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What does 'green' mean?

A committed green builder explains

The presentation centre for TAS's M5V condos, shown here, was the first LEED-registered sales office in North America.

Sustainability, green, eco-friendly – these are buzzwords that permeate every aspect of our consumer market, from detergents and clothing to food and alcohol. Our homes and work environments are no different; from the materials that are used to the energy that is consumed, green is at the top of our minds – as it should be.

But what does it mean to live green or build sustainable buildings? First and foremost, we believe it is a sensibility, one that is driven by a keen awareness of the world around us and the impact that our actions have. It starts with the basics, such as turning off the lights, fixing a leaky faucet and not leaving the water running. These may sound trivial, but living green starts by acting green in the simplest ways.

With a growing consumer awareness that is translating to consumer demand, there are more choices being offered to people who are making decisions about how and where they want to live. As a

result, the number of green condominiums being planned and marketed is growing.

Typically positioned as LEED (Leadership in Energy and Environmental Design) registered, these projects have been designed to achieve energy performance standards that are better than the benchmark national average set by National Resources Canada (NRCAN). But, as with any emerging paradigm, questions arise about the implications of the change, its actual outcome and benefits and even validity of the proposition.

With growing consumer skepticism about the commitments made by developers, the onus is on the development community to explain and answer what offerings they are providing as part of their green strategy.

A project that is LEED-registered is not guaranteed to become certified. Developers may register their buildings with the intent of certification, but in order to become certified, the building has to

be designed and built to specific standards and perform within the defined guidelines.

So what makes a building green and eligible for LEED? Reducing a building's environmental footprint is most directly tied to its energy consumption; hence, a building's mechanical systems play the biggest role. A prerequisite for all green buildings is a mechanical system designed with Heat Recovery Ventilation (HRV). HRV systems allow for the transfer of latent energy between exhausted air and fresh air.

Simply put, in a traditional system when air is exhausted from a home (when you turn on your bathroom fan, for example), the air is dumped directly outside. With an HRV system (an alternate system is an ERV, Energy Recovery Ventilator), the exhausted air passes through a unit that consists of a pipe-in-pipe set-up. The exhaust air passes through the inner pipe, and the fresh air is drawn in through the outer pipe. As a result, the temperature of the

air being exhausted adjusts the temperature of the fresh air being drawn in. The fresh air adjusts closer to the desired interior temperature, and the amount of energy required to condition the fresh air is reduced.

Think of our Canadian winters. If the interior temperature of a home is 23 C and the exterior temperature is -5 C, the difference between these is 28 degrees. With an HRV system, the cold air that is drawn in passes the warm that is being exhausted, warming it by several degrees before it enters the house proper. Less energy is then required to warm the air to the desired 23 C.

In addition to the HRV system, the building design plays a significant role. Considerations that must be made include the percentage of solid area versus glazed (window) area on the elevation, as well as the orientation of the building. That is to say, the amount of direct sun entering the space will have an effect on energy demand.

The energy consideration is just

the beginning. LEED buildings must also take into consideration water consumption, materials used and, most importantly, the processes that are engaged to build a building to qualify it for certification.

Mazyar Mortazavi is a principal of TAS DesignBuild, developer of the M5V condominiums in Toronto.

TAS DesignBuild is a title sponsor of the Green Living Show, on all this weekend at the Direct Energy Centre, Exhibition Place. As a corporate policy, TAS DesignBuild is committed to developing only green buildings. A model of eco-friendly living from the onset, M5V condominiums was one of the first buildings in Toronto eligible for LEED certification, and the presentation centre was the first LEED-registered sales office in North America.

For more information, visit the TAS DesignBuild booth at the Green Living Show or go to www.tasdesignbuild.com.