

**6.01.26 - APPENDIX: SUPPLEMENTAL MATERIAL FOR SECTION 4.02 - LCC Sample E
DESIGN AND CONSTRUCTION STANDARD**

Project Level Entries

General Information	
Project Name:	UT Austin Energy Recovery Study - 8am to 5pm
Location:	Austin, Tx
Analyst Name:	Travis Alexander
Discounting Convention:	End-of-Year
Discount Rate:	6%

Key Dates	
Base Date:	1-Jan-08
Length of Study Period:	25 Years

Life-Cycle Analysis Description:
This LCC was performed to determine at what amount of outside air justifies the increase of price for outside air units with energy recovery compared to ones without energy recovery. The input values for the LCC were determined by taking the difference in costs between the two types of units. A positive LCC total means the energy recovery unit is justified. It was assumed that these units ran 8760 hours a year. The analysis looked at outside air units ranging from 1000 CFM to 50,000 CFM.

Summary of Results:
For the range of CFM review, the analysis did not yeild positive life cycle costs. Exhaust energy recovery is not recommended for facilities with "normal business" hours (Monday to Friday, 8am to 5pm) except where required by code.

(Add as many alternates as are needed)

Alternate Name:	1,000 CFM
Alternate Description:	The alternate was used to determine if the increase of price for 1,000 CFM outside air units with energy recovery compared to ones without energy recovery are justified.

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Alternative Level Entries	
Alternate Name:	1,000 CFM
OM&R Replacement Cost	
Cost Name:	Capital Cost
Calculated Annual Simple:	-\$2,229
Cost Name:	Maintenance
Calculated Annual Simple:	-\$2,000
Electricity Costs	
Annual Consumption:	-454
Units:	Watts-Hours
Price/Unit:	\$0.077
Chilled Water Costs	
Annual Consumption:	434
Units:	Therm
Price/Unit:	\$0.8875
Steam Costs	
Annual Consumption:	17
Units:	Therm
Price/Unit:	\$0.914
Water Costs	
Annual Water Usage:	N/A
Units:	N/A
Price/Unit:	N/A
Price Escalation Rates:	N/A
Non-Annually Recurring O&M and Repair Cost	
Years/Months:	N/A
Amount:	N/A
Annual Rate of Increase:	N/A

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Alternative Level Entries	
Alternate Name:	2,000 CFM

OM&R Replacement Cost	
Cost Name:	Capital Cost
Calculated Annual Simple:	-\$2,112
Cost Name:	Maintenance
Calculated Annual Simple:	-\$2,000

Electricity Costs	
Annual Consumption:	-1,040
Units:	Watts-Hours
Price/Unit:	\$0.077

Chilled Water Costs	
Annual Consumption:	758
Units:	Therm
Price/Unit:	\$0.8875

Steam Costs	
Annual Consumption:	31
Units:	Therm
Price/Unit:	\$0.914

Water Costs	
Annual Water Usage:	N/A
Units:	N/A
Price/Unit:	N/A
Price Escalation Rates:	N/A

Non-Annually Recurring O&M and Repair Cost	
Years/Months:	N/A
Amount:	N/A
Annual Rate of Increase:	N/A

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Alternative Level Entries	
Alternate Name:	4,000 CFM

OM&R Replacement Cost	
Cost Name:	Capital Cost
Calculated Annual Simple:	-\$1,877
Cost Name:	Maintenance
Calculated Annual Simple:	-\$2,000

Electricity Costs	
Annual Consumption:	-2,446
Units:	Watts-Hours
Price/Unit:	\$0.077

Chilled Water Costs	
Annual Consumption:	1,525
Units:	Therm
Price/Unit:	\$0.8875

Steam Costs	
Annual Consumption:	62
Units:	Therm
Price/Unit:	\$0.914

Water Costs	
Annual Water Usage:	N/A
Units:	N/A
Price/Unit:	N/A
Price Escalation Rates:	N/A

Non-Annually Recurring O&M and Repair Cost	
Years/Months:	N/A
Amount:	N/A
Annual Rate of Increase:	N/A

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Alternative Level Entries	
Alternate Name:	8,000 CFM

OM&R Replacement Cost	
Cost Name:	Capital Cost
Calculated Annual Simple:	-\$5,222
Cost Name:	Maintenance
Calculated Annual Simple:	-\$2,000

Electricity Costs	
Annual Consumption:	-3,923
Units:	Watts-Hours
Price/Unit:	\$0.077

Chilled Water Costs	
Annual Consumption:	3,142
Units:	Therm
Price/Unit:	\$0.8875

Steam Costs	
Annual Consumption:	128
Units:	Therm
Price/Unit:	\$0.914

Water Costs	
Annual Water Usage:	N/A
Units:	N/A
Price/Unit:	N/A
Price Escalation Rates:	N/A

Non-Annually Recurring O&M and Repair Cost	
Years/Months:	N/A
Amount:	N/A
Annual Rate of Increase:	N/A

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Alternative Level Entries	
Alternate Name:	15,000 CFM

OM&R Replacement Cost	
Cost Name:	Capital Cost
Calculated Annual Simple:	-\$6,923
Cost Name:	Maintenance
Calculated Annual Simple:	-\$2,000

Electricity Costs	
Annual Consumption:	-6,658
Units:	Watts-Hours
Price/Unit:	\$0.077

Chilled Water Costs	
Annual Consumption:	5,877
Units:	Therm
Price/Unit:	\$0.8875

Steam Costs	
Annual Consumption:	239
Units:	Therm
Price/Unit:	\$0.914

Water Costs	
Annual Water Usage:	N/A
Units:	N/A
Price/Unit:	N/A
Price Escalation Rates:	N/A

Non-Annually Recurring O&M and Repair Cost	
Years/Months:	N/A
Amount:	N/A
Annual Rate of Increase:	N/A

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Alternative Level Entries	
Alternate Name:	30,000 CFM

OM&R Replacement Cost	
Cost Name:	Capital Cost
Calculated Annual Simple:	-\$11,499
Cost Name:	Maintenance
Calculated Annual Simple:	-\$2,000

Electricity Costs	
Annual Consumption:	-10,079
Units:	Watts-Hours
Price/Unit:	\$0.077

Chilled Water Costs	
Annual Consumption:	11,476
Units:	Therm
Price/Unit:	\$0.8875

Steam Costs	
Annual Consumption:	472
Units:	Therm
Price/Unit:	\$0.914

Water Costs	
Annual Water Usage:	N/A
Units:	N/A
Price/Unit:	N/A
Price Escalation Rates:	N/A

Non-Annually Recurring O&M and Repair Cost	
Years/Months:	N/A
Amount:	N/A
Annual Rate of Increase:	N/A

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Alternative Level Entries	
Alternate Name:	50,000 CFM

OM&R Replacement Cost	
Cost Name:	Capital Cost
Calculated Annual Simple:	-\$21,239
Cost Name:	Maintenance
Calculated Annual Simple:	-\$2,000

Electricity Costs	
Annual Consumption:	-22,169
Units:	Watts-Hours
Price/Unit:	\$0.077

Chilled Water Costs	
Annual Consumption:	19,219
Units:	Therm
Price/Unit:	\$0.8875

Steam Costs	
Annual Consumption:	784
Units:	Therm
Price/Unit:	\$0.914

Water Costs	
Annual Water Usage:	N/A
Units:	N/A
Price/Unit:	N/A
Price Escalation Rates:	N/A

Non-Annually Recurring O&M and Repair Cost	
Years/Months:	N/A
Amount:	N/A
Annual Rate of Increase:	N/A

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Alternate Name: 2,000 CFM

Alternate Description:

The alternate was used to determine if the increase of price for 2,000 CFM outside air units with energy recovery compared to ones without energy recovery are justified.

Alternate Name: 4,000 CFM

Alternate Description:

The alternate was used to determine if the increase of price for 4,000 CFM outside air units with energy recovery compared to ones without energy recovery are justified.

Alternate Name: 8,000 CFM

Alternate Description:

The alternate was used to determine if the increase of price for 8,000 CFM outside air units with energy recovery compared to ones without energy recovery are justified.

Alternate Name: 15,000 CFM

Alternate Description:

The alternate was used to determine if the increase of price for 15,000 CFM outside air units with energy recovery compared to ones without energy recovery are justified.

Alternate Name: 30,000 CFM

Alternate Description:

The alternate was used to determine if the increase of price for 30,000 CFM outside air units with energy recovery compared to ones without energy recovery are justified.

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Alternate Name: 50,000 CFM
Alternate Description:
The alternate was used to determine if the increase of price for 50,000 CFM outside air units with energy recovery compared to ones without energy recovery are justified.

Alternate Name:
Alternate Description:

Alternate Name:
Alternate Description:

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