

Meeting minutes of New York State Energy Code Technical Subcommittee

August 8, 2012

Members Present:

- Don Winston, member (NYC)
- Marshall Kaminer, member (NYC)
- Mark Schwarz, member (NYC)
- Carl Ian Graham, member (NYC)
- Todd Stewart, member
- Scott Copp, member
- John Ferraro, member
- Mike Burke, member
- Daniel Farrell, member
- Mike Burnetter, DOS
- Joseph Hill, DOS, Committee Chairman

Joseph Hill opened the meeting at approximately 10:15 am. Joseph, by a call of members present, noted there is a quorum of members.

Old Business:

Joseph Hill asked if there were any issues or discussion needed on the June 29 meeting minutes. Joseph Hill requested that the group review the meeting minutes and that they would be reconsidered after lunch. Joseph asked if the working group on panned duct work had met. A working group within the Subcommittee had been assigned to discuss alternatives to the prohibition for using building cavities as return ducts. The group had reported that they had not yet met, so this discussion was tabled; Subcommittee will consider recommendations or suggestions brought forward by this group at a later date.

Regarding the mandatory provision in the 2012 IECC for blower door testing to establish maximum envelope leakage of 3ACH₅₀ it was noted by Marilyn Kaplan that NYSERDA has formed a small working group to study the efficacy of this requirement. The 2010 ECCCNY contains blower door testing as a compliance option at 7ACH₅₀. The group generally agreed that moving from 7ACH₅₀ to 3ACH₅₀ is a big change for the Residential building industry. Todd Stewart (member) stated that he had many comments on the subject of mandated blower door testing. Joseph Hill asked Todd Stewart to provide his comments in writing to the Committee. It was noted that the IRC 2012 requires mechanical ventilation when infiltration rate is less than 5ACH₅₀. If NYS adopts 5ACH₅₀ or less, then whole-house mechanical ventilation must be provided.

Don Winston (member) stated that ICC does not coordinate well between sections and that this should be brought to their attention. Mike Burnetter stated that IECC and IRC must be reconciled, specific to the subject of required ventilation when under the $5ACH_{50}$ threshold. Marilyn Kaplan (observer) asked if a joint meeting of Energy and Residential Technical Subcommittees would be possible. Joseph Hill stated that although possible, this is unlikely to be able to co-ordinate meeting times of the two Subcommittees. As a matter of course, the Energy Subcommittee has access for editing to the Residential Code of New York State for Energy Code coordination purposes.

Daniel Farrell (member) noted that $5ACH_{50}$ equates to .35 ACH at natural (atmospheric) pressure which has been established by ASHRAE (Standard 62-89) as minimum infiltration to provide adequate air for occupants. He noted that the NY ENERGY STAR Homes program has had $5ACH_{50}$ as the maximum allowable envelope leakage rate and has required mechanical ventilation for several years. Todd Stewart stated that he recognizes that tight houses need to be mechanically ventilated. He stated he would prefer to see requirement for mechanical ventilation rather than blower door requirement. Ian Graham (member) noted that requiring mechanical ventilation will increase energy use, and that mechanical ventilation for leaky homes will further increase energy use. Don Winston made the point that testing is the one true measure of performance.

There was some discussion regarding if blower door testing was typically conducted during construction. Mike Burke (member) stated that blower doors are typically used at substantial completion for homes/buildings in the NY ENERGY STAR Homes program. There was some additional discussion of what baseline envelope air leakage is for newly built homes. As part of a code-compliance study conducted on behalf of NYSERDA by VEIC, 44 newly-constructed homes not participating in the NY ENERGY STAR Homes program were evaluated. Average envelope leakage for these homes was $5.5ACH_{50}$ although this varied depending on the location of the home (upstate homes tended to be less leaky than downstate). Daniel Farrell stated that this result is not statistically reliable and therefore that $5.5ACH_{50}$ should not be viewed as a reliable statewide baseline. Marilyn Kaplan stated that the data from the VEIC is useful information and helpful to consider.

The group then discussed special inspection provisions for code compliance. Under this scenario, CEO could designate a third party such as HERS Rater for compliance inspections. Who would bear the cost? It was generally recognized that the building owner bears the cost of permits and inspections. Mike Burke has spoken with a counterpart in CSG's MA office regarding compliance with MA stretch code. Third-party inspections in MA are generally conducted by HERS Raters. One issue in MA seems to be lack of oversight of the Rater community. DOS (Joseph Hill) will speak with counterpart in the State of Massachusetts with regard to enforcement. Mark Schwarz (member) stated that the Town of Hempstead requires a HERS Rating now for code compliance. The CEO can maintain a list of qualified testers. Provision could be provided for local policing of the special inspection roster. Scott Copp (member) stated that a visual inspection by third party may be a more reliable provision to ensure compliance than testing. John Ferraro (member) stated that special inspections are viable alternative. He stated that visual inspections are an excellent way to go, so that thermal bypasses are caught during construction when walls are open. He stated that political considerations and feasibility need to be considered.

There was some discussion on the issue of mandatory blower door testing, *some* members of the group preferred that a visual inspection, mandated in the code, with option for blower door test, may be the best way to proceed. It was *generally* agreed that a mandate for whole-house ventilation was prudent, although there would tend to be an increase in expected energy use. It was noted that the Section R303.4 requirement for mechanical ventilation in the IRC 2012, having a window in a bathroom does not allow for eliminating the requirement for mechanical ventilation in bathrooms.

The group adjourned for Lunch at approximately 11:55 am

Joseph Hill reconvened the meeting at approximately 1:10 pm, and asked for consideration of the minutes from June 29. Joseph Hill asked again if there were any comments or concerns. Ian Graham will edit section regarding discussion of commercial building provisions of 2012 IECC relative to ASHRAE 90.1-2010.

Joseph Hill stated that the group should now consider the commercial building section of the code. Mike Burnetter provided a table summarizing the significant changes in the commercial provisions of the 2012 code.

C 402.2.8 Insulation of radiant heating systems. Marshall and Don will provide revised language to Joseph Hill for this section.

C 403.2.3.1 Water-cooled centrifugal chiller packages. Don Winston noted there is an issue with these equations as they only allow use of SI units. He stated there should be provision in the code for use off inch-pounds (IP) vs. SI units.

C 403.2.5.1 Demand controlled ventilation (DCV) Don Winston stated there is a conflict between International Mechanical Code (as implemented in NYC) and IECC regarding DCV. Discussion ensued regarding proposed maximum occupant load per 1000 square feet of floor area. **Currently limit is 40, but 2012 IECC proposes to lower this to 25.** Discussion of whether occupancy density provisions of Building Code may dictate what the limit should be here. Mike Burnetter will provide relevant table from 2012 Mechanical Code for the group's consideration. Don Winston will reach out to others in mechanical engineering community. Not being allowed to go below minimum outside air requirements dictates costly design/engineering changes for relatively small rooms. Another issue is the difficulty in properly calibrating carbon dioxide sensors so that airflows are adjusted for higher occupancy situations. There is a NYC Bulletin on this topic that would be useful for group to consider. Marshall Kamener will locate this document (it is currently in draft form). Proposal is made to review the tables and mandatory and prescriptive provisions (Don Winston and Ian Graham). It was suggested (and agreed to) to Table discussion of demand controlled ventilation pending acquisition of further information.

It was noted and discussed that (because of equipment efficiency minimums) that PTAC units might be eliminated in practice based on increased efficiency in ASHRAE Table 6.3.2

Mike Burnetter suggested a proposal to make consistency alterations to have the IECC 2012 better match the ASHRAE 2011 levels for lighting and other HVAC areas such as economizers items that appear

throughout the commercial chapter C-4 of the proposed energy code; this could be brought forward for the group's consideration at a subsequent meeting. This might include economizer, lighting, energy recovery and fan power minimum performance requirements (pending thorough review of the tables.

The group discussed Economizers – Don Winston stated that the provisions for water-side economizer will be difficult to meet. **There is no air-side economizer provision for complex systems.** He stated this is a significant concern, and needs to be addressed. ASHRAE 90.1 only requires water-side economizer for loads greater than 135,000 Btus, while the 2012 IECC mandates water-side economizers for loads greater than 33,000 Btus. Mike Burnetter proposed consideration of the economizer language as provided in **ASHRAE 90.1 Section 6.5.1** ASHRAE 90.1-2007 is still the legal baseline.

The group then reviewed the preliminary lighting power density requirement per DOE. Discussion of Table **C405.5.2.1 (1)** It was noted that IECC 2012 less restrictive on lighting minimum efficiency requirements than ASHRAE 90.1-2010.

Ian Graham suggested removing the additional page of onsite renewable language. He further suggested moving the ASHRAE lighting into NYS Commercial.

Joseph Hill noted that the next Subcommittee meeting is September 6, 2012. A motion to adjourn was made and seconded; meeting was adjourned at approximately 3:20 pm.