

Erie County Technical School: Simple Life Cycle Cost Analysis of Various HVAC System Options			
	Packaged DX Cooling/Gas Heat Rooftop Units	Indoor Air Handling Units with Hot Water Heat and Chilled Water Cooling	Additional Notes
Primary Equipment:	25 Ton Rooftop Unit	25 ton Indoor Air Handler	N/A
Primary Equipment Initial Cost:	\$ 89,875	\$ 56,275	N/A
Primary Equipment Expected Life (years):	15	20	N/A
Boiler Initial Cost:	\$ 44,950	\$ 67,425	Air handler options would require more and/or larger boilers to accommodate air handler heat.
Boiler Expected Life (years):	25	25	N/A
Chiller Initial Cost:	\$ -	\$ 131,850	Rooftop unit option would not require a chilled water plant.
Chiller Expected Life (years):	20	20	N/A
VAV Box Initial Cost:	\$ 17,952	\$ 17,952	Both options would utilize the same terminal VAV boxes.
VAV Box Expected Life (years):	20	20	N/A
Ductwork Initial Cost:	\$ 361,600	\$ 361,600	Both options would have similar ductwork layouts and sizing.
Ductwork Expected Life (years):	30	30	N/A
Piping Initial Cost:	\$ 155,300	\$ 232,950	Air handler option would require more hot water piping as well as chilled water piping.
Piping Expected Life (years):	40	40	N/A
Pump Initial Cost:	\$ 21,750	\$ 43,500	Air handler option would require larger hot water pumps as well as chilled water pumps.
Pump Expected Life (years):	20	20	N/A
Gas Piping Initial Cost:	\$ 55,000	\$ 5,000	Rooftop Unit option would require more gas piping running on the roof.
Gas Piping Expected Life (years):	40	40	N/A
Life Cycle Limiting Factor:	Primary Equipment	Primary Equipment	N/A
Life Cycle Limited Life (years):	15	20	N/A
Structural Work Initial Cost:	\$ 14,000	\$ 1,000	Air handler option would require minimal structural/roof work because of existing air handler infrastructure.
Operating Cost per Year:	\$ 231,500	\$ 224,900	N/A
Maintenance Cost per Year:	\$ 26,600	\$ 34,400	Air handler option would also require the maintenance of a chilled water plant and all associated equipment.
Total Anticipated Cost per Year of Expected Life:	\$ 67,902	\$ 58,843	
Total Anticipated Cost over Expected Life:	\$ 1,018,527	\$ 1,176,852	

Total Cost over 15 Years:	\$ 1,018,527	\$ 882,639	
Total Cost over 20 Years:	\$ 1,358,036	\$ 1,176,852	