Multifamily New Construction
What to expect in the 2024 RBES & CBES

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Target Effective Date

- July 1, 2024

- Do RBES and CBES have the same code version trigger?
- CBES: Building Permit application date
- RBES: Construction start date
- CBES caveat: For buildings permitted under 2020 CBES: construction must start prior to December 31, 2024

Source: R. Edwards & Co. Architects

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Do I follow RBES or CBES?

- Three story slab-on-grade building?
- Four story building?
- Three story building with parking garage under?

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2024 Stretch Code?

CBES:

- No
- What about ACT 250 projects?

RBES:

- Yes
  - ACT 250 projects
  - Municipalities that have adopted the more stringent Stretch Code

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Envelope Requirements

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Building Envelope Requirements

Changes from 2020:

- Adjustments to most U-value requirements
- Better alignment between RBES and CBES
  - Windows: U-0.30
  - Air leakage: 0.15cfm50/s.f. regardless of building height
- Define a solar-ready zone

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Building Envelope Requirements

COMPONENT	ENERGY CODE			EXAMPLE ASSEMBLIES	
	2020 CBES	2024 CBES	2024 RBES	CBES	RBES
Roofs					
Insulation above deck	U-0.025	U-0.022	U-0.020	R-45ci	R-44ci
Attic and Other	U-0.021	U-0.020	←Same	R-49	←Same
Slope	-	-	U-0.025	-	R-44
Walls, Above grade					
Wood-framed and other	U-0.042	U-0.036	U-0.044	R-13 + R-16ci or R-19 + R-12ci or R- 25ci	R-21 + R-5ci or R-13 + R-10ci or R-20ci
Walls, Below Grade					
Below-grade wall	C-0.063	C-0.048	-	R-20ci	R-20ci or R13+10ci
Floors					
Joist/Framing—Wood	U-0.033	U-0.027	U-0.029	R-38	←Same
Slab-on-Grade Floors					
Unheated slabs	F-0.036	F-0.434	-	R-20 for 48" below	R-20 for 48" below or R-15 edge +R-7.5 below full slab
Heated slabs	F-0.073	F-0.433	-	R-20 for 48" below + R-15 full slab	←Same

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RBES: Windows & Doors

- Up to 15% of glazed fenestration per dwelling unit shall be permitted to be exempt from U-factor requirements

- One side-hinged opaque door assembly up to 24 s.f. in area is exempted from the U-factor requirements for doors

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Dwelling Unit Enclosure Testing

CBES and RBES are aligned

Air leakage shall not exceed 0.15 cfm/ft^2 tested at 50Pa

- Fewer than 8 units: test all units
- More than 8 units: test 20% of units, minimum of 7

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Solar-ready zone

- For MF buildings RBES requirements = CBES requirements
- Located on roof
  - Buildings oriented between 110° and 270° of true north; or
  - Low slope roofs
- Not less than 40% of roof area
- Can be single area or smaller, separated sub-zones

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Solar-Ready Zone

- Construction drawings indicate
  - Roof loads specified: not less than 5psf
  - Drawings show interconnection pathways for conduit etc
  - Electrical energy storage system-ready floor area

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Solar-Ready Zone cont.

- Main panel shall have reserve space to allow installation of
  - Dual-pole circuit breaker for future solar electric
  - Dual-pole circuit breaker for future electrical energy storage system installation

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Solar-Ready Zone cont.

Exceptions:

- On-site renewable energy system pre-exists
- Solar-ready zone is shaded 70% of daylight hours
- Incident solar radiation available is not suitable
- Extensive rooftop equipment, skylights, vegetation, other obstructions (certified by licensed professional)

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Mechanical Systems

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CBES: Ventilation

CBES says meet ASHRAE 62.1

Exception: All Residential occupancies

See the ventilation requirements of Section 304 of the *Vermont Residential Building Energy Standards*.

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CBES: Ventilation cont.

Dwelling units shall have ERVs

- 70% recovery efficiency at heating design condition
- 60% enthalpy recovery efficiency at cooling design condition

Exception: Systems with a minimum sensible recovery efficiency (SRE) of 75 percent at 32°F at design airflow

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RBES: Ventilation

RBES says install a whole house balanced ventilation system with minimum 75 SRE and 1.2 cfm/Watt

- Follow ASHRAE 62.2 2019 or…..
- Follow Passive House ventilation requirements or…..
- Similar to 2020 RBES there will be the simplified 15cfm plus 15 cfm per bedroom option. This will appear in the handbook not the RBES

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CBES: ASHP Equipment sizing

Heat pump equipment shall not be sized greater than the calculated peak heating and cooling loads

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CBES & RBES: Electric Resistance Heating Equipment

Allowed under the following circumstances:

1. Cold-climate heat pumps are primary heating system
    1. Supplemental electric resistance heat operates only at temperatures 5F or lower
    2. The building has tested air leakage of less than 0.15cfm50/sf

2. Multifamily buildings with heating loads ≤ 6.0 Btu/hr/sf at design temperature

Note: Need prior approval from BED to install electric resistance heating!

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CBES: Enclosed parking garage ventilation controls

Sensors must detect NO_x in addition to CO_2

Exceptions for garage ventilation systems that do not utilize heating or cooling:

1. Total exhaust capacity less than 4,000 cfm
2. Garage area to ventilation system motor nameplate power ratio that exceeds 1,125 cfm/hp

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CBES: Duct Insulation

Supply and return air ducts and plenums shall be insulated with not less than:

- R-12 insulation where located in unconditioned spaces
  - (2020 CBES = R-8)
- R-20 insulation where located outside the building
  - (2020 CBES = R-12)
- RBES says no duct insulation outside of thermal envelope

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Electrical Power and Lighting Systems

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Electrical Power and Lighting Systems

Dwelling and Sleeping Units required to have 100% LED lighting

Parking Garage Lighting has new lighting control requirements

Lighting Power Density improved, approximately 15% more efficient but varies by building area type or space-by-space type

Electrical Power and Lighting Systems

- Energy Monitoring is now required in buildings >25,000 SF
- Electric Vehicle Charging Stations:
  - Must be Level 2 chargers or better
  - Revised requirements for charging stations and future ready/capable spaces

CBES Dwelling Unit Electrical Meters

Nothing new: Each dwelling unit located in a Group R-2 building shall have a separate electrical meter

New Exception: Buildings where a majority of the living units serve tenants at or below 80% of area median income

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RBES Electrical Meters

2020: No requirement for individual electrical meters

2024: Same language as CBES

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CBES: Energy monitoring

Buildings > 25,000sf shall be equipped to monitor, record and report energy consumption

Exception: MF buildings and individual tenant spaces provided that each space

- Has its own utility services and meters
- And has <5,000 square feet of conditioned floor area

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CBES Electric vehicle Power Transfer Infrastructure

TABLE C405.13.1
REQUIRED EV POWER TRANSFER INFRASTRUCTURE

COMMERCIAL BUILDING OCCUPANCY	EVSE SPACES	EV READY SPACES	EV CAPABLE SPACES
Groups A, M	2%	0%	20%
Group B	6%	0%	30%
Group E	4%	0%	20%
Groups F, H, S	2%	0%	10%
Groups I, R-3, R-4	3%	0%	10%
Group R-1	8%	7%	50%
Group R-2	0%	0%	Determined in Equation 4-11

Equation 4-11: *R2EVC = D/SU + 0.25 * (APS – D/SU)*

R2EVC = Total requirement for EV Capable Spaces

D/SUI = Total number of dwelling and sleeping units

APS = Total number of *automobile parking spaces* provided

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Electric vehicle Power Transfer Infrastructure

A few definitions:

- Level 1 charger: with a charge rate of 1-2 kVA this is no longer permitted under 2024 CBES
- Level 2 charger: 2024 CBES minimum charge rates specified effectively make this the minimum requirement
- Electric Vehicle Fast Charger: Also referred to as a Level 3 charger

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CBES: Electric vehicle Power Transfer Infrastructure

EVSE space: An *automobile parking space* that is provided with a dedicated *EVSE* connection

EV ready spaces: An *automobile parking space* that is provided with a branch circuit and either an outlet, junction box or receptacle, that will support an installed *EVSE*.

EV capable spaces: A designated *automobile parking space* that is provided with all the requisite infrastructure in place within five feet to allow installation of electrical wiring and connection to power for EVSE

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CBES: Electric Vehicle Power Transfer Infrastructure

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Group R-1	8%	7%	50%
Group R-2	0%	0%	Determined in Equation 4-11

One of the first Elcar vehicles. Flickr/Alden Jewell

- EVSE equipment minimum charging rate of 6.2 kVA (30A @ 208/240V)
- Each installed EVSE space with an EV fast charger shall count as 4 EVSE spaces

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CBES: Electric vehicle Power Transfer Infrastructure

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Groups I, R-3, R-4	3%	0%	10%
Group R-1	8%	7%	50%
Group R-2	0%	0%	Determined in Equation 4-11

One of the first Elcar vehicles. Flickr/Alden Jewell

- Installed EVSE spaces that exceed minimum requirements may be used to meet EV Ready and EV capable spaces requirement
- Installed EV Ready spaces that exceed minimum requirements may be used to meet EV capable spaces requirement

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CBES: EV Capable Spaces

Each EV capable space used to meet the requirements of Section C405.13.1 shall comply with all of the following:

- A continuous raceway or cable assembly shall be installed between an enclosure or outlet located within 3 feet (914 mm) of the EV capable space and a suitable panelboard or other onsite electrical distribution equipment.
- 2. Installed raceway or cable assembly shall be sized and rated to supply a minimum circuit capacity in accordance with C405.13.5.
- 3. The electrical distribution equipment to which the raceway or cable assembly connects shall have sufficient dedicated space and spare electrical capacity for a 2-pole circuit breaker or set of fuses.
- 4. The electrical enclosure or outlet and the electrical distribution equipment directory shall be marked: "For future electric vehicle supply equipment (EVSE)."
- 5. Reserved capacity shall be no less than 4.1 kVA (20A 208/240V) for each EV capable space.

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CBES: EV Capable Spaces

Exception: R-2 Occupancies with multifamily building garage or covered parking should:

- provide on electrical drawings the appropriate sized pathway to the building electrical room to accommodate a future electrical upgrade for Level 2 EVSE electric vehicle charging;
- provide adequate wall and floor space in the building electrical room for future EV charging related electrical equipment;
- provide the appropriate sized pathways to exterior on-grade surface parking spaces for future Level 2 EVSE electric vehicle charging;
- provide a line diagram on the electrical drawings demonstrating a pathway for future Level 2 EVSE electric vehicle charging

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RBES: Electric Vehicles

Required Level 2 Capable spaces (base & stretch):

BUILDING/PARKING TYPE	MINIMUM REQUIRED NUMBER OF LEVEL 2 CAPABLE EV CHARGING PARKING SPACES
Single Family Home or Multifamily Building	1 per dwelling unit or the number of parking spaces provided, whichever is less
Additional Parking Spaces	25% of remaining parking spaces not utilized by dwelling units, or 40 spaces, whichever is less

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RBES: Electric Vehicles

Required Level 2 *Capable* spaces (base & stretch):

For MF building garages and surface parking:

- Provide on electrical drawings the appropriately sized pathway to the building electric room to accommodate future upgrade for Level 2 EVSE
- Provide adequate floor/wall space in electric room for future EV charging related equipment
- Quantity of future Level 2 EVSE charging stations per previous table

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CBES: Additional Electric Infrastructure

Exception: Buildings with R-2 Occupancies

Note: while not a code requirement this is a method for obtaining additional energy credits if desired

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CBES: Additional Electric Infrastructure

Buildings with low-capacity combustion space heating (<225 kbtu/h furnaces, <400 kbtu/h boilers)

- Condensate drains installed within 3’ of heating equipment
- Dedicated branch circuit installed and labeled “For Future Heat Pump Space Heater” (unless large enough circuit already exists to serve cooling equip.)

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CBES: Additional Electric Infrastructure cont.

Buildings with high-capacity combustion space heating:

- Conduit only between junction box located <3’ away from space heating equipment and an electrical panel
- Junction box, conduit, bus bar in electrical panel shall be rated and sized to accommodate a future branch circuit with sufficient capacity for equivalent electric equipment
- Box and panel shall have labels stating “For Future Electric Space Heating Equipment”

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CBES: Additional Electric Infrastructure cont.

Other combustion systems with similar circuit and signage requirements as for combustion heating systems:

- Service water heating
- Commercial cooking appliances
- Commercial clothes drying
- Residential clothes drying equipment serving multiple dwelling units

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Additional Efficiency, Renewable, and Load Management Requirements

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CBES: Compliance

Buildings shall comply with the following:

- Additional Energy Credits AND
- Additional Renewable & Load Management Credits

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CBES: Additional Energy Efficiency Credits

How many points does my building need?

TABLE C406.1.1
ENERGY CREDIT REQUIREMENTS BY BUILDING OCCUPANCY GROUP

	Building Occupancy Group								
	R-2, R-4, and I-1	I-2	R-1	B	A-2	M	E	S-1 and S-2	All Other
Energy Credit Requirements	79	46	83	30	60	75	90	65	36

What about mixed occupancy?

Calculate weighted average of credit requirements based on square footage of floor area

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CBES: Energy Efficiency Measures and Credits

TABLE C406.2.1

ENERGY EFFICIENCY M

ID	Energy Credit Measure	R-2, R and I
E01	Envelope Performance	
E02	UA Reduction	19
E03	Envelope Leak Reduction	13
E04	Add Roof Insulation	7
E05	Add Wall Insulation	13
E06	Improve Fenestration	42
H01	HVAC Performance	6
H02	Heating Efficiency	14
H03	Cooling Efficiency	3
H04	Residential HVAC Control	21
H05	Energy Recovery	46
W01	SHW Preheat Recovery	93
W02	Heat Pump Water Heater	81
W04	SHW Pipe Insulation	6
W05	Point of Use Water Heaters	
W06	Thermostatic Balance Valves	3

TABLE C406.2.1
ENERGY EFFICIENCY MEASURES AND CREDITS BY OCCUPANCY GROUP

ID	Energy Credit Measure	Building Occupancy Group								
		R-2, R-4, and I-1	I-2	R-1	B	A-2	M	E	S-1 and S-2	All Other
W07	SHW Heat Trace System	11	1	7	5	3	5	5	2	5
W08	SHW Submeters	17								17
W09	SHW Distribution Sizing	68		26						47
W10	Shower Heat Recovery	25	1	9						10
P01	Energy Monitoring	3	3	2	3	2	5	3	5	3
L01	Lighting Performance									
L02	Enhanced Digital Lighting Controls	1	4	1	4	1	5	4	3	3
L03	Increase Occupancy Sensors	1	4	2	4	1	6	3	4	3
L04	Increase Daylight Area	2	5	3	6	1	8	5	4	4
L05	Residential Light Control	3								
L06	Reduced Lighting Power	1	5	1	5	1	6	5	4	4
Q01	Efficient Elevator Equipment	4	2	2	4	0	3	4	5	3
Q02	Commercial Kitchen Equipment					21				
Q03	Residential Kitchen Equipment	13		10						
Q04	Fault Detection	3	3	2	3	3	3	4	6	4

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CBES: Renewable & Load Management Credits

How many points does my building need?

TABLE C406.1.2
RENEWABLE AND LOAD MANAGEMENT CREDIT REQUIREMENTS BY BUILDING OCCUPANCY GROUP

	Building Occupancy Group								
	R-2, R-4, and I-1	I-2	R-1	B	A-2	M	E	S-1 and S-2	All Other
Renewable and Load Management Credit Requirements	16	11	14	24	4	25	22	20	17

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CBES: Renewable and Load Management Credits

TABLE C406.3.1
Renewable and Load Management Credit Requirements by Building Occupancy Group

ID	Renewable and Load Management Credit	Building Occupancy Group								
		R-2, R-4, and I-1	I-2	R-1	B	A-2	M	E	S-1 and S-2	All Other
R01	On-Site Renewable Energy	9	6	8	14	2	9	13	24	11
G01	Lighting Load Management	5	14	9	10	4	18	16	36	14
G02	HVAC Load Management	10	12		8	16	14	18	14	13
G03	Automated Shading	1		1	5		8	14		5
G04	Electric Energy Storage	14	13	13	16	4	11	20	24	14
G05	Cooling Energy Storage	7	11	12	12	2	9	16	1	9
G06	SHW Energy Storage	18	4	26	6	15	4	7	2	10
G07	Building Thermal Mass	27	26	26	8	6	13	31	20	20
C01	Insulation Embodied Carbon	5	3	4	8	1	8	7	6	5
E01	Additional Electric Infrastructure	16								

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CBES: Renewable & Load Management Credit

R&LM Credit Exceptions:

1. Building achieves additional 70% of Energy Efficiency Credits from Table C406.1.1:

   only 50% of R&LM credits required

2. Building achieves additional 120% of Energy Efficiency Credits from Table C406.1.1:

   Zero R&LM credits required

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RBES: Total Required Points

BUILDING/DWELLING SIZE	BASE CODE REQUIRED POINTS	STRETCH CODE REQUIRED POINTS
Alterations	0	0
Additions < 250 square feet	0	0
Additions 250 to 500 square feet	1	2
Addition 501 to 1,000 square feet	2	3
Addition > 1,000 square feet	3	4
Multifamily <650 square feet	0	1
Multifamily 650 to 900 square feet	1	2
Multifamily 900 to 1,250 square feet	2	3
Multifamily >1,250 to 2,500 square feet	4	5
< 2,500 square feet	5	7
2,500 to 4,000 square feet	7	12
> 4,000 square feet	10	15

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RBES: Envelope Points

Component		Description	Points
Envelope	Slab (on or below grade, heated or unheated)	R-20 around perimeter and below entire slab **OR**[b]	2
		R-25 around perimeter and below entire slab	3
	Walls	R-28 2x6 cavity insulation with continuous (R20+9ci or similar) (U-0.036 wall assembly) **OR**[b]	1
		R-35 double stud or similar (cavity and continuous) (U-0.028 wall assembly) **OR**[b]	2
		R-40 double stud or similar (cavity and continuous) (U-0.025 wall assembly) **OR**[b]	3
		R-48 SIP 10 1/4" XPS or similar (cavity and continuous) (U-0.021 wall assembly)	4
	Ceiling	R-60 attic flats (U-0.018) and R-49 slopes, vaulted and cathedral (U-.020)	1
		R-80 attic flats (U-0.013) and R-60 slopes, vaulted and cathedral (U-.018)	2
	Floors - Exposed	R-49 (U-0.021)	1
	Windows- Triple Pane	Average U-factor ≤ 0.27 **OR**[b]	1
		Average U-factor ≤ 0.25 **OR**[b]	2
		Average U-factor ≤ 0.21 **OR**[b]	3
		Average U-factor ≤ 0.18	4
	Doors - Exterior	U-0.26	1

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RBES: Air Leakage and Ventilation Points

Air Leakage	Tight	Tested to ≤0.11 CFM50/Sq. Ft. of Building Shell (6-sided) (~1.5 ACH50) **OR**[b]	1
	Tighter	Tested to ≤0.07 CFM50/Sq. Ft. of Building Shell (6-sided) (~1.0 ACH50) **OR**[b]	2
	Tightest	Tested to ≤0.03 CFM50/Sq. Ft. of Building Shell (6-sided) (~0.5 ACH50)	3
Mechanical Ventilation	Better Heat Recovery **OR**	Balanced ventilation with ECM fans and ≥80% SRE and ≥1.2 cfm/watt **OR**[b]	3
	Better Electrical Efficiency	Balanced ventilation with ECM fans and ≥70% SRE, and ≥2.0 cfm/watt	
	Mechanical Ventilation Testing	Mechanical ventilation systems shall be tested and verified to provide the minimum ventilation flow rates required by Section R403.6. Testing shall be performed according to the ventilation equipment manufacturer's instructions, or by using a flow hood or box, flow grid, or other airflow measuring device at the mechanical ventilation fan's inlet terminals or grilles, outlet terminals or grilles, or in the connected ventilation ducts.	1

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RBES: Heating & Cooling Equipment Points

Heating and Cooling[a]	Basic Equipment	ENERGY STAR basic: (1) Gas/propane furnace ≥ 95 AFUE, Oil furnace ≥ 85 AFUE; (2) Gas/propane boiler ≥ 90 AFUE, Oil boiler ≥ 87 AFUE; **OR**[b]	1
	Cold Climate Air Source Heat Pump	Whole building heating /cooling is ENERGY STAR v.6 labeled[d]	5
	Ground Source Heat Pump	Whole building heating /cooling is Ground Source Heat Pump (GSHP) and ENERGY STAR labeled[d]	10
	Air-to-Water Heat Pump	Whole building heating/cooling is Air-to-Water Heat Pump (ATWHP) COP ≥ 2.5	5
	Advanced Wood Heating System	Whole building heating/cooling is Advanced wood heating system from http://www.rerc-vt.org/advanced-wood-heating-system/eligible-equipment-inventory-eei	5
	Low-Temperature Hydronic Distribution System	Hydronic distribution system designed to meet building peak heating demand with 120-degree water	1
	Demand Responsive Thermostats	All electric heating thermostats provided with *demand responsive controls*	1

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RBES: Domestic Hot Water Points

Water	Heat Pump Basic	Electric Heat Pump Water Heater UEF ≥ 2.20 **OR**[b]	3
	Heat Pump Advanced	Electric Heat Pump Water Heater UEF ≥ 3.30	5
	Low flow	All showerheads ≤ 1.75 gpm, all lavatory faucets ≤ 1.0 gpm, and all toilets ≤ 1.28 gpf[c] **OR**[b]	1
	Certified[e]	Certified water efficient design per WERS, WaterSense, or RESNET $HERS_{H2O}$	2
	Drain heat recovery	Drain water heat recovery system on *primary showers* and tubs	1
	Recirculation User-demand	Controlled hot water recirculation system with user-demand via push-button for furthest fixtures	1
	Pipe Insulation	All service hot water piping is insulated to at least R-4 from the hot water source to the fixture shutoff.	1
	Demand Responsive Controls	Electric storage water heater(s) provided with *demand responsive controls*	1
	Point of Use Electric Water Heater	Remote fixtures requiring hot water supplied from a localized source of hot water with no recirculating system.	1
	Solar Ready Zone	Follow R402.7 Solar –ready zone requirements. These points are only available for Base Code and not Stretch Code since Stretch Code requires following R402.7.	2
	Solar Hot Water	Solar hot water system designed to meet at least 50% of the annual hot water load	2

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RBES: Renewables and Other Measure Points

Renewables	On-Site Generation	Solar photovoltaic (PV) (or other on-site renewable energy system), 1 point per 1.5 kW per housing unit of renewable generation on site	1 per 1.5 kW, max. 4
Other Measures	Monitoring	Whole-building energy monitoring system installed, minimum 5 circuits and homeowner access to data	1
	Radon Mitigation System	Radon mitigation designed to https://www.epa.gov/radon/radon-standards-practice is installed and documented to homeowner	1
	Energy Model	Building energy model with projected annual energy use and costs developed, used in design and construction decisions, and provided to homeowner	1
	Battery	Minimum 6 kWh grid-connected dispatchable demand-response-enabled battery	1
	Advanced Lighting Controls	All lighting for at least 50% of floor area is controlled and/or continuously dimmed based by occupancy, daylight, load shedding, and/or schedule.	2

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RBES: Insulation Embodied Carbon Points

Insulation Embodied Carbon Emissions	Global Warming Potential (GWP)/square footage (kg CO_2e/ft^2)	Report the global warming potential (GWP) impact of project insulation materials as described in Section R408. Use calculation table R408.1.1 to summarize insulation GWP intensity (kg CO_2e/ft^2) for the project. Default global warming potential (GWP) values for common insulation products are provided in table R408.1.2. The calculation may utilize Type III, product-specific environmental product declaration (EPD) in lieu of default values for insulation products. If EPD values are used for a given insulation product, include the sum of lifecycle stages A1-A3 from the sourced EPD instead of default GWP value when completing the calculation. Include A5 and B1 GWP values for SPF and XPS products, as noted in R408. **OR**[b]	1
	Global Warming Potential (GWP)/square footage (kg CO_2e/ft^2)	Demonstrate a calculated insulation GWP intensity (kg CO_2e/ft^2) less than 0.5. Product-specific EPDs may be used in place of default values, subject to requirements in R408. **OR**[b]	2
		Demonstrate a calculated insulation GWP intensity (kg CO_2e/ft^2) less than 0. Product-specific EPDs may be used in place of default values, subject to requirements in R408.	3

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RBES: Multifamily Building Specific Points

Multifamily Buildings	Efficient Elevator Equipment	Elevators in the building qualify with Energy Efficiency Class A per ISO 25745-2, Table 7.	1
	Residential Kitchen Equipment	All dishwashers, refrigerators, and freezers comply with the most recent ENERGY STAR Most Efficient label.	2
	Water Heating System Submeters	Each individual dwelling unit served by a central service water-heating system is provided with a service hot water meter connected to a reporting system that provides individual dwelling unit reporting of actual domestic hot water use.	1

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Energy Code Assistance Center

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