SKYLINE ENGINEERING LLC

WDTI Campus Expansion

This design-bid project campus expansion consists of sizeable additions and a new building to revamp the program and offerings of the Western Dakota Technical Institute located in Rapid City, South Dakota. The major space components will include a new 31,000SF Diesel Technology Building inclusive of a garage area, ten service stalls, a service pit, washroom and a dynamometer room. The main building will receive a 15,000 SF Public Safety training addition, a 13,000 SF Multipurpose Addition, a 8,800 SF Medical Simulator addition, and a 4,000 SF kitchen remodel.

Project Data

Owner
Rapid City Area Schools

Location
Rapid City, South Dakota

Building Type
Educational

Building Area
72,000 SF

Mechanical Systems / Features
VAV Air Handling Systems
Vehicle Exhaust Systems
Radiant Floor
Existing Piping Integration
Demand Control Ventilation
Simulated Medical Gas Systems

Electrical Systems / Features
High Bay and LED Lighting
Lighting with Occupancy Controls
Matrix Wireless Controls in PSB
New 1.5.MW Service Transformer
Access/CCTV Security Extensions
Addressable Fire Alarm Extension
Category 6 Network Solutions

Construction Cost
$15.6 million

Completion Date
2016

Mechanical Engineering

High efficiency boilers provide heat for the Diesel Technology Center through the use of radiant floors. Also included is a diesel exhaust extraction system that will allow dynamic diesel equipment service within the space. Exhaust accommodations for the inclusion of a tractor dynamometer is also included.

The Public Safety addition allows for security and fire fighting professional training through the inclusion of equipment bays, a mock booking area and a training simulation room.

The medical simulator provides a medical environment for student training that includes simulated medical gas systems. A full kitchen remodel with associated exhaust hoods and grease interceptor is also part of this project.

The existing central plants and building piping interconnections will also be modified to accommodate new additions.

Electrical Engineering

The lighting solutions for this project utilize efficient troffer fixtures in the classrooms and offices and LED specialty lighting, while occupancy sensors coupled with wall switches offer excellent control and energy efficiency. The Public Safety Building (PSB) utilizes matrixed fixture-by-fixture lighting controls for ultimate simulation flexibility.

A new power service transformer replaces the existing such that the additions to the main WDT facility can be extended from the existing service entrance gear. The life safety and emergency power loads are met by existing natural gas backup generators.

Special systems include the extension of paging, fire alarm, and security access systems; infrastructure for computer and overhead projector-based interactive learning board systems; wired and wireless communications; and a category 6 network wired with copper and fiber optic wiring systems.