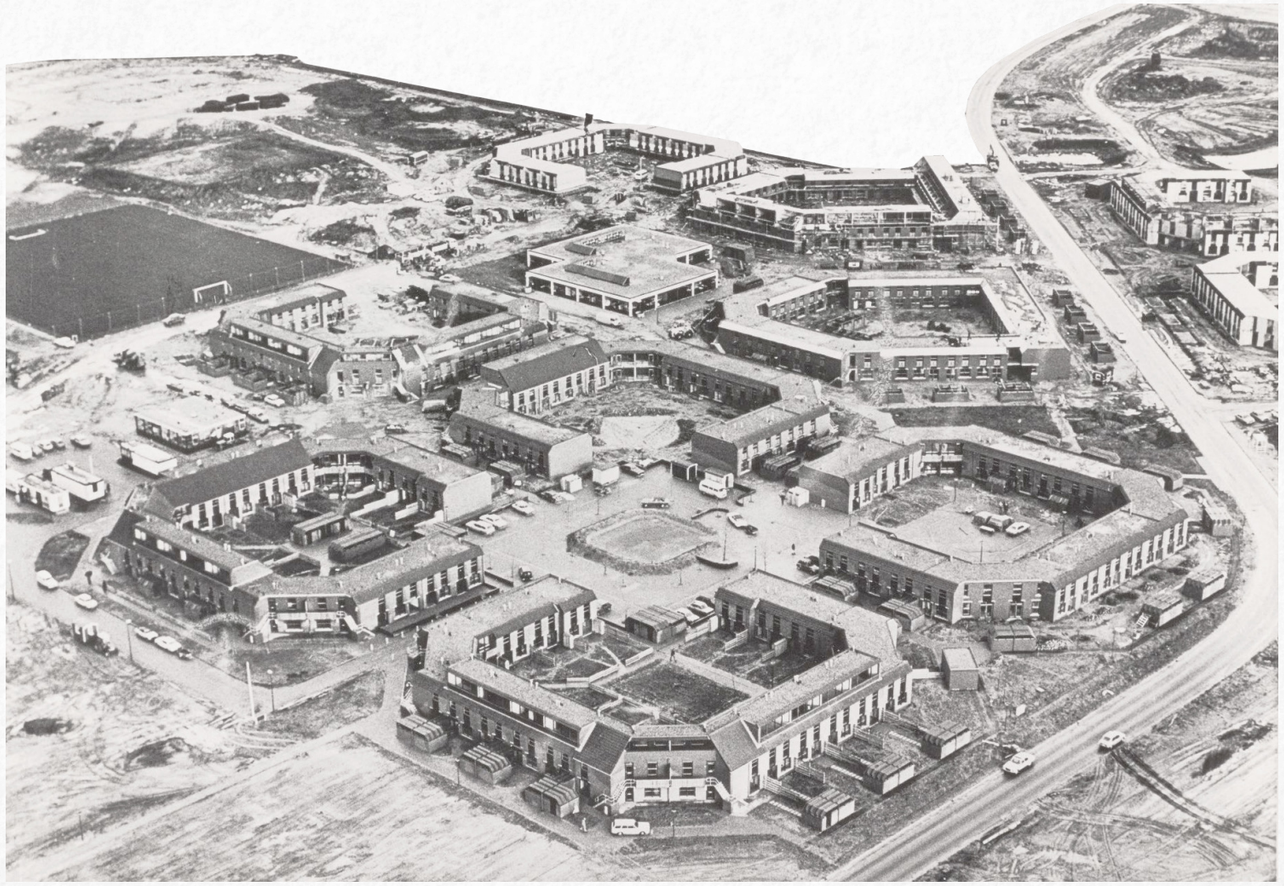
REDESIGNING COMMUNITIES

REALISING COHOUSING THROUGH CIRCULAR TRANSFORMATION

ING. S.C.E. HUIZINGA

1975

1975

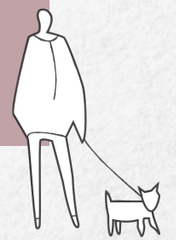


1975

1980’s

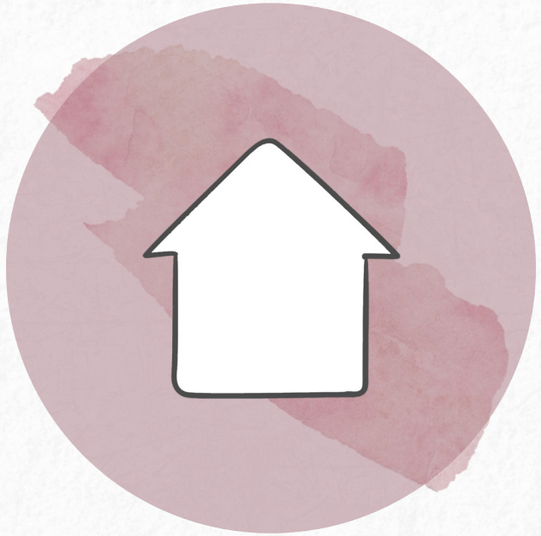
present

“ 60% of the first residents still live here,
but the social cohesion of the past is declining ”
~ Resident of Almere Haven



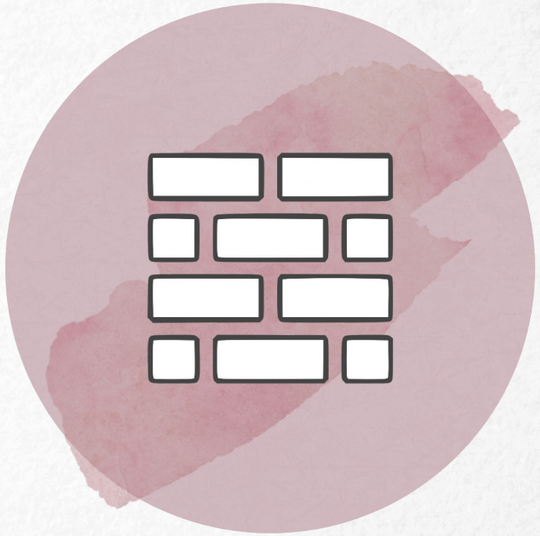
social value

sense of community



relative art value

seventies aesthetics



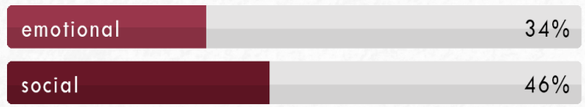
ecological value

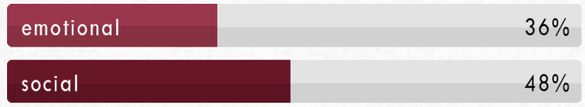
embodied energy

PROBLEM STATEMENT

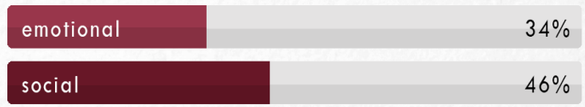
LONELINESS

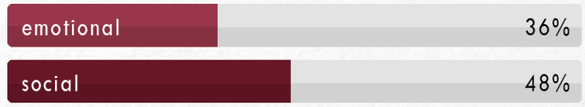
Almere Haven





The Netherlands

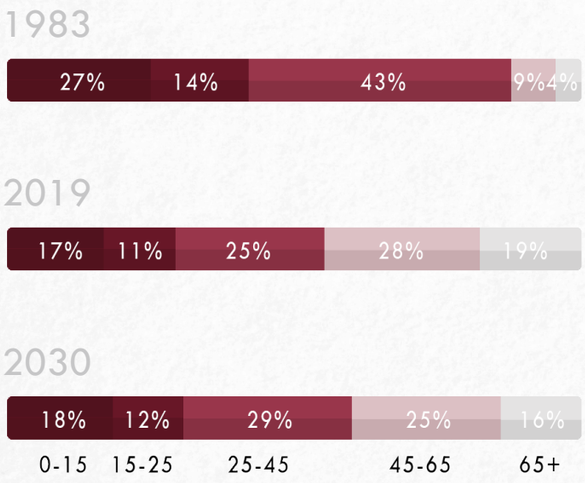


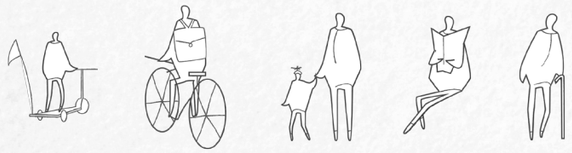


PROBLEM STATEMENT

AGING

Almere Haven





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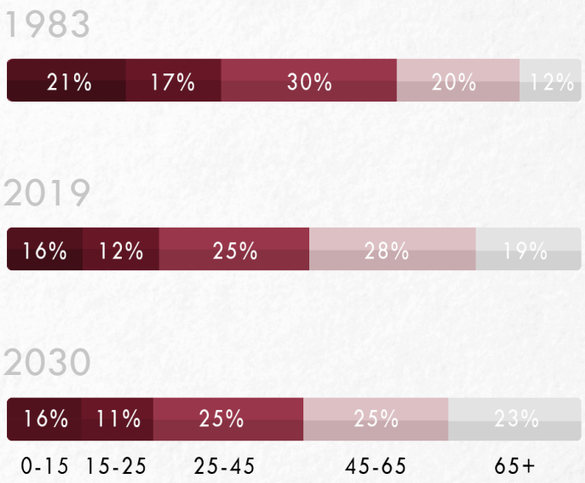
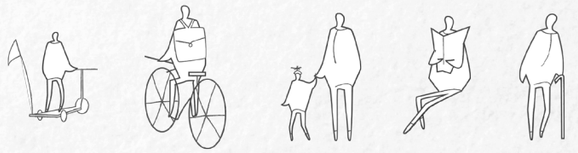




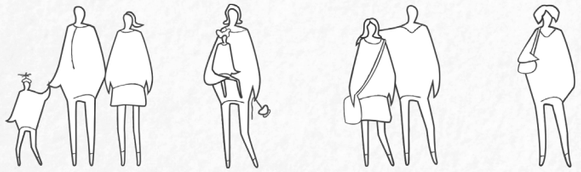
PROBLEM STATEMENT

HOUSEHOLDS

Almere Haven

2019

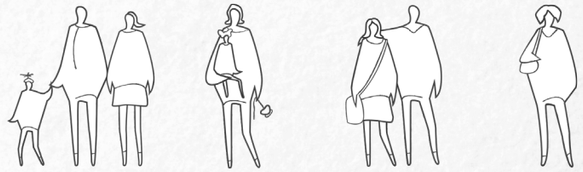
2030



The Netherlands

2019

2030



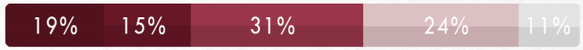
PROBLEM STATEMENT

SUSTAINABILITY

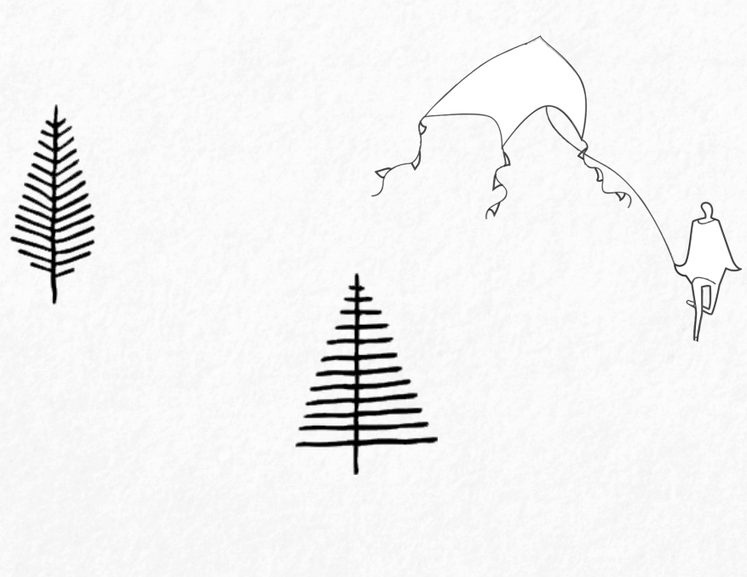
Almere Haven

1970-1985

The Netherlands

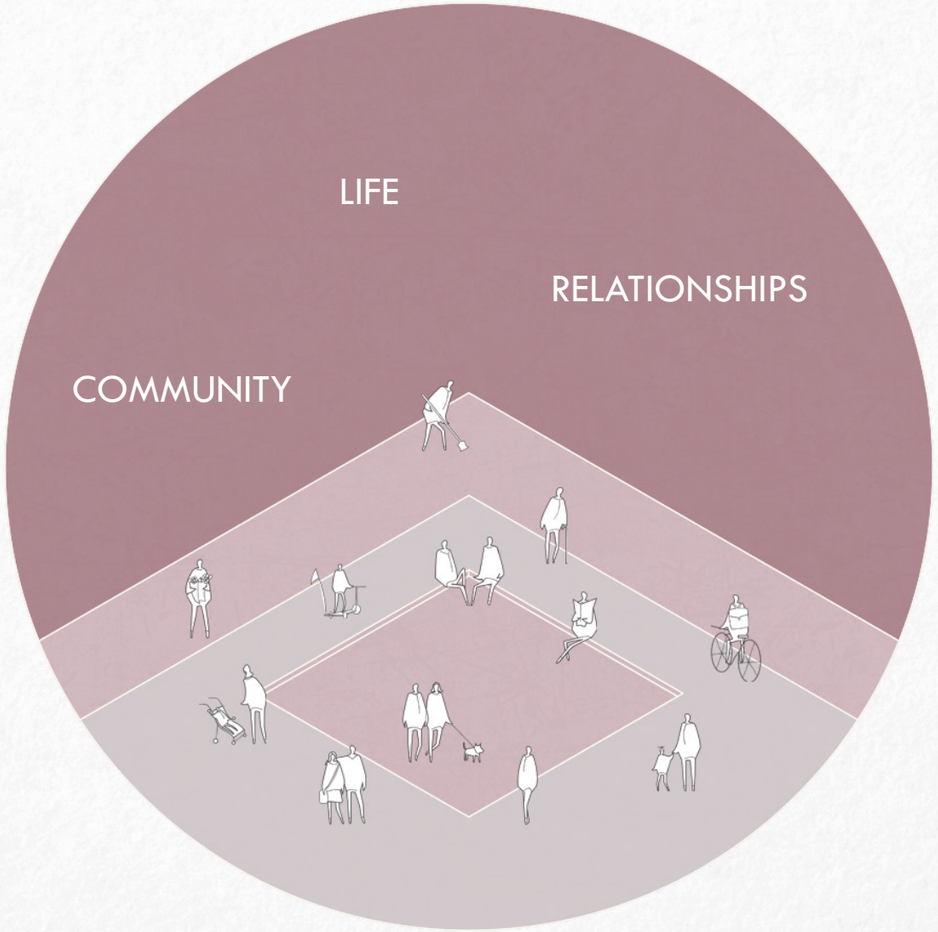


1965-1985



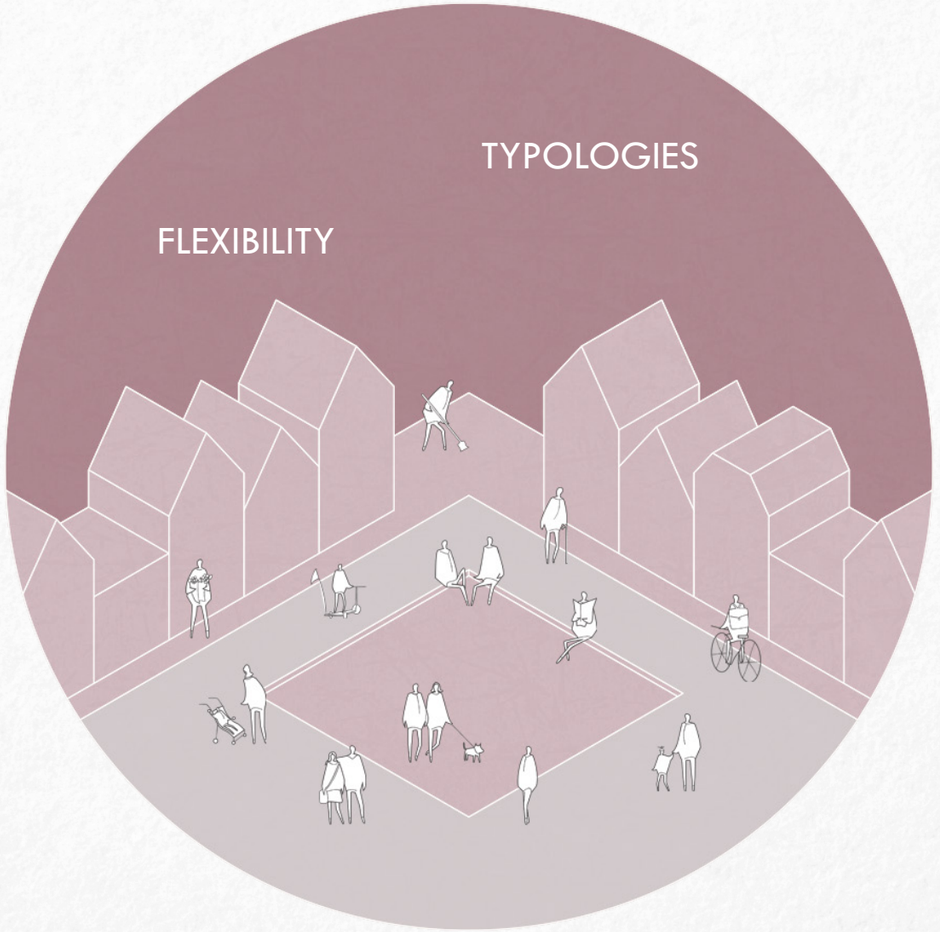
VISION

SOCIAL



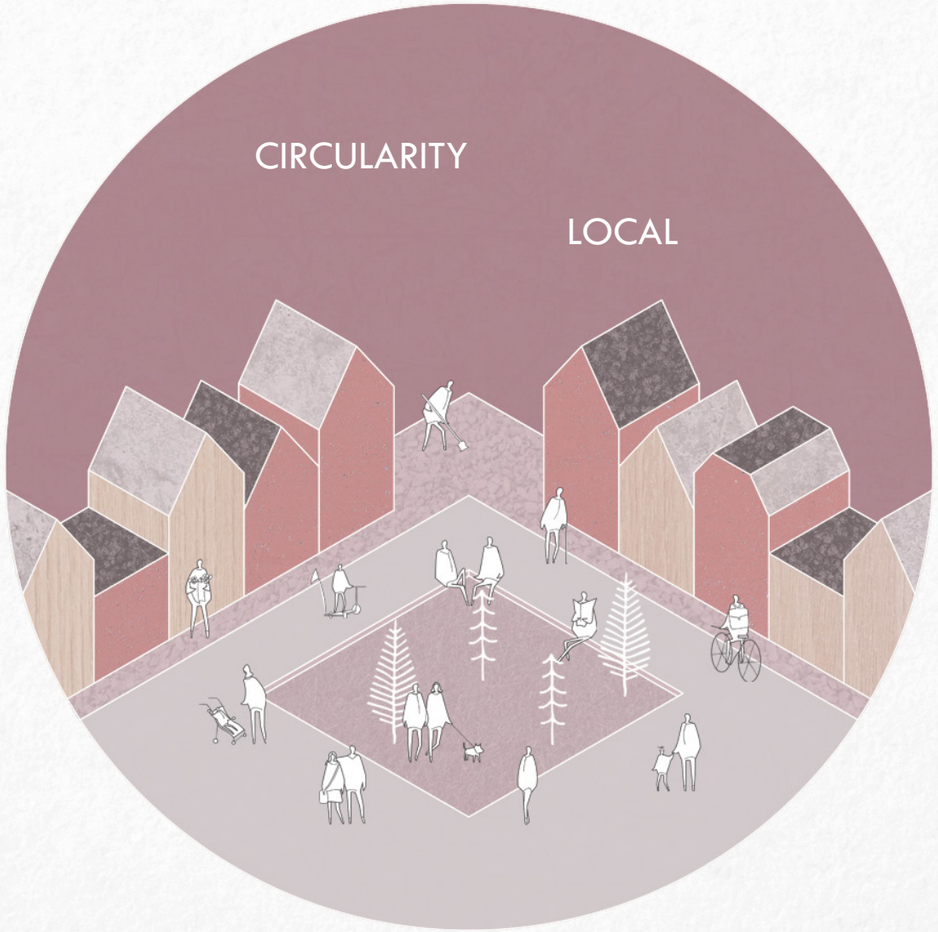
VISION

SPACE



VISION

MATERIAL



VISION

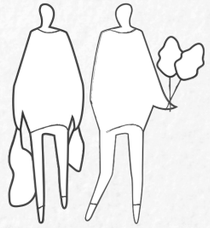
DESIGN QUESTION

HOW TO ESTABLISH COHOUSING FOR DIFFERENT AGE GROUPS IN THE EXISTING BUILT ENVIRONMENT THROUGH CIRCULAR TRANSFORMATION?

DEFINITION

COHOUSING

Cohousing communities are intentional residential communities, created and run by their residents. Each household has a self-contained private home, as well as shared community spaces. Residents come together to manage their community and to share activities.



VISION

LIFE

DESIGN

TECHNOLOGY

RESULT

VISION

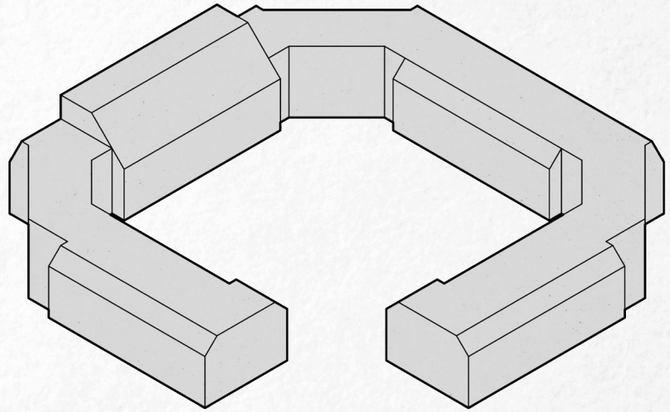
LIFE

DESIGN

TECHNOLOGY

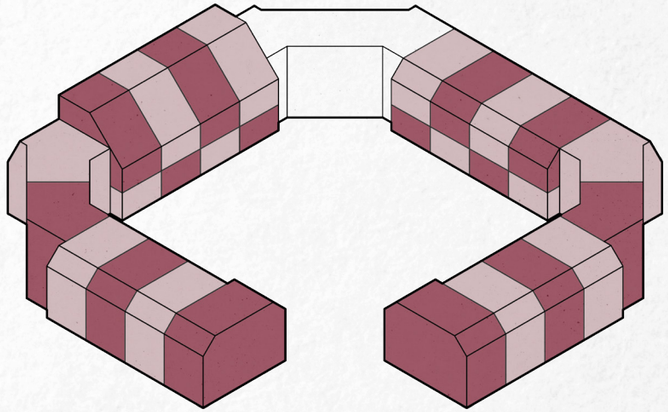
RESULT

STRUCTURE



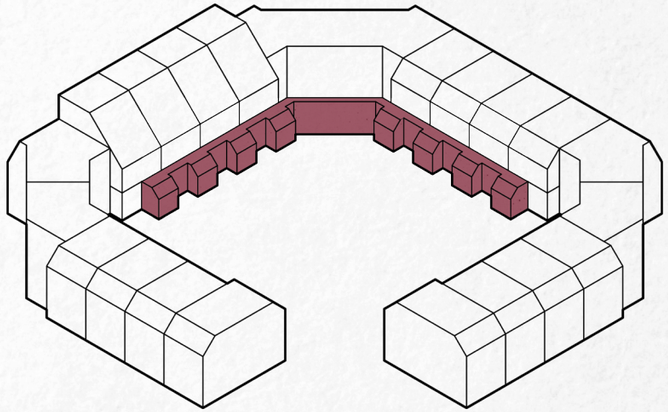
1. current situation

STRUCTURE



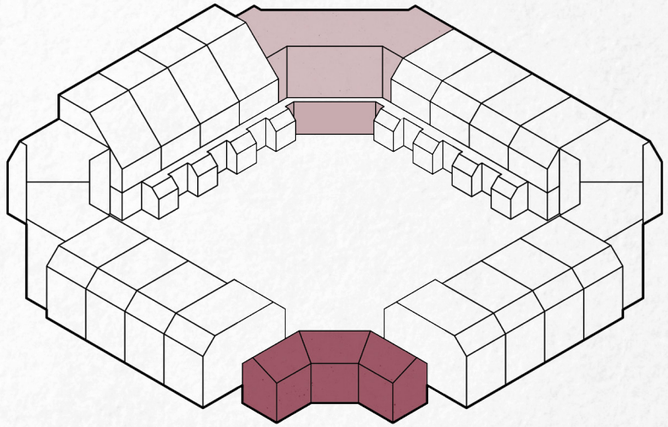
2. split

STRUCTURE



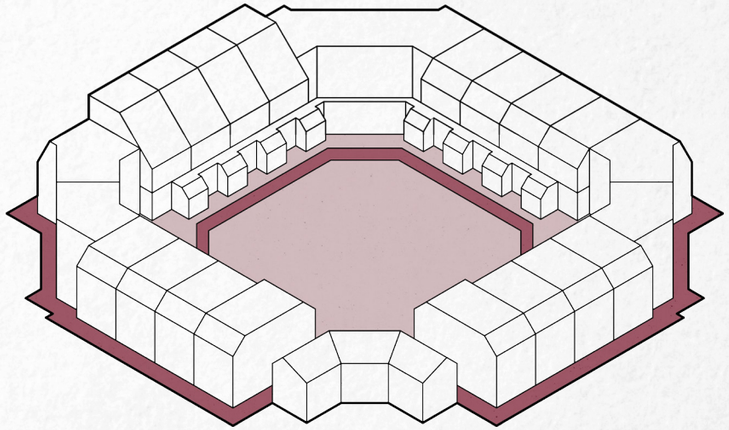
3. connect

STRUCTURE



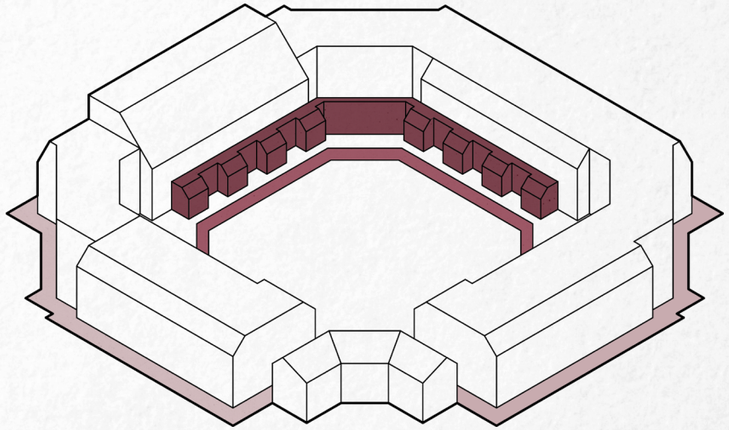
4. communal functions

STRUCTURE

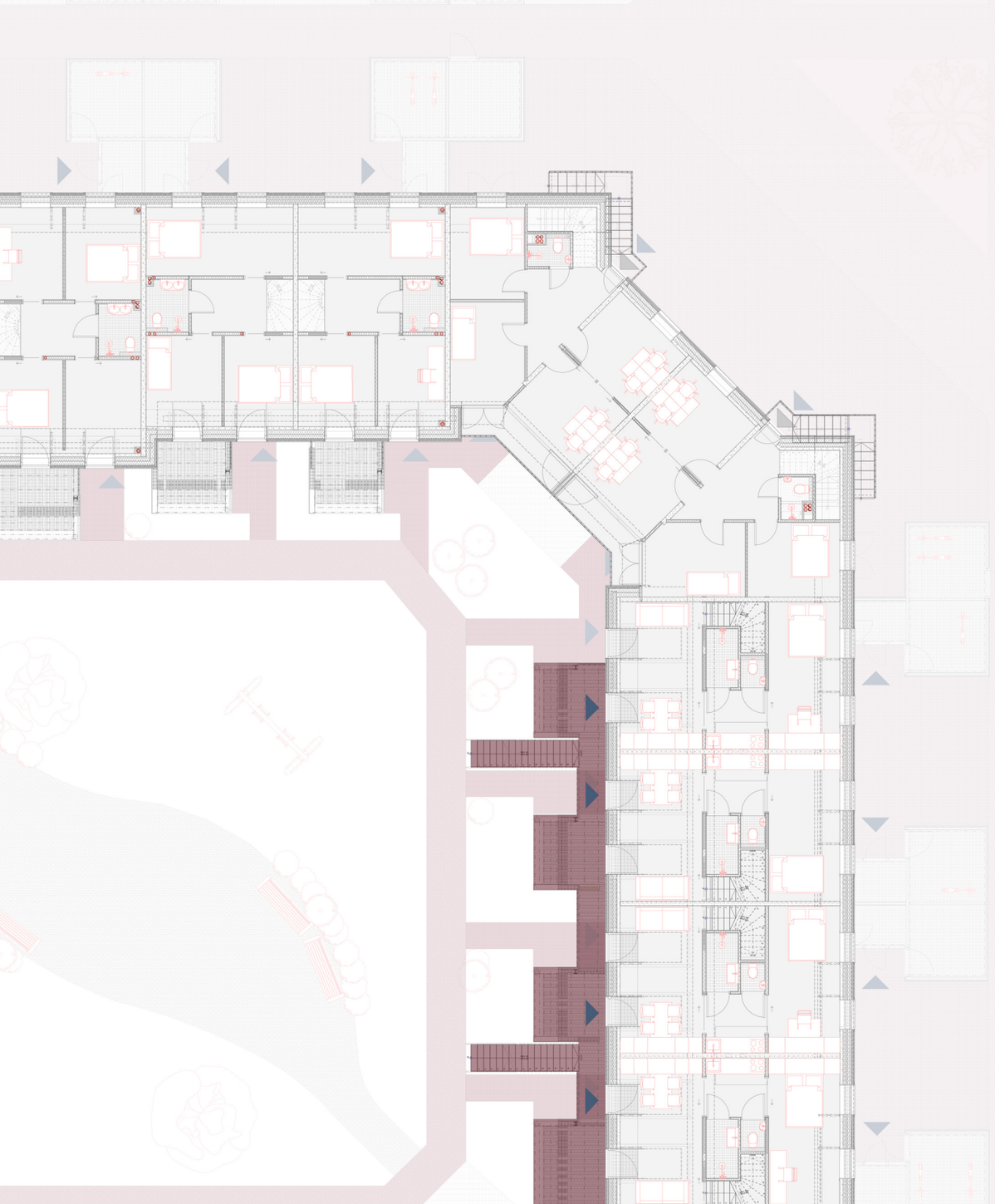


5. outdoor

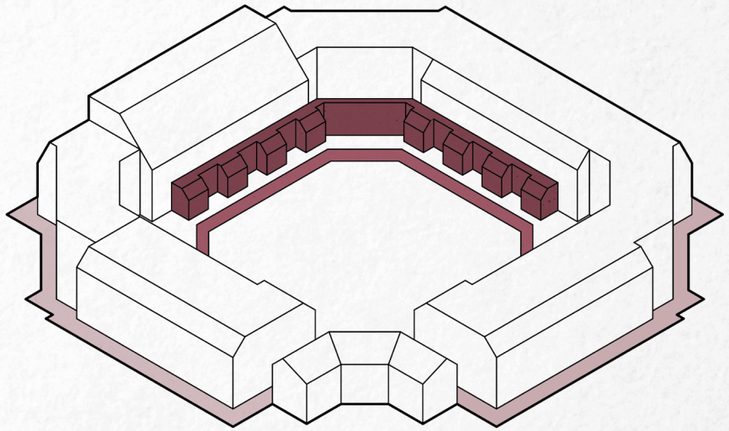
CIRCULATION



formal and informal entrances

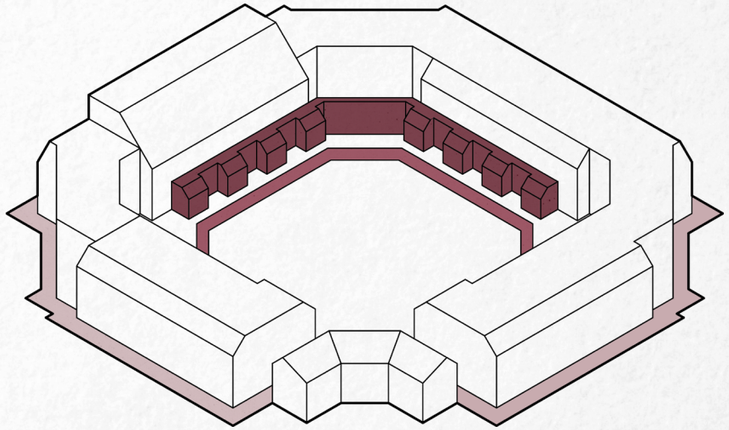


CIRCULATION



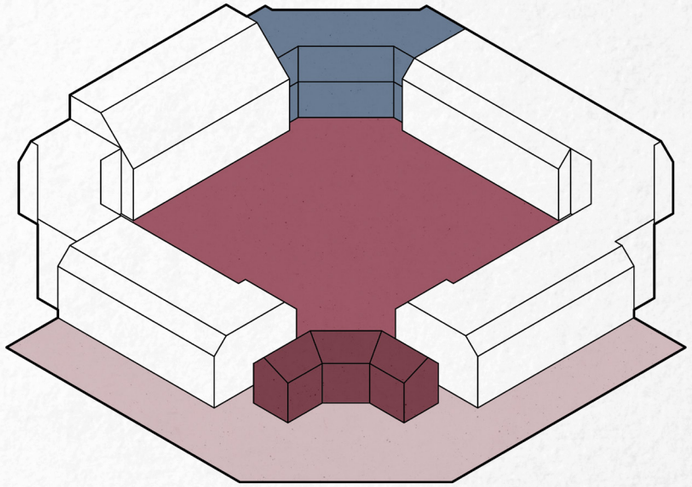
formal and informal entrances

CIRCULATION



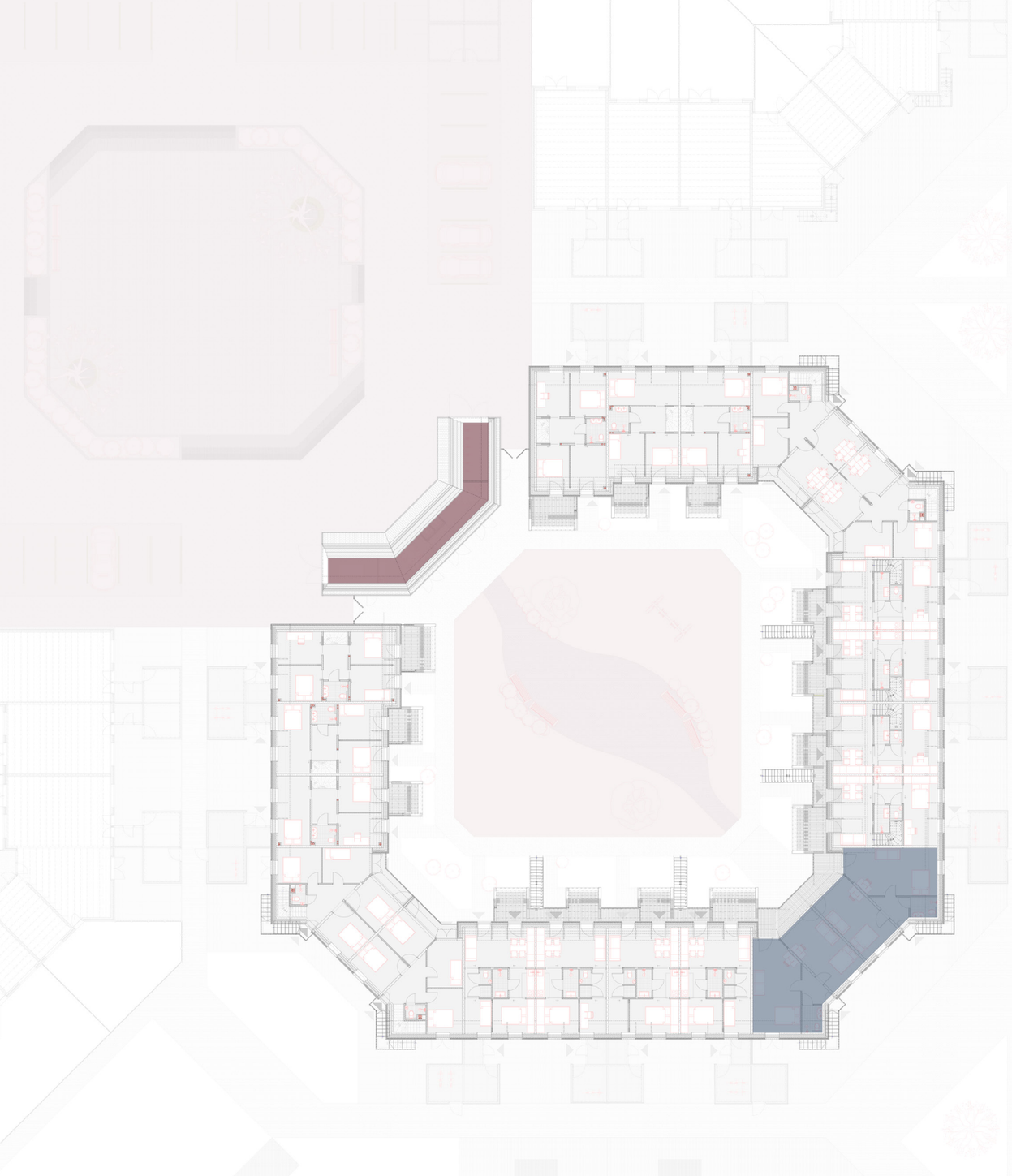
raised street with balconies above and patios underneath

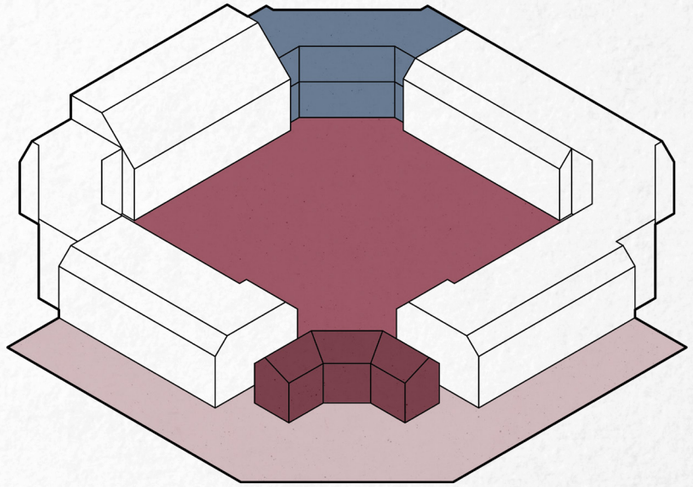
COMMUNAL FUNCTIONS



- service building
- community building
- communal courtyard
- neighbourhood square

COMMUNAL FUNCTIONS





- service building
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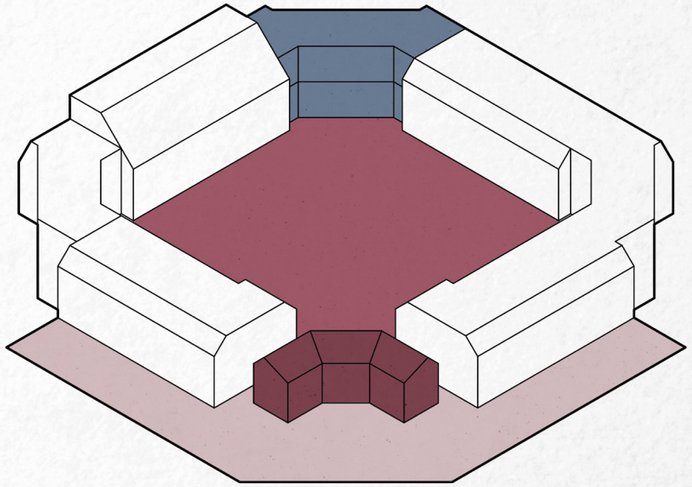
COMMUNAL FUNCTIONS



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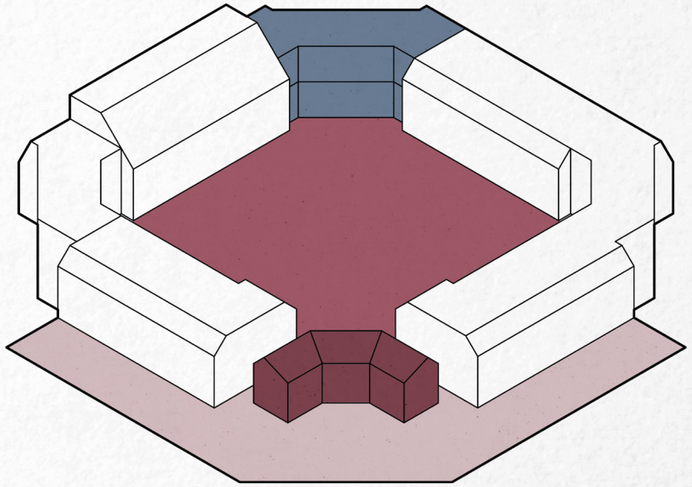

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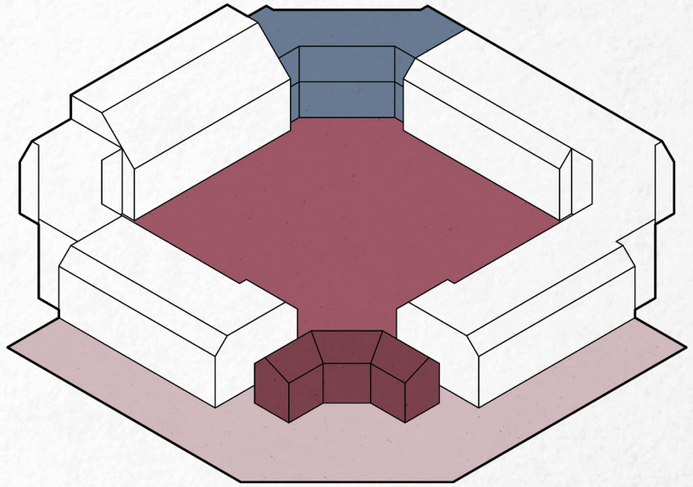
- neighbourhood square

COMMUNAL FUNCTIONS



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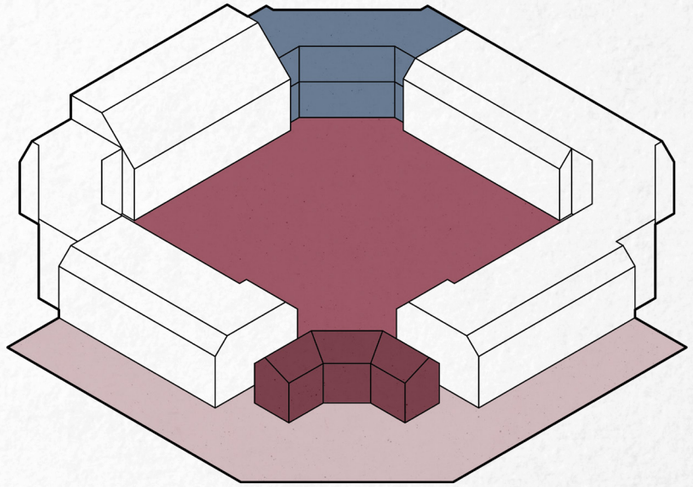

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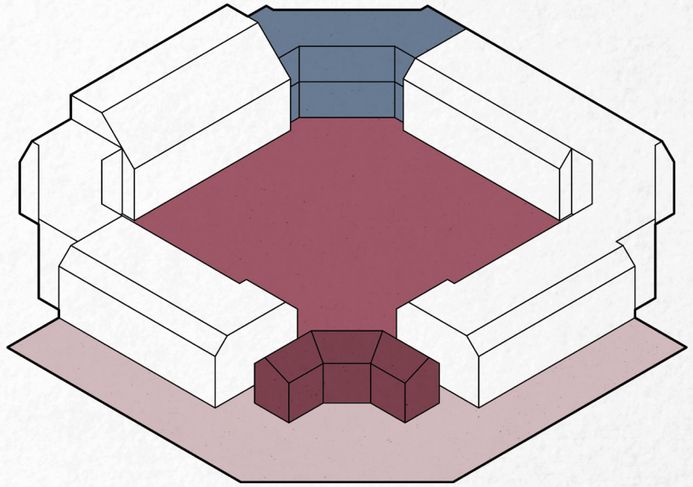

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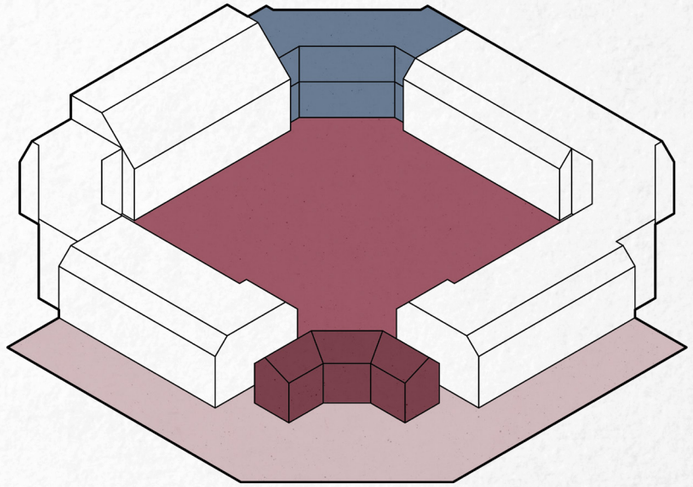

- service building
- community building
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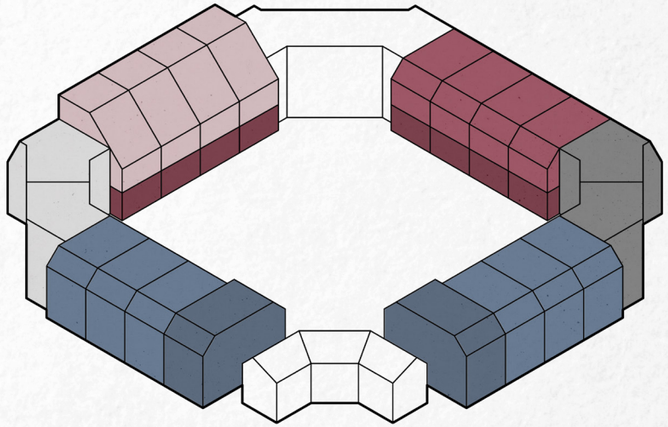
HOUSING UNITS



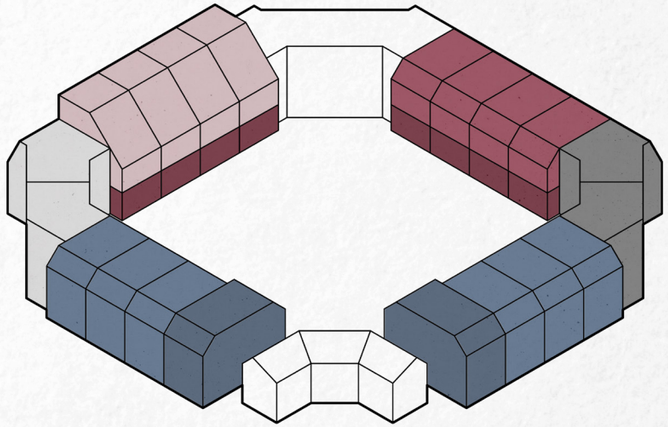
(large) family dwelling

3, 4 or 5 bedrooms

90 square meters

100 square meters

HOUSING UNITS



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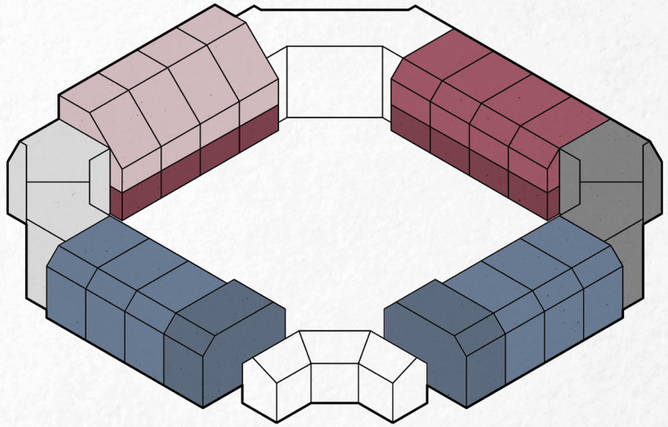


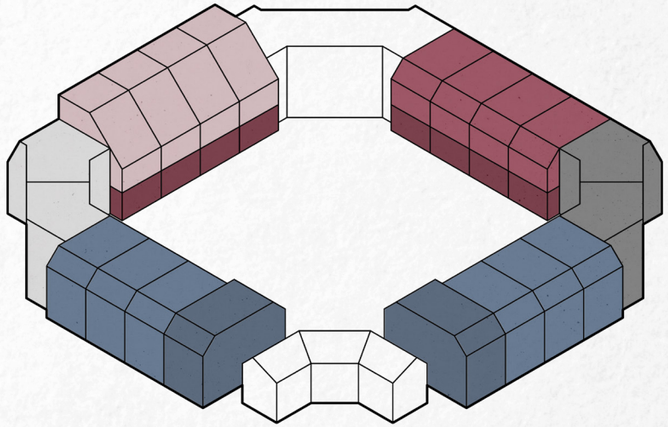
single / couple apartment

1 bedroom

45 square meters

suitable for disabled

HOUSING UNITS



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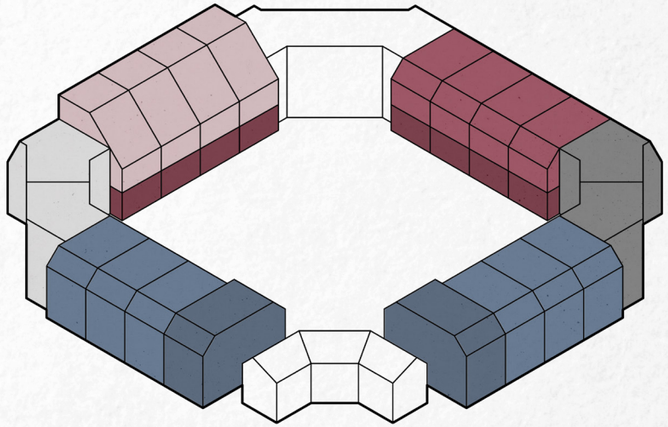
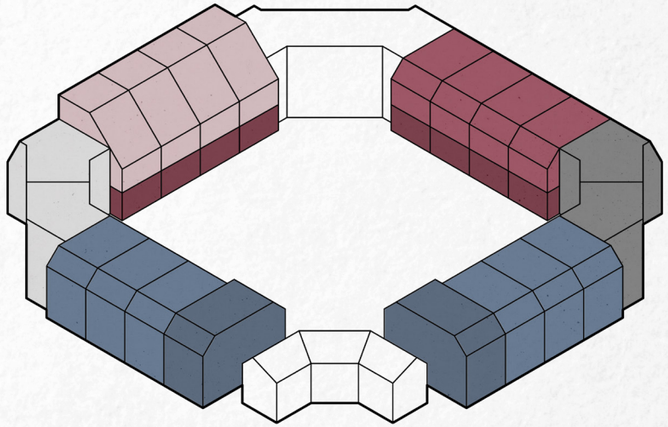


single / couple apartment

1 or 2 bedrooms

45 square meters

HOUSING UNITS



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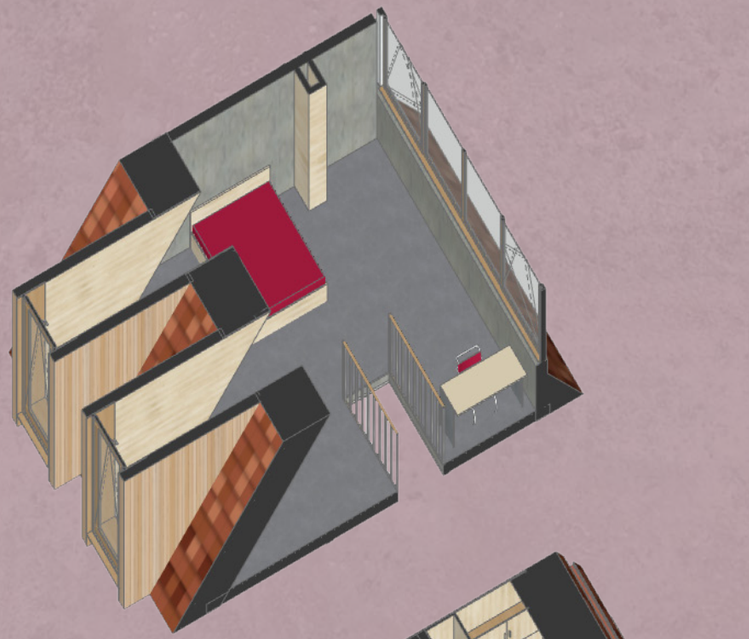
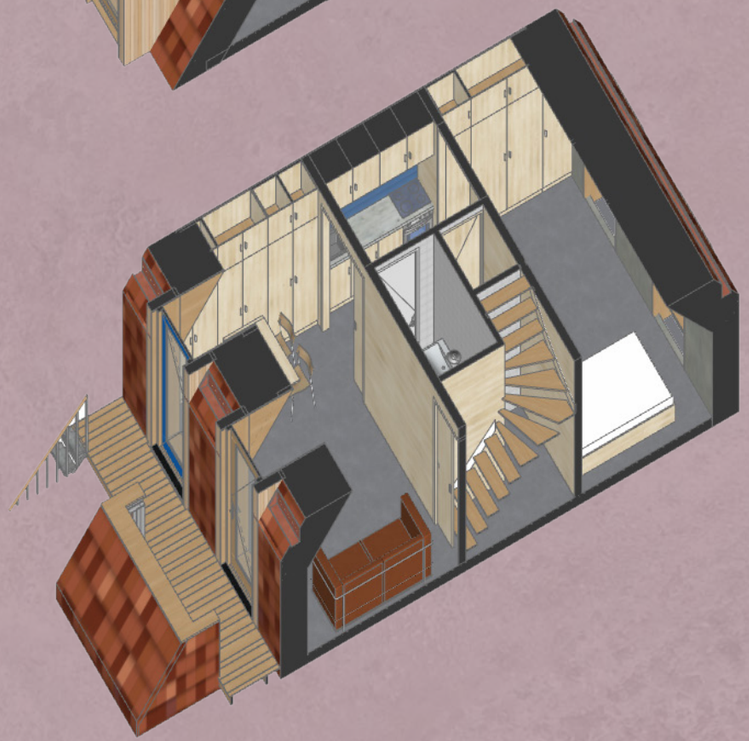
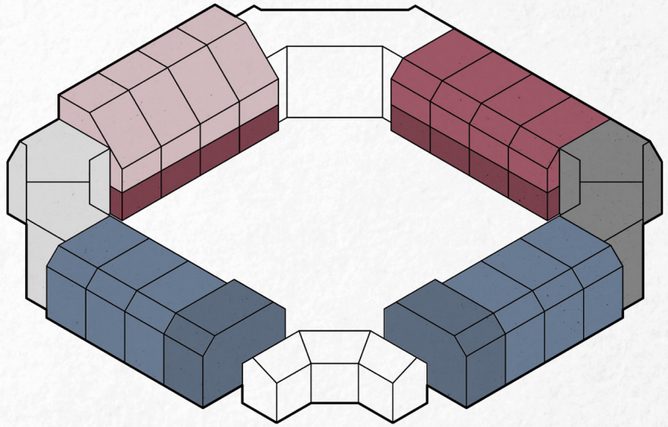




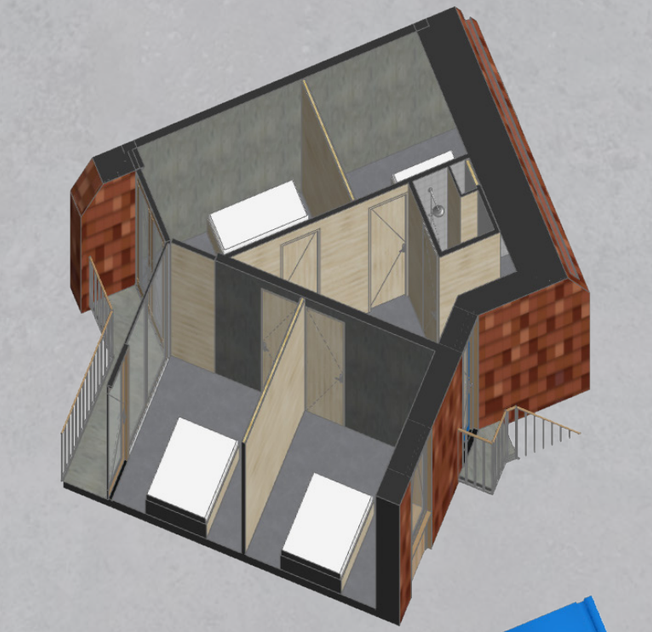
HOUSING UNITS

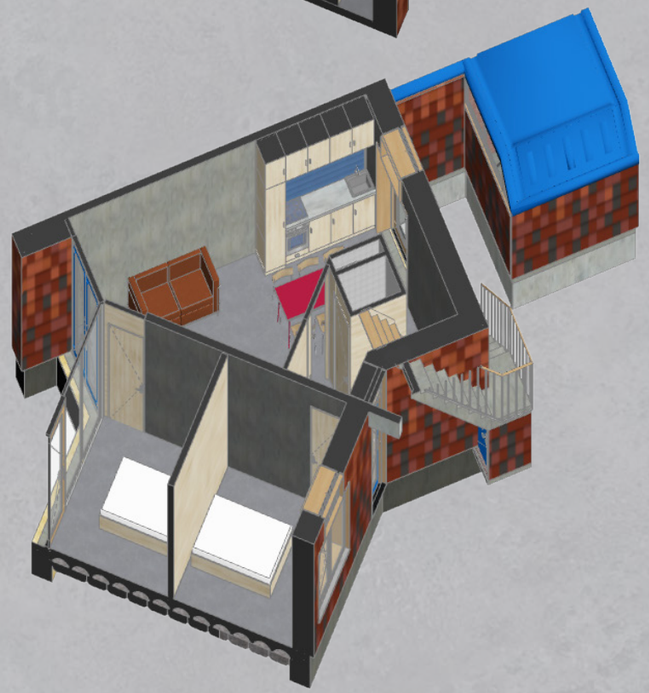


couple / small family apartment

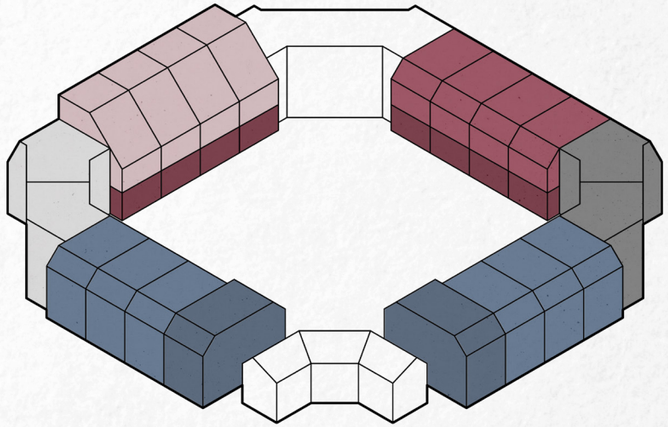
2 bedrooms

70 square meters





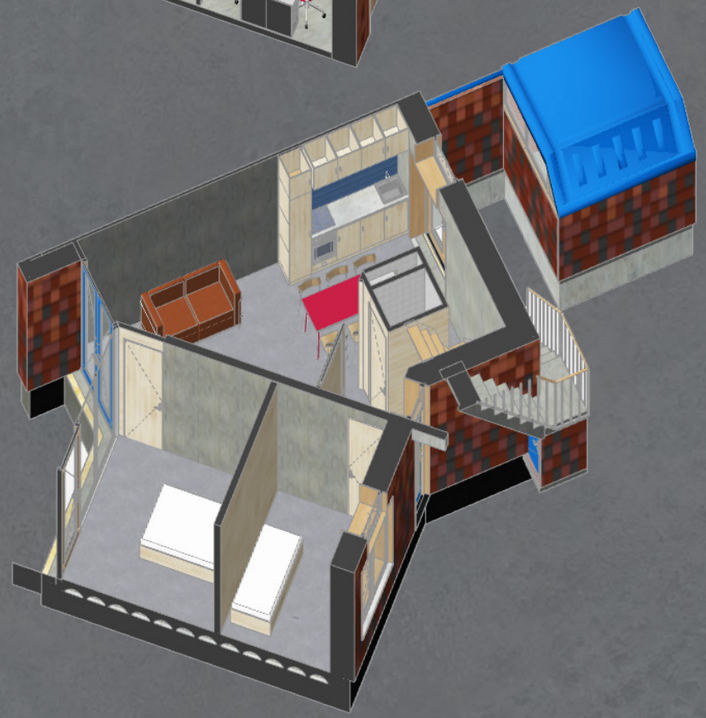
HOUSING UNITS



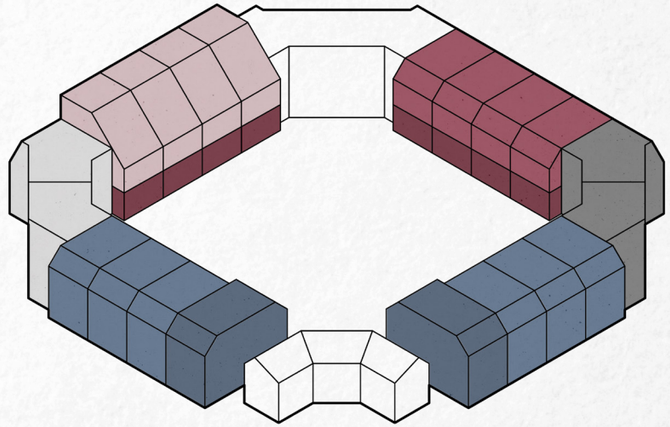
student dwelling

6 bedrooms

110 square meters



HOUSING UNITS



entrepreneur dwelling

4 bedrooms

1 double office space

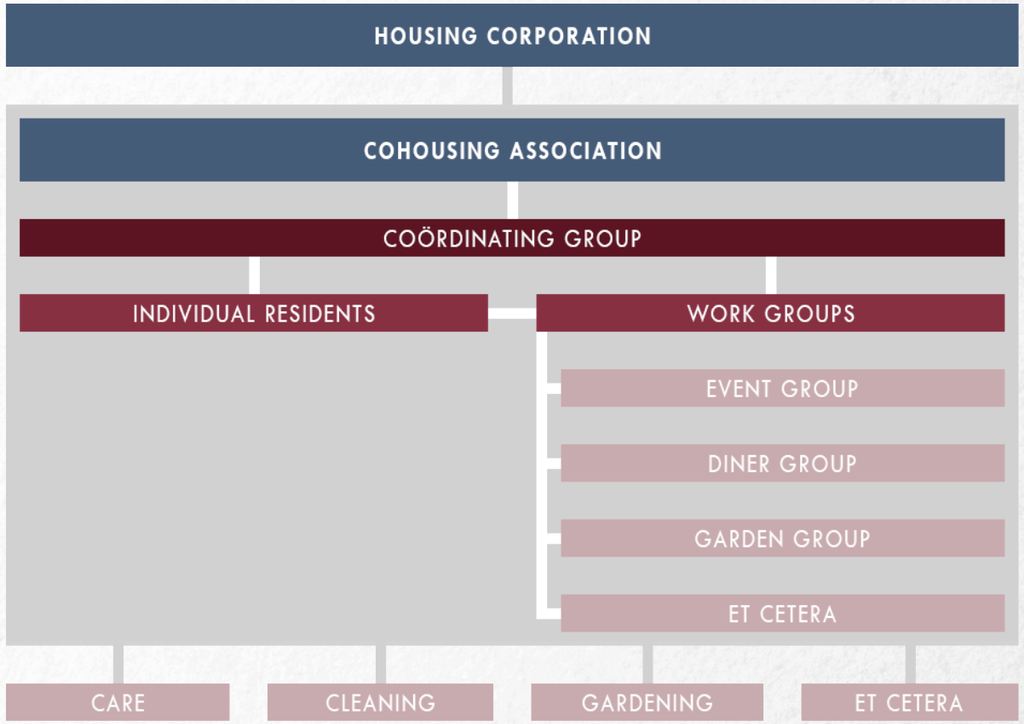
110 square meters

ORGANISATION

HOUSING CORPORATION

INDIVIDUAL RESIDENTS

ORGANISATION



VISION

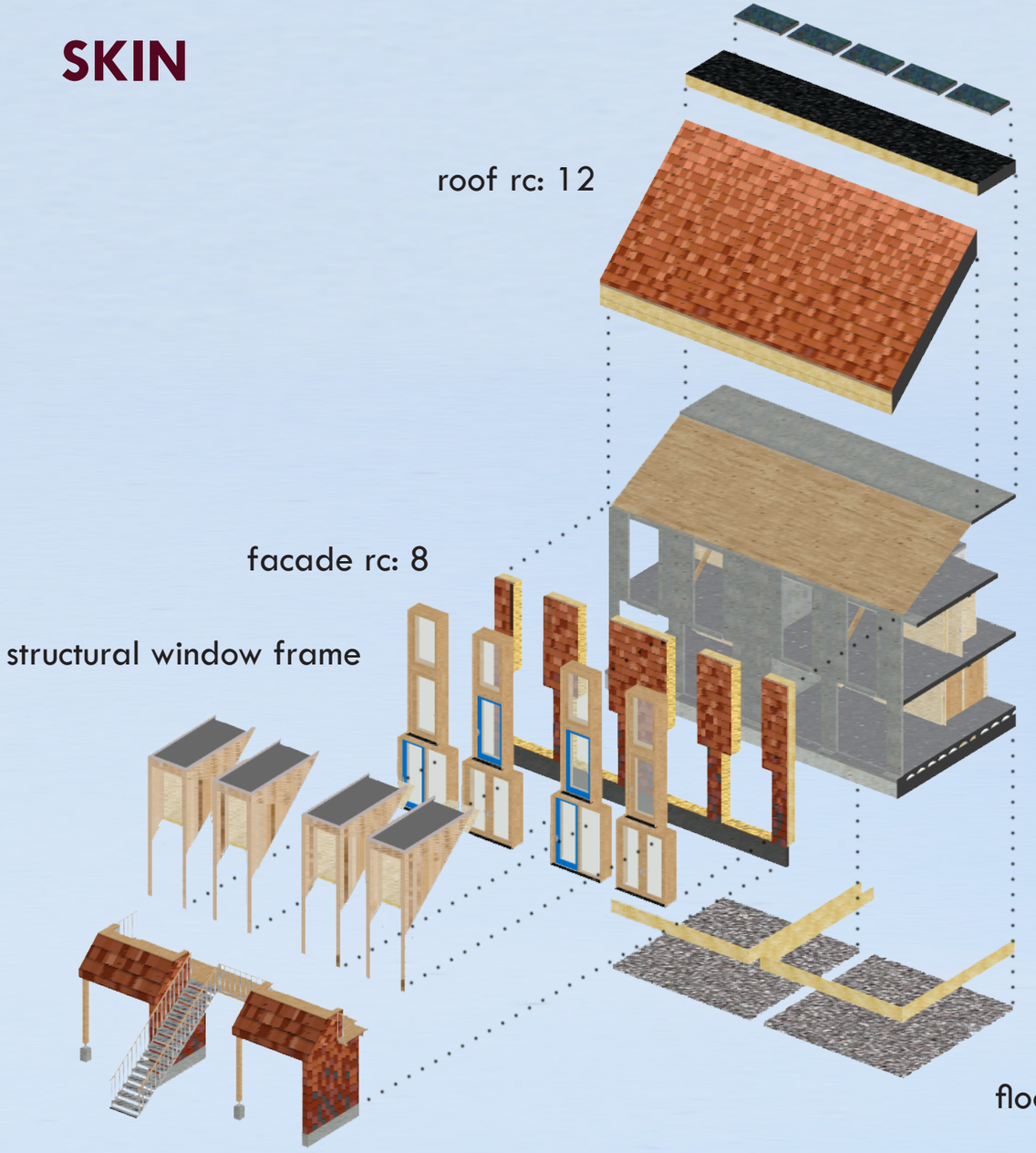
LIFE

DESIGN

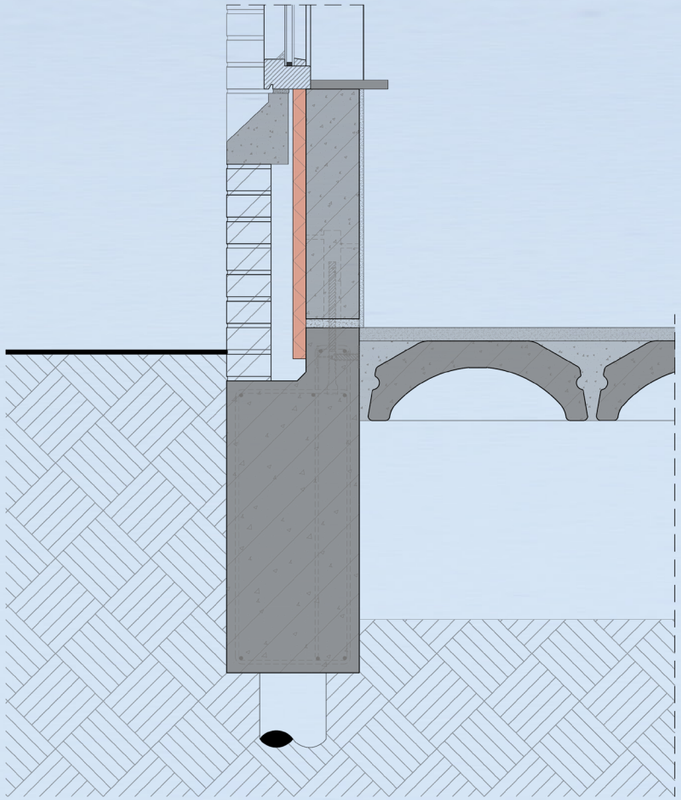
TECHNOLOGY

RESULT

SKIN

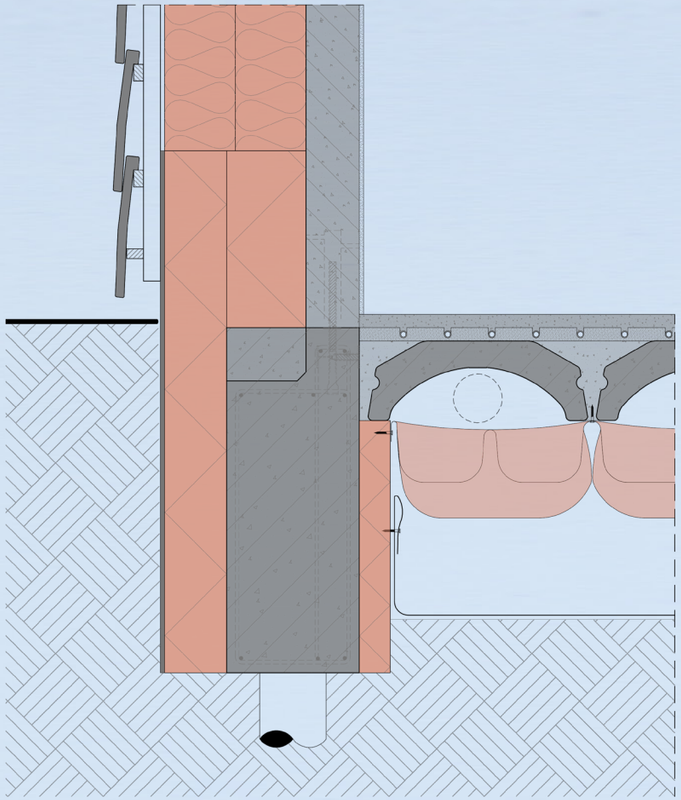


INSULATION



wood fibre insulation
from local waste- or infected timber

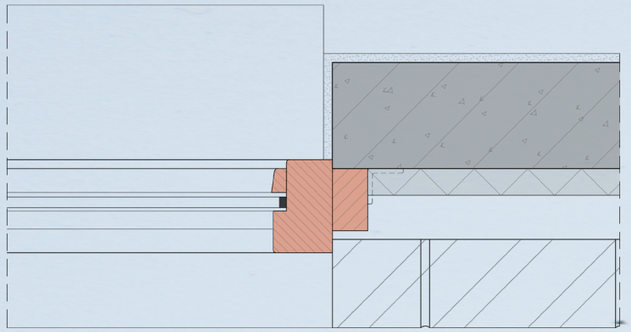
INSULATION

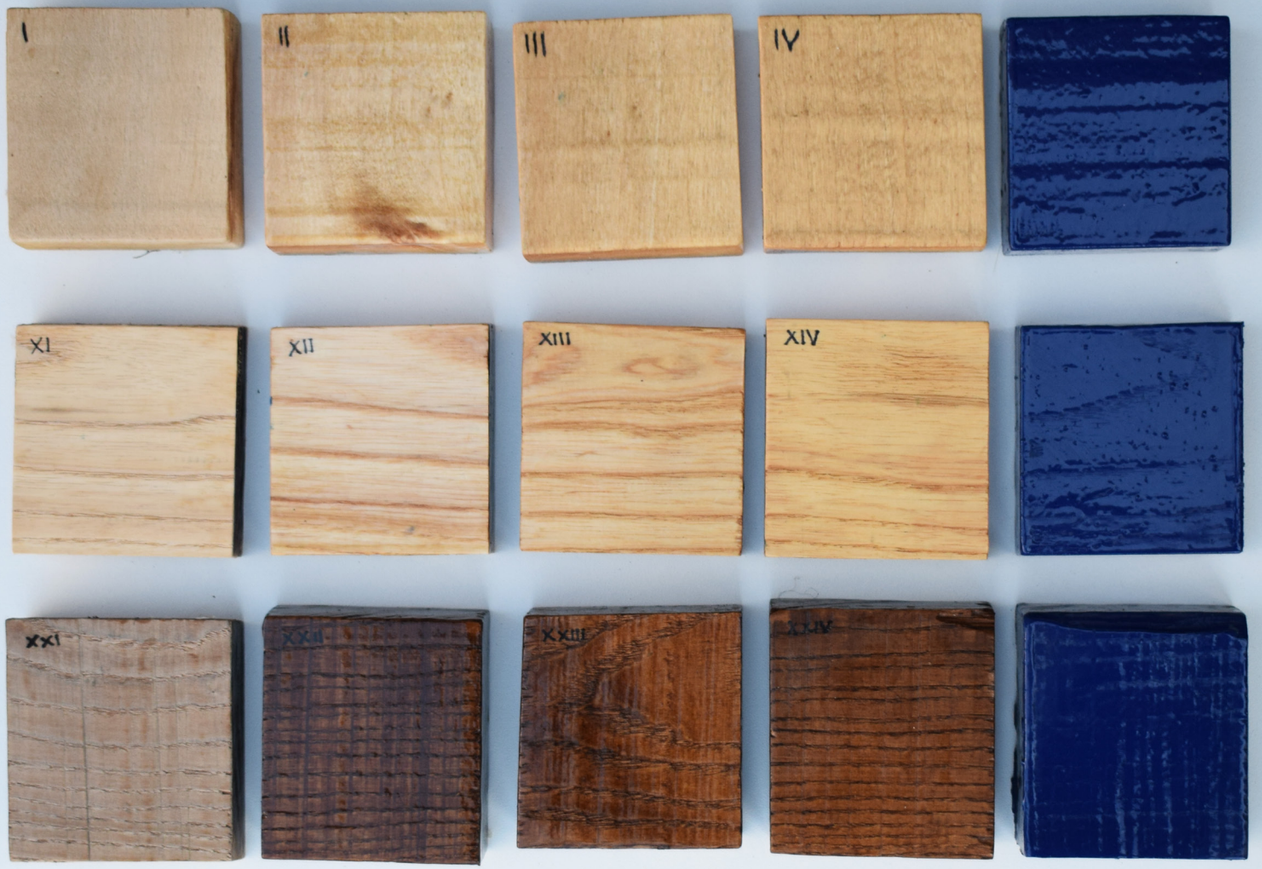


Tonzon floor insulation

Hard insulation with recycled PVC board

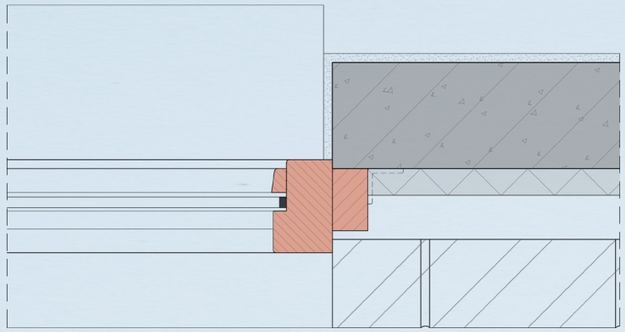
WINDOW- AND DOOR FRAMES

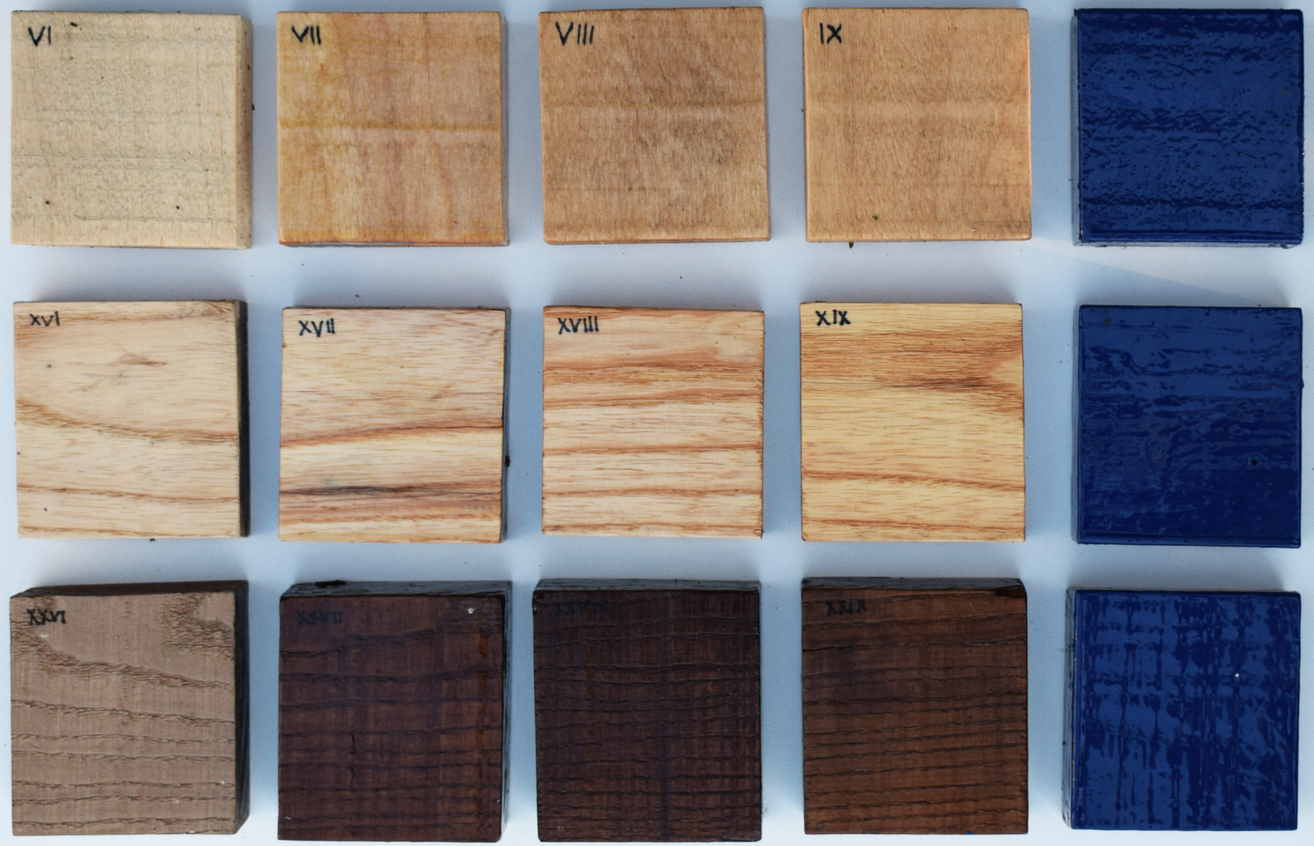




local poplar- and ash timber
test samples weathered in sun

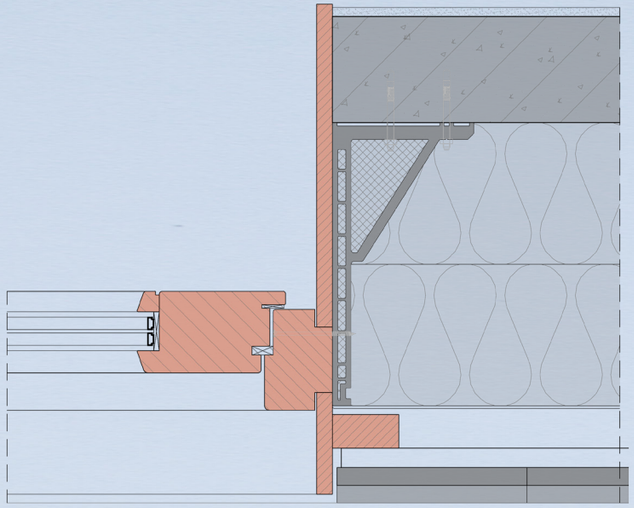
WINDOW- AND DOOR FRAMES

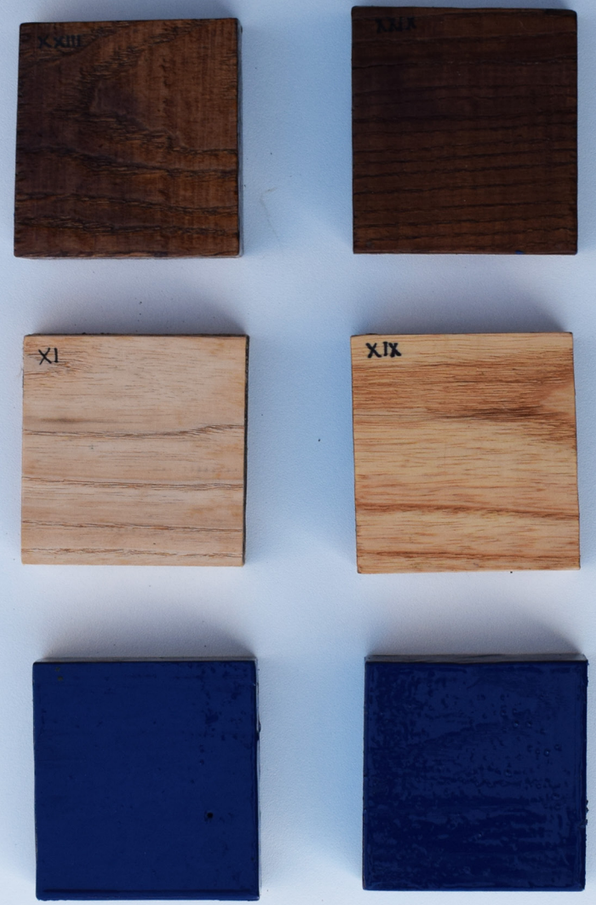




local poplar- and ash timber
test samples weathered in rain

WINDOW- AND DOOR FRAMES

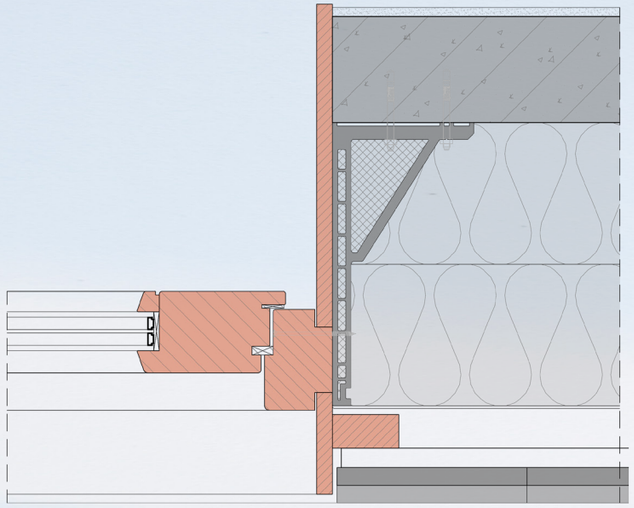




local poplar- and ash timber

chosen materials and finishes

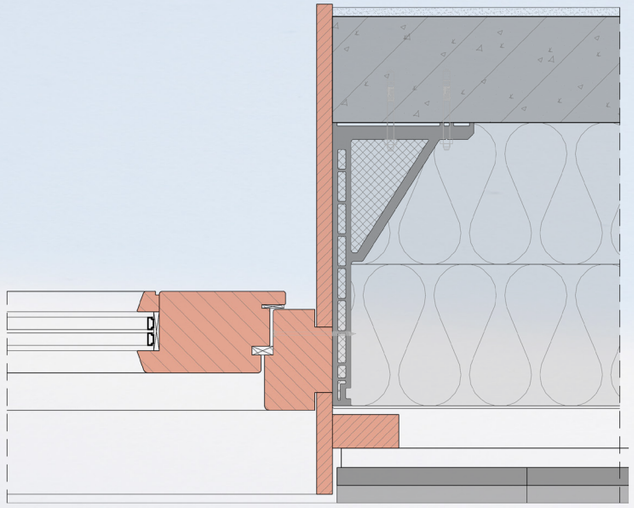
WINDOW- AND DOOR FRAMES



local poplar- and ash timber

chosen materials and finishes

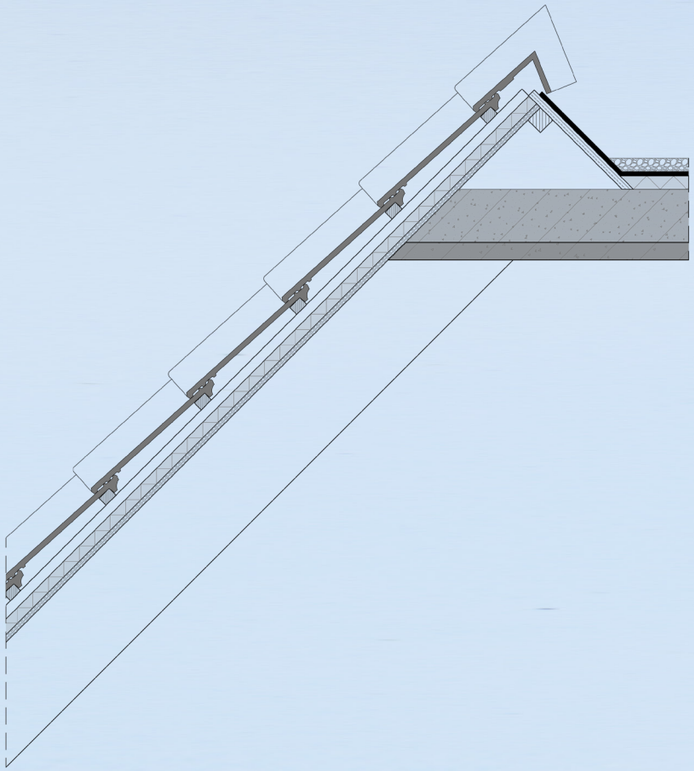
WINDOW- AND DOOR FRAMES



local poplar- and ash timber

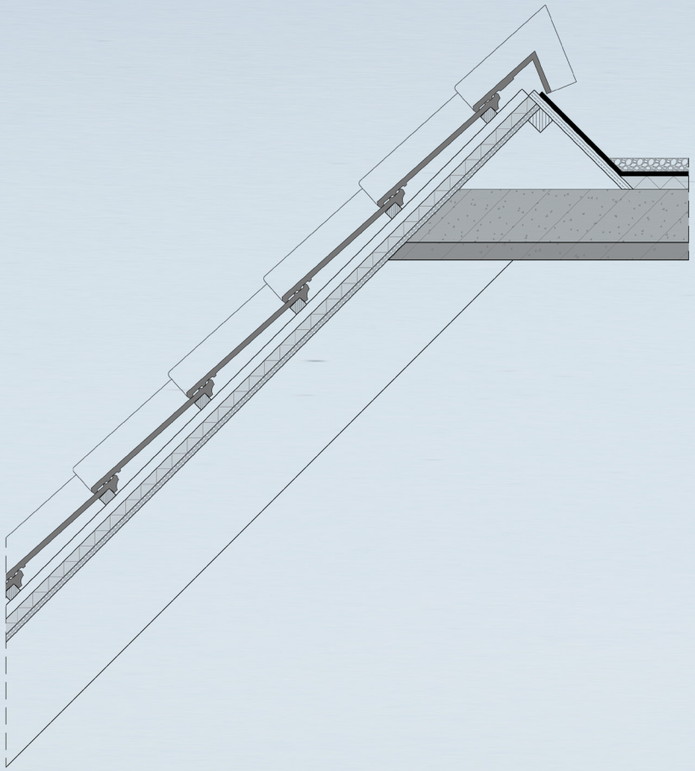
chosen materials and finishes

FACADE CLADDING



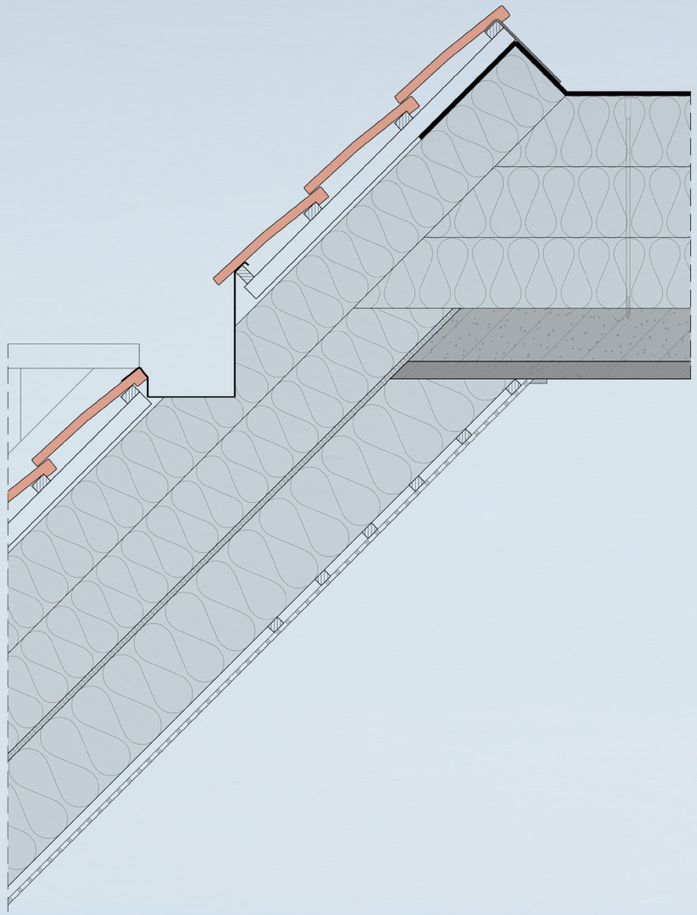
recycled ceramic facade tiles

FACADE CLADDING



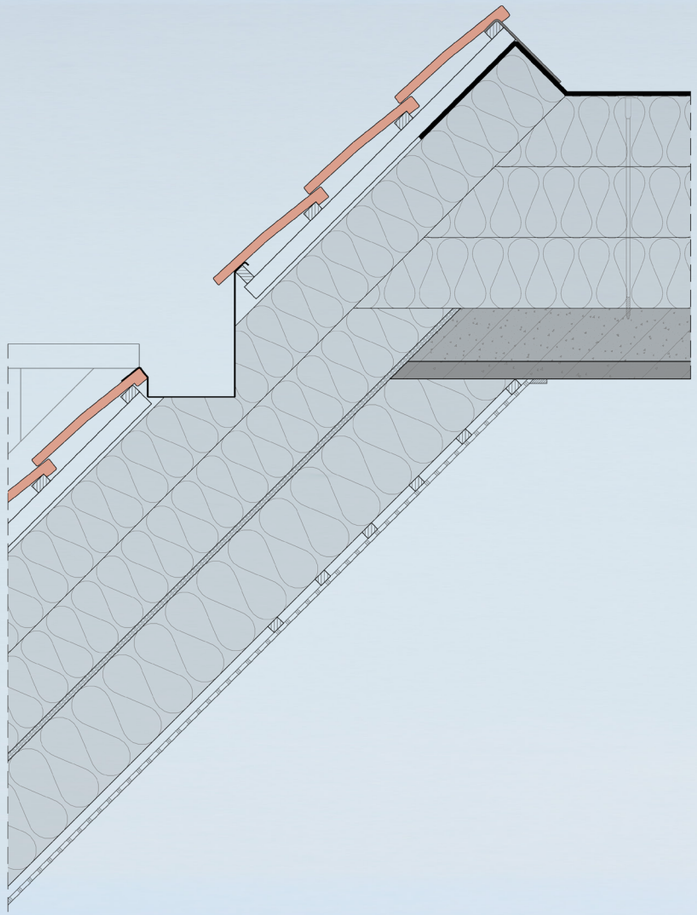
different test samples tested on colour,
texture and homogenity

FACADE CLADDING



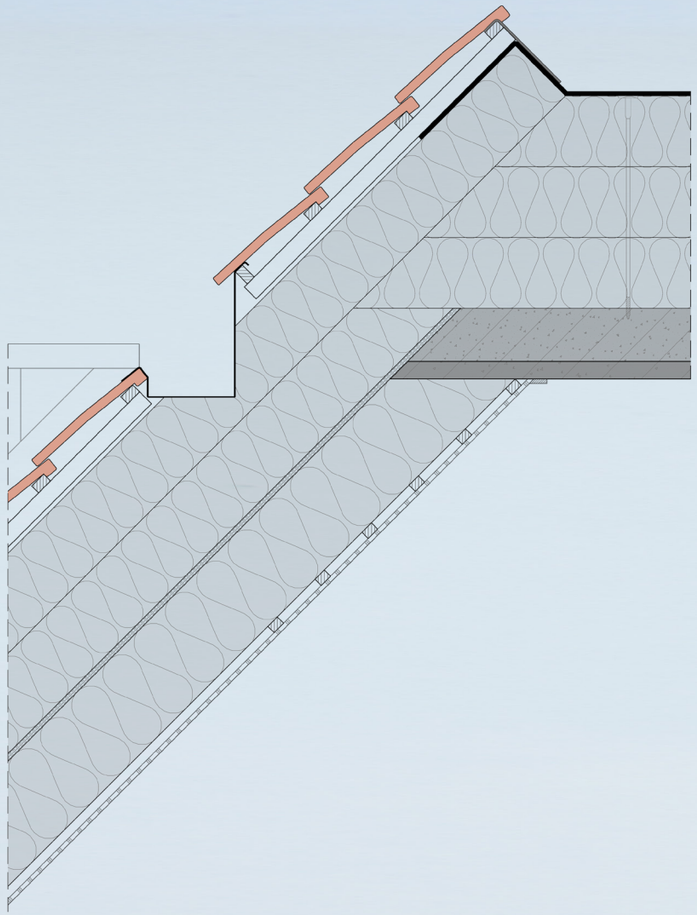
final version made from
70% recycled brick

FACADE CLADDING



final version made from
70% recycled brick

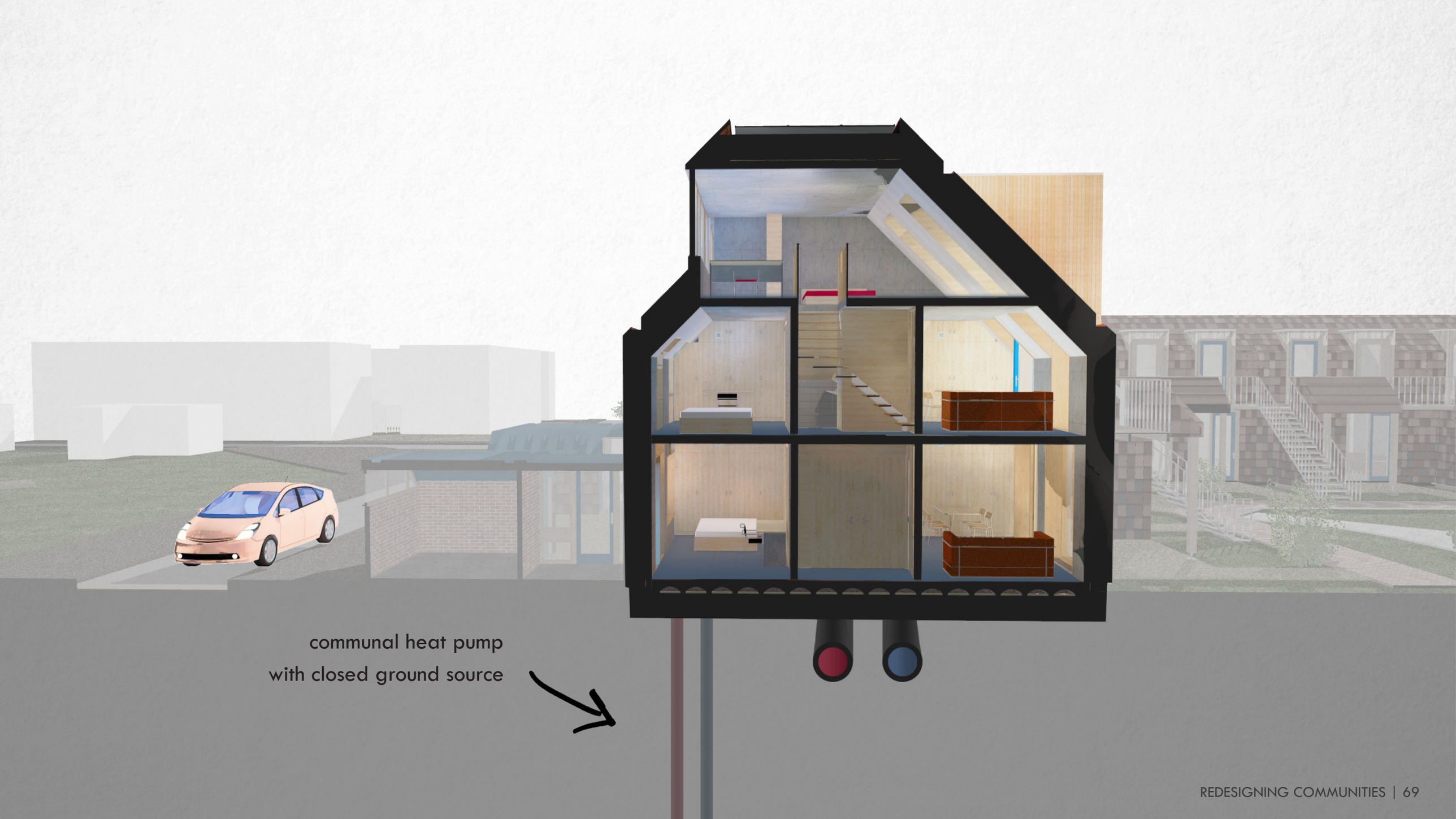
FACADE CLADDING



final version made from
70% recycled brick

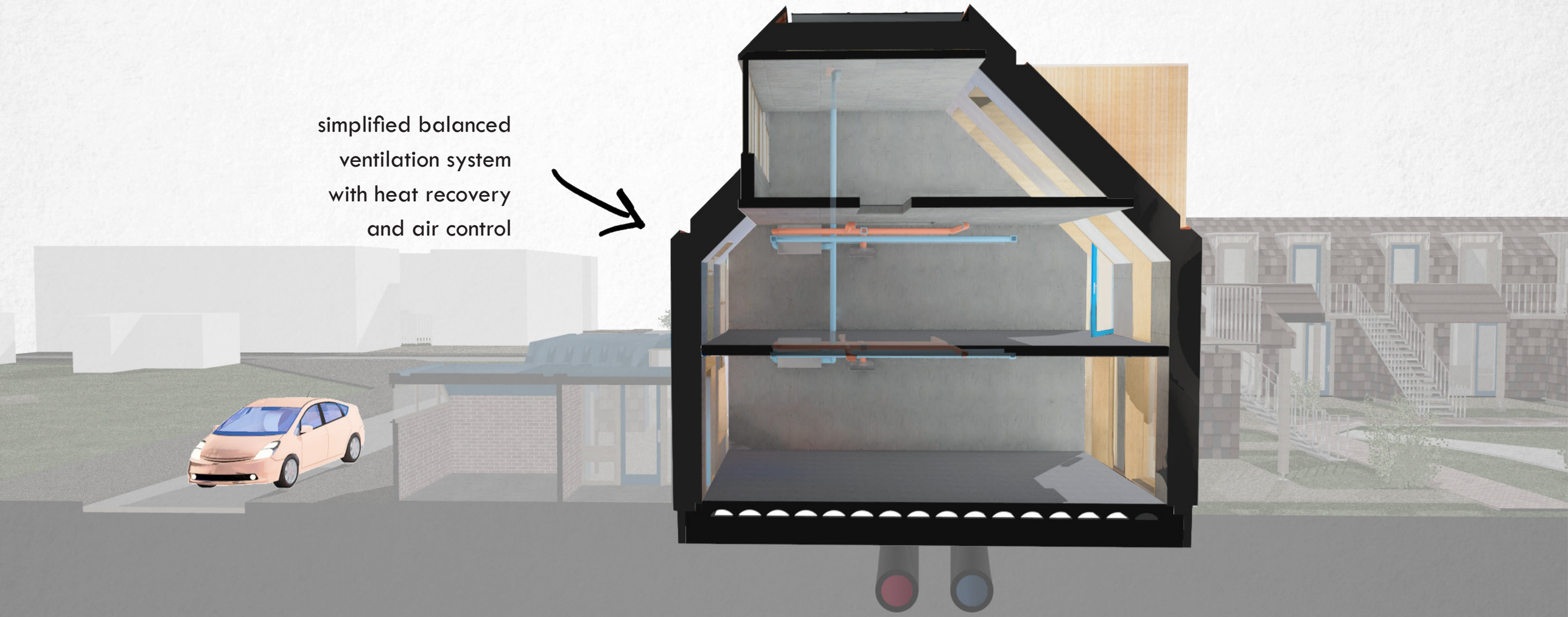
INSTALLATIONS & CLIMATE

communal heat pump
with closed ground source


communal heat pump
with closed ground source

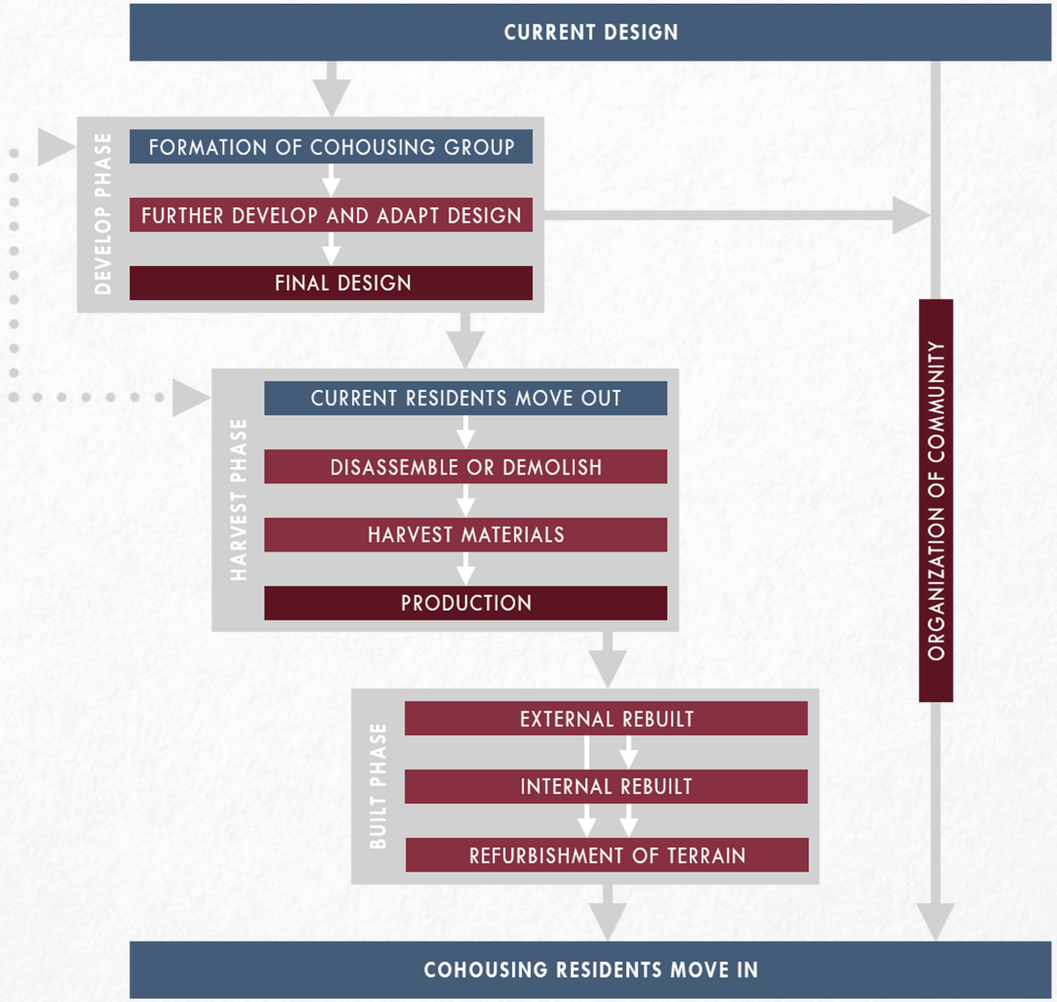

installations integrated
within cabinet wall

simplified balanced
ventilation system
with heat recovery
and air control

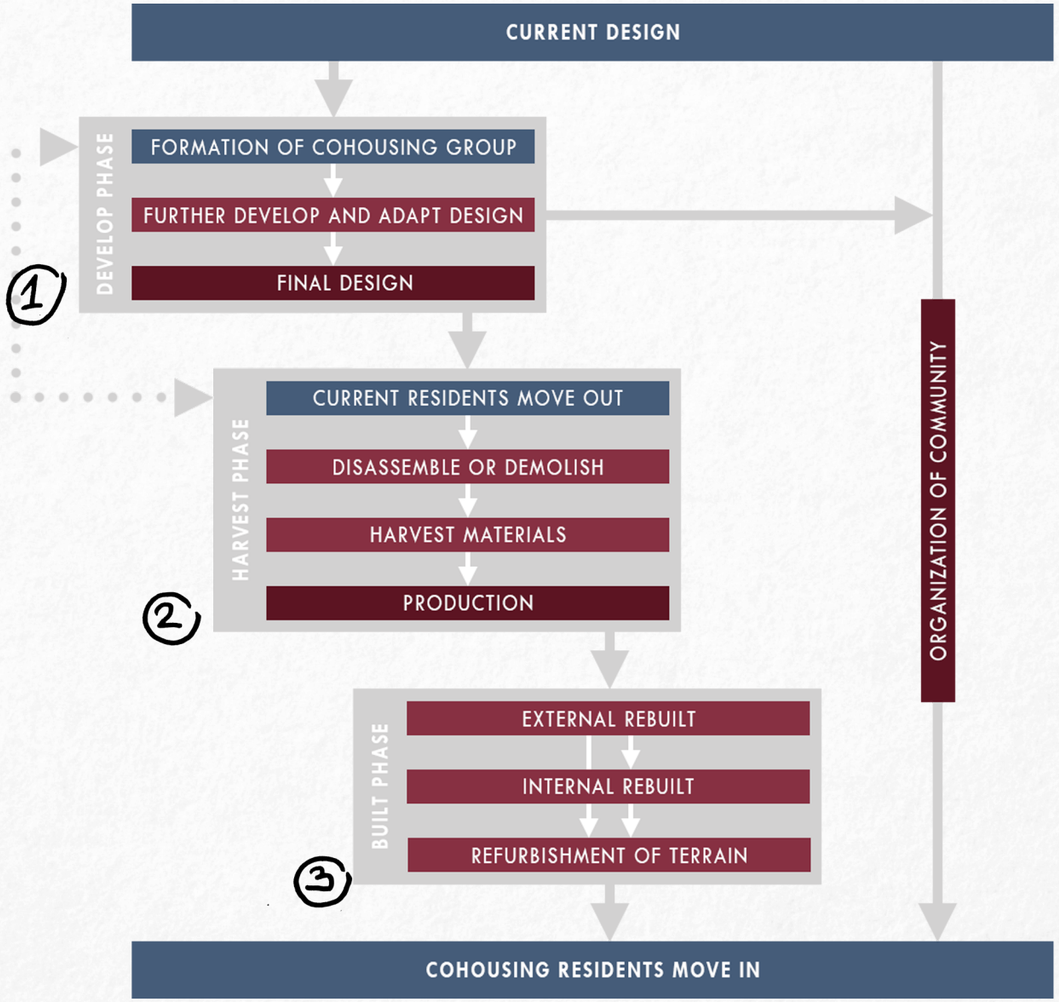


smart electricity grid
with communal electric cars
for temporary energy storage

BUILDING PROCESS

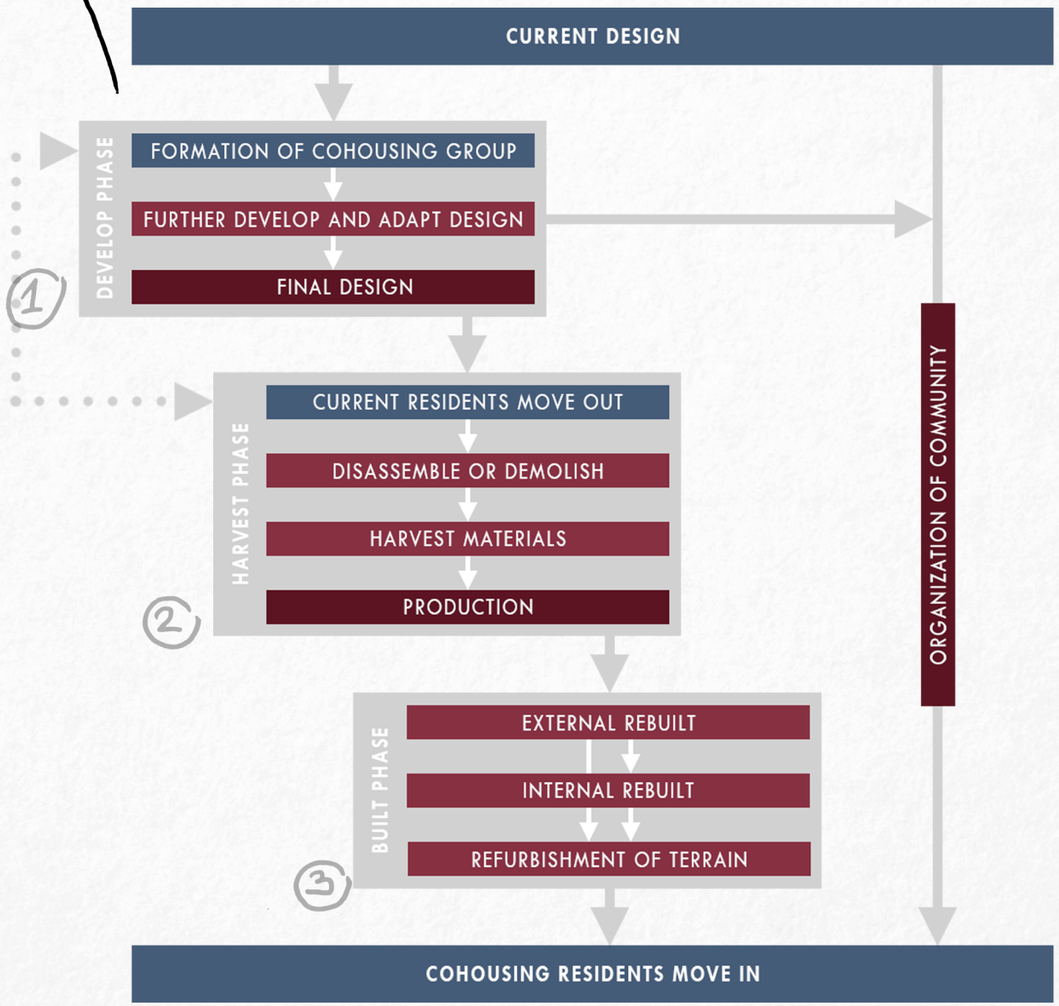


BUILDING PROCESS



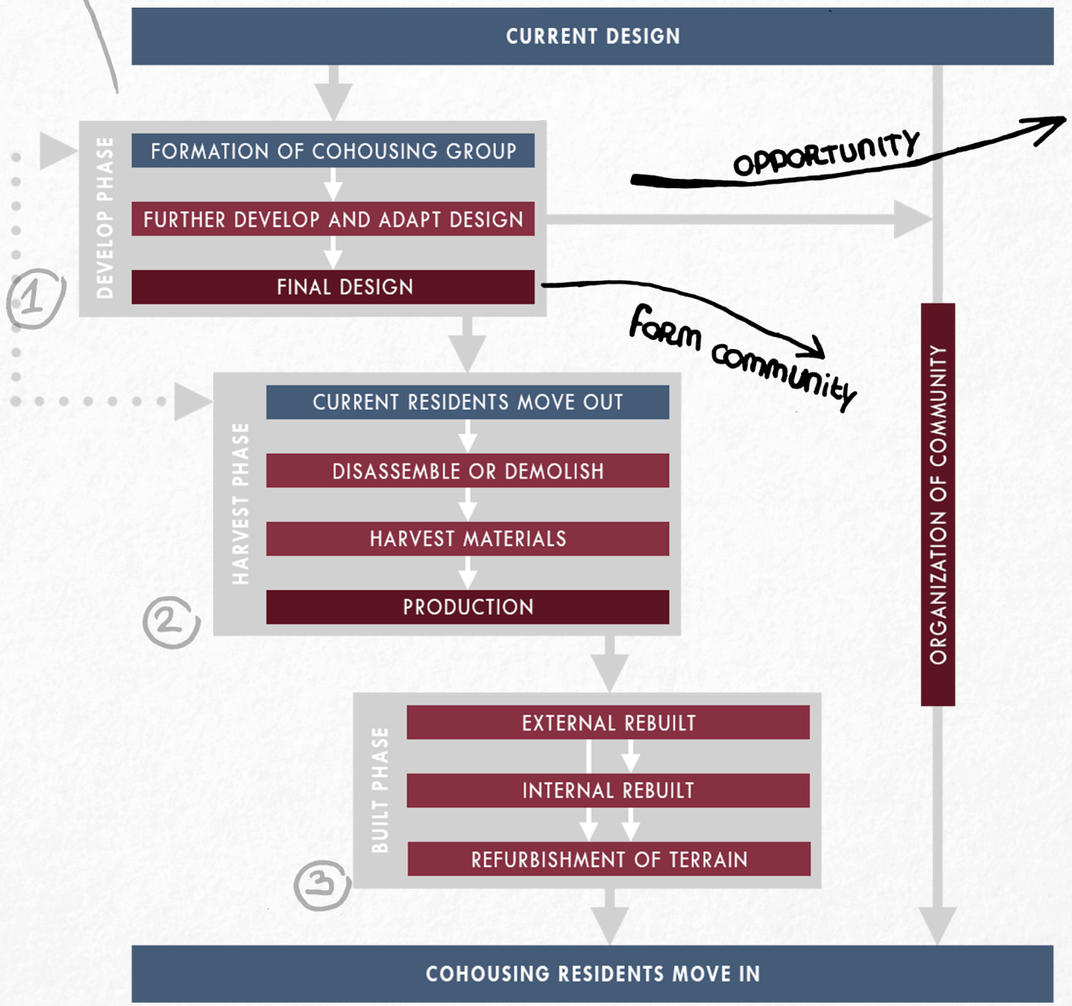
- current residents
- inhabitants of 'Haven
- outsiders

BUILDING PROCESS



BUILDING PROCESS

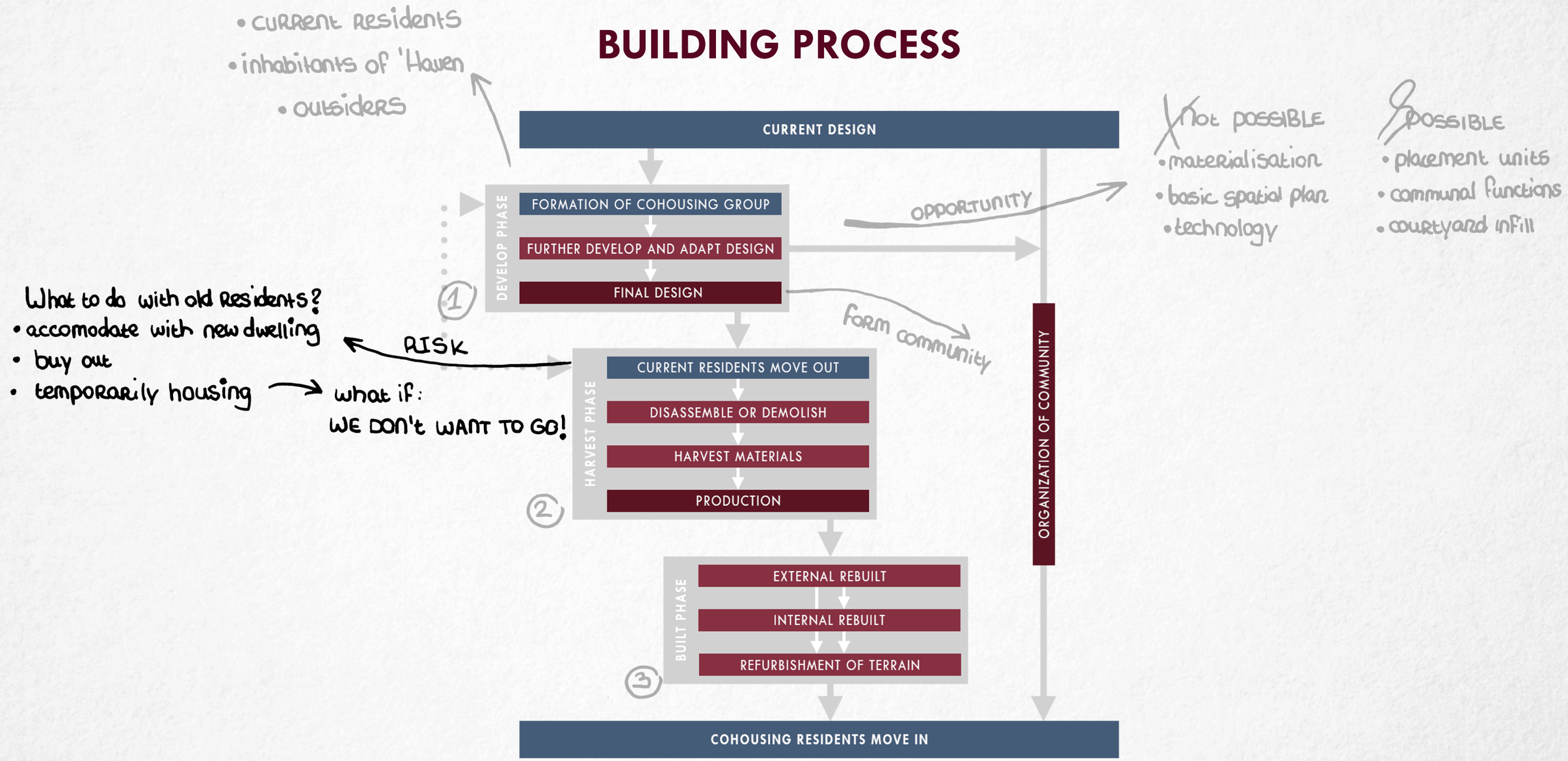
- current residents
- inhabitants of 't Haven
- outsiders



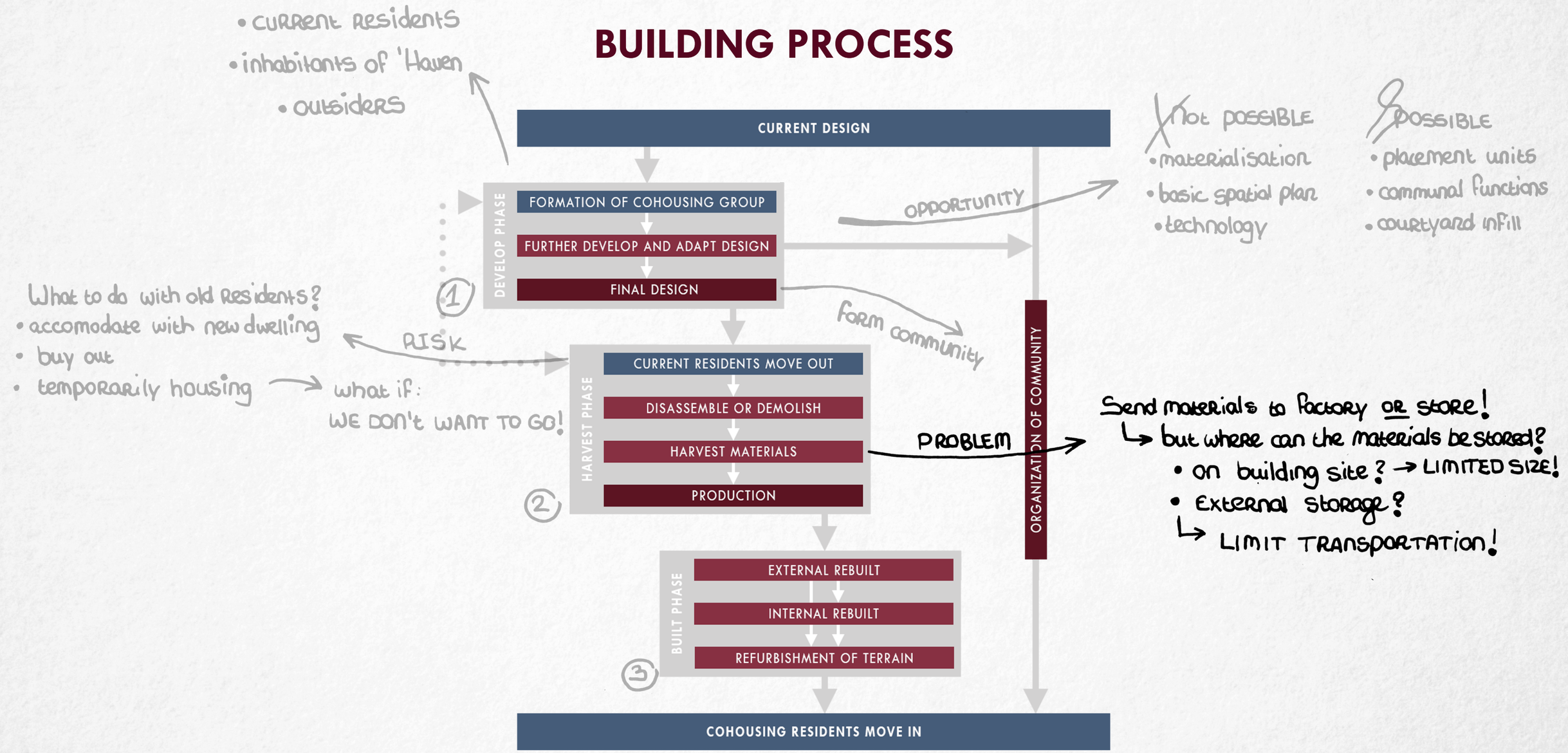
Not possible
- materialisation
- basic spatial plan
- technology

Possible
- placement units
- communal functions
- courtyard infill

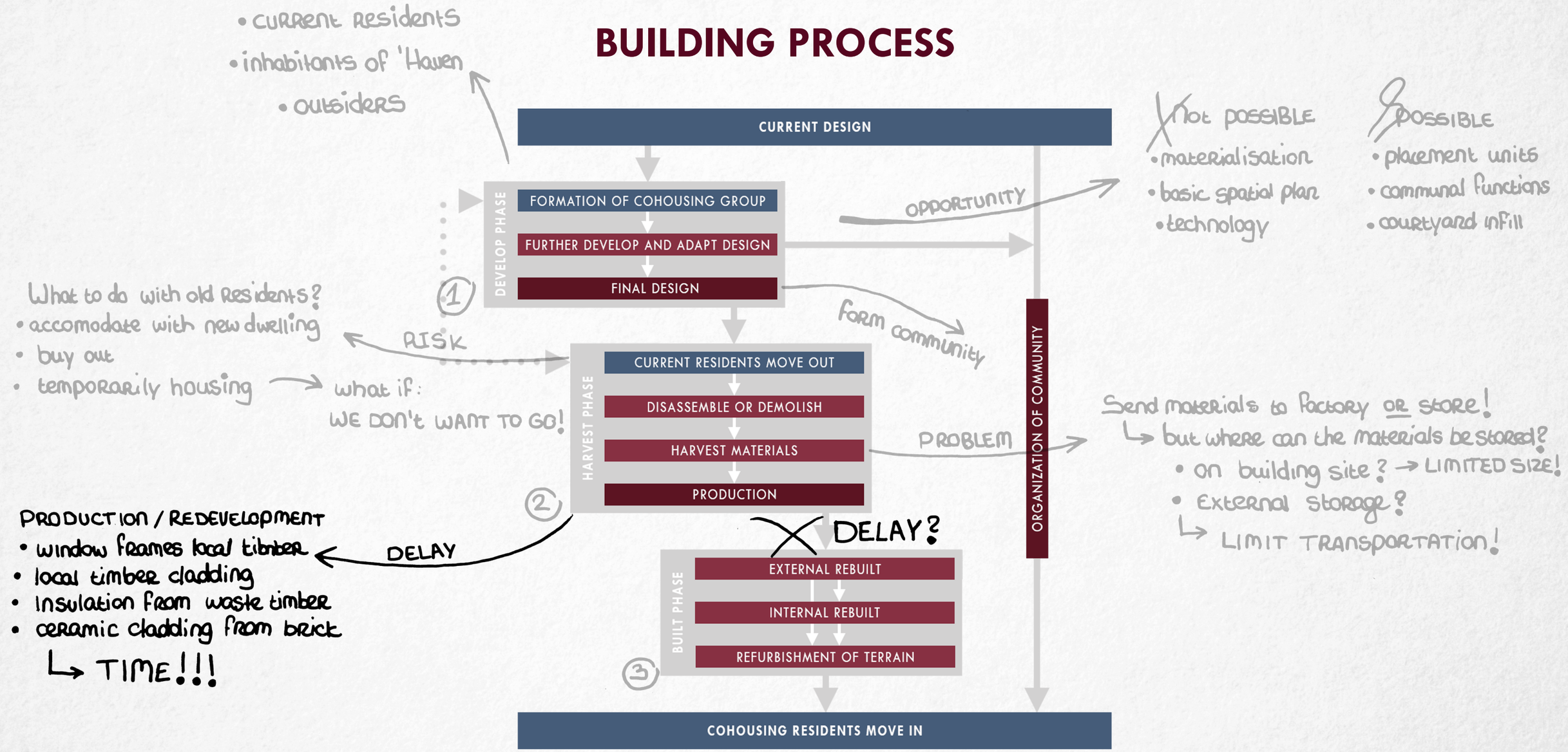
BUILDING PROCESS



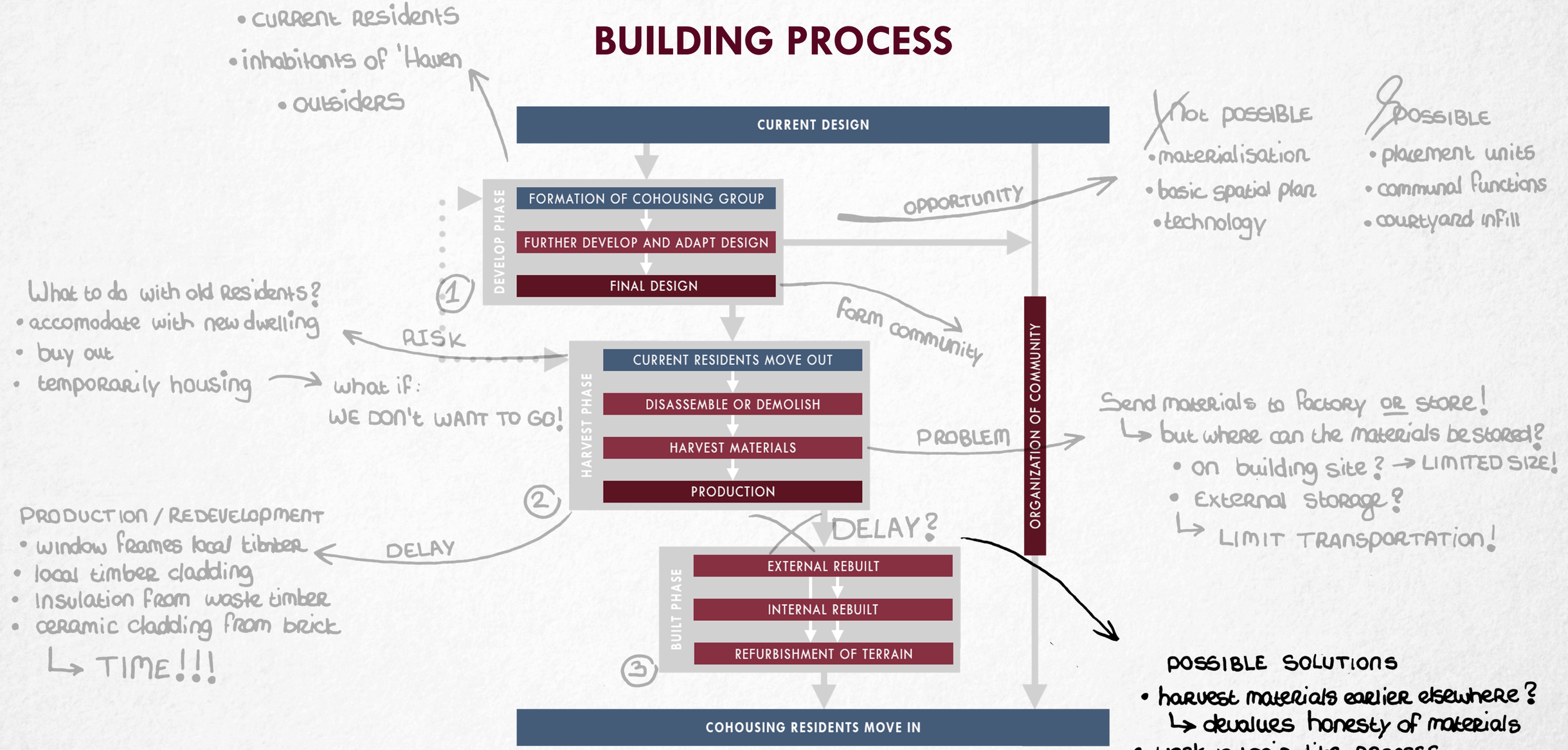
BUILDING PROCESS



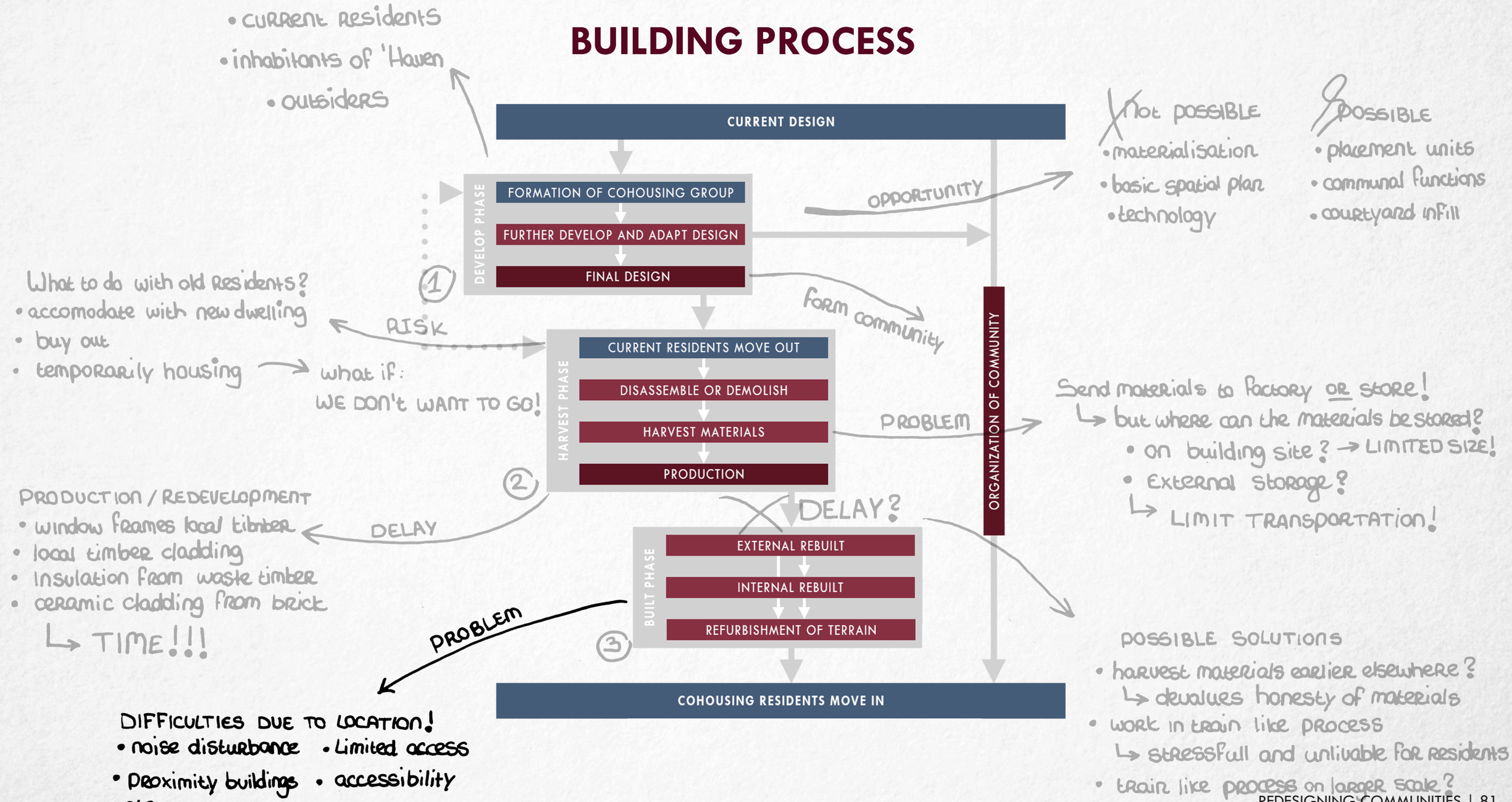
BUILDING PROCESS



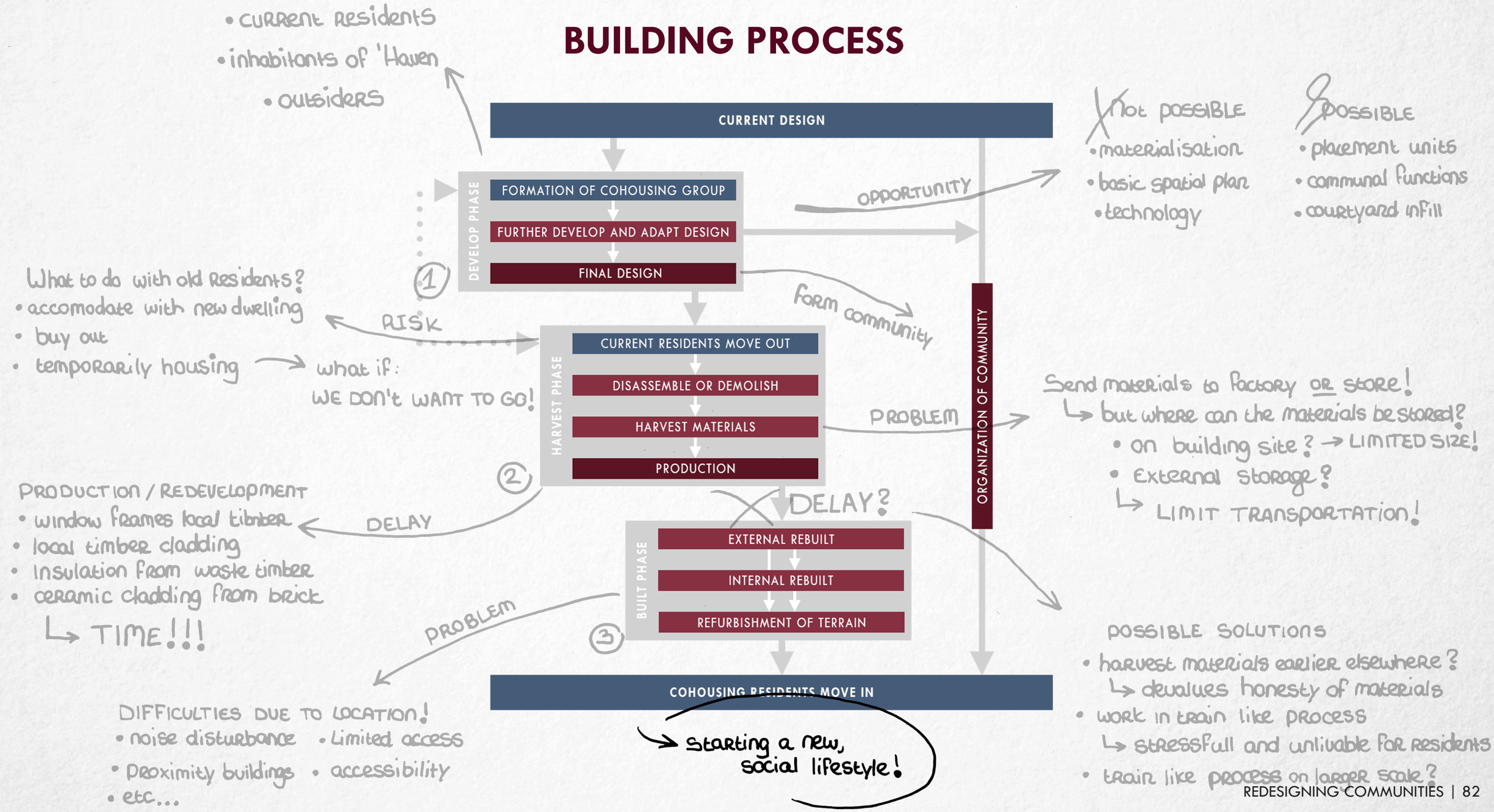
BUILDING PROCESS



BUILDING PROCESS



BUILDING PROCESS



VISION

LIFE

DESIGN

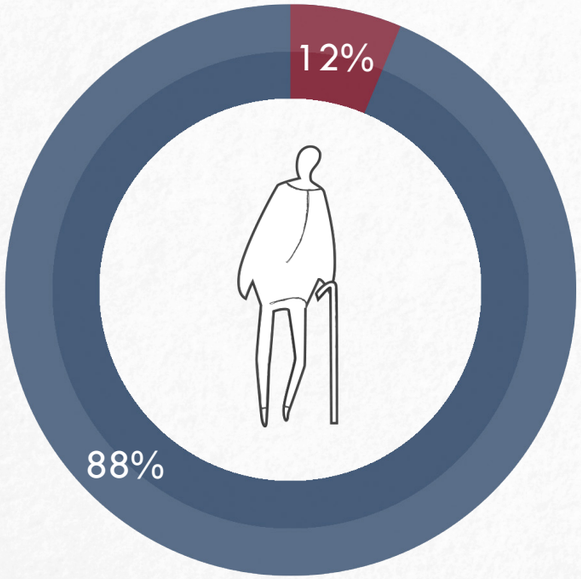
TECHNOLOGY

RESULT

RESULT

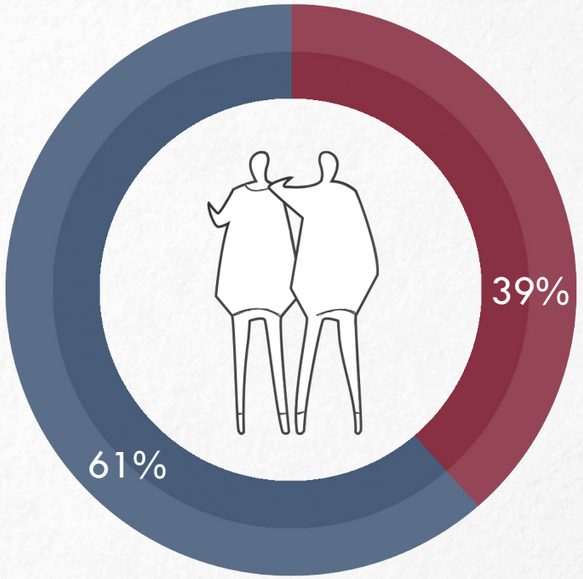
SOCIAL

from



400 of in total 3.500
square meters

to

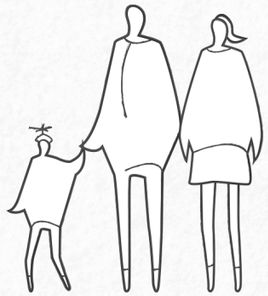


1.365 of in total 3.500
square meters

RESULT

SPACE

from

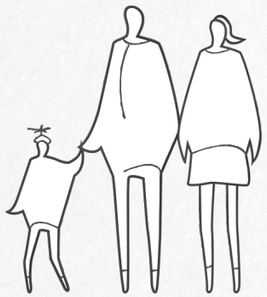


families

RESULT

SPACE

to



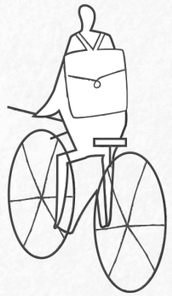
families

couples

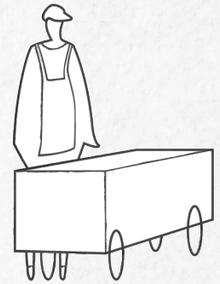
singles

single-parents

elderly



students



entrepreneurs

RESULT

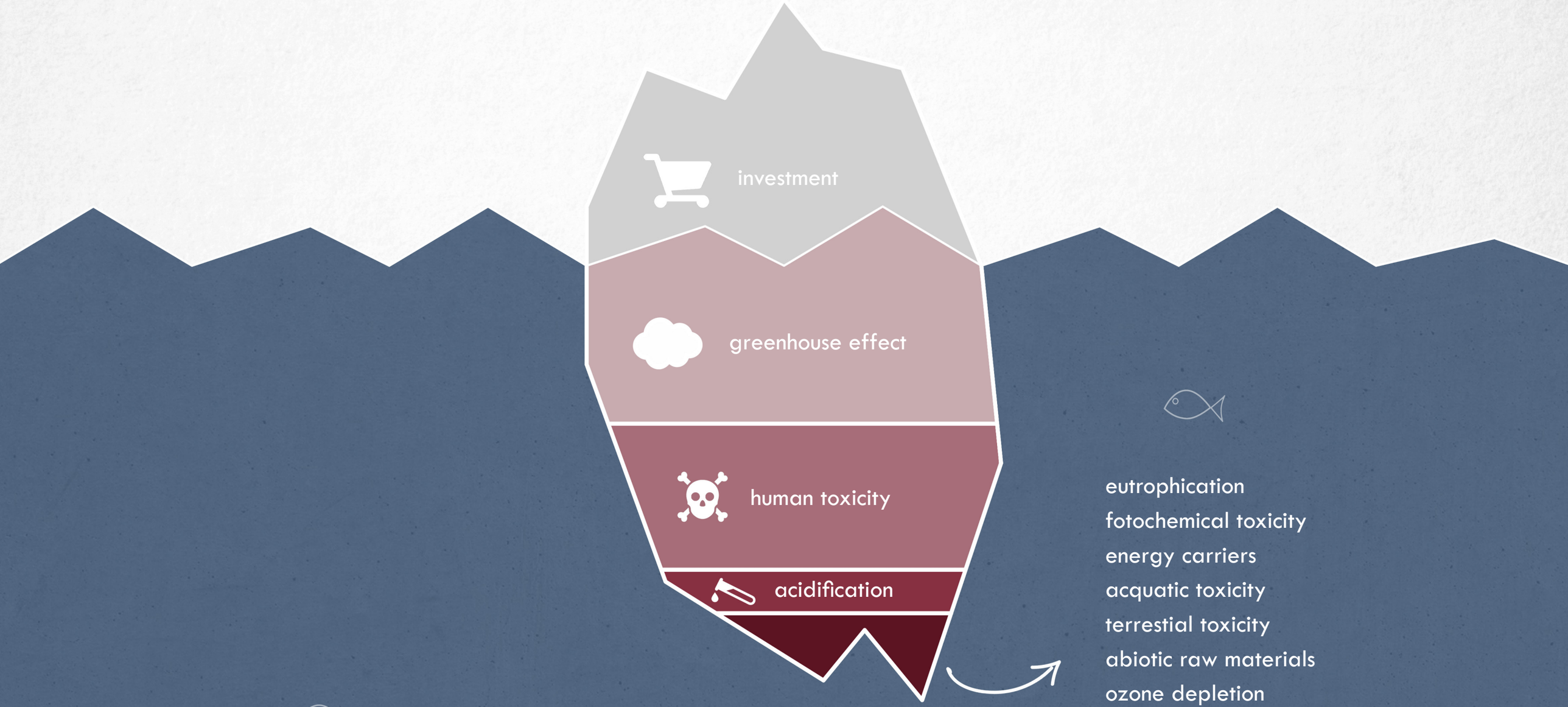
MATERIAL

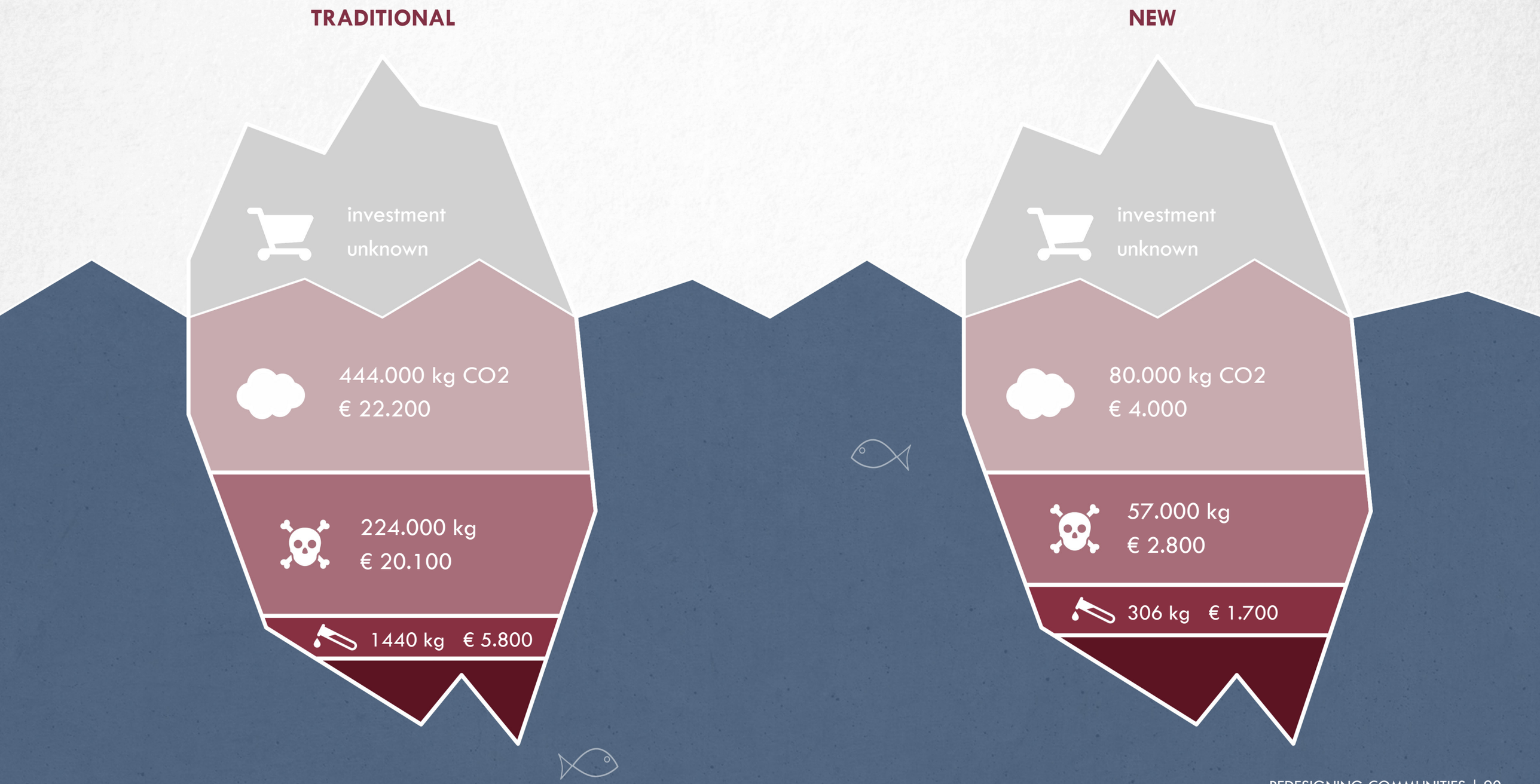
SHADOW COSTS

The shadow costs give an indication for the consequences of the material use for the environment and society, and how much it would cost to combat them, expressed in money.

TRADITIONAL VERSUS NEW

The new situation was compared to the same situation, but with traditional materialization.
Similar and comparable products were sought after in the database of NIBE,
this resulted in two different but comparable scenario's.


investment
greenhouse effect
human toxicity
acidification
eutrophication
fotochemical toxicity
energy carriers
acquatic toxicity
terrestial toxicity
abiotic raw materials
ozone depletion

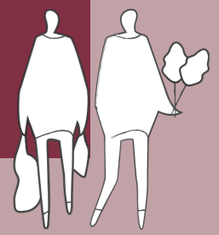

TRADITIONAL
investment
unknown
444.000 kg CO2
€ 22.200
224.000 kg
€ 20.100
1440 kg € 5.800
NEW
investment
unknown
80.000 kg CO2
€ 4.000
57.000 kg
€ 2.800
306 kg € 1.700


TRADITIONAL
NEW
€ 53.600
100%
€ 9.700
18%

LEARNING GOALS

Cohousing is a resilient solution for housing demand in present society, it can be and should be realised within existing building structures in residential neighbourhoods

Circular-, and local material use can form a starting point for successful and truly sustainable architecture



ABSTRACT

Strengthen the present sense of community,
re-introduction of a new pioneering mentality

Re-interpretation of seventies aesthetics

Existing materials as starting point of transformation

Redeveloped community

“A GOOD NEIGHBOUR IS WORTH MORE THAN A DISTANT FRIEND”

REDESIGNING COMMUNITIES
ING. S.C.E. HUIZINGA