



YOU LIVE ON EFFICIENCY GAINS

WE'LL HELP YOU LIVE BETTER

ENERGY SERVICES

The pressure is always there. You need innovative approaches to energy savings to build out existing and new client projects. The high-visibility projects are easy. A lighting retrofit project can turn up 40% savings and might have a pay-back period as short as two years. But after that's done, the challenge for Project Managers remains the same — find more savings.

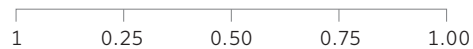
Without an in-depth understanding of HVAC systems, you may not recognize the retrofit projects that offer potential for savings. You might pass up a project opportunity because of the capex requirement. Worse still, you might invest in a retrofit but select traditional system components, which would lead to you missing out on the best ROI opportunity.

Integrated Plant automation energy efficiency

Integrated Plant Control all variable speed



Existing



ANNUAL AVERAGE - kW/ton

Armstrong retrofit solutions draw on advanced technologies and proven efficiencies that will deliver energy savings.

We know where the potential savings are

Armstrong can help you review the HVAC systems in your clients' buildings and point out opportunities for bigger savings and faster payback. Our retrofit solutions can provide annual savings of tens of thousands of dollars and payback periods of 6-36 months.

The HVAC system in a commercial building typically represents 40-65% of the building's total energy usage, and energy is approximately 50% of a building's annual operating cost.

Compared to the buildings constructed 10-15 years ago, today's new buildings are designed to use 40% less energy for HVAC requirements. These efficiencies are usually achieved through improvements to the building envelope, orientation, and high-efficiency integrated solutions. Although these technologies work

well in a new construction environment, there is often no opportunity to apply the same techniques to existing buildings.

Armstrong HVAC retrofit solutions are applicable to new buildings and old buildings alike. Retrofit projects, from a change-out of a fixed speed pump to a replacement of an entire chiller plant, can be completed at a low installed cost. Armstrong retrofit solutions draw on advanced technologies and proven efficiencies that will deliver the energy savings to support your internal hurdles for ROI and payback period.

You don't have to settle for trade-offs. You can amaze your customers. You can satisfy occupant requirements. You can have premium efficiency systems at a lower installed cost. With Armstrong solutions you can be a market leader, and the buildings you retrofit will operate at an efficiency level that makes everyone's life easier.

Industry-standard solutions

- Constant speed pumps
- Constant flow systems

Constant speed chiller

Large storage tanks

Base mounted constant speed pumps

New variable speed chiller plant

Aging chiller plant with banned refrigerant

Aging boiler plant

Armstrong solutions available

Variable speed pumps and controls
Variable flow systems

Variable speed chiller plant plus controls with all components sized for part-load efficiency

Instantaneous water heater

Intelligent variable speed Vertical In-Line and dualArm pumps

All variable speed plant automation

Prefabricated all variable speed chiller plant

New prefabricated modulating condensing boiler plant with variable flow

Additional benefits

Occupant comfort, space savings, future-proofing the building, longer equipment life, reduced maintenance costs, energy savings

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Space savings, health benefits, reduced maintenance costs, improved reliability

Maintenance cost savings, space savings, installation savings, piping savings, friction and energy savings

Greater than 25% energy savings over best-in-class

- 60% energy savings
- Fast and simple retrofit

- Between 15% and 50% energy savings compared to alternatives
- Quick installation

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