



DESIGN INFORMATION

DESIGN ASSUMPTIONS FROM CLIENT CONSULTANT ADVICE

FLOORS 4 TO 6	HEATING AND COOLING PROVIDED BY DX HEAT PUMP SYSTEMS NO BOILER PLANT LOAD FOR THESE FLOORS
FLOORS: FIRST TO 3	FAN COIL LOAD 1 3 x (1344m ² x 80W/m ²) = 322 kW AHU OUTSIDE AIR LOAD 134 people/floor x 12 l/sec/person = 1.7 m ³ /floor 7 floors x 1.7 m ³ /floor = 11.9 m ³ /sec 11.9 m ³ /s x 1.21 x 20 delta T = 287 kW
HWS LOAD	PRIMARY HWS LOAD 3 3400 l/ites x (65-10) / 60 min x 14.3 = 218 kW
TOTAL BOILER LOAD	1 + 2 + 3 322 + 287 + 218 = 827 kW
CLIENT SPECIFIED BOILER CAPACITY	850 kW
ACTUAL BOILER CAPACITY	3 x HOVAL ULTRAGAS AM-350 (3 x 318) = 954 kW
BOILER OUTPUT WITH 2 BOILERS	(2 x 318) = 636 kW - 75% OF TOTAL CAPACITY

PUMP DETAILS (AS CONSULTANT SPEC)	PRIMARY PUMPS	2 No.	DUTY: 25 l/sec @ 40 kPa MODEL: WIL0 IL 100 / 150 15 / 4 ELEC: 3 ph, 15 kW
	C.T PUMPS	2 No.	DUTY: 12 l/sec @ 160 kPa MODEL: WIL0 IL 80 / 220 - 4 ELEC: 3 ph, 2.2 kW
	V.T PUMPS	2 No.	DUTY: 12 l/sec @ 160 kPa MODEL: WIL0 IL 80 / 220 - 4 ELEC: 3 ph, 2.2 kW
	HWS PRIMARY PUMPS	2 No.	DUTY: 6 l/sec @ 50 kPa MODEL: WIL0 TOP-S 50 / 15 ELEC: 3 ph, 1.1 kW
	HWS SEC. PUMPS	2 No.	MODEL: WIL0 STAR-Z 20 / 1 CIRCOSTAR ELEC: 1 ph, 0.005 kW

BOILER ROOM VENTILATION IN ACCORDANCE WITH BS 5440-2

LEGEND

STANDARD LIST OF ABBREVIATIONS:

F	FLOW PIPE
R	RETURN PIPE
IV	ISOLATING VALVE
LSV	LOCKSHIELD VALVE
SC	STOP COCK
GC	GAS COCK
DC	DRAIN COCK
AV	AIR VENT
AAV	AUTOMATIC AIR VENT
CS	COMMISSIONING STATION
DRV	DOUBLE REG. VALVE
OP	ORIFICE PLATE
MV	MOTORISED CONTROL VALVE
SOL IV	SOLENOID VALVE
DCV	DOUBLE CHECK VALVE
STR	PIPELINE STRAINER
MV	MOTORISED VALVE
NRV	NON RETURN VALVE
PRV	PRESSURE RED. VALVE
T	TEMPERATURE GAUGE
P	PRESSURE GAUGE
▷	PIPELINE REDUCER

NOTES

1.0 DRAIN COCKS AND AIR VENTS ON PUMPS

VALVE CHART

REF	TYPE	CIRCUIT / SIZE	REF	TYPE	CIRCUIT / SIZE
1	IV	Boiler No. 3 FLOW 80	45	IV	CT PUMPS 100
2	IV	Boiler No. 3 RETURN 80	46	STR	CT PUMPS 100
3	MV	Boiler No. 3 RETURN 80	47	NRV	CT PUMPS 100
4	LSV	Boiler No. 3 COLD FEED 80	48	IV	CT PUMPS 100
5	3-way	Boiler No. 3 VENT 80	49	IV	CT PUMPS 100
6	SRV	Boiler No. 3 BOILER SRV 80	50	STR	CT PUMPS 100
7	GAS IV	Boiler No. 3 GAS IV 80	51	NRV	CT PUMPS 100
8	IV	Boiler No. 2 FLOW 80	52	IV	CT PUMPS 100
9	IV	Boiler No. 2 RETURN 80	53	IV	HWS PRIMARY PUMPS 50
10	MV	Boiler No. 2 RETURN 80	54	STR	HWS PRIMARY PUMPS 50
11	LSV	Boiler No. 2 COLD FEED 80	55	NRV	HWS PRIMARY PUMPS 50
12	3-way	Boiler No. 2 VENT 80	56	IV	HWS PRIMARY PUMPS 50
13	SRV	Boiler No. 2 BOILER SRV 80	57	IV	HWS PRIMARY PUMPS 50
14	GAS IV	Boiler No. 2 GAS IV 80	58	STR	HWS PRIMARY PUMPS 50
15	IV	Boiler No. 1 FLOW 80	59	NRV	HWS PRIMARY PUMPS 50
16	IV	Boiler No. 1 RETURN 80	60	IV	HWS PRIMARY PUMPS 50
17	MV	Boiler No. 1 RETURN 80	61	IV	HWS PRIMARY CCT 4.0
18	LSV	Boiler No. 1 COLD FEED 80	62	CS	HWS PRIMARY CCT 4.0
19	3-way	Boiler No. 1 VENT 80	63	IV	HWS PRIMARY CCT 4.0
20	SRV	Boiler No. 1 BOILER SRV 80	64	CS	HWS PRIMARY CCT 4.0
21	GAS IV	Boiler No. 1 GAS IV 80	65	DRV	EAST ZONE VT 80
22	OP	PRIMARY Cct ORIFACE 150	66	IV	EAST ZONE VT 80
23	IV	PRIMARY Cct STR IV 150	67	DRV	WEST ZONE VT 100
24	STR	PRIMARY Cct STRAINER 150	68	IV	WEST ZONE VT 100
25	IV	PRIMARY Cct STR IV 150	69	DRV	EAST ZONE CT 80
26	IV	PRIMARY Cct STR IV 150	70	IV	EAST ZONE CT 80
27	IV	PRIMARY Cct SEPARATOR 150	71	DRV	WEST ZONE CT 100
28	IV	PRIMARY Cct SEPARATOR 150	72	IV	WEST ZONE CT 100
29	IV	PRIMARY PUMPS 150	73	IV	NORTH WEST ZONE VT 4.0
30	STR	PRIMARY PUMPS 150	74	DRV	NORTH WEST ZONE VT 4.0
31	NRV	PRIMARY PUMPS 150	75	IV	NORTH WEST ZONE CT 50
32	IV	PRIMARY PUMPS 150	76	DRV	NORTH WEST ZONE CT 50
33	IV	PRIMARY PUMPS 150	77	IV	DOSING POT 25
34	STR	PRIMARY PUMPS 150	78	IV	DOSING POT 25
35	NRV	PRIMARY PUMPS 150	79	IV	DOSING POT 25
36	IV	PRIMARY PUMPS 150	80	IV	GAS SOLENOID VALVE 150
37	IV	VT PUMPS 100	81	IV	GAS SHUT OFF VALVE 150
38	STR	VT PUMPS 100	82	IV	NW ZONE CT F 80
39	NRV	VT PUMPS 100	83	CS	NW ZONE CT FR 80
40	IV	VT PUMPS 100	84	IV	CT F PRIMARY HEADER 10
41	IV	VT PUMPS 100	85	IV	VT F PRIMARY HEADER 100
42	STR	VT PUMPS 100	86	IV	HWS F PRIMARY HEADER 50
43	NRV	VT PUMPS 100	87	CS	CT R PRIMARY HEADER 100
44	IV	VT PUMPS 100	88	CS	VT R PRIMARY HEADER 100
			89	CS	HWS R PRIMARY HEADER 50
			90	DRV	VT CONTROL CCT BYPASS 50
			91	DRV	VT CONTROL CCT 100
			92	3-PORT	VT MOTORISED VALVE 80

R	AS INSTALLED RECORD DRAWING	-
Rev	Description	Date

client
LAND SECURITIES

project
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drawing title
ENGINEERING SERVICES
BASEMENT BOILER PLANTROOM
SYSTEM SCHEMATIC

Scale	NTS @ A1	Drawn	AK
Date	-	Checked	AK

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R

drawing status
RECORD DRAWING