

TeMA

Journal of
Land Use, Mobility and Environment

This special issue collects a selection of peer-review papers presented at the 8th International Conference INPUT 2014 titled "Smart City: planning for energy, transportation and sustainability of urban systems", held on 4-6 June in Naples, Italy. The issue includes recent developments on the theme of relationship between innovation and city management and planning.

Tema is the Journal of Land use, Mobility and Environment and offers papers with a unified approach to planning and mobility. TeMA Journal has also received the Sparc Europe Seal of Open Access Journals released by Scholarly Publishing and Academic Resources Coalition (SPARC Europe) and the Directory of Open Access Journals (DOAJ).

INPUT 2014

papers selected

Smart City

planning for energy, transportation
and sustainability of the urban system

SMART CITY

PLANNING FOR ENERGY, TRANSPORTATION AND SUSTAINABILITY OF THE URBAN SYSTEM

Special Issue, June 2014

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TeMA. Journal of Land Use, Mobility and Environment offers researches, applications and contributions with a unified approach to planning and mobility and publishes original inter-disciplinary papers on the interaction of transport, land use and environment. Domains include engineering, planning, modeling, behavior, economics, geography, regional science, sociology, architecture and design, network science, and complex systems.

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This special issue of TeMA collects the papers presented at the 8th International Conference INPUT 2014 which will take place in Naples from 4th to 6th June. The Conference focuses on one of the central topics within the urban studies debate and combines, in a new perspective, researches concerning the relationship between innovation and management of city changing.



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EIGHTH INTERNATIONAL CONFERENCE INPUT 2014

SMART CITY. PLANNING FOR ENERGY, TRANSPORTATION AND SUSTAINABILITY OF THE URBAN SYSTEM

This special issue of TeMA collects the papers presented at the Eighth International Conference INPUT, 2014, titled "Smart City. Planning for energy, transportation and sustainability of the urban system" that takes place in Naples from 4 to 6 of June 2014.

INPUT (Innovation in Urban Planning and Territorial) consists of an informal group/network of academic researchers Italians and foreigners working in several areas related to urban and territorial planning. Starting from the first conference, held in Venice in 1999, INPUT has represented an opportunity to reflect on the use of Information and Communication Technologies (ICTs) as key planning support tools. The theme of the eighth conference focuses on one of the most topical debate of urban studies that combines , in a new perspective, researches concerning the relationship between innovation (technological, methodological, of process etc..) and the management of the changes of the city. The Smart City is also currently the most investigated subject by TeMA that with this number is intended to provide a broad overview of the research activities currently in place in Italy and a number of European countries. Naples, with its tradition of studies in this particular research field, represents the best place to review progress on what is being done and try to identify some structural elements of a planning approach.

Furthermore the conference has represented the ideal space of mind comparison and ideas exchanging about a number of topics like: planning support systems, models to geo-design, qualitative cognitive models and formal ontologies, smart mobility and urban transport, Visualization and spatial perception in urban planning innovative processes for urban regeneration, smart city and smart citizen, the Smart Energy Master project, urban entropy and evaluation in urban planning, etc..

The conference INPUT Naples 2014 were sent 84 papers, through a computerized procedure using the website www.input2014.it . The papers were subjected to a series of monitoring and control operations. The first fundamental phase saw the submission of the papers to reviewers. To enable a blind procedure the papers have been checked in advance, in order to eliminate any reference to the authors. The review was carried out on a form set up by the local scientific committee. The review forms received were sent to the authors who have adapted the papers, in a more or less extensive way, on the base of the received comments. At this point (third stage), the new version of the paper was subjected to control for to standardize the content to the layout required for the publication within TeMA. In parallel, the Local Scientific Committee, along with the Editorial Board of the magazine, has provided to the technical operation on the site TeMA (insertion of data for the indexing and insertion of pdf version of the papers). In the light of the time's shortness and of the high number of contributions the Local Scientific Committee decided to publish the papers by applying some simplifies compared with the normal procedures used by TeMA. Specifically:

- Each paper was equipped with cover, TeMA Editorial Advisory Board, INPUT Scientific Committee, introductory page of INPUT 2014 and summary;
- Summary and sorting of the papers are in alphabetical order, based on the surname of the first author;
- Each paper is indexed with own DOI codex which can be found in the electronic version on TeMA website (www.tema.unina.it). The codex is not present on the pdf version of the papers.

SMART CITY PLANNING FOR ENERGY, TRANSPORTATION AND SUSTAINABILITY OF THE URBAN SYSTEM Special Issue, June 2014

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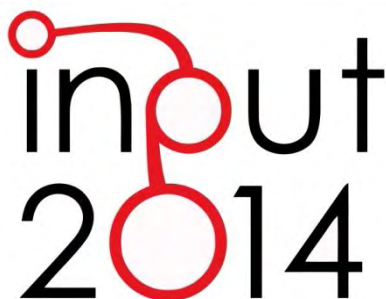
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SPECIAL ISSUE

Eighth International Conference INPUT
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of the Urban System

Naples, 4-6 June 2014



CITY/SEA SEARCHING FOR A NEW CONNECTION

REGENERATION PROPOSAL FOR NAPLES WATERFRONT LIKE
AN HARBOURSCAPE: COMPARING THREE CASE STUDIES

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ABSTRACT

The port is a strategic area of transition, where it is possible to perceive the territory-landscape and the urban front. However it lost its urban character, gradually becoming an high specialized independent machines, a sectorial infrastructure divided from the city: this phenomenon has created increasingly socio-economical marginalization. Within a double view, lengthwise and transverse, we can describe the port as a space closed to the city and as an unfathomable barrier for the transverse flows that previously connected the waterfront to the city.

The paper examines the case study of Naples, where the port expansion continues to grow without any integration with other parts of the city, distorting its "urban area" role, establishing its independence and making urban system compatibility conditions even weaker. The functional and physical division increases the perception of the port as a barrier rather than a filter.

Turning the sense of these conditions aims at rethinking waterfront as a public space, a place where integration and specialization spaces become new open and accessible spatial devices. In some contemporary European and American cities (Aalborg, Oslo and Toronto) we could see the port as multifunctional system, an interdisciplinary project that creates urban spaces integrated to the city and that allows the coexistence of different uses. The project of a new public space between the sea and the hinterland could involve all these conflicting functions creating, with different strategies, a potential multifunctional landscape. In Naples as well, where the waterfront is still waiting to be re-connected with the story of the city itself.

KEYWORDS

Harbourscape, waterfront, regeneration

1 HARBOURSCAPE BETWEEN SPECIALIZATION AND PUBLIC SPACE

1.1 TWO KEY NOTIONS

Talking about urban waterfronts and port areas, landscape and public space is a key notion in a contemporary debate about cities.

The port is an area of transition, a strategic area where the city becomes landscape. The port infrastructure turns into an access device, a place where it is possible to perceive the territory-landscape, the shore line and the urban front, a line with different dimensions but, at the same time, an incredible depth.

In the past, port areas have represented an amazing public space for the city. However, in the course of time, they lost their urban character, gradually becoming high specialized independent machines and taking out every activity and every function not essentially related to their internal function.

Today the port area has become a sectorial infrastructure divided from the city, that creates marginalization and urban blight, not only in its proximity, but also next to the infrastructures that connect and, at the same time, divide the city from its waterfront.

In the contemporary¹ European city we could see the port as multifunctional system, an interdisciplinary project that creates urban spaces integrated to the city and that allows the coexistence of different uses. The project of a new public space between the sea and the hinterland could involve all these conflicting functions

Integration and cross-sectorial strategies are the keywords for a different concept of these areas as a landscape and a public space. We need to extend the *multifunctional landscape*² concept to the port's waterfront and reconfigure it working on any material that links, on a larger scale, its identity to a territorial government.

The port is, potentially, landscape and public space: its shape, its position, its history, its shore line connection, its nature of a public space as an extension of the city into the sea, define its social and urban character.

1.2 A DOUBLE NATURE AND A DOUBLE INTERPRETATION

We can think the port area as an *independent machine*, regulated by laws and rulings into his spatial and authority enclave, but also as a *part of the city*, as a natural extension of spaces and fabrics that characterize the urban morphology.

We can read the port of the contemporary city with a double view: lengthwise and transverse. The port's waterfront combines specialized areas that lost the characteristics of a place, sectorial but still relevant rationality remains and irregular zones, and contemporary city's critical and potential materials in need to be understood through a perceptive and functional interpretation of spaces.

¹ From the 1980s a different integration to the existent city throughout the remodeling of port areas was really frequent. Examples like the Moll de la Fusta in Barcelona, the London Docklands, the Amsterdam Eastern Docklands, the Kop Van Zuid in Rotterdam and the Hafen City in Hamburg, prove the amazing urban potential of the waterfront as an opportunity of urban and social regeneration and of reconstruction of integrated parts of the city.

² Multifunctional landscape is a concept related to ecosystems, where sometimes the ecological function has to become compatible to different and usually incompatible uses. These type of studies are usually agricultural or – when working on the city – greenways oriented, especially in the US landscape, as structures “planned, designed and managed for multiple purposes including ecological, recreational, cultural aesthetic or other purposes compatible with the concept of sustainable land use”. (Ahern J. F., 2002).

Lengthwise, because the port is a space closed to the city, between its enclosure and the sea. It is an unfathomable zone organized on the basis of connections between different parts, areas, elements, buildings, characterized by functional reasons often without any link to the urban context, except for the infrastructure that allow the access and the crossing of the internal space. The harbor enclosure has monitored access and imposed direction of travel that define – lengthwise – an inner organization of linear series of volumes, of enclosures and buildings, describing the urban waterfront as a composition of large buildings, linear infrastructure and functional centers.

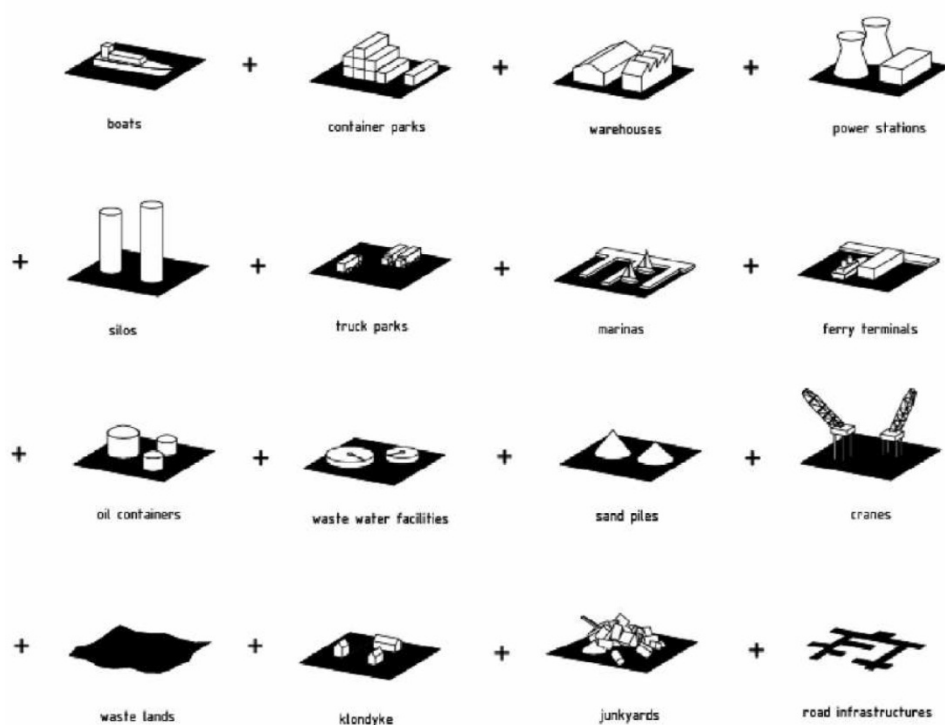


Fig. 1 The Industrial Waterfront – a mono functional structure but with an astonishing wealth of typologies

Lengthwise, the harbor subdivision works on the architectural perception of sequences: maritime station, support facilities, Ro-Ro handling platforms, warehouses, offices, silos, military buildings, shipbuilding, dry docks, large tow trucks and gantry cranes, cargo platforms, multifunctional and multicolored buildings. Lengthwise, the port is an infrastructure governed by a sectorial rationality and efficiency logic.

The historical port – as a natural waterfront extension – was a place of social, public and commercial activities, with no distinction between public and specialized spaces.

The perception of the waterfront as an open and public space was modified permanently by its progressive strengthening and expansion, creating an unfathomable barrier for the transverse flows that previously connected the waterfront to the city. This created a city-port dualism, from a morphology and transformation process point of view.

The functional and physical division increases the perception of the port as a barrier rather than a filter. The port zones are now unfathomable industrial and manufacturing enclosures, large platforms isolated from the context and crossed by railways, viaducts and highways, full of logistical platforms and large parking lots.

Turning the sense of these conditions aims at rethinking waterfront as a public space. A place where integration and specialization spaces become new open and accessible spatial devices, able to host urban related functions, not only specialized ones, with a project that works on hidden layouts and potential spaces, to reinvent the continuity and the identity of the city.

The integration between these two dimensions is related not only to the port morphology, but also to a different concept of uses and functions, rethinking the port waterfront as an urban regeneration “uncommon machine”, as a landscape infrastructure, as an accessible public space system integrated to the city.

The port-city interface doesn't have to be restricted to the redesign of specialized area edges, but has to orient the project for the port functional areas, for its spaces and urban infrastructure, outsourcing some parts if necessary.

The *harbourscape* concept, analyzed in the following paragraph, is an history and urban culture meeting place, characterized by attractive and public uses; a space that have a strategic place in the urban territory and that give an identity to this part of the city thanks to the perceptive and functional integration between the environmental part and its historical footprint.

2 CASE STUDIES

2.1 NAPLES: AN HARBOURSCAPE SEARCHING FOR ITS FOUNDING VALUES

Harbourscape emphasizes the idea of a city characterized by the relationships between the historical layout, its urban identity and landscape, as a city palimpsest. A similar neologism is used describing the later mentioned waterfront regeneration project in Aalborg by Hans Kiiib³.

Identifying the port with the landscape and with historical images, means that the waterfront is not an “uncommon machine” anymore, but a part of a larger system that includes territorial and environmental components: this slip of meanings transforms the prospective of a landscape components recycle.



Fig.2 Lengthwise functions

The Naples port is a point of view where it is possible to look up to the environmental landmark, the Vesuvius and the Gulf of Naples (from Posillipo to Sorrento coast); but it is also the fabric of a stratigraphic city, with its monumental front and its urban architectures. It is important to rethink specific waterfront functions and their accessibility, creating “functional platforms” like spine paths and spaces overlooking the

³ Kiiib, H. (2007), *Harbourscape*, Aalborg University Press, Aalborg.

sea, where the functions are mixed and not specialized, the enclosure is not interrupted, like Maritime station and local passengers docks: public spaces that – like railway and subways stations – represent big attractors with different flow types.

It is possible to create and improve a “water community” working on lengthwise functions and city morphology, using different functions able to create new accessibility from the city. This community – meant as a community interested in the waterfront requalification– could be able to act on the port area revitalization, with the actual engagement of different stakeholders.

Traditionally, the lengthwise direction – focused on the port-system – is characterized by companies’ interests and entrepreneurial subjects. The transverse direction inverts this perspective, connecting the public and private sector. The main problem still remains a Port Authority largely influenced by ship owners and other subjects, unfavorable to the port opening to the surroundings and to a mixed and porous layout. The port is still a contented space, sector managed in opposition to a wide opening, to a re-discover of identity values, to an actual multifunctional role.

In addition, the port expansion continues to grow without any integration with other parts of the city, distorting its “urban area” role, establishing its independence and making urban system compatibility conditions even weaker.

In the last 20 years, a development prospective has been carried on, with the hypothesis of large infrastructural works. In opposition to the port enlargement there is a less sustainable scenario, related to the vehicular congestion problem that could be determined on the back of the port, close to the other regional logistics platforms. This could create a progressive breaking with the urban fabric and the degeneration of the spaces near the specialized port enclosure.



Fig. 3 The port enclosure

Without a project, the port machine keeps on going, creating problems not only for the potential port-city integration, but also for minimal conditions of mutual compatibility.

However, in an integrated system vision, Regione Campania developed il Progetto per la Portualità Turistica (2003), related to the entire Campania riverside, spacing from Garigliano river estuary to Sapri port, including the harbour of Torre Annunziata, Castellammare, Campi Flegrei, etc. The gulf of Naples is at the core center of this network, claiming for its environmental and cultural characteristics. Primary goal of the Project will be the recovery of local ports, with their facilities, services, the enhancement and the expansion

of maritime inter-connections, the creation of new boat points, in a complex design in order to rationalize mooring system.

2.2 THE HARBOURSCAPE PERSPECTIVE AND PARADOX: AALBORG (DENMARK)

In the city of Aalborg, part of the Waterfront Communities⁴, the port is, at the urban scale, an interesting meeting between the town and the fjord landscape/sea, representing an interface between the local life and the rest of the world, an *Harbourscape*, as in the words of Hans Kiiib, who studied this case. Since 2005 a series of workshops and conferences at Aalborg University were made, to find a strategy to give to the city new public spaces, recycling disused port areas. The aim was to develop visionary concepts and design proposals, emphasizing the development and the regeneration of the waterfront in a multiscalar vision. Four central themes were presented, summarizing the challenges for the twin-city waterfront development: the “multifunctional programming”, “The Harbor as the Core Urban Space”, “The Harbor as a Big Stage and a Public Domain of the Fjord-Side Town”, and “Designing Ten Public Domains along the Edge of the Fjord”. The regeneration process originated from a comprehensive understanding of the history of the genuine landscape of the waterfronts, developing the unique qualities of the existing architectural typologies, and providing a range of conceptual models for alternative waterfront development to recreate a new waterfront-city integration. The key point of the project was to transform the harbor from a privatized industrial zone into a public domain for the citizens, guaranteeing the population to continue its everyday life and activities.

During the workshop, two teams among the others presented unique conceptual developments, working on a sort of reverse thinking in a paradox approach: the ‘Spine’ and the ‘Bridging’ project. The paradox is that Aalborg city consists almost exclusively of one typology of urban structures and buildings, a homogenous city with a multitude of programs. At the harbor, on the other hand, there are many different typologies, but only one industrial program. This means that the number of typologies is not related to the number of programs and that the harbor can be an opportunity to create different typologies for the inner city.

The Spine project approaches firstly urban life, secondly urban spaces, and finally the edge and buildings along the harbor, not treated as building-volumes, but as edges and frames for the public space, every spaces is modelled on urban life conditions and on providing space for life and contact between inside and outside, the public and the private sphere.

In the Bridging Project they appoint larger areas with recreational purposes, parks and public facilities, using a big amount of un-restored buildings (a surplus landscape) for cultural applications, galleries, temporary functions as summer restaurants, concert halls and other types of events, as a cultural magnet.

Using the hybrid bridge as a metaphor, they connected a traditional economy to the new one and merge traditional private urban spaces with new types of public domains, basing the development of the city on knowledge and culture instead of industry.

2.3 CORE CITY WATERFRONT AND FJORD CITY: OSLO (NORWAY)

The redevelopment of Oslo’s waterfront moves from the need to give back the waterfront to the city and this was made possible by a strategic vision based on a regional scale that brought to the outsourcing of the industrial port.

⁴ The project aims to improve waterfront development in nine gateway cities around the North Sea. It will be implemented along three themes: develop a learning network; meeting strategic objectives; setting standards for urban and social design quality. Specific focus will be laid on sustainability and social inclusion.

The accessibility to the waterfront as a public urban area was realized through the redevelopment of spaces partly occupied by still operative and vital infrastructure installation (port, railways and road). This operation allowed reestablishing a contact between the citizens and the waterfront, as a multi-uses working machine but also as an actual public space of the city.

Three main interventions encompassed the social and physical transformation of the contemporary city: the *Festningstunnelen*, new district in place of industrial manufacture like of Aker Brygge and new important architecture as place of interest.

At the end of 1970s the old arterial roads were saturated, the entries to the inner city and the center itself were severely strained by cars: a comprehensive solution was proposed leading traffic under the ground. The *Festningstunnelen* (opened in 1990) was a key project to reduce the traffic load and improving the environment in the city center. It also made the western waterfront more attractive by overcoming its "isolation" from the urban core.

Aker Brygge was the site of city's largest industries and was the first out of 16 industrial areas in Oslo that had to be converted. After an architectural competition in 1982, the pier was transformed into a dwelling area, characterized by exclusive housing with an articulation of public, semi-public and private spaces: the concept was "City Collage" with mixed uses. The public and private partnership was essential for financial investments to realize the new district.



Fig. 4 Befor and after the project of the waterfront

The New Opera House project, located in Bjorvik in addition to two other cultural buildings close to it, the Munch Museum and the new library building, is at the center of the project of "spectacularization" of the waterfront. New attractors were positioned in a symbolic way as a new core of the city. One of their main intentions was to provide an open space between the waterfront and the city behind, guaranteeing to eastern neighborhoods a new access to the water. As already mentioned, in order to reach that goal a series of heavy installations had to be removed: port installation needed to be relocated also from the eastern waterfront.

In addition to the program for the planning and for assessment process realized until 2008, the City Council adopted The Fjord City plan. The development plan represents the attempt to consider regeneration of the waterfront as a process that involves the all fjord coast requiring a global vision.

The waterfront promenade will be one of the key attractions and will provide public access to the sea. It will be open to all and attract a broad group of users thanks to its universal design and rich range of activities and recreational facilities.

The fjord tram will ensure good access for all to the Fjord City and its functional and symbolic effects will help to make the waterfront, parks, streets, plazas, commons and other open areas more accessible to the public.

2.4 WATERFRONT RECOVERY AND PORT NEW LIFE WITHIN THE CITY FUTURE: TORONTO (CANADA)

Lake Ontario, after a century of de-industrialization and industrial pollution, needed to be rethought in its relationship with the city and the inhabitants. Toronto the main city of the Ontario region is one of the most involved in redevelopment.⁵ During the last decades five districts of the waterfront of the wider designated waterfront area (DWA) of Toronto, were interested by a redevelopment policy through a plan for environmental improvements, economic activity and overall enhancement of quality of life.

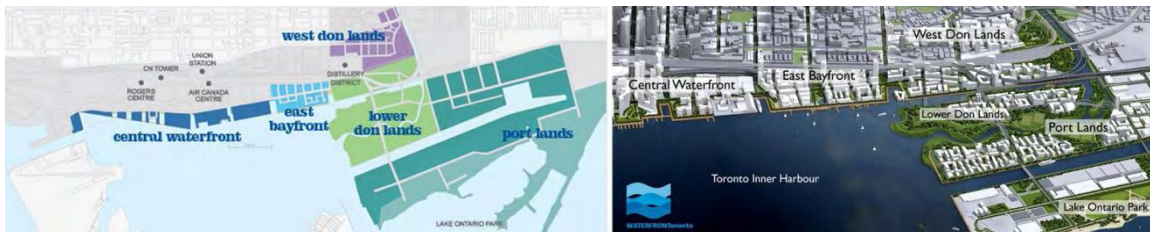


Fig. 5 Waterfront districts in redevelopment

Revitalization of the waterfront area meant to deal with soil that has been impacted by decades of industrial uses, when environmental standards were not as stringent as today. Post-fordist drosscapes (Berger, 2006) of the Toronto waterfront became a chance to give a new and wider meaning to the concept of the environmental “smartness” in which the landscape actively contributes to the ecosystem improvement and balance.

Waterfront renewal was officially launched in 1999. The “Waterfront Revitalization Task Force”, a task force of the City of Toronto, involving the Government of Canada and the Province of Ontario was established in the same year to study the future of the Toronto waterfront. Great emphasis was given to the target of landscape in the meaning of providing a clean environment by improving water quality, cleaning up contaminated soils, eliminating the risk of flooding and naturalizing appropriate areas.

In 2001 the Toronto Waterfront Revitalization Corporation (later renamed Waterfront Toronto) was formed to oversee and lead waterfront renewal. The organization is directed to support many different goals, from the redevelopment of brownfields and the contaminated land cleanup to the growth of a competitive and sustainable economy based on a compact growth. Various other initiatives have been promoted for the revitalization of the area, including public transit, housing developments, possible removal of the Gardiner Expressway that today separates the city and the waterfront, lakeshore improvements and naturalization of the Don River. At the same time private investments have been fundamental to build a strategic and incremental system. The city gave building rights in exchange for lots to create and improve the open public space system.

Some of the most interesting aspects of the redevelopment were the ability to intersect interests of different stakeholders, to include the citizens in a participated planning and to set a multiscale and multi-sectorial vision, also in the long term view. For example a section of the West Don Lands will be utilized for the Pan Am Games Athletes’ Village and then transformed in mix-use neighborhood after the 2015 games.

⁵ Toronto as part of the Great Lakes “manufacturing belt” has been for long time one of the most productive area of the Ontario region. Chemical, automotive and metallurgic sectors were driving the local economy. At the same time a strategic location close to the main North American industrial towns and waterways, made the Toronto harbor dynamic and competitive.

In 2006 West 8 international office won the competition for the central waterfront masterplan proposing a new “Multiple Waterfront” to improve the access to the waterfront and the quality of public spaces: the Primary Waterfront – a continuous water’s edge promenade with a series of pedestrian bridges, the Secondary Waterfront – a recalibrated Queens Quay Boulevard with a new urban promenade and public spaces, the Floating Waterfront – a series of floating elements that offer new boat moorings and public spaces in relation to the lake– and connections from Toronto’s diverse neighborhoods towards the waterfront.

In 2007 Michael Van Valkenburgh Associates elaborated a masterplan for the Lower Don Lands post-industrial site, which unites transformative landscape methodologies with innovative scientific approaches to natural reclamation and makes them operational at the scale of the city and the regional ecology. Both the urban and the natural elements of the landscape are seen as having the potential to introduce complex new systems to the site that will evolve over the course of many years characterizing the development of the neighborhood.



Fig. 6 Lower Don Lands post-industrial site aerial view (1970) and 2007 masterplan by MVVA

3 PRINCIPLES AND POSSIBLE STRATEGIES

Case studies of regional and urban resilience models have been discussed across scales in two countries, two in Scandinavia (Europe) and one in North America (Canada). The towns in Scandinavia and Canada are extremely different as landscapes—politically, financially and in scale. None of them have been through a crisis to the extreme nature as that of Italy and Naples waterfront. Conversely, the cases are presently in the world’s wealthiest nations on earth, but each is facing a serious transformation due to the change of the waterfront role after the worldwide de-industrialization process, the closure of factories and the dislocation of harbour activities.

Landscape and public space become driving forces to rethink the port system, defining the waterfront not only as a working machine, but as an actual space of urban identity, connected to the city.

Analyzing the three case studies, some principles may be defined, in a strategic orientation for Naples waterfront too, which is still waiting to be re-connected with the story of the city itself:

— Port in a multiscale logic:

A multiscale vision represents a necessary framework. At metropolitan scale it is possible to rethink the port functions in a regional system, with the possibility of some areas and functions

decentralization. At local scale it is possible to create mixed uses along the waterfront (maximizing the public use of the open space). Thinking over port-city relations aims at working on different dimensions, physical and immaterial.

- The waterfront multi sectorial *governance*:
A subjects co-planning aiming at a common purpose is necessary. Strategic planning related to the waterfront development and combined with architectural, urban space, lighting and parking policies. Multifunctional programming has the advantage of allowing space for programs that assign priority to activities, such as existing industrial and artisan areas, and harbor-related cultural landscapes and event spaces, but also spaces for working and living.
- Waterfront-city integration:
It is possible to think over the whole urban system, working on ongoing projects and especially on interstitial areas, as an urban regeneration of relevant projects areas. Instead of low density development, this would lead to a concentration of the construction work on a few new spots and to leave the larger areas for recreational purposes, for parks and spaces for alternative applications. Old industrial buildings have proved to be extremely well-suited to cultural applications, galleries, temporary functions as summer restaurants, concert halls and other types of events, etc.
- Partnership as an implementation model (economics and financial):
Co-planning and partnerships represent the only possible implementation model (urban, economics and financial) for the port waterfront regeneration, that could become an attractor for new activities, flows and private investments.
- Landscape as a device:
We could use the landscape concept with its multidimensional and multifunctional value, pinpointing and correlating morphological, historical, physical and natural characteristics in a complex and stratified territory. Landscape perspective is founded on the idea that waterfront areas aren't neutral, they simply can't be because, too much has already happened within their influence. Nowadays they have a great opportunity of reconstruction of relationships with open spaces and green areas system, through a wider approach of landscape ecology and urban metabolism.

NOTES

§ 1 by M. Russo. § 2.1 by M. Russo and S. Castiello. § 2.2 by S. Castiello. § 2.3 by C. Di Marco. § 2.4 by M. Prisco. § 3 by A. Attademo and M. Russo.

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Figg. 2, 3: by Susanna Castiello.

Fig. 4: Municipality of Oslo / <http://www.bjorvikautvikling.no>.

Fig. 5: <http://www.waterfrontoronto.ca>.

Fig. 6 left: <http://www.portlandsconsultation.ca/>. Fig. 6 right: <http://www.mvvainc.com>.

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