

# Sustainable development of housing, renovation of multi – apartment dwelling buildings, quality of living environment

Interreg V-A Latvia – Lithuania Programme

2014 – 2020

LLI – 303, Life in Clean Environment – a Better Future !

Acronym “Clean Brownfields”

21.01.2020

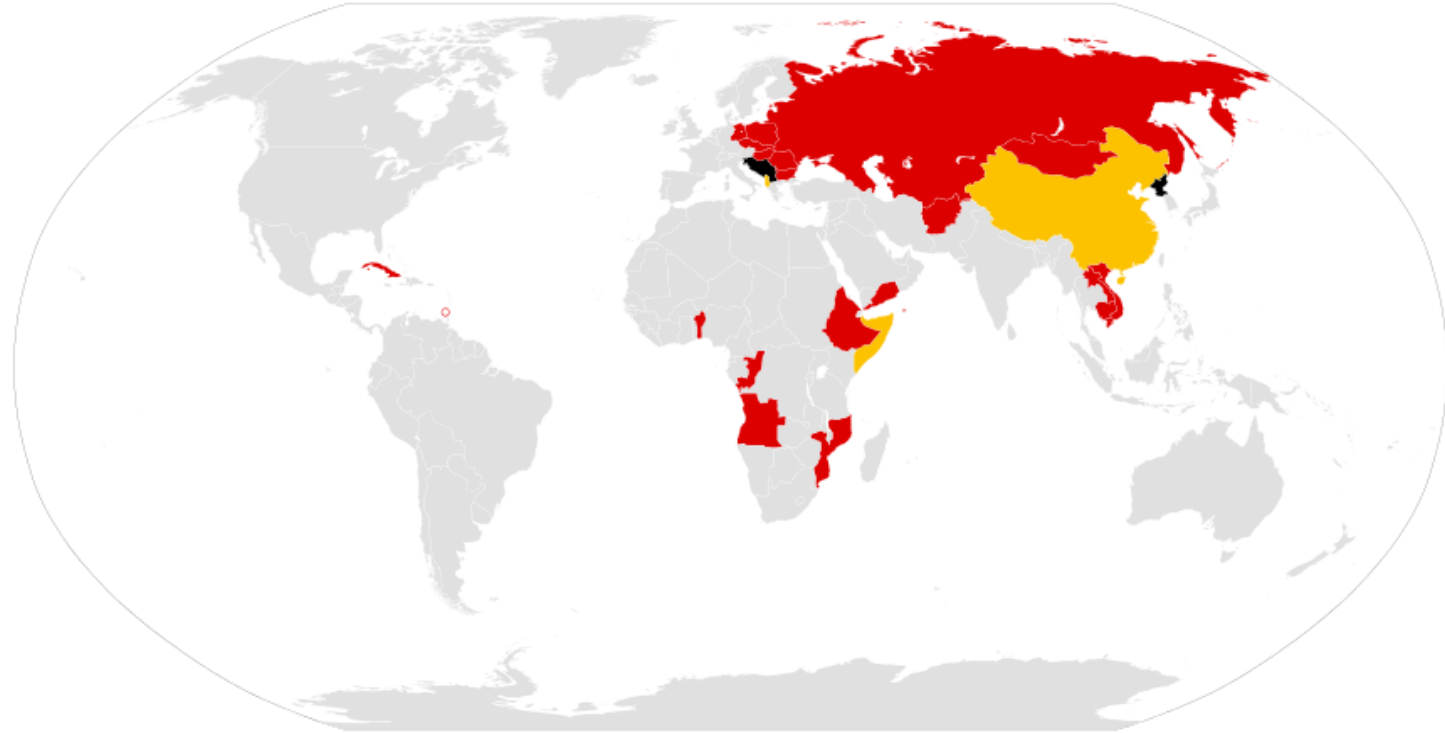
Aleksandrs Fel̨tins





# **1. GENERIC CONDITIONS**





# **50 MILLION UNITS**

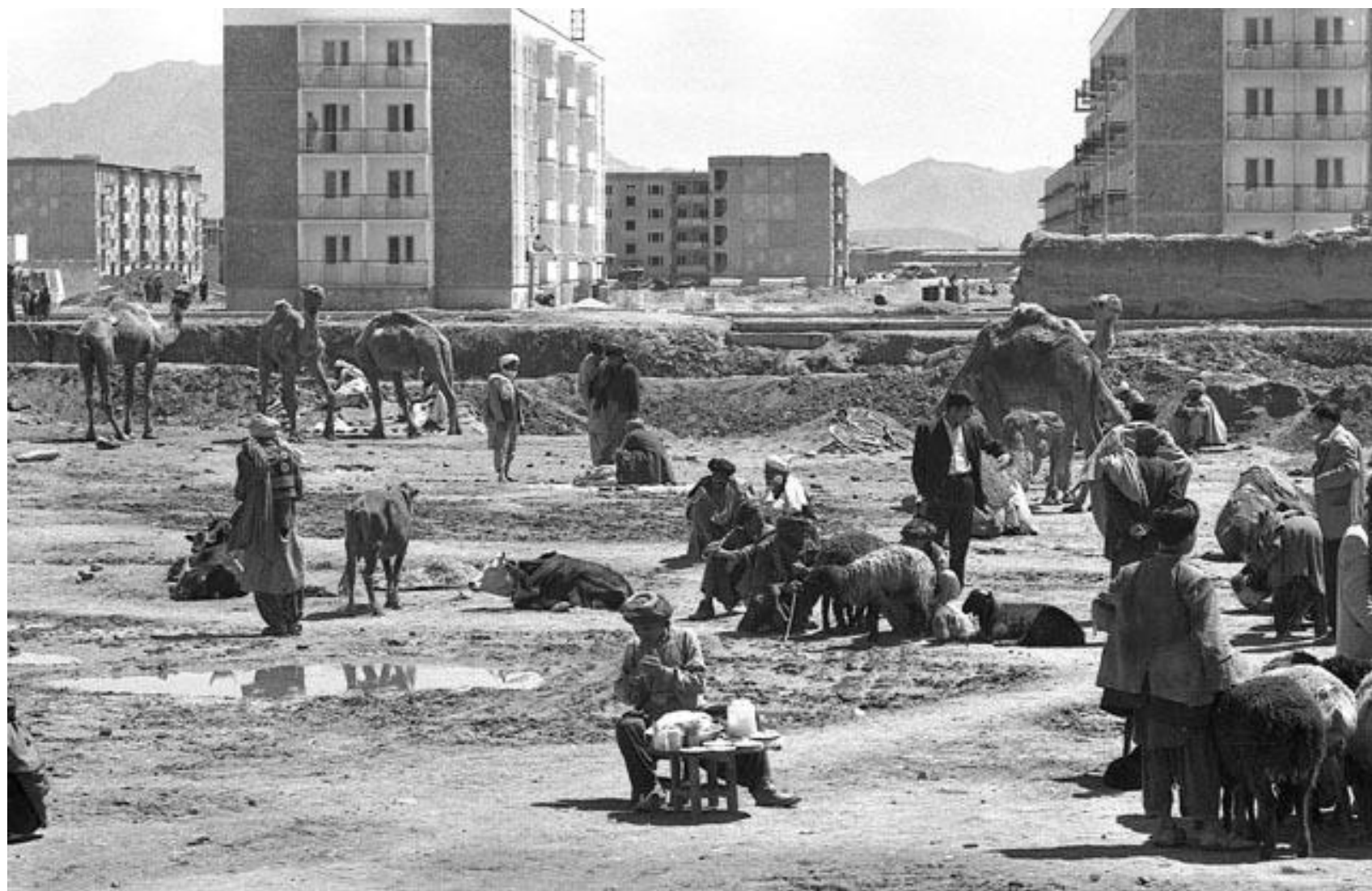
## **1955-1985**

**THE GREAT SOVIET EXPERIMENT: STANDARD CITY AND AFTER**  
**ALEXANDER SVERDLOV**





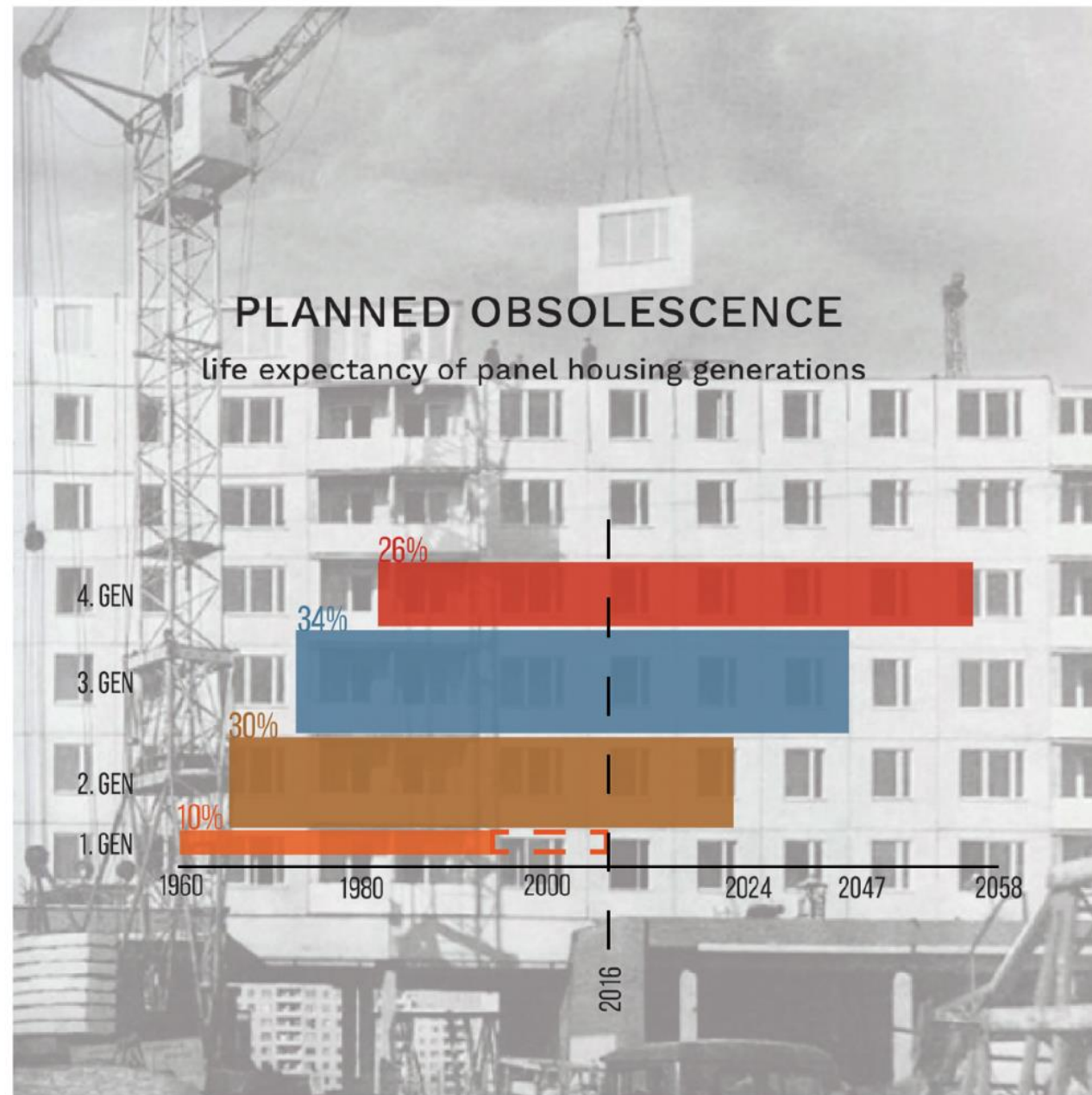






# **1c. PLANNED OBSOLESCENCE**





Percentage of different generations built throughout ussr in overall number of units

Data from Microrayon factbook - Prefab Periods



## **1d. NON-STIGMATIZED**



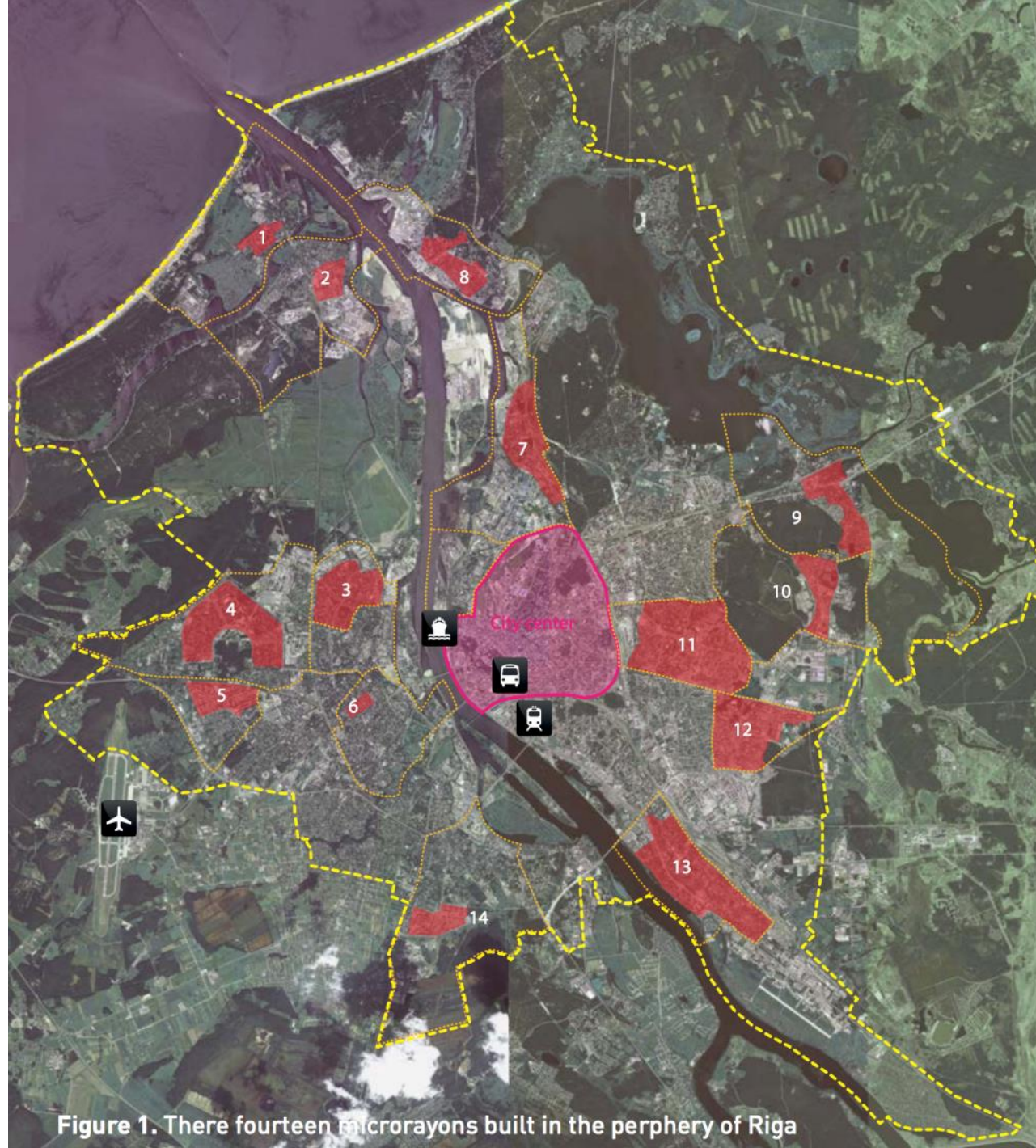


Figure 1. There fourteen microrayons built in the periphery of Riga



## **1e. POTENTIAL OF COMMON/PUBLIC SPACE**















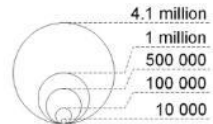
## **2. SPECIFIC CONDITIONS**



# **2a. (DE)- POPULATION DYNAMICS**



# City population at the end of 2006:



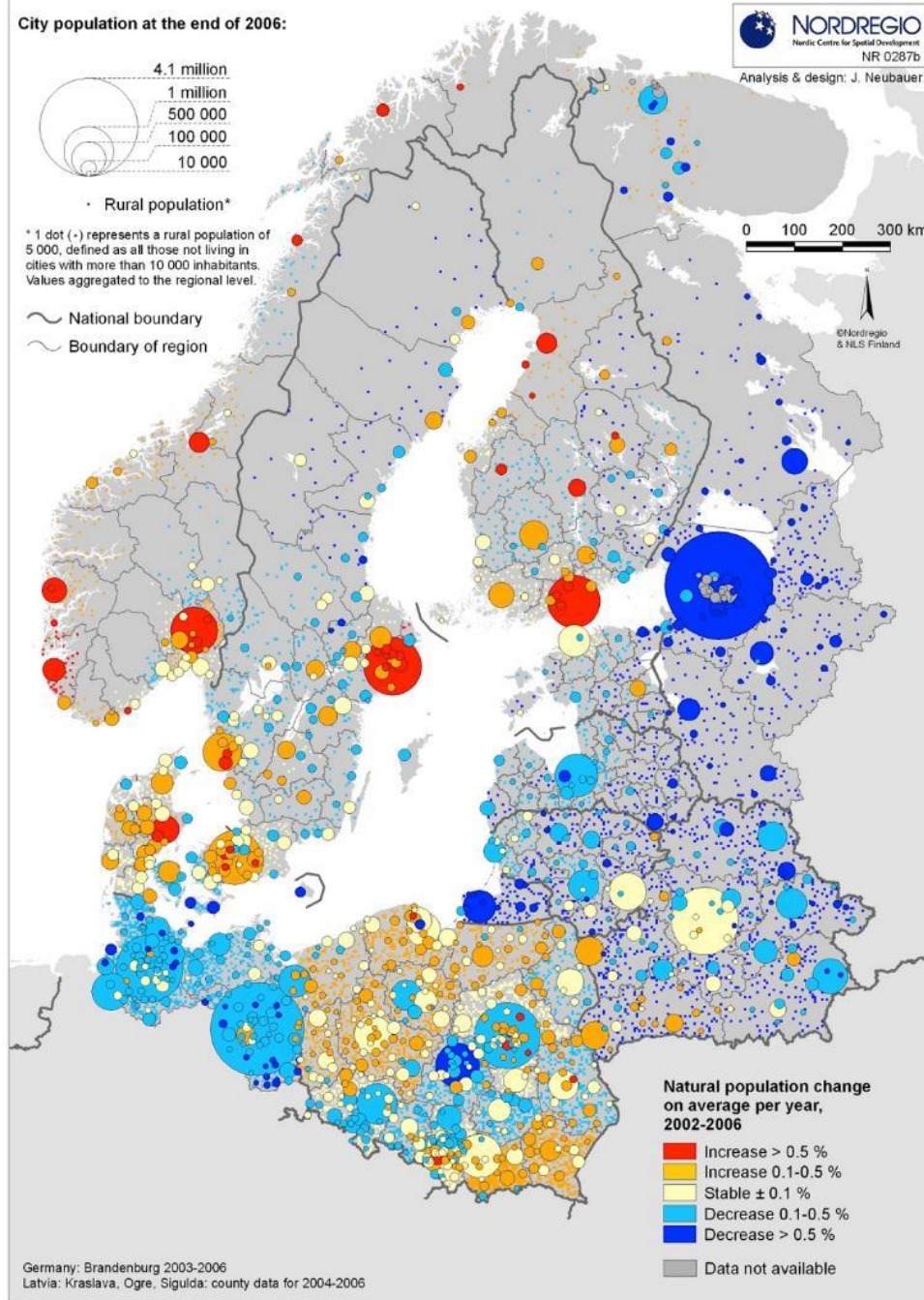
• Rural population\*

\* 1 dot (•) represents a rural population of 5 000, defined as all those not living in cities with more than 10 000 inhabitants. Values aggregated to the regional level.

— National boundary  
— Boundary of region

0 100 200 300 km

©Nordregio  
& NLS Finland

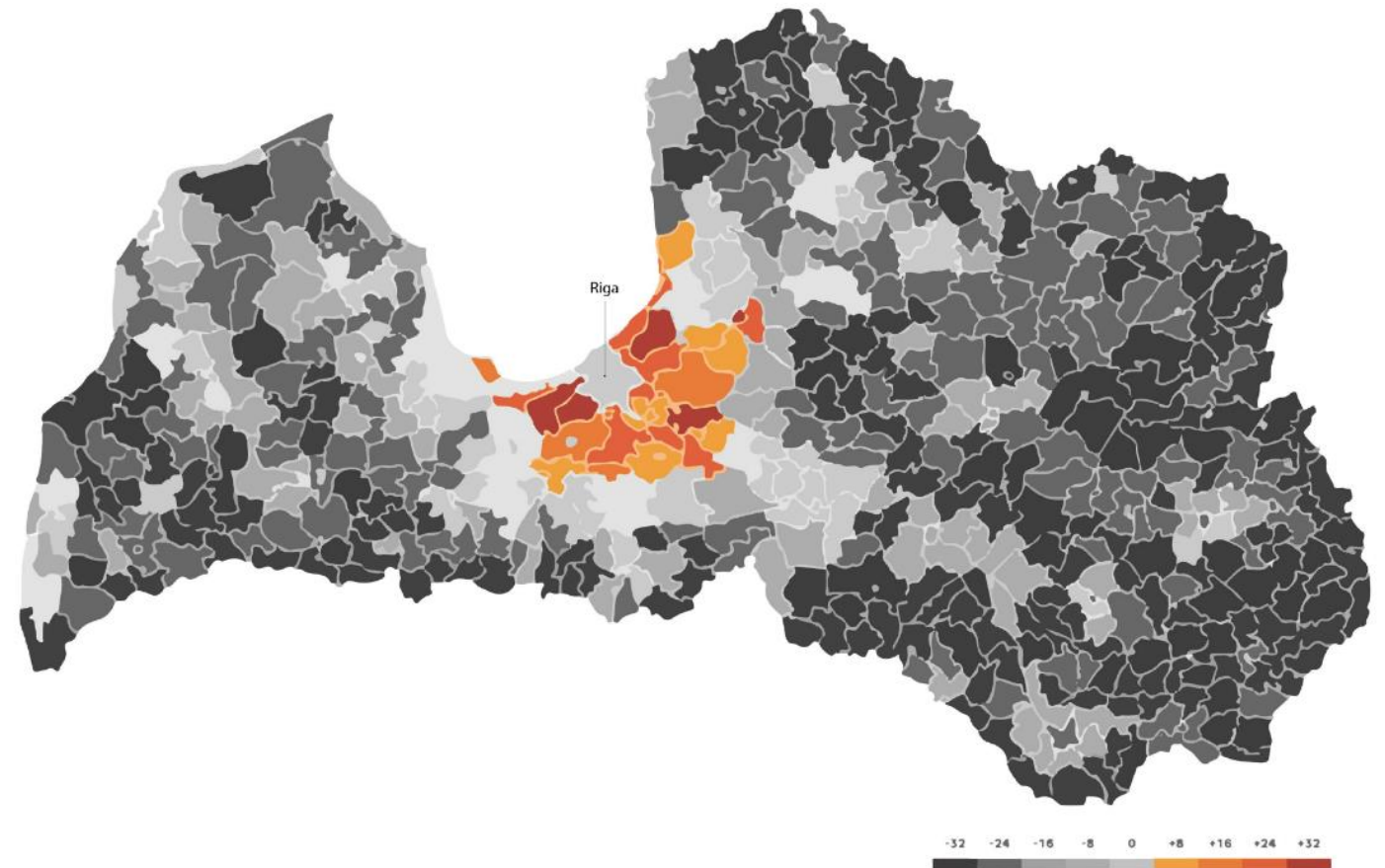


Germany: Brandenburg 2003-2006

Latvia: Kraslava, Ogre, Sigulda: county data for 2004-2006



Current  
Condition  
Sprawl &  
Depopulation





# **2b. URBAN SPRAWL DYNAMICS**



# Development of Sprawl

“Even though  
during the past  
two decades  
Riga experienced  
a decline in  
population,  
the number of  
inhabitants in  
the suburbs has  
increased”

Romante Valiulyte,  
Urban Transformation of Riga's Microrayons



Societal Changes in Riga - Shrinking & Sprawling



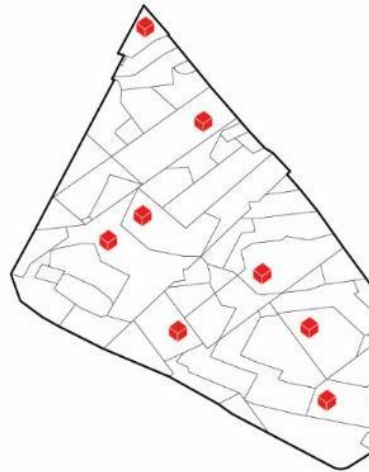
# **2c. SOVIET vs POST-SOVIET OWNERSHIP**



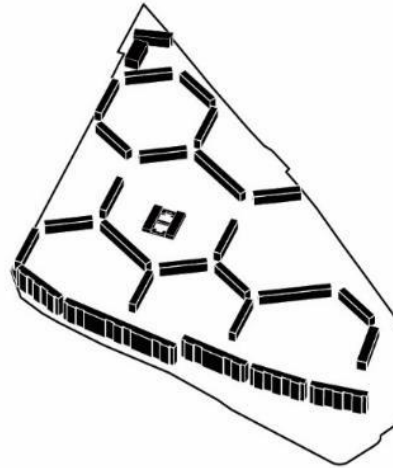
## THE CONDITION

The reason - a complicated history of ownership

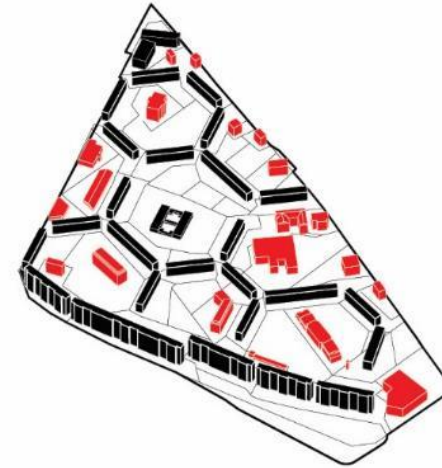
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Pre-Soviet ownership condition



Soviet ownership condition



Post-Soviet ownership condition





Pre-Soviet ownership boundaries reinstated over mass-produced housing.  
Model presented as part of The Baltic Pavilion, 15th International Architecture Exhibition - La Biennale Di Venezia 2016



## **2d. SUSPICION OF THE COLLECTIVE/COMMONS**



**2e. COMPLEX  
ETHNIC/LINGUIS  
TIC  
GEOGRAPHIES**

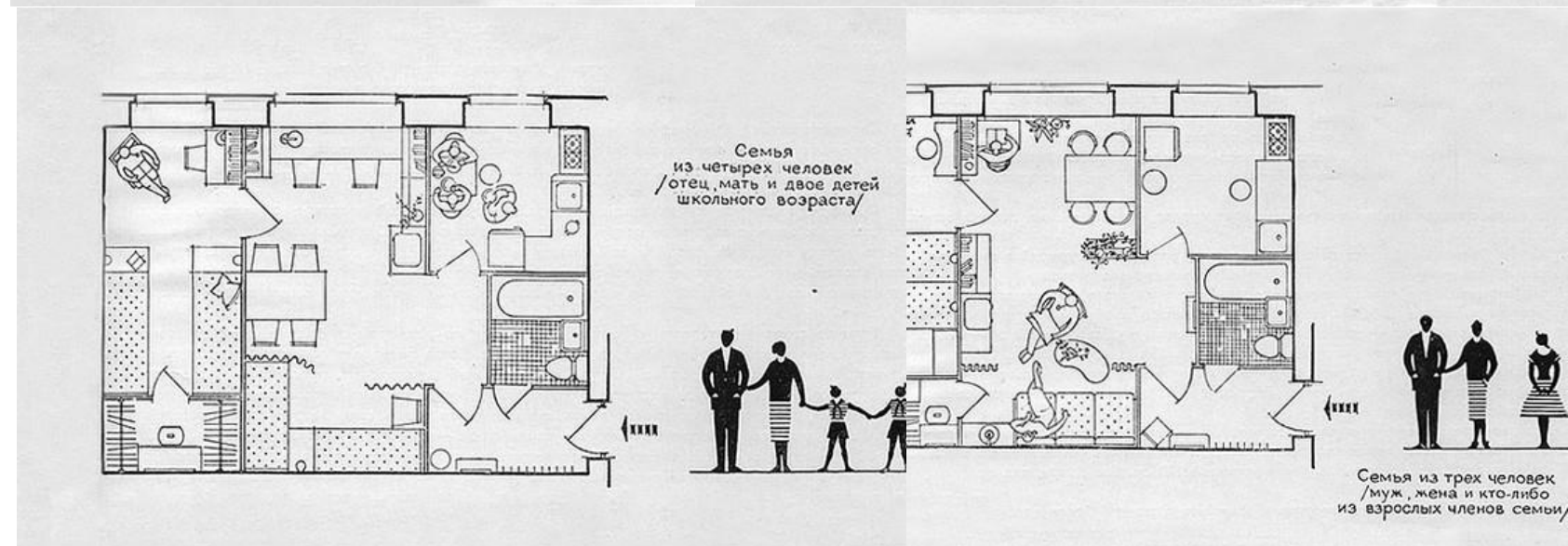
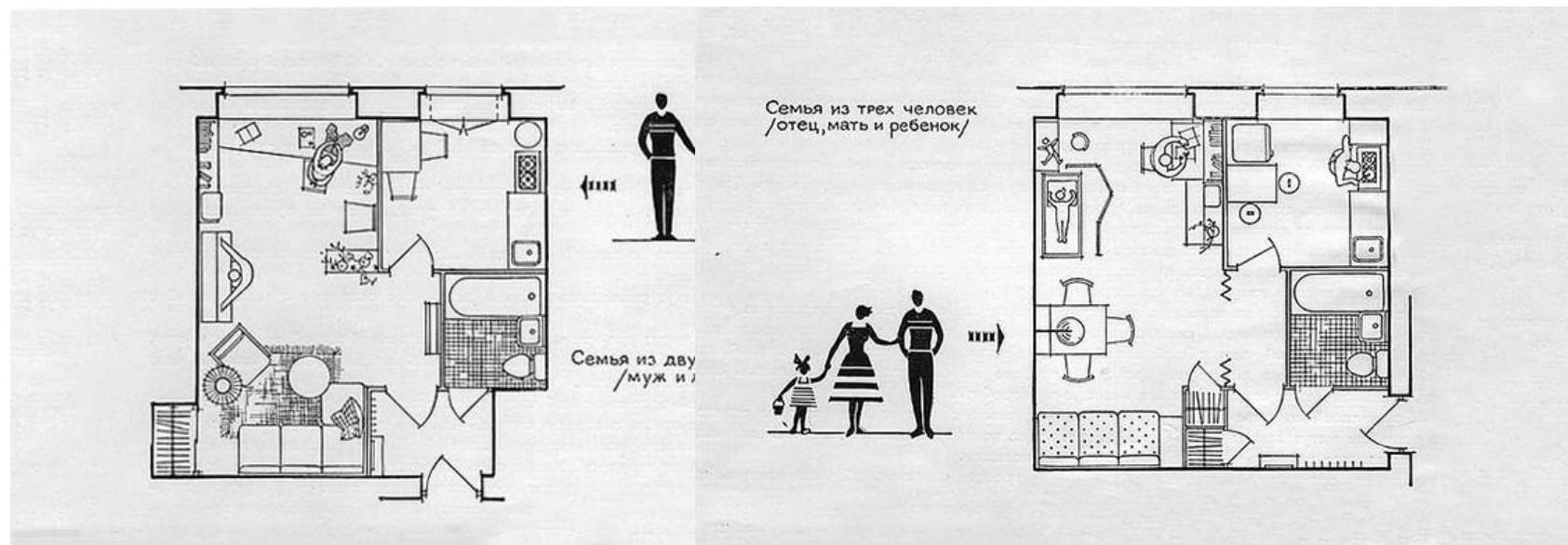


**2f.**  
**DEVELOPMENT**  
**PRESSURES**  
**(EG. PARKING)**



**2g.**  
**TRANSFORMED**  
**HOUSING**  
**DESIRES**







ПРИМЕРЫ ПОДБОРА ОБОЕВ



Цвета обоев, рекомендуемые для комнат с хорошей освещенностью: светлые — для северных районов страны; более темные (насыщенные) — для южных районов.



Обои для столовой.



Обои для кабинета.

Обои для спальни и детской. В центре — только для спальни.



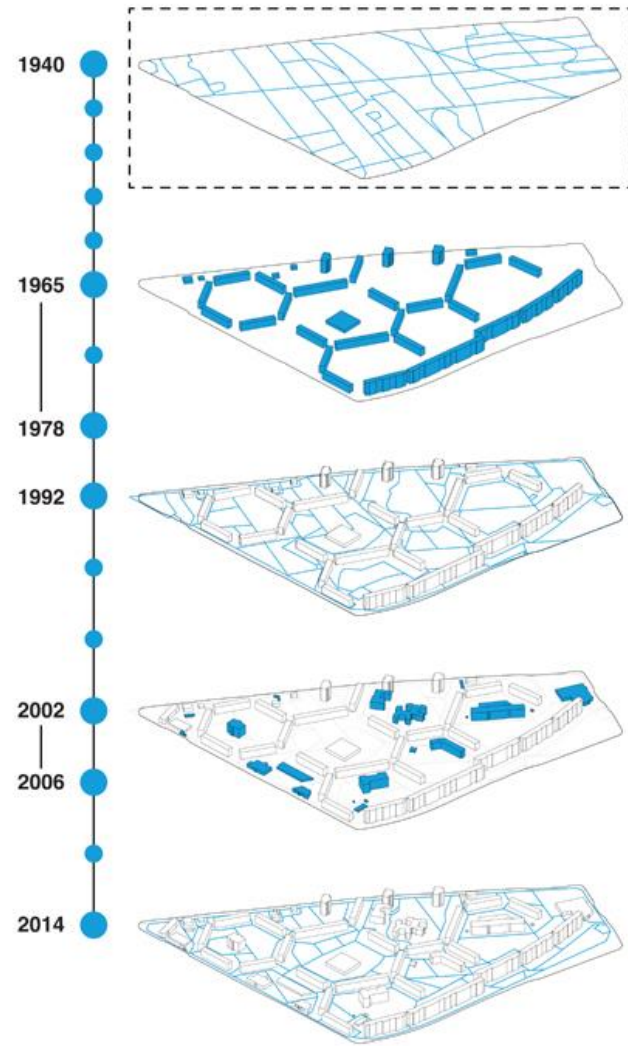
Цвета обоев, рекомендуемые для комнат с недостаточной освещенностью: светлые — для северных районов страны; более темные (насыщенные) — для южных районов.

К ст. Обои.

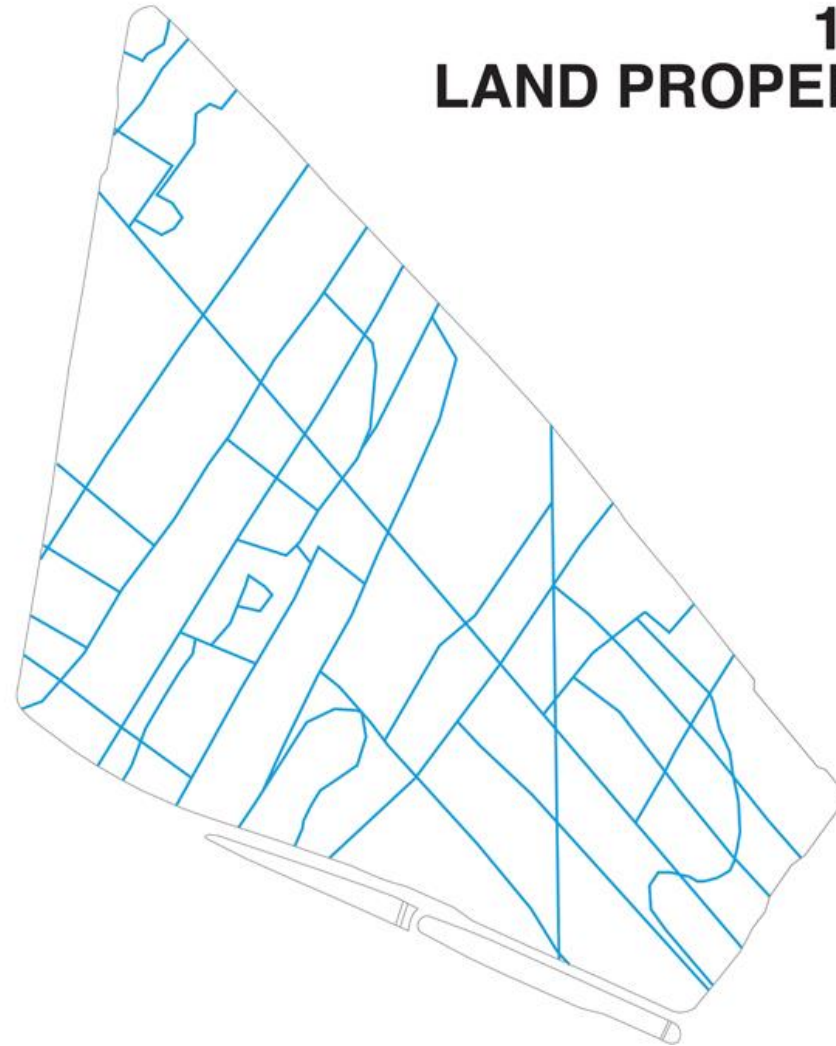




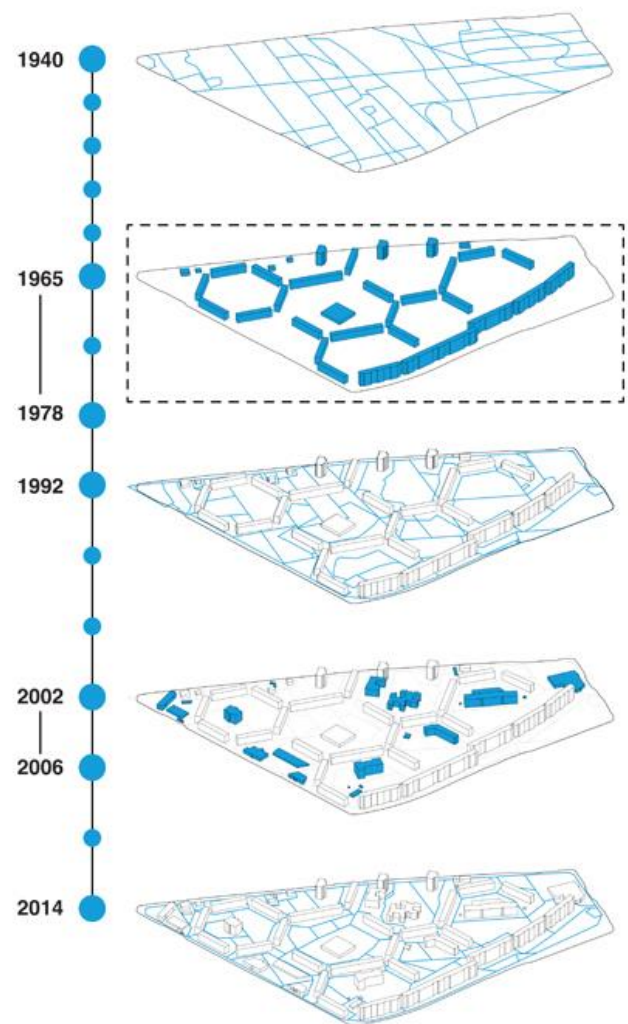




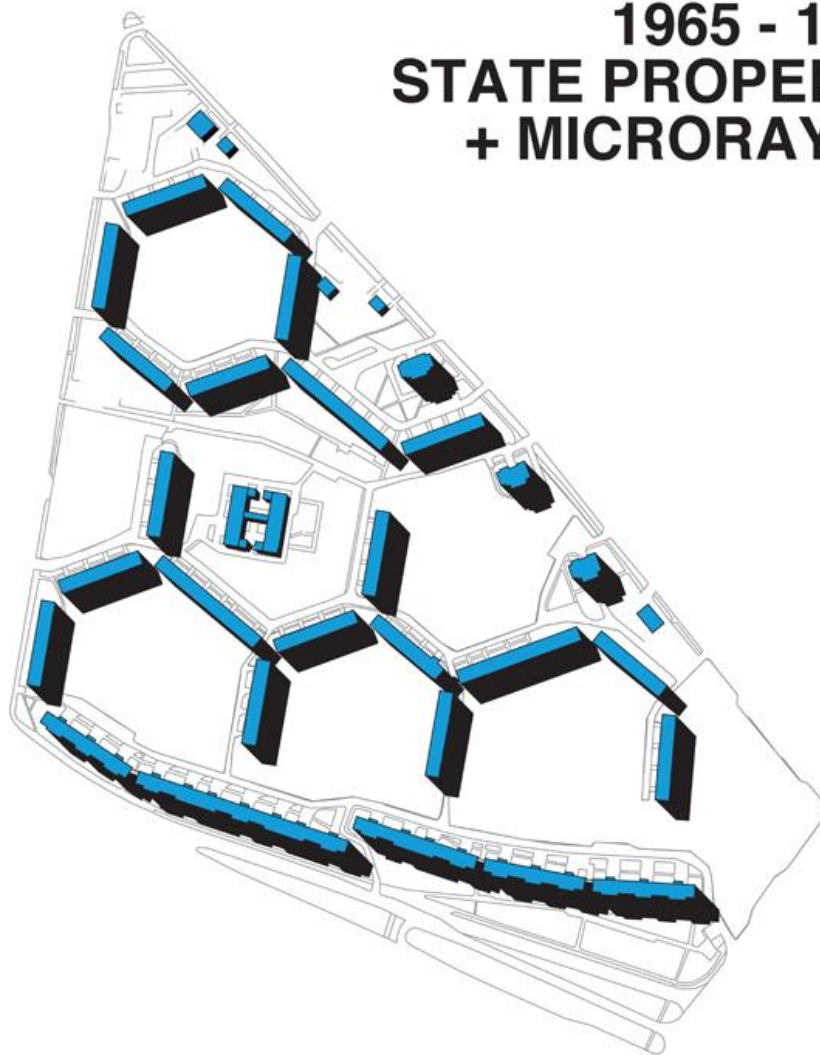
# 1940 LAND PROPERTY



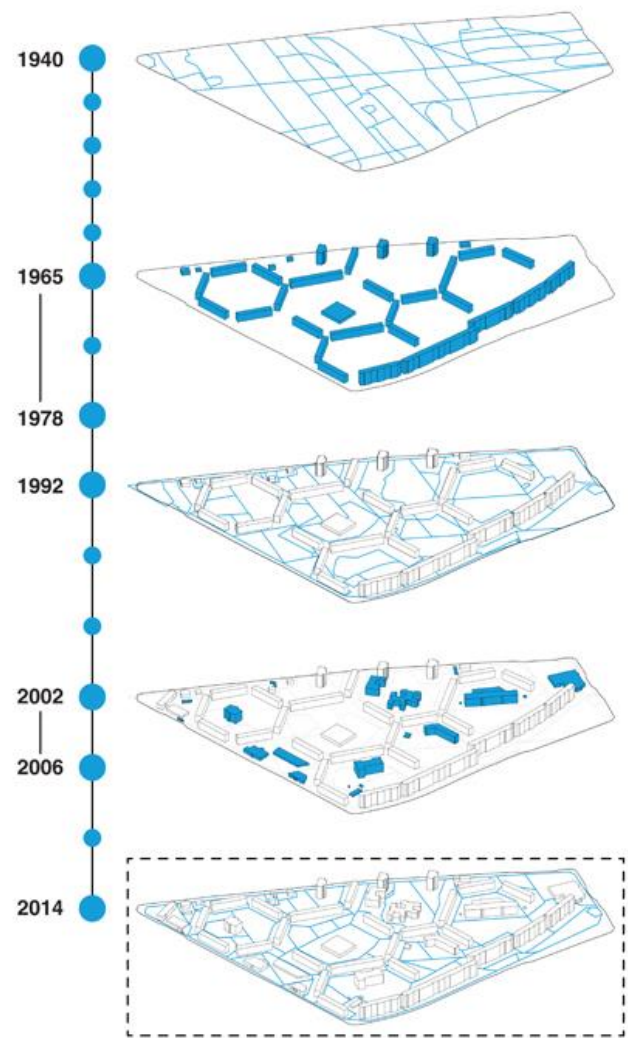




## 1965 - 1978 STATE PROPERTY + MICRORAYON







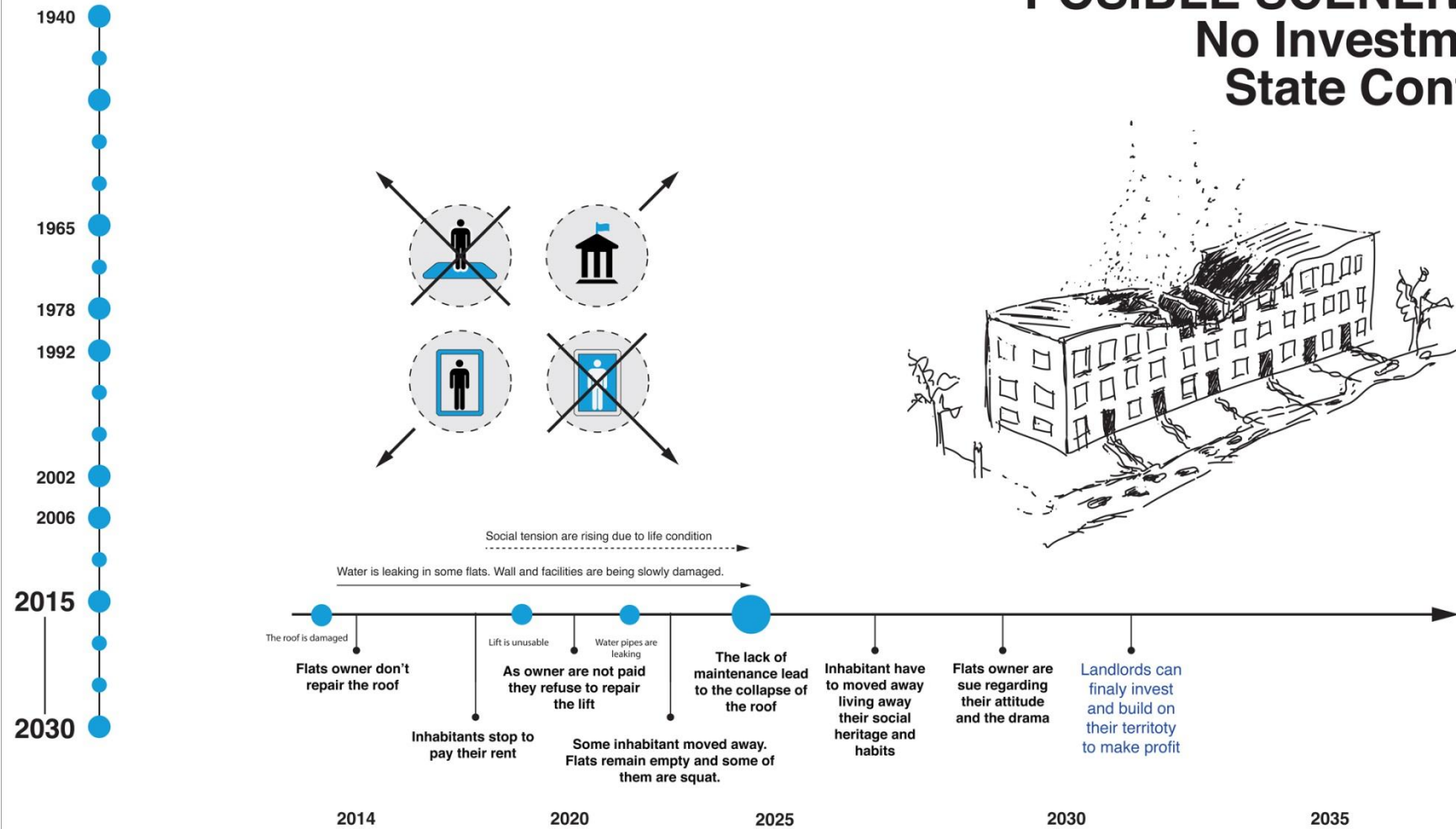
# 2014 MUNICIPALITY PROPOSITION





# POSSIBLE SCENERY 1

## No Investment State Control

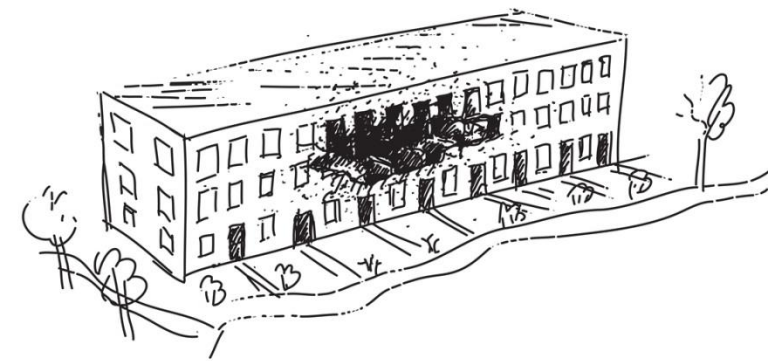
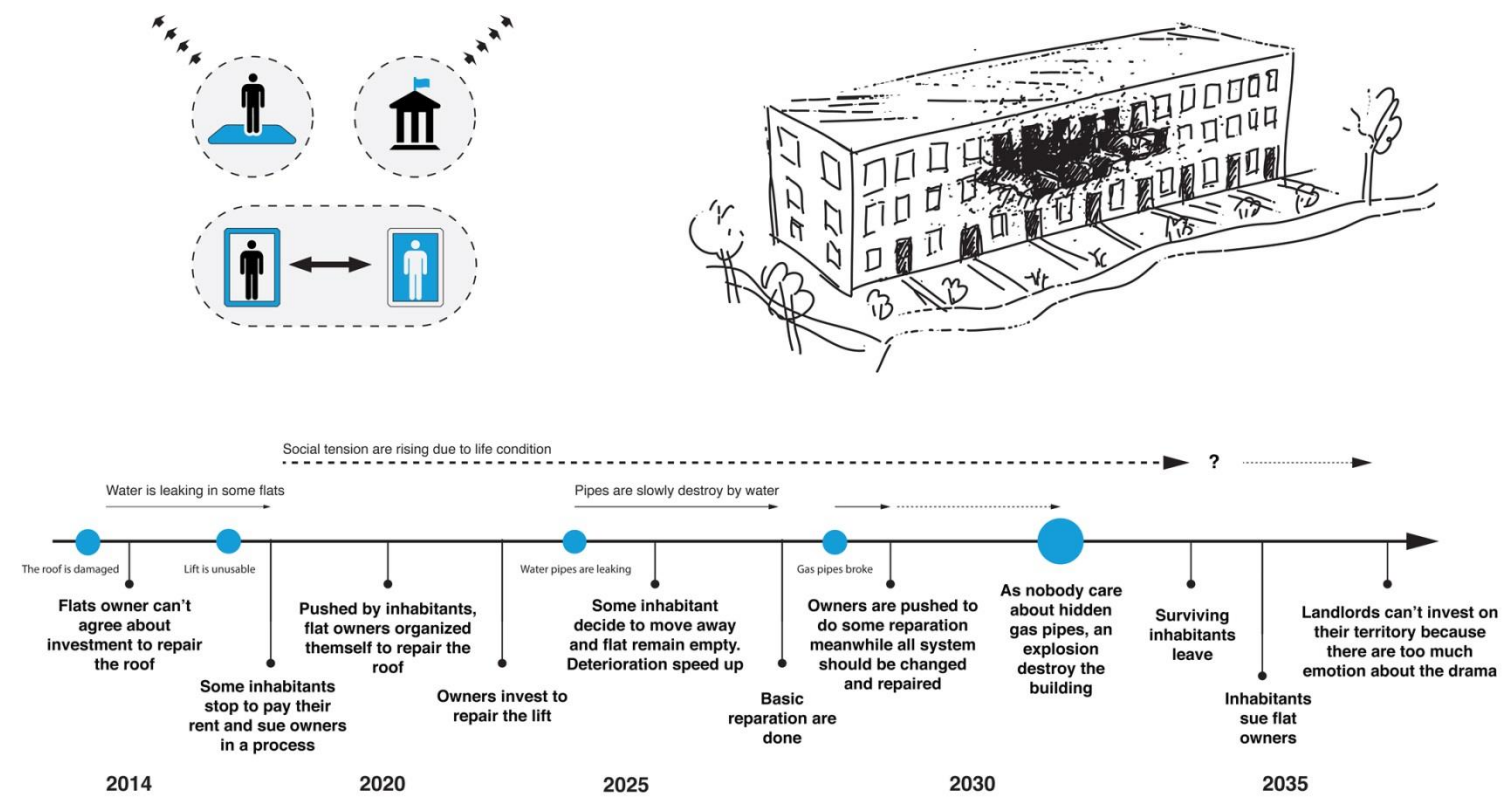
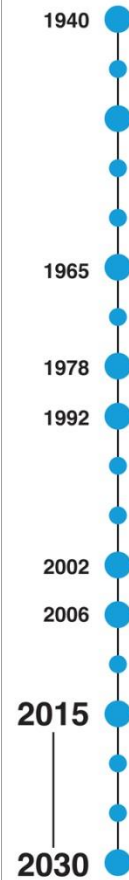




# POSSIBLE SCENERY 2

## Minimum Investment

### Land owners + Tenants

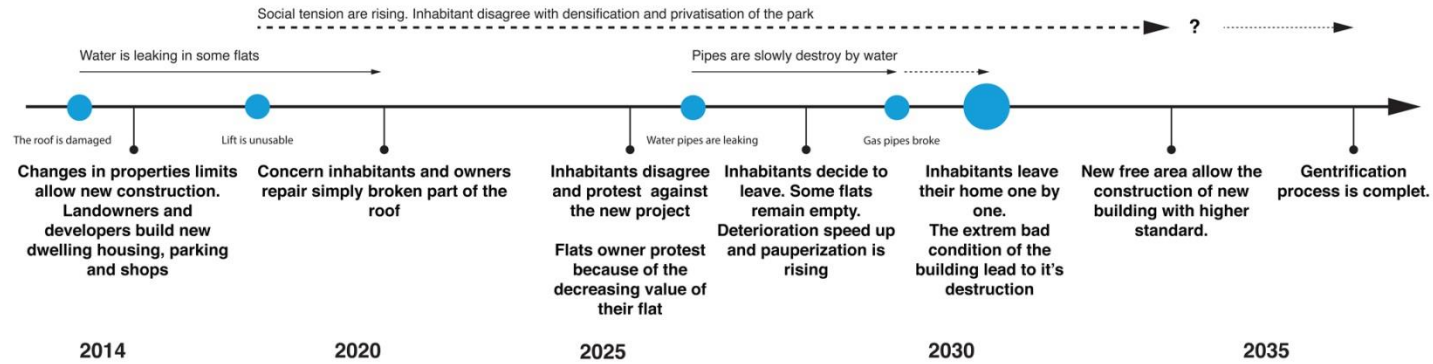
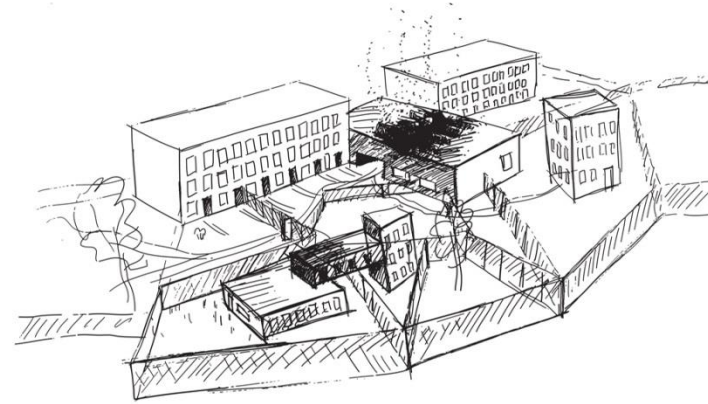
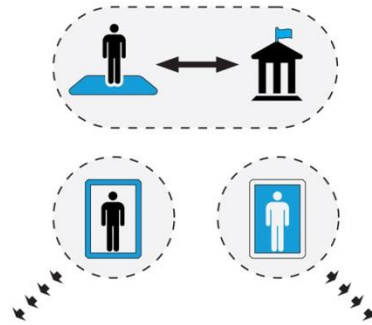
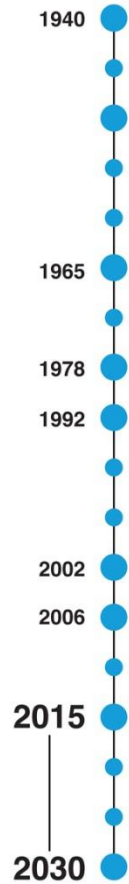




# POSSIBLE SCENERY 3

## High Investment

### Land owners + Deregulation

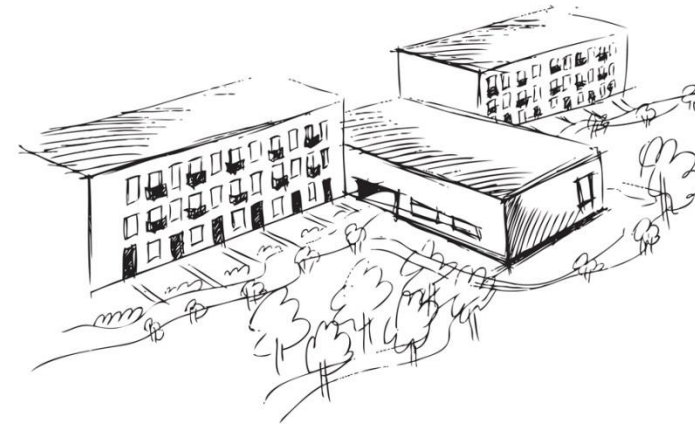
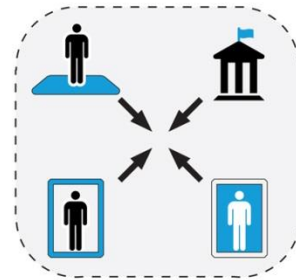
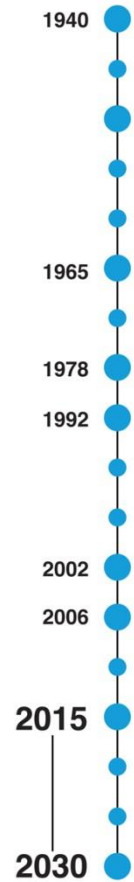




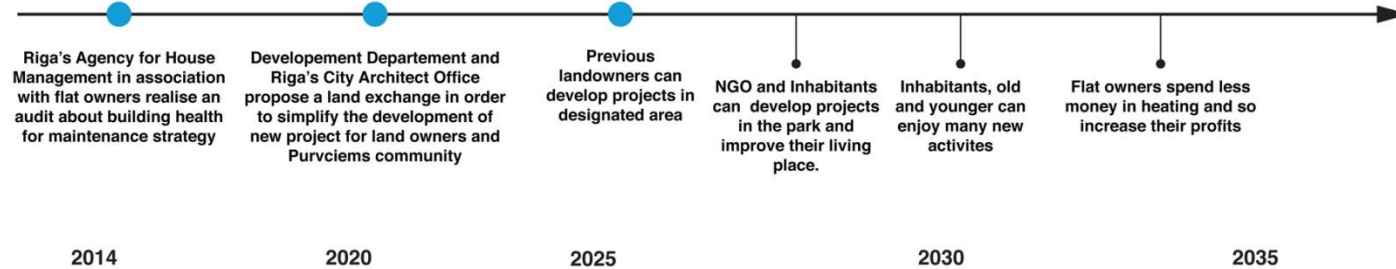
# POSSIBLE SCENERY 4

## Mix Investment

### Land owners + Flat Owners + State

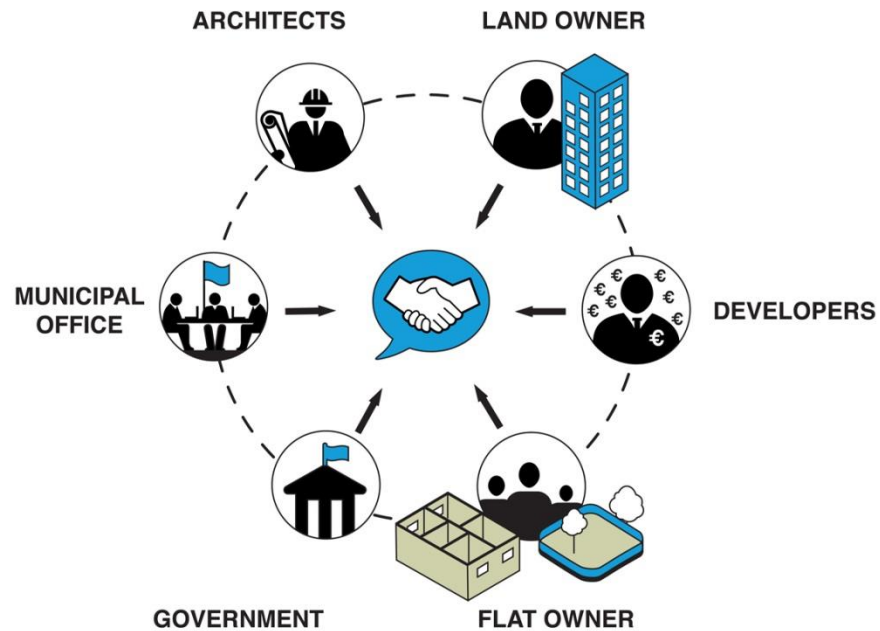
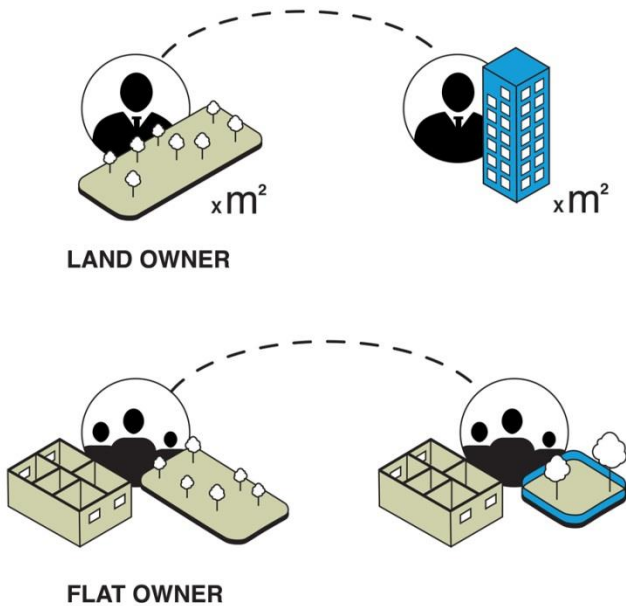
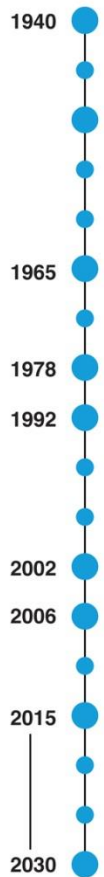


Riga's Agency for House Management in association with flat owners realise an audit about building health for maintenance strategy



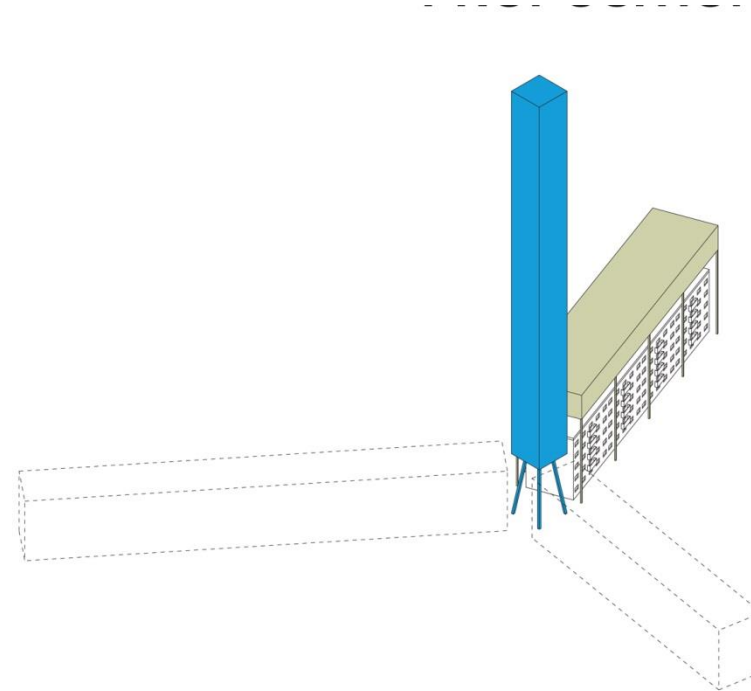
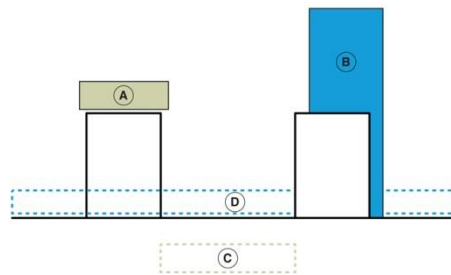
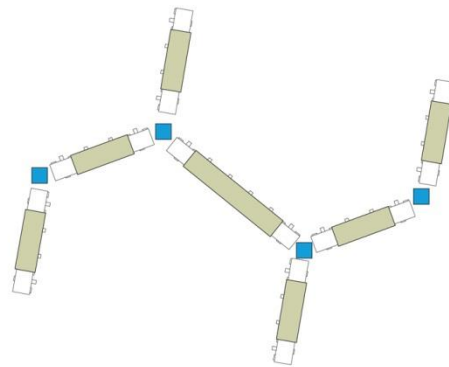
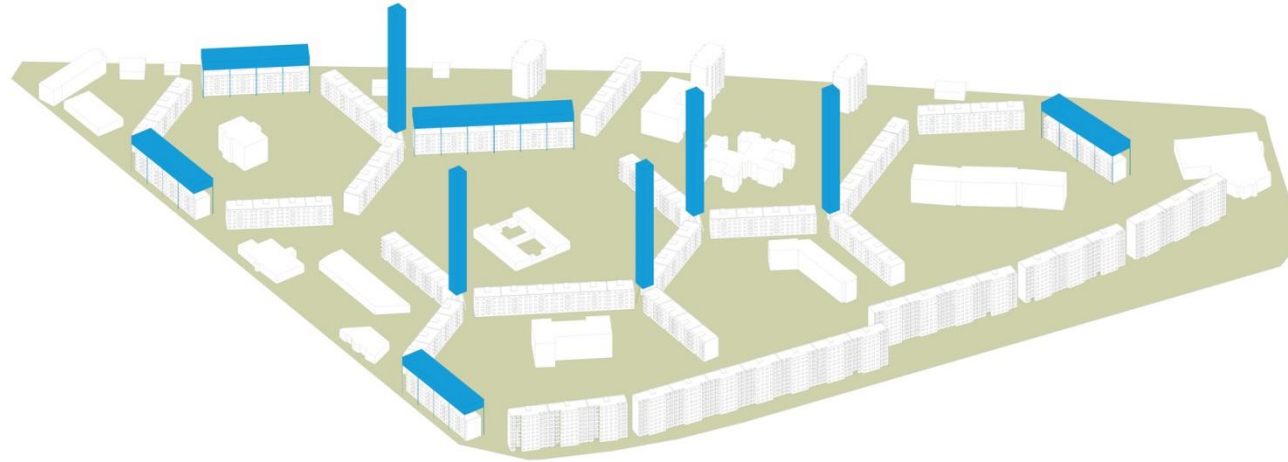
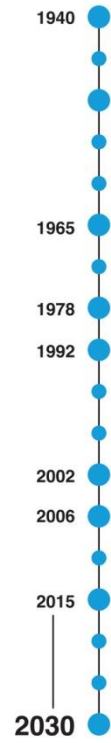


# 2015 - 2030 PROPOSITION





# 2015 - 2030 PROPOSITION



















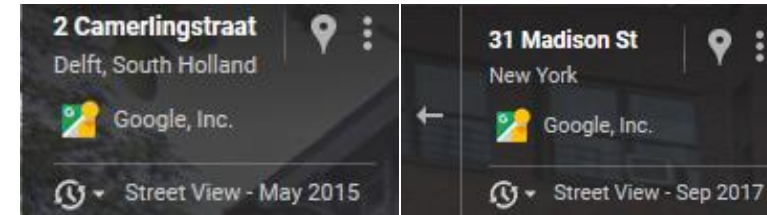


# Tēls, arhitektūras daudzveidība Berlīnes piemērs





# Tēls, arhitektūras daudzveidība Nīderlandes/ Ņujorka





# Tēls, arhitektūras daudzveidība





# Vides koptēls



fasāde

ieejas durvis

Autonovietne

lodžijas

velonovietne

Jaunie apjomi

atkritumi

Autonovietne pie ieejas

Pārvietošanas ātrums

Vertikālās komunikācijas







# Pagalmu apstādījumu koptēls





# Mikrorajona urbanitāte

TAB2013 konkursa darbs «DYNAMO»  
Autori Izabella Cichonska, Nathan de Groot,  
Lindsay Harkema, Ondrej Janku





# Publiskā ārtelpa Pagalmu kop-radišana ar iedzīvotājiem

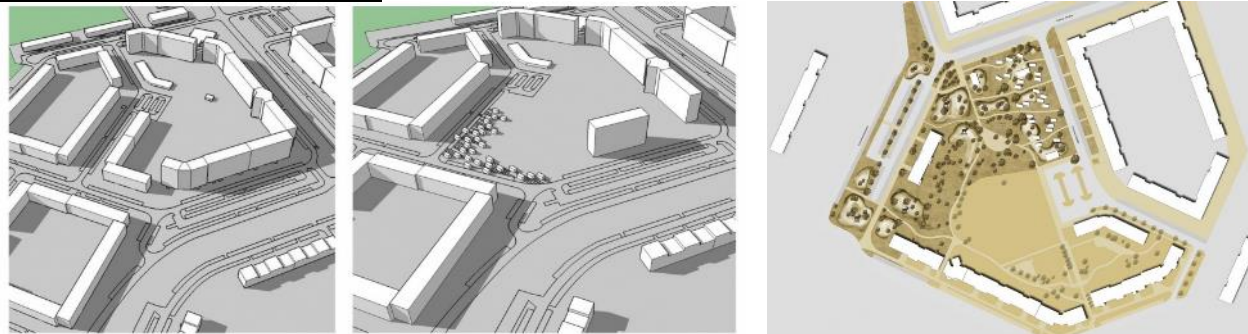
Refurbishment of Schorfheide real estate  
Berlin (Germany), 2010

DEVELOPER:

degewo AG

AUTHORS:

gruppeF - Landschaftsarchitekten





# Mobilitāte nākotnes kontekstā—mazāk stāvošo auto pagalmos





# Mikrorajons Purvciems-3

## Pagalmu risinājumi, jaunās stāvietas, gājēju prioritāte







## 602 series

purvciems

Dzelzavas 23 - first **602. series** building, built in 1967. Nine - storey slab buildings with load-bearing structure is constructed of lightweight aggregate concrete wall panels and concrete floor slabs. Separate bathroom, a balcony, a rather large kitchen. Built from the 1970th mid-year till 1980.

62053 people



NORTH  
FACADE

SOUTH  
FACADE



## EAST FACADE



## WEST FACADE



## INTERIOR

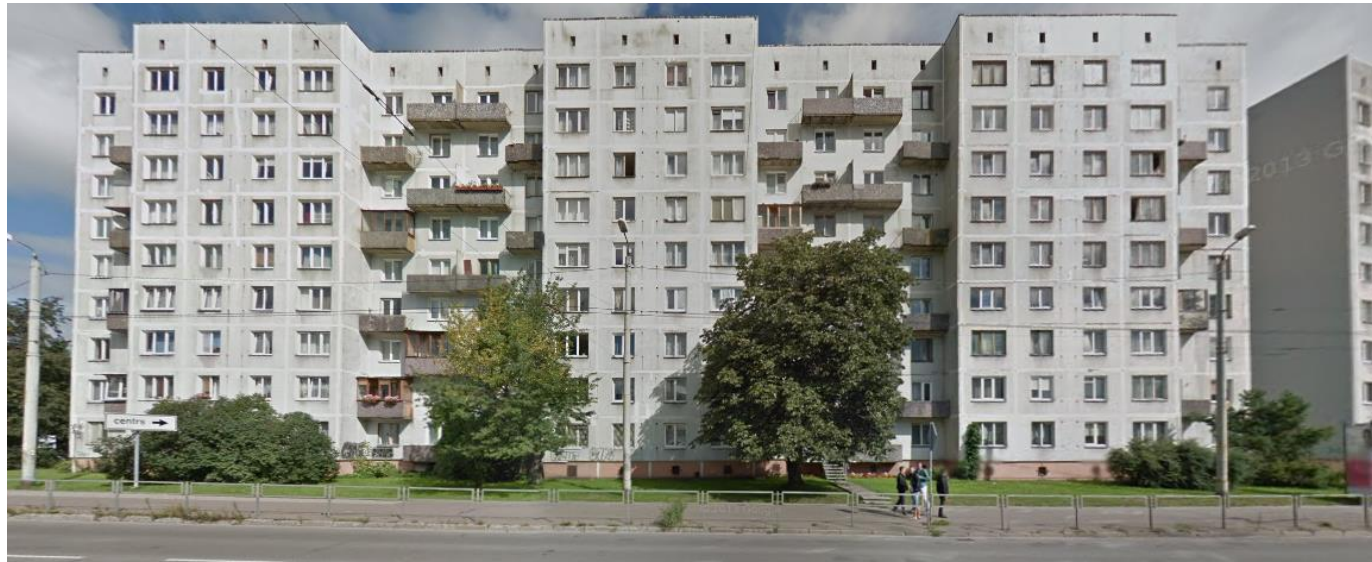
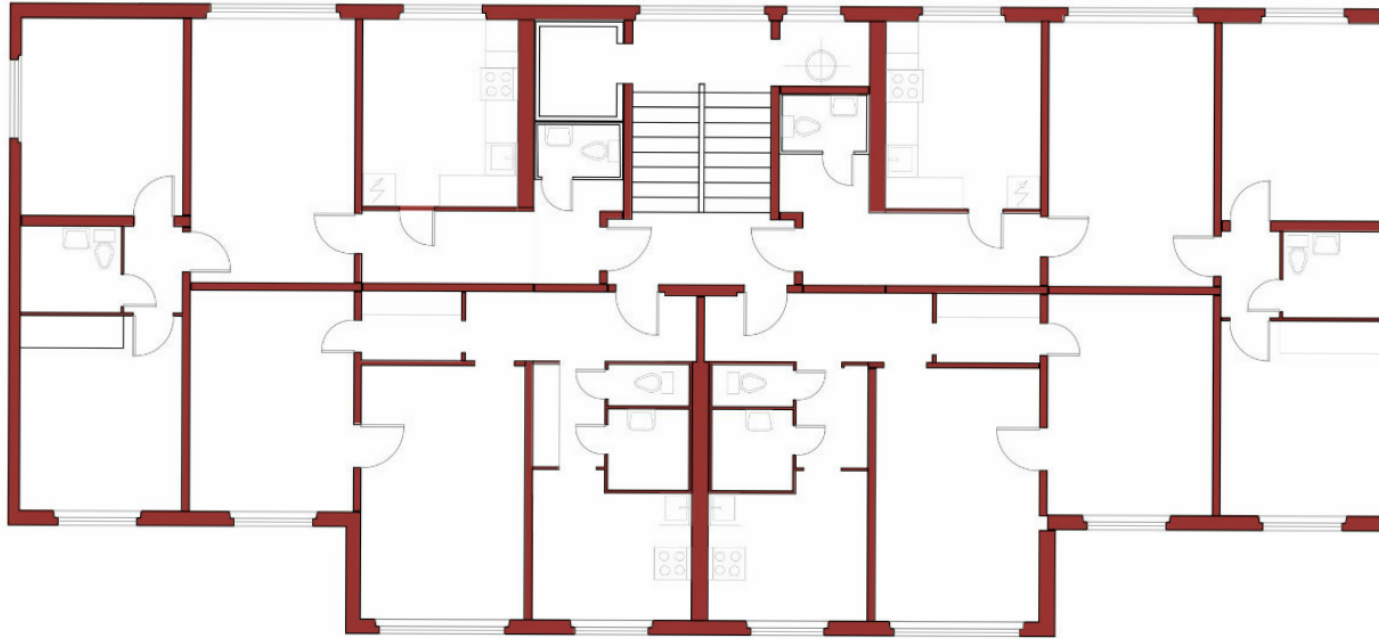


## ROOF





# CURRENT FLOOR PLANS







External walls- **Bachl extrapor EPS 80** insulation (250mm), Eternit cladding

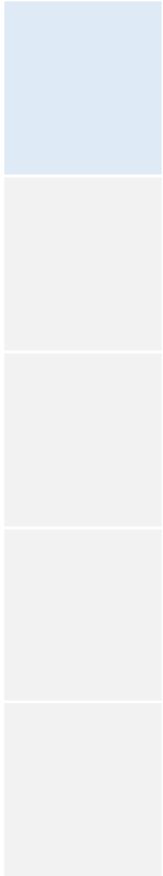
(new U-value **0.15 W/m2K**)

Windows- **Rationel** (U-value **0.66 W/m2K**)

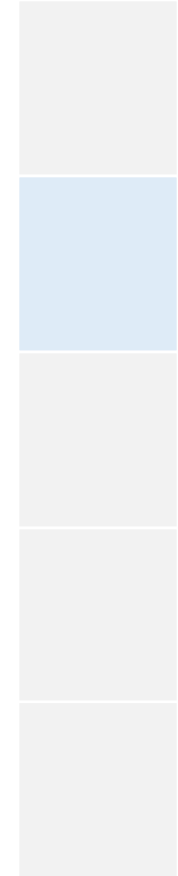
Total renovation cost for the whole building- **1,010 mln.**

Payback- **2024** (10 years)









External walls- **Hemp** insulation (150mm), Eternit cladding  
(new U-value **0.18 W/m<sup>2</sup>K**)

Windows- **Rational** (U-value **0.78 W/m<sup>2</sup>K**)

Total renovation cost for the whole building- **1,660 mln.**





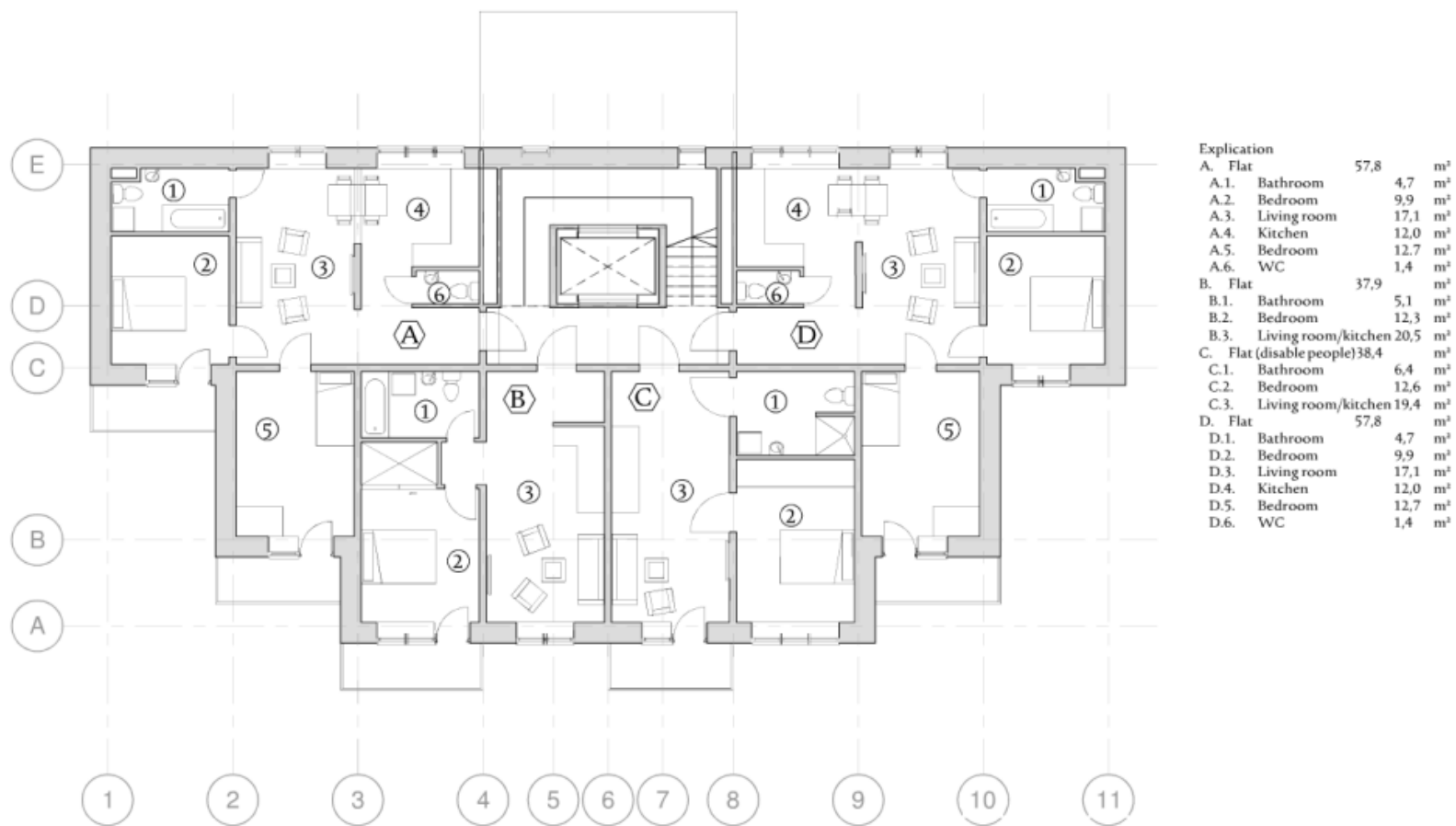
North



South

FACADE





External walls- **Polyisocyanurate** insulation (100mm), timber cladding

(new U-value **0.19 W/m2K**)

Windows- **Rationel** (U-value **0.66 W/m2K**)

Total renovation cost for the whole building- **1,910 mln.**







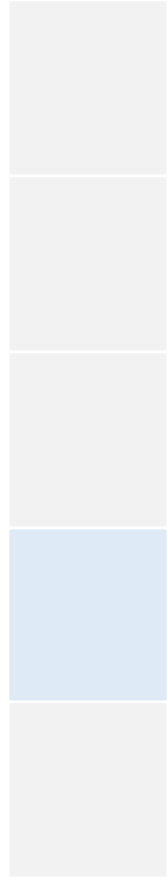


External walls- **PAROC** insulation (600mm), plaster (new U-value **0.13 W/m<sup>2</sup>K**)

Windows- **G25 GROUP** (U-value **1.0 W/m<sup>2</sup>K**)

Total renovation cost for the whole building- **1,080 mln.**







## SECOND FLOOR



External walls- **Kingspan** insulation (200mm), plaster (new U-value **0.008 W/m2K**)

Windows- **SAPA Avantis 95 PassivHaus Window** (U-value **0.64 W/m2K**)

Total renovation cost for the whole building- **1,560 mln.**

Payback- **2028** (14 years)



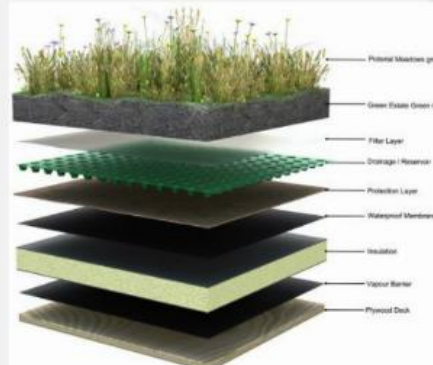
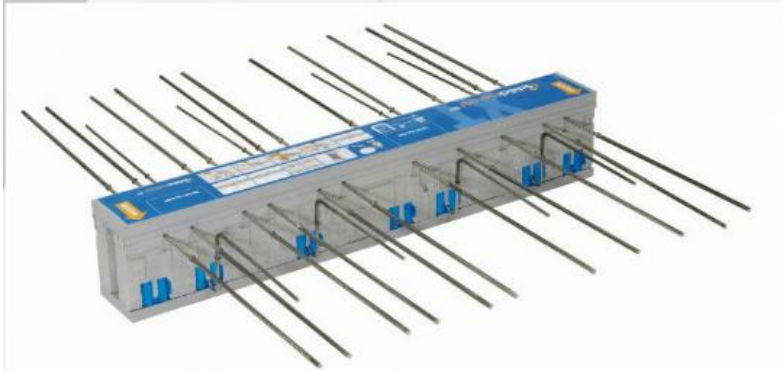


## SOUTH FACADE





# SUSTAINABLE SOLUTIONS



## Vacum insulation panel

Kingspan optim R  
5cm =>  $U=0,131W/m^2K$

