MASTER

The blue necklace
a new waterfront for Boston : between tradition and innovation

Rabajoli, C.

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The Blue Necklace
The Blue Necklace
A new waterfront for Boston: between tradition and innovation

Graduation Studio: Architecture of Smart Mobility
September 2013 - August 2014

Chair of Architectural History and Theory Master in Architecture Building and Planning

Supervisors
prof.dr.ir. Pieter van Wesemael
prof.dipl.-ing. Christian Rapp
ir. F.H.J. Franz Ziegler

Author
Carlotta Rabajoli

carlotta.rabajoli@hotmail.com
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“Education is the most powerful weapon which you can use to change the world”.

(Nelson Mandela)
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1.1 Theme of the Graduation Studio

The starting point of the Graduation Studio Architecture of Smart Mobility derives from some considerations about the contemporary way of living, which is now based on mobility.

This new way of living strongly affected the morphology and dynamic of the city itself. If, in the beginning of the century, the ideas of auto mobility and city were extremely linked and enhanced, nowadays the relation between these two elements is changed.

Concerns about pollution, noise, traffic and derived stress are diffused, supported by sustainable development concepts.

The futuristic vision of a car city, developed mainly by Antonio Sant’Elia around 1914, enhanced the importance of movement and velocity. The fascination of the urban landscape appeared shattered by lights, noise, and movement, where streets and flyovers dominated the scene.

Fig.1 Antonio Sant’Elia, La Città Nuova, 1914
Nowadays, a new vision of the city is developing and spreading all around the world. Pedestrian and bicycle axes are more and more taking over, especially in the city centers.

Already from the 70’s, various cities in North Europe (such as Stockholm, Edinburgh, Oslo, London, Copenhagen and Amsterdam), promoted polices in order to encourage an ecological culture, based on the concept of eco-community.

These operations permitted an improvement of the urban comfort, as the private traffic was reduced or even excluded from the centers.
In the city the problems started to be accentuated in the years after the *Industrial Revolution*, when the population moved from the countryside to the urban knot.

In the mid 19th century, in order to deal with the disorderly urbanization, theories and measures were developed. Different urban systems were proposed, trying to revive and promote also the rural areas, as E. Howard *Garden City*. Howard vision was combining the advantages of urban life to the pleasure of the countryside, saving the city from congestion and the countryside from abandonment.

The concept of *Sustainable Development* has been defined for the first time at international level only in 1987, with the report "*Our Common Future*" by the World Commission on Environment and Development.

Today, as the population is still increasingly moving to urban areas, it is fundamental to implement some sustainable strategies in order to limit pollution and congestion. The UN statistics show that in 1900 the 10% of the population lived in cities; in 2007 the 50% and in 2050 the rate will reach about 75% of the population.
Fig. 5 Urban vs rural population estimation. Defined by UN HABITAT as a city with a population of more than 10 millions.

Fig. 6 Space occupied in a street by three common modes of transport, cars, bicycles, and a bus.
The Graduation Project Architecture of Smart Mobility aimed to analyze and compare two different contexts, one European and one American, where the mobility and infrastructure really changed the organization of the settlement.

The chosen cities were Boston, in Massachusetts, and Eindhoven, in the Netherlands. This study started from a larger urban scale, developing researches in groups, and reached to a smaller architectural scale, with the evolvement of this personal project.

Therefore, in the first quartile of the year, I deepened my knowledge into the city of Boston, analyzing the history, the context and the urban transformations. This procedure provided me with the required background in order to define my research question and determine my starting points, from where my proposal is developed.

I organized this report following the process that I did during the entire year, continuously jumping from the urban scale to the architectural one and from theory to practice.
Fig. 8 Boston, Big Dig South entrance
BOSTON: BACKGROUND AND CONTEXT
2.1 Historical transformations

Boston was established in 1630 by the English Puritans who escaped to avoid the persecutions of Motherland and became a colony six years later. The original name was Trimountain, later transformed into Boston, from the namesake English city. Since the origin of the settlement, the area was a small peninsula separated by high hills and promontories.

The city always had an important role in the history of United States, as the Independence Wars divulged from there. The Boston Tea Party is recognized as the first act of rebellion against England. Especially after the years of Revolution, the city was asserted with one of the most important international harbor, able to influence the whole New England.

Immigrants from Europe started to arrive during these years: before a first wave of Irish people (more than 35000 in 1850) followed then by Italians and Portuguese.

Fig. 1 Prospective view of Boston by N. Dearborn, 1786–1852
NEW MAP OF
BOSTON
GIVING ALL POINTS OF INTEREST:
WITH A NEW RAILWAY & STEAMSHIP TERMINAL.
HISTORICAL FIGURES & PUBLIC BUILDINGS.

Designed by T. G. Wilson, 1850.
Published by J. B. Herron.

HOTEL
United States Hotel

NATIONAL PLACES

HISTORICAL INSTITUTIONS

PLACES OF CHURCHES

HEROIC STORIES

MUSEUMS
With the arrivals of the 20th century, Boston replaced its merchant-based town of 200,000 people with an industrial-based city of 1,000,000 people. In fact, until the early 20th, the city was one of the most relevant manufacturing centers of the country, overtaking also international trades.

It is remarkable that from its foundation until the end of the 19th century, the city enlarged its limit, tripling its area through land fill.

After a flourishing period which lasted until the mid-20th century, Boston started to decay, as businesses preferred to move to other regions in order to find cheaper labor.
Factories and warehouses, condensed especially in the waterfront, became obsolete and turned neglected.

In this context, in 1958 the Boston Redevelopment Authority was established which, after its first contested project in West End, positively impacted the transformations of the city.

During the 1970’s the economy of the city began to flourish again, after 30 years of recession. The Financial District became the scene of a large number of projects for high rises buildings and skyscrapers, translated to Downtown.
2.2 Infrastructure

It is remarkable to notice that much of the Downtown’s street pattern dates from the 17th century. Even if they seem absolutely not planned, they were originally traced in order to avoid hills, water, marsh and swamp.

Only in few part of the city the roadway follows a grid and this has always been a confusing element for both tourists and residents. As Kevin Lynch resumed from some inhabitant’s questioning in “The Image of the City”, the path system in the center of Boston is generally confusing. “The entire city image for many interviewees was difficult to be outlined and several routes were confusing, especially when major paths were lacking of identity”\(^1\).

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*Fig. 5 Street pattern transformation: Boston 1700th century map over an actual map*
The most impacting infrastructure project in Boston has been the Central Artery, which got also transformed in the 1950’s from elevated element to tunneled one, only finished in 2002.

The idea of an elevated freeway over the city started in 1925, when a committee of the Massachusetts’ legislature submitted its final report delineating the necessary measures to improve the “intolerable conditions” of the traffic in Downtown. In fact, even if only one out of five citizens was owning a car at that time, the traffic in the narrow animated streets was rapidly turning unbearable. Therefore, a new large freeway from North to South was promoted in order to also make more accessible the central district and its neighborhoods.

The recession and the World War I blocked the project until 1948, when Robert Bradford (Massachusetts Governor) commissioned the “Highway Masterplan”, which included the Central Artery in the planning of needed transport facilities of the 20th Century.

In 1950, mostly due to evictions and expropriations, a dark cloud of destruction came over the oldest neighborhoods were the most cohesive residents were settled.

In the summer of 1954, it started the construction of the overpasses in the Eastern area of North end and in the Buffich Triangle.
However, while the construction was proceeding, oppositions and contrasts coerced the Commission to re-consider the plan in the Southern section. In fact, the demolition of part of North End and the appearance of the impending work, made the municipality to realize the disaster of the project, which was patched up from overpass to tunnel in the Southern part.

Fig. 6 Boston aerial photo, 1940’s

Fig. 7 Demolished Scollay Square area (~ 1964) and of the completed Central Artery on the left
Even if for the city of Boston the axis North-South was necessary and the Central Artery had been determinant for the economic development of the city, until it became a congested road, the solution of an elevated structure resulted inadequate. “By the early 1990s traffic on the elevated Central Artery was 190,000 vehicles per day, with an accident rate four times the national average for urban interstates. Traffic was bumper-to-bumper for six to eight hours per day, with projections of traffic jams doubling by 2010”.

Therefore, in 1970’s the secretary of transportation Fred Salvucci and the Governor of that period, Micheal Dukakis, proposed the idea of a new long tunnel. The plan set the goal to solve two problematic: re-linking the city to the coast, which was separated by the elevated structure, and allowing better accessibility to the Logan Airport and the port.

The Big Dig was finally completed in December 2007, with a cost of over $14.6 billion, after several controversies.

In order to connect again the city to the coastal areas and North End, over the tunnel it was created The Rose Fitzgerald Kennedy Greenway, a linear urban park.
Fig. 9 The transformations around the Central Artery
2.3 Slow mobility

The morphology and compactness of Boston make the city easily walkable. According to the US Census, in 2000, the 13.36% of the inhabitants preferred to go to work by foot. The magazine Bicycle, in March 2006, defined Boston as one of the three worst cities for biking in United States, analyzing road shape, continuity of bike lanes and city government pro-bike gestures.

Fig.10 New bike lane in the road

Fig.11 Rental bikes from the municipality of Boston
Since 2007, the municipality is trying to improve the use of bicycle, increasing the number of cycle lanes, promoting the number of bike sharing and discouraging the parking in downtown (with the program called Boston Bikes, launched by Mayor T. Menino).

"Many MBTA (Massachusetts Bay Transportation Authority) riders use a bicycle to get to a nearby station, and the number of bicycle racks and lockers has been increased. Moreover, the building code is trying to encourage new improvements in major offices with showering and locker facilities\textsuperscript{5}.

Bicycle paths are nowadays present in the pleasant Green Belt of Parks (Emerald Necklace), but they are still quiet scarce in the rest of the city. The present bike lanes are marked on the streets, but the system of separate paths is emerging slowly.
2.4 The parkway system and the Emerald Necklace

At the end of the 19th century in Massachusetts (and especially between 1893 and 1895, many ideas regarding the links between public health and open spaces started to evolve. These were represented by the developments of parklands and parkways, such as the Boston Parkway System. In fact, as a response to the increasing urbanization in the beginning and mid-nineteenth century, in United States the parks were seen as a good solution for the urban contexts, which were overcrowded and polluted.

*Fig. 14 Olmsted Emerald Necklace map*
The idea of creating pleasant places, where city inhabitants could escape from the city itself, has been a decisive factor.

However, "the momentum of labor reform, urban improvement, social welfare, and the early environmental movement was strongly influencing the ways in which public lands were being managed in the Commonwealth (...) Despite the significance, pressures such as suburban development, population growth, greatly increased traffic volumes and limited maintenance funding for the Massachusetts parkways have all put enormous strains on the system". 

Around 1818, in Massachusetts and more specifically in the basin close to Gravelly Point, the construction of the Mill Dam contributed to a deterioration of the territory with sewage disposals. Therefore, in order to decontaminate this kind of areas, plans and projects of parks were approved and promoted.

The formal association to this project by the landscape architect Frederick Law Olmsted, occurred in 1878, when he signed to design the Back Bay Fens solely.

The Great Depression slowed the plan of creating a system of seven parks (one located in each section of the city), which was approved in 1881.
Fig. 15 Olmsted Emerald Necklace map

Fig. 17 Parkway typology: connecting parkways in the urban area
F.L. Olmsted strongly believed that a chain of parks, instead of a large single one, could have been really beneficial to serve the needs of the entire city. Even if this choice started from the topography of Boston (which has small dimension, especially in the center), it resulted optimal as it allowed to “travel” for miles, surrounded by greenery.

Olmsted emphatically argued that “a park exercises a very different and much greater influence upon the progress of a city in its general structure than any other ordinary public work, and that after the design for a park has been fully digested, a long series of years must elapse before the ends of the design will begin to be fully realized”\(^7\).
RESEARCH QUESTION
Through these observations, how can Boston Downtown be improved?

How mobility can downsize its impact on the city’s human scale?

How can the waterfront contribute to the everyday life of different sections of the population?
How can **one spot** be able to change the multiple dynamics of Boston Downtown?
URBAN STATEMENT/PROPOSAL
3.1 Analysis and concept

Like many other American cities, Boston is strongly affected by the use of cars and heavy transports, even if in the early 1860’s Frederick Law Olmsted, responded to the increasing urbanization and the related problems, with the design of a chain of parks, (linking different areas) where the inhabitants of the city could escape from the city itself.

However, Olmsted’s plan did not integrate the city center, which grew without any important green axis (beside the historical Common Park) and which remained excluded from the Emerald Necklace until nowadays.

Fig. 1 Boston Common Park plan 1895

Fig. 2 Boston Common Park
In particular, Kevin Lynch in The Image of the City identified how “most of the subjects were unable to interconnect the Charles River and the Boston harbor in any concrete way”, as there was (and there is until now) an absence of waterside path connections. Charles River was clearly perceived and with a sense of edge, while the harbor, which was obscured by many structures, was confusing. This ambiguity of the harbor was and is determined also by the fact that these areas do not have an identity anymore.

As Kevin Lynch wrote “paths with clear and well know origin and destination had stronger identities, help tie the city together”.

Every individual carries with himself the mental image of a specific place, influenced by the physical characteristics of the location, as by his interests, personal cultural heritage.

Fig.3 The Boston that everyone knows, The Image of the City, Kevin Lynch, 1960
and experiences. In the urban scene, in terms of perception, more than a composite aspect of the spot, it is important also the visibility and the cleanness of this one.

Qualifying an area in term of singularity and identity means that the design should portray the specificities of the place in an easy and readable way, attracting the attention of the visitor during his itinerary.

According to the Census Bureau of 2013, the city welcomed 55,000 residents since 2011 and 600,000 since the 1970’s. These numbers were and are translated by the municipality in rapid housing programs in order to accommodate the population which will continue to grow with a rate of 3.1% by 2020.

This factor and the idea of creating a real Downtown American style centre slowed the opportunity to also have large open spaces around the central area.
The Boston Common Park remains the main central open space since its creation in 1634. However, its lower topography (comparing to downtown) and its marginal position comparing to the head of the peninsula, does not make it very practical for everyone coming from the centre to enjoy the park.

Recently, in the new project of the Bid Dig, two important sections over the tunnel were transformed into open spaces, with walkable paths, and other facilities, but even if some greenery is present, it cannot be considered yet as a linear park.

The only larger green space of Downtown and North End, where people can actually seek...
refuge in the nature and evade from the city centre, is the Columbus Park.

It was opened in 1976 and fined in 1987 with a granite fountain and iron fences. However, the choice of creating a sort of oasis within the city makes really difficult the perception and the actual vision of the horizon of the sea from the street level. In fact, the decision of placing so many trees at the borders of the park has really been discussed by many Bostonians, as it does not link to the water.
Analyzing the potentialities of slow traffic paths (as pedestrian and cycling lanes), which could link the various districts to the city center, it immediately gets visible that Olmsted Necklace could be successfully extended and completed until Downtown.

In fact, the continuous route exposed to the waterfront and freed from the urban fabric, it could be transformed in a new linear park, able to attract within its loop both tourists and inhabitants. Moreover, the waterfront after the loss of its working-harbor meaning, lacks of identity.

Actually, for a dense metropolis, the waterfront should be where the city opens up beyond the topography of daily life, and not a discontinuous area, covered and obstructed by fabrics.

One of the mistake of the Harborwalk project of 1984, is the missing link to the Emerald Necklace, just on the other side of the peninsula.

This plan, promoted to guide the reemergence of Boston’s waterfront, lacked of a larger scale vision, mainly involving the Long Wharf and the Central Wharf.

In the original report of 1984, it is mentioned the intention of creating a path able to link South Boston to Charlestown Navy Yard, omitting the transversal connections to the city (and consequently to the Green Park System).

Moreover, this pedestrian route is not continuous and, besides
the Central Wharf and the adjacent area, it does not have public facilities on the itinerary.
Fig. 7 Emerald Necklace + Blue Necklace
Kevin Lynch underlined, in The Image of the City, how walking lanes, as a straight unprotected and dull path, are experienced as very long and tiring, while a very short distance could be experienced if the route is perceived in stages. This can be easily obtained if the route varies along its length a series of sequences, and if “things happen” during the itinerary. Moreover, in an era where the bicycle is largely used as a way of transport, the discontinuous or inexistent cycle lane network in a growing city, such as Boston, is illogical.

In all the most important cities the area “where the land meets the sea has always been a magnet for people, recreation and trade, and the harbors have provided blue highways for access and connections between coastal settlements”.

Boston waterfront should serve as a front yard and service alley, as a cultural stage and playground center, representing the open society of nowadays and offering a new way of transport for the citizens and the passengers.

As showed from many other cities, such as London, San Francisco, Baltimore, Sydney, Toronto and so on, the redevelopment of previously manufacturing area, has positive implications in the economic, social, cultural and environmental aspects of the whole city.
Fig. 8 Successful Waterfront Redevelopment
- London, Docklands Museum
- Sydney, Harbor
- San Francisco, Pier 39
sustainability
tourism
cultural loop
downtown
ew meeting points on the waterfront
daily itinerary

urban consolidated area
neglected waterfront

CONNECTION
LIFE

green spaces
waterfront walkway
cultural facilities
It is necessary to take into account the plethora of ways from which a port could be perceived, as it is a dynamic scene which is always renewing its meanings, merging object and subject together.

The relationship between city and port is mediated by the memory and the conscience of the people, in a context where water and city coexist and reinforce the integration of a harbor city.

A stronger link between human and water could be enhanced also by a permanent system of ferry routes, that it could renew the essence of what a metropolitan waterfront really is. In Boston, the water, has already been developed as a way of transport (with an average number of 302,807 passengers/year) and it had been temporarily potentiated as an alternative to the cars when the city center was unusable for the construction of the Big Dig. Now, it can

*Fig. 9* Lockwood’s Basin, Boston, 1918
be translated as a permanently sustainable solution to the traffic congestion in an aesthetic way.

A Blue Necklace, linking the waterfronts and floating to the Park System, could be the right answer, not only creating a continuous itinerary from the peripheries (as Brookline) to Downtown, but also generating new junctions between the North End district and the rest of the city.

In fact, even if nowadays the Central Artery is not anymore a physical barrier, some traces of difficult pedestrian permeability from East to West are still present. Therefore, the formation of a fluid slow traffic path (following the waterfront and continuing to the Emerald Necklace) will also carry with it some comparatively new dynamics in the city, able to join the different districts.

The water and the green will be a unifying element for tourists, residents, athletes of all ages.

The Blue Necklace, besides the connective meaning, should also load the design of esplanades and public facilities, in order to attract people from earlier in the day until the night, avoiding any nocturnal desertion.

Tracing some lines from the existing public facilities on the waterfront, it is clear how from South Boston to Charles River, there are important knots but without any particular link to one another.
A unique route (from the new Boston Children Museum in South Boston, to the New England Aquarium, to the Christopher Columbus Park, to the study area in North End, to the Puopolo Athletic Field, to the Museum of Science between West End and Cambridge, to the Lederman Park, to Charles River or the Common Park and then to the Emerald Necklace) could be created as a series different of sequences.

In consequence to this, Downtown will be able to switch from an introvert district, where the...
main forces are directed around the Business District area, to a more extrovert city center, expanding also to the natural edges.

Once I detected the city’s problems and identified my starting points in the urban scale, I proceeded asking myself which spot could actually represent the city’s catalyst and trigger the new dynamics, and how a singular spot could be able to change the multiple dynamics of Boston Downtown.

The plan of 1984 redeveloped only on paper the northern part of the waterfront and focused mainly on the Long Wharf and the Central Wharf. However, this area (between Pilot House Park and Langone Park) is fundamental in order to link and create the chain with the Emerald Necklace.
Therefore, which spot could be the catalyst?

*Fig.10 Activities and re-developed piers (green line)*
Fig. 11 Public and attractive activities on the waterfront (green dots)
a green-blue waterfront

a public whoever waterfront

a trigger of new dynamics

a connected waterfront
4.1 The city and its port

What has always been the relationship between the city and its harbor and how this relationship has evolved nowadays?

In the past, a port has always been considered as an important source of economic development and has always generated uncontrollable growth to the city where it was located.

Until the industrial revolution, the port-cities were structured as consolidated systems, where the urban tissue and the harbor co-existed in a state of complete integration: the city entirely hinged on the presence of the port, as it was the main source of prosperity and development.

The so-called waterfront area had no definable boundaries, because the entire urban tissue was directed and polarized in the popularity of the harbor, which had at the same time the role of infrastructure hub, historic center and commercial area.

"In the nineteenth century, visiting a port city meant becoming acquainted with microcosm that seemed to include all nationalities, cultures, and ethnic groups; a visit to a port city was an introduction to the world".  

This was translated in a close spatial and functional link between the harbor and the city at
that period.
In order to be more practical, the industries and warehouses were settled close to rivers and oceans, where the access for trading was direct and immediate. Beside this, the location was also strategic in order to get energy from the water power, which replaced the wheels turned by men or animals.

Cities were developed around these economic engines also due to the fact that the settlement of the workforces and the corresponding community facilities had been located nearby them.

The waterfront became an industrial site, where railroads, roads, and warehouses intersected, creating a sort of barrier from the city to the sea.

In reality, during the 18th and 19th century the harbor was not a place to enjoy or visit, even if it was the heart of the city. “The waterfront was a place filled with merchandise and warehouses, smelling of the stench of fish and burly sweating strange men, it was a throbbing, noisy and crowded place. It was vital

Fig.1 Brooklyn, Red Hook warehouses in the late 17th Century
but for most people intimidating.
People who lived in the harbor area had strong ties with the harbor activities.\textsuperscript{11}

With the industrial revolution, the harbor suffered the transformation from the central/fundamental urban nucleus to a highly specialized infrastructure, losing completely the characteristics of social gathering of the city.

The choice of following strategies in favor of a strong relaunch of the maritime economy, at the expense of other social-public elements, was derived from the role that the port has always been playing in the urban scene: a primary engine of progress and prosperity for the whole city. New port zones were constructed outside the centers, consisting of factories and huge size warehouses. This created a physical and social segregation, without any presence of human scale activities any longer. The emergence of the container shipping industry caused the abandonment of the old ports, as these had become too small to stock the increasing amount of goods.

\textbf{Fig. 2} New Jersey, shipping containers at Port Elizabeth
Therefore shipping “has moved out from the city center, abandoning the historic old port area where the city began, and where the city’s image was created for the rest of the world” 12.

Moreover, the crisis of the passenger transits by sea—consequence of the rapid expansion of air and rail transports—contributed to the process of physical separation between city and port, which culminated around the 1960’s and 1970’s.

The abandonment of these areas was translated as a great opportunity. Especially after the 1960s, a great demand of public spaces for recreational and leisure uses was raised in the urban scene. Similar to other leftover spaces, waterfronts became suitable urban lands, which was generally located in proximity to the city centers and which aimed to turn into newly emerging trends of society.

In this context, some American cities decided to transform the large neglected areas into social-public poles. The initiators were the cities of Baltimore, San Francisco and Boston, which easily became the references of many other cases (such as London, Toronto, Rotterdam and Barcelona).

The new Waterfront revitalization movement, especially through the analysis of of Vigaré, Hoyle, Hilling, Pinder and Husain for the spatial port-city
interdependencies, exerted an important influence on the urban redevelopment plans. In particular, according to Hoyle, the interconnections between port and city could be analyzed through an initial process of generalization, as despite the individuality of the context (in terms of geographical, political, economic, technological elements), all settlements and coastal activities are influenced by international process.

The term waterfront, born with the aforementioned movement, specifically identifies the space between the use of urban land and the port functions: the zone

Fig.3 Port-city scheme by Hoyle, Pinder and Husain, Revitalising the Waterfront, 1988
of physical contact between city and water.

Most of the world’s big city centers are situated on the water edge and a revitalization of these areas could organize not only the edges, but also the urban relationship inland and across the water. “Waterfronts had experienced the most radical urban revitalization of 20th century cities by having transformation in their physical layout, function, use and social pattern” 14.

However, these developments should consider the individual peculiar identity of each location, avoiding the mistake happened in some cases where the harbor became part of a new global network. The waterfront risks to be perceived as a part that is detached from the rest of the city and it is characterized by a patchwork of individual elements that combine seamless continuity.

Moreover, the waterfronts are a sort of window of the urban context and therefore they could become attraction points.

Nowadays, one of the most important issues for the cities is to improve or remake their image, “What sells the city is the image of the city ” 15, in order to compete with other world cities. This image should be based on historical roots and characterize the place, avoiding standardization.
The renewal of the waterfronts is also important for the economic growth of the urban scene. In fact, even if the central harbors do not have maritime functions anymore, they could still bring good income, thanks to their attractive elements (like the Bilbao Guggenheim Museum project, which strongly raised the local economy).

Fig. 4 San Francisco, Bob Bastian’s chronicle cartoon about the Embarcadero decline.

Fig. 5 Pier 1 had become obsolete and, with the 1953 construction of the Embarcadero Freeway, the once vibrant Port of San Francisco was cut off from its lifeblood, the City.
Fig. 6 Accessibility and definition of the Waterfront (Al Ansari, 2009)

Fig. 7 1960’s Baltimore Inner Harbour and present day
Fig. 8 Helsinki, Cable Factory, converted from the municipality in a cultural centre
4.2 North End and the waterfront

Since the foundation, Boston’s economy and prosperity has been linked to its port.

North End waterfront includes the area between Charlestown Bridge and the Waterfront Park and it is one of the oldest parts of Boston.

This neighborhood changed a lot since its origin. “First settled in 1630’s the North End was the most populous and elegant part of the town which contained fine residences on slopes that commanded views both sea ward and landward” 16.

In the 18th century, North End was mainly populated by wealthy British, which were linked to the mercantile and shipping world. Many of these personalities contributed to the developments of the area, such as the architect Charles Bulfinch for instance, which built the still existing St.Stephan Church.

Another important figure for this neighborhood, and not only, was Paul Revere, one of the participants of the Boston Tea Party (the spark that started the American Revolution). He resided in North Square and his wooden house was opened to the public in 1908, as one of the earliest historic house museums.
When the war finished, the affluent British inhabitants of North End, which remained loyal to the Motherland, moved to Canada or returned to England. The depleted area radically changed by the 1800. The ample estates were replaced by overcrowded apartment buildings, occupied by a wave of poor immigrants (mainly Irish at first and then mainly Italians). The waterfront, the trigger of the new major industry (shipping), turned into a dense neglected area with warehouses and dockyards. A testimony of 1872 affirms that "The North End was once the most important part of the town, containing not only the largest warehouses and public buildings, but the most aristocratic quarter for dwelling-houses. But this was a long time ago. A large part of the North End proper has been abandoned by all residents except the poorest and most vicious classes". 

*Fig.9 The Destruction of Tea at Boston Harbor, lithograph depicting in 1773*
Actually, the sealing activity also leaded to the degradation of North End, which became a criminal area, where drunkenness, prostitution and gambling were dominating.

Due to the need for larger area for the maritime trade around the 1920’s, the sealing industry moved to South and East Boston, leaving the historical waterfront underutilized and neglected.

The strong barrier created by the Central Artery on one edge and the industries and water on the other edge, helped the residents of this neighborhood to become a strong community, which is still nowadays considered one of the oldest and most unique of Boston. Around 1930, North End was almost a hundred percent Italian.

The renewal program started in the 1960’s and it aimed to...
consider Boston’s waterfront as window to the world. Even if some of the structures and warehouses were transformed in residential and office facilities, a large part of the waterfront included many *tabula rasa* projects.

During these years it is possible to mention the restoration of Lewis Wharf, Commercial Wharf, Mercantile Wharf and Union Wharf and the creation of the new landmarks, as the New England Aquarium and the Harbor Towers.

Harbor activities, such as the Freedom Trail path and the Boston Tea Party event, were launched in order to re-link the city to its historical port.

Another important project for Boston waterfront is the Harborwalk, dated 1984. The goals of the Boston Redevelopment Authority, the Harborpark Advisory Committee and the Boston Harbor Association were to revitalize and encourage people to go along the waterfront.

Fig.11 BRA Piers study report 1987, Ideas and Recommendations
Fig. 12 BRA Piers study report 1987, Long Wharf

Fig. 13 BRA Piers study report 1987, Central Wharf
In the Waterfront Report of the Boston Redevelopment Authority, the plan attempted to achieve these primary goals:

- To provide public access to the waterfront’s unique opportunities for recreation, economic activities and affordable housing;

- To manage growth, so that appropriately designed, mixed-use development occurs on the waterfront with benefits that are shared by all Boston residents;

The zoning of the Harborwalk especially wanted to provide a continuous access along Boston’s entire waterfront, promoting water-dependent and water-related activities. However, this path is mainly developed in the Southern wharves of North End waterfront, and it is interrupted by some lots of the Northern area.
However, today North End is progressively losing its community character, converting public facilities or neighborhood grocery stores (such as fruit vendors, butcher, bakeries, and so forth) to restaurants or services for tourists. In the last years, for example, “ten of its twelve schools have been subdivided and converted to condominium apartments”  19.
Baltimore

Site: Inner Harbor of Baltimore
Initial date: 1958
Last project date: 2004
Dimensions site: ~ 4000m²
Site: Harbourfront
Initial date: 1980
Last project date: 2008
Dimensions site: ~ 4600m²
SANTA MONICA

Site: Santa Monica Carousel Pier
Initial date: 1990
Last project date: 2002
Dimensions site: ~1400m² pier
SAN FRANCISCO

Site: San Francisco Piers
Initial date: 1978 (Pier 39)
Last project date: 2014
Dimensions site: ~ 5000m² between Aquatic park and Pier 39
NEW YORK

Site: New York Waterfront
Initial date: 1990
Last project date: 2013
Dimensions site: ~9000m²
Site: Genova Porto Antico
Initial date: 1992
Last project date: 2004
Dimensions site: ~6000m²
Site: Copenhagen Waterfront
Initial date: 1960’s
Last project date: 2008-2013
Dimensions site: ~3000m²
MARSEILLE

Site: Marseille Vieux Port
Initial date: 1990
Last project date: 2013
Dimensions site: ~5000m²
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RESEARCH QUESTION
How can one spot be able to change the

Which spot can actually represent the

How can the waterfront develop its own divide but as a connecting element
multiple dynamics of Boston Downtown? city catalyst and trigger the new dynamic? not as a unique position in the city and the sea?
PROJECT 6
6.1.1 Location

**Location:** Boston  
**District:** North End  
**Dimension lot:** 56.500 m² (including also the fragment of Commercial Street)

Analyzing Boston wharves, it appears obvious that the southern part of the waterfront, around the Central Wharf, has been more carefully planned and designed.

From the program for the open space’s legibility and materialization, it is clear that the intention of the developers was to promote this area as the linking zone between city and sea.

The Boston Redevelopment Authority enhanced paths that arrive directly from the Government District to the Central Wharf, ignoring the fact that since the origin of the city, the road which was reaching the ocean from the center of the peninsula was actually passing through North End.

If we walk along the waterfront it is evident the transition between the re-developed southern part and the northern less touristic part. The Harborwalk is characterized by a large red brick path, which is sometimes replaced
Fig. 1 South piers Harborwalk (up images) vs North piers paths (down images)
by wooden plank connections. However, in the proximity of Union Wharf, the red guide trail becomes a smaller concrete sidewalk. Then, only around the “recent” project of the Fairmont Battery Hotel, dated 2007, the waterfront walk appears again with red bricks, wooden planks and pleasant green bushes.

It appears obvious that the trail along the waterfront should be more continuous, promoting also bike’s mobility, which is almost absent today. Moreover, in order to enhance the connection from North End to West End (and then to the Emerald Necklace) it is necessary to create an attractive point in the Northern part of the waterfront.

In this area, the perception of the sea, especially from Commercial Street, is not permitted. In reality, the big buildings on the piers or in front of them, block the line of the horizon from Union Wharf to A. Puopolo park.

One of the peculiarities of North End is the topography. In fact, since its origin, the neighborhood was characterized by the sloped territory, generated by the fifteen meters Copp’s Hill. The slope and the different heights create interesting balconies over the surroundings, producing unbelievable panoramas looking the ocean. Remarkable is Copp’s Hill terrace, which connects the Burying Ground to the Commercial Street.
Fig. 2.1 Section A-A'

Fig. 2.2 Section B-B'

Fig. 3 Copp's Hill terrace
Fig. 4 Bird views of the study area
The huge lot just behind Fairmont Battery Wharf could actually obtain an important role, as it is situated in an interesting location which joins the City Hall Plaza to the sea, through Hanover Street.

The study area is characterized by two green zones, the Lancaster Park and the A. Puopolo athletic field and by three piers with the relative front street zones. Nowadays, the main part of the lot is used as Guard Coast and USO New England Association base.

The access to the public is impeded, even on the piers which are used as a huge parking lot, ignoring the potential of the place.

Looking several decontextualized projects on the waterfront, such as the recent Fairmont Battery Hotel, I realized that North End waterfront needs something more linked to its tradition. In fact, the whole neighborhood of North End is regulated by city zoning norms, but the waterfront is not affected much by them.

From the 1970s, developers are converting tenements into larger luxury apartments and condominiums, without considering the character of the place.

One of the most remarkable aspects of North End is the strong sense of community, which is still deep-seated today.
Emerald necklace’s extension

waterfront

historical neighborhood
city catalyst able to bring life and activities

Fig. 5 Starting points of the project
Fig.6 North End daily life activities and special events
During the Great Depression, for example, North End was considered a slum and this caused lending discrimination. The residents could not acquire any loan to build or rehabilitate buildings. As many of them were carpenters, plumbers, masons, electricians, and so forth, they decided to rehabilitate the neighborhood in a low cost way: by themselves\textsuperscript{1}.

Nowadays, several activities and festivities are promoted in order not to lose the character of a living, vibrant, organic neighborhood. The Italian tradition is also still present, encouraged by several associations, which are trying to launch Italian language courses, kitchen courses, religious festivities and even a fund raising for a new cultural center in North End.
Fig. 7 View from Charlestown of the study area
Fig. 8 The Battery Wharf hotel
Fig. 9 View of the study area from the North entrance bridge of Boston
Fig. 10 Image of the actual situation

Fig. 11 Image of the piers use nowadays
Fig. 12 Starting point: more permeability through the lot
6.1.2 Study area history

How to create an icon able to represent the identity of the place?

In order to better understand the location, its dynamics, and the memory that is linked to it, I started by analyzing the relevant transformations during the historical timeline.

The most important track from the past in the lot was the industrial area, which was settled on the waterfront after the Industrial Revolution. The district was, mainly, lived by the people whom were working in the huge warehouses on the wharves. The waterfront was a vibrant gathering area, able to store and exchange goods from the trains to the ships (and vice versa).

In order to do this in a more practical and immediate way, along Commercial Street, an elevated railway was constructed. This train also had a connecting function from the North Station to the South one and from the center of the peninsula to the waterfront. It was well used by the workers of the waterfront, but when, in the 1920’s, the use of the automobile increased and the jobs on the wharves started to disappear, the raised avenue declined. In 1942, the suspended tracks were taken down.
Fig. 13 Images of the Atlantic Avenue with and without elevated railway

Fig. 14 Aerial view of Boston Downtown, ca. 1960s - emphasis on the industrial sites and the discontinuity of the waterfront
The warehouses present in the area changed owners and related merchandises many times, from sausages to candies and chocolate products, to farm wagons and coaches (of the Hercules-Campbell Body & Co). The whole area was filled by factories, higher and more formal (bricks buildings) on the front of Commercial Street, while lower and less permanent on the piers (wooden structures).

When the Coast Guard acquired the lot during the World War II, the waterfront industries had already changed owners four times, as it was getting popular to move to the peripheries. Firstly, the Coast Guard demolished the warehouses on the wharves, and then another three over the total six which were situated in the proximity of Commercial Street. The biggest factory, being left as an empty box, was initially used to repair and support the ships, and afterwards it was divided with floorings.

The open space obtained on the piers, was thought as the perfect parking solution.

The last industry to leave the area was The Boston Sausage and Provision Company in 1977 in the Constitution Wharf. However, its production had already been minimized since 1967, because it was causing pollution problems to the neighborhood.

In a report of the 1980’s it is
Fig. 15 1980's BRA Report: Actual situation and Coast Guard proposal
clear that the intentions of the Boston Redevelopment Authority was to preserve as much as possible the original factories, but then economic aspects prevailed.

In the report it is affirmed that: “The two building slated for demolition, while not significantly attractive or historic, do complement and support the traditional maritime-warehouse context of the area. The committee proposes that serious attention be given to the preservation, interpretation and reinforcement of this particular area”².

However, after the 1980’s, these historical factories were completely demolished and replaced by two or three floor industrial buildings, by the Coast Guard.

The open space where the Polo Athletic Field is now present, has always been a recreational place with a strong link to the water. This recreational area, characterized by the popular North End beach, it was opened by the city for public health reasons. In fact, at the end of the 19th century, in this crowded neighborhood many people did not have any bathing facilities, as they were the poor working class. The intention was to provide cleaning and exercising facilities at the same time. The Beach was in the middle of the industrial area and, even if the water was really polluted, it was an important gathering-rec-
Fig. 16 North End Beach, 1920's
reational point for the residents.

During the mid-1900th century, films were also projected on the big warehouse, visible by the beach, in order to educate the low class to the Americanization.

This was not only a workers neighborhood, but it was a community where everyone knew each other. "Hygiene meant my mother would put clean underwear in a bag and send me off to the public bath house to shower. She would then go to buy fruits and vegetables at Johnnie D’s market. There, if she ran short on money, he would tell her to pay when she could. That’s the kind of trust people shared with one another. (...) Living in

the North End meant our social centers were the streets ".

The North End Beach playground was replaced by a swimming pool, when the harbor became unfit for swimming. The fishing wooden piers were demolished and with them also the connection to the water, which is till nowadays completely lost.
Fig. 17 Road axes and the intersection on the study area
6.1.3 The road system and the axes

The lot under analysis is located at the intersection of two important axes: Commercial Street and Hanover Street. Both roads are already present in a map of the 1700th century and represent the historical connection between the peninsula and the harbor/sea.

Hanover Street:

Known as the Route to the Sea, it was originally an Indian path, linking the center of the peninsula to the ocean. Until the 1960’s, when it was shortened in order to create the Government District, it maintained its vibrant peculiar characteristics.

Nowadays, Hanover Street starts from the Central Artery, at the opposite side of the City Hall Plaza, and it ends to the North Pier.

While today the extension to the wharves is blocked by the Coast Guard, the recommendations of the Boston Redevelopment Authority in the 1980’s were completely different. In a report of the 1980’s, the Boston Downtown Waterfront Project, it is affirmed that “The Hanover Street route to the sea continues into the central Coast Guard
Fig. 18 Hanover Street: vivant in the proximity of the intersection with the Central Artery

Fig. 19 Hanover Street: without any activity in proximity of the waterfront
pier, now used for parking, with a magnificent vista and historic continuity – but is closed to the public. (...) The project will continue discussions with the Coast Guard on possibilities and physical mechanisms for public access\textsuperscript{4}. However, especially after the 11th September 2001, the accessibility at the wharves around the Coast Guard is forbidden, creating a fracture between the city, the sea and the waterfront itself.

Hanover Street, by entering from the Central Artery, is very vivant and dynamic, as activities are fitting more to the surrounding, but it turns to be quieter around the intersection with Commercial Street, which is mainly a residential area. The presence of restaurants and bars here is absent, as these are condensed into the more touristic part of North End; along the beginning of Hanover Street, along North Street and around Columbus Park and the re-developed wharves.

Moreover, the street profile changes and reduces its dimension during the transition from the Central Artery to the waterfront.

It is today characterized by an approximate dimension of 18 meters (from building to building), with sidewalks from roughly 2 meters to 3.5 meters. The street is bidirectional, with a section formed by: sidewalk, parking, roadway, roadway,
Fig. 20 Commercial Street: vivant and pleasant in the Southern part, around Central Wharf.

Fig. 21 Commercial Street on the study area: less "pedestrian" profile.
parking, and sidewalk.

Analyzing the potential of this axis and the historical importance that it has, especially nowadays, in my proposal I conceived Hanover Street as a direct pedestrian (and cycle) link from the City Hall Plaza to the water. A public tram-line is added to the slow mobility profile, in order to enhance the commuting access to my study area, just at the end of the street. It could become a sort of trampoline to the sea, able to link two important civic buildings: the City Hall and the new design on the waterfront.

Commercial Street

This street is the longitudinal axis along the waterfront. Nowadays, it is divided in Commercial Street, in the northern part, and Atlantic Avenue, in the southern part, but in the past it was respectively called Lynn Street and Ship Street.

From 1901 to 1938, the street was characterized by the elevated railway, which was then demolished, as the ridership was really low.

When the elevated structure was built, Commercial Street was the core of the fishing and maritime industries, and of the ferry terminals.
Fig. 22 Hanover Street sections: actual situation (top) / proposal (below)

Fig. 23 Commercial Street: actual situation (top) / proposal (below)
Today, Commercial Street is also subjected to a transition as long as we move to the north. It can be noticed that around the re-developed wharves (Central wharf, Commercial wharf, Long wharf, and so forth) the street profile is more pleasant.

Larger sidewalks, green areas and trees are creating an atmosphere of a maritime boulevard. The visual link to the water is enhanced by sequences. However, around the study area, the section of the sidewalks is much smaller, characterized by irregular cracked rectangular concrete casting.

Moreover, the parking on both sides and the less human-pedestrian look of the northern fragment (where the cars are also allowed to go faster) makes the street difficult to cross, becoming a sort of barrier from North End to the waterfront.

In my proposal, the street profile will be modified: the sidewalks will become larger, taking also some meters from the Langone Park, the parking will be in some specific zones and not on the waterfront side. A cycling path will be added in a separated lane, separated from the cars by a green area.

In my project the design of Commercial Street is fundamental in order to create some experiences along different sequences. I conceived Hanover Street as a more pedestrian axis, where the
Fig. 24 Actual situations of Commercial Street (2 images on top) and Harbor Walk (below). Lack of bike lanes and pleasant pedestrian profiles
perception of the sea has been, therefore, thought with a slower pedestrian point of view.

For Commercial Street, where slow and fast mobility are coming together, I planned different perceptual points, also for the people passing with cars. These points make visible the line of the horizon, and therefore of the ocean, surprising and attracting the visitors at the same time.

The crossing between Hanover and Commercial Street and between the Copp’s Hill terrace and the waterfront will be elevated by some centimeters in order to slower the traffic.

Fig. 25 Boston Redevelopment Authority Waterfront report, 1980’s
Fig. 26 Bird view of the study area
Fig. 27 “Bringing the city to the sea” concept
6.1.4 From the analysis to the architectural concept

One of my starting points was to re-create a link between the city and the sea, demolishing the physical and psychological barriers which have been created during the years through North End and the waterfront.

Hanover Street will become the connection between Downtown and the waterfront, while Commercial Street will become the juncture between the historical North End and the sea.

Some existing axes will be kept and empowered in order to frame the view and the line of the horizon. These lines will be intensified through: framing structures, parametric green landscape alternates with openings, historic buildings and tiny streets.

Improving the access to the edges, both in terms of the view and the contact with the water, it respects the traditions and it shapes again the tracks of the history, when North End was "intimately related to the sea".

Fig. 28 "Framing the horizon" concept
**Fig. 29** Perceptual axes to enhance - framing the horizon

**Fig. 30** The guide to the sea through the designed buildings
Permeability

The lot in analysis should be more open in order to permit a better permeability to the docks. In reality, several buildings located just before the wharves, obstruct the visibility and the perception of Commercial Street as a seaside road. Especially the ancient warehouse, currently used as offices by the Coast Guard, creates a real fracture between the public Langone Park and the next wharves. Keeping this track of the past, it is possible to translate it into a more permeable element which will be added to the Blue Necklace linkage among all the existing attractions along the water. The waterfront, which became line in 1984, should now be translated into space, where public and private could be mixed and where different activities should enhance the area as a land of opportunities. New dynamics could arise, with good walkable and cycle paths, and with the intention of creating open spaces on the docks which will be used as civic cultural stage and not as parking. In this way, the city “has the possibility to extend its new tentacles into the sea, thus undermining its impregnability.”

The permeability until the edges of the city has been thought in sequences, created by three symbiotic elements (conceived as one entity): the gate, the icon and the pavilion. These volumes, placed in orthogonal position along the axis and de-
Fig. 31 Constitution Wharf: before (top) and after (below) the Coast Guard intervention
signed in a strategic way, have the aim to guide the visitors to the sea.

**Preservation**

“New ideas must use old buildings”

The American method of treating historic buildings has not always been superficial as nowadays and during the urban renewal years. During the 1980’s the Boston Redevelopment Authority wrote about the waterfront: “Preservation and enhancement of key historic buildings and settings in both hidden and active waterfront areas. We recommend that such protection will be extended to specific areas and elements of the North End waterfront. (...) The creation of public spaces, gracious walkways and landscaping, typical of the 19th century would enhance existing historic buildings and bridges and provide a distinctive thematic image for the area.”

Unfortunately, along the waterfront these concepts have not always been followed. The factories at the close Constitution wharf have been demolished and with them also the important memory link. Therefore, after visiting the study area and understanding better the relevance of the constructions, I decided to have a more careful approach to the existing constructions. Regarding re-use and integration of new and old, many
Fig. 32 North End and its waterfront, 1928

Fig. 33 Maquette of the study area before the Coast Guard intervention
thoughts and theories have been developed over the years. Between a revolutionary modernity, atopic and without any historical basis, and a regressive imitation, which in some cases is just a replication (“how it was” and “where it was”), there is also a third way, an intervention based on a strong relationship and respect of the memory and of its active contextualization.

Rafael Moneo affirmed that “every period of history asks architecture different projects”. Therefore, we should support the need of architecture to give a mark of its time, as “There is nothing worst, in fact, than an architecture that does not correspond to its time, or to the personality of its author, or that it is not built following the logic, which express the harmony and the character of the site and the urban context.”

In this sense, the reuse of a building passes through a direct learning process based on proven experiences, which is not repeatable, classifiable and generalizable in other context, because each intervention has its own unique identity.

The monuments and historic buildings are nothing more than objects that remind us something and that includes a set of values stored in it. This set should guide us in the design process, providing several rules that should not be searched anywhere else but the monument itself.
Fig. 34 Current surroundings: barriers to the water
Fig. 35 Existing buildings
Fig. 36 Demolitions
Demolitions

As I already illustrated before, my intervention takes under careful consideration the importance of the history of the place. Therefore, in my design I propose some soft demolitions, which are not contributing in any way to the memory of the place. In the drawing next to this page are visible these interventions: the red colour represents real buildings or part of buildings which I decided to demolish, while the orange one shows the demolitions of temporary volumes, garages or canopies.
HARBOUR BATH

Location: Copenhagen, Denmark
Program: swimming pool and open space
Architect: PLOT = BIG + JDS
Year: 2003

Keywords:
- waterfront
- link to the water
- materialization
- attractivity
LOCATOR: Toronto, Canada
Program: promenade, public space
Architect: West 8 urban design & landscape architecture and DTAH
Year: 2006-2011

Keywords:
- waterfront
- slow mobility
- continuous path
- link to the water
- materialization
6.1.5 What does North End miss?
Program and strategies

The concept of bringing people close to the water, allowing them to flow through the docks and, consequently, bringing public life to the city skyline, involves also a well-thought program.

The study area is organized in such a way that a series of possible activities can be created, diversified for different user types. In fact, in this lot it is important to offer highlights for both tourists and residents.

Since a couple of years, the Italian Community of North End has been trying to develop a fundraising to produce a project for a community center. Reporting from their website:

"We envision the Center to serve as a public meeting place, similar to an Italian “piazza” open to; a place that honors tradition and fosters innovation; a place one can visit to listen to a concert and network with entrepreneurs and companies; a place where one can attend a scientific seminar or discover the secrets of Italian cuisine; a place where one can watch a movie and where children are invited to learn more; a place where one can simply meet new and old friends; a place for dialogue and where to exchange ideas amongst the diverse communities present in Boston.10."
Fig. 29 444-450 of Commercial Street

Fig. 37 Commercial Street, existing warehouse
The perfect spot for this center could be the edifice located at the 444-450 of Commercial Street, which is the most detailed and elaborated building of the lot. Facing the street and being closer to North End neighborhood, in addition to the typical style of the facades, is making this building the most suitable place for a public function for the residents.

It was really surprising to discover that, even if North End is one of the most characteristic and authentic neighborhoods, it does not have an historical museum. In general, in the North End area, besides the Paul Revere House, there is no museum. Only in 2007, with the Fairmont Battery Hotel project, a 90 square meters space, called the Maritime Museum, opened. This museum was, actually, a sort of agreement between the municipality and the developers, as if a public function would have been added to the Hotel, the height limit norms would have been more tolerant. Therefore, this museum was not developed with a real attention to the importance the history has in North End, and nowadays is already temporary closed due to the low number of visitors.

It is obvious that a new attracting museum could be an appropriate solution for part of the big existing warehouse in my study area. In terms of function, the intention to link the history to the neighborhood also fitted perfectly.
Fig. 38 North End Beach, 1920’s

Fig. 39 North End Mirabella swimming pool, nowadays
Moreover, this program could be a sort of mixer of users, from tourists to inhabitants.

The importance that the water always had in this site, made me choose my last main public function: the swimming pool. The old northenders think nostalgically to North End Beach and, even if nowadays the area still has a swimming pool, it is completely detached from the idea of linking sea and people. Besides the fact that it is not even close to the level of the sea, a high metallic fence blocks and ruins the view to the ocean.

Moreover, there is not any large place on the waterfront able to welcome public open events, such as concerts, stages, fireworks, festivals and so forth, which are becoming more and more popular and largely enjoyed. The program was thought in order to involve users of different ages and with different interests.

In conclusion, in order to create an attracting waterfront scenario, the site should be active both day and night and in all four seasons of the year.
6.2.1 Ensemble: symbiotic buildings

The guides to the sea (3 elements 1 entity)

The large lot, situated at the intersection between Hanover Street and Commercial Street, should aim to re-sew the city to its waterfront. In order to generate an immediate and successful link, I enhanced the ocean axis, giving more visibility to the location and its new design.

I developed the study area, dividing it into three main sets: the green open space, which will become a pleasant park along the waterfront, commemorating the beloved North End Beach; the cultural center, where architecture and activities will trigger social life; and the dock area, where landscaping will enhance and permit the contact to the water.

The site dimensions and the need to create a human scale project, made me decide to develop the design of three buildings, which should work as an ensemble. These three elements are following orthogonal lines between each other, generating a guide to the sea, on the ordinates axis, with different sequences. These sequences are controlled by the specific function that each of the three volumes have.
Fig. 1 Route Architectural: the guide to the sea
The first building, facing Commercial Street and North End, is a transition, a sort of gate from the city to the pier. It follows the traditional style of the neighborhood, especially in the front façade, but it shows also some characteristics of the new intervention. The first two floors have been developed as a waterfront hall, able to filter and pass from the city to the waterfront.

The second building, the big brick warehouse, is rearward from the road and it represents nowadays the most characteristic volume of the site. Even if originally it was just one of the numerous factories present in this area, it is nowadays one of the few particular industrial tracks of the history. The massiveness and simplicity of the outside, contradicted by the new un-expected elaborated inside, translates the building into the icon of the site.

The third volume could be considered as the end of the route architectural, the link to the water. Named as Pavilion, its characteristic is to have a dual identity: volume on the side which is facing the icon; and balcony on the ocean’s side. In order to respect its location and function, the Pavilion has been conceived as an “in between landscape and built”, almost melting with the Pier, which starts just behind him.
Fig. 2 Directions, access and gates
Access and gates

Accessibility and entrance definition of the lot were two important topics in order to define my final design. The difficulty resulted in trying to combine an omnidirectional character of the site, while enhancing the access and the perimeter.

I outlined the gates thinking about the two main directions which will flow into this segment of the waterfront: the longitudinal one, along the Emerald Necklace; and the transversal one, along Hanover Street. The perception from these two different axes to the entrances of the site has been designed while trying to reach a good level of attractiveness.

In fact, as the buildings right now do not need any particular visibility, they do not arise among the neighborhood. My vision of the accesses is to have different sparkling gates, from where the visitors will be intrigued and welcomed to enter.
Fig. 3 Textures and comparison

Fig. 4 Palazzo di Vigonovo facade, Venice
Corten steel: a story teller and unifying element

I decided to use certain types of material for both inside and outside spaces, to underline the concept of respecting the memory from the past.

In particular, one material will be repeated in the whole open space complex: the corten steel. It will be applied over the ground floor of all facades and the urban furniture (as benches, lampposts, railings, bikes parking and so forth), and it will characterize and identify the new dockland area. Through these corten steel slabs, which will be inscribed/engraved, it will be possible to read some anecdotes about the piers. By night, a system of Led lights behind the corten will enhance the message and create a special atmosphere.

Moreover, the unifying element will be a story teller, which will guide the visitor until the sea. In this way, the open space will be immediately recognized as part of the built complex and it will be easier for the observer to perceive all the area as a whole.

The material is chromatically similar to the bricks which not only characterize the re-used buildings in the lot, but the entire North End neighborhood. However, it is also definitely different and contrasting, as it clearly appears as a new intervention.
Fig. 5 Urban furniture design - corten steel

Fig. 6 Different volumes and facades linked by the corten steel
The intention was to create not only a contemporary architecture, but also an important object of art that will complete the pre-existence complex and that will make people reflecting and asking questions to themselves while observing it.
NICOLAI CENTER

Location: Kolding, Denmark
Program: cultural center
Architect: Dorte Mandrup Arkitekter ApS
Year: 2006-2008

Keywords:
- gate
- corten steel
- unifying element
- contrast old/new
PALAZZO VIGONOVO

Location: Vigonovo, Venice, Italy
Program: apartments
Architect: 3ndy Studio
Year: 2012

Keywords:
- perception
- light
- corten steel
- attractive day/night
Fig.7 Textures and comparison

Fig.8 Piazza del Campo, Siena

Fig.9 Squares flooring materials
La piazza

The concept of “piazza”, as a space for public use and convergence of an urban area, has been really important in the definition of my project. In the traditions of the Mediterranean countries, where the weather is more favorable, the square always had an important role for meetings, ceremonies, processions, commercial activities and many more. The square should be the specific spot where history, tradition, culture and collectivity intersect and merge together.

In my proposal, I designed two main squares with different character and function. The first one is facing Commercial Street and it is actually split into two zones, one in front of the icon building and the other one behind the transition building. This piazza, covered by ochre sandstones, represents the typical traditional Italian square, where buildings and open spaces are intersected.

On the other hand, the other square is located in the space on and between the piers. Here, the wooden flooring and the maritime atmosphere create a sort of stage over the ocean, able to host big events, using also the water as element of spectacle.
Fig. 10 Actual situation vs proposal site plan
Fig.11-12 Perspective of the three buildings and surrounding
I developed an analysis and design in depth for the most catalyst building present in the study area: the old warehouse (the icon).

This choice has also been determined because the building in analysis is located exactly in the middle of the Blue Necklace. What is now a barrier could be in the future an incentive, a trigger of dynamics?

Moreover, I designed the other two volumes to a 1:100 scale level, as they are considered part of my Masterplan and they all work in symbiosis as a system.

However, as through this graduation project I had a higher degree of design freedom, I encouraged myself to develop the most peculiar lot of the area.
The ICON = L’ ICONA

The GATE = La PORTA

The PAVILION = Il Padiglione

the icon / l’icona
the gate/
la porta

the pavilion/
il padiglione
TATE MODERN

Location: London
Program: museum
Architect: Herzog & de Meuron
Year: 2000

Keywords:
- experiencing a building
- industrial heritage
- perception
- light
- surprising inside
- massiveness
YALE LIBRARY

Location: Yale University Campus, New Haven
Program: rare books library
Architect: Gordon Bunshaft of Skidmore, Owings, & Merrill
Year: 1963

Keywords:
- experiencing a building
- solid and void contrast
  - perception
  - light
- surprising inside
- weightlessness
GUGGENHEIM MUSEUM

Location: New York
Program: museum
Architect: Frank Lloyd Wright
Year: 1943-1959

Keywords:
- experiencing a building
- ramp as exposition route
- perception
- light
- attractivity
- icon
CAIXA FORUM

Location: Madrid, Spain
Program: museum and cultural center
Architect: Herzog & de Meuron
Year: 2001-2007

Keywords:
- reuse
- contrasting the existing
- corten steel/brick
- open space around building
- attractivity
ELBPHILHARMONIE

Location: Hamburg, Germany
Program: concert hall
Architect: Herzog & de Meuron
Year: 2007-2017

Keywords:
- reuse
- contrasting the existing
  - waterfront
- industrial heritage
- public building
MUSEO NACIONAL DE ARTE ROMANO

Location: Merida, Spain
Program: museum
Architect: Rafael Moneo
Year: 1986

Keywords:
- reuse
- contrasting the existing
- museum as an experience
- ramp
Location: Verona, Italy
Program: museum
Architect: Carlo Scarpa
Year: 1958-1974

Keywords:
- reuse
- contrasting the existing
- clarity of shapes
- ramp
Fig. 1 Concept: contrast solid and void - massive volume vs skeleton
6.3.1 Architectural concept

1. REUSE

One of my starting points has been to establish a balance between the existing building and the new intervention. In particular, the old and new parts should have a new symbiotic relationship, where there is not a prevalence of one over the other.

The building nowadays, besides not contributing in any way to represent the historical traces of the area, is very different from what it was in its origin: a blank box. My intention was to re-create the original atmosphere, enhancing the dimensions of the warehouse through a new volume. This volume, integrated in a specific asymmetrical part, will embody a sort of light skeleton in a total contrast with the massiveness of the original factory.

The strategies which I followed to shape the new design derive from the idea that old and new will perform in a positive way if they are considered as integrated elements, and not as different entities.

The massiveness characterizing the existing building, is not compromised, but, on the contrary, intensified.

I focused on trying to under-
Fig. 2 The ramp and the perception from it: experiencing the building and the city
stand which elements were/are missing in the existing complex in order to re-create a strong identity in the site, even if this comes with a different atmosphere comparing to the past.

Rafael Moneo wrote that “The life of the buildings is based on their architecture and on their permanence of the most characteristic features. Although, it may seem a paradox, is exactly that permanence which makes to appreciate the transformation: the respect of the architectural identity of a building is what makes change possible, what it guarantees life continuing.”

My new design took shape following the needs, weaknesses and strengths of the original building, which have been modified and merged with new dynamics.

2. PERCEPTION

“As we move through spaces, the body moves in a constant state of essential incompletion. A determinate point of view necessarily gives way to an indeterminate flow of perspectives. (….) Perception and cognition balance the volumetrics of architectural spaces with the understanding of time itself (...). Parallax, the change in the arrangement of surfaces that define space as a result of the change in the position of a viewer, is transformed when move-
Vertical and oblique movements through urban space multiply our experiences. Spatial definition is ordered by angles of perception. (…) The movement of the body as it crosses through overlapping perspectives formed within the spaces is the elemental connection between ourselves and architecture. (…)

“The turn and twist of the body engaging a long and then short perspective - an up and then down movement, an open and closed or dark and light rhythm of geometries - these are the core of the spatial score of architecture” 12.

The design has been defined based on the idea that an icon-building should, moreover, be an emotional experience for the visitor.

The ramp, conceived as a sort of route to discover the edifice itself and the external surroundings, is transformed into something more than a regular vertical connection.

Through this one and, additionally, the perception that the visitor has when he is moving, specific spots with internal or external views have been designed. Besides framing the internal high space around the skeleton, the ramp and the composition of the openings through this one also allow to frame Boston in the museum.
3. LIGHT

“Light has always been recognized as one of the most powerful formgivers available to the designer, and great architects have always understood its importance as the principal medium which puts man in touch with his environment.”

Moreover, daylight has been identified as the most desirable due to its illumination and spectral qualities.

In my project the importance of natural light is combined with the importance of the view which is associated to it. Openings are not only defined through perceptional needs, but also through a relevant alternation of light and shadows. Especially in the lateral sides, small long windows permit to have an interesting change of light cone inclinations during the different hour of the day.

The zenithal light is also integrated. This is captured through the glass box on top of the building and is filtered until the ground floor, thanks to the void (at each level) between the ramp and the floor.

![Fig.3 Openings and ramp as a perceptional system](image-url)
Fig. 4 Routing (blue lines: public accessibility / brown: museum path)

GROUND FLOOR

SECOND FLOOR

FOURTH FLOOR
Fig. 5 The Icon's program
Program

The program of the Icon building is the result of my analysis in the neighborhood and in the whole waterfront area.

As I have already mentioned before, the need of a museum in North End, and especially a museum linked to the history of the location, appeared to be the perfect solution.

However, as this edifice is located in a way that could block the continuity of the Blue Necklace, it seemed also necessary to design it as an omnidirectional permeable volume.

Walking from outside to the ground floor, the visitor will get immediately surprised by the unexpected indoor. At this level, the icon reveals its peculiar identity, inviting the guest to walk through the ramp or flowing further to the piers. Here, they are located a small auditorium, a cafeteria, an info point and toilets. In order to create the atmosphere even more intense, suspended artworks and other kind of installations will be placed in the entrance.

The first and second level accommodate a public art exposition, guardrobe, ticket office, museum shop-bookstore, toilets and an amazing balcony with some sit stairs over the en-
Fig. 6 Section and program
trance. From the second level, the routing is split between visitors of the museum and people who want to reach the roof terrace.

A hanging staircase is providing the ascension until the last floor for those who want to go directly to the roof.

The museum visitors, instead, will continue to follow the ramps until the last floor.

The roof terrace is characterized by the glass box, with a wonderful restaurant, services and viewpoints; and an open space, which offers a 360° view over the whole city of Boston.
Fig. 7 Refined new materials (left) vs rough existing materials (right)

Fig. 8 Materialization and hierarchy of elements
Materialization and structure

The choice for the materials follows the starting point of being "easily identifiable as new intervention".

Outside, as I have already explained, the only material that has been added to the original warehouse is the corten steel at the ground floor. This also helps to identify and accentuate the entrances of the most public area.

Inside, the new volume is characterized by a neutral slightly reflective color material which runs from the ground floor to the last one, covering ramps and horizontal floorings. Everything here is designed in order to enhance lightness, purity and refinement, contrasting the roughness of the external mass.

The pillars, all steel-made in order to communicate verticality at the same time, and the tradition of the industrial heritage, are divided in two sets: the holding ramp one and the holding floor one. The first set of columns is a white H profile, intended to define the shape and configuration of the skeleton. The second one, instead, is composed by pipe chromium plated columns and it recalls the accurate detailing of Mies van der Rohe.

Remarkable is that "The chromi-
um-plating, turned the column surfaces into reflecting mirrors that tended to make the columns seem much more slender than they actually were”. In addition, this material is also able to reflect on it the existing brick walls and volume, merging and creating a fascinating balance/unity with the heritage.

Some of the marble vertical elements are located around the service box to give more elegance and light reflection.

The flooring of the ground floor has been designed with the same sand stone of the external square in order to intensify the idea that the public square filters and penetrates also inside the building. In fact, this level is a sort of covered square where transit and rest stop intersect.

The structure of the existing building is based on large steel span columns, reinforced by trusses at the ceiling with a height of approximately 1.95 meters. The two central trusses will become meaningless in terms of structural bearing once inserted into my volume and, therefore, they will be demolished to facilitate the raising of the ramp.

The stability of the building is guaranteed by two concrete bearing walls around the lift.

The hanging staircase on the side of the building will be attached in four points to the brick
walls and stabilized with beams which link the skeleton’s floor to the landing balcony of the stairs.

The removal of several bricks from the façades, needed to create larger openings, has been solved through the insertion of metallic L profile slabs outside and a steel beam inside.

Fig. 9 Central Artery: bricks removal and new openings
BARCELONA PAVILION

Location: Barcelona, Spain
Program: German Pavilion for the International Expo in Barcelona, 1929
Architect: Ludwig Mies van der Rohe
Year: 1928 - demolished in 1930 - rebuilt in 1986

Keywords:
- structure
- harmony
- elegance
- materials
CENTRO GALLEGRO

Location: Santiago de Compostela, Spain
Program: museum of contemporary art
Architect: Alvaro Siza
Year: 1993

Keywords:
- materials
- reflection
- elegance
- light
- contrast old/new
Fig. 1 Concept: contrast solid and void - massive volume vs skeleton
6.3.2 Architectural concept

This building is the first one that appears, coming from Downtown and following Hanover Street.

Analyzing the actual situation in terms of perception from this axis, I noticed how the angular wall along Hanover Street is actually merging with all the other buildings of North End.

My proposal therefore is based on the intention to create an attractive volume, which will encourage the visitors to reach the intersection of Commercial Street, discovering the new North End piers.

In order to do this, a small part of the building will be demolished and replaced with a straighter façade, completely covered by corten steel. These metallic engraved panels will also have a visible sign of “North End piers” on them, very attractive by day and night.

This volume follows the typical North End façade style, with the corpus in bricks and the decorations around the openings in stone.

Besides the materials, the horizontal building hierarchy is also remarkable: identifiable ground floor, corpus, third floor as piano nobile, crowning.
Fig. 2 New facade on the intersection between Hanover Street and Commercial Street
The front facade style is respected and barely touched (only the lower part of the ground floor is covered by the corten steel) as it represents the character and the link to the North End neighborhood. The lateral facades are treated as attracting elements, while the one by the sea has alternated traditional and new patterns. Therefore, the building represents the transitional access from the city to the sea and vice versa.

Typical North End facade

Structure:
- identifiable ground floor
- corpus
- third floor: piano nobile
- crowning

Materialisation and details:
- bricks facades
- decorations around openings
- often white/stone decorations
Fig. 3 The Gate's program
Program

The first two floors are intended to be the “gate to the docks”.

A large welcoming atrium, with an internal patio, a cafeteria, an info point and service, is located at the ground floor.

The community center, situated in the upper floors, follows a specific horizontal order: from more public (ground floor) to more intimate (third floor). In this part the library, the archives, the exposition spaces and some rooms for activities are located.
Fig.4 Intersection of the different axes
Fig. 5 Gate’s front facade on Commercial Street: tradition and innovation
Fig. 1 Concept: the dual identity of the volume
THE PAVILION

6.3.3 Architectural concept

The Pavilion is the end of the Route Architectural, the link to the water. Its shape is a sort of hybrid between volume and landscape.

The intention for the design of this building was to respect the different meanings and shapes needed in the two main orientations (facing the sea and facing the icon building), defining two different identities.

The façade which is adjacent to the Icon building maintains the corten steel ground floor and its dimensions, becoming a sort of gate to the sea. While the opposite façade is more fluent and dynamic, transforming itself into stairs to the sea. This side of the building, which carries a physical and metaphorical concept of "link to the ocean, staircase to the water", is a balcony over the harbor swimming pools and over the Boston Bay.

Fig.2 Concept: Pavilion and pier are merging together
Fig. 3 The Pavilion's program
This volume is the actual filter from the land to the swimming area. It contains all the facilities necessary for a swimming pool as changing rooms with lockers, toilets, a cafeteria, and a ticket-info office. The location of the building is guarantying the access to the swimming pool only in supervised conditions, preventing dangerous situations (as during the night). In the winter, the water of the pools could be easily transformed in ice-skating surfaces making the whole complex active and vivant during the whole year.
Fig. 4 Image of the pier and volume from the Blue Necklace: before and after
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L’ICONA
1. RAMP/FLOOR LEVEL SECTION - 1: 50
1. Drainage substrate
2. Waterproofing membrane
3. Insulation in wood fiber
4. Vapor barrier
5. Levelling
6. Steel structure
7. Ceiling
GROUND FLOOR PLAN - 1: 400
The Graduation Project has been investigating the city and its future dynamics in terms of mobility. The comparison between the city of Boston and the city of Eindhoven has been the first starting point from where a deep research has been developed.

Beside this, during the M3 we were asked also to analyze individually two reference projects which have been inserted in the graduation Atlas. These cases studies were divided in two categories: urban project and typology project.

This research, advanced before the design process, gave us the knowledge’s basis to reach the personal urban statement. The concept was to learn not only about the assigned references but also to gain information from the other student’s investigations.

As urban reference, I decided to analyze the Government Center in Boston from which I started to understand the American context and vision, while as typology reference I maturated a deep study on how the drive-in typology is born and developed.

The process had been advanced with theoretical analysis and architectural examples. Moreover, three charrettes in the studio, gave us the opportunity to start designing since the beginning of the year, challenging ourselves in 3 hour design projects. From one of these charrettes, I started to delineate my focus on the green axis of Boston and its low relationship with Downtown.

In fact, the chain of parks called The Emerald Necklace barely touches Downtown and it does not link the waterfront after Charles River Banks. In all American cities the possibility of enhancing new ways of moving which do not involve traffic jams and pollution is becoming more and more popular. In this context, the extension of the
Emerald Necklace until Downtown and around it, appeared to me as a consistent point to start. The link between Emerald Necklace and waterfront came spontaneous as the perfect section of the city which could trigger different dynamics and become a really attractive point. Boston waterfront in some parts is very neglected and almost forgotten. In particular, the connection between North End-West End-Central Artery is lacking of easy permeability. Through the Begin Colloquium I reached my final urban statement and the first research question, which set starting points and guidelines.

The chosen site on the wharves of North End neighborhood therefore represents the perfect junction between the city, the sea and the Emerald Necklace. In term of access, I worked with a longitudinal line (the Blue Necklace) and with a cross line (Hanover Street). The intersection between Hanover and Commercial Street became fundamental to link the City Hall Plaza to the water. The spot has great potential in terms of open space and connection to the water, but also in terms of architecture trace from the history. In fact, two existing volumes which are nowadays almost hidden, could create an interesting area where past and present merge together.

Walking in North End I noticed how the visibility of the ocean is not enhanced as it should/could be. This helped me to understand that some perceptual axes, which would frame the horizon, should be intensified. From these axes, I delineated my masterplan where I proposed the reuse of two existing edifices and the design of a pavilion. As reuse approach I decided that I should create a contrast between new and old, but with a deep respect and comprehension of the historical transformations. Therefore I used my interventions as sort
of symbiotic elements which do not “steal the show” from the existing buildings but complete them. As the lot has the important role of creating the missing link between the one side of the peninsula to the other, it should be attractive and impressively surprising. Beside the rich program and the different activities that could occur in the new waterfront, I carefully designed also the perception outside and inside the volumes.

My main focus has been on the old warehouse which I imagined as a new landmark/icon for the whole city. Preservation, permeability and perception have been three key words that I set as guidelines since the beginning.

One of the challenges that I faced has been that during the process of design, I approached my site not as a singular lot or as a neighborhood transformation, but as something which would influence the entire Boston. In particular, the meeting with Lauren Shurtleff of the Boston Redevelopment Authority made me realize how the American context is nowadays setting long terms plans for all the major cities where the public spaces have a main role.

My fascination on studying and deepening the links among different cultures and traditions found the perfect response in this graduation. The opportunity to investigate a new context (as the American one) and to develop a project which is linking historical and contemporary architecture, it fulfilled me while the design was taking shape. The fact that I could combine an urban and architectural project really made me thinking about the continuous coherency, jumping from one scale to the other during my whole process. Moreover, as my last university project abroad, I had the chance to combine my Italian root, Dutch influences and a new context.
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