September 14, 2012

TO: Washington State Building Code Council

FROM: Sue Lani W. Madsen, AIA

RE: 2012 WA State Energy Code Amendments

SUBJ: 2012 Washington State Energy Code SBEIS Appendix A

Comments on the Cost & Energy Impacts of 2012 Energy Code – Significant Cost Impacts: Pages 1-3

Overall Comments: The costs per SF and savings per SF are all based on SF of floor area; what is the assumed ratio of floor area to wall area? Of fenestration? These costs/savings will be inaccurate for buildings much smaller or larger, or with more or less window area than the baseline assumption (e.g. warehouses).

For renovation projects undertaken on an incremental basis, all or nothing requirements present a financial barrier. Reducing operating costs is sufficient incentive in most cases, if building owner and/or building official have discretion to determine what improvements make the most sense and in what priority order.

Regarding controls, monitoring and metering in general: When buildings become too operationally complex for the skill level of management, expensive systems become abandoned boat anchors. Commercial buildings are not just for profit offices with professional building engineers/operators; this category includes volunteer run community centers and churches, small schools operated by the janitor, and owner occupied/operated commercial structures. Floor area is not necessarily related to mgmt. capacity.

Section C403.2.12.2: Suggest we ask the mechanical engineering members of the Architecture for Health Panel for input. What are the alternatives to the constant volume exception in order to meet standard of care for health care environments?

Section C408.2 Building Commissioning – Eliminating Threshold for Smaller Buildings: What is the availability of such services across the state. I assume availability is better with proximity to metropolitan areas. How does availability as well as size of building impact cost? The table does note that it is more expensive for smaller buildings – this should be quantified. The additional cost would be not only in the commissioning agent's fee but in additional design fees for buildings where mechanical and electrical systems are designed by the installer without need for extensive design documentation. (Note: The state appears to have a conflict of interest in requiring building commissioning, since ESD 112 is pushing this outside of its primary service area and in competition with private companies.)

Section C409 Energy Metering: What assumptions are made about the availability of skilled building management personnel to manage and use this information?

C101.4.4 Change in Occupancy or Use: This would negatively impact efforts to revitalize existing building stock in decaying urban downtowns and not-quite-a-ghost-town-yet small towns by adding additional requirements.

C402.4.1.2.3 and C402.4 Air Barrier Testing: See comments on C408.2 above.

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C402.4.7 Vestibules: How does this apply to existing buildings? To historic buildings? Also would like to note from past experience that a vestibule does not do much to keep conditioned air in unless the distance between doors is enough to act as a true sally port. That doubles the area of the typical vestibule and affects the cost projections.

C403.3 Simple Systems/C405.2.1.2 Lighting Controls/C406 Additional Efficiency: See comments regarding complexity out of balance with resources and mgmt. capability.

R101.4.4 Unheated Space Conversions – Residential: Pardon my cynicism about whether people would actually get permits for this kind of project.

C405.2.3 Emergency Lighting Controls: This item reminds me of my own experience with lighting controls which have NOT saved any energy but certainly added first cost to a (technically) commercial project at my church, money that could have been better spent elsewhere to actually save energy and operating costs. I'll try not to climb on that soap box today.

Conclusion and Recommendations:

Hold off one year on adopting the 2012 Energy Code.

Go back and evaluate the SBEIS made prior to the adoption of the 2009 code. Were the costs more or less than projected? Have projected cost savings been realized? Are building owners, managers and operators adjusting to these changes, or is the technology outpacing the human assets? Are building officials routinely waiving some requirements as impractical?

Verifying that the Energy Code is achieving the desired results at a reasonable cost would go a long way toward answering cynics like me. A one year postponement with a specific purpose will not endanger the health, safety or welfare of the people of the state of Washington.

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