Energy Codes and Your Municipality

  
- What are some of the differences between the 2006, 2009 and 2012?

Consumer Expectations
When you purchased your home or commercial building did you have any expectations of how the structure would perform?

Many would expect that when

- It rained the inside would stay dry

- It snowed the roof would support the added weight

- It was windy the building would stand
Many would expect that when
• You turned on the faucet there was hot water and it was on the left side

Many would expect
• That the drains drain

Many would expect that
• It would be reasonably comfortable

Building and Energy Codes
Intent:
The purpose of any of the International family of codes is to establish minimum requirements to safeguard the public safety, health and general welfare through;

Building and Energy Codes
• Affordability

Building and Energy Codes
• Structural strength
Building and Energy Codes
• means of egress facilities

Building and Energy Codes
• stability

Building and Energy Codes
• sanitation

Building and Energy Codes
• light and ventilation

Building and Energy Codes
• safety to life and property from fire and other hazards

Building and Energy Codes
• energy conservation
Let’s Talk Energy!

• In a one hour session we can only tackle one code at a time.

Living up to the expectation

• So what are some things that we can be doing to our buildings so that they live up to the expectations of those who buy them?

1. Define the Thermal Envelope

2. Protect the Thermal Envelope

Air Barriers

Air Leakage

• The building thermal envelope shall be durably sealed!
Floor Insulation

Floor insulation shall be installed to maintain permanent contact with the underside of the subfloor decking.
2. Size the mechanical equipment properly
Residential Mechanical

- Houses are tighter than they used to be
- Insulation is better than it used to be
- Windows are better than they used to be
- It becomes more important to put more thought into the size of equipment needed for a home. The old “Rule of Thumb” just doesn’t cut it anymore.

Commercial Mechanical

- “Control Issues”: Commercial mechanical equipment should be designed with controls with capabilities to:
  - Turn things down or off when not needed,
  - Have programmable thermostats that allow varied settings and abilities to operate equipment during power failures
  - Reduce outside air when it’s not required
  - Provide outside air instead of chilled air when it is economical to do so
  - Sequencing operations on multiple units
  - Reduce pump flows when applicable
  - Change fan speeds when applicable

Duct Leakage and Insulation

 SEAL ALL JOINTS AND SEAMS

Ducts in unconditioned spaces need insulation!

Duct Design

- You designed your equipment to the way you built your building, now design the ducts to deliver the air appropriately.
- When you don’t feel the right amount of air from your duct work, you turn up the heat or cooling. What you need to do is design the duct work correctly from the beginning.

3. Lighting

- Recessed lighting installed in the building’s thermal envelope should be rated to be in contact with insulation (IC rated)
- And should have seals and gaskets to limit air leakage.

Residential Lighting

- Use high efficacy bulbs in your permanent fixtures.
Commercial Lighting

- More “Control Issues”: Commercial lighting should be designed to allow the user to turn the lights down by at least 50% when they can. This can be done with dimmer switches, controls that allow you to shut some lamps off and not others, or occupancy sensors.
- Also, controls should be provided to allow for holiday scheduling and after hour shutoffs.
- Always have at least one control for the lighting in each room the lighting serves. Don’t make me go into another room to turn the lights on for the room I need to be in.
- Exterior lighting should have controls that shut it off when it’s light enough outside that you don’t need it.
- And then put some thought into which occupancies need more wattage than others and design appropriately.

Flexibility and Options

- ResCheck/ComCheck
- Performance Path
- ASHRAE 90.1
- Above Code Programs (“Green”)

What’s next?

- The 2012 codes are out. The 2015 code is nearing the development process. How much more will they tighten down the numbers and increase the efficiency?
- There’s only so much insulation you can get in a ceiling or a wall. Where do we go from here?
  Performance!

Free Training

For free training on any Energy Code topic please contact:
Shaunna Mozingo, Colorado Code Consulting
smozingo@coloradocode.net
Or
(303)598-3465

Free Adoption Assistance

- Need help with code adoption?
- Have questions about code adoption?
- Want someone to talk to your City Council?
- Want someone to attend public meetings to answer questions?
- Give us a call, we can help – for FREE!
  Shaunna Mozingo, (303)598-3465
Thank you!!

Energy Code Support Partnership
Brought to you by:
Colorado Governor’s Energy Office
Department of Local Affairs, Div. of Housing
Colorado Code Consulting
International Code Council
Energy Logic