

# A Building for Tomorrow

Florence Utility Commission, 501 Spring Avenue, Florence, WI 54121

A list of energy efficiency measures that were implemented in the construction of the new facility

<b>CATEGORY</b>	<b>ENERGY EFFICIENCY MEASURE</b>
Structure	Facility is partially recessed in hillside. Second floor is directly over first.
Envelope	Wall insulation is R-24 and roof R-40.
Lighting	LED lighting with maximum of 0.8W/ft <sup>2</sup> .
Lighting Controls	Occupancy sensors and daylight harvesting indoors. Time clock and photocell outdoors.
Ventilation Energy Recovery	ERV reclaims 65% of thermal energy which is exhausted from building to temper ventilation air.
High-Efficiency Boiler	Lower water temperatures allow for condensing of flue gasses, boosting efficiencies to 97%.
Variable Air Volume	Reduce airflow to spaces when temperatures are satisfied. Close off airflow to spaces when unoccupied and satisfied.
Economizer Mode	Packaged air handling unit utilizes up to 100% outdoor air to cool the building when outdoor air temperatures are below 62 degrees in lieu of mechanical cooling.
Carbon Monoxide Sensor	Lower level storage room is only be ventilated as needed. Individual unit heater serves this space to maintain lower temperature than rest of building.
Variable Speed Drives	VFDs on supply and return fans as well as boiler pump provide better control and efficiency. Reduces flow by 50% saves 87% of the energy.
Building Management System	In addition to maximizing the performance of all other measures, the BMS allows for trending, data logging, optimization of nearly all system setpoints & schedules.
Low Leak Dampers	When the building is unoccupied, fresh air dampers close and properly seal to prevent unconditioned air from entering.
ECM Pumps	New pump technology provides 50% energy savings at full speeds and obtain even greater savings as the speeds are reduced.
CO2 Monitoring	The conference rooms are equipped with CO2 sensors to allow the ventilation to that space to be closed when temperature setpoints and CO2 levels are satisfied.
Airflow Modulation	Utilizing the sensors in the light fixtures, the VAV boxes fully close when an entire zone is unoccupied and the temperature is satisfied. This slows the speed of the supply and return fans at the air handling unit.
Air Handling Unit Schedule	The AHU gathers data from the light fixtures, thermostats and a programmed schedule to determine when the building is unoccupied and satisfied. The AHU completely powers off during these times.