

Could this happen in Ontario?

You may have heard about the case of Ms. Robin Speronis of Cape Coral, Florida, who chose to disconnect her house sewer, water service pipe, and her electrical supply. Living off the grid is frowned upon in Cape Coral and Robin has already spent 5 weeks in jail on charges of animal abuse that were later dropped (suspiciously). By 2014, the City of Cape Coral had placed water, sewer and two code enforcement liens of about \$13,000 against her property.

Ontario's Building Code also takes a dim view of situations where people live off the grid. The prescriptive requirements of the Building Code state that every house must be connected to the electrical grid, if it is available on the street. Similarly, every house must have a plumbing system if a water supply is available.

Regardless of whether or not you agree with Ms. Speronis' approach to living off the grid, her case brings into focus the question of whether the energy, water, and sewer grids are the only viable options, especially in the future.

I recently replaced the majority of the light bulbs in my house with LED bulbs that work very well on only 12 volts DC and use less than 20% of the power consumed by incandescent bulbs. Since my computers, LED monitors, smoke alarms, CO alarms, and other electronic equipment work on 12 volts DC or less, it would not be unreasonable to supply only 12 volt DC power to most rooms in my house, other than, perhaps, the kitchen, laundry and the furnace room. Given the current research into renewable energy and energy storage systems, one would not be surprised if, in the near future, houses could be habitable without a connection to the electrical power grid. There may no longer be a need for a 120/240 volt AC electrical power supply. It may make more sense to standardize on a 12 volt or a 48 volt DC power supply.

If advances in technology enable an economical, zero energy, off the grid solution, the Building Code's prescriptive requirement for houses to be connected to an electrical power grid may become an anachronism.

Much of our water and sewer infrastructure and our buildings are designed and built on the premise that a water supply grid delivers water to each building and a gravity drained sanitary sewage grid transports untreated sewage away for treatment at a central location. This model is reflected in the requirements of the Building Code. However, current technology developed in Ontario is capable of producing clear tertiary treated effluent that is free of solids and that can be pumped into much smaller sewer pipes or recycled on-site. Changes in our society's views of the economic, political, and ethical advantages of recycling may favour more on-site treatment and recycling.

Ontario has an objective based Building Code, which means that the prescriptive requirement for a connection to the grid is only one acceptable solution and that other equivalent alternative solutions are acceptable.

Unfortunately this alternative method of compliance, which is clearly permitted in the Building Code, is rarely used as it has proven to be cumbersome, costly, time consuming and problematic, given that building officials can only issue permits for buildings that are proven to comply with the Building Code.

Ontario's building regulatory system stifles innovation because there is no legal way to introduce or test a new technology or material in a building in order to measure its real life performance.

In order to encourage innovation, it is time to create a new class of building permits for experimental components in buildings. This has the potential of creating research jobs in Ontario and making the province a leader in innovation. I had advocated for experimental permits while I was the code development manager in the Ministry of Municipal Affairs and Housing but this new and innovative concept never found favour with my risk-averse legal, policy, and management colleagues.

About the author: Alek Antoniuk is best known for co-ordinating and managing the technical development of the 2006 and the 2012 editions of the Ontario Building Code. He also played a lead role in managing the code advisory services of the Ontario Ministry of Municipal Affairs and Housing since 1989. He is a building code consultant, a policy advisor, and the publisher of a web site for information about construction codes at: www.codenews.ca .