

OYATE HEALTH CENTER



DES Project Manager

CDR Matt Mergenthaler, P.E./ CAPT Frank Chua, P.E.

Location

Rapid City, SD

Area Office

Great Plains Area

Tribe(s) Served

Oglala, Cheyenne River and Rosebud

Design Start

September, 2017

Construction Start

September, 2019

Construction Completion

February, 2024

Size

204,000 Sqft

Procurement Method

Direct Federal

Delivery Method

Design Build

Architect of Record

AE-1 Seven Generations, AE-2 Childers

Prime Contractor

Flintco

Energy Efficiency

An energy consumption level of 43% below the ASHRAE 90.1-2016

LEED Certification

Designed and constructed to achieve LEED v4 Gold Certification

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Sustainable Design Features (Planned): 165kW Photovoltaic (PV) System (8.2% total electricity from PV renewable sources), Metering, Submetering, Monitoring. Outdoor climate design criteria were based on ASHRAE – 0.4% for cooling and 99.6% for heating. HVAC design utilized condensing boilers having the highest efficiencies at low return temperature. The hot water heating system for return water temperatures at 160°F does not cause the boilers to condense which lowers their efficiencies. The chiller plant consists of two air cooled chillers at approximately 130 tons each (180 tons nominal), ice storage, and one heat recovery chiller at 125 tons. The ice storage system consists of 3 banks of 3 manifold tanks for a total of 9 tanks, ice is generated by the chillers over the nighttime hours when cooling requirements are low and electrical rates are at their lowest. The ice storage system reduces operating costs. Control Strategies minimize energy use. Water side economizer control utilized on the heat recovery chiller and an air-cooled chiller with fluid cooler. High-efficiency LED lamps, fixtures and associated dimmers and drivers are utilized throughout the building. Designed and constructed to achieve a 37.68% water savings when compared with EPA Act 1992, 2005 baselines (20% minimum reduction).

Services Programmed for New Facility: Primary Care, Specialty Care, Podiatry, Telemedicine, Native Woman's Health Clinic, Dental, Eye Care, Audiology, Diagnostic Imaging, Laboratory, Pharmacy, Physical Therapy, Clerical Support, Mental Health, Social Work, Psychiatric, Alcohol/Substance Abuse, Environmental Health, Community Health, Diabetes, and Wellness Center

Design Concept: "The initial visioning exercise led the design team to prioritize a clear marking of the building's entrance, utilize natural materials both inside and out, take advantage of natural light, and provide visual interest with both color and texture. The design concept for this building took cues from the South Dakota geography, which is separated into a number of distinct environments. The eastern portion of the state is vast grasslands; the west becomes rocky cliffs and timberland; and they are separated by the Missouri River running between.

Each tribe has a distinct landscape on which their reservation resides and these topographies influenced the building as designed today. Rosebud Reservation is home to the Sicangu Lakota Oyate, who are the easternmost tribe serviced by the new health clinic. Rosebud's landscape can be described as grasslands, rolling hills and timber groves. Pine Ridge Reservation belongs to the Oglala Sioux, and they are the westernmost tribe serviced by the new health clinic. Pine Ridge is the only reservation who call The Badlands home. The land is characterized by mixed grass prairie blended with colorful buttes and gorges of eroded sedimentary rock. The Cheyenne River Lakota Nation, of the Cheyenne River Reservation are geographically the northernmost tribes being serviced by this new clinic. Their landscape can be identified as sprawling prairie blessed with abundant water. Finally, the new clinic is being built in Rapid City, South Dakota, whose unique geography is comprised of the Black Hills on the west, grasslands on the east, and is split in half by the Dakota Ridge."