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Canadian
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Association canadienne
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May 25, 2010

Bruce Clemmensen, Chair
Canadian Commission on Building and Fire Codes
c/o Anne Gribbon, Secretary
Canadian Codes Centre / National Research Council
Building M-23A
1200 Montreal Road
Ottawa, ON K1A 0R6

Dear Mr. Clemmensen:

I am writing with regard to the National Energy Code for Buildings (NECB) now that the main elements of the new Code have been established in preparation for the public consultation.

1. Thermal Transmittance and Fenestration to Wall Area Ratio (FWR)

CHBA has already expressed its concerns about the excessive thermal transmittance requirements, including their potential negative impact on the durability and service life of the housing stock.

At its meeting last week, the Standing Committee on Energy Efficiency in Buildings reduced the limiting fenestration to wall ratio (FWR) from 40% to 30% for most of the populated regions of the country in order to reduce what they consider to be an excessive trade-off option for insulation in big box stores and other low fenestration occupancies. This decision makes the prescriptive requirements even more stringent in buildings where the market demands a larger percentage of fenestration, such as in apartment buildings.

The lower FWR has the additional effect of denying the use of the prescriptive path to a large proportion of multi-unit residential buildings. The computer tool needed to use the trade-off path has not yet been developed but even if it lives up to its billing as simple and straightforward, it may still require the involvement of additional consultants and result in more complexity in obtaining approvals. The Standing Committee should be asked to retain the simple formula now in the MNECB'97 for the trade-off path (using U-value times Area (UA) for each trade off) until there has been adequate experience with the future software product.

In order to deal with big box stores without making the requirements for multi-unit residential buildings prohibitive, the occupancy categories for these large low fenestration buildings could be dealt with separately and the FWR restored to 40% for the remaining occupancies. For those concerned about precedent, the lighting requirements in the new NECB make a series of distinctions based on occupancy type. Adherence to the goal of having a single category for all building types should not trump having realistic requirements.

Even with the FWR restored to 40%, the proposed requirements for thermal transmittance would remain onerous. There has been insufficient attention paid to the implications of these requirements on constructability and there is little to no experience in the industry in how to build at these levels of thermal performance. Examples of the resultant wall sections should accompany the public consultation documents to help focus the review.

2. Cost Information

The information on cost implications provided for thermal transmittance is inadequate and needs to be enhanced prior to consultation. The draft proposed change forms simply state that payback is “well within their estimated life expectancy” and then link to the consultant report. This report compares the cost of envelopes (roofs, walls, sub-grade elements) built to the proposed prescriptive requirements with those components built to a “baseline” case. This “baseline” was developed by the Building Envelope Task Group without an objective survey. Anecdotal experience is not a credible basis for developing this code.

It is standard practice to base the cost analysis of a new requirement on the cost of the current requirement and there is no reason why this should not apply in this case. The requirements in the MNECB'97 were the minimum requirements in Ontario until 2007. They are also a more accurate reflection of current practice elsewhere than the so called “baseline” invented by the Task Group on Building Envelopes.

More is needed than simply comparing the costs per square metre of wall or roof area. The impact of the proposed changes, both individually and cumulatively, on overall building cost is essential to the assessment of the proposed new code. This information should be evident and accessible.

We know from the consultant report that the payback is beyond what any homeowner or business owner would consider reasonable, regardless of what assessment tool is used. For example, the payback for masonry veneer steel stud wall assemblies appears to range from 15years to 40years depending on location and materials to as much as 300years for curtain wall assemblies.

What we don't know is the impact on first-time costs which will determine, for example, the number of households who will no longer be eligible to purchase a condominium. The impact on affordability should be taken into account in making these decisions.

While the capital cost implications are unknown at this stage, having this information prior to the public consultation would allow reconsideration and adjustment. Once the changes go to public consultation, it will be impossible to adjust the requirements without a second consultation which is not possible, apparently, within the time frame already committed to by the Commission.

3. Air Barrier Requirements

Contrary to the advice from the CCBFC Executive Committee, the Standing Committee did not consider the readiness of the industry to implement a requirement that air barrier systems (as opposed to components) would have to demonstrate conformance with an appropriate standard. The policy direction from the CCBFC Executive was not mentioned once during the long deliberation on this topic at the Standing Committee meeting in May.

The Standing Committee did receive a formal presentation on why this requirement is premature and ill-considered. Having rejected, or more accurately ignored, the compelling case presented to them, the Standing Committee is well positioned to dismiss similar comments that will be received during the public consultation. The Standing Committee will simply say that there is no new information and will reject the comments as non-persuasive. Making the same decision twice doesn't make it a better decision. The confusion between proven air barrier materials versus tested air barrier systems will create problems in the approval process.

The Standing Committee has made the highly questionable assumption that the new requirement would improve the air tightness of buildings by 0.1L/(s.m²). This, coincidentally, would produce a 3% improvement in performance, according to the consultants, bringing the overall improvement in energy performance to the magic number of 25%. The single-minded pursuit of an arbitrary percentage reduction in energy consumption undermines the credibility of the national codes development process.

The Commission should refer this matter to the Standing Committee on Environmental Separation to consider for the 2015 edition of Part 5 of the National Building Code.

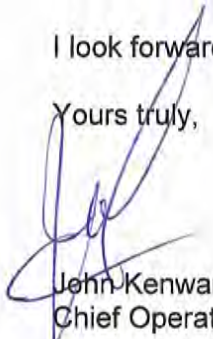
4. Summary

The CCBFC should take the following steps prior to public consultation:

- Restore the FWR to 40% and deal with big box stores separately if required
- Retain a "UA" option for the trade off compliance path
- Develop sample wall sections to illustrate the practical implications of the proposed requirements
- Develop estimates of the capital costs of the changes both individually and cumulatively using the MNECB'97 as the point of reference
- Consider the implications of the capital costs on affordability and take corrective action if required
- Remove the requirement for air barrier systems to be tested to the future ULC standard and ask the Standing Committee on Environmental Separation to deal with this matter in the next edition of Part 5 of the NBC.

I look forward to receiving your response.

Yours truly,



John Kenward
Chief Operating Officer

cc. CHBA Executive Board