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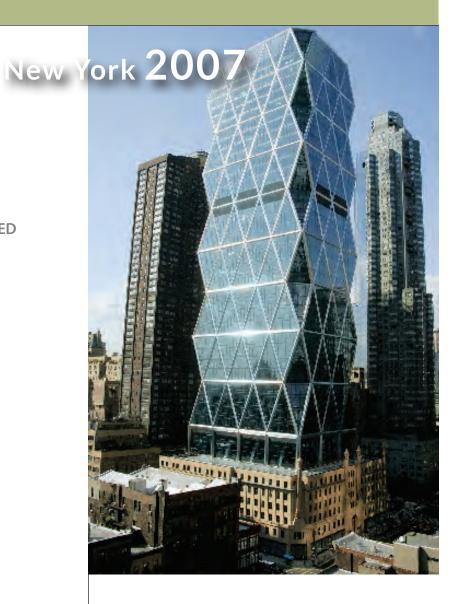
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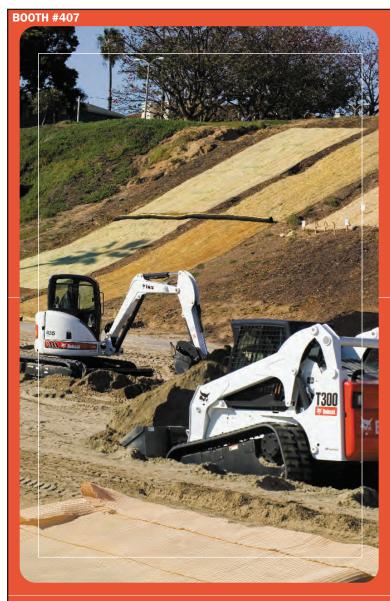
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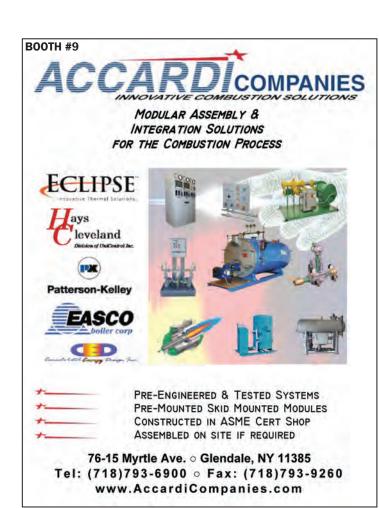


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# FROM THE PUBLISHER



(L-R): Mary Kellum, Amy Cragg, Karen Ow, JP Bryant, Sherrie Colca, Kacee Pals, Terri Starck.

We at "Construction Monthly" are excited to bring this ground-breaking publication to the New York market. For the first time the entire New York construction industry will have a publication representing the industry as a whole. It will feature twelve departments, ranging from architecture/design, finance, and health, to heavy construction.

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I want to thank the industry for the support we have received in launching this new and innovative publication. Also, I would like to thank my entire staff for their dedication in production of the publication.

Sincerely,

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Synthia Barton is a writer and architect in New York. She writes about sustainable architecture, housing issues, and topics related to public health for Worldchanging.org and other publications. She was a contributing editor to Architecture for Humanity's book, Design Like You Give a Damn: Architectural Solutions to Humanitarian Crises.



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Richard P. Weiland is Chief Executive Officer of the ICC. He has an extensive background in the public and non-profit sectors. He served as a Senior Advisor and State Chief of Staff to former Senate Leader, South Dakota Senator, Tom Daschle. He was appointed by President Clinton to serve as a Regional Director of FEMA. He was South Dakota's State Director for AARP and has run for the United States Congress.

Over those years, Mr. Weiland's focus has been on disaster prevention and recovery, numerous federal policy initiatives, economic development efforts, public/private partnerships, tribal relations and business development.

At the Code Council, he continues to play a key role in developing the organization's Blueprint to the Future to map ICC's path to growth and success.

# **NEW YORK'S**

# ises Building to New Heights

By Stephanie Aurora Lewis, LEED AP

Just as the emblematic torch of the new Freedom Tower will soar 1,776 feet in the air above New York City, the Freedom Tower's "green" building features rise above present-day industry standards. Headquartered in an office in the area of 7 World Trade Center (WTC), a committed and talented team works on innovative technologies, materials and construction methods that characterize "green" inspiration at the Freedom Tower. Led by Larry Silverstein, President and CEO of Silverstein Properties, Inc., the other leading members of the team are the Architect David M. Childs, FAIA, Design Partner in Charge at Skidmore, Owings & Merrill, LLP, and the General Contractor Tishman Construction Corp. An office building with an exceptionally high level of environmental sustainability, on such a large scale, reflects the remarkable commitment from Silverstein and from the many talented and experienced team members. Governor George Pataki congratulates the close-knit design crew for a tremendous building that raises industry standards for a "greener" New York City of the future.

# New York's Freedom Tower Raises "Green" Building to New Heights

In sum, Silverstein's "green" efforts are measured by the United States Green Building Commission (USGBC) and directed through Leadership in Energy and Environmental Design (LEED). These organizations were established in response to the fact that buildings produce approximately thirty percent of this country's greenhouse emissions that in turn contribute to detrimental climate change. In an attempt to quantify and reward environmentally friendly building practices, the LEED program developed standard definitions and checklists that certify levels of "green" design. The levels start at Certified, and go up to Silver, Gold and Platinum. Platinum is rarely achieved and is sometimes impossible to attain based on factors beyond the control of the builder. The WTC tower achieved Gold status in the LEED Core and Shell category. Among various and specific categories, Core and Shell relate to building elements such as the structure, envelope and building level systems.

Larry Silverstein, President and CEO, made his first deal in the early 1950's when he leased a loft in Lower Manhattan for fifty cents per square foot. Now, the billionaire, who has developed, owns and manages more than twenty million square feet of office, residential and retail space, is leasing office space in the WTC site for approximately fifty to sixty dollars a square foot - forty percent higher than surrounding generic Lower Manhattan office buildings. The road to success, however, at the World Trade Center has been very challenging. When Silverstein completed the largest real estate transaction in New York City history by acquiring the ten million square feet at the WTC, he lost it in a terror attack only six weeks later. Taking a misfortune and turning it into a national strength is an incredible feat for which Silverstein believes will be part of his legacy.

The Freedom Tower follows in the "green" footsteps of the WTC tower. Since the structure won the Award from the Municipal Art Society for "exemplifying the highest standards of architectural design," one can only imagine how spectacular the new Freedom Tower will be. David M. Childs, FAIA of SOM, LLP, designed both buildings to exhibit very high "green" standards. The Freedom Tower will use much of the same innovative materials and technologies, but will go a step beyond its predecessor. Not only will the building be an example of "green" architecture, it will also be beautiful. SOM has received 850 design awards, and is known for beautiful design. The base of the Freedom Tower is made from glass panels that emit prisms of colored light. These prisms dance light into the public square and seem to move along in space as one passes by in reflection.

# The Freedom Tower Incorporates the Newest and Best "Green" Innovations

With his gracious demeanor, at the LEED Gold certification award assembly for 7 WTC, Silverstein explained his commitment to the environment this way: "As part of our response to 9/11, we at Silverstein Properties pledged to conserve New York's most precious resources, including water and energy. We pledged to create a healthy, enjoyable and productive environment for the people who work here. And we pledged to safeguard the health of the people who live, work, visit and go to school in Lower Manhattan... We have raised the bar for green construction in New York City." Governor Pataki recognized the new WTC building designs and respective Sustainability Standards as a model of a business district that has high environmental standards. He pointed out that the success of 7 WTC proves economic development and environmental responsibility can work hand-in-hand. He went on to recognize that a twenty-first century business district requires environmental consciousness and commitment by both the private and public sectors.

A required commitment to build "green" typically costs more money once it surpasses the Certified level. Most often, however, added costs are reclaimed through energy savings. Yet, on some occasions, the "green" alternative may cost less. For example, Tishman Construction Corp., on excavating bedrock for the new foundation of the Freedom Tower, saved an enormous amount of time and fuel, noise and dust by blasting through some of the bedrock rather than removing it mechanically. Mel Ruffini, Senior Vice President at Tishman, said "It is not only a schedule savings, but a better environmental approach." Tishman's careful research regarding bedrock excavation enlightens the fact that building "green" is a process, that begins at the design and construction phases and continues through to the day-to- day operations. Tishman Construction Corp., has been intimately involved with the "green" building movement in New York City since the eighties. They have constructed several "green" buildings and hold a legacy for their great contribution to the industry by way of sustainable design. Since 1959, Tishman has had a Research and Development department that works on such environmental issues and generates creative solutions.

# "Green" Building Pays Off in Energy Savings, Labor Costs and Tax Breaks

The standard for clean air through the exclusive use of environmental-saving construction vehicles earned Silverstein Properties, LLP, a 2004 EPA Environmental Quality Award. Clean air is better preserved due to ultra-low sulfur fuels that reduce emissions of nitrogen oxides and particulate matter from heavyduty vehicles typically powered by diesel fuel. In conjunction with the alternative fuel, Tishman implemented particulate filters to clean emissions rather than to negatively exhaust them into the environment.

Some of the elements that define the LEED Gold Level at 7 WTC are as follows: more open space for the public, more natural light, glass that conserves energy by blocking heat and uninhibiting light, excellent indoor air quality through the use of a high-efficiency filtration system, steam to electricity turbine generators, variable speed fans, harvesting rainwater for reuse in the cooling system and for irrigating the park, waste reduction through diversion of more than seventy-five percent of construction waste and use of recycled content materials.

Glass technologies are constantly evolving. In the past, energy-saving glass meant that it was darkened. At 7 WTC, the high-tech glass blocks ultraviolet rays that cause heat, while maintaining clear glass, that allows full sunlight to illuminate the interiors. A steam to electricity turbine conserves energy by using steam that in turn generates an electric current.



The variable speed fan relates to the indoor/outdoor air ventilation fan that is operated depending on mechanical need rather than at a single constant speed. The fan can operate at full speed or it can reduce down to a zero energy pull. Since not all water used in a building is potable, gray water can be harvested from rainfall and recycled through various point-of-use water supplies throughout the building. There are many different techniques used to do this from a simple pickle barrel in a home owner's backyard to a multi-faceted system, such as that implemented at 7 WTC and the Freedom Tower, that balances the supply v. demand water source between rainfalls. In addition to conservation, and improving employee health and work satisfaction, there are many tax breaks and refund benefits for utilizing these systems and solutions. Further, labor costs for recycling building materials may be reclaimed.

At the Freedom Tower, sustainability standards have improved even more in comparison to the award winning WTC. Cogeneration and fuel cells, on-site and off-site renewable energy sources, such as wind energy, are special features in the Freedom Tower. Cogeneration is the result of a heat engine or a power station that generates electricity and heat at the same time. This is the most efficient use of electricity on an energy basis standard. Where heat energy is lost through electricity generation, the energy produced by heat is actually reclaimed through the HVAC system. Similar to a battery, a fuel cell makes electricity more efficiently and keeps the environment cleaner. Wind power can be purchased through credits then given to an electric power company in the grid on which the building is located. Even though renewable energy may not always be available onsite, this credit system allows a building owner to support and to demand that energy be purchased from renewable sources. Wind farms are located throughout the country.

In the Freedom Tower, electricity costs are expected to be thirty-five percent lower than surrounding generic Manhattan office buildings. Fifty percent of the energy comes from renewable sources such as the wind farms mentioned earlier. Full height low-iron glass allows tenants to install daylight dimming controls. High efficiency cooling and heating systems surpass local energy codes with high efficiency filters to improve indoor air quality. Low-VOC paints are the standard throughout the building. VOC's, or volatile organic compounds, are carcinogens and unhealthy. High efficiency plumbing systems save thirty percent of water consumption, such as low-flow toilets and devices to limit water use for hand washing. Rainwater collection systems supply water for the irrigation system as well as for the cooling tower. Carbon dioxide sensors are installed throughout the building. There was no use of ozone-depleting HCFC refrigerants in the mechanical systems. The maximum use of post-consumer recycled content was used for building materials. Fifty percent of wood on the project comes from certified sustainable harvested forests. Under the US Forest Stewardship Council, sustainable forests provide new growth to replace trees removed for construction or other purposes. Ninety percent of the interior workspaces have outdoor views throughout the building. Many research studies show that employees experience better holistic health when they have exterior views and natural daylight in their workspaces.

# "Green" Buildings Provide Healthier Work Places

Larry Silverstein stated that, "Given the speed at which new technologies are emerging and given the relationships we have built with pioneering organizations such as the National Resources Defense Council and Clean Air Communities, we expect that we will continue to raise the bar from our environmental standpoint as we move forward." Mickey Kupperman, Senior Consultant at Silverstein Properties, states that there is a great spirit among the working members of the team to rebuild the World Trade Center and the Freedom Tower. He believes their stories will be retold to generations in the future about what it was like to put things back together. The Freedom Tower is summed up so well by Childs as he states, "This is a city that believes in looking forward."

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# BUILDING GREEN for 9 etime Bruce's passion for architecture has remained



An Interview with Bruce S. Fowle, FAIA, LEED By Stephanie Aurora Lewis and Brien McDaniel

ruce S. Fowle, FAIA, LEED, Senior Principal at FXFOWLE ARCHIin the sustainability movement. "I have been an advocate for architects have a key role in creating a more humanistic and sustainable society."

strong since he began working in the field 45 years ago. His first introduction to sustainable design came through his experience designing a half-dozen homes on Martha's Vineyard in the late 1960s. His designs focused on natural ventilation in order to keep, the homes cool during the hot summer months. Although this design approach on these early projects was not "rocket science" as Bruce recalls, it began the learning process that enabled him to implement sustainable building practices in his future designs.

Bruce got an opportunity in the mid 1990s to build a sustainable building of a different magnitude. Working with The Durst Organization (developers), Tishman Construction and the Rocky Mountain Institute (a naturalresource think tank), FXFOWLE (then known as Fox & Fowle) designed the first, and still one of the most important, environmentally responsible skyscrapers in the United States. The Condé Nast Building in Times Square. "The largest green project in the country at this time was about 50,000-square-feet," Bruce commented. "What we were designing was 1.6-million-square-feet!"

"Building 'green' on such a large scale was way "ahead of the game" said Bruce, "in that there were no formal metrics on standards prior to the Condé Nast Building that we could use to measure how green a building was. First, we developed a list of everything we could think of that would be environmentally responsible for the project. We brought in consultants from all over the world to advise us on what was feasible and how to achieve our goals. There was no single source for all the answers, so there was a big learning curve for the entire team. It was the commitment of The Durst Organization and the synergy of the team that made it happen. There was so much press and buzz about the

Roosevelt Avenue Intermodal Station



project that it began to influence the industry even before the building was completed."

Many of the systems and methods used in designing and building the Condé Nast Building have since been adopted by the architectural/building/engineering industries for green commercial and residential developments. All building systems and construction technology were evaluated for their impact on occupant health, environmental sensitivity, and energy reduction, making this the first project of its size and type to adopt state-of-the-art standards for energy conservation, indoor air quality, recycling systems, and the use of sustainable manufacturing and construction practices.

The design team projected that the building would use forty-one percent less energy than a typical building of its time. Its energy

usage reduction is primarily attributed to the use of on-site highly efficient gas-fired absorption chillers, photovoltaics (solar panels), two 200 KVA fuel cells, and variable-speed drives on all motors, fans, and pumps. The on-site power sources generate electricity at 85 percent efficiency, as opposed to 50 percent efficiency from the grid.

These initiatives served as a catalyst for the United States Green Building Council's LEED (Leadership in Energy and Environmental Design) rating program. The program is currently the nationally accepted benchmark for the design, construction, and operation of high-performance green buildings. LEED gives building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance.

The break-through moment surrounding the Condé Nast project, according to Bruce, was during a three-day retreat where the design team and consultants discussed protocols about how the project would come together. They broke off into brainstorming groups, one of which was to plan what the team could do to make a 1.6-million-square-foot building environmentally responsible. "With all the disciplines at the table, it started to gel," Bruce explained. "Very few consultants, installers, manufacturers, and suppliers were prepared for something of this scale."

Bruce believes a key contributor to the success of this landmark building at 4 Times Square was The Rocky Mountain Institute (RMI). RMI is a non-profit research organization that promotes better performing buildings. Early in the project, RMI was given a Federal Grant for four pilot projects to receive funding and research support. The Condé Nast Building was selected to participate in the program.

The Condé Nast building won eight major design awards including the AIA National Honor Award, the highest honor in the architectural industry. Bruce credits the success of this project to the valuable interaction among other architects, developers, and construction companies with similar "green" initiatives and consciousness, and the support from the Rocky Mountain Institute. "We didn't really know how to designate the

building at that time, but we knew it was the right thing to do," stated Bruce.

"We spend as much time educating as designing," says Bruce with regard to advice for clients and members of the building industry. "With the incredible growth of a 'green' mind-set among our clients, we're not always the first to bring up the 'green' word." He adds, "There was a time when we would have been thrown out of the room if we had mentioned 'green' too early in the process. It is much easier now to find and create support from clients to build 'green.' The good news is that competition within the manufacturing industry makes sustainable building materials less expensive and more easily accessible. We emphasize the fact that a LEED-Certified level really doesn't cost much, if any, more these days. And, the economic bottom line is not the only bottom line - social aspects and environmental aspects are just as important."

In 1978, Bruce co-founded FXFOWLE on the philosophical basis that architecture must be conscious and respectful of context and utility while enriching the human experience. His design leadership has shaped most of the firm's recognized projects, ranging from high-rise, multi-use complexes to cultural institutions and private homes. Almost every aspect of the architecture practice has changed since Bruce designed his "cuttingedge" houses on Martha's Vineyard, except for his vision for a more livable and sustainable society. Reflecting on current sustainability issues and initiatives around the world, Bruce commented, "It's all coming together now, and I'm very excited to be a part of this new green movement. We must all unify our efforts, expand our horizons, and apply bigger, linked thinking to effect change. We can't afford not to."



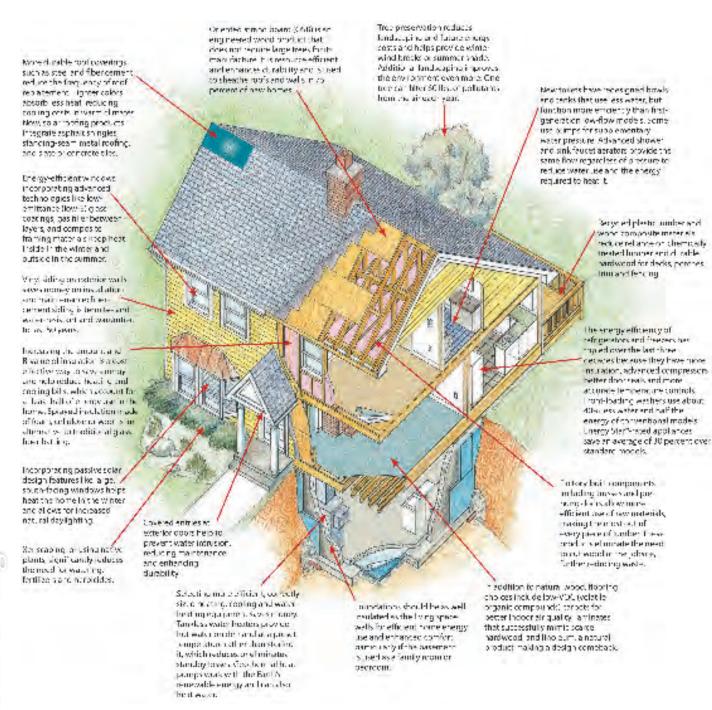


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# How Homes Become Green

As the "green" movement gains momentum, homeowners want more details about green construction. Here's a bird's-eye view of a home that contains many features -- from more durable roof coverings to insulated foundations – of sustainable building elements.



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Source: National Association of Home Builders

Illustration: Rick Vitullo

# Green Building is here to Stay



# Not Just a Flash-in-the-Pan

The World Resources Institute reports that the green building sector is worth \$38 billion and growing. Strong, durable and sustainable homes that are safe and affordable have a smaller impact on the world's limited resources. As in building hurricane-resistant homes, energy efficient green homes may cost more initially, but environmentally-friendly construction saves money in the long run by reducing energy use.

A nationwide study conducted in 2004, by the research and consulting firm, Capital E, found that the additional cost for building green was about \$4-5 per square foot and – over 20 years – would result in energy-related savings of about 10 times the value of the initial investment – as much as \$65 per square foot. The conclusion: Green building isn't just a trend that will fade in a few years.

As I travel around the country meeting with colleagues, I see green building practices in place everywhere, from schools in White Plains to public buildings in Rochester to skyscrapers in New York City. More and more, the public is asking for environmentally friendly construction and builders are responding. The International Code Council is responding as well.

# **International Code Council Approves New Policy Position on Green Building**

The International Code Council Board of Directors recently approved a policy position on Green Building and Sustainable Communities to emphasize its commitment to social responsibility and expand the boundaries of public safety. Buildingsafety professionals and others in the construction industry can have a positive impact on the environment by advocating for sustainable construction and promoting the environmentally friendly features of the International Codes. The policy outlines several initiatives to support green building, including educatBy Richard P. Weiland CEO. International Code Council

ing our members and advocating for green building in the legislative, regulatory and code arenas. This policy reinforces the Council's commitment to the environment and assures that our members play an important role on matters related to green building. The policy calls for the Code Council to participate in activities with other organizations to assure that green building practices are sustainable and safe. Such an effort is already underway through a partnership with the National Association of Home Builders (NAHB).

# A National Green Building Standard for Residential **Building is Developed**

The Code Council and NAHB have joined forces to develop the first-ever residential National Green Building Standard. The standard will make it even easier for builders to adapt to green building methods, techniques and materials. It also will help code officials and building safety professionals to better understand green building features and ensure that such practices are sustainable, safe and affordable. By developing the National Green Building Standard and including green and sustainable construction methods in the International Energy Conservation Code (IECC), jurisdictions that join the green building movement will have these tools at the ready; builders, designers, contractors and building officials all will benefit. The standard is being developed under the American National Standards Institute's (ANSI) guidelines and is expected to be completed in late 2008. The result will be a voluntary green home building standard that can be adopted by local jurisdictions or building departments as a guide for green home building programs.

Green building features include sustainable, durable and low maintenance building design and operation, energy and water efficiency, attention to indoor and outdoor air quality, the use of recycling and conservation in building materials and products, and many more practices. Many of these building methods and techniques are included in the IECC, which has been adopted by at least 15,000 jurisdictions in 38 states, including New York State and New York City. The IECC addresses energy-efficient

provisions for residential and commercial buildings, and prescriptive-and performance-based approaches to energy-efficient design. The U.S. Department of Energy references the IECC as the benchmark for conserving resources used in construction and daily living. The compatibility of the I-Codes with green building, combined with the energy-efficient features found in the IECC and the National Green Building Standard under development with NAHB all illustrate the International Code Council's support of green building.

In a report issued to the International Code Council Industry Advisory Committee by the Task Group on Green Buildings, it concluded that there were very few, if any, serious barriers in the I-Codes that would inhibit green building techniques and methods. As interested parties get involved in the code change process and submit code changes, many green and sustainable materials and methods will be included in the codes. This will further complement the National Green Building Standard and other green building standards in place and being developed around the country.

# **The Code Council Has Gone Green**

The Code Council has "gone green" as well, recently relocating the organization's world headquarters to the first LEED-certified (Leadership in Energy and Environmental Design) building in Washington, D.C. Its green features include energy efficiency, rainwater collection, high-efficiency heating, cooling and lighting, water-efficient fixtures and waterless urinals, excellent day-lighting, and use of recycled content materials. This move fits in perfectly with the Code Council's mission of safeguarding the public and demonstrates our commitment to good corporate citizenship.

An initiative underway in all of our offices commits the Code Council to help save energy, reduce landfill waste, take advantage of recycled products and reduce other wasteful habits that are detrimental to the environment. Our "Going Green" initiative will begin with Sustainable Workplace Advocate Teams (SWAT) in each office to coordinate being green and sustainable. The SWATs will explore ideas such as recycling cans, water bottles and paper; using compact fluorescent lamps



in place of incandescent lamps; eliminating simultaneous heating and cooling in offices; selecting products such as paper, furniture and carpet made from recycled materials; installing low-consumption plumbing fixtures; and offering incentives to carpool.

It is the responsibility of the International Code Council and its members to make sure that green materials and methods undergo the same scrutiny and procedures that other code-prescribed materials and methods have endured. The public health, safety and general welfare must be safeguarded for green buildings, just as it is for all other buildings. The International Code Council has made a corporate commitment to respect the environment. Green technology is playing an important role in our collective future—not just in the United States but around the world.



# Bigger May Be Better

# But Smaller Is Smart

By Edward Olivera

# How does the size of your home impact the environment?

Whether we like to admit it or not, our burgeoning consumption of natural resources has had a devastating impact on the environment, a trend that appears to have accelerated in recent decades. Heavy industry and larger automobiles are often blamed as the chief culprits in energy waste, but what about our homes?

Our penchant for bigness has led to the McMansion – that behemoth of construction on the rise in many upscale communities. The burden of accommodating limited natural resources to increasing demand is going to be placed smack on the backs of you and me.

Between 1970 and 2000, the average single-family home in the US increased in size from 1,500 square feet to 2,200 square feet. This occurred despite the reduction of the average number of people occupying these homes. This reflects a decline from 3.14 people per household in 1970, to 2.62 people per household in 2000, according to US Census Bureau statistics. This means that we occupy nearly double the amount of space today than we did 30 years ago.

The problem is not simply one of adhering to the belief that "bigger is better," it also reflects a serious indifference to our participation and complicity in leaving a more depleted and polluted planet for our children and grandchildren. It does not require a rocket scientist to calculate that the amount of energy it takes to run a 4,000 square foot house exceeds the amount of energy it takes to run a 1,500 to 2,000 square foot house.

In our favor, it seems that at the same time, small house construction is becoming a vital industry with many resources available for the consumer. A recent New York Times article featured several innovative home designs that were genuinely miniscule (as small as 65 square feet), and addressed the question of how much – or how little – personal space is truly necessary. While the Times article's emphasis was on second homes, a trend towards small homes (although not necessarily "miniscule" homes) is catching on among designers and consumers.

The Small House Society (www.smallhousesociety.org), of lowa City, sets no guidelines for what constitutes a small



house, but rather advocates a size of home that fits the individual's "life and comfort level." One of its founders, Jay Shafer, is a designer who runs the Tumbleweed House Company (www.tumbleweedhouses.com), producing elegant designs that are energy efficient. And it is ultimately in energy efficiency that innovative small houses may finally force us to look at our lifestyle.

A study by the Oak Ridge National Laboratory, for example, conducted in collaboration with Habitat for Humanity, the Department of Energy's Building America Project and others, investigated whole-house construction technologies that could produce small, near-zero-energy houses. Four houses were built for the study ranging in area size from 1,056 to 1,200 square feet equipped with a rooftop solar photovoltaic power system (hence the zero-energy consumption). Through a combination of materials (e.g., structural insulation panels and high efficiency heating/cooling systems), EnergyStar appliances and other design criteria, small and affordable homes were produced that maximized energy efficiency and reduced average consumption from 40 percent up to 60 percent.

When Henry David Thoreau built his small cabin on the edge of Walden Pond in 1850, he mused on the necessary amount of energy needed to accommodate one man. Since then, we've had our Levittowns, our Corbusier-inspired vertical urban ghettos, even Frank Lloyd Wright's Usonia, as examples of our continuing struggle to come to terms with the American Dream – home ownership for all. The reduction of energy consumption, environmental disturbance, maintenance costs and other efficiencies available in the design of small homes prompt yet another, more realistic look.

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# BUILDING **GREEN**<sup>in</sup> W

By Cathleen Rineer-Garber

It wasn't long ago that building "green" meant using recycled materials and installing energy efficient windows or a solar power system. While these traditional methods remain basic, green building today has a much broader definition and there are more products available.

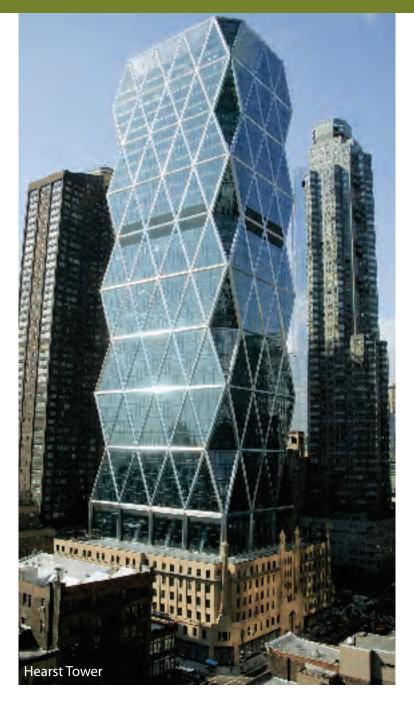
Green materials in today's market are more than recycled porcelain and materials manufactured from renewable resources. They range from safer paints and formaldehyde-free insulation to wood from environmentally sound sources, such as fast-growing bamboo.

Carmen Arguelles, President of Green Depot, in Brooklyn, N.Y., says green building materials are in great demand. "We have a small group of products—about 100—but that list is growing everyday." The company is one of the largest suppliers of environmentally friendly products in New York (and the country for that matter).

One of the Green Depot's most popular products is non-toxic paint. Most conventional paints contain high levels of volatile organic compounds (VOCs) that produce a breathable gas when applied. VOCs diminish air quality, and may be detrimental to health. Alternative manufacturing techniques have allowed the development of low- and no-VOC paints that release minimal (or no) VOC pollutants, and are virtually odor free.

These safe paints are popular with homeowners and residential and commercial builders, says Arguelles. Green Depot was founded last year with a focus on the commercial contractor. About six months ago they purchased Environmental Outfitters of NY (ECO NY), which is focused more on the residential side. Now, says Arguelles, Green Depot's customer base is about half residential and half commercial. These numbers don't surprise Sally Siddiqi, former executive director of the New York Chapter of the US Green Building Council (USGBC). "The green movement is not new to New York," says Siddigi. In fact, she says, "New York (particularly New York City—with its enviable public transportation system and small living spaces) has always been green."

For many years, says Siddiqi, there has been a small, but strong green movement in New York. But, she adds, it has always been kind of an underground movement. "In the past few years, green building has really taken off." She attributes this to the energy crisis, a change in attitudes and the fact that green living has become popular.



Another reason for the change is modern technology. Nanotechnology, the manipulation of matter at the molecular scale, is a hot topic in the scientific world, but it is also creating new possibilities for green building. Products ranging from paints that collect solar energy to heat-absorbing windows are already making their way into the construction industry. Predictions about windows that shift from transparent to opaque and environmentally friendly biocides for preserving wood, bode well for the future of the green building movement.

In New York City, engineers, architects, developers and builders of the city's trademark skyscrapers are not waiting to see what technology brings. "We are now seeing big developments and skyscrapers that are using green materials and techniques," she says. These include Seven World Trade Center, the Bank of America building, Goldman Sachs headquarters in Battery Park City and the Hearst Tower.

Seven World Trade Center and the Hearst Tower showcase environmental design; both were certified with the USGBC's Leadership in Energy and Environmental Design (LEED) Green Building Rating System™. The LEED system, established in 2000 by the USGBC, is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. The system grades buildings in energy and water consumption, indoor-air quality and use of renewable materials. As of February, 2006, 10 projects in New York State had been certified and nearly 200 other projects were in the process of applying for LEED certification, 98 of which were in the New York metropolitan area.

For workers in the Hearst Tower, this means breathing air that has been ventilated and filtered; coated windows that reduce heat by blocking solar radiation, while allowing in light; limited internal walls; radiant stone floors that generate heat in the winter and absorb heat in the summer; and a natural humidifying and chilling system courtesy of a three-story waterfall.

This approach to green building goes far beyond the use of non-toxic, environmental friendly materials and has broadened the scope of green construction. "The green revolution is often a collaboration between the designers, mechanical engineers and engineers," according to Siddigi. Design professionals are working together to incorporate environmen-

tally sound systems (such as greywater systems and electricity-generating wind turbines) and are redefining the concept of green materials. While these new

approaches are

# Resources

Green Depot: www.Greendepot.com New York Chapter, US Green Building Council: http://chapters.usgbc.org/newyork/ NY Wa\$teMatch: http://www.wastematch.org/

welcomed, old-fashioned concepts—such as recycling—remain popular. In New York City, Wa\$teMatch has taken recycling to a new level. Operated by the NYC Materials Exchange Development Program at the City College of New York, the program encourages the dismantling of old buildings to recover materials for reuse. Since its inception in 1997, NY WaSteMatch has diverted 25,000 tons of materials from landfills and helped participants realize \$4 million in savings and revenues. Seeing commercial builders finally buy into the green materials concept is a welcome change for Arguelles, who has been in the business for two decades. "In the past, commercial builders haven't gone as green as they



could," she explains. For example, commercial builders often opt for a formaldehyde-free insulation, but if they were truly interested in a green product, they would use a product such as Ultra Touch, a natural cotton insulation manufactured by Bonded Logic.

"Commercial contractors have resisted using green materials," says Arguelles, because of a lack of understanding and the added cost and limited availability of products, but, as awareness increases and technology improves, these barriers are becoming less of a problem.

For residential builders, incorporating green building materials has become easier—mostly because homeowners want it, says Arguelles. This attitude has moved into the commercial world as well. "Fortune 500 companies have realized they must join the movement. Because of increasing demand and the willingness to spend money, live healthy and do the right thing, green has become mainstream."

# Pinndcle Awards

When nominations opened in February 2006 for the 2006-2007 BOMA/NY Pinnacle Awards, almost 50 buildings, organizations and professionals threw their hats into the ring. But the Award, which confers the highest honor in the real estate management profession, also demands the most; its rigorous competition criteria often cuts the pool of contenders in half by the time judging begins. By November 2006, only 27 nominees made it through the demanding regimen of preparing a written submission, and/or undergoing an in-depth building inspection or personal interview.

# **Outstanding Local Member of the Year**

Mark Landstrom, RPA; VP, Cogswell Realty Grp.

# **Historical Building**

### The Lincoln Building

Owner: W & H Properties on behalf of Lincoln Building Associates, LLC Management Firm: Newmark Knight Frank Building Manager: Thomas F. Beissel

#### Government Building

# **Ted Weiss Federal Office Building**

Owner/Management Firm: US General Services Administration Building Manager: David V. Wells

#### **New Construction**

#### The Hearst Tower

Owner: Hearst Communications, Inc. Management Firm: Tishman Speyer Properties, Inc. Building Manager: Geraldine Walsh

#### Earth Award

# **Ted Weiss Federal Office Building**

Owner/Management Firm: US General Services Administration Building Manager: David V. Wells

### **Civic Betterment: Construction**

## Henry J. Muller Achievement Award: The Durst Organization

Manager of the Year (3-10 Years Experience): Meghan Ellen Gill, RPA/FMA; 555 West 57th Street, SL Green Realty Corp. Manager of the Year (10 Years or More Experience): Stephen A. McGann, CPM/RPA; General Manager, 1290 Avenue of the Americas, CB Richard Ellis, Inc.

## Corporate Office Building: Sony Building (550 Madison Avenue)

### Owner: Sony Corporation of America

Management Firm: Grubb & Ellis Real Estate Services, Inc. Building Manager: David Azzopardi

## Renovated Building: 1359 Broadway

Owner: W & H Properties on behalf of 1350 Marlboro Associates, LLC

Management Firm: Newmark Knight Frank Building Manager: Wayne W. Wiedman

# Operating Office Building - 100,000 - 499,999 sf: 501 Seventh Avenue

Owner: 501 Seventh Avenue Associates LLC

Management Firm: CB Richard Ellis, Inc. **Building Manager: Javier Lezamiz** 

# Operating Office Building - Over 1,000,000 sf: Time Warner Center

Owner: A consortium led by Related Properties, Inc.

Management Firm: Related Management Co., LP

Building Manager: James Kleeman

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# WHY NOT LEED?

By John Fulmer

or a long time, most people believed "green" or sustainable building was the province of granola-gobblers who built homes out of recycled tires and equipped them with hideous-looking solar panels the size of garage doors. Perhaps they used hay bales for insulation. And they all lived in California.

Then, environmentally conscious construction began to enter the mainstream, and some early adopters in the commercial sector went with the flow. The problem green-leaning contractors always had was convincing owners that higher initial construction costs would pay off in the long run with a building's reduced energy consumption. The "feel-good" factor, prodding owners to a loftier level of ecological awareness, was an even harder sell, especially in a low-bid world.

All that has changed in an incredibly short time. The U. S. Green Building Council's Leadership in Energy and Environmental Design (LEED) designation, which got its start in the late 1990s, may be the biggest single development in this arena. As little as two years ago, mentioning LEED to contractors and vendors was often met by blank stares. Now LEED Professional Accreditation is seen as an important resume-builder for architects and designers and many forward-thinking contracting firms have accredited professionals (LEED AP) on staff, individuals who have passed an exam in one of three areas: new construction, commercial interiors and existing construction.

More important, every contractor should be aware of the LEED rating system. While the USGBC is a nonprofit, nongovernmental agency and achieving LEED status—there are different levels and categories—is strictly voluntary, many public-sector projects are beginning to require LEED-based guidelines.



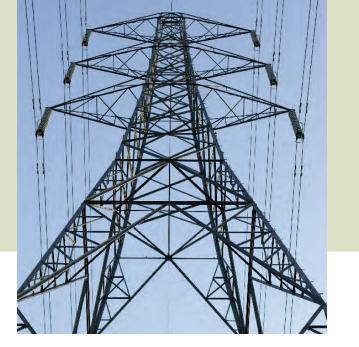
## **LEED 101**

So what exactly is LEED? The USGBC (www.usgbc.org) describes itself as a community of more than 7,500 organizations from every sector of the building industry united by a common purpose to transform the building market-place to sustainability by rating construction practices. LEED divides construction into eight categories, such as residential, schools, and new commercial construction. If you wanted to try for LEED certification, first register your project—there's an online form on the Web site—and begin accumulating points in the six categories listed on the rating system documents, which are also available online.

The categories for new commercial building are:

- sustainable site
- water efficiency
- energy & atmosphere
- material & resources
- indoor environmental quality
- innovation & design process





#### **GETTING BROWNIE POINTS**

Each of these categories has a total number of available points. For instance, it's possible to score a high of 17 points in "Energy and atmosphere" and a low of 5 points in "Water efficiency." There are subcategories that explain how a builder/developer can amass points. Some criteria are required, such as a fundamental commissioning of the energy system. An advanced commissioning will award builders an extra point.

The new commercial rating system has a total of 69 points, but a builder need not hit every target. The USGBC rates the performance, tallies up the points and awards the certification in four levels:

- Platinum 52-69 points
- Gold 39-51 points
- Silver 33-38 points
- Certified 26-32 points

# **SCORING POINTS**

Some of the ways points are awarded would seem obvious, such as energy-efficient lighting systems and building envelopes with advanced insulation techniques. But LEED is a comprehensive program that awards points in often arcane and oblique ways.

For instance, in a commercial project, LEED gives points for easy access to public transportation and installation of bike racks, with the idea that gasoline consumption is reduced. Builders would "lose" points if they had equipment and materials trucked in beyond a 500-mile radius because that increases diesel-fuel use. A quick look at a rating system.—maybe not that quick since the new-construction PDF is 81 pages long—will outline requirements for carpet systems and adhesives use. It will prohibit development in proximity to wetlands and in flood plains. Fenestration that maximizes "daylighting" and cuts the electric bill will put you in LEED's good graces. It blesses construction that

implements recycled and regionally produced materials and curses HVACR systems filled with refrigerants that cause ozone depletion.

#### WHAT'S THE POINT?

What's does it matter if you get a gold or silver star on your new building? Why go green at all? Well, how about tax breaks? The New York State Green Building Tax Credit for (GBTC) provides \$25 million in income-tax credits over nine years for several types of construction, including many commercial classifications, with a minimum building size of 20,000 square feet. GBTC criteria could even be considered more stringent than the LEED system, but the two are very similar. In fact, the USGBC was among the parties that provided input on the New York requirements.

New York is one of dozens of U.S. cities that have LEED-based building requirements or incentives, and most experts agree that green-building momentum is unstoppable. In various jurisdictions, LEED offers other benefits such as grants, fast-track permitting and special loans. In some cases, building-permitting fees are slashed in half for LEED projects and zoning variances are allowed for higher density. Why? Because LEED seeks to improve interior environments, and one of the intangible benefits that green building proponents point to is that LEED-type buildings are considered more healthy. This may, in turn, cause insurance companies to drop mold-exclusion clauses and cut premiums, another example of the type of "soft" benefits greenies like to talk about.

You'll have partners, among them the New York State Energy Research and Development Authority. NYSERDA can assist with computer modeling and charrette coordination, help you gain LEED certification, and guide you on Executive Order 111, Gov. Pataki's 2001 directive to state agencies and authorities to become more aware of sustainable building principles. NYSERDA's Web site highlights The Bank of America Building under construction in midtown Manhattan. The two million-square-foot office building is the first high-rise to go for a LEED Platinum rating.

And a trend has emerged in which RFPs, owners and projects all look for a firm with LEED APs. Yet this is a simplistic overview. LEED certifications and requirements are complex, and estimators need to figure in LEED administrative costs. However, as energy prices skyrocket and resources are depleted, owners will begin—have already begun—to understand that long-term energy savings may outweigh savings on cheaper but less-energy-efficient construction.



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# **GREEN ON A BUDGET**



How Much Extra Will It Cost to Build Green?

I have been an environmental product consultant for over 15 years, and though times have certainly changed, the one question I still hear most often from clients is: "How much extra will it cost to build green?"

IT COSTS LESS

In the 1990's, the cost of building green ranged from 15-20% above the normal market value GOING GREEN! of a property, mainly because of the lack of green product manufacturing in the U.S., and the difficulty involved in securing imported European materials. As a growing number of small U.S. manufacturers began to understand the need for green construction materials, a greater variety THAN YOU THINK of products went into production, and costs slowly started to decrease.

> Now, green has hit the mainstream, and the market for green building products and systems has exploded. According to the National Association of Home Builders, more than half of their members – who build more than 80% of the homes in this country – will be incorporating green practices in the development, design and construction of new homes by the end of 2007.

Today, with consumers more aware than ever of the environmental impact and health-related issues surrounding conventional building products, demand has escalated to the point where larger U.S. manufacturers are now jumping on the green bandwagon, putting into production

an array of environmentally friendly products. The resultant accessibility and superior quality of these products has served to make green products much more competitively priced, and has greatly enhanced their consumer appeal, a crucial factor that has driven the additional costs of a green building down to 2-6% above market value.

Yet, although more people are looking to build green these days, and the outlay is significantly lower than it was 10 to 15 years ago, the fear of higher costs still looms large. As a builder, there are a number of things you can do to help counter those concerns.

# **Decide What Green Means**

Although a number of widely respected certification programs and guidelines exist today, when it comes to building green there is plenty of room for interpretation. It is important that you understand your client's definition of green, and that you both come to consensus about how that translates to their project, before you design, build, or even price-out the job. This can save you both a considerable amount of time and money, and will narrow the scope of products and systems available.

## Pick a Shade of Green

With the extensive availability of a wide range of environmentally friendly products and systems these days, you can easily build to different "shades of green" based upon the goals of your project. This may range from choosing products that are low- or non-toxic, or contain varying degrees of pre- or post-consumer, or post-industrial recycled content. It may also involve the selection of systems that deliver differing degrees of energy or water savings, or enhanced indoor air quality.

## **Put on Your Green Filter**

Don't assume that the "more environmentally safe" choices carry higher costs – such as non-toxic vs. low-toxic materials – because in many instances this is not the case. Each item must be thoroughly and individually researched, put through a "green filter" to ensure it meets your client's definition of green and the goals of the project. When considering the functionality of materials used in building green, it is important to consider the labor costs associated with their installation. Green products, that are more consistent with their standard counterparts, will be more readily accepted – and more easily installed – by standard trades. Another key factor to consider is the projected life cycle of the product; the longer the life cycle, the lower the overall cost over the life of the building. Though the existence of countless options in green materials and systems these days is a big plus when it comes to pricing and availability, it can also be a major obstacle when it actually comes down to selection.

#### Ask the Green Expert

The most efficient way to find the best product solutions for your application is to confer with an environmental products specialist - whether an independent consultant or an experienced employee of a store that specializes in green building supplies. In either case, it is always important to verify credentials to ensure that he or she possesses the requisite knowledge. The specialist can guide you to the products that meet both the project's budget and green objectives, and can also instruct you on the proper use and installation of materials. In the greening of a project, there are many ways to accomplish your goals, and all should be explored with a specialist in the earliest phases of planning. At GREEN DEPOT, we believe that any green choice – big or small – is a positive step for our future. Our team brings together some of the most dedicated and respected leaders in the worlds of construction and environmental building, so no matter what the project, our people have the experience and insight to get the job done right.

# **How Green is My Project?**

A systematic approach to identifying ways to green up your



FAST-GROWING BAMBOO...A **RENEWABLE RESOURCE** 

project involves the use of a standard product specifications list produced by the designer or architect. Using the standard spec list, the environmental products specialist can then develop a list that contains substituted green product alternatives, and then a comparison of functionality and price can be made between the two. Be prepared to go through two or three substitution lists before a solution that meets both budgetary and green objectives is determined. Once the list of green products has been established, it is important to find not only the best pricing, but also a reliable supplier who can deliver your materials on a timely basis, as delays in product availability will greatly affect your labor costs and subsequently impact your total project budget.

## **Find a Green Source**

Currently, most standard building supply stores and their employees do not possess a genuine knowledge of green materials – let alone stock them – and as such, are not usually a dependable source for these products. Choosing such a supplier makes it very unlikely that you will be directed to the product most suited to your application, and the extra effort involved on their part in ordering these products will certainly add a premium to the cost that will far exceed that of a store that specializes in green building products. Choosing a green building supply store for a majority of your materials will afford a much greater selection of products within your budget, and allow for a broader range of options in construction methods to keep costs down. As the largest supplier of environmental building materials to serve the Northeast, GREEN DEPOT works hard to seek out the very best green building products and materials for every "shade of green." By making a range of high quality green products available, we empower our customers to make the best green choices

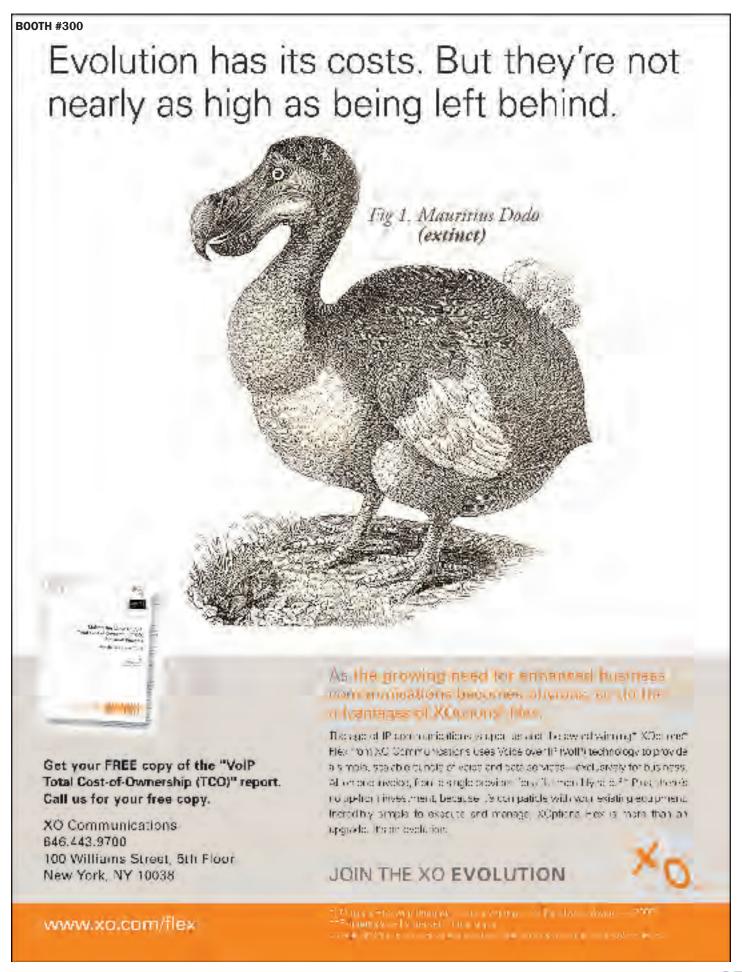
# **Greening Your Trades**

One of the most important factors in keeping costs under control is choosing the right subcontractors and trades. Though there are subs that specialize in green construction, they are still a minority in the industry. If a green sub cannot be found, your search should focus on those who are genuinely willing and interested in building green, as they will be more receptive to using products spec'ed for them, and will be much less likely to make substitutions. The trend toward green products has motivated more trades to consider their use, so finding one who is willing to learn will be much easier than in the past.

#### **Green Choices**

Although challenges certainly still exist, in today's climate no one should fear the costs associated with building green. There is a wide range of budget-conscious environmentally friendly materials and systems to choose from, and many qualified and certified advisors available to help reach that green goal – including experienced and knowledgeable environmental product specialists and salespeople, and a growing source of reputable green suppliers and distributors to make the job a whole lot easier and more cost-efficient.

Paul T. Novack is GREEN DEPOT's in-house "expert," specializing in the fields of environmental health and construction, and has been resourcing, defining, and selling environmentally friendly building products since 1991. Considered one of the leading experts in the field of ecologically correct and non-toxic construction materials, Paul's consultancy is sought out by architects, builders and endusers. Prior to joining GREEN DEPOT, Paul was the Founder and Operating Manager of Environmental Construction Outfitters of New York, one of the oldest and most respected environmental building companies in the United States. For more information, visit it on the web site at www.GreenDepot.com



# Green Machines



By Tim Moran

hen purchasing a piece of construction equipment -- be it a tiny lawn tractor or a bulky excavator – contractors traditionally considered three factors and three factors alone: power, price and reliability.

But in a dense, expensive construction environment like the Tri-State area – where the price of gas and diesel is hovering around \$3 a gallon and where noise or pollution complaints from neighbors can stop a project dead in its tracks – some savvy contractors are now finding that they also want their equipment to be fuel efficient and environmentally friendly.

"This is no longer just some fringe idea. People want machines that cost less to fuel and can meet the increasingly high standard set by cities and states in terms of pollution output," said Ray Werner, chief of the air programs branch of the Federal Environmental Protection Agency's Region #2 office, which has jurisdiction over New York and New Jersey. "Contractors have begun recognizing the need for more efficient equipment, and now the manufacturers are responding to the contractors."

At long last, the industry has realized what contractors have known for a while: there's money to be made, or to be saved, by going green.

Some big names in equipment manufacturing, including John Deere, Caterpillar, New Holland and Bobcat, have recently introduced products that can aide the urban contractor in meeting increasingly stringent local laws regarding air and noise pollution, and limit the impact of rising gas prices on the bottom line. Here's a look at a few:

## **MORE POWER, LESS FUEL**

Last summer, Case Construction Equipment introduced its CX B series of full-sized excavators. Products in the new line boast EPA Tier III-certified engines that are up to 20 percent more fuel efficient than those in older Case models and in competitors' models, company officials say. The fuel savings can have a significant effect on a contractor's bottom line.

"Think about what 20-percent better fuel efficiency means for the owner of a Case excavator," asks Dave Wolf, marketing manager, Case Construction Equipment. "That's huge. During testing, we were seeing almost a gallon an hour difference in fuel use. If you multiply that times 2000 hours of operation per year times \$2.50 a gallon for diesel fuel, that's a savings of \$5,000 per year."

In this case, fuel economy does not come at the price of power. The CX160B, CX210B, CX240B and CX290B deliver 120, 157, 177 and 207 net horsepower, respectively. Bottom line, on average, the new engines produce 17 percent more horsepower than older Case engines.

## **CATERPILLAR'S CLEANER COMPACTOR**

Site preparation can be dirty, dusty work. Two products from Caterpillar can help keep the dirt and dust free from wasteful fuel emissions. The 815F2 and the 825H soil compactors both feature EPA Tier III-compliant engines equipped with Cat's ACERT technology. ACERT engines feature advanced electronic control, precision fuel delivery and refined air management, along with precisely timed multiple injections,

## **ULTRA-LOW SULFER FUEL THE WAY TO GO**

New York City's Local Law 77 requires that all equipment being used on city projects use Ultra-Low Sulfur diesel fuel and utilize particulate filters. According to Ray Werner, chief of the air programs branch of the Federal EPA, many private developers now also require use of the ULS diesel and particulate filters.

"It makes for better community relations to be able to say your site is using clean technologies," he said. "When you're building in a dense, urban environment, a good relationship with neighbors is worth a lot."

#### **JUST TURN IT OFF**

Werner says one of the best ways to save on fuel costs requires nothing but a change in attitude. For generations, diesel operators of all stripes – from train operators to tractors drivers – were taught to leave their machines idling, because starting diesel engines has traditionally been difficult. But today's electronically controlled engines turn on and off with relative ease.

"If operators can just break the habit of leaving the machines on when they're not in use, they could save big," Werner said. "Everyone just needs to remember that you can turn off these newer engines and turn them back on later and they'll work just fine."

resulting in more complete combustion. More complete combustion means fewer emissions without sacrificing the power and economy of the machine.

Cat's ACERT engines can run on blends of up to 20 percent biofuel. Other components on the compactors can operate using biodegradable hydraulic oil, decreasing the potential for site contamination.

#### **NEW HOLLAND's HYBRID**

Of any big player, New Holland might be making the biggest inroads into green product manufacturing. Earlier this year, New Holland, along with its sister company Kobelco Construction Machinery Co., introduced their prototype "HYBRID" seven-ton class crawler excavator.

The new excavator features an efficient diesel engine and a battery-powered motor. The addition of the battery powered motor allows the HYBRID to perform similarly to other 7-ton class excavators while relying on a smaller, more fuel efficient diesel engine. Fuel consumption and carbon dioxide emissions on the HYBRID are 40 percent lower than those of current New Holland excavators.

As a bonus, when the HYBRID excavator and other hybrid products finally come to market, their diesel engines will be able to operate on a mix of biofuels.

"All New Holland-branded engines will currently operate with B5 biodiesel fuel (5 percent biodiesel and 95 percent petroleum-based diesel), while several of our current products are approved to operate on B20 blends, and we expect more will be approved shortly," said Kirk Gillette, who handles North American marketing for New Holland. "As an alternative fuel with the ability to lower emissions and help reduce dependence on foreign oil, biodiesel can also contribute to lower machinery operating costs."

## AS COOL AS A BOBCAT

Of course, air pollution isn't the only negative environmental impact contractors want to minimize on their sites. Noise pollution is always a hassle (think: complaining neighbors) and can even be dangerous when it interrupts verbal communication on the site. Many new Bobcat products look to minimize noise pollution.

The company's K-Series skid-steer loaders (S130 through S300), compact track loaders (T140 through T300), and the A300 all-wheel steer loader all now feature the SmartFAN cooling system. SmartFAN is a hydraulically driven cooling fan that senses machine operating temperatures and then self-regulates to rotate only as fast as it needs to. The new fans can be 30 percent quieter than traditional fans in some operating conditions, which can go a long way toward meeting city noise ordinances.

# A Look at the TOP10 GREEN Building Products

By Alex Wilson, BuildingGreen, Inc.

# Architects, builders, subcontractors and owners,

in response to a growing interest in sustainable building, are seeking reliable information about the best in the "green" products marketplace. As more and more products come in to this arena every year, it becomes a challenge to make the best choices.

# In the "green" marketplace, it's important to separate the real from the hype.

To fill this information gap, the editors of BuildingGreen and our flagship publication, Environmental Building News, has published our top picks from among thousands of "green" building products. These Top 10 products are drawn primarily from new additions to our company's GREENSPEC product directory. Our database, which was first published in 2001, includes more than 2,100 products. More than 250 products were added during the past year alone.

Inclusion of the products listed in the GREENSPEC directory earns LEED credits under the US Green Building Council's Leadership in Energy and Environmental Design. The LEED Green Building Rating System is the national benchmark for high performance "green" buildings.

# OUR CURRENT TOP 10 PICKS ARE LISTED BELOW:

Polished Concrete System from RetroPlate

Polishing concrete is a relatively new technique for turning both new and old concrete slabs into attractive, durable, finished floors. RetroPlate™ (from Advanced Floor Products, Inc.) pioneered this process of grinding, polishing, and chemically hardening (densifying) concrete in the 1990s, and its system has now been used on more than 100 million square feet of flooring. The RetroPlate process was developed by combining European stone grinding and polishing technology with concrete hardening and densifying agents that had been used in North America. In the process, large walk-behind diamond wheel grinders remove between 1/16th and 1/4 inch of the concrete floor surface.



# What makes this product green?

- Reduces impact from construction or demolition
- Reduces heating and cooling loads
- Releases minimal pollutants
- Exceptional durability or low-maintenance

# Salvaged Underwater Standing Timber by Triton Logging

Harvesting underwater standing trees from forests that were submerged decades ago by reservoirs created by hydroelectric dams could add billions of board feet of lumber worldwide. In British Columbia alone, Triton estimates that there are five billion board feet of salvageable underwater timber, and worldwide the total could exceed 100 billion board feet. The company uses its proprietary Sawfish™ logging submarine, which is tethered to a surface ship and controlled remotely. The Sawfish clamps onto a standing tree, attaches

inflatable floats and cuts the trunk with an electric chainsaw. The tree then floats to the surface where it is processed and loaded onto a barge.

# What makes this product green?

- Salvaged products
- Extends the life of existing land-based forests

SageGlass Tintable Glazing from Sage Electrochromics
This electronically tintable exterior glazing by SageGlass® provides glare control on demand while preserving views.
Unlike earlier switchable glazing products that degraded with exposure to UV light, SageGlass is a multi-layer, thin-film tungsten-oxide coating that is as durable as low-emissivity coatings. The glazing uses 0.28 W/ft2 to switch the glass from clear to tinted, a process that takes several minutes, and 0.1 W/ft2 to maintain that tinted state. Used with typical clear glass in an insulated glazing unit, SageGlass reduces the visible transmittance from 62% to 3.5% while reducing the solar heat gain coefficient from 0.48 to 0.09.

# What makes this product green?

- Reduces heating and cooling loads
- Improves light quality

# Certified Composite Surface Material from KlipTech Composites

PaperStone™, from KlipTech Composites, is a dense, hard, water-resistant, solid-surface composite material used for countertops, toilet partitions, and exterior rainscreen siding. It is made from cellulose fiber (paper) and a non-petroleum phenolic resin derived in part from natural phenolic oil in the shells of cashews. KlipTech offers two versions of the product: standard PaperStone contains at least 50% post-consumer recycled paper; while the newer PaperStone Certified has 100% post-consumer recycled paper. The latter product is third-party certified by SmartWood to carry the Forest Stewardship Council (FSC) recycled-content label.



# What makes this product green?

- Post-consumer recycled content
- Rapidly renewable
- FSC-certified wood
- Low-emitting product with no formaldehyde

# Recycled-Content Panel Products from 3form, Inc.

Two interior panel products from 3form, Inc. offer interior designers a wide range of design opportunities coupled with recycled content and low emissions. Varia™ is 3form's line of eye-catching transparent and translucent panels made from its 40% pre-consumer recycled-content Ecoresin™, which is a copolyester (PETG) that is chemically similar to the PET used in beverage containers. Available in a range of colors and patterns, 100 Percent is appropriate for such applications as toilet partitions, interior workstations, and interior trim.

# What makes this product green?

- Post-industrial recycled content
- Post-consumer recycled content
- Does not release significant pollutants into the building

# Recycled-Content Interior Molding from Timbron International

Timbron® International, Inc., produces interior molding in a variety of profiles that are made from at least 90% recycled polystyrene—75% post-consumer and 15% pre-consumer, certified by Scientific Certification Systems. Timbron is highly durable, waterproof, termite-proof, paintable (though also suitable unpainted as white), and fully workable with carpentry tools. While usable anywhere indoors, the product is especially appropriate for kitchens, bathrooms, laundry rooms, and basements, where moisture or humidity levels may be high.

# What makes this product green?

- Post-consumer recycled content
- Pre-consumer recycled content
- Exceptional durability or low maintenance
- Low emitting

# Water-Efficient Showerhead with H2Okinetic Technology from Delta

Delta Faucet Company, in April, 2006, introduced a revolutionary showerhead that delivers superb performance using just 1.6 gallons of water per minute. Delta worked with Bowles Fluidics Corporation to develop their H2Okinetic Technology™, which produces droplets that are fairly large, resulting in good heat retention and body wetting. By

comparison, many low-flow showerheads either create very small droplets or aerate the water, either action can allow the water to cool quickly and make showering less satisfactory.

# What makes this product green?

- Fixtures and equipment that conserve water
- Equipment that conserves energy

# **Smart Irrigation Controls from HydroPoint** Data Systems, Inc.

HydroPoint® Data Systems, Inc. has revolutionized irrigation management in North America through its WeatherTRAK® irrigation control systems that create watering schedules based on physical landscape features (soil type, slope, and plantings) as well as weather data that is beamed wirelessly to the controllers each day. While most irrigation controllers base water delivery on timeof-day metering, sometimes with override controls for soil moisture, the WeatherTRAK system uses actual local weather conditions to examine evapotranspiration (ET) rates and regulate water delivery accordingly—so that irrigation will occur in the correct amounts and not if rainfall is occurring or predicted.



# What makes this product green?

- Fixtures and equipment that conserve water
- · Reduces stormwater pollution

# **Indirect Evaporative Air Conditioner from** Coolerado, LLC

The Coolerado Cooler is a revolutionary air conditioning system that relies on the evaporation of water (latent heat of vaporization) to cool a space, but its similarity to standard evaporative coolers, or swamp coolers, is so remote that the company does not even use the term "evaporative" to describe its product. Conventional (direct) evaporative coolers cool the air that is blown into the living space by evaporating water into that air, raising the humidity. Direct-indirect evaporative coolers introduce less moisture, but still raise humidity.

## What makes this product green?

Energy savings



Renewable energy credits (RECs), often referred to as "green tags," provide a way for building owners who are unable to install their own renewable energy systems to buy conventional grid power, while also buying the environmental attributes of electricity produced from renewable energy. Buyers of RECs aren't actually getting electrons derived from wind, solar, or other renewable energy sources, but by paying extra for their power from a fraction of a cent to several cents per kilowatthour (kWh)—they are helping to displace conventional grid power and subsidize the further development of renewables. Quantitatively, each renewable energy credit (or certificate) aligns with one megawatt-hour (MWh) of clean, renewable electricity generation.

# What makes this product green?

 Renewable Energy

More complete descriptions and contact information about these products is available in the online edition of GreenSpec or **Environmental Building** News, both of which are available through the BuildingGreen Suite of online information from BuildingGreen Inc. (www.BuildingGreen.com) Manufacturers do not



pay to be listed in GreenSpec, and neither GreenSpec nor any other BuildingGreen publication carries advertising; both are supported exclusively by users of the information. A new 7th edition of the printed GreenSpec Directory will be published in 2007.

Alex Wilson is founder and president of BuildingGreen, Inc. in Brattleboro, Vermont and executive editor of Environmental Building News. He is the author of "Your Green Home, a Guide to Planning a Healthy, Environmentally Friendly New Home," published in 2006 by New Society Publishers.

For more than 25 years Alex has written about energy-efficient and environmentally responsible design and construction. Prior to starting his own company in 1985, he was executive director of the Northeast Sustainable Energy Association. Alex served on the board of directors of the U.S. Green Building Council for five years and he is currently a trustee of The Nature Conservancy, Vermont Chapter.



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CONSTRUCTION MONTHLY | new york 2007

# **How SRIs**

# Can Benefit the Construction Industry (and Everyone)

By Edward Olivera

# While a look at an SRI holdings list will offer you companies

in manufacturing, retail, technology and other business sectors, it appears logical that the construction industry stands poised as the most influential area that will have to put its money where its mouth is. Until the world becomes colorblind to Green and certain practices are universally adapted, sustainable design will remain the exception rather than the rule.

The trends of SRI affect a host of construction-related industries, including equipment and material manufacturing, real estate, and power, as well as builders themselves. The fact is that the built environment more directly affects the natural environment because of the way in which it impacts land use and natural resources. Without a new direction in which SRI companies point the way, the construction industry and its satellite industries will stall if not fail.

For companies poised to embrace Green principles of design and building, this is a win-win situation. In other words, although it is the socially responsible thing to do, it is more than mere altruism. These are the companies that future investors will watch for their performance as well as their good works, as sustainable practices become a more commonplace part of doing business in the construction industry. Put another way, those who find themselves on the wrong side of the curve as sustainable practices become more adapted and even mandated are going to increase their risk of failing to thrive.

There are several key areas that the industry will be evolving and developing, keeping in mind that our traditional markets of housing, transportation, and vertical construction among other sectors will necessarily become involved with related industry developments. For instance, in areas that directly affect supply and demand, SocialFunds.com (www.socialfunds.com), a website of SRI World Group, Inc., a research and consulting firm, offers detailed information about top wood product companies that support sustainable forestry practices, as well as those that are less rigorous in their standards and merely desire some ecological cachet. One of the holdings of Portfolio21 (www.portfolio21.com) – a global equity mutual fund that invests in ecologically, superior products – is British Land (www.britishland.com), a property development and management company that gathers several concerns under its planning including alternate transportation systems, water resources, brownfield re-use and multiple use of structures. Skanska,

(www.skanska.com), the worldwide construction giant, is committed to elevating building standards in Europe and has lobbied the EU to increase efficiency. Skanska is one of the few construction companies to be found among Green investments but serves as a model for what is achievable and how construction companies can take the initiative as leaders in sustainability rather than considered as one of the bad guys.

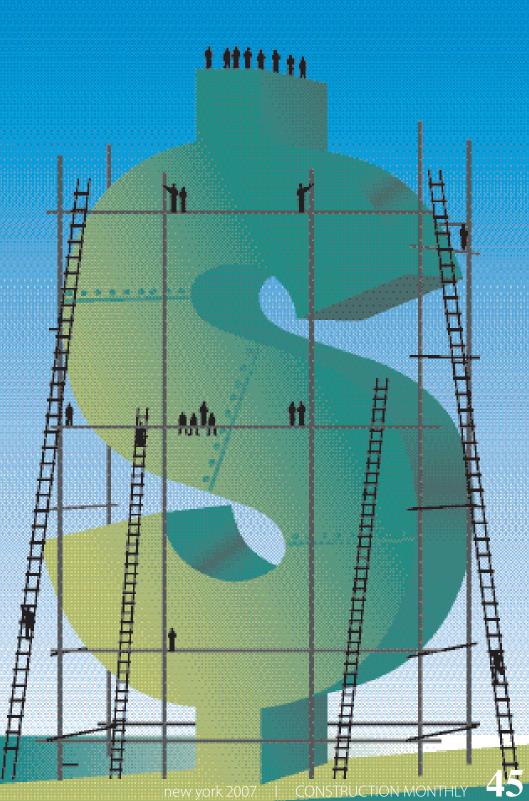
JM, (www.jm.se), a Swedish construction and real estate firm noted for its commitment to sustainable building practices, is among Portfolio 21's Top Ten Picks for 2006. JM has been proactive with its development of key performance indicators such as employee training, monitoring of CO2 emissions, the energy efficiency of the buildings it develops, creating a database of preferred building materials, and communication outreach to the broader industry.

As part of the power of Green Investing to make a serious difference in the way we do business, the US Green Building Council (USGBC), a coalition of leaders in the building industry, has recently announced plans to purchase the first federally sanctioned Green Bonds being sold on Wall Street. The AAA rated bonds are part of \$2 billion being allocated by the US treasury for four large projects around the country. The Syracuse Industrial Development Authority is issuing the first \$238 million for the Destiny USA Project in New York. USGBC calls this \$20 billion project the world's largest green building powered by renewable energy and will house retail, hospitality and entertainment.

Some companies in the construction and related industries are taking their own initiative to employ sustainable development practices and policies and thus becoming attractive candidates for SRI investors. Lafarge, the worldwide construction materials behemoth, is addressing several environmental issues and shows a high level of corporate transparency. It acknowledges, for instance, its releasing 89.3 tonnes of CO2 into the atmosphere in 2005 and announces its plans to cut emissions produced by cement plants by 20 percent worldwide by 2010 as well as a 10 percent cut in absolute emissions in industrialized countries. This represents a greater share in the responsibility by industries to cut such emissions as outlined in the Kyoto Protocol of 5.2 percent. Portfolio21 recommends other construction-related companies with sustainable initiatives in their operations. Schnitzer Steel (http://www.schnitzersteel.com) processes over 4.9 million tons of recycled ferrous and non-ferrous metals

annually with an annual production of 700,000 tons of finished steel products. Schnitzer uses minimill technology and strategically places its operations in proximity to suppliers and transportation routes. Suntech Power (http://www.suntech-power.com), a global solar energy company based in China, manufactures photovoltaic (solar) cells along with research and development into solar energy. Potlatch (http://www.potlatchcorp.com) is using cutting edge green forestry techniques to sensitively employ new standards in stewardship of forestry lands and processing of pulp. Severn Trent (www.severntrent.com) is a British water and wastewater utilities services company engaged in building urban drainage systems, segregating waste, and developing waste minimization techniques such as collecting methane gas for energy from landfills.

SRI is not only a good way to invest, though it is that. It is also a means of change through advocacy and a tool for learning. Among the best websites for learning more about green investing is www.greenmoney. com, a font of good information and articles on SRI issues worldwide that are well-written and researched. www.socialfunds.com offers detailed information on a variety of funds and news with a convenient SRI Fund finder. www.socialinvest.org is a national nonprofit membership organization dedicated to promoting the growth of SRI. www.sustainablebusiness.com carries up to date news, investor news, business resources and information on stocks' performance.



FLOOR PLAN **EXHIBITORS** 

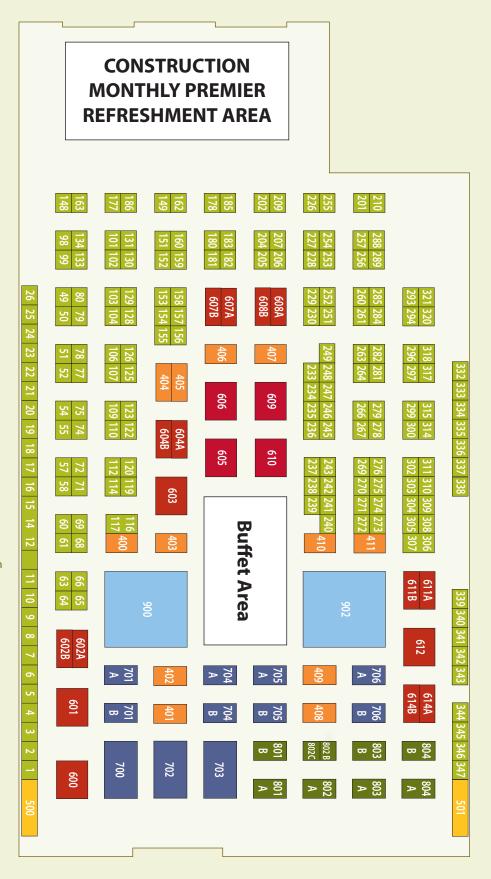
as of 4/17/07

as of 4/17/07

Foatu	red Exhibitors
	Company
611 B 409	AFCO Precast
706 B	Airweld, Inc. Allstate Insulation
700 B	& HVAC Supply
801 B	Altek Enterprises LLC
902	Alumil & Everlast Group Corp.
614 A	AM Royal
609	American Transportation
	& Disposal Systems
500	Aramsco
603	BBH Solutions
703	Belden Brick Sales & Service, Inc.
	Anchor Concrete Products
406 610	Bergen Tile & Floor Center Big Apple Sign Corp.
407	Bobcat of NY/North Jersey
116-117	
706 A	Cabinets by Graber
401	Call-A-Head Corp.
12, 14, 15	
606	Croker Fire Drill Corp.
408	Crystal Window & Door Systems
607 B	Cultec, Inc.
705 A	Environmental Safety
	Solutions, LLC
705 B	European Kitchen Center
605	Force One International Security & Consultants Firm, Inc.
400	Gardner Industries, Inc.
600	Garlock Equipment Company
704 B	Greenway Cabinetry, Inc.
611 A	Il-Ferrow Italiano, Inc./Trinchese
	Distributors, Inc.
608 B	Innovative Construction
	Products, Inc.
602 B 802 A	Kleet Lumber Co., Inc. Lenfex Group
612	Lincoln Electric Company
306-307	Marble of USA
607 A	Marble Systems, Inc.
404	Mediterranean Scapes
704 A	Metrocom
402	Microdesk, Inc.
700	Nacirema Industries
411	National Construction Rentals
601	Oness Corp.
405	Pella Windows & Doors
604 A 608 A	Promiser Technical Services Corn
000 A	Premium Technical Services Corp. Foresta Flooring
702	Prime Protective Systems, Inc.
602 A	Ricoh Business Systems
900	Sansone's Motors Fleet
701 A	Secure Group, The
801 A	SMC Stone Importer
614 B	SoHo Studio Corp./Lazer Marble
604 B	The Little Engine That Could
501	U.S. Fence Systems
701 B	Welco
403 410	Xerox / Aresco Zo-Air Company, Inc.
410	20-Air Company, Inc.

Booth#	Company	Booth#	Company
210	1 Hour Chimney	275	Danner Manufacturing, Inc.
112	A 1 Tristate	235	Decocrete Depot/Topcrete
230	Abbey Hart Brick		Design Studio
9	Accardi Companies-Innovative	207	Decoplast, Inc.
	Combustion Solutions	243	Deterrent Technologies
296	Access Display Group dba	206	Direct Cabinet Sales
	SwingFrame	252	DJJ Technologies
282	Accordant Company	120	Eagle Master Signs & Awards
2	ACS Mechanical Inc	289	Eastmore Agency, The / Allstate
310	Active World Solutions, Inc.	248	Engineering Control Corp.
119	ADT Security Services	261	Environmental Contractors, Inc.
342	Advance Testing Co., Inc.	154	Environmental Management
251 11	Advanced Exterminating Co., Inc. Aldona	239	Solutions of New York, Inc.
128		257	Everett J Prescott, Inc.
109	All County Flooring Supply Co., Inc. Alliance Logistics Service	264	Everhot, Inc. Extech Industries, Inc.
123	All-Pro Rubbish Removal and	148	Extreme Concrete Design
123	Waste Management	279	F.A. Bartlett Tree Expert, The
149	Allstate Bank	269	FERMA Wood Flooring
4	Ample Storage	308	Firestop Solutions
78	ANCI Group Corp.	159	First Cardinal Corporation
314	Appliance Brokers, Itd	79	Fleet One, LLC
18	Archer A. Associates, Inc	337	Force Beyond, Inc
202	Architectural Grille	347	Furniture Rental Associates, Inc.
266	Archtech Electronics Corp.	204	Gallant & Wein Corp.
802B	Arnel Associates	294	Geese Police, Inc.
101	Arsenault Associates	315	Genworth Financial
227	Art of Soma	229	Global Flooring, Inc.
209	Atlantic Business Products	263	Global Metal Solutions
163	Audrey Signs, Inc.	238	Gold Star Electrical, Inc.
107	AXA Advisors, LLC	131	GR Courier, Inc.
272	Bad Dog Tools	320	Graybar Electric
75	Barnwell House of Tires	340	Halo Associates
157	Bell Bird Control	65	Henderson and Bodwell, LLP,
285	Best Value Kitchen & Bath, Inc		Consulting Engineers
343	BNI	155	Hertz Equipment Rental
255	BookSweepers	242	HOLZBUILD
205	Brick IT	183	Hudson Valley Mountain Stone
299	Building Cooling Systems, Inc.	249	Impact Environmental
336	Casa Building Materials	60	Independent Equipment Corp.
69	Castrillon, Barker & Associates, LLC	103	International Stone
162 126	Charrette/Cannon	51 246	Inter-Tel
236	Chazen Companies, The Choice Granite Products	110	J.M. Haley Corp. J.P. Hogan Equipment Corp.
102	Cinqular	54	James L. Taylor Mfg.
52	CityWide Supplies	276	JB Aluminum Supplies, Inc.
6	Classic Promotional Group	303	John James Benefits, LTD
228	Classic Window Systems	57	Just Digital
274	CLP Resources	344	Kaufman Manufacturing Grove
305	Coast Cities Equipment Sales, Inc.	245	Kingston Block & Masonry Supply
3	Compensation Risk Managers, LLC	178	Kohler
237	Construction Staffing Solutions	114	Kuhns Bros. Log Homes
284	Contractor Services Network	199	Laticrete International, Inc.
332	Contractors for Kids	68	Laurel Environmental Associates, Ltd.
271	CORT	16	LB Carpet, Inc.
317	Coveragge Zone of NY (C.Tech)	241	LI Build Block Insulating Concrete
288	Custom Image Apparel		Forms Supply
273	Custom Integrated Systems	156	Liberty Signs, Inc.
66	Danbar Supply, LLC	260	LIK USA
180	Danbro Distributors	186	Lime Energy
1	Danisi Truck Sales/Integrated Leasing	130	Lloyd Staffing

Booth#	Company
240	LMPG Wealth Management Group/ Cobeso, Inc.
153	Local 12 Insulators/NY Insulation
104	Contractors Assoc. M Space Holdings
8	Marriott Vacation Club International
297	Metallic Ladder Mfg Corp
335	Mr. Locks
318	Mr. Shower Door, Inc
99	North Fork Bank
80	Oceansafe Housing
133	Perimeter Protection Products
281	Post & Lintel Architectural Cast Stone
	& Masonry Supply
77	Power Door Products
247	Presentation Products, Inc.
181	PRO 1 Tire Service, Inc.
22	Progressive Brick
122	Public Energy Solutions
17	Ramco Windows & Screens, Inc.
61	Regin Associates, Inc.
270	RIA Group, Inc., The
345	Richmond Precast, Inc.
160	Robles Transportation, LLC
185	Roto-Rooter Service Co.
55	S & H Uniforms Corp.
125	S.D. Stone Depot Importers
151	& Distributors
151	Sabre Integrated Security/ Ideal Interiors
339	Sign Expo Tribeca
177	Smith Barney
63	Sonco Worldwide
256	Spinnenweber Supply Company
302	Sprint
10	Stalco Construction
58	Standard Tinsmith Supply
309	Sunbelt Rentals
106	Super Laundry Equipment Corporation
72	Swett & Crawford Group
23	Tanenbaum-Harber Co., Inc.
341 311	Taylor Hodson Staffing, Inc. The Talent Mine
253	Thermco
226	Time Marble & Granite, Inc.
5	Top Choice Concrete Design
64	Townhouse Kitchen Cabinets
333	Traffic Control
233	Transportation Resources
152	Tri Weld Industries
74	United Rentals
267	Vehicle Tracking Solutions, LLC
129	Verdad Investigations & Protection
158	Verrazano Flooring Co.
234	Wireless Links
304 71	Wireless Links Wood Floor Distributors
7 I 168	Wood Floor Distributors Wooster Products, Inc.
300	XO Communications
278	YB Security
182	Yodock Wall Company, Inc., The
. 52	The second company, may may



THE ART OF CLOSING (1st Hour)

WHY BUYERS BUY (2nd Hour)

*alue: \$75 – FREE* 

Room # 1A30

Analyzes effective closing techniques and how to implement them. How to improve effectiveness in securing the business without getting caught in the low bid cycle.

#### Topics covered:

- The Assumptive Close
- The Objection Handling Close
- Eliminating the Fear of Closing

WHY BUYERS BUY: Takes a look at the basic buying habits of people, both individually and in a corporate setting. How to truly separate yourself from your competitors. How to find customer "Hot Buttons"

#### Topics covered:

- Get a Hold of the Customer's Need
- Customer's Buying Priorities
- Beating the Lowest Bid Game

Presented by Tom Woodcock, President & Principal Instructor of Seal the Deal www.tomwoodcocksealthedeal.com

# **STAINED CONCRETE:** MEANS, METHODS, AND **DECORATIVE TECHNIQUES**

Room # 1A22

An interactive, multi-media presentation of how to prepare, score, stain, seal, wax and maintain stained concrete. Learn to design stunning flooring and verticals using the most advanced decorative concrete techniques available.

### Topics covered:

- Means and Methods
- Specifications
- Integrating Decorative Concrete Systems
- Managing Customer Expectations
- · Hiring the Right Contractor for the Project
- Matching Products to Designed Use
- Design Mix of the Slab
- Finish Techniques
- Additives and Chemical Compatibility
- Surface Preparation
- Maintenance Schedules

Presented by Shellie Rigsby, Owner Concrete Stain Designs www.concretestaindesigns.com

## **OUICKBOOKS**

**Room # 1A28** 

This class will cover the basics of setting up and entering transactions specifically for construction companies as well as advanced topics.

# Topics covered:

- Setting Up Accounts and Items Lists to Get the Reports You Need
- Entering Estimates
- Progress Billing from Estimates
- Time and Materials Billing
- Entering and Paying Expenses by the Job
- Handling Retainage
- Entering Change Orders
- Work-In-Process
- Job Cost Reports
- And more...

The class is designed for those new to QuickBooks as well as advanced users. The methods taught will apply to all versions of the software you are using, and Gregg will stay after class to answer questions.

Presented by Gregg Bossen, CPA, P.C. www.greggbossen.com

SUSTAINABLE DESIGN: **ISSUES & CONCERNS** (GREENBUILDING)



Room # 1A25

Case studies of "Green" buildings will be presented, illustrating how the new technologies have been implemented. In addition, attendees will be presented with the latest research into sustainable materials - what products are truly sustainable and which ones are not.

## Topics covered:

- The Compelling Reasons for Building Sustainability
- New Requirements of LEED, Version 2.2, and How to Incorporate Them into "Green" Projects
- What Kinds of "Green" Programs are Municipalities Developing and How Will That Affect your Practices?
- How Has "Green Design" Evolved Throughout History?
- A Procedure for Producing "Green" Buildings
- How to Write "Green" Specifications
- How to Ensure Contractor Compliance with "Green" Requirements

Presented by Douglas P. Casper, AIA, LEED, AP, CCCA, CCS, MBA

# THE LAW OF NEW YORK **CONSTRUCTION CONTRACTS**

**Room #1A18** 

# **Topics Covered:**

- Pay When Paid Clauses
- Prompt Payment Statute
- Incorporation by Reference
- Notice of Extra or Protest Work
- Arbitration
- Venue
- Period of Limitations
- Third-Party Beneficiary
- Lien Waivers
- Attorneys' Fees

Presented By: Howard S. Jacobowitz, Esq. & Frank T. Cara, Esq. McDonough, Marcus, Cohn, Tretter, Heller & Kanca, L.L.P.

MASTERING **CONSTRUCTION SPECIFICATIONS** 



Room # 1A25

Practicing architects need to understand the vital role that Specifications play in Construction Contracts. This session will illustrate how to unlock the secrets of the American Institute of Architects' (AIA's) and the Construction Specifications Institute's (CSI's) Contract Document in order to produce high quality Construction Specifications.

## Attendees will learn the following:

- What is AIA A 201 the General Conditions of the Contract for Construction and how does it relate to Division 1 - General Requirements?
- How to prepare Specifications Books
- How to use national standard specifications and the "CSI Method" to producing superior Contract Books
- Gain a better understanding of what are the component parts of a Construction Contract and how do these segments go together, including an overview of the AIA documents?
- · How to work with Construction Specifications Institute's (CSI's) MasterFormat, SectionFormat & PageFormat.
- What are bid bonds and when are thev used?
- How do project delivery methods affect Specifications?
- What is the new CSI MasterFormat<sup>™</sup> 2004 and how can it be used by architects to produce better documents?

Presented by Douglas P. Casper, AIA, LEED, AP, CCCA, CCS, MBA

# MODERN FURNITURE

Room # 1A11

Illustration of how designers have moved from a decorative approach to furniture design to the creation of new aesthetic concepts by redefining the relationship between function and beauty. Objectives:

- Understand HSW Issues as They Relate to Modern Furniture
- Understand How Ergonomics & Barrier-Free Codes Affect Furniture Design
- · Understand the Impact of Historical, Social, Environmental and Technical Developments on the Evolution of **Design Concepts**

Presented by: Design Art Seminars, Inc. www.designartseminars.com

# MEXICO: ARCHITECTURE & DESIGN

Room # 1A11

# Learning objectives:

- Apply HSW Concepts Used in Historical Mexican Architecture to Design Spaces that Promote the Life, Health, Safety and Welfare of the End Users
- Identify the Evolution of Architecture as a Result of Multiple Cultural Influences Throughout History and their Interaction with Different Climactic and Geographical Conditions
- Use of Light, Texture and Color Characteristic of Mexican Architecture as Primary Elements of the Integration of Architecture and Interior Design
- Analyze the Advantages and Limitations that the Application of a Different Set of Building Codes Has in the Design Solutions of Private and Public Spaces

Presented by: Design Art Seminars, Inc. www.designartseminars.com

### ACCESSIBILITY UPDATE

Room # 1A08

Focus on city, state and federal accessibility requirements impacting both commercial and residential occupancies. Specifically, this course will focus on problem application areas in commercial facilities and the different types of dwelling units in residential occupancies.

Presented By: Linda Volpe, Compliance Specialist Accessibility Services

# GRADE YOUR EFFECTIVENESS IN MARKETING & BUSINESS **DEVELOPEMENT**

Room # 1A27

This engaging and informative course will stimulate every participant to expand their efforts to promote and sell their services more productively. Grade your company in its effectiveness to acquire work through pursuing relationships and opportunities in the marketplace.

# Topics covered:

- Advertising Materials
- Public Relations
- Direct Mail/ Lead Generation
- Image and Logo
- Competing for Projects
- Use of Technology • The Art of Business Development

Presented by Larry Silver, National Consultant and Published Author, President, Contractor Marketing, Inc. www.contractormarketing.com

# A GREENER NEW YORK

Room # 1A09

Green design principles are consistent with the now acknowledged environmental performance commitment. Key elements are sustainability, optimizing energy performance and reducing contaminants. Green roofs are sprouting up across New York City's high-rise buildings bringing color, green space and environmental benefits. The key issues are environmental awareness, collaboration between builders, businesses and residents.

Presented By: Lenore Janis- President, Professional Women in Construction (PWC) -National Association, in conjuction with **HOK Architects** 

# GAIN NEW CLIENTS. SERVICE EXISTING CLIENTS AND AUTOMATE WITH THE WEB

Room # 1A17

Today your Web Presence should be more than just image; it is a vehicle to automate vour business and/or market your products and services. So, when setting up a new Web Presence or upgrading an existing one, it helps to step back and assess what you want.

 Set Goals: The most important thing to focus on are your desired results

• Assess the Competition: Whether you are an independent small player or a large corporation, begin with a strategy on how to position your business against the competiton

Impact Your Audience: Assess how to best reach your target customer. Is your product or service something everyone uses on a daily basis or something only specialists, such as engineers, can understand or describe?

Presented By: Robert P. Davidson, Ph.D. President, RP Design Web Services www.rpdesign.com

# **CONCRETE: NOT YOUR MOTHER'S COUTERTOPS UNLESS SHE'S REALLY COOL**

Room # 1A16

Highly entertaining and practical applications for those who would like to be informed about the new and exciting options that concrete countertops and furnishings have to offer in today's market place. There will also be a guestion and answer session for those that still have an appetite to learn more.

# Topics covered:

- · Sale of Product
- Client Awareness & Expectations
- Designs and Techniques
- Molds and Mixes Colors and Aggregates
- Curing Times
- · Finishing Options Sealers and Installation

Presented By: Cindy Hamm, President, The Boot camp Training Center www.thebootcamptraining.com

# **EFFICIENT COMPRESSED AIR SYSTEMS AND MAINTENANCE**

Room # 1A19

The discussion will include proper system maintenance and operation of individual components as well as system monitoring and auditing.

# Topics covered:

- Compressor Control Systems
- Types of Compressors
- Filtration
- Drying
- System Storage
- Down-Stream System Flow Control

Presented By: Philip Cohen, Sr. Engineer, Member AFE & NFPA Comairco Equipment Company

# RESOURCE LIST

# **BIRD CONTROL FOR BUILDINGS: A** COMPREHENSIVE INTRODUCTION

Room # 1A19

Understand the importance and value of proper bird deterrence.

## Topics covered:

- Protecting Building Materials
- Financial Savings
- Preventing the of Spread of Disease (Essential for Schools & Healthcare Facilities)
- Removing Nuisance to Building Occupants

Information on how to design buildings with bird control in mind will be presented. Mr. Waldorf will also explain how methods of bird deterrence are available to retrofit an existing building as part of a restoration or integrate into new construction.

Presented By: Heath Waldorf, CSI, *Vice President, Bell Bird Control* www.bellbirdcontrol.com

# 10 COMMON OBJECTIONS IN **BIDDING, ESTIMATING & QUOTING**

Room # 1A30

Tired of not winning projects or orders because you didn't know how to counter the customer's objections? This seminar helps you beat the most commonly used deflectors. Get past the "NO" and into the winners circle.

Presented By: Tom Woodcock, President & Principal Instructor "Seal the Deal" www.tomwoodcocksealthedeal.com

#### **BUILD GREEN - BECAUSE BUYERS** WANT IT! Room # 1A14

# Topics covered:

- Energy Conservation, Sustainable Materials, Non-pollution, and Recycling are Primary Issues in Today's Buying Public
- Examples of Green Buildings in NYC (residential & office) are the Solaire, Tribeca Green, the Helena, and the Conde Nast building
- Green Certification Includes USGBC Standards, LEED Certification, AIA awards & Standards, NYS Planning & Support of Green Initiatives
- Relationship of Green Design to Local Design Codes
- Principles: Conservation Low Energy Use, Limitation of Chemicals & Pollutants, Recycling & Re-use

- How Green Design is Different Features of Green Architecture
- · Who Buys Green & Why The Cost of Green vs. Conventional Homes & Offices
- Learn How to Market Green Construction to Buyers

Presented By: Kristen Bacorn, Instructor, Real **Estate Education Center** www.reedc.com

# HOW TO LEAD YOUR COMPANY THROUGH THE MAZE OF U.S. **IMMIGRATION**

**Room # 1A13** 

The latest developments employers must know to successfully navigate international personnel through the immigration process and to avoid liabilities for their companies. LEAD your company or your client's company through the US immigration maze.

## LEARN about:

- The U S Department of Labor PERM regulations, Backlog Reduction Plan and current processing issues
- Current laws concerning professional workers, H-IB, L-I intracompany transferees, nonimmigrant visas and strategies for coping with the H-IB annual cap
- How to prepare for enhanced I-9 enforcement efforts by USICE (US Im migration and Customs Enforcement)

Presented By: Allen E. Kaye Attorney, Allen E. Kaye P.C., Past President of the American Immigration Lawyers Association, Listed in Best Lawyers in America and Preeminent Lawyers in America for U.S. Immigration and Joanne Orizal- Senior Counsel, Law Offices of Allen E. Kaye, P.C. www.kayevisalaw.com

# BUILDING YOUR MILLION DOLLAR NEST EGG IN REAL ESTATE

Room # 1A14

Acquiring and holding multifamily buildings even with New York City rent regulation. Mr. Frame will put forth an introduction of how to evaluate the purchase of investment property. First, we examine the borrowing of money. Then we look at Risk versus Return: How to Decide When to Invest. From that point, some time is spent on learning the investment language of investors and using the financial calculator. Collecting and analyzing data is presented. Discounted cash flow methods are presented as a means of keeping everything in perspective. Finally making decisions is reviewed. A number of typical problems are presented for practice and reinforcement. Presented By: Alexander M. Frame, President, Real Estate Education Center www.reedc.com

# THE LANGUAGE OF LIGHT

Room # 1A11

The Language of Light is a practical overview on the creative application of light in architectural projects.

#### Topics covered:

- How We See Emotion in Lighting & Selecting Lighting Products for Visual Impact
- · Technical Factors Color Temperature, Color Rendering & Photometric Evaluation of Selecting Lighting Fixtures

The presentation is visually stimulating and will offer something for lighting specifiers at every level along with many project images.

Presented By: Philip G. Cialdella, MIES, Regional Vice President of Sales. Louis Poulsen Lighting www.louispoulsen.com

# **RECYCLED CONTENT &** SUSTAINABLE DESIGN FOR **INTERIOR SYSTEMS**

This program will explore building

Room # 1A20

sustainability as it relates to gypsum board and ceiling tile. General standards and guidelines will be reviewed, after which the most recent innovations in manufacturing and recycling programs will be shown. Embodied energy and life-cycle assessment will also be discussed. The second half of the program will look at the topic of indoor environmental quality and its impact on occupants. The program will look specifically at VOC's and formaldehyde emissions from building materials, and the health hazards posed by formaldehyde off-gassing. ASTM and emissions testing protocols, as well as maximum exposure levels prescribed by certain states, will also be included. By the end of the program, participants will understand material selection in regard to gypsum/tile assemblies and the trade-offs involved in choosing the best sustainable material.

Presented By: Richard S. Ferrara, USG Architectural Services

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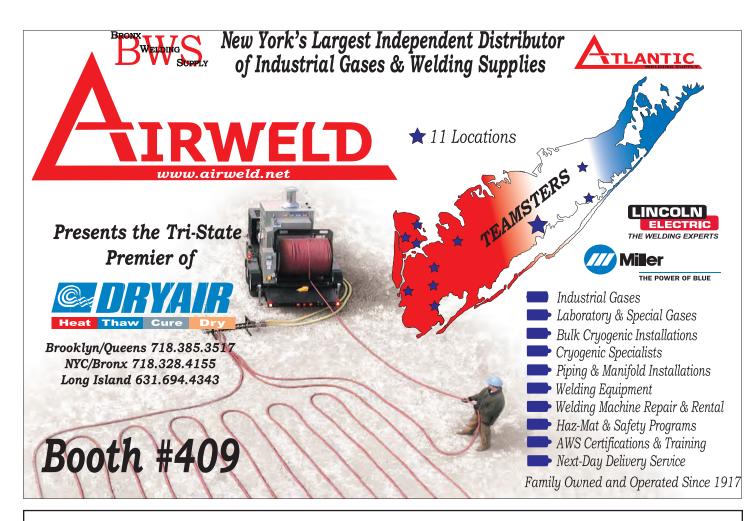
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# Socially Responsible Investing

# WHY IT'S A GOOD THING TO DO

ocially Responsible Investing, or SRI, establishes social and environmental concerns as benchmarks for its investments. SRI investments have become powerful economic and advocacy tools for identifying which businesses act in compliance with a stringent set of criteria. For investors, SRI provides personal satisfaction about where their investment money is going, and for businesses, SRI provides guidelines and exposure towards improved conduct, corporate transparency and integrity.

Socially Responsible Investing (SRI) involves three strategies: screening, shareholder advocacy and community investment.

An excellent primer on SRI can be found at the Social Investment Forum (www.socialinvest.org). Basically, SRI involves three strategies: screening, shareholder advocacy, and community investment. Screening is the process where businesses are scrutinized for their commitment to social and environmental practices and, based on those criteria, which corporate securities should be recommended to investors. Among screening categories employed by various funds are alcohol, tobacco, gambling, defense/weapons, animal testing, environment, human rights, employment/ equality and community investment. A fund may choose to restrict or limit its investments with any business that does not comply with its governing investment policies.

Shareholder Advocacy provides vital information and strategy development for social investors in areas such as the shareholder resolution process, investment policy, media outreach and corporate governance issues. This is activism that produces real results, where consumers, investors and business leaders are given a voice to express their concerns about social and environmental issues.

Community Investment seeks to bridge the gap when capital from traditional financial services is unavailable. These are capital investments with high social impact, providing communities underserved with the resources and opportunities to gain access to credit, equity, capital and banking products. On a more socially responsive level, community investing creates jobs, affordable housing, provides education, and improves childcare and health care. By Edward Olivera

These are powerful tools, and have the power to alter the way companies do business as well as where investors decide to put their money. One can see the implications for the construction industry and its satellite industries. Indirectly of course any SRI holding with a physical plant is liable to being screened for its use of land, resources, and energy.

Whether most publicly traded construction or A/E companies could withstand the transparency demanded of SRI investments is difficult to gauge. But a simple look at the structure of SRI funds places construction and its related industries at the heart of SRI concerns: environmental issues, first and foremost, but also labor relations, housing, energy and virtually every major issue confronting SRI criteria.



As an example of how far reaching SRI can extend its advocacy and determination for responsibility, a resolution was filed against the heavy equipment giant Caterpillar for modifying its bulldozers with armor ostensibly to destroy homes in the West Bank and Gaza Strip. According to Social Funds (www.socialfunds.com), while divestment is a last resort among shareholders, accountability must be reached through some means of dialogue. If companies refuse to offer reasonable responses to allegations of neglect or abuse directed at their ways of conducting business, information through shareholder advocacy will remain a threat to shareholder value.

Because of these pressures, construction companies and their related industries should increase their efforts to "Get Green." Their profitability stands to rise or fall with an evergreening marketplace. Jeff MacDonagh, SRI Portfolio Manager at Domini Social Investments (www.domini.com/), a high-performing mutual fund investment firm working exclusively in SRI, issues a stark warning to the construction industry regarding its current practices. "Get on the train 'cause it's leaving the station," MacDonagh guips. "People in the US construction industry are going to find themselves at a disadvantage to the rest of the world."

MacDonagh sees the real issue facing the industry to be one that impacts us all: "The trend we see affecting everyone is climate change and the effect that is having in terms of energy efficiency. The name of the game is what is regulation doing," said MacDonagh, pointing to Britain where 70 percent of development is mandated by law to develop their land on brownfields. MacDonagh also sees energy efficiency in buildings themselves as a positive way for builders to avert the catastrophic effects of climate change, and again he points to countries in Europe that are leading the way in building eco-houses.

"Construction companies have a wide variety of impact - they spread themselves out," said MacDonaugh, noting though that investor voting proxy indicators show that management cares about" the issues of "how to cut energy use and resource use.





"We have to change the course we're on," MacDonagh warns, adding that in terms of investments "we're looking for companies that are going to be first movers," concluding with the admonition that "there's a big learning curve with companies that want to begin to employ green building practices."

Publicly traded companies also face the threat of divestment as investors become increasingly informed about where their money is going and what purposes it serves.

Many of the issues raised by MacDonagh in terms of corporate responsibility by the construction industry are echoed in a program the United Nations launched called the United Nations Environment Program Sustainable Building and Construction Initiative (UNEPSBCI). The initiative states that not only is the building and construction sector "a key sector for sustainable development," that "contributes to a large proportion of the world GDP," but "it is also widely responsible for resource depletion, waste generation or greenhouse emission. It is a key sector for sustainable development, both in terms of the important benefits it contributes to society and to the considerable negative impacts it may cause if appropriate considerations are not given to the entire life span of buildings." For more information go to http://www.uneptie.org/pc/pc/SBCI/SBCI 2006 InformationNote.pdf

The SBCI's strategy for its program is to bring together stakeholders from the construction industry – which includes not only construction companies, but also material manufacturers, developers and real estate managers, financial services, government, planners, private owners and research experts. For companies who do work on a global basis, this initiative has serious implications especially for those who have no plan in place for changes in doing business in construction, changes that are inevitable. SRI is a good place to start.

# Green Building Practices



# Aim to Cure Sick Building Syndrome

By Stephen del Percio, ESQ., LEED-AP

Sustainable "green" building practices can alter more than just the impact that structures have on the natural environment, although that impact is incredibly profound. The nation's commercial and residential buildings use more than sixty-two percent of our electricity, consume thirty-six percent of our oil and gas, and are responsible for thirty percent of greenhouse gas emissions. Green design principles can also help mitigate the effects that workers and residents may experience from spending substantial amounts of time inside artificial building spaces. Some of those effects can manifest themselves in what is known as sick building syndrome.

Sick Building Syndrome (SBS) refers to building conditions that give rise to a variety of illnesses suffered by occupants. These conditions usually result from poor indoor air quality and include symptoms such as headaches, nausea, dizziness and fatigue. Significantly, these symptoms disappear once an occupant leaves the building. In a 1984 investigation, the World Health Organization reported that occupants in up to thirty percent of the world's new and remodeled buildings were suffering from indoor air quality-related illnesses. While SBS is typically associated with office building workers, teachers and residential dwellers have also complained of SBS ailments.

Here in the United States, a study in 2000 performed by the Lawrence Berkeley National Laboratory in California, concluded that approximately twenty-three percent of American office workers suffer from some type of SBS symptoms. Importantly, these symptoms dropped by twenty percent when air quality was improved through green design principles. The study also projected that owners stood to realize \$6 billion to \$14 billion in savings from reduced absenteeism owing to respiratory disease, \$1 billion to \$4 billion from reduced allergies and asthma, and from \$20 billion to \$160 billion from improved worker productivity. However, it did acknowledge that "existing data and knowledge allows only crude evidence of the magnitude of productivity gains that may be obtained by providing a cleaner indoor environments."

Most litigation resulting from allegations of SBS has involved insurance coverage. Commercial general liability policies are usually written with an absolute pollution exclusion, broadly defining the term "pollutant," and precluding insurance coverage for bodily injury or property damage arising from the discharge or release of any pollutants within a building owned or occupied by an insured. While the absolute pollution exclusion is generally effective at limiting an insurer's exposure for environmental claims, some courts have allowed claimants to challenge the language in such policies and obtain coverage in SBS scenarios.

For example, a 1997 Wisconsin case found the term "pollutant" to be ambiguous as applied to bodily injury claims. The insured was the manager of an office building that had a poorly-designed HVAC system. Accordingly, an excessive amount of CO2 slowly built up throughout the office spaces. Workers contended with poor air quality resulting in headaches, nausea, and sinus problems. The insured building manager sought to obtain coverage from its insurer for the numerous claims brought by building occupants. Both the insurer and the insured had intended for the pollution exclusion clause to have broad application, but the court could not say with any degree of certainty that CO2 should fall within the policy's definition of "pollutant." It therefore allowed the insured to obtain coverage for the claims. Sustainable building practices can help prevent not only the underlying claims of SBS by building occupants but also help to reduce the number of coverage disputes between owners and insurers.

The USGBC's LEED green building rating system recognizes the importance of occupant health and comfort by devoting one of its five credit categories exclusively to indoor air quality. The Indoor Environmental Quality ("IEQ") credit category has two mandatory prerequisites that every project seeking any level of LEED certification must satisfy. The first, minimum indoor air quality performance, requires that the building meet the minimum requirements of ASHRAE 62-1999, Ventilation for Acceptable Indoor Air Quality. The second, Environmental Tobacco Smoke ("ETS") control, requires projects to either

prohibit smoking entirely and locate designated exterior smoking areas at least twenty-five feet away from entries and operable windows, or provide a designated smoking area within the building which captures, contains, and removes the ETS from the building. Other credits within the IEQ category are designed to help prevent allegations of SBS and improve occupant health and comfort. Project teams can earn up to fifteen LEED credits for increased ventilation, the use of low-emitting volatile organic compound (VOC) materials (including sealants, paints, carpet systems, and woods), and provide occupants with increased daylight and personal control

over thermal systems. VOCs are particularly egregious contributors to SBS because of their high vapor pressures; they can vaporize under normal atmospheric conditions into methane or benzene. The United States Environmental Protection Agency estimates that VOCs in typical indoor spaces can be two to five times greater than as those existing outdoors. At times, EPA has measured that figure at one thousand times greater

There is currently little hard data on a consistent basis across different types of building stock from owners who have addressed indoor air quality through green design. This is in large part owing to such owners' fears of incurring liability for not having taken such measures previously. However, that has not prevented some forward-thinking owners from recognizing



the importance of indoor air quality and making it an integral part of their green building projects. The Hearst Corporation's LEED Gold headquarters in Manhattan for example, uses natural ventilation during three quarters of the calendar year to bring fresh air from outside into the building. Moreover, the low-emittance coating of its exterior glass curtain wall, coupled with a paucity of

> interior walls, allows natural light to penetrate deep into the core of the building's office floors. Some of New York's green residential buildings also offer similar design elements. FXFOWLE's Helena contains low-VOC paints, gaskets to prevent smoke, odors and other pollutants from traveling between apartments, and bathroom and kitchen heat that preheats outdoor air and

is sanitized by ultraviolet light prior to being supplied to the building's corridors.

While SBS will likely always be an issue no matter how green a building claims to be, the promise that new technologies and innovative designs offer in terms of mitigating the effects that buildings – both commercial and residential – have on their occupants is significant and real. Accordingly, the construction industry needs to aggressively push owners of green buildings to furnish data about performance. Doing so will encourage reluctant owners to share both successes and failures and assist construction professionals in comprehensively addressing the problems associated with SBS through sustainable design.

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# **Green Dream House**



By Worldchanging NYC local blogger, Cynthia Barton

hat do these buildings have in common? -The Hearst Tower

-The Solaire

-The Bronx Library Center

They are among the first "green" buildings in New York City. If you are interested in green architecture, you are among those who can identify with them

Because of the information these projects have generated about the benefits of green design-energy efficiency, non-toxic materials, lower operating costs, and so on-as well as examples of successful energy-efficient suburban projects, many NYC homeowners want to build green on a small scale.

Two magazines, Natural Home and Dwell, are each providing coverage of small green residential projects in construction now. The magazines are using their websites to follow the construction process from start to finish. Each narrative provides valuable information about how to build green in urban areas. Robyn Griggs Lawrence, editor-in-chief of Natural Home, always envisioned the Natural Home website as a teaching tool because, "the advent of the web is great for showing actual construction work, as opposed to pretty pictures...we can show all aspects of a project, not just focus on materials or systems."

When reviewed together, the blogs provide excellent technical detail about various sustainable approaches to architecture, and a good sense of what it feels like to take on a green renovation. As is typical for New York City, both projects are gut renovations of existing buildings rather than new structures. Natural Home Magazine's Green Show House is a two-unit development in Boerum Hill, while the Dwell project is a townhouse in Harlem.

The Natural Home blog is a straightforward document based on photographs of construction as it progresses, with accompanying text describing was initiated by the development company R & garages were designed to rise up out of a corner building that was built in 1920. Architect Tony and high air quality were priorities for this project. will be watching the installation of a compact solar panel system that can provide all the units' electricity and hot water, and support an innovative solar/gas hybrid system that does the heating and Lung Association "Health House" in the City. Details about building guidelines for this new certification

The Natural Home blog is an excellent technical experience of the building process from a client's perspective. Video episodes document not only the construction process but the voices of the clients (a married couple who are green enthusiasts on a tight budget), the architect (Hannah Purdy), and the construction company (Green Street Construction). Interviews with each of them show green building to be a less risky process (both financially and practically) than one might assume.

The focus of the Dwell project is on making a place that feels like home in a very specific sense. It is like any architectural undertaking in that way. A common refrain on both blogs is that building green in the city requires a willingness to learn as the project unfolds.

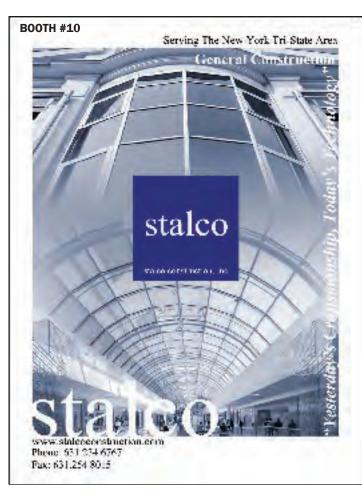
The fact that the green issues are negotiated like the details of a typical project provides reassurance that green projects are just as doable as building in the standard way. Perhaps the key message implicit orators provides the support to follow through on





Health House under renovation









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Green Buildings

Good for People Good for the Environment Good for the Economy

By Mark Breslin

Most of us spend 80 to 90 percent of our time indoors, so the environment has a significant impact on our physical and psychological well-being. In an office environment, indoor air quality, lighting, occupant comfort, acoustics, aesthetics and views all have been linked to productivity and health. On the psychological side, green buildings affect us through

natural light, contact with nature, acoustics, temperature and control of ambient conditions. From a business standpoint, a healthier workforce adds up to fewer sick days and less lost time. This can help reduce the cost of health insurance, which can be added to the employer's bottom line.

Happy and healthier workers and a better bottom line ultimately help owners better serve and satisfy their customers.

Green buildings make us happy and healthy

It's no surprise that, more and more, the construction industry finds clients, both public and private, talking about incorporating green building principles into their new construction or renovation projects. According to the U.S. Green Building Council, the annual U.S. market in green

building products and services – just over \$7 billion in 2005 – is expected to nearly double to \$12 billion in 2007. The trends are moving toward more green buildings, because they are environmentally smart, energy saving, and they generally provide healthier places to work.

We can all agree that the concepts associated with green buildings benefit workers and owners, but what about the workforce that's constructing the facility? The same philosophy is true for the construction industry.

Here are a few of the healthy benefits of building green:

 Indoor air quality affects not only the people who will eventually work in a building, but the onsite construction staff prior to occupation. While working in an enclosed building, construction workers can be exposed to various amounts of dust and particulate. In Troy, N.Y., Turner Construction is seeking a Silver LEED certification for it's 221,000 square foot building for the Experimental Media and Performing Arts Center for Rensselaer Polytechnic Institute. The project incorporates a "green" practice that utilizes an indoor air quality plan to limit dust and particu-

**Shrink-wrap that** duct work for a dust and toxin-free construction site

late. The project team requires that the ductwork be delivered shrink-wrapped. Then, after installation, it is rewrapped. Once turned on, the airhandling units use "final filters" for the balance of the construction. When changed weekly, these filters circulate cleaner air, resulting in less dust, toxins and debris inside the construction site.

• Some building products contain volatile organic compounds (VOCs) that may have short- and long-term adverse health effects, such as eye, nose and throat irritation, headaches, nausea, dizziness and skin problems. Higher concentrations of these irritants may cause irritation of the lungs, as well as damage to the liver, kidney

or central nervous system. VOCs are found in products such as paints and lacquers, paint strippers, carpets, wood glues, sealants and linoleum and are generally found in higher concentrations indoors. A "green" builder will require products with low VOCs, greatly reducing the negative impact of these products on construction site workers.

 To limit workers' exposure to secondhand smoke and create a smoke-free environment, many "green" builders, including Turner, require the onsite staff to smoke only outside once the building is enclosed. Here are some eyeopening statistics that make a compelling argument for creating smoke-free worksites:

Many buildings require the onsite staff to smoke only outside.

- A recent Surgeon General's report stated that there is no safe level of exposure to secondhand smoke.
- Some 126 million nonsmokers are exposed to secondhand smoke, increasing their risk of developing heart disease by 25 to 30 percent.
- Tens of thousands of nonsmokers die every year of coronary heart disease because they are exposed to other people's smoke.
- Only smoke-free buildings and public places truly protect nonsmokers from the hazards of breathing in other people's tobacco smoke.
- And finally, and not limited to "green" projects, some builders encourage onsite workers to exercise when possible. Many construction sites use hoists to lift materials to the higher floors of a building. A healthy practice would be to allow only the person carrying the materials to use the hoist. All others would be required to use the stairs. Here's why:
- · According to a Harvard study, you gain two hours of life expectancy for every hour of regular exercise.
- CEOs have consistently cited healthcare as their top cost concern, but fitness

programs have reduced employer healthcare costs by 20 to 55 percent.

- Reducing just one health risk increases a person's productivity on the job by nine percent and reduces absenteeism by two percent.
- Not only does walking for as little as 30 minutes every day provide health benefits, but walking is something almost

everyone can do and it has the lowest dropout rate of any physical activity. And because physical INnactivity doubles the risk of heart disease, walking – even if it's just up the stairs makes sense.

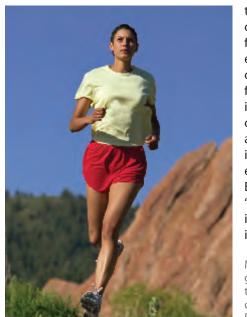
Skip the elevator. Take the stairs.

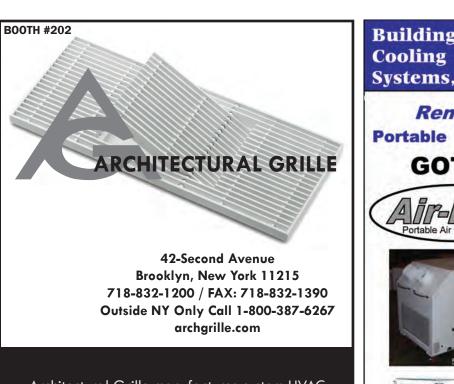
• For the non-construction industry, the American Heart Association has a saying encouraging people to exercise at work: "Skip the elevator. Take the stairs." We in the construction industry need to make that phrase our own: "Skip the hoist. Take the stairs."

In addition to my Turner Construction hat, I also wear the hat of chairman of the American Heart Association's Capital Region Board of Directors. In this capacity, I've been engaged in an initiative program called START! This campaign is aimed at fighting physical inactivity in the workplace through walking programs.



Mark Breslin is vice president and general manager of Turner Construction. He also is chairman of the American Heart Association's Capital Region Board of Directors.





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# THE SOLAIRE



By Douglas P. Casper AIA, LEED AP, CCCA, CCS, MBA

The Solaite – because of what this building represents and what it has achieved, it can be considered to be an "instant landmark." The building is the first residential structure to receive Leadership in Energy and Environmental Design (LEED) Gold Certification from the U.S. Green Building Council (USGBC). The Solaire also received the Top Ten Award from the American Institute of Architects (AIA) Committee on the Environment (COTE).

To date, there are only nine buildings in New York City that are LEED Certified. There are 146 projects in NYC that have been registered with the United States Green Building Council. Certification, however, is a long and arduous process. The Solaire is the second NYC building to receive Gold status.

The Solaire was developed by Russell C. Albanese, President, and Martin S. Dettling, Vice President of the Albanese Organization, Inc. – the Garden City, Long Island owner/developer who is committed to building Green. Martin S. Dettling served as the project manager for the Solaire and serves as the chair of the NY Chapter of the USGBC. He has been active in promoting the benefits

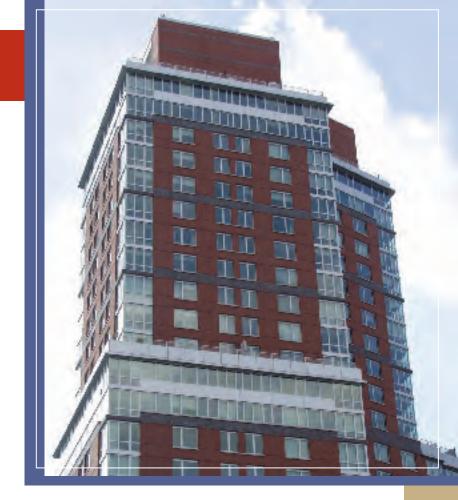
of a building such as the Solaire to groups of architects and engineers. Albanese and their architect, Cesar Pelli, have subsequently designed two other apartment towers at Battery Park City: the Verdesian and Site 3. Albanese rents the units, rather then acting as the developer and loosing ownership rights. This way, they can control the future of the building and ensure that it is properly monitored and that the highest quality standards are maintained.

Albanese was chosen through a design competition offered by the Hugh L. Carey Battery Park City Authority (BPCA), an organization that developed guidelines that ensure that all construction built within the confines of its lower Manhattan domain are of the highest quality from both an aesthetic as well as environmental and sustainable standpoint. Timothy S. Carey, the BPCA's Chairman at the time the guidelines were developed, went on to become President and Chief Executive Officer of the New York Power Authority and presided over a renovation of their 17-story administrative office building, located in White Plains, NY. This facility draws the distinction of being the first LEED Gold-EB building, a new category initially offered by the USGBC in 2004 for achieving certification for renovation projects.

There are currently nine buildings at Battery Park City that are considered to be Green, including Site 3 and Parcel 19B, a maintenance facility which has joined the lofty ranks of the LEED Certified buildings in New York City. Incidentally, of the nine LEED Certified buildings in NYC, two are Platinum (the highest ranking), six are Gold, and one is Silver. This represents higher ranking levels than are achieved throughout the country, possibly due to the high profile of the NYC projects and their enlightened designers and developers.

Cesar Pelli, Principle, Cesar Pelli & Associates and David W. Hess, RA Senior Associate, Cesar Pelli & Associates Architects spearheaded the architectural design team that brought together all of the elements needed for successful Green building projects and led a talented project team that included some of the top experts in the field of sustainable design. Their success is demonstrated not only by the awards received, but by the high level of interest on the part of the design community, as well as the general public.

The building was an outgrowth of Battery Park City's rigorous design guidelines which, for example, require a two story stone base (in this case slate from Virginia) and a special treatment of the top two stories of the



building, as well. The exterior skin of the building itself was the subject of extensive study. Energy modeling was performed to help arrive at the best design for the exterior wall. In addition, photovoltaic panels were incorporated into the façade. One feature of the exterior wall is that all points where air could penetrate into the building were sealed. Unitized exterior wall construction, a process that involves factory fabricating large precast concrete panels, with brick veneer was considered, but determined to be infeasible, due to site constraints and, thus, rejected.

The building is a LEED™ Gold Certified building, achieving 41 Credits under LEED-NC, Version 2.0. It is a 357,000 square foot multi-unit residential building, 27 stories tall, with 293 units. It is located on the east bank of the Hudson River, at 20 River Terrace. The building design rated \$540,000.00 in NYSERDA tax credits for using energy efficient equipment. It gained three LEED points for reducing energy use by 30% and actually, was able to reduce energy use by 35%.

One of the LEED™ credits that are available is an Indoor Environmental Quality credit given for using carbon dioxide monitoring equipment. This CO2 monitoring is difficult to implement in an apartment building because it needs a separate monitor in each unit. The architect was able to obtain a Credit Interpretation ruling from the Green Building Council which allowed them to waive the need for having monitors in each room. Instead, monitors are required only in the central air system.

Another LEED™ point was gained for using gas





absorption chillers – which are much more energy efficient than electric chillers. The Credit awarded was EA (Energy & Atmosphere) Credit 4 – Ozone Protection. The LEED Reference Guide explains that the purpose of the credit is to reduce the use of HCFCs and Halon in buildings H.V.A.C and refrigeration systems, thus helping to preserve the Ozone Layer of the upper atmosphere. The building's overall H.V.A.C. system is 35% more efficient than standard H.V.A.C. systems in use, today. This tremendous reduction earned five LEED™ points for EA Credit 1 – Optimize Energy Performance. The solar array employed on this project is extensive

and provides 33 KW of power. This array consisted of the south and west elevations of the upper roof penthouse structure, which is about 30 feet high and is all photovoltaic panels. The balances of the photovoltaic panels are on the west elevation of the glass façade. Sophisticated computerized monitoring systems are utilized in the mechanical equipment room to monitor actual electrical production, on a "real-time" basis. The photovoltaic monitoring equipment is available for viewing in the HVAC control room for groups touring the building.

Green roofs are commonly described as either lowprofile ("Extensive") or high-profile ("Intensive"). Extensive green roofs include only 2"-6" of planting media and support short ground cover vegetation, such as Sedums, and require minimal maintenance. Intensive green roofs have more soil media, 6" – 36" depth, and support a wide variety of plants, shrubs and trees and require irrigation and maintenance.

The added weight to the roof (for an "Extensive" application) is minimal (15-20 lbs./square foot). Rough cost should be \$15.00-20.00/square foot (plantings and soil material only). The advantages of a green roof, from an environmental standpoint, are: 1) that the roof's rain water can be stored and utilized by the plants, while excess runoff can be collected in cisterns and used for irrigation and other similar uses, 2) the roof reduces the "Heat-Island Effect" of buildings contributing heat, and 3) plants will remove pollutants.

In the case of this facility, both the upper roof and lower roofs are green. The upper roof is not open to tenants and is an extensive solution with Sedums, walkway pavers and photovoltaic lights placed directly on the roof for nighttime pathway lighting.

The lower roof is a large area, approximately 60 feet x 80 feet, and is an intensive solution. The soil depth ranges from 6" to 18" and there are planted areas with flowers, shrubs and even bamboo plants. (Bamboo is considered to be a rapidly renewable resource because it can be harvested in 10-12 years time.) The roof system itself is a hot rubber fluidapplied roof. The roof drains have special covers on them to protect them from soil getting in and they are connected to a storm water retention system which reuses the water for landscape irrigation.

The wastewater treatment system for the Solaire is impressive. It is a Syncro Flo system that processes 250,000 gallons of wastewater per day. It is located in an approximately 30' x 50' room and costs about \$1,000,000. On-site wastewater treatment is typically



# building.

The system earns LEED Credit 2.2 for Water Efficiency. The sludge is filtered off and piped to a New York City wastewater treatment plant.

The individual units incorporate a number of "Green" features. All appliances are Energy Star rated, including the Bosch Axis washers and driers. The environmental comfort level of the apartments is impressive. Because the exterior skin is so well sealed to reduce air infiltration- the units are very quiet; very little "street-noise" makes its way up to the individual apartments. The casement windows are very well sealed to enhance this effect.

Other features include: Seven day programmable thermostats, recycled content medium density fiberboard (MDF) used in the kitchen cabinets, formaldehyde-free wood (used throughout the project), and cherry wood veneer cabinets.

The building has a program for recycling refuse (however, it only has one refuse chute per floor). There are two bike storage spaces provided in basement racks for each apartment.

The Solaire is impressive as the first LEED™ certified high-rise apartment building in the U.S. It was the first apartment building to incorporate a number of green features. It should be viewed as a learning exercise for future green apartment buildings.

# TIPPES

# Branding

# то Marketing то Sales

By Tom Woodcock

# **"W**hy do I have to be concerned

about my branding? How do I develop a marketing campaign? What is a sales strategy?" Good questions all! The problem is most contractors see these issues as too complex or time-consuming to put forth the effort to develop them. In today's ultra competitive construction environment, having a solid brand reflected in a strong marketing campaign and supported by a strategic sales plan is a must to succeed at a high level. Too often contractors stick with the same brand format of 20 years ago, do-seat-of-the-pants marketing programs and have no legitimate sales strategy.

Even worse, many throw umpteen thousands of dollars at out of town consulting firms to build this dynamic for them. I know! I'm one of those firms some of those contractors turn to (though I'm not in the "umpteen" category). Though consultants can help, you have to design a program that fits your company dynamic and budget. These three areas are interlocked and not separate entities.

# **Branding**

This is the hottest topic in the marketing consulting industry. "Specialists" are popping up everywhere and getting ridiculous sums of money for relatively little help. Though you may need some consulting and design help, paying \$50K to get a new logo and a tag-line is absolutely absurd! Yet, it happens everyday. Branding, however, is critical in establishing your public image and setting the standard on how your firm will be perceived. Do you want to be like all the other kids on the block or do you want to stand out from the crowd? Does your image appear dated or mundane? Do your clients perceive you to be on the cutting edge? These are the questions you need to answer. We live and do business in a visual society so the look of your logo, the directness of your tag-line and the artistic impression of your marketing material all shape the customer's initial impression of you. If you won't invest here, what makes the customer think you've invested in the technology and innovation to perform effectively on their project? For those of you that say "Bah, humbug," get ready to get smoked in the marketplace. Please join us in the 21st century before it's too late.

Overly busy business cards, wordy literature and over-developed websites are very common errors. You need to be edgy, clean, neat and efficient with your image. Think of some of the best tag lines, "Just Do It!" "Brown works for you." "Quality is job One." Sound familiar? What do these company logos look like? Now look at yours. Take the time to hire someone to evaluate your branding or do it internally. Either way, find someone who knows what they're doing without charging some ridiculous fee.

# Marketing

This necessary evil of business is probably the most misunderstood aspect of promoting your firm or yourself. I've had VP's of sales, CEO's and ownership groups that had absolutely no idea how to go about setting a marketing campaign. They simply move from idea to idea, developing them to see what happens and become highly disappointed with the results. The main problem is fundamental. Marketing campaigns merely break the ice for a sales strategy. A marketing campaign CANNOT replace or be the core of a sales strategy. The sales team is the key to the success of any marketing campaign. Sales reps, estimators and project managers are seldom consulted in the development of marketing campaigns. Gee, why would we want to consult them? They're only with the customer base day in and day out! Old, out-dated marketing methods are still the most common form of promotion. Power-mailing flyers to a huge mailing list, spending gobs of money on trinkets and hiring marketing firms that have no understanding of your custom-



er type. If you've done this, look in a mirror and say, "What were you thinking?" Surgical mailings, concentrated spending and tiered attack methods have replaced the 5000 piece scattershot mailing program.

How does your literature read? Would you read the whole piece? Does it have eye-appeal? Why does it need to be visually appealing, you ask? So people will look at it! Do you want your literature and website doing all



your quoting and selling, or do you want your sales agents doing this important job? Did you know that 75% of people don't link to more than three pages on a website? So why do you have five? Did you realize the average viewer-waiting time for a website to download is 30 seconds? So why do you have that beautiful flash intro that takes two minutes to download? What type of event marketing do you do? What is event marketing?

Can you see my direction? You may have answers to some of these questions or maybe none at all. Either way, the questions you can't answer are symptomatic of the lack of marketing insight many in the construction industry have. Keep in mind that your marketing efforts must be conducive to and reinforced by your sales plan. Sales and marketing are not two different vehicles -- a very common misconception. They directly feed off each other. Too many firms are completely disjointed in relation to this synergy.

# Sales Strategy

Aaaaah, we close with the sales strategy. The long forgotten child of selling success. How can you fight a competitive sales

battle without a plan? You need to determine target accounts, revenue goals, margin standards, separation points and marketing-reinforced attack strategies. Select the customers, projects and business you want, and develop a plan and go after it. Include your sales agents in the plan and structure it to maximize your marketing and branding efforts.

See how this all comes together? You'll have confidence, energy and comfort knowing you have a plan going forward. You won't be killing yourself trying to figure out how to win each piece of business. It will be easier to maintain margins and close a higher percentage of opportunities. If you don't know how to set a sales strategy, hire someone who can help. Don't fight without a plan! You will lose. (Badly!)

There you have it. Those are the basic strategies you need to maximize where your company is going in its growth agenda. Many contractors need to modernize in these areas and the sooner the better. Look at the strong performers you compete against and you'll clearly see these elements at work. They don't just have a pretty logo; they have a pretty good attack strategy behind it!

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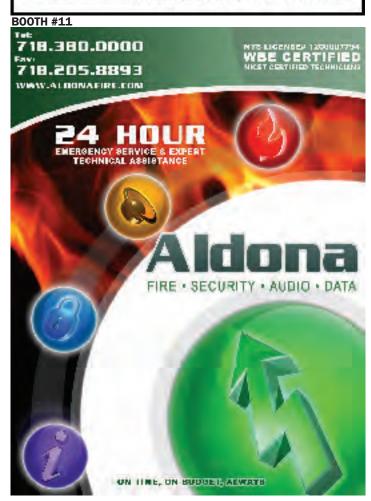
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# THE LOW BID MYTH

By Tom Woodcock

So, you're great at your particular trade. People say you do quality work. You've gained respect in the St. Louis construction industry. You're connected enough to get plenty of bid opportunities. Then let me ask you this: why do you have to be low bid to win the project?

Your answer may well be, "Tom, everyone knows you have to be low bid to get the job." Bunk! There are many contractors who win projects as high bidder or even through competitive bid-free scenarios. Why isn't that you? Oh, you may pull it off every now and then, but not consistently. How do they do it? Is it the fact they've known the contact so long or are they the recipient of some bid-shopping tactics? Let me enlighten you. You're not a contractor first, you're a sales organization before anything else.

This is the great myth many contractors have fallen into. Granted, you may be very good at your particular trade but why do you still get hammered on price? This is because fundamental sales principles are ignored in the estimating and bidding process. I'll bet you practice at least one of these following sales faux pas:

- 1. Faxing in bids and quotes-Removes face to face contact and eliminates the opportunity to close the job onsite with the customer.
- 2. Lack of presenting competitive separating factors-Equates you with your competitors and gives the customer no reason to use you over them except by price.
- 3. Delayed or forgotten follow up Shows a lack of interest and opens the door for a more enthusiastic competitor.
- 4. Non-establishment of partnership at initiation-From the first moment of project knowledge failure to assume the business is yours putting you on equal competitive footing.
- 5. Poor qualifying- Assuming a project is similar to one you've had in the past and therefore you "mail it in."

These are just five common errors. There are others. Many contractors spend time improving their technical aptitude and job management abilities, but, if you're not winning higher margin bids and becoming an exclusive bidder, your sales skills are lacking. I've seen contractors who have made the effort to improve those skills and realized immediate results. People want to buy from people, not e-mails, faxes or phone calls. It is possible in many cases



to close the transaction on bid delivery. It gives you a great opportunity to handle objections, gain the customer's trust and elevate you above your competitors.

Whether the market is strong or weak, good sales skills are essential to secure strong margins and not have your expertise degraded by a pricing war. Once you establish that you'll negotiate primarily on price, you've built the foundation for the customer in relation to your sales practice. They become more prepared to challenge you on every project. Think about it, does a customer really WANT to go through the bid process on every project? Why would they when he or she knows a contractor who has done a great job for them in the past and has always treated them fairly? You really don't want to bid, you want to win the project at a healthy margin! Both contractors and contractor suppliers have a plethora of excuses why this is "just the way it is." Hogwash! There are scads of contractors who receive project purchase orders and never have to worry about some yahoo with an '80 panel-van and a stolen ladder undercutting their price and taking jobs away from them. When you lose a bid and ask the customer why, ask what, besides price, might have been a contributor to the loss. Whatever they say, that's the real reason.

If contractors were to invest the same amount of time and finances on their sales skills as they do on equipment and technical training, margins would increase, referrals would grow and more no bid situations would develop. Without revenue, no business can succeed. Jobsite and people management are major factors in construction success. The problem is however, if you're not securing enough high-margin jobs it doesn't matter how talented you are in these other areas. So instead of beefing about dwindling profit percentages and fly-by-night competitors, get some stick! Sharpen your sales tools and win those contracts the old fashioned way!

Eco-friendly construction is on the rise. Interest from clients in all sectors is up, as homeowners, corporations and organizations test the waters of building green.

The good news is the emergence of an exciting new service area and the opportunity to have a lasting impact through design and construction. Each of your competitors, however, is claiming to be a green expert. Truly innovative builders and designers need to differentiate by showing clients their green knowledge, experience and passion. Here are six strategies to separate your firm from the eco-mob.

- LEAD, DON'T FOLLOW Recognize the fact that having LEED-certified projects in your portfolio and LEED Accredited Professionals on staff is not enough. Differentiation through LEED (Leadership in Energy and Environmental Design) projects will pass quickly, and you need to create your own area of true excellence, a niche within the broader definition of green.
- **GET WAY OUT IN FRONT** Appoint yourself an expert in sustainable building, and then back it up by becoming one. Back up your claim through research, teaching, writing and speaking on sustainable building practices to accelerate both your reputation-building and your knowledge gain. You also need champions inside the firm willing to make a serious commitment of time and effort.
- **CREATE TANGIBLE PROOF** One of the biggest complaints of clients is the lack of data on the payback resulting from implementing green design. Document the success metrics on your own projects, and gather additional data on successful projects within your market sector. If you have little proof data, start gathering it now.
- **BRING YOUR KNOWLEDGE ON THE ROAD TO CLIENTS** Why wait for the RFP or the invitation to come and talk about green? Gather your research and project data, create a (short) tutorial on the benefits and cost of building green, and go see your clients. Odds are you will find a willing audience.
- BEWARE OF THE "GREENWASH EFFECT" One of the more cynical results of the rush to green materials and practices is the inflated claims of those selling the services and products. Called "greenwash," this has produced a climate of hype and given pause to clients. Be certain

your marketing pitch accurately describes your expertise and ability to deliver. If your team is still in the learning curve, be honest in how you describe the service.

GET IT ON THE WEB SITE Clients are using Web sites to create their short lists for upcoming projects. Web sites, and the company culture the Web site reveals, influence potential clients. Get your green experience and commitment to sustainable practices on your Web site, and update it frequently.

The sustainability movement offers a great opportunity for the construction industry. It will challenge the capacity for innovation as firms work to position their teams and create value around their green services. There's plenty to do, however. Buildings emit one-third of the country's greenhouse gasses. At the rate green building is penetrating the market today, it will take a generation to make a sizeable reduction. That's a lot of marketing!

Clients need to partner with firms that are ahead of the curve on sustainability, building information modeling, integrated service delivery and technology integration. These are the clients who appreciate the creativity and overall value delivered by best-in-class service professionals. Seeking relationships with these great clients is crucial.

Marketing green demands a solid strategy to expand your expertise and simultaneously inform clients about this expertise. Carve out your unique specialty, create some proof of the value you offer, and seek out the informed buyers. Once you get started, it won't be just the buildings that are sustainable. The relationships will be as well.

Michael J. Reilly, FSMPS is President of Reilly Communications, a Boston-based marketing and PR firm, President of the Massachusetts Building Congress, an instructor at Boston University, a past national and past chapter president of SMPS, and a contributing editor for Marketer magazine. He can be reached at 617.464.1717 or mreilly@reillycommunications.com.

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Solar Power

# IT'S HERE TO STAY

By Noah Kaye, Solar Energy Industries Association

"Some day," Thomas Edison said in 1910, "some fellow will invent a way of concentrating and storing up sunshine to use instead of this old, absurd Prometheus scheme of fire." The past five years have made Edison look like a prophet, as the global solar photovoltaic (PV) industry has seen a growth rate of 30+ percent annually, with manufactured output tripling between 2003 and 2006. Annual revenues have grown to \$15 billion, and are projected to grow to as much as \$60 billion by 2010. Strong consumer demand for clean, reliable energy where it is needed – on the rooftops of homes and businesses – has led to record levels of interest – and investment – in the power of the sun.

# Solar Power - It's on the Rise

What's energizing the global PV boom? Primarily, the economics of solar have improved owing to:

- Skyrocketing natural gas prices, which translate into electric rate hikes
- Technology improvements and manufacturing scale-ups, which have slashed the cost of solar by 95% since the 1970s
- A suite of incentives and other policies that encourage consumers to go solar

Most notably, the state of California recently moved ahead with a \$3.2 billion incentive program to build 3,000 megawatts of solar generating capacity on homes and other buildings in the next decade. New Jersey, Pennsylvania, Arizona, and other states have made long-term commitments to build thousands of megawatts of PV. And in 2005, the U.S. Congress enacted new federal tax credits for homeowners and businesses that install solar, greatly fueling consumer interest nationwide.

With energy issues in the public mind, and solar becoming a compelling alternative to fossil fuels, your company can capitalize on this consumer interest to market your solar and other products. Here are some basic resources to get started.

## **Technology 101**

Photovoltaic devices convert sunlight into electricity using semiconducting materials, usually polysilicon. Individual PV cells (typically producing 1 or 2 watts of power) are connected together to form larger units, or modules, which







in turn can be connected to form arrays. The "modularity" of PV enables the installer to size systems to meet the power needs of the customer, whether that is a single-family home or a large commercial building.

Increasingly, the solar industry is marketing building-integrated photovoltaics (BIPV), or PV products that integrate with traditional roofing materials. Nearly every major manufacturer offers a type of solar roofing tile or shingle, combining the photovoltaic cells with slate, metal, asphalt, or fiber-cement. BIPV products are installed over new or existing roof sheathing, wired together, and tied into the home's electrical grid.

The old paradigm of solar homes, completely off the power grid and using batteries to store excess power, has shifted. Most new solar installations are interconnected to the power grid. These "grid-tied" systems include an inverter to convert the DC electricity produced by the solar modules to AC electricity. The AC feeds directly into the building load, and any excess electricity is fed into the power grid. Consumers use their grid-connected system to supply some of the power they need, and use utility-generated power when their power usage exceeds the current PV system output. With this arrangement, there is no lifestyle sacrifice, no requirement for the system owner to curb power.

For more information on solar technology basics, go to the Department of Energy's Solar Technologies Web page at: www1.eere.energy.gov/solar/index.html>

# **Economics and Incentives**

In general, the entire US has generally good solar resources – meaning that the economics of going solar depend far more on local electric rates and incentive programs than on the amount of sunlight. For example, the same PV system may produce 25% more electricity in Albuquerque, NM, than it would in Boston, MA, but the savings are the same because electric rates are higher in Boston. Using typical financing assumptions, a home PV system will generate power at a fixed and constant \$.25 - \$.35 / kWh over its 25-year-plus lifetime. This cost should be compared with the retail cost of energy from the local utility.

Incentives, both state and utility company, for going solar differ greatly throughout the country, with some states paying as much as 50% of system costs. At the Database of State Incentives for Renewable Energy (www.dsireusa.org), you can determine whether there are any state or utility financial incentives – tax credits, exemptions, rebates, loan or grant programs, or production incentives – in your service territory.

When you visit this website, make sure to research your area's interconnection and net metering regulations, which differ in all 50 states. In 41 states, the owner of a grid-connected PV system can sell any excess electricity back to the local utility, watch their meter spin backwards, and receive a credit on their electric bill - a process called net metering. Some states, recognizing the peak power/renewable energy value of solar electricity to an energy portfolio, offer special incentives for grid-connected solar.

Grid-connected Owners Earn Credits Selling Excess Electricity Back to Their Electric Company

# **Getting to know the Industry**

Building your business starts with building knowledge of the solar industry, the products, and the companies that are fueling its growth. Solar Power 2007, the largest businessto-business solar industry conference in the United States, is a can't-miss event for companies looking to break into the business. The conference has grown rapidly in recent years; more than 10,000 people are expected to attend, and more than 190 companies (primarily manufacturers and large integrators) will exhibit. Many manufacturers hold product workshops and certified installer-training classes at the conference. The conference offers a chance to see all the new products launched this year, as well as to attend educational sessions on technology and policy developments - and, of course, the chance to build relationships with all of the major manufacturers and dealers in the industry. This year's conference will take place in Long Beach, CA from September 24th - 27th. The website for the conference is: www.solarpowerconference.com.

# The Solar Energy Business Enters the Mainstream

Joining the national Solar Energy Industries Association (SEIA) and its state chapters offers your company great networking opportunities, as well as a chance to keep up on the industry's advocacy efforts. With 50 different state policies on incentives, interconnection, and net metering, it is important for the growing solar industry to come together and speak with one voice. You can learn how to join the national trade association by visiting www.seia.org.

Noah Kaye is the director of public affairs for the Solar Energy Industries Association, representing over 20,000 employees in the U.S. solar industry. You can contact him at nkaye@seia.org.



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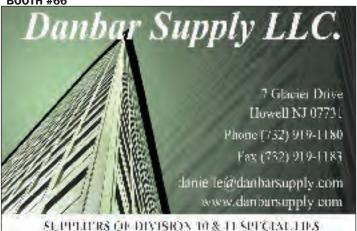
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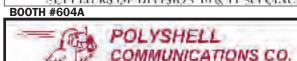
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# Using the Old Bean

By Loretta Hall

Creative thinking and extensive research are creating new soybean-based products to help contractors build cleaner and greener.

Whether it's because of government mandates, societal pressures, or personal convictions, the construction industry is becoming more environmentally friendly. Rising costs of petroleum-based products, as well as the quest for LEED certification, are leading builders to switch to "greener" products. A variety of materials based on soybean oil are satisfying those objectives without sacrificing quality.

# Soy-based Products are Non-Toxic

Soy-based products are nontoxic and virtually free of VOCs, so they are safer to handle and they don't produce offensive odors. They are biodegradable, so cleanup and disposal are simple. And, because soybeans can be grown in most parts of the country, transportation costs can be reduced. This year, for example, New York farmers plan to plant a record-high 210,000 acres of soybeans.

Some soy-based products seem exotic. Alowood, for example, is a new line of wood products that uses a soy additive to treat plantation-grown softwoods, hardening them so they look and function like rain forest-grown hardwoods.

Other products are still undergoing commercial development and are currently in limited use. In one highprofile test, the petroleum-based hydraulic fluid used in the Statue of Liberty's elevator system was successfully replaced with a soy-based alternative more than four years ago. Last fall, National Crane successfully tested a similar product in the hydraulic lift system of a truckmounted crane (the truck also ran on soy-based biodiesel fuel). The fluids work well, and any leaks that might occur would not be environmentally harmful.

# Soy-based Products are Environmentally Friendly

But what about common, readily available construction materials? For starters, there's spray foam insulation. BioBased Systems makes closed cell and semi-open cell versions that it touts as containing no fibrous materials (such as cellulose or fiberglass) that can cause irritation. Coler Natural Insulation, a BioBased installer and supplier in Ionia, New York, says its mission is to

make "environmentally friendly products easy and affordable for all involved in the residential and commercial design, building and occupancy process." EMEGA Biopolymers, another manufacturer, promotes its spray foam insulation as having "equivalent or better physical characteristics than petroleum-based counterparts."

Its fire ratings exceed the thresholds for Class I. Its R-values range from 3.6 to

7.3, depending on the specific product. In addition, the foam has no food value, so it does not support rodents or insects. EMEGA also offers a portable system for manufacturing soy-based polyurethane insulated concrete forms (ICFs) at construction sites. The company says the system is designed for small-scale manufacturers, with fewer than 50 employees. Another of its products, WYN-Sulate Structural Insulated Panels (SIPs), sandwiches a 6-12" thick soy-based foam core between two 25 gauge galvanized steel panels. The company points out that "the production of soy-based polyols is much less energy intensive than manufacturing of insulation, lumber and other products used to build frame walls." And, like other soy-based products, theirs effectively resists mold and mildew.

Rather than being used in the building itself, some soy-based products just facilitate the construction process. An example is Soy Form Release, produced by SoyClean. "On certain forms, we've had customers say that the petroleum-based product eats away at the forms," says Kurt Brannian, the company's director of marketing. "This one doesn't. The guys really like using it." The product, which costs about 9 cents per square foot, is an effective release agent that won't stain the concrete, and cleanup is as easy as washing with soap and water.





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# Green Building Laws

By Douglas P. Casper AIA, LEED AP, CCCA, CCS, MBA, NCARB

# What "Green" Laws are on the Books Now and How Do They Impact the Way We Practice Architecture and Engineering?

Until now, most Green building requirements have been strictly voluntary in nature and, for that reason, unevenly followed. Now, with the advent of sweeping regulations being put forward by New York City, as well as some public authorities, that situation is changing dramatically.

Presently, there are only nine LEED Certified buildings – fewer than one tenth of a percent of the new buildings built here over the last ten years. The reason there are so few is that, aside from the administrative effort required to submit a building plan to the United States Green Building Council as a Registered building, the time and money required discourages the typical building owner from pursuing this option.

# **Executive Order 111 Impacts New State Buildings**

On June 10, 2001, Governor George Pataki signed Executive Order 111 for "Green and Clean" state buildings and vehicles. This document was prepared by the New York State Energy Research and Development Authority (www.nyserda.org). The order required that all new building and major renovation projects undertaken by state agencies that were greater than 20,000 square feet in area, must be designed to be the equivalent of a LEED rated building. (Significantly, the order did not require the building plans to be submitted to the USGBC and go through their formal rating process.) Transportation and Industrial buildings were exempted from this ruling.

The Agencies affected by the Order includes: Battery Park City Authority, City University of New York, New York Power Authority, and New York State Public Transportation Authority. Some of the LEED Certified buildings put into service over the last seven years were designed and built under the aegis of some of these agencies.

## **New Local Law 86 Imposes Higher Standards**

Then, on October 3, 2005, The New York City Council passed Local Law 86 (LEED Law). This ruling became effective January 1, 2007,



and requires all new building or substantial renovation projects done for city agencies to be Certified as LEED Silver. This involves actually registering the project with the USGBC and, then, working through the certification process with the "Council" until it receives its Certification.

#### **How the New Law Works**

Schools, libraries, and medical facilities need not be Silver rated – but must receive at least a LEED Basic rating. Occupancy group G (educational and libraries) and H-2 Occupancies (hospitals and clinics) require only a LEED Basic Rating. Occupant groups A (high hazard), D (industrial), F-2 (grandstands, stadia, etc.), and all group J (residential) are exempted. In addition, all affected buildings must improve energy efficiency and reduce potable water usage. The city has over 1300 buildings and leases over 12.8 million square feet of office space. This legislation will affect \$12 billion worth of construction, over the next 10 years.

"Green and Clean" Legislation will have a positive affect on green buildings into the future.

The Lower Manhattan Development Corporation (LMDC) developed its own extensive guidelines, referred to as the Sustainable Design Guidelines (SDG), affecting all the work being done on the World Trade Center Site. In addition, Governor Pataki, in his "swansong," required all buildings on the site to be the equivalent of LEED Gold Certified buildings.

# **New Legislation Goes Beyond Existing Building Codes**

The "Green and Clean" legislation and Local Law 86 will have a positive affect on the sheer number of "Green" buildings that will get built, going into the future. To appreciate just how extensive these requirements are, consider that, embedded in the LEED Reference Guides are additional laws and standards that must be followed to be able to build a "Green" building. These additional requirements go well beyond present day building codes.

A good example of that effect is the referenced standards of the American Society of Refrigeration and Air Conditioning Engineers (ASHRAE). The building codes currently in effect in the states of New York and New Jersey are adaptations of the International Building Code, 2000 Edition. These codes reference ASHRAE 90.2P (ASHRAE 1989): Energy Standard for Buildings Except Low-Rise Residential. The New York City Building Code references ASHRAE Handbook - 1987 HVAC Systems and Applications. (The New York City Building Code is known for having out-dated reference standards.)

Now that the city and state agencies are requiring that A/E firms design in accordance with the LEED Reference Guides, a much higher standard for HVAC equipment is being elicited. Under Energy and Atmosphere Credit 2, LEED-NC, Version 2.2 references ASHRAE 90.1-2004: Energy Standard for Buildings Except Low-Rise Residential. This standard requires buildings to be at least 20% more efficient than the older version currently referenced in the 2000 International Building Codes (the I-Codes).

Another example of how the LEED Reference Guides go significantly further than state and municipal codes in effect is in the area of paints. LEED-NC, Version 2.2, under Credit



EQ 4.2 – Low Emitting Materials. This credit applied to interior coatings only (site applied and within the weatherproofing system). Flat paints can have a maximum of 50 grams per liter of volatile organic compounds (voc's) and non-flats can have a maximum of 150 g/L voc content.

The LEED Guidelines, of course, have extensive requirements in all areas that go significantly beyond state and municipal building code requirements. That is due, largely because building codes take several years to adopt and are by definition always going to be at least a few years behind the current codes and standards. New York City is in the process of revamping their building code, following the I-Code model. Because there are so many quirky features contained within the New York City Building Code, however - the process is being delayed. (The New York City Building Code was supposed to be released January 1, 2007 – but, alas, it was not.)

The latest decisions made by our area politicians to adopt and embrace the new "Green" building Guidelines as part of these requirements is a major decision and one that should be applauded. Governmental entities must help as much as they can to facilitate the change process because, like with anything in life – there are going to be "growing pains."

This new direction should be applauded by the design community because it affords it the best opportunity, yet, to engage in the design and construction of "Green" buildings on a larger scale than was previously possible.

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# **NYC** is Fast Becoming the Big Green Apple

By Josh Dorfman

New York City-based policy makers and green advocates often strike a self-congratulatory tone when recounting how the city is already the greenest in the U.S. thanks to strong population density, good public transit, and limited car ownership by New Yorkers. Yet, ask New Yorkers whether they enjoy living in such close proximity to their neighbors and whether they appreciate the high costs of monthly parking that make car ownership prohibitive and it readily becomes apparent that the policy wonks are describing a situation that has little do with sustainability and even less to do with concerns for quality of life.

Now, if New York City's policy makers were to make their claims about the city's leadership role as the center of urban sustainability and green innovation based on the entrepreneurial activities underway here, their claims would ring significantly less hollow and would in fact be true. For it is here that green residential building demonstrates in the largest numbers the possibilities for leading outrageously cool lifestyles that are aligned with a cleaner planet. Take for instance the Solaire, Versdesian, Visionaire, and Tribeca Green apartment buildings that line the downtown skyline from Tribeca to Battery Park City. Or the nearby green condos at the Millennium Tower Residences or One River Park Terrace. All of these residential towers are or will be LEED-certified and also include advanced systems for healthy living with regard to their state-of-the-art air and water filtration systems. Midtown Manhattan has the Helena and Archstone Clinton green residential towers. Roosevelt Island has The Octagon with the largest solar array of any building in New York City. Harlem has the Kalahari and 1400 5th Avenue which provides mixed-income housing opportunities attesting to the fact that healthy, green living presents options for the many and not simply for the wealthy few.

New York City's creative energies are also evidenced in Brooklyn's growing leadership role as a hub of contemporary sustainable furniture design. Firms like Brave Space, Cambium Studio, Bettencourt Woodworking, and Delano Collection work with renewable materials with a modern aesthetic such as bamboo. Scrapile, Moe Design Studio and Niche Design transform reclaimed materials into stunning creations. Argington, Oeuf, and Igloo Play are at the forefront of an



emerging movement that emphasizes healthy, environmentally smart furniture for children using materials such as FSC-certified sustainable wood or particle board that is free of toxins and made from recovered wood.

Back across the river in Manhattan, Q Collection, a leader in design-driven, environmentally smart furniture, has its headquarters and showroom. Modernlink is in Soho and utilizes bamboo for its furniture to achieve a strong contemporary aesthetic that is both powerful and elegant. And David Bergman crafts his Fire&Water line of eco-friendly lighting on the Lower East Side.

New York City has always been known for its dynamism and creative energy that attracts bright, entrepreneurial talent from around the world. That talent is turning this city into a bastion of green innovation and with it the promise of increasingly enticing ways to align our urban lifestyles with a cleaner planet without sacrifice and with a strong nod toward design.

Josh Dorfman is the Founder and CEO of Vivavi, a Brooklyn-based provider of contemporary sustainable furniture, and Modern Green Living, an online resource that enables homeowners and renters to find available green residences and locate green building professionals throughout North America. He is also the Producer and Host of The Lazy Environmentalist radio show airing on the Lime Channel of Sirius Satellite Radio. His book, The Lazy Environmentalist: Your Guide to Easy, Stylish, Green Living, will be published by Stewart, Tabori & Chang this Spring. Contact: www.greenbuildings.com





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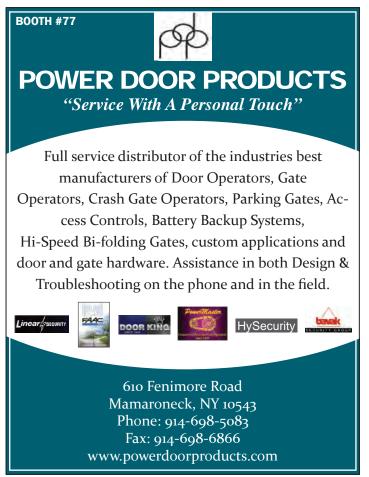
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# A/E/C INDUSTRY MUST TAKE GREEN BUILDING RISK MANAGEMENT SERIOUSLY



By Stephen Del Percio, ESQ, LEEP-AP

we move through the first quarter mark in 2007, the green building movement only seems to be gaining increased momentum with each passing week. All over the country, municipalities either greeted the New Year by ushering green building legislation into effect or opening up debates in state and local assemblies with respect to potential new initiatives. In New York City, for example, Local 86 became effective on January 1, 2007, requiring many municipally-owned projects in the Five Boroughs to meet LEED Silver. Starting in December, the Town of Babylon on Long Island will require both public and private development of at least 4,000 square feet to reach a LEED Certified level. What many in the industry initially perceived as a fad just a few short years ago is undeniably with us for good. While green building undoubtedly can offer both bottom line benefits to owners, as well as (more importantly) significantly ameliorate the environmental impact of buildings, it does present implications

for project teams which traditional projects do not. Accordingly, each stakeholder in a given green project from a municipal owner to each design professional or contractor- should educate itself (and indeed will be forced to educate itself) with respect to the potential risks that its role in the project may present.

To date, very little has been written about risk in the green building context. In fact, in its 2006 Green Building White Paper, Building Design + Construction magazine called on the legal profession to produce some scholarly research on the topic. Many of the legal implications are obvious. With respect to projects seeking LEED certification, construction contracts need to be drafted in order to reflect the responsibilities of the various project team members in terms of documenting LEED credit compliance. This issue will become increasingly salient as more municipalities either mandate LEED as part of a local

building code or require proof of certification from USGBC prior to handing out any particular incentive.

Spelling out these responsibilities up front is imperative. Suppose, for example, that an architect's LEED Silver building, designed to such a level for the purpose of securing some type of state or local tax incentive, only received LEED Certified because of a credit rejection from USGBC due to insufficient documentation? It is not difficult to imagine the owner looking to the architect or engineer responsible for that particular part of the design for some sort of redress, particularly if documentation responsibilities were not clearly identified by contract. It is therefore imperative that design professionals- and their attorneys- understand the LEED documentation process and appropriately allocate such responsibilities within agreements for green design and construction services.

Industry players in the New York City area, as well as across the country, are also concerned that green building rating systems may be adding additional layers of transaction costs to the already high costs of construction. Richard Anderson, President of the New York Building Congress, made this very point in an interview with Crain's New York Business last month regarding Mayor Bloomberg's proposed energy initiatives in connection with his PlaNYC 2030 program. "Everything is adding cost to development, whether it's adding a component of affordable housing or a green component," Anderson told Crain's. "It's getting to the point where new residential and commercial development is very expensive."

If a public owner chooses to comply with a certain level of LEED certification or mandates any other green design





should mandate that private development comply with a green building standard. How will such municipalities enforce these standards? Could an owner that's denied a building permit or certificate of occupancy turn to its project team for some sort of recovery? Will municipalities end up discouraging development by pushing developers to other locales where green standards exist as incentives rather than the law? How the private sector responds to municipal green building mandates will help determine whether future green legislation is enacted as a carrot (tax credits, expedited building permits, or other incentives) or a stick (LEED-driven building codes).

Other implications are at this point more nebulous. For example, new technologies that the construction industry is starting to embrace could present pitfalls for green project stakeholders. At last November's Greenbuild conference in Denver, USGBC and Autodesk announced a partnership to integrate the company's Building Information Modeling ("BIM") software with LEED. BIM offers design professionals the ability to assemble project drawings into one central database from which a variety of sophisticated project analyses can be performed. In connection with announcing its partnership with USGBC, Autodesk surveyed architects about their expectations for using such technology. Forty-three percent expected to evaluate solar heating (up from twelve percent today)

while fifty-three percent expected to conduct energy modeling and baseline analysis (up from twenty-five percent today). From a green building perspective, BIM software becomes an extremely powerful tool. It offers design professionals the ability to perform these types of analyses far more cost-effectively. However, it also leaves many legal questions unresolved. How, for example, will BIM impact a design professional's ownership over its drawings that are plugged into the project database? Moreover, BIM may result in design professionals being held to a higher standard of care thanks to the technology's ability to provide an unprecedented level of detail on project drawings. These questions are in their infancy and industry professionals must monitor them as technology continues to rapidly change the construction landscape.

Green building is undoubtedly here for the long haul and contractors and design professionals must consider the legal implications of both new technologies and rating systems like LEED. Sustainable design promises higher returns for every project stakeholder along with tangible benefits for the natural environment. However, in order for it to reach its fullest potential, owners and project teams need to make sure that they understand the risks involved and insist on strong contract language in order to protect themselves from the uncertainties and potential liabilities that may be lurking just below the green surface.

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