founding assembly, which uniquely included indigenous people and expressly sought to balance social benefits with environmental and economic concerns, set FSC apart from other certifying bodies.

FSC certification gave consumers the opportunity to choose wood products generated from a "sustainable" forest. The Forest Stewardship Council codified a standardization and accreditation process, which aimed to certify third-party independent certifiers, rather than actually certify forests and forest products directly. Environmental, social and economic standards of forest management were defined through a complex consensus-building process, which incorporated the positions of all of the assembled stakeholders. These broad standards were adapted to local realities and operationalized for implementation by national working groups. The accreditation process provided assurance that third-party certifying bodies would competently and independently verify that forests adhere to the FSC standards (Exhibit 5).

Certifying bodies were also accredited by the FSC to monitor the entire supply chain. They would provide "chain-of-custody certification" to authenticate the wood as it moved from forest to mill to manufacturer to the end consumer. Chain of custody certification was complex, costly, and inefficient in that less than 10 percent of the wood harvested from FSC certified forests reached consumers under an FSC label.

In 1995, in response to the FSC certification, the American Forest and Paper Association created the Sustainable Forestry Initiative (SFI) certification process. This was greatly criticized by environmentalists for weak environmental standards and lack of credible and objective third party evaluation. Following its inception, SFI underwent a number of improvements, including the participation of outside auditors such as PricewaterhouseCoopers. However, environmental NGOs continued to criticize them for lack of chain-of-custody certification, and the exclusion of indigenous people and the public at large in development of the standard.

While environmentalists criticized the SFI standard, retailers largely accepted it, because FSC certified products were more expensive and difficult to source. SFI products were offered at no additional cost and were easily available for purchase from mills. In 2003, 42.5 million hectares of land in Canada and the United States were SFI certified. These woodlands, managed by only 200 different companies, accounted for 85 percent of all wood produced in North America. In contrast, FSC certified woodlands were fragmented and dispersed: 25.5 million hectares in 66

⁴ <http://www.fscus.org>

different countries, including 4 million hectares in the United States under 500 different landowners. Similarly, only a small fraction of saw mills were FSC certified. These mills would process both FSC and non-FSC certified wood, but not simultaneously. Before cutting FSC certified wood, a mill operator was required to shut down and clear the premises of non-FSC certified wood, in order to meet stringent FSC chain-of-custody requirements. The set-up time was costly in lost output, so a mill operator would typically only produce a batch of FSC certified wood three or four times per year. FSC certified woodlands, FSC certified saw mills, and manufacturers of FSC certified products were geographically dispersed, and suffered high transportation costs and delays. Hence retailers might have the opportunity to order a particular FSC certified product only once in three months.

The demand for FSC certified wood was stimulated by the Leadership in Energy and Environmental Design (LEED) Green Building Rating System, a voluntary standard developed by the U.S. Green Building Council⁶ to promote high-performance sustainable buildings. The LEED system awards points for making various environmentally preferable choices, including choosing FSC certified lumber. By achieving various point thresholds, a building is designated LEED Certified: Silver, Gold, or Platinum. To achieve points for certified wood, builders are required to use at least 50 percent FSC certified lumber in the project, and the wood costs are required to be at least 2 percent of the total cost of the project. The U.S. federal government was committed to building to the LEED standard, as were many corporations, universities and individuals. Many new schools and post offices in California were LEED certified.

HLC: SELLING FSC CERTIFIED WOOD

Initially, HLC's demand for FSC-certified wood came primarily from custom homebuilders. Luxury home buyers tended to be less sensitive to price, and many were willing to pay a premium for a home that was "deep green," or as environmentally friendly as possible. Such buyers were unwilling to accept a partial solution, and demanded that the proportion of FSC-certified wood should be close to 100 percent. HLC's other builder-customers, those who built low-cost tract homes, were unwilling to pay a premium for FSC certified wood.

Unfortunately, luxury homes required premium wood products, but the local FSC-certified mill was not equipped to consistently meet premium standards for accuracy and surface finish. Too often, quality problems with the FSC-certified wood led to delay, waste and dissatisfied customers (builders and home buyers).

Nevertheless, Hayward chose to stock FSC certified lumber, and dedicated one acre of land in the Salinas lumberyard to this purpose. (Commercial real estate for industrial use sold for more than \$200,000 per acre in 2002.⁷) Given the lead-time of approximately 3 months to obtain FSC-certified lumber from the mill, HLC needed to hold inventory in order to deliver the wood to builders in the traditional manner: pre-cut, load stacked, and with a short lead-time. By making it convenient to obtain FSC-certified wood, HLC hoped to attract new customers: green builders from all over California, in particular those constructing large public buildings to LEED

⁶ <http://www.usgbc.org>

⁷ <http://www.naidirect.com/research/market/pguide2003/montereyca.pdf>

specifications. Based on its best estimate of demand over the next three months, HLC initially purchased \$500,000 of FSC-certified lumber at \$4.00 per board foot.⁸ This was 20% greater than the cost of \$3.20 per board foot for non-certified lumber. (See Exhibit 10.)

None of HLC's competitors in central California carried FSC-certified lumber. In this vacuum, HLC decided to sell the FSC-certified lumber for \$4.20 per board foot. This seemed reasonable in that HLC also used a 5% mark-up with non-certified lumber, buying at \$3.20 and selling at \$3.35 per board foot. After two months, HLC had sold 80% of the inventory of FSC-certified wood. Rather than allow the remainder to dry out and warp, HLC removed the eco-label and sold the FSC-certified lumber as regular lumber at the regular price of \$3.35 per board foot. Fortunately, the FSC-certified wood was physically indistinguishable from other wood.

BUILDING GREEN AND SELLING WHOLE SYSTEMS: EXPANDING THE ENVIRONMENTAL STRATEGY

In a document issued in April of 2000, which became known as "Hayward's Green Manifesto," Bill Hayward outlined his three-part environmental strategy. The first part of the strategy was to provide a comprehensive selection of environmentally friendly building materials with a short and reliable lead-time. HLC would continue to supply FSC-certified lumber on a just-in-time basis, and extend into higher-margin green building materials such as nontoxic adhesives, no- and low-VOC paints⁹, formaldehyde-free insulation, FSC-certified or recycled cabinets, counters and floors, and energy efficient doors and windows. HLC sought substitutes for toxic or environmentally harmful products. For example, in 2000, the company replaced arsenic-treated wood, a very common product in the lumber industry, with arsenic-free wood. (In February of 2002 the Environmental Protection Agency announced that arsenic-treated wood would not be permitted for use in residential buildings after December 2003.) Arsenic preserves wood but poses severe health threats to construction workers who touch it often, and potentially to residents of the home. Because many vendors of green building materials were small startup organizations, HLC could add great value by aggregating these products in one place, easing each builder's procurement process.

The second part of the environmental strategy was to stimulate demand through education. Specifically, HLC invited key decision makers, such as architects, inspectors, engineers, appraisers, city officials, and influential homeowners, to daylong seminars on green building. HLC created a toolkit for assessing the costs and benefits of building green and an extensive web catalogue of green building materials, even listing products that HLC did not carry in stock. In addition, HLC garnered media attention by donating FSC-certified building materials to celebrity-endorsed, charitable construction projects by Habitat for Humanity in Hollywood.

The third part was to change the culture of the company, to incorporate environmental values in all decisions and activities. Green builders and their customers are idealistic, and prefer to do business with those that share their values. Therefore, HLC implemented an internal recycling and waste diversion plan, changed their procurement policies to buy green products for internal

⁸ One board foot is a piece of lumber that is 1 foot wide, 1 foot long and 1 inch thick, or its volumetric equivalent

⁹ No/low-VOC paints do not contain, or contain very few volatile organic compounds, which are known hazards to human health.

use, and made a commitment to build all new Hayward construction projects to the LEED standard. In so doing, they would gain valuable knowledge about green building.

Ultimately, Hayward planned to use the company's experiential knowledge and leadership position to become the trusted one-stop shop for green builders. Incremental environmental upgrades were always costly. However, with a whole-system approach, increased capital costs could be recouped through operational savings. For example, a builder must tighten the entire building envelope to achieve energy efficiency. Premiums paid for highly efficient doors and windows would be lost as heat waste if the walls and ceilings were not similarly insulated. Because of these interdependencies, an integrated product offering was particularly attractive to green builders. With intellectual capital garnered through building and buying green, HLC would offer comprehensive, environmentally sound systems.

Hayward added an external sales team, and instructed them to prepare detailed cost/benefit analyses for the green systems, centering on energy efficiency, and identifying rebates, operational cost savings, and payback periods. Furthermore, the sales team was trained to focus on coordinated sales, building relationships with customers, gathering information about potential building projects, and forecasting demand.

The first was a truss plant. (A truss is two-dimensional frame to support the roof or floor of a house. See Exhibit 11.) Frustrated with the glacial pace of innovation in construction, Hayward aimed to "be the change" by manufacturing wood structures with 20 percent less lumber, in one of the first industrial production facilities to meet the LEED Gold standard. The facility would manufacture wall panels in addition to trusses. Roof trusses were common elements in both custom and tract housing, and floor trusses were established though much less common. However, prefabricated wall panels were innovative in this market. The truss plant would be located in Santa Maria, in order to serve both the San Luis Obispo and Santa Barbara counties.

The truss plant would specialize in "advance framing": cutting and assembling lumber with careful design to avoid waste. For example, by using 2x6 inch slats spaced further apart than the standard 2x4 inch slats, HLC could build a common roof truss¹⁰ with only 16 b.f. of lumber instead of the standard 20 b.f.. (A common roof truss would sell for approximately \$140 in central California, and ten copies would be required to support the roof of a two car garage.) Essentially, advance framing substitutes engineering design effort for wood (approximately 8 hours of analysis by a civil engineer for a simple roof truss system). HLC expected to be most competitive on a high volume job, e.g. 10 copies of the same roof truss system for tract housing, in which the design cost would be spread over many units. A roof truss system would sell for \$4,000 for a typical home and \$6,000-\$10,000 for a complex custom home.

To provide a roof truss, HLC would need to collaborate with the builder in the very early stages of a project. Due to recent earthquakes, the building code required tract builders to commit to the roof structure – and hence to the truss plant – 60 days in advance of construction. However, builders of individual, custom homes could cancel an order at any time.

¹⁰ with a span of 30 feet

To support a mix of one-off custom jobs with high-volume tract jobs, HLC would invest \$600,000 in fast, flexible equipment. This included a computer numerically controlled saw, which performed changeovers in seconds rather than tens of minutes, ergonomically designed elevated assembly tables, and a Gantry press which could quickly secure the framing beams in a truss.

HLC would build an indoor facility to protect this equipment, as well as workers and materials, from the elements. Most truss plants in California (including Hayward's only competitor in Santa Maria, Truss Pro) were open-air facilities, which shut down operations in case of rain. The Hayward facility would be designed to maximize water and energy efficiency, with day lighting, and 20,000 square feet of solar panels (100 kw) to power the production process.

The sizing of the truss plant was a challenge, as demand would be seasonal and dependent on regional growth, and might be served by incremental capacity investment from Truss Pro. Hayward planned to invest a total of \$2.5 million for the land, building and equipment. With an ideal product mix and current prices, the facility would have capacity to generate revenues of \$12 million in roof trusses and \$12 million in wall panels per annum. In recent years, Truss Pro had generated revenues of approximately \$8 million per annum on roof trusses, with a gross margin of 35 percent. It was successful in landing approximately 75 percent of the roof truss jobs for which it provided a quote.

The second proposition under consideration was a Design Center to serve the rapidly growing green building market in Santa Barbara. The Design Center would provide a lush showcase for premium doors, windows, kitchen cabinets, knobs and pulls, and hardwood flooring. The plan included renovating an existing structure and in the process greening the building and surrounding landscape. Plans included 12 operable skylights for natural light and air flow in lieu of air conditioning, a south-facing ivy trellis to further cool the building, an underground cistern for onsite water reclamation, permeably paved parking, photovoltaic power generation, FSC lumber engineered for advanced framing, and the use of 20-30 percent recycled materials. Estimates for the cost to build the Design Center totaled \$2 million, and Hayward projected sales of \$5.5 million for its first year of operation, \$7.5 million for the second, and \$10 million for the third. The Santa Barbara location seemed ideal because it was three blocks from an existing HLC lumberyard, and the number of high-end housing starts in the market was growing rapidly. Further, an organization of environmentally focused builders and architects called the Green Alliance was very active in the Santa Barbara market.

Bill Hayward also considered buying Eco Timber, a company created in 1992 and offering ecologically sound wood flooring. Eco Timber products included flooring from FSC certified forests, reclaimed flooring, and innovative wood alternatives like bamboo flooring. Eco Timber was located in San Rafael, California, but had a national sales force and distribution partners. EcoTimber total flooring sales from 1999 to 2002 amounted to: \$3,400,00 with an annual growth of 40% and margins between 17 and 28% according to the type of customer. Architects and their environmentally aware clients were the primary sources of demand for EcoTimber products. These clients ranged from national accounts and corporations, to commercial and high-end residential developers, to affluent homeowners. Its customers included Nike, Disney, Pottery Barn, Patagonia, and Whole Foods Market. EcoTimber marketed its brand to architects and their

clients. They sold product directly to contractors as well as to dealers who serviced contractors. They also sold to affluent, progressive consumers through their web site, flooring dealer network, and eco-focused publications.

EcoTimber positioned itself as selling green flooring products at competitive prices. EcoTimber differentiated itself as the only comprehensive line of eco-friendly flooring products, for a “one-stop-shop.” The emerging competition was still specialized offering only one green product (certified, bamboo, reclaimed etc.). In addition, EcoTimber was also active establishing partnerships with other FSC suppliers (non flooring) to offer “whole project” solutions for architects/clients.

Bill Hayward was looking across the window at the piles of FSC certified wood lying on its Lumberyard. He wondered whether his grandfather would have approved of the new direction he was taking the company. Did it make business sense to sell FSC lumber? How should HLC prioritize and focus its efforts and growth? Should he invest in any of these new ventures (the Truss Plant, the design center and Eco Timber)? Were there synergies between all these propositions and HLC core business? Although Bill Hayward was very excited about these opportunities, he was concerned that HLC’s managerial and financial resources would be stretched to their utmost in pursuing all of them.

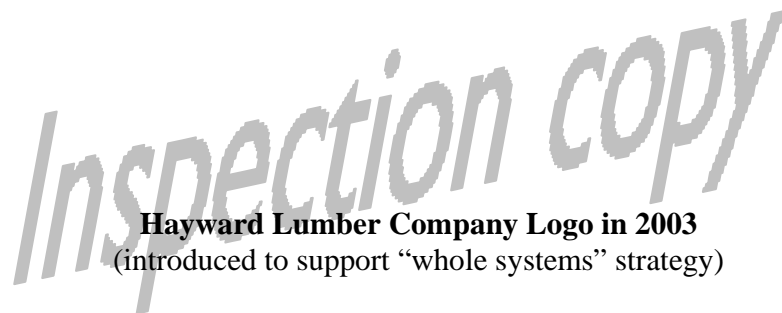
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Exhibit 1**Hayward Lumber Company Sales by Product Type (\$000s)**

	1998	1999	2000	2001	2002	2003	2003 % of
	Actual	Actual	Actual	Actual	Estimate	Budget	Total
Lumber/Plywood	42,263	50,241	53,418	64,468	61,047	60,995	50.6%
Roof Truss		2,257	2,855	3,707	4,129	4,965	4.1%
Wall Panels					100	1,500	1.2%
FSC Lumber			300	1,070	1,012	1,800	1.5%
Sheetrock					1,220	2,100	1.7%
Moldings	1,117	1,110	1,213	3,018	3,304	3,678	3.1%
Doors	3,440	3,700	3,233	6,773	6,565	7,730	6.4%
Windows	2,347	2,727	4,500	8,135	9,170	9,288	7.7%
Cabinets	3,144	3,518	4,617	4,831	4,366	4,558	3.8%
Building Materials	4,854	5,794	7,125	10,769	12,425	12,211	10.1%
Other	7,617	7,810	7,015	8,402	9,949	11,607	9.6%
Total Sales	64,782	77,157	84,276	111,173	113,287	120,432	100.0%

Exhibit 2

Hayward Lumber Company Logo in 1990's



Hayward Lumber Company Logo in 2003
(introduced to support "whole systems" strategy)



Exhibit 3**Forest Stewardship Council Principles and Criteria for Forest Management ¹¹(Summary)****Principle 1: Compliance With Laws and FSC Principles**

Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.

Principle 2: Tenure and Use Rights and Responsibilities

Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.

Principle 3: Indigenous Peoples' Rights

The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected.

Principle 4: Community Relations and Worker's Rights

Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.

Principle 5: Benefits From The Forest

Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.

Principle 6: Environmental Impact

Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and by so doing, maintain the ecological functions and the integrity of the forest.

Principle 7: Management Plan

A management plan — appropriate to the scale and intensity of the operations — shall be written, implemented, and kept up to date. The long-term objectives of management, and the means of achieving them, shall be clearly stated.

Principle 8: Monitoring and Assessment

Monitoring shall be conducted — appropriate to the scale and intensity of forest management — to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.

Principle 9: Maintenance of High Conservation Value Forests

Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.

Principle 10: Plantations

Plantations shall be planned and managed in accordance with Principles and Criteria 1-9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits and can contribute to satisfying the world's needs for forest products, they should complement the management of natural forests while reducing pressures on them, and promoting their conservation and restoration. of.

¹¹ <http://www.fscus.org>

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Exhibit 4
US Green Buildings Council LEED MR-7¹²

SS	WE	EA	MR	EQ	ID
Credit 7					

1 Point

Certified Wood

Intent

Encourage environmentally responsible forest management.

Requirements

Use a minimum of 50% of wood-based materials and products, certified in accordance with the Forest Stewardship Council's Principles and Criteria, for wood building components including, but not limited to, structural framing and general dimensional framing, flooring, finishes, furnishings, and non-rented temporary construction applications such as bracing, concrete form work and pedestrian barriers.

Submittals

- ☐ Provide the LEED Letter Template, signed by the architect, owner or responsible party, declaring that the credit requirements have been met and listing the FSC-certified materials and products used. Include calculations demonstrating that the project incorporates the required percentage of FSC-certified materials/products and their cost together with the total cost of all materials for the project. For each material/product used to meet these requirements, provide the vendor's or manufacturer's Forest Stewardship Council chain-of-custody certificate number.

Potential Technologies & Strategies

Establish a project goal for FSC-certified wood products and identify suppliers that can achieve this goal. During construction, ensure that the FSC-certified wood products are installed and quantify the total percentage of FSC-certified wood products installed.

¹² http://www.usgbc.org/Docs/LEEDdocs/LEED_RS_v2-1.pdf

Exhibit 5 North American Wood Certifying Bodies, Comparison Chart¹³

	American Tree Farm System	CSA International	Forest Stewardship Council	Sustainable Forestry Initiative
Basis for Company Participation	Voluntary	Voluntary	Voluntary	Required for American Forest & Paper Association (AF&PA) membership. Voluntary for third-party certification and non-member licensees.
Scope	Private, non-industrial forests in the United States.	Currently limited to Canadian industrial companies. Also includes provisions for small, private landowners.	Used by all types of forest ownership around the world.	Primarily focused on industrial forests in the United States and Canada.
Governance	Sponsored by the American Forest Foundation, an independent, non-profit and non-governmental organization. Each state's program is self-governing.	An independent, non-profit and non-governmental organization. Governed by a Board of Directors, the majority of which are elected by membership with the remainder being appointed by the existing Board.	An independent, non-profit and non-governmental organization. Governed by a Board of Directors and membership formed in three chambers, social, environmental and economic. Board is elected by members.	Program of AF&PA, an industry trade association. Governed by a multi-stakeholder Sustainable Forestry Board [*] appointed by AF&PA; 60% are from outside interest groups.
Public Participation in the Development of Forest Assessment Standards	Tree farmers and multi-stakeholder committees in individual states guide standards; no direct public input.	Multi-stakeholder committee developed standards which were then subject to a public review process. Approved as a Canadian national standard by the Standards Council of Canada.	Global standards developed through consultation with stakeholders and members from environmental, economic and social sectors. National and regional standards developed by working groups through the same process.	Standards set by Sustainable Forestry Board, 80% of which are from outside interest groups; no direct public input.
Public Participation in Individual Forest Certification/Verification	No provision for public appeals of forest assessments.	Requires public participation in identifying performance indicators for individual forests.	Any stakeholder can appeal a certificate during the forest assessment process or following certification.	No public involvement in verification assessment. Members of the public may request an investigation of a company for non-compliance.
Public reporting	Public disclosure of certification report is not required. Standards and other program information freely available.	Public disclosure of certification report is required. Standards are not free to the public.	Public disclosure of certification report and management plan are required for forest management companies. Standards and other program information freely available.	Public disclosure of verification report is not required. Collective performance trends are reported annually by AF&PA. Standards and other program information freely available.
Issues Covered by Standards*	Standards address environmental and silvicultural issues. Many indicators are discretionary.	Standards address environmental, silvicultural, social and economic issues.	Standards address environmental, silvicultural, social and economic issues. Most indicators are mandatory.	Standards address environmental and silvicultural issues. Many indicators are discretionary.
Nature of assessment - (on-the-ground) versus systems-based (internal management)	Performance-based monitoring of on-the-ground practices and an assessment of the forest management plan.	Hybrid performance-based and systems-based assessment incorporating elements of ISO 14001 management systems and monitoring of on-the-ground practices.	Performance-based monitoring of on-the-ground practices and an assessment of the forest management plan.	Hybrid performance-based and systems-based assessment incorporating elements of ISO 14001 management systems and monitoring of on-the-ground practices.
3rd party, independent certification	3rd party certification is required. Volunteer foresters provide initial certification and repeat audits every 5 years.	3rd party certification is required. Accredited registrars provide initial certification, an audit after three years and repeat audits every five years.	3rd party certification is required. Accredited certifiers provide initial certification and repeat annual audits.	1st party verification is required, 2nd party verification and 3rd party certification are optional. If 3rd party certification is chosen, independent certifiers provide initial certification, an audit after three years and repeat audits every five years.
Chain of Custody tracking	None	Chain of Custody tracks products "from forest through ownership, transportation and transformation".	Chain of Custody tracks products from forest through each stage of manufacturing and distribution.	None
On-product label	None	Yes	Yes	Expected debut in early 2002 for third-party certifications only.
Number of participants - 1/02	65,000 Certified Tree Farmers.	3 forest management companies.	3,011 certified companies (holding 3,077 certificates) in 67 countries. 535 companies (543 certificates) are Forest Management and 2,515 companies (2,534 certificates) are Chain of Custody.	125 AF&PA members. 72 additional organizations outside of AF&PA are licensed under program.
Total acreage - 1/02	26,000,000 in the U.S.	14,700,000 in Canada.	138,068,232 globally; 64,868,719 in North America.	105,000,000 in the U.S. and Canada, 46,000,000 of which have been third-party certified.
Endorsement from environmental, social and economic groups	128 "Co-Sponsors, Cooperators and Partners" in the U.S. from the American Forest Foundation. (http://www.affoundation.org/html/untilted_2_partners.html)	45 supporting groups in Canada from CSA International. (http://www.certifiedwood.org/search-modules-new/compare-systems/canadian-standards-association-supporters.html)	499 member organizations in 59 countries from FSC A.C. (http://www.certifiedwood.org/search-modules-new/compare-systems/fsc-member-organizations.html)	45 "Organizations Supporting the Goals of the SFI Program" in the U.S. and Canada from the AF&PA website. (http://www.afandpa.org/forestry/sfi/sfi_licensees.html)
* - CFPC is assembling a Scientific Review Panel to develop a set of criteria for evaluating and comparing forest management practices and standards based on current scientific understanding of ecologically sound forest management. The Panel's findings will be posted on this site as soon as they are completed.				
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<http://www.certifiedwood.org/search-modules/compare-systems/printable/compare-systems.pdf.asp>

¹³ http://www.certifiedwood.org/search-modules/compare-systems/comparison-of-systems/comparison-of_systems.htm

Exhibit 6

Definitions of Lumber Industry Supply Chain Positions¹⁴

Forest Owner/Manager: Manages land, harvests trees and sells logs. Minimum unit of sale is typically a truckload, railcar-load or shipping container.

Primary Manufacturer: Converts logs into standardized basic products such as lumber, veneer, chips and pulp. Often called "mills" -- sawmills, veneer mills, chip/pulp mills, etc. Minimum unit of sale is *typically* a truckload, railcar-load or shipping container.

Secondary Manufacturer: Converts basic products into more specialized or value-added products, such as paper, plywood, flooring, stair parts, moldings, etc. Also combines basic products and value-added products into cabinets, furniture, doors, windows, etc. Generally has standardized product lines, large production capacities, and buys directly from primary or secondary manufacturers or wholesale distributors. Minimum unit of sale is *typically* a truckload, railcar-load or shipping container.

Limited-Production/Custom Manufacturer: Manufactures value-added or finished wood products on a limited-production, contract or special-order basis. May have standardized product lines or may manufacture entirely to the specifications of the customer. Products may be the same as those made by secondary manufacturers but production capacity tends to be smaller and more flexible. Tends to buy from distributors or retailers rather than direct from primary or secondary manufacturers. Unit of sale varies by product and company but is *typically* smaller than secondary manufacturers.

Woodworker: Makes finished wood products or components on a custom basis. Production is very limited or one-off and capacity is very flexible and tailored to the needs of the individual customer or job. *Usually* there is no minimum order. Often sells direct to the general public and trades people.

Broker/Agent: Buys or sells products on behalf of another party, usually for a fee or commission. Minimum unit of sale is typically multiple truckloads, railcar-loads or shipping containers.

Wholesaler/Distributor: Buys primarily from primary and secondary manufacturers for the purpose of resale and distribution to retailers, manufacturers, or large end-users. Offers products on a business-to-business basis, not to the general public. Minimum unit of sale varies depending on company specialty, but is always in bulk, not by the piece. Also called a "Merchant" in the paper industry.

Retailer: Typically stocks and offers a wide variety of products direct to the general public and trades people, with no minimum order. Can usually mix and match product lines depending on customer needs. Often can arrange delivery to a home or jobsite.

¹⁴ <http://www.certifiedwood.org/search-modules/SuppChainDefinitions.htm>

Exhibit 7**HLC Gross Margin & Return on Sales**

	1996	1997	1998	1999	2000	2001	2002	2003
Gross Margin	19.58%	19.00%	20.70%	21.60%	23.80%	25.90%	24.80 %	24.90 %
Return on Sales	.02%	0.20%	0.70%	1.50%	3.30%	1.80%	0.60%	1.60%

Inspection copy

Exhibit 8
Building Permits Issued, by County

Single Family
 Permits

County	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MONTEREY	736	869	1466	1323	1496	1713	1178	1506	1492	894
SAN BENITO	365	404	491	422	443	630	745	579	533	300
SAN LUIS										
OBISPO	666	855	1047	985	1176	1329	1730	1579	1547	1687
SANTA										
BARBARA	719	549	700	792	775	903	1026	601	731	933

Inspection copy

Exhibit 9
Hayward Lumber Company Sales by Customer Type (\$000s)

	1998	1999	2000	2001	2002	2003
	Actual	Actual	Actual	Actual	Estimate	Budget
Professional Builders	49,765	58,055	62,266	82,017	82,616	83,219
Owner/Builder	2,135	2,982	4,353	5,134	4,610	6,420
Green Builders	0	0	0	1,277	1,159	1,389
CI/Gov	4,100	5,838	6,415	6,404	7,096	7,833
Concrete Contractors	0	0	0	631	2,171	2,066
Retail Customer	8,627	10,119	11,078	15,172	16,420	16,499
Employee	154	162	165	216	274	406
Total Sales	64,781	77,156	84,276	110,851	114,346	117,832

Inspection copy

Exhibit 10
Lumber Prices in \$ per 100 board feet, 1992 - 2002

Douglas Fir, Green
2x4 Std&btr, Random
(Prices net of f.o.b. Mill, Portland Rate)

Monthly Averages													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yearly Avg
1992	236	263	270	266	243	239	250	269	263	250	289	297	261
1993	336	384	466	440	366	349	323	347	357	342	406	464	382
1994	467	452	414	347	374	347	334	341	315	324	324	308	362
1995	318	323	310	294	281	278	292	310	336	311	322	334	309
1996	317	346	355	350	390	407	413	457	413	398	408	403	388
1997	409	425	414	424	397	399	368	353	325	351	365	333	380
1998	326	326	327	312	268	308	338	371	303	287	304	296	314
1999	349	350	368	356	382	459	505	394	385	343	376	360	385
2000	369	360	362	329	310	300	279	280	291	288	308	287	314
2001	286	292	297	308	366	321	303	309	286	258	258	271	296
2002	289	313	324	303	290	282	277	283	284	281	273	278	290

FSC Douglas Fir, Green
2x4 Std&btr, Random
(Prices net of f.o.b. Mill, Portland Rate)

FSC Monthly Averages													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yearly Avg
1992	326	309	294	293	303	326	329	327	300	331	320	295	313
1993	454	477	489	476	416	485	457	454	481	430	439	468	461
1994	435	467	440	451	392	445	465	420	433	400	437	447	436
1995	345	382	404	395	369	374	368	362	341	393	345	356	369
1996	440	497	447	462	474	444	511	505	439	458	450	456	465
1997	413	435	458	461	480	464	468	456	464	426	415	489	452
1998	370	406	393	359	381	352	406	347	352	345	366	342	368
1999	457	476	423	439	472	485	443	506	474	501	436	480	466
2000	406	381	414	370	372	407	359	384	371	402	392	395	388
2001	375	349	385	380	376	332	362	374	334	322	327	371	357
2002	379	361	320	339	363	372	356	333	369	324	341	336	349

Job	Truss	Truss Type	Qty	Ply	Fruslo Residence
Q10791	A01	CAL HIP SCISSOR	1	2	Job Reference (optional)

Hayward Truss, Santa Maria, CA 93454, CHRIS DAVIS 5.200 s Aug 19 2003 MITek Industries, Inc. Fri Jan 02 09:28:40 2004 Page 1