

**NON-INVASIVE  
REFRIGERATION  
EFFICIENCY  
BROCHURE**



**Techno Mechanical Solutions**

**EVAPORATIVE CONDENSER PRE-COOLING SYSTEMS**

For estimates: **512-551-0923**

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**TECHNO MECHANICAL SOLUTIONS, LLC**

**512-551-0923**

# "Custom-fit, clean-energy technology that cuts the peak-energy demand and costs of air-cooled HVAC equipment."

## REDUCE EXPENSES & IMPROVES COMFORT



PEAK+ reduces the operating cost of the largest single user of electricity in a building, the HVAC system. On hot days, the system will keep inlet air 15 - 30 degrees below ambient temperature, so cooling capacity never degrades and comfort increases when needed most.

## INCREASE EFFICIENCY & CONSERVATION



PEAK+ system's EZ Frame prevents dirt and debris from fouling the HVAC unit's condenser coils, which boosts heat-transfer efficiency resulting in increased equipment life. The SmartSpray controls minimize water usage by only using water when needed.

## BUILDING A SUSTAINABLE FUTURE



PEAK+ technology is free of any hazardous chemicals, refrigerants and difficult-to-recycle materials. PEAK+ reduces energy usage and, therefore, reduces the output of greenhouse gases in the community.

## PERFORMANCE MAINTENANCE PLAN



In addition to reducing long-term wear on HVAC equipment by adopting the PEAK+ system, the preventative maintenance plan includes routine maintenance, annual inspections, remote performance monitoring, autonomous SmartSpray controls and sensors that go beyond fault detection. Customers receive software upgrades, emergency-hotline assistance and response services as well as an extended parts and labor warranty.

HOW DOES THE SYSTEM WORK?

# TECHNOLOGY

- 1** The system retrofits on virtually any air-cooled HVAC unit by encasing the unit's condensing section with our EZ Frames.
- 2** Treated water sprays within our EZ Frames and either evaporates or accumulates onto a thin filter media; no water transfers to the condenser coils.
- 3** The result is a lower ambient air temperature that helps reduce the amount of power your HVAC uses to cool; this saves you money on your electric bill and prolongs the life of your equipment. All results are monitored and verified with our performance monitoring package.



# PARTNERS

Proven solutions for all types of industries, including:

- Data Centers / Critical Facilities
- Commercial Buildings
- Electric Utilities
- Government / Public Facilities
- Healthcare
- Mechanical Engineering Firms
- Major HVAC OEMs



# REDUCE YOUR HVAC ENERGY USAGE BY 25 - 30% OR MORE!

As the market leader in evaporative condenser pre-cooling for commercial HVAC units, has helped countless small, mid-sized and Fortune 500 companies reduce their HVAC energy usage. **The system is revolutionary because of its innovative remotely-monitored design which uses minimal water paired with compelling financial paybacks.**

HVAC accounts for 40 - 60% of a typical commercial building's energy bill. **By pre-cooling the air before it enters the condenser coils, the system reduces compressor energy usage by 25 - 30%, without adding humidity to the indoor air.** This innovative approach dramatically increases the efficiency of the critical heat exchange process, therefore reducing peak-demand energy consumption resulting in significant energy cost savings.

The hotter it is outside, the more energy an HVAC unit uses to cool the indoor space. **The system essentially changes the weather immediately outside of the HVAC unit, allowing it to operate as if it's cooler outside than it actually is.** The system pre-cools the incoming condenser air using evaporation. The EZ Frame is non-invasively attached to the condenser coil opening, misting water onto a filter medium. Hot air that passes through the EZ Frame cools before reaching the condenser coils, with no water reaching the coils. Because the air the system cools never enters the indoor space, the system is applicable and effective even in very humid areas and has no impact on the indoor air.



PEAK+ is continually improving its product to increase its effectiveness and minimize maintenance requirements. PEAK+ understands that it takes commitment from building owners, facility managers, and technicians to be successful, so the system is designed to make installation and maintenance as easy as possible. PEAK+ strives to make HVAC systems run more effectively, in turn, saving money and extending the life of the equipment.

## HOW IT WORKS

# HVAC IN THE SUMMER



The single biggest driver of energy demand on a commercial building is the HVAC system. When the outside air temperature increases, the air conditioner works harder to cool the air using more electricity.

**When the air entering the equipment is 100°, the extra work causes the head pressure inside the compressor to rise.**

Continued high head pressure overtime will cause the system to malfunction and lead to reduced capacity for cooling until it ultimately results in premature compressor failure. Dirty coils are another contributing factor to high head pressure and reduced functional life. Dirt and pollen on the coils act as insulation preventing the ejection of heat from inside your building to the outside air. It is equivalent to putting a thick coat on the unit.

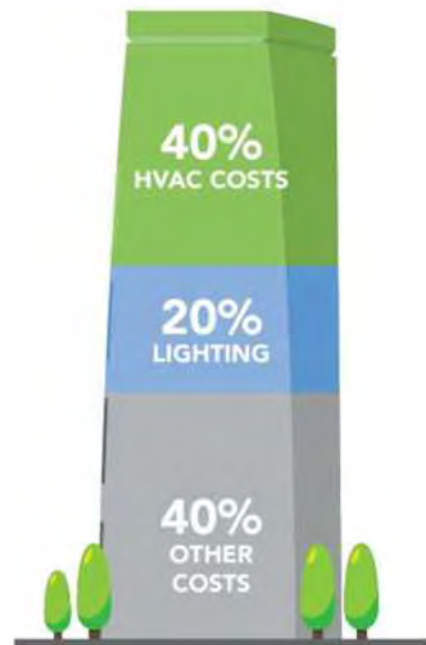
To protect the compressor, modern HVAC systems contain a kill switch which turns the unit off when the head pressure gets to damage-causing levels. This is when building tenants start to make emergency maintenance calls.

**Modernizes your HVAC system by cleaning and cooling the air flowing into the coils, thereby reducing head pressure, lowering your electricity bill, and improving your HVAC system reliability.**



# THE CURRENT STATE OF ENERGY COSTS

In an increasingly competitive commercial real estate market, buildings with high energy efficiency outpace their neighbors on operating expenses, rent premiums, occupancy, and asset value. **By significantly reducing utility costs, upgrades result in increased Net Operating Income that is capitalized into increased asset value.**



Commercial buildings in the U.S. spend an average of \$1.34 per square foot on electricity. HVAC represents around 40% of that total cost, making it a prime target for energy savings. **ENERGY STAR calculates that a 10% decrease in energy use could lead to a 1.5% increase in NOI, with even more impressive figures as the energy savings grow.** In premier markets with high rents, energy savings may appear relatively small as a percent of NOI; however, considering the current compression of cap rates, it is possible to turn pennies into millions through value per square foot.

In addition to reduced operating expenses and increased property value, becoming more energy efficient enhances the loyalty and the comfort of commercial tenants. With customers, investors, and even employees increasingly expecting businesses to show a commitment to energy efficiency, research shows that tenants are willing to pay a premium to office in buildings that meet these standards. One-third of respondents to a McGraw Hill Construction survey said they would pay a premium for green retrofitted space. A CoStar study found that buildings with ENERGY STAR and LEED certifications were able to command higher rents per square foot and sold at higher asking price compared to the average rates for the region.

Energy efficient upgrades allow building owners and managers to demonstrate their commitment to the environment by reducing pollution, greenhouse gas emissions, and saving water.

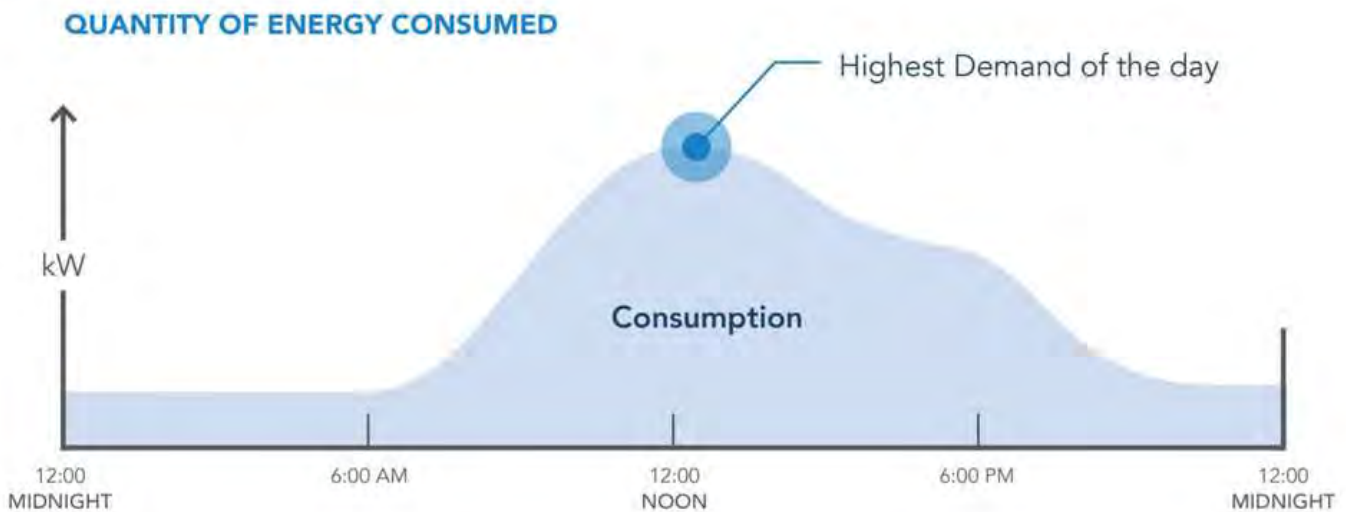
**Developed to help commercial building owners reduce energy demand, improve sustainability, and increase property value...a true win-win-win.**

# UNDERSTANDING YOUR UTILITY BILL

In order to manage your building's energy costs, it is important to understand how utility charges work. Residential electricity is based purely on consumption. Commercial electricity is based on two measures: consumption and demand.

CONSUMPTION	DEMAND
Based on the amount of electricity in the kilowatt-hours (kWh) that the building consumes during a month.	The peak energy use at one time in kilowatt (kW) occurring within the month, or for some utilities, during the previous 12-months

Demand charges range from \$8-40 per kilowatt per month, representing almost 75% of the entire bill. When looking for energy savings, building owners, managers, and tenants should strive to reduce peak demand.



**Reducing your energy usage during peak demand can result in real savings you can see grow over time with our service.**



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