

BDC

Università degli Studi di Napoli Federico II

20

numero 2 anno 2020



BDC

Università degli Studi di Napoli Federico II

20

numero 2 anno 2020

**Public Spaces,
Nature-based
Infrastructures
and Common Goods**



BDC

Università degli Studi di Napoli Federico II

Via Toledo, 402
80134 Napoli
tel. + 39 081 2538659
fax + 39 081 2538649
e-mail info.bdc@unina.it
www.bdc.unina.it

Direttore responsabile: Luigi Fusco Girard
BDC - Bollettino del Centro Calza Bini - Università degli Studi di Napoli Federico II
Registrazione: Cancelleria del Tribunale di Napoli, n. 5144, 06.09.2000
BDC è pubblicato da FedOAPress (Federico II Open Access Press) e realizzato con Open Journal System

Print ISSN 1121-2918, electronic ISSN 2284-4732

Editor in chief

Luigi Fusco Girard, Department of Architecture, University of Naples Federico II, Naples, Italy

Co-editors in chief

Maria Cerreta, Department of Architecture, University of Naples Federico II, Naples, Italy
Pasquale De Toro, Department of Architecture, University of Naples Federico II, Naples, Italy

Associate editor

Francesca Ferretti, Department of Architecture, University of Naples Federico II, Naples, Italy

Editorial board

Antonio Acierno, Department of Architecture, University of Naples Federico II, Naples, Italy
Luigi Biggiero, Department of Civil, Architectural and Environmental Engineering, University of Naples Federico II, Naples, Italy
Francesco Bruno, Department of Architecture, University of Naples Federico II, Naples, Italy
Vito Cappiello, Department of Architecture, University of Naples Federico II, Naples, Italy
Mario Coletta, Department of Architecture, University of Naples Federico II, Naples, Italy
Teresa Colletta, Department of Architecture, University of Naples Federico II, Naples, Italy
Ileana Corbi, Department of Structures for Engineering and Architecture, University of Naples Federico II, Naples, Italy
Livia D'Apuzzo, Department of Architecture, University of Naples Federico II, Naples, Italy
Gianluigi de Martino, Department of Architecture, University of Naples Federico II, Naples, Italy
Stefania De Medici, Department of Civil Engineering and Architecture, University of Catania, Catania, Italy
Francesco Forte, Department of Architecture, University of Naples Federico II, Naples, Italy
Rosa Anna Genovese, Department of Architecture, University of Naples Federico II, Naples, Italy
Fabrizio Mangoni di Santo Stefano, Department of Architecture, University of Naples Federico II, Naples, Italy
Luca Pagano, Department of Civil, Architectural and Environmental Engineering, University of Naples Federico II, Naples, Italy
Stefania Palmentieri, Department of Political Sciences, University of Naples Federico II, Naples, Italy
Luigi Picone, Department of Architecture, University of Naples Federico II, Naples, Italy
Michelangelo Russo, Department of Architecture, University of Naples Federico II, Naples, Italy
Salvatore Sessa, Department of Architecture, University of Naples Federico II, Naples, Italy

Editorial staff

Mariarosaria Angrisano, **Martina Bosone**,
Antonia Gravagnuolo, **Silvia Iodice**,
Francesca Nocca, **Stefania Regalbuto**,
Interdepartmental Research Center in Urban Planning
Alberto Calza Bini, University of Naples Federico II,
Naples, Italy

Scientific committee

Roberto Banchini, Ministry of Cultural Heritage and Activities (MiBACT), Rome, Italy
Alfonso Barbarisi, School of Medicine, Second University of Naples (SUN), Naples, Italy
Eugenie L. Birch, School of Design, University of Pennsylvania, Philadelphia, United States of America
Roberto Camagni, Department of Building Environment Science and Technology (BEST), Polytechnic of Milan, Milan, Italy
Leonardo Casini, Research Centre for Appraisal and Land Economics (Ce.S.E.T.), Florence, Italy
Rocco Curto, Department of Architecture and Design, Polytechnic of Turin, Turin, Italy
Sasa Dobricic, University of Nova Gorica, Nova Gorica, Slovenia
Maja Fredotovic, Faculty of Economics, University of Split, Split, Croatia
Adriano Giannola, Department of Economics, Management and Institutions, University of Naples Federico II, Naples, Italy
Christer Gustafsson, Department of Art History, Conservation, Uppsala University, Visby, Sweden
Emiko Kakiuchi, National Graduate Institute for Policy Studies, Tokyo, Japan
Karima Kourtit, Department of Spatial Economics, Free University, Amsterdam, The Netherlands
Mario Losasso, Department of Architecture, University of Naples Federico II, Naples, Italy
Jean-Louis Luxen, Catholic University of Louvain, Belgium
Andrea Masullo, Greenaccord Onlus, Rome, Italy
Alfonso Morvillo, Institute for Service Industry Research (IRAT) - National Research Council of Italy (CNR), Naples, Italy
Giuseppe Munda, Department of Economics and Economic History, Universitat Autònoma de Barcelona, Barcelona, Spain
Peter Nijkamp, Department of Spatial Economics, Free University, Amsterdam, The Netherlands
Christian Ost, ICHEC Brussels Management School, Ecaussinnes, Belgium
Donovan Rypkema, Heritage Strategies International, Washington D.C., United States of America
Ana Pereira Roders, Department of the Built Environment, Eindhoven University of Technology, Eindhoven, The Netherlands
Joe Ravetz, School of Environment, Education and Development, University of Manchester, Manchester, United Kingdom
Paolo Stampacchia, Department of Economics, Management, Institutions, University of Naples Federico II, Naples, Italy
David Throsby, Department of Economics, Macquarie University, Sydney, Australia



Indice/Index

- 225 Editoriale
Luigi Fusco Girard
- 231 Assessing the balance between urban development and densification: consolidated practices and new challenges
Elisa Conticelli, Claudia De Luca, Simona Tondelli
- 241 Città e pandemie. Densità urbana e densificazione dopo il COVID-19
Alessandro Sgobbo
- 261 Reinventing wastescapes in port cities. A resilient and regenerative approach to plan Naples at the time of logistics
Marica Castigliano, Paolo De Martino, Libera Amenta, Michelangelo Russo
- 277 ValoreNapoli: la valutazione dei servizi ecosistemici culturali per un modello di città circolare
Maria Cerreta, Eugenio Muccio, Giuliano Poli
- 297 Strategie operative per la valorizzazione e la resilienza delle aree interne: il Progetto R.I.P.R.O.VA.RE
Adriana Galderisi, Pierfrancesco Fiore, Piergiuseppe Pontrandolfi
- 317 Riabitare il patrimonio urbano ed edilizio dei territori interni: spazio digitale per servizi sanitari efficienti
Antonella Mami, Elvira Nicolini

- 337 Il riuso delle emergenze architettoniche dei centri minori come strategia di recupero per le aree interne
Francesca Ciampa, Patrizio De Rosa
- 357 Consumo di suolo e sequestro di carbonio nella Regione Sardegna: uno studio basato sull'utilizzo del *Normalized difference vegetation index*
Maddalena Floris, Corrado Zoppi
- 375 Un approccio *Sentinel 2a based* a supporto della pianificazione ed il monitoraggio delle infrastrutture verdi
Michele Grimaldi, Emanuela Coppola
- 393 Processi di *Parametric e Computational Design* per la definizione di strategie di *regenerative climate adaptive design* per il distretto di Secondigliano
Eduardo Bassolino, Francesco Palma Iannotti

**REINVENTING WASTESCAPES IN PORT CITIES.
A RESILIENT AND REGENERATIVE APPROACH TO PLAN NAPLES
AT THE TIME OF LOGISTICS**

Marica Castigliano, Paolo De Martino, Libera Amenta, Michelangelo Russo

Abstract

Port cities and metropolitan port territories are experiencing a profound transition as a consequence of radical spatial and governance changes mainly led by logistics' dynamics. Contemporary spaces between ports and cities have often become a collage of wastescapes: marginal territories resulting from the current uneven growth of port cities. This contribution develops a new methodological approach by stating that neglected spaces represent a precious resource to initiate circular and resilient regenerations of port cities through metabolic transformation processes. The article points out the wastescapes of the port of Naples as network of resources that allows decision-makers and urban planners to combine the logistical strategies and the enhancement of the port cultural heritage through synergistic interventions.

Keywords: port city, wastescapes, Naples

**REINVENTARE I WASTESCAPES NELLE CITTÀ PORTUALI.
UN APPROCCIO RESILIENTE E RIGENERATIVO ALLA
PIANIFICAZIONE DI NAPOLI AL TEMPO DELLA LOGISTICA****Sommario**

Le città e i territori metropolitani portuali stanno vivendo una profonda transizione come conseguenza di radicali cambiamenti spaziali e di governance guidati principalmente da dinamiche legate alla logistica. In molti casi, gli spazi contemporanei tra porto e città sono divenuti un collage di *wastescapes*: territori marginali derivanti dall'attuale crescita disomogenea delle città portuali. Questo contributo sviluppa un nuovo approccio metodologico sostenendo che gli spazi dismessi possono rappresentare una risorsa preziosa per avviare rigenerazioni circolari e resilienti nelle città portuali attraverso processi di trasformazione metabolica. L'articolo evidenzia i *wastescapes* del porto di Napoli come rete di risorse che consente a decisori e pianificatori di coniugare le strategie della logistica e la valorizzazione del patrimonio culturale portuale attraverso interventi sinergici.

Parole chiave: città porto, wastescapes, Napoli

1. The conceptualisation of a regenerative approach for wastescapes in port cities

Port cities have undergone profound changes since industrialization. Ports, cities and their regional hinterlands have become one single interconnected system, and a very complex and fragile territory. Today, global changes such as excessive land consumption, climate alteration, and the development of large-scale infrastructures are putting port cities and their natural and architectural heritage under pressure.

The contrast between port expansions and urban development has always characterised the coastal landscapes of many European port cities and beyond (Bruttomesso, 1993; Desfor *et al.*, 2010; Hein, 2011). It is in this liminal space, between the port and the city that spatial conflicts materialize because of a lively political friction between the infrastructural plans of the port authority and the urban policies of municipal institutions. Divergent goals and approaches of leading actors produce conflicts and deadlocks that turn spatially into physical borders, sectoral areas and social enclaves (Fig. 1). As a result, in many port cities, the areas where port and city physically meet have become a collage of disconnected pieces from a social, environmental, functional and economic point of view.

Fig. 1 – East Naples, 2017



Source: Paolo De Martino

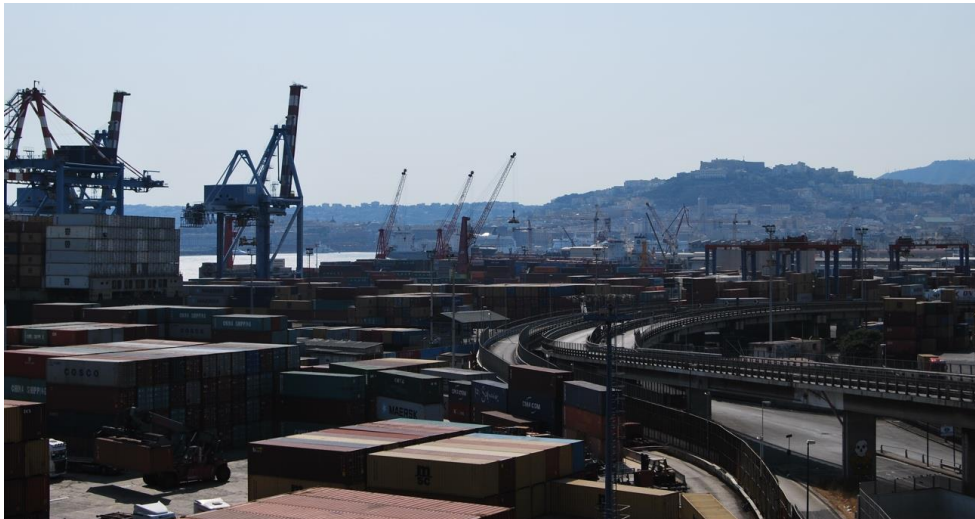
Therefore, the following contribution focuses on in-between and marginal territories, here defined as ‘wastescapes’ (Amenta and van Timmeren, 2018; REPAiR, 2018). The term ‘wastescape’ is directly linked to the concept of ‘urban metabolism’ (Kennedy *et al.*, 2011; van Timmeren, 2014; Wolman, 1965). Through this paper, the unsustainable role of neglected landscapes, considered as the inevitable outcome of linear metabolic flows of

urban transformation processes (Newmann, 1999), is pointed out. In order to propose a new development paradigm, the concept of urban metabolism is utilised to frame the urban dynamics as an interconnected and complex system of inputs (flows of materials and energy) and outputs (waste) (Kennedy *et al.*, 2011) that can lead the design process of cities in transition.

This paper understands wastescapes in the port city of Naples as a result of a linear process of an unequal growth, and as the aftereffect of the shrinkage between the port and the city which follow different logics and planning time-frames due to different political and economic agendas (Fig. 2). The proposed methodology aims at defining a regeneration strategy for the port city of Naples by implementing reuse practices through the reintroduction of wastescapes into circular urban metabolic dynamics (Girardet, 2008). As revealed by the in-between areas of Naples' city and port, wastescapes are often a mix of hard and paved logistic platforms, storage areas and buildings, oversized roads unfriendly for pedestrians and cyclist, but also a reserve of fragmented third landscapes (Clement, 2005) or even agricultural scraps.

Thus, by unravelling the unobserved potentials of wastescapes, their values and inherent strategic role, this paper argues that wastescapes of port cities should not be expelled from urban and port plans, on the contrary, they can be interpreted as a resource to trigger wider circular and sustainable regeneration of port cities. This perspective can lead towards the improvement of the quality of life for people living around the ports (AIVP, 2018).

Fig. 2 – Port of Naples, 2017



Source: Paolo De Martino

2. Developing a methodology to frame a resilient strategy in Naples

This paper sheds light on the regeneration pathways of Naples: a southern Italian port city with a metropolitan area of about three million inhabitants and still engaged today in port infrastructure expansion. Here, the development of the port has followed an unconventional path and, contrary to many European port cities such as Rotterdam and Barcelona – where port expansions have been the opportunity for the different authorities to rethink historic waterfronts and their surrounding areas – (Schubert, 2010), in Naples, this process had been not carried forward by the authorities. The port has grown without ever triggering significant urban and territorial regeneration.

In Naples, the spaces between port and city have been historically characterised by a profound interconnection of spaces and functions. Since the XIX century, it was not the case anymore with port and city institutionally planned as two autonomous entities in conflict for the use of land. The coastal landscape of Naples stands exemplary for how different actors find it difficult to define a sustainable coexistence of interests at the intersection of land and water. With a process started in 2006, port expansions related to logistics and a new container terminal are projecting the port beyond its traditional borders, defining new scales of relationships, contributing to both improving infrastructural features and making the port area separated from the city. This calls for greater attention to the spaces of relationships, pushing planning authorities, planners and scholars to re-interpret these territories as opportunities for territorial regeneration, and to define adaptive measures to the ongoing transitions. Indeed, ports and municipal authorities are today at the forefront of reinventing their relationship, with the opportunity to experiment novel approaches towards an improved and more circular urban metabolism.

Firstly, this article analyses the evolution of the spatial conflict between the port and the city of Naples. Furthermore, it describes the impacts of different institutional aims in defining the port-city relationship. Secondly, it introduces the urgency for a regenerative and more resilient approach as demonstrated by the contemporary debate and examples on the theme of the port-city region relationship. Thirdly, this paper introduces a methodological strategy organized in three points:

- the identification of wastescapes in the port-city coast of Naples to understand their spatial and governance nature. This refers to specialized areas, production and logistics, but also public areas and parks;
- the need to reconnect them to the coastline to re-establish a physical and cultural connection with the port. This system of spaces can play a key role as ‘urban laboratories’, to test innovative and resilient solutions;
- the use and the regeneration of wastescapes as compensation measures. This perspective, as happened in other European contexts, becomes an opportunity to plan port development in a dialogue with nature.

Finally, this contribution concludes by highlighting possible future pathways that shapes the network of wastescapes acknowledging the heritage of port soft values that can lead to new forms of integration between the port and the city, with positive outcomes in the port region context. Moreover, the proposed strategy frames a transferable methodology, suitable for other port cities where the historical urban and industrial palimpsest offer relevant opportunities to reinvent the relationships at the intersection of land and water.

3. Evolution of the conflicts between the port and the city in Naples

In Naples, the relationship between the city and the sea has been an important urban question throughout history. Since the city of Naples developed from its port area, the waterfront was its urban core. It was a transition area and an extraordinary gateway at the intersection of artifice and nature, where the city has traditionally represented itself on the edge between land and water (Fig. 3).

Fig. 3 – Port of Naples, 1700-1710



Source: Caspar Van Wittel. Wikimedia Commons

Similarly to other port cities, in Naples the port represented the main entrance to the urban area, the place of market and, at the same time, a public space meeting area for different cultures (Colletta, 2006). Since the second half of the XIX century, the relationship between the urban activities and the port infrastructure changed dramatically.

In this period, massive transformations modified the spatial structure of the port which became more and more specialized, consequently generating consistent impacts in social terms. In 1918, the autonomy of the port area improved with the establishment of the ‘Ente Autonomo del Porto e per la Zona Industriale di Napoli’, an administrative body in charge of developing the port as a ‘small-sized port city’. In addition, since the ‘60s, the transition to the modern port and its containerization process definitively interrupted the historical and functional integration of port and city; this was done with land reclamation that allowed the expansion of the port area eastward through the construction of new piers and docks. Therefore, the evolution of the conflict was enhanced with the physical closure of the port infrastructure, the new specialized docks and the rail system parallel to the coast. To remark this spatial separation, since the ‘30s a broad coastal road alongside the port fancies, emphasized the spatial and physical border of Port Authority’s area.

Despite the significant transformations of the XIX and XX centuries, the morphology of the new coastline – albeit functional to the new closed and autonomous port system – showed a

morphological connection with the urban fabric of the historical city centre. The city's main layout can be found in the spatial structure of the port where historical piers constitute the extension of the main urban routes perpendicular to the shoreline, defining paths that ideally connect the city to the sea. Hence, the shape and the placement of main docks and port buildings still underline a design criterion, deduced by the urban settlement, in the arrangement of port elements and functions.

Besides the morphological continuity between the monumental port and the city, the city of Naples and its port are still two separated entities. Since 1994, the Port Authority of Naples has become the institutional body in charge to program, coordinate and control port operations and development planning directions. From the regulatory point of view, indeed, the zoning plan of the Municipality of Naples identifies the port area as not involved in the urban regulation process. Thus, the separation of the planning tools entails a consequent divergence of priorities between the urban and port goals. The main conflict is currently prominent in the east side of the city, where a new port area for logistics is under construction. Admittedly, since the first half of the XX century, the port growth required room towards the only available area not yet heavily urbanized: the east side. Thus, the port commercial area extended over the new docks also taking advantage of retro-port areas. Therefore, eastern coast became the area of the expansion of port industries according to an overall model of regional port growth (Hoyle, 1996): refineries, oil storage sites, iron factories, etc. found valid positional features to prosper and fulfil the port demand. Today, in East Naples, the current spatial outcome is a wide fragmented area, an urban fringe resulting from the process of urban and industrial diffusion (Lucci and Russo, 2012). Here, contrasting visions and plans focus on the future development.

4. The perspectives of the Port Authority and the Municipality of Naples

In the last decades, institutional arrangements, multi-actors agreements, public meetings and academic debates have been promoting cooperation between the Port and the Municipality of Naples. A tangible example of this effort is represented by the "Advanced Node": a collaboration mostly between the Port Authority and RETE (association for port-city collaboration) which aims to reduce frictions in the areas of controversy, by promoting training actions, research and dissemination activities at a local level (1). Nevertheless, the Port Authority and the Municipality of Naples still approach the theme of the port city relationship from different perspectives as it is witnessed in official plans (urban plan and implementation plans – PRG and PUAs) and operational measures. The different development goals, being often conflictual, can hardly lead to common priorities of values and coordinated planning paths. Indeed, for many years the lack of an integrated and shared vision undervalued material and immaterial resources (e.g. functional zoning, spatial expansions, economic outlooks, citizens' trust in institutions, etc.) and it reduced the effectiveness of transformations. Nevertheless, in the last decade, the Port Authority and the Municipality are collaborating in discovering a common ground and thus negotiating scenarios built on the interplay of the two goals: the regeneration of the urban coast and the expansion of the port area. Even acknowledging the diplomatic efforts, the foundation of a promising institutional dialogue, and the good results achieved in some cooperations (public cultural events, design workshops and industry conferences), this paper aims at framing the conflicts still existing in plans and strategies of the city and port. On the one hand, the integration of the coastline with the historical city is a clear objective of the

current urban plan, even if weakly pursued by recent policies. On the other hand, the logistics challenge is being played in the east side and former industrial area of Naples (Castigliano *et al.*, 2018). In East Naples, more than the historical port area, the port represents an autonomous territorial enclave, within which a plurality of functions related to the movement of goods and people take place often detached from urban dynamics.

In 2009, the Municipality developed a draft plan that was outlined in the 2004 PIAU (Innovative Plan in Urban Areas) to rethink the waterfront area of San Giovanni a Teduccio – a small town absorbed in the Municipality of Naples in the early '30s and currently constituting the eastern coastal edge of Naples – as a consequence of an agreement protocol between the Ministry of the Infrastructures and Transports, the Municipality of Naples, the Port Authority and the Italian State Railway. The implementation plan (PUA) of 2009 for the area of San Giovanni a Teduccio, proposed a spatial integration between the city and the sea. The PUA, indeed, identified some important intervention strategies to integrate the port and the city: coastal walking paths, the construction of the Archaeological Park of the fort of Vigliena, the restoration of the Ex Corradini, the construction of a marina and a new university. The latter (built by the Federico II University in the Ex Cirio area) is the only realized project, while the other objectives, after more than ten years, seem completely expunged from the political debate about the future of Naples.

Moreover, this vision – based on a tangible desire of spatial integration between land and water – clashes with the one proposed by the Port Authority which seems more interested in the concept of connection from a functional and economic perspective. In fact, in order to be competitive in a globalized market, the Port of Naples is developing, in the eastern districts, a new container storage area and a new railway to reinforce the infrastructural links with inland logistics platforms. In the areas of Molo Flavio Gioia and Molo Bausan, the port of Naples settled the functional area of container handling and storage by taking advantage of the vicinity of the port access from the highway. Due to the lack of space on the coast, the Port Administrative Board decided to fill the wet dock Darsena di Levante in order to obtain a wide artificial platform on the sea. The construction process – that has been introduced in the port plan of 1958, officially confirmed in 2006 and started in 2011 – is still ongoing with delays also due to some strict environmental measures.

Thus, the port economic need is shaping the coast once again, and it is going to create a twofold urban issue. Firstly, it will change the relationship between the sea and the urban settlement of San Giovanni a Teduccio. Even if San Giovanni has historically been related to the expansion of factories, actually, the citizens are aware of the sea shoreline as an urban resource, especially in terms of potential public spaces that are absent in East Naples. Secondly, the logistics area will completely change the scenarios that have been developed by the Municipality in the last years (through the PUA of 2009 and other set of regulations for eastern areas reported in the urban plan as areas *in transition* called 'ambiti'). The urban visions of developing East Naples as a new resilient urban area – where to plan houses, services and public areas according to sustainable and ecological principles – have seriously been compromised. It is evident that the port shape and its flows dynamics are not being developed neither in an urban nor metropolitan scale. A common awareness of the urban waterfront resources in the outskirts, and a keen knowledge of the opportunity to take advantage of scattered inland logistics areas and hubs, should lead the port strategies to build networks of existing underdeveloped infrastructures, as well as designing the port area according to the urban form.

Nowadays, the Municipality and the Port Authority are collaborating to undertake shared decisions in order to reduce the disagreement on future perspectives. If this cooperation appears to be feasible on the west side of the urban port, close to the historical centre, we claim that the 'Eastern knot', where the logistics challenge is being faced, still seems to bring into play contrasting visions. The risk is that with the absence of common interests, the city and the port will be increasingly separated.

5. Towards a regenerative approach for wastescapes in port cities

The new port city scale of relations requires a broader and systemic approach to the theme of territorial transformation and urban regeneration to move towards an improved, and eventually circular, urban metabolism where material and territorial waste is reduced or possibly avoided.

Understanding and recognizing the spatial fractures and socio-economic fragilities of the territory is necessary in order to turn them into opportunities for a wider land-sea reconnection. This topic is supported also by the contemporary debate carried out as part of the Port City Futures initiative, a Leiden-Delft-Erasmus collaboration (www.portcityfutures.nl), which is 'exploring areas where port and city activities occur simultaneously and sometimes conflict'. It has been incorporated into the policies of many port cities in Northern Europe. Here, different local and national authorities, together with private partners, work together to achieve a twofold objective. On the one hand they aim to achieve the infrastructural and logistical efficiency of the port; on the other hand, they yearn to accomplish the restoration of the lost relationships with the city from a social, cultural and economic point of view.

As testified by the case of Stadshavens in Rotterdam, it is possible to reinvest in the regeneration of wastescapes, as instance on the creative reuse of abandoned areas between the port and the city. In fact, this happens in the RDM Campus (Fig. 4), a former shipyard in-between the city and the port of Rotterdam, where the municipality together with the port authority, has proposed the creation of a cluster of knowledge and innovation, which represents a return of the port back into the city (City of Rotterdam, 2007).

The RDM Campus today focuses on the port-related manufacturing industry with connected education and research programs. Another example is the M4H, located on the other side of the river Maas, which offers space for manufacturing companies, firms, and start up to establish their activities. Eventually, this area will develop in a mixed area with a balanced combination of houses and companies. The reuse of wastescapes, and precisely of old and vacant buildings, will play a crucial role in this new spatial development.

The port city of Amsterdam also represents an inspiring case where the new HavenStat municipality project envisages the construction of between 40000 and 70000 new houses in the port area. Here, themes such as the energy transition and circular economy become the opportunity for a new relationship between the port and the city. To do so, the unsolved topic of polluted and abandoned industrial areas is faced by reintroducing wastescapes once again back into the urban metabolism processes (Broto et al., 2012) by providing for novel meanings, added values and diverse functions. This occurs, as instance, in the northern area of Amsterdam, namely the 'De Ceuvel' site (Fig.5). This is another iconic example where a polluted port land, which was abandoned after ending its life cycle, has been regenerated and remediated through a process of phytoremediation and, at the same time, the space has been compatibly used by designers and creatives.

Fig. 4 – RDM Campus, Rotterdam 2017

Source: Paolo De Martino

Fig. 5 – De Ceuvel, Amsterdam 2017

Source: © Superbass. Wikimedia Commons

In fact, temporary houseboats have been placed on the site for a timespan of 10 years with the aim to give the soil back to the Municipality as a clean soil to be reused for diverse functions.

By considering the public perception of the port and its neighbouring areas, environmental and social degradation of port buffer zones have an important role in regeneration processes. In fact, the areas nearby ports are generally affected by soil and air pollution, noise, and even criminality. Moreover, people are generally not involved in port activities feeling as pushed away from this territory, in spite of their strong desire to re-establish a

connection with the sea. The areas comprised between city and port become easily territories just to be crossed by car mostly and not lived by pedestrians, thus mostly forgotten.

Therefore, several international organisations, such as RETE (Association for the Collaboration between Ports and Cities), ESPO (European Seaport Organisation), AIVP (the worldwide network of port cities) and LDE-portcityfutures are engaged in spatial, societal and economic transition of ports, promoting more socially and economically sustainable relationships between ports, cities and their regions. One example of initiatives proposed by the above-mentioned institutions is the Agenda 2030 by AIVP. The Agenda, by contributing to the global goals on sustainable developments, identifies possible strategies for a sustainable integration between port and city as a unique landscape, by treating the port as an urban space, by making the port visible to people and by finding solutions that could allow integration (AIVP, 2018). It is evident that wastescapes can be considered as innovative resources of port cities and their waterfront in multiple aspects, and more precisely to re-establish novel and meliorated urban metabolism processes.

6. Wastescapes in the port area: interlacing constellations of opportunities in Naples

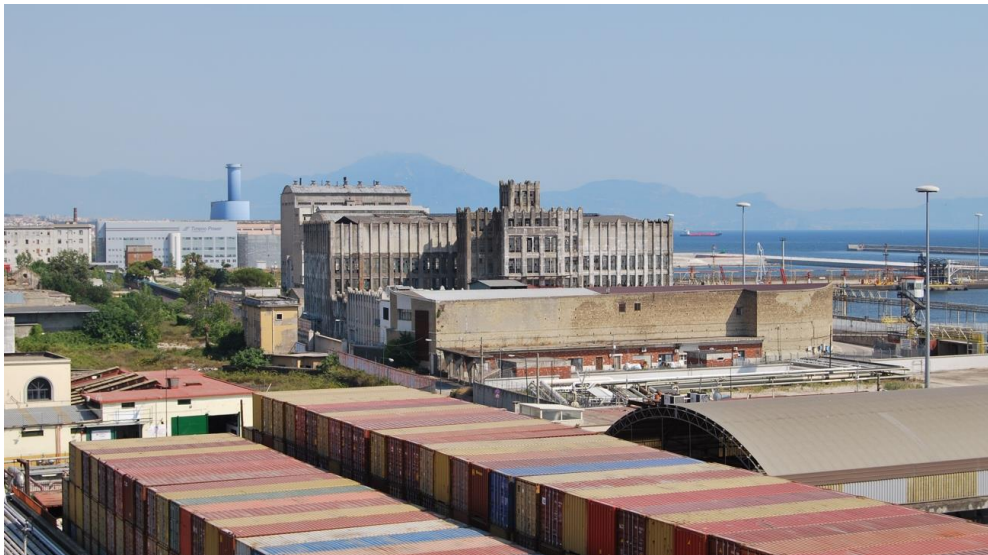
In Naples, the innovative strategies and solutions for the renewal of the port areas are few, and the different institutional aims and visions are far from building a shared and integrated desirable future for the urban coastline (Russo, 2014). Here, wastescapes constitute the results of the linear metabolism and actually the left-over in the development of the city. They are lands, architectures, docks, water surfaces, infrastructures widespread along the coast that are not suited anymore for the function for which they have been planned and realised, so they are available for new uses, meanings and values. Green empty areas, ex-industrial sites, abandoned port railway, historical buildings and docks are in a waiting condition: current neglected spaces contributing to damaging the perception of the port although making the port landscape appealing to be reshaped according to sustainable principles (Fusco Girard, 2013).

The energy theme is the focus of the Port Authority to achieve an environmental sustainability in port areas. Indeed, the Campania Regional Port System programmed the electrification of piers, and the installation of photovoltaic plants on the roofs. They also aim to reduce the environmental and noise pollution by obtaining the authorization to transform the petroleum dock in a GPL depot (Adsp Mar Tirreno Centrale, 2019). This aim is strictly related to one of the goals of the Municipality of Naples that is the regeneration of former industrial areas, specifically the former oil fields. In East Naples, some of these facilities are still working, while others are disused. Therefore, the urban and implementation plans proposed to renew this area transforming it into a living and working environment by enhancing the landscape and by regenerating the abandoned industrial heritage. Moreover, the idea is also to create new manufacturing, commercial and tourist attractions. Prior to these transformations, there is the need to remove oil from the city and from the port, including the pipelines with the aim to implement a safe and good living environment (Comune di Napoli, 2004; De Martino *et al.*, 2019). Nevertheless, regional and local policies did not draw operative solutions to fulfil this important aim.

The transformation of the oil storage system would have effects on both the city and the port. Indeed, the petroleum dock would give the opportunity to rethink the area of Vigliena, the polluted seashore next to the port. It is the access to the sea for the community of San

Giovanni a Teduccio, and it still keeps historical trails: the ruins of the fort built in the XVIII century, and the Cirio factory, a famous tomato canning industry abandoned since the '90s (Fig. 6). The buildings of the ex-Cirio are part of a project of conversion: large structures dedicated to laboratories and workshops for the construction, assembly and conservation of the theatrical staging that will support the San Carlo theatre in Naples. The project is the result of the 2007 agreement between the Port Authority, the State Property, the Municipality of Naples and the Campania Region. Nevertheless, it strongly contrasts with the port objective to transform the east wing of the port in a very dense logistics area.

Fig. 6 – Ex-Cirio factory, 2017



Source: Paolo De Martino

The empty areas in-between the port fences and the city are the elements where a new form of integration can be designed through new resilient public spaces. Urban voids characterised by the third-landscape (Clement, 2005) – the wild and biodiversity rich re-appropriation of urban lots accomplished by the nature – are fragmented buffer zones that separate the port infrastructures (mainly roads and railways) from the urban settlement.

In Naples, due to the high density of the built environment, those areas are few and distant from each other. However, they represent the opportunity for the construction of an ecological system. The area of 'Parco della Marinella' is long waiting to become a park according to the urban plan; the green areas surrounding the Aragonese towers should be integrated in a system of pedestrian and bike lanes as well. By widening those scenarios,

the mentioned areas are the resources where to plan the public spaces of reconnection between the port and the city.

In the port city landscape, different elements contribute in framing the image of the port city as it is perceived by people and, thus, as it should be preserved. The role of industrial buildings and docks in the regeneration of urban waterfronts defines a well-known approach that finds its principles in the acknowledgment of the port building environment as part of urban heritage (Bruttomesso, 1999). As testified by international cases (Meyer, 1999; Schubert, 2008; Hein, 2011, Porfyriou and Sepe, 2017), strategies based on reusing port buildings and areas imply that port activities and infrastructures move in peripheral areas, leaving the urban shoreline. This is not the case of Naples.

Fig. 7 – Mercato Ittico, 2016



Source: Paolo De Martino

However, Naples shows opportunities to rethink the concept of the waterfront regeneration also through a cultural-led regeneration. On the one hand, in the city of Naples, many private and public initiatives are contributing to revitalize the metro infrastructural systems ('metropolitana dell'arte') and to promote participatory cultural activities in abandoned or underused buildings nearby or within the port area (e.g. the activities promoted by 'friends of molo San Vincenzo' and the initiatives of the 'N.EST theatre') witnessing an already existing committed community. On the other hand, empty buildings in the port area need to be recycled (Fabian and Munarin, 2017) to become part of the port city regenerative system. The architectural heritage that stands as phantom of a wealthy port past consists of historical buildings that are not anymore part of the port, neither the city. They were built in different historical periods, thus they can be considered as monuments of a collective memory: the military defence, in the XVI century (Molo San Vincenzo), the early port communities' headquarter in the XVII century (Palace of the 'Deputazione della Salute' or Palazzo Immacolatella), the late XIX century industrial production (ex-Corradini factory), and the trading economies of the late '50s (ex Magazzini Generali) with the public market area (Mercato Ittico) (Fig. 7).

Besides historical buildings and the neglected areas which need to be recovered, the port heritage is also made of suggestive interactions between the built environment and its inhabitants with the sea. Water surfaces as the Darsena Acton, long strips of land in the sea as the pier Molo San Vincenzo, historical dry docks as the ones at Molo del Carmine: they all are, in different ways, part of the port city wastescapes although they preserve the local values of the port city atmosphere. They have lost their main function, though they are suspended in-between the port global goals and the city inoperative proposals.

7. Conclusions

The history and the recent scenarios determined by the Municipality and the Port Authority make it evident that the port and the city of Naples are meant to coexist in a dense coastline. The last few years have certainly seen improvements in the construction of a dialogue between the different authorities also thanks to the new port presidency. However, this has not been channeled into a real process of renewal between the port, the city and the region. The port expansion in Levante, which took over from a tourist port project, is in a waiting condition, the regeneration of the historic waterfront is proceeding very slowly and the uncertainties linked to the contemporary pandemic situation make the construction of future scenarios even more fragmented. Thus, in order to pursue forms of integration between the two systems – as the national and European policies state – port wastescapes become the opportunities, the trigger areas, of a regenerative strategy. The future visions have to create new form of spatial, social and economic integration defining how to interlace scattered empty spaces, ex-industrial platforms, historical buildings, and obsolete docks towards a resilient and sustainable urban transition.

Therefore, we believe that the strategic role of the port – as urban infrastructure – in the city asks for new possible strategies. Firstly, the port must be framed in a multiscalar approach by decision-makers. The recent national policies on port clustering offer some opportunities to pursue this goal by framing the port on a regional scale. This allows urban planners and economists to think about new forms of integrations between different flows and between production and logistics, bringing into play operational areas located in the metropolitan region. Starting from the re-interpretation of abandoned or underused landscapes becomes a strategic device to be used at different scales, rethinking the nature of the wastescapes.

At a local scale, today the port of Naples experiences two different conflicting relationships: one with the historic city, the other with the eastern city. In the first instance, identifying new forms of coexistence means rebuilding new morphological relationships with the historic city, its urban palimpsest and persistence. In this perspective, the Neapolitan attitude towards a slow transformation preserved the relevant heritage of the port area – constituted by representative buildings, warehouses, piers and dry docks still existing nowadays although they have been mainly underused or abandoned. Thus, new visions for the port city of Naples should capitalise from its historical and recent past and upgrade the cultural and ecological approach in regeneration strategies by focusing on networked systems of resources. This could be achieved through the redevelopment of in-between spaces, reintroducing them in the system of values that characterise the port landscape.

On the other hand, rethinking the relationship between the port and the city in the eastern area means identifying new opportunities in the contemporary porous peripheral part of the city using the new port expansion planned by the Port Authority as an opportunity to

reshape the nature of an operational port in a fragile city like Naples. Here the logistics flows overlap to a highly vulnerable territory such as the district of San Giovanni a Teduccio that was historically conceived by local and national planning as an industrial periphery. Today, the citizens of marginal areas claim new public spaces that can be designed in the framework of environmental compensation measures, reinterpreting the spatial relationship between the industrial past and the system of wastescapes that characterises the port infrastructure and its urban edge. New planning and design tools can be framed by understanding the nature of wastescapes, their condition and their potential role within the urban settlements. This is aimed at creating a network of spaces that could redefine the relationships between the port and the city by allowing a meliorated accessibility and a new spatial quality of coastal spaces. Therefore, new forms of living and production could build new scenarios for contemporary living the boundaries of the city.

It is clear that the construction of these scenarios challenges governance models. In fact, current policies, in reiterating the strategic role of ports on a national scale, effectively delegate the port planning dimension to local authorities. However, this strategic vision cannot be entrusted to the Municipality or Port Authority only, since this belongs to a wider, collaborative level of planning. This approach would also help in the definition of an effective regional port plan that should not result from the summation of individual port plans – as it is today. Conversely, by looking at the systemic relationship with the other nodes of the region and, according to this, a port plan on a regional scale should also implement courageous decisions for the distribution of logistics activities in the several nodes – also inland – of the logistics network.

Notes

- 1) Autorità di Sistema Portuale del Mar Tirreno Centrale. Presentazione Accordo “Nodo Avanzato” Stazione Marittima, Giovedì 27 settembre, ore 14.30 Sala Calipso. URL: <https://porto.napoli.it/presentazione-accordo-nodo-avanzato-stazione-marittima-giovedi-27-settembre-ore-14-30-sala-calipso/>. Last access 2019-06-05

Attributions

All the parts of this article have been developed and approved by all the authors. However, the paragraphs have been written as follows: §1 by Libera Amenta; §2 by Michelangelo Russo; §3 and §5 by Paolo De Martino; §4 and §6 by Marica Castigliano; §7 by all the authors.

References

- AIVP (2018), *AIVP Agenda 2030. 10 goals for sustainable port cities*. https://66ac397d-12db-434e-bc80-8e2a03c755f7.filesusr.com/ugd/1032fc_d1019cfb4455437d8db452e0872647cd.pdf.
- AdSP, Autorità di Sistema Portuale del Mar Tirreno Centrale (2019), “Pietro Spirito: il nostro piano per un porto sostenibile. l’impegno per accelerare sulle opere e non solo. dai dragaggi, alla ZES, alle connessioni materiali e immateriali, in attesa della semplificazione amministrativa”. <https://adsptirrenocentrale.it/pietro-spirito-il-nostro-piano-per-un-porto-sostenibile-limpegno-per-accelerare-sulle-opere-e-non-solo-dai-dragaggi-alla-zes-alle-connessioni-materiali-e-immateriali-in-attesa-della-sem/>.

- Amenta L., van Timmeren A. (2018), "Beyond Wastescapes: Towards Circular Landscapes. Addressing the Spatial Dimension of Circularity through the Regeneration of Wastescapes". *Sustainability*, vol. 10, n. 12, p. 4740.
- Broto V. C., Allen A., Rapoport, E. (2012), "Interdisciplinary Perspectives on Urban Metabolism". *Journal of Industrial Ecology*, vol. 16, n. 6, pp. 851-861.
- Bruttomesso R. (ed.) (1993), *Waterfronts: A New Frontier for Cities on Water*. Centro Internazionale Citta D'Acqua, Venezia, Italy.
- Bruttomesso R. (1999), *Water and industrial heritage: the reuse of industrial and port structures in cities on water*. Marsilio, Venezia, Italy.
- Castigliano M., De Martino P., Russo M. (2018), "Napoli: relazioni irrisolte tra porto e città". *Urbanistica Informazioni*, n. 278-279, pp. 43-45.
- Clément G. (2005), *Manifesto del Terzo paesaggio*. Quodlibet, Macerata, Italy.
- Colletta T. (2006), *Napoli, città portuale e mercantile: la città bassa, il porto e il mercato dall'VIII al XVII secolo*. Kappa, Roma, Italy.
- Comune di Napoli (2004), *Variante generale al Prg*.
- De Martino P., Hein C., Russo M. (2019), "Naples Beyond Oil. New design approaches in the era of retiring landscapes". *Portus plus, the online magazine of Rete*, Special focus n. 37.
- Desfor G., Laidley J., Stevens Q., Schubert D. (eds.) (2010), *Transforming urban waterfronts: fixity and flow*. Routledge, London, UK.
- Fabian L., Munarin S. (ed.) (2017), *Recycle Italy, Atlante*. LetteraVentidue, Siracusa, Italy.
- Fusco Girard, L. (2013), "Toward a Smart Sustainable Development of Port Cities/Areas: The Role of the "Historic Urban Landscape" Approach". In *Sustainability*, n. 5, pp. 4329-4348.
- Girardet H. (2008), *Cities, people, planet: Urban development and climate change*, 2nd ed. John Wiley, Chichester, UK.
- Hein C. (ed.) (2011), *Port Cities: Dynamic Landscape and Global Networks*. Routledge, New York, USA.
- Hoyle B. S. (ed.) (1996), *Cityports, coastal zones, and regional change: international perspectives on planning and management*. Wiley, Chichester, UK.
- Kennedy C., Pincetl S., Bunje P. (2011), "The study of urban metabolism and its applications to urban planning and design". *Environmental Pollution*, vol. 159, n. 8-9, pp. 1965-1973.
- Lucci R., Russo M. (2012), *Napoli verso Oriente*. Clean, Napoli, Italia.
- Meyer H. (1999), *City and Port: Urban Planning As a Cultural Venture in London, Barcelona, New York, and Rotterdam: Changing Relations between Public Urban Space and Large-Scale Infrastructure*. International Books, Utrecht, the Netherlands.
- Newman P. W. G. (1999), "Sustainability and cities: Extending the metabolism model". *Landscape and Urban Planning*, n. 44, pp. 219-226.
- Porfyriou H., Sepe M. (ed.) (2017), *Waterfronts revisited: European ports in a historic and global perspective*. Routledge, New York, USA.
- REPAiR (2018), *Process Model for the Two Pilot Cases: Amsterdam, the Netherlands & Naples, Italy. Deliverable 3.3*. EU Commission Participant Portal. Brussels. Grant Agreement No 688920." <https://doi.org/55988e03-ea52-406d-a18f-57ff00630fbd>
- Russo M. (2014), "Harbour Waterfront: Landscapes and Potentialities of a Contended Space", *TRIA*, n. 13.

- Schubert D. (2008), “Transformation Processes on Waterfronts in Seaport Cities – Causes and Trends between Divergence and Convergence”. In Waltraud K., Gandelsman-Trier M., Wildner K., Wonneberger A. (eds.) *Port Cities as Areas of Transition – Ethnographic Perspectives*. De Gruyter, Berlin, Germany, Boston, USA.
- Schubert D. (2010), “Waterfront Revitalizations: From a Local to a Regional Perspective in London, Barcelona, Rotterdam, and Hamburg”. In Desfor G., Laidley J., Stevens Q., Schubert D. (eds), *Transforming urban waterfronts: fixity and flow*. Routledge, London, UK.
- van Timmeren A. (2014), *The Concept of the Urban Metabolism (UM)*. Delft University of Technology, Faculty of Architecture, Department of Urbanism, Chair Environmental Technology & Design, Delft, the Netherlands.
- Wolman A. (1965), “The Metabolism of Cities”, *Scientific American*, vol. 213, n. 3, pp. 178–90.

Marica Castigliano

Department of Architecture, University of Naples Federico II
Via Forno Vecchio, 42 – 80134 Napoli
email: marica.castigliano@unina.it

Paolo De Martino

Department of Architecture, Faculty of Architecture and the Built Environment, Delft University of Technology
Julianalaan 134, 2628 BL Delft, Netherlands
Department of Architecture, University of Naples Federico II
Via Forno Vecchio, 42 – 80134 Napoli
email: p.demartino@tudelft.nl

Libera Amenta

Department of Architecture, University of Naples Federico II
Via Forno Vecchio, 42 – 80134 Napoli
Department of Urbanism, Faculty of Architecture and the Built Environment, Delft University of Technology
Julianalaan 134, 2628 BL Delft, Netherlands
email: libera.amenta@unina.it

Michelangelo Russo

Department of Architecture, University of Naples Federico II
Via Forno Vecchio, 42 – 80134 Napoli
email: russomic@unina.it

