

## CASE STUDY

# CERTA-LOK® LEADS TO NEW WAY TO HEAT AN OLD BARRACK

Carlisle Barracks is the nation's second oldest army post. First used in 1758 for training on Indian fighting, the historic site is now home of the United States Army War College where senior military officers and civilians come together to prepare for strategic leadership roles. To preserve its historical grounds and facilities, the College continuously works to modernize many of its buildings and associated systems, most notably its antiquated central steam system.

## CHALLENGE

Carlisle Barracks' aging central steam system used a traditional boiler and dated network of pipes that ran beneath streets and sidewalks. Modern processes such as geothermal technology, which extracts heat from the ground instead of the air, would likely improve the facility's heating and cooling systems. However it was critical for these new systems to operate in an environmentally safe and secure manner.

## APPLICATION

The barracks' central steam system was completely replaced with a new geothermal heating/cooling system by Connecticut Wells. The project called for nearly 70 wells to be drilled, ranging in depth from 350 to 1,000 feet.

## SOLUTION

Connecticut Wells approached the large installation as it would any normal water well project for domestic homes, the only difference being the diameter of the wells. While a residential well averages six inches in diameter for the first 150 feet, well diameter at the Carlisle Barracks averaged eight inches for the first 150 feet. Beyond 150 feet, the well diameters were reduced to 6/4 inches.

After the Carlisle Barracks wells were drilled and cased, Connecticut Wells installed Westlake Pipe & Fittings Certa-Lok® PVC insulating sleeves from the top to the bottom of the wells to facilitate heat transfer to and from the ground. For added safety, the Certa-Lok joint was connected without potentially harmful chemicals. The solvent-free joint allows the wells to maintain healthy standards for drinking water.

"Since the water pulled from the ground is soon returned for human consumption, it's essential for drillers to focus on maintaining healthy standards for drinking water," said Tom Mahan, owner and founder of Connecticut Wells.

Mahan adds Certa-Lok Well Casing also was easy to install. Requiring no special tools, the comparatively lightweight casing can be easily assembled by hand.



**Project Type:**  
Water Well

**Application:**  
Geothermal Well

**Owner:**  
United States Army War College

**Product Used:**  
Certa-Lok® PVC Well Casing

**Contractor:**  
Co-Energy Group, LLC

**Engineer:**  
Connecticut Wells Inc.

Not only did Connecticut Wells successfully install the efficient geothermal wells to meet the college's heating and cooling needs, the installation created virtually no distractions for the campus. Connecticut Wells contained its well work to sites away from roads and sidewalks limiting disruption to day-to-day activities for the barracks' military officers, civilians and tourists.

While installing a geothermal heating system may cost more than a traditional furnace and air conditioner, the geothermal heating system more than makes up for the cost difference in savings on heating and cooling bills.