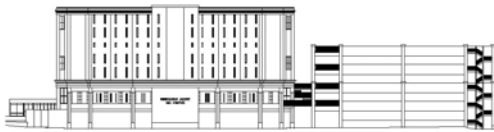


Pennington County Jail Annex



The Pennington County Jail project included construction of a new 4-story, 128 bed multi-level security facility with two floors of shelled space for future development. The addition is currently under construction next to the existing Public Safety Building and south of the existing jail. A new connector from the campus central plant to the facility and a three level parking structure were also included in the project.

Project Data

Location

Rapid City, South Dakota

Building Type

Institutional

Building Area

92,000 square feet

Mechanical Systems / Features

150 Ton Chiller Plant Addition
1,600 Ton-hours Ice Storage
Fire Pump
Smoke Control
Energy Recovery
Vacuum Waste

Electrical Systems / Features

Vandal Resistant Design
Emergency Generator
Fire Alarm
Fire Fighters Smoke Control
Data/Communications Cabling

Completion Date

Scheduled for 2004

Architect

Lund Associates, Ltd.
www.lundltd.com

Mechanical Engineering

The jail annex involved the expansion of an existing central plant serving the existing courthouse, jail and Public Safety Building. Additions to the central plant included a 150 ton chiller and ten ice storage tanks, resulting in an additional 1,600 ton-hours of capacity. Although the existing boiler plant had enough capacity for the expansion, a new shell-and-tube heat exchanger was required due to the increased head requirements imposed on the plant.

Plumbing systems included the addition of domestic water heaters, water softening systems and a vacuum waste system for the cell blocks. Skyline Engineering also designed a new fire pump system and the smoke control systems for the Jail.

Electrical Engineering

The nature of the facility dictated the use of high-abuse and security lighting fixtures. American Correctional Association lighting levels were modeled and supplemented via the required natural light components. Life safety and egress lighting was supplied from emergency ballast fixtures powered from a 750 KVA diesel generator located on a plaza at ground level. Lighting control was accomplished via relay panels controlled from the security system.

The electrical service was located on the lower parking level. Cell block HVAC was powered from the generator life-safety branch to support Smoke Control functions.

Skyline provided design interface with the systems including; medium security cell block control, lighting control, audio, video, and officer station interfaces at the cell block consoles. Skyline also specified the firefighters control and fire alarm panels satisfying the 1997 UBC Section 905 for smoke control.