

CASE STUDY | Central Memorial High School



Central Memorial High School creates opportunities for 1100 students to focus on the arts, athletics or trades. In 2018, Armstrong worked with the Calgary board of Education to upgrade the HVAC system for better efficiency and comfort.

Armstrong installed four new Design Envelope pumps, plus the cloud-based analytics platform for pump analytics. Indoor temperatures are now more comfortable and the replacement pumps use 59% less energy.



FACILITY TYPE
Educational



LOCATION
Calgary,
Alberta,
Canada



SIZE
49,000 sq ft

SITE CHALLENGES

- Access to mechanical room limited to off-hours
- Minimal time window for upgrade work



ANNUAL ENERGY COST

BEFORE

\$2,882
CAD

AVERAGE

AFTER

\$1,175
CAD

AVERAGE



CO₂ EMISSIONS

BEFORE

3,104
kg CO₂

AVERAGE

AFTER

1,265
kg CO₂

AVERAGE



**ANNUAL
ENERGY
SAVINGS**

BUREAU
VERITAS
VERIFIED

59%

**ANNUAL COST
SAVINGS**

\$1,707 USD

**ANNUAL CO₂
EMISSION REDUCTION**

1,839 kg CO₂

TO GET YOUR ENERGY
UPGRADE PROJECT
STARTED, CALL:



KEY OUTCOMES:

- ✓ 59% efficiency improvement
- ✓ Annual energy savings - approximately 13000 kwh
- ✓ Annual cost savings - approximately \$1,700
- ✓ Annual CO₂ emissions reduction - approximately 1,800 kg
- ✓ Easy access to operating data showing flow, head, power usage and rpm
- ✓ Data-logging and performance monitoring capabilities

Equipment included 4 × Design Envelope 4380 iVS Close-Coupled Horizontal End-Suction Pumps with Armstrong's Cloud Analytics platform connectivity

ACTIVE PERFORMANCE MANAGEMENT



HVAC system has no building management system in place to guide and monitor operations.

With Design Envelope pumps installed and the Cloud Analytics platform subscription activated, operators can now receive alerts and reports indicating pump status and providing early notification of any issues.



SOLUTIONS EMPLOYED

DESIGN ENVELOPE

END-SUCTION PUMPS

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 Cloud Analytics platform helps maintain and extend efficiency throughout the pump's operating life.