

Rooftop Unit (RTU) Replacement at the Eliot & Broadmeadow Schools

RTUs supply pre-heated & cooled fresh air to the school buildings

Why do the RTU's need replacement?

- 20+ years old
- Past the end of useful life
- Constant repairs are only a “Band-Aid” to keep operating
- Refrigerant (R-22) no longer manufactured – banned greenhouse gas
- Recurring problems in furnaces, motors, fans & controls
- First step in transition away from use of Natural Gas



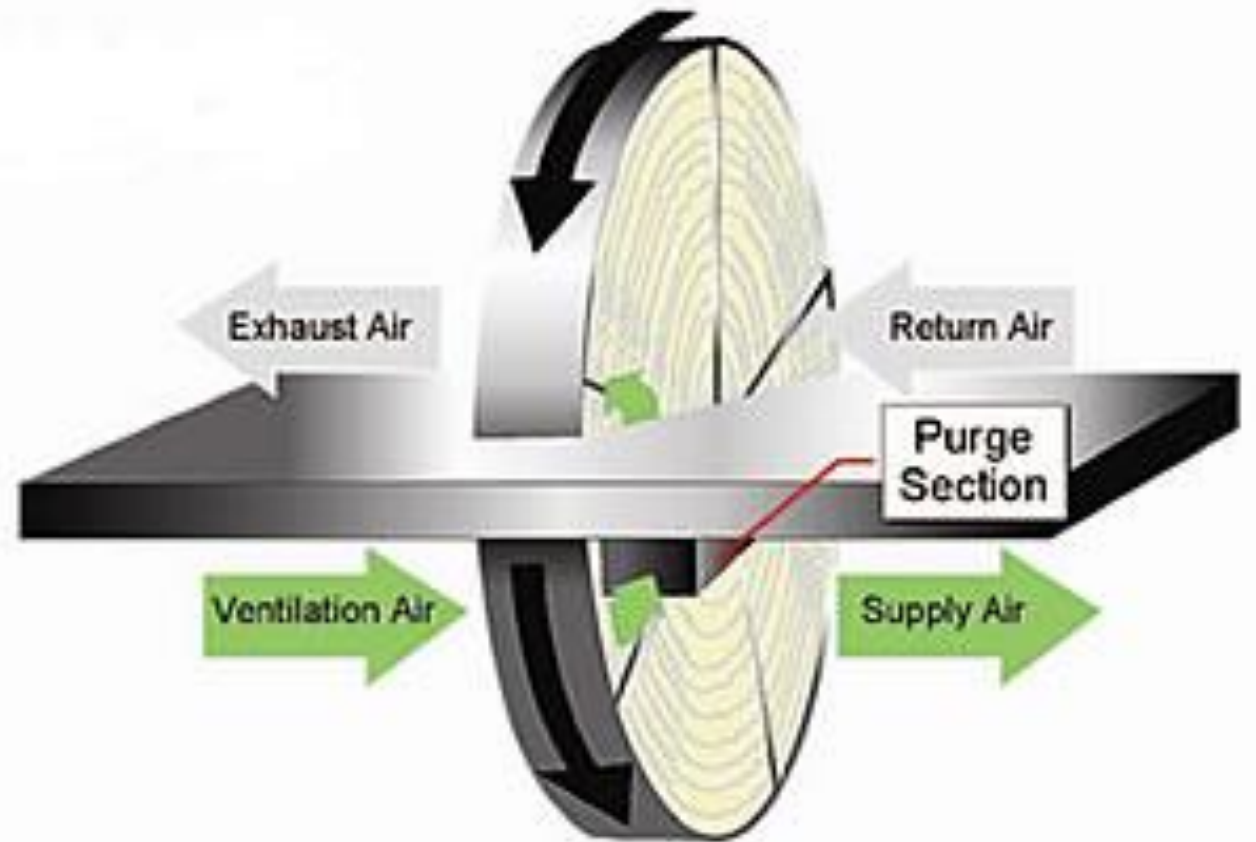
Broadmeadow has 5 RTUs



Eliot has 4 RTUs

What does the new Energy Code require?

- More energy efficient equipment
- Energy Recovery Ventilation (ERV) – Wheel inside the RTU captures energy from air exhaust and returns it to supply air
- Transition away from use of Natural Gas
- All electric RTU lower first cost of equipment cost



What is the recommended solution?

New all-electric RTUs with:

- Energy Recovery Wheels
- Direct Expansion (DX) cooling
- Electric resistance heating
- Removal of gas piping to roof
- RTU Adaptor curbs to limit structural modifications
- Reduced use of natural gas

Air-sourced Heat Pump (ASHP)

- For summer reheat to VAV boxes
- More efficient than running gas boilers through summer
- Rests boilers during swing and summer months
- Assists in extending existing boiler lifespan
- Allows for future summer repairs
- Reduced use of natural gas

What is the Schedule?

Eliot – Construction Summer 2024

Broadmeadow - Construction Summer 2025

Rooftop Unit Replacement - Eliot & Broadmeadow Elementary Schools													Draft Schedule		3/3/2023																											
Years	2022				2023				2024				2025				2026				2027																					
Fiscal Years	FY 2023				FY 2024				FY2025				FY 2026				FY2027				fy 2028																					
Months	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Designer Selection	█																																									
Feasibility Study/SD	█				█																																					
Preferred Solution					█																																					
Construction Funding																																										
Eliot School																																										
Design Development					DD																																					
Construction Documents					CD																																					
Bidding					Bid																																					
Project Award					*																																					
Equipment Procurement					Shop Dwgs & Procurement																																					
Construction									Summer																																	
Warranty													Year 1- Warranty				Year -2 Warranty																									
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What is the estimated cost?

	Eliot School	Broadmeadow School	Total
Hard Costs	\$3,427,000	\$3,991,000	\$7,418,000
Soft Costs	\$583,000	\$692,000	\$1,275,000
Contingency	\$514,000	\$599,000	\$1,113,000
Total Project Costs	\$4,505,000	\$5,282,000	\$9,806,000 Rounded up \$9,817,750

Prior funding (ATM 5/2022)

\$817,750

Requested funding (ATM 5/2023)

\$9,000,000