

References by activity



Facilities





FACILITIES

22@ MAR BUILDING

LOCATION ▶ Barcelona (Spain)

CUSTOMER ▶ Inbisa

PROJECT SCOPE:

Full installation work on a 17,500 m² 11-storey office building located in Barcelona's district 22@

AMOUNT ▶ EUR 5 million

START DATE ▶ october 2006

FINISH DATE ▶ june 2007



SPAIN

Barcelona (Spain)



FACILITIES

22@ MAR BUILDING





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FACILITIES

AB SKIPPER HOTEL

LOCATION ▶ Barcelona (Spain)

CUSTOMER ▶ Eptisa

PROJECT SCOPE:

Full facilities of the Hotel AB Skipper

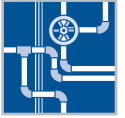
AMOUNT ▶ EUR 5 million

START DATE ▶ january 2007

FINISH DATE ▶ august 2007

CHARACTERISTICS:

- ▶ Full facilities
- ▶ Solar thermal
- ▶ Centralised control
- ▶ CCTV
- ▶ Access control

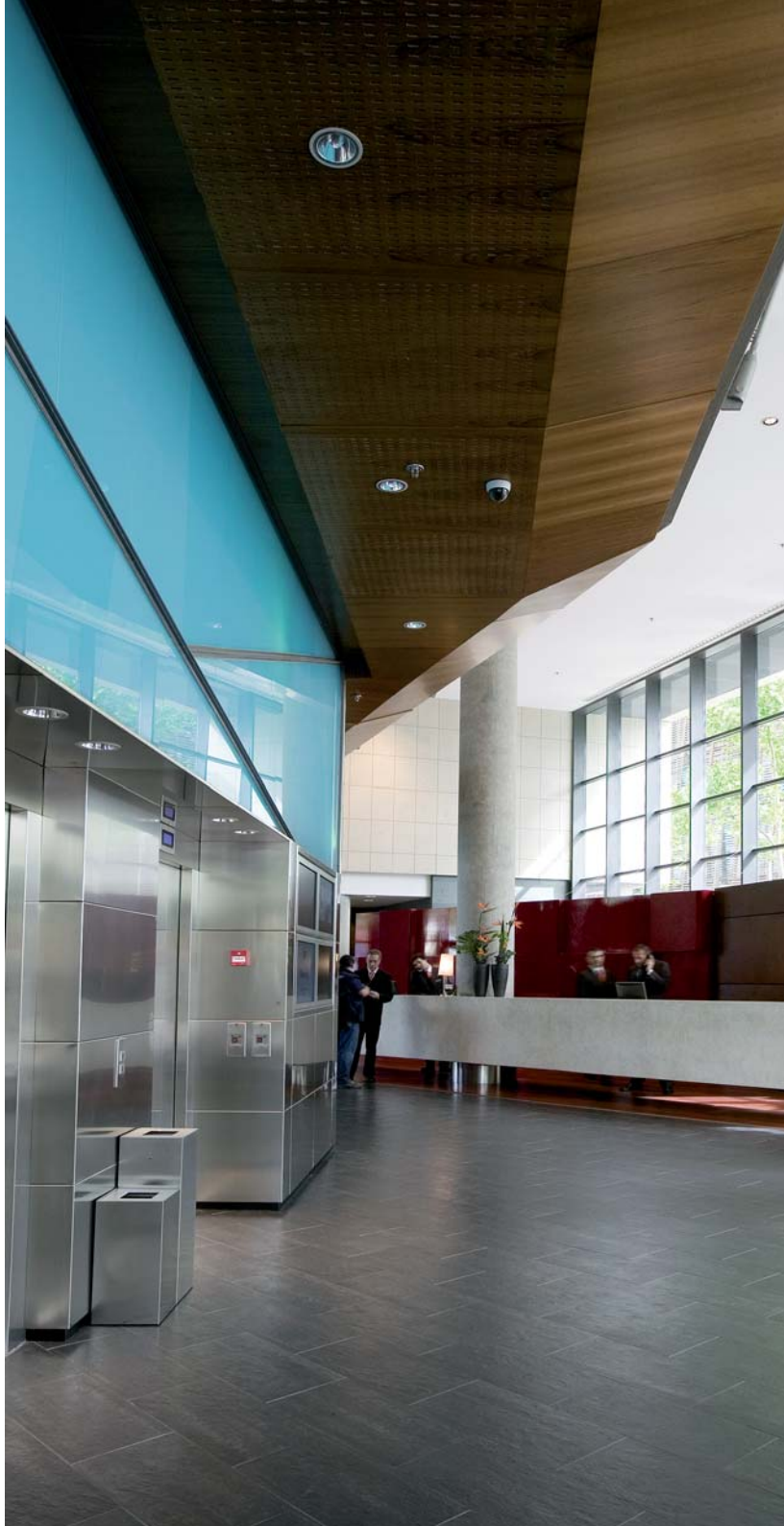


SPAIN

Barcelona (Spain)

FACILITIES

AB SKIPPER HOTEL





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FACILITIES **ÁGUILAS PLAZA**

LOCATION ▶ Águilas. Murcia (Spain)

CUSTOMER ▶ Águilas Plaza

PROJECT SCOPE:

Electrical wiring for the Águilas Plaza Shopping Centre, with a built surface area of 71,000 m², 21,500 for commercial areas, 3,200 for outdoor facilities and two parking lots for 1,300 cars

AMOUNT ▶ EUR 5 million

START DATE ▶ june 2007

FINISH DATE ▶ may 2008

CHARACTERISTICS:

- ▶ MV for company units
- ▶ MV for subscriber units
- ▶ LV for common areas and premises connections
- ▶ Low currents
- ▶ Security unit
- ▶ Installation of management system



SPAIN

Águilas. Murcia (Spain)

FACILITIES

ÁGUILAS PLAZA





FACILITIES

ALBA SYNCHROTON

LOCATION ▶ Cerdanyola del Vallés, Barcelona (Spain)

CUSTOMER ▶ CELLS

PROJECT SCOPE:

Facilities at the Alba electron accelerator complex for the production of synchrotron light to show the atomic structure of materials and study their properties

AMOUNT ▶ EUR 7 million

START DATE ▶ february 2009

FINISH DATE ▶ november 2009

CHARACTERISTICS:

- ▶ Wiring
- ▶ Communications facilities
- ▶ Fire detection and extinguishing system
- ▶ Special systems (CCTV, anti-intruder and security systems)



SPAIN

Cerdanyola del Vallés, Barcelona
(Spain)

FACILITIES

ALBA SYNCHROTRON





SUR



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FACILITIES

ÁREA SUR

LOCATION ▶ Jerez de la Frontera (Spain)

CUSTOMER ▶ Inmobiliaria Chamartín

PROJECT SCOPE:

Electrical wiring and special facilities for the Área Sur Shopping Centre, Jerez de la Frontera

AMOUNT ▶ EUR 5 million

START DATE ▶ may 2007

FINISH DATE ▶ may 2008

CHARACTERISTICS:

- ▶ MV and LV wiring
- ▶ Telephony system
- ▶ Security
- ▶ Voice and data

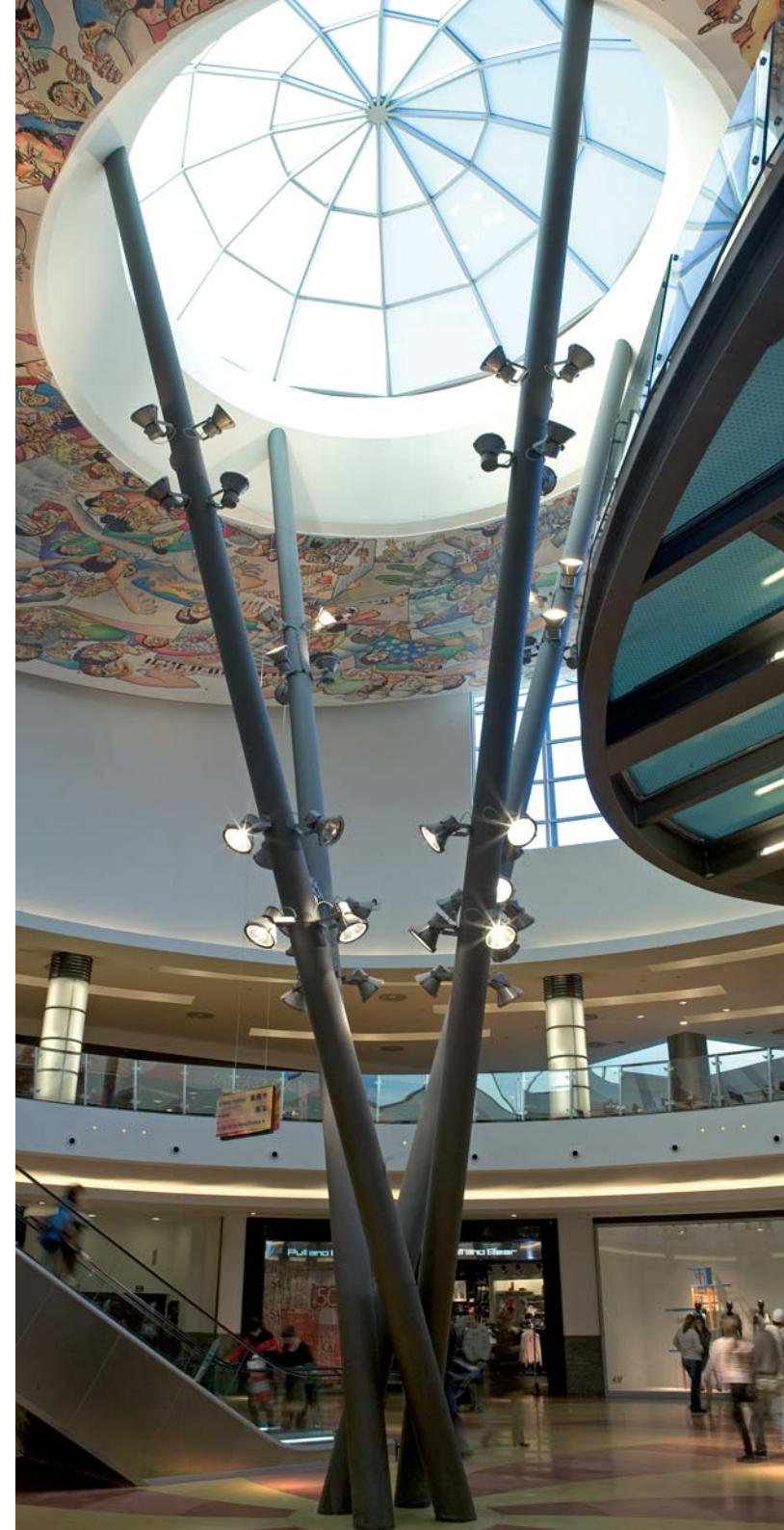
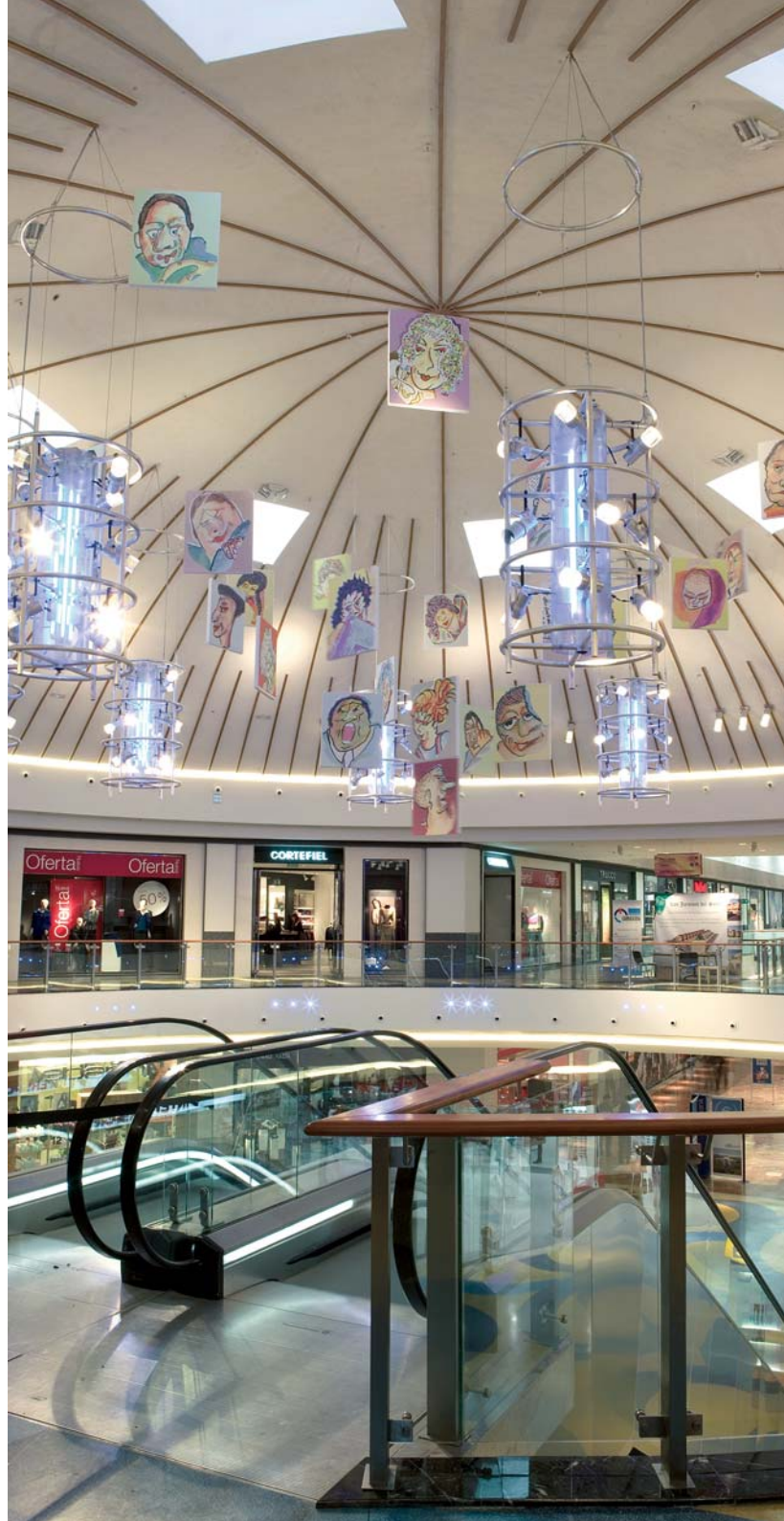


SPAIN

Jerez de la Frontera (Spain)

FACILITIES

ÁREA SUR





FACILITIES

OFFICE BUILDING ARTURO SORIA

LOCATION ▶ Madrid (Spain)

CUSTOMER ▶ Merlin Properties Socimi

PROJECT SCOPE ▶

Execution of general reconditioning and partial restructuring works, and exterior façade and roof works on the office building on Arturo Soria Street

AMOUNT ▶ EUR 6 million

START DATE ▶ January 2020

FINISH DATE ▶ September 2020

CHARACTERISTICS:

- ▶ Latticework on the façade and a Tramex walkway for maintenance
- ▶ Double-height ground-floor lobby and reconditioning of the ground floor
- ▶ Access points and exterior communal areas
- ▶ Communal rooftop area with meeting room, terrace and pergolas
- ▶ Replacement of slabs with Tramex for the climate control pipe shaft
- ▶ Terrace barriers
- ▶ Accessible toilets for compliance with safe use and accessibility standards
- ▶ Work on installations
- ▶ Reconditioning of cladding for standard floors
- ▶ Reconditioning and modification of finishing touches at site access points
- ▶ Reconditioning of parking facilities. Repainting



SPAIN
Madrid

FACILITIES

OFFICE BUILDING ARTURO SORIA





FACILITIES

BANCO POPULAR

LOCATION ▶ Madrid (Spain)

CUSTOMER ▶ Banco Popular

PROJECT SCOPE:

Heating/air conditioning, mechanical and fire prevention installations for the new Banco Popular headquarters in Madrid - central offices, an adjoining building for other uses and a car park

AMOUNT ▶ EUR 16 million

START DATE ▶ february 2015

FINISH DATE ▶ february 2017

CHARACTERISTICS:

- ▶ The project is designed to meet LEED Gold standards.
- ▶ HVAC system:
 - ✓ 5 heat pumps
 - ✓ 5 x 600 kW cooler units
 - ✓ 30 air conditioning units
 - ✓ 21 x VRV systems
 - ✓ 4 precision air conditioners
 - ✓ Garage extraction systems
 - ✓ Overpressure fans for stairways, lobbies and centralised BMS control system
- ▶ Mechanical facilities:
 - ✓ Pressure and treatment units
 - ✓ DHW production using microgeneration equipment and solar thermal panels
 - ✓ Plumbing and sanitation system
 - ✓ Bilge wells
 - ✓ Gas and diesel facilities
 - ✓ Sprinkler and reclaimed water network
- ▶ Fire prevention facilities: fixed firefighting network, hydrants, dry riser, fire detection system and water-mist extinguishing system

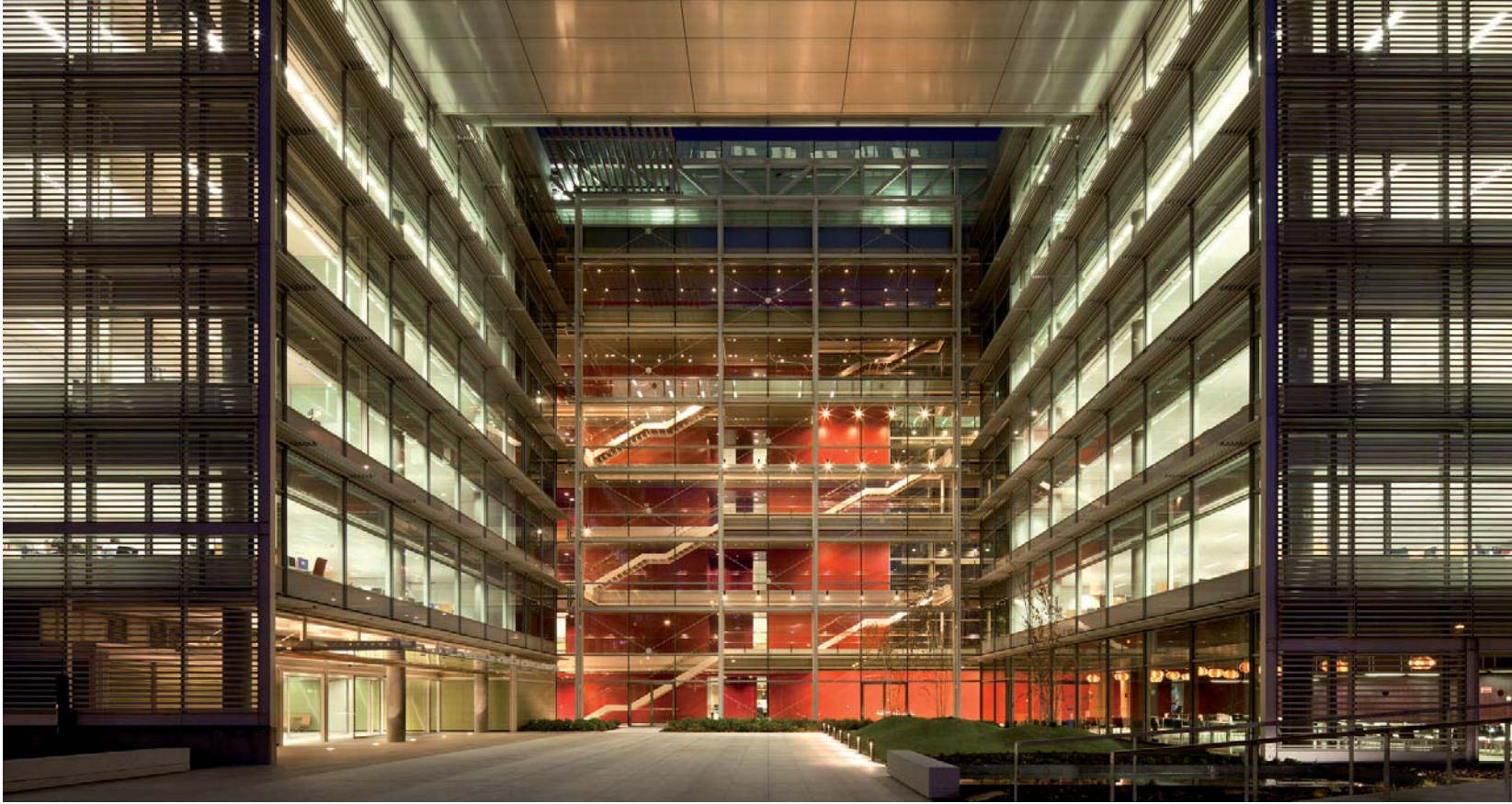


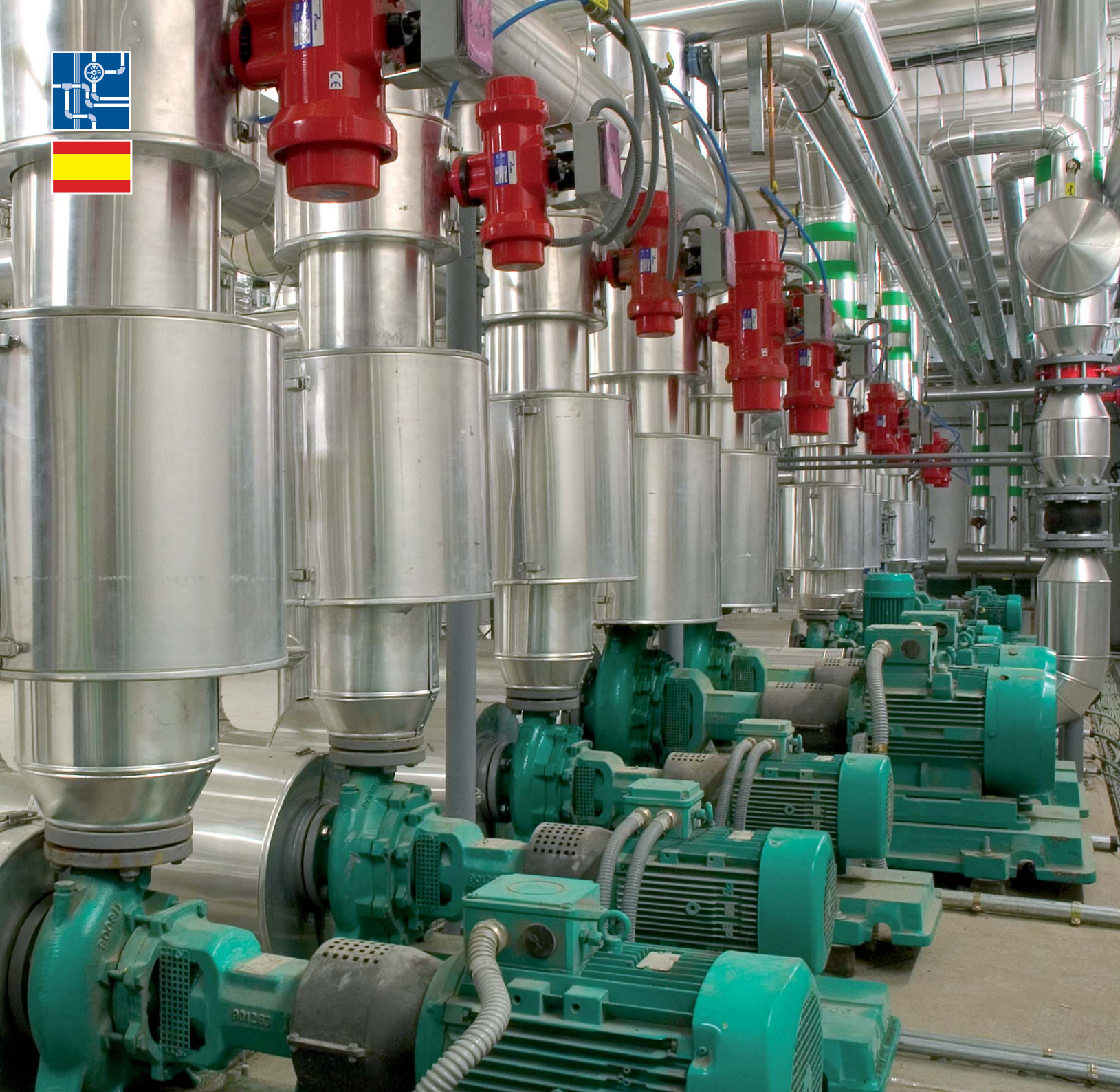
SPAIN

Madrid (Spain)

FACILITIES

BANCO POPULAR





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FACILITIES

BANCO SANTANDER

LOCATION ▶ Boadilla del Monte. Madrid
(Spain)

CUSTOMER ▶ Banco Santander

PROJECT SCOPE:

Mechanical facilities for Banco Santander's
"Financial City"

AMOUNT ▶ EUR 17 million

START DATE ▶ march 2013

FINISH DATE ▶ january 2015

CHARACTERISTICS:

- ▶ HVAC systems
- ▶ Ventilation
- ▶ Fire protection
- ▶ Plumbing
- ▶ Sanitation
- ▶ Irrigation
- ▶ Natural gas network



SPAIN

Boadilla del Monte. Madrid (Spain)

FACILITIES

BANCO SANTANDER





FACILITIES

BARCELONA METRO

LOCATION ▶ Barcelona (Spain)

CUSTOMER ▶ Gestión de Infraestructuras (GISA)

PROJECT SCOPE:

Telecommunications, substations and power distribution system for line 9 of the Barcelona metro, consisting of 46 stations and 2 depots, with driverless trains

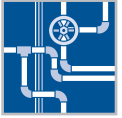
AMOUNT ▶ EUR 45 million

START DATE ▶ november 2003

FINISH DATE ▶ december 2015

CHARACTERISTICS:

- ▶ Telecommunications system:
 - ✓ SDH and PDH system, digital radio network and IP network
 - ✓ PA system, telephony and interphone system
 - ✓ Timing system
 - ✓ Video surveillance
 - ✓ Centralised management system
 - ✓ Uninterrupted power system (UPS)
- ▶ Power distribution system:
 - ✓ CTE ring and CTI at 30 kV for TC
 - ✓ SET ring at 30 kV for substation
- ▶ Traction substations:
 - ✓ Installed capacity 87,200 KVA
 - ✓ Feeder line voltage 1,500 Vdc
 - ✓ Distributed control system for automatic management
- ▶ Receiving substations:
 - ✓ Reception at 220 kV AC and transformation 30 kV AC
 - ✓ Transformation power output 200,000 KVA for traction current
 - ✓ Transformation power output 140,000 KVA for station services and interstation services



SPAIN

Barcelona (Spain)

FACILITIES

BARCELONA METRO





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FACILITIES

CITY 22@ BUILDING

LOCATION ▶ Barcelona (Spain)

CUSTOMER ▶ Bouygues

PROJECT SCOPE:

Full installation work and hook-up to the heating and cooling network for an office building located in Barcelona's district 22@

AMOUNT ▶ EUR 5 million

START DATE ▶ october 2005

FINISH DATE ▶ october 2006



SPAIN

Barcelona (Spain)

FACILITIES

CITY 22@ BUILDING





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FACILITIES

COSLADA HOSPITAL

LOCATION ▶ Coslada, Madrid (Spain)

CUSTOMER ▶ Sacyr

PROJECT SCOPE:

Full facilities - Coslada Hospital

AMOUNT ▶ EUR 14 million

START DATE ▶ february 2007

FINISH DATE ▶ december 2008

CHARACTERISTICS:

- ▶ Plumbing: 37,538 ml of piping, pressure and pumping equipment
- ▶ HVAC system: 72 centrifugal pumps, 5 hot water boilers, 792 fancoils, 14 purification units for isolation wards
- ▶ Electricity production systems: 80 flat solar collectors, distribution boards for power supply, equipment operation and control
- ▶ Mechanical facilities: 3 x RMS units
- ▶ Fire protection system
- ▶ Photoluminescent signs: 1,069 signs
- ▶ Electrical and lighting facilities
- ▶ Telecommunications and radioelectric facilities
- ▶ Outdoor public lighting system



SPAIN

Coslada. Madrid (Spain)

FACILITIES

COSLADA HOSPITAL





FACILITIES

CREÁPOLIS BUILDING

LOCATION ▶ San Cugat del Vallés, Barcelona (Spain)

CUSTOMER ▶ Esade

PROJECT SCOPE:

Full facilities of the corporate headquarters of Esade

AMOUNT ▶ EUR 6 million

START DATE ▶ december 2008

FINISH DATE ▶ december 2009

CHARACTERISTICS:

- ▶ Wiring
- ▶ HVAC systems
- ▶ Fire protection
- ▶ Plumbing
- ▶ Sanitation
- ▶ Voice and data



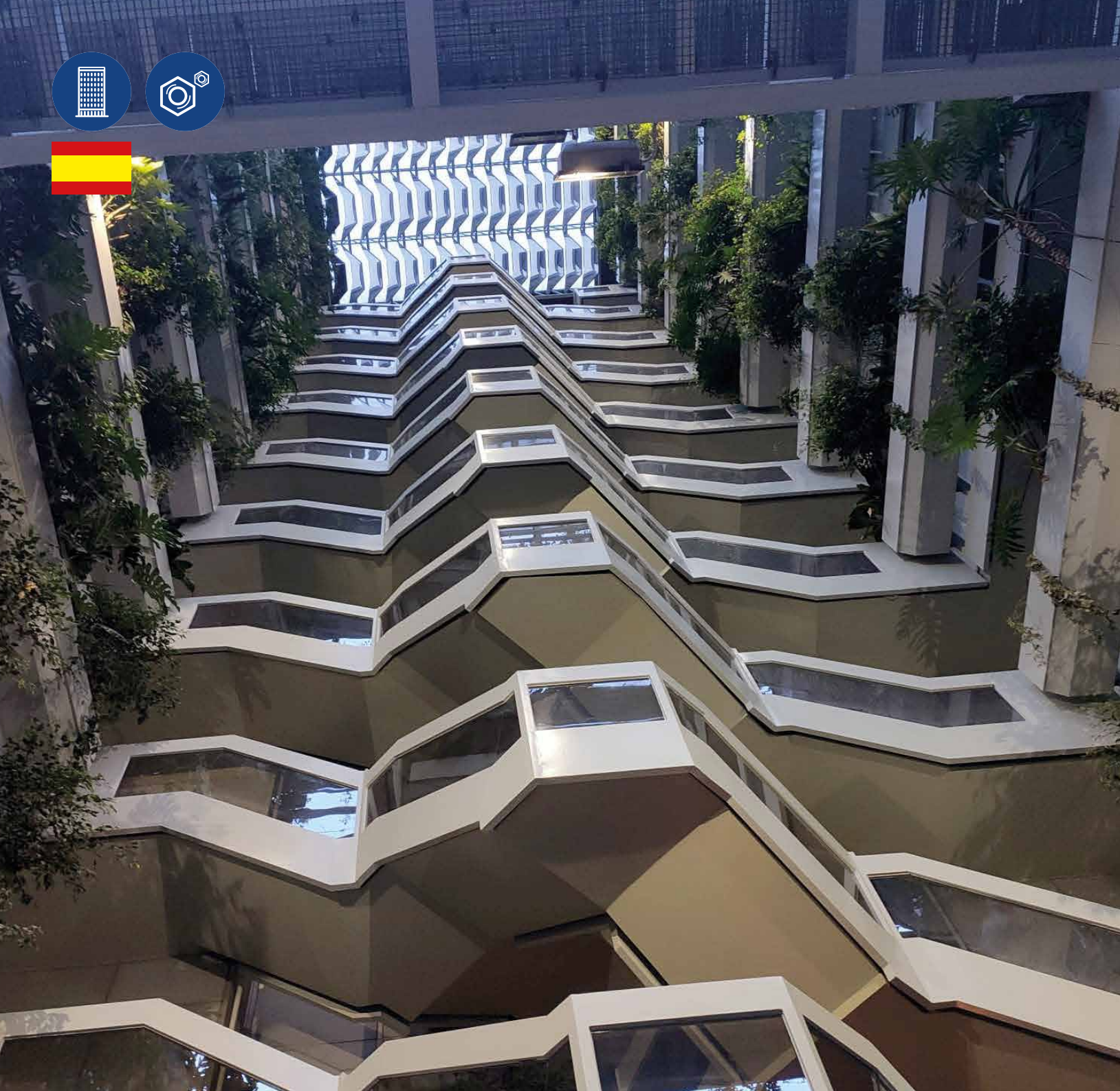
SPAIN

San Cugat del Vallés. Barcelona
(Spain)

FACILITIES

CREÁPOLIS BUILDING





CONSTRUCTION/FACILITIES **DIAGONAL 605 OFFICE BUILDING**

LOCATION ▶ Barcelona (Spain)

CUSTOMER ▶ Merlin Properties

PROJECT SCOPE ▶

Renovation of an office building built in 1988 to increase functionality and accessibility.

AMOUNT ▶ EUR 6.3 million

START DATE ▶ July 2019

FINISH DATE ▶ October 2020

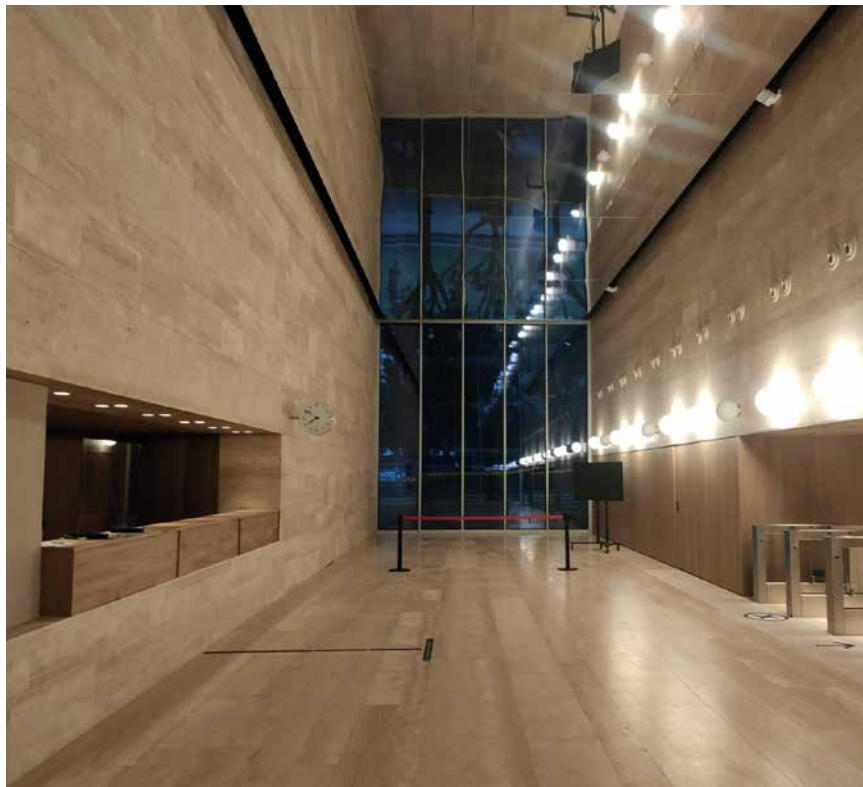
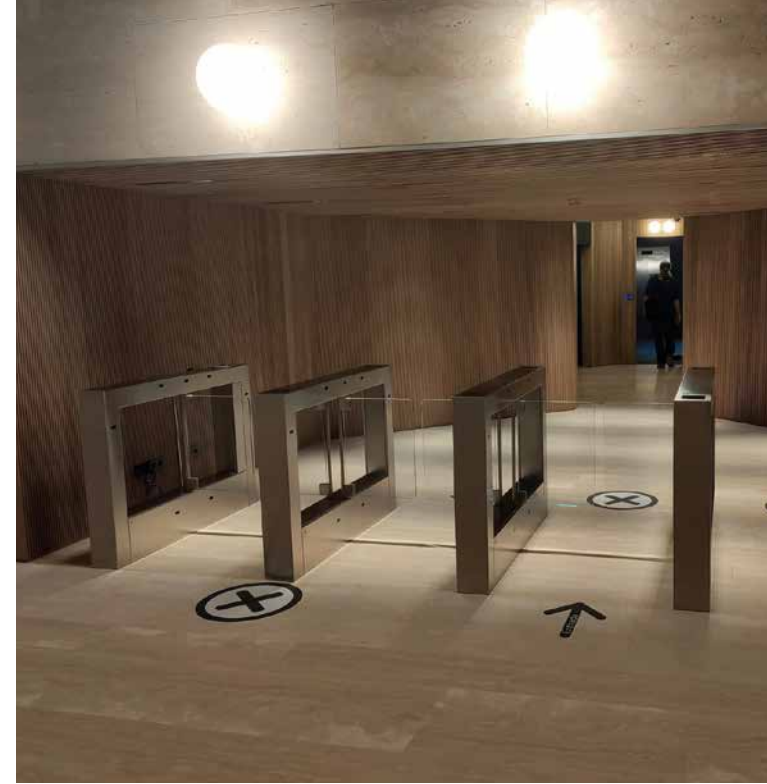
CHARACTERISTICS:

- ▶ Remodelling low-level floors, communal areas, surroundings and façades.
- ▶ Redesigning the existing entrance hall to make it proportionate to the size of the building and increase natural light.
- ▶ Moving the location of the car park to increase security.
- ▶ Bringing the building level with the public road (it is below street level) to eliminate the need for stairs and improve accessibility.
- ▶ Updating finishing touches to give a contemporary look; improving spaces; modernising lifts and the electricity, heating, air conditioning, communications and fire protection systems.



 **SPAIN**
Barcelona

CONSTRUCTION/FACILITIES
**DIAGONAL 605
OFFICE BUILDING**





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FACILITIES

EL ALTET AIRPORT TERMINAL

LOCATION ▶ Alicante (Spain)

CUSTOMER ▶ AENA Aeropuertos

PROJECT SCOPE:

Processor building and boarding facility and their electrical and mechanical equipment, infrastructure for the communications system, fire detection system and data processing unit

AMOUNT ▶ EUR 62 million

START DATE ▶ march 2005

FINISH DATE ▶ march 2011

CHARACTERISTICS:

- ▶ Area of the building: 333,500 m²
- ▶ Two full 8-storey buildings with cafeterias, dining areas, washrooms and miscellaneous services
- ▶ 96 check-in desks
- ▶ 14 luggage carousels
- ▶ 26 boarding gates

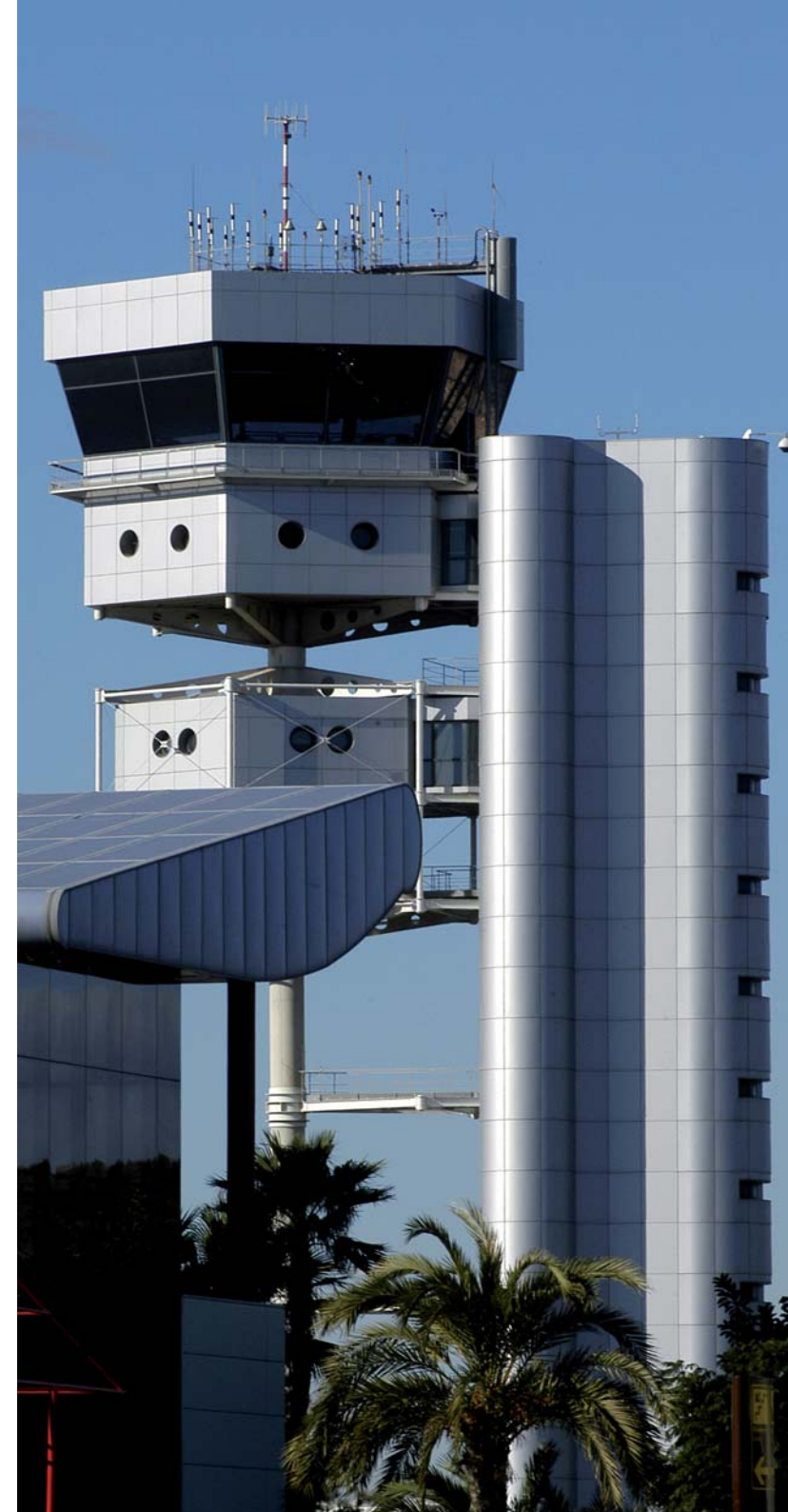


SPAIN

Alicante (Spain)

FACILITIES

EL ALTET AIRPORT TERMINAL





EL MUELLE

LOCATION ▶ Las Palmas de Gran Canaria (Spain)

CUSTOMER ▶ Riofisa

PROJECT SCOPE:

Mechanical facilities for the El Muelle Shopping Centre in Las Palmas de Gran Canaria, composed of 2 basements and 5 sales floors

AMOUNT ▶ EUR 5 million

START DATE ▶ november 2001

FINISH DATE ▶ april 2003

CHARACTERISTICS:

- ▶ HVAC systems
- ▶ Plumbing
- ▶ Sanitation
- ▶ Fire detection system
- ▶ Fire extinguishing system
- ▶ Forced ventilation system
- ▶ Centralised management system



SPAIN

Las Palmas de Gran Canaria (Spain)

FACILITIES

EL MUELLE





elecnor

FACILITIES

EL PRAT AIRPORT

LOCATION ▶ Barcelona (Spain)

CUSTOMER ▶ AENA Aeropuertos

PROJECT SCOPE:

Construction of the airside electrical power plant, refurbishment of the marking system on the current runway and ancillary work. Installation of a SCADA control system and a unit to manage the power plant's low voltage and high voltage systems

AMOUNT ▶ EUR 56 million

START DATE ▶ august 2002

FINISH DATE ▶ july 2006

CHARACTERISTICS:

- ▶ Power plant building: 4,520 m²
- ▶ Maintenance building: 1,200 m²
- ▶ Regulation unit buildings: 3 buildings, each 260 m²
- ▶ Facilities for the buildings, water connections, drainage, HVAC, lighting, PA system, CCTV system and fire protection system
- ▶ Outdoor landscaping
- ▶ MV and LV switchgear
- ▶ Channellings and marking systems
- ▶ Control system for the power plant and transformer units, and another marking control system



SPAIN

Barcelona (Spain)

FACILITIES

EL PRAT AIRPORT





FACILITIES

EL PRAT AIRPORT TERMINAL

LOCATION ▶ Barcelona (Spain)

CUSTOMER ▶ AENA Aeropuertos

PROJECT SCOPE:

Electromechanical facilities for the new south terminal at Barcelona airport

AMOUNT ▶ EUR 23 million

START DATE ▶ october 2007

FINISH DATE ▶ october 2012

CHARACTERISTICS:

- ▶ Area of the building: 525,400 m²
- ▶ Volume of the building concerned: 2,000,000 m³ with a flow of 1,900,000 m³/h
- ▶ Installation of air conditioning system
- ▶ Electrical system with different supply sources and power output in excess of 90 MVA, 80 km of cable, 620 electrical control booths, 630 PLCs and BMS, 4,500 fire detectors
- ▶ Flow installed for fluids and gas, 22,000 m³/h
- ▶ Flow for hydraulic system, 680 m³/h
- ▶ Flow for fire protection system, 450 m³/h



SPAIN

Barcelona (Spain)

FACILITIES

EL PRAT AIRPORT TERMINAL





FACILITIES

FORMULA 1 SHEDS

LOCATION ▶ Valencia (Spain)

CUSTOMER ▶ Regional Government of Valencia (GRP)

PROJECT SCOPE:

All facilities for Sheds 4 and 5 in Valencia Port used for car pits and ancillary infrastructures (offices, kitchens, medical area, public areas, signing of evacuation zones, common bathroom facilities etc.)

AMOUNT ▶ EUR 6 million

START DATE ▶ march 2008

FINISH DATE ▶ july 2008

CHARACTERISTICS:

- ▶ LV facilities
- ▶ Ventilation and air conditioning
- ▶ Fire protection
- ▶ Plumbing and sanitation
- ▶ Compressed air
- ▶ Pits extraction facility
- ▶ Voice/data facility
- ▶ TV network
- ▶ Hoisting equipment



SPAIN

Valencia (Spain)

FACILITIES

FORMULA 1 SHEDS





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FACILITIES

FÓRUM BUILDING

LOCATION ▶ Barcelona (Spain)

CUSTOMER ▶ Autonomous Government of Catalonia and Barcelona City Council

PROJECT SCOPE:

Full installation and audiovisual work on the Fórum building. The Fórum building, currently called Museu Blau, is a unique architectural feature of Barcelona located in the Fórum park, which played host to the 2004 Universal Forum of Cultures and which boasts this iconic building. It was designed by Swiss architects Jacques Herzog and Pierre de Meuron

AMOUNT ▶ EUR 6 million

START DATE ▶ february 2004

FINISH DATE ▶ june 2004

CHARACTERISTICS:

- ▶ Full installations
- ▶ Audiovisual installations
- ▶ Microphone systems
- ▶ Sound systems
- ▶ Simultaneous interpreting systems
- ▶ Video equipment
- ▶ Electrical switchboards and distribution panels, generators and UPS
- ▶ "Districlima" heating and cooling network

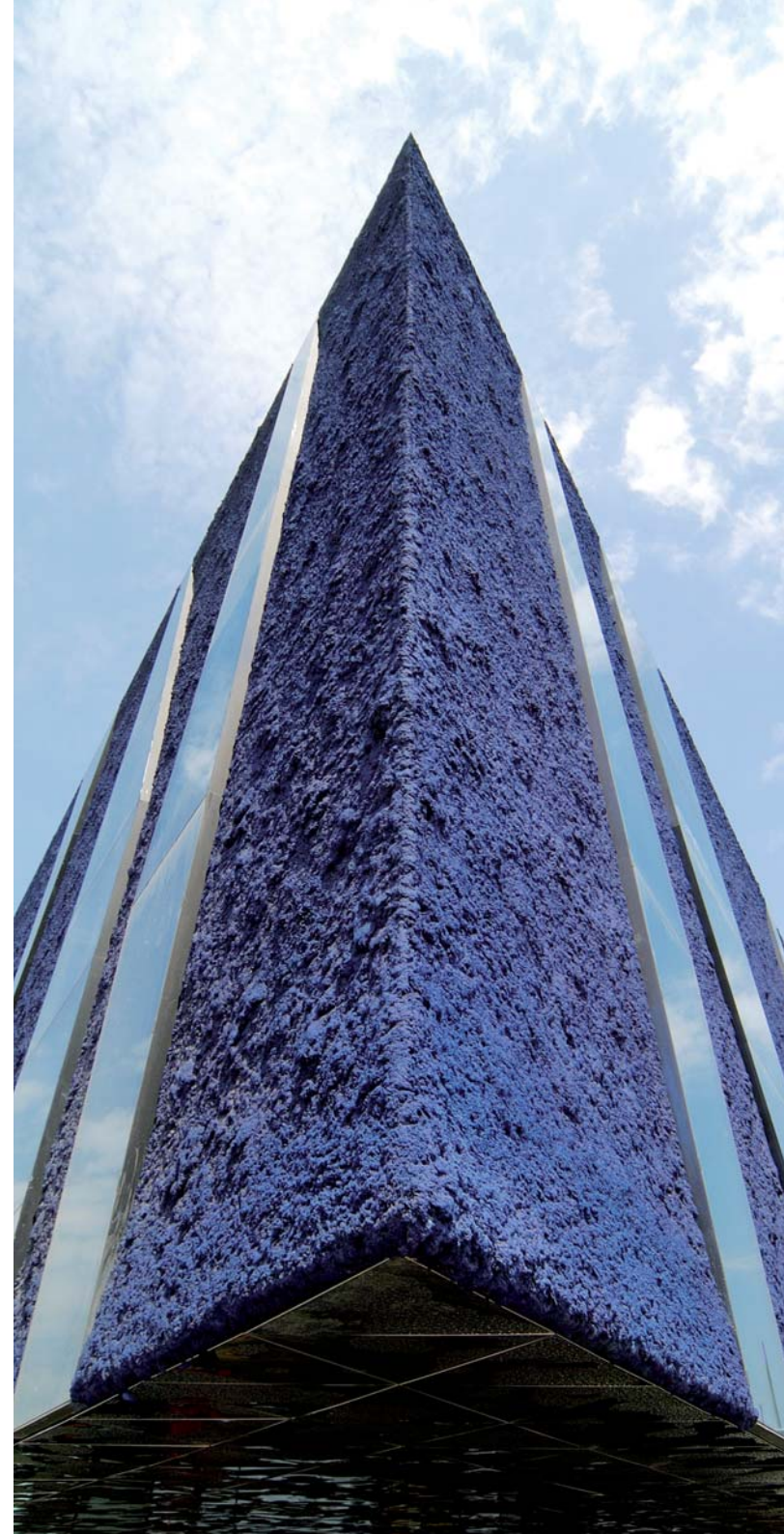


SPAIN

Barcelona (Spain)

FACILITIES

FÓRUM BUILDING





FACILITIES

FRIPOZO PRODUCTIVE CENTER

LOCATION ▶ Las Torres de Cotillas,
Murcia (Spain)

CUSTOMER ▶ Fripozo

PROJECT SCOPE ▶

Installations at the new production centre that will house the new production and storage lines for frozen products as well as production offices, mechanical rooms and maintenance areas.

AMOUNT ▶ EUR 3.3 million

START DATE ▶ July 2020

FINISH DATE ▶ February 2021

CHARACTERISTICS:

- ▶ 35,000 m² distributed over 3 levels
- ▶ Mechanical installations
- ✓ Water network (drinking, well and different process waters)
- ✓ Sanitation network
- ✓ Air conditioning and ventilation network
- ✓ Compressed air network
- ✓ Thermal and edible oil network
- ✓ Steam and condensate network
- ✓ Natural gas network



SPAIN

Las Torres de Cotillas, Murcia

FACILITIES

FRIPOZO PRODUCTIVE CENTER





FACILITIES

GRIFOLS

LOCATION ▶ San Cugat del Vallés, Barcelona (Spain)

CUSTOMER ▶ Grifols

PROJECT SCOPE:

Full facilities for the corporate headquarters of Grifols

AMOUNT ▶ EUR 7 million

START DATE ▶ march 2008

FINISH DATE ▶ december 2008

CHARACTERISTICS:

- ▶ Wiring
- ▶ Mechanical facilities
- ▶ HVAC systems
- ▶ Ventilation
- ▶ Fire protection
- ▶ Plumbing
- ▶ Sanitation
- ▶ Voice and data



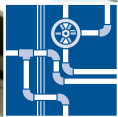
SPAIN

San Cugat del Vallés. Barcelona
(Spain)

FACILITIES

GRIFOLS





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FACILITIES

HILTON AIRPORT HOTEL

LOCATION ▶ Madrid (Spain)

CUSTOMER ▶ Avenida de Barajas 2 SL

PROJECT SCOPE:

Wiring, air conditioning and special facilities for the Hilton Airport Hotel, Madrid

AMOUNT ▶ EUR 8 million

START DATE ▶ april 2006

FINISH DATE ▶ october 2007

CHARACTERISTICS:

- ▶ Wiring
- ▶ Plumbing (water supply, distribution and sanitation)
- ▶ Lighting and HVAC controls
- ▶ TV and CCTV systems
- ▶ PA system
- ▶ Air conditioning systems
- ▶ Boiler room - 4 boilers and 23 pumps
- ▶ 4-cooler facility
- ▶ Solar thermal unit to produce DHW using 48 panels with a power output of 650 W/m²

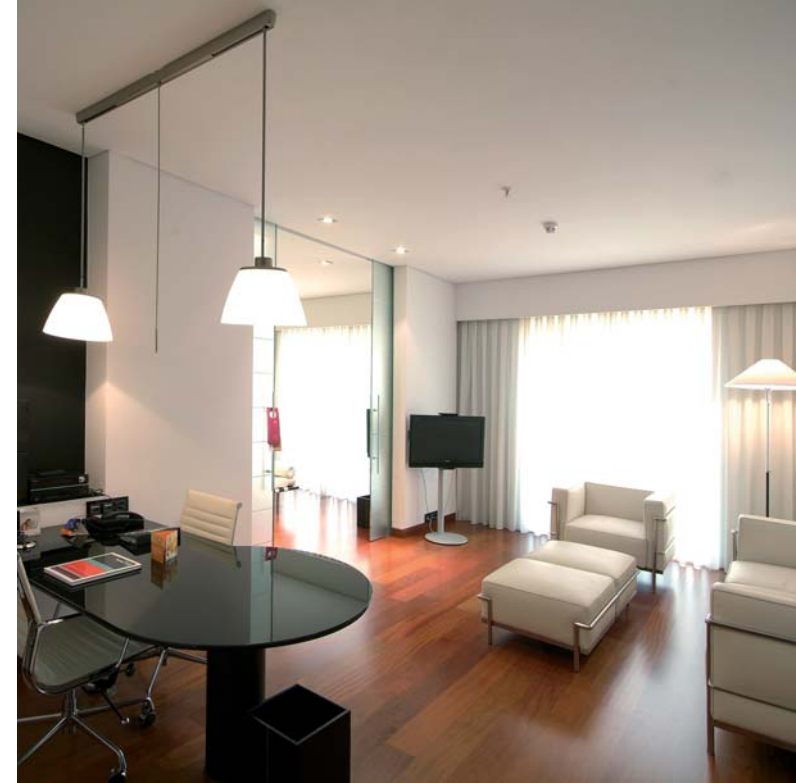


SPAIN

Madrid (Spain)

FACILITIES

HILTON AIRPORT HOTEL





elecNOR

FACILITIES

5* HOTEL ONLY YOU LA EQUITATIVA

LOCATION ▶ Málaga (Spain)

CUSTOMER ▶ Key Continental, S.L.

PROJECT SCOPE ▶

End-to-end installations at a 5* urban hotel. It will have 96 rooms, 2 restaurants, communal areas, a spa, a chill-out terrace (electrical, mechanical, audiovisual, CCTV and room access control installations).

AMOUNT ▶ EUR 2.5 million

START DATE ▶ January 2020

FINISH DATE ▶ November 2020

CHARACTERISTICS:

- ▶ Low- and medium-voltage electricity
- ▶ Ornamental lighting
- ▶ Ventilation
- ▶ Climate control
- ▶ Natural gas
- ▶ Fire protection
- ▶ Plumbing and sanitation
- ▶ CCTV
- ▶ Access control
- ▶ Voice-data installation
- ▶ Public address



SPAIN

Málaga (Spain)

FACILITIES

5* HOTEL ONLY YOU LA EQUITATIVA





FACILITIES

5* HOTELS: VARA DE REY AND JUAN DE AUSTRIA

LOCATION ▶ Ibiza, Balearic Islands (Spain)

CUSTOMER ▶ Ibiza Real Estate Project, S.L.U.

PROJECT SCOPE ▶

Installations in two 5-star luxury hotels in Ibiza, located around 100 metres from each other: Hotel Vara de Rey (54 rooms) and Hotel Juan de Austria (15 rooms).

AMOUNT ▶ EUR 3.8 million (2.7 for Hotel Vara del Rey and 1.1 for Hotel Juan de Austria)

START DATE ▶ July 2020

FINISH DATE ▶ March 2021

CHARACTERISTICS:

- ▶ Voice and data communications
- ▶ Plumbing and sanitation
- ▶ Climate control and ventilation
- ▶ Centralised management system
- ▶ Gas
- ▶ Security and access control

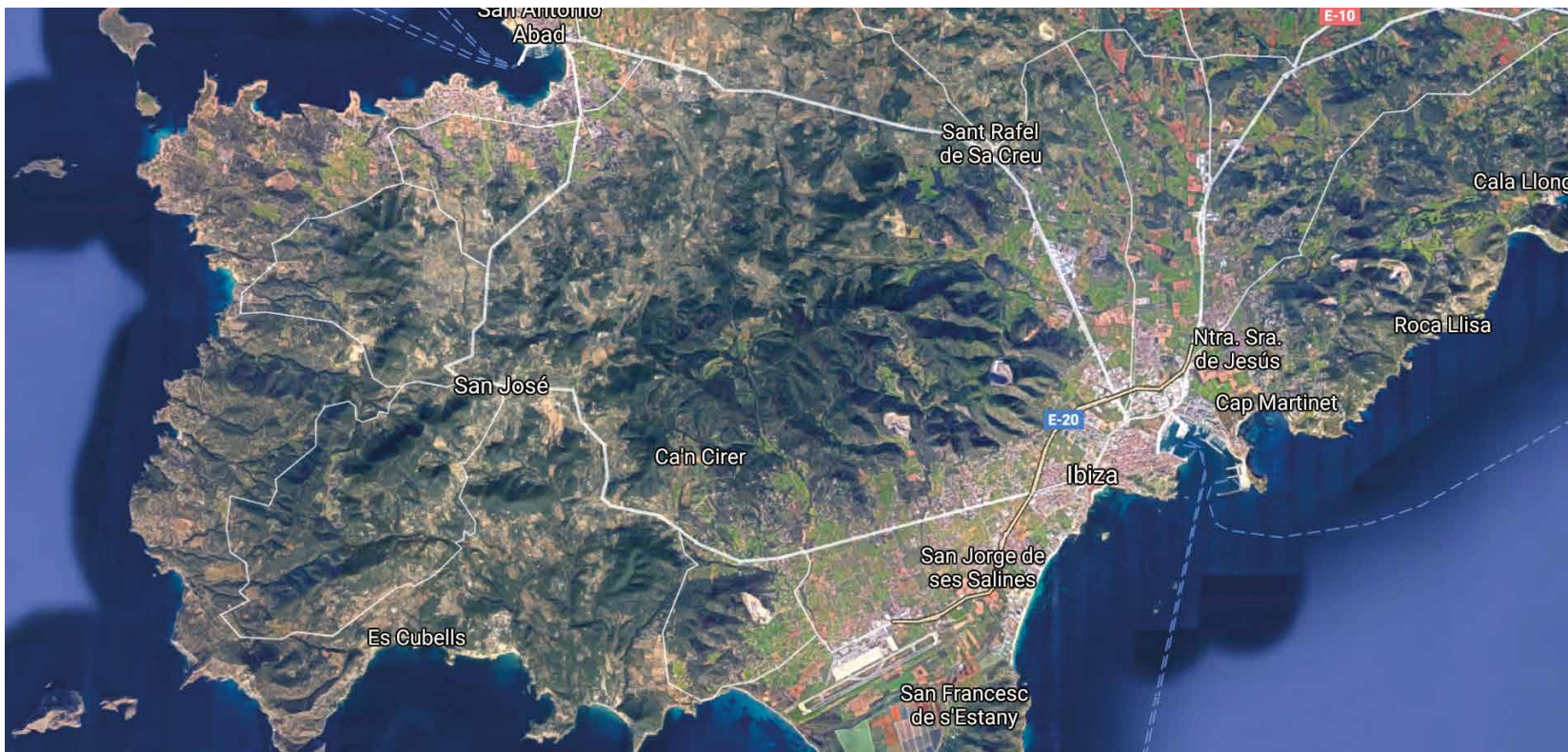


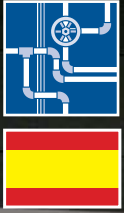
SPAIN

Ibiza, Balearic Islands

FACILITIES

5* HOTELS: VARA DE REY AND JUAN DE AUSTRIA





elecnor

FACILITIES

IBERDROLA TOWER

LOCATION ▶ Bilbao (Spain)

CUSTOMER ▶ Iberdrola

PROJECT SCOPE:

Wiring and special facilities for the 164 m Iberdrola Tower, featuring 41 storeys of office space above grade. Building designed by the architect César Pelli

AMOUNT ▶ EUR 7 million

START DATE ▶ june 2009

FINISH DATE ▶ october 2011

CHARACTERISTICS:

- ▶ MV and LV wiring
- ▶ Telecommunications facilities
- ▶ Security and access control
- ▶ Fire detection systems



SPAIN
Bilbao (Spain)

FACILITIES

IBERDROLA TOWER





FACILITIES

ILLACUNA BUILDING

LOCATION ▶ Barcelona (Spain)

CUSTOMER ▶ Inmobiliaria Colonial

PROJECT SCOPE:

Full installation work on the Illacuna property complex with 20,000 m² of office space

AMOUNT ▶ EUR 5 million

START DATE ▶ november 2009

FINISH DATE ▶ october 2010

CHARACTERISTICS:

- ▶ LV electrical system
- ▶ Fire detection and extinguishing
- ▶ Sanitation
- ▶ CCTV, intrusion and access control and public address system
- ▶ Oversight of electrical and air conditioning systems
- ▶ Voice/data signals and TV
- ▶ Air conditioning through ventilation systems and "districlima" heating and cooling networks
- ▶ Plumbing and DHW
- ▶ Solar panels



SPAIN

Barcelona (Spain)

FACILITIES

ILLACUNA BUILDING





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FACILITIES

ISLAZUL

LOCATION ▶ Madrid (Spain)

CUSTOMER ▶ Grupo Lar

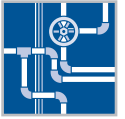
PROJECT SCOPE:

Electrical wiring for the Islazul Shopping Centre in Madrid. The shopping centre has 200 commercial and leisure premises, and a covered car park with space for more than 4,000 cars

AMOUNT ▶ EUR 9 million

START DATE ▶ january 2007

FINISH DATE ▶ april 2008



SPAIN

Madrid (Spain)

FACILITIES

ISLAZUL





CONSTRUCTION **LA PEDROSA BUILDING**

LOCATION ▶ Barcelona (Spain)

CUSTOMER ▶ Europa Building 2018, S.L.

PROJECT SCOPE ▶

Construction of the Europa Building office building. Its location and size make it an ideal corporate headquarters.

AMOUNT ▶ EUR 10.91 million (50% ENO)

START DATE ▶ March 2018

FINISH DATE ▶ December 2020

CHARACTERISTICS:

- ▶ 6,203.94 m² floor area
- ✓ Main and ground floor access with outdoor VIP parking space with high capacity electric chargers
- ✓ Pedestrian garden area
- ✓ Underground parking
- ✓ Main access with control area and concierge
- ✓ Lobby accessible by lift or stairs From there is the internal courtyard or vertical garden
- ✓ Open and diaphanous spaces with 400 m² usable rooms
- ▶ Curtain wall facade with high thermal and acoustic performance, minimising energy costs, and covered by automatic opening microlook perforated metal ceiling tiles that allow regulation of direct sunlight entering the building
- ▶ BREEAM Certification Criteria for sustainable building



SPAIN
Barcelona

CONSTRUCTION
**LA PEDROSA
BUILDING**





elecnor

FACILITIES

MÁLAGA AIRPORT

LOCATION ▶ Málaga (Spain)

CUSTOMER ▶ AENA Aeropuertos

PROJECT SCOPE:

Remodelling of the electrical system, generators and ancillary systems at Málaga airport

AMOUNT ▶ EUR 12 million

START DATE ▶ July 2005

FINISH DATE ▶ December 2009

CHARACTERISTICS:

- ▶ Construction and start-up of an electrical substation, as follows:
 - ✓ 2 x 66/20 kV 20 MVA transformers
 - ✓ Four 2.250 kVA diesel generators with dual-connection supply
 - ✓ Control room to manage the entire system with a special SCADA facility to monitor and control the entire HV and LV primary network
- ▶ Main HV distribution units (20 kV) with 14 transformer units to supply 20/0.4 kV to airfield services
- ▶ Construction and LV fittings for the two units regulating supplies to runway marking and platform
- ▶ Full remodelling of the existing electricity power plant to transform it into a continuity substation with two uninterrupted redundant units operating in parallel (dynamic UPS systems), 1,750 kVA per unit, and the secure 20 kV supply units

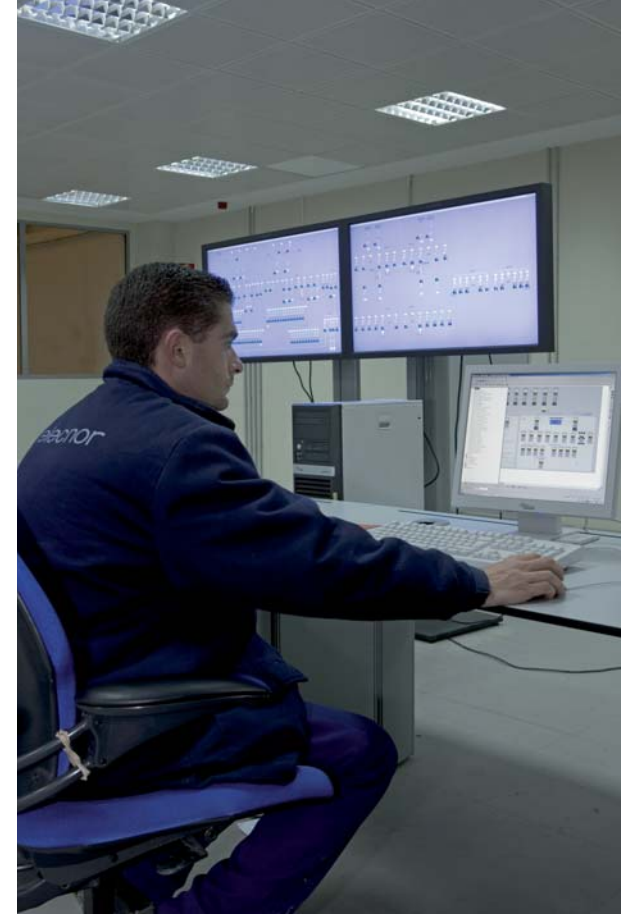


SPAIN

Málaga (Spain)

FACILITIES

MÁLAGA AIRPORT





elecnor

FACILITIES

MÁLAGA AIRPORT TERMINAL

LOCATION ▶ Málaga (Spain)

CUSTOMER ▶ AENA Aeropuertos

PROJECT SCOPE:

Supply and installation of furnishings and decor, including facilities, for Málaga airport's new T3 terminal

AMOUNT ▶ EUR 10 million

START DATE ▶ march 2009

FINISH DATE ▶ march 2010

CHARACTERISTICS:

- ▶ Architecture:
 - ✓ Floor cladding, enclosures, divisions, floors, ceilings, claddings, wooden and metal trims.
- ▶ Facilities:
 - ✓ Electrical facilities, sanitation and plumbing, air conditions, fire detection and extinguishing equipment.
- ▶ Specialist woodwork and metal fittings:
 - ✓ Check-in and information desks
 - ✓ Stands
 - ✓ Booths
 - ✓ Desks
 - ✓ Technical consoles
- ▶ Furnishings and outfitting of offices and public areas



Ausgaenge
Gates
Puertas **D60 to a D63**

Ausgaenge
Gates
Puertas **D75 D78**

Ausgaenge
Gates
Puertas **B C**

Ausgaenge
Gates
Puertas **D42 to a D49**

Ausgaenge
Gates
Puertas **D70 D74**

Gepäck und ausgang
Baggage and exit
Equipajes y Salida



SPAIN

Málaga (Spain)

FACILITIES

MÁLAGA AIRPORT TERMINAL





MAPFRE TOWER IN BARCELONA

LOCATION ▶ Barcelona (Spain)

CUSTOMER ▶ Mapfre

PROJECT SCOPE:

Refurbishment of the facilities and spaces of 16 of the 38 floors of the office building with the aim of upgrading the building for its marketing and subsequent rental

AMOUNT ▶ EUR 6 million

START DATE ▶ july 2016

FINISH DATE ▶ july 2017

CHARACTERISTICS:

- ▶ Demolition of the interior facilities of the office floors and toilets
- ▶ Fireproofing of floors and structure
- ▶ Interior architecture
- ▶ New technical floor
- ▶ New metal false ceiling including all terminal elements
- ▶ Complete renewal of the LV electrical installations
- ▶ Complete renewal of the voice and data facilities
- ▶ Complete renewal of the HVAC facilities
- ▶ Complete renewal of the toilets and services area
- ▶ Adaptation and upgrade of thermal and acoustic insulation in the interior of the offices



SPAIN

Barcelona (Spain)

FACILITIES

MAPFRE TOWER IN BARCELONA





FACILITIES

MULTI-SERVICES AND WORK ON REAL ESTATE

LOCATION ▶ Spain

CUSTOMER ▶ Telefónica

PROJECT SCOPE:

Comprehensive maintenance and work at Telefónica's corporate buildings and technical facilities

AMOUNT ▶ EUR 20 million

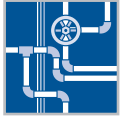
START DATE ▶ march 2014

FINISH DATE ▶ march 2019

CHARACTERISTICS:

- ▶ Multi-services:
 - ✓ Locations: Galicia, Asturias, Cantabria, Basque Country, Navarra, La Rioja, Castilla-León, Aragón, Madrid and Castilla La Mancha
 - ✓ Comprehensive maintenance, including work on electrical systems and air conditioning at corporate buildings, energy facilities (HV, generators, UPS systems), air conditioning for technical facilities and DPCs, multi-assistance (building work, carpentry, metalwork etc.).
 - ✓ General cleaning
 - ✓ Lift maintenance
 - ✓ Disinfection and pest control

- ▶ Work on real estate:
 - ✓ Spain
 - ✓ Miscellaneous work on full facilities (fire systems, electricity, air conditioning), general building work, daddings, compartmentalising, glazing, metalwork, insulation, painting etc



SPAIN

Spain

FACILITIES

MULTI-SERVICES AND WORK ON REAL ESTATE





FACILITIES

PALAFOX CINEMA

LOCATION ▶ Madrid (Spain)

CUSTOMER ▶ Yelmo Films

PROJECT SCOPE ▶

Refurbishment and reconditioning of the old Palafox cinema to renovate it and increase the number of screening rooms from three to seven.

AMOUNT ▶ EUR 3.7 million

START DATE ▶ August 2018

FINISH DATE ▶ July 2019

CHARACTERISTICS:

- ▶ Renovation, rearrangement and adaptation of interior spaces, structural restoration and reinforcement for the new arrangement of the screening rooms and waterproofing of the roof
- ▶ Plumbing, sanitation, electricity, air conditioning and fire protection installations and special facilities
- ▶ Renovation of the facade and reconditioning of the entrance, creating a ramp to improve accessibility to the interior of the cinema
- ▶ The screening rooms will be "LUXURY", with different requirements than those currently in place in terms of screening room type, seating, capacity, finishing touches, lobbies and the food offer (the building will have an annex for the kitchen, changing rooms and storage areas)



SPAIN
Madrid

FACILITIES
PALAFIX CINEMA





elecnor

FACILITIES

PIKOLÍN

LOCATION ▶ Zaragoza (Spain)

CUSTOMER ▶ Iberebro

PROJECT SCOPE:

Facilities of the logistics and industrial centre of the sleep products manufacturer Pikolín

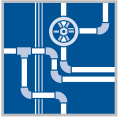
AMOUNT ▶ EUR 13 million

START DATE ▶ december 2015

FINISH DATE ▶ august 2016

CHARACTERISTICS:

- ▶ MV and LV electrical facilities
- ▶ Outdoor lighting system
- ▶ Weak signals
 - ✓ Voice and data
 - ✓ BMS (Building Management System). Electromechanical and safety installations control system
 - ✓ Access control
 - ✓ Intrusion
 - ✓ PA system
 - ✓ CCTV
 - ✓ Fire detection
- ▶ HVAC systems
- ▶ Ventilation
- ▶ Fire protection
- ▶ Plumbing
- ▶ Compressed air
- ▶ Natural gas network



SPAIN

Zaragoza (Spain)

FACILITIES

PIKOLÍN





elecnor

FACILITIES

PORT AVENTURA CONVENTION CENTRE

LOCATION ▶ Salou. Tarragona (Spain)

CUSTOMER ▶ Port Aventura

PROJECT SCOPE:

Full installation work on the Port Aventura Convention Centre

AMOUNT ▶ EUR 8 million

START DATE ▶ january 2009

FINISH DATE ▶ october 2009

CHARACTERISTICS:

- ▶ LV and MV electrical systems
- ▶ Fire detection and extinguishing
- ▶ Sanitation
- ▶ HVAC
- ▶ Plumbing and DHW
- ▶ Power generator
- ▶ Centralised control
- ▶ Hydrants
- ▶ Smoke evacuation
- ▶ Gas installation



SPAIN

Salou. Tarragona (Spain)

FACILITIES

PORT AVENTURA CONVENTION CENTRE





FACILITIES

POWER PLANTS BARAJAS AIRPORT

LOCATION ▶ Madrid (Spain)

CUSTOMER ▶ AENA Aeropuertos

PROJECT SCOPE:

Construction of CE-1 and CE-2 electrical power plants, management system and cabling for extension to Barajas airport

AMOUNT ▶ EUR 14 million

START DATE ▶ december 2001

FINISH DATE ▶ june 2004

CHARACTERISTICS:

- ▶ Civil engineering
 - ✓ CE-1 and CE-2 power plants and landscaping
 - ✓ Cogeneration building (cooling unit, heat unit and cogeneration units)
 - ✓ Natural gas Regulating and Metering Station (RMS)
 - ✓ Tanks and positioning of cooling towers, drinking water tanks and fire water tanks, and the pumping station
- ▶ Mechanical facilities
 - ✓ Drinking water facilities at the power plants
 - ✓ Cogeneration unit and landscaping
 - ✓ Air conditioning, ventilation and fire protection system
 - ✓ Installation of distribution piping conveying cooled water and heated water to the New Terminal Building and the New Satellite Building.
- ▶ HV, MV and LV electrical facilities
- ▶ Security system and supervision of management and control system



SPAIN

Madrid (Spain)

POWER PLANTS BARAJAS AIRPORT





elecnor

FACILITIES

SACYR TOWER

LOCATION ▶ Madrid (Spain)

CUSTOMER ▶ Sacyr

PROJECT SCOPE:

All facilities for the 236 m Sacyr Tower - 58 storeys above grade and 6 basements for a 457-room hotel and offices

AMOUNT ▶ EUR 38 million

START DATE ▶ january 2007

FINISH DATE ▶ december 2008

CHARACTERISTICS:

- ▶ MV and LV wiring
- ▶ Air conditioning and ventilation
- ▶ Plumbing and sanitation
- ▶ Control units
- ▶ Telecommunications facilities
- ▶ Security and access control



SPAIN

Madrid (Spain)

FACILITIES

SACYR TOWER





SAN ANTONIO MARKET

LOCATION ▶ Barcelona (Spain)

CUSTOMER ▶ Institut Municipal de Mercats
(Barcelona City Council)

PROJECT SCOPE:

Development of the external blocks and internal island and fitting out of San Antonio market and construction of the new Dominical del Libro market

AMOUNT ▶ EUR 15 million

START DATE ▶ 2015

FINISH DATE ▶ 218

CHARACTERISTICS:

- ▶ Installations:
 - ✓ HVAC and ventilation.
 - ✓ Sanitation
 - ✓ Fire protection
 - ✓ Fire detection
 - ✓ MV and LV electrical installations
 - ✓ Lighting
 - ✓ Communications and security

- ▶ Construction:
 - ✓ Disassembly and demolition work
 - ✓ Movement of earth
 - ✓ Sewage and drainage network
 - ✓ Surfaces, flooring and elevations of patios
 - ✓ Lighting network
 - ✓ Gardening and irrigation network
 - ✓ Traffic signalling
 - ✓ Street furniture
 - ✓ Affected services
 - ✓ Waterproofing
 - ✓ Pergolas and other metal structures

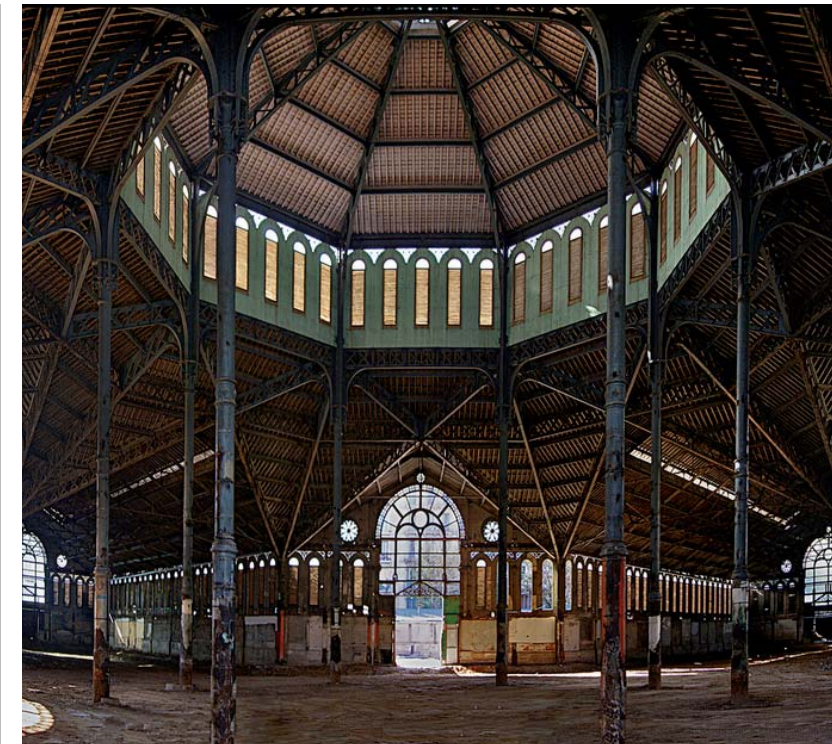
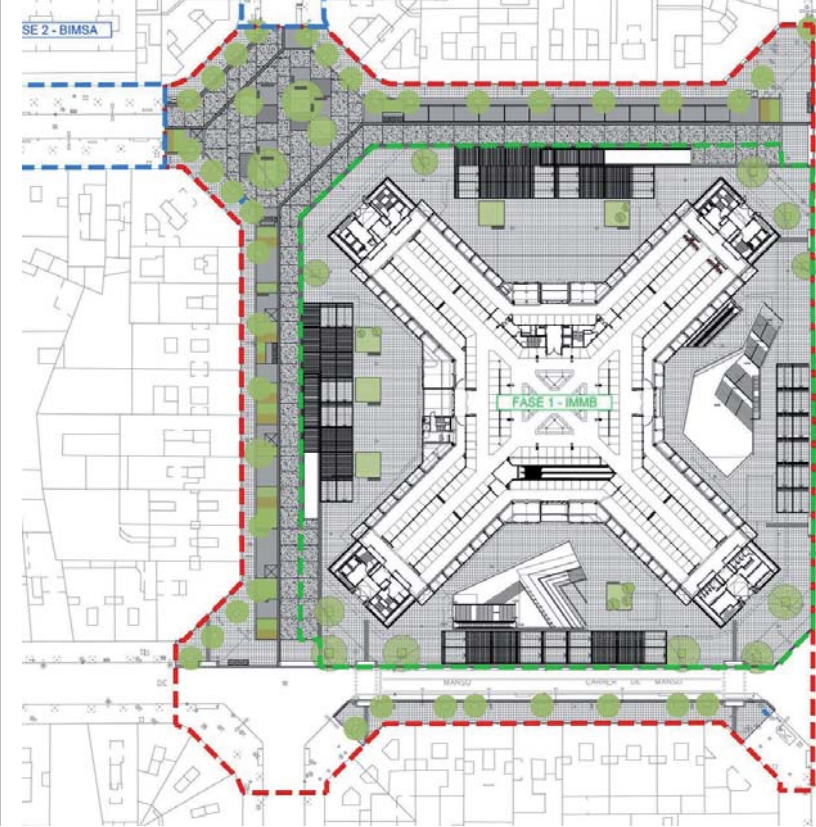


SPAIN

Barcelona (Spain)

FACILITIES

SAN ANTONIO MARKET





HOSPITAL SAN RAFAEL

LOCATION ▶ Madrid (Spain)

CUSTOMER ▶ Hospitaller Order of Saint John of God

PROJECT SCOPE ▶

Reconditioning and restructuring of Building 5 to house a unit for rehabilitation, early years speech therapy and stimulation, and external consultations, as well as construction of a link to Building 6 via a small gallery-style extension to provide access to the Colegio de Educación Especial (a centre for children with special educational needs) and treatment room. Installation of a Multi-Purpose Room.

AMOUNT ▶ EUR 6 million

START DATE ▶ November 2019

FINISH DATE ▶ March 2021

CHARACTERISTICS:

- ▶ Facilities
- ▶ Civil engineering
- ▶ Urbanisation and landscaping
- ▶ Penetration sealing of installations



ESPAÑA
Madrid

FACILITIES
**HOSPITAL
SAN RAFAEL**





FACILITIES

THADER

LOCATION ▶ Murcia (Spain)

CUSTOMER ▶ Metrovacesa

PROJECT SCOPE:

Electrical wiring and communications for the Thader Shopping Centre in Murcia, a 4-storey building

AMOUNT ▶ EUR 5 million

START DATE ▶ september 2005

FINISH DATE ▶ october 2006

CHARACTERISTICS:

- ▶ MV and LV wiring
- ▶ Communications facilities
- ▶ PA system





SPAIN

Murcia (Spain)

FACILITIES

THADER





CONSTRUCTION/FACILITIES **TORRE VILLAGE COMMERCIAL CENTRE**

LOCATION ▶ Zaragoza (Spain)

CUSTOMER ▶ Iberebro, S.A.

PROJECT SCOPE ▶

Construction of the first phase of the Torre Village Commercial and Leisure Centre in the grounds of the former Pikolin factory.

AMOUNT ▶ EUR 19 million

START DATE ▶ October 2019

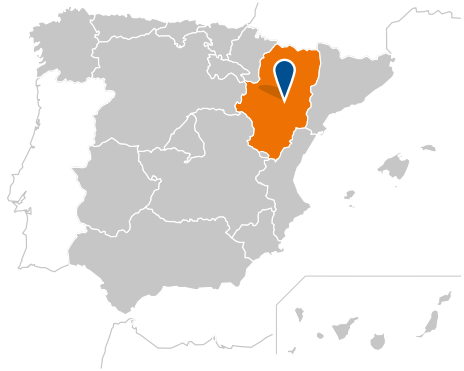
FINISH DATE ▶ August 2020

CHARACTERISTICS:

- ▶ Construction of the M1 block, consisting of a set of local commercial premises on the ground floor, with direct access from a main road
- ▶ Complete installation to cover the internal and shared areas
- ▶ Civil works and installation corresponding to the cinemas



CONSTRUCTION/FACILITIES
**TORRE VILLAGE
COMMERCIAL
CENTRE**





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FACILITIES

BELLARA STEEL COMPLEX

LOCATION ▶ Region of Jijel (Algeria)

CUSTOMER ▶ Algerian Qatari Steel (AQS)

PROJECT SCOPE

Contract for Balance of Plant and water treatment plant for Bellara steel complex. It covers a surface area of 216 hectares and will produce 5 million tons of steel each year

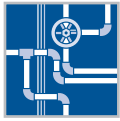
AMOUNT ▶ EUR 138 million (ENO 85M)

START DATE ▶ May 2016

FINISH DATE ▶ September 2018

CHARACTERISTICS:

- ▶ Basic services (drainage, sewerage, electricity, racks, etc.)
- ▶ Roads and railway
- ▶ Buildings (warehouses, workshops, laboratories, offices, canteens, social areas and mosque)
- ▶ Lighting
- ▶ Communications
- ▶ Security
- ▶ Water treatment plant. Capacity:
 - ✓ Makeup water: 1.320 m³/h
 - ✓ Drinking water: 5 m³/h
 - ✓ Waste water: 540 m³/h
 - ✓ Sanitary water 100 m³/day



AFRICA

Region of Jijel (Algeria)

FACILITIES

BELLARA STEEL COMPLEX





FACILITIES

CHUQUICAMATA UNDERGROUND MINE

LOCATION ▶ Calama, Antofagasta region (Chile)

CUSTOMER ▶ Codelco

PROJECT SCOPE:

Electrical upgrade and telecommunications network, Radomiro Tomic division concentration plant

AMOUNT ▶ EUR 14 million

START DATE ▶ november 2014

FINISH DATE ▶ december 2015

CHARACTERISTICS:

- ▶ Civil engineering
- ▶ Construction of 23 kV and 13.8 kV power lines
- ▶ Fibre optic connections
- ▶ Tap-off points
- ▶ Dismantling the existing medium-voltage power lines



SOUTH AMERICA
Calama, Antofagasta region (Chile)

FACILITIES

CHUQUICAMATA UNDERGROUND MINE



CHILE





elecnor

FACILITIES

RADOMIRO TOMIC MINE

LOCATION ▶ Calama, Antofagasta region (Chile)

CUSTOMER ▶ Codelco

PROJECT SCOPE:

Supply and assembly of electrical infrastructure for the Chuquicamata underground mine

AMOUNT ▶ EUR 15 million

START DATE ▶ november 2014

FINISH DATE ▶ december 2015

CHARACTERISTICS:

- ▶ Civil engineering
- ▶ Construction of 23 kV and 13.8 kV power lines
- ▶ Fibre optic connections
- ▶ Tap-off points
- ▶ Dismantling the existing medium-voltage power lines



SOUTH AMERICA
Calama, Antofagasta region (Chile)

FACILITIES
**RADOMIRO
TOMIC MINE**





elecnor

FACILITIES

NEW TRADE FAIR

LOCATION ▶ Beijing (China)

CUSTOMER ▶ China Exhibition Investment & Development Corporation

PROJECT SCOPE:

Supply, management of assembly and start-up of electromechanical equipment for the new Beijing Trade Fair, with a built surface area of 600,000 m²

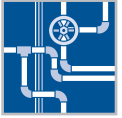
AMOUNT ▶ EUR 8 million

START DATE ▶ april 2007

FINISH DATE ▶ december 2007

CHARACTERISTICS:

- ▶ Air processing units
- ▶ Escalators
- ▶ Lifts
- ▶ Air compressors
- ▶ Access control systems
- ▶ Water coolers
- ▶ Entrance doors



ASIA

Beijing (China)

FACILITIES

NEW TRADE FAIR





elecnor

FACILITIES

FOUR SEASONS HOTEL CASABLANCA

LOCATION ▶ Casablanca (Morocco)

CUSTOMER ▶ Inveravante

PROJECT SCOPE:

Wiring and special facilities for the Hotel Four Seasons Casablanca, which has 183 rooms and suites and was designed by the Norman Foster architecture studio

AMOUNT ▶ EUR 10 million

START DATE ▶ january 2014

FINISH DATE ▶ january 2015

CHARACTERISTICS:

- ▶ Hotel area of 35,000 m² over five levels
- ▶ Wiring
 - ✓ Medium voltage with three 1,250 KVA transformers
 - ✓ Low voltage, including 2 G.E of 800 KVA, three 600 KVAR condenser batteries, 2000 A prefabricated piping, power and lighting, 400 KVA uninterrupted power system, 30 min. and surge diverter
 - ✓ Fire detection, with sound evacuation and alarm system
- ▶ Communications facilities
 - ✓ Communications cabling
 - ✓ Audiovisual systems
 - ✓ Security and video surveillance systems
 - ✓ Physical and wireless network electronics
 - ✓ Voice PBX



AFRICA

Casablanca (Morocco)

FACILITIES

FOUR SEASONS HOTEL CASABLANCA





elecnor

FACILITIES

HILTON HOTEL TANGER CITY

LOCATION ▶ Tanger (Morocco)

CUSTOMER ▶ Tánger City Center (Inveravante)

PROJECT SCOPE

Tanger City Center (Inveravante)
Project scope: Full installation work (electrical mechanical and special) at the five-star Hilton Hotel Tanger City. The hotel covers 25,700 m² and has 15 storeys with 182 rooms, 20 suites and other additional facilities

AMOUNT ▶ EUR 6 million

START DATE ▶ july 2014

FINISH DATE ▶ december 2016

CHARACTERISTICS:

- ▶ Electrical installations:
 - ✓ 600 KVA and 315 KVA generators
 - ✓ Transformers and complete medium-voltage installation
 - ✓ Main and low-voltage switchboards
 - ✓ Power and lighting cabling
 - ✓ Decorative and functional lighting
 - ✓ Energy control and management system for the building
- ▶ Mechanical facilities:
 - ✓ HVAC
 - ✓ Plumbing and sanitation
 - ✓ Fire detection and extinguishing
 - ✓ Smoke extraction system in the event of fire
 - ✓ Facilities control and management system for the building
- ▶ Special facilities:
 - ✓ Multi-service communications network
 - ✓ WiFi network
 - ✓ Copper and fibre optic interior cabling
 - ✓ TV distribution (IPTV)
 - ✓ Video surveillance
 - ✓ Telephony system
 - ✓ Background and evacuation PA system
 - ✓ Security interphone system
 - ✓ Access control
 - ✓ Anti-intrusion security
 - ✓ Audiovisual systems
 - ✓ Digital signage



AFRICA
Tangier (Morocco)

FACILITIES

HILTON HOTEL TANGER CITY





FACILITIES

L.A. FEDERAL COURTHOUSE

LOCATION ▶ Los Angeles, California (United States)

CUSTOMER ▶ Helix Electric

PROJECT SCOPE:

Wiring, ducts and photovoltaic system for the new US Federal Courthouse in Los Angeles

AMOUNT ▶ EUR 11 million

START DATE ▶ november 2013

FINISH DATE ▶ july 2015

CHARACTERISTICS:

- ▶ Surface area: 51,000 m²
- ▶ Wiring
- ▶ Ducts for security and fire detection systems
- ▶ Ducts for communication systems
- ▶ Solar photovoltaic energy system (290 kW)



NORTH AMERICA

Los Angeles, California
(United States)

FACILITIES

L.A. FEDERAL COURTHOUSE





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