Making buildings better for life
Building a sustainable future

The challenges facing building owners and the organizations that work within a facility’s walls are full of complexity. How well your building operates during its lifetime and how its operation affects the lives inside it play a critical role in your strategic objectives.

Today, with a wealth of research now substantiating the premise, there’s simply no denying the influence that temperature, humidity and air quality have on people’s ability to successfully work and learn.

Building operations are a big part of any budget. In a tight economy, even decisions impacting how building systems are serviced and maintained must consider the return on investment that can be gained over time.

Meanwhile, we all need to use resources more responsibly. Buildings, which account for 40 percent of the world’s energy use, offer perhaps the greatest opportunity to reduce wasteful consumption.¹

Trane building solutions balance all of these demands. They contribute to mission-critical objectives, reduce environmental impact, and improve quality of life.
Better for your organization: The Trane approach to High Performance Buildings

Leverage your building to realize your mission

Energy and water consumption, lighting and sound levels, processes for environmental compliance...everything in a high performance building works together to support the mission and values of the organization for the life of the building.

Of course, the mission varies greatly from one type of organization to the next: Building-related objectives for a hospital, which requires 24/7 operation and must comply with stringent codes and regulations for air quality, are very different than those for a manufacturing company that needs to reduce operating costs and increase productivity in order to remain globally competitive. No matter what your organization is striving to accomplish, Trane knows how to leverage your building to raise your success.

Making it happen

Trane creates High Performance Buildings by combining financial, operating and energy analysis with specialized service offerings and project financing. High performance buildings help owners and occupants be more productive and achieve their business/organizational missions by using standards that are created, measured and continually validated and improved upon to deliver established outcomes within specified tolerances.

Trane has developed concepts and methodology that can fully integrate with virtually every building’s operational need. An example are our exclusive EarthWise™ Systems that deliver industry leading energy efficiency, reduced emission, sustainability and documentation.

Our approach aligns to four key areas of building performance:

1. Energy, water and operational cost avoidance
2. Operational sustainability
3. Occupant health and welfare
4. Systems reliability and equipment uptime

For some building owners, achieving a “high performance building” is an immediate objective. More often, it occurs through a progression of decisions and actions. Whichever approach you prefer, Trane will work with you to put the basic principles into practice.

Visit our High Performance Buildings website to learn more:
Look inside a Trane High Performance Building

Studies continue to link indoor environmental conditions to the occupant experience that keeps employees productive and businesses profitable. Temperature, humidity, air pressure and ventilation can be precisely managed with Trane technology and services, combined with the expertise of our industry-leading HVAC professionals. Trane makes High Performance Buildings for life.
High efficiency chillers and unitary rooftop units—including EarthWise™ CenTraVac® chillers—cost less to operate and reduce carbon footprint.

Flexible, web-enabled building controls supporting open standard protocols make it easier for facility managers to maintain optimal conditions.

Air handlers equipped with advanced filtration systems improve indoor air quality and improve acoustics through quiet, vibration-free operation.

Ice storage shifts energy use to off-peak hours, saving money and reducing stress on local utilities.

Continuous monitoring and maintenance provided by Trane technicians brings out the best in any existing HVAC system. Proactive service reduces energy costs and sustains ideal indoor environmental conditions, year after year.

Parts and supplies to support systems operations and maintenance are readily available at a nearby Trane Parts Center.

Learn more about Trane High Performance Buildings at www.trane.com/highperformancebuildings
Trane collaborates with all types of organizations to raise the performance of their buildings and elevate their success, however they define it. It’s your building. Let’s work together to make it better.

**Creating ideal conditions for education**

Solutions from Trane enable schools to maintain optimal conditions for learning: temperatures from 67°F to 73°F with 50 percent relative humidity. The Trane Catalytic Air Cleaning System (TCACS™) helps keep students healthy and in school by controlling dust, particulates, odors, VOCs, viruses and bacteria.

Quiet Trane systems help ensure classroom sound levels meet ANSI/ASA Standard 12.60 for acoustics, too, because studies prove that children are especially sensitive to noise distractions.

**Sustaining effective environments for healthcare**

More than 1,200 studies directly connect the physical environment of a hospital with the quality of patient care and staff satisfaction and, subsequently, financial objectives. Many aspects of the environment of care can be improved and maintained through Trane building performance solutions. Our technologies and methodologies are used in hospitals around the world to ensure that patient rooms, operating suites and ICUs have the ideal conditions for healthcare delivery.

**SUCCESS STORY**

At a community hospital in Maine, improved air quality implemented by Trane increased operating room productivity. The upgraded conditions helped the hospital attract top surgical staff.

**Helping campuses grow greener**

A campus-wide sustainability plan is cost-effective when improvements that are designed to reduce energy use and minimize carbon footprint are offset by long-term utility cost savings. State-of-the-art analysis tools help identify the solutions that will provide the best returns. In addition, new technologies are making it viable and affordable to use alternative energy sources—geothermal, cogeneration, wind and solar—to power heating and cooling systems.

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Better for people and productivity: Let’s see what we can do for you.
Reducing manufacturing costs while raising quality

The cost to manage heat and humidity in a manufacturing facility is often the largest item in an operating budget. Significant financial benefits can be gained by improving the energy efficiency of climate control systems. Almost half (49 percent) of senior executives globally say that in the past three years, energy efficiency programs have improved their company’s bottom line.4

And when manufacturing processes require precise conditions, integrated Trane controls play an important role in quality control.

SUCCESS STORY

When Trane installed CDQ™ Dessicant Dehumidification at a robotics and stability facility in Connecticut, quality and consistency improved, and the company realized a 20 percent reduction in energy costs.

Keeping conditions cool to maintain data integrity

Heat is the number-one enemy in data centers. Trane provides highly reliable air conditioning systems and back-up processes. Our off-site monitoring services identify the earliest warning signs of cooling system failures. Many problems can be resolved remotely, before they become problematic. Growth is inevitable for many data centers, so new installations are practically designed for easy and affordable expansion.

Repeatable performance

Organizations that operate multiple facilities in different locations can rely on pre-engineered applications to provide consistent and reliable performance from one building to the next.

As a global company, Trane delivers standardized applications all over the world. Fast, on-time delivery and simplified installation keep construction schedules and budgets on track.

SUCCESS STORY

An international wholesale club opening multiple new warehouse stores in the United States and Mexico needed a cost-effective way to manage building operations and reduce energy costs. Trane provided packaged rooftop HVAC units with factory-mounted unit controls that are designed to work together. These pre-engineered systems simplified installation, lowered initial costs and kept tight construction deadlines on track. On a daily basis, this solution delivers exceptional energy efficiency and ease of operation through a building automation system (BAS) with web-based interface that allows building operators to manage all components as one system, from virtually anywhere.
Better for the bottom line: Trane service and support

Trane engineers and technical specialists can provide the support you need to gain the most cost-effective and beneficial performance possible from your indoor climate control system—from its first day of operation through the day it needs replacement.

Even an ideal, high performance system requires ongoing professional maintenance to sustain its intended operational benefits—that’s true whether your building runs a HVAC system we installed or equipment from any other supplier. No matter who made it, Trane can maintain its optimal operation.

Meet our team: The real Trane advantage

As a global company that has provided almost 100 years of industry leadership, Trane brings an abundance of collective knowledge to your building. Over 700 Trane employees are LEED® Accredited Professionals. Top industry engineers, technicians and support staff working with you to optimize the operation of critical indoor climate control systems for as long as you own your building—that’s the real advantage to working with Trane. Service for the life of your building.
Trane services and support

Our capabilities span every step in your building’s lifecycle. You can always turn to Trane for professional service and support. A long-term relationship with Trane ensures your original investment delivers a solid return.

Stage 1: System planning

DESIGN ASSISTANCE
Collaboration between Trane and the design engineering team ensures that the HVAC system specified is ideally suited to deliver long-term cost and performance benefits, based on the purpose of the building and the mission of your organization. In many cases, pre-engineered applications may be specified to shorten design time and reduce the up-front cost to purchase and install the system.

CONSIDERING LEED BUILDING CERTIFICATION?
Involving Trane during the early planning stages helps ensure your building meets the requirements.

Stage 2: Installation and construction

TURNKEY CONTRACTING
Plumbing, lighting, security and other critical building systems must work together in a building. Trane can manage the design and integration of all these systems to optimize energy efficiency and overall performance.

COMMISSIONING
Most suppliers are satisfied to simply sell the equipment, but Trane ensures you receive the performance you purchased. Field representatives assist with system start-up and commissioning to ensure the climate control system delivers the specified parameters for temperature, humidity, ventilation, static air pressure and other critical factors.

Stage 3: Operation and maintenance

PROACTIVE SERVICE AND MAINTENANCE
A proactive, predictive approach to maintenance can save an estimated 12–18 percent of your budget compared to a run-to-fail approach.5 Trane offers a range of planned service agreements. At the basic level, we’ll provide scheduled maintenance visits and inspections for a fixed annual fee. At the other end of the spectrum, performance contracting guarantees that building conditions and energy costs are maintained within pre-specified tolerances.

With a full range of service capabilities, and a national chain of retail parts outlets, Trane offers a service approach to suit very specific needs.

RE-COMMISSIONING
Optimized settings may be altered over time, causing system performance to fall out of spec. Periodic re-commissioning restores the system back to the original settings, and returns environmental conditions to the intended state.
Stage 4: System and product restoration

SYSTEM RENEWALS AND UPGRADES
Over the years, parts begin to wear down and technology becomes outdated. A planned upgrade helps prevent system failures and expensive emergency repairs. The Trane R’Newal process updates equipment with the latest technologies and restores vital components to original operating conditions at a fraction of the cost of a full system replacement.

SUCCESS STORY
An elementary school in Cheatham County, Tenn., was devastated by over seven feet of floodwater in May. It took work crews 60 days to clean up the building. Afterward, and with school scheduled to begin on August 8, the district called on Trane for a total replacement of the HVAC system. The project was completed by late July—and school began on time.

FLEXIBILITY FOR THE FUTURE
The way you use your building may evolve over time. Future regulations might dictate a more aggressive approach to energy management. System components that are designed with the future in mind ensure that upgrades and reconfigurations will be simple, fast and affordable.

Research involving all makes and models of HVAC systems has indicated that regular maintenance can:

- Cut unexpected breakdowns by 70%–75%
- Reduce downtime by 35%–45%
- Lower equipment repairs and maintenance costs by 25%–30%
- Reduce energy consumption by 5%–20%
Trane
Intelligent Services

We’ll keep watch over your critical systems from hundreds of miles away.

Establishing connectivity between your building and Trane enables you to tap into the benefits of our Intelligent Services. Technical specialists working the Intelligent Services center watch over the critical alarm points you define—automatically alerting your personnel via text message, email or pager when any deviation occurs. In many cases, they can diagnose and even repair minor issues remotely, before they develop into major events.

And by analyzing the steady stream of data that’s received from your building systems, Trane analysts are able to recommend immediate and long-term improvements you can take to raise your building’s performance, and leverage your facility to achieve financial and strategic objectives.

Trane Parts Centers

High quality parts (and trustworthy advice) are always nearby.

Service professionals rely on Trane for high quality supplies... and practical advice. Trane has more than 250 parts stores across North and South America. They offer HVAC parts, supplies and small equipment (ours and other brands) along with practical information about new technologies and effective techniques.
Better for the environment:
Using energy wisely is everyone’s business

In the future, managing energy use and reducing carbon emissions may be highly regulated. For now, it is simply the right thing to do.

As a global leader in indoor climate control systems, Trane considers it our responsibility to develop solutions that reduce energy consumption and associated costs, and soften the environmental impact.

We have focused on technologies for reducing energy consumption since the original energy crisis in the 1970s. Today, we are developing innovative and affordable ways for building owners to prepare for global or regional regulations impacting energy use, carbon emissions, refrigerant handling, and indoor air quality.

Leading the industry
Regional Trane professional teams stay abreast of emerging policies, legislation and consumer preferences for energy efficiency in every part of the world. And customers everywhere benefit from the Trane advancements that are emerging globally.

In North America, the Trane Energy Services Team introduces systems and practices that enable customers to achieve world-class levels of energy efficiency—drawing from years of practical experience and industry-leading energy analysis tools.

TRACE Energy Analysis
Considered the industry standard, TRACE™ Design and Analysis tools help establish the peak cooling and heating loads during the planning stage of a building project. At the design development stage, it aids evaluation of energy-saving concepts, such as the effects of day lighting, HVAC optimization strategies, and high-performance glazing. Near the end of construction, the TRACE model helps document compliance with ASHRAE Standard 90.1-2007 or validate the building’s eligibility for LEED® certification.
The environmental benefits of sustainable buildings are clear. But does it make sense from a business point of view?

The answer is clearly “yes.” Sustainability and the efficient use of resources are foundational to high performance buildings that contribute to mission-critical objectives. For example, dollars saved on utilities can be redirected to fund key initiatives, or to improve profitability and share the results with employees and shareholders.

The financial risks are minimal, as well. Many Trane customers find that systems upgrades that reduce energy use are self-funding through the projected utility cost savings.

Finally, up to 50 percent of energy used by commercial buildings is attributable to HVAC system operation. Improving HVAC energy efficiency offers your business some peace of mind against volatility and increasing costs in the energy market.

Trane subject matter experts proactively contribute to public policy debates regarding corporate sustainability, energy efficiency solutions in buildings and climate change mitigation.

We’ve been a part of some of the most important conferences and initiatives worldwide:

- United Nations Framework Convention on Climate Change
- United Nations Montreal Protocol treaty
- Alliance to Save Energy
- United States Green Building Association
- Green Building Initiative
- European Partnership for Energy and the Environment
- China Refrigeration and Air Conditioning Association
- India Green Building Council
- Business Council for Sustainable Energy

…and many others

Contributing to global policies

The business case for sustainable buildings
Better technology: 
Solving today’s problems

Trane technology continues to raise the bar for energy efficiency and indoor air quality in both new and older buildings.

**EarthWise systems**

Designed in accordance with Environmental Protection Agency recommendations, EarthWise™ systems benefit building owners and the environment through superior performance that can be measured, documented and sustained.

EarthWise systems combine Trane HVAC equipment, building controls and ongoing service to balance costs, energy efficiency and performance throughout the lifecycle of the building. The Trane EarthWise CenTraVac® is also the first commercial chiller in the world to receive third-party Life Cycle Assessment certification through registration of its Environmental Product Declaration as per ISO 14025.

**Energy efficient rooftop units**

The ENERGY STAR® rated Precedent™ 17 PLUS is one of the most energy-efficient packaged rooftop units in the industry. Designed specifically for K-12 schools, this rooftop unit is up to 17 percent more efficient than the competition, and exceeds federal minimum requirements by over 30 percent.

With a growing number of states implementing regulations for indoor air quality (IAQ), Precedent 17 PLUS features advanced filtration technologies that help manage environmental health hazards including dust, excessive moisture and chemical vapors.

**Next-generation controls: 
Easier to use, simple to install**

Many Trane airside units and chillers are available with factory-installed controls, which save time and reduce errors that can occur at the jobsite.

Web-based, enterprise-wide integrated control systems provide flexibility and reduce operating expenses. Widely-compatible field controllers are ideal for building renovations. Throughout the life of your facility, Trane offers controls solutions to optimize system performance.

The consistent, graphical interface that is used across all Tracer™ controls makes it easier for facility managers to manage temperature, ventilation and humidity levels, especially in buildings that have multiple control units.
Trane for life

At Trane, we are focused on the discovery of new technologies and services solutions to improve the life of your building and the lives within it.

Wind, biomass, geothermal and heat recovery systems are emerging as viable new energy alternatives. Forward-thinking Trane engineers are developing the technologies that will enable building owners to use these and other renewable energy sources now and into the future.

Success Story

At a Midwestern university, Trane implemented campus-wide upgrades, including the installation of 150 geothermal wells to provide high-efficiency heating and cooling for three of the main buildings. The overall initiative, which also included upgraded lighting systems, air handling units, acoustical improvements and new windows on selected buildings, is generating approximate annual cost savings of $735,000. A $36.1 million energy savings contract (ESCO) with Trane will save 31 percent in energy costs and is projected to reduce CO₂ emissions by 7,500 tons while retiring $20 million dollars in deferred maintenance liability.
Learn more about Trane systems and service solutions for the life of your building. Visit Trane.com. Or call your local Trane representative.

Footnotes:

2. ESource: A Sector Snapshot for K-12.
3. Validated by the Robert Wood Johnson Foundation (www.rwhf.org), the nation’s largest philanthropy devoted exclusively to healthcare.

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