

# Old Port of Trieste Past, Present and Future

November 8<sup>th</sup>, 2017

Gorizia



# Outline

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## **✘ Trieste and its port**

## **✘ The Old Port**

- ✓ History
- ✓ Present situation
- ✓ Which future?

# Trieste and its port



# The city of Trieste

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- A satellite-style map of Italy with a red circle highlighting the city of Trieste. A yellow star is placed on the map next to the label 'Trieste'.
- ✓ Trieste is the capital of the autonomous region of **Friuli Venezia Giulia** in the **North-Eastern corner of Italy**
  - ✓ The **Region borders** Austria on the North, Slovenia on the East and the Adriatic Sea on the South
  - ✓ The Municipality has an **area** of 84,5 square kilometres, a **population** of 205.595 (census 2014) and a density of 2.415,64 people per square kilometre
  - ✓ **Cosmopolitan vocation**: it is a **crossroad of cultures, religions and peoples**
  - ✓ Home to **prestigious international institutions**
  - ✓ **Tertiary, office and financial service sectors**
  - ✓ **Research and development of innovative technologies**
  - ✓ The city also welcomes **international high tonnage cruise ships** into the heart of the historical centre

# The city of Trieste

Strictly connected to the sea



# Port & tourism



Extensive  
marina  
facilities for  
recreational  
boating

Annual  
Barcolana  
regatta

Cruise  
shipping



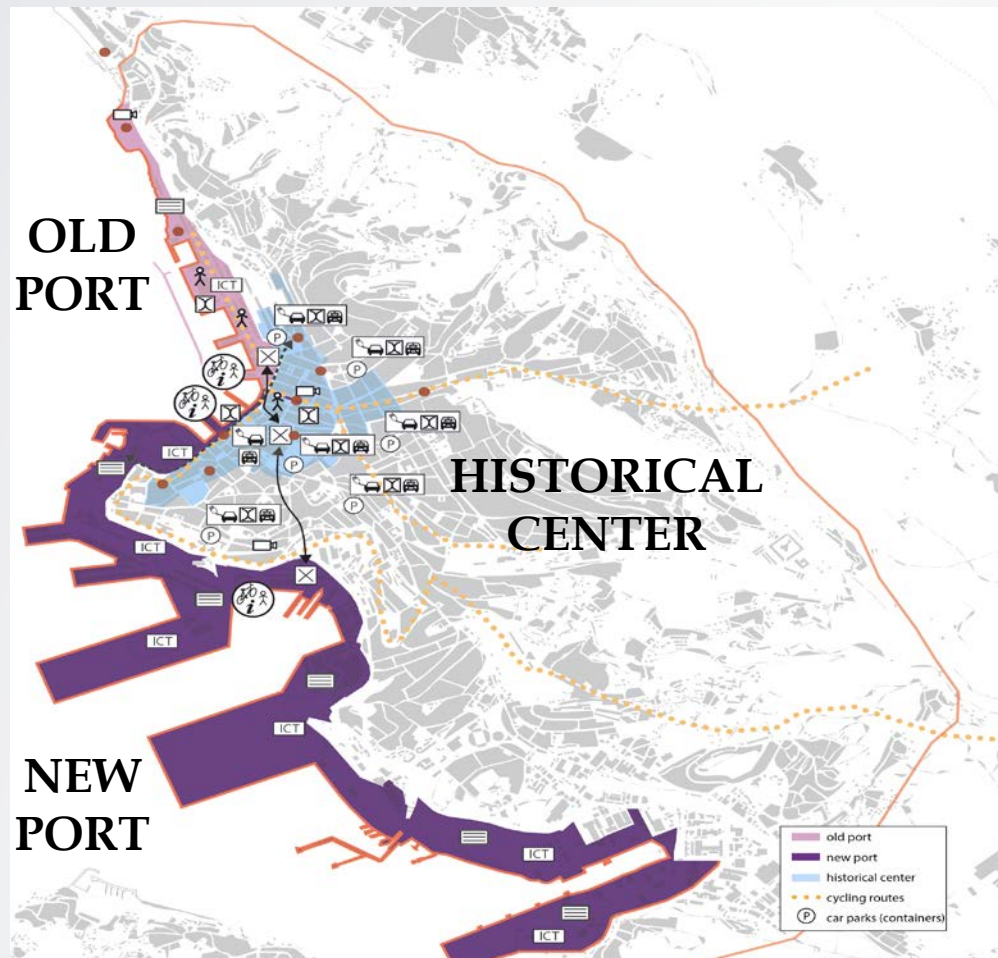
# The Port of Trieste

- ✓ **International hub** for overland and sea trade
- ✓ Located in the heart of Europe, at the intersection between shipping routes and the **Baltic-Adriatic** and **Mediterranean TEN-T core network corridors**
- ✓ **Two separate supply chains: long-distance intercontinental maritime transportation** and short/medium-distance **intra-Mediterranean trade**
- ✓ Terminus of **regular direct ocean transportation services** provided by the world's **main shipping lines to China, the Far East, Singapore and Malaysia**, with stops in several other ports in the Mediterranean Basin (Albania, Slovenia, Croatia, Greece, Turkey, Egypt, Lebanon, Israel, etc.)



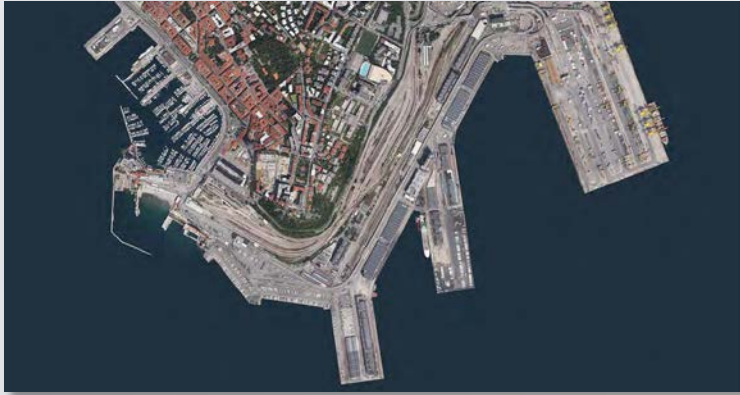
# The Port of Trieste

The port is located next to the **heart of the city**





# The New Port ...



# ... and the Old Port



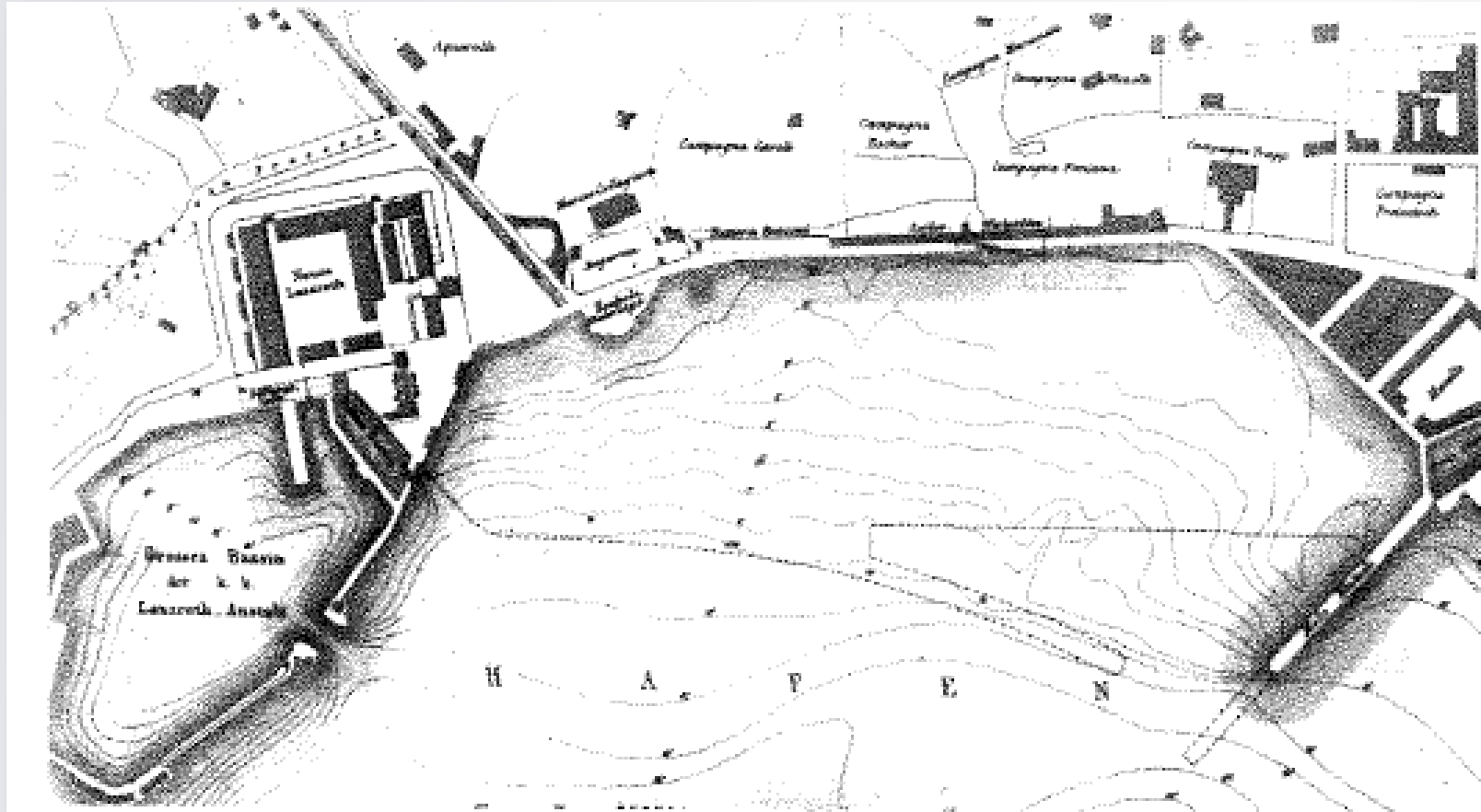
# The Old Port - History



# History - '700 and '800

- ✘ From the beginning of 1700 and 1850 Trieste was mainly an emporium
- ✘ 1719: Trieste was given the status of Free Port by Emperor Charles VI of Austria
- ✘ 1740: Empress Maria Theresa of Austria took power and extended the borders of the Free Port area to the periphery of the town
  - ✓ Merging of the emporium, the port, the new city and the old one
  - ✓ Extensions of the exemptions from customs duties to the whole city, which attracted many people from different countries (Italians, Serbians, Slovenians, Croats, Jews and Greeks)
  - ✓ The "Editto di tolleranza" law provided for the freedom of worship, the possibility to negotiate freely and to own goods
- ✘ The Trieste Company (known as the "Austrian East India Company") attempted to connect directly the Habsburg Empire to the Indian and Chinese markets

# The port in 1850

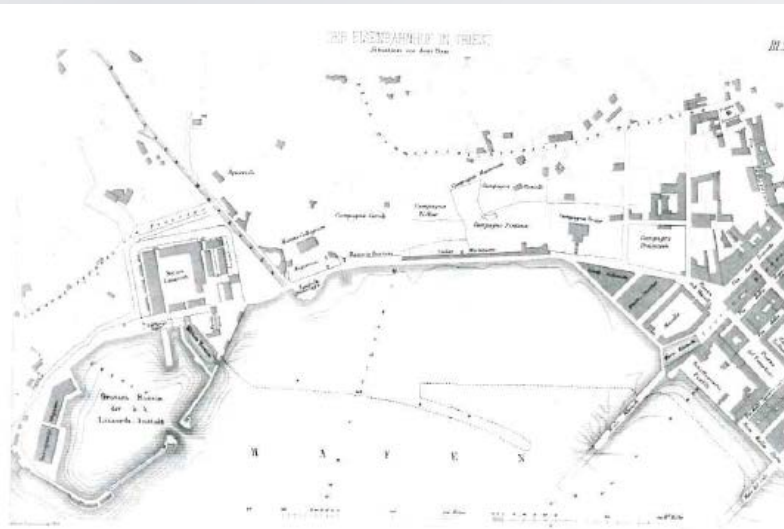


*Allgemeine Bauzeitung, 1859*

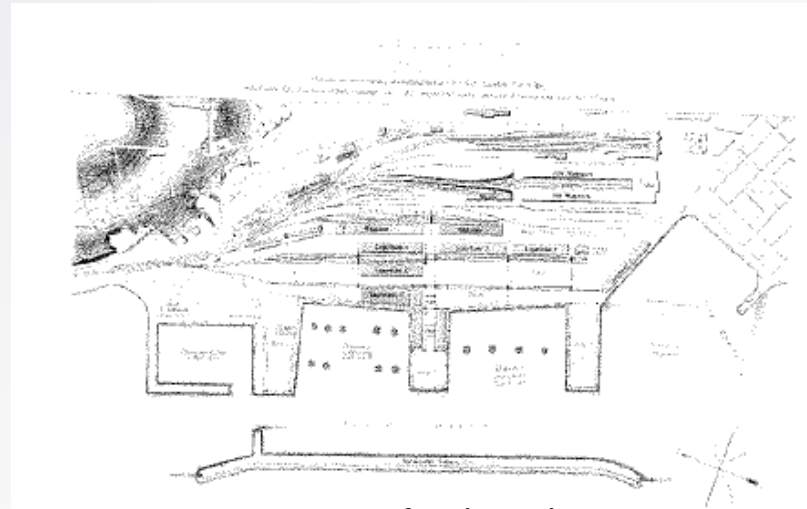
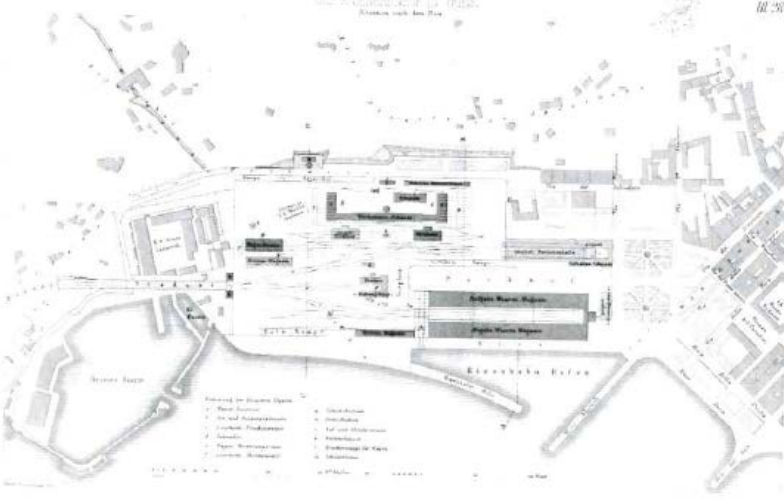
# History - '700 and '800

- ✘ International fame as the most important port of the Austro-Hungarian Empire (7<sup>th</sup> port in the world as volume of handled cargo)
- ✘ It appeared that it was necessary to enlarge the port infrastructure and the railway network
  - ✓ 1857: the Südbahn (Southern) Railway line became operational along the northeastern route Trieste-Postojna-Ljubljana-Graz-Vienna (with further links to Budapest and the Balkans)
  - ✓ The railway element was central in the design of the port structures
- ✘ The Lagerhäuser system of Northern European ports was used as a model
- ✘ 1863: call for tender for the realization of a new port for Trieste

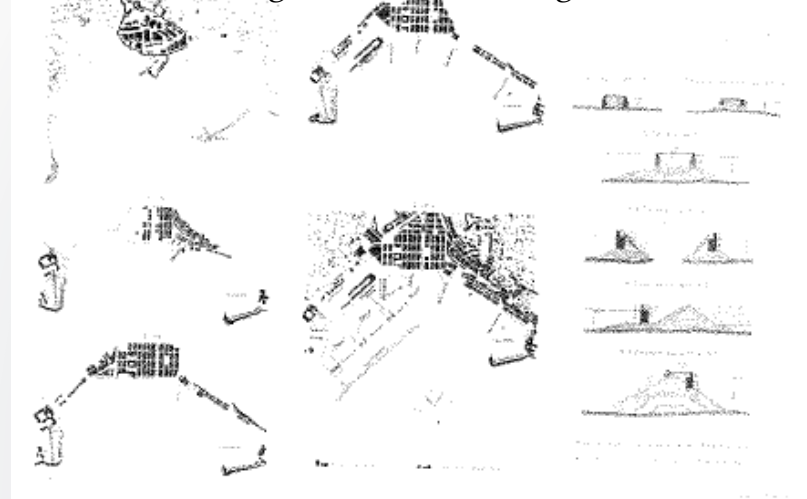
# Some project proposals - 1859



**Der Eisenbahnhof in Trieste**



**Der Neue Hafen in Trieste**  
*Allgemeine Bauzeitung*



# History – '800

- ✘ **The winner was Paul Talabot (a French engineer) who designed the project and the most ancient complex of facilities**
- ✘ **1868: the construction of the current “Old Port” (at the time called “New Port”) was started**
  - ✓ To tackle the competition of Northern ports, able to attract trade thanks to railway connections
  - ✓ To satisfy the needs of non-European maritime transport, increased after the opening of the Suez Canal in **1869** (shortening of the distance separating Trieste from Bombay by 7,500 miles)
- ✘ **1868-1883: the most ancient complex of facilities was built, together with the outer breakwater and other sea infrastructure**
  - ✓ Port and railway development plan aimed at consolidating the role of Trieste as a trading centre for all territories under Austro-Hungarian rule

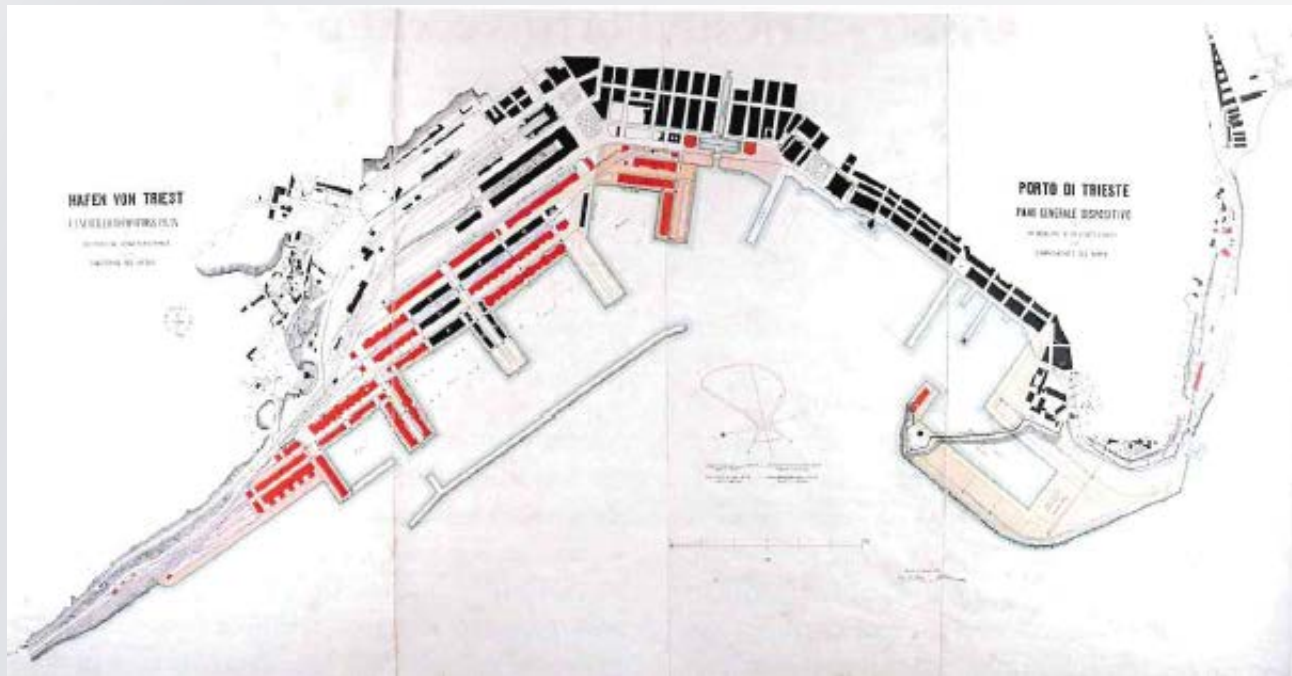


# History - '800

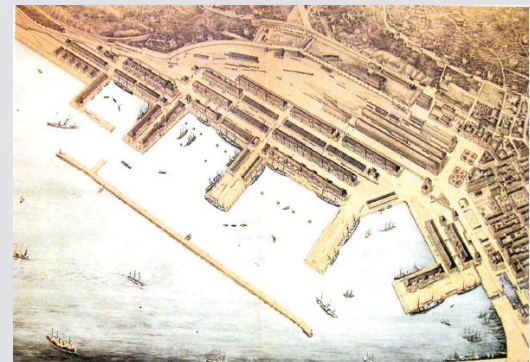
- ✘ 1871: a new monthly service linking Trieste with Bombay was established
- ✘ 1874: a contract was signed with the Südbahn for the development of the port
- ✘ 1879: the Magazzini Generali (the Warehouses) were erected
- ✘ 1879: the Pontebbana line was officially opened connecting Trieste, Udine, Pontebba, Villach, Salzburg and Munich
- ✘ 1891: the port became a free port and was separated from the rest of the town by an enclosure
  - ✓ The status of free port (previously extended to the whole city) was now being limited to this area
  - ✓ The city became physically separated from the port
  - ✓ From “commercial hub” to “transit hub”



# The Masterplan - 1886



Der Neue Hafen in Trieste - Eng. Buzzi and Krause



# History – '900

- ✘ **From 1901 to 1914: the works began to enlarge the Rive area (the embankment), to build the Bersaglieri Wharf, the Scalo Legnami (the timber pier) and S. Andrea port (piers V and VI) -> “New Port”**
- ✘ **From 1924 to 1936: realisation of major public works**
  - ✓ Completion of the sea infrastructures, port equipment on piers V and VI, Silo, Stazione Marittima (the passenger station), Idroscalo (the air harbour)
- ✘ **After the Second World War**
  - ✓ Reconstructing of the buildings damaged by the bombings
  - ✓ An innovative port reorganisation was started in line with the needs of the containerisation and the new transport systems
- ✘ **The status of the Free Port Zones has remained a distinctive feature, being confirmed by subsequent peace treaties, by the European Community and by the Italian Parliament**

# Warehouses

- ✘ The oldest buildings of the port, erected after the model of the Lagerhäuser (parts of a city used for goods handling)
- ✘ For the storage and stocking of goods, from their arrival in port to their shipment and distribution
- ✘ 3 groups of buildings (38 warehouses and hangars):
  - ✓ One-storey above-ground buildings
  - ✓ 2 or 3-storey above-ground buildings, with cellars and garrets, with galleries that link the avant-corpses and are supported by cast-iron mullions
  - ✓ 4-storey above-ground buildings, with cellars, ground floors and four higher floors with galleries
- ✘ Initially equipped with cranes, elevators, hoists and other lifting equipment, used for goods loading/unloading and hydraulically operated
- ✘ The one/two/three grounds buildings have a “perron”
  - ✓ Raised platform, about 1 meter high, used to perform loading and unloading operations with railway cars)

# The Old Port



Hydraulic crane

# Architectural features

- ✘ Vertical and horizontal lines along the facades, geometric definition of the basements, doors, windows
- ✘ Along the facade, the horizontal lines (e.g. the stringcourses) give the buildings a longitudinal appearance, while the vertical lines (pilaster strips and avant-corpses) create interruptions
- ✘ Through the harmonisation of the lines, the structural elements take up an architectural character
- ✘ At the time of the construction, decorating was achieved through the use of different finishing materials and the work of master decorators and stone-dressers
  - ✓ Cornices, modillions, capitals, basements, windowsills and avant-corpses made of different materials produce a suggestive effect
  - ✓ Grey cast-iron mullions are a distinctive feature of hangars' ground floors

# Some relevant buildings

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**✘ Warehouse 26**

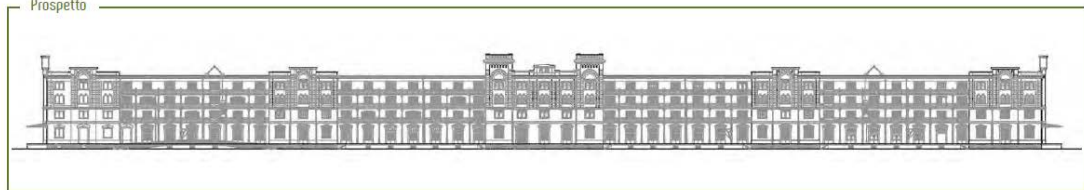
**✘ Hydrodynamic Plant**

**✘ Electrical Substation**

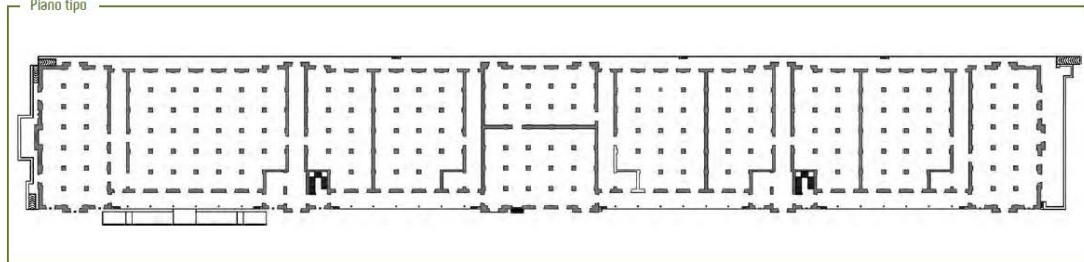
# Warehouse 26 (1893)



Prospetto



Piano tipo





# Warehouse 26 (1893)

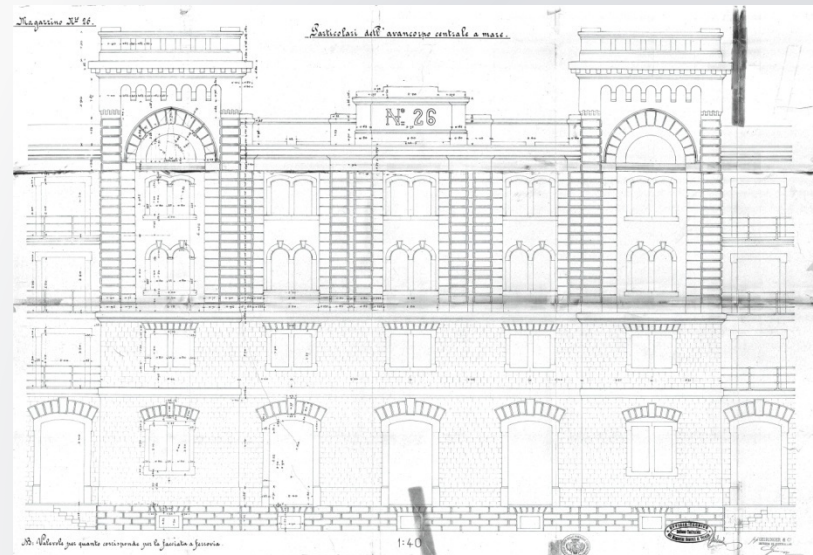
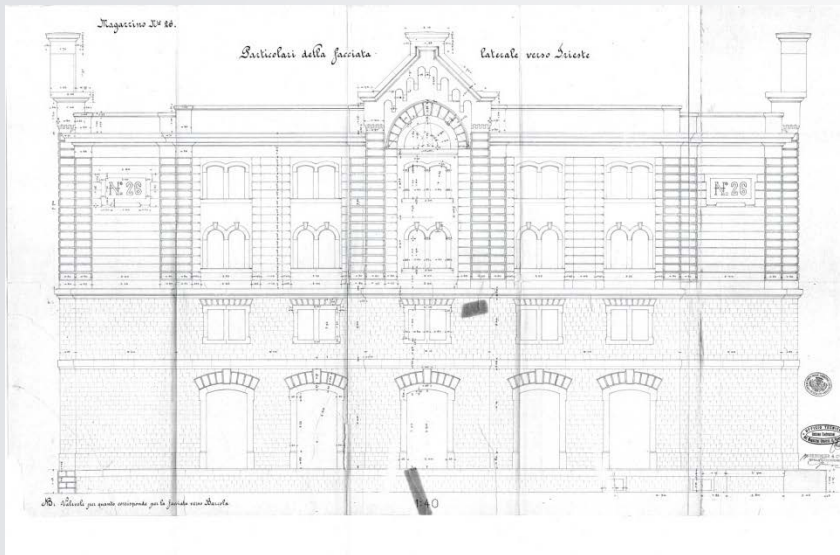
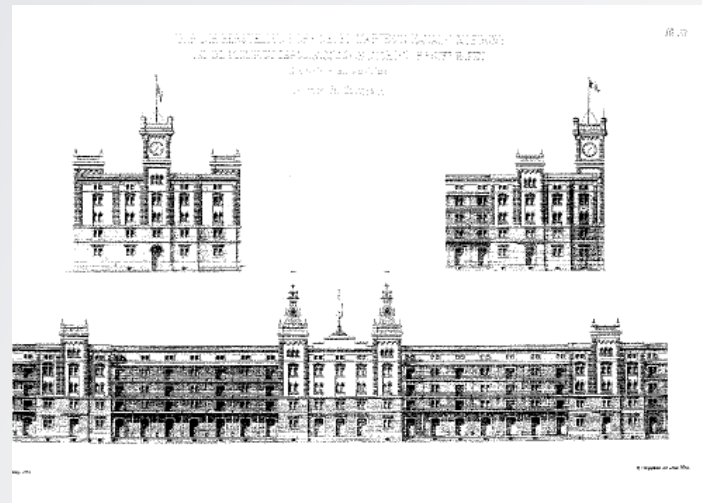
## ✘ The largest of all the buildings

- ✓ 30.000 square meters
- ✓ Length of 244 meters
- ✓ 12 main area, 5 levels (a basement used as a cellar, a ground floor, 3 upper floors and a garret)
- ✓ Rectangular design; stand-alone buildings whose facades are interposed with a series of galleries
- ✓ 2 main stairs leading to the higher floors 7 elevators, 8 lifts and 2 internal hatchways connected with the cellar

## ✘ Extraordinary historical and architectural worth

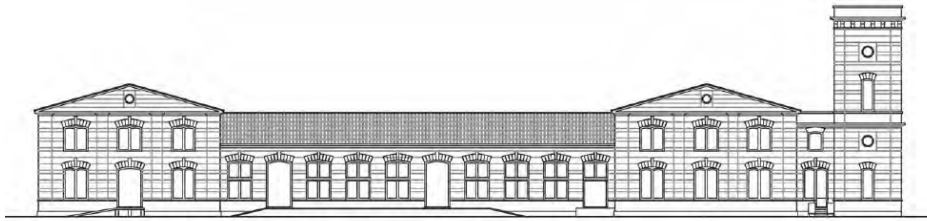
- ✓ Witness to Hasburg Trieste, to a culturally and architecturally forward-looking Trieste
- ✓ Turrets above the finishing cornices, richly decorated mansards and clock tower -> sumptuousness of this warehouse
- ✓ Extraordinary perspective given by the rows of cast-iron mullions and the avant-corpses

# Warehouse 26 (1893)

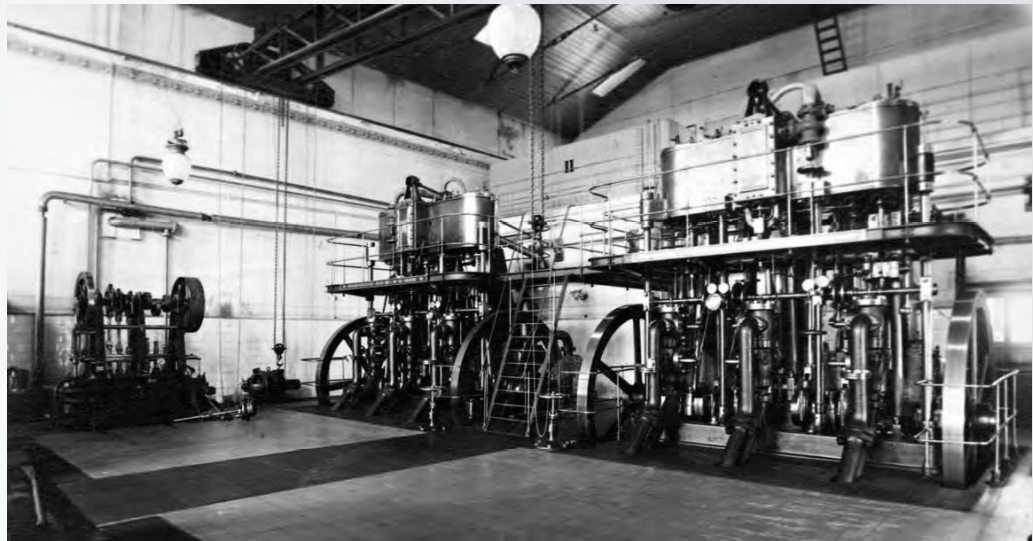
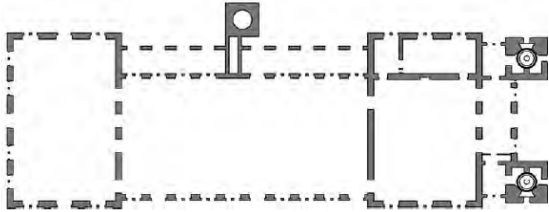


# Hydrodynamic Plant (1890)

Prospetto



Piano tipo



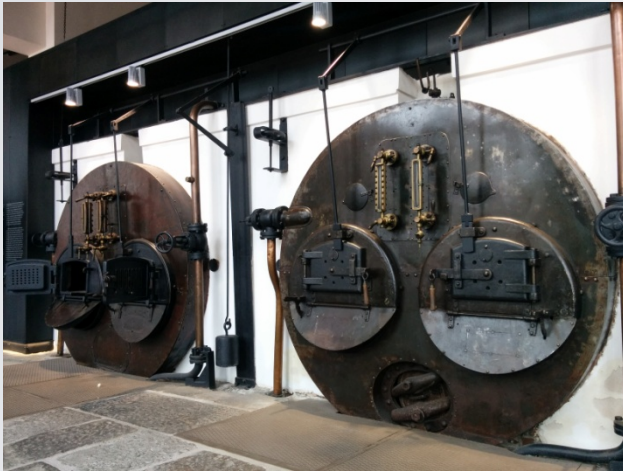
# Hydrodynamic Plant (1890)

- ✘ Together with Hamburg, Buenos Aires, Calcutta and Genoa, Trieste was one of the first ports in the world to be equipped with a hydrodynamic plant
- ✘ The building is located behind the pier and is characterised by a high brick smokestack and 2 square towers at the sides of the main façade
- ✘ **An important piece of industrial archaeology**
  - ✓ The first alternators were exhibited at the Paris Exhibition in 1881
  - ✓ The first electric motor was invented by Galileo Ferraris in 1885
  - ✓ In the years between 1920 and 1939 the plant operated 83 quay cranes, 31 external cranes for the warehouses and 57 hoists
  - ✓ It ceased to be used in 1983
  - ✓ The hydrodynamic plant - a rare example of machines that worked for more than a century - is located in a Rundbogenstil building (an architectural style that was a German version of Romanesque, very popular at the time)

# Hydrodynamic Plant (1890)

- ✘ The plant took the water from the water system and supplied energy to the different points of consumption
- ✘ It is a centralised energy generator, which operated the quay cranes, the external cranes and the internal hoists of the port warehouses
  - ✓ A series of Cornish 2 fire-tube boilers, with a 2,10 m diameter and a 10 m length, produced steam with a pressure of 7 atmospheres
  - ✓ The steam was delivered to 4 main machines and an auxiliary one
  - ✓ The main machines had a higher motive part (with a central high-pressure cylinder with a 450 mm diameter and two lateral low-pressure ones with a 600 mm diameter) and a lower operating one
  - ✓ A system of crankshaft rods ensured the correct timing of the 3 cylinders
  - ✓ Pressure was kept constant by means of hydraulic accumulators
  - ✓ Pressurised water was distributed along the port main axis through a 6,8 km long system of cast-iron pipes, installed in underground passages that could be inspected

# Hydrodynamic Plant (1890)

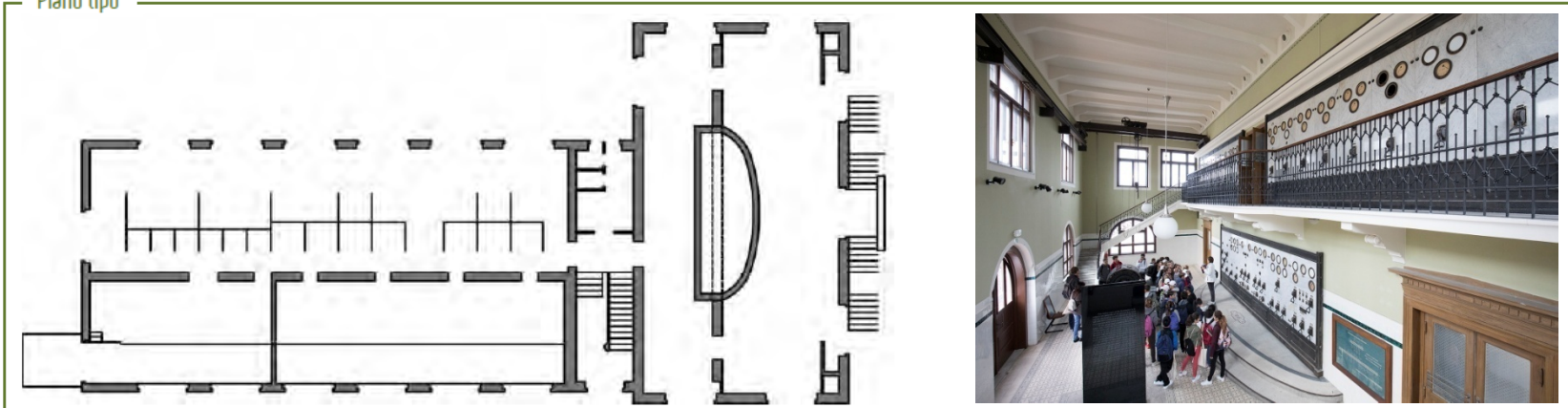


# Electrical Substation (1913-1915)

Prospetto



Piano tipo



# The Old Port - Present



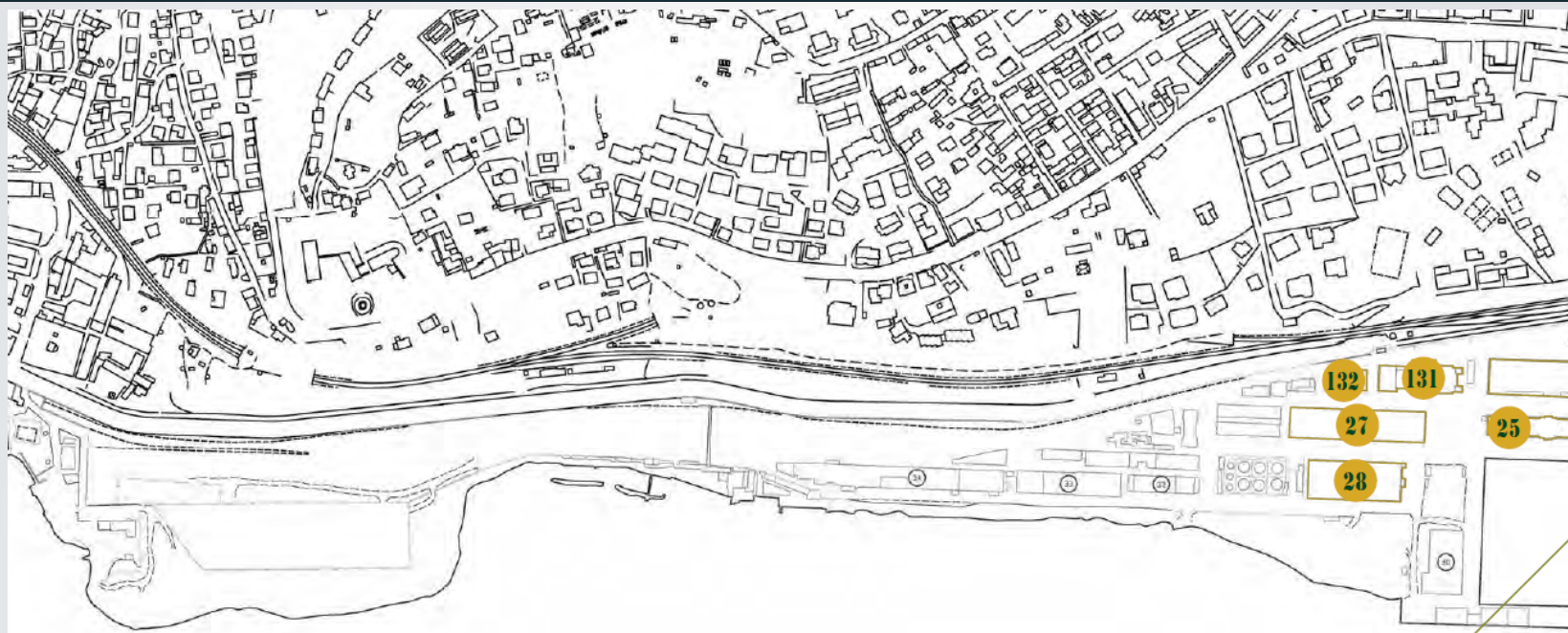


# The Old Port area



- ✘ **An architectural heritage of great historical and artistic value**
  - ✓ 600,000 sq.m. located in the heart of the city
  - ✓ Visual link among Miramare Castle, Barcola and San Giusto castle
  - ✓ 5 piers, 3100 m. of docks, 23 buildings (originally 38), directly linked to the old railway (1857)
  - ✓ Each building is an example of the technical architecture at the end of the 19th century
  - ✓ A jewel to be relaunched through the identification of **new functions**







# Revival of the Old Port area and the waterfront

- ✘ The zone has been included in the UNESCO list of World Heritage Sites as a unique example of industrial archaeology
- ✘ Historic buildings due for redevelopment as offices, museums, accomodation and for recreational tourism and so on
- ✘ Today we have a functional restoration of some important buildings
  - ✓ Warehouse 26
  - ✓ Hydrodynamic Plant
  - ✓ Electrical Substation
  - ✓ Warehouse 1

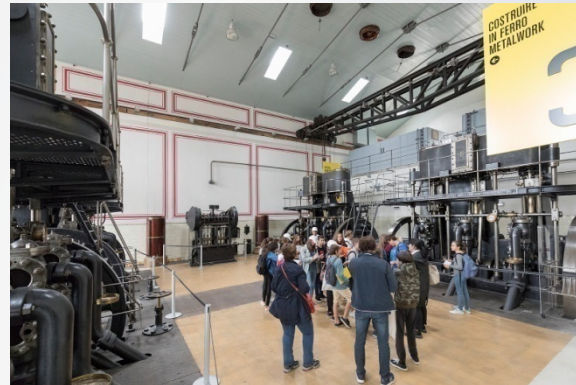
# Warehouse 26



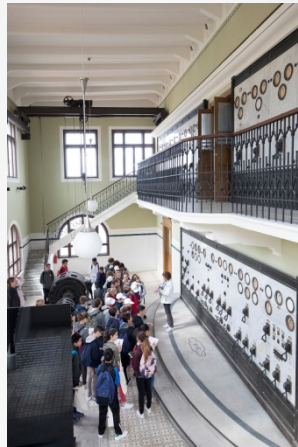
# Hydrodynamic Plant



# Hydrodynamic Plant

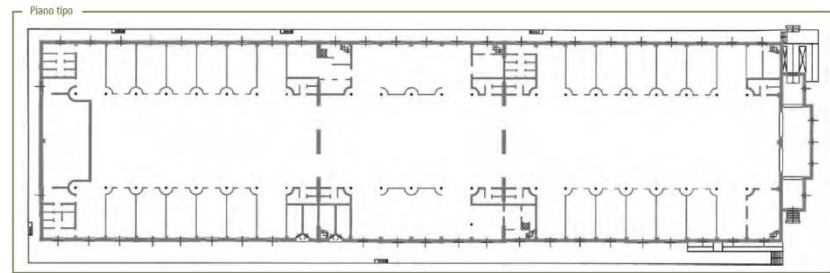


# Electrical Substation





# Warehouse 1



# The Old Port - Future



# The new situation

## ✘ What's happened?

### L. 190 - 23/12/2014 ("legge di stabilità 2015")

#### art. 1 paragraphs 618-619

*618. Il Commissario di Governo per il Friuli Venezia Giulia, previa intesa con il presidente della regione Friuli Venezia Giulia e con il sindaco di Trieste, adotta, d'intesa con le istituzioni competenti, i provvedimenti necessari per spostare il regime giuridico internazionale di punto franco dal Porto vecchio di Trieste ad altre zone opportunamente individuate, funzionalmente e logisticamente legate alle attività portuali.*

*619. In conseguenza dei provvedimenti di cui al comma 618, le aree, le costruzioni e le altre opere appartenenti al demanio marittimo comprese nel confine della circoscrizione portuale, escluse le banchine, l'Adriaterminal e la fascia costiera del Porto vecchio di Trieste, sono sdemanializzate e assegnate al patrimonio disponibile del comune di Trieste per essere destinate alle finalità previste dagli strumenti urbanistici. Il comune di Trieste aliena, nel rispetto della legislazione nazionale ed europea in materia, le aree e gli immobili sdemanializzati e i relativi introiti sono trasferiti all'Autorità portuale di Trieste per gli interventi di infrastrutturazione del Porto nuovo e delle nuove aree destinate al regime internazionale di punto franco. Sono fatti salvi i diritti e gli obblighi derivanti dai contratti di concessione di durata superiore a quattro anni in vigore, che sono convertiti, per la porzione di aree relative, in diritto di uso in favore del concessionario per la durata residua della concessione. Il presidente dell'Autorità portuale, d'intesa con il presidente della regione Friuli Venezia Giulia e con il sindaco di Trieste, delimita le aree che restano vincolate al demanio marittimo.*

# The new situation

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## **✘ Some bureaucratic steps and...**

- **The old port area now belongs to the Municipality of Trieste with effect from the date December 31st 2016**
- **According to the law the Municipality of Trieste should sell the goods (areas and buildings). Income should go to the Port Authority of Trieste. Actually Municipality and Port Authority will agree for the future of the area.**

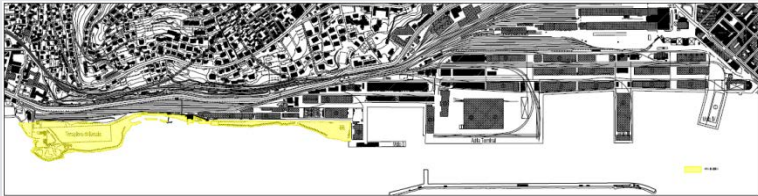
# Troubles and Challenges

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**✘ We have now to face a lot of different situations and constraints:**

- Environment and pollution
- Heritage site
- State boundary
- Concessions
- The railway System
- Accessibility
- Recent developments

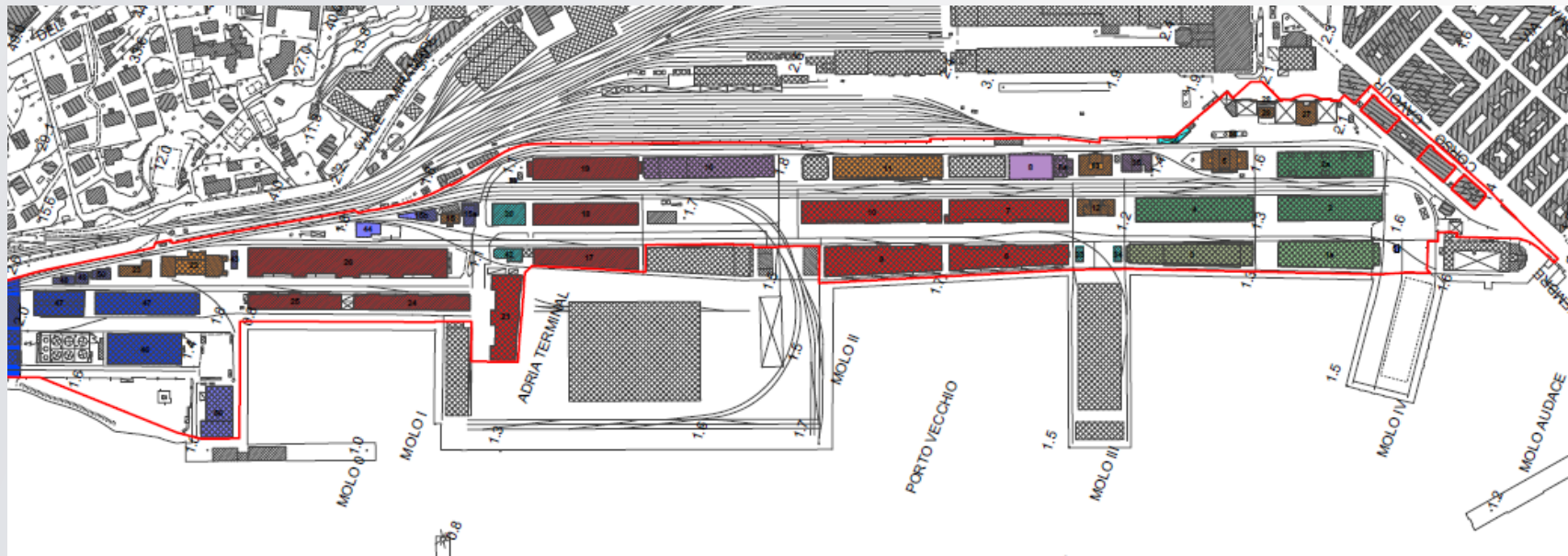
# Environment and pollution



- ✘ “Terrapieno di Barcola”
  - ✘ Dump for several years
  - ✘ A great embankment was created
  
- ✘ We have now to face a polluted soil



# Heritage site

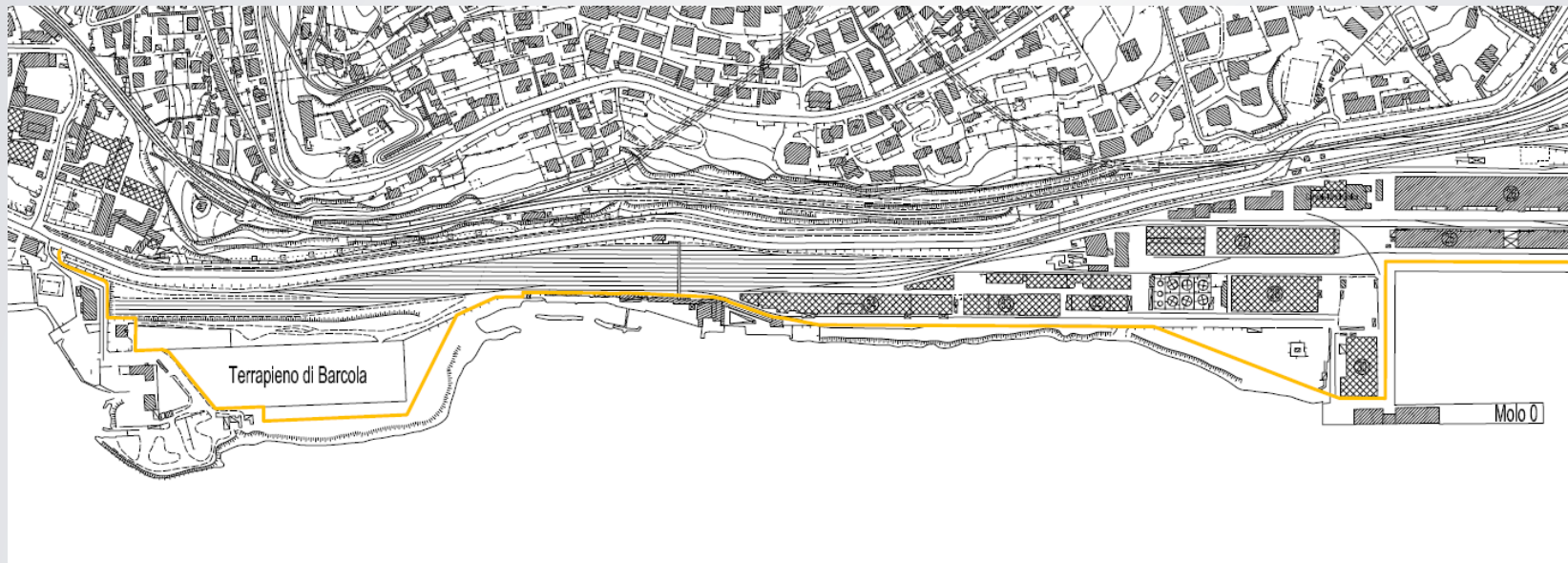


	Vicolo diretto ex art.2 D.Lgs.490/99 - art.10 D.Lgs.420/4
	Vicolo diretto ex art.2 D.Lgs.490/99 - art.10 D.Lgs.420/4 Deroga progetti alla qualità - recupero e/o rifacimento delle finiture esterne con materiale naturale compatibile al supporto murario secondo il disegno originario con colori omogenei agli interventi in tutta l'area del Porto Franco Vecchio, non sempre corrispondenti all'ultima fase di trasformazione dei manufatti al fine di rivitalizzare il complesso anche dal punto di vista dell'impatto visivo. [...] nella prospettiva di una dinamica riqualificazione funzionale è possibile valutare eventuali deroghe"
	Vicolo indiretto ex art.49 D.Lgs.490/99 - art.45 D.Lgs.420/4 Consentita rivisitazione tipologica del balusto esterno
	Vicolo indiretto ex art.49 D.Lgs.490/99 - art.45 D.Lgs.420/4 È consentita la realizzazione, all'interno del sedime delimitato dalle muraure perimetrali degli attuali corpi di fabbrica, di un nuovo volume architettonico (...)
	Vicolo indiretto ex art.49 D.Lgs.490/99 - art.45 D.Lgs.420/4 Consentita abbattimento sovrالعlevatione esistente - è consentita la realizzazione, all'interno del sedime delimitato dalle muraure perimetrali degli attuali corpi di fabbrica, di un nuovo volume architettonico (...)
	Vicolo indiretto ex art.49 D.Lgs.490/99 - art.45 D.Lgs.420/4 Consentita demolizione/ricomposizione volumi per integrità allineamento urbano
	Vicolo indiretto ex art.49 D.Lgs.490/99 - art.45 D.Lgs.420/4 Consentita demolizione senza ricostruzione
	Vicolo indiretto ex art.49 D.Lgs.490/99 - art.45 D.Lgs.420/4 Eventuali nuove edificazioni non devono superare linea di gronda Centrale Elettrica - Stazione Trasformatore, vale per tutta l'area Biorcola - Biondo
	Vicolo indiretto ex art.49 D.Lgs.490/99 - art.45 D.Lgs.420/4

<p><b>Prescrizioni Generali</b></p> <p><b>Mantenimento degli assi viari che caratterizzano il sito e che formano particolari con prospettici visivi verso gli immobili vincolati dall'art. 2 del d. Leg. vo 490/99 di cui al comma 12 del presente decreto, anche attraverso la ricomposizione volumetrica degli elementi mancanti.</b></p> <p><b>Mantenimento delle volumetrie degli edifici esistenti, naturalmente comprese le facciate e le dimensioni.</b></p> <p><b>Risistemazione delle banchine portuali, delle aree e dei percorsi esterni agli edifici in questione in lastre di pietra come documentato in origine ed in parte ancora esistenti, mantenendo e/o ripristinando anche con il solo segno a terra i percorsi a binario esistenti.</b></p> <p><b>Riqualificazione degli elementi caratterizzanti l'arredo urbano attraverso fuso di idonei componenti quali corpi illuminanti, segnaletica verticale, panchine, balaustre ed accessori vari, atti a garantire il decoro del complesso architettonico.</b></p> <p><b>Mantenimento e/o ripristino delle pavimentazioni in pietra delle banchine esterne agli edifici conservandone il limite architettonico originario.</b></p> <p><b>Recupero e/o rifacimento delle finiture esterne con materiali naturali compatibili al supporto murario secondo il disegno originario con colori omogenei agli interventi in tutta l'area del porto franco vecchio, non sempre corrispondenti all'ultima fase di trasformazione dei manufatti, al fine di rivitalizzare il complesso anche dal punto di vista dell'impatto visivo.</b></p> <p><b>Mantenimento delle caratteristiche tipologico-costruttive delle architetture di facciata compresi ove presenti gli elementi aggettanti, con la eventuale rivisitazione degli infissi con profili in metallo (ferro e/o acciaio) nella prospettiva di una dinamica riqualificazione funzionale dei manufatti architettonici.</b></p> <p><b>Mantenimento degli elementi connotati di archeologia industriale presenti sulle facciate degli immobili in questione.</b></p> <p><b>Eliminazione delle superfetazioni edilizie presenti allo stato di fatto in aderenza e/o adiacenza agli immobili considerati, in quanto aggiunte posteriormente all'impianto architettonico ed in palese contrasto con la tipologia degli stessi.</b></p>
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# State Boundary

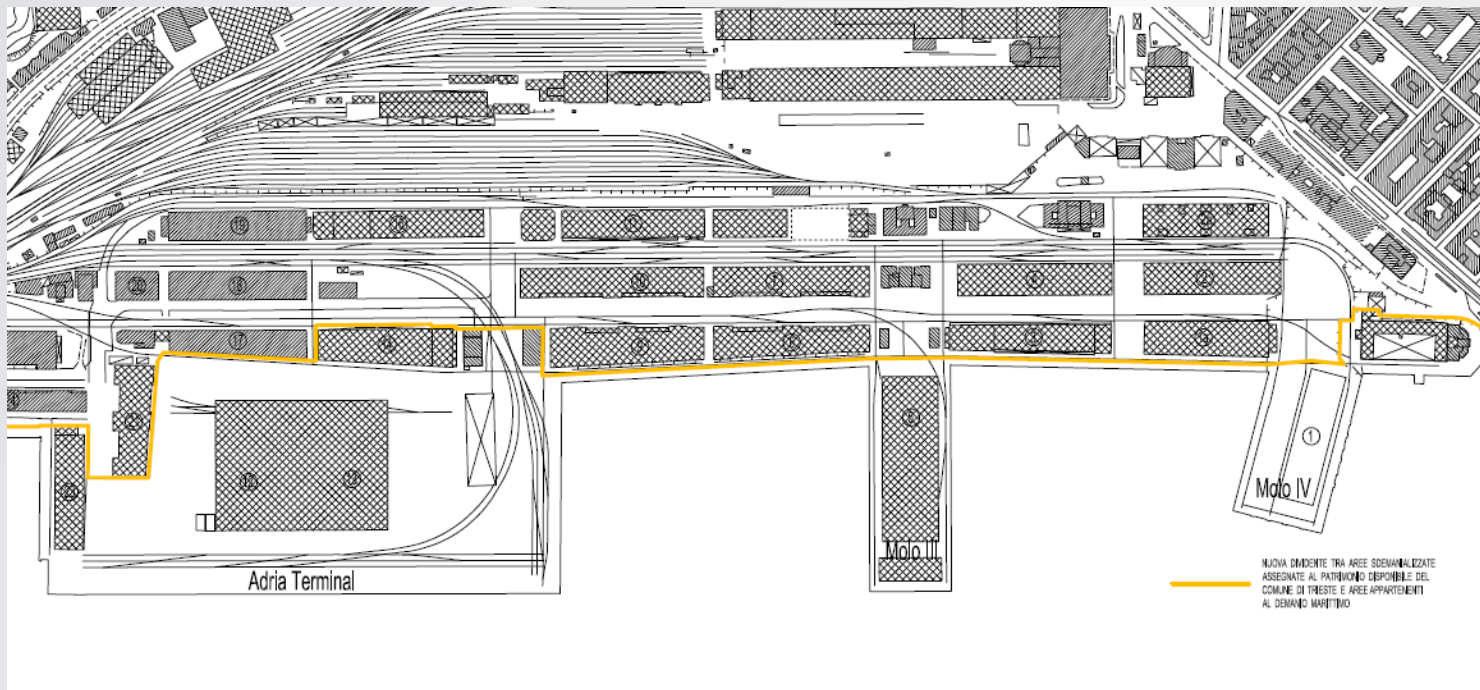
- ✘ The yellow line shows the new boundary between the port Authority area and the Municipality area





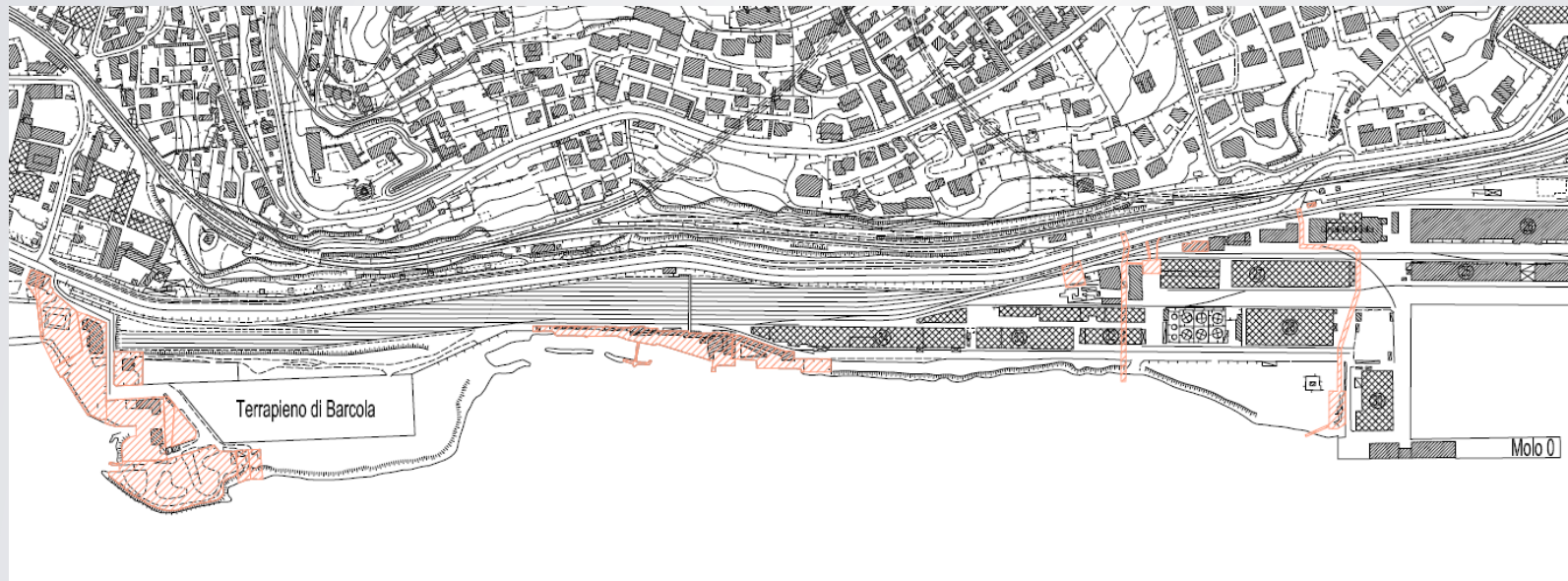
# State Boundary

- ✘ The yellow line shows the new boundary between the port Authority area and the Municipality area



# Concessions

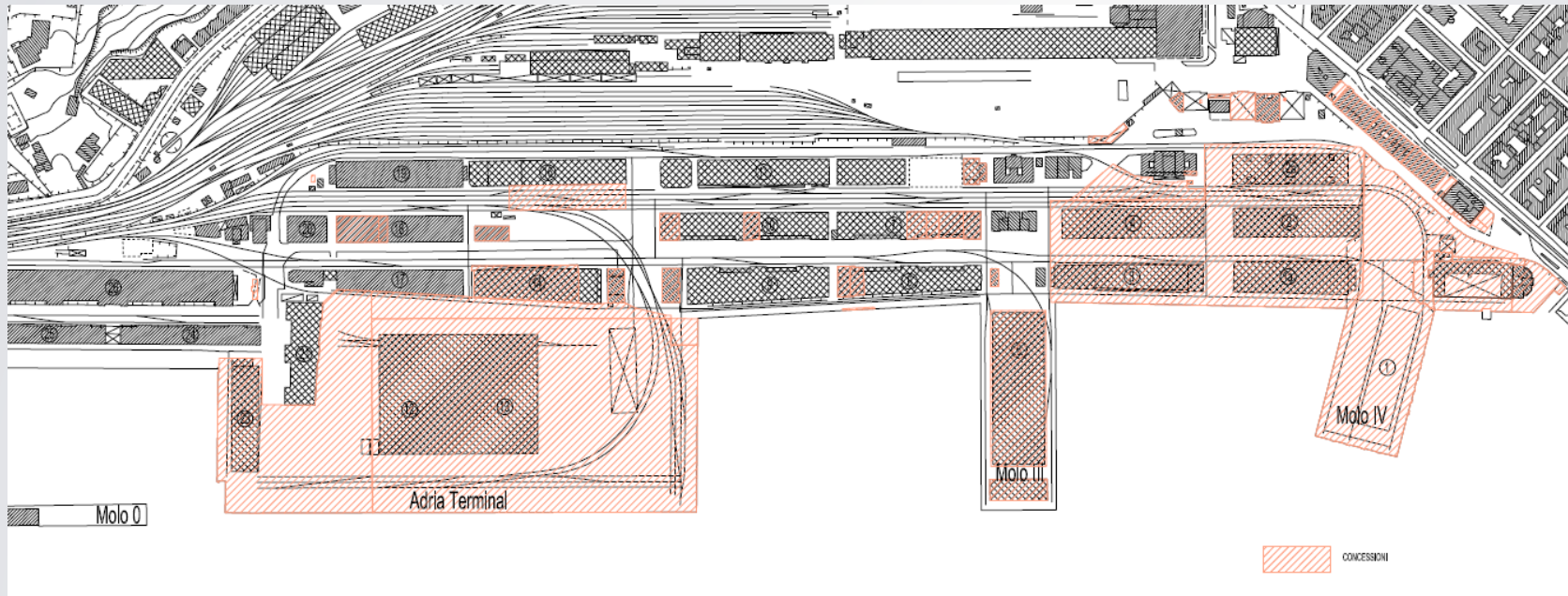
✘ Existing concessions must be respected



North Area

# Concessions

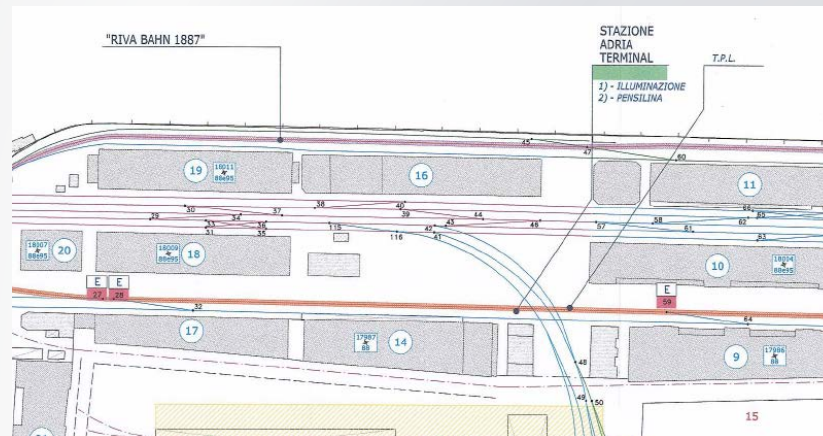
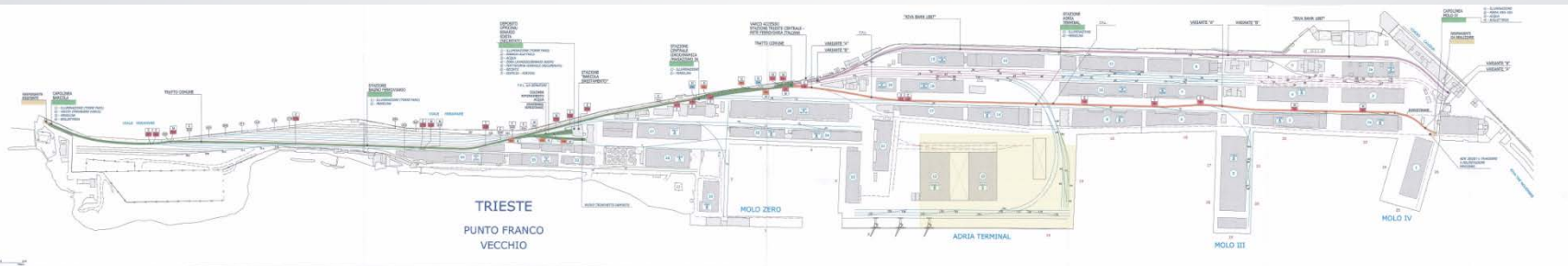
✘ Existing concessions must be respected



South Area

# The railway system

- ✘ A sound railway system was built to serve the port operations
- ✘ Is it a new opportunity?



# Accessibility

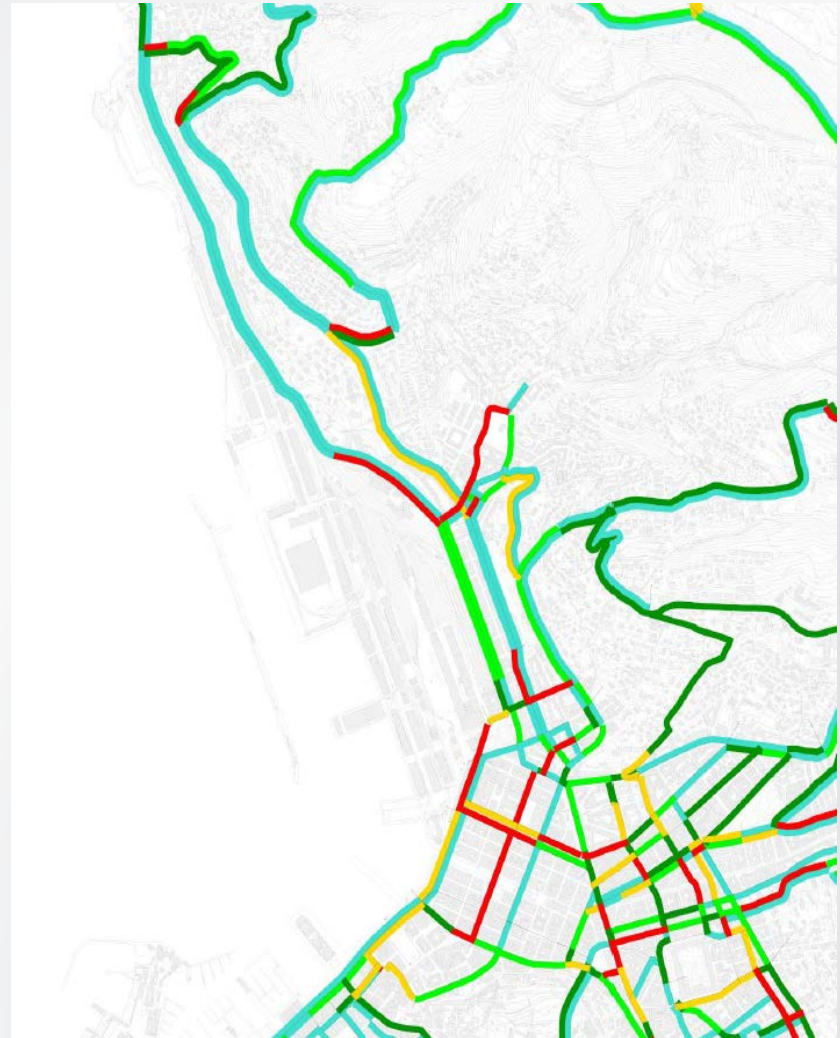
- ✘ The Old Port Area is in the core of the city
- ✘ All the traffic flows from a to the Old Port Area impact directly on the rest of the city



# Accessibility

- ✘ The traffic flows in the peak hour: most of links are at a critical level near the Old Port Area.
- ✘ What about added flows?

Saturation flow rate  $v/c$



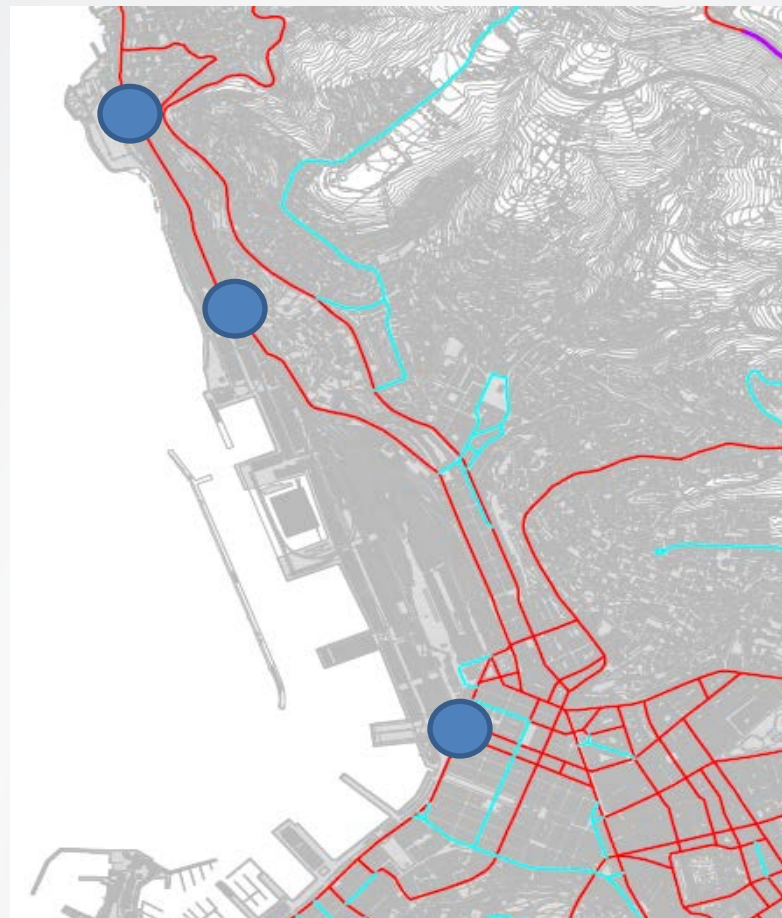
# Accessibility

## ✘ Feasible Access Point

Access to a new parking area (feasibility study)

Great Roundabout (feasibility study)

South Access  
(to be studied)  
Critical Area!



# Accessibility

## ✘ Mobility is a critical aspect in Old Port planning

- Existing traffic flows must be considered
- New traffic flows could be unacceptable
- What about new transport modes?

Railway?          Boats?  
Cableway systems?      ...

## ✘ Infrastructural studies first!

- I.e.: what is the freeway capacity?

*The maximum sustained 15-min flow rate, expressed in passenger cars per hour, that can be accommodated by a uniform freeway segment under prevailing traffic and roadway conditions in one direction of flow*



# Recent developments

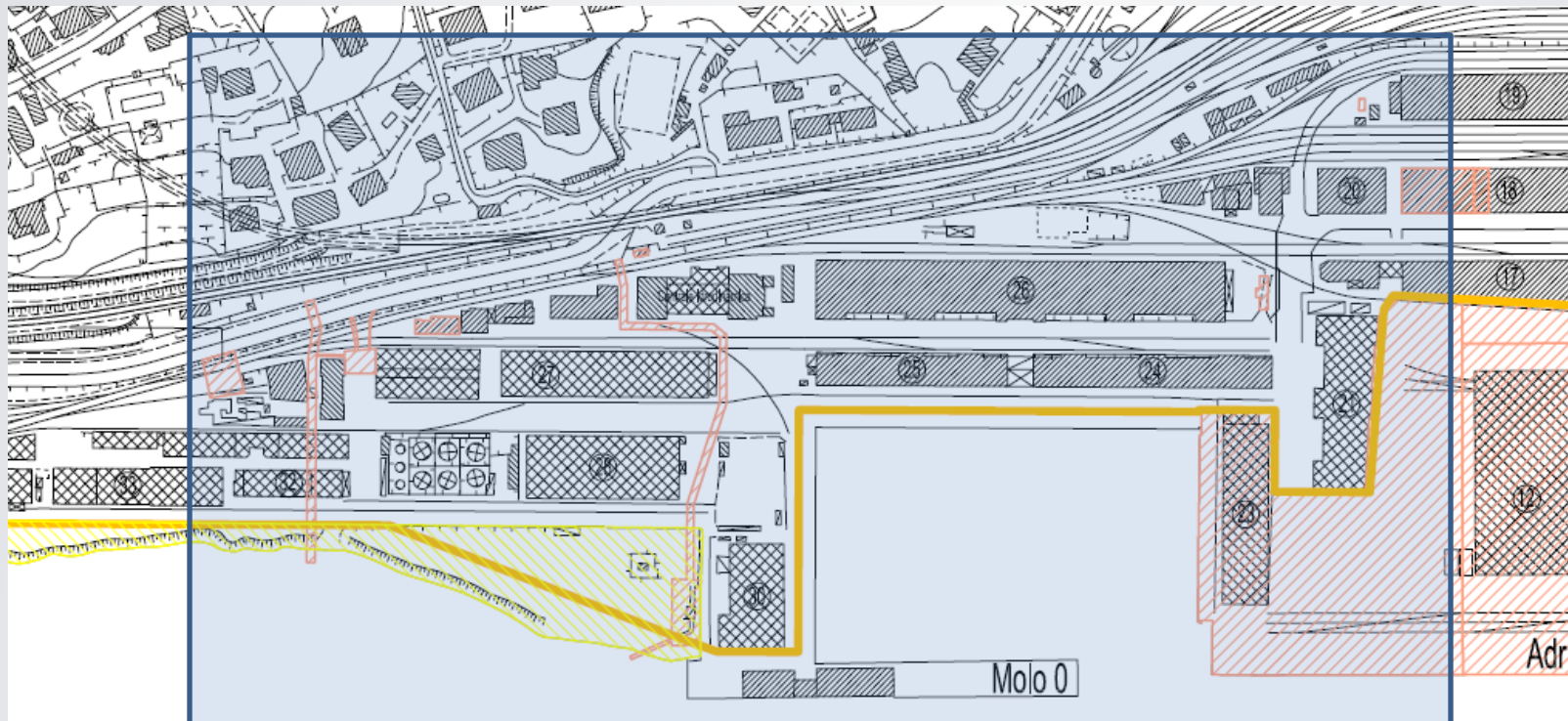
## ✘ “50 millions agreement”

- **Ministry of Heritage, Regional Administration, Municipality of Trieste and Port Authority**
- **Funds will be allocated in order to develop some important areas in the Old Port:**
  - **Road works**
  - **Infrastructural works (aqueduct, sewerage system, public lighting system, ...)**
  - **Warehouse 26 renewal (south part) in order to move the ICGEB (International Centre for Genetic Engineering and Biotechnology)**
  - **Museum of the sea (warehouse 24 and 25)**
  - **Ancient “Ursus” crane renewal**

# Recent developments

✘ “50 millions agreement”

✘ Area Involved



# Recent developments

## ✘ European Science Open Forum 2020

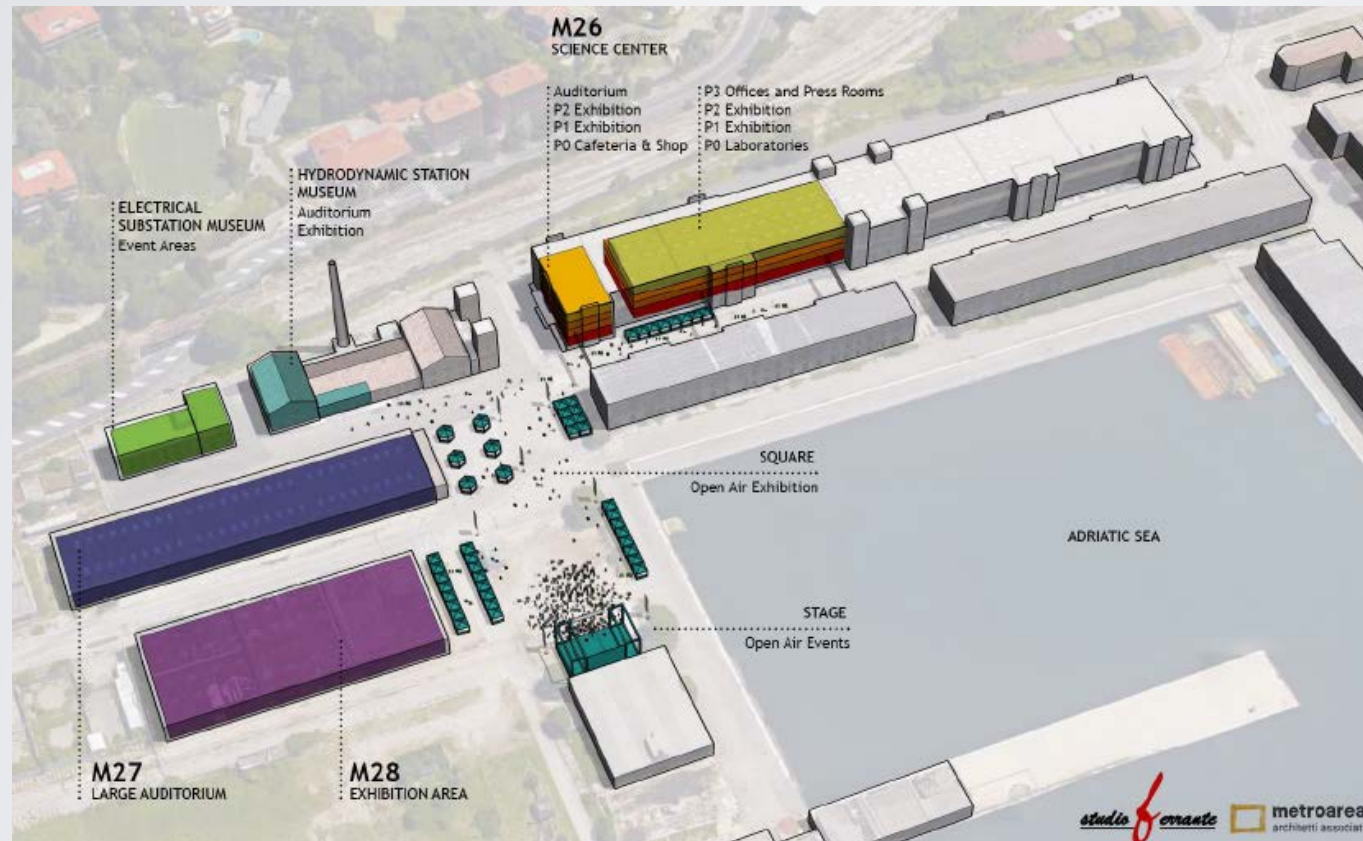
- Trieste will be the European Science Capital in 2020.
- Great event will set up in July 2020 in the old port area



# Recent developments

## ✘ European Science Open Forum 2020

- Area involved



# Recent developments

- ✘ European Science Open Forum 2020
- ✘ Area involved



# Recent developments

## ✘ New Park “Bovedo”

- A new parking area with 2 main purposes:
  - Useful Area for sport activities (boating, sail, ...)
  - Park and Ride: in order to connect the area with the city centre

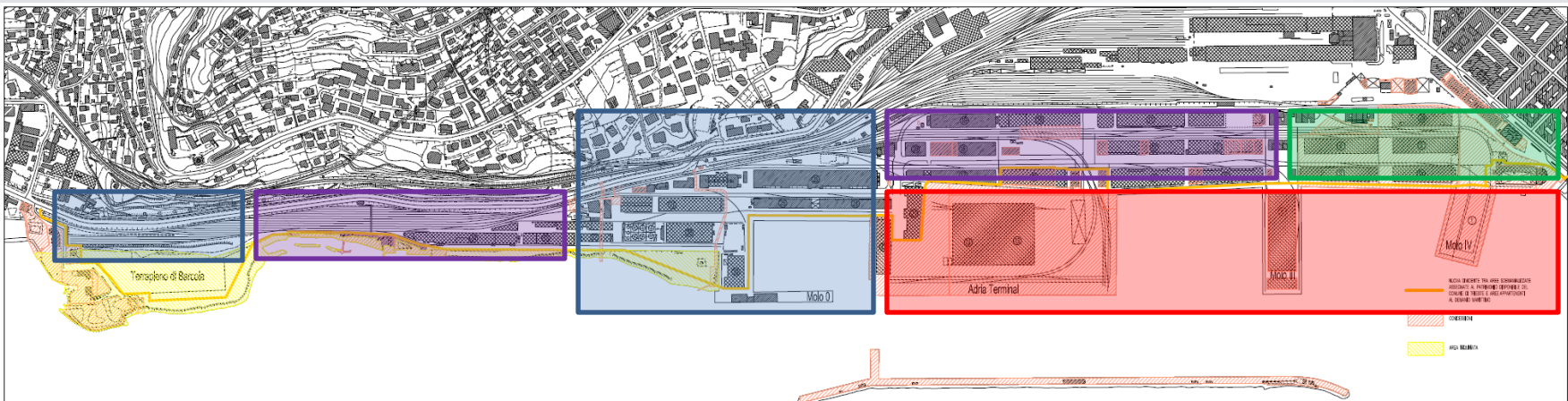


# The future of the Old Port Area

✘ We have to face a puzzle made of different links, destinations, projects...

Private Partner Area

Private Partner Area Existing Concession



Public Oriented Area

Public Oriented Area

Port Authority Area

# The future of the Old Port Area

- ✘ You have now all the necessary information for planning the future of the Old Port Area  
Now it is up to you ... good job!





# Thank you!

Giulio Bernetti

Municipality of Trieste

[giulio.bernetti@comune.trieste.it](mailto:giulio.bernetti@comune.trieste.it)

