

Open Letter to Vaughan City Council – Beyond Green

Feb 3, 2010

Tall buildings have become a fixture on the urban landscape. These buildings cluster together a large concentration of people within walking distance of each other and within proximity of major public transportation systems.

High-rise sustainable buildings can integrate all disciplines of architecture and engineering into the built environment including exterior wall, glazing, structural framing systems, ceiling systems, lighting, ventilation, exit strategies, building mechanical systems, water recycling systems and fundamental space allocation criteria.

Also, these buildings can afford underground parking at a reduced standard than single-family homes, significantly reducing the heat island effect of roads and large surface parking lots. These underground garages offer the perfect area to store storm water on-site – avoiding damaging runoff – and offer the ability not only to collect it but to recycle it.

Many high-rise buildings offer the ability to be vertically mixed-use, i.e., retail at grade, second level and above office commercial space, typically in a podium, and the residential and or hotel uses in a point tower above. Hence, they typically reinforce the idea of live and work in the same neighborhood, which again diminishes the reliance on and use of the car as energy consumption and polluting force.

Q: What is considered a true tall building?

A: To create enough critical mass and density, as well as point tower built form and slenderness ratio – width to height factor – I feel a tall building is most efficient when it starts at or above the 30-story level where construction methods and structural engineering technologies are more stringent and require more complex solutions – a higher level of engineering than standard residential trades.

Q: What are some benefits of a tall green building?

A: Benefits over and above enhancement to the environment include: reduced water consumption costs; reduced impacts on local and regional sewage systems; enhanced landscaping and water features within projects, especially where water conservation is key; reduced energy costs to run the project; eliminating storm water runoff and potential pollution into neighboring properties.

Q: What are the inherent efficiencies of tall buildings?

A: Some examples include a 30-story building of 300,000 square feet that could house up to 300 residential units on one acre of land. Three hundred residential single-family homes would require 100 acres of land. The roof is the prime source of energy loss in a building, a 30-story building has one roof, and 300 single-family homes have 300 roofs.

Similar arguments apply to furnaces, one central system capable of drawing excess heat from one zone and distributing it to the cool zone saves significant energy consumption versus 300 furnaces. A 300-unit single-family subdivision equally requires many more roads, sidewalks, sewers, hydro lines, gas lines, light standards, fire hydrants, etc., whereas in one tall building it is all housed in one efficient location. The critical mass and buying power of creating one central system for heating, cooling, storm water management and water consumption brings the cost down per unit in a high-rise building making the sustainable development much more cost-effective than in a single family home.

Similarly, point towers create the least amount of sun shadowing for the highest density achieved.

Education Is Key

The bottom line to this idea of building tall green buildings begins with education, promoting sustainable projects to the clients and to the cities. Education is within the realm of legislators-local provincial and federal-in promoting and rewarding sustainable mixed use smart growth design.