Reconnecting historic industrial sites with their urban surroundings: the case of the Royal Shipyard in Barcelona

Nuevas conexiones de complejos industriales históricos con su entorno urbano: el caso de las Reales Atarazanas de Barcelona

Patricia Tamayo e Yves Schoonjans
Katholieke Universiteit te Leuven
patriciatamayo@coac.net ; yves.schoonjans@kuleuven.be

Abstract. Industrial buildings are usually designed as large-scale projects to accommodate secluded spaces for production. During recent decades, coinciding with the relocation of manufacturing infrastructures outside the city, many urban development policies have focused on the reconversion of historic industrial sites. These large buildings are often given a new public or semi-public function, thus creating the need to rethink the building's relationship with its urban context. To this end, a new type of interaction between those buildings and urban social life is required. This demands contemporary urban design solutions to enhance such buildings' connectedness and integration with their neighbourhood surroundings. The focus of this paper is to analyse the architectural design strategies being implemented in the framework of this change of use, focusing on the specific case of the former Royal Shipyard (now the Maritime Museum of Barcelona, MMB) in Barcelona, Spain.

Keywords. Industrial architecture; contemporary reuse; social spaces; urban connectivity.

Resumen. La construcción de complejos industriales está generalmente vinculada al diseño de estructuras de gran escala que alojan espacios privados para la producción. Durante las últimas décadas, coincidiendo con la reubicación de infraestructuras fabriles en la periferia de la ciudad, muchas políticas de desarrollo urbano se han centrado en la reconversión de emplazamientos industriales históricos. Es frecuente que estas grandes estructuras se destinen a una función pública o semipública, lo que conlleva la necesidad de replantear la relación del edificio con su contexto urbano. Para ello, se requiere una nueva interacción entre estos edificios y el espacio público colectivo. Lo cual precisa de soluciones proyectuales que mejoren la conectividad e integración del complejo con su entorno inmediato de una manera contemporánea. El presente artículo se centra en el estudio de las estrategias de diseño arquitectónico implementadas en el caso específico de las antiguas Atarazanas Reales (hoy, Museo Marítimo) de Barcelona.

Palabras clave. Arquitectura industrial; reutilización contemporánea; espacios colectivos; conectividad urbana.

Formato de citación. Tamayo, Patricia, y Schoonjans, Yves (2020). Reconnecting historic industrial sites with their urban surroundings: the case of the Royal Shipyard in Barcelona. *URBS. Revista de Estudios Urbanos y Ciencias Sociales*, *10*(2), 54-69. http://www2.ual.es/urbs/index.php/urbs/article/view/tamayo_ Schoonjans

Recibido: 23/05/2020; **aceptado:** 28/09/2020; **publicado:** 4/11/2020
Edición: Almería, 2020, Universidad de Almería

Introduction

Barcelona has managed to preserve one of the most important naval factories in Europe, the Royal Shipyard, or *Drassanes* in Catalan. It has been listed in the *Catálogo de edificios y monumentos de interés histórico, arqueológico, típico o tradicional de Barcelona* [Catalogue of Buildings and Monuments of Historic, Archaeological, Typical or Traditional Interest of Barcelona] since 1962 and was declared a Historic-Artistic Monument in 1976[1]. Although it is one of the city's largest historical sites, at the same time, it was one of the most unknown[2] by citizens due to its location, lack of connectivity, and diversity of uses throughout its history.

Over the centuries, the Royal Shipyard has changed its function several times, forcing it to interact with the urban fabric in different ways depending on its needs and multiple programs. Historically, it was part of the city's maritime façade, forming a link between Barcelona and the sea. Like many other industrial buildings, the Royal Shipyard segregated itself from the city around it for economic, security and military reasons. When its function shifted from a shipbuilding factory or military compound to a museum with a public function, a new dialogue with the city needed to be established. The aim of this paper is not to analyse the building as a specific historical object, but rather to focus on how the building has interacted

[1] Published in the *Boletin Oficial del Estado BOE* no. 103, 29 abril 1976. Decreto 896/1976 (8821), de 5 de marzo, por el que se declara monumento histórico-artístico de carácter nacional el conjunto de edificaciones que forman las Reales Atarazanas de Barcelona. Decree by the Council of Ministers of the Spanish Government.
[2] According to Roger Marcet, former director of the Maritime Museum, in https://ajuntament.barcelona.cat/casalsgentgransantmarti/ca/noticia/my-new-post-tt-0000001915935615VgnV6CONT00000000000RCRD_11916

within its immediate surroundings and the new coastline following its change of use. The first part of this paper briefly highlights the building's major functional transformations: from shipyard to military barracks and finally the current Maritime Museum of Barcelona. The second part focuses on the building's urban interaction in the 20th and 21st centuries. To that end, an architectural and urban design analysis methodology is used to interpret and better understand this interconnectedness. The paper will show that function and position are not the only things that can empower a building or the surrounding public space; connectivity is also especially relevant.

Historical Transformation and Evolution in the Urban Fabric (13th to 21st Centuries)

The Royal Shipyard of Barcelona was the pillar of maritime expansion in the Mediterranean in the 13th century (Segovia, 2008). The decision to build a new shipyard can be attributed to Peter III of Aragon during his reign (1276-1285), when an expansionist policy in the Mediterranean was heightened, harnessing the Crown's naval power (Dahl, García, & López, 2013).

Fig. 1a. (Top left) 13th century, showing growth that took place during the late middle ages. **Fig. 1b.** (Top centre) 14th century, the second defence wall is built. **Fig. 1c.** (Top right) 15th century, the third defence wall is built. (Figs. 1a to 1c, Source: MUHBA, *Carta Històrica de Barcelona*, adapted by Patricia Tamayo.) **Fig. 1d.** (Bottom left) Barcelona city map with old medieval fortification layout (XIII-XIV centuries). Portal de Santa Madrona and the Royal Shipyard are marked with a yellow circle, and a red line to show the direction towards the gate of Framenors. (Source: Servei d'Arqueologia de Barcelona / CC BY-SA https://upload.wikimedia.org/wikipedia/commons/2/28/Planta_muralla_medieval_de_Barcelona.jpg). **Fig. 1e.** (Bottom right) Image of the Portal de Santa Madrona, circa 1910. (Source: Arxiu Fotogràfic de Barcelona (AFB) / Unknown author).

The Royal Shipyard was initially conceived for the monarch's private use; however, to finance its expansion, the Crown was obliged to take on the interests of other institutions that wished to use the complex to maintain their fleets[3]. For many years, the building was classified as a civil Gothic construction. Nevertheless, recent archaeological work carried out in 2012 concluded that the Royal Shipyard complex is actually the result of several transformations and additions spanning from the 13th to the 18th centuries, although largely preserving the same Gothic style. The only surviving structures from

[3] The main political institutions in the County of Barcelona under the Crown of Aragón were the *Consell de Cent* (an administrative body in Barcelona that existed from 1265 to 1714) and the *Diputació del General de Catalunya* (an organ of the Principality of Catalonia that ensured compliance with the Catalan constitutions and laws).

the medieval period (13th century) are the two naves facing the sea. Figure 1 shows the evolution of the building over time within the surrounding urban fabric and how it was connected to, or disconnected from, the adjacent neighbourhood and the sea. Figure 1a shows the area just before the Royal Shipyard was built. Figure 1b shows the location of the Royal Shipyard when it was built, near the sea but removed from the old city and its Roman fortifications. A small stream formed an extra barrier between this new construction and the city (current location of La Rambla, the boulevard built along the old watercourse). In the 14th century, the second fortification line ending just next to the stream, again leaving the Shipyard outside the city structure[4]. Figure 1c shows how, as the city grew, the agricultural plots to the west of the city were enclosed within the new urban perimeter. The new city wall finally incorporated the Shipyard. The building had a strategic location: in proximity to the fortifications and to what is now La Rambla.

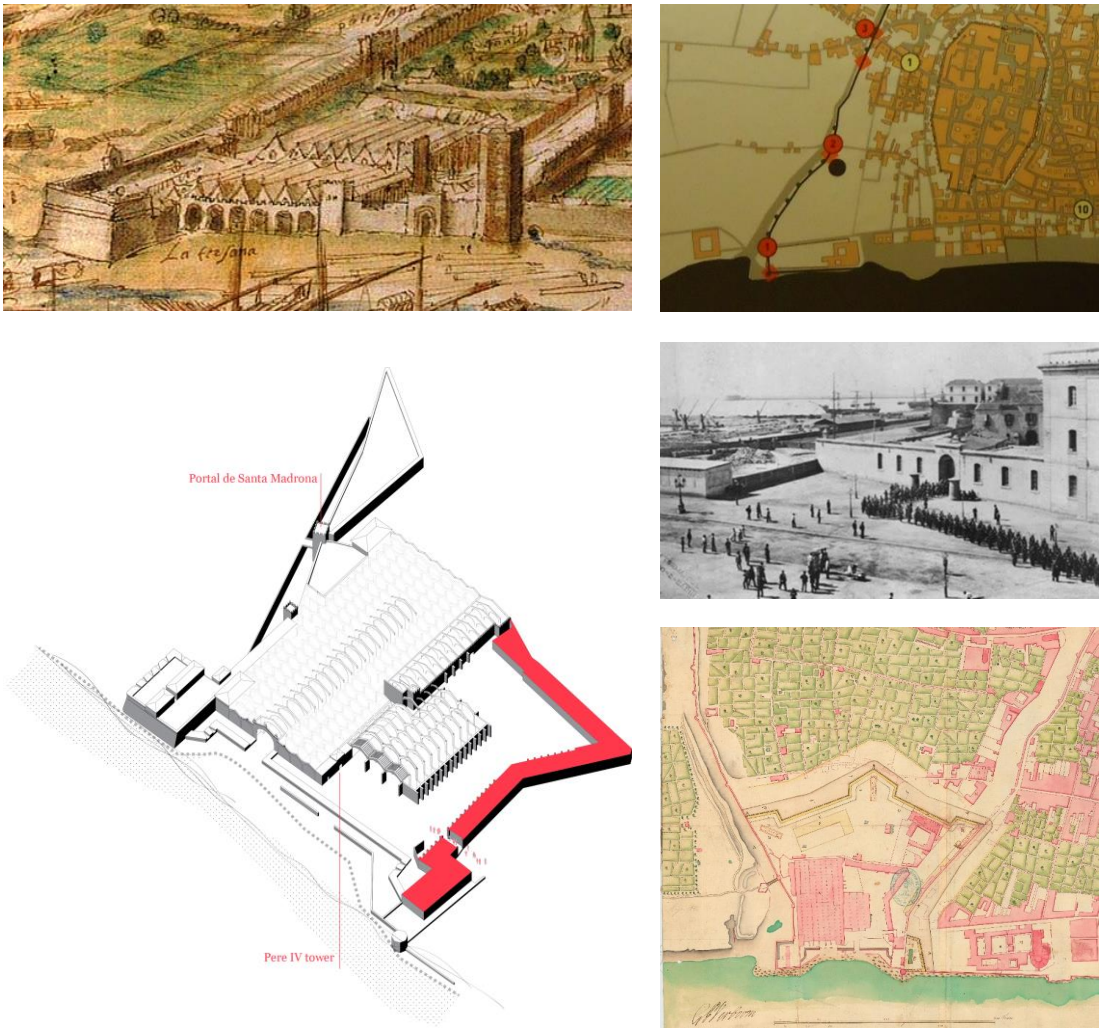


Fig. 2a. (Top left) Fragment of an aerial perspective of Barcelona drawn by Anton van der Wyngaerde in 1563. (Source: MMB, original drawing in the National Library in Vienna.) **Fig. 2b.** (Top right) The Framenors gate is clearly marked on the map with the number 1 on the perimeter from 1358. (Source: https://julioccardonam.files.wordpress.com/2013/06/plano-general.jpg) **Fig. 2c.** (Middle right) Members of the military queue in front of the door to the courtyard between the barracks and the Shipyard. Author: A. Torija, 1882. (Source: Museu Marítim de Barcelona.) **Fig. 2d.** (Bottom left) The Royal Shipyard transformed into an artillery yard in 1749. (Drawing by Patricia Tamayo). **Fig. 2e.** (Bottom right) Floor plan of the new fortifications (marked in yellow) to be built around the Shipyards. Jorge Próspero de Verboom. 1715. (Source: IHCM, Cartoteca B-05-18.)

[4] Source: MUHBA, *Carta Històrica de Barcelona*, adapted by the authors.

Early on, the most convenient access was by sea, where materials and ships could easily enter and exit. When the city walls were built in the 15th century, enclosing the Royal Shipyard, an entrance gate called the Portal de Santa Madrona was built in the wall (Fig. 1d, 1e; The Portal de Santa Madrona is the only remaining portion of the third fortification. This gate provided an access point to the city but not to the Shipyard, which was still walled off at that time. Between the Framenors gate and the Shipyard there was a space, now occupied by La Rambla (Fig. 2a, 2b). As Dahl explains: 'There is a reference to the construction of galleys in front of the Shipyard gates which suggests that the area was enclosed and protected and that there would have been an entrance near the sea facing the Rambla' (Dahl, García, & López, 2013, p. 252). This suggests that there was another entrance to access on foot which could have been by one of the towers.

In the 1630s, the Shipyard began to be used for purposes other than those directly linked to the construction and maintenance of the galley fleets. As the naval shipyard gradually ceded land for a series of military uses, it incorporated a navy wine store, a gunpowder warehouse, army barracks and a military prison. From the 17th century onwards, the evolution of the Shipyard continued with expansions, demolitions and reforms. As the building transformed, the city around it also evolved. During the Reapers' War (1640-1652)[5], Barcelona was completely militarized, and the Shipyard became an artillery factory. It was adapted for use as a defensive arsenal while under military jurisdiction, with the construction of barracks (Fig. 2c, 2d, 2e).

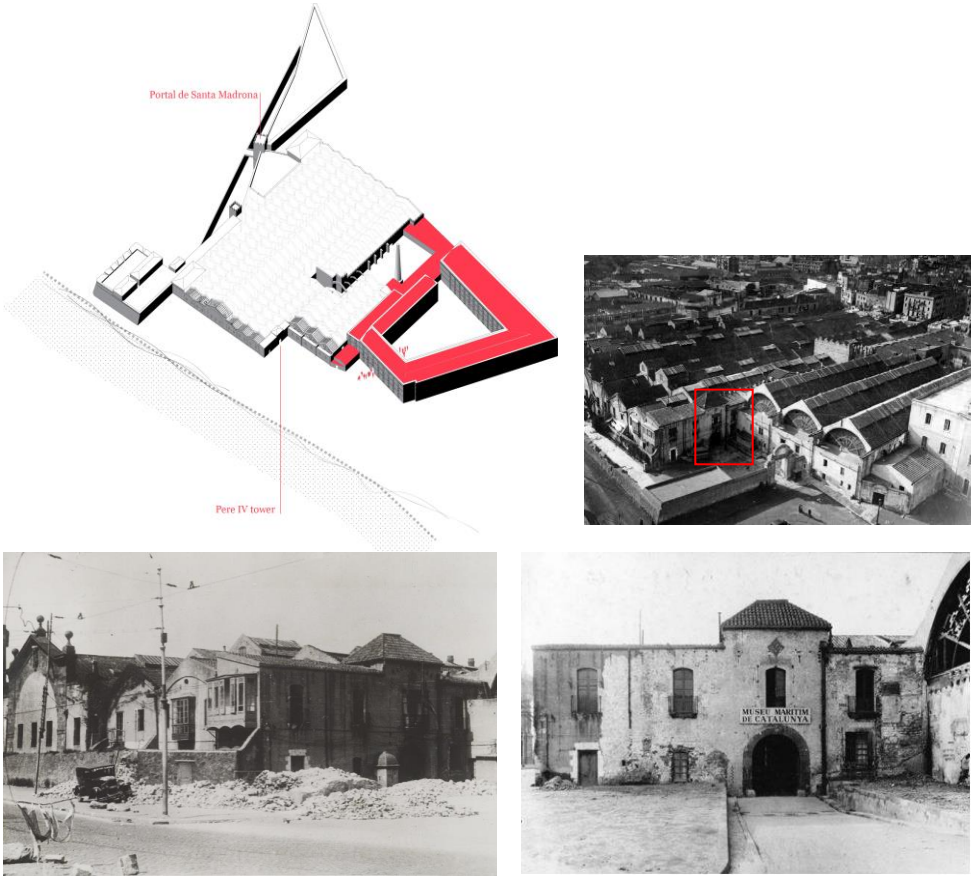


Fig. 3a. (Top left) The Royal Shipyard transformed into an artillery yard in 1807. Drawing by Patricia Tamayo. **Fig. 3b.** (Top right) Aerial view of the artillery yard. Marked in red is the entrance toward the Pere IV tower. ca 1890. (Source: Museu Marítim de Barcelona). **Fig. 3c.** (Bottom left) This image shows the corner of the seafront façade and the entrance towards the Pere IV tower. Photograph by Brangulí, 1936. (Source: Arxiu Nacional de Catalunya). **Fig. 3d.** (Bottom right) Entrance with the sign 'Museum Marítim de Catalunya' (Maritime Museum of Catalonia) above the entrance door. Unknown author, 1937. (Source: Museu Marítim de Barcelona).

[5] Source: https://military.wikia.org/wiki/Reapers_War

The barracks were later demolished in 1776 with the intention of replacing them with larger ones. The engineer Antonio López Sopeña changed the original layout and introduced modifications by enclosing the Shipyard with a fence-building on the barracks side (Fig. 3a, 3b) (Segovia, 2008). At that time, the entire seafront of the Shipyard was also walled. The only connection to the city was a gated door aligned with the Portal de San Francisco (the Framenors gate, one of the eight gates located at different points along the city's second wall to control of the influx of people and goods.). The evolution of artillery effectiveness for armies and navies was a key driver of the changes and developments during this period. After the military period was over, the military fence surrounding the site was demolished, transforming the entrance to the building (Fig. 3c).

In 1935, the Shipyard was handed over to the City Council and the decision was made to transform into a maritime museum (MMB). At that time, it was a struggle to find a place for the documentary collections associated with Catalonia's maritime history, and the Shipyard seemed the perfect place to accommodate them. The award-winning design was developed by the architects Adolf Florensa and Joaquim Vilaseca, who proposed recovering the Shipyard as a stand-alone building. This was one of the reasons why the jury selected their proposal as the winner. The reconstruction began with the demolition of the military barracks, but the works were interrupted by the Spanish Civil War (1936-1939). The Catalan Maritime Museum was inaugurated in 1941[6]. The permanent exhibition at the time occupied only a small part of the Shipyard complex, while the rest was still undergoing restoration.

As a museum, the building also underwent multiple transformations over the years. The transformations during the period 1950-1966 at the hands of the architect Adolf Florensa are of particular interest, along with the renovations undertaken between 1985 and 2013 by the architects Robert and Esteve Terradas. The latest intervention was designed by BOPBAA, led by Josep Bohigas, Francesc Pla and Iñaki Baquero, together with AV62, led by Toño Foraster and Victoria Garriga (2010-2016). This series of designs shows how the building's connectivity with the surrounding urban fabric was continually being reformulated.

Overview of the Three Major Transformations

The Transformations from 1950 to 1966 by Adolf Florensa

Adolf Florensa was the first architect who transformed the Royal Shipyards into a Maritime Museum (between 1957 and 1966). He undertook the restoration project with a double purpose: on the one hand, to recover the archetypal formal characteristics the Royal Shipyards' heyday and, on the other, to convert the former shipbuilding facilities into a museum. «The reconstruction of the immense building», Florensa stated in 1966, «is on hold for the time being, due to the importance of the initial work that needs to be done, that is, the roof over the seven naves in the oldest part. In the interim, the porch facing the Paseo de Colón has been paved almost entirely, and modifications and improvements have been made to the gardens which embellish it, along the broad pavement underneath. [...] The contents of the museum could be extended to include other types of transport, which the building could accommodate due to its large spaces; however, this same characteristic has sparked considerations of how convenient it would be to have such a large covered area to use for temporary exhibitions or fairs» (Florensa, 1962, p. 24).

The Transformations from 1985 to 2013 by Robert and Esteve Terradas

In 1985 there were new demands from the municipality. The complex had to be enlarged from the initial 4,000 m² in 1941 to 10,000 m² (mainly dedicated to exhibition space, 1,500 m² to services and 2,200 m² to gardens). The commission to design this transformation was awarded to the architects Esteve and Robert Terradas. Some years later, in 2008, came a fundamental milestone with the presentation of a doctoral thesis focusing strictly on the building: The Barcelona Shipyard: The Geometry, Plan and Structure as Guarantees of the Building's Identity, by Robert Terradas. Concentrating on the construction methods,

[6] Throughout its history as a museum, it has operated under different names: from the 'Institut de Nàutica de la Mediterrània' (1929-1936), 'Museu Marítim de Catalunya' (1936-1939), and 'Museu Marítim de Barcelona' (1939-1993) to its present 'Consorci de les Drassanes Reials i Museu Marítim de Barcelona' (1993).

Terradas compiled and analysed everything that had been written up to that point. Together with his associate Esteve, they were in charge of the project between 1985 and its definitive completion in early 2013.

The Transformations from 2010 to 2016 by BOPBAA and AV62 Arquitectos

In 2010, the Consortium of the Royal Shipyards Maritime Museum of Barcelona launched a design competition for a new museography for the interior of the building, which surprisingly led to another change in the complex as a whole. The winners were Josep Bohigas, Francesc Pla and Iñaki Baquero (former BOPBAA) together with Toño Foraster and Victoria Garriga (former AV62 Arquitectos). Their proposal aimed to increase the building's permeability, connecting it with La Rambla on one side and the cruise port on the other. To that end, it was necessary to change the entire configuration of the entrances. They proposed creating a passage between the naves that would function as a public space, thus increasing accessibility to the building. They determined that this would also solve some of the building's visibility problems, since even after the second transformation by Terradas, the access remained quite hidden. This proposal to improve the urban connectivity was the reason they won the competition.

Contemporary Interaction of the Building with the Urban Fabric

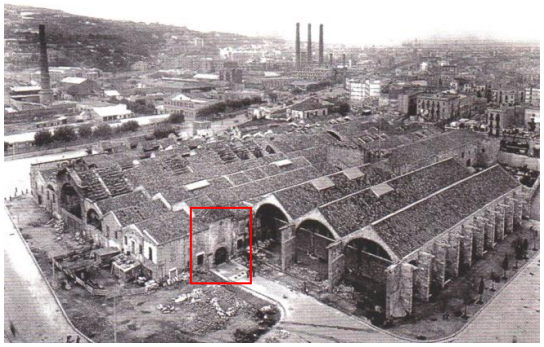
The Shipyard has a strategic position in the urban fabric of Barcelona, located at the intersection of three main streets: the emblematic La Rambla, La Rambla del Raval which changes its name to Avinguda de les Drassanes (taking the name of the building), and the end of Avinguda del Paral·lel. Where the Royal Shipyard used to face the sea, the city has gained ground over the years. In front of the Royal Shipyard, on an infilled area, the Spanish Tax Agency now stands between the Royal Shipyard and the water.

The adjacent neighbourhood to the north of the Shipyard was El Raval, informally known at the time as the 'Barri Xino', the equivalent of a red-light district. This deteriorated area, especially the part closest to the old port, along with the presence of the barracks in the Royal Shipyard, favoured the concentration of a large number of brothels and various activities related to prostitution. Between the 19th and 20th centuries, the social reality of this neighbourhood was characterised by marginalization and poverty, a situation that remained unchanged until the end of the 1970s. There is even some lasting stigmatisation to this day, despite the present uncontrolled gentrification.

The First Reconversion

The architect, Adolf Florensa, decided to create a large porch facing the seafront (Fig. 4b, 4c.) in order to provide depth to the façade. This decision was a way to illustrate that the building had extended towards the sea in its past, while also emphasising the Shipyard's arch-based structure. This intervention also gave him the opportunity to create a new public space between the museum and the sidewalk. Strangely enough, he did not use the new large openings to create the main entrance to the museum. He maintained the entrance through the former Pere IV tower, the old entrance to the artillery yard (marked in a red rectangle in Fig. 4b), without harnessing the possibilities of the new public space facing the sea.

One possible reason might have been that Florensa presumed the museum would be expanded again, making room for a more central entrance. The new access would have given meaning to the garden designed for the former artillery yard. Some of Florensa's design drawings, done during the Civil War, support this hypothesis (Fig. 5a). It was only in 1954 that a final design for the new garden was developed – by the municipality and not by Florensa (Fig. 5d). The plan shows the proposal of elevating the garden level in order to reduce the number of steps at the entrance to the new extension of the museum (Fig. 5e). The design also incorporated a stairway and a ramp connecting with what is now Av. de les Drassanes, in order to better connect this part of the building to the city.



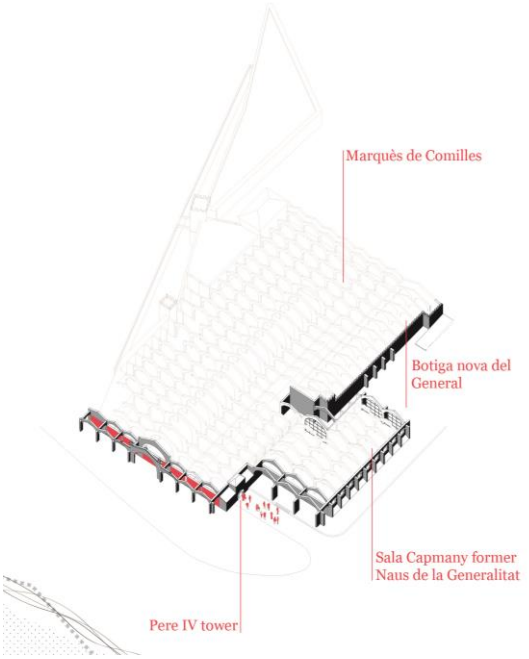
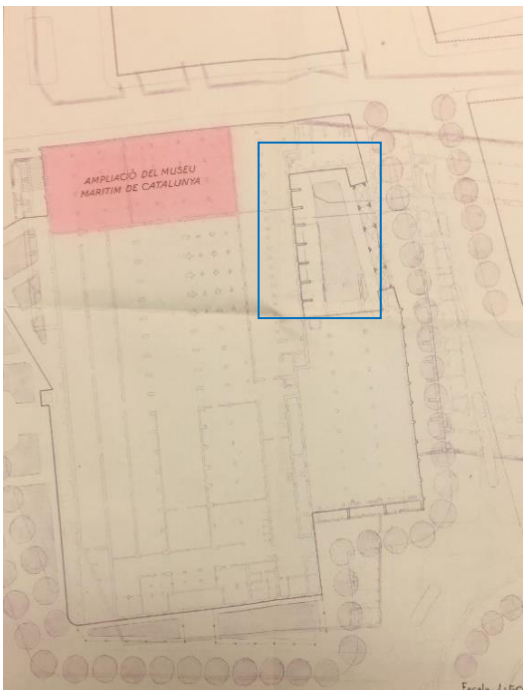


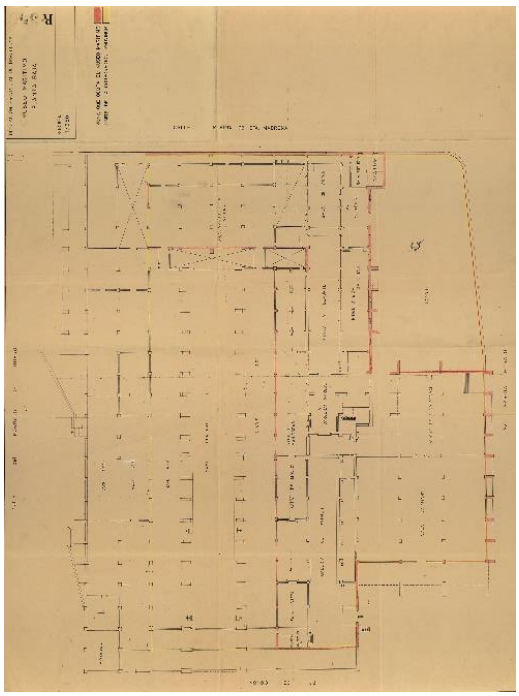
Fig. 4a. (Top left) Reconstruction of the Maritime Museum, 1949-1950. (Source: Museu Marítim de Barcelona). **Fig. 4b.** (Bottom left) After Adolf Florensa's intervention in the Royal Shipyard in 1975. (Source: Museu Marítim de Barcelona). **Fig. 4c.** (Bottom right) The Royal Shipyard transformed by Adolf Florensa. Drawing by Patricia Tamayo.

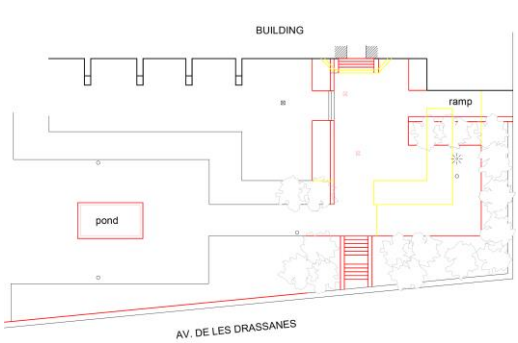
One possible reason might have been that Florensa presumed the museum would be expanded again, making room for a more central entrance. The new access would have given meaning to the garden designed for the former artillery yard. Some of Florensa's design drawings, done during the Civil War, support this hypothesis (Fig. 5a). It was only in 1954 that a final design for the new garden was developed – by the municipality and not by Florensa (Fig. 5d). The plan shows the proposal of elevating the garden level in order to reduce the number of steps at the entrance to the new extension of the museum (Fig. 5e). The design also incorporated a stairway and a ramp connecting with what is now Av. de les Drassanes, in order to better connect this part of the building to the city.

Moving the Main Entrance

In the second large transformation, the architects Esteve and Robert Terradas developed the 'Pla Director de Reforma i Restauració de les Drassanes' (Master Plan for the Reconstruction and Restoration of the Shipyards) in 1985. The new plan was intended to promote maritime culture and history and serve as a benchmark for similar institutions in the Mediterranean. An important shift in the building's connectivity with the city was brought about when the Terradas architects changed the main access on the city side, as can be seen in Figure 6. They made use of the existing garden to create a courtyard as an intimate public space or foyer facing the main entrance (Fig. 6b, 6c, 6d). The architects even changed the position of the main door, in order to align it with the stairs. As can be observed in the pictures (Fig. 6b, 6d) the red rectangle shows the position of the new door they opened, which does not correspond with the old one. The images reveal that the entrance door has been moved since it is not in the same place as in Figures 5f or 5e, and its position relative to the buttresses is different (the red rectangle shows the same spot in both images).







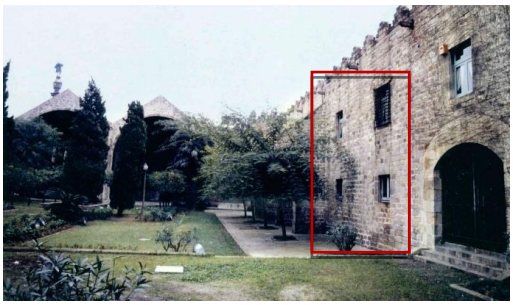


Fig. 5a. (Top left) Floor plan from January 1937, signed by Adolf Florensa, indicating the enlargement of the Maritime Museum into the 'Marquès de Comilles' naves, shaded in red ("Ampliació del Museu Marítim de Catalunya") (Source: Arxiu Municipal Contemporani de Barcelona Q147. 2.Edificis. M46 Museu Marítim, Ref. 66080, consulted 3rd July 2017). **Fig. 5b.** (Top right) The red contours define the area occupied by the Maritime Museum. (Source: AGMMB, Fons Museu Marítim de Barcelona, Planta de les Drassanes Reials, 1961. https://arxiummb.blogspot.com.es/2015/05/). **Fig. 5c.** (Middle left) 'Botiga Nova del General' building under restoration, around 1948. (Source: Museu Marítim de Barcelona). **Fig. 5d.** (Middle right) Project of the refurbishmet of the gardens in the courtyard of the Maritime Museum. Barcelona, January 1954. Barcelona City Council, Park Services. This is not a plan signed by Adolf Florensa. (redrawing of the plan by Patricia Tamayo, original: Ayuntamiento de Barcelona, Agrupación de Vialidad, servicio de parques. Source: Arxiu Municipal Contemporani de Barcelona, consulted 3rd July 2017). Red colour line show new interventions, yellow colour line show demolitions. **Fig. 5e.** (Bottom left) During Florensa's restoration, the garden level was lower, as evidenced by the fact that there were eight steps to access the area of 'Botigues Noves'. Picture taken c. 1955. (Source: Museu Marítim de Barcelona) **Fig. 5f.** (Bottom right) The implementation of the floor plan in Fig. 5d. can be seen in this picture. An entrance through the 'Botiga Nova del General', circa 1960. (Source: Museu Marítim de Barcelona, unknown author). The red marking indicates where the main access was relocated by Terradas architects later on.

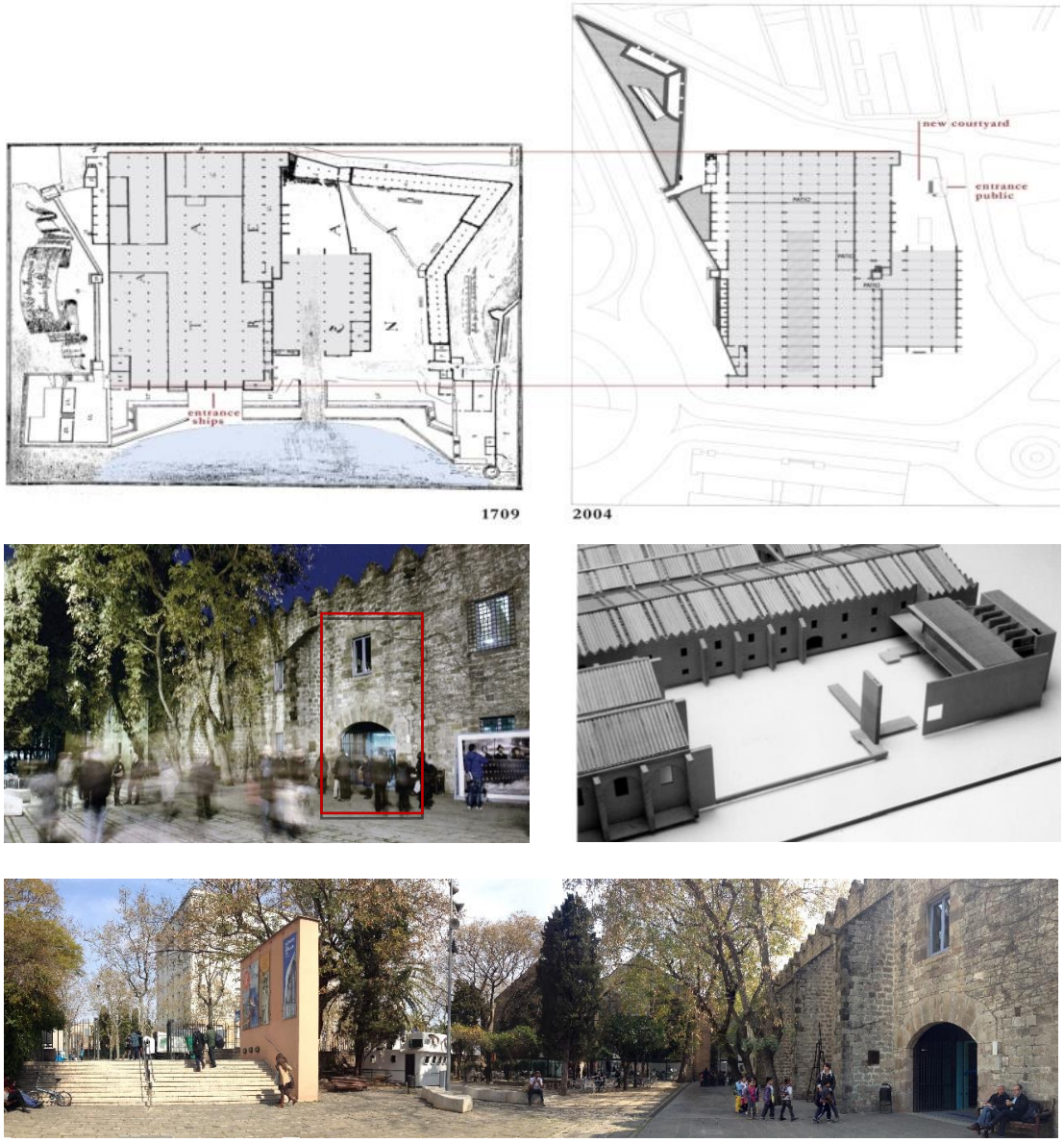
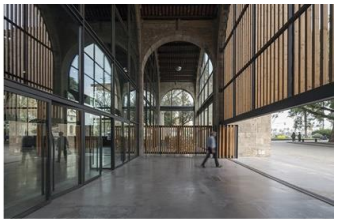


Fig. 6a. (Top left and top right) On the left, floor plan of the Royal Shipyard; on the right, the transformation by Terrades architects into the Maritime Museum. Source: (left) Plano del arsenal de las Atarazanas. Koblinau, W.A. 1709. Centro de documentación de las Reials Drassanes, 717 P. (right) Terradas Muntañola, Robert. (2008). *Les Drassanes de Barcelona: La geometria, la traça i l'estructura com a garants de la identitat de l'edifici* (Doctoral dissertation). Escola Técnica Superior Arquitectura La Salle (ETSALS), Barcelona. **Fig. 6b.** (Middle left) Courtyard after the intervention by Terradas architects. This image shows that the entrance has been moved. It is not in the same location as it was in Fig. 5f. Photograph by Diego Yriarte, 2013. (Source: Museu Marítim de Barcelona). **Fig. 6c**. (Middle right) Detail of the model for the Master Plan showing the new access through Atarazanas Avenue proposed in 1984. **Fig. 6d.** (Below) Main entrance to the Maritime Museum from the courtyard with the restaurant-cafeteria in the background, before the latest transformation of the new access, completed in 2016. Photograph by the author from 20th March2014. As can be seen in this picture, the Terradas architects moved the entrance door to line up with the stairs.

The Terradas architects believed in the need for linking the existing building with its adjacent urban spaces. The Royal Shipyard has a certain monumentality when compared to the immediate surroundings. However, when it shifted from being conceived as a closed-off building-object outside the historical city to become a public-function building, its interaction with the smaller grain of the surrounding neighbourhood needed to be redefined. Terradas's idea for the Maritime Museum as a public building was

to bring people together and to create social spaces tied into the city. They achieved this by designing different public spaces and accentuating the permeability of the urban fabric into the interior of the museum, linking public squares with the public building. By doing so, they created a cluster in which the two elements are difficult to separate. To break up the sharp change in scale, the Terradas architects designed a more intimate 'inner square' courtyard as a transitional space between the urban fabric and the museum.

This gesture was possible because there had long been an inaccessible residual space between the hard barrier of the fence around the Royal Shipyard compound and the building itself. With the change of use to house the museum, that open residual space had the potential to become a new urban public social space. Primarily in the project designed by the architects Esteve and Robert Terradas (1984-2004), the reorientation of the building with respect to the surrounding neighbourhood put that undefined leftover space at the core of the restoration. Despite the difficulties with the difference in level between the Maritime Museum and the street, the space was redesigned as a courtyard, even though it was disconnected from the sidewalk outside, which sat at a higher level. A staircase was built to link the street to the courtyard and the pavement of the staircase extends over the sidewalk, emphasising the access for the visitor.



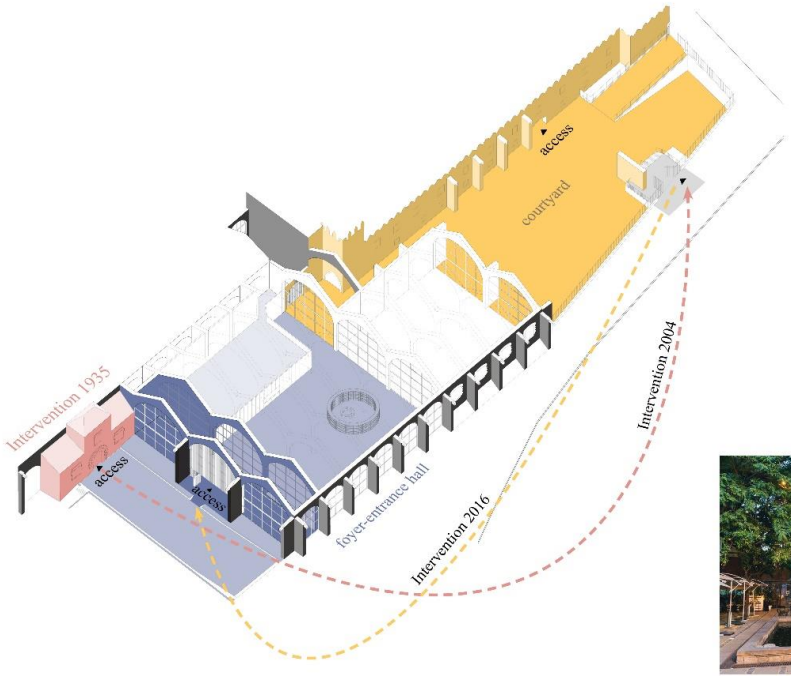


Fig. 7a, 7b, 7c. (top left, top centre and top right) Sequence of spaces at the current entrance. (Source: Pictures courtesy of AV62 architects). **Fig. 7d.** (middle left) Three different entrances to the museum: 1935, 2004, 2016. Illustration by Patricia Tamayo. In pink: initial intervention by Adolf Florensa. In yellow: intervention by Terradas architects. In blue: latest intervention by BOPBAA+AV62 (drawing by Patricia Tamayo). **Fig. 7e.** (bottom right) Interior garden. Image by @MuseuMaritim from 2019.

Twofold Connectivity and Increased Permeability

In 2010, the design by BOPBAA+AV62 provided the building with another public square. The architects radically changed the main entrance again, moving it from the courtyard out to the seafront (Fig. 7a, 7b). They felt that the access designed by Terradas still remained too hidden from the city around it, as they explained in the brief that accompanied their competition submission and in our interview. Here, the quality of the public space in front of the building is reinforced by using the arches as the main entrance. Visitors pass under a wooden screen into a smaller, much more intimate yet still transparent enclosure (Fig. 7c). However, this is not the only element. The architects conceived the interior of the building as a covered public space that can be accessed not only by museum visitors but the general public as well. Once inside the front door, people can move through the foyer towards the 'Botiga Nova del General' naves and the main hall of the museum. Here, there a small ticket office where museum visitors can buy their tickets and turn left to access the interior of the museum. This sequence of spaces becomes more interesting in the 2010 design, since it is possible to enter the foyer from two sides: from the main square facing the sea or through the cafeteria linked to the garden-courtyard. The old access from the courtyard still exists, but only for access to the Marquès de Comilles hall for special events. As such, the access to the building is now dual and freely accessible, creating an enhanced permeability for everyone (Fig. 7d).

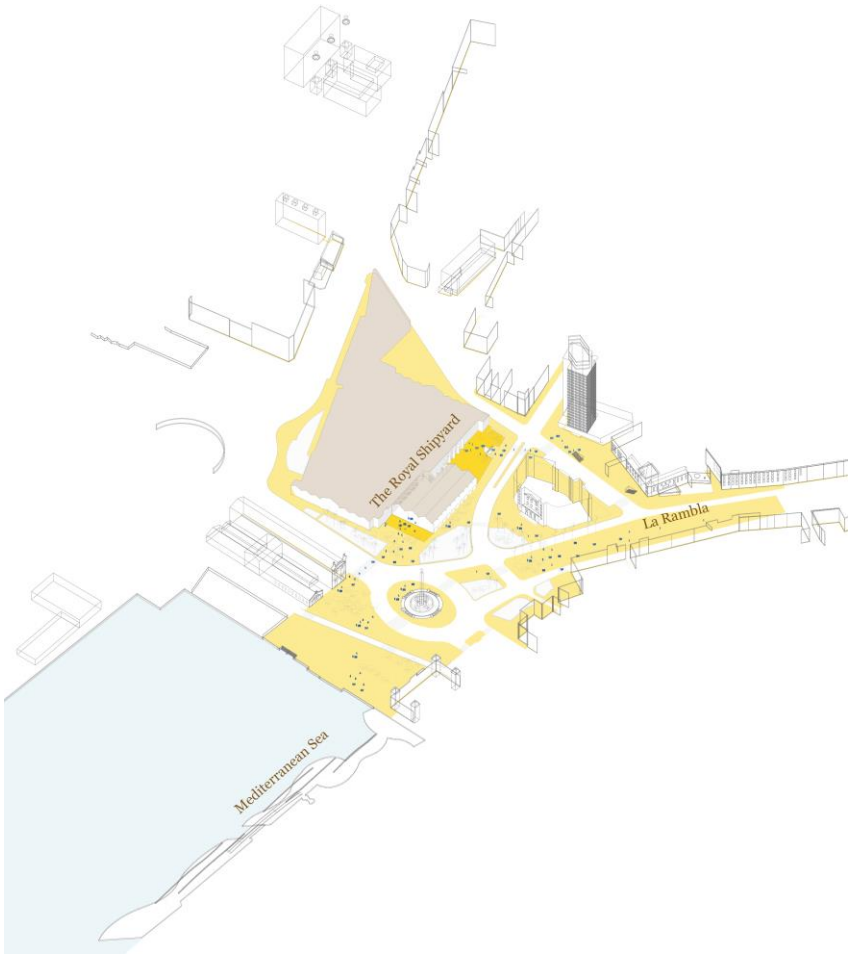


Fig 8. Relation of the current urban situation of the Royal Shipyard (now the Maritime Museum) with the present surroundings. In dark yellow: the courtyard (designed by Terradas architects) and the new entrance facing the sea (designed by BOPBAA+AV62 architects). In light yellow: the public space on the sidewalks around building. Illustration by Patricia Tamayo.

BOPBAA+AV62 made a clear effort to open the façade of the foyer toward the street, which had been entirely closed off in the past. The architects designed large windows to provide transparency towards the city from the interior and thus expand the space the visually.

Overall, the entrance progressed from the gate in the fence (understood as a 'visual autonomous element') to the door in the Pedro IV tower to access the artillery park, which continued as the original entrance proposed by Florensa. Then there was a more 'hidden access' in the final design by Terradas architects. Now, the current access offers more 'permeability and openness' for the building. Figure 8 shows the connectivity of the Maritime Museum within the present urban context.

The project by BOPBAA+AV62 should be understood as an attempt to generate a better connection between the Shipyard and the urban fabric. The Shipyard building is hemmed in by circulating traffic which has barely any interaction with other public spaces. As a result, it has to find alternative resources to establish this connection with its immediate environment.

Strong evidence of this need is the urbanisation project envisioned by the Barcelona City Council in 2014. The architect Jaume Artigues was commissioned to develop a new urban design for the area of carrer del Portal de Santa Madrona and its surroundings (Fig. 9a). The intention was to pedestrianise the street, establishing a connection between La Rambla and Avinguda del Paral·lel. And expanding Plaça de la Blanquerna by unifying the two empty spaces that are now separated by the street. The goal was to generate activity and city life behind the Shipyard building[7]. The idea was that the museum would be more open and, therefore, the area would cease to be understood as a backside. Artigues' proposal also would have helped to direct the flow of people from La Rambla to the entrance of the Maritime Museum, generating better visuals of the entrance.

The renderings for the proposal (Fig. 9b) show Artigues' intention to open up the large windows in the 'Marquès de Comilles' naves to generate transparency and create visual permeability from the outside public space to the public interior. It was similar to an idea developed by Terradas architects when they were designing the rehabilitation of the Shipyard, prior to Artigues's urban proposal. At the time, however, the idea was ruled out for security reasons. The 'rear' of the Royal Shipyard towards El Raval was and is still seen as an urban marginal site where drug users, homeless people and prostitutes often congregate. Ultimately, the new urban development project was never implemented. The responsible institution has not publicly revealed the reasons behind the decision.

When each team of architects set out to address the task of the Shipyard's rehabilitation, it is clear that Florensa, Terradas, and BOPBAA+AV62 detected that there was an issue with the building's permeability and connectedness to city life. It seemed like the building needed to breathe more urban air, creating a dialogue not only with the visitors, but also with the daily life in the surrounding neighbourhoods. They tackled the issue of permeability differently. Florensa's idea was to make a porch and create an 'intermediate' space on the seafront façade next to the entrance. Terradas architects made use of the residual space to create a garden that could serve as an intimate public buffer space between the building and the city. BOPBAA+AV62 sought to create a highly open and transparent public interior to visually link the public exterior with the interior.

Social Spaces

The previous pages have shown how the different interventions aimed to create levels of transition between the small scale of the surrounding neighbourhood and the larger scale of the building. Public and semi-public squares and inner courtyards help to generate that transition.

[7] *Avantprojecte d'arranjament i millora del carrer Portal de Santa Madrona i entorns*. The preliminary project by the architect Jaume Artigues (Source: Ajuntament de Barcelona, BIMSA Barcelona d'Infraestructures Municipals BIMSA, Gener 2014.

Fig. 9. The preliminary project by the architect Jaume Artigues; **(a)** (Top left) plan and **(b)** (Top right) render *View from the new square*. (Source: Ajuntament de Barcelona, BIMSA Barcelona d'Infraestructures Municipals BIMSA, Gener 2014 – *Avantprojecte d'arranjament i millora del carrer Portal de Santa Madrona i entorns*). **Fig. 9c.** (Bottom) Current Here we can see the back part of the Royal Shipyard, with the entrance for loading and unloading of the picture of the 'Marques de Comilles' hall. Picture by P. Tamayo, 2015.

It is interesting to look at how architecture interacts with urban life in its encounters and avoidances. According to Hillier and Hanson (1984), the spatial relations between buildings are non-hierarchical. For them, buildings define empty volumes of space between them, which can be seen as ordering space. Together with Habraken[8], they prefer to talk about the rules underlying spatial forms instead of studying the spatial forms themselves. Spaces are linked to people – meeting, gathering, interacting, inhabiting or exchanging ideas – and thus to social public life. Following the interventions, the public spaces around the Shipyard and the courtyard became a more accessible cluster of public and semi-public spaces. The same is true for the seafront entrance created by BOPBAA+AV62 in 2016, where filters create a gradation from the public plaza outside to the semi-public, more intimate foyer.

However, because the Shipyard is a public building, this public nature must be considered beyond the accessibility or the sequences alone. When it comes to connecting the building with the city, the public character does not stop at the front gate or the glass door leading into the museum. To optimise the program's integration and spatial cohesion within its enclosure, the most recent changes demanded new strategies for spatial interaction to achieve publicness from outside to inside and vice versa. The strategy of creating intimate public spaces and courtyards where social interaction can occur is an important one. To that end, the larger spaces had to be partly deconstructed to make the building more welcoming and to transform a 'public space' into a 'social place'. The spaces are compartmentalized, creating several thresholds. «Thresholds have variable thickness, extended by means of doors, frames, courtyards, terraces, sheds and exterior spaces, that incorporate both the nearby urban landscape as well as the distant

[8] This particular set of references (Habraken, Hillier, Hanson) is part of Kris Scheerlinck's doctoral dissertation. (2012). *Depth Configurations. Proximity, Permeability and Territorial Boundaries in Urban Projects*, URL Barcelona. Reference to Habraken, N.J. (1998). *The structure of the ordinary*. MIT Press.

cityscape» (Fontana, Mayorga, & Roa, 2016, p. 87). This is apparent in the connection of the courtyard and open square to the foyer and within the foyer itself.

Inside, the foyer connects with all the spaces around it. This connectivity is heightened by the design decision of creating large windows and modifying the façade facing La Rambla to generate visual transparency and views towards the exterior from the inside. (In the original building the façade had no openings, leaving this space completely closed.) From the foyer, which is free for anyone to access, it is possible to explore the different spaces: the new foyer itself (understood as a covered public square), the gift shop, the entrance to the museum, the bar-cafeteria, and the ticket office. For the shop, the architects created another space inside the open foyer: a round wooden latticework, demarcating an enclosed public space. In addition, it is possible to access a mezzanine, free of charge, to explore another view of the space. The spaces offer a more intimate publicness without losing the grandeur of the existing structure.

At the same time, the notion of a social space goes beyond the production of form. On the museum website, the mission statement cites a social responsibility, by virtue of which it is «an institution committed to our surroundings that provides social values to our local area and to citizens. Being a **social museum** committed to people, one that values inclusion and solidarity and helps to build a better society»[9]. The MMB is well known for its temporary events, which can be held in parallel to its function as a museum. As a result, the interior space of the 'Sala de Comillas' is often fully transformed, for instance, with small shops acting as a food market for three days at Christmas time or even for private events. Urban social life is enriched by the overlapping of different events, when people converge simultaneously for a congress or to visit the exhibitions.

Conclusions

Although the Shipyard has undergone many transformations, there is still something impressive about it because of its scale. That scale is, of course, closely linked to the shipbuilding activities which took place that inside. The building's huge size did not respond to an urban logic (in terms of its relation with other buildings) or intentions. It was created purely in response to a programmatic concern, answering to the demands of a specific activity. Over time, the Shipyard was absorbed by the growing city, but for a long time it remained a secluded island, a space with little urban interaction.

Through their different designs, the architects aimed to connect the building with the surrounding urban fabric. They understood that the new public museum function could only prosper if the building were incorporated into its surroundings. The open residual spaces around the production building became squares or courtyards around the museum, providing spaces for social public activities and uses. It did not lead to a sense of fragmentation and detachment from the areas around it, but rather to an understanding rooted in the concept of the threshold. Robert and Esteve Terradas and BOPBAA+AV62 also transferred this strategy into the building itself, where exterior and interior meet. In the transformation of the Royal Shipyard, the concept of a *public interior* can be understood as an architectural design tactic to reconfigure the space in its relation to its context. The strategy involved reimagining the building's orientation, a change of activity on the ground floor, and the creation of new social spaces which were non-existent in the former building. As a result, they generated an overall spatial experience at a human scale.

Certainly, there are still issues that have yet to be resolved. In some areas, the building is still largely closed off. The section adjacent to El Raval remains quite impenetrable, generating a hard buffer between the Royal Shipyard and the neighbourhood. There, with the presence of the Sala Baluard Safe Injection Site

[9] MMB, https://www.mmb.cat/en/explore/social-responsability/ (emphasis on the website; accessed May 2020).

and a healthcare centre maintained by the Barcelona City Council, it offers a less aesthetic image characterised by rough urbanity and the presence of drug addicts and homeless people. In the same way, the area around the Santa Madrona gate is only open one day a year to visit the gardens. It would be interesting to keep this gate open on a permanent basis to provide lasting permeability. Today, security reasons still prevent this. Although the 'back' of the Royal Shipyard contributes insecurity in the area, it also reflects the character of the more challenging neighbourhood. In that sense, while it does not fully respond to the problems of the surrounding neighbourhood it does not simply push them off into other parts of the city.

Although the Shipyard building is still relatively closed off, the different architects managed to provide it with greater permeability, and further possibilities have been explored to promote interaction with the city and to redefine the urban interconnectedness, convinced of its importance. It illustrates the need for thorough design of in-between public or semi-public spaces in relation to the spatial bigness of those historical industrial buildings, and ensuring their connectivity with the immediate urban context. The Maritime Museum of Barcelona implements practices to foster a connection with the surrounding neighbourhood, with the aim of familiarizing citizens with the museum. Some spaces can be used as meeting places by local community associations. In addition, the museum opens its doors during the city's official celebrations, and it is free every Sunday afternoon so that all Barcelona residents can visit the building and its exhibitions. In 2018, 64,637 people visited the museum for free[10].

References

Alemany Llovera, Joan (1988). Les Drassanes de Barcelona i el Museu Marítim. *Drassana: Revista del Museu Marítim de Barcelona*, *1*, 8-18. http://www.raco.cat/index.php/Drassana/article/view/109315/165703

Alexander, Christopher (2002). *The nature of order: An essay on the art of building and the nature of the universe*. London: Routledge.

Catàleg de monuments i conjunts històrico-artístics de Catalunya (1990). Generalitat de Catalunya.

Cubeles i Bonet, Albert, & Puig Verdaguer, Ferran (2003). La Drassana i la gestació de la façana marítima de Barcelona. *Drassana: Revista del Museu Marítim de Barcelona*, *11*, 50-61. https://raco.cat/index.php/Drassana/article/view/106289

Cubeles i Bonet, Albert (2011). Noves dades, noves perspectives i nous objectius en l'estudi històric de la Drassana Reial de Barcelona. *Drassana: Revista del Museu Marítim de Barcelona*, *19*, 120-136. http://www.raco.cat/index.php/Drassana/article/view/252910/339648

Cubeles i Bonet, Albert; Moreno, Iñaki, & Nadal, Esteve (2012). Noves descobertes arqueológiques a la Drassana Reial de Barcelona. *Revista de Catalunya*, 278, 117-139.

Cultura mediterránea en las Atarazanas de Barcelona (1979). Centro de Cultura Mediterránea.

Dahl Termens, Silvia; García Domingo, Enric, & López i Miguel, Olga (2013). *Les Drassanes Reials de Barcelona*. Barcelona: Efadós and Museu Marítim de Barcelona.

Dovey, Kim (2016). *Urban design thinking: A conceptual toolkit*. New York: Bloomsbury Academic.

Estrada Rius, Albert (2003). Les Drassanes Reials de Barcelona a la Baixa Edat Mitjana: Notes d'estudi. *Drassana: Revista del Museu Marítim de Barcelona*, *11*, 36-49. http://www.raco.cat/index.php/Drassana/article/view/106288/132800

[10] Source: Museu Marítim de Barcelona, Annual report: https://www.mmb.cat/es/museo/documentacio-corporativa-2/.

Estrada Rius, Albert (2004). *La Drassana Reial de Barcelona a l'edat mitjana: Organització institucional i construcció naval a la Corona d'Aragó*. Barcelona: Museu Marítim de Barcelona.

Estrada Rius, Albert (2008). *La Generalitat de Catalunya a la Drassana Reial de Barcelona en temps d'Alfons el Magnànim*. Barcelona: Museu Marítim de Barcelona.

Florensa Ferrer, Adolf (1959). *Jardines y monumentos*. (2nd edition). Barcelona: Ayuntamiento de Barcelona. http://hdl.handle.net/11703/101588

Florensa Ferrer, Adolf (1962). *Conservación y restauración de monumentos históricos (1954-1962)*. (2nd edition). Barcelona: Ayuntamiento de Barcelona. http://hdl.handle.net/11703/97466

Fontana, Maria Pia; Mayorga, Miguel, & Roa, Margarita (2016). Le Corbusier: Urban visions through thresholds. *Journal of Architecture and Urbanism*, *40*(2), 87-98. https://doi.org/10.3846/20297955.2016.1196541

Garcia Domingo, Enric, & López Miguel, Olga (2012). Les Drassanes Reials de Barcelona, redescobertes. *L'Avenç*, *381*, 42-53.

Habraken, Nicolaas John (1998). *The structure of the ordinary*. London: MIT Press.

Habitar Grupo de investigación UPC (2018). *Atlas del aprovechamiento arquitectónico: Estudio crítico de los edificios reutilizados en Barcelona*. Barcelona: UPC /Ministerio de Economia y Competitividad.

Hillier, Bill, & Hanson, Julienne (1984). *The social logic of space*. Cambridge: Cambridge University Press.

Marcet i Barbé, Roger (s.d.), *Culmina la restauració de les Drassanes Reials*. Ajuntament de Barcelona. https://ajuntament.barcelona.cat/casalsgentgransantmarti/ca/noticia/my-new-post-tt-0000001915935615VgnV6CONT00000000000RCRD_11916

MUHBA. *Carta Històrica de Barcelona*. https://ajuntament.barcelona.cat/museuhistoria/cartahistorica/#map=13/240736.69/5070093.46/2010//0/0/0/0.

Rogers, Ernesto Nathan (1954). Le preesistenze ambientali e i temi practici contemporanei. *Casabella-continuatà*, *204*.

Segovia Barrientos, Franciso (2008). *Las Reials Drassanes de Barcelona entre 1700 y 1936: Astillero, cuartel, parquet y maestranza de artilería, Real Fundición de bronce y fuerte*. Barcelona: Museu Marítim and Angle Editorial.

Scheerlinck, Kris (2012). *Depth Configurations. Proximity, Permeability and Territorial Boundaries in Urban Projects* (Doctoral dissertation). Escola Técnica Superior Arquitectura La Salle (ETSALS), Barcelona. Universitat Ramón Llull.

Terradas Muntañola, Robert (2008). *Les Drassanes de Barcelona: La geometria, la traça i l'estructura com a garants de la identitat de l'edifici* (Doctoral dissertation). Escola Técnica Superior Arquitectura La Salle (ETSALS), Barcelona. Universitat Ramón Llull. http://www.tdx.cat/handle/10803/9131

Terradas Muntañola, Robert, & Terradas Muntañola, Esteve (1996). El Pla director de les Drassanes de Barcelona i els projectes. *Drassana: revista del Museu Marítim de Barcelona*, *5*, 13-18. http://www.raco.cat/index.php/Drassana/article/view/108911/165765