EECC 2015
Indoor Air Pollution Data

Part 1:HVAC Parameters

Outdoor Parameter

Parameter	Summer	Winter
Air Pressure (mbar)	998.5	1020.2
Dry-bulb Temperature (°C)	34.8	-10
Wet-bulb Temperature (°C)	26.7	---
Relative Humidity (%)	73	54
Air Temperature (°C)	31	-2
Wind Velocity (m/s)	2.8	3.2
Wind Direction	C SSW	C SSW

Indoor Parameter

Location	Dry-bulb Temperature (°C)		Relative Humidity (%)	
	Summer	Winter	Summer	Winter
Manufacturing Facility	27	18	<65	>30
Lobby	27	16	50~65	>30

Air Conditioner Capacity

Cooling Capacity	1614kW
Cooling Target	81W/m
Heating Capacity	1405kW
Heating Target	71W/m

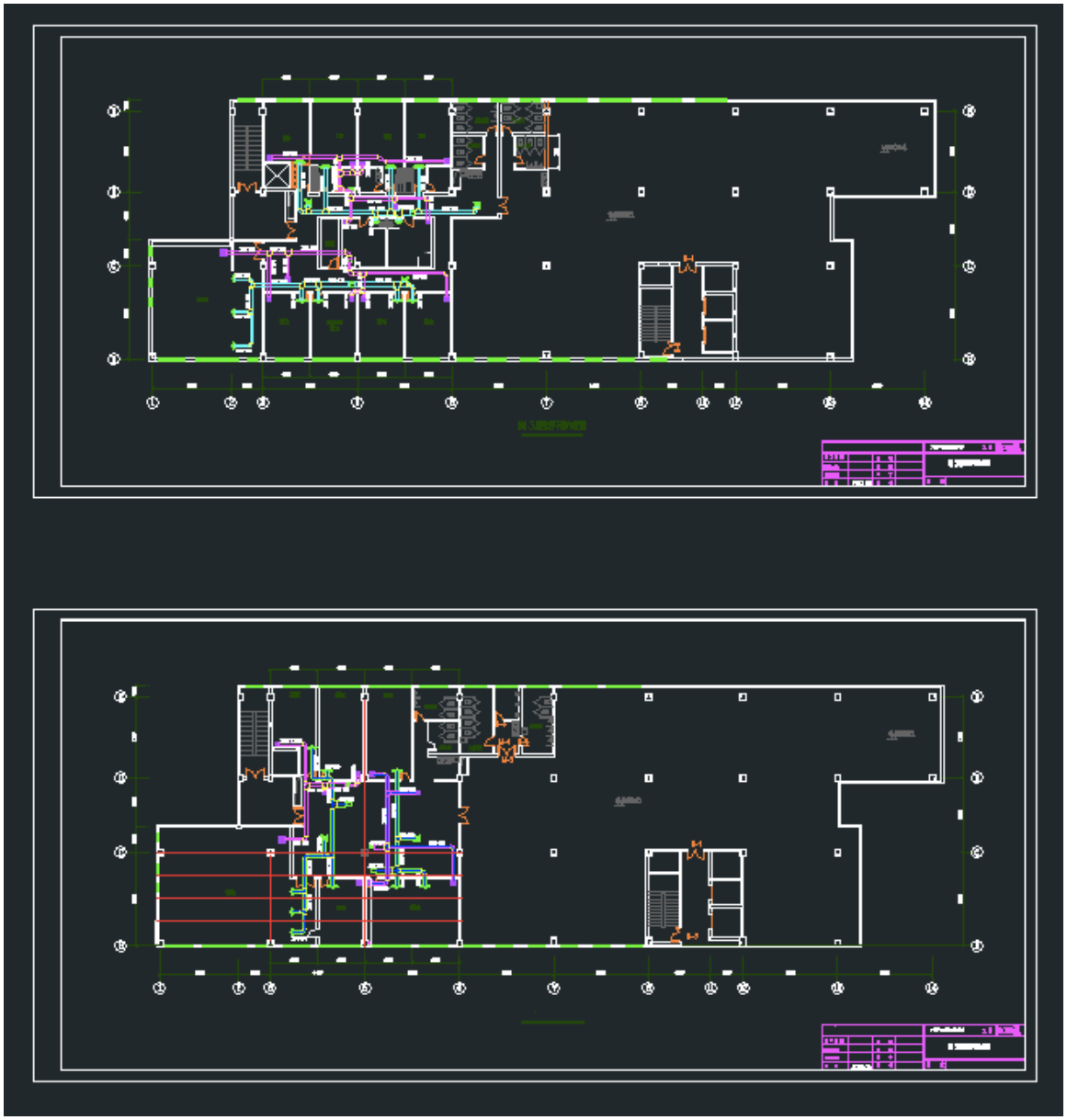
Heating and Cooling Source

Ground source heating pump	SGHP800	SGHP1000
Heating/cooling capacity	754kW/817kW	937W/1040kW

Heat Transfer Parameter

Outer wall heat transfer coefficient: 0.39 W/ (m*C)
Outer window heat transfer coefficient: 2.6 W/ (m*C)
Inner wall heat transfer coefficient: 0.56 W/(m*C)

Sketch map of HVAC



Part 2: Heat Pump Data

Overview of heat dump conditions 2013-2014

	11/1/13	12/1/13	1/1/14	2/1/14	6/2/14	7/2/14	8/2/14	9/2/14
Main Motor load	20200	38420	34820	34940	21420	35140	30040	7400
Water pump load	9948	15624	16848	16632	11112	20094	17712	5532
Heat pump load	87500	173720	163900	165510	112570	119855	116780	10600
Total load	30148	54044	51668	51572	32532	55234	47752	12932

Heat pump and power usage condtions

	11/1/13	12/1/13	1/1/14	2/1/14	6/2/14	7/2/14	8/2/14	9/2/14
Main motor load	20200	38420	34820	34940	21420	35140	30040	7400
Water pump load	9948	15624	16848	16632	11112	20094	17712	5532
Heat pump load	87500	173720	163900	165510	112570	119855	116780	24900
System total load	30148	54044	51668	51572	32532	55234	47752	12932
Ground source heating/cooling load	55010	98400	87910	90180	170560	151270	182660	43190
System coefficient of performance (COP)	2.9023 48414	3.2144 17882	3.1721 76202	3.2092 9962	3.4602 85258	2.1699 49669	2.4455 52019	1.9254 56233
Device COP	4.3316 83168	4.5216 03332	4.7070 64905	4.7369 77676	5.2553 68814	3.4107 8543	3.8874 83356	3.3648 64865

Part 3: Cost Benefit Analysis Data

Price of electricity has three phases:

- Top Power
  - Time Range: 10:30-11:30; 19:00-21:00
  - Price Calculation formula: ¥0.8024*1.7/kW.h
- Peak Power
  - Time Range: 8:30-10:30; 18:00-19:00
  - Price Calculation formula: ¥0.8024*1.6/kW.h
- Valley Power
  - Time Range: 23:00-7:00
  - Price Calculation formula: ¥0.8024*0.4/kW.h

Average price for all the other time: ¥ 0.8024/kW.h