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<section-header><section-header><section-header><section-header><section-header><section-header></section-header></section-header></section-header></section-header></section-header></section-header>	Introduction Overview and Implementation Options	



### Who We Are



The Sustainability Membership Council is a vehicle whereby ICC members come together to give technical guidance in how we shape the ICC policies and programs addressing energy efficiency and sustainability in the built environment.

### What is the IgCC



- An Adoptable, Useable and Enforceable building code.
- Designed to overlay and coordinate with the ICC family of codes.
- □ Intended to reduce the negative impacts of the built environment on the natural environment.









### Flexibility of the IgCC

Each chapter is comprised of three sections:

- Mandatory requirements
- Additional measures, either:Prescriptive requirements, or
- Performance requirements
- The document is written in code language and can be modified to fit local needs:
  - State code vs. local code
  - Local priorities can be augmented or adapted to the code



### Site Sustainability - Chapter 5

- Work with the site, not against it.
- Perform a detailed site analysis before land development begins
- Develop a Building Site Waste Management Plan for materials associated with earthwork











### Energy Efficiency - Chapter 7

2 Compliance Paths

- Mandatory (701.3) + Prescriptive Option (701.4)
- Mandatory (701.3) + Performance Option (701.5)

### Energy Efficiency - Chapter 7



Mandatory Provisions (sec. 701.3)

- ► Continuous Air Barrier
- ►On-site Renewable Ready
- Energy Consumption Management System

► Automatic Demand-response systems



### Energy Efficiency - Chapter 7

### Prescriptive Path (701.4) ►HVAC

- ▶90.1 Section 6 Compliance + 10% Higher minimum equipment efficiencies
  - ▶ Required Duct Leakage Tests
  - Additional requirements on Economizers, ERVs, Kitchen
  - Exhaust, Duct Insulation, Controls











### Indoor Env. Quality - Chapter 8

### Focus is on how our indoor environment impacts us

- ► Indoor Air Quality is a large focus with the 3 pillars focused on:
  - Ventilation ASHRAE 62.1 (801.3.1 8.3.1)
  - Filtration PM reduction thru MERV filters (801.3.1.3 8.3.1.3)
     Source Control low VOC emitting materials such as paints, adhesives, flooring, insulation, ceiling and wall systems, and furniture (801.4.2 -8.4.2)
- Additional source control requirements:
  - No smoking (801.2.1.7 8.3.1.7)
    - Building Entrances walk off systems (801.3.1.8 8.3.1.8)

### Indoor Env. Quality - Chapter 8

But there is other areas besides IAQ (indoor air quality) that make up IEQ (indoor environmental quality)

► Humidity Control (801.3.1.6 - 8.3.1.6)

Acoustical Control (801.3.3 - 8.3.3)

- Lighting Quality dynamic lighting controls (801.3.5 8.3.5) ► Glare Control - daylight without sunglasses (801.3.7 - 8.3.7)
- Daylighting (801.4.1 8.4.1)





### Materials & Resources - Chapter 9

Waste Management Plans that recognize and assess diversion, waste contents, biologic and chemical hazards, recyclable potential, waste storage, and product life cycles



### Materials & Resources - Chapter 9

Focus is on making sure our construction practices are environmentally friendly and using more environmentally friendly products in our environmentally friendly buildings

- Construction Waste Management diversion of C&D waste (901.3.1 9.3.1)
- Refrigerants law-abiding HVAC&R and fire suppression system chemicals (901.3.3 9.3.3)

Areas for Storage and Collection of Recyclables and Discarded Goods - once a building is open make sure they are recycling (901.3.4 -9.3.4)

cury Content Levels of Lamps (901.3.5 - 9.3.5)







### Typical I-Code Appendices



- ► Typical ICC code appendices
  - Written in mandatory language like all code provisions
     Not part of the code unless specifically adopted by the Authority Having Jurisdiction (AHJ)

Normative, Informative and What the .....?

### Normative Appendices

- Typical ASHRAE appendices
  - Normative appendices:
    - Written in mandatory language
       Must be complied with are part of the provisions of the standard (code)

Preface:

"This is a normative appendix and  ${\it is}$  part of this code."





### **Normative Appendices**

NORMATIVE APPENDIXA, CLIMATE ZONES AND PRESCRIPTIVE BUILDING ENVELOPE AND DUCT INSULATION TABLES

NORMATIVE APPENDIX B

▶ PRESCRIPTIVE EQUIPMENT EFFICIENCY TABLES FOR THE ALTERNATE REDUCED RENEWABLES AND INCREASED EQUIPMENT EFFICIENCY APPROACH IN SECTION 701.4.1.1.2 (7.4.1.1.2)

NORMATIVE APPENDIX C
PERFORMANCE OPTION FOR ENERGY EFFICIENCY

NORMATIVE APPENDIX D BUILDING CONCENTRATIONS















(This annex contains **normative material** from an existing ASHRAE standard that is cited in this code. This annex is **not part of this code**; its inclusion is **merely informative**. It is included here to facilitate use of this code."





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# Adoption of IgCC HOMEGROWN • The IgCC works with what is currently enforced • Customize to your community • We are family • Unintended consequences • Upkeep • Upkeep

























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	January 7, 3041 Adopt 3009 IECC.	Builders have a 5-mouth grade period. Renning submitted up to July 2, 2001, per meat the 2005 or 2009 code, effect that, the gives must meet 2009 code. Submit Matter Para by Menter April to provide adequate time for review.
	July 1, 2011: All residential building permits must	New reportions on 2009 ECC include:
EXAMPLE OF A	comply with the 2009 IECC.	Water resistive barrier, exterior of hause     Leth inspection under mucco/briok/stone     Tital bracing both interior and exterior
PORTION OF		inspectors focus on the water resistive barrier
CACTLE DOCKIE		penetrations.
CASTLE RUCK'S	January 1, 2012: Focus on the thermal envelope.	Construction plans must indicate the location of the
ΙΜΡΙ ΕΜΕΝΤΑΤΙΟΝ		building's thermal envelope. Plans include air barrier
		installation, inspectors will focus on "cold-spots" like
PLAN		crewl spaces, furnace rooms and HVAC ducts in unconditioned spaces.
	July 4, 2012: Focus is an mechanical systems.	Manual J, S & D must now be accompanied by an
		HVAC plan showing ductwork, Begin duct tightness test at rough inspection. All supply and return are new ducted.
	January 1, 50-32 Overall energy code compliance is achieved.	Probable time of adoption of 2013 REC, requiring mechanical vertilation of the house (build tight and vertilate right).
		© 2019 Colorado Code Consulting, LLC





### Establish a SUSTAINABILITY champion

- Select someone from your staff to be your sustainability champion
  - Who do you choose?
  - How do you support your champion?



## What can an sustainability champion do for you?

- Review the IgCC code
  - Possible amendments
  - Staff training
  - Council meetings





### TRAINING



- Monthly training
- Sustainability requirement topics
- Real world applications

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REQUIREMENTS PRIOR TO ENFORCEMENT	the sequence to approximate the second secon
Why am I providing this if it is not getting enforced yet?	







### THINGS TO REMEMBER

- Patience
- Education
- Partnering
- Empathy
- Options



## POLICIES Adopt the IgCC that references the phased plan. Use policies for your phased plan. • Establish who is responsible for the inspections. • HVAC testing at rough and final for all models · For commercial projects that are a core and shell determine who is responsible for the thermal envelope

### LESSONS LEARNED

- Communication of the plan
- · Letter to the contractors
- 6 may not be enough
- Train, train, train



















### WHO SHOULD BE INVOLVED?



- PLANNING DEPARTMENT
   BUILDING DEPARTMENT
- UTILITIES OR PUBLIC WORKS
- ENGINEERING DEPARTMENT
- ECONOMIC DEVELOPMENT
- YOUR COMMUNITY









### TRADITIONAL LIFE SAFETY CODES

Building construction is regulated because bad things *potentially* could happen *at that site* Fire Structural collapse

Structural collapse High wind events Seismic events Snow loads EMT & responder access Secured facilities

The beneficial impacts of regulation are limited to a building or a few buildings

### GREEN CODES REGULATE BUILDINGS FOR EVENTS THAT ARE ALREADY HAPPENING WORLDWIDE

Extreme weather events Drought Too much precipitation – flooding Storm surges – flooding Heat waves Wildfire Air quality Vector expansions Ticks Mosquitos Food security





MATERIAL RESOURCES WATER EFFICIENCY OR CONSERVATION INDOOR AIR QUALITY REQUIREMENTS AND INFORMATION ON HOW TO MAINTAIN A SUSTAINABLE BUILDING







### TOOLS TO USE TO GET TO YOUR GOALS

- Do existing programs have tools that can me implemented by your community?
- Do I need to create tools for my community to implement these objectives?
- Third party tools







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