

SDSM&T O’Harra Building Renovation



This Higher Education project for the State of SD consisted of primarily office space renovations to the east half of the first floor of the O’Harra Administration building on the SDSM&T campus. The renovations included a new HVAC system for the remodeled space using chilled water from the campus chilled water system and heating water from the existing O’Harra steam-to-hot water converter. The converter, as well as heating and chilled water pumps serving the new rooftop air handler, was provided under a previous project. Due to limited floor height to ceiling height of the first floor, the design was required to utilize return air plenums and minimum plenum space use. The remodel of only the first floor required all electrical systems to be split up to floor-by-floor services.

Project Data

Owner

State of South Dakota

Location

South Dakota School of Mines and Technology campus

Building Type

Administrative

Building Area

5,000 SF

Mechanical Systems / Features

- ADA Electric Water Cooler with integral Bottle Fill
- Rooftop Air Handling Unit
- Hot Water Pre-heat Coil
- Chilled Water Coil
- VAV Boxes with Hot Water Reheat
- DDC Temperature Controls

Electrical Systems / Features

- Shallow Plenum Lighting
- Occupancy Sensors
- Wireless RF Switching
- 208v, 3PH Power Panels
- FA System Replacement
- Data/Tele Horizontal Comm.
- Card Access System Extension

Construction Cost

\$643,000.00

Completion Date

November 2013

Mechanical Engineering

The plumbing for this renovation consisted of a new ADA electric water cooler with an integral bottle fill. A new single bowl sink serves the Breakroom. The HVAC system consisted of a VAV Rooftop Air Handling Unit and is ducted down on the exterior of the building within a chase to serve the first floor. The unit serves VAV boxes located within the east half remodeled area of first floor. One large VAV box serves the west half of the first floor until that space is remodeled in the future. The existing steam to hot water converter provides heating hot water to the VAV box reheat coils. Plant chilled water serves the cooling coil within the rooftop unit. An inline exhaust fan serves the copier room. The first floor incorporates a new temperature control panel and is interfaced with the school’s existing DDC head end.

Electrical Engineering

Lighting for the project used a mixture of high-efficiency shallow-plenum T5 fluorescent lighting fixtures and efficient LED can lighting. For further efficiency, occupancy sensors were used in nearly all spaces. In addition, due to existing condition, wireless RF switching technologies were used where cost savings could be realized.

Remodel of the first floor within this aged facility required considerable attention to detail to split the power circuits that were serving both first and second floors. Power revisions to the existing 208v, 3 phase system were minimized using the existing infrastructure to the extent possible.

Systems scope included replacement of the Fire Alarm panel facilitating new addressable devices within the remodeled spaces. Existing Fire Alarm devices were monitored by zone modules until the balance of the building is remodeled. The design provided Data/Tele Category 6 horizontal communications cabling for VOIP phones. The design also specified cabling and hardware coordination for card access system extension.