

# IECC 2021



# Kansas City Code Update

\* includes energy weakening amendments  
\* includes energy strengthening amendments

## IBC 2012 (Effective June 2012)

Article 1: Administrative

Article 2: Building Code

Article 3: One/Two family dwellings\*

Article 4: Electrical

Article 5: Fuel Gas

Article 6: Mechanical

Article 7: Plumbing

Article 8: Private Sewage Disposal

Article 9: Elevators + Conveying

Article 10: Signs

Article 11: Underground Space

Article 12: Contractors

Article 13: Existing Building

Article 14: Energy Conservation\*

## IBC 2018 (Effective June 2020)

Article 1: Administrative

Article 2: Building Code

Article 3: One/Two family dwellings\*

Article 4: Electrical

Article 5: Fuel Gas

Article 6: Mechanical

Article 7: Plumbing

Article 8: Private Sewage Disposal

Article 9: Elevators + Conveying

Article 10: Signs

Article 11: Underground Space

Article 12: Contractors

Article 13: Existing Building

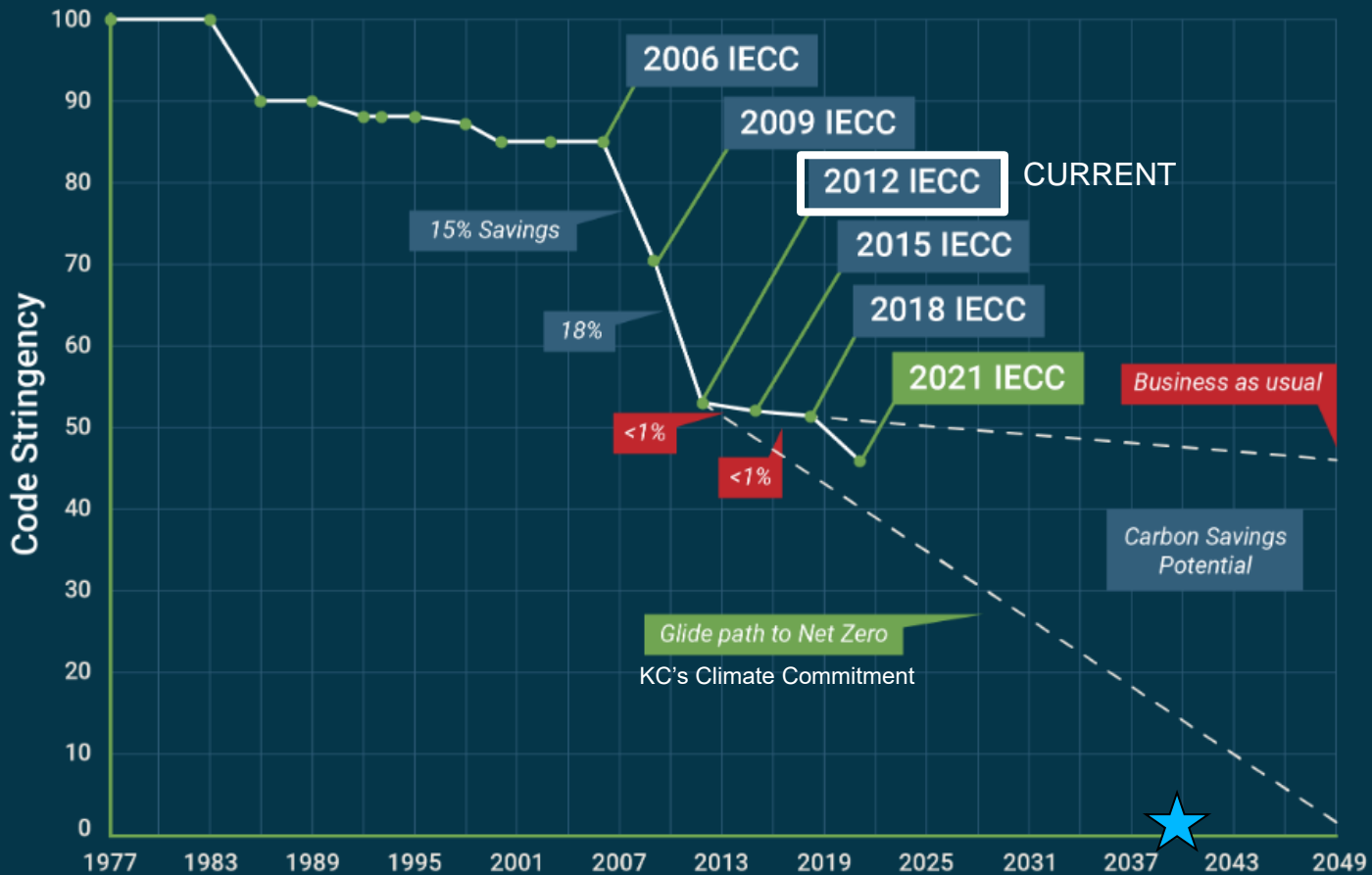
## IBC 2021 (Target November 2021)

Article 3: One/Two family dwellings (energy only)

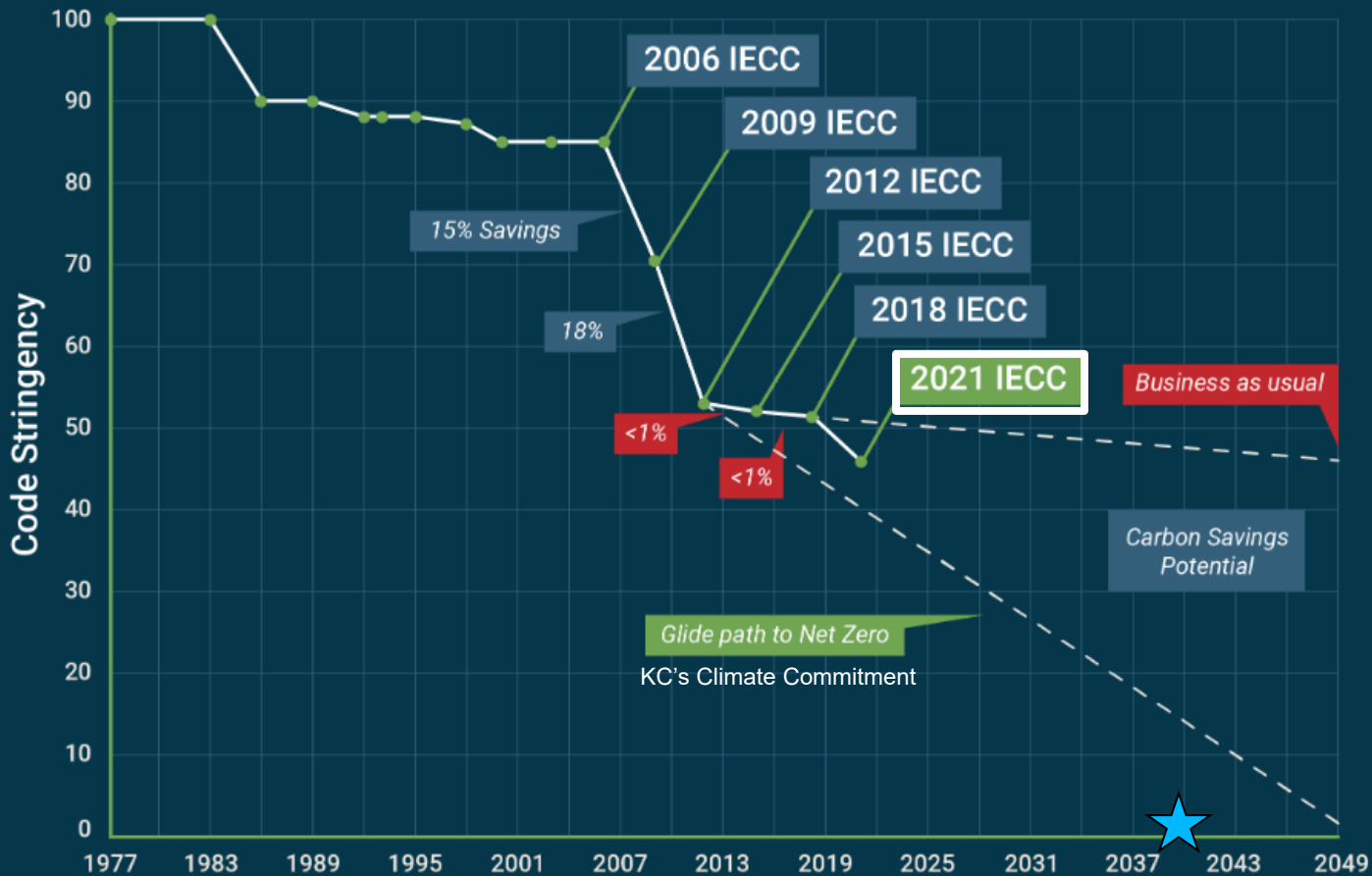
Article 14: Energy Conservation (IECC 2021)



# Efficiency Improvements of IECC: Historic and Projected

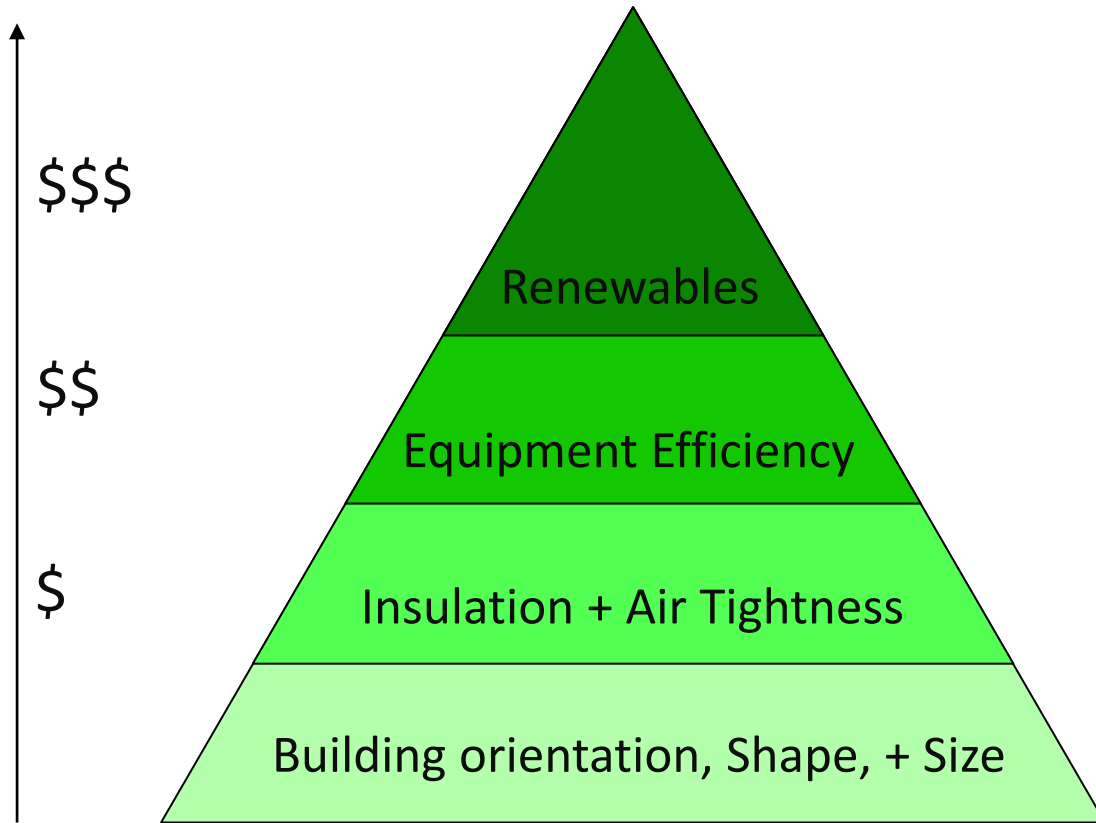


# Efficiency Improvements of IECC: Historic and Projected

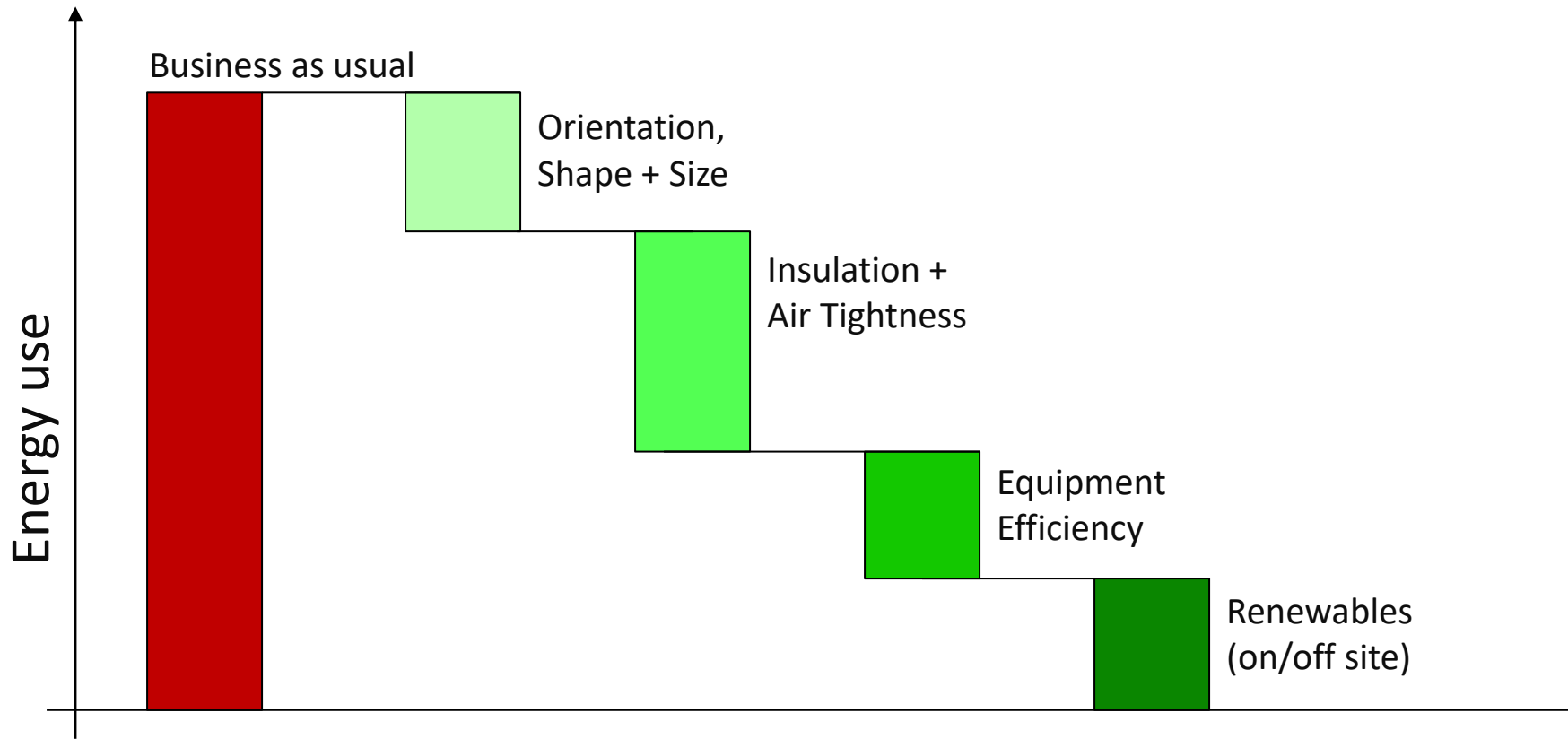


An aerial photograph split vertically. The left side shows a close-up of a white wind turbine's nacelle and hub, with one of its blades extending towards the top left. The right side shows a large-scale solar farm with rows of photovoltaic panels stretching across a field. The background includes a landscape with fields and a cloudy sky.

**READY  
AND  
RESILIENT**



## Energy Reduction Strategies



## Energy Reduction Strategies

A black and white photograph of a construction site. In the foreground, a large tower crane is visible, with the words "CROSS" and "TODAY" on its structure. The crane is positioned over a building under construction, which is heavily scaffolded. In the background, a tall, ornate building with a clock tower is visible. The clock tower has a large clock face and a decorative top. The sky is clear. The text "COMMERCIAL UPDATES" is overlaid in large, white, bold, sans-serif font across the center of the image.




# COMMERCIAL UPDATES



# Ready and Resilient

 strengthening amendment

## Commercial

- Energy Improvement, 10% Savings
- Building Enclosure Changes
- Lighting Improvements
- Flexibility for Builders to Comply
  - Prescriptive – Code tables
  - Performance – Energy Rating Index
- EV Infrastructure 
- Solar Ready 
- Electrification Ready 
- Zero Code Appendix



# RESIDENTIAL UPDATES

# Ready and Resilient

 strengthening amendment

## Residential

- Building Enclosure Updates
- Improved Air Sealing Requirements
- Lighting Quality/Efficacy Improvements
- Water Heating, Compact Design
- Electrification Ready 
- Flexibility for Builders to Comply
  - Prescriptive – Code tables
  - Performance – Energy Rating Index 
- Zero Energy Residential Appendix

Table 1. Minimum Insulation Requirements for New Homes as Listed in the 2009, 2012, 2015, 2018 and 2021 IECC and 2009, 2012, 2015, 2018, and 2021 IRC<sup>a</sup>

Climate Zone	Ceiling R-Value			Wood Frame Wall R-Value			Mass Wall R-Value <sup>f</sup>		Floor R-Value		Basement <sup>e</sup> Wall R-Value			Slab <sup>d</sup> R-Value & Depth			Crawl Space Wall R-Value <sup>e, h</sup>				
	2009 IECC	2012 IECC	2015 IECC	2021 IECC	2009 IECC	2012 IECC	2015 IECC <sup>b</sup>	2009 IECC <sup>b</sup>	2012 IECC	2009 IECC	2012 IECC	2009 IECC	2012 IECC	2015 IECC	2018 IECC	2021 IECC	2009 IECC	2012 IECC	2015 IECC	2018 IECC	2021 IECC
4 except Marine	38	49	60	13	20 or 13+5 <sup>b</sup>	20 or 13+5ci or 0+15	5/10	8/13	19	19	10/13	10/13	10ci or 13	10, 2 ft	10, 2 ft	10ci, 4ft	10/13	10/13	10/13	10/13	10ci or 13

Allowed in homes by current amendments

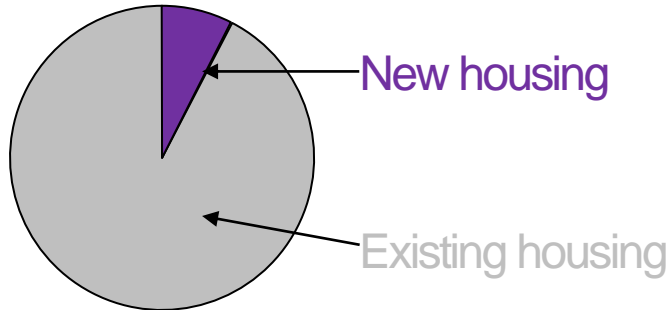
More options!  
2x6 wall framing not req!

Shift towards continuous insulation ("ci")

# Kansas City Housing Impacts

## 2019 KC Regional Housing Sales – 39,232 sales

- Existing housing (not affected by 2021)
- 36,578 houses (91% of sales)
- Average price - \$229, 658
- **New housing**
- 3,735 units
- Average price - \$411,363
- Impact of 2021 code less than 3%  
(using conservative impact estimate)



**Primary KC Impact of 2021 will be on Civic + Mid-Rise Buildings**

Source: Heartland Multiple Listing Service and the Kansas City Regional Association of Realtors



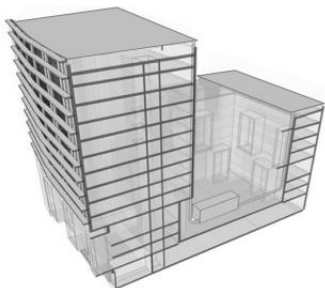
**ZERO** **CODE**<sup>TM</sup>

# ZERO CODE™

Commercial • Institutional • Mid-Rise/High-Rise Residential Buildings

1

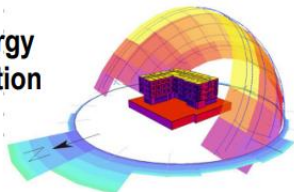
Design an energy efficient building in compliance with the 2021 IECC or better.



2

Establish the building's renewable energy requirement from:

an energy simulation



or

default renewable energy table

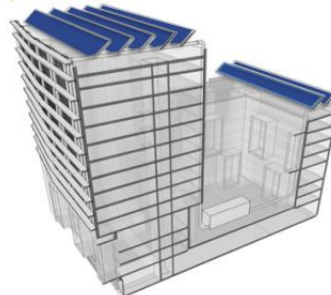
29

Building Type

Building Area Type	Climate Zone														
	2A	3A	3B	4A	4B	4C	5A	5B	6A	6B	7	8			
Multi-family (A-2)	43	41	41	42	42	38	35	31	27	44	41	33	44	53	59
Healthcare/Hospital (A-2)	119	120	119	118	118	108	105	100	100	110	110	105	105	136	131
Hotel/Resort (A-1)	73	75	73	75	77	69	66	60	55	71	68	55	77	72	61
Office (B)	21	21	20	20	20	18	18	16	15	20	20	15	20	20	20
Residential (A-2)	269	429	411	404	404	355	325	303	273	423	323	249	404	309	249
Retail (A)	40	35	43	44	44	37	34	34	34	32	30	46	32	34	37
General (B)	42	40	40	40	39	38	38	40	40	43	43	34	44	45	44
Manufacture (B)	8	8	8	8	8	7	7	7	7	8	8	7	8	8	8
All others	25	28	34	33	31	48	24	32	31	37	34	23	37	35	33

3

Meet the requirement by integrating onsite renewable energy when feasible.



4

If necessary, procure offsite renewable energy.

