Program Version:**EnergyPlus, Version 8.9.0-eba93e8e1b, YMD=2018.12.15 19:16**

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Tabular Output Report in Format: **HTML**

Building: **Building 1**

Environment: **RUN PERIOD 1 ** Piacenza - ITA IGDG WMO#=160840**

Simulation Timestamp: **2018-12-15 19:16:46**

Report: **Annual Building Utility Performance Summary**

Table of Contents

For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Values gathered over 8760.00 hours

Site and Source Energy

	Total Energy [GJ]	Energy Per Total Building Area [MJ/m2]	Energy Per Conditioned Building Area [MJ/m2]
Total Site Energy	147.03	1009.40	1009.40
Net Site Energy	147.03	1009.40	1009.40
Total Source Energy	393.84	2703.81	2703.81
Net Source Energy	393.84	2703.81	2703.81

Site to Source Energy Conversion Factors

	Site=>Source Conversion Factor
Electricity	3.167
Natural Gas	1.084
District Cooling	1.056
District Heating	3.613
Steam	0.300
Gasoline	1.050
Diesel	1.050
Coal	1.050
Fuel Oil #1	1.050
Fuel Oil #2	1.050
Propane	1.050
Other Fuel 1	1.000
Other Fuel 2	1.000

Building Area

	Area [m2]
Total Building Area	145.66
Net Conditioned Building Area	145.66
Unconditioned Building Area	0.00

End Uses

	Electricity [GJ]	Natural Gas [GJ]	Additional Fuel [GJ]	District Cooling [GJ]	District Heating [GJ]	Water [m3]
Heating	0.00	0.00	0.00	0.00	29.56	0.00
Cooling	0.00	0.00	0.00	40.26	0.00	0.00
Interior Lighting	17.16	0.00	0.00	0.00	0.00	0.00
Exterior Lighting	0.00	0.00	0.00	0.00	0.00	0.00
Interior Equipment	60.06	0.00	0.00	0.00	0.00	0.00
Exterior Equipment	0.00	0.00	0.00	0.00	0.00	0.00
Fans	0.00	0.00	0.00	0.00	0.00	0.00
Pumps	0.00	0.00	0.00	0.00	0.00	0.00
Heat Rejection	0.00	0.00	0.00	0.00	0.00	0.00
Humidification	0.00	0.00	0.00	0.00	0.00	0.00

Heat Recovery	0.00	0.00	0.00	0.00	0.00	0.00
Water Systems	0.00	0.00	0.00	0.00	0.00	0.00
Refrigeration	0.00	0.00	0.00	0.00	0.00	0.00
Generators	0.00	0.00	0.00	0.00	0.00	0.00
Total End Uses	77.22	0.00	0.00	40.26	29.56	0.00

Note: District heat appears to be the principal heating source based on energy usage.

End Uses By Subcategory

	Subcategory	Electricity [GJ]	Natural Gas [GJ]	Additional Fuel [GJ]	District Cooling [GJ]	District Heating [GJ]	Water [m3]
Heating	General	0.00	0.00	0.00	0.00	29.56	0.00
Cooling	General	0.00	0.00	0.00	40.26	0.00	0.00
Interior Lighting	General	17.16	0.00	0.00	0.00	0.00	0.00
Exterior Lighting	General	0.00	0.00	0.00	0.00	0.00	0.00
Interior Equipment	General	60.06	0.00	0.00	0.00	0.00	0.00
Exterior Equipment	General	0.00	0.00	0.00	0.00	0.00	0.00
Fans	Ventilation (simple)	0.00	0.00	0.00	0.00	0.00	0.00
Pumps	General	0.00	0.00	0.00	0.00	0.00	0.00
Heat Rejection	General	0.00	0.00	0.00	0.00	0.00	0.00
Humidification	General	0.00	0.00	0.00	0.00	0.00	0.00
Heat Recovery	General	0.00	0.00	0.00	0.00	0.00	0.00
Water Systems	General	0.00	0.00	0.00	0.00	0.00	0.00
Refrigeration	General	0.00	0.00	0.00	0.00	0.00	0.00
Generators	General	0.00	0.00	0.00	0.00	0.00	0.00

Normalized Metrics

Utility Use Per Conditioned Floor Area

	Electricity Intensity [MJ/m2]	Natural Gas Intensity [MJ/m2]	Additional Fuel Intensity [MJ/m2]	District Cooling Intensity [MJ/m2]	District Heating Intensity [MJ/m2]	Water Intensity [m3/m2]
Lighting	117.77	0.00	0.00	0.00	0.00	0.00
HVAC	0.00	0.00	0.00	276.37	202.92	0.00
Other	412.33	0.00	0.00	0.00	0.00	0.00
Total	530.10	0.00	0.00	276.37	202.92	0.00

Utility Use Per Total Floor Area

	Electricity Intensity [MJ/m2]	Natural Gas Intensity [MJ/m2]	Additional Fuel Intensity [MJ/m2]	District Cooling Intensity [MJ/m2]	District Heating Intensity [MJ/m2]	Water Intensity [m3/m2]
Lighting	117.77	0.00	0.00	0.00	0.00	0.00
HVAC	0.00	0.00	0.00	276.37	202.92	0.00
Other	412.33	0.00	0.00	0.00	0.00	0.00
Total	530.10	0.00	0.00	276.37	202.92	0.00

Electric Loads Satisfied

	Electricity [GJ]	Percent Electricity [%]
Fuel-Fired Power Generation	0.000	0.00
High Temperature Geothermal*	0.000	0.00
Photovoltaic Power	0.000	0.00
Wind Power	0.000	0.00
Power Conversion	0.000	0.00
Net Decrease in On-Site Storage	0.000	0.00
Total On-Site Electric Sources	0.000	0.00
Electricity Coming From Utility	77.216	100.00
Surplus Electricity Going To Utility	0.000	0.00
Net Electricity From Utility	77.216	100.00

Total On-Site and Utility Electric Sources	77.216	100.00
Total Electricity End Uses	77.216	100.00

On-Site Thermal Sources

	Heat [GJ]	Percent Heat [%]
Water-Side Heat Recovery	0.00	
Air to Air Heat Recovery for Cooling	0.00	
Air to Air Heat Recovery for Heating	0.00	
High-Temperature Geothermal*	0.00	
Solar Water Thermal	0.00	
Solar Air Thermal	0.00	
Total On-Site Thermal Sources	0.00	

Water Source Summary

	Water [m3]	Percent Water [%]
Rainwater Collection	0.00	-
Condensate Collection	0.00	-
Groundwater Well	0.00	-
Total On Site Water Sources	0.00	-
-	-	-
Initial Storage	0.00	-
Final Storage	0.00	-
Change in Storage	0.00	-
-	-	-
Water Supplied by Utility	0.00	-
-	-	-
Total On Site, Change in Storage, and Utility Water Sources	0.00	-
Total Water End Uses	0.00	-

Setpoint Not Met Criteria

	Degrees [deltaC]
Tolerance for Zone Heating Setpoint Not Met Time	0.20
Tolerance for Zone Cooling Setpoint Not Met Time	0.20

Comfort and Setpoint Not Met Summary

	Facility [Hours]
Time Setpoint Not Met During Occupied Heating	0.00
Time Setpoint Not Met During Occupied Cooling	0.00
Time Not Comfortable Based on Simple ASHRAE 55-2004	3308.50

Note 1: An asterisk (*) indicates that the feature is not yet implemented.

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BUILDING ENERGY PERFORMANCE - ELECTRICITY

| Meter |

BUILDING ENERGY PERFORMANCE - DISTRICT HEATING

| Meter |

BUILDING ENERGY PERFORMANCE - DISTRICT COOLING

| Meter |

BUILDING ENERGY PERFORMANCE - ELECTRICITY PEAK DEMAND

| Meter |

BUILDING ENERGY PERFORMANCE - DISTRICT HEATING PEAK DEMAND

| Meter |

BUILDING ENERGY PERFORMANCE - DISTRICT COOLING PEAK DEMAND

| Meter |

Life-Cycle Cost Report

| Entire Facility |

Report: **Input Verification and Results Summary** Table of Contents

For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

General

	Value
Program Version and Build	EnergyPlus, Version 8.9.0-eba93e8e1b, YMD=2018.12.15 19:16
RunPeriod	RUN PERIOD 1
Weather File	Piacenza - ITA IGDG WMO#=160840
Latitude [deg]	44.92
Longitude [deg]	9.73
Elevation [m]	134.00
Time Zone	1.00
North Axis Angle [deg]	0.00
Rotation for Appendix G [deg]	0.00
Hours Simulated [hrs]	8760.00

ENVELOPE

Window-Wall Ratio

	Total	North (315 to 45 deg)	East (45 to 135 deg)	South (135 to 225 deg)	West (225 to 315 deg)
Gross Wall Area [m2]	267.36	88.20	45.48	88.20	45.48
Above Ground Wall Area [m2]	267.36	88.20	45.48	88.20	45.48
Window Opening Area [m2]	23.93	9.85	0.00	11.63	2.45
Gross Window-Wall Ratio [%]	8.95	11.16	0.00	13.19	5.38
Above Ground Window-Wall Ratio [%]	8.95	11.16	0.00	13.19	5.38

Conditioned Window-Wall Ratio

	Total	North (315 to 45 deg)	East (45 to 135 deg)	South (135 to 225 deg)	West (225 to 315 deg)
Gross Wall Area [m2]	267.36	88.20	45.48	88.20	45.48
Above Ground Wall Area [m2]	267.36	88.20	45.48	88.20	45.48
Window Opening Area [m2]	23.93	9.85	0.00	11.63	2.45
Gross Window-Wall Ratio [%]	8.95	11.16	0.00	13.19	5.38
Above Ground Window-Wall Ratio [%]	8.95	11.16	0.00	13.19	5.38

Skylight-Roof Ratio

	Total
Gross Roof Area [m2]	72.83
Skylight Area [m2]	0.00
Skylight-Roof Ratio [%]	0.00

PERFORMANCE

Zone Summary

	Area [m2]	Conditioned (Y/N)	Part of Total Floor Area (Y/N)	Volume [m3]	Multipliers	Above Ground Gross Wall Area [m2]	Underground Gross Wall Area [m2]	Window Glass Area [m2]	Opening Area [m2]	Lighting [W/m2]	People [m2 per person]	Plug and Process [W/m2]
THERMAL ZONE 1	50.81	Yes	Yes	152.42	1.00	103.55	0.00	6.82	6.82	9.1105	19.10	0.3664
THERMAL ZONE 2	24.71	Yes	Yes	74.13	1.00	41.16	0.00	2.64	2.64	9.6875	18.58	5.8125
THERMAL ZONE 3	70.15	Yes	Yes	210.44	1.00	122.65	0.00	14.47	14.47	11.6250	1.86	48.0070
Total	145.66			436.99		267.36	0.00	23.93	23.93	10.4193	3.49	24.2330
Conditioned Total	145.66			436.99		267.36	0.00	23.93	23.93	10.4193	3.49	24.2330
Unconditioned Total	0.00			0.00		0.00	0.00	0.00	0.00			
Not Part of Total	0.00			0.00		0.00	0.00	0.00	0.00			

Report: **Demand End Use Components Summary**

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For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

End Uses

	Electricity [W]	Natural Gas [W]	Propane [W]	District Cooling [W]	District Heating [W]	Water [m3/s]
Time of Peak	02-JAN-08:09	-	-	12-JUL-16:00	04-DEC-06:10	-
Heating	0.00	0.00	0.00	0.00	15975.33	0.00
Cooling	0.00	0.00	0.00	13173.33	0.00	0.00
Interior Lighting	1365.93	0.00	0.00	0.00	0.00	0.00
Exterior Lighting	0.00	0.00	0.00	0.00	0.00	0.00
Interior Equipment	3176.85	0.00	0.00	0.00	0.00	0.00
Exterior Equipment	0.00	0.00	0.00	0.00	0.00	0.00
Fans	0.00	0.00	0.00	0.00	0.00	0.00
Pumps	0.00	0.00	0.00	0.00	0.00	0.00
Heat Rejection	0.00	0.00	0.00	0.00	0.00	0.00
Humidification	0.00	0.00	0.00	0.00	0.00	0.00
Heat Recovery	0.00	0.00	0.00	0.00	0.00	0.00
Water Systems	0.00	0.00	0.00	0.00	0.00	0.00
Refrigeration	0.00	0.00	0.00	0.00	0.00	0.00
Generators	0.00	0.00	0.00	0.00	0.00	0.00
Total End Uses	4542.78	0.00	0.00	13173.33	15975.33	0.00

End Uses By Subcategory

	Subcategory	Electricity [W]	Natural Gas [W]	Propane [W]	District Cooling [W]	District Heating [W]	Water [m3/s]
Heating	General	0.00	0.00	0.00	0.00	15975.33	0.00
Cooling	General	0.00	0.00	0.00	13173.33	0.00	0.00
Interior Lighting	General	1365.93	0.00	0.00	0.00	0.00	0.00
Exterior Lighting	General	0.00	0.00	0.00	0.00	0.00	0.00

Interior Equipment	General	3176.85	0.00	0.00	0.00	0.00	0.00
Exterior Equipment	General	0.00	0.00	0.00	0.00	0.00	0.00
Fans	Ventilation (simple)	0.00	0.00	0.00	0.00	0.00	0.00
Pumps	General	0.00	0.00	0.00	0.00	0.00	0.00
Heat Rejection	General	0.00	0.00	0.00	0.00	0.00	0.00
Humidification	General	0.00	0.00	0.00	0.00	0.00	0.00
Heat Recovery	General	0.00	0.00	0.00	0.00	0.00	0.00
Water Systems	General	0.00	0.00	0.00	0.00	0.00	0.00
Refrigeration	General	0.00	0.00	0.00	0.00	0.00	0.00
Generators	General	0.00	0.00	0.00	0.00	0.00	0.00

Report: **Source Energy End Use Components Summary**

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For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Values gathered over 8760.00 hours

Source Energy End Use Components Summary

	Source Electricity [GJ]	Source Natural Gas [GJ]	Source Additional Fuel [GJ]	Source District Cooling [GJ]	Source District Heating [GJ]
Heating	0.00	0.00	0.00	0.00	106.80
Cooling	0.00	0.00	0.00	42.50	0.00
Interior Lighting	54.33	0.00	0.00	0.00	0.00
Exterior Lighting	0.00	0.00	0.00	0.00	0.00
Interior Equipment	190.21	0.00	0.00	0.00	0.00
Exterior Equipment	0.00	0.00	0.00	0.00	0.00
Fans	0.00	0.00	0.00	0.00	0.00
Pumps	0.00	0.00	0.00	0.00	0.00
Heat Rejection	0.00	0.00	0.00	0.00	0.00
Humidification	0.00	0.00	0.00	0.00	0.00
Heat Recovery	0.00	0.00	0.00	0.00	0.00
Water Systems	0.00	0.00	0.00	0.00	0.00
Refrigeration	0.00	0.00	0.00	0.00	0.00
Generators	0.00	0.00	0.00	0.00	0.00
Total Source Energy End Use Components	244.54	0.00	0.00	42.50	106.80

Normalized Metrics

Source Energy End Use Components Per Conditioned Floor Area

	Source Electricity [MJ/m2]	Source Natural Gas [MJ/m2]	Source Additional Fuel [MJ/m2]	Source District Cooling [MJ/m2]	Source District Heating [MJ/m2]
Heating	0.00	0.00	0.00	0.00	733.22
Cooling	0.00	0.00	0.00	291.76	0.00
Interior Lighting	372.99	0.00	0.00	0.00	0.00
Exterior Lighting	0.00	0.00	0.00	0.00	0.00
Interior Equipment	1305.85	0.00	0.00	0.00	0.00
Exterior Equipment	0.00	0.00	0.00	0.00	0.00
Fans	0.00	0.00	0.00	0.00	0.00
Pumps	0.00	0.00	0.00	0.00	0.00
Heat Rejection	0.00	0.00	0.00	0.00	0.00
Humidification	0.00	0.00	0.00	0.00	0.00
Heat Recovery	0.00	0.00	0.00	0.00	0.00
Water Systems	0.00	0.00	0.00	0.00	0.00
Refrigeration	0.00	0.00	0.00	0.00	0.00
Generators	0.00	0.00	0.00	0.00	0.00

Total Source Energy End Use Components	1678.84	0.00	0.00	291.76	733.22

Source Energy End Use Components Per Total Floor Area

	Source Electricity [MJ/m2]	Source Natural Gas [MJ/m2]	Source Additional Fuel [MJ/m2]	Source District Cooling [MJ/m2]	Source District Heating [MJ/m2]
Heating	0.00	0.00	0.00	0.00	733.22
Cooling	0.00	0.00	0.00	291.76	0.00
Interior Lighting	372.99	0.00	0.00	0.00	0.00
Exterior Lighting	0.00	0.00	0.00	0.00	0.00
Interior Equipment	1305.85	0.00	0.00	0.00	0.00
Exterior Equipment	0.00	0.00	0.00	0.00	0.00
Fans	0.00	0.00	0.00	0.00	0.00
Pumps	0.00	0.00	0.00	0.00	0.00
Heat Rejection	0.00	0.00	0.00	0.00	0.00
Humidification	0.00	0.00	0.00	0.00	0.00
Heat Recovery	0.00	0.00	0.00	0.00	0.00
Water Systems	0.00	0.00	0.00	0.00	0.00
Refrigeration	0.00	0.00	0.00	0.00	0.00
Generators	0.00	0.00	0.00	0.00	0.00
Total Source Energy End Use Components	1678.84	0.00	0.00	291.76	733.22

Report: **Component Sizing Summary**

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For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

ZoneHVAC:IdealLoadsAirSystem

	User-Specified Maximum Heating Air Flow Rate [m3/s]	User-Specified Maximum Cooling Air Flow Rate [m3/s]
THERMAL ZONE 1 IDEAL LOADS AIR SYSTEM	0.000000	0.000000
THERMAL ZONE 2 IDEAL LOADS AIR SYSTEM	0.000000	0.000000
THERMAL ZONE 3 IDEAL LOADS AIR SYSTEM	0.000000	0.000000

User-Specified values were used. Design Size values were used if no User-Specified values were provided.

Report: **Surface Shadowing Summary**

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For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Surfaces (Walls, Roofs, etc) that may be Shadowed by Other Surfaces

	Possible Shadow Receivers
SUB SURFACE 1 - OVERHANG	Mir-SUB SURFACE 5 - OVERHANG | Mir-SUB SURFACE 6 - OVERHANG | Mir-SUB SURFACE 7 - OVERHANG | Mir-SUB SURFACE 10 - OVERHANG | SURFACE 19 | SURFACE 20 | SURFACE 46 | SURFACE 47 | SURFACE 5 | SURFACE 32 | SURFACE 15 | SURFACE 42 |
Mir-SUB SURFACE 1 - OVERHANG	SURFACE 19 | SURFACE 20 | SURFACE 5 | SURFACE 15 |
SUB SURFACE 5 - OVERHANG	Mir-SUB SURFACE 6 - OVERHANG | SURFACE 46 | SURFACE 47 | SURFACE 32 | SURFACE 42 |
Mir-SUB SURFACE 5 - OVERHANG	SURFACE 46 | SURFACE 47 | SURFACE 32 | SURFACE 42 |
SUB SURFACE 6 - OVERHANG	SURFACE 46 | SURFACE 47 | SURFACE 32 | SURFACE 42 |
Mir-SUB SURFACE 6 - OVERHANG	SURFACE 46 | SURFACE 47 | SURFACE 32 | SURFACE 42 |

SUB SURFACE 7 - OVERHANG	Mir-SUB SURFACE 5 - OVERHANG | Mir-SUB SURFACE 6 - OVERHANG | Mir-SUB SURFACE 10 - OVERHANG | SURFACE 45 | SURFACE 47 | SURFACE 32 | SURFACE 42 |
Mir-SUB SURFACE 7 - OVERHANG	SURFACE 45 | SURFACE 47 | SURFACE 32 | SURFACE 42 |
SUB SURFACE 10 - OVERHANG	Mir-SUB SURFACE 5 - OVERHANG | Mir-SUB SURFACE 6 - OVERHANG | SURFACE 49 | SURFACE 32 | SURFACE 42 |
Mir-SUB SURFACE 10 - OVERHANG	SURFACE 49 | SURFACE 32 | SURFACE 42 |
SUB SURFACE 4 - OVERHANG	Mir-SUB SURFACE 1 - OVERHANG | Mir-SUB SURFACE 5 - OVERHANG | Mir-SUB SURFACE 6 - OVERHANG | Mir-SUB SURFACE 7 - OVERHANG | Mir-SUB SURFACE 10 - OVERHANG | SURFACE 22 | SURFACE 49 | SURFACE 5 | SURFACE 32 | SURFACE 15 | SURFACE 42 |
Mir-SUB SURFACE 4 - OVERHANG	SURFACE 22 | SURFACE 5 | SURFACE 15 |
SURFACE 18	Mir-SUB SURFACE 7 - OVERHANG | SURFACE 5 | SURFACE 32 |
SURFACE 19	Mir-SUB SURFACE 1 - OVERHANG | Mir-SUB SURFACE 5 - OVERHANG | Mir-SUB SURFACE 6 - OVERHANG | SURFACE 20 | SURFACE 47 |
SURFACE 20	Mir-SUB SURFACE 1 - OVERHANG | Mir-SUB SURFACE 5 - OVERHANG | Mir-SUB SURFACE 6 - OVERHANG | Mir-SUB SURFACE 7 - OVERHANG | SURFACE 19 | SURFACE 46 | SURFACE 5 | SURFACE 32 |
SURFACE 22	Mir-SUB SURFACE 10 - OVERHANG | Mir-SUB SURFACE 4 - OVERHANG | SURFACE 15 | SURFACE 42 |
SURFACE 45	Mir-SUB SURFACE 7 - OVERHANG | SURFACE 32 |
SURFACE 46	Mir-SUB SURFACE 5 - OVERHANG | Mir-SUB SURFACE 6 - OVERHANG | SURFACE 47 |
SURFACE 47	Mir-SUB SURFACE 5 - OVERHANG | Mir-SUB SURFACE 6 - OVERHANG | Mir-SUB SURFACE 7 - OVERHANG | SURFACE 46 | SURFACE 32 |
SURFACE 49	Mir-SUB SURFACE 10 - OVERHANG | SURFACE 42 |
SURFACE 5	Mir-SUB SURFACE 1 - OVERHANG | Mir-SUB SURFACE 5 - OVERHANG | Mir-SUB SURFACE 6 - OVERHANG | Mir-SUB SURFACE 7 - OVERHANG | Mir-SUB SURFACE 10 - OVERHANG | Mir-SUB SURFACE 4 - OVERHANG | SURFACE 18 | SURFACE 20 | SURFACE 45 | SURFACE 47 |
SURFACE 32	Mir-SUB SURFACE 5 - OVERHANG | Mir-SUB SURFACE 6 - OVERHANG | Mir-SUB SURFACE 7 - OVERHANG | Mir-SUB SURFACE 10 - OVERHANG | SURFACE 45 | SURFACE 47 |
SURFACE 15	Mir-SUB SURFACE 1 - OVERHANG | Mir-SUB SURFACE 5 - OVERHANG | Mir-SUB SURFACE 6 - OVERHANG | Mir-SUB SURFACE 7 - OVERHANG | Mir-SUB SURFACE 10 - OVERHANG | Mir-SUB SURFACE 4 - OVERHANG | SURFACE 22 | SURFACE 49 |
SURFACE 42	Mir-SUB SURFACE 5 - OVERHANG | Mir-SUB SURFACE 6 - OVERHANG | Mir-SUB SURFACE 7 - OVERHANG | Mir-SUB SURFACE 10 - OVERHANG | SURFACE 49 |

Subsurfaces (Windows and Doors) that may be Shadowed by Surfaces

	Possible Shadow Receivers
SURFACE 20	SUB SURFACE 1 |
SURFACE 3	SUB SURFACE 2 |
SURFACE 46	SUB SURFACE 6 |
SURFACE 47	SUB SURFACE 5 |
SURFACE 30	SUB SURFACE 8 |
SURFACE 32	SUB SURFACE 7 |
SURFACE 12	SUB SURFACE 3 |
SURFACE 15	SUB SURFACE 4 |
SURFACE 39	SUB SURFACE 9 |
SURFACE 42	SUB SURFACE 10 |

Report: **Adaptive Comfort Summary**

Table of Contents

For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Time Not Meeting the Adaptive Comfort Models during Occupied Hours

	ASHRAE55 90% Acceptability Limits [Hours]	ASHRAE55 80% Acceptability Limits [Hours]	CEN15251 Category I Acceptability Limits [Hours]	CEN15251 Category II Acceptability Limits [Hours]	CEN15251 Category III Acceptability Limits [Hours]

Report: **Initialization Summary**

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For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Version

	Version ID
1	8.9

Timesteps per Hour

	#TimeSteps	Minutes per TimeStep {minutes}
1	6	10

System Convergence Limits

	Minimum System TimeStep {minutes}	Max HVAC Iterations	Minimum Plant Iterations	Maximum Plant Iterations
1	1	20	2	8

Simulation Control

	Do Zone Sizing	Do System Sizing	Do Plant Sizing	Do Design Days	Do Weather Simulation	Do HVAC Sizing Simulation
1	Yes	No	No	Yes	Yes	No

Output Reporting Tolerances

	Tolerance for Time Heating Setpoint Not Met	Tolerance for Zone Cooling Setpoint Not Met Time
1	0.200	0.200

Site:GroundTemperature:BuildingSurface

	Jan{C}	Feb{C}	Mar{C}	Apr{C}	May{C}	Jun{C}	Jul{C}	Aug{C}	Sep{C}	Oct{C}	Nov{C}	Dec{C}
1	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00

Site:GroundTemperature:FCfactorMethod

	Jan{C}	Feb{C}	Mar{C}	Apr{C}	May{C}	Jun{C}	Jul{C}	Aug{C}	Sep{C}	Oct{C}	Nov{C}	Dec{C}
1	1.79	3.68	7.36	10.85	17.45	20.92	21.88	20.11	16.05	10.98	5.99	2.69

Site:GroundTemperature:Shallow

	Jan{C}	Feb{C}	Mar{C}	Apr{C}	May{C}	Jun{C}	Jul{C}	Aug{C}	Sep{C}	Oct{C}	Nov{C}	Dec{C}
1	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00

Site:GroundTemperature:Deep

	Jan{C}	Feb{C}	Mar{C}	Apr{C}	May{C}	Jun{C}	Jul{C}	Aug{C}	Sep{C}	Oct{C}	Nov{C}	Dec{C}
1	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00

Site:GroundReflectance

	Jan {dimensionless}	Feb {dimensionless}	Mar {dimensionless}	Apr {dimensionless}	May {dimensionless}	Jun {dimensionless}	Jul {dimensionless}	Aug {dimensionless}	Sep {dimensionless}	
1	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	

Site:GroundReflectance:SnowModifier

	Normal	Daylighting {dimensionless}
1	1.000	1.000

Site:GroundReflectance:Snow

	Jan {dimensionless}	Feb {dimensionless}	Mar {dimensionless}	Apr {dimensionless}	May {dimensionless}	Jun {dimensionless}	Jul {dimensionless}	Aug {dimensionless}	Sep {dimensionless}	
1	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	

Site:GroundReflectance:Snow:Daylighting

	Jan {dimensionless}	Feb {dimensionless}	Mar {dimensionless}	Apr {dimensionless}	May {dimensionless}	Jun {dimensionless}	Jul {dimensionless}	Aug {dimensionless}	Sep {dimensionless}	{
1	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	

Environment:Weather Station

	Wind Sensor Height Above Ground {m}	Wind Speed Profile Exponent {}	Wind Speed Profile Boundary Layer Thickness {m}	Air Temperature Sensor Height Above Ground {m}	Wind Speed Modifier Coefficient-Internal	Temperature Modifier Coefficient-Internal
1	10.000	0.140	270.000	1.500	1.586	9.750E-003

Site:Location

	Location Name	Latitude {N+/S-Deg}	Longitude {E+/W-Deg}	Time Zone Number {GMT+/-}	Elevation {m}	Standard Pressure at Elevation {Pa}	Standard RhoAir at Elevation
1	Piacenza - ITA IGDG WMO#=160840	44.92	9.73	1.00	134.00	99726	1.1853

Building Information

	Building Name	North Axis {deg}	Terrain	Loads Convergence Tolerance Value	Temperature Convergence Tolerance Value	Solar Distribution	Maximum Number of Warmup Days	Minimum Number of Warmup Days
1	Building 1	0.000	Suburbs	4.00000E-002	0.40000	FullExterior	25	6

Inside Convection Algorithm

	Algorithm {Simple TARP CeilingDiffuser AdaptiveConvectionAlgorithm}
1	TARP

Outside Convection Algorithm

	Algorithm {SimpleCombined TARP MoWitt DOE-2 AdaptiveConvectionAlgorithm}
1	DOE-2

Sky Radiance Distribution

	Value {Anisotropic}
1	Anisotropic

Zone Air Solution Algorithm

	Value {ThirdOrderBackwardDifference AnalyticalSolution EulerMethod}
1	ThirdOrderBackwardDifference

Zone Air Carbon Dioxide Balance Simulation

	Simulation {Yes/No}	Carbon Dioxide Concentration
1	No	N/A

Zone Air Generic Contaminant Balance Simulation

	Simulation {Yes/No}	Generic Contaminant Concentration
1	No	N/A

Zone Air Mass Flow Balance Simulation

	Enforce Mass Balance	Adjust Zone Mixing	Adjust Zone Infiltration {AddInfiltration AdjustInfiltration None}	Infiltration Zones {MixingSourceZonesOnly AllZones}
1	No	N/A	N/A	N/A

HVACSystemRootFindingAlgorithm

	Value {RegulaFalsi Bisection BisectionThenRegulaFalsi RegulaFalsiThenBisection}
1	RegulaFalsi

Environment:Site Atmospheric Variation

	Wind Speed Profile Exponent {}	Wind Speed Profile Boundary Layer Thickness {m}	Air Temperature Gradient Coefficient {K/m}
1	0.220	370.000	6.500000E-003

Surface Geometry

	Starting Corner	Vertex Input Direction	Coordinate System	Daylight Reference Point Coordinate System	Rectangular (Simple) Surface Coordinate System
1	UpperLeftCorner	Counterclockwise	RelativeCoordinateSystem	RelativeCoordinateSystem	RelativeToZoneOrigin

Surface Heat Transfer Algorithm

	Value {CTF - ConductionTransferFunction EMPD - MoisturePenetrationDepthConductionTransferFunction CondFD - ConductionFiniteDifference HAMT - CombinedHeatAndMoistureFiniteElement} - Description	Inside Surface Max Temperature Limit{C}	Surface Convection Coefficient Lower Limit {W/m2-K}	Surface Convection Coefficient Upper Limit {W/m2-K}
1	CTF - ConductionTransferFunction	200	0.10	1000.0

Shading Summary

	Number of Fixed Detached Shades	Number of Building Detached Shades	Number of Attached Shades
1	0	0	12

Zone Summary

	Number of Zones	Number of Zone Surfaces	Number of SubSurfaces
1	3	59	10

Zone Information

	Zone Name	North Axis {deg}	Origin X-Coordinate {m}	Origin Y-Coordinate {m}	Origin Z-Coordinate {m}	Centroid X-Coordinate {m}	Centroid Y-Coordinate {m}	Centroid Z-Coordinate {m}	Type	Zone Multiplier	Zone List Multiplier	Minimum X {m}	Maximum X {m}
1	THERMAL ZONE 1	0.0	67.26	20.87	3.00	68.53	21.56	5.40	1	1	1	64.51	71.17
2	THERMAL ZONE 2	0.0	71.17	20.87	6.00	67.73	19.95	7.50	1	1	1	64.51	71.17
3	THERMAL ZONE 3	0.0	79.21	22.12	3.00	75.19	19.94	6.00	1	1	1	71.17	79.21

Zone Internal Gains Nominal

	Zone Name		# Occupants									Sum Loads per	Outdoor Controlled

		Floor Area {m2}		Area per Occupant {m2/person}	Occupant per Area {person/m2}	Interior Lighting {W/m2}	Electric Load {W/m2}	Gas Load {W/m2}	Other Load {W/m2}	Hot Water Eq {W/m2}	Steam Equipment {W/m2}	Area {W/m2}	Baseboard Heat
1	THERMAL ZONE 1	50.81	2.7	19.103	5.235E-002	9.110	0.366	0.000	0.000	0.000	0.000	9.477	No
2	THERMAL ZONE 2	24.71	1.3	18.581	5.382E-002	9.688	5.813	0.000	0.000	0.000	0.000	15.500	No
3	THERMAL ZONE 3	70.15	37.8	1.858	0.538	11.625	48.007	0.000	0.000	0.000	0.000	59.632	No

People Internal Gains Nominal

	Name	Schedule Name	Zone Name	Zone Floor Area {m2}	# Zone Occupants	Number of People {}	People/Floor Area {person/m2}	Floor Area per person {m2/person}	Fraction Radiant	Fraction Convected	Sensible Fraction Calculation	Activity level	ASHRA Warnin
1	189.1-2009 - OFFICE - LOBBY - CZ1-3 PEOPLE 1	OFFICE MISC OCC	THERMAL ZONE 1	50.81	2.7	2.7	5.235E-002	19.103	0.300	0.700	AutoCalculate	OFFICE ACTIVITY	
2	189.1-2009 - OFFICE - BREAKROOM - CZ1-3 PEOPLE 1	OFFICE MISC OCC	THERMAL ZONE 3	70.15	37.8	18.9	0.269	3.716	0.300	0.700	AutoCalculate	OFFICE ACTIVITY	
3	189.1-2009 - OFFICE - BREAKROOM - CZ1-3 PEOPLE 2	OFFICE MISC OCC	THERMAL ZONE 3	70.15	37.8	18.9	0.269	3.716	0.300	0.700	AutoCalculate	OFFICE ACTIVITY	
4	THERMAL ZONE 2 189.1-2009 - OFFICE - WHOLEBUILDING - SM OFFICE - CZ1-3 PEOPLE	SMALL OFFICE BLDG OCC 1_BASE	THERMAL ZONE 2	24.71	1.3	1.3	5.382E-002	18.581	0.300	0.700	AutoCalculate	SMALL OFFICE ACTIVITY	

Lights Internal Gains Nominal

	Name	Schedule Name	Zone Name	Zone Floor Area {m2}	# Zone Occupants	Lighting Level {W}	Lights/Floor Area {W/m2}	Lights per person {W/person}	Fraction Return Air	Fraction Radiant	Fraction Short Wave	Fraction Convected	Fraction Replaceable
1	189.1-2009 - OFFICE - LOBBY - CZ1-3 LIGHTS 1	OFFICE BLDG LIGHT	THERMAL ZONE 1	50.81	2.7	311.175	6.125	117.000	0.000	0.000	0.000	1.000	1.000
2	189.1-2009 - OFFICE - STAIR - CZ1-3 LIGHTS 1	OFFICE BLDG LIGHT	THERMAL ZONE 1	50.81	2.7	75.845	1.493	28.517	0.000	0.000	0.000	1.000	1.000
3	189.1-2009 - OFFICE - STAIR - CZ1-3 LIGHTS 2	OFFICE BLDG LIGHT	THERMAL ZONE 1	50.81	2.7	75.845	1.493	28.517	0.000	0.000	0.000	1.000	1.000
4	189.1-2009 - OFFICE - BREAKROOM - CZ1-3 LIGHTS 1	OFFICE BLDG LIGHT	THERMAL ZONE 3	70.15	37.8	407.735	5.813	10.800	0.000	0.000	0.000	1.000	1.000
5	189.1-2009 - OFFICE - BREAKROOM - CZ1-3 LIGHTS 2	OFFICE BLDG LIGHT	THERMAL ZONE 3	70.15	37.8	407.735	5.813	10.800	0.000	0.000	0.000	1.000	1.000
6	THERMAL ZONE 2 189.1-2009 - OFFICE - WHOLEBUILDING - SM OFFICE - CZ1-3 LIGHTS	OFFICE BLDG LIGHT_BASE	THERMAL ZONE 2	24.71	1.3	239.365	9.688	180.000	0.000	0.000	0.000	1.000	1.000

ElectricEquipment Internal Gains Nominal

	Name	Schedule Name	Zone Name	Zone Floor Area {m2}	# Zone Occupants	Equipment Level {W}	Equipment/Floor Area {W/m2}	Equipment per person {W/person}	Fraction Latent	Fraction Radiant	Fraction Lost	Fraction Convected	End-U SubCatego
1	189.1-2009 - OFFICE - LOBBY - CZ1-3 ELECTRIC EQUIPMENT 1	OFFICE BLDG EQUIP	THERMAL ZONE 1	50.81	2.7	18.617	0.366	7.000	0.000	0.000	0.000	1.000	Gener

2	189.1-2009 - OFFICE - BREAKROOM - CZ1-3 ELECTRIC EQUIPMENT 1	OFFICE BLDG EQUIP	THERMAL ZONE 3	70.15	37.8	1683.796	24.004	44.600	0.000	0.000	0.000	1.000	Gener
3	189.1-2009 - OFFICE - BREAKROOM - CZ1-3 ELECTRIC EQUIPMENT 2	OFFICE BLDG EQUIP	THERMAL ZONE 3	70.15	37.8	1683.796	24.004	44.600	0.000	0.000	0.000	1.000	Gener
4	THERMAL ZONE 2 189.1-2009 - OFFICE - WHOLEBUILDING - SM OFFICE - CZ1-3 ELECTRIC EQUIPMENT	SMALL OFFICE BLDG EQUIP	THERMAL ZONE 2	24.71	1.3	143.619	5.813	108.000	0.000	0.000	0.000	1.000	Gener

Shadowing/Sun Position Calculations Annual Simulations

	Calculation Method	Value {days}	Allowable Number Figures in Shadow Overlap {}	Polygon Clipping Algorithm	Sky Diffuse Modeling Algorithm	External Shading Calculation Method	Output External Shading Calculation Results	Disable Self-Shading Within Shading Zone Groups	Disable Self-Shading From Shading Zone Groups to Other Zones
1	AverageOverDaysInFrequency	20	15000	SutherlandHodgman	SimpleSkyDiffuseModeling	InternalCalculation	No	No	No

ZoneInfiltration Airflow Stats Nominal

	Name	Schedule Name	Zone Name	Zone Floor Area {m2}	# Zone Occupants	Design Volume Flow Rate {m3/s}	Volume Flow Rate/Floor Area {m3/s/m2}	Volume Flow Rate/Exterior Surface Area {m3/s/m2}	ACH - Air Changes per Hour	Equation A - Constant Term Coefficient {}	Equation B - Temperature Term Coefficient {1/C}	Equation C - Velocity Term Coefficient {s/m}	Equa Velo Squa T Coeffic {s2/r
1	189.1-2009 - OFFICE - LOBBY - CZ1-3 INFILTRATION 1	OFFICE INFIL QUARTER ON	THERMAL ZONE 1	50.81	2.7	1.244E-002	2.449E-004	1.067E-004	0.294	1.000	0.000	0.000	0.
2	189.1-2009 - OFFICE - STAIR - CZ1-3 INFILTRATION 1	OFFICE INFIL QUARTER ON	THERMAL ZONE 1	50.81	2.7	9.428E-003	1.856E-004	8.086E-005	0.223	1.000	0.000	0.000	0.
3	189.1-2009 - OFFICE - STAIR - CZ1-3 INFILTRATION 2	OFFICE INFIL QUARTER ON	THERMAL ZONE 1	50.81	2.7	1.337E-002	2.632E-004	1.147E-004	0.316	1.000	0.000	0.000	0.
4	189.1-2009 - OFFICE - BREAKROOM - CZ1-3 INFILTRATION 1	OFFICE INFIL QUARTER ON	THERMAL ZONE 3	70.15	37.8	1.854E-002	2.643E-004	1.175E-004	0.317	1.000	0.000	0.000	0.
5	189.1-2009 - OFFICE - BREAKROOM - CZ1-3 INFILTRATION 2	OFFICE INFIL QUARTER ON	THERMAL ZONE 3	70.15	37.8	2.914E-002	4.154E-004	1.847E-004	0.498	1.000	0.000	0.000	0.
6	THERMAL ZONE 2 189.1-2009 - OFFICE - WHOLEBUILDING - SM OFFICE - CZ1-3 INFILTRATION	SMALL OFFICE INFIL QUARTER ON	THERMAL ZONE 2	24.71	1.3	1.991E-002	8.058E-004	3.023E-004	0.967	1.000	0.000	0.000	0.

ZoneVentilation Airflow Stats Nominal

	Name	Schedule Name	Zone Name	Zone Floor Area {m2}	# Zone Occupants	Design Volume Flow Rate {m3/s}	Volume Flow Rate/Floor Area {m3/s/m2}	Volume Flow Rate/person Area {m3/s/person}	ACH - Air Changes per Hour	Fan Type {Exhaust;Intake;Natural}	Fan Pressure Rise {Pa}	Fan Efficiency {}

1	THERMAL ZONE 1 VENTILATION PER PERSON	OFFICE MISC OCC	THERMAL ZONE 1	50.81	2.7	1.883E-002	3.706E-004	7.079E-003	0.445	Natural	0.000	1.(
2	THERMAL ZONE 1 VENTILATION PER FLOOR AREA	ALWAYS_ON	THERMAL ZONE 1	50.81	2.7	6.629E-003	1.305E-004	2.492E-003	0.157	Natural	0.000	1.(
3	THERMAL ZONE 2 VENTILATION PER PERSON	SMALL OFFICE BLDG OCC 1_BASE	THERMAL ZONE 2	24.71	1.3	1.255E-002	5.080E-004	9.439E-003	0.610	Natural	0.000	1.(
4	THERMAL ZONE 3 VENTILATION PER PERSON	OFFICE MISC OCC	THERMAL ZONE 3	70.15	37.8	0.267	3.810E-003	7.079E-003	4.572	Natural	0.000	1.(

AirFlow Model

	Simple
1	Simple

RoomAir Model

	Zone Name	Mixing/Mundt/UCSDDV/UCSDCV/UCSDUFI/UCSDUFE/User Defined
1	THERMAL ZONE 1	Mixing/Well-Stirred
2	THERMAL ZONE 2	Mixing/Well-Stirred
3	THERMAL ZONE 3	Mixing/Well-Stirred

AirflowNetwork Model:Control

	No Multizone or Distribution/Multizone with Distribution/Multizone without Distribution/Multizone with Distribution only during Fan Operation
1	NoMultizoneOrDistribution

Zone Volume Capacitance Multiplier

	Sensible Heat Capacity Multiplier	Moisture Capacity Multiplier	Carbon Dioxide Capacity Multiplier	Generic Contaminant Capacity Multiplier
1	1.000	1.000	1.000	1.000

Load Timesteps in Zone Design Calculation Averaging Window

	Value
1	6

Heating Sizing Factor Information

	Sizing Factor ID	Value
1	Global	1.2500
2	Zone THERMAL ZONE 1	1.2500
3	Zone THERMAL ZONE 2	1.2500
4	Zone THERMAL ZONE 3	1.2500

Cooling Sizing Factor Information

	Sizing Factor ID	Value
1	Global	1.1500
2	Zone THERMAL ZONE 1	1.1500
3	Zone THERMAL ZONE 2	1.1500
4	Zone THERMAL ZONE 3	1.1500

Zone Sizing Information

	Zone Name	Load Type	Calc Des Load {W}	User Des Load {W}	Calc Des Air Flow Rate {m3/s}	User Des Air Flow Rate {m3/s}	Design Day Name	Date/Time of Peak	Temperature at Peak {C}	Humidity Ratio at Peak {kgWater/kgDryAir}	Floor Area {m2}	Occupar
1	THERMAL ZONE 1	Cooling	1465.58474	1685.42245	0.12119	0.13937	PIACENZA ANN CLG .4% CONDNS DB=>MWB	8/21 16:10:00	32.22733	1.33499E-002	50.80560	2.659
2	THERMAL ZONE 1	Heating	3644.76614	4555.95768	0.15864	0.19830	COPENHAGEN ANN HTG 99.6% CONDNS DB	2/21 06:00:00	-9.20000	1.71821E-003	50.80560	2.659
3	THERMAL ZONE 2	Cooling	1184.27667	1361.91817	9.79322E-002	0.11262	PIACENZA ANN CLG .4% CONDNS DB=>MWB	8/21 16:10:00	32.22733	1.33499E-002	24.70860	1.329
4	THERMAL ZONE 2	Heating	1756.11757	2195.14696	7.64355E-002	9.55443E-002	COPENHAGEN ANN HTG 99.6% CONDNS DB	2/21 06:00:00	-9.20000	1.71821E-003	24.70860	1.329
5	THERMAL ZONE 3	Cooling	10577.19514	12163.77441	0.87629	1.00773	PIACENZA ANN CLG .4% CONDNS DB=>MWB	8/21 15:00:00	33.10000	1.33499E-002	70.14789	37.753
6	THERMAL ZONE 3	Heating	5080.45927	6350.57409	0.22113	0.27642	COPENHAGEN ANN HTG 99.6% CONDNS DB	2/21 06:00:00	-9.20000	1.71821E-003	70.14789	37.753

Component Sizing Information

	Component Type	Component Name	Input Field Description	Value
1	ZoneHVAC:IdealLoadsAirSystem	THERMAL ZONE 1 IDEAL LOADS AIR SYSTEM	User-Specified Maximum Heating Air Flow Rate [m3/s]	0.00000
2	ZoneHVAC:IdealLoadsAirSystem	THERMAL ZONE 1 IDEAL LOADS AIR SYSTEM	User-Specified Maximum Cooling Air Flow Rate [m3/s]	0.00000
3	ZoneHVAC:IdealLoadsAirSystem	THERMAL ZONE 2 IDEAL LOADS AIR SYSTEM	User-Specified Maximum Heating Air Flow Rate [m3/s]	0.00000
4	ZoneHVAC:IdealLoadsAirSystem	THERMAL ZONE 2 IDEAL LOADS AIR SYSTEM	User-Specified Maximum Cooling Air Flow Rate [m3/s]	0.00000
5	ZoneHVAC:IdealLoadsAirSystem	THERMAL ZONE 3 IDEAL LOADS AIR SYSTEM	User-Specified Maximum Heating Air Flow Rate [m3/s]	0.00000
6	ZoneHVAC:IdealLoadsAirSystem	THERMAL ZONE 3 IDEAL LOADS AIR SYSTEM	User-Specified Maximum Cooling Air Flow Rate [m3/s]	0.00000

Environment

	Environment Name	Environment Type	Start Date	End Date	Start DayOfWeek	Duration {#days}	Source:Start DayOfWeek	Use Daylight Saving	Use Holidays	Apply Weekend Holiday Rule	Use Rain Values	Use Snow Values
1	COPENHAGEN ANN CLG .4% CONDNS DB=>MWB	SizingPeriod:DesignDay	07/21	07/21	SummerDesignDay	1	N/A	N/A	N/A	N/A	N/A	N/A
2	COPENHAGEN ANN CLG .4% CONDNS DP=>MDB	SizingPeriod:DesignDay	07/21	07/21	SummerDesignDay	1	N/A	N/A	N/A	N/A	N/A	N/A
3	COPENHAGEN ANN CLG .4% CONDNS ENTH=>MDB	SizingPeriod:DesignDay	07/21	07/21	SummerDesignDay	1	N/A	N/A	N/A	N/A	N/A	N/A
4	COPENHAGEN ANN CLG .4% CONDNS WB=>MDB	SizingPeriod:DesignDay	07/21	07/21	SummerDesignDay	1	N/A	N/A	N/A	N/A	N/A	N/A
5	COPENHAGEN ANN HTG 99.6% CONDNS DB	SizingPeriod:DesignDay	02/21	02/21	WinterDesignDay	1	N/A	N/A	N/A	N/A	N/A	N/A
6	COPENHAGEN ANN HTG WIND 99.6% CONDNS WS=>MCDB	SizingPeriod:DesignDay	02/21	02/21	WinterDesignDay	1	N/A	N/A	N/A	N/A	N/A	N/A
7	COPENHAGEN ANN HUM_N 99.6% CONDNS DP=>MCDB	SizingPeriod:DesignDay	02/21	02/21	WinterDesignDay	1	N/A	N/A	N/A	N/A	N/A	N/A

8	PIACENZA ANN CLG .4% CONDNS DB=>MWB	SizingPeriod:DesignDay	08/21	08/21	SummerDesignDay	1	N/A	N/A	N/A	N/A	N/A	N/A
9	PIACENZA ANN CLG .4% CONDNS DP=>MDB	SizingPeriod:DesignDay	08/21	08/21	SummerDesignDay	1	N/A	N/A	N/A	N/A	N/A	N/A
10	PIACENZA ANN CLG .4% CONDNS ENTH=>MDB	SizingPeriod:DesignDay	08/21	08/21	SummerDesignDay	1	N/A	N/A	N/A	N/A	N/A	N/A
11	PIACENZA ANN CLG .4% CONDNS WB=>MDB	SizingPeriod:DesignDay	08/21	08/21	SummerDesignDay	1	N/A	N/A	N/A	N/A	N/A	N/A
12	PIACENZA ANN HTG 99.6% CONDNS DB	SizingPeriod:DesignDay	01/21	01/21	WinterDesignDay	1	N/A	N/A	N/A	N/A	N/A	N/A
13	PIACENZA ANN HTG WIND 99.6% CONDNS WS=>MCDB	SizingPeriod:DesignDay	01/21	01/21	WinterDesignDay	1	N/A	N/A	N/A	N/A	N/A	N/A
14	PIACENZA ANN HUM_N 99.6% CONDNS DP=>MCDB	SizingPeriod:DesignDay	01/21	01/21	WinterDesignDay	1	N/A	N/A	N/A	N/A	N/A	N/A
15	RUN PERIOD 1	WeatherFileRunPeriod	01/01	12/31	Sunday	365	Use RunPeriod Specified Day	No	No	No	Yes	Yes

Environment:Daylight Saving

	Daylight Saving Indicator	Source	Start Date	End Date
1	No	SizingPeriod:DesignDay		
2	No	SizingPeriod:DesignDay		
3	No	SizingPeriod:DesignDay		
4	No	SizingPeriod:DesignDay		
5	No	SizingPeriod:DesignDay		
6	No	SizingPeriod:DesignDay		
7	No	SizingPeriod:DesignDay		
8	No	SizingPeriod:DesignDay		
9	No	SizingPeriod:DesignDay		
10	No	SizingPeriod:DesignDay		
11	No	SizingPeriod:DesignDay		
12	No	SizingPeriod:DesignDay		
13	No	SizingPeriod:DesignDay		
14	No	SizingPeriod:DesignDay		
15	No	RunPeriod Object		

Environment:WarmupDays

	NumberofWarmupDays
1	6
2	6
3	6
4	6
5	6
6	6
7	6
8	6
9	6
10	6
11	6
12	6

13	6
14	6
15	6

Environment:Design Day Data

	Max Dry-Bulb Temp {C}	Temp Range {dC}	Temp Range Ind Type	Hum Ind Value at Max Temp	Hum Ind Type	Pressure {Pa}	Wind Direction {deg CW from N}	Wind Speed {m/s}	Clearness	Rain	Snow
1	25.50	8.00	DefaultMultipliers	101265	160	4.6	0.00	No	No		
2	20.80	8.00	DefaultMultipliers	101265	160	4.6	0.00	No	No		
3	23.10	8.00	DefaultMultipliers	101265	160	4.6	0.00	No	No		
4	23.40	8.00	DefaultMultipliers	101265	160	4.6	0.00	No	No		
5	-9.20	0.00	DefaultMultipliers	101265	50	4.8	0.00	No	No		
6	4.10	0.00	DefaultMultipliers	101265	50	14.7	0.00	No	No		
7	-7.60	0.00	DefaultMultipliers	101265	50	4.8	0.00	No	No		
8	33.10	11.90	DefaultMultipliers	99726	90	2.3	0.00	No	No		
9	27.40	11.90	DefaultMultipliers	99726	90	2.3	0.00	No	No		
10	30.30	11.90	DefaultMultipliers	99726	90	2.3	0.00	No	No		
11	30.10	11.90	DefaultMultipliers	99726	90	2.3	0.00	No	No		
12	-6.10	0.00	DefaultMultipliers	99726	250	2.0	0.00	No	No		
13	5.80	0.00	DefaultMultipliers	99726	250	8.9	0.00	No	No		
14	3.50	0.00	DefaultMultipliers	99726	250	2.0	0.00	No	No		

Environment:Design Day Misc

	DayOfYear	ASHRAE A Coeff	ASHRAE B Coeff	ASHRAE C Coeff	Solar Constant-Annual Variation	Eq of Time {minutes}	Solar Declination Angle {deg}	Solar Model
1	202	1084.4	0.2082	0.1365	1.0	-6.23	20.6	ASHRAETau
2	202	1084.4	0.2082	0.1365	1.0	-6.23	20.6	ASHRAETau
3	202	1084.4	0.2082	0.1365	1.0	-6.23	20.6	ASHRAETau
4	202	1084.4	0.2082	0.1365	1.0	-6.23	20.6	ASHRAETau
5	52	1214.6	0.1445	6.0579E-002	1.0	-13.80	-10.8	ASHRAEClearSky
6	52	1214.6	0.1445	6.0579E-002	1.0	-13.80	-10.8	ASHRAEClearSky
7	52	1214.6	0.1445	6.0579E-002	1.0	-13.80	-10.8	ASHRAEClearSky
8	233	1106.3	0.2000	0.1216	1.0	-3.33	12.4	ASHRAETau
9	233	1106.3	0.2000	0.1216	1.0	-3.33	12.4	ASHRAETau
10	233	1106.3	0.2000	0.1216	1.0	-3.33	12.4	ASHRAETau
11	233	1106.3	0.2000	0.1216	1.0	-3.33	12.4	ASHRAETau
12	21	1229.0	0.1415	5.7310E-002	1.0	-11.15	-20.1	ASHRAEClearSky
13	21	1229.0	0.1415	5.7310E-002	1.0	-11.15	-20.1	ASHRAEClearSky
14	21	1229.0	0.1415	5.7310E-002	1.0	-11.15	-20.1	ASHRAEClearSky

Tabular Report

	Style	Unit Conversion
1	HTML	None

Warmup Convergence Information

	Zone Name	Environment Type/Name	Average Warmup Temperature Difference {deltaC}	Std Dev Warmup Temperature Difference {deltaC}	Max Temperature Pass/Fail Convergence	Min Temperature Pass/Fail Convergence	Average Warmup Load Difference {W}	Std Dev Warmup Load Difference {W}	Heating Load Pass/Fail Convergence	Cooling Load Pass/Fail Convergence
1	THERMAL ZONE 1	SizingPeriod: COPENHAGEN ANN CLG .4% CONDNS DB=>MWB	2.8479833537E-002	3.8965565501E-002	Pass	Pass	2.7602532792E-002	6.7422473493E-002	Pass	Pass
2	THERMAL ZONE 2	SizingPeriod: COPENHAGEN ANN CLG .4% CONDNS DB=>MWB	2.9490524298E-002	0.1233365418	Pass	Pass	5.7335531435E-002	0.4072864292	Pass	Pass

3	THERMAL ZONE 3	SizingPeriod: COPENHAGEN ANN CLG .4% CONDNS DB=>MWB	3.7500000001E-002	0.2921660859	Pass	Pass	2.9579182895E-002	9.8281901170E-002	Pass	Pass
4	THERMAL ZONE 1	SizingPeriod: COPENHAGEN ANN CLG .4% CONDNS DP=>MDB	5.9400713650E-002	5.7081353671E-002	Pass	Pass	5.8467742131E-002	0.3418391021	Pass	Pass
5	THERMAL ZONE 2	SizingPeriod: COPENHAGEN ANN CLG .4% CONDNS DP=>MDB	2.6984171842E-002	4.1535970240E-002	Pass	Pass	2.4305582386E-002	5.9745015613E-002	Pass	Pass
6	THERMAL ZONE 3	SizingPeriod: COPENHAGEN ANN CLG .4% CONDNS DP=>MDB	3.9710878749E-002	0.2996175493	Pass	Pass	3.9239621619E-002	0.1258838969	Pass	Pass
7	THERMAL ZONE 1	SizingPeriod: COPENHAGEN ANN CLG .4% CONDNS ENTH=>MDB	4.3796167528E-002	5.3111489619E-002	Pass	Pass	4.0142385294E-002	0.1255359282	Pass	Pass
8	THERMAL ZONE 2	SizingPeriod: COPENHAGEN ANN CLG .4% CONDNS ENTH=>MDB	2.0925913388E-002	6.0549147442E-002	Pass	Pass	2.8738396668E-002	7.7798775299E-002	Pass	Pass
9	THERMAL ZONE 3	SizingPeriod: COPENHAGEN ANN CLG .4% CONDNS ENTH=>MDB	3.8252805610E-002	0.2951479705	Pass	Pass	3.0428740994E-002	8.9407140163E-002	Pass	Pass
10	THERMAL ZONE 1	SizingPeriod: COPENHAGEN ANN CLG .4% CONDNS WB=>MDB	4.1857721510E-002	5.2015377853E-002	Pass	Pass	4.0489073559E-002	0.1171129563	Pass	Pass
11	THERMAL ZONE 2	SizingPeriod: COPENHAGEN ANN CLG .4% CONDNS WB=>MDB	2.0073993784E-002	6.2765544366E-002	Pass	Pass	2.4175733994E-002	7.9509548479E-002	Pass	Pass
12	THERMAL ZONE 3	SizingPeriod: COPENHAGEN ANN CLG .4% CONDNS WB=>MDB	3.8123770346E-002	0.2947314809	Pass	Pass	3.2027068451E-002	9.7661373964E-002	Pass	Pass
13	THERMAL ZONE 1	SizingPeriod: COPENHAGEN ANN HTG 99.6% CONDNS DB	3.9819999150E-014	5.5130495225E-014	Pass	Pass	4.9577063823E-003	4.2404499023E-002	Pass	Pass
14	THERMAL ZONE 2	SizingPeriod: COPENHAGEN ANN HTG 99.6% CONDNS DB	5.7830283772E-014	6.6663290835E-014	Pass	Pass	6.0835975997E-003	5.2388661888E-002	Pass	Pass
15	THERMAL ZONE 3	SizingPeriod: COPENHAGEN ANN HTG 99.6% CONDNS DB	9.9352624893E-014	7.1254341762E-014	Pass	Pass	4.7756716993E-003	4.0806417459E-002	Pass	Pass
16	THERMAL ZONE 1	SizingPeriod: COPENHAGEN ANN HTG WIND 99.6% CONDNS WS=>MCDB	3.7624224723E-014	6.4731375373E-014	Pass	Pass	4.3717217950E-003	3.7275215262E-002	Pass	Pass
17	THERMAL ZONE 2	SizingPeriod: COPENHAGEN ANN HTG WIND 99.6% CONDNS WS=>MCDB	5.5511151231E-014	7.1256139932E-014	Pass	Pass	5.5540663805E-003	4.7670913032E-002	Pass	Pass
18	THERMAL ZONE 3	SizingPeriod: COPENHAGEN ANN HTG	3.7550209855E-014	7.2831416025E-014	Pass	Pass	4.1788709337E-003	3.5596443758E-002	Pass	Pass

		WIND 99.6% CONDNS WS=>MCDB								
19	THERMAL ZONE 1	SizingPeriod: COPENHAGEN ANN HUM_N 99.6% CONDNS DP=>MCDB	8.3414756584E-014	3.9587854032E-014	Pass	Pass	4.9086907057E-003	4.1973765963E-002	Pass	Pass
20	THERMAL ZONE 2	SizingPeriod: COPENHAGEN ANN HUM_N 99.6% CONDNS DP=>MCDB	7.1597049277E-014	5.4390113017E-014	Pass	Pass	6.0341509823E-003	5.1946426026E-002	Pass	Pass
21	THERMAL ZONE 3	SizingPeriod: COPENHAGEN ANN HUM_N 99.6% CONDNS DP=>MCDB	7.5519837297E-014	4.0642715230E-014	Pass	Pass	4.7312698631E-003	4.0417264131E-002	Pass	Pass
22	THERMAL ZONE 1	SizingPeriod: PIACENZA ANN CLG .4% CONDNS DB=>MWB	1.9253033011E-002	5.5772536589E-002	Pass	Pass	3.6173994843E-002	8.4924926711E-002	Pass	Pass
23	THERMAL ZONE 2	SizingPeriod: PIACENZA ANN CLG .4% CONDNS DB=>MWB	3.9167672289E-002	0.2720254449	Pass	Pass	0.1497207744	0.8812595682	Pass	Pass
24	THERMAL ZONE 3	SizingPeriod: PIACENZA ANN CLG .4% CONDNS DB=>MWB	3.7500000013E-002	0.2937548348	Pass	Pass	2.4535896546E-002	9.4026301948E-002	Pass	Pass
25	THERMAL ZONE 1	SizingPeriod: PIACENZA ANN CLG .4% CONDNS DP=>MDB	3.8725517495E-002	4.8712513450E-002	Pass	Pass	3.1254471249E-002	6.5752620134E-002	Pass	Pass
26	THERMAL ZONE 2	SizingPeriod: PIACENZA ANN CLG .4% CONDNS DP=>MDB	2.8276651674E-002	9.1518843380E-002	Pass	Pass	3.6780597423E-002	0.1622981087	Pass	Pass
27	THERMAL ZONE 3	SizingPeriod: PIACENZA ANN CLG .4% CONDNS DP=>MDB	3.7968018950E-002	0.2951412302	Pass	Pass	3.3950305605E-002	9.6465967799E-002	Pass	Pass
28	THERMAL ZONE 1	SizingPeriod: PIACENZA ANN CLG .4% CONDNS ENTH=>MDB	2.6161579408E-002	4.1701657803E-002	Pass	Pass	2.7763922286E-002	5.9588590916E-002	Pass	Pass
29	THERMAL ZONE 2	SizingPeriod: PIACENZA ANN CLG .4% CONDNS ENTH=>MDB	3.9300089300E-002	0.2003804384	Pass	Pass	0.3053541336	2.5845113030	Pass	Pass
30	THERMAL ZONE 3	SizingPeriod: PIACENZA ANN CLG .4% CONDNS ENTH=>MDB	3.7500000005E-002	0.2934689704	Pass	Pass	2.6328268247E-002	8.7525925698E-002	Pass	Pass
31	THERMAL ZONE 1	SizingPeriod: PIACENZA ANN CLG .4% CONDNS WB=>MDB	2.6618813741E-002	4.1284359022E-002	Pass	Pass	2.7833359753E-002	6.8614803826E-002	Pass	Pass
32	THERMAL ZONE 2	SizingPeriod: PIACENZA ANN CLG .4% CONDNS WB=>MDB	3.9274696286E-002	0.1925244763	Pass	Pass	0.2850412043	2.2804085339	Pass	Pass
33	THERMAL ZONE 3	SizingPeriod: PIACENZA ANN CLG .4%	3.7500000004E-002	0.2934330115	Pass	Pass	2.6492787871E-002	8.7105224403E-002	Pass	Pass

		CONDNS WB=>MDB								
34	THERMAL ZONE 1	SizingPeriod: PIACENZA ANN HTG 99.6% CONDNS DB	8.1120295666E-014	6.1593179366E-014	Pass	Pass	4.9489265947E-003	4.2327322073E-002	Pass	Pass
35	THERMAL ZONE 2	SizingPeriod: PIACENZA ANN HTG 99.6% CONDNS DB	6.5700531435E-014	6.0995431983E-014	Pass	Pass	6.0789823356E-003	5.2347369323E-002	Pass	Pass
36	THERMAL ZONE 3	SizingPeriod: PIACENZA ANN HTG 99.6% CONDNS DB	1.0976404970E-013	7.6222198944E-014	Pass	Pass	4.8573631419E-003	4.1523053396E-002	Pass	Pass
37	THERMAL ZONE 1	SizingPeriod: PIACENZA ANN HTG WIND 99.6% CONDNS WS=>MCDB	6.4985054375E-014	7.0129077958E-014	Pass	Pass	4.2731909138E-003	3.6416944848E-002	Pass	Pass
38	THERMAL ZONE 2	SizingPeriod: PIACENZA ANN HTG WIND 99.6% CONDNS WS=>MCDB	4.5371114273E-014	5.6390927075E-014	Pass	Pass	5.5418621662E-003	4.7562650121E-002	Pass	Pass
39	THERMAL ZONE 3	SizingPeriod: PIACENZA ANN HTG WIND 99.6% CONDNS WS=>MCDB	7.9664669923E-014	7.1957168010E-014	Pass	Pass	4.1946599590E-003	3.5733720853E-002	Pass	Pass
40	THERMAL ZONE 1	SizingPeriod: PIACENZA ANN HUM_N 99.6% CONDNS DP=>MCDB	5.7657582412E-014	4.1180412091E-014	Pass	Pass	4.5157129406E-003	3.8531603377E-002	Pass	Pass
41	THERMAL ZONE 2	SizingPeriod: PIACENZA ANN HUM_N 99.6% CONDNS DP=>MCDB	5.0478140186E-014	4.2955923872E-014	Pass	Pass	5.6454749148E-003	4.8482455727E-002	Pass	Pass
42	THERMAL ZONE 3	SizingPeriod: PIACENZA ANN HUM_N 99.6% CONDNS DP=>MCDB	5.3019317332E-014	4.7113621010E-014	Pass	Pass	4.4559236325E-003	3.8009604925E-002	Pass	Pass
43	THERMAL ZONE 1	RunPeriod: RUN PERIOD 1	5.5264435004E-014	4.2728629552E-014	Pass	Pass	5.7646923936E-003	5.7689364390E-003	Pass	Pass
44	THERMAL ZONE 2	RunPeriod: RUN PERIOD 1	5.6386993840E-014	4.3982395722E-014	Pass	Pass	5.0504458366E-003	5.0104382943E-003	Pass	Pass
45	THERMAL ZONE 3	RunPeriod: RUN PERIOD 1	2.6386300552E-014	2.1698320535E-014	Pass	Pass	1.5033491230E-002	1.3505313757E-002	Pass	Pass

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Report: **Climatic Data Summary**

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For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

SizingPeriod:DesignDay

	Maximum Dry Bulb [C]	Daily Temperature Range [deltaC]	Humidity Value	Humidity Type	Wind Speed [m/s]	Wind Direction
COPENHAGEN ANN CLG .4% CONDNS DB=>MWB	25.50	8.00	17.90	Wetbulb [C]	4.60	160.00
COPENHAGEN ANN CLG .4% CONDNS DP=>MDB	20.80	8.00	17.90	Dewpoint [C]	4.60	160.00
COPENHAGEN ANN CLG .4% CONDNS ENTH=>MDB	23.10	8.00	54800.00	Enthalpy [J/kg]	4.60	160.00
	23.40	8.00	19.30	Wetbulb [C]	4.60	160.00

COPENHAGEN ANN CLG .4% CONDNS WB=>MDB						
COPENHAGEN ANN HTG 99.6% CONDNS DB	-9.20	0.00	-9.20	Wetbulb [C]	4.80	50.00
COPENHAGEN ANN HTG WIND 99.6% CONDNS WS=>MCDB	4.10	0.00	4.10	Wetbulb [C]	14.70	50.00
COPENHAGEN ANN HUM_N 99.6% CONDNS DP=>MCDB	-7.60	0.00	-12.00	Dewpoint [C]	4.80	50.00
PIACENZA ANN CLG .4% CONDNS DB=>MWB	33.10	11.90	22.70	Wetbulb [C]	2.30	90.00
PIACENZA ANN CLG .4% CONDNS DP=>MDB	27.40	11.90	23.00	Dewpoint [C]	2.30	90.00
PIACENZA ANN CLG .4% CONDNS ENTH=>MDB	30.30	11.90	74900.00	Enthalpy [J/kg]	2.30	90.00
PIACENZA ANN CLG .4% CONDNS WB=>MDB	30.10	11.90	24.60	Wetbulb [C]	2.30	90.00
PIACENZA ANN HTG 99.6% CONDNS DB	-6.10	0.00	-6.10	Wetbulb [C]	2.00	250.00
PIACENZA ANN HTG WIND 99.6% CONDNS WS=>MCDB	5.80	0.00	5.80	Wetbulb [C]	8.90	250.00
PIACENZA ANN HUM_N 99.6% CONDNS DP=>MCDB	3.50	0.00	-11.30	Dewpoint [C]	2.00	250.00

Weather Statistics File

	Value
None	

Report: **Envelope Summary**

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For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Opaque Exterior

	Construction	Reflectance	U-Factor with Film [W/m2-K]	U-Factor no Film [W/m2-K]	Gross Area [m2]	Net Area [m2]	Azimuth [deg]	Tilt [deg]	Cardinal Direction
SURFACE 18	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	3.69	3.69	270.00	90.00	W
SURFACE 19	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	5.49	5.49	0.00	90.00	N
SURFACE 20	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	6.12	4.90	270.00	90.00	W
SURFACE 21	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	6.24	6.24	0.00	90.00	N
SURFACE 22	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	9.65	9.65	90.00	90.00	E
SURFACE 3	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	19.98	16.98	180.00	90.00	S
SURFACE 4	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	12.93	12.93	270.00	90.00	W
SURFACE 45	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	3.69	3.69	270.00	90.00	W
SURFACE 46	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	5.49	4.12	0.00	90.00	N
SURFACE 47	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	6.12	4.90	270.00	90.00	W
SURFACE 48	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	6.24	6.24	0.00	90.00	N
SURFACE 49	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	9.65	9.65	90.00	90.00	E
SURFACE 5	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	8.25	8.25	0.00	90.00	N
SURFACE 1	EXTSLABCARPET 4IN CLIMATEZONE 1-8	0.15	2.945	5.634	24.71	24.71	180.00	180.00	
SURFACE 17	EXTSLABCARPET 4IN CLIMATEZONE 1-8	0.15	2.945	5.634	13.05	13.05	0.00	180.00	
SURFACE 54	ASHRAE 189.1-2009 EXTROOF IEAD CLIMATEZONE 1	0.30	0.274	0.285	13.05	13.05	0.00	0.00	
		0.08	0.296	0.310	19.98	18.58	180.00	90.00	S

SURFACE 30	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3								
SURFACE 31	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	12.93	12.93	270.00	90.00	W
SURFACE 32	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	8.25	7.01	0.00	90.00	N
SURFACE 36	ASHRAE 189.1-2009 EXTROOF IEAD CLIMATEZONE 1	0.30	0.274	0.285	24.71	24.71	0.00	0.00	
SURFACE 11	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	13.09	13.09	90.00	90.00	E
SURFACE 12	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	24.12	19.30	180.00	90.00	S
SURFACE 15	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	24.12	21.71	0.00	90.00	N
SURFACE 38	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	13.09	13.09	90.00	90.00	E
SURFACE 39	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	24.12	21.71	180.00	90.00	S
SURFACE 42	EXTERIOR WALL MASS CLIMITE ZONE 2_WALL 3	0.08	0.296	0.310	24.12	19.30	0.00	90.00	N
SURFACE 10	EXTSLABCARPET 4IN CLIMATEZONE 1-8	0.15	2.945	5.634	35.07	35.07	0.00	180.00	
SURFACE 43	ASHRAE 189.1-2009 EXTROOF IEAD CLIMATEZONE 1	0.30	0.274	0.285	35.07	35.07	0.00	0.00	

Exterior Fenestration

	Construction	Glass Area [m2]	Frame Area [m2]	Divider Area [m2]	Area of One Opening [m2]	Area of Multiplied Openings [m2]	Glass U-Factor [W/m2-K]	Glass SHGC	Glass Visible Transmittance	Frame Conductance [W/m2-K]	Divider Conductance [W/m2-K]	Shade Control	Parent Surface	A
SUB SURFACE 1	ASHRAE 189.1-2009 EXTWINDOW CLIMATEZONE 1	1.22	0.00	0.00	1.22	1.22	6.424	0.252	0.252			No	SURFACE 20	
SUB SURFACE 2	ASHRAE 189.1-2009 EXTWINDOW CLIMATEZONE 1	3.00	0.00	0.00	3.00	3.00	6.424	0.252	0.252			No	SURFACE 3	
SUB SURFACE 6	ASHRAE 189.1-2009 EXTWINDOW CLIMATEZONE 1	1.37	0.00	0.00	1.37	1.37	6.424	0.252	0.252			No	SURFACE 46	
SUB SURFACE 5	ASHRAE 189.1-2009 EXTWINDOW CLIMATEZONE 1	1.22	0.00	0.00	1.22	1.22	6.424	0.252	0.252			No	SURFACE 47	
SUB SURFACE 8	ASHRAE 189.1-2009 EXTWINDOW CLIMATEZONE 1	1.40	0.00	0.00	1.40	1.40	6.424	0.252	0.252			No	SURFACE 30	
SUB SURFACE 7	ASHRAE 189.1-2009 EXTWINDOW CLIMATEZONE 1	1.24	0.00	0.00	1.24	1.24	6.424	0.252	0.252			No	SURFACE 32	
SUB SURFACE 3	ASHRAE 189.1-2009 EXTWINDOW CLIMATEZONE 1	4.82	0.00	0.00	4.82	4.82	6.424	0.252	0.252			No	SURFACE 12	
SUB SURFACE 4	ASHRAE 189.1-2009 EXTWINDOW CLIMATEZONE 1	2.41	0.00	0.00	2.41	2.41	6.424	0.252	0.252			No	SURFACE 15	
SUB SURFACE 9	ASHRAE 189.1-2009 EXTWINDOW CLIMATEZONE 1	2.41	0.00	0.00	2.41	2.41	6.424	0.252	0.252			No	SURFACE 39	

SUB SURFACE 10	ASHRAE 189.1-2009 EXTWINDOW CLIMATEZONE 1	4.82	0.00	0.00	4.82	4.82	6.424	0.252	0.252			No	SURFACE 42	
Total or Average						23.93	6.424	0.252	0.252					
North Total or Average						9.85	6.424	0.252	0.252					
Non-North Total or Average						14.08	6.424	0.252	0.252					

Interior Fenestration

	Construction	Area of One Opening [m2]	Area of Openings [m2]	Glass U-Factor [W/m2-K]	Glass SHGC	Glass Visible Transmittance	Parent Surface
Total or Average			0.00	-	-	-	

Exterior Door

	Construction	U-Factor with Film [W/m2-K]	U-Factor no Film [W/m2-K]	Gross Area [m2]	Parent Surface
None					

Report: **Shading Summary** Table of Contents

For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Sunlit Fraction

	March 21 9am	March 21 noon	March 21 3pm	June 21 9am	June 21 noon	June 21 3pm	December 21 9am	December 21 noon	December 21 3pm
SUB SURFACE 1	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00
SUB SURFACE 2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SUB SURFACE 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUB SURFACE 5	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00
SUB SURFACE 8	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SUB SURFACE 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUB SURFACE 3	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SUB SURFACE 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUB SURFACE 9	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SUB SURFACE 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Window Control

	Name	Type	Shaded Construction	Control	Glare Control
None					

Report: **Lighting Summary** Table of Contents

For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Interior Lighting

	Zone	Lighting Power Density [W/m2]	Zone Area [m2]	Total Power [W]	End Use Subcategory	Schedule Name	Scheduled Hours/Week [hr]	Hours/Week > 1% [hr]	Full Load Hours/Week [hr]	Return Air Fraction	Conditioned (Y/N)	Cons
189.1-2009 - OFFICE - LOBBY - CZ1-3 LIGHTS 1	THERMAL ZONE 1	6.1248	50.81	311.17	General	OFFICE BLDG LIGHT	61.85	168.00	61.85	0.0000	Y	

189.1-2009 - OFFICE - STAIR - CZ1-3 LIGHTS 1	THERMAL ZONE 1	1.4928	50.81	75.84	General	OFFICE BLDG LIGHT	61.85	168.00	61.85	0.0000	Y
189.1-2009 - OFFICE - STAIR - CZ1-3 LIGHTS 2	THERMAL ZONE 1	1.4928	50.81	75.84	General	OFFICE BLDG LIGHT	61.85	168.00	61.85	0.0000	Y
189.1-2009 - OFFICE - BREAKROOM - CZ1-3 LIGHTS 1	THERMAL ZONE 3	5.8125	70.15	407.74	General	OFFICE BLDG LIGHT	61.85	168.00	61.85	0.0000	Y
189.1-2009 - OFFICE - BREAKROOM - CZ1-3 LIGHTS 2	THERMAL ZONE 3	5.8125	70.15	407.74	General	OFFICE BLDG LIGHT	61.85	168.00	61.85	0.0000	Y
THERMAL ZONE 2 189.1-2009 - OFFICE - WHOLEBUILDING - SM OFFICE - CZ1-3 LIGHTS	THERMAL ZONE 2	9.6875	24.71	239.37	General	OFFICE BLDG LIGHT_BASE	51.48	68.81	51.48	0.0000	Y
Interior Lighting Total		4.7813	317.42	1517.70							

Daylighting

	Zone	Control Name	Daylighting Method	Control Type	Fraction Controlled	Lighting Installed in Zone [W]	Lighting Controlled [W]
None							

Exterior Lighting

	Total Watts	Astronomical Clock/Schedule	Schedule Name	Scheduled Hours/Week [hr]	Hours/Week > 1% [hr]	Full Load Hours/Week [hr]	Consumption [GJ]
Exterior Lighting Total	0.00						0.00

Report: **Equipment Summary**

Table of Contents

For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Central Plant

	Type	Nominal Capacity [W]	Nominal Efficiency [W/W]	IPLV in SI Units [W/W]	IPLV in IP Units [Btu/W-h]
None					

Cooling Coils

	Type	Design Coil Load [W]	Nominal Total Capacity [W]	Nominal Sensible Capacity [W]	Nominal Latent Capacity [W]	Nominal Sensible Heat Ratio	Nominal Efficiency [W/W]	Nominal Coil UA Value [W/C]	Nominal Coil Surface Area [m2]
None									

DX Cooling Coils

	DX Cooling Coil Type	Standard Rated Net Cooling Capacity [W]	Standard Rated Net COP [W/W]	EER [Btu/W-h]	SEER [Btu/W-h]	IEER [Btu/W-h]
None						

DX Cooling Coil ASHRAE 127 Standard Ratings Report

	DX Cooling Coil Type	Rated Net Cooling Capacity Test A [W]	Rated Electric Power Test A [W]	Rated Net Cooling Capacity Test B [W]	Rated Electric Power Test B [W]	Rated Net Cooling Capacity Test C [W]	Rated Electric Power Test C [W]	Rated Net Cooling Capacity Test D [W]	Rated Electric Power Test D [W]
None									

DX Heating Coils

	DX Heating Coil Type	High Temperature Heating (net) Rating Capacity [W]	Low Temperature Heating (net) Rating Capacity [W]	HSPF [Btu/W-h]	Region Number

None					

Heating Coils

	Type	Design Coil Load [W]	Nominal Total Capacity [W]	Nominal Efficiency [W/W]
None				

Fans

	Type	Total Efficiency [W/W]	Delta Pressure [pa]	Max Air Flow Rate [m3/s]	Rated Electric Power [W]	Rated Power Per Max Air Flow Rate [W-s/m3]	Motor Heat In Air Fraction	End Use	Design Day Name for Fan Sizing Peak	Date/Time for Fan Sizing Peak
None										

Pumps

	Type	Control	Head [pa]	Water Flow [m3/s]	Electric Power [W]	Power Per Water Flow Rate [W-s/m3]	Motor Efficiency [W/W]
None							

Service Water Heating

	Type	Storage Volume [m3]	Input [W]	Thermal Efficiency [W/W]	Recovery Efficiency [W/W]	Energy Factor
None						

Report: **HVAC Sizing Summary**

Table of Contents

For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Zone Sensible Cooling

	Calculated Design Load [W]	User Design Load [W]	User Design Load per Area [W/m2]	Calculated Design Air Flow [m3/s]	User Design Air Flow [m3/s]	Design Day Name	Date/Time Of Peak {TIMESTAMP}	Thermostat Setpoint Temperature at Peak Load [C]	Indoor Temperature at Peak Load [C]	Indoor Humidity Ratio at Peak Load [kgWater/kgAir]	Outdoor Temperature at Peak Load [C]	Hum at [kgW
THERMAL ZONE 1	1465.58	1685.42	33.17	0.121	0.139	PIACENZA ANN CLG .4% CONDNS DB=>MWB	8/21 16:10:00	24.00	24.00	0.00987	32.23	
THERMAL ZONE 2	1184.28	1361.92	55.12	0.098	0.113	PIACENZA ANN CLG .4% CONDNS DB=>MWB	8/21 16:10:00	24.00	24.00	0.00939	32.23	
THERMAL ZONE 3	10577.20	12163.77	173.40	0.876	1.008	PIACENZA ANN CLG .4% CONDNS DB=>MWB	8/21 15:00:00	24.00	23.98	0.01028	33.10	

The Design Load is the zone sensible load only. It does not include any system effects or ventilation loads.

Zone Sensible Heating

	Calculated Design Load [W]	User Design Load [W]	User Design Load per Area [W/m2]	Calculated Design Air Flow [m3/s]	User Design Air Flow [m3/s]	Design Day Name	Date/Time Of Peak {TIMESTAMP}	Thermostat Setpoint Temperature at Peak Load [C]	Indoor Temperature at Peak Load [C]	Indoor Humidity Ratio at Peak Load [kgWater/kgAir]	Outdoor Temperature at Peak Load [C]	H [kg
THERMAL ZONE 1	3644.77	4555.96	89.67	0.159	0.198	COPENHAGEN ANN HTG 99.6% CONDNS DB	2/21 06:00:00	21.00	20.99	0.00656	-9.20	
THERMAL ZONE 2	1756.12	2195.15	88.84	0.076	0.096	COPENHAGEN ANN HTG 99.6% CONDNS DB	2/21 06:00:00	21.00	20.99	0.00658	-9.20	
THERMAL ZONE 3	5080.46	6350.57	90.53	0.221	0.276	COPENHAGEN ANN HTG	2/21 06:00:00	21.00	20.99	0.00677	-9.20	

						99.6% CONDNS DB							

The Design Load is the zone sensible load only. It does not include any system effects or ventilation loads.

System Design Air Flow Rates

	Calculated cooling [m3/s]	User cooling [m3/s]	Calculated heating [m3/s]	User heating [m3/s]	Adjusted cooling [m3/s]	Adjusted heating [m3/s]	Adjusted main [m3/s]	Calculated Heating Air Flow Ratio []	User Heating Air Flow Ratio []
None									

Plant Loop Coincident Design Fluid Flow Rate Adjustments

	Previous Design Volume Flow Rate [m3/s]	Algorithm Volume Flow Rate [m3/s]	Coincident Design Volume Flow Rate [m3/s]	Coincident Size Adjusted	Peak Sizing Period Name	Peak Day into Period {TIMESTAMP}[day]	Peak Hour Of Day {TIMESTAMP}[hr]	Peak Step Start Minute {TIMESTAMP}[min]
None								

Coil Sizing Summary

	Coil Type	HVAC Type	HVAC Name	Coil Final Gross Total Capacity [W]	Coil Final Gross Sensible Capacity [W]	Coil Final Reference Air Volume Flow Rate [m3/s]	Coil Final Reference Plant Fluid Volume Flow Rate [m3/s]	Coil U-value Times Area Value [W/K]	Design Day Name at Sensible Ideal Loads Peak	Date/Time at Sensible Ideal Loads Peak	Design Day Name at Air Flow Ideal Loads Peak	Date/Time at Air Flow Ideal Loads Peak	Coil Total Capacity at Ideal Loads Peak [W]	Coil Sensible Capacity at Ideal Loads Peak [W]	Coil Air Volume Flow Rate at Ideal Loads Peak [m3/s]	Coil Entering Air Drybulb at Ideal Loads Peak [C]
None																

Report: **Coil Sizing Details** Table of Contents

For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Coils

	Coil Type	Coil Location	HVAC Type	HVAC Name	Zone Name (s)	System Sizing Method Concurrence	System Sizing Method Capacity	System Sizing Method Air Flow	Autosized Coil Capacity?	Autosized Coil Airflow?	Autosized Coil Water Flow?	OA Pretreated prior to coil inlet?	Coil Final Gross Total Capacity [W]	Coil Final Gross Sensible Capacity [W]	Coil Final Reference Air Volume Flow Rate [m3/s]	Coil Refe V [
None																

Report: **System Summary** Table of Contents

For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Economizer

	High Limit Shutoff Control	Minimum Outdoor Air [m3/s]	Maximum Outdoor Air [m3/s]	Return Air Temp Limit	Return Air Enthalpy Limit	Outdoor Air Temperature Limit [C]	Outdoor Air Enthalpy Limit [C]
None							

Demand Controlled Ventilation using Controller:MechanicalVentilation

	Controller:MechanicalVentilation Name	Outdoor Air Per Person [m3/s-person]	Outdoor Air Per Area [m3/s-m2]	Outdoor Air Per Zone [m3/s]	Outdoor Air ACH [ach]	Outdoor Air Method	Outdoor Air Schedule Name	Air Distribution Effectiveness in Cooling Mode	Air Distribution Effectiveness in Heating Mode	Air Distribution Effectiveness Schedule Name
None										

Time Not Comfortable Based on Simple ASHRAE 55-2004

	Winter Clothes [hr]	Summer Clothes [hr]	Summer or Winter Clothes [hr]
THERMAL ZONE 1	3365.67	4977.17	3280.67
THERMAL ZONE 2	1875.67	2726.33	1570.00
THERMAL ZONE 3	2043.17	4405.33	1628.50
Facility	3605.17	4979.83	3308.50

Aggregated over the RunPeriods for Weather

Time Setpoint Not Met

	During Heating [hr]	During Cooling [hr]	During Occupied Heating [hr]	During Occupied Cooling [hr]
THERMAL ZONE 1	0.00	0.00	0.00	0.00
THERMAL ZONE 2	0.00	0.00	0.00	0.00
THERMAL ZONE 3	0.00	0.00	0.00	0.00
Facility	0.00	0.00	0.00	0.00

Aggregated over the RunPeriods for Weather

Report: **Outdoor Air Summary**

Table of Contents

For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Average Outdoor Air During Occupied Hours

	Average Number of Occupants	Nominal Number of Occupants	Zone Volume [m3]	Mechanical Ventilation [ach]	Infiltration [ach]	AFN Infiltration [ach]	Simple Ventilation [ach]
THERMAL ZONE 1	1.21	2.66	152.42	0.000	0.278	0.000	0.300
THERMAL ZONE 2	1.02	1.33	74.13	0.000	0.252	0.000	0.440
THERMAL ZONE 3	8.60	37.75	210.44	0.000	0.274	0.000	1.430

Values shown for a single zone without multipliers

Minimum Outdoor Air During Occupied Hours

	Average Number of Occupants	Nominal Number of Occupants	Zone Volume [m3]	Mechanical Ventilation [ach]	Infiltration [ach]	AFN Infiltration [ach]	Simple Ventilation [ach]
THERMAL ZONE 1	1.21	2.66	152.42	0.000	0.004	0.000	0.003
THERMAL ZONE 2	1.02	1.33	74.13	0.000	0.005	0.000	0.001
THERMAL ZONE 3	8.60	37.75	210.44	0.000	0.003	0.000	0.004

Values shown for a single zone without multipliers

Report: **Object Count Summary**

Table of Contents

For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Surfaces by Class

	Total	Outdoors
Wall	36	22
Floor	4	3
Roof	4	3
Internal Mass	5	0
Building Detached Shading	0	0
Fixed Detached Shading	0	0
Window	10	10
Door	0	0
Glass Door	0	0
Shading	12	12
Overhang	0	0

Fin	0	0
Tubular Daylighting Device Dome	0	0
Tubular Daylighting Device Diffuser	0	0

HVAC

	Count
HVAC Air Loops	0
Conditioned Zones	3
Unconditioned Zones	0
Supply Plenums	0
Return Plenums	0

Input Fields

	Count
IDF Objects	0
Defaulted Fields	0
Fields with Defaults	0
Autosized Fields	0
Autosizable Fields	0
Autocalculated Fields	0
Autocalculatable Fields	0

Report: **Energy Meters**

Table of Contents

For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Annual and Peak Values - Electricity

	Electricity Annual Value [GJ]	Electricity Minimum Value [W]	Timestamp of Minimum {TIMESTAMP}	Electricity Maximum Value [W]	Timestamp of Maximum {TIMESTAMP}
Electricity:Facility	77.22	1122.87	01-JAN-00:10	4542.78	02-JAN-08:10
Electricity:Building	77.22	1122.87	01-JAN-00:10	4542.78	02-JAN-08:10
Electricity:Zone:THERMAL ZONE 1	5.69	28.73	01-JAN-00:10	433.33	02-JAN-08:10
InteriorLights:Electricity	17.16	63.92	01-JAN-00:10	1365.93	02-JAN-08:10
InteriorLights:Electricity:Zone:THERMAL ZONE 1	5.37	23.14	01-JAN-00:10	416.58	02-JAN-08:10
General:InteriorLights:Electricity	17.16	63.92	01-JAN-00:10	1365.93	02-JAN-08:10
Electricity:Zone:THERMAL ZONE 3	66.89	1051.05	01-JAN-00:10	3764.76	02-JAN-08:10
InteriorLights:Electricity:Zone:THERMAL ZONE 3	9.47	40.77	01-JAN-00:10	733.92	02-JAN-08:10
Electricity:Zone:THERMAL ZONE 2	4.63	43.09	01-JAN-00:10	344.69	02-JAN-08:10
InteriorLights:Electricity:Zone:THERMAL ZONE 2	2.31	0.00	01-JAN-00:10	215.43	02-JAN-08:10
InteriorEquipment:Electricity	60.06	1058.95	01-JAN-00:10	3176.85	02-JAN-08:10
InteriorEquipment:Electricity:Zone:THERMAL ZONE 1	0.32	5.59	01-JAN-00:10	16.76	02-JAN-08:10
General:InteriorEquipment:Electricity	60.06	1058.95	01-JAN-00:10	3176.85	02-JAN-08:10
InteriorEquipment:Electricity:Zone:THERMAL ZONE 3	57.42	1010.28	01-JAN-00:10	3030.83	02-JAN-08:10
InteriorEquipment:Electricity:Zone:THERMAL ZONE 2	2.32	43.09	01-JAN-00:10	129.26	02-JAN-08:10
Fans:Electricity	0.00	0.00	01-JAN-00:10	0.00	01-JAN-00:10
Fans:Electricity:Zone:THERMAL ZONE 1	0.00	0.00	01-JAN-00:10	0.00	01-JAN-00:10
Ventilation (simple):Fans:Electricity	0.00	0.00	01-JAN-00:10	0.00	01-JAN-00:10
Fans:Electricity:Zone:THERMAL ZONE 2	0.00	0.00	01-JAN-00:10	0.00	01-JAN-00:10
Fans:Electricity:Zone:THERMAL ZONE 3	0.00	0.00	01-JAN-00:10	0.00	01-JAN-00:10
ElectricityPurchased:Facility	77.22	1122.87	14-JAN-18:10	4542.78	02-JAN-08:10

ElectricityPurchased:Plant	77.22	1122.87	14-JAN-18:10	4542.78	02-JAN-08:10
Cogeneration:ElectricityPurchased	77.22	1122.87	14-JAN-18:10	4542.78	02-JAN-08:10
ElectricitySurplusSold:Facility	0.00	0.00	01-JAN-00:10	0.00	01-JAN-00:10
ElectricitySurplusSold:Plant	0.00	0.00	01-JAN-00:10	0.00	01-JAN-00:10
Cogeneration:ElectricitySurplusSold	0.00	0.00	01-JAN-00:10	0.00	01-JAN-00:10
ElectricityNet:Facility	77.22	1122.87	14-JAN-18:10	4542.78	02-JAN-08:10
ElectricityNet:Plant	77.22	1122.87	14-JAN-18:10	4542.78	02-JAN-08:10
Cogeneration:ElectricityNet	77.22	1122.87	14-JAN-18:10	4542.78	02-JAN-08:10

Annual and Peak Values - Gas

	Gas Annual Value [GJ]	Gas Minimum Value [W]	Timestamp of Minimum {TIMESTAMP}	Gas Maximum Value [W]	Timestamp of Maximum {TIMESTAMP}
None					

Annual and Peak Values - Cooling

	Cooling Annual Value [GJ]	Cooling Minimum Value [W]	Timestamp of Minimum {TIMESTAMP}	Cooling Maximum Value [W]	Timestamp of Maximum {TIMESTAMP}
DistrictCooling:Facility	40.26	0.00	01-JAN-00:10	13173.33	12-JUL-17:00
DistrictCooling:HVAC	40.26	0.00	01-JAN-00:10	13173.33	12-JUL-17:00
Cooling:DistrictCooling	40.26	0.00	01-JAN-00:10	13173.33	12-JUL-17:00

Annual and Peak Values - Water

	Annual Value [m3]	Minimum Value [m3/s]	Timestamp of Minimum {TIMESTAMP}	Maximum Value [m3/s]	Timestamp of Maximum {TIMESTAMP}
None					

Annual and Peak Values - Other by Weight/Mass

	Annual Value [kg]	Minimum Value [kg/s]	Timestamp of Minimum {TIMESTAMP}	Maximum Value [kg/s]	Timestamp of Maximum {TIMESTAMP}
Carbon Equivalent:Facility	0.00	0.000	01-JAN-00:10	0.000	01-JAN-00:10
CarbonEquivalentEmissions:Carbon Equivalent	0.00	0.000	01-JAN-00:10	0.000	01-JAN-00:10

Annual and Peak Values - Other Volumetric

	Annual Value [m3]	Minimum Value [m3/s]	Timestamp of Minimum {TIMESTAMP}	Maximum Value [m3/s]	Timestamp of Maximum {TIMESTAMP}
None					

Annual and Peak Values - Other Liquid/Gas

	Annual Value [L]	Minimum Value [L]	Timestamp of Minimum {TIMESTAMP}	Maximum Value [L]	Timestamp of Maximum {TIMESTAMP}
None					

Annual and Peak Values - Other

	Annual Value [GJ]	Minimum Value [W]	Timestamp of Minimum {TIMESTAMP}	Maximum Value [W]	Timestamp of Maximum {TIMESTAMP}
EnergyTransfer:Facility	59.64	0.00	02-JAN-22:10	14678.89	04-DEC-06:10
EnergyTransfer:Building	59.64	0.00	02-JAN-22:10	14678.89	04-DEC-06:10
EnergyTransfer:Zone:THERMAL ZONE 1	17.30	0.00	02-JAN-22:10	5448.93	04-DEC-06:10
Heating:EnergyTransfer	29.44	0.00	02-JAN-22:10	14678.89	04-DEC-06:10
Heating:EnergyTransfer:Zone:THERMAL ZONE 1	16.32	0.00	02-JAN-22:10	5448.93	04-DEC-06:10
Cooling:EnergyTransfer	30.20	0.00	01-JAN-00:10	8910.21	11-JUL-17:00
Cooling:EnergyTransfer:Zone:THERMAL ZONE 1	0.99	0.00	01-JAN-00:10	1127.85	11-JUL-17:00
EnergyTransfer:Zone:THERMAL ZONE 2	8.53	0.00	02-JAN-22:10	2718.29	04-DEC-06:10
	6.95	0.00	02-JAN-22:10	2718.29	04-DEC-06:10

Heating:EnergyTransfer:Zone:THERMAL ZONE 2					
Cooling:EnergyTransfer:Zone:THERMAL ZONE 2	1.58	0.00	01-JAN-00:10	1024.46	11-JUL-17:00
EnergyTransfer:Zone:THERMAL ZONE 3	33.81	0.00	02-JAN-08:30	6849.87	10-JUL-15:00
Heating:EnergyTransfer:Zone:THERMAL ZONE 3	6.17	0.00	02-JAN-08:30	6511.68	04-DEC-06:10
Cooling:EnergyTransfer:Zone:THERMAL ZONE 3	27.63	0.00	01-JAN-00:10	6849.87	10-JUL-15:00
DistrictHeating:Facility	29.56	0.00	02-JAN-22:10	15975.33	04-DEC-06:10
DistrictHeating:HVAC	29.56	0.00	02-JAN-22:10	15975.33	04-DEC-06:10
Heating:DistrictHeating	29.56	0.00	02-JAN-22:10	15975.33	04-DEC-06:10

Report: **Sensible Heat Gain Summary**

Table of Contents

For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Annual Building Sensible Heat Gain Components

	HVAC Zone Eq & Other Sensible Air Heating [GJ]	HVAC Zone Eq & Other Sensible Air Cooling [GJ]	HVAC Terminal Unit Sensible Air Heating [GJ]	HVAC Terminal Unit Sensible Air Cooling [GJ]	HVAC Input Heated Surface Heating [GJ]	HVAC Input Cooled Surface Cooling [GJ]	People Sensible Heat Addition [GJ]	Lights Sensible Heat Addition [GJ]	Equipment Sensible Heat Addition [GJ]	Window Heat Addition [GJ]	Interzone Air Transfer Heat Addition [GJ]	Infiltration Heat Addition [GJ]	Opaque Surface Conduction and Other Heat Addition [GJ]	Equipment Sensible Heat Removal [GJ]
THERMAL ZONE 1	16.316	-0.987	0.000	0.000	0.000	0.000	1.172	5.374	0.317	1.692	0.000	0.330	0.000	0.000
THERMAL ZONE 2	6.952	-1.580	0.000	0.000	0.000	0.000	0.845	2.313	2.320	0.606	0.000	0.147	0.000	0.000
THERMAL ZONE 3	6.172	-27.634	0.000	0.000	0.000	0.000	15.312	9.468	57.423	2.962	0.000	1.053	0.000	0.000
Total Facility	29.441	-30.201	0.000	0.000	0.000	0.000	17.329	17.155	60.061	5.260	0.000	1.530	0.000	0.000

Peak Cooling Sensible Heat Gain Components

	Time of Peak {TIMESTAMP}	HVAC Zone Eq & Other Sensible Air Heating [W]	HVAC Zone Eq & Other Sensible Air Cooling [W]	HVAC Terminal Unit Sensible Air Heating [W]	HVAC Terminal Unit Sensible Air Cooling [W]	HVAC Input Heated Surface Heating [W]	HVAC Input Cooled Surface Cooling [W]	People Sensible Heat Addition [W]	Lights Sensible Heat Addition [W]	Equipment Sensible Heat Addition [W]	Window Heat Addition [W]	Interzone Air Transfer Heat Addition [W]	Infiltration Heat Addition [W]	C S Cond and Ac
THERMAL ZONE 1	11-JUL-17:00	0.00	-1127.84	0.00	0.00	0.00	0.00	75.60	416.58	16.76	448.72	0.00	241.25	
THERMAL ZONE 2	11-JUL-17:00	0.00	-1024.38	0.00	0.00	0.00	0.00	87.84	215.43	129.26	126.06	0.00	177.26	
THERMAL ZONE 3	27-JUN-06:01	0.00	-14398.92	0.00	0.00	0.00	0.00	216.93	81.55	1347.04	0.00	0.00	0.00	12
Total Facility	27-JUN-06:01	0.00	-14398.92	0.00	0.00	0.00	0.00	238.78	127.83	1411.93	22.32	0.00	5.10	12

Peak Heating Sensible Heat Gain Components

	Time of Peak {TIMESTAMP}	HVAC Zone Eq & Other Sensible Air Heating [W]	HVAC Zone Eq & Other Sensible Air Cooling [W]	HVAC Terminal Unit Sensible Air Heating [W]	HVAC Terminal Unit Sensible Air Cooling [W]	HVAC Input Heated Surface Heating [W]	HVAC Input Cooled Surface Cooling [W]	People Sensible Heat Addition [W]	Lights Sensible Heat Addition [W]	Equipment Sensible Heat Addition [W]	Window Heat Addition [W]	Interzone Air Transfer Heat Addition [W]	Infiltration Heat Addition [W]	O Su Condu and Ad
THERMAL ZONE 1	04-DEC-06:01	29513.13	0.00	0.00	0.00	0.00	0.00	28.07	46.29	7.45	0.00	0.00	0.00	
THERMAL ZONE 2	04-DEC-06:01	14413.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.45	0.00	0.00	0.00	
	04-DEC-06:01	39820.50	0.00	0.00	0.00	0.00	0.00	398.39	81.55	1347.04	0.00	0.00	0.00	

THERMAL ZONE 3														
Total Facility	04-DEC-06:01	83747.32	0.00	0.00	0.00	0.00	0.00	426.46	127.83	1411.93	0.00	0.00	0.00	

Report: **Standard 62.1 Summary**

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For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

System Ventilation Requirements for Cooling

	Sum of Zone Primary Air Flow - Vpz-sum [m3/s]	System Population - Ps	Sum of Zone Population - Pz-sum	Occupant Diversity - D	Uncorrected Outdoor Air Intake Airflow - Vou [m3/s]	System Primary Airflow - Vps [m3/s]	Average Outdoor Air Fraction - Xs	System Ventilation Efficiency - Ev	Outdoor Air Intake Flow - Vot [m3/s]	Percent Outdoor Air - %OA	Environment Name of Peak System Population - Ps	Date and Time of Last Peak System Population - Ps
None												

System Ventilation Requirements for Heating

	Sum of Zone Primary Air Flow - Vpz-sum [m3/s]	System Population - Ps	Sum of Zone Population - Pz-sum	Occupant Diversity - D	Uncorrected Outdoor Air Intake Airflow - Vou [m3/s]	System Primary Airflow - Vps [m3/s]	Average Outdoor Air Fraction - Xs	System Ventilation Efficiency - Ev	Outdoor Air Intake Flow Vot [m3/s]	Percent Outdoor Air - %OA	Environment Name of Peak System Population - Ps	Date and Time of Last Peak System Population - Ps
None												

Zone Ventilation Parameters

	AirLoop Name	People Outdoor Air Rate - Rp [m3/s-person]	Zone Population - Pz	Area Outdoor Air Rate - Ra [m3/s-m2]	Zone Floor Area - Az [m2]	Breathing Zone Outdoor Airflow - Vbz [m3/s]	Cooling Zone Air Distribution Effectiveness - Ez-clg	Cooling Zone Outdoor Airflow - Voz-clg [m3/s]	Heating Zone Air Distribution Effectiveness - Ez-htg	Heating Zone Outdoor Airflow - Voz-htg [m3/s]
None										

System Ventilation Parameters

	People Outdoor Air Rate - Rp [m3/s-person]	Sum of Zone Population - Pz-sum	Area Outdoor Air Rate - Ra [m3/s-m2]	Sum of Zone Floor Area - Az-sum [m2]	Breathing Zone Outdoor Airflow - Vbz [m3/s]	Cooling Zone Outdoor Airflow - Voz-clg [m3/s]	Heating Zone Outdoor Airflow - Voz-htg [m3/s]
None							

Zone Ventilation Calculations for Cooling Design

	AirLoop Name	Box Type	Zone Primary Airflow - Vpz [m3/s]	Zone Discharge Airflow - Vdz [m3/s]	Minimum Zone Primary Airflow - Vpz-min [m3/s]	Zone Outdoor Airflow Cooling - Voz-clg [m3/s]	Primary Outdoor Air Fraction - Zpz	Primary Air Fraction - Ep	Secondary Recirculation Fraction- Er	Supply Air Fraction- Fa	Mixed Air Fraction - Fb	Outdoor Air Fraction - Fc	Zone Ventilation Efficiency - Evz
None													

System Ventilation Calculations for Cooling Design

	Sum of Zone Primary Airflow - Vpz-sum [m3/s]	System Primary Airflow - Vps [m3/s]	Sum of Zone Discharge Airflow - Vdz-sum [m3/s]	Sum of Min Zone Primary Airflow - Vpz-min [m3/s]	Zone Outdoor Airflow Cooling - Voz-clg [m3/s]	Zone Ventilation Efficiency - Evz-min
None						

Zone Ventilation Calculations for Heating Design

	AirLoop Name	Box Type	Zone Primary Airflow - Vpz [m3/s]	Zone Discharge Airflow - Vdz [m3/s]	Minimum Zone Primary Airflow -	Zone Outdoor Airflow Heating -	Primary Outdoor Air Fraction - Zpz	Primary Air Fraction - Ep	Secondary Recirculation Fraction- Er	Supply Air Fraction- Fa	Mixed Air Fraction - Fb	Outdoor Air Fraction - Fc	Zone Ventilation Efficiency - Evz

					Vpz-min [m3/s]	Voz-htg [m3/s]							
None													

System Ventilation Calculations for Heating Design

	Sum of Zone Primary Airflow - Vpz-sum [m3/s]	System Primary Airflow - Vps [m3/s]	Sum of Zone Discharge Airflow - Vdz-sum [m3/s]	Sum of Min Zone Primary Airflow - Vpz-min [m3/s]	Zone Outdoor Airflow Heating - Voz-htg [m3/s]	Zone Ventilation Efficiency - Evz-min
None						

Report: **LEED Summary**

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For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Sec1.1A-General Information

	Data
Weather File	RUN PERIOD 1 ** Piacenza - ITA IGDG WMO#=160840
Total gross floor area [m2]	145.66
Principal Heating Source	District Heat

EAp2-1. Space Usage Type

	Space Area [m2]	Regularly Occupied Area [m2]	Unconditioned Area [m2]	Typical Hours/Week in Operation [hr/wk]
THERMAL ZONE 1	50.81	50.81	0.00	100.72
THERMAL ZONE 2	24.71	24.71	0.00	63.33
THERMAL ZONE 3	70.15	70.15	0.00	100.72
Totals	145.66	145.66	0.00	

EAp2-2. Advisory Messages

	Data
Number of hours heating loads not met	0.00
Number of hours cooling loads not met	0.00
Number of hours not met	0.00

EAp2-3. Energy Type Summary

	Utility Rate	Virtual Rate [$/unit energy]	Units of Energy	Units of Demand
None				

EAp2-4/5. Performance Rating Method Compliance

	Electric Energy Use [GJ]	Electric Demand [W]	Natural Gas Energy Use [GJ]	Natural Gas Demand [W]	Additional Fuel Use [GJ]	Additional Fuel Demand [W]	District Cooling Use [GJ]	District Cooling Demand [W]	District Heating Use [GJ]	District Heating Demand [W]
Heating -- Not Subdivided	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.56	15975.33
Cooling -- Not Subdivided	0.00	0.00	0.00	0.00	0.00	0.00	40.26	13173.33	0.00	0.00
Interior Lighting -- General	17.16	1365.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exterior Lighting -- Not Subdivided	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interior Equipment -- General	60.06	3176.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exterior Equipment -- Not Subdivided	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fans -- Ventilation (simple)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pumps -- Not Subdivided	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Heat Rejection -- Not Subdivided	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Humidification -- Not Subdivided	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heat Recovery -- Not Subdivided	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Systems -- Not Subdivided	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigeration -- Not Subdivided	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generators -- Not Subdivided	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

EAp2-6. Energy Use Summary

	Process Subtotal [GJ]	Total Energy Use [GJ]
Electricity	60.06	77.22
Natural Gas	0.00	0.00
Additional	0.00	69.81
Total	60.06	147.03

EAp2-7. Energy Cost Summary

	Process Subtotal [$]	Total Energy Cost [$]
Electricity	0.00	
Natural Gas	0.00	
Additional	0.00	
Total	0.00	

Process energy cost based on ratio of process to total energy.

L-1. Renewable Energy Source Summary

	Rated Capacity [kW]	Annual Energy Generated [GJ]
Photovoltaic	0.00	0.00
Wind	0.00	0.00

EAp2-17a. Energy Use Intensity - Electricity

	Electricty [MJ/m2]
Interior Lighting (All)	117.77
Space Heating	0.00
Space Cooling	0.00
Fans (All)	0.00
Service Water Heating	0.00
Receptacle Equipment	412.33
Miscellaneous (All)	530.10
Subtotal	530.10

EAp2-17b. Energy Use Intensity - Natural Gas

	Natural Gas [MJ/m2]
Space Heating	0.00
Service Water Heating	0.00
Miscellaneous (All)	0.00
Subtotal	0.00

EAp2-17c. Energy Use Intensity - Additional

	Additional [MJ/m2]
Subtotal	0.00
Miscellaneous	0.00

EAp2-18. End Use Percentage

	Percent [%]
Interior Lighting (All)	11.67
Space Heating	20.10
Space Cooling	27.38
Fans (All)	0.00
Service Water Heating	0.00
Receptacle Equipment	40.85
Miscellaneous	0.00

Schedules-Equivalent Full Load Hours (Schedule Type=Fraction)

	Equivalent Full Load Hours of Operation Per Year [hr]	Hours > 1% [hr]
OFFICE BLDG LIGHT	3225.	8760.
MEDIUM OFFICE BLDG EQUIP	4737.	8760.
MEDIUM OFFICE BLDG OCC	2834.	5252.
MEDIUM OFFICE INFIL QUARTER ON	5172.	8760.
OFFICE BLDG EQUIP	4737.	8760.
OFFICE BLDG LIGHT_BASE	2684.	3588.
OFFICE INFIL QUARTER ON	5172.	8760.
OFFICE MISC OCC	1508.	5252.
OFFICE WORK OCC	2595.	5252.

Schedules-SetPoints (Schedule Type=Temperature)

	First Object Used	Month Assumed	11am First Wednesday [C]	Days with Same 11am Value	11pm First Wednesday [C]	Days with Same 11pm Value
MEDIUM OFFICE HTGSETP	THERMAL ZONE 1 THERMOSTAT	January	21.00	365	15.60	365
MEDIUM OFFICE CLGSETP	THERMAL ZONE 1 THERMOSTAT	July	24.00	365	26.70	365
SMALL OFFICE HTGSETP	THERMAL ZONE 2 THERMOSTAT	January	21.00	365	15.60	365
SMALL OFFICE CLGSETP	THERMAL ZONE 2 THERMOSTAT	July	24.00	365	26.70	365

Report: **BUILDING ENERGY PERFORMANCE - ELECTRICITY**

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For: **Meter**

Timestamp: **2018-12-15 19:16:46**

Custom Monthly Report

	INTERIORLIGHTS:ELECTRICITY [J]	EXTERIORLIGHTS:ELECTRICITY []	INTERIOREQUIPMENT:ELECTRICITY [J]	EXTERIOREQUIPMENT:ELE
January	0.144585E+10	0.00	0.508480E+10	
February	0.131922E+10	0.00	0.461302E+10	
March	0.150088E+10	0.00	0.518346E+10	
April	0.134625E+10	0.00	0.481555E+10	
May	0.150088E+10	0.00	0.518346E+10	
June	0.144032E+10	0.00	0.499331E+10	
July	0.140680E+10	0.00	0.500569E+10	
August	0.150088E+10	0.00	0.518346E+10	
September	0.140128E+10	0.00	0.491420E+10	
October	0.144585E+10	0.00	0.508480E+10	
November	0.144032E+10	0.00	0.499331E+10	
December	0.140680E+10	0.00	0.500569E+10	
Annual Sum or Average	0.171553E+11		0.600607E+11	

Minimum of Months	0.131922E+10	0.00	0.461302E+10	
Maximum of Months	0.150088E+10	0.00	0.518346E+10	

Report: **BUILDING ENERGY PERFORMANCE - DISTRICT HEATING**

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For: **Meter**

Timestamp: **2018-12-15 19:16:46**

Custom Monthly Report

	INTERIORLIGHTS:DISTRICTHEATING []	EXTERIORLIGHTS:DISTRICTHEATING []	INTERIOREQUIPMENT:DISTRICTHEATING []	EXTERIORI
January	0.00	0.00	0.00	
February	0.00	0.00	0.00	
March	0.00	0.00	0.00	
April	0.00	0.00	0.00	
May	0.00	0.00	0.00	
June	0.00	0.00	0.00	
July	0.00	0.00	0.00	
August	0.00	0.00	0.00	
September	0.00	0.00	0.00	
October	0.00	0.00	0.00	
November	0.00	0.00	0.00	
December	0.00	0.00	0.00	
Annual Sum or Average				
Minimum of Months	0.00	0.00	0.00	
Maximum of Months	0.00	0.00	0.00	

Report: **BUILDING ENERGY PERFORMANCE - DISTRICT COOLING**

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For: **Meter**

Timestamp: **2018-12-15 19:16:46**

Custom Monthly Report

	INTERIORLIGHTS:DISTRICTCOOLING []	EXTERIORLIGHTS:DISTRICTCOOLING []	INTERIOREQUIPMENT:DISTRICTCOOLING []	EXTERIOR
January	0.00	0.00	0.00	
February	0.00	0.00	0.00	
March	0.00	0.00	0.00	
April	0.00	0.00	0.00	
May	0.00	0.00	0.00	
June	0.00	0.00	0.00	
July	0.00	0.00	0.00	
August	0.00	0.00	0.00	
September	0.00	0.00	0.00	
October	0.00	0.00	0.00	
November	0.00	0.00	0.00	
December	0.00	0.00	0.00	
Annual Sum or Average				
Minimum of Months	0.00	0.00	0.00	
	0.00	0.00	0.00	

Maximum of Months				

Report: **BUILDING ENERGY PERFORMANCE - ELECTRICITY PEAK DEMAND** Table of Contents

For: **Meter**

Timestamp: **2018-12-15 19:16:46**

Custom Monthly Report

	ELECTRICITY:FACILITY {Maximum}[W]	ELECTRICITY:FACILITY {TIMESTAMP}	INTERIORLIGHTS:ELECTRICITY {AT MAX/MIN} [W]	EXTERIORLIGHTS:ELECTRICITY []	INTERIOREQU
January	4542.78	02-JAN-08:09	1365.93	0.00	
February	4542.78	01-FEB-08:09	1365.93	0.00	
March	4542.78	01-MAR-08:09	1365.93	0.00	
April	4542.78	03-APR-08:09	1365.93	0.00	
May	4542.78	01-MAY-08:09	1365.93	0.00	
June	4542.78	01-JUN-08:09	1365.93	0.00	
July	4542.78	03-JUL-08:09	1365.93	0.00	
August	4542.78	01-AUG-08:09	1365.93	0.00	
September	4542.78	01-SEP-08:09	1365.93	0.00	
October	4542.78	02-OCT-08:09	1365.93	0.00	
November	4542.78	01-NOV-08:09	1365.93	0.00	
December	4542.78	01-DEC-08:09	1365.93	0.00	
Annual Sum or Average					
Minimum of Months	4542.78		1365.93	0.00	
Maximum of Months	4542.78		1365.93	0.00	

Report: **BUILDING ENERGY PERFORMANCE - DISTRICT HEATING PEAK DEMAND** Table of Contents

For: **Meter**

Timestamp: **2018-12-15 19:16:46**

Custom Monthly Report

	DISTRICTHEATING:FACILITY {Maximum}[W]	DISTRICTHEATING:FACILITY {TIMESTAMP}	INTERIORLIGHTS:DISTRICTHEATING []	EXTERIORLIGHTS:DISTRICTHE/
January	13934.37	10-JAN-06:10	0.00	
February	13921.98	10-FEB-06:10	0.00	
March	13693.33	11-MAR-06:10	0.00	
April	12780.71	06-APR-06:10	0.00	
May	8799.04	13-MAY-06:10	0.00	
June	6169.21	10-JUN-06:10	0.00	
July	2911.87	01-JUL-06:10	0.00	
August	3281.45	25-AUG-06:10	0.00	
September	9429.16	18-SEP-06:10	0.00	
October	10848.91	23-OCT-06:10	0.00	
November	13126.21	20-NOV-06:10	0.00	
December	15975.33	04-DEC-06:10	0.00	
Annual Sum or Average				
Minimum of Months	2911.87		0.00	
Maximum of Months	15975.33		0.00	

Report: **BUILDING ENERGY PERFORMANCE - DISTRICT COOLING PEAK DEMAND**

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For: **Meter**

Timestamp: **2018-12-15 19:16:46**

Custom Monthly Report

	DISTRICTCOOLING:FACILITY {Maximum}[W]	DISTRICTCOOLING:FACILITY {TIMESTAMP}	INTERIORLIGHTS:DISTRICTCOOLING []	EXTERIORLIGHTS:DISTRICTCO
January	1163.39	30-JAN-15:00	0.00	
February	3800.47	21-FEB-14:00	0.00	
March	3848.67	28-MAR-16:00	0.00	
April	6682.52	24-APR-16:00	0.00	
May	8141.83	25-MAY-15:30	0.00	
June	9905.55	23-JUN-15:00	0.00	
July	13173.33	12-JUL-16:00	0.00	
August	11273.64	01-AUG-15:20	0.00	
September	10319.80	08-SEP-16:10	0.00	
October	6768.56	03-OCT-15:00	0.00	
November	3539.11	03-NOV-13:09	0.00	
December	2475.27	19-DEC-13:09	0.00	
Annual Sum or Average				
Minimum of Months	1163.39		0.00	
Maximum of Months	13173.33		0.00	

Report: **Life-Cycle Cost Report**

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For: **Entire Facility**

Timestamp: **2018-12-15 19:16:46**

Life-Cycle Cost Parameters

	Value
Name	LIFE CYCLE COST PARAMETERS
Discounting Convention	EndOfYear
Inflation Approach	ConstantDollar
Real Discount Rate	0.0300
Nominal Discount Rate	-- N/A --
Inflation	-- N/A --
Base Date	January 2011
Service Date	January 2011
Length of Study Period in Years	25
Tax rate	0.0000
Depreciation Method	None

Use Price Escalation

	U.S. AVG COMMERCIAL-ELECTRICITY	U.S. AVG COMMERCIAL-DISTILLATE OIL	U.S. AVG COMMERCIAL-RESIDUAL OIL	U.S. AVG COMMERCIAL-NATURAL GAS	U.S. AVG COMMERCIAL-COAL
Resource	Electricity	FuelOil#1	FuelOil#2	Gas	Coal
Start Date	January 2011	January 2011	January 2011	January 2011	January 2011
1	0.983800	0.971400	0.846900	0.982300	0.997000
2	0.973000	0.973000	0.825700	0.955700	1.008900
3	0.963200	0.994200	0.868100	0.927900	1.008900

4	0.961100	1.016400	0.898800	0.925700	0.994100
5	0.957100	1.054100	0.928900	0.934600	0.994100
6	0.955300	1.092800	0.960400	0.941200	1.000000
7	0.953900	1.126700	0.989700	0.951200	1.003000
8	0.952100	1.158000	1.007500	0.964500	1.005900
9	0.954600	1.179200	1.031400	0.985600	1.008900
10	0.955000	1.196700	1.055400	1.006700	1.011900
11	0.955300	1.220000	1.086100	1.022200	1.014800
12	0.956400	1.233300	1.127800	1.041000	1.017800
13	0.957500	1.256600	1.149700	1.061000	1.020800
14	0.959600	1.270900	1.162000	1.078700	1.026700
15	0.961800	1.282600	1.174300	1.094200	1.029700
16	0.961400	1.298500	1.185200	1.109800	1.035600
17	0.961800	1.310200	1.194800	1.122000	1.041500
18	0.961800	1.325000	1.203700	1.130800	1.053400
19	0.959300	1.326100	1.207100	1.138600	1.056400
20	0.958900	1.328200	1.211900	1.148600	1.059300
21	0.960700	1.332400	1.213900	1.161900	1.065300
22	0.962500	1.335600	1.219400	1.176300	1.071200
23	0.965000	1.343100	1.227600	1.191800	1.074200
24	0.970800	1.351000	1.236500	1.211800	1.080100
25	0.975100	1.356800	1.242000	1.228400	1.083100

Cash Flow for Recurring and Nonrecurring Costs (Without Escalation)

	DEFAULT COST
	Nonrecurring
January 2011	0.00
January 2012	0.00
January 2013	0.00
January 2014	0.00
January 2015	0.00
January 2016	0.00
January 2017	0.00
January 2018	0.00
January 2019	0.00
January 2020	0.00
January 2021	0.00
January 2022	0.00
January 2023	0.00
January 2024	0.00
January 2025	0.00
January 2026	0.00
January 2027	0.00
January 2028	0.00
January 2029	0.00
January 2030	0.00
January 2031	0.00
January 2032	0.00
January 2033	0.00
January 2034	0.00
January 2035	0.00

Energy and Water Cost Cash Flows (Without Escalation)

January 2011	
January 2012	
January 2013	

January 2014	
January 2015	
January 2016	
January 2017	
January 2018	
January 2019	
January 2020	
January 2021	
January 2022	
January 2023	
January 2024	
January 2025	
January 2026	
January 2027	
January 2028	
January 2029	
January 2030	
January 2031	
January 2032	
January 2033	
January 2034	
January 2035	

Capital Cash Flow by Category (Without Escalation)

	Construction	Salvage	OtherCapital	Total
January 2011	0.00	0.00	0.00	0.00
January 2012	0.00	0.00	0.00	0.00
January 2013	0.00	0.00	0.00	0.00
January 2014	0.00	0.00	0.00	0.00
January 2015	0.00	0.00	0.00	0.00
January 2016	0.00	0.00	0.00	0.00
January 2017	0.00	0.00	0.00	0.00
January 2018	0.00	0.00	0.00	0.00
January 2019	0.00	0.00	0.00	0.00
January 2020	0.00	0.00	0.00	0.00
January 2021	0.00	0.00	0.00	0.00
January 2022	0.00	0.00	0.00	0.00
January 2023	0.00	0.00	0.00	0.00
January 2024	0.00	0.00	0.00	0.00
January 2025	0.00	0.00	0.00	0.00
January 2026	0.00	0.00	0.00	0.00
January 2027	0.00	0.00	0.00	0.00
January 2028	0.00	0.00	0.00	0.00
January 2029	0.00	0.00	0.00	0.00
January 2030	0.00	0.00	0.00	0.00
January 2031	0.00	0.00	0.00	0.00
January 2032	0.00	0.00	0.00	0.00
January 2033	0.00	0.00	0.00	0.00
January 2034	0.00	0.00	0.00	0.00
January 2035	0.00	0.00	0.00	0.00

Operating Cash Flow by Category (Without Escalation)

	Energy	Water	Maintenance	Repair	Operation	Replacement	MinorOverhaul	MajorOverhaul	OtherOperational	Total
January 2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

January 2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2024	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2026	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2028	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2030	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2031	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2032	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2033	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2034	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January 2035	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Monthly Total Cash Flow (Without Escalation)

	January	February	March	April	May	June	July	August	September	October	November	December
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Present Value for Recurring, Nonrecurring and Energy Costs (Before Tax)

	Category	Kind	Cost	Present Value	Present Value Factor
DEFAULT COST	Construction	Nonrecurring	0.00	0.00	-
TOTAL				0.00	

Present Value by Category

	Present Value
Construction	0.00
Salvage	0.00
Other Capital	0.00
Energy	0.00
Water	0.00
Maintenance	0.00
Repair	0.00
Operation	0.00
Replacement	0.00
Minor Overhaul	0.00
Major Overhaul	0.00
Other Operational	0.00
Total Energy	0.00
Total Operation	0.00
Total Capital	0.00
Grand Total	0.00

Present Value by Year

	Total Cost	Present Value of Costs
January 2011	0.00	0.00
January 2012	0.00	0.00
January 2013	0.00	0.00
January 2014	0.00	0.00
January 2015	0.00	0.00
January 2016	0.00	0.00
January 2017	0.00	0.00
January 2018	0.00	0.00
January 2019	0.00	0.00
January 2020	0.00	0.00
January 2021	0.00	0.00
January 2022	0.00	0.00
January 2023	0.00	0.00
January 2024	0.00	0.00
January 2025	0.00	0.00
January 2026	0.00	0.00
January 2027	0.00	0.00
January 2028	0.00	0.00
January 2029	0.00	0.00
January 2030	0.00	0.00
January 2031	0.00	0.00
January 2032	0.00	0.00
January 2033	0.00	0.00
January 2034	0.00	0.00
January 2035	0.00	0.00
TOTAL		0.00