Maine's New Building Codes

What Communities Need to Know

FIRE MARSHAL'S OFFICE M.D.P.S.

MAINE GOVERNOR'S Energy Office

GOVERNOR'S OFFICE OF Policy Innovation and the Future

May 21, 2025

Agenda

1. **Welcome**
2. **Overview** of Maine Uniform Building and Energy Code (MUBEC) – Ross Anthony, Governor's Energy Office
3. **Code updates** – Greg Gilbert, Fire Marshal's Office
4. **Q&A**

Reminders

1. This webinar is being **recorded** and will be posted at https://www.maine.gov/future/meetings/maines-new-building-codes-what-communities-need-know

2. Please submit questions through the **Q&A** box – we will do our best to get to as many questions as possible

3. Find **factsheets**, upcoming **trainings**, and **recordings** pf past trainings on the Fire Marshal's website here: https://www.maine.gov/dps/fmo/building-codes

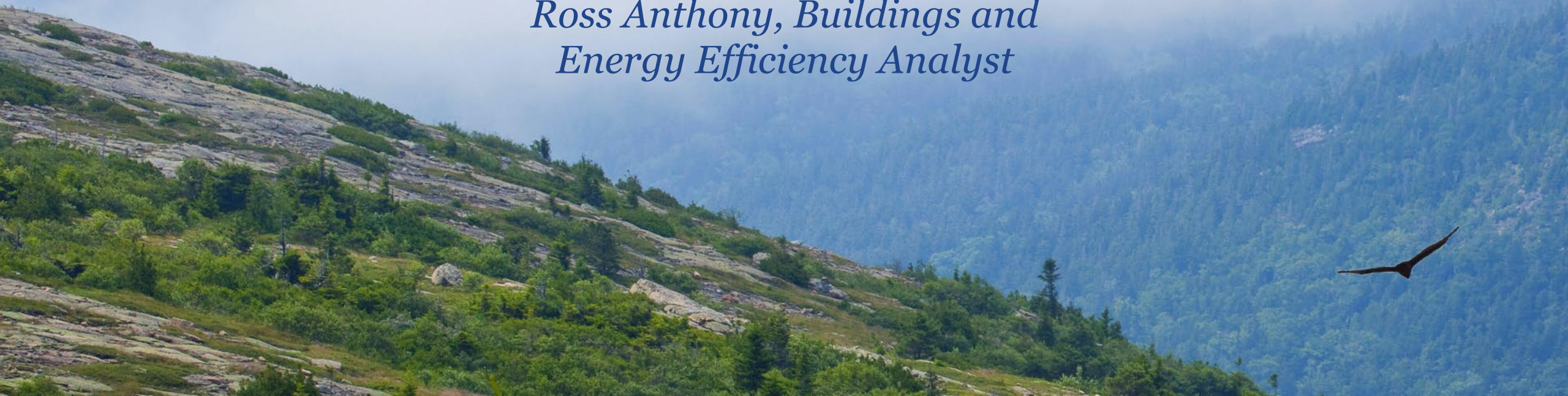
Establish strong systems to support rapid adoption of and compliance with increasingly climate-friendly building codes and standards

MAINE GOVERNOR'S
Energy Office

Maine's New Building Codes

What Communities Need to Know – 5/21/2025

Ross Anthony, Buildings and
Energy Efficiency Analyst



Governor’s Energy Office

Overview

- The Maine Governor's Energy Office (GEO), established within the Executive Department and directly responsible to the Governor, is the designated state energy office tasked with a wide range of activities relating to state energy policies, planning, and development.
- GEO works in partnership with various state agencies, federal and local officials, industry, nonprofit interests, and academia on energy issues.

Key Agencies

Office of the State Fire Marshal

- Current home of MUBEC

Maine Office of Community Affairs (MOCA)

- Future home of MUBEC

Supporting State Offices

- Governor's Energy Office (GEO)
- Governor's Office of Policy Innovation and the Future (GOPIF)

MAINE GOVERNOR'S
Energy Office

MUBEC

What is it?

- Maine Uniform Building and Energy Code
- Statewide building and energy code
  - International Code Council (ICC)
  - American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
  - American Society for Testing and Materials (ASTM)
- Governed by the Technical Building Codes and Standards Board (Board)
- Applies to all buildings constructed or renovated in Maine
- Required to enforce in municipalities with a population of 4,000 or greater
  - Municipalities with a population less than 4,000 may choose whether to enforce

MAINE GOVERNOR'S
Energy Office

MUBEC (Con't)

Legislation

- 25 §2372
  - Established the Division of Building Codes and Standards to provide technical support to the Board
- 10 MRSA §9722 6.B
  - Required to ensure that both the ICC and ASHRAE codes are either the most recent edition or the edition previous to the most recent edition
- 10 MRSA §9722 6.O
  - Required to adopt a voluntary code that contains energy conservation and efficiency requirements that exceeds the energy code requirements established; "stretch code"

MAINE GOVERNOR'S
Energy Office

MUBEC (Con't)

Previous	Current
ICC 2015	ICC 2021
ASHRAE 2016	ASHRAE 2019
ASTM 2008	ASTM 2008
Stretch Code IECC 2021	Stretch Code Custom

MAINE GOVERNOR'S Energy Office

Building Codes

Why are they important?

- Greater energy efficiency
- Safer buildings
- Healthier indoor air quality
- Consistency statewide

What are the benefits of the new codes?

- $978 (est.) in energy cost savings in the first year
- Life-cycle cost savings of over $23,000 (est.)
- Payback period of less 5 years

Is training available?

- Yes!
  - https://www.maine.gov/energy/initiatives/energy-efficiency/building-codes
  - https://www.maine.gov/dps/fmo/building-codes/calendar

US DOE and PNNL. Cost-Effectiveness of the 2021 IECC for Residential Buildings in Maine. July 2021.

MAINE GOVERNOR'S Energy Office

Resources

- Office of the State Fire Marshal: https://www.maine.gov/dps/fmo/building-codes
- GEO: https://www.maine.gov/energy/initiatives/energy-efficiency/building-codes
- Clean Energy Partnership (GEO): https://www.maine.gov/energy/initiatives/cep
- MOCA (Fall 2025): https://www.maine.gov/moca/

MAINE GOVERNOR'S
Energy Office

MAINE GOVERNOR'S
Energy Office

Thank You

ross.anthony@maine.gov

www.maine.gov/energy/initiatives/energy-efficiency/building-codes

Sign up for the GEO email newsletter

MAINE GOVERNOR'S
Energy Office

THE MUBEC UPDATE

MAINE UNIFORM BUILDING AND ENERGY CODE

“WHAT IS MUBEC

MAINE UNIFORM BUILDING AND ENERGY CODES ARE ENFORCED BY TOWNS OF POPULATION OVER 4000 OR VOLUNTARILY OPTED IN.

- **MUBEC is made up of the following codes and standards:**
- 2021 International Residential Code (IRC)
- 2021 International Building Code (IBC)
- 2021 International Existing Building Code (IEBC)
- 2021 International Energy Conservation Code (IECC)
- 2021 International Mechanical Code (IMC)

STANDARDS INCLUDED IN MUBEC
ADOPTED IN CHAPTER 1 – ADMINISTRATION, SECTION 6

- ASHRAE 62.1 - 2019 (Ventilation for Acceptable Indoor Air Quality)

- ASHRAE 62.2 - 2019 (Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings)

- ASHRAE 90.1 - 2019 (Energy Standard for Buildings except Low-Rise Residential Buildings) editions without addenda.

- ASTM E-1465-2008, Standard Practice for Radon Control Options for the Design and Construction of New Low-Rise Residential Buildings.

COMMERCIAL BUILDING CODE

SCOPE

- IBC: The provisions of this code shall apply to the construction, alteration, relocation, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures except for detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height with a separate means of egress, and their accessory structures.

UPDATES TO THE COMMERCIAL BUILDING CODE

- New and Updated Definitions – Chapter 2
- Mass Timber – Chapters 5 & 6
- Sprinkler Requirements - Chapter 9
- Occupant Loads and Occupancy- Chapter 10

EXISTING BUILDING CODE

SCOPE

- IEBC Residential: The provisions of this code shall apply to the *repair*, *alteration*, *change of occupancy*, *addition* to and relocation of *existing buildings* except for Detached one- and two-family *dwellings* and *townhouses* not more than three *stories above grade plane* in height with a separate *means of egress*, and them accessory structures not more than three *stories above grade plane* in height, shall comply with this code or the *International Residential Code*.

IEBC UPDATES

- New and updated definitions
- Repairs- Chapter 4
- Prescriptive Compliance Method - Chapter 5

IEBC WORK CLASSIFICATIONS

- Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment or fixtures using new materials, elements, equipment or fixtures that serve the same purpose.

- Level 2 alterations include the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment, and shall apply where the work area is equal to or less than 50 percent of the building area.
  - Exception: The movement or addition of nonfixed and movable fixtures, cases, racks, counters and partitions not over 5 feet 9 inches in height shall not be considered a Level 2 alteration.

- Level 3 alterations apply where the work area exceeds 50 percent of the building area.

RESIDENTIAL BUILDING CODE

SCOPE

- IRC: The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height with a separate means of egress and their accessory structures not more than three stories above grade plane in height.

SECTION R105.2 – WORK EXEMPT FROM PERMIT (EXEMPT FROM BUILDING REVIEW)

- Exemption from permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction. Building Review shall not be required for the following or as further exempted by municipal zoning ordinance which does not conflict with this code:
- Building:
  1. Other than storm shelters, one-story detached accessory structures, provided that the floor area does not exceed 200 square feet (18.58 m^2).
  2. Fences not over 7 feet (2134 mm) high.
  3. Retaining walls that are not over 4 feet (1219 mm) in height measured from finish grade to the top of the wall, unless supporting a surcharge.” in its place.
  4. Sidewalks and driveways.
  5. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.

SECTION R105.2 – WORK EXEMPT FROM PERMIT (EXEMPT FROM BUILDING REVIEW)

- Building (continued):
  - 6. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.
  - 7. Prefabricated swimming pools that are less than 24 inches (610 mm) deep.
  - 8. Swings and other playground equipment.
  - 9. Window awnings supported by an exterior wall that do not project more than 54 inches (1372 mm) from the exterior wall and do not require additional support.
  - 10. Decks not exceeding 200 square feet (18.58 m2) in area, that are not more than 30 inches (762 mm) above *grade* at any point, are not attached to a dwelling and do not serve the exit door required by Section R311.4.

IRC UPDATES

- New or Updated Definitions
- MUBEC Adoption Addition – Section R301.2.5 Radon Requirements
- Garage Fire Separation – Table R302.6
- Section R310 - Emergency Escape and Rescue Openings
- Section R324 - Photovoltaic Solar systems added

ENERGY CODE

SCOPE

- IECC Commercial : The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height with a separate means of egress and their accessory structures not more than three stories above grade plane in height.

- IECC Residential: This code applies to *residential buildings, building* sites, includes detached one- and two-family dwellings and townhouses as well as *Group R*-2, *R*-3 and *R*-4 buildings three stories or less in height above grade plane, and their associated systems and equipment.

COMMERCIAL ENERGY PATHWAYS

- Prescriptive
  - By the Book
  - UA Alternative
- Total Building Performance
- ASHRAE 90.1
- MUBEC adopted above code alternatives
  - Phius or Passive House certification
  - Zero Energy Provisions from Appendix CC

COMMERCIAL ENERGY UPDATES

- Tables C402.1.3 & C402.4
- Heating and cooling units capacity and efficiency
- Energy Recovery ventilation systems
- Existing Buildings
- Stretch Code

RESIDENTIAL ENERGY PATHWAYS

- Prescriptive
  - By the Book
  - UA Alternative
- Total Building Performance
- Energy Rating Index
- MUBEC adopted above code alternatives
  - DOE Zero Energy Ready Homes certification
  - Phius or Passive House certification

RESIDENTIAL ENERGY UPDATES

- Tables R402.1.3
- Insulation
- Fenestration
- Electrical Lighting and Power
- Existing Buildings
- Stretch Code
- Energy Certificate

STRETCH CODE

Commercial Projects: The Total Building UA for the project, calculated as outlined in C402.1.5, shall exceed the UA requirements by at least 15% over a code compliant project. *This means that the Envelope PASSES design by 15% better (or more) than code per the COMCheck compliance calculation*.

STRETCH CODE

Residential Projects: The Total Building UA for the project, calculated as outlined in R402.1.5, shall exceed the UA requirements by at least 15% over a code compliant project. *This means that the Envelope PASSES design by 15% better (or more) than code per the RESCheck compliance calculation*. For residential projects that do not include fossil fuels for any use (heating, cooling, hot water, backup heat, cooking, etc.) the Total Building UA shall exceed the UA requirements by at least 10% over a code compliant project. This electrification incentive allows the use of fossil fuels for backup power generation.

ENERGY CERTIFICATE

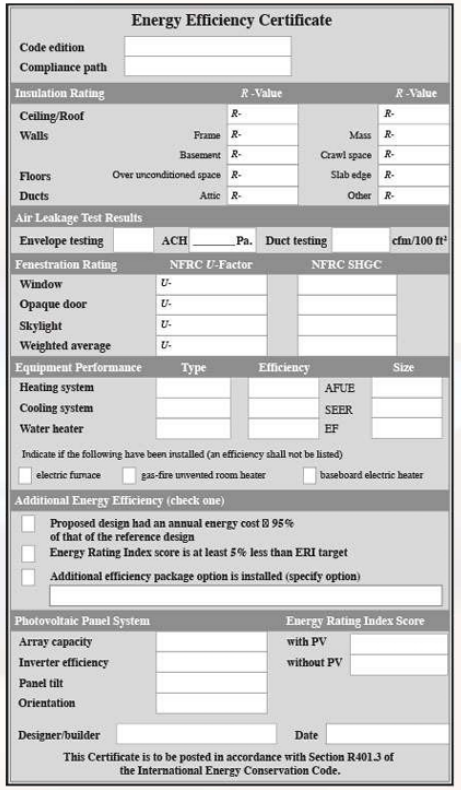
R401.3 Certificate. A permanent certificate shall be completed by the builder or other *approved* party and posted on a wall in the space where the furnace is located, a utility room or an *approved* location inside the *building*. Where located on an electrical panel, the certificate shall not cover or obstruct the visibility of the circuit directory *label*, service disconnect *label* or other required labels.

ENERGY CERTIFICATE

ALWAYS A REQUIREMENT

R401.3 Certificate.

1. The predominant *R*-values…
2. *U*-factors of fenestration and the *solar heat gain coefficient* (SHGC) of fenestration.
3. The results from any required duct system and building envelope air leakage testing performed on the building.
4. The types, sizes and efficiencies of heating, cooling and service water-heating equipment.
5. Where on-site *photovoltaic panel* systems have been installed, the array capacity, inverter efficiency, panel tilt and orientation shall be noted on the certificate.
6. The Energy Rating Index score, both with and without any on-site generation, shall be listed on the certificate.
7. The code edition under which the structure was permitted, and the compliance path used.



Energy Efficiency Certificate

Code edition	
Compliance path	

Insulation Rating		*R* -Value		*R* -Value
Ceiling/Roof		*R*-		
Walls	Frame	*R*-	Mass	*R*-
	Basement	*R*-	Crawl space	*R*-
Floors	Over unconditioned space	*R*-	Slab edge	*R*-
Ducts	Attic	*R*-	Other	*R*-

Air Leakage Test Results

Envelope testing ____ ACH _____Pa. Duct testing ____ cfm/100 ft²

Fenestration Rating	NFRC *U*-Factor	NFRC SHGC
Window	*U*-	
Opaque door	*U*-	
Skylight	*U*-	
Weighted average	*U*-	

Equipment Performance	Type	Efficiency	Size
Heating system		AFUE	
Cooling system		SEER	
Water heater		EF	

Indicate if the following have been installed (an efficiency shall not be listed)

☐ electric furnace ☐ gas-fire unvented room heater ☐ baseboard electric heater

Additional Energy Efficiency (check one)

☐ Proposed design had an annual energy cost ≥ 95% of that of the reference design

☐ Energy Rating Index score is at least 5% less than ERI target

☐ Additional efficiency package option is installed (specify option) ____

Photovoltaic Panel System		Energy Rating Index Score	
Array capacity		with PV	
Inverter efficiency		without PV	
Panel tilt			
Orientation			

Designer/builder ____ Date ____

This Certificate is to be posted in accordance with Section R401.3 of the International Energy Conservation Code.

THANK YOU!

Greg Gilbert

CEO / CFPE / CFI-1 / LPI
State Building Official
Division of Building Codes and Standards
Office of State Fire Marshal
greg.gilbert@maine.gov
Phone: (207) 441-0996

https://www.maine.gov/dps/fmo/building-codes