METROPOLITAN
Community College

The Commercial Energy Code: Session 8

Business Benefits, Marketing & Course Review

Instructor: Matt Belcher

Tuesday, February 28, 6-8p.m.

Housekeeping

- Attendees are muted upon entry
- Questions? Enter them in the chat box
- Webinar is being recorded – slides and recording will be sent to attendees
- CEUs available for AIA and ICC
- Email canderson@mwalliance.org with questions
- Course information available at: https://www.mwalliance.org/metropolitan-community-college-energy-code-course

Today's Agenda

- Energy Cost Savings
  - Incremental Costs and Payback
  - Energy Code Benefits
    - Non-energy code benefits
- Appraisals and Added Value
- Value of Energy Codes
- Marketing High Performance
- Q&A and Review
- Final Exam

ENERGY COST SAVINGS

Energy Code Economics

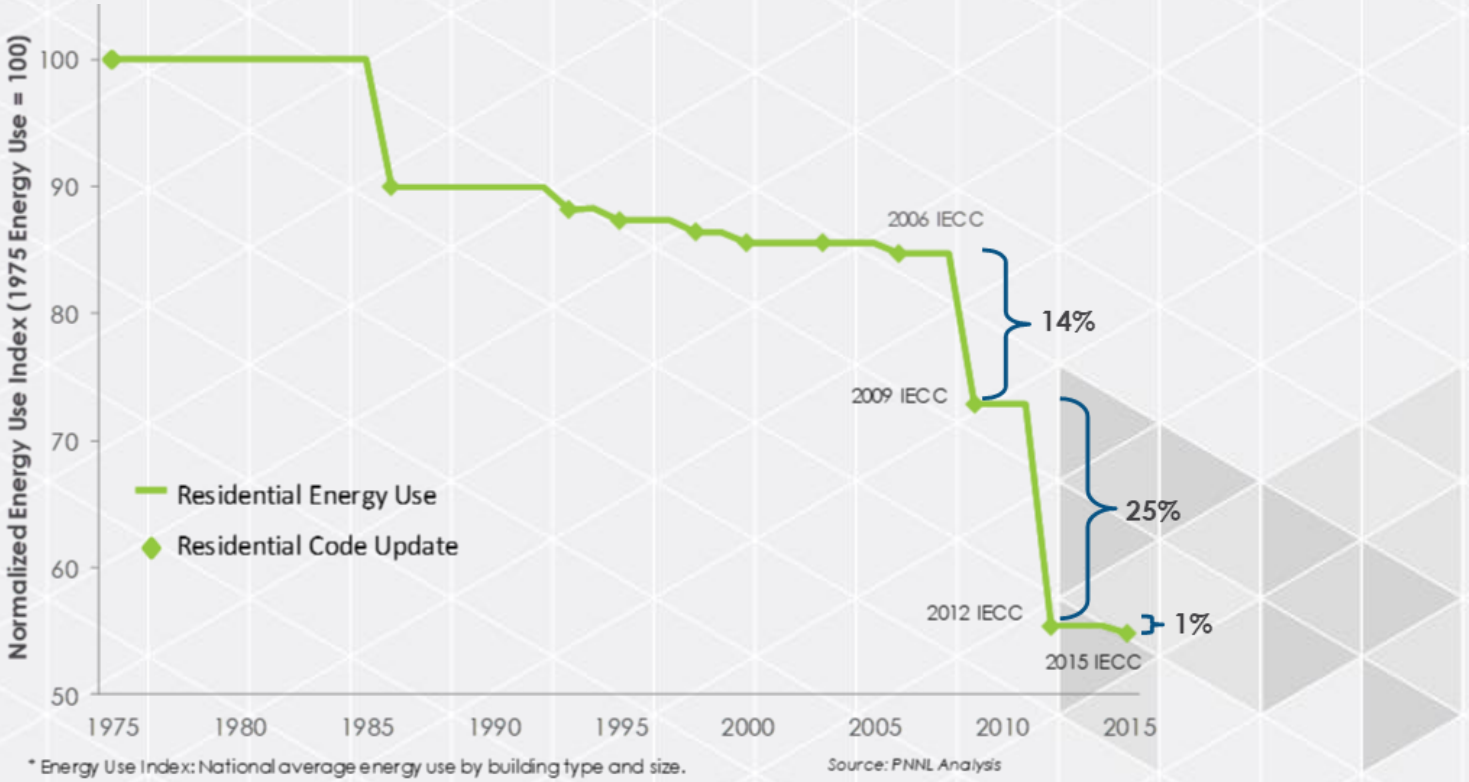
- The energy code is the only building code that pays for itself!
  - Lower energy and operating costs
- Electricity generation reduced with advanced codes
  - Improved health / reduced community health costs
  - Reduced GHG emissions
  - Less grid stress
- Resiliency benefits
  - Homes constructed to newer codes allow longer period of safely sheltering in place

Energy Code Economics

- DOE conducts several analyses that deal with energy cost savings and cost effectiveness of the energy code
  - *State level cost-effectiveness*
  - *Cost determination*
- Both include economic impacts in the analysis

Energy Code Economics

- DOE determination establishes the improvement of energy efficiency relative to the previous edition of the model code
  - Based on national average



Energy Code Economics

- DOE conducts technical analysis evaluating the impacts of the updated code (relative to the previous edition). DOE estimates national savings for:

- Energy cost savings
- Source energy savings
- Site energy savings

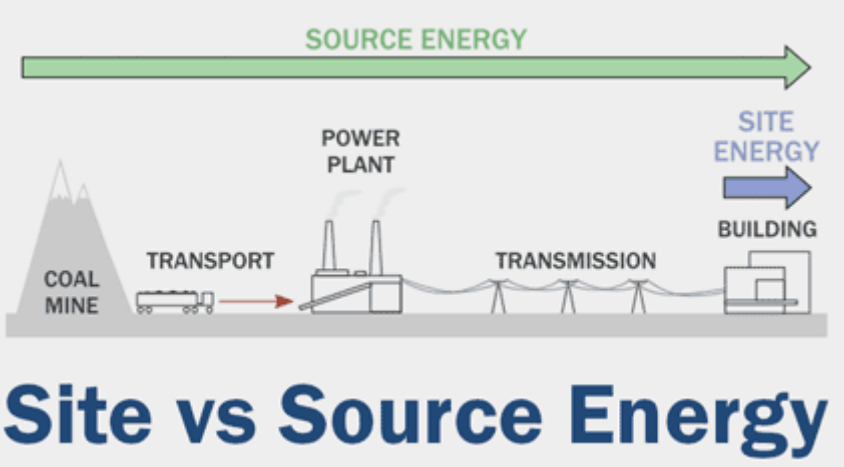


image: archtoolbox.com

Energy Code Economics

- DOE also develops reports evaluating the impacts of the updated code for cost-effectiveness in each state, including:

- Life cycle savings
- First year cost savings
- Simple payback

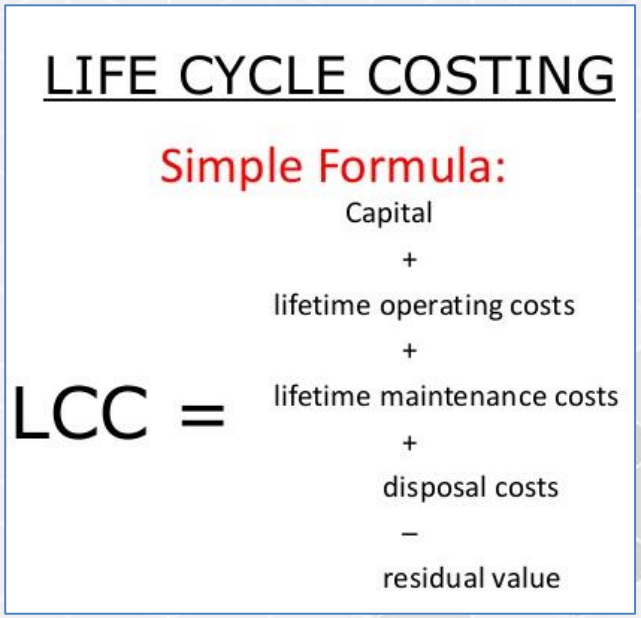


Image: slideshare.net

Example: DOE State Cost-Effectiveness Report

The average statewide economic impact (per dwelling unit) of upgrading to the 2018 IECC is shown in the table below based on typical cost-effectiveness metrics. [1]

Metric	Compared to the 2009 IECC
Life-cycle cost savings of the 2018 IECC	$14,284.10
Simple payback period of the 2018 IECC	1.8 years
Net annual consumer cash flow in year 1 of the 2018 IECC[2]	$821.87
Annual (first year) energy cost savings of the 2018 IECC ($)[3]	$938.68
Annual (first year) energy cost savings of the 2018 IECC (%)[4]	15.0%

Energy Code Economics

(Residential Example but Commercial savings can be exponentially greater!)

- How much does $1,500 of energy improvements add to your monthly payment on a $250,000 mortgage?
  - $80
  - $50
  - $30
  - $10

Image: trulia.com

Energy Code Economics

(Residential Example but Commercial savings can be exponentially greater!)

None of the above!!

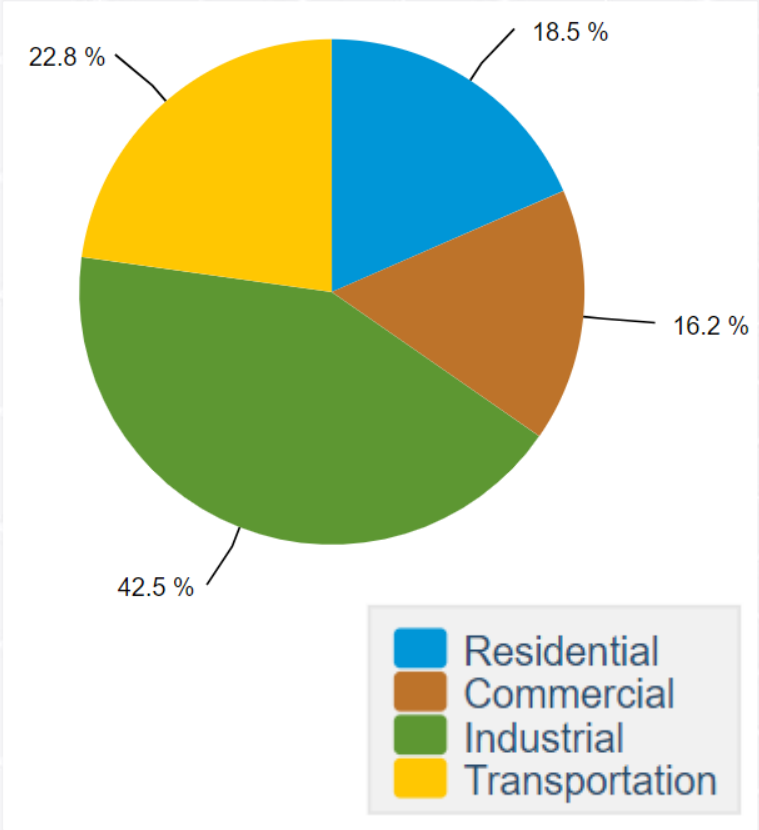
At current interest rates (3.4%) a $1,500 increase on a 30-year mortgage would up the payment….

A whopping $6 per month!!

VALUE OF ENERGY CODES

Nebraska Energy Use by Sector

- Buildings account for nearly 50% of Nebraska energy use*
- Big opportunity to reduce consumption through building energy efficiency
  - Updated energy codes
  - Improved compliance
  - Advanced technologies



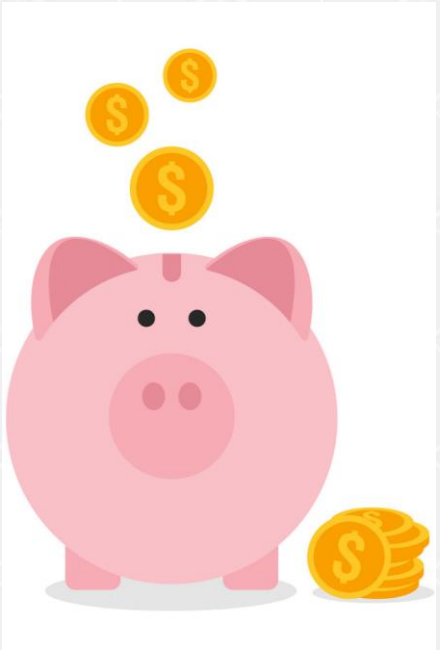
* Source: Energy Information Administration, State Energy Data System

Resilience

- Energy codes reduce demand on the grid and improve grid reliability
- Help buildings remain at livable temperatures for longer periods
- Occupants can shelter in place longer during periods of crisis (natural disasters, power outages)
- Buildings can better withstand extreme temperatures (i.e. Polar Vortex)

Consumer Protection

- Building energy efficiency can substantially reduce energy costs for homeowners and renters
- Energy cost savings are particularly important for low-income families that historically have high energy burdens
- Buildings built today will likely be around for +/-100 years – most cost-effective to implement energy efficiency measures during initial construction.



Indoor Environmental Quality

- Building envelope improvements required by the energy code improve indoor environmental quality and comfort
- Properly installed insulation and a tight building envelope allow for Buildings to remain at a comfortable temperature, even during extreme weather
- Mechanical ventilation and air sealing requirements provide Buildings with appropriate levels of fresh air from a controlled source

Indoor Environmental Quality - Health Implications

- Efficiency updates to buildings can have a large impact on occupant health
- Improvements such as air sealing and better insulation have been found to reduce asthma-related hospital visits
- Appropriate ventilation reduces indoor air pollutants and mold growth
  - Lowers rates of sinus infections, allergies, and colds
  - Increases productivity and cognitive function for workers

Jobs

- Energy efficiency sector supports nearly than 14,000 jobs in Nebraska
- 67% of these jobs are in the construction industry
- As codes advance and new technologies become commonplace, jobs are likely to grow in this field

Source: https://www.cleanjobsmidwest.com/state/nebraska

Stronger Local Economy

- Energy codes reduce the energy use of buildings, saving Owners/Occupants money on their utility bills
- Puts dollars back into Owner/Occupant's pockets that they can spend in the local economy

Sustainability Goals

- Improving building efficiency is essential for states and municipalities in order to achieve climate and sustainability goals
- Reduced energy consumption of buildings leads to reduced power generation and lower carbon emissions
- Improved grid reliability
- Effectiveness of renewable energy sources

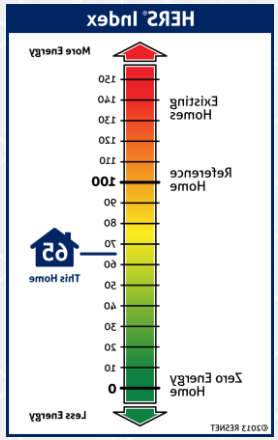
Increased Value of Buildings

- Buildings constructed and labeled to be energy efficient have a higher market value and sell/lease faster than less-efficient Buildings
- Adds value to buildings *and* communities
- Increases tax base for municipalities
- Owners of an energy efficient building are less likely to default on finance payments, giving financial flexibility to spend in community

APPRAISALS AND RESALE VALUE

Green Appraisers

- Unlike “granite countertops”, energy efficiency investments are not always visible at a glance
- Utilize certifications, labels, ratings, and scores
- Make sure appraisers are accurately valuing sustainable properties
- Data base being developed to identify/quantify EE features



Efficient Buildings Have Higher Resale/Lease Value

- Green certified Buildings have a higher market value than less efficient buildings.
- Research shows that, on average, certified buildings sell/lease faster than noncertified
- The odds of financial default are also one-third less for certified buildings.

Lender Specification

- *“This Building is being built/renovated/updated to standards above prevailing code. It is designed and constructed with unique features and materials and with high efficient equipment and in accordance with high efficiency standards. The Lender shall choose an Appraiser educated and knowledgeable in this type of valuation of these specialized Buildings. It is understood that unless said Appraiser can provide verification of education and knowledge, they will not be permitted to conduct the appraisal for this project.”*

MARKETING HIGH PERFORMANCE

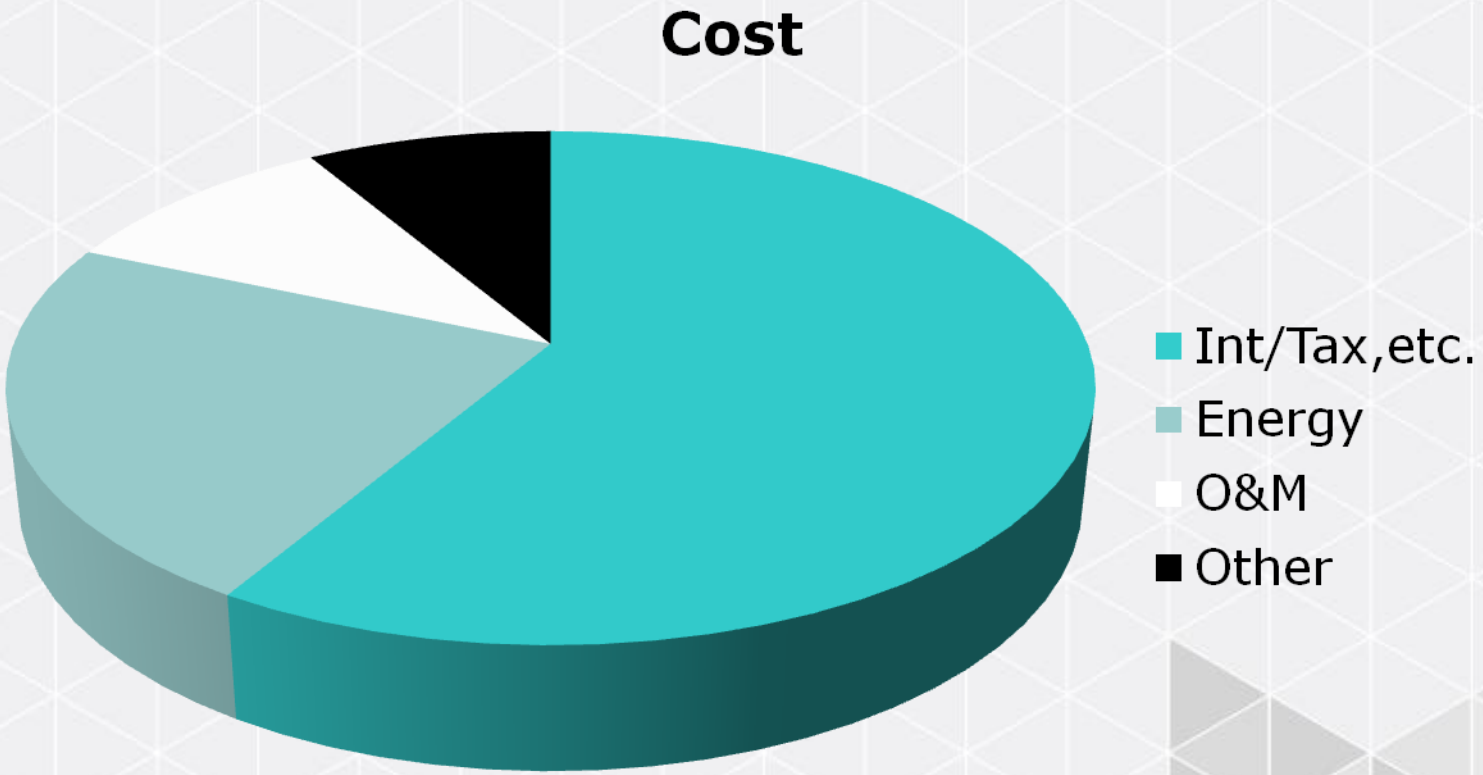
High Performance Buildings

- High-performing buildings cost less to heat and cool and operate, are more *comfortable* and are *healthier* for their occupants.
- 69% of real estate agents said promoting energy efficiency in listings was very or somewhat valuable
- Immediate benefits – energy and maintenance savings, comfort, and health
- Long term-benefits – higher selling/lease price/occupancy rates

Top 2 Priorities: Increased Comfort and Cost Savings

- Use technology and data to your advantage
  - Show concrete and measurable data using thermal imaging, temperature readings and manometers used in blower door testing
- Assurance = Less liability = High referral rate
- More control over the building
- As an industry, we need to continue to leverage technology to offer better ways to lower utility expenses, increase health, comfort and the environment.

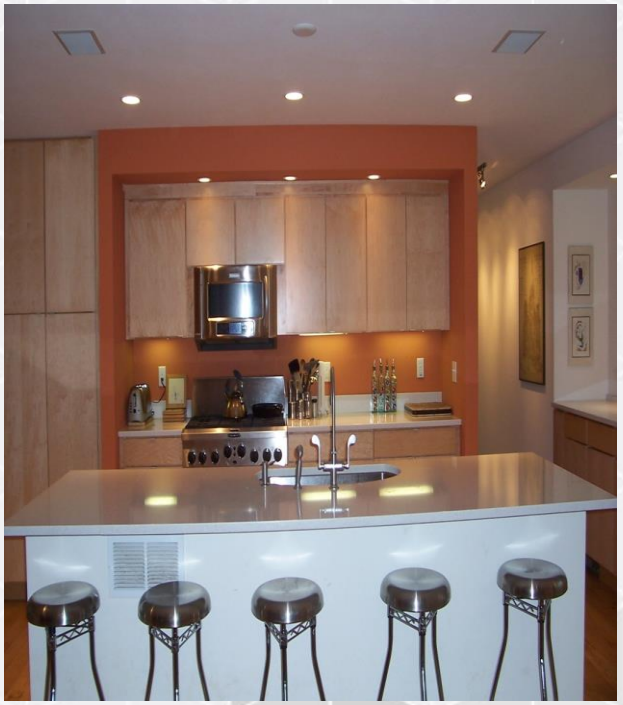
Equity!



Monthly Financial Snapshot

Bottom Line = Bottom Line

- "Right Sized" better design
- Comfort
- Competitively Priced
- Energy Savings + Reduced Maintenance



Cash Savings= Equity

Key Takeaways

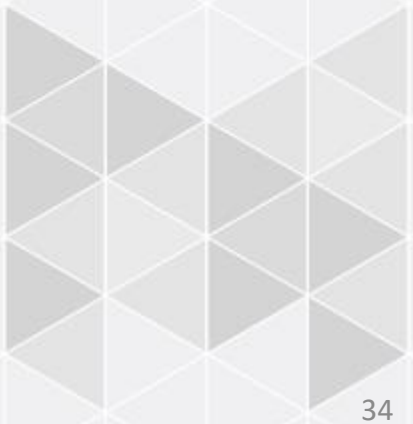
- Energy codes are cost effective, and offer significant energy and cost savings to building owners and occupants over the lifetime of the building
- Strong energy codes have economic, resilience, and health benefits
- Building energy efficiency can be an effective marketing tool for builders – the key is to understand and know how to communicate the benefits

Review:

- History of Energy Codes
- Building Science
- Energy Code Requirements
- Mechanical Systems
- Best Practices
- Non-Code Standards
- Advanced Building Efficiency Technologies
- The Value of Energy Codes and Marketing

Unmute or type in chat

QUESTIONS?



Link in chat

FINAL EXAM

Course Certificate and Continuing Education Credits

- All students who have attended at least **7 out of 8 classes** will receive a certificate of completion for the course.
- Students will also receive **ICC and AIA CEUs** for the number of classes attended.
- Please take the course evaluation and provide your feedback!

- Keep an eye out for an email from Corie.

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THANK YOU!!