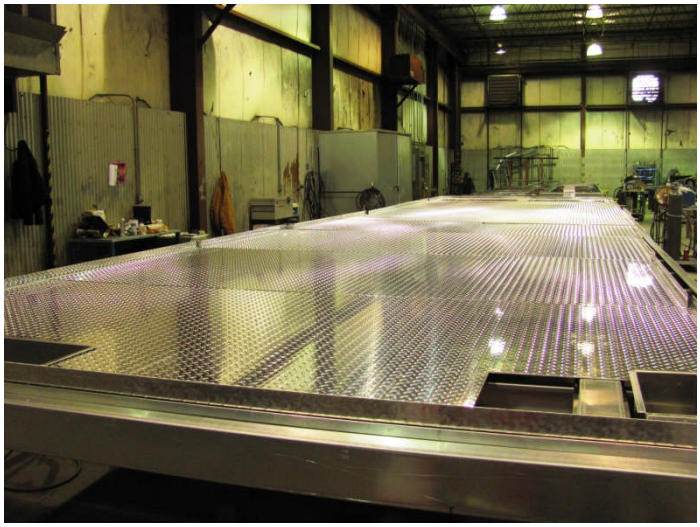
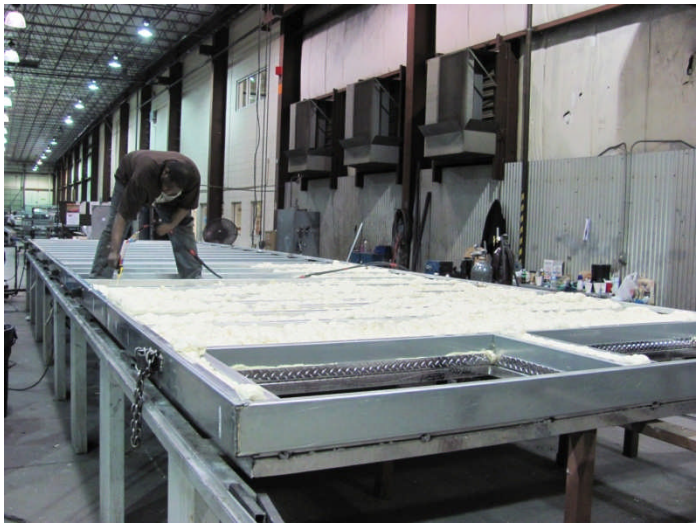
Now In Production

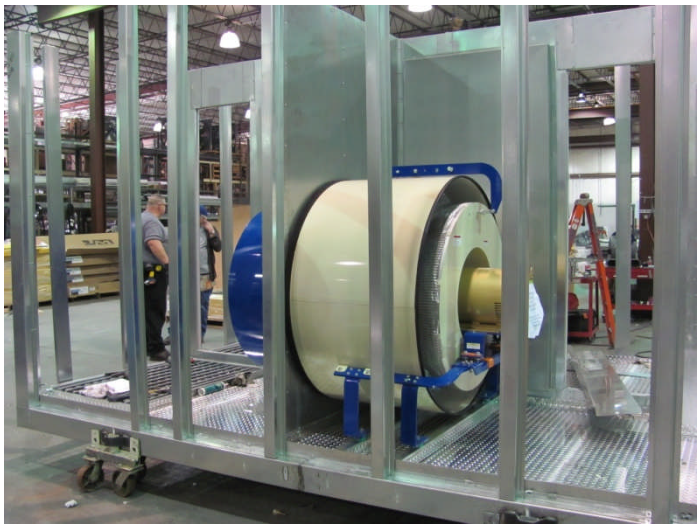
FEBRUARY 2012

Simpson College - KSC, Indianola, IA
Two (2) custom new energy recovery, water source heat pump systems with digital scroll compressors, R-410a refrigerant and walk-in service corridors.
Representative Setpoint Mechanical, 1450 NE 69th PL. Suite 56, Ankeny, IA 50021
Patrick Peterson; P 515-974-6497; F : 515-963-5364





The entire base frames are fully welded and covered with welded aluminum treadplate floors. A 2 inch upturned flange is provided around the base perimeter. The bases are sprayed with 4 inches of polyurethane foam insulation.



Because of the critical sound levels, Acoustiflo blowers with built in diffusers, direct drive TEFC motors and VFDs have been used on supply and exhaust air fans.

Now In Production

FEBRUARY 2012

Simpson College - KSC, Indianola, IA
Two (2) custom new energy recovery, water source heat pump systems with digital scroll compressors, R-410a refrigerant and walking service corridors.
Representative Setpoint Mechanical, 1450 NE 69th PL. Suite 56, Ankeny, IA 50021
Patrick Peterson; P 515-974-6497; F : 515-963-5364

Enthalpy energy recovery wheel, Spiral finned electric heater with SCR controls , aluminum airfoil dampers and piezometer rings are some of features provided.

Multiple independent refrigerant circuits are completely piped. Each circuit is provided with an independent hot gas re-heat coil and a brazed plate water cooled condenser .

Now In Production

FEBRUARY 2012

Simpson College - KSC, Indianola, IA
Two (2) custom new energy recovery, water source heat pump systems with digital scroll compressors, R-410a refrigerant and walking service corridors.
Representative Setpoint Mechanical, 1450 NE 69th PL. Suite 56, Ankeny, IA 50021
Patrick Peterson; P 515-974-6497; F : 515-963-5364

Aluminum exterior panels injected with 2 inch polyurethane foam insulation, hinged access doors with single door handle and viewports, walk-in service corridor with treadplate aluminum floor are additional features provided.

Cabinets are pressure tested for air leaks and units are fully run tested for operational performance by factory technicians before shipping.

ENGINEERING SPECIFICATIONS

JOB NAME	SIMPSON COLLEGE - KSC
LOCATION	INDIANOLA, IA
DATE PREPARED	11/09/11
SEASONS-4 REFERENCE #	B07501
UNIT MODEL #	3SZM38-0433-XXXXX-11RH
UNIT DESIGNATION	RTU-1
SYSTEM VOLTAGE	460/3/60

DESIGN DATA

TOTAL COOLING CAPACITY (BTUH)	520,860
SENSIBLE CAPACITY (BTUH)	331,021
TOTAL AIRFLOW (CFM)	11,000
OUTDOOR AIR (CFM)	0 - 11,000
ESTIMATED REFRIGERANT CHARGE (LBS. R410A)	195
UNIT EER @ AHRI CONDITIONS	14.8
UNIT COP @ AHRI CONDITIONS	3.8

COMPRESSOR SECTION

COMPRESSOR:

TYPE	COPELAND SCROLL
NUMBER	3
STAGES OF CAPACITY	MODULATING

WATER CONDENSER SECTION

TYPE HX/QTY	BRAZED PLATE TYPE / 3
TOTAL HEAT REJECTED (BTUH)	618,361
TYPE FLUID	PROPYLENE GLYCOL MIXTURE 20% (VOL)
ENTERING FLUID TEMP (F)	85.0
DESIGN FLUID TD (F)	10.0
MAX FLUID PRESSURE DROP (FT)	15.0
FLUID FLOW RATE-TOTAL (GPM)	117.0

COOLING COIL SECTION

FACE AREA (SQ-FT)	21.9
ROWS/FPI	6/10
COIL CIRCUITS (NUMBER)	3
TOTAL CAPACITY (BTUH)	520,860
SENSIBLE CAPACITY (BTUH)	331,021
ENTERING AIR TEMP (FDB/FWB)	79.7/66.8
COIL LEAVING AIR TEMP (FDB/FWB)	52.3/50.8
CONDITIONED AIR (CFM)	11,000

HOT GAS REHEAT COIL SECTION (AVAILABLE ONLY DURING SUMMER MODE)

FACE AREA (SQ-FT)	18.4
ROWS/FPI	4/8
COIL CIRCUITS (NUMBER)	3
REHEAT CAPACITY (BTUH)	280,477
ENTERING AIR TEMP (FDB/FWB)	52.3/50.8
LEAVING AIR TEMP (FDB/FWB)	75.7/60.1
CONDITIONED AIR (CFM)	11,000

ENGINEERING SPECIFICATIONS

SUPPLY AIR BLOWER SECTION

TYPE	ACOUSTIFLO FAN MODULE
NUMBER/MODEL	1 / 686q3
AIRFLOW (CFM)	11,000
TOTAL STATIC PRESSURE (TSP) IN WC	5.38
EXTERNAL STATIC (ESP) IN WC	2.00
DESIGN FAN SPEED (RPM)	1,783
FAN BHP	13.0
MOTOR HP	15.0
MOTOR DRIVE	DIRECT DRIVE

RETURN AIR BLOWER SECTION

TYPE	ACOUSTIFLO FAN MODULE
NUMBER/MODEL	1 / 686q4+i
AIRFLOW (CFM)	11,000
TOTAL STATIC PRESSURE (TSP) IN WC	3.20
EXTERNAL STATIC (ESP) IN WC	0.75
DESIGN FAN SPEED (RPM)	1,456
FAN BHP	8.6
MOTOR HP	10.0
MOTOR DRIVE	DIRECT DRIVE

OUTDOOR AIR SECTION - PRE-FILTERS

TYPE	2" PLEATED; MERV 7
NUMBER/SIZE	9/16x25
TOTAL FACE AREA (SQ-FT)	25.0
FACE VELOCITY (FPM)	447

OUTDOOR AIR SECTION - MAIN FILTERS

TYPE	4" PLEATED; MERV 13
NUMBER/SIZE	9/16x25
TOTAL FACE AREA (SQ-FT)	25.0
FACE VELOCITY (FPM)	447

RETURN AIR SECTION - PRE-FILTERS

TYPE	2" PLEATED; MERV 7
NUMBER/SIZE	9/16x25
TOTAL FACE AREA (SQ-FT)	25.0
FACE VELOCITY (FPM)	440

RETURN AIR SECTION - MAIN FILTERS

TYPE	4" PLEATED; MERV 13
NUMBER/SIZE	9/16x25
TOTAL FACE AREA (SQ-FT)	25.0
FACE VELOCITY (FPM)	440

RA ELECTRIC PREHEAT SECTION

TYPE	FINNED TUBULAR
INPUT CAPACITY (KW)	30
CONDITIONED AIR (CFM)	11,000
CONDITIONED AIR TR (F)	8.6
STAGING	SCR

ENGINEERING SPECIFICATIONS

ENERGY RECOVERY WHEEL

SIZE	60 IN DIA / 8 IN DEEP
SUPPLY AIRFLOW (SCFM)	5,500
RETURN AIRFLOW (SCFM)	5,500
PURGE AIRFLOW (SCFM)	179
SUMMER ENTERING AIR TEMP (FDB/FWB)	95.0/78.0
SUMMER LEAVING AIR TEMP (FDB/FWB)	81.4/68.5
WINTER ENTERING AIR TEMP (FDB/FWB)	-20.0/-20.0
WINTER LEAVING AIR TEMP (FDB/FWB)	51.0/38.3
EFFECTIVENESS (%)	0.76
PRESSURE DROP (IN-WC)	0.77
NOTE: ENERGY WHEEL PROVIDED WITH VSD FOR FROST PREVENTION	

WATER CONDENSER SECTION (WINTER MODE - EVAPORATOR)

TYPE HW / QTY.	BRAZED PLATE / 3
TYPE FLUID	PROPYLENE GLYCOL MIXTURE 20% (VOL)
ENTRING FLUID TEMP. (DEG F)	40.0
LEAVING FLUID TEMP. (DEG F)	33
MAX FLUID PRESSURE DROP (FT)	15.0
FLUID FLOW RATE - TOTAL (GPM)	114

HEATING COIL SECTION (WINTER MODE - CONDENSER)

FACE AREA (SQ-FT)	21.9
ROWS/FPI	6/10
COIL CIRCUITS (NUMBER)	3
TOTAL HEATING CAPACITY (BTUH)	465,100
ENTERING AIR TEMP. (DEG F)	51.0
COIL LEAVING AIR TEMP (DEG F)	89.8
CONDITIONED AIR (CFM)	11,000

UNIT SECTION WEIGHTS (LBS)

CORRIDOR SECTION WEIGHT	9,800
SA PLENUM / RA PLENUM SECTION WEIGHT	12,750
CONTROL PANEL / VESTIBULE / ENERGY WHEEL SECTION	15,100

UNIT WEIGHT (LBS) 37,650

ENGINEERING SPECIFICATIONS
ELECTRICAL DATA

JOB NAME SIMPSON COLLEGE - KSC

LOCATION INDIANOLA, IA

DATE PREPARED 11/09/11

SEASONS-4 REF NUMBER B07501 **UNIT MODEL** 3SZM38-0433-XXXXX-11RH

UNIT DESIGNATION RTU-1

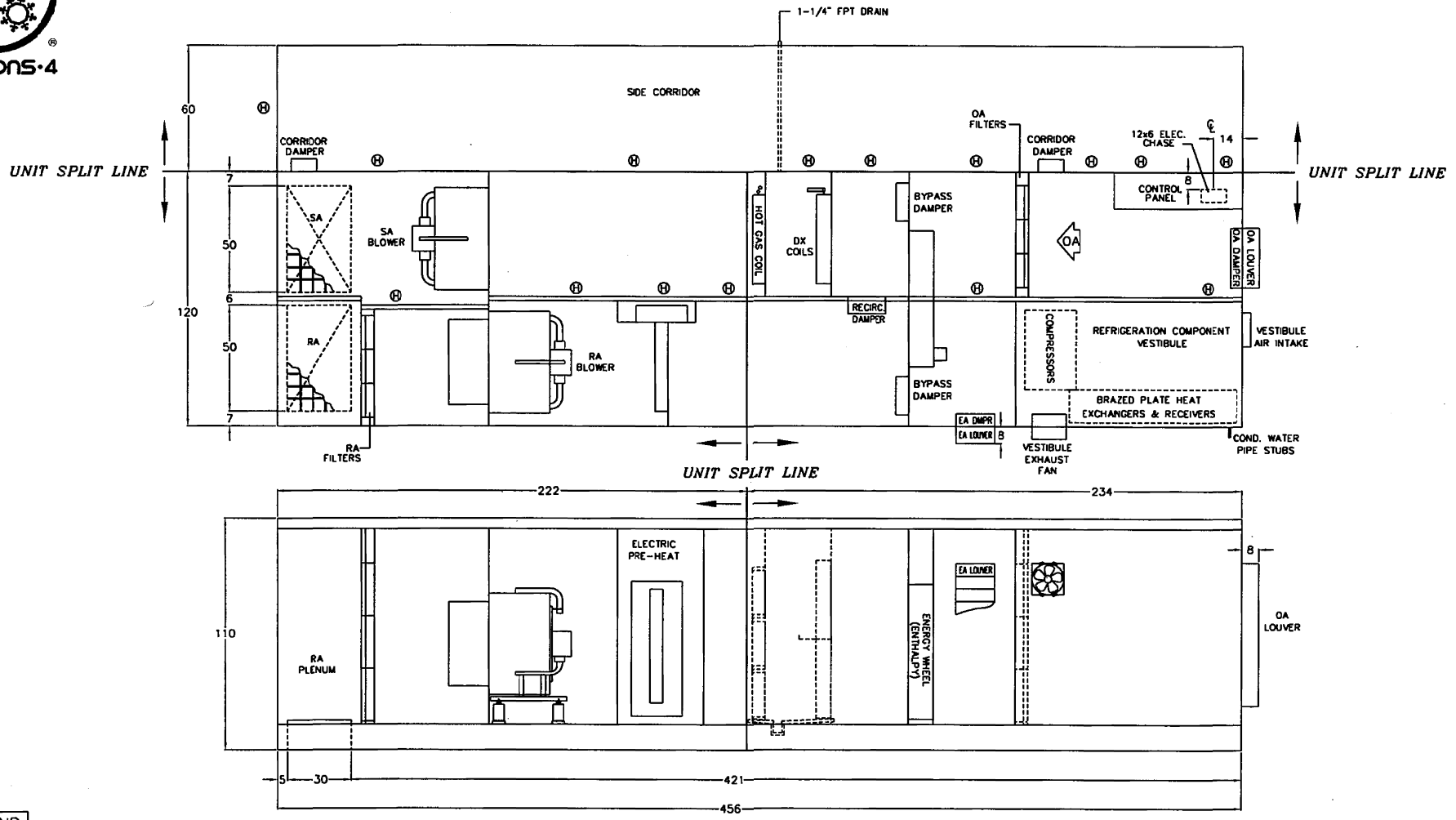
SYSTEM VOLTAGE 460 **CONTROL VOLTAGE** 120 **EXT. VOLTAGE** 24

ITEM	QTY	HP	FLA	LRA	KW	TYPE
COMP 1	1	***	25.7	150.0	10.5	ZPD154KCE
COMP 2 & 3	2	***	25.7	150.0	10.6	ZP154KCE
SA FAN	1	15.0	17.7	118.0	10.4	Bald
RA FAN	1	10.0	12.5	96.0	7.0	Bald
ER WHEEL	1	0.5	1.0	10.8	0.5	GSTD
RA ELECT PREHEAT	1		37.7		30.0	
CONTROL CIRCUIT			3.3			
CONVENIENCE OUTLET			3.3			10 Amps
VESTIBULE HEATER	1		6.3		5.0	
TOTALS (COOL)	6	***	114.8		49.7	
TOTALS (HEAT)	10	***	210.2		106.0	

M.C.A. 216 (MINIMUM CIRCUIT AMPACITY)

M.O.P. 225 (MAXIMUM OVERLOAD PROTECTION)

S.C.C.R. 65,000 (SHORT CIRCUIT CURRENT RATING)



LEGEND

Ⓗ	HINGED ACCESS DOOR
Ⓛ	LIFT-OFF ACCESS DOOR
Ⓑ	BALANCING DAMPER

NOTE: O.A./E.A. LOUVERS, FURNACE VENT CAPS, ETC. MAY REQUIRE FIELD INSTALLATION

REV. #	BY	DATE	DESCRIPTION
0	TDM	11/10/2011	ORIGINAL ISSUE

DIMENSIONAL DATA

SIMPSON COLLEGE – KSC
INDIANOLA, IA
RTU-1

DRAWN BY	TDM
DATE	11/10/2011
SCALE	N/A
REVISION #	0
DWG. NAME	B075D01TM