BOARD OF APPEALS
March 3, 2016

Members Present: Chairperson Wayne Larson, Harold Thompsen, Joel Davy, Dave Obermiller
Members Absent: Jeff Furstenau, Terry Welle
Others Present: Bruce Taralson, Ryan Erickson, Clinton Hildebrand, Gretchen Morlan, Anthony Corcoran

Chairperson Larson called the meeting to order. Mr. Thomson moved to approve the minutes of the February 18, 2016 meeting and Mr. Davy seconded the motion. All members present voted aye and the motion was declared carried.

Mr. Taralson presented the review of changes to the International Residential Code, Chapter 11 & International Energy Conservation Code to the Board. Mr. Taralson stated that the 2012 IECC was split into two sections, each with their own chapters. He explained that it was decided during the last code cycle to not adopt the 2012 IECC. As a result, the 2009, 2012, and 2015 IECC code books were reviewed to determine code updates. Mr. Taralson stated that many of the changes from the 2009 to the 2012 IECC are changes in formatting to facilitate the splitting of both the commercial and residential sections. Many revisions marked with the bar will be revisions to the formatting change and the renumbering of the reference sections. He stated that he did not find many glaring changes other than formatting.

Significant changes from the 2009-2012 IECC

1. Chapter 2. Significant definitions added: "Building Commissioning" and "Building Thermal Envelope".
2. Book was split into a commercial section and a residential section.
3. Added Section C408 requiring system commissioning for mechanical systems in Section C403 and electrical systems in Section C405.

Significant changes from the 2012-2015 IECC

1. Minor changes from the 2012 to 2015 IECC.

<u>Chapter 1</u> Scope and Administration
Section C101.3 Clarified; reworded to emphasize conservation.
Section C101.4 Revised; relocated all sections that had to do with existing buildings to Chapter 5 in the 2015 IECC.

Mr. Thompsen requested that Mr. Taralson highlight significant changes and recommended amendments. Mr. Taralson explained that there are no amendments at this time. Mr. Obermiller stated that at the 2012 Home Builders Association (HBA) meeting, it was decided to not adopt the 2012 IECC code as the cost versus payback was not monetarily sustainable for homebuilders. Mr. Taralson responded that Mr. Hildebrand of the Inspections department did attend meetings with the HBA to discuss proposed amendments. It was determined that many amendments were not applicable to this jurisdiction due to climate zones affected.

Section C103.2 Clarified to show a complete list of information required on plans. Only real change apparent is a plan required to indicate daylight zones. Daylight zone control was required by the IECC 2009 in Section 505.2.2.3. Since the adoption of the IECC, most plans submitted have indicated compliance with prescriptive requirements, then have later showed compliance using a program.

Section C104.1 Clarified information on when inspections are required including duties of permit applicant, covering prior to inspections, work remaining accessible, etc.
Section C104.2 Added section for required inspections.

Section C104.4 Clarified. Approved inspection agencies. The *code official* is authorized to accept reports of third-party inspection agencies not affiliated with the building design or construction, provided such agencies are *approved* as to qualifications and reliability relevant to the building components and systems they are inspecting.

Section C108.2 Clarified; Added wording so multiple orders did not have to be given to stop work.
Section C108.4 Clarified; Fines for failure to comply now as set by applicable governing authority.

Chapter 2 Definitions
Section C202
Building commissioning. Added definition.
Fenestration product, Field fabricated and Fenestration product, site built. Added definitions.
Conditioned space. Clarified definition.
Continuous insulation. Added definition.
Daylight zone. Simplified definition.
Historic building. Added definition.

Chapter 3 General Requirements
Section C301.4 Addition; Added term "tropical climate zone".

Chapter 4 Commercial Energy Efficiency
Chapter was previously "Residential Energy Efficiency" in the 2009 IECC. Chapter was retitled to "Commercial Energy Efficiency" in the new split format (2012 & 2015). Renumbered from Chapter 5 to Chapter 4.

Section C401.2 Clarified; Revised and clarified requirements for different methods of compliance with provisions for commercial buildings. The three types of compliance:

1. ASHRAE
2. Prescriptive. This type of compliance is rarely used due to the requirement for continuous insulation on the exterior wall of a building. All prescriptive requirements must be met including all mandatory requirements in Chapter 4 of the IECC.
3. Total building performance. This is the most common type of compliance used. Examples: ComCheck and ResCheck.

Section C401.2.1 Revision; Deleted "Application to existing buildings"; replaced with "Application to replacement fenestration products".

Section C402.1 Renumbered from Section 502.1. Clarified, revised and made additions; many changes to this section primarily for clarification. This section is one of the prescriptive sections of compliance for the commercial energy requirements.
Section C402.1.1 Section moved for clarification and rewritten; Section was previously numbered 105.1.2 in the 2009 IECC and is relocated to Section C402.1 "General Building Envelope Requirements".
Section C402.1.2 Addition; Generally provides for some exemptions to the building thermal envelope provisions for equipment buildings.
Sections C402.1.3 & C402.1.4 Addition; Added two sections to clarify the use of insulation component R-value-based method (C402.1.3) and Assembly U-factor, C-factor or F-factor-based methods.

Table C402.1.3 Lists prescriptive insulation R-values for the various building components. The table has increased R-values and these changes happened in the 2012. No changes happened between 2012 and 2015. Listed are the following changes to the R-values:

1. Revised insulation entirely above deck from R-25ci to R-35ci for all occupancies.
2. Revised insulation for metal building roofs from R-13+19 to R-30+11ls for all occupancies. The Liner System (LS) designation is new to the 2012 and 2015 IECC. It is defined as:
   LINER SYSTEM (Ls). A system that includes the following:
   1. A continuous vapor barrier liner membrane that is installed below the purlins and that is uninterrupted byframing members.
   2. An uncompressed, unfaced insulation resting on top of the liner membrane and located between the purlins. For multilayer installations, the last rated *R-value* of insulation is for unfaced insulation draped over purlins and then compressed when the metal roof panels are attached.
3. Revised insulation in 'attic and other' from R-38 to R-49 for all occupancies.
4. Revised insulation for metal building walls from R-19+5.6ci increased to R-13+13ci for all occupancies other than group R and R-19+5.6ci to R-13+19.5ci for group R occupancy.
5. Added additional option for wood framed walls of R-20+3.8ci for all occupancies.
6. Revised Insulation for below grade walls from R-7.5ci to R-10ci.
7. Revised Opaque Doors section to include only non-swinging doors now with a value of R 4.75.

Table C402.1.4 Prescriptive insulation U-values for the various building components. The table has revised U-values similar to the revisions in the R value table, with some additional changes.

Sections C402.2 - C402.4 Sections rewritten and additional information provided to determine compliance. There are some revisions and reformatting, but sections are essentially the same.

Summary of section revisions:

Sect- IECC 2009	Sect- 2012	Sect- 2015
502.2 Specific insul reqs (prescr.)	C402.2	C402.2
502.2.1 Roof assembly	C402.2.1	C402.2.1
502.2.2 Classify walls	C402.2.2	C402.2.2
502.2.3 Above grade walls	C402.2.3	C402.2.3
502.2.4 Below grade walls	C402.2.4	C402.2.5
502.2.5 Floors over outdoor air	C402.2.5	C402.2.4
502.2.6 Slabs on grade	C402.2.6	C402.2.5
New 2015- Insulation of radiant heating		C402.2.6
502.2.7 Opaque doors	C402.2.7	None
New 2015- Roof solar reflectance		C402.3
502.3 Fenestration	C402.3 C402.4 (revised and added)	
502.4 Air leakage	C402.4 C402.5 (revised and added)	

Section C403 Building Mechanical Systems. Previously Section 503 in the 2009 IECC.

Section C404 Service Water Heating.

Section C405 Electrical Power and Lighting systems.

Section C406 Addition; Additional efficiency package options; New section in 2012 (& 2015). The section provides for additional energy savings measures be incorporated into the design and construction of a commercial building.

Section C407 Total Building Performance. No significant changes since 2009. Section only comes into play in a design where the designer has chosen to comply with Section C401.2, Item 3. Other requirements are mandated also.

Section C408 Addition; Commissioning. This is a new section in 2012 (& 2015).

Chapter 5 Existing Buildings

New chapter including provisions for alterations, repair, addition and change of occupancy of existing buildings. Existing buildings pose an issue with compliance to the new provisions of the IECC, and this chapter provides alternatives to full compliance.

Section C501.2 Addition; The chapter allows the continued use of the building as it is and also any systems used at time of alterations, repair or addition. **Existing buildings.** Except as specified in this chapter, this code shall not be used to require the removal, *alteration* or abandonment of, nor prevent the continued use and maintenance of, an existing building or building system lawfully in existence at the time of adoption of this code.
Section C501.3 Addition; Section provides information on maintenance of existing buildings.
Section C501.4 Addition; Section provides information on compliance for existing buildings and additional codes also required to be complied with.
Section C501.5 Addition; Like materials are permitted if hazards to life, health or property are not created.
Section C501.6 Addition; Historic building that are undergoing construction, repair, restoration, movement of the building or change of occupancy, are generally allowed to remain as is, provided: **Section C501.6 Historic buildings.** No provisions of this code relating to the construction, *repair, alteration*, restoration and movement of structures, and *change of occupancy* shall be mandatory for *historic buildings* provided a report has been submitted to the *code official* and signed by a *registered design professional*, or a representative of the State Historic Preservation Office or the historic preservation authority having jurisdiction, demonstrating that compliance with that provision would threaten, degrade or destroy the historic form, fabric or function of the building.

Section C502 Addition; Generally, an addition needs to comply with the requirements for new buildings in Section C502. The addition can be shown to be compliant as if it were a new building standing on its own. New and replacement materials shall be installed per the code for new construction.

Section C503 Addition; Generally, alterations need to comply with the requirements for new buildings. Specific exceptions are listed under Sections C503.1 and C503.2 when there is a change to the conditioning of a space.
Section C503.3 Section addresses changes to the building envelope. The addition can be shown to be compliant as if it were a new building. New and replacement materials shall be installed per the code for new construction.

Section C504 Addition; Repairs. Includes guidelines for repair only work. Refers to Section C501.3 which is the maintenance of existing buildings and structures. Generally, this section says that buildings shall be maintained to be compliant to the codes in which they were constructed and includes information of instances when compliance is not mandatory.

Section C505 Addition; Change of occupancy or use. This section explains if compliance is required due to change of occupancy or use.

Mr. Hildebrand introduced the Residential Energy Code to the Board.

IRC Table N1102.1.2 & IECC (R402.1.2) Staff recommends adding a local **AMENDMENT** to read as follows:

Insulation and Fenestration Requirements By Component					
Climate Zone	Fenestration U-Factor	Skylight U-Factor	Glazed Fenestration SHGC	Ceiling R-Value	Wood Frame Wall R-Value
6	0.32	0.55	NR	49	20 or 13+5h,i ~~20 + 5 or 13 + 10h,i~~
7 and 8	0.32	0.55	NR	49	20 or 13 + 5h,i ~~20 + 5 or 13 + 10h,i~~

Balance of Table remains the same.

IRC Table N1102.1.4 & IECC (R402.1.4) Staff recommends adding a local **AMENDMENT** to read as follows:

Equivalent U-Factors				
Climate Zone	Fenestration U-Factor	Skylight U-Factor	Ceiling U-Factor	Frame Wall U-Factor
6	0.32	0.55	0.026	~~0.048~~ 0.057
7 and 8	0.32	0.55	0.026	~~0.048~~ 0.057

Balance of Table remains the same.

IRC Section N1104.1.2 & IECC (R402.4.1.2) Testing. Staff recommends adding a local **AMENDMENT** to read as follows: "The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding five air changes per hour in Climate Zones 1 through 8. ~~and 2, and three air changes per hour in Climate Zones 3 through 8.~~ Testing shall be conducted…" Balance is unchanged.

Mr. Hildebrand stated that this is an amendment requested by the HBA requesting five air changes through all zones.

IRC Section N1102.4 & IECC (R402.4) Staff recommends adding a local **AMENDEDMENT** to read as follows: Air leakage (Mandatory). The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Section R402.4.1 through R402.4.4. Exception: Dwelling units of R-2 Occupancies and multiple single family dwellings shall be permitted to comply with IECC Section C402.5.U Hap: HBA requested AMENDMENT. BT: Commercial section has what HBA is looking for.

IRC Section N1102.4.1.3 & IECC (R402.4.1.3) Visual Inspection Option. Staff recommends adding a local **AMENDMENT** to add new section. Building envelope tightness and insulation installation shall be considered acceptable when installed in accordance with Table N1102.4.1.1 (R402.4.1.1) "Air barrier and insulation installation" and has been field verified.

IRC Section N1103.3.2 & IECC (R403.3.2) Sealing (Mandatory). Staff recommends adding a local **AMENDMENT** to read as follows: Exception: 2. For ducts having a static pressure classification of less than 2 inches of water column (500 Pa), additional closure systems shall not be required for continuously welded joints and seams, and locking-type joints and seams ~~of other than the snap lock and button-lock types.~~

Mr. Hildebrand noted that the mechanical inspectors requested this amendment to avoid having to enforce sealants while in the field. Mr. Obermiller requested a mechanical inspector be present at the last code meeting to provide clarification.

IRC Section N1103.3.5 & IECC (R403.3.5) Staff recommends adding a local **AMENDEDMENT** to read as follows: Building Cavities (Mandatory). Building framing cavities shall not be used as supply ducts ~~and plenums~~.

IRC Section N1103.6 & IECC (R403.6) Staff recommends adding a local **AMENDEDMENT** to read as follows: ~~Mechanical~~ V~~v~~entilation (Mandatory). Balance is unchanged.

IRC Table N1105.5.2(1) & IECC (R405.5.2(1)) Staff recommends adding a local **AMENDEDMENT** to read as follows:

Specifications for the Standard Reference and Proposed Design		
Building Component	Standard Reference Design	Proposed Design
Air exchange rate	Air leakage rate of 5 air changes per hour in Climate Zones 1 ~~and 2, and 3 air changes per hour in Climate Zones 3~~ through 8 at a pressure of 0.2 inches w.g (50 Pa). Balance is unchanged.	For residences that are not tested, the same air leakage rate as the standard reference design. For tested residences, the measured air exchange rate[a]. The mechanical ventilation rated shall be in addition to the air leakage rate and shall be as proposed.

There being no further business, the meeting was adjourned.

Respectfully Submitted,

Bruce Taralson
Acting Board Secretary