



Reference Book  
**Singular  
Building**

Torre Emperador. Spain.



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Botín Centre, Spain.

# Introduction

The concept of singular building work covers initiatives that present challenges from a constructive point of view. OHLA has extensive experience in developing projects of this nature, where it brings new distinctive features to the buildings such as durability and adaptability, bringing the building in line with current standards, and ensuring the user is the primary focus. OHLA has combined this experience with some of the top names in contemporary architecture such as Francisco Javier Sáenz de Oiza, the architect of Torres Blancas and Torre Castellana 81 in Madrid; Juan Navarro Baldeweg, the architect of Teatros del Canal, also in Madrid; María Alexia León Ángel, the architect of the National Museum of Archaeology of Peru; and the multidisciplinary team that designed Mayakoba in the Mexican Riviera Maya, a unique example of how architecture and environmental sustainability can come together in harmony.

Throughout over 110 years of history in countries such as Spain, the USA, the Czech Republic, Chile, Peru and Mexico, the company has carried out unique projects in a wide range of areas –residential, cultural, administrative, sports, etc.– which have become symbols of the times in which they were designed. OHLA has also refurbished buildings to adapt them to new uses or to ensure the original uses are guaranteed. The company has always favoured the protection of architectural heritage within a framework of sustainability and innovation.

OHLA incorporates the sustainability recommendations contained in the UN's 2030 Agenda and the Sustainable Development Goals into its actions, which lay the foundations for the cities of the future. The company also follows the standards of prestigious international organisations which are translated into projects with Leed, BREEAM, CES and PASSIVHAUS certifications, an acknowledgement of the environmental and energy efficiency criteria applied. Examples of this are the Canalejas Centre (Leed Gold), OXXEO (Leed Platinum Core & Shell, BREEAM and Well Gold) and Caleido, a 100% sustainable skyscraper (Leed Gold and Shell Gold), all of which are in Madrid (Spain). In the USA, one outstanding project is the Management & New Growth Opportunity Building (MANGO) at the University of Miami, a Leed Silver certified building.

In the field of innovation, OHLA has been committed to R&D+i for more than two decades by incorporating methodologies such as BIM (Building Information Modelling) used to generate digital 3D models that optimise the works and ensure project cost-effectiveness during construction, and MES, a platform used to monitor structural elements to ensure their stability is not affected by construction work. OHLA also develops and adapts ad hoc tools to optimise the works and uses sustainable building materials made from recycled materials.

We invite you to discover a selection of some of the unique building projects described in this book that demonstrate OHLA's commitment to society and progress, supported by the company's consolidated track record and talented team of professionals.

## Mayakoba tourist complex

### Location:

State of Quintana Roo.  
Riviera Maya (Mexico)

### Owner:

Huaribe S.A. de C.V.

### Completion date:

Divested asset



This tourist-residential project Mayakoba is set in the central coastal area of the Mexican Caribbean, 8 km from Playa del Carmen in the Riviera Maya. It covers an area of 649.7 ha –the resort development covers 240.5 ha while the remaining 409.2 ha have been reserved for the Ciudad Mayakoba residential project, the first fully sustainable community of its kind in the Riviera Maya.

Mayakoba is in a natural environment with a high ecological value, where there is space for four luxury hotels –Andaz, Fairmont, Rosewood, and Banyan Tree–. There is also a golf course, El Camaleón, an 18-hole, par-72 course that has hosted the Mayakoba Golf Classic since 2007, the first PGA Tour event to be held outside of the USA and Canada. The sustainable nature of the project means several ecosystems must coexist –jungle, mangrove, dune, beach, and reefs–. These ecosystems are managed and protected according

to the Environmental Management System (EMS), which also defines how this tourism development project will be built and operated. A multidisciplinary team was in charge of designing an ecological profile as the starting point for the design of a tourist complex that departs from the *all-inclusive* formula while providing access to 1,600 linear metres of beach.

The hotels were located more than 600 m from the beach and behind the mangrove, in areas with secondary jungle vegetation or vegetation that had already been disturbed. Aquatic landscapes were added to the area by designing and building a system of artificial waterways with a length of 13.1 km in an area of 25.7 ha. These landscapes are considered to have the best forestry structure with the highest environmental quality of its kind in the Mexican Riviera Maya.

## Benchmarks in sustainability

Mayakoba is a beacon of sustainability on a global level, as it has become a natural habitat for nearly 200 species of birds, fish, reptiles, crustaceans and molluscs, compared to the 70 that existed before the work was carried out. The combination of sustainability, environmental protection and the highest standards of luxury and exclusivity have earned Mayakoba more than 50 awards and recognitions.

## MILESTONES

- 649 ha of land with high ecological value
- 4 exclusive hotels
- 1 PGA category golf course
- 13.1 km of waterways
- +1,000 rooms and villas
- Environmental Management System (EMS) Certification
- El Camaleón Golf Course designed by Greg Norman, the first PGA TOUR course in Latin America

## BENEFITS

### FOR THE COMMUNITY

- 1,700 direct jobs and 3,300 indirect jobs per year
- Mangrove recovery
- Integration in the Punta Bete-Punta Maroma Wetland System (surface area of 2,355 ha)
- Social activities. development and marketing of local products, improvements to a primary school in the region, and beach cleaning





#### AMERICAN PROPERTY AWARDS

**Banyan Tree Spa Hotel, Mayakoba (2008)**



#### FIVE DIAMOND CERTIFICATION

**Fairmont Hotel, Mayakoba (2008)**

## AWARDS

- Certification in Environmental Quality for Tourism, Federal Attorney's Office for Environmental Protection (2013)
- Ulysses Award, UN World Tourism Organisation (2011)
- Sustainable Standard-Setter Award, Rainforest Alliance (2011)
- World Travel Award, Rosewood Hotel Mayakoba (2011)
- Travel & Leisure World's Best Awards, Rosewood Hotel Mayakoba (2013)
- Five Diamond Certification for the Fairmont Mayakoba Hotel, as the best hotel in the Fairmont chain worldwide in terms of environmental management during 2008.
- Andaz Hotel, ranked among the top 10 resorts in Mexico at the Condé Nast Traveler's Readers' Choice Awards.
- American Property Awards. Banyan Tree Spa Hotel, Mayakoba (2008)

# Ciudad Mayakoba

## Location:

State of Quintana Roo.  
Riviera Maya (Mexico)

## Owner:

Huaribe S.A. de C.V.

## Completion date:

Divested asset



A residential complex with 17,130 accessible dwellings that has been designed to cover an area of 409.2 ha. It is the first integrated, planned, and sustainable community in the Riviera Maya, committed to the quality of life of its inhabitants and where 30% of its natural surface is protected.

The project is divided into three zones:

**Mayakoba City Parks.** With an area of 220.5 ha and 13,600 social and upper-middle-income housing units.

**Mayakoba Country Club.** Covering an area of 161 ha with 2,800 high-end homes. The homes can be used as a primary residence and as a holiday home.

**Mayakoba Village.** The commercial, urban, and business hub for the entire complex, with space for 730 additional dwellings.

All three areas have controlled access and 24/7 security.

## MILESTONES

- Total surface area: 409.2 ha
- Housing units (various typologies): 17,130
- LED lighting for all road infrastructures

## BENEFITS FOR THE COMMUNITY

- 30 percent of the space relates to protected areas
- Extensive bicycle circuit
- Footpaths
- Biological corridors for wildlife to pass through
- Sports facilities
- Park with an area of over 10 ha
- Commercial villa
- Medical centre equipped with state-of-the-art technology
- University campus associated with the tourism sector

## Mayakoba City Lagoons

**Total surface area:** 23.1 ha

**Build surface area:** 209.3 m<sup>2</sup>

**Completion date:** Divested asset

A residential development set in an extensive natural environment structured by canals and lagoons similar to those in Mayakoba, where quality, comfort, security and sustainability converge. It is distributed across:

- 441,730 m<sup>2</sup> where the villas are located.
- 172,091 m<sup>2</sup> for apartments.

The first phase of the project was completed in 2019 with the delivery of Phase I, comprising 39 villas and 304 two- and three-bedroom flats. This phase occupies 3.6 ha, with a built surface area of 42,594 m<sup>2</sup>.

The complex is completed with a communal swimming pool, areas for aquatic activities, and a social club with a gym, cafeteria, and a rooftop with views of the jungle and the Mexican Caribbean. Access is controlled 24/7.

## Mayakoba Country Club

**Total surface area:** 161.0 ha

**Completion date:** Divested asset

The project has seven horizontal complexes and eight vertical developments; 300 m<sup>2</sup> and 500 m<sup>2</sup> single-family plots and 60 ha of natural land including three *cenotes*, biological corridors, green areas, and recreational parks.

It also has a Country Club with a 9-hole golf course, a clubhouse with a semi-Olympic swimming pool, gym, spa area and changing rooms, paddle and tennis courts, pro-shop, restaurant, multi-purpose rooms, children's area, gardens and beach club, all with 24/7 controlled access and security.

## Mayakoba Trails North and West

**Total surface area:** 60.2 ha

**Completion date:** Divested asset

This real estate development is based on the pillars of environmental sustainability, urban planning, security, and promoting community spirit. The development is divided into several plots for sale:

- 329 single-family plots of 160 m<sup>2</sup>
- 310 single-family plots of 300 m<sup>2</sup>
- 7 multi-family plots with a total of 11,260 m<sup>2</sup>
- 4 mixed-use plots with a total of 1,210 m<sup>2</sup>

The environment has extensive natural areas and parks; recreational spaces for children and pets; a community swimming pool, social club, its own cenote, 5 km of cycle paths, and 24/7 controlled access.

## Mayakoba City Forest

**Total surface area:** 10.11 ha

**Built surface area:** 88.3 m<sup>2</sup>

**Completion date:** Divested asset

Vertical design and space for 911 dwellings distributed over:

- Two-bedroom apartments with a surface area of between 93 m<sup>2</sup> and 97 m<sup>2</sup>.
- Two- and four-bedroom apartments of up to 145 m<sup>2</sup>.
- This residential complex is located in the centre of Mayakoba, and two phases have been developed: La Ceiba and Roble.



## Mayakoba Gardens

**Total surface area:** 38.7 ha

**Built surface area:** 238,757 m<sup>2</sup>

**Completion date:** Divested asset

A development with 3,608 social housing units and 149 commercial units, located on the southern edge of Mayakoba City, next to the urban centre of Playa del Carmen.

All phases include a gated community with security, community swimming pools, car parks, and green areas. The development is connected to the Mayakoba City parks and the Xaman-Ha park, with an area of 10 ha.

## Mayakoba Village

**Total surface area:** 22 ha

**Completion date:** Divested asset

This residential area stands out for its first-class landscaping and architecture, with a pedestrian shopping promenade with restaurants, shops, boutiques, a business centre, and leisure facilities.



## Ciudad Mayakoba High-Rise

**Total surface area:** 9.8 ha

**Completion date:** Divested asset

An innovative vertical design - among the tallest on the Riviera Maya - in a setting characterised by jungle and the Caribbean Sea. Of the total area, 2.3 ha are designated for forest conservation, footpaths, and green areas.

The built area has 1, 2, and 3-bedroom apartments and common areas such as a gym, children's and pet areas, terraces, playgrounds, a water park, and 2 swimming pools with swimming lanes. It also has coworking spaces, sports areas, community Wi-Fi, and a cafeteria.

## Health Center and Wellmedic

**Total surface area:** 0.85 ha

**Built surface area:** 12,000 m<sup>2</sup>

**Completion date:** Divested asset

One of the most innovative medical tourism centres in Latin America. It includes a clinic equipped with operating theatres and consulting rooms and a hotel for long-stay patients.

Other services include doctors' consulting rooms and clinics, imaging and interpretation units, laboratory, pharmacy, gym, spa, a small healthy supermarket, restaurants and 100% organic cafeterias.

## Madrid Canalejas Centre

**Location:**

Madrid, Spain

**Client:**

Centro Canalejas Madrid, S.L.U.

**Investment:**

+600 million euro  
(+680 million USD) including  
underground infrastructure



OHLA has contributed to the urban and commercial development of Madrid's historic centre with the refurbishment of the Madrid Canalejas Centre (CCM). The centre is made up of seven historic buildings, most of which are over a hundred years old, and two of them are listed as Sites of Cultural Interest. They are located between Calle Sevilla, Calle Alcalá, Carrera de San Jerónimo, and Plaza de Canalejas.

The refurbishment work has converted CCM into a complex that houses a Four Seasons Hotel which opened in

September 2020, the chain's first Spanish hotel. It will also have 22 *Branded Private Residences*, a pioneering concept as the residences will benefit from the hotel services. There is a commercial space called *Galería Canalejas*, as well as a gourmet space specialising in local delicacies and a car park with 400 spaces.

The project is completed with urban planning works such as pedestrian areas, renovated street furniture, paving, and lighting. The historic Seville metro station has also been refurbished, promoting sustainable transport.



The building has a total built area of 80,000 m<sup>2</sup> distributed over 9 floors above ground (ground + 8) and 4 floors below ground. The building has a classical radial geometry with an axis of symmetry starting at the section of building facing Calle Alcalá 14 and extending through the rest of the buildings. It has a large interior courtyard that provides ventilation and natural lighting to all floors and a smaller courtyard to illuminate certain areas of the hotel such as the spa.

The roof is considered the fifth façade and is mostly covered by a green roof which requires minimum maintenance and emits a significant amount of oxygen. The building's carbon footprint is reduced by using alternative energies, improving indoor environmental quality with geothermal energy, ensuring efficient water consumption and wastewater treatment, and selecting local materials. These practices have been recognised by the US Green Building Council (USGBC) with Leed Gold certification.



## Heritage recovery

More than 17,000 ornamental pieces have been catalogued and will be returned to their place of origin after the renovation work. This has been possible thanks to the work of craftspeople specialising in glass, metals, stone, and wood. The stained-glass windows of Alcalá 14 and Alcalá 10, the marble doorways, the bronze capitals and the art deco grilles stand out for their uniqueness and significant artistic value. In total, nearly 8,000 m<sup>2</sup> of façade have been restored, an investment of over 7 million euro.

## Innovation

The Building Information Modelling (BIM) methodology was followed during the project design process to optimise costs and ensure responsible use of material resources. Structural element monitoring technology was also applied to monitor and stabilise the original façades, ensuring their survival throughout the building reconstruction process.



## MILESTONES

- **Total surface area:** 80,000 m<sup>2</sup>
- **Façades:** nearly 8,000 m<sup>2</sup> restored
- Nearly 17,000 ornamental pieces recovered and +7 million euro invested
- **Hotel Four Seasons:** built area of +35,200 m<sup>2</sup> over 8 floors with 200 rooms
- **Branded Private Residences:** + 8,200 m<sup>2</sup> distributed over 22 apartments
- **Private car park** with 71 spaces and private access
- **Galería Canalejas:** +17,000 m<sup>2</sup> distributed over three floors
- **Food Hall:** 4,000 m<sup>2</sup>
- **Car park:** +15,000 m<sup>2</sup> and 400 spaces

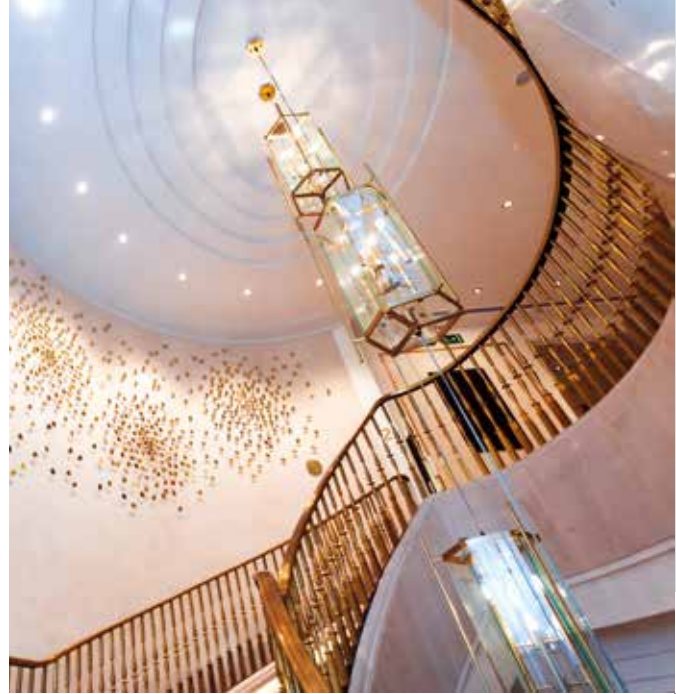
## BENEFITS FOR THE COMMUNITY

- **+5,000 jobs** generated during the construction and development phases
- **Leed Gold Certification** under the Leed for New Construction and Major Renovations programme
- **Protection and conservation of the historical and cultural heritage** of the buildings that house the project, two of which are listed buildings
- **Urban transformation** and commercial promotion of the surrounding area



## AWARDS

- **Best Public Works**, Roads Awards (2021)
- **Best non-residential real estate project**, ASPRIMA-SIMA awards (2020)
- **LIT Design Awards**, Exterior Architectural Illumination (2021)
- **Macael National Prize** for stone restoration works (2019)
- **Horeca New Business Models Award** for the Food Hall (2022)
- **Potencia Prize** in the Urban Works category (2022)





## Ciutat de la Justícia

**Location:**

Barcelona. Spain

**Client:**

GISA, Department of Justice

**Budget:**

279.9 million euros (411.4 million USD)

**Completion date:**

2008

The Ciutat de la Justícia project was born out of the need to unify the region's judicial bodies in a single complex to guarantee functionality, cost savings, management, and accessibility.

The complex is formed by nine buildings connected by a common lobby called the Atrium, covering a total built area of 232,368 m<sup>2</sup>. Seven buildings house judicial offices belonging to the municipalities of Barcelona and Hospitalet de Llobregat, one houses offices, and the final building is residential. In 2010, the project received one of the annual awards from the Royal Institute of British Architects (RIBA) and the World Architecture Festival (WAF) award for a Civil and Community Building.

## Forum Building

**Location:**

Barcelona. Spain

**Client:**

Barcelona City Council

**Budget:**

88 million euros (110.6 million USD)

**Completion date:**

2004

The Forum Building is part of an urban regeneration project and was the star construction of the Universal Forum of Cultures held in Barcelona in 2004. It has housed the Museum of Natural Sciences since 2011 and hosts conferences, concerts and exhibitions, among other activities.

With an equilateral triangular floor plan with sides measuring over 180 m on each side and 25 m high, it appears to float above the Forum esplanade on 17 supports, providing a large covered space for outdoor activities. It has an underground auditorium with 3,200 seats, a 5,000 m<sup>2</sup> exhibition hall and an underground walkway which connects it to Barcelona's International Convention Centre.



## Santiago de Chile Justice Centre

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**Location:**

Santiago de Chile. Chile

**Client:**

Ministry of Justice

**Budget:**

84.3 million euros  
(95.7 million USD)

**Completion date:**

2022

The complex of nine buildings arranged around a large civic square is the main centre of activity for Chile's judicial system. It is also the largest and most modern public justice building in Latin America.

It is considered to be the most important public building project built in Santiago de Chile in the last 50 years.

The cubic project has a surface area of 115,000 m<sup>2</sup> on a 4.5 ha site. The structure is essentially made of reinforced concrete with exposed concrete architectural finishes, made using concrete slabs, walls, and beams. The walls are 30 cm thick, and the slabs are 14 cm.

The buildings are crowned by a metal structure clad with an Aluzinc sheet metal roof; underneath, there is a suspended ceiling built with fibre cement panels in a wood-like finish that gives them spatial unity, providing a large access threshold. Curtain-wall glazing with aluminium joinery and straight and slanted glazed thermal panels are used for the exterior cladding and façades.

## Oxxeo

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**Location:**

Madrid. Spain

**Client:**

GMP Property SOCIMI S.A.

**Budget:**

18.5 million euros (22.1 million USD)

**Completion date:**

2018

OXXEO, a building recognised as the Best New Office Building in Spain by the Spanish Office Association, stands tall in the financial district of Las Tablas, to the north of Madrid. Its energy efficiency and sustainability criteria have enabled it to achieve some of the most prestigious international certifications such as Leed Platinum Core & Shell, BREEAM, and Well Gold.

The building is characterised by its triangular shape, with chamfered corners that adapt to the shape of the plot on which it stands. The rhomboid-shaped lattice on the exterior façade is a load-bearing structure for the slabs and protects the interior from direct sun, while providing the characteristic aesthetics.





## 709 Alton Road Mixed-Use Facility & Parking Garage

**Location:**

Miami Beach, Florida

**Client:**

Alton Road Development

**Budget:**

25.7 million euros (29.4 million USD)

**Completion date:**

2019

This 5-storey, 11,500 m<sup>2</sup> building houses a medical practice building, commercial premises, and a car park with 117 parking spaces. Located on Alton Road, one of Miami Beach's busiest shopping streets, its mixed-use functionality responds to the needs of the local community by providing an environment that offers medical services and a full range of retail, entertainment and dining options.

Digitalisation has been used during the construction process with collaborative BIM technology. The project was awarded the Sunshine State Safety Recognition Award in recognition of its safety best practices.



## Mercat dels Encants

**Location:**

Barcelona. Spain

**Client:**

BIMSA, Barcelona City Council

**Budget:**

26.1 million euros (34.4 million USD)

**Completion date:**

2013

The new Mercat dels Encants was born with one aim: to preserve the soul of the open-air street markets. Designed as an extension of the surrounding streets and structured on different levels, it functions as a permeable public space with a surface area of 35,440 m<sup>2</sup>.

Despite not being traditionally conceived as a building and not having a façade, its suspended canopy creates a visual landmark that gives it a strong identity and makes it recognisable and welcoming from a distance. The gold mirror polished stainless steel finish makes it look like a kaleidoscopic reflection of the city when observing from the market, and vice versa.

## Torre Emperador

**Location:**

Madrid. Spain

**Client:**

Torre Espacio Castellana, S.A.

**Budget:**

69.6 million euro  
(91.8 million USD)

**Completion date:**

2007



Its majesty and beautiful architectural design have made Torre Emperador Castellana a symbol of the Madrid *skyline*. Located in the Cuatro Torres (four towers) Business Area and with a height of 250 m, equivalent to 57 levels above ground and an area of 56,250 m<sup>2</sup>, it is the fourth tallest skyscraper in Spain.

Its visual appeal lies in its design, which is curved according to the trigonometric cosine function. The skyscraper has a square base of 1,620 m<sup>2</sup> on the ground floor and the footprint tapers as it rises, gradually transforming the floor plan into an ellipse of 1,240 m<sup>2</sup> on the top floor. This reduction generates a curve that crosses the building diagonally which is the graphical representation of  $y = \cos x$ .

Torre Emperador is the first office building in Spain to obtain the BREEAM In Use sustainability certificate with an Excellent rating. Its air-conditioning system, known as a chilled ceiling, contributes greatly to maximising energy savings. It is a hybrid air-water system with outside air ventilation through the technical floor and with cold panels and beams in the ceiling.

Another innovative element is its active façade, with dual glass panels, micro-perforated blinds, and an automated control system that adapts to the outside conditions and can control brightness levels. One of the distinguishing features of the interior architecture is its two sky lobbies. Located on floors 18 and 33, they are double in height and house several facilities such as restaurants, cafés and meeting rooms.

## IN NUMBERS

- **4th** tallest skyscraper in Spain
- **250 m** high
- **57** floors
- **56,250 m<sup>2</sup>** usable floor space
- **1,271** parking places

## SUSTAINABLE FEATURES

- **ENERGY CLASSIFICATION A** supported by the active façades in its curtain wall and its air-conditioning system using a chilled ceiling.
- **MATERIAL RECYCLING** with waste separation and complete management through the building's underground accesses.
- **GUARANTEED INDOOR AIR QUALITY** with a high air renewal capacity. The user can control the main thermal comfort and brightness parameters for their workspace.



## AWARDS

**BREEAM In Use Excellent** rating in the section that evaluates constructive aspects and building facilities.



## Torre Caleido

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**Location:**

Madrid. Spain

**Client:**

Espacio Caleido S.A.

**Budget:**

300 million euros (367.9 million USD)

**Completion date:**

2021

With a height of 181 metres and 36 floors, Torre Caleido is the seventh tallest building in Spain. It houses the IE Business School, the first high-rise university campus in the country, and a second horizontal building at the base that is 20 metres high with four floors where the Quirón Health Group runs an advanced medicine centre.

This development complex has a total surface area of 180,000 m<sup>2</sup> and has an inverted T-shaped design. Its location in the north of Madrid, at the top of the Paseo de la Castellana on the odd-numbered side, next to the Cuatro Torres Business Area complex, is one of the most strategic in the capital. It is popularly known as the "Fifth Tower".

It has a large shopping and service area with an innovative range of fashion shops, restaurants and leisure, sports, art and culture areas, as well as green spaces. It is also a 100% sustainable project designed for the benefit and well-being of people. It has been awarded the prestigious Leed Gold and Shell Gold sustainable certifications.





## Hotel W Barcelona

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**Location:**

Barcelona. Spain

**Client:**

Nova Bocana Barcelona, S.A.

**Budget:**

132.7 million euro (190.6 million USD)

**Completion date:**

2010

The Hotel W Barcelona, popularly known as the Hotel Vela (Sail Hotel), is a 5-star hotel with a surface area of nearly 50,000 m<sup>2</sup> and a height of 99 m distributed over 26 floors with 473 rooms and suites. It is located on the seafront, next to the Barceloneta promenade, on a plot of land reclaimed from the sea. Geometrically, it has four easily identifiable bodies: The Sail, Atrium, Podium, and Car Park.

Its sail-shaped silhouette forms part of Barcelona's maritime and architectural landscape. It received the 2010 Prix Villégiature for the Best Exterior Hotel Architecture in Europe and was crowned the best national lifestyle hotel at the World Travel Awards 2022.



## Torre del Agua

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**Location:**

Zaragoza. Spain

**Client:**

Expoagua Zaragoza 2008

**Budget:**

52.5 million euros (77.1 million USD)

**Completion date:**

2008

Standing 80 m tall, the Torre del Agua (Water Tower) is one of Zaragoza's tallest buildings. It was the most emblematic icon of the 2008 Water Expo held in the city. It has a surface area of approximately 21,000 m<sup>2</sup> and a floor plan shape that resembles a drop of water. The building foundation is a large concrete plinth that floats on the Ranillas meander.

Inside the tower there is a large open-plan space with a ramp that ascends in the form of a spiral along the inner wall. The exterior, an elegant glass skeleton, is covered with a transparent glazed mesh. The combination of the mesh with the laminated steel profiles covered with white lacquered sheet metal makes the building very bright during the day and emulates the silhouette of a huge lighthouse at night.

## National Museum of Peru (MUNA)

**Location:**

Lima, Peru

**Client:**

Ministry of Culture/UNOPS

**Budget:**

104.6 million euro  
(128.2 million USD)

**Completion date:**

2021



It is the largest Peruvian museum and the second largest in Latin America, designed to protect, study and disseminate the country's rich cultural heritage. The building's architecture is based on a design reminiscent of a pre-Hispanic past. It is located on an area covering more than 75,000 m<sup>2</sup> within the archaeological zone of Pachacámac in the district of Lurín (Lima).

Leading standards of innovation and sustainability were followed to build the museum, such as the Lean Construction methodology with the Last Planner tool and workflows, and BIM to resolve interfaces between the complex facilities and networks and to create virtual reality models. The infrastructure is located below the water table, so the ground needed to be prepared for the construction work and later waterproofed.

The complex has two clearly differentiated buildings. There is the museum building, with three floors below ground, two floors above ground level, and a terrace on the top floor. Then there is the parking and technical area building that is attached to the museum. This building has two floors below ground and an upper roof with a concrete pergola that forms a large square in front of the museum.

The upper floors are interconnected with wrap-around ramps around a free central area that uses natural light to highlight the valuable archaeological collection around it. Light enters through a skylight with a free span of more than 40 m. The glazing is supported on a structural steel structure and there is a system of 320 automated adjustable louvres.

## IN NUMBERS

- **+75,000 m<sup>2</sup>** of surface area
- **41,000 m<sup>2</sup>** of poured concrete and **+500,000** archaeological artefacts on display
- **5,400 t** of steel made by mass casting
- **A 450-seat** auditorium

## BENEFITS FOR THE COMMUNITY

- More than **2,200 jobs** generated during the construction phase
- **Protection, conservation and dissemination** of the country's historical heritage
- **Technology**: use of BIM to improve construction quality with early detection of incompatibilities between facility networks and structures and finishes

- **2<sup>nd</sup>** largest museum in Latin America
- The entire structure (**83,000 m<sup>3</sup>** of reinforced concrete and **11,700 t** of steel) is made of exposed concrete



## AWARDS

**Gold Hexagon National Architecture Award**  
at the XIX Peru Architecture Biennial 2022 awards.





## Tenerife Arts Space (TEA)

**Location:**

Tenerife. Spain

**Client:**

Island Council of Tenerife

**Budget:**

62 million euros (76 million USD)

**Completion date:**

1995

The Tenerife Arts Space is an architectural complex covering over 20,000 m<sup>2</sup> that houses a museum, a contemporary art centre, a photography centre and a municipal library, among other facilities. It is located in the old quarter of the city of Santa Cruz, on the right bank of the Santos ravine, in Tenerife. It has one basement floor and three floors above ground. There is a public ramp that crosses the entire building, connecting two areas of the city that are at different heights.

The concrete building structure has 2,212 pixel-windows on the exterior façade that are transformed into small pieces of art through which visitors can get a glimpse of the creative universe inside as the sunlight reflections emulate the tips of waves.



## National Library of Technology in Prague

**Location:**

Prague. Czech Republic

**Client:**

Národní technická knihovna

**Budget:**

56 million euros (82.3 million USD)

**Completion date:**

2008

Safeguarding over 1.5 million books, the National Library of Technology in Prague is located on premises belonging to the technical universities and has a floor area of 5,200 m<sup>2</sup>. It has six floors above ground for public areas and administrative facilities, and three underground floors with a book depository and a car park for 450 vehicles. The ground floor is freely accessible, with a transparent façade, and resembles a protected square from where the cafeteria, conference room, gallery, and other facilities can be accessed. A central atrium runs through the building from the ground floor to the roof, and on the top floor there are outdoor lobbies for outdoor study. It has received several awards, including the Czech National Architecture Award in 2010.

## Teatros del Canal

**Location:**

Madrid. Spain

**Client:**

Autonomous Community of Madrid

**Budget:**

66.4 million euros  
(99.9 million USD)

**Completion date:**

2009



This original and innovative 35,000 m<sup>2</sup> building won the 2009 Spanish Biennial Architecture Prize for its “architectural and urban excellence, its cultural content, and the poetry of the space”.

The structure is made up of three distinct parts with independent accesses that are interconnected with each other. The main theatre is the central volume with a 40x20 m stage and a 35 m high stage tower.

Then there is an adaptable theatre which is a multi-purpose hall, with a stage, stands, and balconies that can be adapted according to the needs of the show. And finally, the choreography centre which is dedicated to dance. These three areas are connected through a common service area in the back.

On the outside, the building is surrounded by a special laminated glass skin in black and red –classical theatre colours– with a texture formed by small pyramids that reflect sunlight to give it the feel of velvet theatrical curtains.

Individual solutions were required to resolve the volumetric complexity of the building; in addition, while reinforced concrete in the form of slabs predominates, prestressed concrete (in the longest-spanning slabs) and mixed structures (beams and trusses) have also been used.

The three buildings are separated by joints to prevent shrinkage, creep, and thermal oscillations, allowing them to be functionally and structurally independent. A 0.80 m diameter pile screen was used around the building to limit the movements of the adjacent buildings which have foundations above the excavation level.



## L'Hemisferic

**Location:**

Valencia. Spain

**Client:**

Generalitat Valenciana

**Budget:**

40.9 million euros (61.4 million USD)

**Completion date:**

1998

This 14,000 m<sup>2</sup> building located in Valencia's City of Arts and Sciences has an ovoid roof more than 100 metres long that represents a large human eye, the eye of wisdom. Inside it houses a large sphere, the projection room, a 900 m<sup>2</sup> concave screen with three projection systems: Planetarium, Imax Cinema, and Omniscan Laser.

The "pupil" of the eye is the hemispherical dome of the projection room that is visually transformed into a complete sphere when reflected in the pond. The "eyelids" are the toric vaults and the "eyelashes" are the glazed gates that fold and rotate on central hinges, giving varied and striking optical sensations.



## Dennis C. Moss Cultural Arts Center

**Location:**

Cutler Bay, Florida. USA

**Client:**

Miami-Dade County

**Budget:**

27.4 million euros (38 million USD)

**Completion date:**

2011

This centre of performing arts has a surface area of 7,400 m<sup>2</sup> and houses a theatre with 966 seats, a stage, a stage box, an orchestra pit, dressing rooms, administrative offices and a black box theatre, among other spaces. It also includes a separate building equipped with a theatre laboratory, a dance studio, a cafeteria and flexible spaces for lectures, classes and community meetings.

The two buildings are connected via an outdoor walkway that leads down to a garden along the Black Central Creek canal and a backyard that can accommodate up to 700 people. It has been voted best institutional project by the IIDA South Florida Chapter and best cultural facility of 2011 by the Miami New Times newspaper.



## Janáček Theatre

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**Location:**

Brno, Czech Republic

**Client:**

The City of Brno

**Budget:**

+25 million euros (+28 million USD)

**Completion date:**

2019

It is one of the three stages of the Brno National Theatre. The building underwent a gradual reconstruction process that included carefully restoring and renovating the original elements. As a result, both the interior and exterior of this cultural icon were brought closer to the way they looked shortly after the theatre was built in 1965.

The work included renovating the lighting, stained glass windows, and floors, as well as restoring furniture, dressing rooms, the auditorium and handrails. The engravings on the marble wall, between the wings of the central staircase, are transformed into the handwriting of the Czech composer Leoš Janáček; and the names of his operas appear at night, under the light of the original chandeliers.



## National Museum of Science and Technology [MuNCyT]

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**Location:**

A Coruña, Spain

**Client:**

La Coruña Provincial Council

**Budget:**

11.3 million euros (10.04 million USD)

**Completion date:**

2008

The MuNCyT headquarters in A Coruña, exhibited at the MOMA in New York and the winner of the Young Architecture Prize at the IX Biennial of Spanish Architecture, are arranged around three main elements: the perimeter façade, with a square floor plan measuring 38 m on each side, the interior communications core, and a series of prisms that emerge from the core and rest on the façade, crossing it.

It was the first project in Spain to use self-compacting concrete, which allowed the mix to flow between the reinforcement and fill up the height of the formwork, fully guaranteeing the absence of cracks. A façade of individually made solar laminated glass was built using 1,000 multicoloured sound-absorbing cylinders with a diameter of 22 cm and a length of 125 cm.



## Botín Centre

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**Location:**

Santander. Spain

**Client:**

Botín Foundation

**Budget:**

61.7 million euros  
(64.9 million USD)

**Completion date:**

2017

This contemporary art building has a privileged location and a built surface area of 10,285 m<sup>2</sup>, making it a balcony overlooking the bay of Santander. Cantilevered over the sea, it is clad in a ceramic skin made up of 270,000 circular pieces that reflect the light and changing colours of the sea and the sky.

It has two volumes linked by an intermediate area called Pachinko, named after a Japanese pinball machine. It is a structure with patios and walkways made of steel and glass, which stands 7 m high. Its function is to connect the east and west volumes, distributing the flow of visitors to the building.

The west volume is for exhibition programmes and has an approximate surface area of 2,500 m<sup>2</sup> with two levels of versatile exhibition spaces. The east volume is for educational and multicultural programmes with a double-height auditorium and multi-purpose rooms. There are also gardens with a surface area of 48,500 m<sup>2</sup> and 27,500 m<sup>2</sup> of pedestrian walkways.

The entrance is through the ground floor in the west building where the reception, shop, cafeteria-restaurant and lounge area are located. The works of art for the galleries enter the building through the basement.



## Pompano Beach Library and Cultural Center

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**Location:**

Pompano Beach, Florida. USA

**Client:**

City of Pompano Beach

**Budget:**

13.4 million euros  
(15 million USD)

**Completion date:**

2017

The project involved building a cultural centre and a two-storey library with a total surface area of more than 4,400 m<sup>2</sup>. The cultural centre has a public foyer, a digital media room, offices, a gallery and a multi-purpose space, while the public library is equipped with children's spaces, a computer lab, a multi-purpose room, offices and support areas.

The project also included demolition work, utility connections, paving, levelling, drainage, parking, a service area, a book drop-off point, and site improvements. The project obtained the international Leed Gold sustainability certification for the environmental value and energy efficiency criteria applied in the project.



## Teatro de la Comedia

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**Location:**  
Madrid, Spain

**Client:**  
National Institute of  
Performing Arts and Music

**Budget:**  
11.3 million euros  
(13.7 million USD)

**Completion date:**  
2015

Founded in 1875, the Teatro de la Comedia is one of the capital's most emblematic cultural buildings and a benchmark of Madrid's cast-iron architecture. OHLA was responsible for restoring the building to its original splendour through a refurbishment and extension project that included structural improvements to the spaces used by the public and artists, as well as restoring decorative elements.

The work carried out included various tasks aimed at strengthening the structure: the concrete beams were reinforced with new steel plate box

girders and 25 of the 64 cast-iron columns were replaced. The refurbishment of the theatre also included raising the stage to install the grid and fly system, and creating a new multidisciplinary hall, Tirso de Molina, with a planned seating capacity of 100 people.

Painstaking restoration work was also carried out to restore the theatre to its original image, involving the staircase and box railings, lamps in public areas, bronze sculptures in the foyer and the brass plinth. The polychrome on the linen canvas on the auditorium ceiling was also recovered.



## Masaryk University Simulation Centre (SIMU)

**Location:**

Brno, Czech Republic

**Client:**

Národní technická knihovna

**Budget:**

56 million euros (82.3 million USD)

**Completion date:**

2008

The Masaryk University Faculty of Medicine has the most modern Simulation Centre (SIMU) in Central Europe. With 3,215 m<sup>2</sup> of floor space and 51,850 m<sup>3</sup> of simulated enclosed area, it houses a real hospital environment including an emergency department, a surgical department with operating theatres, and a maternity ward, all used to provide medical students with practical training.

The infrastructure is divided into two parts. To the south, there is a compact five-storey concrete building with an interior atrium. The northern part, made of steel, is shaped like an irregular trapezoid and forms a bridge over Kamenice Street. The steel structure is also the supporting structure for the façade, which is made of gold-plated perforated metal plates.



## Miami-Dade College Center for Learning, Innovation, and Simulation

**Location:**

Miami, Florida, USA

**Client:**

Miami Dade College

**Budget:**

30.7 million euros (34.5 million USD)

**Completion date:**

2019

This 12,300 m<sup>2</sup> building built for Miami Dade College has four floors housing classrooms, a 300-seat auditorium, meeting spaces, clinical study areas and an enclosed walkway connecting it to an existing academic building.

The advanced medical simulation centre occupies the third floor and allows students to gain hands-on experience in a variety of clinical settings. It features spaces that recreate 15 hospital/patient rooms with high-fidelity mannequins, an ambulance, a virtual reality space, and 10 examination rooms where students can interact with actors specially trained to portray patients.



## FIU Management & New Growth Opportunity Building (MANGO)

**Location:**

Miami. Florida. USA

**Client:**

Florida International University

**Budget:**

22.3 million euros (27 million USD)

**Completion date:**

2014

With six floors and a total floor area of 10,000 m<sup>2</sup>, this mixed-use building at Florida International University (FIU) houses the College of Accounting, the Department of Management and International Business programmes, FIU Online, and the Business School.

The building is Leed Silver certified thanks to its high degree of energy efficiency. Its areas include classrooms, offices, conference rooms, multimedia and collaboration spaces, and a test laboratory with a capacity of 150 people.

Advanced course capture technology, which digitally records all lectures, allows students to study flexibly and in a hybrid environment.



## FZU Pavilion, Institute of Physics of the Czech Academy of Sciences

**Location:**

Prague. Czech Republic

**Client:**

Czech Academy of Sciences

**Budget:**

13 million euros (15.9 million USD)

**Completion date:**

2021

The new Institute of Physics pavilion has a total floor area of 3,814 m<sup>2</sup>, two floors above ground and one underground. It is mainly used for solid state physics research. The building houses 55 laboratories in an area of 1,235 m<sup>2</sup> where more than 200 scientists work. The U-shaped plan of the building makes the most of the open atrium in the centre of the building, which is optically separated from its surroundings by a structure covered with climbing plants.

The laboratories are equipped with a system to detect technical gases and extract them through an antistatic air duct. The rooms are designed to prevent contamination transfers, particularly transfers by infiltration, through a pressure cascade which operates continuously.



## Miribilla Sports Complex

**Location:**

Bilbao, Spain

**Client:**

KIROL-GINTZA, S.A.U. (developer)

**Budget:**

40.9 million euros (44.2 million USD)

**Completion date:**

2010

This sports complex has a total built surface area of 30,800 m<sup>2</sup> and is divided into two distinct areas and volumes. The stadium (Palacio de los Deportes) has the competition arena (basketball, indoor football, etc.) with telescopic stands that cater for up to 8,500 people. There is also an underground car park. The other volume, the sports hall, has a swimming pool, gym and administrative offices.

The stadium has been designed as a tree, with arborescent columns that brace the metal structure on the façade and steel sheets lacquered in various colours. The result is an air-permeable enclosure that hides all the air-conditioning machines. It was awarded Sports Building of the Year 2011 by ArchDaily.



## Villa El Salvador Sports Centre

**Location:**

Lima, Peru

**Client:**

Special Project Pan American Games Lima 2019

**Budget:**

30.2 million euros (34.5 million USD)

**Completion date:**

2019

This multi-disciplinary sports complex was built for the 2019 Pan American Games. It is equipped with energy-efficient lighting, ventilation, and sound and security systems of the highest standard. During the Games, it hosted the gymnastics, karate, *boccia* and wheelchair rugby events, and has been a legacy for the community for sports such as gymnastics, karate and volleyball, and for national sports tournaments.

With a surface area of 18,700 m<sup>2</sup>, it has one pavilion with a capacity for more than 6,100 spectators, and another where competitors can warm-up and train. The complex uses an insulated cladding system to create an energy-efficient environment that maximises natural ventilation and light.



## Santander Palacio de Deportes

**Location:**

Santander. Spain

**Client:**

Santander city council

**Budget:**

24.1 million euros (25.3 million USD)

**Completion date:**

2003

Santander's Sports Arena (*Palacio de Deportes*) is an innovatively designed, volumetrically curved sports arena with 6,000 seats and a capacity to host 10,000 people for large events. It combines a concrete structure and a large stainless steel plate roof with a laminated glass enclosure, in a shape reminiscent of a whale. It has a total built area of 15,525.48 m<sup>2</sup> and a usable area of 14,420 m<sup>2</sup>.

Approximately one third of the circular stands are telescopic, while the rest are made of precast concrete connected to concrete beams cast *in situ*. It has a 44x22 m multifunctional playing field suitable for a multitude of sports. The arena can also be set-up in many ways to accommodate entertainment shows.



## Białystok municipal stadium

**Location:**

Białystok. Poland

**Client:**

Stadion Miejski Sp. Zo.o.

**Budget:**

24.6 million euros (33.9 million USD)

**Completion date:**

2014

The municipal football stadium in the Polish city of Białystok has a usable area of more than 24,000 m<sup>2</sup>, in addition to 440,000 m<sup>2</sup> of buildings for other uses such as conference rooms, catering services and a business area. It has a seating capacity of 22,500. The playing field measures 105x68 metres and is located on the same plot where the previous municipal football field was inaugurated in 1972. It is covered with natural grass and has a heating system.

The technical aspects of this project include the spatially open structure of the stadium, which contains 24,000 m<sup>3</sup> of concrete, 2,400 tonnes of reinforcement, and 4,600 tonnes of metal structure for the roof, which has a crown height of 28.4 m. OHLA was awarded the Crystal Brick Award for the best sports infrastructure for this project.



## Central Crime Laboratory - PDI

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**Location:**

Santiago de Chile. Chile

**Client:**

Ministry of Public Works

**Budget:**

29.7 million euros  
(36.4 million USD)

**Completion date:**

2021

The Chilean Investigative Police Department's Central Criminalistic Laboratory (Lacrim) stands out for its seismic resistance, safety, and energy efficiency. The building has seven floors and two underground levels, with a floor area of 15,000 m<sup>2</sup>.

Its specialised laboratories, spread over 1,600 m<sup>2</sup>, have fully controlled environments. They are 'clean rooms' with a high degree of biosecurity, with up to 30 air renewals per minute and routes designed to avoid cross-contamination through airlocks, and a system to control positive and negative pressures.

Its reinforced concrete structure has seismic isolators to ensure the service

can be operated at all times (the previous Central Crime Laboratory was seriously damaged in the 2010 earthquake), safeguarding police evidence.

The laboratory also has uninterruptible power supply systems and energy-efficient elements such as façade enclosures with external insulation systems, curtain walls, and breakaway louvres.

The building complies with CODIS standards (Combined DNA Index System) developed by the FBI, as well as ISO 9001 (quality management systems), ISO 17025 (requirements for testing and calibration laboratories), and NCh 3249 (supplementary requirements for forensic science testing laboratories).



## Navarra Hospital Biomedical Research Centre

**Location:**

Navarra. Pamplona. Spain

**Client:**

Navarro Health Service. Osasumbidea

**Budget:**

15.4 million euros (16.6 million USD)

**Completion date:**

2011

This rectangular building with a surface area of 12,150 m<sup>2</sup> and 4 floors is a space for multidisciplinary biomedical research. It has a unique profile due to the variations in height of the ribs that surround it.

Located in a 14th century hospital building, it houses a research centre with an animal facility, 14 research laboratories, staff areas, a supply warehouse and an administration, management, training and library area.

The façade has large (4500x800 mm), slender, perforated aluminium sheets that are self-supporting, light and flexible, and can adopt the necessary geometry to protect from the building from the sun while providing views.



## ALBA Synchrotron

**Location:**

Cerdanyola del Vallès. Barcelona. Spain

**Client:**

Cons. Lab. Luz Sincrotrón

**Budget:**

11 million euros (15.8 million USD)

**Completion date:**

2010

Alba was the first synchrotron light facility to be built in Spain and the first of its kind in south-west Europe. The high technological component of this space and the demanding operational requirements posed a challenge for its construction.

The synchrotron was built on a surface area of 22,870 m<sup>2</sup> and is formed by the main building—made of concrete and glass, with a circular floor plan of about 140 m in diameter and a helical shell-shaped roof—, the technical building, and a third administrative building for other uses. It has three accelerators—a linear accelerator, a propulsion accelerator and the storage ring— as well as seven experimental beamlines which are used in many fields of scientific research.



## iGuzzini Illuminazione Ibérica corporate building

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**Location:**

Sant Cugat del Vallès, Barcelona. Spain

**Client:**

iGuzzini Illuminazione Ibérica S.A.

**Budget:**

17.9 million euros (23.9 million USD)

**Completion date:**

2011

The headquarters of iGuzzini Illuminazione Ibérica, an Italian lighting design company, has two volumes split according to functionality: a low, large, half-buried volume with no natural light, enveloped in exposed concrete; and a spherical, glazed volume floating in the landscape. The logistics warehouse, car park, showroom, auditorium, light theatre, presentation room and facilities are buried in the existing topography. These environments must be dark for experiments and expose artificial light that are not visible from the outside. The upper surface of the platform is a wired outdoor technical floor, that has movable panels in different finishes. This floor has the flexibility to set up various configurations of the outdoor showroom. The project was awarded the Building of the Year Awards 2011 by Archdaily in the institutional buildings category.

## CEBEGA

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**Location:**

A Coruña. Spain

**Client:**

Santiago de Compostela University

**Budget:**

6 million euros (8.2 million USD)

**Completion date:**

2014

With a surface area of 6,251 m<sup>2</sup>, Galicia's Centre for Experimental Biomedicine (CEBEGA) has two floors. It has one volume in a rectangular parallelepiped shape and a second underground body. It houses an animal facility and laboratories specially designed to produce genetically modified organisms, preclinical and toxicology trials, non-invasive molecular imaging and experimental surgery, among others.

## CINBIO

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**Location:**

Vigo. Spain

**Client:**

University of Vigo

**Budget:**

4.9 million euro (5.9 million USD)

**Completion date:**

2015

The Centre for Research in Nanomaterials and Biomedicine (CINBIO) has a total built area of 6,254 m<sup>2</sup>. The complex houses bio-experimental facilities and a biological containment laboratory that is the only one of its kind in the northwest of the peninsula. It was built on top of an existing building and is divided into two distinct sections. One of them has the functional structure of a comb, formed by six modules perpendicular to a corridor connecting them all. The second is a compact body formed by the superposition of 4 floors.



## Gran Teatre del Liceu Barcelona, Spain

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The reconstruction of the Gran Teatre del Liceu in Barcelona stems from the desire to preserve the memory of one of the city's most emblematic institutions, after the 1994 fire that destroyed the entire theatre except for a few small rooms.

The work began in 1995 and was completed in 1999. It was carried out on the same site where the theatre was erected in 1847, on a plot of land that was expanded from 16,000 m<sup>2</sup> to 32,821 m<sup>2</sup>. The result is an adaptable space with multiple functionalities and a seating capacity of 2,319 seats, 71 boxes and 22 anterooms. The theatre gained an area during the expansion, stretching from the stage entrance to the boundary marked by Carrer Unió and the Rambla, where it is located.

This is where the theatre's technical centre is located. It is highly versatile as it helps scenery to be set up and ready to be incorporated into the stage, some of which are on the same level as the stage and others are up to 16 m below the stage. This is achieved thanks to the use of both horizontal and vertical mobile platforms.

Other spaces that have increased the building's capacity are the choir rehearsal rooms, with a capacity of 120 people, and the space reserved for the orchestra suitable for more than 200 musicians. There are also rooms to prepare and tune musical instruments, and storage and archive rooms. The enlarged area also houses the administrative and technical services areas, maintenance workshops, and security and fire control installations.



## Teatro Real Madrid, Spain

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Classified as an Asset of Cultural Interest of Spanish Historical Heritage, the Teatro Real has undergone multiple renovations since its construction in 1850. This includes the one carried out by OHLA to refurbish the theatre and convert it into an operatic coliseum.

The project consisted of superimposing the new architecture on the pre-existing one. The aim was to give an overall first impression of having a unified theatre close to the original, and for the new details to be perceived upon closer inspection. A historical study showed that only the three lower levels had remained unchanged in their external appearance since the building's origin. Accordingly, these were preserved and restored.

The theatre also underwent a series of interventions over the build area of 65,000 m<sup>2</sup> with a floor plan of 6,000 m<sup>2</sup>. Works to be highlighted include demolitions, foundations, retaining and load-bearing walls, and the new structures that are connected to the existing building and contained within it. The different floor levels and the interior walls and columns in the central stage box module were completely demolished.

The structural reforms and refurbishment work enabled the theatre to be equipped with state-of-the-art technology, in line with the leading theatres in Europe. Simplifying facilities and further rationalising their use resulted in greater efficiency in the use and maintenance of the building.



## Reina Sofía Museum Madrid, Spain

OHLA has participated in a series of remodelling works at the Reina Sofía Art Centre in Madrid, including the construction of transparent vertical communication towers that have been attached to its façades and which are one of the museum's hallmarks.

The twin towers on the main façade of the building house the panoramic lifts for the public, respecting the symmetry established by the main entrance and facilitating the flow of visitors to the different museum floors.

A service tower has also been built on one of the side façades, the one facing

Calle del Hospital, equipped with a large freight elevator to transport works of art, a passenger lift, and a service staircase.

The uniqueness of these three towers lies in the total transparency of their façades, completely clad with structural glass panels, and in the panoramic quality of the lifts, which reduces the visual impact from the outside and offers magnificent views of the urban environment.

The main tower structure is made of steel, while the horizontal elements are solid concrete slabs, which guarantee greater comfort under the dynamic loads of the lift users.



## Prague National Theatre Czech Republic

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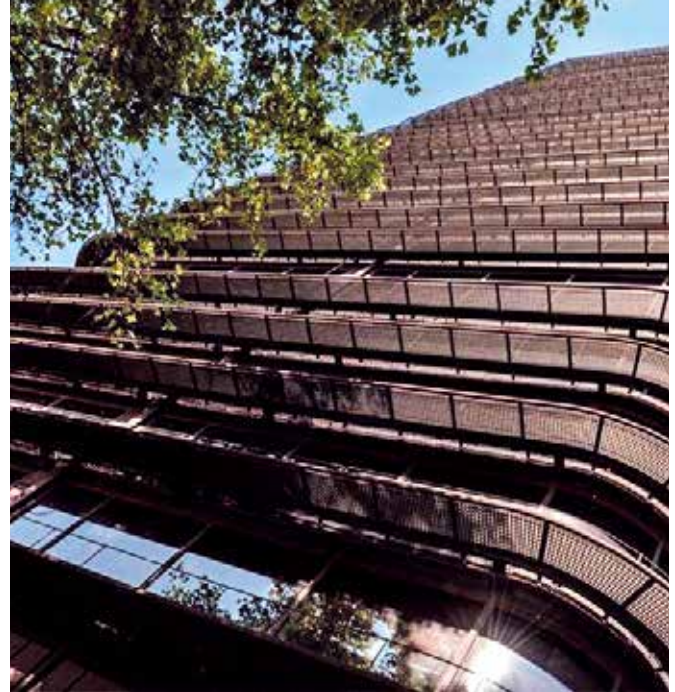
The refurbishment of the neo-Renaissance National Theatre in Prague, one of the most emblematic buildings in the Czech Republic, was a very demanding project in which special emphasis was placed on the quality and precision of the work, as well as on minimal intervention.

The entire reconstruction was divided into four phases and took three and a half years. The work was not limited to repairing the façades, but also included restoring sculptures and other decorative architectural elements. In some places, missing material had to be added to match the original as closely as possible.

The façade reconstruction work involved artistic craftsmanship and restoration work to repair the historic building's cladding and its plastic, ornamental and artistic elements.

OHLA also carried out various restoration tasks to restore the theatre's original appearance, based on the preserved documentation. This included renovating the cornice known as the Fantyš Corner, repairing the coffered ceiling at the main entrance, the door and window frames, and columns, pilasters, balustrades, among others.

The building, which first opened its doors in 1881, did not cease to function during the construction work.



## Constitutional Court of Madrid, Spain

This circular building with its futuristic design stands out for its iconic curved façade made up of 304 trapezoidal in extruded aluminium profiles and anodised in bronze to resemble piano keys. The bulk of the construction involved precast concrete structures.

Originally designed for other purposes, the complex was designed by the architects Antonio Bonet and Francisco G. Valdés and has three levels. The below-ground area has a car park with 300 parking spaces and machine rooms. The ground floor and mezzanine house the meeting rooms and the areas with the most public traffic. The main structure is above this level: a five-storey building which houses the offices of the various departments.

## Castellana 81 Madrid, Spain

An example of modern Spanish architecture and a landmark in the urban landscape of Madrid thanks to a façade that combines glazing with Corten steel carpentry. OHLA carried out the refurbishment work and updated the facilities and services of this emblematic building, the former headquarters of the Bank of Bilbao and winner of the National Architecture Prize, built between 1978 and 1981.

It is a 107 m high rectangular tower with two central vertical cores that are both service and structural cores. The rest of the perimeter space around the cores is open-plan, with no divisions or obstructions in the four directions. It was declared an Asset of Cultural Interest by the Community of Madrid in 2019 and has Well Gold and Leed Platinum sustainable certifications.



## Torres de Colón Madrid, Spain

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This 117-metre-high, 23-storey building introduced the suspended structure model in Spain, which until then had only been used in 17 towers in the world. It should be highlighted for its technical innovation, as the floors had to be built in reverse, i.e. from top to bottom, in order to take advantage of the small size of the site (1700 m<sup>2</sup>) and to allow vehicles to circulate through the basement floors. The structural system was designed entirely in high-strength reinforced concrete, departing from the more widespread technique of steel structural headers commonly used for hanging buildings.



## Torres Blancas Madrid, Spain

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Built in the 1960s, it is the greatest example of organicist architecture in Spain. The building is conceived as a living element, with a shape that resembles a tree that grows upwards and widens with cylindrical platforms crowned at its highest point in the form of a treetop. The concrete blends into the wooden screens of the balconies and windows like leaves. It has 23 floors for residential and office use.

The structure supporting the building is in the centre, as a form of tree trunk, where the stairs, lifts and installations are located. It won the first edition of the Official College of Architects of Madrid awards in 1972. Two years later, it won the European Excellence Award.

## Sustainability

Singular buildings represent the most avant-garde and experimental side of architecture without compromising the purpose for which they were conceived. In addition, for decades their design and construction have responded to a commitment to sustainability which, in the case of OHLA, is embodied in the use of leading standards aligned with international methodologies such as LEED, BREEAM, Passivhaus, CES and WELL. An example of this is the use of sustainable building materials –reused, ecological, local– and alternative energy sources, as well as a control of the GHG emissions derived from the project and an assessment of its life cycle.

OHLA's portfolio includes a number of outstanding projects. Torre Emperador (Madrid, Spain), the company's headquarters, is the first office building in Spain to obtain the BREEAM Excellent sustainability

certificate. Madrid is also home to the Canalejas Centre (Leed Gold) and OXXEO which has Leed Platinum Core & Shell, BREEAM and Well Gold certifications. The company also has several outstanding projects in the United States, such as the Pompano Beach Library and Cultural Center (Leed Gold) and the Management and New Growth Opportunities (MANGO) building (Leed Silver).

Mayakoba in Mexico should also be highlighted, a first-class coastal resort that stands out for its avant-garde approach to sustainability, making it a global benchmark. The actions carried out on this tourist development have earned it important recognitions and awards from the World Tourism Organisation (WTO) and the Rainforest Alliance, the highest awards of these two organisations: Ulysses and Sustainable Standard-Setter, respectively.



Mayakoba Resort. Mexico.

## Innovation

The prestige that OHLA has acquired in the field of singular building is based on its ability to anticipate the construction trends of the moment. The company takes an active role through its ongoing commitment to R&D+i, which has resulted in the creation of proprietary solutions and the adaptation and application of others that have an impact on cost savings and environmental protection, while guaranteeing the useful life of buildings and the well-being of their users.

Examples of OHLA's innovative capacity include the design and use of high-strength concrete in the construction of Torre Emperador (Madrid, Spain); the incorporation of methods to measure dynamic movements in high-rise buildings using GPS; the adaptation of machinery to ensure original structures can be preserved as was the case in the Teatro Real refurbishment project in Madrid; the use of the structural element monitoring (MES) system to demolish and refurbish buildings while maintaining the original façades in the Canalejas Centre project (Madrid); and the use of elements to reduce noise pollution.

OHLA has been a pioneer of the BIM (Building Information Modelling) methodology for years now, which uses digital 3D models as a basis for planning, design, management and construction, and the company uses mobile devices to monitor the evolution of the works in real time, facilitating decision-making.

Torre Emperador, Madrid. Spain.



## AWARDS AND RECOGNITIONS



### TERTIARY

#### Madrid Canalejas Centre. Spain

- Best Public Works 2021, Premios Caminos Awards
- LIT Design Awards 2021
- Macael Prize 2019, stone restoration
- Leed Gold sustainable certification
- Potencia 2022 Award, best urban work

#### Mayakoba Resort. Mexico

- Ulysses Award 2011, UN World Tourism Organisation
- Sustainable Standard-Setter Award 2011, Rainforest Alliance
- Certification in Environmental Quality for Tourism 2013, PROFEPA
- World Travel Award 2011, Rosewood Hotel Mayakoba
- American Property Awards 2008, Banyan Tree Mayakoba Spa Hotel
- Travel & Leisure World's Best Awards 2013, Rosewood Hotel Mayakoba
- Condé Nast Traveller Readers' Choice Awards 2021, Top Resorts Mexico, Andaz Hotel
- American Property Awards 2008, Banyan Tree Mayakoba Spa Hotel

#### Ciutat de la Justícia in Barcelona. Spain

- RIBA Award 2010, Royal Institute of British Architects
- WAF (World Architecture Festival) Award 2010, for Civil and Community Building

#### Oxneo. Madrid, Spain

- Best Office Building in Spain 2018, Spanish Office Association
- Leed Platinum Core & Shell, BREEAM and Well Gold Certifications

#### 709 Alton Road Mixed-Use Facility & Parking Garage. Florida, USA

- Sunshine State Safety Recognition Award 2019

#### Mercat dels Encants. Barcelona, Spain

- PAIT Award 2014, best commercial project
- AIT Award 2014, Special Best Worldwide
- WAN Award 2013, Best Commercial Project

### HIGH-RISE

#### Torre Emperador. Madrid, Spain

- BREEAM Excellent and Exceptional certification

#### Torre Caleido. Madrid, Spain

- ASPRIMA-SIMA 2023 Award, best non-residential real estate project
- Leed Core and Shell Gold Certificates

#### Hotel W Barcelona. Spain

- World Travel Awards 2022, best national lifestyle hotel
- Prix Villégiature 2010 award for best exterior hotel architecture in Europe
- Condé Nast Traveller Award for Best Urban Hotel in Spain

#### Torre del Agua. Zaragoza, Spain

- 3 April Prize for Architecture and Urban Planning



MUNA. Peru.

## CULTURAL

### National Museum of Peru (MUNA)

- Golden Hexagon National Architecture Award, XIX Biennial of Architecture of Peru 2022

### Tenerife Arts Space (TEA). Spain

- Román de la Calle Award 2018, Museum Category

### National Library of Prague. Czech Republic

- 2009 Project of the Year Award, awarded by the Prague Mayor's Office and Metrostav

### Teatros del Canal, Madrid. Spain

- Spanish Biennial Architecture Prize 2018, Spanish Ministry of Public Works

### Dennis C. Moss Cultural Arts Center. Florida, USA

- IIDA South Florida Chapter, Best Institutional/Governmental Project
- Miami New Times Newspaper Best Cultural Facility, 2011

### Miami-Dade College Center for Learning, Innovation, and Simulation. Florida, USA

- Leed Gold certification

### FIU Management and New Growth Opportunity Building (MANGO). Florida, USA

- Leed Silver certification

### Botín Centre Santander, Spain

- Cantabrian Excellence Award 2021

### Pompano Beach Library and Cultural Center. Florida, USA

- Leed Gold certification

### Zaragoza Conference Centre. Spain

- VDViajes Award, best conference centre in Spain

### National Museum of Science and Technology [MuNCyT]. A Coruña, Spain

- National Award for Young Architecture, IX Biennial of Spanish Architecture and Urbanism
- European Museum of the Year Award 2014, special mention

## SPORTS

### Miribilla Sports Complex. Bilbao, Spain

- RIBA Award 2012, Royal Institute of British Architects
- ArchDaily Building of the Year Award 2011

### Bialystok stadium. Poland

- Crystal Brick Award, best sports infrastructure

## SCIENCE AND TECHNOLOGY

### ALBA Synchrotron. Barcelona, Spain

- Manel Xifra i Boada Awards, Research Centres Category
- Asepeyo 2017 Award for best OHS preventive practices

### iGuzzini Iluminazione Ibérica corporate building. Barcelona, Spain

- ArchDaily Building of the Year Award 2011

## HISTORICAL

### Gran Teatre del Liceu. Barcelona, Spain

- Europa Nostra 2000 Award in the category of Conservation and Adaptation to New Uses

### Castellana 81. Madrid, Spain

- Award for the best refurbishment 2017 from the Spanish Office Association.
- ASPRIMA-SIMA 2018 Award, best non-residential real estate project
- COAM Award 2018
- The Architecture MasterPrize in the category Architectural Design-Restoration & Renovation 2019.
- Well GOLD and Leed Platinum sustainable certifications

### Torres blancas. Madrid, Spain

- Prize from the Official College of Architects of Madrid, 1971



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