

# KEEPING THE PRESSES ROLLING

AN INDUSTRIAL  
FACILITY CASE STUDY

Using the packaged system recommended by Armstrong, designers were able to reduce the pump power requirements by 70%, and dramatically increase energy efficiency.

“The savings delivered to Shorewood have been amazing. The Design Envelope approach to sizing allowed us to substantially reduce the pump hp.”

**Chuck Lerch**  
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## Shorewood Printing

Design Envelope IVS technology, combined with advanced system integration capabilities make this an industry-leading installation, and a great example of the diverse capabilities of Armstrong

### Background

Shorewood Printing is a commercial printer for the cosmetics, home video, music, and software markets. Now part of International Paper, the company operates a facility in Danville, VA.

In 2009 Shorewood approached Southern Air, a Virginia-based design-build contractor that specializes in HVAC installations, for help in upgrading their industrial make-up air/plant cooling systems.

One of the challenges associated with the project was the lack of space. The building had no available space for a proper equipment room. The designs called for installation of boilers generating 10,000,000 BTUs in a room no more than 11 feet wide. So Shorewood needed a cooling solution that used minimal floor space.

The initial plans were to use constant speed Vertical In-Line pumps in a duty/standby configuration. That was later revised to use variable-speed pumps, but a lack of sensors in the system was an added challenge. Designers briefly considered using Lonworks, but chose to use the Armstrong Design Envelope sensorless technology instead.

Selecting a Design Envelope pump simplified the installation and gave the facility operators fingertip control over pump operation, plus integrated variable-speed technology that would automatically adjust pump speed to match cooling system requirements.

The project was completed in November 2009. Overall the equipment and installation costs stayed within budget, and because of the decision to use Design Envelope pumps, installation labor hours were reduced below the original estimate.

Facility operators at Shorewood found the Armstrong VIL solution very effective, particularly the floor space savings provided by the integrated, pump-mounted drives.

Perhaps the most dramatic aspect of the installation was the fact that designers could stack the pumps with the control panels facing a walkway.

The advanced controls of the Armstrong Design Envelope pumps allowed for integration into the existing BAS system, so the monitoring and control of the pumps was easy and convenient.

### Tech-Facts

#### Main Equipment

- IVS sensorless controls
- 4300 DE IVS pumps (4)
- 4302 DE IVS Dual Arm (2-Duty/Standby)

#### Design Notes

- Initial design called for constant speed duty/standby VIL pumps
  - CW pump - 100 hp
  - HW pump - 15 hp
- Designers combined the HW Pre-heat and Reheat to reduce the installation to six Design Envelope IVS VIL pumps.
- Pump horsepower was reduced from 115 hp to less than 29.5 hp

**Representative:** SE Burks Sales Company

**Contractor:** Southern Air, Lynchburg, VA

**Industrial Make-up Air / Plant Cooling System**  
Shorewood Printing, Danville VA