



# LEEDing the Retail Sector Green

*Exploring the Progress and Possibilities of Sustainable Development*

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**Abstract:** Green buildings have come of age. Cumulative project registrations under the US Green Building Council's "Leadership in Energy and Environmental Design," or LEED, rating and certification system increased 50% in 2006 compared with 2005, and finished project certifications increased 67%. However, the retail sector has been slow to participate in this "green building revolution." This research report presents the business case for green buildings in the retail sector, presents some representative cost data, and profiles some of the innovative projects that are convincing other retailers to use green building features and ratings.

## I. Green Building History and Trends

A trend toward building and utilizing structures that are environmentally friendly is growing quickly. Taking "green" to mean buildings certified by the U.S. Green Building Council's "Leadership in Energy and Environmental Design," or LEED™ system, as are more than 98% of all such buildings, the growth in the green sector has been remarkable. LEED was introduced in 2000, originally to cover only new construction projects and major renovations. It's since been expanded to cover Core and Shell buildings, new or remodeled Commercial Interiors and the environmental performance of Existing Buildings.

The LEED rating system covers five major categories of environmental concern, each of which can apply to the retail store and to shopping-center sector development.<sup>1</sup>

- Sustainable site development
  - Site selection
  - Urban infill and brownfield development
  - Transportation and parking
  - Open space conservation
  - Storm water management
  - Urban heat island reduction
  - Light pollution
- Water conservation
  - Landscape water use
  - Water conservation and wastewater treatment
- Energy and atmosphere
  - Energy conservation in store operations
  - Renewable energy use on site
  - Building commissioning for improved operating efficiency
  - Performance monitoring and verification

- Purchase of green power from off-site producers
- Materials and resource conservation
  - Construction waste recycling
  - Use of recycled content and salvaged building materials
  - Use of locally produced materials
  - Use of bio-based materials and certified wood products
- Indoor environmental quality
  - Non-smoking buildings
  - Improved indoor air quality
  - Use of Low-VOC (volatile organic compounds) materials for paints, coatings, carpets and composite wood products
  - Improved thermal comfort
  - Use of daylighting

LEED also provides four levels of recognition, depending on the documented level of achievement. In the LEED-NC (new construction) rating system, there are 69 total achievable points. The award levels are the following:

Certified =	26 to 32 points
Silver =	33 to 38 points
Gold =	39 to 51 points
Platinum =	52 or more points.

The highest point total to date is 60, achieved by a general contractor's own headquarters in St. Louis, Missouri. Fewer than 30 (of nearly 700 total certified projects) have been awarded the Platinum designation. More than 70% of all LEED certified projects achieve the Certified and Silver award levels.<sup>2</sup> The categories in the LEED rating system are not exhaustive, but indicate a good part of its concerns. The LEED for New

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<sup>1</sup> The entire LEED system is available for download and use from the US Green Building Council, [www.usgbc.org/leed](http://www.usgbc.org/leed).

<sup>2</sup> USGBC statistics, [www.usgbc.org/leed](http://www.usgbc.org/leed).



Construction rating system (LEED-NC) currently covers about 75% of all LEED projects. Compared with data for 2005, in 2006 all LEED project registrations (declarations of intent) grew by more than 50%, while project certifications grew by 67%. This rate of growth is hard to find in any other area of the commercial building sector, so green buildings must be reckoned with as a major industry trend. Chart 3-1 shows the growth of LEED-NC project registrations, certifications and registered project area (in millions of square feet) since 2000.

In the LEED system and in the green building movement in general, retail has certainly been a laggard. As of May 2007, approximately 100 retail projects had registered their intent to certify under the LEED-NC or LEED for Core and Shell (LEED-CS) rating system, compared with nearly 5000 other projects.<sup>3</sup> Nonetheless, in response to the evidence of the importance of greening the retail sector, the USGBC launched two major initiatives in 2006, the Volume Build program and the LEED for Retail pilot (draft) rating system. The Volume Build program is an attempt to work with the retail sector to reduce the costs of green building certification for those retailers who build essentially the same store in many locations. The LEED for Retail pilot is now available for use and is an attempt to adapt the LEED-NC rating system for the retail sector. Companies wanting to certify using the pilot rating system must apply to the USGBC to do so.

## II. Driving Forces for Green Retail

Awareness and respect for environmental concerns are on the rise worldwide. In the commercial office sector, for example, there is a growing appreciation for the business-case benefits of green buildings. These benefits include some or all of the following:

- Reduced energy costs
- Increased use of utility and tax incentives for energy conservation
- Increased building value, through higher Net Operating Income
- Improved productivity and reduced health impacts of building operations
- Improved sales and lease-up of properties
- Growing evidence of increased sales from daylighting, averaging 5%<sup>4</sup>
- Marketing benefits

- Public relations benefits
- Recruitment and retention of key people
- Greater funding availability from institutional sources
- Increased interest by Wall Street (for public companies) in a company's long-term sustainability programs
- Corporate social responsibility exemplified in green buildings

Not all benefits apply in all cases, but this list is indicative of what green retail stores and retail-center developers should consider when weighing the costs and benefits of greening their operations. In this report, we will also explore tenant and consumer demand, local government incentives and mandates and increasing energy costs as driving factors.

## III. Case Studies

For this research report, we looked at a number of case studies covering LEED-certified and other green retail projects.<sup>5</sup> The green leader at this time is PNC Bank (NYSE: PNC), with more than 40 retail branches certified or registered for LEED certification, plus two major office towers. Wal-Mart has completed two "experimental" stores in Colorado and Texas and has committed more than \$500 million in energy-conservation upgrades. Two shopping centers are certified at LEED Silver, and the first LEED Gold shopping center is well on the way. The first LEED-certified retail project was a Giant Eagle supermarket.

### A. Developers' Case Studies

**Northfield Stapleton.** As part of the research for this report, we visited Forest City's Northfield development in Denver at Stapleton Field (the former Denver airport), which received the first LEED for Core and Shell Silver certification for a "Main Street" or "town center" retail development. The Stapleton residential development has received smart growth awards from the Urban Land Institute and the National Association of Homebuilders. The master plan for the entire project required "sustainable development," a condition that applied also to the retail segment. The LEED certification process involved about 16 small buildings at the core of this large (1.2 million square feet) development, which opened for business in 2006. This open-air project features extensive signage about the green features of the project (created from salvaged signage from the former airport runways),

<sup>3</sup> USGBC project registration statistics, *ibid.*

<sup>4</sup> See studies by Heschang Mahone Group for Pacific Gas & Electric, [www.h-m-g.com](http://www.h-m-g.com).

<sup>5</sup> Case studies were based largely on interviews conducted during May and June of 2007 by Gretel Hakanson, Yudelson Associates, and Sonja Persram, Sustainable Alternatives Consulting, Toronto.



high-efficiency plumbing fixtures in public restrooms, low-toxicity paints and carpets, a reflective roof, high efficiency irrigation and a small solar power system (not visible from the street level.) There are also tenant guidelines that stress both education and incentives for tenants; those who comply get to display a sticker on their window that says, “Sustainability Program Participant.”

**Abercorn Common:** Developed by Melaver, Inc., a privately-held developer, the 169,000-square-foot Abercorn Common in Savannah, Georgia, also received a LEED-CS Silver certification in 2006. Abercorn Common boasts the nation’s first McDonald’s in a LEED-certified building, along with a host of green features in the other parts of the center. In 2006, the project became the first retail LEED for Core and Shell-certified project in the country, achieving the Silver level of performance.<sup>6</sup> According to the developer, the second phase of the project, the 16,000-square-foot Shops 600, was certified at LEED Silver level and built without any discernible cost increase. At Shops 600, the leasable retail space includes solar water heaters and a green roof. Harvested rainwater provides 5.5 million gallons a year of irrigation water, the project’s entire consumption. A densely-insulated building envelope and a reflective white roof reduce electricity consumption by more than 30%. Porous pavement in the parking lots reduces storm water runoff by 30%, and water-efficient plumbing units reduce projected water use by 50%.<sup>7</sup>

Green development was an extension of the owner’s vision. A few years ago the company decided that all of its subsequent development projects would be LEED Certified. This directive arose out of the company’s core values. In 2002, the executive team met with Paul

Hawken and developer John Knott, who recommended that the company retain ownership of its buildings, and to

insert its values into the development process. At that time, LEED was rising in prominence, and the company was planning the Abercorn Common project. During 2002, Melaver’s planning on an office project that was fairly far along (the Whitaker building) was halted for four months to allow staff to learn enough about LEED to enable achievement of the

LEED goals. The knowledge base and goals were then also applied to Abercorn Common, which required a little re-working of the initial planning.

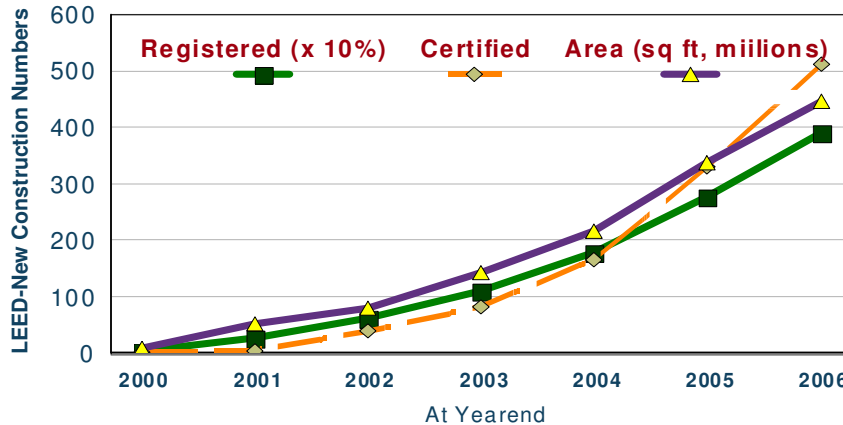
**First Capital Realty:** First Capital Realty (TSX: FCR) is the one of largest owner, operator and developer of retail shopping centers in Canada. Primarily sited within major metropolitan neighborhoods and anchored by supermarkets, the Canadian centers comprise 161 properties totaling about 18.9 million square feet of gross leasable area, of which \$132.8 million in properties is under development.<sup>8</sup> The company is undertaking an ambitious greening program whereby one-third of all properties will be LEED-certified with Canada’s Green Building Council within three to four years, and the remaining (existing) buildings will be “as green as possible” over 10-15 years.<sup>9</sup>

*Visionary leadership:* This green building program was initiated one year ago by President Dori Segal, who engaged corporate executives with his vision for the company’s shopping-center property holdings to be sustainable going forward—not just from an environmental perspective, but for economic reasons as well.

Currently, 27 green LEED-NC projects are in progress, and 27 more are at the planning stage. The LEED—certified requirement will relate to all new construction—

Chart 3-1

**LEED-New Construction Project Growth  
2000-2006, Cumulative Growth**



<sup>6</sup> Melaver Project Receives 2nd LEED Certification, The Savannah Morning News, February 22, 2007, [www.aberncorncommons.com/index.php?option=com\\_content&task=view&id=20](http://www.aberncorncommons.com/index.php?option=com_content&task=view&id=20).

<sup>7</sup> Shops 600 at Abercorn Common Receives LEED Silver Certification, PRLEAP.COM, February 25, 2007, [www.prleap.com/pr/67257](http://www.prleap.com/pr/67257).

<sup>8</sup> First Capital Realty Inc., Annual report 2006, Toronto, Ontario, [www.firstcapitalrealty.ca/live/financials/documents/fin\\_e\\_28.pdf](http://www.firstcapitalrealty.ca/live/financials/documents/fin_e_28.pdf).

<sup>9</sup> The Canada LEED certification is essentially equivalent to the U.S. Green Building Council’s LEED program requirements, with some adaptation for Canadian conditions.



whether on greenfield or on existing properties. As indicated, in existing properties, greening will evolve more slowly, such that for example, HVAC/re-roofing/landscape upgrades will take place as the existing components approach the end of their useful lives.

*Business case factors:* The primary driver in the business case that First Capital considers is location: The company owns ‘insulated’ properties surrounded by dense residential communities. The second driver is the tenant base. Although at present no tenants are demanding green leased space, the company anticipates that a demand shift will occur among larger retailers, and the company also recognizes that some tenants—especially financial institutions—are intending to consider LEED-CI in their future commercial fit-ups. Hence, First Capital plans to be ahead of this market and to stay there. Currently, however, tenants are happy to have the green measures but are unwilling to pay for them.

First Capital understands that paybacks will not be in the short term, but will be achieved in the medium—and longer-term. Although a good deal of effort is now put into educating tenants, the company anticipates that tenants will increasingly demand green leased space in the future, and so it expects to realize future economic benefits through this market differentiation strategy. As well, First Capital Realty sees this approach as indicating that it is a good corporate citizen. While it is anticipated that greener buildings will be associated with higher leases, it is expected that only after one to three years of operations can the company reliably quantify cost savings for future tenants in this or other properties. First Capital anticipates the benefits to the company will emerge in the medium term—three to five years.

*Financial and non-financial incentives:* Permitting and awarding additional building capacity are significant factors affecting costs differentially across the nation: In British Columbia, municipalities are so familiar with and supportive of greening, that permits were fast—tracked (saving a great deal of time and money). Or a municipality may offer another ‘pad’ to build on as a developer incentive, given a project’s green goals. Farther east, however—from Alberta through Central and Eastern Canada—while municipal policies are intended to encourage green building, their staffs were unfamiliar with the measures, and in fact the building permitting process was slowed down. First Capital had to spend time with municipal staff in these regions in order to bring them on board.

*Challenges:* There have been 3 major challenges experienced to date:

- *Tenant education:* Much time is spent in educating the tenants regarding potential

implications of their space changes arising from the greening. Delays also are incurred due to the leasing departments’ education gaps.

- *Municipal staff limitations:* As indicated, while municipalities have the political will to encourage green buildings, at the moment, east of British Columbia, municipal staffs are not sufficiently knowledgeable to effectively support green building permitting. The City of Toronto has formed a Steering Committee to address these concerns, and invited First Capital Realty to participate.
- *Managing costs:* Cost challenges have been significant. It was anticipated that the cost increment for greening would be between 5% and 7%; however for some components this has been as high as 15%-20%. One green project in progress, the Morningside Crossing property, was an existing shopping center with parking. A major portion of the center was vacated and demolished, with an occupied portion still standing while the new center was built. When the construction is complete, the tenants will move in and the remainder of the older site demolition and reconstruction will take place. This property presented some challenges. First, deals with tenants were done prior to the decision to green, which required considerable time spent educating tenants as to the implications of the greener building from their perspectives. Also, leases are triple net; however some anchor tenants have claw backs and caps on costs, limiting what they are prepared to pay the developer. And the decision to green took place after consulting and design drawings were done, requiring many changes to the contract which added considerably to the expenses. Costly green components have included higher-efficiency rooftop units, and low-e triple-paned windows encasing argon (30% higher costs than conventional windows). Insulation costs to achieve LEED certification were not significant since only a few inches were added.

## B. Retailers Case Studies

**Giant Eagle Supermarket:** The first LEED-certified retail project was an 80,000-square-foot Giant Eagle supermarket in the Brunswick Town Center shopping plaza in northeastern Ohio in 2004. When building the Brunswick supermarket, Giant Eagle implemented a range of environmentally friendly features. These are fairly typical of the measures available to large retail stores.



- The consumption of 30% less energy than comparable supermarkets, with more than 50% of the location's electrical energy supplied through wind generation.
- More than 50 skylights integrated with electrical lighting sensors, which automatically adjust the amount of electric light supplied depending on the light generated by the skylight.
- A fiber-optic lighting system for wine coolers that reduces heat generation.
- Natural filtration of parking lot storm water into the adjacent constructed wetland.
- Water-conserving equipment that will save more than 100,000 gallons per year.
- Construction waste recycling program that diverts 62% of waste from landfills.
- All wood used in the building is sustainably harvested, as certified by the Forest Stewardship Council.
- Drought-resistant plants and trees that require no irrigation other than natural rainfall, saving about 400,000 gallons of water each year.
- A green housekeeping program that uses environmentally responsible cleaning products.
- A white, reflective roof and increased insulation to allow the building to cool and heat more easily.<sup>10</sup>

**Home Depot Canada:** Home Depot of Canada Inc. has 155 stores in Canada, and has been working to develop a retail brand array of ecological choices for home renovations. The North Hill project in Calgary, Alberta, was the company's first LEED-certified project.<sup>11</sup> Two years ago, when Home Depot of Canada was planning a fifth store in Calgary, the city required that any development within the location preferred by the company—the downtown core—be certified LEED, and (in the specific instance) utilize an existing building. Given the desirability of the site, the agreement was struck, and the first LEED-certified Home Depot store was developed.

The site was a small, old hotel, which was demolished with much of the old building reused in the new structure. The size of the site meant underground parking was required. For a variety of green and non-green factors, including the way it was demolished, the requirements for re-use, and a labor shortage prompting skyrocketing labor rates (given the Alberta oil sands development), the cost increment for this development was 25%.

Lower energy operations and maintenance costs have been noted at the store: Energy costs for lighting are 40%-50% of those at other stores. Additionally, there have been some water savings due to the installation of water-free urinals and low-flush toilets, as well as timed equipment for plant watering at the garden centers.

Many of these higher building standards (such as energy-efficient lighting; temperature sensors allowing energy shedding by regulating lighting with external temperatures; central energy management of all stores in Canada; and LED signs at both entrances and exits), have been implemented as specifications for all new construction, and some also applied in the existing building stock. However, the company will not be bringing all its buildings to LEED standards, or even to the energy-efficiency standards of LEED certification levels.

The driving force for greening future Home Depots in Canada is the business case. If a store is being developed on a greenfield site, it would likely be built to LEED standards. Where a region requires that developments comply with LEED standards, and the expected sales volumes balance out the anticipated cost increases, Home Depot Canada's business case requirements may be met. In Bowmanville, a town near Toronto, the low land costs allowed development standards targeting a LEED-certified level. While there is a great deal of pride over the LEED-certified North Hill store, the company did not seek market differentiation on that basis. Home Depot of Canada believes there have been reputation benefits from the project, but these are difficult to measure.

**Cycles Unlimited:** This store is a privately owned bicycle-sales-and-service shop located in Springfield, Missouri. Owner Ashley Burchfield had built conventional homes with his wife and, given the construction waste and materials use involved, he was motivated to be environmentally responsible in the development of a new company location, which also is in keeping with the innovative culture of his company. The project's development is privately funded, and the goal of attaining LEED standards is owner-driven. In November, 2006, the company's 4,980 gross square foot retail project was registered LEED-NC v.2.2 with the USGBC. The project goals are for LEED certification at the Gold level.

#### IV. Benefits of Green Retail Centers

If green buildings are happening everywhere in the commercial sector, it's reasonable to suppose that they

<sup>10</sup> Giant Eagle Becomes First LEED-Certified Supermarket in the U.S., [GreenBiz.com](http://GreenBiz.com), Dec. 27, 2004 [www.greenbiz.com/news/news\\_third.cfm?NewsID=27528](http://www.greenbiz.com/news/news_third.cfm?NewsID=27528).

<sup>11</sup> Interview with Nick Cowling, Senior Manager, Communications and External Affairs, Home Depot of Canada Inc.



will come into the retail sector in the next few years. What would be the benefits to a developer to have a larger “green profile?”

*Consumer demand:* It’s speculation at this point, but one can foresee that as more large retailers (such as Home Depot, Starbucks, various banks, etc.) begin to build green stores, consumers will come to expect that the entire shopping center will have green and sustainable features. If one does and another doesn’t, is it possible that consumers will prefer to shop at one and not the other? What is clear from a number of studies of the LOHAS consumer (representing Lifestyles of Health and Sustainability), is that a certain “core group” of such consumers prizes “authenticity” in their lives and selectively patronizes retailers who demonstrate those values. What is not clear at this time is how much you and I are going to change our shopping habits to patronize centers that have such tenants.

*The entitlement process:* Getting land-use and building permits to construct new centers and often to renovate older centers, as well as to develop mixed-use projects, will continue to be a struggle. In many locales, city and county authorities are beginning to offer preferential treatment to development applications that promise to achieve LEED certification. This treatment can take the form of “top of the pile” priority processing (Chicago and San Francisco are two that offer this) and density bonuses or reductions in certain other requirements. As of June 2007, approximately 20 jurisdictions in the U.S. offered some type of development incentive for green buildings. Expect many more cities and counties to offer priority processing for commitments to build to green certification standards, if for no other reason than that it’s politically attractive to do so and costs the jurisdiction nothing. Expect, however, to start having to post bonds to back up your commitment—cities will figure out that they’ll have to give you permits long before you have to get the LEED certification done and that they need some reassurance that you’ll follow through on your commitment.

There are also mandates anticipated on the private sector, since more than 350 U.S. mayors have signed up their cities for the Mayors Climate Change Initiative, which commits them to reduce carbon dioxide emissions by a certain amount. As cities begin to grapple with the reality of this commitment, there will be a temptation to start forcing the private sector to do its part.

In our view, a developer would be wise to start getting green building experience now, before more of these provisos come into force. As of early 2007, about 10 cities around the U.S. (including Boston and

Washington, D.C.) now have ordinances requiring LEED certification for larger commercial developers. As most cities are run by political liberals who value such issues as green building, reducing energy use and increasing environmentally sensitive land use, developers can expect to face such demands.

*Cost offsets:* There are opportunities for reducing initial development costs by reconfiguring shopping-center layout to recover and reuse rainwater from rooftops for toilet flushing and cooling tower makeup water, and to recover and treat storm water from parking lots for irrigation and for washing streets and sidewalks. Recovered storm water can also be infiltrated where soils are appropriate for that purpose and/or used in landscape ponds, drainage swales or even constructed wetlands (for greenfield sites). The goal of all these green measures is to avoid having to send storm water to a storm sewer and thereby to avoid a lot of impact or development charges. Civil engineers need to be instructed to look at a cost/benefit analysis of such measures before proceeding with the usual utility hookups. Not all jurisdictions will go along with reducing fees, but it’s a useful item to have on the table during negotiations.

*Tax breaks and other incentives:* In 2005, the Nevada Legislature passed a law giving a 50% property-tax abatement for 10 years to projects that achieved a LEED Silver rating. If the average property tax is 1% of value, then the abatement is worth 5% of project costs, more or less. This law set off a “gold rush” in Nevada that resulted in such a severe potential drain on local finances that the Legislature made major modifications in 2007.

Oregon and New York both offer state tax credits for green buildings that achieve at least a LEED Silver rating. In Oregon, the incentive is based on square footage (project area), so that an efficient developer can see a definite return. Other states offer similar incentives, so it pays to stay informed at the end of each legislative session about new incentives for green building.

*Renewable energy incentives:* More than 20 states offer some form of incentive for solar power systems.<sup>12</sup> In addition, the 2005 Energy Policy Act (as amended in 2006) offers a 30% federal tax credit for systems placed in service through the end of 2008. Those tax credits are likely to be extended by the current Congress out to 2016. Taken together with local utility incentives for solar power, state tax credits and sales tax abatements, and accelerated federal depreciation, there is a strong return on investment case to be made for putting solar power on every shopping-center roof. In April 2007, Kohl’s became the first major retailer to do this,

<sup>12</sup> The best source for these incentives is the Database of State Incentives for Renewables and Efficiency, maintained by the North Carolina Solar Center, [www.dsireusa.org](http://www.dsireusa.org).



committing to convert more than 75% of its California locations to solar power.<sup>13</sup>

The benefit of using solar power incentives is simple: The systems are visible and most of the public doesn't need a lot of education to recognize them. As a result, a developer or retailer can get a lot of public relations benefit and save money on energy costs. There are a number of partnerships springing up to use the state and federal tax and utility incentives for solar power systems, so that it's possible in about 17 states with such inducements to get the solar power system financed by a third-party at no initial cost to the developer or retailer.

*Branding and marketing:* Green buildings and solar power offer a developer or retailer the rare opportunity to “do well by doing good.” As part of a thoughtful branding and marketing strategy, “green” and “sustainable” are beneficial, but they have to be “real.” The media are pretty well trained by now, or soon will be, to recognize “greenwashing” by the retail sector, so it's best to have a strong corporate commitment to the full extent of sustainable strategies before announcing specific elements.

One should also think of the benefits in terms of hiring and retaining good employees; in today's talent-short world, getting and keeping good people may be a primary benefit realized by greening the retail center and retail store.

**V. Challenges for Greening the Retail Sector**

The first and foremost challenge to greening the retail sector is cost. Other challenges include the capabilities of the design and construction teams to provide green features on conventional budgets; the question of which parties incur costs for green and which parties get the benefits, and the writing of green tenant guidelines.

*Cost and benefits:* The key issue in green building is that “costs are real and present-tense, but benefits are speculative and future-tense.” This means that a developer makes an investment in green building features and certification with the hope of getting some significant return over time. This is not an unreasonable thing to do, but right now it's an exercise in leadership in the industry to commit to a strong green building program.

Getting a LEED certification for a green retail development is initially going to cost more, and it's not clear that a developer can recoup these extra costs in higher rents or faster lease-up, at least not right now. It is possible that the developer may realize some marketing

and public relations benefits, but that is also speculation at this point. Perhaps the greatest benefit may lie in a faster entitlement process and perhaps some reduced development fees—for example, a lower fee for storm sewer hookups, if the development keeps all rainwater on site, either for recharge, landscaping or beneficial re-use in the buildings. In one case, a Lowe's store in south Austin, Texas, completed in 2005, reportedly benefited from its commitment to building a LEED Silver building by receiving all of its permits in three months instead of the expected 15 months. The resulting early opening yielded enough profits in 12 months to pay for the entire building!<sup>14</sup>

*Hard and soft costs:* It's easy to make the distinction between “hard” costs and “soft,” i.e., those for construction and those for design and certification services. In reality, all costs are hard for the company that has to write the check! Nonetheless, the hard costs of green, based on experience in other commercial projects are shown in Table 3-1. These cost premiums are only indicative. As with automobile fuel-efficiency claims, “your mileage may vary.” We have been told of large LEED Platinum projects being completed in 2007 for less than a 2% cost premium, but these results typically accrue to experienced developers or large institutions with sophisticated project management teams.

It's important to point out that *all* developers have found that these cost premiums come down over time, as they gain more experience with green projects. These costs do *not* include the costs of including solar technologies, but might include such things as innovative storm water management, water conservation measures,

**Table 3-1  
Hard Costs for Greening Your Projects**

LEED Certification Level	Cost Premium
Certified (Basic Level)	0%-2%
Silver	2%-4%
Gold	4%-6%
Platinum	Above 6%

energy-efficiency investments, green materials, construction-waste recycling and other sustainability features contained in the LEED system.

In addition to hard costs, there are a range of soft costs, such as additional architectural and engineering fees, holding “eco-charrettes” for considering green alternatives, and the LEED system documentation and certification activities. Table 3-2 shows some of these cost premiums. Note that the two most expensive are

<sup>13</sup> Kohl's Readies its California Rooftops for Solor Power, Press Release from SunEdison, April 26, 2007, [www.renewableenergyaccess.com/rea/partner/story?id=48328](http://www.renewableenergyaccess.com/rea/partner/story?id=48328).

<sup>14</sup> Personal communication, S. Richard Fedrizzi, CEO, U.S. Green Building Council, February 2007.



**Table 3-2  
Soft Costs for Greening Your Projects**

Cost Category	Estimated Cost
Design Services	0%-10% (depending on experience)
Building Energy Modeling or Prescriptive Design Analysis	\$15,000- \$30,000
Building Commissioning	40-70 cents per sq.ft., \$20,000 minimum
LEED consultant/certification effort	\$25,000 (varies by project size)
LEED registration and certification fees (USGBC Members)	\$450 registration fee, plus 035 cents per sq.ft. for certification review; \$17,500 maximum fee

*Who benefits and who pays:* The irony in green retail is that it's mostly the developer who pays for such items as extra insulation and better glazing, more efficient lighting and higher-efficiency HVAC units, as well as storm water management, construction-waste recycling management, LEED certification and the like, and it's the tenant who

things you probably want to do anyway, such as modeling the energy use characteristics of your building or buildings and commissioning the HVAC equipment to make sure that it is working according to design intent. Commissioning is a "high payoff" activity for most projects, but is typically not done in the retail sector.

For smaller retail projects, the costs of green building certification can definitely be a perceived barrier, unless a company has a specific plan for realizing some the benefits of green project recognition. For volume builders<sup>15</sup>, the U.S. Green Building Council is developing a "volume build" program that will allow a company to certify the basic green elements of its prototype or typical store, with documentation needed only for specific "site credits" that are specific to each individual location. The program aims to drive down the cost of green project certification with the USGBC to levels that a retailer can handle.

*Design team capabilities:* We need to point out that, while there are more than 7,000 LEED projects underway, less than 700 had been certified at the end of 2006. Part of this is owing to the time lag between project registration (typically early in schematic design) and the completion and certification of a project (which can take two to three years). As a result of this gap between interest and certification, most design (and construction) teams who do retail work have not yet completed a LEED project.

As a result, they are asking for premiums for adding the LEED component to their scope of services, and they are not comfortable with what it takes to make a project "green." In addition, their ability to deliver green features on conventional budgets is suspect, and (unnecessary) cost increases on early projects may result. In this situation, a retail developer would be wise to insist that the architect add an experienced green consultant to the project team, to guide the entire team through the design, product and system specification, and LEED certification process.

benefits, through the center's advertising and promotional efforts and through lower common-area-maintenance (CAM) charges. While the developer recovers some of these benefits through their non-billable CAM charges (typically 20% or a little more), the tenants enjoy the balance. Over the long run, lower operating costs for energy, water and waste disposal should be reflected in higher rents; at the beginning it's typically not possible to get rent increases. Restructuring a standard lease to share some of the savings is possible, but is not commonly done.

*Tenant guidelines:* Some developers certify to the LEED for New Construction or the derivative LEED for Retail standard, while others prefer to use the LEED for Core and Shell rating system, with its "precertification" benefit. In either case, having gone to the effort to green the retail center, a developer often wants to write tenant guidelines that will ask or require tenants to use sustainable design and construction measures in their own space. In the LEED rating system, a strong set of tenant guidelines also qualifies for one credit point toward certification of a center. These guidelines could cover such items as using low-toxicity paints, adhesives, sealants and carpets in tenant buildout; using more efficient lighting systems, and a wide variety of other measures that are covered in the LEED for Commercial Interiors (Retail) rating system. If the guidelines are not required, then developers would be wise to engage in a strong tenant education program, starting with the lease negotiations. This may provoke discomfort among the brokers working for both developer and tenant; therefore, a clear set of guidelines, with attention to how they're written and promoted is a key part of the process.

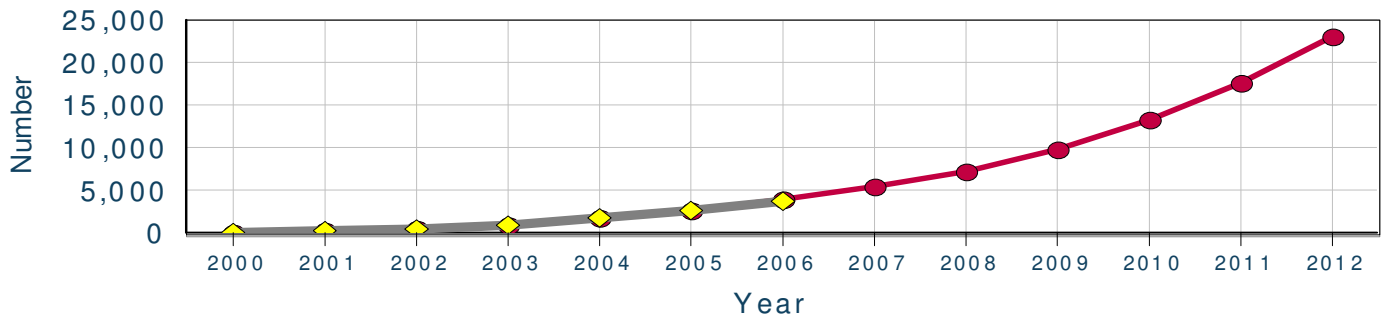
**VI. Looking Ahead**

In terms of greening the retail sector, there's little doubt that the retail landscape will look much different by 2010. The number of large retailers announcing green building initiatives will accelerate in 2007 and probably reach a crescendo in the 2008-2009 period. The number

<sup>15</sup> This includes retailers with small buildings, such as bank branches, and companies, such as Home Depot, Lowe's and Wal-Mart with very large stores.



**Chart 3-2**  
**Cumulative LEED-New Construction Project Registrations**  
 Actual and Projected



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
● Predicted	44	270	614	1077	1774	2741	3980	5441	7375	9841	13341	17759	23140
◆ Actual	45	275	620	1077	1792	2758	3895						

Note: Author's projections, using Fisher-Pry "technology substitution" model, based on LEED project registration data through 2006, furnished by the U.S. Green Building Council staff.

of shopping center developers in the U.S. and Canada building certified green retail centers will increase, so that we should be seeing hundreds of new projects registered each year and dozens being completed. The engagement of center developers with the public sector, in terms of entitlement benefits and green project requirements will feed this trend.

For green buildings as a whole, I have used a theory of market growth called "diffusion of innovations" to predict the overall growth of commercial and institutional-sector LEED for New Construction project registrations through 2012, as shown in Chart 3-2. The

projection uses actual LEED project registration data from the U.S. Green Building Council for 2000 through 2006, with projections for subsequent years. While the retail sector is starting late, it is safe to say that the growth of green projects will follow a similar curve for adopting green technologies and green approaches. Right now, the market opportunity is ripe for "innovators" and "early adopters" to start building green projects, get a better understanding of costs, marketing and other benefits, and begin to green their entire set of retail operations.

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