MONTANA
STATE UNIVERSITY

FACILITIES PLANNING, DESIGN & CONSTRUCTION
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REQUEST FOR PROPOSAL

Project Title: Cooley Laboratory Renovation
Location: Montana State University

PPA No.: 10-0023
RFP No.: 17
Date: 12/09/11

To: Dick Anderson Construction
4498 Jackrabbit Lane
Bozeman, MT 59718

Attention: Platisha

From: Cecilia Vaniman, Project Manager
Cooley Lab Renovation
Montana State University

Attention:

In order to expedite the Work and avoid or minimize delays in the Work the following proposal is requested. Please return a response by: 12/19/11

Date Sent: 12/09/11
Date Received:

RFP Unscheduled Booster Coils and ERV Controls Revisions

Reference Drawings: M0.2, M0.5, and M5.4.

Reference Specifications: N/A

Booster coils BC-115, BC-208, and BC-411 and their associated flow balance devices were shown on the plans but were not scheduled. See attached drawing CM-13 for changes to the schedules.

Energy Recovery Ventilator ERV-1 temperature controls diagram and sequence has been revised for this project. Differential pressure sensors and a damper have been deleted. See attached drawing CM-14 for changes.

Attachment: CM-13, CM-14.

This RFP is for pricing purposes only. The contractor shall not proceed with the scope of work described within until pricing is approved by the owner in writing.

Distribution:
- ☐ Owner
- ☐ Agency
- ☒ Architect
- ☒ Contractor
- ☐ Engineer
- ☐ Other

REFERENCE SHEET M0.2 & M0.5

HEATING/COOLING COIL SCHEDULE – CONTINUED

UNIT	MANUFACTURER	TYPE	QTY	SIZE (FHxFL)	ROWS	FPI	FV (FPM)	MBH	AIR					FLUID				NOTES
									ACFM	S.P.	EDB	EWB	LAT	GPM	EWT	LWT	WPD	
BC 115	McQUAY	HOT WATER	1	9"x9"	2	12	267	5.2	150	0.05	55	–	92.3	0.5	140	120	0.2	(3) 1ST FLOOR COMMON EQUIP RM
BC 208	McQUAY	HOT WATER	1	9"x9"	2	12	356	6.9	200	0.18	55	–	92.3	0.7	140	120	0.2	(3) 2ND FLOOR SERVER ROOM
BC 411	McQUAY	HOT WATER	1	9"x9"	2	12	356	6.9	200	0.18	55	–	92.3	0.7	140	120	0.2	(3) 4TH FLOOR COMMON EQUIP RM

(3) DUCT MOUNTED HOT WATER BOOSTER COIL.

DATUM ELEVATION FOR ACFM IS 4,500 FT, STATIC PRESSURE IS INCHES WATER COLUMN, TEMPERATURES ARE IN DEGREES FAHRENHEIT, FLUID IS 35% PROPYLENE GLYCOL/65% WATER, PRESSURE DROP IS IN FEET OF WATER COLUMN. DIMENSIONS ARE IN INCHES. FACE VELOCITY (FV) IS IN FEET PER MINUTE.

FLOW BALANCE DEVICE SCHEDULE (CONTINUED)

UNIT SERVED	DEVICE TYPE	MFR	RETURN DEVICE	SUPPLY DEVICE	BALANCE FLOW (GPM)	NOMINAL FLOW RANGE	NOTES
BC 115	AUTO	FLOW DESIGN	YR0075	YC075	0.5	2 –32 PSIG	(3)
BC 208	AUTO	FLOW DESIGN	YR0075	YC075	0.7	2 –32 PSIG	(3)
BC 411	AUTO	FLOW DESIGN	YR0075	YC075	0.7	2 –32 PSIG	(3)

(3) AUTOMATIC FLOW BALANCE DEVICE FURNISHED WITH STAINLESS STEEL FLOW ELEMENT, DUAL TEMPERATURE/PRESSURE PORTS, AND OPTIONAL UNION. SEE COIL PIPING DETAILS. FURNISH WITH INDIVIDUAL COMPANION SUPPLY COMPONENTS SUCH AS STRAINER WITH BLOW DOWN VALVE AND CAP, T&P TEST PORT, AND UNION. SEE SPECIFICATION SECTION 15704. SCHEDULED DEVICE MODEL NUMBER MUST BE APPROVED BY OWNER FOR USE OVER INDIVIDUAL COMPONENTS.

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BOOSTER COILS & FLOW BALANCE DEVICES

MSU–COOLEY LAB RENOVATION
BOZEMAN, MONTANA

ISSUE:
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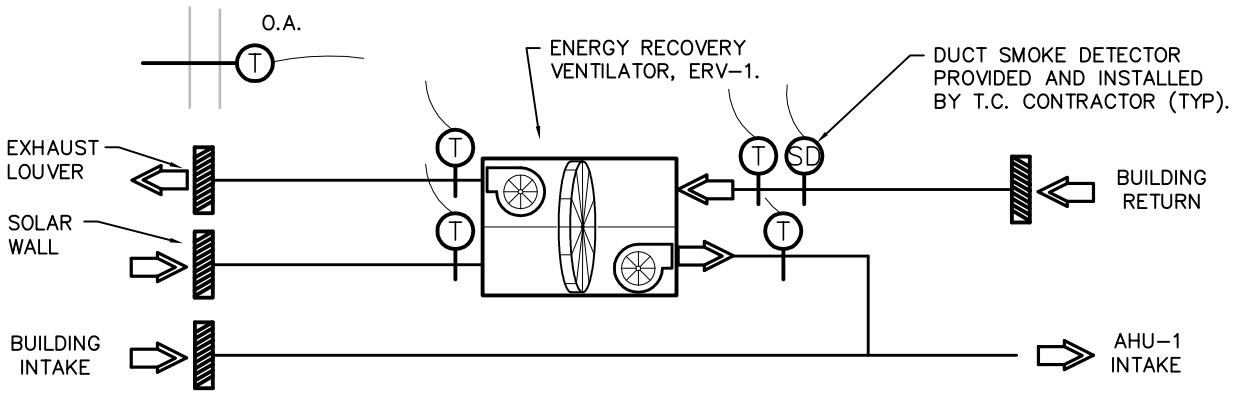
DATE 12/9/2011
PROJECT NUMBER 100104

DRAWING NUMBER CM-13
OF



ENERGY RECOVERY VENTILATOR (ERV) CONTROLS

COMPONENTS OF CONTROL: ENERGY RECOVERY VENTILATOR.

DUTY: TO PROVIDE EXHAUST FOR RESTROOMS, CUSTODIAL, ELECTRICAL, AND IT ROOMS..

SCHEDULE: CONSTANT OPERATION ON NORMAL POWER.

APPLIED CONTROL EQUIPMENT: DDC/ELECTRONIC TEMPERATURE, DIFFERENTIAL PRESSURE, FAN CURRENT SENSORS/TRANSMITTERS, AND ALL NECESSARY RELAYS AND TRANSFORMERS.

SEQUENCE OF OPERATION:

INTERNAL DAMPERS:

INTERNAL EXHAUST AND INTAKE DAMPERS SHALL BE PROVIDED WITH THE ERV UNIT AND SHALL OPEN AND CLOSE UNDER THE UNITS OWN CONTROLS.

ECONOMIZER CONTROL:

WHEN THE OUTDOOR AIR TEMPERATURE IS BETWEEN THE RESET DISCHARGE TEMPERATURE FOR THE AIR HANDLERS (SEE CHILLED WATER COOLING COIL SEQUENCE) AND 75°, THE DDC CONTROLLER SHALL DISABLE THE ENERGY WHEEL AND SHALL INITIATE AN ALERT INDICATING THAT THE ERV IS IN ECONOMIZER MODE.

FROST CONTROL:

THE ERV SHALL OPERATE ON INTERNAL CONTROLS AS PROGRAMMED BY DISABLING THE SUPPLY AIR FAN AND OPERATING ONLY THE RETURN/EXHAUST AIR FAN.

SUMMER OPERATION:

WHEN THE OUTSIDE AIR TEMPERATURE IS 75°F OR GREATER, THE ERV SHALL OPERATE THE RETURN/EXHAUST AIR FAN ONLY. THE ERV DESICANNT WHEEL SHALL CONTINUE TO ROTATE.

MONITORING AND ALARMS:

CURRENT TRANSDUCERS SHALL MEASURE THE CURRENT IN ONE LEG OF EACH MOTOR. HIGH AND LOW LIMIT FAILURE ALARMS SHALL BE SET TO ±10% OF THE INITIAL AMPERAGE READING AND PROGRAMMED WITH AN ADJUSTABLE TIME DELAY FOR FAN START–UP.

FACTORY PRESSURE SWITCH SHALL BE PROVIDED AND FIELD CALIBRATED IN BOTH THE SUPPLY AND EXHAUST AIR STREAMS MONITORING THE FILTER STATUS. EITHER PRESSURE SWITCH SHALL INITIATE A MAINTENANCE ALARM WHEN THE FIELD CALIBRATED PRESSURE SETTING IS EXCEEDED.

A FACTORY INSTALLED WHEEL ROTATION SENSOR SHALL BE PROVIDED WITH THE UNIT AND FIELD WIRED TO THE DDC TO INDICATE WHEEL ROTATION FAILURE.

THE ERV UNIT SHALL HAVE AN HOA SWITCH. THE DDC CONTROL PANEL SHALL START OR STOP THROUGH THE "AUTO" POSITION, SHALL INDICATE AN "OVERRIDE" ALARM IN THE "HAND" POSITION, AND SHALL INDICATE AN "OFF" ALARM IN THE "OFF" POSITION.

SMOKE DETECTION:

UPON SMOKE DETECTION IN THE BUILDING EXHAUST DUCT, THE ERV UNIT SHALL DEACTIVATE.

REFERENCE SHEET M5.4.

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MSU–COOLEY LAB RENOVATION
BOZEMAN, MONTANA

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DATE 12/9/2011
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DRAWING NUMBER CM–14
OF