Nebraska's Residential Energy Code: The 2018 IECC

RES Check and HVAC Rightsizing

Nebraska Energy Code Training Program

Instructor: Matt Belcher

September 1, 2022, 1:00 p.m. – 2:30 p.m.

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Housekeeping

- Attendees are muted upon entry
- Enter questions in the chat box
- This training is being recorded
- Slides and recording will be emailed to attendees and posted on the MEEA website
- CEUs are provided (ICC and AIA)
- Email Corie at canderson@mwalliance.org with any questions

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About MEEA

- Nonprofit membership organization with 160+ members, including:
  - Utilities
  - Research institutions
  - State and local governments
  - Energy efficiency-related businesses
- MEEA helps stakeholders understand and implement cost-effective energy efficiency strategies

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About Matt and Verdatek Solutions

- 40+ Years in the Building Industry
- Served as a Top Building Codes official in St. Louis area
- Director of University of Missouri Columbia High Performance Buildings Research Center. Created and Instructed Curriculum for Students and Industry Professionals
- Assisting University of Missouri Science & Technology in Building and Energy Code Curriculum and Policy
- ICC Member serving on 2012, 2015, 2018 and 2024 Energy Code Development Committee. 2021 Building Code-General Committee
- NAHB Approved Instructor for Advanced Building Science
- Advanced Business Management

VERDATEK SOLUTIONS

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Learning Objectives

- Understand prescriptive energy code requirements from 2018 IECC
- Identify standards for insulation requirements and fenestration performance
- Understand how to use RESCHECK for a simple UA Trade-off
- Learn how RESCHECK can be used as a Simulated Performance Alternative tool

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Nebraska Residential Field Study

- Conducted in 2017 by **Nebraska Department of Environment and Energy.** 2009 IECC was the baseline.
- Collected and analyzed several data points for new homes, including:
  - Envelope air leakage
  - Efficacy in lighting
  - Duct leakage
  - Ceiling & exterior wall insulation
  - Basement & slab insulation
  - Windows

For More Information and Data:

https://www.energycodes.gov/sites/default/files/documents/Nebraska_Residential_Compliance_Evaluation_final.pdf

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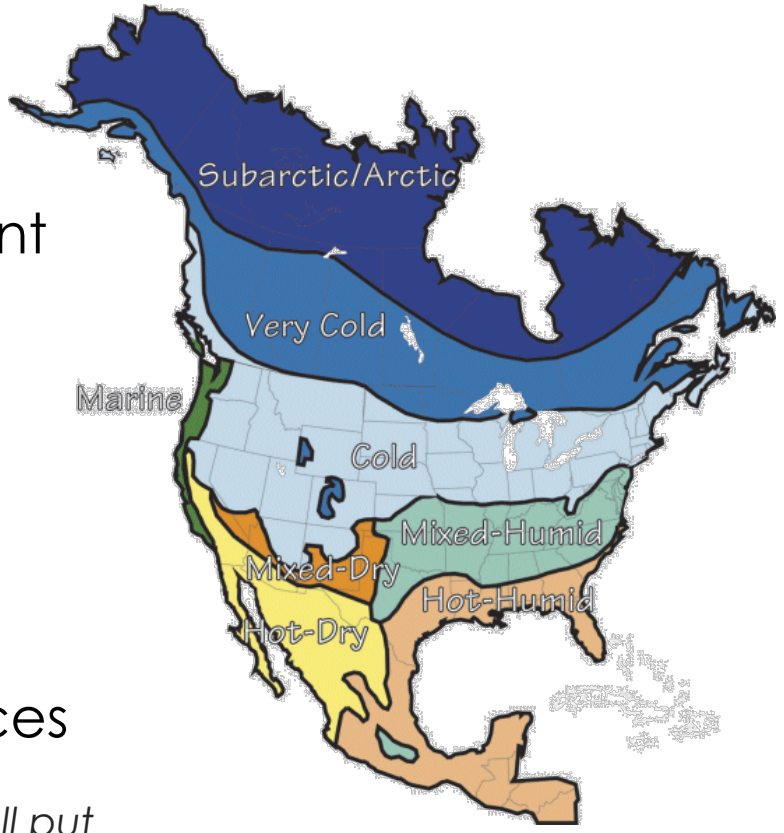
Design Approach for a High-Performance Home

Building Science as guide

Understand physics of heat air and moisture flow

- **High Performance Enclosure**
  Sound structure, shell is tight, well-insulated and resilient
- **Air Distribution**
  Sealed & insulated ducts – located inside building envelope,
  intentional fresh air delivery
- **Reduced Equipment & Loads**
  Efficient Heating, Cooling, Hot Water, Lights, Appliances



The Key: It's not necessarily the stuff in the building — it's how it's all put together! (The house is a system)

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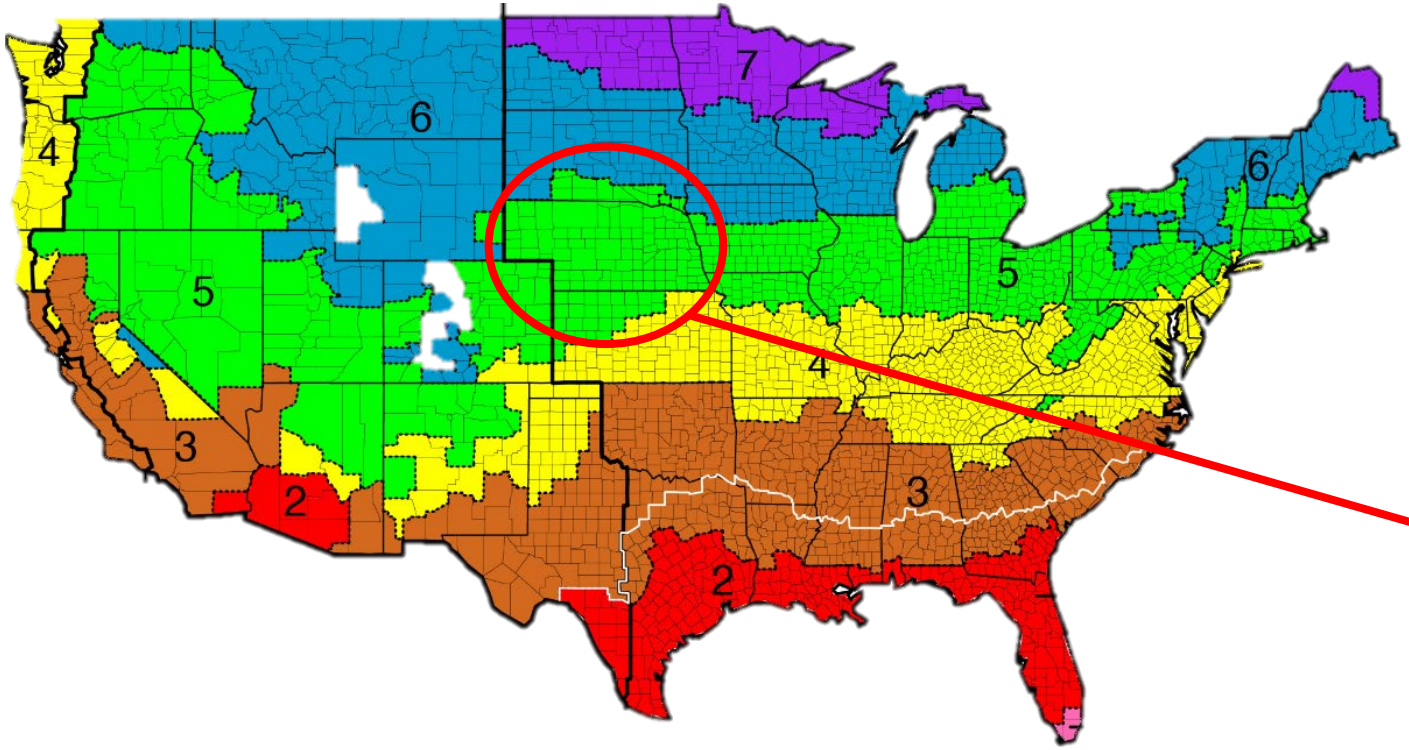
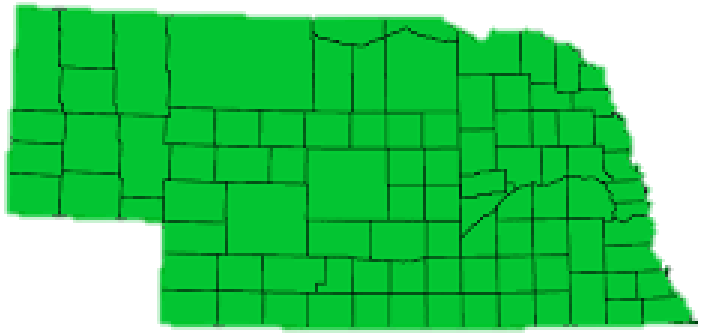
Climate Zones



- Nebraska has only one climate zone – 5A
- Cold & Moist climate



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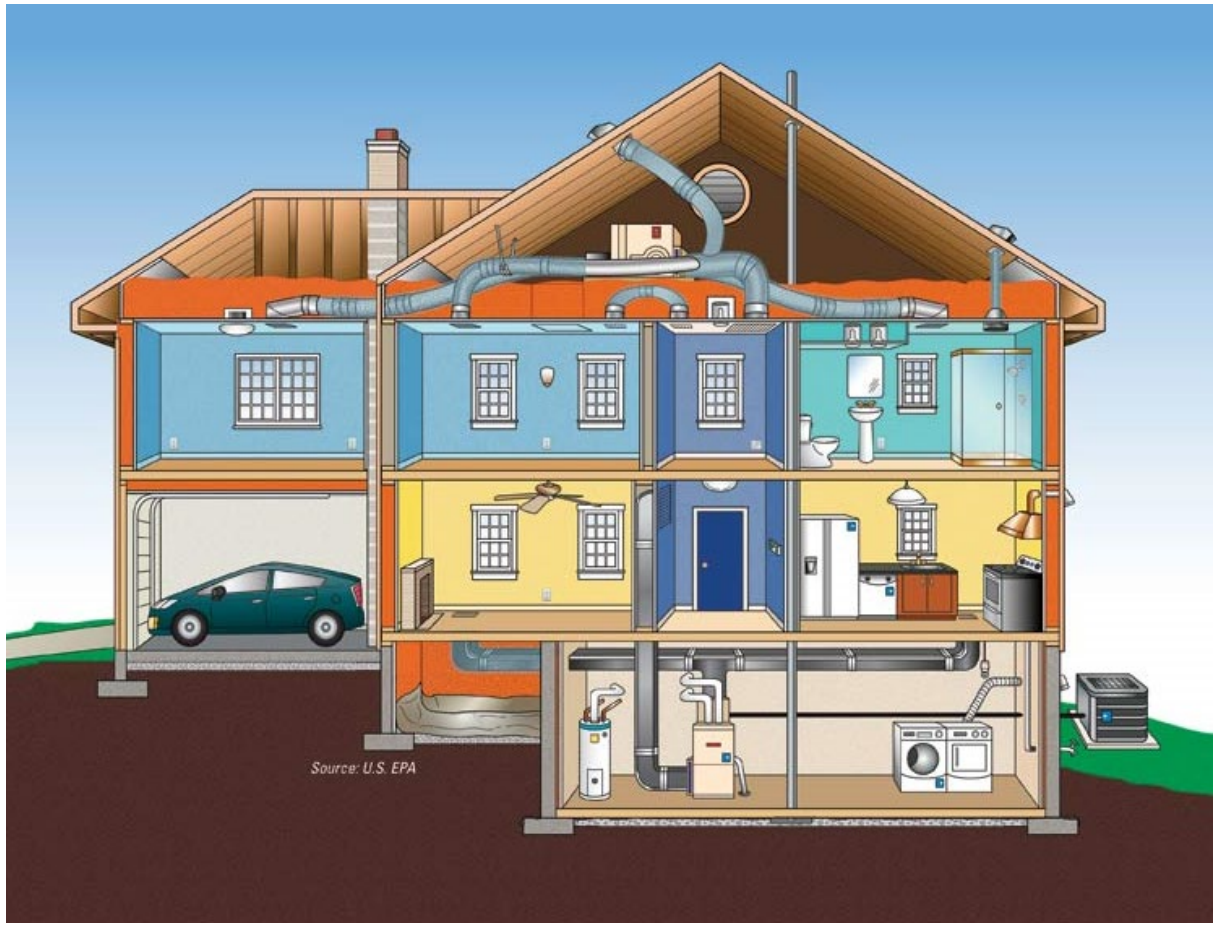
Part I

Building Science

A house is a system made up of interrelated parts:

- The building thermal envelope
- Systems
  - Heat and air conditioning
  - Ventilation
  - Water heating and distribution
- Lighting & appliances



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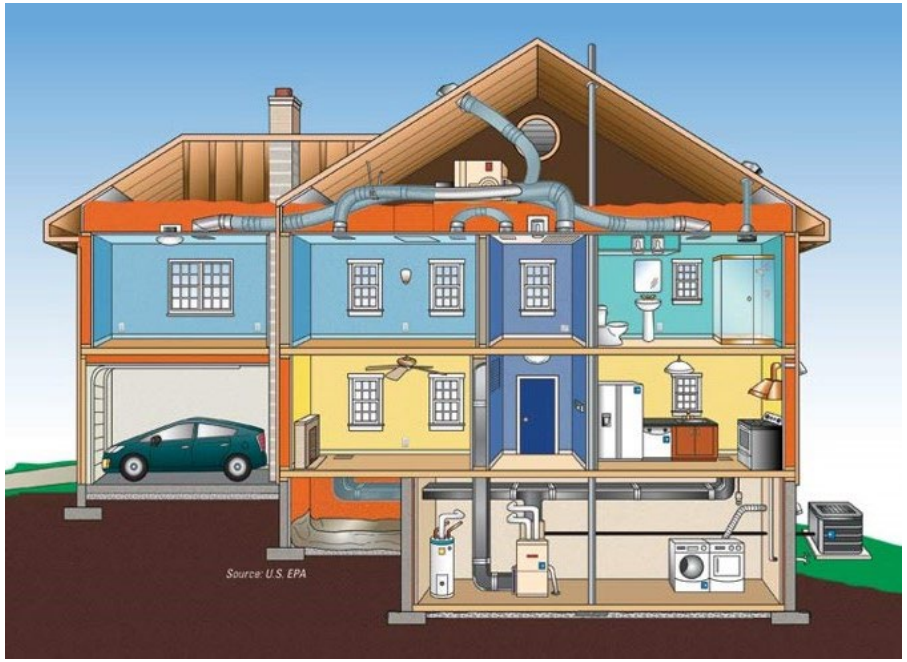
Building Science

Building Thermal Envelope

IECC Definition

The basement walls, exterior walls, floor, roof and any other building elements that enclose conditioned space or provide a boundary between conditioned space and exempt or unconditioned space.

What parts of this house are enclosed by the thermal envelope?



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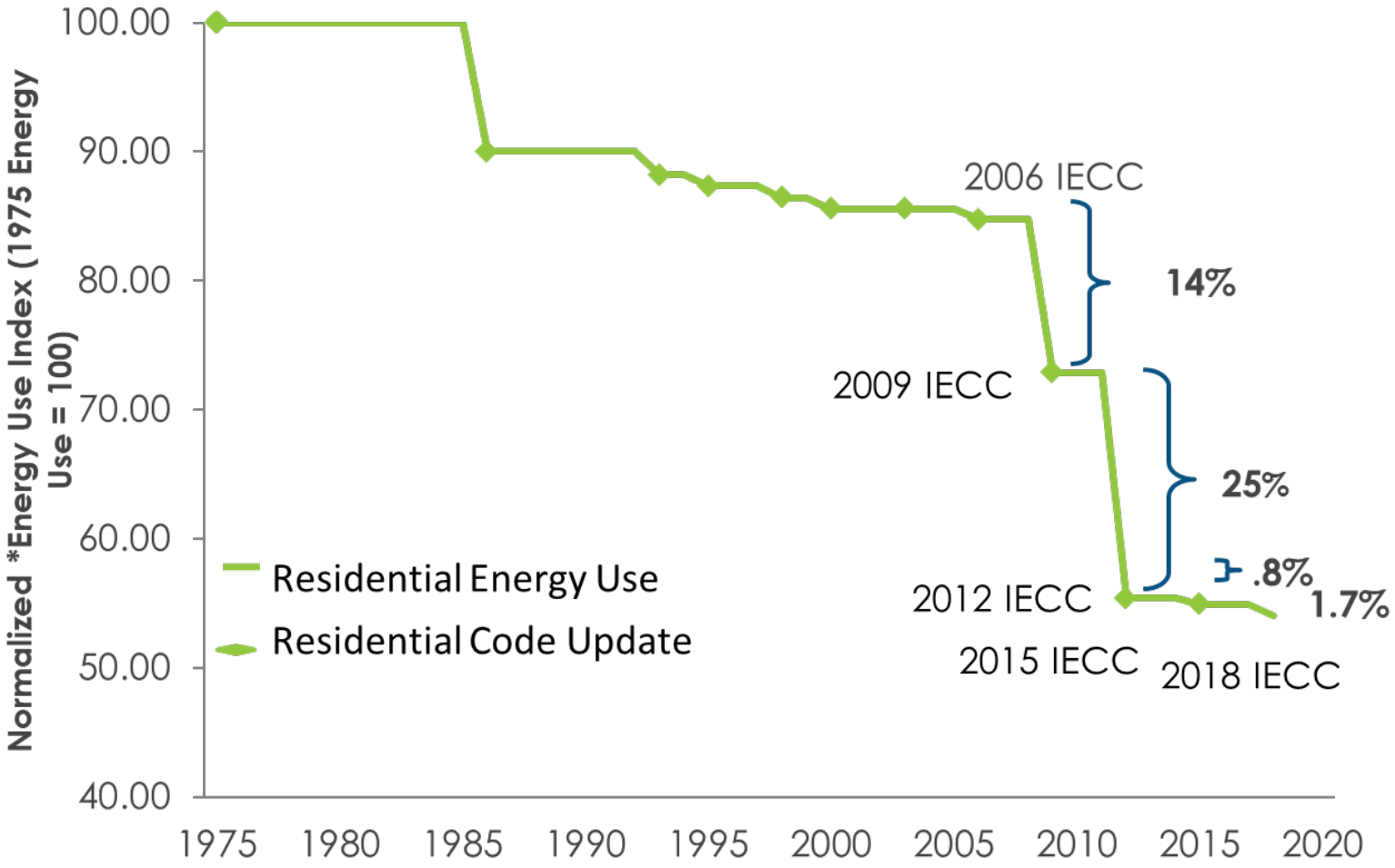
Residential Energy Code Background



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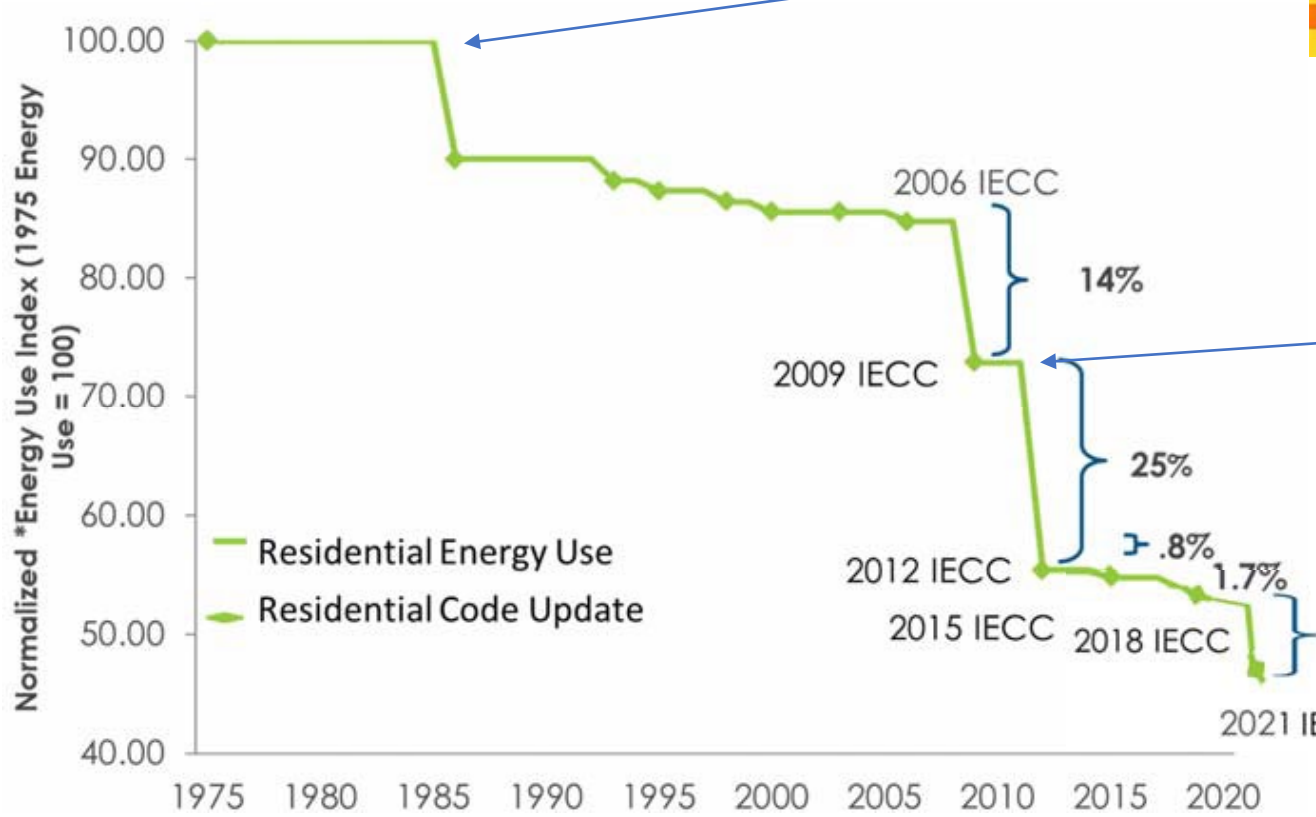

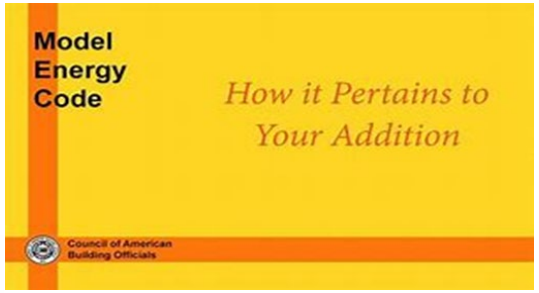

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Part 2

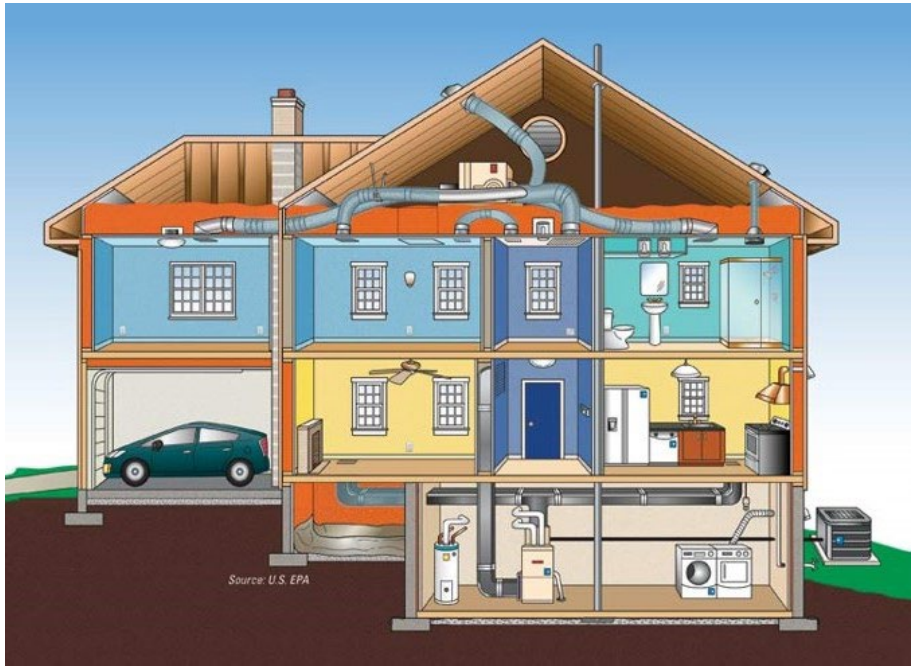
Energy Code: Residential Building

Applies to:

- New construction
- 1 and 2 family (R3)
- Multi-family, 3 stories and less (R2 and R4) – IECC 2009
- Additions, Alterations, Repairs

Exempt Buildings

- No conditioning
- Historical



CONDITIONED SPACE. For energy purposes, space within a building that is provided with heating and/or cooling *equipment* or systems capable of maintaining, through design or heat loss/gain, 50°F (10°C) during the heating season and 85°F (29°C) during the cooling season, or communicates directly with a *conditioned space*. For mechanical purposes, an area, room or space being heated or cooled by any *equipment* or *appliance*.

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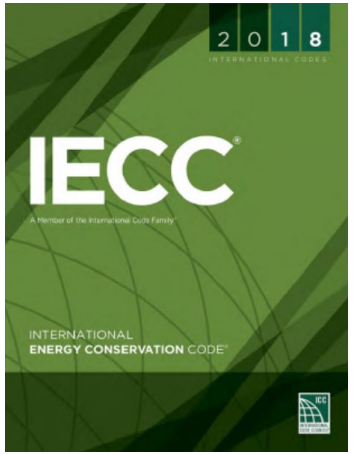
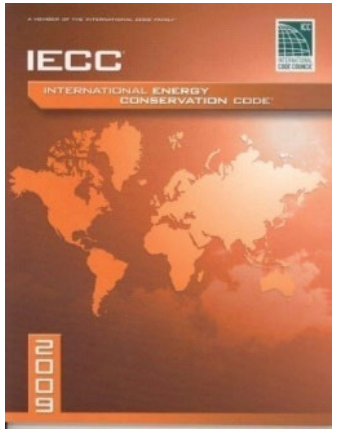
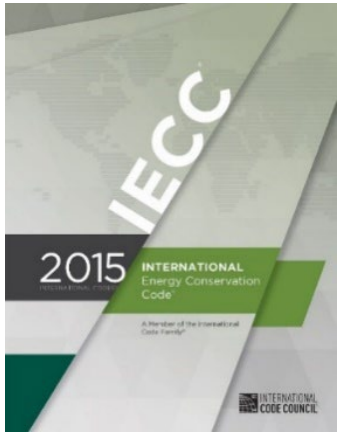
Scope of Residential Energy Code



- Focus is on building envelope
  - Ceilings, walls, windows, floors, foundations
  - Sets insulation levels, window U-factors and SHGC
  - Infiltration control
    - Caulk and seal to prevent air leaks
    - Verify envelope tightness with blower door test (or visual inspection for 2009 code)
- Ducts
  - No building cavities as ducts (post-2009)
  - Seal properly and insulate
    even if all ductwork is in conditioned space
  - Verify tight with duct pressurization test
- Lighting equipment
  - High-efficacy bulbs required (50%, 75%, 90%)
- HVAC equipment efficiencies covered by different DOE standard
- No appliance requirements





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IECC Code Differences – ‘15 to ’18

- Window Ufactors dropped slightly from U35 to U32 & U30 (CZ’s 4-5)
- Exception for log homes built according to ICC 400
- ERV/HRV ducts exempt from leakage testing (if independently ducted).
- Ducts allowed to be buried in ceiling insulation
  - Ducts R-8
  - Minimum surrounding insulation R-19 (R-13 for CZ1-3A, ducts >3’)
  - Effective R-25 when modeling
- Ducts in conditioned space
  - Completely inside thermal envelope
  - Buried ducts with AHU inside envelope plus < 1.5% Total Leakage plus threshold of ceiling insulation
- 90% Efficient Lighting (LEDs)
- ERI relaxed targets
  (62 for CZ4, 61 for CZ5, backstop penalty for renewables)

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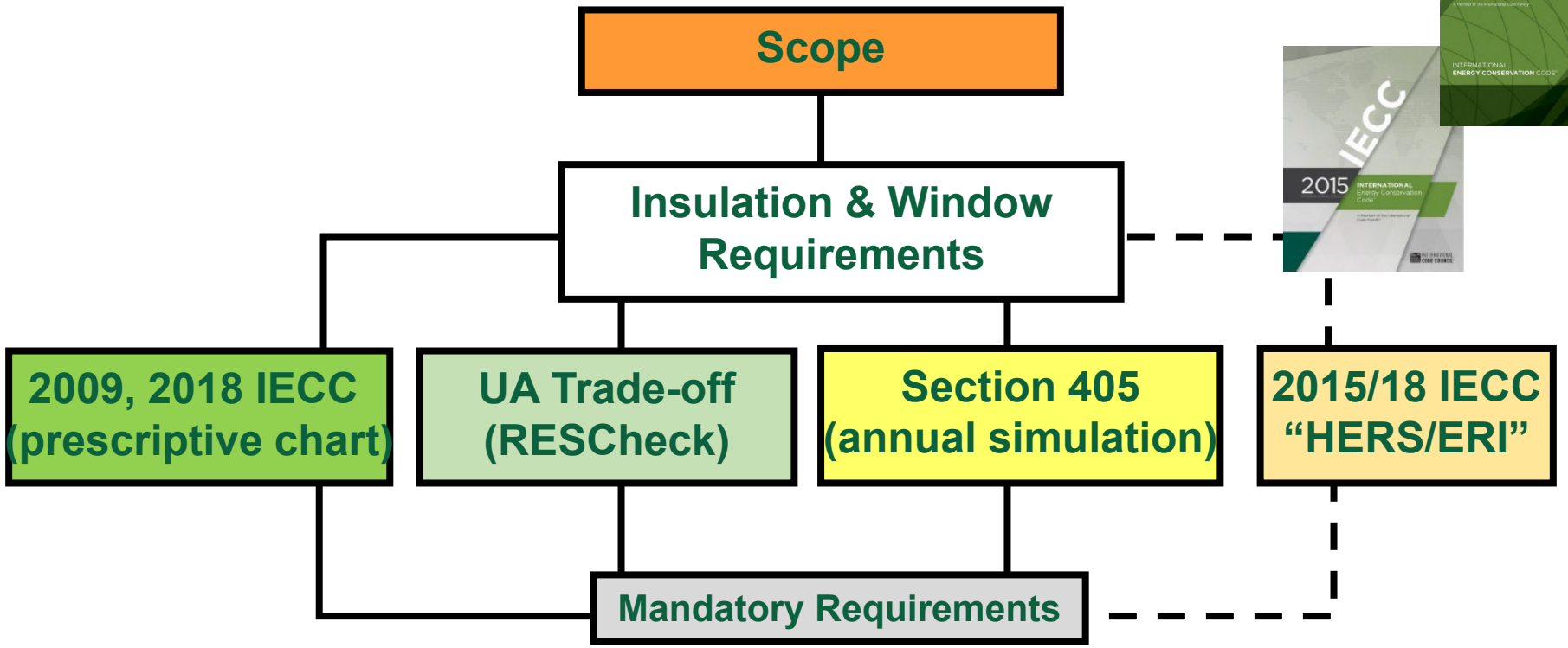
Energy Codes

Compliance Paths



- The new Energy Rating Index (ERI) path gives the most design flexibility (e.g., credit for mechanical equipment efficiency).
- It also credits items not covered by the code (e.g., appliance efficiencies).

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Energy Codes

2009 IECC- Section 402.1

- One prescriptive "answer" for how to build per climate zone (CZ: 4 and 5)
- Includes lots of footnotes

2009

TABLE 402.1.1
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	FENESTRATION *U*-FACTOR[b]	SKYLIGHT[b] *U*-FACTOR	GLAZED FENESTRATION SHGC[b, e]	CEILING *R*-VALUE	WOOD FRAME WALL *R*-VALUE	MASS WALL *R*-VALUE[i]	FLOOR *R*-VALUE	BASEMENT[c] WALL *R*-VALUE	SLAB[d] *R*-VALUE & DEPTH	CRAWL SPACE[c] WALL *R*-VALUE
1	1.2	0.75	0.30	30	13	3/4	13	0	0	0
2	0.65[j]	0.75	0.30	30	13	4/6	13	0	0	0
3	0.50[j]	0.65	0.30	30	13	5/8	19	5/13[f]	0	5/13
4 except Marine	0.35	0.60	NR	38	13	5/10	19	10/13	10, 2 ft	10/13
5 and Marine 4	0.35	0.60	NR	38	20 or 13+5[h]	13/17	30[g]	10/13	10, 2 ft	10/13
6	0.35	0.60	NR	49	20 or 13+5[h]	15/19	30[g]	15/19	10, 4 ft	10/13
7 and 8	0.35	0.60	NR	49	21	19/21	38[g]	15/19	10, 4 ft	10/13

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Energy Codes

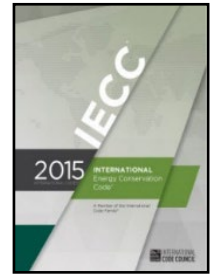
Prescriptive R-values 2015 IECC vs. 2018 IECC

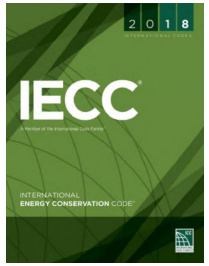
- One prescriptive "answer" for how to build per climate zone (CZ: 4 and 5)

402.1.4 is similar table for U-factors

TABLE R402.1.2
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	FENESTRATION *U*-FACTOR[b]	SKYLIGHT[b] *U*-FACTOR	GLAZED FENESTRATION SHGC[b, e]	CEILING *R*-VALUE	WOOD FRAME WALL *R*-VALUE	MASS WALL *R*-VALUE[i]	FLOOR *R*-VALUE	BASEMENT[c] WALL *R*-VALUE	SLAB[d] *R*-VALUE & DEPTH	CRAWL SPACE[c] WALL *R*-VALUE
2015										
3	0.35	0.55	0.25	38	20 or 13+5[h]	8/13	19	5/13[f]	0	5/13
4 except Marine	0.35	0.55	0.40	49	20 or 13+5[h]	8/13	19	10 /13	10, 2 ft	10/13
5 and Marine 4	0.32	0.55	NR	49	20 or 13+5[h]	13/17	30[g]	15/19	10, 2 ft	15/19
6	0.32	0.55	NR	49	20+5 or 13+10[h]	15/20	30[g]	15/19	10, 4 ft	15/19
2018										
3	0.32	0.55	0.25	38	20 or 13+5[h]	8/13	19	5/13[f]	0	5/13
4 except Marine	0.32	0.55	0.40	49	20 or 13+5[h]	8/13	19	10 /13	10, 2 ft	10/13
5 and Marine 4	0.30	0.55	NR	49	20 or 13+5[h]	13/17	30[g]	15/19	10, 2 ft	15/19
6	0.30	0.55	NR	49	20+5[h] or 13+10[h]	15/20	30[g]	15/19	10, 4 ft	15/19





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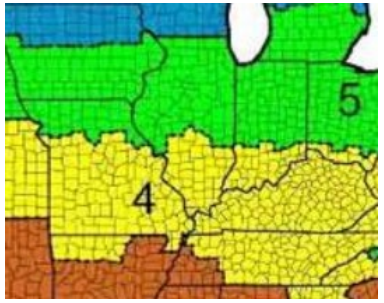
Energy Codes

Prescriptive U-factors 2015 IECC vs. 2018 IECC

- One prescriptive "answer" for how to build per climate zone (CZ: 4 and 5)



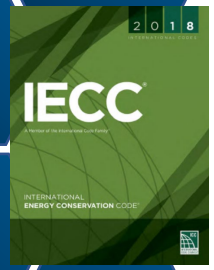


TABLE R402.1.4
EQUIVALENT *U*-FACTORS[a]

CLIMATE ZONE	FENESTRATION *U*-FACTOR	SKYLIGHT *U*-FACTOR	CEILING *U*-FACTOR	FRAME WALL *U*-FACTOR	MASS WALL *U*-FACTOR[b]	FLOOR *U*-FACTOR	BASEMENT WALL *U*-FACTOR	CRAWL SPACE WALL *U*-FACTOR
2015								
4 except Marine	0.35	0.55	0.026	0.060	0.098	0.047	0.059	0.065
5 and Marine 4	0.32	0.55	0.026	0.060	0.082	0.033	0.050	0.055
2018								
4 except Marine	0.32	0.55	0.026	0.060	0.098	0.047	0.059	0.065
5 and Marine 4	0.30	0.55	0.026	0.060	0.082	0.033	0.050	0.055

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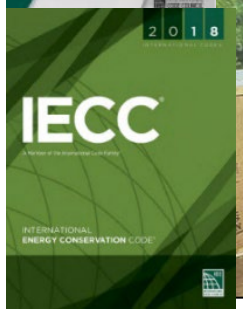
Energy Codes

Section 402.2: Insulation Requirements

- Details for insulating various aspects of the building envelope:
  - **Ceilings with Attic – 402.2.1**
  - **Ceilings w/out Attic – 402.2.2**
  - **Eave baffles – 402.2.3**
  - **Access hatches and doors– 402.2.4**
  - Mass Walls – 402.2.5
  - Steel Framing – 402.2.6
  - Partial Structural sheathed walls – 402.2.7
  - **Floors – 402.2.8**
  - **Basement Walls – 402.2.9**
  - Slab-on-grade – 402.2.10
  - **Crawlspace Walls – 402.2.11**
  - Masonry Veneer – 402.2.12
  - Sunrooms – 402.2.13



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Envelope Tradeoff Options

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Questions so far?

Please type in chat or unmute

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Total UA Method

- All **mandatory and prescriptive** requirements (other than Table R402.1.2) must be met

- Include documentation to demonstrate compliance with the UA Trade-off method. Compliance software submittal must include completed compliance form, inspection checklist and certificate demonstrating compliance with 2018 IECC levels

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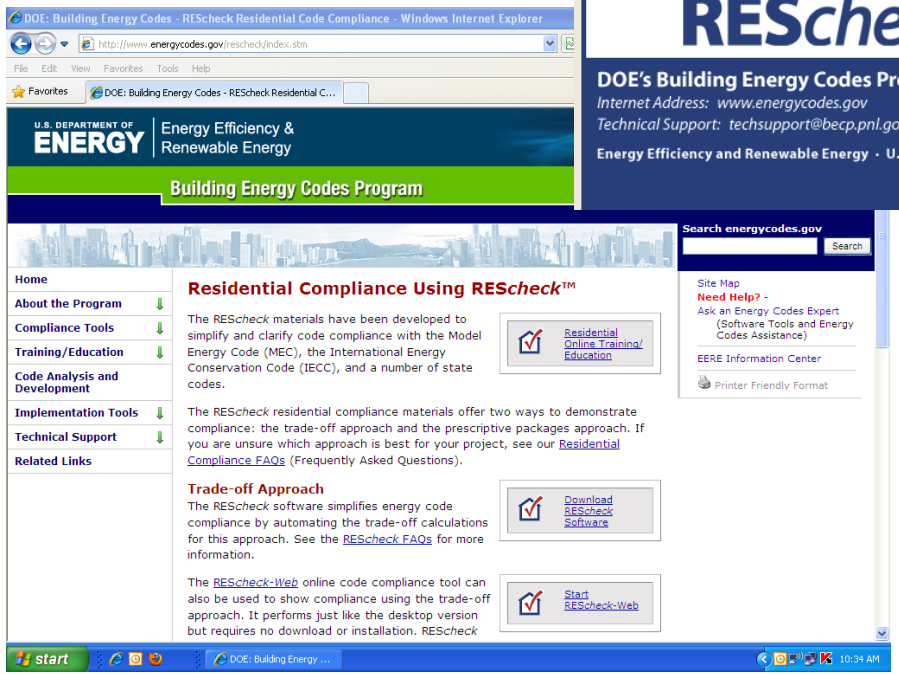
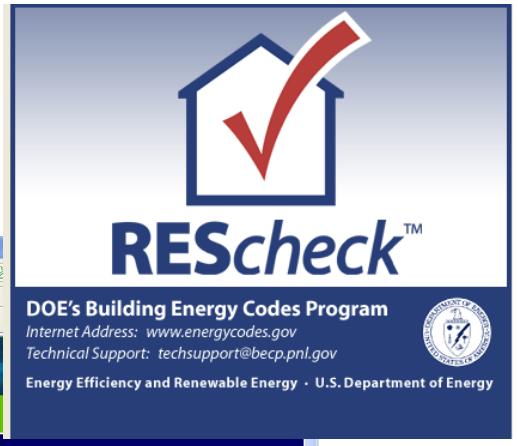
Continuous Insulated Envelope

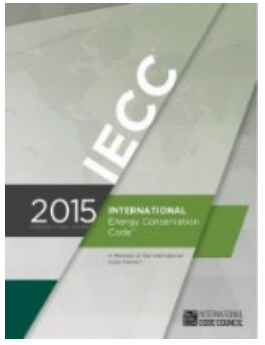
- Total wall performance allows for window walls or other design trade offs..

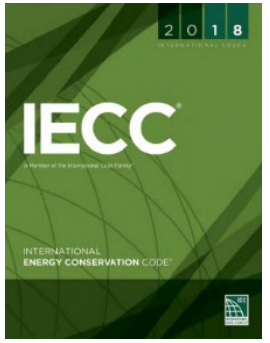
REScheck Tradeoff Option

- www.energycodes.gov
- Software evaluates specific designs quickly
- Demonstrates SHGC compliance
- Allows trade-offs
  - Building envelope components
  - No trade-offs for better heating & cooling equipment efficiencies
- Specify code edition
- UA or Simulated Performance









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Conduction Heat Flow

Heat transfer through a solid object: the formula for calculating conduction heat transfer is $q = U \times A \times \Delta T$

q = heat flow (Btu/hr)

U = inverse of R-Value [U=1/R, R=1/U] (Btu/hr ft^2 °F)

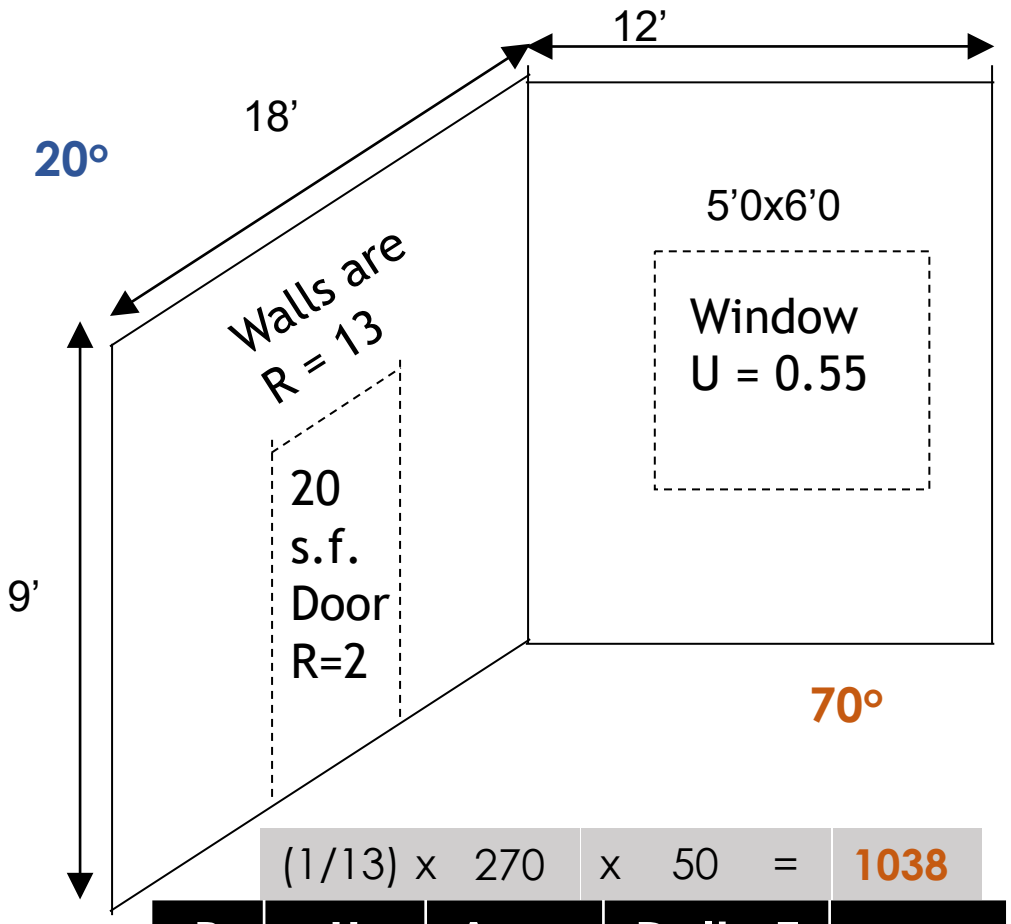
A = area (square feet)

ΔT = temperature difference across component (°F)

$q = U \times A \times \Delta T$

Manual J: $q = A \times HTM$

where HTM = UxΔT



	(1/13) x	270	x 50 =	1038
R	**U**	**Area**	**Delta T**	**q**
13	1/13	220	50	846
2	½	20	50	500
-	0.55	30	50	825
				2171

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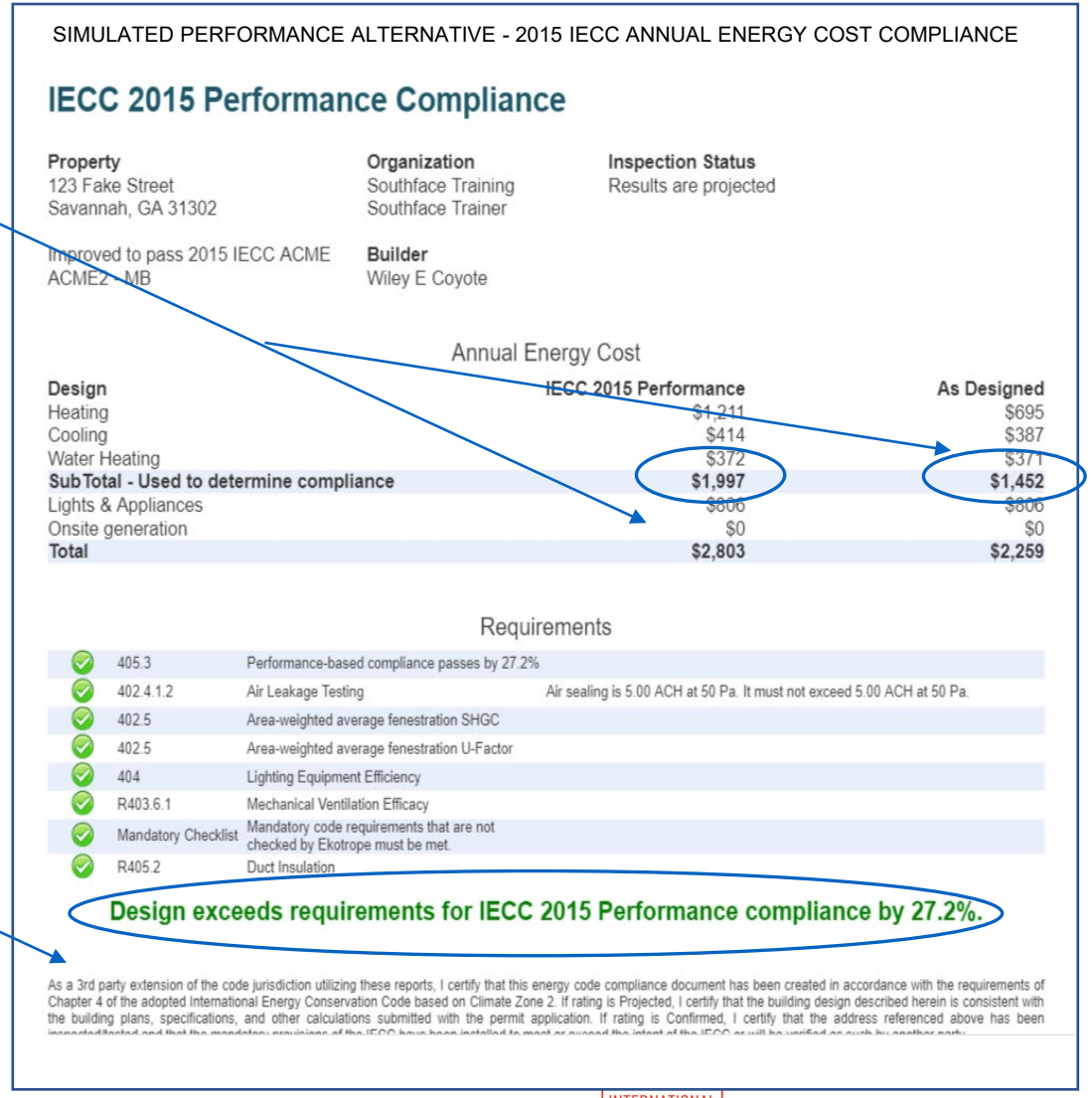
Section 405 Simulated Performance Alternative, Sample Report

- Annual energy usage simulation demonstrates that the proposed building's energy costs are ≤ "standard code" building
- No credit for mechanical efficiencies
- Likely to involve a HERS rater
- Ekotrope, REMrate & Energy Gauge are acceptable

- Compares total annual energy costs
  - ❑ Window U-factor and SHGC
  - ❑ Envelope and duct testing
  - ❑ Lighting, duct insulation
- Compares energy costs of actual home being built against 2015/18 IECC reference home's energy cost



SIMULATED PERFORMANCE ALTERNATIVE - 2015 IECC ANNUAL ENERGY COST COMPLIANCE

IECC 2015 Performance Compliance

Property
123 Fake Street
Savannah, GA 31302

Organization
Southface Training
Southface Trainer

Inspection Status
Results are projected

Improved to pass 2015 IECC ACME ACME2 - MB

Builder
Wiley E Coyote

Annual Energy Cost

Design	IECC 2015 Performance	As Designed
Heating	$1,211	$695
Cooling	$414	$387
Water Heating	$372	$371
SubTotal - Used to determine compliance	**$1,997**	**$1,452**
Lights & Appliances	$806	$806
Onsite generation	$0	$0
Total	**$2,803**	**$2,259**

Requirements

405.3	Performance-based compliance passes by 27.2%	
402.4.1.2	Air Leakage Testing	Air sealing is 5.00 ACH at 50 Pa. It must not exceed 5.00 ACH at 50 Pa.
402.5	Area-weighted average fenestration SHGC	
402.5	Area-weighted average fenestration U-Factor	
404	Lighting Equipment Efficiency	
R403.6.1	Mechanical Ventilation Efficacy	
Mandatory Checklist	Mandatory code requirements that are not checked by Ekotrope must be met.	
R405.2	Duct Insulation	

Design exceeds requirements for IECC 2015 Performance compliance by 27.2%.

As a 3rd party extension of the code jurisdiction utilizing these reports, I certify that this energy code compliance document has been created in accordance with the requirements of Chapter 4 of the adopted International Energy Conservation Code based on Climate Zone 2. If rating is Projected, I certify that the building design described herein is consistent with the building plans, specifications, and other calculations submitted with the permit application. If rating is Confirmed, I certify that the address referenced above has been

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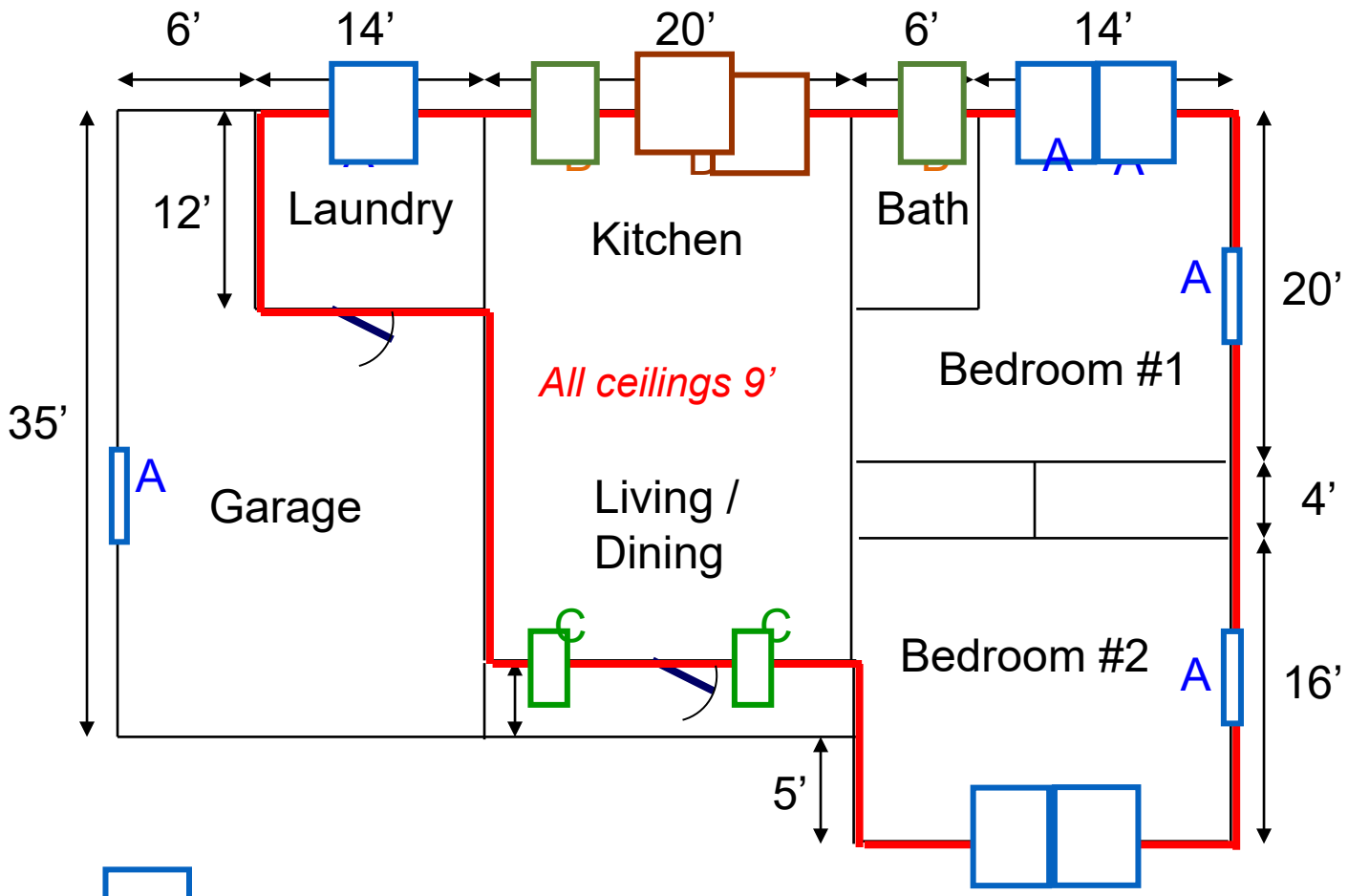
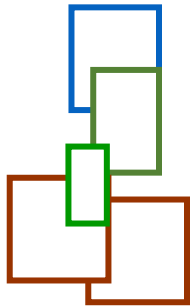
RESCHECK - Simple House





A: 3’0 x 4’0 DP low-e (U.31, SHGC.24)

B: 3’0 x 3’0 DP low-e (U.33, SHGC.26)

C: 4’0 x 5’0 DP low-e (U.32, SHGC.25)

D: 6’0 x 6’8 DP Sliding Glass Door with tint (U.47, SHGC.48)

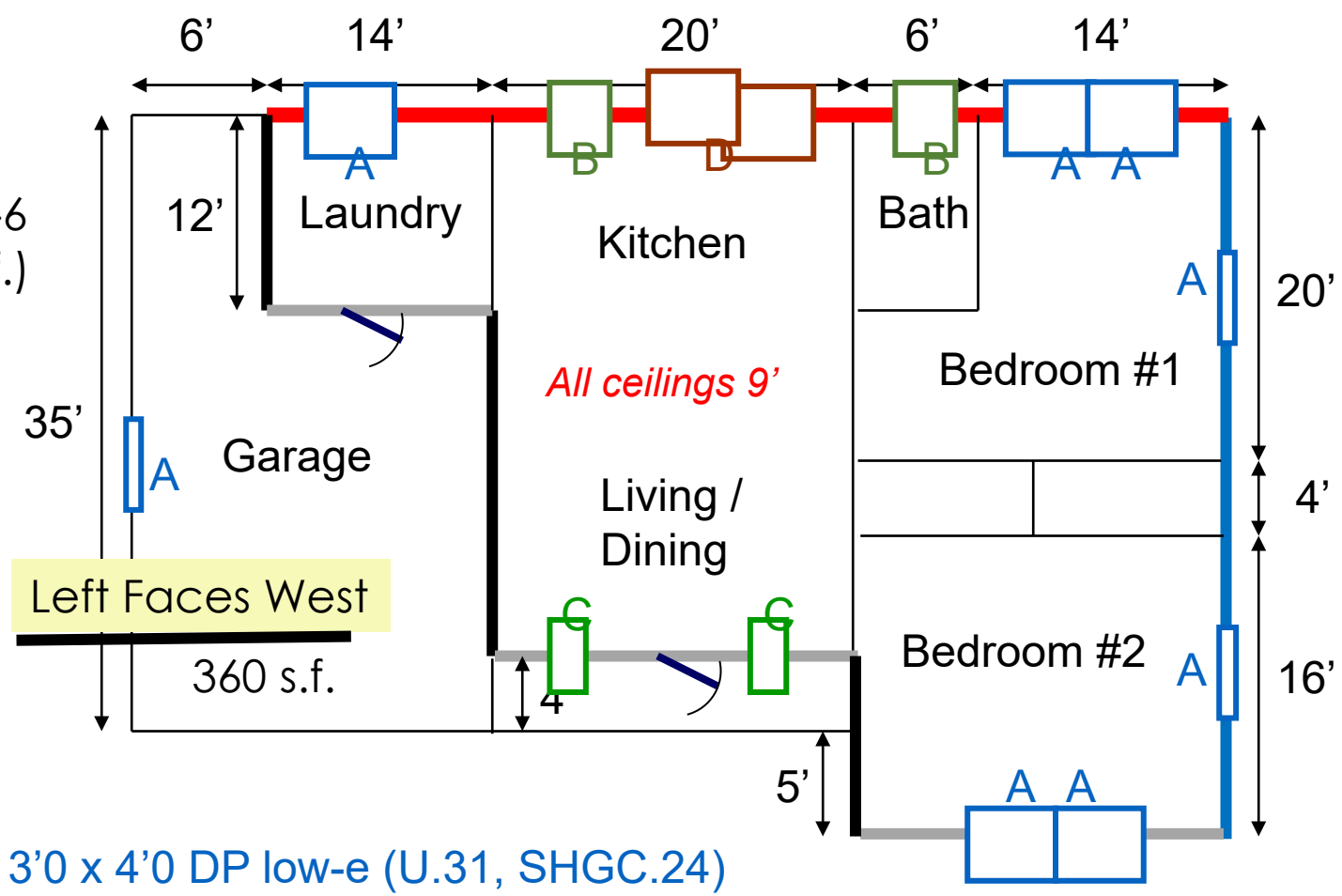
- Perimeter: 54x2 + 40x2 = *188* ft.
- Gross Wall: 188 x 9 = *1,692* sq. ft.
- Floor Area:
  12x14 +
  20x31 +
  20x40 =
  1,588 sq. ft.
- Ceiling Area: *1,588* sq. ft.
- Windows
  - A: 12 x 7 = 84 sq. ft.
  - B: 9 x 2 = 18 sq. ft.
  - C: 20 x 2 = 40 sq. ft.

  Windows: *142* sq. ft.
- Glass Doors: 20 x 2 = *40* sq. ft.
- Solid Doors: *40* sq. ft. (R-3)
- Volume: 1588x9 = 14,292 c.f.

Simple House (1588 s.f.)

Back Faces North 486 s.f.

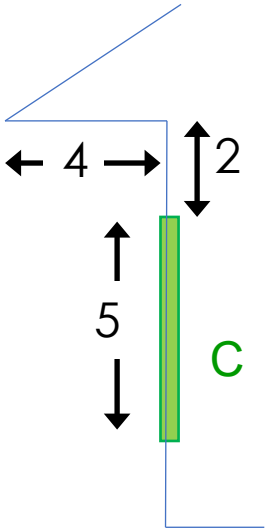
Assume:
- Front faces south
- 1' overhang except 4' porch
- 2x4 frame walls, R-13+R-6
- R-49 flat ceiling (1588 s.f.)
- R-5 slab edge insulation

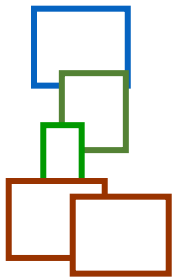


North

Left Faces West
360 s.f.

Right Faces East
360 s.f.

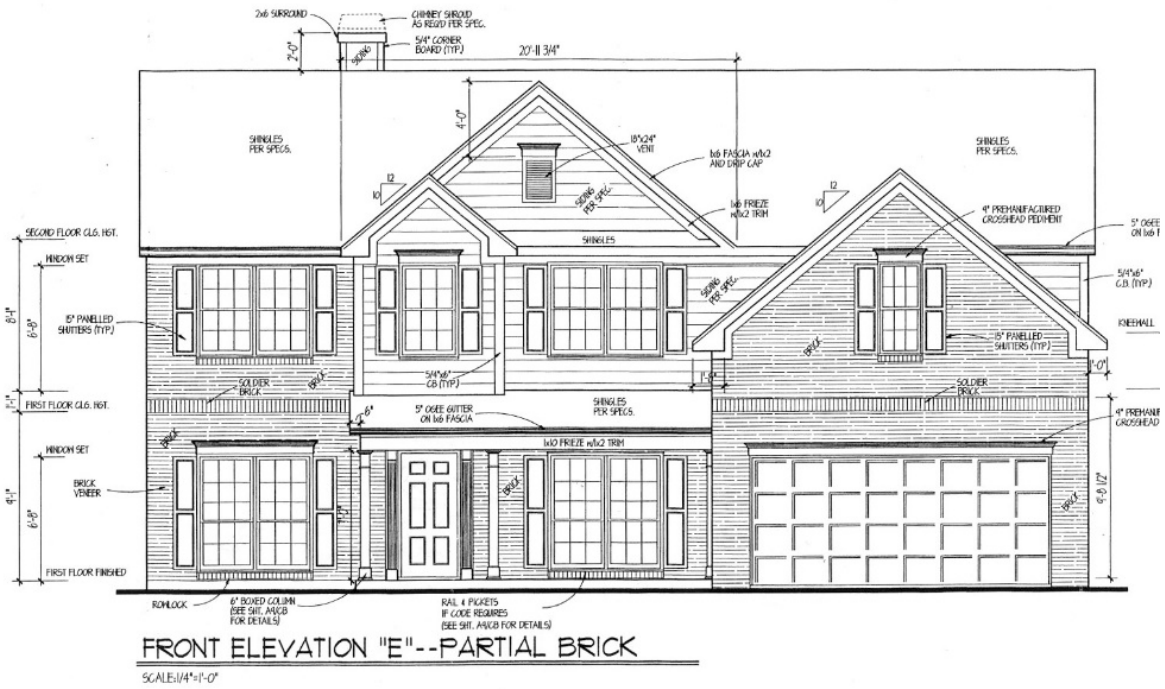


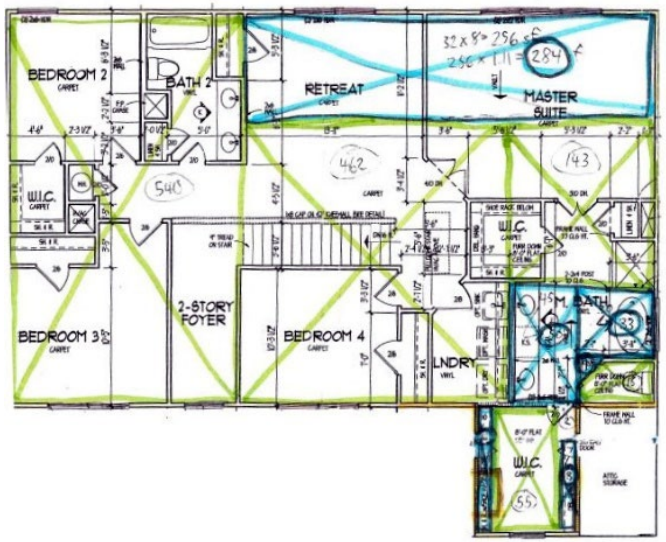


A: 3'0 x 4'0 DP low-e (U.31, SHGC.24)
B: 3'0 x 3'0 DP low-e (U.33, SHGC.26)
C: 4'0 x 5'0 DP low-e (U.32, SHGC.25)
D: 6'0 x 6'8 DP Sliding Glass Door with sun tint (U.47, SHGC.48)

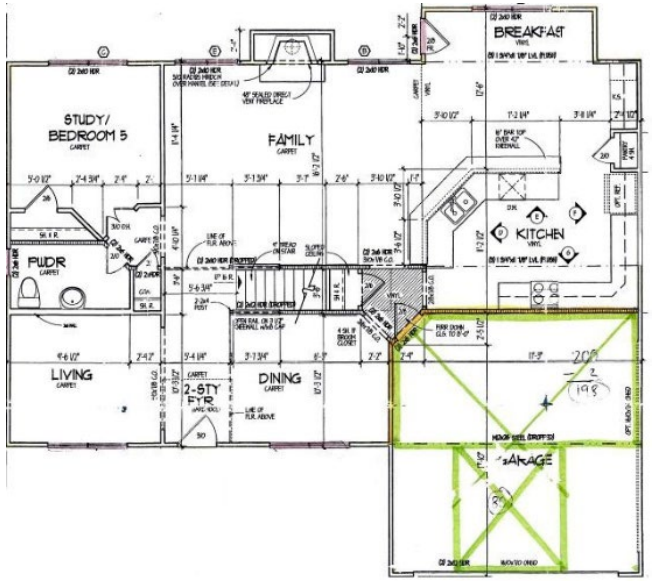
Front Faces South 486 s.f.

RESCHECK – ACME House





Second:
1,473 s.f.



First:
1,343 s.f.

"Acme" base case, 2-story
2816 s.f home (St. Louis)

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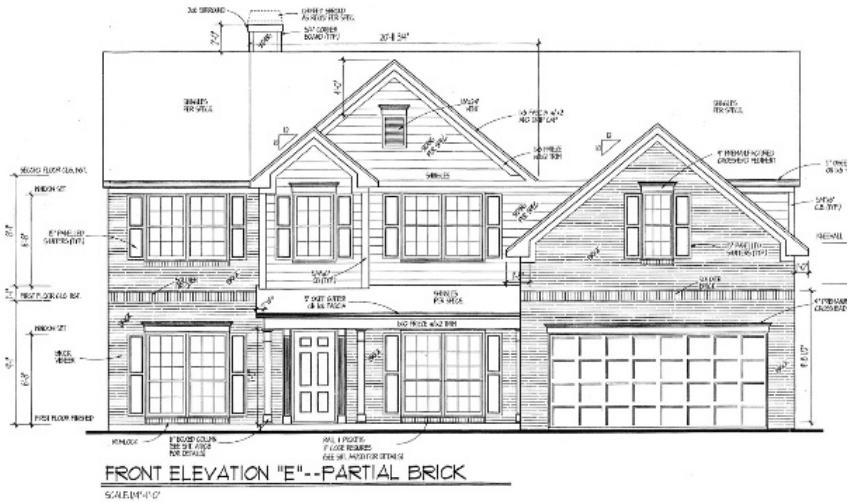
RESCHECK – ACME House Base Case Takeoffs

- Total cond. Floor area: 2816 s.f., Volume: 25,791 c.f.
- First floor area: 1343 s.f., slab on grade: **167' perimeter**, R-10. 2'
- Second level, floor over garage: **280 s.f.**, R-19
- Gross Exterior walls: **2578 s.f.**
  - Net Exterior walls: 2170 s.f., R-20
- Gross Wall Adjacent to Garage: **257 s.f.**
  - Net Wall Adjacent to Garage: 237 s.f., R-13
- Attic Kneewall: **420 s.f.**, R-13+R-5 continuous
- Windows (F,L,B,R): 157+22+177+12 = **368 s.f.**, U-0.30, SHGC-0.26
- Glass Door: **20 s.f.**, U-0.33, SHGC-0.30
- Front Door wood: **20 s.f.**, U-0.5
- Garage Door metal, foam core: **20 s.f.**, U-0.33
- Flat ceiling: **1220 s.f.**, R-49 Vaulted ceiling: **390 s.f.**, R-25



RESCHECK – ACME House Roofline Takeoffs

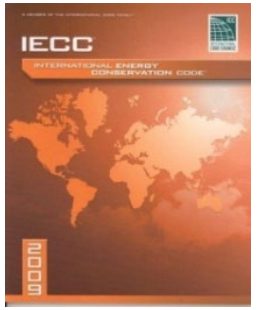
- Total cond. Floor area: 2816 s.f., Volume: 29,811 c.f.
- First floor area: 1343 s.f., slab on grade: **167' perimeter**, R-10, 2'
- Second level, floor over garage: **280 s.f.,** R-19
- Gross Exterior walls: **2578 s.f.**
  - Net Exterior walls: 2170 s.f., R-20
- Gross Wall Adjacent to Garage: **257 s.f.**
  - Net Wall Adjacent to Garage: 237 s.f., R-13
- Foamed Gable End walls: **744 s.f.**, R-20
- Windows (F,L,B,R): 157+22+177+12 = **368 s.f.**, U-0.30, SHGC-0.26
- Glass Door: **20 s.f.**, U-0.42, SHGC-0.30
- Front Door wood: **20 s.f.**, U-0.5
- Garage Door metal, foam core: **20 s.f.**, U-0.33
- Foamed Roofline (vaulted ceiling): **1986 s.f.**, R-20

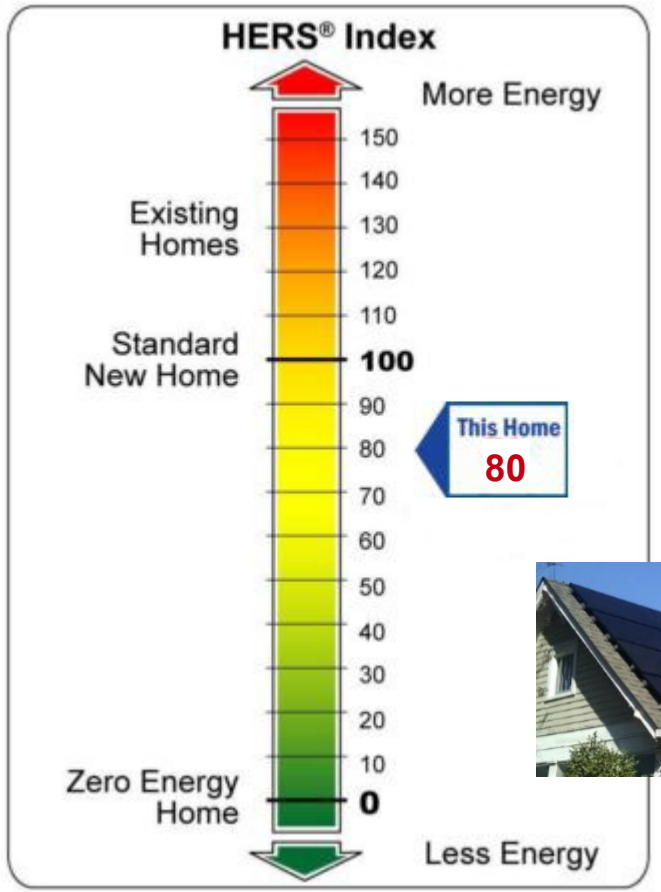
ACME Base – 2816 S.F. Home in Ekotrope

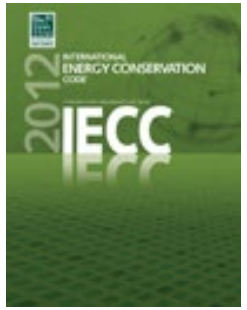
- Two mechanical systems – both in the vented attic
- 75% of 1st floor ducts inside; all others plus 2nd floor ducts in attic
- 80% furnaces, 14 SEER A/C's, no mechanical ventilation, 50 gal gas DHW
- Basic 2009 energy code compliant R-values (assume Grade III)
  - R-30 flat ceiling, R-19 vault
  - R-13 + OSB walls
  - R-19 floor over garage; no slab insulation
- Typical DP low-e windows: U-0.35 SHGC-0.30; poor orientation
- Duct leakage is 12% Total; 8% To Outside
- Envelope Leakage is 7 ACH_{50}, 0.45 ELR_{50}, 3009 cfm_{50}

- Elec rate 12.5¢/kWh + $10 base fee; Gas rate 75¢/therm + $20 base fee

HERS Rating Demonstration

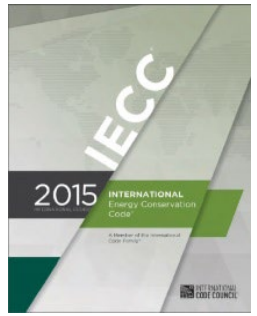






- Index drops to **71** with 2012/15 IECC prescriptive envelope values
- Index drops to **67** when 2012/15 IECC prescriptive 75% efficient lighting values are entered

80 => 70 with 2 kW
- => 56 with 5 kW
- => 32 with 10 kW



- Index drops to **mid-50's** with condensing furnace, 16 SEER AC, and more efficient appliances
- House load drops (4 tons to 3 tons)

57 => 49 with 2 kW
- => 36 with 5 kW
- => 13 with 10 kW

Energy Rating Index (ERI) path

- The ERI may allow more options in materials choice, technologies and innovative strategies than the simulated performance path







- The Energy Rating Index (ERI) path gives the most design flexibility (e.g., credit for mechanical equipment efficiency)
- It also credits items not covered by the code (e.g., appliance efficiencies)

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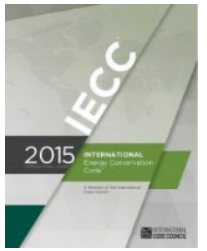


How is the ERI determined?

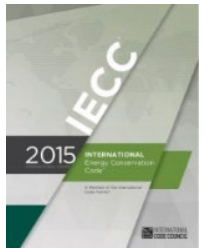
- The ERI is a numerical integer value
- Lower index numbers indicate lower energy use
- The HERS Index is currently accepted for use as the ERI
- A HERS Index is generated from a HERS Rating using modeling software (e.g., Energy Gauge, REMRate, Ekotrope)
- HERS stands for *Home Energy Rating System*

RESNET HERS® INDEX

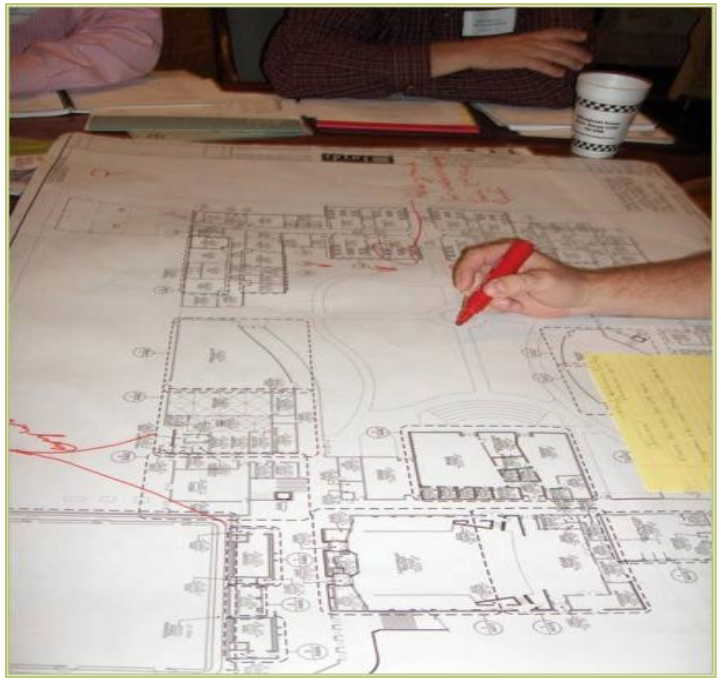
HERS was developed by the Residential Energy Services Network (RESNET)

www.resnet.us

Determining the Energy Rating Index



1. Simulate two homes
   - ***Rated*** Home – what will be built
   - ***Reference*** Home – same home but exactly meets '06 code
2. Compare Annual Energy
   - Space Heating & Cooling, Hot Water, Lighting and some Appliances
   - Multiply by 100 (lower w/ renewables)



Index = 100 x $PE_{fraction}$ x

$$\frac{[\textbf{\textit{Rated}}\text{ Home's Htg + Clg + WtrH + L.A.}]}{[\textbf{\textit{Refer}}\text{. Home's Htg + Clg + WtrH + L.A.}]}$$

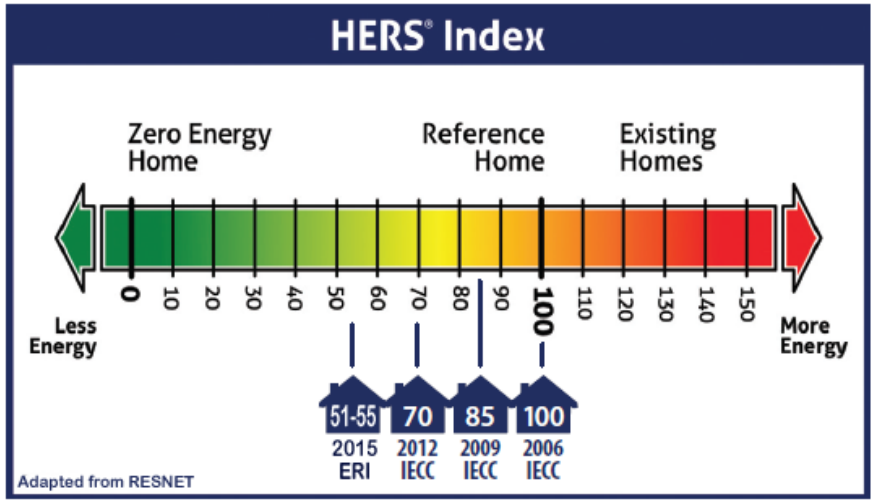
40 30 30 50

70 20 30 80

= 75

HERS / Energy Rating Index – What does it mean?

- HERS Index (lower is better)
- Rated home with Index of 100 = Reference home exactly meeting 2004/06 IECC
- Net Zero Energy Home = HERS Index of O



$$\textbf{Index} = 100 \times PE_{fraction} \times \frac{[\textbf{\textit{Rated}}\ \text{Home's Htg} + \text{Clg} + \text{WtrH} + \text{L.A.}]}{[\textbf{\textit{Refer}}.\ \text{Home's Htg} + \text{Clg} + \text{WtrH} + \text{L.A.}]} = 75$$

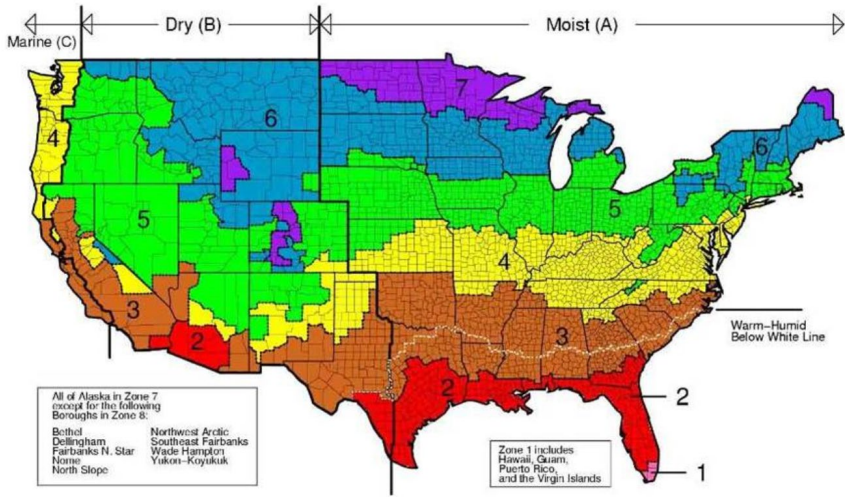
$\frac{\textbf{40}\quad\textbf{30}\quad\textbf{30}\quad\textbf{50}}{\textbf{70}\quad\textbf{20}\quad\textbf{30}\quad\textbf{80}}$

$PE_{fraction}$ is ratio of renewables to purchased energy

(e.g, a home that produces 20% of its annual energy would have a $PE_{fraction}$ of 0.8)
In this example, 0.8 x 75 = **60**

Climate and Energy Efficiency

Design Temps	W / S
Atlanta	24/92
St. Louis	14/91
Fairbanks	-40/78
Miami	51/90



- **Design Temperatures**
  - Heating, for 99% of the season the outdoor temperature is above this value
  - Only 1% of the Cooling season is hotter than this temperature value
- *Design Temp Example*
  - St. Louis Winter 70 – 14 = 56 F ΔT
  - St. Louis Summer 91 – 75 = 16 F ΔT

- **Load Calcs & Energy Code**
  - IECC 2009 Section 302.1: Interior design temperatures (72°F heating, 75°F cooling)
  - **MUST BE ACCURATE**

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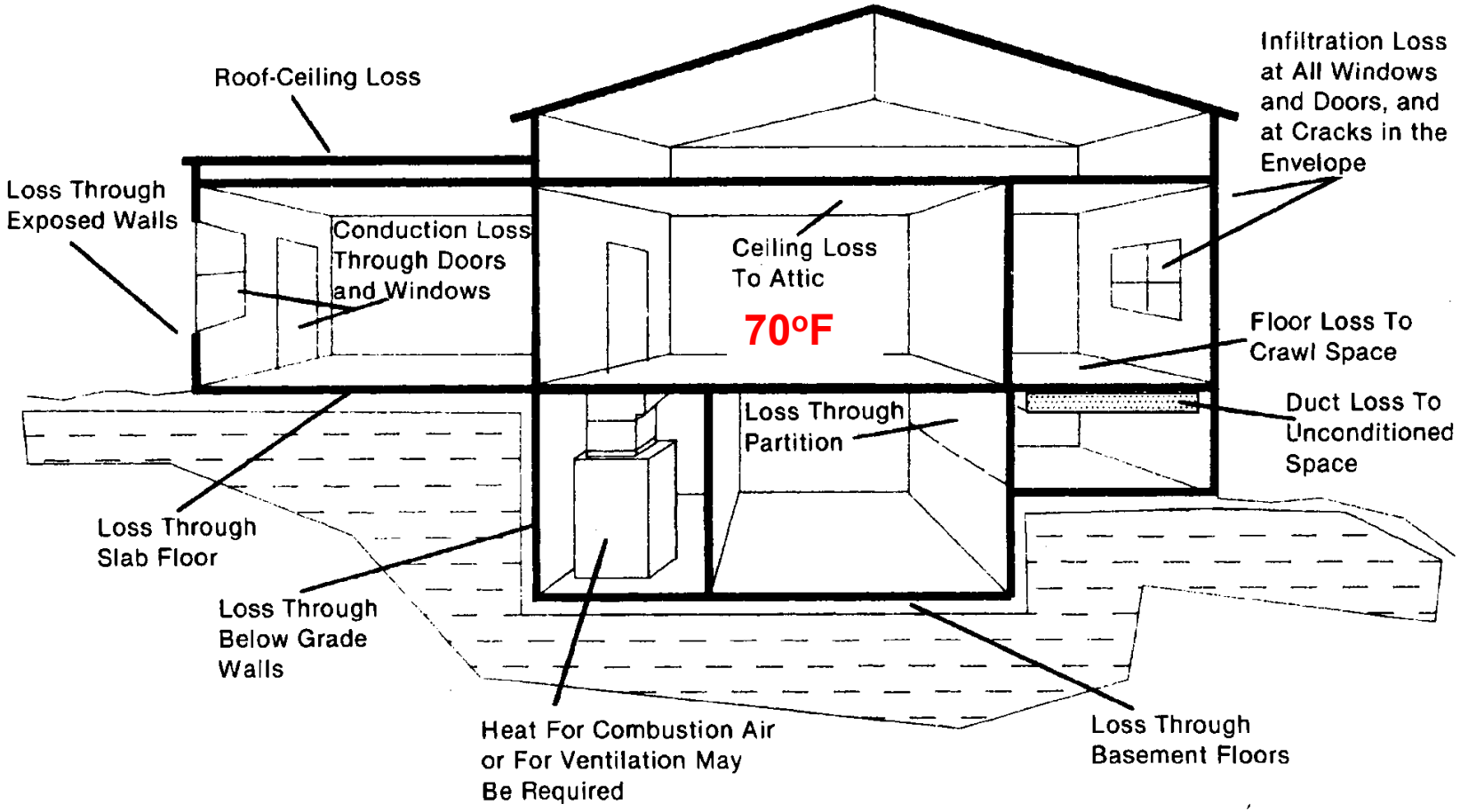
Manual J - Winter Loads



Winter Outdoor Design Temp

14°F

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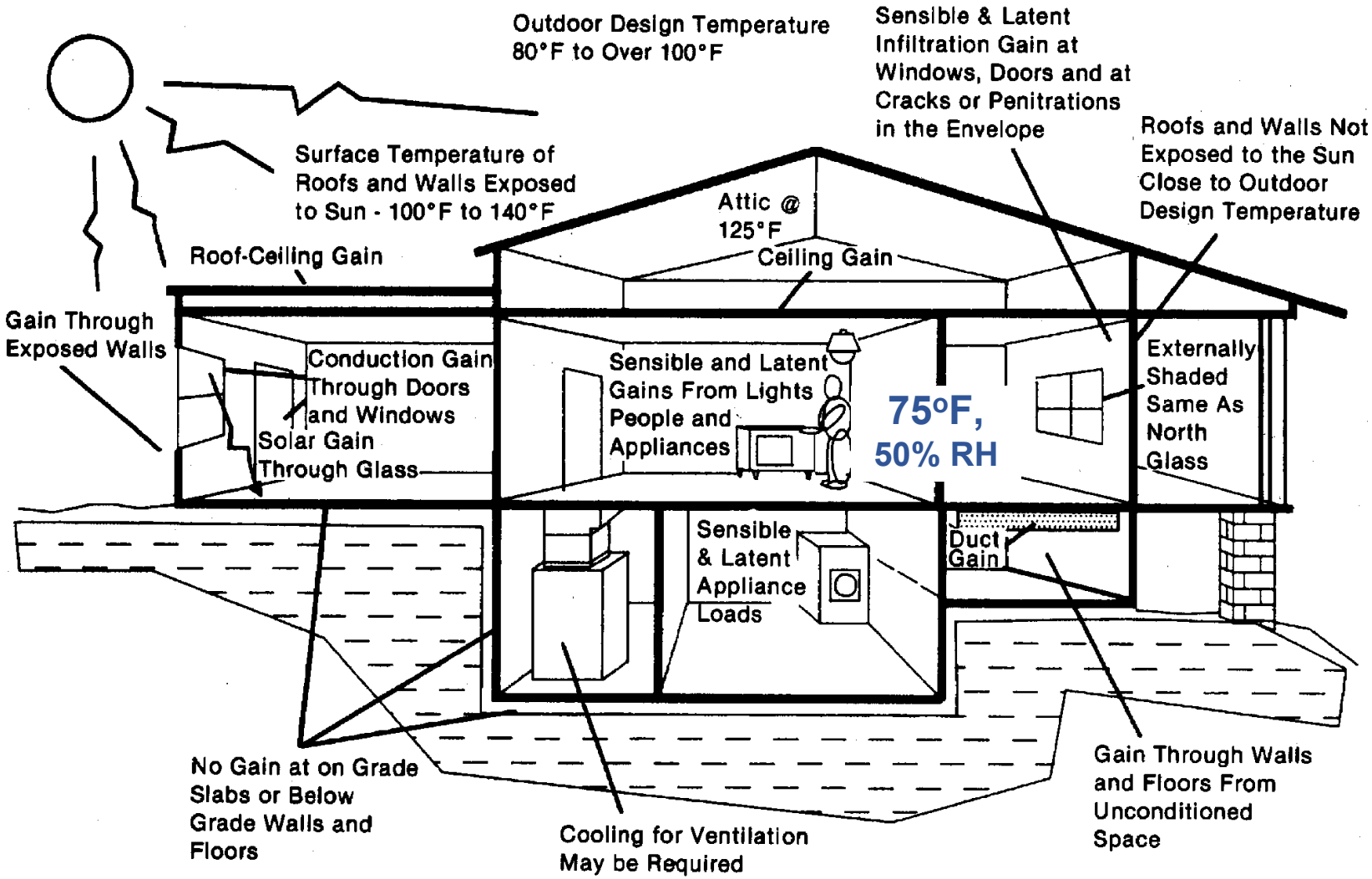
Manual J- Summer Loads



Summer Outdoor Design Temp **91°F**

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Sizing the System

"Heating and cooling equipment shall be sized in accordance with Section M1401.3"

"Heating and cooling equipment shall be sized in accordance with **ACCA Manual S** based on building loads calculated in accordance with **ACCA Manual J** or other approved heating and cooling calculation methodologies."
- 2015 IECC R403.7

- Building orientation
- Glazing, walls, foundation & roof
- Design conditions
- Infiltration
- Internal loads
- Ventilation load

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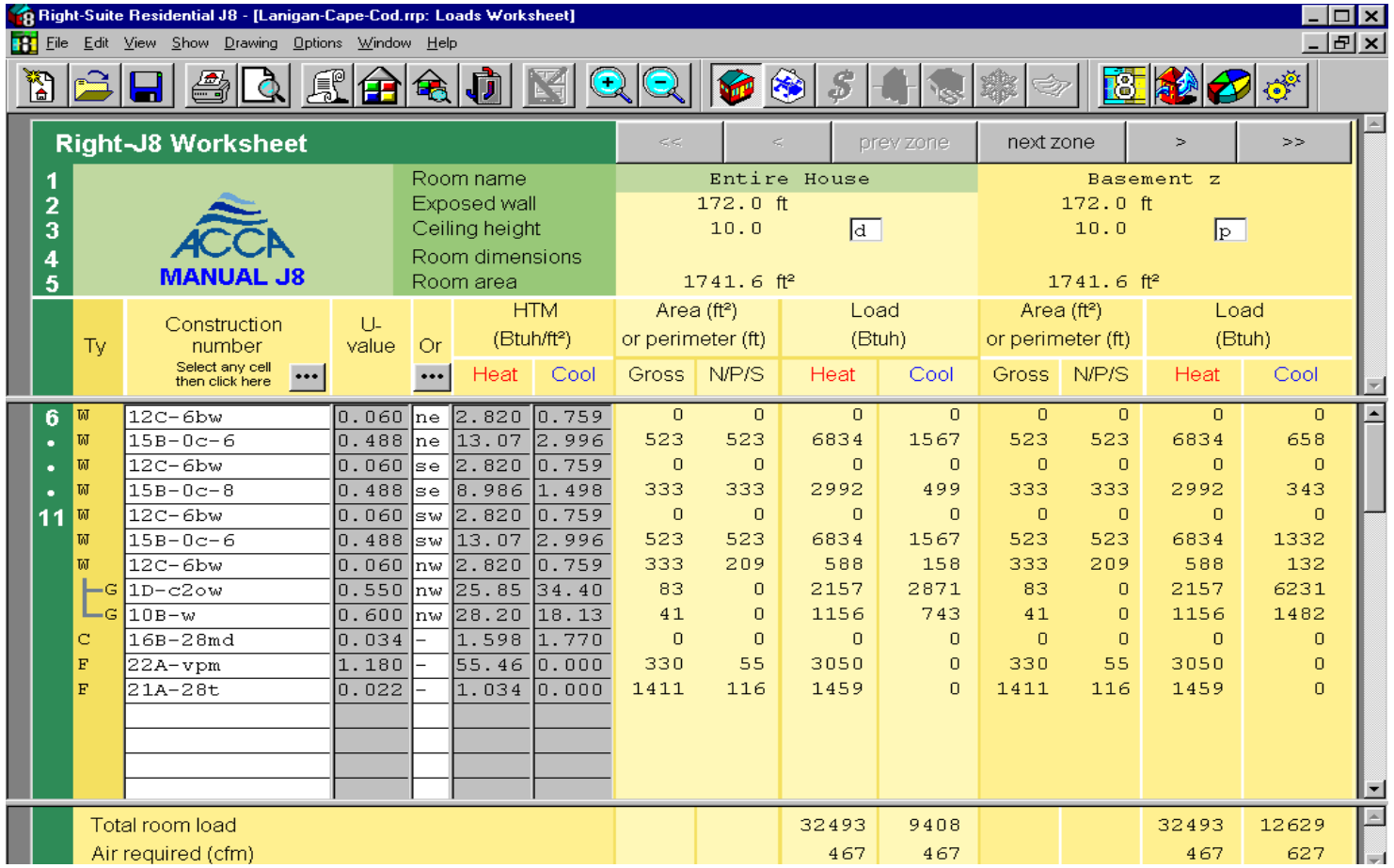
Manual J Software



Why is proper equipment sizing important?

- Equipment first-cost
- Longer/more efficient run times
- Limits equipment cycling
- Better dehumidification

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Key Takeaways

- 2018 IECC has new requirements for:
  - Air sealing
  - Duct sealing
  - U-Factor
  - R-Values
  - Performance Testing
  - Good Alternative Methods!
- Controlling moisture is *critical*
  - Proper air sealing is key
  - Right-sizing HVAC is required
  - Mechanical ventilation must be installed and takes on new importance

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Trainings in September:

9/1 Today "Live" 3-5pm
NDEE 245 Fallbrook Blvd., Lincoln NE

9/13 & 14 "Live" for Nebraska ASHRAE Chapter: ASHRAE 90.1 (as referenced by IECC 2018)

9/15 Nebraska Energy Collaborative "live" 9:30-11:30 (NDEE, Lincoln)

MCC Commercial Energy Code Certificate Course
Tuesday Evenings 9/27-11/15 – Online and in-person

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Trainings in October

10/5 Commercial Energy Code: Advanced Mechanical Systems - Online

10/12-14 Duct & Envelope Testing "Train the Trainer" Live all day (NDEE Lincoln)

10/25-26 DET Testing Certification Lincoln area
(Need two test homes)

More to be announced!

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Phone Survey

- Our research partner Eric Boria is currently conducting a phone survey with Nebraska stakeholders to better understand issues people are having complying with the 2018 IECC and hear about what resources have been helpful.
- We would love to hear from you and anyone else in the state who could share information.
- This feedback will help improve the Nebraska Energy Code Training Program to best serve those working with energy codes in the state.

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Thank you! Questions?

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