

CASE STUDY | Delta Hotel



Delta Hotels Toronto is one of the largest, most luxurious hotels in Canada and is rated as one of the most sustainable. Delta commissioned an upgrade of one of their existing pumps to a new Design Envelope Tango. Energy savings post-installation have proven that the Tango pump was the right choice.

Savings from upgrading just one pump will be over \$2200 per year. Total energy savings will be 22,000 kWh: A 40% efficiency improvement.



FACILITY TYPE
Hotel



LOCATION
Toronto
Canada



SIZE
47 floors
567 rooms

SITE CHALLENGES

- Temperatures in guest rooms and meeting spaces are maintained within a narrow band
- The large number of guest rooms and a 6,500 sq ft ballroom with floor-to-ceiling windows posed a challenge



ANNUAL ENERGY COST

BEFORE	AFTER
\$5,659	\$3,364
CAD	CAD
AVERAGE	AVERAGE

ANNUAL COST SAVINGS
\$1,700 CAD



CO₂ EMISSIONS

BEFORE	AFTER
7,923	4,709
kg CO ₂	kg CO ₂
AVERAGE	AVERAGE

ANNUAL CO₂ EMISSION REDUCTION
18,335 kg CO₂

TO GET YOUR ENERGY UPGRADE PROJECT STARTED, CALL:

+1 866 238 1337



ANNUAL ENERGY SAVINGS

40%



KEY OUTCOMES:

- ✓ All variable speed pumps installed are sensorless
- ✓ Significant cost savings achieved, with no VFD site wiring/mounting, no differential pressure sensors to install, no line reactors required, and lower commissioning costs
- ✓ Significant operating cost savings, with optimized part-load operation using a quadratic control curve, and selection optimized against load profile



- Site specification**
 - Four mechanical equipment rooms
 - One booster equipment room
 - Heating system pumps
 - Boiler pumps
 - Chilled water pumps
 - Cooling system heat exchangers

- Current Armstrong solutions**
 - 10 Design Envelope 4300 pumps
 - 2 Design Envelope DualArm pumps
 - 7 conventional pumps
 - 9 circulators
 - 6 expansion tanks
 - 2 Design Envelope booster packages
 - 13 plate/frame heat exchangers

- Upgraded pumps**
 - Tango pumps



SOLUTIONS
EMPLOYED

DESIGN
ENVELOPE

TANGO 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 Pump Manager helps maintain and extend efficiency throughout the pump's operating life.