TRANE®

Hospitality Solutions

Optimum environmental comfort for your guest experience

Ingersoll Rand®

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Optimum environmental comfort for your guest experience

The environment we breathe keeps us comfortable, healthy and productive. In the hospitality business, the comfort and quality of your environment can win the hearts of guests, create brand loyalty, deliver sustainability, increase staff productivity and positively impact revenue growth from returning customers. From empowering in-room guest comfort to enabling energy management and providing temporary cooling for seasonal outdoor recreation activities or events, Trane helps your guests experience seamless hospitality and feel at home at your hotel, restaurant, pub, bar, conference center, casino or entertainment facility.

Flexible heating, ventilation and air conditioning (HVAC) solutions from Trane transform heat to enhance the quality of life in your facilities and improve your business performance.

Responsible solutions backed by a century of expertise

Design of the built environment and maintenance goes hand-in-hand for the world's best hospitality brands. Determining the right HVAC equipment and technology right from the planning stage is just the beginning. The equipment needs to be appropriately sized to deliver the required cooling capacity with the flexibility to adapt to varying occupancy levels.

With over 100 years of experience, Trane can offer high-quality heating and cooling systems, tailored to meet building needs and the widest range of occupant activities. Our range of **indoor and outdoor chillers** is custom-designed to deliver best in class energy efficiency with whisper-quiet acoustic comfort. They are factory tested under extreme operating conditions to ensure reliable performance all year round.

Trane chillers embed intelligence with **Tracer Adaptive Control™**. The intelligent control features an easy-to-use interface, programmable relays and LonTalk®, BACnet®, Modbus® communication interfaces.

In combination with high efficiency products, Trane brings in-depth systems know-how and applications expertise. We can deliver integrated solutions such as variable primary flow, ice storage, condensing pressure optimization, variable air volume, free cooling, heat recovery and geothermal applications to suit hospitality environments.

When applied rightly these solutions can generate up to 60% energy savings, reduce carbon footprint and deliver operating cost advantages over the facility lifecycle.

Water-cooled packaged chillers

Helical rotary compressors

Centrifugal chillers for high-capacity cooling

Centrifugal compressors

Air-cooled chillers for outdoor installations

Packaged rooftop systems for plug-and-play comfort

The right climate for every purpose

Ensuring the optimal climatic conditions in all areas within a hotel guarantees an exceptional guest experience that differentiates your business from others. Guest rooms, reception, lounge and lobby, conference rooms, dining and recreation zones all have different environmental requirements. Kitchen areas need extensive ventilation and have to be kept separate from other areas. Pools, recreation rooms and gyms have their own unique climate requirements and need effective dehumidification year round.

It takes specialist expertise to provide impeccable temperature and air management round the clock and throughout the seasons.

Both air temperature and air flow must be closely managed to optimize guest comfort and it is the control system that plays this critical role. Trane's **Tracer™** portfolio of controls includes a range of options from a chiller plant management system to building management that allows streamlining of overall facility control including zone sensors and wall controllers for customizing individual spaces.

Tracer™ SC is a flexible, cost effective solution for programming and managing chiller plants that can extend to any HVAC equipment. Accessible from any PC, tablet or connected device, **Tracer™ SC** eliminates the need for a dedicated computer and monitor, so you can manage system performance whenever and wherever it is convenient.

Recommended temperatures for specific areas in hospitality businesses

Room type	Temperature (°C)
Bar, lounges	20-22
Guest bathrooms	26-27
Guest bedrooms	19-21
Restaurants and dining rooms	22-24
Corridors	19-21
Kitchens	16-18
Laundries	16-19

Source: The Carbon Trust, Environmental Design CIBSE Guide A, 2006.

Tracer SC
for total HVAC system control

ZN 523 controller
for easy user interface and integration to BMS

Wall thermostats
for easy space comfort

SOFITEL LONDON HEATHROW

This award winning 605 bed five-star luxury hotel with meeting rooms that accommodate up to 1200 people connects directly to the iconic Terminal 5 of the Heathrow airport.

Trane Solution contributed to developer Arora Hotels' year-on-year operational savings including a **15% reduction in utility consumption.**

- Integrated HVAC system with chillers, air handlers, room controls
- Tracer controls with an owner interface
- Remotely accessible BAS that centralizes system scheduling, control and diagnostics
- Trane Select maintenance agreement

"The great thing is that we use energy when we need it, and not until we need it. Having a Trane system here gives us an advantage. We have been able to build in systems that allow you to be environmentally aware while still offering that on-demand luxury service that people expect. Having a system that controls our energy at point of use is very important."

Vincent Madden, General Manager, Sofitel London Heathrow

"This tells us exactly what is happening in the hotel. For any area in the hotel it tells us the temperatures, how busy it is and of course if there is a problem. Everything is automatic. This is revolutionary, the way maintenance is done in hotels especially at this day and age when cost is one of the most important things we have to control."

David Wilson, Maintenance Manager, Sofitel London Heathrow

Air Quality that makes a difference to your business

Sufficient airflow around the human body is necessary for thermal comfort, while good indoor air quality (IAQ) is essential for a sustainable facility. This is especially true in the hospitality industry. The airflow required depends on the air temperature and the humidity. Good IAQ is influenced by the design of the air distribution system and by how well it is maintained.

The design of a ventilation installation must guarantee a comfortable and hygienic indoor environment for people. Trane air handling units are customized for unique applications to provide optimized HVAC system performance.

Custom-built air-handling systems from Trane are designed to meet unique airflow requirements while enabling easy serviceability and improved indoor air quality. Trane air handling systems come with a range of flexible options such as EC motors and antibacterial seals. They are Eurovent Class A certified to guarantee industry leading performance and energy efficiency.

Global research within the hospitality industry has shown that poor indoor air quality has a measurable cost in lost productivity. This cost can include loss of sales, loss of repeat business and decline in staff productivity.

Trane helps you achieve and maintain good IAQ through **humidity control systems**, providing ample ventilation with filtered and conditioned outdoor air, while working with your management staff to meet or exceed required IAQ standards.

A few factors that can contribute to poor IAQ:

- Occupancy rates that are higher than design ventilation rates result in insufficient dilution or inadequate removal of pollutants. This is especially true for bars, conference rooms, casinos and hotel guest rooms.
- Prevalence of moisture. Plumbing fixtures and HVAC units can lead to moisture management problems.
- Pollutant generating activities such as cooking, smoking, off-gassing of materials and spaces open to the outdoors (birds and insects) generate additional pollution which can tax the system.
- A high number of small HVAC units will need more exhaust fans and create greater probability for pressure imbalance potentially degrading indoor air quality.

CCTA
For easy-to-install modular construction

CCEB
Designed for the most demanding air flow requirements

CLCF Climate Changer™
Customized for comfort applications

THE CONVENTION CENTER DUBLIN (The CCD)

Ireland's first purpose-built convention center is recognized as the first carbon neutral convention center internationally.

Trane Solution **reduced cooling costs by 17% and carbon footprint by 60 tonnes per annum:**

- An ice storage thermal system produces ice at night for air conditioning during the day
- High-efficient heating and chilled-water system
- 33 thermal heat wheels in the air handling units, which recover 80% of the energy from exhaust air for reuse

The CCD recycles up to 85% of building waste, exclusively uses green electrical energy and integrated systems with a BMS and intelligent IP addressable lighting control.

"The CCD is truly committed to sustainability, and we are pleased that our building reflects this throughout while improving the bottom line. The selected systems are good for the environment, offer a low life-cycle cost and help provide a comfortable environment for our clients, visitors and employees."

Paul Moore, Building Services Contracts Manager for The CCD

Guest room comfort to meet the highest expectations

Guests have high expectations and individual needs. A room that is too cold or too warm, has odors or is noisy leaves guests feeling uncomfortable and unwelcome. Whether they are business or leisure travelers, guests need hotel rooms that offer maximum comfort.

Trane's **UniTrane™ fan coil terminal devices** operate silently to ensure thermal and acoustic comfort for your guests. The products come with a large choice of wall thermostats, user interfaces and wireless remote controls. Adequate fresh air intake and cleanable EU3 filters ensure a high quality environment within the guest room.

Trane's CleanEffects™ electrostatic filtration technology minimizes pressure drop and maximizes the volume of clean air delivered to your living space, removing up to 99.98% of particles and allergens as small as 0.1 micron.

Energy saving options on the devices such as EC fan motors deliver up to 80% energy saving potential.

The terminal devices can be easily integrated into the Building Management System (BMS) through the **Trane Tracer™ LonTalk ZN523** controller.

4-way cassette water terminals
for effective air diffusion and filtering

1-way cassette water terminals
for effective air diffusion and filtering

UniTrane™ Harmony concealed water terminals
with CleanEffects™ electrostatic filtration technology, horizontal or vertical installation

Concealed ductable water terminals
for easy installation and start-up

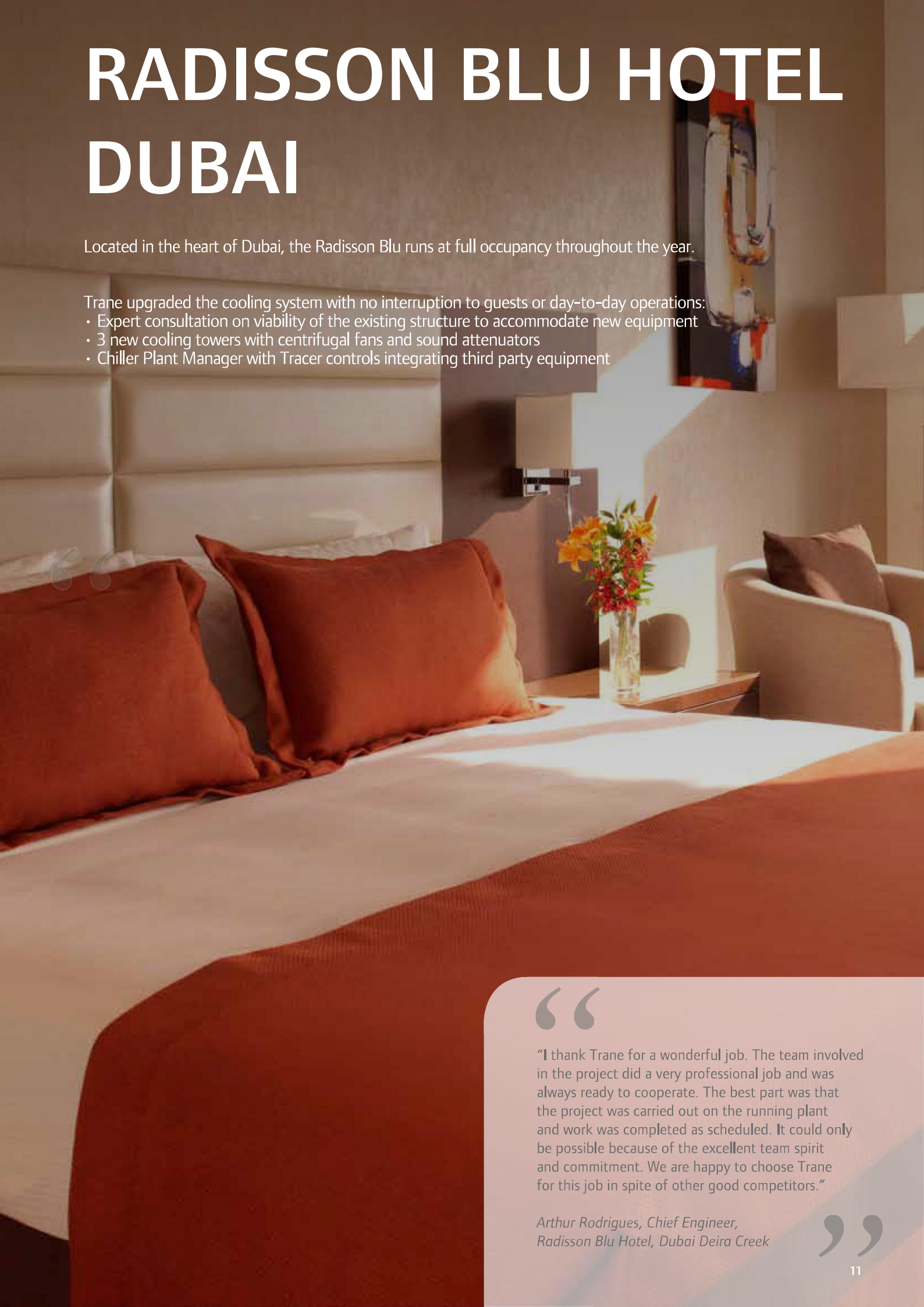
Concealed ductable water terminals
for high level of flexibility

RADISSON BLU HOTEL DUBAI

Located in the heart of Dubai, the Radisson Blu runs at full occupancy throughout the year.

Trane upgraded the cooling system with no interruption to guests or day-to-day operations:

- Expert consultation on viability of the existing structure to accommodate new equipment
- 3 new cooling towers with centrifugal fans and sound attenuators
- Chiller Plant Manager with Tracer controls integrating third party equipment



"I thank Trane for a wonderful job. The team involved in the project did a very professional job and was always ready to cooperate. The best part was that the project was carried out on the running plant and work was completed as scheduled. It could only be possible because of the excellent team spirit and commitment. We are happy to choose Trane for this job in spite of other good competitors."

Arthur Rodrigues, Chief Engineer,
Radisson Blu Hotel, Dubai Deira Creek

Sustaining hospitality with complete care

HVAC systems are designed to heat, cool and filter the air as necessary while controlling humidity during colder seasons. Systems also have to introduce fresh air into the mix to dilute building contaminants. The conditioned air is then circulated throughout the structure.

A poorly maintained HVAC system can allow water to build up in the unit, creating conditions where the system itself can become a reservoir for biological contaminants. Inadequate systems can also allow moisture levels that are high enough to foster the growth of mold and mildew.

Regular maintenance of HVAC systems is necessary to ensure a safe and productive facility, as well as controlling operating costs.

Predictive and preventive services from Trane will identify where your HVAC installation is not performing to its full potential and offer solutions to restore like-new reliability. These services are offered as part of the **Trane Care™ Services** portfolio.

**The services shown are only a small selection of what is available.*

Thermography
captures heat signatures to detect potential hazards in electrical and mechanical equipment

Oil analysis
assesses contamination levels and substance imbalances to identify and fix problems

Vibration analysis
helps to predict future failures, such as an imminent compressor fault

Tube testing
checks the condition of tubes in the heat exchanger impacting efficiency

Trane offers comprehensive 24/7 service through **Trane Select™ Agreements** for HVAC systems through its extensive service network. Regular inspection, preventive maintenance and proper equipment calibration are all delivered as a planned maintenance package for total peace of mind. **Trane Select™** offers four different levels of agreements from preventive maintenance plans to comprehensive maintenance programmes.

Trane service and support capabilities span every step in your HVAC system lifecycle. From initial system start-up, regular monitoring and maintenance, to seamless upgrades, our team of account managers, engineers and logistics professionals partner with clients like you to determine the right actions for ensuring the most reliable and cost-effective performance from your HVAC systems.

With **130 sales and service locations** in the Europe, Middle East and India region and over **1,000 of the best trained engineers and service technicians** in the industry, Trane network is never too far to deliver a fast response to your facility needs.

Energy management for consistent returns

Heating, ventilation and air-conditioning systems account for 50 to 80% of the energy consumed by a typical hotel or entertainment facility. This adds to the CO_2 footprint of the facility. At Trane, we understand that using efficient systems is a first step towards environmental responsibility. The range of services offered by Trane help you proactively manage your energy consumption and reduce your energy costs.

By taking benefit of use of free or wasted energy you can reduce your CO_2 footprint. Heat Recovery whether partial or total heat recovery is a responsible way to make to use of energy where there are simultaneous needs for cooling and heating. Trane offers **heat recovery solutions** for your building to pre-heat sanitary water or to use in kitchens and laundries.

Trane Care™ Energy Services helps improve energy efficiency of your HVAC system so you can generate immediate savings for your hospitality business. From cleaning of heat exchangers to retrofitting of Variable frequency drives and control systems, Energy solutions from Trane touch every aspect of your HVAC installation to provide cost effective peak performance.

Trane also offers solutions to reduce building and system impacts on the environment and human health through **Trane Care™ Environment Services** such as refrigerant leak testing, refrigerant monitoring and retrofits.

A Trane Care upgrade will provide:

- Right level of indoor air quality
- Reduced operating costs
- Extended equipment life
- Regulatory compliance

Adiabatic cooling
for air-cooled chillers reduces power consumption even at summer peaks

Trane Adaptive Frequency™ Drives
to optimize efficiency

Automatic tube cleaning
to clean heat exchangers and keep them operating at peak efficiency

Refrigerant monitoring
measures refrigerant charge and pinpoints leaks

If you are planning to refurbish an existing hotel or leisure facility, Trane can help you make meaningful improvements in energy efficiency and operational efficiency. We make chiller plant replacement and control upgrades easy for you and let you focus on what you do best – delivering memorable guest experiences.

We empower you in energy management through **Trane Boost** – a unique chiller plant efficiency improvement program. The program is designed to help you assess performance of your chiller plant against your needs and find solutions to achieve your energy reduction goals.

Trane Chiller Plant Optimizer is a fully scalable and adaptable control solution that can optimize the performance of the chiller plant. This control solution provides additional management data with customizable management dashboards. It supports multiple energy saving strategies and provides detailed performance reporting. Improved system efficiency results from the optimization of system components. Plant performance trending provides continuous monitoring of plant efficiency. The intelligence gained from the system helps you discover ways to manage your environmental footprint.

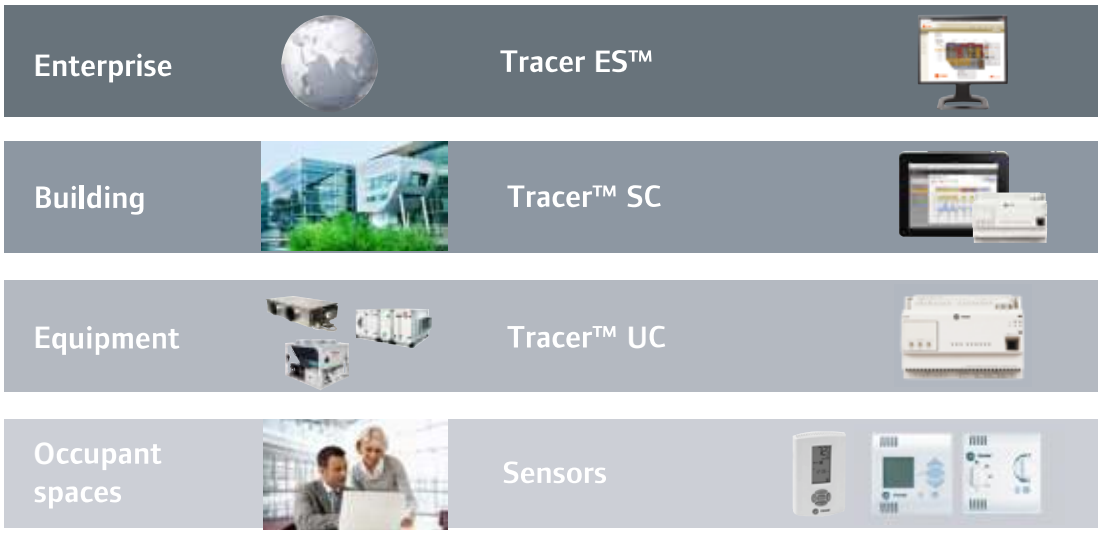
Trane Chiller Plant Optimizer Graphical Control Dashboard

Building Management at your fingertips

For Trane, a control solution goes far beyond automation of the chiller plant. **Trane Building Management Systems** offer scalable solutions from small to medium size individual hospitality facilties to managing multiple facilities as a single enterprise.

From managing individual living spaces, controlling HVAC equipment to integrating with building management, Trane controls architecture is fully scalable for optimal facility operation. Tracer™ control systems can also integrate critical facility subsystems such as lighting and energy metering for automation flexibility.

Trane Tracer™ architecture



Access your facility on the go

The Tracer™ BAS Operator Suite provides mobile apps that allow you to monitor and manage buildings from virtually anywhere, giving you freedom and peace of mind.

- Monitor equipment and systems performance. Graphics and animations make it easy to assess their condition.
- View active and historic system alarms, assess their severity, determine the cause and add notes for others.
- Take action! Respond to hot/cold calls by adjusting set-points and overriding equipment and occupancy.

The Tracer BAS Operator Suite works with iPhone®, iPod touch®, iPad® and Android™ devices.

LE MERIDIEN BANGALORE

The international five-star hotel located in the heart of India's Technology capital Bengaluru

Trane Solution resulted in nearly **38% energy savings.**

- Series R™ helical rotary chillers
- Tracer™ building management system
- Trane Select maintenance agreement
- Trane Care Energy services – eddy current testing
- Chiller control program load cycling designed for optimum chiller plant operation.

"Trane's excellent after-sales service guarantees no downtime, which helps me run the business most profitably. When a guest walks in from outside and into the hotel, it's a completely different atmosphere. We pay a lot of attention to temperature levels and fresh air in the hotel."

Mr. G. Vijay, Vice President,
Le Meridien, Bangalore

LIM CENTER WARSAW MARRIOTT HOTEL

A-Class office and five-star hotel is a city landmark in Poland.

Trane Solution generated **more than 30% reduction in energy consumption, lowered operating noise levels by 15db** and reduced greenhouse gas emissions.

- HVAC system upgrade including new chiller plants with energy saving features such as Variable Frequency Drives
- Chiller plant management system linked to the overall BMS
- "Free Cooling" solution that works using cooling towers and chilled water pumps
- Trane predictive maintenance agreements

"At LIM JV/Warsaw Marriott Hotel we have always proactively adapted our building to the highest quality standards. Our actions are not limited to the indoor design, but we constantly seek ways of modernizing the building to meet the most modern technology standards in order to be energy efficient and environmentally responsible. We are proud, that although 20 years old, the building represents the same technological standards as the most up-to-date and recently constructed buildings in Warsaw."

Rafał Gierczak,
General Director at LIM Joint Venture Sp. z o.o.

Cooling when and where you need it

Be it during summer peaks, seasonal outdoor events or scheduled maintenance, **Trane Rental Services** offers you temporary cooling virtually anywhere, anytime. With this totally flexible solution from Trane, hospitality managers and facility operators can reduce the capital investment costs associated with cooling equipment and avail of temporary equipment whenever the need arises.

The Trane rental chiller range includes brand new Air-cooled chillers of 50 kW to 1.5 MW cooling capacity, specifically manufactured for temporary cooling and comfort applications.

- Scroll chillers 50 – 450 kW
- Helical-rotary chillers 275 – 1451 kW

Trane provides a complete turnkey solution delivered to your doorstep, installed and running with no disruption to ongoing facility operations.

Find out more: **www.trane-chiller-rental.com**

Trane chiller rental installation at ALBEA, Italy

Ingersoll Rand (NYSE:IR) advances the quality of life by creating and sustaining safe, comfortable and efficient environments. Our people and our family of brands—including Club Car®, Ingersoll Rand®, Thermo King® and Trane® — work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; secure homes and commercial properties; and increase industrial productivity and efficiency. We are a $14 billion global business committed to a world of sustainable progress and enduring results.

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Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice.
Trane bvba, Lenneke Marelaan 6, 1932 Sint-Stevens-Woluwe, Belgium, ON 0888.048.262 - RPR Brussels

We are committed to using environmentally conscious print practices that reduce waste.

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