

## Building as a landscape - a way to connect people with nature



P5 presentation  
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Main mentor: Anne Snijders  
Second mentor: Paddy Tomesen  
Third mentor: Mo Smit  
Delegate of the Board of Examiners : André Mulder

1. problem statement,
2. research,
3. project



# Problem statement

Personal observations





# Cities demanding sources

Problem statement



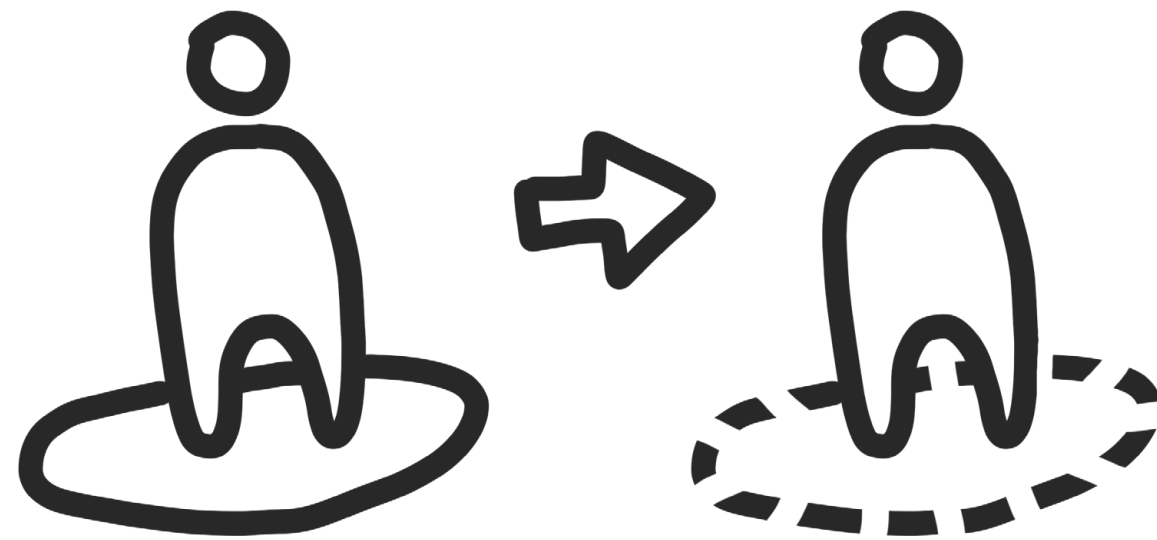
including the operational landscapes of agricultural production, resource extraction, circulation, and waste disposal.

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# Disconnection from nature

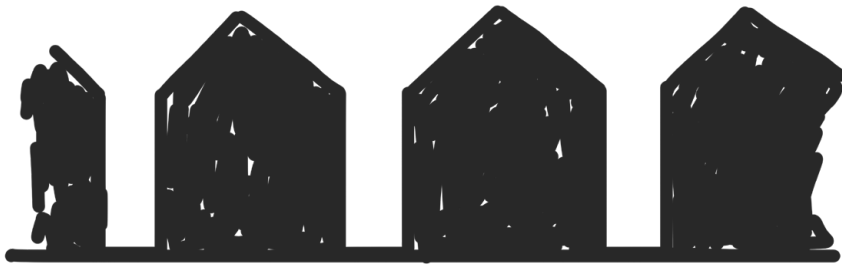
Design and research strategies



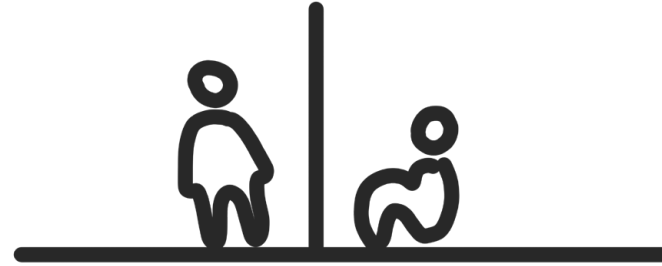
Breaking the borders between people and nature  
with architecture

# How to reduce the gap between nature and people?

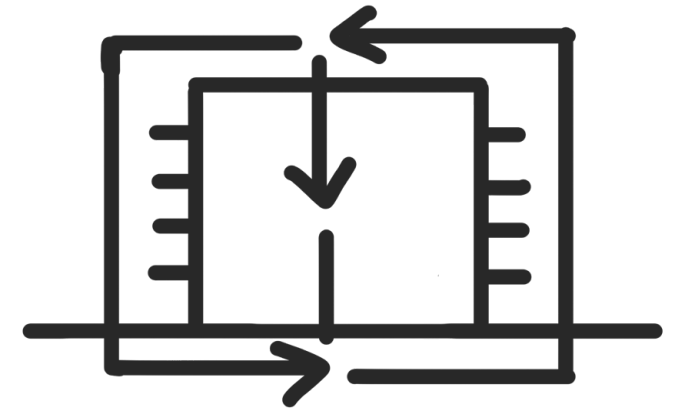
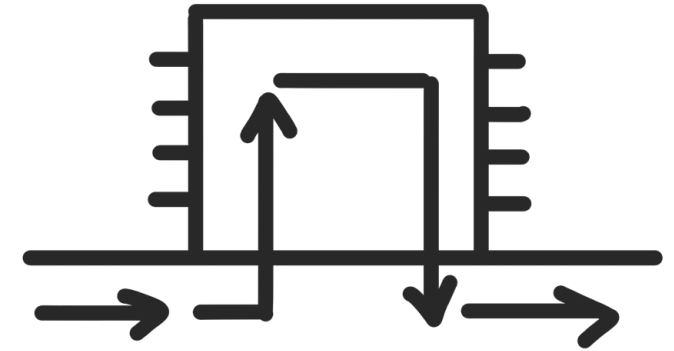
Design and research strategies



in the visual aspect



in the use of space

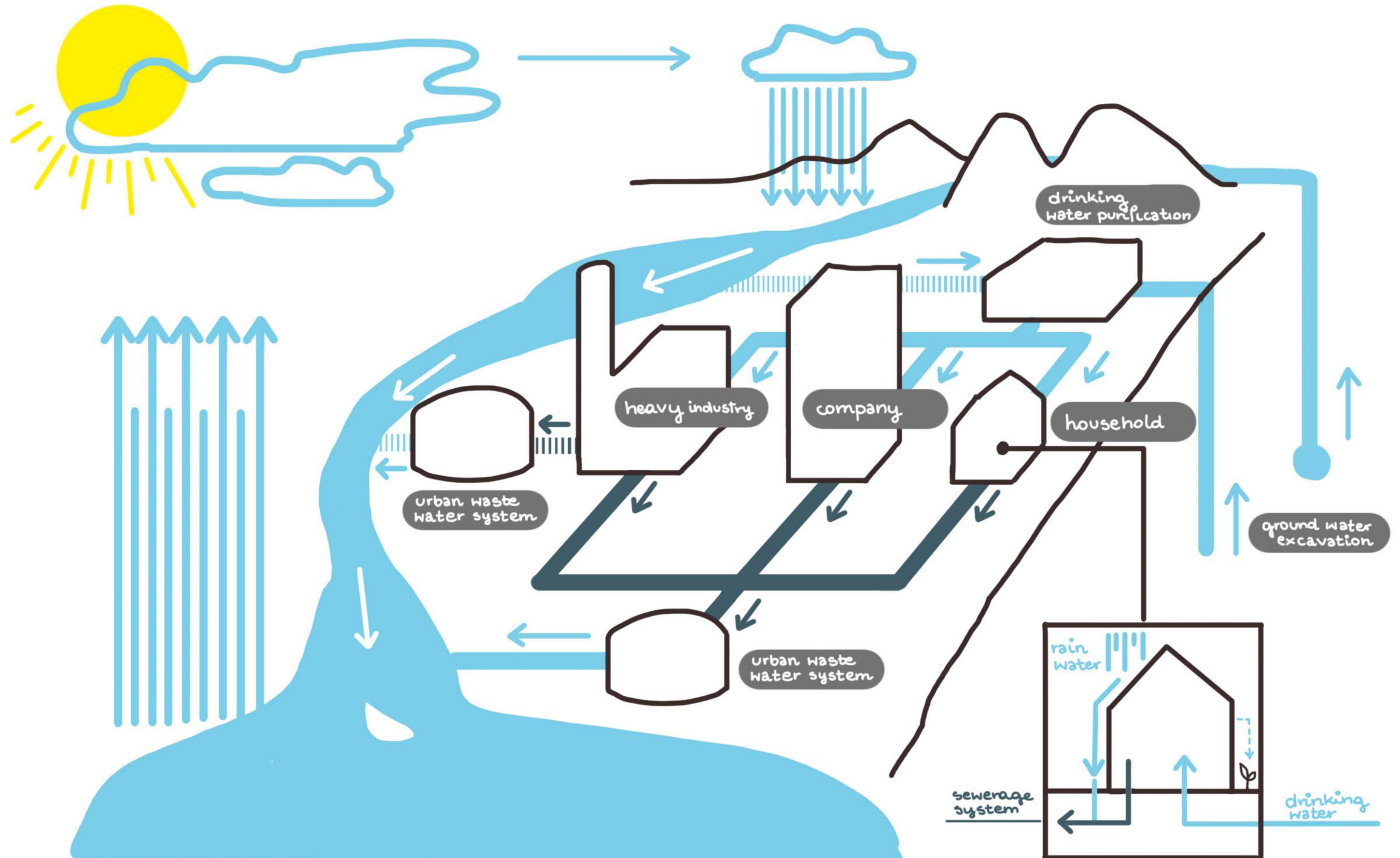


in the flow

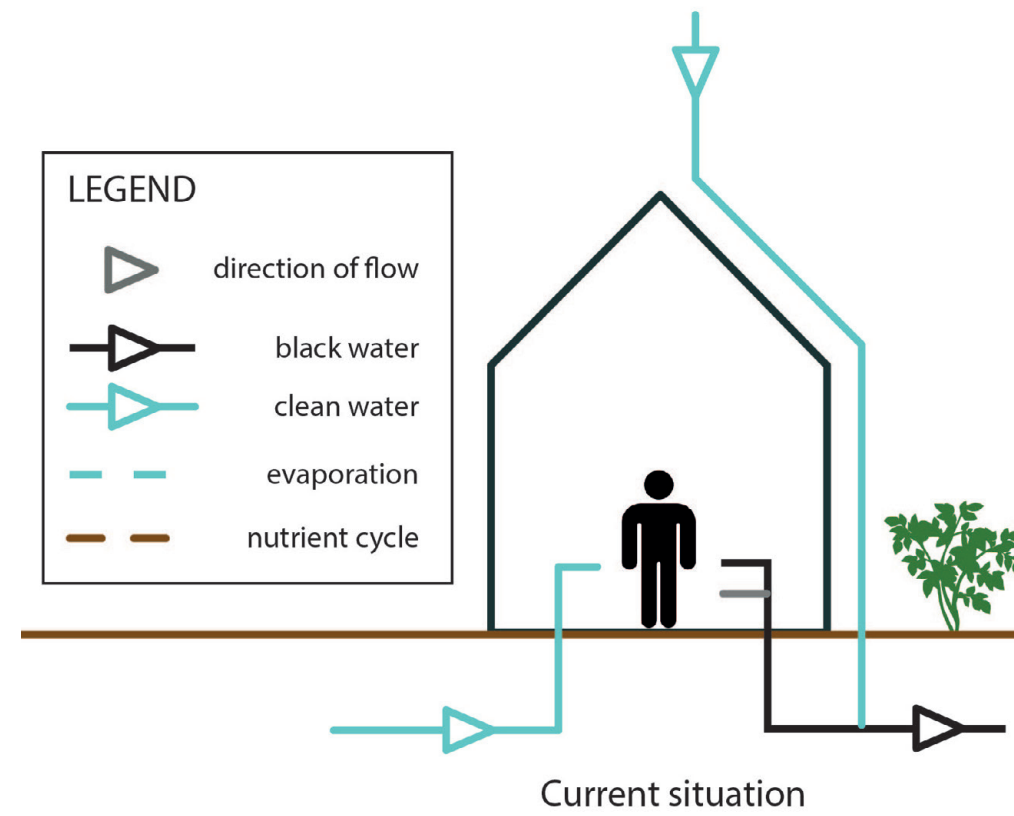


# Centralized sanitation system

Research



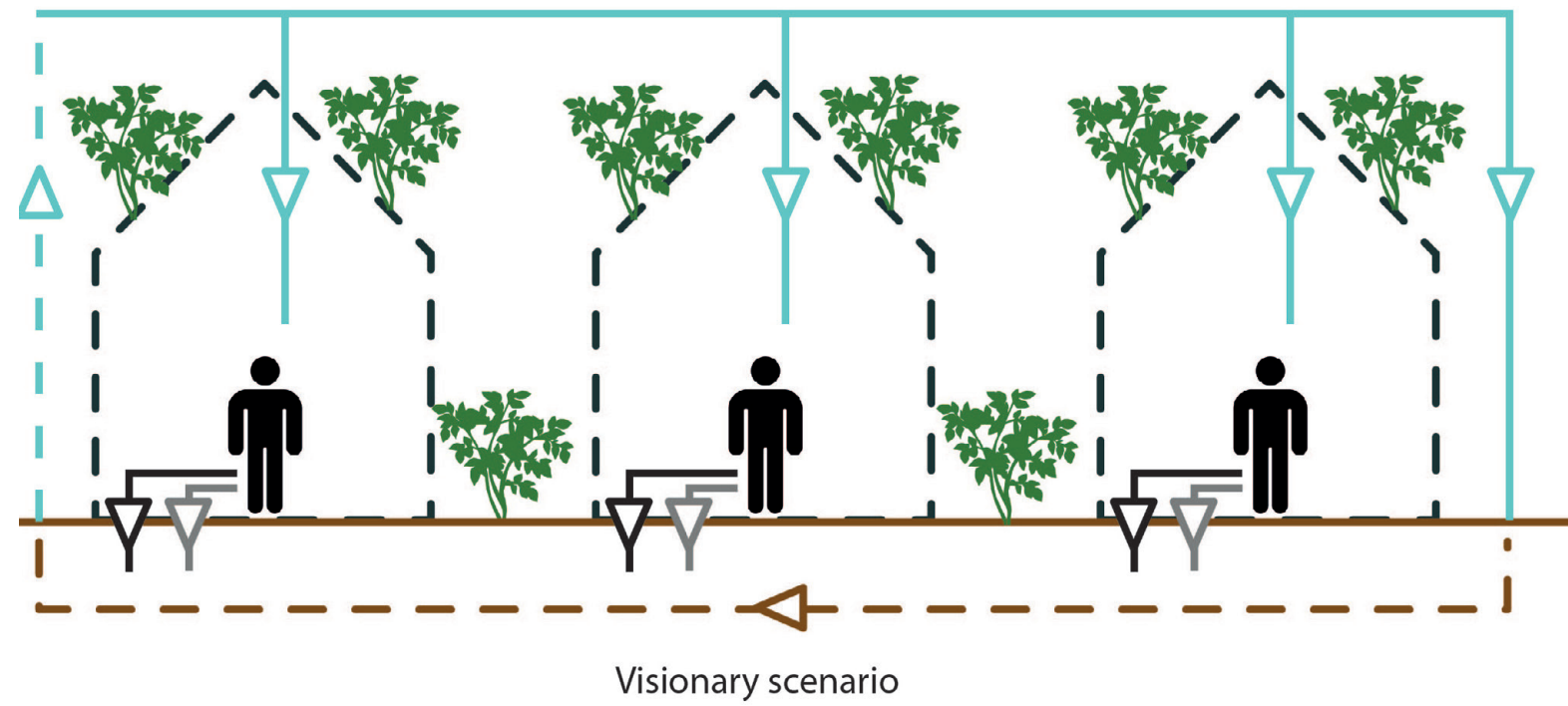
## Current situation





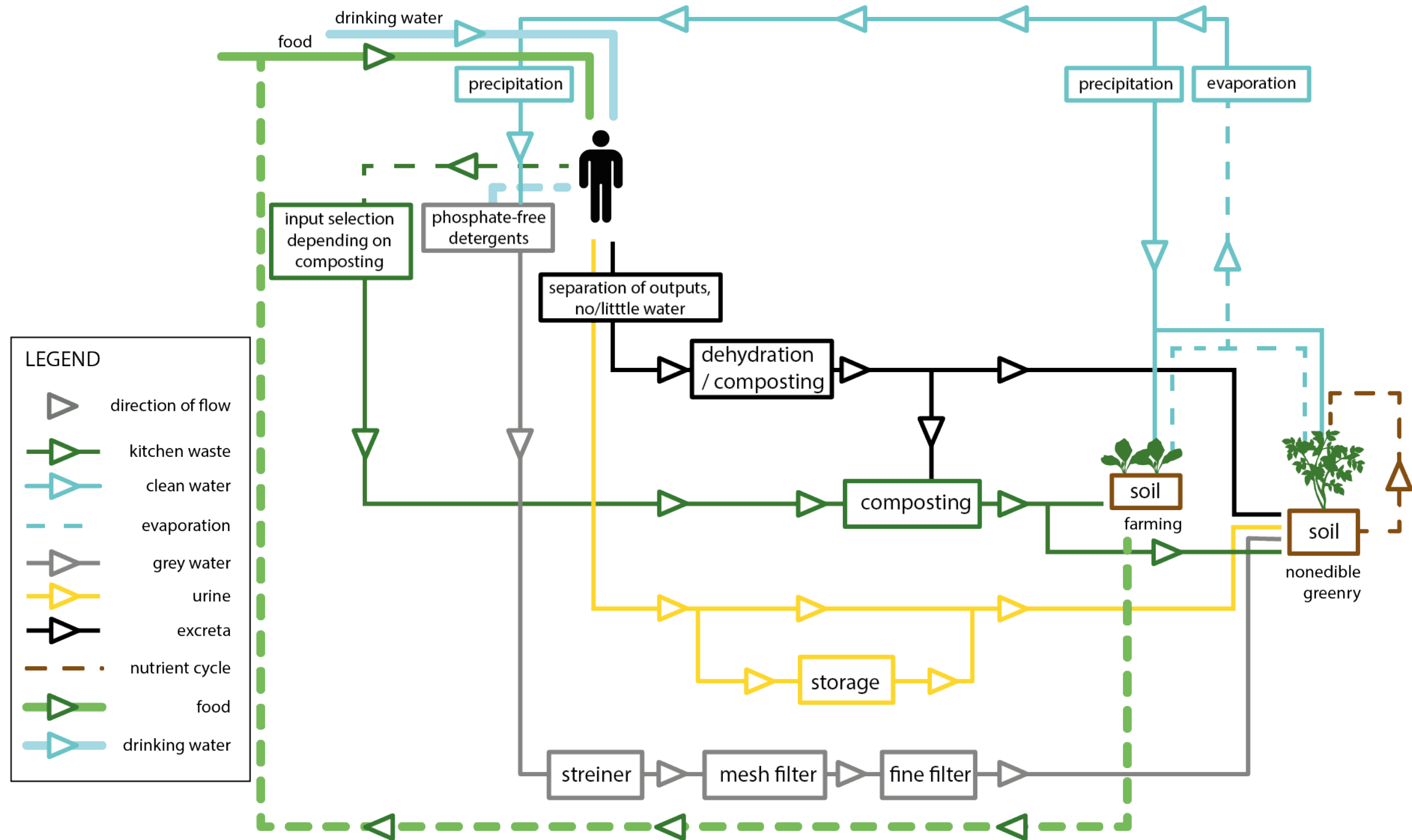
# Problem statement

Ideal scenario



# Research

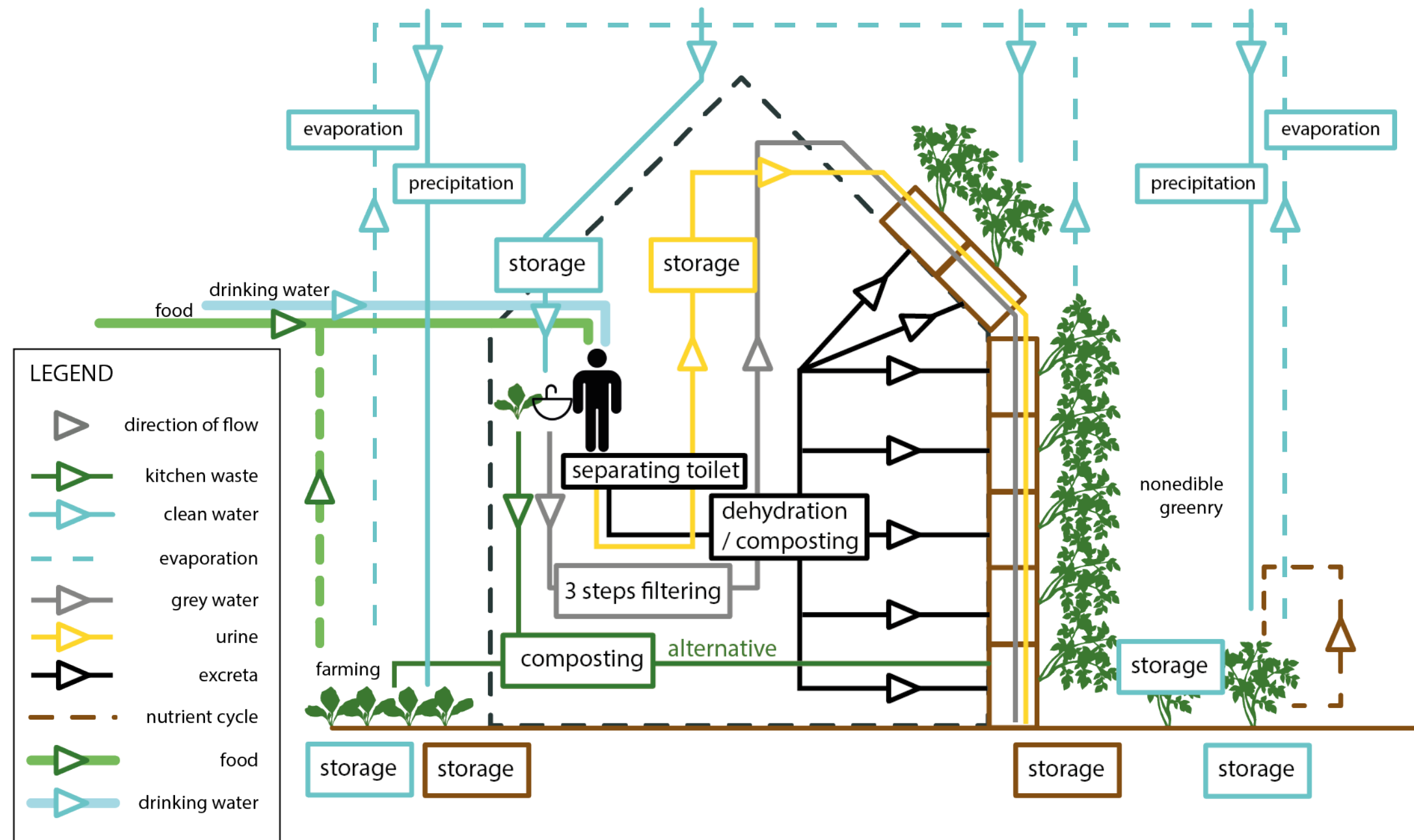
Connecting the flows of the building to





# Research

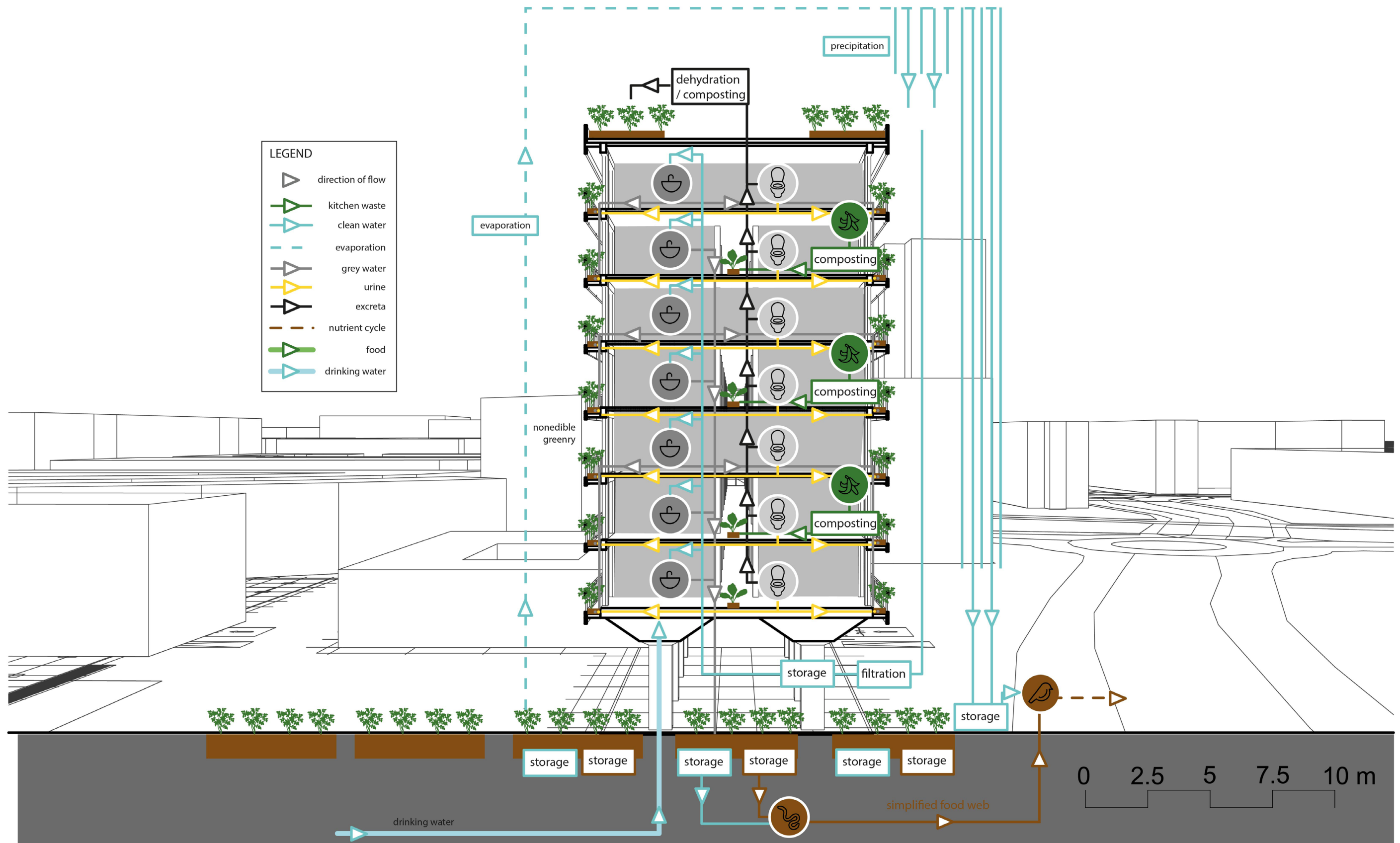
## Closing the loop - spatial arrangement scheme





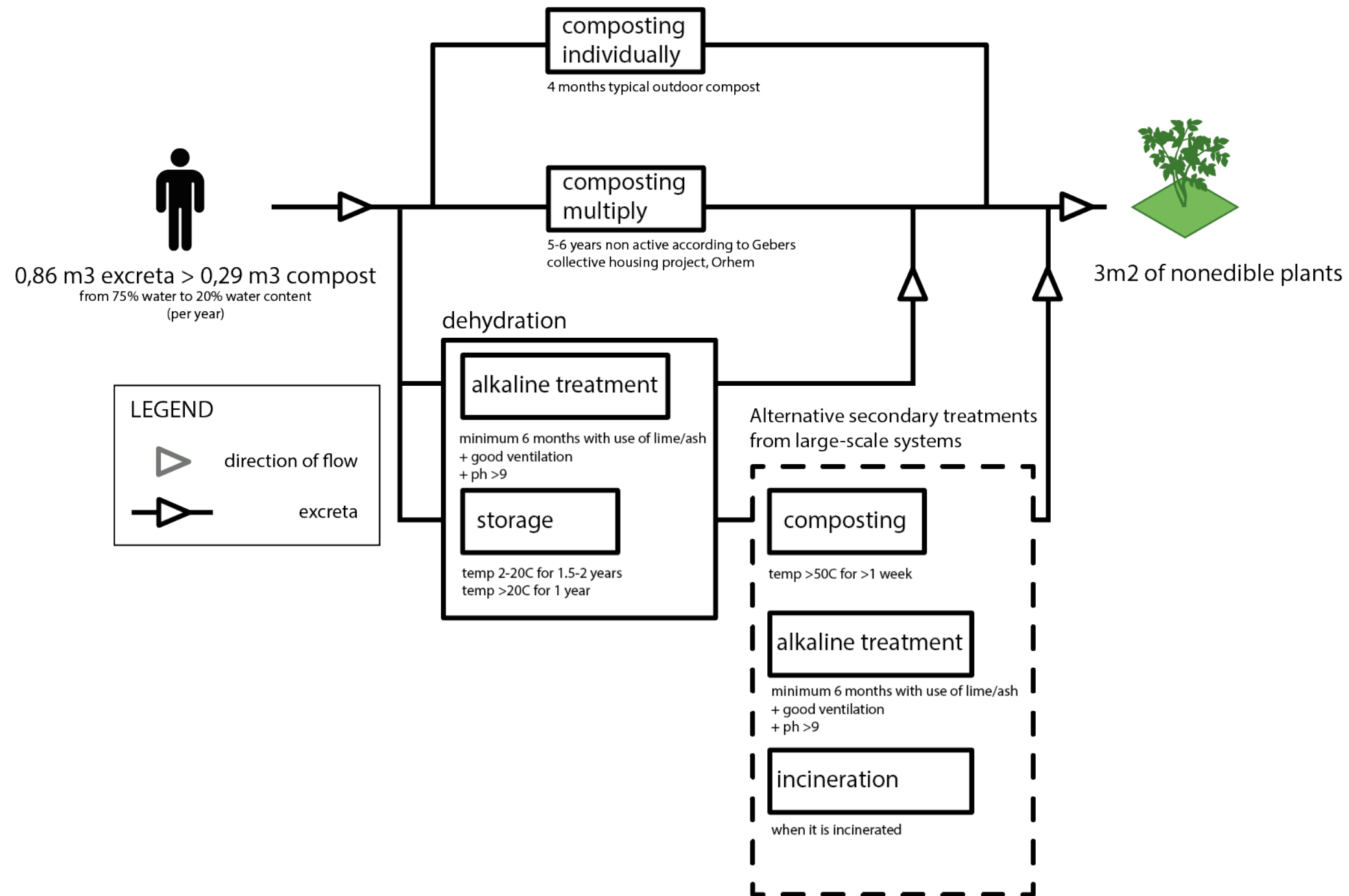
# Research

## Closing the loop - spatial arrangement



# Research

## Results: Feaces treatment

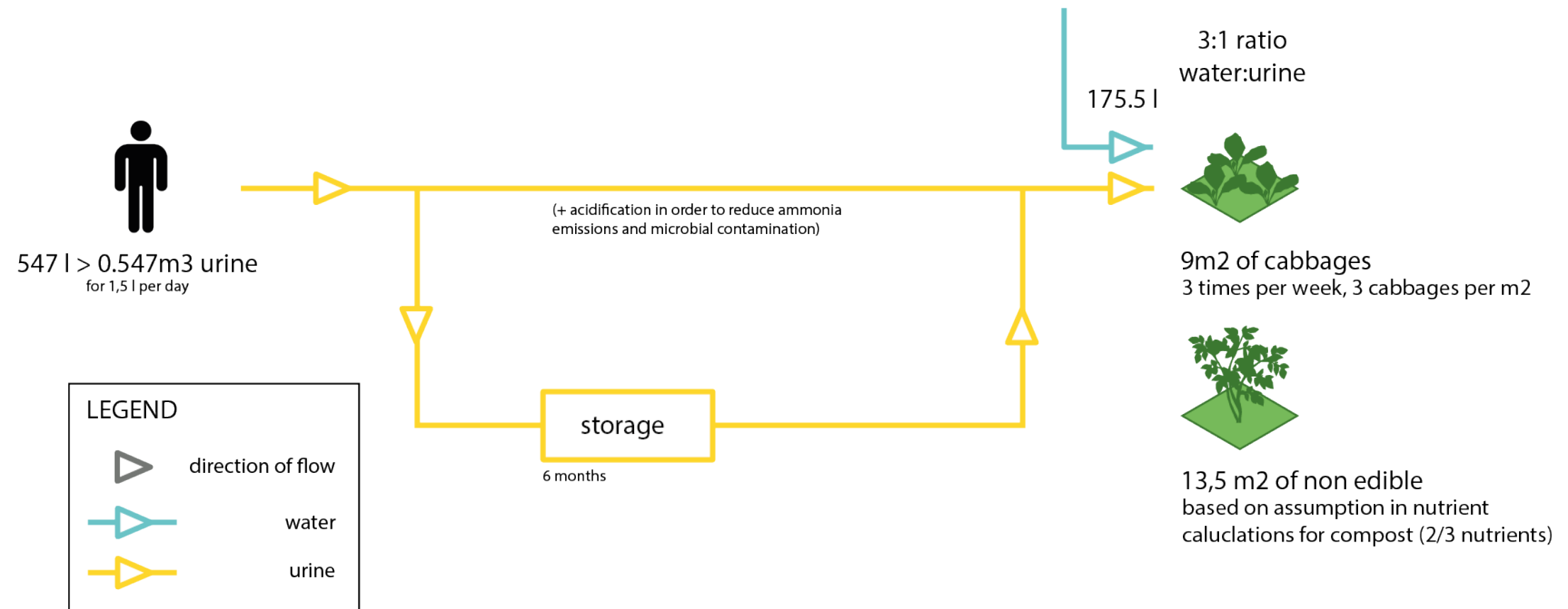


- <https://sswm.info/humanitarian-crises/prolonged-encampments/sanitation/collection-and-storage-treatment/dehydration-and-storage>
- Rieck, C. (Ed) (2012) *Technology Review of Urine-diverting dry toilets (UDDTs) Overview of design, operation, management and costs* Eschborn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH



# Research

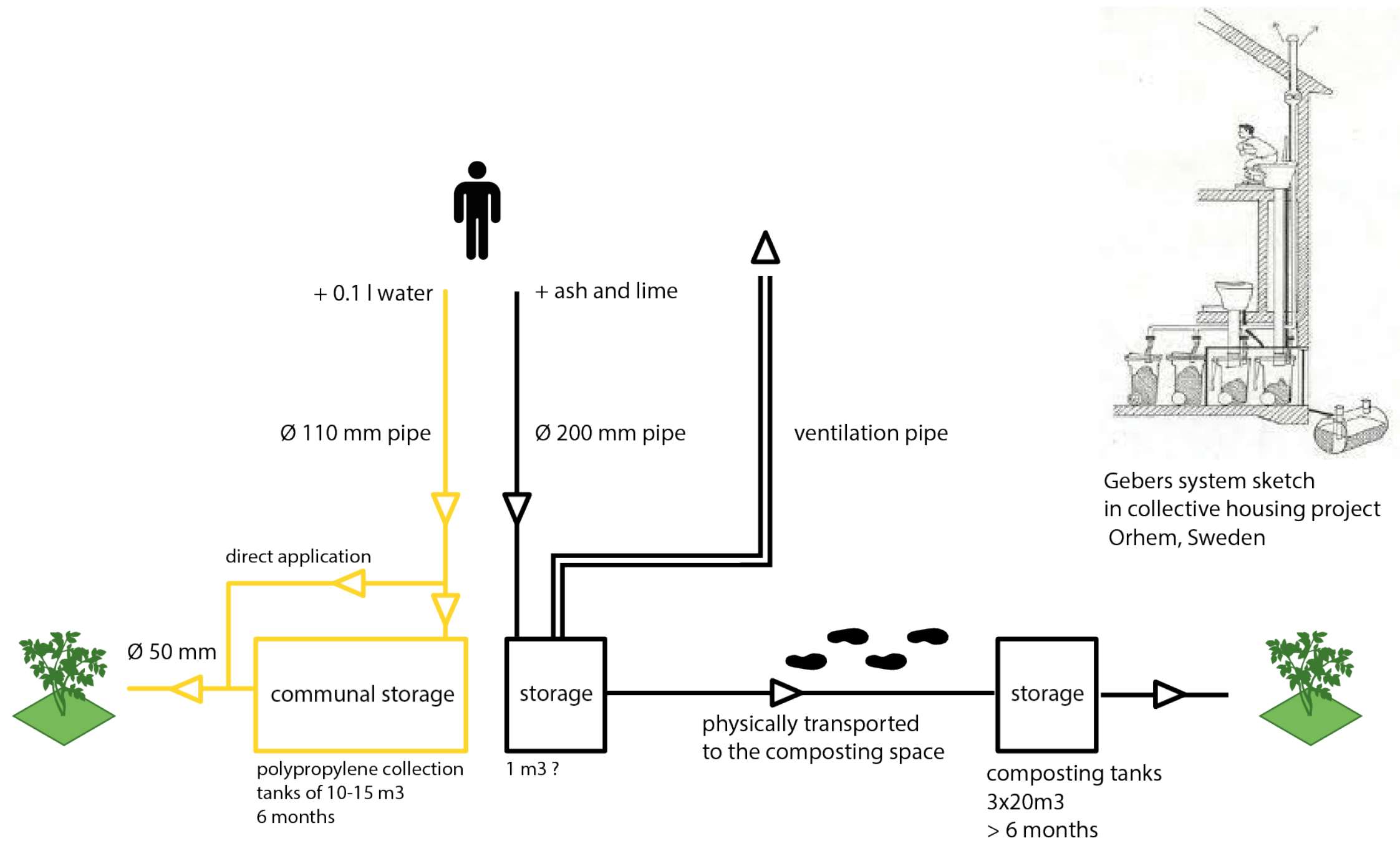
## Results: Urine treatment



-Richert, A., Gensch, R., Jonsson, H. Stenstrom T. Dagerskog, L.(2009) Practical Guidance on the Use of Urine in Crop Production Stockholm: Stockholm Environment Institute, EcoSanRes Series 2009-10-14

# Research

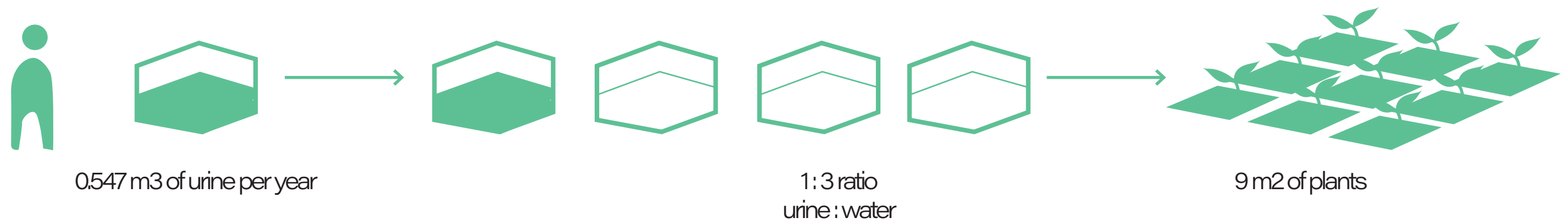
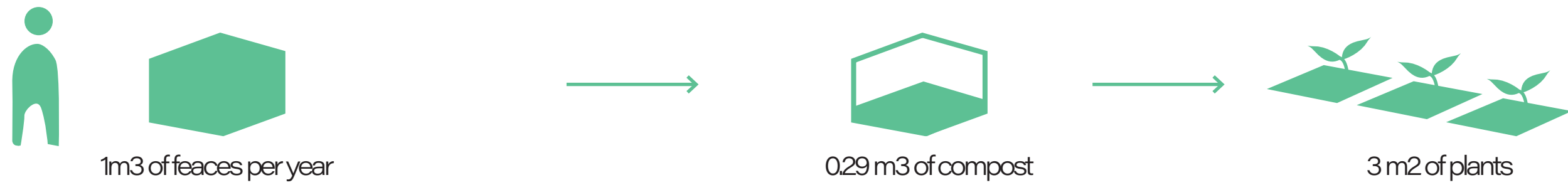
Requirements for those systems



- <https://sswm.info/humanitarian-crises/prolonged-encampments/sanitation/collection-and-storage-treatment/dehydration-and-storage>
- Rieck, C. (Ed) (2012) *Technology Review of Urine-diverting dry toilets (UDDTs) Overview of design, operation, management and costs* Eschborn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

# Research

## Conclusion

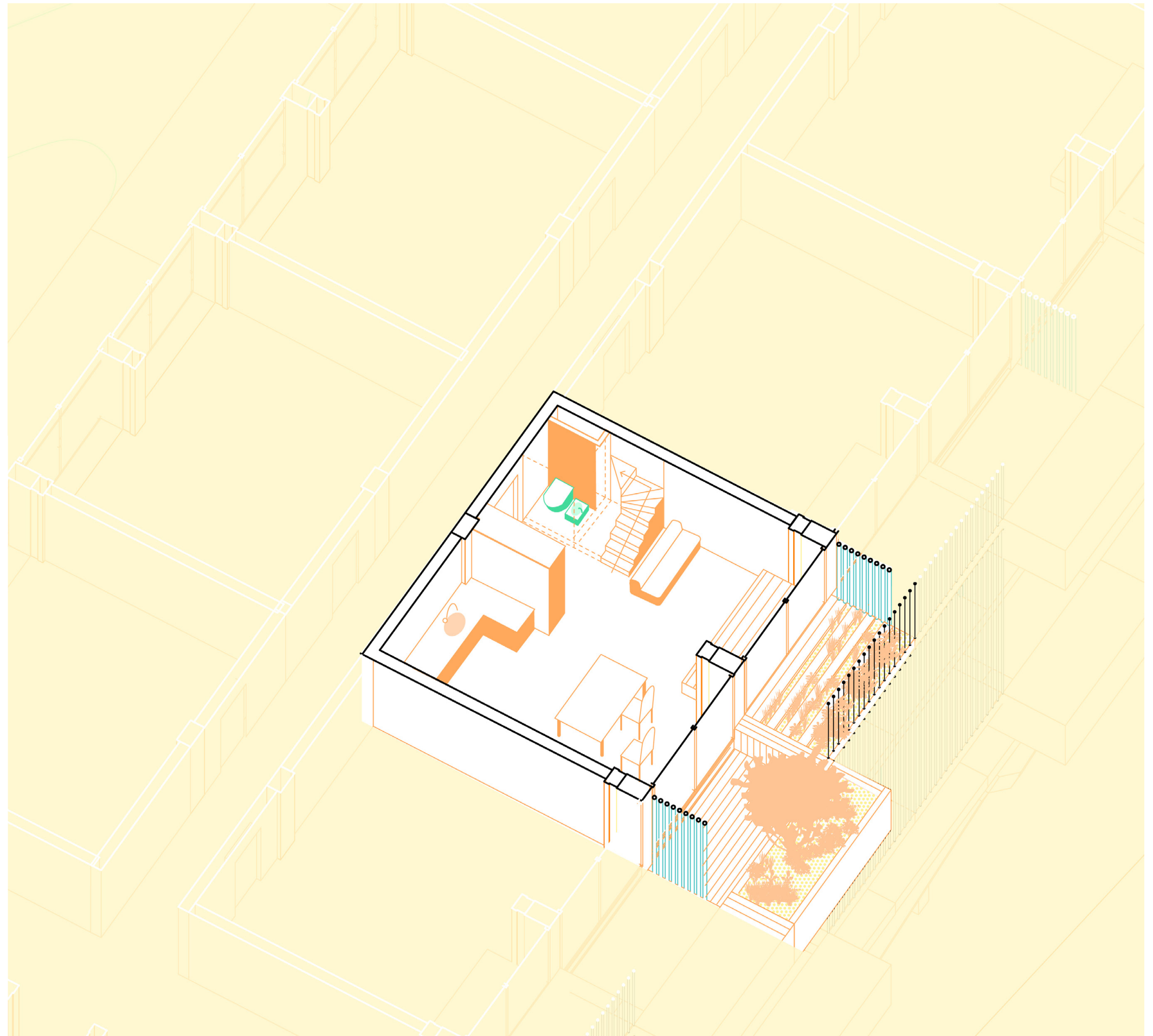
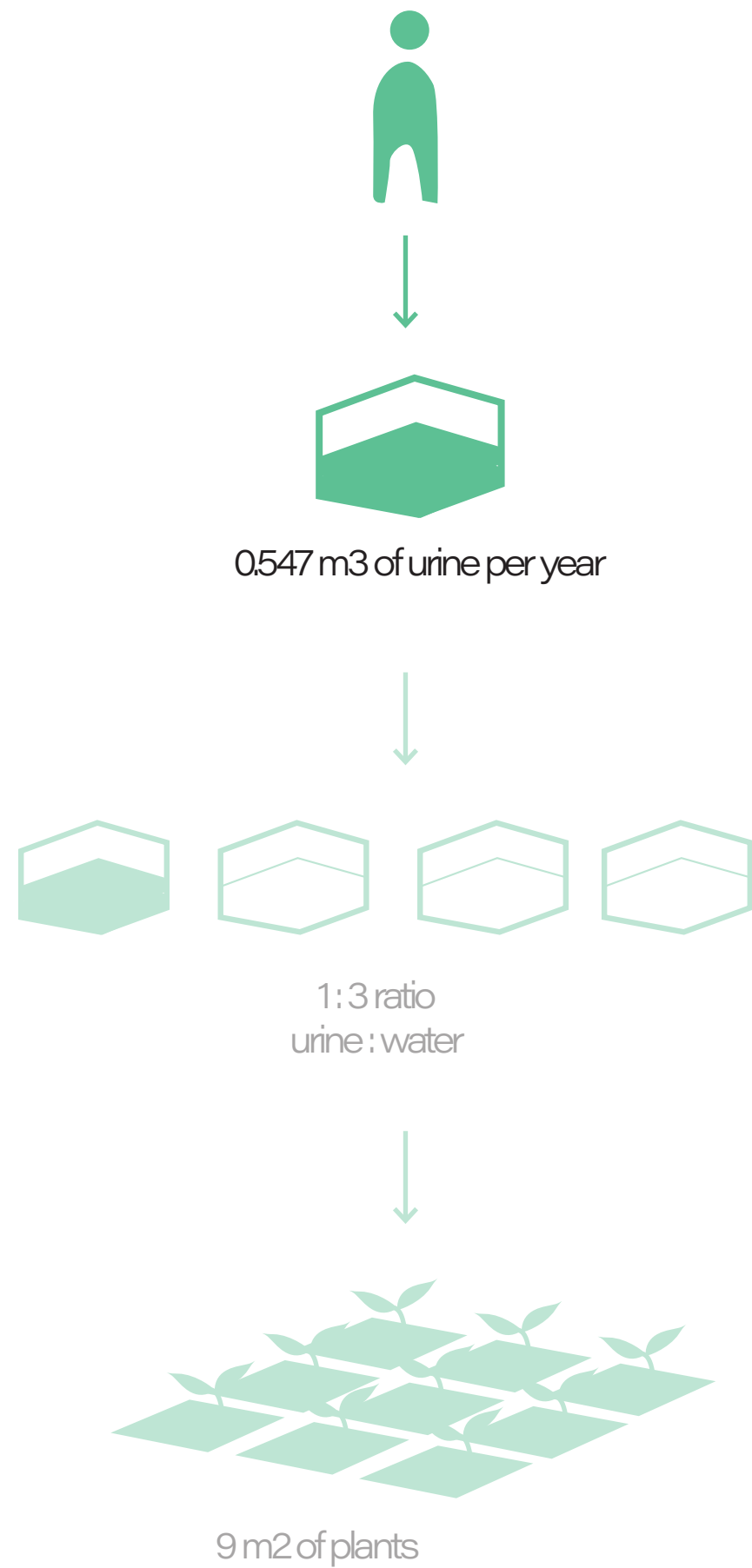


What does it mean for architecture?



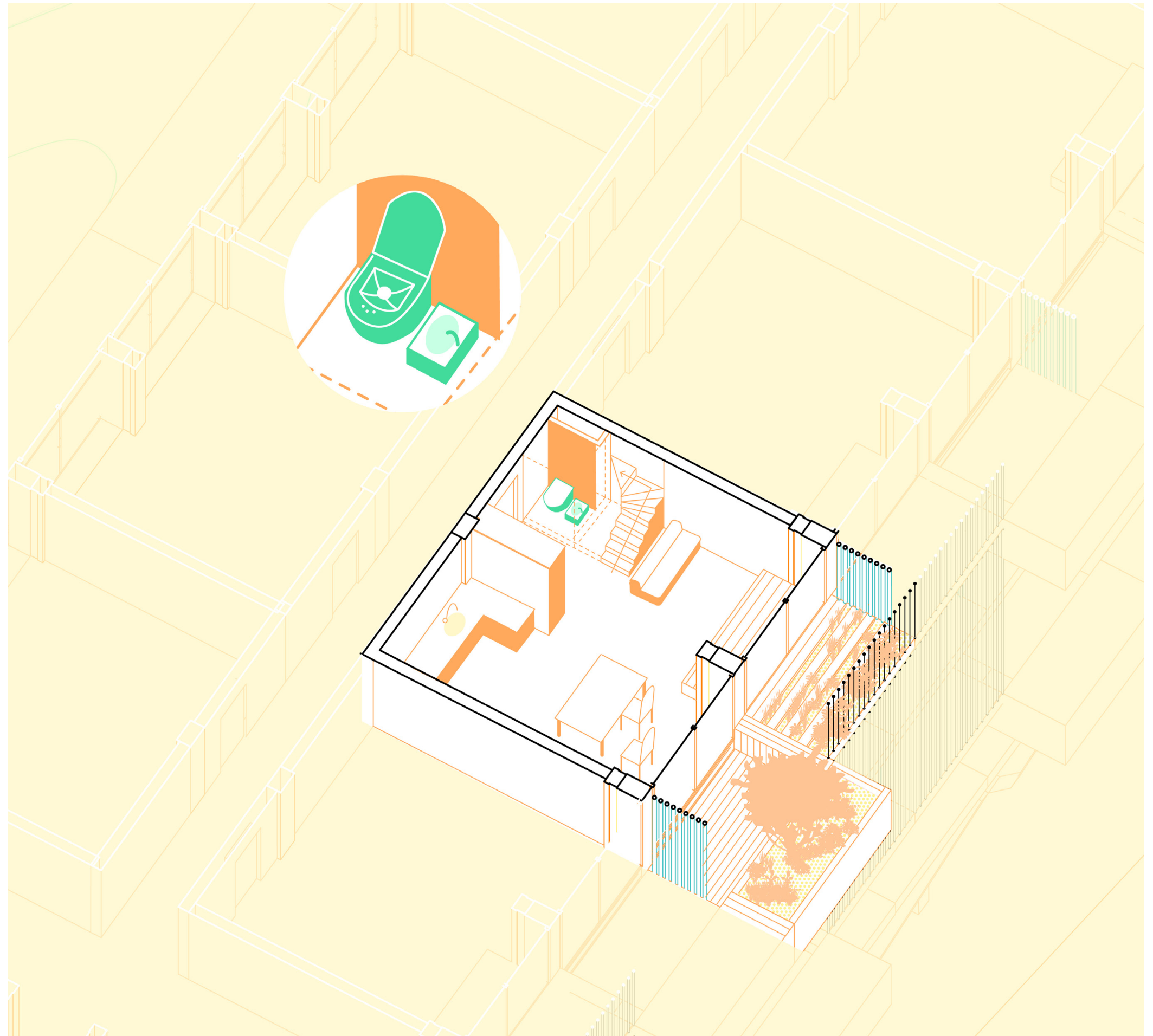
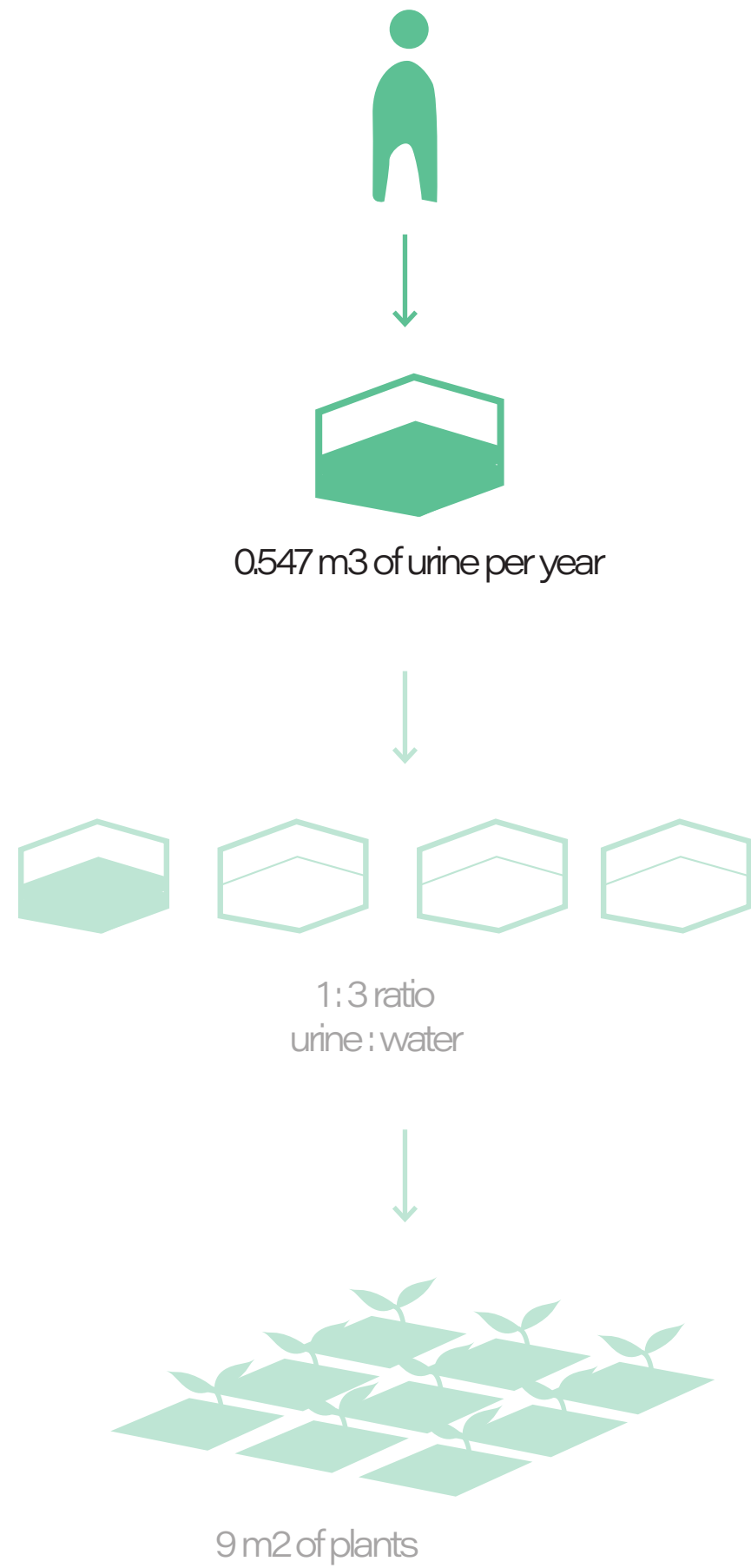
# Urine treatment

Connection between research and design



# Urine treatment

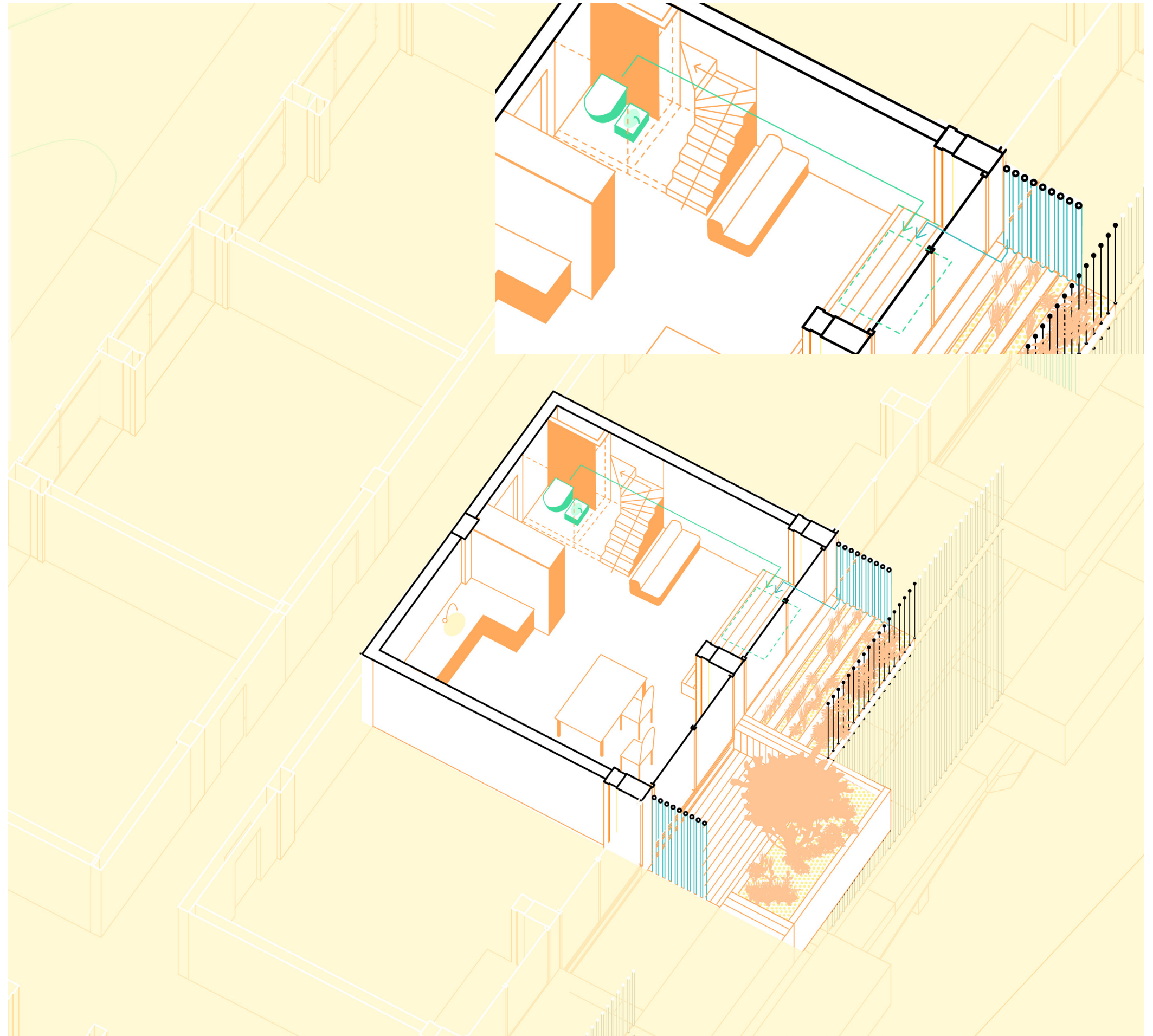
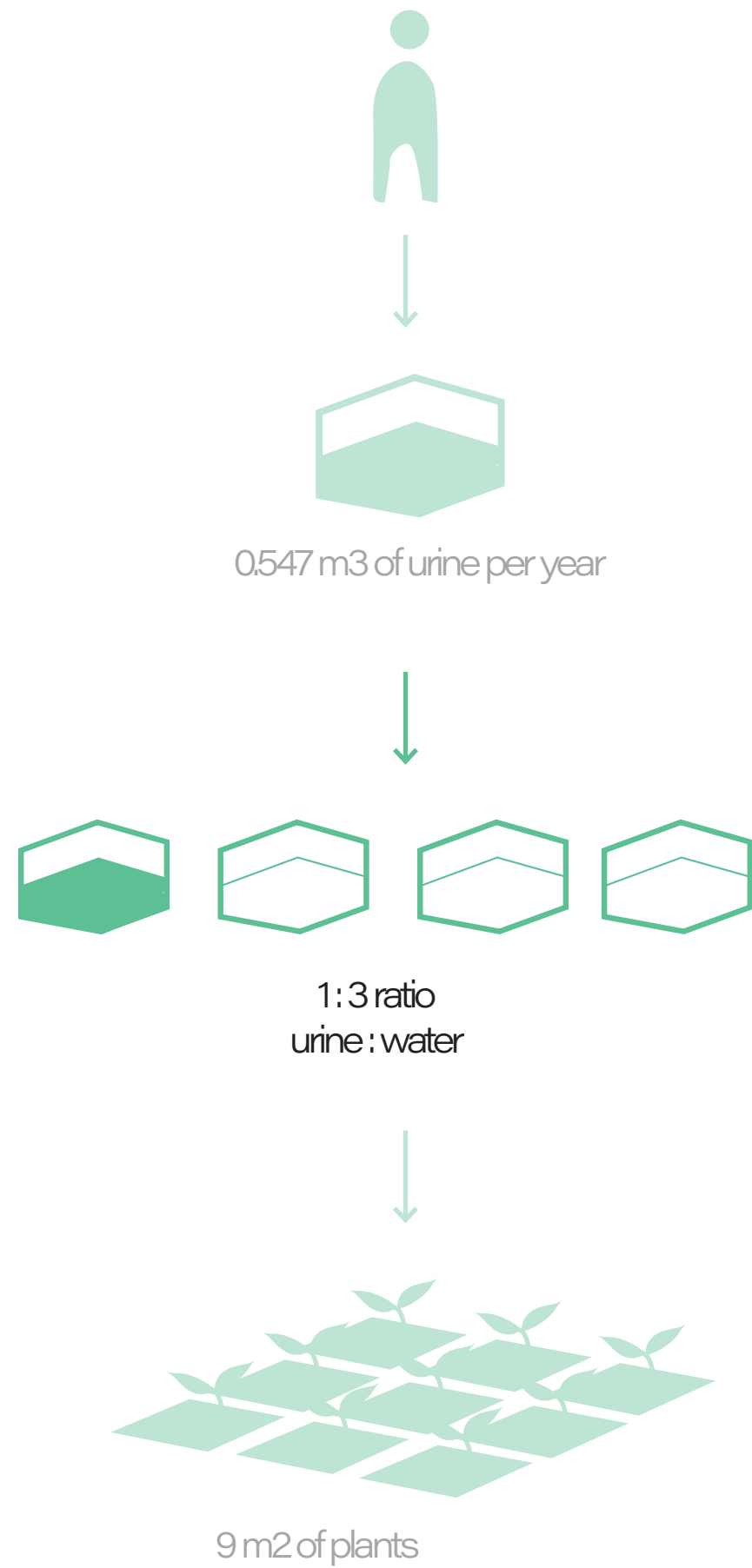
Connection between research and design





# Urine treatment

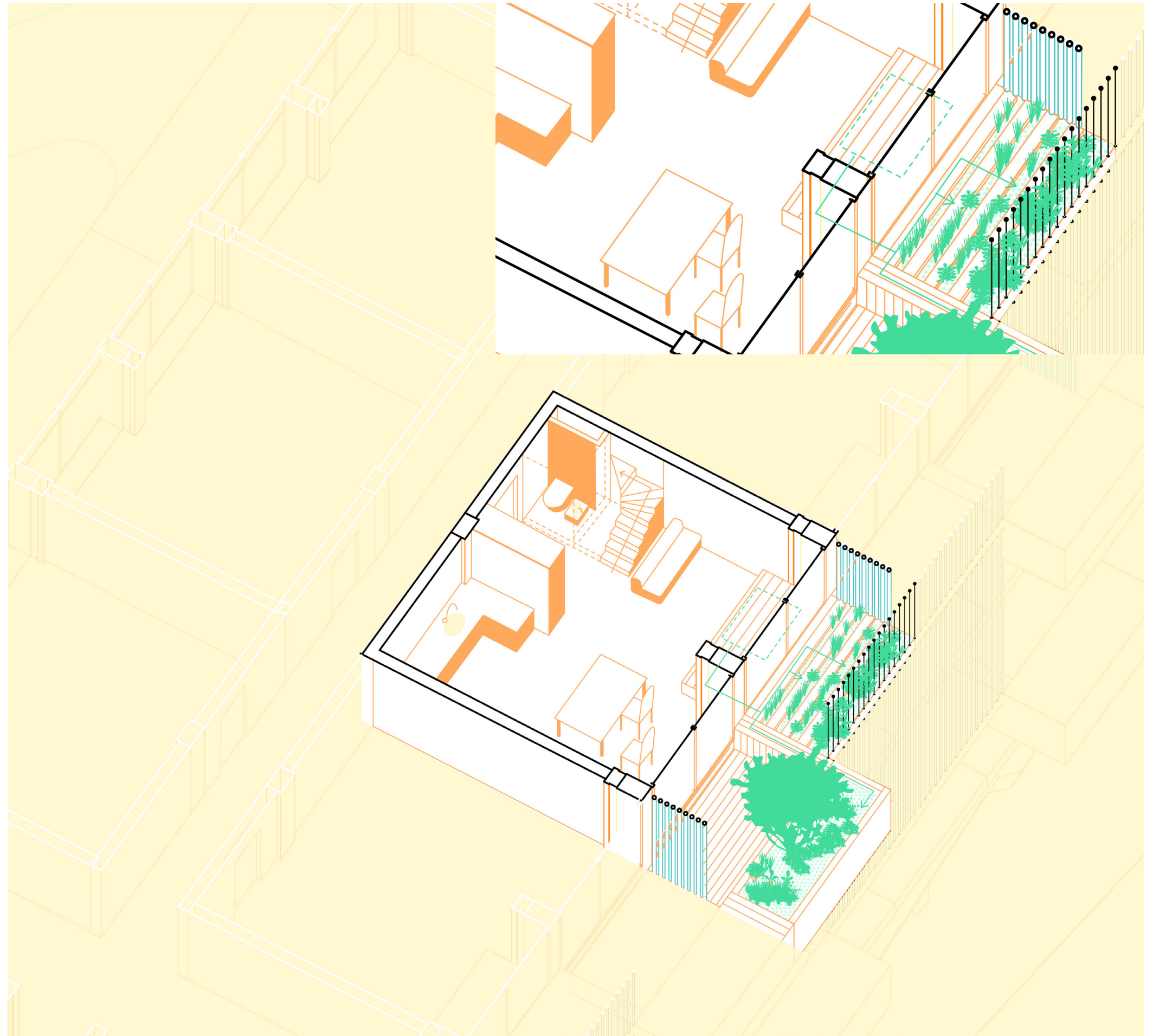
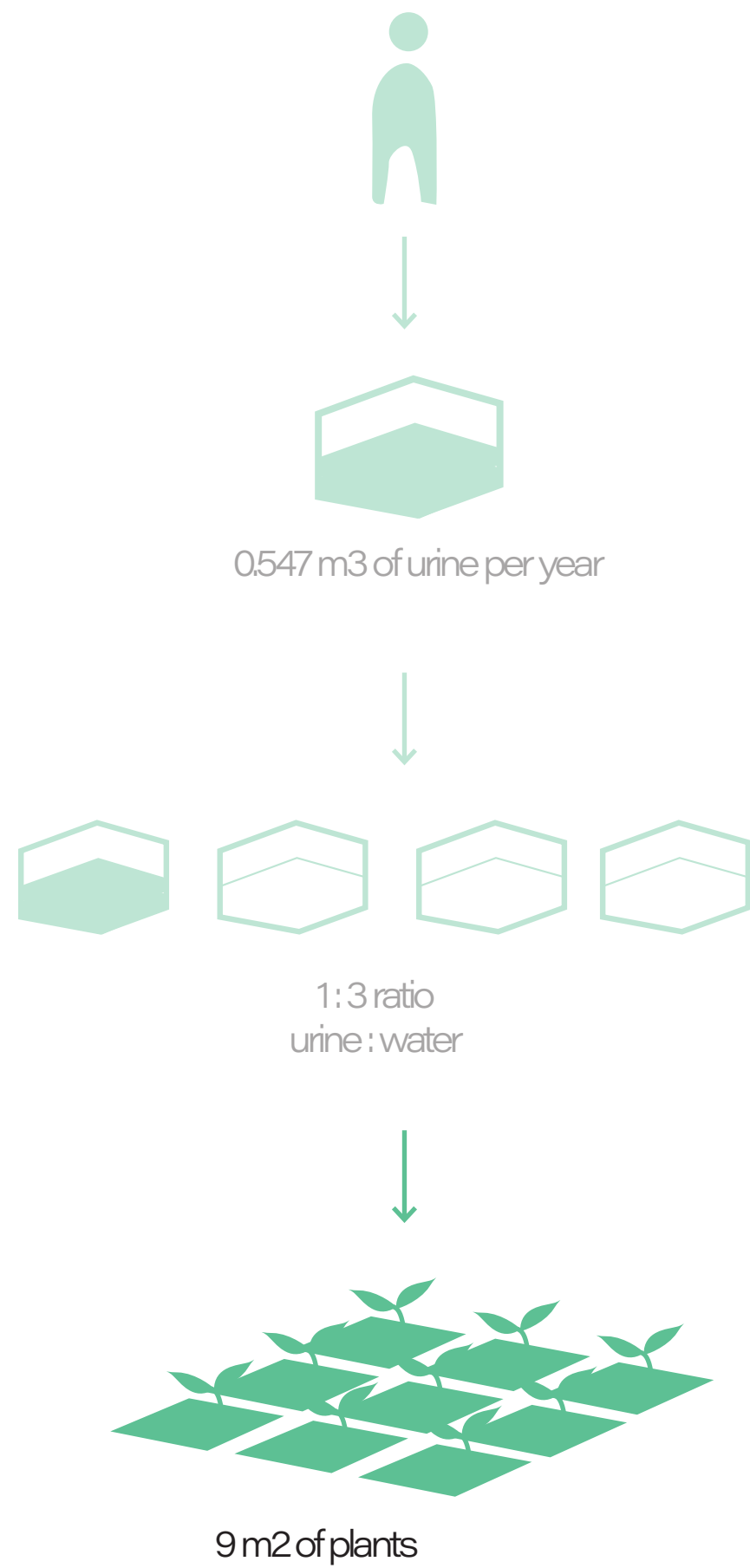
Connection between research and design





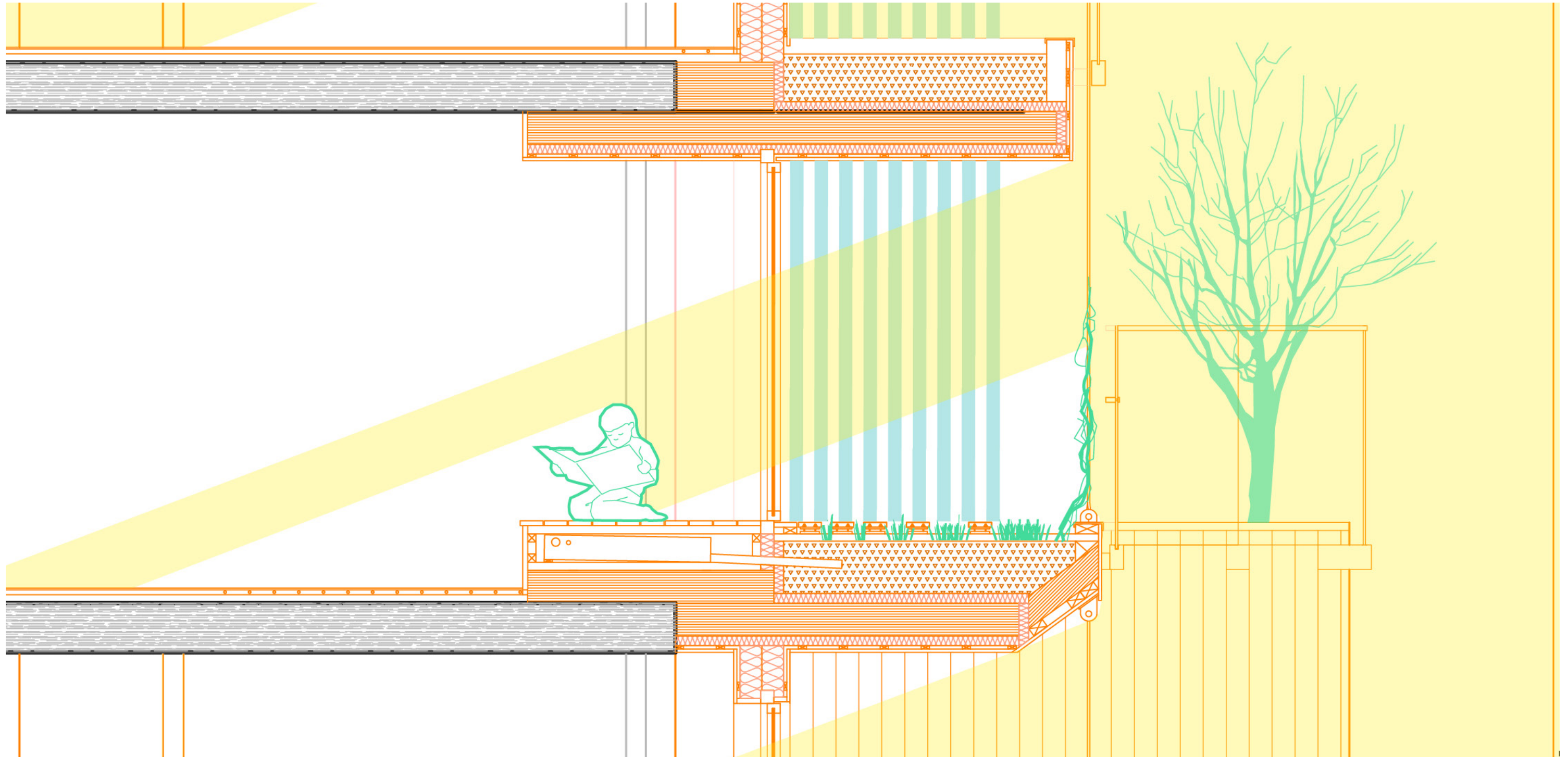
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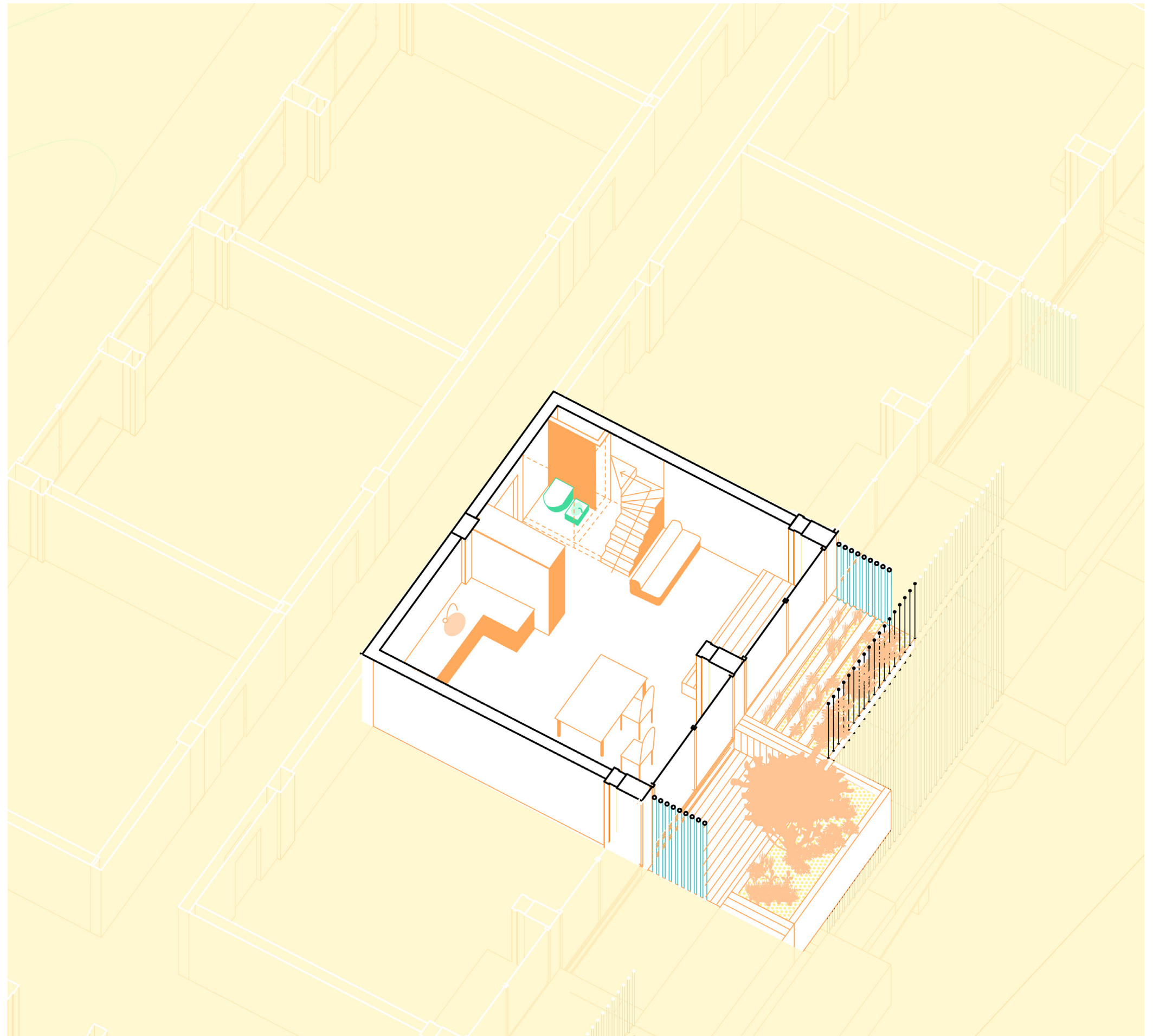
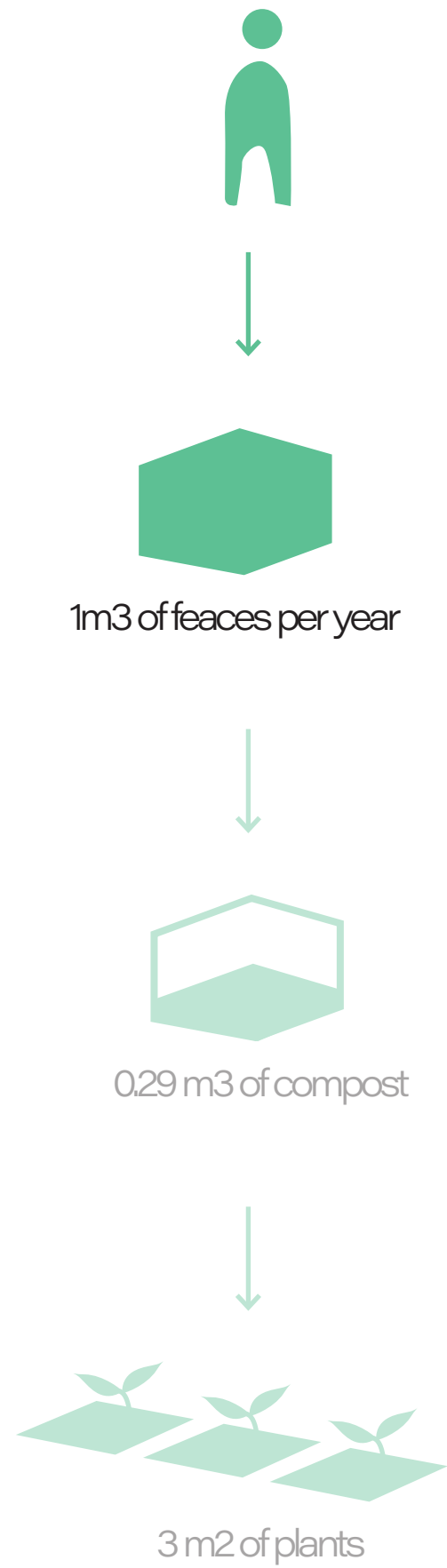
Connection between research and design





# Feaces treatment

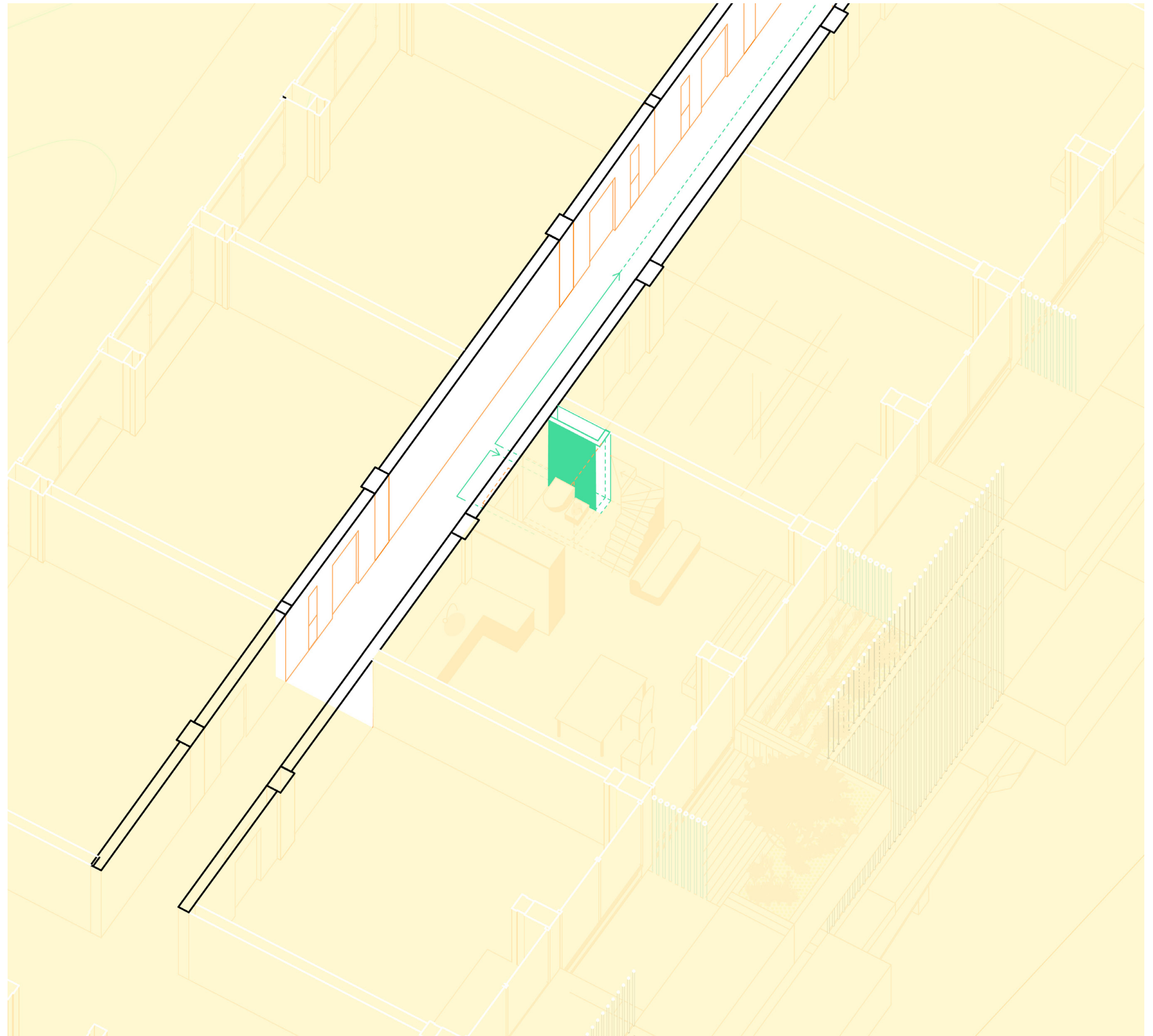
Connection between research and design





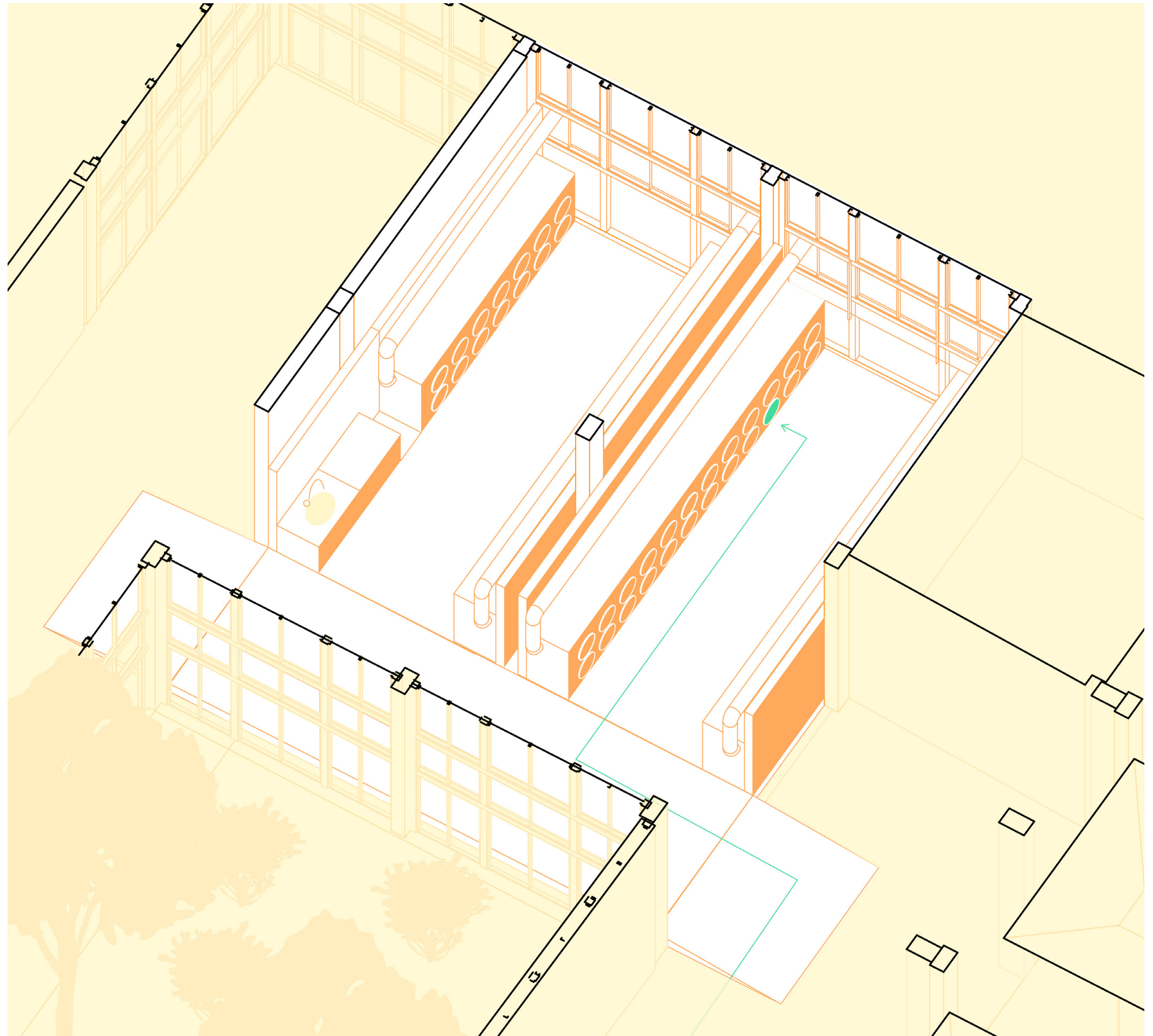
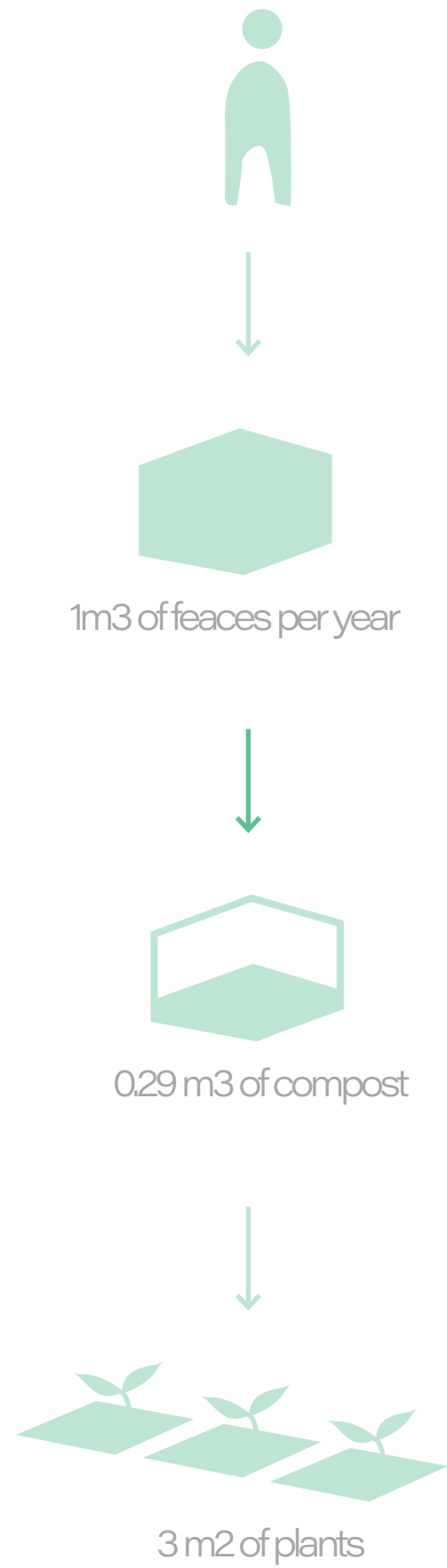
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Connection between research and design



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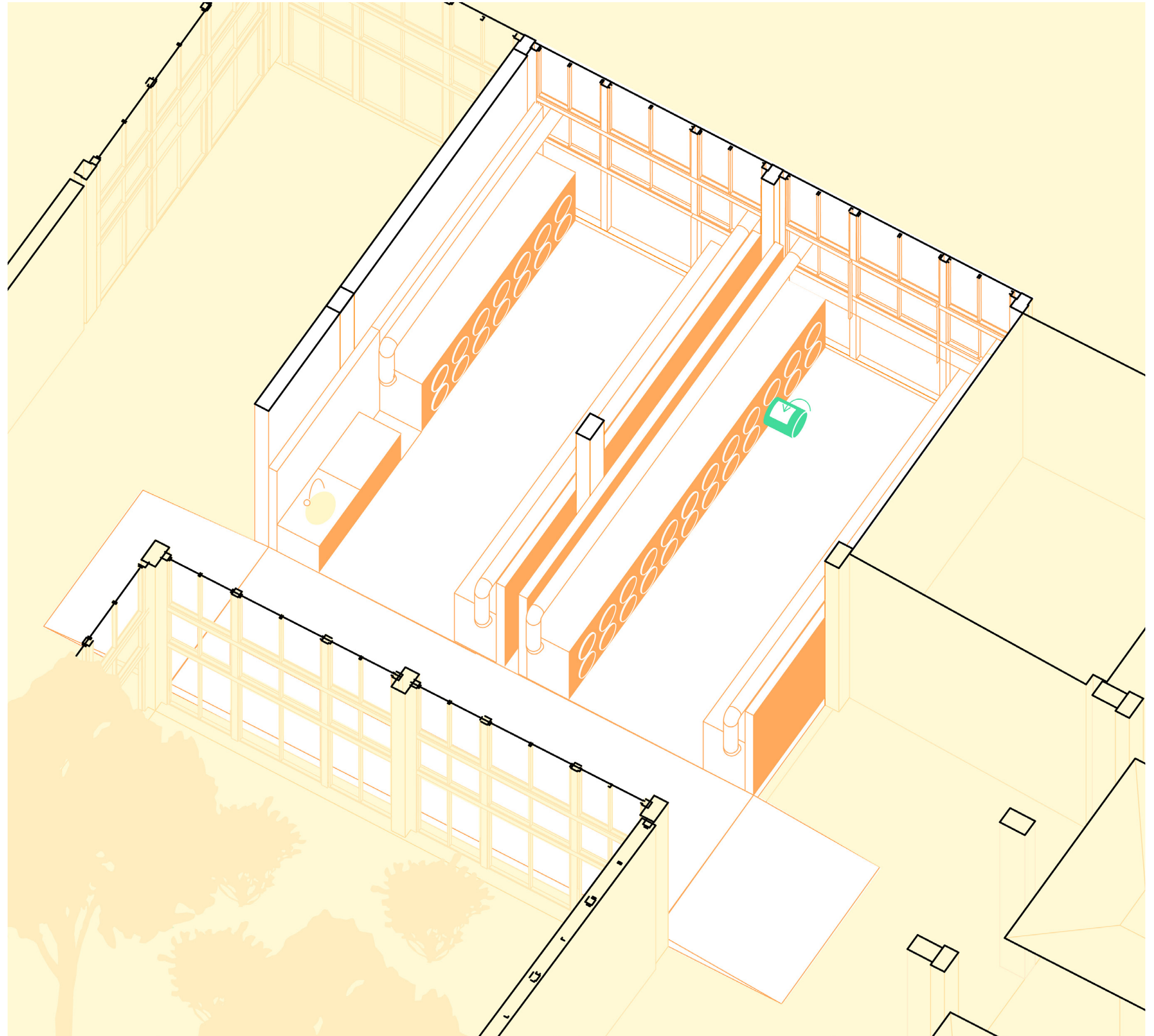
Connection between research and design





# Feaces treatment

Connection between research and design





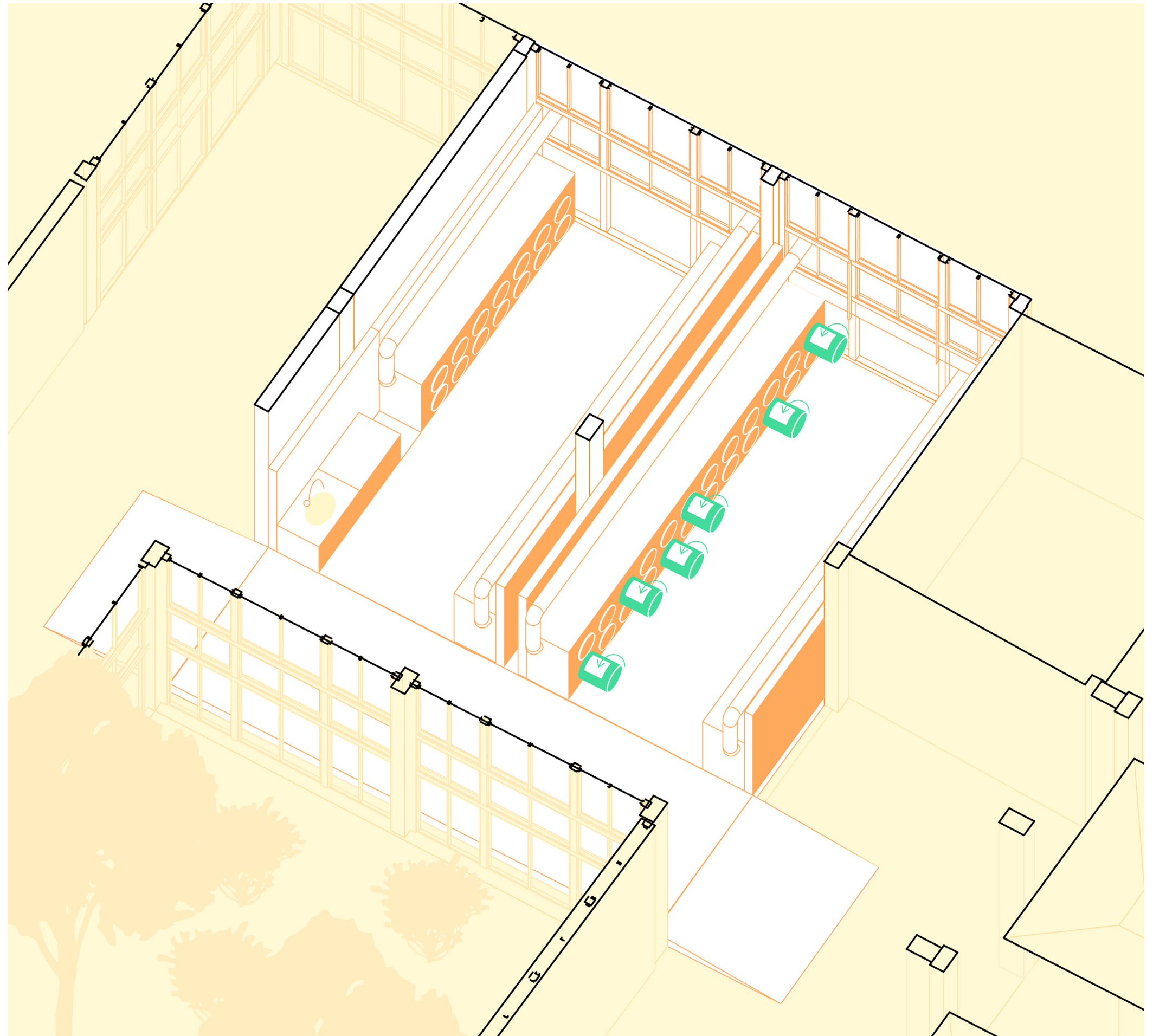
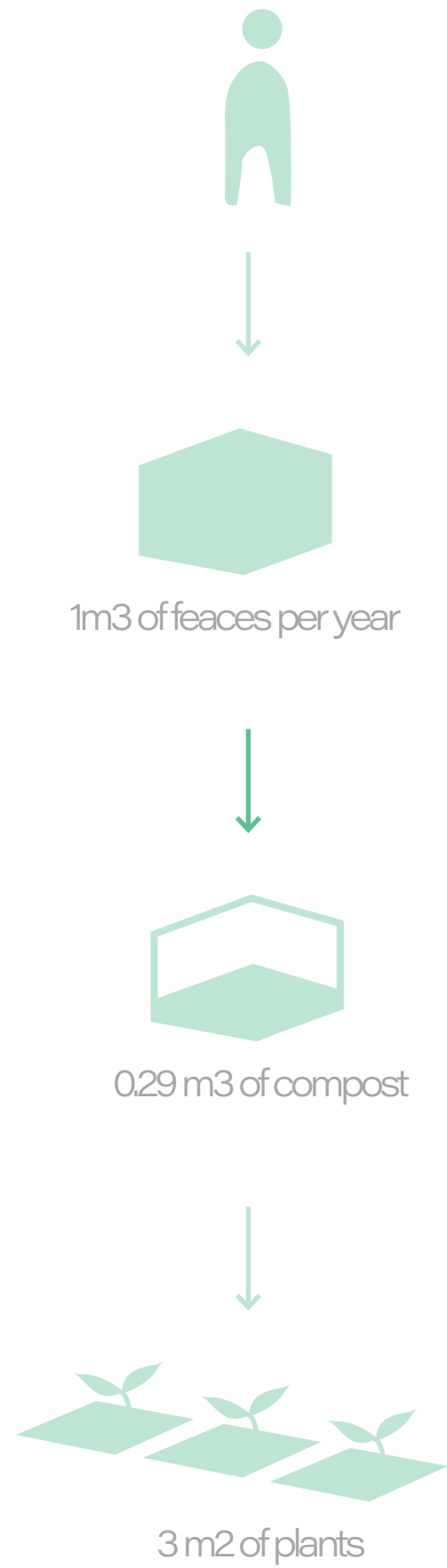
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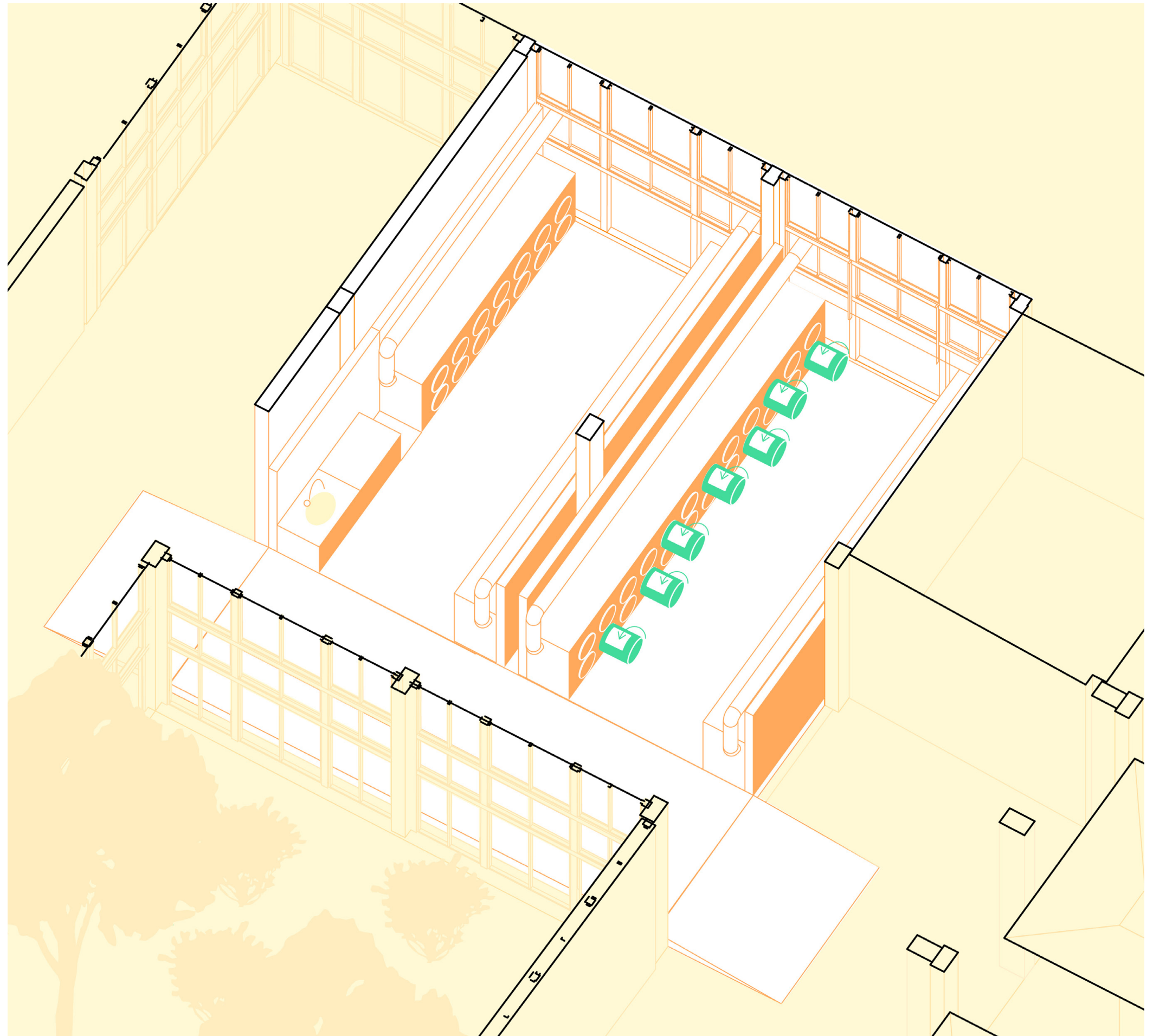
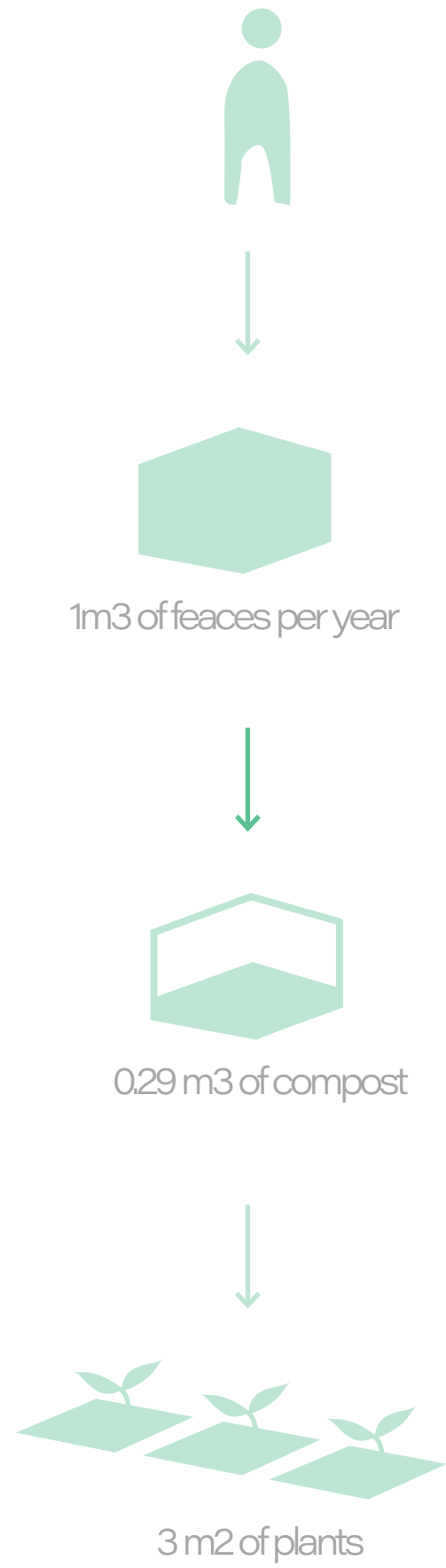
Connection between research and design





# Feaces treatment

Connection between research and design



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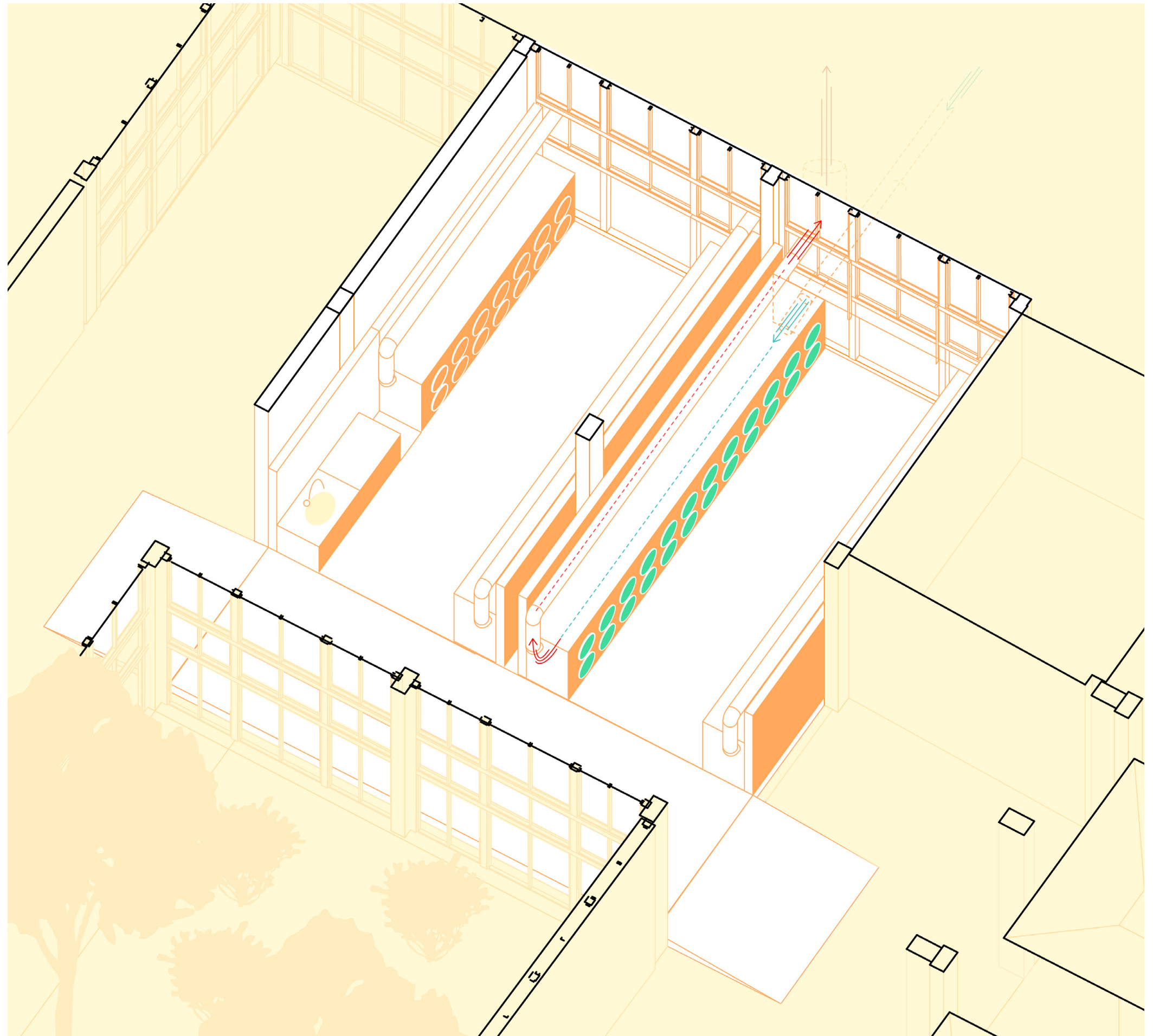
Connection between research and design





# Feaces treatment

Connection between research and design



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Connection between research and design





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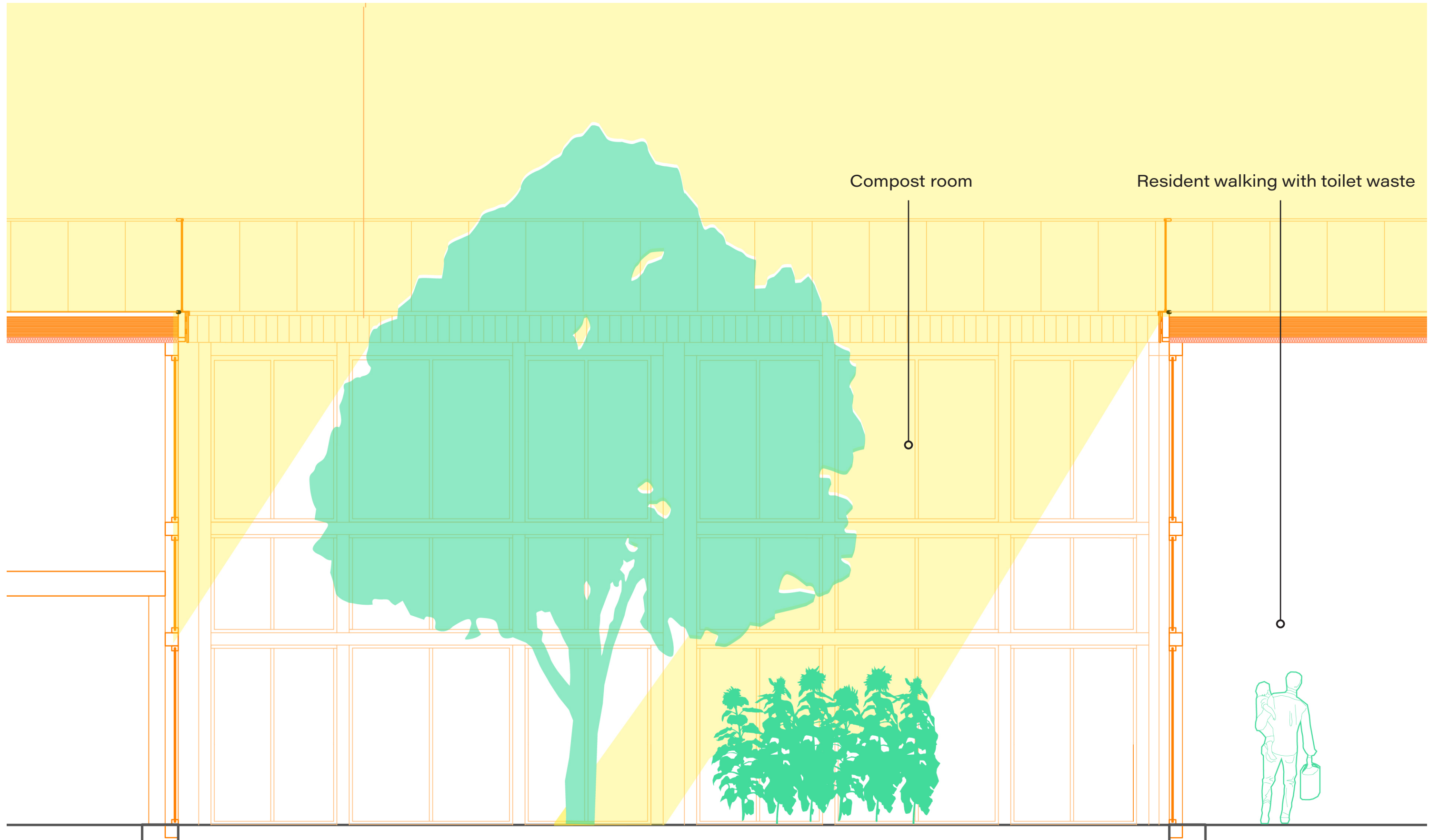
Connection between research and design





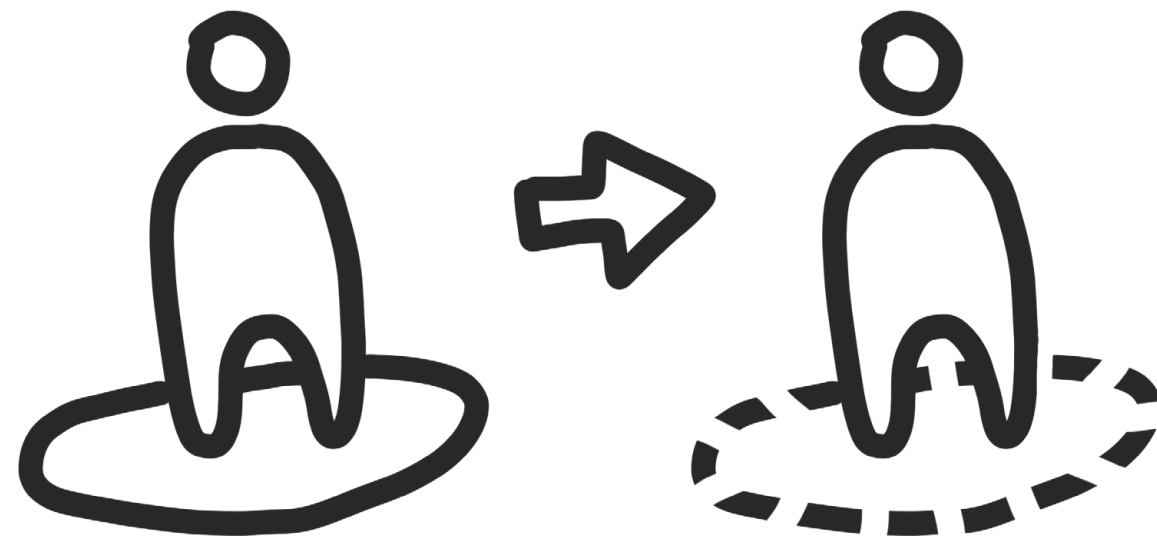
# Feaces treatment

Connection between research and design



# Design goals

Programme of the building



Breaking the borders between people and nature  
with architecture

# Existing building

Current Situation



*Het belastingkantoor gezien vanuit het zuidwesten vlak na oplevering in 1970 (bron: 77DP)*



# New facade

Vision



# Design goals

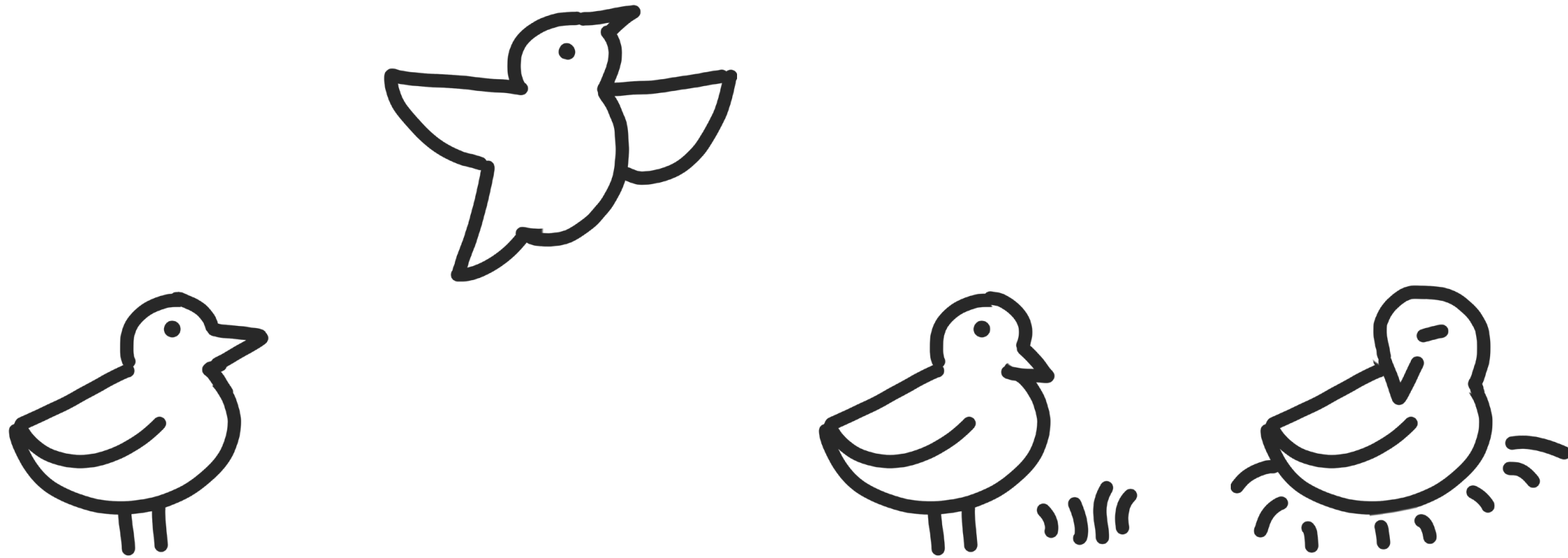
Vision

Spring

Summer

Autumn

Winter

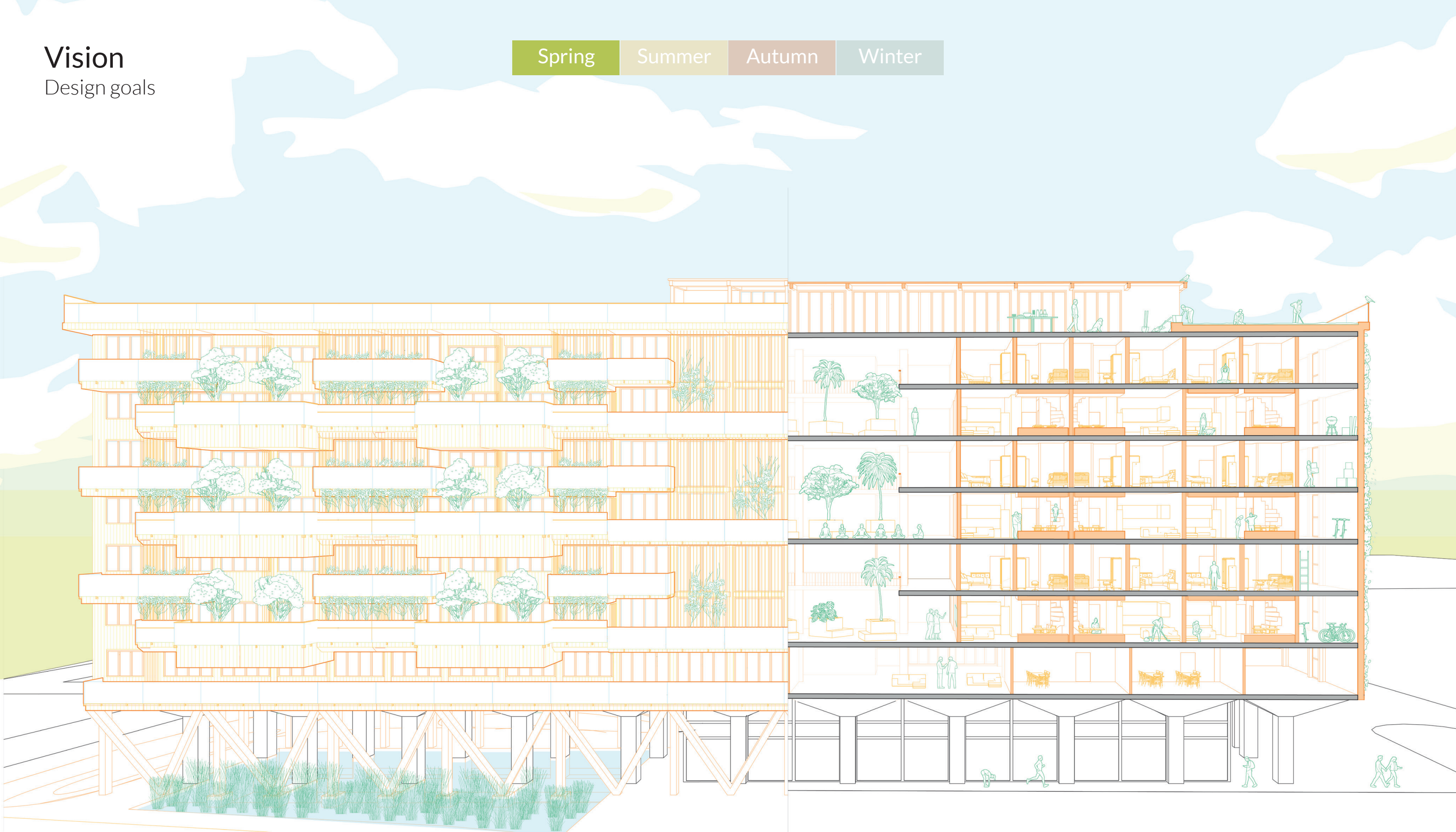


Each season brings different requirements and qualities



Vision  
Design goals

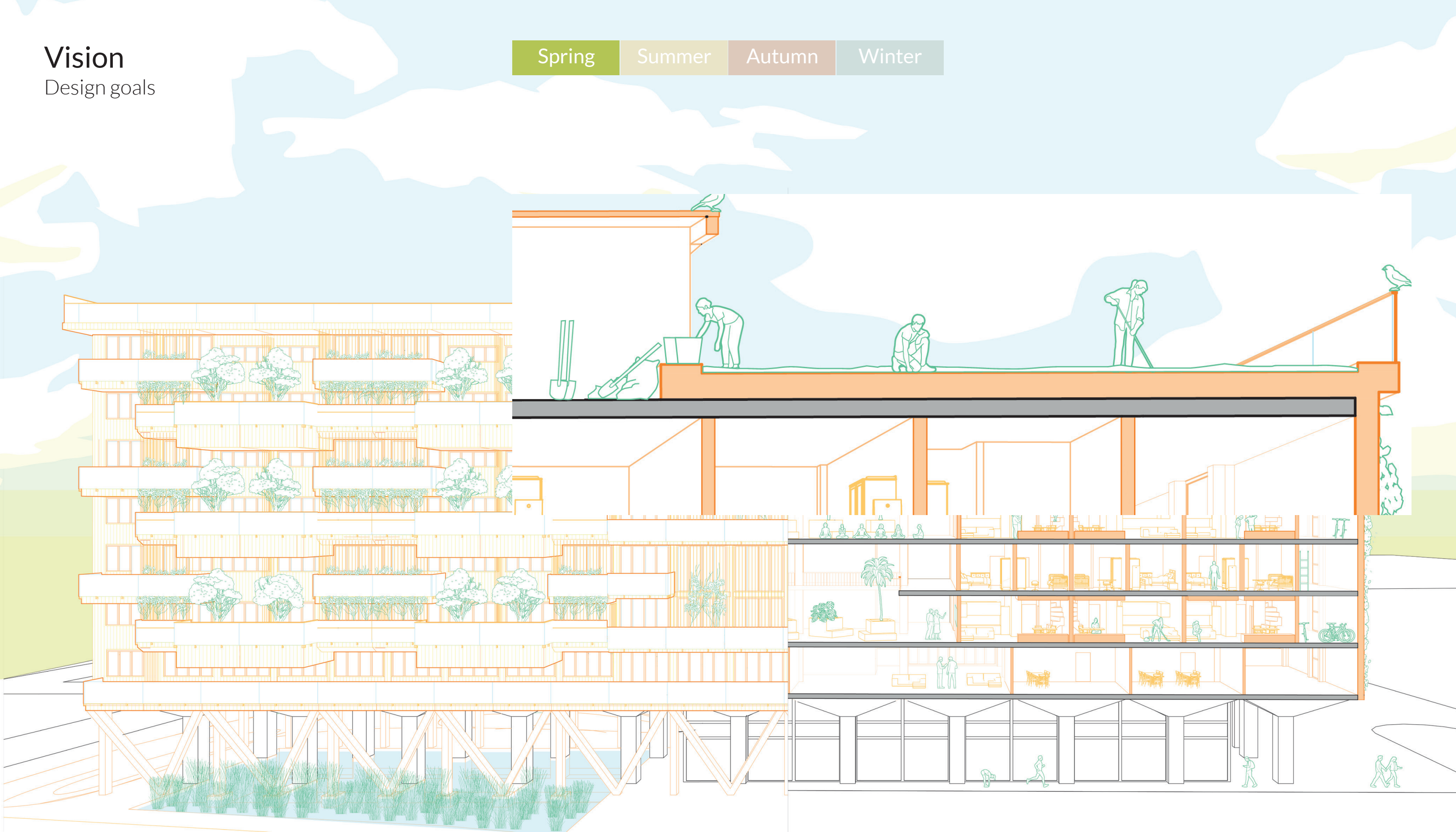
Spring Summer Autumn Winter





Vision  
Design goals

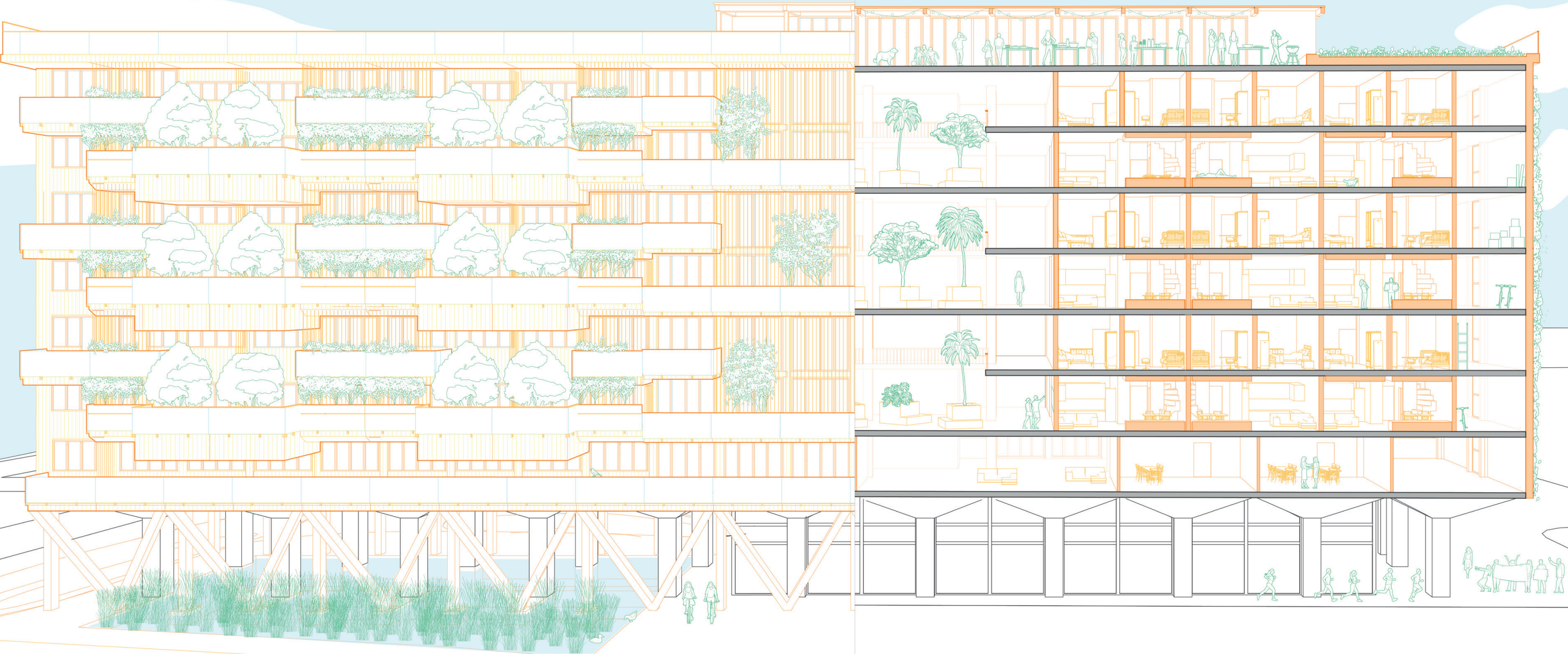
Spring Summer Autumn Winter





Vision  
Design goals

Spring Summer Autumn Winter





Vision  
Design goals

Spring Summer Autumn Winter





Vision  
Design goals

Spring Summer Autumn Winter





# Vision

Design goals

Spring

Summer

Autumn

Winter



# Vision

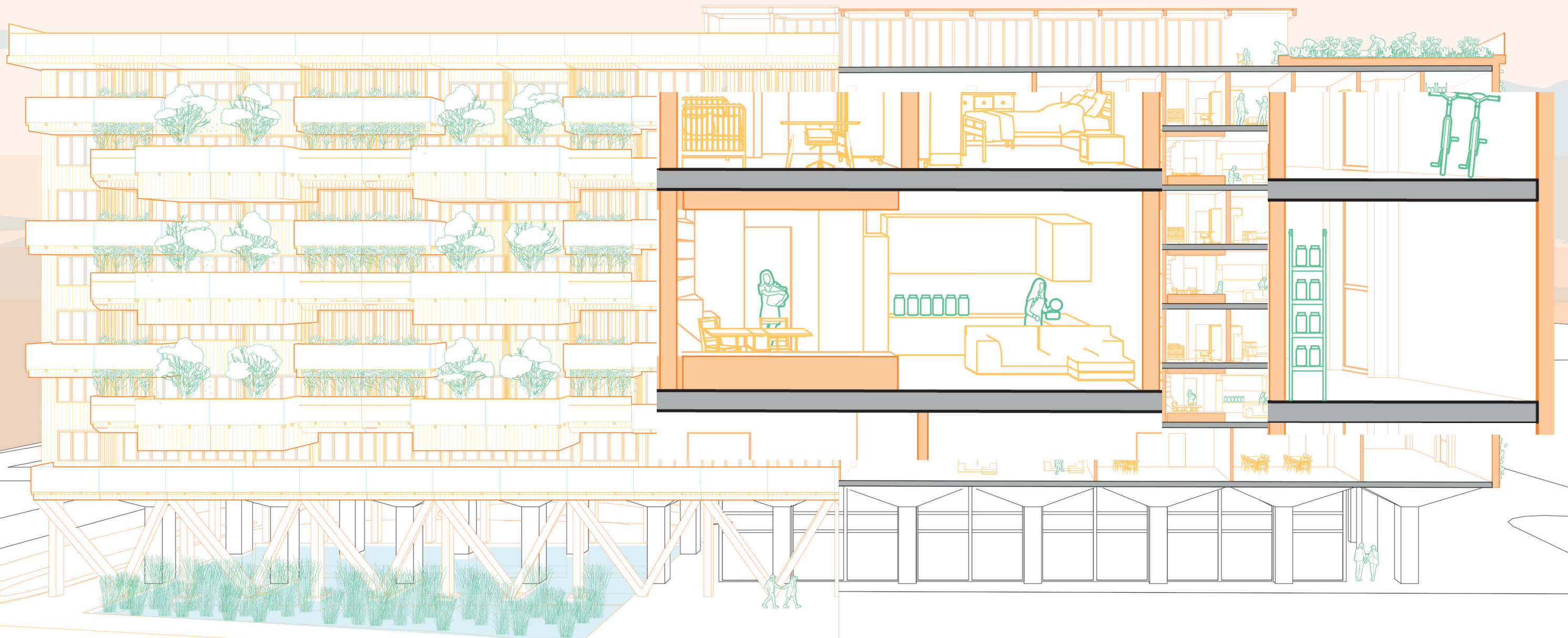
Design goals

Spring

Summer

Autumn

Winter





Vision  
Design goals

Spring Summer Autumn Winter



Vision  
Design goals

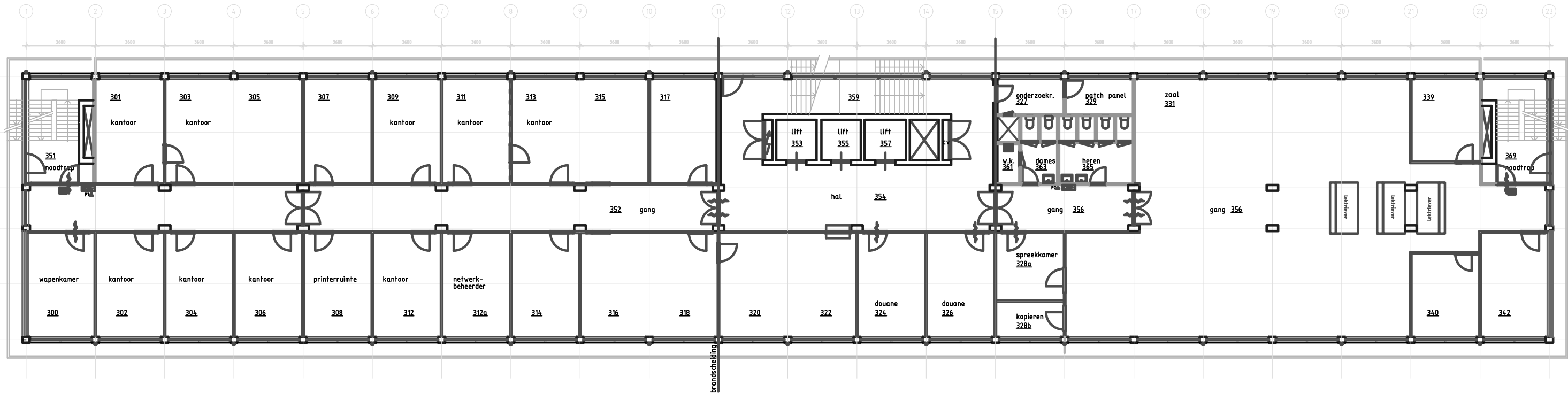
Spring Summer Autumn Winter



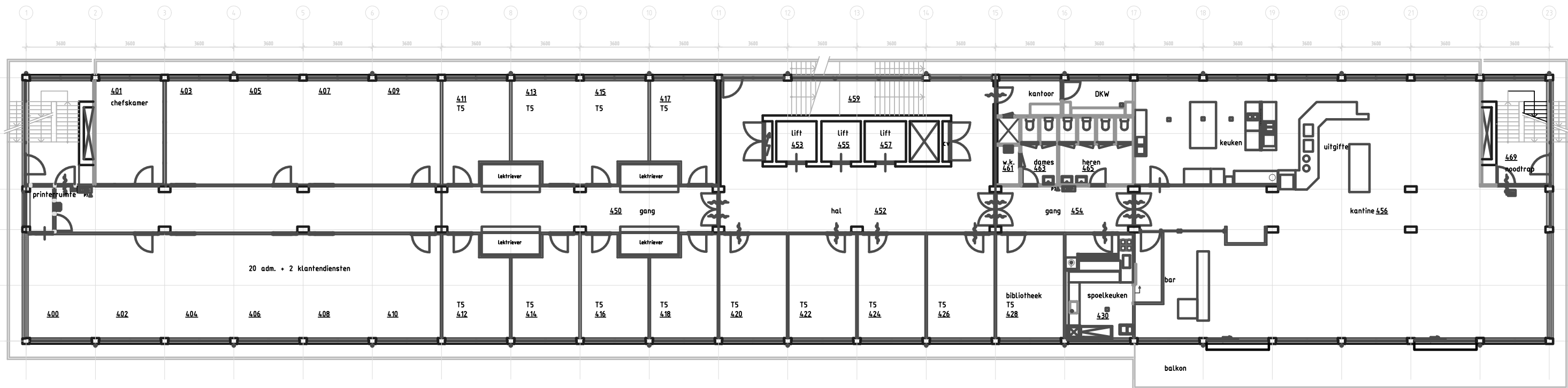


# Existing

Programme of the building  
verdieping

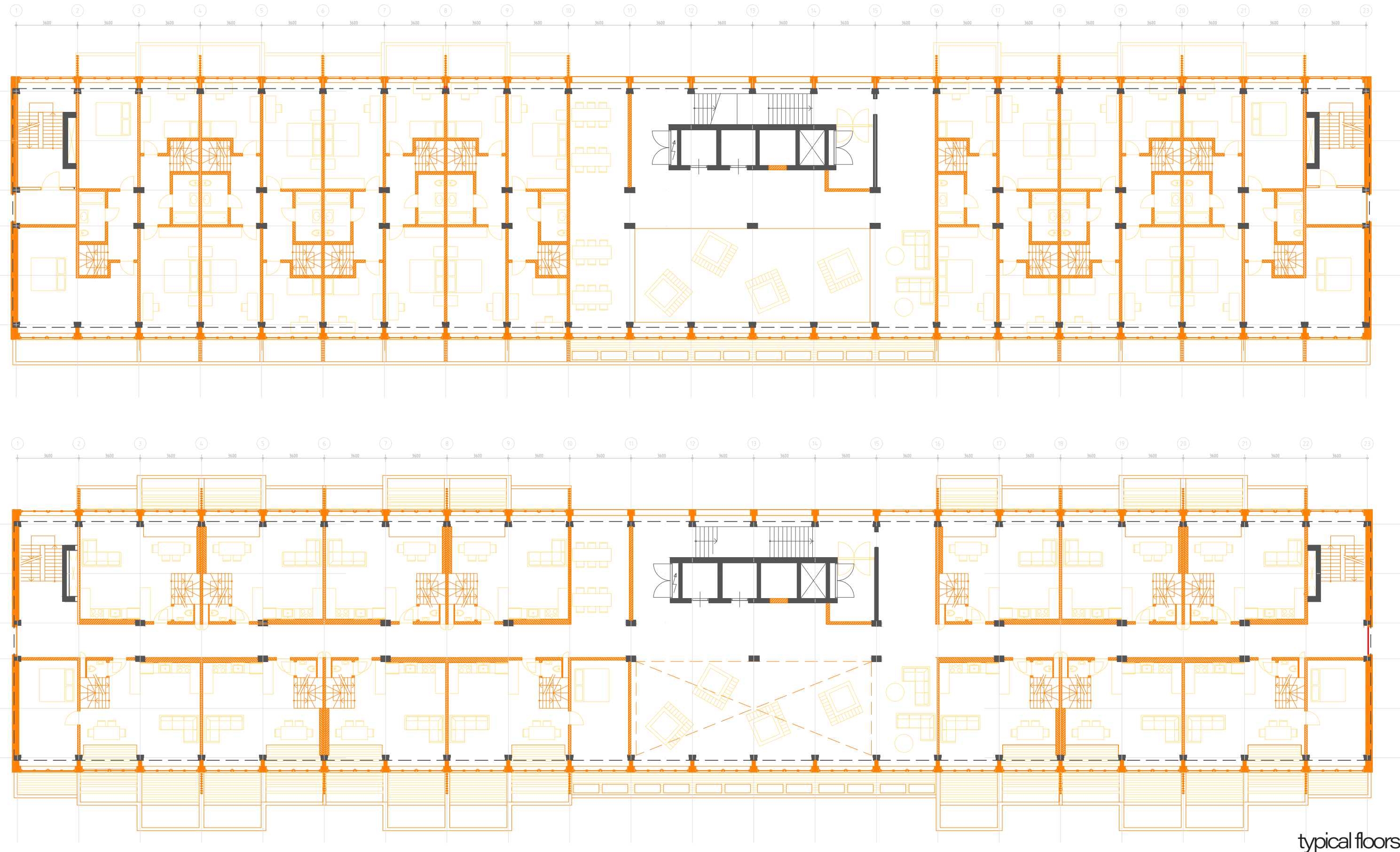


## 3e verdieping



# Interventions

Programme of the building

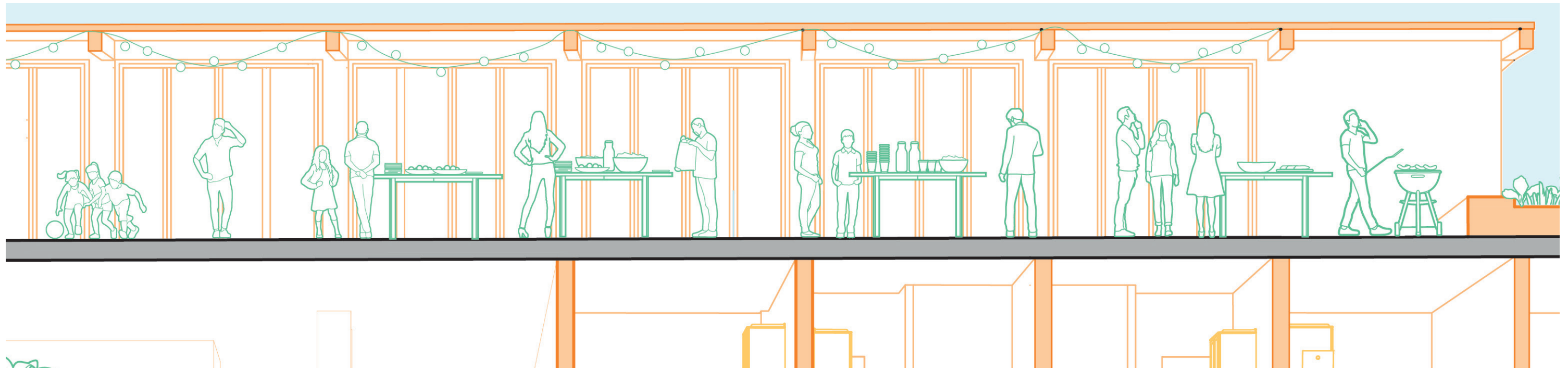


typical floors



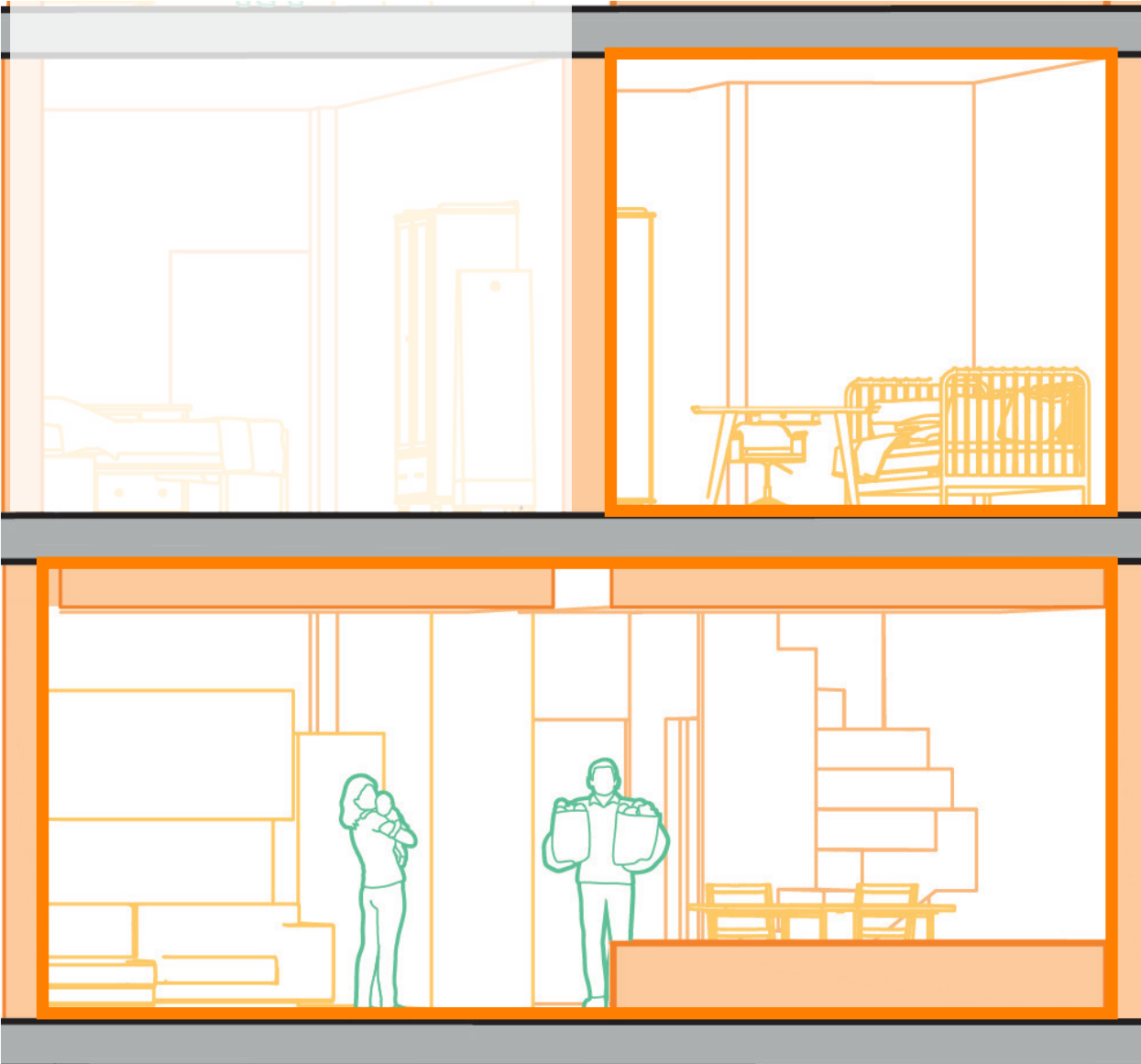
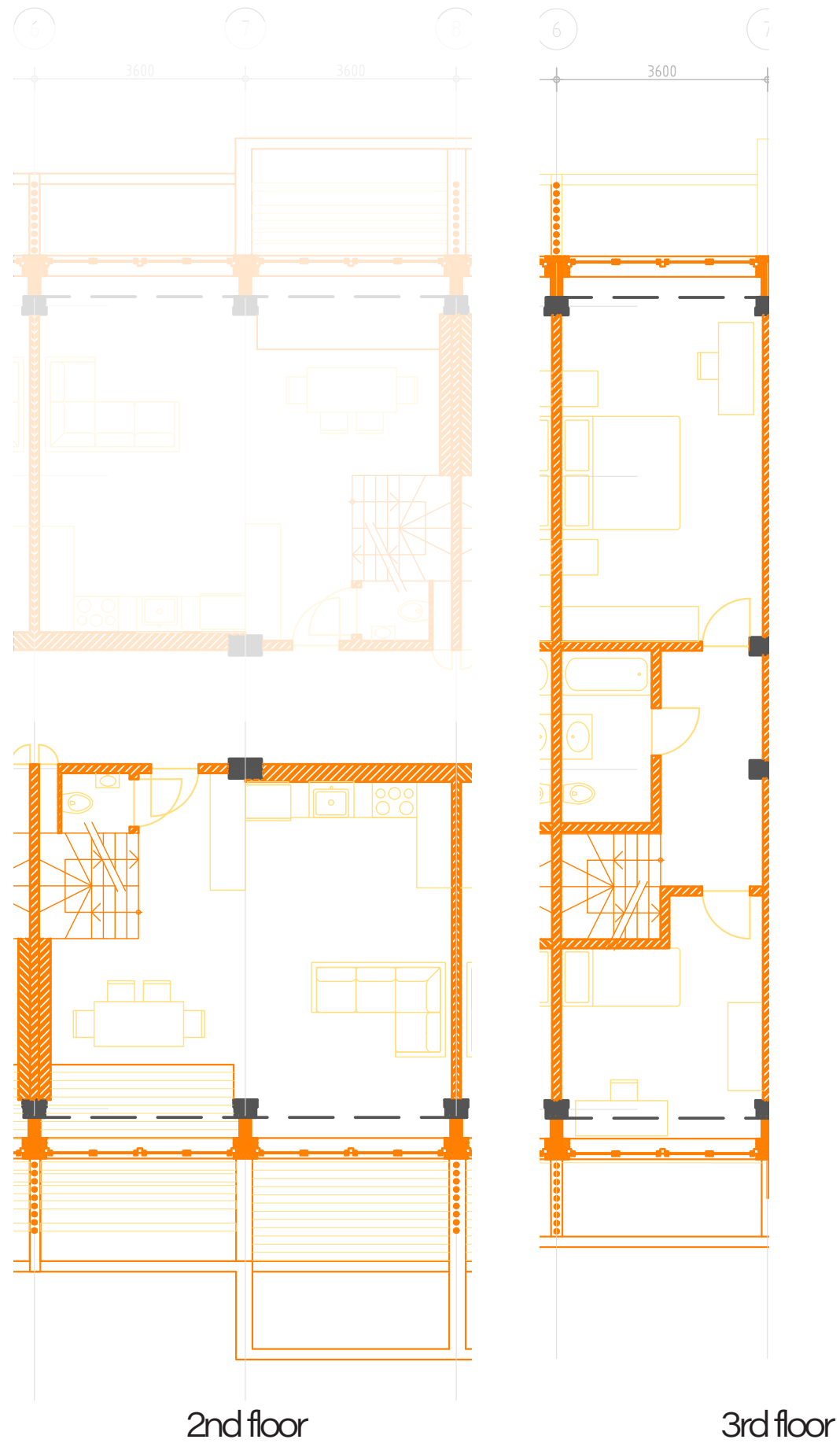
# Cohousing

Programme of the building



# Apartment 1

Programme of the building

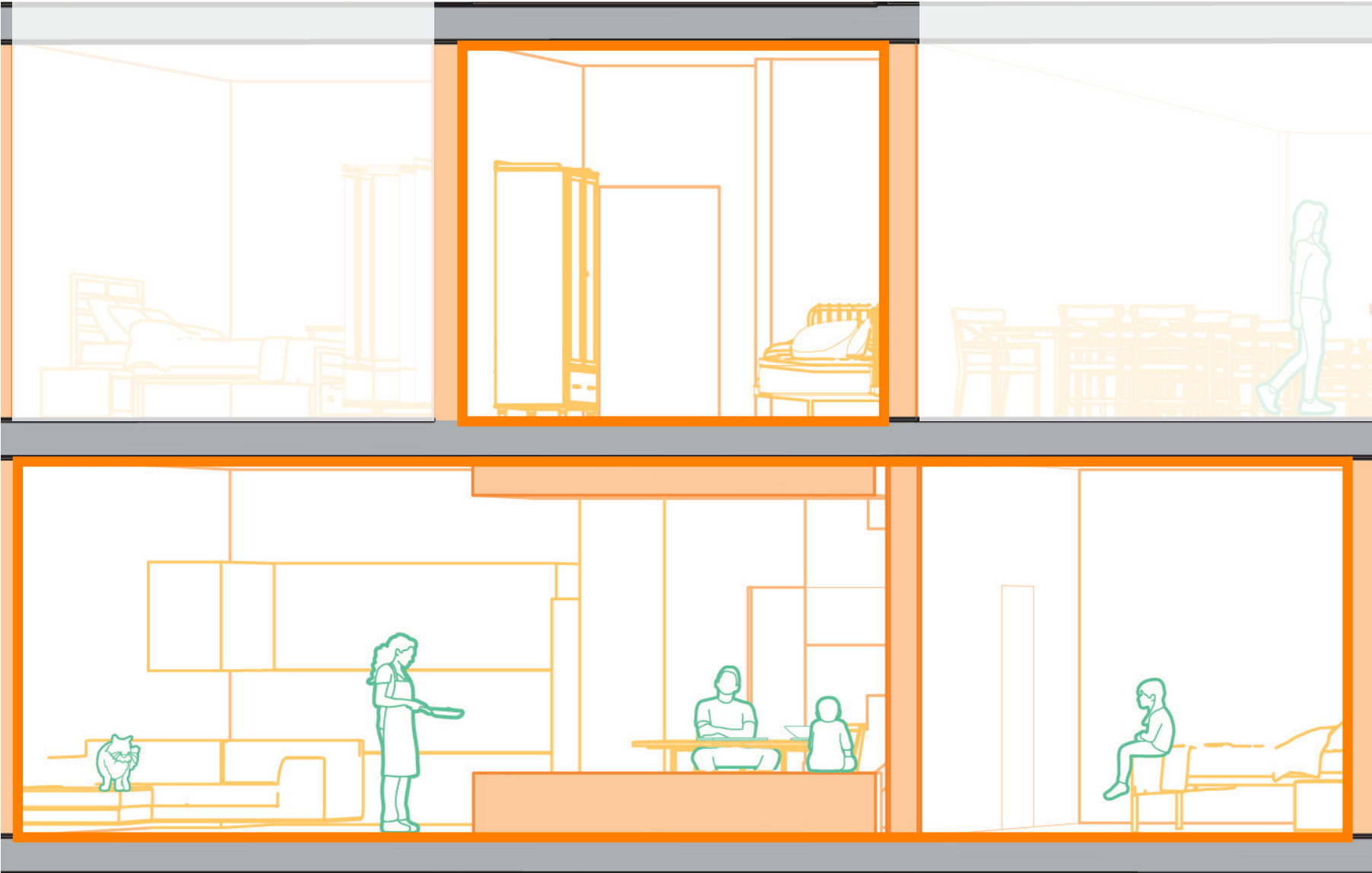
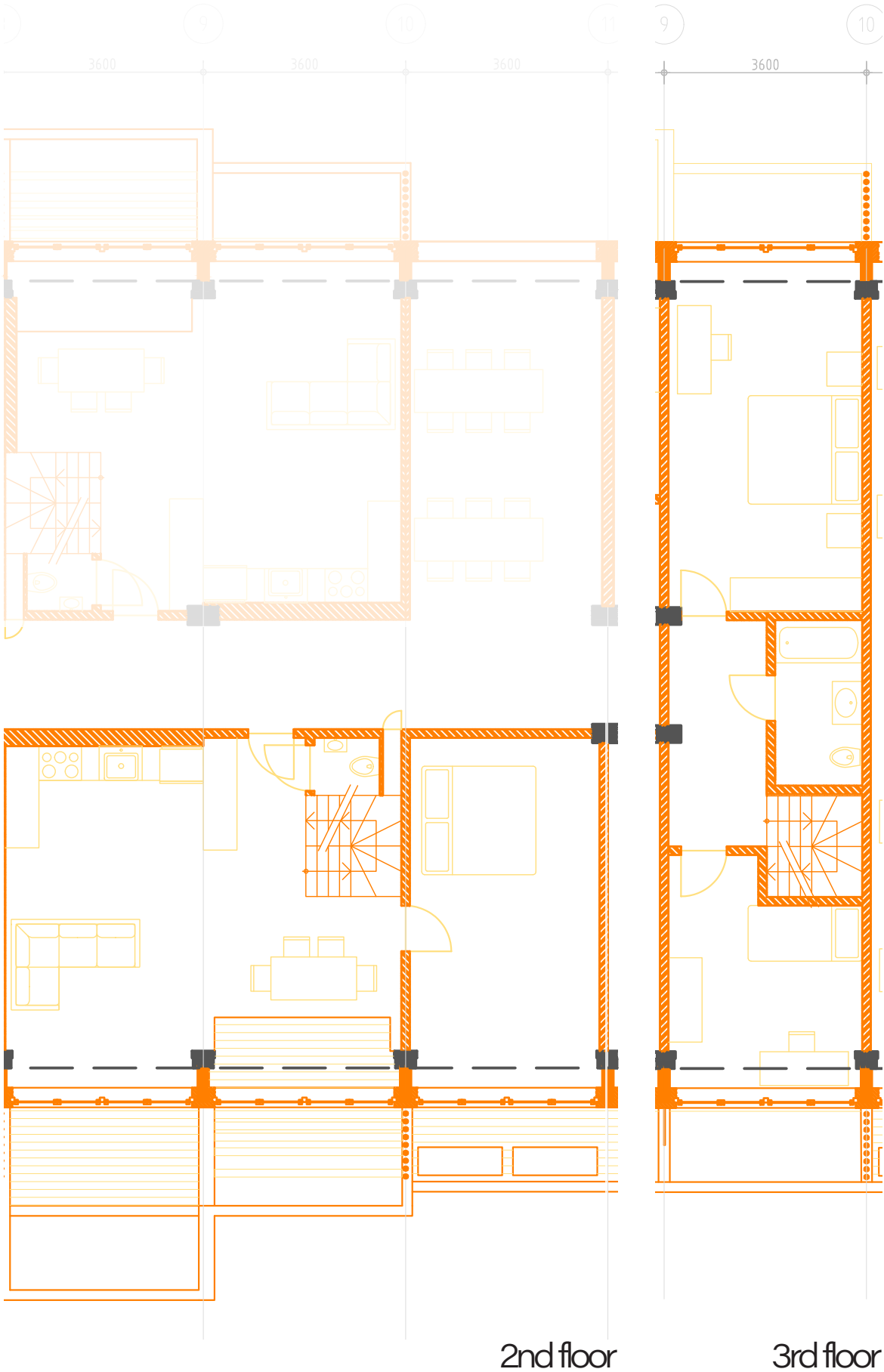


3 bedroom apartments



Apartment 2

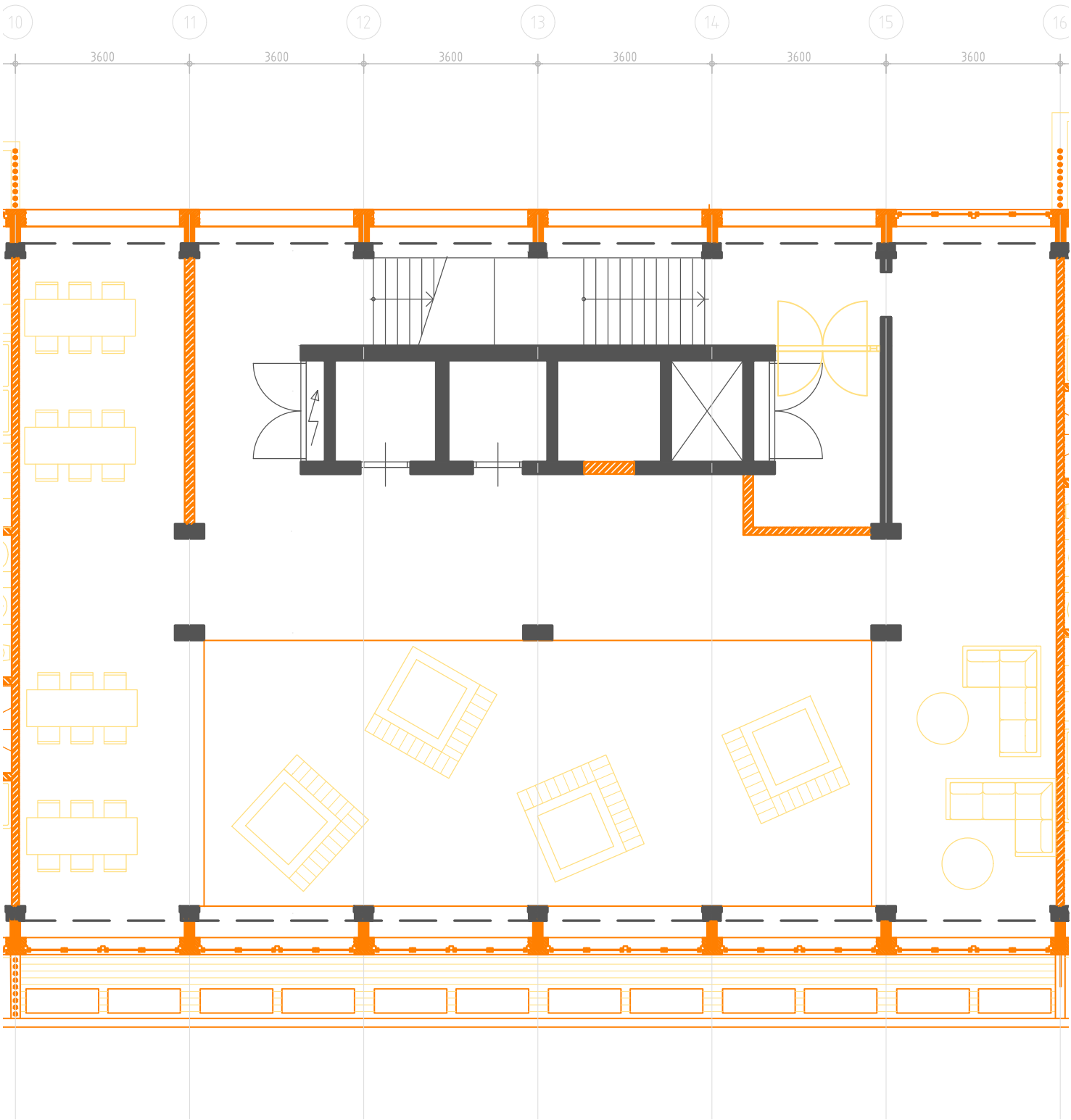
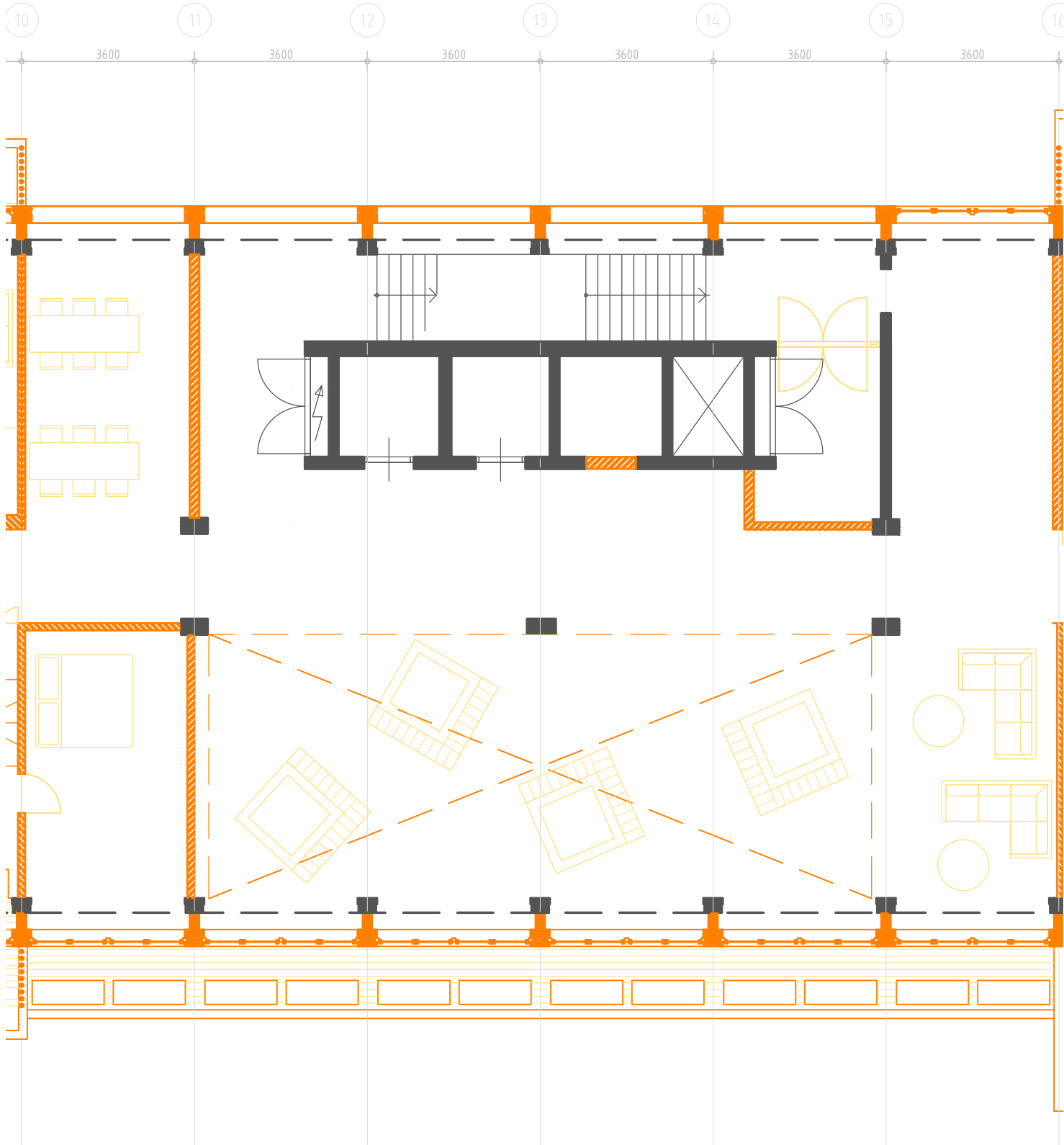
Programme of the building



3 bedroom apartments

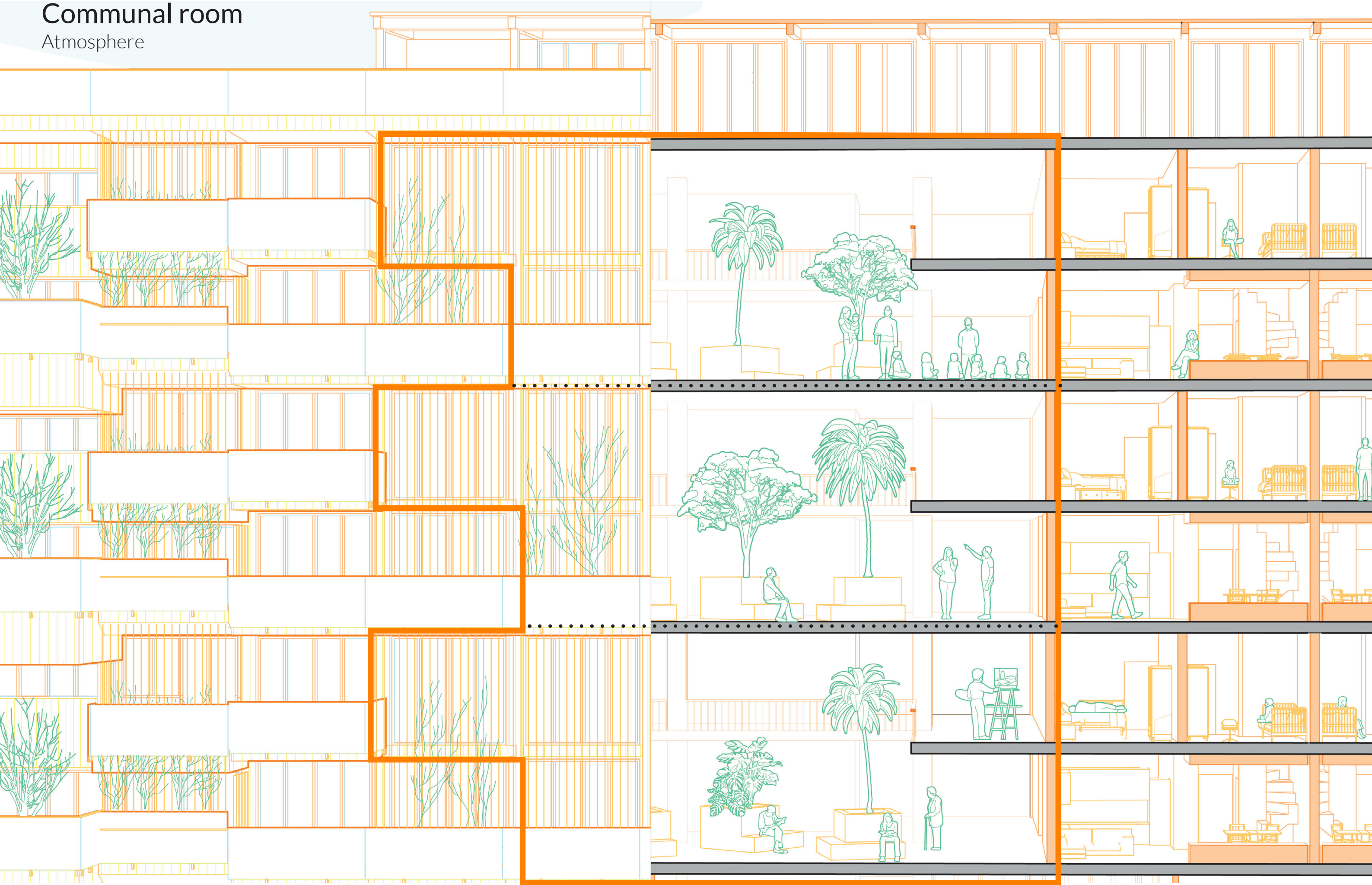
Common room

Programme of the building



communal room one per floor

Communal room  
Atmosphere





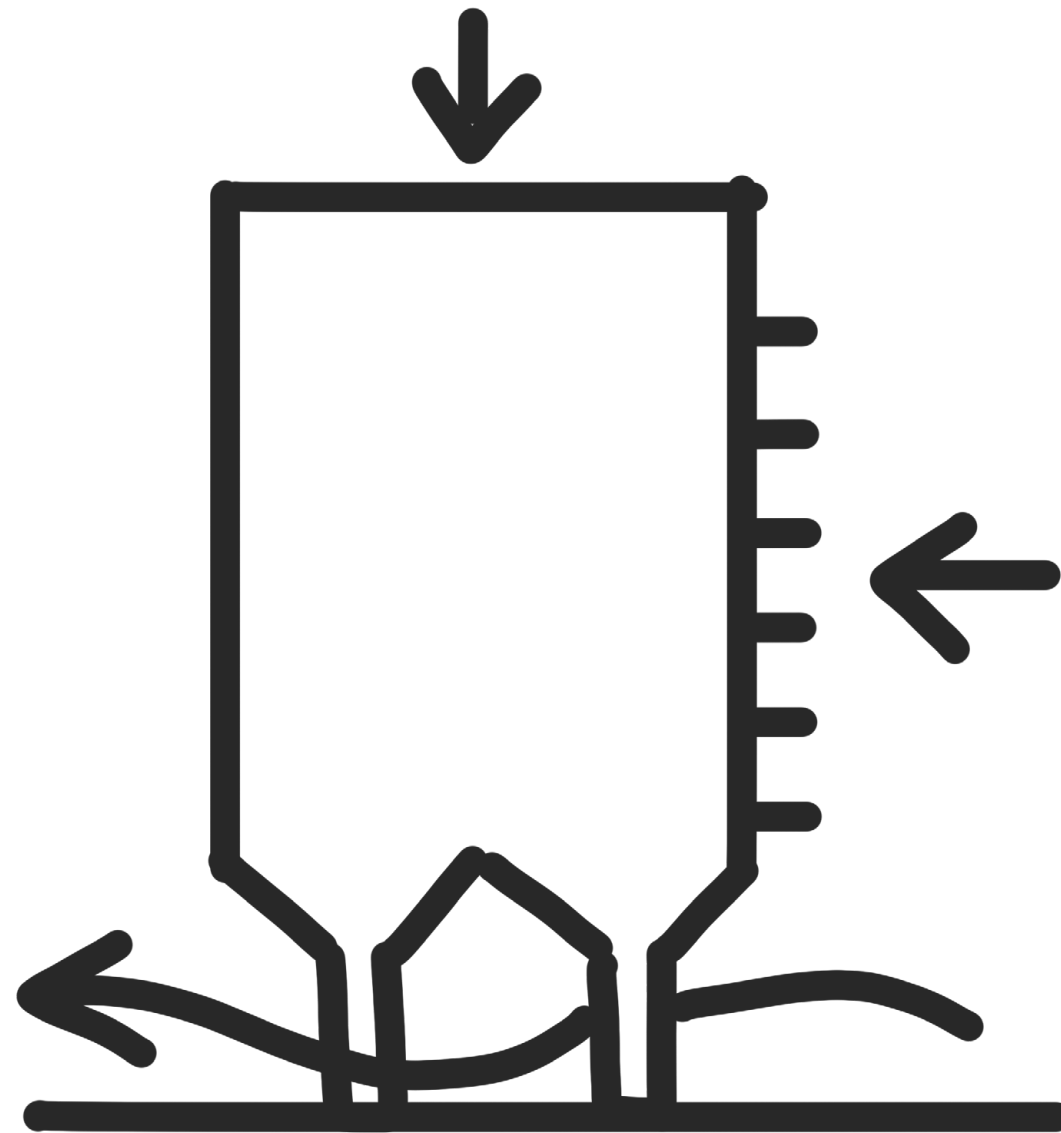
# Communal room

Atmosphere



# Design

Focus in design - Skin layer of the building

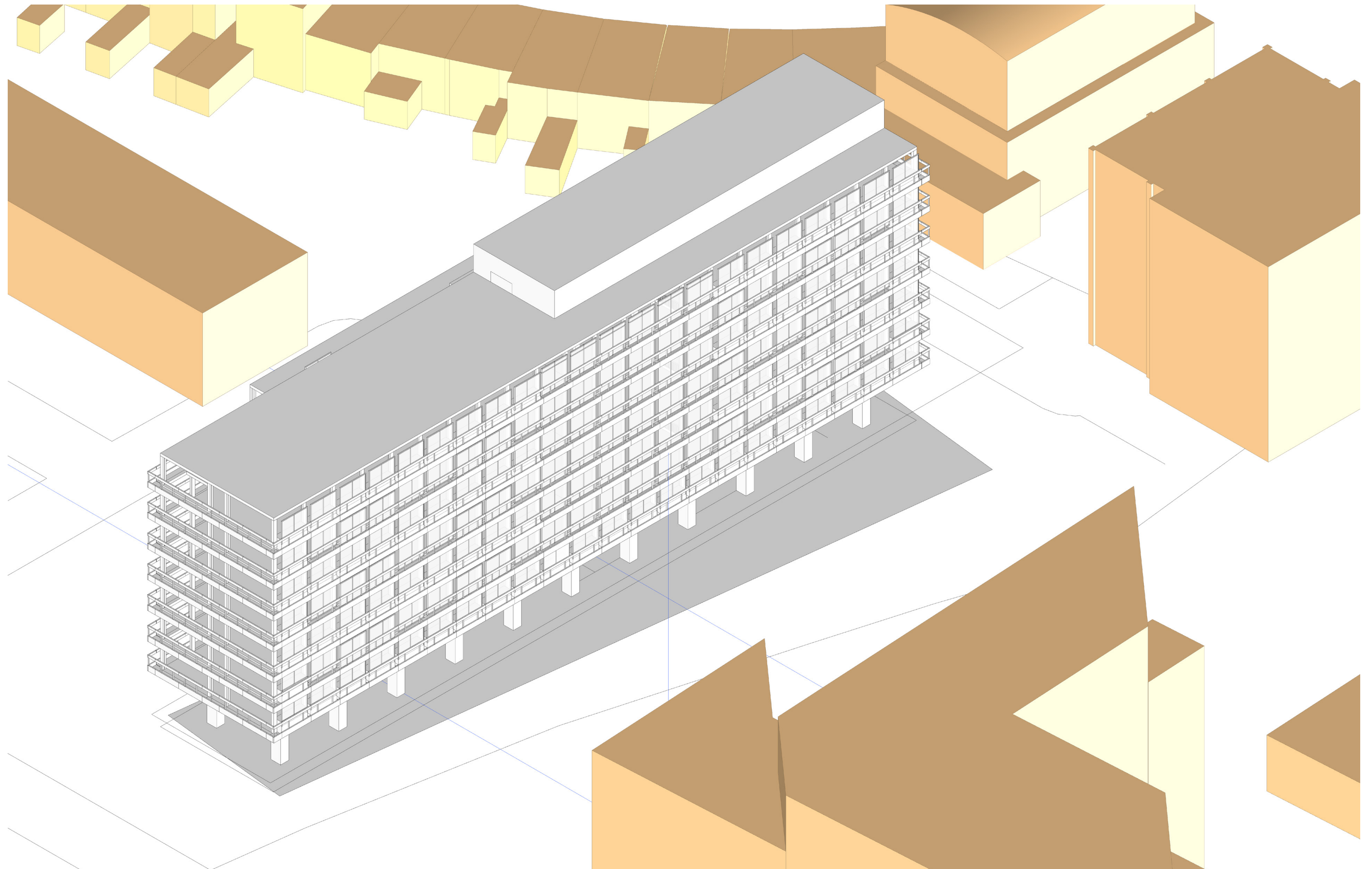


The transitional spaces



# Design

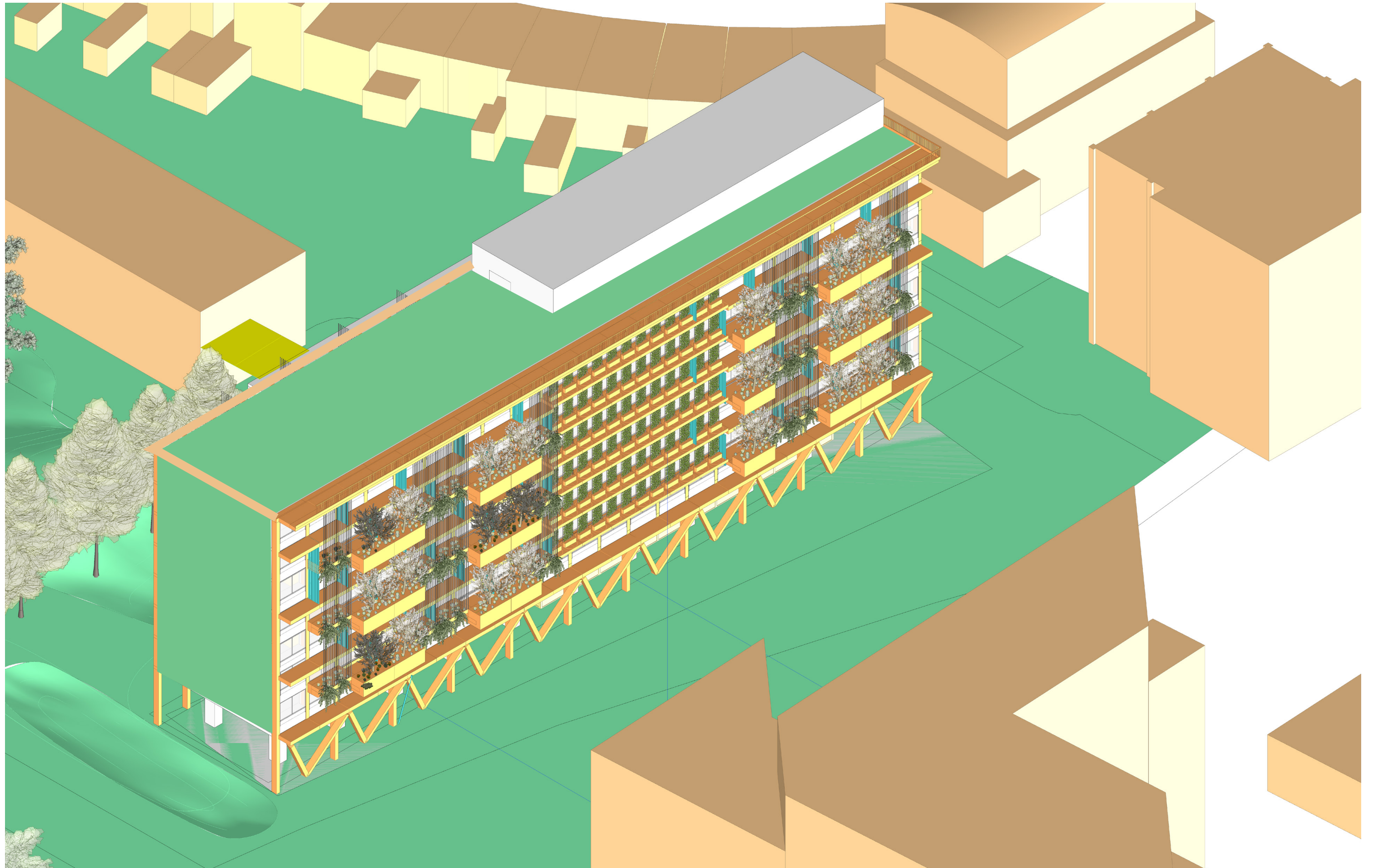
The existing building





# Design

The building with second skin





# Site

Ground floor

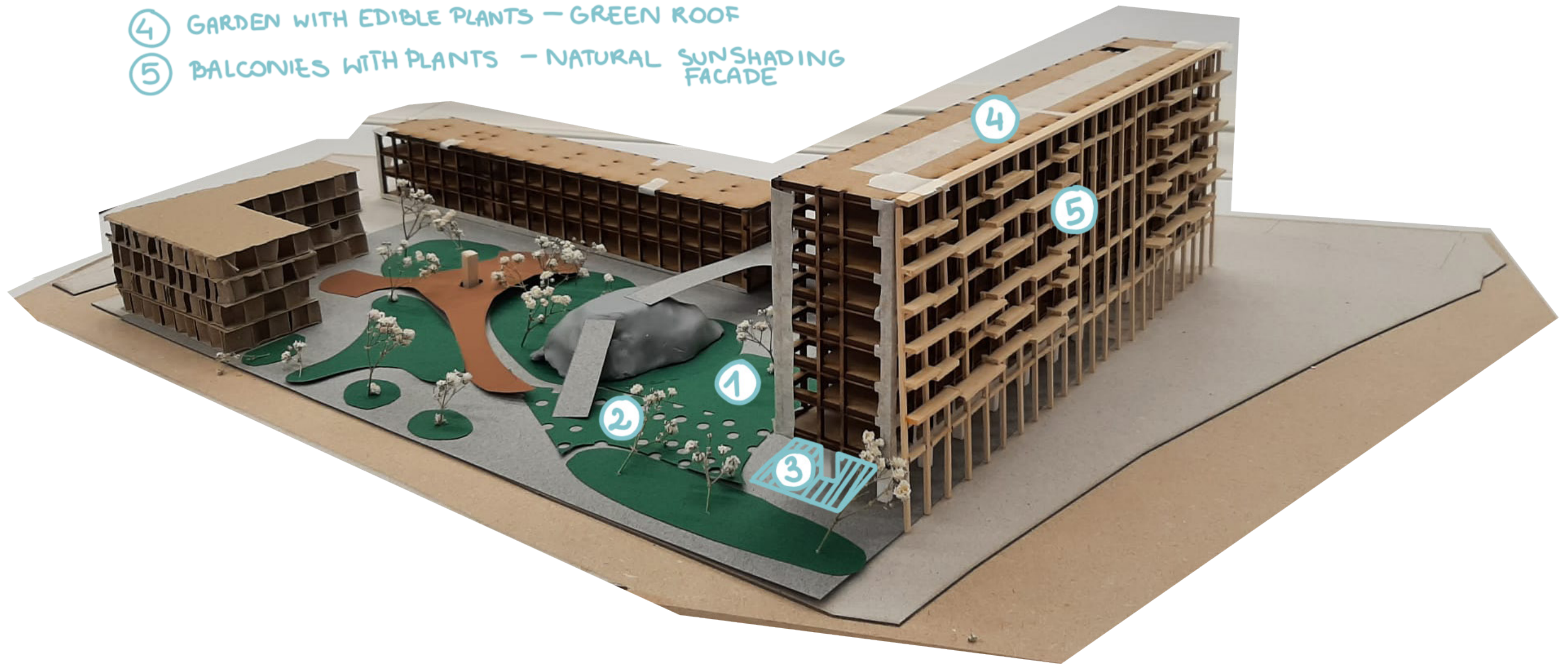




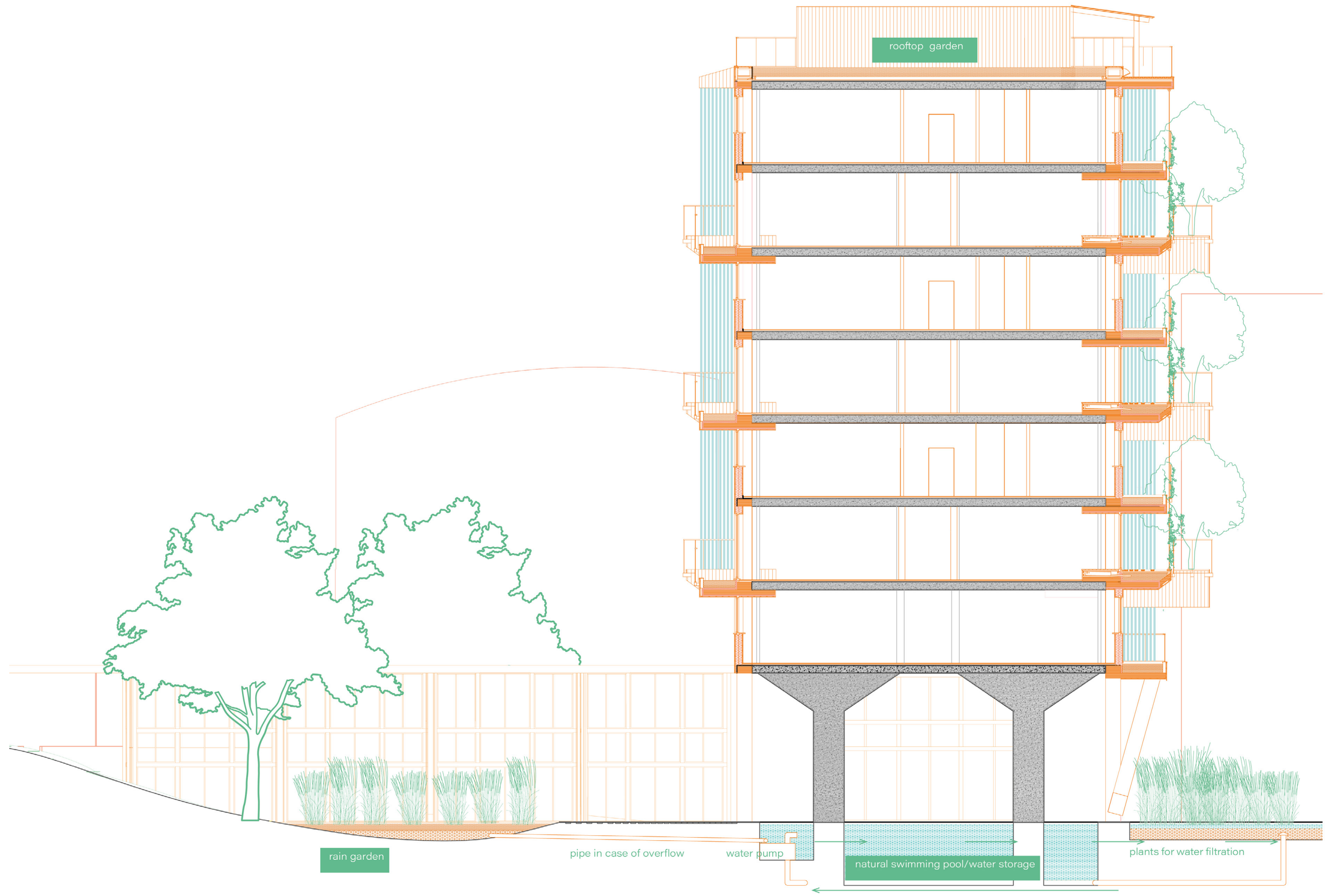
# Site

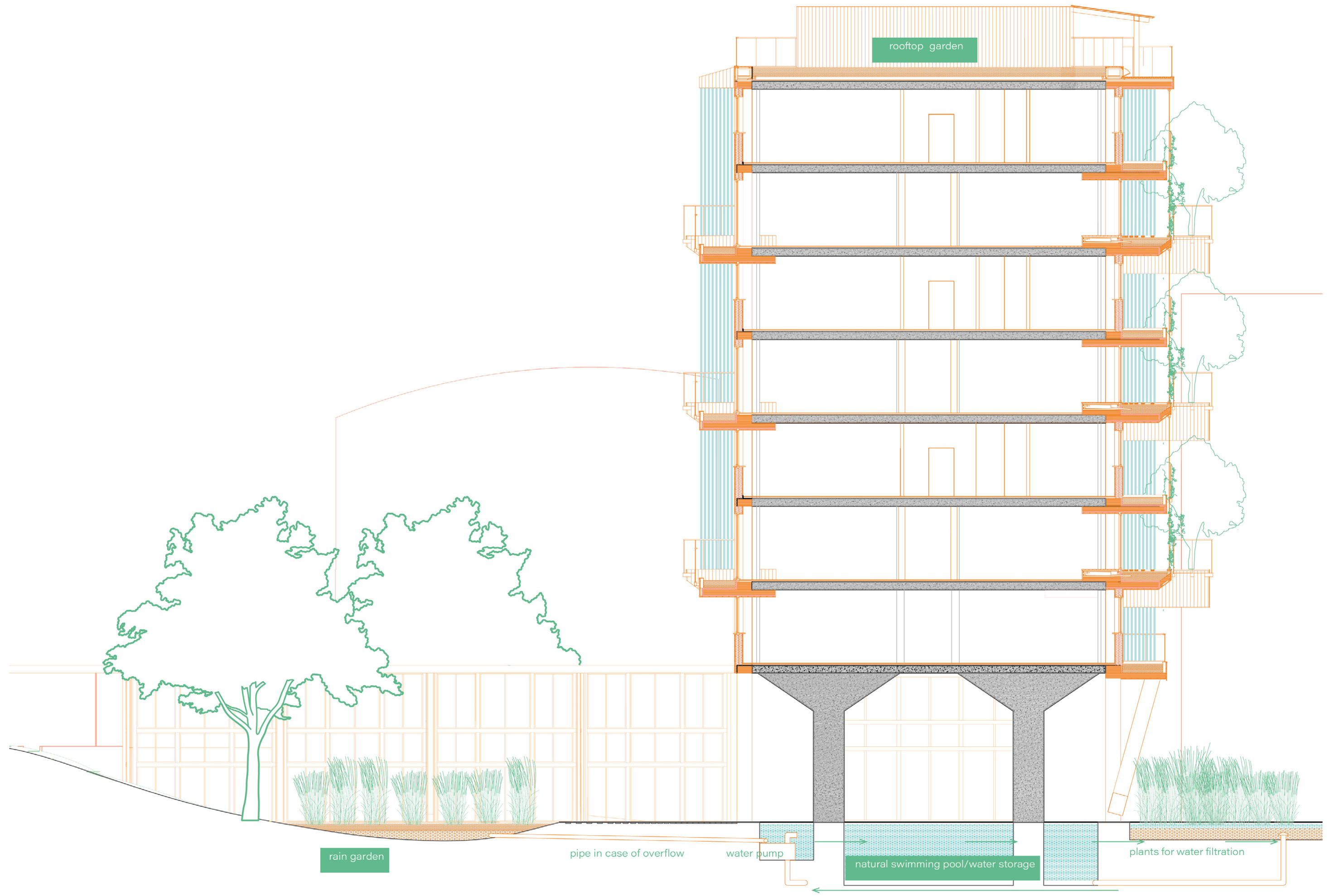
Ground floor

- ① RAIN GARDEN
- ② PERMEABLE PAVEMENT
- ③ NATURAL SWIMMING POOL
- ④ GARDEN WITH EDIBLE PLANTS — GREEN ROOF
- ⑤ BALCONIES WITH PLANTS — NATURAL SUNSHADING FACADE

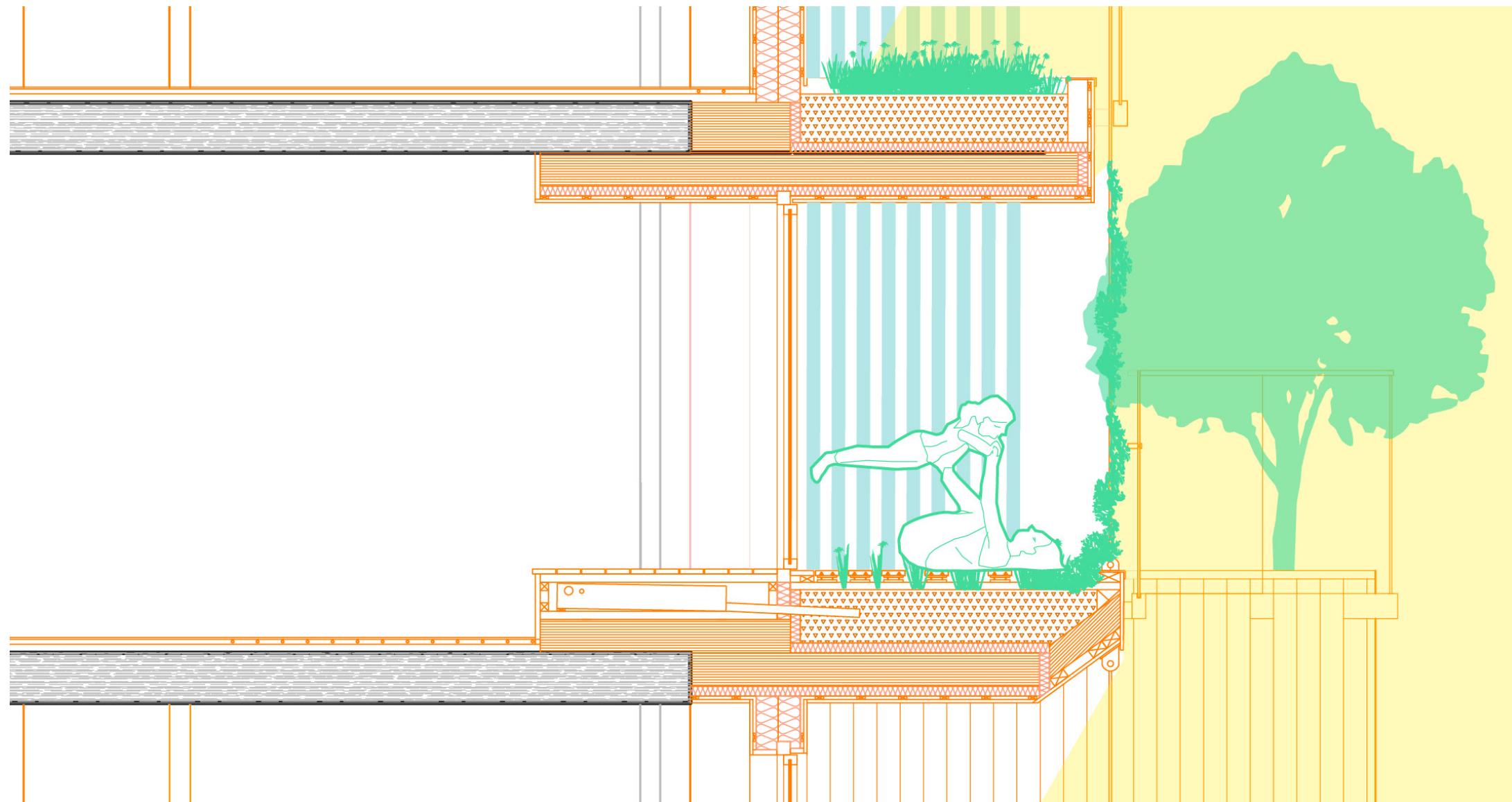












Balconies



# Balconies

North facade





# Balconies

South facade





# Balconies

South facade - planting strategy

Plant	Latin name	purpose	type	origin/native to	sun	soil	Ph	height [cm]	diameter [cm]	colour
Dahlia	Dahlia	"for instects"	perennial	Mesoamerica		rich, well-drained soil	slightly acidic	30-160		colourful
Alpine delphinium/Candle	Delphinium elatum	"for instects"	perennial	Europe middle/east		rich, well-drained soil	acidic/neutral/alkline	120-200		blue, liliac, white
Garden Cosmos	Cosmos bipinnatus	"for instects"	one year	Mesoamerica		avoid rich soil,	slightly acidic	50-111		white, pink, red
Mexican marigold	Tagetes Erecta	"for instects"	one year	Mesoamerica		adaptable to many kinds of soil		30		yellow, orange, brown
Bluemink	Ageratum Houstonianum	"for instects"	one year	Mexico, Central America and the Caribbean.		rich, moist, well-drained soil,	acid, neutral and basic	10-70		blue, liliac, pink, white
Begonia sp.	Begonia Semperflorens	"for instects"	one year	South American		light, fertile, well-drained soil,	slightly acidic soil	15-25		red, pink,white
Common verbena	Verbena officinalis	"for instects"	one year	Europe		Dry to medium moisture, well-drained	acidic	20-30		purple, red, pink, white
Petunia	Petunia	"for instects"	one year	South American		fertile soil which drains well	slightly acid	20-30		colourful
Nickotiana x sandarea		"for instects"	one year	South American		soft soil mixed with sand	Acid, Alkaline, Neutral	25-80		white, pink, purple, green
Wallflower	Erysimum cheiri/Cheiranthus cheiri	"for instects"	one year	Greece				30-70		yellow, brown
Garden arabis, mountain	Arabis caucasica	"for instects"	two years	south eastern Europe and the Mediterranean		light, medium and heavy soils, prefer	Acid, Alkaline, Neutral	15-30		pink, white
Evergreen candytuft/perennial	Iberis sempervirens	"for instects"	perennial	southern Europe		tolerates poor soil and does well in v	high tolerance	15		white
Wood violet	Viola odorata	"for instects"	perennial	Europe and Asia		Deep moist soil	Slightly acidic to neutral	15		purple,white
Perennial cornflower/mou	Centaurea montana	"for instects"	perennial	Europe		dry to medium, well-drained soils (f	Neutral to acidic, alkaline	50		blue
Oxeye daisy	Leucanthemum vulgare	"for instects"	perennial	Europe and eastwards into central Asia		light, medium and heavy soils and p	neutral and basic (alkaline)	50		white
Nepeta x faassenii		"for instects"	perennial	Europe and the temperate regions of Asia				30		lavender, blue
Large-flowered tickseed	Coreopsis Grandiflora	"for instects"	perennial	north America		sandy or rocky soils but can adapt to	Neutral to acidic	60-90		yellow
New York aster	Symphyotrichum novi-belgii	"for instects"	perennial	northeastern Americ		sandy, loamy, and clay soils	Neutral to acidic	80-140		liliac, red, white
Orpine	Sedum Telephium	"for instects"	perennial	native to Eurasia		light, medium and heavy soils	acid, neutral and basic (alkaline)	40-60		pink, purple, red
Hemp-agrimony	Eupatorium Cannabinum	"for instects"	perennial	native to many areas of Europe		base-enriched soils, damp, wet	acid, neutral and basic (alkaline)	150-200		pink
Blue globe-thistle	Echinops Bannaticus	"for instects"	perennial	southeastern Europe		well-drained	acid	80-120		blue
Knotweed	Polygonum L.	"natural garden"		Asia				20-30	30 cm	pink
Lily of the Nile	Agapanthus L'Hér.	"natural garden"		south Africa				70-100	100 cm	purple
Lavender	Lavandula	"natural garden"		Europe (Old world)				30-60	50-60 cm	
False goat's beard	Astilbe	"natural garden"		North America						
Honeysuckle	Lonicera periclymenum	"wild flowers"	perennial	native to much of Europe	roots in the shade, and its flowering top in sun or light shade			300-500		yellow, white
Big-flowered foxglove	Digitalis grandiflora	"wild flowers"	perennial	southern Europe, Asia	part shade			60-100		yellow
Yellow foxglove	Digitalis purpurea	"wild flowers"	perennial	temperate Europe	partial sunlight to deep shade			70-150		red
Lady's bedstraw	Galium verum	"wild flowers"	perennial	most of Europe	partial sunlight to full sun			30-40		yellowish-white
Meadowsweet	Filipendua ulmaria	"wild flowers"	perennial	Europe and Western Asia.	Full sun, dappled shade, partial shade			150-170		white
Perforate St John's-wort	Hypericum perforatum	"wild flowers"	perennial	temperate areas of Eurasia	?			30-70		yellowish-green
Horned pansy	Viola cornuta ("Angrland")	"wild flowers"	perennial	native to the Pyrenees and the C	partial sunlight to full sun			10-30		liliac-blue
Sweetbriar rose	Rosa rubinginosa "Fritz Nobis"	"wild flowers"	perennial	native to Europe and western As	partial sunlight to full sun			200		white-pinkish
Common hepatica	Hepatica nobilis	"wild flowers"	perennial	mountains of continental Europe	partial sunlight			10-15		purple
European columbine	Aquilegia vulgaris	"wild flowers"	perennial	Europe and Western Asia	partial sunlight to full sun			10-15		purple
Monk's-hood	Aconitum napellus	"wild flowers"	perennial	endemic to western and central Europe				50-160		blue
Perennial cornflower	Centaurea montana	"wild flowers"	perennial	endemic to Europe	partial sunlight to full sun			40-50		blue
Ox-eye daisy	Leucanthemum vulgare	"wild flowers"	perennial	Europe	best in full sun			30-70		white
Bladder campion	Silene inflata	"wild flowers"	perennial	Europe	partial sunlight to full sun			15-50		white
Wood anemone	Anemone nemorosa	"wild flowers"	perennial	Europe	shadow			10-20		white
Field mouse-ear	Cerastium arvense	"wild flowers"	perennial	Europe	partial sunlight to full sun			5-30		white
Pheasant's eye	Adonis vernalis	"wild flowers"	perennial	dry meadows and steppes in Eur	partial sunlight to full sun			20-40		yellow
Golden marguerite	Anthemis tinctoria	"wild flowers"	perennial	Europe	full sun			30-60		yellow
Giant silver mullein	Verbascum bombyciferum	"wild flowers"	perennial	native to Turkey,	full sun			150-200		yellow
Primrose	Primula vulgaris	"wild flowers"	perennial	native to western and southern E	can take full sun, but usually require constant or at least good moisture levels			10-20		yellow, white, pink
Sticky catchfly	Lychnis viscaria/Viscaria vulgaris	"wild flowers"	perennial	Europe	full sun			30-60		white, pink,red
Common corn-cockle	Agrostemma githago	"wild flowers"	perennial	common weed of Europe	sunny with well-drained soil are best			30-80		pink
Cinnamon rose	Rosa majalis	"wild flowers"	perennial	native to forests of Europe and S	partial sunlight to full sun			50-150		pink,red
Maiden pink	Dianthus deltoides	"wild flowers"	perennial	Europe	full sun			10-20		purple-red



# Balconies

South facade - planting strategy

Plant	Latin name	january	february	march	april	may	june	july	august	sept	october	november	december
Dahlia	Dahlia												
Alpine delphinium/Candle	Delphinium elatum												
Garden Cosmos	Cosmos bipinnatus												
Mexican marigold	Tagetes Erecta												
Bluemink	Ageratum Houstonianum												
Begonia sp.	Begonia Semperflorens												
Common verbena	Verbena officinalis												
Petunia	Petunia												
Nickotiana x sandarea													
Wallflower	Erysimum cheiri/Cheiranthus cheiri												
Garden arabis, mountain	Arabis caucasica												
Evergreen candytuft/perpetua	Iberis sempervirens												
Wood violet	Viola odorata												
Perennial cornflower/moulin	Centaurea montana							Will rebloom in fall if cut back after first blooming period					
Oxeye daisy	Leucanthemum vulgare												
Nepeta x faassenii													
Large-flowered tickseed	Coreopsis Grandiflora												
New York aster	Symphiotrichum novi-belgii												
Orpine	Sedum Telephium												
Hemp-agrimony	Eupatorium Cannabinum												
Blue globe-thistle	Echinops Bannaticus												
Knotweed	Polygonum L.												
Lily of the Nile	Agapanthus L'Hér.												
Lavender	Lavandula												
False goat's beard	Astilbe												
Honeysuckle	Lonicera periclymenum												
Big-flowered foxglove	Digitalis grandiflora												
Yellow foxglove	Digitalis purpurea												
Lady's bedstraw	Galium verum												
Meadowsweet	Filipendua ulmaria												
Perforate St John's-wort	Hypericum perforatum												
Horned pansy	Viola cornuta ("Angrland")												
Sweetbriar rose	Rosa rubinginosa "Fritz Nobis"												
Common hepatica	Hepatica nobilis												
European columbine	Aquilegia vulgaris												
Monk's-hood	Aconitum napellus												
Perennial cornflower	Centaurea montana												
Ox-eye daisy	Leucanthemum vulgare												
Bladder campion	Silene inflata												
Wood anemone	Anemone nemorosa												
Field mouse-ear	Cerastium arvense												
Pheasant's eye	Adonis vernalis												
Golden marguerite	Anthemis tinctoria												
Giant silver mullein	Verbascum bombyciferum												



# Balconies

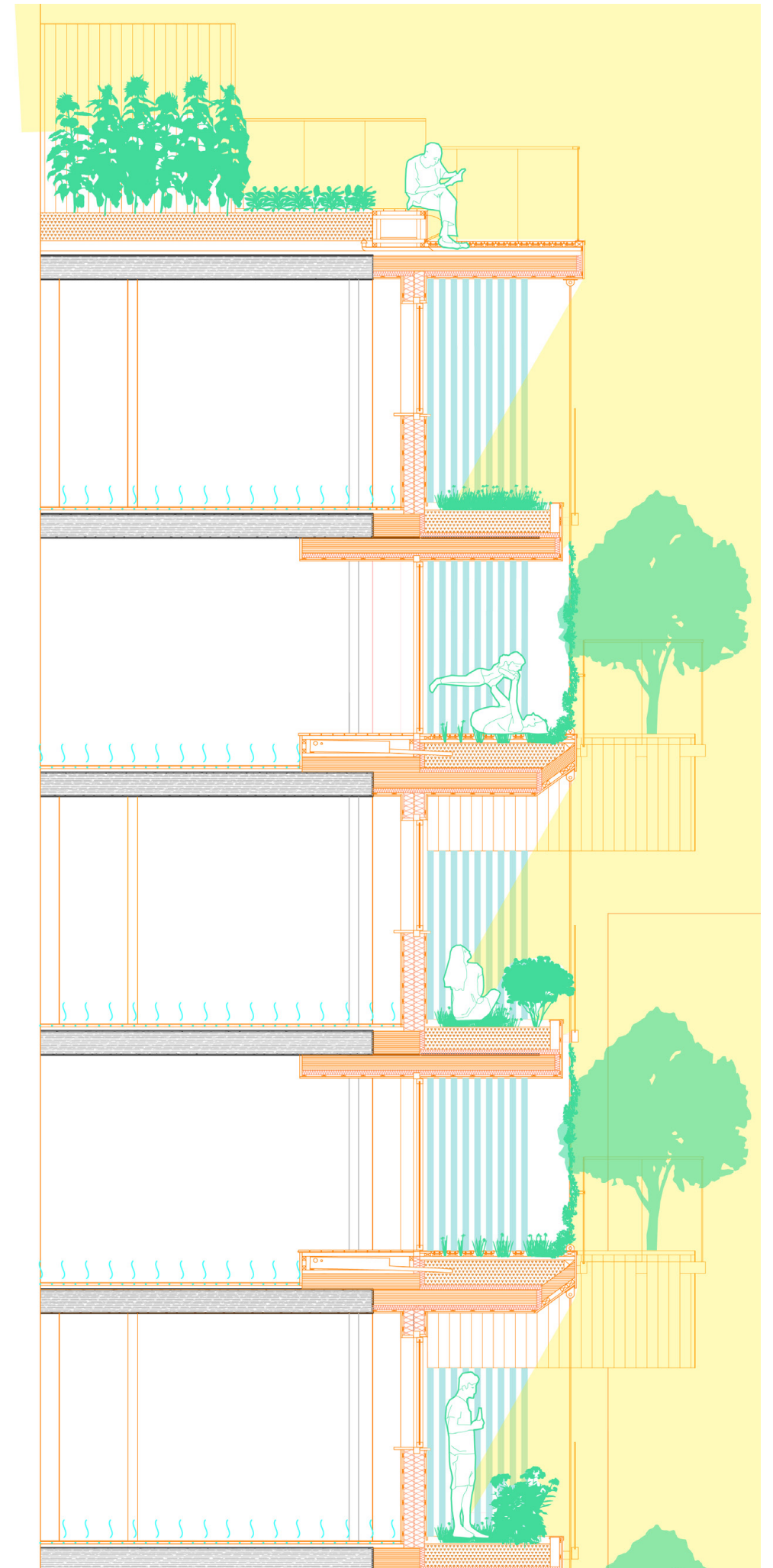
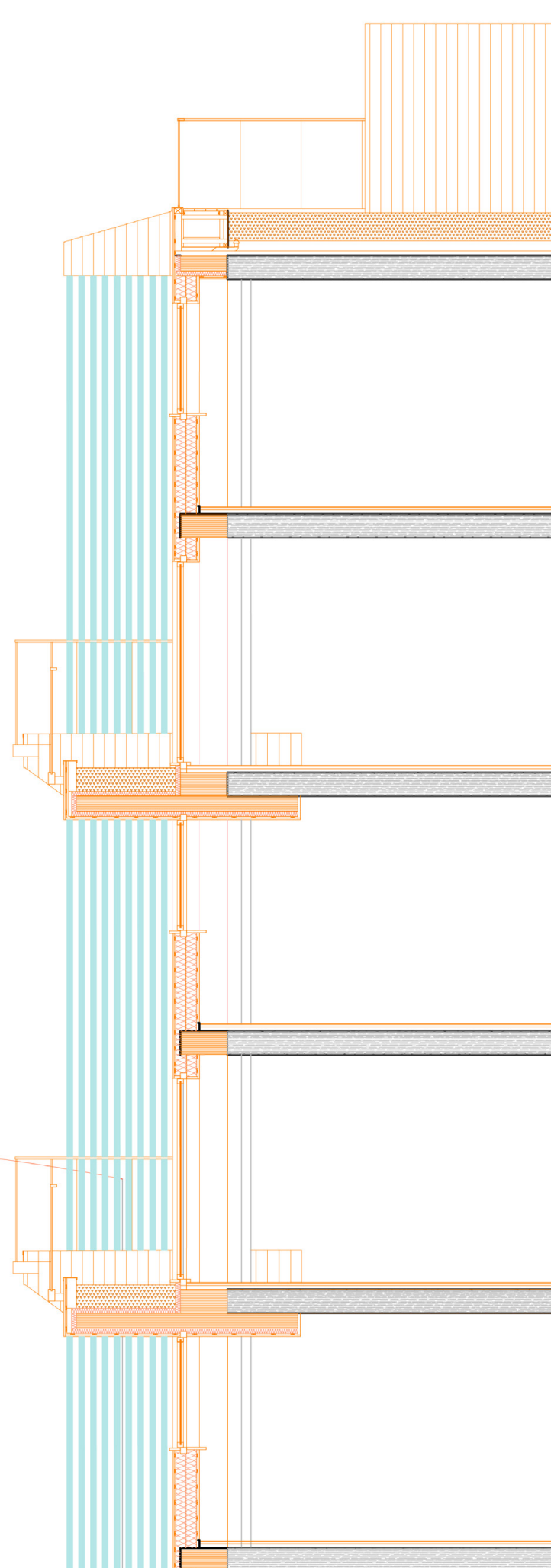
Visualisation





# Balconies

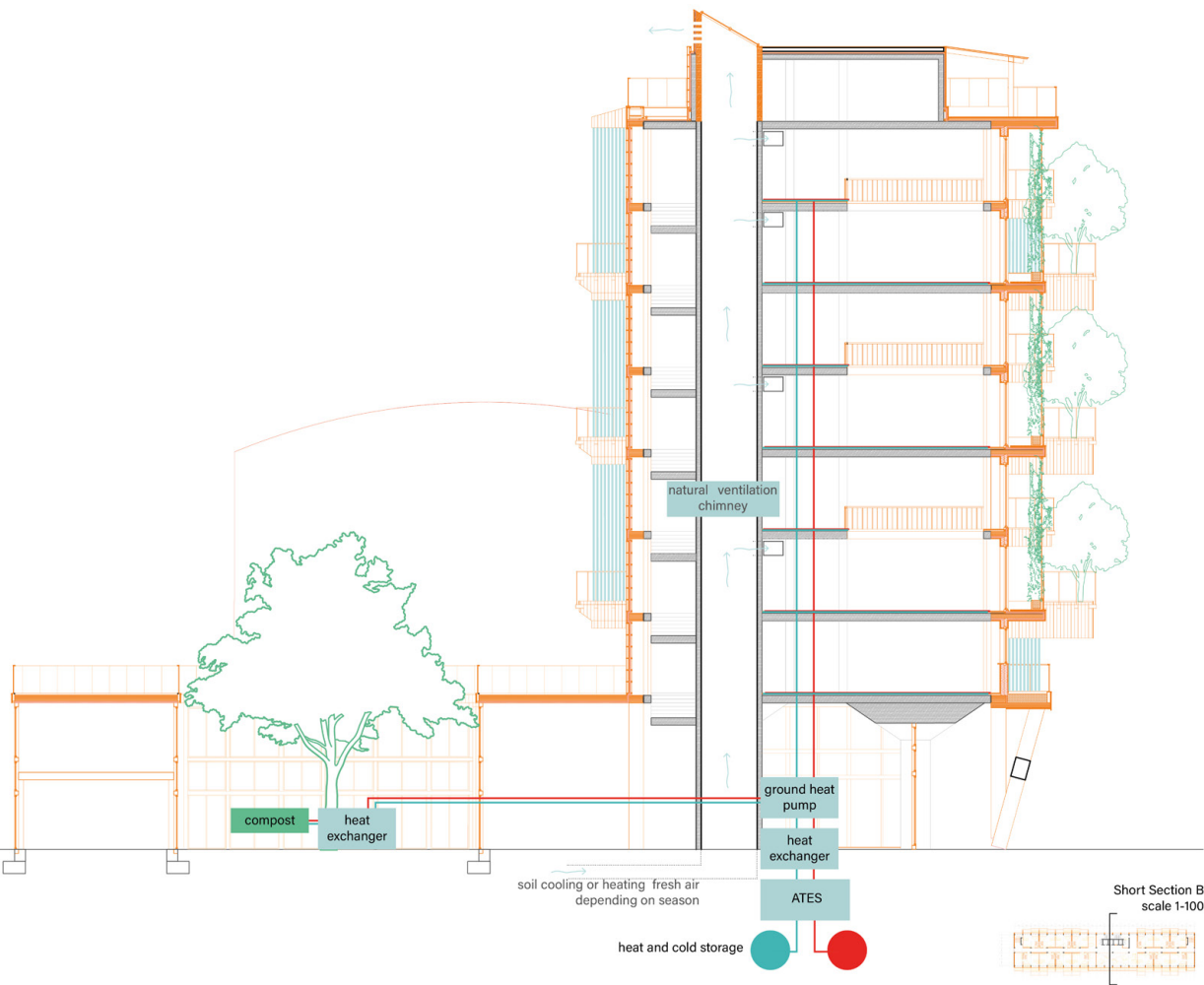
Climate comfort, summer situation



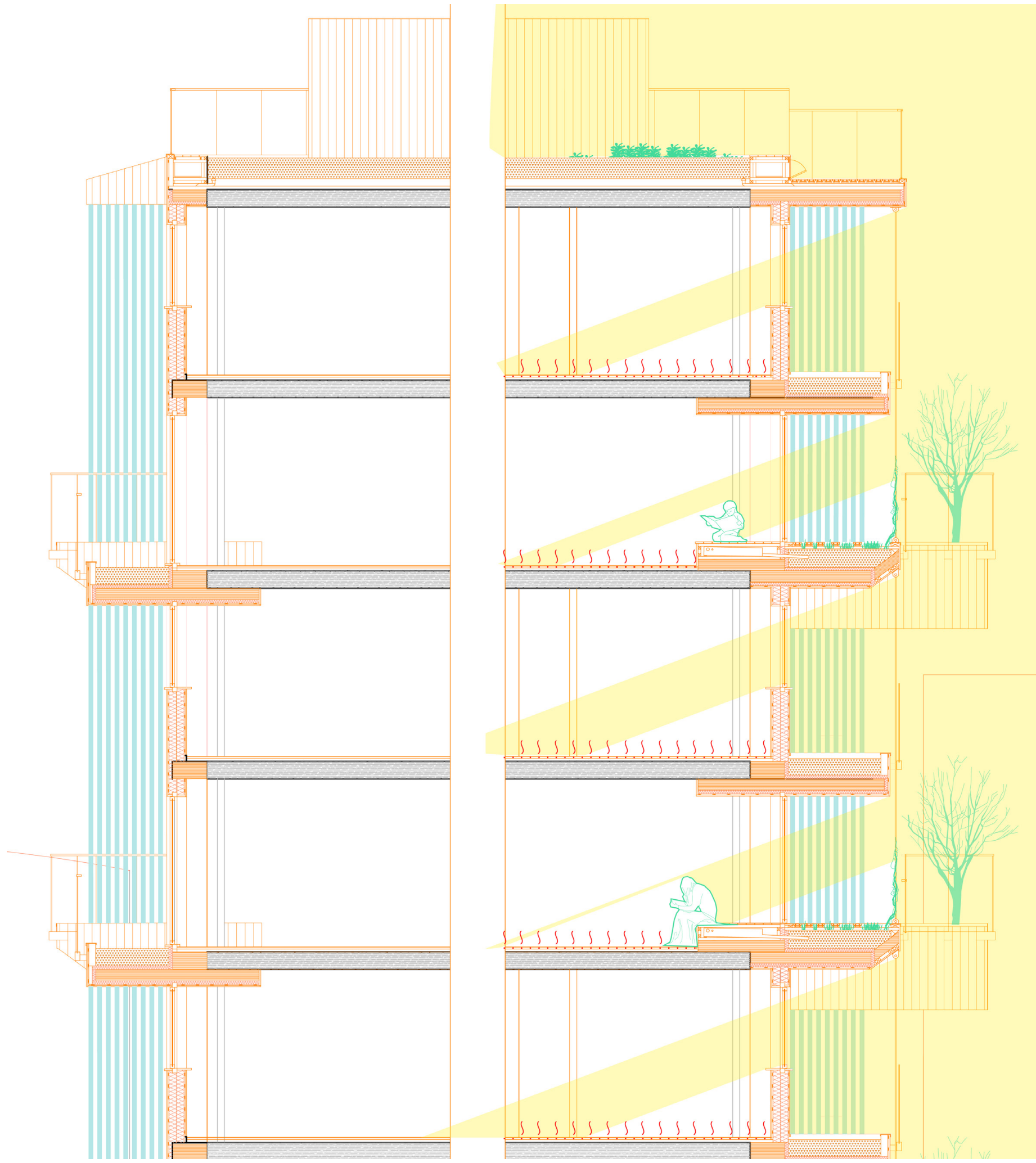


# Balconies

Climate comfort, winter situation



Aquifer Thermal Energy Storage with heat exchanger from the compost facility





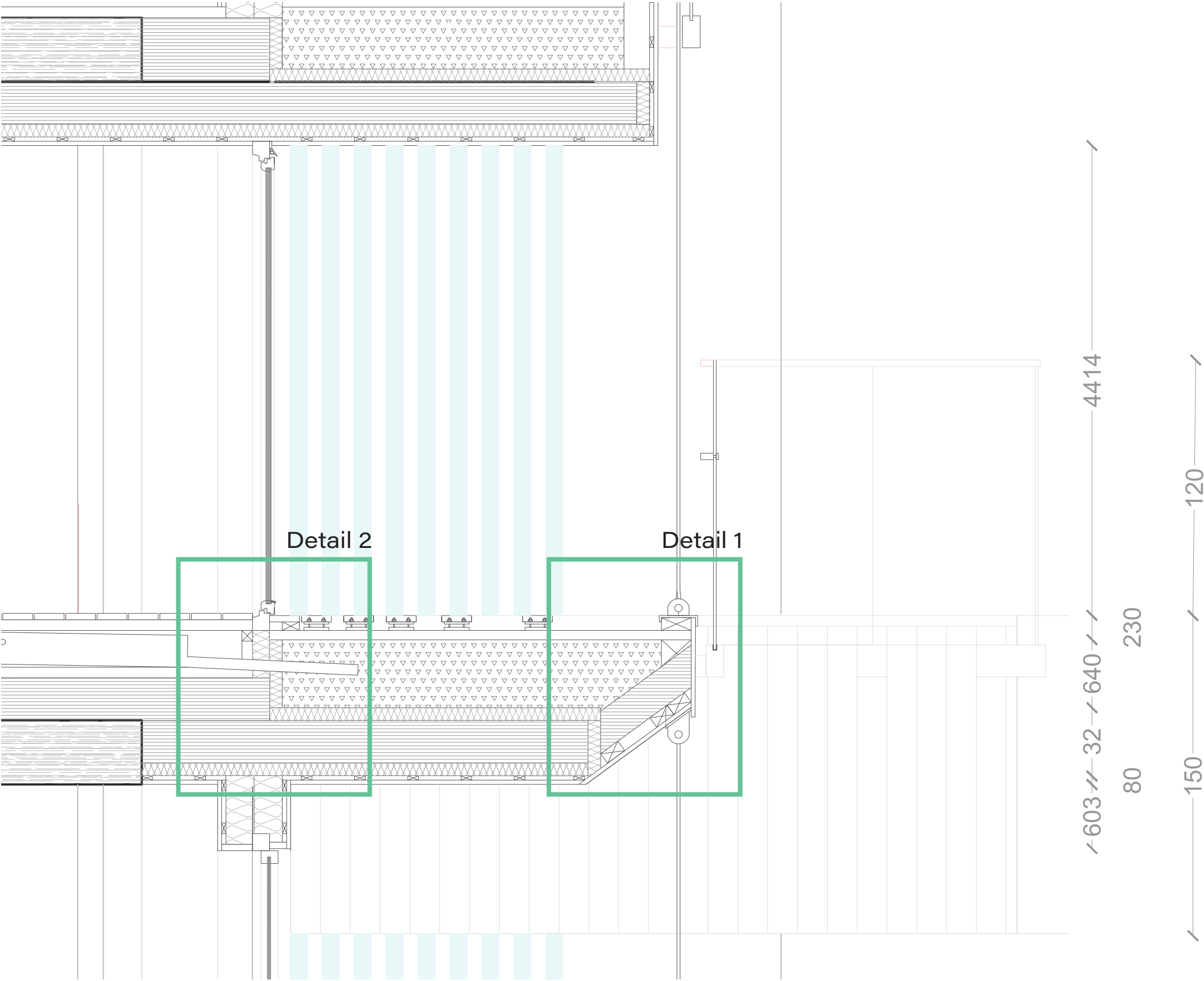
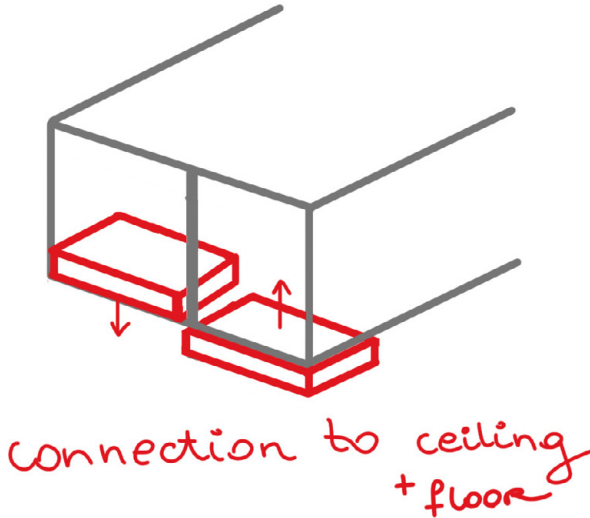
# Balconies

Visualisation



Balconies

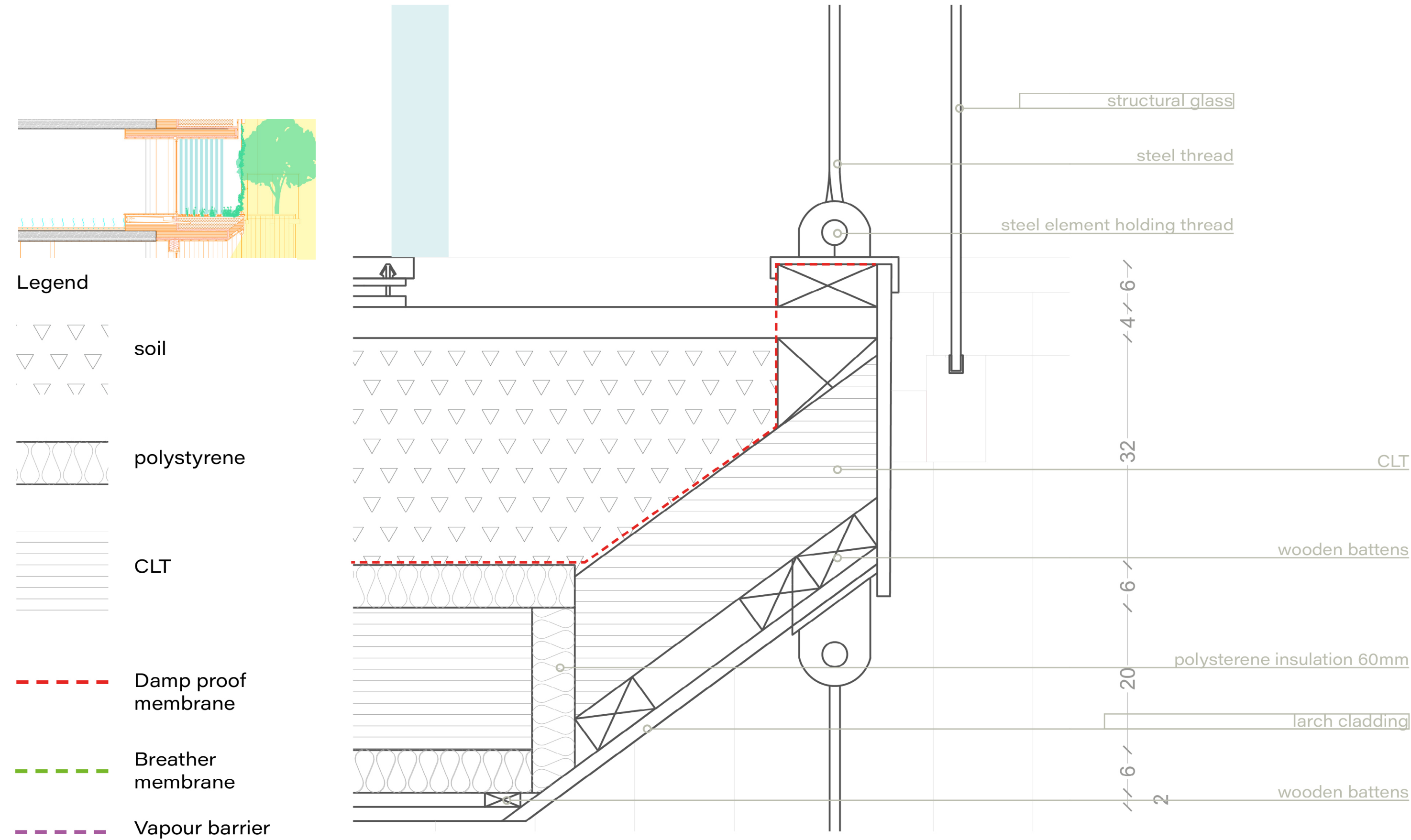
Section, summer situation





# Balconies

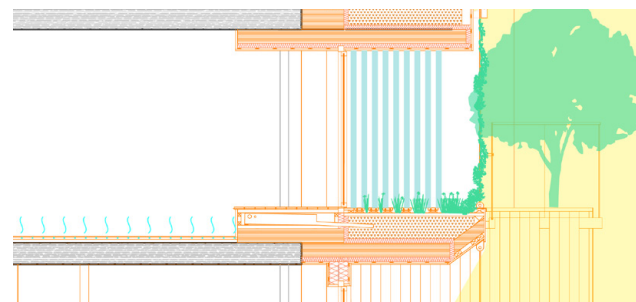
Section, summer situation



Detail 2  
edge of balcony with steel thread  
scale 1-5

# Balconies

Section, summer situation



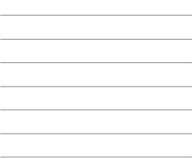
## Legend



soil



polystyrene



CLT



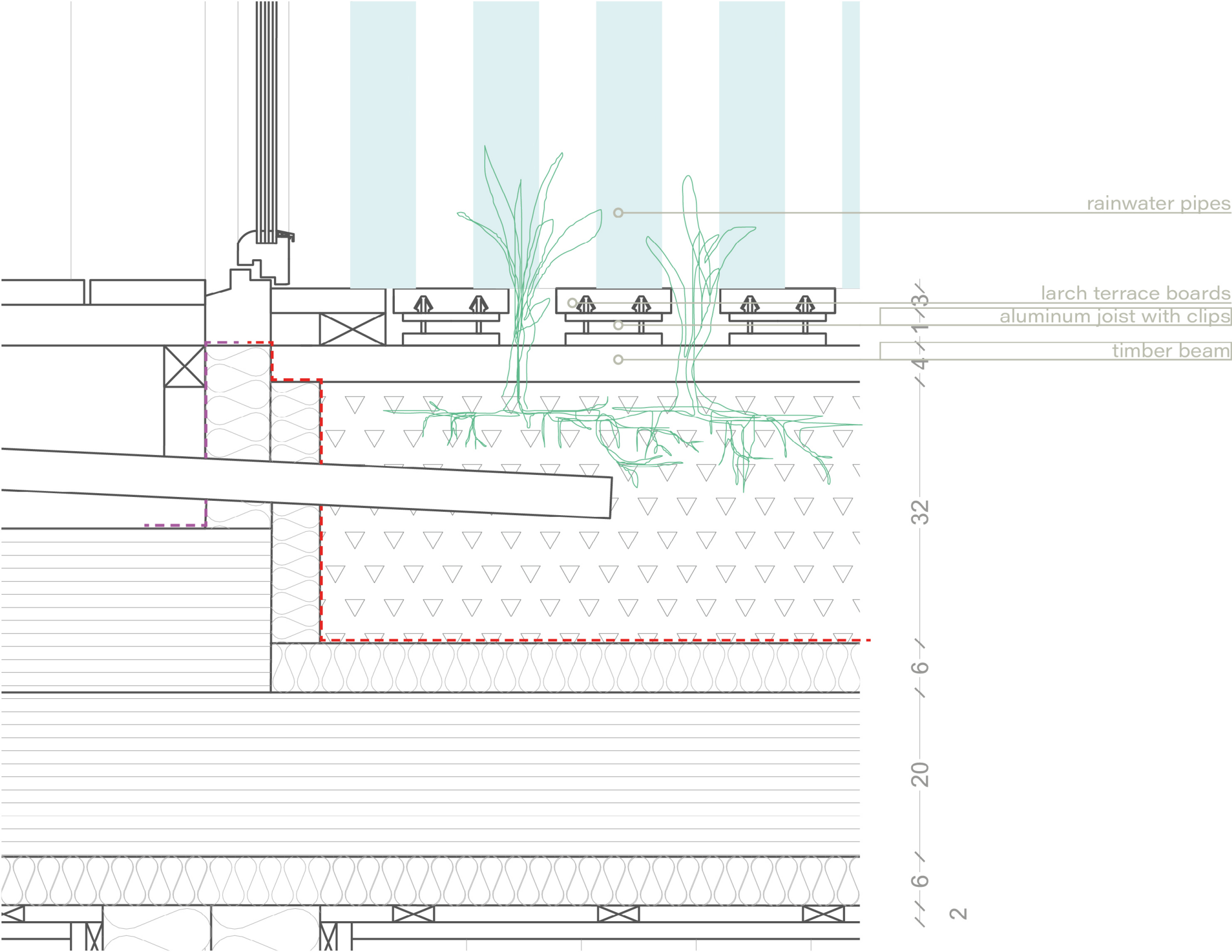
Damp proof  
membrane



Breather  
membrane

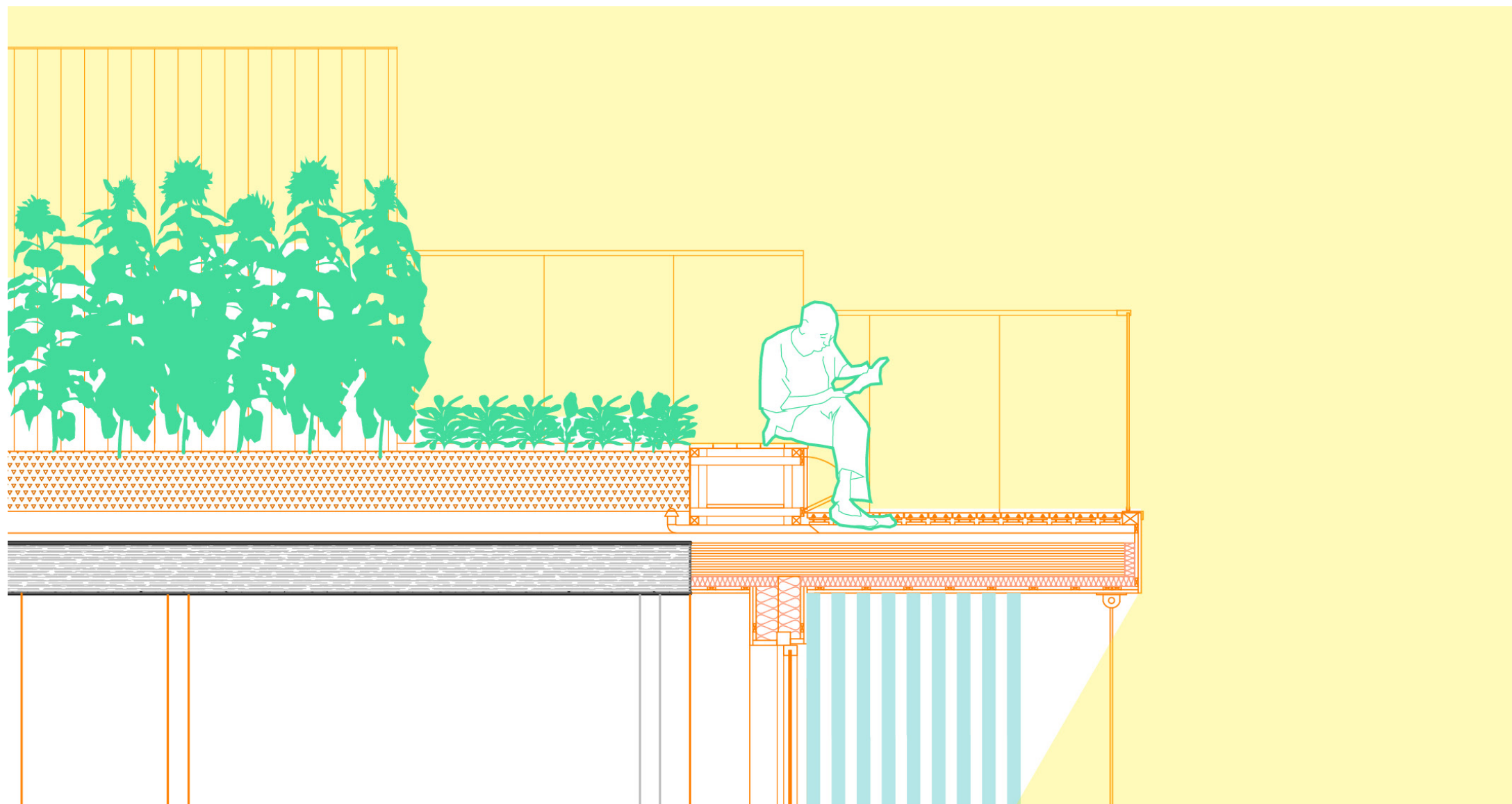


Vapour barrier



Detail 1  
doors - balcony floor connection  
scale 1-5





Roof



# Roof

References - alltoment gardens





# Roof

Visualisation





# Notion of people

Section



# Notion of people

Section

Spring

Summer

Autumn

Winter





# Notion of people

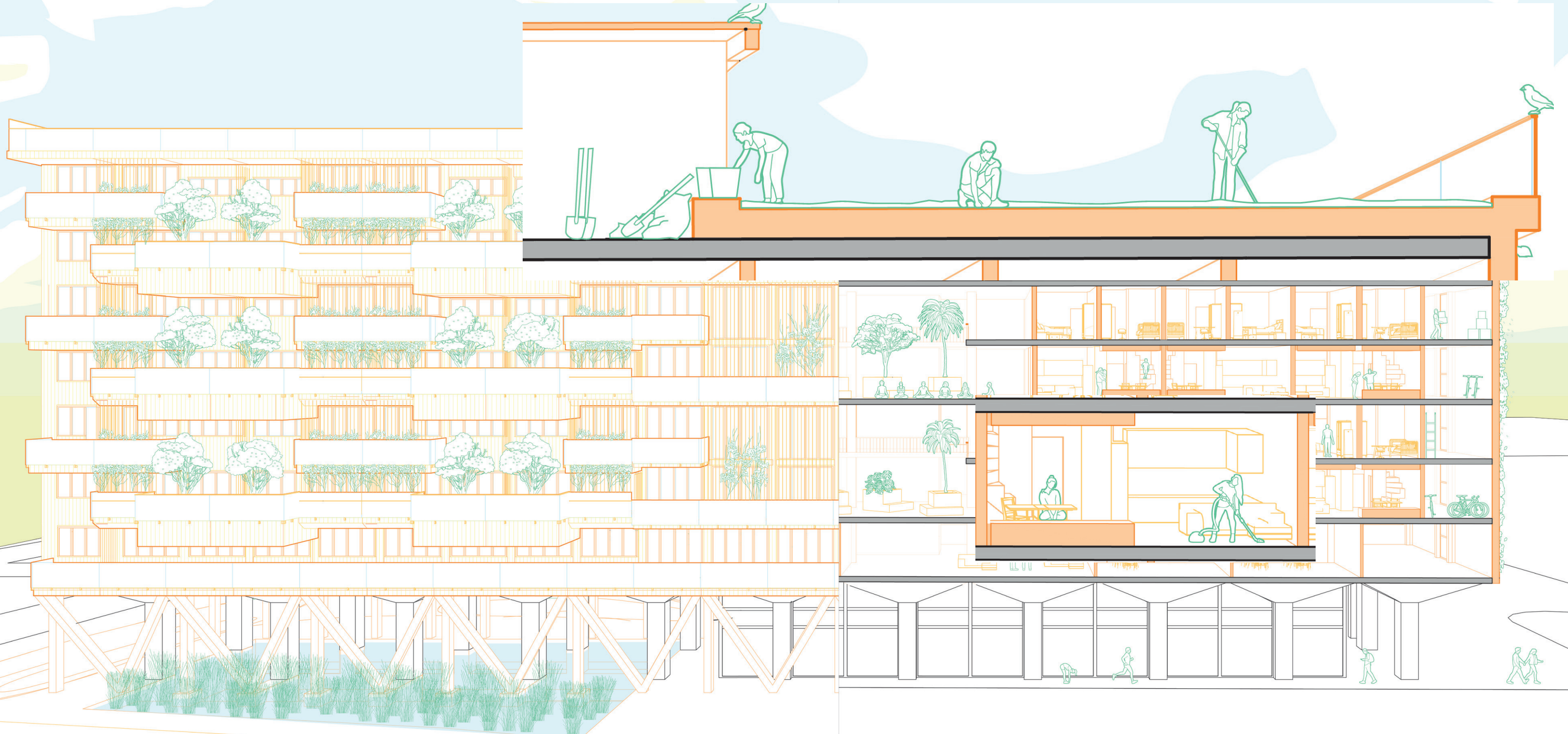
Section

Spring

Summer

Autumn

Winter





# Notion of people

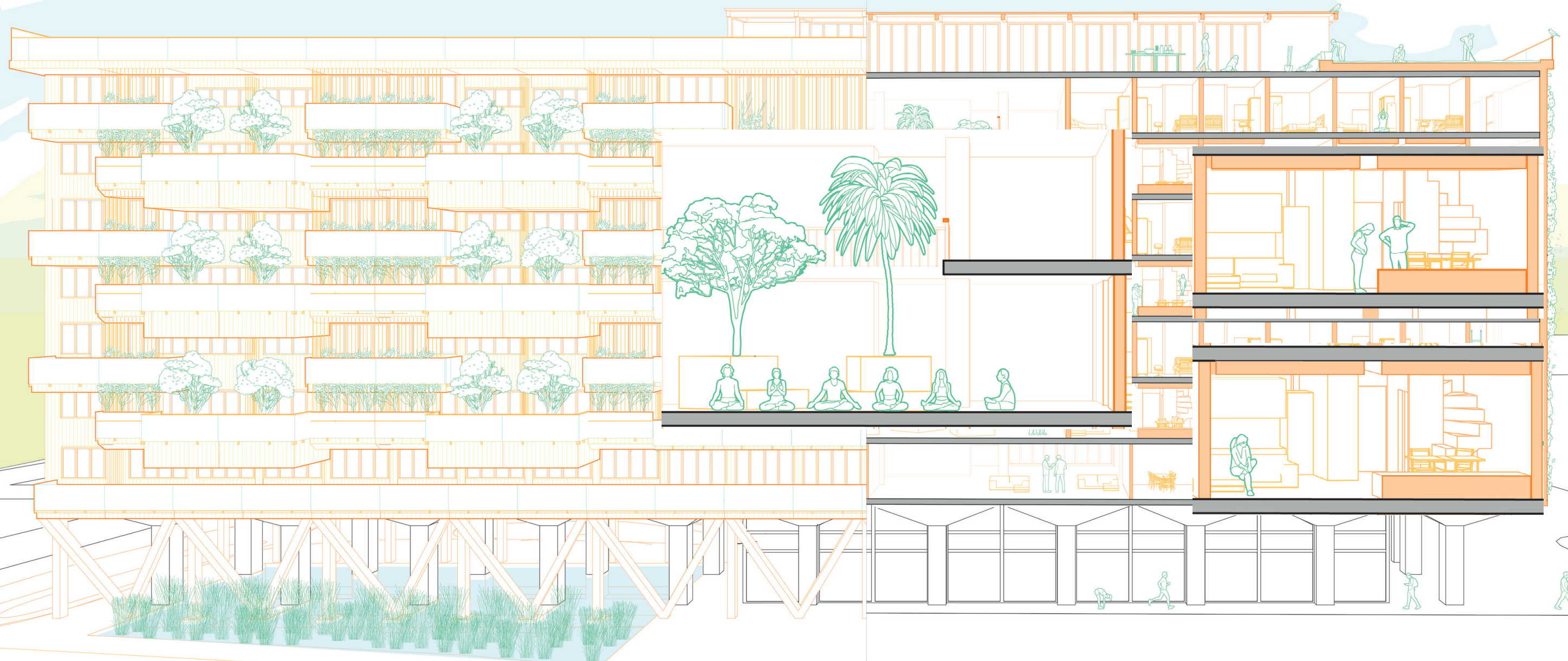
Section

Spring

Summer

Autumn

Winter





# Notion of people

Section

Spring

Summer

Autumn

Winter





# Notion of people

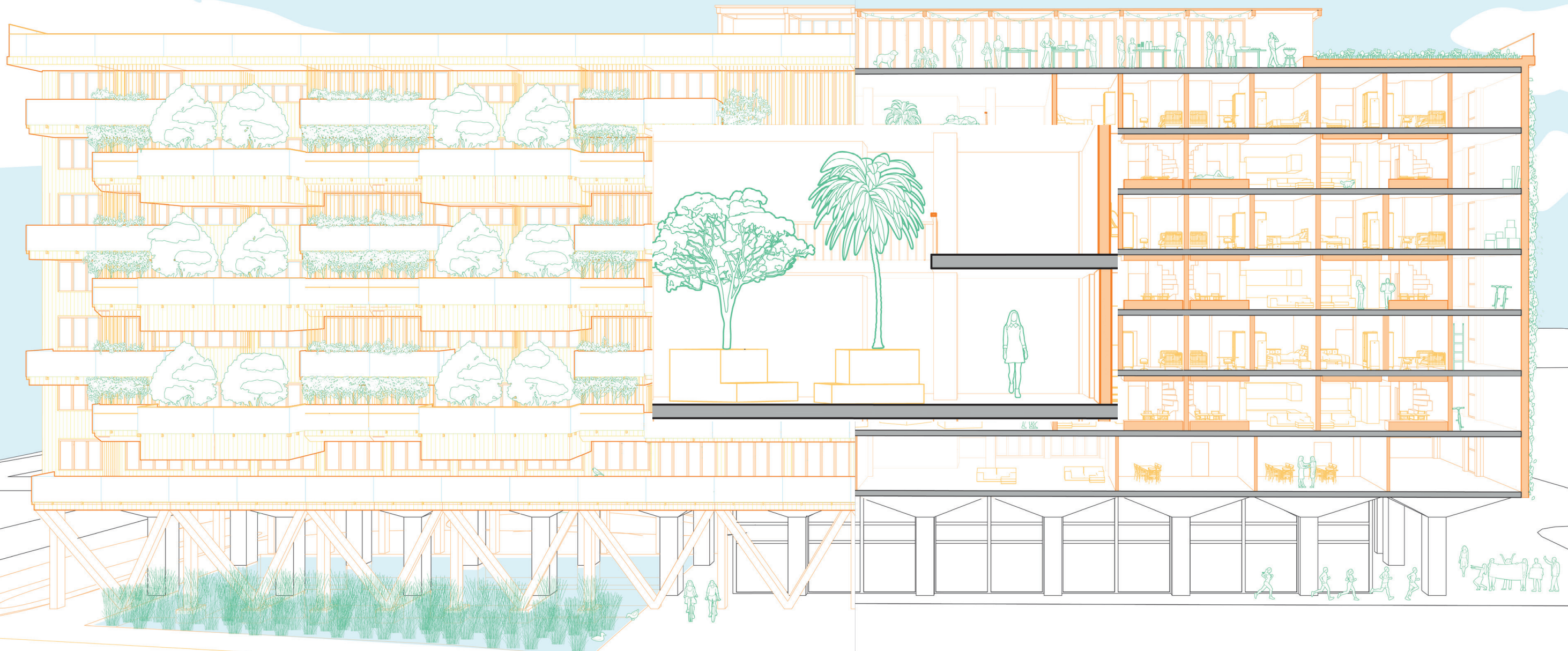
Section

Spring

Summer

Autumn

Winter





# Notion of people

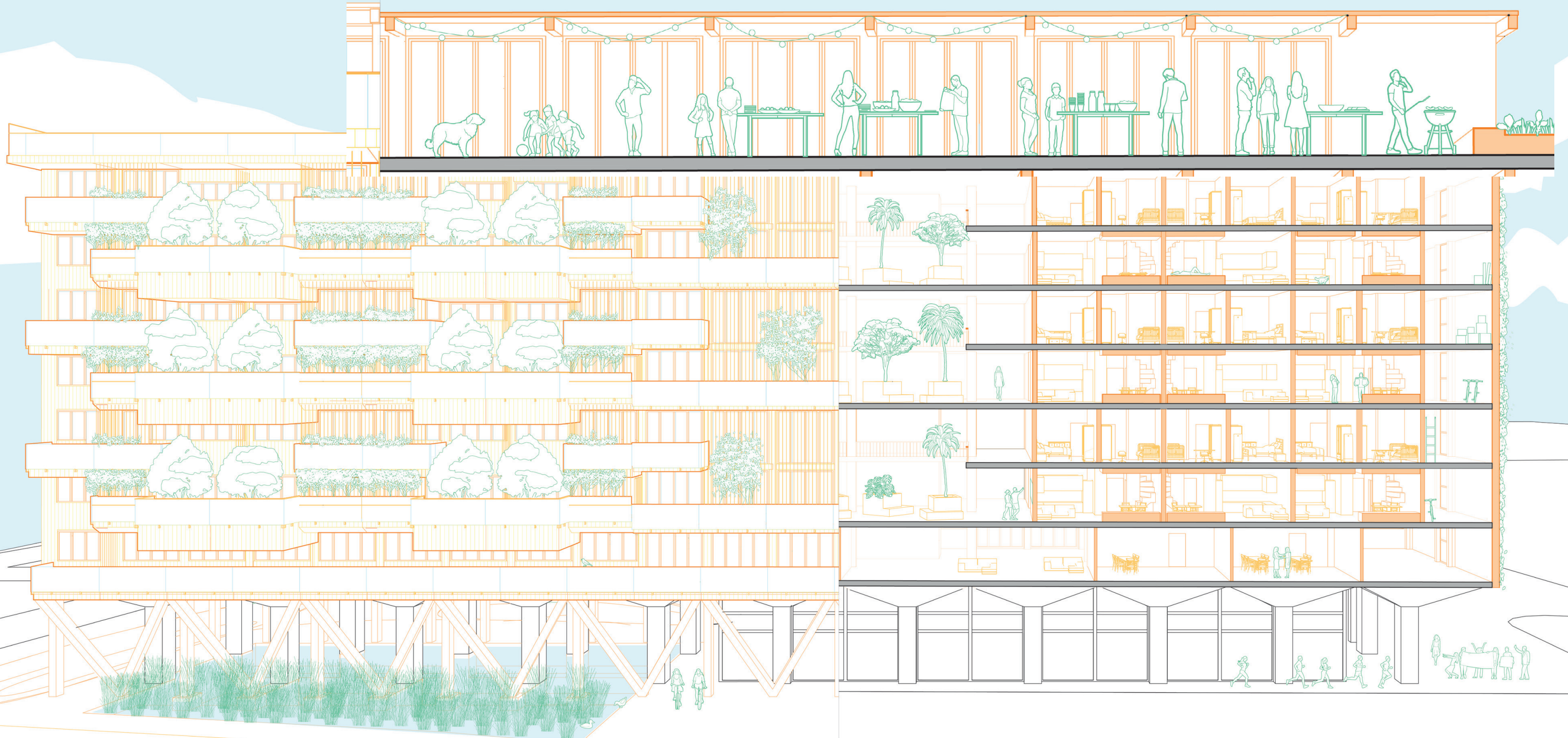
Section

Spring

Summer

Autumn

Winter





# Notion of people

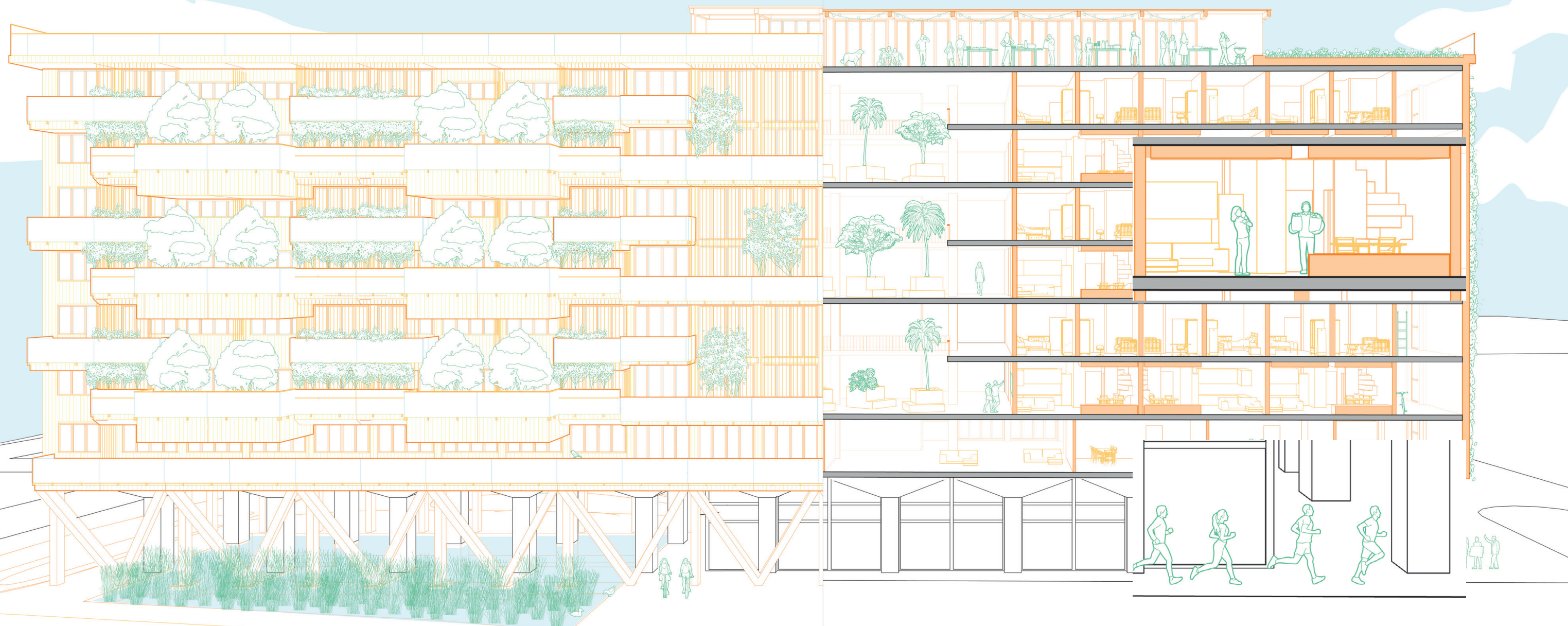
Section

Spring

Summer

Autumn

Winter





# Notion of people

Section

Spring

Summer

Autumn

Winter





# Notion of people

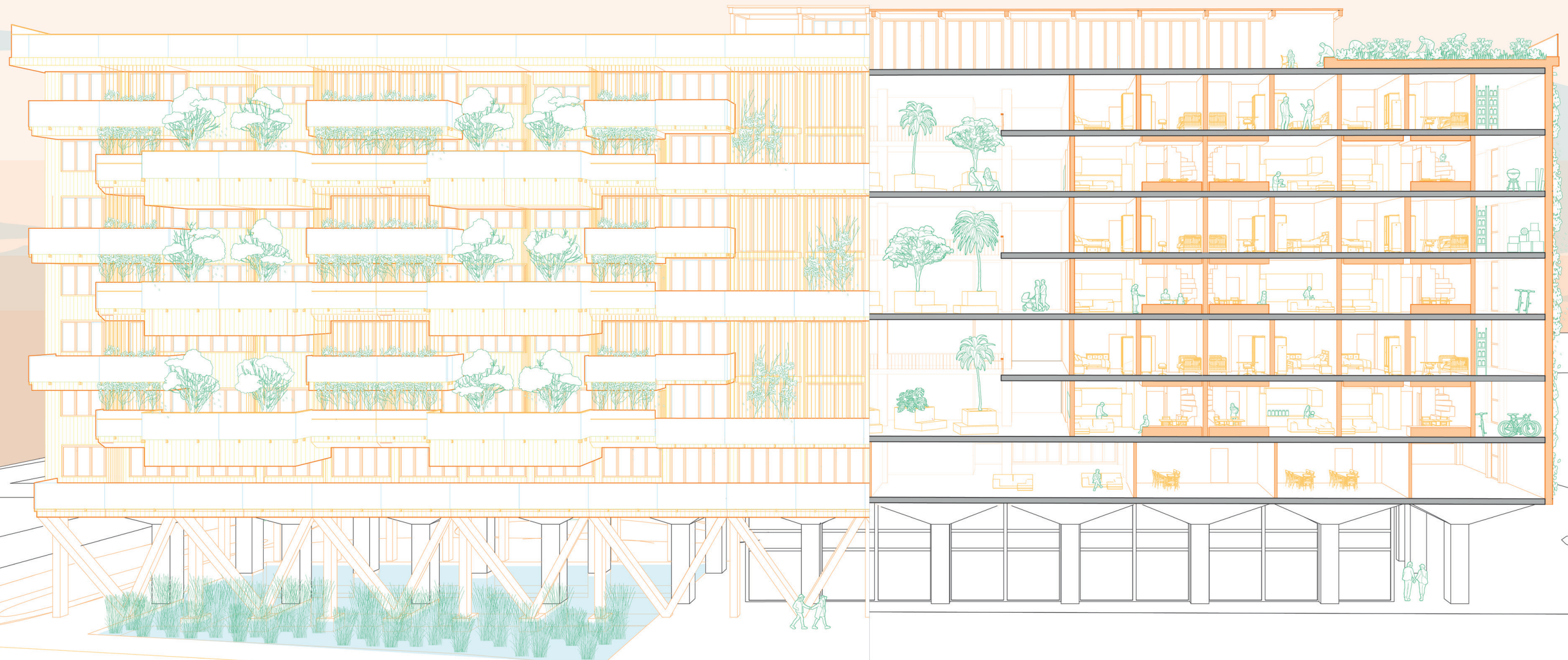
Section

Spring

Summer

Autumn

Winter





# Notion of people

Section

Spring

Summer

Autumn

Winter





# Notion of people

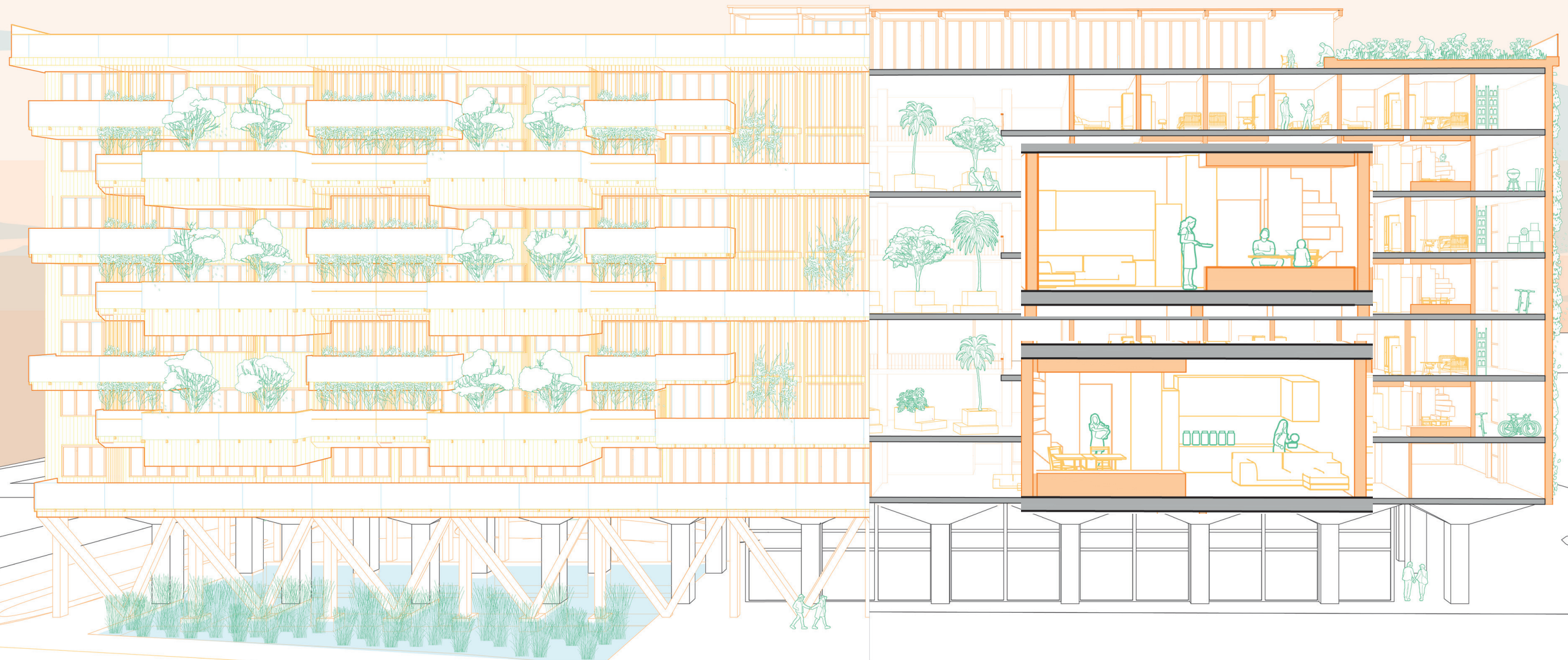
Section

Spring

Summer

Autumn

Winter





# Notion of people

## Section

Spring

Summer

Autumn

Winter





# Notion of people

Section

Spring

Summer

Autumn

Winter





# Notion of people

Section

Spring

Summer

Autumn

Winter





# Notion of people

Section

Spring

Summer

Autumn

Winter





# Notion of people

Section

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