

BUSBY + ASSOCIATES ARCHITECTS

> SETTING THE STANDARD FOR GREEN BUILDING DESIGN

By Rochelle Bacigalupo, MBA, Schulich School of Business

Vancouver-based Busby + Associates Architects is recognized as a leader in green building design. For many years this award winning practice has been raising the standard for green architecture through research and design projects while proactively working to expand the market for

green buildings in Canada. The practice is firmly positioned to take advantage of this market growth while acting as a role model for other design firms interested in sustainable design.

"As sustainability is about the future we care about how the buildings we design today affect our planet for the years to come... We base our design solutions on functionality, durability and value for money, with a view to the life of the building, not just the day it opens." (Busbv + Associates firm profile)

> GREEN BUILDING DESIGN BASICS

Canada's Green Building Council defines green design as "design and construction practices that significantly reduce or eliminate the negative impact of buildings on the environment and occupants."ⁱ Some of the known benefits of green design include reductions in greenhouse gas emissions, pollutants and waste produced by buildings, protection of natural resources and the use of sustainable energy sources. To achieve these objectives Busby + Associates employs a variety of green or sustainable design strategies, including responding to local site conditions, posing minimal demands on existing infrastructure systems, using environmentally sound materials, maximizing energy efficiency and minimizing construction and deconstruction waste.

> GREEN TRENDS IN CANADA

Peter Busby and other members of the firm have been involved in recent initiatives that are raising the profile of green building design in Canada. Peter Busby was a founding member of the Canada Green Building Council (CaGBC); an organization founded in 2002 to introduce sustainable practices to the mainstream building industry. The CaGBC administers the national Leadership in Energy and Environmental Design Rating System™ (LEED), a voluntary system that evaluates buildings in five key areas.ⁱⁱ Busby + Associates' White Rock Operations facility, completed in 2003, was the first new building in Canada to receive LEED gold status (figure 1). Designers awarded silver, gold or platinum LEED certification can use this credible achievement for marketing and competitor differentiation.

While data from the CaGBC indicates a steady growth in both enrolment in professional courses and buildings seeking LEED certification, green design has not been widely



Figure 1

White Rock Operations Building, 2003

- 26% reduction in storm water run-off, 87% reduction in water use
- 60% energy savings improvement beyond Canada's Energy Code
- 97.75% of construction/demolition waste diverted from landfills
- 31% of materials originate within 500 miles of the project

embraced by designers. At the beginning of 2003, there were only 428 CaGBC member organizations nationwide, even though there are 3,691 architecture and 8,372 engineering firms in Canada.

> DIVERSE AND GROWING INTEREST

Peter Busby developed the green foundations for his practice early on, before many designers and clients were aware of sustainability issues. Today there is a much broader-based understanding of the negative impacts of buildings on people and the environment. There are also growing expectations for architects to develop better design and building practices. While some may see green building design as a business opportunity, Busby + Associates believes that environmental, political, economic and social drivers will increasingly make it imperative for designers to

develop green design capabilities to remain competitive and in practice.

From an environmental perspective there is mounting evidence that current building design, construction and operations degrade the environment. Statistics for

Figure 2 - Global building industry statistics⁹

- 50% of the planet's natural resources use
- 40% of total energy consumption
- 40% of the world's greenhouse gas emissions production
- 50% of waste generation in developed nations
- the leading cause of indoor and outdoor pollution, noise and dust
- primary destructor of agricultural land and wildlife habitat

the global building industry shown in figure 2, provide a troubling industry snapshot. Critics within and outside the industry propose a revamping of the entire building supply chain to address these impacts.

Governments at all levels are also acting as a driver of change, as they adopt green practices for publicly built, owned or operated facilities to demonstrate responsible governance and fiscal management. Many are establishing policies and incentive programs to promote green practices.

Institutional, corporate and private developer clients are also

increasingly commissioning green buildings for their lower capital costs and operating budgets as they become receptive to the economic benefits of green buildings.

In addition, there is a growing desire amongst clients and the public to create healthy buildings. Many buildings suffer from 'sick-building syndrome';ⁱⁱⁱ a term referring to chronic health problems suffered as a result of exposure to toxic materials and chemically treated air. Green building strategies emphasizing fresh air, natural light and safe materials, are seen as a means of improving employee health, satisfaction and even productivity.

> BUILDING A GREEN DESIGN FIRM

Busby + Associates has recognized these drivers of change and has structured its practice to meet the challenges of providing industry leadership. Some of the firm's notable characteristics and core activities resulting from green building design include:

Challenging convention > Peter Busby's philosophy on the role of architecture and architects in society is a driving force for the firm. He believes that architects have a responsibility to design buildings that benefit the broader community and the environment, not just the immediate client. Green building design is a way of thinking that fundamentally challenges

"Peter's personal commitment to advancing the cause has been impressive. He has dedicated about a quarter of his personal time, pro-bono, over the past 2 years to helping launch CaGBC and get it operating and to spreading the message. He believes in environmentalism and he demonstrably walks the talk." (CaGBC member)

how architecture is practiced. In building the firm, Peter Busby has employed green building design as a means of remaining true to these values.

Changing the industry mindset > Peter Busby has been a vocal advocate for change within the building industry for many years. He has played a key role in promoting green building strategies through the Canada Green Building Council. He and firm employees have taught professional courses through the Royal Architectural Institute of Canada and lectured to diverse audiences. Through this leadership, Busby + Associates is helping to grow the Canadian green building market and to set higher social, environmental and aesthetic design standards.

Embracing technology and research > Unlike many architectural practices, Busby + Associates conducts its own research into green building strategies and technology. The firm's research team scans the marketplace and academic work for green building practices, products and materials. For the firm, research is both a means of staying current and integrating new current technologies and construction practices into projects.

Collaborating with other disciplines > One of Busby + Associates' key design tenets is multi-disciplinary collaboration. The firm's Integrative Design Process differs from linear design approaches in which other disciplines are consulted only when required. The Integrative Design

Process begins with a meeting of the client and consultant team in order to build relationships and instill a sense of commitment to the project and to achieving green objectives. This collaboration continues through to construction and creates informed clients, consultant teams that think more holistically and ultimately, higher quality buildings.

Planting the seeds of innovation > Busby + Associates supports a culture of learning and is developing the next generation of green designers. The open-plan office encourages designers to interact and share ideas.

The horizontal management structure allows designers, regardless of seniority, to be involved in all aspects of green design. The firm encourages its designers to enroll in professional courses and to act as internal resources and disseminators of information. The 'green lunch' initiative is one example of designers sharing with colleagues their knowledge on specific green building topics, such as green roofing systems, photovoltaic panels, waste water treatment or recycled materials.

"...the firm has strong convictions about sustainability and the roles and responsibility (of architects and buildings) to the environment..."

"Peter's beliefs and convictions are a rallying cry for the entire firm - his vision inspires employee buy-in"

(Busby + Associates employees)

> CREATING A COMPETITIVE EDGE

To remain competitive in the ever-changing field of architecture, firms need to differentiate themselves. One could argue that there is an early mover advantage for firms that embrace green thinking ahead of competitors. Busby + Associates is realizing concrete advantages as a result of its



Figure 3

knowledge of and experience with green building design.

Peter Busby's early embrace of sustainability and his willingness to challenge the norms of his profession are now well known and highly respected. The firm is regularly the first choice for clients and potential employees seeking green building expertise.

Busby + Associates has the opportunity to explore stimulating and non-traditional types of design work. The firm recently prepared a green building design reference document for the Greater Vancouver Regional District^{iv} and it has also worked on experimental projects. Two examples include the Sustainable Condo prototype (figure 3) designed for the 2003 GLOBE conference in Vancouver and the

Centre for Interactive Research on Sustainability, which will be a testing facility for green technologies. The firm was also engaged by York University to design the first institutional green building in Canada's eastern climates (figure 4). These projects diversify the firm's portfolio and they create new areas of knowledge and experience that can assist in winning new commissions.

Designers at the firm also note that multi-disciplinary collaboration builds long-lasting relationships with consultants and clients. Clients that are included in the design process understand how buildings can contribute to the community and the environment and tend to remain loyal to the green design process.

> OVERCOMING CHALLENGES

Busby + Associates is optimistic about the future of green design and the new opportunities that are likely to emerge as this market grows. This optimism however, is tempered by an understanding that real challenges also exist.

One key challenge for Busby + Associates is overcoming different client perceptions of sustainable design. For example, some private developers tend to be skeptical of proposed cost-savings and end-user market demand for green buildings. In contrast, some clients are less committed to sustainable design and more interested in the positive public image and marketing potential arising from a completed green building.

There is also much work to be done to change the attitudes and practices of the mainstream design community. Many designers are unaware of green building design or are reluctant to adopt these practices for fear of liability issues. Meanwhile there are other firms using 'green-washing' marketing tactics to retain or attract new clients.

Finally, there is a need to extend the green design process to include post-occupancy issues. Conducting building and user evaluations following construction would improve design strategies and establish research credibility.

> LOOKING TO THE FUTURE

Peter Busby is in an enviable position. He is respected for his philosophical approach to architecture and for his work in setting the foundation for a Canadian green design market. His firm, Busby + Associates Architects, is a green design success story, possessing the largest portfolio of completed green buildings in the country and receiving numerous design awards for buildings that are contemporary, cost effective and efficient. The firm's commitment to creating buildings that benefit the environment, the community and the people living or working in them, has resulted in loyal clients, satisfied and capable employees and a consistently busy practice. Designers interested in sustainable design may look to the success of Busby + Associates for direction on how to integrate green design principles and working processes into an architectural practice.



York University Computer Science Building, 2002

- 68% reduction in energy use versus an equivalent nongreen building
- 29% reduction in heating, 19% reduction in cooling, 32% in ventilation and 61% in internal lighting
- Greenhouse gas emission reductions of 85,715 tonnes over 75 years

ⁱ 'An introduction to the Canada Green Building Council' PowerPoint presentation

ⁱⁱ Sustainable Site Planning, Safeguarding Water and Water Efficiency, Energy Efficiency and Renewable Energy, Conservation of Materials and Resources and Indoor Environmental Quality – successful building may receive a silver, gold or platinum award status

ⁱⁱⁱ Roodman, D M and Lenssen, N Worldwatch Institute 'Worldwatch Paper #124: A building revolution: How ecology and health concerns are transforming construction March 1995

^{iv} 'Sustainable Building Design: Principles, Practices and Systems' prepared for the GRVD

^v UNEP Industry and Environment: A quarterly review 'Sustainable building and construction: facts and figures' Volume 26 No 2-3