

September 16-17 2015

INFORMATION ITEM

Upgrade Building Automation Controls – Lommasson Center – University of Montana – Missoula

THAT

In accordance with Board of Regents Policy 1003.7, the Board of Regents of the Montana University System acknowledges this informational item and understands the University of Montana will be seeking approval at a later date.

Existing building commissioning services were performed on the Lommasson Center and it was determined that an upgrade to the building controls would provide energy savings and improved occupant comfort. Total project costs: 1.2 million

EXPLANATION

The Lommasson Center was constructed in 1955 and has undergone multiple additions and renovations over the intervening years. The current building is a student-funded auxiliary that hosts a variety of uses and occupants, from enrollment services to student dining facilities. The buildings control systems vary from unitary systems with their own local, independent control, to old-generation pneumatic systems, to modern direct digital controls (ddc). There is however no “supervisory” controller that integrates all these diverse systems and signals. Even Lommasson’s advanced ddc systems are split between two competing control products which don’t crosstalk. The building cannot be operated in a coordinated fashion and therefore has many instances of simultaneous heating and cooling as the different controllers compete with each other. **This building is UM’s #1 energy consumer.**

McKinstry Essention Inc. is the engineering services company that was hired to perform existing building commissioning. McKinstry Essention Inc. identified over 70 Facility Improvement Measures (FIMs) ranging from minimal cost to \$1.2M. Many low-cost FIMs have already been implemented. This control upgrade project is the costliest – the range of magnitude (ROM) estimate is \$1.2M – but it was also determined by McKinstry Essention Inc. to be the most pivotal measure that can have the best impact on occupant comfort, building operations and energy savings. ROM annual savings are \$100,000 with an estimated simple payback of 12 years.

For a recent example of the potential effectiveness of such a measure, consider the success UM has had with re-commissioning the Chemistry building. Last year, it was our #1 energy consumer but with the simple addition of a supervisory controller, the natural gas usage decreased 84% which produced annual savings of over \$80,000 (see Attachment 1). A similar effect is anticipated at Lommasson Center.

UM intends to complete its due diligence with McKinstry Essention Inc. to fully define the scope of work, prepare the engineering design and cost estimate, and present the final evaluation at a subsequent Board of Regents meeting for approval at that time. It is expected this project will be funded through the following sources:

1. Plant Funds (Auxiliary)	\$990,000
<u>2. InterCap Loan</u>	<u>\$210,000</u>
Total project cost	\$1,200,000

ATTACHMENTS

Attachment #1 – Effect of Control Supervisor on Chemistry Natural Gas Usage