

## First Interstate Gateway



This marquee office space is the landmark entry for visitors arriving into Rapid City from the north via I90.

The architecture featured an open-air lobbies and center courts accented with dramatic lighting, while HVAC systems featured ground source heat pumps, energy recovery and demand control ventilation.

### Project Data

#### Owner

First Interstate Bank, J. Scull  
Construction, and  
Bangs McCullen Butler Foye  
& Simmons

#### Location

Rapid City, South Dakota

#### Building Type

Office Building

#### Building Area

53,000 S.F. & 15,000 S.F. Basement

#### Mechanical Systems / Features

Ground Source Heat Pumps  
145 Ton Well Field  
Energy Recovery Ventilator  
Demand Control Ventilation  
Web-based Control System  
Fire Pump

#### Electrical Systems / Features

Direct/Indirect Linear Lighting  
Low-Voltage Accent Lighting  
Fire alarm, and overhead Sound  
Security & Communications  
Heat Service & Metering  
Fire Pump Service

#### Construction Cost

\$10,500,000

#### Completion Date

March 2006

#### Mechanical Engineering

The mechanical system is based on a ground source heat pump system to conserve energy. The design includes a dedicated outside air preconditioning unit with a total energy heat recovery wheel to control humidity and supply outside air to the space.

Ventilation air is supplied directly to the water-to-air ground source heat pumps through a dedicated outdoor air system utilizing motorized dampers. Occupancy sensors in conference rooms and other transient occupancy spaces allow the ventilation to be reduced for these areas during unoccupied times.

The facilities are served by a wet sprinkler system and fire pump installed in accordance with NFPA 13.

#### Electrical Engineering

Lighting highlights this facility's interior and exterior Architectural features. Efficient fixtures were utilized throughout the facility. Special design considerations were given for control of exterior lighting and signage. The open interiors are lit with a combination of decorative low-bay fixtures in lobbies and direct/indirect fixtures in the open-office workstation areas, complimented by use of low-voltage tech lighting.

The dual-metered electrical power system consists of three separate services economically fed from a single transition cabinet and a single utility transformer. The main service is a 1200 amp, 208V service for lighting and normal power distribution. The 1600 amp heat metering service provides 208 V power to the heat pumps and miscellaneous heating equipment. The third service is dedicated to the fire pump.

Special systems include; Security, Fire Alarm, Card Access, overhead sound and Telephone/Data Communications wired for a category 5e network.