- Mechanical HVAC Systems
- Plumbing Systems

KROESCHELL PROJECT CASE STUDY:

Naval Station Great Lakes Steam Decentralization

THE CHALLENGE:

For years, the 193-acre Naval Station Great Lakes, located in Great Lakes, Illinois, has operated with a central steam plant with an inefficient underground distribution system. Inevitably, the base was taking on higher energy and maintenance costs. The Navy decided it was time to make a change. They decided to decentralize the steam plant and supply each of the 97 buildings with an individual boiler system. This would allow each building to use their own heating source more efficiently. The Navy bid the work and ultimately awarded the three year, $57 million project to Kroeschell.

THE SOLUTION:

Kroeschell oversaw five building additions totaling 8,000 SF; as well as 4,500 SF of non-mechanical space converted into mechanical rooms. These conversions included all facets of construction; electrical, plumbing, HVAC, sheet metal, fire alarm, sprinkler piping and extension of natural gas utility piping to provide new gas meters for all buildings.

A significant component of Kroeschell's bid package was the proposed "Betterment Package." Kroeschell suggested two types of betterments.

- With the first, Kroeschell identified steam boiler plants that they believed could be converted to hot water boilers instead: hot water boilers were selected with efficiencies up to 96%, while steam boiler efficiencies are only 80%. Kroeschell located 14 buildings that were eligible for this betterment and saved the Navy $1,150,000.
- In the second, Kroeschell offered a hybrid solution. The design called for expensive high-efficiency condensing boilers in all buildings. The team proposed the installation of both high-efficiency condensing boilers as well as lower efficiency but more economical non-condensing boilers. Kroeschell chose this solution because a condensing boiler at full load is not condensing anymore and therefore there is no benefit. This saved the Navy 11.7% on boiler equipment costs or $415,000.

THE RESULTS:

- By the beginning of year three, 95% of the new boilers were operational and the base was already reporting about 25% less energy consumption as they had seen in previous years.
- Kroeschell's two betterment packages saved the Navy $1,570,000.

The Naval Station Great Lakes has recognized $9,000,000 a year in energy savings with the Betterment Packages, emissions reduction savings and federal rebates.

PROJECT OVERVIEW:

Location: Naval Station Great Lakes, Illinois

Project Scope:

- Decentralize the steam plant and supply each of the 97 buildings with an individual boiler system.
- Proposed two betterment packages that saved the Navy $1,570,000.

Customer Profile:

Naval Station Great Lakes is the home of the United States Navy's only boot camp, located in Lake County, Illinois. It is the second largest military installation in Illinois and the largest training station in the Navy. The base has 1,153 buildings situated on 1,628 acres and has 50 miles of roadway to provide access to the base's facilities. The base is like a small city, with its own Fire Department, Naval Security Forces (Police) and Public Works Department.

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KROESCHELL

Established 1879

Headquartered in Chicago since 1879, Kroeschell is a leading provider of mechanical, electrical & plumbing solutions and facility support services for Fortune 500 companies, hospitals, universities and the U.S. Government. From HVAC to industrial production systems, Kroeschell keeps facilities and equipment operating at top performance, across the country and around the globe. We design, build, service and operate the advanced equipment found in today's most complex environments. When Kroeschell is your single source of responsibility, you maximize cost-effectiveness, quality craftsmanship and on-site safety.