GREEN BUILDINGS AND ECO-CITIES

A North American perspective

Green buildings are going up in cities, large and small, across North America. Homes, hotels, and corporate headquarters have been certified green from Anchorage to Mexico City. But, despite the many advantages for cities of green buildings – from energy savings and related greenhouse gas emissions reductions to decreased water use – many obstacles remain before these buildings will become the norm for both new construction and retrofits.

Some of the major impediments to the adoption of green building construction include difficulties and risks involved in financing these projects; lack of education and training for a "green workforce" of design practitioners and tradespeople; and a need for information-sharing to aid in navigating the complex marketplace of green building systems, standards, and materials.

Economics, consumer awareness, and private-sector initiatives are helping to address these issues. Likewise, city, state, provincial, and federal governments are working to remove obstacles in order to accelerate the uptake of green building through integrated use of building codes, zoning regulations, tax-based incentives, preferential treatment for green developers (such as fast-track permitting), and demand offset programs – where developers reduce energy and water demand as a condition of permitting.

Despite these efforts, green buildings still represent a small percentage, and a more comprehensive approach to improving conditions for green building construction is essential.

Trilateral Task Force

One response has come from the governments of Canada, Mexico, and the United States, taking advantage of close economic ties and environmental cooperation already in place in a new effort to improve the environmental performance of buildings in North America.

Last year, the three countries named a tri-national task force (see sidebar) charged with identifying opportunities and determining the best way to drive changes needed to foster the construction of green buildings across the continent. The task force is working through the Montreal-based Commission for Environmental Cooperation (CEC) – an intergovernmental organization that brings together governments, civil society, and businesses to develop innovative North American solutions to global environmental challenges - and building on the CEC Secretariat's landmark 2008 report, Green Building in North America: Opportunities and Challenges.

Already, task force members have outlined an approach intended to tackle some of the most fundamental challenges of green building faced by cities, developers, and even homeowners: financing, urban re-densification, workforce education and training, performance benchmarking, and cataloguing green building systems and programs. For task force chair Ann Edminster, one of the most important aspects of this work, even more important than developing the latest and greatest solar energy systems or insulation technologies, is education.

"We're ignoring the enormous opportunities that are before us right now, with knowledge we already have," Edminster said during the Globe 2012 conference on business and the environment in Vancouver. "We need to educate about knowledge that already exists about how to make better buildings and cities."

Edminster said that one of the main obstacles for people pursuing environmentally friendly building is making the case for green building as opposed to the status quo, noting that the task force intends to pull together a repository of information about incentive programs, green financing case studies, and best practices.

"We've all amassed a number of anecdotes and research studies and bits of data here and there, but that doesn't mean we have at our fingertips a really good, comprehensive resource that addresses all the parts of this argument."



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Trilateral Green Building Construction Task Force Members

Canada

Jonathan Westeinde, Managing Partner, Windmill Development Group (Co-Chair)

Ray Cole, University of British Columbia, Co-founder Green Building Challenge

Phil Jago, Director Buildings Division, Natural Resources Canada *David Moses*, Moses Structural Engineers, Inc.

Mexico

Odón de Buen, President, Energía, Tecnología y Educación (ENTE) (Co-Chair)

Jorge Diez de Bonilla, VIVESI

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United States

Ann Edminster, Consultant, Teacher and Facilitator, Design AVEnues (Chair)

Robert Brooks, Director, ICC-ES Environmental Programs

Sean Cahill, Vice President, Development Property, Group Partners LLC

Ryan Colker, Director of the Consultative Council and Presidential Advisor, National Institute of Building Sciences

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Michael Calvert, Global Practice Lead, Green Building (BBM), Foreign Affairs and International Trade Canada

Rodrigo Guarneros, Evaluación y Seguimiento de Negociaciones Internacionales - Secretaría de Economía

Iván Islas, Instituto Nacional de Ecología (INE)

Innovative Financing for Green Building

Besides promoting education and information-sharing, the task force agreed that a significant obstacle to the green building market in the three countries is the fact that builders and developers bear a high burden of financial risk associated with greening new and existing buildings.

While a variety of financing models are available, said task force members, none has yet effectively been adopted on a wide scale. Nor have any green building finance mechanisms been evaluated to determine their effectiveness in meeting the different needs for building types and conditions in each of the three countries.

As a result, a good part of the CEC's green building work this year will focus on developing a model business case supporting the need for innovative financing of both new green building construction and green building retrofits. The model will include market projections to demonstrate demand, case studies of specific projects and impacts, and guidelines and indicators for qualifying green projects. It will also propose a framework to engage North American financial institutions and governments in financing green commercial retrofit initiatives.

Members of the task force will take advantage of this year's international Greenbuild conference in San Francisco from November 14 to 16 to get feedback from developers, city planners, financial institutions, and others on this new approach to financing green building in cities across North America.

Greener, Denser Cities

One of the primary goals of promoting green buildings is to green our cities. Smart growth and integrated urban planning – combining a concentration of green buildings, densification, and enhanced transit and transportation systems – are keys to improving the health and quality of life of the 80 percent of North Americans who live in urban areas.

"Re-densification of our cities was viewed as a very, very central concern across North America by members of the task force," said Edminster.

She said that, as a result, the task force would create a "toolkit for redensification" based on a cost-benefit analysis of greening existing buildings and other densification measures. The toolkit will focus on proposed policy pathways for implementation and the roles and contributions of municipal and other governments, including marketing efforts, innovative financial mechanisms, and other densification strategies.

Cities Hitching Wagons to Energy Star

With more and more cities focused on cost and emissions savings through energy efficiency, building developers are turning to programs like the U.S. Environmental Protection Agency's (EPA) Energy Star program for benchmarking building performance and evaluating energy savings.

"This year marked the 20th anniversary of the Energy Star program, and today Energy Star certified buildings in cities across America are help-

ing to strengthen local economies and protect the planet for decades to come," said EPA Administrator Lisa Jackson.

According to EPA, these buildings have saved some \$2.3 billion in annual utilities and prevented GHG emissions equal to the emissions from the annual energy use of more than 1.5 million homes.

Earlier this year, Jackson announced EPA's annual list of American cities with the most Energy Star certified buildings. Some 16,000 buildings have received certification across the country. Large U.S. cities, such as Los Angeles (659 buildings certified) and Chicago (294 buildings), are, of course, near the top of the list; but,

many smaller cities including Riverside, California, and Colorado Springs, Colorado, also are among the top 25 cities.

And, the uptake of Energy Star is happening across North America. Last November, Natural Resources Canada announced an agreement with EPA to create a common platform for measuring and assessing energy performance of new and existing commercial buildings based on EPA's Portfolio Manager tool.

"Energy benchmarking is an important aspect of an effective strategy to improve energy efficiency in buildings, because what gets measured gets done," said the Honourable Joe Oliver, Minister of Natural Resources. "This

agreement is another example of how we are working with the U.S., through the Clean Energy Dialogue, to reduce greenhouse gas emissions and combat climate change."

This year, part of the CEC's green building focus is to support Mexico in developing its own energy benchmarking and rating system that will align with the U.S. and Canadian programs.

Mexico already has a number of tools and incentives in place, including a "green mortgage" program for homeowners, but the new energy rating system should help make it easier for building owners and operators to have a standard approach across the three North American countries. MW



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