

## NY State Energy Code Technical Subcommittee

September 17, 2012

### Meeting Minutes

#### In Attendance:

- John Ferraro
- Mike Burke
- Daniel Farrell
- Mike DeWein
- Scott Copp
- Kenrick Chai-Hong (for member Marshall Kaminer)
- Mark Schwarz
- Ian Graham
- Mike Burnetter, DOS
- Joseph Hill, Chair, DOS
- Cecil Scheib (guest, Urban Green Council)

The meeting was convened at approximately 9:10 am. Roll call indicated a quorum of voting members present. Joseph Hill directed the discussion to tested air leakage requirements as proposed in the 2012 IECC. Chairman Hill stated that a number of additional meetings will be held between today's date and October 31<sup>st</sup>. This is needed to complete the work of the Code review, as the code subcommittees have been required to accelerate the code adoption process. He referenced a memo dated September 10<sup>th</sup> from DOS Codes Division Director Ron Piester stating that the commercial energy code will be updated to 2012 IECC /ASHRAE 90.1-2010 with an effective date of July 2013. The Uniform code (including residential provisions of the Energy Code) must be implemented by May of 2014. He stated the additional meetings allocation would allow for further discussion of residential provisions and allow more time to address third-party protocols and training.

Mark Schwarz (member) stated that some jurisdictions on Long Island are already requiring an ACH 50 (blower door test) as proof of compliance with the envelope portion of the Energy Code. Requiring a third-party tester in this manner is similar to the special inspection process, the CEO can choose to accept the individual/firm the builder specifies (for example) – verification of completed Electrical work, or to specify use of Chapter 17 of the Building Code of New York State to designate a "Special inspector". Mr. Schwarz stated that HERS Raters are more knowledgeable about duct and envelope testing (DET) than CEOs. Local code in the Town of Hempstead requires a HERS Index of 70 as promulgated by RESNET; a HERS Rater can certify compliance. Mark Schwarz stated that to his knowledge there have not been any instances where a C of O could not be issued because a home failed this air leakage test. Mark's opinion (of this section of the IECC 2012) is that the ACH<sub>50</sub>- Blower door testing can be done by the builder because third party is allowed, but not required.

Joseph Hill stated that the State of Massachusetts has conducted a study of their Stretch Code with specific results of ACH 50 testing. Results indicate that random blower door testing is achieving an average of 4.85 ACH<sub>50</sub> in Massachusetts for new homes constructed to their code. This indicates that

adjustment of the standard from 3 to 5 Air Changes per hour should be acceptable to the NYS builder's association. He reiterated that the International Residential Code or **IRC Section 303.4** addresses mechanical ventilation when envelope leakage is tested to be less than 5 ACH<sub>50</sub>. He stated that the group should consider incorporating references to ventilation, dilution and combustion air safety testing per the IRC-2010 which states that any building with less than ACH .40 natural infiltration should be CAZ tested to avoid potential back drafting of atmospherically vented combustion appliances, which is a life safety concern.

Tony Lisanti, a certified Home Energy Rater, gave a presentation to the Subcommittee on the status of available infrastructure of Energy Raters. Tony is a member of the Building Performance Contractors Association and Northeast HERS Alliance (industry associations for building performance professionals). In 2011, anticipating the changes in the code, NEHERS surveyed members regarding the infrastructure needed for successful duct and envelope testing (DET) on a wide scale. About 250 rater-members are represented by NEHERS.

The survey results showed that some Energy Raters are already testing for code-required duct tightness, and Raters are ready to do ACH50 (blower door) testing. The blower door requires the volume of the home be calculated (to do determination of actual ACH50). Chapter 8 of RESNET Standards includes all field testing requirements. Raters have required training for building science, energy modeling software, performance testing as well as annual continuing education requirements. Tony stated that Raters have to keep up on new technology in the field and understand that instrument calibration is critical to accuracy of the test. Due to the reduction in participation in the various state ENERGY STAR homes programs, the individual Raters are actually looking for additional work, attesting to available infrastructure to serve the industry. Tony stated that fees vary depending on the size and complexity of the building, but that approximate fees are \$250-400 for a blower door test only (if home is already prepared) and about \$200 for duct pressure testing. Tony presented survey results showing that NEHERS affiliated Raters who responded (30%) felt that they could increase capacity to do DET testing that would meet the residential new construction market in New York State. New Rater trainings are going on constantly.

There was some discussion about if BPI certified professionals offer sufficient duct and envelope testing skills. Tony suggested that BPI AC/Pump certification trains technicians for duct testing. Some quality assurance issues were discussed, such as that there is no website showing if Raters are suspended or have had issues. Should be barriers to entry (not everyone should be doing this)

With regard to the Residential provisions of the IECC 2012, Mr. Hill stated that (according to Federal determination) if States adopt provisions that are less stringent, (than the IECC 2012) the adopting State must provide a justification to DOE on why the 2012 provisions were not feasible. The Federal determination for Commercial standards is different, being that States must attest to the fact that their State adopted Commercial Energy Code is at least as restrictive as ASHRAE 90.1-2010.

Mike DeWein (member) then stated that he would provide draft language to change the 2012 IECC language on envelope testing to increase the allowable rate from 3 ACH<sub>50</sub> to 4 ACH<sub>50</sub> in Climate Zones 5 and 6, and 5 in Climate Zone 4. Specify who would be qualified to provide the testing. Reference was made to RESNET Chapter 8 for qualifications. There was discussion of a suggesting that the CEO could issue Temporary of C of O if initial blower test does not meet code requirements; one member of the group stated that most banks will not honor a temporary C of O. Mike Burke (member) stated he would reach out to colleague in mortgage industry to see if this would be acceptable. Joseph Hill stated that one possible solution would be to enable municipalities to issue a conditional C of O. Joseph Hill stated

that the next meeting focused on residential provisions will be October 3<sup>rd</sup> and that there would be proposed language for discussion on envelope leakage requirements.

The group broke for lunch at approximately 12:05 pm.

After re-convening the meeting at approximately 1:00 pm, Joseph Hill directed the discussion to creating parity in the lighting provisions between ASHRAE 90.1-2010 and 2012 IECC. Jack Bailey (Lighting Designer) joined the discussion by conference line. He stated that the biggest difference between 2012 IECC and ASHRAE 90.1-2010 is that 90.1 allows 1 watt per square foot for decorative lighting. Jack stated that there is an additional power allowance included in 90.1 for decorative lighting. He stated that base lighting power density (LPD) values are higher in IECC and lower in ASHRAE 90.1. By virtue of his participation with the International Association of Lighting Designers (IALD), he stated that the IALD memberships' goal would be to avoid venue shopping between ASHRAE and IECC. He stated that service applications (hotels, restaurants, retail) rely on higher levels of decorative lighting.

Joseph Hill proposed replacing IECC 2012 **Section 405** and substitute with lighting table from ASHRAE 90.1-2010 (from section 9 of ASHRAE 90.1). Jack Bailey generally agreed with this, as long as additional allowances for power for decorative lighting. Jack Bailey stated that his preference would be to including the tables in the state code, rather than referencing 90.1. Ian Graham (member) stated there are multiple issues with the day lighting provisions under **Section C405 Electrical Power and Lighting Systems**. He stated that day lighting controls have a consistent payback range (5-7) years but this may come down as allowable lighting power densities continue to be reduced.

Joseph Hill suggested moving day lighting from mandatory to prescriptive, to which much discussion ensued. Ian Graham argued that economizer controls are prescriptive (not mandatory) and that this logic could be seen as good argument to make automatic daylight dimmer a prescriptive (not mandatory) requirement.

Joseph Hill then placed a call to Don Winston (Committee member) who was not in attendance. Don stated that the prescriptive path describes the minimum performance requirements for day lighting, which must be included in the budget building for energy modeling purposes. Don noted that IECC 2012 now has a space-by-space methodology for lighting power density requirements, which was lacking from previous version of the code.

#### **Scott Copp proposed**

- 1. All IECC or ASHRAE, but you have to consider lighting power density requirements.**
- 2. Delete Section 406 Additional Energy Efficiency Package-**

Ian Graham proposed a side by side comparison of IECC and ASHRAE lighting power densities. The resultant is that the ASHRAE 90.1 2010 and IECC 2012 Section 406 are identical. Joseph Hill requested that the meeting minutes reflect that a previous straw poll results taken on 9/6/12 to delete Section 406 was rescinded due to additional information provided by lighting consultants, regarding allowances for decorative lighting in **ASHRAE 90.1-2010 Section 9.6.2**.

Discussion moved to the issue of air side economizers which are missing in the IECC 2012 under Complex HVAC systems. Mr. Hill spoke with the IECC -2012 secretariat, who indicated the requirement "fell through the cracks", and additionally, that this omission will be corrected in the IECC 2015. Joe also

noted that there is no readily manufactured economizer small enough to accommodate a 33,000 Btu/hr cooling system. Likely since the 33,000 Btu/hr systems is smaller than what is normally encountered in commercial mechanical cooling systems. This supports moving baseline economizer requirements to minimum levels found in ASHRAE 90.1-2010.

There is a proposal to reference air-side economizers for complex systems from the requirements of simple cooling systems. The group voted to copy a paragraph out of current NYS 2010 code to remedy this issue. In addition it was proposed to consider language to be drafted by Mike Burnetter to allow air economizers in computer rooms (language taken from ASHRAE 90.1-2010). The group agreed in principle to this change, without a vote (language will be brought forward for consideration and vote at the next meeting.) Scott Copp asked if this would affect large high-rise residential buildings that must meet commercial energy code provisions. The Group discussed the economizer exceptions which give relief for Residential occupancies of five times the Tabular requirements. Subsequent to lengthy economizer discussion, a motion to adjourn was taken.

Joseph Hill reminded the group that next meetings are scheduled for October 3<sup>rd</sup> and 4<sup>th</sup>. The meeting adjourned at approximately 3:20 pm.