

Industrial Park Makeover

By Clay Braziller

Two Canadian developments exemplify new thinking in industrial park design.

In the last 20 years most cities have experienced a flight of businesses from their urban centers to the outskirts, often to what was once wooded or agriculturally productive land. This expansion has been, for the most part, welcomed by cash-hungry municipal councils looking to expand their tax bases.

However a lot has changed in the last two decades. Cheap land rarely exists anymore and the cost of providing municipal services to these industrial sites has continued to rise faster than the taxes they generate. Aesthetically, most industrial parks are dreary places to work and offer little in the way of public access or amenities. Additionally, obstacles such as the rising cost of fossil fuels; the influences of the "green" movement, and a general NIMBY attitude held by many people, and it is easy to see the pressure that municipalities face to do a better job in the development of industrial property.

the community. In practical terms, this means they should not over-burden wastewater systems or create air-quality problems, but they should allow the public to continue to enjoy the open space in some real way. A first approach that many municipalities take to achieve a more sustainable industrial park is to ask developers to construct environmentally friendly, energy-efficient buildings or install more trees. Less obvious, but more effective, especially for a large park, is to consider the impact that the infrastructure has on the environmental footprint of the park.

Traditional infrastructure is designed with a single purpose in mind, whereas a more sustainable design process begins with a much wider scope. For instance, consideration should be paid of how a wastewater system interacts with other planned-development projects, industrial water use or a community's energy plan. Optimizing the location of buildings on the site to reduce truck traffic

and greenhouse-gas emissions is another positive design approach.

The City of Fort McMurray, Alberta—not known for being "green"—is actually a leader in process when it comes to new, innovative

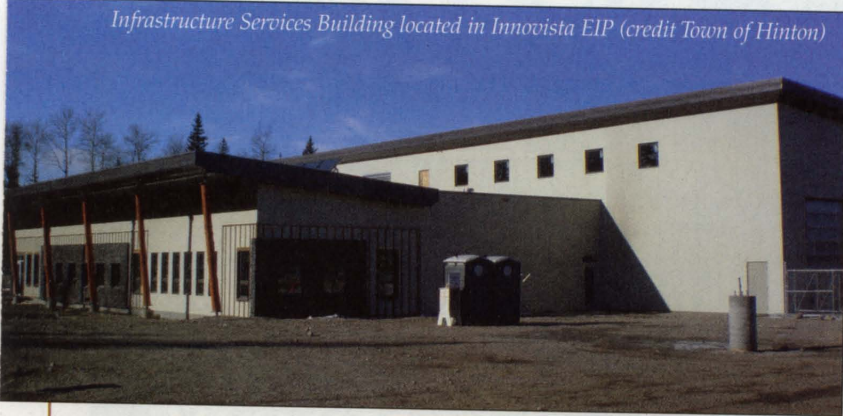
industrial parks. It has taken the concept of green infrastructure and embedded it into the bylaw requirements of TaigaNova, one of Canada's newest eco-



industrial parks. For instance, Taiganova has made allowances for private utilities to be able to provide electric power, sewage disposal, steam and nearly a dozen other services on the site. This planned allowance is integrated into the infrastructure design that has seen the layering of service corridors underneath roads and pedestrian trails.

The development's bylaws also require the use of permeable-paving materials; that all paving materials be recycled; high energy-efficiency cars receive preferential parking and that there be outdoor amenities such as benches, and recreation areas. To minimize roads and truck traffic, the bylaws require the stacking of industrial buildings and joint-logistics facilities. Future pavements will be thinner than traditional roads, while still able to accommodate the large trucks that serve the park. The roads are designed to accommodate a nine-meter-wide utilidor (five meters within road and four meters within an easement along lot fronts), to future-proof the site for eco-industrial opportunities such as district energy or by-product synergies between businesses.

Infrastructure Services Building located in Innovista EIP (credit Town of Hinton)



At a very high level, industrial parks have to meet the needs of the businesses occupying them, while making a positive financial and social contribution to



Above: Illustrated Concept Plan of Innovista Eco-Industrial Park
 Left: Illustrated concept map of the TaigaNova Eco-Industrial Park.
 Illustration courtesy of Eco-Industrial Solutions Ltd.

Typically not found in industrial parks, TaigaNova actually mandates the installation of sidewalks and pedestrian trails separated from the road ways. To deal with stormwater and snow melt surface runoff management is integrated into landscape design including a retention pond that is designed to allow for the distribution of stormwater or wastewater to replace potable water in certain industrial applications.

In the case of TaigaNova, these are only a handful of the infrastructure improvements. A complete description of the bylaws can be found at www.taiganova.com/site/docs/bylaw-amendments.pdf

Another Albertan eco-industrial park success story is Innovista, located in Hinton a small town outside of Jasper National Park, where fifty-six percent of the

industrial park area will retain its trees and include natural walking trails. In addition, only seven percent of the development will be covered by roads as compared to twelve percent in a typical industrial park.

While Innovista has many similarities to TaigaNova it also makes use of an innovative small bore sanitary (SBS) sewer system, designed by Clearford Industries, a company based in Ontario, Canada. With the SBS system, an individualized primary-treatment facility—a clarifier tank—is located on each property. The tank separates the solid and liquid components of the sewage. Once separated, a predominately solids-free liquid effluent is directed by gravity through small-diameter pipes to the final treatment plant.

The patented sewer system uses fused-joint, high-density polyethylene (HDPE) for its collection mains, laterals and clean-out access points. The use of HDPE pipes allows the company to utilize no-dig, trenchless technology to install mains and laterals, which minimizes surface and subsurface disruption during construction.

As we move into an era of environmental, economic and social awareness, industrial parks will still be necessary. Spurred by the challenges of rising energy costs, coupled with the guidance of modern bylaws and zoning, the industrial park can receive a well deserved makeover and take their place as financially, environmentally and socially positive public amenities. **SLDT**

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