



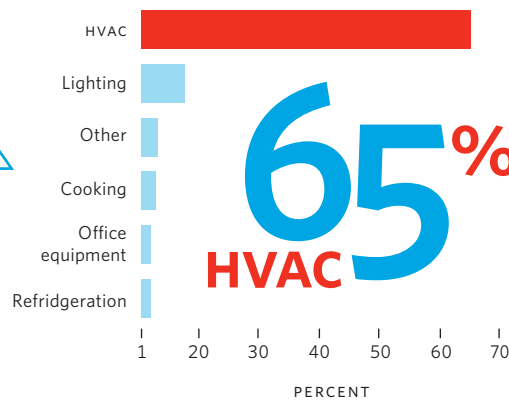
YOU KNOW HOW TO WIN GUESTS WITH COMFORT

WE'LL HELP YOU TO KEEP THEM WITH GREEN

HOSPITALITY

Clean soft sheets. Luxurious towels. Inviting furnishings. Perfect room temperatures. Hot water on demand. These are the types of comforts that your guests expect and appreciate. Satisfy your guests and they will quickly become repeat customers.

Hotel energy consumption



Beyond the demands of providing these types of guest experiences, there is the more difficult challenge of meeting guest expectations regarding environmentally friendly practices. Industry trends show that hotel guests expect operators to take steps to reduce their impact on the environment. They want to know that their favorite hotel is as committed to the environment as they are, and they expect hotels to reduce their energy usage and carbon footprint as part of a larger sustainability program. Armstrong has developed proven solutions to address water supply, heating, cooling and other HVAC issues common to hotels.

Many of the services provided by hotels involve energy-intensive equipment, including boilers, chillers, and water pumps. In fact, the lodging industry is the heaviest user of energy in the commercial sector, averaging nearly \$2 per square foot or \$2,200 per room per year in related costs.

Energy is the single fastest-growing operating cost for hotels. For most hotel and motel properties, heating and cooling accounts for up to 65% of energy demand. Hot water delivery in particular represents one third or more of energy consumption.

HVAC systems have a direct impact on guest comfort and operating margins. Armstrong's demand-based solutions provide a comfortable hotel environment and decrease energy consumption. Unfortunately, most HVAC systems are oversized for even the most extreme weather conditions, and operate at full capacity, even in shoulder seasons. The result is that many hotels incur costs to heat or cool rooms that are not occupied.

Variable speed technology with integrated controls adjusts HVAC output to match your heating or cooling requirements at different occupancy levels, ultimately reducing energy consumption.

You've won the loyalty of your guests with consistent service. Let us help you maintain that loyalty with energy efficient, sustainable HVAC systems.

Project	Annual energy savings	Annual cost savings ¹	Annual CO ₂ reduction [†]
Intelligent Variable Speed (ivs) installed on evaporator pump*	100,000 kWh	US\$ 10,000	1.50 tons
Intelligent Variable Speed (ivs) installed on domestic water booster pump*	180,000 kWh	US\$ 18,000	2.70 tons
Intelligent Variable Speed (ivs) installed on condenser pump*	190,000 kWh	US\$ 19,000	2.85 tons
Optimized flow and scheduling of water feature pumps*	320,000 kWh	US\$ 32,000	4.80 tons
Chiller replacement**	630,000 kWh	US\$ 63,000	9.45 tons

*1,400,000 ft² hotel

**242,000 ft² hotel

¹ 0.03 lb/kWh

[†] US\$0.10/kWh

A 10% reduction in energy costs is equivalent to increasing RevPAR by more than \$2.00 for full-service hotels or \$0.62 for limited service hotels.

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Industry-standard solutions

Problems you may experience

Armstrong solutions available

Additional benefits

Chilled water systems

- High operating costs
- Unacceptable temperature swings

- Integrated chilled water plants
- Patented controls

- Redundancy
- Improved temperature control
- Reduced maintenance
- Extended life-cycle
- Low operating cost

Boilers

- High operating costs
- Repeated cycling

- Modular boiler systems

- Improved efficiency in a part-load environment
- Improved temperature control

Heat exchangers

- High cost of maintenance
- Capacity shortages

- Retrofit heat exchanger options

- Improved maintenance and control

Pumps

- Overpumping
- High cost of maintenance

- Variable speed pumps with integrated controls

- Space savings
- Low operating cost
- Improved maintenance and control

Fire systems

- Insufficient alarms
- Lack of reporting and data logging

- Remote fire monitoring systems

- Alarms
- Data logging
- Text messaging