STATE BUILDING CODE INTERPRETATION NO. I-2-04

February 26, 2004

The following is offered in response to your letter to me dated February 9, 2004 in which you seek a formal interpretation of the provisions of Section 1512.0 of the BOCA National Building Code/1996 portion of the 1999 State Building Code.

Question 1: If a commercial building owner wishes to tear off an existing roof covering and replace it with a new roof covering and insulation system to meet current energy code requirements, are they required to have a structural engineer review the building to certify that the roof structure complies with current structural codes for snow loads and snow drifts?

Answer 1: Yes. The removal and replacement of the entire roof covering and insulation system exceeds the definition of repair (defined as "The reconstruction or renewal of any part of an existing structure for the purpose of its maintenance") and therefore must be considered an alteration (defined as "Any construction or renovation to an existing structure other than repair or addition.") Section 3408.2 of the referenced code states in part that "if, in the alteration or repair, the current level of safety or sanitation is to be reduced, the portion altered or repaired shall conform to the requirements of Chapters 2 through 12 and Chapters 14 through 33." The potential that the existing roof structure may not be satisfactory to carry the new loads created by the installation of higher levels of insulation and thus, lower levels of snow melt, may indicate that the current level of safety is being reduced. Since the structural requirements for roofs are found at Chapter 16, one of the chapters with which conformance is required, any existing roof structure that will not carry the additional loads imposed by any additional amount of snow based on a higher level of insulation, must be improved to carry the new loads.

Question 2: If a commercial building owner wishes to apply a second roof covering over an existing roof, would it then be necessary for a structural engineer to review the roof structure and certify that it complies with current codes for snow loads and snowdrift loads?

Answer 2: No. The intent of the code regarding structural evaluation for adding additional layers of roof covering is made clear at section 1512.2 of the referenced code. The roof structure must only be evaluated to determine that it will, in fact, support the weight of the second layer of roof covering being added, as well as any temporary loads induced by piling of materials or by equipment placed on the roof during the roofing application. Since only an additional layer of roof covering is being added, with no additional insulation, there is no significant change in the effect of snow or snow drift.

Question 3a: If either building referenced in questions one and two are not in current compliance with structural codes for snow loading, is the building owner ever required to upgrade the structure to meet the code?

Answer 3a: The code is specific, at section 102.2, to allow existing conditions that do not represent an unsafe condition, to remain. In the case of Question 1, we see that existing conditions have changed due to the installation of new insulation, and that the existing structure must be evaluated for the effect that the new insulation may have on snow melt. In the case of Question 2, we see that since there is nothing about the application of the second layer of roofing that will effect the snow melt, we are not required to evaluate the existing structure for snow related loads. The code would not require the existing structure referenced in Question 2 to be re-evaluated simply because the requirements of the code might have changed since the building was constructed.

Question 3b: If not, can you please clarify the interpretation for not requiring an upgrade to current structural codes for snow loading?

Answer 3b: The answer to this question is found at section 1614.4: “Where an existing structure heretofore approved is altered or repaired, the minimum design loads for the structure shall be the loads applicable at the time of erection, provided that the public safety is not endangered thereby.” Thus, a change in the current code’s requirements regarding snow load does not require an upgrade in an existing structure simply due to the new code requirement. It is not the intent of the code that all previously approved buildings and structures endanger the public safety as a result of adoption of a new code. In fact, many provisions of the code actually become less restrictive upon adoption of a newer building code.