

All Agency Project Request

2013 - 2015 Biennium

<u>Agency</u>	<u>Institution</u>	<u>Building No.</u>	<u>Building Name</u>
University of Wisconsin	Superior	285-0M-0002	BARSTOW SCIENCE HALL

<u>Project No.</u>	14I2Z	<u>Project Title</u>	Barstow Hall Fume Hood/Exhaust Renv
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Project Intent

This project provides investigation and research, pre-design, and design services to upgrade the building HVAC control systems, upsize the exhaust duct for one lab space, replace fume hood air monitors, and re-balance the entire building to provide adequate ventilation for all building spaces and adequate fume hood exhaust volumes. Control sequences will be upgraded to minimize energy use. The HVAC controls, fume hoods, and exhaust system will be evaluated to identify deficiencies, develop design solution alternatives, and recommend appropriate corrective measures.

Project Description

Project work includes renovating the air handler filter racks by replacing filter rack gaskets and repairing assembly structures. The branch exhaust duct from the main exhaust duct to Lab 010A will be upsized. New terminal air units will be installed in the general supply, exhaust, and laboratory exhaust systems and controls will be replaced. Fume hood face velocity monitors will be replaced. Lab fume exhaust fan controls will be replaced. Pneumatic controls will be upgraded at various HVAC units to restore operation to original system design conditions. Control sequences will be modified to optimize air flow and energy efficiency. The general building supply system, general building exhaust system and the fume hood exhaust system will be rebalanced.

Project Justification

A study (12E2Q) was conducted to investigate various HVAC system deficiencies. Deficiencies identified include inadequate intake air supply filtration, inadequate fume hood exhaust, inadequate lab air supply, and HVAC control issues on both supply and exhaust systems. These deficiencies result in fume hood face velocities that are below the standard of 100 feet per minute at approximately one-third of the 28 fume hoods and improper building pressurization due to inability to balance the supply and exhaust systems. The supply duct to Lab 010A is under size and should be replaced to provide design air volume. The air filter racks need to be renovated to prevent bugs from entering the supply air distribution system. Various damper actuators and controls have failed and should be replaced. The fume hood face velocity monitors do not accurately indicate air flow rates and they should be upgraded. The supply and exhaust fan control systems need to be replaced to restore unoccupied mode reduced air volume design condition to reduce energy use. The entire building needs to be re-balanced to obtain proper air volumes and space pressurization.

A/E Consultant Requirements

A/E Selection Required?

Consultants should have specific expertise and experience in the design and coordination of heating, ventilating, and cooling systems, and laboratory fume hood systems as part of a design team. Work includes site surveys, acquiring field data, and verifying as-built conditions to assure accurate development of design and bidding documents, and production of necessary design and bidding documents. Consultants should indicate specific projects from past experience (including size, cost, and completion date) in their letter of interest and when known, include proposed consulting partners and specialty consultants.

The consultant will verify project scope, schedule, and budget estimates, and recommend modifications as required to complete the specified project intent. The consultant will prepare a pre-design document to establish an appropriate project scope, budget, and schedule prior to the university seeking authority to construct from the Board of Regents and State Building Commission.

Commissioning

- Level 1
- Level 2

All Agency Project Request

2013 - 2015 Biennium

<u>Project Budget</u>	<u>Funding Source(s)</u>	<u>Total</u>
Construction Cost: \$	GFSB - Facilities Maintenance & Renovation [Z060]	\$0
Haz Mats: \$	PRSB - []	\$0
Construction Total: \$	Agency/Institution Cash [AGF0]	\$25,000
Contingency: 15% \$	Gifts	\$0
A/E Design Fees: 8% \$	Grants	\$0
DFD Mgmt Fees: 4% \$	Building Trust Funds [BTF]	\$0
Equipment/Other: \$0	Other Funding Source	\$0
\$625,200		\$25,000

Project Schedule

SBC Approval: 05/2015
 A/E Selection: 10/2014
 Bid Opening: 03/2016
 Construction Start: 05/2016
 Substantial Completion: 09/2016
 Project Close Out: 12/2016

Project Contact

Contact Name: Dustin Johnson
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 Telephone: (715) 394-8123 x

Project Scope Consideration Checklist

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1. Will the building or area impacted by the project be occupied during construction? If yes, explain how the occupants will be accommodated during construction.
All project work will be coordinated through campus physical plant staff to minimize disruptions to daily operations and activities.
2. Is the project an extension of another authorized project? If so, provide the project #...
12E2Q.
3. Are hazardous materials involved? If yes, what materials are involved and how will they be handled?
Hazardous materials abatement is not anticipated on this project. Comprehensive building survey inventory data is not available on Wisconsin's Asbestos & Lead Management System (WALMS) <http://walms.doa.state.wi.us/>.
4. Will the project impact the utility systems in the building and cause disruptions? If yes, to what extent?
All project work will be coordinated through campus physical plant staff to minimize disruptions to daily operations and activities.
5. Will the project impact the heating plant, primary electrical system, or utility capacities supplying the building? If yes, to what extent?
6. Are other projects or work occurring within this project's work area? If yes, provide the project # and/or description of the other work in the project scope.
7. Have you identified the WEPA designation of the project...Type I, Type II, or Type III?
Type III.

All Agency Project Request

2013 - 2015 Biennium

8. Is the facility listed on a historic register (federal or state), or is the facility listed by the Wisconsin Historical Society as a building of potential historic significance? If yes, describe here.
9. Are there any other issues affecting the cost or status of this project?
10. Will the construction work be limited to a particular season or window of opportunity? If yes, explain the limitations and provide proposed solution.
Project work is seasonal. Preferred project work schedule should be limited to late spring, summer, and/or early fall months if possible.
11. Will the project improve, decrease, or increase the function and costs of facilities operational and maintenance budget and the work load? If yes, to what extent?
Completion of this project will decrease operational maintenance costs.
12. Are there known code or health and safety concerns? If yes, identify and indicate if the correction or compliance measure was included in the budget estimate, or indicate plans for correcting the issue(s).
The fume hood exhaust system does not adequately exhaust harmful vapors and the fume hood face velocities do not meet health and safety codes. The fume hood face velocities fluctuate greatly depending on how many hoods are in operation. The inability to balance or control the ventilation systems is placing students and staff at risk.
13. Are there potential energy or water usages reduction grants, rebates, or incentives for which the project may qualify (i.e. Focus on Energy <<http://www.focusonenergy.com>> or the local utility provider)? If yes, describe here.
14. If this is an energy project, indicate and describe the simple payback on state funding sources in years and the expected energy reduction here.