

## ABSTRACT

The mix of activities and the flexibility of uses in port spaces show the potential of port infrastructure as a collective space in the city, a real urban hub where flows and activities of diverse types converge.

Although the functional requirements of contemporary ports tend towards specialization and spatial segregation, with obstacles that break the fluidity between city and port, this research aims to show how intense urban spaces are generated in some routes and spaces where a degree of programmatical superposition occurs.

The spatial analysis of three city-port ecosystems at small scale in the western Mediterranean (Port-Vendres, Palamós and Port d'Alcúdia) illustrates the operational logics and distribution of various functional sectors in these ports and highlights spaces of a mixed nature in relation to the urban fabrics, where the type of city-port relations that we could call "salty urbanity" arise.



## "Salty Urbanity". City-Port Ecosystems in Small Port Cities

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## KEYWORDS

Salty Urbanity; City-port ecosystems; Port infrastructure; Port-Vendres; Palamós; Port d'Alcúdia

# “Salty Urbanity”. City-Port Ecosystems in Small Port Cities

## Introduction

### *The potential of port spaces*

The port space, as a point of disembarkation, is by definition a place of confluence between maritime and land routes: therefore, it is a place of exchange. Associated with the city, port spaces are affected by many stimuli that are unrelated to their inherent activities. This superposition of “urban matters” (De Solà-Morales, 2008) and maritime matters increases the number of potential coincidences and conflicts that could take place at the same time in the port space.

At a point of disembarkation, on a quay or in a passenger terminal, there are various references to the city that reveal the urban potential of this type of spaces. The building of a terminal in itself incarnates the relationship between the infrastructure element and the urban element. The presence of fishing or recreational boats berthing and sailing around a commercial port indicate the range of port functions and the weight of the various sectors in the local economy.

The presence of the port, considered an institution and a productive space, attracts other economies that establish themselves in this space (Alemany, 2017). Port-cities have long attracted people and businesses that benefit from access to both sea and hinterland, even accepting all these parties the negative externalities of port cities, such as the pollution of air, water, and land” (Hein, 2021).

The main port activities are often accompanied by different uses that complement them, giving continuity to the economic cycle that takes place in the same physical space. These activities and uses of a diverse nature coexist, their corresponding movements are overlapped, which makes the port space a place for meeting. To sum up, the port infrastructure can be interpreted as a space for interaction, where different communities, individuals and entities converge: consequently, the port can be considered as a democratic space (Sennett, 2014).

The port-city relationship gains much more relevance on islands. Particularly, in small Mediterranean islands in which the port is the only gateway, the economy of small and medium-sized port cities depends directly on the port infrastructure, as the port provides the main connection with the world. Given the economic attractiveness of port spaces and considering the limited availability of open space in this type of cities, the city tends to use ports as collective spaces, real urban hubs, the gate of the city and the island.

An illustrative example, among dozens of similar cases, would be that of the small island of Ponza in the Tyrrhenian Sea. In its port, where the topography is more pronounced, there is a port front on two levels, which doubles the opportunities to use its spaces. Where the topography is gentler, the stone esplanade of the ferry quay is used as an embarkation platform and as a public car park or even as a square for the weekly market every Tuesday (Figure 1). In the same terms, other cases can be mentioned such as Portoferraio on Elba, the island of Hydra in the Peloponnese, or Tinos in the south Aegean Sea, among hundreds of other cases.



Figure 1. Port of Ponza. Weekly open-air market and simultaneous disembarkation of ferries in the same dock as an example of collective space. (<https://sunsetvillage.files.wordpress.com/2013/06/port-ponza.jpg>).

At the other extreme there are the cases of the large industrial ports of Barcelona, Marseille or Genoa. It is much harder to image how this flexibility and superposition could be extrapolated to these large ports or even found in a small part of their perimeter. The enormous scale of the port infrastructures and their strong functional requirements establish a very clear limit between what belongs to the city and what belongs to the port. As large-scale infrastructures, the importance of port-related networks transcended the scale of an individual city and their shape and size demand a large amount of space (Meyer, 1999).

Historically, ports permitted a flexible use of their spaces due to greater functional simplicity. This meant that port spaces could become the main collective domain of the city, without interfering with port activities. However, their historical evolution led to an increase in the degree of complexity and therefore an increase in their functional requirements. This brought about a trend of structuralism and functionalism in the organization of contemporary port infrastructures, which in most cases translated into sectorisation by uses and functional segregation of port spaces. In the end, infrastructures perform a crucial role in opening up the city to the world, but always bearing in mind that the “immensity of (port-) infrastructural elements form an impediment to linking or adapting them to the existing city” (Meyer, 1999).

Broadly speaking, we can identify four main sectors or port uses: 1/ marina (recreational or tourism port), 2/ fishing port, 3/ commercial or passenger port and 4/ merchant or industrial port. For reasons of security and functionality, this sectorisation could lead to restricted access areas, barriers, minimum distances, controlled access points, etc. This series of requirements have complicated the fluid relationship between the city space and the port space.

Nevertheless, it can be considered that on small and intermediate scales, the functional requirements could be less strict, as the level of restrictions could be lower. This should allow interaction between city and port in port spaces that are fully operational that will be equipped with their own form of urbanity.

### *“Salty Urbanity”*

The mix of superimposed activities and uses that occurs in certain port spaces generates a specific type of urbanity. The diversity, transitoriness and simultaneousness of port spaces, as attributes of the city, are what we could call “salty urbanity”, according to a certain definition of material urbanity (de Solà-Morales, 2005). The specific form of port spaces, their material composition and the related arrangement of activities and buildings in the port front determine their formal diversity and the superimposition of uses and their associated tempos.

The interpretation of the space of the port as an entity that can have unclear-and-shifting boundaries, with different degrees of porosity, in both space and time, “can aid understanding of how sea and land, and port, city, and hinterland have interconnected over time” (Hein, 2021). At certain scales of port and city, the subsequent higher degree of porosity and the resultant capacity to encompass many uses and situations will make the port infrastructure an urban, productive, collective and contemporary space.

The main aim of this research is to indicate how certain city-port ecosystems can generate intense urban spaces, considering the potential of the port infrastructure as a collective space. To achieve this, we should understand in what way port uses and spaces interact with the city and what the limits and determining factors of this interaction are. The aim is therefore to identify which spaces, activities and economic factors of the city are most suitable and applicable for each port sector.

The relationship between the history of the urban development of port cities and the form of their geography is the starting point to establish a relationship between each of the port sectors and the various urban fabrics. The relationships between the functional itineraries derived from port activities are key factors to define and understand the dimensions of urbanity in the city-port interface.

A comparative analysis of the three cases of urban ports in the northwest Mediterranean enables us to observe how at small or intermediate scales each one of the specialized port sectors is associated with specific urban fabrics and one is often the cause and/or the consequence of the other. A deeper interpretation of the analysed cases shows that the relation between urban fabrics and the form of the port infrastructure ends up determining the port’s capacity to construct a dialogue with the city: a crucial dialogue to determine the “Salty Urbanity”.

Three cases in the western Mediterranean area are selected: Port-Vendres, on the northern limit of the Côte Vermeille in the region of Languedoc-Roussillon (France); Palamós on the Costa Brava in northern Catalonia and the Puerto de Alcudia in the north of the island of Mallorca. In addition to their coincidental location on the same vertical line defined by the third meridian, they have in common that all have fishing, recreational, commercial and merchant sectors that are fully operational, which makes them comparable and at the same time similar in terms of their status of factors that determine their “Salty Urbanity”. Their size is relatively similar, as they are located in towns that have only around 20,000 inhabitants, but they have a certain strategic position in the Mediterranean that has enabled them to become consolidated as complete, complex, competitive ports today, with a clearly predominant position in their respective areas and in comparison to the smaller ports in their surroundings.

## PORT-VENDRES

### GOODS:

210,000 T (2012)

### PASSENGERS:

37700 (2012)

20 cruises per year

### FISHING:

kilograms of catch per year: 4,000,000 (2012)

### MARINA:

number of berths: 250

## PALAMÓS

### GOODS:

140,883 T (2015)

### PASSENGERS:

45646 (2015)

25 cruises per year

### FISHING:

kilograms of catch per year: 1,505,227 (2015)

number of boats: 66

### MARINA:

number of berths: 817

## ALCÚDIA

### GOODS:

1,503,094 T (2015)

### PASSENGERS:

265,804 (2015)

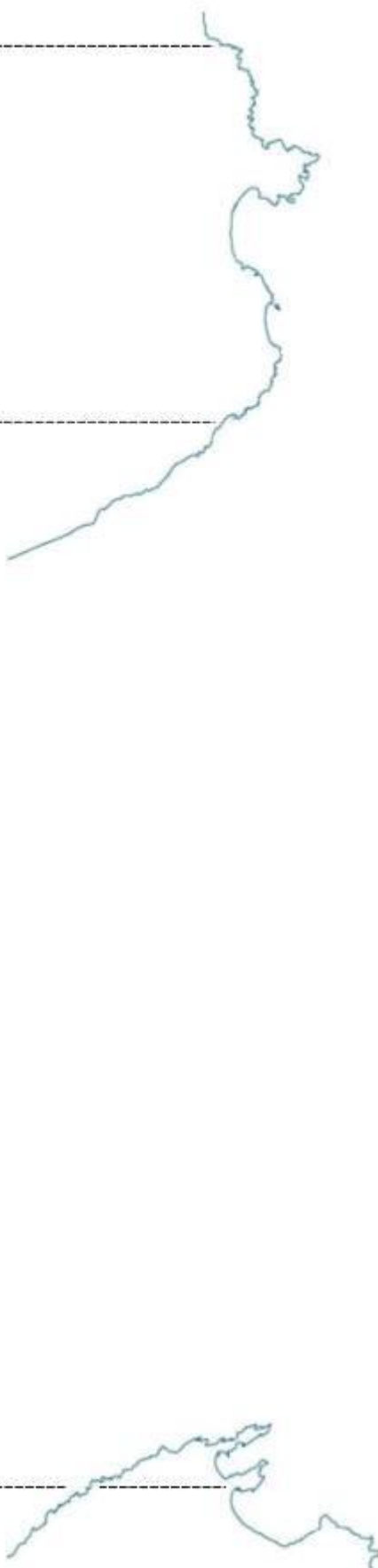
5 cruises per year

### FISHING:

number of boats: 43 (2015)

### MARINA:

number of berths: 746



## *Materials and methods*

Two approaches have led the research about city-port ecosystems in small cities. On the one side, the understanding of current ecosystems as a result of geomorphological and historical factors. On the other, the analysis of the functional requirements of the different port sectors brings into focus the sites where simultaneity and superposition take place so that the ‘salty’ urbanity, as defined, emanates.

Some historical cartographies and some works on local urban history have been the basis of a historical review of each case study and made it possible to understand the evolution of the port infrastructure and the development of the neighbouring urban fabric. This historical reconstruction of the port-city relationship has incorporated the comprehension of the territorial context, emphasising links between geography, urban structure, and urban morphology. The cross-comparison of the three study cases has been possible for the analogous dimension of the port sectors, for the similar port range of each port in its regional context and finally, for a certain resemblance on the number of inhabitants of their respective cities.

For each case, the urban spaces and structures that define the city-port ecosystem have been determined by making a triple-analysis focusing on the extension, structure, and main features of the fishing port, the marina, and the commercial-merchant port. The existing relationship and hierarchy between the three functional port sectors are decisive to figure out specific kinds of contacts between infrastructure and urban fabric, either by their related activities, their simultaneous construction, or their functional interdependence.

As a result, a series of cartographies are generated in which the three characteristic ecosystems are superimposed, allowing: 1/ to justify the current layout of programs, enclosures, and constructions and to understand possible contradictory situations; 2/ to highlight the advantages, disadvantages, and particularities offered by the interrelation of the three functional ports in each of the three cases studied; 3/ to draw transversal conclusions which allow the potential of city-port interrelation to be highlighted in the case of small cities.

## **The forms of Salty Urbanity. Three case studies**

On the coastal strip of port cities, port infrastructure can occasionally function as a barrier but also as a porous, permeable membrane. In the second case, the port space becomes an element of connection between the port activity and the urban fabric, where the elements of the city connect with the port spaces to form a series of city-port ecosystems.

To explain the functioning of the city-port ecosystems for the cases of Port-Vendres, Palamós and Alcudia, it is essential to understand the mechanisms of the layout of both the urban fabric and the different parts of the port infrastructure. The geography is presented as a determining factor for the morphological development of the port city. Another determining factor is the order of occurrence of the historical events that have chronologically marked this development. If we look at the timelines, we can see that each one of the urban fabrics of the port city has been either the cause or consequence of the appearance of each one of the elements that comprise the system of port spaces. Therefore, we can associate the urban fabrics with each specific port sector, based on their functional and historical logic.

Fishing sectors tend to be established on historical quays. They have always been there and the fishermen of each city have adapted their activity over the years to the form of these quays since they were built. In addition, the movement of both commercial and merchant traffic to other quays leaves more space for bigger fishing boats. Consequently, activities relating to the fishing industry are associated with the historical centres of cities that are normally adjacent to these quays.

It is known that the tourism industry has a profound effect on the Mediterranean coasts and their urban development. These coasts are defined by open air activities and sports such as sailing, which often lead to the emergence of marinas. Associated with free-time and tourism, marinas are often complemented by other uses such as catering and leisure activities.

Finally, the merchant and commercial port sectors can be described together as they tend to share a dock, one beside the other, due to the similar size of their boats and the type of control that is required. These port infrastructures are generally at a considerable distance from the city centre. Industrial specialization of their activities and security measures have led to these sectors abandoning their traditional quays. Merchant and commercial ports develop in separate spaces next to available open areas where, in most cases, complementary industrial activities are established.

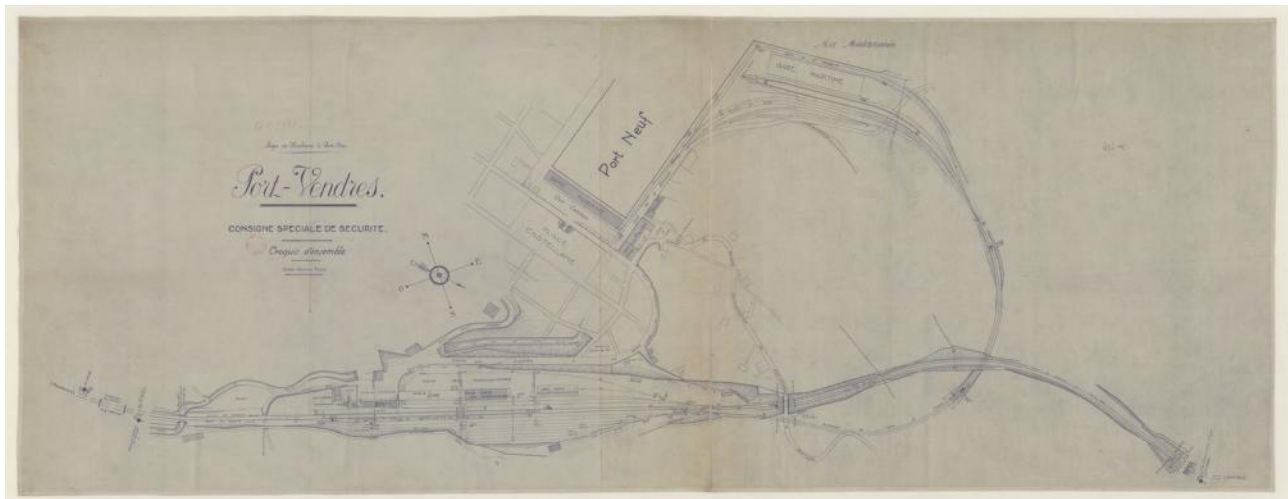
Despite these apparently clear divisions, the segregation not so obvious and the boundaries between the ecosystems are often blurred. The graphic representation of each port ecosystem on the city map reveals the close relations between each urban fabric and its associated port sector (fishing, marina and commercial/merchant). In this approach, some overlaps can be seen, which precisely illustrate the key spaces in this “salty urbanity” as a condition of simultaneousness between different movements that come together in some spaces that have a greater collective meaning.

### *PORT-VENDRES. The mirror effect of the concave port*

The port of Port-Vendres is located in an old cove on the Languedoc-Roussillon coast (France). The concave, deep geography of this small, natural port makes it the last shelter on the Mediterranean coast before reaching the Cap de Creus cape. The steep orography of the region, with a great lack of flat ground compresses the urban fabric of Port-Vendres against the port front, which was excavated from the ground. Consequently, many journeys within the city pass along the port front. The great geographic difficulty in exploiting the territory meant that the port activity would become the main economic driver of the region. The port is structured on the arms of the same cove: the original eighteenth century port, which is accessed via the road from Colliure, while the new port was excavated in the nineteenth century, with access by road and rail.

Although there are references describing modest port infrastructure since the thirteenth century, it was not until the era of French occupation of the region at the end of the seventeenth century that a clear interest was expressed in a military reinforcement of Port Vendres to “establish a home for galleys and light frigates, in times of war, to pursue the Majorcans who have devastated all the coasts” (Gigot, 1960). The first urban design of the port and the design of the central square by architect Charles de Wailly (Largier, 2010) at the end of the Colliure road date from the eighteenth century. In the decade of the 1830s, the escalation of tensions with the Regency of Algiers and the resulting French occupation of this country led to the establishment of the regular maritime route Port-Vendres – Algeria, as this is the French port that is closest to the north of Africa. In 1836, General De Castellane constructed the new port, which was commissioned by Napoleon III, in an operation very similar to that of Wailly. In 1867, the complex was completed with the construction of the train station (Figure 2).

Today, tourism has been timidly established in Port-Vendres with the construction of a marina in the nineteenth century port. Gradually, ferries and small cruise ships have begun to arrive in the commercial port that has moved to the eastern end of the infrastructure, while the fishing sector is located in the old port. Consequently, Port-Vendres has three port sectors that have equally relevant roles, with seasonal impact of tourism that is not too pronounced.



Source gallica.bnf.fr / Bibliothèque nationale de France

Figure 2. Design of the new port of Port-Vendres and its railway station (nineteenth century).  
(Source: Bibliothèque National de France. <https://gallica.bnf.fr/ark:/12148/btv1b53066928z.highres>).

### Fishing port (Figure 3.a)

Most of the fishing boats of Port-Vendres have their moorings in the old port. Specifically, they are moored along the coastal quay that runs from the foot of the promontory of La Miranda and borders the square containing Wailly's obelisk.

At one end, at the foot of the lighthouse (Le Fanal), is an esplanade delimited by the quay, the fish market and the fish wholesale warehouse, and an esplanade with a travelift to carry out maintenance on these vessels. Following coastal quay (Quai Fanal) we find the moorings of a number of fishing boats. Although the larger fishing boats do not fit in this small dock (they are, exceptionally, located at the other end of the port, in the nineteenth century quay) most of the fishing fleet of Port-Vendres continues to occupy the historical docks of the city. The first urban settlement was established precisely on the slopes of the stream bed that runs out over these quays.

Between the start of the road to Colliure and the coastal dock in a “U” shape is the square of the obelisk. Dominating the view of the mouth of the port, the plaza generates a large esplanade on two levels with buildings facing each other on the sides like a Roman Circus. In this way, the square is conceived as a prolongation of the emptiness of the mirror of water that is contained in the concavity of the Quai Fanal. The pronounced topography has forced the urban fabric to develop in a stepped fashion. The waterfront, which is resolved on two levels, gives rise to a series of premises and stores on the lower level that alternate with steps leading to the higher level, evoking on a small scale the solution constructed in 1863 in the port of Algeria after the French occupation.

### Marina (Figure 3.b)

The marina of Port-Vendres is situated on the new dock excavated in the nineteenth century that forms a right angle with the historical port. Recreational vessels of 3 to 15 meters length are moored on a series of floating docks in a herringbone layout with one controlled access on the quay François Joly. In contrast, the coastal quay is left for passing boats, which favours a more flexible use of this space. This means that both the Quai François Joly (southern quay) and the customs quay (eastern quay), as well as much of the Quai Pierre Forgas (western quay), are available for the mooring of different types of vessels and port activities. Another consequence is that the coastal quay can remain totally accessible to the public.



The tourism sector is present in Port Vendres as in numerous coastal towns in the area. In this case, it has emerged in the centre of the city around the old nineteenth century quay that has now made room for the marina. Souvenirs, cafes, restaurants, hotels, nautical shops, tourism offices and ATMs occupy the ground floors and some buildings in the urban fabric constructed in the era of Napoleon III. In this way, the tourism activity that invades the port extends through the inner streets and up the slopes and steps that give shape to this neighbourhood superimposed on the powerful topography of the place. Again, the mirror effect appears and the marina becomes predominant as it is situated in the centre of the activity that surrounds it with the urban façade of the waterfront and the fishing port in the distant plane like backdrops. In this case, an esplanade on two levels also finishes off the operation at the end of the port. On the lower level, the Chamber of Commerce and Industry building is the institutional representation in the large square that is formed by the François Joly quay. On the upper level, at a distance from the hubbub of the quay, is a road that leads to the main road and the train station.

### Commercial/merchant port (Figure 3.c)

Situated at the northeast end of the nineteenth century quay, at the end of the coastal quay that crosses Port-Vendres, is the Pla du Port: a large flat area set aside for the merchant and commercial port. Although this is at the end of the quay, the shape of the port that is closed in on itself means that this sector occupies the centre of the field of vision from any point in the coastal quay.

As we access this sector from the customs quay, the hubbub of the lower floors becomes less intense and dense so that the compact fabric of the traditional city seems to give way to a more open, industrial fabric. In this area, warehouses and large empty spaces with restricted access enable the correct operation of the commercial and merchant port, without coming into conflict with the rest of the urban fabric. In addition, this location in a peripheral zone of the city facilitates access to the ring road and from the railway to the merchant port, which was so important for connections between France and the north of Africa during the nineteenth century. This has enabled the consolidation of the merchant port of Port-Vendres up to the present day and increased its scope at a scale much larger than the one that could be expected from a port city of this size.

In this case, the more industrialized nature of the surroundings of the commercial and merchant port have led to the emergence of businesses and services of a greater size such as large supermarkets, workshops and wholesalers. This type of establishments would not easily have found a space in the compact, consolidated city of this size and they attract activities that are unrelated to the commercial port in its surrounding area.

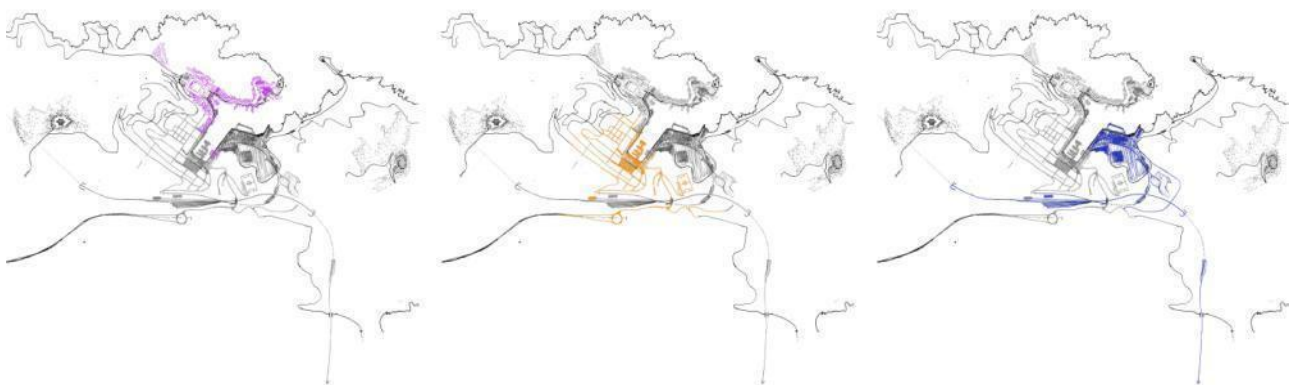


Figure 3. (3.a; 3.b; 3.c). Port-city ecosystems in Port-Vendres. Own production.

## PALAMÓS. The quays of Pedró and the deaf ear

The urban centre of Palamós is situated on a promontory called El Pedró, which is in the form of a small peninsular extending towards the south in the Costa Brava of Catalonia. Its characteristic morphology leaves its western flank well-protected from the Tramontana wind. This is why the city has this orientation and expands on the plain to the west, while the eastern flank, which is rockier and steeper, makes urban development difficult. The city centre is situated on the isthmus of this small peninsula, while its port infrastructure extends to the east and west. The limited space available on the sides of El Pedró means that the port infrastructure’s perimeter is compressed and cannot easily grow. In the same way, the lack of available space on El Pedró has led the city take over port spaces as these are some of the few that remain available.

The first historical references place the foundation of Palamós as a military port in the thirteenth century, although the first port infrastructure was not built until the end of the fifteenth century. This was when, in front of the Plaça dels Miradors square, the first breakwater was built that would consolidate the port of Palamós and make it prosper. Due to attacks, wars, epidemics and other political reasons, the city went through various periods of decay until the eighteenth century. It was then that, under the initiative of the Duke of Sesa, the port was revived and the dock that is now the commercial and merchant quay was constructed (Figure 4). In this period, Palamós’s connections with the road and rail networks were constructed. These improvements made the port activity of Palamós prosper to the extent that it became a leading port for fishing and commerce on the Mediterranean coast. In the twentieth century, the emergence of the tourism economy triggered the construction of the marinas of the Club Nàutic Costa Brava in the 1970s, between the fishing and commercial ports, and more recently the marina of the Club Nàutic Marina de Palamós on the eastern slope of El Pedró (Junyent, 1991).

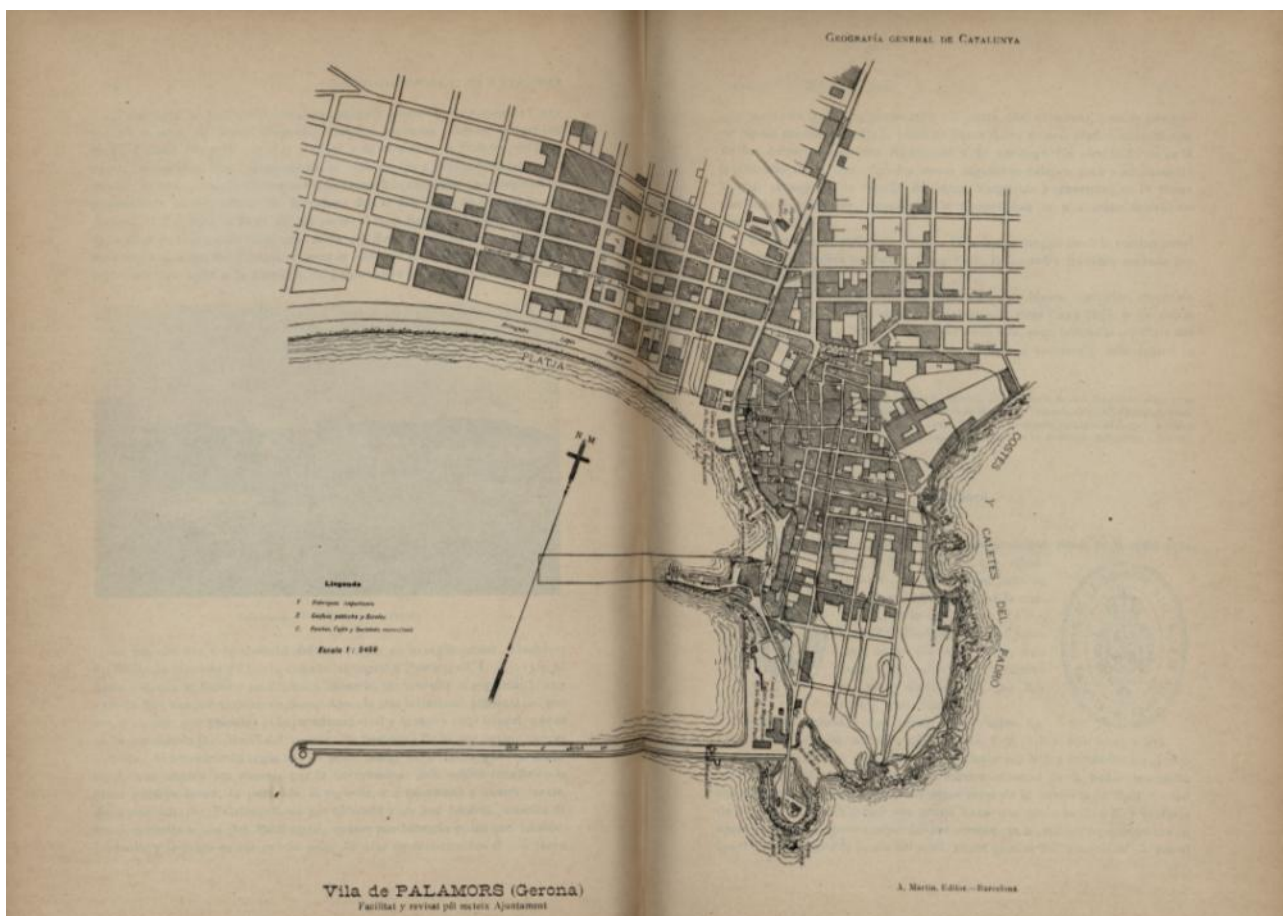


Figure 4. Vila de Palamós. Project for the breakwater and the new quay in front of the Plaça dels Miradors, 1908. ICGC.  
(Source: <https://cartotecadigital.icgc.cat/digital/collection/atles/id/1447/rec/32>).

The port tradition of Palamós has led to the development of three functional sectors. However, in this case, the functional segregation is not physical, as the port sectors share some spaces. As a result of this superimposition, some of the production spaces have had to remain open and have ended up becoming the main collective spaces of the city.

#### Fishing port (Figure 5.a)

The facilities of the fishermen’s community of Palamós are distributed along the length of the Moll Vell (old quay) and part of the adjoining quays. The fishing boats have their moorings spread around the entire perimeter of the quay, which is sometimes shared with some recreational boats of the Club Nàutic Costa Brava. Confirming the central role of the historical quay for the guild of fishermen of Palamós, the fishing port’s main facilities are found on this platform (offices, fish market, stores for material, etc.).

On one side, the topography of the El Pedró promontory divides the section of the quay into two levels: on the lower level is the access to the rest of the stores of the fishing port that are below the public road on the higher level. On the other side, the esplanade that provides access to the beach is used for laying out fishing nets, a function that was formerly carried out in the place that is now occupied by the car park of the Plaça dels Miradors.

This square, which is on two levels, is the hub of the historical centre of Palamós. It is delimited by the most famous, prominent façades of the old quarter of the city that watch over the port from a lofty position, around two metres above the Moll Vell to which the square is connected by the lower level. On the upper level, the square connects with the Carrer Major street that runs from the Arbres square (formerly known as the “Land Gate”) to the Plaça dels Miradors (formerly known as the “Sea Gate”). Indeed, the Moll Vell, the port and the Miradors as a gateway to the city are the greatest expression of the confluence and exchange between port activities and movement in the city. At this point, the main access roads to the port converge: on one side, the aforementioned Carrer Major, and the Av. Onze de Setembre, and on the other the roads that lead to the other port areas such as the lighthouse or the warehouses of the commercial port. In the upper level, the ground floors of the historical centre are used for restaurants and housing and enjoy the hustle and bustle and the views over the port, avoiding any functional conflict due to the two levels.

#### Marina (Figure 5.b)

The port of Palamós has two marinas situated on the western and eastern slopes of El Pedró and assigned to the Club Nàutic Costa Brava (CNCB) and the Club Nàutic Marina de Palamós (CNMP) respectively.

As mentioned above, the CNCB shares a part of the Moll Vell with the fishing sector where it occupies some berths, which generates a mix of users and movements. Vessels with greater draughts and lengths are in the more distant part at the end of the Moll Vell or moored in part of the commercial quay on which the offices and other CNCB facilities are situated. Finally, most of the recreational vessels of the CNCB have their berths in the set of floating docks anchored to the coastal quay that joins the Moll Vell with the breakwater and the commercial quay, in front of the fishing port’s stores.

The CNMP is in a diametrically opposite situation both physically and conceptually. It is on the other side of El Pedró where the difference in geographic elevation between the raised city and the sea level prevents any clear continuity. In this case, the powerful section of two pleasantly connected levels that we find on the west side becomes a cliff that is violently removed from the urban fabric of the port, which makes access hard. In addition, the considerable exposure of this dock to the Gregal (north-easterly wind) led to the construction of an imposing curved breakwater that gives the whole operation the curious shape of an ear. The forced orientation of this dock

(opposite to the orientation of the city) and the access problems due to its location meant that an unusual access had to be created via a curved ramp on a very steep slope that ends in a mechanical barrier.

In the west, the topography is not as abrupt, which has enabled a transverse section of the quay to be developed that is richer and more complex, with greater potential and superpositions and mixes of uses. As a result of this situation, the location of CNCB provides good opportunities for relationships with the city, which is just the opposite of the CNMP space, where the complicated, limited accessibility of the port spaces generally makes relations with the urban fabric difficult, due to the inhospitable surroundings.

In terms of the tourism fabric of Palamós, the connection with the marinas is not as direct, as almost all of the tourism offering is concentrated in the coastal strip parallel to the promenade that borders the beach. Nevertheless, the attraction of the port and its facilities, as well as activities in the old quarters, generate some sporadic flows of tourists to the marina.

### Commercial/merchant port (Figure 5.c)

At the far south end of El Pedró, at the foot of the hill culminating in the lighthouse, a 700 m-long breakwater starts out towards the west that was constructed at the start of the twentieth century. On the inner side of this protection, a 42-m wide quay forms the main mooring point for the commercial and merchant sectors of Palamós. At its ends are cranes for loading and unloading goods, and halfway up is a small terminal constructed to manage the flow of passengers from ferries and cruises, which are increasingly frequent. Thus, here as well, the same structure carries out both merchant and commercial functions.

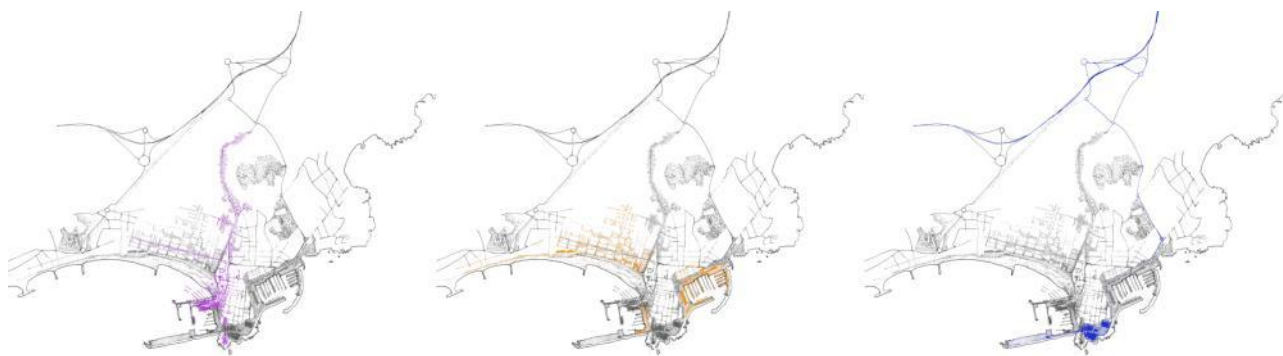


Figure 5. (5.a; 5.b; 5.c). Port-city ecosystems in Palamós. (Source: Own production).

As described above, part of the first stretch of the quay is used for the CNCB facilities, which adds a third sector to the port functions that have adopted this space. However, this superposition works for all purposes, as the CNCB offices are separated from the commercial and merchant port spaces by a one-storey brick wall and considerable entry controls by means of automatic barriers.

At the southeastern end of El Pedró, crossing under the bridge that provides access to the lighthouse on the higher level and following the road that traverses its perimeter on the lower level are some esplanades of quite considerable dimensions that were excavated in the rocky hill to construct the breakwater of the commercial port.

These esplanades currently serve as a dry dock for boat maintenance, and as the location of the Escola de Vela de Palamós sailing school's stores and some marine mechanical workshops. Beyond this space, the perimeter road soon becomes a fast road that does not interfere with the urban fabric situated at a much higher level.

The lack of available ground and the irredeemable location of the commercial port at the southern end of El Pedró create a commercial and merchant port established in a contorted layout and with serious obstacles to expand and to have free-flowing heavy traffic. In addition, the spatial complexity entailed by its operation and its coexistence with the city generates a situation of conflict that promotes the confluence of activities and increases the superposition of flows.

### *PORT D'ALCÚDIA. Linked ports*

The historical centre of Alcúdia is located inland on a peninsula between two natural ports in the north of the island of Mallorca. However, its port is situated on its own on the coast of the Bay of Alcúdia. This position has enabled it to become one of the most important ports in the Mediterranean, although its local geographic configuration, between mountains and wetlands, has made the adjacent urban development complicated. In fact, the small urban fabric of the original port could not grow until the advances of the industrial revolution enabled the land to be tamed. The first evidence of port infrastructure dates to the fourteenth century, although after this time the port would sink into decay due to constant closures. It was not until the end of the eighteenth century when new initiatives began to modernize the port and construct for the first time a stone quay and some small additional buildings that would constitute its first urban centre (Domingo & Druguet, 2004). This updating would enable Alcúdia Port to prosper and reestablish commercial routes to different points of the Mediterranean while the city and the port grew together (Figure 6).

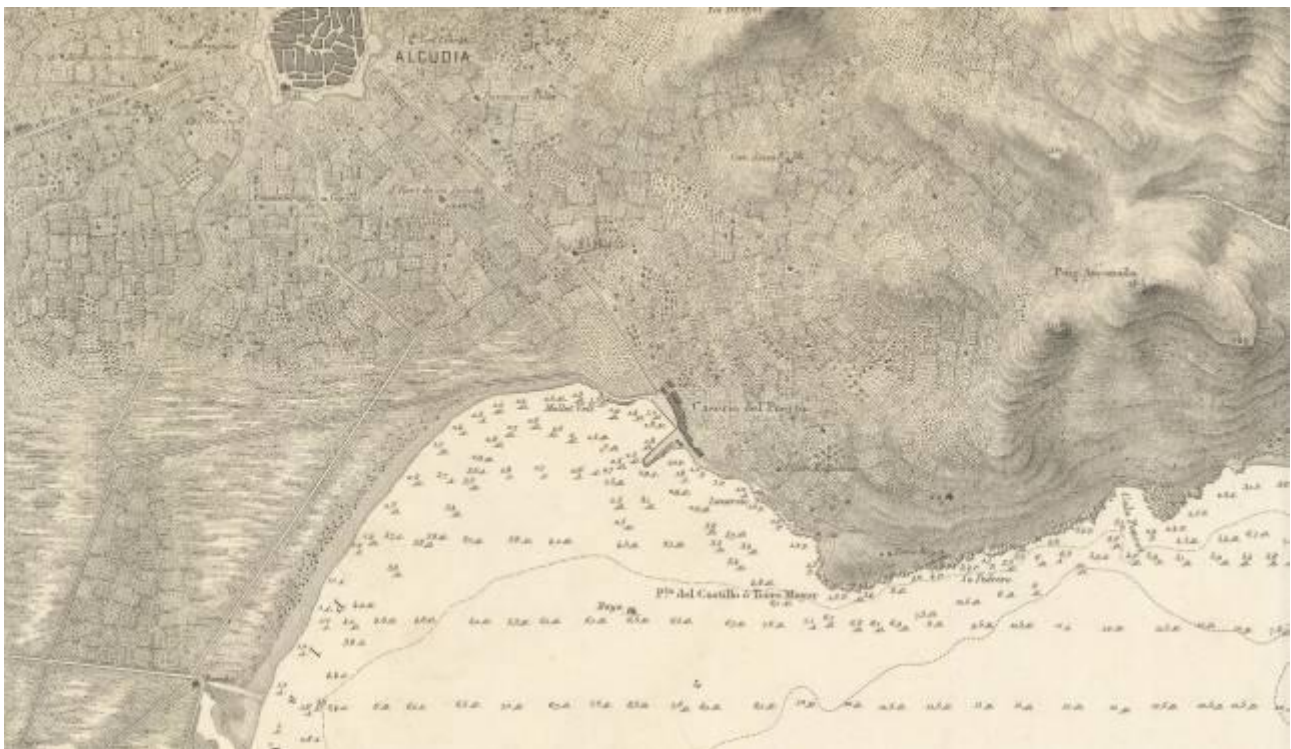


Figure 6. Original quay of Port d'Alcúdia and first urban settlement, 1892. Gómez Imaz. Comisión hidrográfica. (<https://www.ign.es/web/catalogo-cartoteca/resources/html/000942.html>).

At the start of the twentieth century, the old quay was obsolete and, between the 1940s and 1950s, to the east of the city, a new dock was constructed that would function as a quay for goods and passengers. At the same time, a power station would be built in this place to provide the entire island with electricity until the 1980s. Around this, fabric of industrial activity would grow.

The force with which the tourist industry landed in Mallorca drove the construction of a marina at the western end of the urban centre of Alcúdia Port. This led to the extension of a promenade and coastal quay from the beach to the fishing port. Finally, in 2008 a large quay of 27,000 m<sup>2</sup> was

constructed forming an enormous platform between the merchant breakwater and the fishing quay. This functions as a terminal for passengers and cruise ships.

To sum up, the resulting ecosystem is a more or less linear chain of port spaces that develops at the same time as a succession of urban fabrics, whose functions and uses are compatible, leading to a certain coexistence of their various components.

#### Fishing port (Figure 7.a)

The fishing sector of Alcúdia Port has most of its fleet and its facilities on the historical quay of or the Moll Vell, which was the site of all the port functions until the second half of the twentieth century. At the start of this quay, we find a set of buildings that include the Lonja de Pescado (fish market), Capitanía Marítima (the harbour master’s office) and the premises of the Cofradías de Pescadores (fishermen’s guild). The quay starts from the point of contact with the sea of the former road established in the nineteenth century that joins the historical centre of Alcúdia with Alcúdia Port. From there, a large part of the catch is taken to a warehouse in the Polígon del Butà industrial area, close to the commercial port, for sale to wholesalers, while a smaller fraction is sold in the fish market to restaurants and individuals.

The nineteenth century road meets the port front tangentially, so that a virtual intersection is created with the projection of the Mol Vell. Here the pedestrian and vehicular traffic that are typical of coastal cities of the northwest Mediterranean converge, with movements associated with the fishing sector and with access to the port and to the historical city.

The urban fabric of the historical centre of Alcúdia Port is concentrated at the end of the nineteenth century road, and offers façades on both sides of the road, as well as on the port front. Plots are small, which is typical of nineteenth century urban growth. They are long and narrow and compete to obtain a section of façade onto the port front and/or onto the road. Although this fabric has undergone various renovations during its existence, today it still maintains its basic plot structure. The buildings have grown and have been modernized, a car park has appeared that has enabled the streets to be pedestrianized, and the ground floors have been taken over by non-residential uses. In the furthest part from the sea, local businesses have emerged. They give way to businesses that are more tourist-focused as we get closer to the port-front promenade. It is on the ground floors of the broad promenade where the tourism offering reaches its utmost expression, apart from the surroundings of the Moll Vell where local commerce focused on fishing occupies the ground floor.

Despite the growing tourist pressure on the historical centre of Alcúdia Port, fishing activity has continued to develop, even with greater intensity, as tourism has led to an increase in demand for the product, which has kept its place in the port space on which the city was founded.

#### Marina (Figure 7.b)

The sailing club Alcudiamar manages the 745 berths of the marina of Alcúdia Port situated in front of the promenade. Smaller boats have their berths distributed along the coastal quay that borders the promenade, which is only interrupted half-way along by a quay from which boats for coastal tours depart. At the western end there is a large quay built in the 1970s from which a series of jetties arise that offer berths for most of the boats of the sailing club. On this large quay, a hotel and a range of catering and leisure activities attract a flow of tourism to this space, which makes it a strong centre of attraction for local or foreign tourists, established in the urban fabric distributed along the beach.

The main quay of the marina functions as a hinge between the beach area and the port zone, between the monofunctional fabric and the urban centre. In short, it is the port space that indicates where the city starts.

Throughout the second half of the twentieth century, sun and beach tourism in Mallorca was the cause of urban expansion and led to the construction of urban fabric in proportions that exceeded any expectations and that is structured along the axis of the Playa de Alcudia beach.

Tourism occupies and strengthens the marina, and mixes with the marina’s users and activities. Ultimately, it is the economic motor that drives the construction of this new element of port infrastructure and makes it run. The same is true of the port’s maritime front where, despite belonging to the original structure of the historical centre, the superimposition of tourism activities has meant that the ground floors and the coastal quay belong to both the tourism fabric and the marina, which gives them the seasonal highs that characterize them today.

### Commercial/merchant port (Figure 7.c)

The eastern quay was built in the 1950s together with the coastal quay and the large adjacent esplanade, to house the storage areas that receive most of the merchant cargo. This is followed by the large platform known as the Moll de Ponent (western quay), which is used for passenger traffic. On it, the large building of the maritime station is the gateway that separates the area open to the public from the restricted part, narrowing the access to the latter and giving way to the flyover gangways. In this way, most of the surface of the quay is available only for purely port activity.

Access to the merchant/commercial port is via ring road, to avoid unwanted conflicts with the city and to cut off port traffic from that of the city. Nevertheless, the access to the commercial port is from the seafront in front of the city, so it is possible to enter on foot from the seafront to the accessible area of Moll de Ponent.

Entry restrictions and the large surface areas form the image of the merchant and commercial port. In addition, this infrastructure joins the wide areas of the propane tanks, fed by the gas pipeline from the head of the Moll de Ponent, situated in the area of the Polígono del Butano (separated from the city for safety), the large plot of the former power station and the empty towns that housed the power station’s employees. The juxtaposition of large closed areas associated with this port sector added to the distance that separates it from the town centre hamper a potential relationship between the city and the sea in the area of the commercial port.

However, the open part of this quay is used as a multifunctional mooring point. The increase in the fishing fleet in recent years has led to the preparation of some meters of the quay for new fishing boats, to which have been added some boats for tourist trips. This indicates that it is wrong to think that the commercial port should be a closed space, and that it should not be cut off from the city. It would be interesting to reduce the distance between this area and the city, for mutual benefit, as today the Moll de Ponent represents the space beyond which the city fades.



Figure 7. (7.a; 7.b; 7.c). Port-city ecosystems in Port d'Alcúdia. (Source: Own production).

## Final reflections

From the study of the three examined case studies, a series of general reflections on the urban potential of the port infrastructure can be extracted, as well as other more specific remarks on the composition and coordination of port spaces.

First of all it must be highlighted that the conclusions are limited to a specific scale of port and city and to a specific geographical and cultural framework of the northwest Mediterranean. In this respect, it is worth to take into account the direct impact of the legal, economic and social frameworks that are specific to each region or country and directly affect a certain type of management and administration, even in the case of small cities, which does not make sense for a direct and extended extrapolation of the conclusions.

1. Within this scope of ecosystems, ports have historically shared their spaces with the city due to the compatibility of uses, making the space of the port, not a logistic, but an urban space. However, the progressive specialization of port activities brought about a trend of functional segregation. In this conjuncture, it can be stated that there are still situations of opportunity in which the city and the port are, or can still be, in frank dialogue. The search for these situations presents itself as a good option for the urban project of the city-port relationship.

2. A certain combination of the geographical configuration and a series of historical events, determine the potential of the relationship between the port spaces and adjacent urban fabric. According to these logics, the contradictory design of these port spaces can often make difficult the fluid interrelation between the components of the port-city ecosystem. One example is the Club Nàutic Marina of Palamós, which is a cut off from the city due to its lack of continuity with the urban fabric.

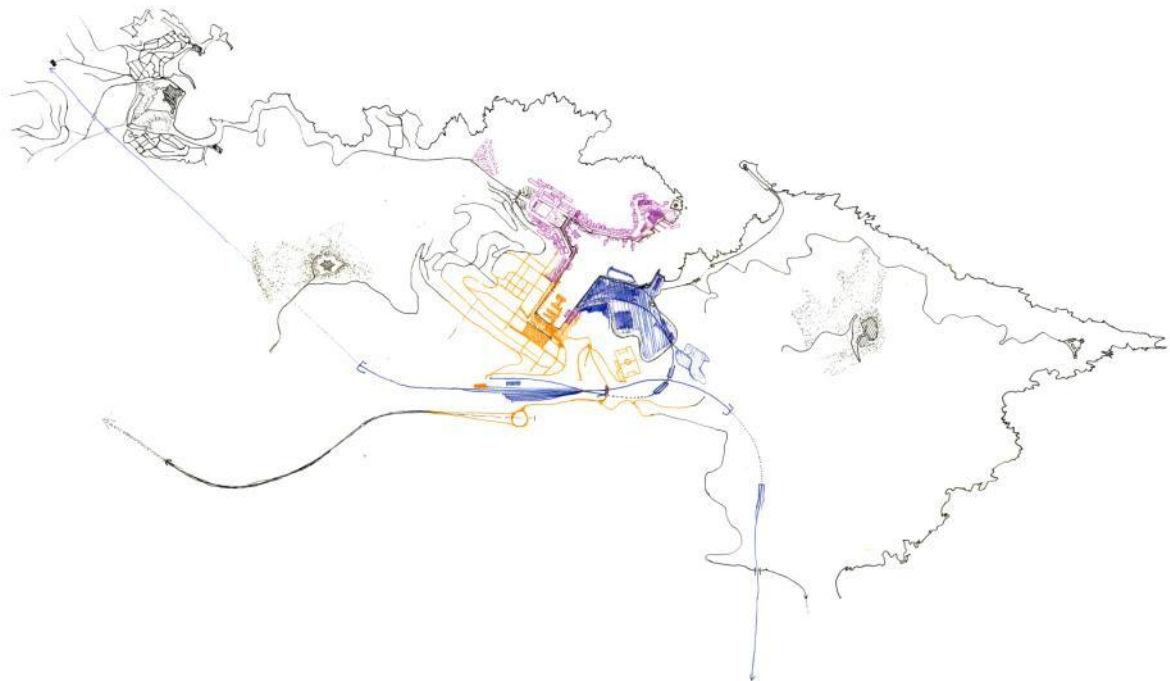


Figure 8. Port-Vendres. Overlapping of port-city ecosystems. (Source: Own production).

3. The association of a specific port sector with a specific urban fabric determines the type of flows and relations that could be established between both. In this respect, compatibility between the activities of both entities is vital so that simultaneous use is not counterproductive.



4. Likewise, the compatibility of port spaces with other types of uses and appropriations depends on their level of restriction or inclusiveness. That question will be determined by the kind of port activity and its degree of functional requirement. From this perspective, the layout of barriers and access controls becomes highly relevant with respect to the flexibility of use. This can be seen in the case of the commercial port of Alcúdia, where just a small part of the quay is accessible, whereas it is mainly occupied by the terminal building. Consequently, its use is very restricted to port activity and its conditions, a dead end enclosed by fences, never attractive for alternative uses.



Figure 9. Palamós. Overlapping of port-city ecosystems. (Source: Own production).

5. The degree of specialization of the different contiguous port spaces, their functional requirements and the activities that they house determine the degree of accessibility of these spaces. For example, the treatment of hazardous materials in the case of the gas pipeline of Alcúdia requires restricted access. In contrast, areas used for drying nets do not necessarily need special protection. Equally, yacht club users need a certain degree of security for access to their vessels, which is also the case of berths for passenger vehicles. However, this does not make them incompatible with other activities. Not only the management, but also the form, that is the design, of how these port spaces are organized in a more flexible way determines the capacity of port infrastructure to interact with the city.

6. Port spaces that have a less defined function have the capacity to be used in different ways simultaneously, so that they can be considered “democratic spaces” (Sennet, 2014). In these spaces, flows and independent or interdependent activities that respond to different scales, functions, places and times get associated. It is this lack of definition that promotes the simultaneousness, diversity, promiscuity, and productive conflict that characterizes this type of port spaces and that makes them truly collective spaces, where the productive capacity and flexible use include and increase their social value and economical allure. The space of the port front of Alcúdia can be taken again as an illustrative case.



Figure 10. Port d'Alcúdia. Overlapping of port-city ecosystems. (Source: Own production).

7. From this perspective, material continuity and contiguity between the port space and the urban fabric are essential conditions. The material composition (flooring, pavements, steps, fences, vegetation, etc.) clearly contributes to the fluidity of the space, to defining its complex nature and identity conferring significance and relevance to it. In these cases, the confluence of flows, activities and uses brings with it a mixture, diversity and superposition of scale and time references. The formal and material complexity of these port infrastructures (the port front in Alcúdia; the Moll Vell and the Plaça dels Miradors in Palamós; the docks facing each other in Port-Vendres) reveal and reinforce its mixed and diverse condition within a unifying framework capable of integrating it all, which is the layout of the port. All this gives room for coincidence, improvisation and spontaneity, which provide a special performance to the port space and which we have chosen to call "salty urbanity".

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