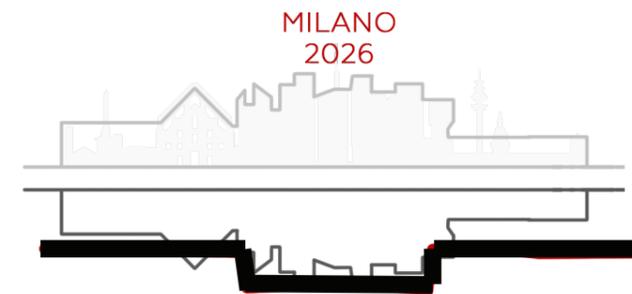


thesis  
booklet

THESIS PROJECT BY : ETVLEVV ARIFI & VESA SHASIVARI  
supervised by: prof. Bertelli Guya Grazia Maria

Sustainable Architecture and Landscape Design Program  
POLITECNICO DI MILANO | 2020-2021

# 1. THE EARTHSCRAPER



The project area:  
Milano, Porta Romana ex railway yard

Porta Romana railway yard is one of the underused areas that is located in a strategic point of the city, at the crossroad between the radial Corso di Porta Romana, the ancient 'decuman' and the external ring way, one of the main roads of the city's structural system. It is a place of interference and encounter between the dense and consolidated fabric of the 'central' city and the more heterogeneous and rarefied settlement of the Modern city (20th century).

**Reading and understanding the site through key concepts: voids, traces and limits:** The site of the intervention is defined by the Porta Romana railway station, an **urban 'gap'** that can be read : as an extended **void**, a 'place' in a state of abandonment and awaiting new transformation; an 'internal' **limit** between the most consolidated part of the city to the north and the peri-urban part to the south; a significant **'threshold'** of the city, a potential place for future modification.

Voids  
accessible green spaces, agriculture fields & railway yards



Limits  
railway tracks & highways



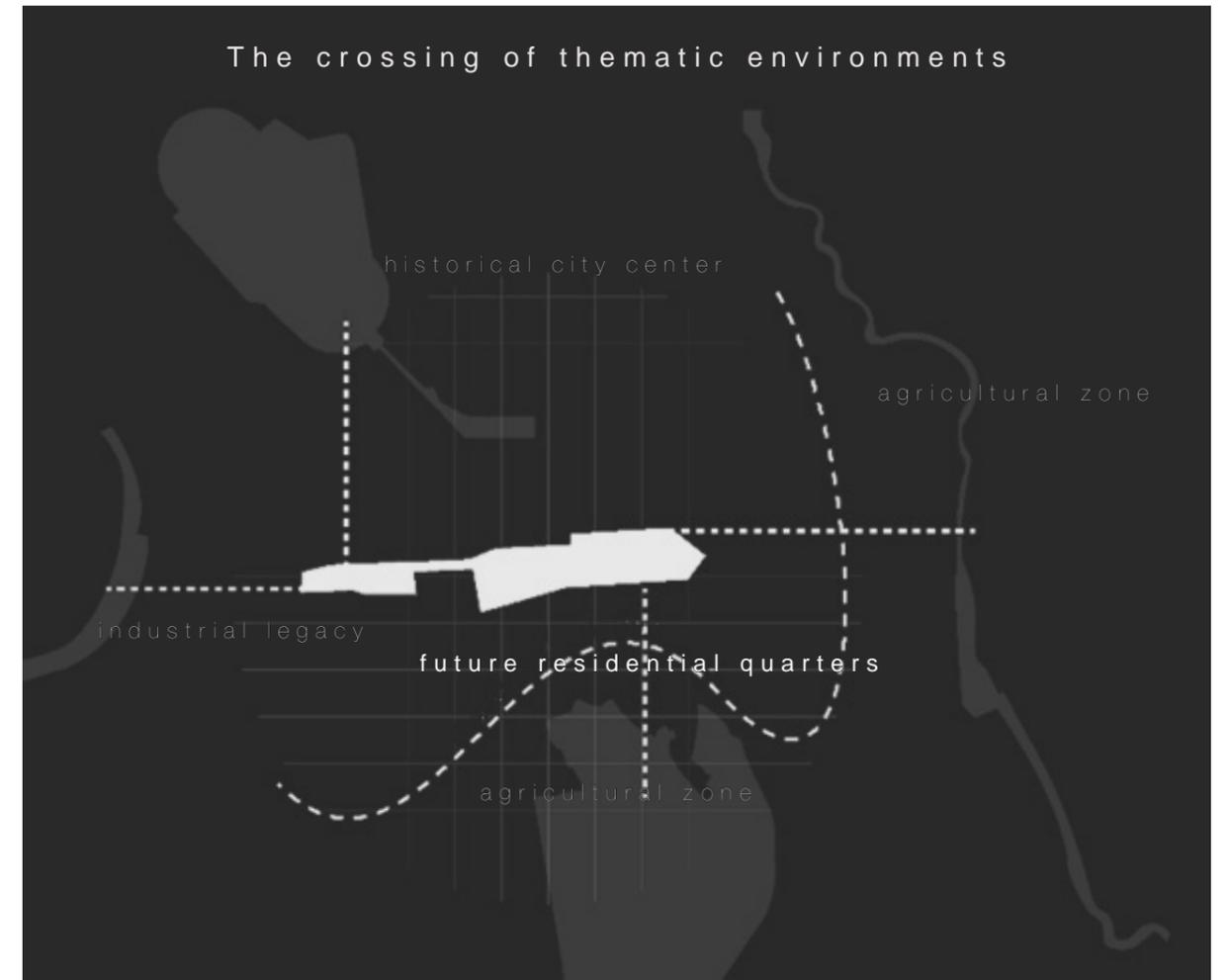
Traces  
water bodies & important historical roads



Within a complex urban reality and its large landscape and territorial potentials, the work will focus on the main goals consisting in the **construction of an architectural and urban resilient system, able to react at the fragile and critic contemporary conditions,**

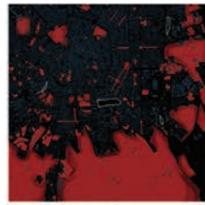
Porta Romana site, **a threshold that acts as a central spine,** characterised by: connected green system; increased sustainable mobility; improved grey infrastructure system; enhanced blue infrastructure - water as 4th dimension\_ time; interconnected attractive areas; integrated collective spaces.

### The crossing of thematic environments



# READING THE SITE

## Urban analysis



ACCESSIBLE GREEN SPACE:  
AGRICULTURE FIELDS  
RAILWAY YARDS/FARINI,  
GRECO, LAMBRATE,  
ROGOREDO,  
PORTA ROMANA, PORTA  
GENOVA,  
SAN CRISTOFORO)

### READING AND UNDERSTANDING THE SITE THROUGH KEY CONCEPTS : VOID, LIMIT, TRACE

#### VOID

FROM ANCIENT TIMES UNTILL NOW, THE URBAN FABRIC OF MILAN STARTS EVOLVING INTO MORE VOIDS. THE BUILT UP AREA IN THE HISTORIC CENTER COVERS ALL THE LAND AND LESS VOIDS ARE SEEN. COMING TO THE END OF THE RINGS, NOWADAYS THE BUILT UP AREA BECOMES MORE SEPARATED LEAVING SPACE FOR THE VOIDS. THESE VOIDS ARE CONSIDERED THE ACCESSIBLE GREEN SPACES AROUND ALL MILAN, BUT ALSO THE RAILWAY YARDS WHICH SOMEHOW ARE VOIDS WAITING FOR FUTURE PROJECTS.



#### LIMIT

RAILWAY TRACKS  
HIGHWAY

THE ANCIENT MILAN HAD ALSO LIMITS, THESE LIMITS ARE CONSIDERED THE FIRST ROMAN RING AND THEN THE SECOND RING. THESE RINGS WERE LIMITING THE ACCESS FROM OTHER CITIES TO MILAN. TODAY THE LIMITS ARE THE RAILWAY TRACKS AND HIGHWAY, WHICH DEVIDE THE CITY IN HALF AND THIS WAY MAKING THE ACCESSIBILITY MORE LIMITED.



#### TRACE

WATER BODIES (RIVERS, LAKES, CHANNELS)  
IMPORTANT HISTORICAL ROADS

FOLLOWING THE TRACES OF THE PAST, MOST OF THE UNDERGROUND CHANNELS ARE KEPT UNDERGROUND AND SOMEHOW HIDDEN UNDER THE BUILDINGS OR STREETS. IN THE OTHER HAND THESE HISTORIC ROADS EVEN THOUGH HIDE THE WATER CHANNELS THEY ALSO HAVE A HUGE IMPORTANT ROLE INTO CONNECTING MILAN FROM THE CENTER TO THE OTHER DIRECTIONS AND CITIES.

### INTERPRETATION OF SPACES



HISTORICAL DENSE TISSUE  
COMPACT URBAN CURTAIN TISSUE  
URBAN RENEWAL TISSUE  
URBAN TISSUE WITH AN OPEN SYSTEM

### URBAN TISSUE



compact urban tissue    compact urban tissue    urban tissue with open system

historical city    urban renewal tissue

### BUILT UP SPACES



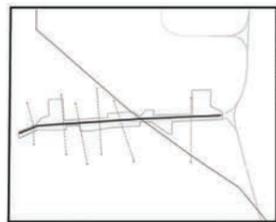
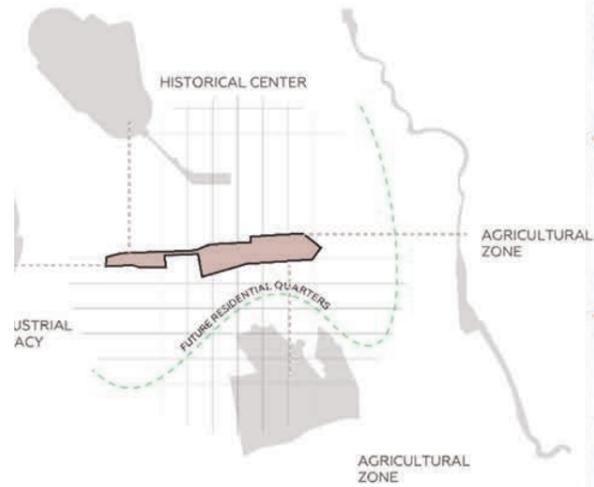
### LANDMARKS



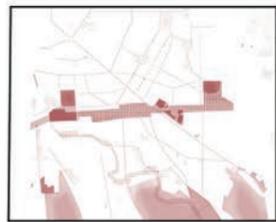
# WRITING THE TEXT

## Strategic map

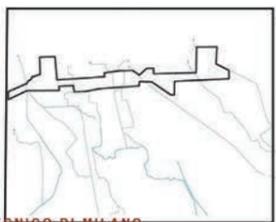
FROM A GATED ENCLAVE TO  
A THRESHOLD THAT ACTS AS A HINGE  
THE CROSSING OF THEMATIC ENVIRONMENTS



**INTERCONNECTED LANDSCAPE**  
IMPROVED GREY INFRASTRUCTURE  
SYSTEM WITH MAIN AXIS THAT CONNECT  
MILAN IN ALL DIRECTIONS.



**RE-NATURALIZATION OF THE CITY**  
SUSTAINABLE MOBILITY  
GREEN CORRIDORS  
INCREASED IMPORTANCE OF AGRICULTURE

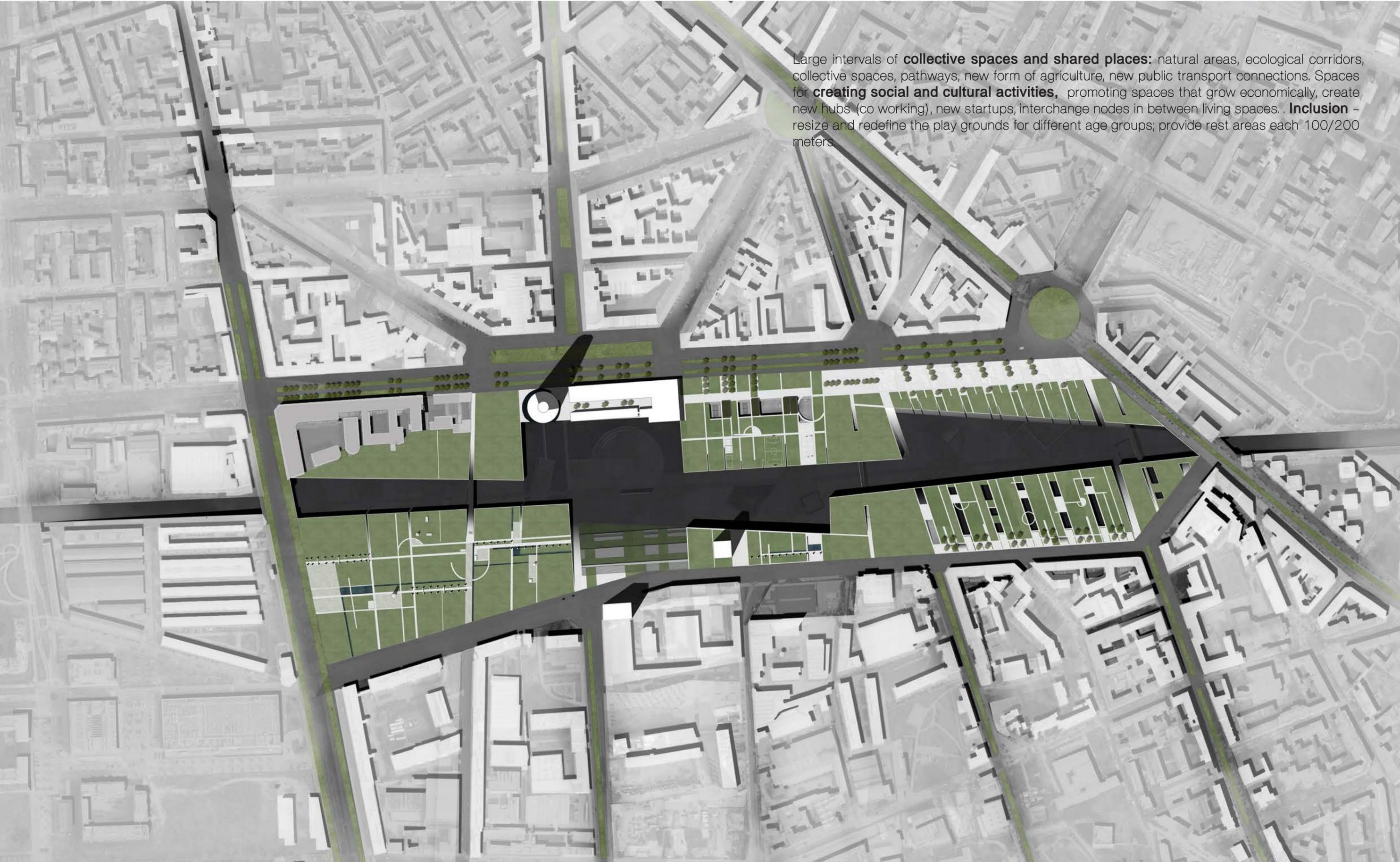
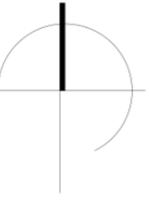


**WATER AS 4TH DIMENSION : TIME**



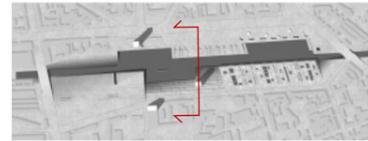
# A NEW SPACE OF RELATIONS

Urban scale/Masterplan

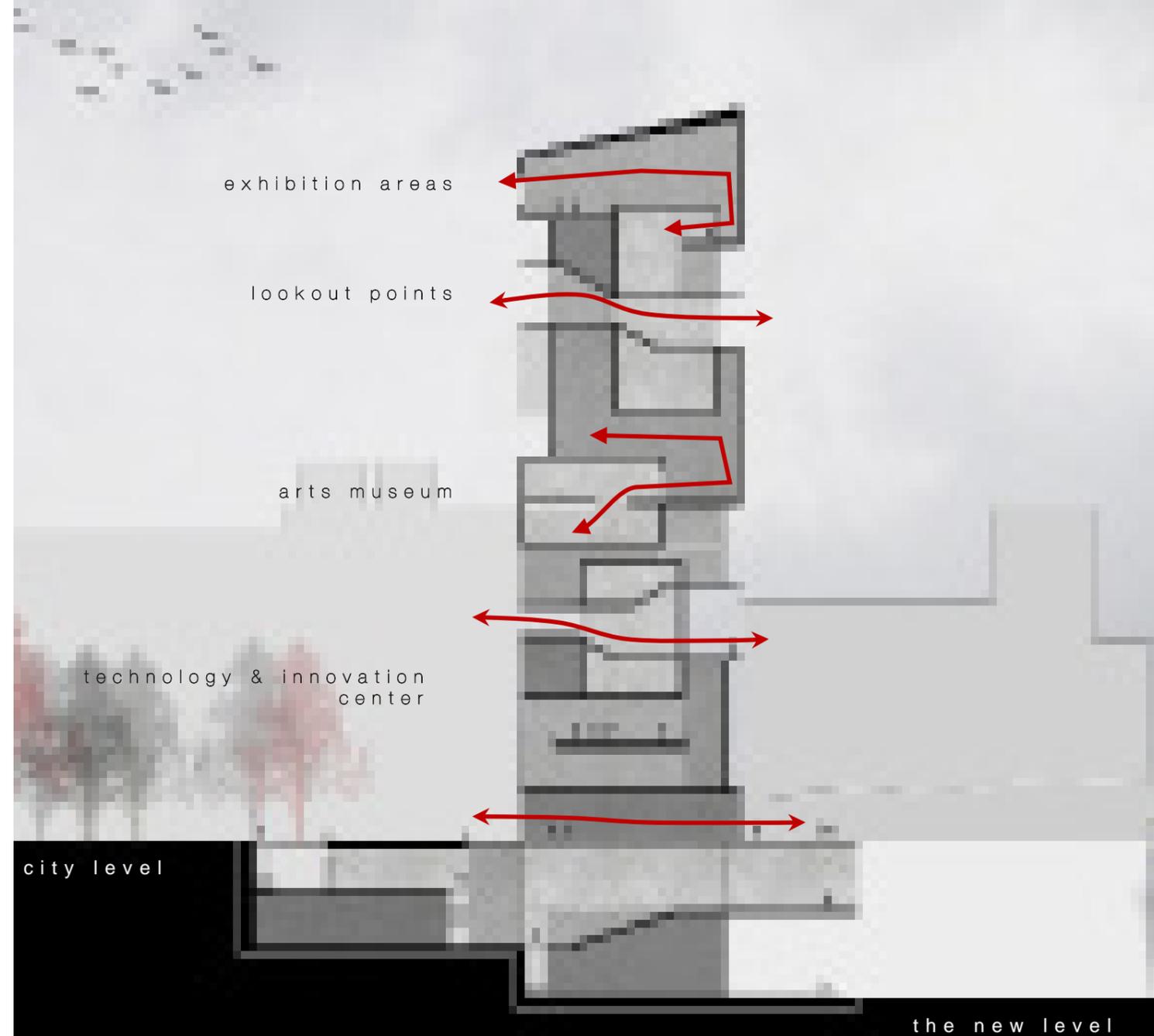


Large intervals of **collective spaces and shared places**: natural areas, ecological corridors, collective spaces, pathways, new form of agriculture, new public transport connections. Spaces for **creating social and cultural activities**, promoting spaces that grow economically, create new hubs (co working), new startups, interchange nodes in between living spaces. **Inclusion** – resize and redefine the play grounds for different age groups; provide rest areas each 100/200 meters

A new system of urban connections and relations /relational areas



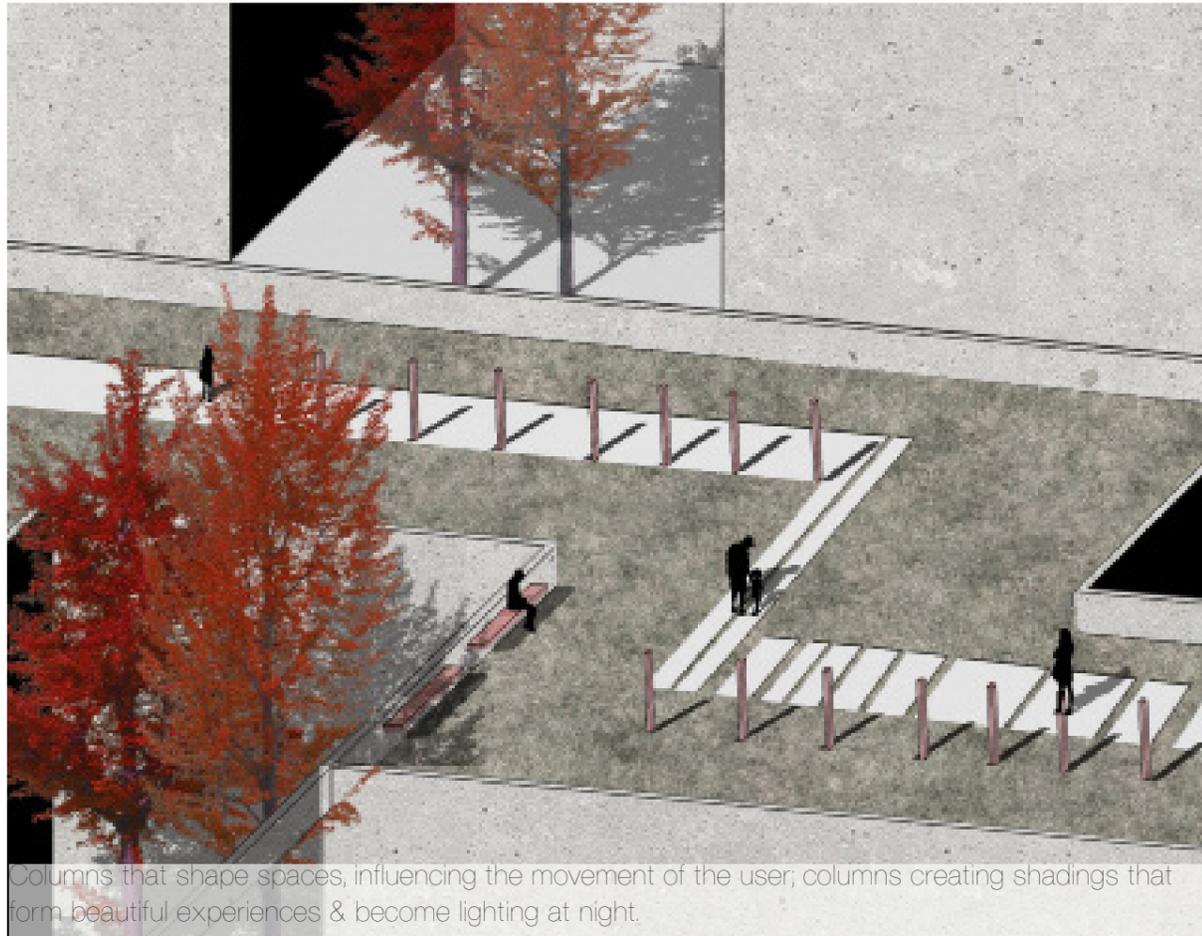
Relationship with the sky and the soil  
functionality & flexibility



# Defining spaces

the abacus of urban spaces

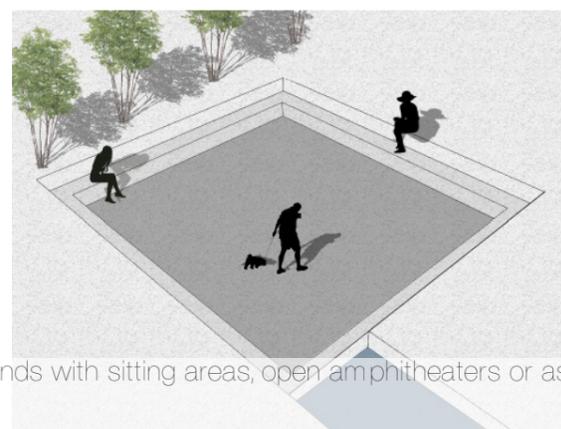
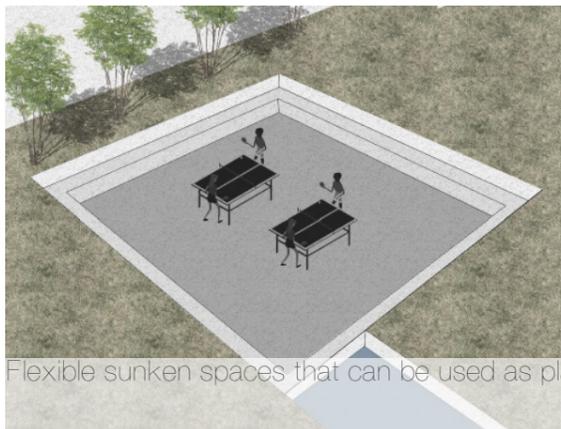
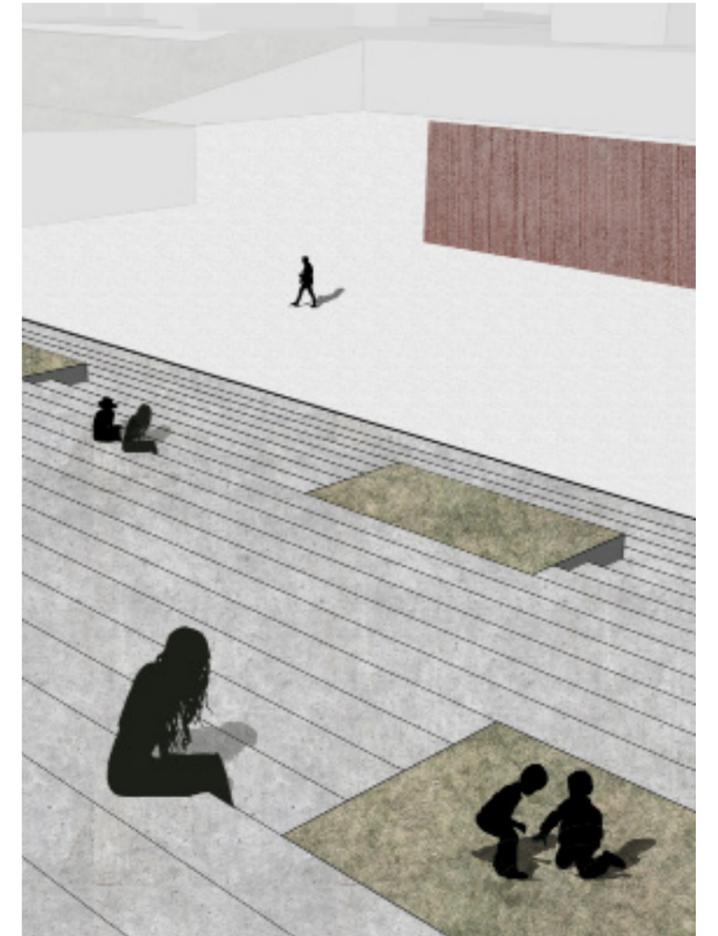
*"When designing physical spaces, we are also designing, or implicitly specifying distinct experiences, emotions and mental states. Environments changes our brains, and those changes in turn alter our behaviour."*(Pallasmaa, Juhani)



Columns that shape spaces, influencing the movement of the user; columns creating shadings that form beautiful experiences & become lighting at night.



walls & trees, urban elements that define spaces, guiding the user into different areas walls as urban furniture, providing sitting areas

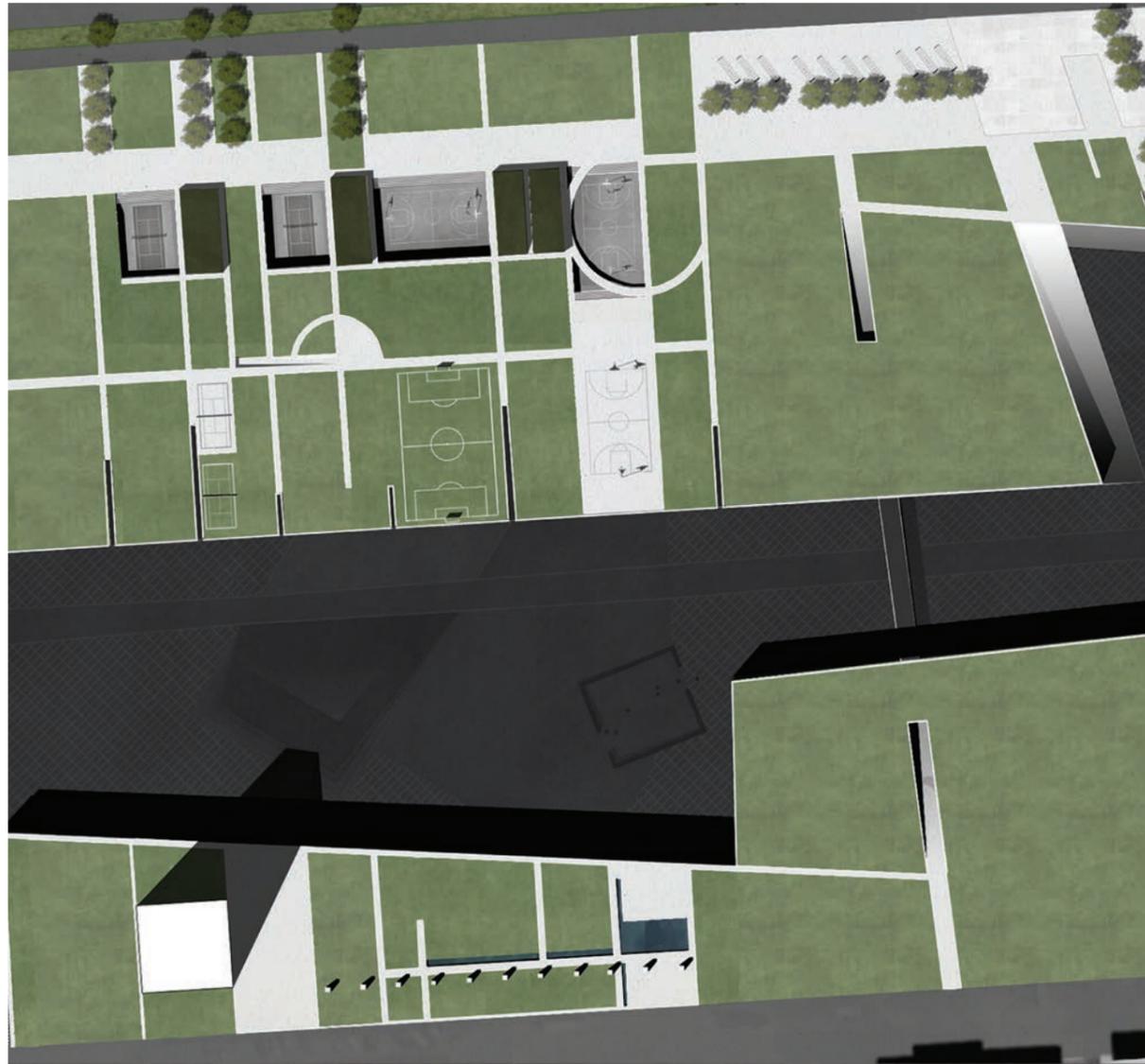


Flexible sunken spaces that can be used as playgrounds with sitting areas, open amphitheaters or as sunken plazas that collect water in times of heavy rainfalls.



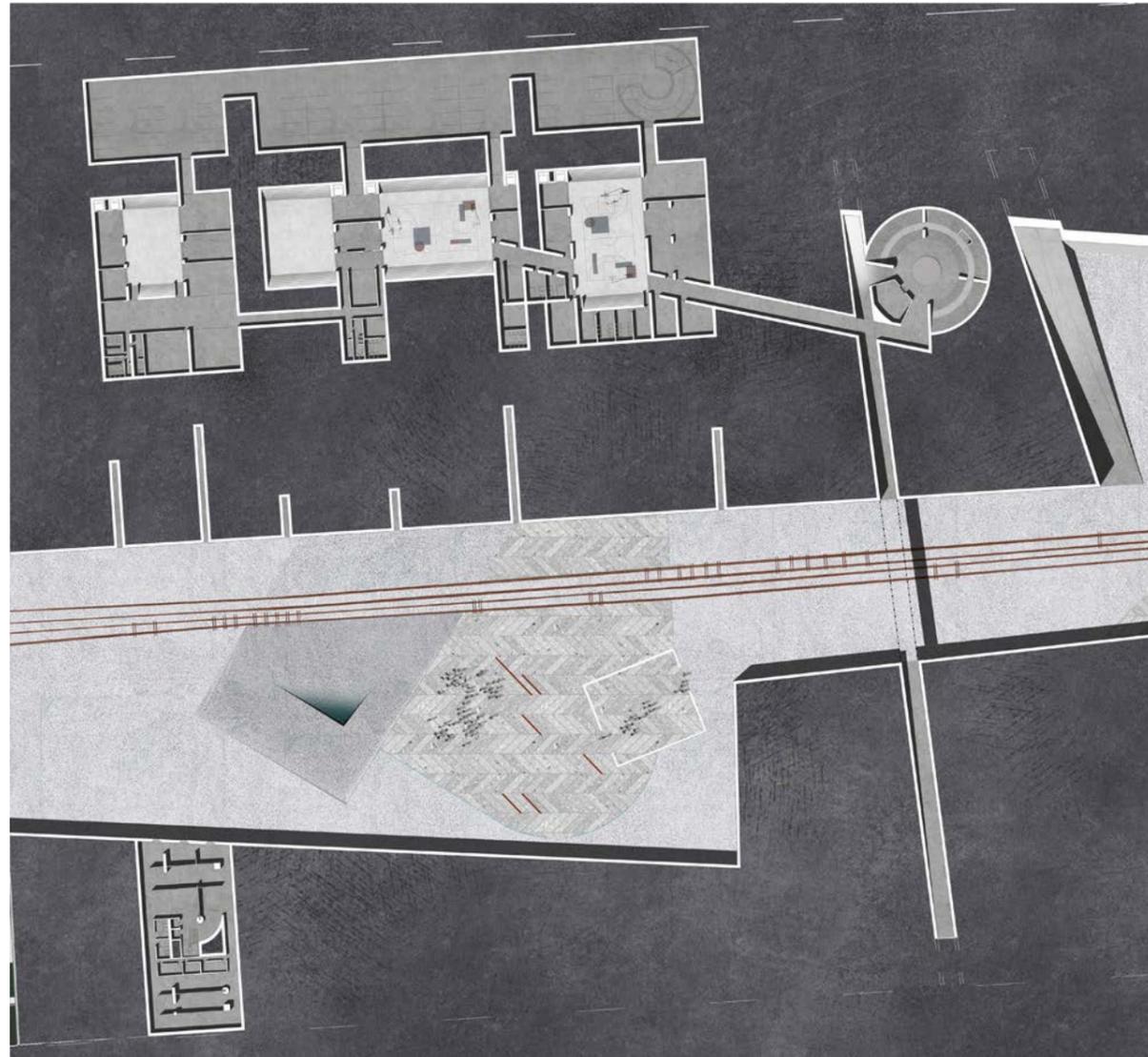
# Relationship with soil and surrounding

Focus area 1 / City level (level 0)



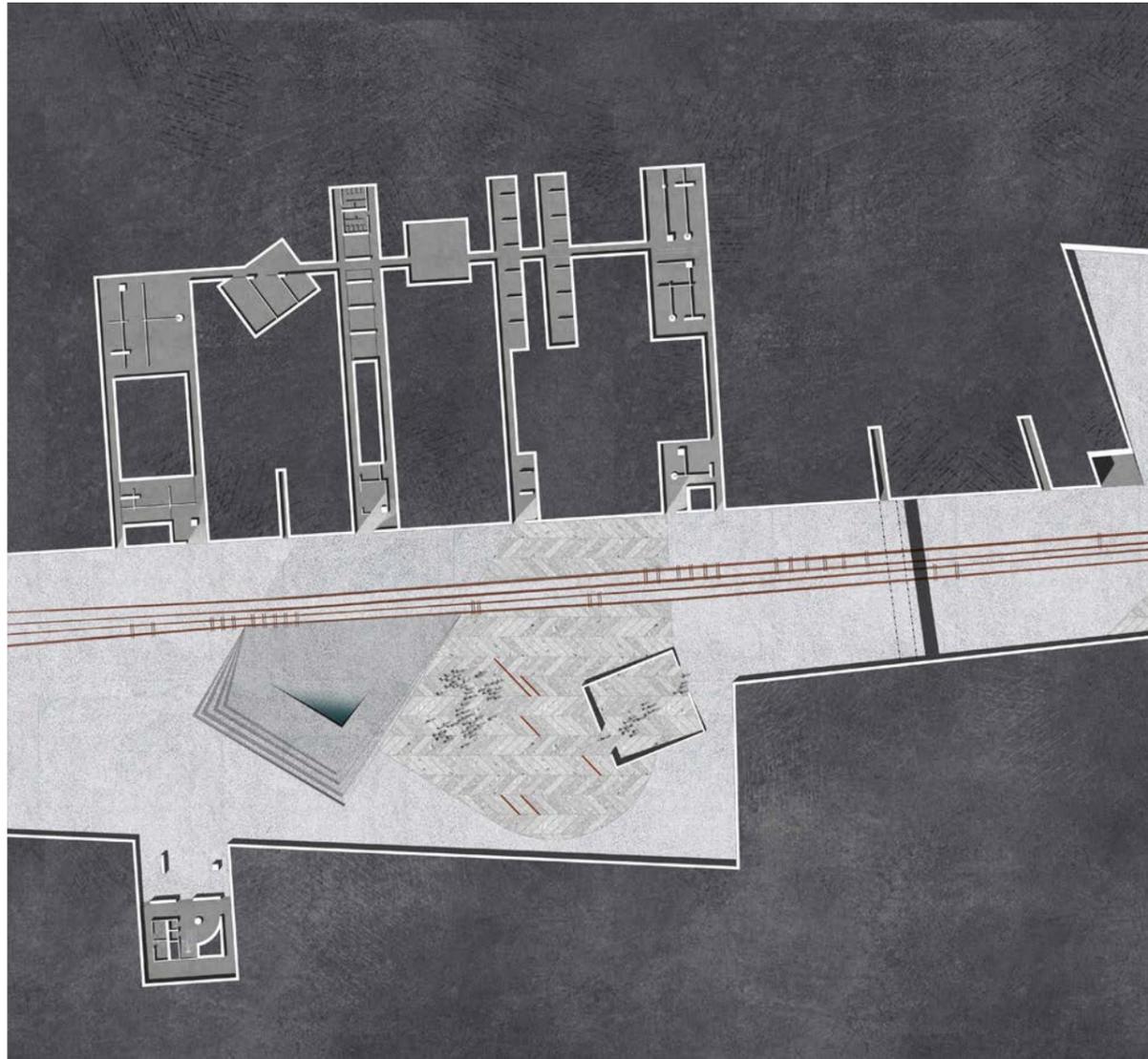
# Relationship with soil and surrounding

Focus area 1 / underground (level -1)

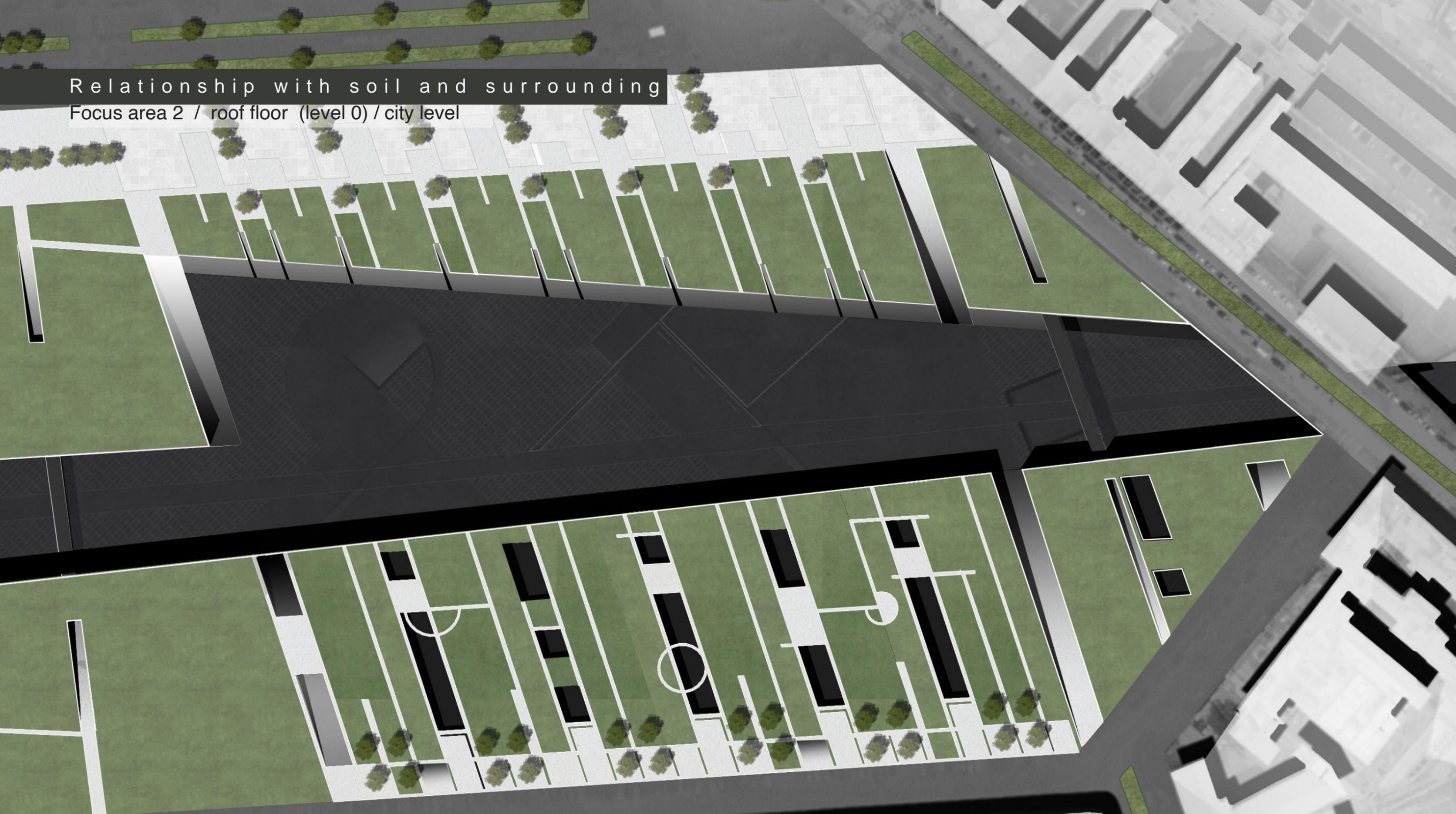


# Relationship with soil and surrounding

Focus area 1 / underground (level -4)



Relationship with soil and surrounding  
Focus area 2 / roof floor (level 0) / city level

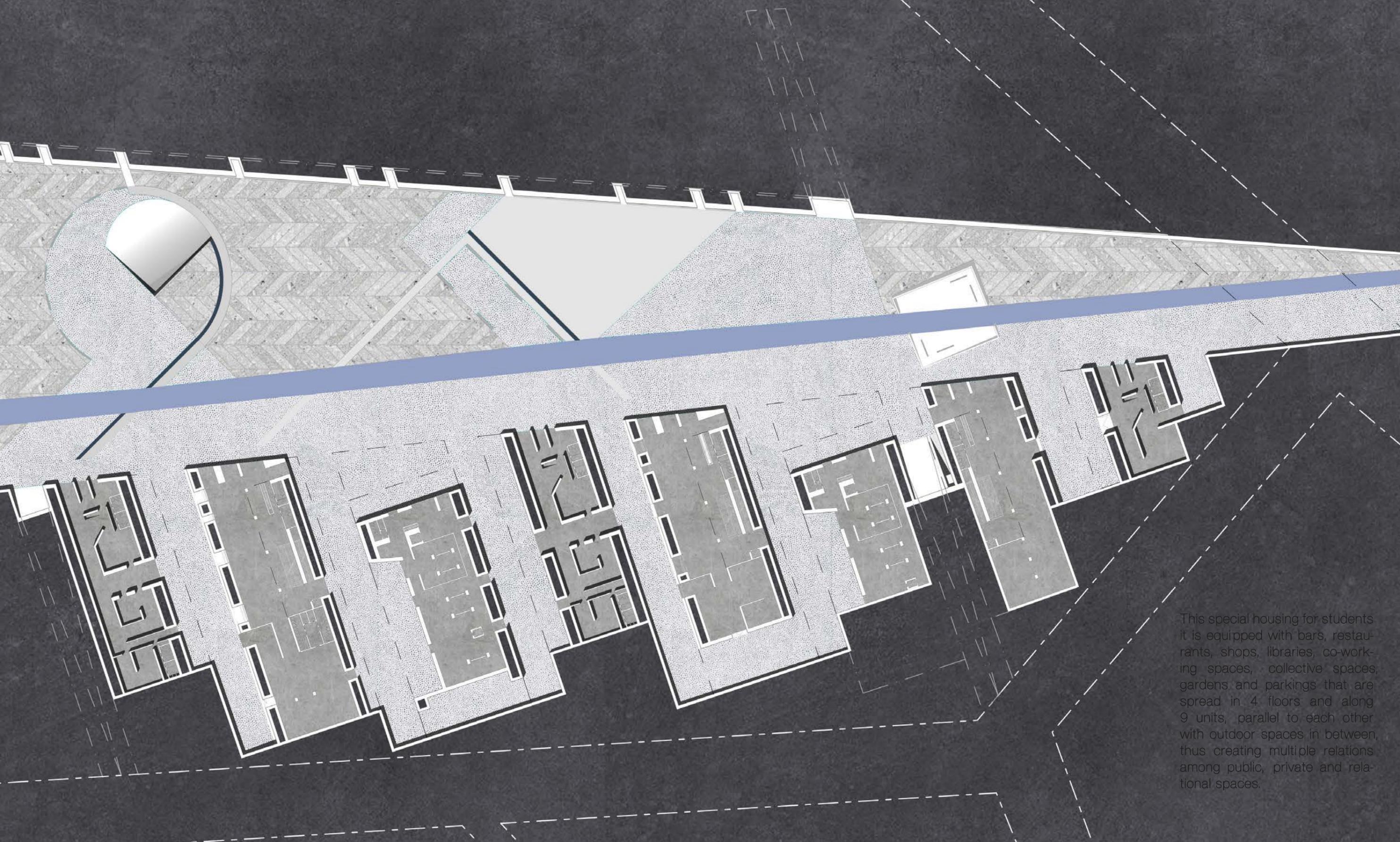


**Designing of an Innovative Athletes Housing** where housing wellbeing and social integration (sharing of spaces) is the center of the design process. A community that is as balanced as possible; A sustainable housing with car sharing, bike sharing, space sharing & services sharing.

What is once perceived as just green collective spaces with pathways, vegetable gardens and parks, now, becomes the roof of a housing district that is engraved 16m down the earth surface, in order for the nature to take over. Its permeable with infrastructural structure allows visitors and residents to access the site from different parts of the city.

## Relationship with soil

Focus area 2 / ground floor (level -4) / the new horizon



This special housing for students is equipped with bars, restaurants, shops, libraries, co-working spaces, collective spaces, gardens and parkings that are spread in 4 floors and along 9 units, parallel to each other with outdoor spaces in between, thus creating multiple relations among public, private and relational spaces.

# Diversification

Architectural scale / typical floor (level -2)

Different spaces that are in relationship, where housing wellbeing and social integration (sharing of spaces) are the center of the design process.



## Inside/outside relationship

Architectural scale / characteristic sections

### A crack that creates a new front

the relationship with inside/outside and connection with the sky, a design that stresses multiple relations among: public, private, relational spaces

front facade towards the events' square



longitudinal section a-a'

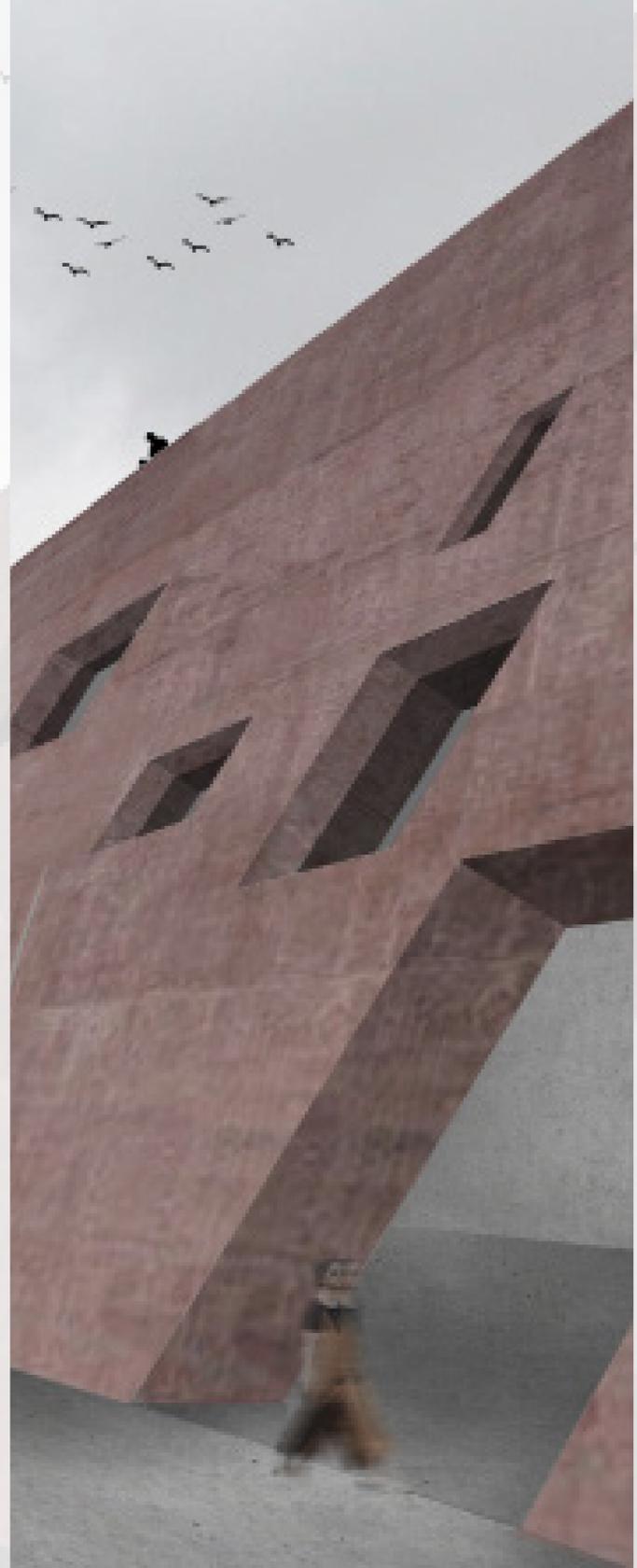




**Arts & exhibition areas, showcasing different authors work.**

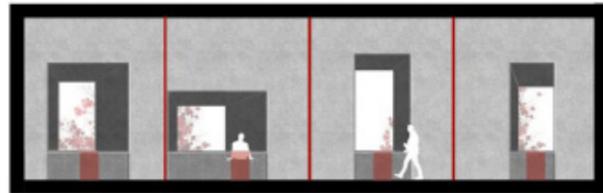
here shown: The exhibition "Chillida: Rhythm-Time-Silence", delves into Eduardo's Chillida (a renowned Spanish sculptor) longtime exploration of space as material, as well as his philosophical investigations into the relationships between sculpture, architecture, nature and site.

**Carving of materials that resemble the earth;** relational areas in the housing district that allow visitors and residents to explore the site.

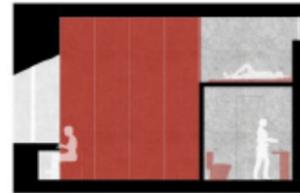


# Innovative layouts for housing

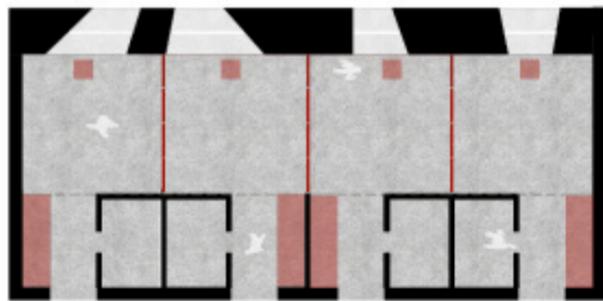
Student Housing typologies



section view

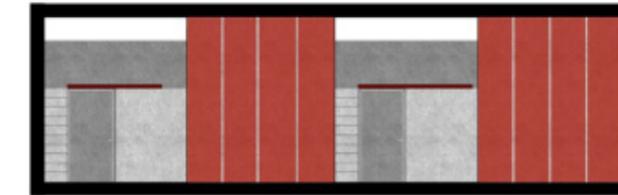


section view

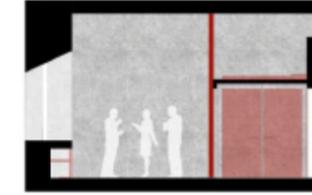


plan view

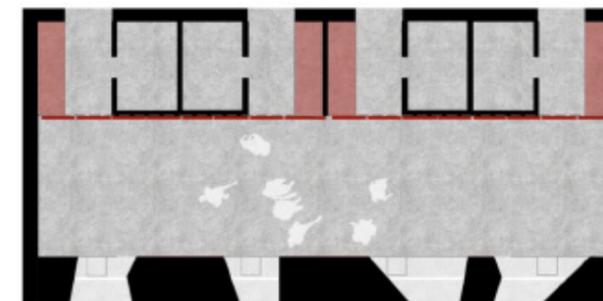
from private spaces...



section view



section view



plan view

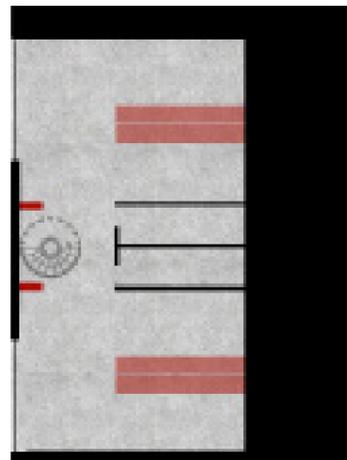
to social/collective spaces



# Innovative layouts for housing

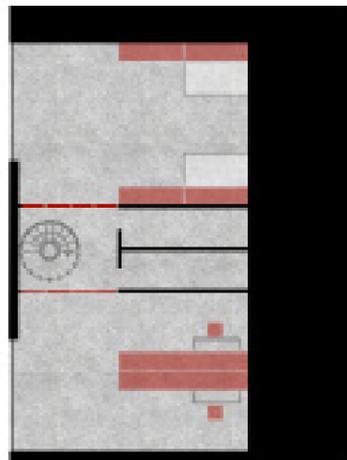
Student Housing typologies

from shared spaces ...

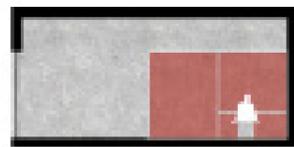
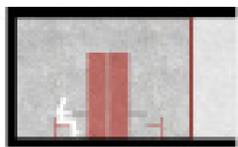


plan view: -1 level

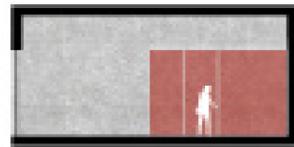
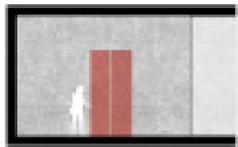
to private double rooms



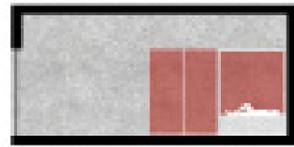
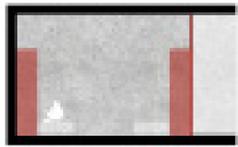
functional and flexible spaces



private study space



private closet



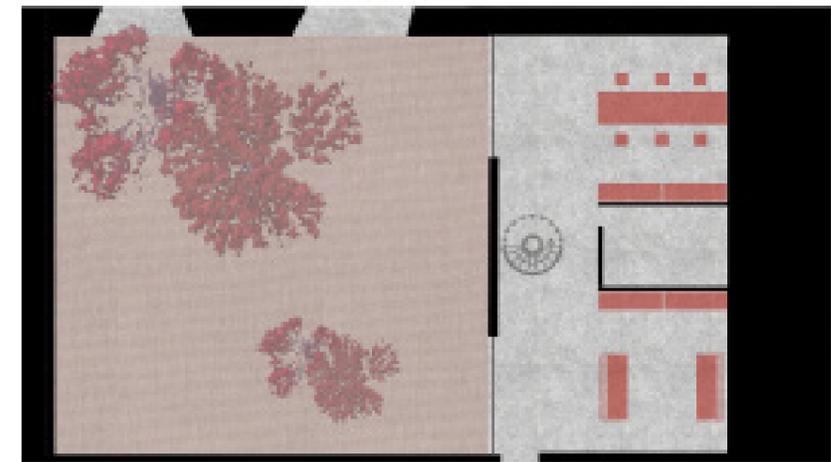
shared bedroom

section views

Typology 2: green, diverse & flexible house

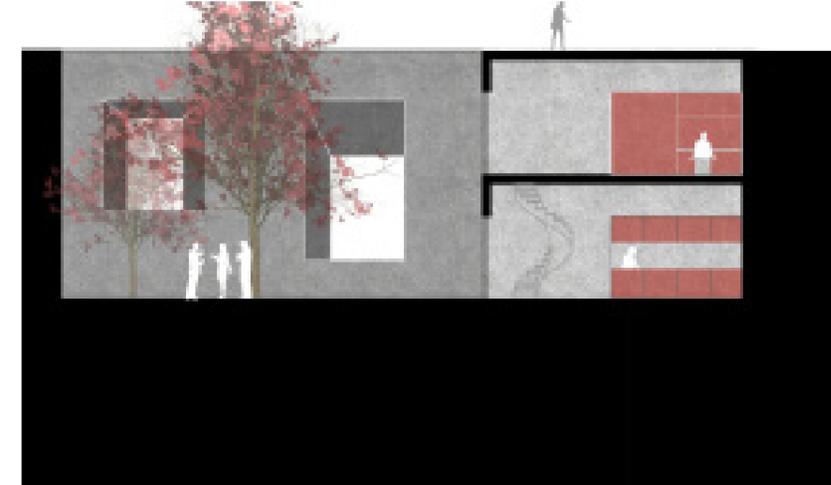
Living spaces that are resilient and adaptable

shared spaces: inner courtyard, living & dining area



plan view: ground (-2) level

relationship between the courtyards and housing unit



section view