

# STRATEGIES FOR REVALUATING AND REGENERATE THE WATER CITIES– THE CASE OF MILAN: THE REOPENING OF NAVIGLI

Antonello Boatti and Marco Prusicki  
Politecnico Milan



Istituto Professionale Niccolò Machiavelli



With the support of the  
Erasmus+ Programme  
of the European Union



ERASMUS+ project

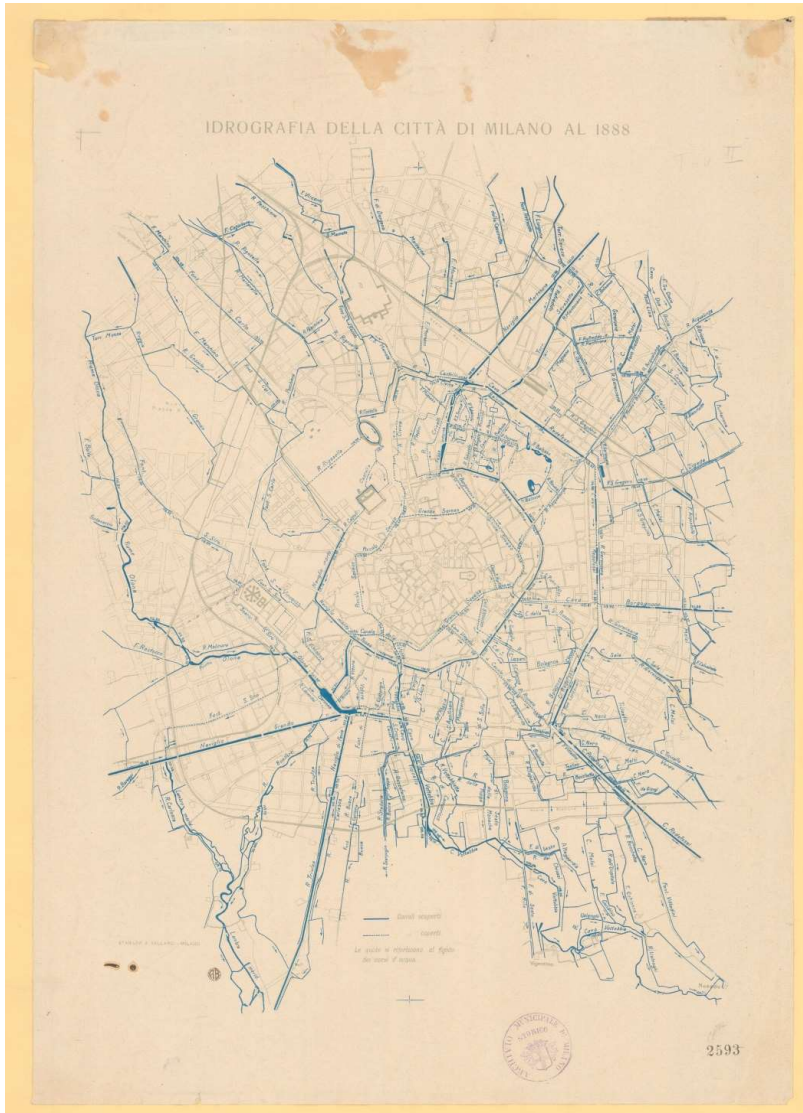
'Aquatic Environment and Natural&Cultural Heritage'

Presentation of the project to the Community and

awarding of the LOGO Contest

29/10/2019











# HISTORICAL FUNCTIONING OF THE CANALS





An aerial photograph of a city, likely Rome, with a blue highlighted path winding through it. The path starts at the bottom left, moves east, then north, then east again, and finally north towards the top right. Several basins are labeled with white text: 'Basin of Viarenna' at the bottom left, 'Vetra' in the lower middle, 'San Marco - Basin of Incoronata' in the middle left, 'Sforza - Policlinico' in the lower right, and 'Martesana - Gioia' at the top right.

**San Marco – Basin of Incoronata**

**Martesana - Gioia**

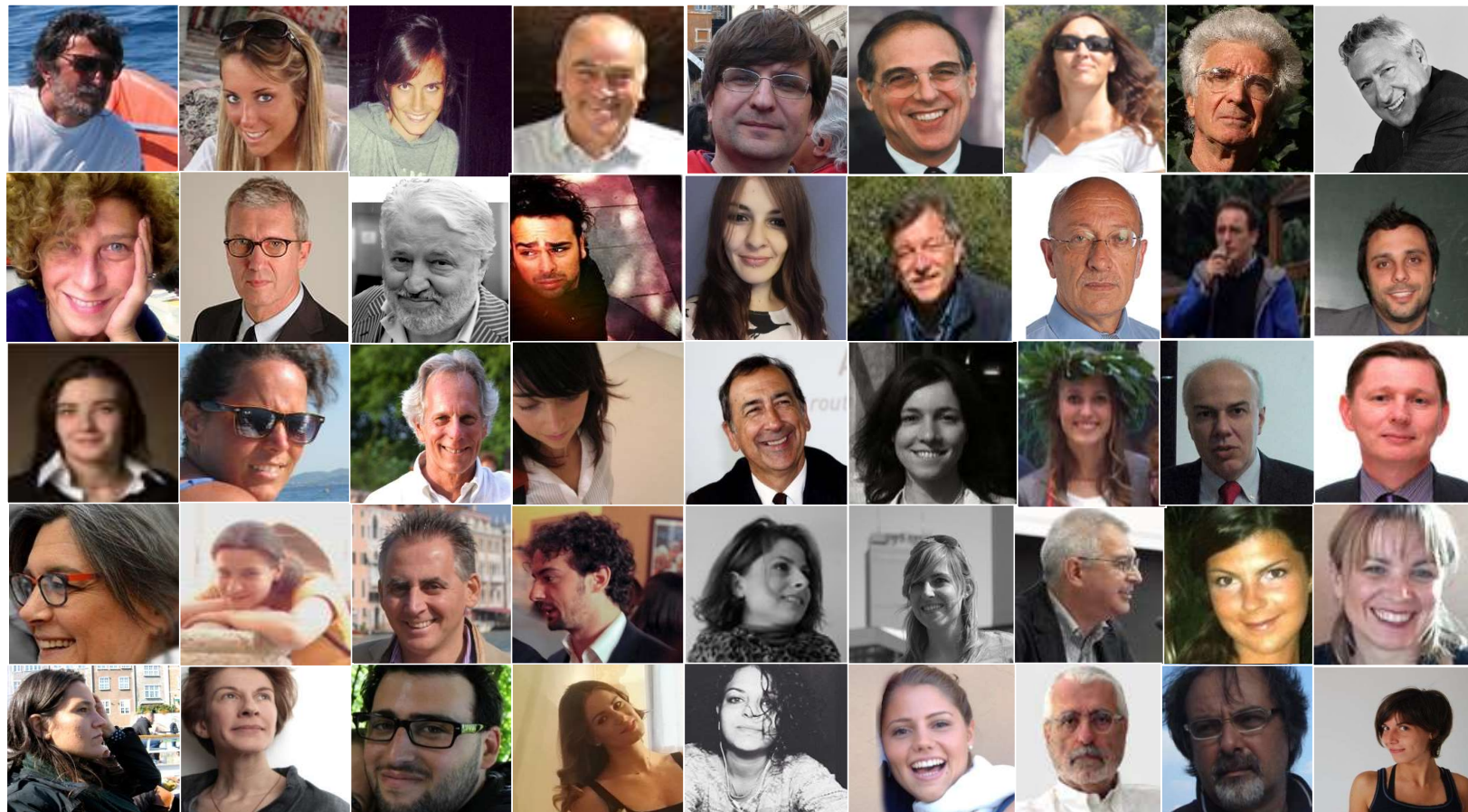
**Vetra**

**Sforza - Policlinico**

**Basin of Viarenna**



# ART, PAINTING, LITERATURE, CULTURAL STUDIES, A MYRIAD OF ACADEMIC DISSERTATIONS: FACES OF DIFFERENT GENERATIONS LOOK AT THIS IDEA





...and all these persons worked on the project...

**PROJECT COORDINATOR:** ANTONELLO BOATTI, Professore Politecnico di Milano (DASStU) –

**PLANNING:** GIORGIO FRANCHINA, dottore in fisica - PAOLO LUBRANO, architetto - MARCO PROVERBIO, geologo –

**ARCHITECTURAL AND URBAN DESIGN :** EMILIO BATTISTI, Professore Politecnico di Milano (DASStU) - ANTONELLO BOATTI, Professore Politecnico di Milano (DASStU) - CLAUDIA CANDIA, architetto, dottorando - SIMONE CARZANIGA, architetto - ANDREA CASSONE, architetto - ELENA FILONI, architetto - ALESSANDRA GIANNINI, architetto dottore di ricerca - GIADA LONGHI, architetto - EMPIO MALARA, architetto, studioso della materia - MARCO PRUSICKI, Professore Politecnico di Milano (ABC) - EKATERINA SOLOMATIN, architetto –

**HYDRAULICS, HYDROLOGY, HYDROGEOLOGY:** MAURIZIO BROWN, ingegnere - CARLOTTA LAMERA, ingegnere dottore di ricerca - RENZO ROSSO, Professore Politecnico di Milano, (DICA) - GUIDO ROSTI, geologo - MARIA CRISTINA SCIANDRA, ingegnere dottoranda - STEFANO SIBILLA, Professore Università degli Studi di Pavia -

**MOBILITY SYSTEM:** GIORGIO GOGGI, Professore Politecnico di Milano, (DASStU) - VERONICA INDELICATO, architetto

**COSTING AND COLLECTIVE BENEFITS OF THE PROJECT :** FLAVIO BOSCACCI, Professore Politecnico di Milano (DASStU) - ROBERTO CAMAGNI, Professore Politecnico di Milano, (DICA) - ANDREA CARAGLIU, ricercatore Politecnico di Milano, (DICA) - ILA STEFANIA MALTESE, assegnista Politecnico di Milano, (DASStU) - ILARIA MARIOTTI, ricercatore Politecnico di Milano (DASStU) - MASSIMO VADORI, geometra –

**PARTICIPATION AND COMMUNICATION PROCESSES :** MARCO BOFFI, assegnista Università degli Studi di Milano (Dipartimento di Beni Culturali e Ambientali) - PAOLO INGHILLERI, professore Università degli Studi di Milano (Dipartimento di Beni Culturali e Ambientali) - LINDA POLA, dottoranda - NICOLA RAINISIO, professore a contratto Università degli Studi di Milano (Dipartimento di Beni Culturali e Ambientali) - ELEONORA RIVA, ricercatore, Università degli Studi di Milano (Dipartimento di Beni Culturali e Ambientali) –

**HISTORICAL-CULTURAL VALORISATION PROJECT :** ANTONIO LAMPUGNANI, architetto - ARIANNA LUGARINI, designer - UMBERTO VASCELLI VALLARA, architetto

**ASSOCIATIONS:**

Roberto Biscardini (Riaprire i Navigli) – Giuseppe Amato (Amici della Martesana)

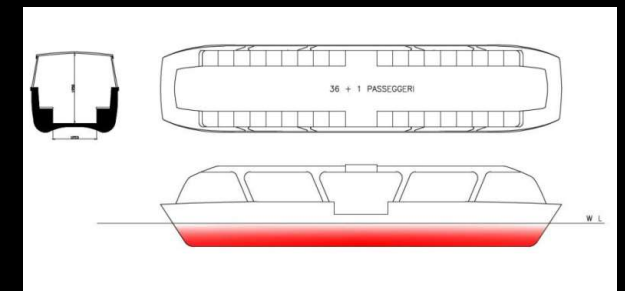
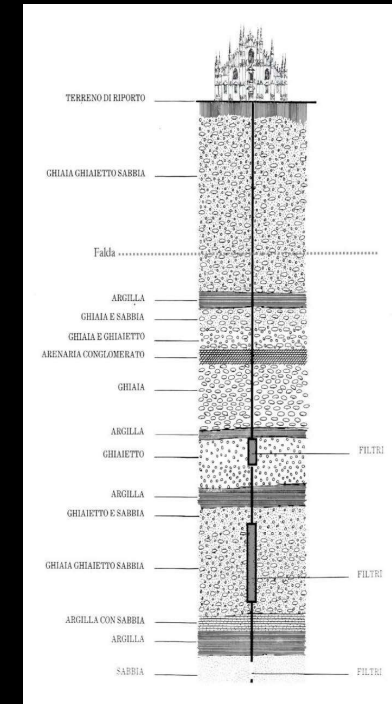
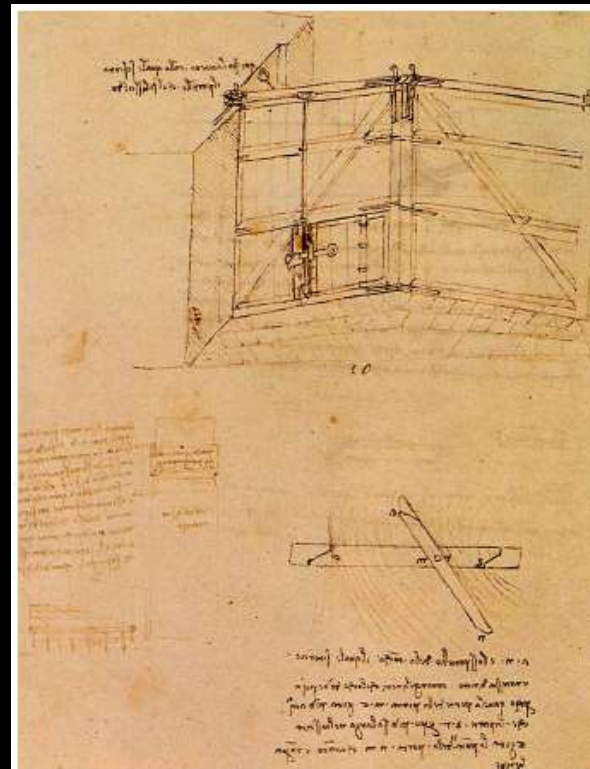
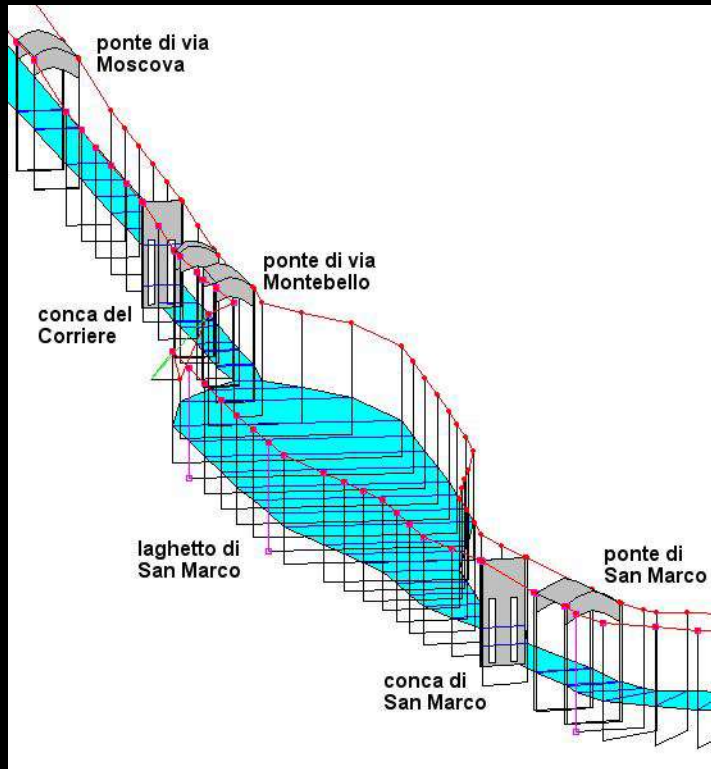
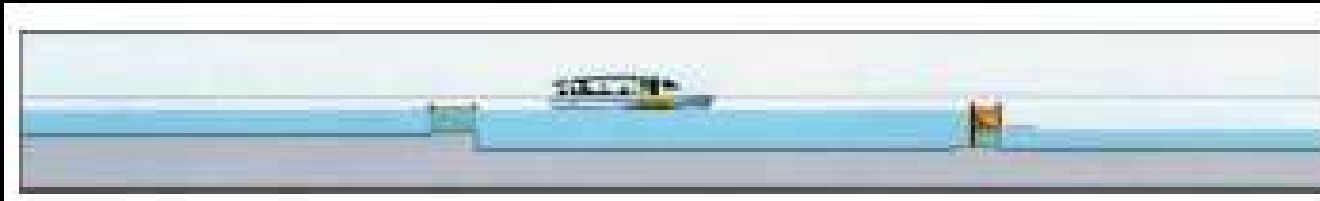
**STUDENTS:**

Cristiana Alexy - Cecilia Barberis - Matteo Barbieri - Giulia Bassi - Giuditta Bernareggi - Elena Bertoni - Federica Bianchi - Virginia Bombelli - Allegra Bonamore - Simone Braga - Valentina Brambilla - Laura Burzilleri – Martina Busatta - Nicola Cassone - Giulia Carucci - Martina Cinelli - Beatrice Colombi – Matteo Colombo - Federica De Luca - Patrizia Drammis - Laura Ferrari - Mario Fossati - Marco Galli - Maddalena Gatti - Eros Lizzio - Laura Lossi - Dauno Lucisano - Carlo Magnani - Lucilla Malara - Ilaria Mariotti - Mauro Mele - Francesca Carlotta Nagari - Ruben Palermo - Laura Pizzamiglio - Elisa Prusicki - Ettore Franco Repellini - Beniamino Ripamonti - Chiara Russo - Luca Sandrini - Francesca Sartori - Corinna Sensoli - Giuseppe Stucchi - Giulia Trevisani - Alessio Vadori - Federica Zambellini – Marzia Stancati - Eleonora Zorzi



# Professions, disciplines and indispensable techniques:

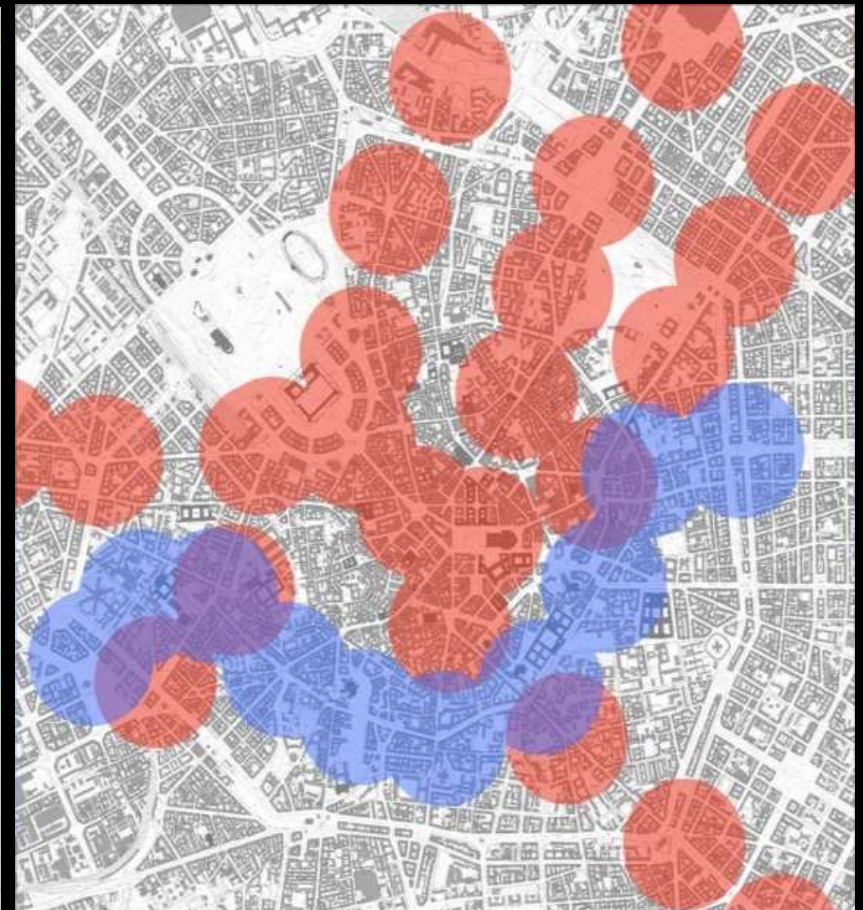
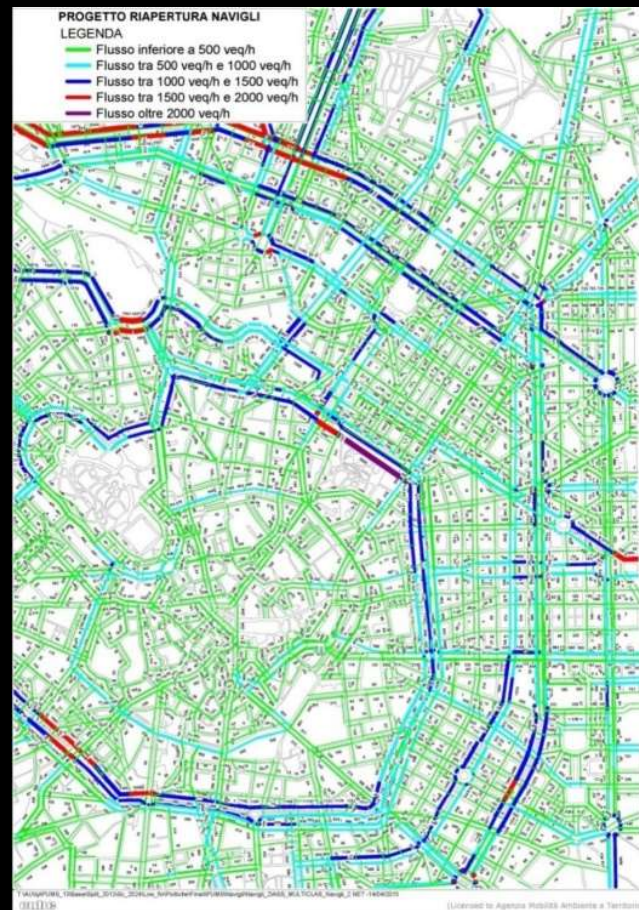
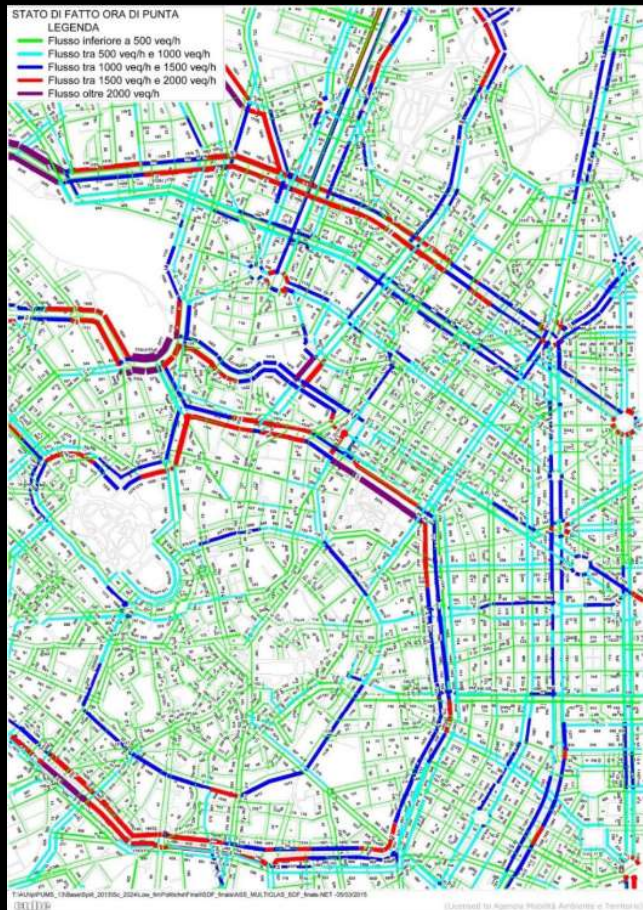
## 1. Hydraulics, hydrology, hydrogeology





# Professions, disciplines and indispensable techniques:

## 2. Viability and transport studies





## Professions, disciplines and indispensable techniques:

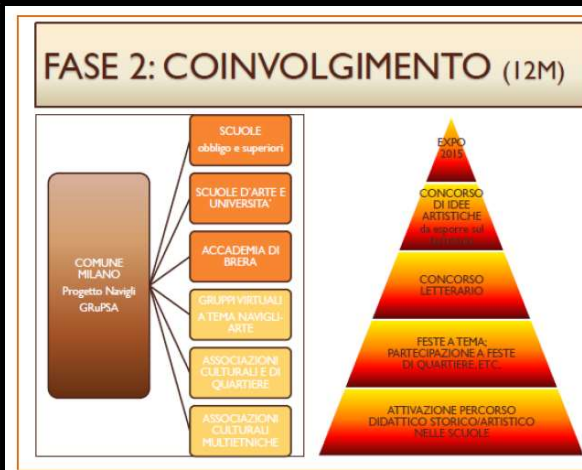
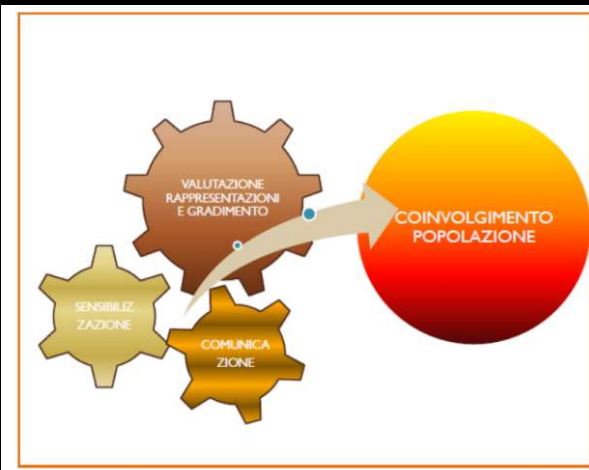
### 3. Estimate of costs and economic feasibility

<b>A. Public investment costs</b>		<b>406,9 mln €</b>
<b>B. Increase in income from work thanks to the investment</b>	168,0 mln €	
<b>C. Improvement of urban quality</b>	759,9 mln €	
<b>D. Increased profitability of the commercial activities</b>	66,9 mln €	
<b>TOTAL QUANTIFIED BENEFITS</b>	<b>994,8 mln €</b>	
<b>E. Discomfort from overuse</b>		Already computed in C
<b>F. Hardships from construction site</b>		Hardly evaluable
<b>G. Remodeling of mobility and accessibility</b>	Reduction of emissions / traffic accidents along the circle	Reductions in accessibility around city center
<b>H. Increase of tourist attractiveness</b>	Significant but not evaluable, partly included in D	
<b>I. Thermal and hydroelectric production</b>	Limited benefits	



# Professions, disciplines and indispensable techniques:

## 4. Sociology and Participation



Naviglio Interno



### La Conca di Via Senato

Il tratto della Conca di via Senato un tempo era caratterizzato da numerosi interessanti episodi che arricchivano questo complesso paesaggio urbano. Qui il Naviglio interno si biforcava a formare una Conca di navigazione e una derivazione le cui acque muovevano le ruote di mulini, una piccola isola (isolino) separava i due rami, si collocavano così un concorso animato dalla presenza di barconi oggetto di celebri rappresentazioni pittoriche (F. Carraro). Da qui si potevano ammirare i giardini rigogliosi delle ville nobiliari affacciate lungo la riva de Naviglio. Dal 1639 per volontà di Federico Borromeo lungo l'alzata si avviava la costruzione, completata nel '700, del Collegio Elvetico oggi noto come Palazzo del Senato, sede dell'Archivio di Stato che ancora domina la scena urbana impreziosita dal vicino giardino ideato da Piermarini come spazio per le feste pubbliche. Nobilitavano questo ambito maestosi prestigiosi palazzi e la chiesa di San Pietro Celestino contribuendo alla configurazione di uno dei tratti più eleganti della Conca.

*The stretch of the canal circle corresponding to Via Senato was once characterized by numerous interesting features that enriched the complex urban landscape. Here the inner canal branched to form a navigable lock and a derivation whose waters turned the wheels of mills on islets (isolino) separated the two branches; the landscape, enlivened by the presence of large boats, became the subject of famous pictorial representations (F. Carraro). From here you could admire the lush gardens of stately homes overlooking the Naviglio banks along the waterway. In 1639, by order of Federico Borromeo, the construction of the Collegio Elvetico began along the waterway. The palace, completed in the 18th century, is today known as Palazzo del Senato and is the seat of the State Archive. It still dominates the urban landscape, which is also enlivened by the nearby garden designed by Piermarini as a piazza for public events and celebrations. Now prestigious buildings and the Church of San Pietro Celestino also contributed to enoble the area, forming one of the most elegant segments of the Conca.*





... a world of associations accompanies the idea and the project

**RIAPRIAMO I NAVIGLI**

**RIAPRIAMO I NAVIGLI CHE HANNO CHIUSO**

**Inizio da Cassina del Pan**

**Via Melchiorre Gioia**

**Conca dell'Accornata**

**Tamburi di San Marco**

**Via Fabbricemattoli**

**Via Francesco Sforza**

**Approdo al Parco delle Basiliche**

**Terminale alla Darsena**

I Navigli, che hanno avuto un ruolo cruciale nella vita dei milanesi per oltre ottocento anni, e che furono coperti tra il 1929 e gli anni Sessanta da via Melchiorre Gioia alla Darsena, oggi possono essere riaperti con un progetto che guarda al futuro e ad uno sviluppo qualitativo della città per la realizzazione di un grande spazio pubblico. Questo intervento di recupero, già condiviso dalla maggioranza dei milanesi, è fattibile dal punto tecnico, urbanistico e finanziario ed è compatibile con un piano di riorganizzazione del traffico urbano.

I Navigli saranno riaperti seguendo il senso dell'acqua, da Cassina del Pan, là dove il Naviglio Martesana oggi si infossa sotto via Melchiorre Gioia, verso la Carchia dei Navigli fino alla Darsena.

Otto chilometri di Navigli in Milano per ripristinare il grande sistema idroviario milanese e lombardo, restituendo alla Lombardia la navigabilità dei suoi canali del Lago Maggiore e del Lago di Como fino all'Adriatico.

La realizzazione della nuova rete dei Navigli rappresenta una straordinaria occasione per riqualificare la città. Sarà fonte di nuova attrattività internazionale. Garantisce lo sviluppo dell'accesso al tempo libero e della cultura. Fare di Milano una città più giovane e dimostrazione che una diversa idea di città è possibile.

Con la riapertura dei Navigli, Milano potrà sviluppare la propria vocazione turistica facendo riscoprire il valore dei propri monumenti, dell'arte e del suo paesaggio.

I nuovi Navigli potranno essere realizzati utilizzando i fondi del privato, ricorrendo ai progetti finanziati e a sottoscrizioni popolari.

**ASSOCIAZIONE RIAPRIAMO I NAVIGLI**

Via Cazzanovi, 9 - 20124 Milano  
 info@riapriamoinavigli.it  
 www.riapriamoinavigli.it

Guarda come e perché su [www.riapriamoinavigli.it](http://www.riapriamoinavigli.it)

*istituto per i NAVIGLI*  *associazione AMICI DEI NAVIGLI*

NOTIZIE DAI NAVIGLI

LAVORI IN CORSO

OPERE REALIZZATE

I NAVIGLI

Le boccole  
Le canche  
I lavatoi  
I ponti

IDROVIA

LO-MI-VE

SALA STAMPA

Comunicati  
Dicano di noi  
Multimedia

PUBBLICAZIONI

IMMAGINI

**ASSEMBLEE**

**CONVEGNI**

**MOSTRE**

**APPUNTAMENTI SUI NAVIGLI**

**notizie sui Navigli**  
NOTIZIARIO TRIMESTRALE

*In viaggio sui Navigli*  
L'Espresso


**Milano nei cantieri dell'arte**

Seguici

ANCE

Comune di Cuggiono

[www.fondazionecaripisa.it](http://www.fondazionecaripisa.it)



© Toni Nicolini



**MILANO SI MUOVE**

*Iniziativa popolare referendaria per la qualità dell'ambiente e la mobilità sostenibile a Milano.*

**associazione bei navigli**



# THE FAVORABLE ONES

Vittoriano Viganò, Architect

What would you destroy, besides the Arengario? ", Asks the journalist Silvia Giacomoni, and he, without any hesitation:" The coverage of the Navigli, first of all.

let yourself be transported by the sunset redeemer who gives us back for a moment the lost spell of the Navigli

Giovanni Raboni, Poet, 1983

Carlo Bertelli, former superintendent, 2003

the conditions that determined their coverage have now disappeared

"This should be done, open the Navigli, return to the times of Stendhal"

Dario Fo, Nobel prize, 2007

Adriano Celentano, songwriter, 2006

Olmi defends the vegetable gardens, me the canals... and the gardens are near the canals

"the Navigli are an irreplaceable asset.

Armando Torno, Journalist, 2005

Alessandro Belloni, writer, 2014

"I thought it would not be bad even now, reopen it, I mean, it would not be bad. "

Personally I am for the uncovering of the Circle of the Navigli.

Luca Doninelli, writer, 2012

Jacopo Gardella, Architect, 2011

"I consider it a courageous dream, not ingenuous, passionate, not rash, achievable, not utopian".

"At the Dal Verme theater [...], Professor Umberto Veronesi [...] went to ask for the reopening of the Navigli.

Umberto Veronesi, doctor, 2012

"A project to reopen the Navigli has the great advantage of re-establishing a historical, urbanistic and identity connection between the metropolis of today and that of the past.

Franco Iseppi, dir. Touring Club, 2013

Sostiene "con convinzione e commozione l'idea di una riapertura di grande parte dei Navigli interrati

Marina Terragni, journalist and blogger, 2013

Giuseppe Sala, now Milan's Mayor, 2014

I think Milan should recover its memory and the Navigli would be a good starting point. If someone wants to deal with it, I will be active by his side "

"my heart widened when I read the opinion of Giuseppe Sala.

Franco Morganti, businessman and journalist, 2014

Roberto Maroni, Regione Lombardia President, 2015

"A fascinating idea and an extraordinary opportunity for Milan

"If you really believe that the partial reopening of the Navigli can be the keystone of the city's future, this is the best time to make it a political priority.

Ivan Berni, Journalist, 2013

Antonio Albanese, Enrico Bertolino (actors),  
Inge Feltrinelli (publisher)



“Milano è la più bella città del mondo.

Lo disse Stendhal quando Milano era circondata dai Navigli, ma io confido nell’impegno del Sindaco Sala di riscoprirli.

Da bambino ho avuto il piacere di vederli e manca veramente solo l’acqua per far tornare Milano la più bella città del mondo.

Vi saluto e vi abbraccio tutti.”

**Gualtiero Marchesi**

13 novembre 2017

# THE PROJECT IS BORN FROM HERE...

## THE REFERENDUM OF JUNE 12-13, 2011

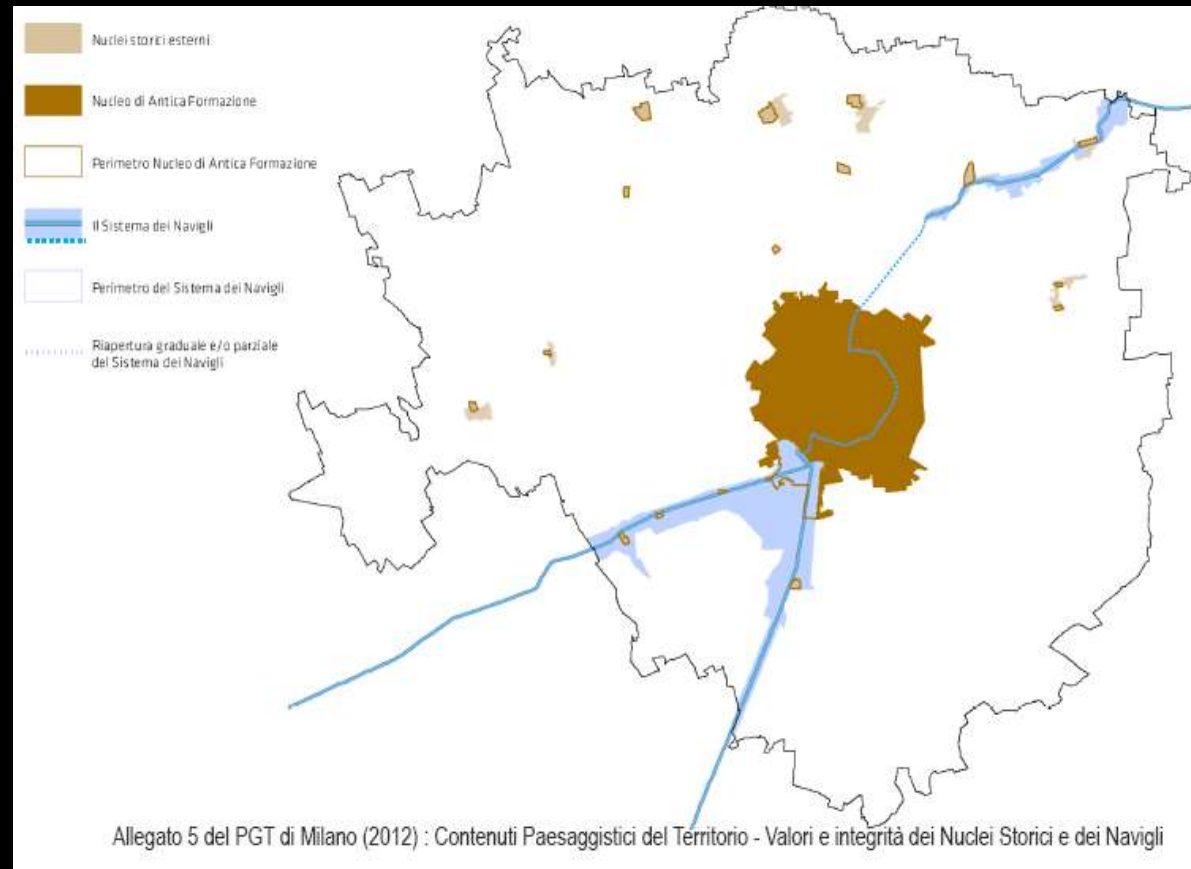
### The referendum question and the result

*"Do you want the City of Milan to reorganize the Dock as a port of the city and ecological area and gradually proceed with the hydraulic and landscape reactivation of the Milan Navigli system on the basis of a specific feasibility project?"*  
(Question n5 of advisory referendum)

At this question **489.727 citizens** answered **YES**,  
That is 49,09% of Milan citizen and 94,32% of voters

### A first step: the Territorial Government Plan of Milan

In 2012 the proposal was included, **for the first time in history**, in an official document of **Planning of the Territory of the City of Milan**. In this plan, explicit mention is made of the gradual and / or partial reopening of the Navigli system.





# The new Territorial Government Plan of Milan

#milano2030

## 5 OBIETTIVI PER LA MILANO DEL 2030

of  
Pierfrancesco Maran  
Assessore Urbanistica Verde e Agricoltura  
Comune di Milano









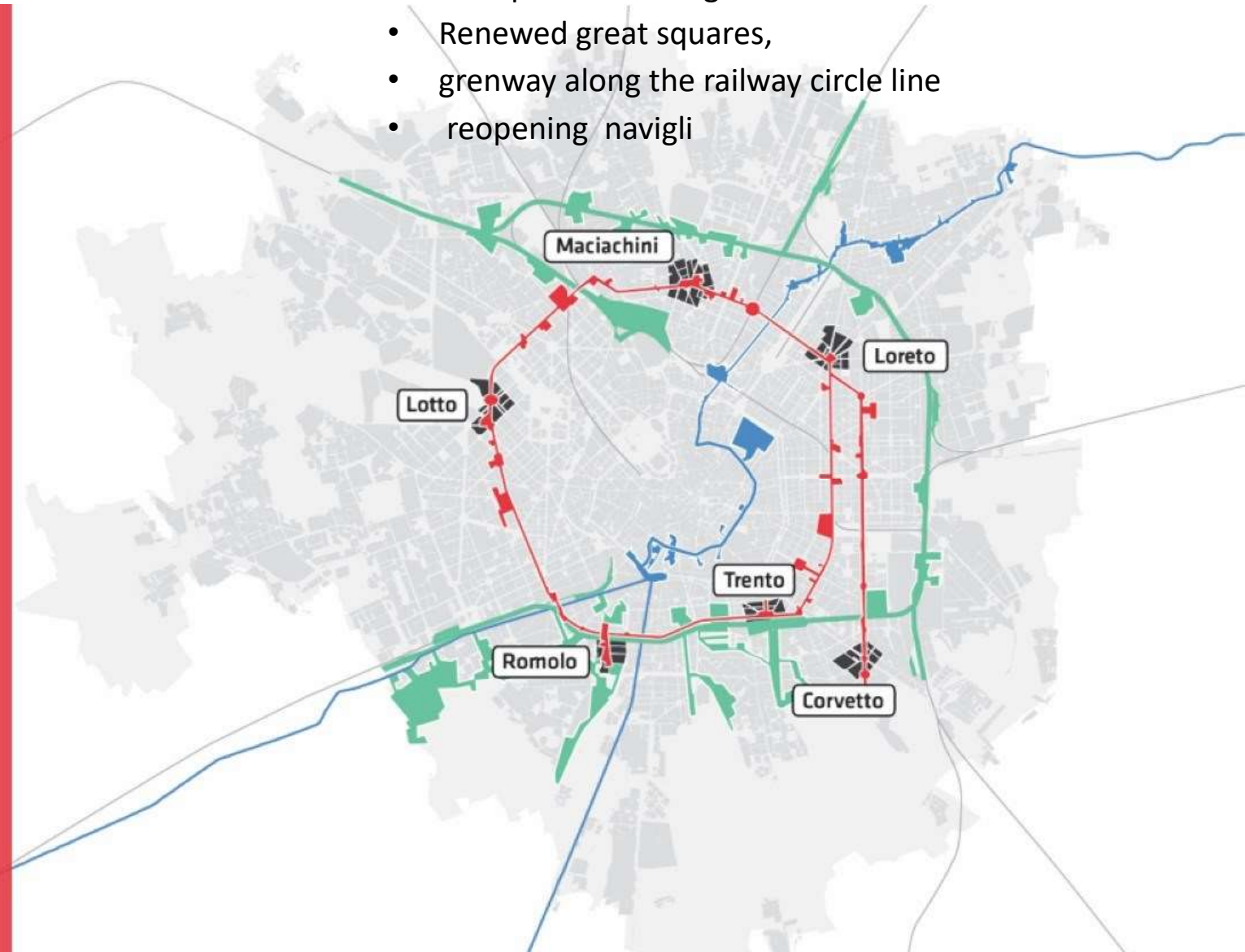
MILANO 2030  
**UNA CITTÀ, 88 QUARTIERI  
DA CHIAMARE PER NOME**

**Riaprire i Navigli, Rigenerare sette  
Scali, Reinventare sei Piazze.**

Trasformare le cerchie viarie, filoviarie e ferroviarie, da infrastrutture di connessione – oggi barriere - in elementi di ricucitura tra parti di città e nuove centralità di sviluppo della Milano 2030 grazie agli scali, ai navigli e a sei piazze da reinventare come porte a vocazione

Three important strategies:

- Renewed great squares,
- greenway along the railway circle line
- reopening navigli



## ...2 YEARS, 700 PAGES, 50 HARD WORKING DRAWINGS...

**JUNE 13, 2014**

*Framework agreement between the Municipality of Milan and the Polytechnic of Milan (Department of Architecture and Urban Studies - Dastu) concerning the carrying out of scientific and technical research activities aimed at the feasibility study of the reopening of the Milanese navigli as part of the reactivation of the overall system of the navigli and its navigability and has for goal to define the preliminary activities aimed at a study that configures, through a succession of gradual interventions, a route towards the complete reopening of the Milanese Navigli (Martesana, Inner Circle, Naviglio di via Vallone, Conca di viarenna, Darsena) as a function of the hydraulic reconnection of the entire system of the Lombard canals and the possibility of reactivating navigation along all the tracks.*

**APRIL 14, 2015**

Convention for the second phase of the Feasibility Study which, in addition to reiterating the fundamental characteristics of the work, committed the Politecnico di Milano through the coordination group to continue the analysis initiated in the first phase of the study, entrusting also to Metropolitana Milanese S.p.A. (MM) the task of providing the development, technical coordination and support activities to the Politecnico di Milano through a specific assignment to be assigned to internal subjects or through external professionals selected in compliance with the applicable regulations in force.

**GIUGNO 2015**

The work is delivered to the City of Milan ....



... but it continues ...

In December 2016 the mayor Giuseppe Sala instructed me to coordinate the Scientific Committee for the reopening of the canals

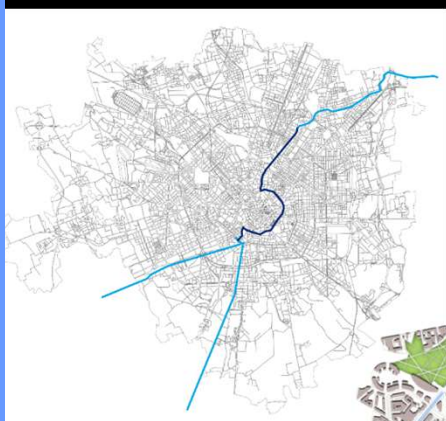


# The project in brief



The strategic role of the Navigli system on the scale of the Metropolitan City, from Adda River to Ticino River, and, if it's possible, from Milan to Po river (maybe Venice?)  
Everything will be flanked by a cycle path

A continuous system along the historical route consisting of a navigable canal and a cycle path



Total length  
7.700 m



### NAVIGLIO MARTESANA

2.438 m

- 1443 ideation: Filippo Maria Visconti
  - 1457-60 construction. Francesco Sforza (ing. Bertola da Novate)
  - 1471 navigable during the duchy of Galeazzo Maria
  - 1564 Rectification of the last section = Melchiorre Gioia street
- Cassina de' Pomm – Melchiorre Gioia st. – ramparts of Porta Nuova*

### NAVIGLIO OF S. MARCO

902 m

- 1496 – Ludovico il Moro
- San Marco street*

### INTERNAL CIRCLE (Internal ditch)

3.800 m

- 1156-58 ditch (Guglielmo da Guintellino)
  - 1338 partially navigable
  - 1496 Navigable thanks to Ludovico il Moro
- Streets: Fatebenefratelli – Senato – San Damiano – Visconti di Modrone – Francesco Sforza – Santa Sofia – Molino delle Armi - De Amicis*

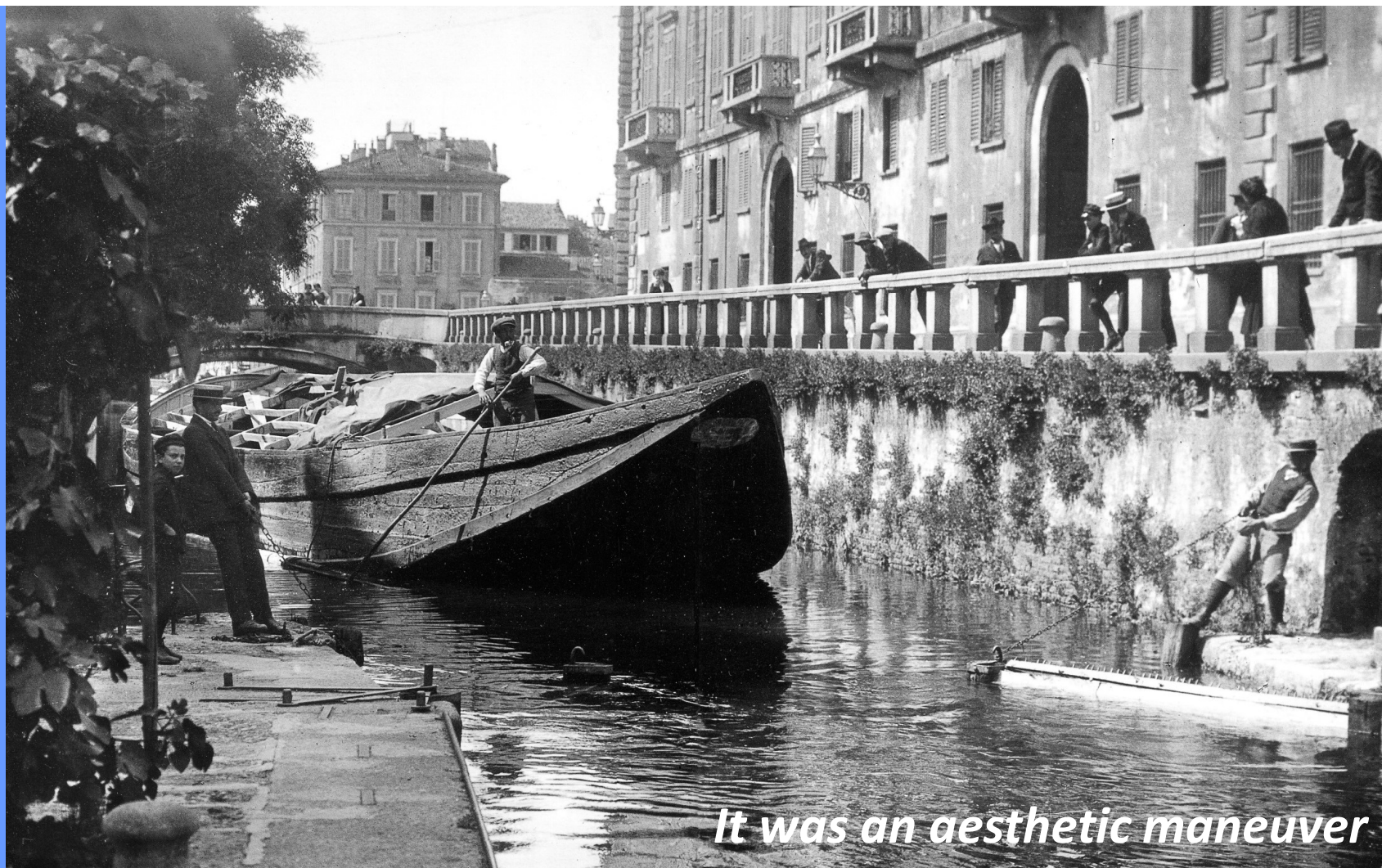
### NAVIGLIO OF VIARENNA

560 m

- 1439 – Filippo Maria Visconti (Filippo da Modena – Fioravante da Bologna)
- Conca del Naviglio street (delivery to Darsena)*



The project in brief



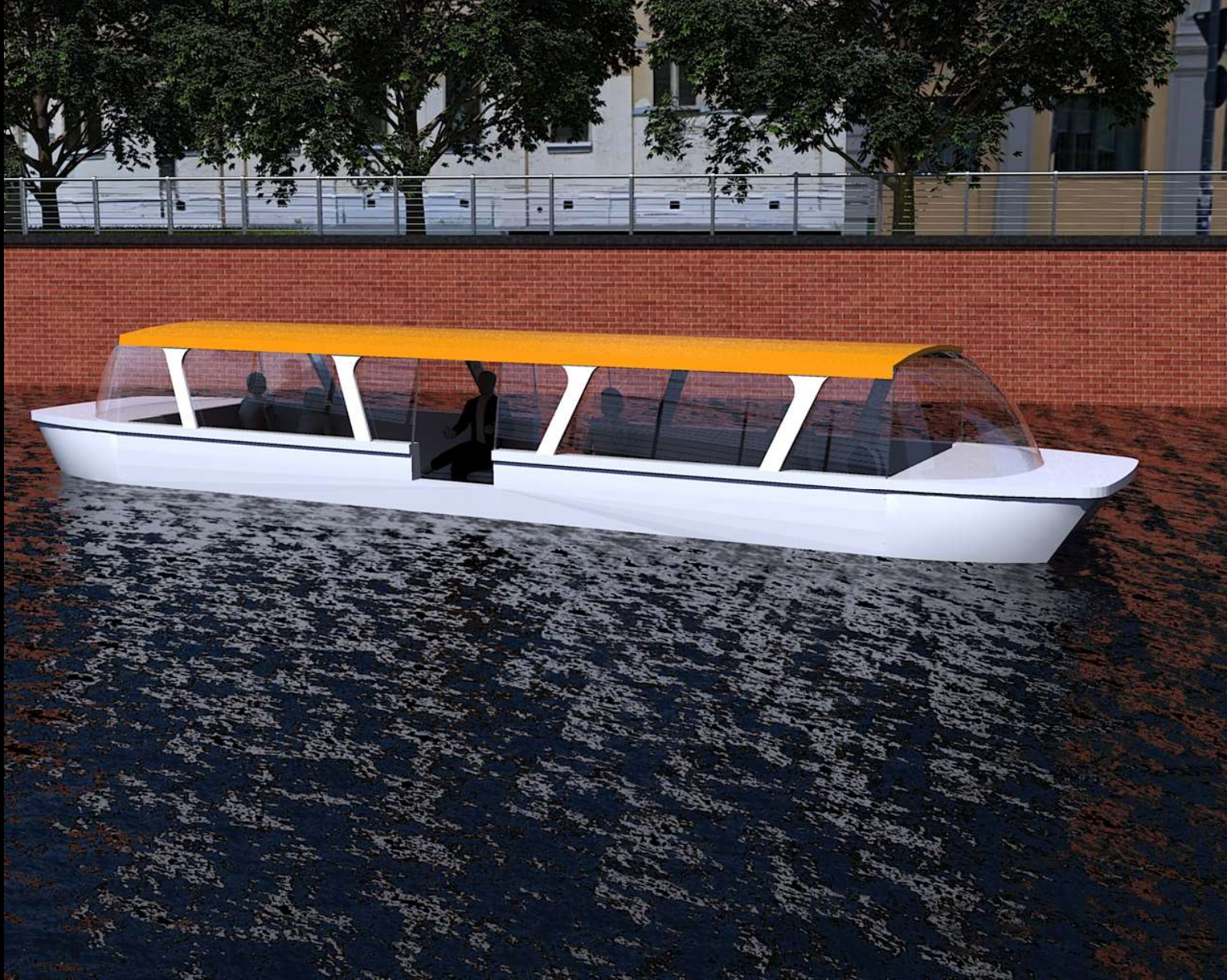
*It was an aesthetic maneuver*

*much more instructive than the one that starts a truck, because it conveyed the child's curiosity to form some knowledge, as well as hydraulic, topography of the waterways; and with the interest in the genesis of the networks of the channels, familiarizing the minds with pages of history not unworthy of memory*

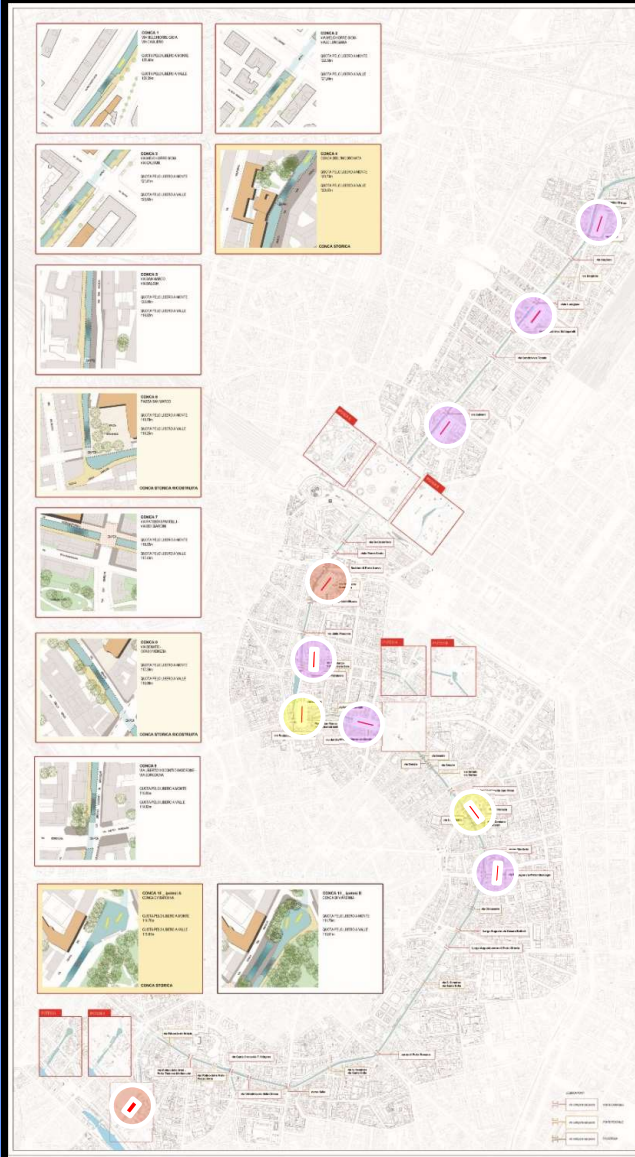
*Luca Beltrami, La mostra del "Naviglio" ne "Il Marzocco" - 26 maggio 1929*



The project in brief







## NAVIGATION SCHEDULE

**2 ore 20 minutes downhill**

(from Cassina de' Pomm to Darsena)

**2 ore 40 minutes uphill**

(from Darsena to Cassina de Pomm)

*Examples:*

CASSINA DE POMM- M2 GIOIA

Downhill 40' – Uphill 53'

PORTA NUOVA – LAGHETTO DI SAN MARCO

Downhill 24' – Uphill 35'

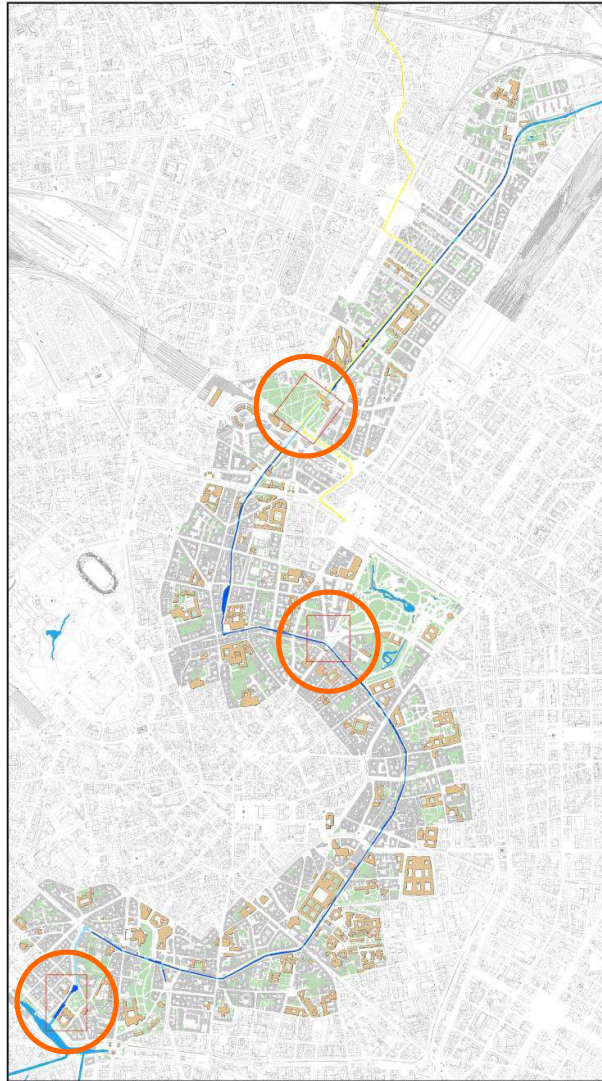
SAN MARCO – CA' GRANDA

Downhill 43' – Uphill 52'

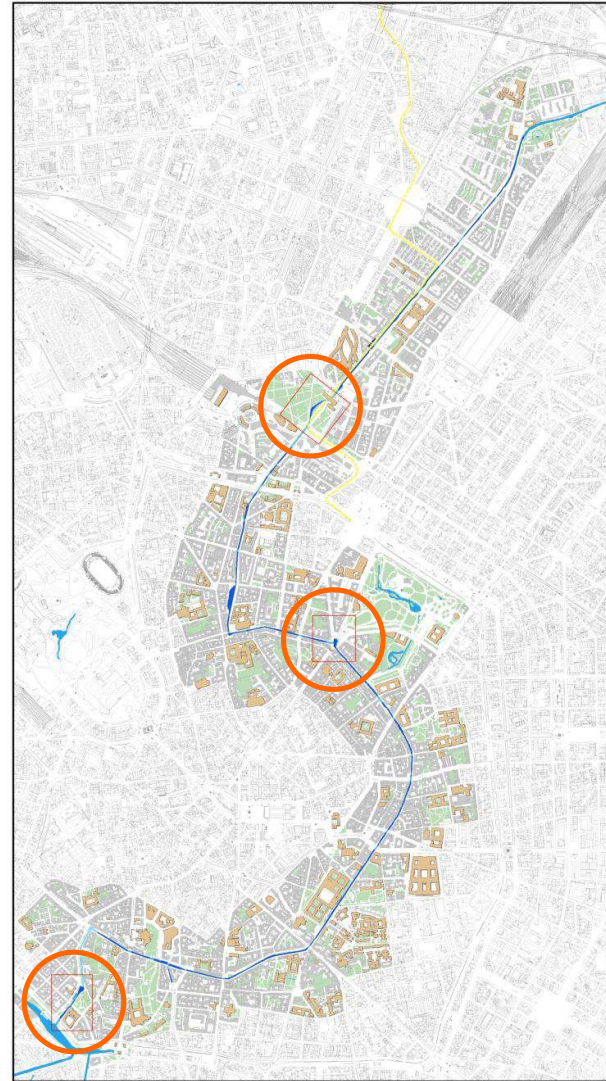
VIA SENATO – BASILICA DI SAN LORENZO

Downhill 35' – Uphill 45'

# The project in brief



SOLUZIONE A



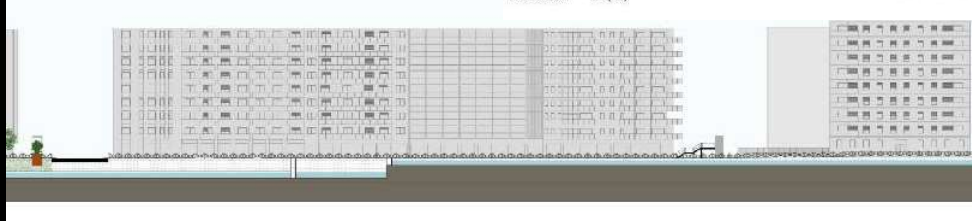
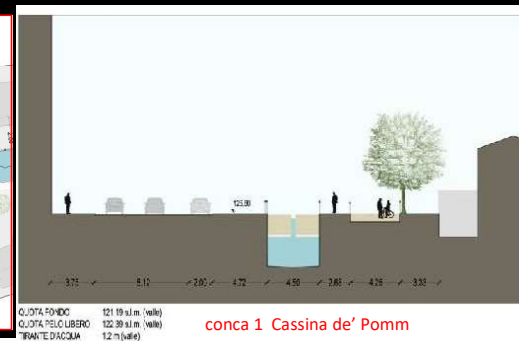
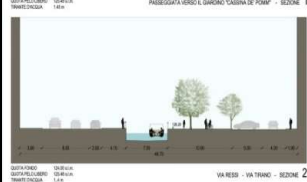
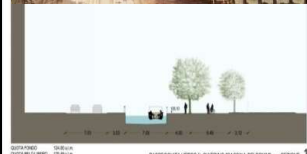
SOLUZIONE B

The route of the reopening of the Milanese Navigli



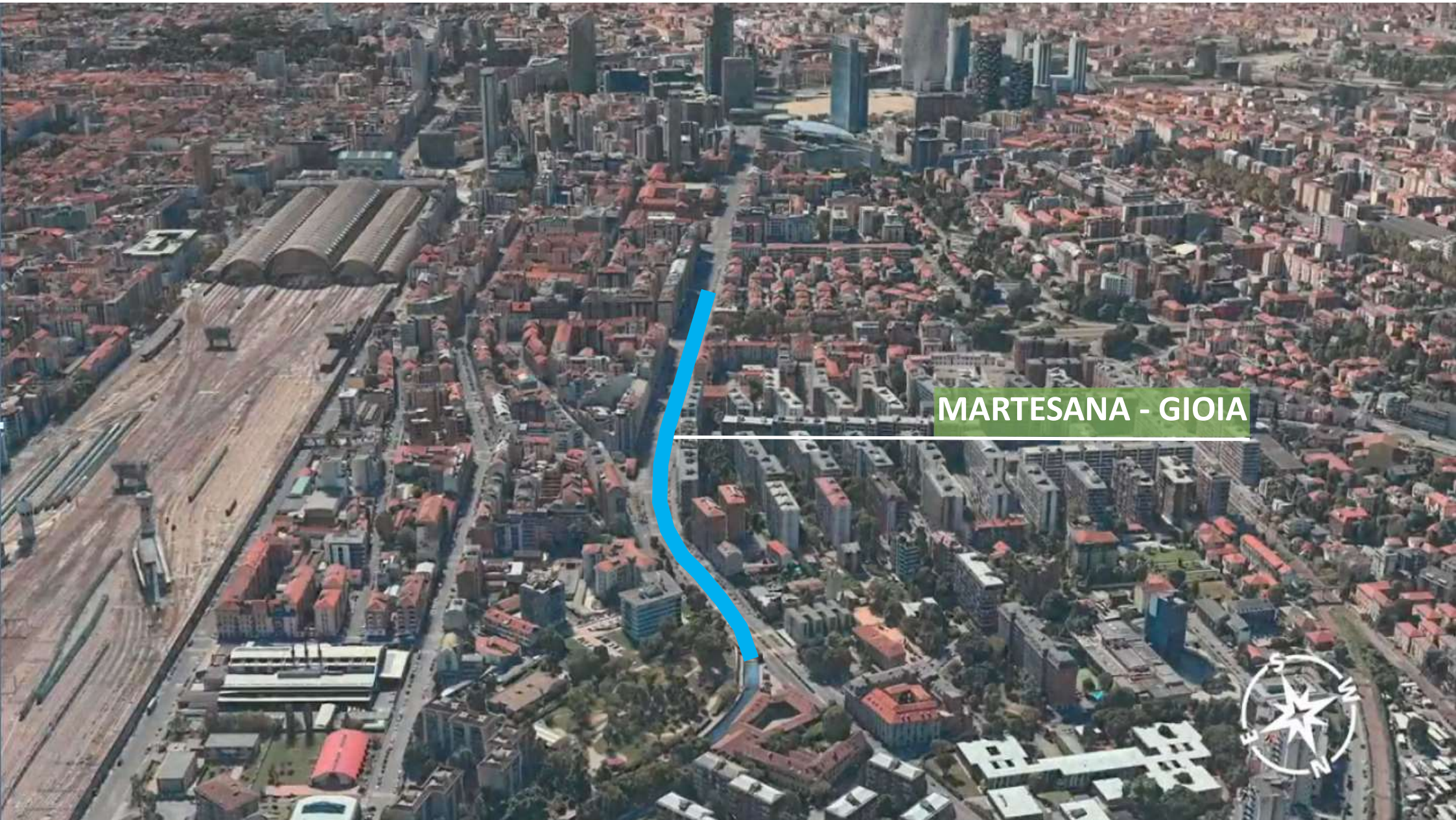
# The project in brief

MR1: Cassina de' Pomm - Cagliero



The first section of Via Melchiorre Gioia (MR1): enhancement of the role of the Naviglio in the system of public spaces that was formed around the Cassina de Pomm, also through the enhancement of traces of the ancient system





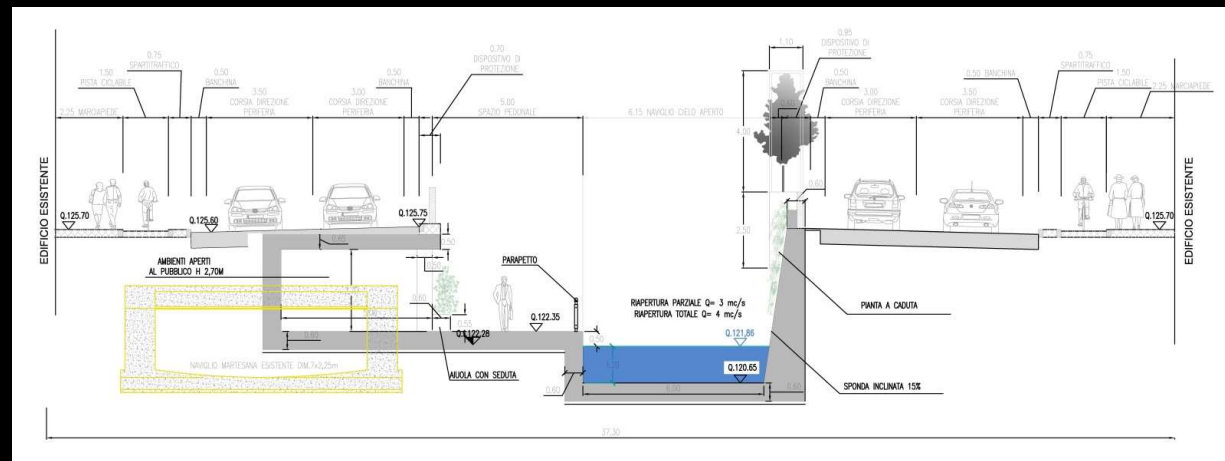
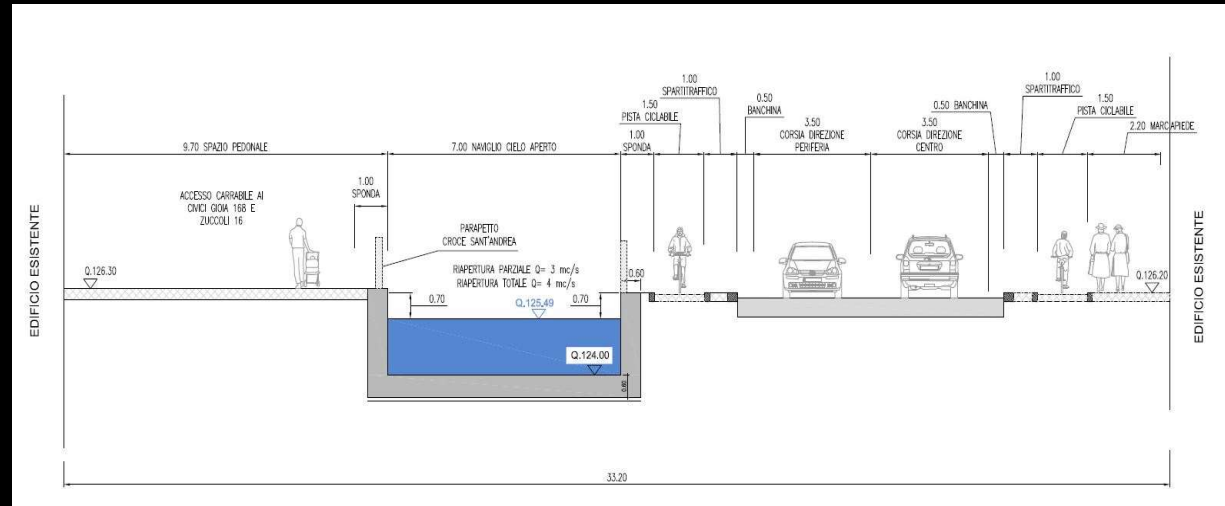
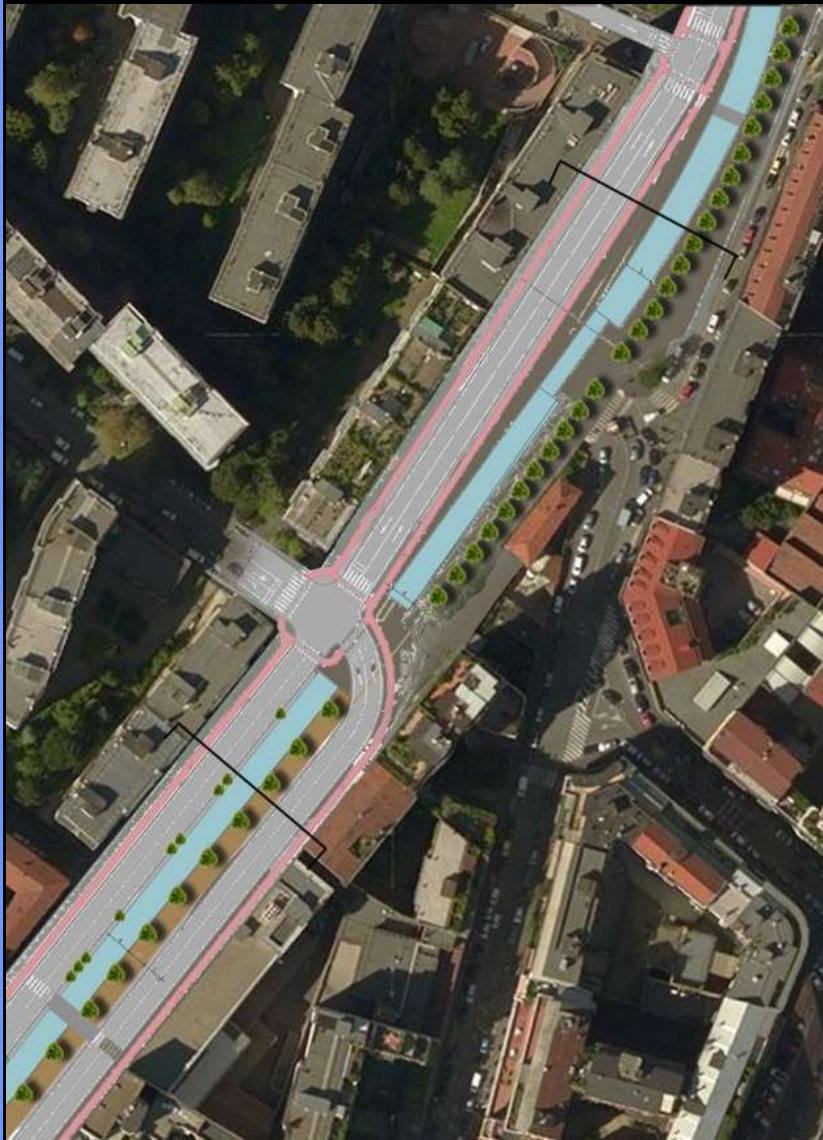
MARTESANA - GIOIA



Il progetto in sintesi



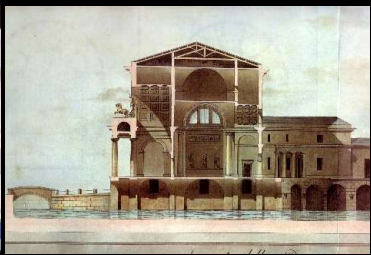
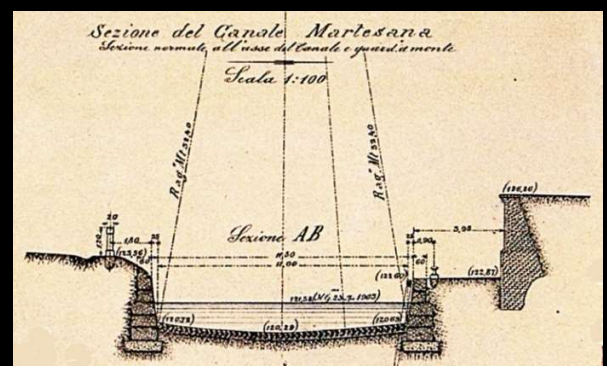
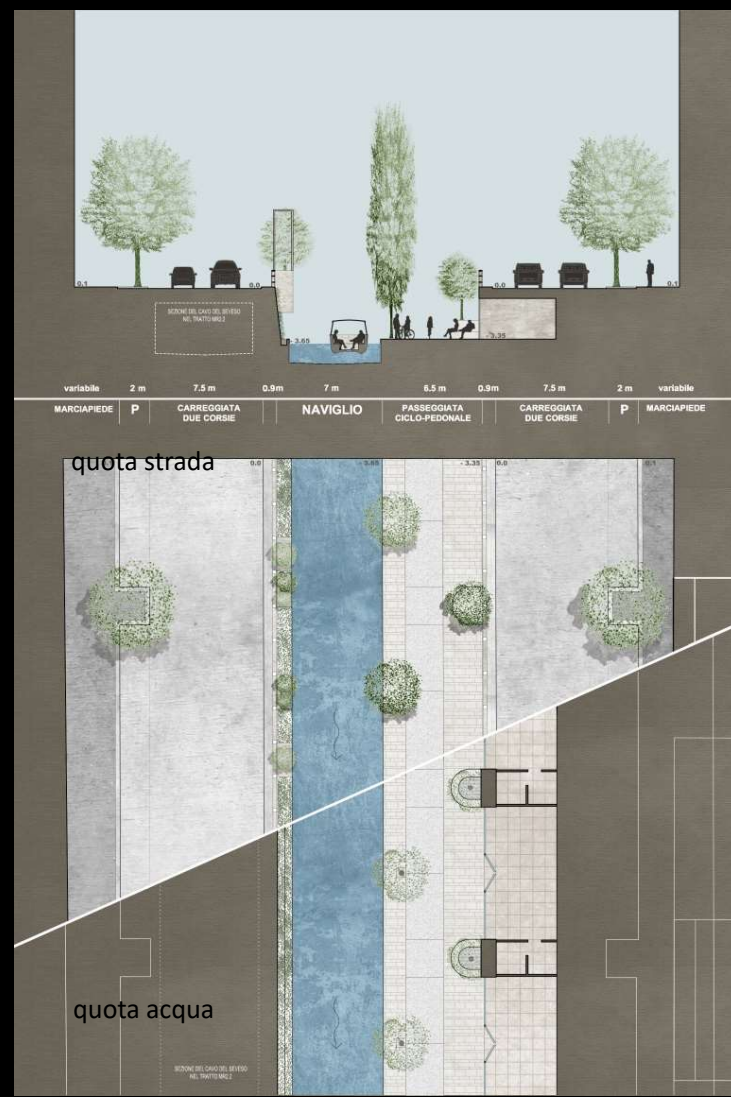
# Il progetto in sintesi



The first section of Via Melchiorre Gioia (MR1): enhancement of the role of the Naviglio in the system of public spaces that was formed around the Cassina de Pomm, also through the enhancement of traces of the ancient system



# The project in brief



The second stretch of Via Melchiorre Gioia (MR2): reaffirmation of the role of the Naviglio in the construction of a new habitable urban space able to counter the dominant presence of vehicular traffic that has squandered all the original wealth, leaving no room for other functions

# The project in brief



Il secondo tratto di via Melchiorre Gioia (MR2)



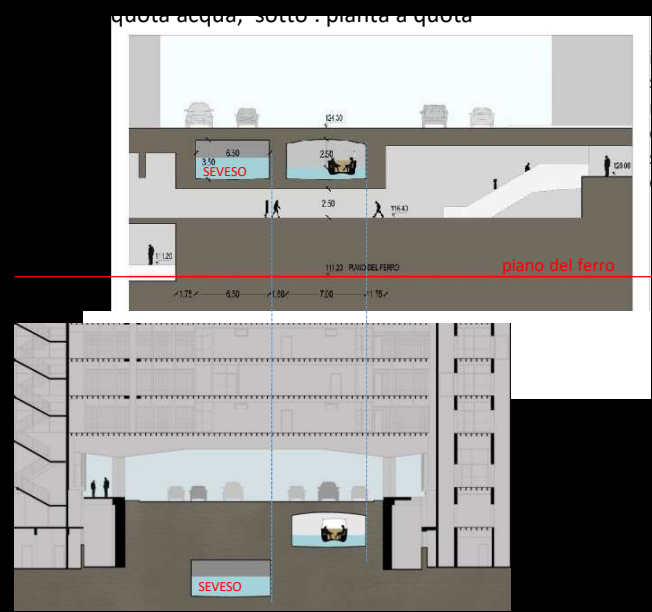
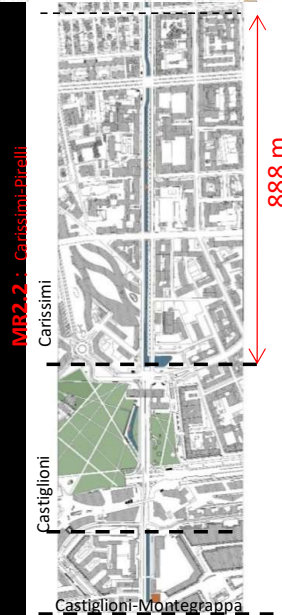
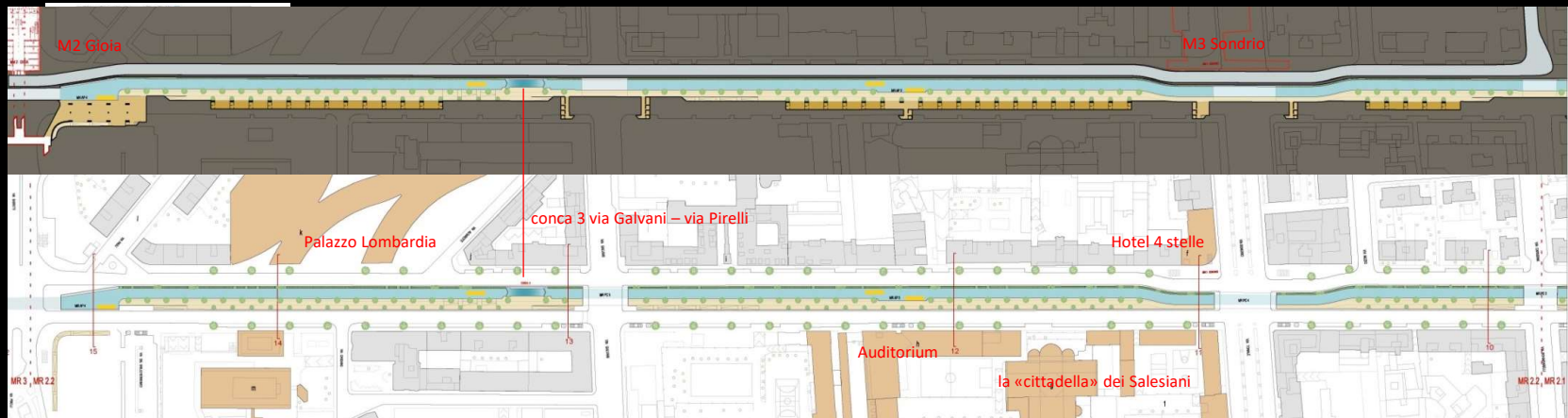
Il progetto in sintesi

via Melchiorre Gioia



The second stretch of Via Melchiorre Gioia (MR2)

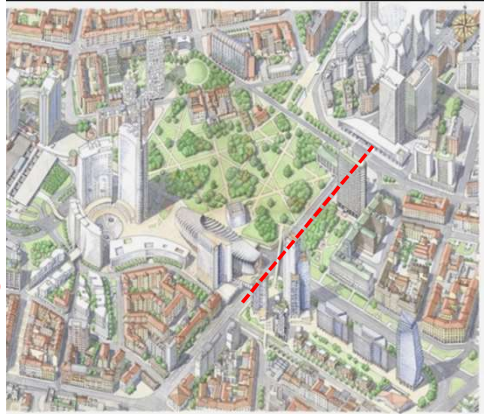
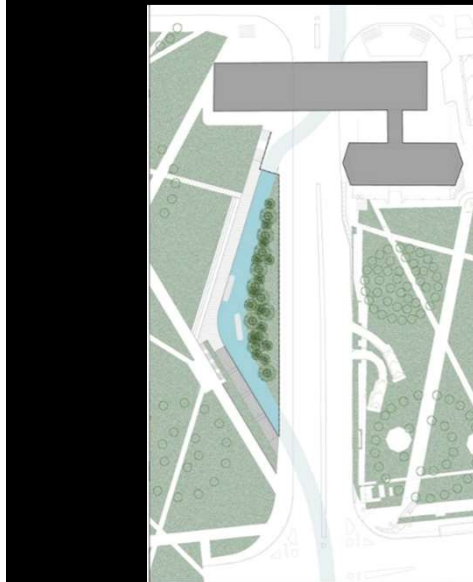
# The project in brief



The second stretch of Via Melchiorre Gioia (MR2.2)



# The project in brief



soluzione B



100 m a cielo aperto + 250 m in galleria

The third stretch of Via Melchiorre Gioia (MR2.2)

The project in brief

PORTA NUOVA COMPLEX



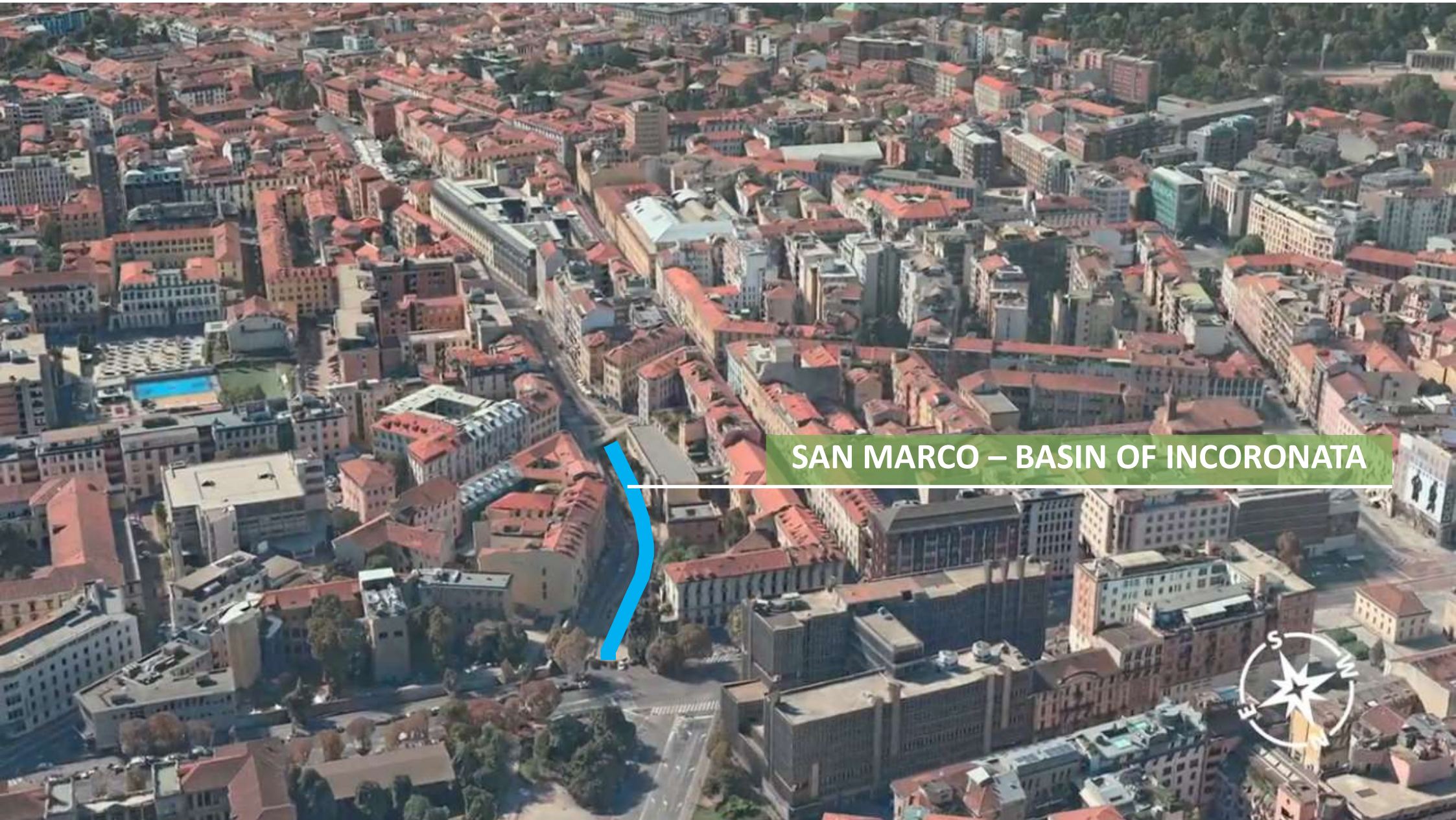


SECTION OF VIA SAN MARCO - THE BASIN OF THE INCORONATA

The project in brief







SAN MARCO – BASIN OF INCORONATA



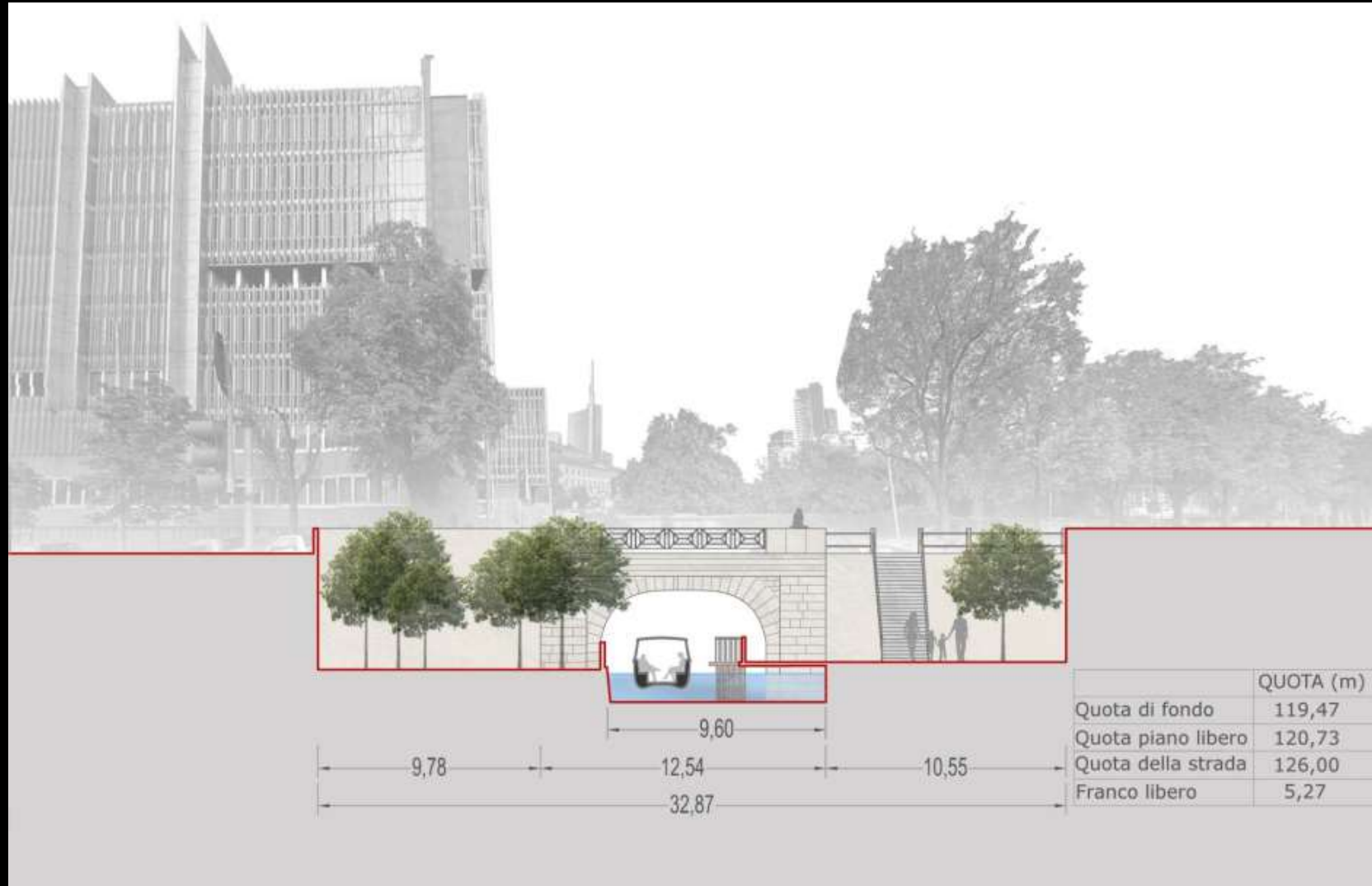


The project in brief



Section of via San Marco - the basin of the Incoronata

The project in brief



Section of San Marco street - The basin of the Incoronata



Il progetto in sintesi





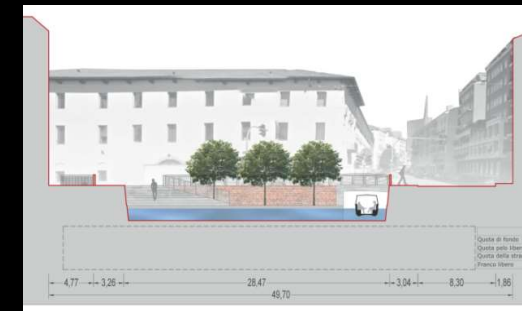
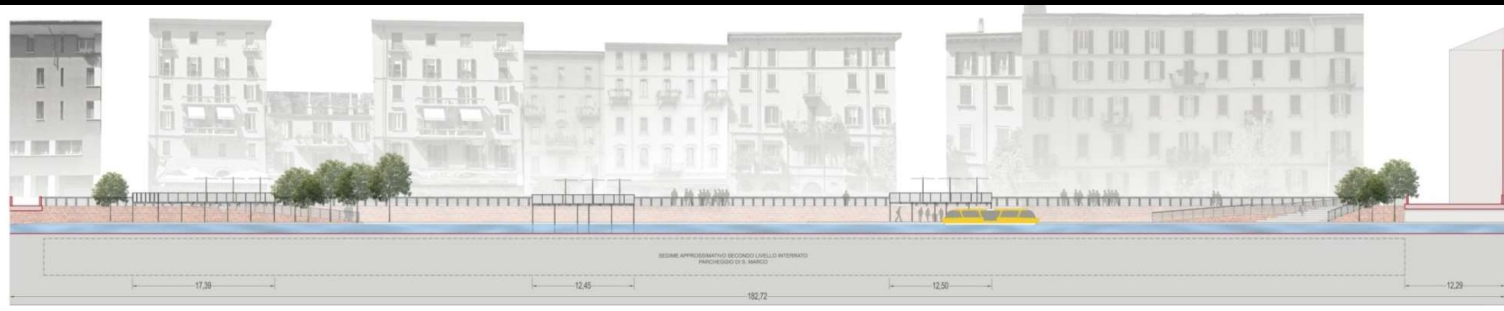
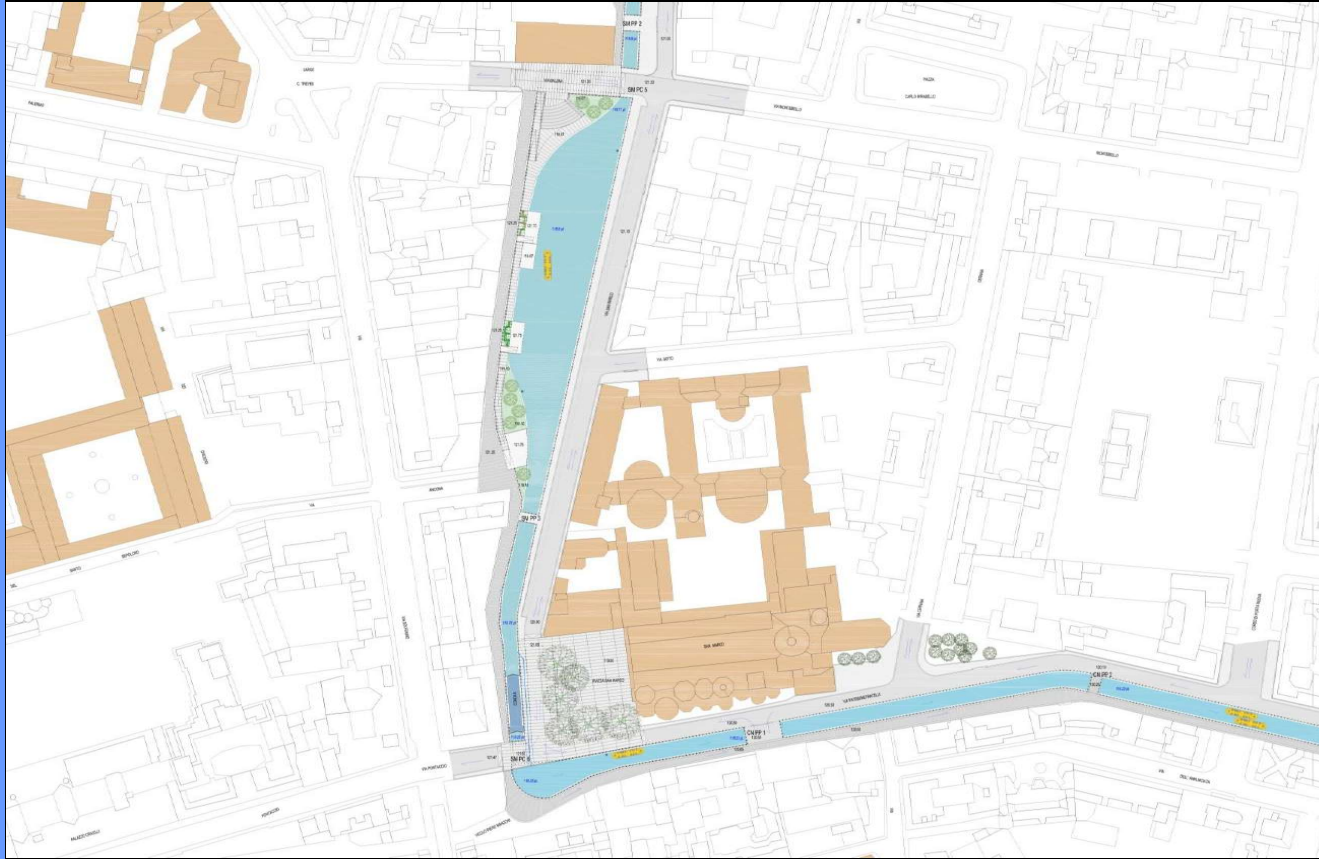
Il progetto in sintesi



Section of via San Marco – View of Porta Volta Ramparts

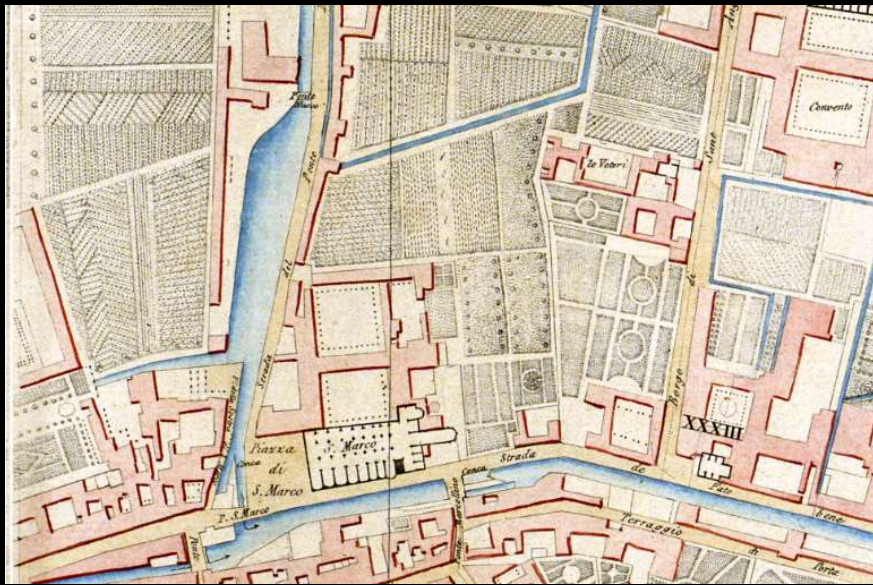
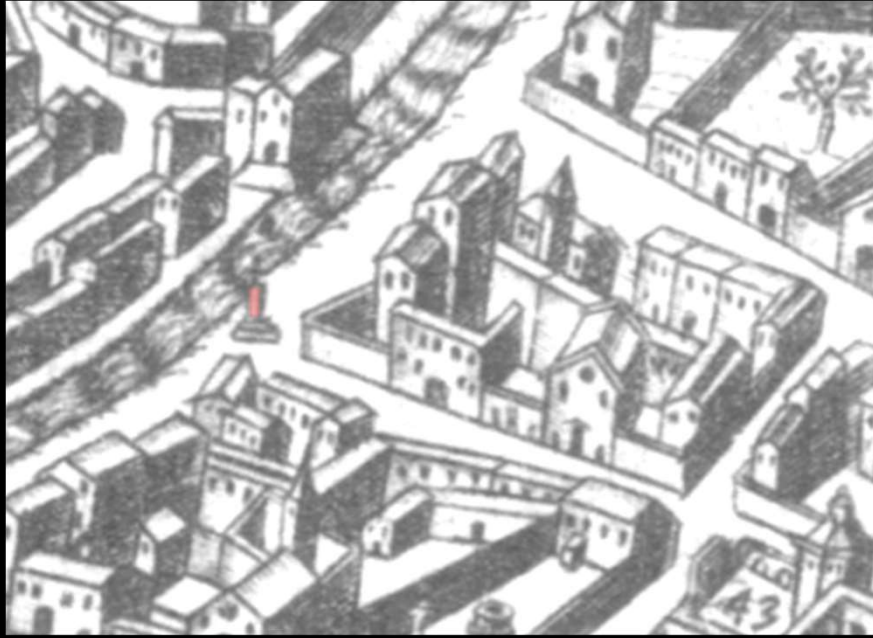


# SECTION OF VIA SAN MARCO - THE POND (IL LAGHETTO)



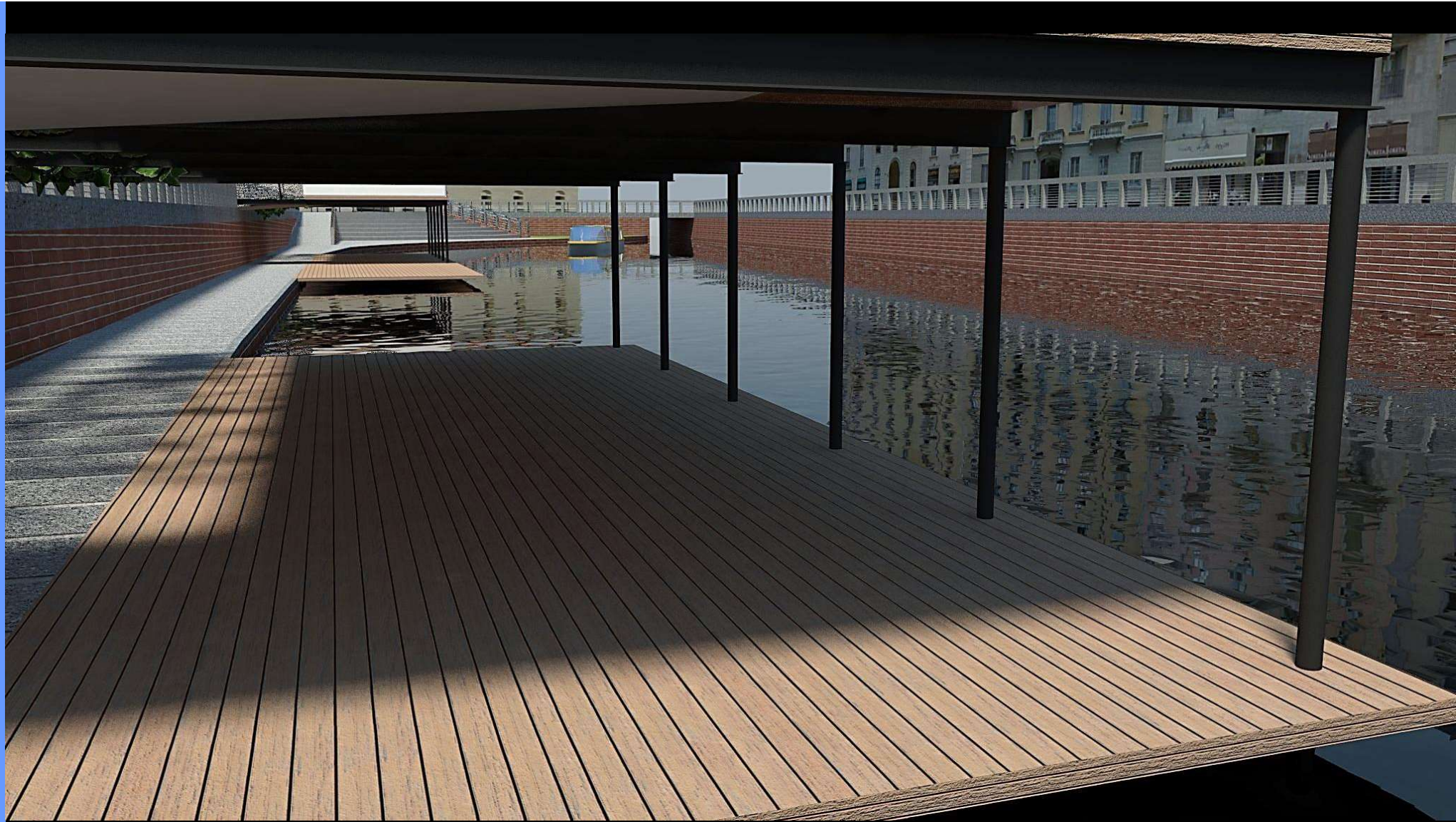


The project in brief





The project in brief

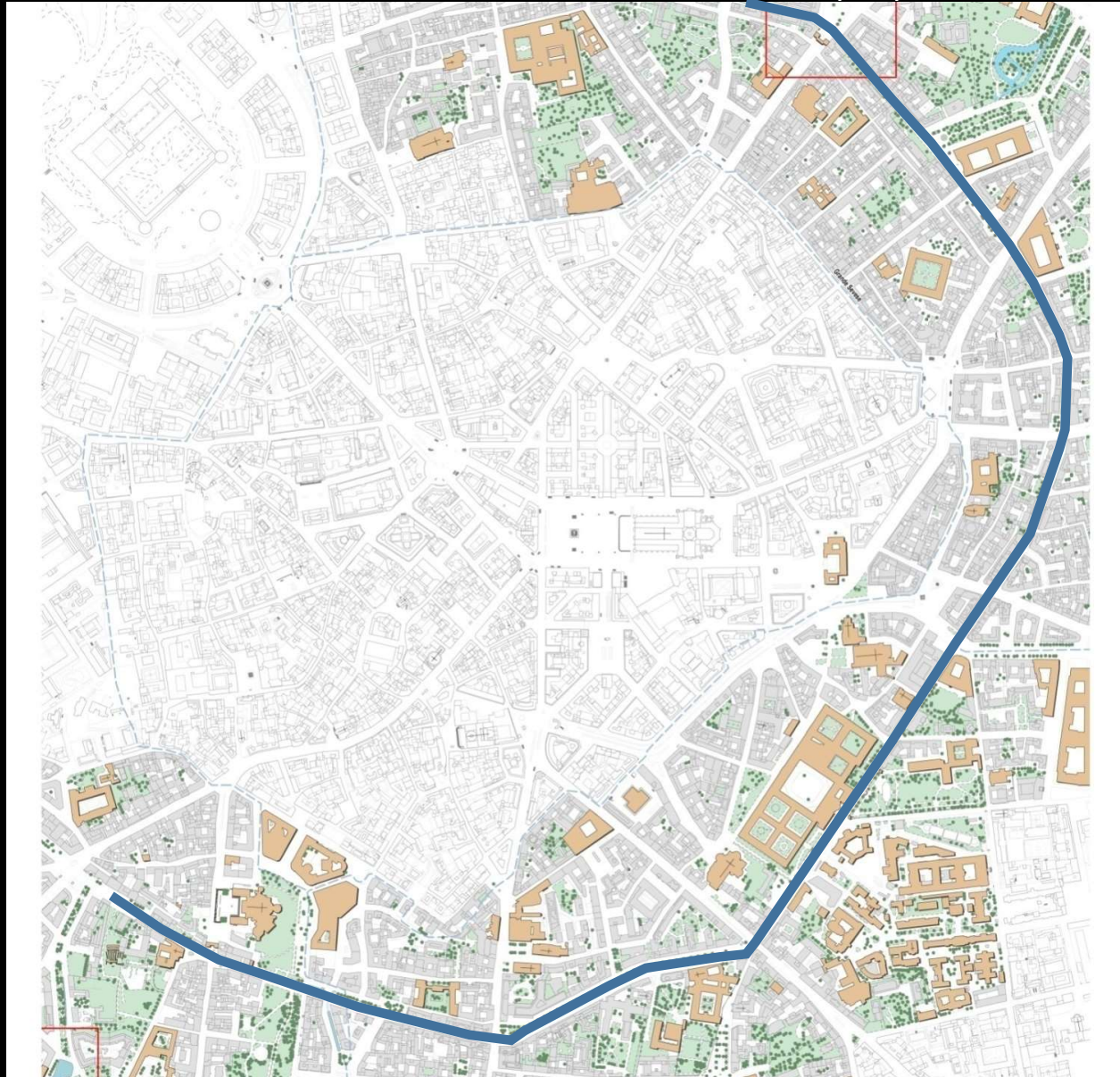


A great project for a new public space



The project in brief

THE SECTION OF THE INNER CIRCLE (CN)



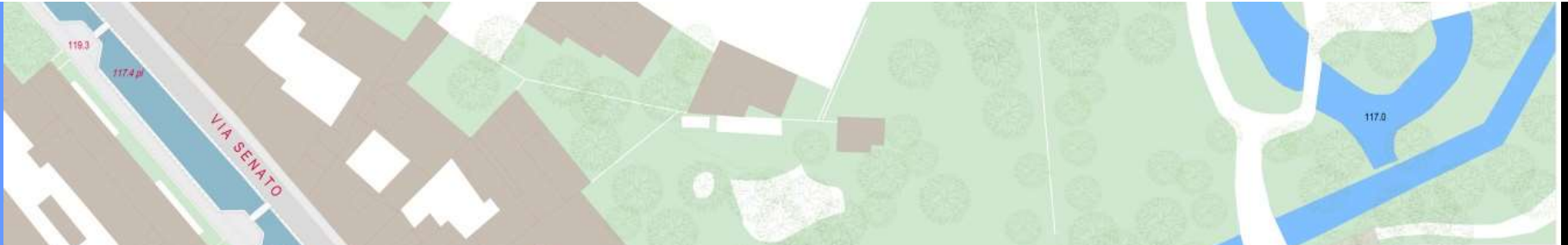


# The project in brief





Il progetto in sintesi



The section of the inner circle – Senato street



An aerial photograph of a city, likely Pavia, Italy, showing a dense urban landscape with numerous buildings and red-tiled roofs. A large, central university complex is highlighted with a semi-transparent blue rectangular overlay. The complex consists of several interconnected buildings forming a courtyard. A vertical blue line runs through the center of the image, separating the left and right halves. In the bottom right corner, there is a white compass rose icon.

**SFORZA- POLICLINICO  
«STATALE» UNIVERSITY**



# The project in brief



The section of the inner circle –  
Francesco Sforza street

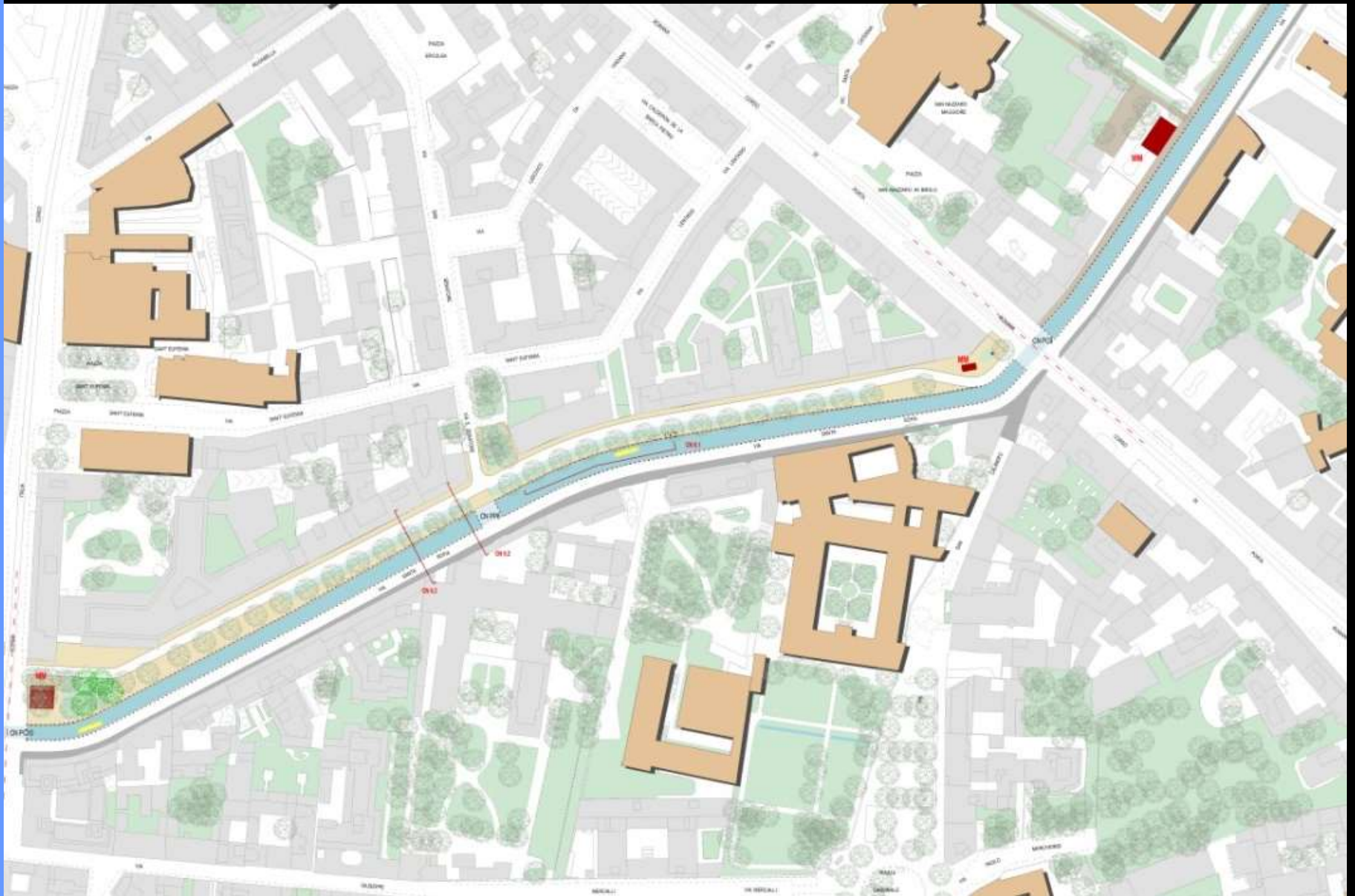


The project in brief



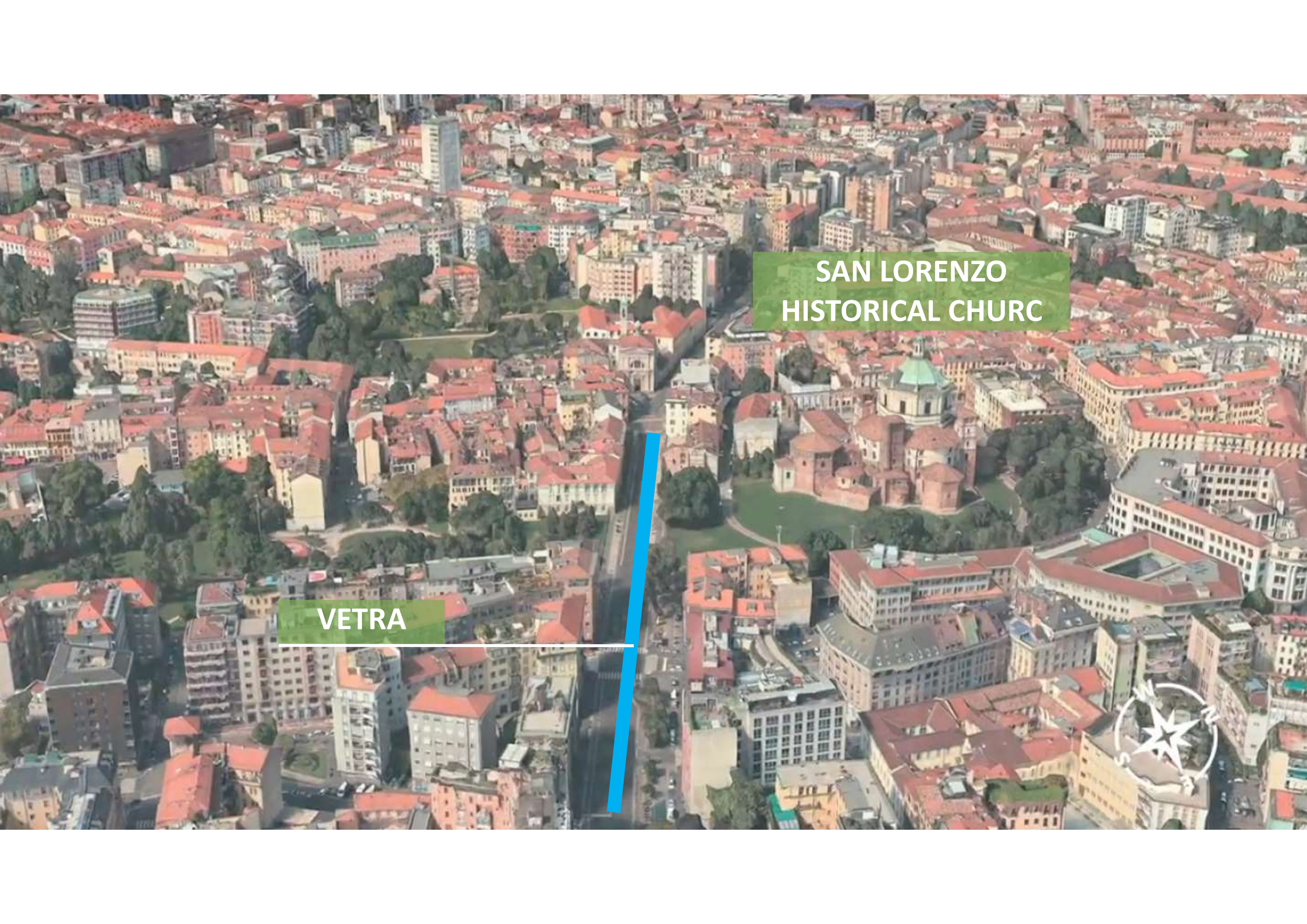


The project in brief



The section of the inner circle – Santa Sofia street





SAN LORENZO  
HISTORICAL CHURC

VETRA





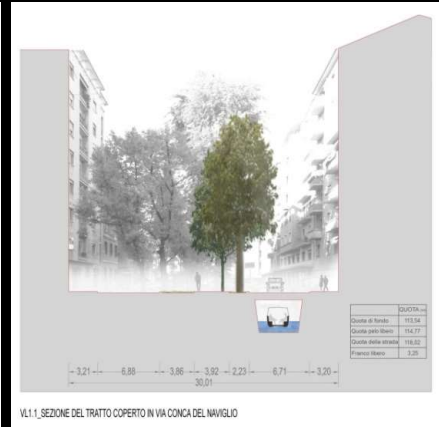
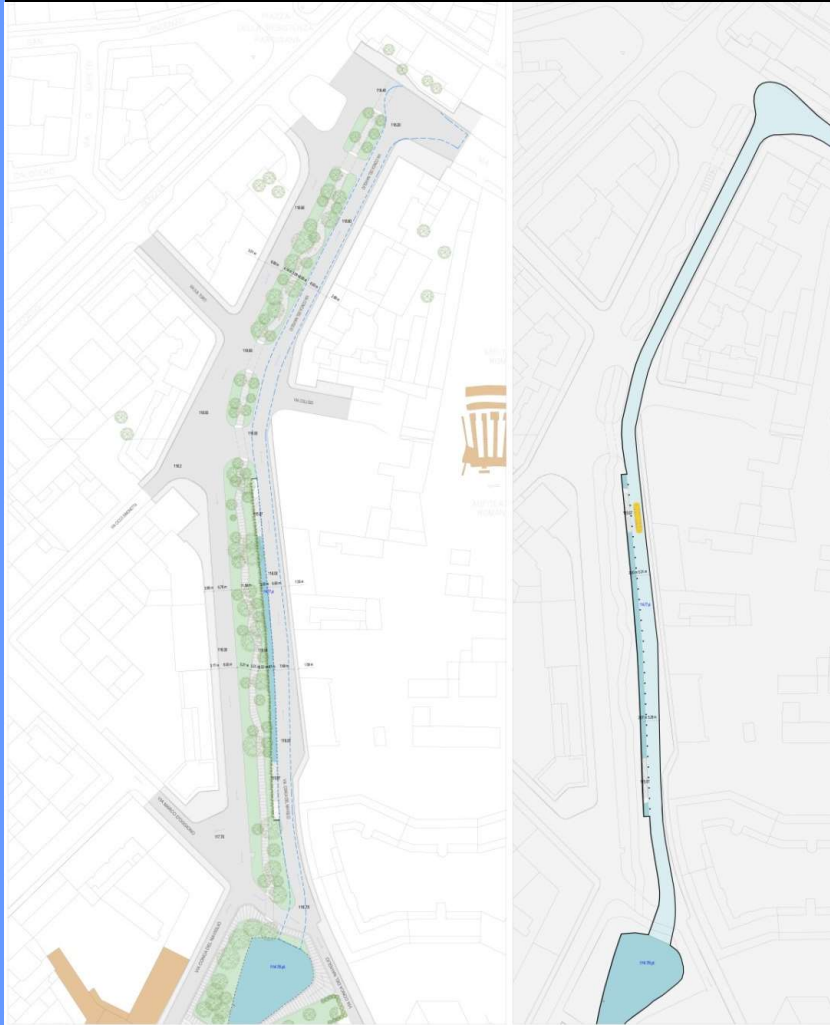


Il progetto in sintesi

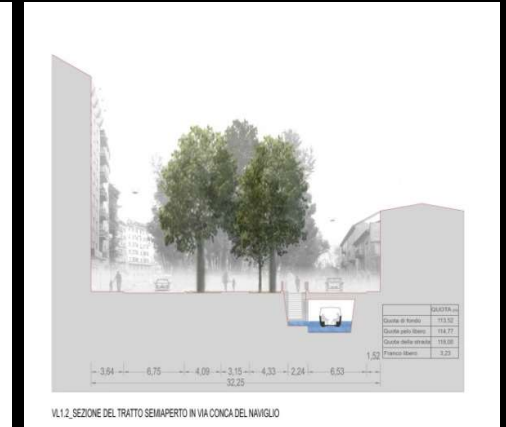




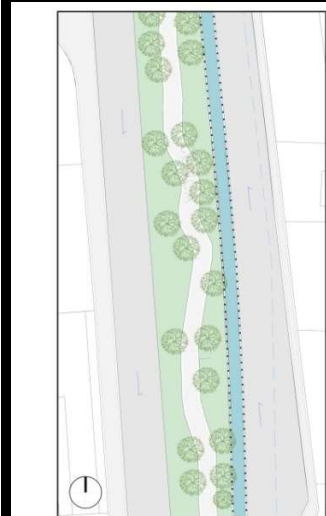
# The project in brief



VL1.1\_SEZIONE DEL TRATTO COPERTO IN VIA CONCA DEL NAVIGLIO



VL1.2\_SEZIONE DEL TRATTO SEMAPERTO IN VIA CONCA DEL NAVIGLIO



PLANIMETRIA DEL TRATTO SEMAPERTO IN VIA CONCA DEL NAVIGLIO



LA GRANDE AIUOLA ALBERATA DI VIA CONCA DEL NAVIGLIO

The project in Conca del Naviglio street



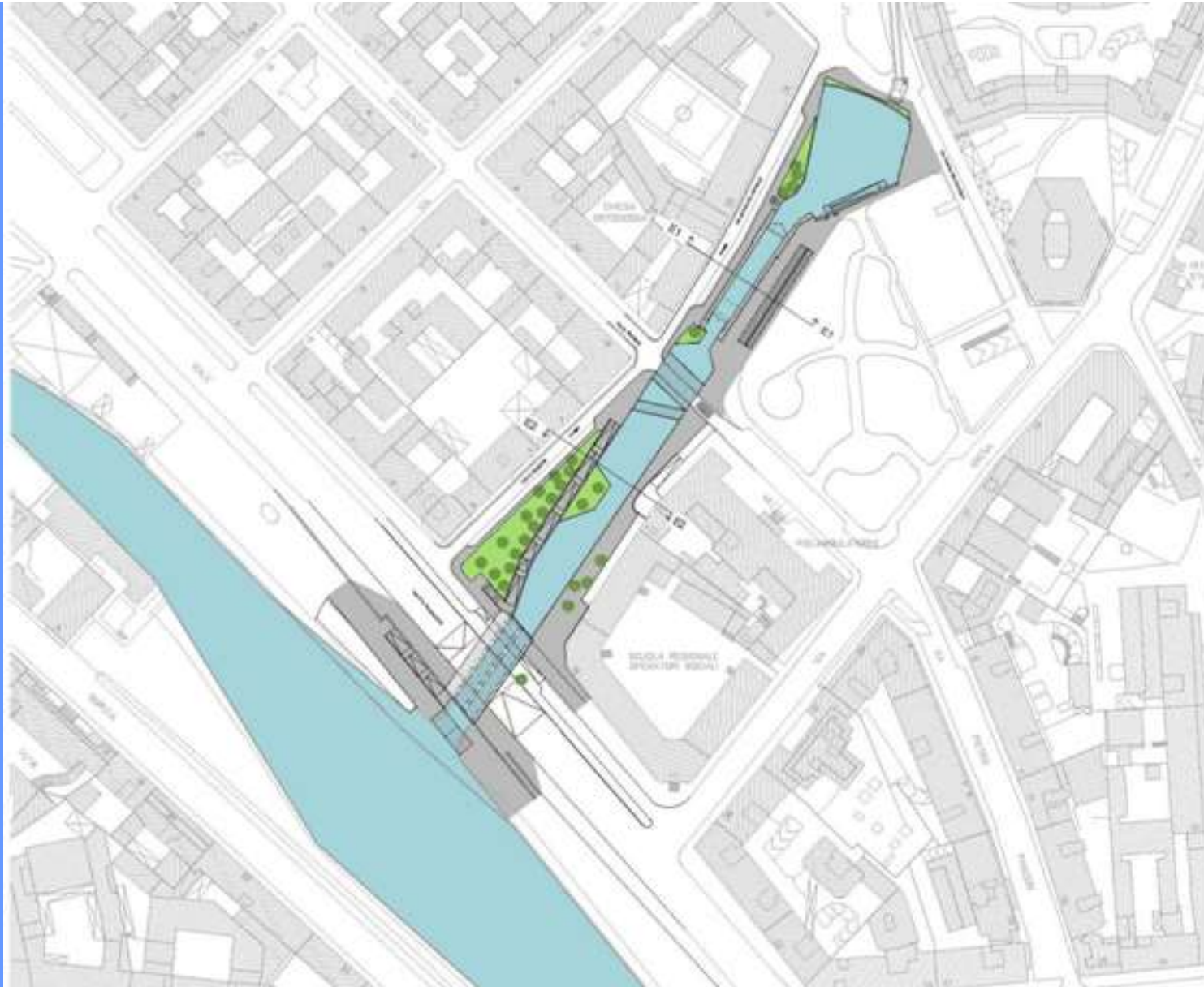


EXISTING DARSENA

BASIN OF VIARENNA



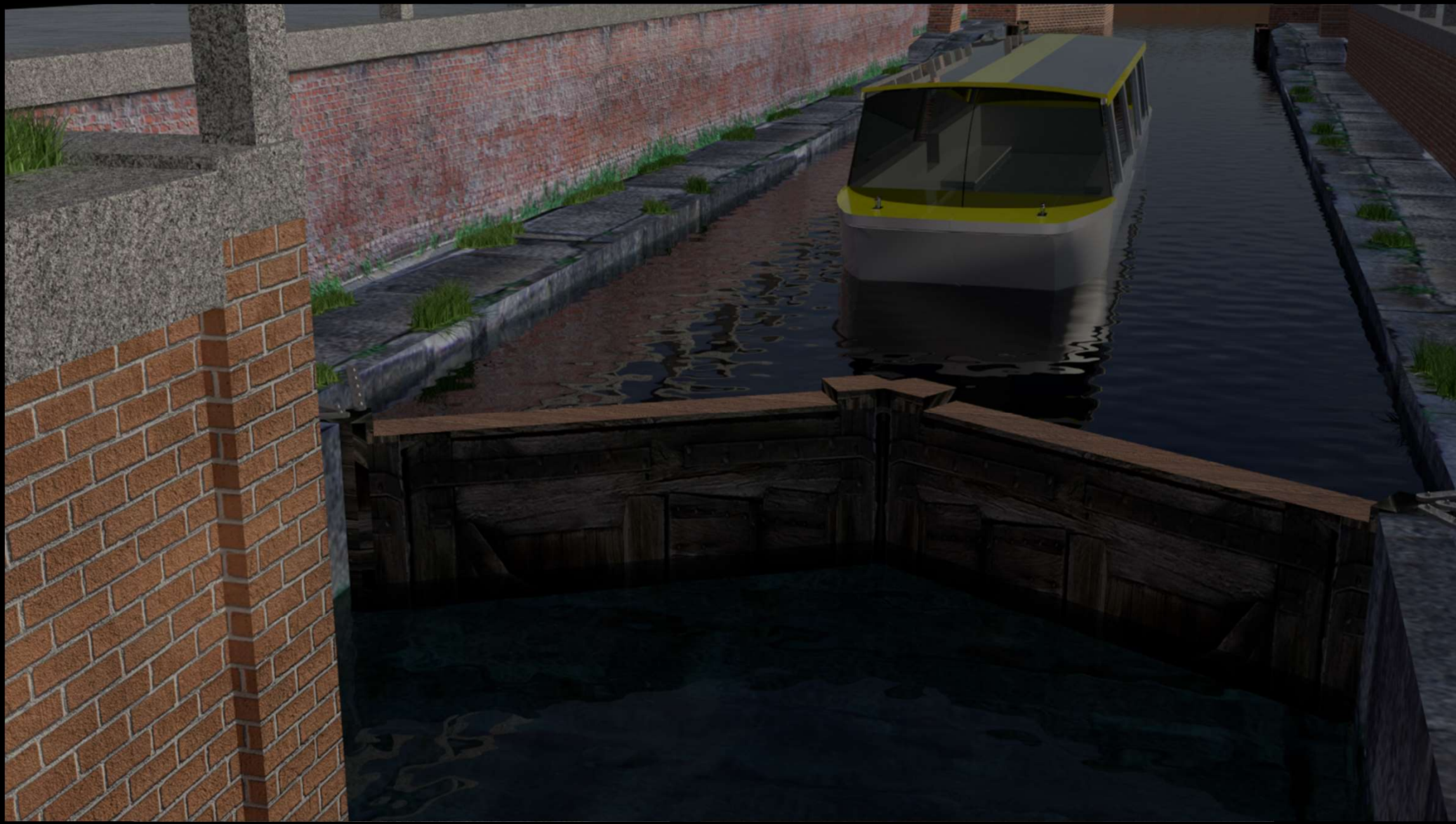
The project in brief



Taken from via Conca del Naviglio to the Darsena



The project in brief





**Agli idraulici è stato chiesto ancora:**

*Se era possibile realizzare il progetto per fasi, risolvendo il problema dell'approvvigionamento idrico e del conferimento delle acque da ogni tratto aperto in un corpo idrico adeguato. E se era possibile separare il Seveso dalla Martesana per garantire la qualità delle acque di quest'ultima e per il riordino idraulico più generale delle acque milanesi.*

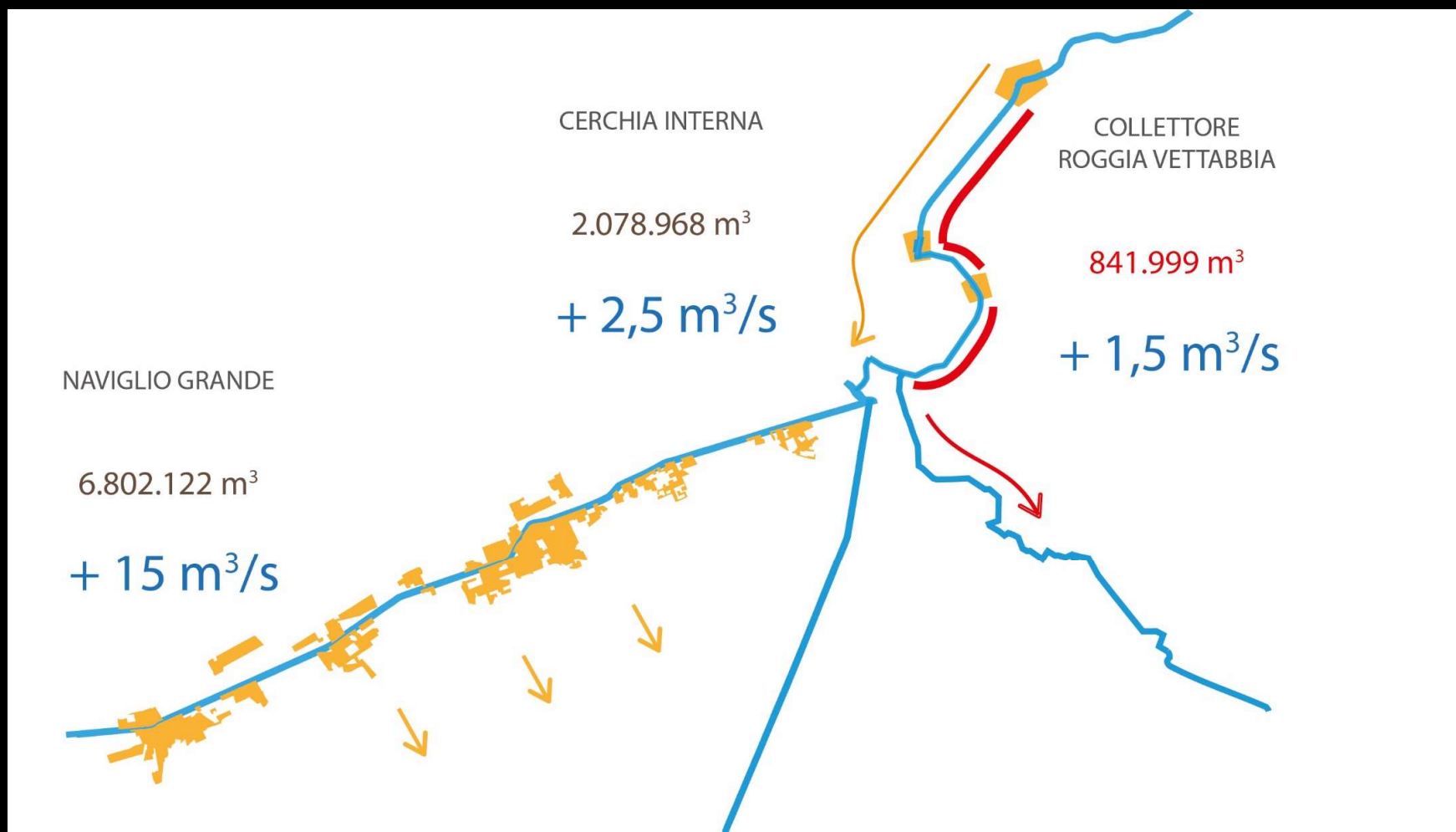


## POSSIBILI FASI DI ESECUZIONE DELLA RIAPERTURA DEI NAVIGLI :

- CASSINA DE POMM- VIA CARISSIMI
- SEPARAZIONE SEVESO DA MARTESANA (TUBAZIONI)
- ESECUZIONE DELLA TUBAZIONE CHE CONSENTE LA RIAPERTURA DI TRATTI INDIPENDENTEMENTE DALLA LORO CONCATENAZIONE FISICA
- RIATTIVAZIONE DELLE CONCHE DELL'INCORONATA E DI VIARENNA



## CONTRIBUTION OF HEAT PUMPS



IN RED, THE CHANNEL THAT SUPPORTS THE REOPENED NAVIGLIO CONTRIBUTES TO THE WATER BALANCE OF THE VETTABIA WITH AN INCREASE OF 1,5 MC/S ALLOWING ALL THE BUILDINGS FACING THE NEW CHANNEL A POSSIBILITY TO INSTALL THE HEAT PUMPS.

IN BLUE THE INCREASES OF THE FLOW THAT REACH THE DOCK THANKS TO THE EXTENSION OF THE USE OF HEAT PUMPS TO FURTHER BUILT UP CONTEXTS (+ 2.5 MC / S).

MILAN, THE DARSENA AND THE FUTURE



Milan has demonstrated with Expo2015 to be able to face the reconstruction of the city of water with the fine example of the reactivation of its Darsena





...s'eri drè andà giò'n Domm

Mi stanòtt ho fa' 'n bel sogn...

I have a dream....

