



**LOUISVILLE  
MUHAMMAD ALI**  
INTERNATIONAL AIRPORT

# Geothermal Project Makes Deep Impact

The Louisville Muhammad Ali International Airport (SDF) geothermal system will be the largest of any airport in the United States. It includes 648 vertical wells, each drilled 500 feet deep into the earth. The system saves massive amounts of energy by using the earth's natural temperature to heat in the winter, cool in the summer and replaces the need for additional equipment.

The HVAC system will also increase the amount of outside air that is brought into the terminal, which contributes to a healthier and more comfortable environment for travelers and airport staff.

The geothermal project at SDF will cut carbon emissions by more than 80% and save \$400,000 each year in heating and cooling operating costs. This geothermal system will use 40% less energy than traditional heating and cooling systems and will require less maintenance over the course of the system's operating life.

Geothermal systems have a much longer use expectancy than traditional systems and contribute to a more resilient terminal overall. With the geothermal system in place, old systems that require large, loud cooling towers and boilers will be removed, making space for terminal expansion in the future.



SDFNext.com

## Sustainability Metrics

**80%**

Carbon Footprint Reduction

**648**

Vertical Geothermal Wells (Largest of Any Airport in U.S.)

**\$400K**

Annual HVAC Operating Cost Savings with Additional Savings to be Realized

**40%**

Energy Reduction vs. Traditional Systems

**100K**

Square Feet of Future Terminal Expansion

**2-3x**

The Average Traditional System Life Span





# HOW GEOTHERMAL WORKS



Water circulates through pipes and absorbs heat from inside the terminal.



Water circulates through pipes and absorbs heat from the ground.

Water moves through pipes.



Water moves through pipes.

Heat is transferred to the ground.



Heat is transferred to the terminal.

Water in the pipes is cooled and moves back into the terminal, pushing cold air.



Water in the pipes is heated and moves back into the terminal, pushing hot air.