



Commercial New Construction Project Recommendations and Incentives

The following recommendations assume that the building design, at a minimum, meets the requirements set forth in the 2020 Vermont Commercial Building Energy Standard (CBES). The following 4 efficiency opportunities are applicable to all Commercial New Construction projects and Efficiency Vermont will work with you and your team to identify additional energy saving opportunities specific to your business.

Building Envelope Air Tightness:

Primary Goal

Set an air leakage goal of no more than 0.13 cfm75/sq ft of building shell area.

Context

Air sealing is extremely cost-effective and EVT recommends constructing your building to an air tightness level that exceeds the CBES 0.3 cfm75/sq ft requirement. With planning and building envelope commissioning new commercial buildings routinely achieve blower door-verified building tightness levels of 0.13 cfm75/sq ft or less. Benefits of air sealing to this level include:

- Measurably lower energy consumption and utility bills.
- Potential to reduce HVAC equipment size, lowering construction costs.
- Increase in occupant comfort and building durability.

Recommendation

Hire a building envelope commissioning agent (BECx) to support the project. Design and construction phase services the BECx provides include but are not limited to the following.

- Review of architectural drawings to identify air barrier issues and air sealing opportunities
- Provide written comments and directions for air sealing activities
- Kick off meeting to highlight process and roles and responsibilities of each party
- Visual progress inspections and fog or infrared testing
- Provide progress/interim blower door testing during construction,
- Provide final blower door test to confirm attaining the air leakage goal

Incentive

If an agreed-upon low air leakage target is set and achieved, Efficiency Vermont will cover 25% (up to \$2,500) of the cost to hire a BECx. Efficiency Vermont will also provide \$1,000 plus \$10 per 100cfm75 reduction below the CBES minimum requirement of 0.3cfm75/sq ft of building shell area.

Notes:

- For buildings heated with natural gas contact VGS to discuss potential incentives for reduced air leakage.
- **Building Commissioning Agents and points of contact:**
Contact Efficiency Vermont for a list of Building Commissioning agents in your area

Efficient LED Lighting Design:

Primary Goal

Use Design Lights Consortium (DLC) and ENERGY STAR listed LED light fixtures in an efficient design to provide the necessary lighting for a safe and appropriately lit space that maximizes energy savings.

Recommendation

Design the interior light fixture layout to achieve a lighting power density (LPD) that is 20% better than required by CBES.

A member of the design team must submit a completed Efficiency Vermont's LPD Tool to demonstrate the w/sf achieved. A request to download the tool, as well as instructions on how to use the tool are found on EVT's website here:

www.efficiencyvermont.com/trade-partners/lighting-power-density-tool

Incentive

If the LPD analysis shows the lighting design layout is at least 20% better than CBES, EVT will provide \$0.10/sq ft floor area, not less than \$500. These incentives are in addition to point-of-purchase incentives applied when qualified fixtures are purchased through Vermont suppliers.

Notes

Estimated annual savings of \$500 for a 10,000 sq ft office

Alternatively, a COMcheck lighting analysis will suffice in lieu of a completed LPD tool.

Energy or Heat Recovery Ventilation:

Primary Goal

Install a high efficiency Energy Recovery Ventilation system (ERV) with the following attributes:

- Sensible heat recovery efficiency (SRE) of 70% or greater
- Variable speed fans and controls
- Occupied/unoccupied schedule

Recommendation

In addition to the $SRE \geq 70\%$ recommendation, optimize the recovery efficiency by sizing each ERV so that it utilizes its variable speed fans to supply delivered air at roughly 75% of maximum capacity. For example, if your space requires an ASHRAE 62.2 ventilation rate of 600cfm, specify an ERV capable of delivering 800cfm at maximum speed.

Incentive

\$0.10/sq ft for building areas served by ERVs with controls to set up occupied/unoccupied schedule

Notes:

- For buildings heated with natural gas contact VGS to discuss potential ERV incentives.
- Estimated annual savings of \$200-\$300 for a system as described above

Mechanical Systems:

Primary Goal

Install appropriately sized, high efficiency mechanical equipment.

Recommendation

Incorporate efficient mechanical equipment into the basis of design. Utilizing heat pump technologies can reduce operating costs and greenhouse gas emissions.

Incentive

EVT can provide incentives for electrically powered HVAC equipment that exceeds the 2020 CBES by at least 10%.

Notes

- Fossil fuel burning equipment does not qualify for Efficiency Vermont incentives.

EVT offers rebates at point of sale through distributors for the following equipment:

- Air Source Heat Pumps found on the NEEP Cold Climate Heat Pump List.
 - Air-to-air Ductless: ashp.neep.org/#!/product_list/veic_ductless
 - Air-to-air Ducted: ashp.neep.org/#!/product_list/veic_ducted
- Air-to-Water Heat Pumps found on EVT Qualified Product List (QPL).
 - Incentive through EVT Rebate Form: www.efficiencyvermont.com/Media/Default/docs/rebates/forms/efficiency-vermont-heating-ventilation-air-conditioning-rebate-form.pdf
 - EVT QPL: www.efficiencyvermont.com/Media/Default/docs/rebates/qpls/efficiency-vermont-awhp-qpl.pdf
- Ground Source Heat Pumps meeting the following AHRI rated criteria:

Equipment Type	EER	COP
Water to Water	16.1	3.1
Water to Air	17.1	3.6

- Only closed-loop applications are eligible (vertical and horizontal loops)
- Equipment must be installed by an Efficiency Excellence Network contractor.
- Rebates:
 - < 10 Tons = \$2,100 per Ton
 - 10 - 20 Tons = \$1,500 per Ton
 - 20 – 50 Tons = \$1,000 per Ton
- Heat Pump Water Heaters found on EVT Qualified Product List (QPL).
www.efficiencyvermont.com/Media/Default/docs/rebates/qpls/efficiency-vermont-heat-pump-water-heaters-qualifying-products.pdf

