

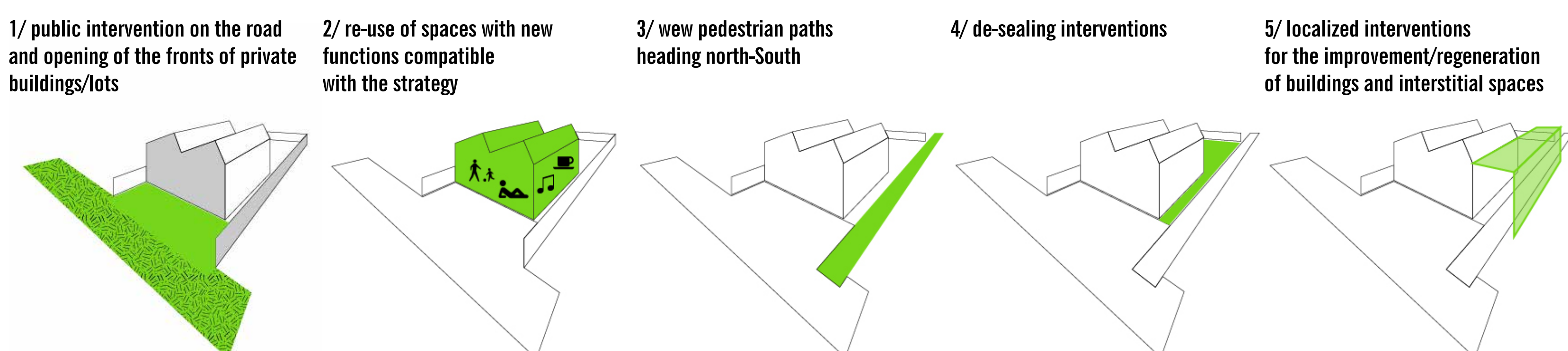
TEMPORARY USE AND NEW ENVIRONMENTAL STANDARDS FOR REGENERATING THE ARTISAN DISTRICT IN SAN LAZZARO

Urban regeneration of the artisan district takes shape through the renovation of the open spaces and incremental reuse of the existing buildings, taking advantage of the social and structural resources of the city. The project establishes its requirements on three key words that make up the guidelines for every phase of discussion and planning: **flexibility, permeability, and wellbeing**. Flexibility is the tool that's been adopted so that the spaces of the district can in time adapt to the changing needs, thanks to urban tools provided with objectives and variable criteria. The concept of permeability is declined to the urban and local scale (with incentives for a progressive extension of the green areas and both public and private de-paving) with social value (through tools of participation to promote the reuse of neglected buildings)

and functional value (aimed at integrating shared spaces where to work, live and/or host creative and artistic activities). The blue infrastructure is planned following a progressive disconnection from the pre-existing sewage system by favoring local infiltration and, where possible, reusing water for non-drinkable purposes. The road sections are redesigned in order to carry rainwater to specific infiltrating wells, the areas intended for parking are made permeable and equipped with rain gardens of various size while the public green areas function as temporary detention basins. The rows of trees are the main element of green infrastructure. Placed south of the roads to obtain maximum environmental comfort, they trace and highlight the existing paths.



MASTERPLAN, GREEN AND PUBLIC SPACES PROJECT

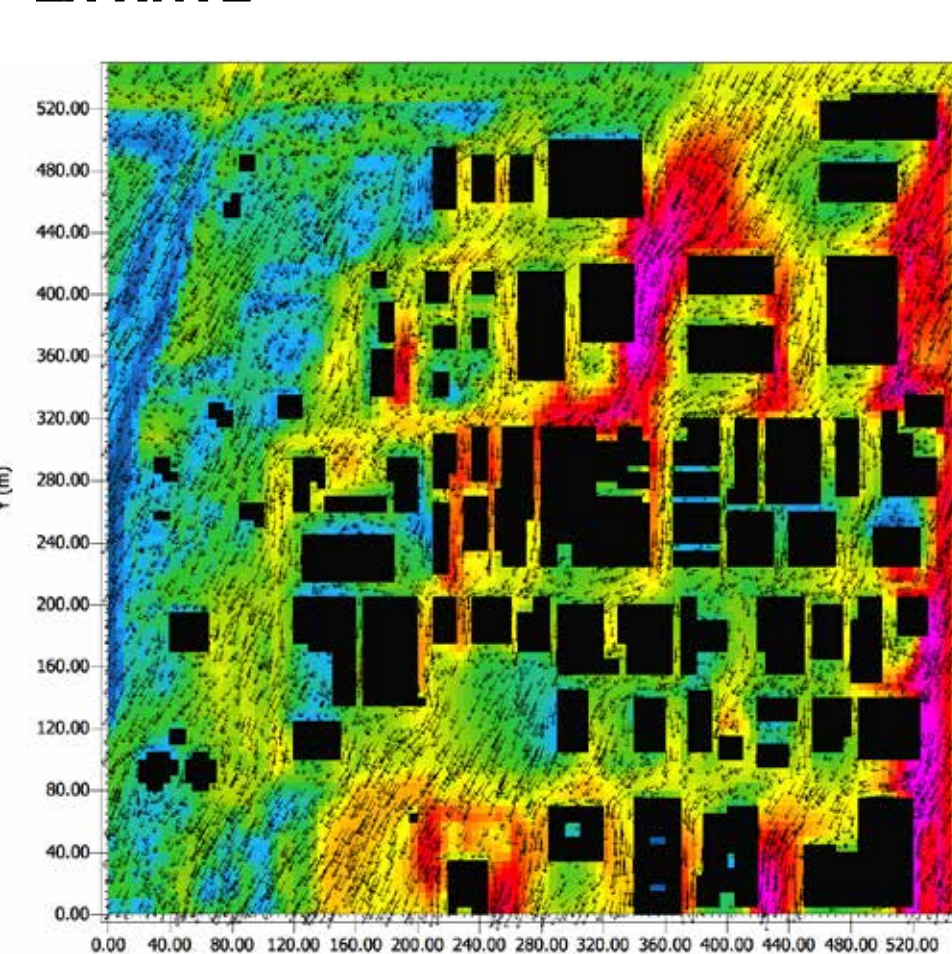


STRATEGY FOR URBAN AND ENVIRONMENTAL TRANSFORMATION OF THE DISTRICT

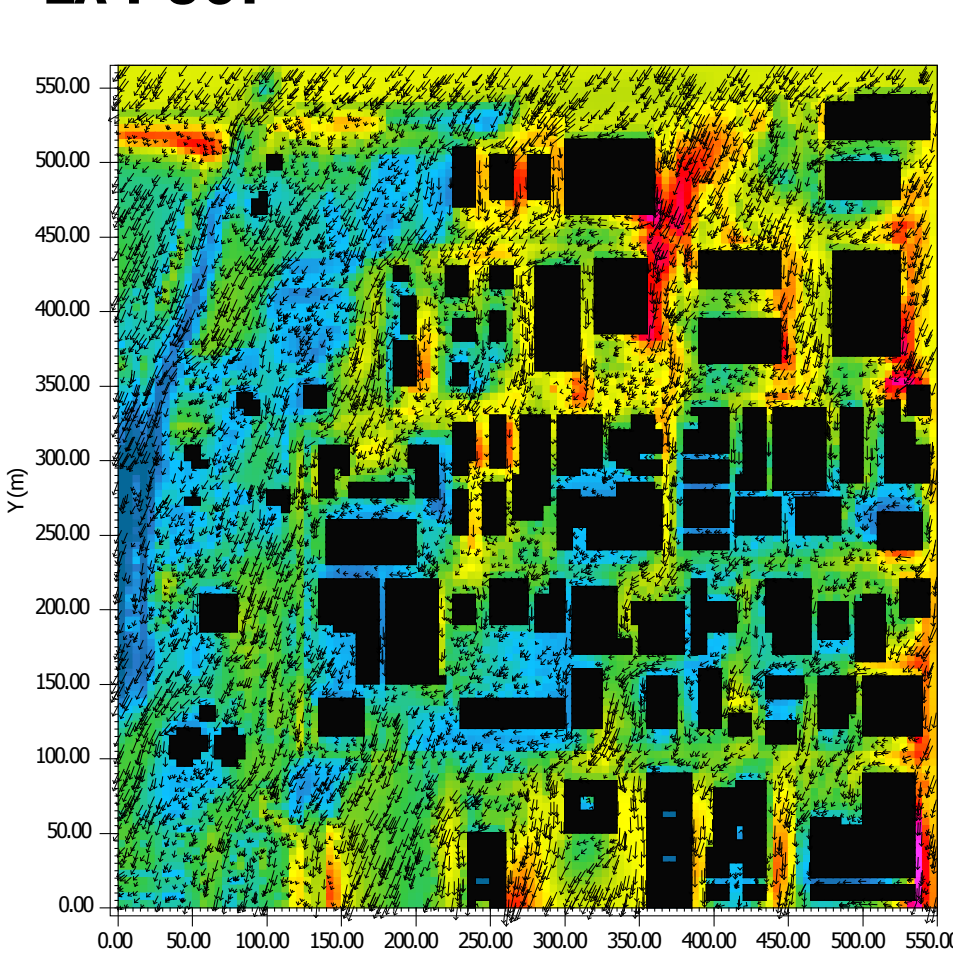
ENVI-MET SIMULATION / WIND SPEED / 24.06.2017 - H 14:00

The map illustrates the temperature distribution (color) and the wind direction and intensity (arrows). In its current state it shows values up to 3.0 m/s 'light breeze', differing closer to buildings. The proposed solution is partially effective and allows a decrease in the intensity of the wind in specific points of the area.

EX ANTE



EX POST

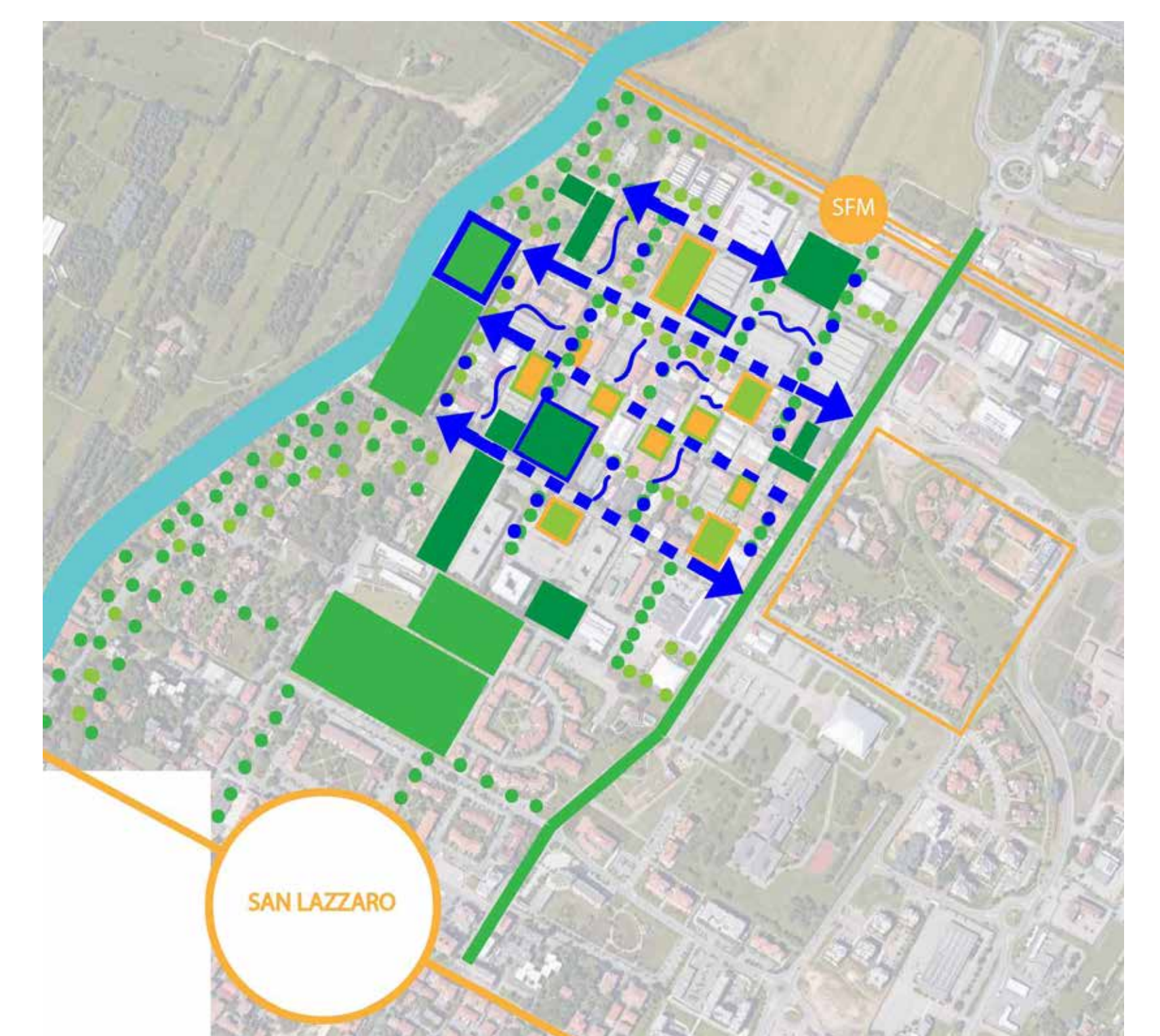


Squadra San Lazzaro 1 / Silvia Bernardi - mobility engineer, Simona Beolchi - 'city maker' planner, Fernanda Canino - S.Lazzaro Municipality, Sara Simona Cipolla -

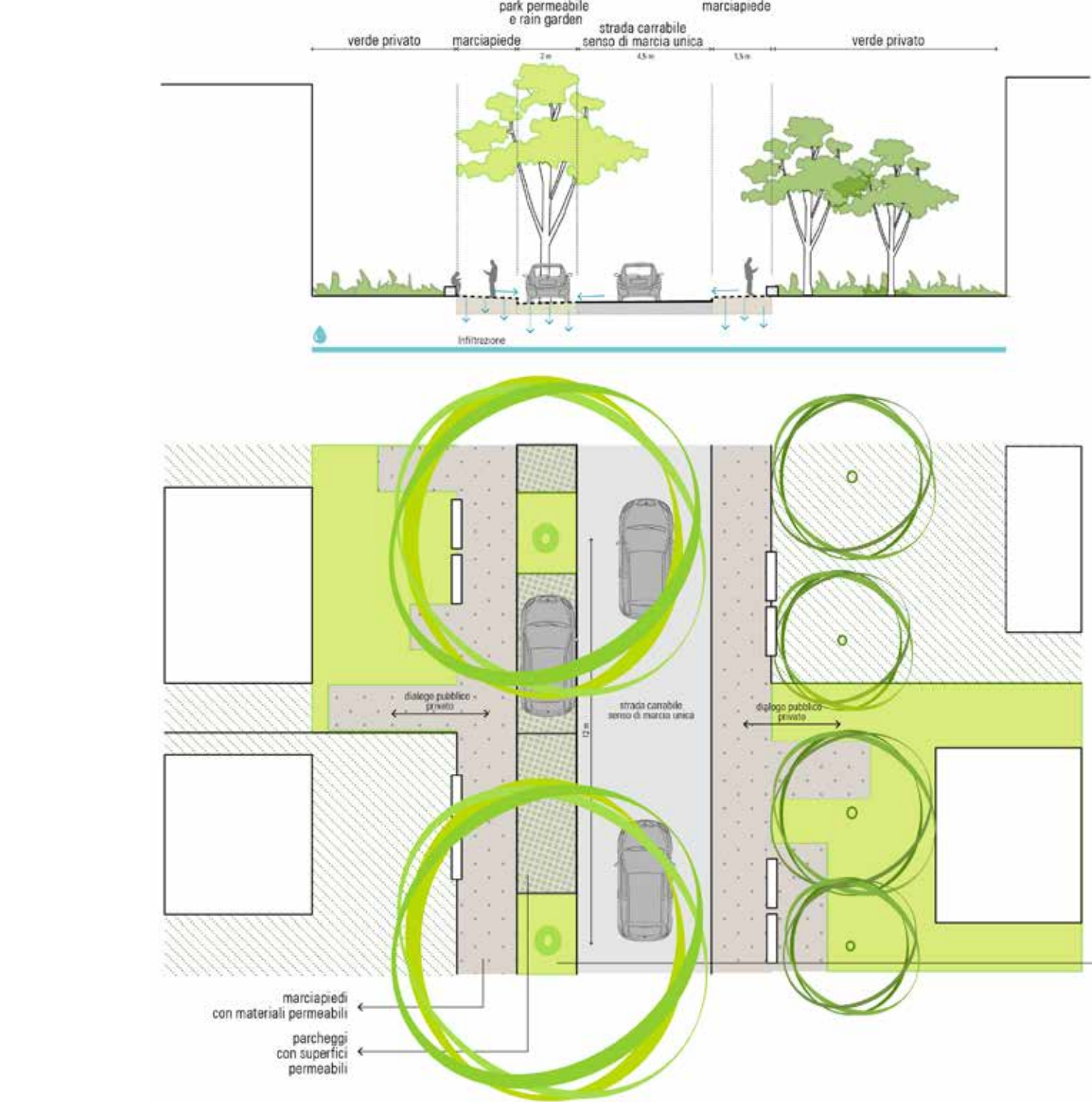
hydraulic engineer, Patrizio D'Errigo - planner, Carlotta Fabbri - landscape architect, Lorenzo Feltrin - S.Lazzaro Municipality, Giulia Fini - urban designer, Lorenzo



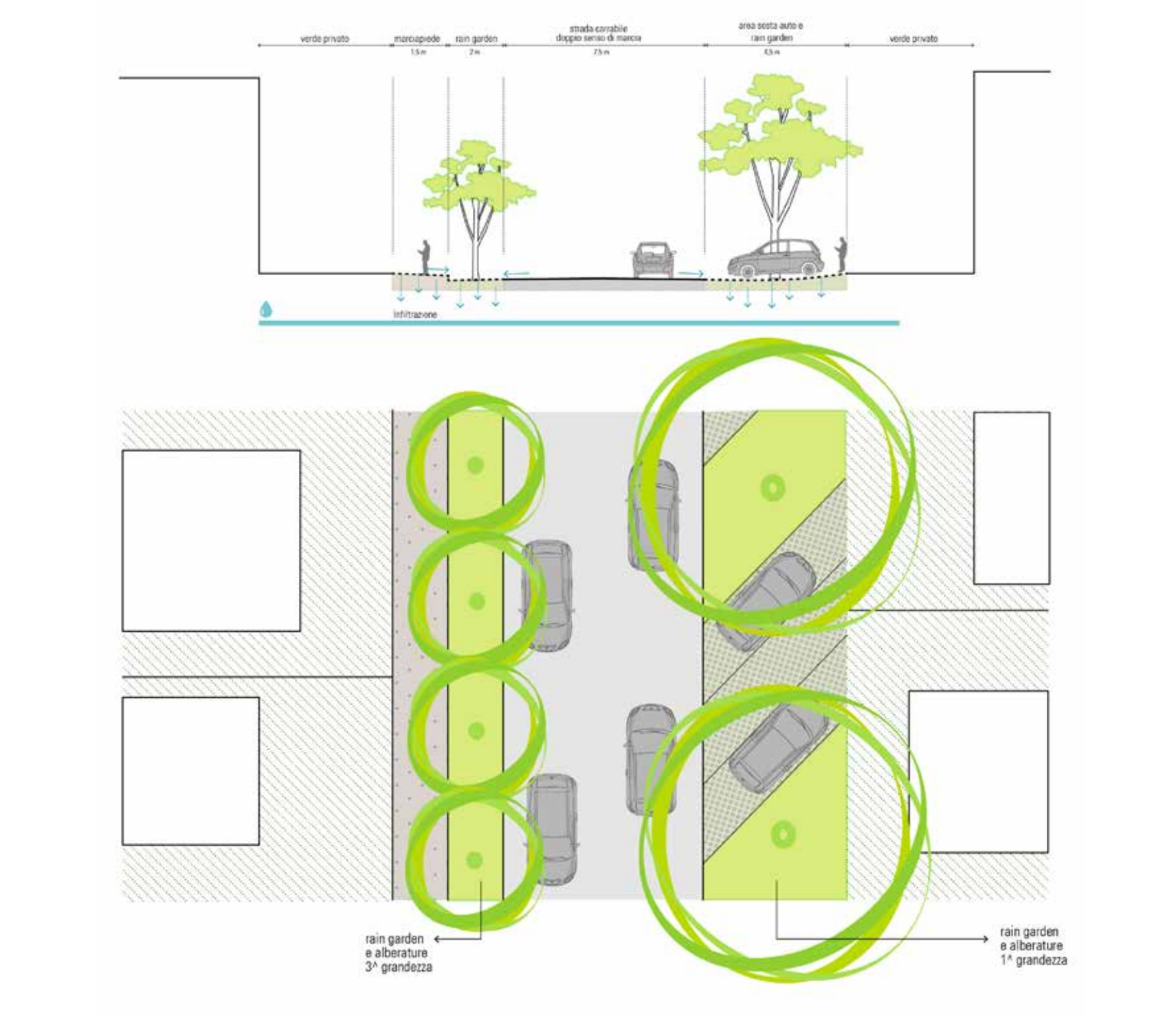
GREEN INFRASTRUCTURE



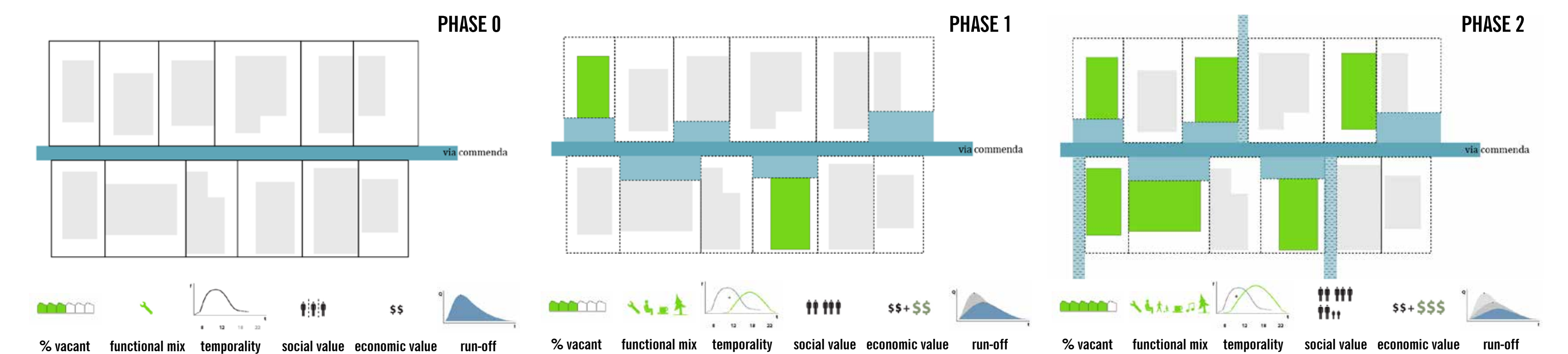
INFRASTRUCTURE



STREET SECTION PROPOSAL FOR VIA COMMENDA



STREET SECTION PROPOSAL FOR VIE SPERANZA - CA' RICCHI

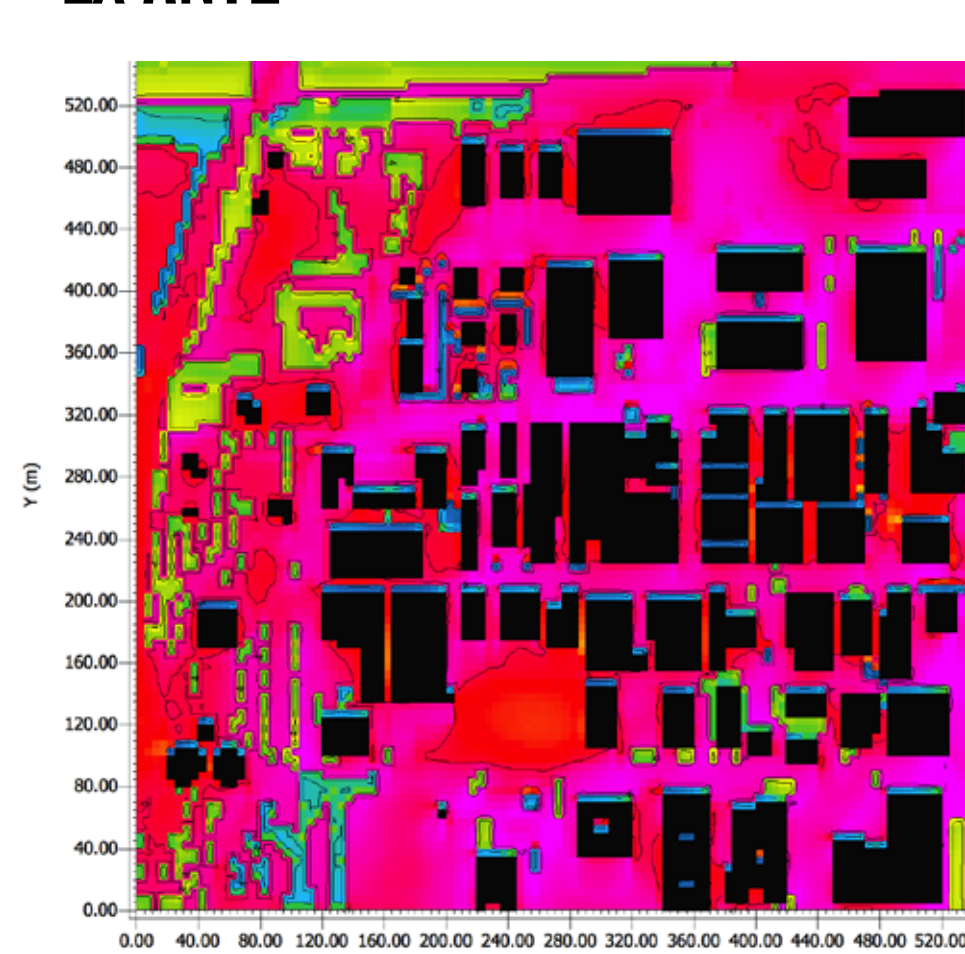


STRATEGY FOR RE-USE AND TRANSFORMATION OF VIA COMMENDA

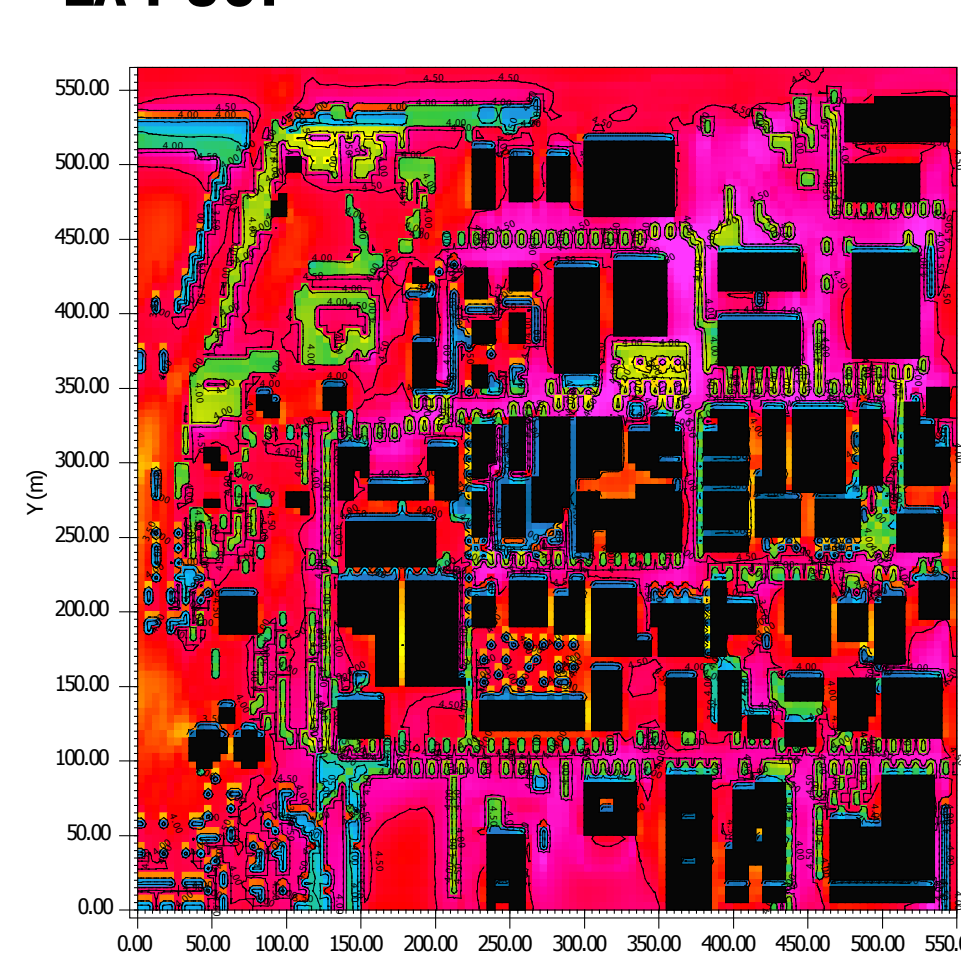
ENVI-MET SIMULATION / PMV (PREDICTED MEAN VOTE) / 24.06.2017 - H 13:00

The PMV index expresses the opinion of individuals regarding thermal comfort in a given microclimatic condition. The ex-ante map presents consistent and high values, greater than 4.5 'very, very hot.' The project shows a slight improvement in the spaces where trees have been inserted, which does not allow mitigation of the heat island effect of the district.

EX ANTE



EX POST



Melandri - architect, Marcella Minelli - agronomist, Daniela Mongardi - engineer, Marco Nelli - agronomist, Michele Pasqui - Emilia-Romagna Region officer, Riccardo

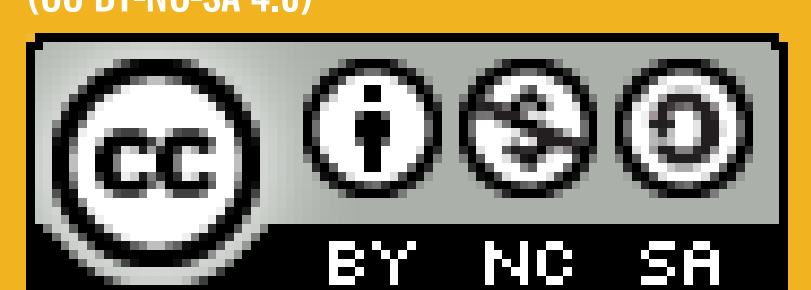
Raimondi - near graduate Civil Engineer-Architecture University, Sebastiano Sarti - architect, Matteo Verzelloni - landscape architect, Enrico Vincenzi - architect.

SAN LAZZARO LIGHT INDUSTRIAL DISTRICT / 1

PROJECT STUDY AREA

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PUBLIC SPACES AS DRIVERS FOR THE ARTISAN DISTRICT TRANSFORMATION

E-COM ECO-DISTRICT

E-COM is an eco-district based on the key concepts of ecology, community, and mobility. A new school of high-level training for innovative craftsmanship, created through public provincial funding, encourages its renovation, becoming an identity-creating, attractive, and propulsive element of the district. The establishment of temporary uses and artisan or innovative service industry activities is encouraged through a public competition and by public-private compensation/budgetary agreements. The renovation is made sustainable by the green and blue urban infrastructures organized along bike and pedestrian paths that are newly designed or inserted into existing paths. This re-divides the profiles of the roads: diagonally, following the flow of the Savena creek and in the direction of the wind, connecting the

station and the existing school complex; and horizontally, with the pedestrianization of Via Commenda and the connection to the Savena creek; and in a vertical direction to connect residential areas, schools, and the railway. A flooding basin takes the place of three warehouses of little value that will be demolished, serving as both a collection basin for rainwater running from the buildings, as well as storage for irrigation purposes, slowly releasing the water towards the Savena thanks to a lowering of the land along via Commenda. The private buildings can seek, through public competitions, incentives for specific rainwater collection and reuse systems and localized de-sealing operations. In front of the station, a warehouse will be converted into a multilevel park and ride with licensed management.

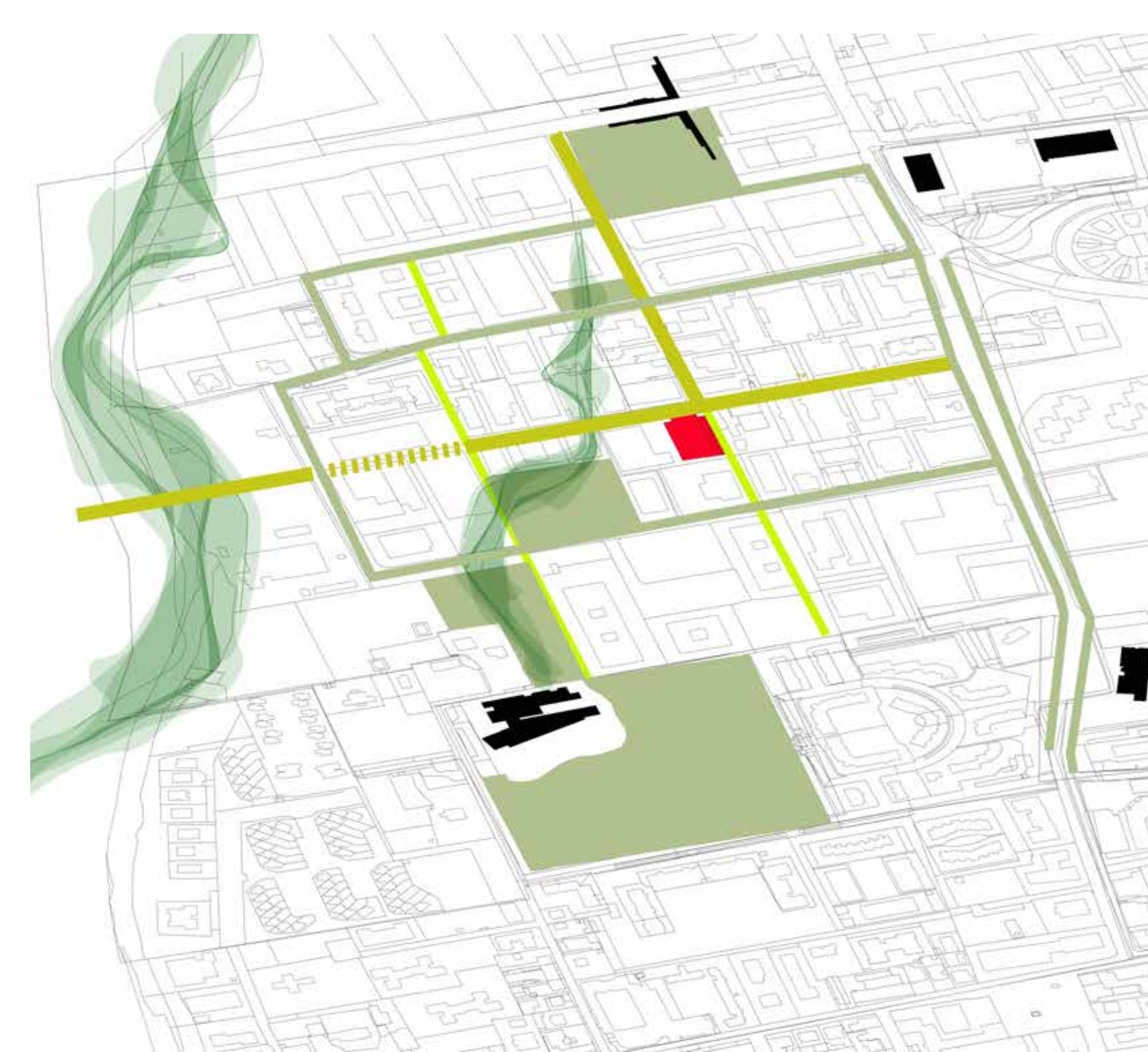


MASTER PLAN, GREEN AREAS AND PUBLIC SPACES PROJECT

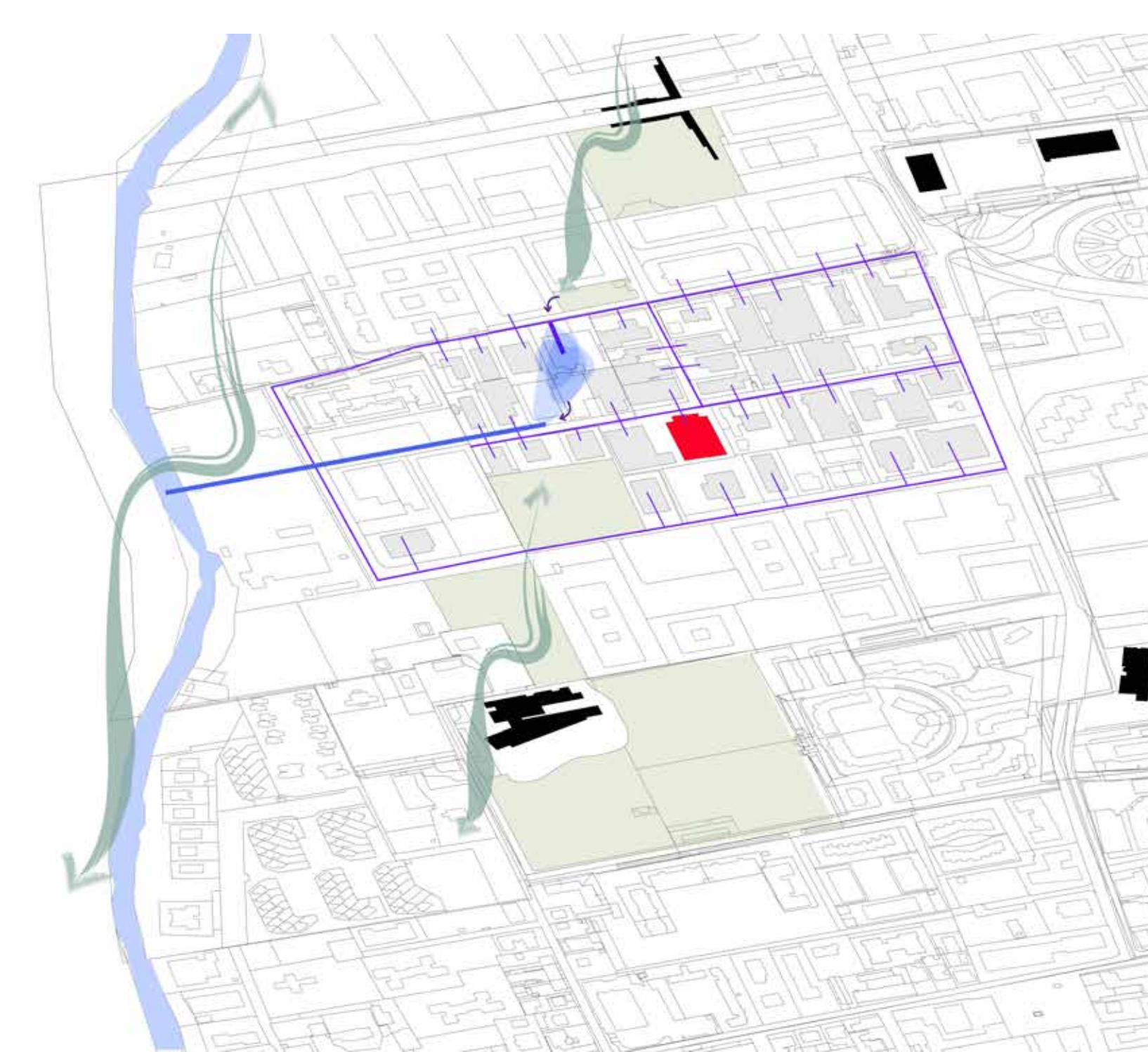


VIA COMMENDA AND PEDESTRIAN WAYS

VIA SPERANZA AND INNER ROAD NETWORKS



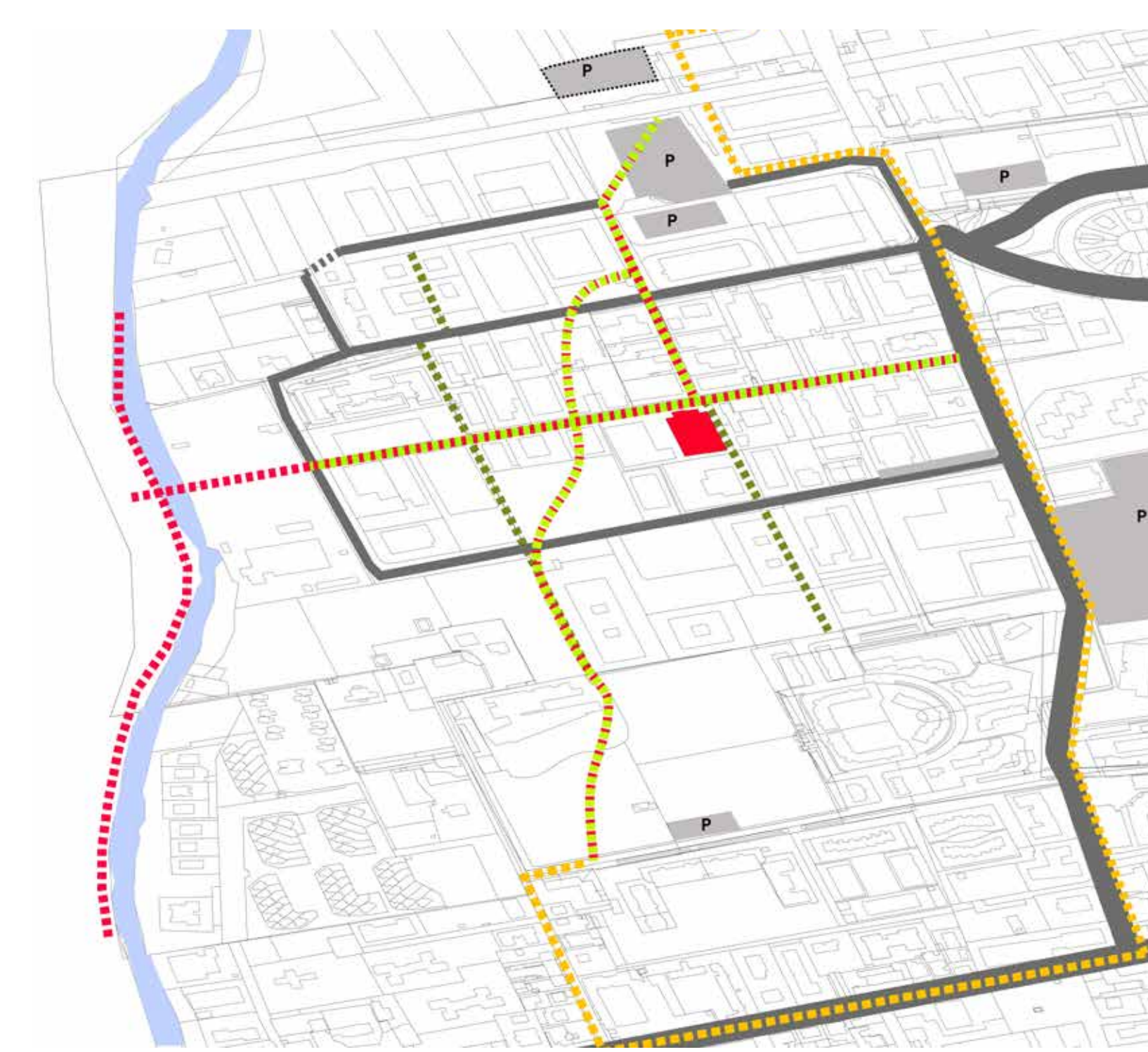
GREEN INFRASTRUCTURE



BLU INFRASTRUCTURE



URBAN TRANSFORMATION PROCESSES



MOBILITY

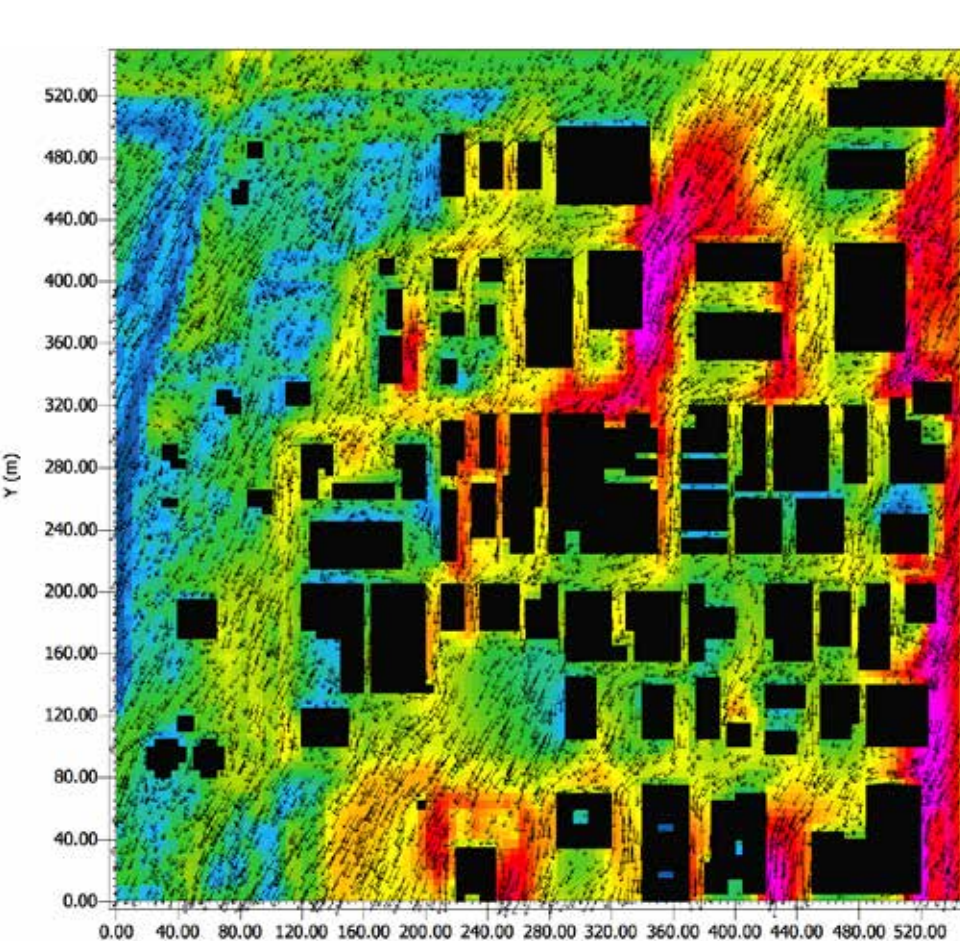


PARTICIPATION PROCESS: FROM THE LAUNCH AND ACTIVATION TO THE SPACES TRANSFORMATION

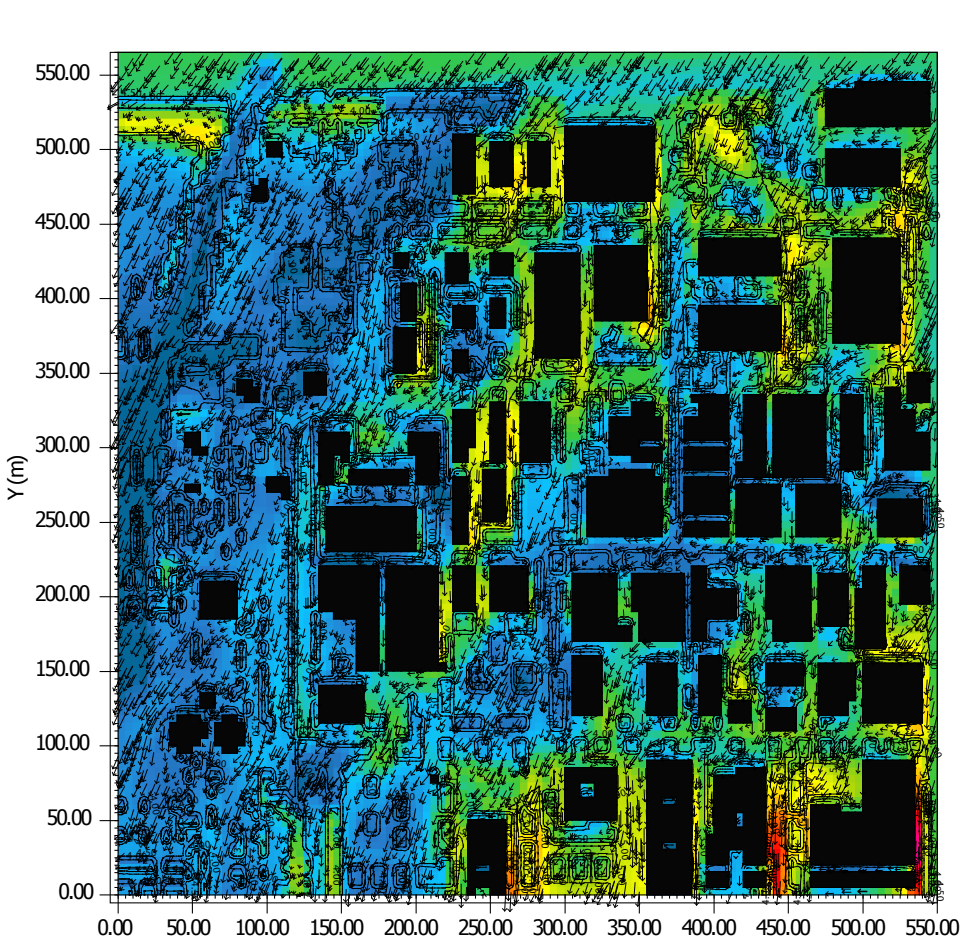
ENVI-MET SIMULATION / WIND SPEED / 24.06.2017 - H 14:00

The map illustrates the temperature distribution (color) and the wind direction and intensity (arrows). In its current state it shows values up to 3.0 m/s 'light breeze', differing closer to buildings. The proposed solution is rather effective and can decrease the intensity of the wind, decreasing the number of vectors in specific points.

EX ANTE



EX POST



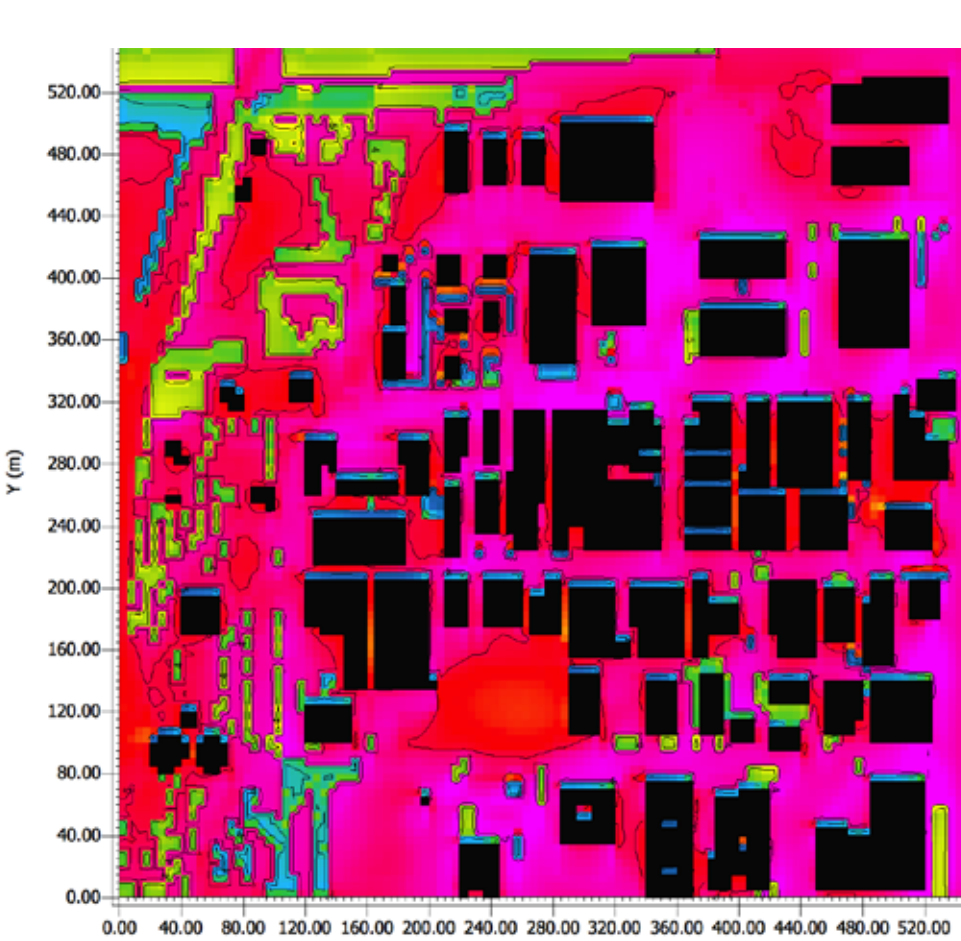
Team San Lazzaro 2 / Francisco Pérez Amtrano - architect, Rachele Bria - engineer, Edoardo Cagnolati - landscape designer, Annalisa Cerrè - engineer, Alessandro

Chiccoli - public servant Municipality of Comacchio, Annalaura Ciampi - 'city maker' architect, Claudia Di Girolamo - urban planner, Alessandra Feliciotti - city

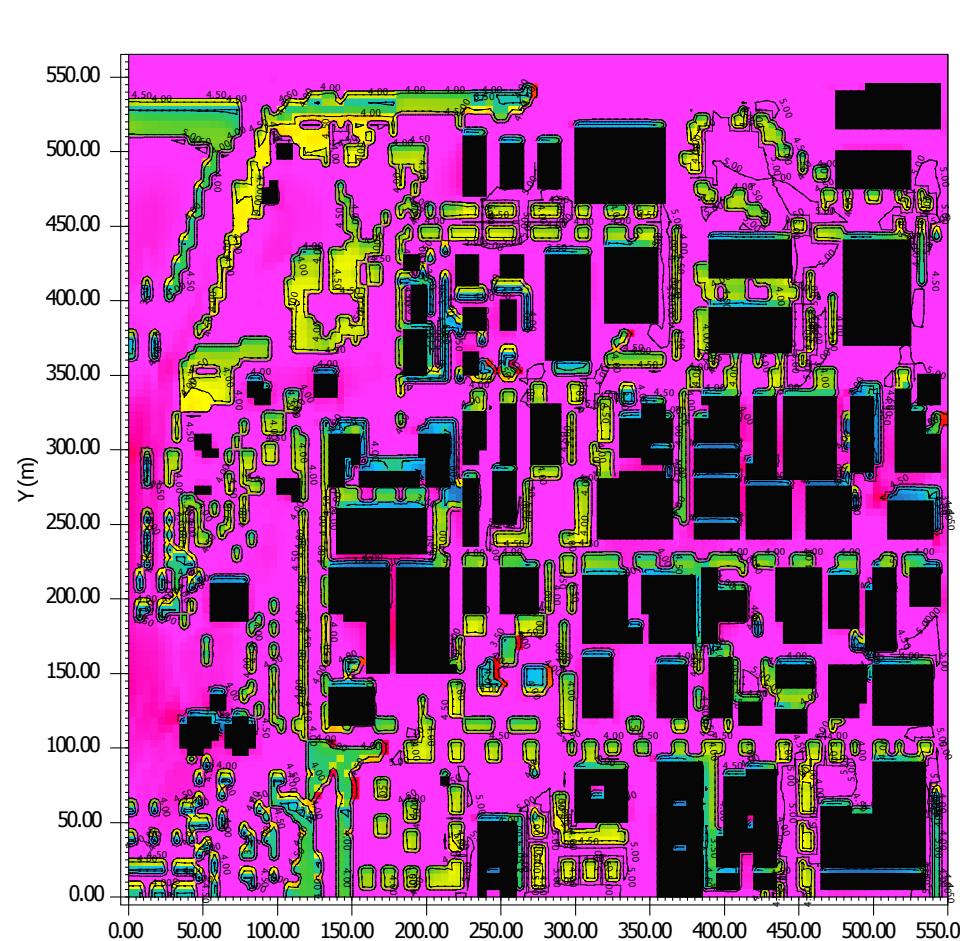
ENVI-MET SIMULATION / PMV (PREDICTED MEAN VOTE) / 24.06.2017 - H 13:00

The PMV index expresses the opinion of individuals regarding thermal comfort in a given microclimatic condition. The ex-ante map presents consistent and high values, greater than 4.5 'very, very hot.' The project brings an improvement to only the open spaces where trees have been planted, especially along the diagonal pedestrian path.

EX ANTE



EX POST



planner, Giuliana Fornaciari - architect, Gregorio Grassi - landscape designer, Nicola Nanni - architect, Elena Pagliarini - public servant Municipality of San Lazzaro,

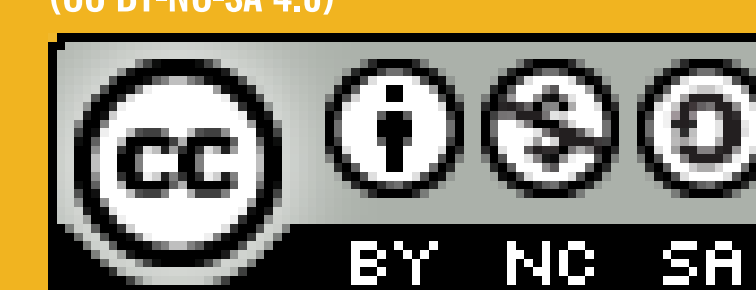
Ilaria Rosati - public servant Municipality of Parma, Marco Stagni - mobility engineer, Simona Ugolini - landscape designer, Giacomo Ventura - agronomist.

SAN LAZZARO LIGHT INDUSTRIAL DISTRICT / 2

PROJECT STUDY AREA

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THE CITY DOCK BETWEEN HISTORICAL CENTER AND INDUSTRIAL ARCHAEOLOGY / STUDY AREA AND DESIGN OBJECTIVES

The new 'Darsena di città' district, the city dock between the railway and the 'Candiano canal', makes up the urban head of the industrial and petrochemical port: an area which is about to be dismissed. Since the 90s, various regeneration projects have come about, and in the past 10 years the area has experienced the first concrete urban and architectural transformation.

The district is still today characterized by an industrial appearance given the presence of several warehouses, buildings with industrial archaeology (such as the ex-sulfur warehouse Almagià, which is today a cultural center) or transformations for temporary reuse for recreational and sport purposes (such as the Darsena PopUp).

The study area is characterized by large-sized lots, once intended for production activity and now partially neglected. The main

road - Via Trieste - runs parallel to the bank of the Candiano Canal and marks the area, separating it from the surrounding residential neighborhood. The secondary road grid is developed perpendicularly to the bank and is made up of roads of modest size and local use. It is mainly used as parking for residents of the neighborhood. The structure that derives from it is not very permeable and is difficult to access and reach, especially for slow mobility.

Within the area, vegetation or, more generally, the surface intended for greenery, is extremely poor. With the exception of Via Trieste - a tree-lined road with wide sidewalks and a bike path - public spaces are nearly bare and asphalted, devoid of greenery and urban furniture.



- | | |
|------------------------------------|------------------------------------|
| 1 TRAIN STATION | 12 EX RACECOURSE |
| 2 BUS STATION | 13 PUBLIC GARDENS |
| 3 ARTIFICERIE ALMAGIÀ | 14 PORT AUTHORITY |
| 4 DARSENA POP-UP | 15 PARKING AREA |
| 5 C.M.C. | 16 ROCCA BRANCALEONE PARK |
| 6 EX S.I.R. INDUSTRIAL ARCHAEOLOGY | 17 PEEP TRIESTE AREA |
| 7 RESIDENCES | 18 URBAN DOCKS CANDIANO CANAL HEAD |
| 8 ARTS PARK (1° SECTION) | |
| 9 RESIDENTIAL BUILDINGS (1° PHASE) | A VIA TRIESTE |
| 10 EX MILL NOW RESIDENCES | B VIA D'ALAGGIO |
| 11 PALA COSTA | C VIA DARSENA |
| | D VIALE MARAMOTTI |
| | E VIA ZARA |

- SIMULATION AREA
- PROJECT SITE / AREA OF INTEREST
- PUBLIC MOBILITY ROUTE (BUS)
- BIKE NETWORK

ENVI-MET SIMULATIONS

A study of the thermal comfort of the area has been prepared using the SPACE modules from ENVI-MET, a holistic three-dimensional non-hydrostatic software that allows one to model the physical and microclimatic behavior of the buildings and open spaces, with applications for urban planning, climate adaptation, comfort, and the health of the people.

The software allows one to analyze the urban comfort of a certain area linking data that has been extrapolated from a climate analysis of the place with the topographical study of the spaces (which includes the buildings, vegetation, and land-use).

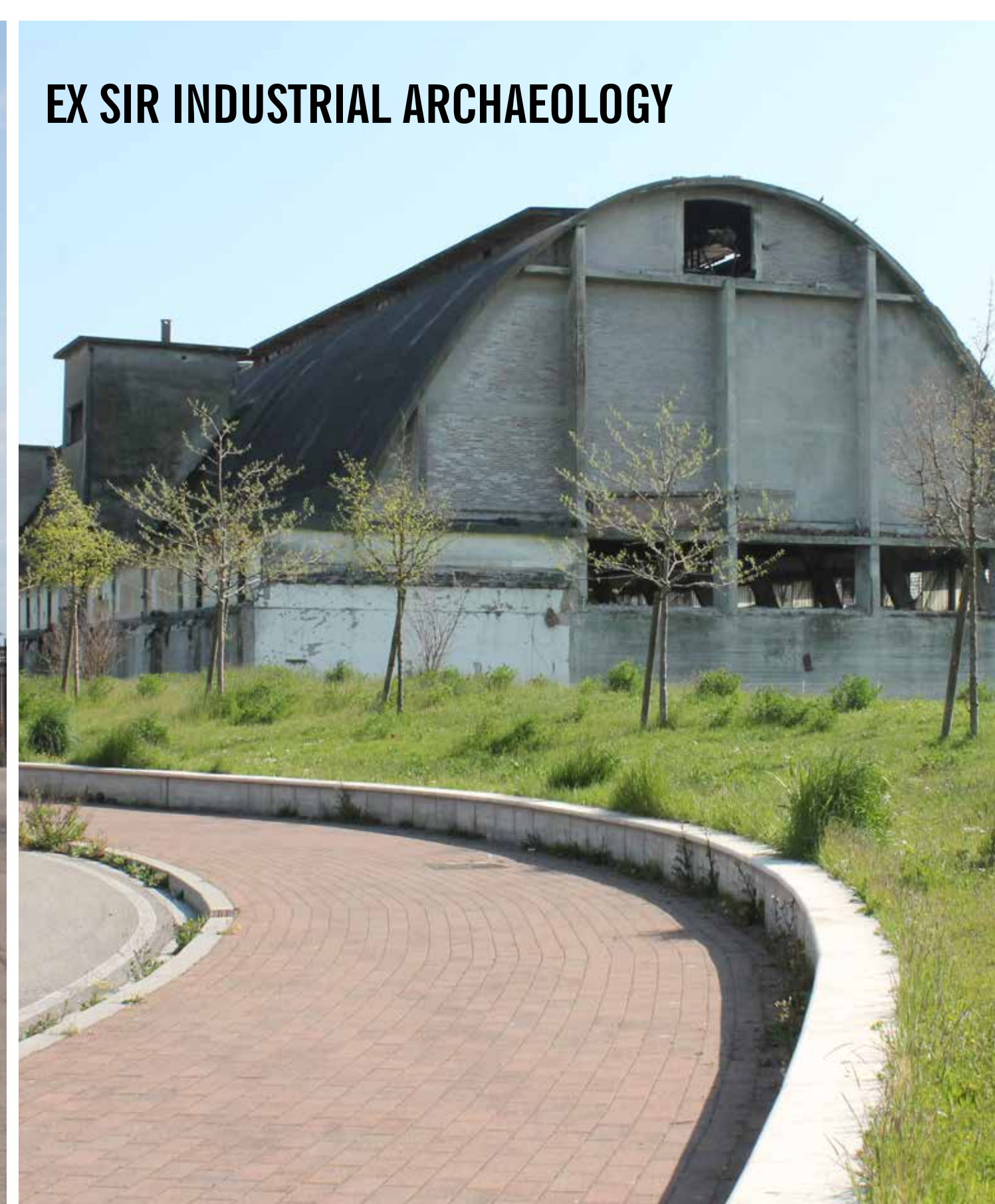
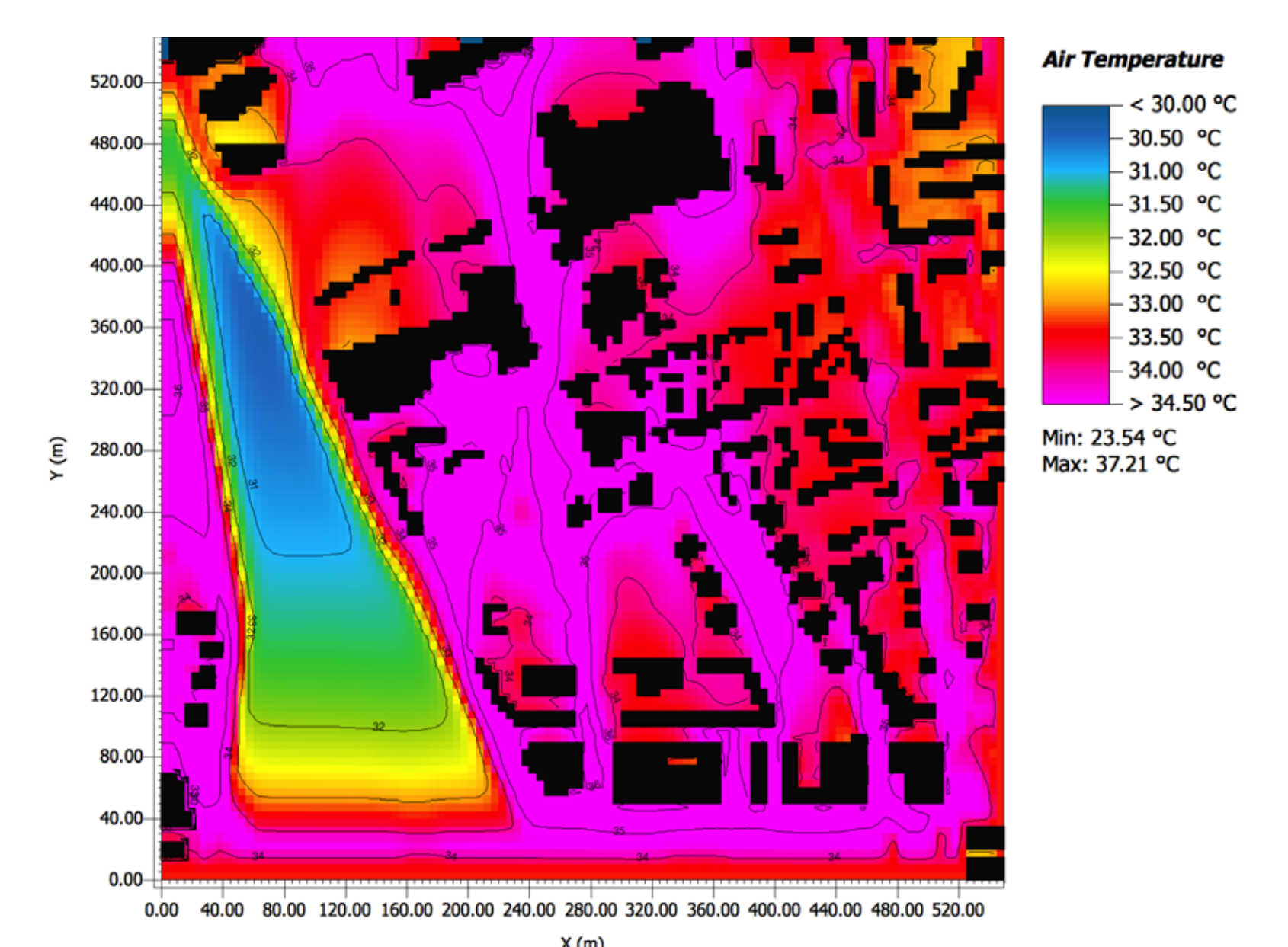
The output results of the ex-ante status are compared to the thermal comfort of the ex-post status, which takes the different design choices into consideration.

In the area of Ravenna, there are various large industrial buildings, some of which are neglected, with valuable architectural characteristics. The built space alternates with the road network, which is developed in a fragmented and diagonal way in relation to the banks and the private yards within the large lots.

AIR TEMPERATURE / 24.06.2017 - H 14:00

The isolines allow one to understand the distribution of the air temperature in °C, in the open spaces and near buildings, a value that affects the direct thermal exchange between the human body and the environment.

The map shows that the air temperature values at 14:00 are between 30°C and 37°C in most open area. The areas in fuchsia represent the areas with a higher temperature that can be considered 'pockets of hot air.' The Candiano Canal shows lower temperatures thanks to the effect of water evaporation.

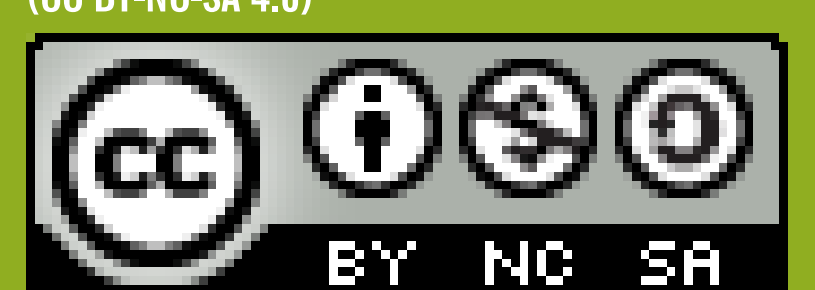


RAVENNA CANDIANO CANAL

STUDY AREA

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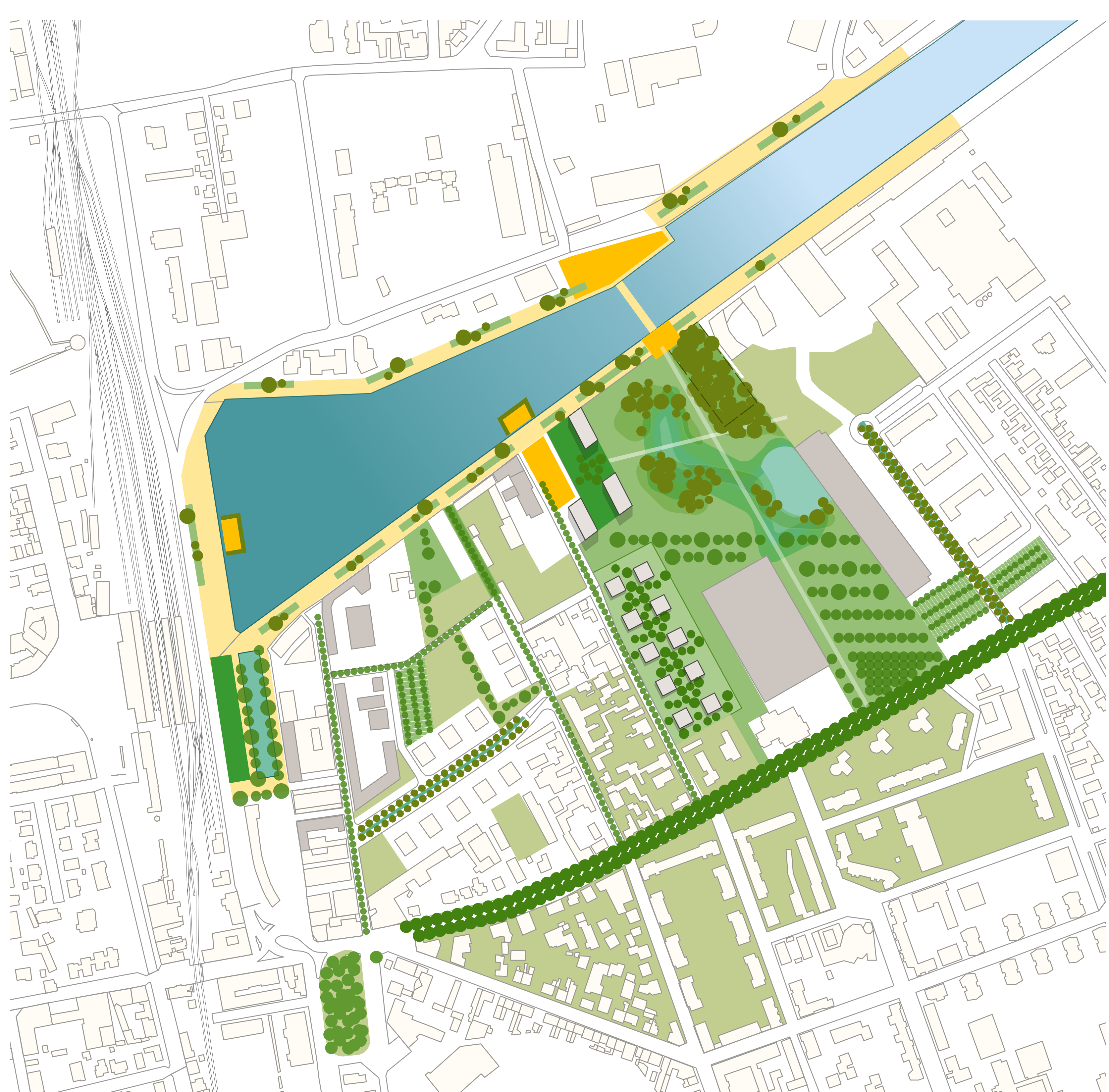


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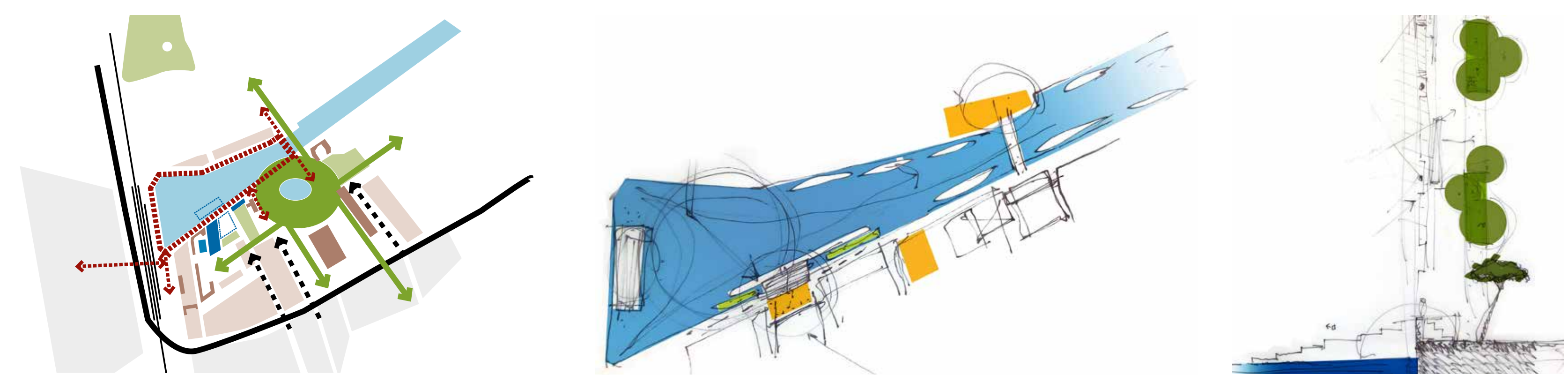
A NEW ECO-DISTRICT RESTORES NATURE TO THE CITY DARSENA-ON: SWITCH-ON THE SPACES

The objectives of the project are to reconnect the neglected port area of the city, give Ravenna a new waterfront of high environmental quality, and increase the provisions of public services and green areas through an integrated and shared intervention. The regeneration strategy is based on policies of public-private partnerships that are necessary for adopting new planning regulations able to reduce the current fragmentation and involve private entities in making available areas destined for public use in exchange for economic incentives. Thus, the project proposes to reduce urbanization and planning fees for social and innovative activities, and to introduce regulation and management breaks for temporary uses of the space in order to reduce neglect and abandonment.

Actions for reopening pedestrian and car access between the city and the Candiano are planned for the public space as well as the removal of impermeable areas, with more than 70% to be replaced by permeable and green areas, and the creation of bioremediation and biosorption operations to reduce the amount of pollutants in the soils. The green and blue infrastructure serves as a link for the urban fabric: the heart of the eco-district is an urban forest that surrounds a flooding basin for water safety. From here, eco-corridors for bike and pedestrian connections branch off, arranged in a way that can be easily managed, with widespread areas of natural development and reduced maintenance costs. On the banks of the Candiano, the greenery serves for shading and rainwater collection.

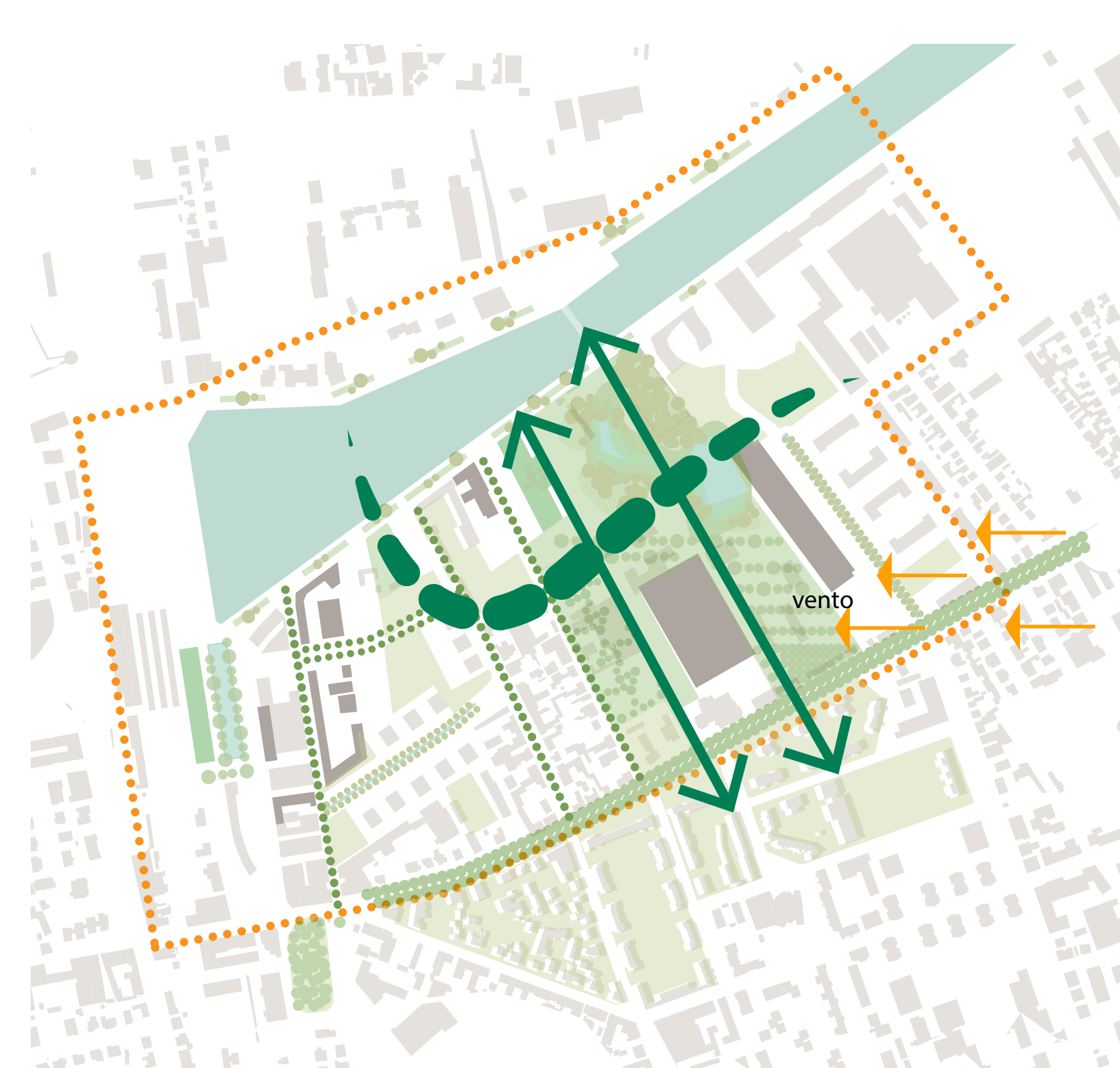


MASTER PLAN, GREEN AREAS AND PUBLIC SPACES PROJECT

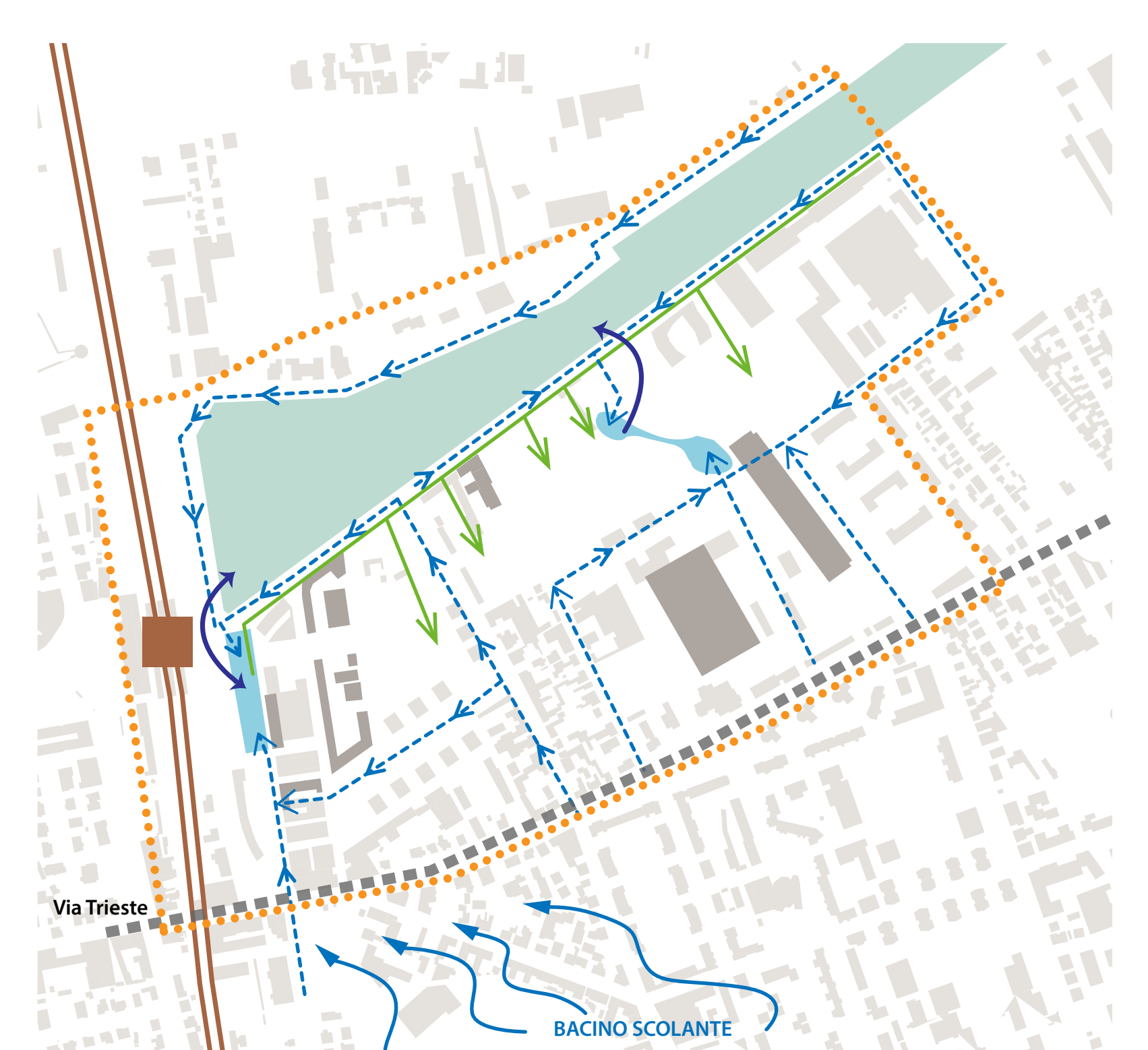


CONCEPT

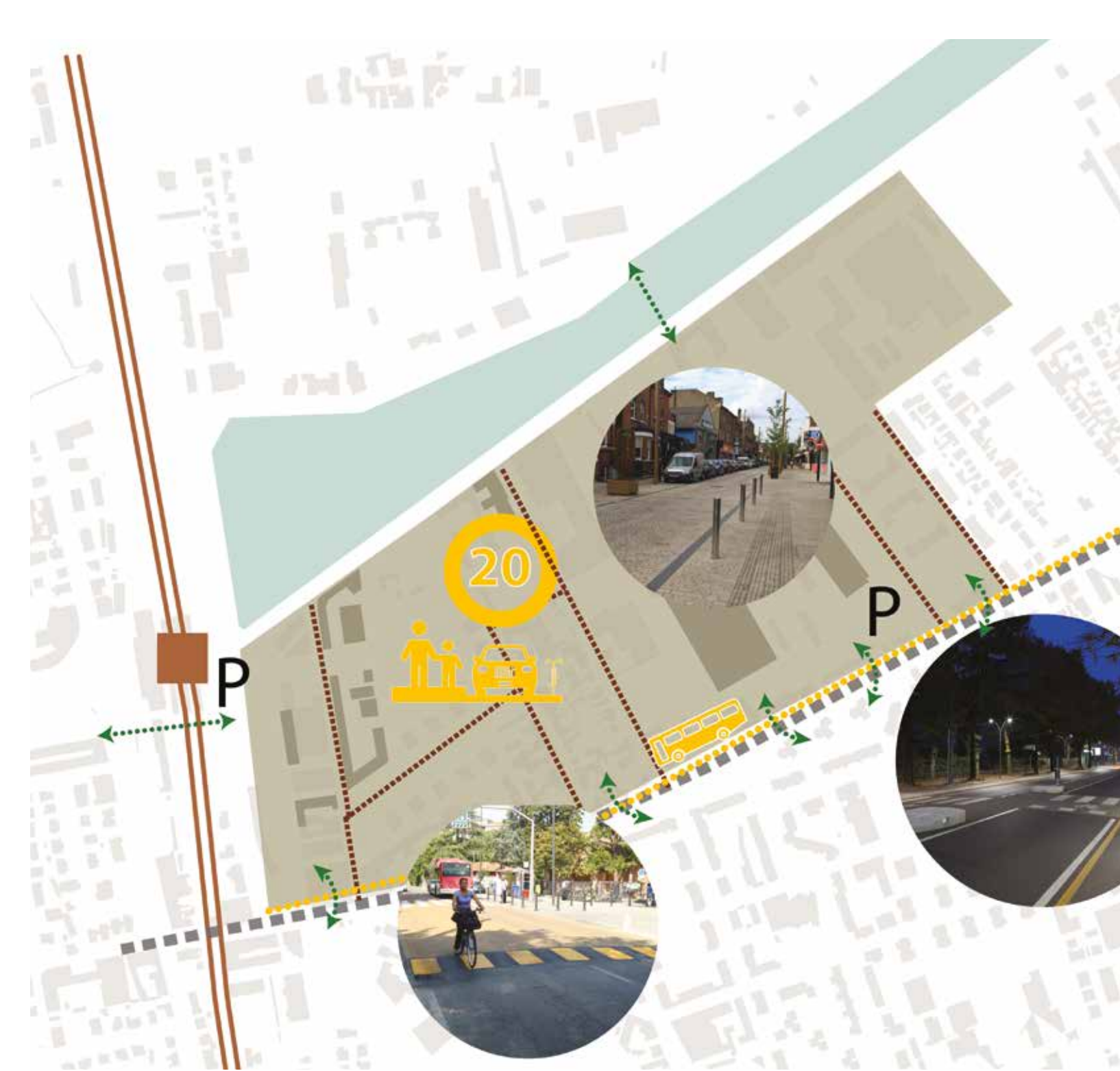
DESIGN SCHEME AND SECTION OF THE QUAY



GREEN INFRASTRUCTURE AND WINDS



BLUE INFRASTRUCTURE



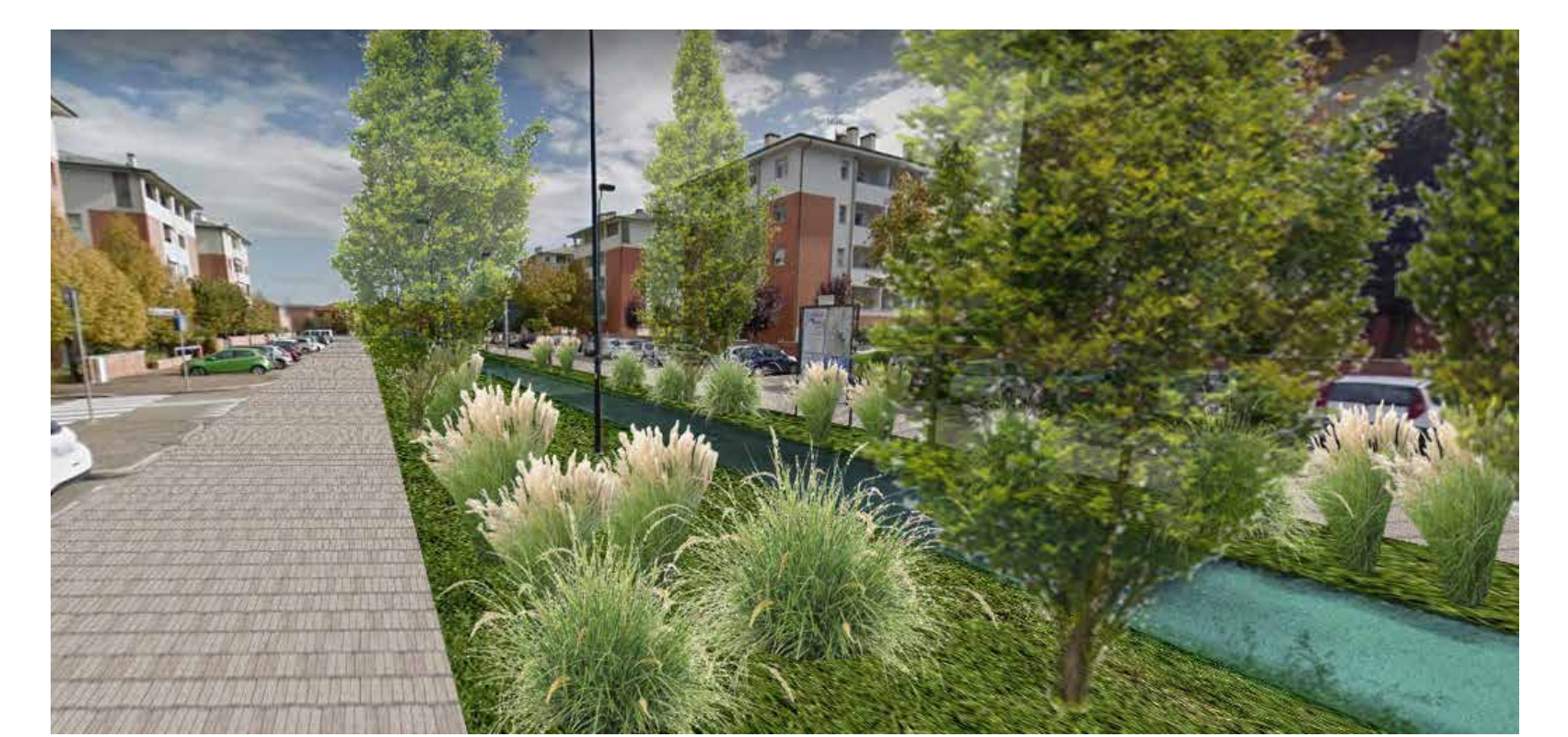
ACCESSIBILITY



PUBLIC SPACES AND BUILT-UP AREAS



THE QUAY: SHADE AND UPPER PATHWAY

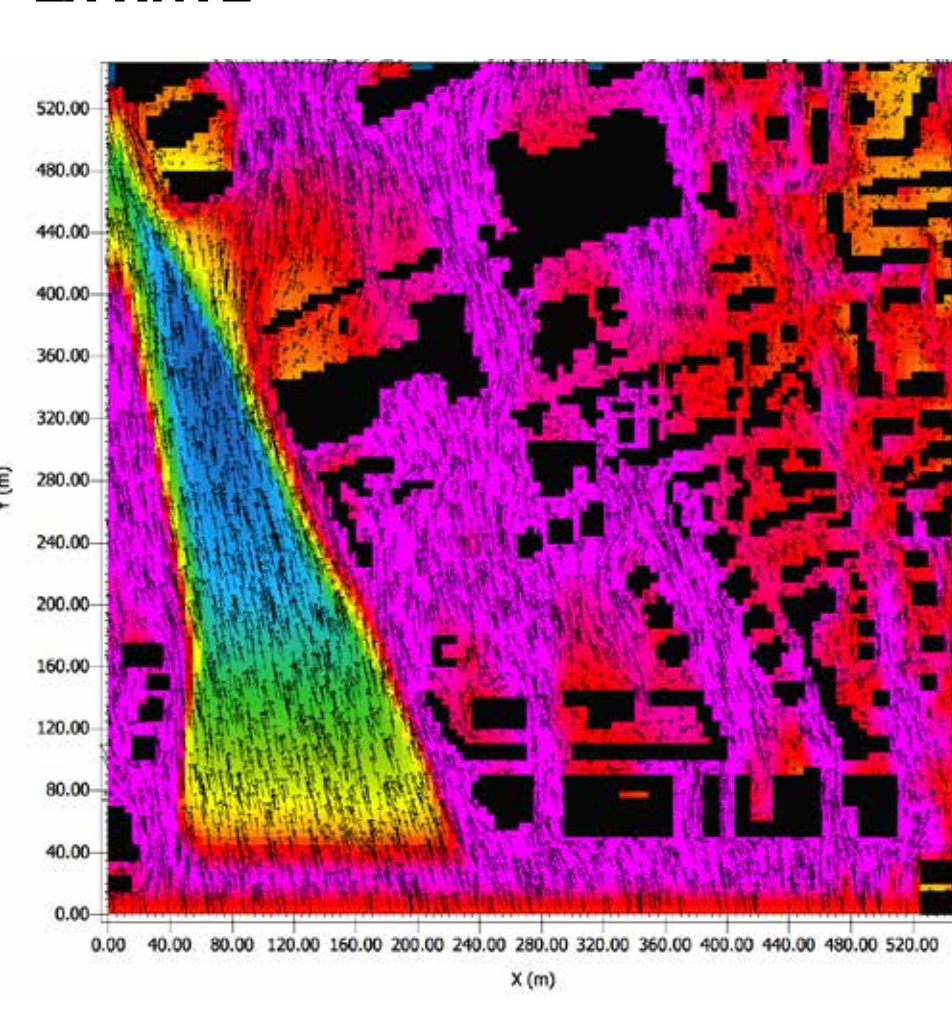


VIA MISERICORDI: RUN-OFF REDUCTION

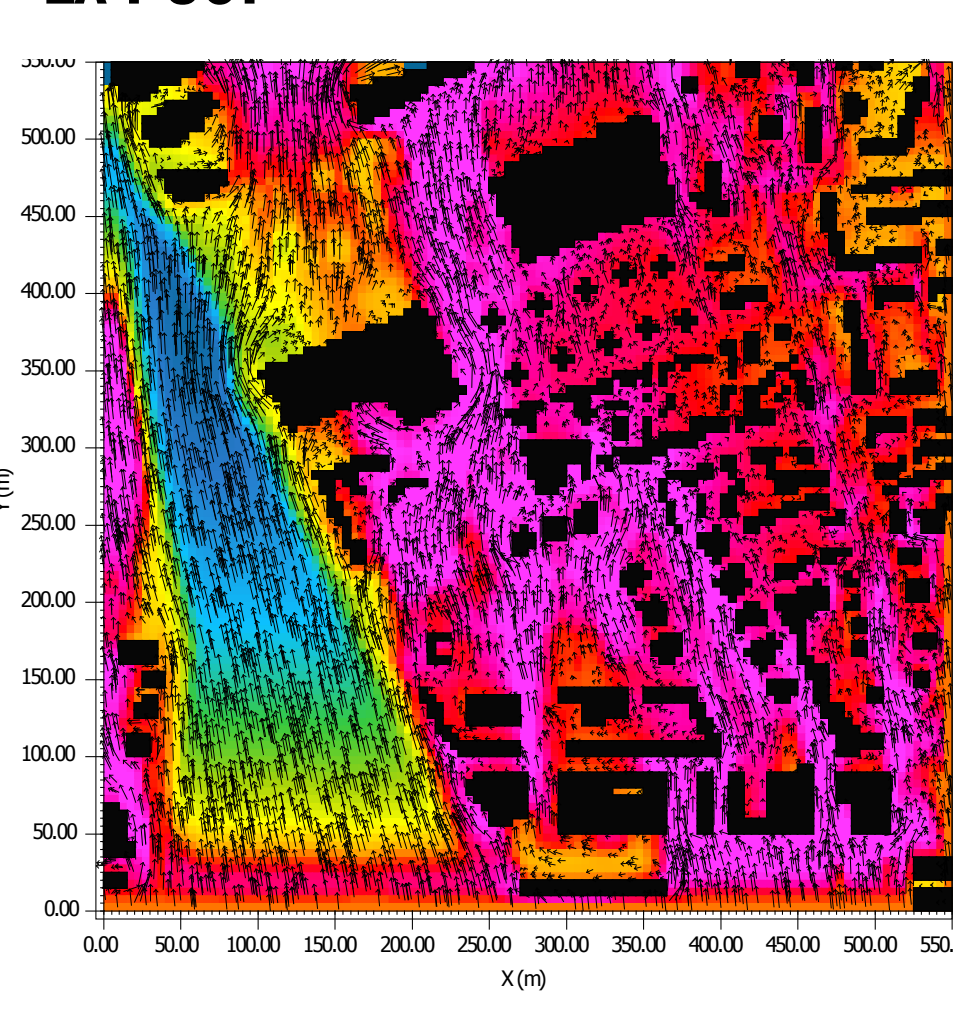
ENVI-MET SIMULATION / WIND SPEED / 24.06.2017 - H 14:00

The map illustrates the temperature distribution (color) and the wind direction and intensity (arrows). In its current state it shows values up to 3.0 m/s 'light breeze,' differing closer to buildings. The proposed solution is effective, decreasing the intensity of the wind of the district and reducing the barrier effect behind the station.

EX ANTE



EX POST



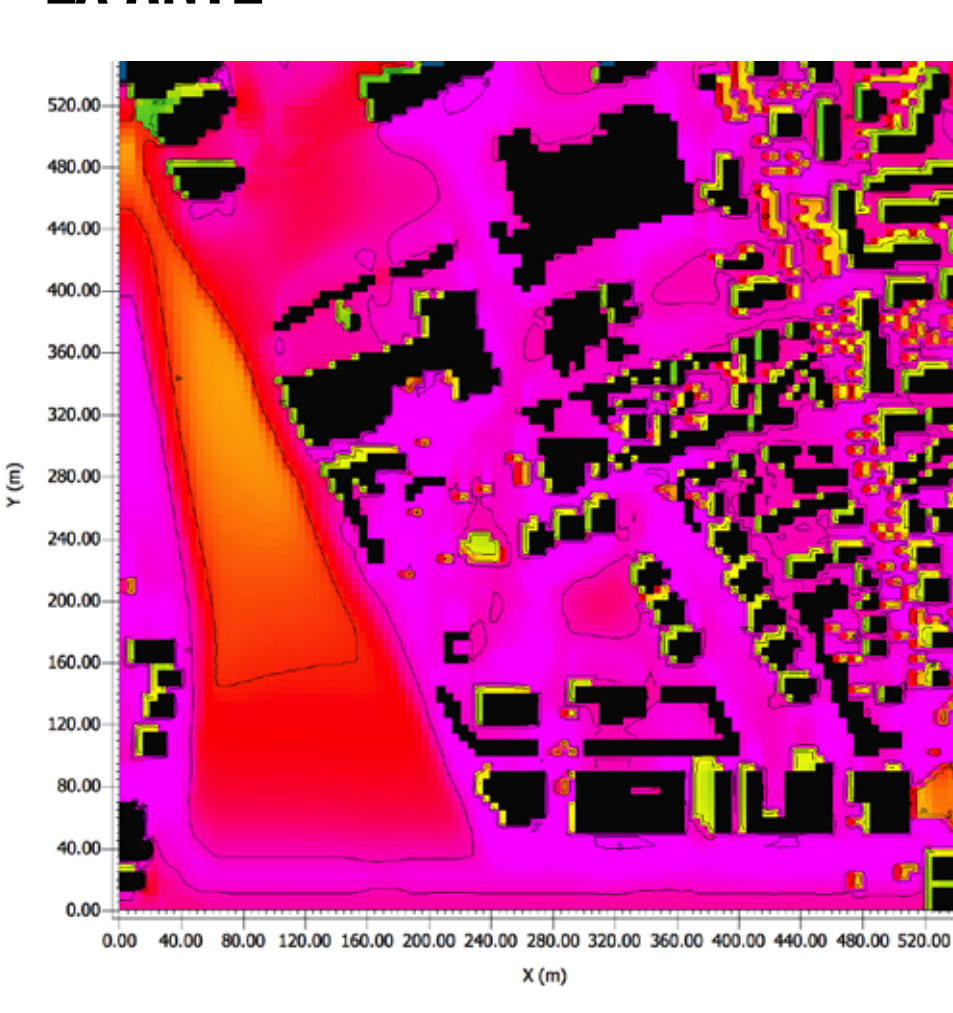
Team Ravenna 1 / Francesca Aiello - 'city maker' architect, Fabrizio Breganni - agronomist, Antonino Condemni - Emilia-Romagna Region officer, Adele Fiorani

- landscape designer, Thorsten Lang - architect, Raffaella Lombardi - hydraulic engineer, Giulia Mazzali - landscape architect, Flavia Mazzoni - agronomist, Alberto Merigo

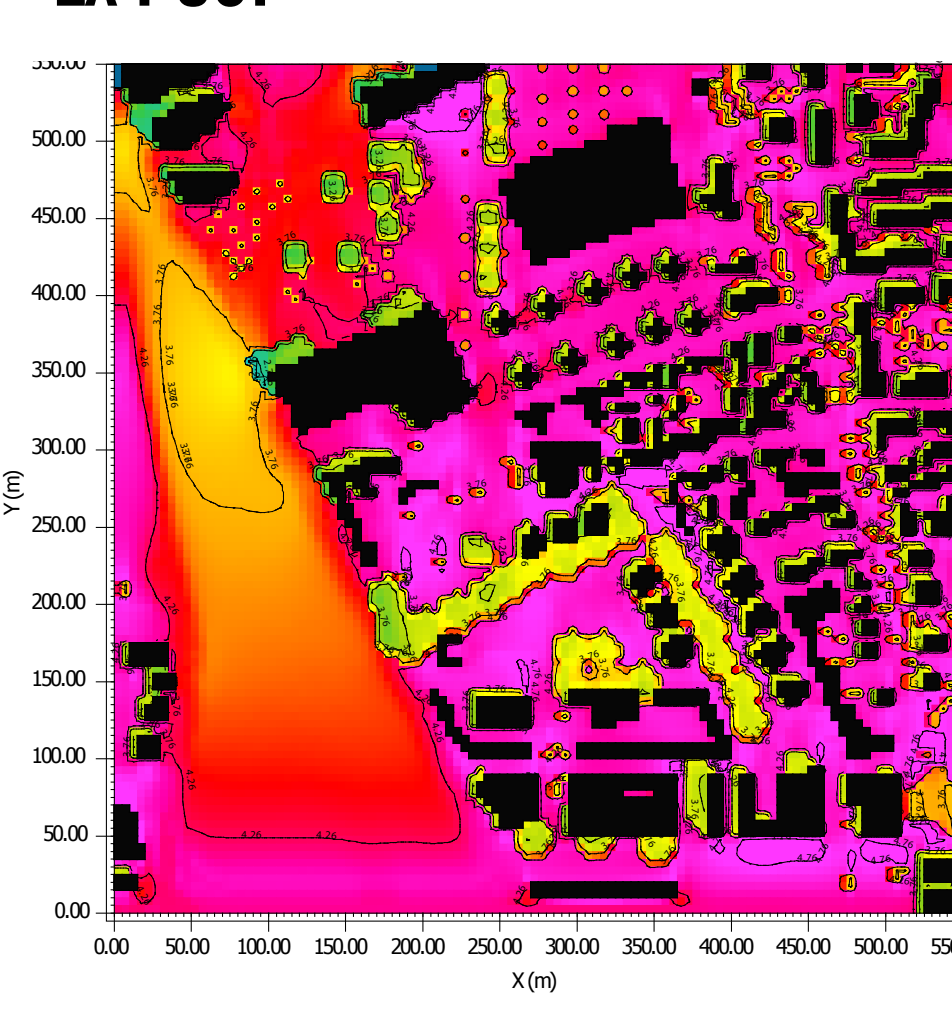
ENVI-MET SIMULATION / PMV (PREDICTED MEAN VOTE) / 24.06.2017 - H 13:00

The PMV index expresses the opinion of individuals on thermal comfort in a given microclimatic condition. The ex-ante map presents very high values, even higher than 5 in various areas. The project brings localized improvement where green interventions are planned, increasing the areas of comfort, especially near existing buildings and in the central area.

EX ANTE



EX POST



- mobility engineer, Giacomo Pizzardi - engineer, Luca Righetti - architect, Leonardo Rossi - officer Ravenna Municipality, Nicola Scanferla - officer Ravenna

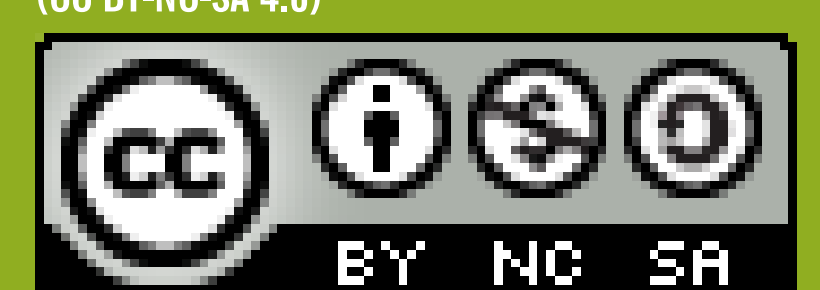
Municipality, Simone Scortecchi - urban designer, Ilaria Tonti - near graduate Arch. University, Ilaria Venturi - officer Ravenna Municipality, Stefano Villani - architect.

RAVENNA CANDIANO CANAL / 1

PROJECT STUDY AREA

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A CAR-FREE ECO-DISTRICT BETWEEN SOCIAL AND ENVIRONMENTAL INNOVATION CREATING A BLUE, GREEN, RED, AND GOLD MOSAIC

The project proposes to give life to a car-free district through a new urban design, with the objective of reunifying existing fragmentation, enhancing the industrial identity of the area, and increasing its multifunctional purpose.

Via Trieste represents a break between the residential neighborhood and the industrial area. It is the infrastructural road that connects the city to the sea and, at the same time, represents an opportunity for reunification and mediation.

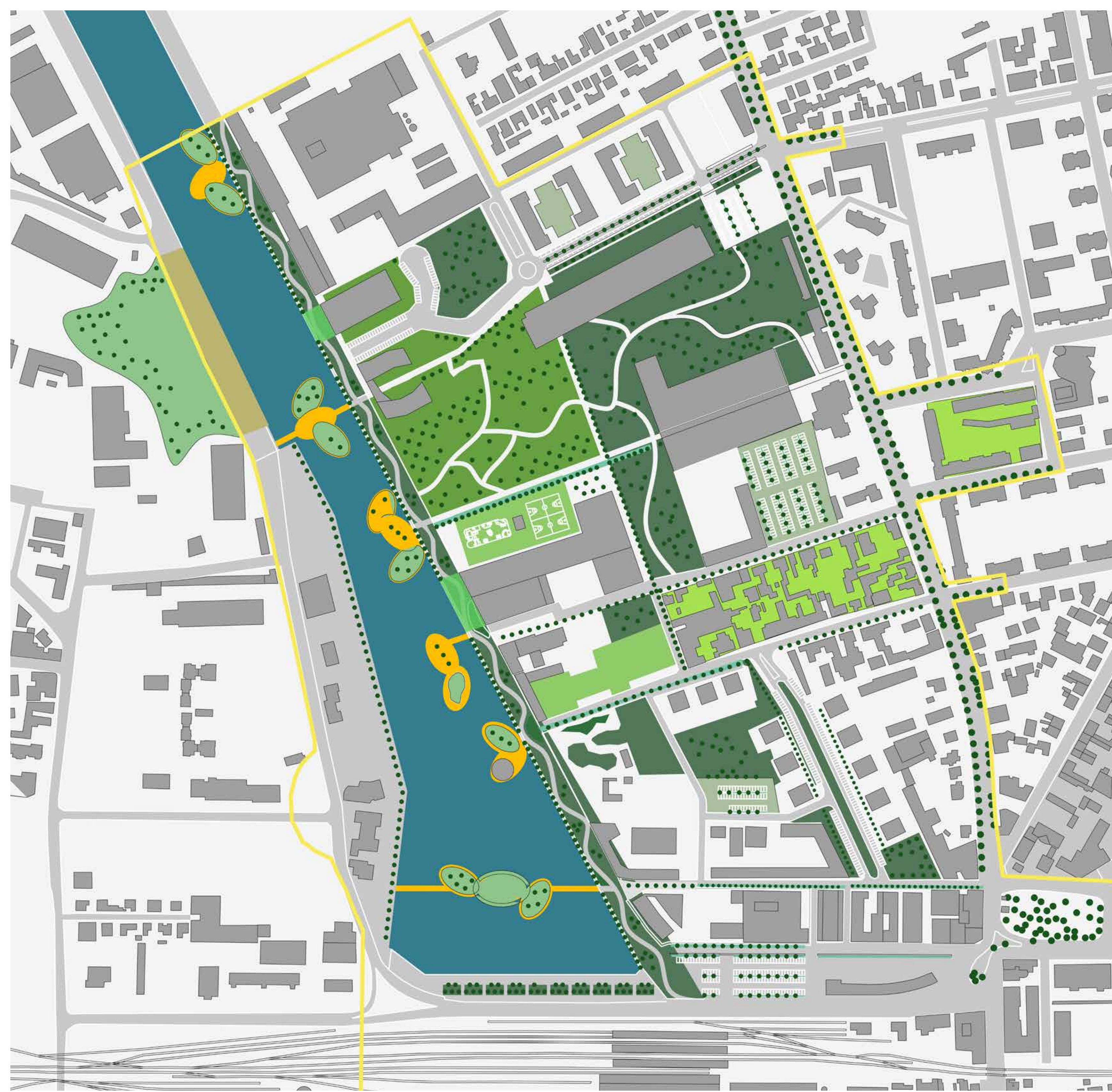
On the directional side, it is an occasion to move polarities for the service industry and for the high-quality accommodation where to host cultural tourism.

A green link, with different functional and spatial characteristics, permeates the interstitial areas, while temporary residences

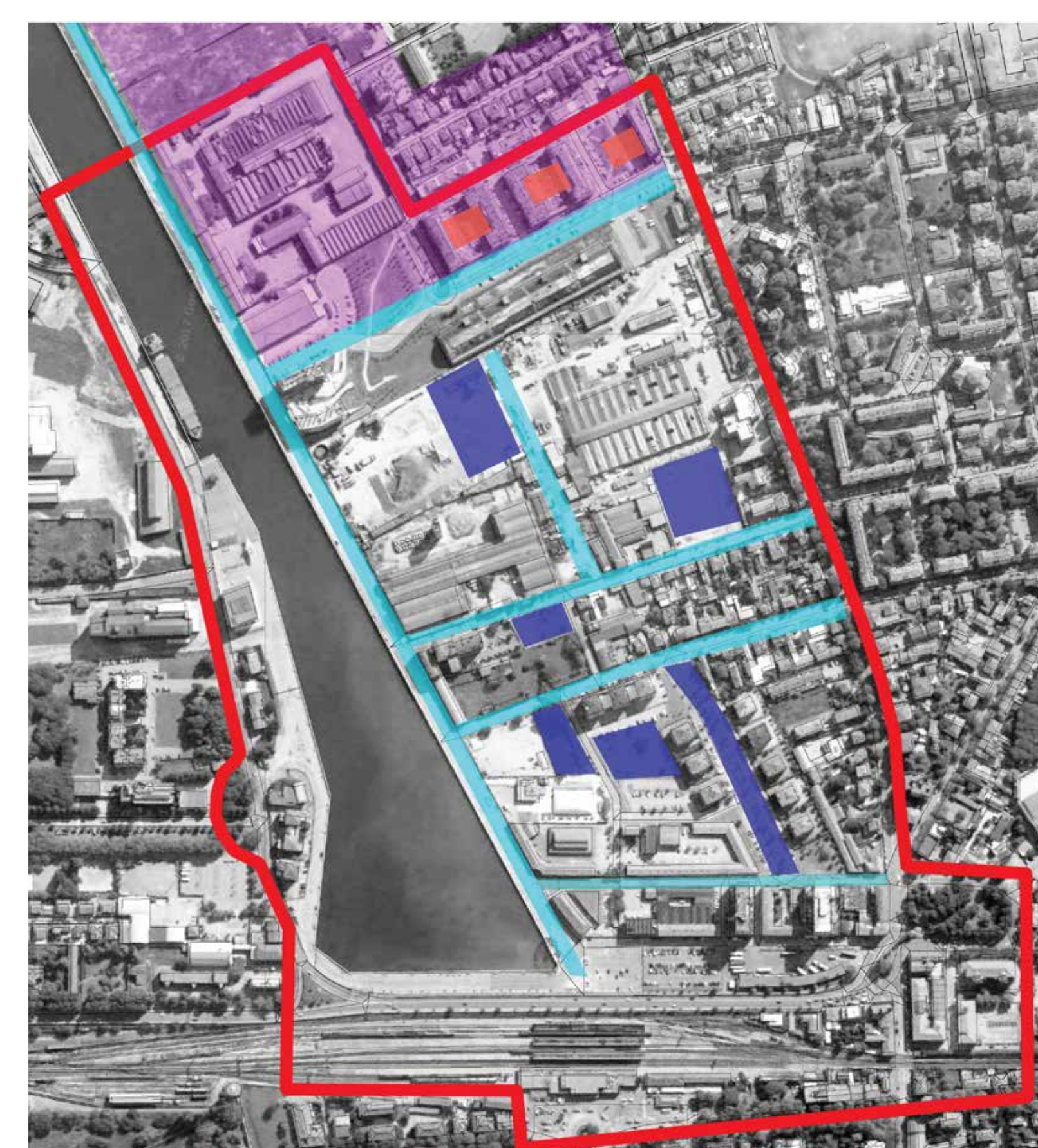
(such as the student housing in the social housing district) are transferred to industrial archaeology buildings that need restoring.

The open spaces are enhanced through a strategy that aims to integrate, physically and functionally, with the surrounding pre-existing buildings. The strategy is centered on a precise integrated system, 'a mosaics' of green spaces, composed of private gardens, shared green areas, and public space.

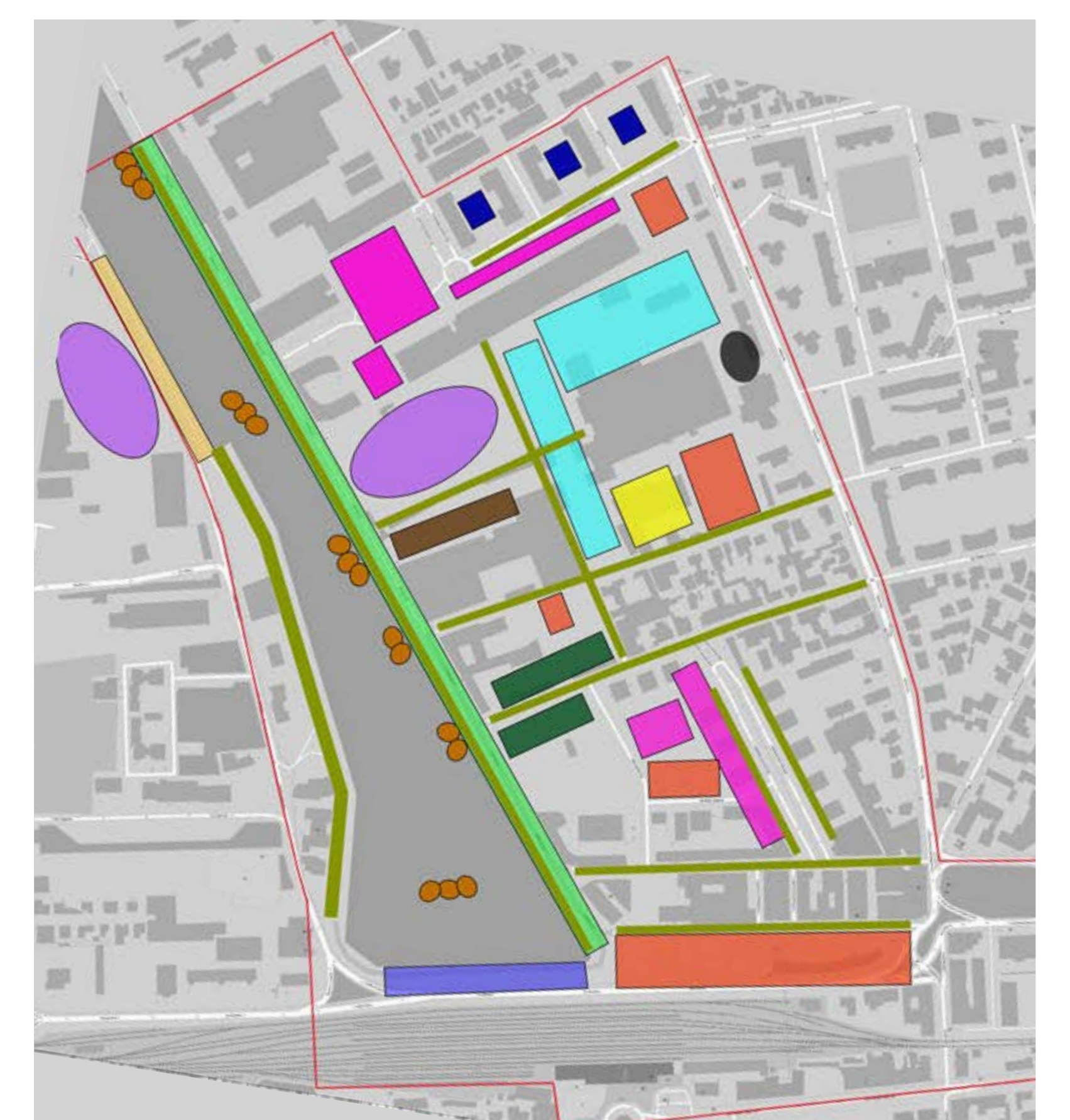
It is also planned to increase soil permeability; create pocket gardens in residential areas; de-pave private areas of mixed buildings to create collective gardens and equip the public spaces with floodable ditches along the main driving routes, basins, water squares, and rain gardens, as well as constructed wetlands with spontaneous plants to treat rainwater.



MASTER PLAN, GREEN AREAS AND PUBLIC SPACES PROJECT



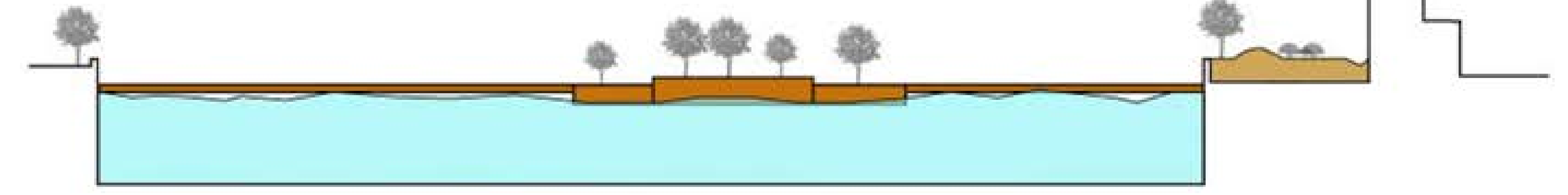
- FLOODABLE DITCH
- DETENTION BASIN
- WATER SQUARE
- RETENTION BASIN



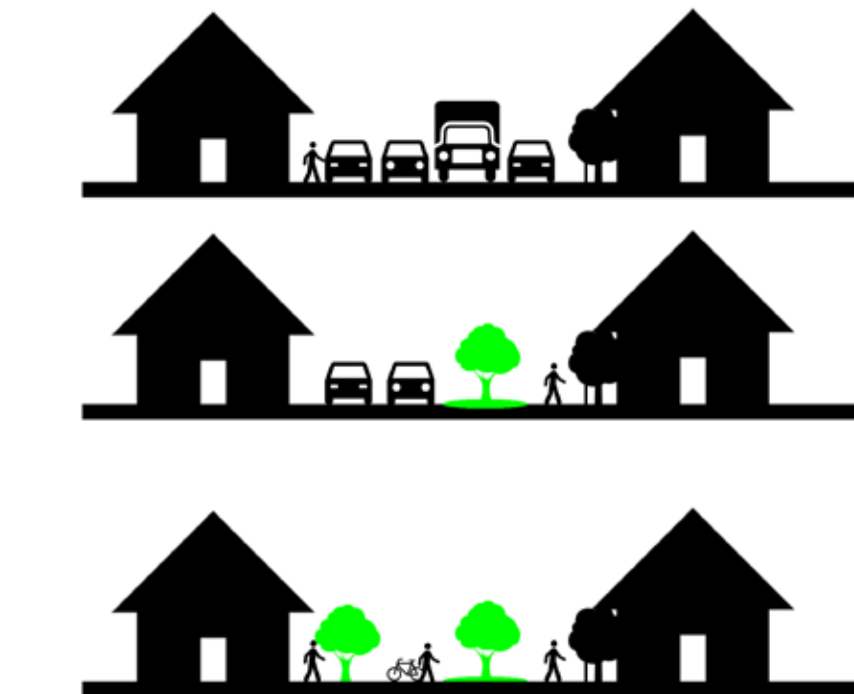
- LINEAR PARK
- MITIGATION GREEN
- SOCIAL GARDENS
- GREEN AREAS FOR SPORT
- ART GARDENS
- FITO-REMEDIATION
- REGENERATION AREAS
- BEACH
- WATER SQUARES
- SQUARES
- ROWS OF TREES
- GREEN RAFTS

BLUE INFRASTRUCTURE

ROWS OF TREES ALONG QUAY



QUAY STREET SECTION



STATE OF THE AREA

INTERMEDIATE PHASE:
- Reduction of street parkings
- introduction of green-blue infrastructure

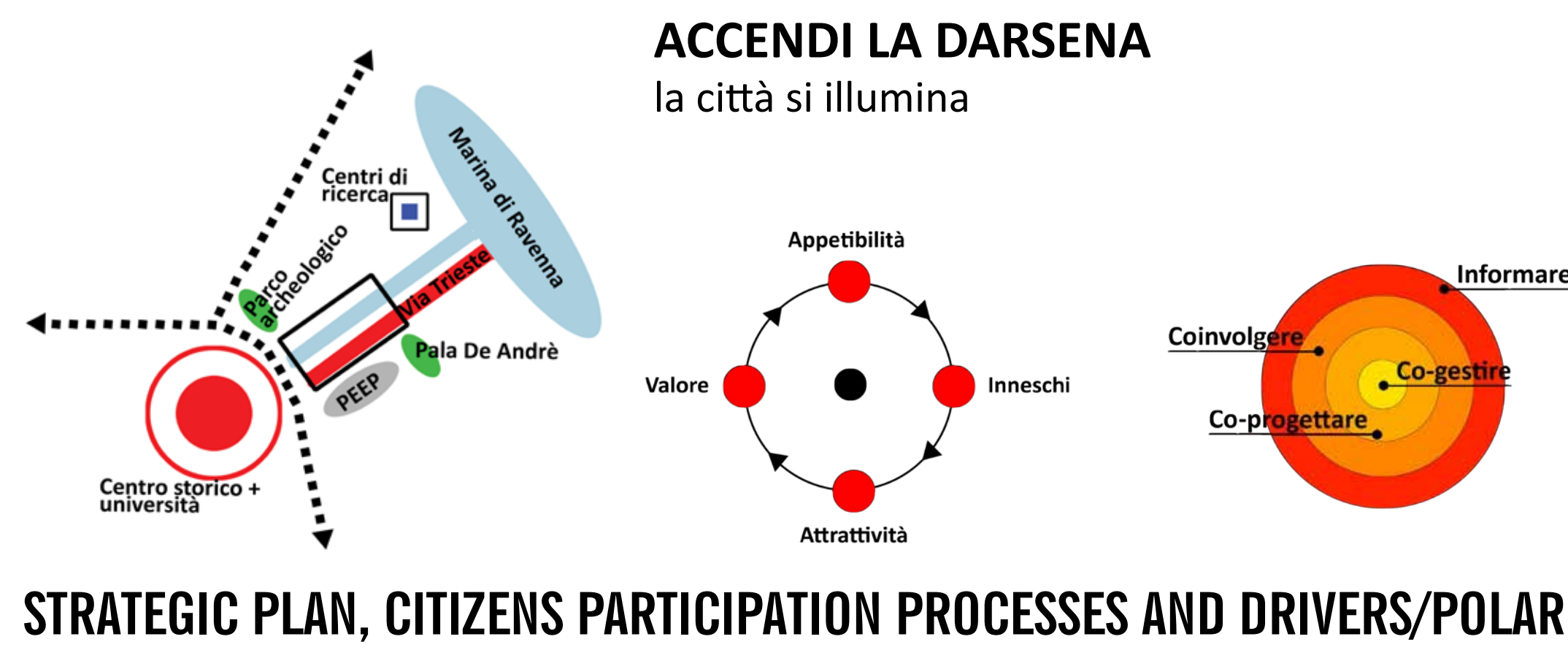


FINAL PHASE:
- complete removal of street parkings
- wider use of bikes and cargo-bikes



COMMON AREAS AVAILABLE
(for storage/sharing of goods/collective activities)
INCENTIVES TO USE CARGO BIKES / CAR SHARING

MOBILITY, GREEN AREAS AND SHARING: TOWARDS A CAR-FREE NEIGHBORHOOD

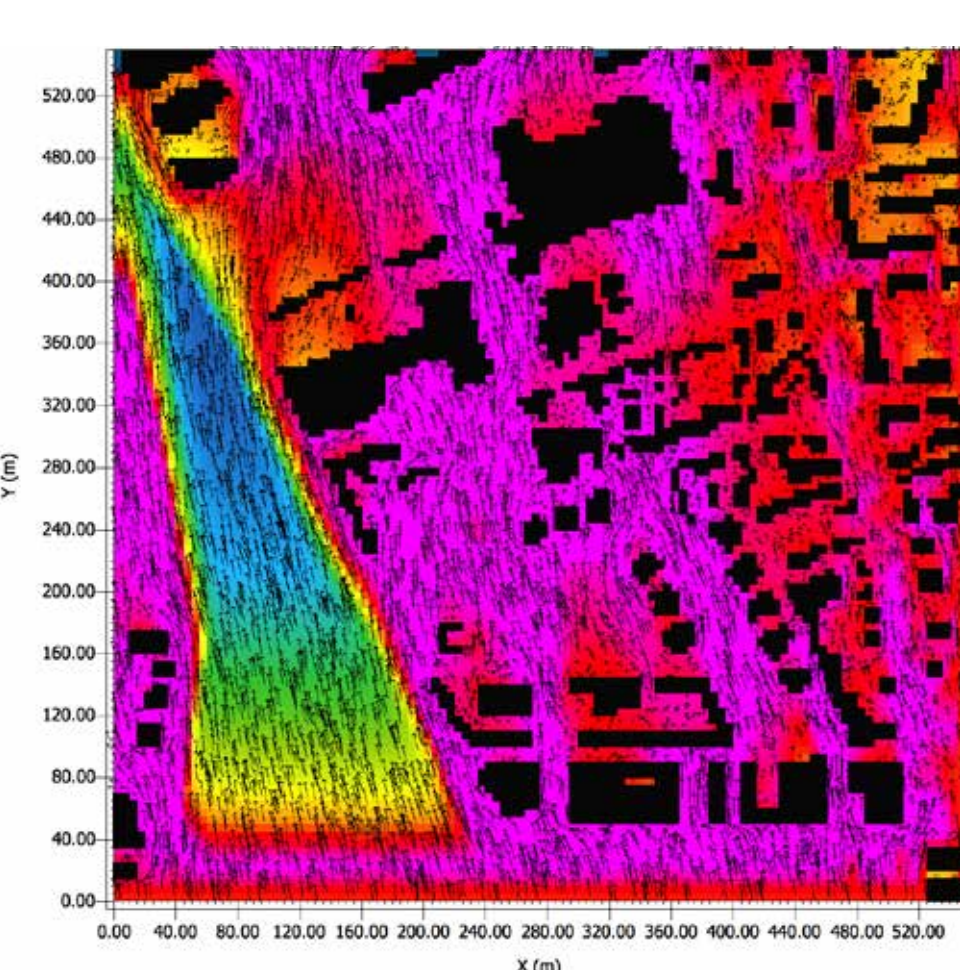


STRATEGIC PLAN, CITIZENS PARTICIPATION PROCESSES AND DRIVERS/POLARITIES

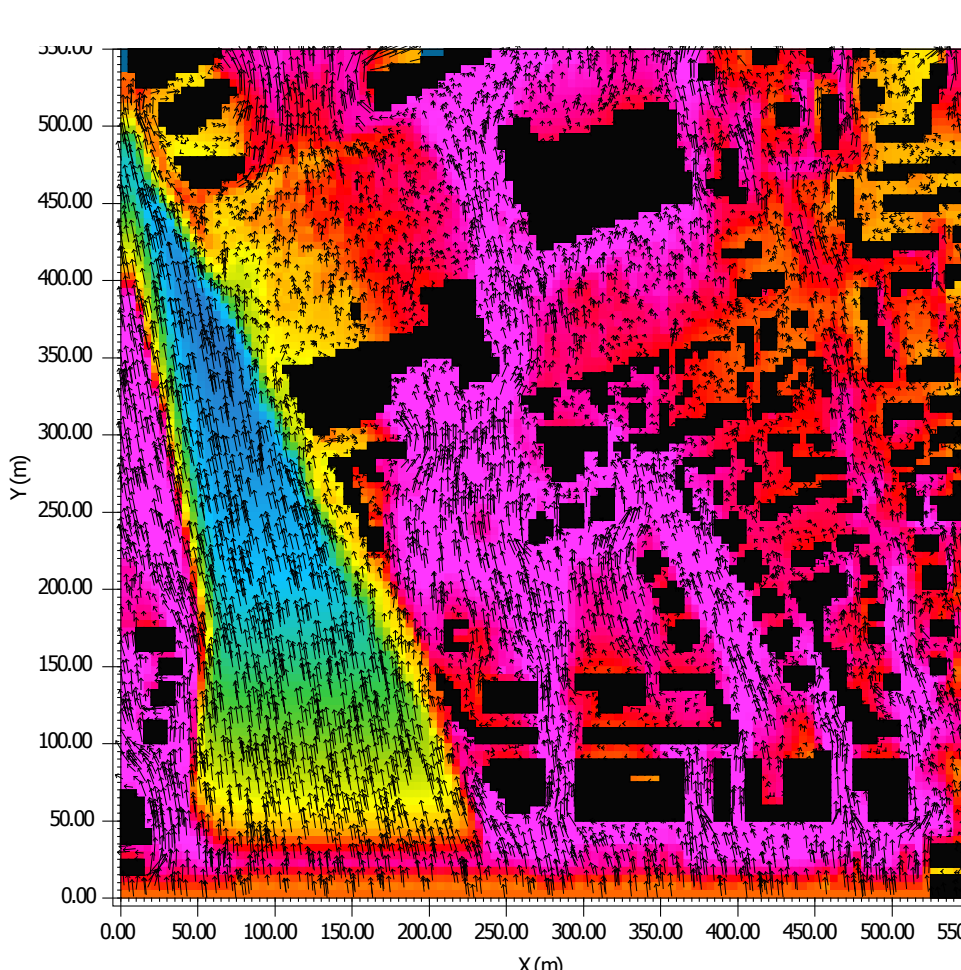
ENVI-MET SIMULATION / WIND SPEED / 24.06.2017 - H 14:00

The map illustrates the temperature distribution (color) and the wind direction and intensity (arrows). In its current state it shows values up to 3.0 m/s 'light breeze', differing closer to buildings. The proposed solution does not reduce the Venturi effect or turbulence, while it does decrease in part the barrier effect behind the station.

EX ANTE



EX POST



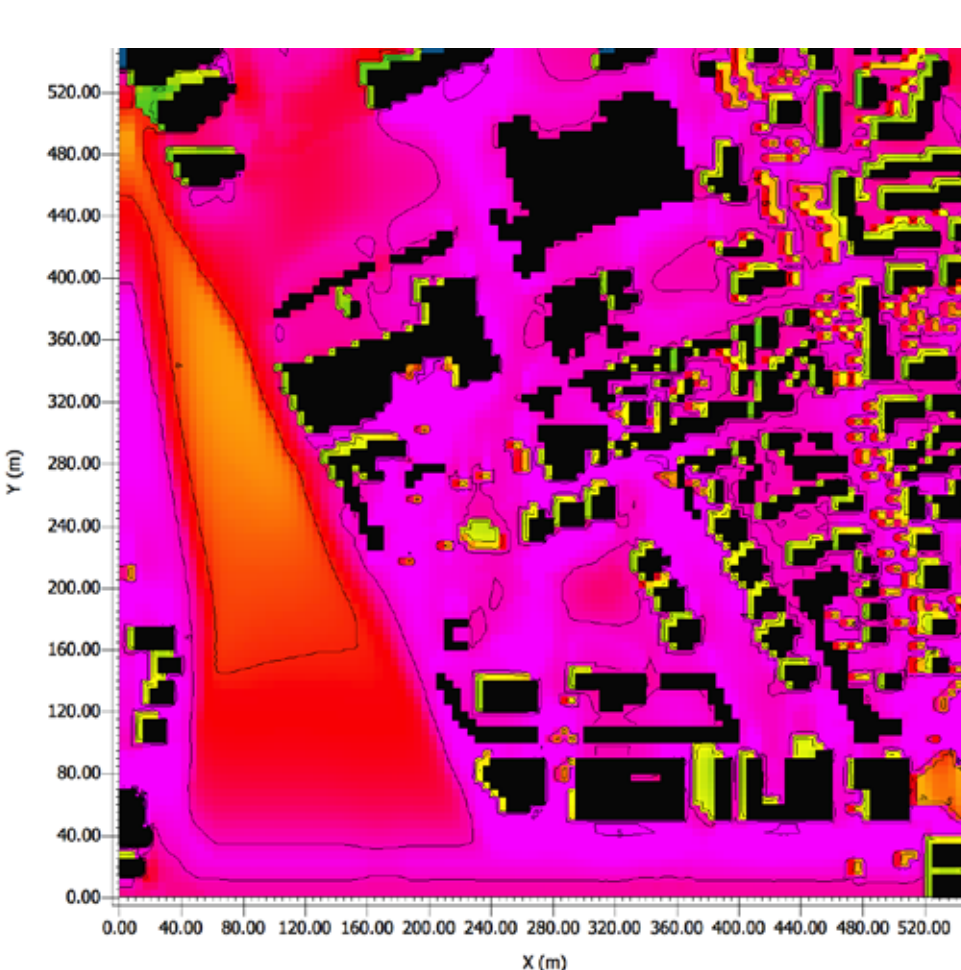
Team Ravenna 2 / Marcello Cova - architect, Monia Fantini - architect, Paolo Focaccia - architect, Matteo Furian - landscape designer, Federico Galli - engineer,

Raffaella Gueze - officer Municipality of Bologna, Anna Chiara Leardini - architect, Andrea Morsolin - agronomist, Mauro Mugnai - agronomist, Giorgia

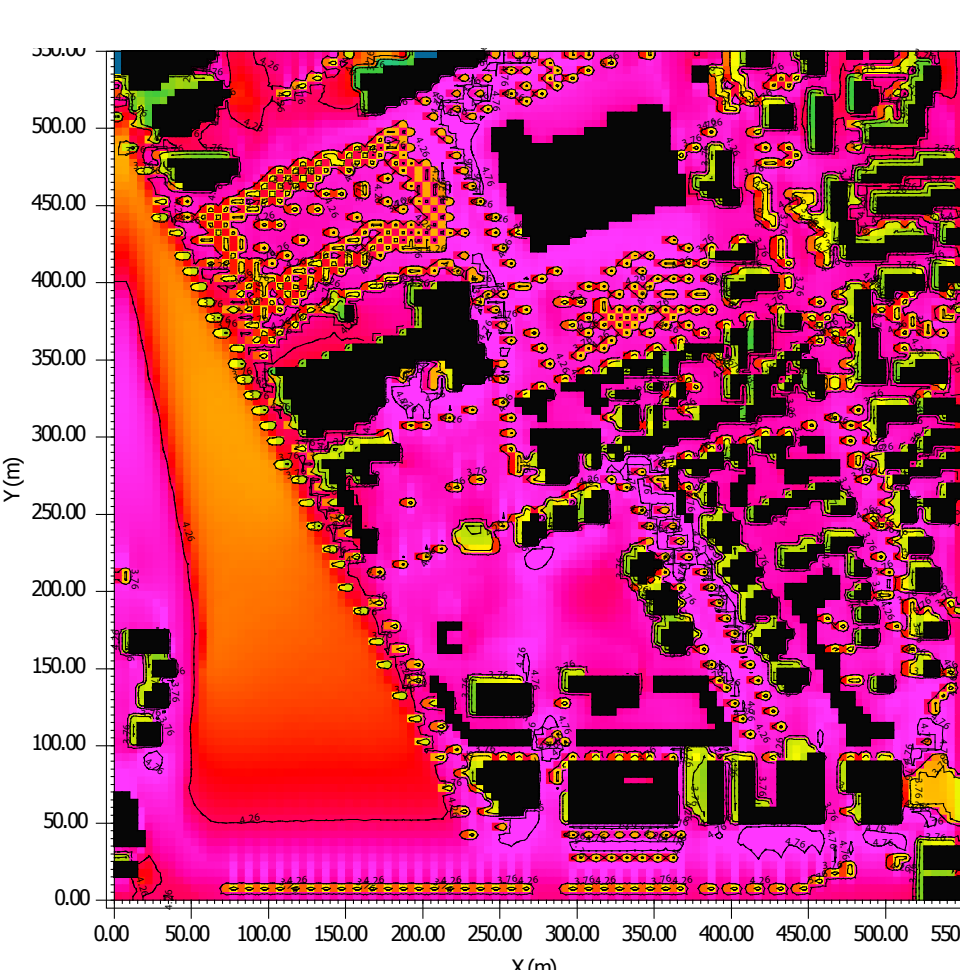
ENVI-MET SIMULATION / PMV (PREDICTED MEAN VOTE) / 24.06.2017 - H 13:00

The PMV index expresses the opinion of individuals on thermal comfort in a given microclimatic condition. The ex-ante map presents very high values, even higher than 5 in various areas. The project brings slight improvement to spaces where green intervention is planned, which, however, won't improve the comfort of the neighborhood nor effect the existing built environment.

EX ANTE



EX POST



Rambaldi - mobility engineer, Giuseppe Romagnoli - urban designer, Mara Roncuzzi - officer Municipality of Ravenna, Andrea Sankowsky - urban planner, Eleonora

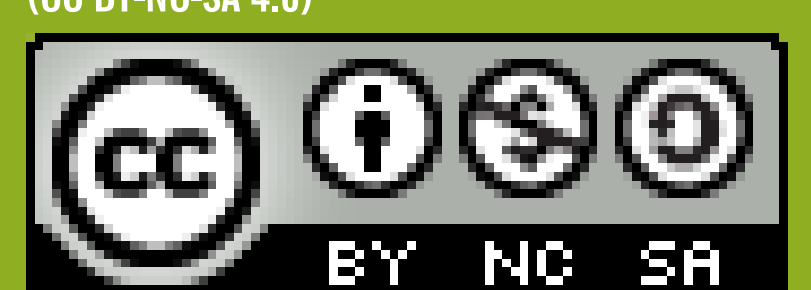
Tricomi - landscape architect, Anna Vacchi - engineer, Domenico Zamagna - officer Municipality of Ravenna.

RAVENNA CANDIANO CANAL / 2

PROJECT STUDY AREA

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HISTORICAL CENTER AND DARSENA DISTRICT OF SAN PAOLO / STUDY AREA AND DESIGN OBJECTIVES

The new San Paolo Darsena district finds place between the Garden City, the Estense walls that define the historical center and the Po di Volano, a secondary delta branch of the Po river. The area, which assumes its current form with the structure of the Produce Market, today neglected and in the process of reconversion, is characterized by vast sealed surfaces used for parking and by various buildings of historical value in the process of reconversion (ex MOF building – ex Magazzini Savonuzzi). The district is strategic for the city and makes up the main connection between the historical center, the river, and the Darsena.

For decades devoid of qualifying and attractive uses, the area has progressively strengthened itself with services: it is home to two

main public parking lots and the city bus station. There are many green areas, especially along the canal and near the historical walls that here have a reduced height, lowering from east to west until it disappears, beside the intersection with Corso Isonzo, following demolitions at the beginning of the 20th century to create the Garden City. Along the whole track there are extremely beautiful and frequently used bike and pedestrian pathways.

On the other hand, the green areas near the Darsena are poorly accessible and of poor quality. The low water quality, lack of sports and recreational use, and the partial privatization in the use of space allowed to private individuals all have caused disrepair, which discourages public use along the river.



- 1 EX MOF PARKING AREA
- 2 BUS STATION
- 3 EX CAMILLI AREA
- 4 EX PISA PARKING AREA
- 5 SEBASTIAN PUB
- 6 EX SAVONUZZI WAREHOUSES
- 7 ROWING CLUB
- 8 DARSENA GARDENS
- 9 MEIS MUSEUM
- 10 PATHWAY ALONG THE CITY WALLS
- 11 GARDEN CITY
- 12 AQUEDUCT
- 13 SUPERMARKET
- 14 PORTA PAOLA / PIAZZA TRAVAGLIO
- 15 PARKING AREA
- 16 CITY CENTRE
- 17 ESTENSE CASTLE
- 18 CATHEDRAL
- 19 CITY HALL
- A VIA DARSENA
- B CORSO ISONZO
- C RAMPARI DI SAN PAOLO
- D VIA BOLOGNA
- E VIA IPPOLITO D'ESTE

- STUDY AREA
- CITY CENTRE
- CITY WALLS URBAN PARK
- TRAIN STATION
- ROAD NETWORK
- RAILWAY
- DARSENA AND PO DI VOLANO

- SIMULATION AREA
- PROJECT SITE / AREA OF INTEREST
- PUBLIC MOBILITY ROUTE (BUS)
- BIKE NETWORK

ENVI-MET SIMULATIONS

A study of the thermal comfort of the area has been prepared using the SPACE modules from ENVI-MET, a holistic three-dimensional non-hydrostatic software that allows one to model the physical and microclimatic behavior of the buildings and open spaces, with applications for urban planning, climate adaptation, comfort, and the health of the people.

The software allows one to analyze the urban comfort of a certain area linking data that has been extrapolated from a climate analysis of the place with the topographical study of the spaces (which includes the buildings, vegetation, and land-use).

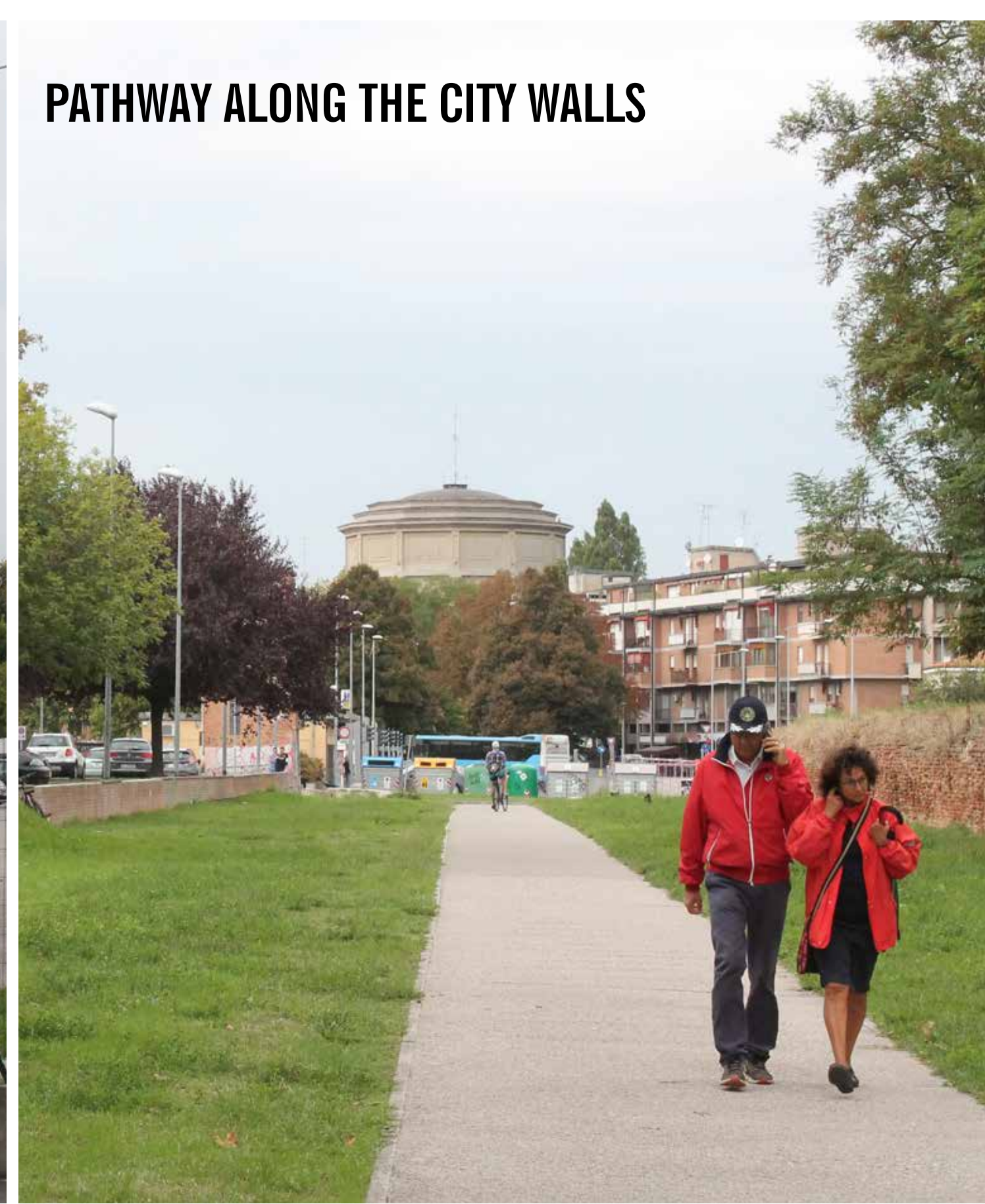
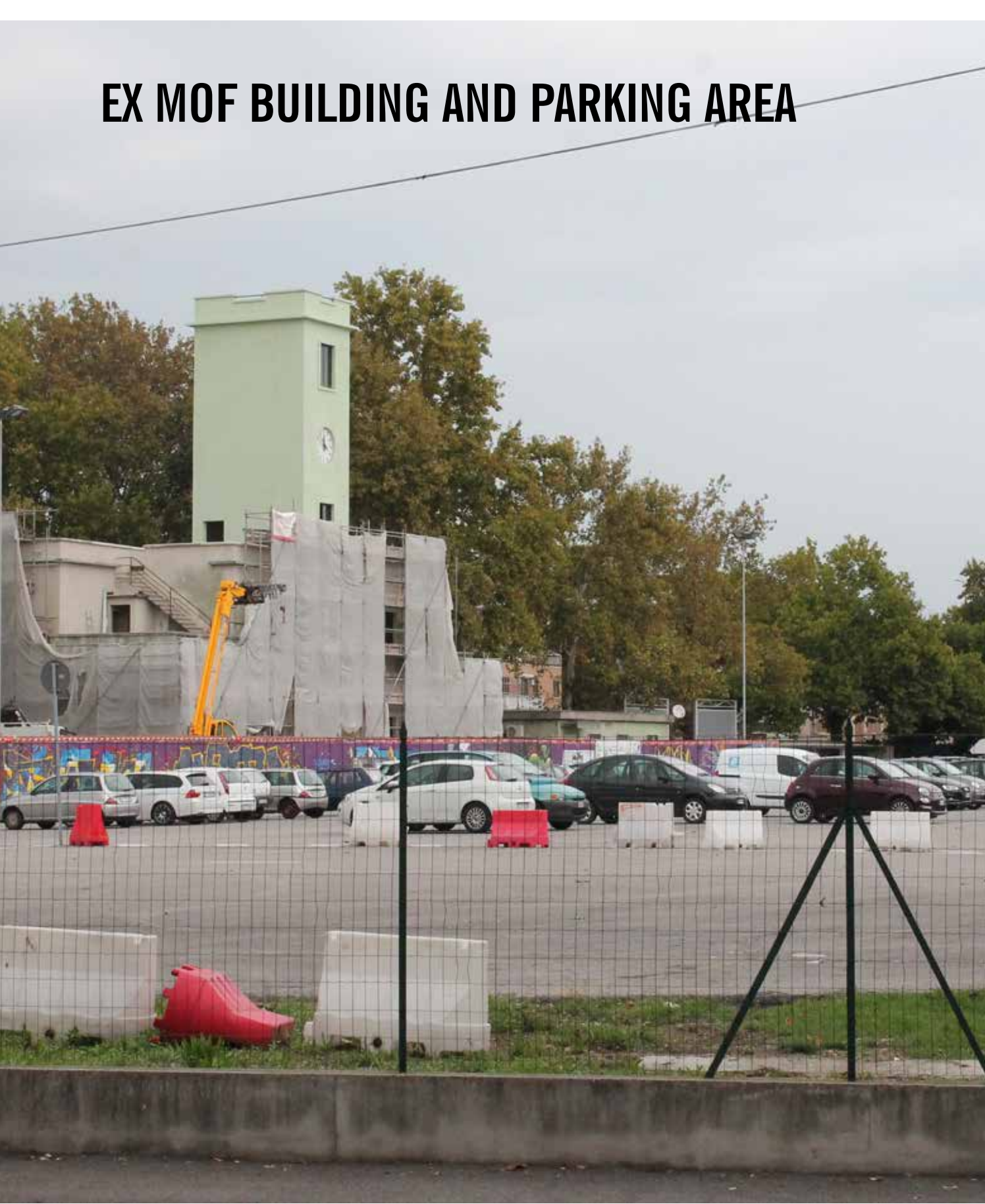
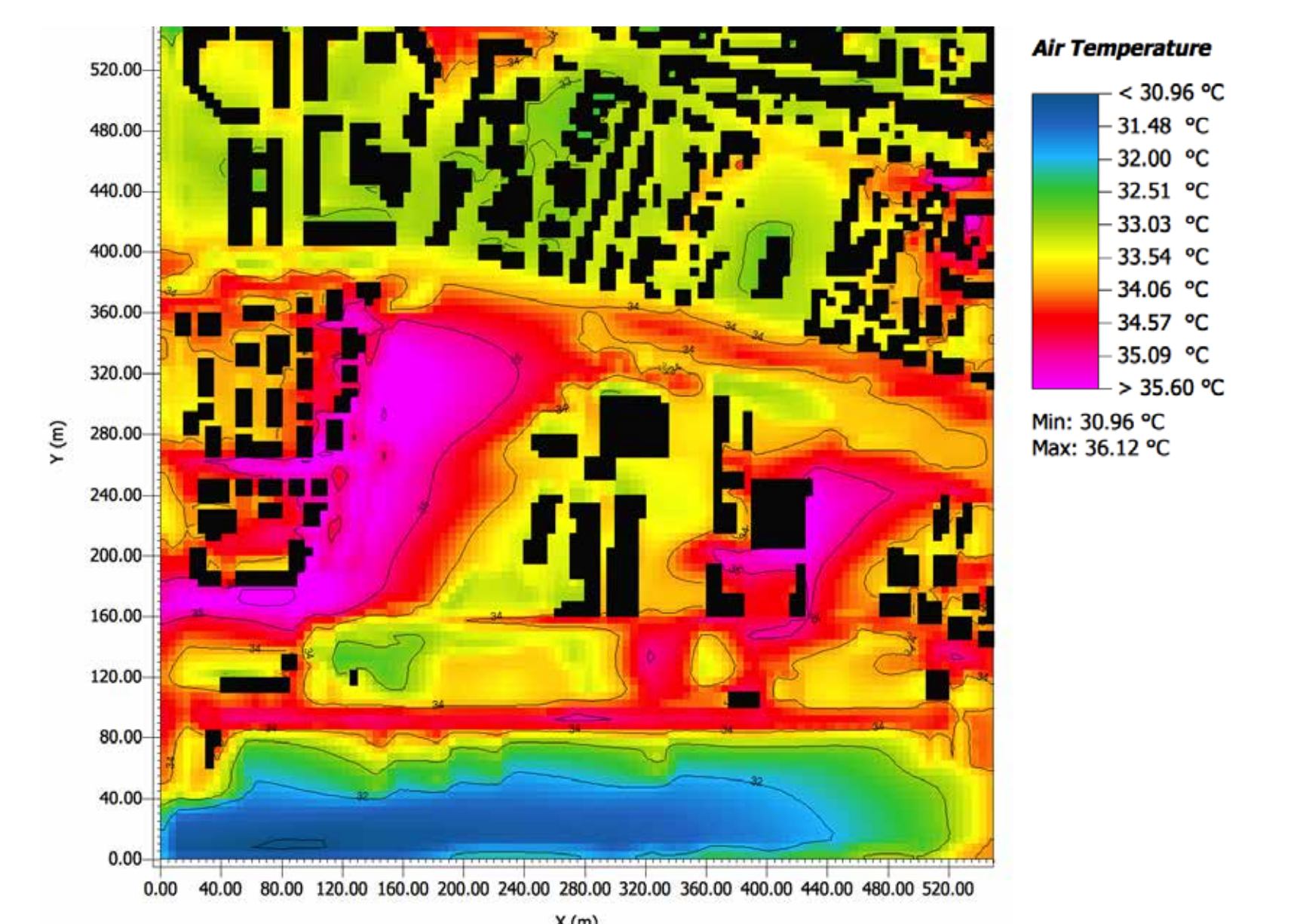
The output results of the ex-ante status are compared to the thermal comfort of the ex-post status, which takes the different design choices into consideration.

In the area of Ferrara, there are open spaces of considerable size designated for both parking with asphalted surfaces and equipped for green space with or without trees. The built space is characterized by a very dense and compact urban fabric with Two- or three storey residences typical of the historical center. Some industrial buildings of considerable size that are today neglected are present.

AIR TEMPERATURE / 24.06.2017 - H 14:00

The isolines allow one to understand the distribution of the air temperature in °C, in the open spaces and near buildings, a value that affects the direct thermal exchange between the human body and the environment.

The map shows that the air temperature values at 14:00 are between 30°C and 36°C in most open areas. The areas in fuchsia represent the areas with a higher temperature that can be considered 'pockets of hot air.'

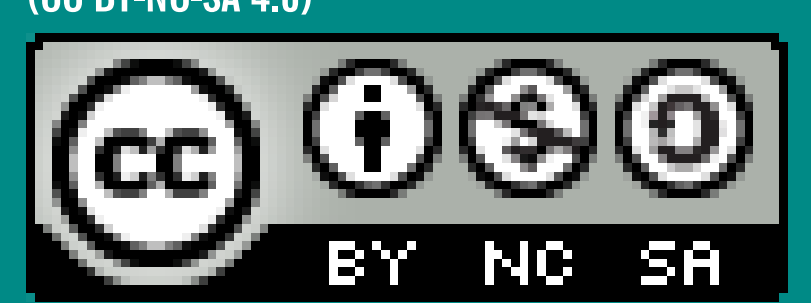


FERRARA SAN PAOLO DARSENA

STUDY AREA

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HIGHLY RESILIENT ECO-DISTRICT BETWEEN RIVER, DARSENA, AND CITY CENTER TAKING A BREAK

The urban regeneration intervention establishes the objective of creating a functional and spatial empathy with the new green and blue infrastructure that is meant to be introduced in the district. The widespread preexisting complexities of the district have been investigated and resolved with the goal of raising urban quality, also through a new design generated by the refunctioning of the dilapidated and neglected building heritage.

The green infrastructure represents the supporting beam of the entire design proposal and the two existing lengthwise axes - the green area near the dock and the linear park along the walls - will be reinforced and connected.

The project plans to channel the water deriving from the Garden

City, which is subject to flooding, by way of a filtering canal along the main existing walkway on Corso Isonzo.

A superficial detention basin with double functions is planned. It will feed an underground basin for storage and reuse in times of drought and a fountain to refresh the square in the summer.

The orange infrastructure, a link between the green and the blue, develops lengthwise along the bank and regulates livability. Vegetation to produce thermal-hygrometric benefits are planned here, as well as a set of functions focussed on food as the attraction and strength point: on the one hand, in the commercialization of those resources and in the development of facilities and recreational activities, and on the other hand, in the production and distribution of food.



MASTER PLAN, GREEN AREAS AND PUBLIC SPACES PROJECT



GREEN INFRASTRUCTURE

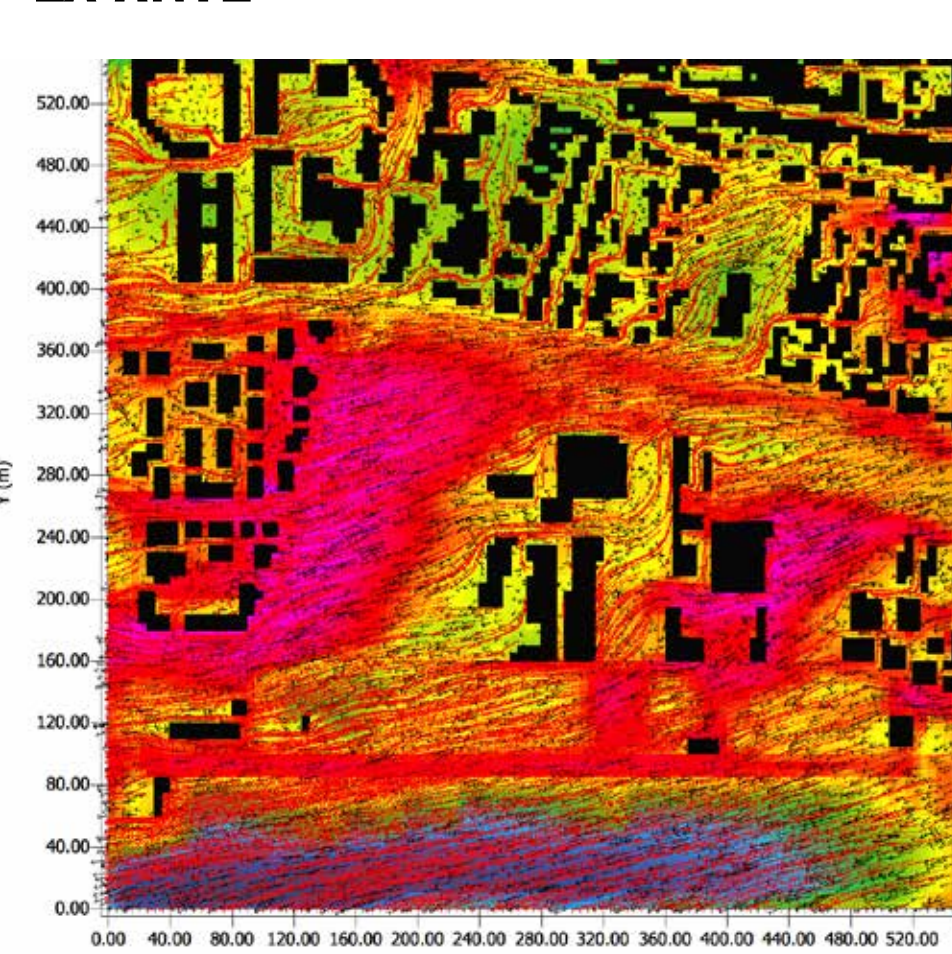
GREEN PLOTS

BLU INFRASTRUCTURE

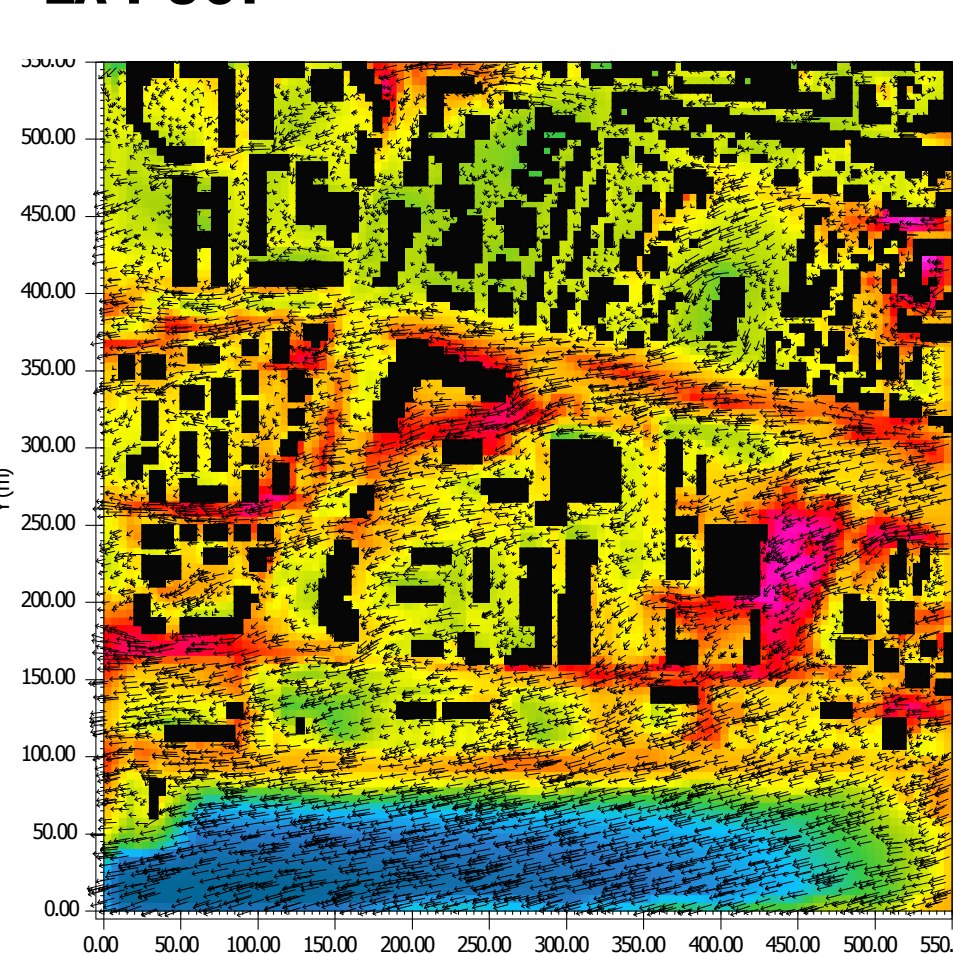
ENVI-MET SIMULATION / WIND SPEED / 24.06.2017 - H 14:00

The map illustrates the temperature distribution (color) and the wind direction and intensity (arrows). In its current state it shows values between to 0.6 m/s 'calm' and 3.0 m/s, differing closer to buildings. The proposed solution is rather effective and can decrease the intensity of the wind, decreasing the number and intensity of vectors.

EX ANTE

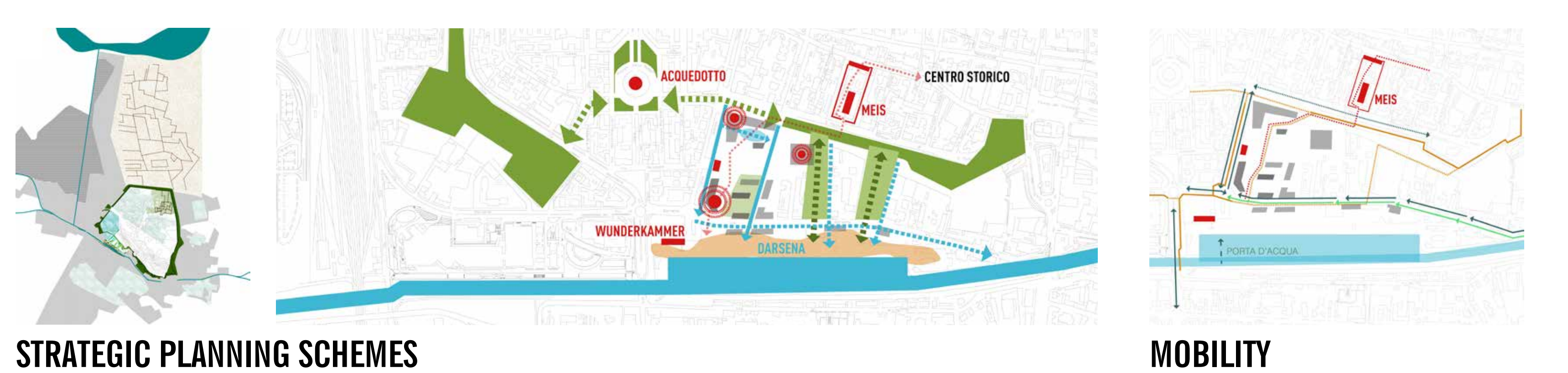


EX POST



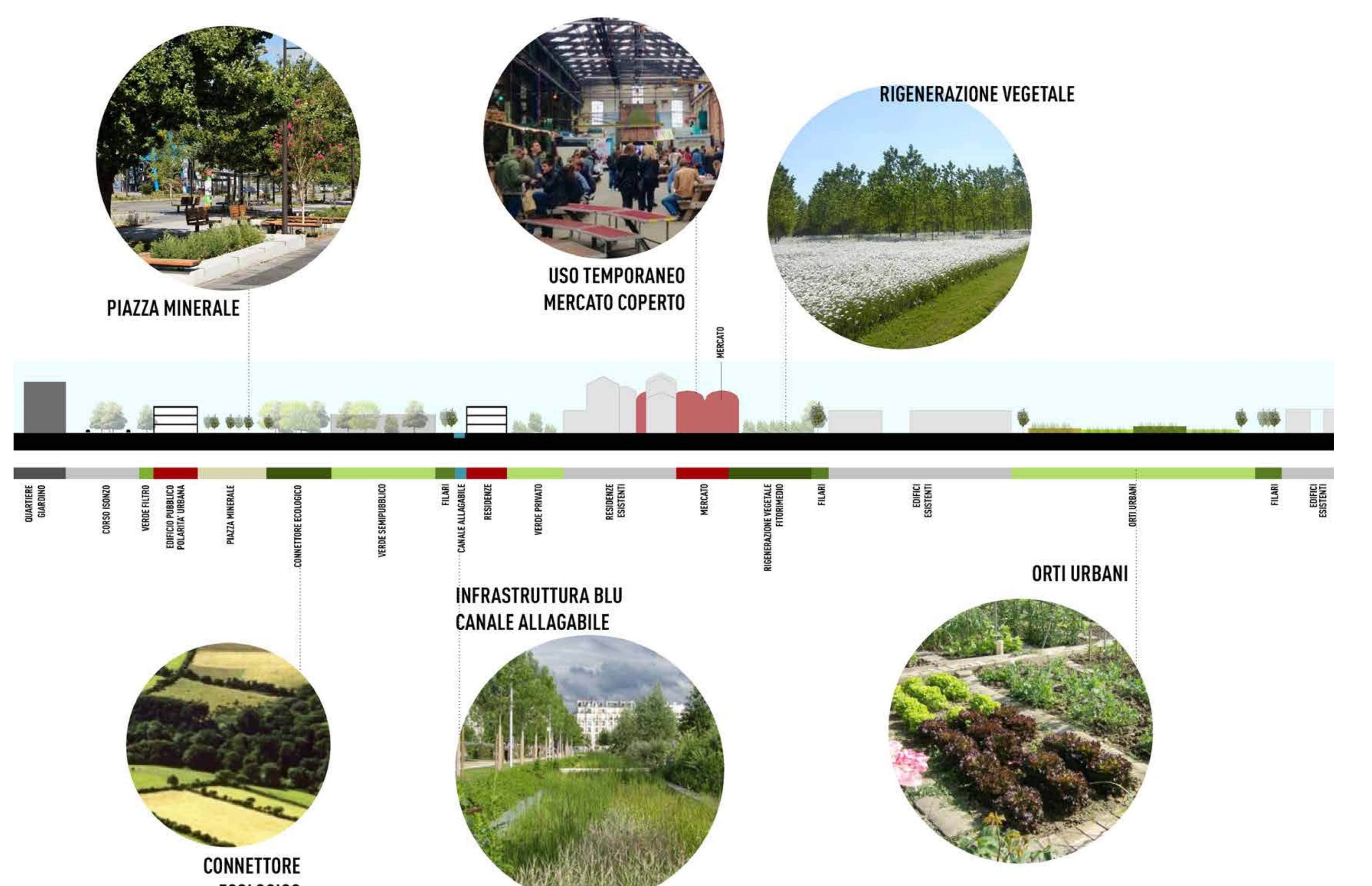
Squadra Ferrara 1 / Filippo Armani - architect, Silvia Bertoni - mobility engineer, Tiziana Coletta - Ferrara Municipality, Francesca Guerzoni - Ferrara Municipality,

Alberto Malavasi - hydraulic engineer, Luca Marcheselli - agronomist, Maria Vittoria Mastella - 'city maker' architect, Silvia Mazzanti - Ferrara Municipality, Giuseppe

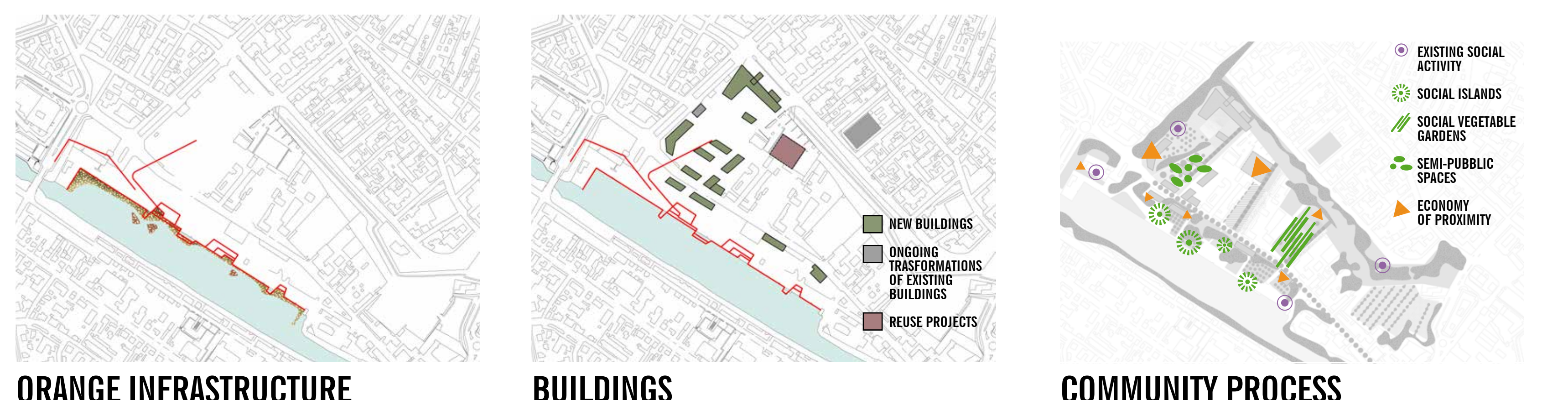


STRATEGIC PLANNING SCHEMES

MOBILITY



CROSS SECTION AND DESIGN REFERENCES



ORANGE INFRASTRUCTURE

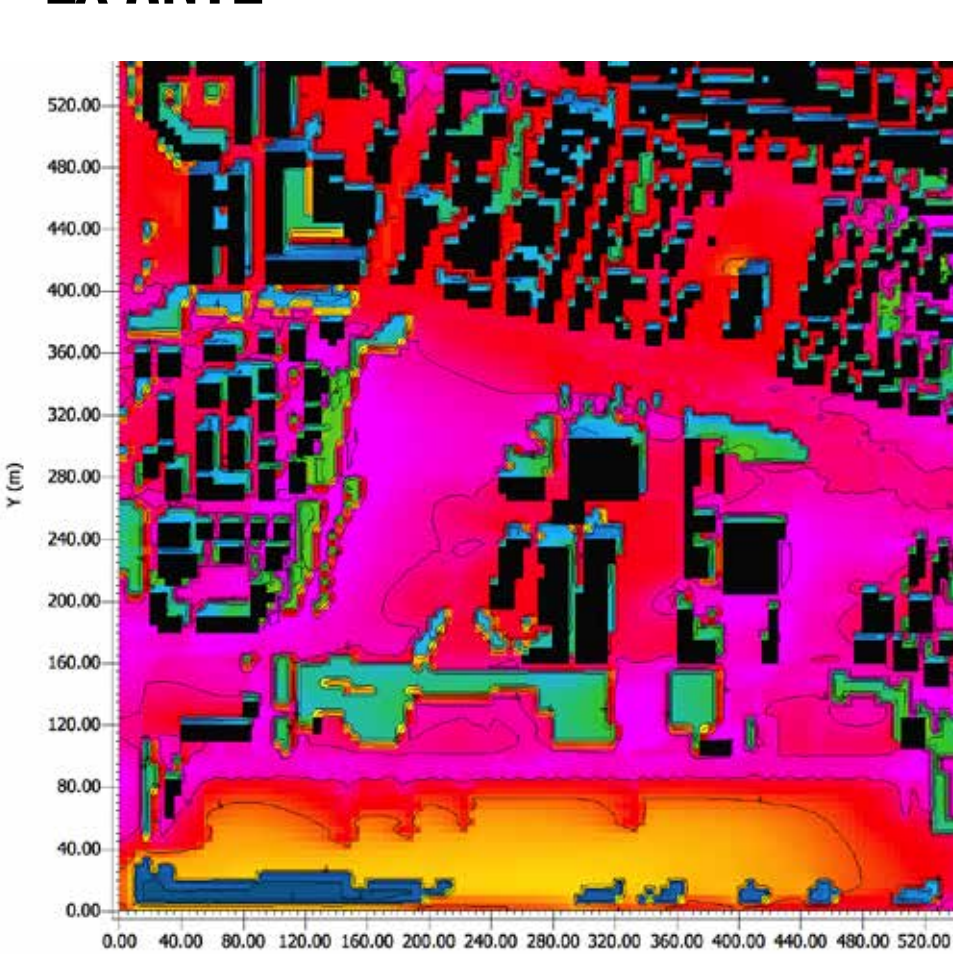
BUILDINGS

COMMUNITY PROCESS

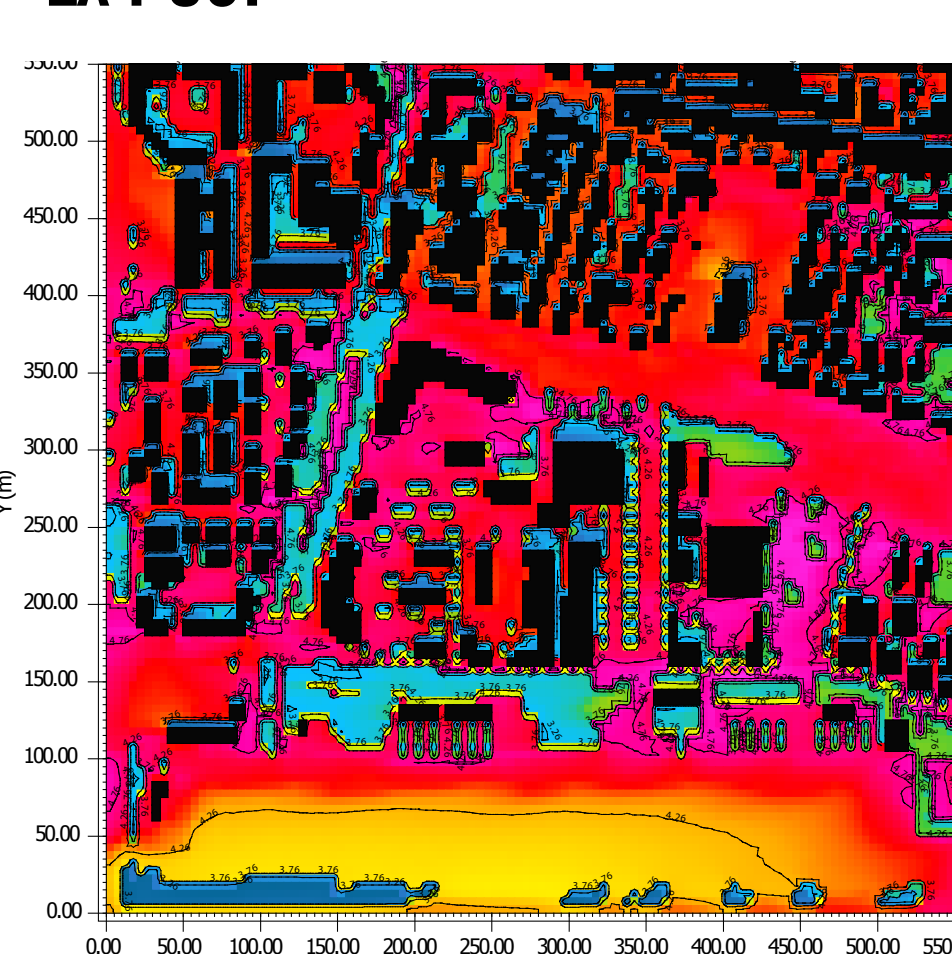
ENVI-MET SIMULATION / PMV (PREDICTED MEAN VOTE) / 24.06.2017 - H 13:00

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EX ANTE



EX POST



Milano - engineer, Giuseppe Orselli - agronomist, Giulia Pentella - architect, Claudia Piscitelli - urban planner, Elisa Spada - landscape designer, Samantha Trombetta

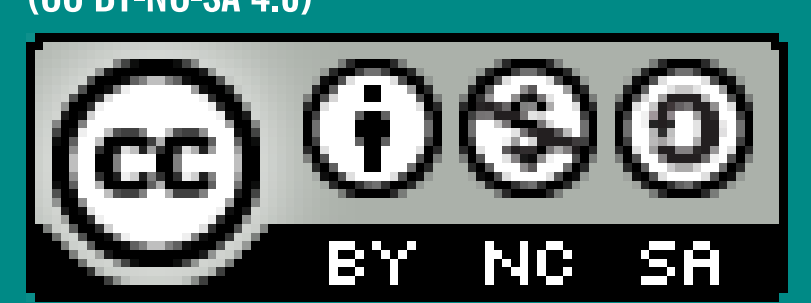
- urbanist, Matteo Zamagni - landscape designer, Anna Zappòli, official Emilia-Romagna Region, Stefano Zec - near graduate Civil Engineer-Architecture University.

FERRARA SAN PAOLO DARSENA / 1

PROJECT STUDY AREA

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ECOLOGY AND GREEN URBAN INFRASTRUCTURE FOR THE LIVABILITY OF THE HISTORICAL CENTER

ECO-DARSENA: COMFORT DOWNTOWN

The objective of the project is to create an eco-district that is resilient, both seismically and climatically; energy efficient; and that contains a mix of functions.

With the creation of a large urban park in the public area near the Darsena, the ecological potential of the district is recognized and valued, with the intention to provide for continuity to the green space system along the walls.

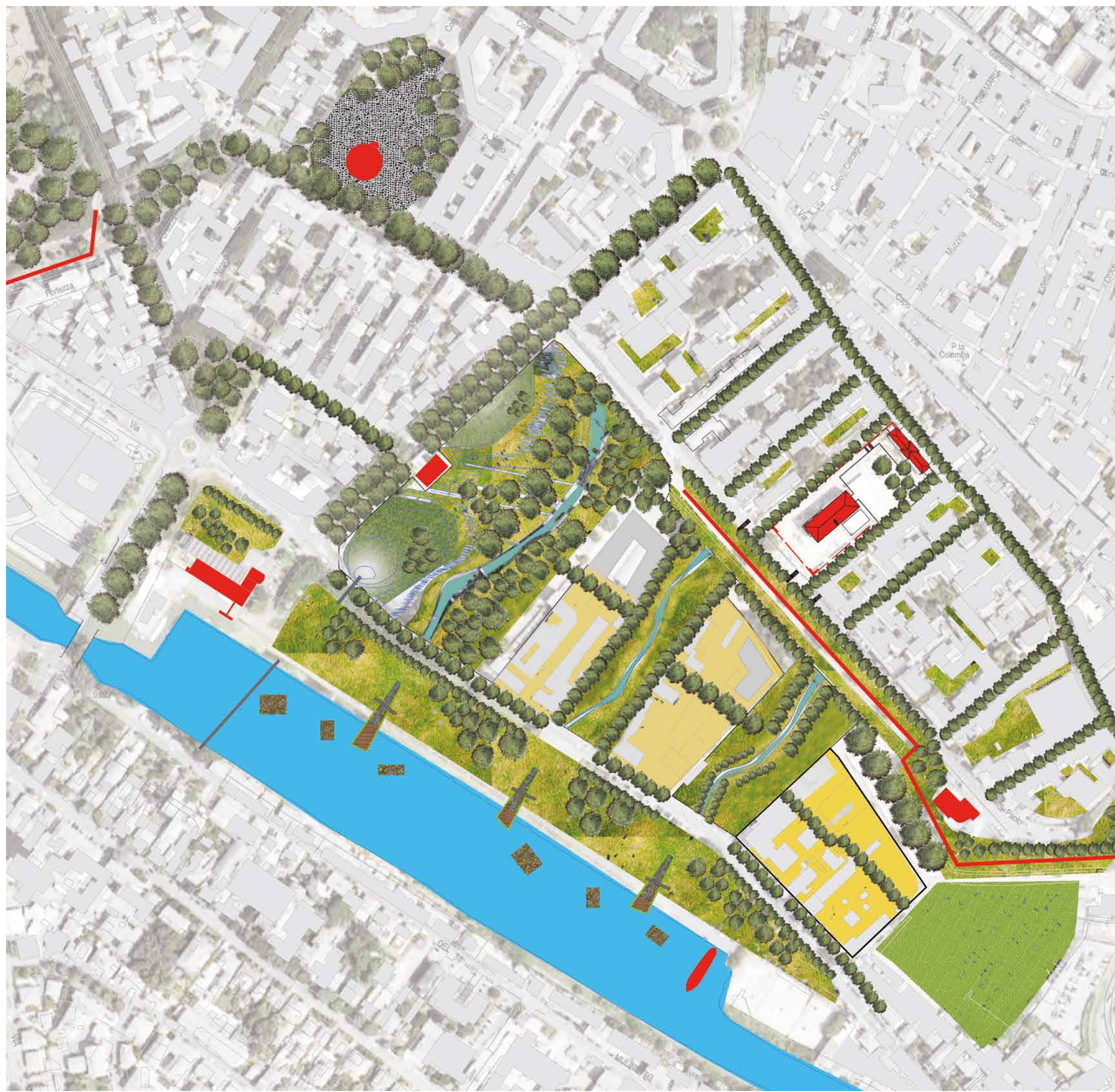
The regeneration of public areas serves thus as a driver for the valorization of the existing building heritage, attracting public and private funding, both for internal investments in the regenerated areas by adding new uses and functions, and for the investments in widespread regeneration of the surrounding building fabric.

The project is based on the creation of a blue infrastructure made

up of a system of three canals that connect the historical center to the Darsena, to guarantee water safety and increase comfort, foreseeing the possibility of inverting the water flows according to hygrometric conditions.

Constructed wetlands are planned for the waters entering the canals.

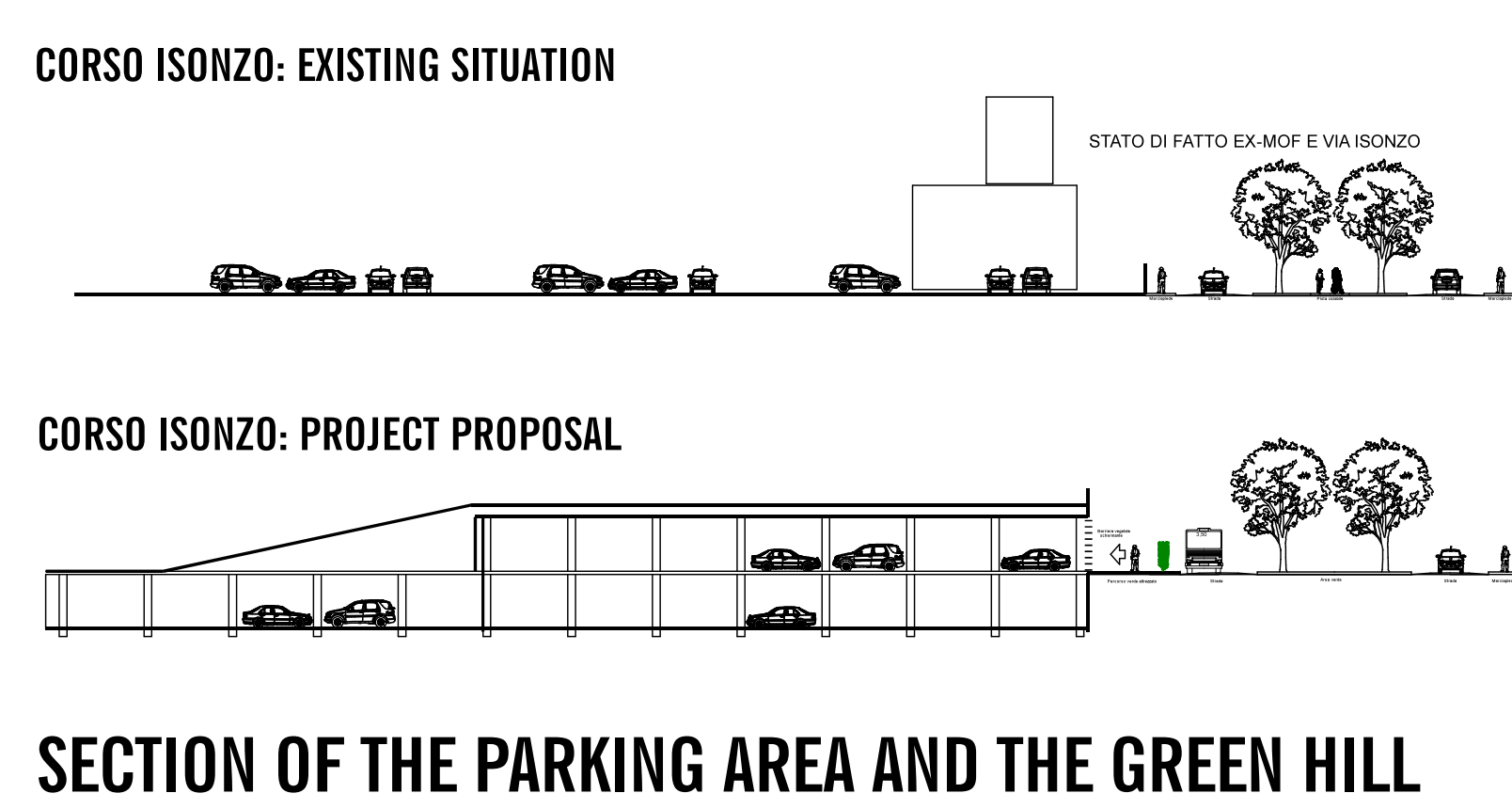
A continuous green infrastructure is simultaneously developed, which is also a link to the existing fabric, and is made up of three areas: an artificial hill in the ex-MOF with an urban forest (ash, lime, and Judas trees) to cover an underground parking lot; the recovery and naturalization of the ex Camilli area through the use of hemp, and a protected green space for organizing educational workshops in the ex-Pisa area.



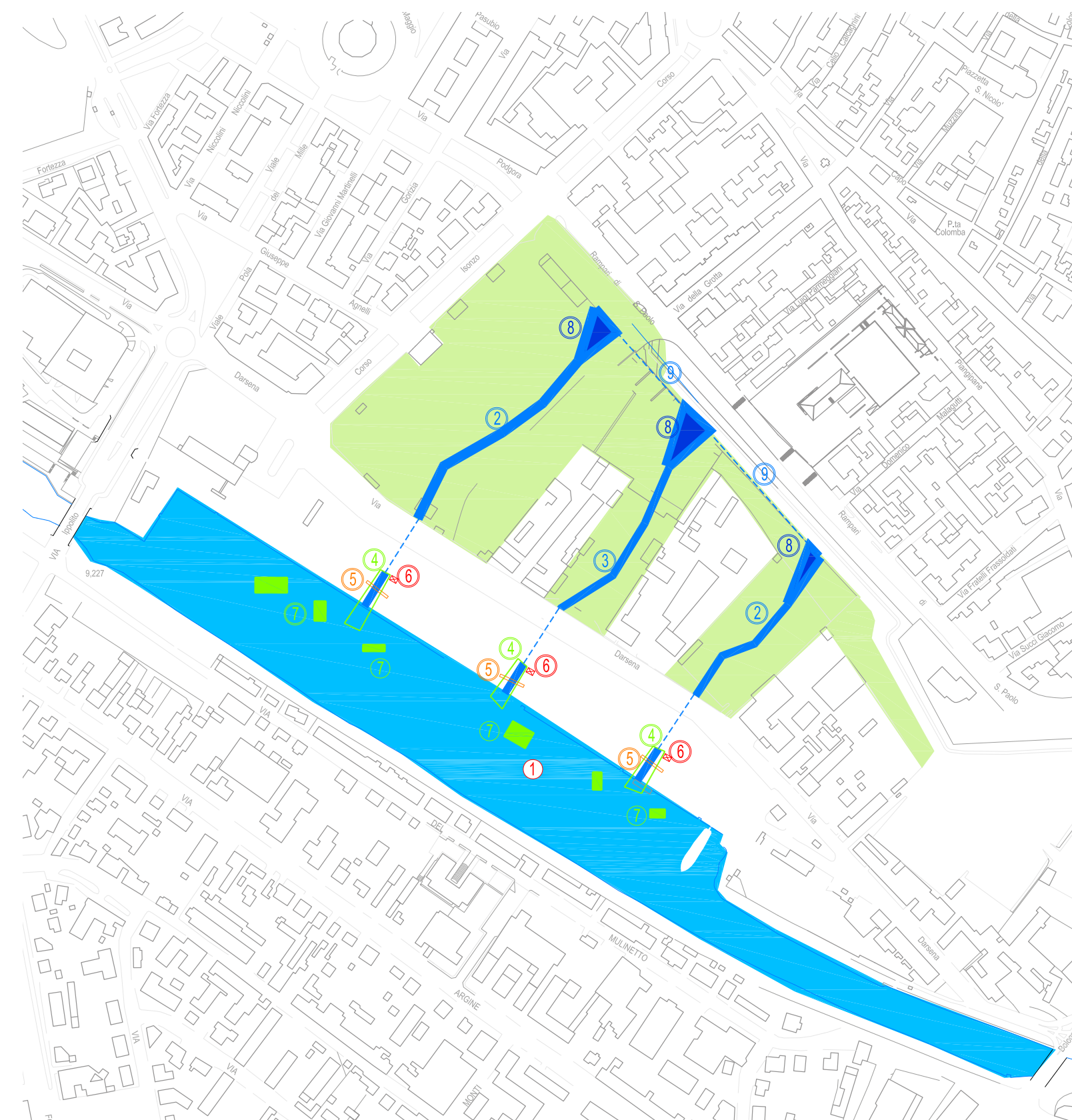
MASTER PLAN, GREEN AREAS AND PUBLIC SPACES PROJECT



STRATEGIC PLANNING SCHEME



SECTION OF THE PARKING AREA AND THE GREEN HILL



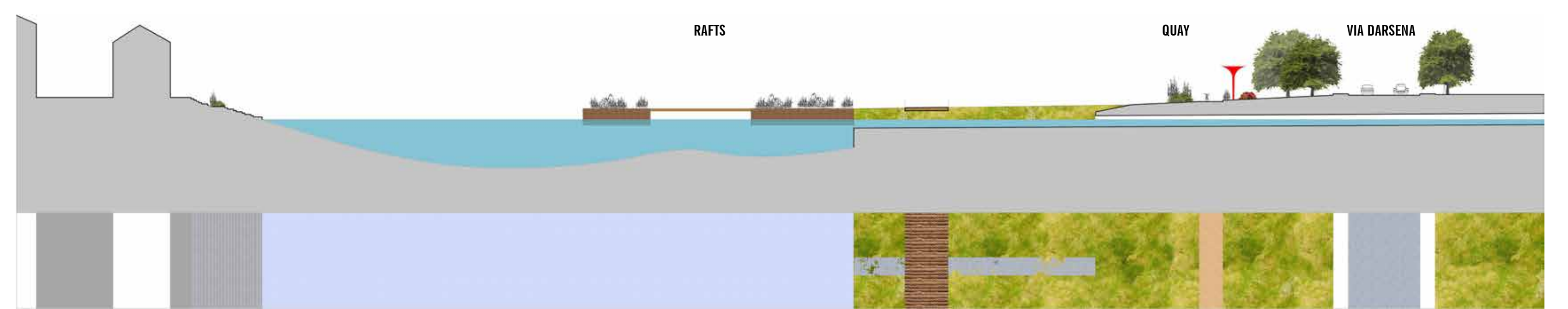
1. PRELIMINARY DREDGING OPERATION OF THE RIVERBED AND EXCISION OF THE ALGAL MATERIAL ON THE SURFACE
2. FLOODABLE DITCHES
3. FLOODABLE DITCH WITH INSULATED BOTTOM IN RECLAMATION AREA
4. PHYTODEPURATION CONES TO FILTER WATER OF THE CANAL
5. PEDESTRIAN-BIKE CROSSINGS
6. GROUND FLUSH PUMPS FOR WATER FLOW
7. TANKS ON FLOATING RAFTS FOR PHYTO-PURIFICATION
8. RECEPTORS FOR HYDRAULIC INVARIANCE AND URBAN DRAINAGE OF THE OLD TOWN
9. FLOODABLE DITCH

BLUE INFRASTRUCTURE



- LARGE SIZE TREES
- MEDIUM SIZE TREES
- ROWS OF TREES
- GROUP OF TREES
- LAWN
- HEMP FOR DECONTAMINATION
- PERGOLA FOR SHADING
- AQUATIC PLANTS FOR PHYTO-PURIFICATION

GREEN INFRASTRUCTURE



DARSENA CROSS SECTION



PATHWAY ALONG THE DARSENA

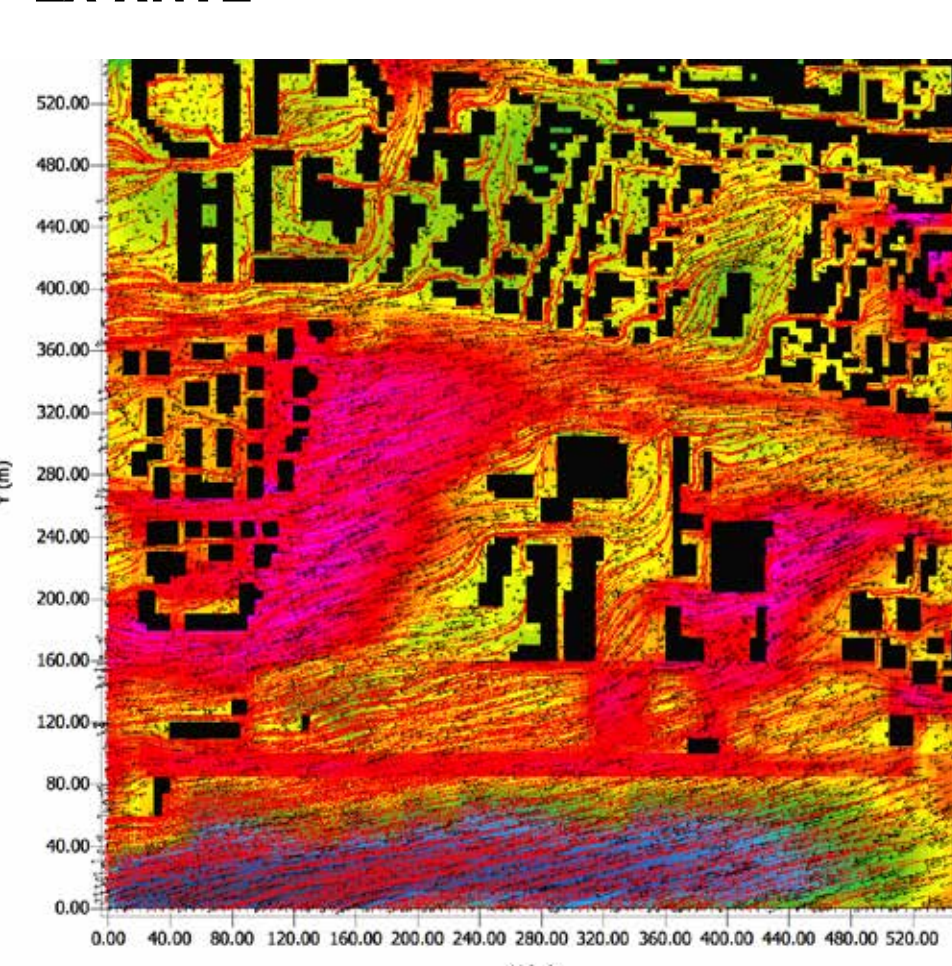


HEMP FOR DECONTAMINATION AND RENATURATION

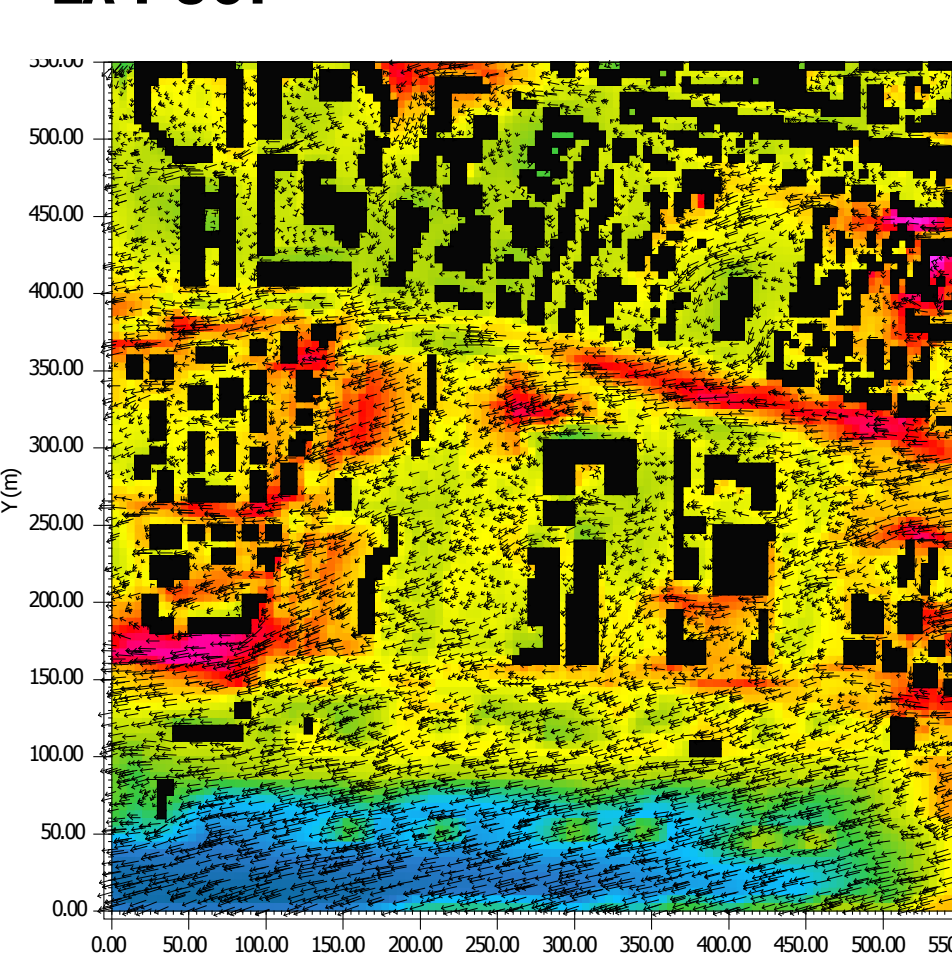
ENVI-MET SIMULATION / WIND SPEED / 24.06.2017 - H 14:00

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EX ANTE



EX POST



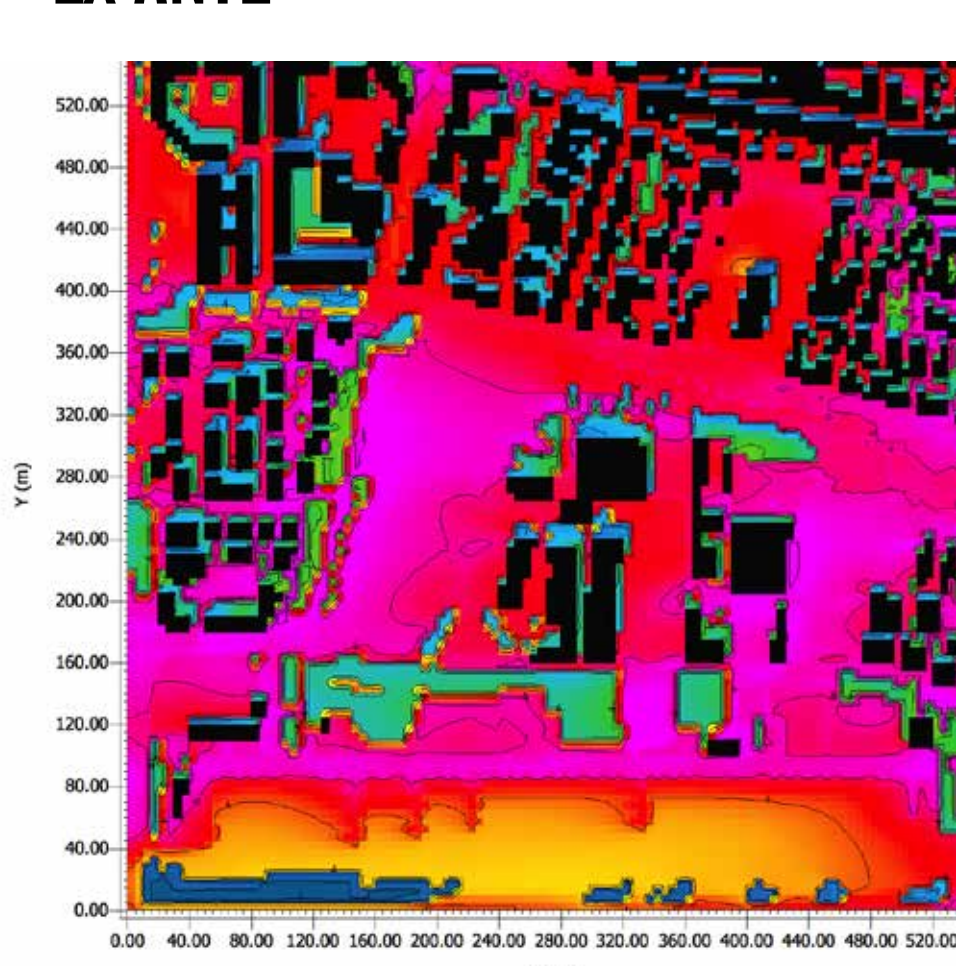
Team Ferrara 2 / Francesco Ballerini - mobility engineer, Saverio Cioce - urban planner, Giacomo Corda - landscape designer, Arturo Cristiano Dapporto

- architect, Valerio Francia - engineer, Flavio Gardini - architect, Marco Lorenzetti - officer Municipality of Ferrara, Giacomina Lorusso - agronomist, Giuseppe

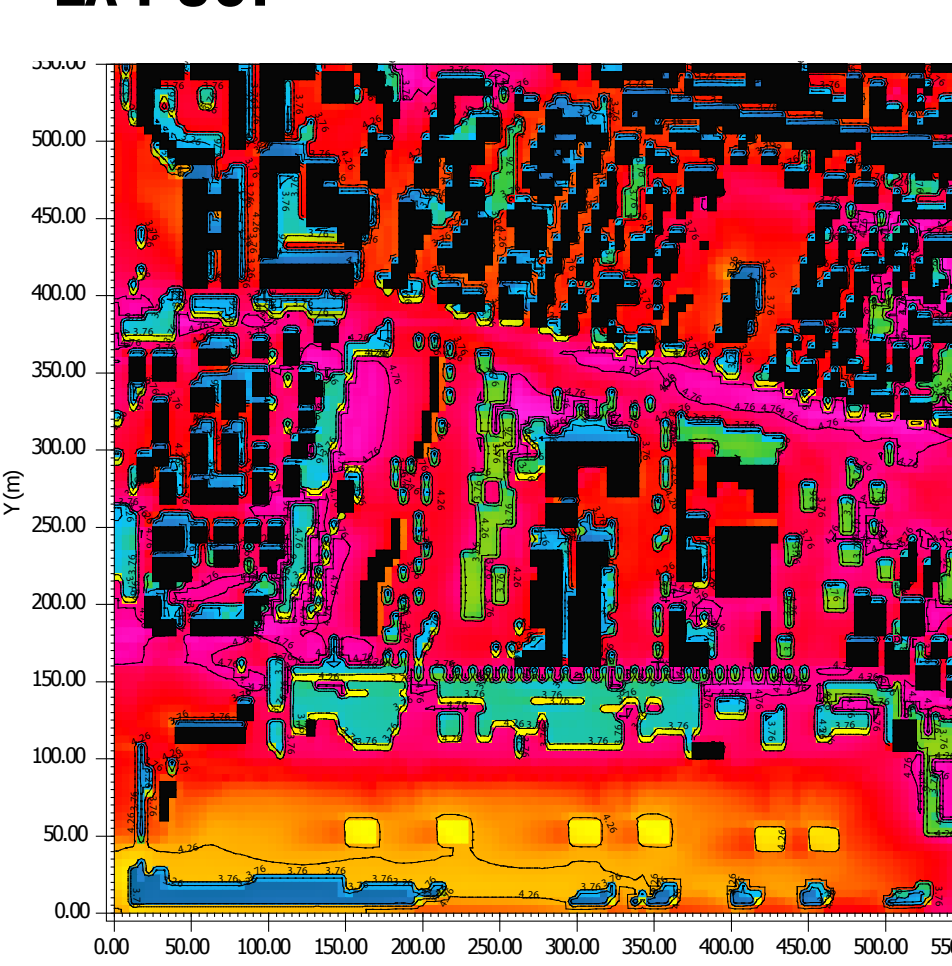
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EX ANTE



EX POST



Marchi - architect, Viola Marrucci - landscape architect, Silvia Parmeggiani - agronomist, Ilias Pierangeli - engineer, Chiara Porretta - officer

Municipality of Ferrara, Mariagrazia Ricci - urban designer, Simone Toni - architect, Clara Tumiati - officer Unione Comuni Terre e Fiumi.

FERRARA SAN PAOLO DARSENA / 2

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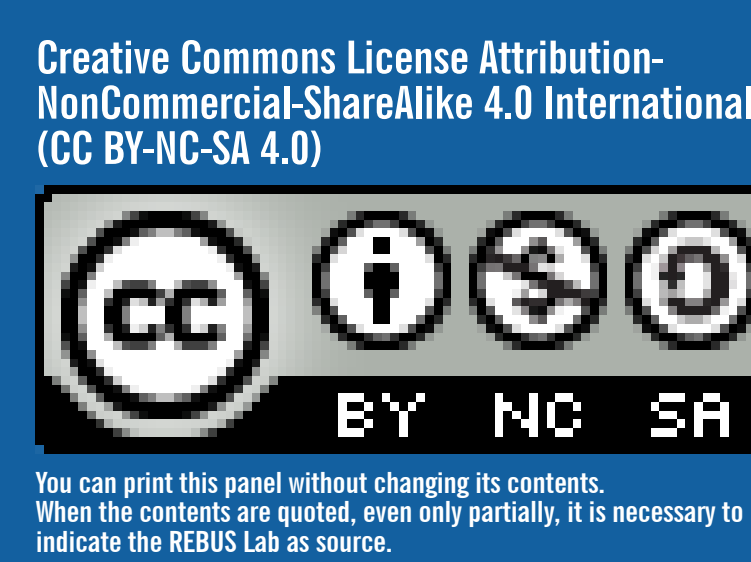
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and digital agenda

Paolo Ferrecchi
G.D. Care of the territory and the environment

Roberto Gabrielli
Department of Territorial and urban planning,
transports and landscape

IN COOPERATION WITH
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EXHIBITION CURATED BY
Luisa Ravanello
with Elena Farnè and Francesca Poli

TEXTS
Valentina Dessì, Elena Farnè, Teodoro Georgiadis,
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and Planners
INU Italian National Institute of Planning
AIAPP Italian Association of Landscape Architecture
Climate-KIC Italy

WITH THE PARTICIPATION OF
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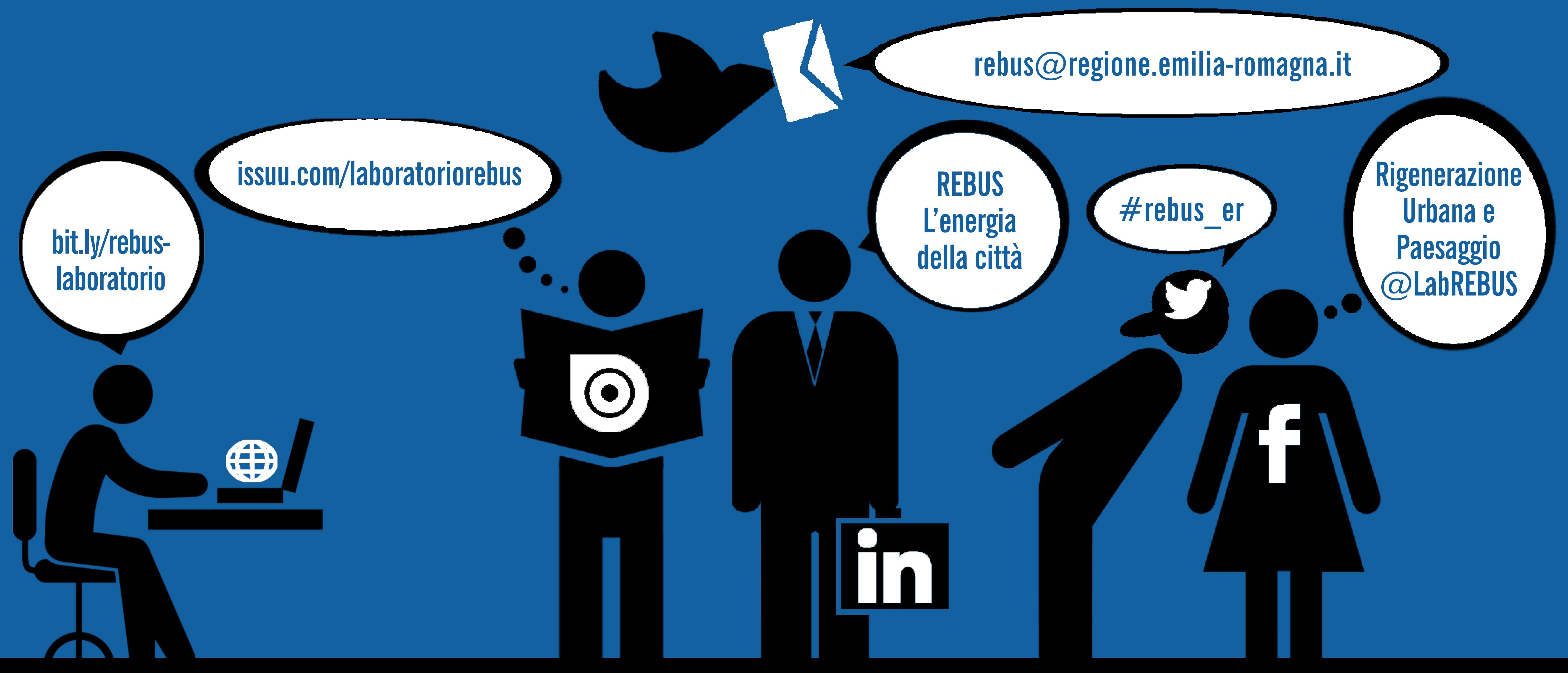
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Withing
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REPUBLIC-MED
Retrofitting PUBLIC spaces
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ENVI-MET SIMULATIONS
Marianna Nardino

CASE STUDIES DESCRIPTION
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Luisa Ravanello
With the contribution of
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Filippo Bonazzi, Marcello
Capucci, Catia Rizzo, Stefano
Savoia - Municipality of
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Boschi, Maurizio Ermeti - Rimini
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Elena Farnè - architect
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