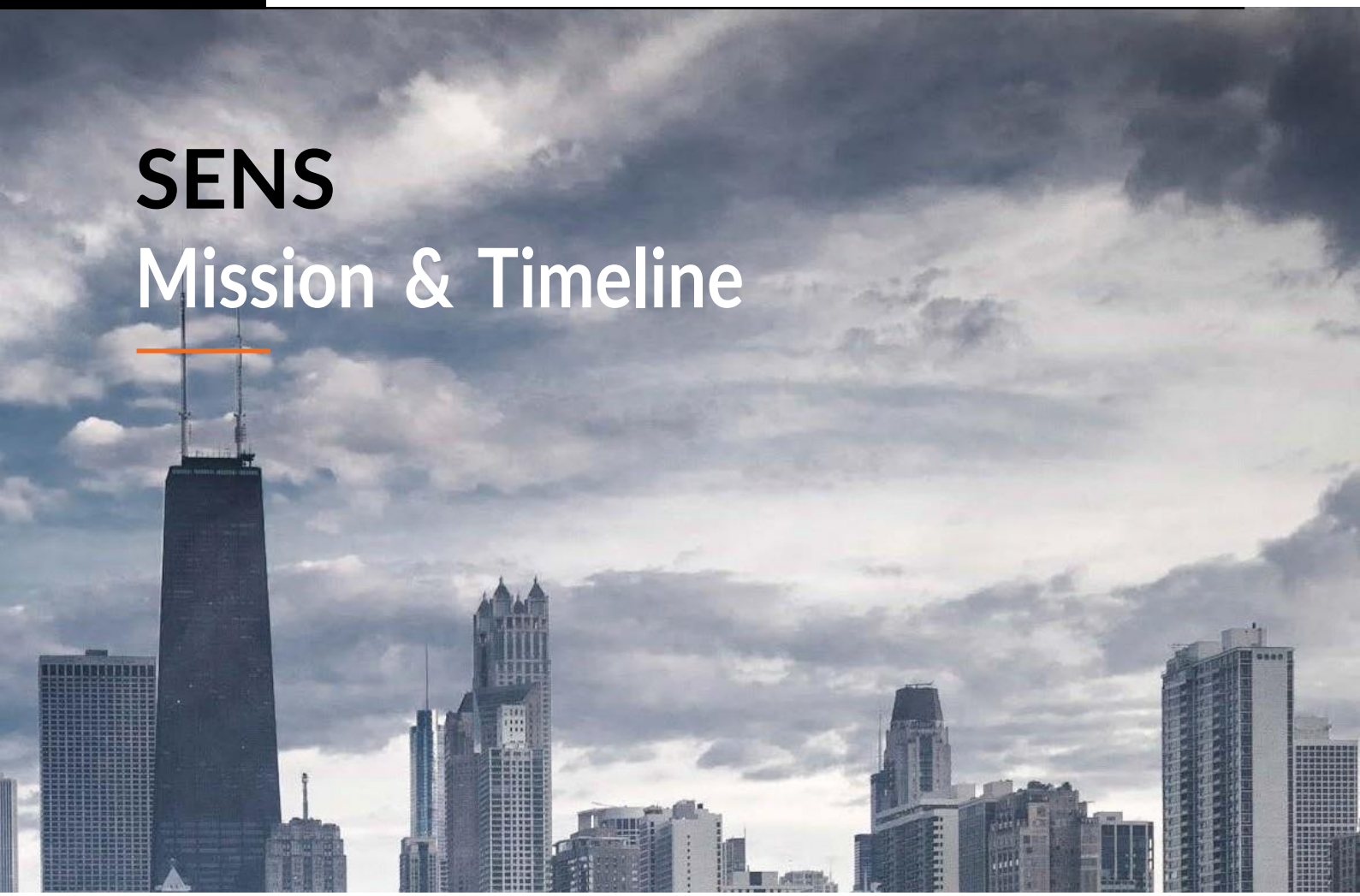
An Introduction to

SENS INNOVATION

SENS

SENS
WHO WE ARE



SENS
Mission & Timeline

MISSION

To develop products and services which enhance the energy performance and functionality of buildings and marine assets.

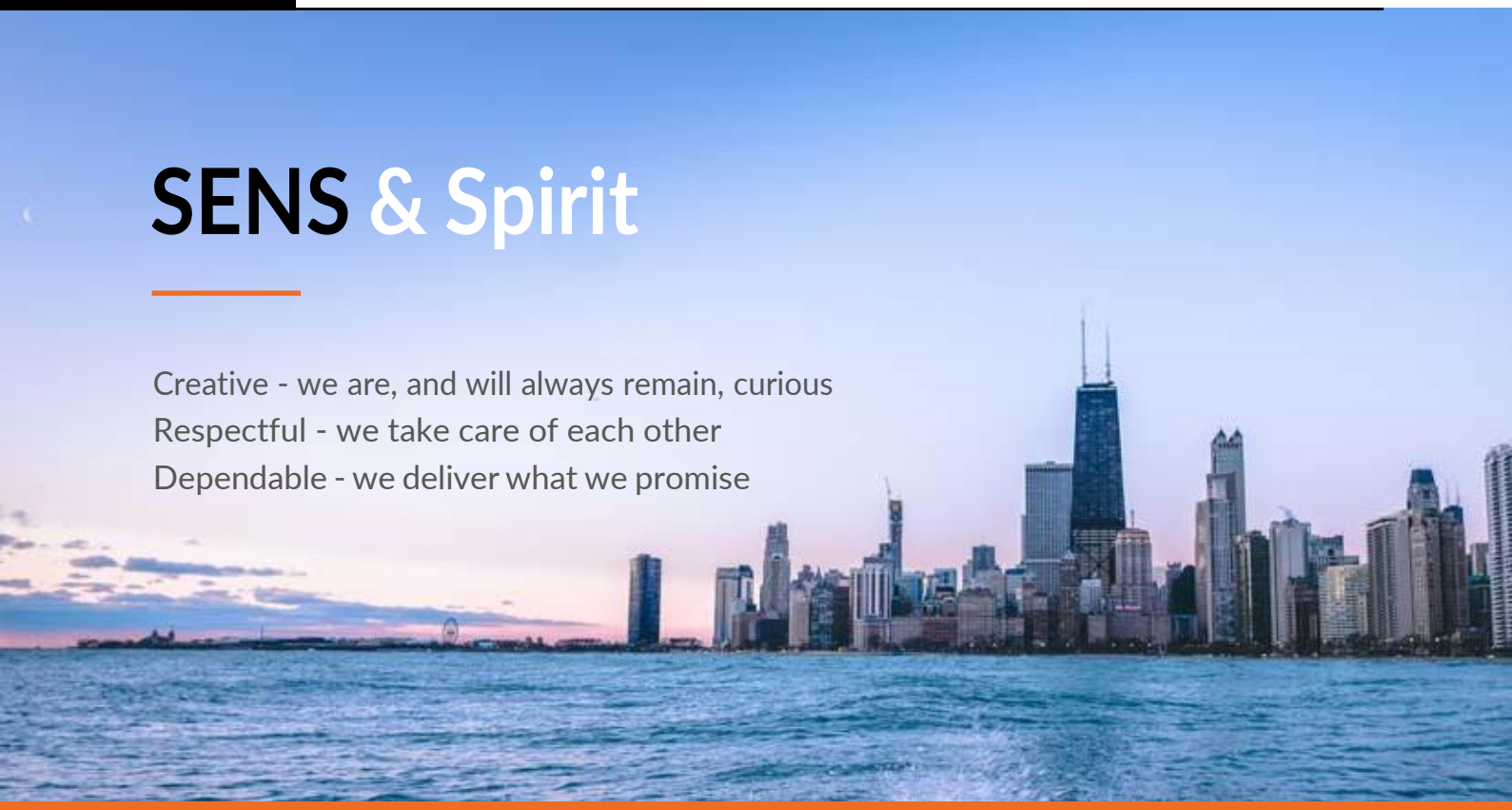
TIMELINE

Our vision since 1996 has been to design energy management solutions that are incredibly useful and consistently return value to clients.

That vision has been rewarding not only to SENS, but to those who have trusted us with their energy management challenges.

2019	Launch of IoT devices
Development of Cloud infrastructure	2014
2009	Expansion and export to global markets
1st energy management solution development	2000
1996	Foundation of the company

SENS & Spirit



Creative - we are, and will always remain, curious
Respectful - we take care of each other
Dependable - we deliver what we promise

It's not just about revenue generation, it's also about managing cost.

How much energy do you consume, where do you consume it, and why?

These are the questions we answer

We deliver active visibility over energy consumption and designs leading-edge energy management solutions which turn a financial drain into an opportunity for excellence.

Our activities

- Energy management & operations
- Guest experience

Our speciality

We design and provide energy management solutions for new and operational hotels with focus on retrofit projects.

Our technology is equally adaptable to any commercial building or marine asset.

Take control with our real-time visibility over your energy consumption to take immediate actions to reduce your carbon footprint.

Reducing your ENERGY WASTAGE.
Increasing your PROFITABILITY.

SENS GRMS & OTHER PRODUCTS

SENS INNOVATION

Introducing the IoT Series for all types of HVAC

SENS IoT SERIES

For Energy Performance and Guest Comfort in Retro-fit and New Build Projects

Why Reduce Energy Wastage?

According to statistics provided by Hotel News Now, Energy is the second largest spending categoryfor Hotels, second only to employment. Hotel News Now also state Energy accounts for up to 60%of a Hotel's CO2 emissions. SENS Innovation reduces energy wastage by managing HVAC systems,lighting and appliances that have been left on when vacating the room to consume the least energy without affecting guest comfort.

Variable Refrigerant Volume/Flow AC System (VRV/VRF)

Fan Coil Unit AC System (FCU)

Split Unit AC System

SENS IoT Devices

integrate with all types of Air Conditioning Systems without affecting room aesthetics or your guest comfort

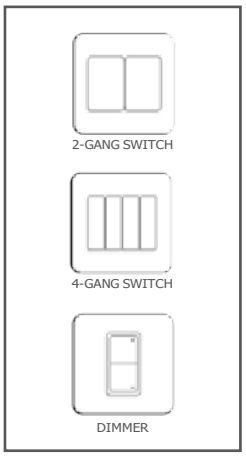
Bring Your Own Device (BYOD)

allows your guests the convenience to control room appliances hygienically through the comfort of their own phone using our Cheetah mobile App

SENS Innovation

Reducing your **CARBON FOOTPRINT.** Reducing **BACTERIA TRANSMISSION.**
Increasing your **PROFITABILITY.**

Standard switch from any supplier



Integrate with any device below without affecting room aesthetics

MORE CHOICE AND FLEXIBILITY FOR HOTELS

An affordable and flexible GRMS for sustainable hotel operations - **Any standard switch fromany supplier** can now deliver GRMS functionality with energy management at its core

SOLUTION BENEFITS

- Keep existing switches - use of any third party switches
- Cost effective - GRMS functionality
- Get real-time visibility, access on the Cloud - have control to take immediate actions
- Flexible and modular - adapts to various types of brands and adds on to other expansion modules
- Encrypted and secured systems
- Future proof technology - upgrade and add on to existing system

COMMUNICATION & NETWORKING

- WiFi/Ethernet
- Bluetooth Low
- EnergySub 1-GHz (868MHz)
- Modbus RTU/TCP-
- IPNB-IoT
- DALI2.0
- BLE - beacon ready

SYSTEM INTEGRATION

- Door locks via Zigbee/BLE
- Property Management System (PMS)
- IPTV via APIs

SECURITY FEATURES

- AES 128/256 Encryption
- SSL transmission to Cloud
- MQTT secure, event-driven protocol

SENS Innovation

Reducing your CARBON FOOTPRINT. Increasing your PROFITABILITY.

REACH Platform showing Savings, Room Occupancy and Equipment Status

AN INTUITIVE, ACCURATE AND EFFECTIVE PLATFORM

Take control for immediate actions with REACH real-time visibility to maximise **energy performance and savings**

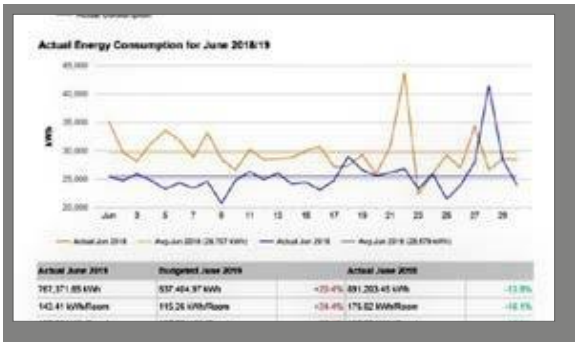
SOLUTION FEATURES

- Engineering matrix - give access to real-time status of each room for immediate action
- Key Performance Indicators (KPIs) - transform data into understandable data for action
- Trends analysis and comparison - compare consumption trends with goals
- Saving information - represented as KPIs andgraphs with automatic reporting
- Encrypted and secured platform - SSL transmission to Cloud

SOLUTION BENEFITS

- 24/7 access to controls and settings
- Accurate data collection and comparison
- Easy to install and programme
- Bespoke end user friendly data platform
- Customisable KPIs , charts and reports
- Historic data available for trends
- Reports automatically exported and generated
- Information sharing and communication made easy
- Easily accessible with Microsoft Azure on the Cloud

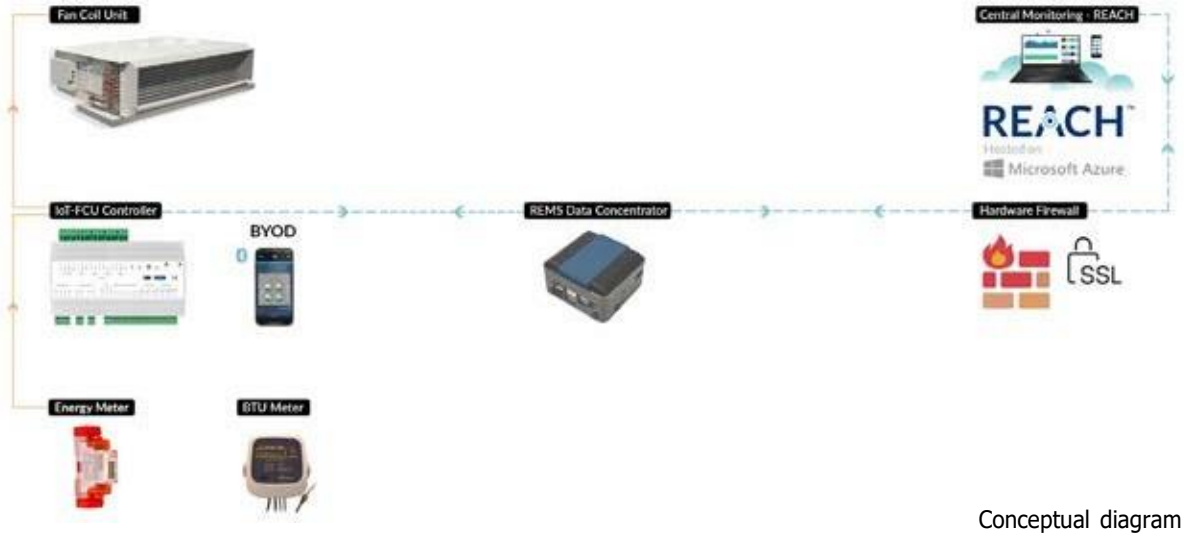
REACH Platform showing Room Status



REACH Platform showing Energy Consumption

SYSTEM INTEGRATION

- Door locks and safes via Zigbee/BLE
- Property Management System (PMS)



Conceptual diagram

MACHINE LEARNING CAPABILITY

SENS meter and measure both **Thermal and Electrical** energy savings in guestrooms.

SENS uses machine learning techniques to understand how metered data from sample rooms impact consumption and savings across the whole property. Our solutions can be retrofitted to ACsystems that have basic, dumb controls, or to existing GRMS equipment.

UPGRADE DON'T REPLACE

SOLUTION BENEFITS

- Accurate and transparent readings
- Results can be audited by 3rd parties
- Results based on metered values
- Understand the real ROI of room energy management
- Identify opportunities for optimisation and savings
- Categories guest rooms by their energy performance
- Detect issues for maintenance and intervention
- A management tool for sustainable hotel operations

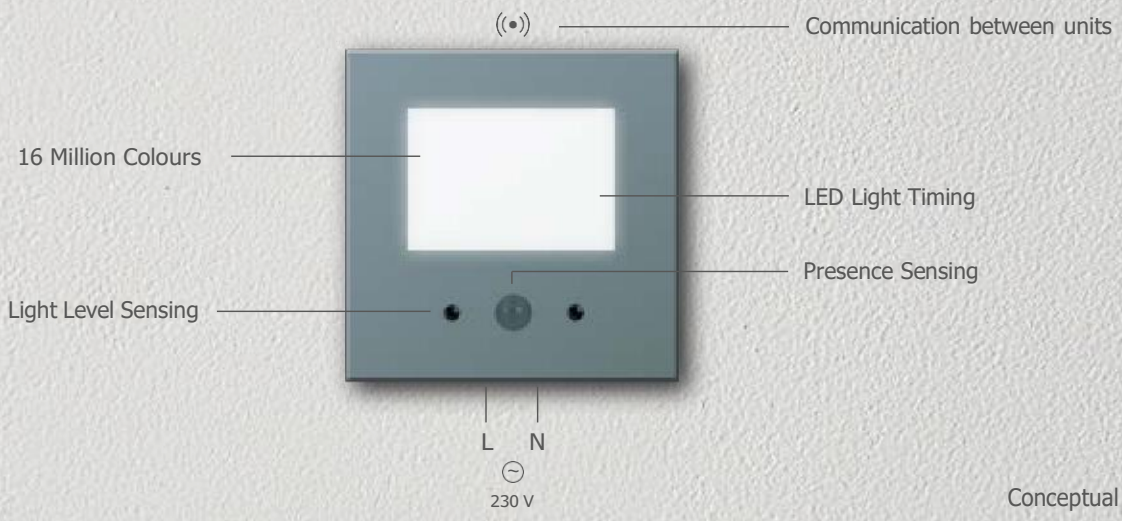
SOLUTION OUTCOMES

- How much energy and money can be saved in unoccupied rooms?
- What savings can be achieved in unsold rooms?
- If a door or window is left open, what is the energyloss and cost?
- Which rooms in my hotel are most energy efficient?
- How does seasonality affect my energy performance potential?
- What is the effect of the guest room management onthe plant?

SENS Innovation

Reducing ENERGY WASTAGE. Reducing BACTERIA TRANSMISSION.
Increasing your PROFITABILITY.

Introducing our Nightlight Solution



Conceptual diagram

STEP INTO LIGHT

Our Nightlight solution **provides discrete lighting** during hours of darkness.
It is smart, easy to install and network, and customisable for any type of room.

SOLUTION FEATURES

- LUX Sensing triggers - activate when natural or artificial lights level are low
- Presence detection - accurate and configurable range detection from 0.5-5m
- Duration - select the length of operation from seconds to minutes
- Colour - personalise your Nightlight from a palette of 16 million colours
- Networking - Nightlight operates in standalone mode or multiple units can be networked to operate according to requirements

SOLUTION BENEFITS

- Safety and convenience for guests in hotel rooms
- Discrete, automated lighting delivers the right amount of light at the right time
- LED colours customisable to match room décor
- Easy to install and programme

COMMUNICATION & NETWORKING

Networking options between grouped Nightlight units

- Sub 1-GHz (868MHz)
- Power Line Communication (PLC)

Setting up & commissioning individual Nightlight units

- Wi-Fi

SENS Innovation

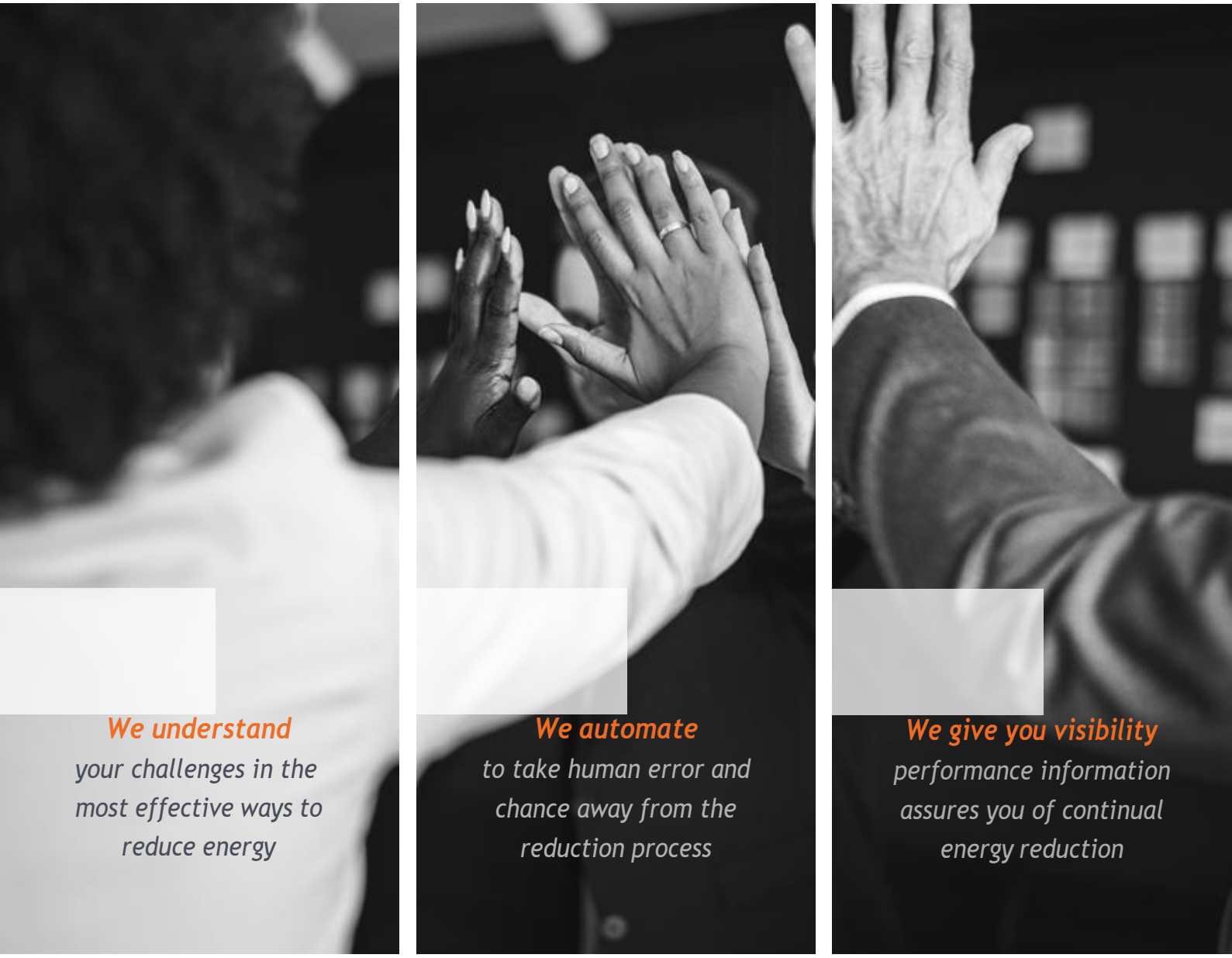
Reducing **ENERGY WASTAGE.** Reducing **BACTERIA TRANSMISSION.**
Increasing your **PROFITABILITY.**

SENS

SOLUTIONS
FOR HOSPITALITY

How do we save energy to make your business more efficient and profitable?

We include you in the solution



We understand
your challenges in the most effective ways to reduce energy

We automate
to take human error and chance away from the reduction process

We give you visibility
performance information assures you of continual energy reduction

STOP WASTING, START EARNING - FOR YOUR BUILDINGS

Understand energy consumption in context to business operations

REACH METERING & PERFORMANCE

- Increase efficiency of plant and equipment
- Understand consumption trends to identifyopportunities for reduction
- Monitor and measure savings
- Understand the dynamics of consumption and profitable actions

+ FOR MORE SAVINGS

Use the REACH APP for real-time notification on energy consumption

Integrate SENS energy management solutions with your existing enterprise software

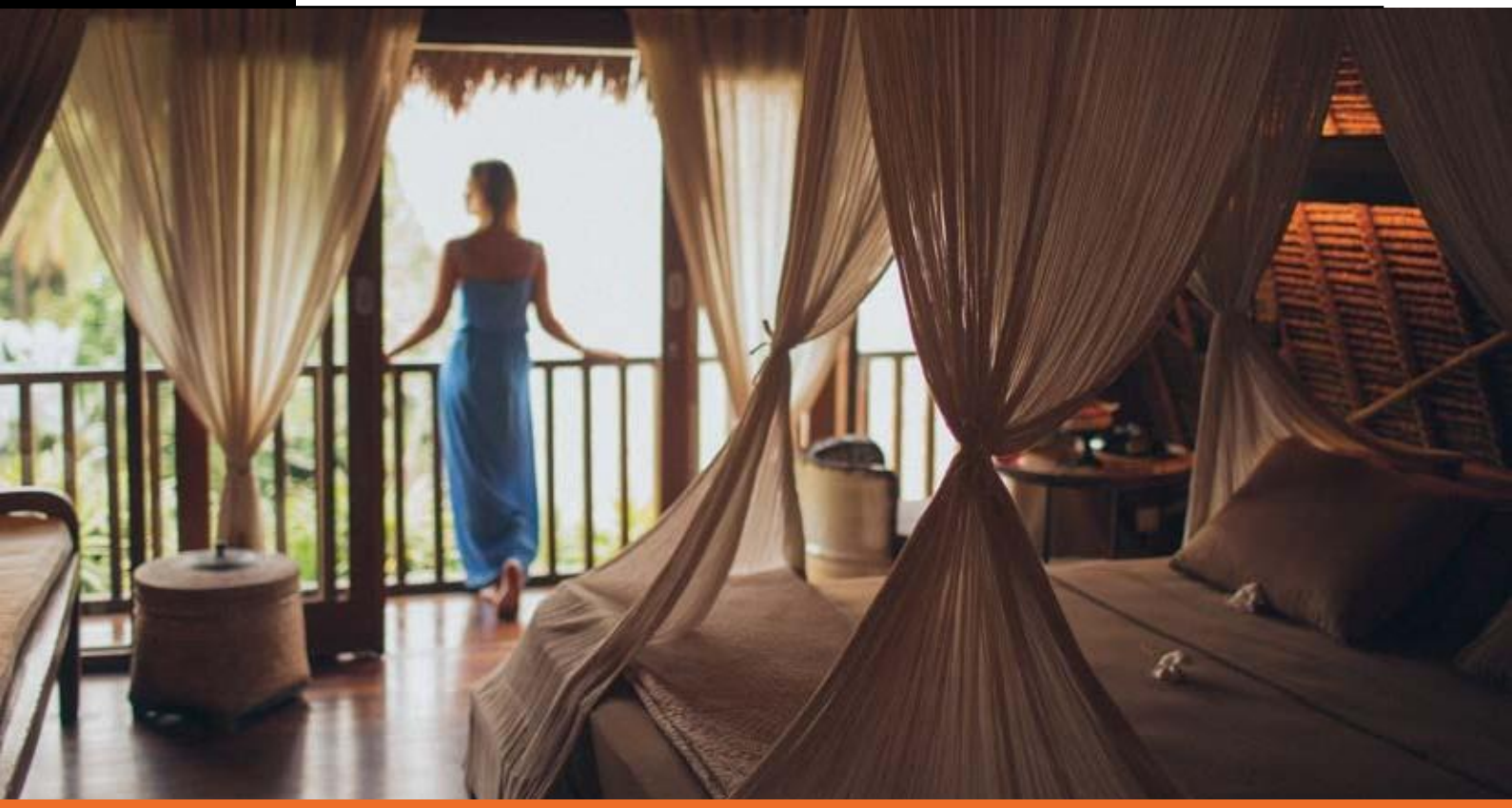
Operate your hotel more profitably

REACH OPERATIONS

- Bill tenants or internal departments on their consumption
- Enter and store data related to waste management obligations
- Generate reports on demand
- Administer technical audits for propertycompliance standards
- Forecast consumption from historic and current data
- Create budgets from latest trend information

+ FOR MORE EFFICIENCY

Move data from your BMS to the dynamic Cloudenvironment of REACH



STOP WASTING, START EARNING - FOR YOUR ROOMS

Reduce energy consumption without impactingguest comfort & aesthetic of your hotel

REACH ROOM ENERGY

- Optimise energy savings in each guest room
- Minimise guest complaints from issues connected to humidity
- Obtain key data on guest behaviour
- Improve operational costs in guest rooms

+ FOR MORE CONTROL

Integrate REACH ROOM ENERGY with

Door Locks - SENS can integrate with your door locks to achieve higher savings by distinguishing room access by staff or guest

PMS - Integration with the Property Management System allows different energy profiles to be managed in unsold rooms

Safes - Alert guests on check-out if the guest room safe has not been re-opened

Improve guest satisfaction

REACH ROOM EXPERIENCE

- Allow guests the facility to control room temperature, lights and curtains from an APP on their smart devices
- Anticipating guest needs in the room through analytics on behaviour

+ FOR MORE COMFORT

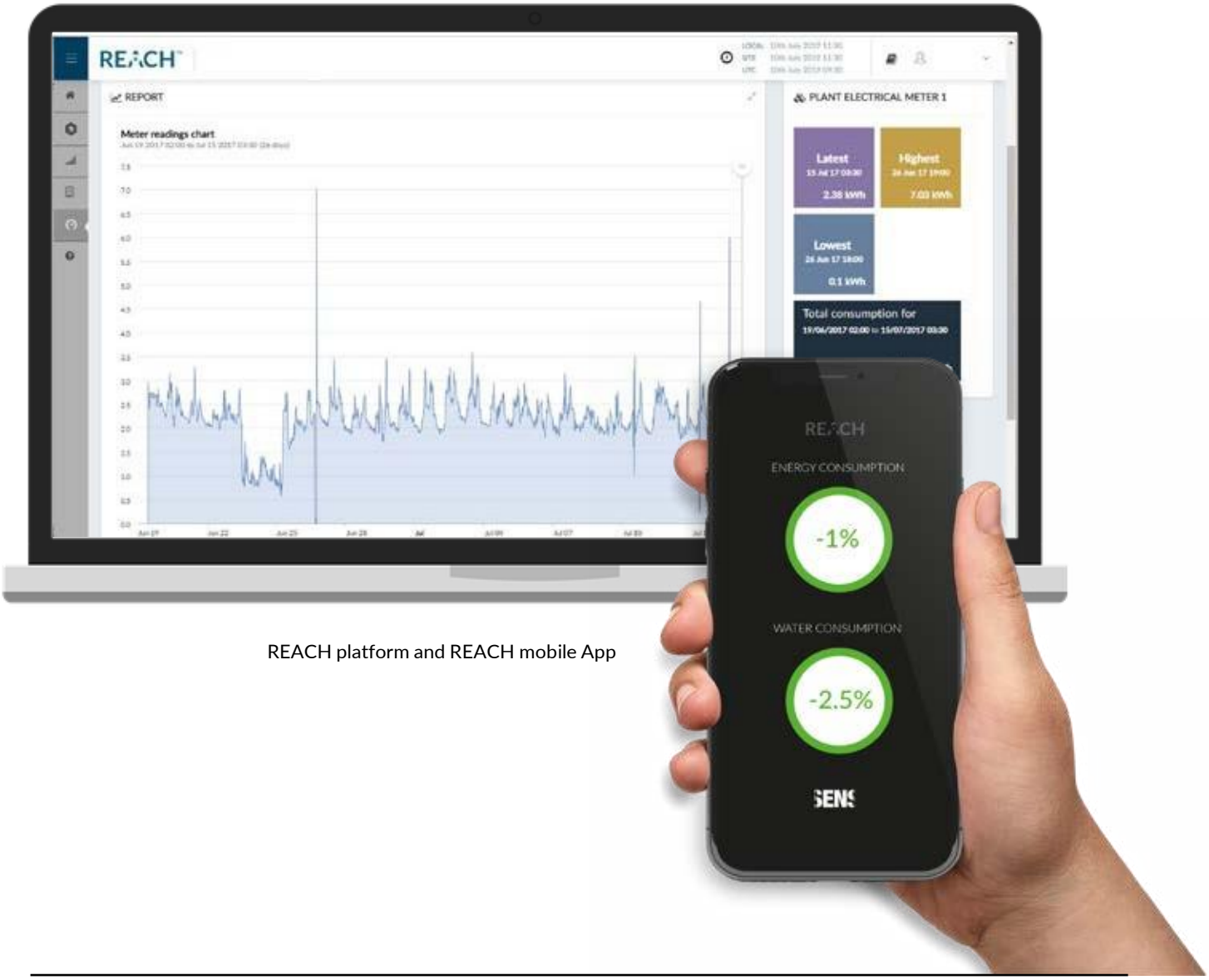
Ask about

Upgrading the guest panels in rooms without changing your existing electrical infrastructure

Understand how each guest room can have a customised environment

Learn how data from the REACH ROOM EXPERIENCE can be applied to Guest Relationship initiatives

Manage your hotel utility costs efficiently the secured Cloud environment of REACH drives key information and analytics through the REACH APP



REACH platform and REACH mobile App

Give your guests the convenience to manage room temperature, lights, curtains or guest services from their smart device

Cheetah APP display screen available on App Store

BRING YOUR OWN DEVICE to the guestroom experience

SENS brings convenience and hygiene to guest room controls without the need to change existing devices. BYOD delivers high engagement with your hotel customer from their trusted personal device

#hospitalitytechnology

SENS Innovation

Reducing ENERGY WASTAGE. Reducing BACTERIA TRANSMISSION.
Delivering HIGH ENGAGEMENT.

Benefits for you

SENS PRODUCTS DESIGNED TO SUIT YOUR REQUIREMENTS

Our products are designed to be

Adaptable

- To your existing equipment - we UPGRADE not REPLACE existingequipment
- To your needs - we design solutions specific to your business challenges
- To your budget - we provide effective solutions with the right features at the right price

Statistics show that on average, guests only spend 49% of their time in the room, where 68% of them leave heating/cooling on when vacating their room.

Operational

- Useful and effective - designed with and for hotel managers and engineers
- Easy to install - no disruption of hotel operations
- Aesthetically aligned - no impact on the room décor

Profitable

- Savings - 25 - 35% reduction on electrical costs
- Payback - within 24 - 30 months
- Return On Investment (ROI) - typical 12-15% p.a. over 10 years

SOME PROJECTS
2017 - 2021

Ritz Carlton Al Wadi RAK

Project Type: **Full scale GRMS with REMS for luxury tented villas**

Moevenpick Downtown Apartments

Project Type: **Standard GRMS**

Marriott managed hotelsin the UK

Project Type: **Retro-fit room energy management system (REMS) for 5000+ keys**

Kempinski Baie Lazare

Project Type: **BMS and GRMS with REMS using glass switches. Also include Nightlight modules**

Kempinski Business Bay

Project Type: **GRMS and REMS using retractable switches**

Fairmont Barbados

Project Type: **REMS with condensation mitigation as priority**

Sun Resorts
Shangri-la Mauritius

Project Type: **REMS for an FCU AC system**

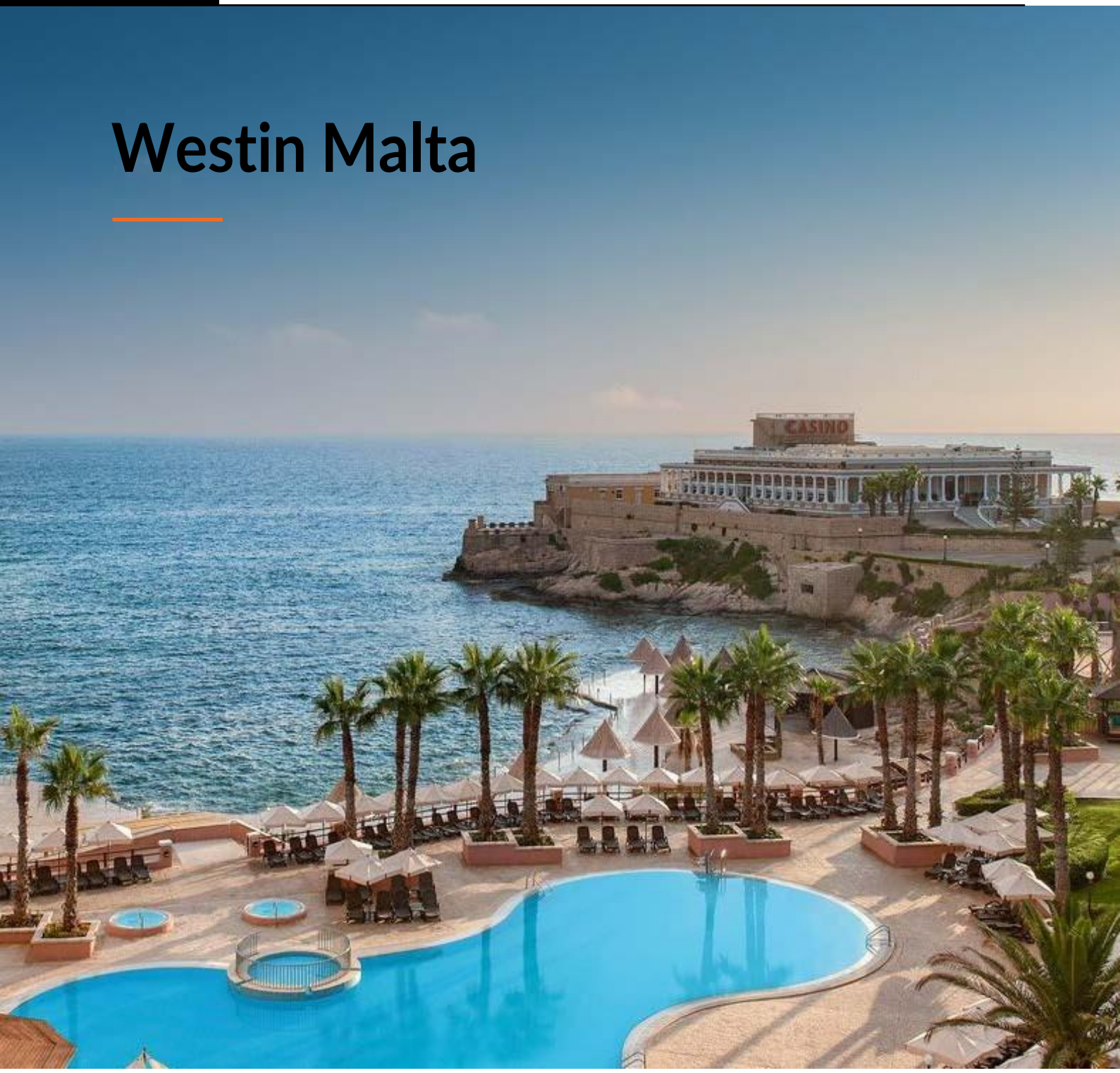
Sun Resorts Kanuhura Maldives

Project Type: **REMS for a VRV AC system**

Corinthia Grand Hotel Budapest Hungary

Project Type: **BMS**

Westin Malta



Project Type: **GRMS with REMS for FCU and VRV AC systems across the whole hotel. Integrated GRMS with Assa Abloy locks to put locks online**

Hyatt Regency Malta

Project Type: **GRMS with retractable switches and Nightlight**

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