

Blinded by the (Green) Light: The Rise of Environmentalism and a New Vocabulary—Four Perspectives

BY RICHARD SHIELDS

Awareness of Energy and the Environment: Perspective One

A NEW ENERGY AND ENVIRONMENTAL AWARENESS was thrust upon the United States in the 1970s with the OPEC oil embargo.¹ Facing rising energy prices and gas shortages, the U.S. had a sudden realization that energy supplies would not keep pace with the world's consumption. As the economic fallout of the sudden rise of oil prices gripped the nation, the government responded with new regulations to reduce consumption. Programs included implementing gasoline rationing on alternating days based upon odd/even license plates, the establishment of an "Energy Czar," the creation of the Department of Energy, the imposition of a national speed limit of 55 miles per hour, and the creation of the Strategic Petroleum Reserve.² In the private sector, energy conservation quickly moved from being a technical field of interest that was centered in the manufacturing, energy production, transportation and building industries, to the concern of every citizen. A period of discovery, research, investment, new laws, incentives and even celebrations such as Earth Day³ followed and set forth a new national imperative that has continued to evolve. The result has been an emergence of environmental industries and advocates that have had a significant impact both on the quality of our environment and on the reduction of energy consumption.

CREATING TRUST IN ENVIRONMENTAL PROGRAMS

Following the Oil Embargo, equipment, electronics and appliance manufacturers made great advances in the development of reliable and ever more environmentally responsible products. At first, there were many fads to save energy, and wild claims of environmental benefits of the recycled content of products. These fads created both confusion and mistrust of environmental claims. But soon, products designed to reduce energy and environmental impact through use of responsible materials and recycled goods became prevalent. As gains in energy conservation came to market, false claims in labeling of environmental benefits gave rise to a need

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for a responsible way to identify and prove that product claims were accurate. In 1992, the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy established a voluntary labeling program known as ENERGY STAR®⁴ to identify and promote energy-efficient products to reduce greenhouse gas emissions. Manufacturers signed on and began to produce appliances and other electrical devices whose newly engineered systems began delivering measurable environmental benefits, with direct cost and energy use information. Today, the ENERGY STAR label has become a trusted name in sustainable products for more than 12,000 organizations, delivering more than \$16 billion in energy savings (over non-ENERGY STAR products) in 2007.⁵

FROM VOLUNTARY PROGRAM TO A LEGISLATED REQUIREMENT: LEED® GRADUATES AT THE HEAD OF THE CLASS

The nature of buildings, their ownership, use and location makes the subject of sustainable design complex. The industry struggled to find the connection between the professional and technical participants in the process of development, and to find a vocabulary to communicate expectations, desires and requirements. With thousands of government jurisdictions, countless zoning and build code requirements and diverse geographic locations in our nation, it is difficult to establish uniform standards or to navigate the diverse requirements for building design. The design community and industry organizations took the early leadership in establishing design and performance-based standards for building systems and components: insulation and sealants, glass and building skin, roofing, and HVAC and plumbing systems. These standards have provided engineered and measurable contributions to building design, achieved major improvements in conservation, and reduced the environmental impact of buildings. Communities have joined industry by adopting energy conservation standards and using these industry standards to define code and/or performance requirements.

A few short years ago, the U.S. Green Building Council (USGBC) trademarked its Leadership in Energy & Environmental Design, or LEED program. It is a voluntary but prescriptive system to promote and certify “green” buildings. Today, USGBC has more than 16,000 member companies and organizations, including real estate developers, architecture, design and engineering firms, contractors, product manufacturers, government agencies,

educational institutions, nonprofit organizations, and 50,000 individuals who have received recognition in LEED processes.⁶ This widespread adoption of the LEED rating system has brought an important focus to the building and design industry, and made sustainability a national priority.

USGBC’s efforts have organized the uncertain and disparate jargon, practices, principles, and opinions with regard to energy conservation, consumption and environmental impact of buildings. USGBC has built upon many accepted engineered system standards and has expanded its evaluative process to include other attributes which project the opinions of professionals on the importance of design/project criteria. USGBC has seen its building certification program and its rating system become the nationally accepted benchmark for sustainable development, adopted by corporations, institutions and all levels of government, as required on development projects. What had been created as a voluntary certification process has morphed into regulatory requirements, as government organizations and communities have adopted the LEED certification for zoning or permitting. The rush to these standards has led to 20 states and more than 160 other jurisdictions implement LEED as a standard, while implementing and enforcing it in different ways. The acceptance by jurisdictions of the LEED standard as a prerequisite for zoning or permits creates a new responsibility on the part of governments to ensure that the certification of LEED buildings in their jurisdictions does, in fact, improve the environment, and that certification does not confuse or mislead the public as to what the requirement for LEED certification, or achieving it, represents.

Today more than 14,300 projects have submitted LEED applications, and more than 1,750 have been certified,⁷ up from 40 in 2002. The ENERGY STAR classification system, with measurable results as to its contribution to the quality of the environment, continues to exist, although newer LEED certification of buildings strives to deliver savings far beyond those achieved by ENERGY STAR.

LEED certification is an important new standard for developing sustainable buildings and communities. However, development patterns that separate workspaces and living places can have a significant impact on the environment. The space between home and work demands the use of fossil fuels for the shipment of goods, commuting to work, shopping and recreation.

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The concern over greenhouse gases from the emissions of fossil fuels has increased significantly, and petroleum use in transportation has become the largest contributor to the emissions of greenhouse gas from human activities. Transportation accounts for more than 31 percent of all CO₂ in the U.S., and CO₂ gas emissions account for 80 percent of all greenhouse gases produced in the U.S.⁸

Less than one percent of U.S. buildings have been certified by the USGBC.⁹ With more than 80 million buildings in our nation, the goals set by USGBC present a major opportunity to make a positive impact on the environment. However, promoting environmental improvement by rewarding only buildings with certification shines the light too narrowly on too small a portion of the built environment. It certainly fails to adequately consider the impact of site selection. USGBC is addressing this concern with its new LEED-ND Certification, which gives greater importance to reduction of Vehicle Miles Traveled (VMT) to sites with transit services. ■

The Impact of U.S. Fuel Consumption, Commuting Patterns and Vehicle Miles Traveled on the Environment: Perspective Two

THE IMPROVEMENT IN FUEL ECONOMY and of reduction of emissions from vehicles has been one of the earliest environmental battlegrounds. In 1975, the Corporate Average Fuel Economy (CAFE) standards were established by the Energy Policy and Conservation Act (EPCA) of 1975¹ as a means of reducing U.S. dependence on foreign oil. CAFE set, as national policy, the average miles per gallon (MPG) that passenger cars and light trucks sold by U.S. manufacturers must attain. When enacted, CAFE established a 14.6 miles per gallon (MPG) level for combined car and light truck fuel economy.

The CAFE standards presented major technology challenges for automakers and required tremendous investments over a sustained period of time in order to meet the ever increasing mileage performance of vehicles.² The standards—and their constant revision

ENDNOTES

1. http://www.eia.doe.gov/pub/oil_gas/petroleum/analysis_publications/chronology/petroleumchronology2000.htm#T_2.
2. http://www.eia.doe.gov/pub/oil_gas/petroleum/analysis_publications/chronology/petroleumchronology2000.htm.
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6. <http://www.usgbc.org/News/USGBCInTheNewsDetails.aspx?ID=3795>.
7. U.S. Green Building Council, Green Building Facts – Green Building by the Numbers (USGBC September 2008) <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1718>.
8. <http://www.eia.doe.gov/oiaf/1605/flash/flash.htm>.
9. <http://www.usgbc.org/News/USGBCInTheNewsDetails.aspx?ID=3795>.

upward—has been one of the great successes of the EPA in the U.S. The MPG performance of passenger cars increased from 14.0 MPG in 1975 to 22.4 MPG in 2007,³ resulting in a nearly 20 percent reduction in gasoline use per passenger vehicle. Unfortunately, at the same time the number of vehicle miles traveled (VMT) also increased from 9,309 in 1975 to 12,427⁴ miles in 2007, wiping out nearly all of the efficiency improvements. This was caused by the explosive growth of the ex-suburbs, the popularity of SUVs and trucks, and increased commuting distances.

Over the past 50 years, “sprawl” has become the most common land-use pattern as the population fled cities for safer communities, better schools and lower land/housing prices.⁵ The spread of low-density residential subdivisions, commercial strips, large retail complexes surrounded by acres of parking, office parks far from home and shops, and a growing network of roads to link them has led to an increase in demand for vehicles and more VMT. We now drive further to shop and work, and we are more likely than ever to drive alone rather than carpool, take public transit or walk to work. The number of people who drove to work alone rose from 64–76 percent between 1980 and 2000. During that same period, the share that carpooled fell from 20–12 percent.⁶ Certainly, standards over and above CAFE’s are needed to reduce fossil fuel emissions and VMT. ■

ENDNOTES

1. <http://uscode.house.gov/download/pls/49C329.txt>.
2. Statement of the Alliance of Automobile Manufacturers before the U.S. House of Representatives Committee on Energy and Commerce, (Subcommittee on Energy and Air Quality, June 7, 2007).
3. <http://www.nhtsa.dot.gov/portal/site/nhtsa/menuitem.d0b5a45b55bfbe582f57529cdba046a0/>.
4. Energy Information Administration, *Annual Energy Report*, 2007, Table 2.8 "Motor Vehicle Mileage, Fuel Consumption, and Fuel Rates, Selected Years, 1949-2007," (U.S. Department of Energy, 2008) http://www.eia.doe.gov/emeu/aer/pdf/pages/sec2_23.pdf.
5. Elena G. Irwin, "The Effects of Open Space on Residential Property Values." (*Land Economics*, 2002).
6. Alan Pisarski, "Commuting in America III: The National Report on Commuting Patterns and Trends," (Transportation Research Board, 2006).

Density, Site Selection and Being Green: Perspective Three

ONE STRIKING EXAMPLE OF THE SOLUTION that dense in-fill and high-rise development can provide to the issue of VMT is the Chicago Downtown condominium development boom. Since the 1950s, the City of Chicago has seen a flight of residents from the city to the suburbs. However, within the downtown urban core, the opposite has been true. From 1994 to 2007, more than 48,765 new dwelling units were constructed, resulting in a population increase of nearly 80,000 residents.¹ Much of this growth occurred within the urban core consisting of a two-mile square centered on the Chicago Loop. With an average parking ratio of one car per unit (zoning of not-to-exceed 0.55 cars per unit for 15,765 units, and 1.25 cars per unit for 34,242 units; and 10,686 units with no parking spaces), a total of 48,765 automobiles are garaged in the new residences. Compared with or in contrast to the same households located in the suburbs, with an average of two cars per household, the urban living choice saved more than six-hundred million VMT per year. That savings assumes the downtown resident will still use a vehicle at the same average rate, as the suburban driver at 12,247 VMT per year.

Long before LEED was established, governments were committed to reducing the demand for new infrastructure and reducing VMT. Early on in the implementation of conservation measures and environmental analysis of new buildings, laws and regulatory process were the primary tools used to address environmental goals and concerns. The rise of the Environment Impact Statement (Federal) and Environmental Impact Report (California) drew the attention and effort of designers, developers and owners as they sited and proposed new buildings and defended a project's impact on the environment. These requirements were expensive and time-consuming, and necessitated a

great deal of public involvement. However they also depended upon measurable elements such as storm water flow, traffic creation/demand, air quality, water use, land use and impact to surrounding landowners and communities (shadow, noise, light and heat island effect). As "negative" as the industry may be to these requirements, they are based upon measurable inputs and outputs.

The impact of site selection on the environment can be seen in two projects in the Chicagoland area.

Project 1 is a new construction, 73-story condominium building located in the East Loop of downtown Chicago. Located on a site of 29,000 square feet, the project redevelops underutilized, obsolete buildings within the existing city infrastructure. It is directly located on the Chicago Transit Authority (CTA) Orange, Brown, Green and Pink Lines, and bus routes. It is also served by existing roadways, water, sewer, electrical and gas systems, requiring no construction of new infrastructure. The building has 357 residential units, 40,000 square feet of university classroom space and 469 parking (less than 1.25 cars per unit) spaces. Because the building is located in the center of the downtown business and cultural district, it offers the opportunity for residents to reduce or eliminate lengthy commutes to work, and the use of motor vehicles. The project incorporates on-site storm water control systems, green roofs and "skygardens," ENERGY STAR appliances, and is designed to modern energy and conservation standards, including ASHRAE 90.1-2004. This building achieves a 35 percent improvement in energy use (a result of curtain wall vs. punch windows) over a nearly identical building designed, developed and completed just two years prior. The building also incorporates District Cooling through the Chicago Thermal District Cooling Plant.² This enables the building to take advantage of chilled water produced with off-peak electrical power, delivering significant energy savings to the residents and reduction of cooling systems and equipment from the building.

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Despite the significant environmental performance of both the building and the location, the developer chose not to seek LEED certification. The USGBC Rating System lacks recognition for site selection of dense high-rise buildings, for energy systems, and for performance results when compared to less meaningful material and design features. An example is the ability to score one point for conducting measurement and verification of the performance of the engineered systems of the project. Meeting this criteria would have required the investment of up to a million dollars to measure and test the building performance, all to acquire just a single point. It was much easier to install bike racks and achieve the same point. The significance of the Thermal Energy approach also did not garner sufficient importance in the LEED scoring criteria. This imbalance in importance of certification criteria, along with the lack of more significant credit for situating the project on a small site in the center of the business district, was disheartening and rendered the pursuit of LEED certification to be of little relevance to the greater goal of improving the environment.

Project 2 is a suburban conservation community built upon a green site (formerly a farm) located more than 40 miles northwest of downtown Chicago. Many of the community's residents work in the City of Chicago. This suburban reserve established sustainable planning and construction standards for the development, including the creation and preservation of open space, incorporation of ENERGY STAR appliances, and a site location near a commuter rail station. The development provides 359 single-family homes and 36 condominium units on 677 acres, 350 of which are protected from development. Other development patterns in the same suburban area would have resulted in the development of a total of 2,400

homes on the same property. To develop the new conservation community, new roadways, sewer, water, gas, electrical and telecommunication infrastructure had to be constructed, along with complex storm water systems. The housing was built to U.S. Department of Energy Green Building standards, and a Charter School includes one building that is certified LEED Gold. The aesthetic design and high quality of construction of the community has attracted great interest and high property values.

The community also is located approximately five to ten miles from adjacent towns and major shopping locations, requiring significant automobile travel for local shopping and entertainment. The adjacent commuter rail service provides an easy option for residents to commute to work in the city, but Metra, which tracks ridership,³ estimates that only 8–17 percent of residents use the northwest lines serving this community, leaving more than 80 percent of the residents commuting via automobile to workplaces that are between five and forty miles from the development.

There is no comparison between the two projects when considering land use, impact on carbon footprint, new infrastructure requirements and the reduction of VMT. ■

ENDNOTES

1. Appraisal Research Counselors, 4th Quarter 2007 *Downtown Chicago Residential Benchmark Report* (Appraisal Research Counselors, 2008).
2. <http://www.thermalchicago.com/>.
3. Neighborhood Capital Budget Group, "Evaluating the Capital Spending and Equity of Service of the Metra Commuter Rail System," (Campaign for Better Transit, 2006), (<http://www.juliehamos.org/transit/documents/02-09-06/Evaluating%20Capital%20Spending%20at%20Metra.pdf>).

The Green Guide and the FTC: Perspective Four

DESPITE THE RISE OF TRUSTED LABELS like ENERGY STAR®, green marketing practices offering products that were "environmentally friendly" or recycled, or had other unsubstantiated positive environmental impact, grew. This created concern over marketing efforts for these "green" products, and led to the loss of public confidence in conservation efforts. The National Association of State Attorneys General examined the

regulation of environmental claims and issued its Green Report (I and II).¹

In part, this led the federal government to threaten litigation while at the same time the Federal Trade Commission (FTC) issued the Green Guides² to help marketers avoid making erroneous environmental claims that could be unfair or deceptive under Section 5 of the Federal Trade Commission Act.³ The FTC published revisions to these marketing standards in 1996,⁴ and again in 1998.⁵

Although it had been illegal to make false marketing

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claims as to the benefits of a marketed product, the Commission decided to strengthen its ability to take action under the FTC Act if a business made environmental marketing claims inconsistent with the Green Guides. In any such enforcement action the Commission must prove that the act or practice at issue is unfair or deceptive.⁶ The Green Guides outline general principles that apply to all environmental marketing claims and then offer guidance regarding specific environmental claims. For all marketing claims, the Guides advise: "...that qualifications and disclosures be sufficiently clear and prominent to prevent deception; that marketers make clear whether their claims apply to the product, the package or a component of either; that claims not overstate an environmental attribute or benefit, expressly or by implication; and that marketers present comparative claims in a manner that makes the basis for the comparison sufficiently clear to avoid consumer deception."

Like the "green" claims in products and within the automobile industry, the emergence of green and sustainable building practices has led to a similar concern over marketing claims of deceptive practices related to such buildings and the use of USGBC LEED Certification and Trademark on projects and products. As a result, the Commission reviewed the USGBC process and rating systems and brought together industry leaders to examine developments in green building and product/building claims, as well as consumer perception of such claims. In November 2007, the Commission published its *Guide for the Use of Environmental Marketing Claims*⁷ and began conducting workshops with the industry. In May 2008,⁸ USGBC responded to the Commission review of the industry use of LEED certifications and recognition stating: "...specifically, USGBC recommends the addition of

language clarifying that marketers should take caution when using logos and seals awarded for a specific purpose to be sure that they do not indicate approval or endorsement of environmental attributes that have not actually been evaluated by the certifying program. This is particularly important in cases in which logos or seals address some, but not all, aspects of a product or service. For example, although USGBC provides third-party certification of buildings through LEED, it does not certify individual products or building components as "green" or "environmentally friendly." Despite this fact, some marketers have used the USGBC logo on product packaging and in advertisements alongside claims that products are certified by USGBC or LEED, or can be used to achieve LEED credits. Claims of this kind mislead consumers and pose similar challenges to third-party certifiers who are unknowingly linked to products they have not, in fact, reviewed or endorsed." In response, the Commission discourages environmental marketers from making claims that cannot be substantiated or proven. ■

ENDNOTES

1. <http://www.naag.org/>.
2. 16 CFR Part 260 <http://www.ftc.gov/bcp/grnrule/guides980427.htm>.
3. Federal Trade Commission Act, 15 U.S.C. 45.2, http://www.ftc.gov/ogc/FTC_Act_IncorporatingUS_SAFE_WEB_Act.pdf.
4. 61 Federal Register 53311.
5. 63 Federal Register 24240.
6. 15 U.S.C. Sections 41-58, Part 260.6 "General Principals."
7. 16 CFR Part 260.
8. <http://www.ftc.gov/os/comments/greenpkgworkshop/534743-00027.pdf>.