Chapter 15.08 Amendments 2009 IECC and Build Better Program

Hailey City Council

September 27, 2010

About the Committee

- Created in December 2008
- Group includes: architects, builders/contractors, energy consultants/specialists, building official, interested citizen, and non-profit.

Objectives:

- Conduct background research
- Identify and prioritize goals and corresponding actions.
- Develop and implement community involvement and information strategies

Education and outreach

- Website
- Presentation to 1) SBR, 2) AIA, and 3) WRCA during **Spring/Summer 2009**
- Frequent updates and information in Our Town
- **June 16, 2009** Britt/Makela Inc. presentation, followed by stakeholders forum
- **October 12, 2009** integrated design process and HERS modeling with Boulder's David Neiger.
- **October 13, 2009** presentation to City Council by David Neiger.
- **March 3, 2010** Presentation by Idaho Office of Energy Resources
- **March 22, 2010** HERS demonstrations and presentation to the Council by Brian Bennett
- **July 22, 2010** presentation by Idaho Office of Energy Resources
- **August 12, 2010** presentation by Flynner Homes on building green, presentation by staff on recommendation, stakeholder discussion panel with committee and non-committee stakeholders.

Guiding Principles

- Minimize cost to applicant.
- Baby steps – start small to allow the community adapt.
- Increase energy efficiency in new construction, to the degree that payback can be achieved within 7 years.
- Increase water conservation and decrease overall environmental impacts without over-burdening applicants.
- Increase stakeholder and public awareness through education.
- Minimize any additional Building Department requirements and staffing.

Recap from April 26th's presentation

- Buildings account for 49% of total GHG emissions and 72% of electricity consumption (APA).
- Average life span of a building is 75 years (US DOE).
- Energy prices are expected to increase as demand increases and supply decreases (US DOE).
- Locally, Idaho Power prices have risen 17% in 2009.
- Natural gas supply is limited in the WRV without costly infrastructure improvements.

The recommendation developed out of the identified need for long term solutions to a growing problem. This problem has not gone away with the recession.

The need for increased long term economic sustainability has become more apparent.

The Committee's recommendation was created for a number of reasons and serves multiple purposes:

- It addresses energy and water conservation in a manner that keeps costs to a minimum for the applicant and the city.
- It is a step towards planning for greater energy security and independence, and guards against the financial impacts of future energy price volatility.
- Buildings use the most energy of any sector in the US - more than the transportation sector - therefore; it makes sense to focus on sources of usage that are greatest.
- Current building practices are legal minimums established by the State - greater energy efficiency can be obtained.
- Our local climate requires lots of energy during the winter– this translates to higher energy costs and provides an opportunity to substantially increase efficiencies and savings.
- The average life span of a building is 75 years. The status of energy prices and availability could change within 75 years, especially considering the potential impacts of climate change and future policies aimed at curtailing emissions associated with climate change.
- Future building code requirements and federal legislation may require our community to rapidly improve building practices; being ahead of the curve will help Hailey adjust.
- It focuses on new construction to take advantage of opportunities to ensure a better future building stock and existing structures to address the most energy inefficient buildings that will likely make up the majority of the building stock for decades.
- It ensures that buildings are built in a manner that considers energy efficiency for future occupants of buildings, so occupants aren't left paying high energy and heating costs.

Amendments

- Adopts 2009 IECC by January 1, 2011
- Adopts Build Better Program:
  1. Section 15.08.012.C, Energy Efficiency for Commercial and Residential construction
  2. Section 15.08.012.D, Water, Indoor Air, Construction Waste, and Durability and Assurance (WICDA).
  3. Section 15.08.012.E, Points Menu addresses home size and exterior snow melt systems.
     - Construction waste
     - Energy efficiency
     - Solar
     - Material efficient framing and structure
     - Sustainable products
     - Indoor air quality
     - Home owner information
     - Design process and innovation

New Construction:

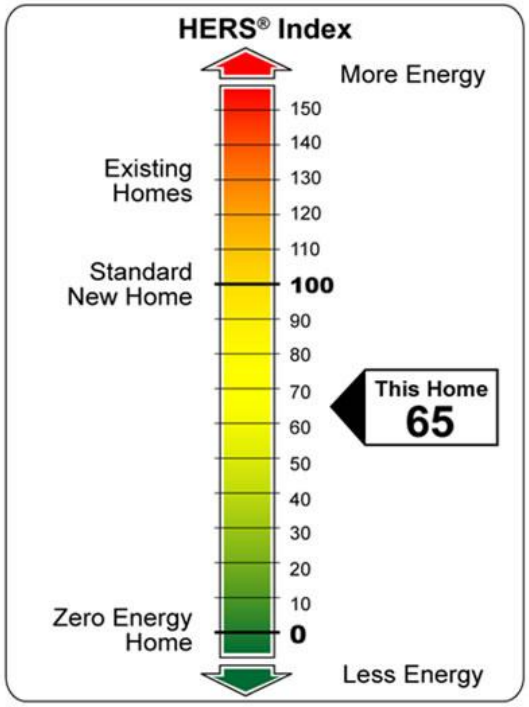
Exemptions:

- NAHB, LEED, & Energy Star.

Commercial and **residential** new construction and additions would be designed and built in a manner that increases the energy efficiency by 10%

Verification:

- Using 3rd party verified Home Energy Performance System (HERS) for residential
- Using Com-Check for commercial.



New Construction

- The recommendation suggests that all new construction address:
  - **1) water conservation,**
    - Water conserving plumbing fixtures.
  - **2) waste management,**
    - Recycle clean wood waste and cardboard.
  - **3) indoor air quality, and**
    - Ensure standard s in 2009 IMC is met.
  - **4) durability and assurance.**
    - Checklist, installation specifications on plans, and signature stating installation has occurred to manufactures specifications.

Existing Buildings – Alterations and Additions

Exemptions (applied to 80% of 2009 Building Permits):

- Window replacements of the same size and location.
- Bathroom and kitchen remodels.
- Reroofs.
- Additions less than 500 square feet of conditioned floor area.
- Any addition that does not involve conditioned space (ex: garage).
- Alterations that do not affect the integrity of the building envelope.
- Alterations that do not require a building permit.
- Tenant and ADA improvements required by the Building Department.
- Structures listed on the National Historic Register.
- Removing or alteration of an interior wall to expand a room
- Installation of new flooring
- Installation of new heating equipment
- Electrical work
- Plumbing work
- Repairs due to damage or natural disaster.

Existing Buildings – Alterations and Additions

- Audit required if:
  - A Building Permit is required by code AND effects the building envelope.
  - Removal or replacement of an exterior wall.
  - Installation of new windows (not replacements).
  - Addition is over 500 sq. ft. of conditioned space.
- Alterations
  - Energy audit – no improvements are required.
- Additions
  - Energy audit of existing structure – no improvements are required
  - Addition must be built 10% better than current state adopted energy code (IECC).

Residential Additions and new construction

- Addresses building size through a flexible points based system for residential additions and new residential construction
  - Encouraging smaller more efficient homes and additions.
  - The larger the home the greater the amount of energy and resources are consumed; therefore, more points or greater sustainable practices and materials would be required.

Timing

- Committee does not recommend voluntary time period due to research conclusions that voluntary programs are unsuccessful.
- If voluntary introduction period is desirable,1 year is recommended by staff.
  - This allows the Building and Planning Departments to continue education and outreach on the adopted code, in preparation for January 1, 2012 and allows one full building season for the community to familiarize themselves with the Build Better Program…and maybe participate during the voluntary period.

Points Menu - Equations

- Snow melt

Size (square feet)	# of points
100	1
200	2

- New residential construction

Size (sq. ft.)	# bedrooms	# of points
1,500	3	5
4,000	2	20
3,500	4	8.75

Points Menu

- Additions over 500 sq. ft. of conditioned space

Size (sq. ft.)	# of bedrooms associated with the addition	# of points
500	1	2.5
750	0	7.5
1500	2	5

Joint Administration and Verification

- Building Department will administer energy efficiency, Section 15.08.012.C.
- Building and Planning Department will administer the water, indoor air, construction waste, and durability and assurance (WICDA), Section 15.08.012.D.
- Planning Department will administer the points menu, Section 15.08.012.E, excluding parts of Section 15.08.012.E.5 (the energy efficiency section of the points menu).

Council's questions

- Recycling costs for clean wood waste and cardboard?
  - *Clear Creek:*
    - *Cardboard: $25 for dumpster delivery for cardboard.*
    - *Clean wood waste: $35 delivery fee for 15 cubic yard container, $2/day, $112 per pull and $10 a ton (vs. $55) tipping fee.*
  - *DIY:*
    - *Cardboard: free*
    - *Clean Wood Waste: $10 a ton vs. $55 a ton for tipping fees.*
- NAHB and ID Builders and Contractor's Association view on above-code programs?
  - NAHB created the National Green Building Program.
  - IBCA no response.
- Ways to reduce costs:
  - Keeping cost low was a primary goal when developing the recommendation.
  - Add as eligible for fee deferral program for the 1st year.

Questions?

Identified Concerns and Issues

3. How might it affect building and housing costs?
   - Up front, additional costs: 0-3%, for a 10-30% energy efficiency increase, without rebates and other financial incentives.
   - Return on investment (payback): less than 5 years

- *" Studies by the Department of Energy's National Renewable Energy Laboratory (NREL) illustrate that meeting a 30% residential energy consumption reduction target below the baseline energy code will save households in every region of the U.S. between $403 and $612 per year <u>after the cost of efficiency measures is factored in</u>." (DOE)*
- *In the Seattle area, Green certified homes were on the market for 24% less time compared to traditional homes (Daily Journal of Commerce, 2010)*

Upfront Costs

Type of Program	% Increase in Energy Efficiency	Additional Upfront Costs	Source
Unknown	32-40%	1% more	NY State Energy Research and Development Authority
HERS	30%	1.75%	Sustainable Built, LLC of Boulder
Energy Star	15%	0-1%	Kentucky Office of Energy Policy
LEED Certified	18%	0.66%	2003 Green Building Costs and Financial Benefits, Greg Kats
LEED Gold	37%	1.82%	2003 Green Building Costs and Financial Benefits, Greg Kats
Passive Solar Design	10-15%	0%	World Business Council for Sustainable Development

Upfront Costs

Type of Program	% Increase in Energy Efficiency	Additional upfront Costs	Source
LEED	18%-37%	0-3%	World Business Council for Sustainable Development
Solar window orientation	25%	0%	U.S. Department of Energy
Properly sealing air leakages	30%	Less than $200 for the average home	U.S. Department of Energy
LEED Gold	37%	1.82%	2003 Green Building Costs and Financial Benefits, Greg Kats
Passive Solar Design	10-15%	0%	World Business Council for Sustainable Development
LEED	18%-37%	0-3%	World Business Council for Sustainable Development

National and Local Trends

National movements:

- Over 300 communities in the US have adopted mandatory or voluntary above-code building programs, including California, Washington, Oregon, Minnesota, Illinois, and New Mexico State.
- At least 17 municipalities utilize HERS as a part of their mandatory program.

Local movements:

- Blaine County – created recommendations
- Ketchum – has expressed interest in creating a recommendation
- Sawtooth Board of Realtors – green feature space on MLS

Identified Concerns and issues

1. Will people choose to build elsewhere?
   - What about other mountain towns?

•McCall, ID and Moscow, ID

•Teton County

•Jackson, WY

•Taos, NM

•Santa Fe, NM

•Telluride, CO

•Eagle County/Vail, CO

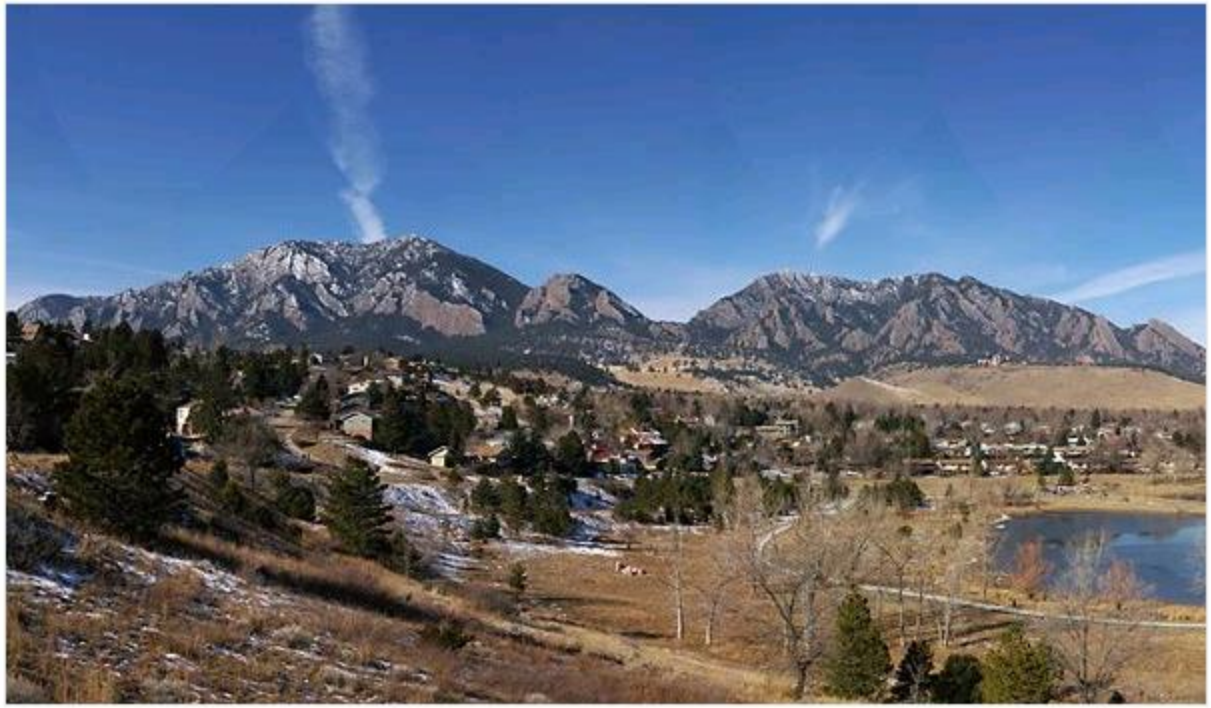
•Pitkin County/Aspen, CO

•Boulder County, CO

•Boulder, CO

BusinessWeek

The 30 Strongest Housing Markets in the U.S



Boulder rocks

By Prashant Gopal

Wait a second. At a time when real estate prices have been in almost perpetual free fall for more than a year, are there really places around the U.S. where home values are going up? Unbelievable as it may sound, yes. According to real estate site Zillow.com's second-quarter home value index, there are more than 30 metro areas across the country where values have risen from the first quarter of the year to the second quarter. The winner? Boulder, Colo., the affluent Denver suburb where the share of homes with increasing values rose nearly 60%.

-Business Week, September 8, 2009

Identified Concerns and Issues

2. What might a “green” building program do to the local economy?

- Be a catalyst for creating new jobs and new businesses.
- Foster healthy competition among local green businesses.
- Increases awareness and community identity.
- Attract positive local, state and national media attention for taking a leadership role in sustainable building practices.

Energy Efficient Homes: A Winning Strategy for Home Builders

Friday, March 13, 2009

Artistic Homes bucks housing recession trend

New Mexico Business Weekly - by Steve Ginsberg Special to NMBW

Print Email Reprints RSS Feeds LinkedIn Share

Other Matching Articles for
"artistic homes net zero"

Artistic Homes bucks housing recession trend [03/13/2009]

Calendar [09/15/2003]

If you don't buy, they might stomp their feet and cry [01/13/1997]

> More Search Results

Not all the news is dire on the home building front. Albuquerque-based Artistic Homes is doubling its production in 2009 and expanding to Colorado.

Randy Siner | NMBW

Artistic Homes owners Tom Wade and his father Jerry Wade build homes with energy efficient elements, like solar roof panels.

View Larger

Artistic's maverick founder and President, Jerry Wade, has plans to build 250 homes this year and is embarking on a campaign to build affordable solar-powered units that generate revenues by selling excess power back to utilities. Wade was the first major New Mexico builder to go green in 1999. He has a reputation in energy efficiency building that he hopes to exploit to give him a competitive edge while his competitors are struggling to survive.

Wade's expansion is primarily outside the Rio Grande Valley. He is entering the Durango

Energy codes can generate New employment opportunities for those in the Building Industry

- Home Energy Raters / Consultants
- Energy Auditors (spurs existing home retrofits / weatherization, window replacement, insulation, air-sealing)
- HVAC / Mechanical Contractors – creates market for new products, learn new skills
- Contractors – learn new skills, more competitive
- Solar Thermal / PV industry growth
- Insulation Contractors – better quality from third-party inspections
- Market innovation – creates incentive for local companies to innovate

Source: US Metro Economies: Current and Potential Green Jobs in the US Economy, 2008