

# Building Green

A shift toward “green building” has begun, and may ultimately lead to the replacement or retrofitting of much of the world’s built environment. It may take decades, but green building is poised to become a major segment of the global construction industry.

**BY DENNIS & SANDY JONES**

The sector’s global promise, comes with its own challenges. The most immediate is the worldwide economic downturn and the drying up of credit that has accompanied it. Projects are being cancelled, put on hold or cut back, which is obviously not good for Canadian design firms. Fortunately, most of the companies in our green building sector are robust, adaptable and diversified enough to cope with the problem. And because of their reputation for great technical skill and creativity, they’ll be well placed to ride the upturn when it happens.

< Canadian companies have a high reputation in the green building sector, in large part due to their experience in extreme climate conditions. Most companies agree that the world’s emerging economies will provide the best opportunities for green building today, particularly in the Middle East and Asia. Pictured here: Toronto-based Zeidler Partnership Architects’ conception of Emerald Towers, in Almaty, Kazakhstan.



According to a 2009 study by McGraw-Hill construction, the value of the world's green building market will increase to USD 60 billion by 2010 and, within the following three years, will rise to USD 96 to 140 billion in the combined residential and non-residential sectors. Asia will be a hotbed for the sector, and by 2013 it is expected that three-quarters of its construction firms will be involved in green building – in fact, a full 60 per cent of their projects will be green. In Europe, by the same year, two-thirds of all building companies will be in a similar position, and in North America, the proportion will be slightly more than half.

Canadian firms, especially architectural and engineering companies with advanced expertise in this sector, are already finding opportunities around the world. This has been especially true in the Middle East, where Canadian architects, engineers and management teams have been involved in the planning and construction of some of the world's most spectacular projects. And while the global financial crisis has slowed activity for the moment, there will be even greater opportunities when growth resumes. To take just one example, the government-owned Abu Dhabi Future Energy Company (ADFEC) is pressing ahead with its enormous MASDAR Initiative, which will lead to the creation of a zero-waste, zero-carbon, car-free city in the desert.

**Canadian firms have a high reputation in the global market. In their favour is experience in designing structures to withstand Canada's extreme climate. Canadian firms have become master builders because of the daunting conditions that they have to cope with, so they can design for almost any environmental problem found abroad.**

## Global Value of Green Building Market:

... by 2013  
US\$96 – \$140 billion

In fact, EDC has targeted construction as one of its priority sectors in the Gulf Cooperation Council (GCC) states. Jean-François Croft, EDC's Chief Representative in the GCC is developing relationships with key regional infrastructure developers such as Aldar Properties, the Mubadala Development Company and Emarr Properties. EDC is targeting the GCC not only because of the medium-term opportunities it offers, but also because EDC's infrastructure team is matching the interest that Canadian businesses have expressed in the GCC, and understands their ability to meet the needs of the region.

In fact, many Canadian firms have already succeeded in the GCC, and EDC is helping them create synergies with other Canadian companies that are not yet in the market but want to enter it. For example, EDC works to match these latter firms to local architects and general contractors, and to connect them with Canadian companies that are already operating in the GCC and are looking for Canadian products and services. In addition, EDC can provide financing to GCC buyers, help Canadian firms secure needed working capital through their banks, and furnish various kinds of credit and political risk insurance to protect companies as they enter their new markets.

**What is green building?** The United States Green Building Council (USGBC) defines it as "building that is aimed at energy conservation, saving natural resources and preserving the environment."

The spike in energy prices during the 1970s began a trend that led to the formation of many organizations whose sole focus was to encourage the creation of green, climate-adapted buildings. The most notable of these is the World Green Building Council, formed in 2002. Originally a coalition of eight national green building councils (GBCs), including that of Canada, it now comprises 12 national councils worldwide, plus three emerging ones. Business-led but non-profit, the GBCs collectively advocate for green building, push for environmentally responsible industry standards and help develop green design practices and rating systems.

There are several of these systems, which are used to rate a building's green credentials. They include Leadership in Energy and Environmental Design (LEED), used in several countries including Canada; the U.K.'s BRE Environmental Assessment Method (BREEAM); Green Star, used in South Africa, Australia and New Zealand; Abu Dhabi's Pearl Building rating system; and Japan's



Comprehensive Assessment System for Building Environmental Efficiency (CASBEE). None is an international standard, although LEED is showing signs of being more widely adopted than others.

All these systems are intended to minimize the environmental impacts of the world's buildings. This is no idle matter; according to the U.S. Department of Energy, buildings account for 30 per cent of all greenhouse gas emissions, 36 per cent of all energy use and 65 per cent of all electricity consumption. Even leaving aside the environmental issues, energy costs alone can provide a convincing case for green building.

**Last year, EDC announced its plans to move to a new LEED Gold Certified head office in Ottawa. Construction has begun and completion is targeted for 2011.**

Do Canadian companies have a place in this greener world? "Yes, particularly our engineering and architectural services companies," says Salerno. "These firms have been active in green building for a long time, have developed tremendous expertise in the field and can provide all the services and products needed to undertake a green project of any size and complexity. And there are now about 10,000 LEED-accredited professionals in Canada, which suggests that almost all Canadian architectural and design firms have the expertise.

It's also significant that the headquarters of the World Green Building Council is now located in Toronto, Ontario. "This gives Canada a central place in coordinating the creation of Green Building Councils all over the world," Salerno adds. "It makes us a conduit for engaging the global construction industry and for predisposing it to use Canadian expertise to supply green building services. This demonstrates the solid leadership that Canada has achieved across all parts of the green building sector."

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## **Busby Perkins+Will**

Located in Vancouver and founded in 1984 by Peter Busby, Busby Perkins+Will has become internationally renowned as a practitioner and advocate of green building design.

"We used to call them high-performance buildings," says Martin Nielsen, one of the firm's principals. "But even then, we felt that energy efficiency was a virtue because it made sense not to waste a valuable resource. We also thought that the indoor environment should provide a healthy place for people to work, so natural daylight and good ventilation were important. When we sold these ideas to our clients, we emphasized the energy savings and the fact that a healthy environment would lead to greater employee productivity. We didn't refer to it as green building."

The company's first green building project outside Canada began in 2004 as part of a light rapid transit system in Riyadh, Saudi Arabia. The firm had just finished two stations on Vancouver's Millennium Line, and their work attracted the attention of the Ar-Riyadh Development Authority, which commissioned designs for the system's prototype stations.

Since 2004, the firm has focused its overseas work on planning sustainable communities, with projects in India, Singapore and Abu Dhabi, where the government wanted a master development plan and looked around for cities that were international models of liveability.

Vancouver enjoys that reputation, and since Busby Perkins+Will has been closely involved with the city's development, the Abu Dhabi authorities selected the firm to do the project in partnership with two local companies.

In fact, being based in Vancouver has proven to be a major marketing advantage for the company. "This city is one of the most liveable places in the world," Nielsen says. "Urban planning delegations come from everywhere to find out how it works, and our close involvement with the city gets us a lot of work abroad."

The company acquires the bulk of its work through its connections and its international reputation. Local partners play a substantial role in the firm's projects because they know their market and can deal effectively with local authorities, approvals and regulations and advise on the availability of materials, preferred construction methods, building codes and a host of other matters.

The company sees its best prospects in the Middle East, whose appetite for green building will continue to grow, in Nielsen's opinion, despite the downturn. The Dubai real estate bubble may have burst, but Abu Dhabi and Saudi Arabia have such deep pockets that they will weather the storm.

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Photos: Courtesy of Busby Perkins+Will

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**Green Building = building that is aimed at energy conservation, saving natural resources and preserving the environment.**

## Future Cities® International

“Cities are a kind of organism, so building them in a green way isn’t done using a single avenue of development, but instead takes an overall organic approach,” says Miguel Escobar, President of Montreal design firm Future Cities® International Inc.

“In fact, urban design is more than just design,” says Escobar. “Our idea is to create higher-density cities that are economically viable and have an increased quality of life.”

Established in 1985, the company has been doing business internationally since 2002, beginning with the redevelopment of a 200-hectare area in central Beijing, just east of the Forbidden City.

Escobar transformed it with low-rise residential and commercial areas, four residential towers, a new university campus and a generous proportion of outdoor spaces. Later came a design project for an industrial park in the Chinese city of Qujing. Instead of leveling the site, filling in its ponds and streams and cutting down its trees, Escobar’s team designed it as a park system with the industrial buildings integrated into the natural landscape.

In a similar way, the company’s resort project at Serenity Point in the Bahamas works with the local environment instead of overriding it; there’s an underground reservoir to store rainwater, while the use of local flora for landscaping is designed to reduce the need for irrigation. Electricity costs are astronomical by Canadian standards, so Escobar is considering the use of solar panels despite their high initial expense.

Like Busby Perkins+Will, Future Cities® International relies on local partners when operating in foreign markets. Escobar uses them to obtain permits, do production drawings and make sure that everything complies with local codes and standards. In many jurisdictions, too, a partnership is a legal requirement. To do business in the Bahamas, for example, Escobar must have a local partner that has a 51 per cent share in the project.

As a result, he works hard to develop good relationships with design and engineering firms in his target markets.

Escobar believes that the world’s emerging economies will provide the best opportunities for green building, and that they may in fact offer more potential than the U.S. market. The latter has many skilled



Photo: Courtesy of Future Cities® International Inc.

▲ Montreal-based company Future Cities International has a goal to create higher density cities that are economically viable and have an increased quality of life.

green building firms and the competition is consequently fierce. While Canadians can compete with the best the U.S. can offer, non-U.S. markets may be easier to penetrate and can be equally lucrative.

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## Zeidler Partnership Architects

Toronto-based Zeidler Partnership Architects has been designing to high environmental standards since 1988, when it became involved in a project in the Knightsbridge district in London, England. Since 2000, it has undertaken numerous green building projects both in Canada and abroad, among them the spectacular Burj Dubai Residences III, a set of residential towers that is part of the Burj Dubai skyscraper complex.

“Our buildings are optimized for energy use, waste management and a healthy environment inside and out,”

says Vaidila Banelis, one of the firm’s partners. “Much of our major work abroad is currently in the UAE where local planners are awakening to the need for sustainability. We’re now seeing LEED-type requirements on new projects, a shift that’s going to become more prevalent in the next two to three years.”

Zeidler is also very active in China, although Banelis says that it’s not yet an easy market for green building. Even so, the company has been applying its sustainable principles to projects such as Beijing’s Hongrun mixed-use complex, which was built to respond to local environmental concerns, and the master plan for the De Sheng New Town development, which integrates retail, commercial and cultural facilities into a pedestrian-friendly environment. Outside Canada, Zeidler also maintains offices in West Palm Beach, Berlin, London, Chengdu, Shanghai, Beijing and Abu Dhabi.

“Except for the latter two,” says Banelis, “our offices have always been established as a result of winning a contract. They begin as project offices but then continue as we acquire more work locally. In the case of the China and Abu Dhabi offices, we saw promise in those markets that we got licensed and registered to do business there.”

Zeidler’s foreign offices employ a mix of expatriate Canadians and local nationals. Zeidler also uses partners extensively in its foreign operations. “In China and the UAE,” notes Banelis, “and other markets where we’re less experienced, we typically team with a local design firm to obtain their expertise with codes, materials, construction methods and so on. But as we become more familiar with a market, our local office may tend to use those partners less and less and eventually we do most of the work in-house.”

Banelis sees emerging markets as the most promising destinations for the Canadian green building sector. Looking past the downturn, he believes that the prospects will be good not only in China and the Middle East, but also in the Caribbean, Mexico, South America and India. Abu Dhabi is particularly attractive for the company, he adds. ■

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