## INDUSTRY

Health Care

## SCENARIO

In 2011, a major healthcare team broke ground on a new ecofriendly hospital in Northern Mississippi

## ARCHITECT, GENERAL CONTRACTOR & ENGINEER

A major firm that has been in business for over 45 years with partnership offices in 16 US cities

## CUSTOMER PROFILE

The hospital, in partnership with its medical staff, works to collaborate with patients and their families to be the leader in providing high quality, cost-effective patient- and family-centered care

## PHYSICAL DETAILS

- Total square footage: 225,000
- Will serve ~47,000 residents
- Emergency services, obstetrics, cardiology, MRI and a diagnostic cardiac catheterization lab

## SYSTEM BENEFITS

- Reduced the geothermal heat exchanger (the borefield) size by 52% compared to conventional geothermal
- Reduced energy and water operating costs 72% vs. conventional geothermal
- Projected energy savings of $106,500 per year according to the hospital's Engineer of Record


## Greensleeves LLC

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# Case Study
# Northern Mississippi Hospital

## Hospital to Implement Geothermal with GeoModule™

Greensleeves LLC has been approved to implement its GeoModule solution in a new 100-bed hospital. The hospital design team wanted to reduce operating costs, increase efficiencies and provide a quiet environment for patients by implementing a ground source heat pump solution. A conventional geothermal solution for a facility this size was very large, raising concerns about possible impacts to wetlands that surround the hospital site. The original design called for 408 bores that were 300 ft. deep for a full geothermal heat exchanger solution. With Greensleeves' smart geothermal technology, the borefield was downsized 52% to 196 bores at 300 ft. deep.

Temperature saturation is one of the biggest risks in geothermal installations. The GeoModule is able to provide a secure low-risk solution as one of the only products on the market that monitors, plans and makes adjustments for temperature fluctuations.

The GeoModule is a hybrid-ready geothermal borefield management system that monitors the buildings actual demand, the weather conditions and the condition of the borefield. Using an intelligence-based predictive algorithm, it makes control decisions to nightly and seasonally condition a smaller borefield based upon the future need for rejected heat and the cost of operating heat disposal systems now, or at a more optimal time in the future.

The hospital benefited from the reduced borefield size, construction duration and labor costs. It also saved 5,000 sq. ft. of equipment room space over a conventional HVAC system. This new facility is slated to open in 2013.

The GeoModule significantly reduces the first costs of geothermal construction and will be far cheaper than conventional HVAC systems to operate and maintain.

greensleeves ENERGY SOLUTIONS