



Energy efficiency with ISDE HOTELON in Royal Hideaway Corales Resort (Tenerife, Spain)

The hotel resort is located in the south of Tenerife (Spain) near Costa Adeje in a characteristic natural environment, it is a newly built resort and consists of 235 rooms and apartments with great details as well as a wide variety of common areas that complement user experience.

Barcelo Hotels Group as hotel operator and **CONTEL Ingenieros** as integrator chose **ISDE's HOTELON** integral hotel automation solution to face all the technological challenge posed by a hotel with these characteristics. The following case study describes the main challenges of the project and the automation solution by the main players.



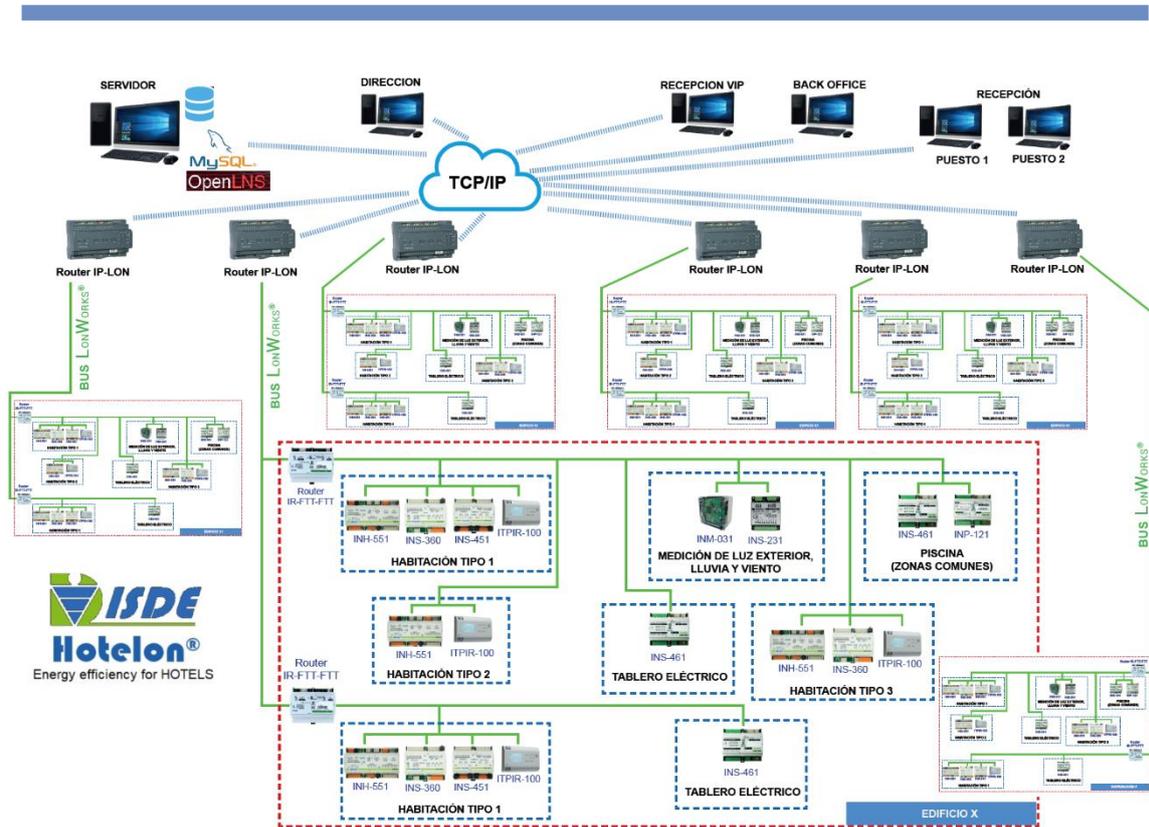
The challenge

- Geographically located in an area with lots of solar incidence, an infrastructure that contains large windows that causes generation of high temperatures inside the apartments.
- Hotel operation model through timeshare that requires measurement and billing of electricity, drinking water and hot water consumption domestic per apartment / room.
- The end user's requirement is for maximum comfort, going a step further in the line of 5 stars great luxury by including functionalities in the automation apartments of: awnings, curtains, scenic lighting of terraces and swimming pools, access management and control air conditioning, as well as information on the status of the rooms in real time.
- Technical management of all lighting electrical panels in the complex controlled by light threshold and schedule, access control to common areas such as parking, swimming pool, technical panels, etc.
- Easily maintainable and sustainable over time, by avoiding proprietary technology which maintenance or upgrading could be done by just one manufacturer.

The Solution

ISDE's HOTELON covers all the needs required by the client, below are described the following details:

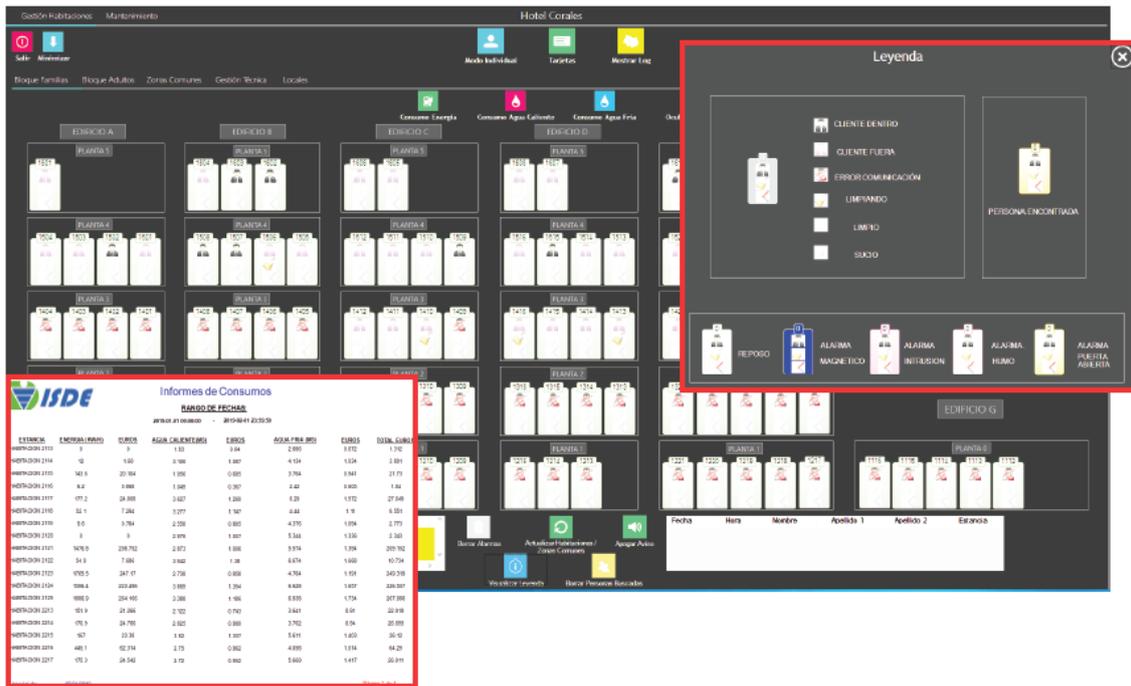
All the Hotel automation subsystems are connected to each other using the standard LONWORKS protocol (ISO / IEC14908), the field installation of the control nodes is done by wire using the twisted pair channel FT-10 which could be installed in a bus or free (star) topology. Architecture example showed in the image:



Infrastructure is made up of 9 different buildings, all buses are interconnected through IP-852 routers IP media. System configuration is done through the LNS database which resides in all nodes of the network, making the installation hubs free dependent, that is, intelligence resides in the nodes and the entire system continues to work locally in the event of a temporary loss of communications. All these characteristics allow total independence between the manufacturer, integrator and the end customer (most benefited). The most outstanding features are:

- Management of all hotel accesses, both from customers to apartments and common areas (parking, gym ...) as well as the hotel staff to technical areas using cards and readers proximity. The system allows modifying in real time from any of the positions enabled the accesses of a room as well as to report the accesses made to it.
- HVAC control, lighting and services in all rooms of each apartment. All parameters can be varied from the management software without the need of accessing the apartment, for instance once the client performs a check in the apartment automatically prepares the climate of the room for maximum comfort, reaching a balance between maximum customer comfort and maximum savings in the operation of the hotel (HVAC would standby if client leaves the room unoccupied and powered off if room goes to check out).
- Automated control of awnings and curtains locally, remotely, by wind threshold or by schedule programming, rewarding maximum security whenever excess wind is detected the awnings of the apartment will be collected, a general order Collection can be given from the management software if, for example, strong winds are expected in the next few hours.
- Dimming lighting in the room of the apartments with setting up of lighting scenes to create atmospheres with maximum comfort.
- Lighting in terraces, swimming pools and common areas of apartments controlled by light threshold and time programming. Lighting only when needed automatically at dusk.

ISDE's HOTELON® management and multi-station software allows the user to know in real time all the hotel's events: accesses, alarms, air conditioning, lights, consumption, billing ... as well as managing and configuring the functionalities of each room depending on the needs. The solution is based on the client-server architecture and project has 5 different desktops operating simultaneously, every desktop works autonomously and independently of whether each of the stations is connected or not. HOTELON interface is showed in the image below.



“Thanks to HOTELON, the integral automation solution for Hotels based on the LONWORKS standard protocol, we have managed to meet all the demands posed by the client as well as reduce the implementation time, infrastructure costs and increase the ease of maintenance that such a demanding project requires.”, said José Luis Delgado, CEO of CONTEL Ingenieros.

The result

Full project was finished early 2019, a integral LONWORKS system with more than 1.500 nodes from three different LONMARK international manufacturers was implemented: ISDE, SIMON and Dialog semiconductor (former ECHELON). An example of LON nodes quantities and achievements are showed below:

- HOTELON delivers to operator all resort systems management with just one click: HVAC, lighting, access control, metering, technical elements, reports...
- Real-time system with immediate response times, fully scalable, easily maintainable and sustainable over time.
- Just one LNS database and one integral infrastructure combining LON-IP and LON -FT reduced installation and maintenance costs.

| LON node | DESCRIPTION | QTY |
|------------|----------------------------------|-----|
| INH-551 | HOTEL ROOM LON CONTROLLER | 245 |
| INS-451 | LON CONTROLLER 6I/4O | 135 |
| INS-801 | LON CONTROLLER 8O WITH RTC | 6 |
| INS-360 | 3 CHANNELS DIMMER LON CONTROLLER | 147 |
| ITPIR-100 | LON FANCOIL CONTROLLER WITH PIR | 422 |
| INFC-621F | LON FANCOIL CONTROLLER | 16 |
| INS-081 | LON CONTROLLER 8 I WITH RTC | 101 |
| INS-461 | LON CONTROLLER 6I/4O WITH RTC | 52 |
| INP-121 | LON ACCESS CONTROLLER | 90 |
| INS-231 | Nodo de control estándar | 1 |
| INM-031 | LON CONTROLLER | 2 |
| IR-FTT-FTT | Router FTT-FTT | 28 |
| IR-IP-FTT | Router iLON IP852 - FTT | 9 |
| | Multifunction button panel | 270 |

“Under the ISDE HOTELON philosophy, a solution for hotels entirely based on the LONWORKS standard protocol, we can offer to the building automation market an integral solution from field devices to management software entirely done with LON, being able to implement systems that interact between them in a horizontal way such as access control, HVAC, lighting, technical elements, metering and energy management all under the same goal of maximizing energy efficiency in the building.”, said Jorge Bueno, ISDE CT.



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