

Briarcliff Manor UFSD – Classroom Air ConditioningOption 1 – Window A/C Units

Cost: \$20,000 per classroom, including all contingencies and fees.

Scope includes: A/C unit, window panel, bracing, branch electrical circuit, DDC controller, upgrade of unit vent to DDC for interlock purposes, new electrical panels as necessary.

Pros: Lowest first cost.

Cons: Noise, aesthetics, shorter life expectancy, dehumidification not as accurate.

Option 2 – VRF Ductless Split A/C Units

Cost: \$50,000 per classroom, including all contingencies and fees.

Scope includes: Unit, refrigerant piping, condensate piping, electrical work, DDC controller, upgrade to unit vent to DDC for interlock purposes, remote condensers, new electrical panels as necessary.

Pros: Lower noise criteria, simultaneous heating and cooling (VRF heat pump), better dehumidification capabilities.

Cons: Higher first cost versus window A/C units.

Option 3 – Unit vent replacement with new heating and A/C units

Cost: \$80,000 per classroom, including all contingencies and fees.

Scope includes: New VRF unit ventilator, shelving work if necessary, masonry work, refrigerant piping, condensate piping, remote condensers, electrical work, DDC controls, new electrical panels as necessary.

Pros: Simultaneous heating and cooling (VRF), better efficiency than window A/C units, no controls interlocks necessary as fresh air comes through unit, more aesthetically pleasing than window units.

Cons: High first cost.

Cost of Air Conditioning Classrooms

School	Number of Classrooms	Cost to A/C via Window units at \$20,000/CR	Cost to A/C via Ductless Splits at \$50,000/CR	Cost to A/C via Unit Ventilators at \$80,000/CR
Todd ES	51	\$1,020,000.	\$2,550,000.	\$4,080,000.
MS/HS	83	\$1,660,000.	\$4,150,000.	\$6,640,000.
Totals	134	\$2,680,000.	\$6,700,000.	\$10,720,000.

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Items with Return on Investment (ROI) – Possible EPC Items

Todd Elementary School

Architectural

Item 20 – Roof replacement (1995) \$ 619,000.

Item 21 – Roof replacement (2002) \$2,352,000.

HVAC

Item 8 – DDC Controls \$ 375,000.

Item 9 – Kitchen hood controller \$ 50,000.

Item 14 – VSD's on HW pumps \$ 20,000.

Plumbing

Item 6 – Replace electric water heater \$ 20,000.

Item 7 – Replace HW storage tank with  
gas water heater \$ 75,000.

Electrical

Item 25 – Provide new LED lighting \$ 500,000.

Middle School/High School

Architectural

Item 24 – Roof replacement (2002) \$2,181,725.

Item 26 – Roof replacement (1998) \$4,898,775.

HVAC

Item 16 – Provide condensing boilers \$ 400,000.

Item 17 – Provide VSD's on HW pumps \$ 60,000.

Item 21 – DDC controls \$ 750,000.

Item 23 – Control valve – HS rm 104 \$ 5,000.

Item 25 – Kitchen hood controller \$ 10,000.

Electrical

Item 26 – Provide new LED lighting \$ 950,000.

Item 33 – Repair/replace solar tube dampers \$ 20,000.