

## AFFORDABLE, DEVELOPER-FRIENDLY AND GREEN

New direction for residential building that can please all stakeholders.

Bryan Rappaport

**As the 1990s came to a close in Vancouver, British Columbia, an architect and a developer decided to come together to create what they saw as a new design direction for residential housing. The company they formed is designing single and multi-family dwellings that are more eco efficient, yet also affordable for their target community and profitable for the developers involved.**

**“Sustainable architecture celebrates the connection between our built and natural environments, enhances communities, minimizes the impact of design and construction on finite natural resources, and fosters our physical and emotional well-being.”**

**Sustainable Architecture White Papers, Earth Pledge Foundation**

The market for new housing grew rapidly throughout the last decade, yet communities were also paying increased attention to the finite nature of the environment. Buildings were, and still are, consuming 40% of the world’s materials and energy.<sup>1</sup> The 1992 Rio Summit ushered in a new hope and focus on pushing the public, governments and businesses towards adopting more environmentally sound practices throughout all industries. Widespread actions are needed to ensure that the environment and the economy can coexist.

In addition to the negative externalities that buildings create are the effects to individual health stemming from Sick Building Syndrome or SBS (see p.19). The United States Environmental Protection Agency (EPA) has listed SBS as a major cause of illnesses throughout the world. It is their contention that upwards of 30% of all new and renovated buildings suffer from SBS by providing poor indoor air quality and using products that emit chemicals to the environment.<sup>2</sup>

So in late 1999, Heather Tremain and Robert Brown, each with different backgrounds, but with a shared interest in sustainability, decided to get into the business of green building consulting. ReSource ReThinking Building was formed with the goal of helping developers and individuals to design sustainable and life-enhancing buildings. Robert Brown brought with him years of experience as a developer and commercial leasing agent, most recently founding the Chesterman Property Group

Inc. Heather Tremain, while completing her Masters in Architecture, was working as co-creator and content producer for the television show “Healthy Home.” Each had taken their own steps towards creating

Robert Brown and Heather Tremain, cofounders of ReSource ReThinking Building.



more sustainable buildings and were ready to begin a business together entirely focused on that objective.

ReSource has worked with both developers and homeowners alike to consult on and design single and multi-family dwellings. It employs contractors, architects, engineers, landscape architects and facilitators on contract, to form a team to consult with clients on the options available to develop their green home. Outsourcing to various experts has enabled ReSource to utilize different people with different capabilities to address the environmental challenges posed by each new project.

The company follows the principle that green building design makes sense for people, for the environment and for the future

profitability of the business.

Tremain and Brown look at ways that each new development can help minimize its impacts on the external environment while improving the internal environment of the building. Through reduction of energy, water, materials and waste, ReSource’s projects are both cutting edge and practical. The partners have also managed to capitalize on the growing demand for healthier spaces by returning to simple concepts lost through years of booming industrialism.

### Market for Green Building

In Canada, there is a growing demand for green building. More specifically, in the Pacific Northwest where the environment is regarded as a more integral part of daily life, the public is recognizing the need for healthier living spaces. Add to this the fact

that home ownership is on the rise in Canada, and you can see how ReSource has managed to carve itself a niche in the B.C. housing market.

The Canadian government has also begun to give fiscal incentives to reward green building with Natural Resources Canada and the CMHC leading the way. In the United States, the U.S. Green Building Council has created the Leadership in Energy & Environmental Design (LEED)<sup>™</sup> program. The first accreditation program of its kind in North America, LEED<sup>™</sup> certifies buildings on an individual basis depending on each building’s performance in meeting its defined sustainability goals.

## One Step At a Time

Their diverse backgrounds has helped Tremain and Brown attain success for ReSource in this business environment. While working together on Chesterman Property Group projects, the pair had important experience with green projects and saw a possible business model for green building consulting. Tremain notes that ReSource's goal is not to push its clients to adopt all the possible green design elements. Rather, she says, their key strength as consultants is the fact that they do not always try to be cutting edge in terms of meeting eco efficiency goals. Instead, they help their clients to take the next important step towards green design. This has secured them more contracts as ReSource is seen as a developer-friendly organization rather than one that takes an all-or-nothing approach.

## Cranberry Commons

Only a half-hour's bus ride from Vancouver, the Cranberry Commons cohousing community in North Burnaby was created to accommodate 25 families in various sized homes and was ReSource's first contract. Initially, ReSource began advising on material usage and design factors to ensure that the project used resources as productively as possible. According to the company, the most significant sustainability feature was the solar domestic hot water panels on the large south-facing roof. These panels were implemented to reduce drastically the energy required to heat water for all of the units. By the time the project was finished ReSource had helped Cranberry Commons to meet its goals, while still enabling the units to be sold at a competitive price.

While the end product of Cranberry Commons was an immense success, Tremain and Brown met numerous challenges along the way. The pair found that there was a steep learning curve for most of the people involved. Since they got involved in the later stages of the project, there were certain elements that could not be changed and they had to work around these obstacles. In the end, ReSource spent considerable time on the project. Tremain feels that the developers got "extremely high value for work done." But, while not very profitable, the project was still a good investment. She considers Cranberry Commons to have been a learning experience that provided the foundation for the company's subsequent green housing initiatives.

## Single-Family Dwellings

The next project ReSource took on was their first ever single-family dwelling, Hamilton House. Client and designers set three major "green" goals for the house:

- To ensure high quality indoor air
- To reduce demand on potable water
- To achieve material conservation

## Hamilton House

The goal of improving indoor air quality was met by using heat recovery ventilation as well as by using low VOC paints and finishes to reduce toxic emissions. Wood used in the project came from certified sustainable hardwoods. Other sustainable materials included Flyash concrete, which is a by-product of coal-fired electric generating plants. This product offers two environmental benefits by using recycled material and by consuming significantly less water than traditional concrete. At the same time, it also improves the quality of the concrete by decreasing its permeability to water. Each of these features helped the homeowners to achieve their green goals for the new residence.

As the needs and demands of individual homeowners are so diverse, Tremain, Brown and their multi-disciplinary team are expected to provide customized advice based on an extensive knowledge of design and materials. ReSource has compiled an extensive materials database to help with this process. Tremain believes that creating this database is one of the company's greatest strengths. It allows them to quickly source green materials with minimal additional research.

## Koo's Corner

The most recent project to be completed by ReSource is the Koo's Corner market townhouse project in the Strathcona area of Vancouver. This project combines new building design with a retention and refurbishment of an existing auto garage building. As with many other ReSource projects, sales for the townhouses were completed before construction began. The goals for Koo's Corner were: to utilize sustainable construction techniques and green designs to create high quality indoor air and to use locally sourced affordable and resource efficient materials.

While the use of low VOC finishes, minimal finishing and certified green carpets improved the indoor air quality, this project's most unique features revolve around its energy efficiency. Water is heated by solar panels and then a greywater heat recovery system ensures that the heat still emanating from used water is recaptured

rather than heading down the drain as wasted energy. Flyash concrete was used again on this project and a large proportion of each house was built with reclaimed materials from other sites.

## Profitable and Affordable

The Koo's Corner project was a success. It reduced the energy needed by the complex while still scoring high on aesthetics and functionality. In the end, the project proved both profitable for the developer and affordable for the owner, all while rebuilding an old auto garage in an urban setting. By the time this project ended, ReSource had established itself as an industry model in green building consulting. The demand for their services has grown significantly since their company's inception only three years ago. Robert Brown and Heather Tremain had seen the opportunity to create a viable business for themselves and to carve out a niche in the west coast building industry.

## Next revolution

There are new and exciting opportunities in green building that will prove beneficial both for the ecosystem and for mankind. While green building is solely a first step towards sustainability, it is entrepreneurs like Heather Tremain and Robert Brown who will be leading the next revolution. Those who do not follow may eventually find themselves as antiquated as the materials and processes they continue to use. ●

## Notes

1. Worldwatch Institute Paper 124
2. EPA Publication – <http://www.epa.gov/iaq/pubs/sbs.html>