

CASE STUDY | Zheng Zhou University



Armstrong pumps were selected as part of a retrofit for this administrative building at Zheng Zhou University. Though the university administrators were primarily interested in a chiller upgrade, they opted to upgrade to Design Envelope pumps for the potential energy savings.

78%

The retrofit Design Envelope pumps reduced energy usage by 78%, saving over RMB 4,500 per pump annually. Because of the energy savings, the costs of the retrofit project were recovered in less than two years.



FACILITY TYPE
Education



LOCATION
Zhengzhou,
China



SIZE
50,000 m²

SITE CHALLENGES

- Low tolerance for noise and vibration
- Limited floor space in the mechanical room



ANNUAL ENERGY COST

BEFORE

AFTER

RMB

57,944

RMB

12,446

AVERAGE

AVERAGE

ANNUAL COST
SAVINGS

RMB

45,499

CO₂

CO₂ EMISSIONS

BEFORE

AFTER

55,148
kg CO₂

11,845
kg CO₂

AVERAGE

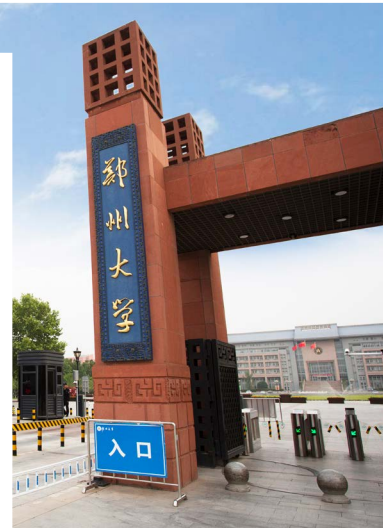
AVERAGE

ANNUAL CO₂
EMISSION REDUCTION

43,303
kg CO₂

TO GET YOUR ENERGY
UPGRADE PROJECT
STARTED, CALL:

+1 888 240 7379

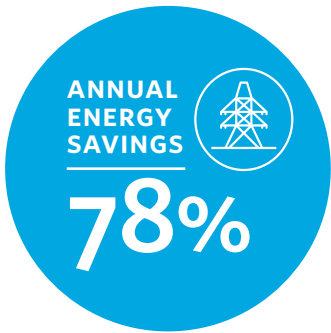


KEY OUTCOMES:

- ✓ Design Envelope Vertical In-Line pumps were easy to install and were pipe-mounted for additional cost savings and space savings.
- ✓ Compared with conventional fixed-speed pumps, the new Design Envelope pumps provided 78% energy savings.

Site specification • 50,000 m² administration building constructed in 2005

Equipment included • 10 × Design Envelope 4300 pumps



Bureau Veritas S. A. is an international certification agency appointed by Armstrong to provide a technical assessment of pump performance and energy usage.



DESIGN ENVELOPE



Armstrong maps each individual pump's hydraulic, motor and inverter variations at the factory, to achieve exceptional accuracy throughout the flow range. With this calibration, Armstrong Design Envelope pumps also serve as flow meters, providing reliable system flow data (+/- 5%). The testing ensures optimal performance efficiency at start-up, and Armstrong's Pump Manager helps maintain and extend efficiency throughout the pump's operating life.