Small-Duct Central Heating & Air Conditioning

Case Study: Warren AFB, Cheyenne, WY

PARTNERS

UNICO Contractor

Energy Tech Terry DiPoma 238 Golden Harvest Rd. Draper, UT 84020-9511 801-330-2161



The front of the building

The Unico System is designed to fit. It's ideal for heating or cooling buildings with:

- Electric Heat
- Hot Water Heat
- Chilled Water
 Loops
- Steam Heat
- Radiant Floor Heat
- Inadequate or No Ductwork
- Limited Space
- Inadequate Cooling on Upper Levels
- Baseboard Heat
- Radiator Heat

Overview

Warren Air Force Base in Cheyenne, WY is the oldest, continuously active installation in the Air Force. In the 1860's, it started as a fort for soldiers to protect railroad workers from the frequent attacks from the Native Americans. It has served many different purposes from that time and helped in the Civil War, Mexican American War, WWI and WWII. In 1930, President Hoover gave the installation the name Fort Francis E. Warren to honor Francis Warren who was Wyomings territorial governor and then became the states first governor. In 1947, it officially became an Air Force Base (AFB).

Today, Warren AFB is home to the Global Air Strike Command which facilitates ICBM and bomber operations. It employs nearly 20,000 people, both military and civilian. Despite the state of the art hardware and equipment currently being used now, over 300 buildings still being used were built in the 1880's. One building in particular, the new Interrogation Center, which features three sound proof interrogation rooms and also houses a small arms armory, had the need to update its central heating and air conditioning.

Strategy

The General Contractor and the Contracting Officer hired Terry DiPoma of Energy Tech in Salt Lake City.

Terry often works as a sub contractor to the general contractor in charge of the entire project. Because the building is essentially a historic project, Terry suggested The Unico System as a great fit for this particular installation due it's ability to fit into small areas and limit marring the historic interior.

To ensure the required load is met, Terry installed two Unico Green Series 3642 (3—3.5 ton) blowers and heat pump coils and one Unico Green Series 4860 (4—5 ton) blower and heat pump coil. All of which are paired to outdoor DX condensing units. Using the Green Series gives Terry the ability to completely manage the airflow, which significantly maximizes both comfort and efficiency. By using a heat pump, Terry is able to do both heating and cooling with the same coil.

The project also utilizes Unico's 2.5" outlets. For higher elevation projects, especially above 4,000 ft like this installation, air density becomes lower, meaning the system needs to push more air than it would normally at lower elevations. Generally, conditions like this means more outlets are necessary, but due to the larger 2.5" outlets, the total number of outlets needed is not raised, meaning even less visual impact on the installation. In fact, Unico offers outlets in a variety of different wood species, which very closely match the woods commonly found in homes and other structures.

Results

The project has been well received by everyone involved. The Contracting Officer in charge, as well as all of the base mechanics involved in the project were very pleased. In fact, the base is planning several other projects that involve The Unico System. The Air Force, and the military in general expect the best out of every person and piece of equipment that is used. The fact that they chose The Unico System is a testament to the performance and construction quality of the system.

The Unico System®

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Historic Renovation

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All of the Unico Green Series units Top: Plenum configured in "H" style pattern



Top: Outlets shown to match the hardwood floors

Bottom: An outlet above the two way glass in one of the Interrogation rooms

