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Towards Circular Port–City Territories

Rotterdam and the Port Back to the City

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DOI
10.1007/978-3-030-78536-9_10

Publication date
2022

Document Version
Final published version

Published in
Regenerative Territories

Citation (APA)
De Martino, P. (2022). Towards Circular Port–City Territories: Rotterdam and the Port Back to the City. In L. Amenta, M. Russo, & A. van Timmeren (Eds.), *Regenerative Territories: Dimensions of Circularity for Healthy Metabolisms* (pp. 161-171). (GeoJournal Library; Vol. 128). Springer. https://doi.org/10.1007/978-3-030-78536-9_10

Important note
To cite this publication, please use the final published version (if applicable).
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Chapter 10
Towards Circular Port-City Territories

Rotterdam and the Port Back to the City

Paolo De Martino

10.1 Introduction: Rotterdam Towards a Twofold Objective

Port cities in Europe cannot be properly understood as a comprehensive entity. On the contrary, they consist of peculiar aspects in relation to geography, economy, and governance. These elements play a fundamental role in shaping the identity of each port city. Space is understood here as the result of specific institutions and governance arrangements that are in fact place specific. Moreover, the presence of path dependencies—as dependence on consolidated (and therefore inertial) economies and governance processes—explain why ports, despite having similar characteristics, differ from each other (Hein & Schubert, 2020; Monios & Wilmsmeier, 2016; Notteboom et al., 2013; Ramos, 2017). Because of path dependence, port and city authorities tend to become committed to developing strategies to reinforce their historical beliefs and values (De Martino, 2020b; De Martino & Hein, 2020; Sorensen, 2018).

This chapter focuses on the case of Rotterdam where different authorities are working on breaking path dependence by developing a twofold objective: on the one hand, by improving the economic position of the port and, on the other hand, by revitalizing port-city relationship from a historical, cultural and social perspective.

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L. Amenta et al. (eds.), *Regenerative Territories*, GeoJournal Library 128,
https://doi.org/10.1007/978-3-030-78536-9_10

10.2 Approach: Path Dependence and its Implications

This chapter proposes to look at the port territory of Rotterdam and its spatial transformations as closely connected to the history of its institutions. The concept of path dependence is applied as an interpretative tool to understand the stratification of institutions, the formal and informal arrangements among authorities and how changes in the current governance setting can represent a window for new opportunities (Arrow, 2004; Arthur, 1980; David, 2007; Hein & Schubert, 2020; Mahoney, 2000; Ramos, 2017). Path dependence, whose connection with the evolution of port cities has been explored in other recent publications (De Martino, 2020a, 2020b), represent the theoretical approach to analyse what André Corboz has defined as "urban palimpsest" (Corboz, 1998), to better understand the wide variety of traces and mutations that have firstly connected and later detached the port from its city.

From this perspective, space can be better understood as institutionally constructed and therefore linked to the changes in the system of regulations and constellation of actors which have cemented over the centuries. In fact, several authors, Sorensen among others, have explained the interactions among planning authorities as something that have led historically to the creation and reinforcement of existing patterns and therefore path dependence (Sorensen, 2015). Path dependence refers to the idea that the future depends on past decisions and this reliance influences what is perceived by the authorities as a feasible outcome. The concept which has its roots in economic studies mainly focuses on the phenomena institutional inertia and the ways in which people shape political and cultural behaviour (Arthur, 1980; David, 2007; Mahoney, 2000; Sorensen, 2015, 2018). In other words, history matters and approaches built in the past define what is the range of options for the future. This resistance to change generates feedback loops that imprison actors in their ideologies, making them unable to identify alternatives.

However, change is hard but not impossible. The recent joint projects between port and city in Rotterdam show that path dependence can be interrupted. This can take place within a new awareness by the authorities of the role that the port is called to play for the territory at different scales (local and regional) and dimensions (social, spatial, economic and environmental).

10.3 A Historical Overview

The name of the city of Rotterdam originates from the presence of a dam on the Rotte river. The port overlooks the North Sea and it belongs to the so-called Hamburg-Le Havre (HLH) range which is an integrated maritime interregional network consisting of the ports of Hamburg, Bremerhaven, Amsterdam, Rotterdam, Antwerp, Zeebruges, Dunkirk and Le Havre (Plasschaert, Derudder, Dullaert, & Witlox, 2011).

The development of Rotterdam as maritime and industrial port is quite recent. The city has been eclipsed for a long time by Amsterdam where all the traffics concentrated at least until the nineteenth century. Only after the second half of the nineteenth century the economic and industrial development of Germany around the Ruhr signed the beginning of the economic and industrial power of Rotterdam and therefore also the detachment of the port from its city (Aarts et al., 2012; Camera-di-commercio-e-industria-di-Napoli, 1914; Daamen, 2007).

Oil has played a significant role in the port, defining the industrial character we still see today. Since 1862—when the first drop of oil was shipped into the port of Rotterdam—petrochemical industries became increasingly important for the port and the Dutch economy (Hein, 2009, 2013, 2018). Oil continued to play a key role also after WWII and Pernis (orange), Charlois (red) Merwehaven and Wallhaven (violet), Eemhaven (pink) Europoort and Botlek (yellow) are just the spatial impact of oil industry on the Rotterdam port landscape (Fig. 10.1).

Therefore, it can be argued that until the nineteenth century, the relation between port and city was preserved. Subsequently, the port and city developed more or less independently with the port moving away from the city towards the sea.

Due to containerization the port needed more and more space and deeper waters for ships. That is why central and local governments opted for the construction of port expansions outside the city centre. Port and city drifted apart with huge areas left behind for new urban uses. The late 1980s and 1990s were the years of waterfront regeneration projects. The area of Kop van Zuid in the South of Rotterdam is emblematic of this. Here, the city government decided to revive the city with high rise offices and apartments, which gave the city a new identity still visible today.

Fig. 10.1 Rotterdam's port development. An overview in history (*Source* Rotterdam port Authority. URL: https://www.portofrotterdam.com/en/files/history-port-of-rotterdampng)

The process of naval gigantism required the construction of the area known as Maasvlakte 2 (initiated in 2008 and to be finished by 2030) for the handling of containers, logistic and industrial activities. This expansion, which was possible thanks to a change in the governance structure that allowed the port authority to invest beyond the port perimeter, is highly controversial. On the one hand, it in fact acts as a tangible example of the need on the part of the authorities to look at the port from a regional perspective, but at the same time, it represents the concrete result of a separation between port and city. The port authority following the construction of the expansion had to introduce nature compensation to balance the damages on the environment.

Today the port–city relationship has changed a lot compared to the past and large transformations are leaving space to local renewal processes and acupunctures in the urban palimpsest. Important topics like climate change and energy transition are putting pressure on the port authority to find solutions to remain competitive in the future, not at the expense of the environment. Rotterdam represents therefore a very inspiring example because port authority and municipality are at the forefront of reinventing their relationships (Aarts et al., 2012). They aim to find each other again. Today, in fact after years of conflicts the port authorities are looking back to the city as a place to establish new collaborations with the city that can benefit both the port and the city.

10.4 Spatial Understanding and Planning Interests

The city of Rotterdam is situated in the Province of Zuid-Holland and it is part of the economic core of the Netherlands, the so-called Randstad (CityofRotterdam, 2009). This is a spatial agglomeration and complex territory constituted by different spatial, functional and administrative entities all connected to each other's (ProvinceofZuid-Holland, 2015). The Randstad is polycentric metropolitan conurbation with about 8 million people living around cities such as Amsterdam, Rotterdam, Utrecht and The Hague. The Hague is the administrative centre, Amsterdam the business city, Rotterdam, with its important port hosts the industry and Utrecht the cultural centre.

The Randstad is the scale to better analyse the port of Rotterdam whose economic impacts do not concern only the city of Rotterdam, but a broader territory. The port is the major container hub in Europe and the most important European oil hub. More than 50% of refineries in Northwest Europe are in fact supplied via Rotterdam which together with Amsterdam and Antwerp, form the so-called ARA which is an alliance for the industrial sector.

Therefore, the port represents the economic driver of the city and the region and also the main source of negative externalities, such as air and water pollution.

These are the main problems that port and city authorities are facing today in Rotterdam and these also motivate the processes of collaboration and the joint project development known as Makers District. Here, several public and private parties have decided to investigate how to develop a port in a way that can continue creating

room for economic development but in a more sustainable way (PoR, 2011a). Both port and city authorities believe that the next economy will not be 100% oil-based anymore. As a result, working on new and more circular economies could help to relaunch the relationship between port, city, region and the landscape as a whole. Improving this relation is in the interests of both port and city authorities in the belief that the port will play a key role as a catalyst for new cultural integration that in the long term can generate also new economies gravitating around the port.

As for the governance, Dutch ports see an active involvement of local authorities. The Dutch government is not completely involved in the port–city relationship. On the contrary, its interest is mostly in big infrastructure developments, safety and secure shipping, but also environment and nature (OECD, 2010). The central government has in fact the ambition to make the Netherlands the most competitive, accessible, livable and safe country by 2040 (Ministry of Infrastructure & Environment, 2011).

Until 2004 the port was owned by the city (Notteboom et al., 2013). Following the port reform in 2004 the Rotterdam Port Authority detached from the Rotterdam's Municipal Port Management (RMPM) to develop a public corporation under the name of *Havenbedrijf Rotterdam NV (PoR).* As a result of this new structure, the municipality became the largest shareholder (70%) and the owner of the port land together with the Dutch Government (30%) (Brooks & Pallis, 2012; Ng & Pallis, 2010; PoR, 2018). Concretely, the port is publicly owned but commercially driven which means that the city (and the state) own the land, but the port authority has an everlasting lease contract with the city that allows to explore and develop the port on behalf of the government.

This reflects the more decentralized approach that characterizes the Dutch planning which is closer to people and users and delegates more responsibilities to local authorities. This promotes collaboration between the different levels of planning and the private sector (Ministry of Infrastructure & Environment, 2011).

The port of Rotterdam, for example, is in competition with the port of Amsterdam for the container sector. However, the two collaborate on a regional scale for the oil trade. In addition, there is even interregional cooperation between Rotterdam and Antwerp for the carbon capture and storage. From a governance perspective, there is no regional authority. Cooperation between ports happens through a bottom-up process and where authorities identify real economic benefits.

There is, instead, a metropolitan authority called the Rotterdam-The Hague metropolitan area (MRDH) which acts as an intermediate level of planning between the region, province and the municipal scale. MRDH is an alliance between 23 municipalities including Rotterdam and The Hague. It represents a recent governance authority established in 2015. Until this date, Rotterdam and The Hague focused on two different economies: Rotterdam on infrastructure and logistics due to the presence of the port and The Hague on administration and services(OECD, 2016). Today, the two cities cooperate to form a larger metropolitan region and to also integrate these two different economies (MRDH, 2016; OECD, 2016). The roadmap developed by MRDH aims in fact to look at the territory through the lens of the circular economies. These economies will have profound impacts on the society of the future, asking for significant changes in the port and logistic sector. According to the Roadmap linear

versus circular, centralized versus decentralized are the dichotomies that will guide the future development of the port of Rotterdam and its region (MRDH, 2016).

On a more local scale, it seems evident that the main interest of the Rotterdam port authority goes in the direction of industrial and infrastructural developments. However, taking the lead in these two sectors in the future asks for a broader perspective. This is why since September 2011 the port authority has been cooperating with Deltalinqs, the Municipality, the Province of South Holland and the Dutch government to define an agenda for the future and more sustainable development of the port. The collaboration led to the definition of the Port Vision 2030 (PoR, 2011b). This vision acts as a strategic instrument to guide the development of the port in close dialogue with the city, the regional territory and the environment as a whole (PoR, 2011a). The main ambition of the plan is to combine the two main pillars that have guided the development of the port for years: global hub (logistics) and industrial cluster. The port authority is envisioning the port of the future as a laboratory of innovation where to experiment processes related to the circular economies (PoR, 2011a). Therefore, although the main purpose of the port is to improve the economic position and infrastructures of the Port Authority also makes efforts to offer a more vivid port environment to the employees.

Nevertheless, achieving this goal is very difficult especially if considered that the port is still quite old fashion. The Rotterdam port is an oil-based port with 30 kms occupied by storage and refineries and heavy logistics activities from all over the world. Its footprint is quite negative at the moment. While this dependence offers the port a leading position today, it also risks preventing a real change and diversification of the economy, making the existing model not resilient.

10.5 Stadshavens Strategy and the Makers District (M4H)

How to deal with a sustainable port city relationship is the main goal behind the joint Spatial Development Strategy known as “Stadshavens”. The plan identifies several areas whose development will contribute to the improvement of Rotterdam both from an economic, spatial and environmental perspective. All the areas concern specifically the relationship between port and city (City of Rotterdam, 2007).

Since the beginning of the twenty-first century, port and city needed a new narrative. On the one hand, the Port authority has become increasingly aware of the importance of investing in port–city relations on the other the municipality has also realized that there was a need to prepare young people for the next generation of port-related jobs. Stadshavens strategy therefore brings these two ambitions together (City of Rotterdam, 2007). Thus, port authority and municipality started to rethink all the port areas around the city. This area was called Stadshavens which is known as the largest port-city regeneration project in the Netherlands (Vries, 2014). This process started as a joint strategy between the two authorities to reduce the conflicts at the intersection of land and water. The strategy touches upon different areas, each one with specific dynamics and spatial qualities. The Waalhaven and Eemhaven areas are

specializing as an important cluster for fruit and vegetables together with container transhipment. Rijnhaven and Maashaven are the areas closest to the city centre and also where it is possible to identify the traces of an industrial past. Merwehaven and Vierhaven will develop over the next 30 years into the Makers District (M4H), an innovative arena where houses will coexist with new start-ups and companies in the field of energy and materials.

The RDM Campus, on the opposite side of the river, was also a joint project but it is mostly owned by the Port Authority. In 2006, educational institutions, the PoR, the Municipality and Woonbron (housing corporation) signed an agreement to develop the RDM site (Daamen & Vries, 2013; Vries, 2014). The RDM, old shipyard, today focuses on the port-related manufacturing industry with related education and research. This function is in line with the location on the left bank of the Maas, where the port plays a more dominant role. Here, Techniek College Rotterdam and Rotterdam University of Applied Sciences cooperate with local companies to develop projects and education programs on port-related issues such as floating projects and 3D printing for the maritime industry (City of Rotterdam, 2017). However, the RDM had some limitations. Companies here were not able to grow further due to a lack of space. That is why the M4H came in as a place where small companies could move to continue developing their project.

When port authorities and municipality started to work on M4H was because they came to realize that the planning interests were moving towards new areas: Merehaven area. The pressure on the housing market was high and therefore mixed-use spaces were starting to become a priority and this could not be achieved around the RDM area. In M4H, companies working in the fields of logistics and maritime industry had more space to invent, test and implement new technologies, based on digitization, robotization, and smart manufacturing by coexisting with housing and knowledge institutions (City of Rotterdam, 2017). The project of M4H represents therefore an emblematic case that shows also a changing approach of the port authority. Innovation does not occur anymore behind the fences of one company. On the contrary, several companies have to cooperate. Start-ups and new businesses can influence the existing model. And these new businesses are not looking for large hectares in Massvlakte area. On the contrary, they aim to stay within the city.

Keilewerf is one of the many examples that is possible to find in the port of Rotterdam (Fig. 10.2). The project started in 2014 consisted of reusing an empty warehouse of about 1000 m^2 to host more than 80 (young) creative entrepreneurs. Here, steelworkers, artists, furniture makers and musicians have settled their new businesses.

The plan for the development of the Makers District is the result of a changing approach to port–city relationship. This highlights the spatial dimension of circularity which does not concern only the economic sphere but represents a regenerative model that touches upon different dimensions and scales. The port, with its more or less permeable areas of relevance, becomes an interesting laboratory to experiment with new possibilities of hybridism in which new forms of production can coexist with the renewed forms of living.

Fig. 10.2 Keilewerf, the place for makers in Rotterdam (*Source* Photo by Paolo De Martino)

10.6 Conclusion

In this chapter, we have analysed and discussed the case of Rotterdam which is peculiar for how city and port authority's visions intertwine when there are common values. No doubts the two authorities have different and often contrasting spatial ambitions as the developments are guided by different economic interests and needs. Nevertheless, they have made circularity a priority and a common strategy to work on. The city owns 70% of the port and this explains the active involvement of the municipality in the port planning, but this is not the only motivation. The city hosts the first European port for the handling of goods. The port, although the many efforts into the direction of clean energy, is still quite dependent on oil. Changing this model could have a profound impact on the economy of the city and region. At the same time, a possible collapse of the model would risk putting the economy of the city and the region under pressure. Authorities are therefore aware that this model should be changed and a diversification of the economy would allow for more resilience in the future. This diversification is also in the interest of the city, which in this way can prepare the next generation of workers and help to improve the environment in which they have to operate.

From a governance perspective, the analysis highlights the presence of a decentralized approach with the state not being directly involved in the port–city relationship.

On the contrary, it gives autonomy to local authorities for the management of port–city interaction spaces. This seems to be a key aspect especially in a time when

uncertainties associated with global changes are asking the authorities for immediate response in order to anticipate and better adapt to the future. Decentralization also reflects in the planning tools where major territorial transformations are leaving space today to smaller and acupunctures in the city context such as the recovery of abandoned buildings with the rethinking of productive chains at the intersection of port and city. This is what circularity is about. The broader Stadshavens strategy is emblematic of this.

Thanks to this strategy, after many years of separation the port can look back to the city again. RDM Campus and Makers District are significant to show a change of perspective by municipality and port authority on the issue of port–city integration. The analysis has shown that innovation today passes through the regeneration of the territories in between. Innovation is no longer tied only to large companies, rather to small businesses and start-ups. Eventually, these micro-changes can be scaled up and change the port model at a bigger scale.

However, the risk of path dependence is always around the corner. The port in fact, with its big numbers related to container and oil traffic is challenging the sustainable relation with the city at different scales. The strong position of the port in the field of energy risks in fact to prevent a real change beyond oil. This challenge is asking authorities to engage therefore in a new relationship. To do so, it becomes crucial that all stakeholders have a keen awareness of each other's needs and interests to better develop innovative, adaptive and resilient strategies capable of looking at the port from different scales and perspectives.

The establishment of a regional authority could help to better coordinate the relationship between port and territory, improving territorial cohesion towards new forms of economies integrated with nature.

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