



Civil Engineering  
UNIVERSITY OF TORONTO

June 14, 2013

Planning and Growth Management Committee  
Toronto City Hall  
100 Queen St. W.  
Toronto, ON, M5H 2N2

To the Committee,

We are members of the Sustainable Building Group in the Department of Civil Engineering at the University of Toronto. Our most recent building energy-use research, in both the single-family home and multi-unit residential building sectors, has shown tremendous potential for reducing the energy consumption of existing buildings, even buildings constructed quite recently. These studies not only reveal the vital importance of energy retrofitting existing buildings, they also demonstrate the importance of designing and constructing new buildings to be low-energy. Retrofitting buildings is far more costly, and therefore economically wasteful, than building better initially. Further, with every new building constructed, we are effectively determining how carbon intensive our future will be. Additionally, our analysis of the 2012 Ontario Building Code updates shows that it is economical, now, from a societal perspective, to require even more stringent energy provisions than exist in the current Ontario Building Code<sup>1</sup>.

With the introduction of the tiered Toronto Green Standard, Toronto became a North American leader in building energy efficiency - a model for others, including Ontario, to follow. However, since the 2012 Ontario Building Code update, Toronto has effectively lost this leadership position. Following our review of the “Development of Energy Efficiency Requirements for the Toronto Green Standard” and the “Cost/Benefit Analysis of Proposed Energy Efficiency Requirements for the Toronto Green Standard” reports by Sustainable Buildings Canada, undertaken on behalf of City Planning, we wish to express our unqualified support for increasing the minimum energy performance standards for new construction in Toronto.

We fully support the recommendations in the Sustainable Buildings Canada reports, specifically that the Tier 1 standard be increased to 15% better than OBC 2012, and the optional, incentivized Tier 2 standard be raised to 25% better than OBC 2012. However, we believe that *energy intensity*, a performance-based metric for achieving the City’s energy and GHG emission reduction goals, should be eventually be adopted by both the Ontario Building Code and the Toronto Green Standard. We hope that the implementation of this type of metric will be investigated by the Chief Planner and Executive Director, City Planning and discussed in the recommendations to be presented in 2014, as per the Staff Report dated May 23, 2013.

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<sup>1</sup>Di Placido, A.M., Pressnail, K.D. and Touchie, M.F. “Building Better Homes: The Economic and Environmental Case for Building Better than the Ontario Building Code” *Energy and Buildings* (Draft submitted May 2013)

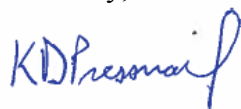
By using energy intensity, or the annual energy use per square foot of building, designers are afforded the freedom to trade-off between envelope and HVAC performance while still achieving a high-performance building. To ensure that the goals of this approach are met, post-occupancy or actual building energy performance should be tracked and reported. By gathering such data, the accuracy of the energy model submitted at the time of permit application can be verified. Also, the availability of this data will allow for more appropriate goal-setting in the future. In the meantime, given the current “As-Constructed Energy Reports” in Tier 2 of the TGS, this requirement could also be extended to Tier 1 so that energy consumption data could start being gathered from a much larger building population.

It is our understanding that the National Energy Code for Canada is slated to adopt energy intensity targets in the 2015 release of this code. For Toronto to remain a building energy efficiency leader, the City should embrace these performance-based energy intensities. An important first step would be for the City to request that the Province adopt energy intensity-based targets as part of the next Ontario Building Code update.

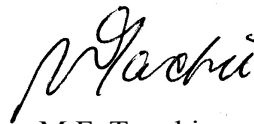
In short, we truly hope that Toronto will continue to lead the way by advancing the Toronto Green Standard. The leadership steps taken so far have been influential; in the area of building energy efficiency, Toronto has made great strides and led the Province of Ontario in improving our energy standards. However, Toronto should not stand down! We still have a long way to go with over 50% of the City’s GHG emissions coming from commercial and residential buildings<sup>2</sup>. Toronto is in a unique position of influence. By continuing to build on the strengths of the Toronto Green Standard, we can ensure our buildings are less of a burden on the people of today *and* tomorrow.

While we could write much more, we hope that you find our brief letter of support for improving the energy efficiency standards in the Toronto Green Standard, helpful. Should you wish further comment, or should have any questions, please do not hesitate to contact us.

Sincerely,



K.D. Pressnail  
Associate Professor  
Department of Civil Engineering  
University of Toronto  
35 St. George St  
Toronto, ON, M5S1A4



M.F. Touchie  
Ph.D. Candidate  
Department of Civil Engineering  
University of Toronto  
35 St. George St  
Toronto, ON, M5S1A4

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<sup>2</sup> City of Toronto, “Change is the Air” March 2007, [Online] Available:  
<http://www.toronto.ca/legdocs/mmis/2007/ex/bgrd/backgroundfile-2428.pdf>, pp 5