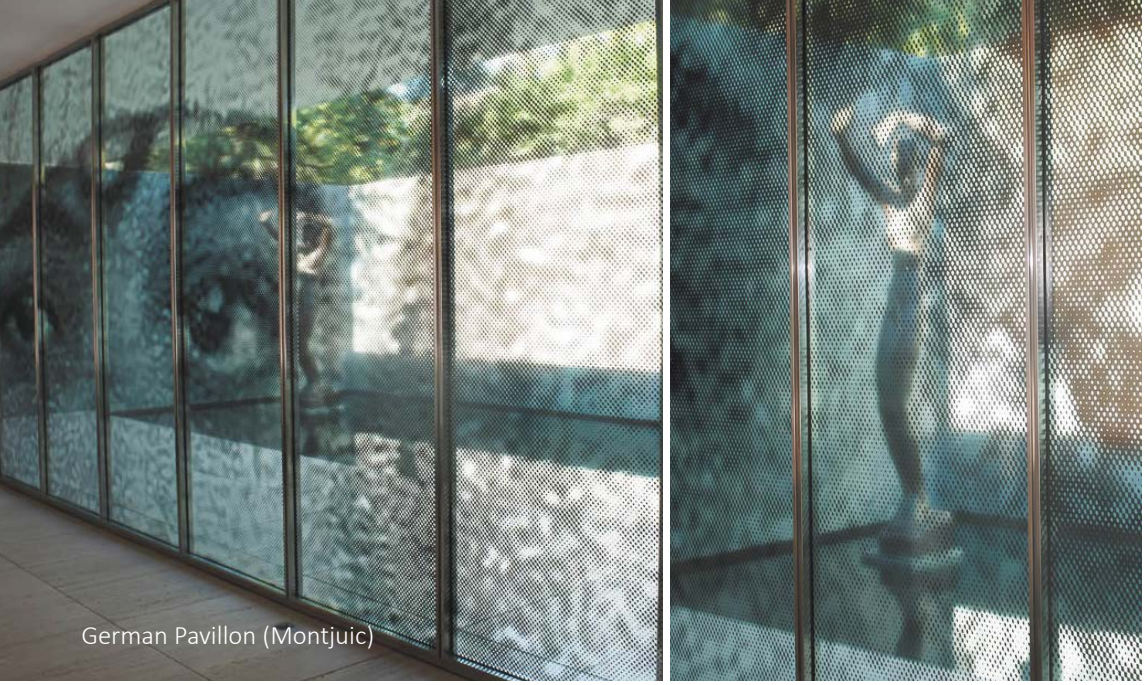


German Pavillon (Montjuic)

BARCELONA

From Montjuic to the sea

Discovering a new city!

On this occasion, we will go over the streets of Barcelona. The city of Barcelona welcomes us with an exceptional location in front of the sea.

We start our journey with one of the most outstanding works of modern architecture, the German Pavilion for the Universal Exposition in 1929 hosted in Barcelona, by the famous architect Ludwig Mies van der Rohe, in collaboration with his colleague Lilly Reich.

German Pavillon (Montjuic)

This masterpiece has become a reference of rationalism showing their main ideas more freely than in other works.

This current recovered the importance of functionality over aesthetics and considered architecture with a social mission that should improve people's quality of life. Natural light, space disposal and their relation with nature and environment were crucial. The idea of releasing the floor plan to get open spaces made possible great structural advances such as liberating the structure from the envelope and replacing the load-bearing wall with pillars.

This concept is masterfully expressed through the cross shape metal pillars, initially made with chrome iron due to the short-lived character of the building.

In 1930, once the exposition ended, the pavilion was dismantled. However, in 1983, Oriol Bohigas, from the Urban Planning Department of Barcelona Council, started its reconstruction under the Spanish Transition historical context.

Architects Ignasi Solá-Morales, Cristian Cirici and Fernando Ramos, opted to build a exact reproduction of the pavilion but it was necessary to figure some systems out to guarantee its permanence.

One of the changes was using stainless steel for the pillars and other frames because the former chrome iron was not stable with the saline environment of the city.

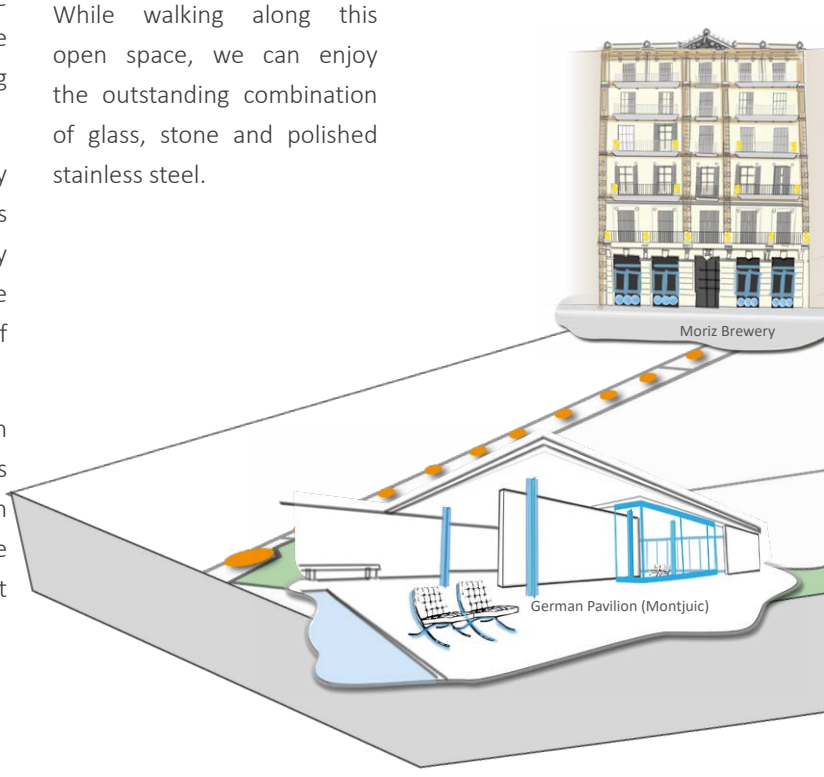
While walking along this open space, we can enjoy the outstanding combination of glass, stone and polished stainless steel.

We will reach our next destination enjoying the amazing architecture of Gran via de les Corts Catalanes, one of the main avenues that crosses the city parallel to the sea. We will stop just before arriving at the Plaza Universidad.

Moritz Brewery

Luis Moritz opened the Factory in 1864 after the walls fell, between the Barrio del Raval and the Barrio del Eixample Barrios, just the same site as today.

Between 2004 and 2011, Jean Nouvel, another architecture genius who won the Pritzker award in 2008, took care of its refurbishment. It was a respectful intervention with the history of the building and the architectural heritage of the industrial Barcelona of the XIX century, -including stones from the original walls and even an air-raid shelter-. The result of the project is an space where coexist a brewery, a bar, a shop and a 100% adapted and accessible museum dedicated to beer

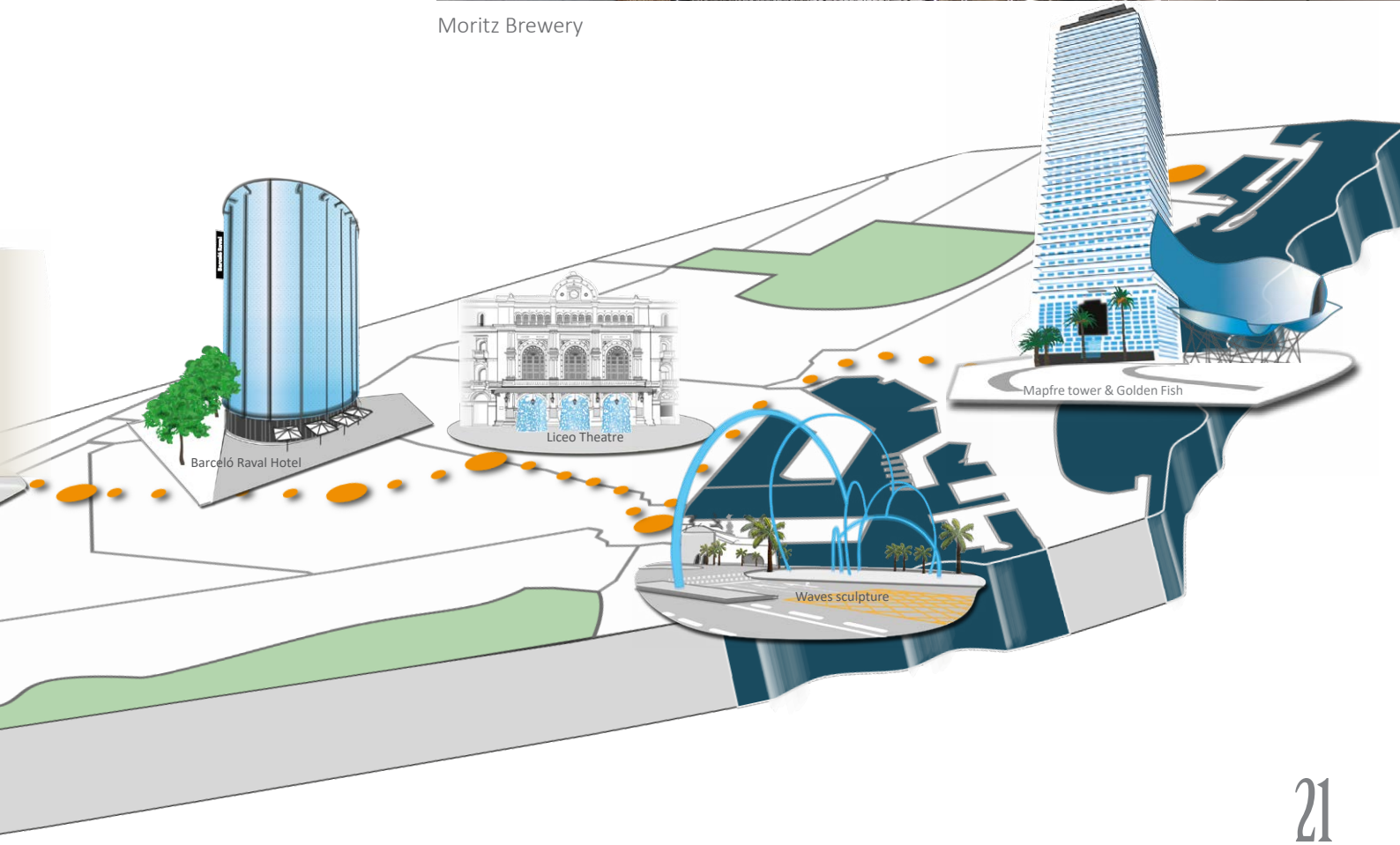


STAINLESS AND THE CITY

Stainless steel is all over the project because of its direct relation with the fabrication, conservation and transport of beer as a clean, resistant and hygienic material. It is the raw material of the huge tanks where beer is manufactured. However, it is also used to protect and renew an antique wooden staircase that goes from the bar to the basement where beer is produced, or to make the great windows of the façades.

If you visit Moritz you will enjoy many other design elements that really stand out. After this brief stop, we will go through the Barrio del Raval, one of the most multicultural of the city and will reach our next stop.

Moritz Brewery



Barceló Raval Hotel

The Barceló Raval Hotel is a building with an elliptical layout, designed by CMV Architects in the heart of Barcelona, just in the Barrio del Raval.

Its placement plays an important role in the urban structure. With the marked directionality of the Rambla del Raval, it depends on the direction of your approach to the building that you will see it with different volume.

The purity of its façade was necessary so the blank spaces would not distort the elliptical volume. An outer stainless steel mesh skin is responsible to guarantee the uniform aesthetic while ensuring privacy avoiding indiscreet eyes.

We follow towards another quite different building, where stainless steel has been recently installed. It is the Liceo Theatre, placed in a very touristic street, the Rambla, a few meters away from the most famous market: the Boquería.

Liceo Theatre

The Liceo theatre is an iconic building whose history has marked its evolution over time. The facilities we enjoy today are quite young; in 1999, it was practically rebuilt after a fire. Unfortunately, the theatre has a strong connection with fire from its very beginning

The Liceo theatre was built in 1840 as an art, culture and social epicentre over the remains of a nunnery that was devastated by flames. Soon, it became the meeting point for the bourgeoisie elite. The glory days were brief; in 1861, another fire almost destroyed it entirely. It was rebuilt and opened its doors again until 1994 when a new fire took place during maintenance actions.

Again, after its reconstruction, the Theatre has been a reference of culture and art. It is in 2022 when stainless steel arrives on its façade. The principal doors, designed by the renowned Barcelonian sculptor Jaume Plensa, are a combination of stainless steel letters from nine different alphabets. “Letters are a nice metaphor of society: just one letter means nothing, but combined with others creates words, concepts; this is the power of the community”.- Jaume Plensa.

We continue our journey walking down the Rambla until the sea.

At the port of Barcelona we will discover our next icon.

Waves sculpture

This impressive sculpture welcomes visitors to the Barcelona harbour. The huge waves created by the Valencian sculptor Andreu Alfaro -already mentioned in Puerta de la Ilustración sculpture, Stainless and the

Barceló Raval Hotel

Liceo Theatre

Waves sculpture

city: Madrid. Despite the size, it instils an incredible sense of lightness. It is a tubular stainless steel structure, with 7 arcs of different dimensions connected one to each other. The highest arc is almost 42 metres tall.

Now we shall cross the Barceloneta, originally anglers' quarter and continue through the seafront to arrive at our next destination.

Mapfre tower

Mapfre Tower is on the seafront, it was one of the first skyscrapers in Spain - being once the second tallest. It is included in the Olympic Village plan for the 1992 Olympic Games, together with its twin tower, the Arts hotel.

This 40-story tower was designed by Ortiz y Leon architects and is the symbol of Barcelona's opening to the sea. It is inspired by fishing walkways and emphasizes the Mediterranean light thanks to the combination of stainless steel in both polished and matt finishes. Façade was conceived as a prefabricated concrete piece in L shape, coated with stainless steel panels where sloping glasses are anchored.

Due to its location, the correct selection of the materials was critical. They installed AISI 316, 1,5 mm thickness for the outer side of the panels and AISI 434 0,8 mm for the inner one.

Mapfre tower

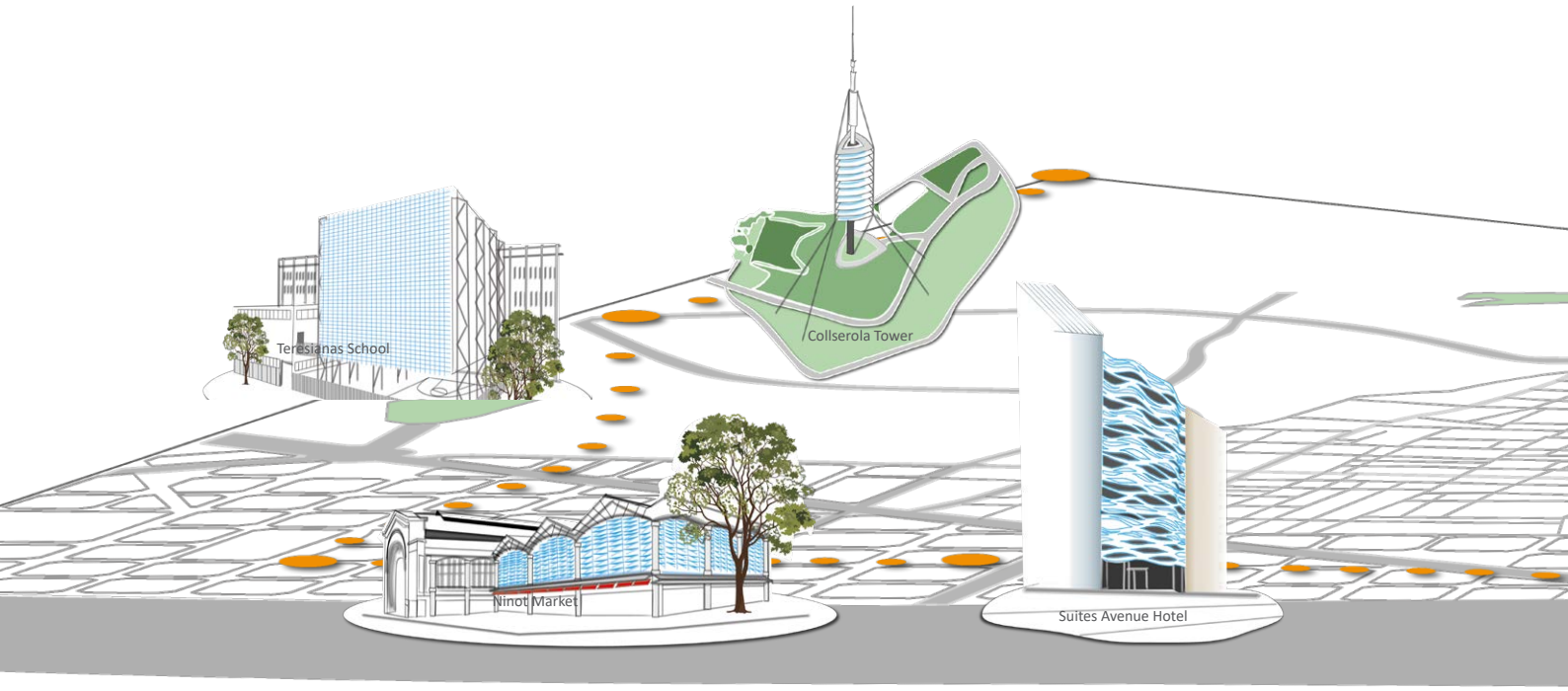
Golden Fish

As part of the plan to define the maritime face of Barcelona, in 1992 they also built the enormous Olympic Fish sculpture.

Ready to jump into the sea, this amazing 56 x 35 m sculpture is Frank Gehry's stainless steel design. Gehry, winner of the Pritzker and the Princesa de Asturias of Arts awards, is a great expert in metals behaviour and often uses them for his projects with his unique interplay or curves. In this big fish, gold coloured stainless steel becomes living scales thanks to the light reflection.

We have finished our first route, from Montjuic to the sea, crossing the historical city centre.

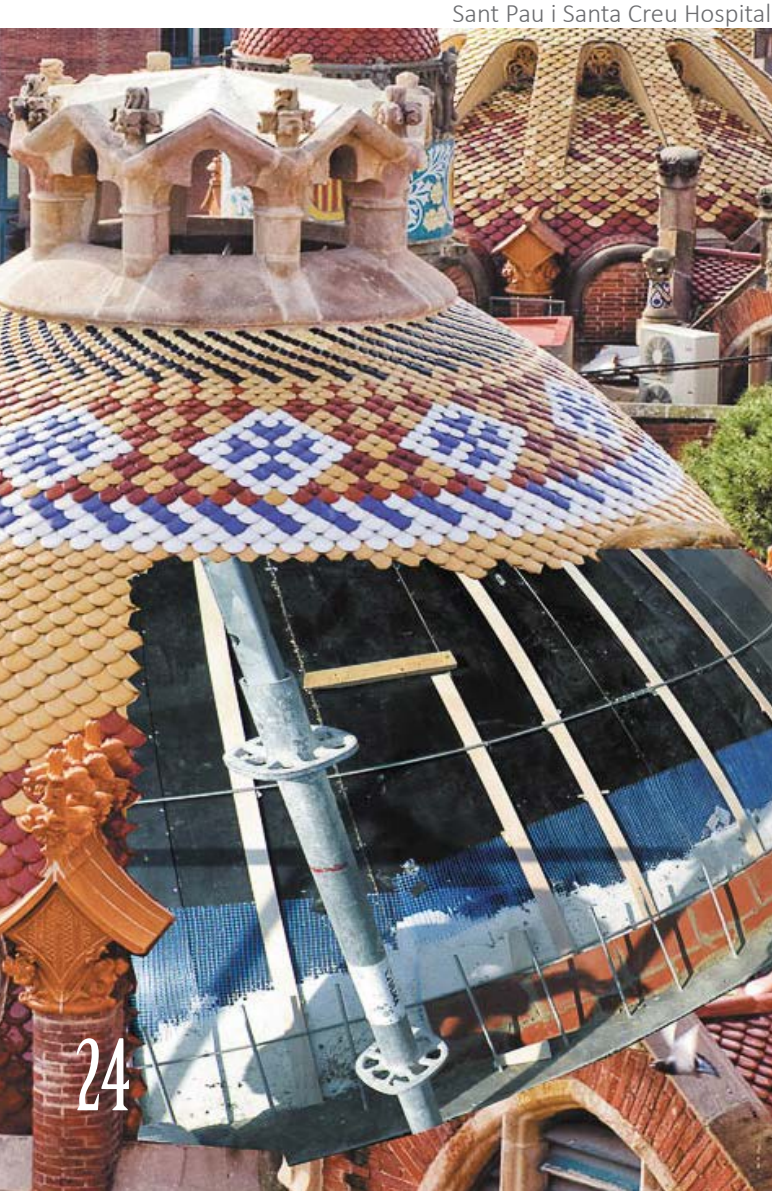
Golden Fish



For the **second** day, we have something different: an 11 km bicycle tour, a special way of enjoying Barcelona.

It was not possible to spend another day in Barcelona without talking about Modernism, due to the mark it has left on the city. Modernism arose in the late 19th century, in a wealthy context thanks to the industrial revolution but also affected by the loss of the Spanish last colonies.

Sant Pau i Santa Creu Hospital



Inspired by nature, it includes technological advances such as the use of iron and glass. Architects give great importance to ornamentation with the aid of the best ceramic, stone, glass, forge, paint, mosaic and cabinetmaking artisans.

On this second day, we start in front of one of the greatest examples of this architectural style.

Sant Pau i Santa Creu Hospital

This medical centre was designed in the early 20th century by architect Lluis Domenech i Montaner, one of the most well known figures of modernism who obsoleted the former medieval one. Taking as inspiration the modern European hospitals, Domenech i Montaner redesigned the spaces into isolated pavilions surrounded by gardens and connected through underground tunnels for hygienic criteria.

Each building was focused on one specialization, avoiding infections among patients. Lighting, good ventilation and decoration made Sant Pau i Santa Creu a new hospital model that introduced the importance of sun and open space to take care of patients.

Soon after being declared World Heritage site by UNESCO, the dome of the Mare de Déu de la Mercé, collapsed. In 2009, restoration works started in order to assure its reconstruction and structural consolidation.

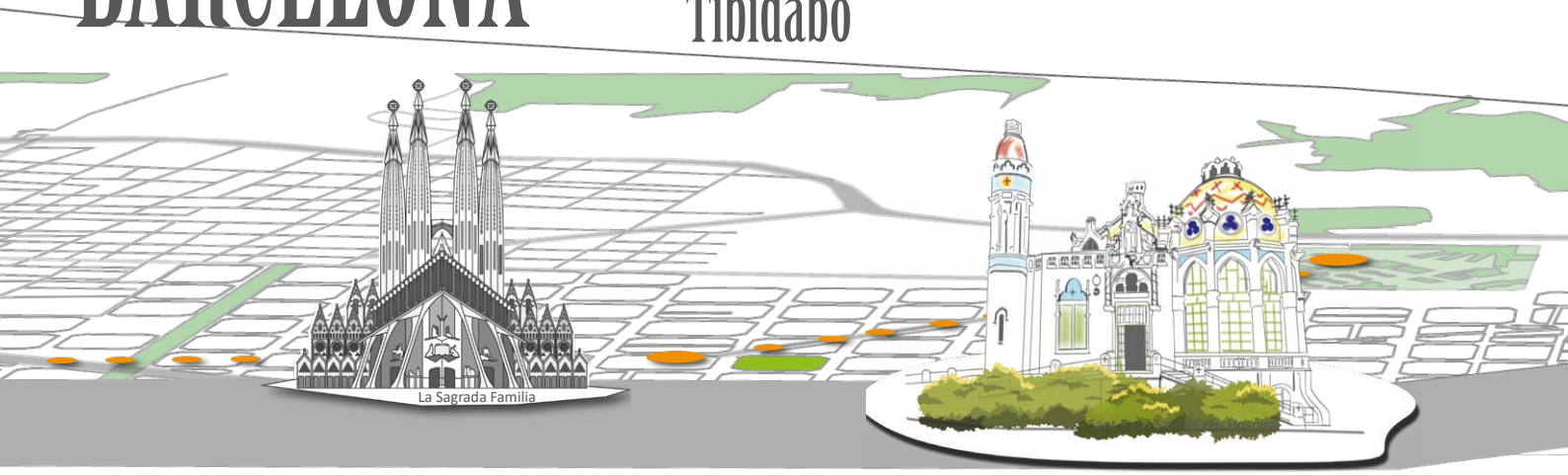
In the intervention, precise respect for the original materials and construction techniques was maintained. AISI 304 stainless steel reinforced ones replaced the edge beams of the dome, specially the iron beams that presented high corrosion rate. Stainless steel welded mesh was also used in order to reinforce the interior dome drum masonry.

Surrounding Gracia towards Sierra del Tibidabo

In addition, stainless steel bolts were used to fasten the characteristic coloured tiles of this building.

BARCELONA

Going around Gracia towards Sierra del Tibidabo



Finally, we arrive at the top of Modernism design, La Sagrada Familia. Yes, here, stainless steel was also necessary, follow to discover where.

La Sagrada Familia

La Sagrada Familia

In this monumental work, Antoni Gaudí achieves its artistic peak and turns La Sagrada Familia into the greatest example of modernism.

Construction began in 1882 following the initial project by Architect Francisco de Paula del Villar. However, only one year later was assigned to Gaudí. At the very beginning, he combined it with other projects but since 1914, he dedicated exclusively to the temple. The cathedral remains the original, organic and unique Gaudí's style.

The construction involved many artisans, sculptors and artists, due to the extreme grade of ornamentation. We must also bear in mind the numerous architects that have been taking care of the construction since Gaudí died.

During the first years, works followed the original idea, The Spanish civil war as well as a fire that destroyed Gaudí's mock-ups and drawings, made it very difficult to continue. In order to get a quick advance, the towers were solved with a modular construction. This was possible due to the evolution of materials and new technologies. Therefore, stainless steel was incorporated into the project.

Duplex 2205 was chosen thanks to its combination of resistance and lightness, essential for the construction of the modules for the 4 Evangelists' towers (135 m high), the Virgen María's one (140 m) and the giant central tower, called Jesus' tower, that will reach more than 170 m tall.

This one is expected to be inaugurated in 2026, as the best way to honour the centenary of Gaudí's demise.

As well as being part of the substructure of the tower modules, stainless steel was also used in many resistant elements such as reinforced beams of the pillars, supports of the stone groins, prestressed head of the panels and as reinforcement of slags.

After the heroic efforts to finish the construction, it is essential to guarantee the durability of this World Heritage construction, hence the importance of the correct selection of materials.

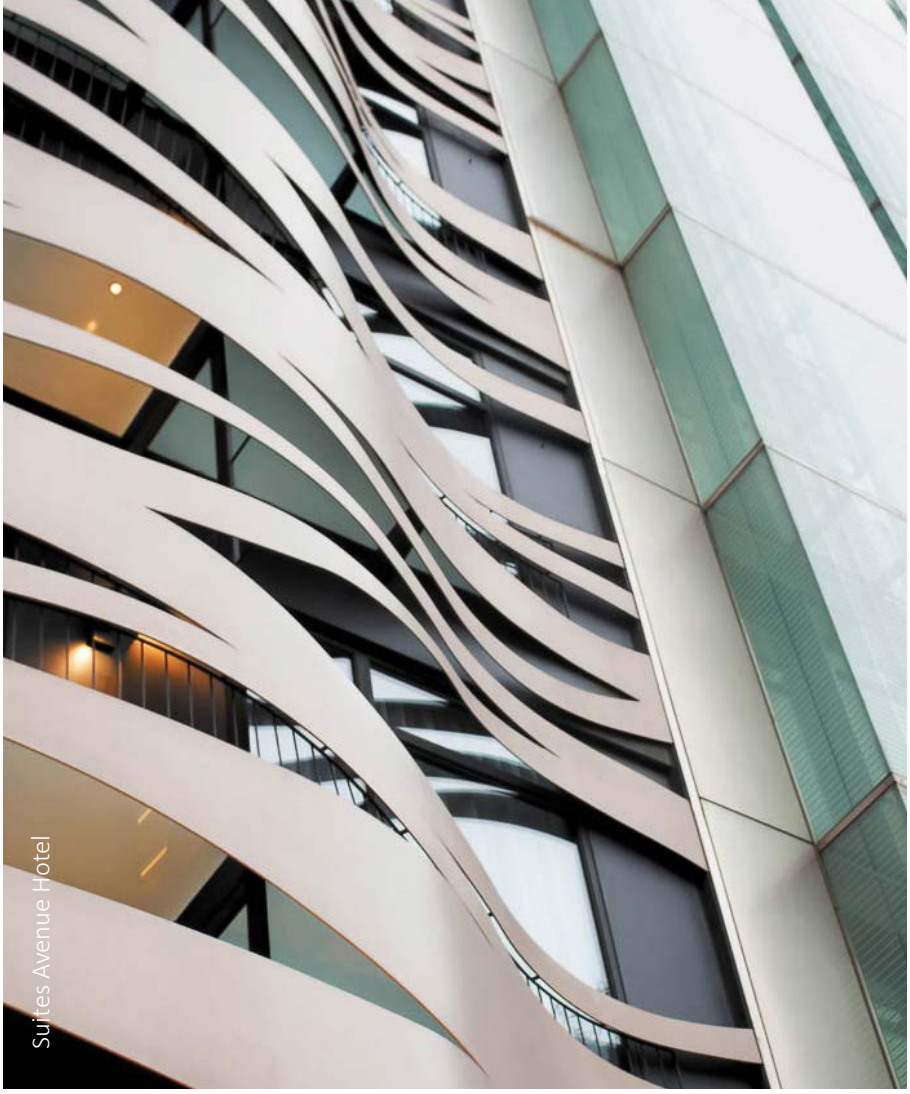
Now we move to Passeig de Gràcia, just in front of La Pedrera, another iconic work of Antoni Gaudí. However, on this occasion we shall look behind in order to face our new destination, the Suites Avenue hotel.

Suites Avenue Hotel

A luxury accommodation with an amazing view due to its location. Since 2009, their guests have been waking up with extracts of Gaudí's work that can be contemplated through the sinuous shapes of the stainless steel skin designed by Japanese architect Toyo Ito. It is a privilege to have into our route one stainless design from one of the best architects of the 20th century.

His work has been often awarded, obtaining among others, the Pritzker for his creative vision, functionality and the optimum quality of his construction. His quest for freedom makes him break the limits through organic shapes related to nature that combine with the latest technological advances.

Let's go to the next stop at Eixample Esquerra. The refurbishment of an ancient market with more of 100 years of history.



Suites Avenue Hotel

Ninot Market

We would like to highlight the refurbishment carried out in 2015 over this emblematic market. The original market dated back to the thirties, when the place was covered with a metallic structure designed by architects Antoni de Falguera Sivilla and Joaquim Vilaseca Rivera.

The refurbishment project by Mateo Arquitectura in a joint venture with MUR Arquitectura was based on a search of balance between respecting the essence of the original building, catalogued as City Architectural Heritage and the need of adapting it to new uses and required spaces.

The company García Faura incorporates a perforated and folded stainless steel double skin. The main idea of this solution is to filter the entrance of direct light. The façade consists of 720 m2 of stainless steel slats.

Next, we will cross the Avenida Diagonal and follow to get to our next destination in Sarria-Sant Gervasi district.

Ninot Market

Teresiana School

Teresiana School

Our steps lead us to another original Gaudí's construction, though we focus on the extension carried out in 2014. The architectural studio Picharchitecs drove the challenge of the project without reducing the visibility of the existing elements.

Their solution combines innovation and modernity, respecting original architecture, colours and textures. The building shows a ceramic textile (Flexbrick) over interwoven AISI 316 stainless steel wire mesh.

The double skin filters light, improving the thermal characteristics of the building as well as helping with the distribution of the interior façade.

The large format system is produced in the workshop, being easier and quicker to install on the building, avoiding any uncertainty and problem.

Now it is time to fill up our water bottles and head up towards Tibidabo riding our bikes. Along the ride, we can enjoy the beautiful sights of the city. Just at the end we will leave the Tibidabo behind and reach Collserola.

Collserola Tower

Collserola tower is a telecoms infrastructure built in 1992 on the occasion of the Olympic Games in Barcelona. It was placed on the top of a hill to ensure a good operation of the radio signal.

Norman Foster reinvents the concept of communication towers, making Collserola a new technological symbol.

Foster was supported by Arup Engineering from the very beginning because the structural design and the construction process played a key role in the project.

One of the greatest challenges was to ensure the stability and safety during the construction phases. The 13 triangular-shaped platforms on which equipment was placed were built on the floor prior to being hoisted once the work has finished.

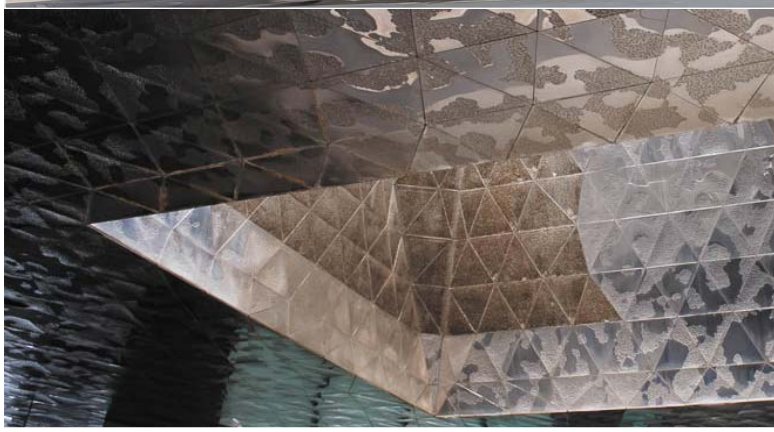
We find stainless steel in the coating of these platforms as an open perimeter grid.

At Collserola Tower we finish our second day, after a nice but demanding 12 km journey by bike.

Collserola Tower

BARCELONA

La Diagonal



For the **LAST** day, we have prepared a route that flows next to Avenida Diagonal, one of the main streets of Barcelona city.

Ildefons Cerdá's urban proposal, determined the orthogonality of Barcelona streets, as well as the characteristic chamfers of its buildings. This idea helped to make ventilation and get better health standards, which in 1860 was critical.

This last journey will start when Avenida Diagonal meets the sea.

Natural Science Museum also known as Forum

Just at this point, we will find the great Forum esplanade with its most representative building.

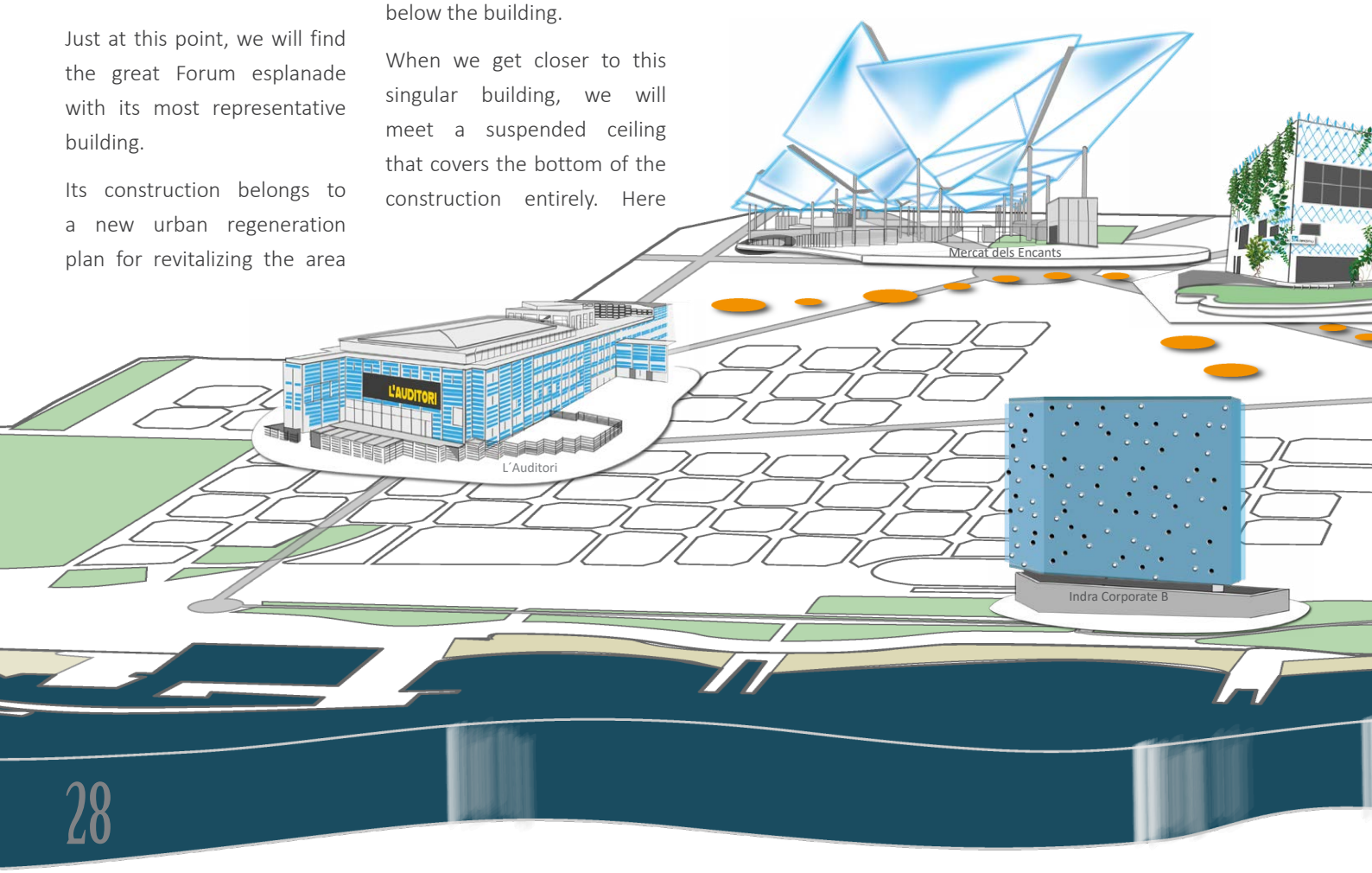
Its construction belongs to a new urban regeneration plan for revitalizing the area with the creation of a new space dedicated to leisure and culture.

This triangular base building was first conceived for conferences, concerts and expositions and was inaugurated in 2004. Nowadays, it is the Natural Science Museum of Barcelona.

This amazing design brings us again the Swiss architects Hergoz & de Meuron, already mentioned in our previous Stainless and the City Madrid edition. They propose, as well as in the Caixa Forum, an elevated building that allows the continuity of the square below the building.

When we get closer to this singular building, we will meet a suspended ceiling that covers the bottom of the construction entirely. Here we find stainless steel, grade AISI 316L in BA finish with an embossing pattern simulating the water surface.

Thanks to its height, we can see our next destination from the distance.



Natural Science Museum also known as Forum

Melia Sky Hotel (Now ME hotel)

Dominique Perrault, a prestigious prize-winning French architect is responsible for this design in collaboration with Corada Figueras and AIA Salazar Navarro as local partners.

Apart from its height (almost 120m), the building stands out for the enormous cantilever that forms when it meets Avenida Diagonal. However, what it shall get our attention is the singularity of its cladding. Stainless steel is captured in the inside face of the glasses. The façade system is a modular curtain wall that allows the construction of each module in the workshop, making easier and quicker the construction on site.

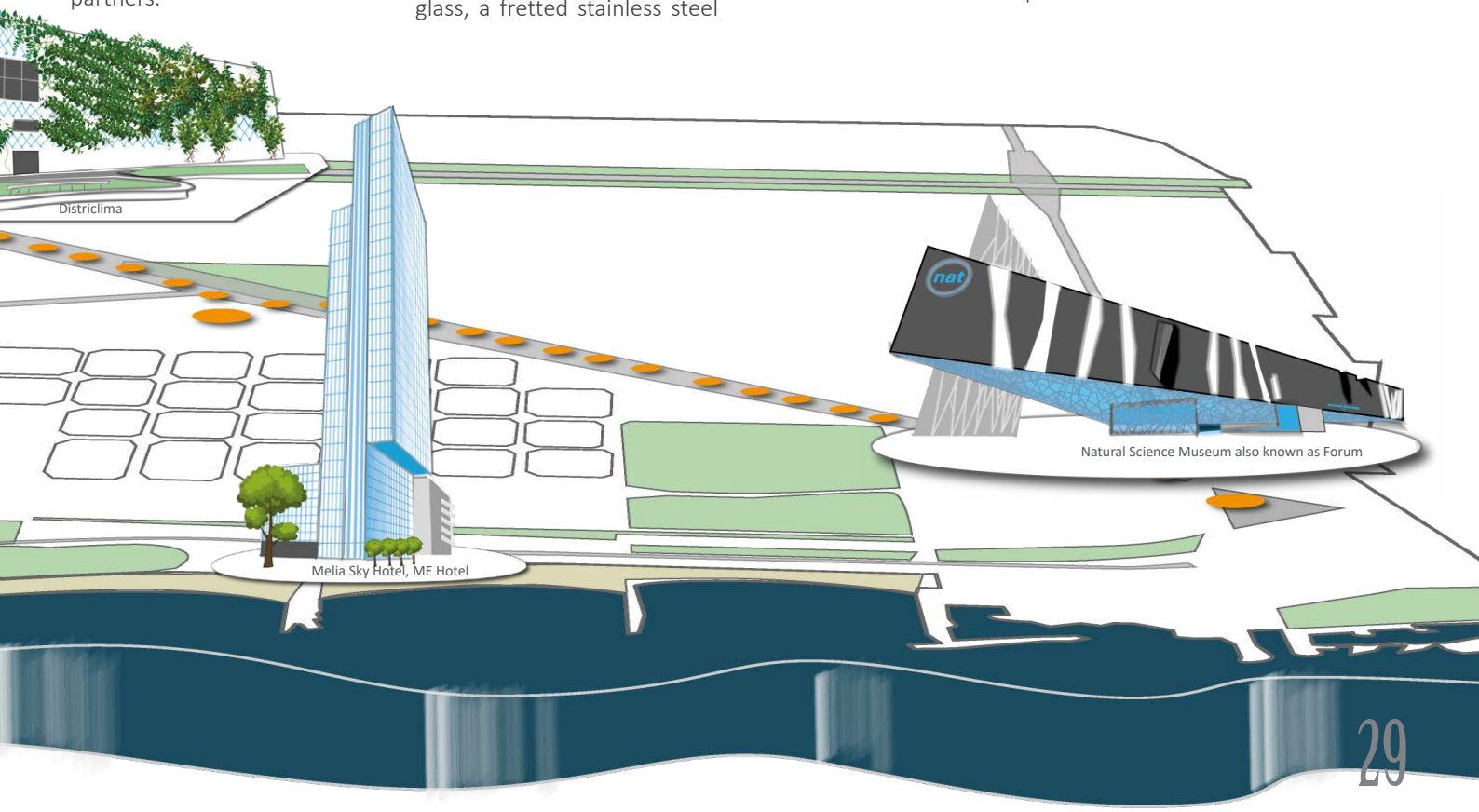
The façade has three different units: the first one is matte and the tallest. Compound by three layers, the exterior one is made of glass, the fretted stainless steel sheet in the middle and in the interior, an isolated bright stainless steel panel that coats the rooms.

The second unit is designed to allow the light entrance but maintain the uniform image.

It is shorter than the previous one and also made by three layers, again a transparent glass, a fretted stainless steel sheet (in this case perforated) placed in the middle chamber, and a workable interior glass skin for maintenance purposes.

The last type of unit that forms the façade is a see-through one of the same height as the translucent one shaped by a unique window. It is an original and singular system, specifically designed for this project.

Only 10 minutes' walk, we will find our two next destinations: Indra Headquarters and its neighbour Districlima.



Indra Corporate B

We will approach this corporate building, designed by b720 Fermín Vázquez Arquitectos, from its more representative corner. The volume is a 3-story base, from where the other ten storeys arise destined to offices.

The transition between both volumes goes through a technical floor that is setback from the façade, making it lighter.

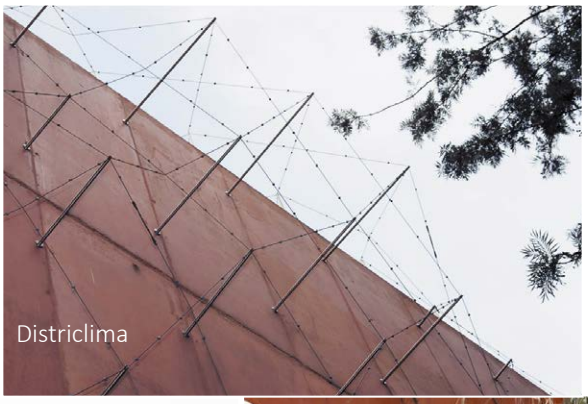
The tower façade consists of several layers, an internal curtain wall skin anchored between frames, and an external skin made of stainless steel wire mesh that protects from an excessive light entrance inside the building. The corporate character of the headquarters is enhanced with the stamped semi-spheres on the enveloping mesh.

Moreover, just on our back, one construction that gives support to the surrounding buildings

Districlima

Districlima is a heat and refrigeration distribution urban network for sanitary water. We are in front of Tanger Central of Districlima, in the middle of 22@, the technological district of Barcelona city that holds natural gas facilities, refrigeration towers, electrical equipment, natural gas boilers and three ice storage tanks as well as a water treatment plant. Therefore it also has a small administrative and control site.

Architects Victor Rahola and Jorge Vidal propose a copper oxide coloured concrete envelope for the construction. The proposal includes a vertical garden fixed to the concrete skin. The system includes some specific anchors and a cable net (both in stainless steel) that allows vegetation covers the façade.



Districlima

Indra Corporate Building

We walk near the Agbar Tower (another Jean Nouvel's design) and cross the Plaza de Glories to reach our next destination.

Mercat dels Encants

Another design by b720 Fermín Vázquez Architects, who won the tender called by the City Council for this project. Until 2008, this market opened freely in the open air for the trade with antiquities, second hand objects and collector's items.

The winning proposal defined a big covered marketplace that intends to maintain the open character of ancient trading posts. The different stands organise along the space in order to create a nice corridor, simulating a similar experience to having a walk and shopping in an ordinary street. The space is covered by an enormous 25 metres above the ground level roof that enhances maximum light entry and seems to be light. In addition, the powerful image of the slanting roofs makes it recognizable as iconic urban furniture from Glories area.

The inside cladding is made from gold coloured stainless steel in an amazing bright finish, returning kaleidoscopic reflections that exaggerates the everyday life.

Out of the market through Avenida Meridiana and leaving behind the National Theatre of Cataluña we will face our next and last architectural milestone.

Mercant dels Encants

L'Auditori

Rafael Moneo, whose professional path begins with Sáenz de Oiza, Pritzker awarded in 1996 and twice National Award of Architecture, was the one in charge of the Auditori de Barcelona design.

The building takes up the space of two blocks of the Cerdá's graticule, following the Hospital Clinic or the Modelo examples.

L´Auditori is a rectangular layout construction that contains two concert halls, rehearsal halls, library, museum, recording rooms and many other complementary services.

Housing these different spaces in a conventional strict parallelepided volume, involves the presence of interior gaps. A central square crowned by a glass cube acting as small tower is responsible for assembling all the spaces.

The character of the building is defined by the façade rhythm, where one concrete graticule gets out and alternates with horizontal stainless steel pieces. This is another good example of the versatility of stainless steel that gets a dun colour instead of the usual grey hue, due to a specific pickling process.

Here we finish our three vibrant days in Barcelona. Stainless steel has enabled us to reach buildings with many different usages, from museums to communication towers or temples, schools and hospitals.

We have been able to present numerous construction typologies and ways of getting the best from stainless steel.

We sincerely hope you enjoyed all of them and hope to see you in the next edition of Stainless and the City.

L´Auditori