



The Next Step

NRCA establishes a new organization dedicated to environmental and energy issues

by Craig Silvertooth

1962 was a pivotal year in the history of environmental politics. That year, biologist Rachel Carson's landmark work *Silent Spring*—which highlighted the alleged evils of chemical pesticides—was published to widespread acclaim. The narrative proved so influential that Carson is frequently credited with spawning the modern environmental movement and spurring the U.S. government to sign dozens of environmental policies into law during the 1970s.

With the benefit of the passage of time, 2007 also may be perceived as a watershed year. Notably, former Vice President Al Gore and the Intergovernmental Panel on Climate Change won the Nobel Peace Prize, and Gore's film "An Inconvenient Truth" was named Best Documentary Feature at the Academy Awards. The film, based on the book of the same name penned by Gore, continues along a well-trodden path of environmental narrative.

With a bit of luck, 2007 also will be noted for developments that occurred below the public radar and the year a tipping point was reached. During 2007, a critical momentum of concerted action had been reached by representatives from government, industry and academia. And it punctuated the palpable transformation that has occurred in the construction industry during the past few years. The vocabulary has changed; the market has evolved; and materials have diversified and grown in technological sophistication.


The transformation's rapidity is staggering and demands a coherent response. Consumers expect sustainability to be fully integrated into their environments. Two questions arise. First, is the green building movement irreversible? And second, if so, the question for the roofing industry and all construction sectors is: How do we manage the transformation successfully and prosper in this new environment?

A new forum

To better position the roofing industry to address these and other issues, NRCA has

established the Center for Environmental Innovation in Roofing, a separate, non-profit 501(c)(6) organization that will promote the development and use of environmentally responsible, quality roof systems.

Bill Good, NRCA's executive vice president, says "if the change is properly managed, the industry stands to be in an entirely new position: one that contributes to energy management, one that is pro-environment, and one that can begin to attract a new generation of material producers and employees who view the industry in a much different light."



The roofing industry is ripe for an organization that focuses on quality, energy-efficient roof systems

Headquartered in Washington, D.C., the center's core purpose is to establish a forum that will draw together the entire roofing industry to work for the common cause of promoting and increasing the knowledge base of environmentally friendly, quality roof systems. The organization's objectives include:

- Serving as a repository for information pertaining to energy, the environment and roofing
- Serving as a research link between academia and industry and providing a forum for ongoing peer review of such research
- Coordinating and encouraging research, especially in the fields of energy efficiency and renewable energy
- Safeguarding jurisdiction to ensure new roofing products, systems and services remain within the roofing industry's sphere

- Expanding market opportunities for manufacturers, contractors and design consultants
- Conducting science-based advocacy on behalf of the industry
- Identifying emerging issues as new technologies develop
- Coordinating standards and codes in the U.S. and abroad

This is an ambitious agenda, and time will be required to achieve all the objectives. But each objective is attainable in the long-term, and, ultimately, each will reinforce and strengthen the offerings and benefits of the others.

Driving the center's philosophy are three beliefs.

First, the center acknowledges the construction industry increasingly will use green building materials. With North American and global expenditures on green building technologies representing an increasingly larger percentage of construction purchases in the public and private sectors, the roofing industry is ripe for an organization that focuses on consensus standards and best available data and practices for quality, energy-efficient roof systems.

Second, this endeavor will succeed only with an appreciation for the importance of the center reflecting a true industrywide profile. The center's board of directors will be composed of manufacturers, contractors and other relevant stakeholders in the roofing industry, and initial staffing is composed of personnel from various industry sectors.

And finally, rather than succumbing to the instincts of command-and-control solutions that emphasize limits in the face of environmental challenges, the center endeavors to advance innovative solutions and proceeds with the belief that the spirit of collaboration is a critical ingredient of innovation.

Why roofing?

Representing the largest source of greenhouse gases and energy consumption in

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Is the movement sustainable?

Naturally, one has to wonder whether the re-energized interest in environmental responsibility is a fad. But a confluence of government, consumer and economic concerns are fueling the sustainability movement, and data suggest the trend is irreversible.

In November 2007, the American Solar Energy Society and economic research firm Management Information Services Inc., Washington, D.C., released "Renewable Energy and Energy Efficiency: Economic Drivers for the 21st Century." The report marks the first time the renewable energy and energy-efficiency industries have been rigorously specified and actual sales and employment numbers derived.

The report predicts that by 2030, under an aggressive deployment scenario, there could be more than 40 million Americans employed in the renewable energy and energy-efficiency industries—about one in every four workers—and the industries could generate \$4.53 trillion in annual revenue.

In addition, McGraw-Hill Construction's *Construction Outlook 2008* reports that in 2006, 2 percent of the nonresidential building stock in the U.S. was registered under the Leadership in Energy and Environmental Design® (LEED) criteria issued by the U.S. Green Building Council.

McGraw-Hill Construction suggests this is a conservative estimate because some owners are "using green materials and design without registering under LEED," and predicts that by 2010 green buildings will compose up to 10 percent of the nonresidential building stock in the U.S.

The report indicates building types "most likely to adhere to green practices are publicly owned structures such as schools and public administration buildings" but increasingly large multifamily projects will incorporate "green practices to enhance marketability" or a retail chain will adopt green practices for reasons relating to "social responsibility, lower costs over the long-run, and positive visibility for the firm."

Large commercial real estate firms see the potential, as well. CB Richard Ellis (CBRE), the world's largest commercial real estate services firm, has announced it plans to be carbon-neutral by 2010 in all of its operations and to act as an adviser for the 1.7 billion square feet of properties it manages around the world. As part of this effort, CBRE announced it will partner with the Natural Resources Defense Council to implement its goals.

Furthermore, strong consumer support exists for clean, energy-efficient technologies. An Energy Pulse™ survey conducted in 2006 found 86 percent of U.S. homebuyers would choose one home over another based on its energy efficiency and that 63 percent believe energy prices have increased enough to make them change their consumption habits.

Harvey Bernstein, vice president of McGraw-Hill Construction, notes McGraw-Hill Construction's market research group projected "green home building reached its tipping point in 2007, when more home builders [were] building green compared to those who [were] not."

So aside from public sentiment, what's fueling the shift? For many corporations, energy costs are second only to personnel costs and, consequently, must be addressed if senior executives are to meet their fiduciary responsibilities. But for others, there's the allure of potentially huge profits.

According to figures released by the National Venture Capital Association, in November 2007, investments in clean technology by U.S. venture capital firms reached \$2.6 billion in the first three quarters of 2007—the highest dollar volume ever, exceeding full-year investment 2006 dollar volume, which reached \$1.8 billion. The data also reveal solar energy was the largest subsector for clean technology investments.

And in mid-December 2007, the National Venture Capital Association released the results of a survey of its members' predictions for 2008. Eighty percent of respondents predict the clean technology sector will attract higher levels of venture financing during 2008.

Major corporations also are getting into the game. Apart from pursuing an ambitious program to green its vast real estate portfolio, which totals some 92 million square feet worldwide, Citigroup announced in May 2007 that it will direct \$50 billion during the next 10 years to address global climate change through investments, financings and related activities to support the commercialization and growth of alternative energy and clean technology among the clients and markets it serves, as well as within its own businesses and operations.

Citigroup isn't alone: Bank of America, UBS, Goldman Sachs and HSBC, among others, are making commitments to incorporate sustainable practices into their operations and advance the growth of green technologies.

the world, the built environment exerts a profound force on our environment and energy demands.

The U.S. Energy Information Administration says buildings account for an estimated 48 percent of all greenhouse gas emissions, 40 percent of total energy use and 71 percent of electricity consumption in the U.S. A vast majority of this energy is produced from nonrenewable, fossil-fuel resources. Consequently, the National Institute of Building Sciences reports buildings generate 35 percent of the carbon dioxide (the primary greenhouse gas associated with climate change), 49 percent of the sulfur dioxide and 25 percent of the nitrogen oxide found in air.

And if current trends continue, U.S. annual building energy consumption is projected to increase 37 percent and greenhouse emissions by 36 percent during the next 20 years.

With one foot firmly planted in the renewable energy sector and another in the energy-efficiency camp, roofing occupies a unique position within the built environment—it's the only major building component sector that can save and produce energy.

What's ahead

The roofing industry's position also brings with it certain challenges, and it is hoped the center will help the roofing industry as it confronts the hurdles and opportunities that accompany the green movement.

For instance, James Hoff, the center's director of research and president of Carmel, Ind.-based TEGNOS Research Inc., an organization focused on advancing research in the building envelope industry, cautions that increasing regulatory risks are looming.

"During the next few years, every state will face increased pressures to meet federal pollution standards, and these standards are already 'on the books' and require no further legislation," Hoff says.

And for states that fail to meet them, there will be a significant risk of federally imposed fines and rules. Hoff's concern is that the roofing industry will be affected dramatically.

"To meet urban ozone standards, the industry will be called upon to virtually eliminate volatile organic compound emissions," Hoff says. "To meet clean water regulations, more roofs will be required to hold storm water. And the cost to dispose of roofing waste, which accounts for almost 10 percent of all solid waste in the U.S., will continue to escalate."

Hoff believes individual roofing companies and trade associations cannot effectively address these issues because it will be far too expensive for any single organization to have professional representation at every state capital. He advises the only way to address these issues is through an industrywide effort.

The center will fill that role as it helps define how the roofing industry responds to the disposal and reuse of construction waste. And by doing so, the industry will be able to attract new employees.

McGraw-Hill Construction's Greening of Corporate America SmartMarket Report released in 2007 confirms that demonstrable sustainability practices offer an opportunity for enhancing a company's reputation and competitive advantage through market differentiation.

Further, the scope is awe-inspiring. With a global output of more than \$4.6 trillion, construction contributes 10 percent of the global gross domestic product and has a global work force of 100 million employees.

Harvey Bernstein, vice president of McGraw-Hill Construction, reasons that a corporate social commitment will yield higher productivity and a more stable work force and by adapting to the shifting ethics of a younger generation, corporations can remain relevant and attractive to recent graduates and emerging leaders. In effect, the transformation provides marketing and work force development functions.

It's unrealistic to believe the market will transform seamlessly, but it's entirely possible it can evolve with a minimal amount of pain for the business community and consumers. To change successfully, business and government must chart complementary courses. And one of the center's principal objectives is to facilitate that dynamic.

Government activity

Another goal of the center is to serve as the roofing industry's advocate before the government regarding energy and environmental issues. Areas of activity include building codes, investment incentives, work force promotion (what some refer to as green-collar jobs) and public education.

In addition, numerous technical and regulatory challenges from the government already confront us, and others will follow. In short, green building initiatives are taking root across federal, state and local levels of government, and a solid, bipartisan shift in the collective mindset of our politicians is under way.

For example, on Dec. 19, 2007, President Bush signed into law the Energy Independence and Security Act of 2007. Although the bill does not contain several significant provisions advocated by the center and NRCA, it nonetheless is the single most significant energy-efficiency legislation ever enacted.

The law is projected to save consumers and businesses \$450 million in avoided energy costs by 2030 and will reduce



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Addressing life cycle

According to James R. Kirby, NRCA's associate executive director of technical communications, part of the roofing industry's challenge to be green is to manufacture products that fit into an appropriate life-cycle paradigm.

Kirby believes the roofing industry must determine how to provide information for life-cycle assessment about roofing products and systems to the building community, thereby allowing the roofing industry to advance its role as a component of energy modeling and the overall energy savings of buildings.

"Energy use in buildings is not just about how much energy is used to operate a building," Kirby says. "Rather, it's all about a building being sustainable and good for the environment, and the building community is analyzing every step of the process—from raw material extraction, material manufacturing, transportation, installation and reuse."

James Hoff, the Center for Environmental Innovation in Roofing's director of research and president of TEGNOS Research Inc., Carmel, Ind., agrees this focus on durability is of paramount concern.

"As an industry, we have spent far too much time and far too many dollars fixing past problems not to become unflinching advocates for the importance of durability in any green building initiative," Hoff says. "Simply put, no building product should be considered truly sustainable unless it meets or exceeds the desired durability of the building itself."

energy consumption by 8 percent and greenhouse gases by 10 percent from the forecast for 2030, according to the American Council for an Energy Efficient Economy, a nonprofit organization dedicated to advancing energy efficiency to promote economic prosperity and environmental protection.

Among other important energy-efficiency provisions in the act, Section 422 authorizes the Zero Net Energy Commercial Buildings Initiative, which provides a framework for members of the Commercial Buildings Initiative (CBI) to work with the U.S. Department of Energy in a public-private partnership toward the long-term goal of zero net energy, carbon-neutral, high-performance buildings.

CBI, of which the center is a member, is a consortium of organizations that combines research, development and deployment activities toward the goal of making all new commercial buildings produce zero net energy, meaning a facility will produce only as much energy as it uses, by 2030.

The new law also permanently authorizes Energy Savings Performance Contracts, an innovative financing tool for upgrading the energy efficiency of federal buildings, and requires federal agencies to reduce their energy consumption by 30 percent by 2015, which would save more than \$4 billion in taxpayer money. (The federal government is the largest energy consumer in the U.S.)

Unfortunately, Congress and the president did not agree on the energy tax incentive package, which would have extended the commercial building tax deduction and investment tax credits for renewable energy technologies, such as solar, in the construction sector. The commercial building tax deduction and other energy incentives expired Dec. 31, 2007.



For more information about Silent Spring, log on to www.professionalroofing.net.

Addressing these expiring provisions moved to the second session of the 110th Congress when it convened in January. On a positive note, the building community and its allies have laid an excellent foundation for continuing the provisions, which enjoy broad bipartisan support in the House and Senate through 2013.


On the state level, New Jersey offers favorable financial incentives for solar energy technology through its New Jersey Clean Energy Program. The incentive-based program was launched in 2001 and already has granted more than \$120 million in rebates for photovoltaic projects.

Oregon is another example. The state legislature recently passed a measure that increases the tax credit for renewable energy systems installed by businesses from 35 to 50 percent and doubles the maximum project cost from \$10 million to \$20 million.

And new buildings in Los Angeles with more than 50 units or 50,000 square feet of floor space will be required to meet the U.S. Green Building Council's Leadership in Energy and Environmental Design® standards.

Regarding Los Angeles' green building plan, the *L.A. Times* notes that because "cities have no authority over vehicle emissions and power plants are generally regulated by state officials, building projects are the easiest way for mayors to limit the effects of global warming."

A responsible response

Generate power. Conserve energy. Preserve the environment. These mantras of the environmental movement need not be separate. The center aims to integrate the three and assist the industry in developing innovative, sustainable solutions for energy efficiency, power generation and environmental stewardship. The three goals are compatible objectives that meet the needs of the industry's customers and communities. 

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