

# Towards a liveable neighborhood

Oranjeboom street, Feijenoord, Rotterdam

Graduation Project, Rmit studio

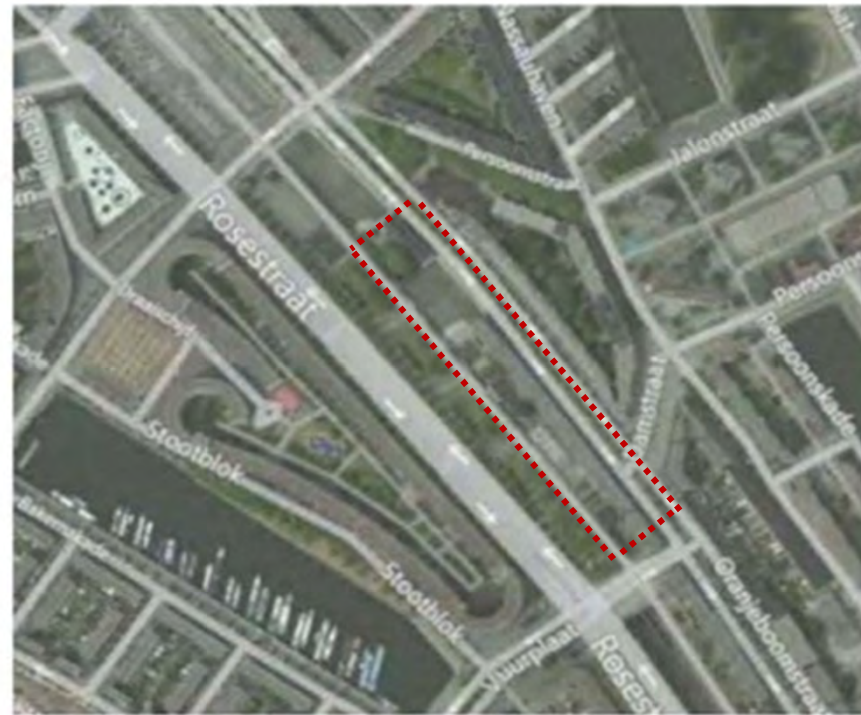
Gallou Eirini

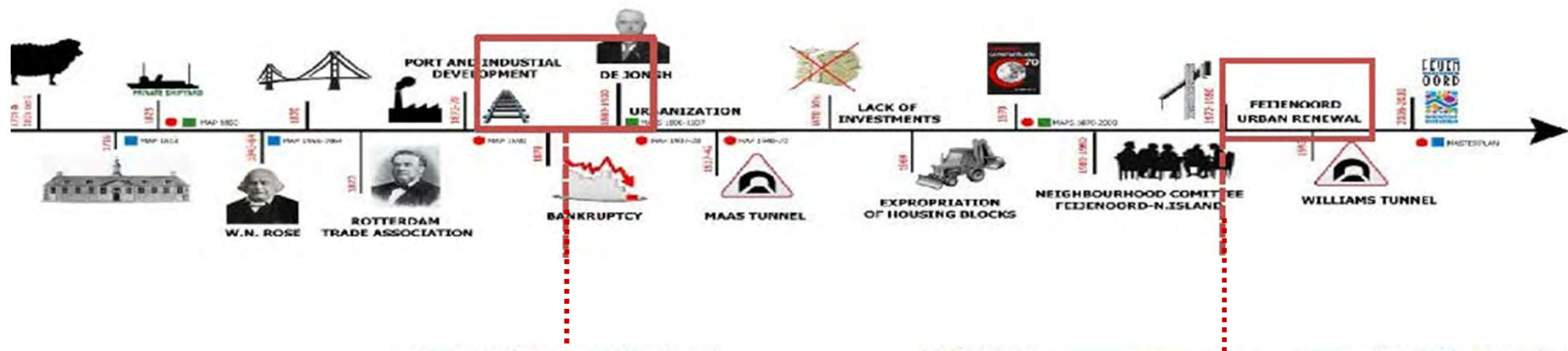
Tutors: L.Spoormans, W.Quist, O.Trienekens, A.Luising

Feijenoord



Oranjeboom street





CONTEXT

RESEARCH APPROACH

DESIGN GOALS

DESIGN

CONCLUSION









CONTEXT

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CONTEXT

RESEARCH APPROACH

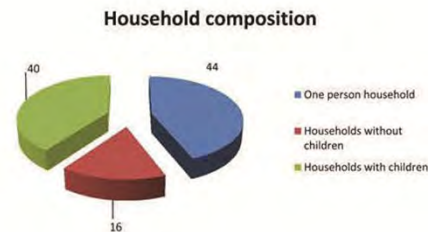
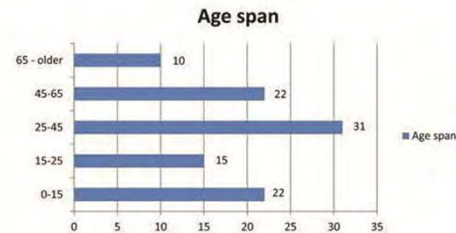
DESIGN GOALS

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The “Social Index” gives an indication of the neighborhood’s social state which is based on statistical data. Feijenoord is in the red (negative) in the social and cultural activities part..

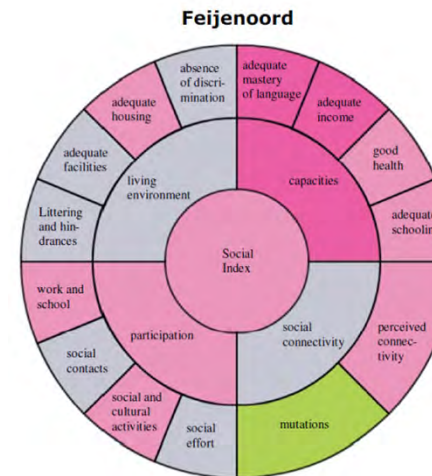


#### WHO?

7290 inhabitants  
 Equal gender distribution  
 Big children population (30% of the population is under 20 years old)  
 Young people  
 Retired older people

#### WHERE FROM?

poor white people & new immigrants  
 82% of Feijenoord population are ethnic minorities (p.e. Turkish, Surinamese, Moroccan, black, )



## RESEARCH APPROACH

Focus on Social aspect of sustainability



- **Livability**

Strengthen the neighbourhood and community by creating **viable public spaces** and promote the restoration of **compact, walk-able, safe, mixed-use** urban area

- **Livability is part of sustainability :**

Design for a brighter and long-lasting future of this area

-**better living conditions**

-**economic expansion**

-**social growth**

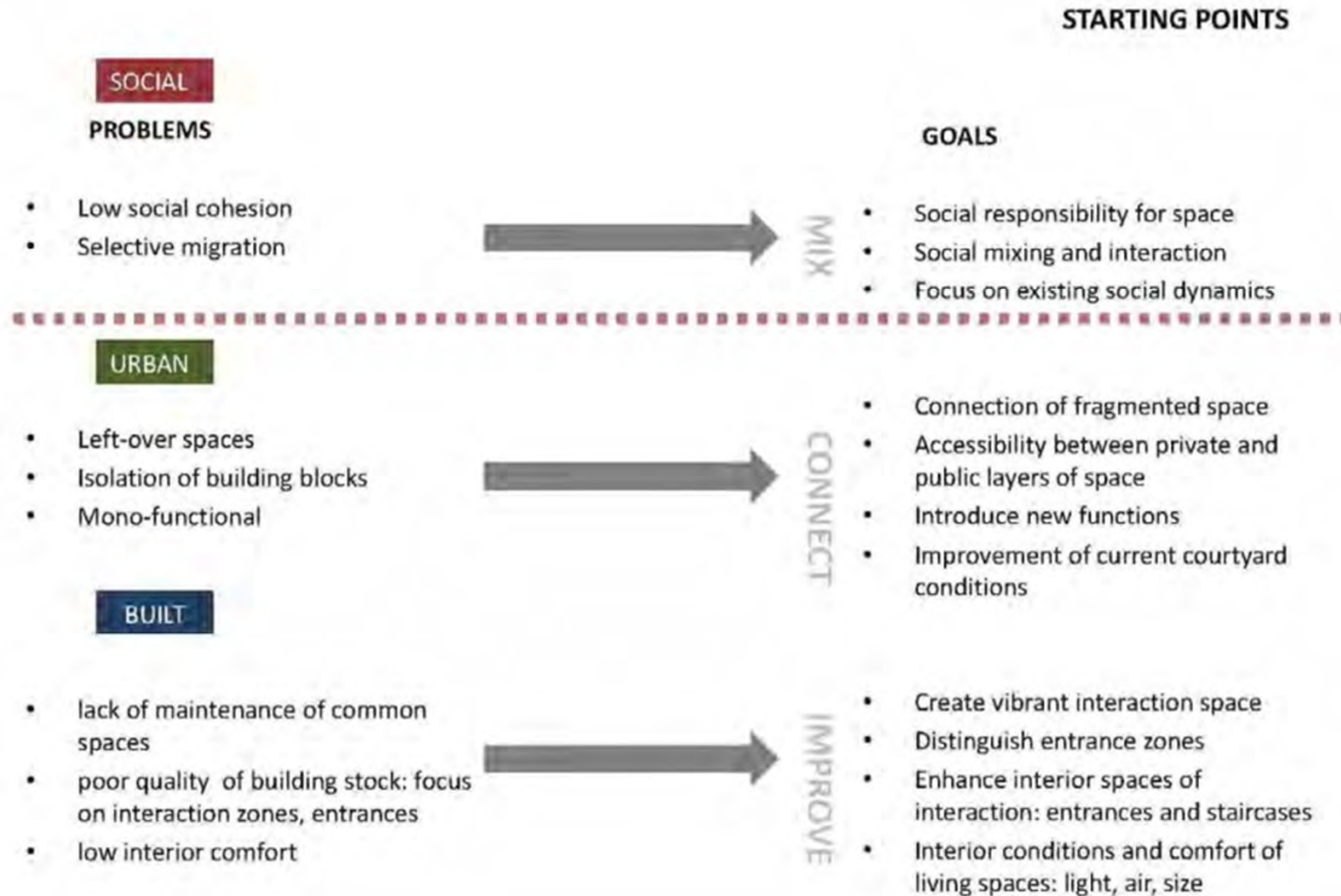


### Research question

How can spatial and programmatic interventions stimulate **social cohesion** and thereby lead to **sustainable livability** in the neighbourhood?



# From starting points to design



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# Social sustainability

## Social cohesion

- common activities
- AND common facilities e.g. jointly invest in a trampoline for the neighborhood children. The apartment building has shared facilities, as e.g. covered bicycle parking and separate containers.



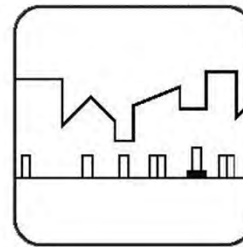
## Social Security

- Enhance visibility
- Treat borders and define territory to provoke Involvement and care



## Diversity of district

- work at home, by installing a good workplace,
- daily shopping within the neighborhood
- functions are mixed over the neighborhood
- live, work and play



## Life resistance

- Provide accessible Public Places and amenities
- Provide flexible Renovation plan





## Social sustainability

Social cohesion

Social security

Social mixing

Life resistance

## Value assessment

Urban level

visual and physical connection , water

District level

Diversity

Building

Identity

Material

refurbishment, light and air

## Design goals

Interaction, community bonding

Visibility, Privacy zoning

Diversity: groups and build.types

Accessibility, int.liv.conditions



CONTEXT

RESEARCH APPROACH

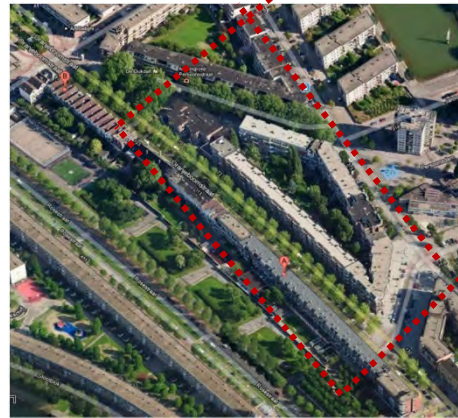
DESIGN GOALS

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Urban level    .....➔ Neighborhood level    .....➔ Building level    .....➔ Material level

Feijenoord



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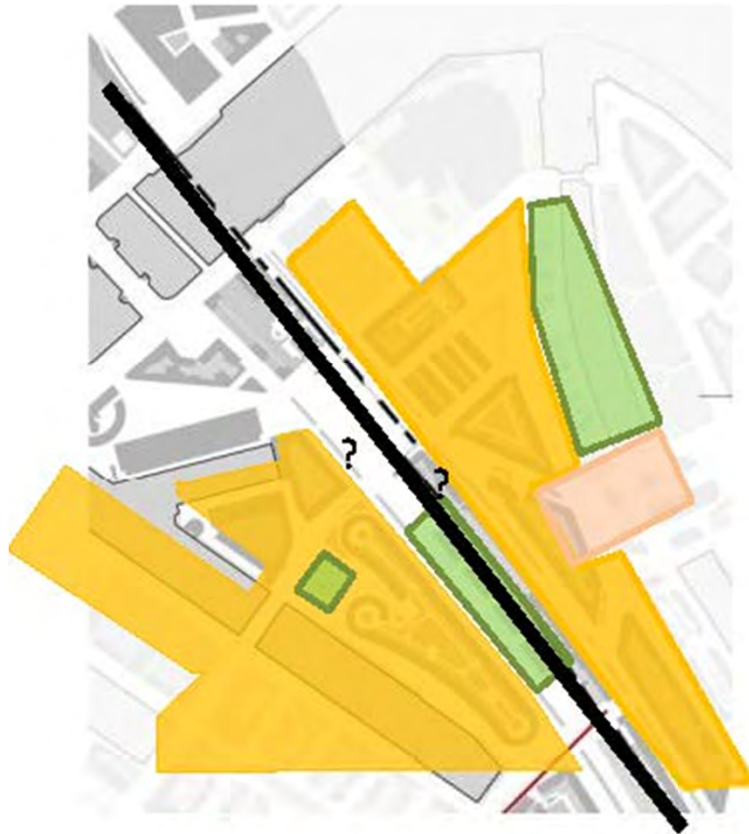
Feijenoord



## Urban level



Social Interaction  
Accessibility



CURRENT

- Infrastructure has resulted in **building acting as a border** between Entrepothaven and Feijenoord
- Lack of public functions and mix of uses on this axis
- Potentials due to demolishing of residential part



PROPOSAL

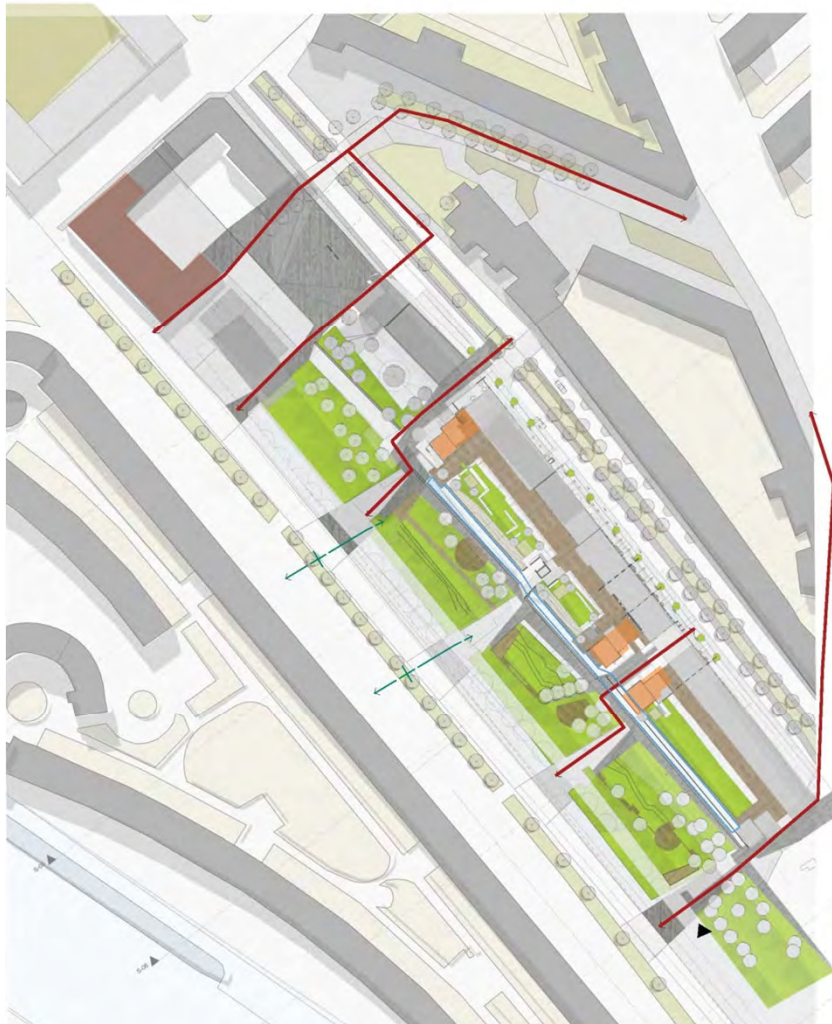
- Use public infrastructure to connect areas
- Introduce public **functions and mix of uses** on this axis
- Fill in demolished parts





## New Functions

Daycare centre in the start of Rosestraat  
:new centre of interaction!



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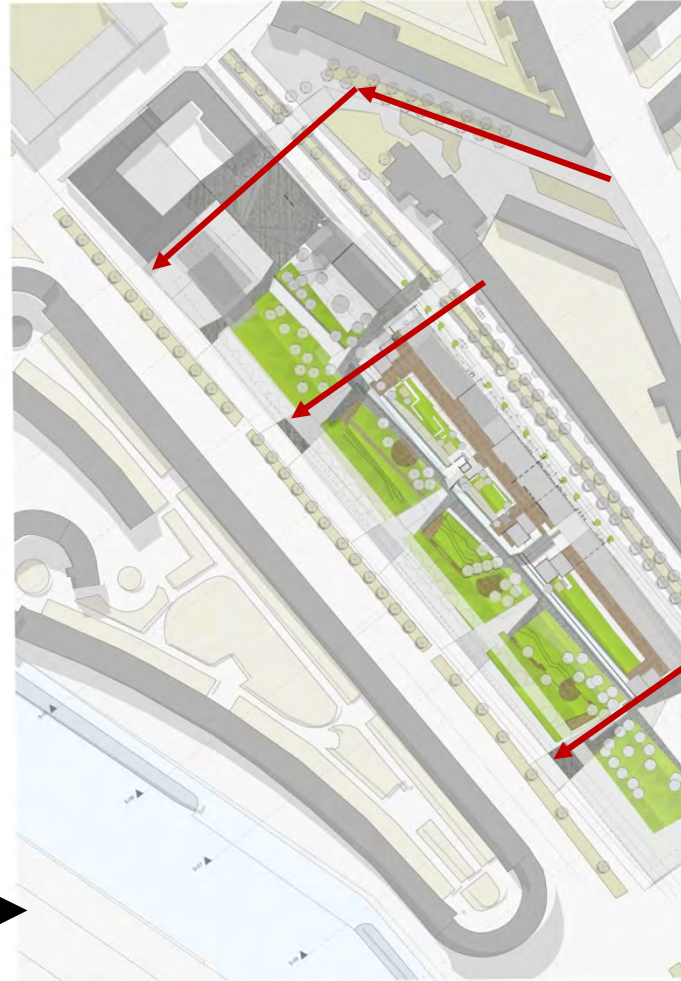
DESIGN

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CONTEXT



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Urban level

New pedestrian accesses

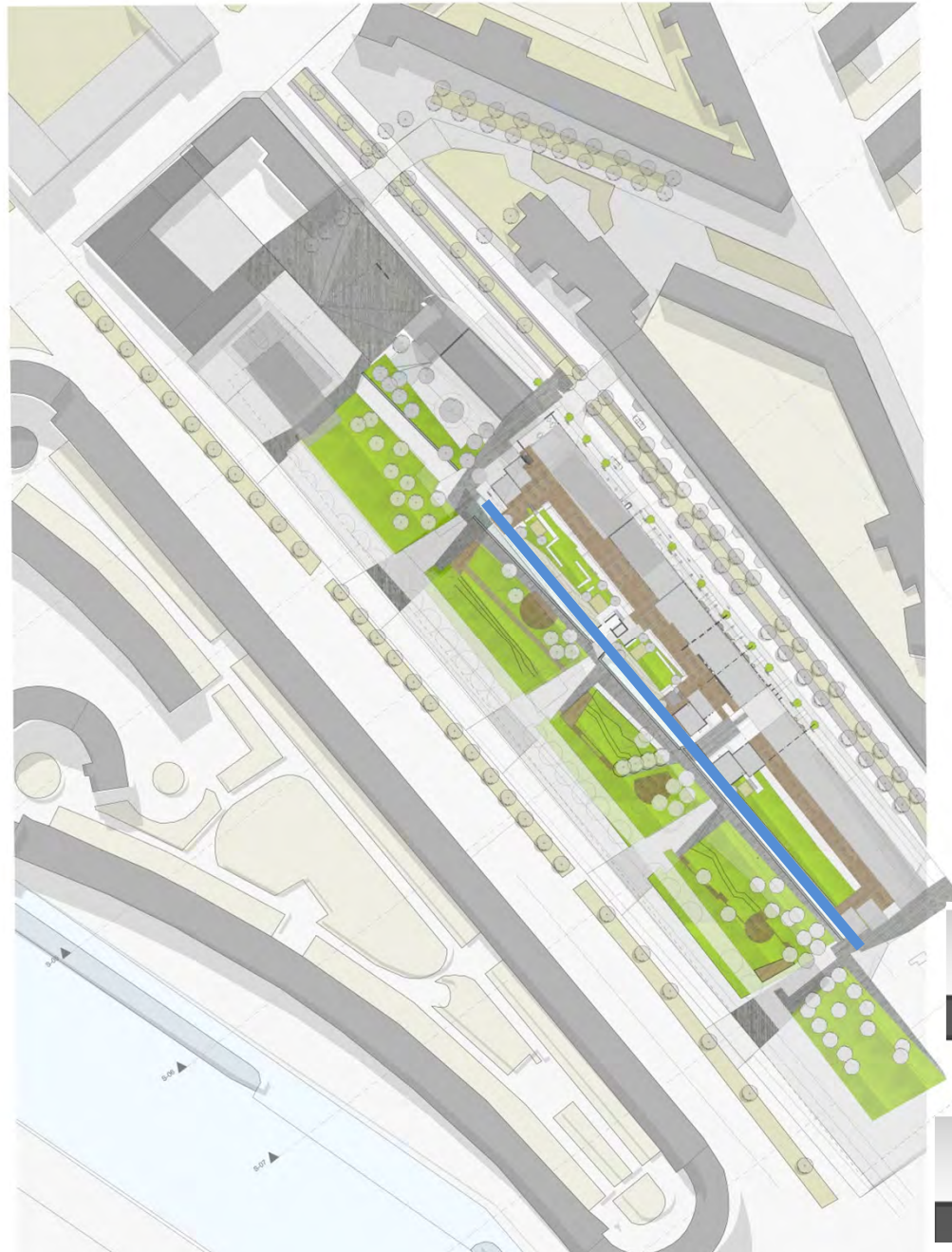


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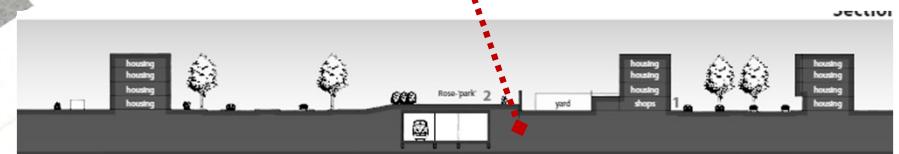
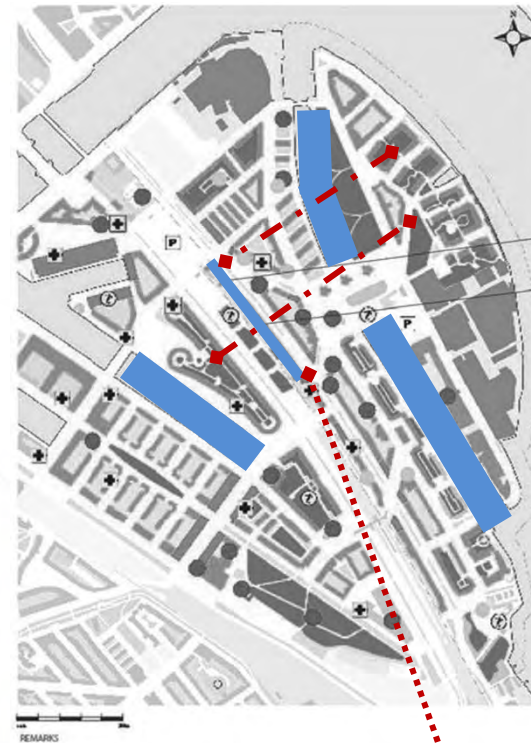
CONCLUSION

RESEARCH APPROACH





Urban level  
New border; water element



CONTEXT

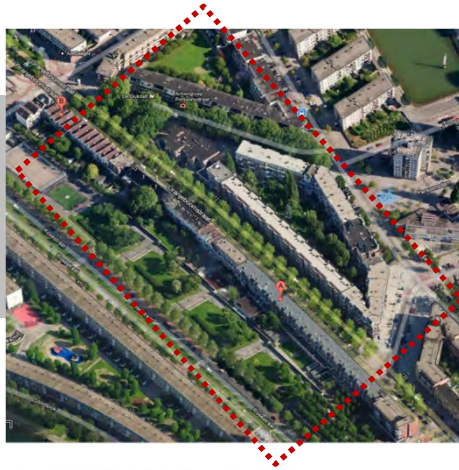
RESEARCH APPROACH

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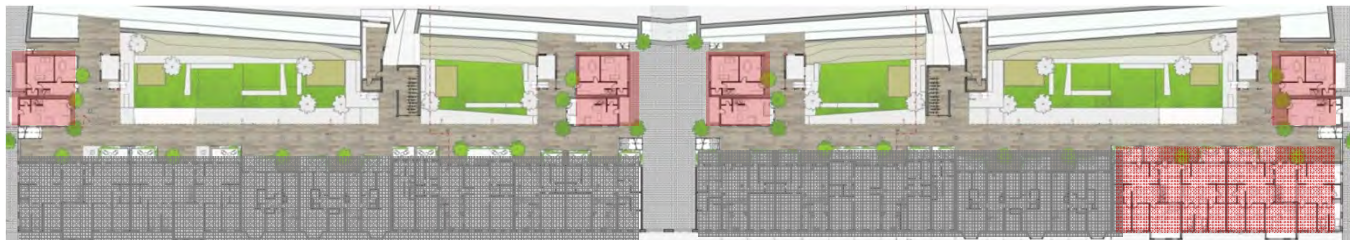
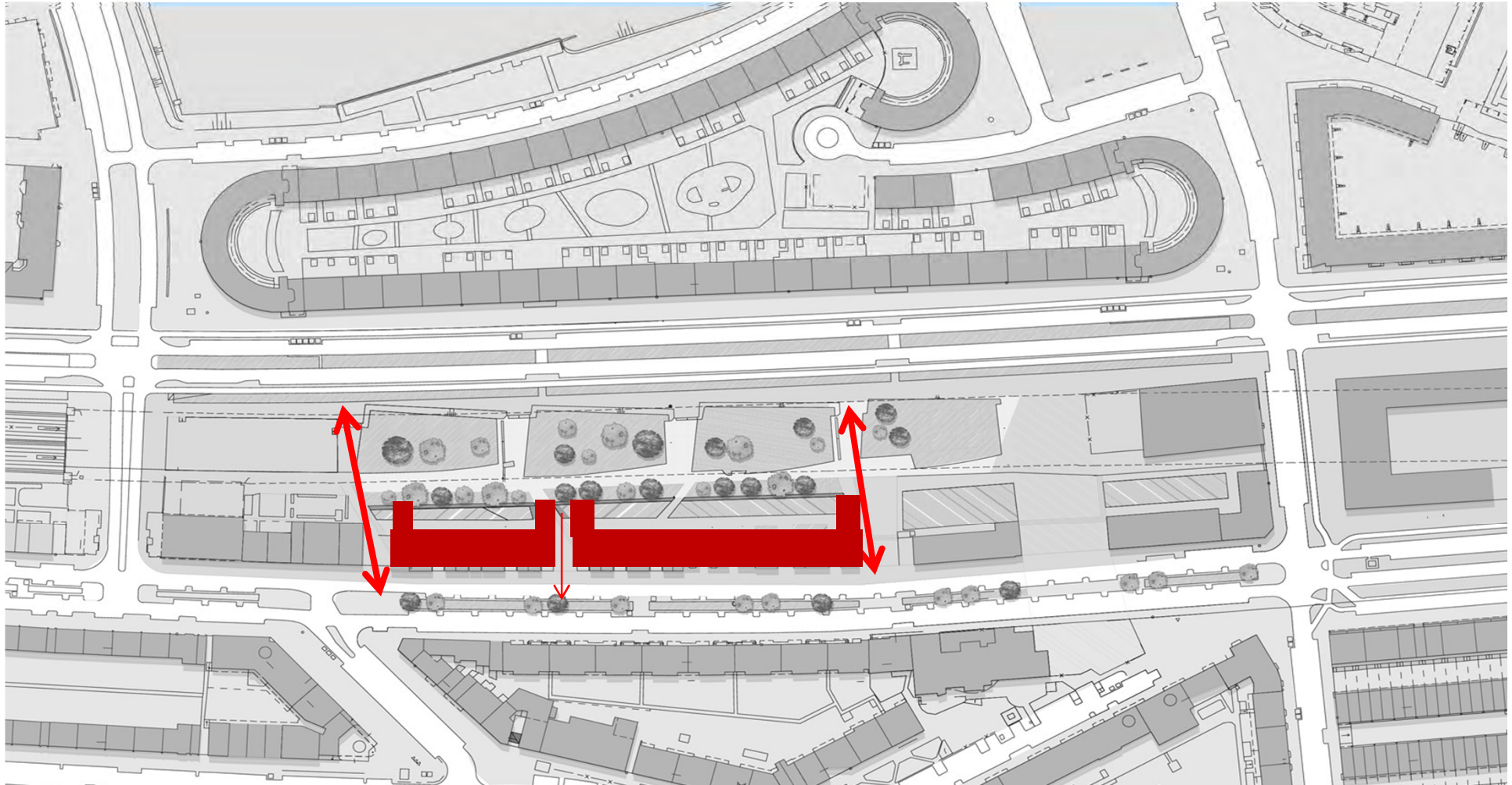
## Neighborhood level



Accessibility  
Interaction, community bonding  
Living conditions  
Diversity  
Privacy zoning

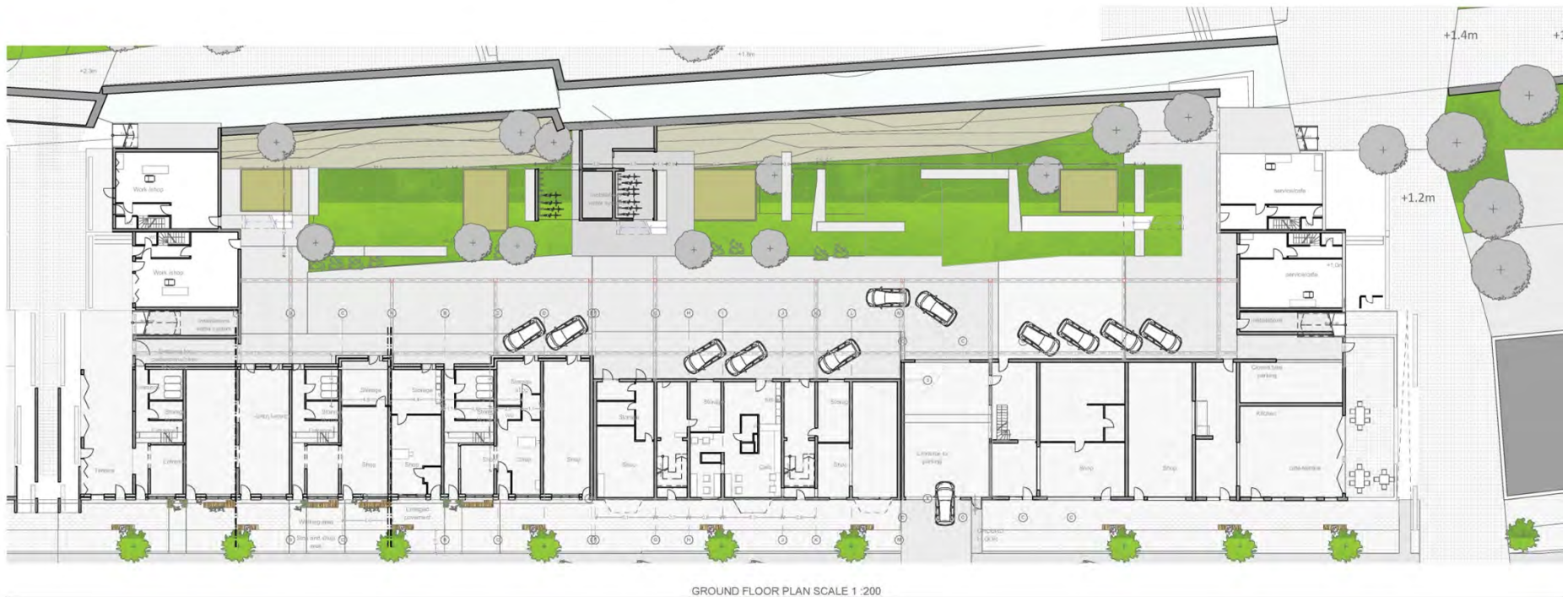
Breakthroughs and additions

Neighborhood  
level





Neighborhood  
level





# Overview

## Neighborhood level



CONTEXT

RESEARCH APPROACH

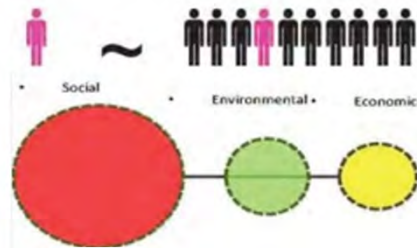
DESIGN GOALS

DESIGN

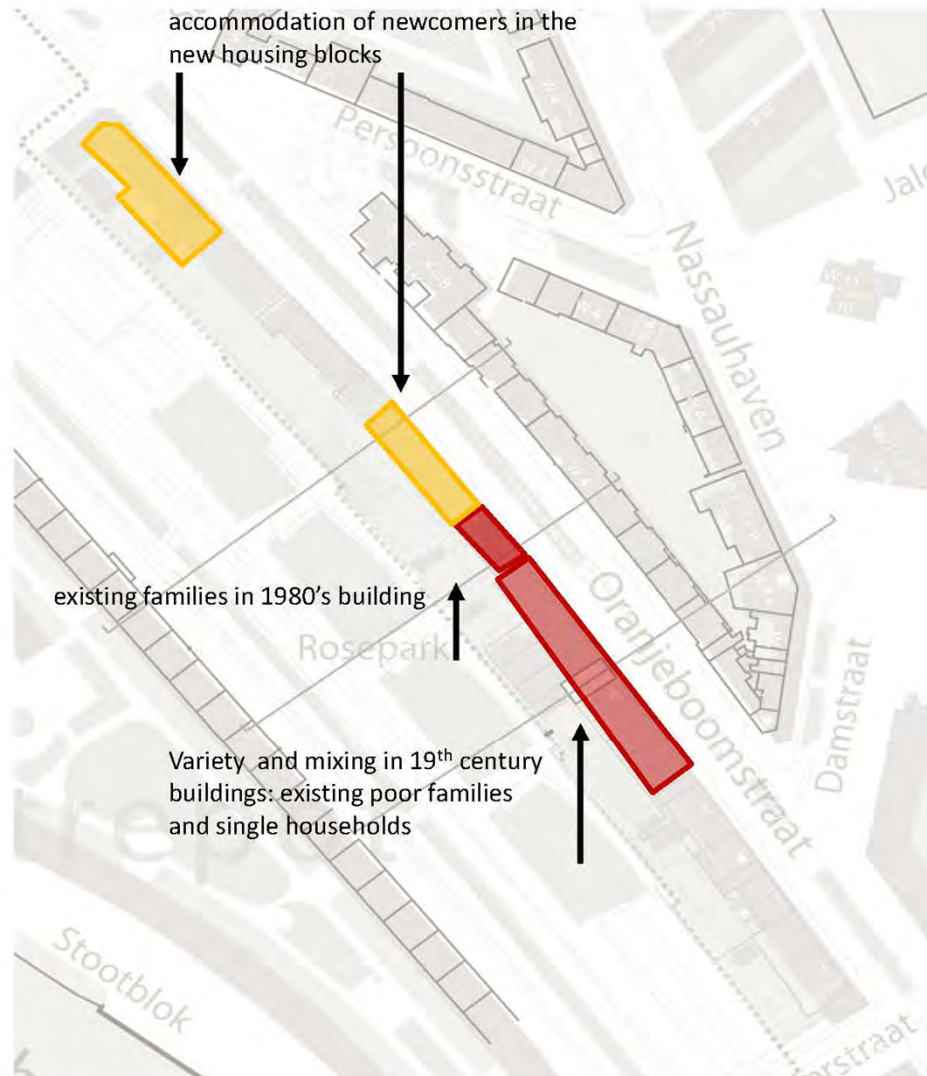
CONCLUSION

## DIVERSITY





## Neighborhood level Diversity



### SOCIAL MIXING

Exploit variety in building stock to host variety of groups

#### How?

##### 1. income

attract middle class

##### 2. household composition

large families, (existing +new)  
single household (existing)

#### for the **existing inhabitants**

-Upgrade conditions and improve sense of belonging for existing by focusing on communal space-interaction

#### for the **new inhabitants**

-Offer public amenities and cheaper, big housing

Newcomers: Middle social strata  
 Existing: Lower social strata

CONTEXT

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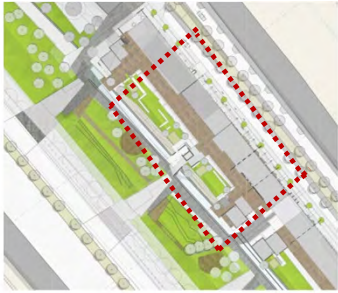
DESIGN

CONCLUSION

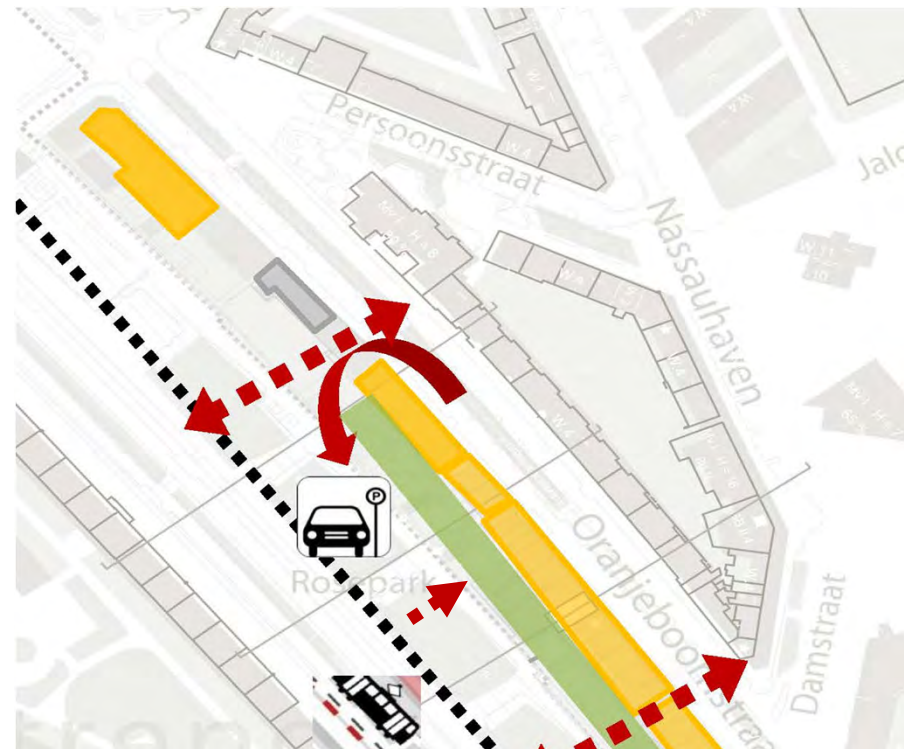
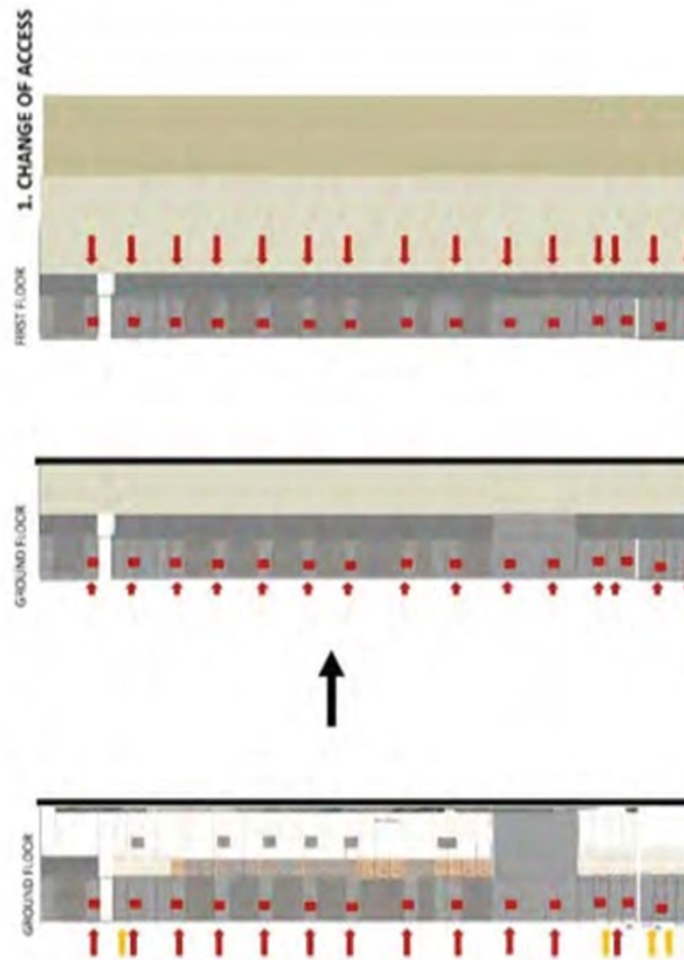




## ACCESSIBILITY-SAFETY



## Neighborhood level Access



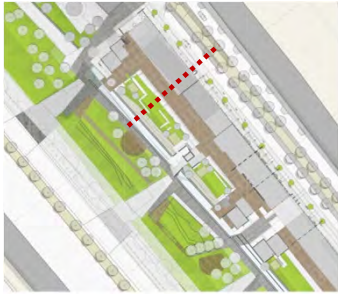
CONTEXT

RESEARCH APPROACH

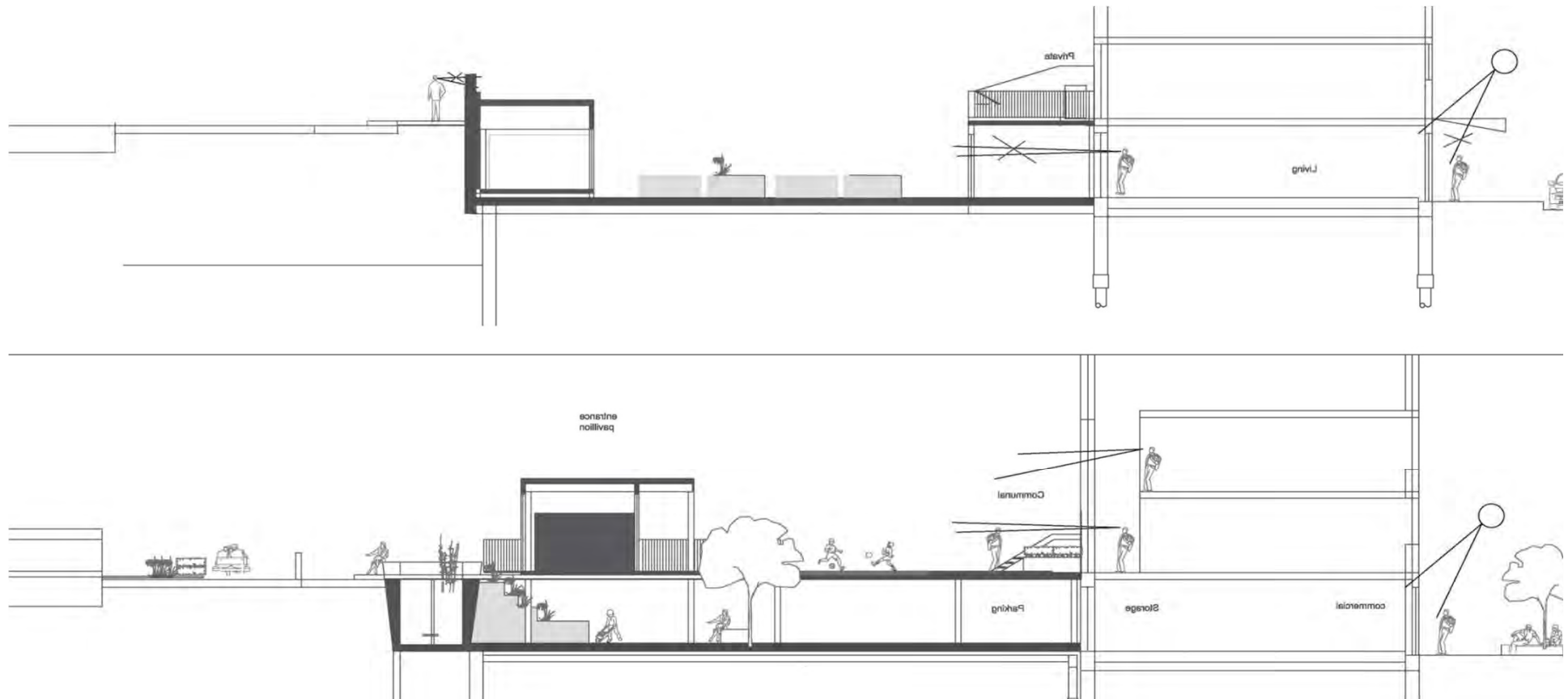
DESIGN GOALS

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## Neighborhood level Access/Safety



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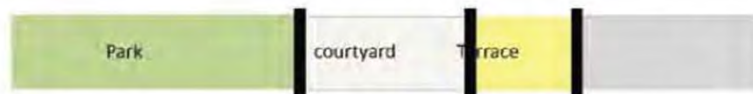


## Neighborhood level Access-Safety



S1 SECTION COMMUNAL YARD

1:200



### PRIVACY ZONING

PUBLIC >> COLLECTIVE >>> PRIVATE

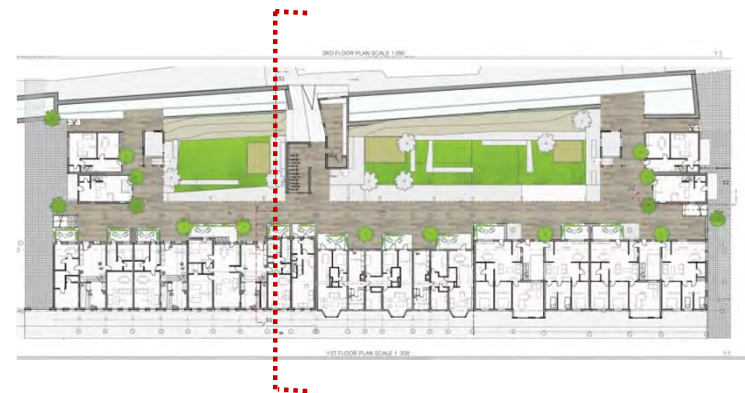
LAYERS IN COLLECTIVE

A. PLAY AND GROW

B. SIT AND WALK

### DEFINE BORDERS

PUBLIC-COMMUNAL , COMMUNAL-PRIVATE SPACE



CONTEXT

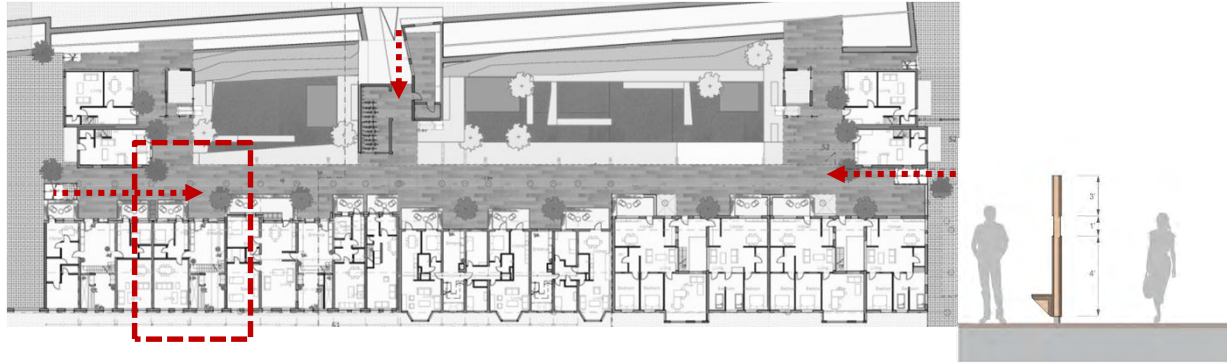
RESEARCH APPROACH

DESIGN GOALS

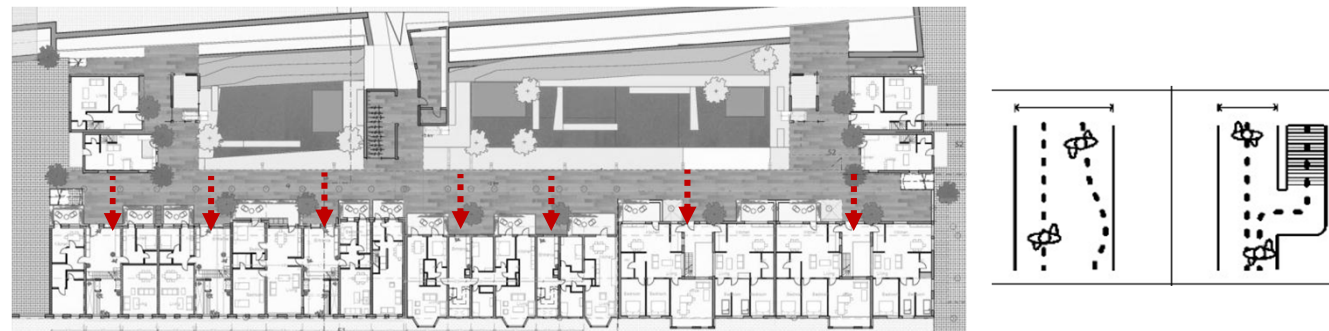
DESIGN

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Neighborhood level  
Privacy Zoning



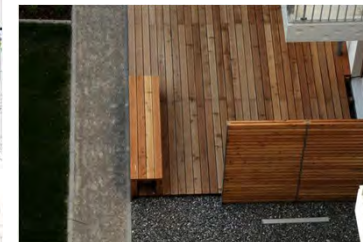
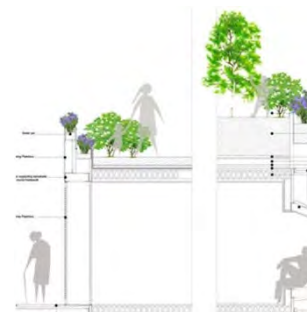
Provide entrance control



Increase  
meeting points



-  Communal Deck
-  Private zone in front of apartments



Provide Private  
space in front of  
apartments

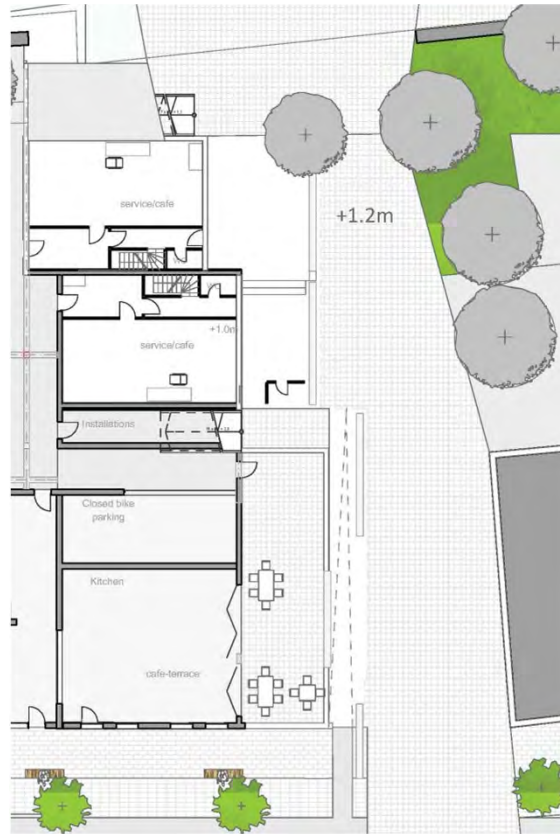
CONTEXT

RESEARCH APPROACH

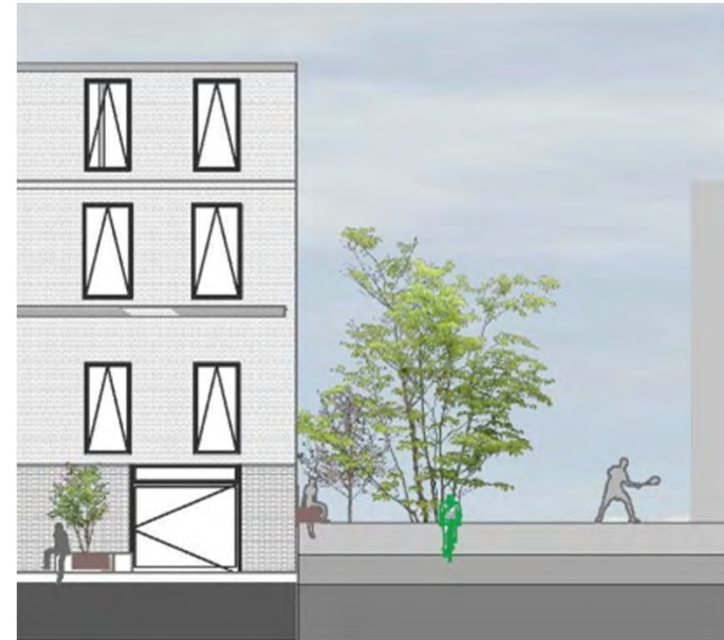
DESIGN GOALS

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Neighborhood level



E-14

ELEVATION\_ NW SIDE ENTRANCE

1:200



CONTEXT

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## INTERACTION IN STREET SIDE



CONTEXT

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**DESIGN**

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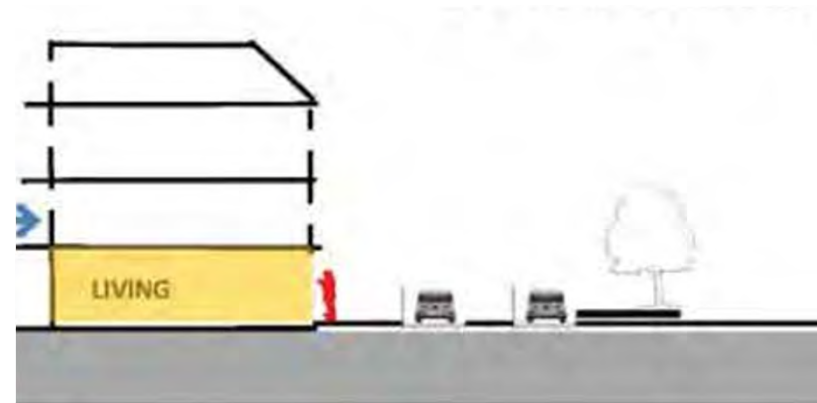




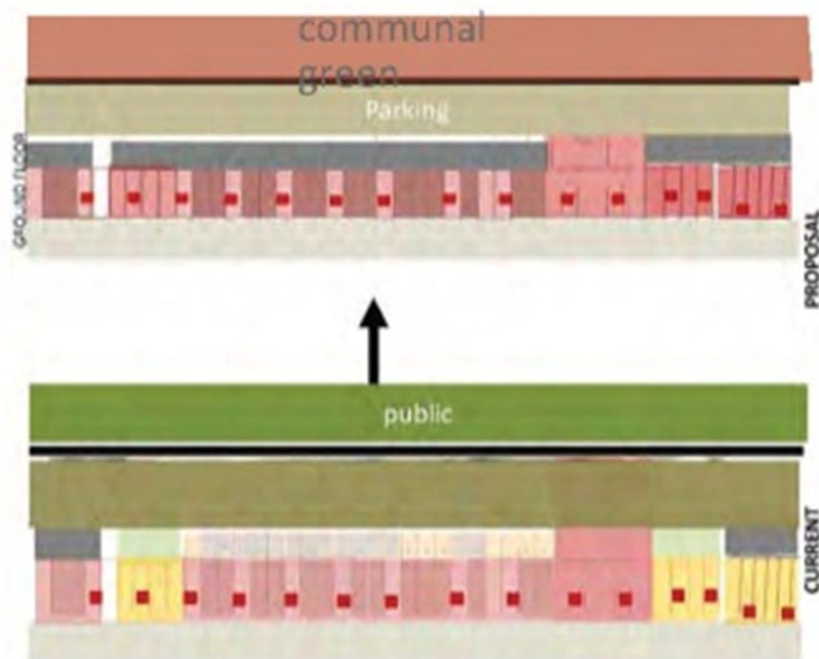
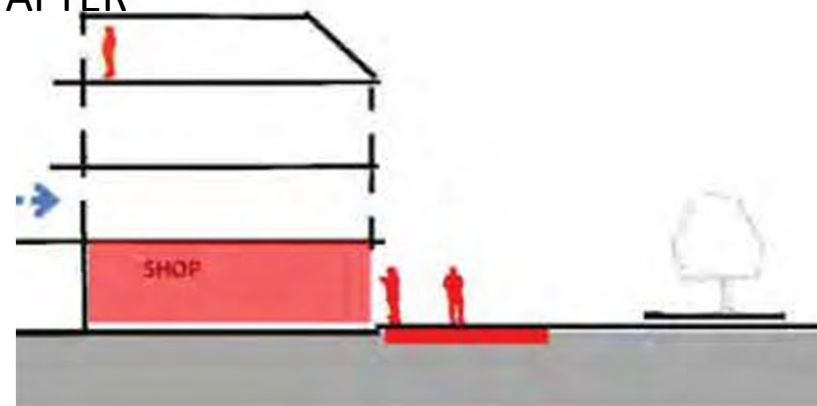
Neighborhood level

## Functions

BEFORE



AFTER



CONTEXT

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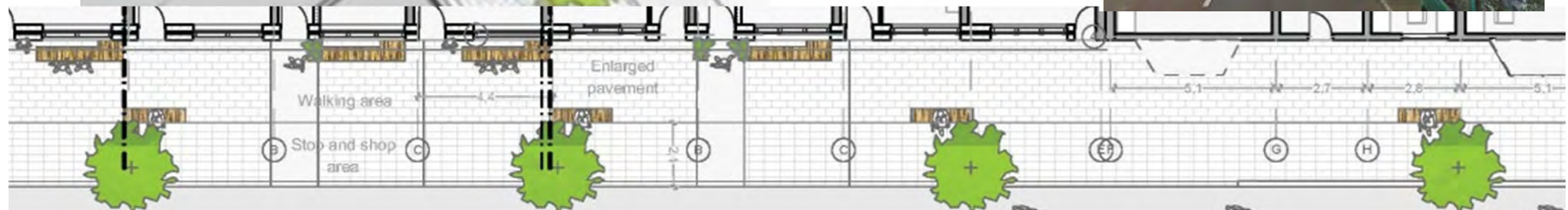
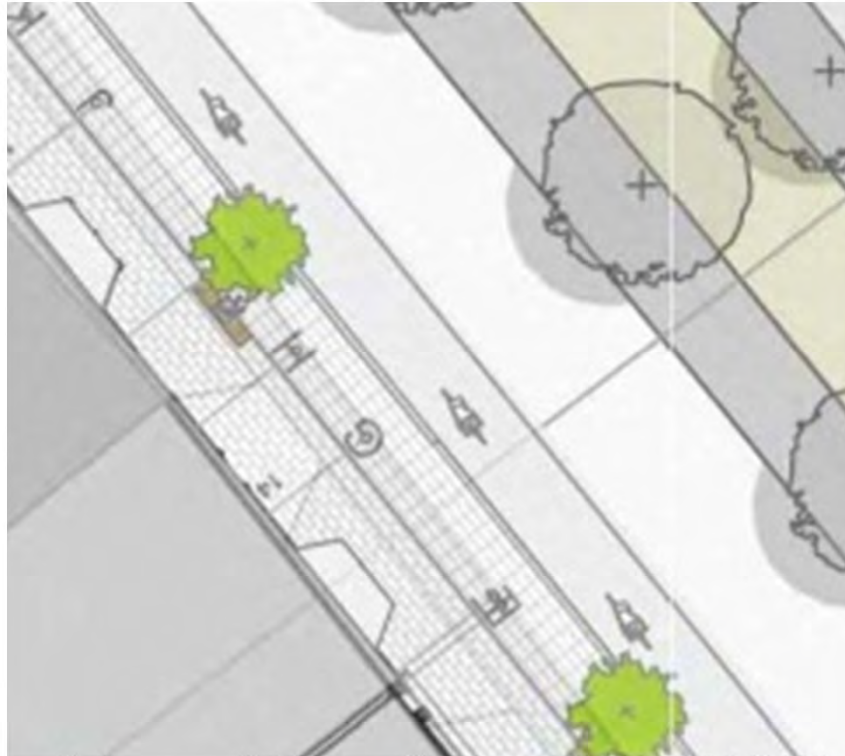
DESIGN

CONCLUSION



## Neighborhood level

Street side: change in street profile



CONTEXT

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Neighborhood level

BEFORE



“Closed” ground floor,  
housing

AFTER



Transparent ground floor ,  
shops and cafes



CONTEXT

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CONTEXT

RESEARCH APPROACH

DESIGN GOALS

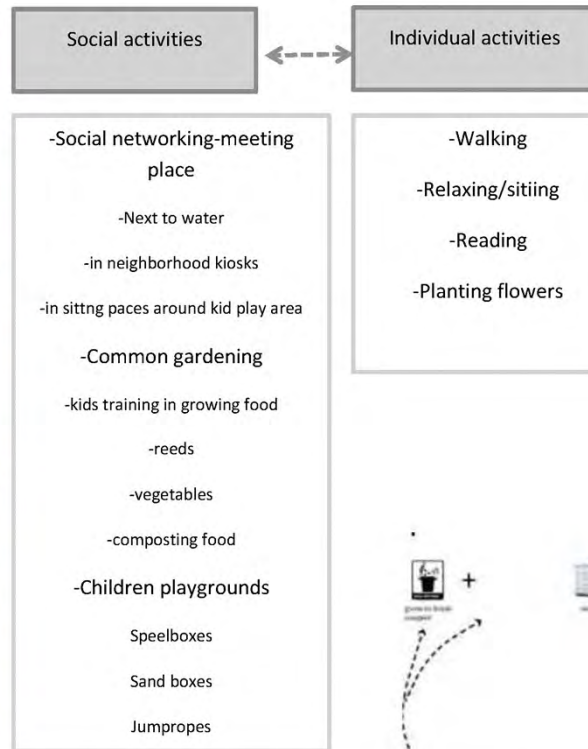
**DESIGN**

CONCLUSION



# INTERACTION IN COMMUNAL SPACE





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CONTEXT

RESEARCH APPROACH

DESIGN GOALS

**DESIGN**

CONCLUSION





CONTEXT

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DESIGN GOALS

**DESIGN**

CONCLUSION



S1 SECTION COMMUNAL YARD

1:200

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DESIGN

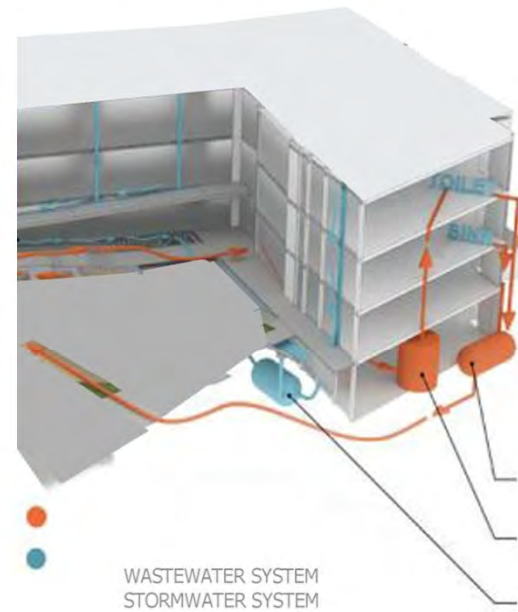
CONCLUSION



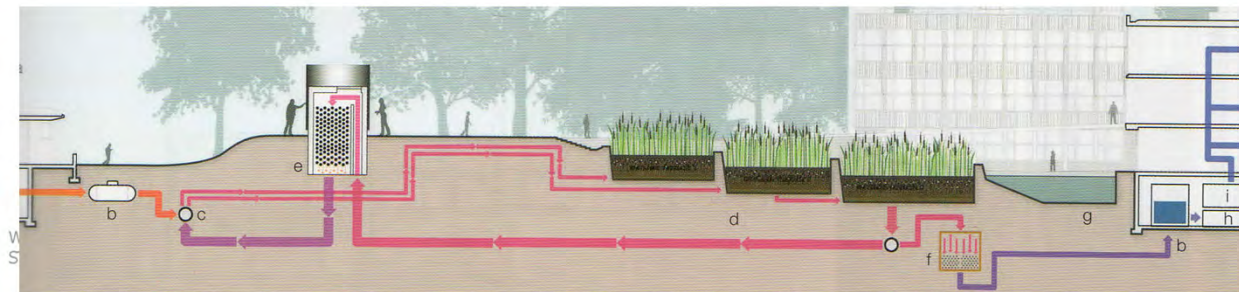
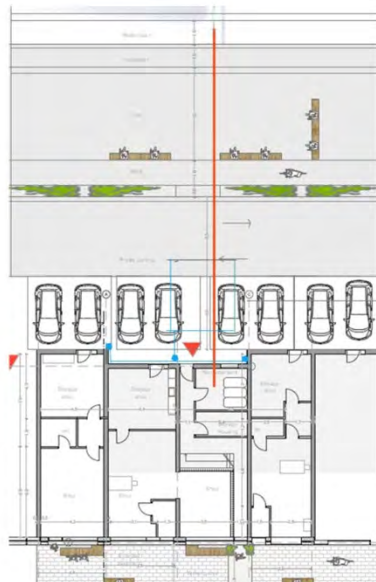
## WATER STRATEGY

- rainwater+ grey water
- collect and reuse
- collect, purify and reuse (toilet flushing, washing machines)

### WATER STRATEGY



SEPTIK TANK  
BASEMENT TANKS AND FIL-  
TERS FOR GREY WATER  
STORAGE  
RAINWATER CISTERN









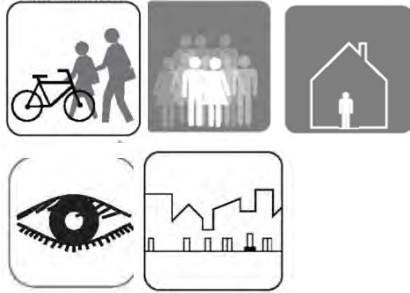








## Building level



Social Interaction  
Diversity  
Accessibility  
Visibility  
Liv.conditions

## ACCESS/VISIBILITY/INTERACTION



- Proposal



Ground floor



- Before

Building level

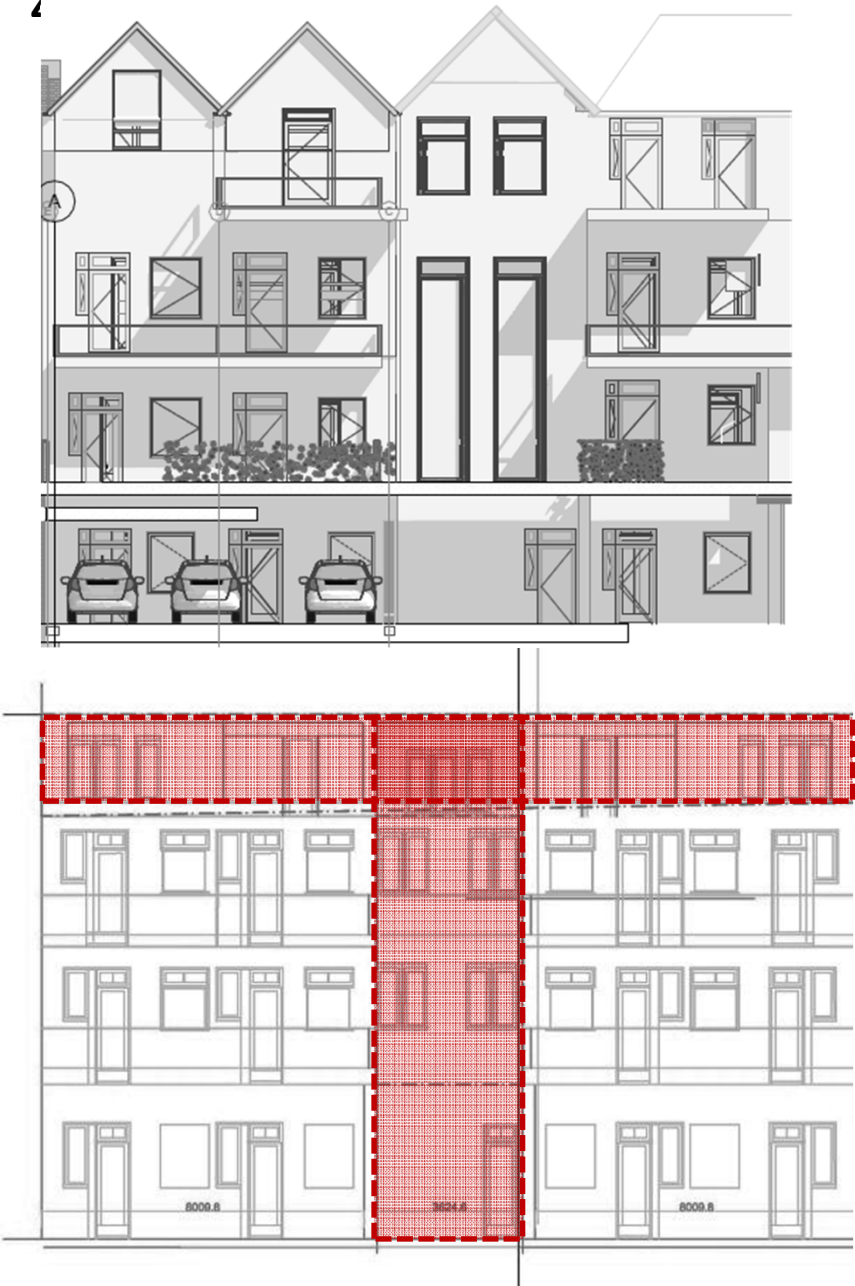


First floor





2



Building level

**EXISTING 19<sup>TH</sup> CENTURY  
FAÇADE TRANSFORMATION**



CONTEXT

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## Building level

### URBAN RENEWAL BUILDING

#### STRATEGY

- DEFINE ENTRANCE ZONE
- "VERTICALITY", LEGIBILITY OF FAÇADE

#### MATERIALISATION

- CREATE A NEW MONUMENTAL, TRANSPARENT PLINTH ON STREET FAÇADE
- RESTORE FAÇADE COVER WITH WOOD AS DESIGN INITIAL INTENTION



CONTEXT

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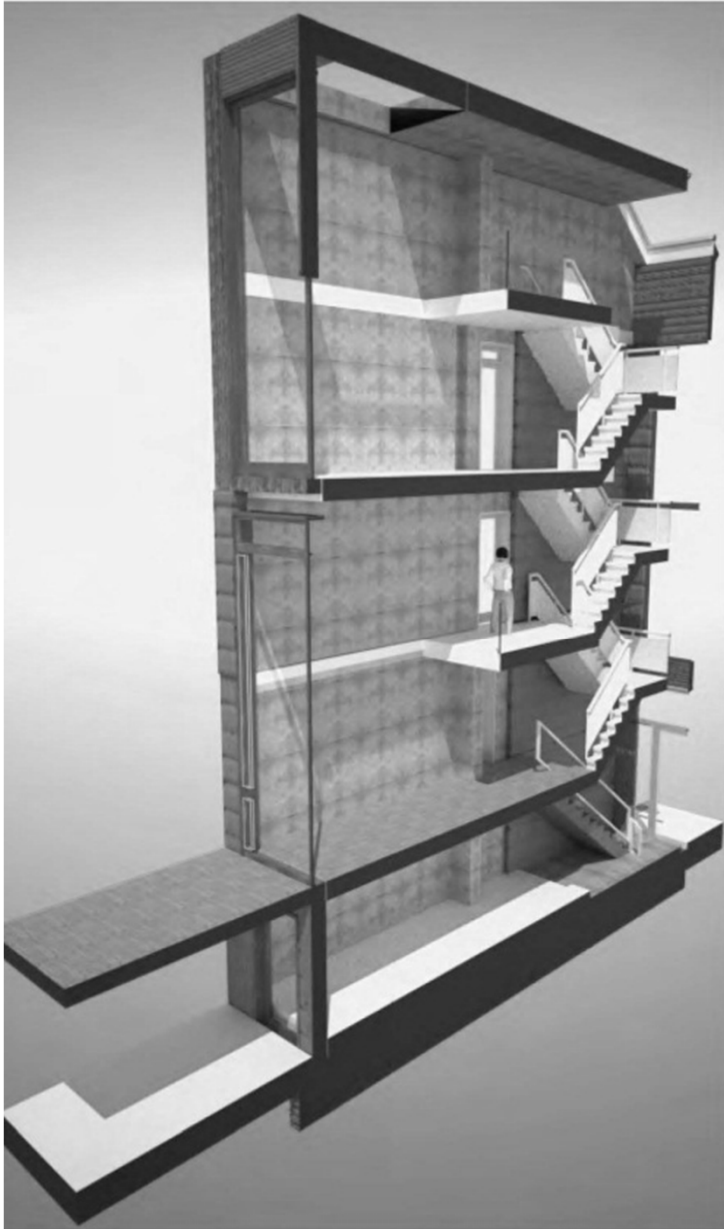
DESIGN

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## Building level Urban renewal



PORTIQUE FACADE FROM PARK SIDE 1:100

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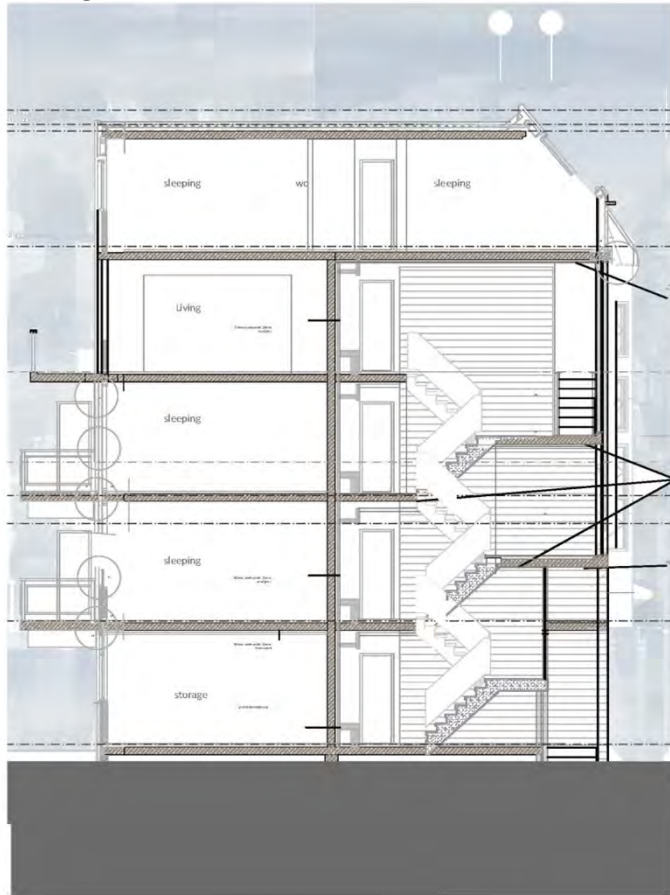
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## Building level URBAN RENEWAL

BEFORE



PORTIQUE SECTION

1:100

AFTER



PORTIQUE SECTION

1:100

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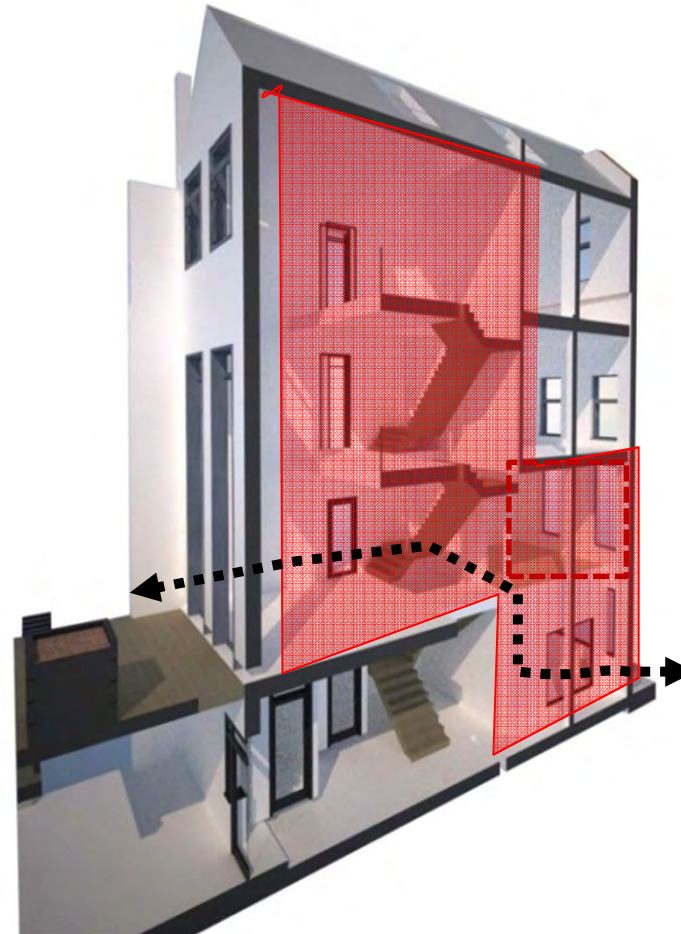
CONCLUSION



BEFORE



AFTER



Building level  
19<sup>TH</sup> CENTURY



Flexible use of  
portique space:  
Playroom or rented  
office space

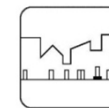
CONTEXT

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## DIVERSITY







## Building level

### HOUSING CAREER



/ MOVE IN



+ LIVE TOGETHER



+ CHILDREN



+ ECONOMIC UPGRADE



+ WORK AT HOME



- DIVORCE



- DEATH PARTNER



- CHILD MOVES OUT

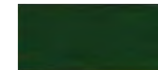


- ECONOMIC DOWNGRADE



- CLOSE WORKPLACE

### Apartment types



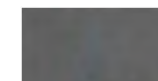
New mezonettes



4 bedroom apartments  
with workspace included



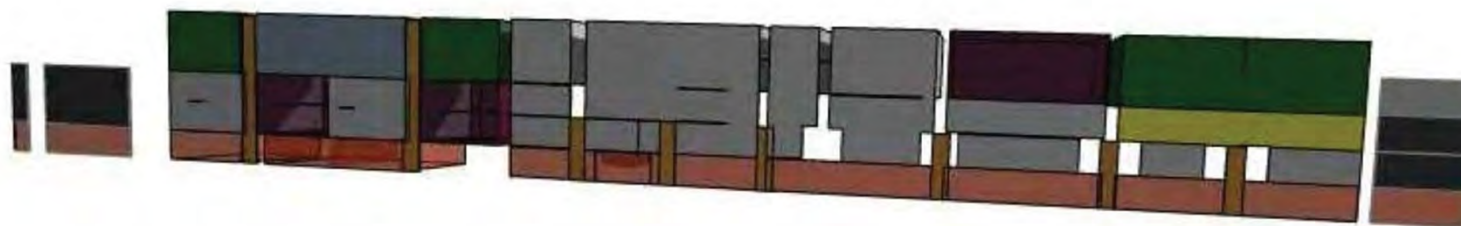
5 bedroom apartments



3 bedroom apartments (3 variations:  
75 s.m, 110 s.m, 110s.m mezonette)



Shop/Commercial spaces



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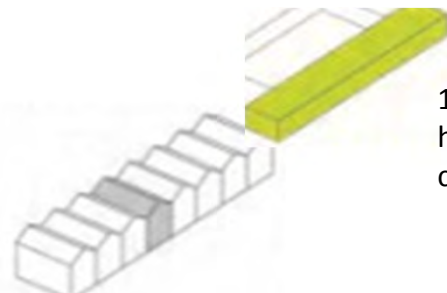
## Building level URBAN RENEWAL BUILDING

variation of typologies> mixing of tenants

New: Offer transversal apartments, light ,air !



### PROPOSAL 1<sup>ST</sup> FLOOR



1 main size: fewer apartments so  
host existing big families:  
cheaper renovation

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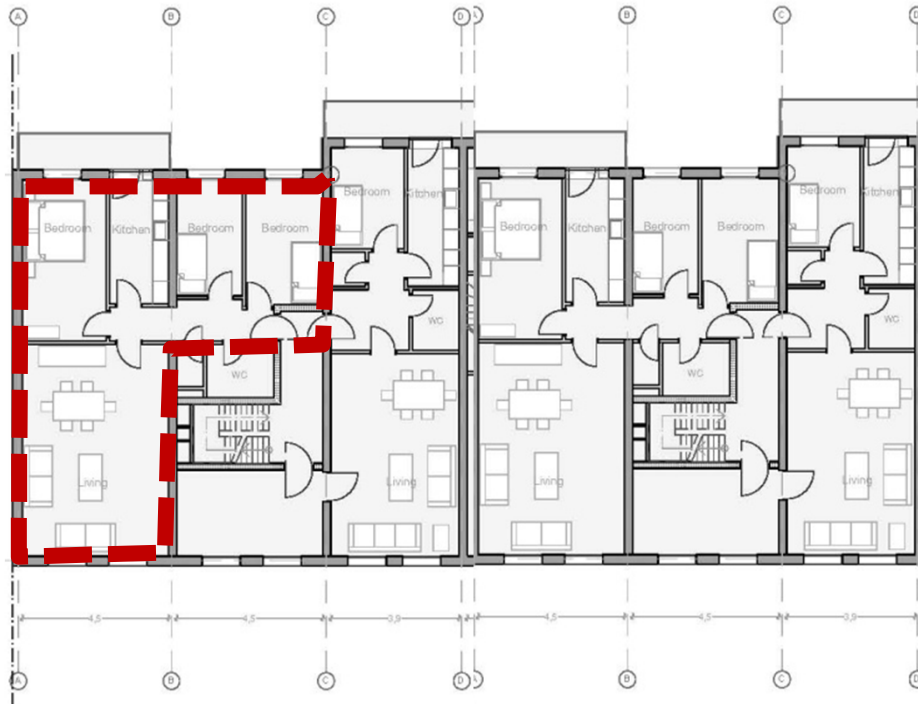
CONCLUSION



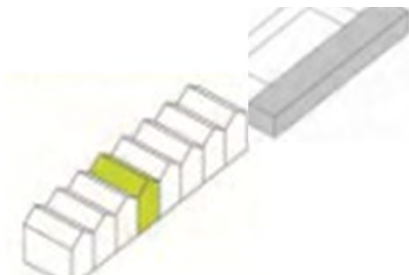
## Building level EXISTING 19<sup>TH</sup> CENTURY

variation of typologies> social mixing  
Increase variety by merging!

CURRENT



PROPOSAL



2 main sizes: one person  
household and family 3 children  
Host :existing poor and existing  
ones that want to housing career  
-3<sup>rd</sup> floor changed bigger  
interventions, to sell !

CONTEXT

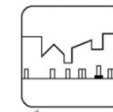
RESEARCH APPROACH

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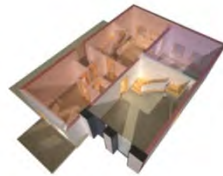
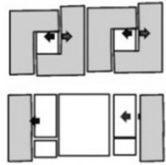




Building level

## New features/types

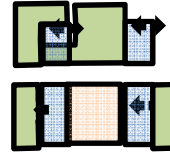
### 19<sup>th</sup> century



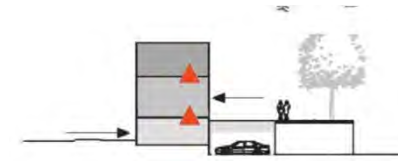
EXISTING



### Urban Renewal



### New additions



MEZONETTES



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## Material level



Visibility  
Liv. Conditions

CONTEXT

RESEARCH APPROACH

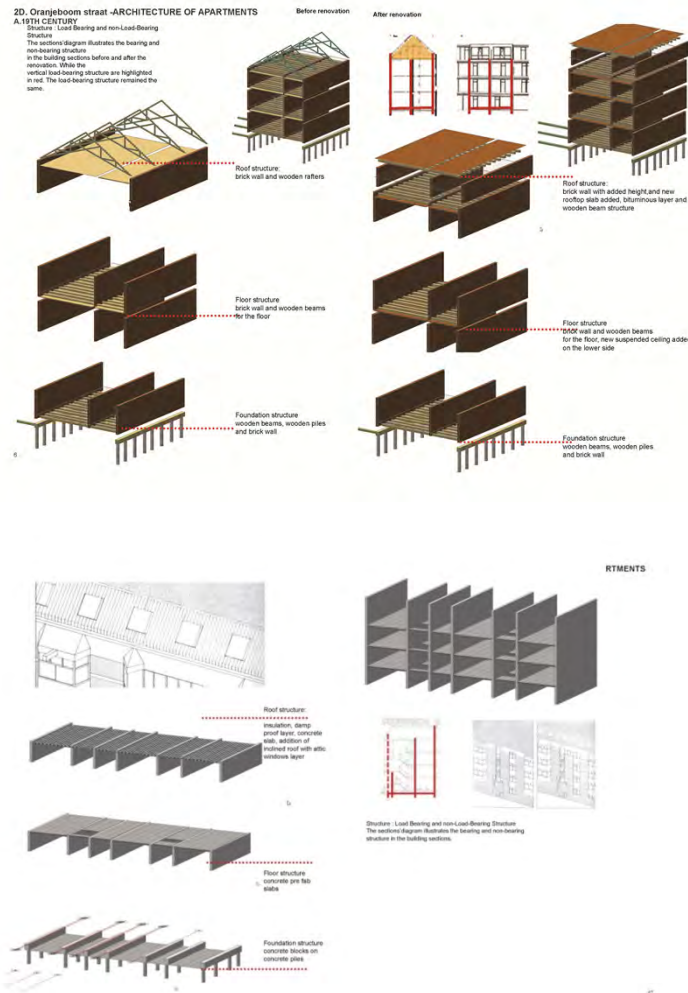
DESIGN GOALS

DESIGN

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## EVALUATION OF CONSTRUCTION AND MATERIALS

2 different ages + construction systems: 19<sup>th</sup> Vs Urban renewal



### Refurbishment principles

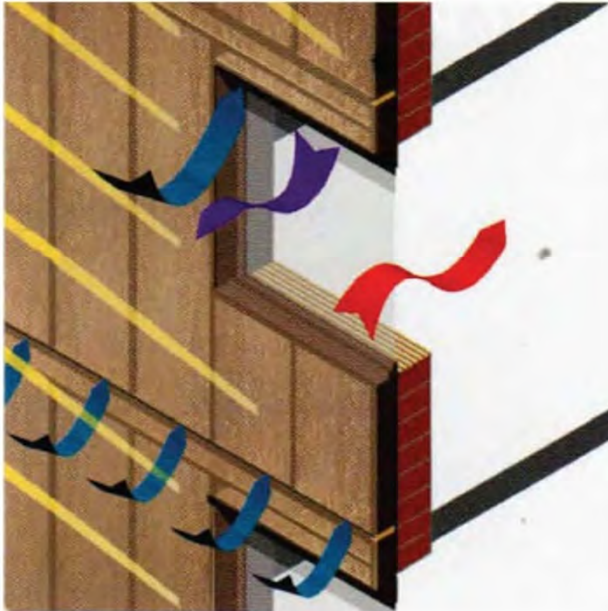
- Maintenance of historic characteristics(street façade) in balance with envelope upgrade measures
- Restoration of building identity lost by renovations(upper layer)
- \_Minimum destruction of original material and load bearing walls



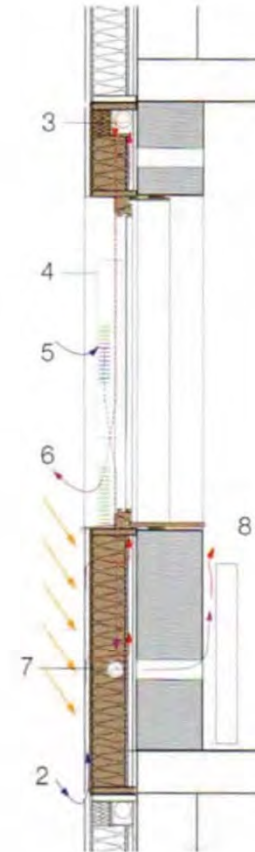
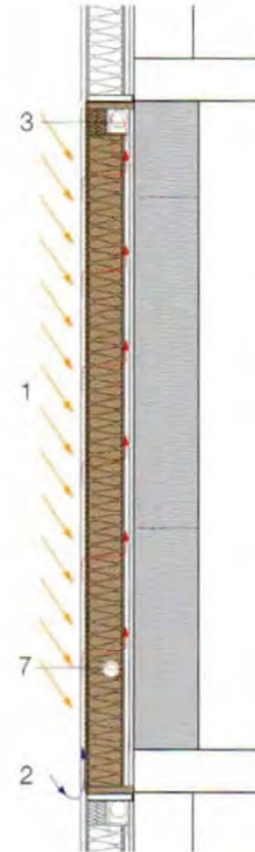


## Material level

Urban renewal



Floor plan scheme; wooden facade parts  
Ventilation of the wooden facade parts



CONTEXT

RESEARCH APPROACH

DESIGN GOALS

DESIGN

CONCLUSION



Material level

Energy demands in synergy with liveability



Better view



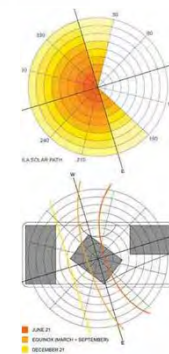
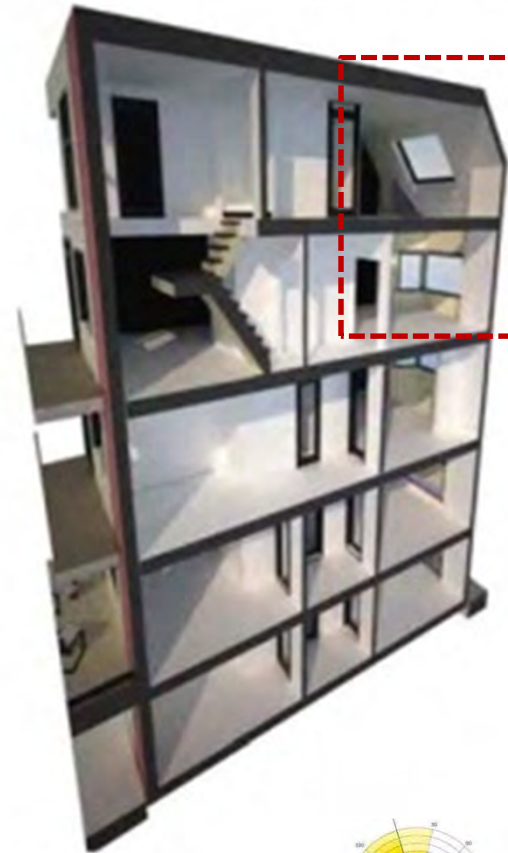
More daylight



More fresh air



Intelligent control



CONTEXT

RESEARCH APPROACH

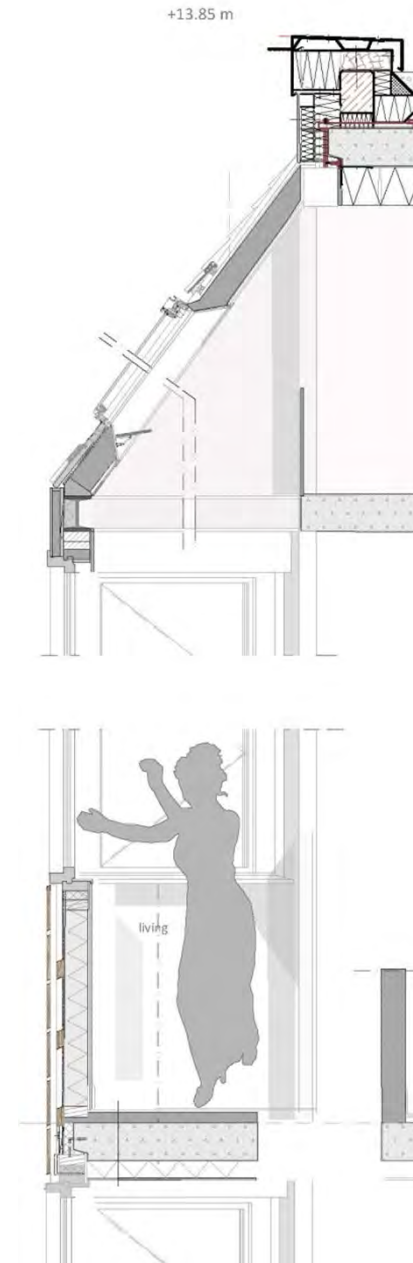
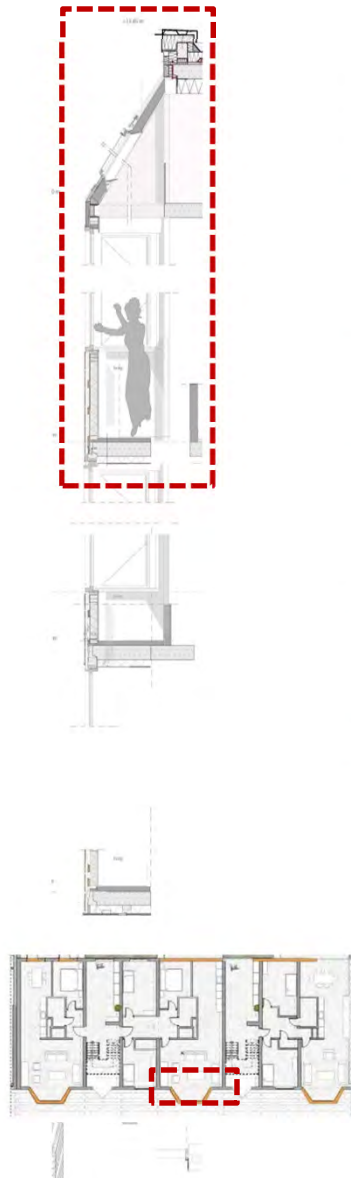
DESIGN GOALS

DESIGN

CONCLUSION

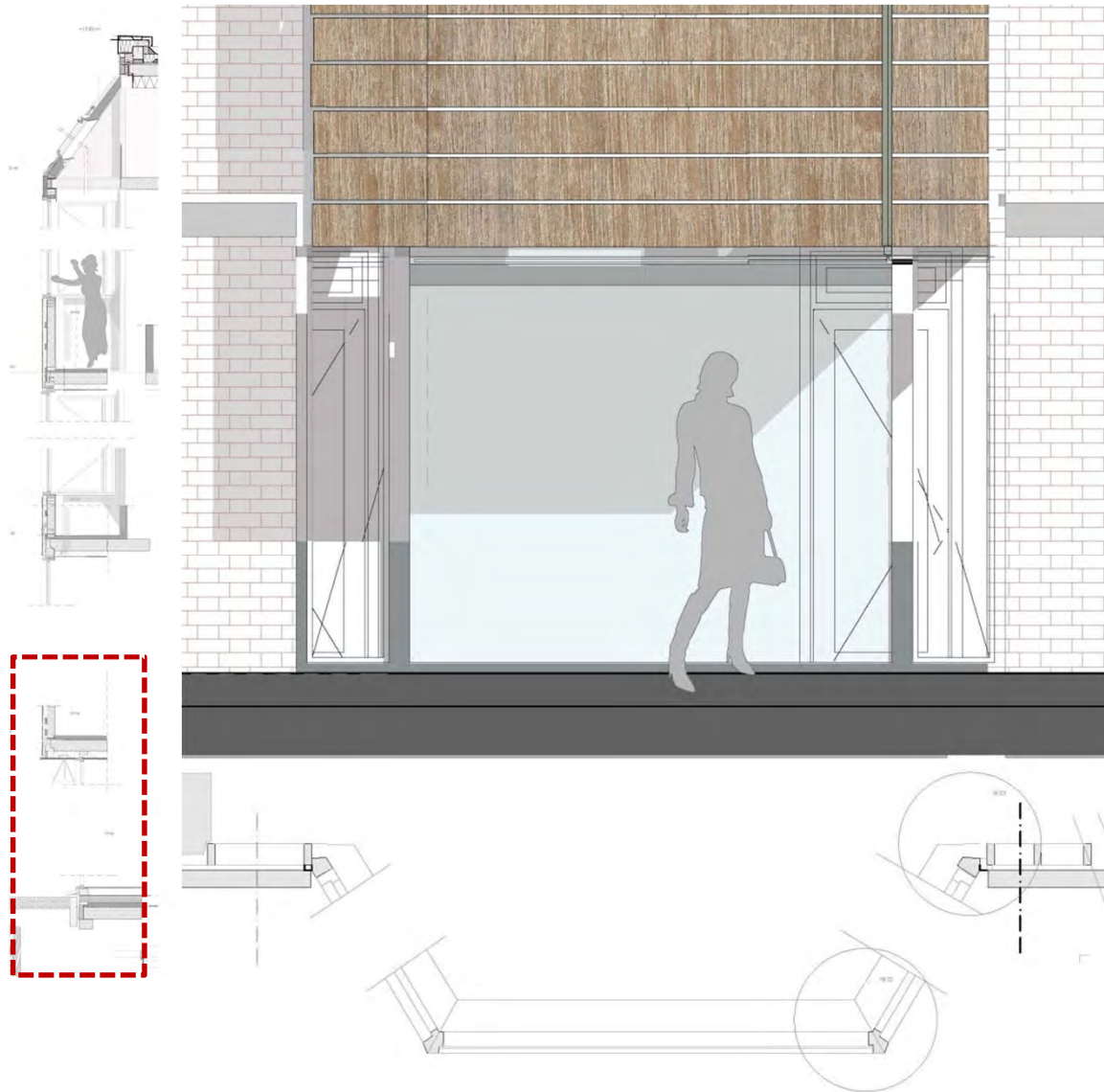
Top floor

Material level





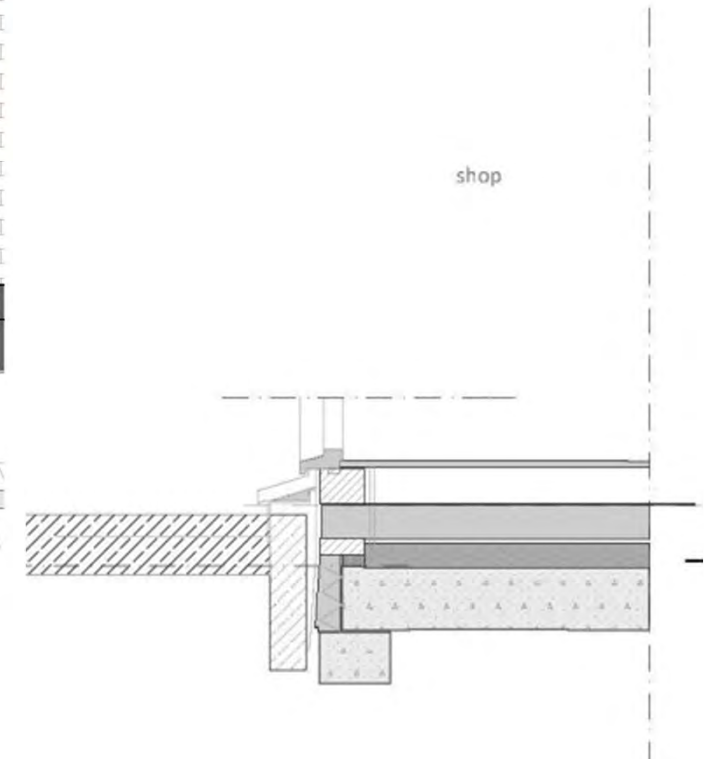
Ground floor



Material level

Urban renewal

Street side



CONTEXT

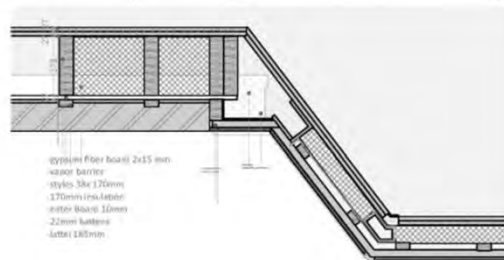
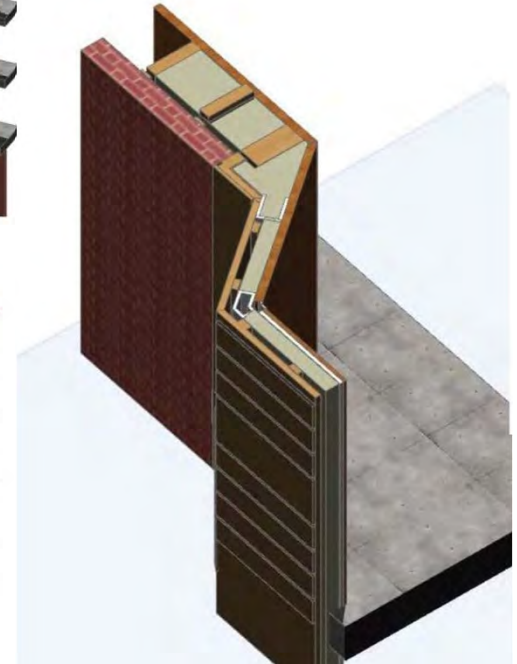
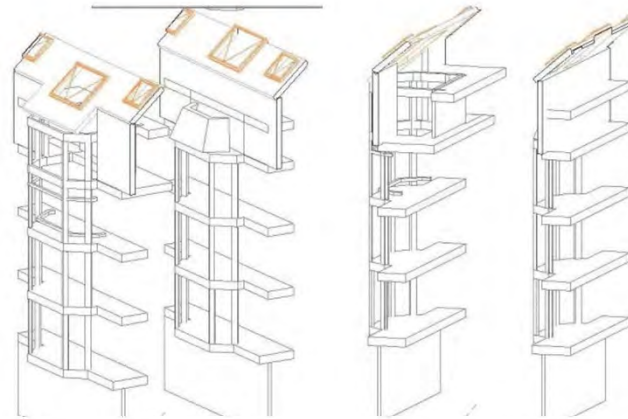
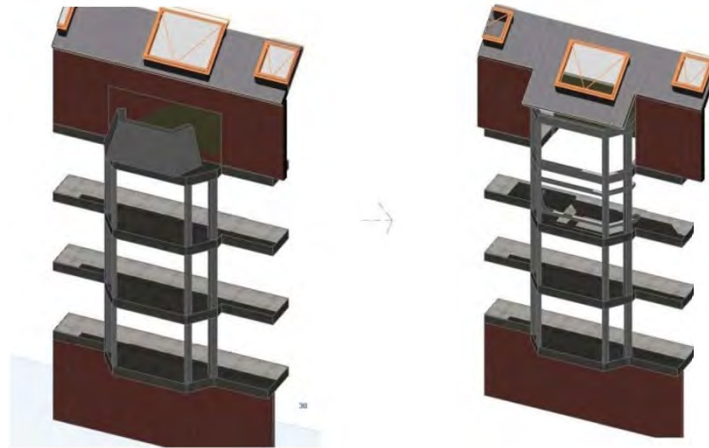
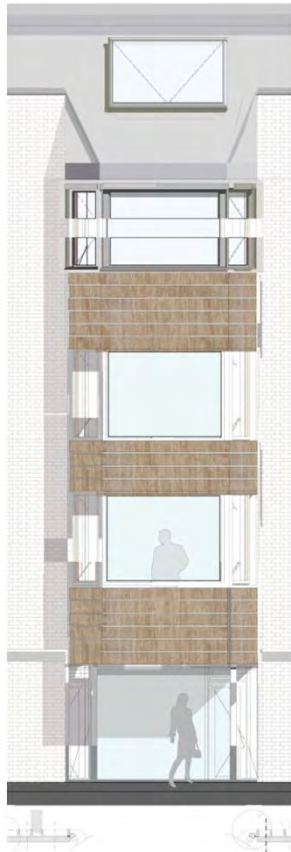
RESEARCH APPROACH

DESIGN GOALS

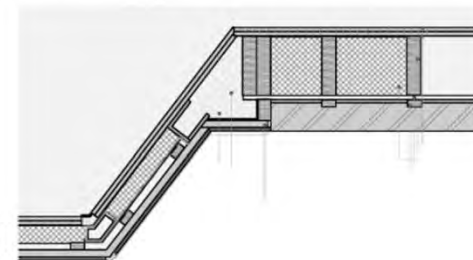
DESIGN

CONCLUSION

# Material level



Ø90mm Floor beam 2x15 mm  
 120mm concrete  
 170mm insulation  
 10mm plaster  
 22mm plaster  
 180mm



FLOOR PLAN\_N\_FACADE DETAIL D.01

1:20

1:20

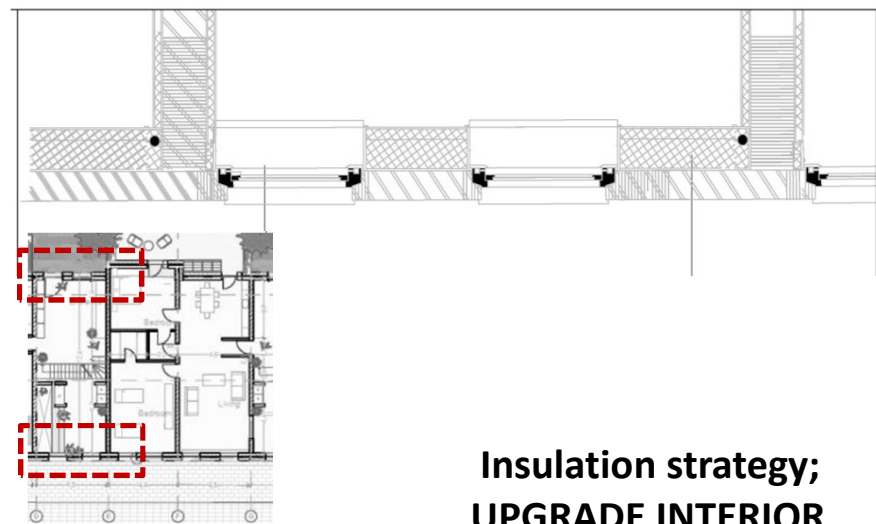
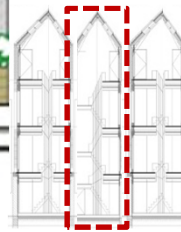
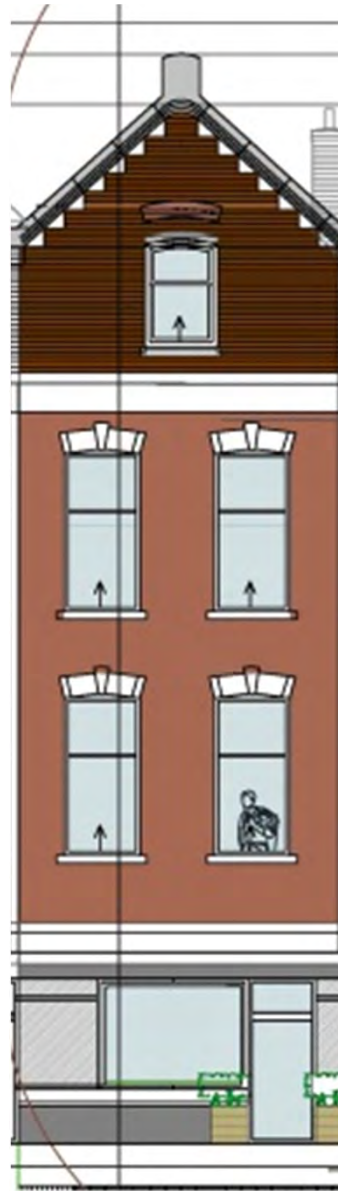
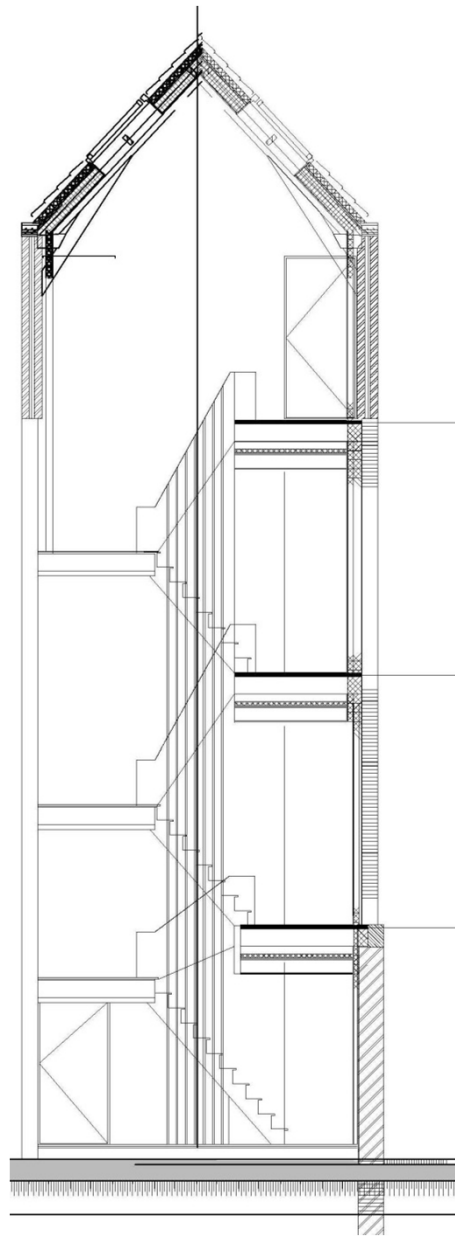
CONTEXT

RESEARCH APPROACH

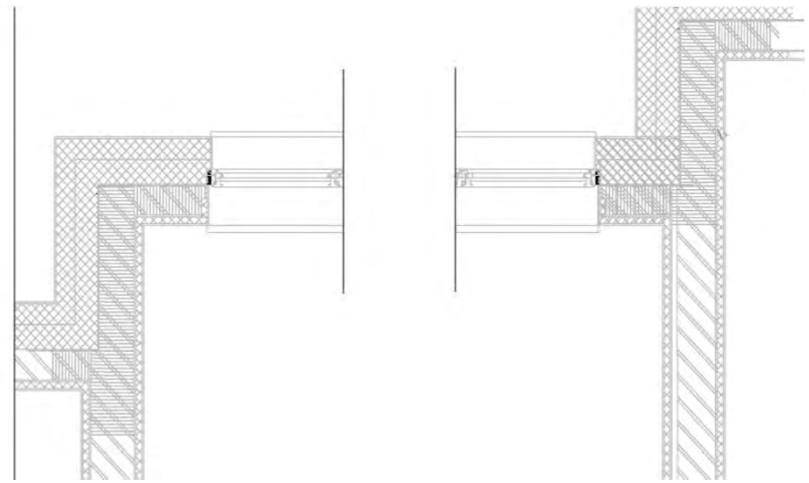
DESIGN GOALS

DESIGN

CONCLUSION



Material level  
**EXISTING 19<sup>TH</sup> CENTURY**  
FAÇADE TO THE STREET



**Insulation strategy;  
UPGRADE INTERIOR**

CONTEXT

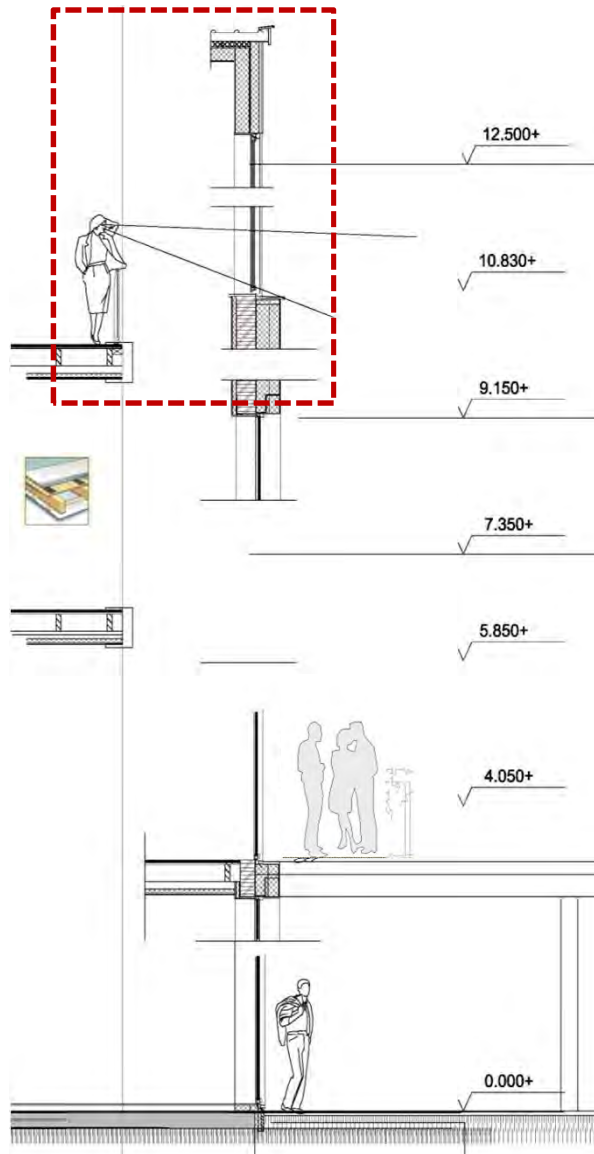
RESEARCH APPROACH

DESIGN GOALS

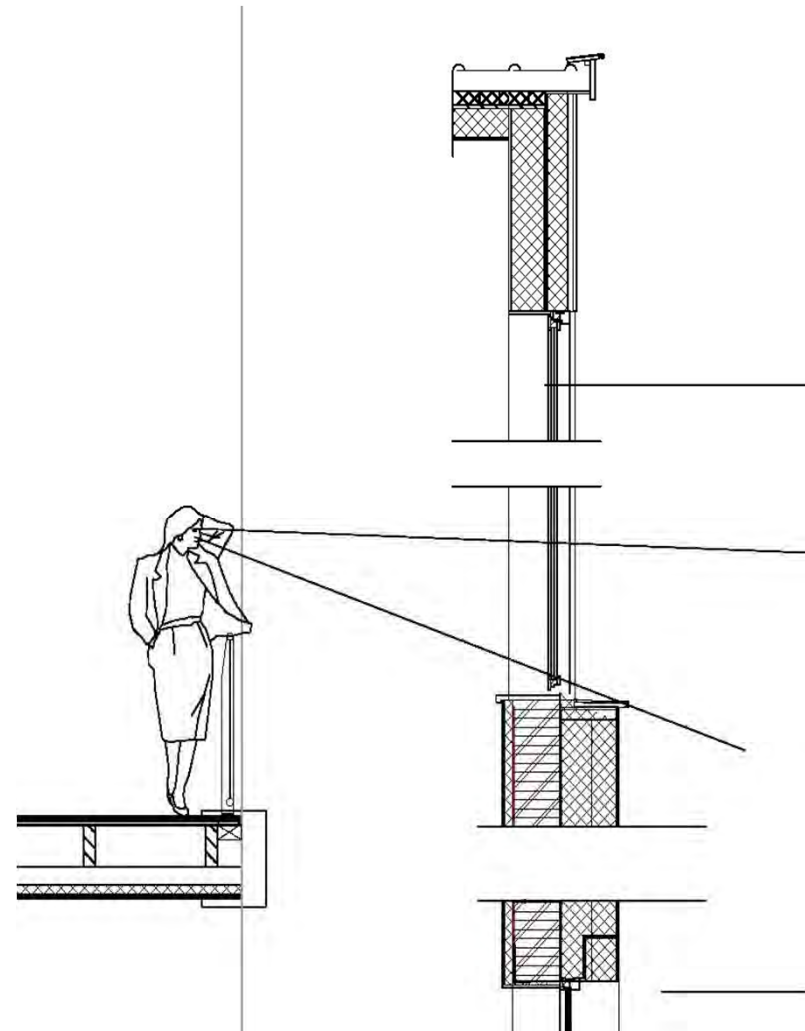
DESIGN

CONCLUSION





# Material level 19<sup>TH</sup> CENTURY FAÇADE TO THE PARK



**TRANSPARENCY**

CONTEXT

RESEARCH APPROACH

DESIGN GOALS

**DESIGN**

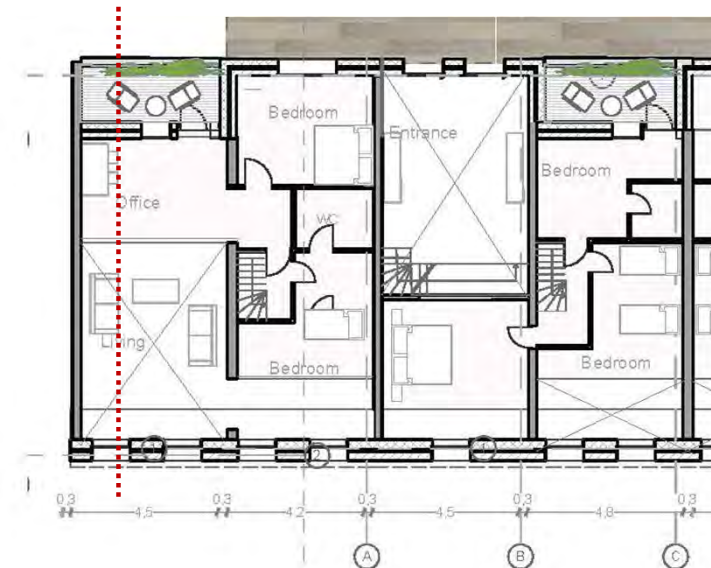
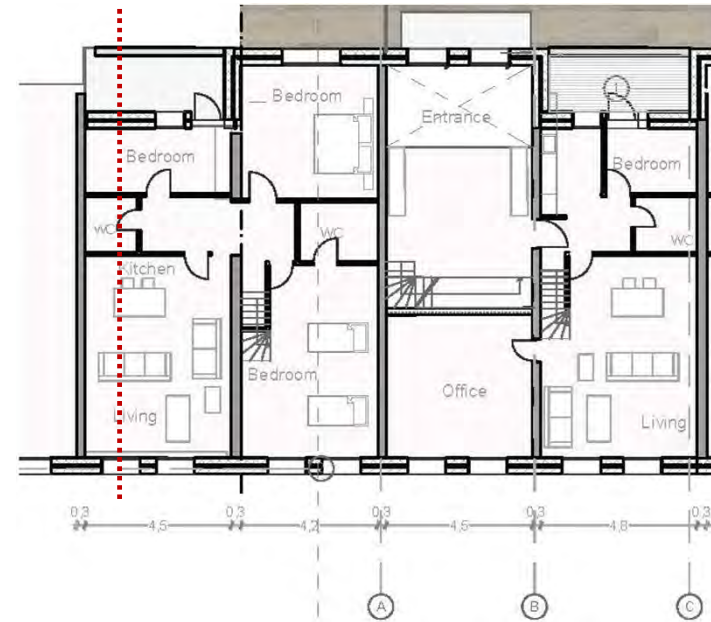
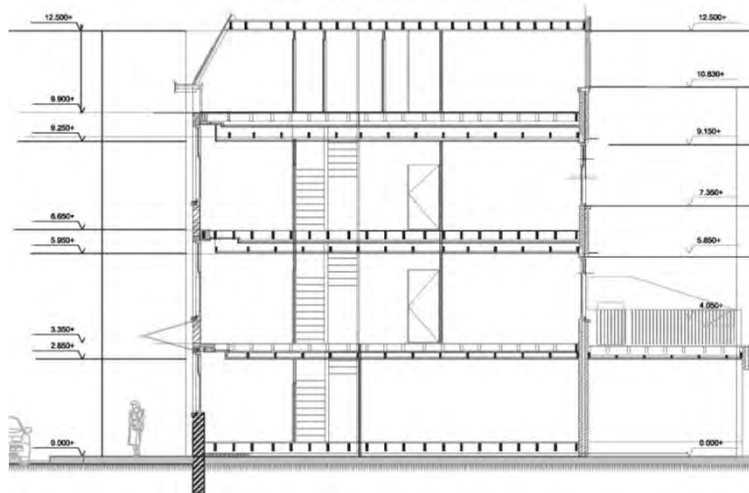
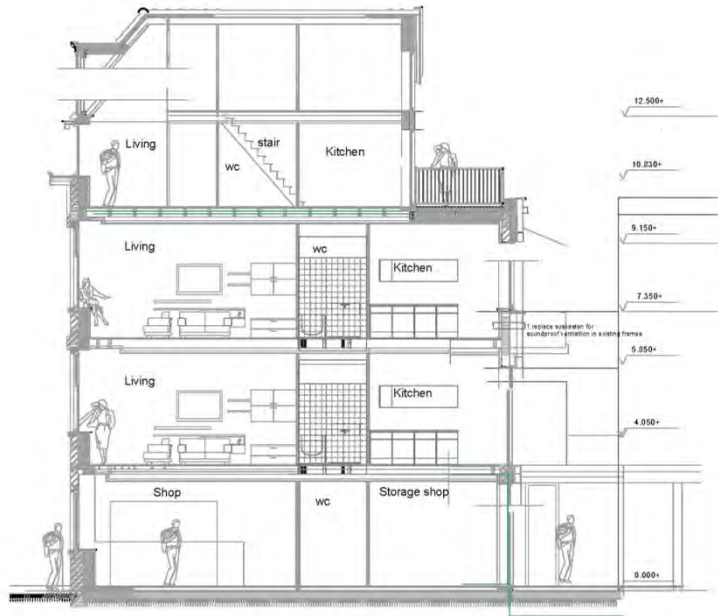
CONCLUSION







## Building level 19<sup>TH</sup> CENTURY



CONTEXT

RESEARCH APPROACH

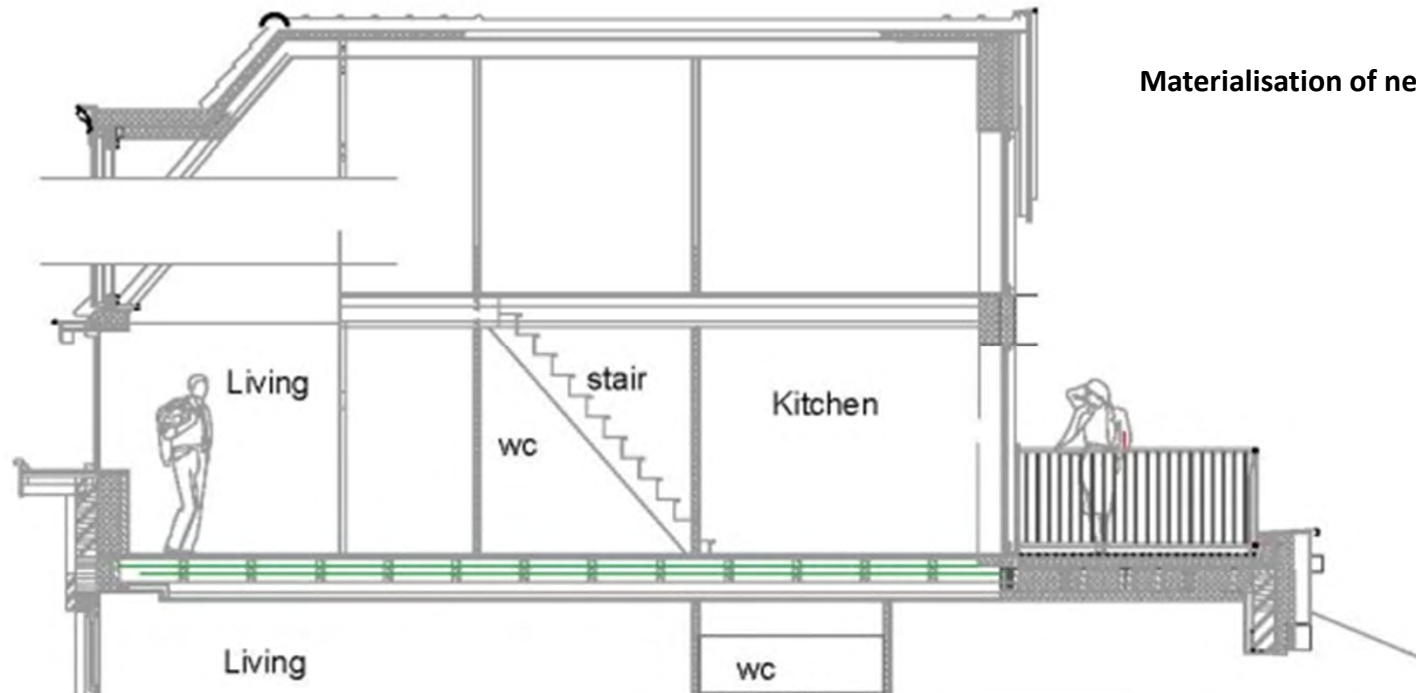
DESIGN GOALS

DESIGN

CONCLUSION



Building level  
**19<sup>TH</sup> CENTURY**



Materialisation of new upper floor



CONTEXT

RESEARCH APPROACH

DESIGN GOALS

DESIGN

CONCLUSION



# Design goals

\_Interaction in communal space

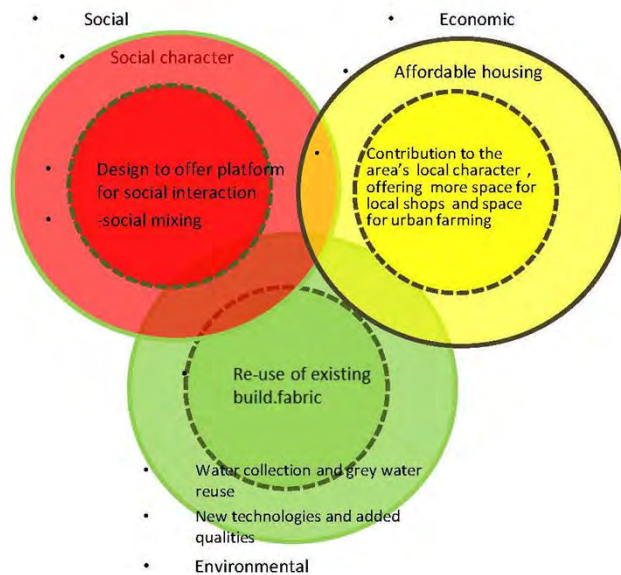
\_Diversity ( visually and typologically)

\_Visibility

\_Accessibility, safety

\_Daylight and interior liv. Conditions





## ADDING VALUE WITH SUSTAINABLE INVESTMENT

- lower vacancy rates, higher rents but increased property values

## COST AND COMPENSATION MEASURES

### Cost

- Higher initial cost for new constructions
- Lenotec etc. more expensive
- Private parking under the houses
- Possible refurbishment instead of demolition of the façade can save money

### Compensation measures

- Faster construction time (pre-fab system for roofs)
- Additional dwellings 'higher density'
- Use of sustainable materials, ;larch can possibly be maintenance free
- Rainwater collection and saving in bills

# Applicability of project principles

## CONTEXT RELATED PARAMETRES

- Existing various housing typologies
- Existing multicultural mix of inhabitants
- Identity and historic character of street
- Connectivity and accessibility problems ; previous infrastructural sites



## \_Strategy in neighborhood level

Bottom up approach, small interventions for affordability of project

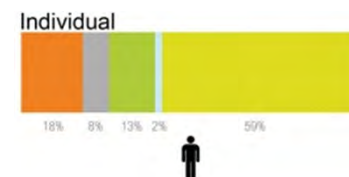
### Applicability

Areas with problems of social coherence

- Areas with existing variant housing typologies, social housing
- Design focus on communal space instead of huge costs for individual space improvement

## Factors that add to success of project

- participation of residents in project
- process similar to creatif beheer projects: coordinator or initiators needed



## \_Strategy in building level

### Applicability

- 19<sup>th</sup> century housing with historic facades
- Late Urban renewal housing stock

# Questions?

