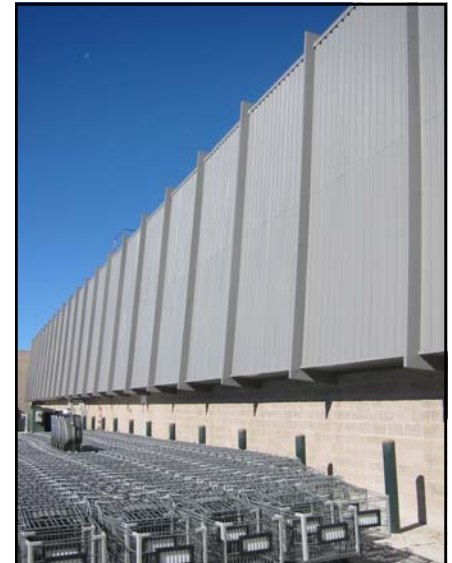




**Commercial**

**Wal-Mart**



*Grey SolarWall® panels on the south wall of Wal-Mart's new Denver-area Supercenter. The architectural "fins" were incorporated into the design to give the wall a unique appearance.*

## Background

In November of 2005, Wal-Mart opened their first cold-climate experimental store, the Aurora Supercenter, in the metro-Denver area. This store is the latest in environmentally sustainable design, and Wal-Mart has taken the position that it could profoundly change the way in which the retail industry designs and builds future stores. To illustrate, the metal panels that form the exterior south wall of the Supercenter serve a dual purpose in that they also act as a solar heater. The SolarWall panels are expected to reduce annual energy consumption at the Wal-Mart Supercenter by 1,325 million BTUs (388,000 kWh), and save the store around \$20,000 U.S. per year in displaced energy costs at 2005 natural gas prices.

## Solution

8,000 ft<sup>2</sup> (745 m<sup>2</sup>) of grey SolarWall cladding forms the south exterior wall of the Supercenter. The metal panels heat up in the sun, and the ventilation fans draw the warmed air on the surface of the wall through the perforations in the panels and into the air cavity. This solar heated air is then distributed throughout the building and auto service center by the ventilation system using a series of long fabric ducts to deliver fresh air to shoppers in the store.

This "natural" pre-heating of fresh air means less natural gas is needed to heat the ventilation air required to maintain a high level of indoor air quality. The wall also acts as a solar shield, reducing solar heat gain and cooling needs in the summer.

Wal-Mart decided to actively showcase the energy-saving features with information screens throughout the stores, and a "walk of fame". Each energy technology involved in the process has a "star" in the store which describes their technology, and how it will reduce energy consumption and improve the working environment. The objective is to increase awareness and allow customers to learn about the different technologies, thereby mainstreaming the concept of energy efficiency.



*The SolarWall star, located in a main aisle of the store.*

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