

Eco-industrial Zones: Sustaining the wealth of industrial developments

by Peter Mitham

While key areas of Metro Vancouver grapple with a shortage of industrial land — and the consequent loss of businesses and tax revenues to other municipalities — a combination of environmental thinking and industrial-strength know-how is transforming one of Vancouver's oldest neighbourhoods into an eco-industrial zone designed to foster and support local business development. Strathcona, a precinct of heritage homes and aging industrial properties too small to effectively serve the needs of the expanding port, is charting a new and very exciting course for itself.

Recognizing its key position in the city — just east of the downtown core, adjacent to the port, and in the path of pending residential development — Strathcona is pursuing a business model that puts local needs first. Those needs include the standard elements of the triple-bottom line of sustainable development: social, environmental, and economic success.



Emerging eco-industrial activities...

In addition to influencing the way individual lots and the overall area are planned, those pursuing eco-industrial activity seek to:

- *Reduce business impact on infrastructure (such as roads, water supply, stormwater management, wastewater treatment, energy use)*
- *Create more ecofriendly infrastructure*
- *Support green buildings, whether they are new or renovated*
- *Save operating businesses money and enhance their environmental performance by strategically coordinating individual efficiency and by supporting business-to-business networking to add value to 'wastes.'*

Given that Strathcona is built out, the last two will be most important. Even for businesses that are more commercial in nature, there should be opportunities such as pooled delivery services, coordinated training (especially as part of creating green jobs), or blocks that allow businesses to get bulk rates on green products such as biodiesel or technologies such as solar hot water heating.

"Part of it is applying a new face on to the issues that area has and providing some sort of a positive direction to head forward," explains Toby Barazzuol, owner of [Eclipse Awards International Inc.](#) and chair of the Strathcona Business Improvement Association's sustainability committee.

The area suffered through the 1990s following the closure of the Woodward's department store that had helped anchor the Downtown Eastside a few blocks west, but entrepreneurs such as Barazzuol with an interest in sustainable business practices are remaking the area.

The two buildings Barazzuol owns have green roofs and incorporate locally made materials. One of Barazzuol's tenants is [Frogfile](#), which sells environment-friendly office supplies. "We developed this idea based around moving companies towards a greener type of operations," Barazzuol says of the move the sustainability committee is charting. "Understanding and incorporating sustainability is the single best investment that a business can make in its future success."

The sustainability committee is also looking at initiatives the individual members might not be able to offer on their own, such as a recycling network or forum for the exchange of used goods.

When describing what's taking place in Strathcona, Barazzuol makes only one reference to the eco-industrial concept — a fact that belies the low profile eco-industrial development has had in Canada. The concept, however, is not new.

The oldest such arrangement evolved in [Kalundborg, Denmark](#) in the early 1960s, when five local industrial enterprises joined with the local municipality to trade various byproducts from their operations, including steam and heat, water, refinery gas, gypsum, biomass, liquid fertilizer, fly ash, and sludge. The goal is more efficient operations for the partners and a smaller environmental impact overall.

The exchanges in Strathcona highlight the fact that the opportunities aren't limited to industrial byproducts; goods and services that serve and support the needs of the local community are also eligible. The overall goal is a business arrangement that creates a sustainable environment in terms of economic, social and environmental measures.

Strathcona isn't alone in its ambitions; examples of eco-industrial networks exist in almost every province. The path Strathcona's advocates envision for the area is broader than most other projects in Canada, however.

"Unfortunately, a lot of what we've done tends to be piecemeal and very limited in scope," says Ray Côté, founding director and senior fellow at the [Eco-Efficiency Centre](#) at Dalhousie University in Halifax, Nova Scotia. "Eco-industrial park development, or as I like to use the term, ecologically sustainable industrial park development, requires a lot of rethinking about the way industrial parks are planned and built and operated. And we're not quite prepared to take that step."

Recycling networks have been the primary form eco-industrial initiatives have taken in Canada, Côté says, but he notes that green buildings — such as those with [LEED](#) certification — are beginning to make an appearance in industrial parks. But there's also significant potential for low-rise industrial structures with on-site generating facilities that garner power from the sun and wind.

"There's a lot more that needs to be done," he says. "Municipalities are just really scratching the surface in terms of requiring features that conserve resources and so on...If we wanted to, we could pass bylaws and identify guidelines to require developers to pay attention to those things, but it needs to start with the municipalities. And they still need educating."

Indeed, an understanding of the eco-industrial approach is one of the chief obstacles many municipalities face in moving forward with such ventures, says Clay Braziller, who manages business development and marketing for [Eco-Industrial Solutions Ltd.](#), a Vancouver-based company specializing in eco-industrial planning and development.

Eco-Industrial president Tracy Casavant studied under Côté before establishing the firm in 2001. It has worked on several projects for municipalities in BC, and is currently involved with the [TaigaNova Eco-Industrial Park](#) in Fort McMurray, Alberta and [Partners in Project Green](#), a project planned for 27,500 acres surrounding Toronto Pearson International Airport in Ontario. The latter is the largest eco-industrial project currently planned for Canada.

While the attitude of municipalities is improving, Braziller says many aren't clear on the impact eco-industrial developments can have for a region. "It's just a little bit of new thinking that not all the municipalities are familiar with. I think there's a notion that it costs more," he says.

When the net impact of a conventional industrial park is tallied and stacked up against an eco-industrial approach, Braziller adds, many municipalities see benefits in the form of reduced infrastructure and waste management costs. "When



An early TaigaNova Eco-Industrial Park site plan developed by Eco-Industrial Solutions shows a variety of lot sizes, green space, and a storm-water management pond.



A green roof on the Frog File building, one of two eco-industrial projects built by Toby Barazzuol in downtown Vancouver. Green roofs support green buildings, which is one objective of pursuing eco-industrial activity.

municipalities start to look at the bigger picture, they say, "We've got to do something different here. Our community is not getting all the value it should from our industrial park."

The realization also counters the other common objection that requiring adherence to eco-industrial development principles will drive away business. "They're afraid that if they regulate this and say [development] has got to be eco-industrial, they won't be able to sell the land," he says. "It's that commodity thinking again — it's got to be cheap or we won't be able to compete."

That's changing as municipalities face restrictions on growth, whether from competing land uses, greenbelts, riparian setbacks and other limitations. "They're actually starting to understand that there's no more land," he says. "They're starting to understand that industrial land is not a commodity. Once you've built it out, you've built it out."

Additional information regarding eco-industrial development is available through the [Eco-Industrial Development Council](#), an association of eco-industrial stakeholders across North America.

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Burnside is a 1,200-ha retrofitted eco-industrial park (EIP) in Halifax, Nova Scotia operated jointly by the non-profit Eco-Efficiency Center and Dalhousie University. It was initially developed as an industrial park, but over the past decade has begun to transform into an EIP by:

- *adopting development guidelines to maintain a high quality work and natural environment;*
- *exploring opportunities for businesses to cooperate and reduce waste, resources, and costs;*
- *conducting research, development, education, and outreach to increase greener business operations; and,*
- *facilitating material exchange programs to circulate resources and wastes from one business to another.*