

# San Giovanni 2050

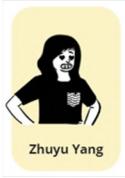
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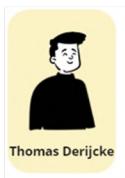
Urban Climate Change Research  
Network for Higher Education  
**Climate-Resilient Design, Planning  
and Governance of Cities**

## Community Groups ( Group 3 ) : Overview

Data Spatialisation and Results of the Collaborative Mapping thanks to Alessia and Maria :



Zhuyu Yang



Thomas Derijcke

Section of the perception :



Serena Salvo



Rita AKIKI DIT  
MAZRAANI

Story Telling Video :



Cyprian CZABAN



Flòra Madàcsi



Xiaolin LAO



Francesco  
Angelone

A day in the life in the future :



Sharon Troucas



Corinthe  
DELAVANDE

# STORY TELLING

[San Giovanni a Teduccio 2024 - YouTube](#)

# Section of perception



# Section of perception





# Collaborative mapping

RePazzo

UDCW NAPOLI Collaborative map...

48 vues  
Dernière modification effectuée hier à 18:12

Ajouter un calque Partager Aperçu

Criticalities

Style appliqué par nom

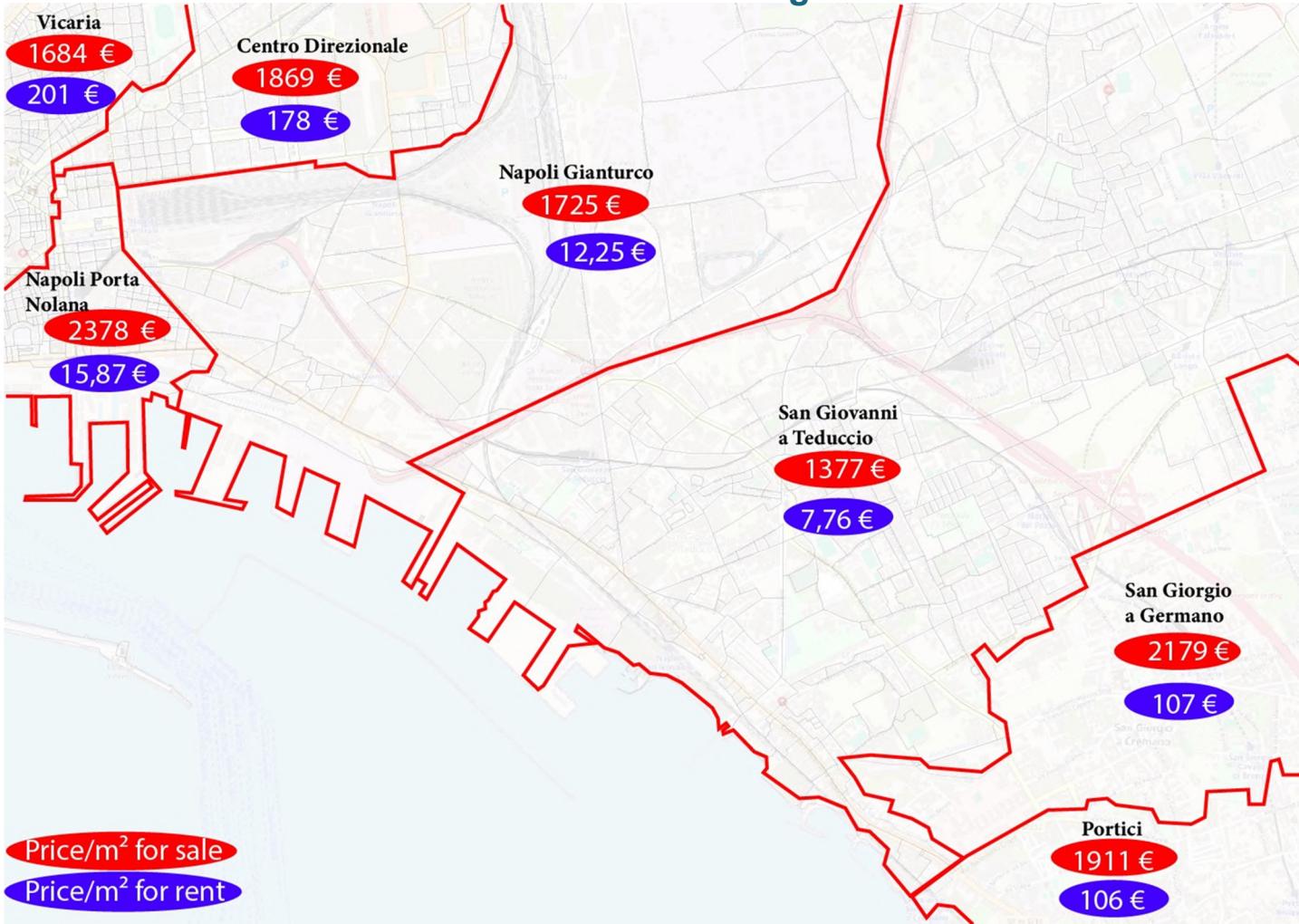
- Heat areas (11)
- Abandoned buildings (7)
- Waste (7)
- Abandoned areas (6)
- Criminality (6)
- Flooding areas (6)
- Cold areas (5)
- Traffic (5)
- Fire-risk areas (4)
- Inaccessible areas (3)

Potentialities

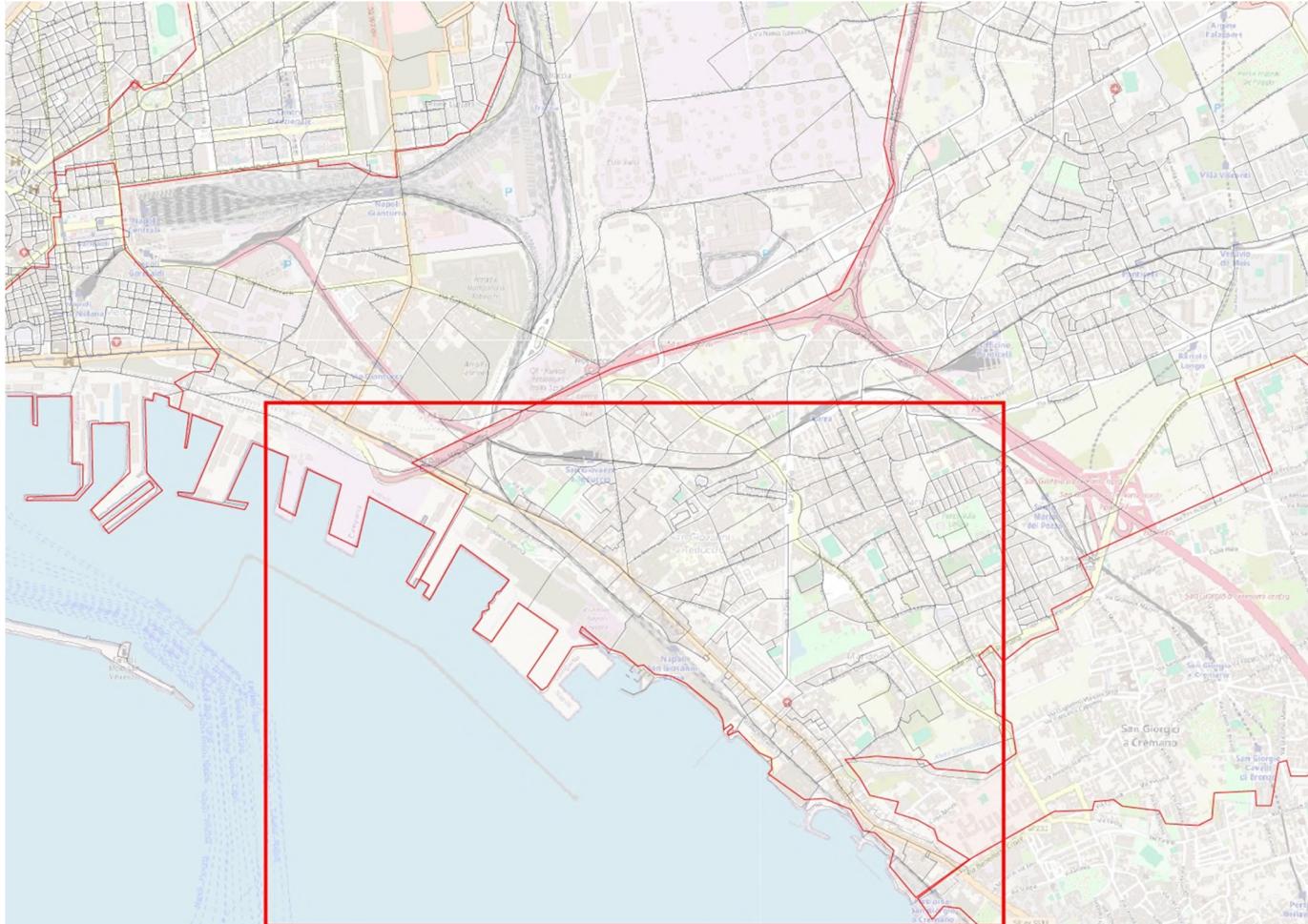
Style appliqué par nom

- Outdoor social spaces (9)
- Sports area (5)
- Indoor social spaces (4)
- Parks (3)
- Medical and healthcare facil... (2)
- Commercial area (1)

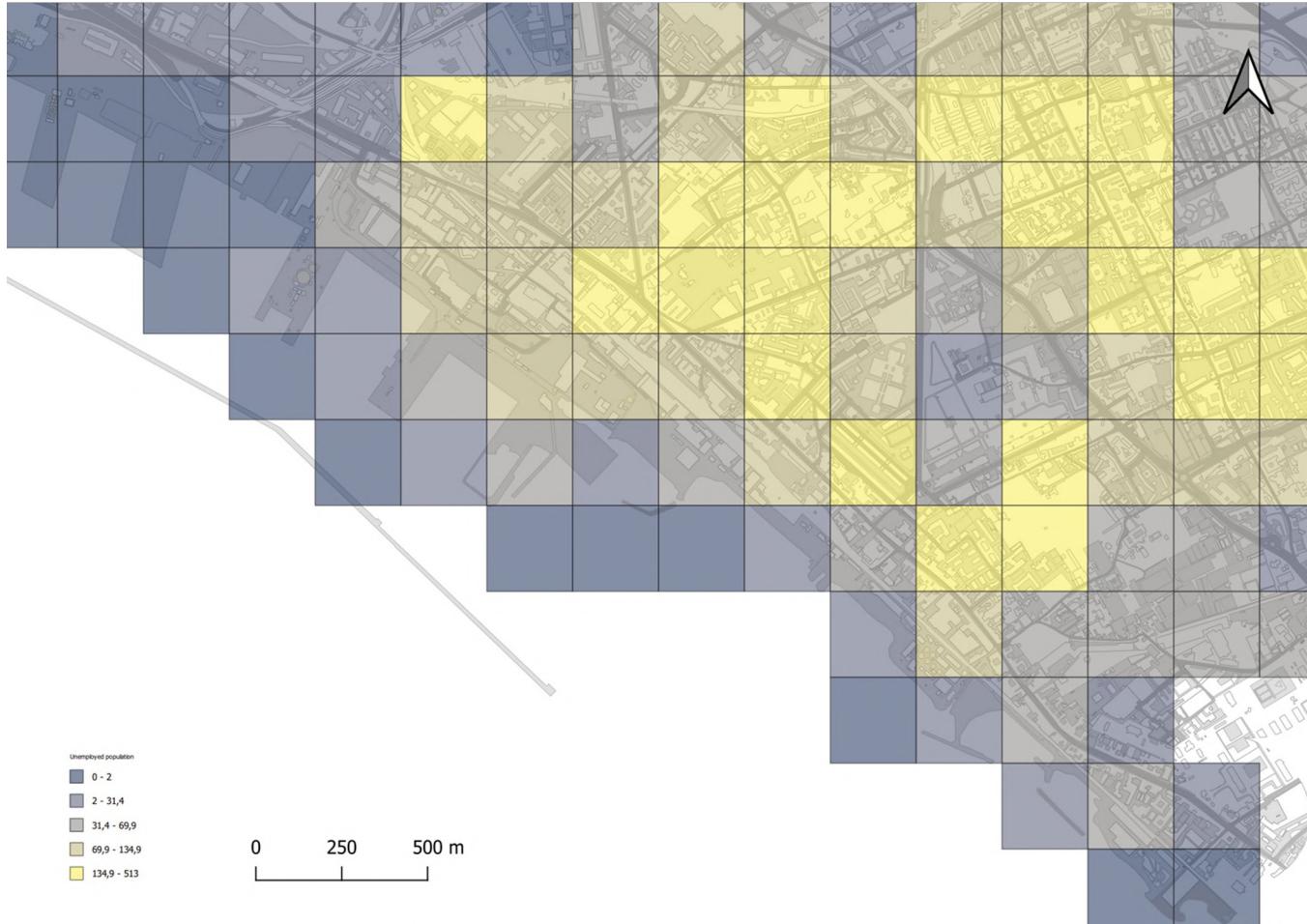
## Average price/m<sup>2</sup> for sale and rental of residential buildings



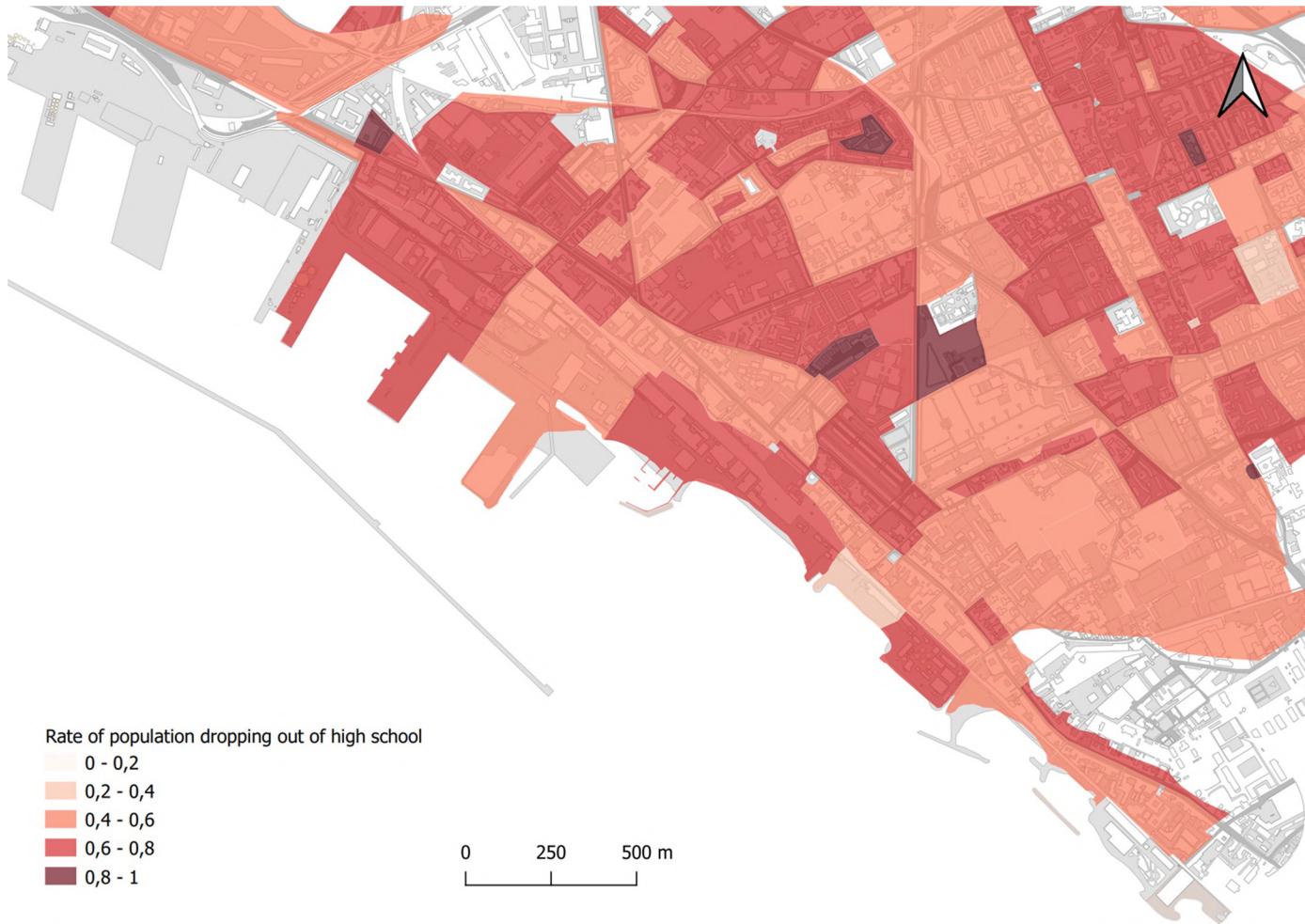
## Zone of focus



# Mapping of the number of unemployment



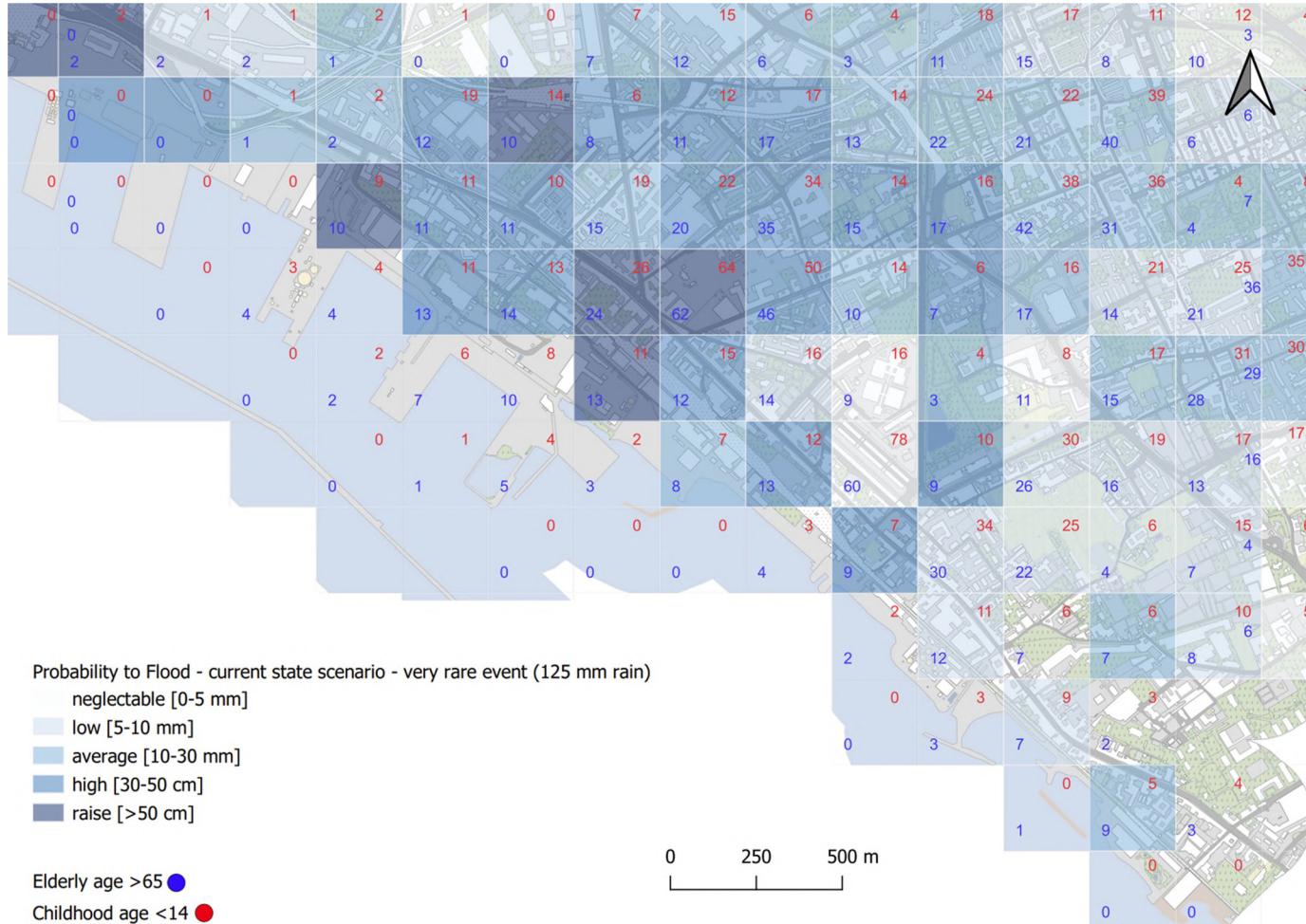
# Mapping of the rate of high school dropout



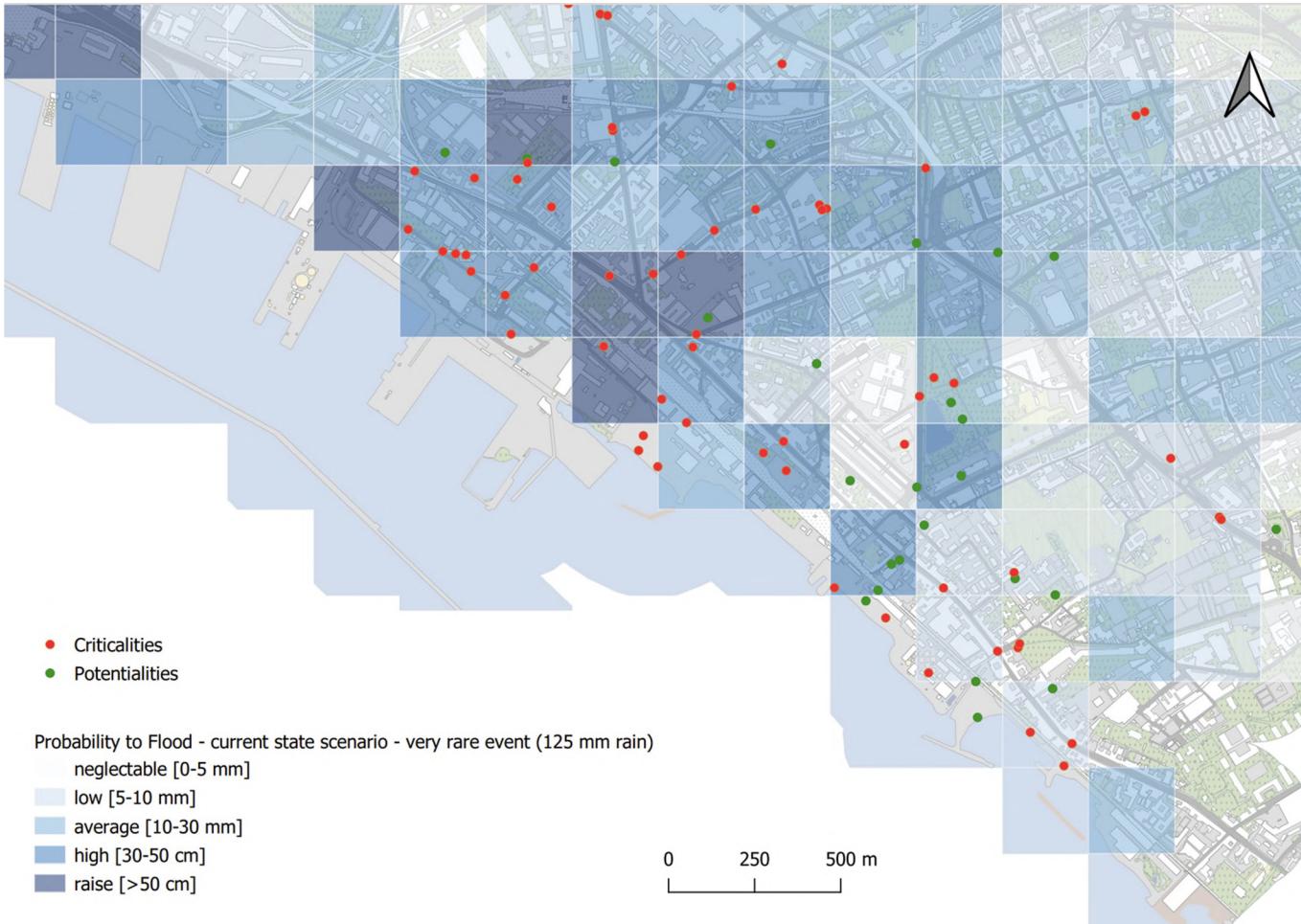
# Mapping of local services in areas prone to flooding



# Mapping of the number of vulnerable citizens in areas prone to flood



# Mapping of local places prone to flooding according to the collaborative map

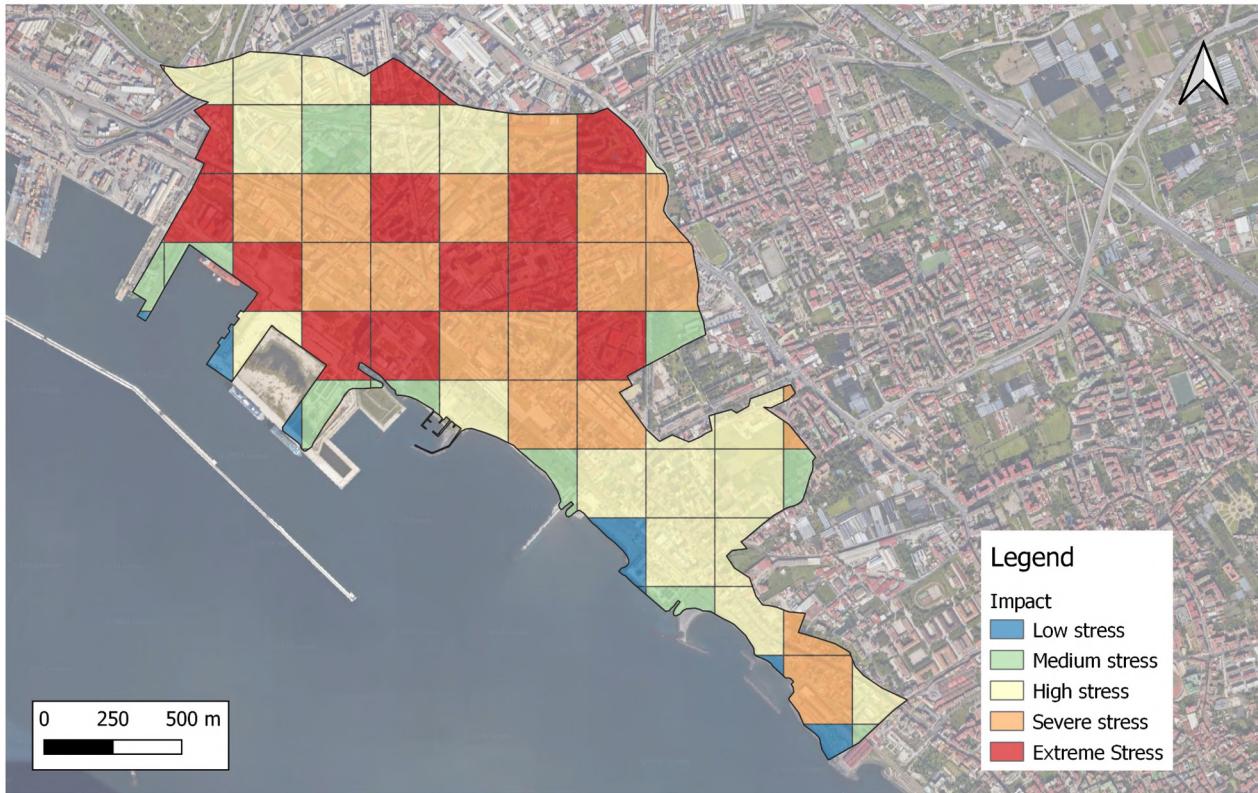


# Mapping of local places prone to flooding according to the collaborative map



# Mapping of local places prone to heat stress

Heat Stress Map - San Giovanni a Teduccio UTCI 39° C



# **MASTER PLAN AND NEIGHBOURHOOD SCALE**

# SWOT Analysis

## STRENGTHS

Green areas available  
Empty areas

Community engagement

## Strong social network

Sense of community

Internal bounding

Willingness on the population for change

New fundings for sustainability projects

Will for innovative solutions

Climate change awareness

Tourism - Global interest for local culture

Connection by efficient public transportation

Proximity to the seaside

University and academy students and staff

No services + lack of quality public spaces

- Combined sewer system
- Industry discharge goes to the sea

Undeveloped seafrot

Fragmentation due to railroad

Unsafe streets for pedestrians

## NOISE

- cars
- scooters
- people

Car emissions, pollution, trash, dirty city feeling

Abandoned buildings

Dangerous non used areas

## CHAOS

## LOW MAINTENANCE

Water management

Criminal organizations

Seismic risks

Volcano

No physical connection to the city

Sea level rise  
Weather conditions

Floods and Draughts

## WEAKNESSES

## THREATS

## 2050 Vision



By 2050 San Giovanni will be a **clean and healthy** city, **accessible and self-sufficient** driven by a **socially inclusive** and **respectful** community participation with great **economic potential and resilient** to emergent threats.

IMAGE - PURPOSE - MISSION - VALUE

## **Healthy City**

“A **healthy city** is one that **continually creates and improves its physical and social environments** and expands the community resources that enable people to mutually support each other in performing all the functions of life and **developing to their maximum potential.**”

“**Healthy cities** are places that deliver for **people and the planet.**”

“**Healthy cities** lead by example in order to achieve change for the better, **tackling inequalities and promoting good governance and leadership** for health and well-being.”

“**Innovation, knowledge sharing and health diplomacy** are valued and nurtured in **healthy cities.**”

## Urban Systems and Healthy Cities

**Healthy Cities**

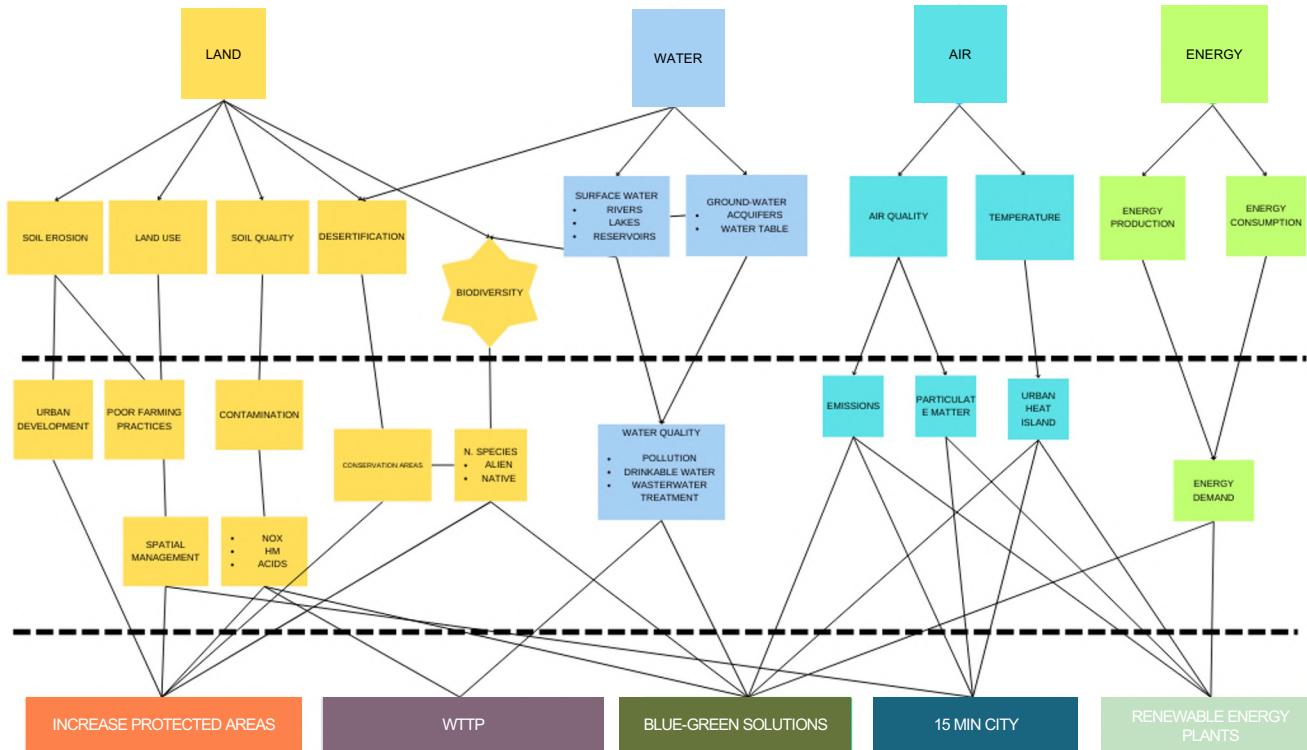
- 
- The diagram illustrates the interconnected nature of three urban systems, each represented by a colored circle and its corresponding text label. These three components are arranged in a circular pattern, connected by dashed lines that form a triangle. The top node is a teal circle labeled "Environment and Energy". The bottom-left node is a dark purple circle labeled "Public spaces and Services". The bottom-right node is an orange circle labeled "Mobility and Healthy streets". The text labels are positioned to the right of their respective circles.
- Environment and Energy
  - Public spaces and Services
  - Mobility and Healthy streets

# Environment and Energy

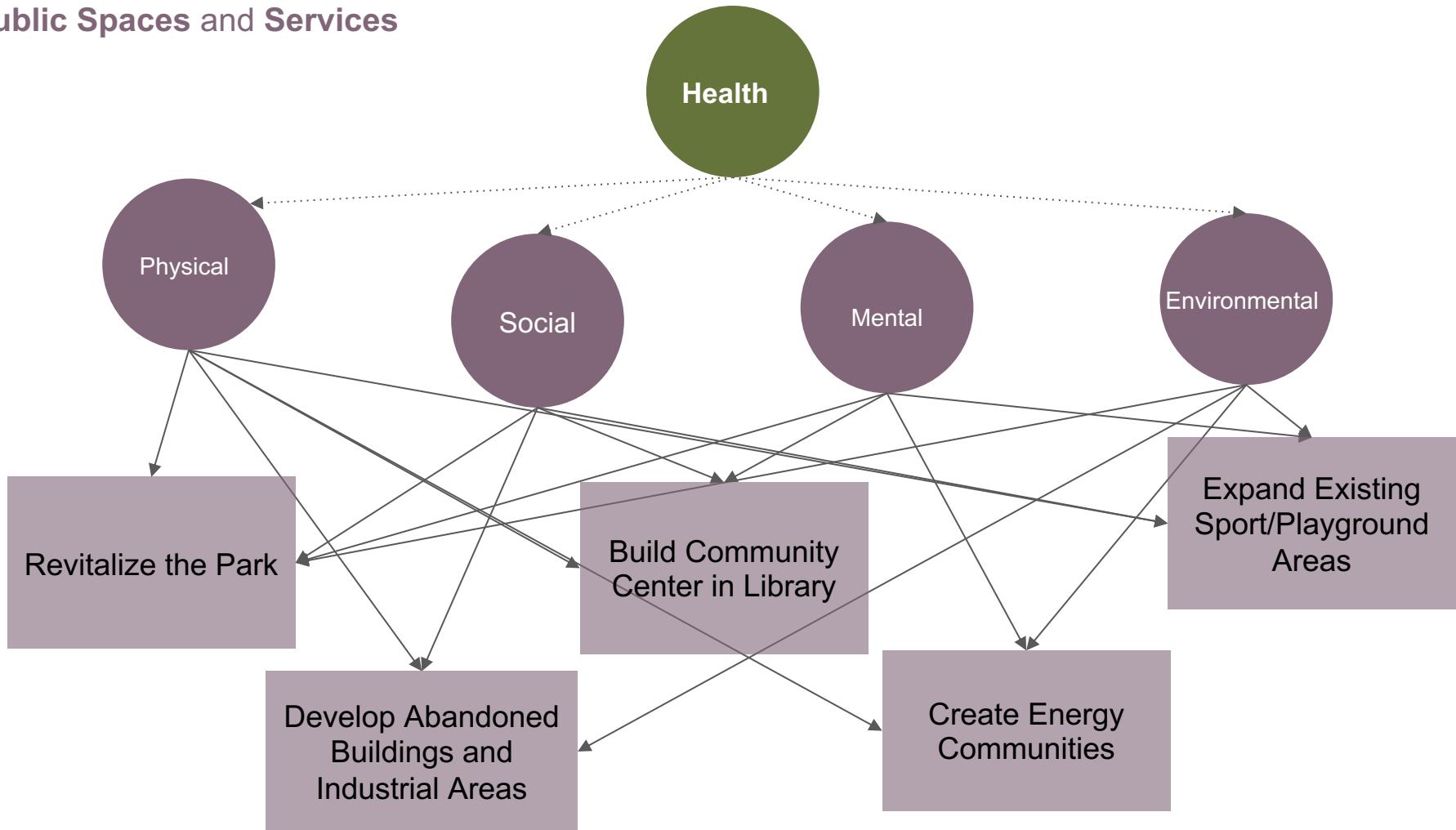
SECTORS TO ADDRESS

INDICATORS

INDICATORS



# Public Spaces and Services



# Mobility and Healthy streets

## Why focus on mobility for a healthy city vision?

- Mobility significantly impacts **public health, environmental sustainability, social equity, and economic prosperity.**
- Promoting sustainable and active transportation modes, along with equitable access to transportation infrastructure, is essential for building healthy cities.

## Contribution of mobility on health aspects

### **Physical Health**

Mobility initiatives such as promoting walking and cycling paths encourage physical activity, leading to improved physical health.

### **Mental Health**

Safe and accessible streets which are pedestrian-friendly, cycling-friendly and have less vehicular transportation contribute to stress reduction and improved mental health outcomes.

### **Social Health**

Shared streets, public plazas, and vibrant public spaces encourage social connections and a sense of belonging among residents, contributing to stronger social networks and community cohesion.

### **Environmental Health**

Promoting sustainable transportation modes such as walking, cycling, and public transit reduces greenhouse gas emissions and air pollution, leading to cleaner air and healthier environments.

## Strategies for Healthy Mobility

**Healthy  
Streets**

**Promotion  
of Public  
Transport**



## Environment and Energy

1. Restore quality of water
2. Reclaim the beach
3. Introduce green-blue network
4. Place energy communities



## Public spaces and Services

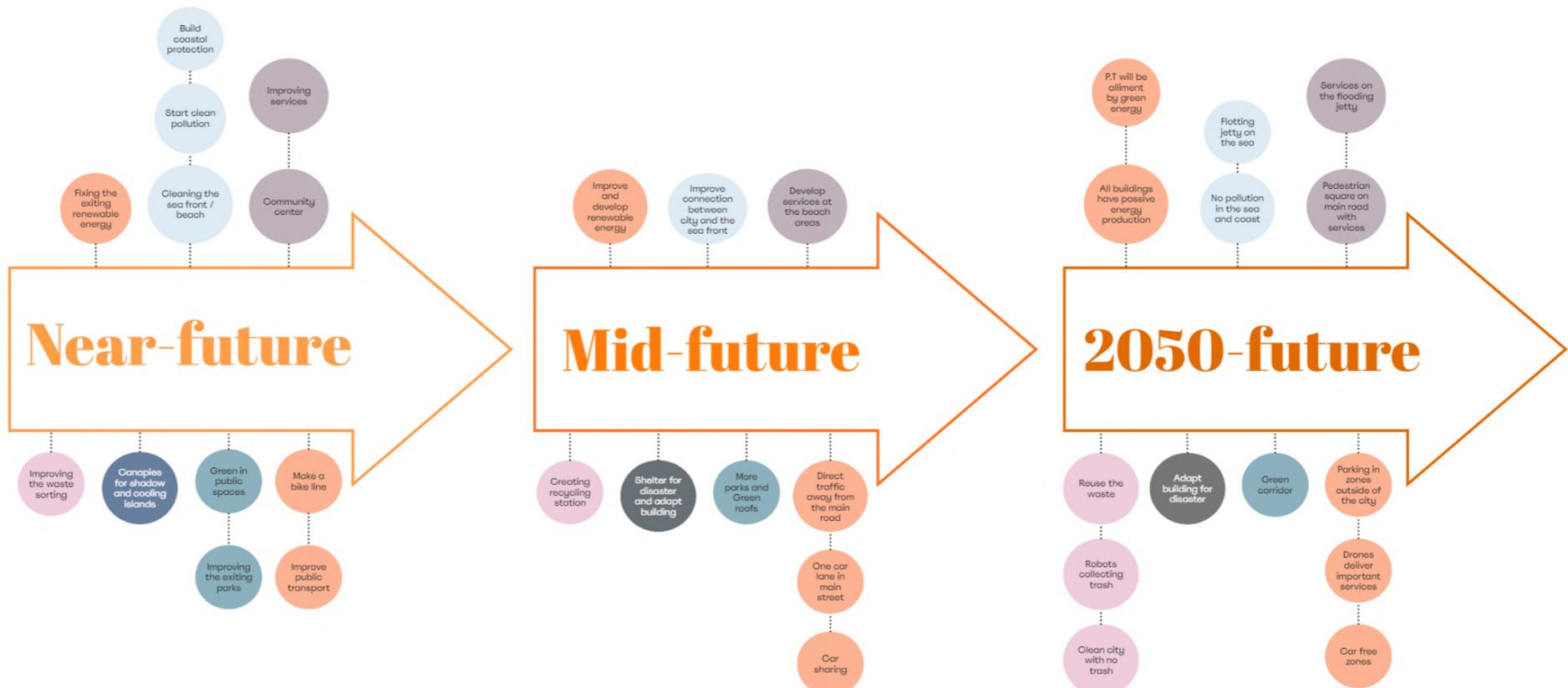
1. Multifunctional park
2. Revitalize libraries/ create community center
3. Revitalize the beach
4. Infrastructure redesign (student housing, energy communities)



## Mobility and Healthy streets

1. Main Street Redesign
2. Cycling Network and Healthy Zones
3. Mobility hub
4. Rejuvenation of public spaces and connections

# Timeline

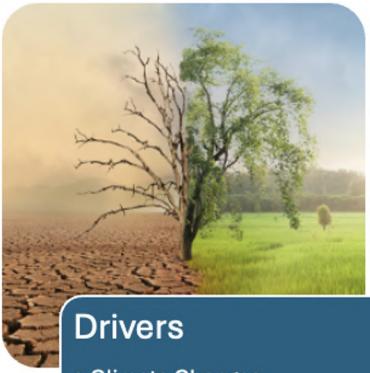


# Master Plan 2050 San Giovanni



-  Environment and Energy
-  Public spaces and Services
-  Mobility and Healthy streets

# Environment and Energy\_ Current state



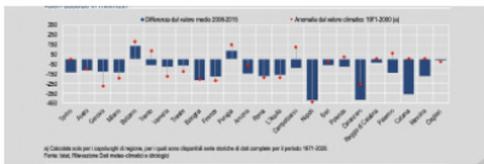
## Drivers

- Climate Changes
- Water Mismanagement
- Urbanizations



## Challenges

- Water Stress by 2040 (ANBI)
- Risk of Desertification (20% of Italy (ANSA))
- Droughts
- Urban Floodings
- Sea Level Rise and Storm Surges
- Illegal Sewage Water Connections
- Pollution



TOTAL ANNUAL PRECIPITATION ANOMALIES FROM CLIMATE VALUE 1971-2000(a) AND DIFFERENCES FROM THE AVERAGE VALUE 2006-2015 BY REGIONAL CAPITAL AND METROPOLITAN CITY (istat.it)



# Environment and Energy\_ Solutions



## Water management

- Open the river
- Stop Illegal sewage discharge
- Activate WTPP
- Recycle Treated water
- Beach reclamation
- Sewage/stormwater-seperation

## Green- Blue Infrastructure

- Create Green corridors
- Green networks

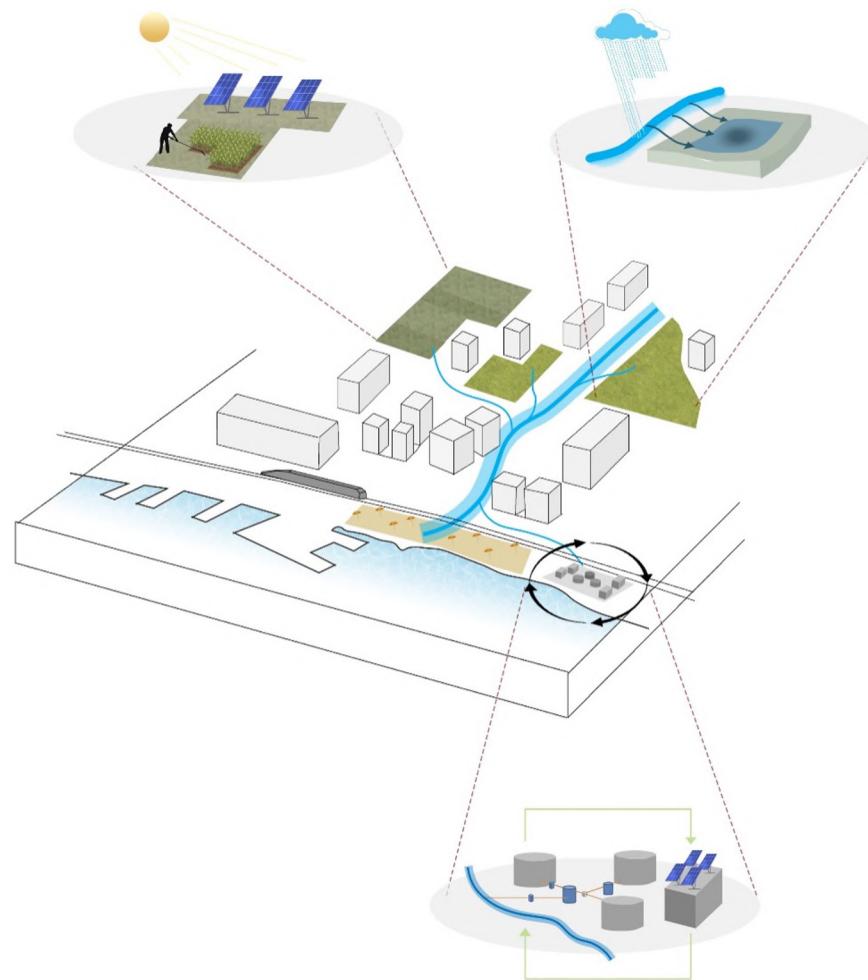
## Renewable Energy

- Increase Energy communities
- Solar PV for WTPP
- Solar Panel for agro-voltaics

## Climate resilience

- Reservoir for Flood control
- Contamination Control

# Environment and Energy \_ Visualization



# Environment and Energy \_ Water Management Strategy



San Giovanni a Teduccio -  
Water Management  
Strategy



## Legend

- Water Management
- Water Treatment Plant
- Open River
- Closed River
- Reservoir
- Groin
- Artificial Reef
- Beach
- Pollution Points
- Pump Water 2050
- Sewage 2050
- Stormwater 2050
- Tank Reservoir
- Critical Point

## Environment and Energy \_ Concept



- GREEN CORRIDOR
- TREATED WATER
- RESTORED RIVER
- GREEN AREAS
- ENERGY COMMUNITIES

# Environment and Energy \_ Green Network and Energy Strategy



San Giovanni a Teduccio -  
Green Network & Energy  
Strategy



## Legend

- Energy**
  - Energy Communities
  - Solar Panels
- Green Network**
  - Green Corridors
  - Pocket parks
  - Agricultural Areas
  - Urban gardens
  - Main Green Axes
  - Minor Axes
  - Major Parks
  - Critical Areas

# Environment and Energy \_ Blue-Green Network and Energy Strategy

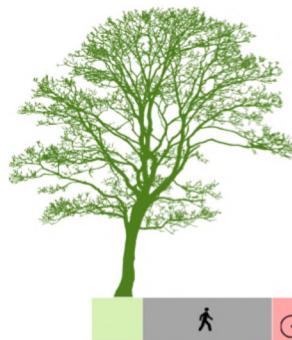


## San Giovanni a Teduccio - Blue-Green Network & Energy Strategy

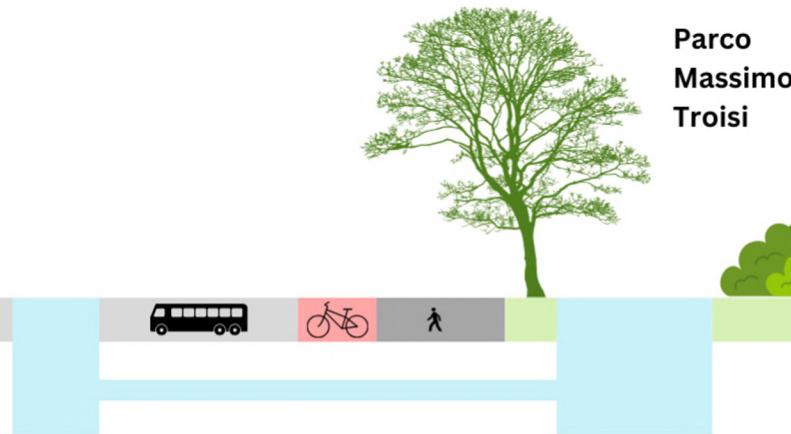
### Legend

Water Treatment Plant	■
Open River	■
Reservoir	■
Closed River	■
Groin	■
Artificial Reef	■
Beach	■
Pollution Points	●
Stormwater 2050	—
Sewage 2050	—
Pump Water 2050	—
Tank Reservoir	●
Agricultural Areas	■
Major Parks	■
Pocket parks	■
Urban gardens	■
Green Corridors	■
Main Green Axes	■
Minor Axes	■
Critical Point	■
Solar Panels	■
EnergyCommunities	■

## Environment and Energy \_ Critical Point Blue Green Network

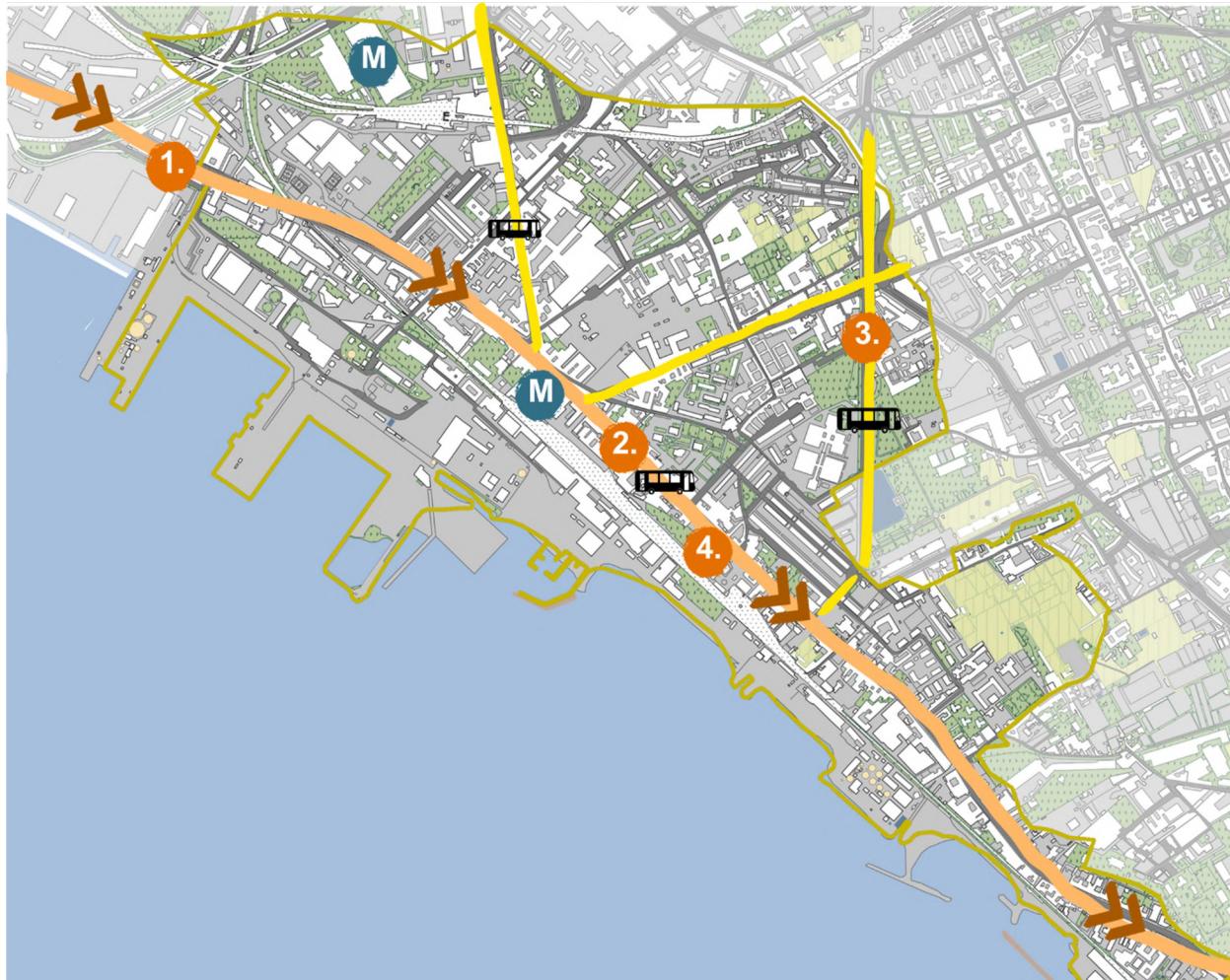


Viale 2 Guigno



Parco  
Massimo  
Troisi

## Mobility and Healthy streets \_ Current situation



### Existing Scenario and Problems



Fragmentation of  
cycle path



High-frequented  
street



Inequitable structure of  
mainstreet



Unused space in front  
of the train station

# Mobility and Healthy streets \_ Visualization



## Intervention - Main Street Redesign

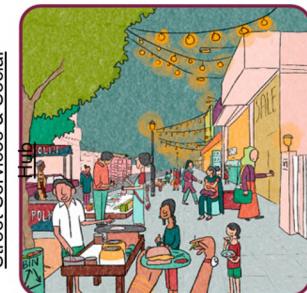
### Ideation

- A gradual transition toward a street free from cars to public transport
- An equitable allocation of street space to prioritize pedestrians, cyclists, and essential services
- Introduction of green elements and improvement of mobility infrastructure on streets

Equitable Usage of Streets



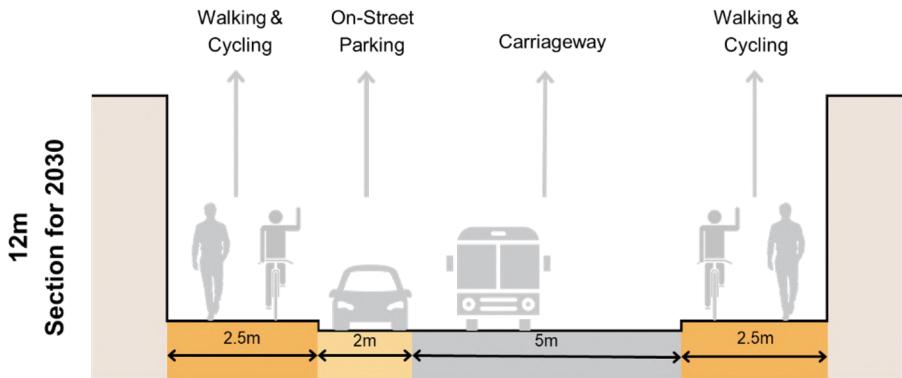
Street Services & Social



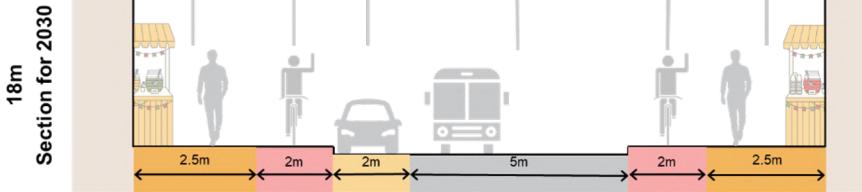
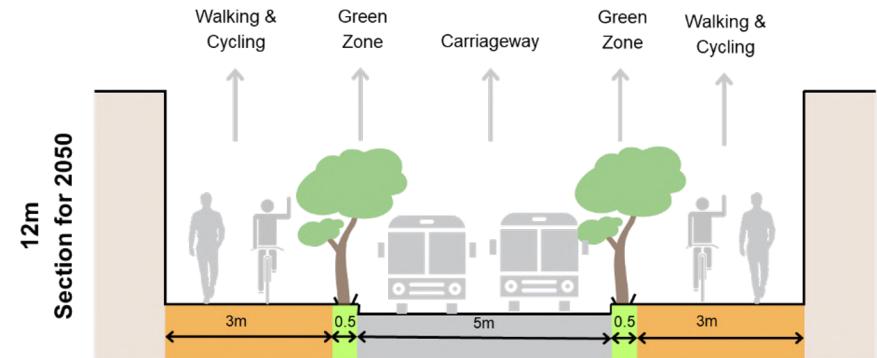
Existing Scenario

# Mobility and Healthy streets \_ Visualization

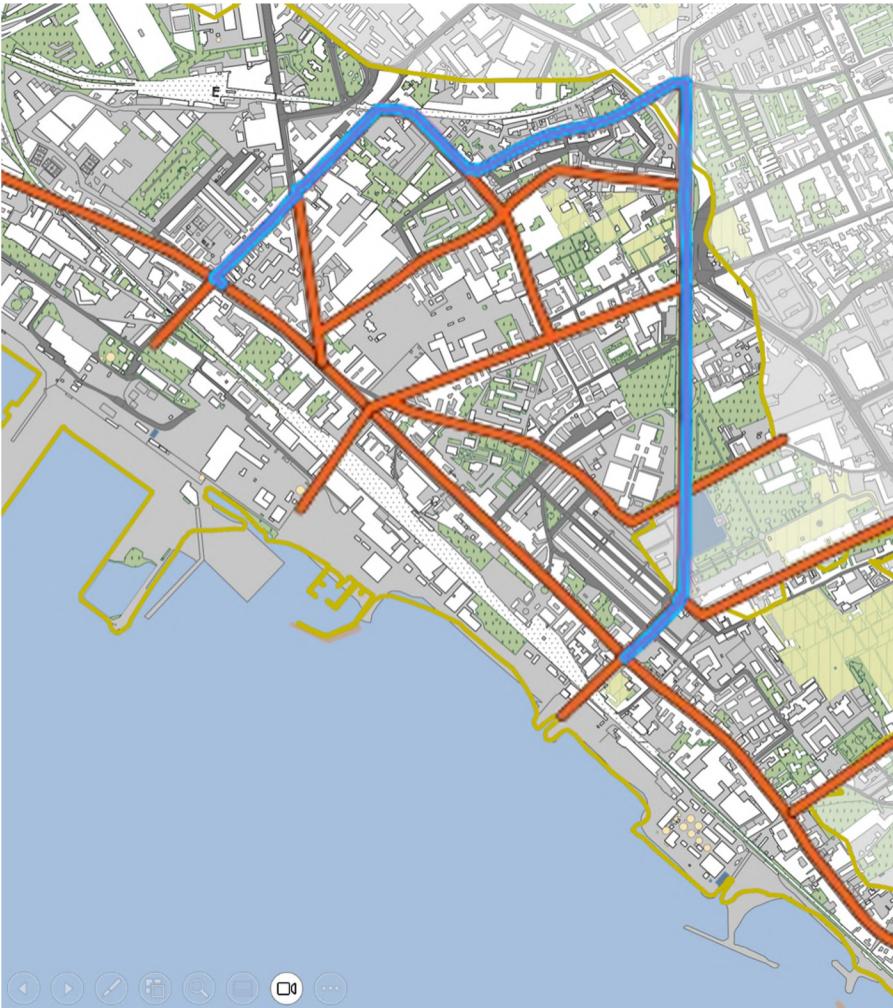
## Main Street Redesign - 2030



## Main Street Redesign - 2050



# Mobility and Healthy streets \_ Visualization



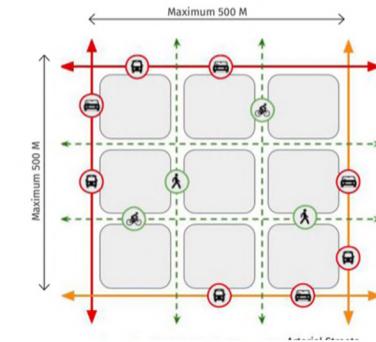
## Intervention - Cycling Network & Healthy Zones

### Ideation

- Interconnectedness within and beyond the neighborhood
- Areas designated for zero-emission vehicles
- Linking public spaces, sea-front, green spaces, and community amenities
- **By 2030-** To create an outer network
- **By 2050-** To branch out the internal networks



Preference for Walking and  
Cycling Infrastructure



Internal Emission-Free  
Zones

# Mobility and Healthy streets \_ Visualization



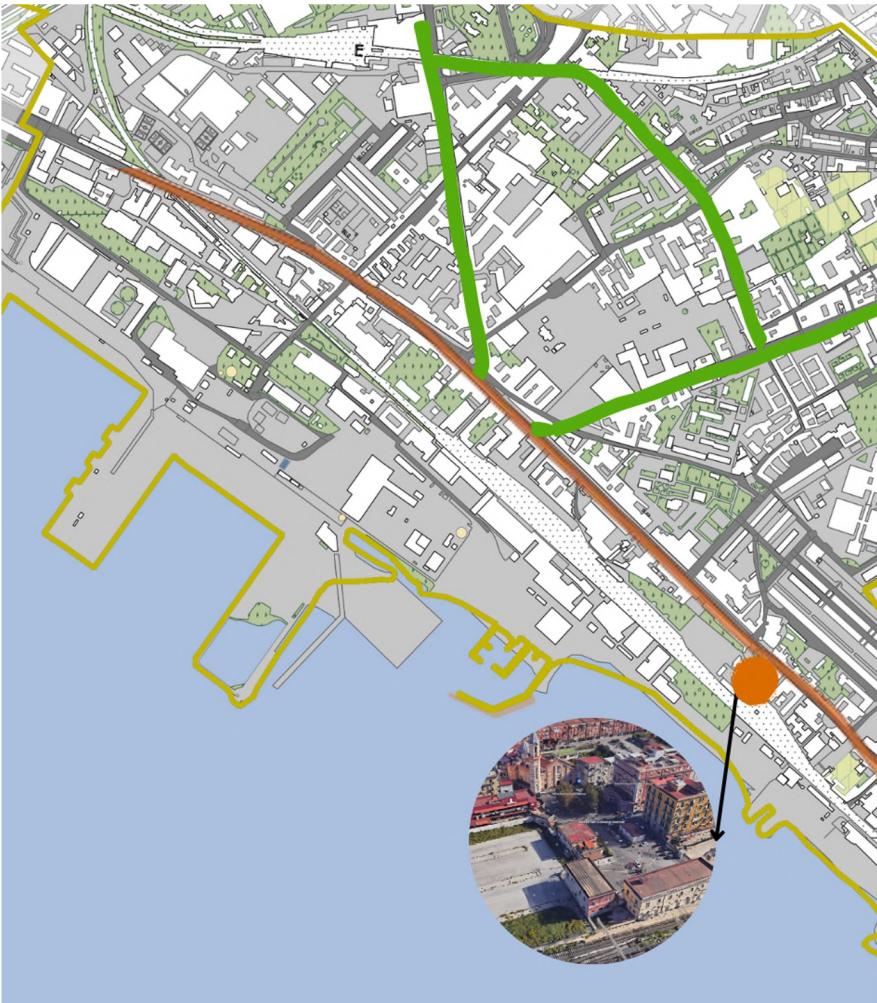
## Intervention - Mobility Hub

### Ideation

- Facilitating modal choice and offering bike and electric vehicle charging facilities
- Linking the pair of train stations
- Establishing bike racks and parking spaces for both bicycles and cars



# Mobility and Healthy streets \_ Visualization



## Intervention - Rejuvenation of Public Spaces

### Ideation

- By 2030- Rejuvenating public paces and plazas
- By 2050- Creating green corridors to connect these plazas and public places using the concept of active street edge as an element
- Eliminating parking and vehicular traffic from the public places and plazas
- Creating intermediate gathering spots for residents as they traverse the neighbourhood



Place for Informal Interaction



Active Street Edge

# Mobility and Healthy streets \_ Concept



- PRIMARY MOBILITY
- MOBILITY HUB
- CONNECTION WITH THE SEA

## Public spaces and Services \_ Concept



## Key Opportunities for Revitalization

1. Revitalized Park and other public areas
2. Community Center
3. Utilization of abandoned buildings
4. Energy Community
5. Connected Services

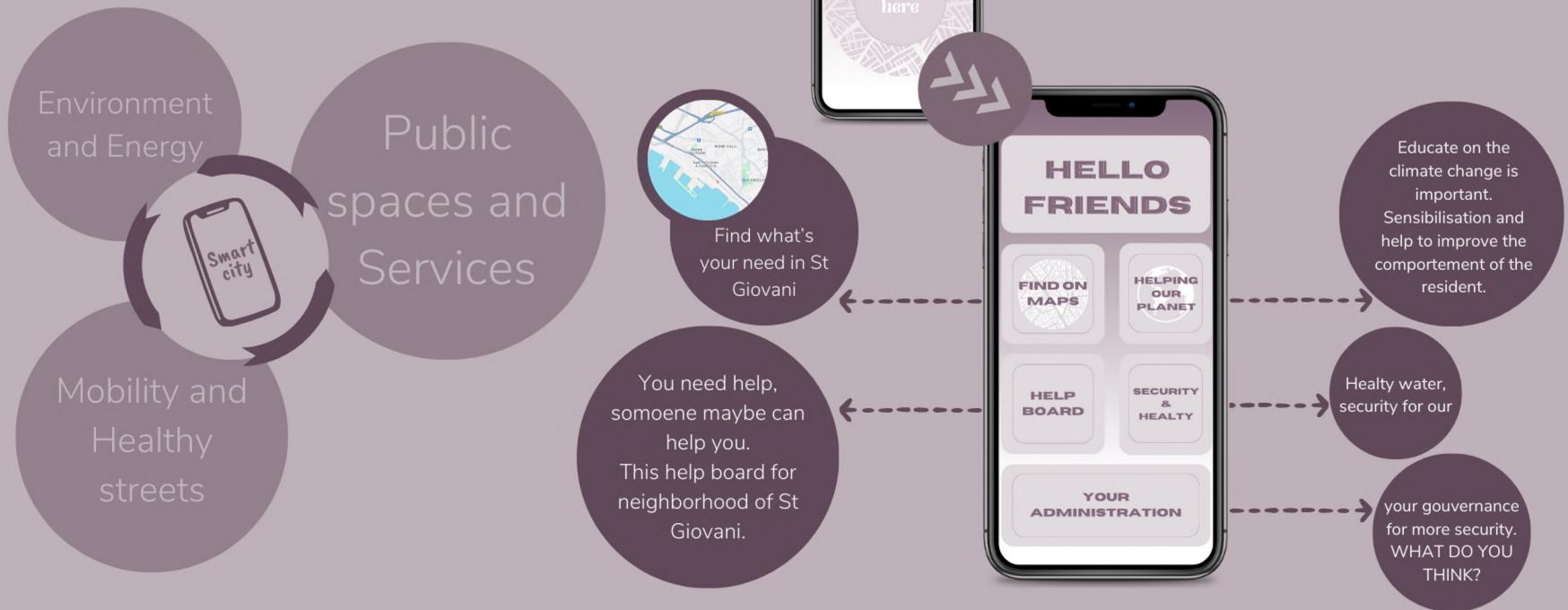
# Public spaces and Services\_ Map



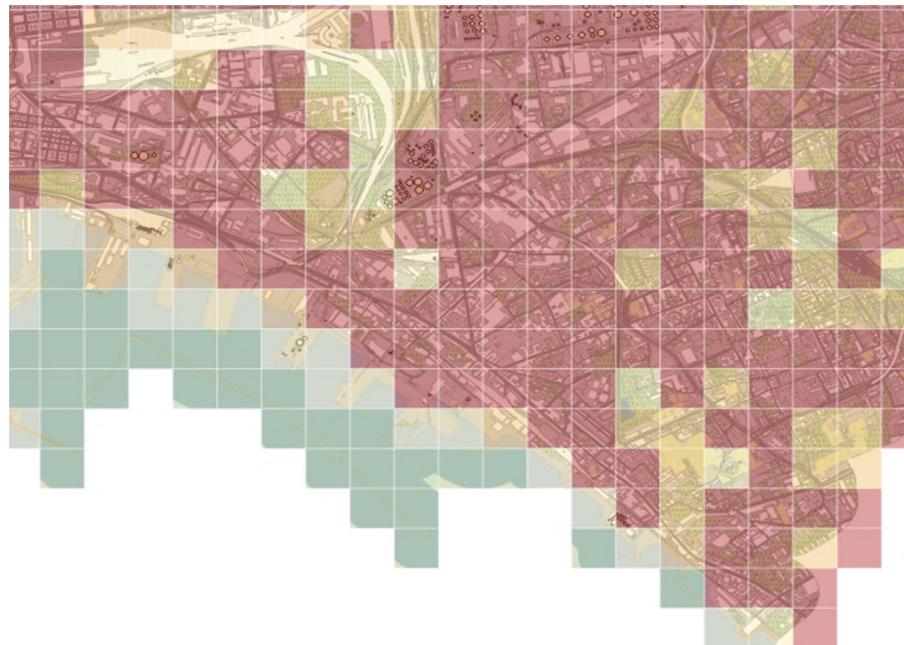
# Public spaces and Services\_ Visualization



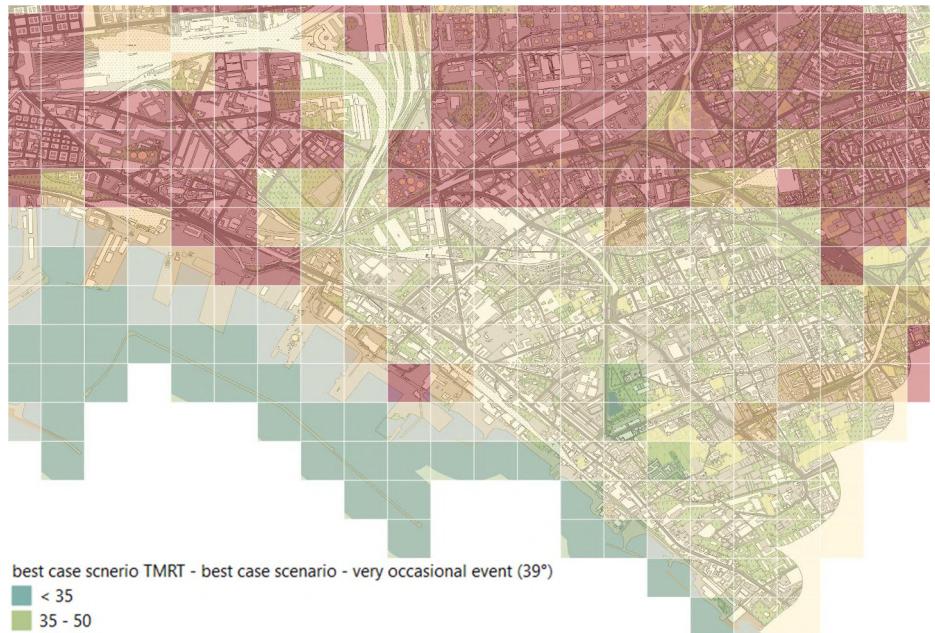
# Smart Neighborhood



## San Giovanni Current State



## San Giovanni 2050 Simulation



best case scenario TMRT - best case scenario - very occasional event (39°)

- < 35
- 35 - 50
- 50 - 65
- 65 - 70
- > 70

## San Giovanni Current State



## San Giovanni 2050 Simulation



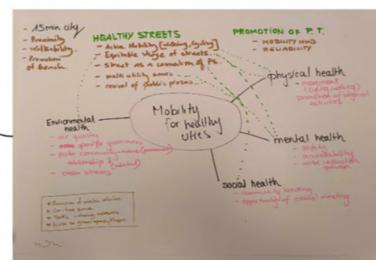
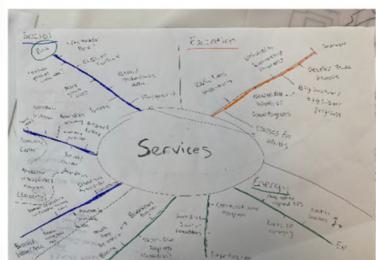
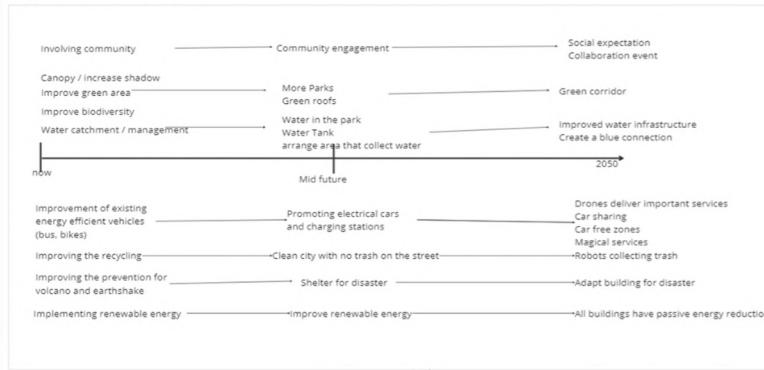
# **URBAN DESIGN: NEIGHBOURHOOD TO BUILDING SCALE**

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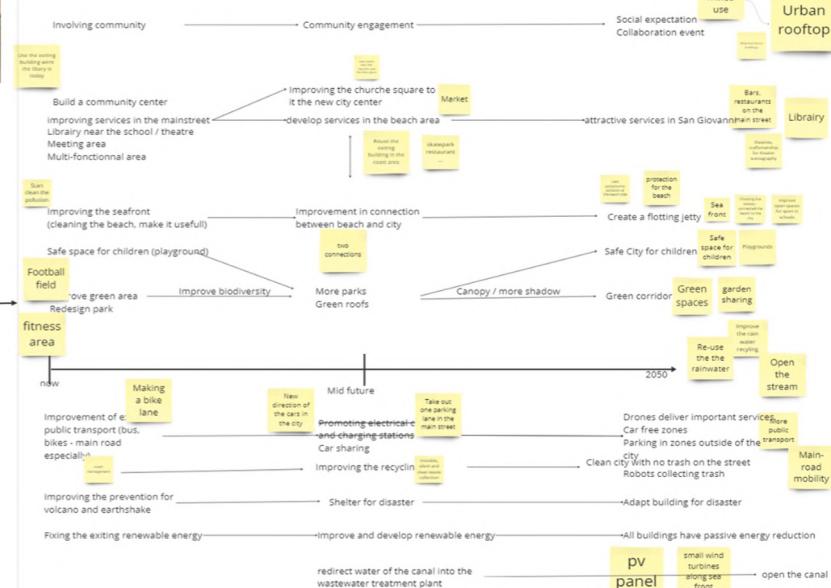
## **Methodology \_ timeline**



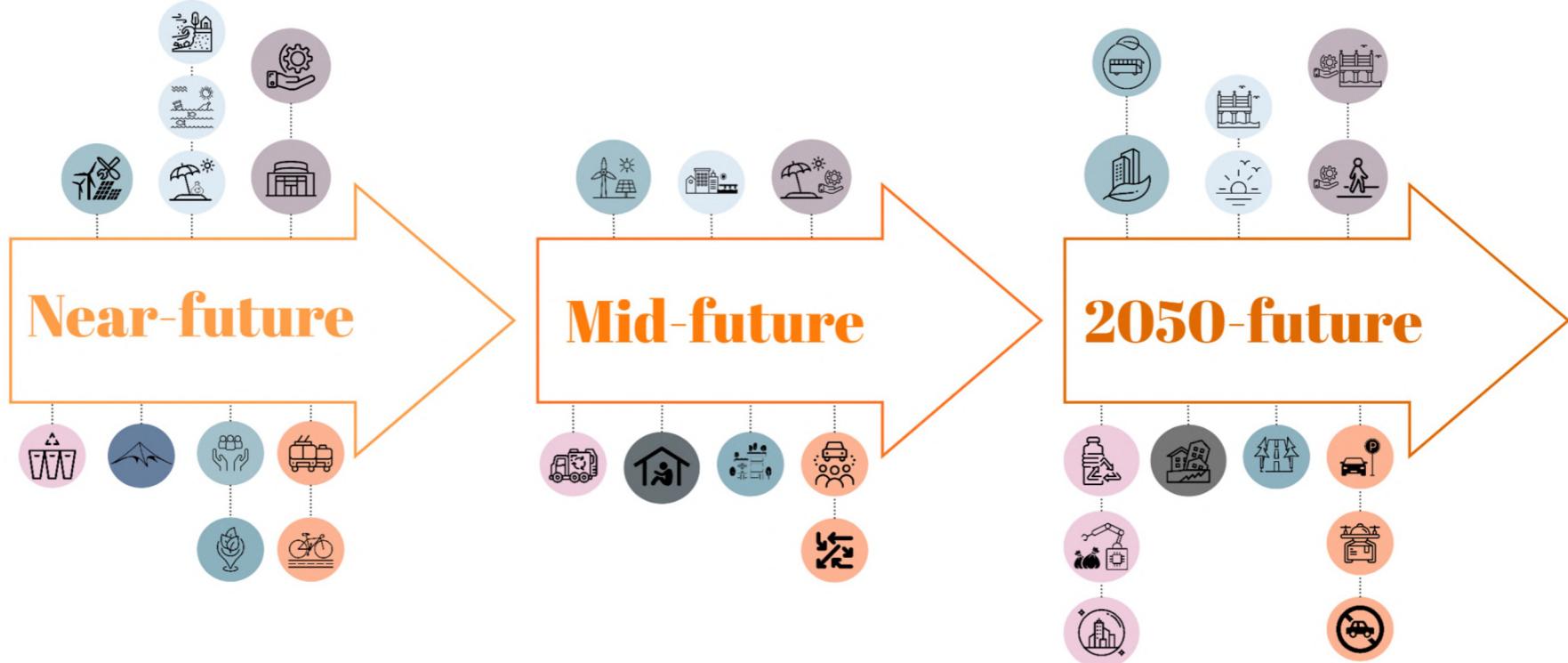
Copy of VISION: Healthy City



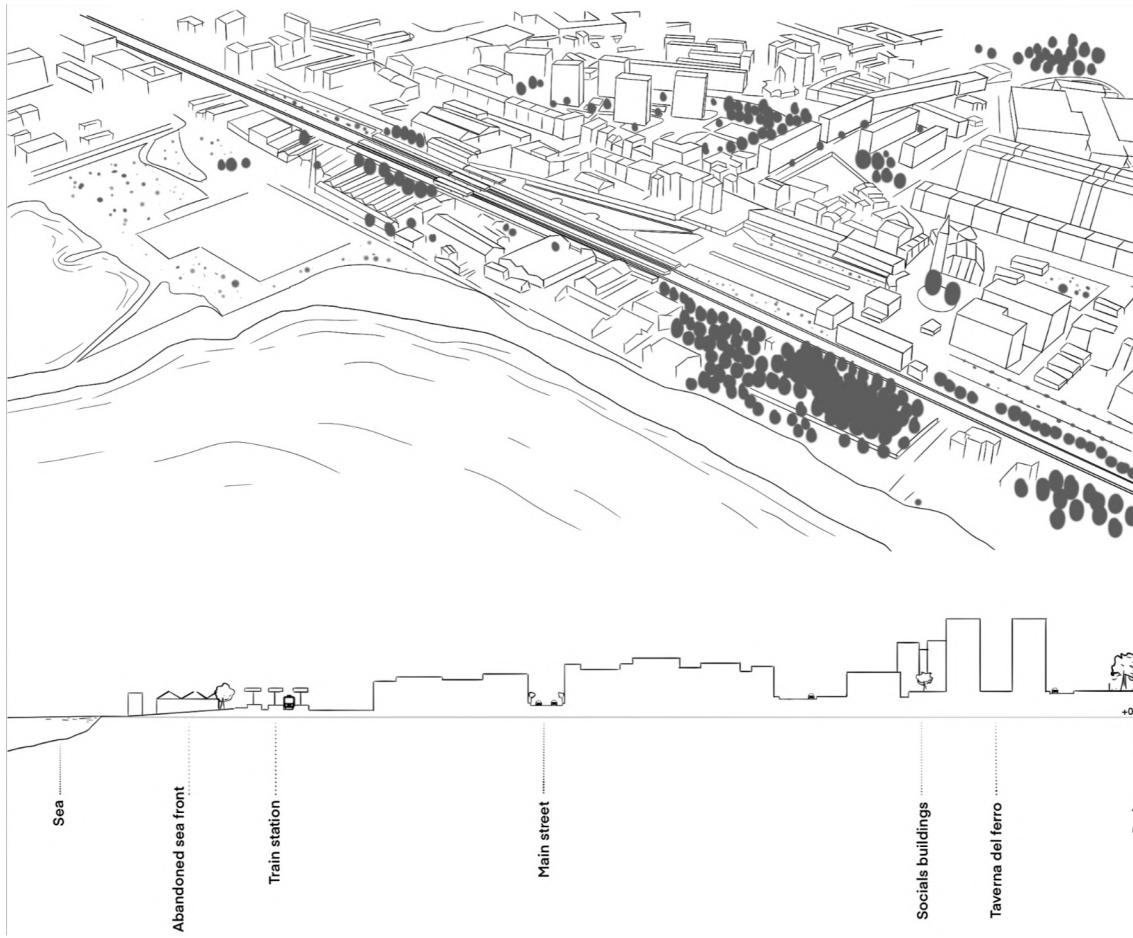
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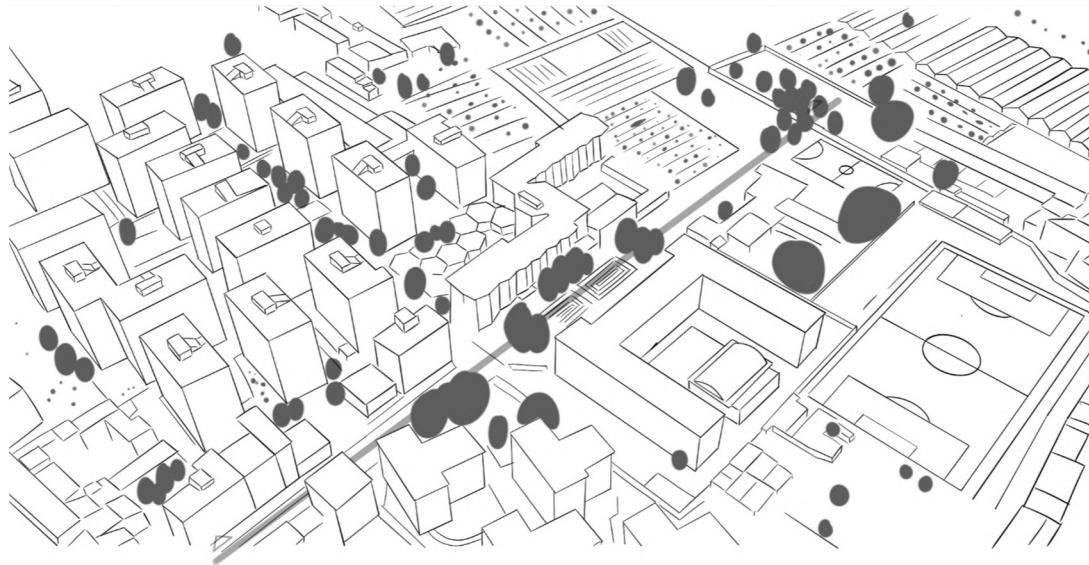
# Timeline



## **Current state\_residential park /parking area**



## **Current state\_abandoned building**



Main street

San Giovanni buildings

Via Bernardo Martirano

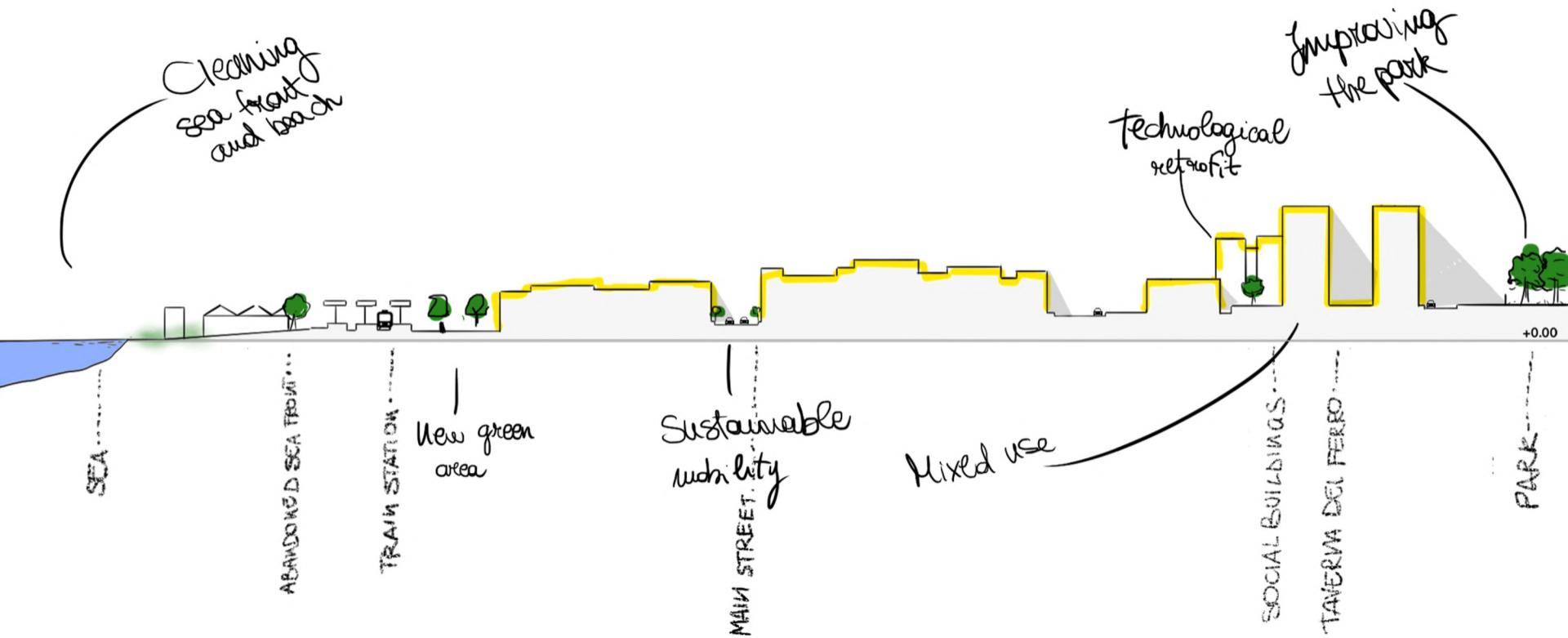
Theatre

Vegetations

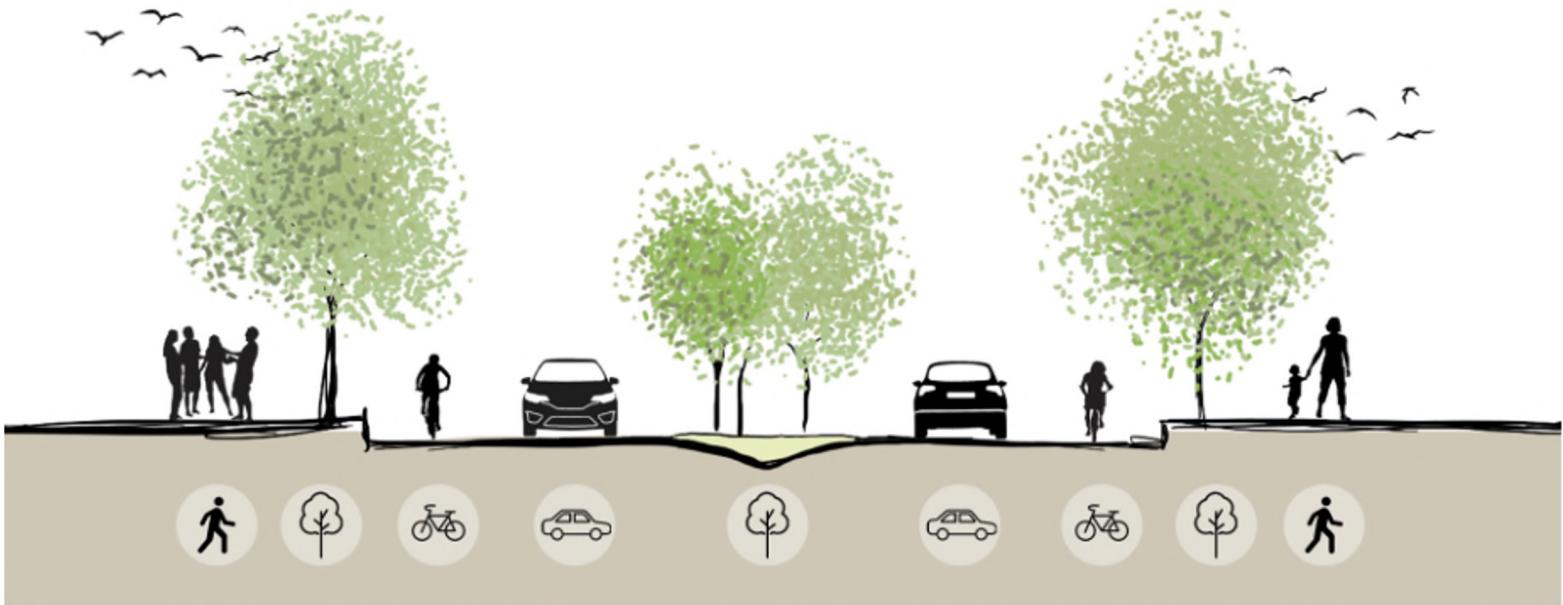
# Near future sketch residential park /parking area



# Near future sketch\_residential park /parking area



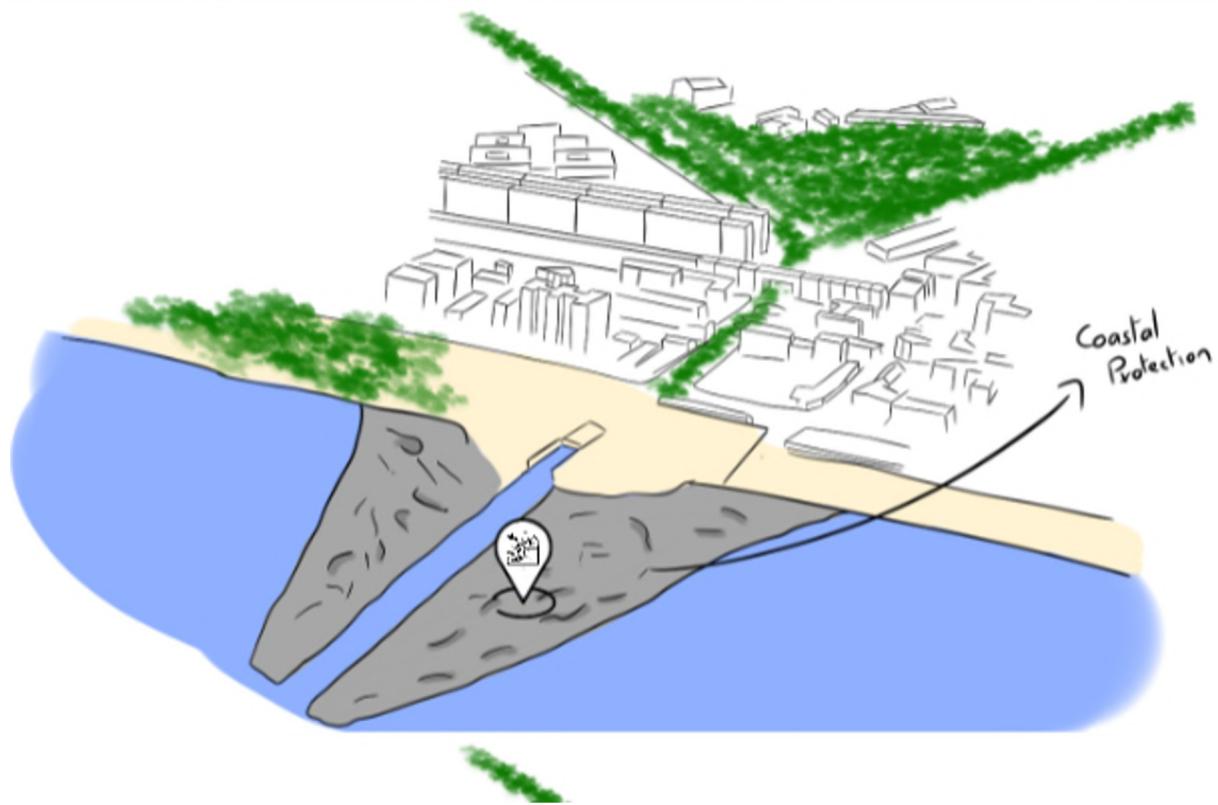
# Near future sketch\_mobility sketch



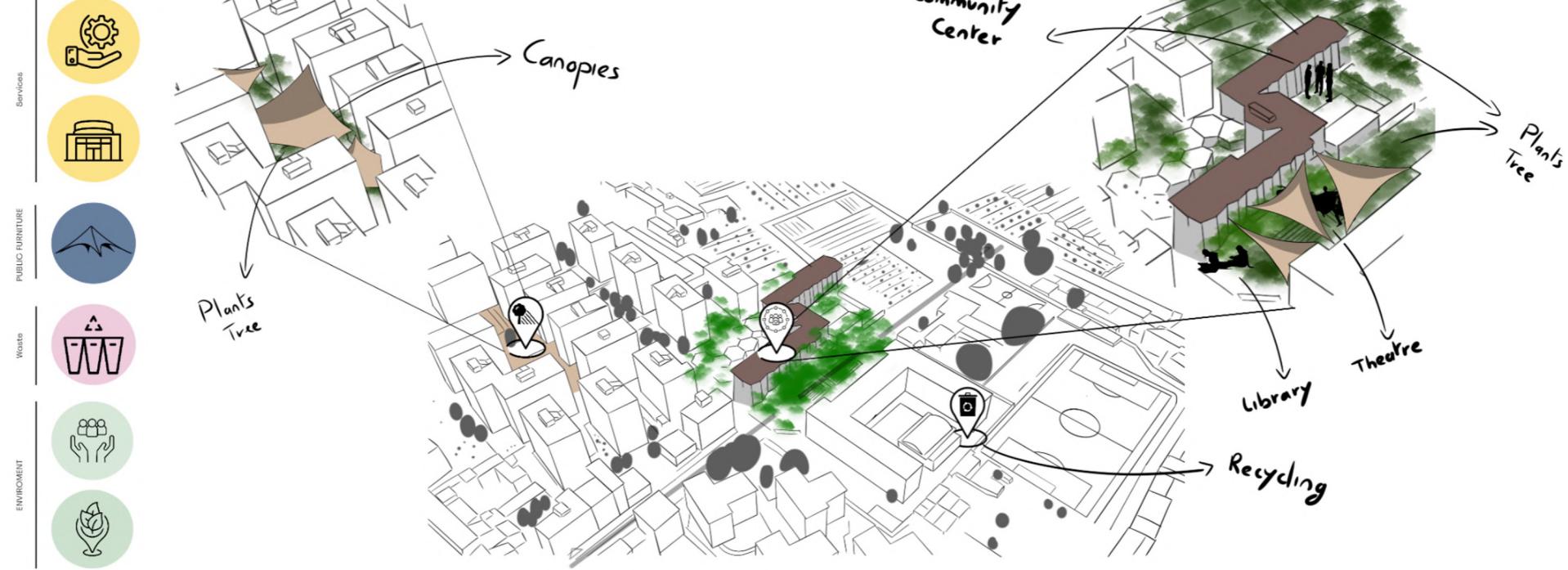
## Near future sketch\_costal protection sketch



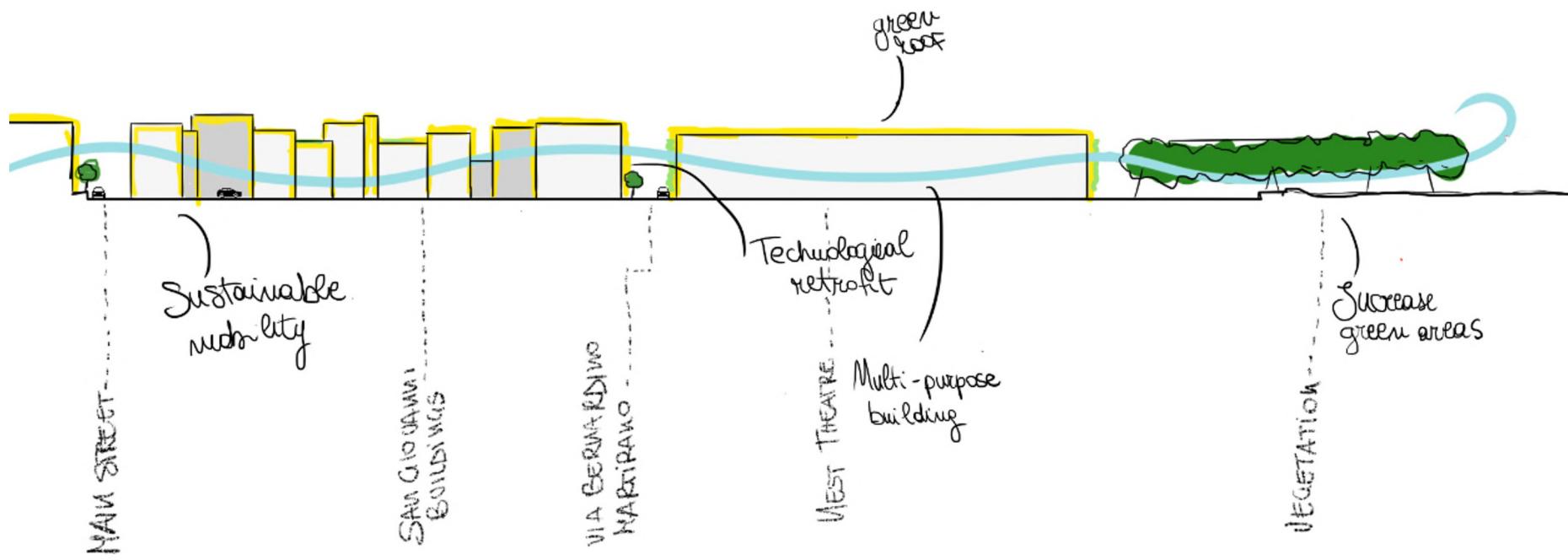
## Near future sketch\_costal protection sketch



# Near future sketch\_abandoned building



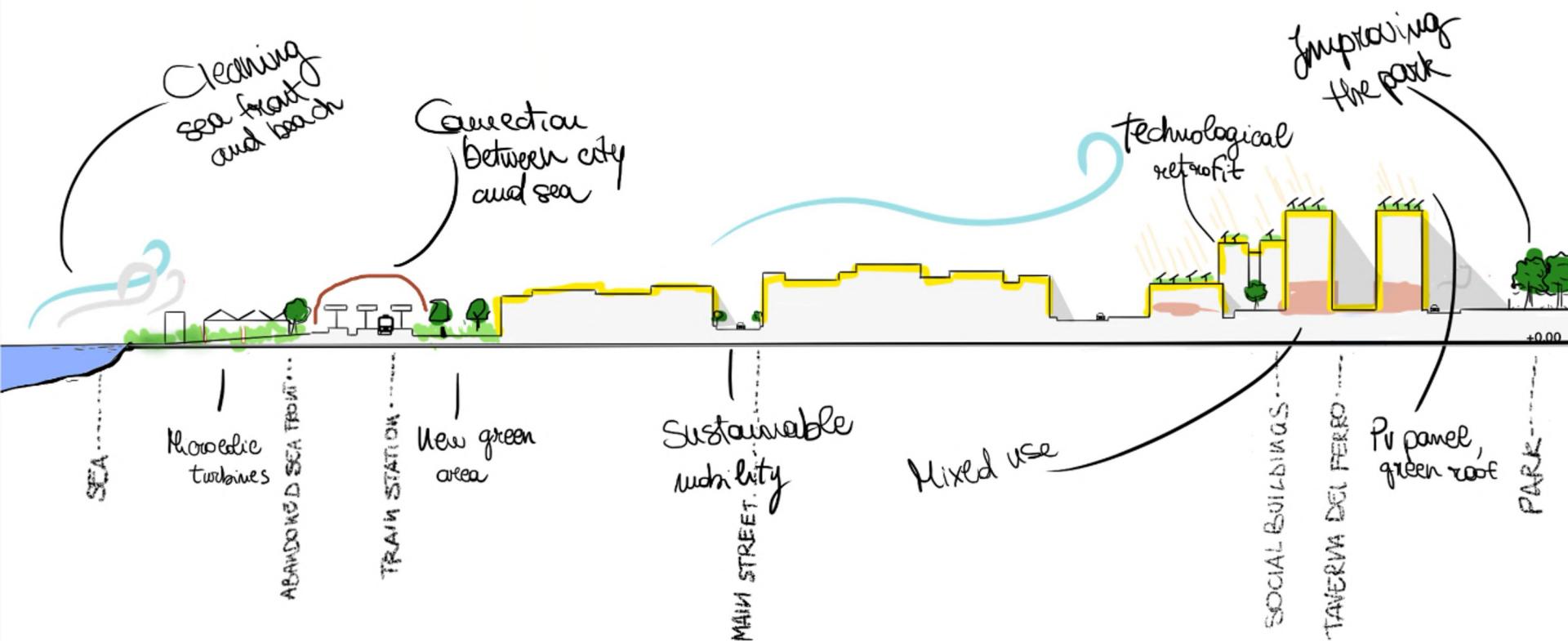
# Near future sketch\_abandoned building



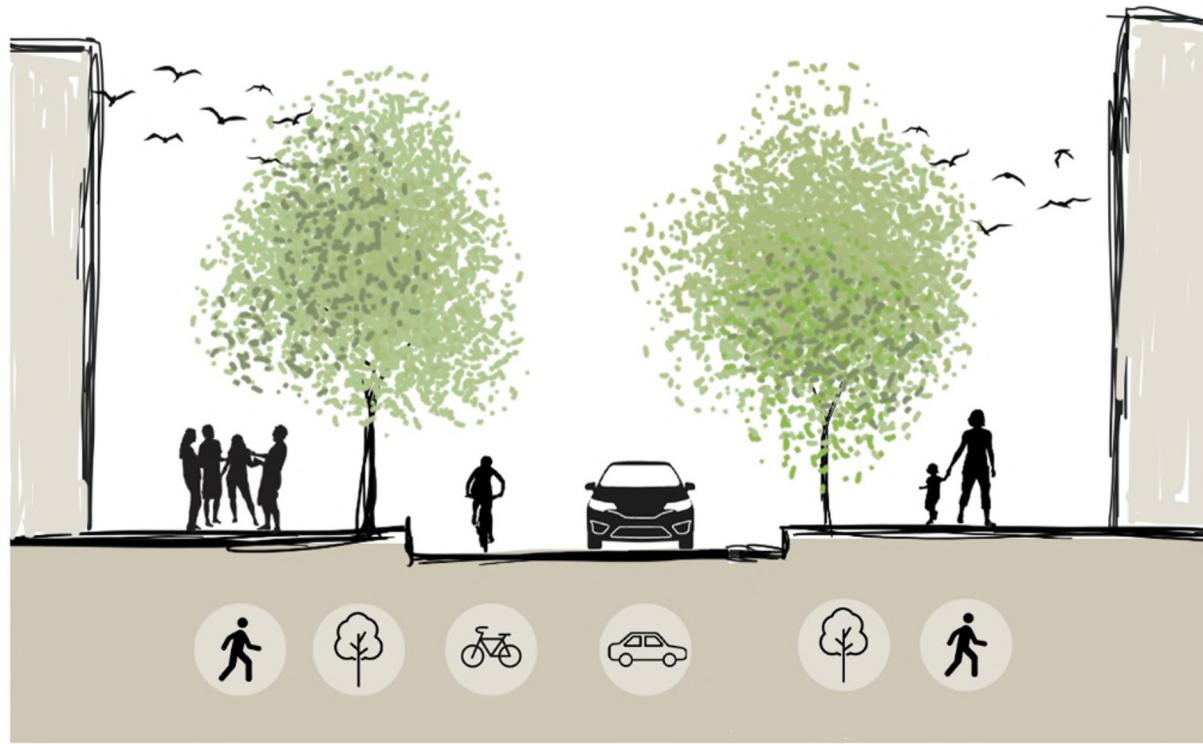
# Mid future sketch\_residential park /parking area



# Mid future sketch\_residential park /parking area



## Mid future sketch\_mobility sketch



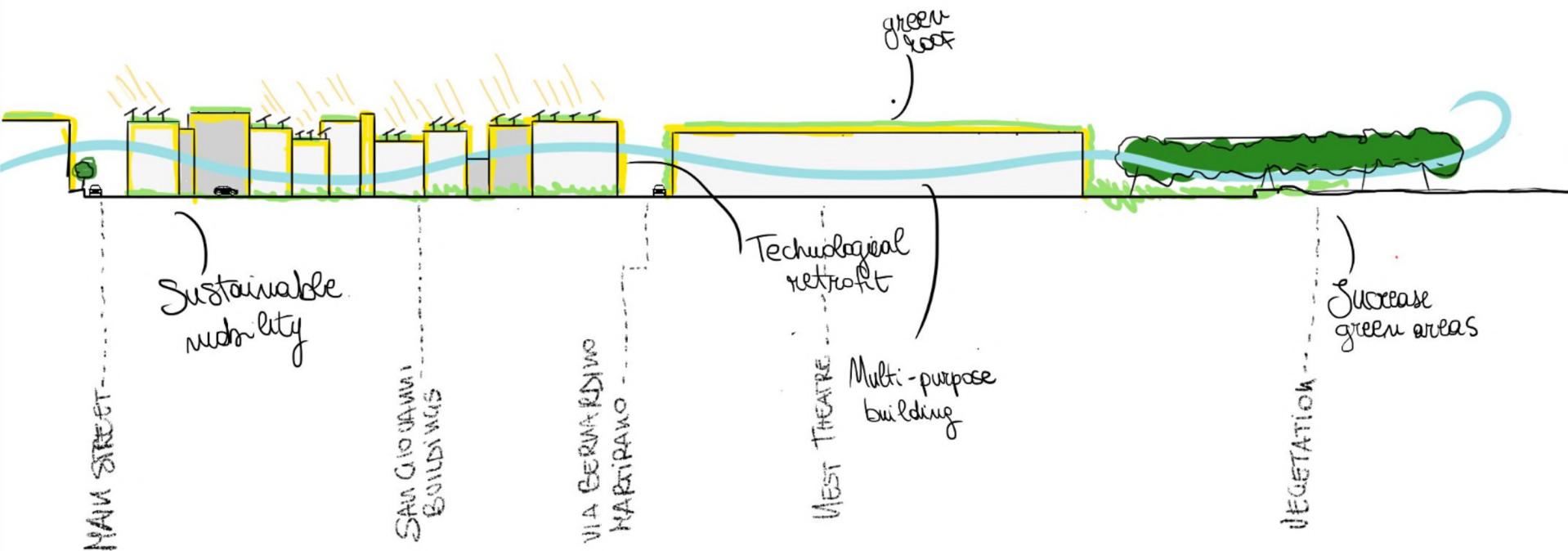
PUBLIC TRANSPORT [PT]



## Mid future sketch\_abandoned building



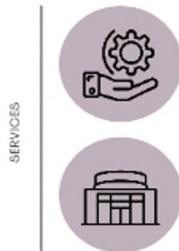
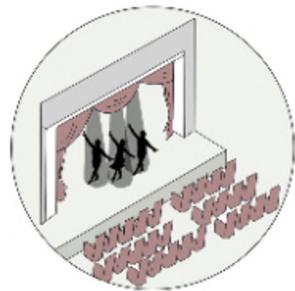
# Mid future sketch\_abandoned building



# Mid future sketch\_abandoned building



ENVIRONMENT



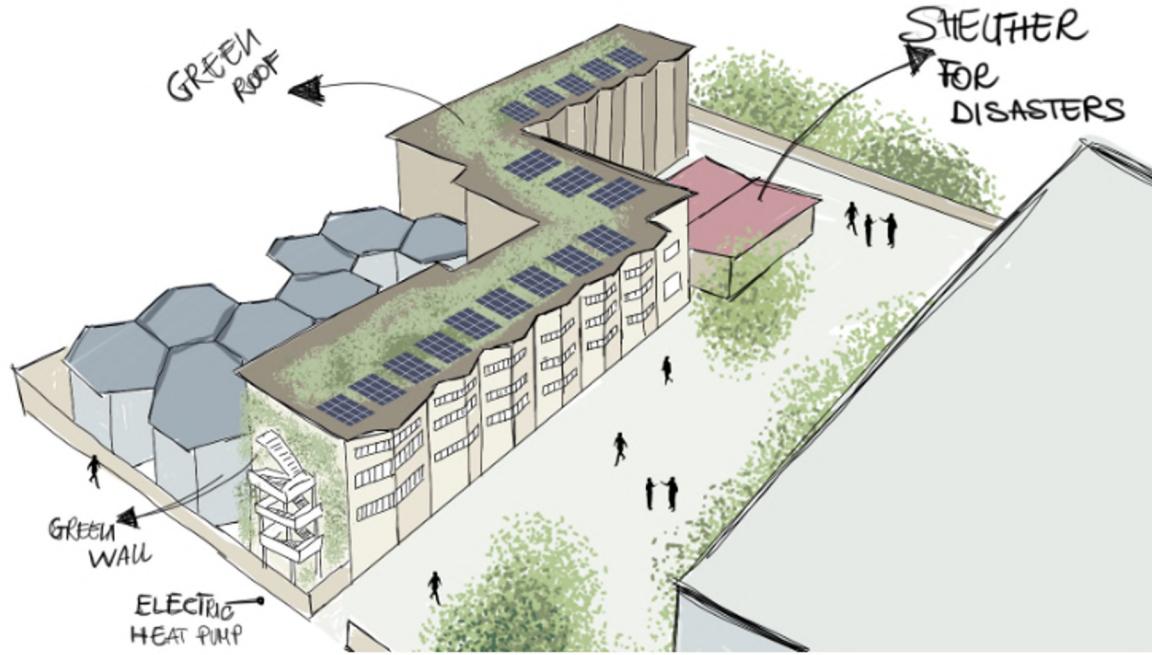
SERVICES



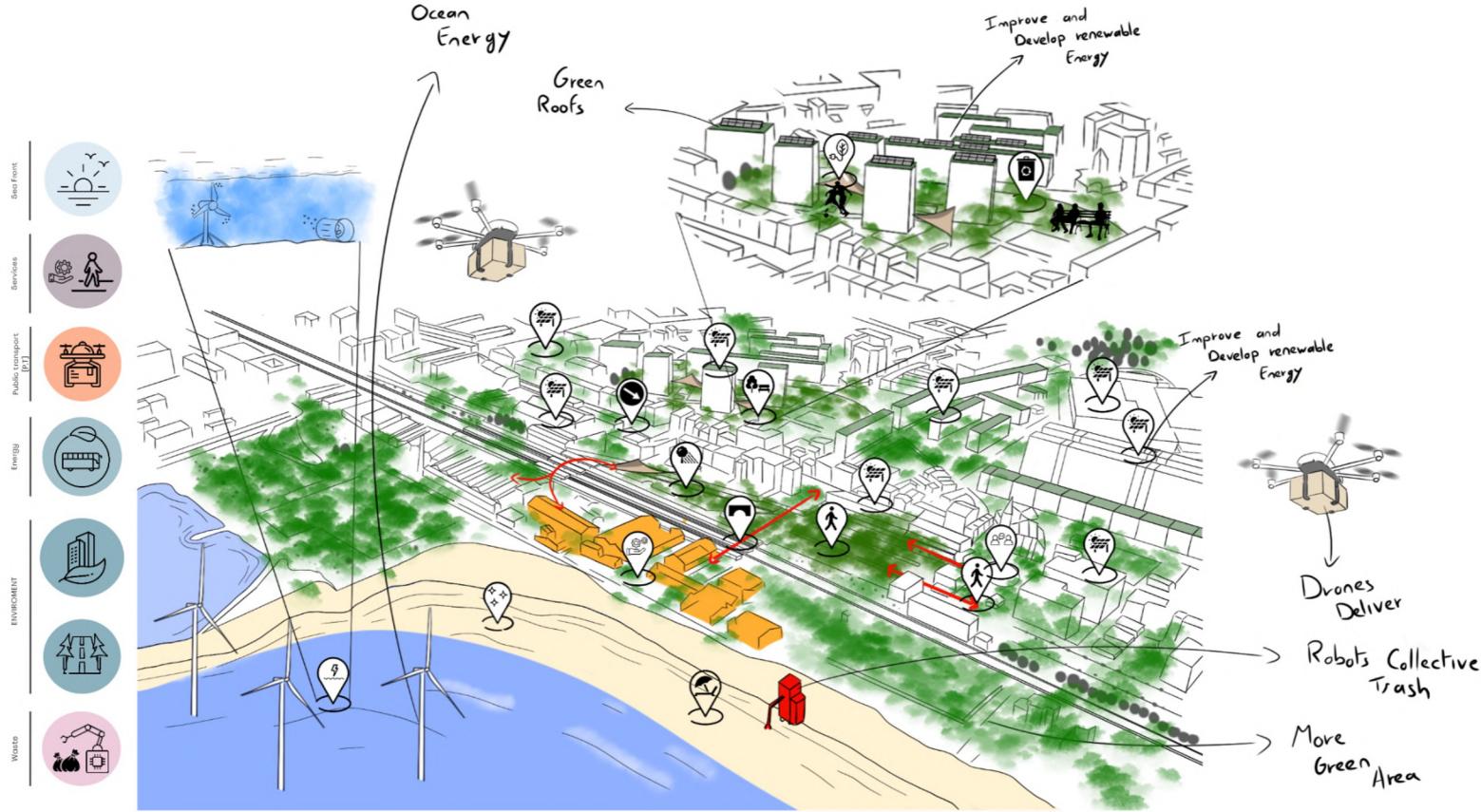
PUBLIC FURNITURE



SHELTER



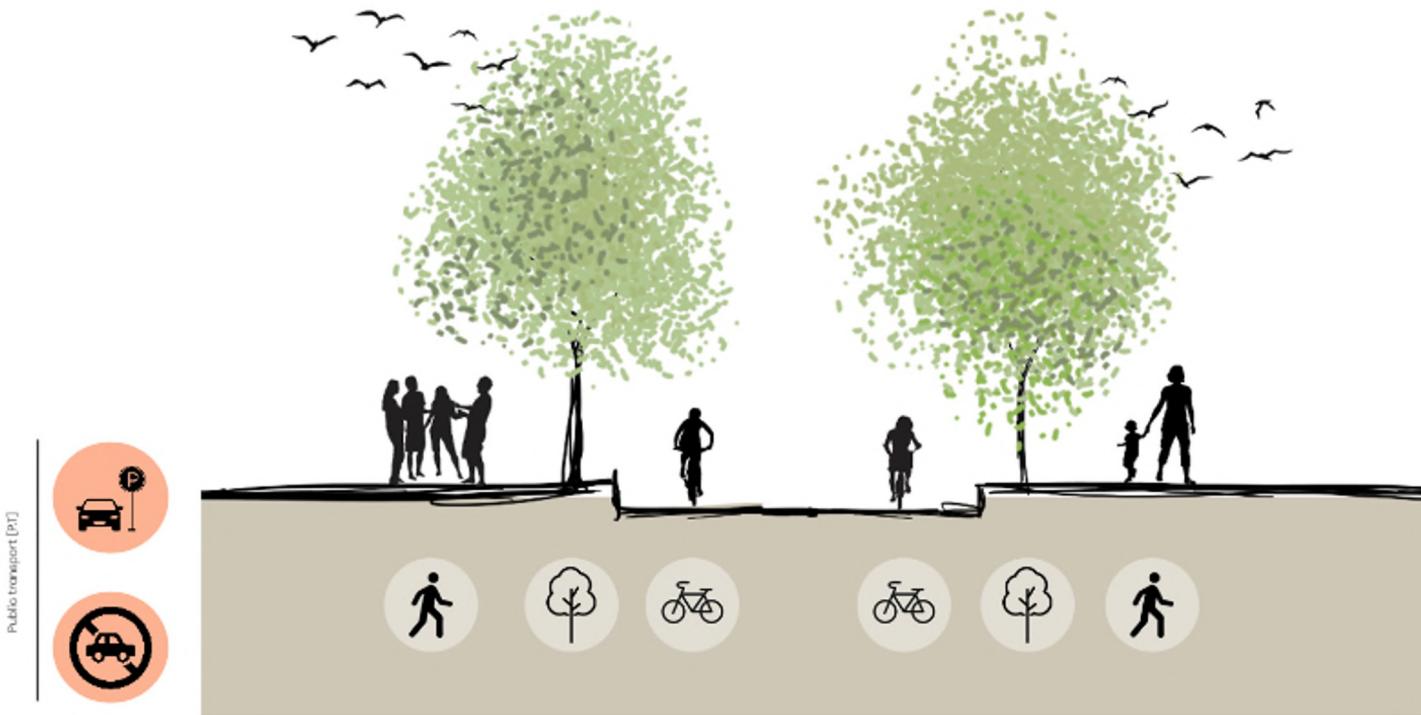
# 2050 future sketch\_residential park /parking area



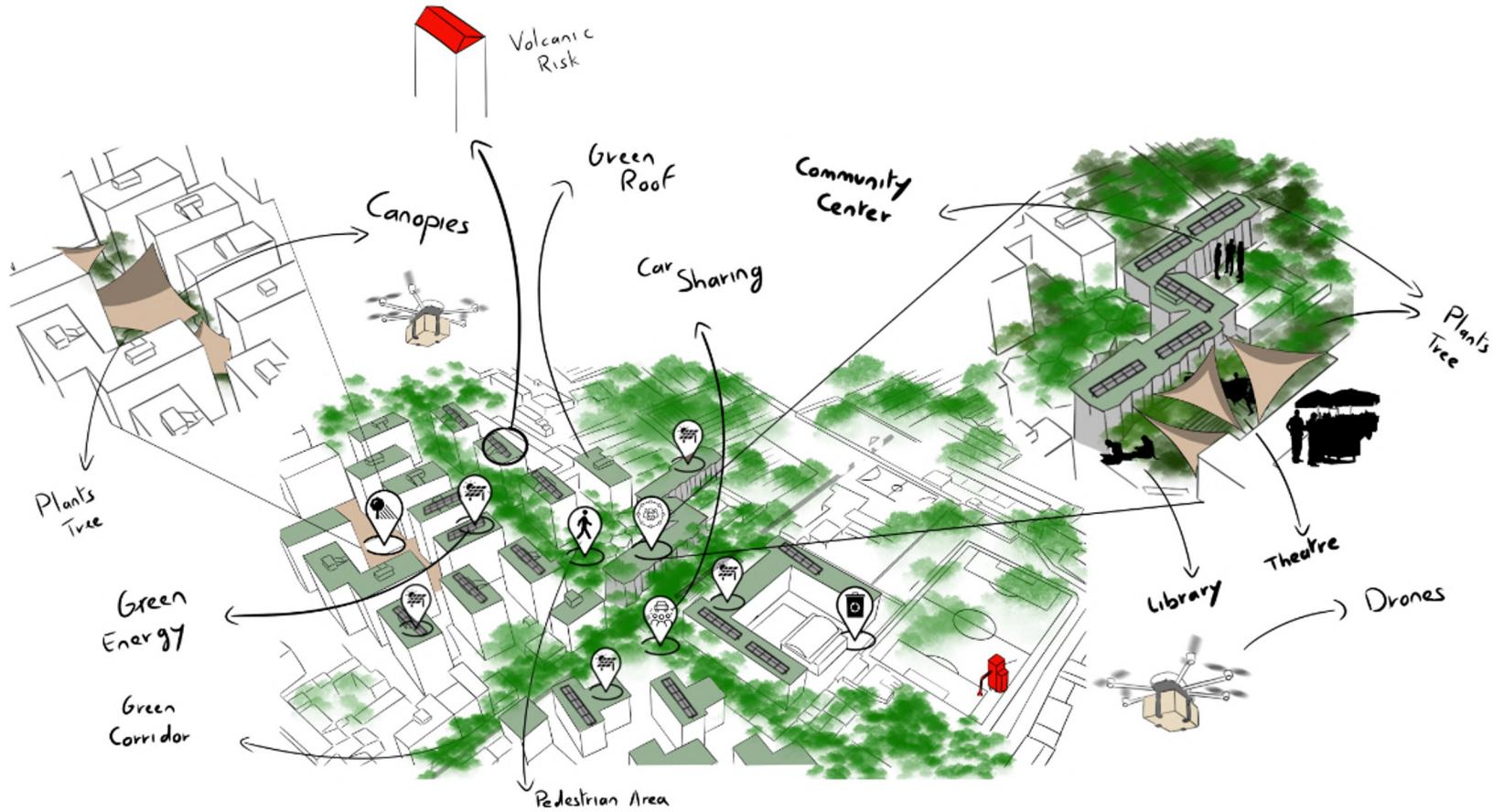
# 2050 future sketch\_residential park /parking area



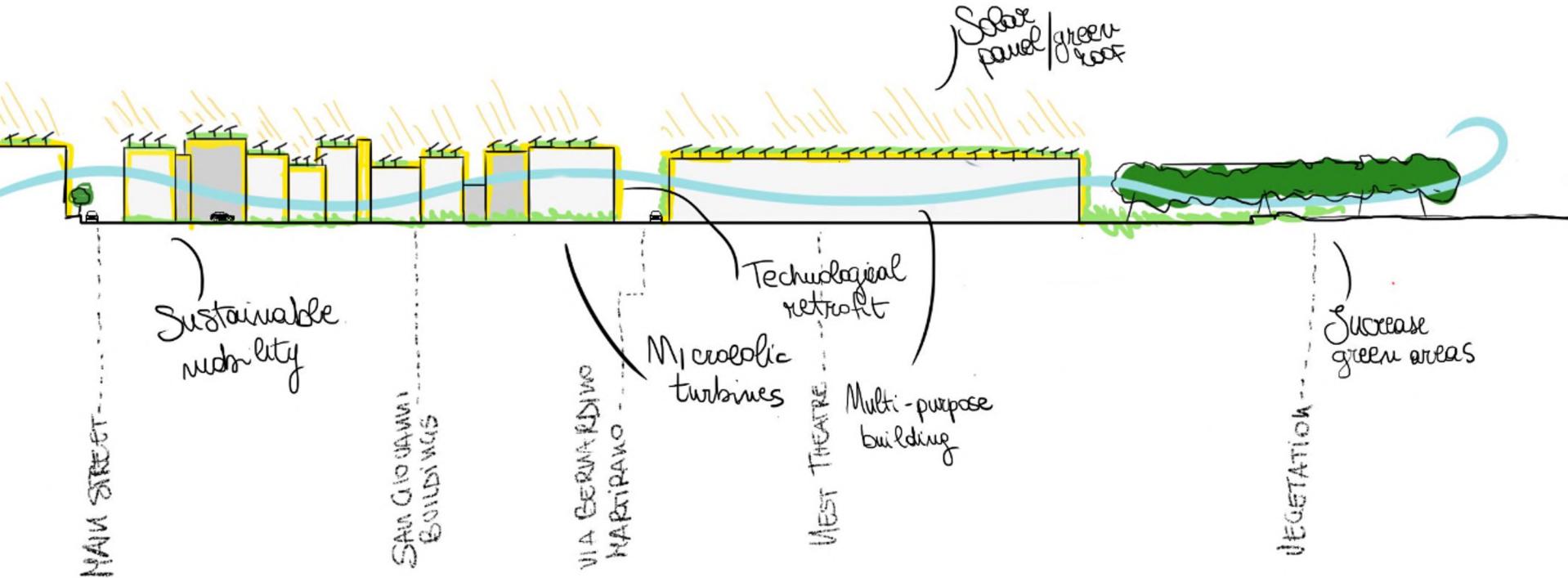
# 2050 future sketch\_mobility sketch



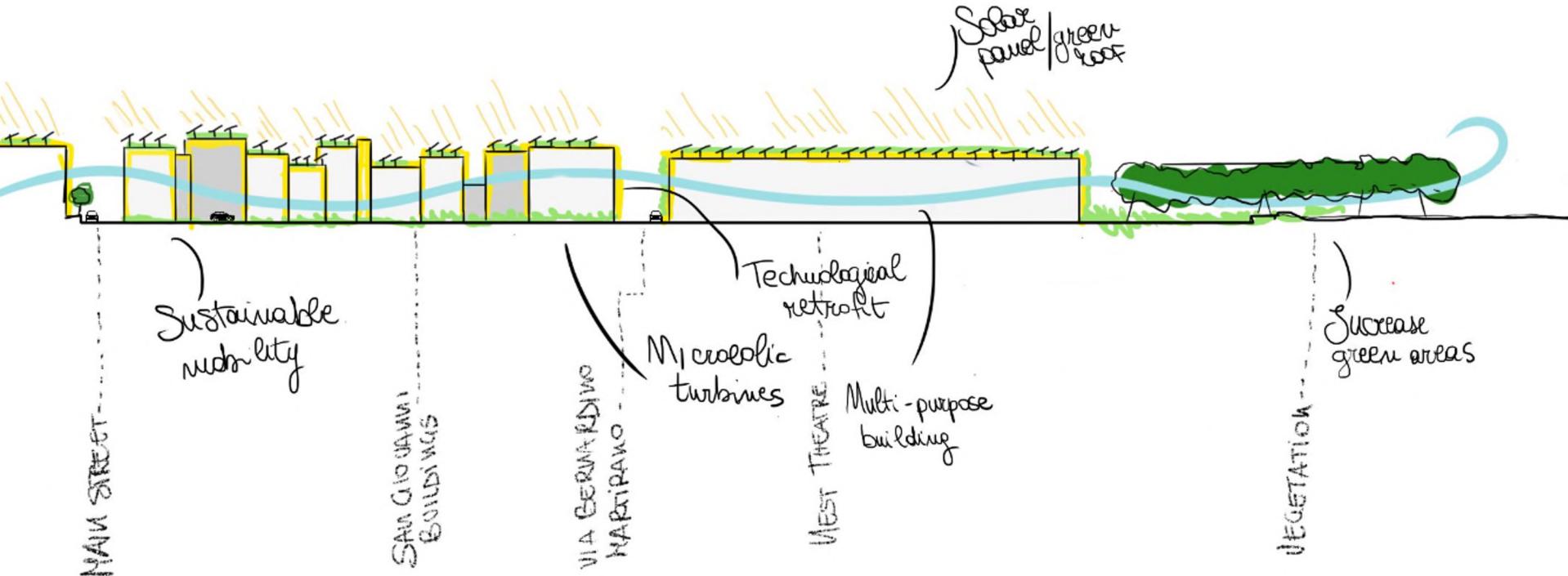
# 2050 future sketch\_abandoned



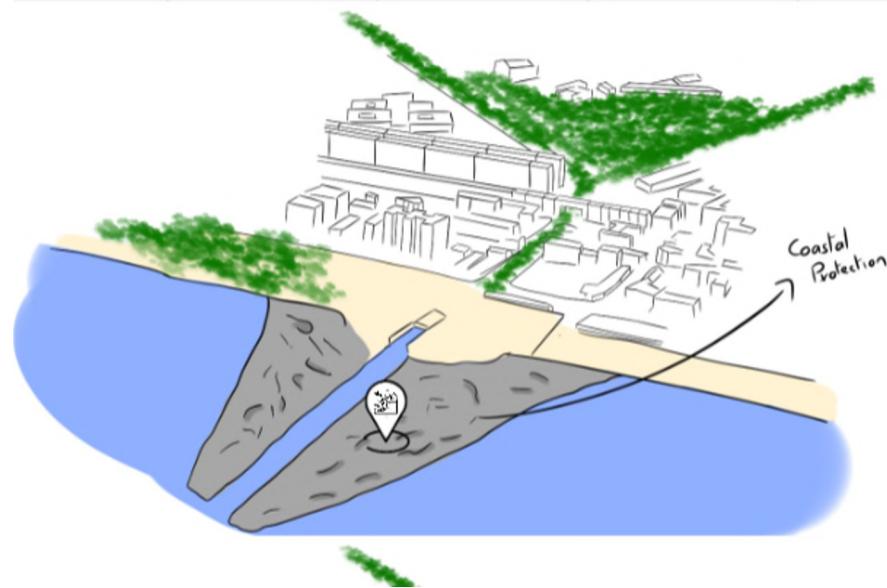
# 2050 future sketch\_abandoned



# 2050 future sketch\_abandoned



## 2050 future sketch\_costal promenade



# **3D Model and output simulation**

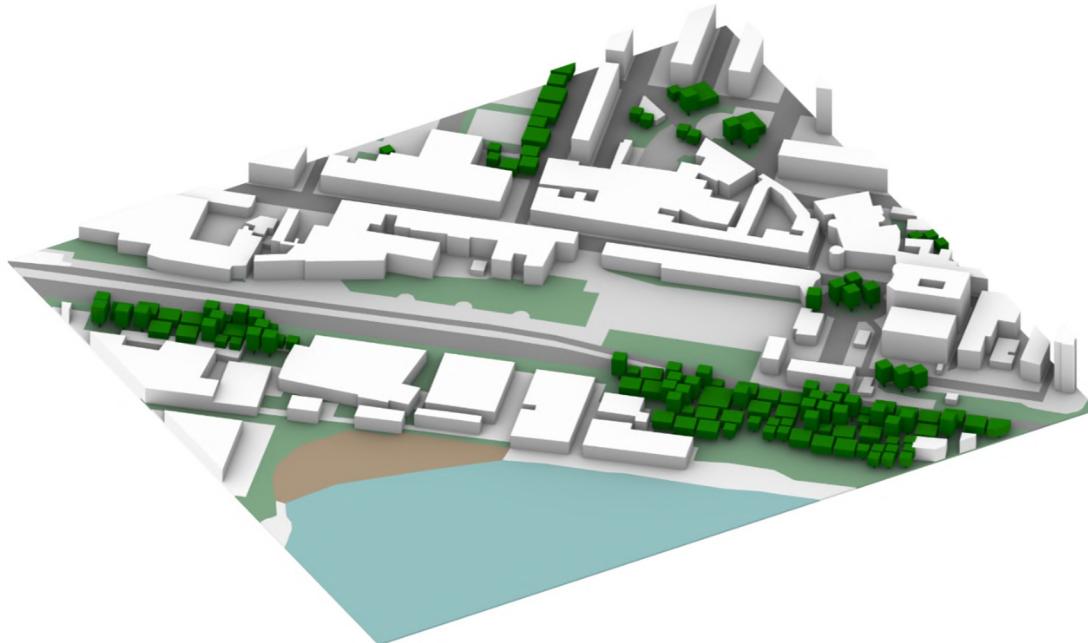
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# 3D Model and output simulation\_parking area

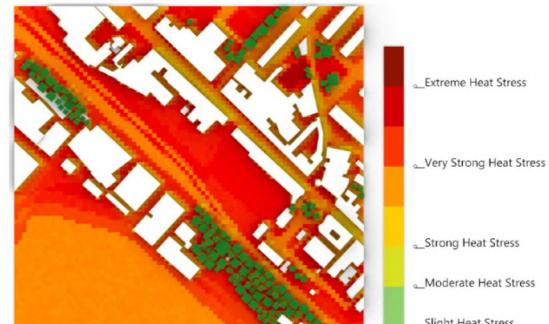
## Current situation

31 July

Air temperature: 32°C



Universal\_Thermal\_Comfort\_Index  
time 13:00-16:00



Mean Radiant Temperature  
Time 13:00-16:00



## 3D Model and output simulation\_residential buildings

### Current situation

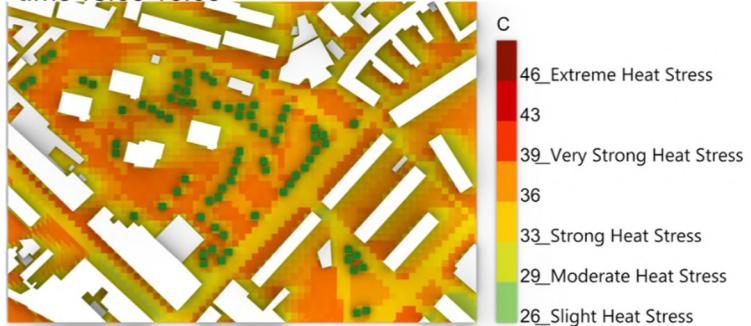
31 July

Air temperature: 32°C



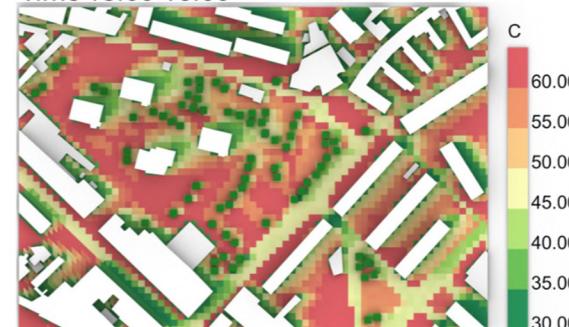
### Universal\_Thermal\_Comfort\_Index

time 13:00-16:00



### Mean Radiant Temperature

Time 13:00-16:00

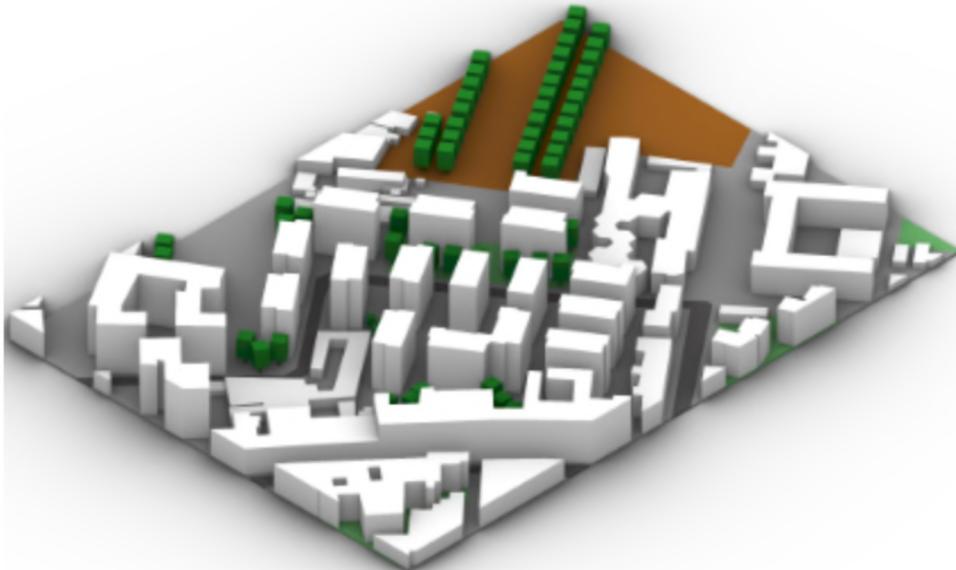


# 3D Model and output simulation\_abandoned building

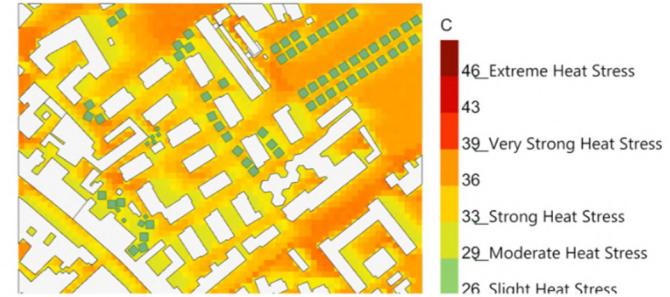
## Current situation

31 July

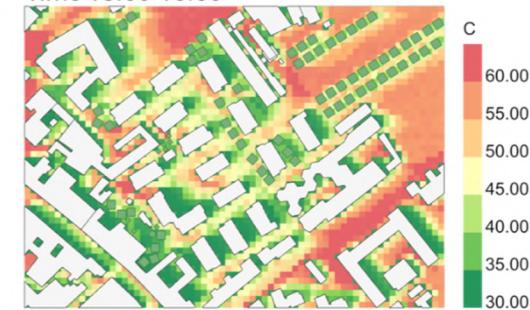
Air temperature: 32°C



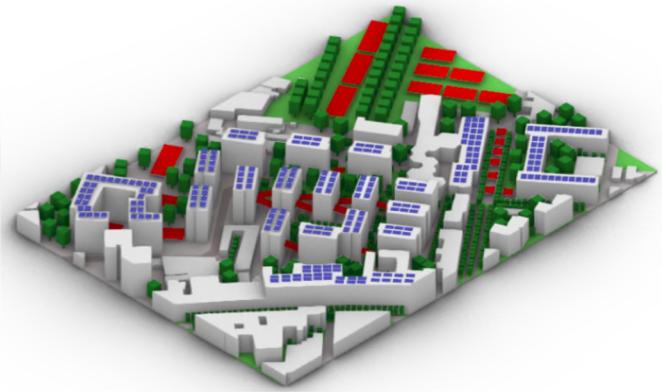
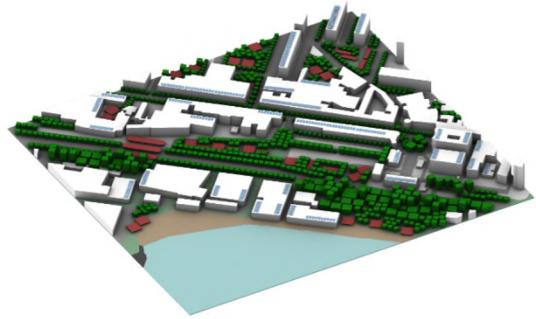
Universal\_Thermail\_Comfort\_Index  
time 13:00-16:00



Mean Radiant Temperature  
Time 13:00-16:00



# 3D Model of 2050 design vision

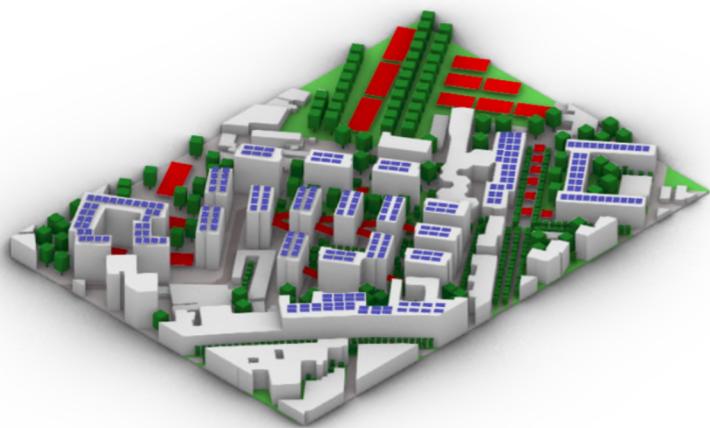


# The comparison of current situation and 2050 vision

## 2050 situation

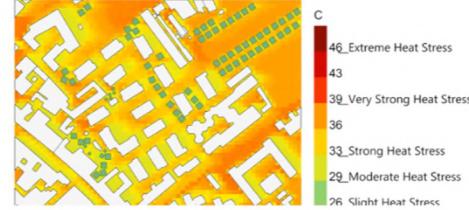
10 August

Air temperature: 37°C

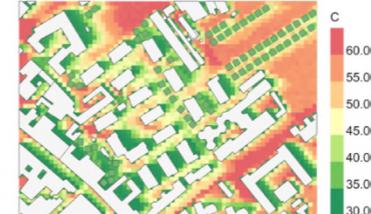


## Current situation

Universal\_Thermail\_Comfort\_Index  
time 13:00-16:00

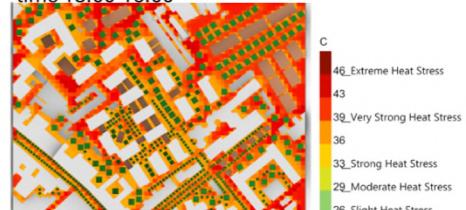


Mean Radiant Temperature  
Time 13:00-16:00



## 2050 vision

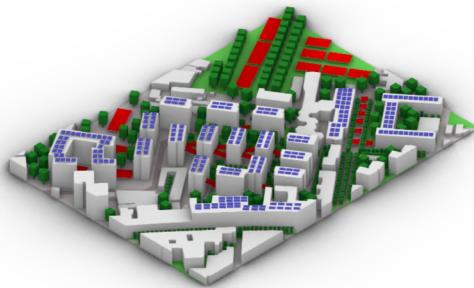
Universal\_Thermail\_Comfort\_Index  
time 13:00-16:00



Mean Radiant Temperature  
Time 13:00-16:00

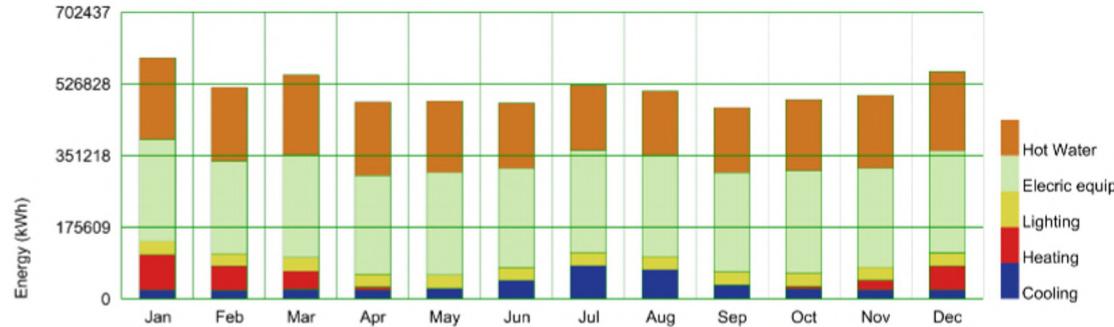


# The result from energy consumption simulation



**By implementing solar panel technology , the energy consumption is reduced by 25%**

The end use intensity without solar panel  
Average annual energy consumption 95,56 kWh/m<sup>2</sup>



The end use intensity with solar panel  
Average annual energy consumption 70,80 kWh/m<sup>2</sup>

