ENERGY RECOVERY UNIT SCHEDULE

GENERAL	TAG	**ERU-1**
	TYPE	FIXED-PLATE ENTHALPIC
	MFR	RenewAire
	MODEL	HE2XINV
FILTER SECTION	FILTERS	2" MERV 8
(TYP-2, SUPPLY & EXH)	MIN. AREA, sf	11.1
	VELOCITY	153
OUTSIDE AIR FAN	TYPE	FC
	AIRFLOW, cfm	**1,700**
	ESP, in.wc.	0.75"
	MOTOR SPEEDS	VFD
	HP	2
EXHAUST AIR FAN	TYPE	FC
	AIRFLOW, cfm	**1,700**
	ESP, in.wc.	1.25"
	MOTOR SPEEDS	VFD
	HP	2
OVERALL DIMENSIONS	LENGTH	36"
	WIDTH	54"
	HEIGHT	37"
	OPERATING WEIGHT, lbs.	420
HEAT RECOVERY CORE	SUMMER OA DB/WB	88 / 72
	WINTER OA DB	-10
	SUMMER SA DB/WB	78.4 / 67.7
	WINTER SA DB	44.9
	SENSIBLE EFFECTIVENESS	69.0%
	SUMMER TOTAL EFF.	50.0%
	WINTER ENTHALPY EFF.	69.0%
	FROST CONTROL	NONE REQUIRED
ELECTRICAL DATA		
	V-PH-HZ	208/3/60
	UNIT MCA	26.0
	MAX FUSE SIZE	30.0
	SUPPLY AND RETURN SMOKE DETECTORS	NO

NOTES:
1. ERU MFR. SHALL PROVIDE VFD'S, NF DISCONNECT, 24VAC TRANSFORMER/RELAY PACKAGE

AIR HANDLING UNIT SCHEDULE

		AHU-1	AHU-2	AHU-3
GENERAL	UNIT NO.	AHU-1	AHU-2	AHU-3
	LOCATION	MECH 001	MECH 001	MECH 218
	SERVICE	ALUMIN ADMIN	ANNEX LOUNG	RECEPTION 110
	DESIGN EQUIPMENT	TRANE CSSA - 10	TRANE CSSA - 4	TRANE CSSA - 4
	SYSTEM TYPE	VARIABLE AIR VOLUME - C02 DEMAND CONTROL	VARIABLE AIR VOLUME - C02 DEMAND CONTROL	VARIABLE AIR VOLUME - C02 DEMAND CONTROL
	CFM STD. AIR	4,650	1,500	2,200
	MIN. OA CFM	800	800	240
	OA SUPPLIED BY	ERU-1	ERU-1	OA LOUVER
	ECONOMIZER BY	EXISTING CHILLER	EXISTING CHILLER	OA/EA LOUVERS
ELECTRICAL	VOLTAGE	208-3-60	208-3-60	208-3-60
	MOTOR EFFICIENCY	PREMIUM	PREMIUM	PREMIUM
	VFD FURN BY	DIV 23	DIV 23	DIV 23
	DISCONNECT SW. FURN BY	THRU VFD	THRU VFD	THRU VFD
	SMOKE DETECTOR (SD)	YES	NO	YES
	SD FURN BY	DIV 26	---	DIV 26
	SD INSTALLED IN DUCT BY	DIV 23	---	DIV 23
	SD WIRED TO HVAC CONTROLS BY	DIV 23	---	DIV 23
	SD WIRED TO FIRE ALARM BY	DIV 26	---	DIV 26
SUPPLY FAN	DIAMETER - TYPE	PLENUM	PLENUM	PLENUM
	AIRFLOW, cfm	4,650	1,500	2,200
	ESP, in.wc.	1.75	1.5"	1.6"
	TSP, in. wc.	3.4	2.8	3.9
	MAX BHP	4.2	1.2	2.5
	MOTOR HP	5	1.5	3
	MOTOR RPM	1800	1800	3600
	VFD	YES	YES	YES
HOT WATER COIL	EAT, deg-F.	40	45	45
	LAT, deg-F.	80	90	90
	TMBTUH	202	73	107
	MIN COIL AREA, sf.	9.19	4.51	4.51
	MAX AIR PD. in. wc.	0.15"	0.10"	0.16
	COIL FACE VELOCITY fpm	506	332	487
	FLUID	30% PROP GLYCOL	30% PROP GLYCOL	30% PROP GLYCOL
	EWT, deg-F	180	180	180
	LWT, deg-F	140	140	140
	GPM	11	4	6
	WATER PD, ft-H2O	1.5	0.43	0.54
CHILLED WATER COIL	ENT. AIR, DB/WB	80/ 63	78.5 / 65.5	80.0 / 67.0
	LVG. AIR, DB/WB	53.4 / 53.0	53.4 / 53.0	53.4 / 53.0
	TMBTUH	146	55	92
	SMBTUH	136	42	64
	NOMINAL TONS	12	5	9
	MIN COIL AREA, sf.	9.98	4.51	4.51
	MAX AIR PD. in. wc.	0.55"	0.44"	1"
	COIL FACE VELOCITY fpm	466	332	487
	FLUID	30% PROP GLYCOL	30% PROP GLYCOL	30% PROP GLYCOL
	EWT, deg-F	45	45	45
	LWT, deg-F	57	57	57
	GPM	27	10	17
	WATER PD, ft-H2O	6	2	5
FILTER MIXING BOX	FILTER MERV RATING	8	8	8

NOTE: AHU-1 & 2 SHALL BE PROVIDED WITH 6 IN BASE RAILS

CONVECTOR SCHEDULE

TAG	STERLING MODEL	STYLE	LENGTH	HEIGHT	DEPTH	MBH	GPM	MAX WPD	PIPE RUNOUT SIZE
CONV-1	SW-A	WALL HUNG SLOPE TOP	40"	18"	4"	5.0	0.8	0.2	1/2"
CONV-2	SW-A	WALL HUNG SLOPE TOP	40"	18"	4"	5.0	0.8	0.2	1/2"

NOTES:
BASE SIZING ON: 170 AWT, 30F TEMP DROP. 30% PG

ELECTRIC CONVECTION HEATER SCHEDULE

TAG	SERVES	CHROMALOX MODEL	VOLTS	PHASE	WATTS	AMPS	BTUH	WEIGHT (LBS.)	NOTES
ECH-1	BATH 203	CAF-20215	208	1	1500	7.2	5118	32	Integral T-Stat

HEAT EXCHANGER SCHEDULE - STEAM TO WATER CONVERTER

UNIT NO.	MFR-MODEL	STEAM INLET PRESS PSIG	STEAM LBS/HR	HEATED FLUID							PASSES	SHELL DIA	OVERALL LENGTH
				GPM	% PROP GLYCOL	E.W.T. DEG F	L.W.T. DEG F	P.D. (FT HD)	TUBE VEL (FPS)	MBH			
HX-1	THRUSH S10-036	5	1,455.70	150	30	160	180	5.86	7.36	1,500	4	10"	56.38"

BAS POINTS LIST - DISTRIBUTION

POINT NAME	QTY	DEVICE	AI	AO	DI	DO	FAIL POSITION	ALARM	NOTES
AIR TERMINAL UNITS - VAV W/REHEAT									
SPACE TEMP	11	WALL TEMP SENSOR	X					HI & LO	
MODULATE DAMPER	13	VAV BOX DAMPER ACTUATOR		X			LAST		
DAMPER POSITION	13	VAV BOX DAMPER ACTUATOR	X						
MODULATE CONTROL VALVE (UNITS W/REHEAT)	11	COIL CONTROL VALVE ACTUATOR		X			OPEN		
MODULATE CONTROL VALVE POSITION	2	COIL CONTROL VALVE ACTUATOR		X					RECEPTION & PRESIDENT'S RM
DA SENSOR	11	TERMINAL DA TEMP SENSOR	X					HI & LO	
AIR TERMINAL UNITS - ERU AIR TO AHU-1 & 2									FRESH AIR METERED TO AHU'S
SPACE CO2	4	WALL CO2 SENSOR	X					HI & LO	SEE B.O.D. NOTES BELOW
SPACE OCCUPANCY SENSING	1	SPACE OCCUPANCY SENSOR			X				RECEPTION ROOM ONLY
ERU									
VFD ENABLE	1	VFD				X			
VFD SPEED	1	VFD		X					
VFD FAULT	1	VFD			X			FAULT	
FAN STATUS	1	VFD			X			FLOW LOSS	
OA DAMPER	1	DAMPER ACTUATOR				X			
EA DAMPER	1	DAMPER ACTUATOR				X			
SUPPLY DUCT STATIC PRESSURE	1	PRESSURE SENSOR	X						
LOW TEMPERATURE	1	FREEZESTAT			X			LOW TEMP	HARD WIRED WITH DI
AHU-1 AND AHU-2									
VFD ENABLE	2	VFD				X			
VFD SPEED	2	VFD		X					
VFD FAULT	2	VFD			X			FAULT	
FAN STATUS	2	VFD			X			FLOW LOSS	
OUTSIDE AIR	2	DUCT TEMP SENSOR	X						
SUPPLY AIR	2	DUCT TEMP SENSOR	X					HI & LO	
SUPPLY DUCT STATIC PRESSURE	1	PRESSURE SENSOR (AHU-1 only)	X						
CHW COIL OUTPUT	2	2-WAY CONTROL VALVE ACTUATOR		X					
HW COIL OUTPUT	2	2-WAY CONTROL VALVE ACTUATOR		X					
AIR FILTER DP FOR DIRTY FILTER	2	DIFFERENTIAL PRESSURE SWITCH			X			FLOW SETPOINT	
DUCT SMOKE DETECTION (AHU-1 & 3)	2	DUCT SMOKE DETECTOR			X			ALARM	
LOW TEMPERATURE	2	FREEZESTAT			X			LOW TEMP	HARD WIRED WITH DI
AHU-3 (SAME AS AHU-1 & 2 W/ EDITS BELOW)	1	ALL POINTS ABOVE FOR AHU-1 & 2							
ECONOMIZER OA & EA DAMPERS	2	DAMPER ACTUATORS		X					MODULATE OA & EA IN SEQUENCE
CABINET UNIT HEATERS & UNIT HEATERS									
SPACE TEMP	4	Stand Alone							
CONTROL VALVE	4	Stand Alone							
CONTROL VALVE POSITION	4	Stand Alone							
FAN ON - OFF	4	Stand Alone							

POINT NAME	QTY	DEVICE	AI	AO	DI	DO	FAIL POSITION	ALARM	NOTES
HEATING PLANT									
PUMP VFD ENABLE	2	VFD				X			
PUMP VFD SPEED	2	VFD		X					
VFD FAULT	2	VFD			X			FAULT	
SECONDARY PUMP FAULT	2	VFD			X			FAULT	
HWS	1	TEMP SENSOR (existing)	X					HI & LO	
HWR	1	TEMP SENSOR (existing)	X						
LOOP PRESSURE	1	PRESSURE SENSOR	X						
CHILLED WATER INTERFACE									
PUMP VFD ENABLE	1	VFD				X			
PUMP VFD SPEED	1	VFD		X					
VFD FAULT	1	VFD			X			FAULT	
SECONDARY PUMP FAULT	1	VFD			X			FAULT	
CHWS - BUILDING	1	TEMP SENSOR	X					HI & LO	
CHWS - CAMPUS	1	TEMP SENSOR	X					HI & LO	
CHWR - TO CAMPUS	1	TEMP SENSOR	X						
LOOP PRESSURE	1	PRESSURE SENSOR	X						
CHWR TEMP CONTROL VALVE	1	MODULATING CONTROL VALVE					OPEN		

POINT NAME	QTY	DEVICE	AI	AO	DI	DO	FAIL POSITION	ALARM	NOTES
MISCELLANEOUS									
SANITARY EJECTOR PUMP STATUS	1	CONTROL PANEL CONTACT			X			FAILURE	
ELEVATOR SUMP PUMP STATUS	0	CONTROL PANEL CONTACT			X			FAILURE	
ELEVATOR SUMP PUMP ALARM	0	CONTROL PANEL CONTACT			X			HIGH LEVEL	

BASIS OF DESIGN NOTES
VARIABLE OCCUPANCY SPACES:
1. 008 LOUNGE
2. 103 CONF
3. 104 CONF
4. 106 RECEPTION

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ALLIED PROJECT No: 14088
Graphic Scale: 1" 1/2" 0 1"

CONSTRUCTION DOCUMENT SET - FOR CONSTRUCTION

REVISIONS

No.	Description	Date
1	Addendum 1	5-20-15
2	Addendum 2	5-27-15
3	Addendum 3	7-2-15
4	Addendum 4	7-24-15

UNIVERSITY OF NEW ENGLAND
PORTLAND, MAINE

ALUMNI HALL RENOVATION

MECHANICAL SCHEDULES

Project Number	14525
Date	August 7, 2015
Drawn by	REW
Checked by	HAG

MH5.0

Scale AS NOTED

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