



## PROJECT SUMMARY

### CURRENT SITUATION

The Lommasson Center at the University of Montana is a series of constructions and additions beginning in the 1950s, most recently modified in 2010. There are over 150 individual systems and zones of nearly every vintage and type serving the building. Many of the spaces have overlapping systems and controls that do not communicate with each other, leading to simultaneous heating and cooling. The lack of comprehensive building controls results in 24/7 operation for many of the facility's systems regardless of occupancy.

### SCOPE OF WORK

This project seeks to replace and/or upgrade all the existing disparate building controls and includes: Replacing existing pneumatic controls, Johnson Controls systems, standalone control systems and outdated Delta control systems with a new single direct digital control (DDC) system compatible with the existing campus infrastructure.

Key to this project is the elimination of all existing pneumatic devices including sensors, actuators and controllers. This transition will involve removal of temperature control compressors and all associated tubing, piping, valves, filter/driers, gauges, etc. in their entirety. All pneumatic devices must be replaced with electrical devices throughout the building.

In addition to upgrading the building's controls, this project will also modify several systems where necessary to take full advantage of the DDC conversion (i.e. converting a constant volume system to a variable volume system)

The Lommasson DDC upgrade will be accompanied by a comprehensive commissioning of all controls and mechanical systems including a thorough operator training program. Additionally, the scope will cover ongoing Measurement and Verification to ensure energy savings are maintained post-installation.

### PROJECT BENEFITS

The advantages of the new system are numerous. The new environment will:

- Improve comfort and control
  - Ensuring spaces are properly conditioned and ventilated when occupied and setback when unoccupied.
- Save energy and water
  - The new DDC system will be able to schedule every piece of equipment for the space it serves.
  - It will be able to monitor air quality in critical spaces and only deliver enough fresh air to meet the needs of the space at the time instead of constantly over ventilating around the clock.
  - It will be able to monitor systems that overlap one another to ensure they do not fight each other.
- Allow operations and maintenance to be proactive instead of reactive.
  - It will generate alarms for the building operator to allow him to be proactive in addressing failed equipment of components before they become an issue.



- It will also automatically restore settings that have been overridden for a single time period
- It will alert the operator when overrides have not been restored ensuring energy savings will be maintained.

This project will enhance the savings already achieved through a recently completed retro commissioning effort and ensure the savings are maintained into the future. The project has a guaranteed maximum cost of \$1,200,000 with energy and water savings of approximately \$100,000 annually.