

FEMP Tech-Specific Success: Geothermal Heat Pumps

The GHP Core Team gives federal agencies confidence in, and access to, the big savings potential of GHPs

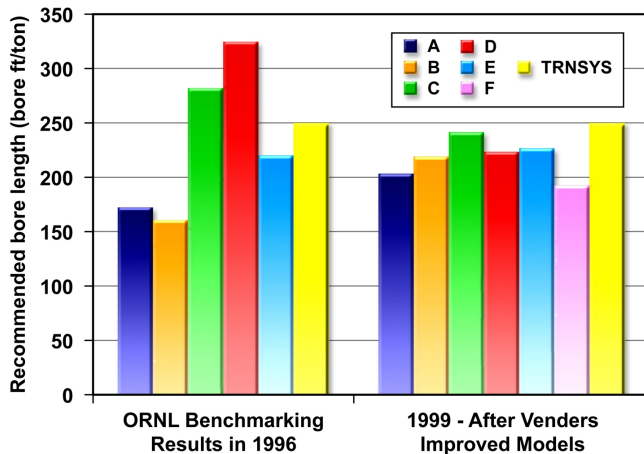
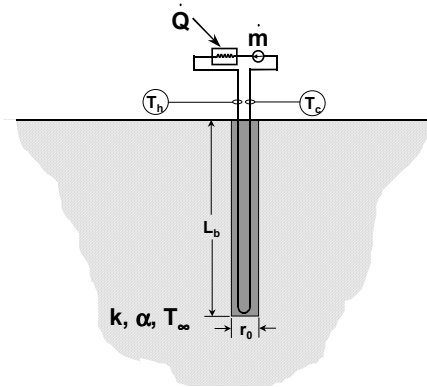
Federal facility managers need hard data on benefits to justify investments in "advanced" technologies. March 1998 Final Report ORNL/CON-460, *The Evaluation of a 4000-Home GHP Retrofit at Fort Polk, Louisiana:*

- Federal city of 12,000 people
- All new heating, cooling, water-heating equipment; lighting; and low-flow shower heads
- Maintenance headaches transferred to the private sector for 20 years
- Electricity reductions (33% less use, 43% lower peak demand, annual load factor 0.52 to 0.62)
- Privately financed and paid for from savings over 20 years

Federal facility managers must be confident that quality projects will be obtained.

Dependable design data:

- Subsurface thermal properties vary widely
- They must be estimated from measurements at the site to design systems for maximum efficiency and minimum cost
- ORNL developed a method to get better estimates faster



Reliable design tools:

- Ground loop size dominates system cost
- ORNL benchmarked widely used sizing methods in 1996 – sizes varied by 100%
- Spurred by ORNL's study, vendors improved their methods significantly by 1999

Hard data, technical support, access to financing ⇒ ⇒ ⇒ Skyrocketing federal GHP use to meet energy savings goals

- Tech-specific GHP Super ESPC for worldwide access (Dept. of State, DoD)
- GHP Core Team — technical support
- FEMP Project Facilitators — agency's guides to financially smart projects

In partnership with industry, ORNL is using the burst of federal projects to develop the standard tools of the trade:

Guide specifications, maintenance and construction cost estimating guides, feasibility survey guide, and others.



Investment in GHP Projects is Booming

