

Toronto STAFF REPORT

October 4, 2005

To: Policy and Finance Committee

From: V. Ann Borooah, Chief Building Official and

Subject: “Green Building Code”: Energy Efficiency Provisions in the Ontario Building Code

Purpose:

The purpose of this report is to respond to the Council request that the Chief Building Official report on the progress of requesting that the Provincial government implement a "Green Building Code".

Financial Implications and Impact Statement:

There are no financial implications associated with this report.

Recommendations:

It is recommended that:

- (1) Council convey its support for the recently announced Ministry of Municipal Affairs and Housing initiative to complete the technical research necessary to introduce Building Code requirements that would introduce new mandatory requirements to increase the level of energy efficiency for both small and large buildings beyond the current Code requirements and other “green building initiatives”.
- (2) Council request at a minimum, the province update the version of the referenced ASHRAE/IES 90.1 standard and/or work towards adopting the proposal in the federal Kyoto plan to require that new commercial/institutional construction meet standards that are 25 percent higher than the current Model National Energy Code for Buildings.
- (3) Council further encourage the Minister, based on technical research currently underway by the Ministry of Municipal Affairs and Housing, to amend the Ontario Building Code to facilitate the broader use of “green technologies” in new building

construction with the objective of increasing energy efficiency and supporting the principle of energy conservation.

- (4) Council convey its support to the Deputy Minister, Municipal Affairs and Housing of his recommendation to the Canadian Commission on Building and Fire Codes that it not discontinue the 1997 Model National Energy Codes for Buildings, but revise the standard.
- (5) This report be forwarded to the Planning and Transportation Committee for information.
- (6) The appropriate City Officials be authorized and directed to take the necessary action to give effect thereto.

Background:

At its meeting of November 30, December 1 and 2, 2004, City Council amended Policy and Finance Committee Report 9, Clause 11 “2004 Status Report – Implementation of the Environmental Plan Recommendations by adding that the City of Toronto:

- 1) Again request the Provincial Government implement a Green Building Code, and the Chief Administrative Officer be requested to report in six months on the progress of this matter; and
- 2) Incorporate energy efficiency and conservation objectives into the construction of new buildings in the City that are higher than are currently required by the Ontario Building Code.

At its meeting of April 12, 13 and 14, 2005 Council directed that the Chief Building Official and Executive Director, Building, in consultation with appropriate City staff, be requested to report to the Policy and Finance Committee on ways in which the City can further promote environmentally sustainable development for all Divisions, Agencies, Boards and Commissions.

Ontario Building Code, 1992

The Ontario Building Code Act and the Ontario Building Code (OBC) set out uniform provincial standards for new construction. The province is responsible for code development and administration, while municipalities are responsible for enforcement.

The OBC contains the highest energy efficiency standards in Canada. Resource conservation and environmental integrity are identified as purposes of the Code in the *Building Code Act, 1992*. Specific energy efficiency requirements for both small buildings and large buildings are identified in the OBC along with other requirements that support the principle of energy conservation.

Comments

According to recent data from Natural Resources Canada, buildings including housing currently account for 30 percent of energy end use and 27 percent of greenhouse gas (GHG) emissions. Conservation measures are often cited as the primary way end users can reduce GHG emissions and overall energy use.

Currently, there is support and interest at both the federal and provincial government for regulatory changes to improve the energy efficiency of new construction, evidenced by the federal government moving forward on its Climate Change Action plan and the Ontario government commitment to reduce peak electricity demand by 2007. Through technical research that is currently underway, the province is considering changes that could be made to the Building Code to improve the energy efficiency of buildings. At the federal level, the Canadian Commission on Building and Fire Codes is now considering revising the 1997 Model National Energy Code for Buildings, a standard referenced by the province in the Building Code.

As the *Building Code Act, 1992* currently prohibits municipalities from setting standards that go beyond the minimum requirements of the OBC, the timing is appropriate for Council to provide its support for the provincial and federal initiatives underway that are intended to increase the energy efficiency of new building construction.

Ontario Building Code Amendments

The Ministry of Municipal Affairs and Housing has recently announced that it is considering changes that could be made to the Building Code to improve the energy efficiency of buildings with the goal of reducing electrical consumption and GHG emissions. The Ministry has issued a request for proposals to research potential changes to mandatory code requirements and remove barriers to the use of emerging energy efficiency technologies. It is recommended that Council write to the Minister of Municipal Affairs and Housing to support amendments to the OBC that would facilitate improved energy efficiency for buildings covered in the Code.

The Code currently contains prescriptions for the energy efficiency of small residential buildings and references two standards, ASHRAE/IES 90.1-1989 and the 1997 Model National Energy Code for Buildings (MNECB).

The American Society of Heating Refrigerating and Air Conditioning Engineers (ASHRAE) is an international membership based organization that developed an energy efficiency standard (90.1-1989) that is referenced in the 1997 edition of the Ontario Building Code. Most building permit applications the City receives are designed to the ASHRAE standard, rather than the MNECB standard.

The standard has been revised twice (2001 and 2003) since the 1997 edition of the Code. Many jurisdictions in the United States are now referencing the revised version of the standard. It is not, however, certain whether and to what extent the new standard would improve energy efficiency in Ontario.

At its meeting of June 24, 25 and 26, 2003 Council, adopted the recommendation contained in that report, “Response to the Ontario Code Consultation” that the “Ministry of Municipal Affairs and Housing be requested to consider, at minimum, updating the version of the referenced ASHRAE/IES 90.1 standard and to work towards adopting the proposal in the federal Kyoto plan to require that new commercial/institutional construction meet standards that are 25 percent higher than the current Model National Energy Code for Buildings”. It is recommended that Council reiterate this request to the Minister of Municipal Affairs and Housing as a minimum.

While the proposed Code amendments included in the 2003 consultation did not include any measures to improve energy efficiency in the OBC, the interest in incorporating energy efficiency measures in new construction has expanded. As a result, there is growing interest in “green” technologies such as solar power systems, green roofs and wind turbines which are often installed or incorporated into new building design. Expanding the enabling provisions in the OBC may facilitate the broader use of “green” technology in new construction.

Model National Energy Code of Canada for Buildings, 1997

The second energy efficiency standard prescribed in the Ontario Building Code is the 1997 Model National Energy Code of Canada for Buildings (MNECB). Similar to the recent attention to the energy efficiency provisions of the OBC, there is renewed interest at the federal level in updating the MNECB.

In 1997, the Canadian Commission on Building and Fire Codes (CCBFC) released the MNECB. The CCBFC develops and maintains six of Canada’s model construction and fire codes and oversees the work of several standing committees, special purpose committees and task groups.

The MNECB provides economically justified thermal performance levels based on regional construction costs, energy prices and climate. Ontario and the City of Vancouver are the only jurisdictions that have adopted the MNECB as alternatives to achieving energy efficiency.

The current version of the MNECB was developed in the early 1990s and has not been updated to reflect innovations in technology, changes in construction practices, energy cost structures and the cost of materials. As a result, the MNECB is becoming increasingly difficult as a benchmark for good practice.

In August, 2004 the Chair of the CCBFC informed provincial and territorial Deputy Ministers that the Commission did not intend to update or maintain the model national energy codes as a result of the lack of acceptance or adoption across Canada. The Deputy Minister of the Ontario Ministry of Municipal Affairs and Housing requested that the CCBFC not discontinue the MNECB. He stated that the decision not to update the Codes presents a missed opportunity to develop national level energy requirements that could be used as a guide by jurisdictions that are interested in resource conservation and energy efficiency.

At its meeting in June, 2005, the CCBFC discussed the future of the model national energy codes. Ontario representatives and the Chief Building Official (representing the City’s position)

re-iterated the need to update the documents as a basis for further increasing energy efficiency in new construction. The Chief Building Official reinforced that MNECB was the best standard to pursue to increase energy efficiency from the current levels.

The Commission decided to support updating the technical provisions of the MNECB subject to financial support from Natural Resources Canada (NRCan) and deferred consideration on whether it would continue as a “progeny” document for the model building and fire codes, as energy efficiency is not within the scope of the model national codes.

A “progeny” document is designed to account for situations in which broad consensus has not been reached as to whether an issue should be controlled by regulation, but where there is sufficient agreement that having model national technical requirements would be beneficial. Regulatory authorities, therefore, have these codes available should they decide to regulate in the subject areas covered by the codes (as in Ontario), but can ignore them if such regulation is not part of their government’s agenda (other provinces).

At the June CCBFC meeting, Ontario advised that they will likely move forward with an update to the Ontario Building Code in the near future, whether the MNECB is updated or not. There have been no further meetings on this issue at the national level. The Chief Building Official and Executive Director, however, will continue to monitor the process and advise Council further when the updated standards are available for comment.

Conclusions:

The timing for increased energy efficiency measures is positive. The province has indicated that it is interested in potential changes to the Ontario Building Code to improve the energy efficiency of new construction and remove barriers to the use of “green” technologies used in new buildings. The Ministry of Municipal Affairs and Housing is proceeding with the research necessary to support these changes as it has the appropriate technical and policy capacity. At the federal level, there is support for updating the 1997 Model National Energy Code on Buildings.

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