

SA\_symbiotic architecture

P5 presentation

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Research tutor: Jan Jongert  
Technology tutor: Paddy Tomesen  
Studio: Architectural Engineering  
Date: 09-11-2018



# CONTENT

Introduction method

Research

Strategy neighbourhood

Design steps

Concrete design

INTRODUCTION METHOD

# LINEAR ECONOMY

Raw materials



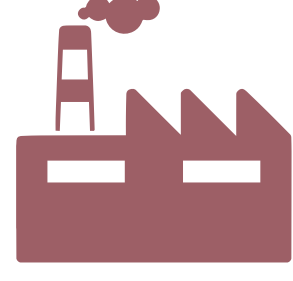
Extraction



Take



Make



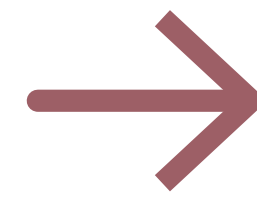
Distribute



Consume

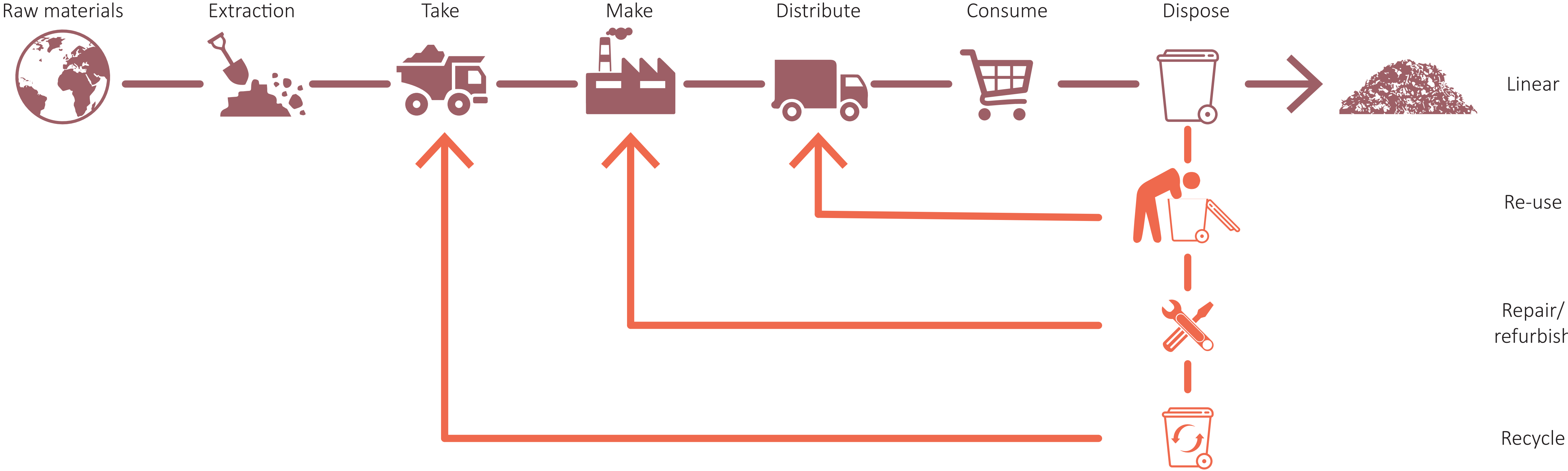


Dispose

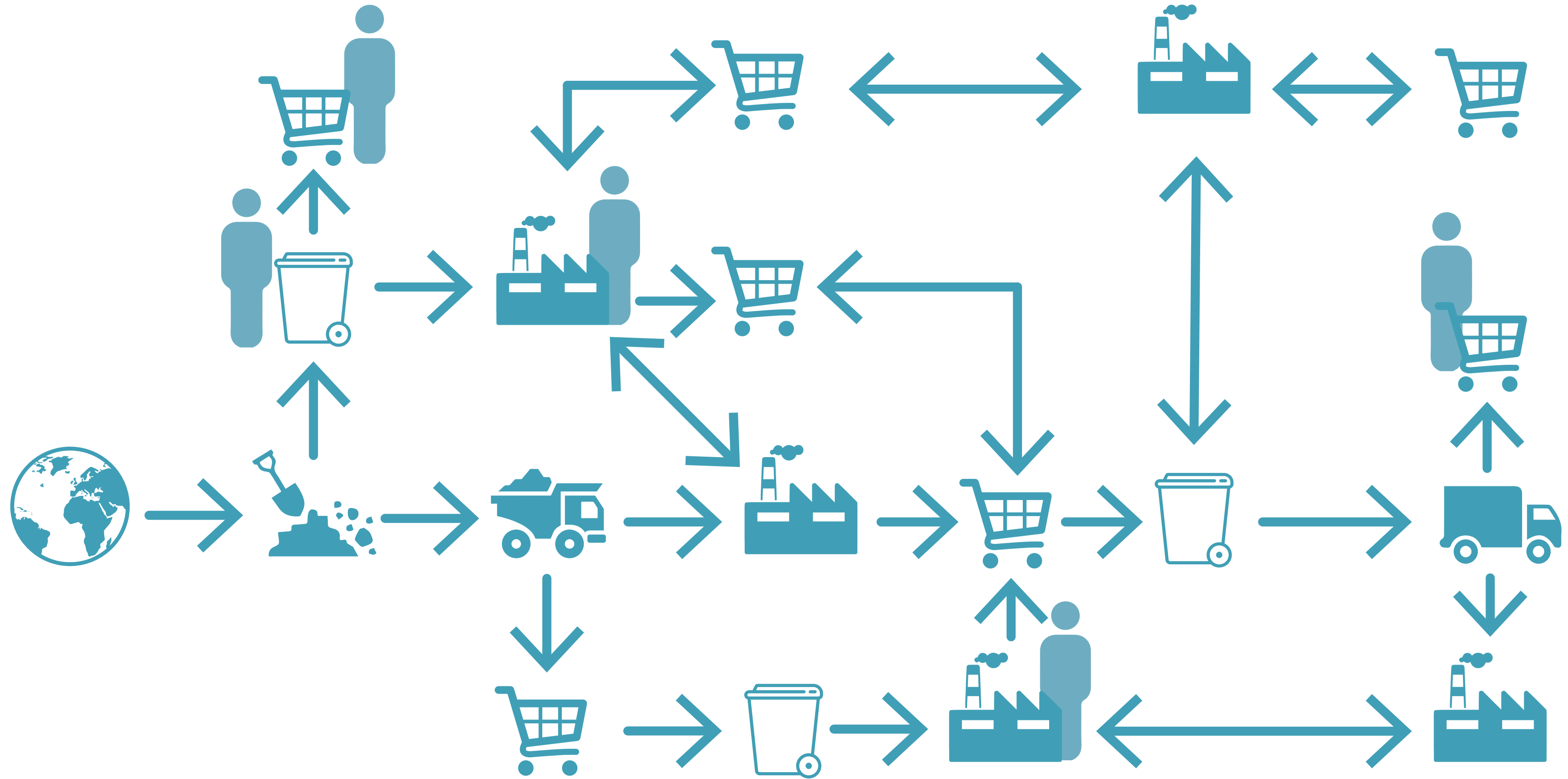


Linear

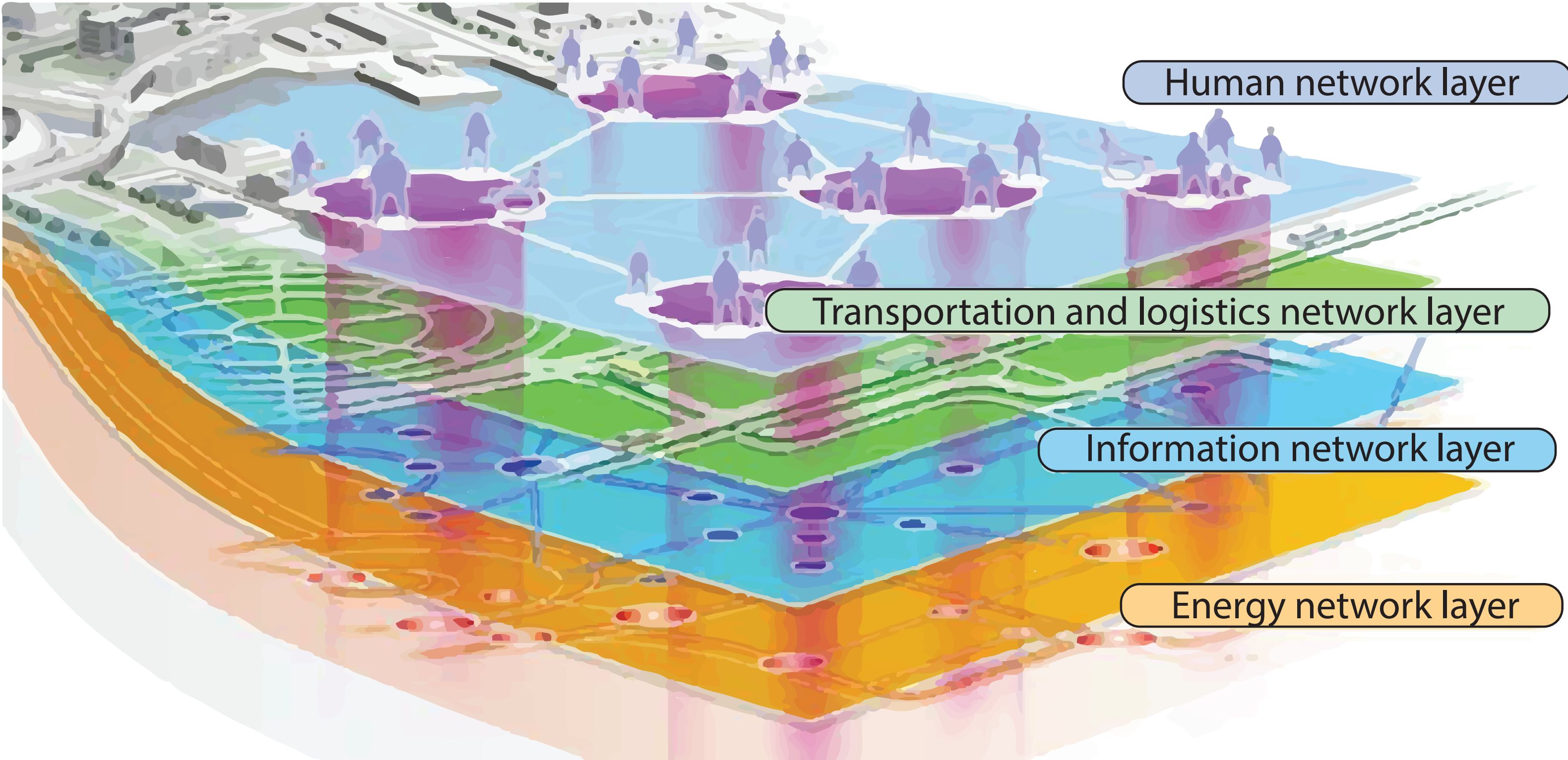
# CIRCULAR ECONOMY



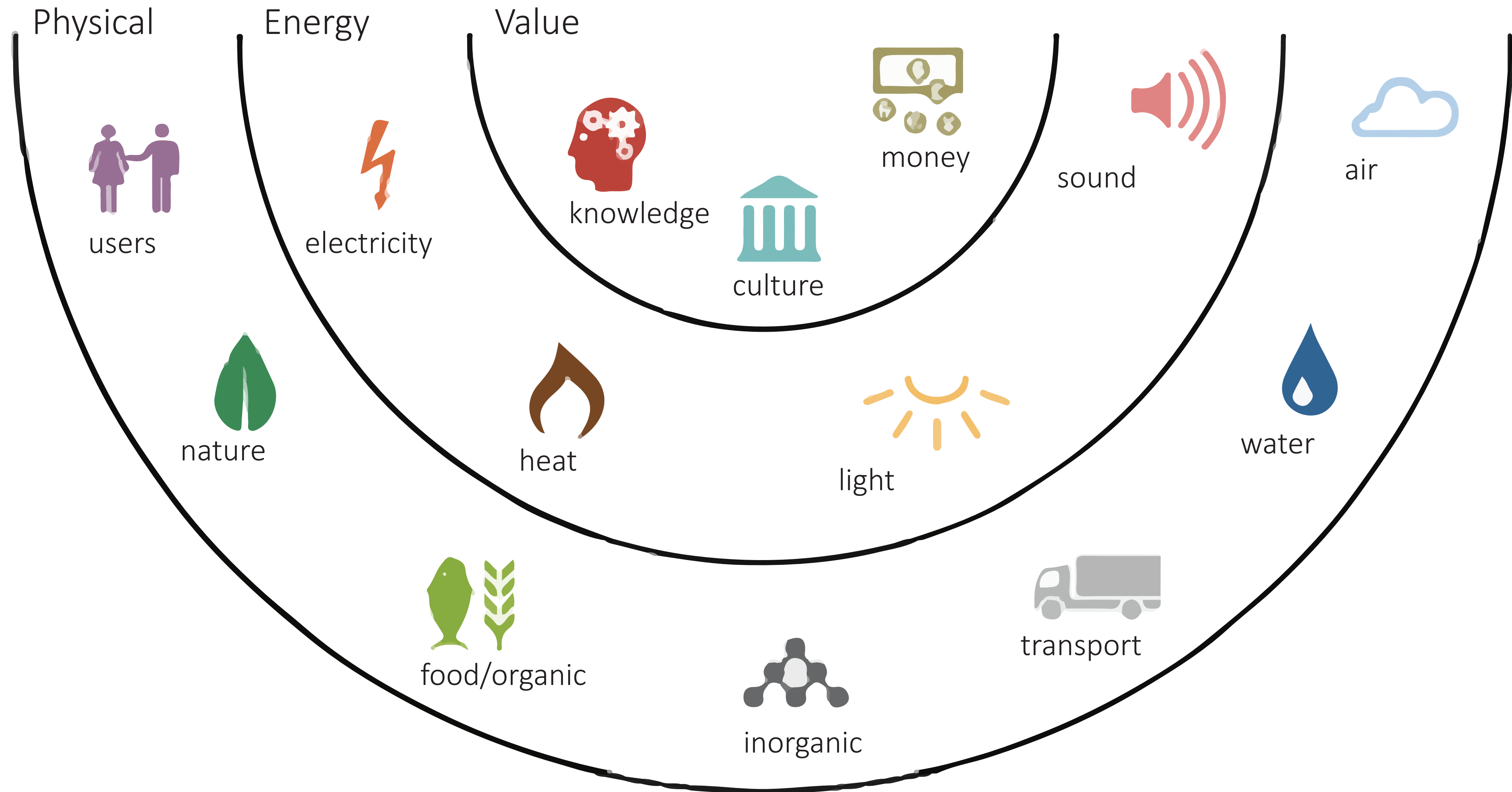
# BLUE ECONOMY



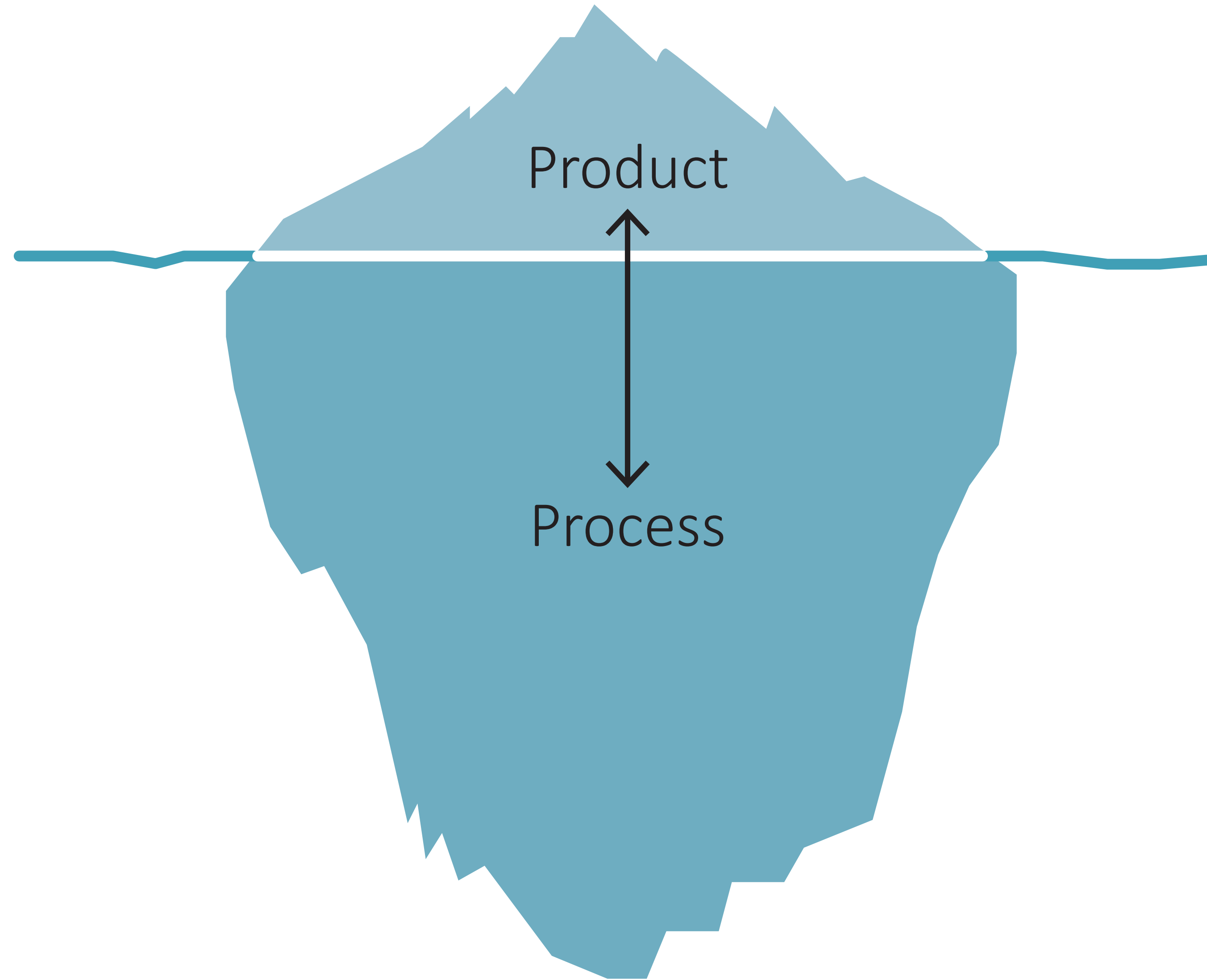
# COMPLEX NETWORKS



# FLOWS



# PROCESS AND PRODUCT



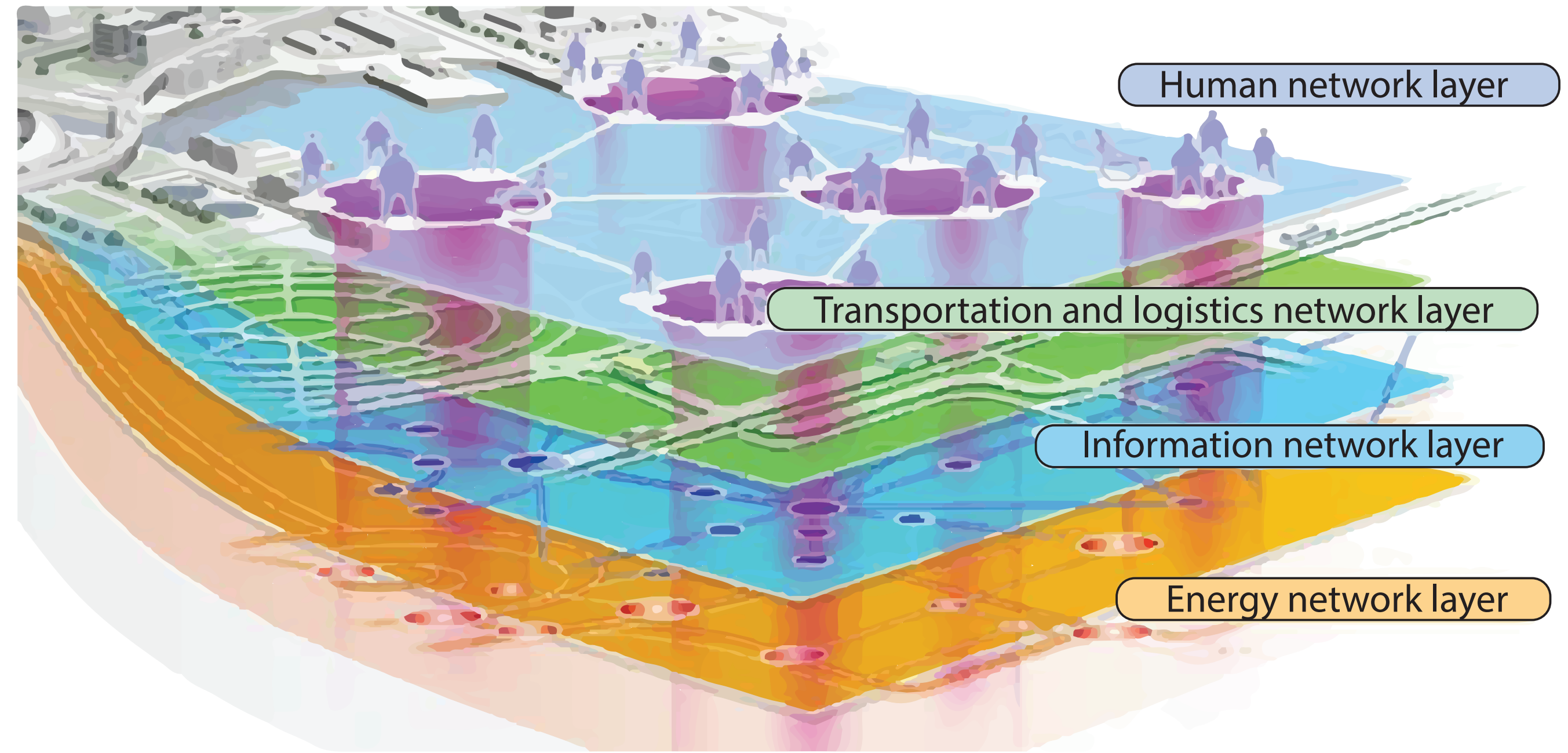
# PROBLEM STATEMENT



Copyright: 2008, wouterdeheus.nl

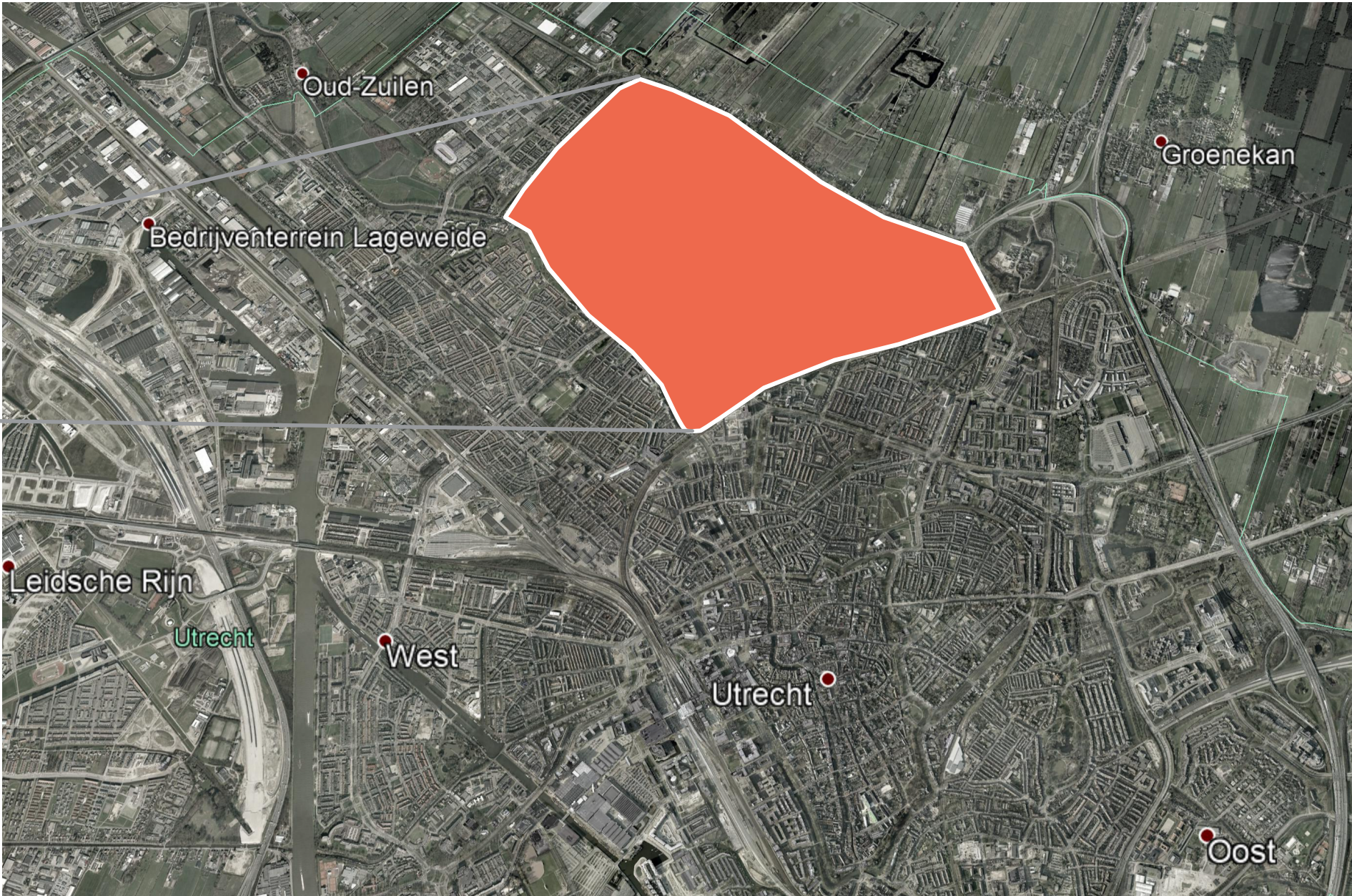
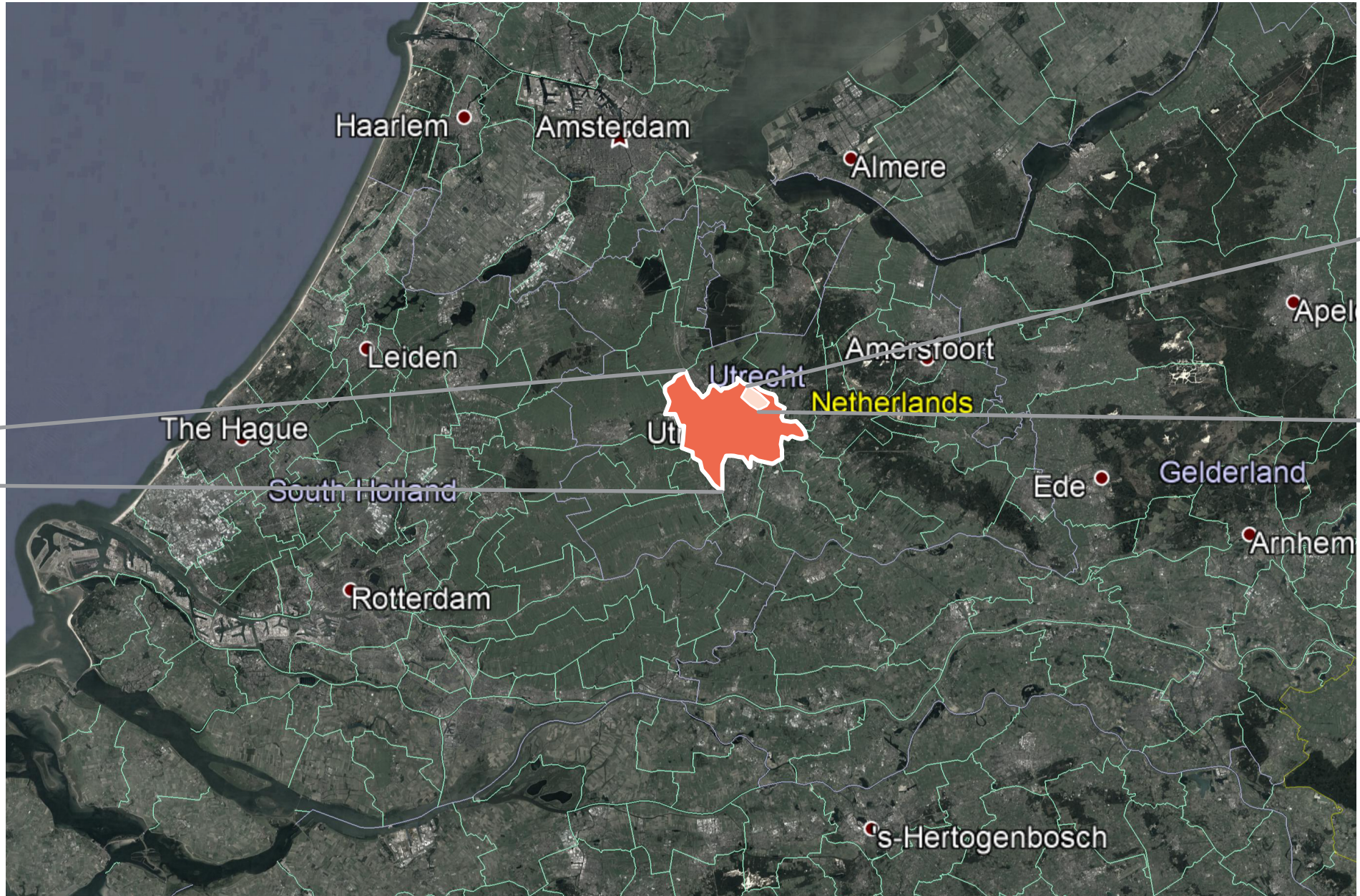
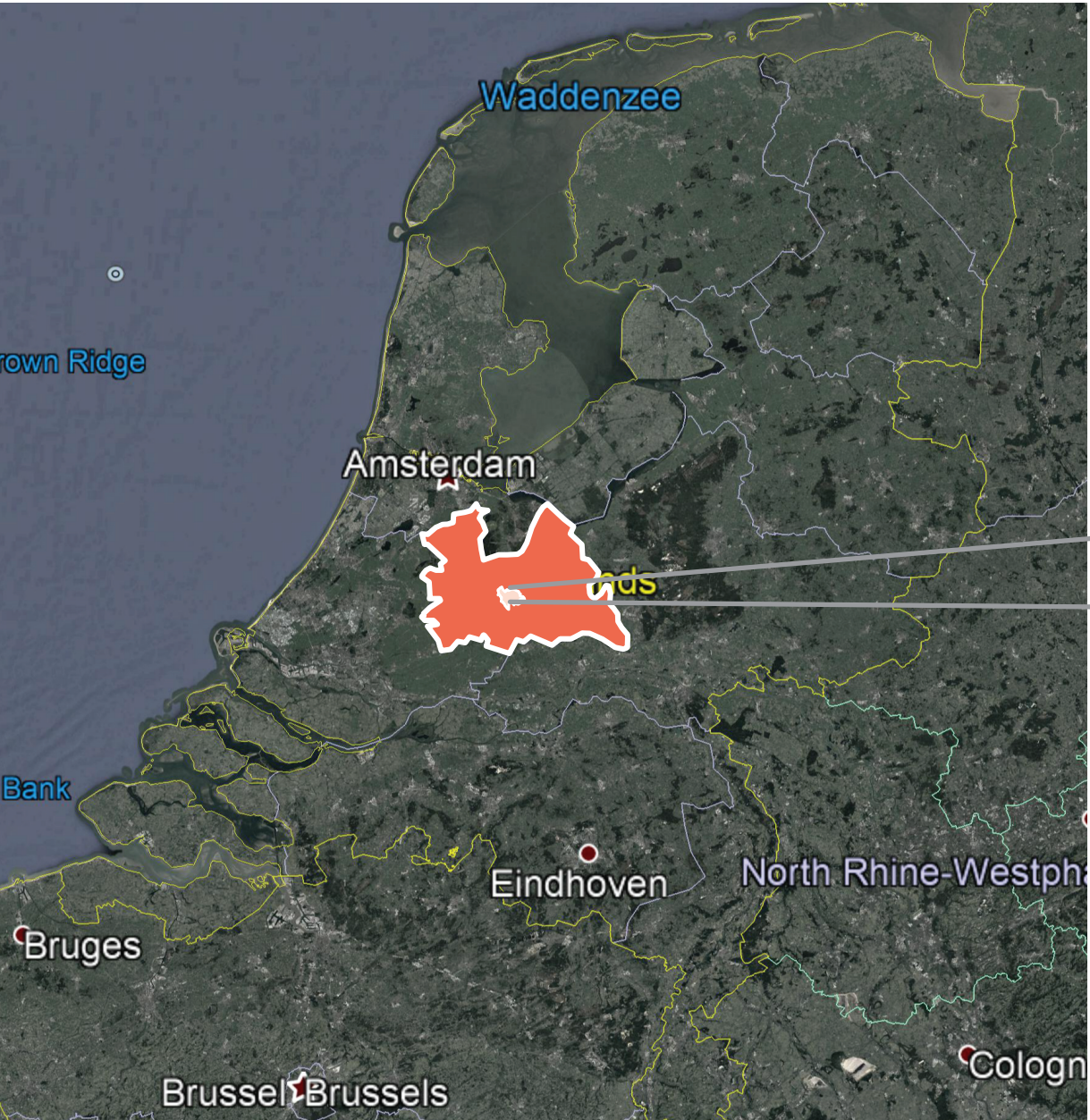


# NOT SIM CITY



RESEARCH

# OVERVECHT



# MODERN



# MOVING OUT AND IN



Making career



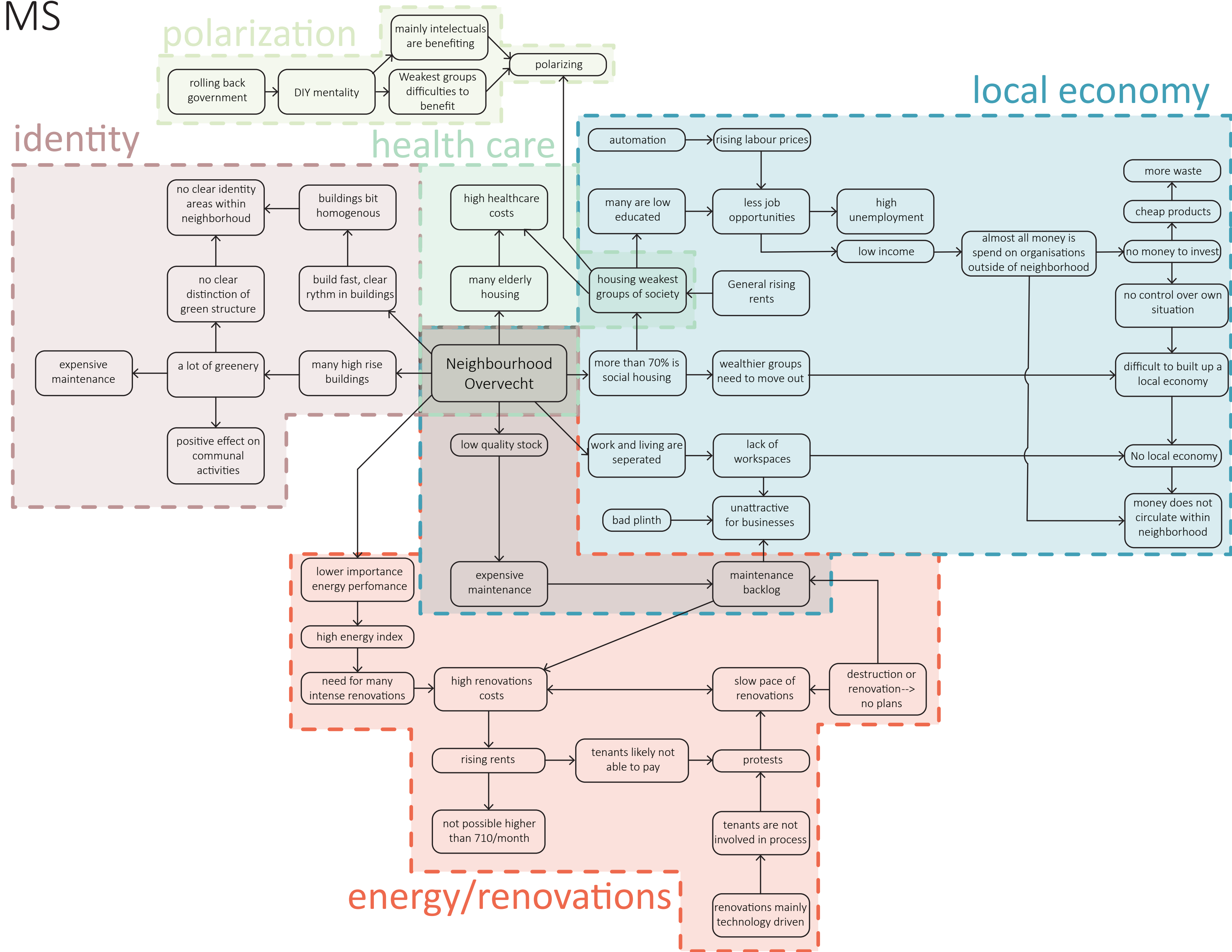
High percentage  
social housing



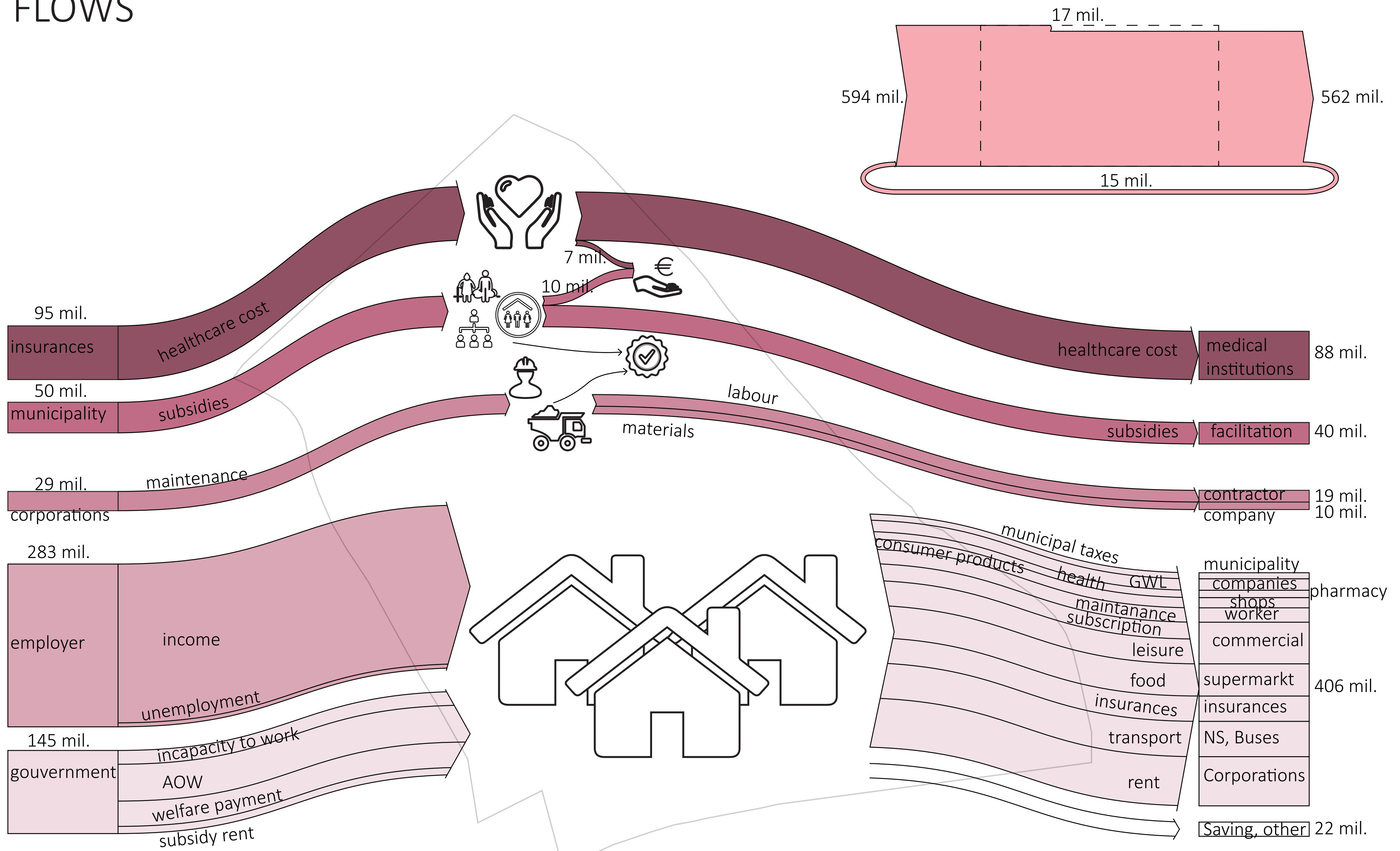
Need to move out

→ New, mainly weak  
groups move in

# RELATIONAL PROBLEMS



# MONEY FLOWS



# LOCAL ECONOMY



Re-circulation



Jobs



Place-based



Unique



Supply-demand



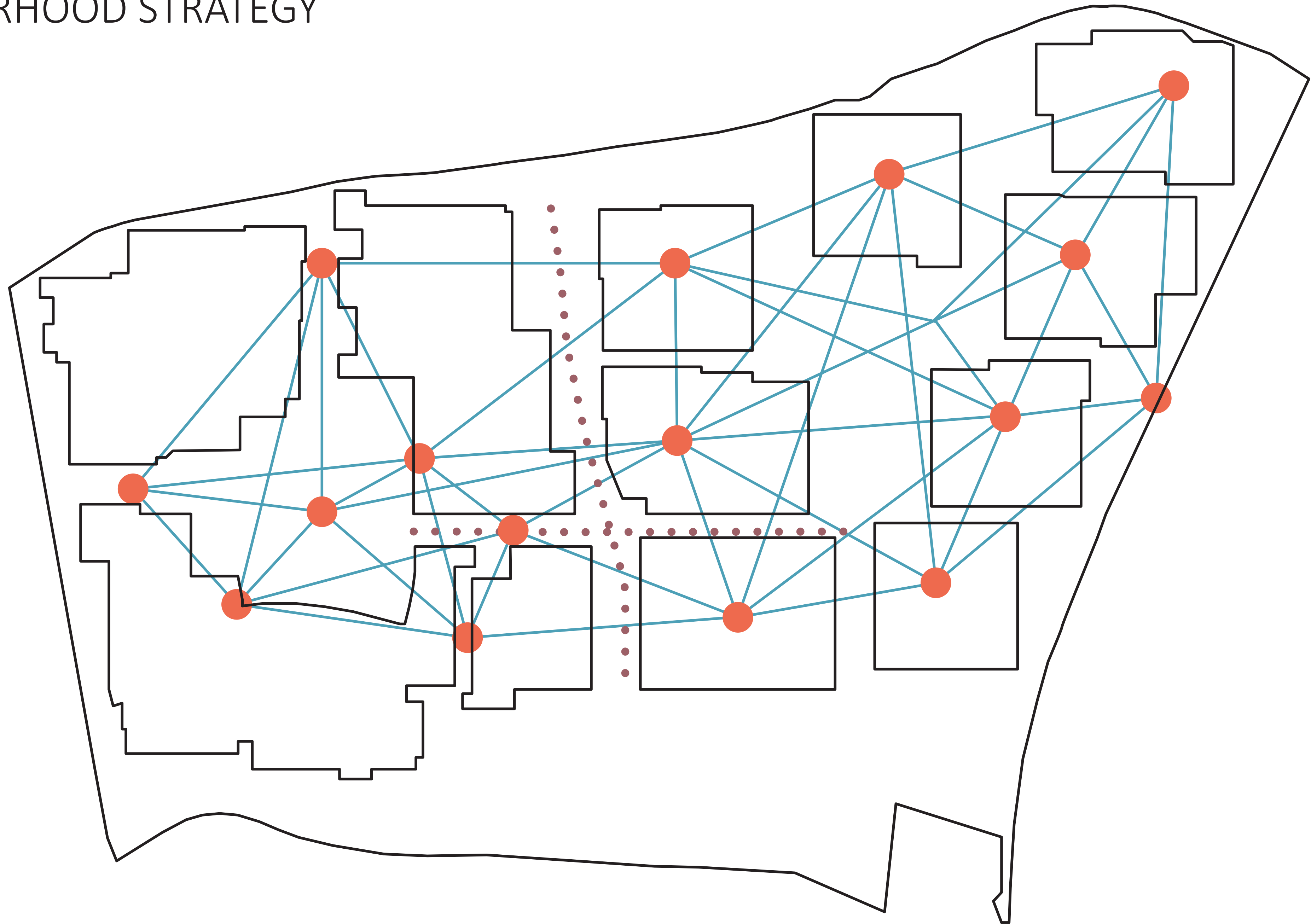
Customer service



Social cohesion

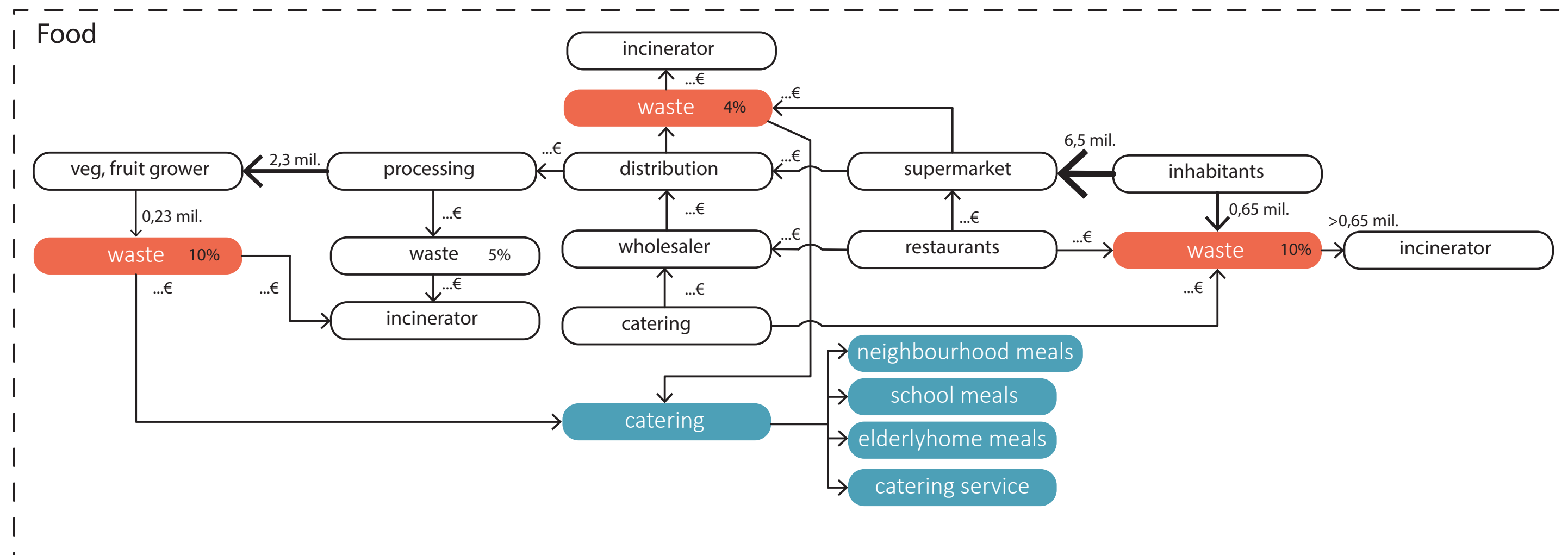
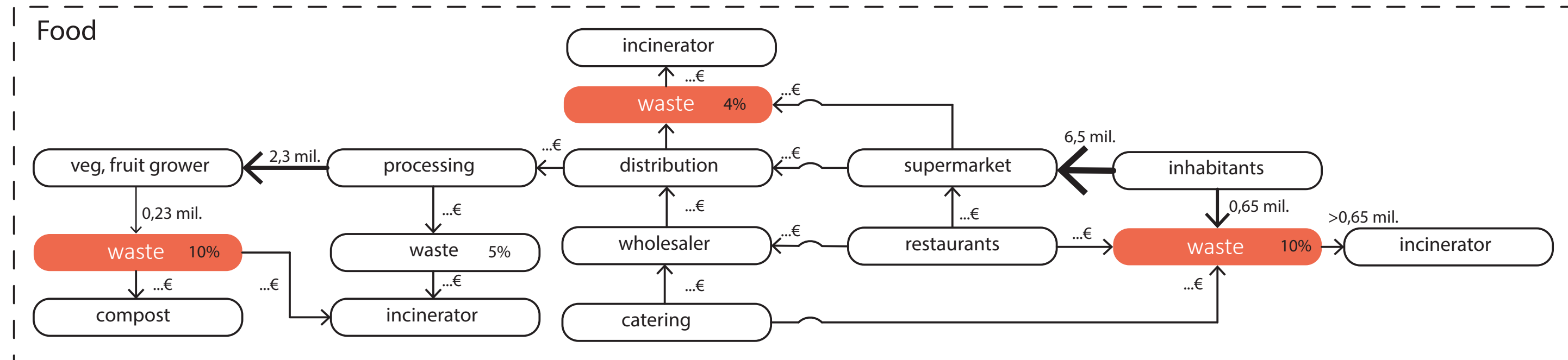
# NEIGHBOURHOOD STRATEGY

# NEIGHBOURHOOD STRATEGY

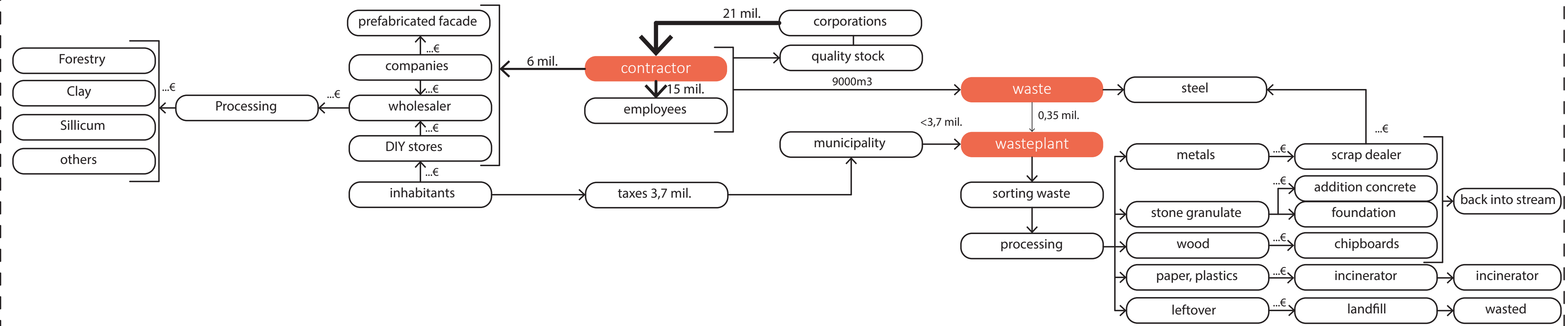


WHAT?

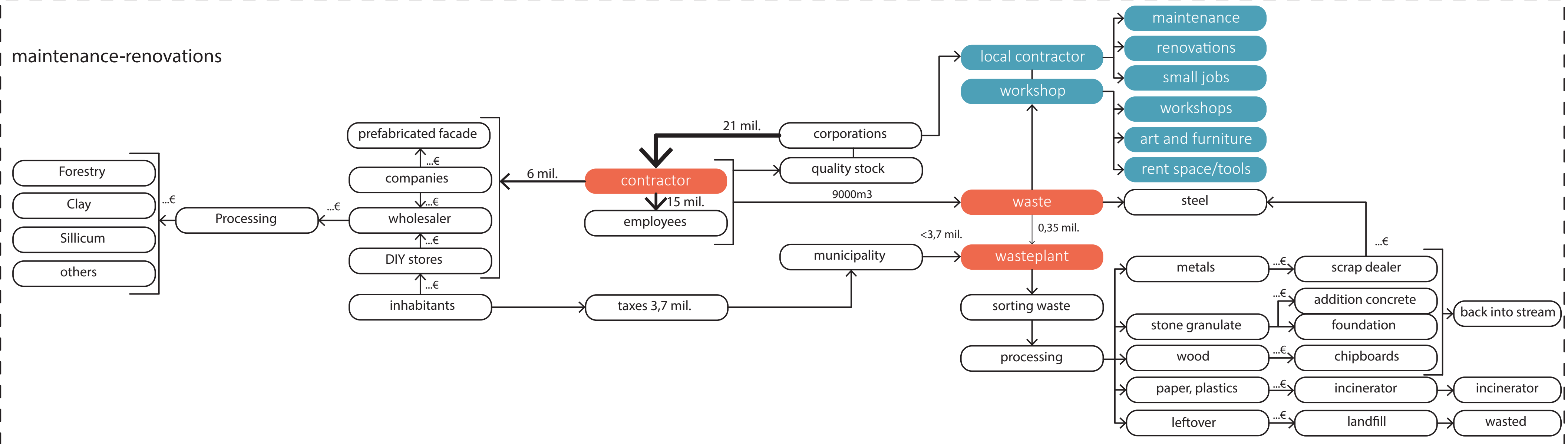
# EXISTING SYSTEMS/NEW BUSINESSES

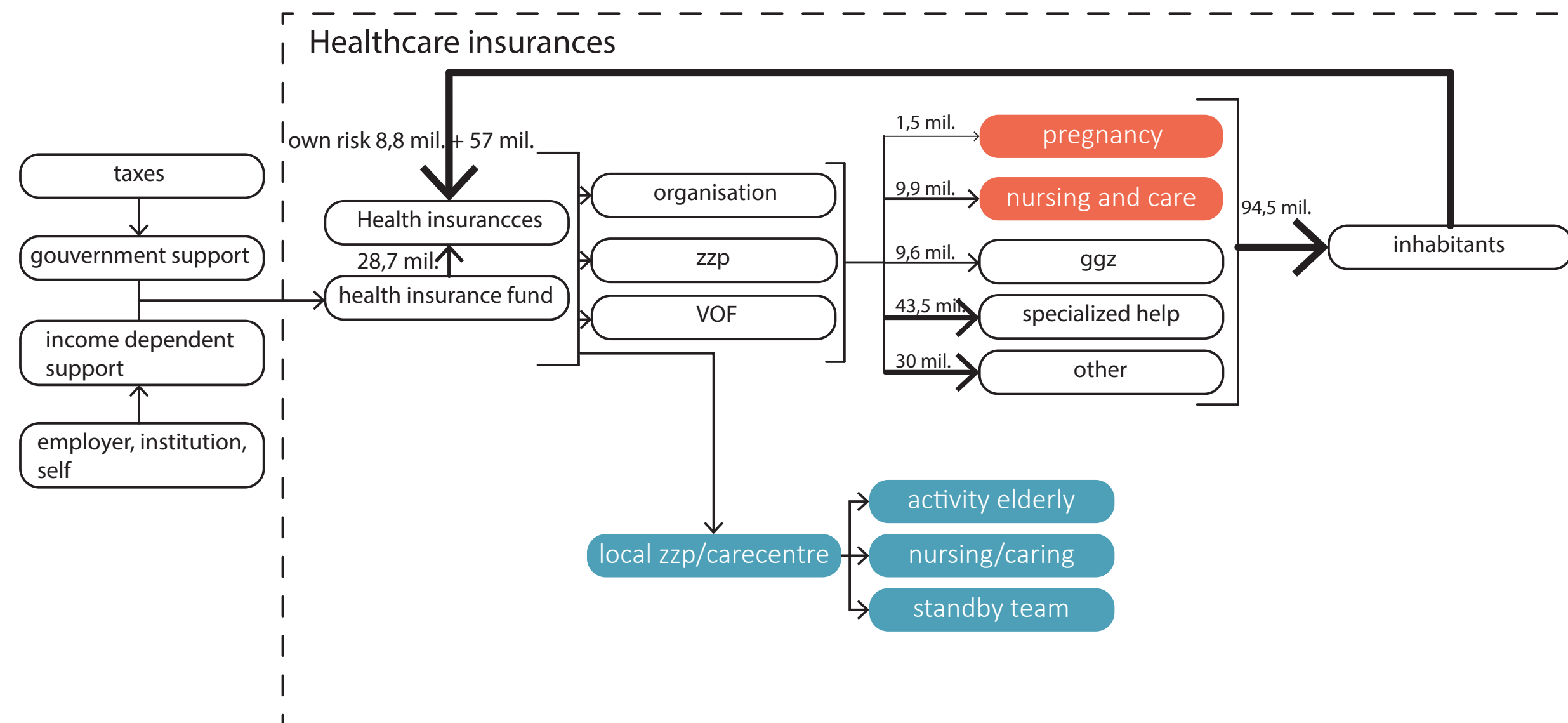
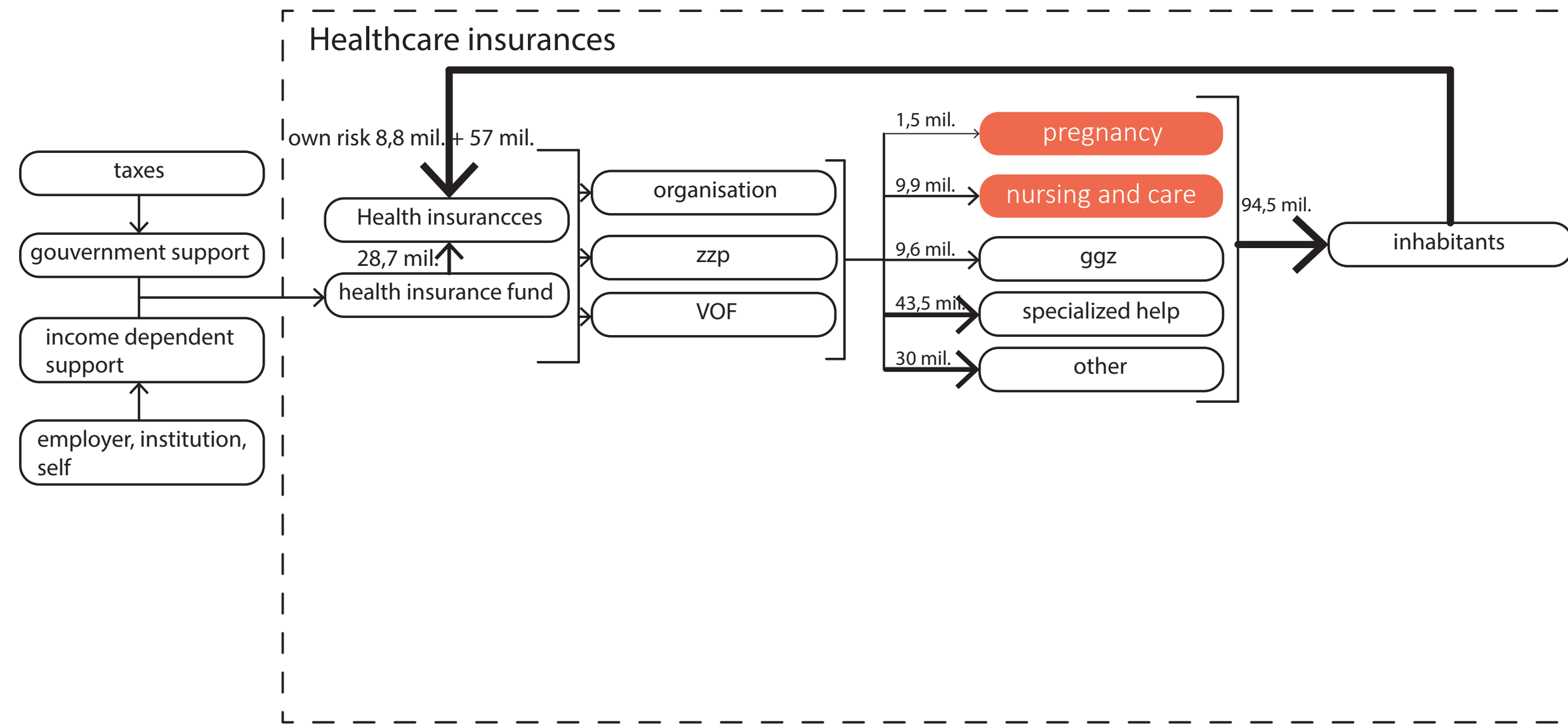


maintenance-renovations



maintenance-renovations





# ELABORATE NEW BUSINESSES

2017-12-18\_datashet\_researchpaper - Excel

Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do

Clipboard Font Alignment Number Styles Cells Editing

Care center Funeral

Money in	eur/h	eur/4 hrs	eur/day	people/d	hours/pe	hours tot	eur/yr	reference
homecare	15			6	1	30	black	
personal	27			21	0,75	78,75	93555	https://w
standby	33			3	0,75	11,25	16335	https://w
nursing	40			30	0,5	75	132000	
by solar power				6	0,5	15	29040	
by second hand				20		32	140800	
by biogas production				86		242	411730	
by renewable energy								
by reuse grey water								

Money out	l/w/h	m3	eur/kg	eur/yr	amount	total	reference
employees							
homecleaning							
personal care				14933	3,0	44793	https://w
nursing				25977	3,0	77631	https://w
activities				36181	2,0	72362	https://w
total						194792	http://www

Money in	peoplely	price	cost/day	cost/h	hr	eur/yr	reference
aid	70				30	350	10500
coffin	120	150			120	18000	
transport	20					3000	
cooling/t	40		40			1600	
aid for bc	40			30	40	1200	
food	1000	5				5000	
room	0	0				0	
urn	100	50				5000	
total					510	44300	

Money out	l/w/h	m3	eur/pe
coffin			
transport			
cooling/body			
food			
urn			
rent			
Civil and other			
total			

m2/pers	eur/m2/yr	eur/m2/yr	m2	eur/m2/yr
space	5	4117,3	1947,3	2768,8

ser-m-in-utrecht-naar-gemeente-2016.html

\* wages is taken 70% care, travel 5%, 25% administration https://www.ictthealth.nl/nieuws/nieuwstema/article/Administratie-in-de-zorg-moet-minder-volgens-de-zorgprofessionals.html

m2 assur 100

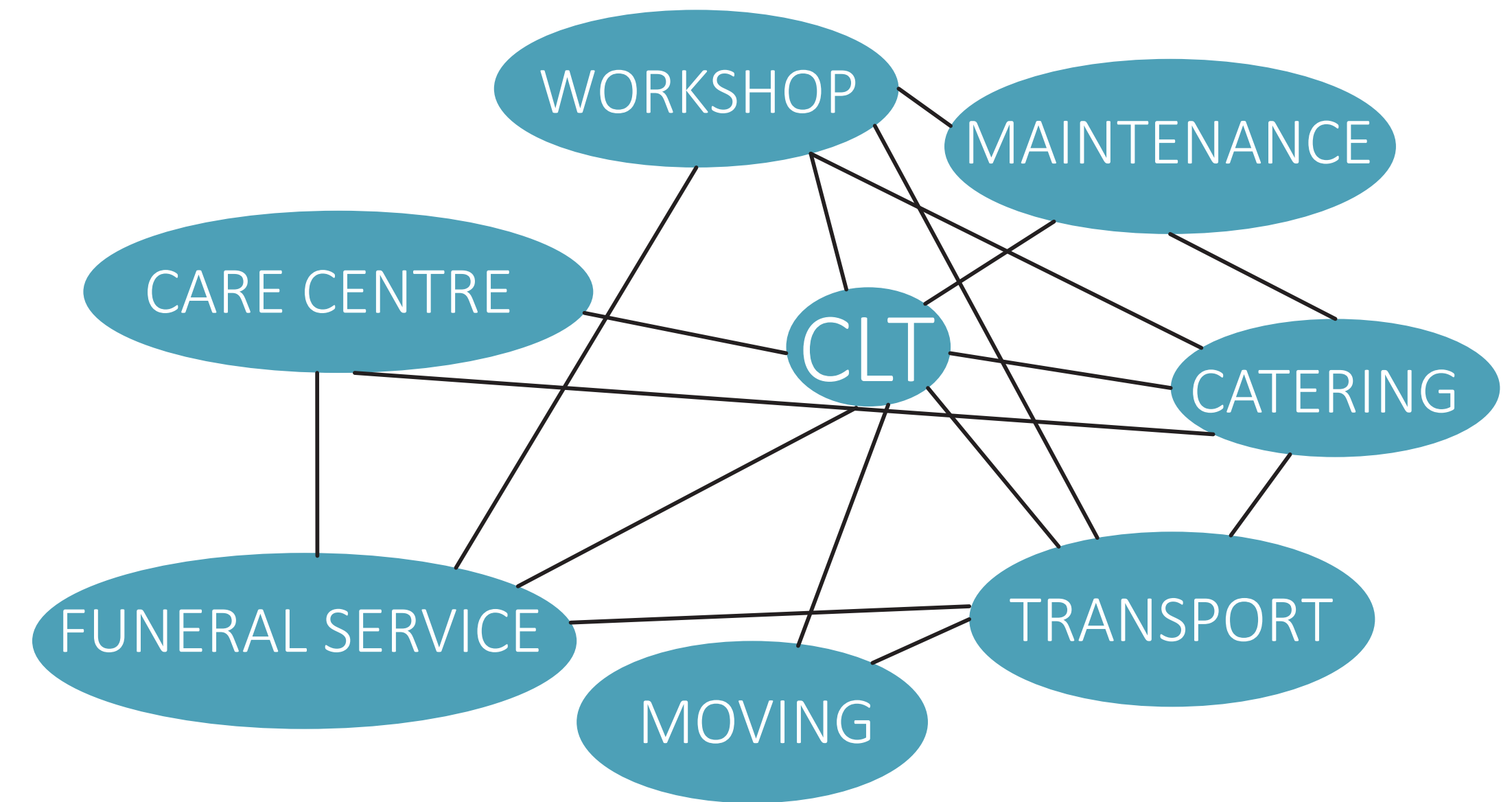
cost bank 280000

https://www.berekenhet.nl/ondernemen/netto-inkomen-zzp-er.html

full work week is 30 hours nursing, rest is adm. Etc per year it is 1320 hours. Wage for personal and nurse are filled in 1 euro higher, due to standby team

Costs zzp	company	income zzp	company costs
3fte personal	10000	21637	rent *****
retiremer	2642		
tax	0		
insuranc	791		
reserves	1500		
3fte nursing	17000	27803	rent *****
retiremer	3638		
tax	252		
insuranc	1217		
reserves	1500		

Households money flow functions Vektis Open Databestand Zorgver

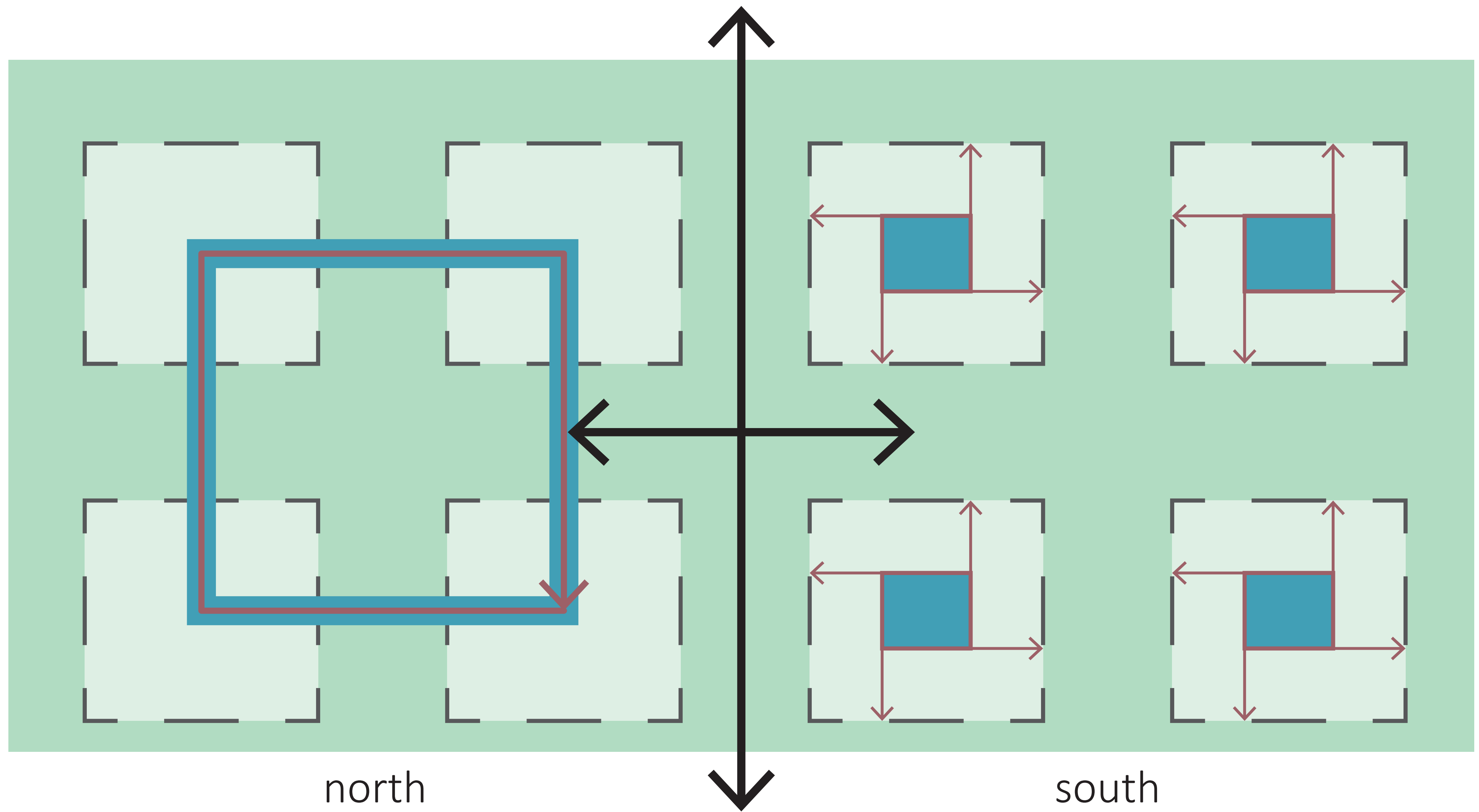


WHERE?

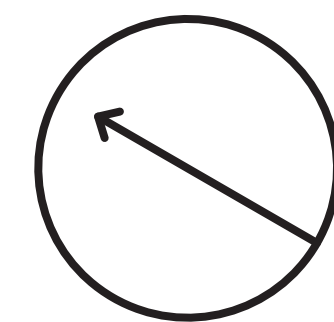
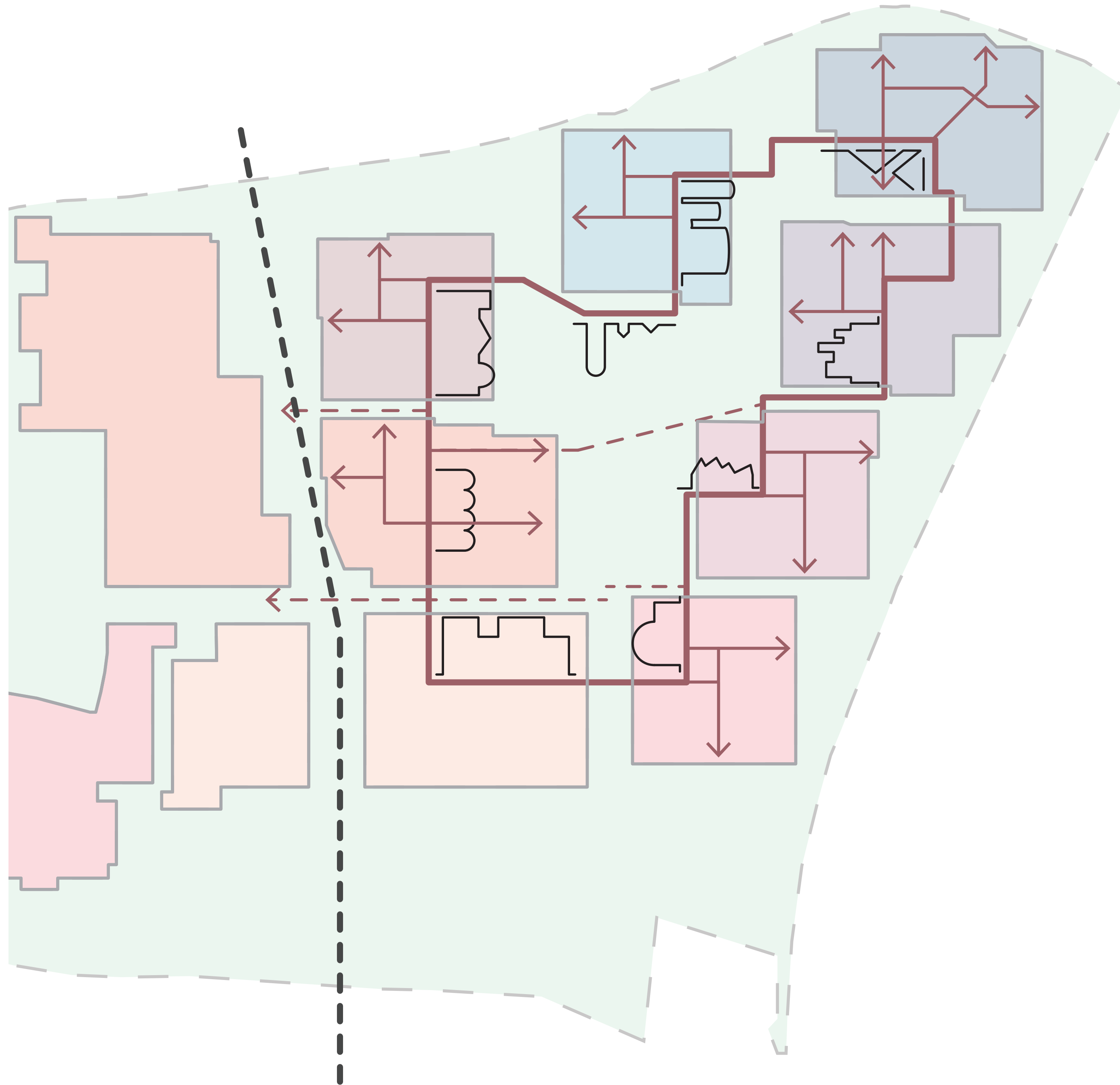
# ACCESS



# ABSTRACT



# STRATEGY SOUTH







# SCHOOL

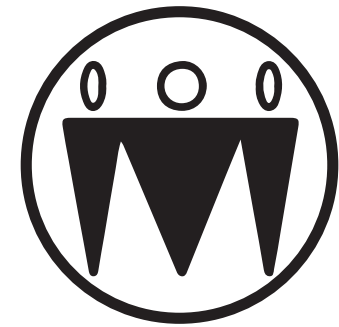
Economic potential



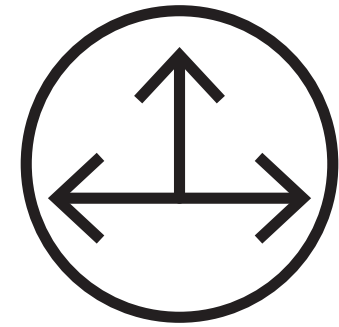
Accessibility



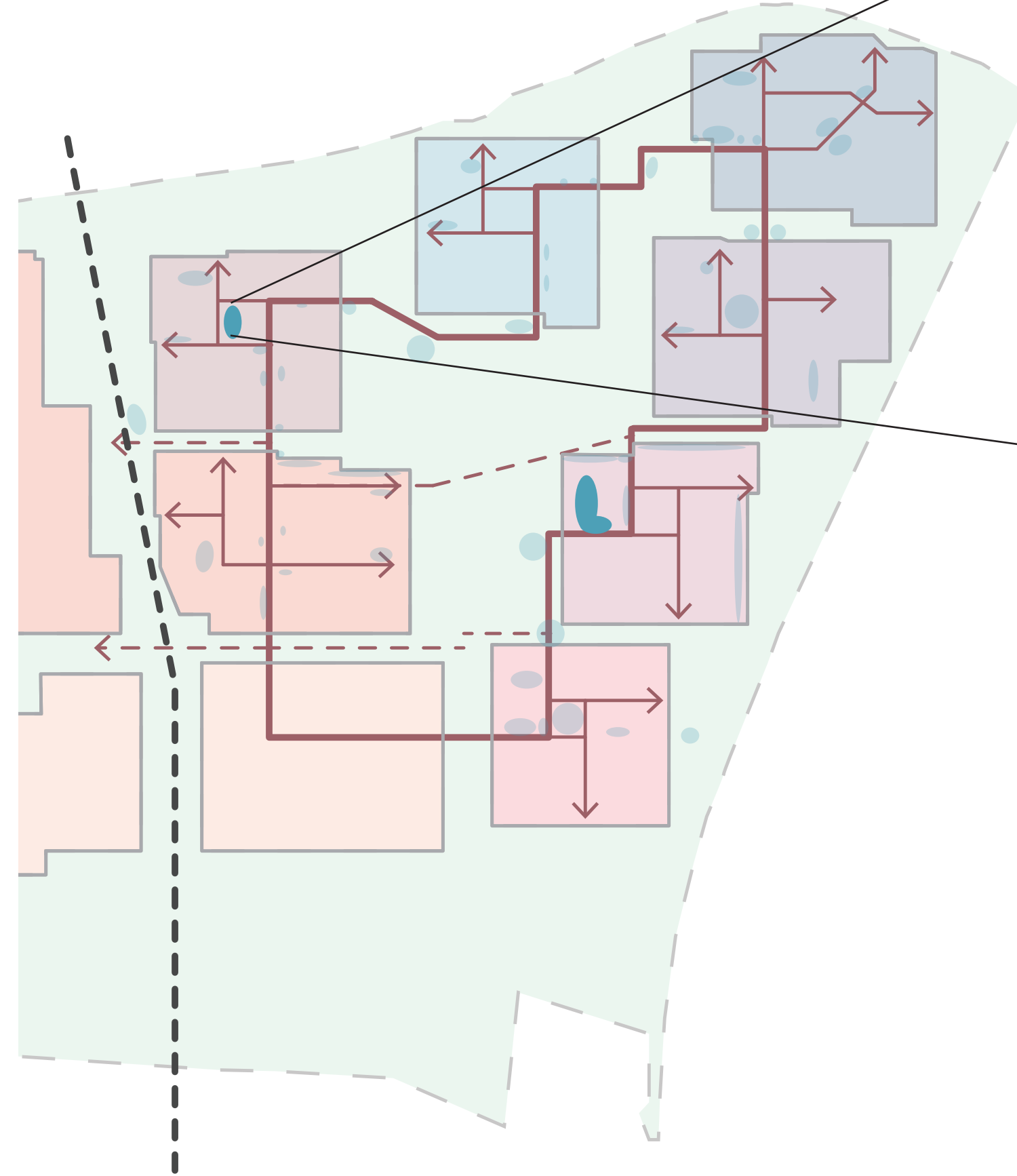
Social potential



Growth



Surrounding



# AROUND



NOW... HOW TO DESIGN?

# DEPLETION OF COMMONS

ECONOMIC

Lack of local economy in the neighbourhood.

SOCIAL

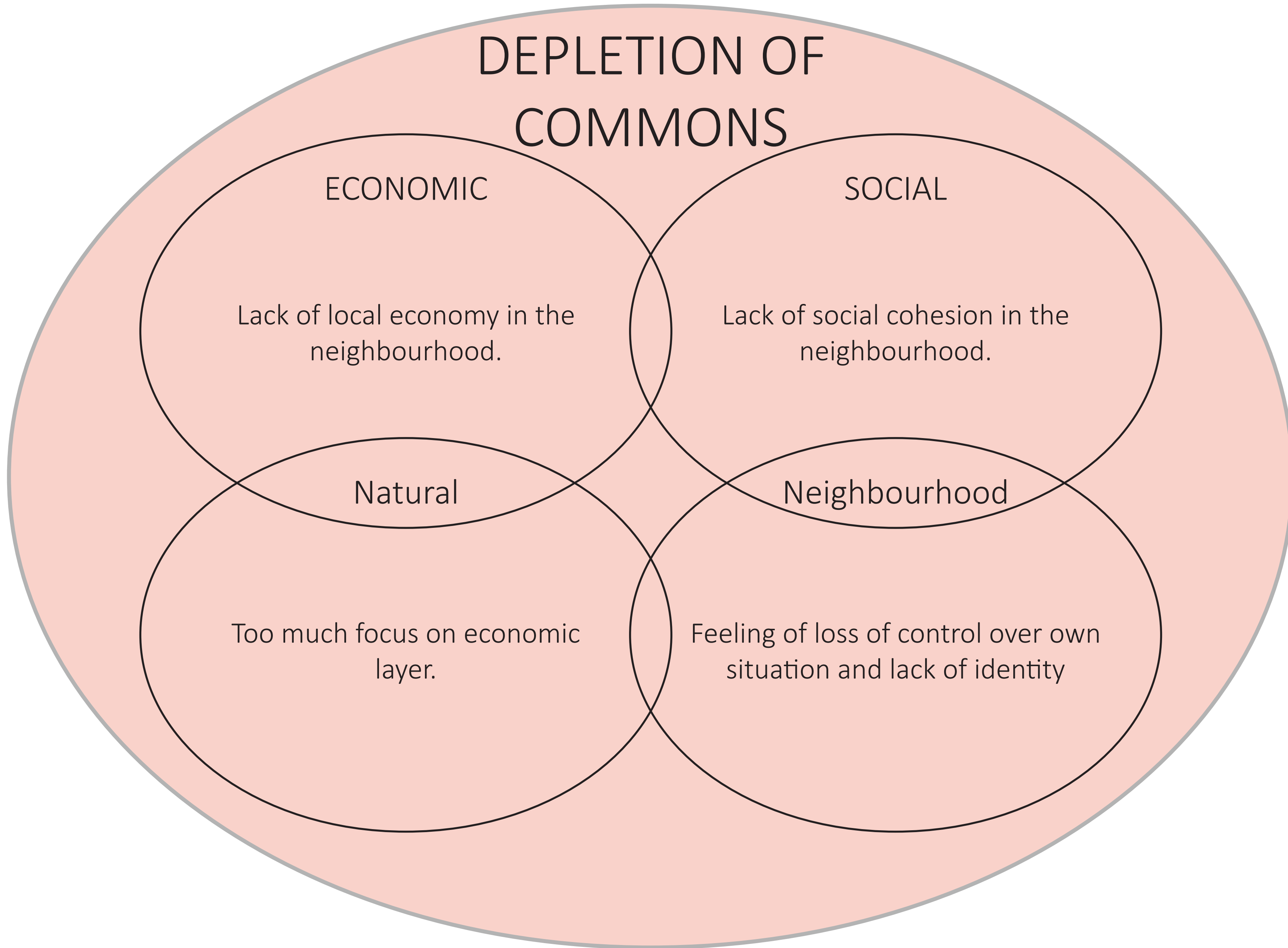
Lack of social cohesion in the neighbourhood.

Natural

Too much focus on economic layer.

Neighbourhood

Feeling of loss of control over own situation and lack of identity



# COMMONS

## ECONOMIC

Enhance the local economy in the neighbourhood.

## SOCIAL

Facilitate collaborations and interactions.

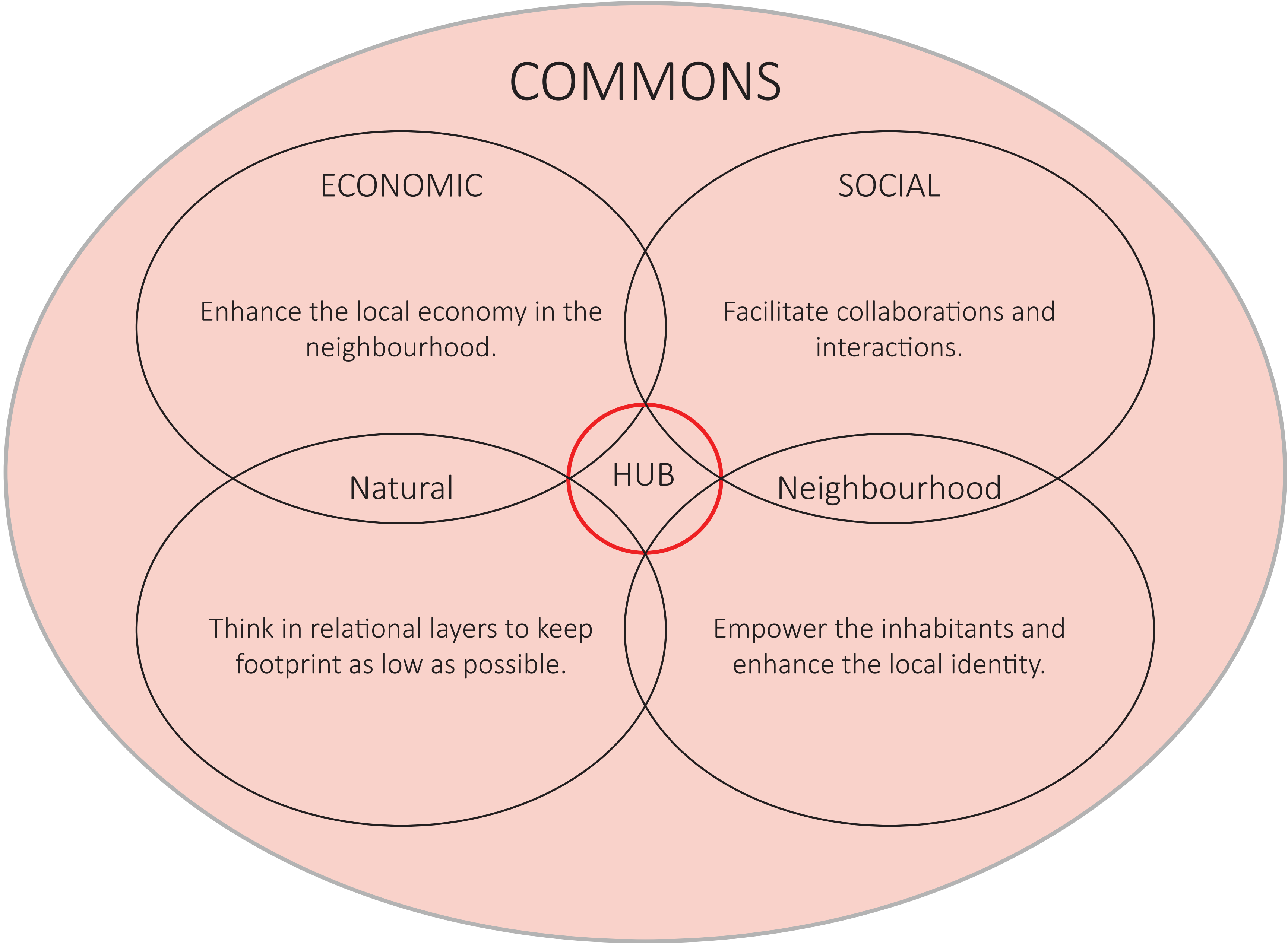
## Natural

Think in relational layers to keep footprint as low as possible.

## Neighbourhood

Empower the inhabitants and enhance the local identity.

## HUB



WHAT WILL BE THE BALANCE  
BETWEEN THE PEOPLE AND  
THE ARCHITECT WITH SUCH A  
COLLABORATIVE PROJECT ?



PEOPLE  
DIY  
UNPLANNED  
FULL CONTROL  
OWNERSHIP HOUSE  
FRAGILE  
UNCERTAIN

IN-BETWEEN



ARCHITECT  
SPECIALISTS  
PLANNED  
NO CONTROL  
NO OWNERSHIP  
STRONG  
CERTAIN

AAA Urban-R



The decorators



StudioBASAR



We made that



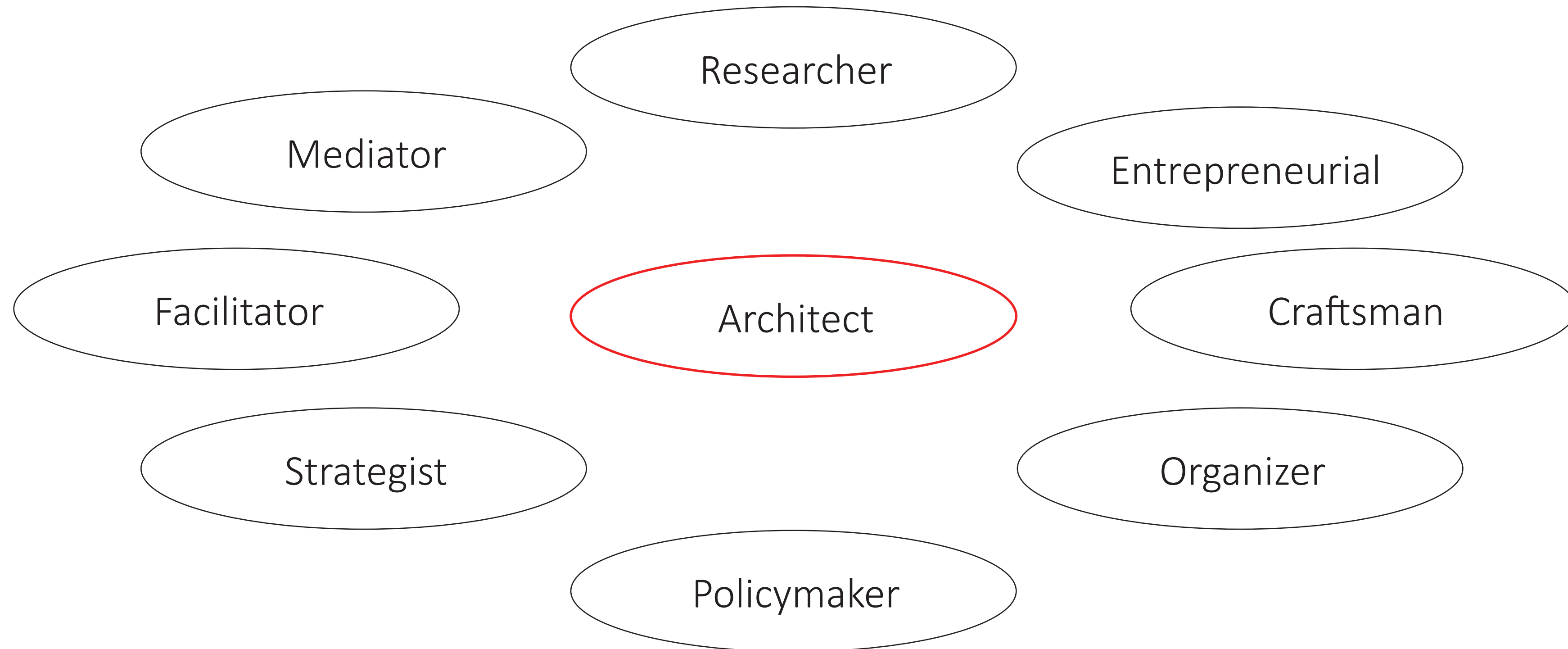
Raumlabor



Atelier MOB



Assemble



FUNCTION/USE

FORM/SPACE

SOCIAL/HISTORICAL CONTEXT

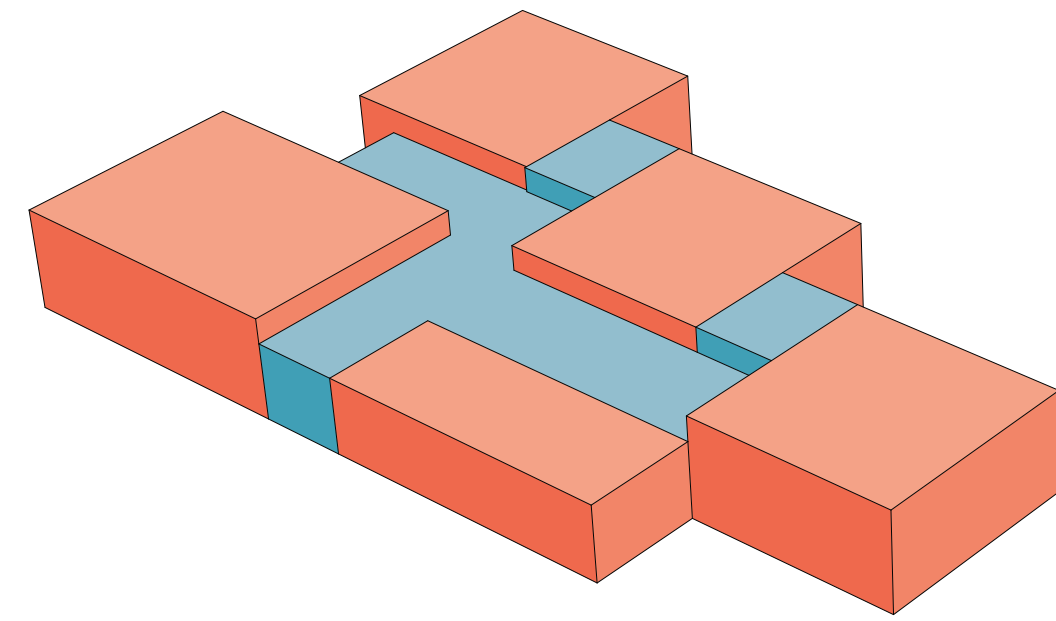
Boundaries/rules

URBAN CONTEXT/SITE

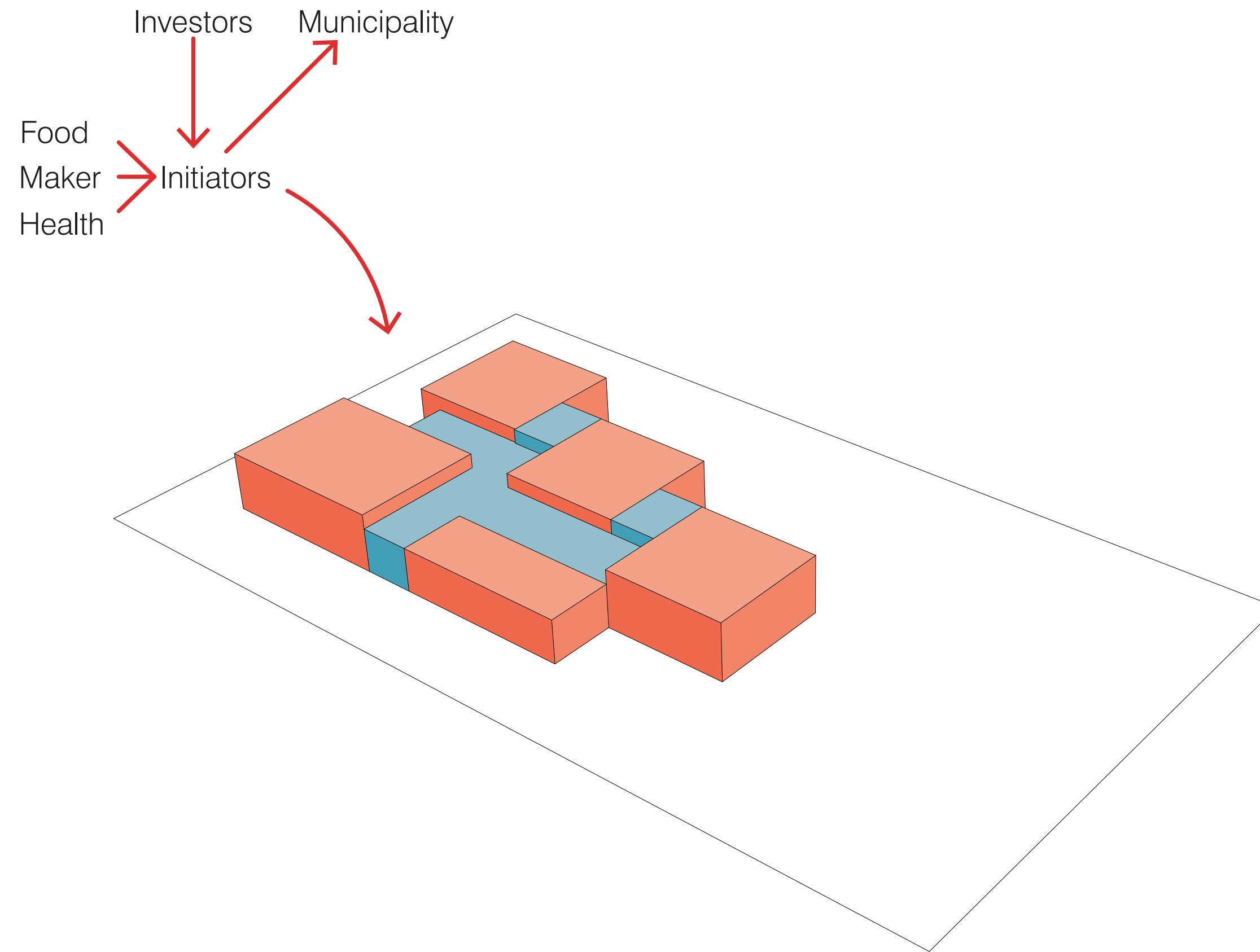
MATERIAL/CONSTRUCTION/CLIMATE

START

School

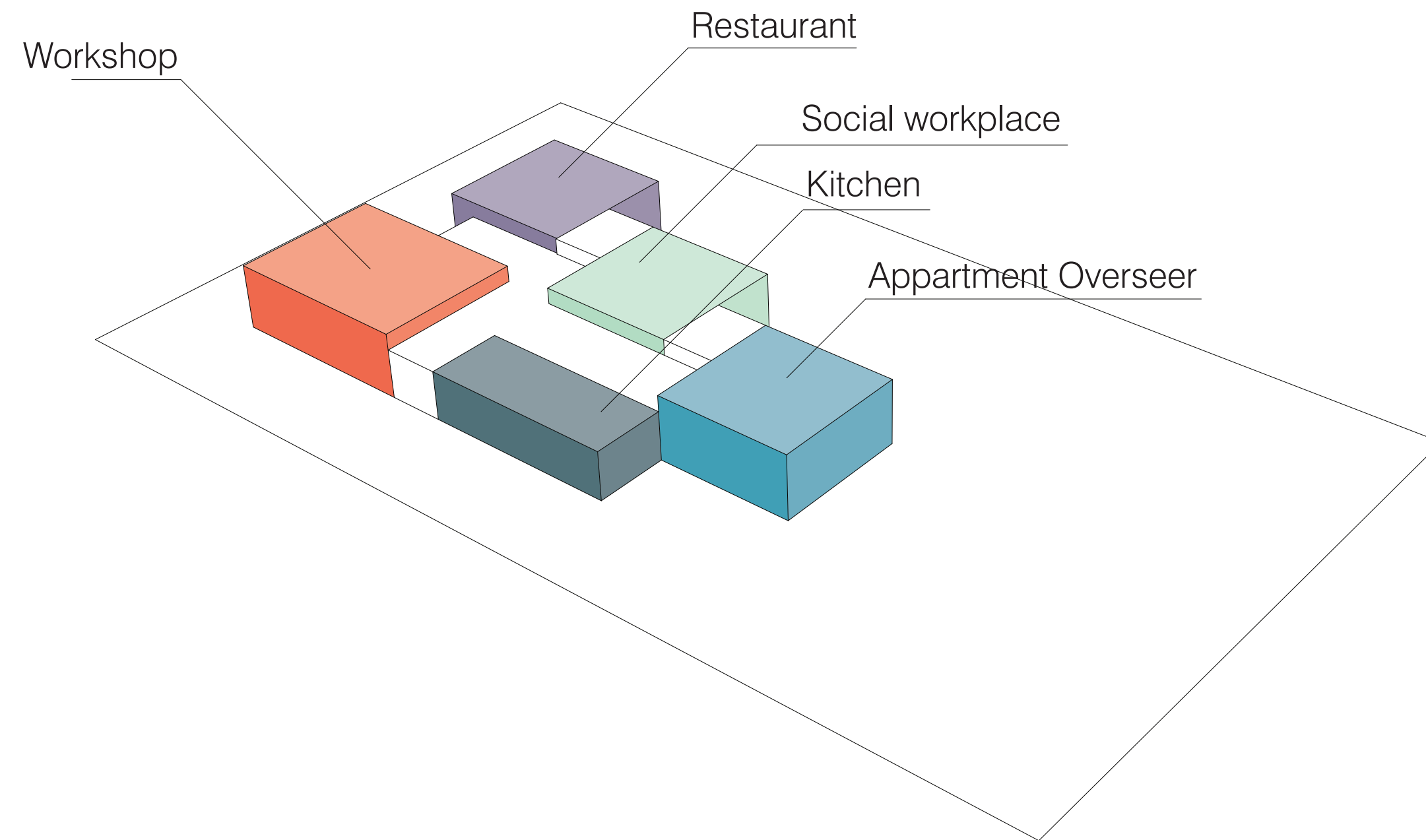


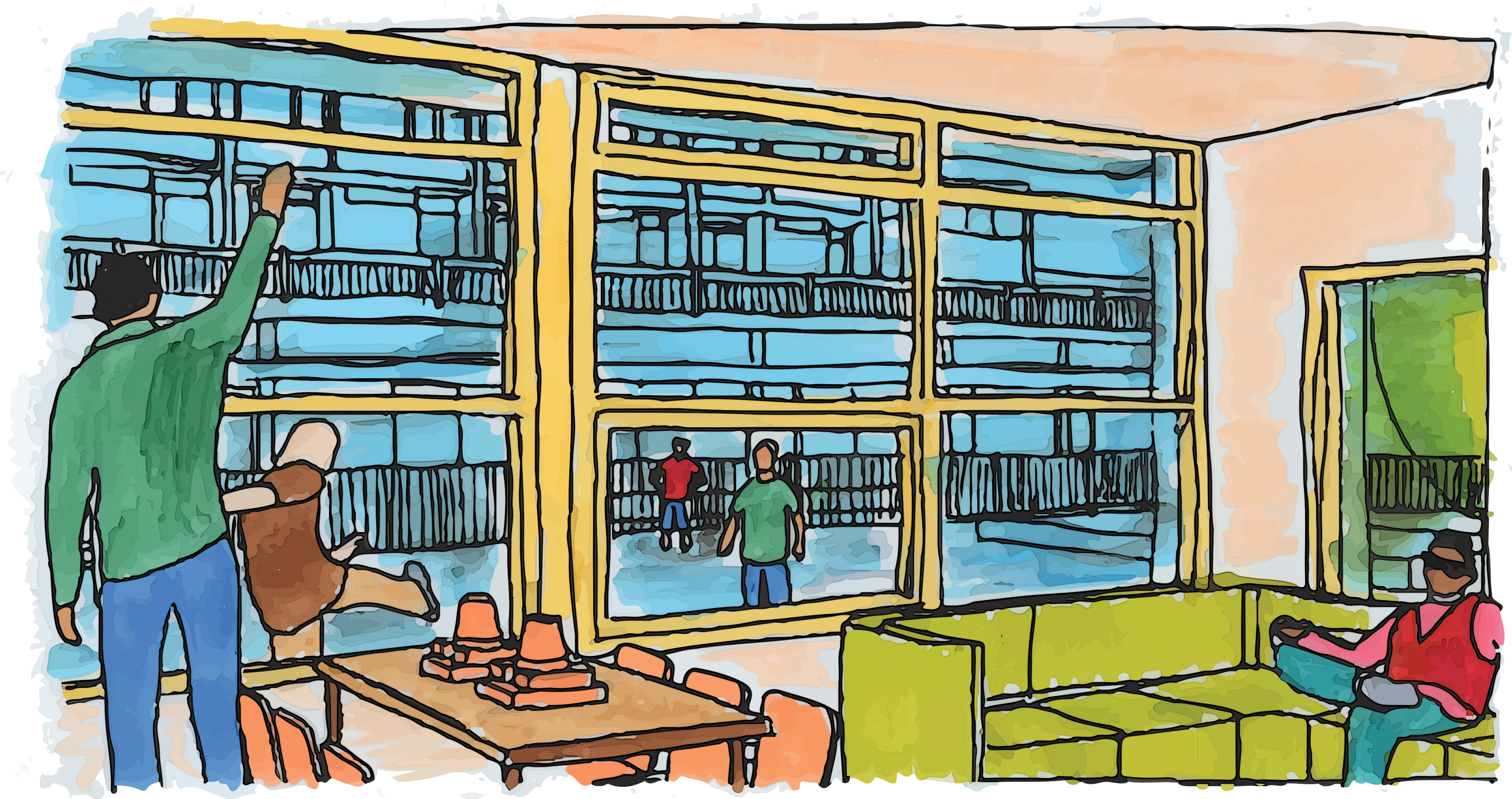
# Starting businesses



# Functions

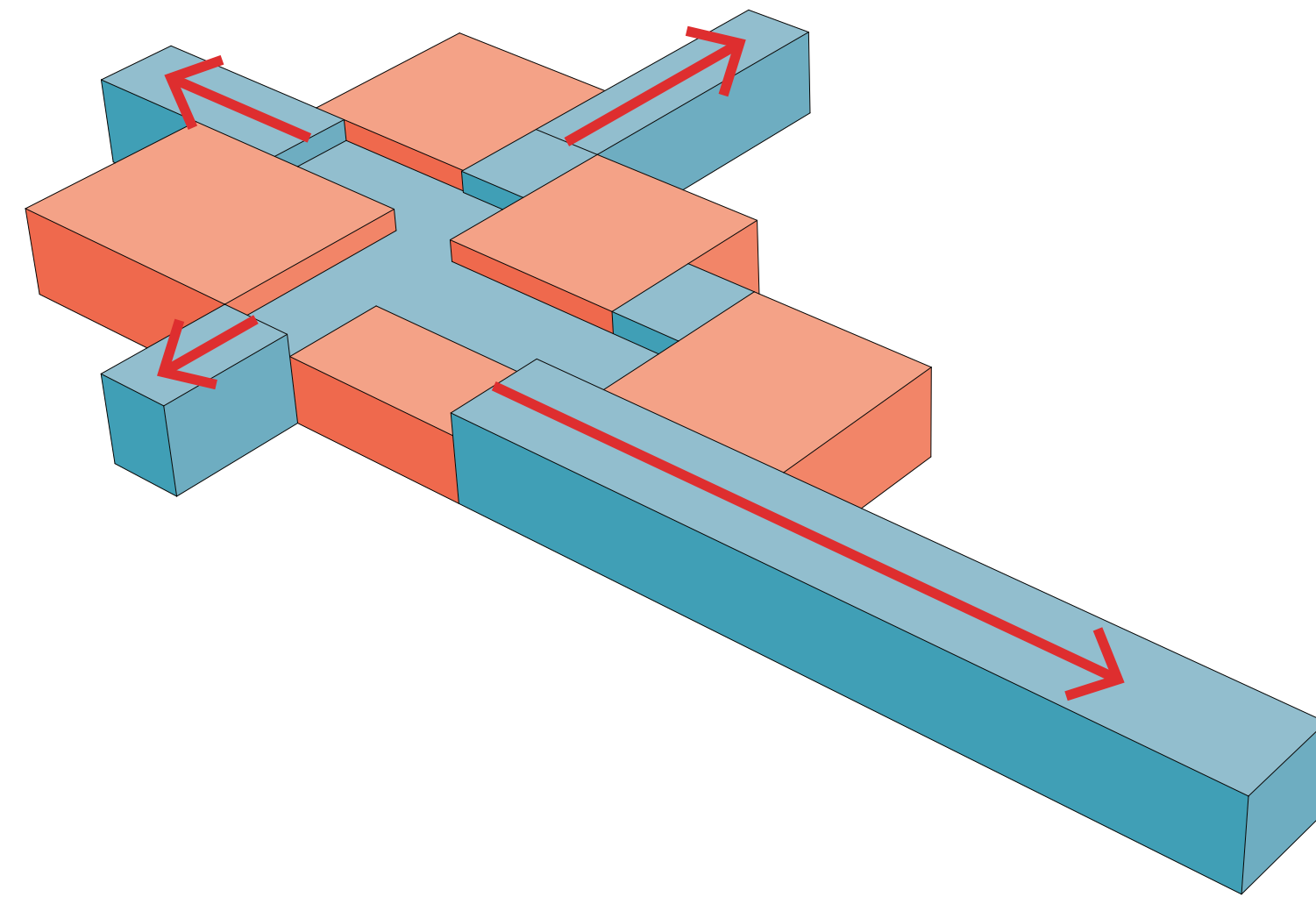
## Starting functions





Shape

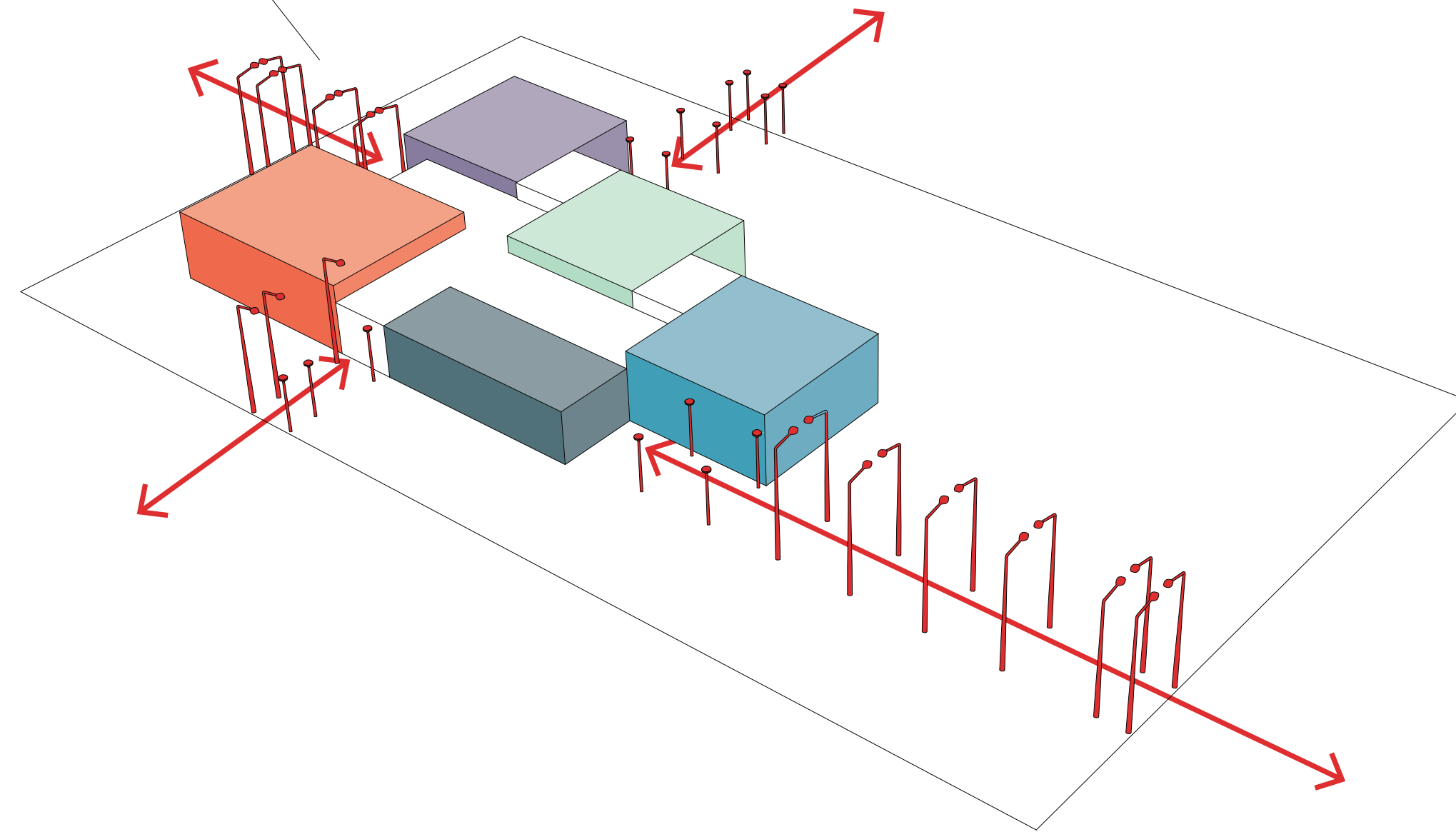
Extend hallways

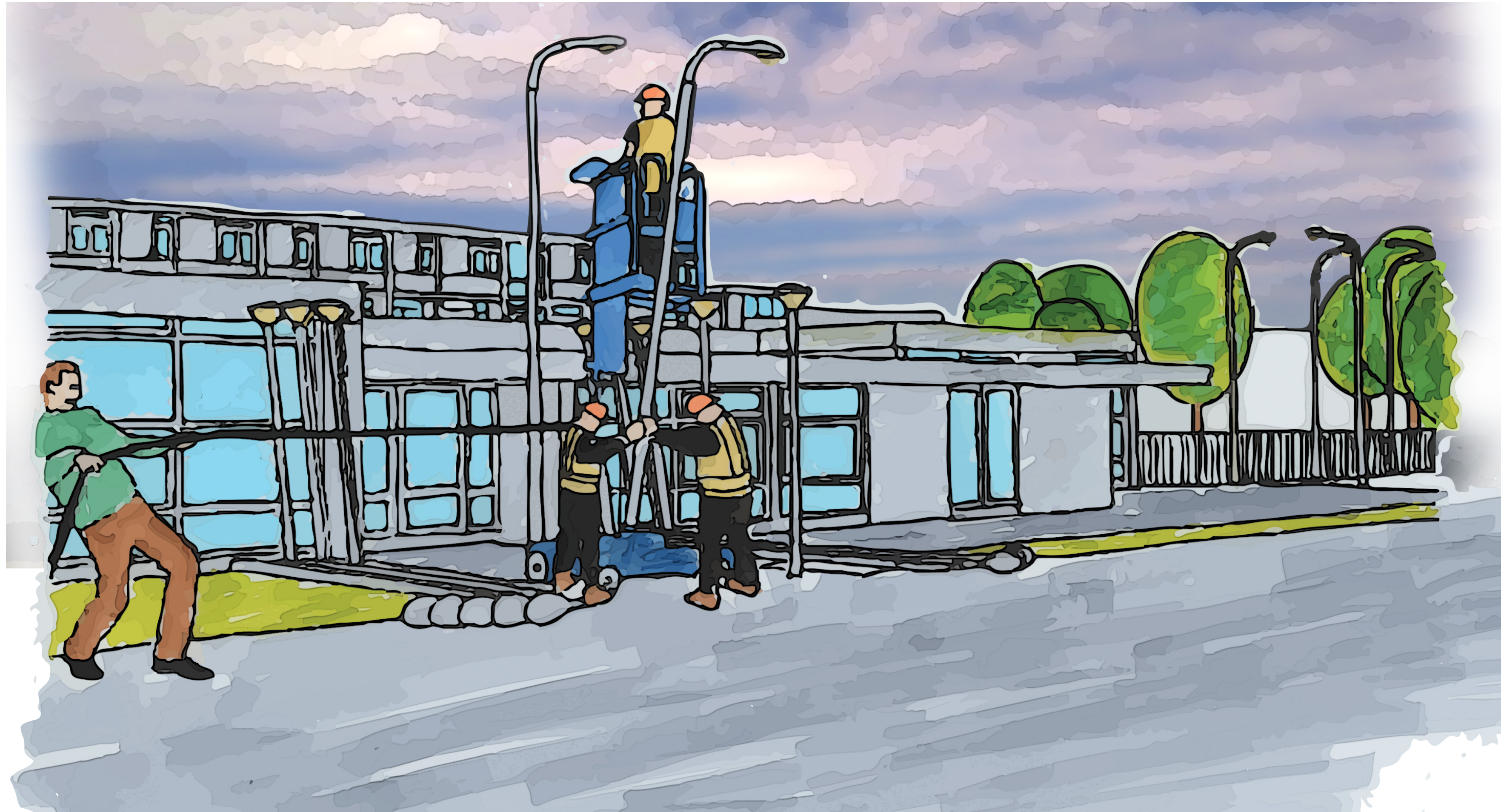


# Functions

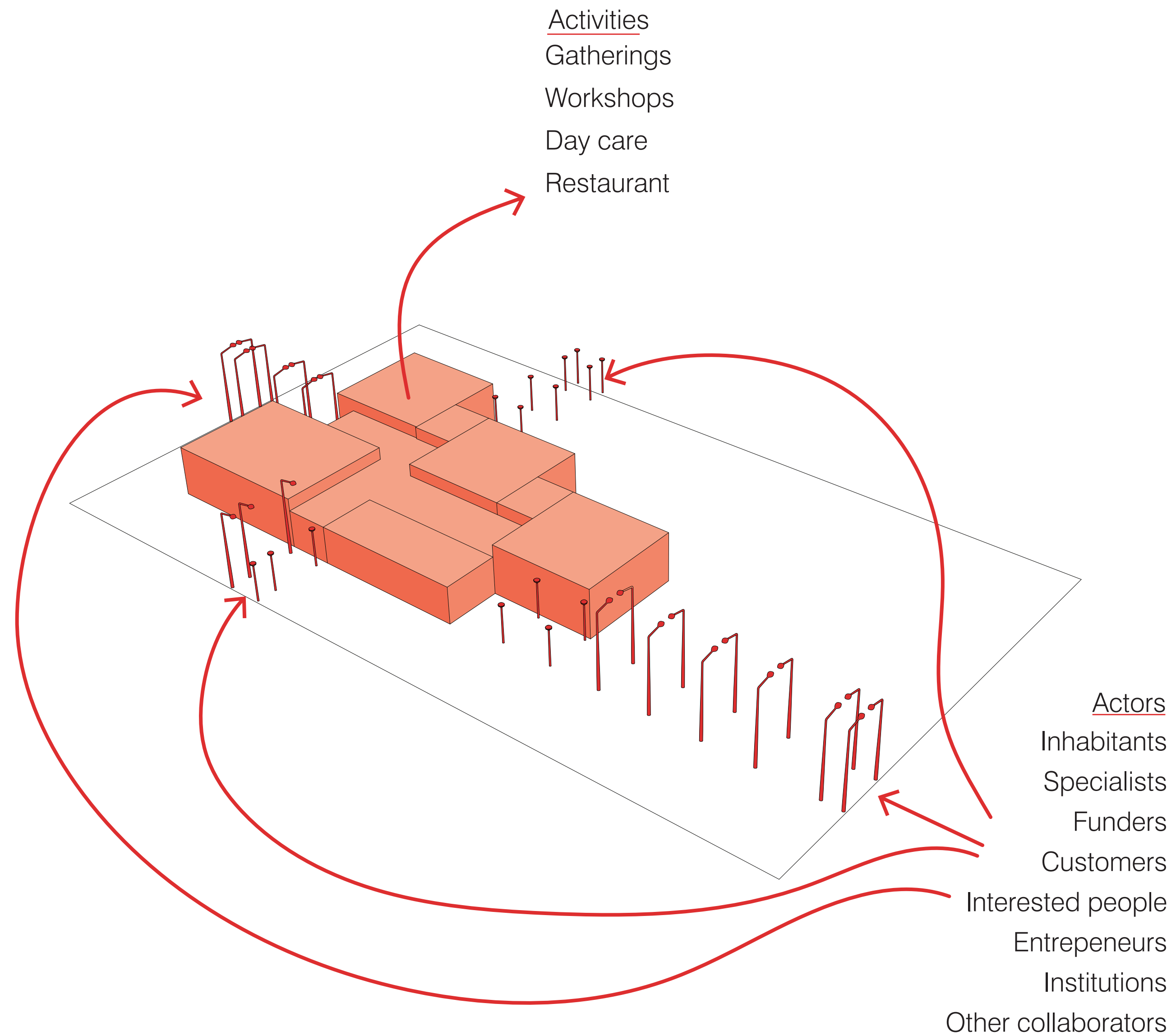
## Passages to access

Passage into building





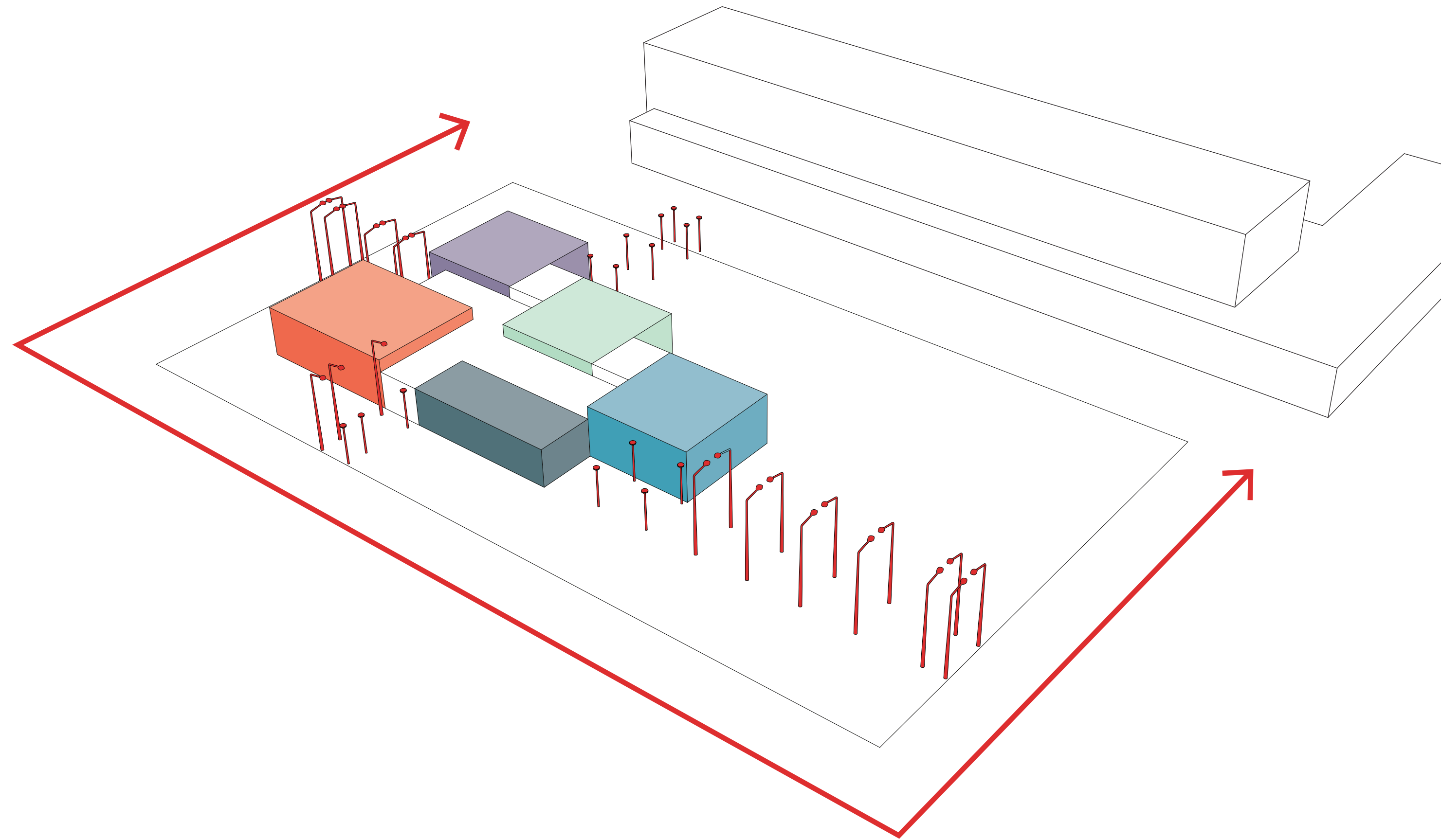
# Getting different groups inside building



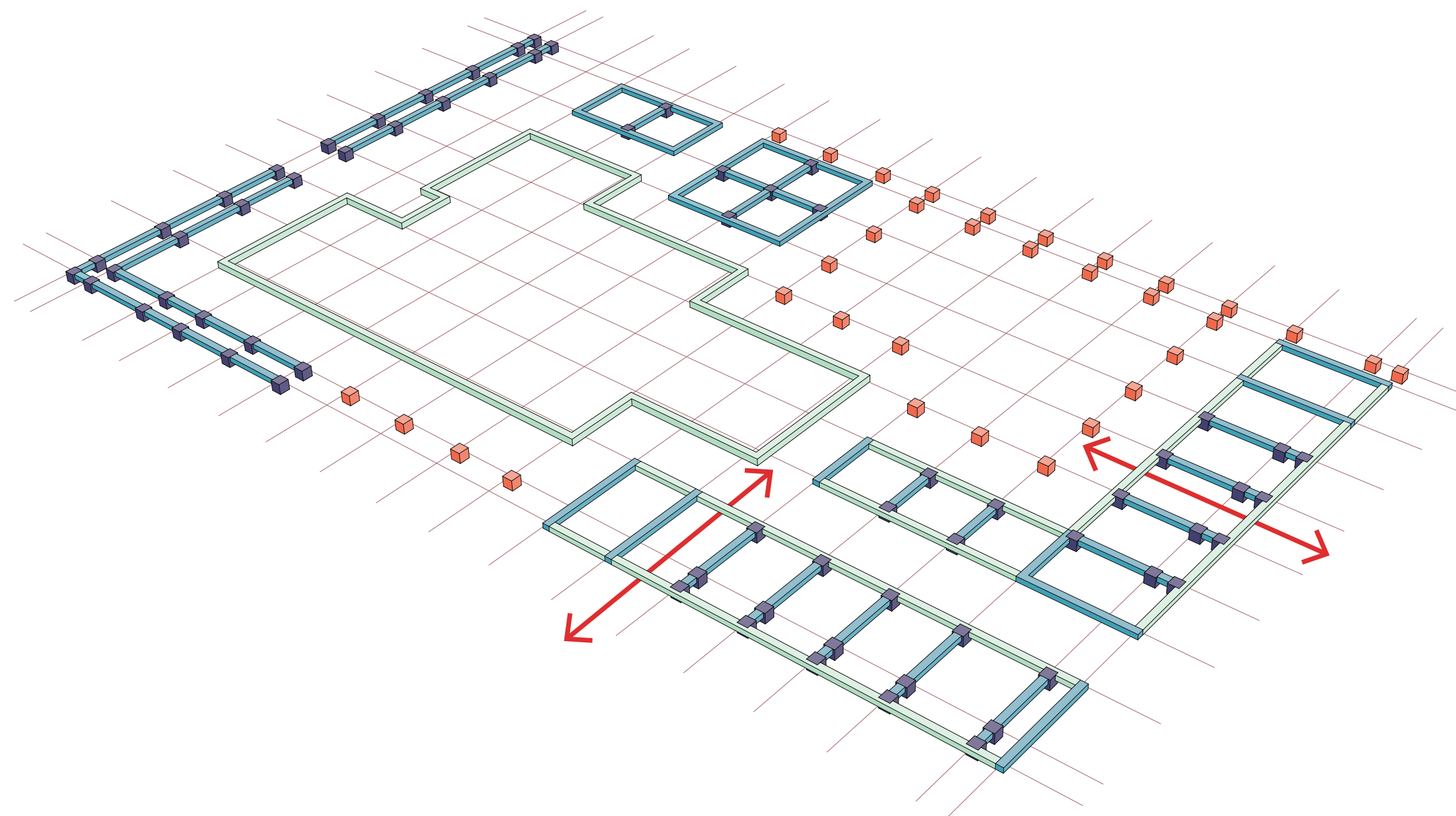




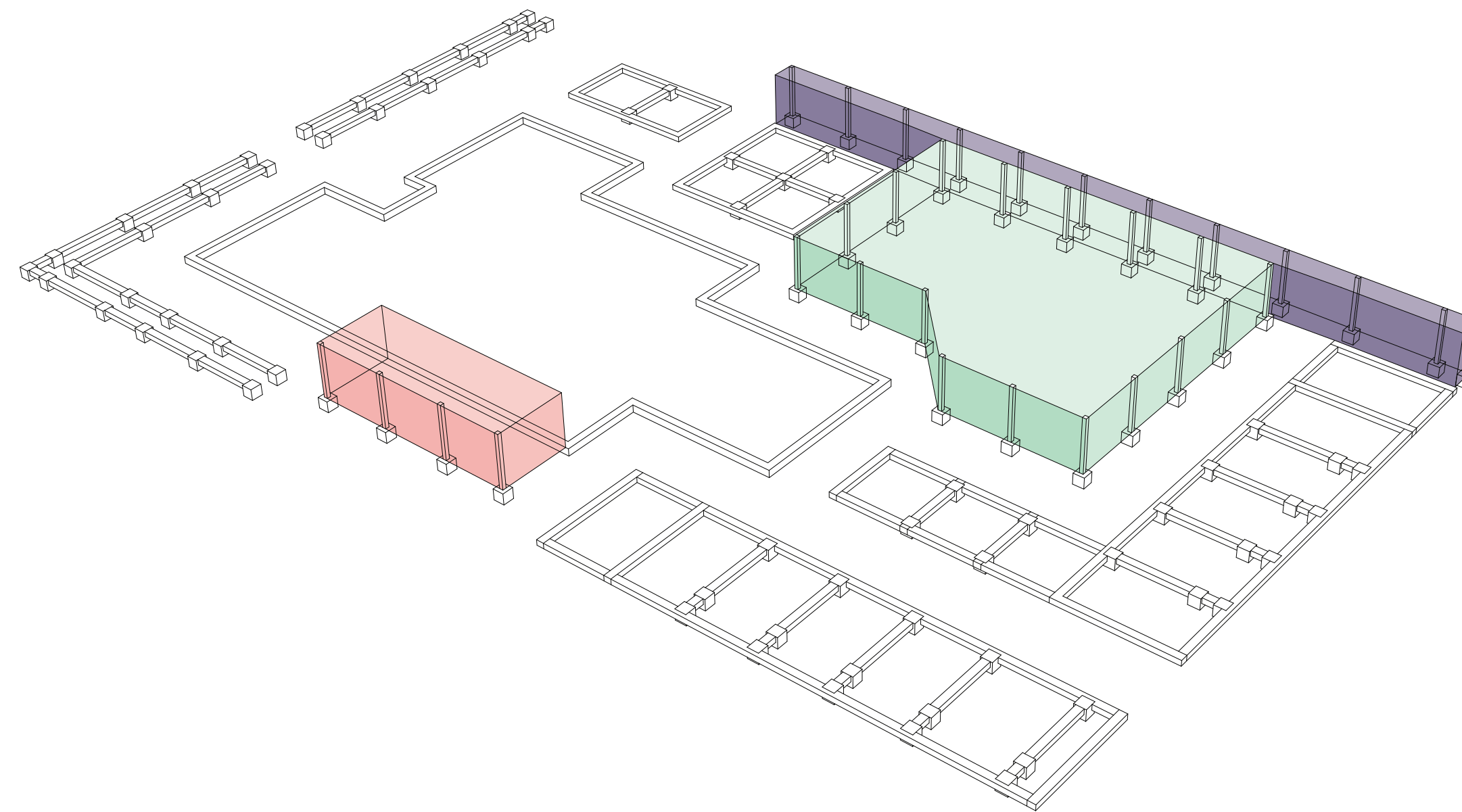
# First extensions along roadsides



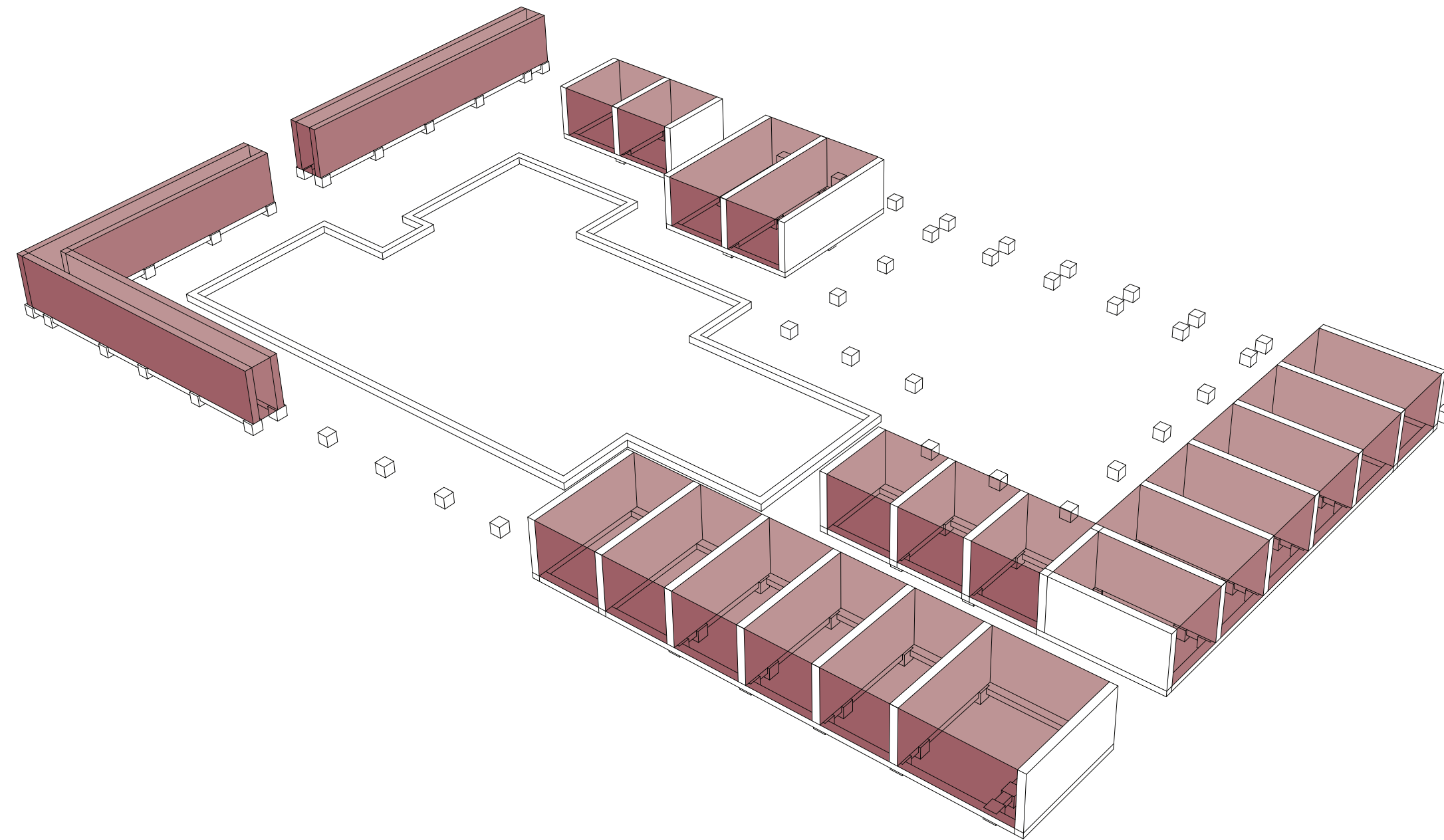
# Differences in foundation, fixed direction



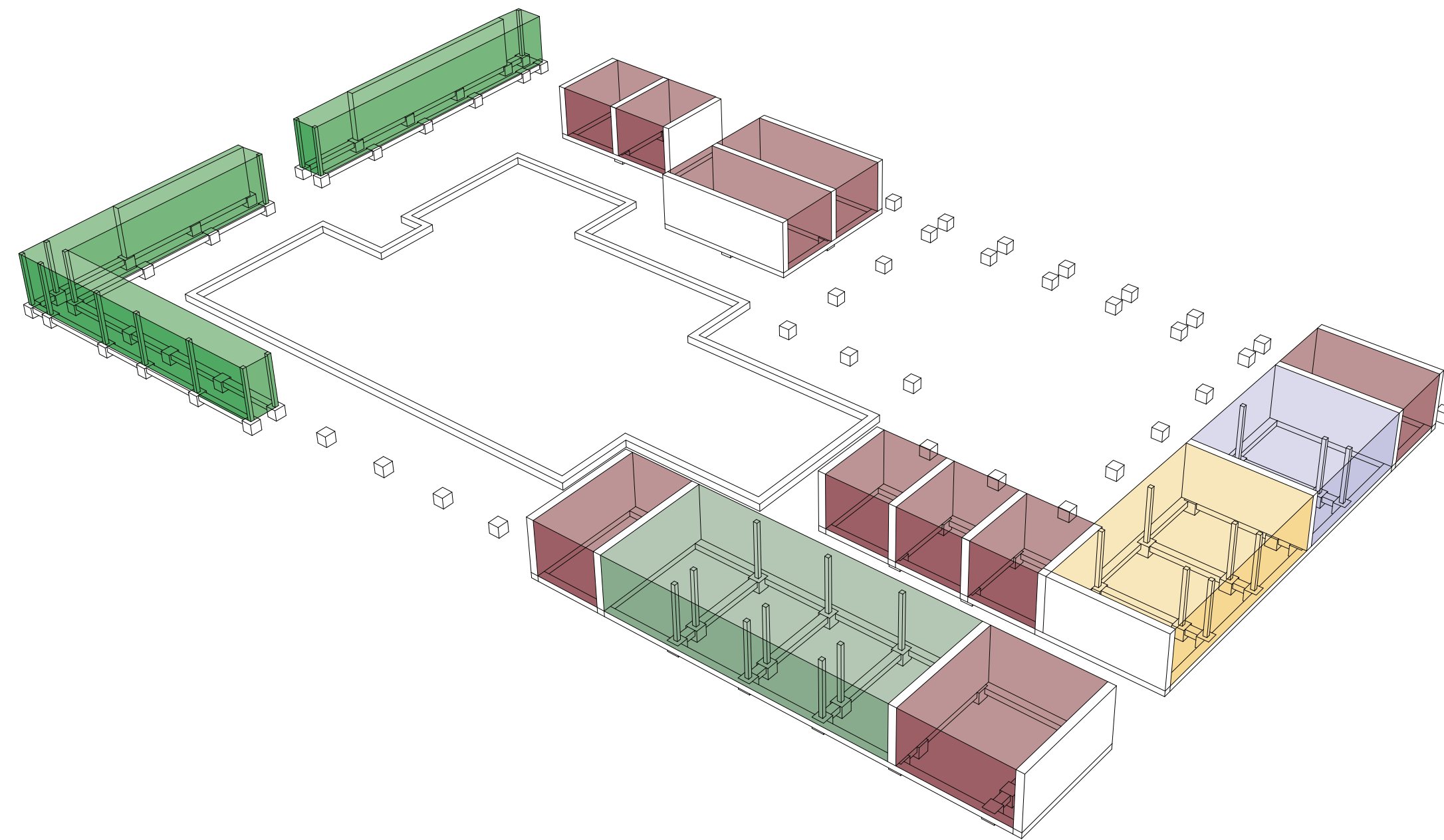
# Area framed by columns



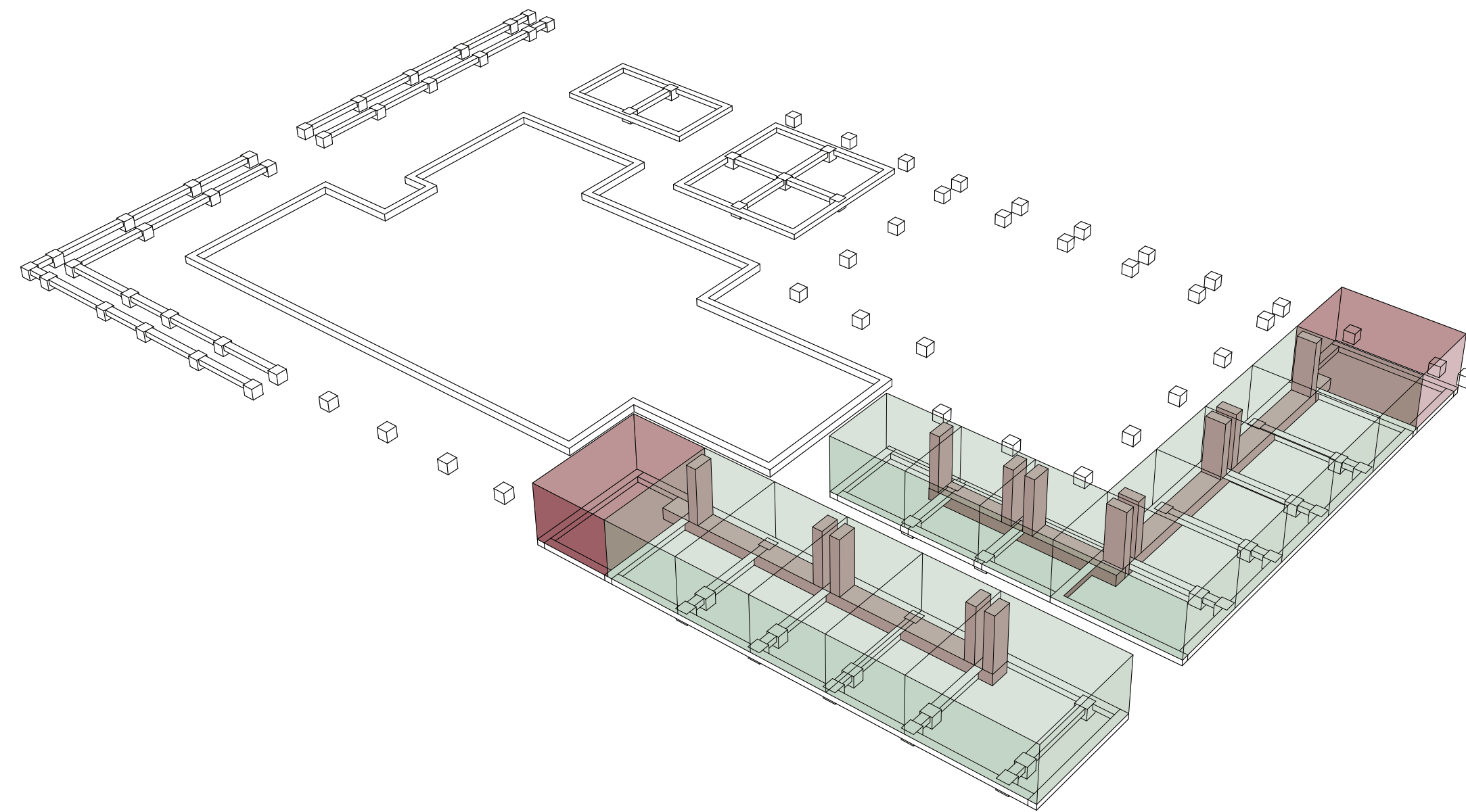
# Areas framed by walls



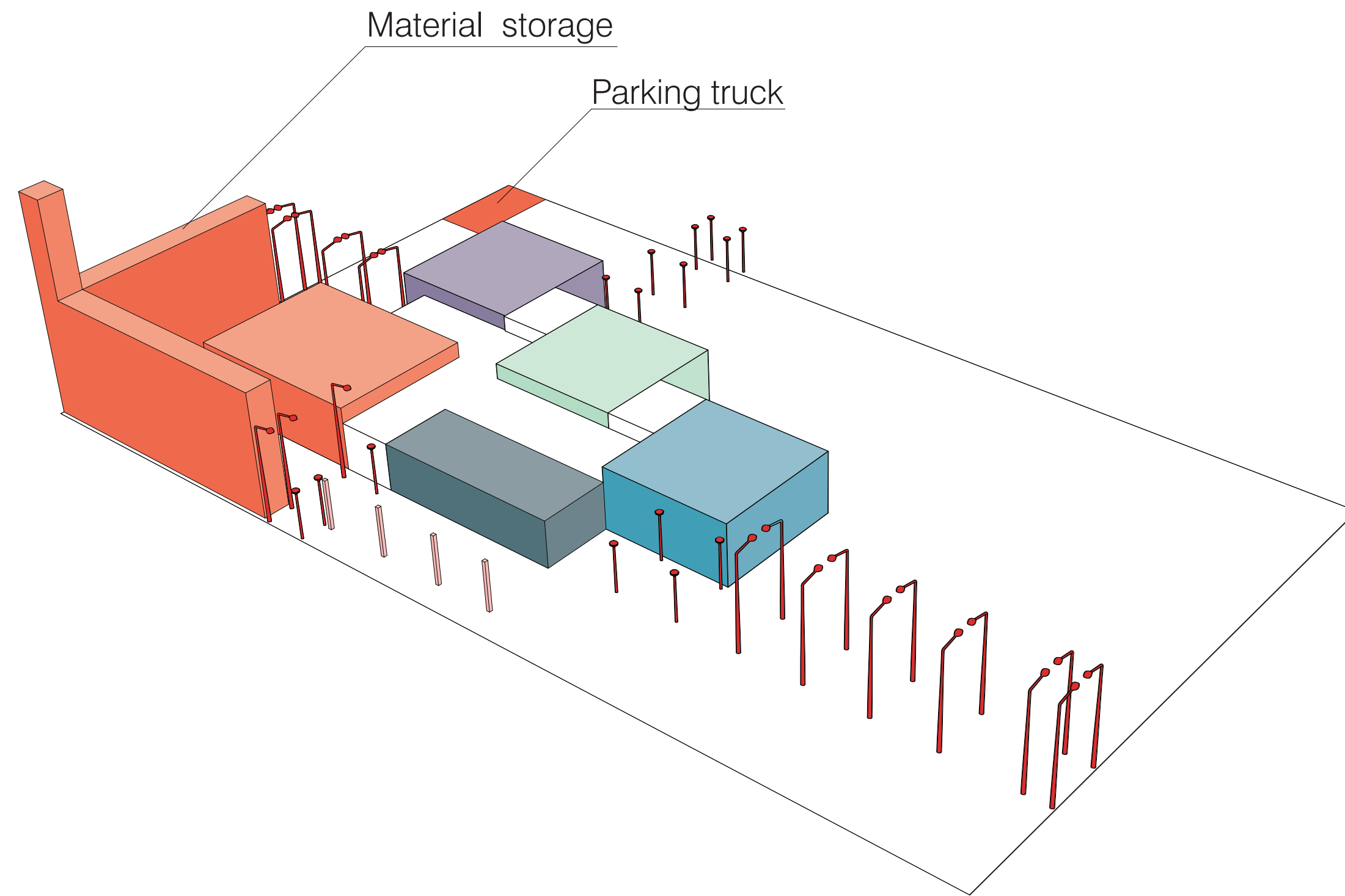
# Areas framed by walls and columns

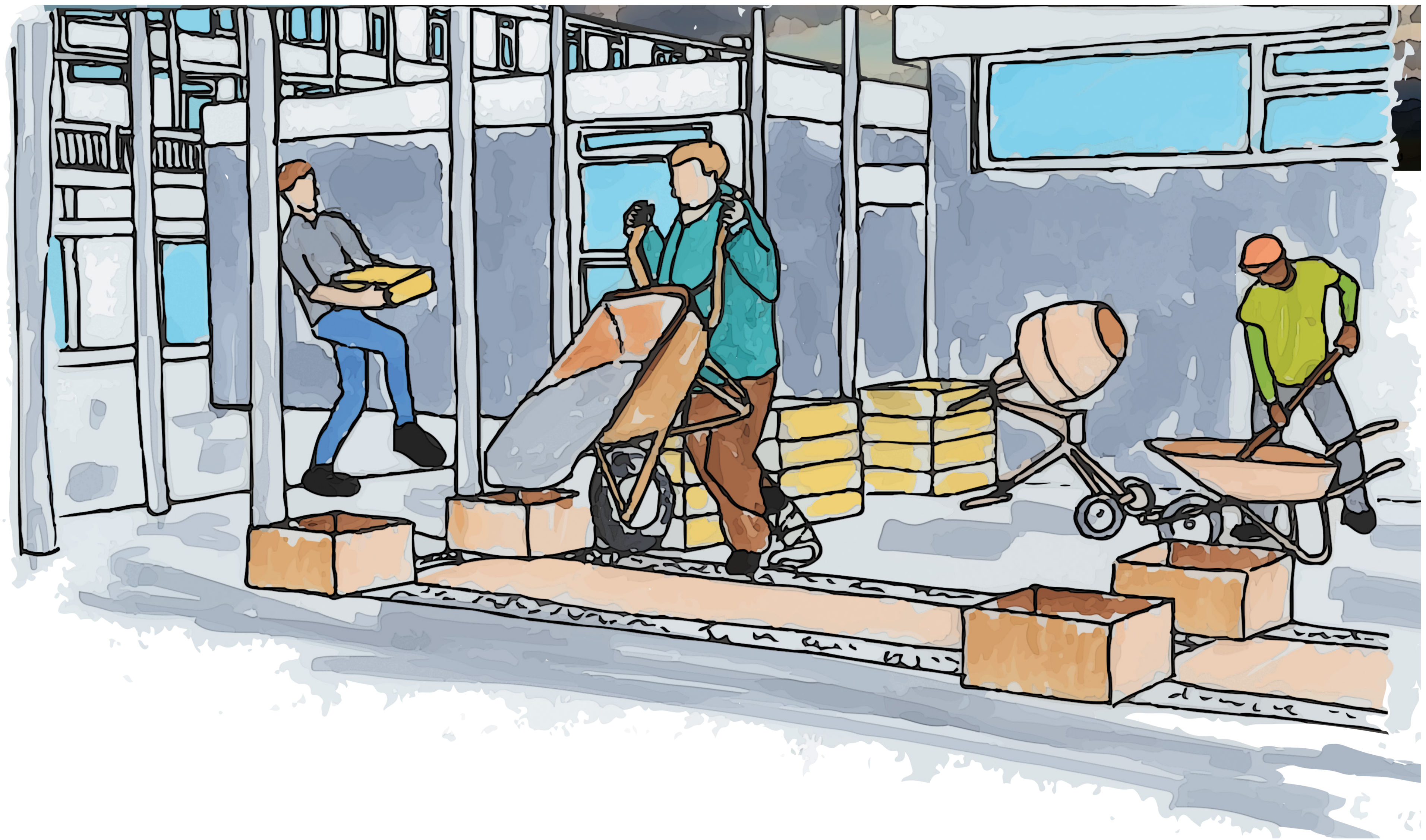


# Powerhouses always same structure



# Extend material storage and create parking for truck









# Colours

Warm



Consequent



Cold

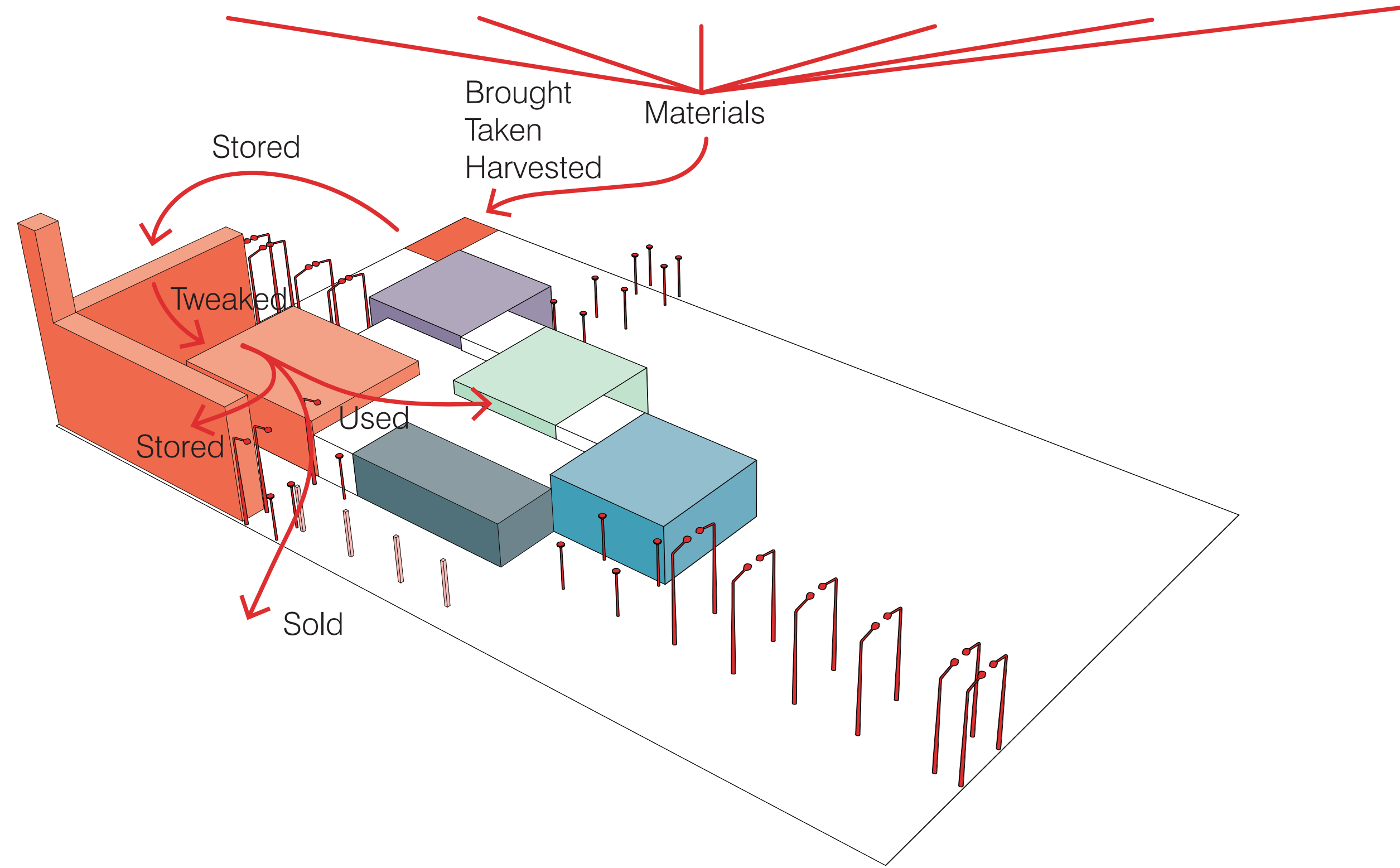


# Materials

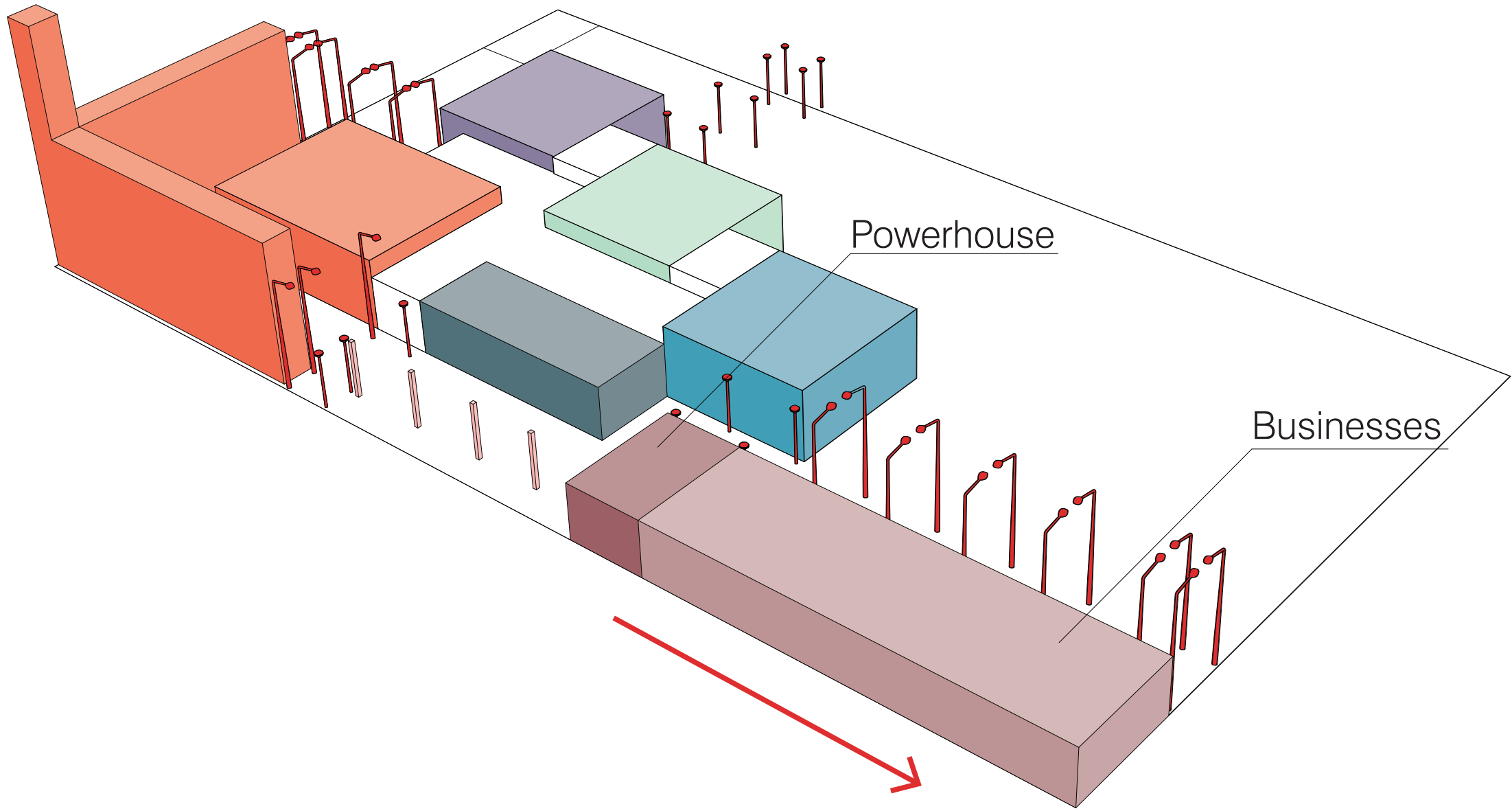


# Create flow of local materials from local actors

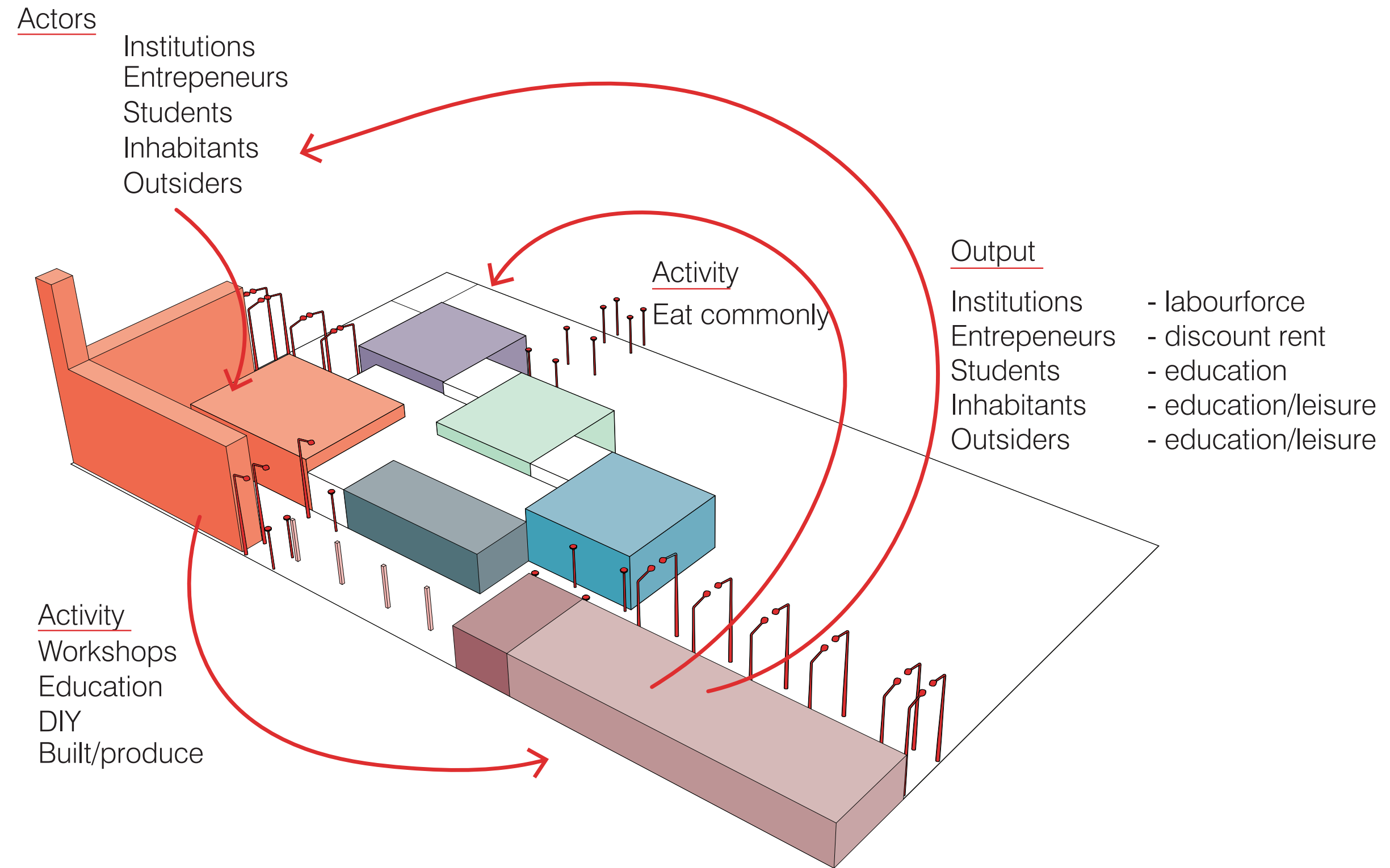
Actors	Lumberjacks Forestry Inhabitants	Inhabitants Workers Waste company Municipality	Inhabitants Workers Waste company Municipality	Growers Inhabitants Workers Waste company Municipality	Steel retailer Waste company Municipality	Inhabitants Waste company Municipality
Example materials	Any not rotten tree	Flooring Pallets Door/window frames Boards Beams Furniture	Bricks Rubble Paving	Polycarbonate Plexiglass Double glazing Single glazing	Beams	Vinyl Bikes Tires Cans
Material	Trees	Whole/laminated wood	Stones	Transparent	Steel	Theme material

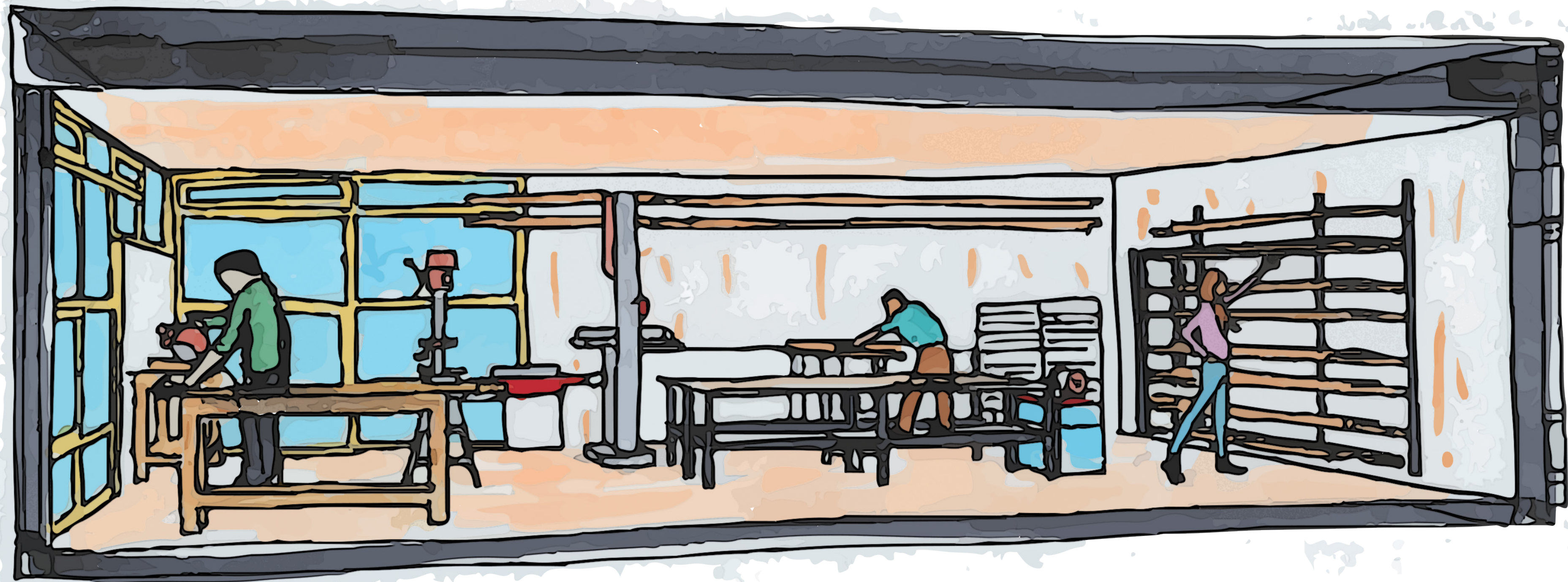


# Create powerhouse and businesses on west side



# Different actors, different output (varied scales)

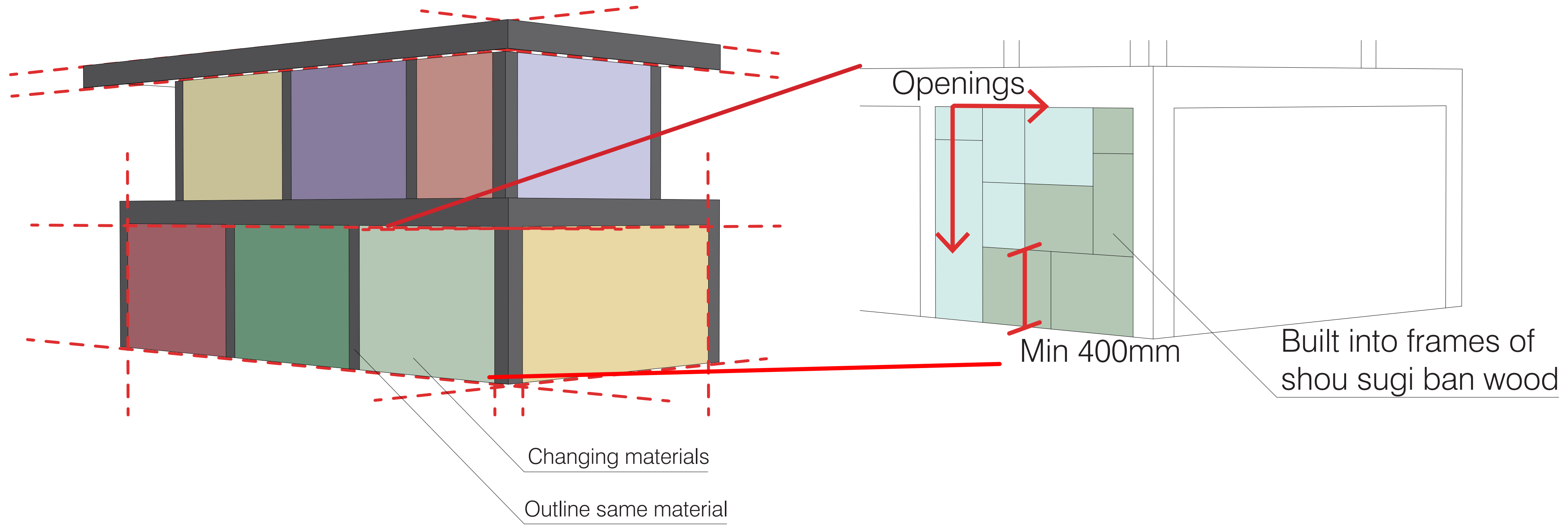




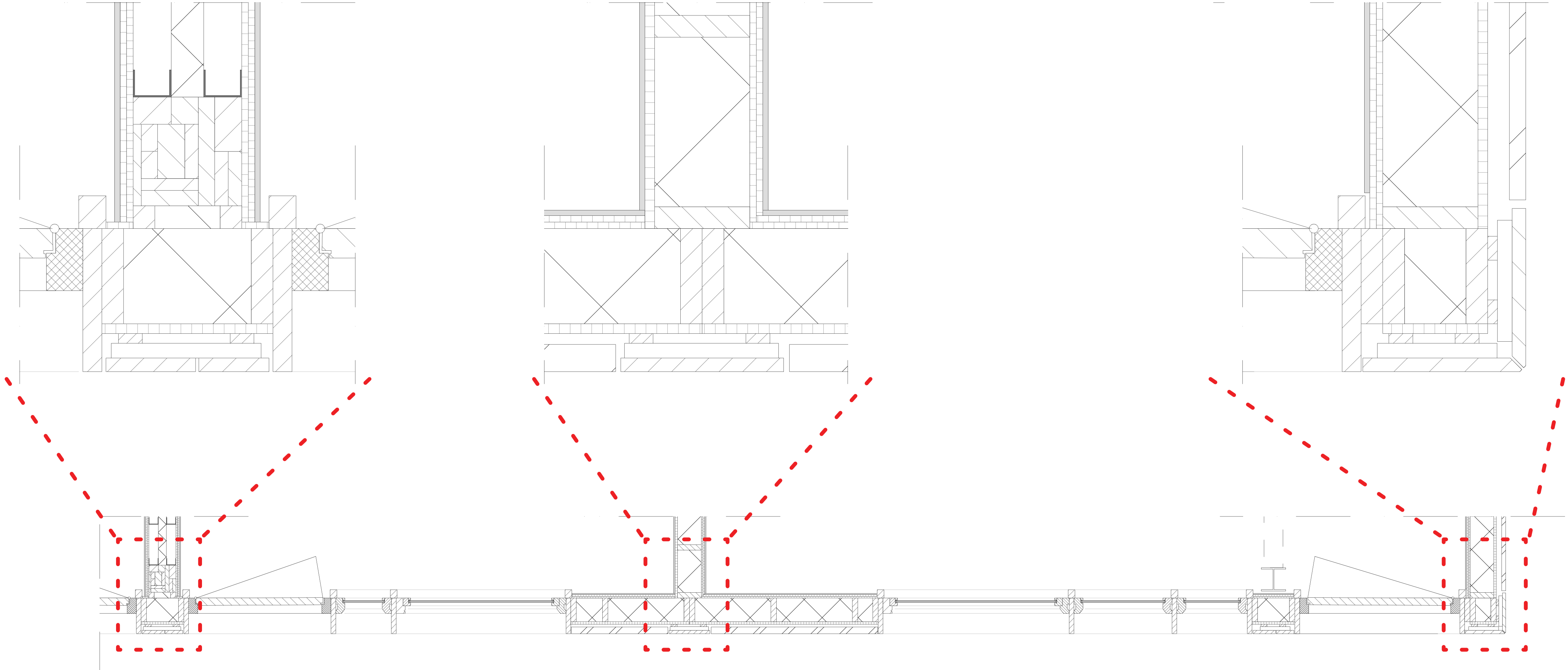




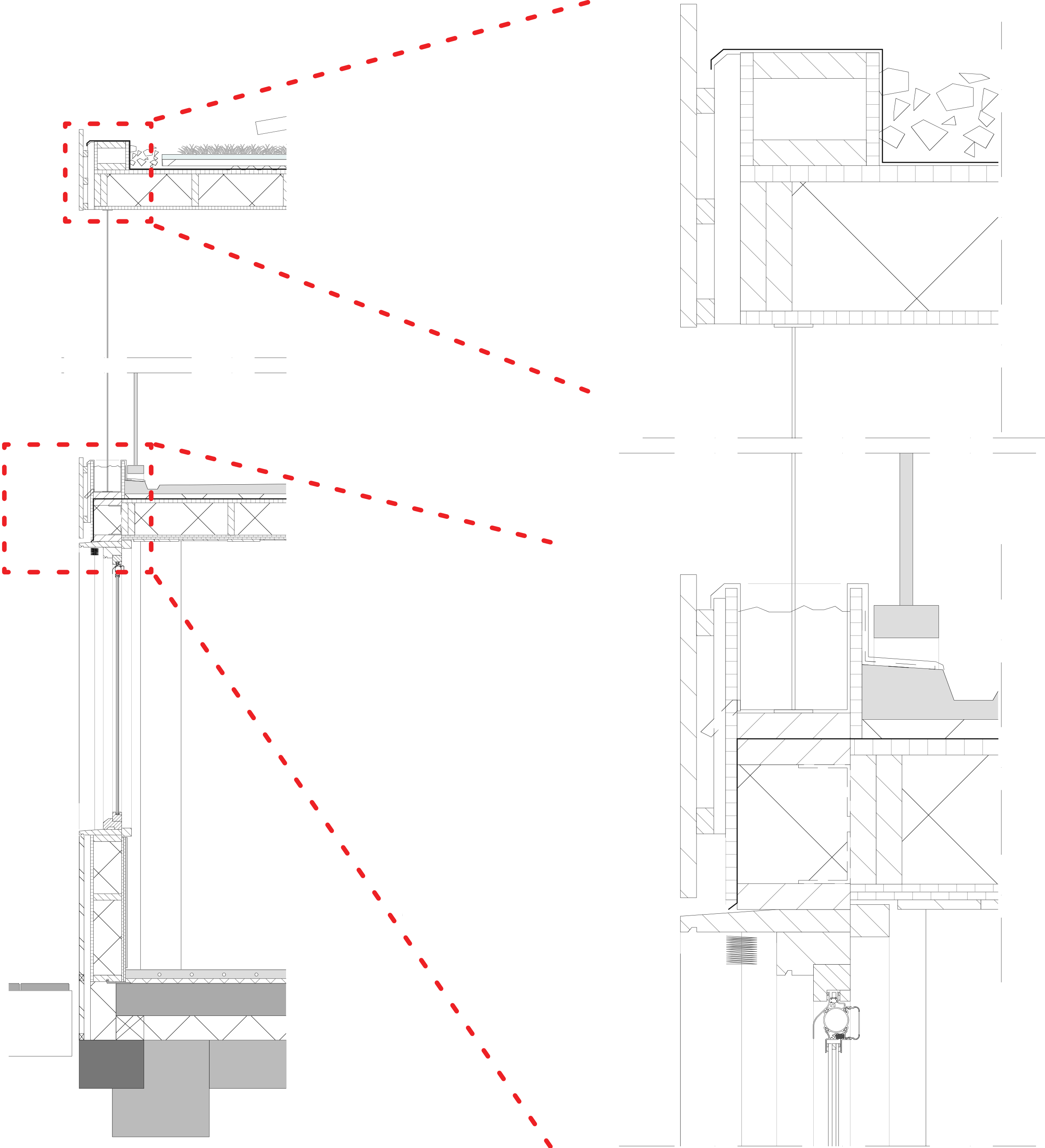
# Outline/frame by shou sugi ban



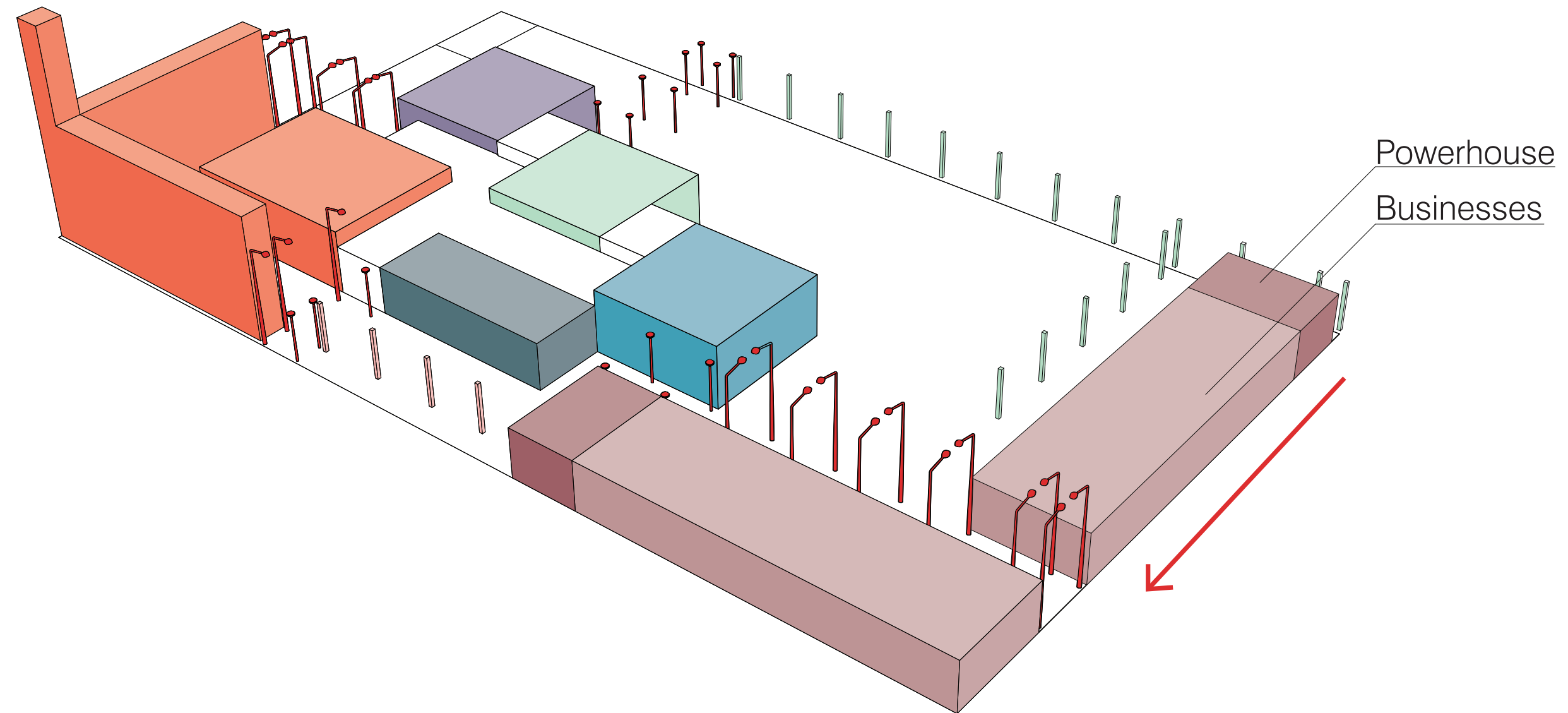
# Horizontal detail



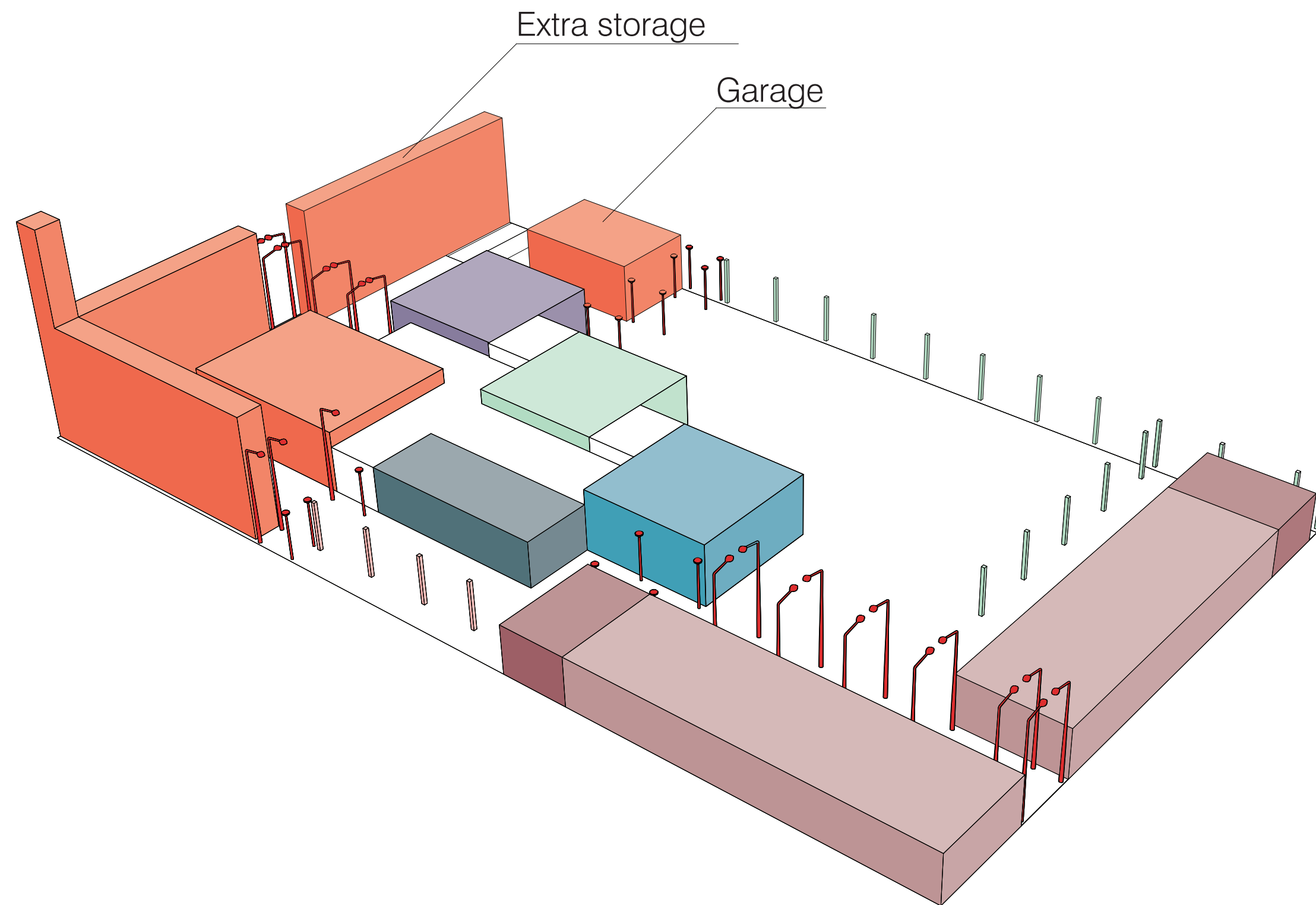
Vertical detail



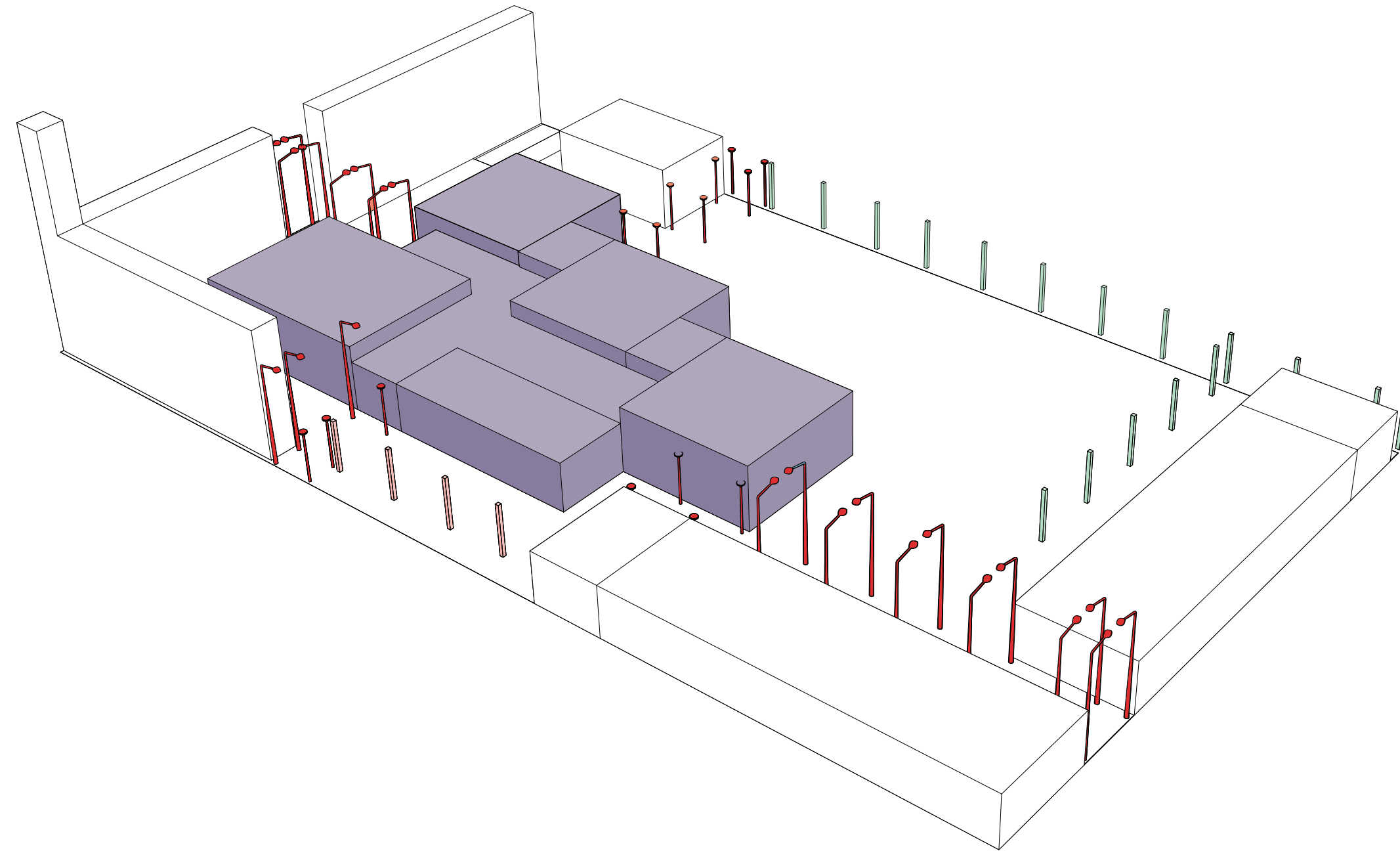
Create powerhouse and businesses on south side



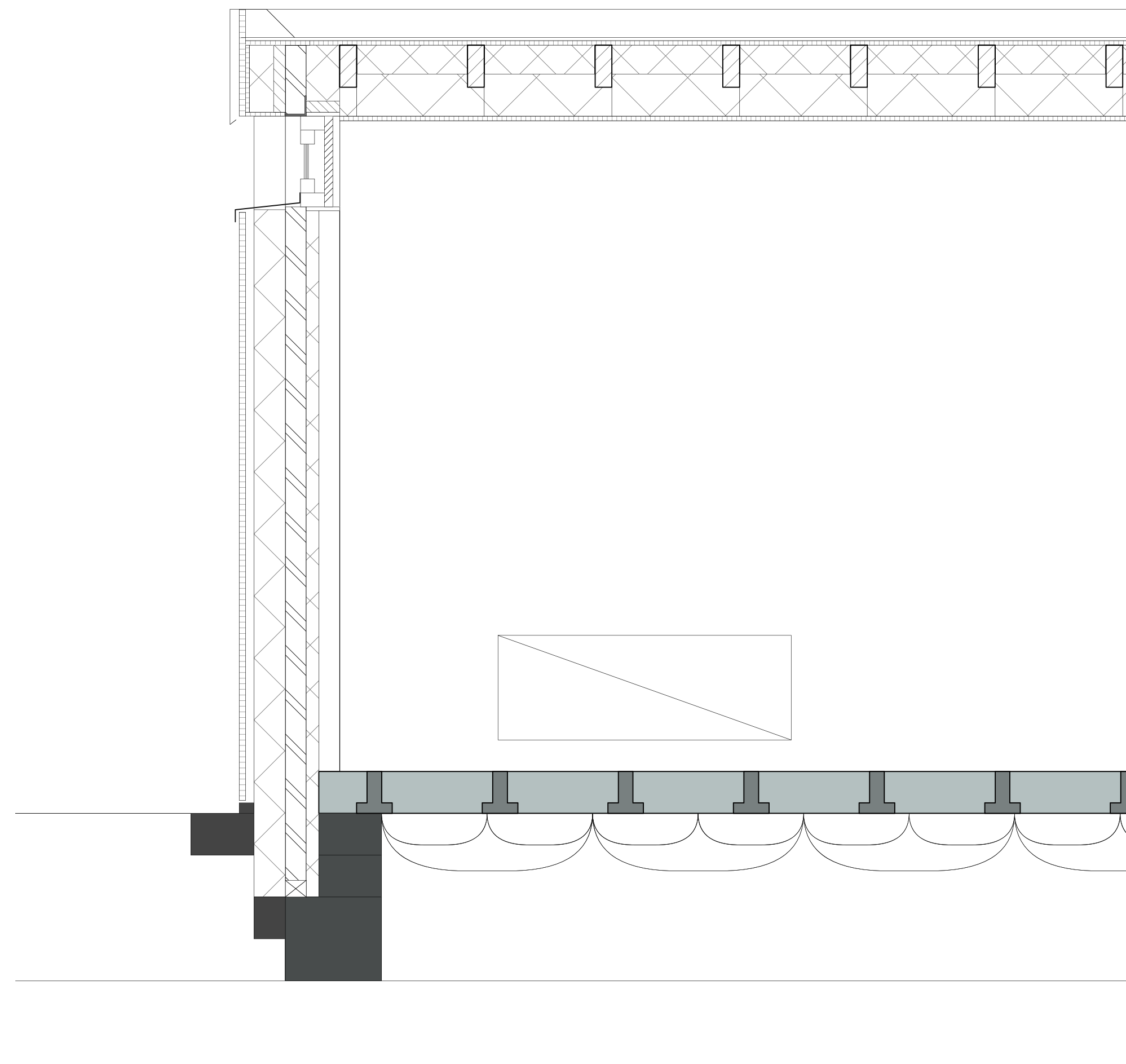
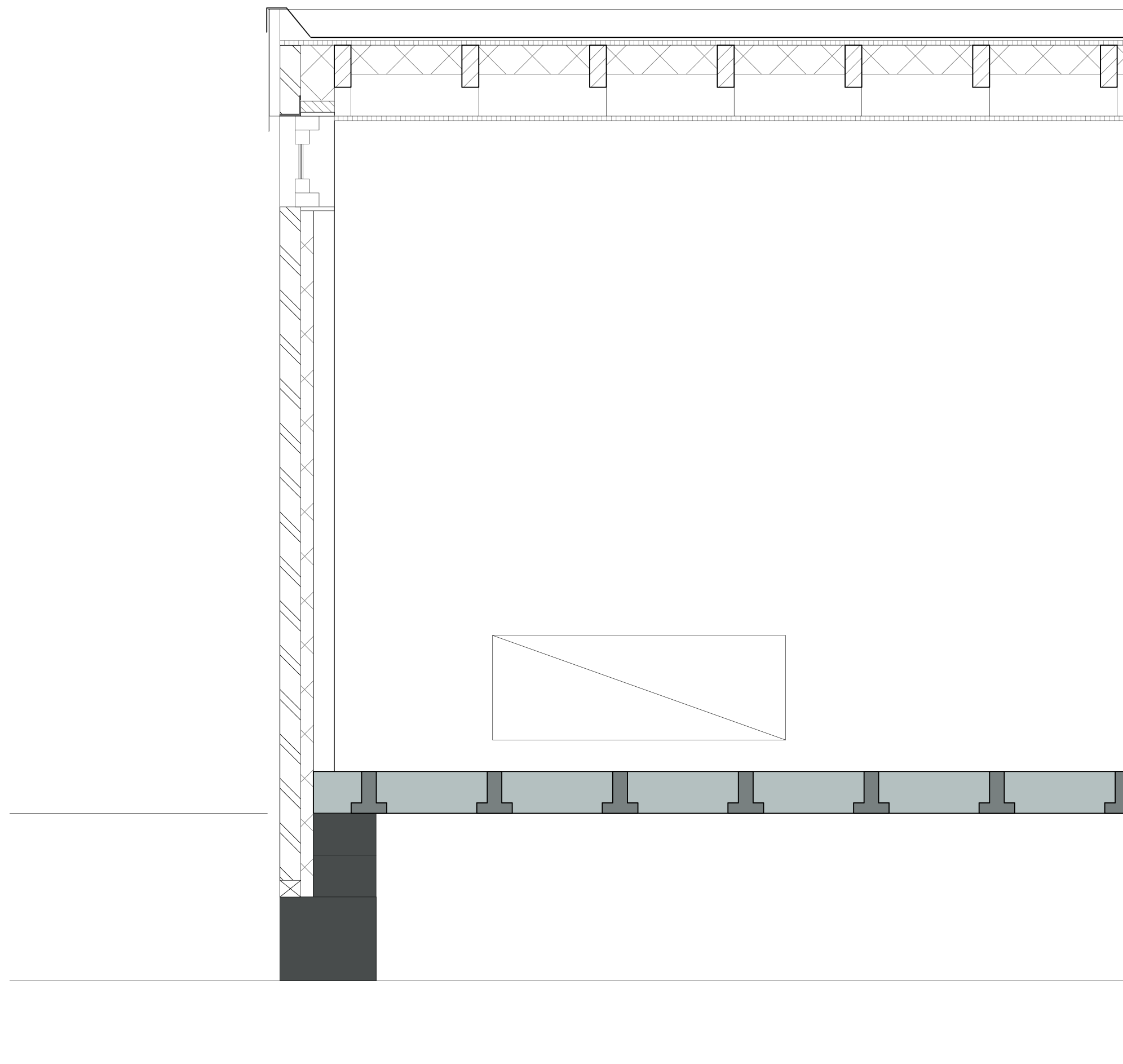
# Extend material storage



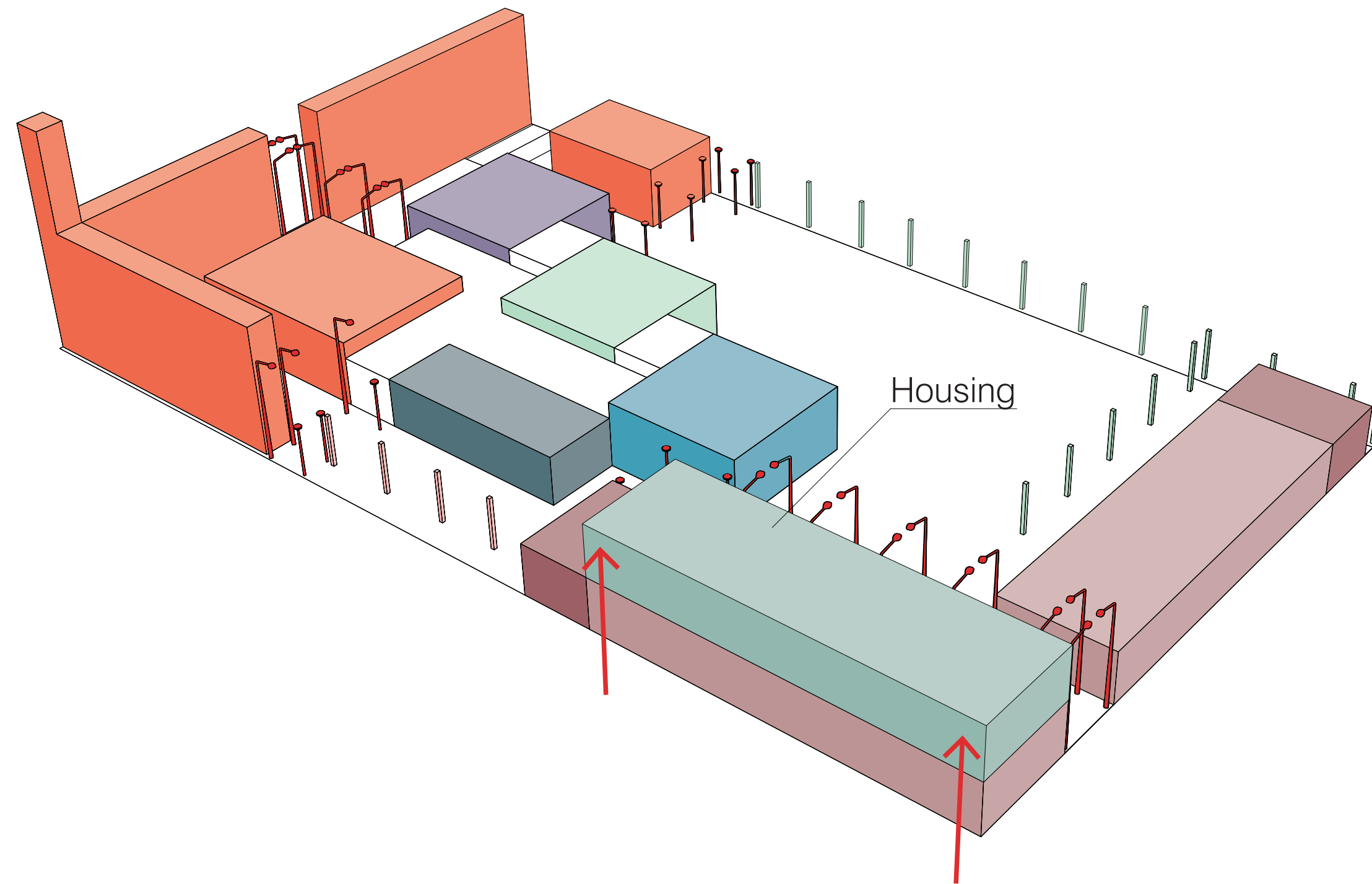
# School as a whole recognizable



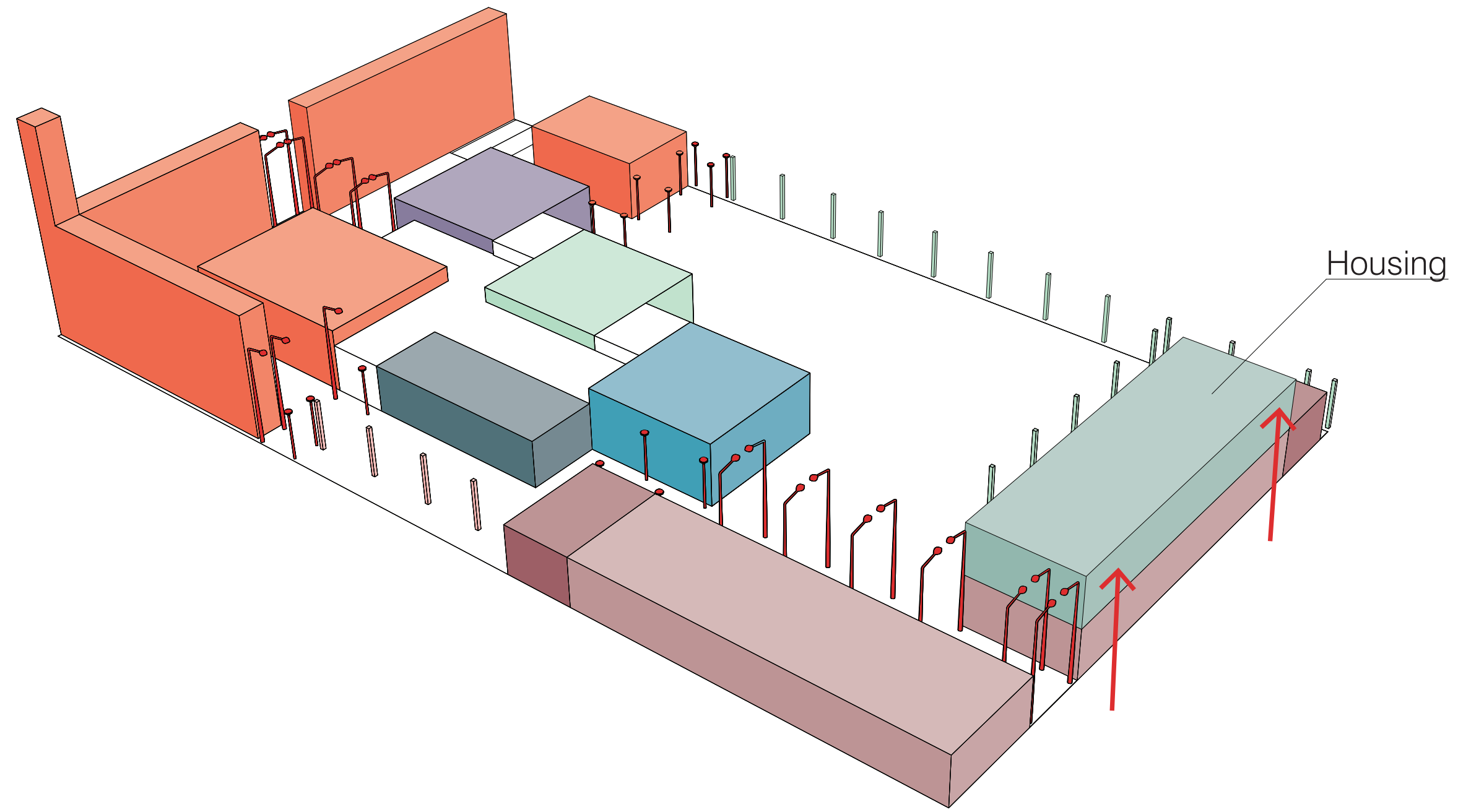




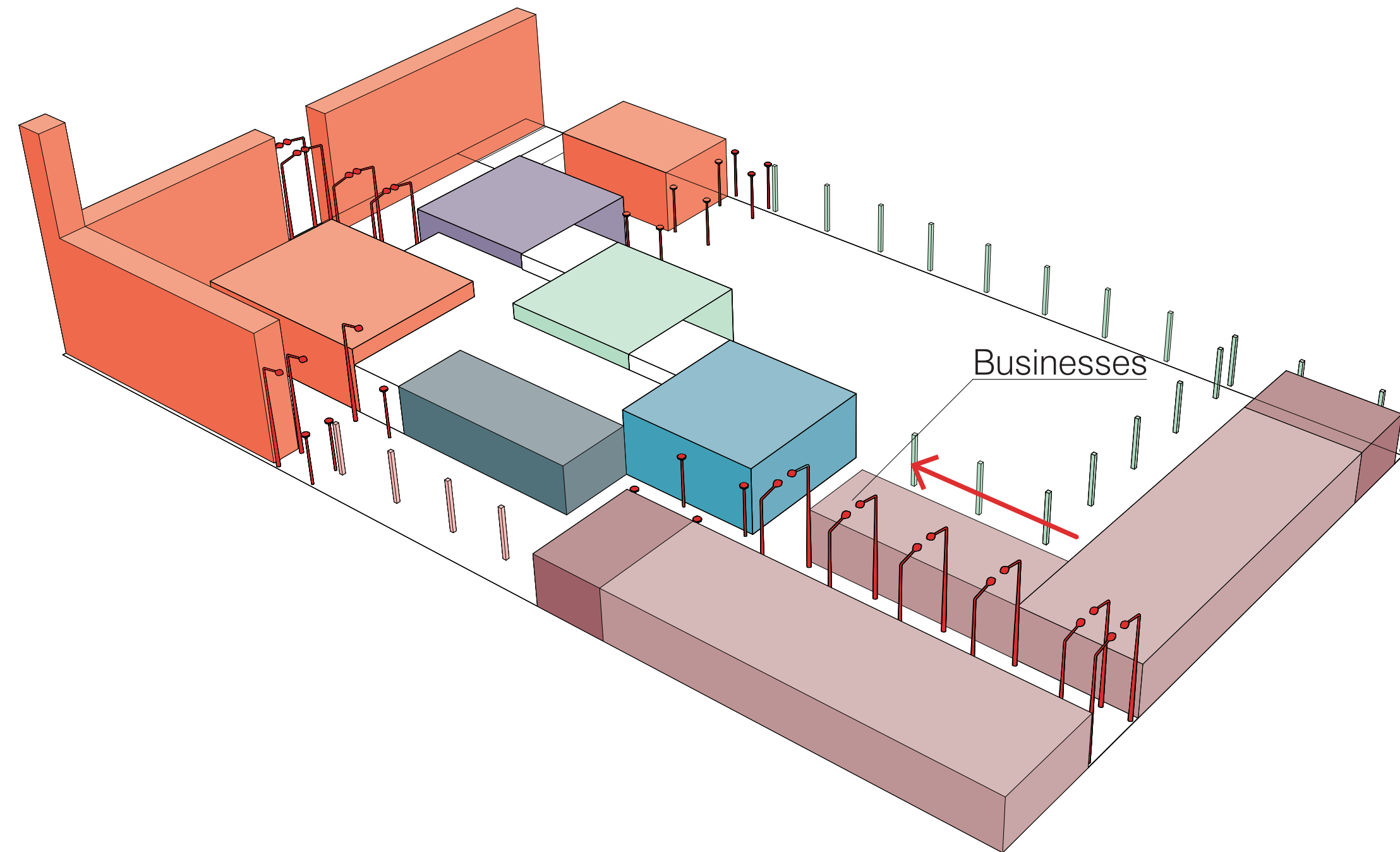
# Opt 1. housing westside



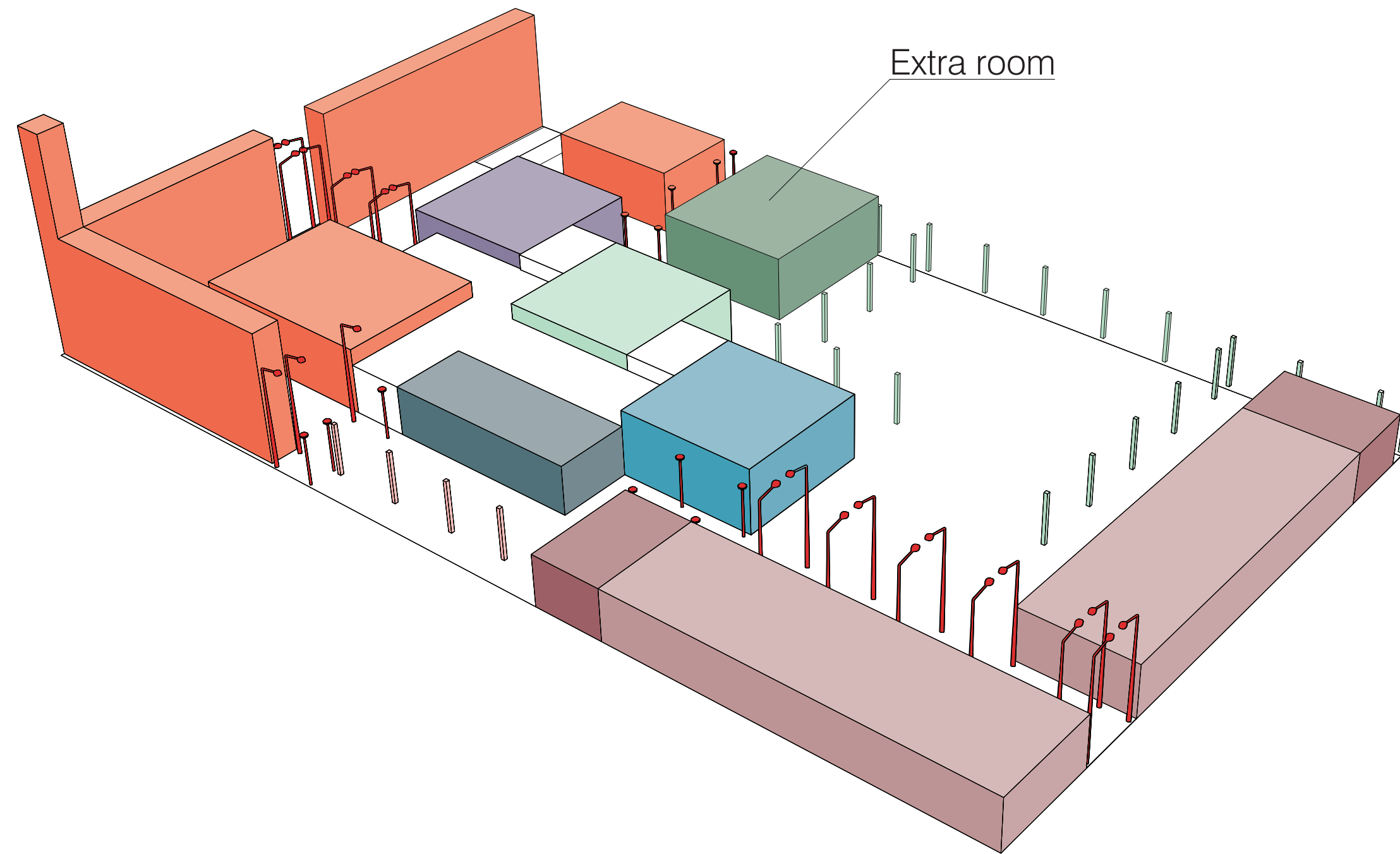
# Opt 2. housing southside



# Opt 3. extra businesses

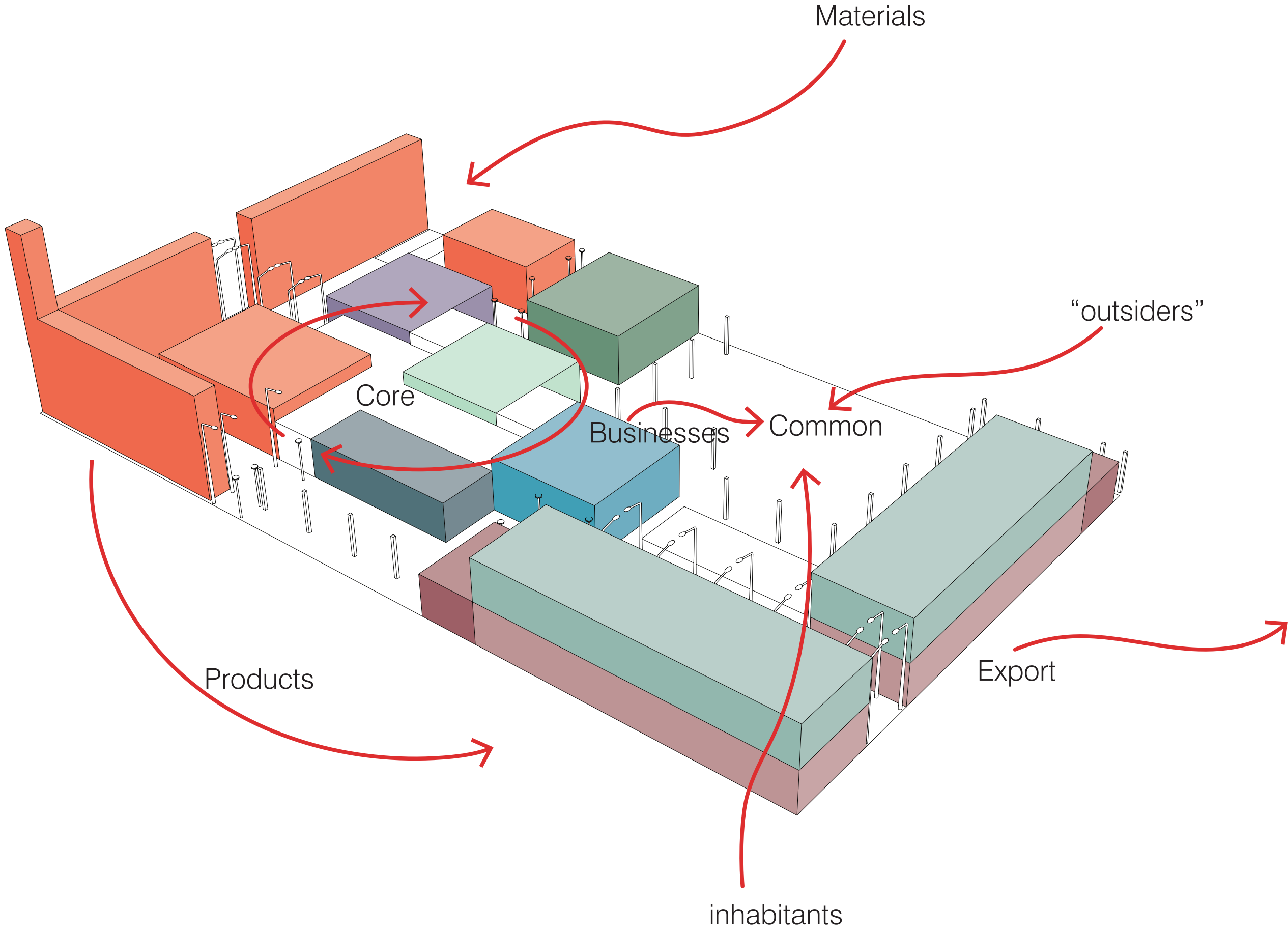


# Opt 4. extra room



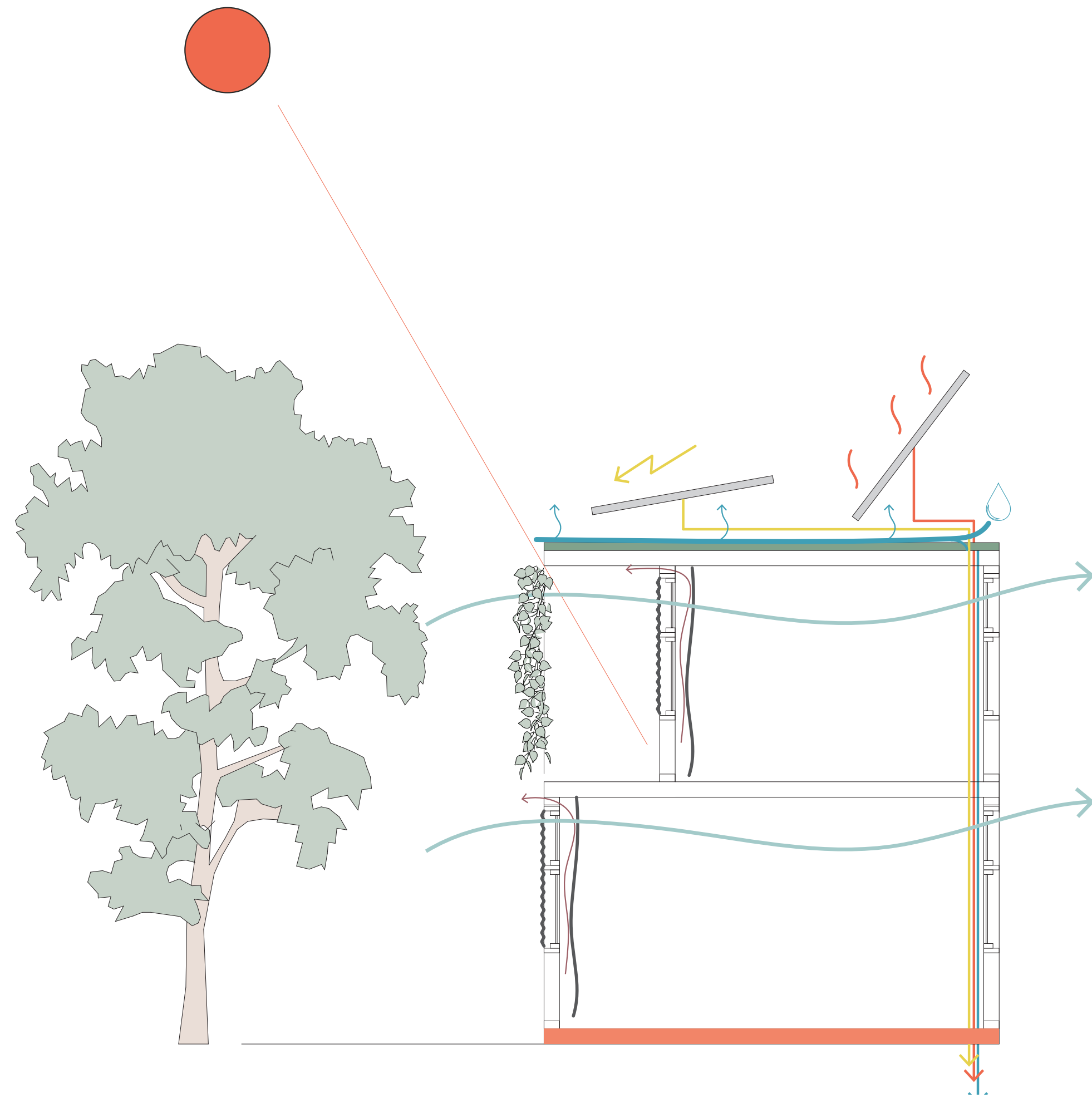


# Usage different functions

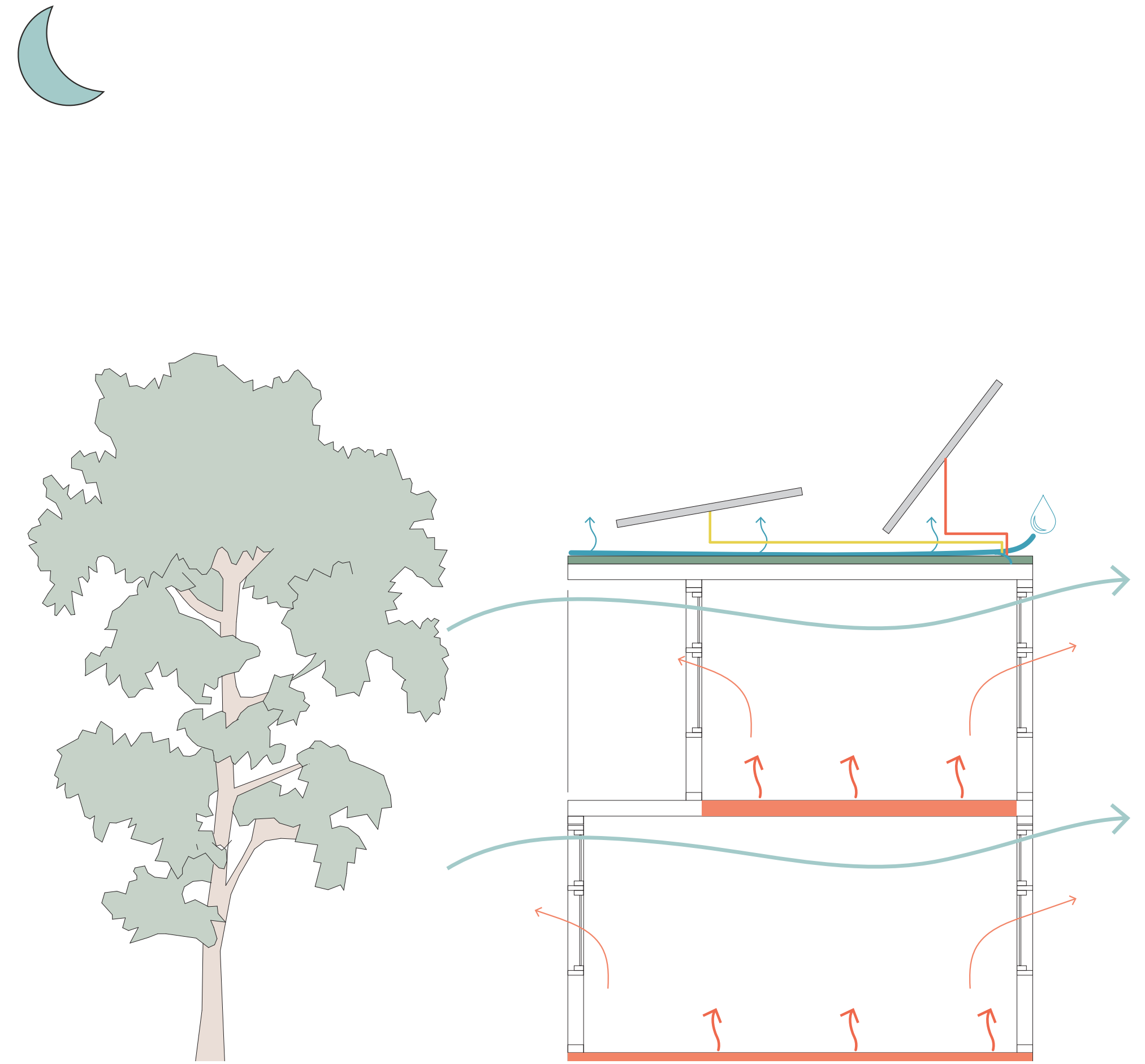


CLIMATE

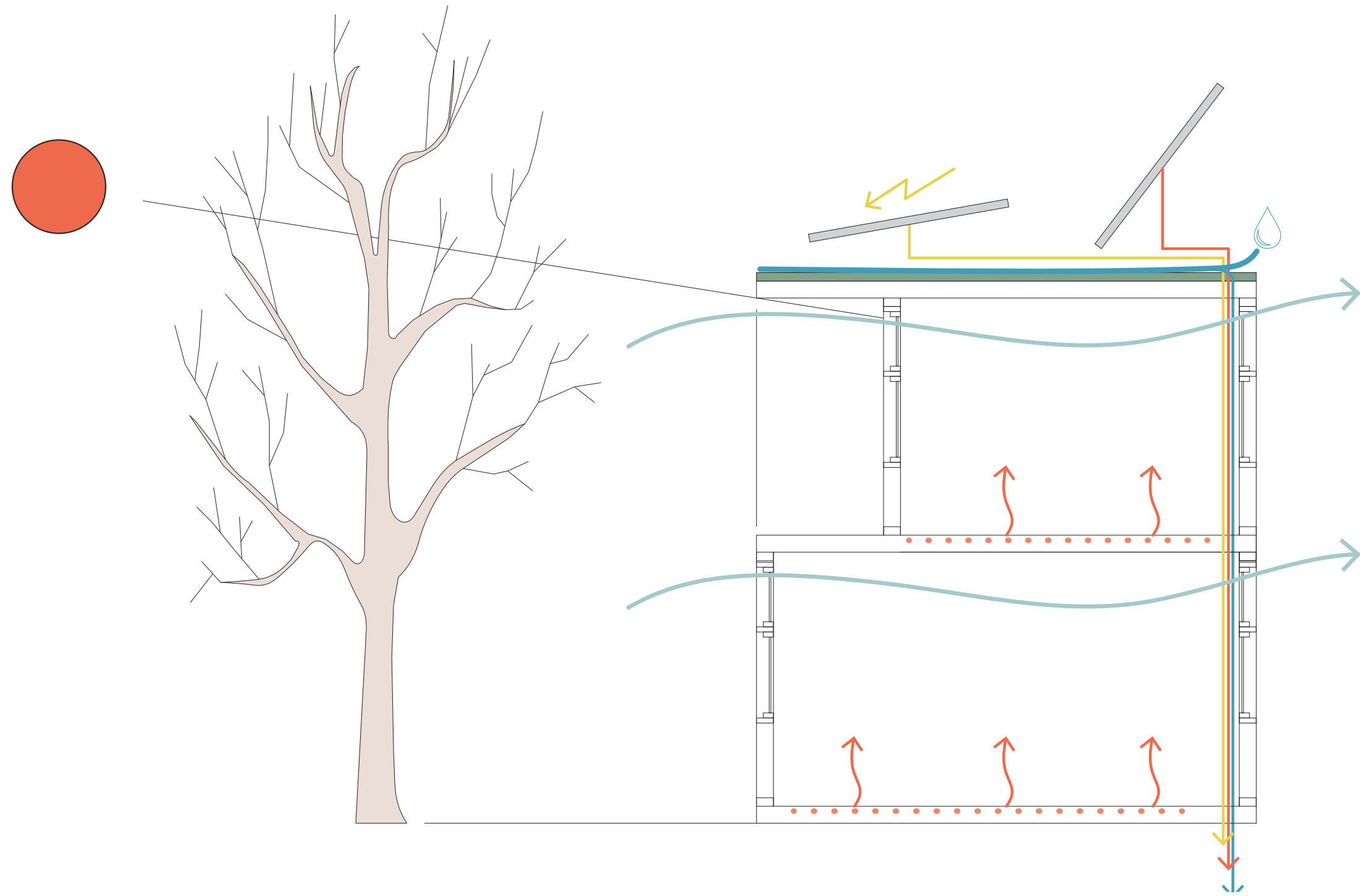
Summer day



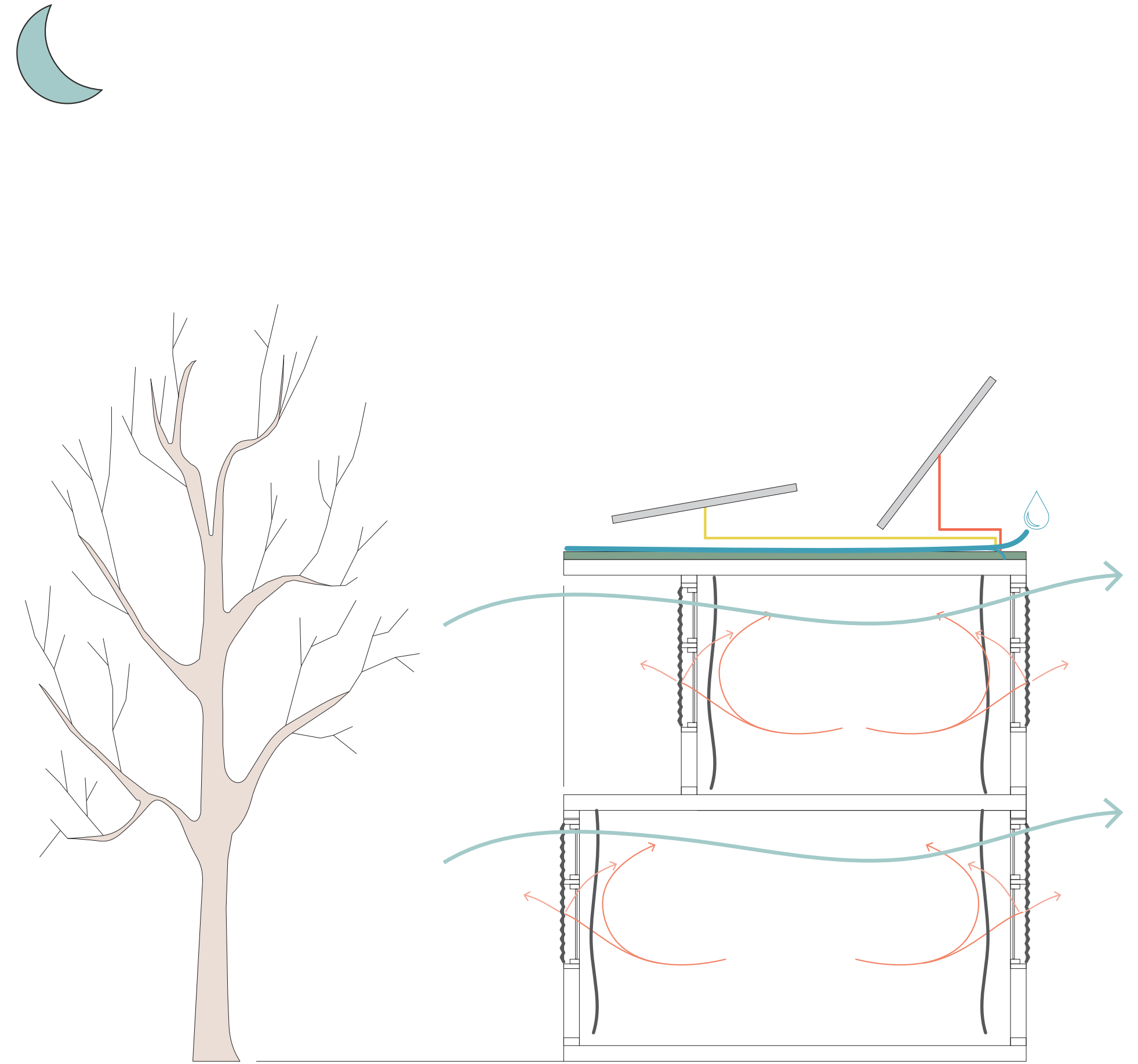
Summer night



Winter day

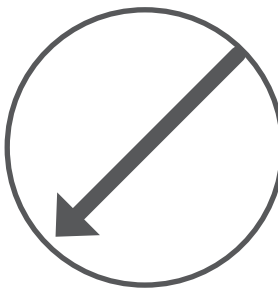


Winter night

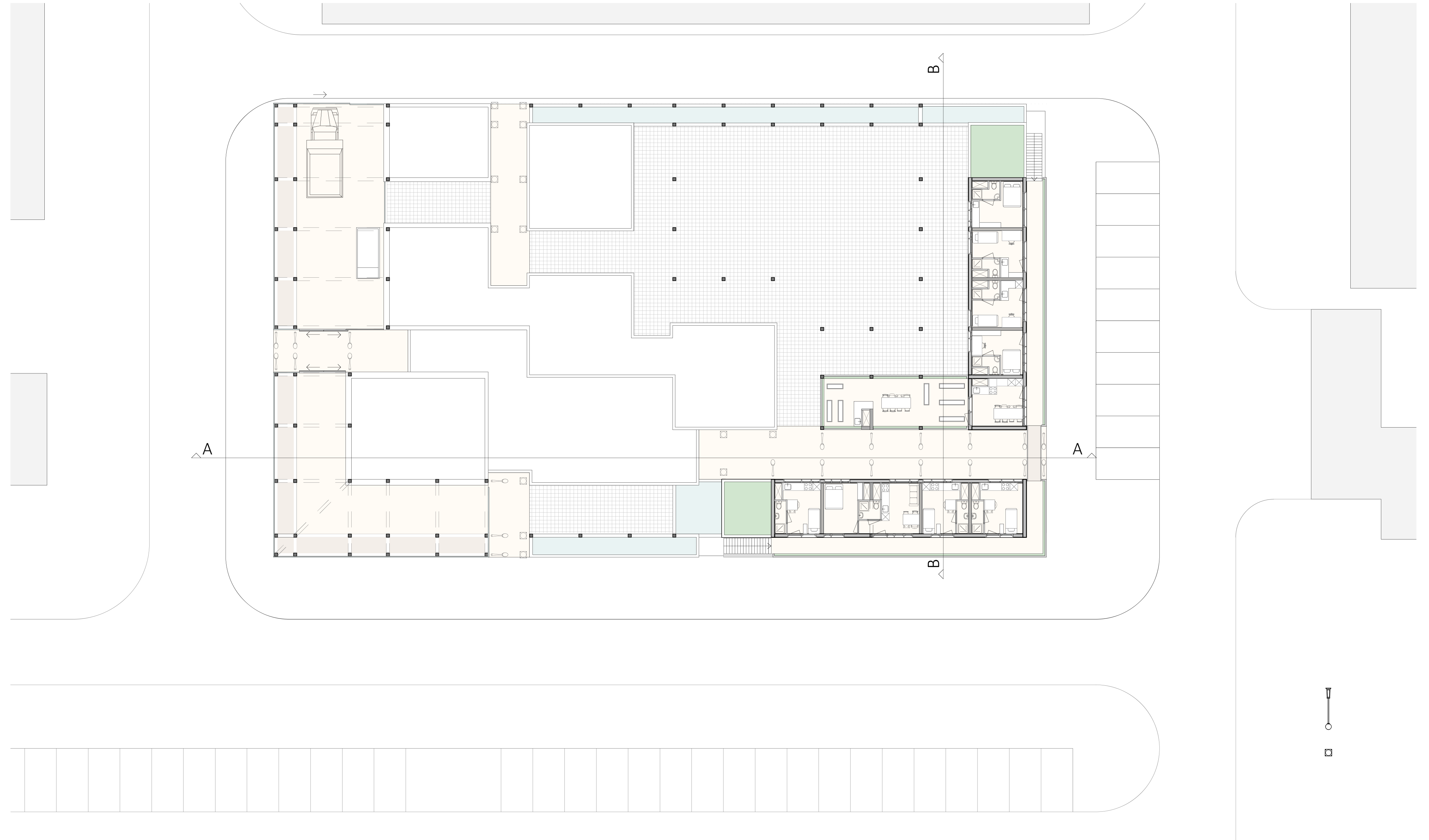


Concrete design

# Ground floor



# 1st floor



# Connecting surrounding



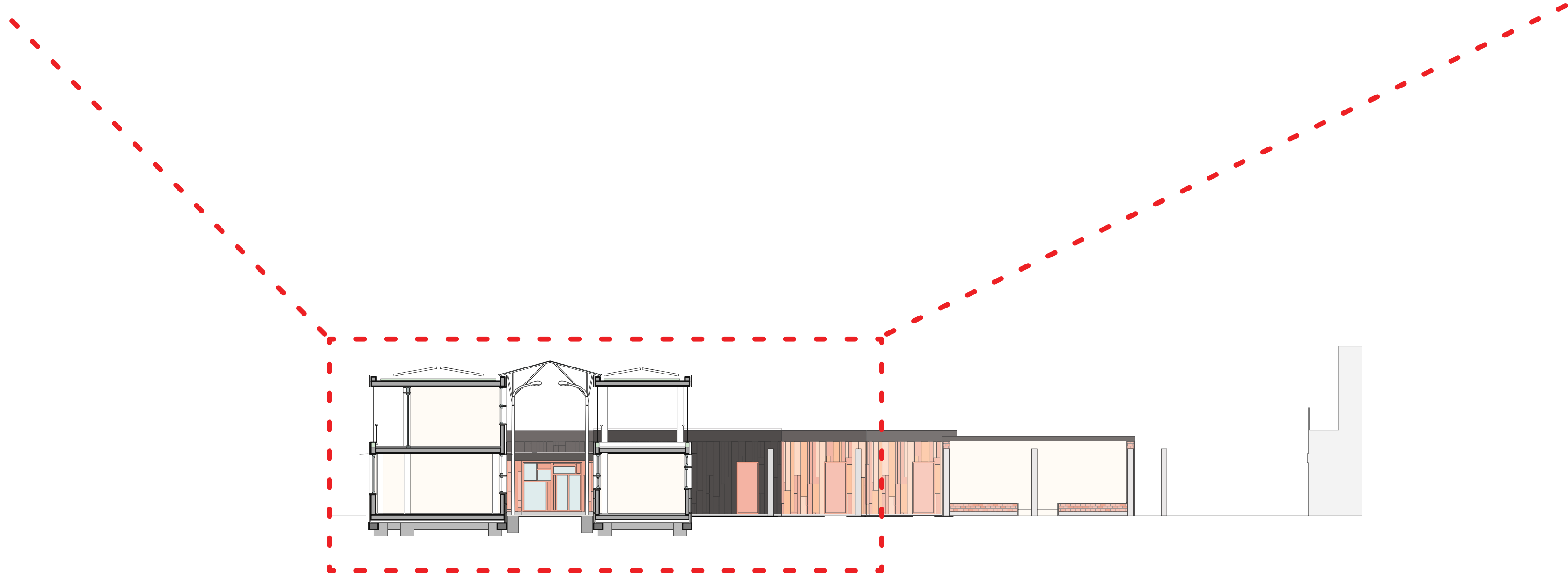
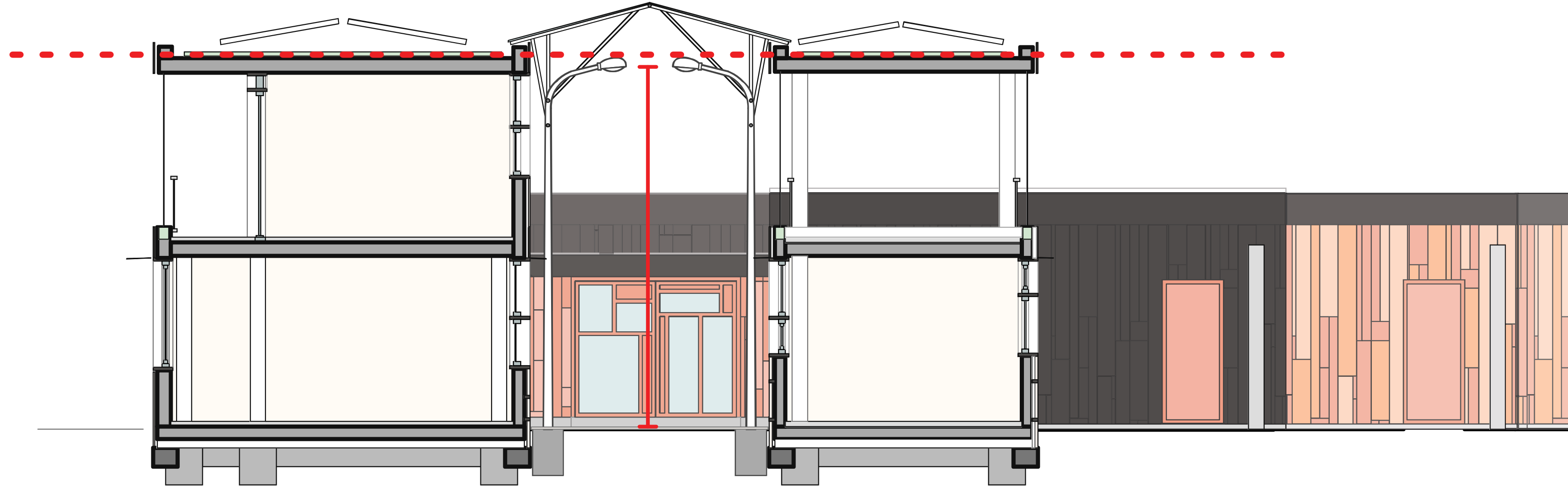
# Passages



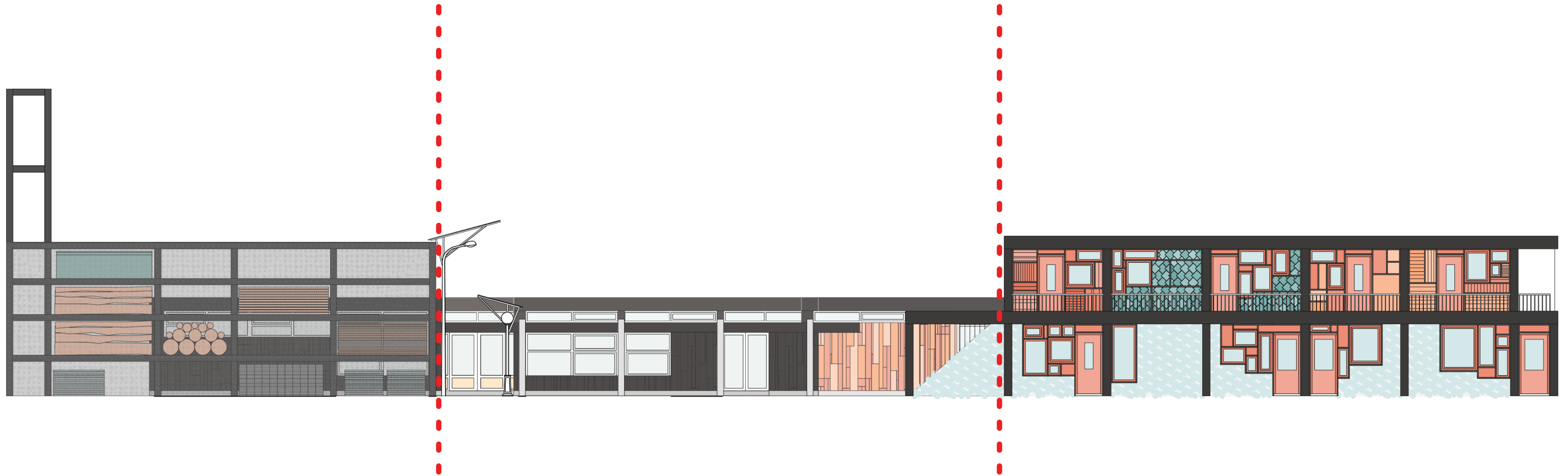
# Open spaces



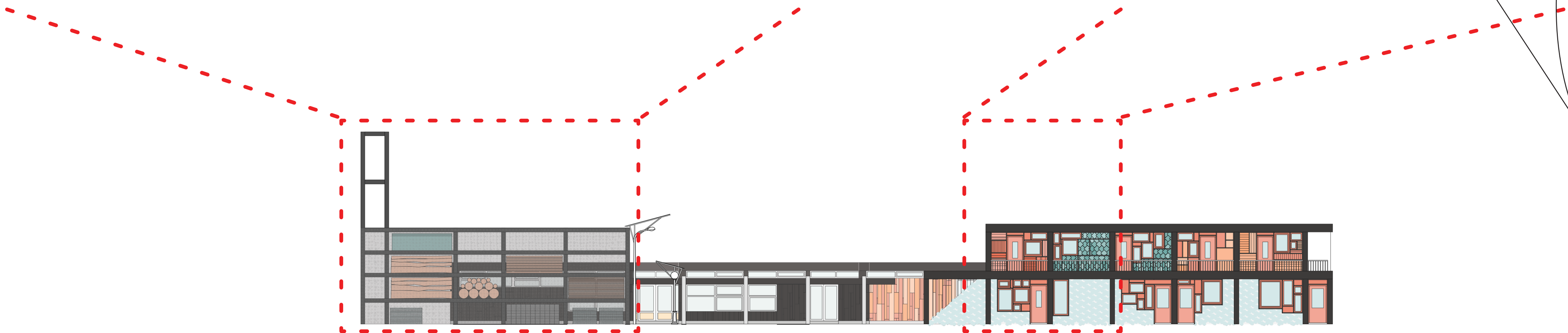
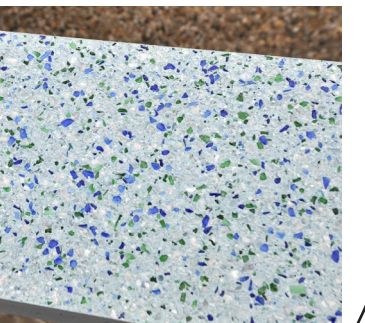
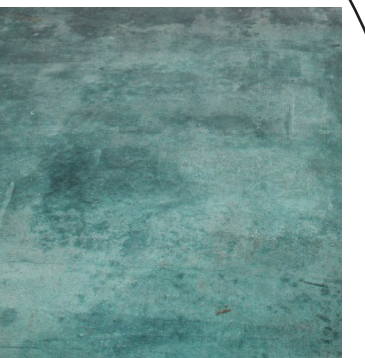
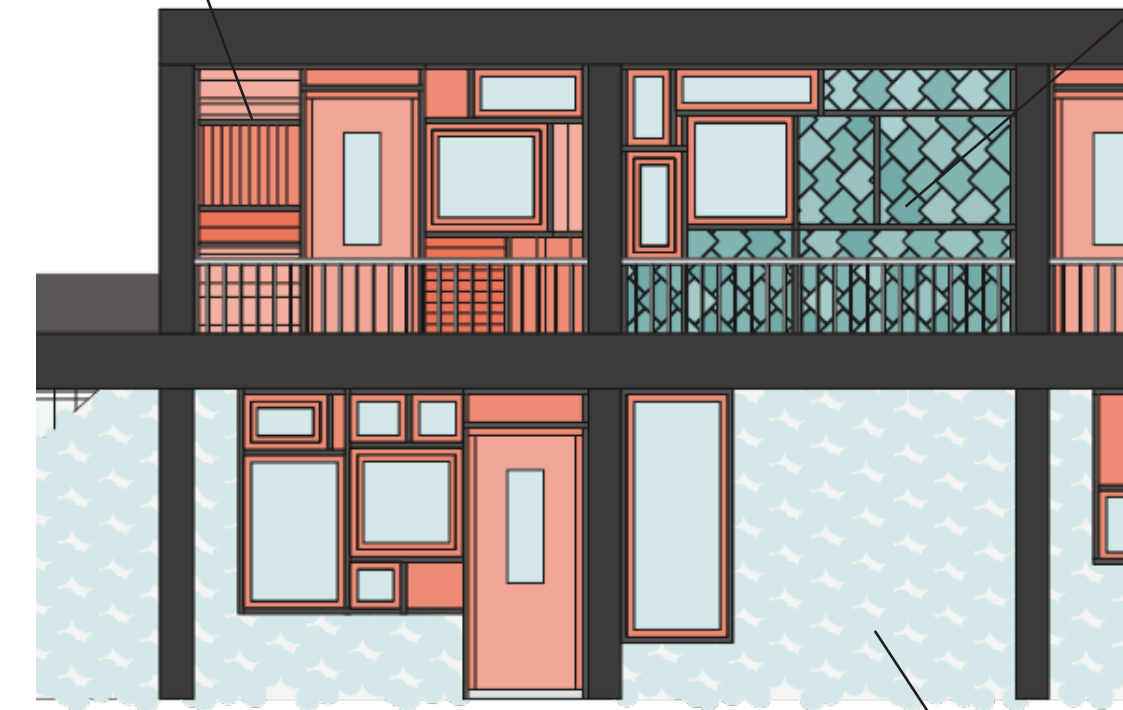
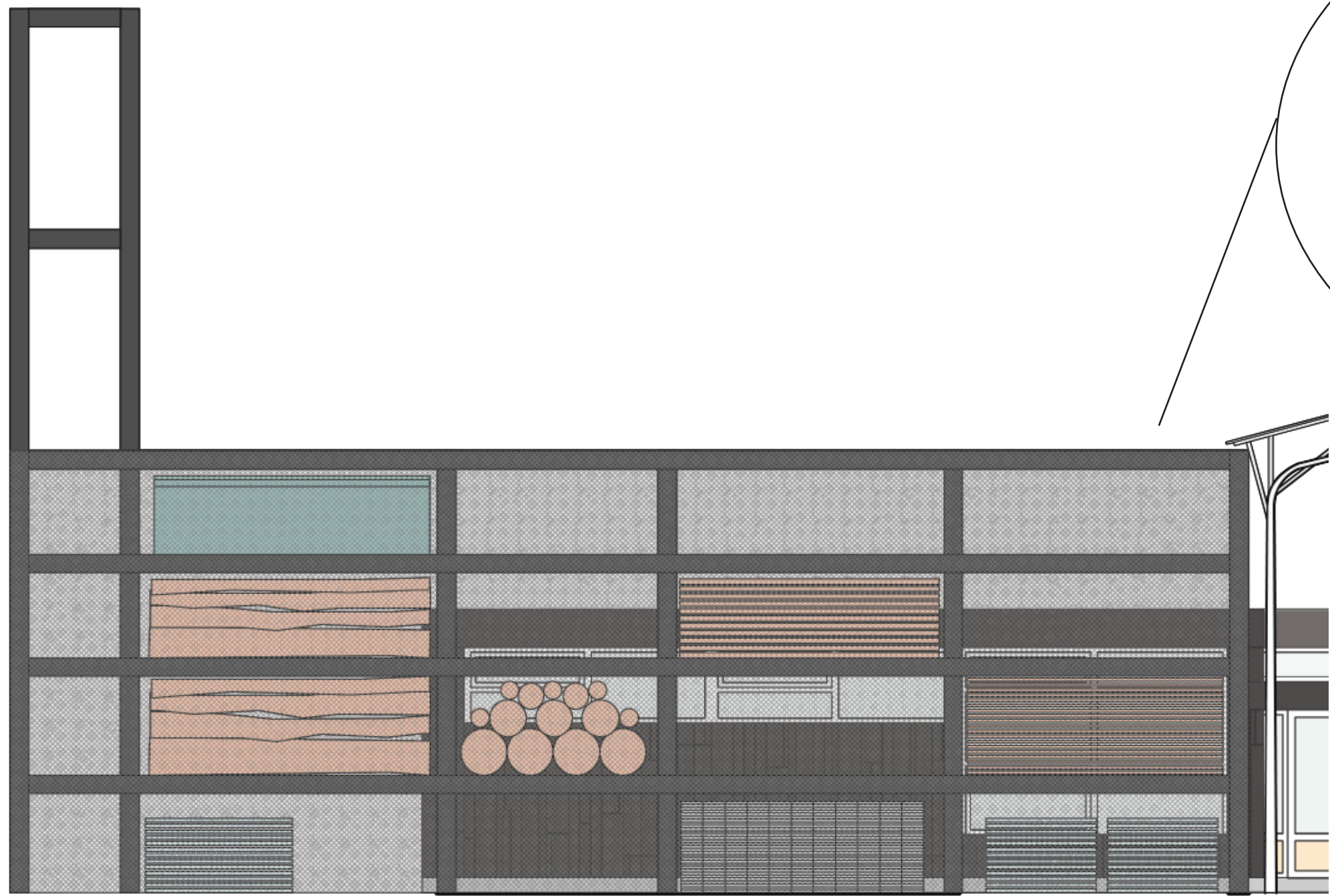
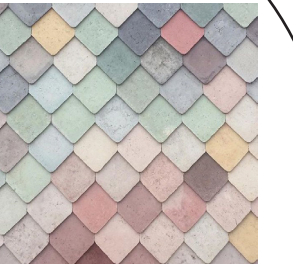
# Lanterns



# Different parts



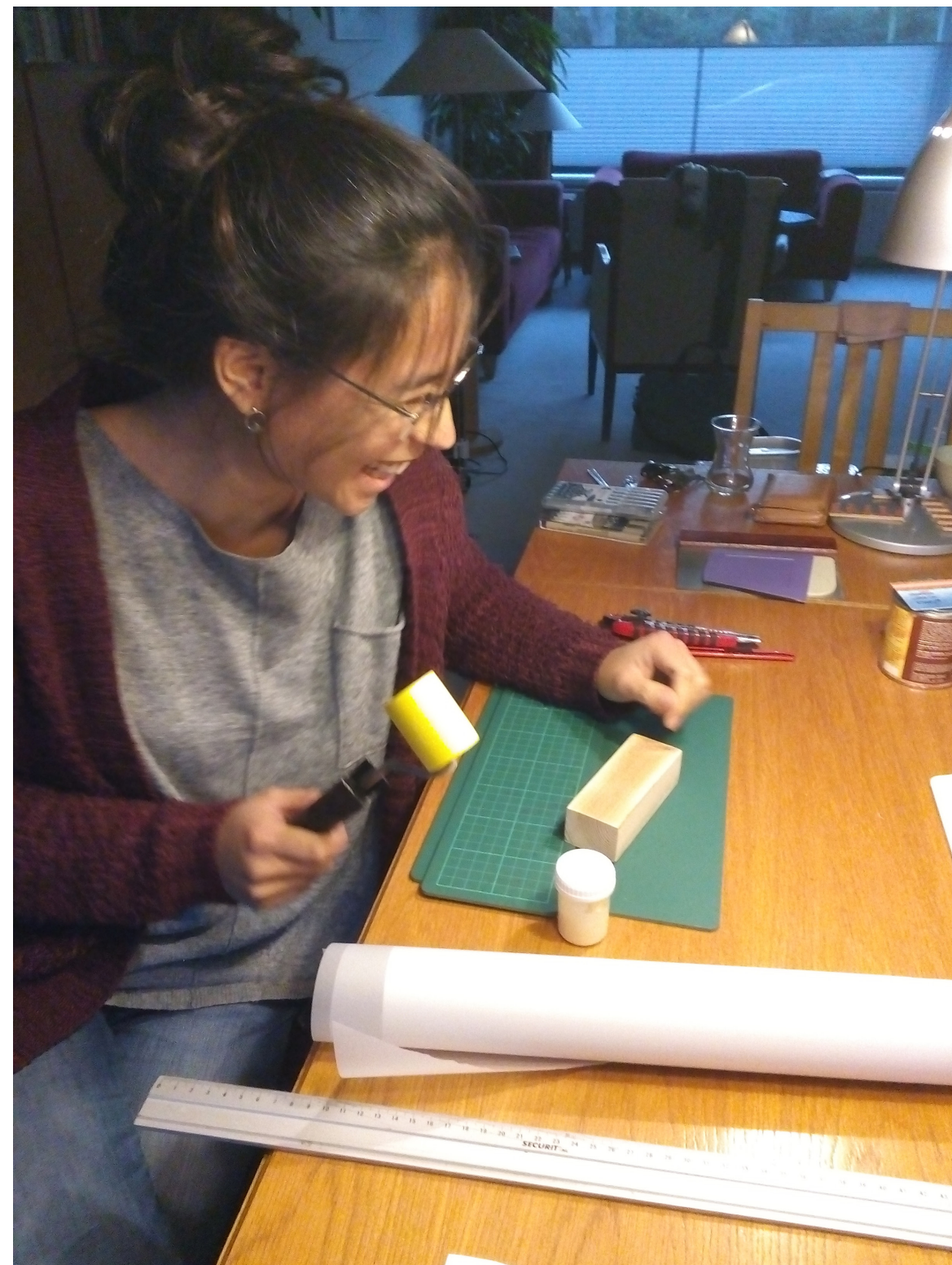
# Materials



# Materials passage



“Models do not lie”





JEUGD DE DREEF

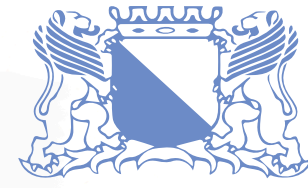
PLAN EINSTEIN



peerby



Marktplaats



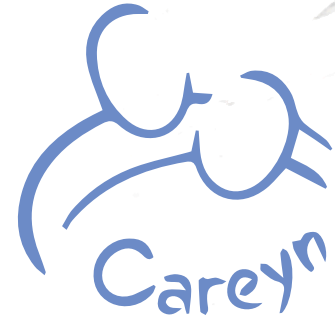
Gemeente Utrecht

DE DREEF

Etsy



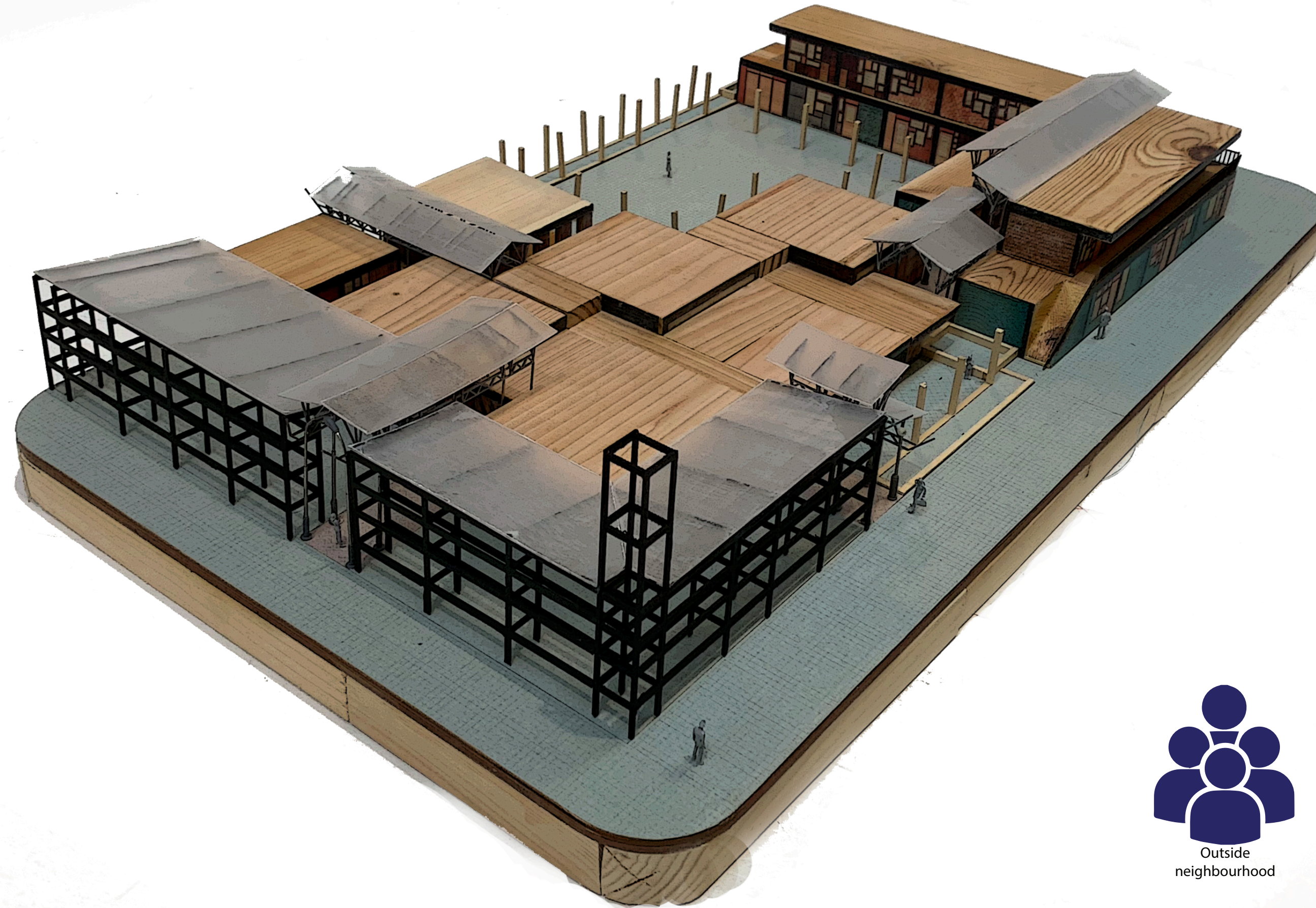
DURA VERMEER



ALDI

JUMBO

#POUWER COLLEGE



- Neighbourhood
- Outside neighbourhood

- HUB
- Surrounding

# COMMONS

ECONOMIC

Enhance the local economy in the neighbourhood.

SOCIAL

Facilitate collaborations and interactions.

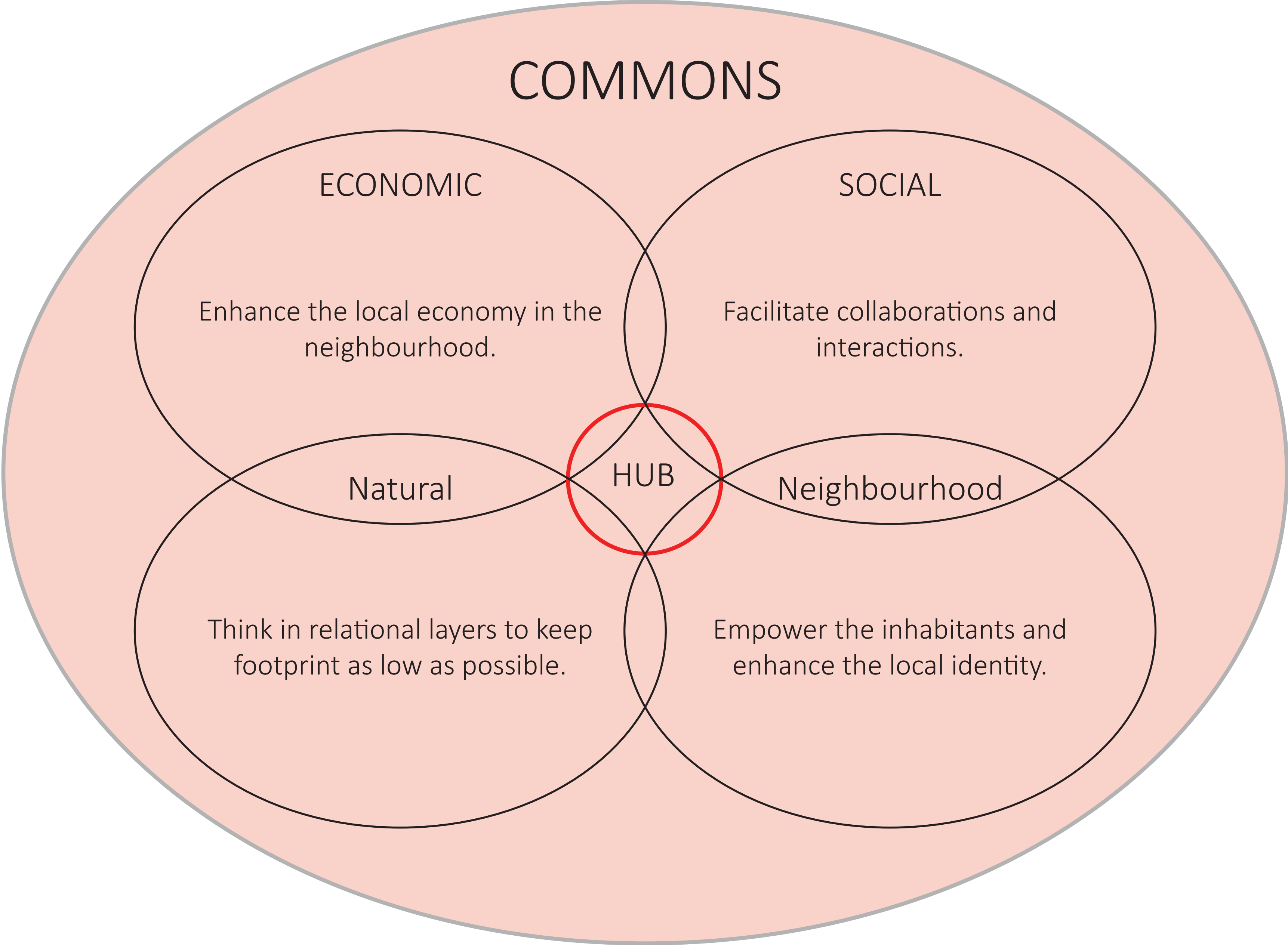
Natural

Think in relational layers to keep footprint as low as possible.

HUB

Neighbourhood

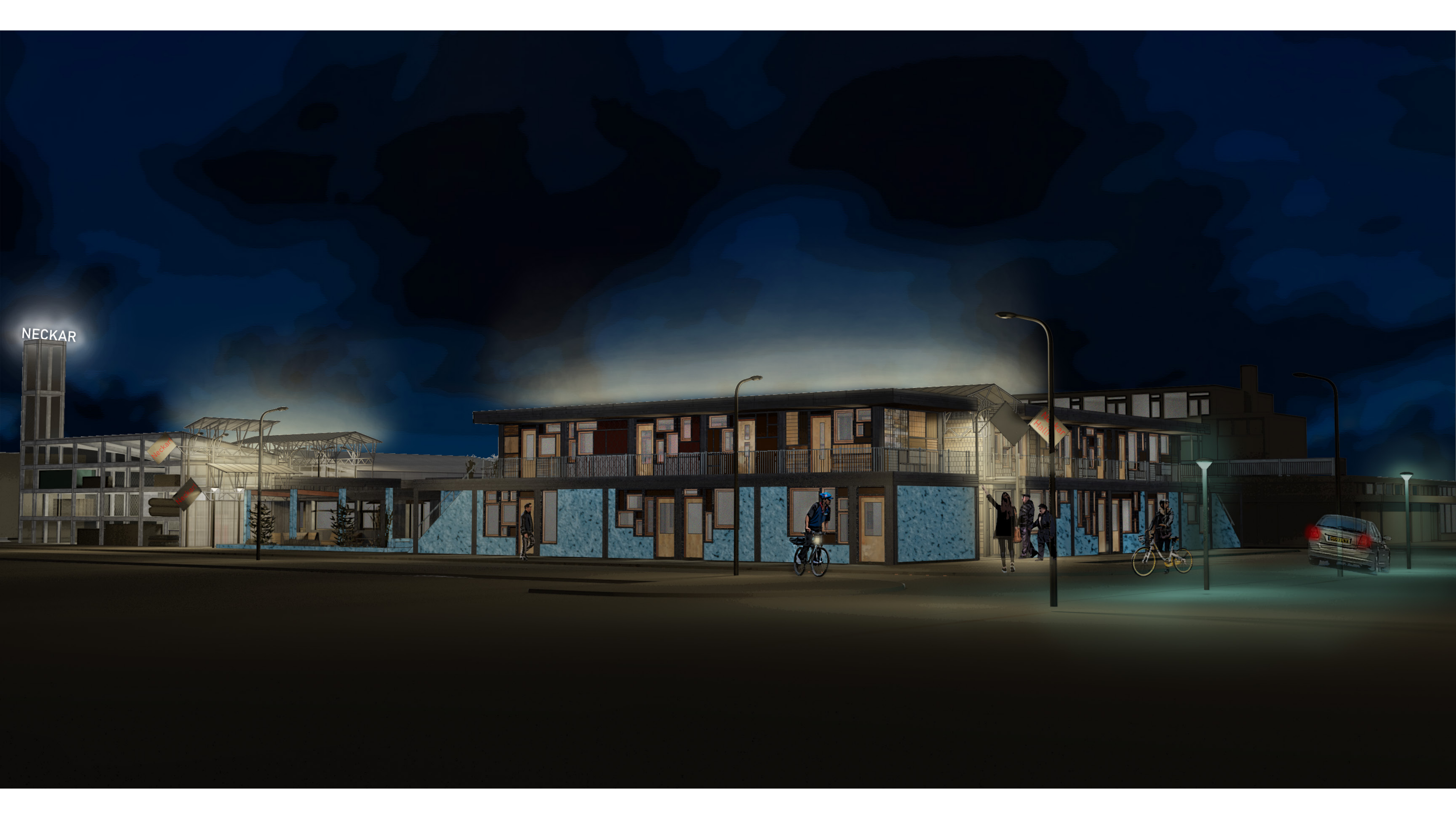
Empower the inhabitants and enhance the local identity.











NECKAR

Neckar

Neckar

Neckar

