

# Energy-efficient 60,000 square foot building delivers quick return on investment.

Bent Creek Office Building



## THE CHALLENGE:

**Design an HVAC system in a new two-story office building to be so efficient, that the client would quickly see a tangible return on investment.**

## THE SOLUTION:

**Ground Coupled Water Source Heat Pumps that are more efficient and reduce energy costs.**

Many energy efficient HVAC systems can help to lower a building's operating costs and provide savings over the long term. But designing and building a system so efficient that it will provide building owners with an immediate financial payback can be a very tough task, indeed. (Simple payback period is 7 years.)

To accomplish this, the Design/Build team at H.B. McClure used our years of experience in designing and constructing energy efficient HVAC systems to create a system that combined a variety of innovative options into a single system that minimized operating costs.

We used our experience with Ground Coupled Water Source Heat Pumps (GCWSHP) to eliminate the need for boilers, chillers and cooling towers. We did this by using a closed loop ground well heat exchange system and by distributing the water to heat pumps.

Fresh air that enters the building is pre-heated and cooled by using Energy Recovery Units. And to make sure that temperatures stay even throughout the building, we integrated a perimeter radiant under floor heating system with the GCWSHP system. This eliminated the need for traditional electric baseboards.

## THE RESULTS:

**Annual heating and cooling costs average \$.90 per square foot. These exceptionally low operating costs provide the immediate return on investment our client wanted without compromising comfort.**

## PROJECT TYPE:

Design/Build

## GOAL:

Lower operating costs with highly efficient HVAC System that will provide a short-term payback on the initial investment.

## EQUIPMENT USED:

- Ground Coupled Water Source Heat Pump
- Energy Recovery Units
- Perimeter In-Floor Radiant Heating

## ANNUAL ENERGY COSTS:

\$0.90 per square foot

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