

## Building for the future

Toronto developers take climate responsibility to brand new heights

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Published: Tuesday, April 22, 2008



Most condominium buyers in the greater Toronto area are not thinking about the environment when they are shopping for a unit, but a recent shift to green building by many developers means that many condo owners will have some pretty serious green cred in the next few years.

Increasingly, developers are adopting environmentally friendly features such as green roofs, smart lighting systems and energy-efficient designs. They are looking for corporate bragging rights and betting that buyers will come to embrace their green condos. Even if buyers don't know or care that their building collects and reuses rainwater, developers figure they can sell on the fruits of their efforts, namely significantly lower energy and water bills.

"Our experience is that the buyers like it but they are not really prepared to pay for it," says Jamie Goad, an architect and partner with DHD Development Corp., which has been building on Toronto's historic Distillery district since 2001.

Nestled just north of the city's railway hub, the Distillery may be Toronto's best-kept green secret. DHD's greatest green accomplishment is likely its most overlooked: restoring the Victorian-era buildings from the Gooderham and Worts distillery.

The project opened in the spring of 2003 with 200,000 square feet for commercial space and has been steadily adding to that space as it has continued to restore buildings on the site. It is now close to opening its first residential building, called Pure Spirit, and is planning two new condo buildings for the east side of the property, a 40-storey building dubbed Clear Spirit and the adjacent 35-storey Gooderham tower.

The heart of DHD's green development is a planned 2.8-megawatt, gas-fired co-generation plant that it is currently negotiating to operate with Toronto Hydro. Having a power plant on-site brings many advantages: Waste heat can be used to create domestic hot water (about 30% of the energy demands for such a project) and, strange as it sounds, that waste heat can be used to power a massive absorption chiller for summer air conditioning. DHD estimates the co-gen plant will provide power that is 40% cleaner than that delivered by the grid and will offset 2,200 tonnes of CO<sub>2</sub> annually. (Residents will also get a 10% cost reduction on energy delivered by the power plant).

DHD's engineers are also exploring novel features of the Distillery lands that could be translated into environmental windfalls. The property boasts a molasses pipeline that dates back to the time the distillery imported molasses from the East Indies. DHD is studying a scheme to bring lake water north to the distillery through that pipe that could power heat pump plants. "The heat pump is kind of like a refrigerator, you have to put some electricity into it to either raise the temperature or lower the temperature a little bit, but you get about 60% of the energy for free," Mr. Goad notes.

The Distillery also boasts a 400,000-gallon reservoir-- once used for firefighting -- that the developer wants to use as an "energy sink," Mr. Goad says. "At night, when hydro rates are low, we can chill that and draw cool out of that during the day when electricity rates are higher and when demand is higher." The new buildings will also require a concrete barrier to the railway lands. DHD is looking to lace the south-facing wall with glycol-filled piping and create a solar heat sink for hot water.

The newest Distillery buildings will qualify for LEED certification because of the lands themselves. Even the paving bricks will help. DHD imported 400,000 century-old bricks from Cleveland to replace many of the asphalt roads on the site. The pavers don't soak up the summer sun like asphalt does, thereby lessening the heat island effect, and, unlike blacktop, allow rainwater to percolate into the ground.

The 800 units in the two new Distillery Pure Spirit buildings will range in size from 500 sq. ft. to 1,200 sq. ft. All the units will have eight-foot-wide wraparound balconies. The greatest treasure for buyers on the Distillery site may be right under their feet. The developer lucked into a fortune of 19th-century hardwood when it purchased the property.

The environment is also a major part of the corporate strategy of TAS DesignBuild's M5V condo tower, named after its postal code and set to occupy the corner of King and Spadina. "We have made a corporate commitment that every building we do on a move-forward basis, M5V being the first one, will be a LEED-certified building," says Mazyar Mortazavi, an architect and the principal of TAS DesignBuild.

With occupancy expected for 2010, getting certified as a LEED or green building means diversion of as much construction waste as possible away from landfills, using recycled concrete and sheathing the building in a high-efficiency glass curtain.

Green features include six-foot balconies to provide shade in summer and winter solar gain, dual-flush toilets, low-flow faucets, Energy Star appliances, motion sensor-controlled lighting and individual air-quality management. Likely to become the new standard, these energy recovery systems seal off units from the hallways -- unlike older buildings, which force "fresh" air underneath the entrance door.

M5V's environmental features that occupants are unlikely to notice include the use of low-emission flooring, sealants and adhesives, zero-emission paints, rooftop rainwater collection, water-efficient landscaping and three mechanical rooms. Breaking with the practice of one massive mechanical hub, the three-part set-up allows for more efficient delivery of critical systems, TAS says.

Owners can also act as their own conservation authorities with individual water metering and programmable thermostats.

"Not only have we provided individual metering but all of our fixtures are low-flow fixtures, which means that you are not getting compromised pressure but the water that flows out is reduced," Mr. Mortazavi says. "Not only are the cost savings there, but the environmental impact as well."

The TAS principal describes the tower's units as "open-concept-designed, wide and shallow units," which deliver natural light. Rather than focusing on upgrades, M5V boasts amenities such as a five-appliance, Italian-designed kitchen as a standard.

Toronto's Regent Park is probably the last place to expect LEED Gold residential towers, but the inner city neighbourhood will soon boast three. Developer Daniels Corp., long an environmental pioneer (it built the province's first R2000 subdivision back in the 1980s) is handling phase one redevelopment of Regent Park. The company is putting up three towers, two as subsidized housing and one as a private condo project.

The buildings will be an estimated 45% more efficient than comparable towers, says Martin Blake, Daniels' vice-president of project implementation. The tower that will be offered to the public, the 10-storey building called One Cole, will feature 84 units. Like the other buildings, it will boast a green roof, heat exchange ventilation and a central energy plant.

Green living is also a major selling theme for the Benvenuto Group's 21-storey condo tower in the Yonge and Mt. Pleasant area. The 207-unit project features individual metering and dual-flush toilets and rainwater collection. The company expects the units will use 30% less energy and water than comparable condo units. But the "greenness" of 83 Redpath goes beyond what's inside, says Mitch Abrahams, Benvenuto's president. He notes that the project will replace a long-neglected asphalt parking lot. "[The parking lot] was

just an eyesore and from an environmental perspective, a heat sink."

Rather than build to LEED's standards, Beneventuo utilized the Canadian Green Globes environmental design and management tool, which Mr. Abrahams says offered the tower's creators greater flexibility because it was Web-based. "The nice thing about this is the architects, the engineers, the developer can get on this thing and see how changes affect the footprint of this building."

Smaller, well-designed suites also contribute to the project's overall green character, Mr. Abrahams says. They range in size from 540 sq. ft. to 1,300 sq. ft. and the developer has paid careful attention to common spaces such as a fitness club and party room and ground-floor yoga studio.

83 Redpath is expected to be completed in 2009.

Farther afield is Liza Homes' Whitby, Ont., development. The Toronto bedroom community's Lake Ontario Marina is the site of what Liza Homes calls the country's first LEED town home community. The 227-unit project will feature Energy Star appliances, high-efficiency heating and cooling systems, energy-saving lighting and water-saving showers.

Units range from 520 sq. ft. to 1,700 sq. ft. and buyers are expected to vary as well. "We have the empty nesters who are downsizing and want to be near the water and the first-time home buyers and young professionals as well, because we are right near the GO station," says Maryam Mansouri, a vice-president with Liza Homes.

The developer will begin selling units this summer.

Outside of the town houses, Liza Homes is focusing on green construction methods. It is implementing a waste management system to recycle construction waste, will utilize green materials and is paying particular attention to surface water management.

Liza will use permeable paving materials and expects more than 50% of the site will allow water to percolate directly into the ground. To minimize the heat island effect, all vehicle parking will be underground.

"It's definitely more expensive, it's definitely adding cost to us, but it is adding value to the project as well," Ms. Mansouri says.