



## **SCHEMATIC DESIGN APPROVAL**

**Name of Project:** *UAF Campus Wide Energy Fairbanks Campus*

**Project Type:** R&R

**Location of Project:** *UAF, Fairbanks Campus, Fairbanks*

**Project Number:** *2012028*

**Date of Request:** *August 14, 2012*

<b>Total Project Cost:</b>	<b>\$ 6,000,000</b>	
<b>Approval Required:</b>	<b>Full Board</b>	
<b>Prior Approvals:</b>	<b>Preliminary Administrative Approval</b>	<b>August 08, 2012</b>

A Schematic Design Approval (SDA) is required for all Capital Projects with a Total Project Cost in excess of \$250,000.

SDA represents approval of the location of the facility, its relationship to other facilities, the functional relationship of interior areas, and the basic design including construction materials, mechanical, electrical, technology infrastructure and telecommunications systems, and any other changes to the project since formal project approval. Unless otherwise designated by the approval authority or a material change in the project is subsequently identified, SDA also represents approval of the proposed cost of the next phases of the project and authorization to complete the design development process, to bid and award a contract within the approved budget, and to proceed to completion of project construction. Provided however, if a material change in the project is subsequently identified, such change will be subject to the approval process.

### Action Requested

**“The Facilities and Land Management Committee recommends that the Board of Regents approve the Schematic Design Approval request for the University of Alaska Fairbanks – UAF Campus Wide Energy Fairbanks Campus as presented in compliance with the campus master plan, and authorizes the University administration to award a contract within the approved budget, and to proceed to completion of the project not to exceed a Total Project Cost of \$6,000,000. This motion is effective September 27, 2012.”**

### Project Abstract

The project will implement energy upgrades to ten buildings on the UAF Fairbanks campus based on the results of an energy audit performed through a grant made available from AHFC and will reduce the energy consumption of the buildings selected.

## RATIONALE AND REASONING

### Background

UA has been working to increase energy efficiency of buildings across the system. Over the last twelve months all three MAUs performed energy audits on many campuses across the state through a competitive RFP process. This RFP process is unique in that the RFP selects the initial consultant to perform the audit and then that consultant has the option to become the contractor to implement the work effort that is a result of the audit. Due to this unique approach, Formal Project Approval was eliminated and Schematic Design Approval is being requested.

The audits constituted a thorough study of the existing lights, fans, motors, HVAC systems, building envelopes and cooling in the buildings selected for review. The result of each energy audit is a design and firm bid to implement a recommended list of Energy Efficiency Measures that address specific energy issues within the buildings. Should these measures be performed by the audit consultant, the consultant will guarantee the savings to the University. This project will take the recommendations from the audits and implement them.

### Programmatic Need

No specific programs will be impacted directly by this project. The project is aimed at improving the overall efficiency and functionality of campus infrastructure.

### Project Scope

This project will implement the Energy Efficiency Measures (EEMs) identified in the Investment Grade Energy Audits performed by Siemens Building Technologies. Services to be performed include the installation, modification, and commissioning of new and existing energy systems, and verification and reporting of energy savings in ten buildings on the UAF main campus. The buildings to receive the energy upgrades are Duckering, Student Recreation Center, Patty Center, Patty Ice Arena, the Fine Arts Complex, Stevens Hall, Gruening, Wood Center, Elvey, and Irving 1.

A project goal is to meet or exceed an aggregate 12 year payback for the combined EEMs.

### Project Impacts

The project will impact the maintenance requirements of the ten affected buildings. Maintenance call-outs should be significantly reduced. Energy consumption will be reduced greatly as well.

### Variiances

None

### Total Project Cost and Funding Sources

Funding Title	Fund Account	Amount
FY13 General Fund	571352	\$6,000,000
<b>Total Project Cost</b>		<b>\$6,000,000</b>

Project Schedule

DESIGN

Conceptual Design	July 2012
Formal Project Approval	September 2012
Schematic Design	July 2012
Schematic Design Approval	September 2012
Construction Documents	September 2012

BID & AWARD

Advertise and Bid	N/A
Construction Contract Award	October 2012

CONSTRUCTION

Start of Construction	November 2012
Construction Complete	July 2013
Date of Beneficial Occupancy	Continual through construction
Warranty Period	One year

Project Delivery Method

This project will be completed through a contract to Siemens Building Technologies. They were selected through a competitive RFP process to perform energy audits with an option to implement the results of those audits.

Supporting Documents

- One-page Project Budget
- Proposed List of Energy Efficiency Measures

Affirmation

This project complies with Regents' Policy and the campus master plan.

UNIVERSITY OF ALASKA		
Project Name: Campus Wide Energy Audits Main Campus		
MAU: UAF		
Building: 0	Date:	August 15, 2012
Campus: UAF	Prepared By:	JLC
Project #: 2012028CWEMC	Account No.:	Multiple
Total GSF Affected by Project: 855000		
PROJECT BUDGET	FPA Budget	SDA Budget
<b>A. Professional Services</b>		
Advance Planning, Program Development		\$0
Consultant: Design Services		\$0
Consultant: Construction Phase Services		\$0
Consul: Extra Services (List: _____)		\$0
Site Survey		\$0
Soils Testing & Engineering		\$0
Special Inspections		\$0
Plan Review Fees / Permits		\$0
Other		\$0
<i>Professional Services Subtotal</i>		\$0
<b>B. Construction</b>		
General Construction Contract (s)		\$5,350,000
Other Contractors (List: _____)		\$0
Construction Contingency		\$65,000
<i>Construction Subtotal</i>		\$5,415,000
<i>Construction Cost per GSF</i>		<b>\$6.33</b>
<b>C. Building Completion Activity</b>		
Equipment		\$0
Fixtures		\$0
Furnishings		\$0
Signage not in construction contract		\$0
Move-Out Cost/Temp. Reloc. Costs		\$0
Move-In Costs		\$0
Art		\$0
Other (List: _____)		\$0
OIT Support		\$0
Maintenance/Operation Support		\$5,000
<i>Building Completion Activity Subtotal</i>		\$5,000
<b>D. Owner Activities &amp; Administrative Cost</b>		
Project Planning and Staff Support		\$243,900
Project Management		\$321,000
Misc Expenses: Advertising, Printing, Supplies		\$0
<i>Owner Activities &amp; Administrative Cost Subtotal</i>		\$564,900
<b>E. Total Project Cost</b>		<b>\$5,984,900</b>
<i>Total Project Cost per GSF</i>		<b>\$7.00</b>
<b>F. Total Appropriation(s)</b>		<b>\$6,000,000</b>

Table I.2  
Proposed EEM Summary

UAF Campus Wide Energy - MAIN CAMPUS: Savings By Facility

FACILITY	ENERGY EFFICIENCY MEASURES (EEM) INCLUDED	kWh Savings	kWh \$ Savings	Therm Savings	Therm \$ Savings	Water kGal Savings	Water \$ Savings	SAVINGS \$	ESTIMATED ASSOCIATED SAVINGS \$	COST \$	SIMPLE PAY-BACK YEARS
									SAVINGS \$		
Student Rec Center	EEM 1.01, 5.01, 5.02, 9.01	164,606	\$ 31,251	9,756	\$ 9,756			\$ 41,003	\$ 3,991	\$ 237,355	5.3
Patty Ice Arena	EEM 1.01, 5.01, 5.02, 5.04, 7.03, 9.01	251,716	\$ 47,789	7,079	\$ 7,079			\$ 54,869	\$ 5,216	\$ 398,992	6.6
Patty Center	EEM 1.01, 5.01, 5.04, 5.06, 7.01, 7.02, 9.01, 9.02	318,336	\$ 60,437	6,152	\$ 6,152			\$ 66,589	\$ 6,730	\$ 944,536	12.9
Stevens Hall	EEM 1.01, 7.02	35,397	\$ 6,720	(712)	\$ (712)			\$ 6,007	\$ 834	\$ 73,630	10.8
Gruening Building	EEM 1.01, 7.01, 9.01	390,562	\$ 74,149	(4,883)	\$ (4,883)			\$ 69,274	\$ 7,114	\$ 665,137	8.7
Wood Center	EEM 1.01, 4.01, 7.02, 9.01, 11.05	108,630	\$ 20,624	4,031	\$ 4,031			\$ 24,654	\$ 2,394	\$ 353,335	13.1
Fine Arts Complex	EEM 1.01, 5.04	460,019	\$ 87,335	(8,359)	\$ (8,359)			\$ 78,970	\$ 10,765	\$ 1,019,790	11.4
Duckering Building	EEM 1.01, 5.08, 5.10, 7.02, 9.01	326,365	\$ 61,961	(4,291)	\$ (4,291)	2,839	\$ 33,013	\$ 90,676	\$ 7,879	\$ 804,391	8.2
Irving	EEM 1.01, 7.01	146,316	\$ 27,778	(2,624)	\$ (2,624)			\$ 25,154	\$ 3,073	\$ 302,509	10.7
Elvey	EEM 1.01, 4.02, 5.06, 7.01, 9.03	64,845	\$ 12,311	6,422	\$ 6,422			\$ 18,741	\$ 210	\$ 247,372	13.1
	MV Setup									\$ 41,955	
	Warranty									\$ 70,342	
	SOA FEE 1% - \$5,000 Max									\$ 5,000	
<b>SIEMENS PROJECT TOTAL</b>		<b>2,266,792</b>	<b>\$ 430,355</b>	<b>12,570</b>	<b>\$ 12,570</b>	<b>5,677</b>	<b>\$ 66,026</b>	<b>\$ 475,938</b>	<b>\$ 48,237</b>	<b>\$ 5,164,344</b>	<b>9.9</b>
10% DD&C OH costs										\$ 516,434	
<b>TOTAL INCLUDING DD&amp;C OH costs</b>								<b>\$ 475,938</b>	<b>\$ 48,237</b>	<b>\$ 5,680,778</b>	<b>10.8</b>

EEM #	FACILITY	ENERGY EFFICIENCY MEASURE (EEM) DESCRIPTION
1.01	SRC/Patty ICE/Patty CTR/Stevens Hall/Gruening/Wood Center/FA/Duckering/Irving 1/Elvey	Lighting Retrofits
4.01	Wood Center	Exhaust Hood - Energy Conservation
4.02	Elvey	HVAC Improvement - Unused Exhaust System Removal
5.01	SRC/Patty ICE/Patty CTR	Unoccupied Heating - OA Damper Closure
5.02	SRC/Patty ICE	Unoccupied Temperature Setback
5.04	Patty ICE/Patty CTR/FA Concert	Demand Ventilation
5.06	Patty Center/Elvey	Control Upgrade - Baseboard Heating Zones
5.08	Duckering	Exhaust Fan - Unoccupied ShutDown
5.10	Duckering	Control Upgrade - Domestic Water Cooling Control
7.01	Patty CTR/Gruening/Elvey/Irving 1	Fan Speed Control
7.02	Patty CTR/Stevens Hall/Wood Center/Duckering	Motor Replacements
7.03	Patty ICE	Refrigerant Compressors - VFD and Motor Replacement
9.01	SRC/Patty ICE/Patty CTR/Gruening/Wood Center/Duckering	Entrance Door Improvements
9.02	Patty CTR	Window and Seal Replacement - Northwest Wall
9.03	Elvey	Envelope Improvements - Wall Patch
11.05	Wood Center	Ice Machine Pre-Cool Water System

University of Alaska Fairbanks  
Campus Wide Energy, Main Campus  
Detailed Energy Audit