

## Energy Audit Case Study

Heated potable water is used for many purposes in industry, most often washing something. When hot water demands are large and intermittent or unpredictable it is common to have a storage tank.

This facility had an old industrial water heater and remote tank. The design was very heavy and showed no signs of wearing out, but the efficiency was terrible. Measurements showed high stack temperature, and there were high standby losses because the tank had no insulation. A condensing water heater with heavily insulated tank offered annual savings of 20-40% depending on usage. Rather than replacing with equal size and capacity, the design duty of the heater was reviewed. The original design calculations from the 1960's were not available, so the sizing was based today's requirements for hot water. All of the

connected fixtures were counted, diversities applied, and low flow fixtures were incorporated where possible. Reduced hot water flow and reduced equipment losses allowed the new heater to be 'right sized', with a smaller burner and smaller tank than the one it replaced. This is a good example of *integrated design*, the process of combining end use reductions with equipment selection; it applies to new buildings and renovations alike.

The key is reviewing the whole system, including the energy source and its end uses. This process increases savings, and can reduce installation cost when new equipment is able to be down-sized.

Image: bodenplumbing.com



Colorado Springs Utilities offers no cost energy audits to all commercial and industrial customers. Call Barbara Rabideau at 719-668-8907

