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AIA-PECONIC POSITION PAPER No.3: PARTIALLY ENCLOSED DESIGNS PROTECT THE PUBLIC WITHOUT COMPROMISING SAFETY

To the Editor:

In 2003, as part of the wholesale change in the New York State Building Code, all new construction was required to meet an Engineered Design Standard for its external envelope (the walls, windows, doors, roof or skylights) that satisfies the maximum pressure on each of those construction elements in winds up to 120 MPH. Two Engineering Methods of achieving this standard were promulgated in the Code: Design Pressure, in which the envelope doesn't let the wind force enter; and Partially Enclosed Design, in which it does. Both methods address the primary safety intent of the Code, the need to preserve structural integrity and thereby protect the occupants, but only Partially Enclosed Design achieves this without compromising egress and rescuer safety.

To satisfy the Design Pressure Method, all of a building's envelope elements must prevent a high wind force from entering a structure and pushing apart its walls and/or roof, including the openings (windows, doors, and skylights). The Building Code assumes that all 'opening protection' must remain in place and intact to comprise a complete wind-resistant system under this method. AIA Peconic has previously written about how 'opening protection' devices may restrict an inhabitant's ability to escape, or a rescuer's ability to ascertain a structure's occupancy, during an emergency. Though 'opening protection' devices are required for this method, they may accidentally create more dangerous situations than those they are trying to make safe, especially in the event of fire.

In the alternative method, Partially Enclosed Design, calculations assume that the windows, doors, and skylights blow out of a house or building. Through requiring the structural frame, floors, and roof to be constructed to higher wind resistant standards, the house remains upright and fully secured to the foundation, keeping the occupants safe. Since openings do not have to be protected, the health, safety, and welfare of occupants and rescuers is not compromised.

There is currently a conflict in the existing New York State Building Code's version of Partially Enclosed Design that needs to be corrected. Even though a building may be structurally designed using this method without the openings filled by windows, doors, and skylights, the Code requires these opening elements be calculated to meet the design pressure test as if they were there in place! Requiring this appears to be directed at protecting interior contents, but inadvertently decreases occupant safety.

Owners and their architects should be given appropriate discretion to adopt the Partially Enclosed Design Method to protect occupants against structural failure or to employ the Design Pressure Method to protect both occupants *and* interior contents. To enable this, *prescriptive* standards for the Partially Enclosed Design Method should be written into the Code, in addition to the engineering approach, to encourage use of this method, similar to the manner in which prescriptive standards and engineering are already provided for the Design Pressure Method.

As members of the Peconic Chapter of the American Institute of Architects, we commend the decision of the NYS Fire Prevention and Building Code Council to retain Partially Enclosed Design in the new 2009 NYS Building Code, despite its elimination from the current International Building Code, upon which the NYS Code is based. We have asked the Code Council to ensure its retention and emphasize its importance, in future revisions.

We note that the 2009 NYS State Residential Building Code is about to be reissued. We have been told that the comment period for current revisions has ended and that our position will not be examined until the opening of the next round of revision comments to be held in approximately three years, c. 2012. We hope that publication of this letter will lead to public support for more timely action.

A copy of our Position Letter - which addresses other issues in the Code - and contact information may be found on our website: <http://AIAPeconic.org>.

Very truly yours,

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Chairman, AIA Peconic Chapter Codes Committee