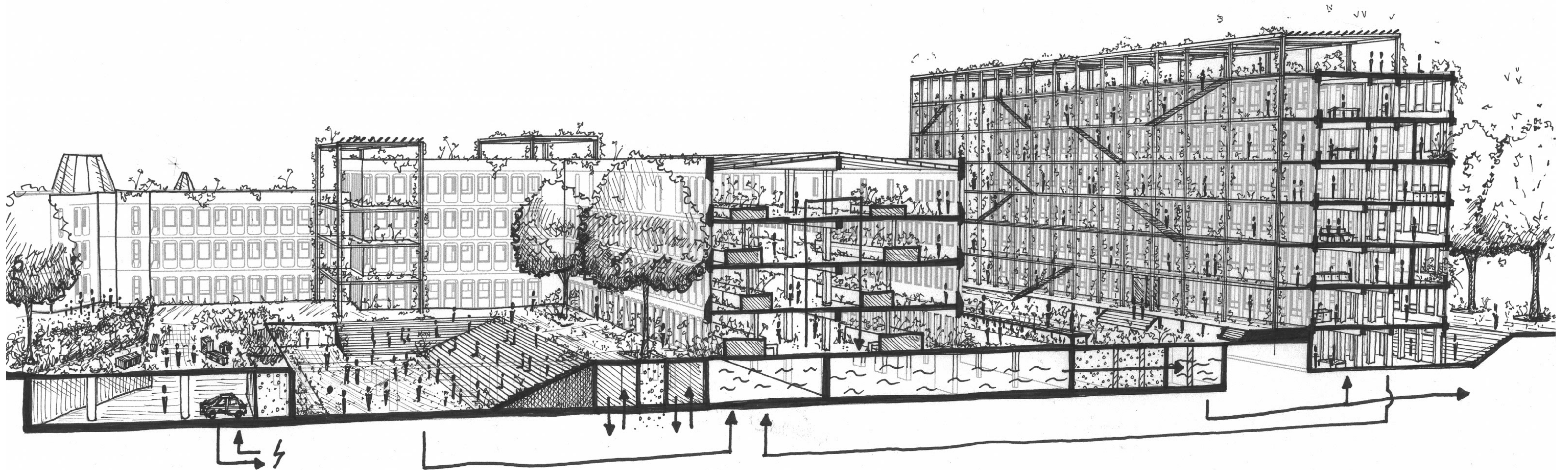


How will we live together?

rethinking the role of heritage as connection between humans and nature



Presentation 16.01.2023

Design Lidy Meijers

Arne Boenders 4591690

Research Hielkje Zijlstra

Adapting 20th Century Heritage AR3AH105

Building technology Frank Koopman

Societal challenges - how will we live together? - *rethinking our relationships*

01 Humans + Nature

climate change
loss of biodiversity
unhabitable planet

02 Humans + Humans

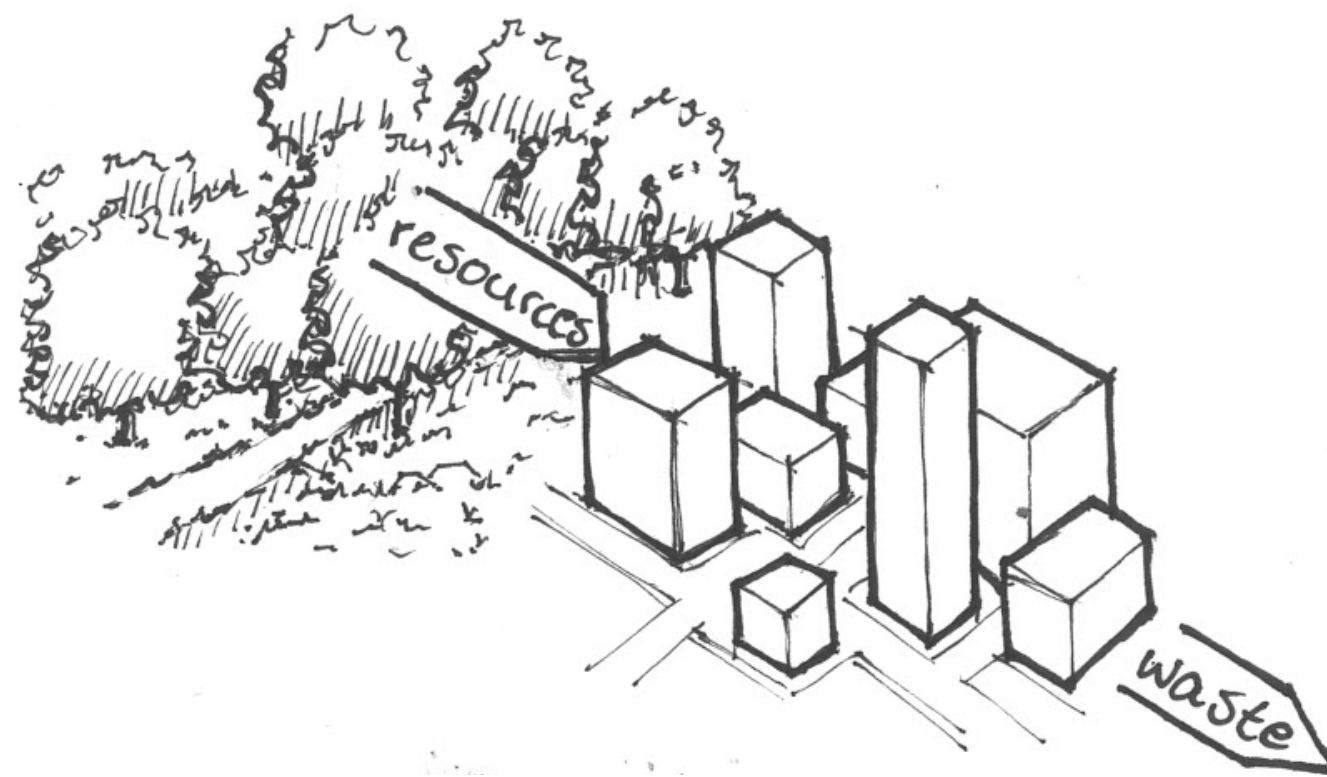
loneliness
polarization

03 Humans + Building

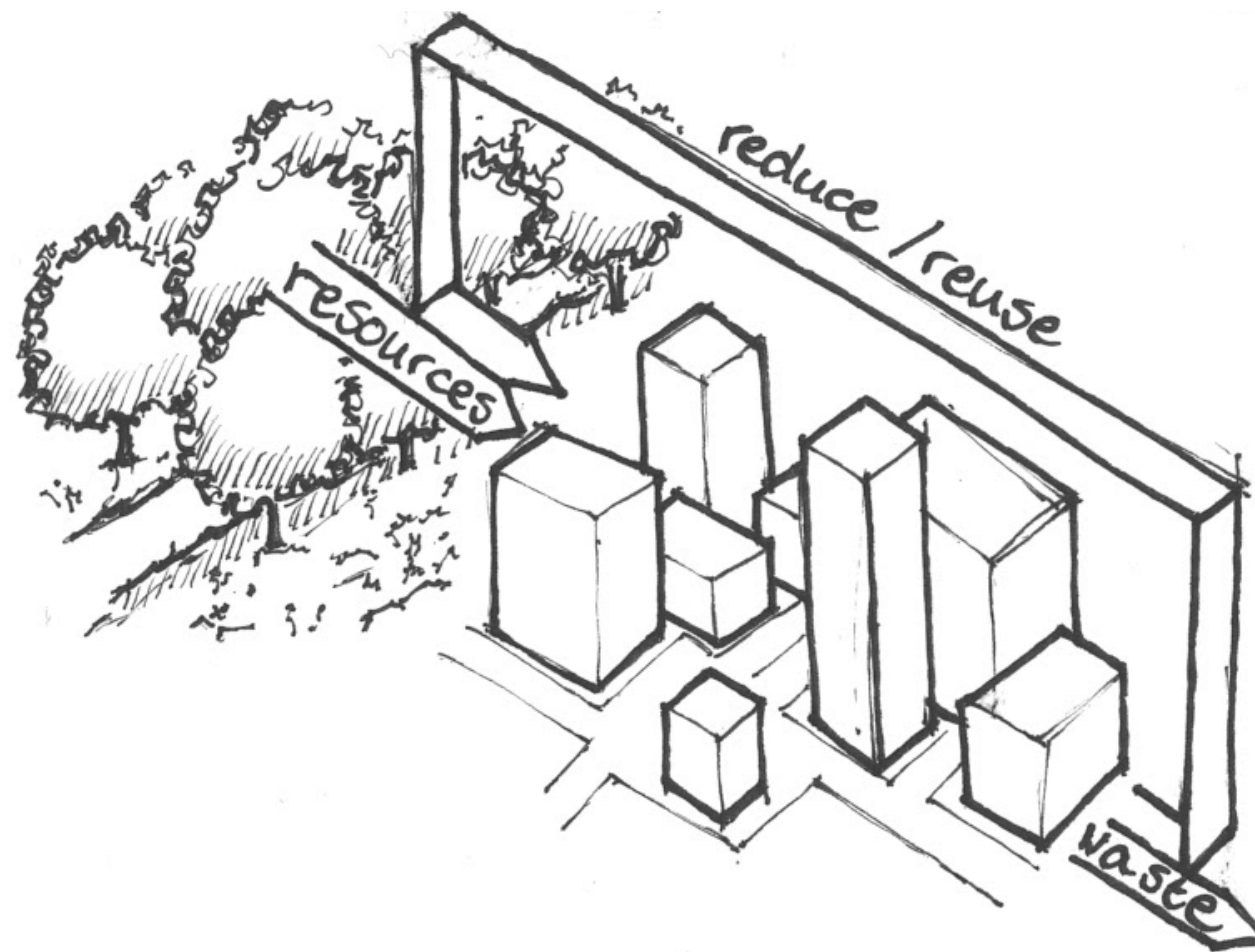
vacant buildings
undervalued buildings

01 Humans + Nature

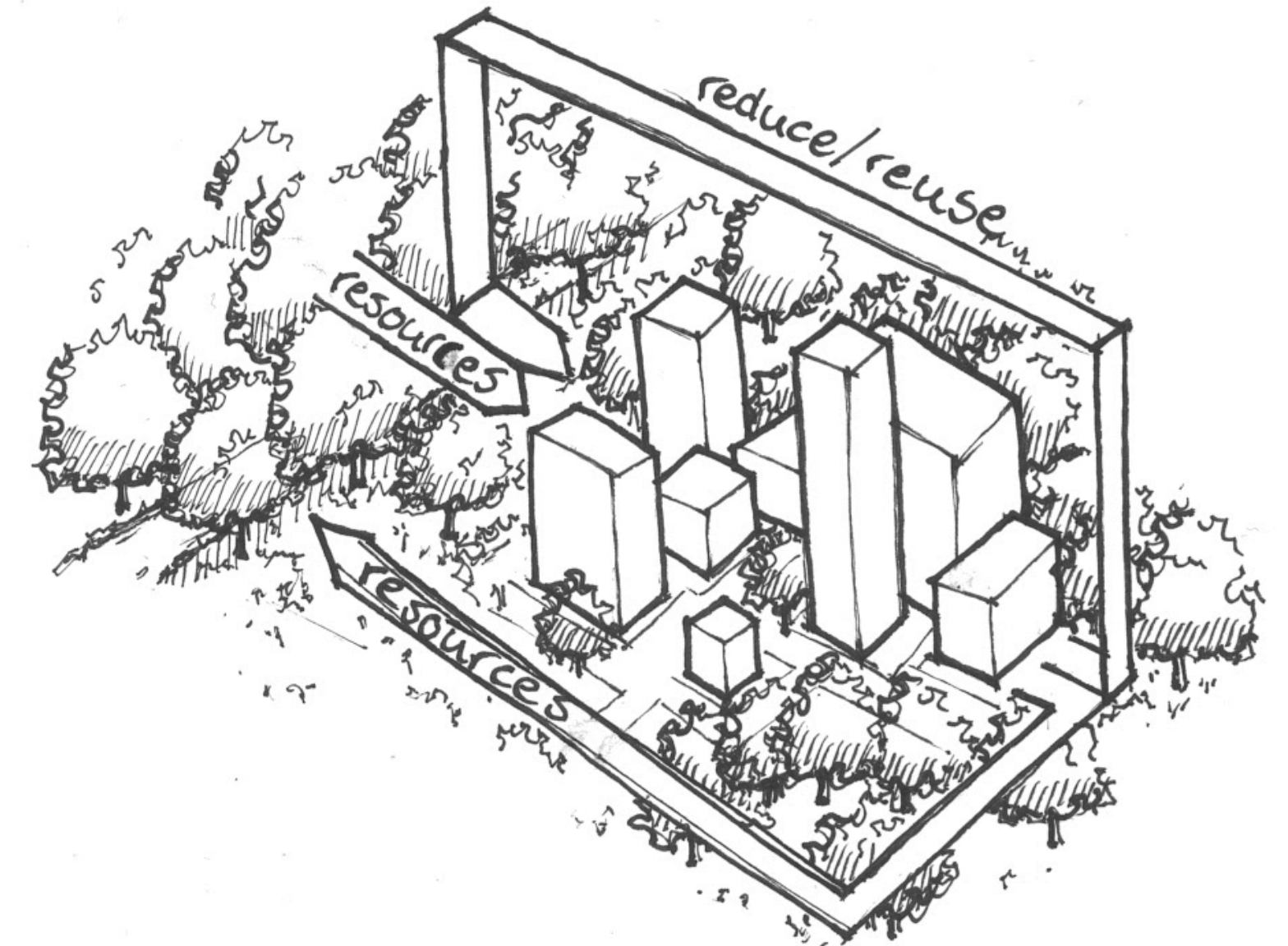
Relation natural and built environment



resources are exploited and
turned into unprocessable waste



minimize negative environmental impact

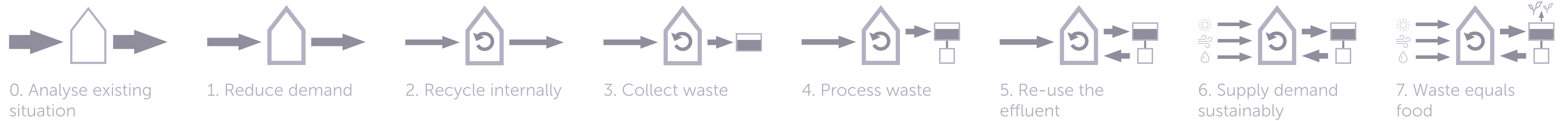


create positive impact for environment

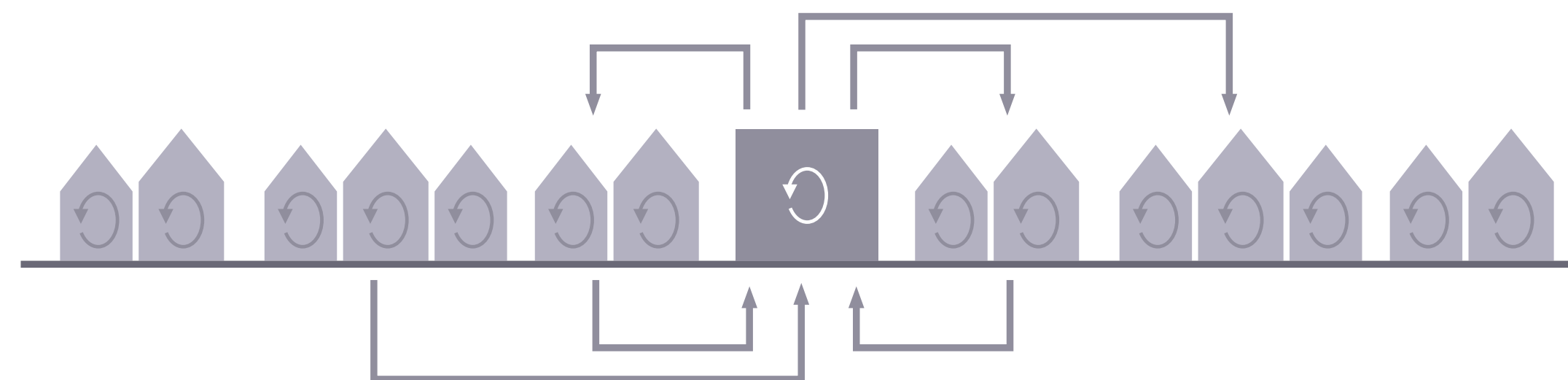
past present future

Literature research - systems theories

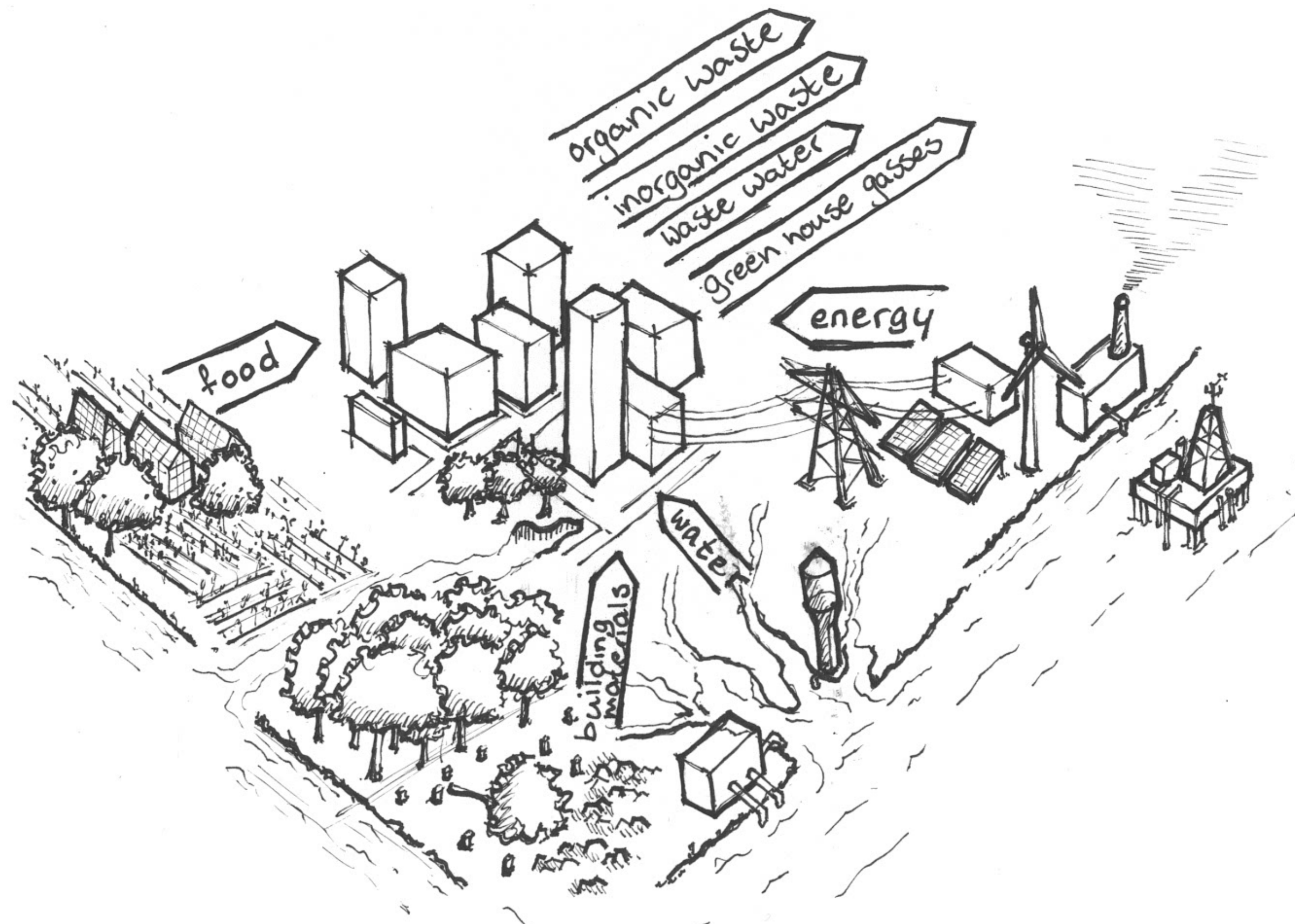
New stepped strategy



applied on neighborhood scale



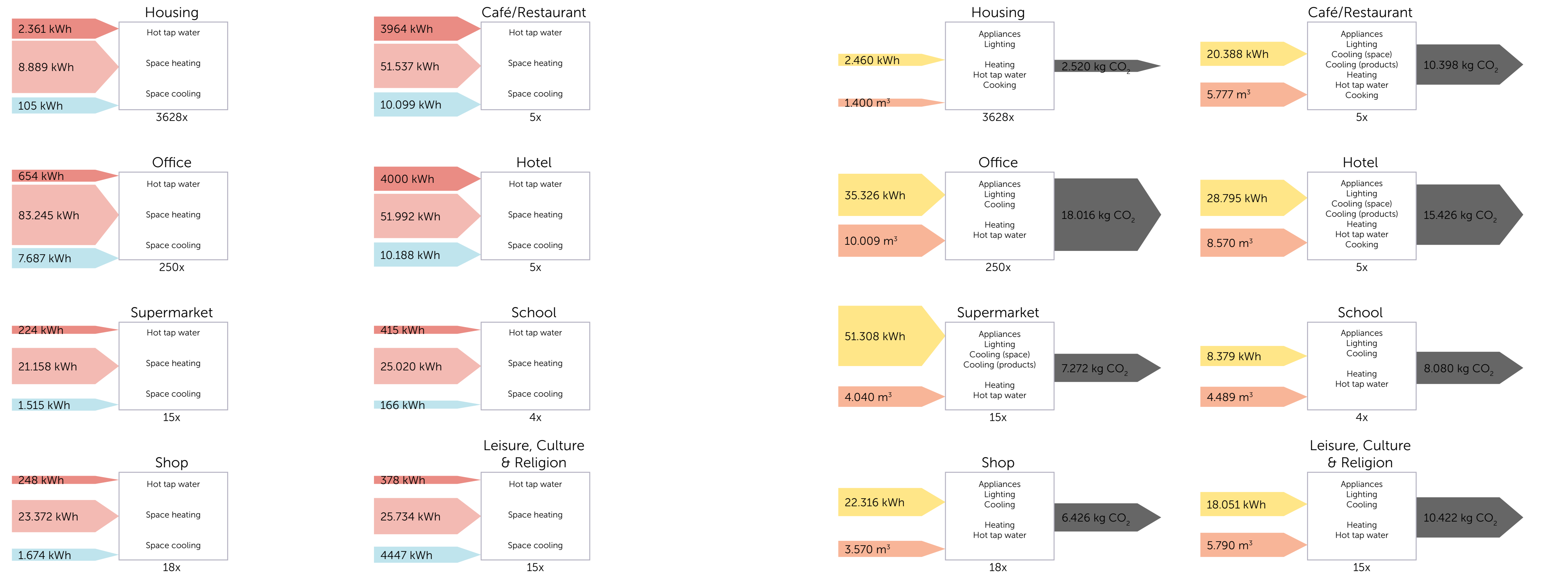
Literature research - urban metabolism



Urban metabolism - Archipelbuurt

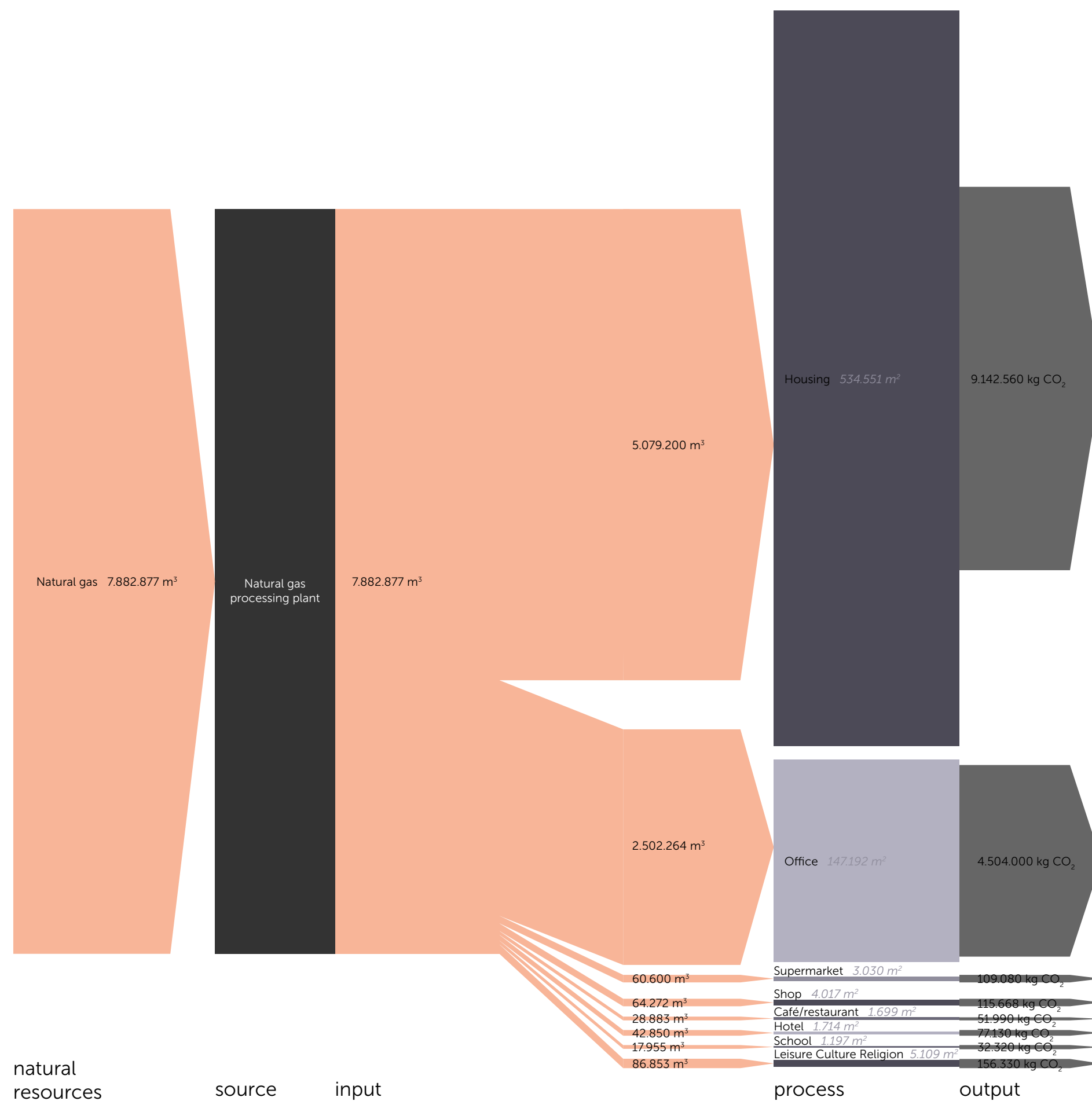
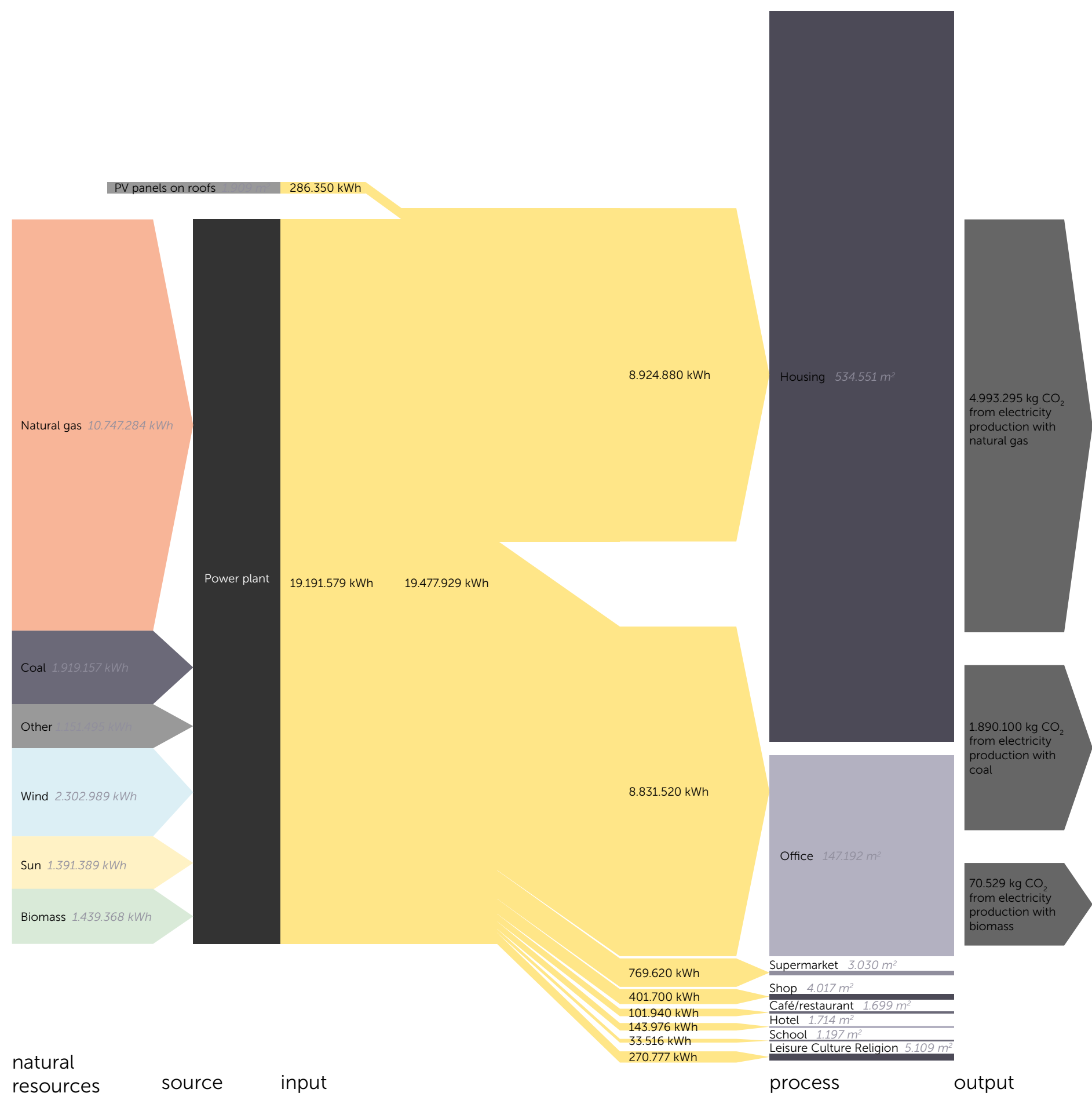


Energy - heat, cold, electricity & gas

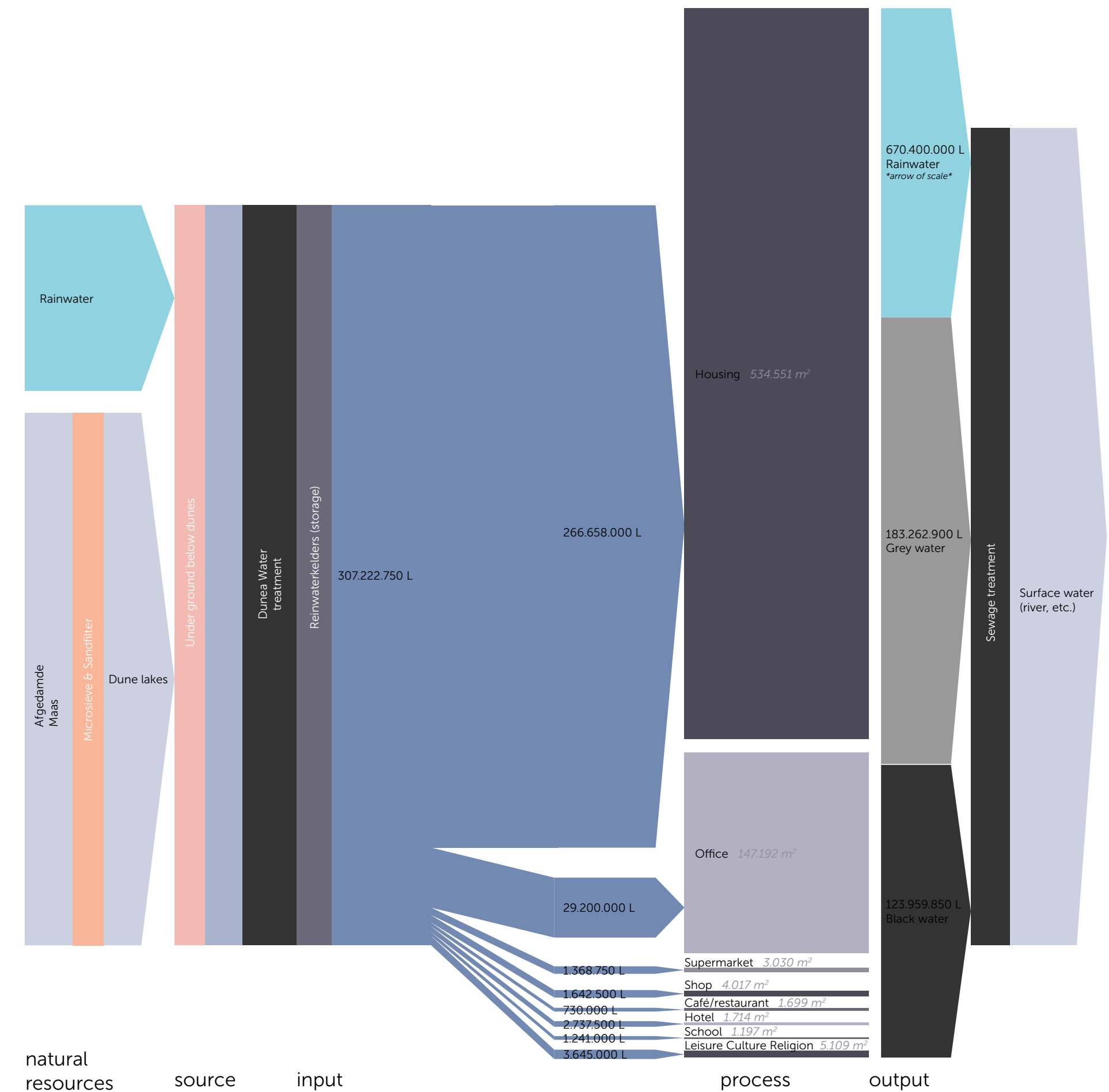
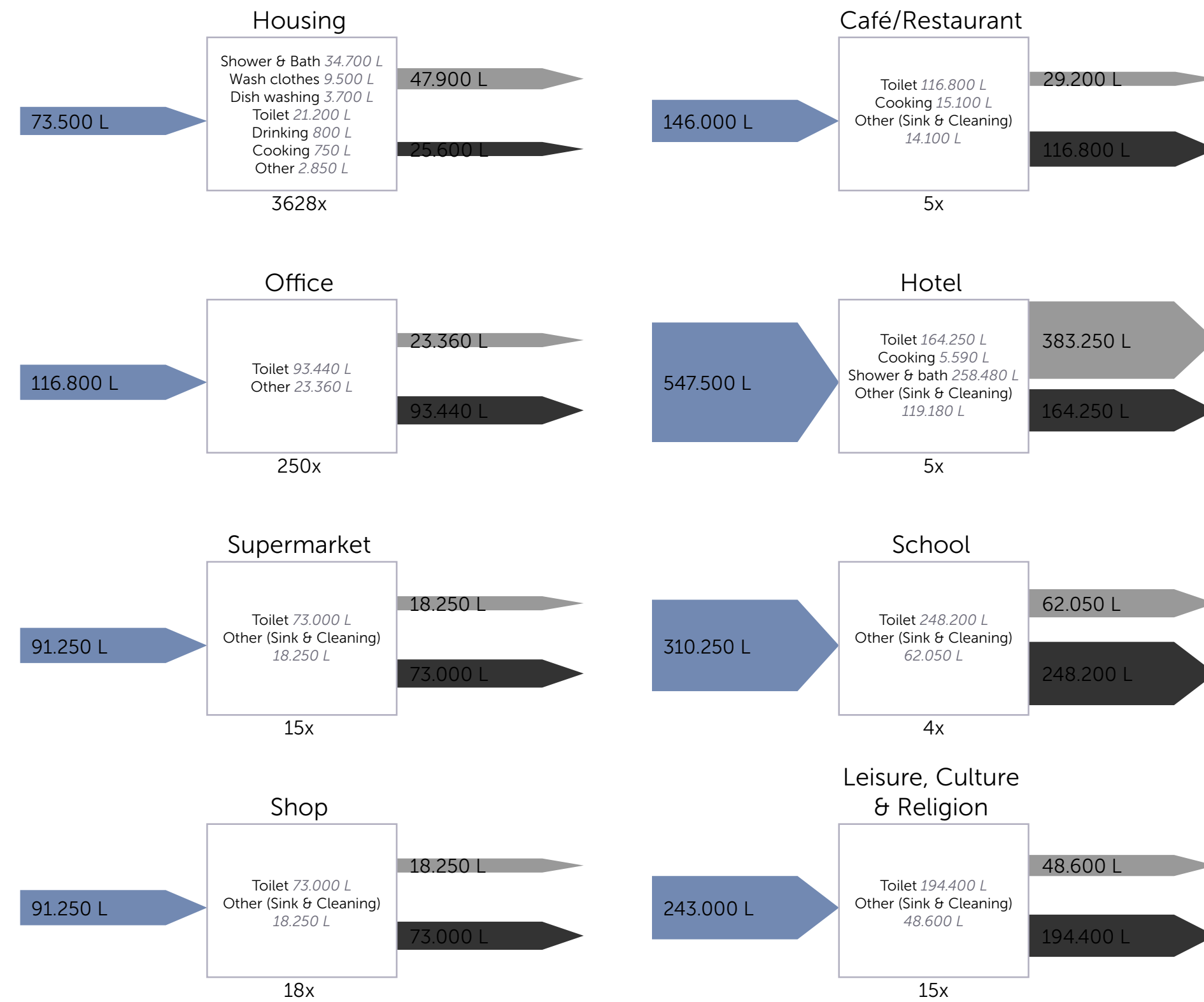


hot tap water space heating space cooling natural gas electricity CO₂ from cooking and gasboiler

Energy - heat, cold, electricity & gas



Water - fresh, grey & black water



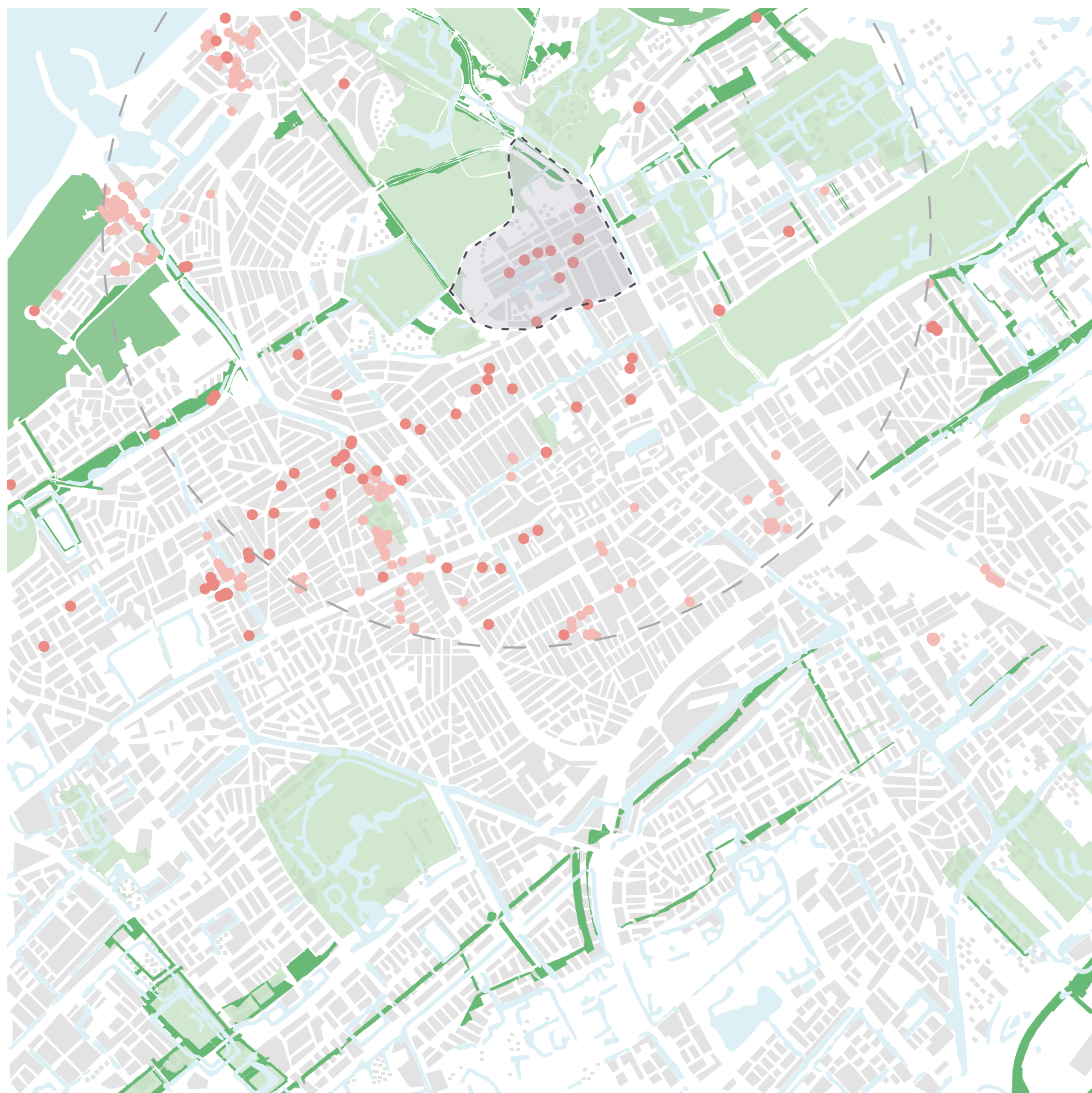
Biotic factors - flora & fauna

Nature



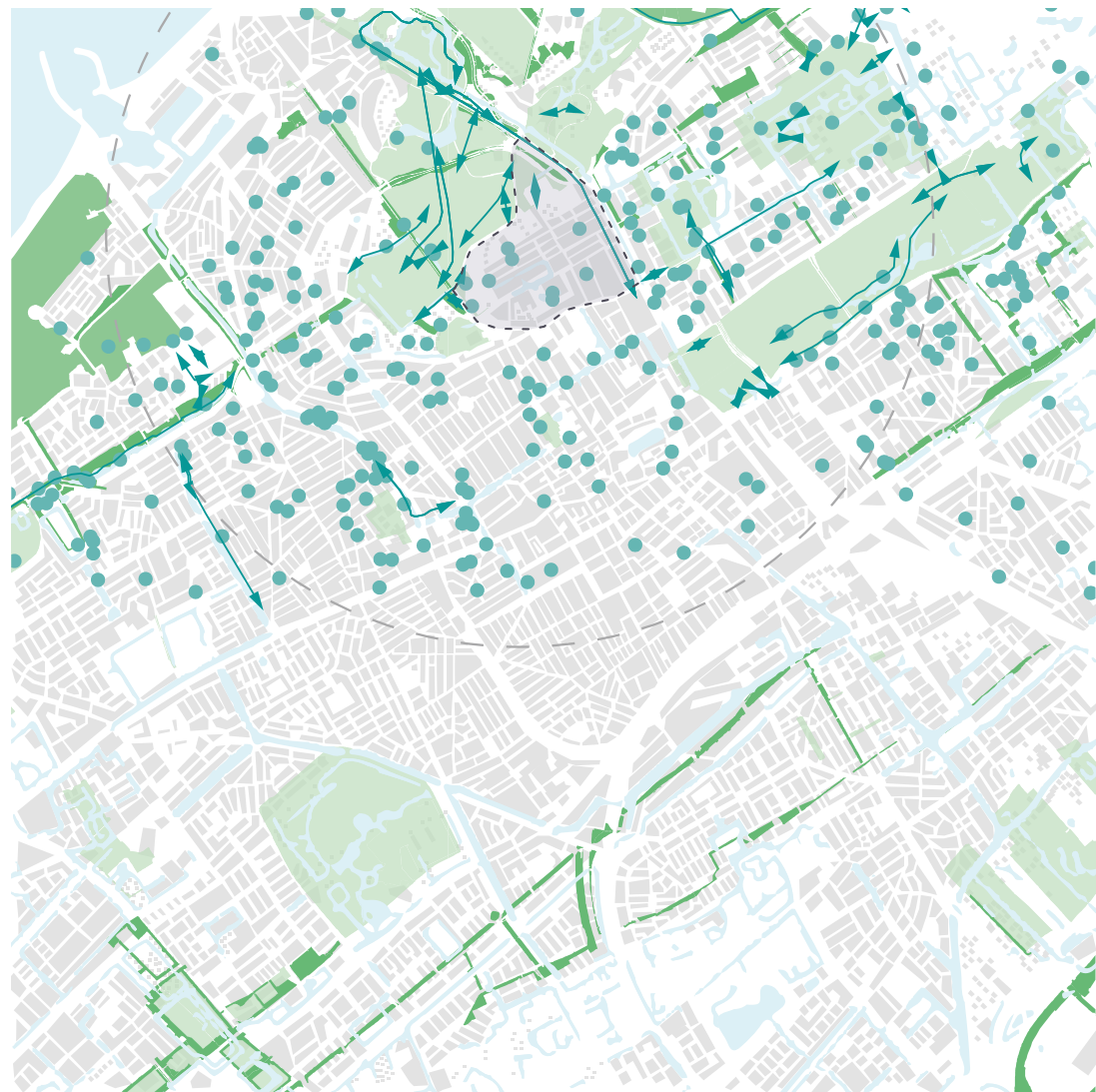
ecological corridor natura 2000

Birds



swift nest house sparrow nest

Bats



dwarf bat nest bat flying route

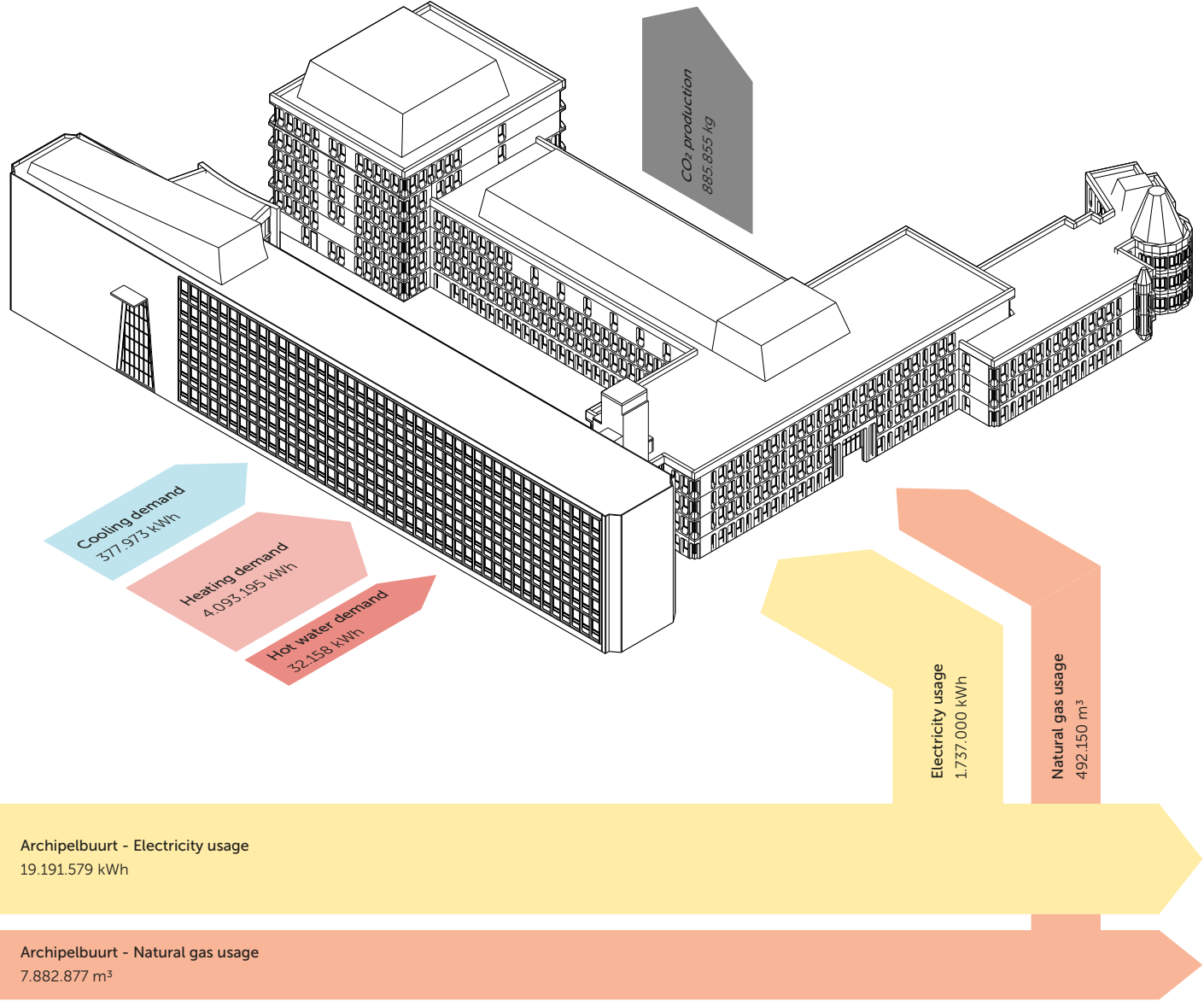
Archipelbuurt



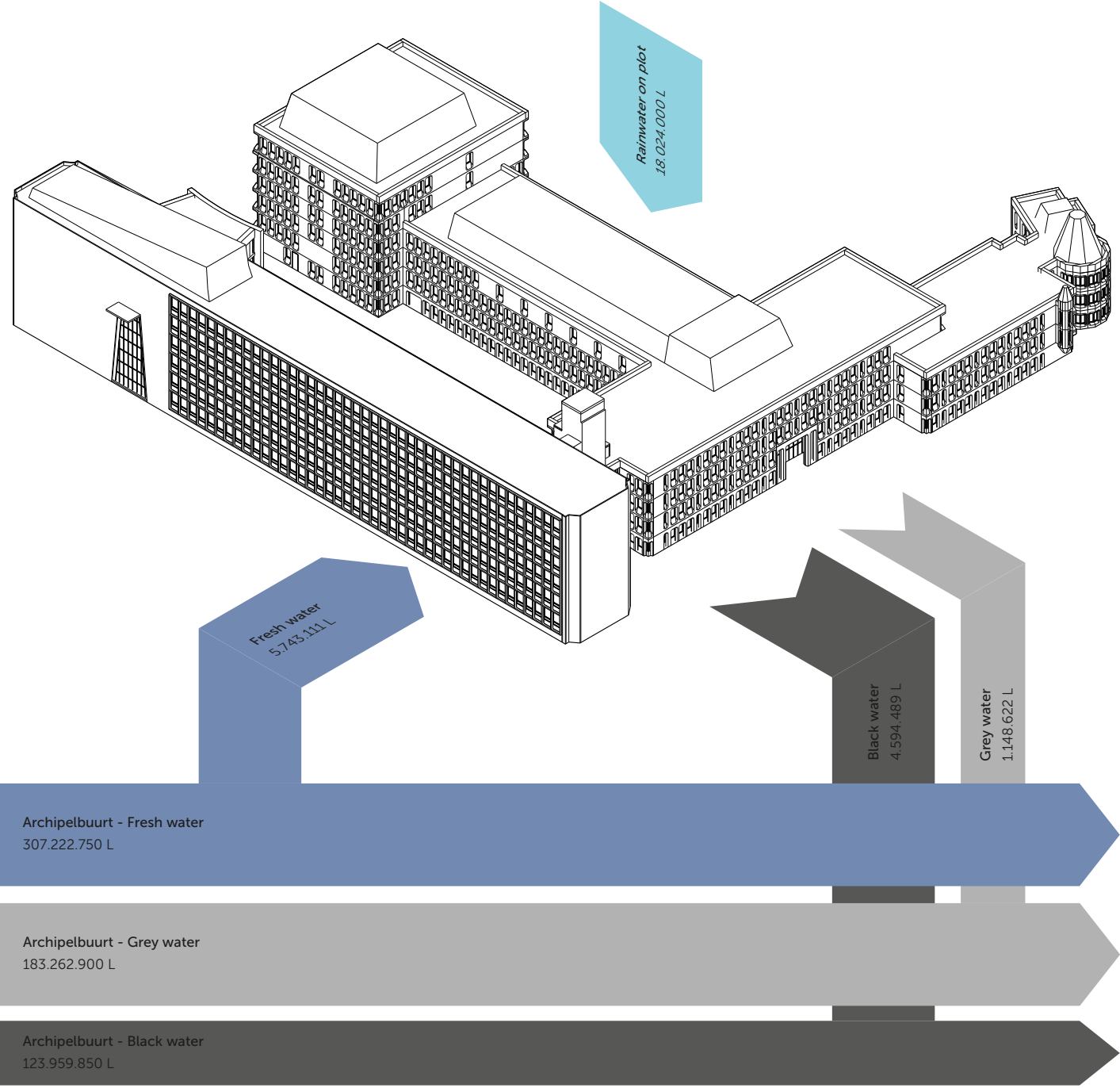
private cemetery canal
collective park fauna route

Urban metabolism - Eenheidsbureau

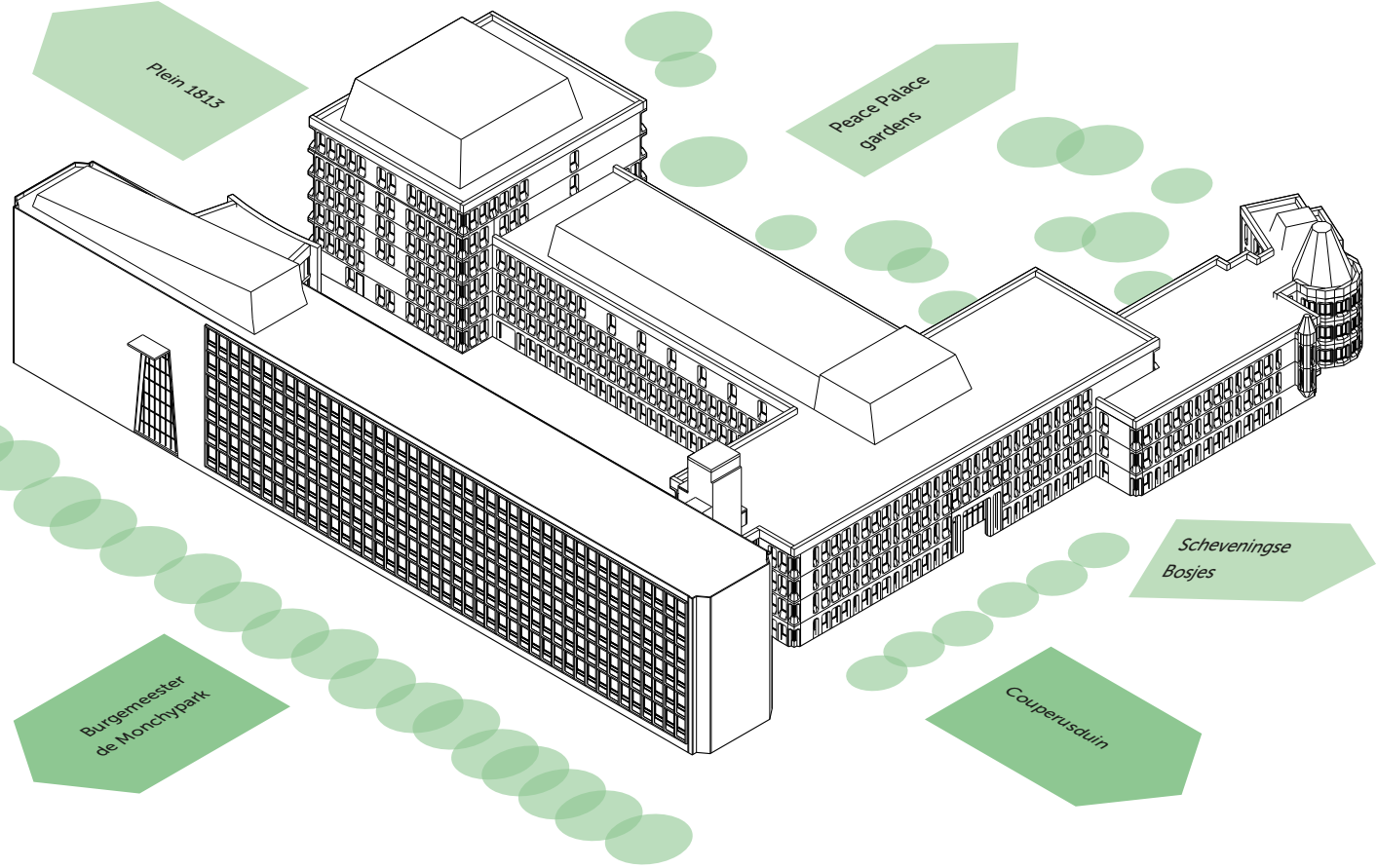
Energy



Water

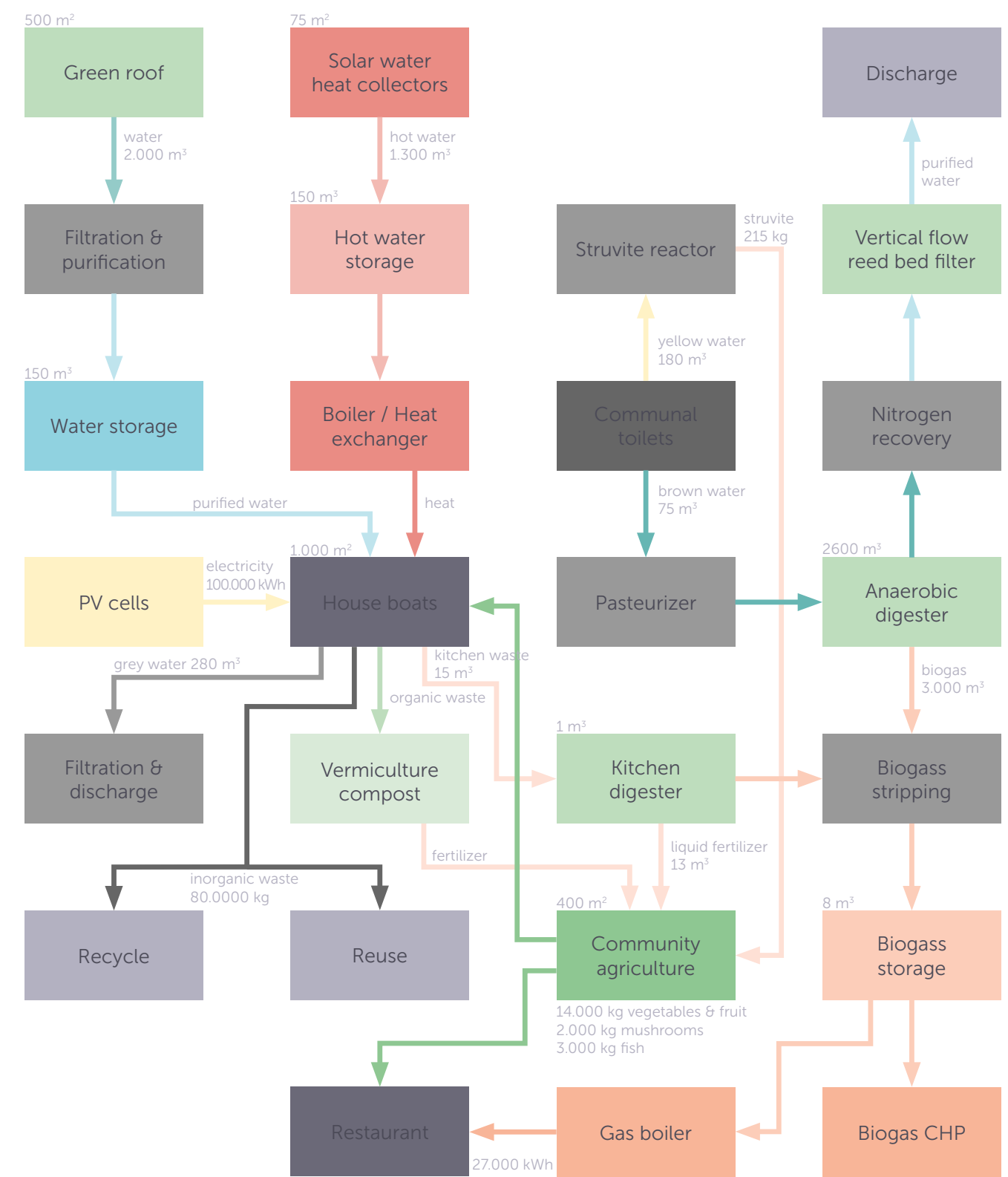


Biotic factors

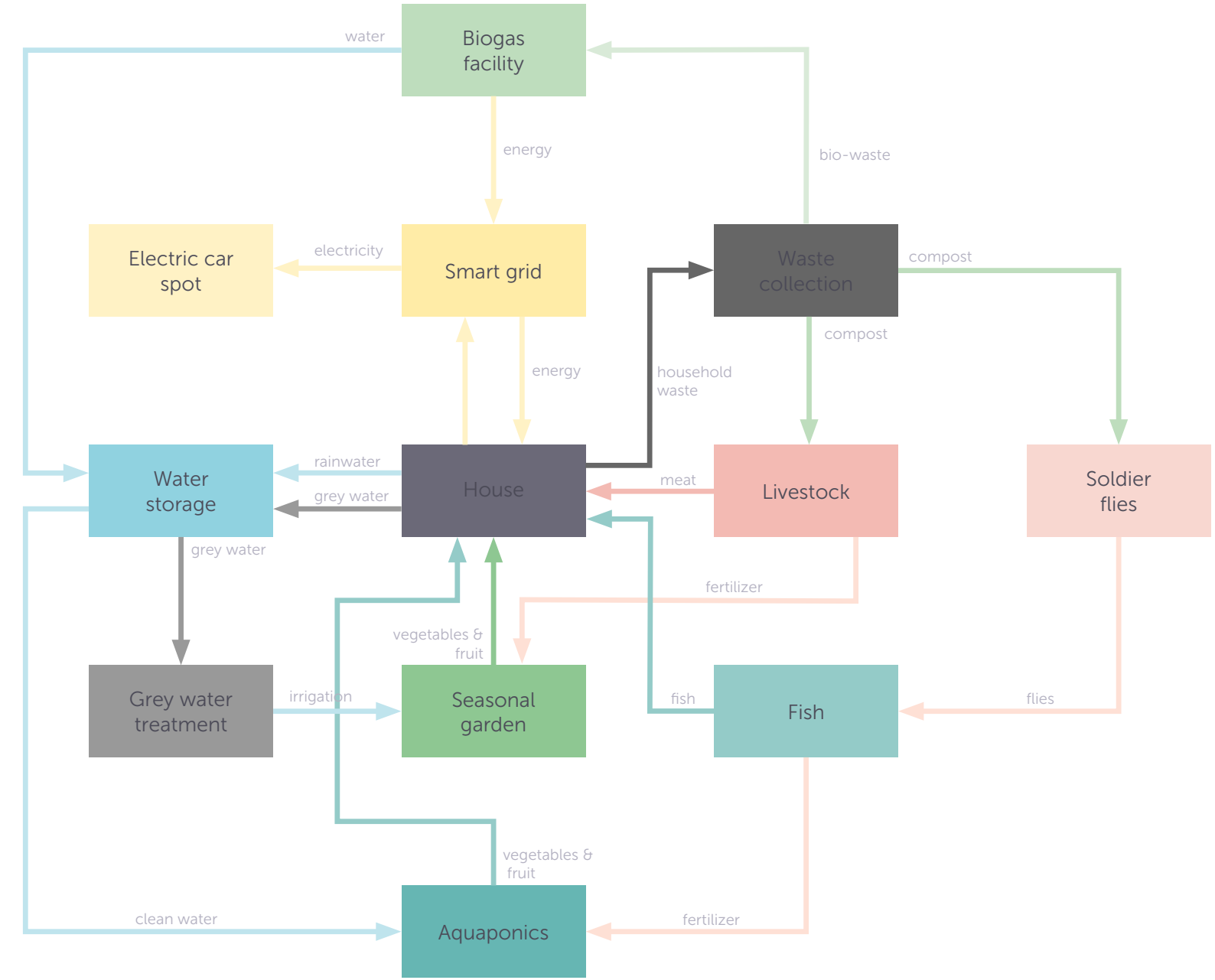


Case study research - closing cycles

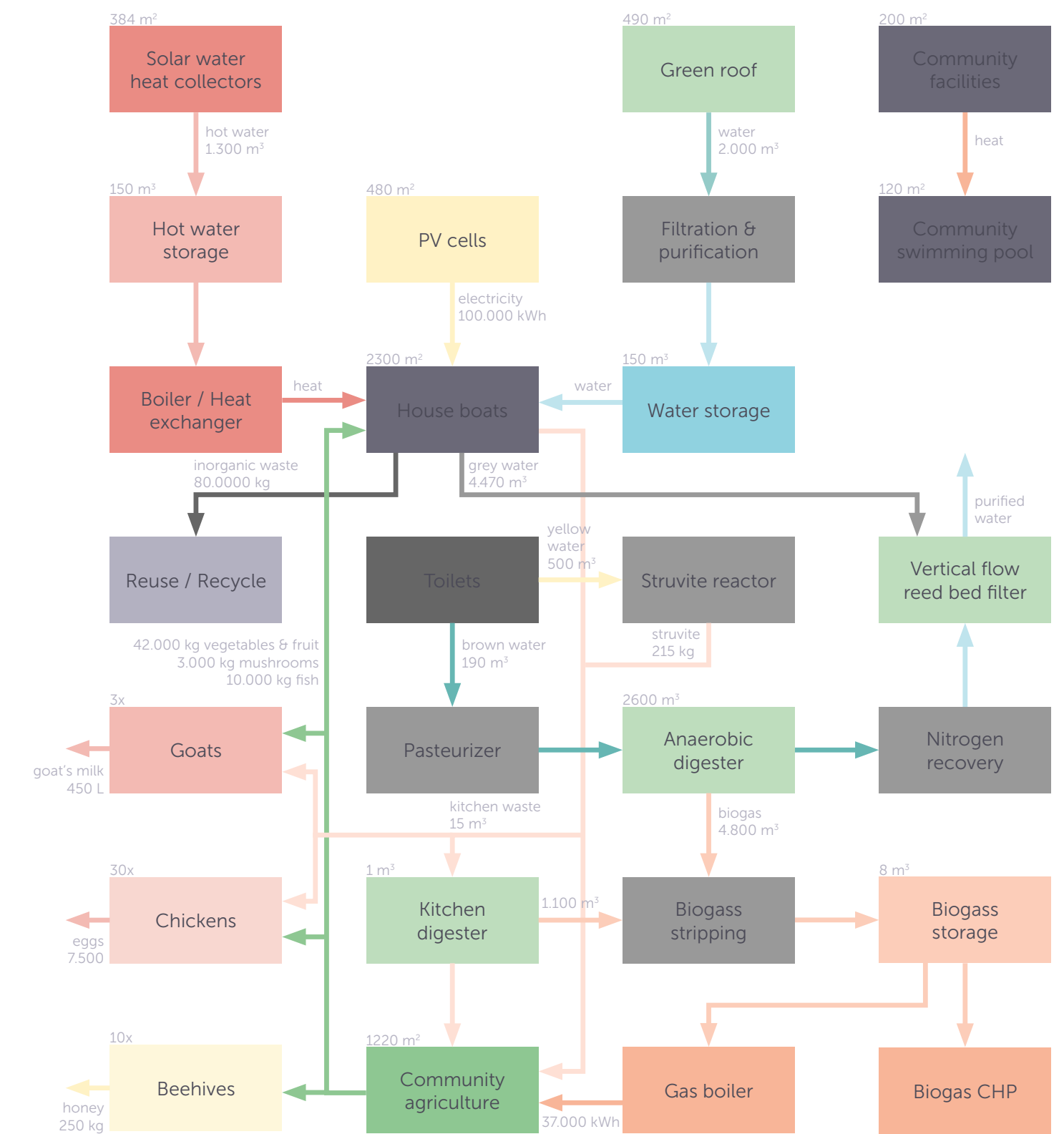
De Ceuvel - Metabolic



ReGen village - Effekt

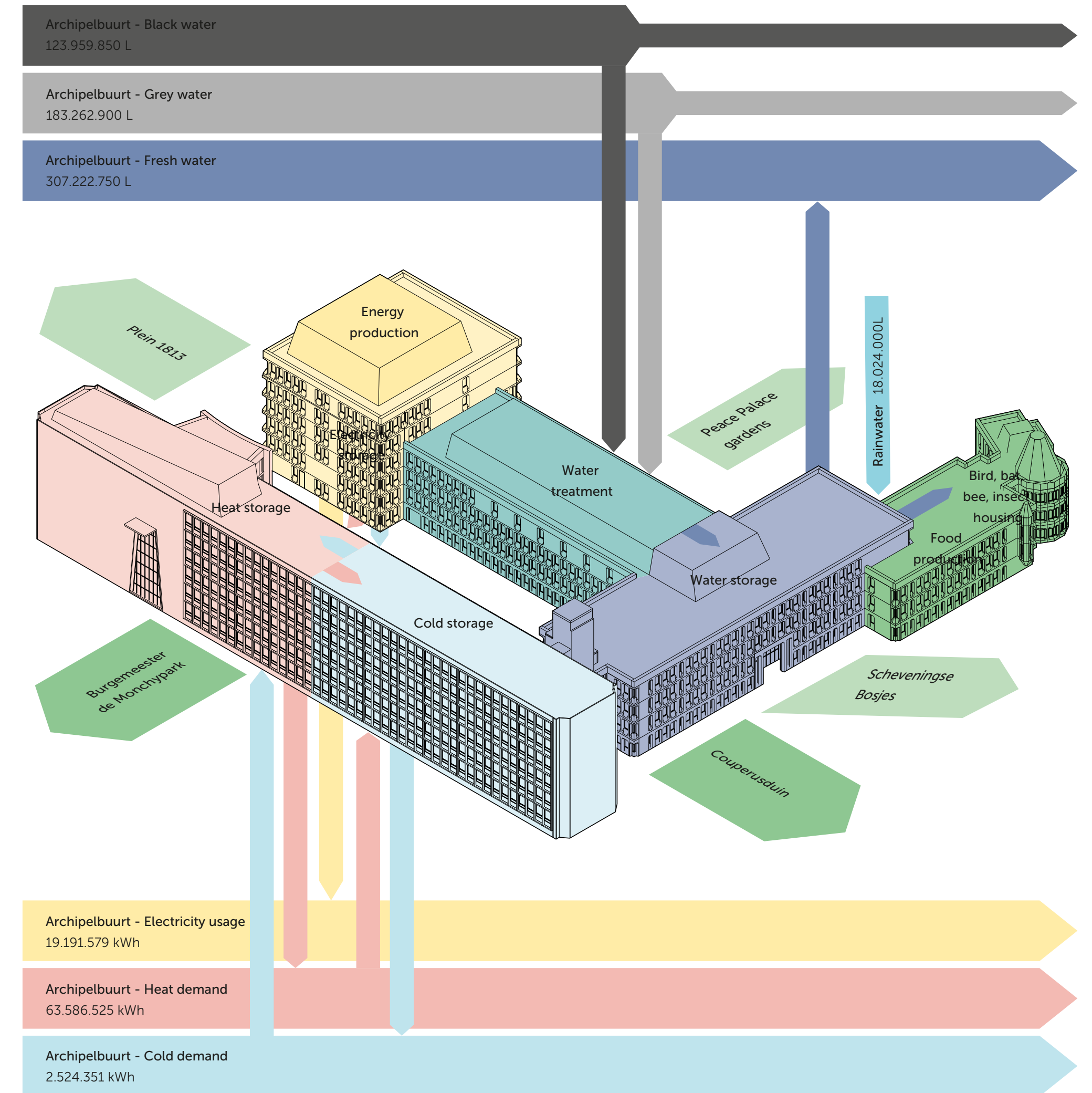
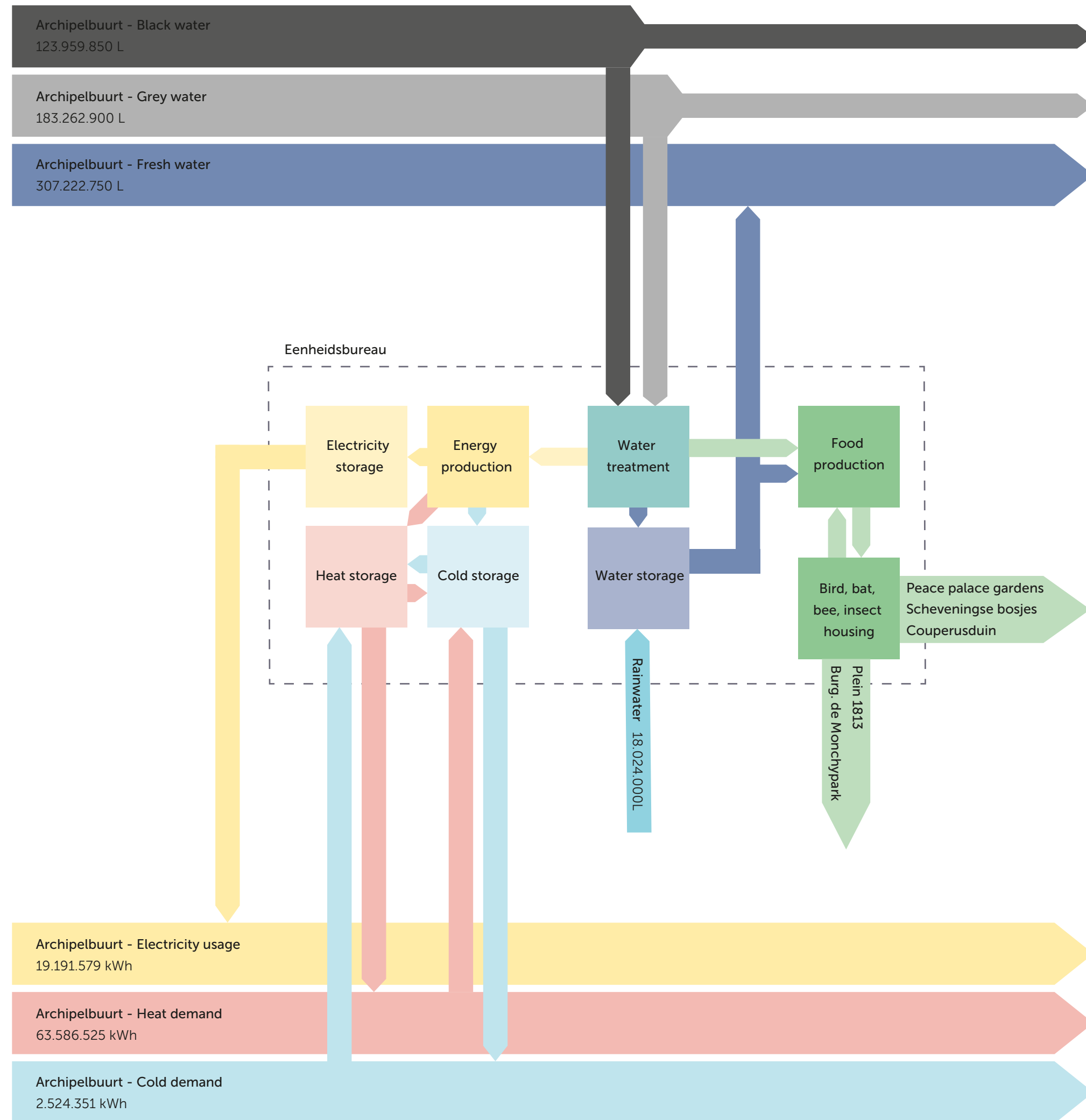


Schoonschip - Metabolic



Based on information from Metabolic (2013). *Cleantech Playground a cleantech utility in Amsterdam North*. ISBN: 978 - 90 - 5059 - 501 - 8. & Effekt (2016). *Regen Villages*. Retrieved on 12.01.2022 from <https://www.efeekt.dk/regenvillages> - own drawings

Transformation framework - urban metabolism



Program - humans + nature

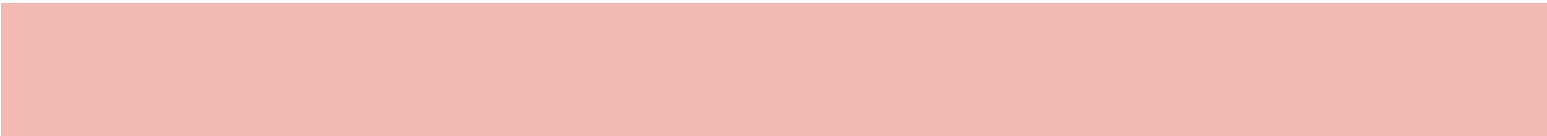
energy



photovoltaic-thermal (PVT) panels 4800 m²



combined heat-power plant (CHP) 100 m²



heat exchanger roof 200 m²



seasonal heat & cold storage 2000 m²

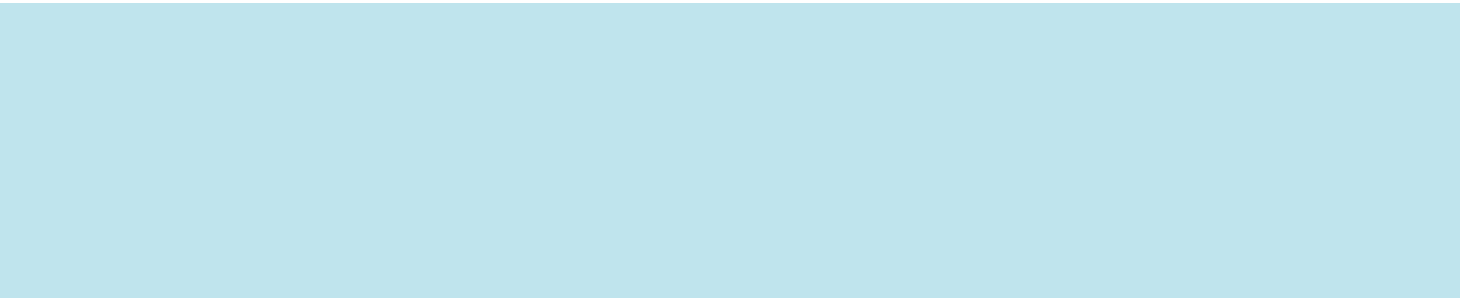
water



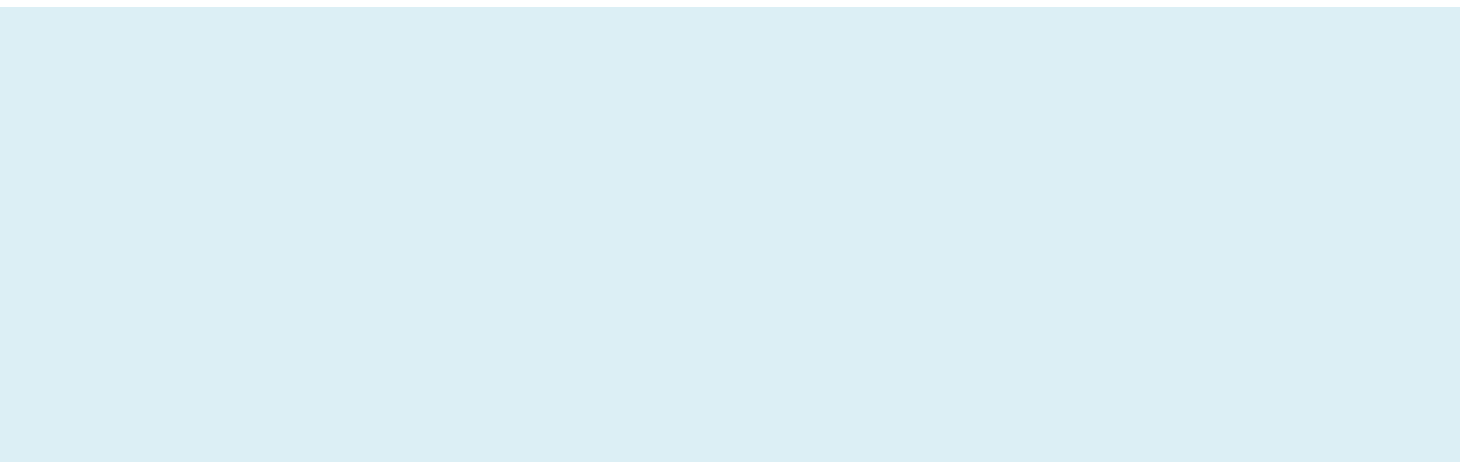
water treatment indoor 2500 m²



water treatment outdoor 1250 m²



water storage 1000 m²



natural water for biodiversity 2000 m²

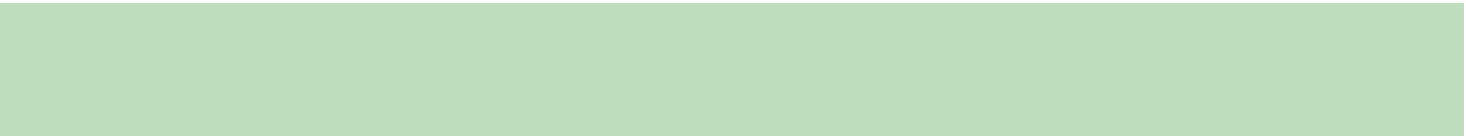
flora & fauna



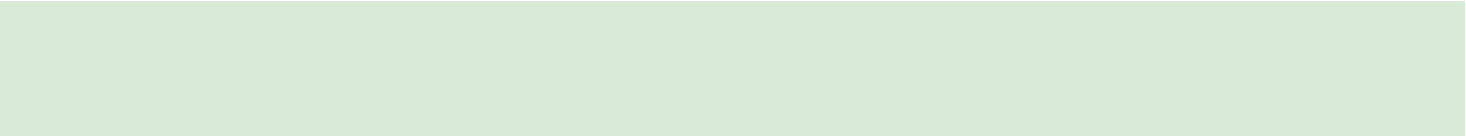
urban farming 4000 m²



habitat for fauna 400 m²

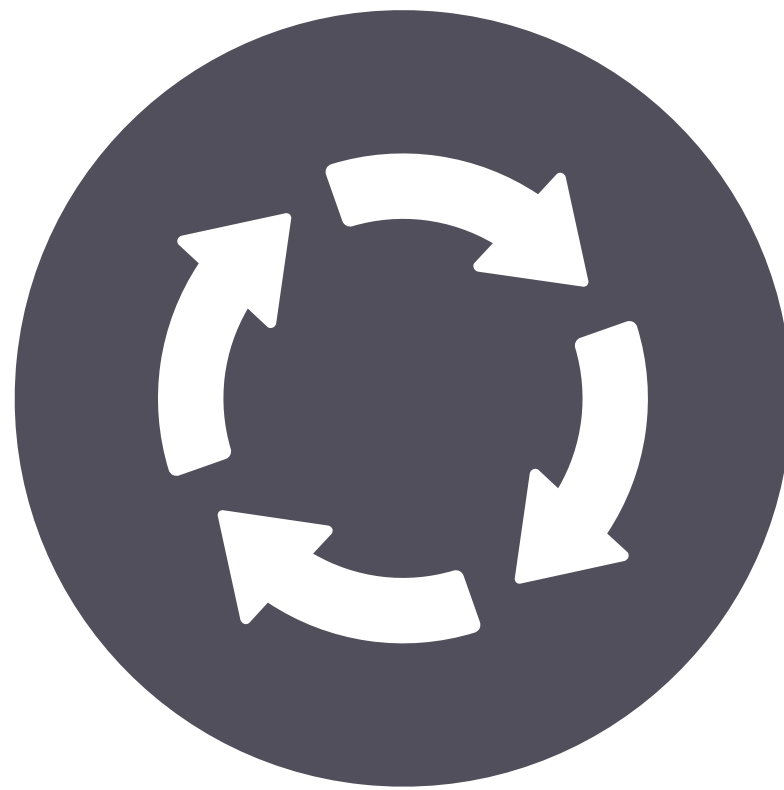


digester 100 m²



organic waste chutes 100 m²

Design starting points - humans + nature



Contribute to closing the **water, energy, and material cycles** for the **building** as well as the **neighborhood**



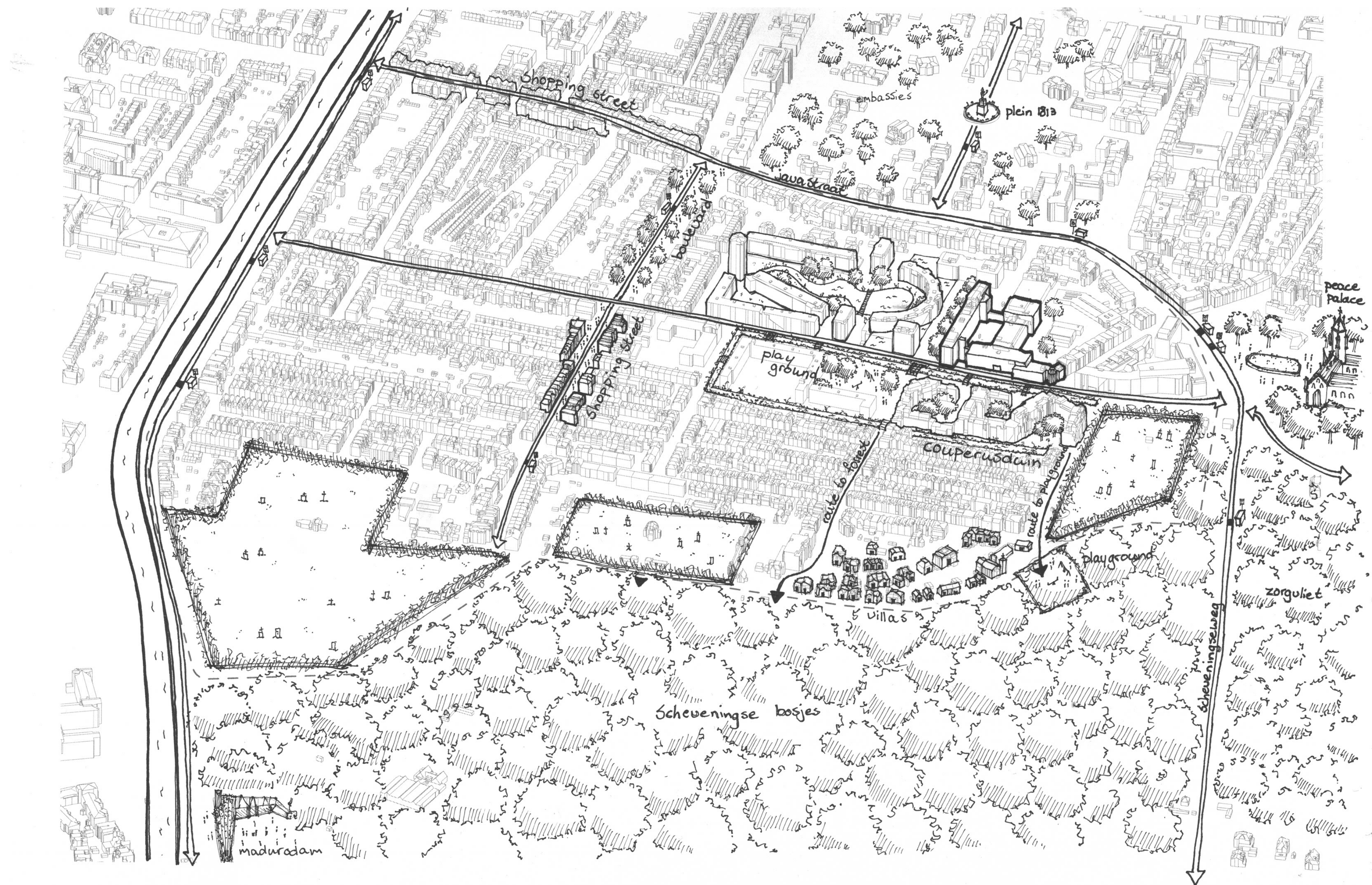
Connect to surrounding **blue/green structures**



Create **awareness, appreciation**, and provide **education** on relation with nature

02 Humans + Humans

Urban context - existing situation



Social public functions - healthy living



- health care facility
- pharmacy
- supermarket
- speciality shop
- restaurant
- café

Social public functions - healthy living

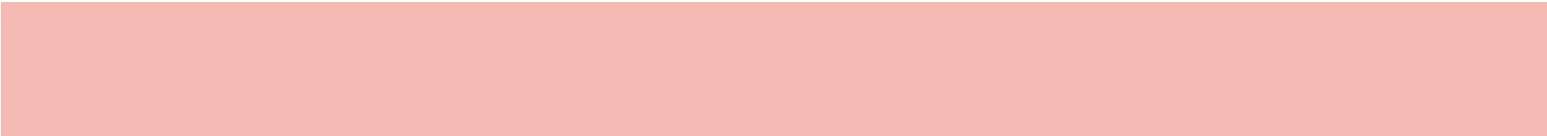
health care & sports



health care centre 800 m²



child daycare 400 m²



indoor sport facilities 300 m²

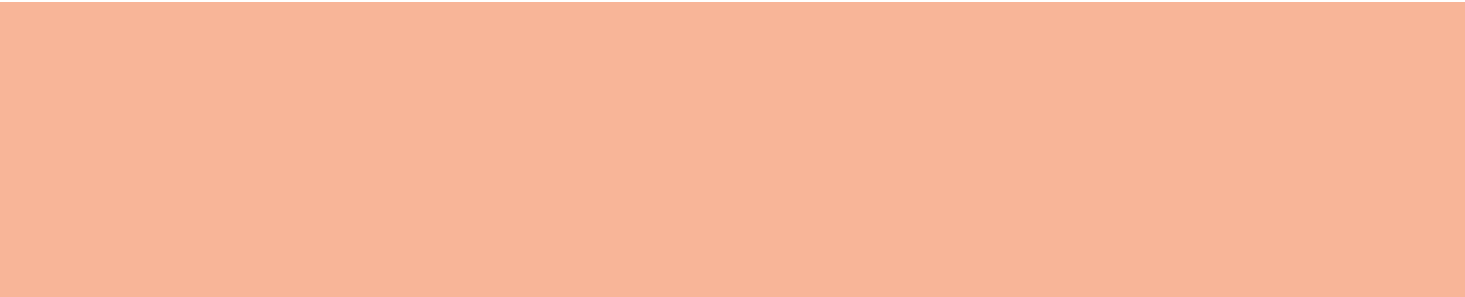


outdoor sport facilities 2400 m²

work & leisure & education



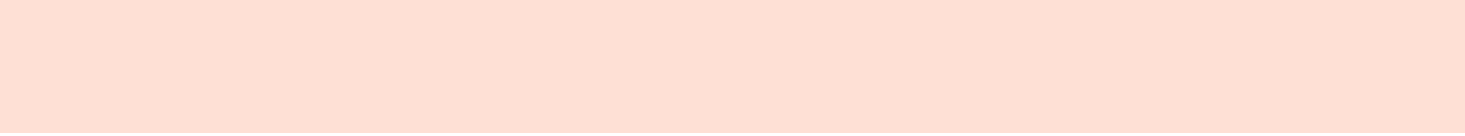
workspaces 800 m²



shared kitchens 800 m²



entertainment spaces 800 m²



education spaces 400 m²

food & drinks



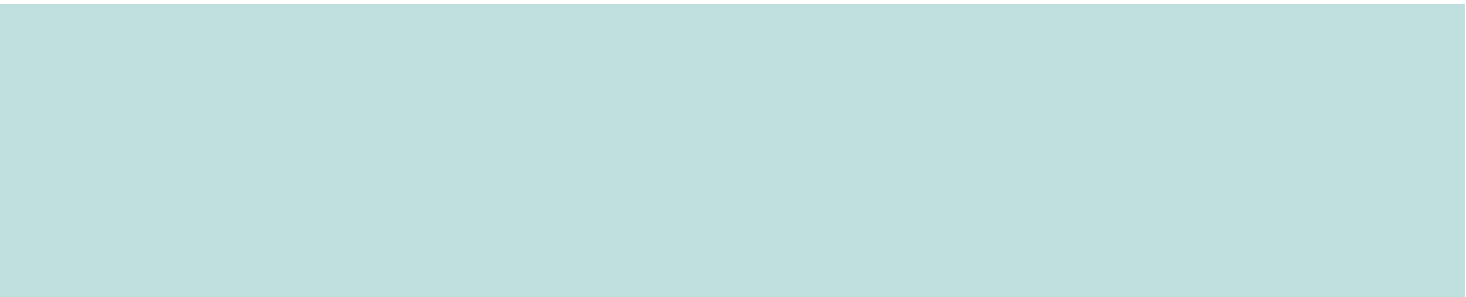
supermarket 400 m²



restaurant 400 m²

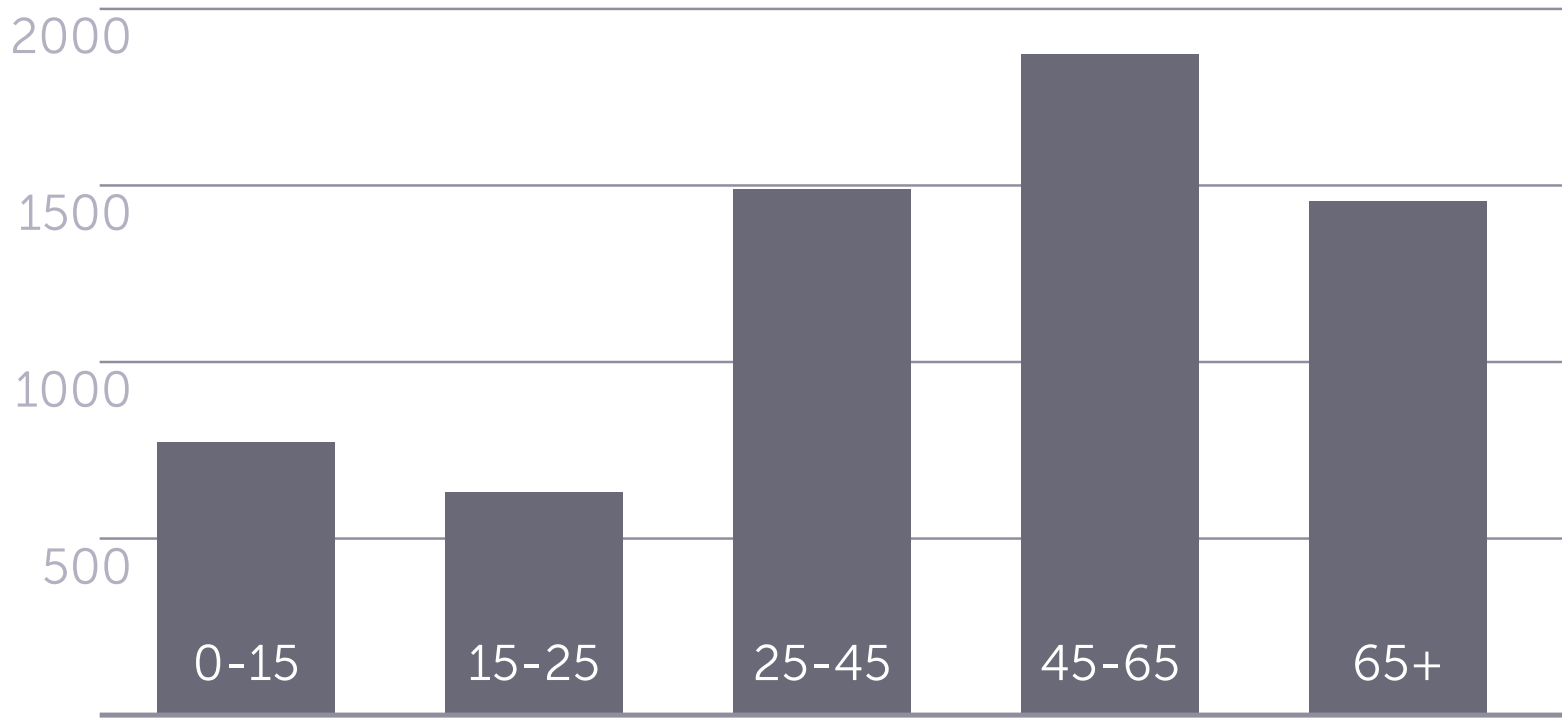


café/coffee corner 120 m²



terrace 800 m²

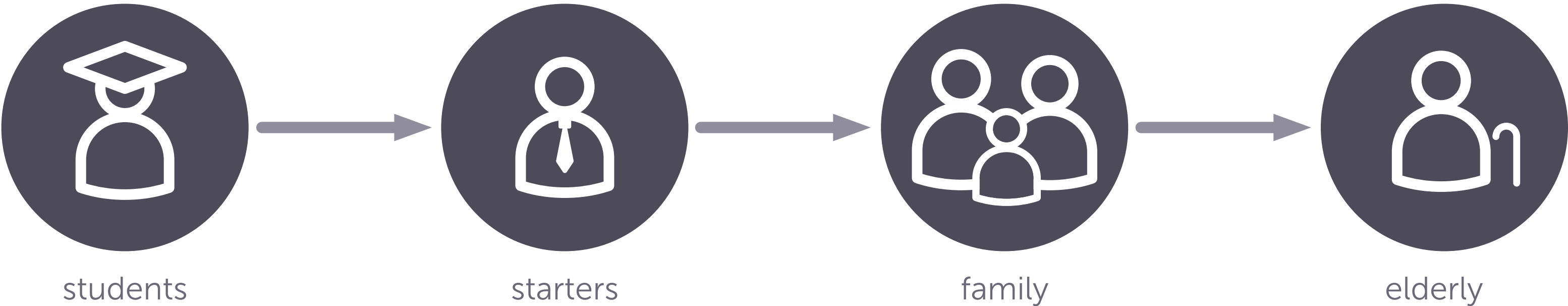
Target groups - Archipelbuurt



current demography Archipelbuurt



growing within the building

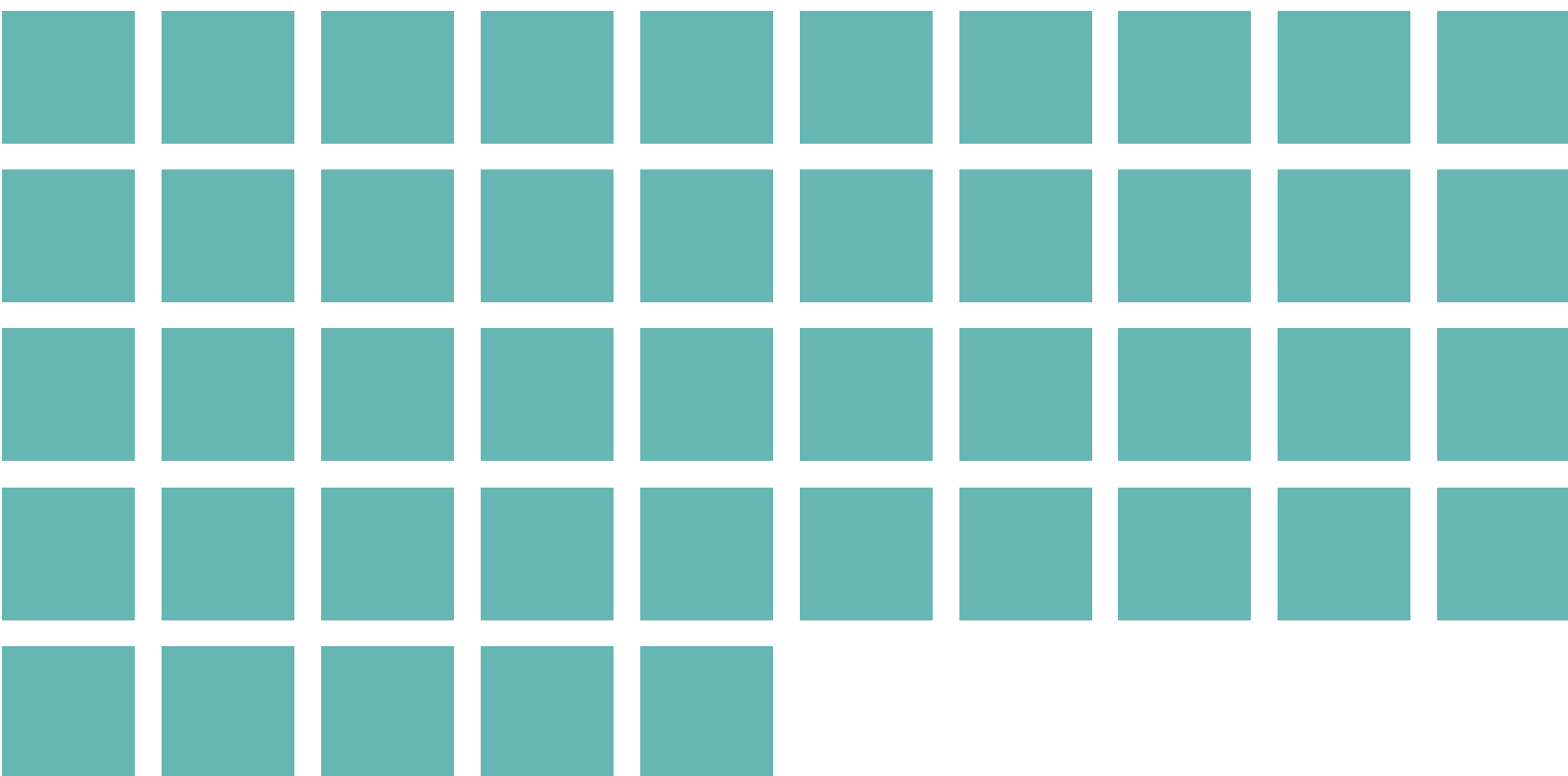


Housing types - diversity

bedroom apartments



studio 30 m² (20x)



1-bedroom 55 m² (45x)



2-bedroom 75 m² (20x)

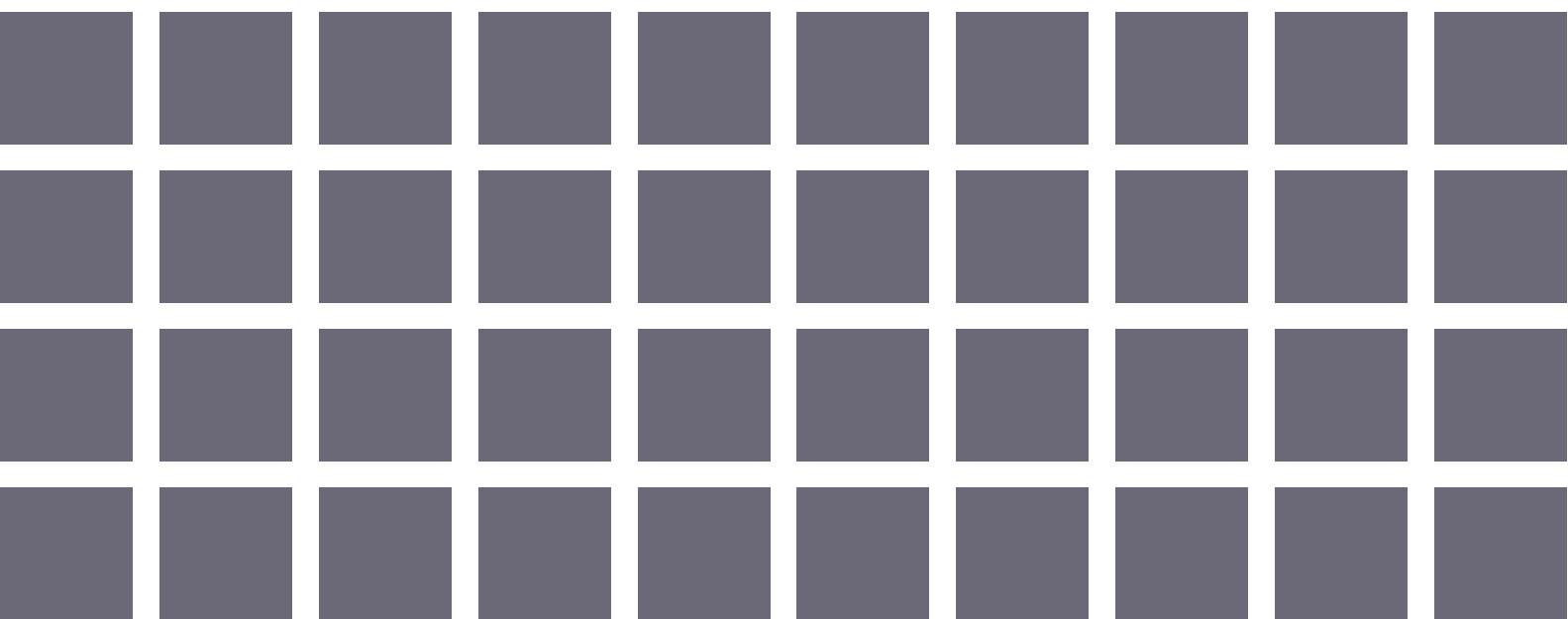


3-bedroom 85 m² (15x)

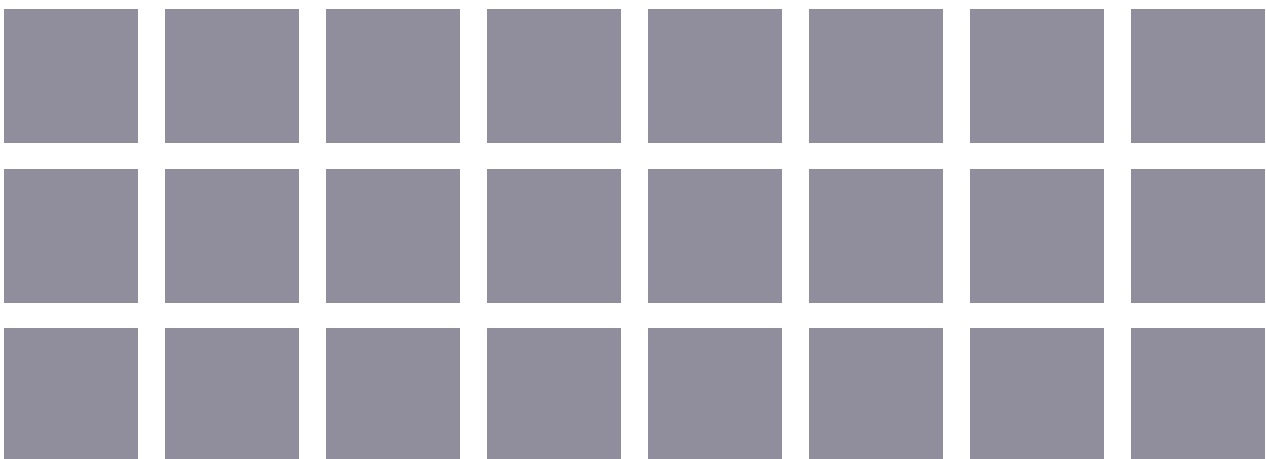
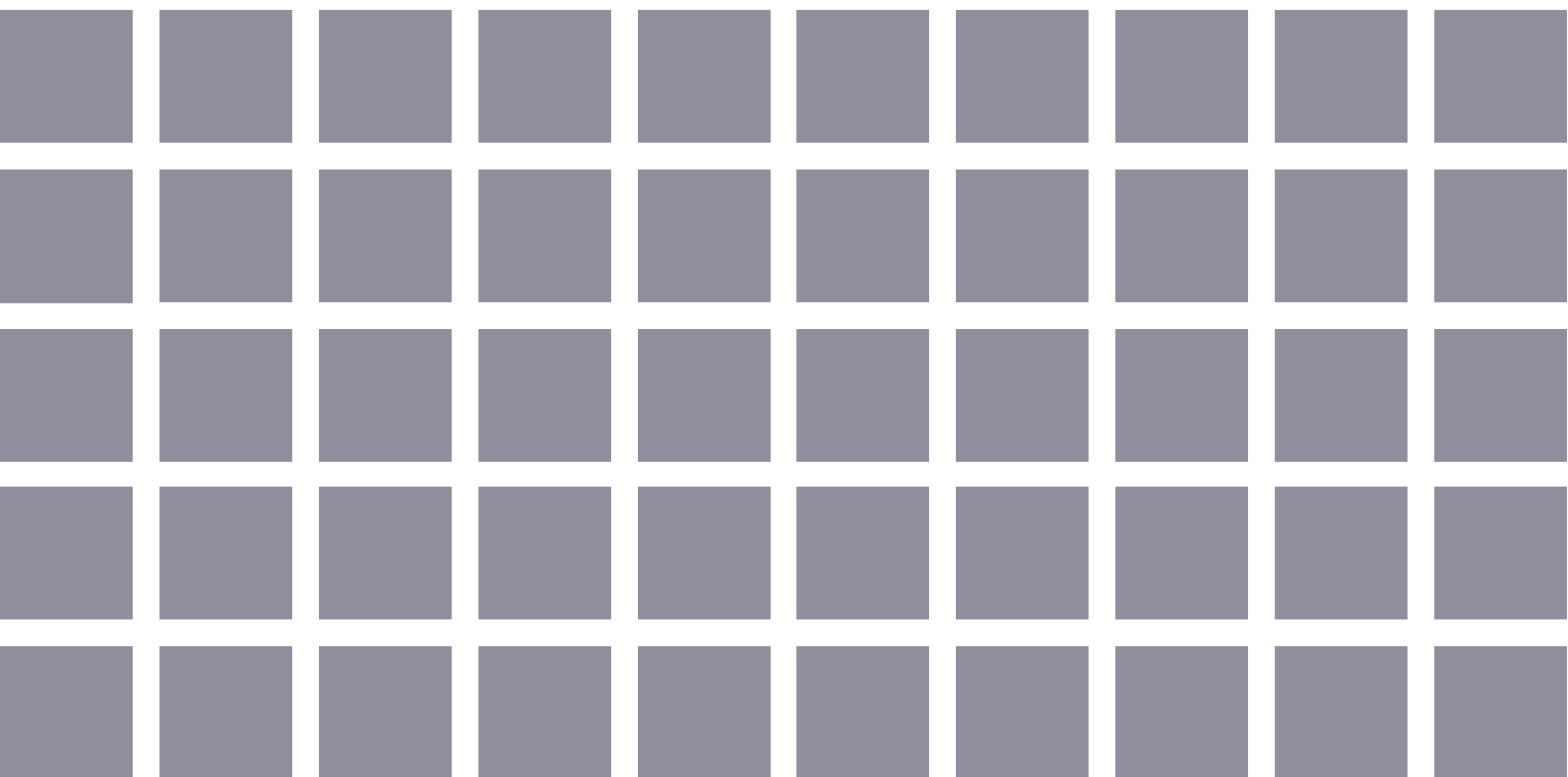
co-housing



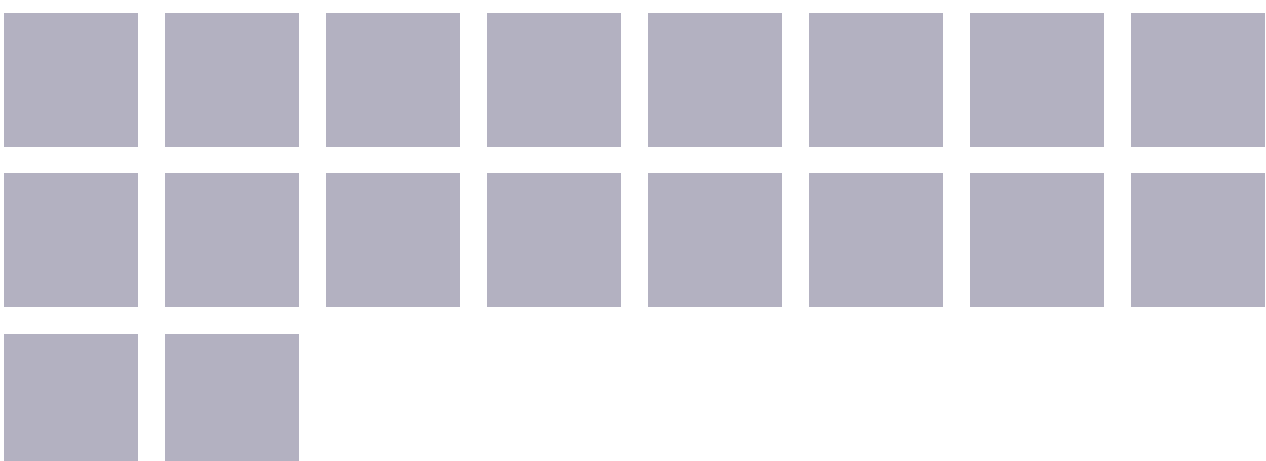
3 apartment houses 100 m² (10x)



4 apartment houses 150 m² (10x)

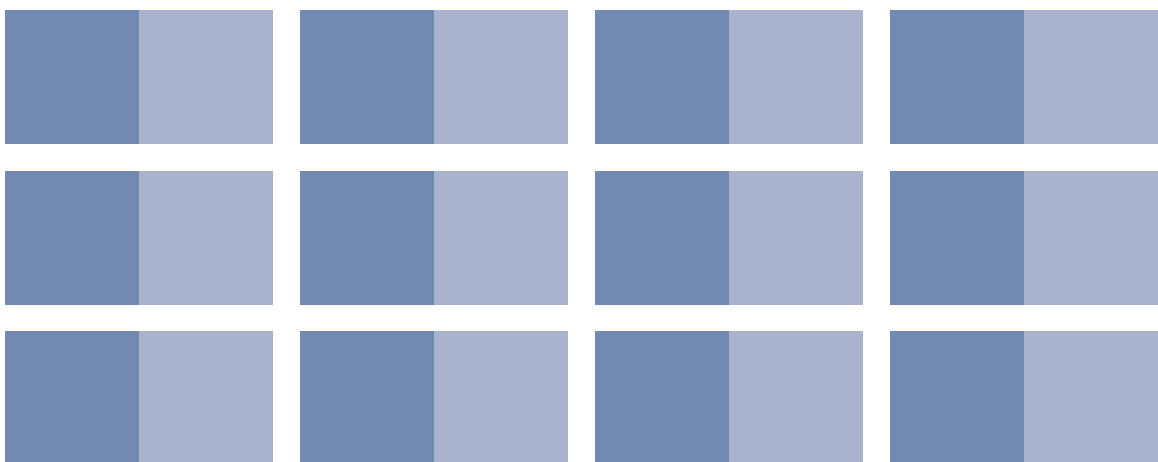


5 apartment houses 200 m² (15x)



6 apartment houses 250 m² (3x)

work-living apartment



work-living apartment 160 m² (12x)

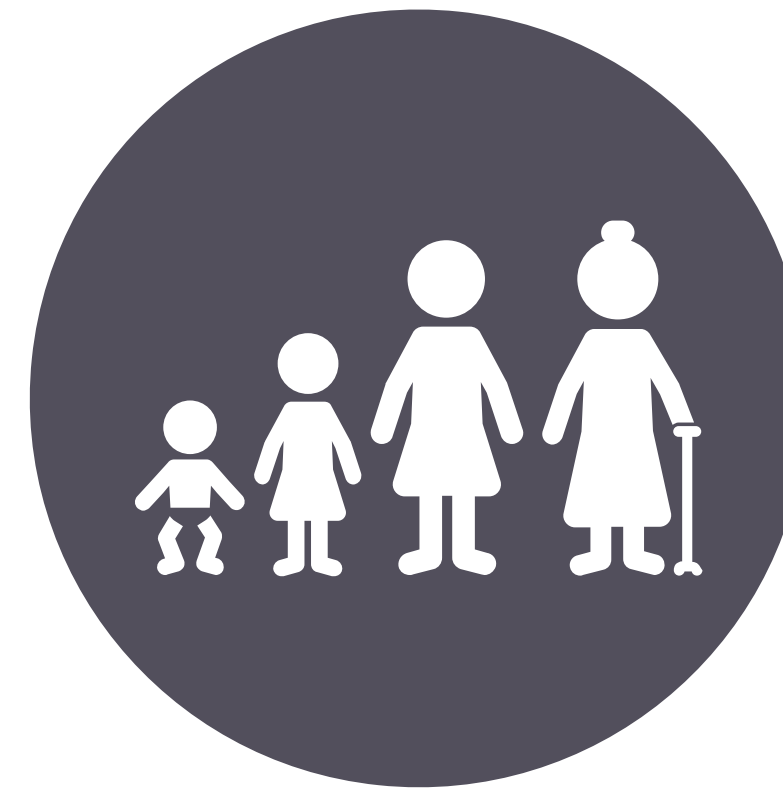
Design starting points - humans + humans



Stimulate **social interaction** and **cohesion** of **inhabitants** and **neighborhood** to prevent loneliness



Stimulate **healthy living**

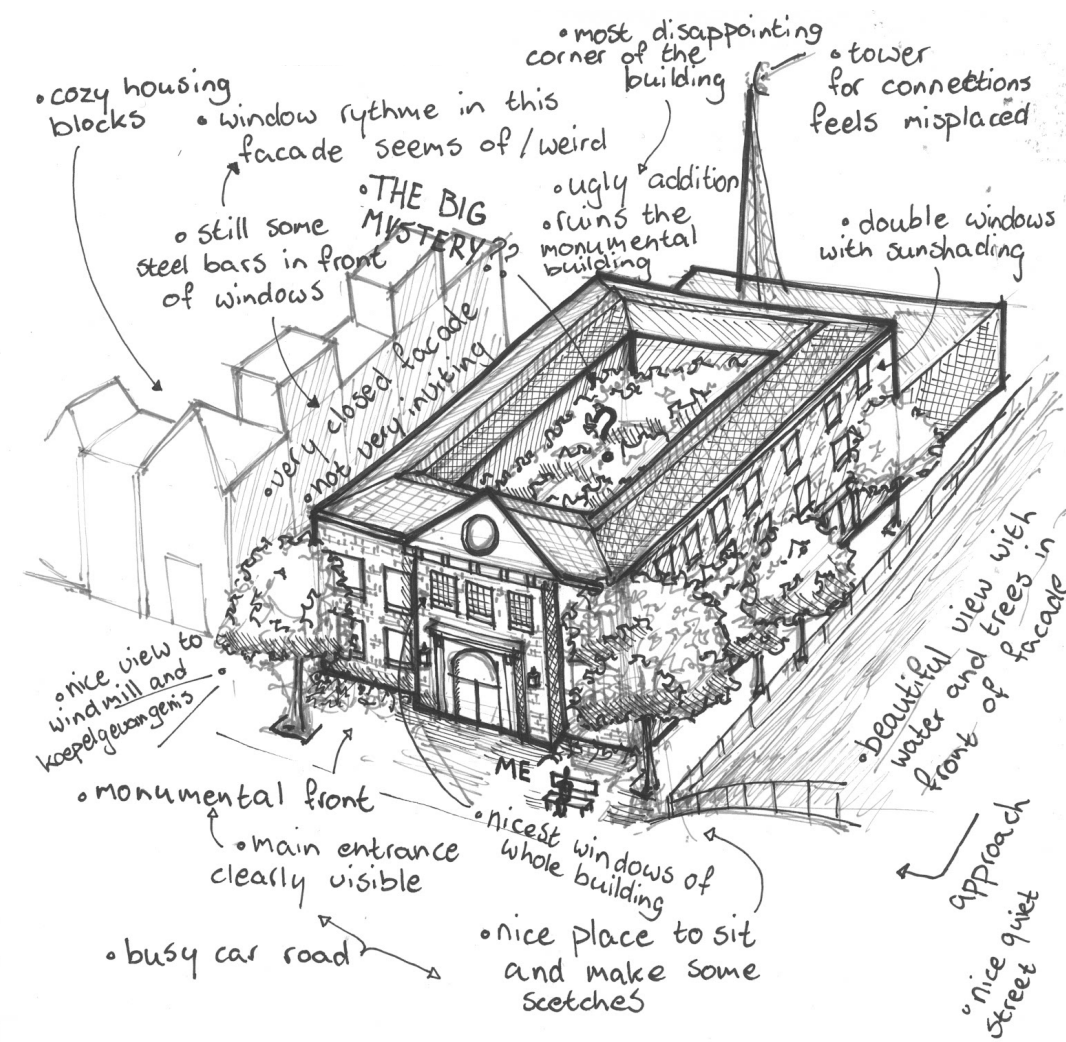


Create a building suited for a wide **mix of target groups**, allowing **growth** within the building

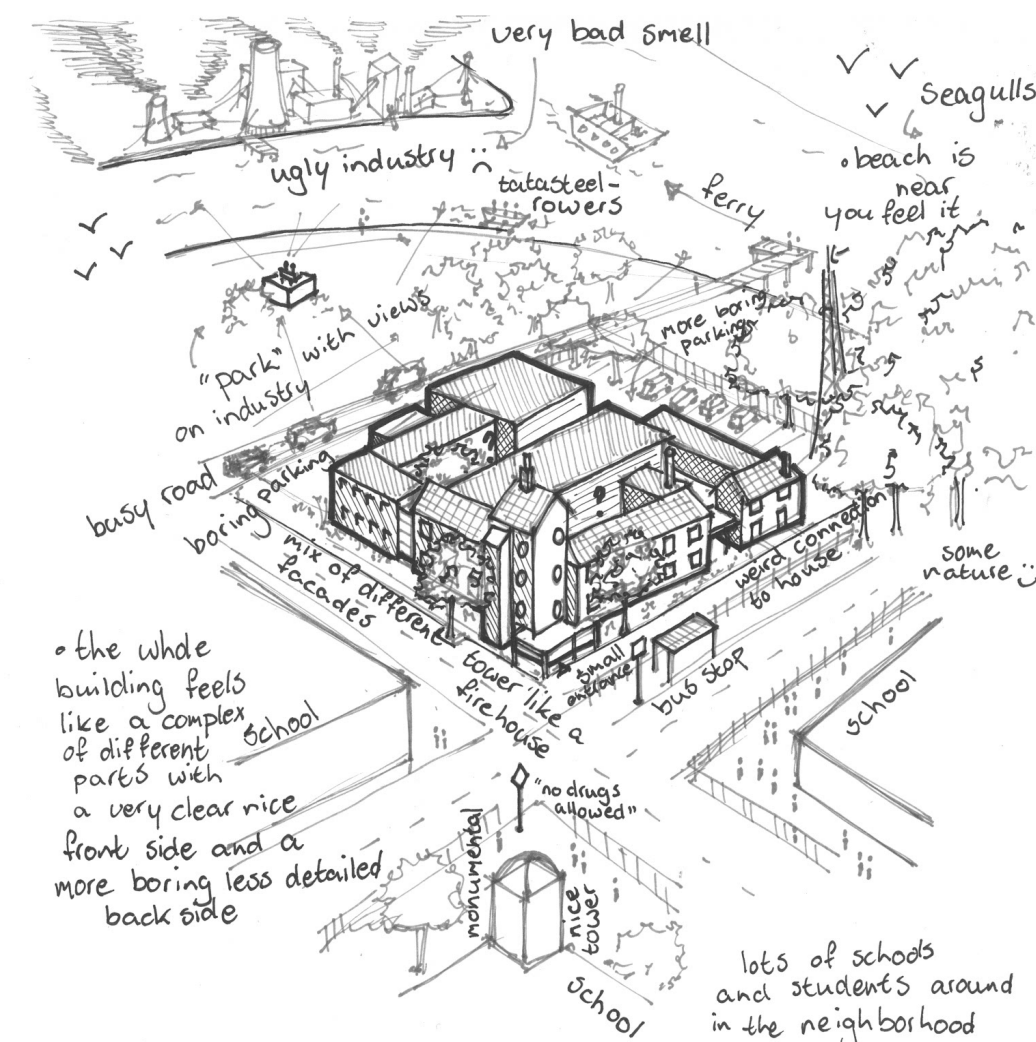
03 Humans + Buildings

Transforming built environment - adapting 20th century heritage

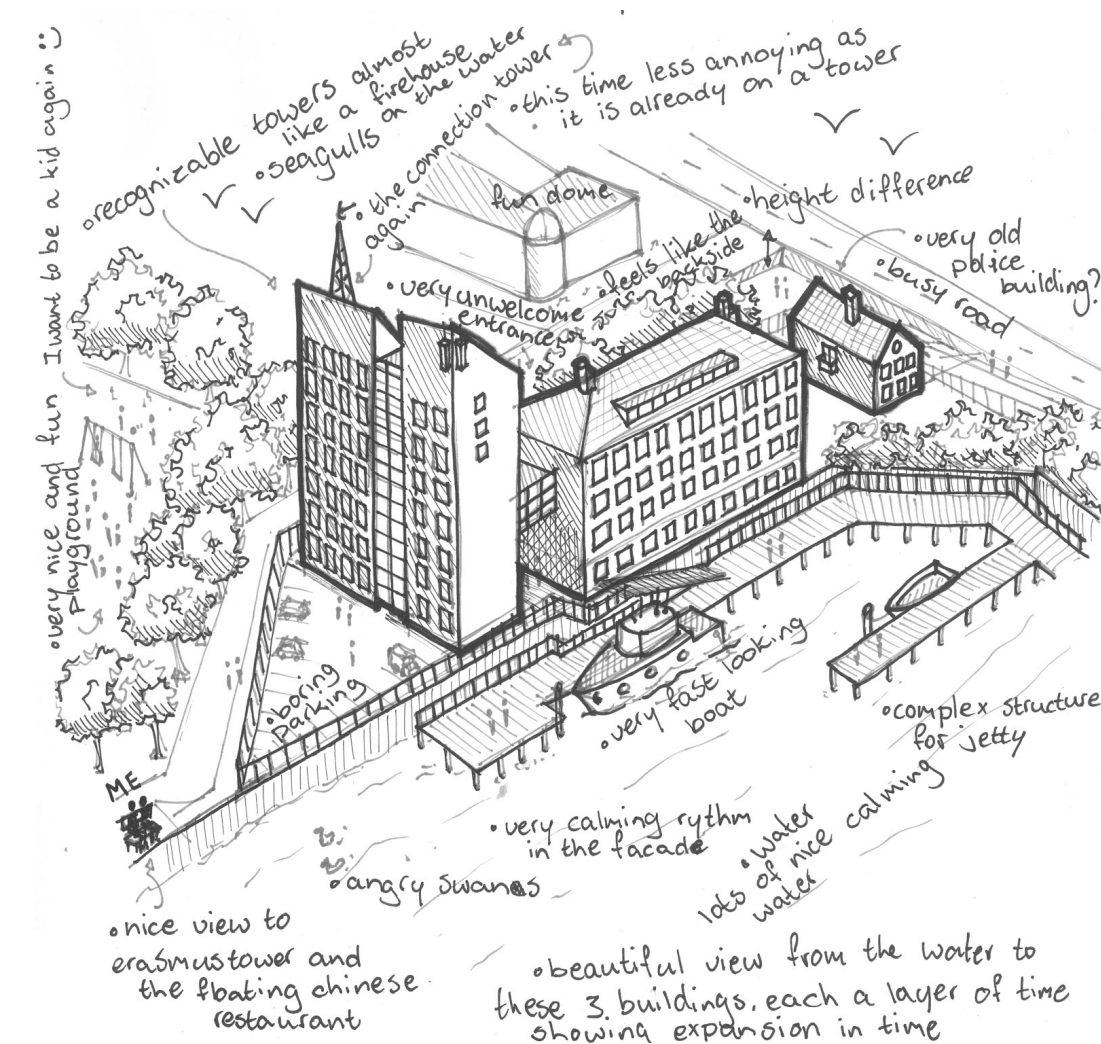
Haarlem - Koudenhorn



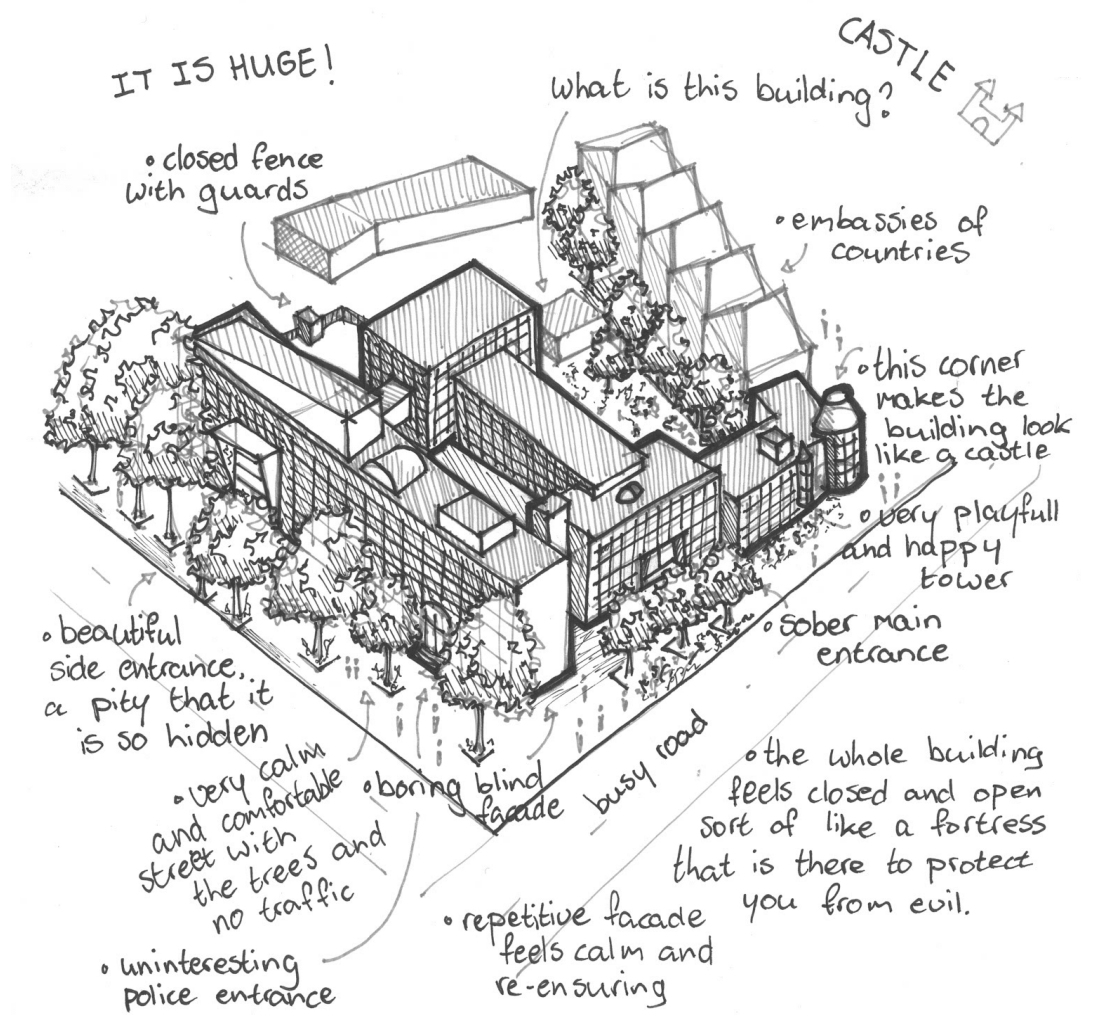
IJmuiden - Havenpolitie



Rotterdam - Havenpolitie



The Hague - Eenheidsbureau



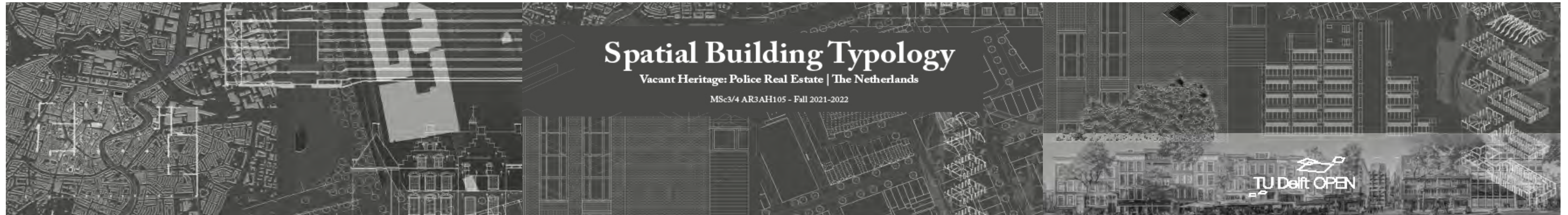
Eenhheidsbureau - The Hague



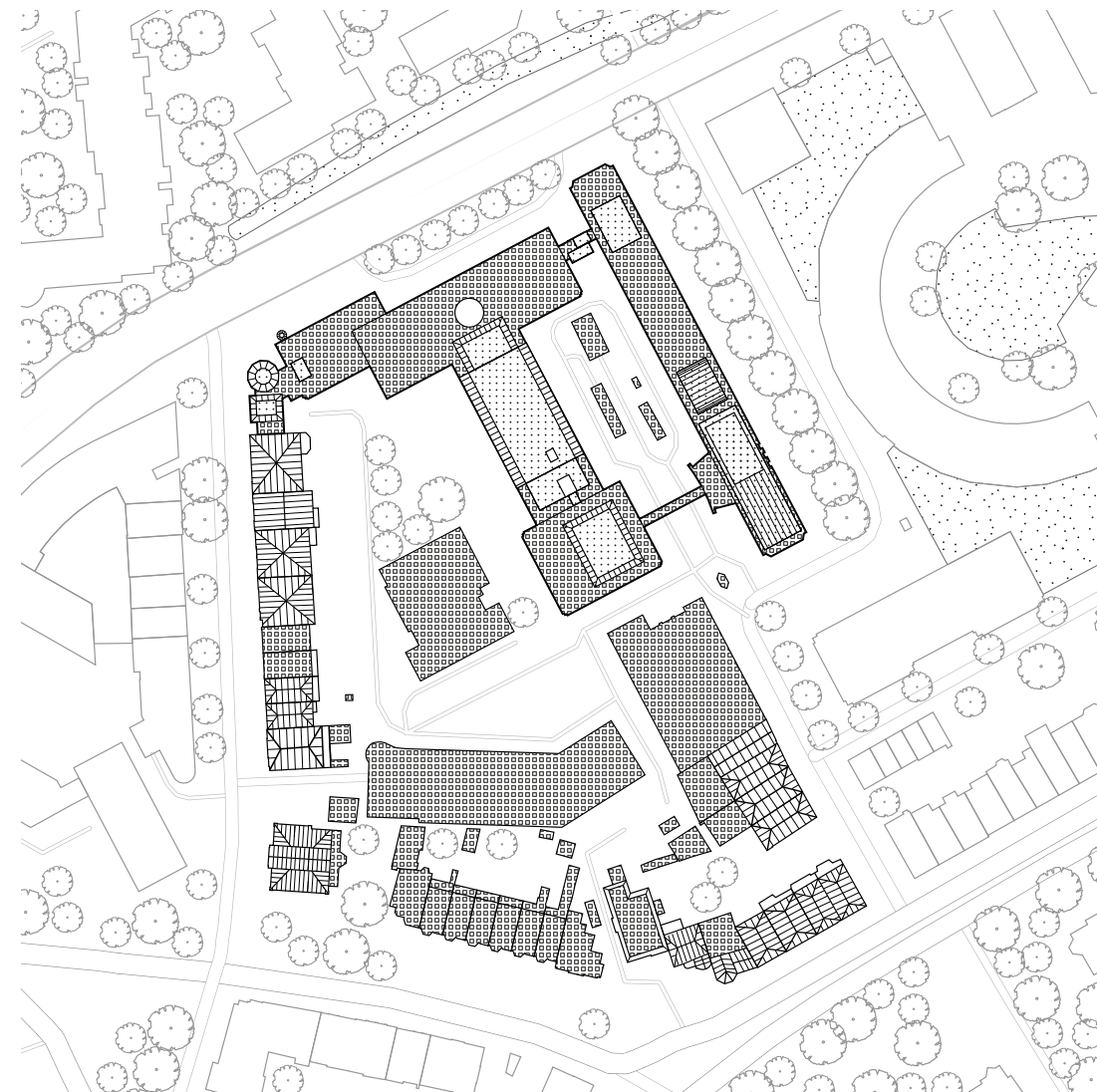
Haags Gemeente Archief - Gemeente Politie Den Haag



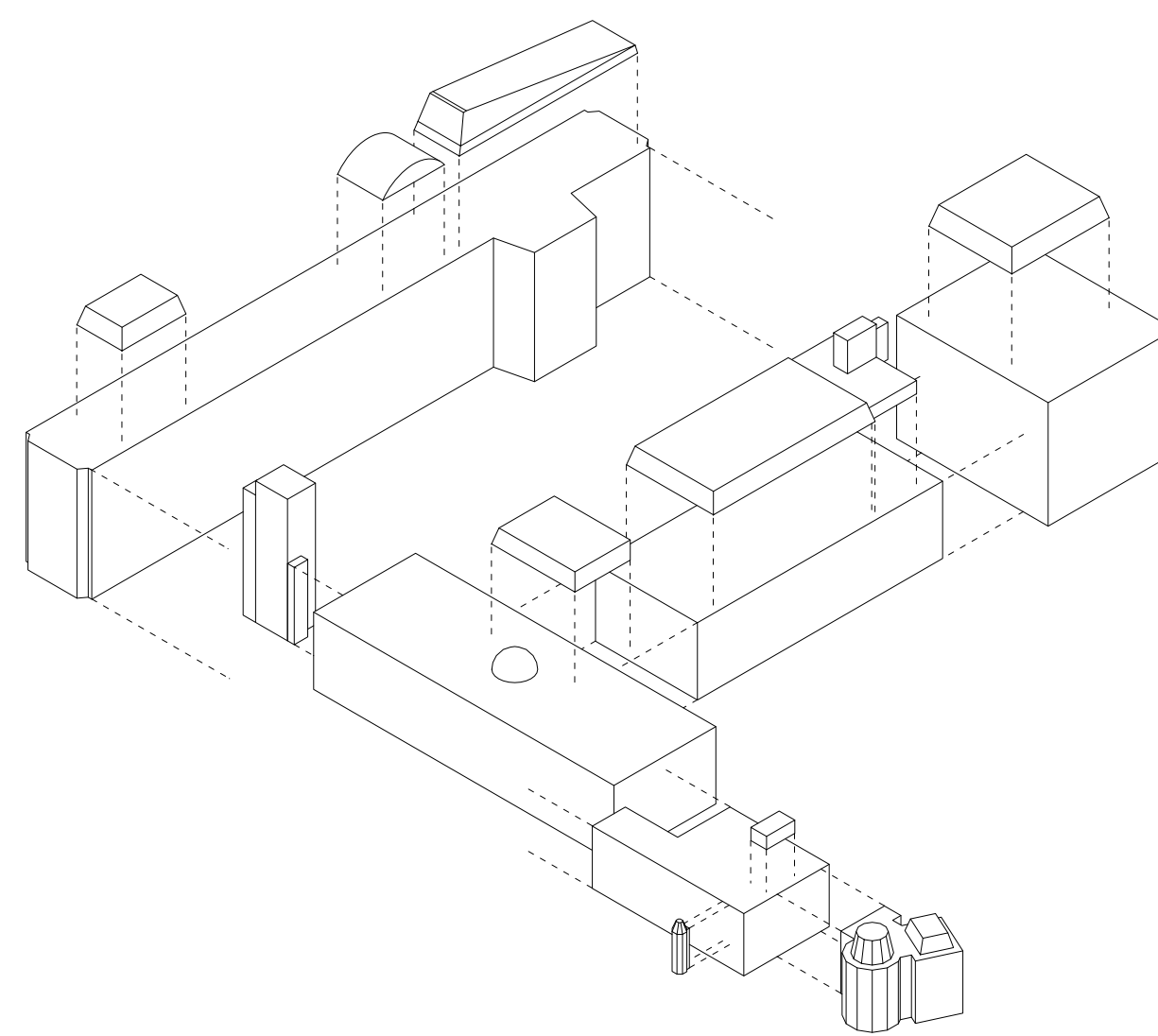
Spatial Building Typology - Heritage research



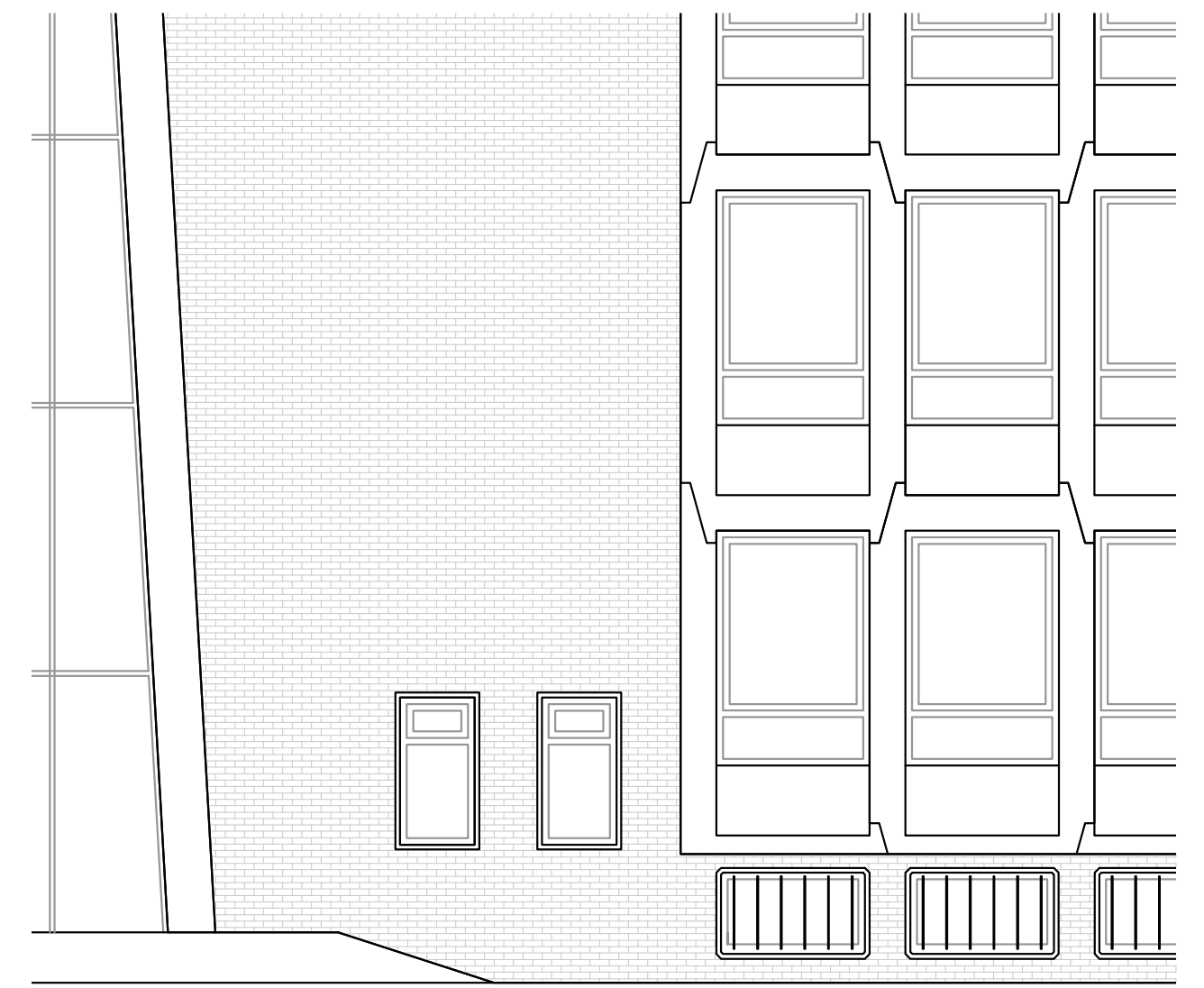
inner city scale



urban block scale

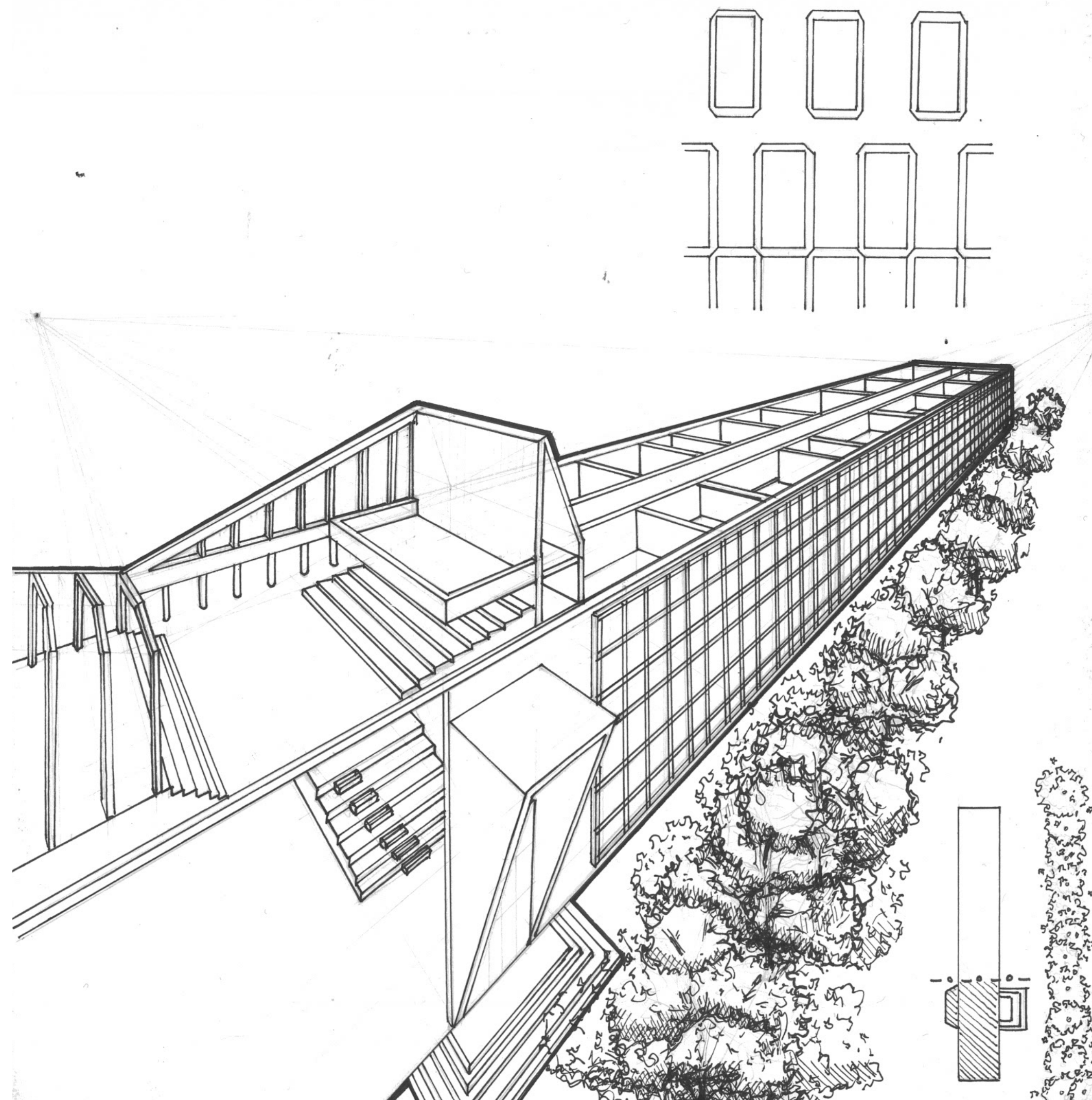


building object scale

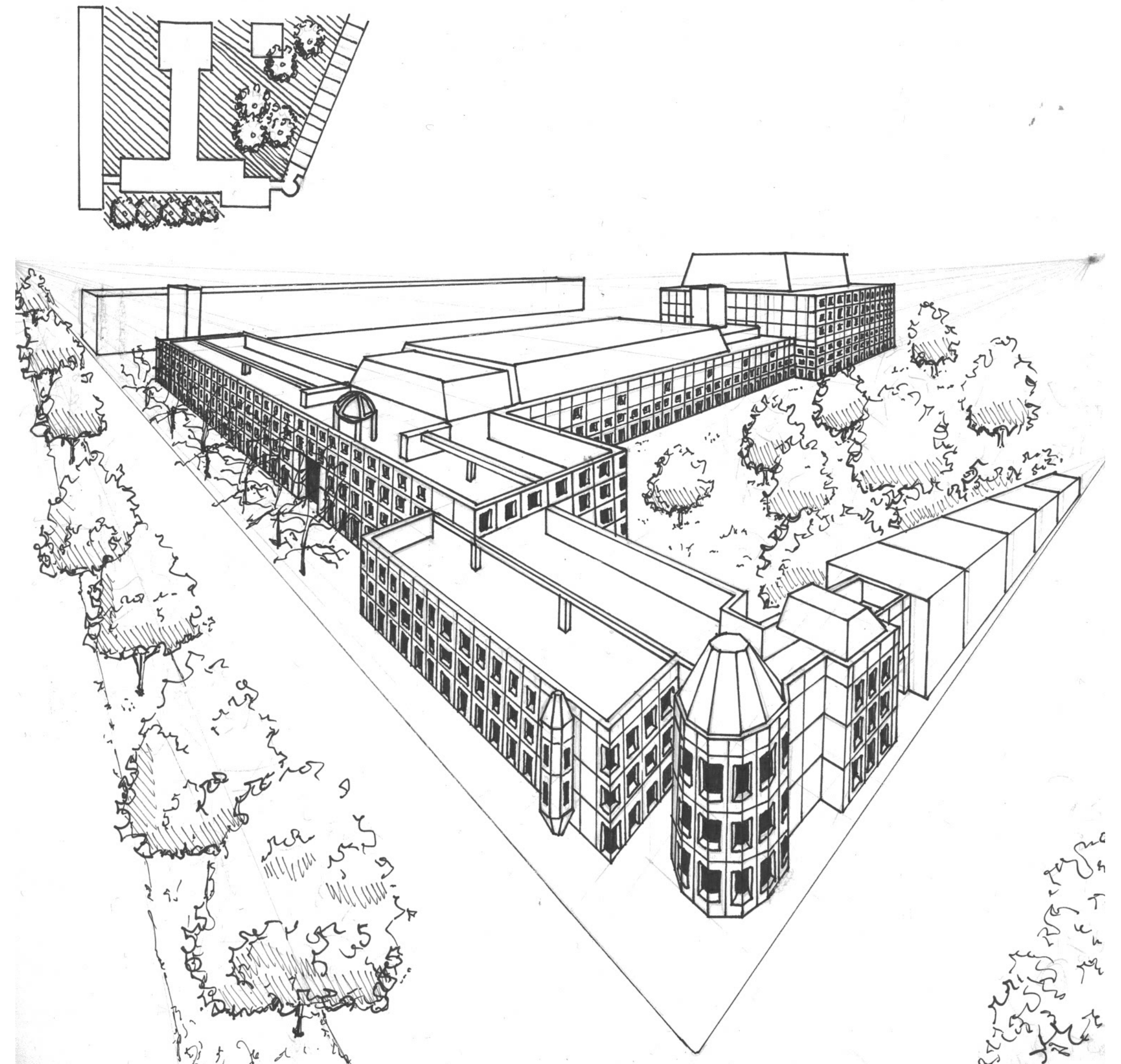


building envelope scale

Cultural value assessment - portraits Eenheidsbureau

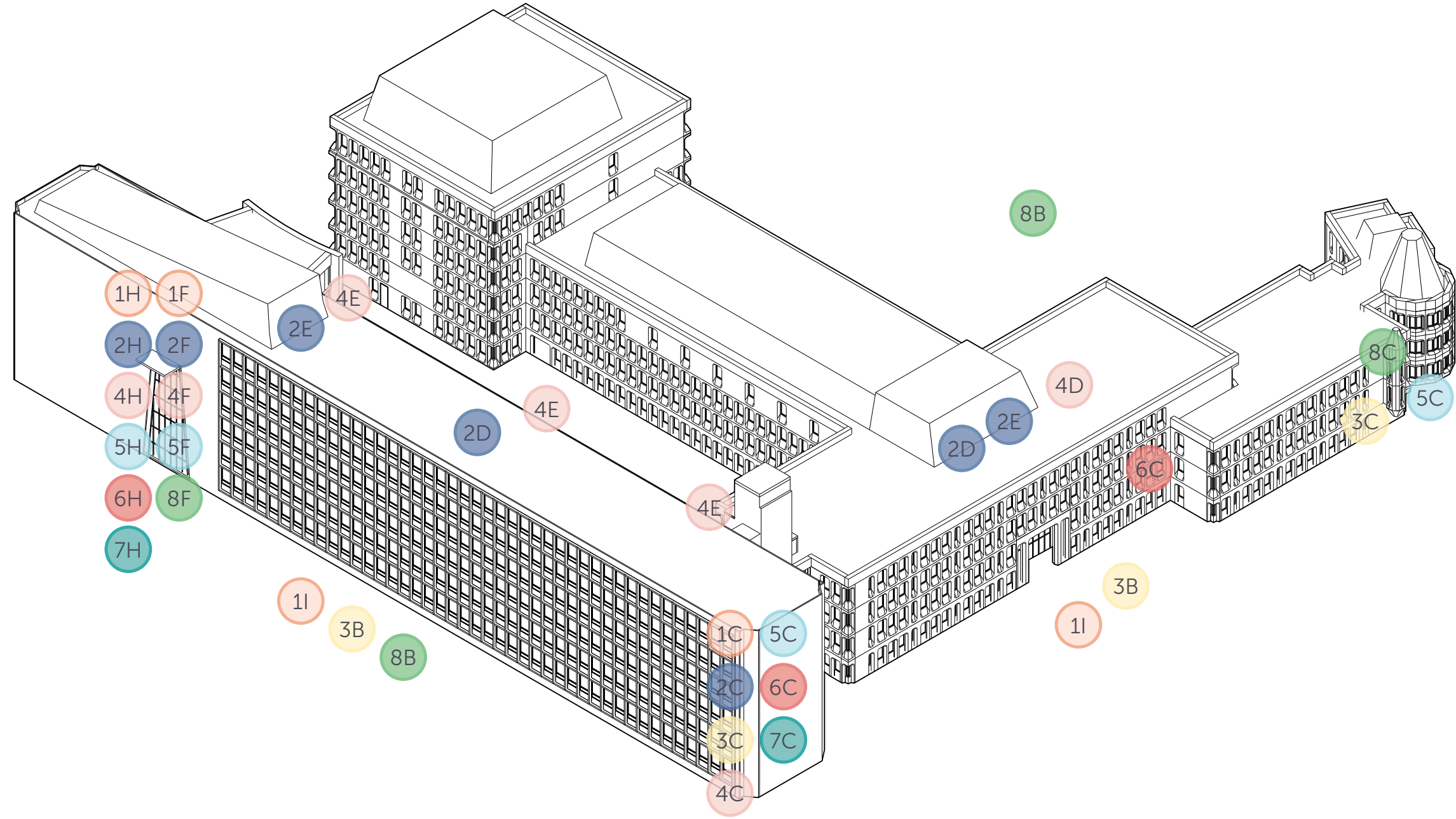


1959 building

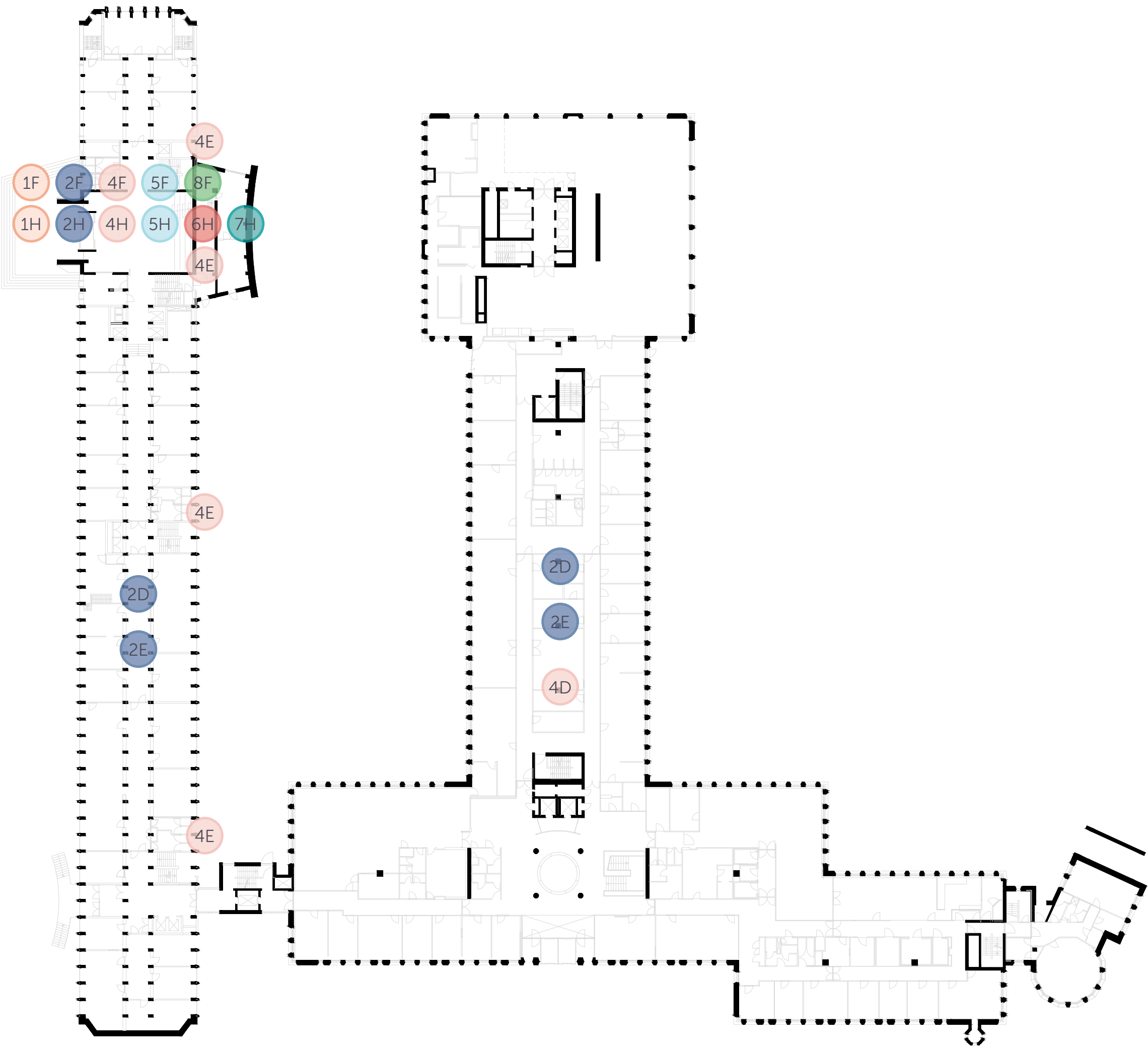
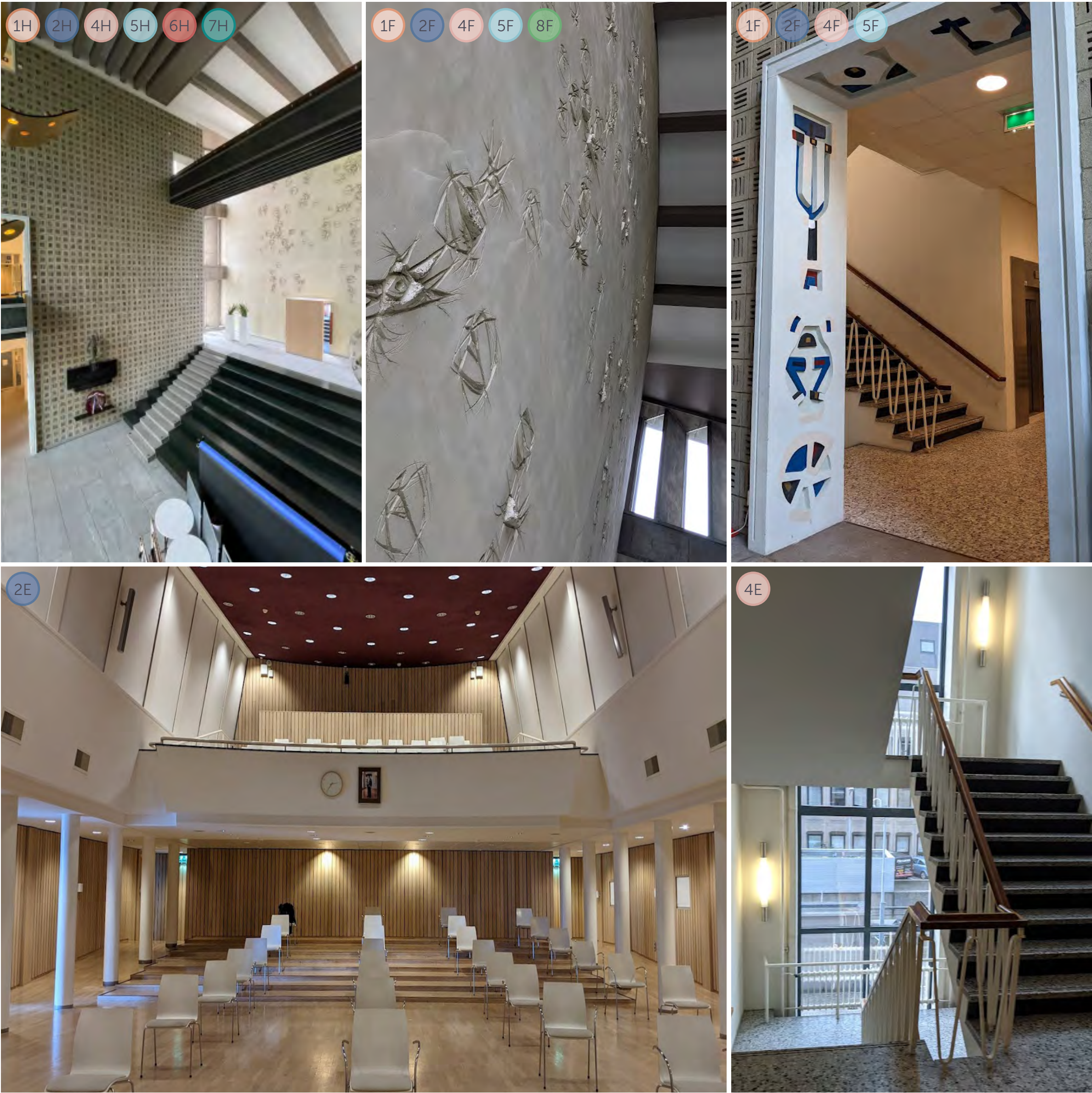


1981 building

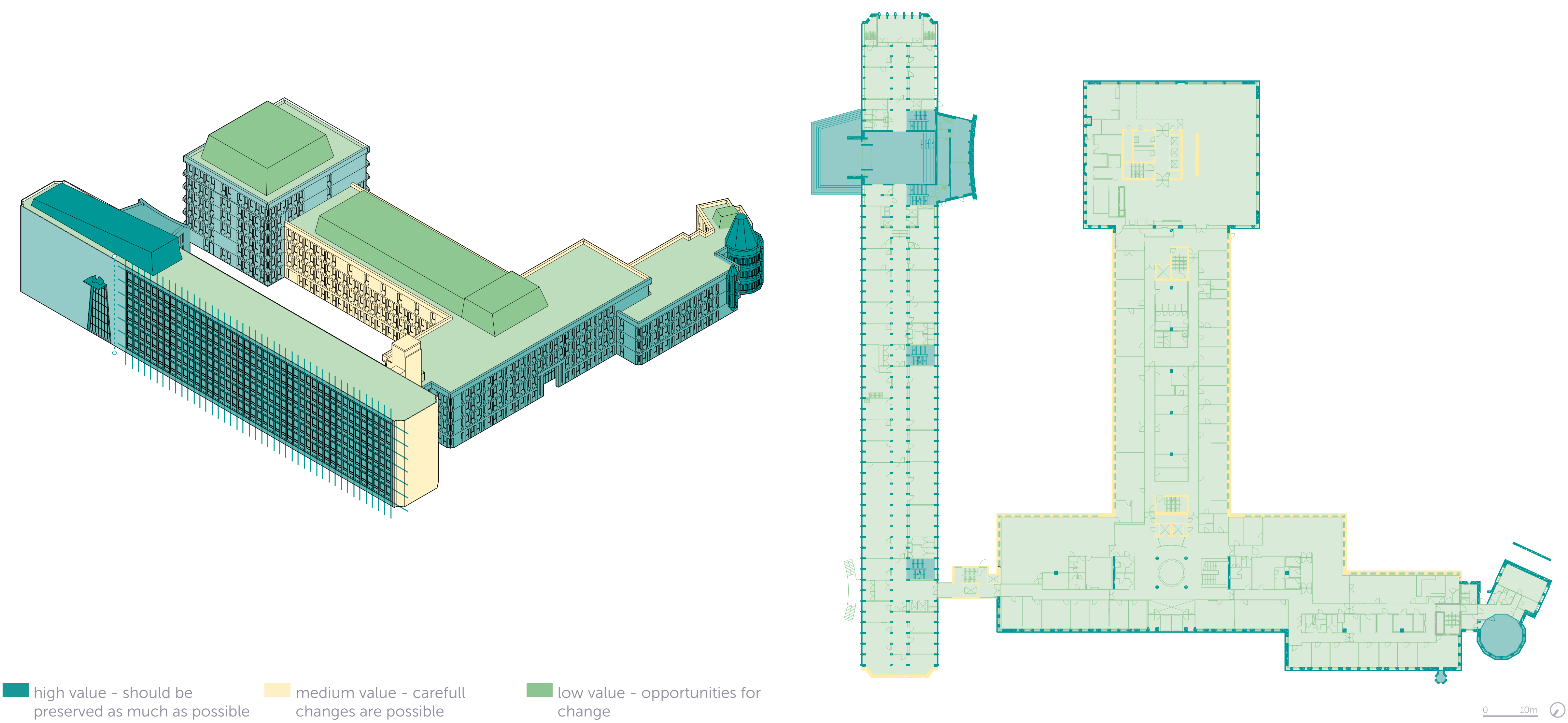
Cultural value assessment - exterior



Cultural value assessment - interior



Transformation framework - cultural values



Design starting points - humans + building



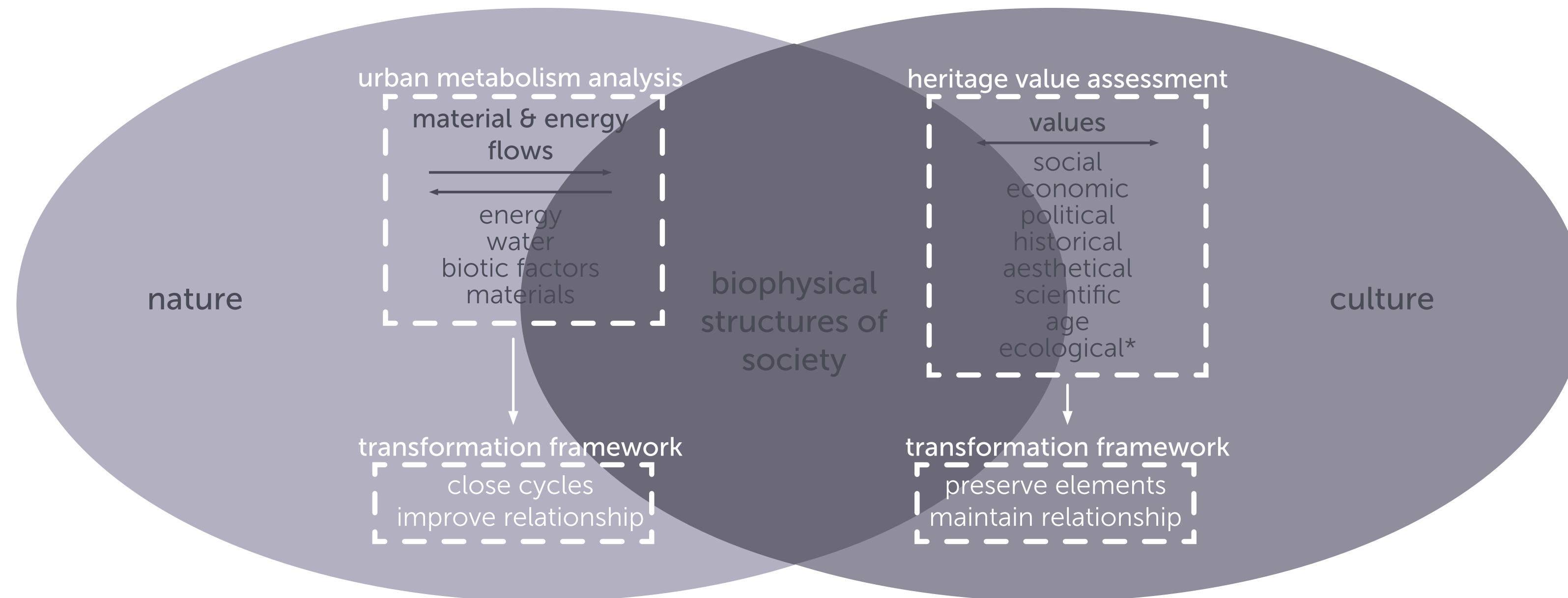
Respect high value
elements, **allowing**
change in low value
elements



Utilize characteristics
and **potential** of existing
building for placement of
program

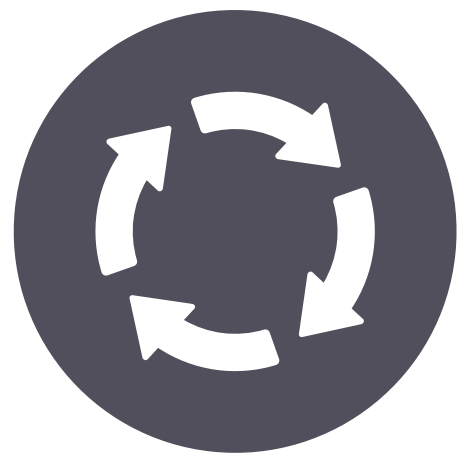
Research + design

Relation between transformation frameworks - guiding the design



Design goals- healthy living together

humans + nature



Contribute to closing the **water, energy, and material cycles** for the **building** as well as the **neighborhood**



Connect to surrounding **blue/green structures**



Create **awareness, appreciation,** and provide **education** on relation with nature

humans + humans



Stimulate **social interaction** and **cohesion** of **inhabitants** and **neighborhood** to prevent loneliness



Stimulate **healthy living**

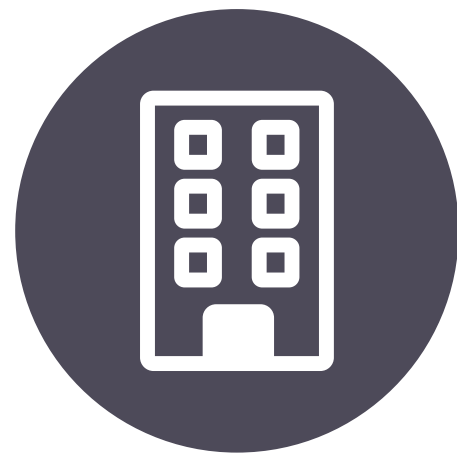


Create a building suited for a wide **mix of target groups**, allowing **growth** within the building

humans + building

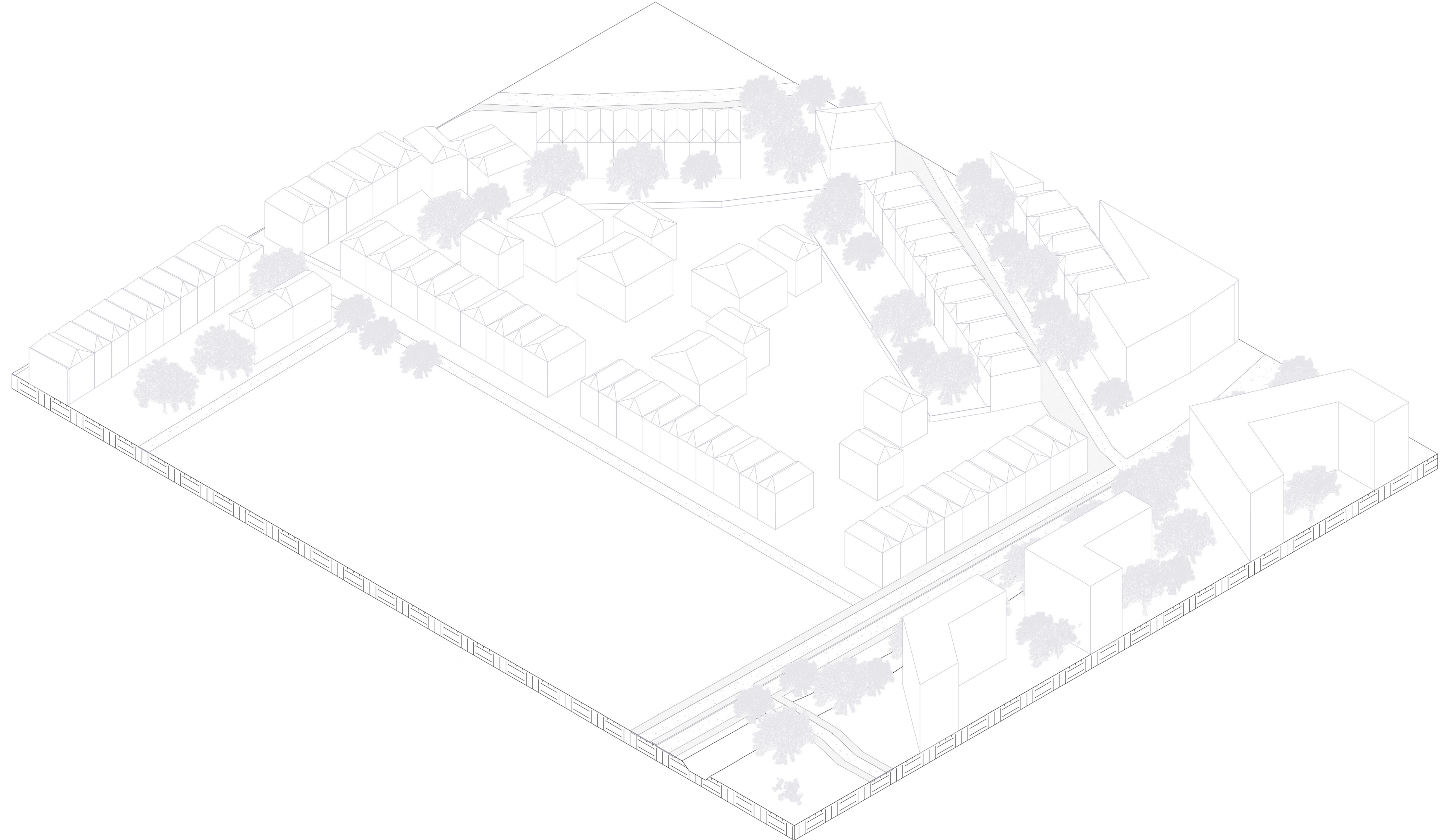


Respect high value elements, **allowing change** in low value elements

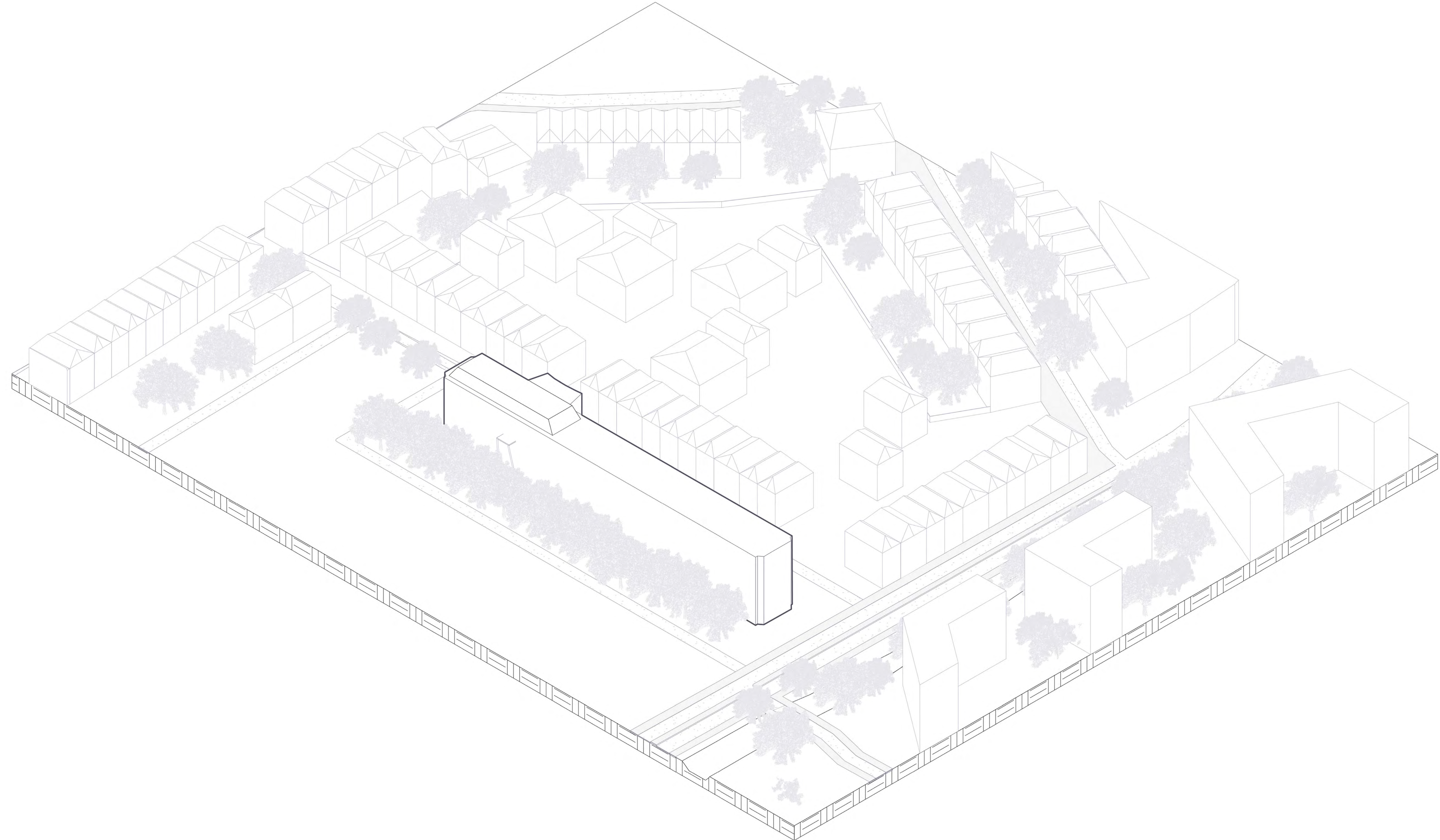


Utilize characteristics and **potential** of existing building for placement of **program**

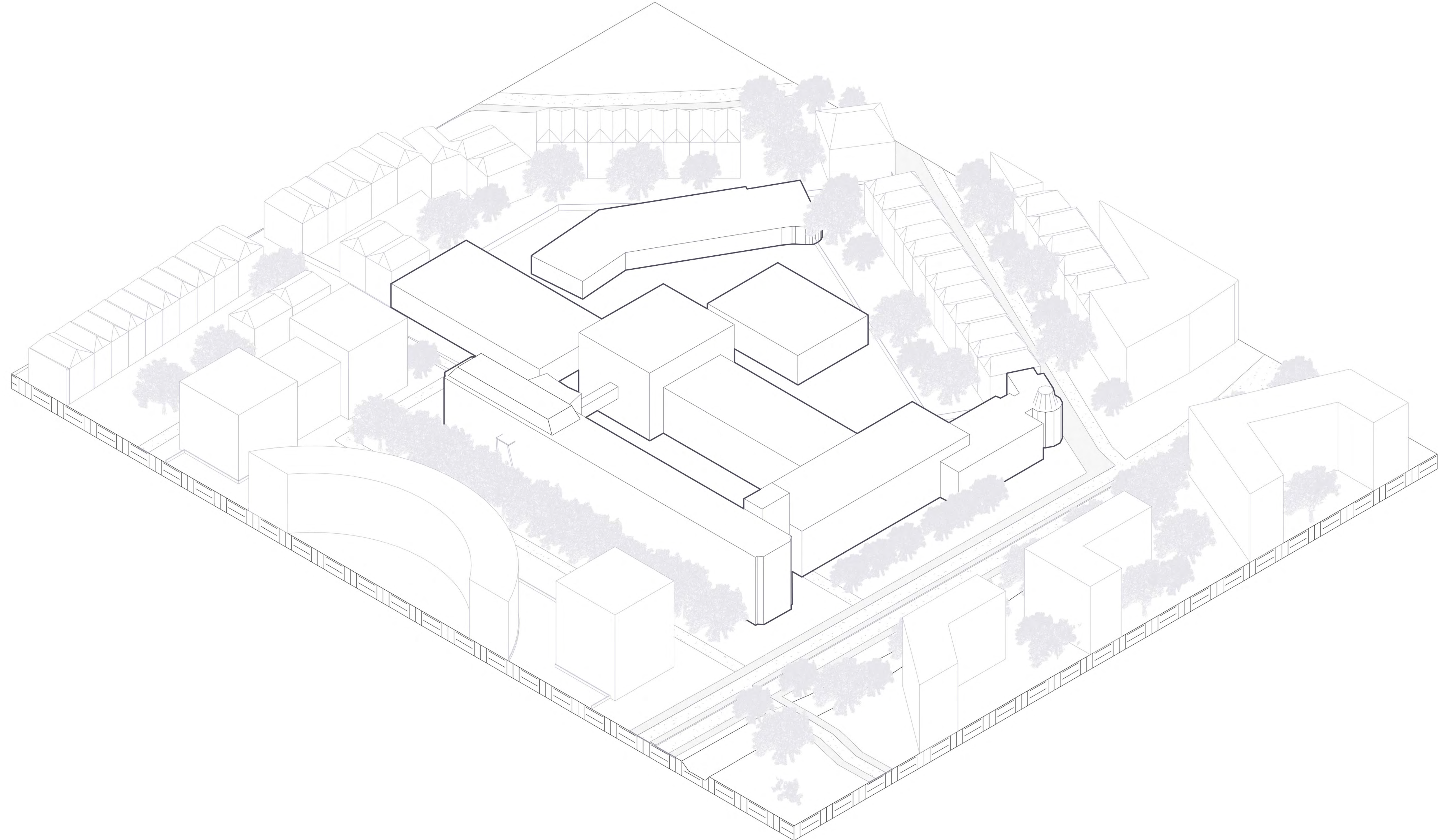
1900 - previous situation



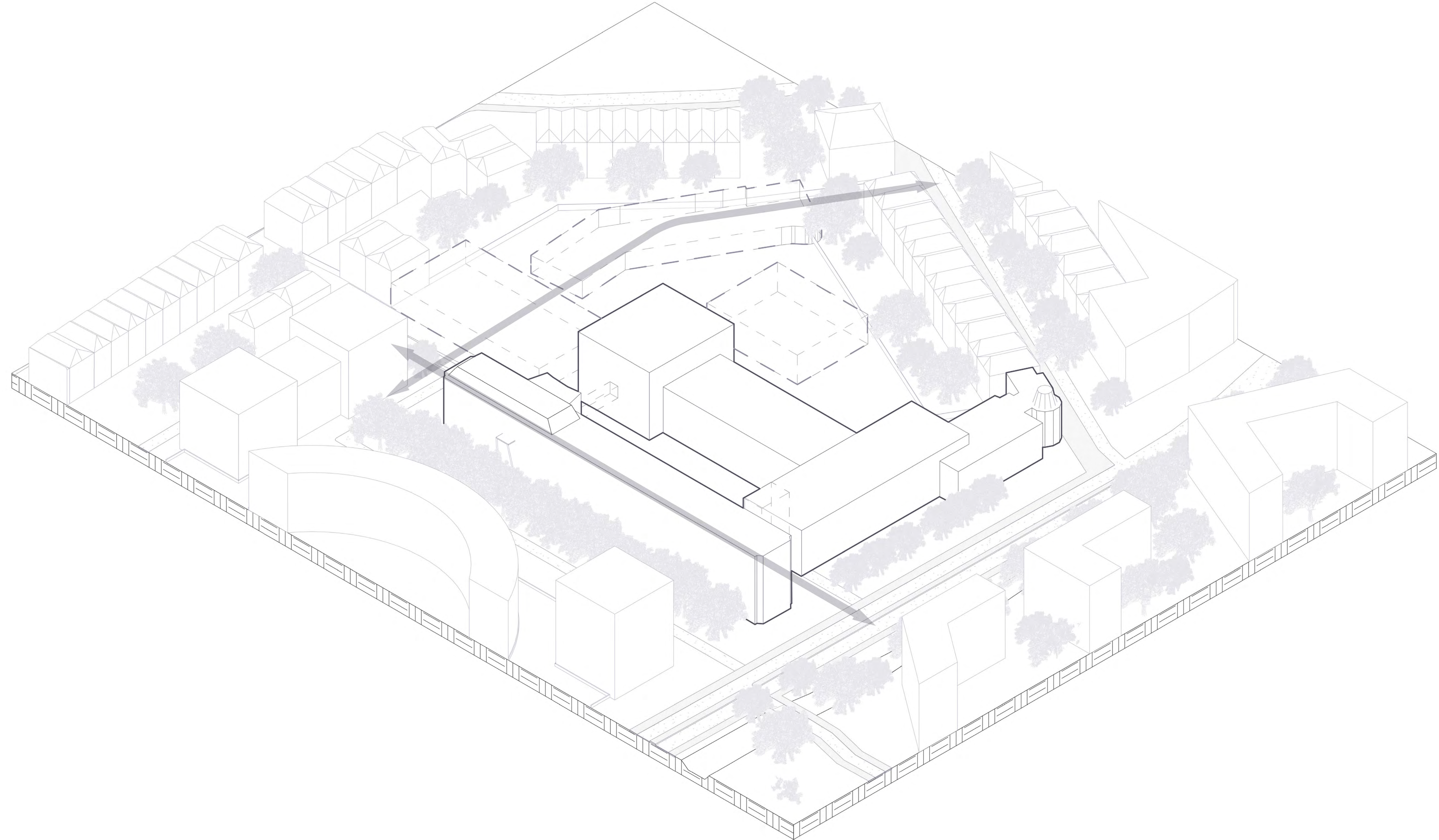
1959 - police building



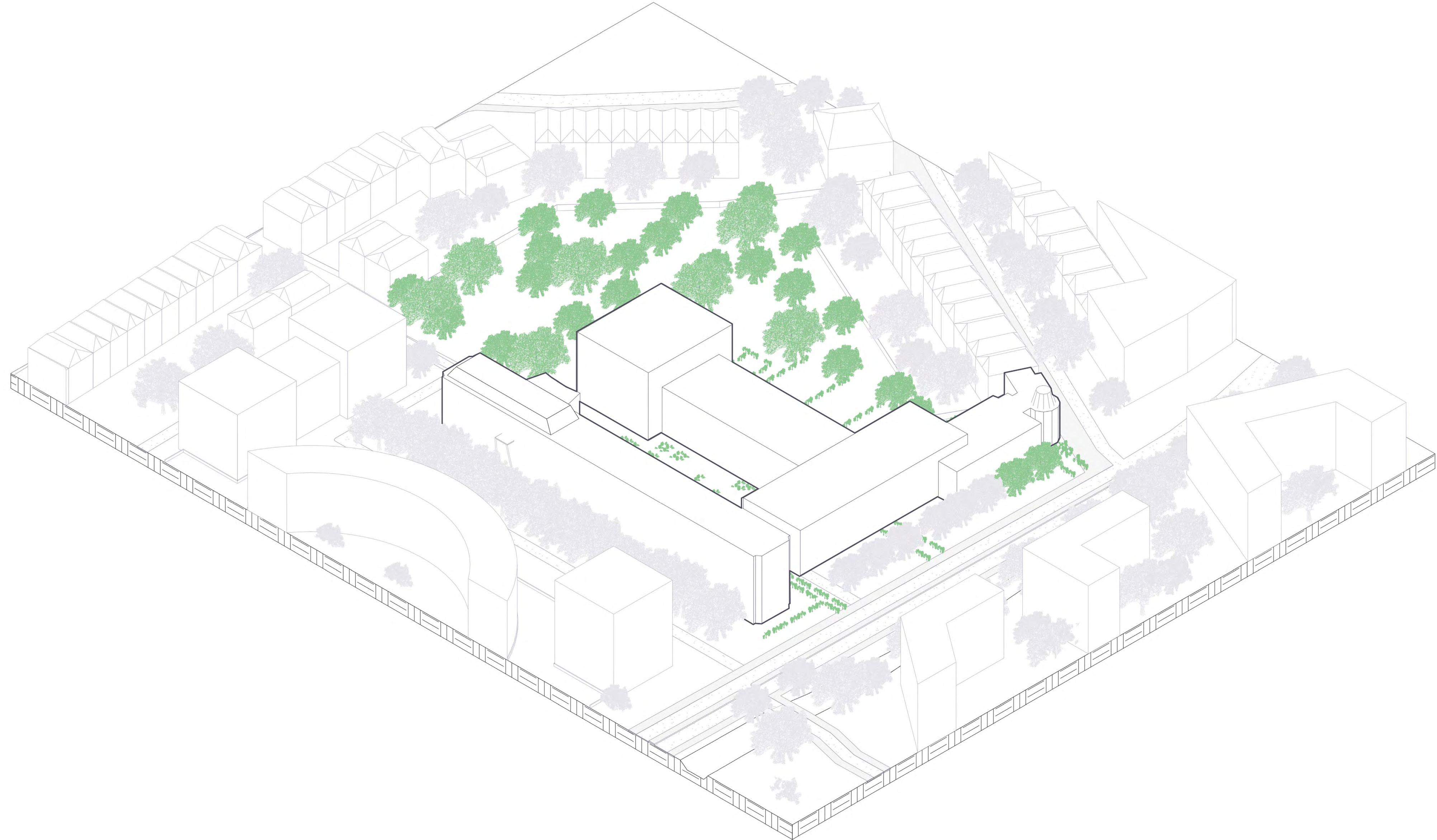
1981 - extension of police building



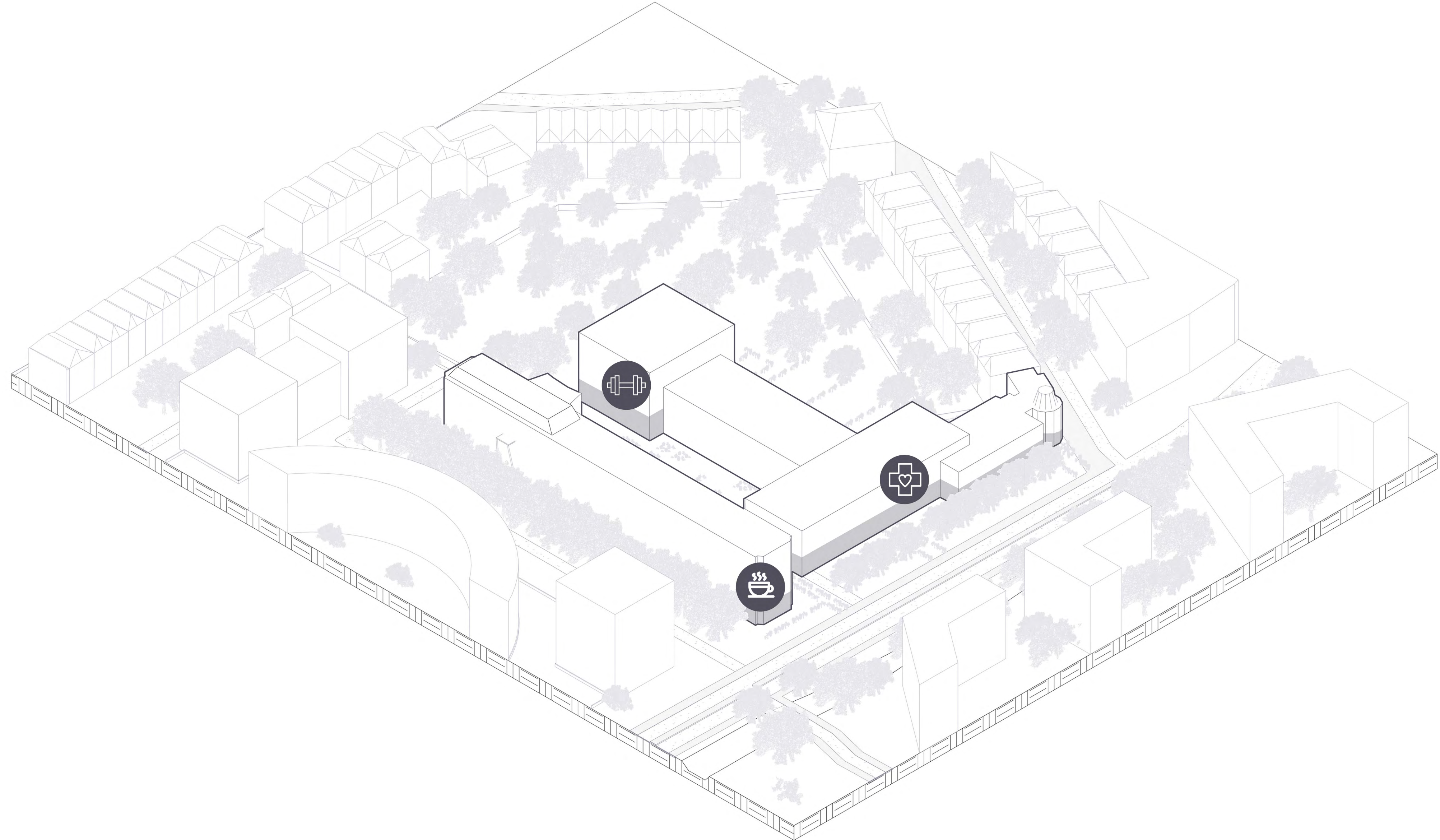
design proposal - opening of urban block



design proposal - connection with green + blue structures



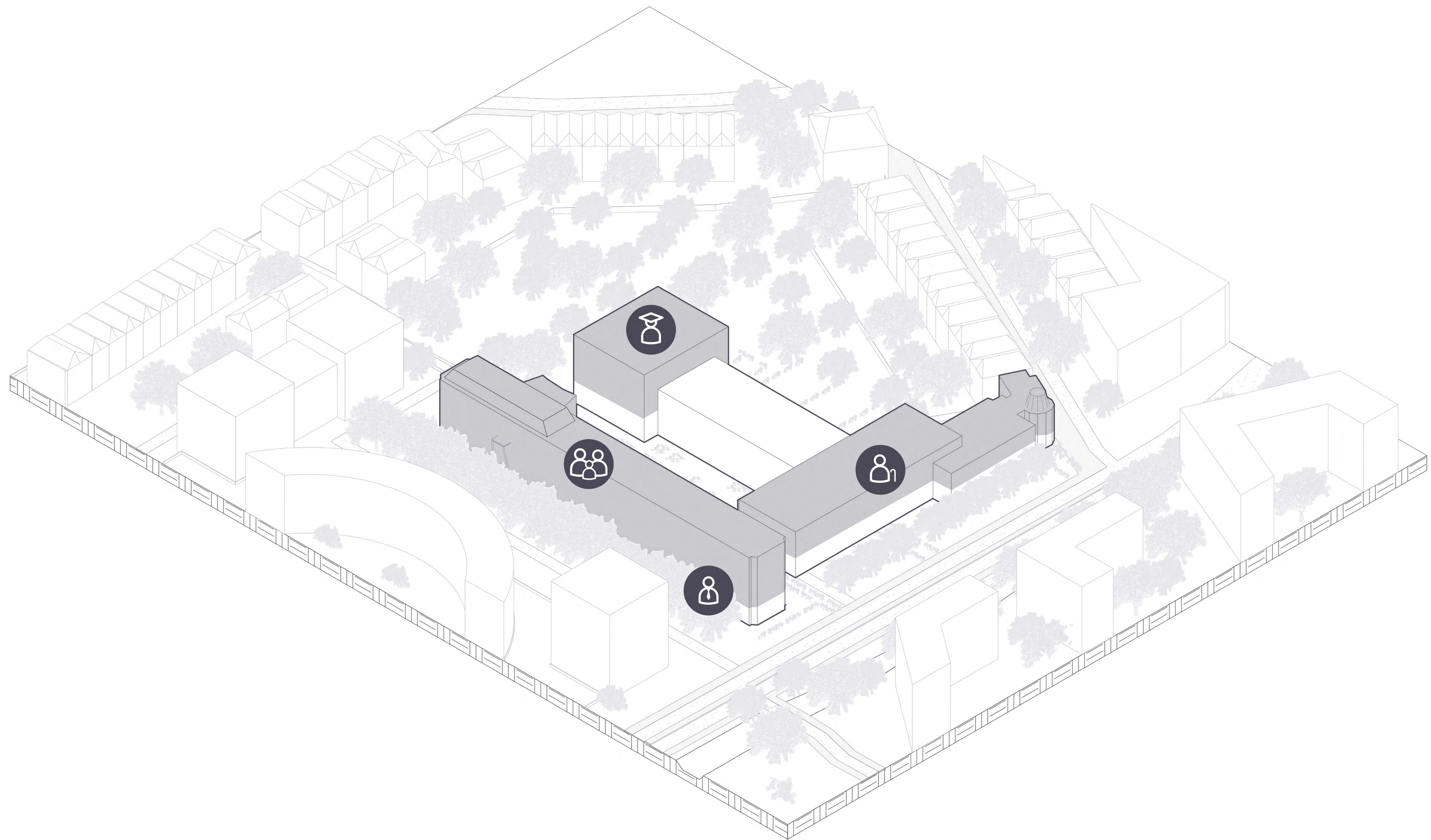
design proposal - ground floor with public functions for healthy living



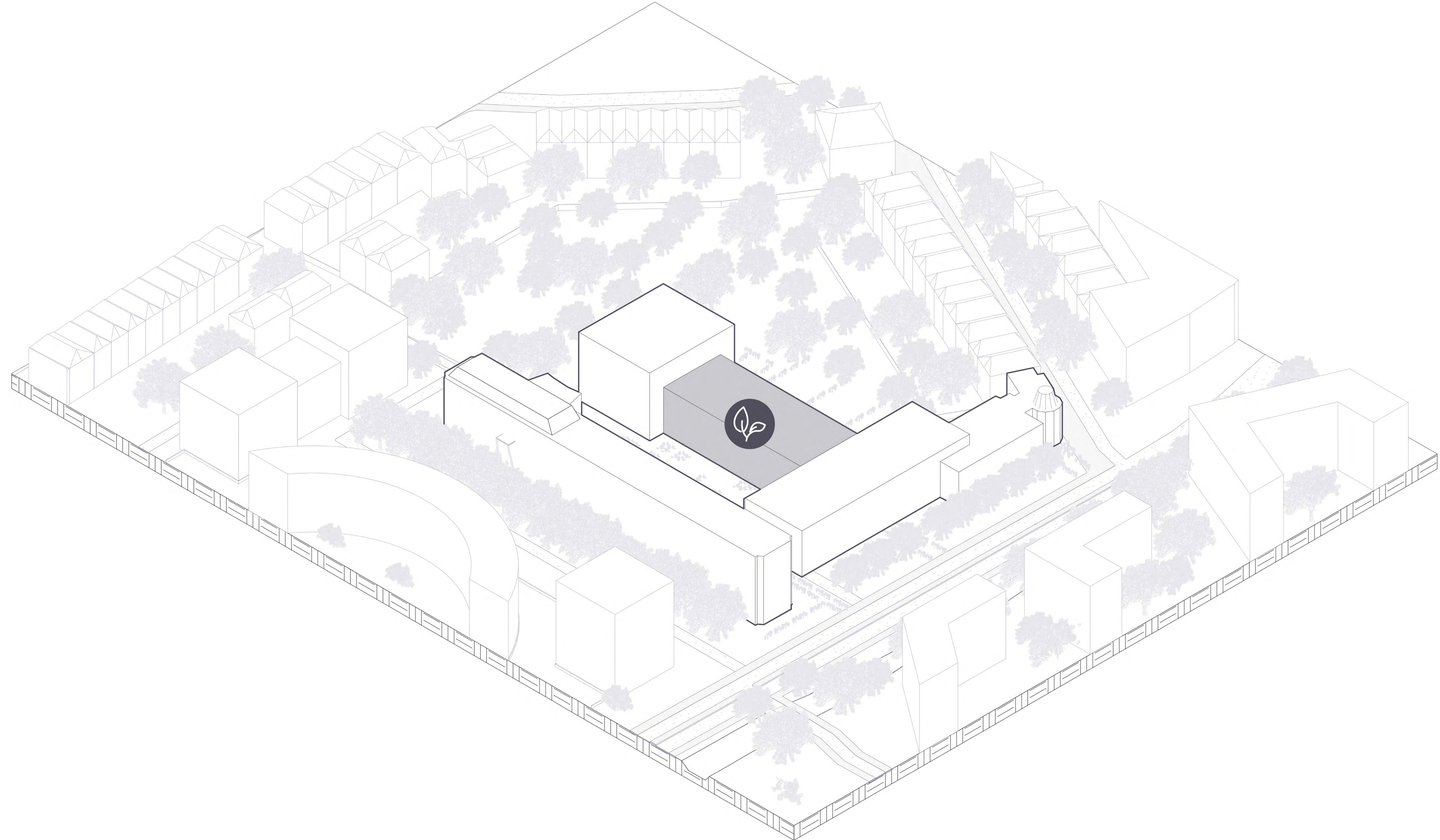
design proposal - circulation cores



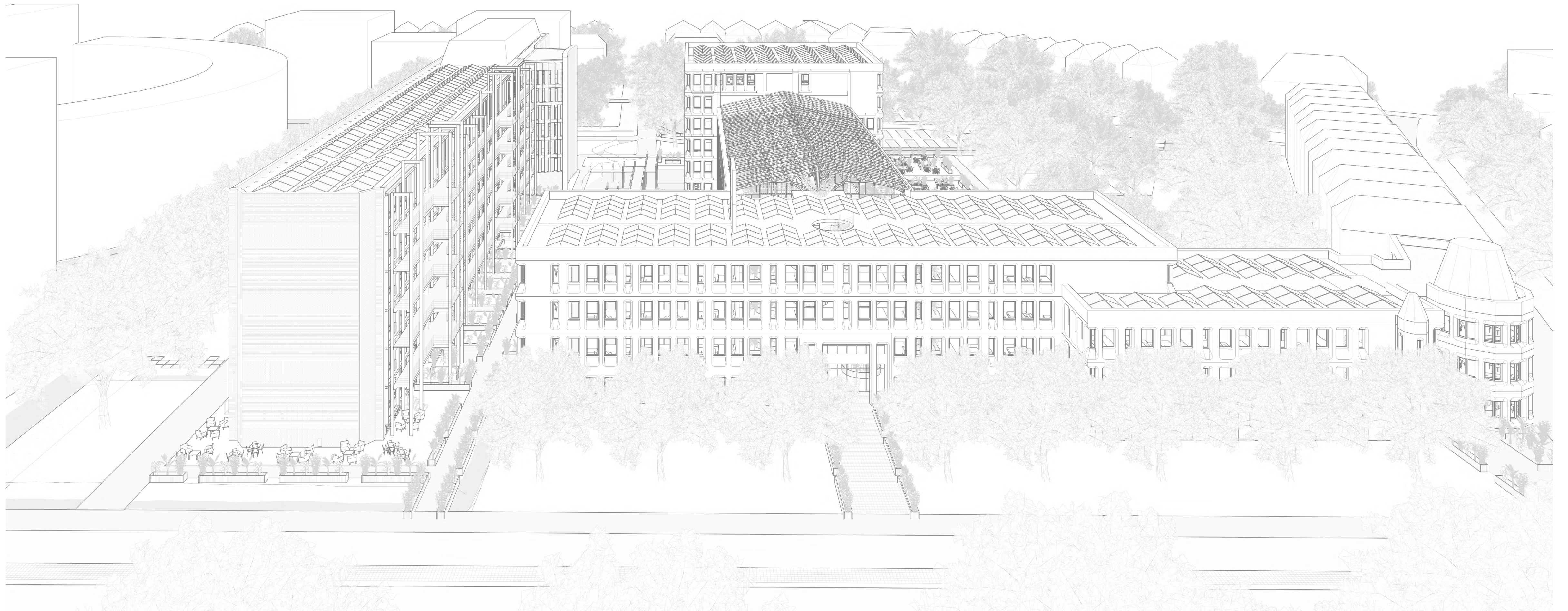
design proposal - variety of housing types



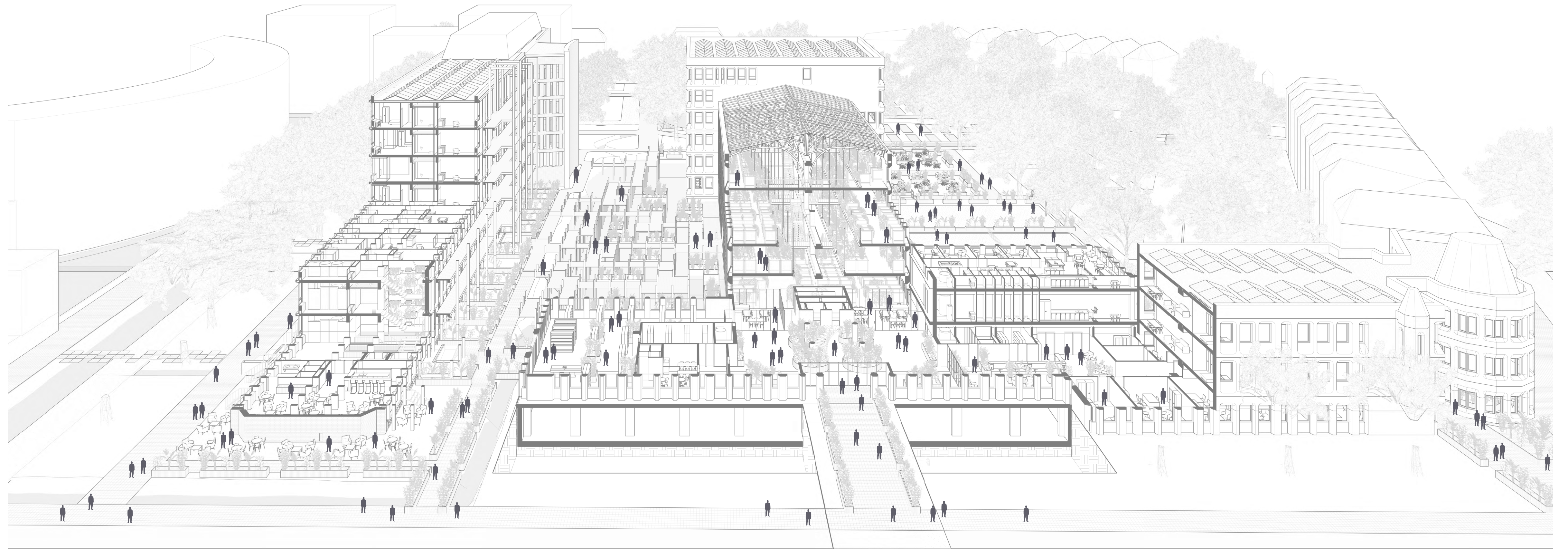
design proposal - living machine as beating heart



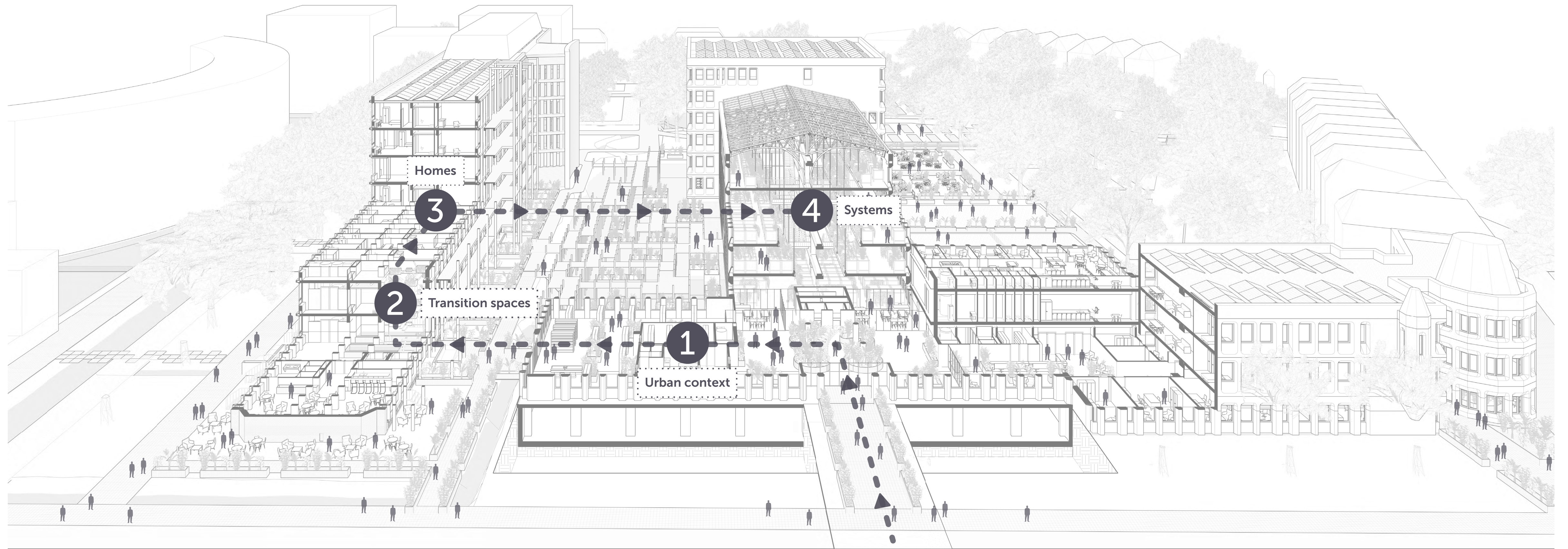
Transformed Eenheidsbureau - how will we live together?



Transformed Eenheidsbureau - how will we live together?

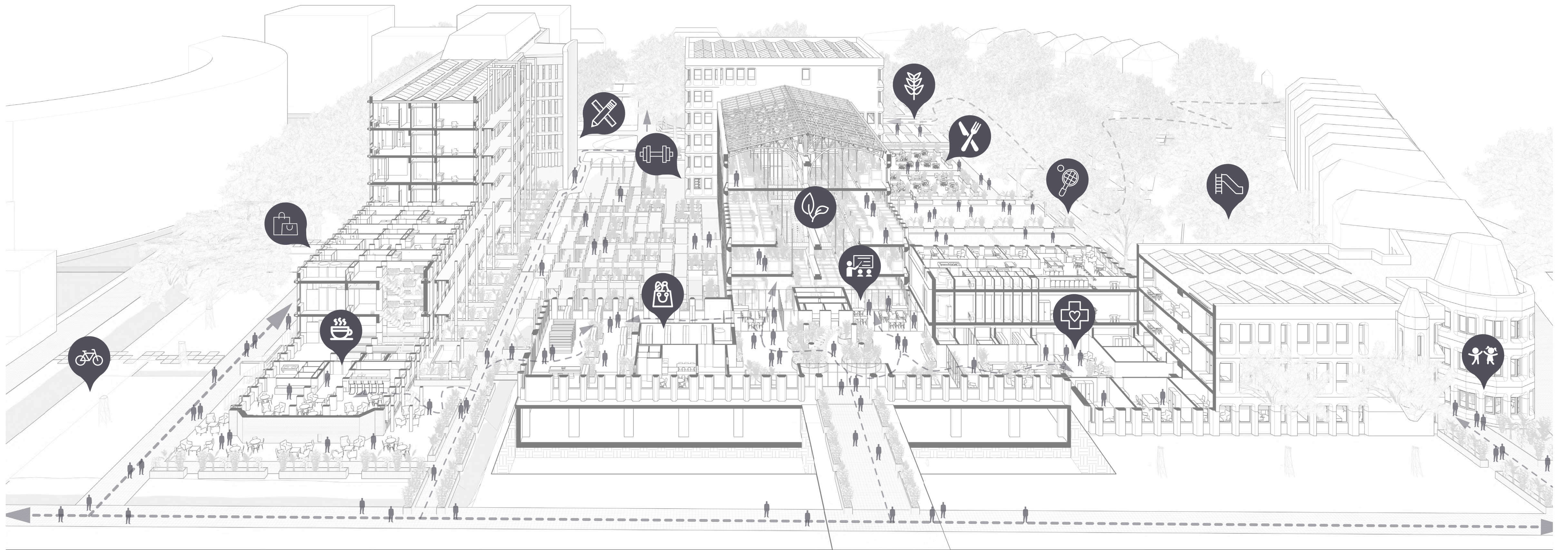


Transformed Eenheidsbureau - how will we live together?

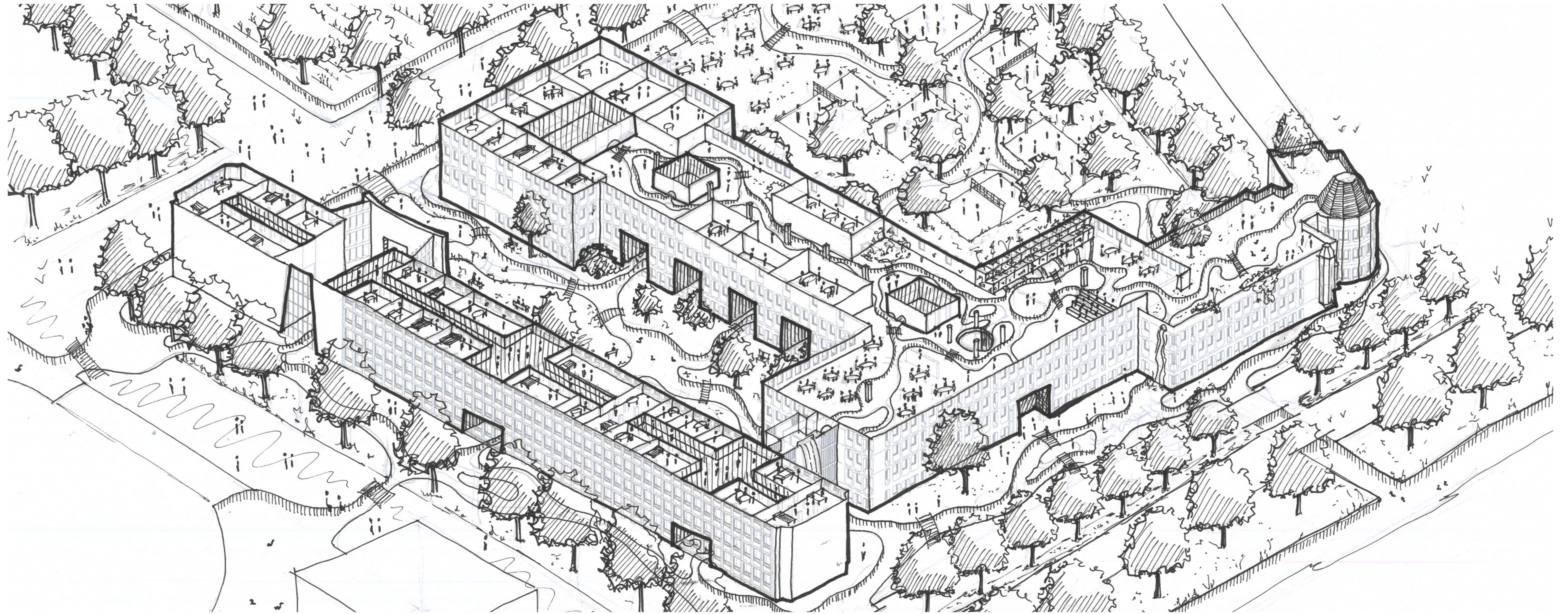


Urban context

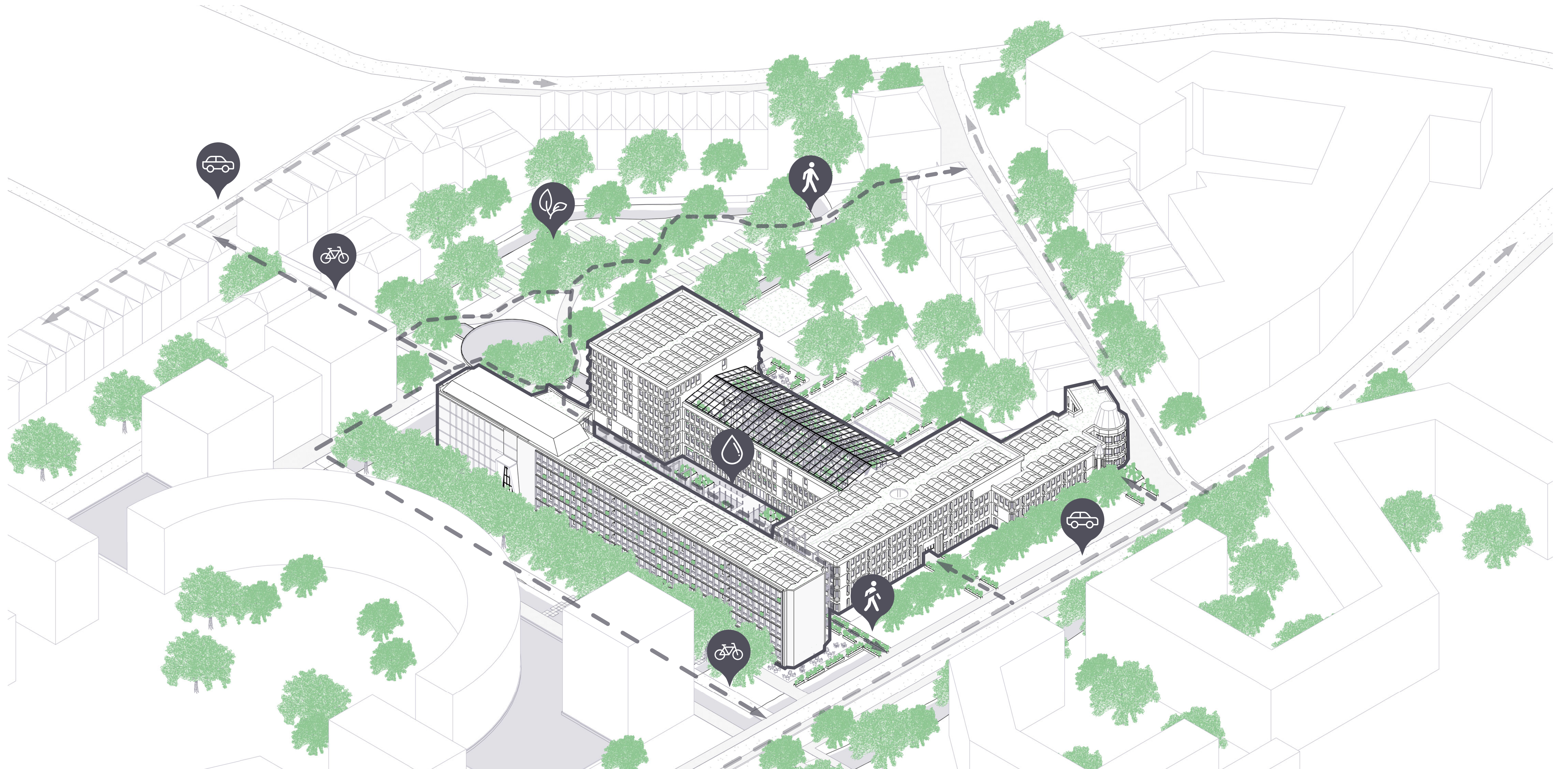
bringing people and cycles together



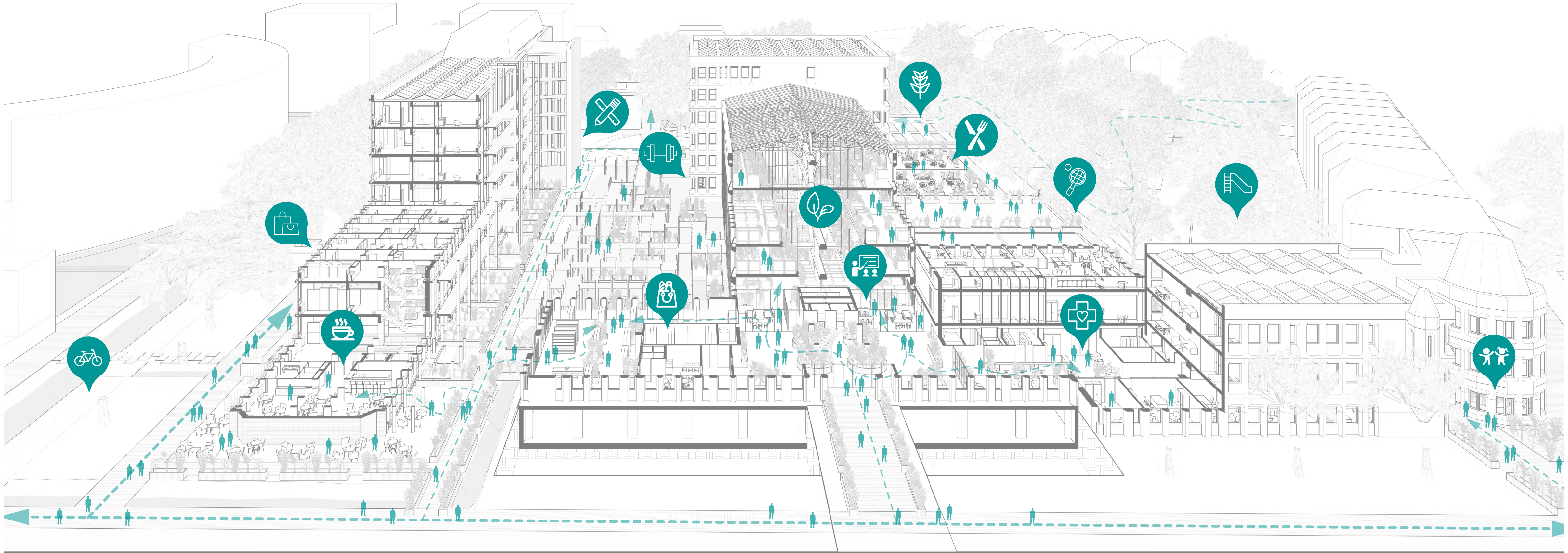
Urban context - bringing people and cycles together



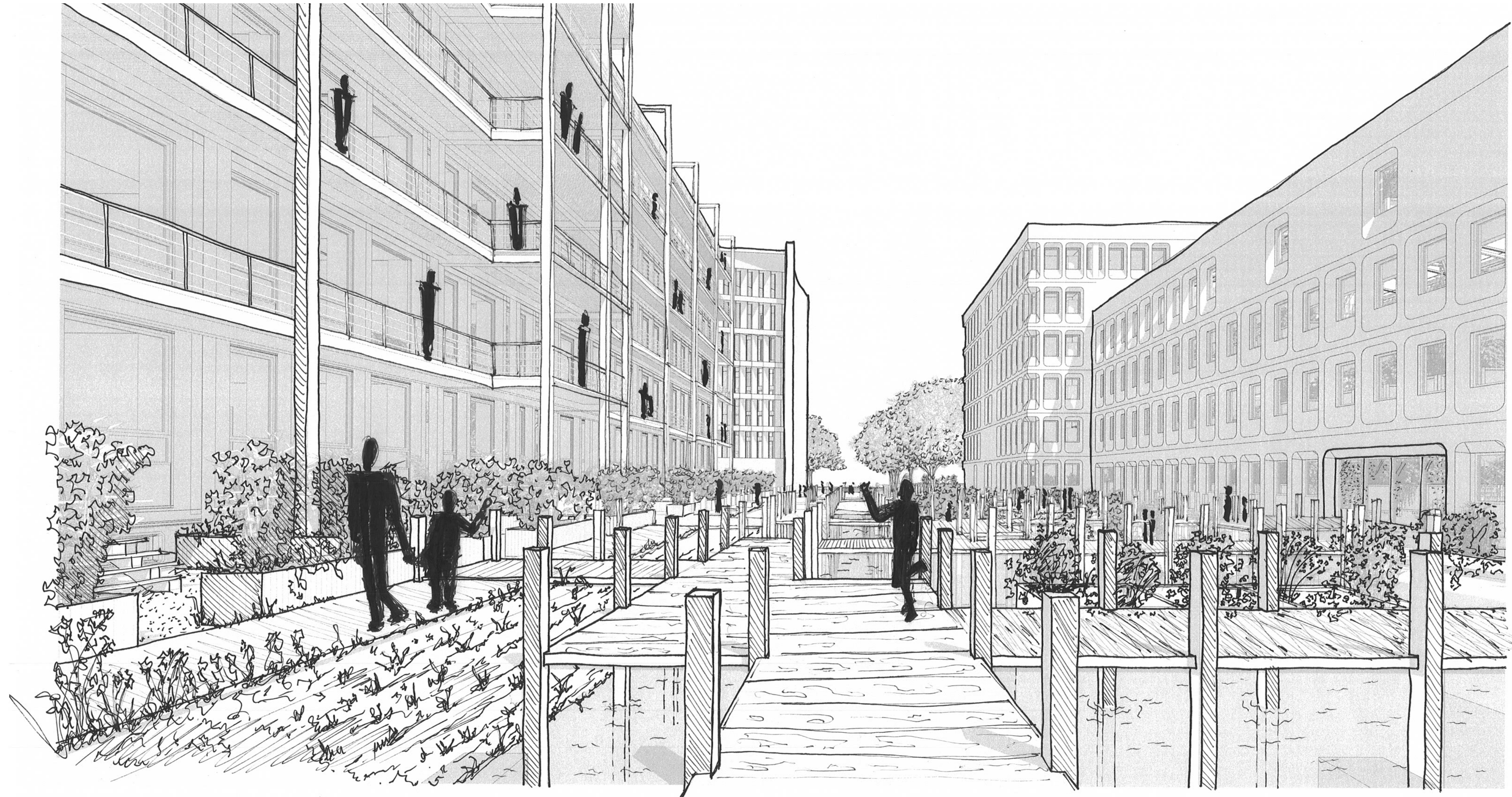
Urban context - connection in the neighborhood



Social cycle - social & education

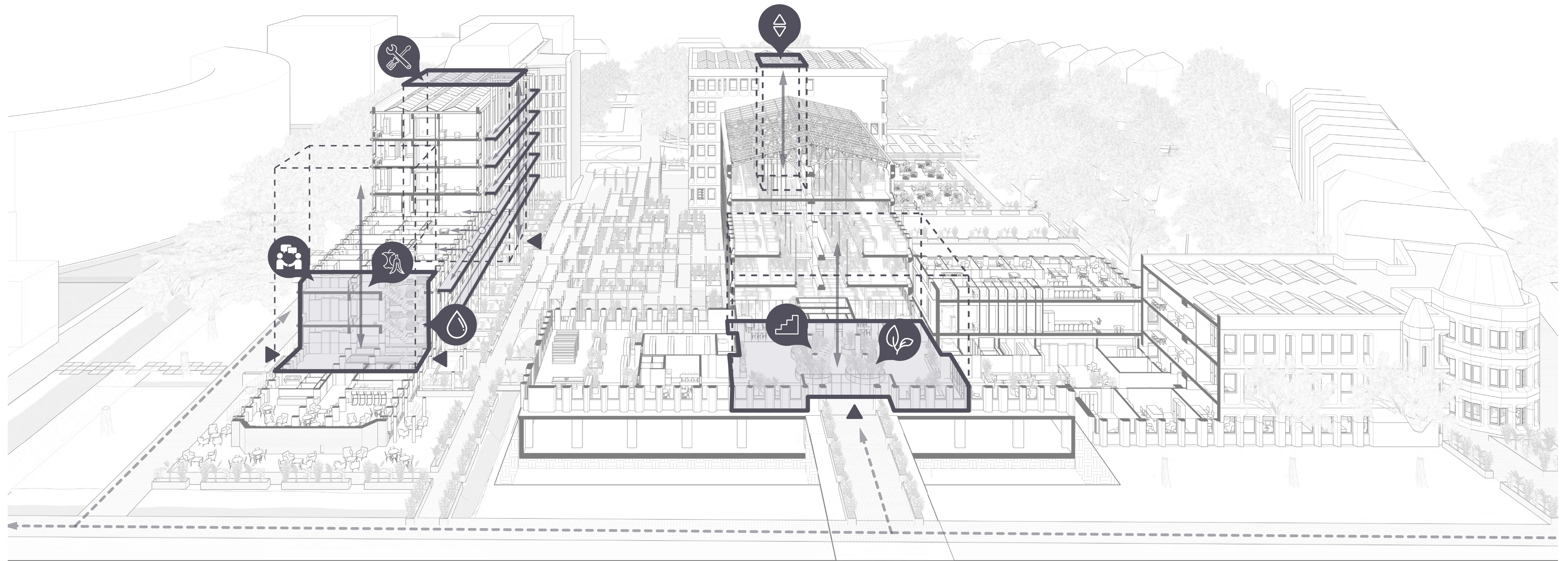


Water square - impression

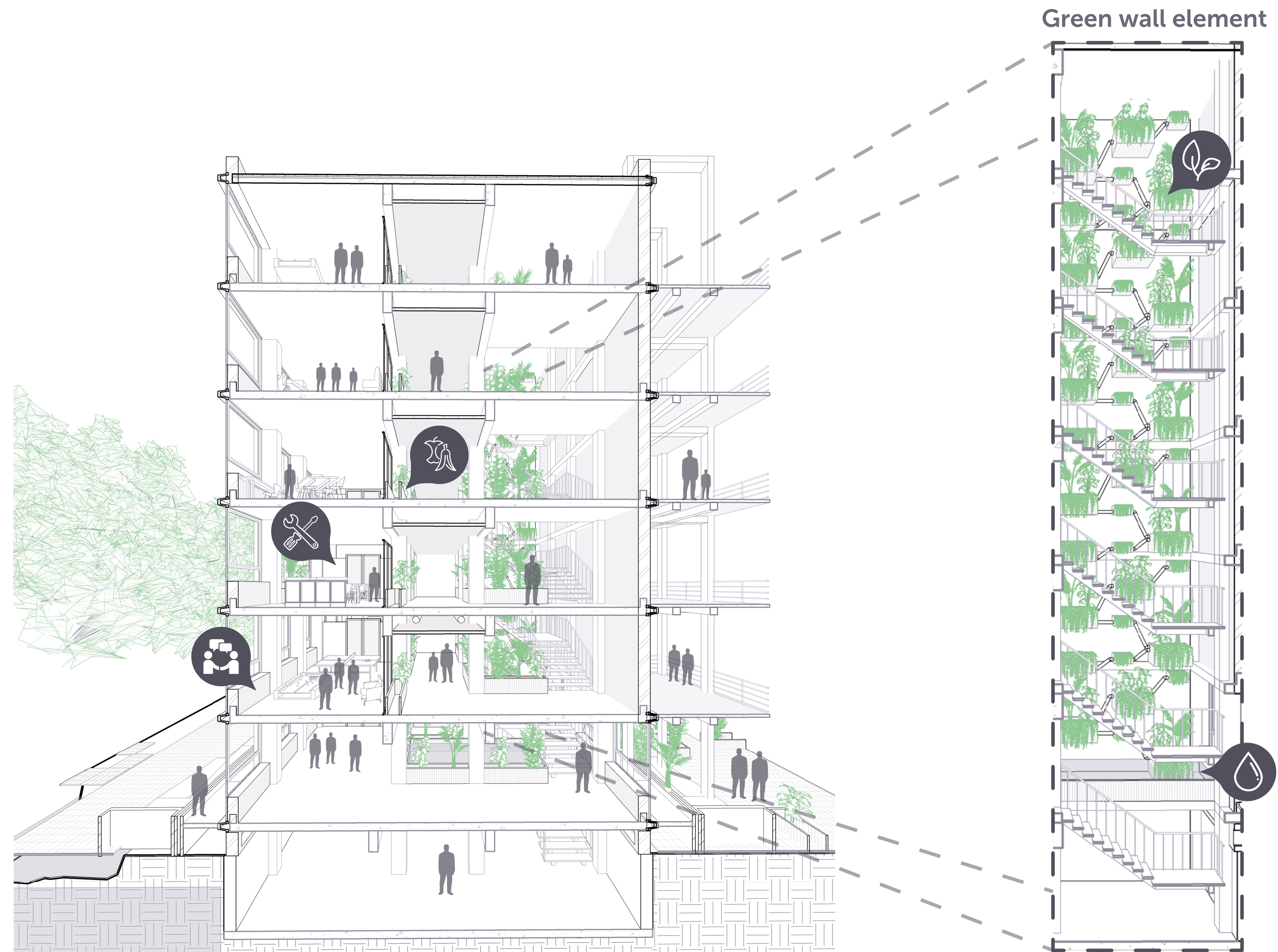


Transition spaces

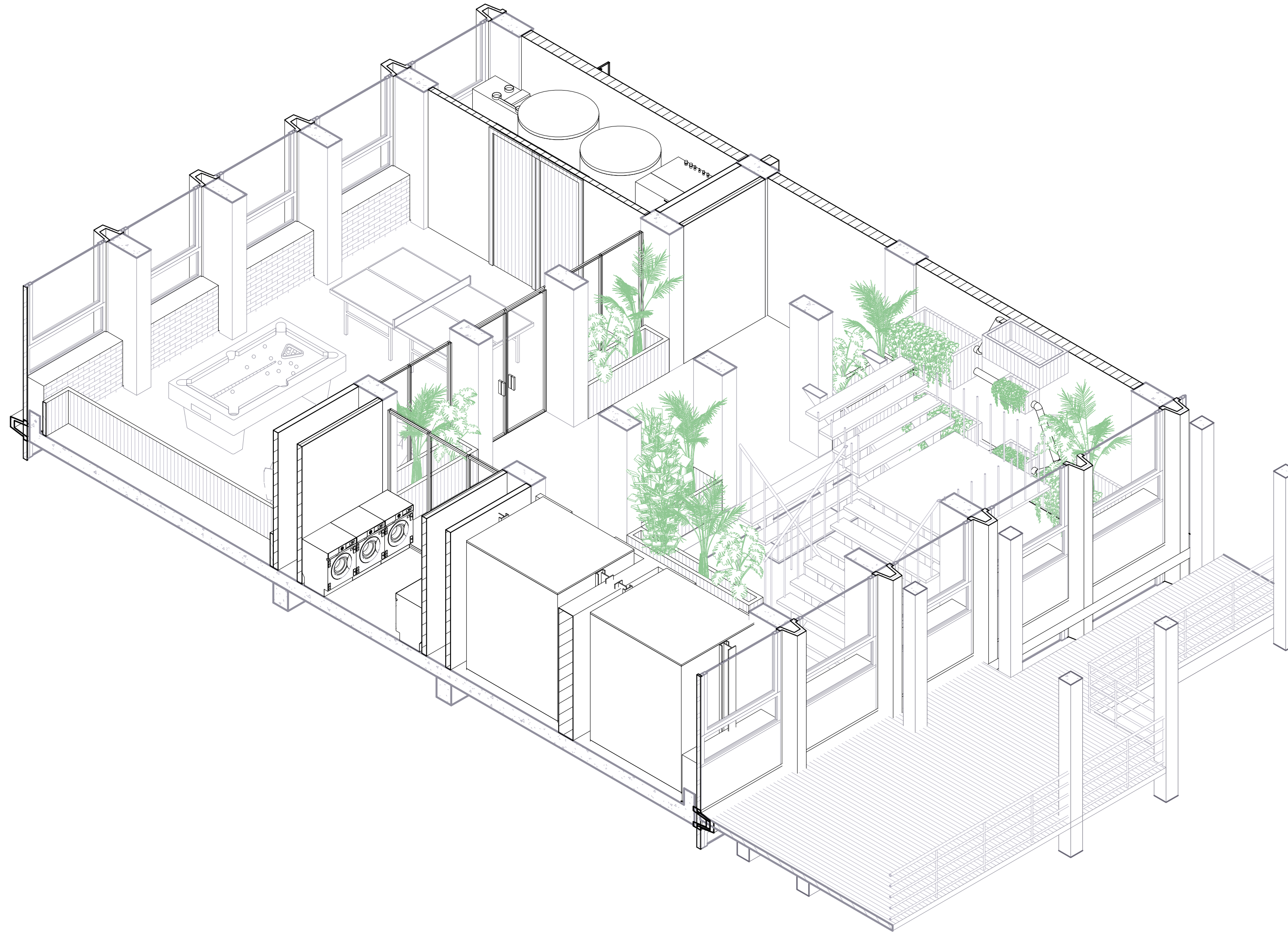
bringing exterior and interior together



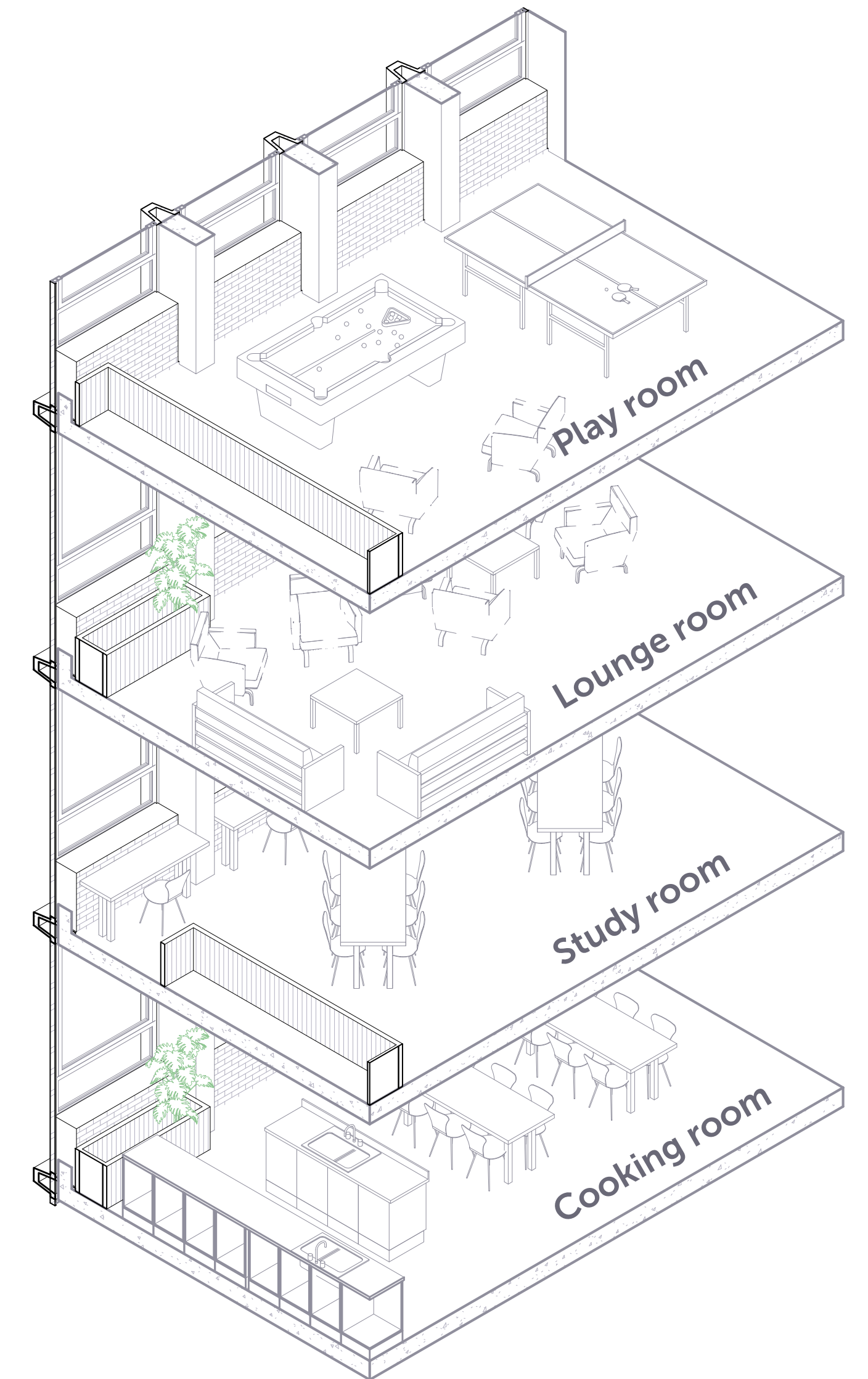
Transition spaces - bringing exterior and interior together



Transition spaces - bringing exterior and interior together



Typical floor



Collective spaces

Stair - impression

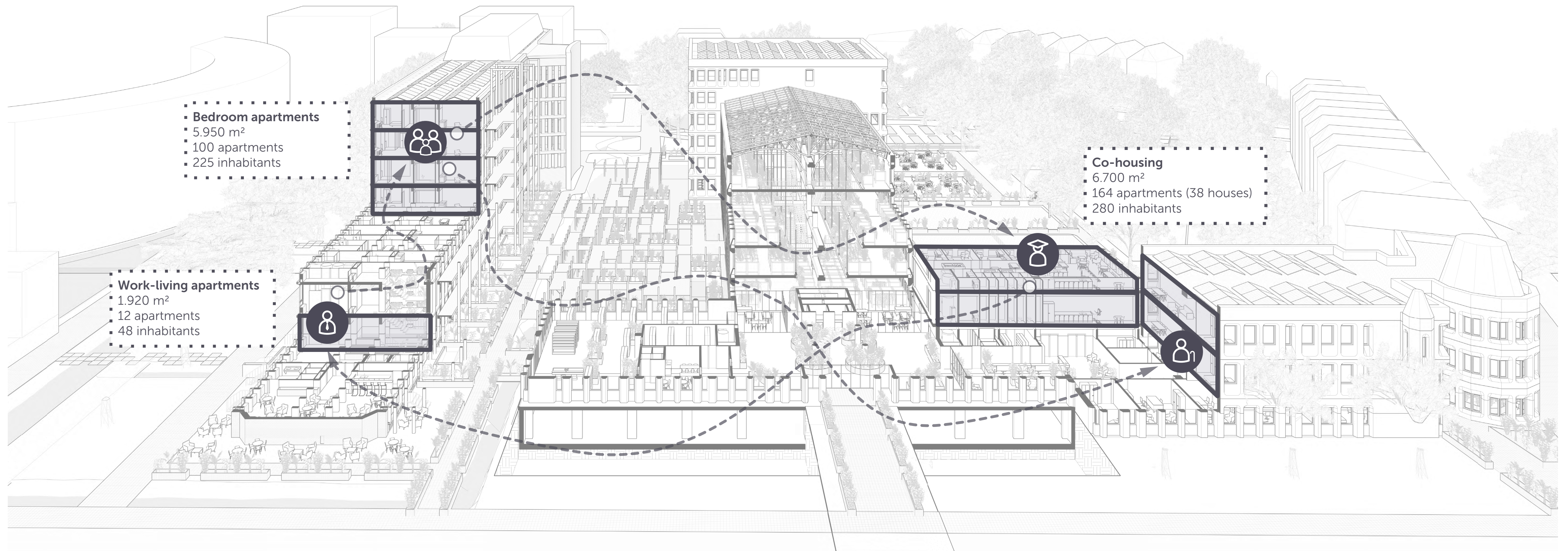


Gallery - impression

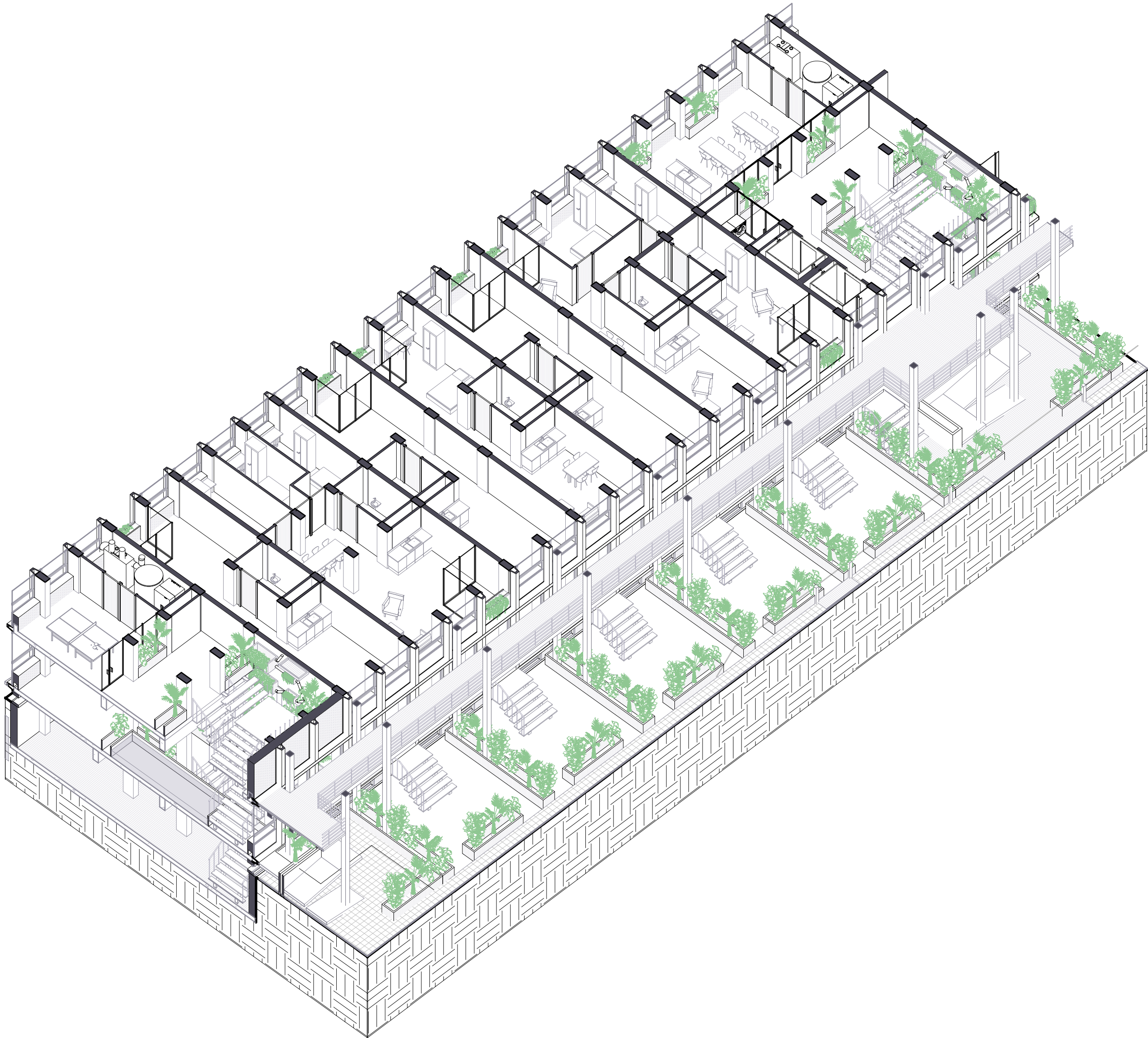
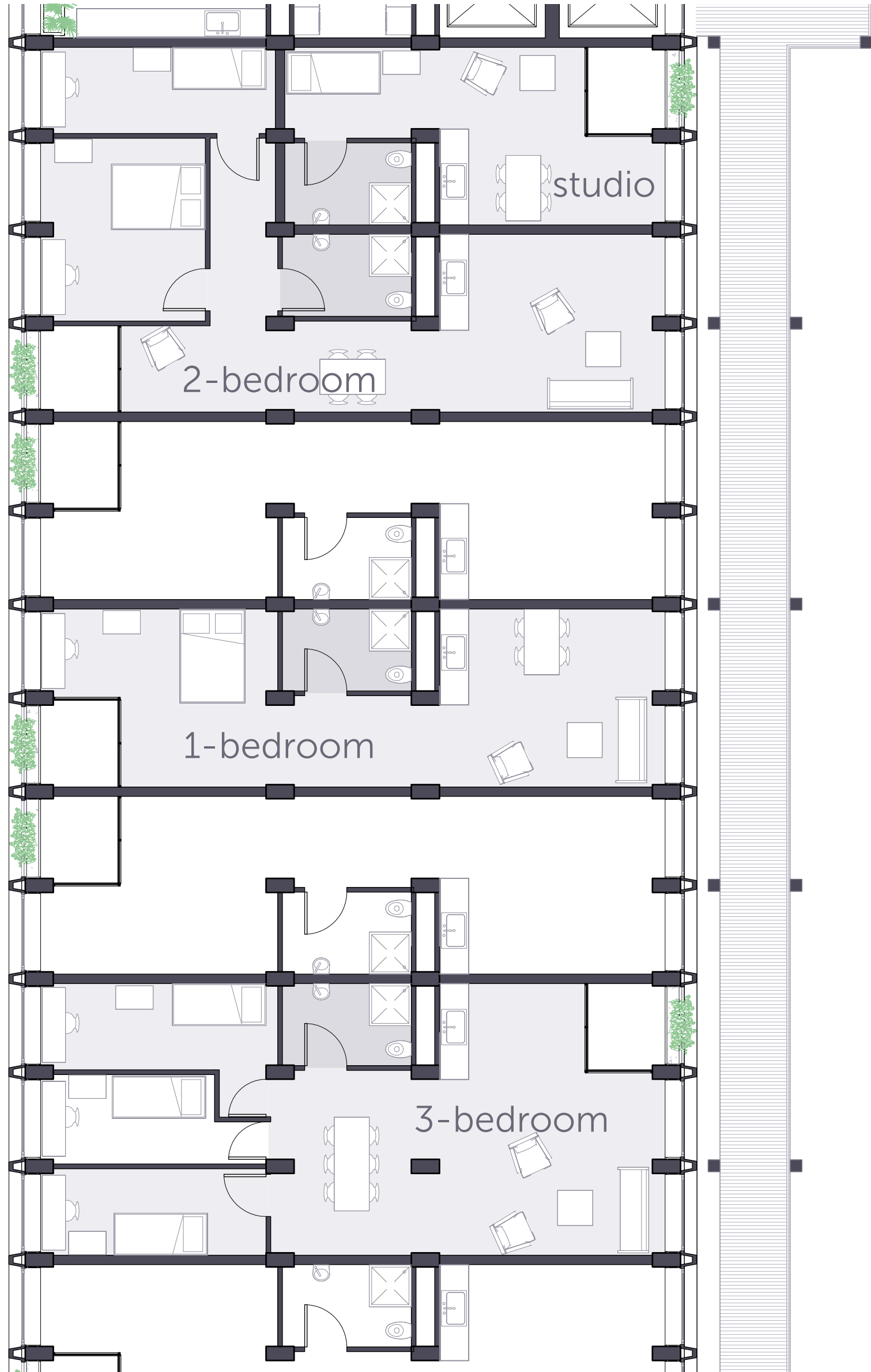


Homes

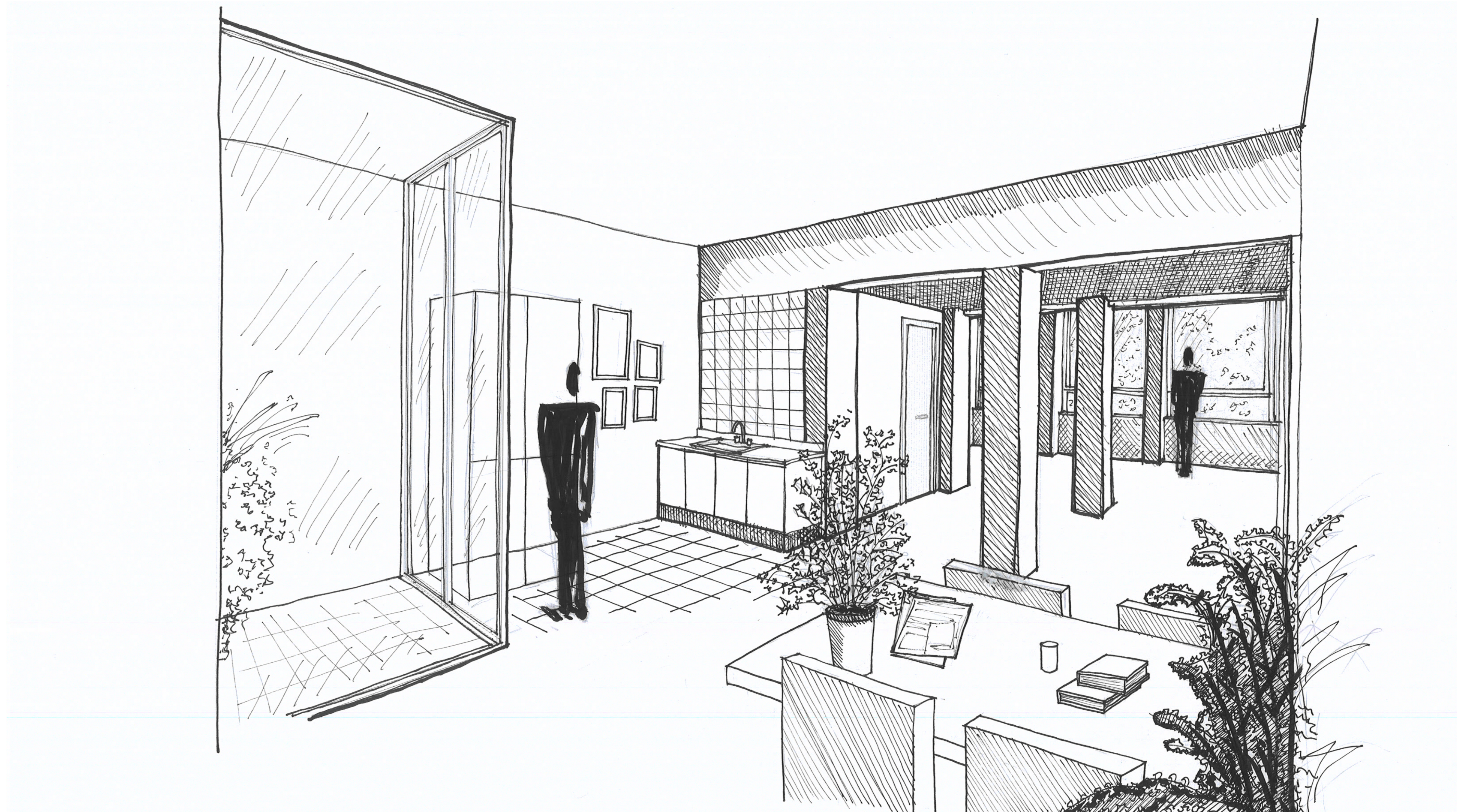
bringing living and comfort together



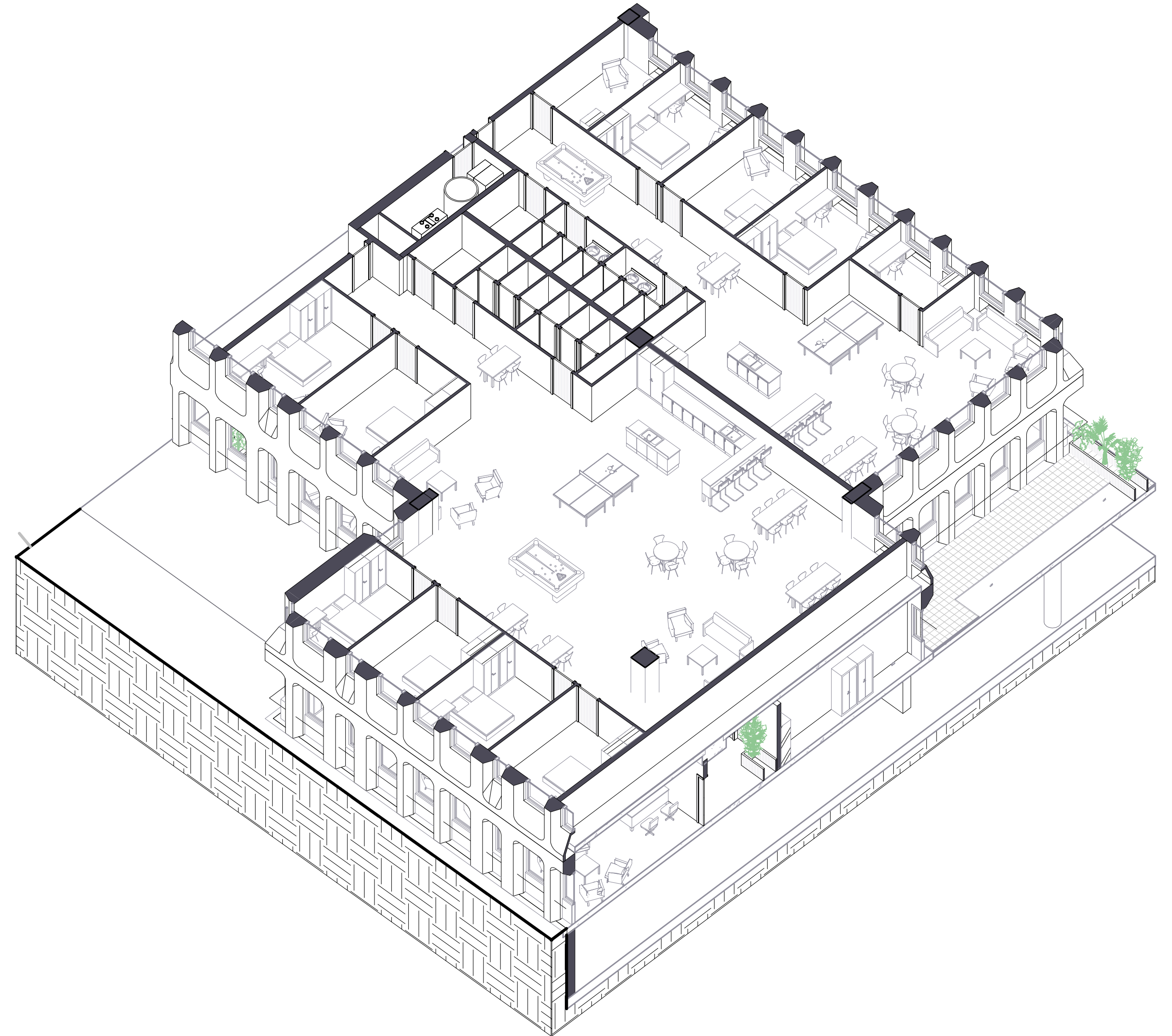
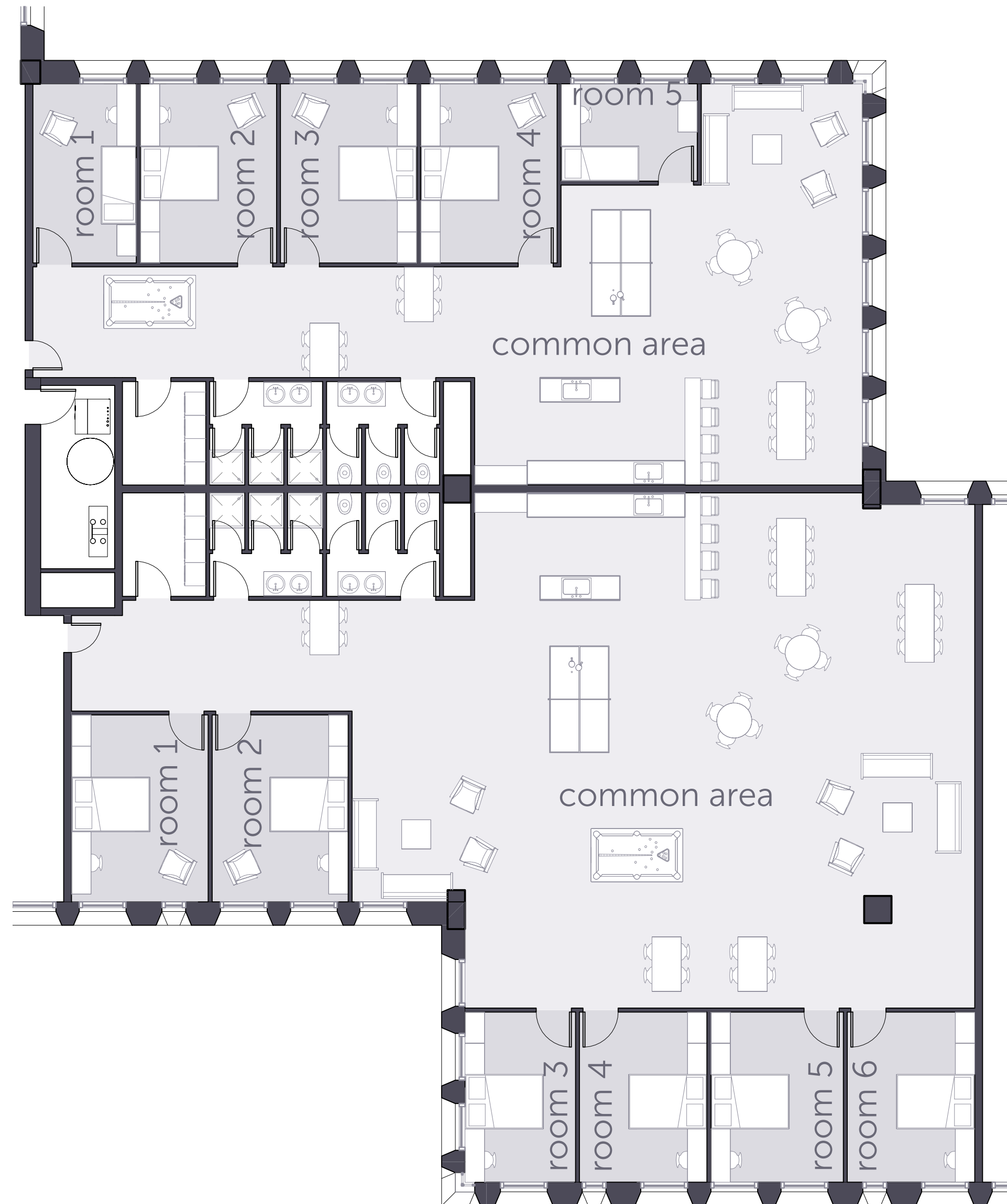
Homes - flexible living



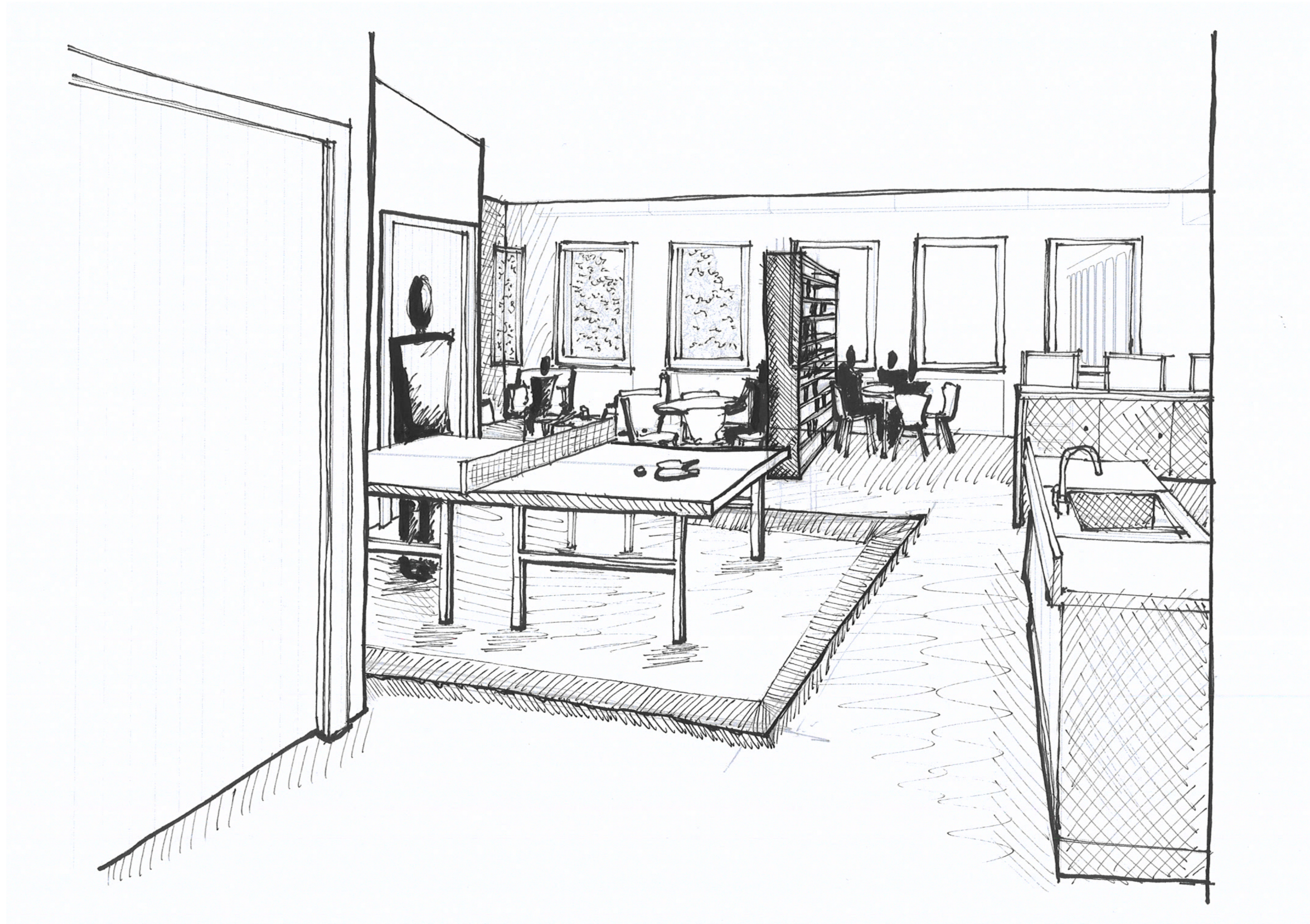
Flexible bedroom apartment - impression



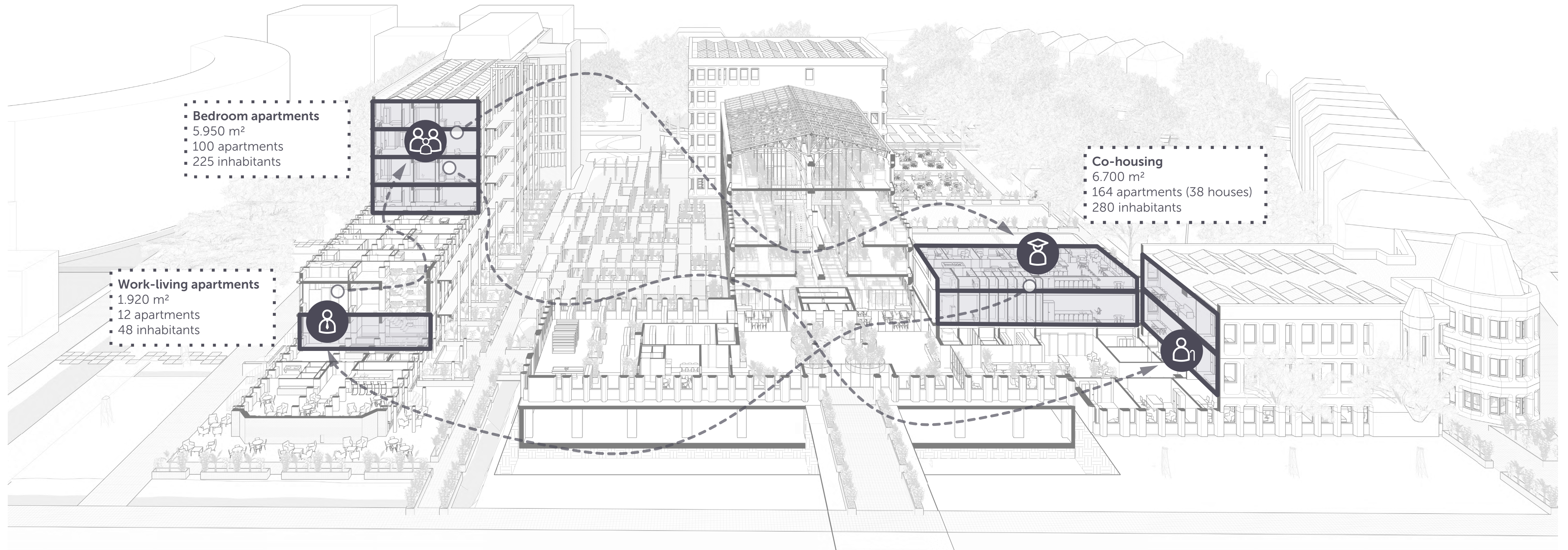
Homes - co-housing



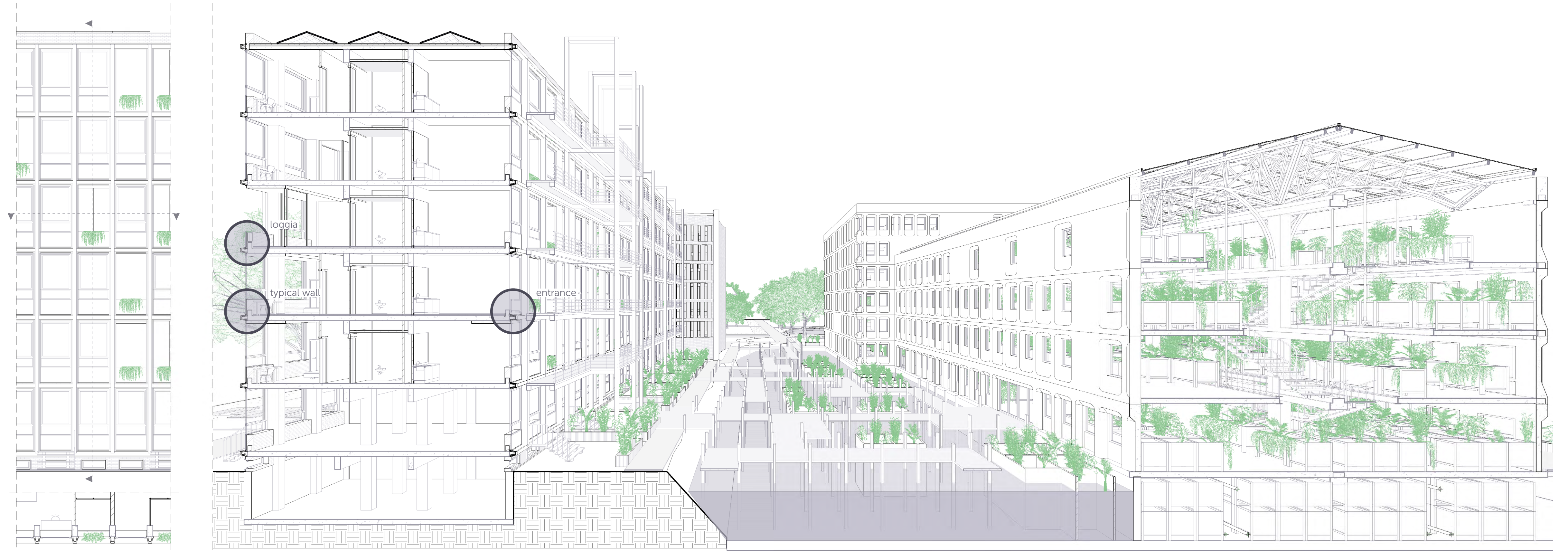
Co-housing - impression



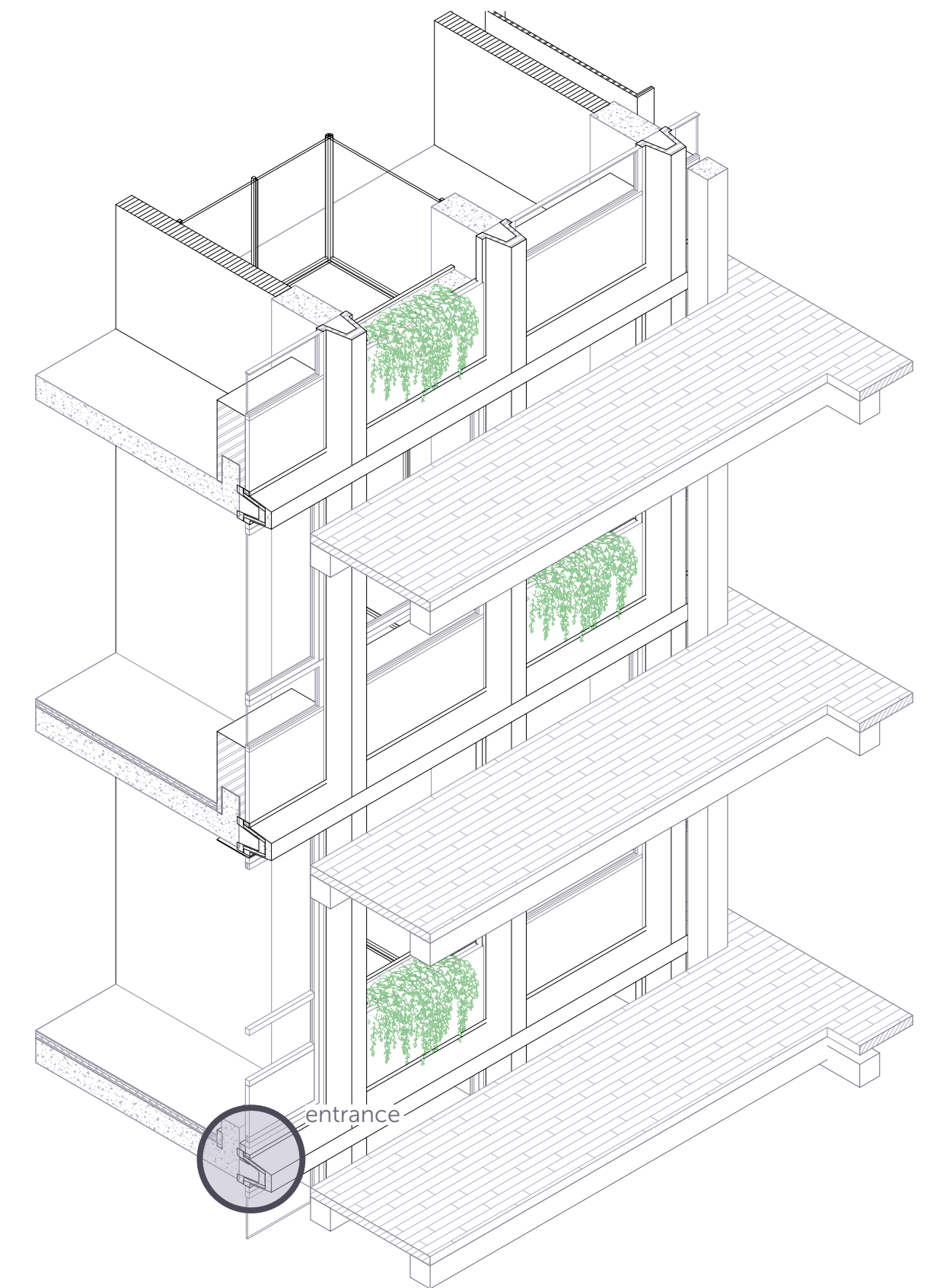
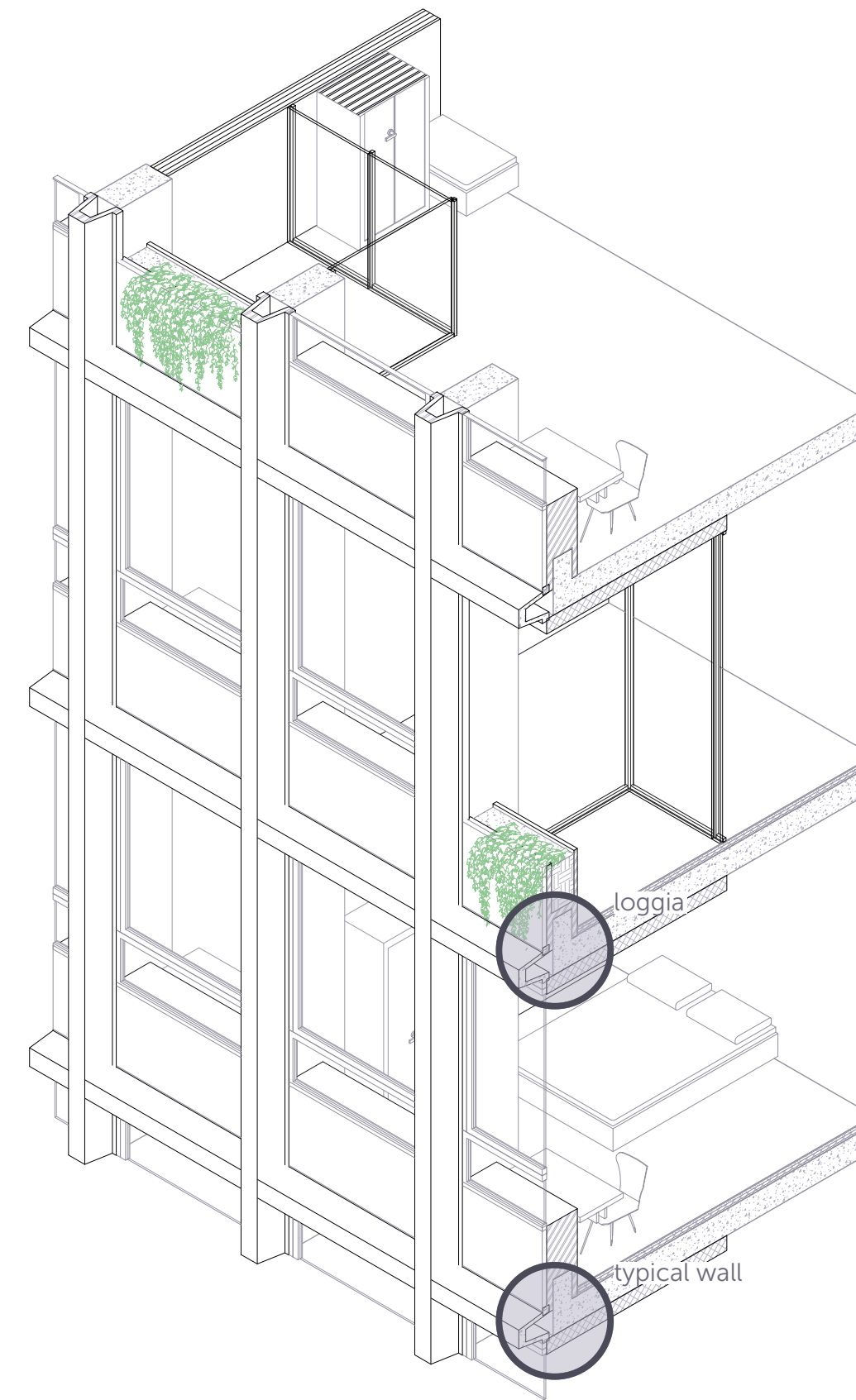
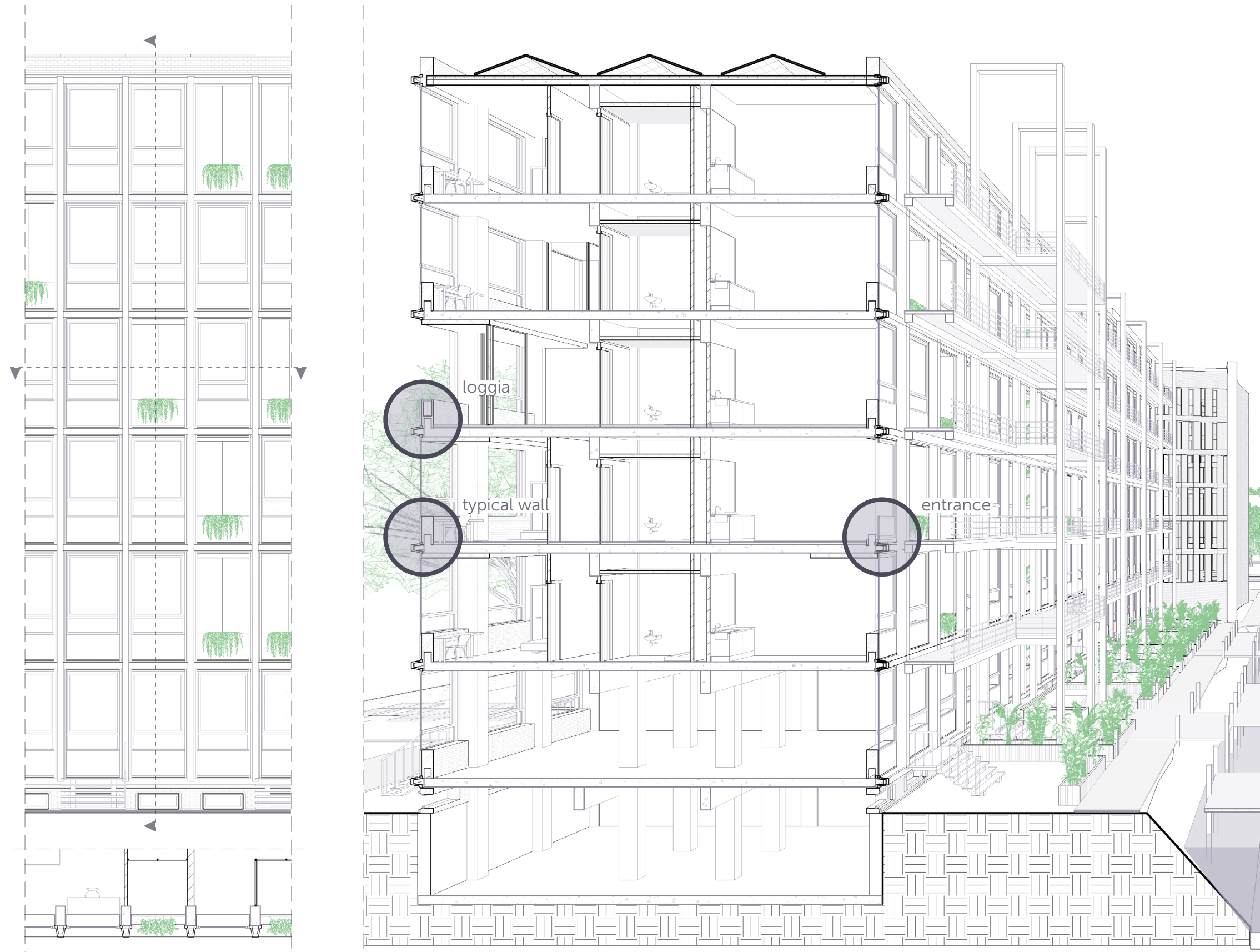
Living - growing within the building



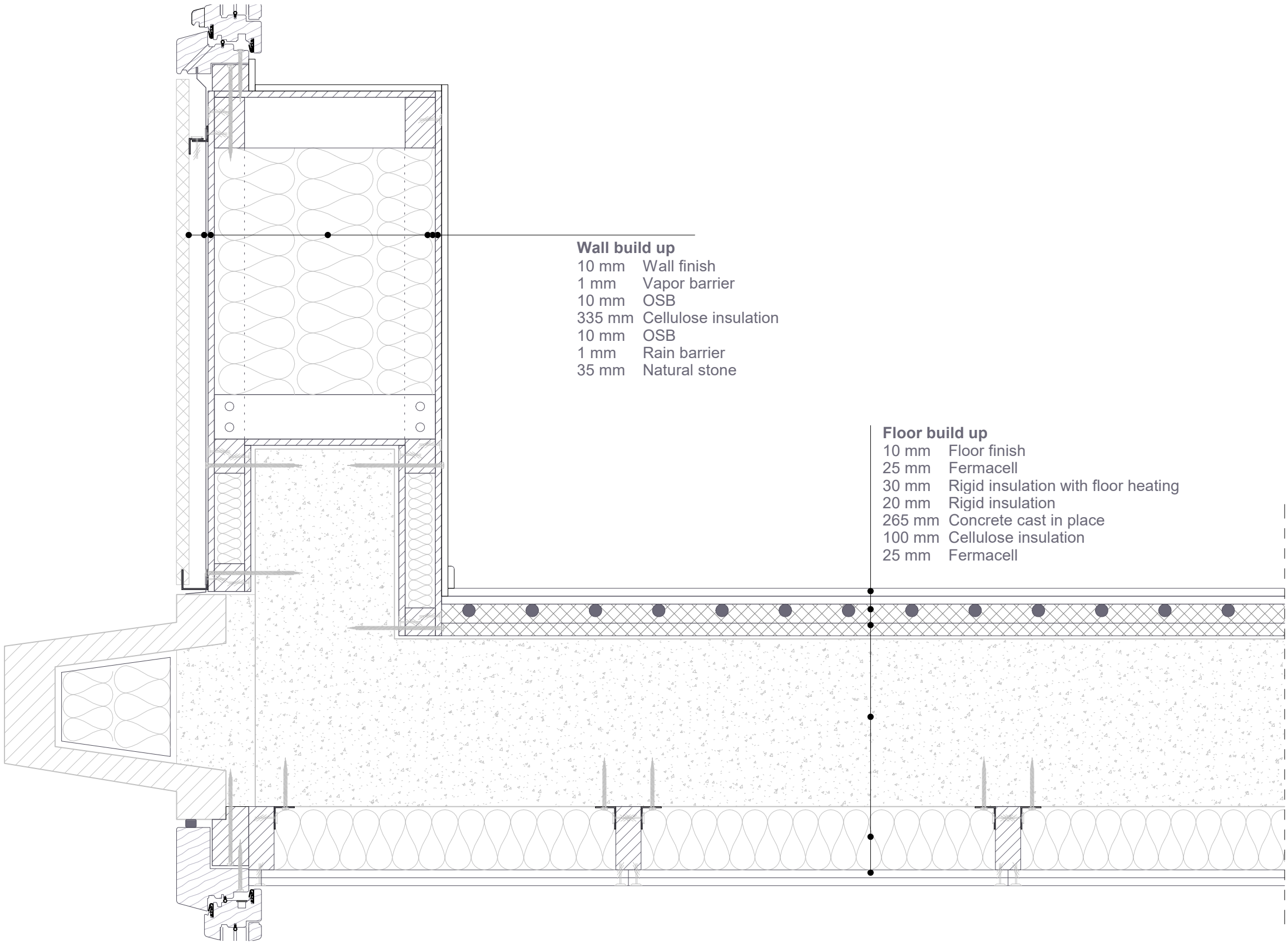
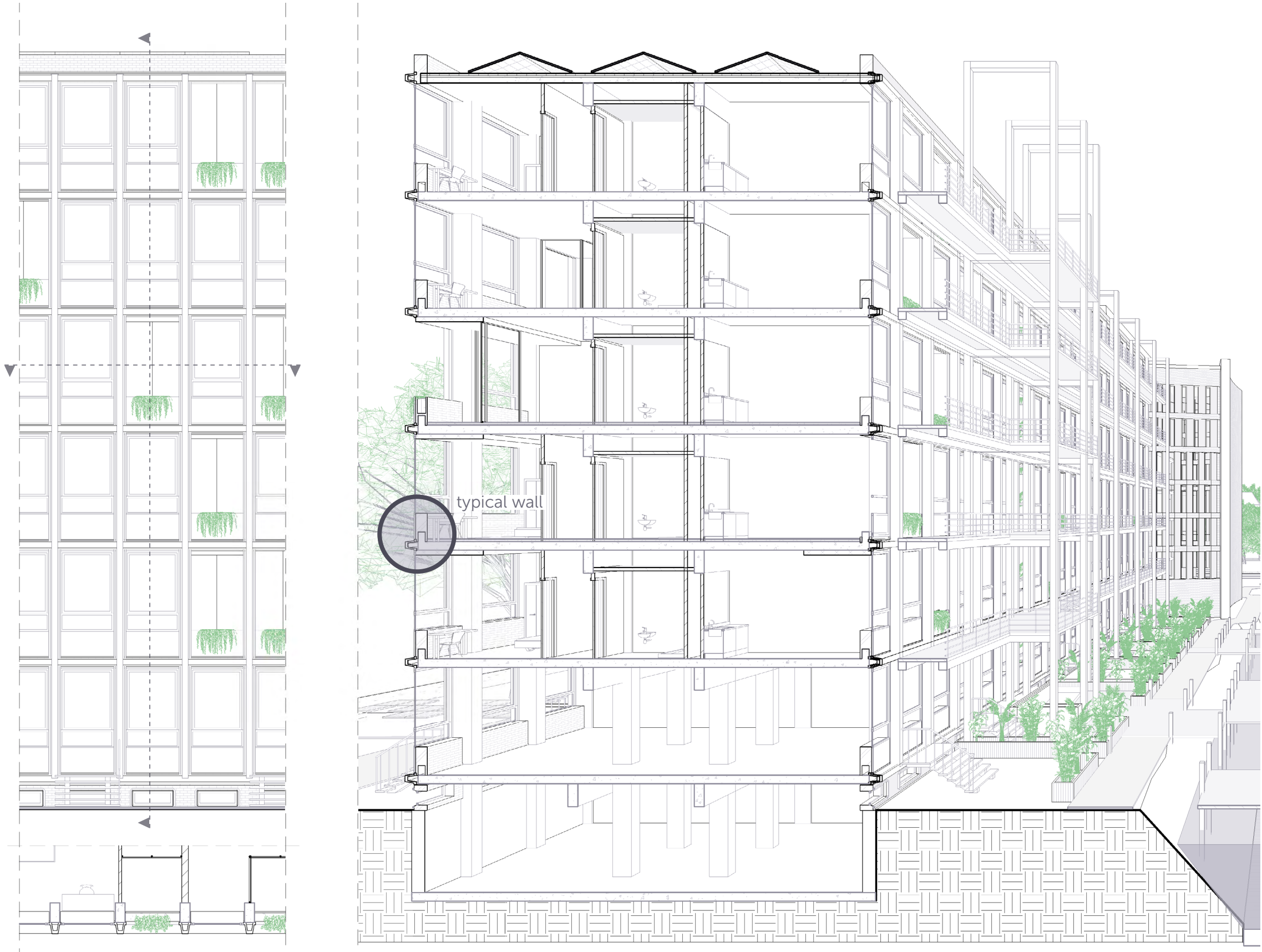
Homes - renovation strategy to create comfort



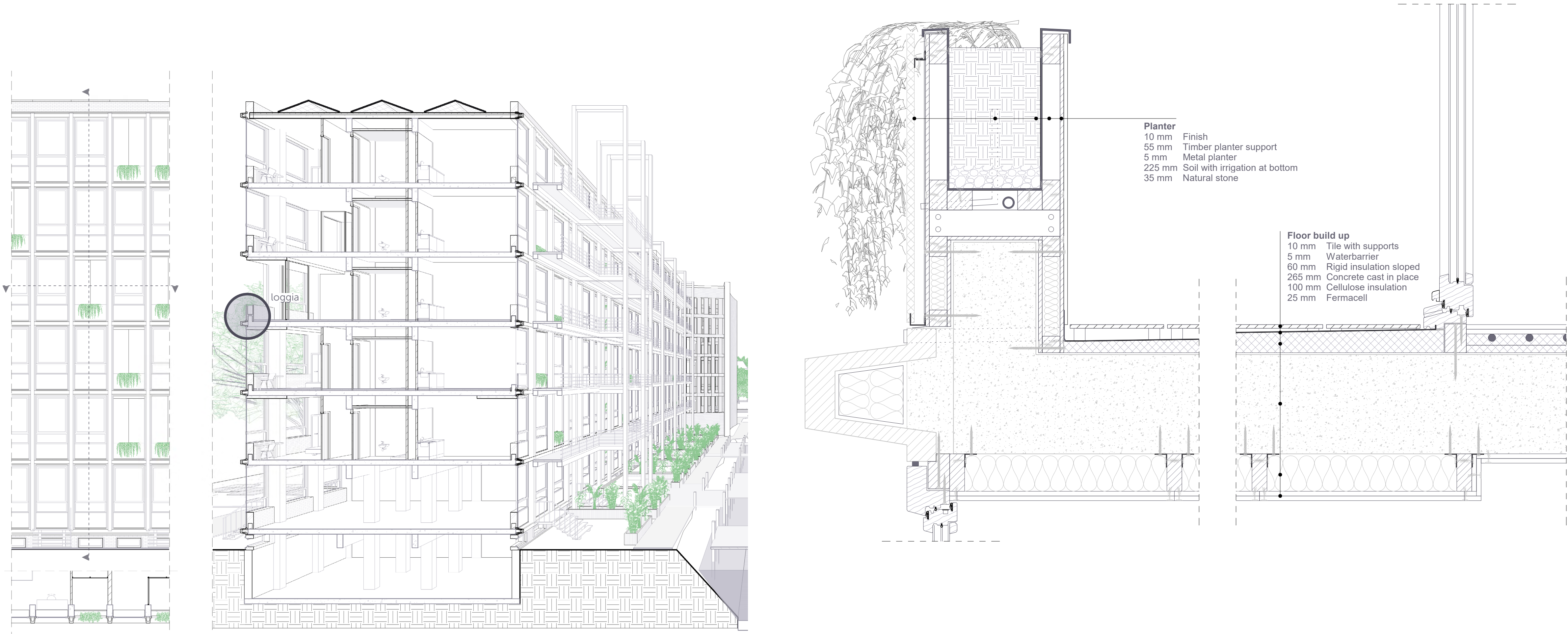
Homes - renovation strategy to create comfort



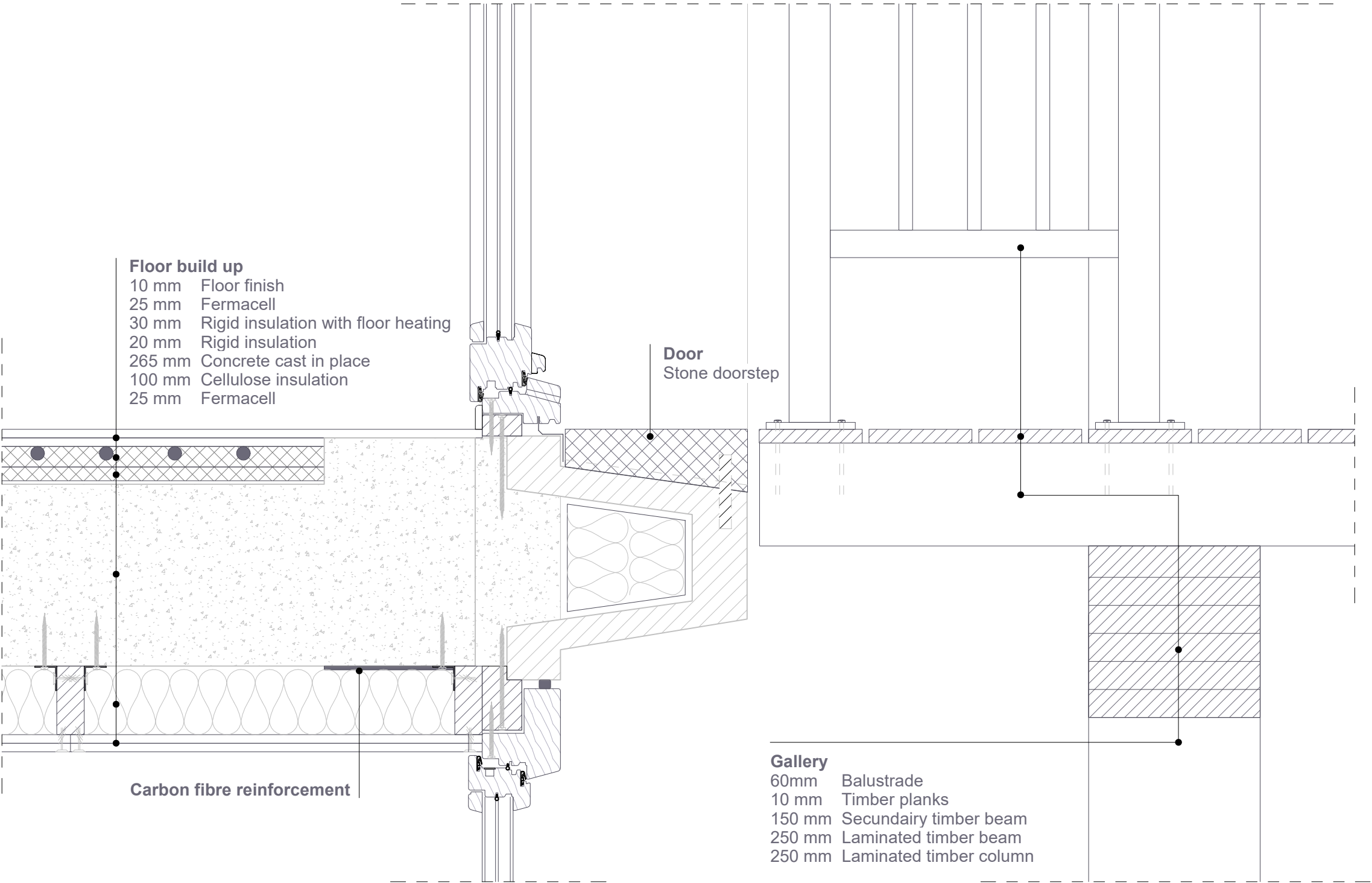
Homes - renovation strategy to create comfort



Homes - renovation strategy to create comfort



Homes - renovation strategy to create comfort

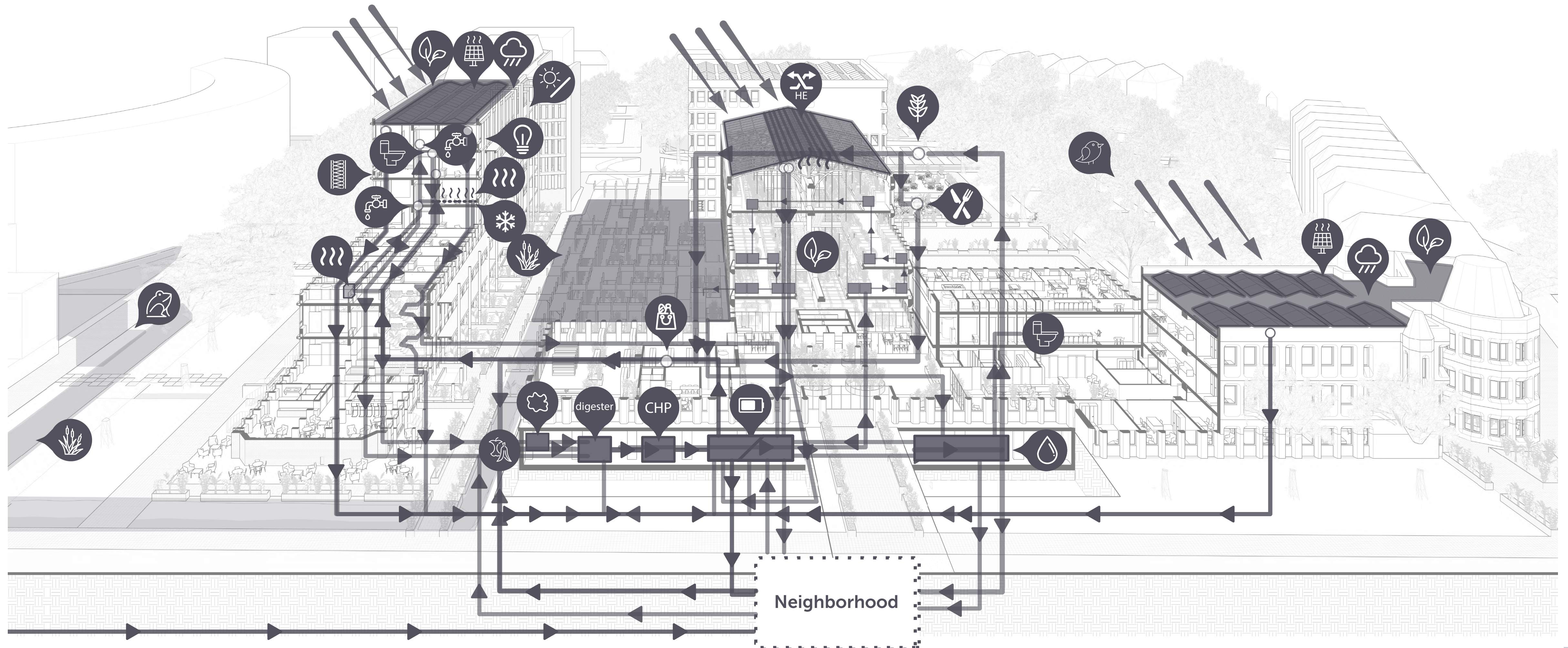


Homes - from police office to homes



Systems

bringing technology and ecology together



Systems - bringing technology and ecology together

- 1a. insulation, sunshading, green roof

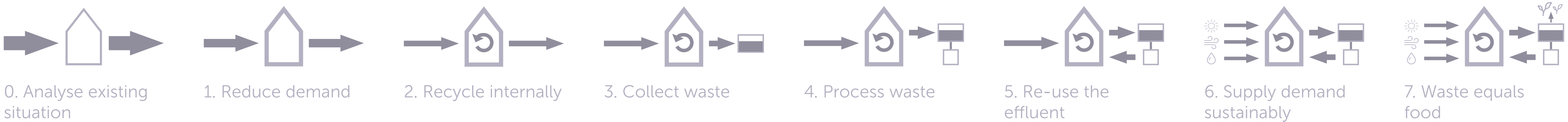
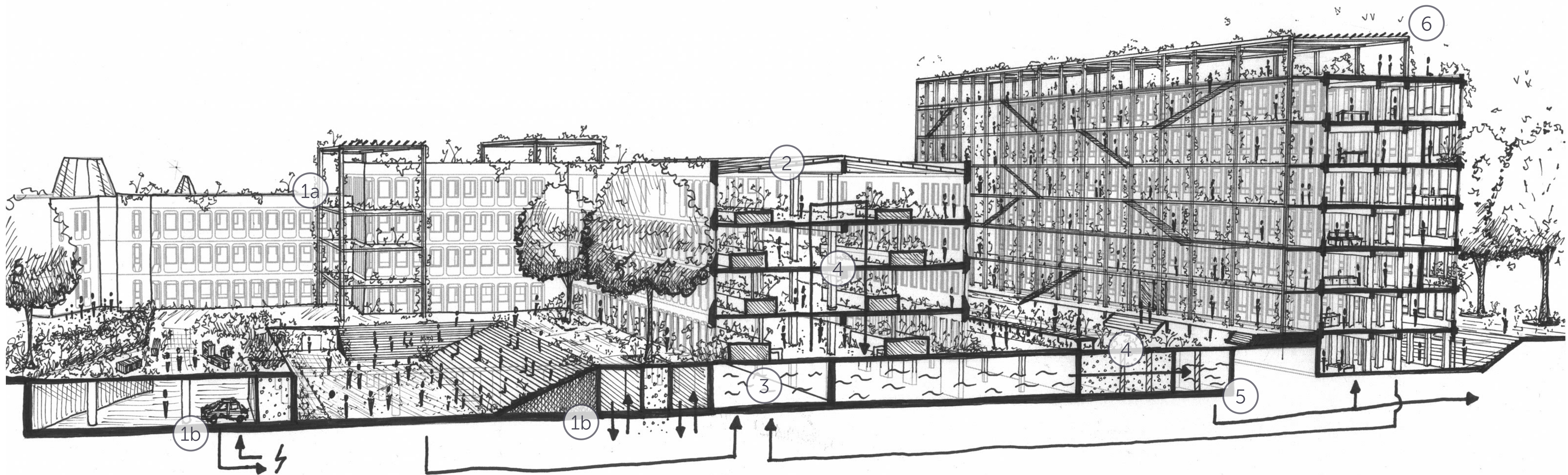
1b. storage of water, heat/cold, electricity

2. heat cascade from cooling, heat from living machine
3. collection of waste water, waste chutes in cores,

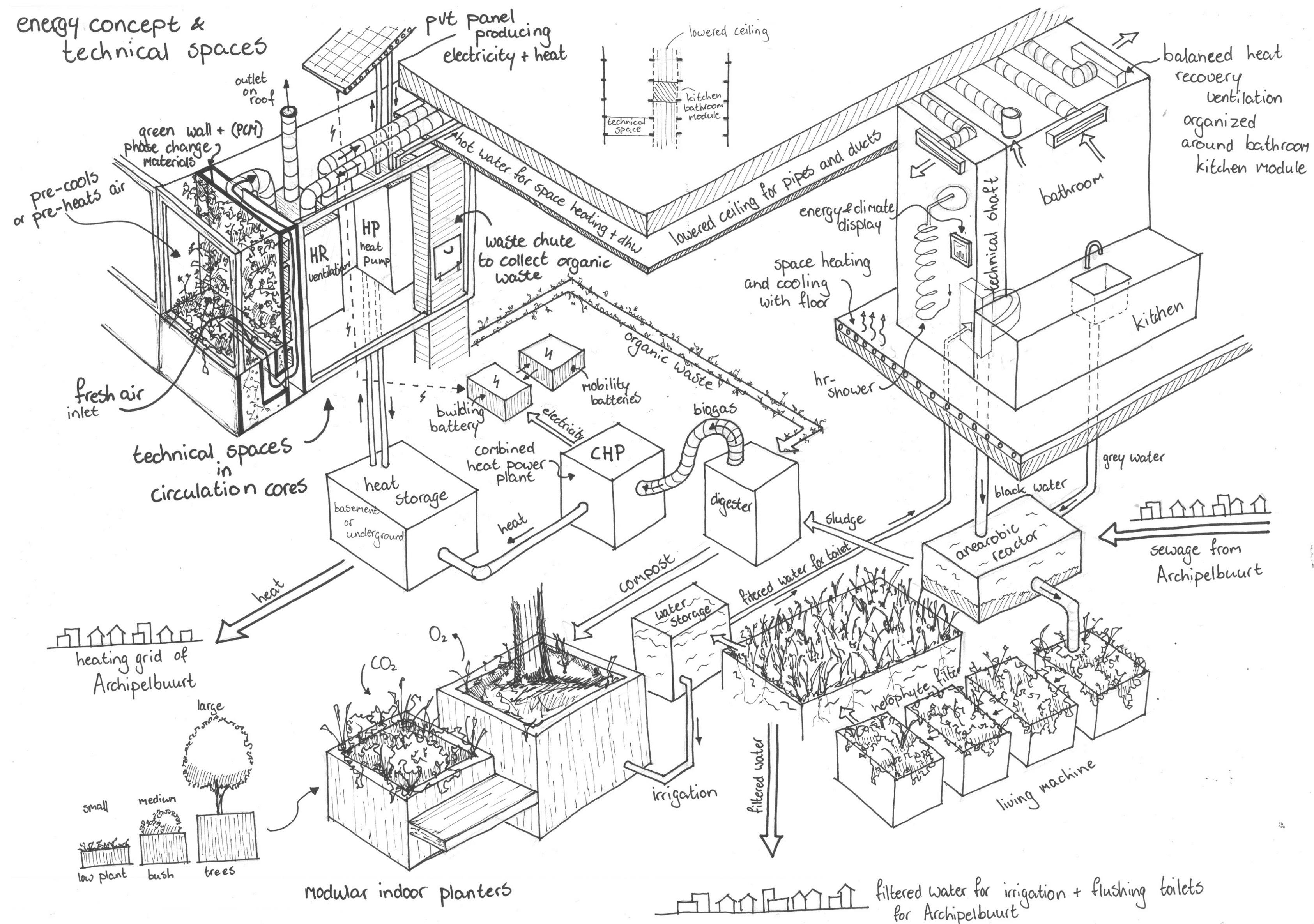
4. treatment of water with living machine

5. water & energy reused in building & neighborhood
6. pvt panels on roof & CHP

7. organic waste into fertilizer

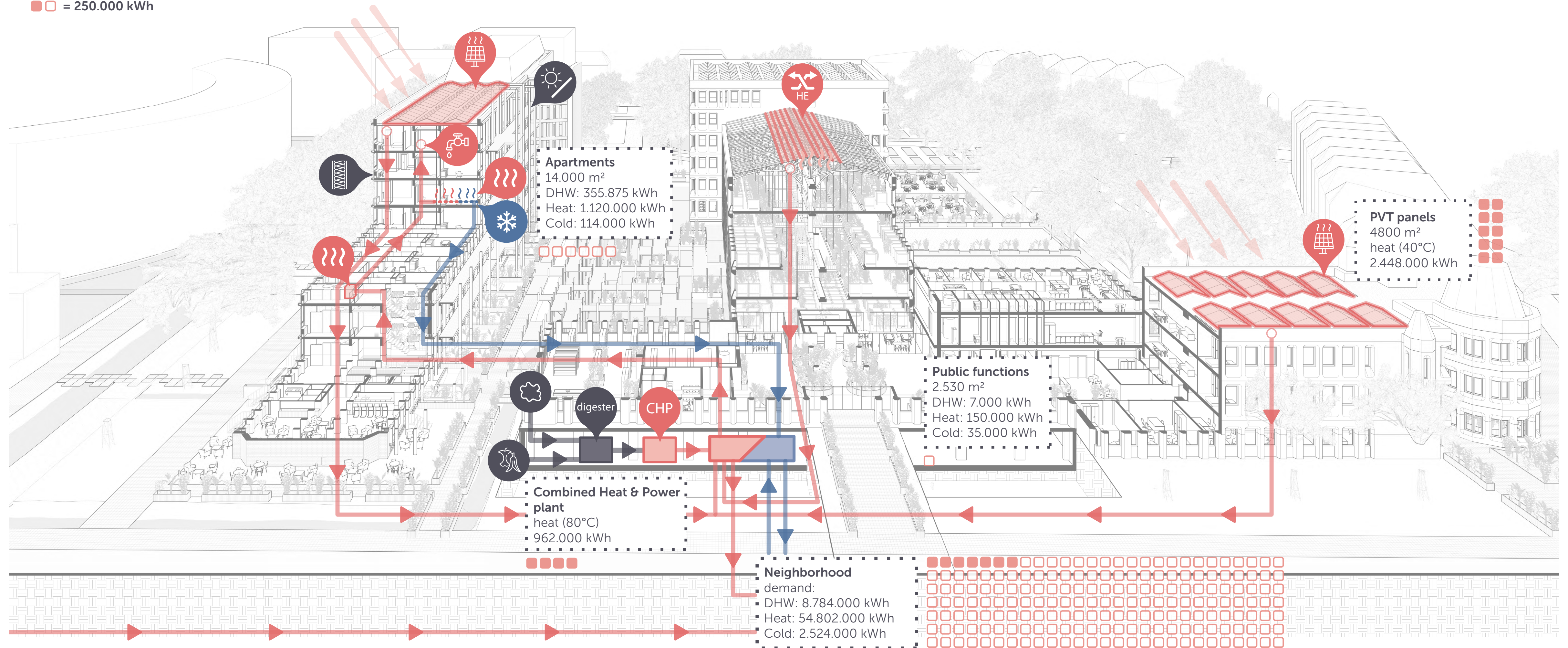


Systems - bringing technology and ecology together

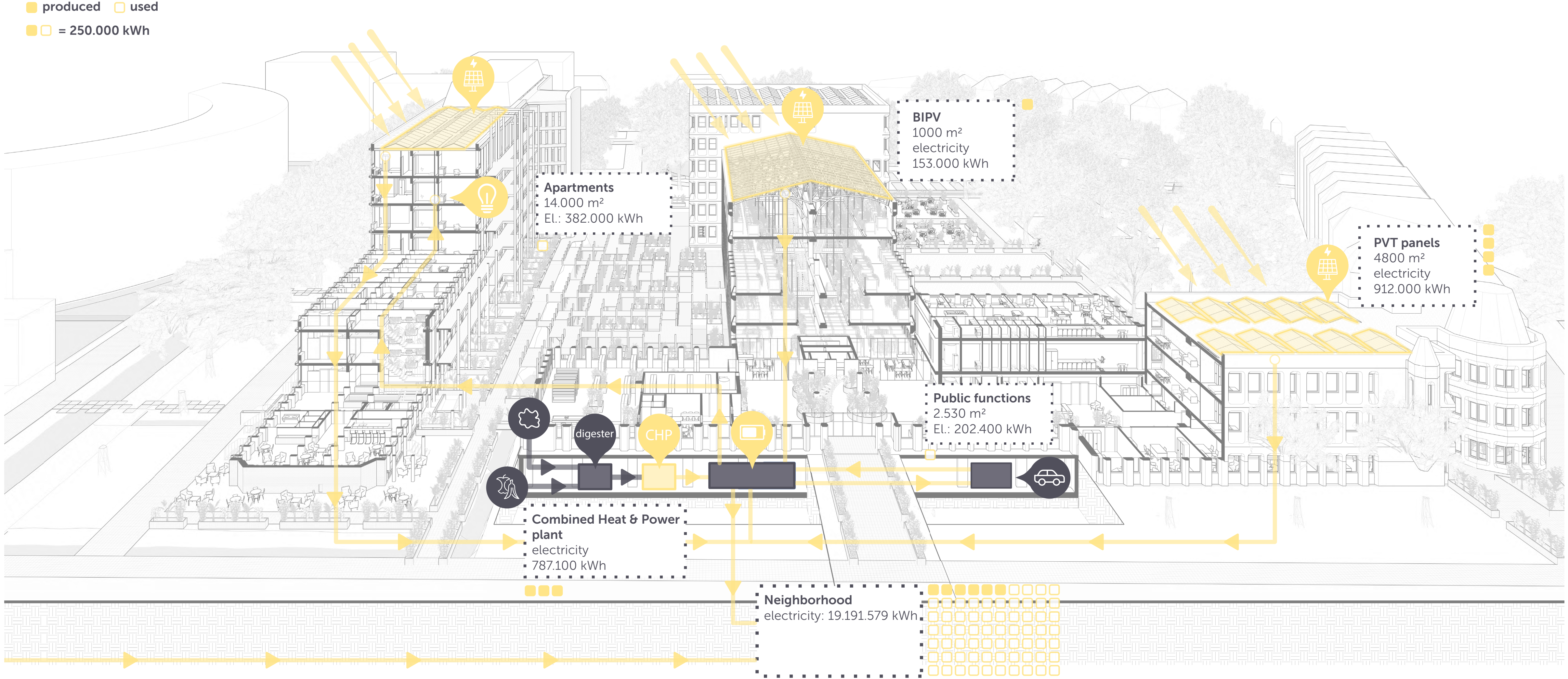


Thermal cycle - energy

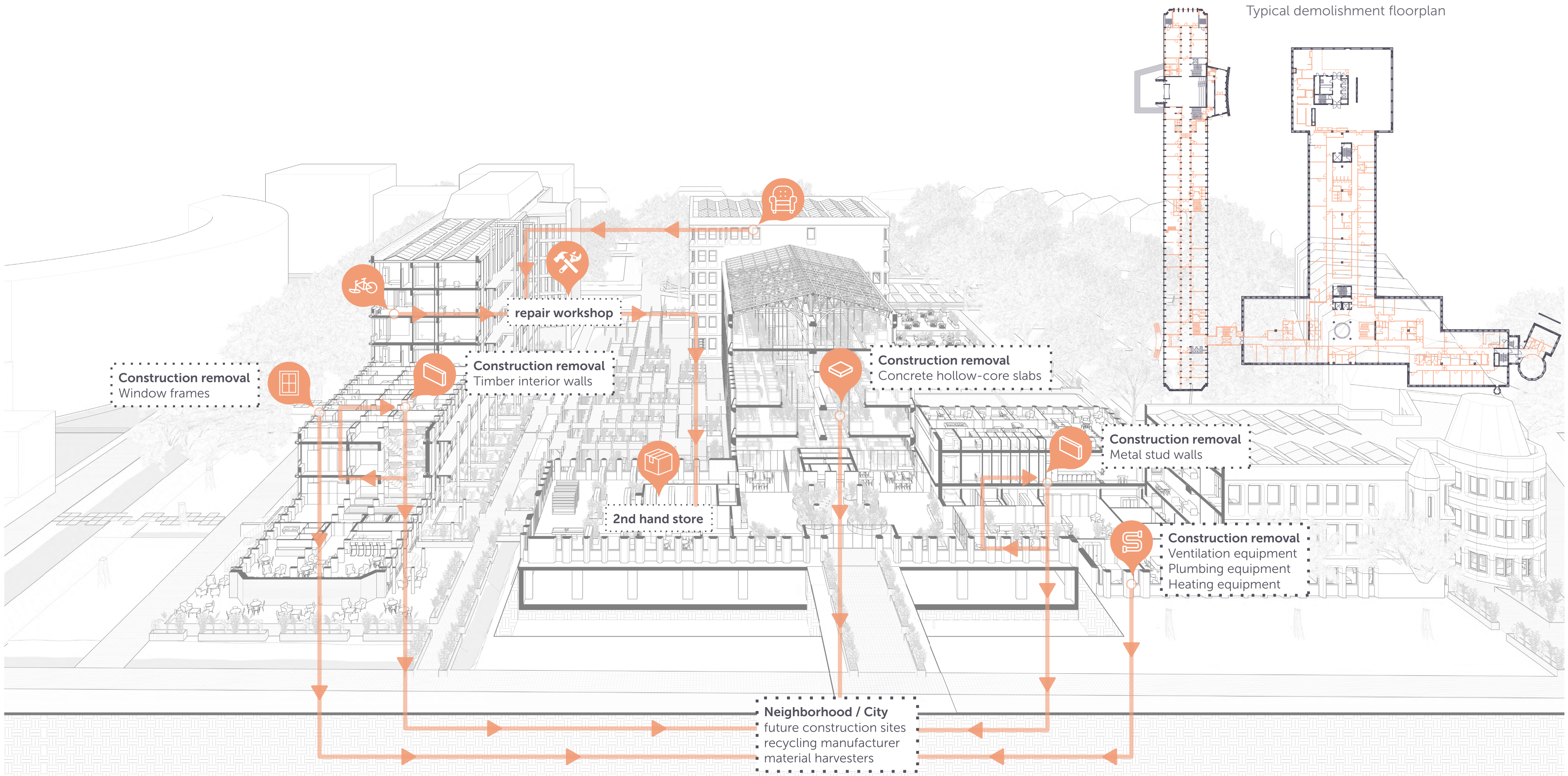
■ produced □ used
■ □ = 250.000 kWh



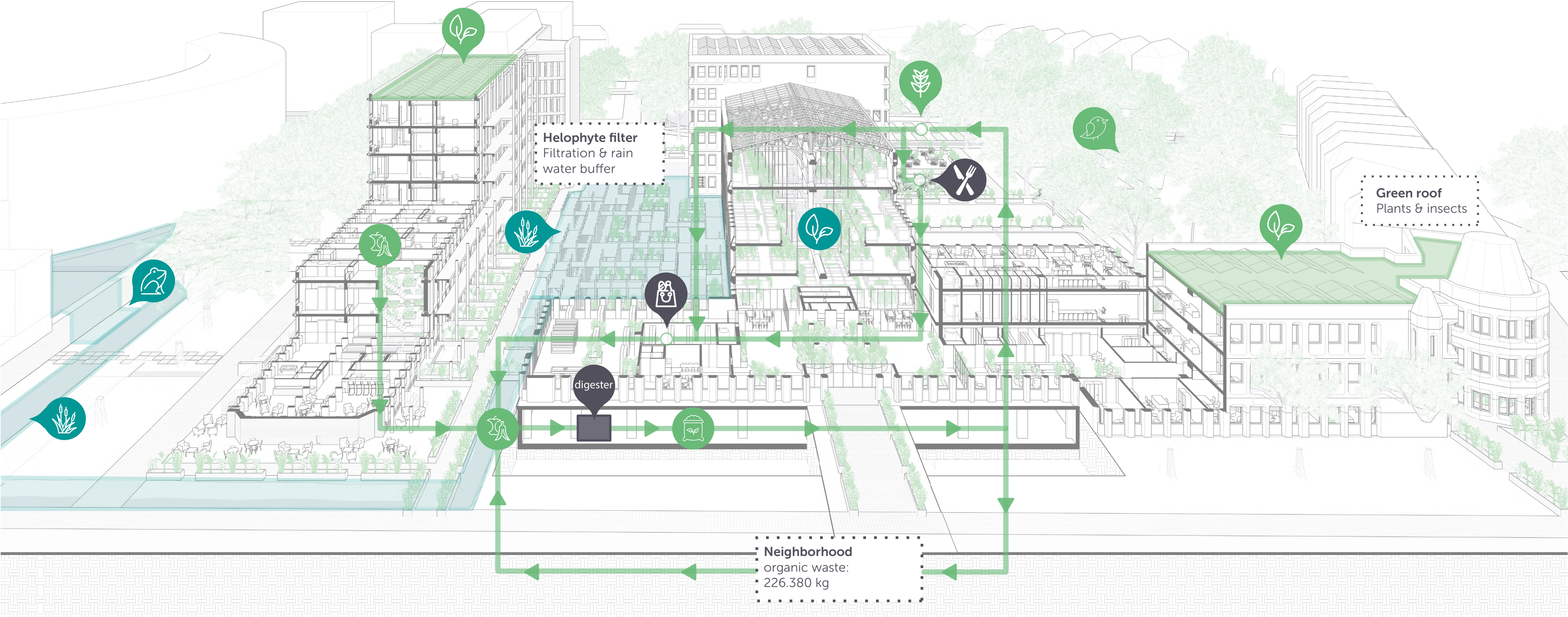
Electrical cycle - energy



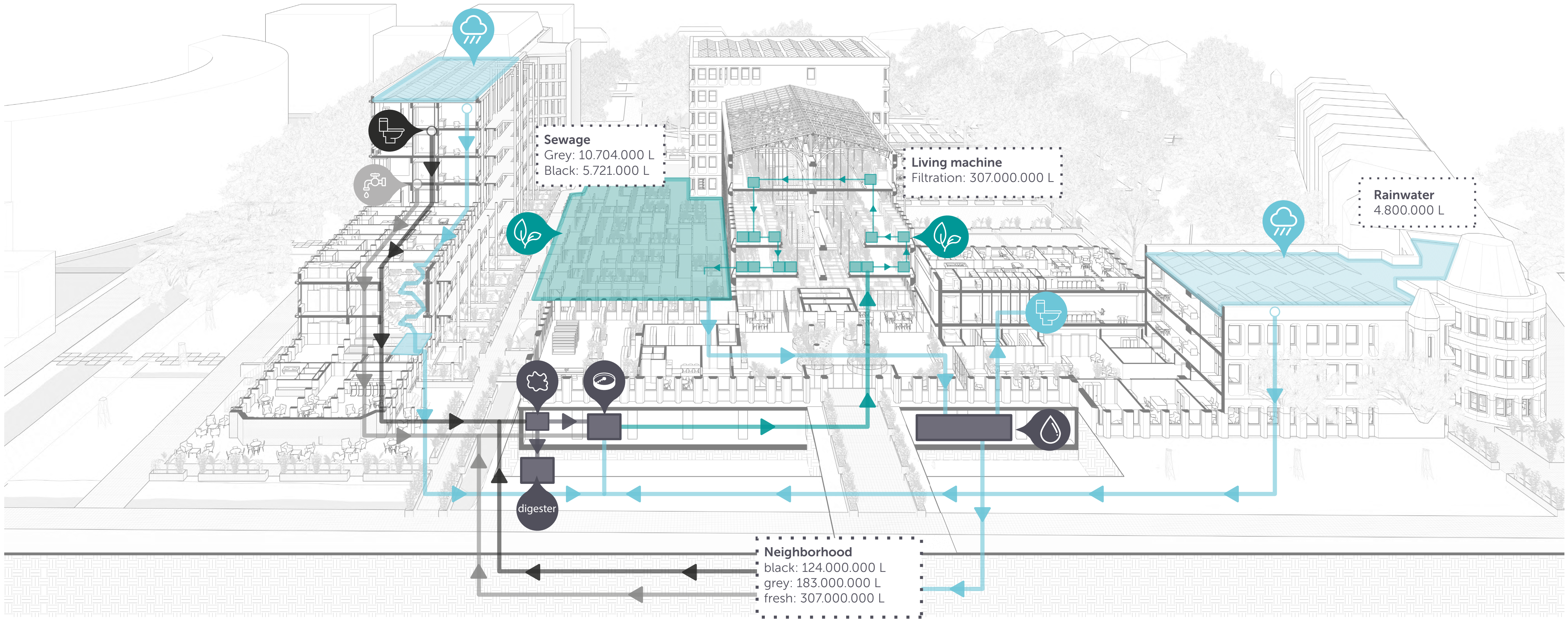
Material cycle - material



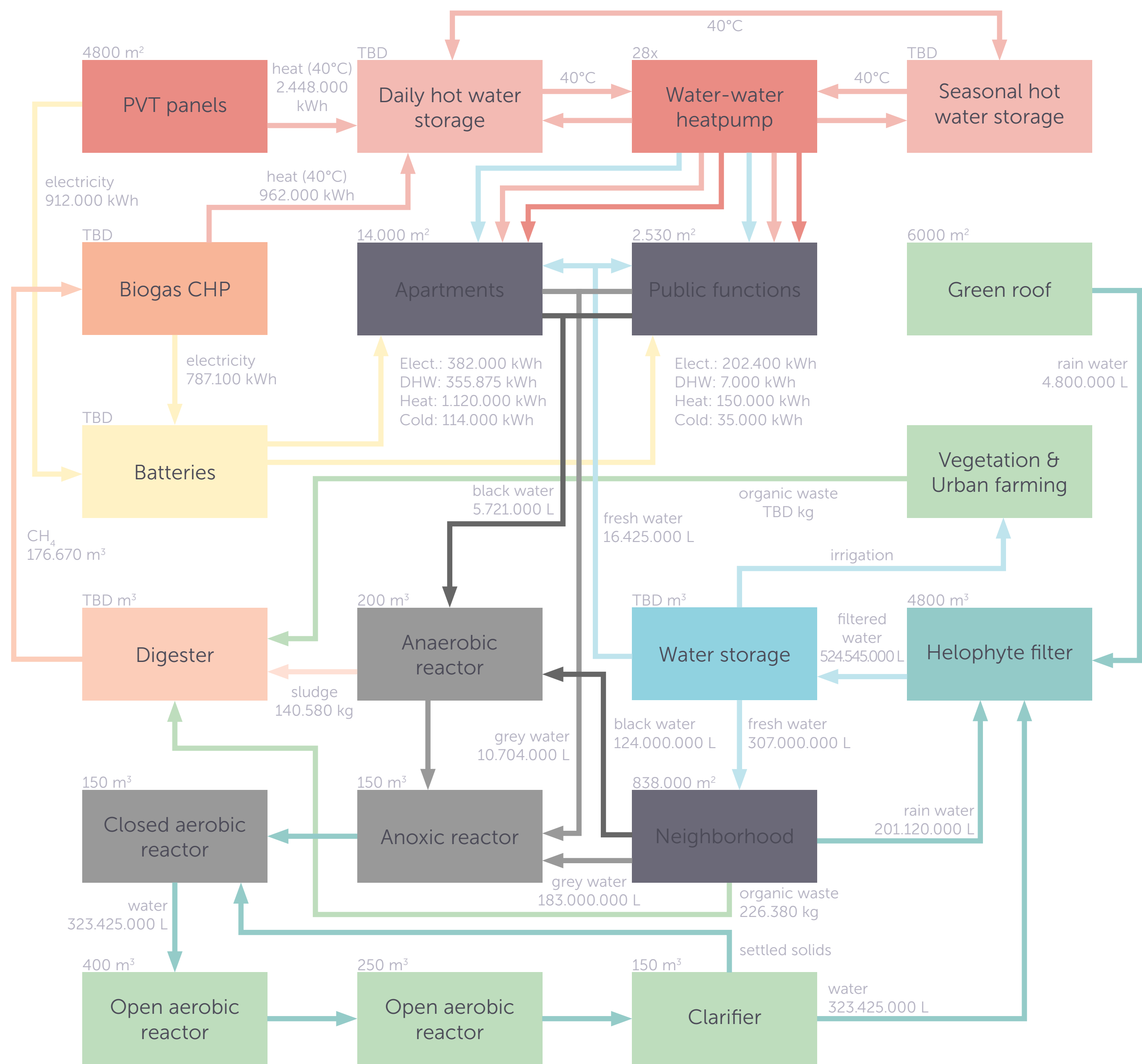
Biotic cycle - biotic



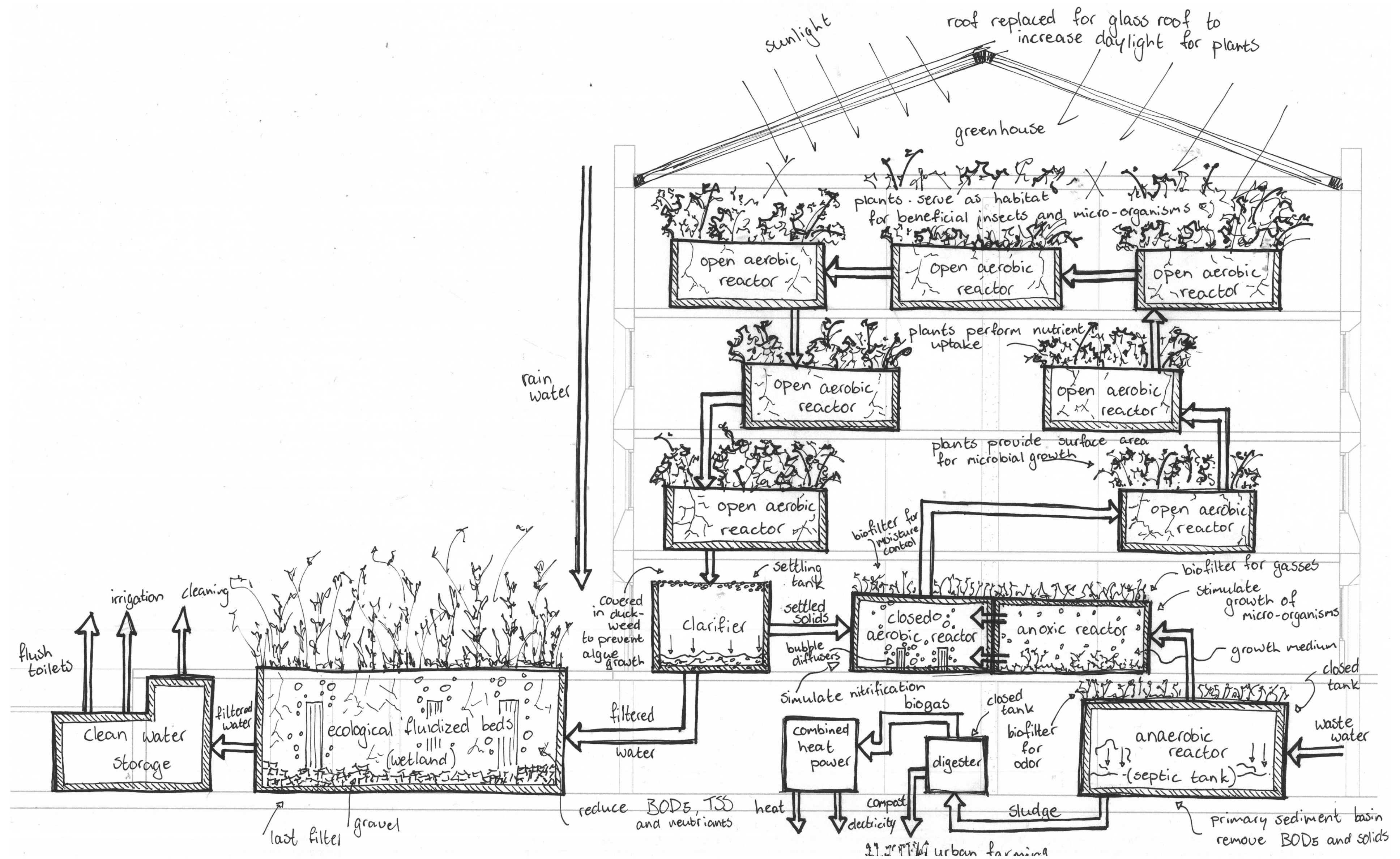
Water cycle - water



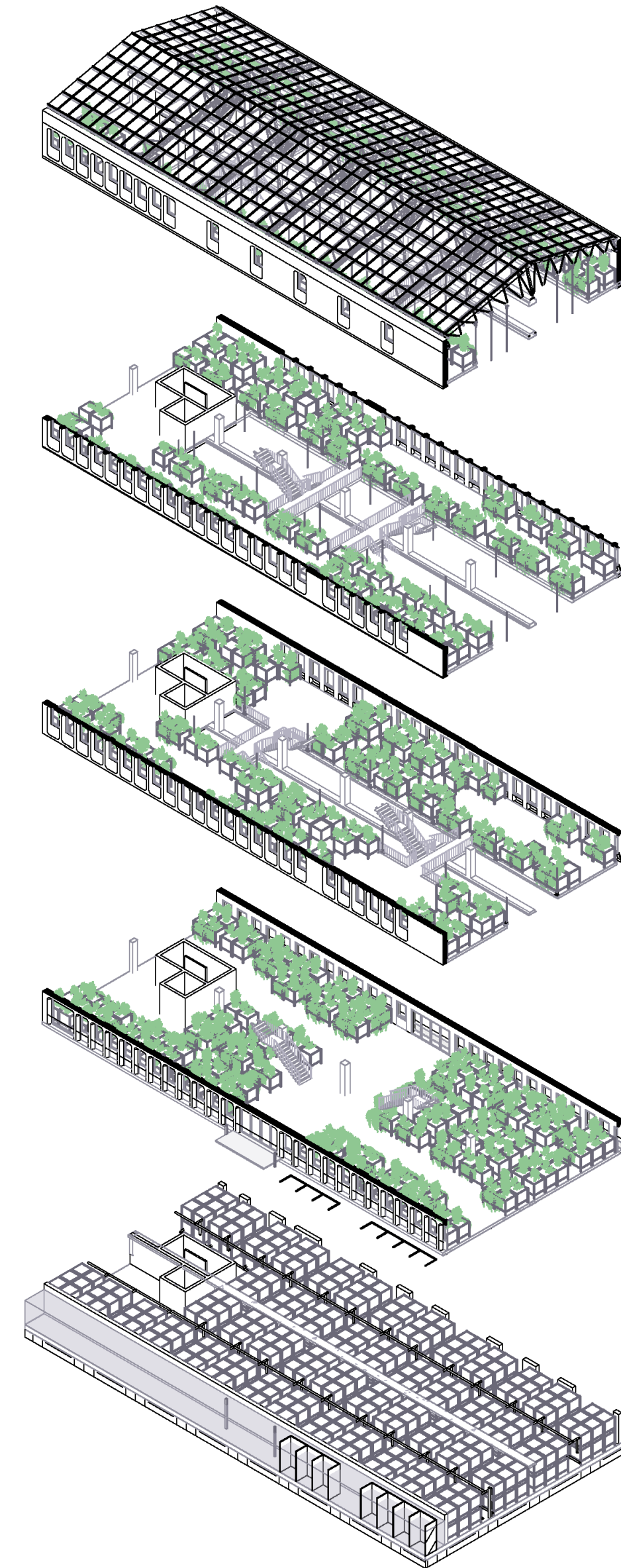
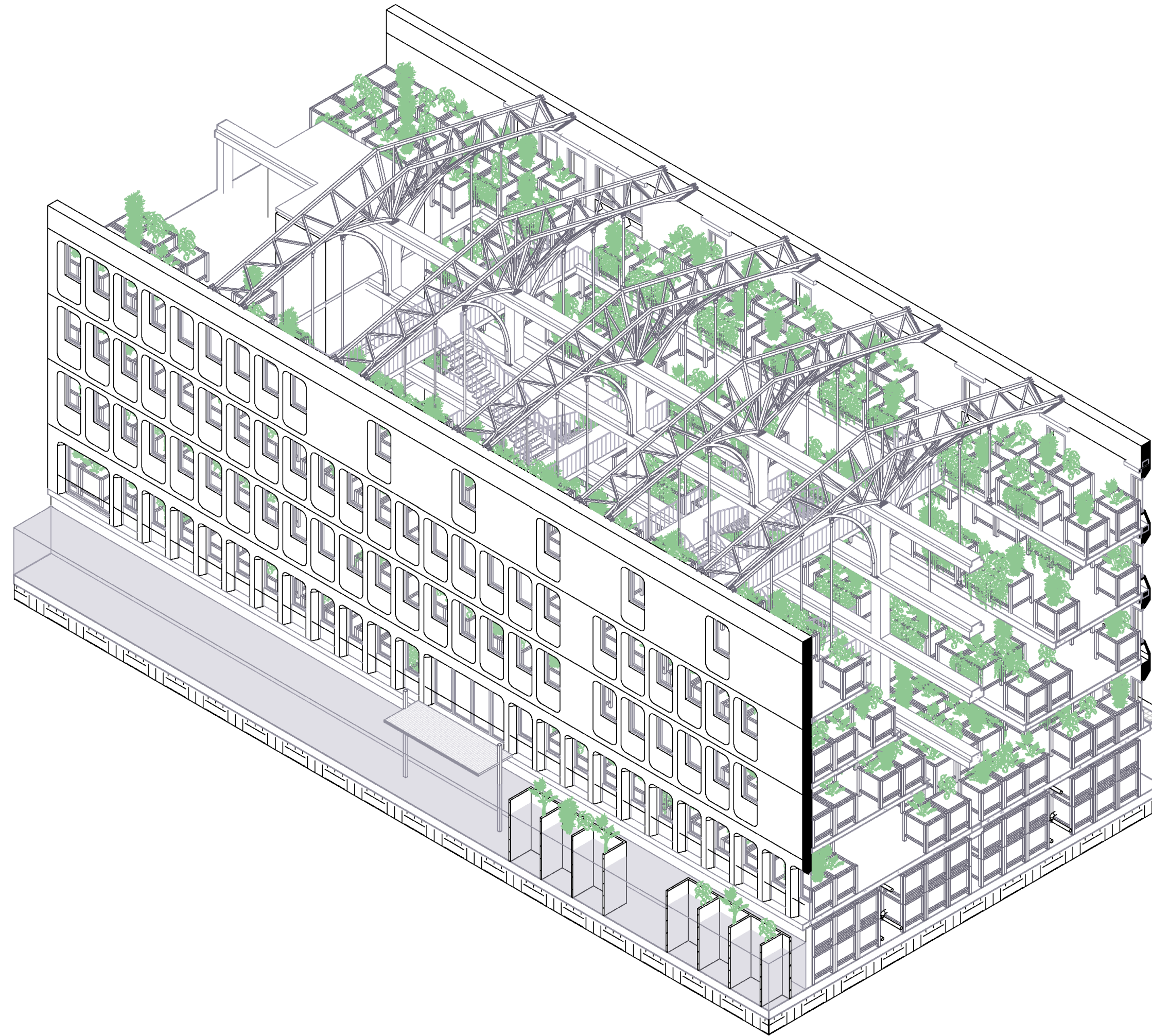
Systems - bringing technology and ecology together



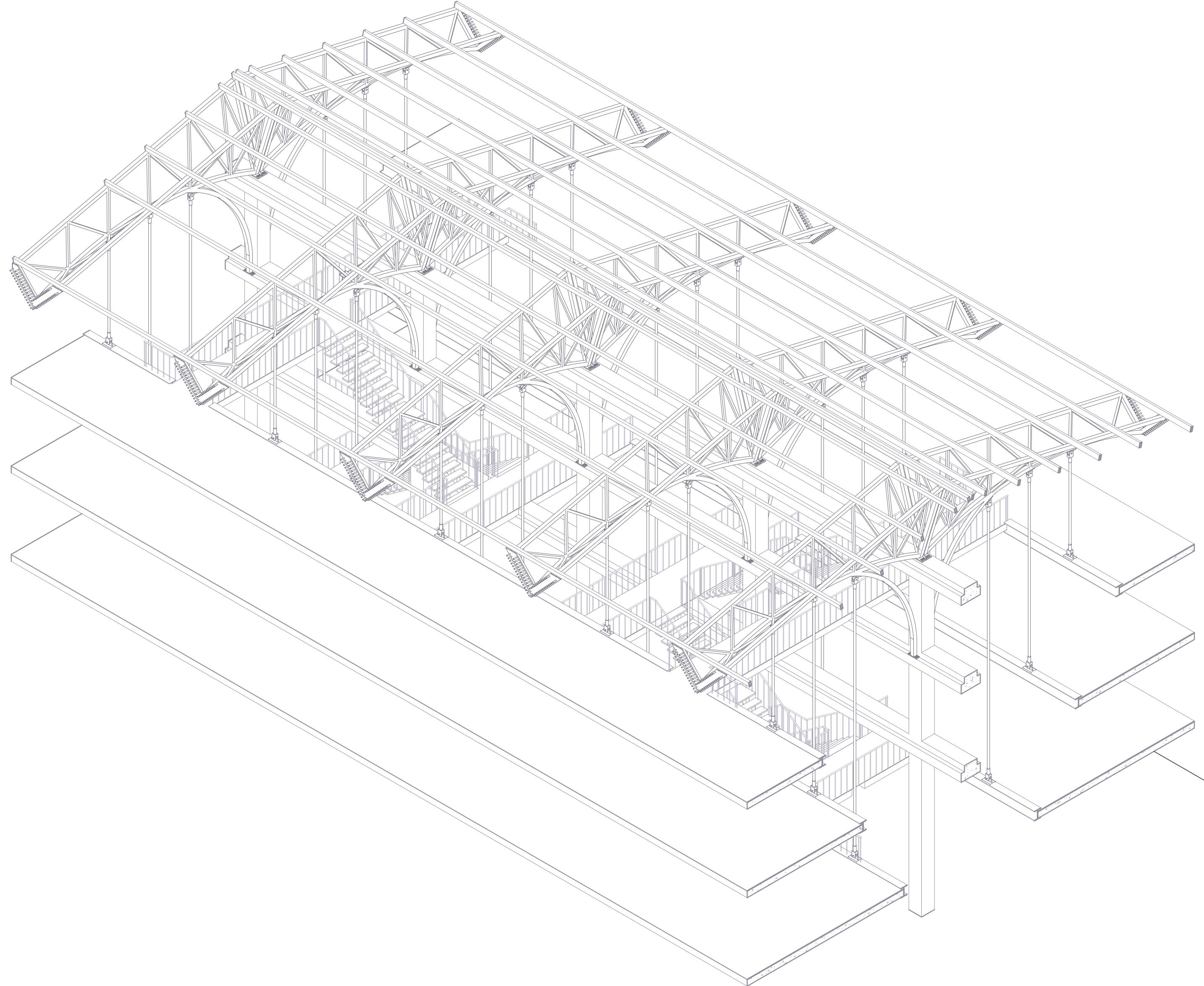
Systems - living machine: ecological water treatment



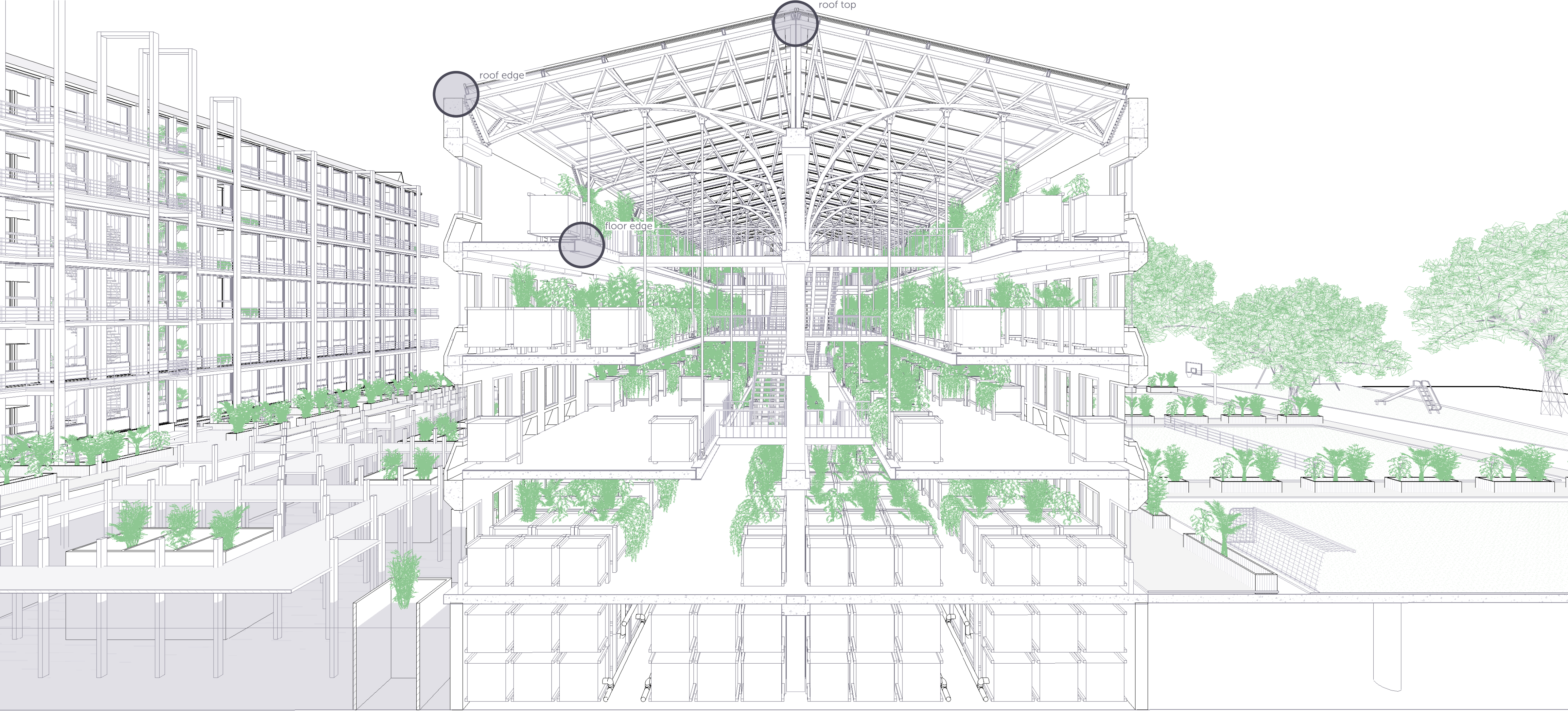
Systems - living machine



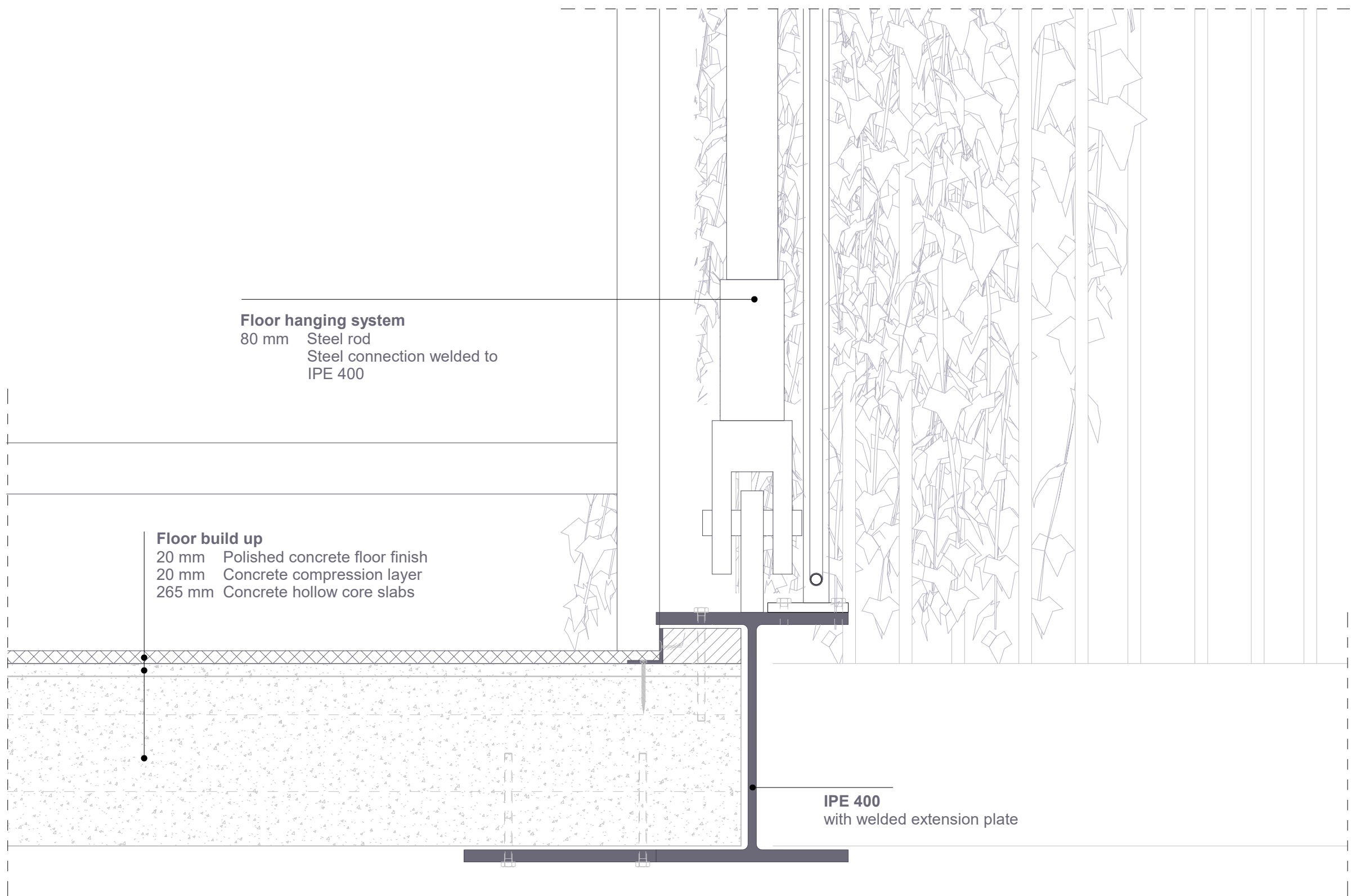
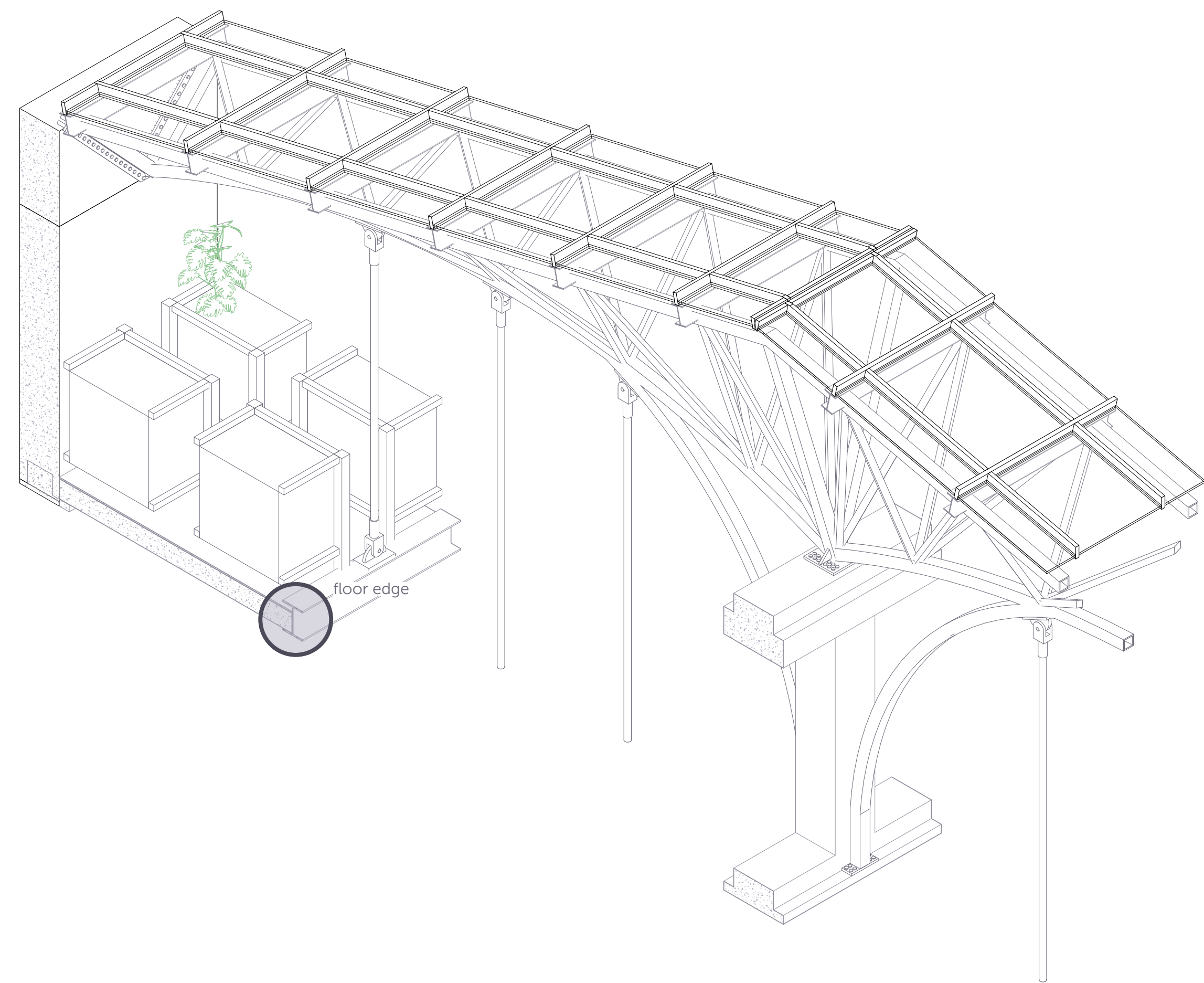
Systems - living machine



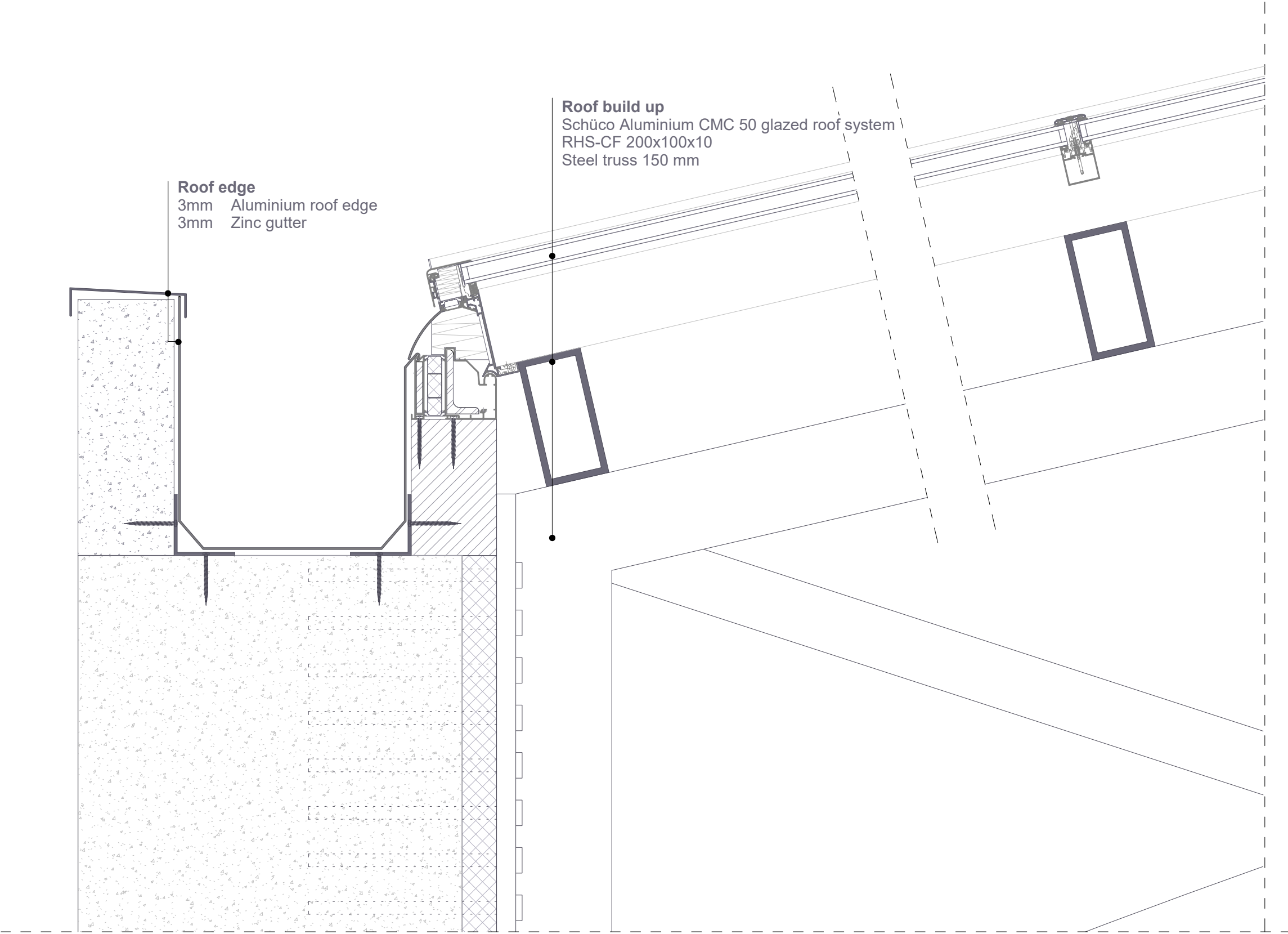
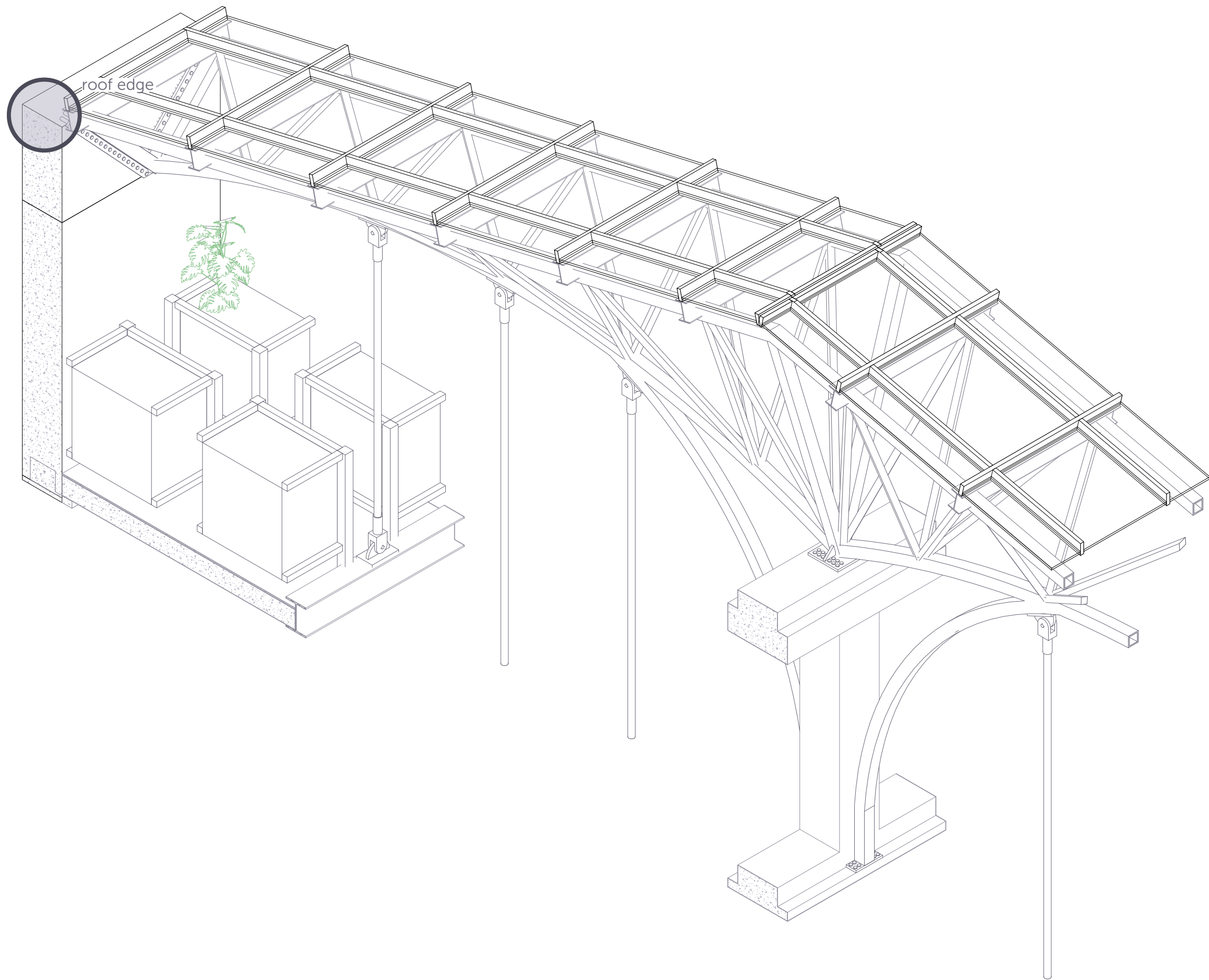
Systems - living machine



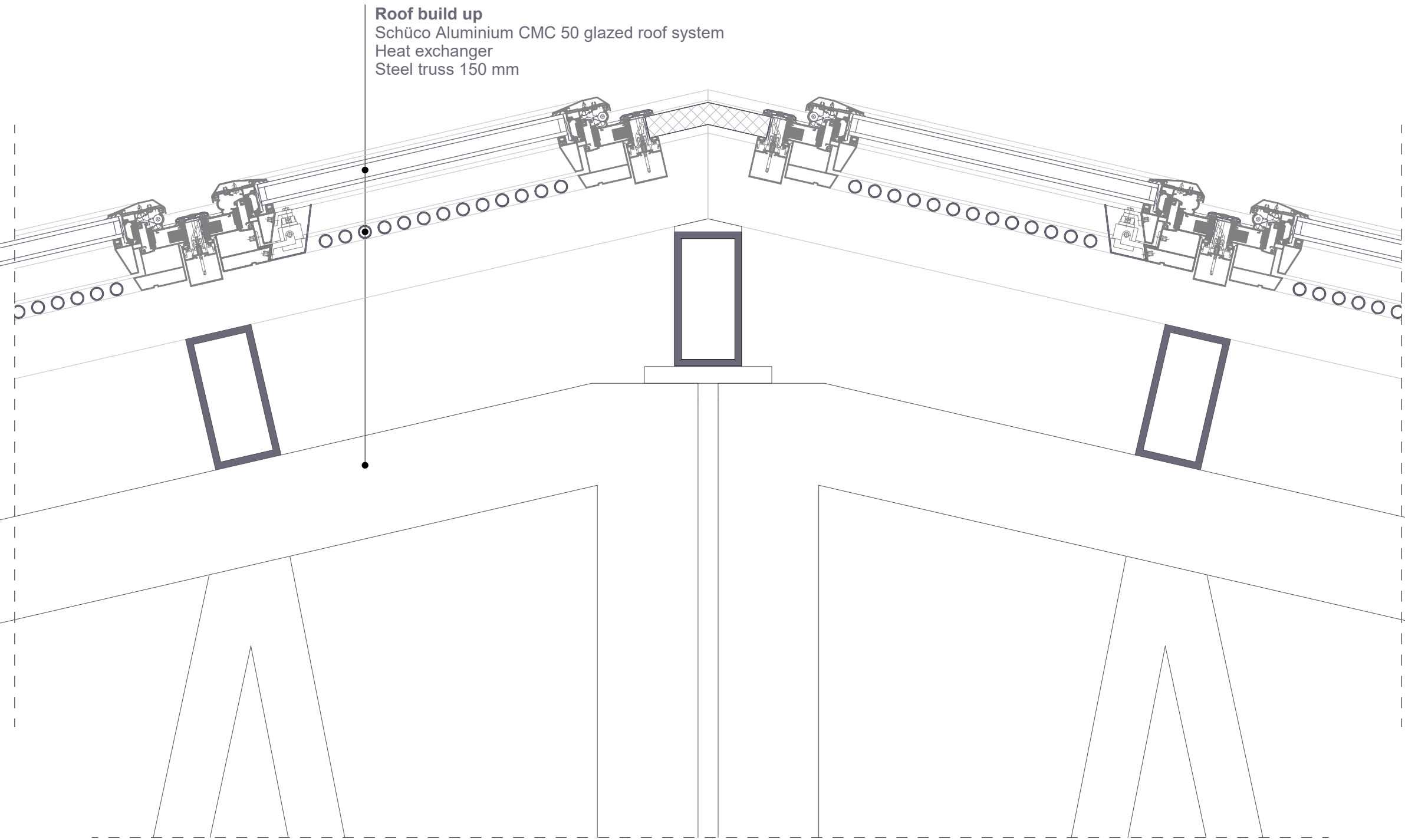
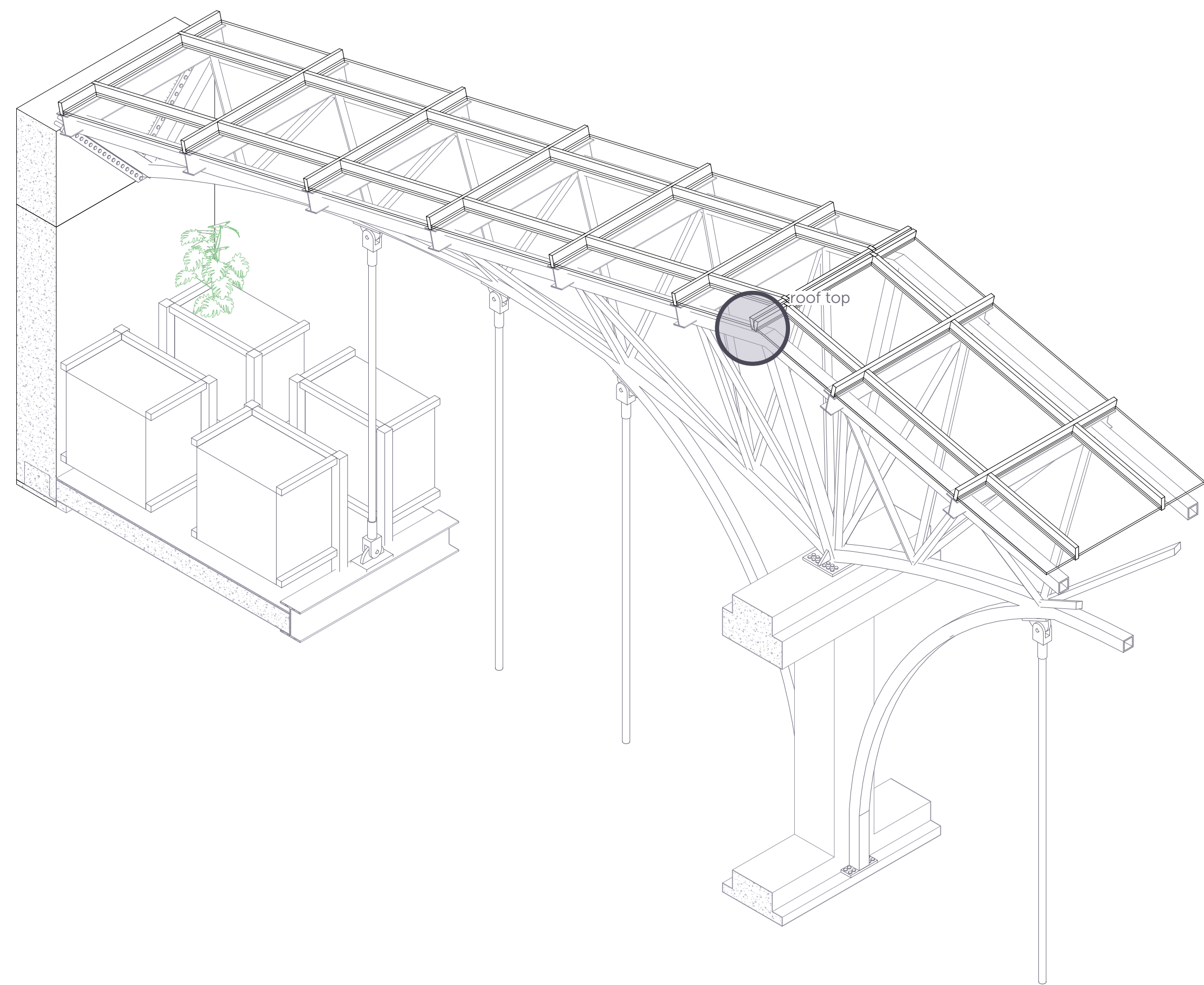
Systems - living machine



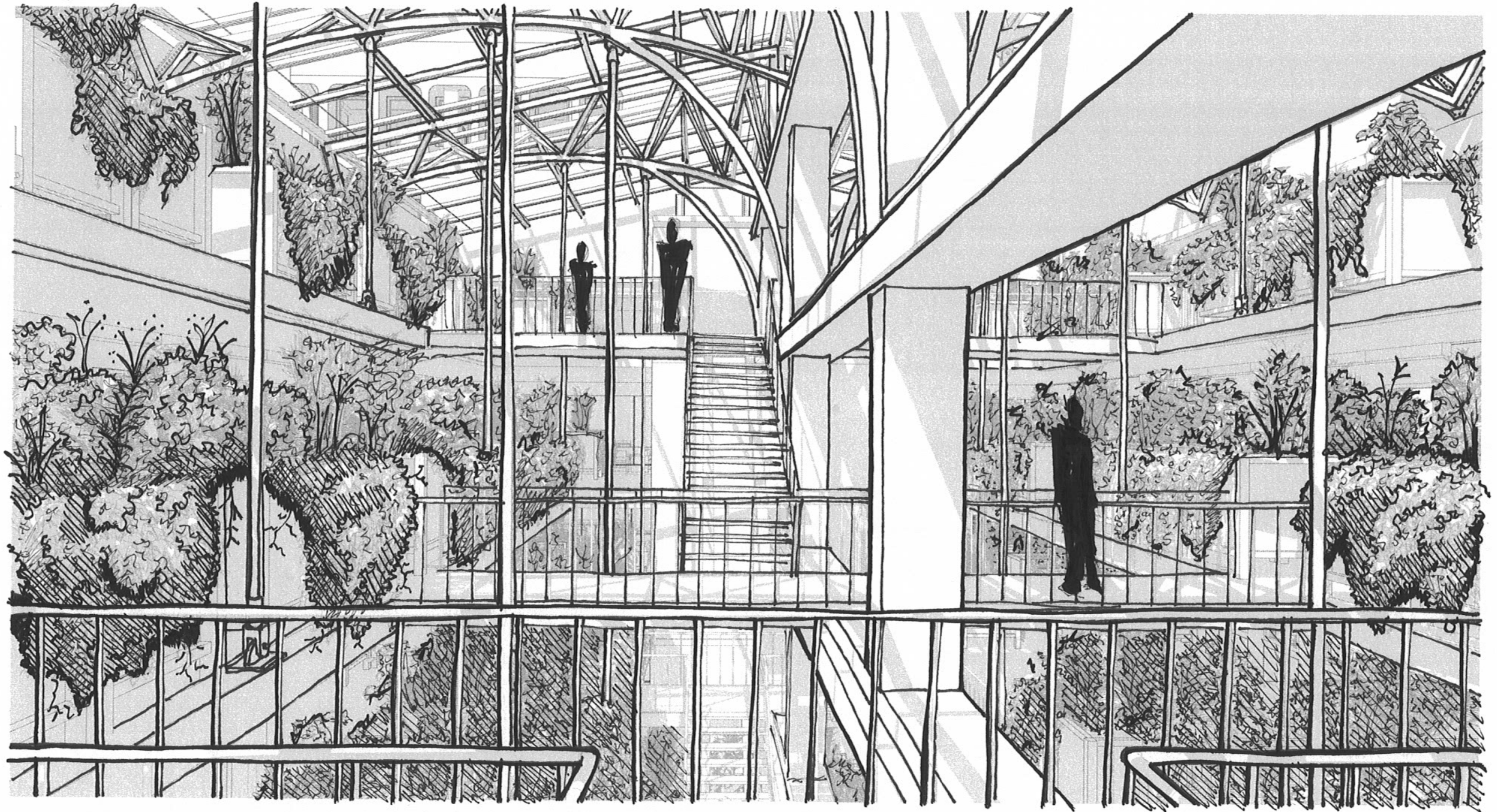
Systems - living machine



Systems - living machine



Living machine - impression



Conclusion + reflection

How will we live together? - rethinking our relationships

01 Humans + Nature

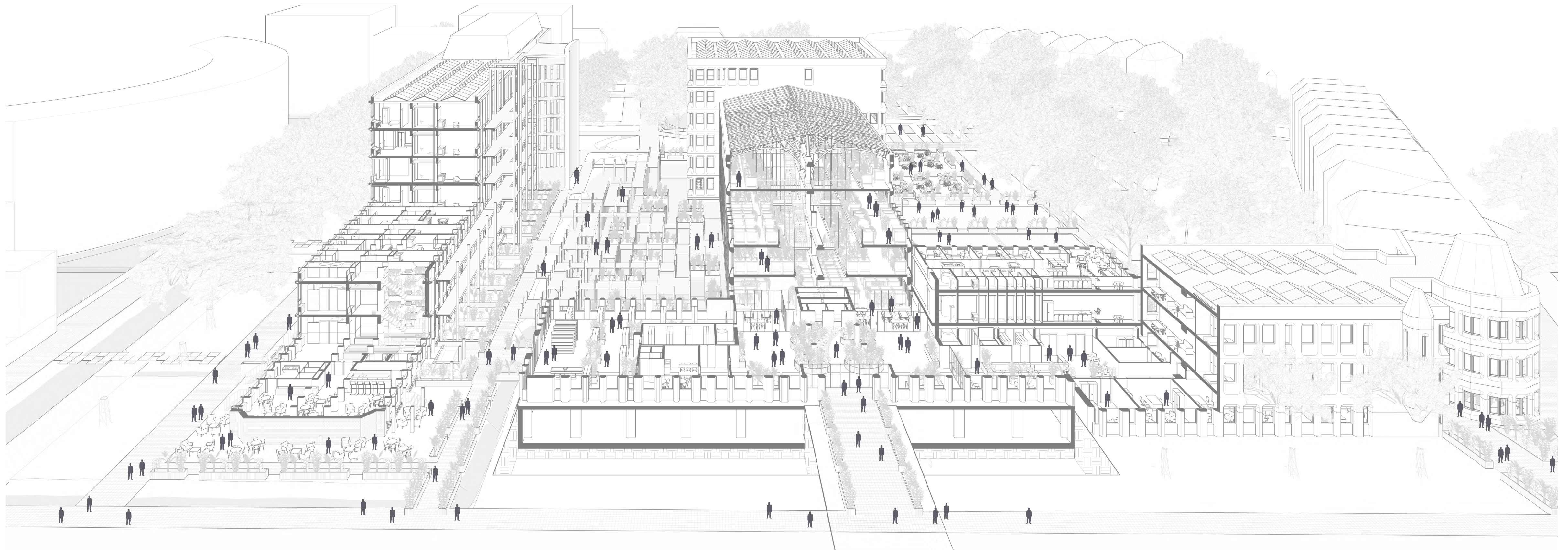
closing cycles
connect to green blue structure
creating awareness

02 Humans + Humans

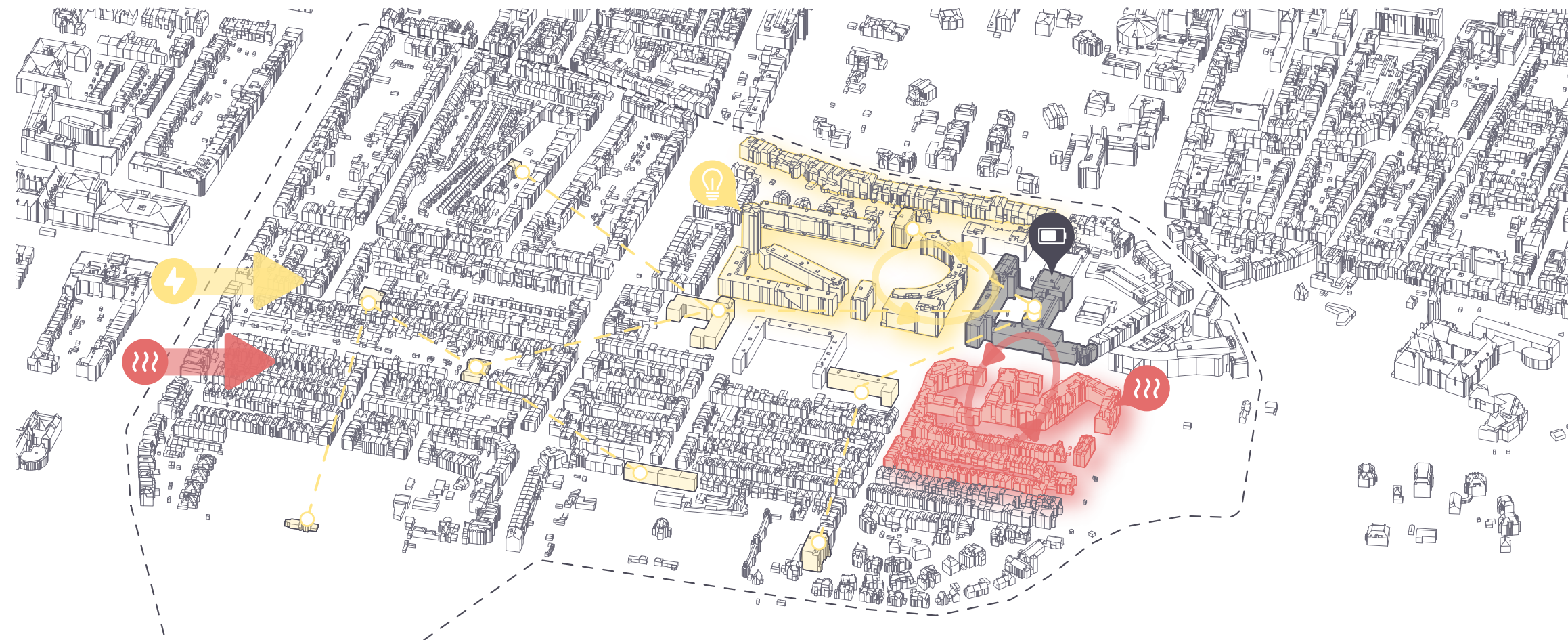
social interaction
healthy living
growing within building

03 Humans + Building

improving the values of building
positive impact on surroundings



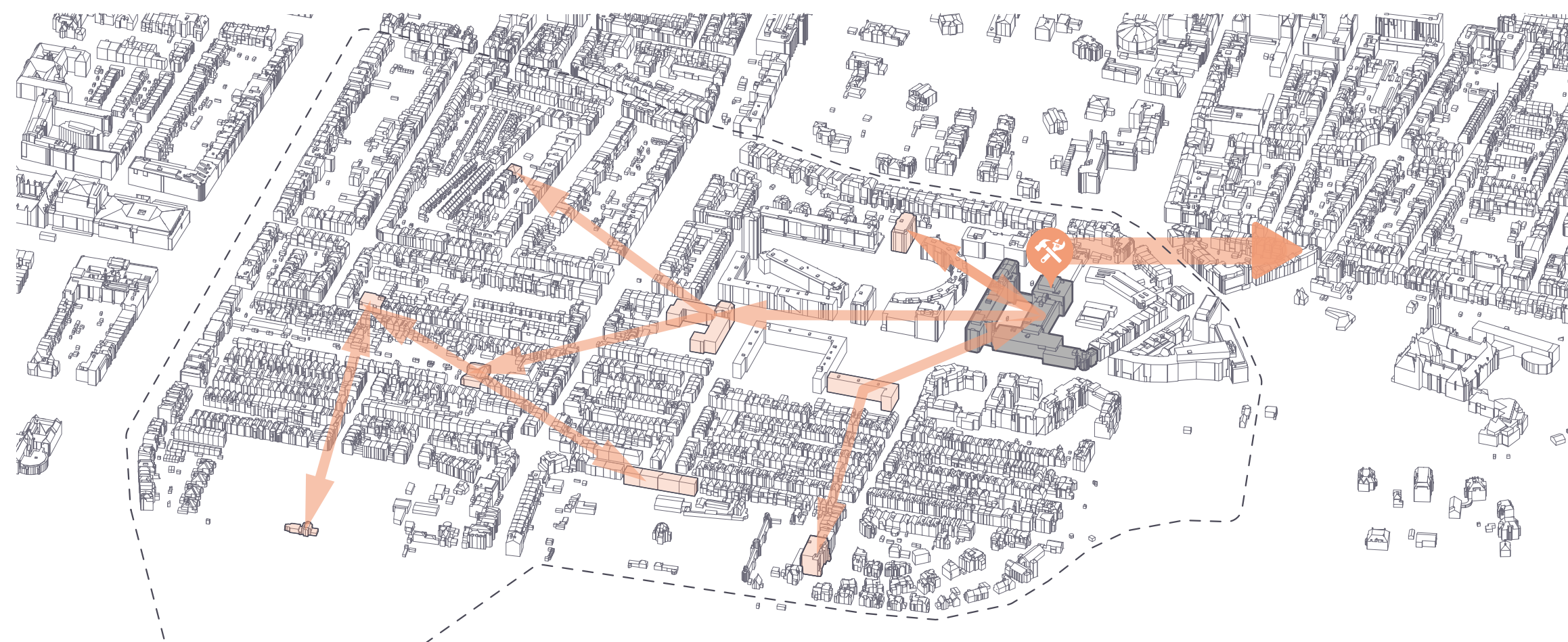
01 Humans + Nature - closing of cycles & creation of awareness



Energy cycle - to be closed on larger **district scale** to create a better balance between production and usage



Biotic cycle - important to take into account on **every scale** from the smaller building scale to the neighborhood scale to the district scale

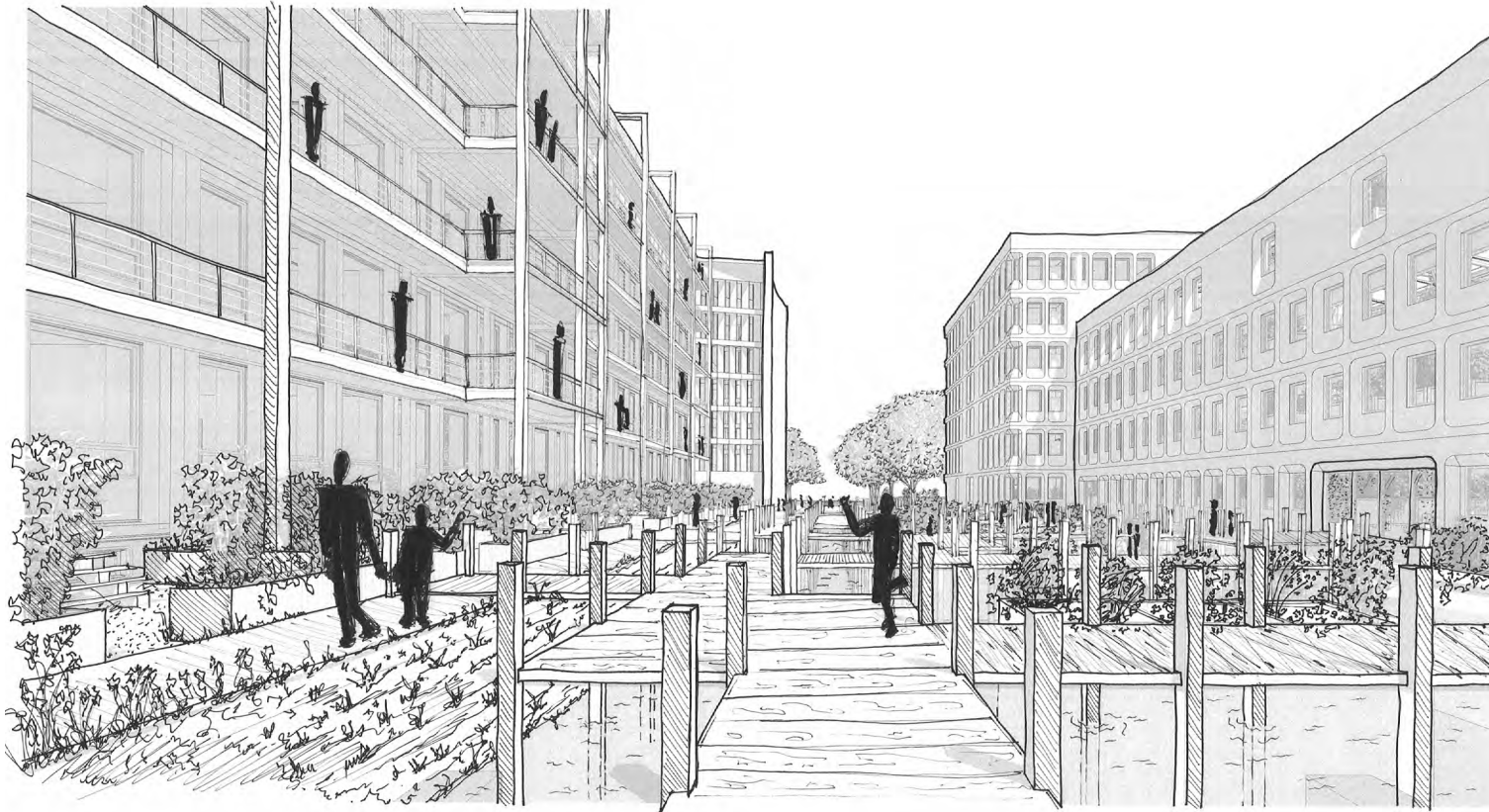


Material cycle - construction material cycle to be closed on larger **national scale**
household material cycle to be closed on **neighborhood scale**

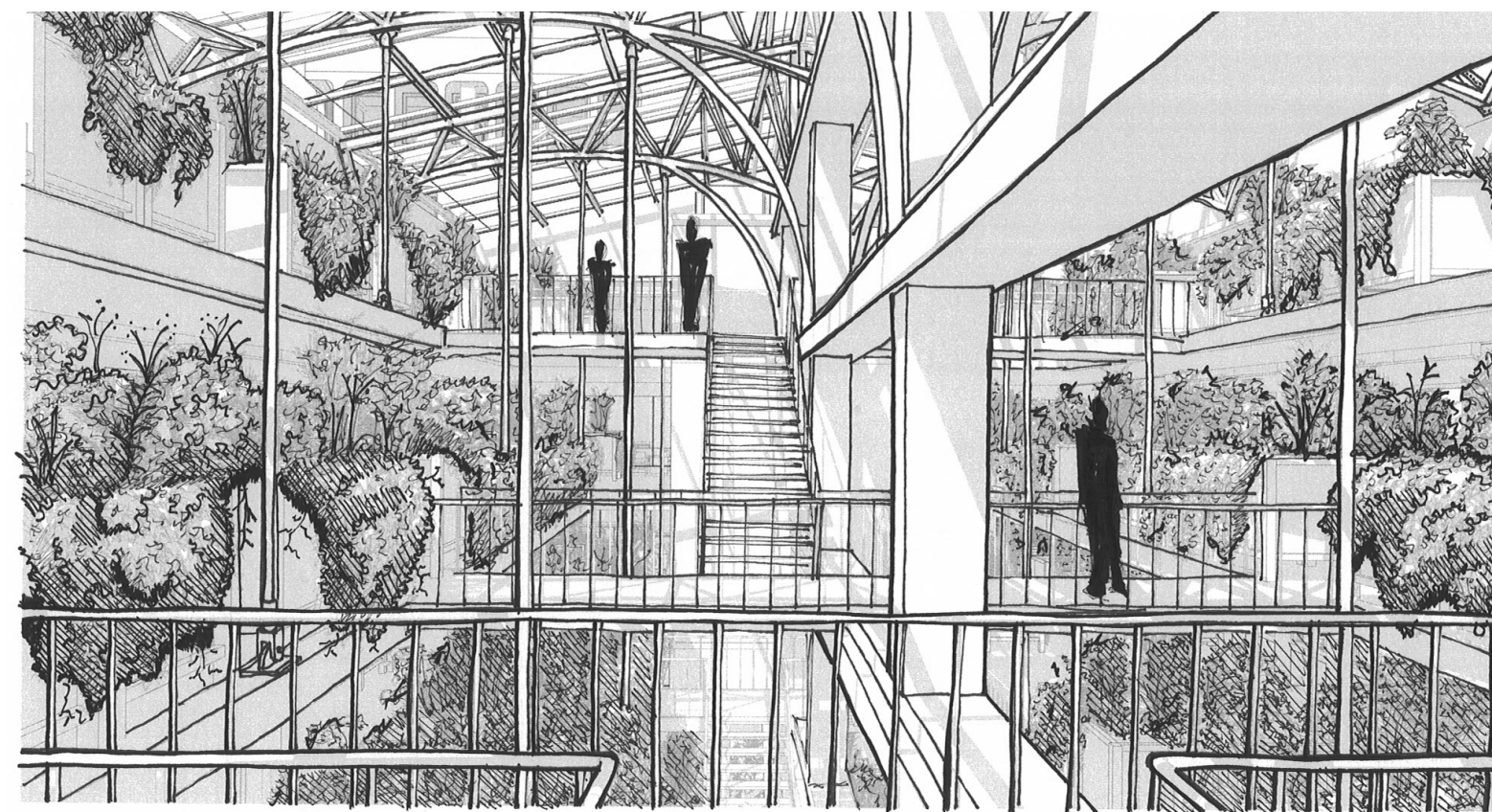
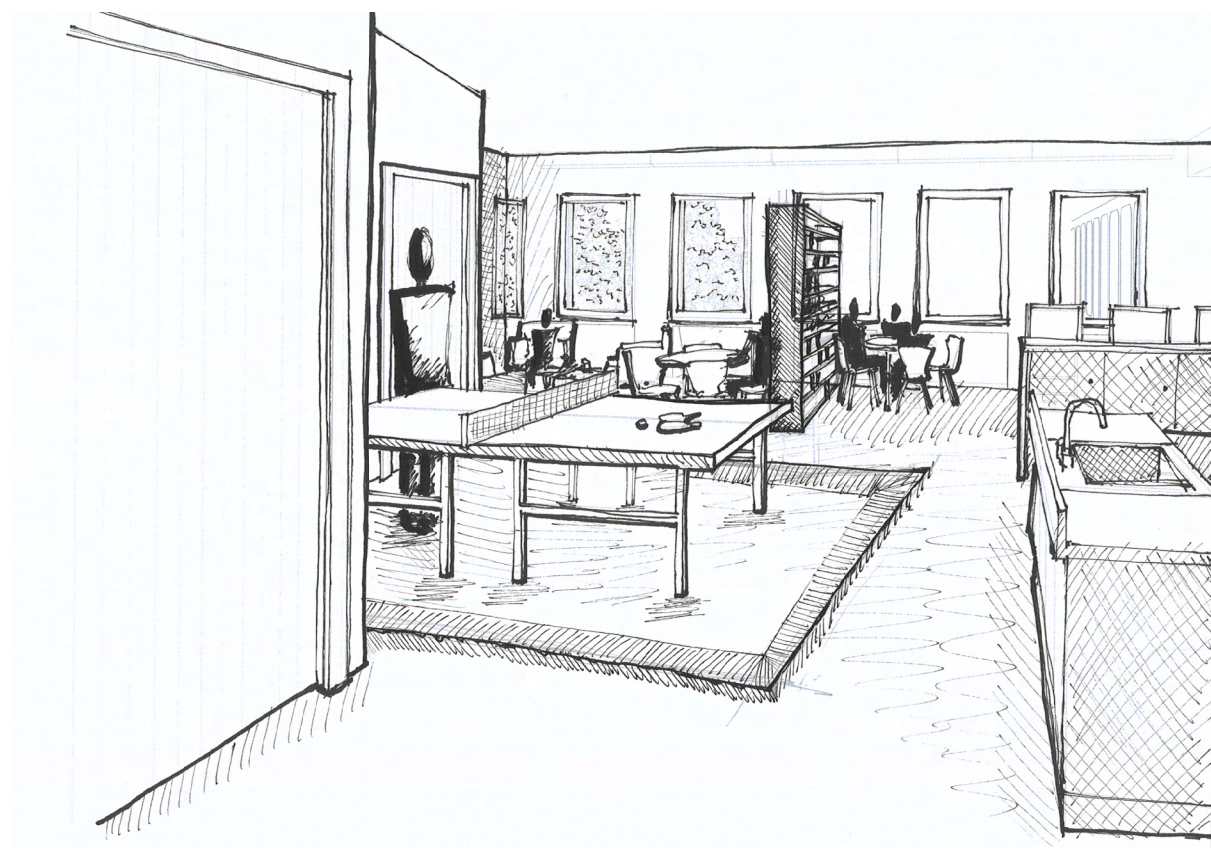


Water cycle - to be closed on **neighborhood scale** to create awareness, improve buffer capacity, and decrease pressure on national water infrastructure

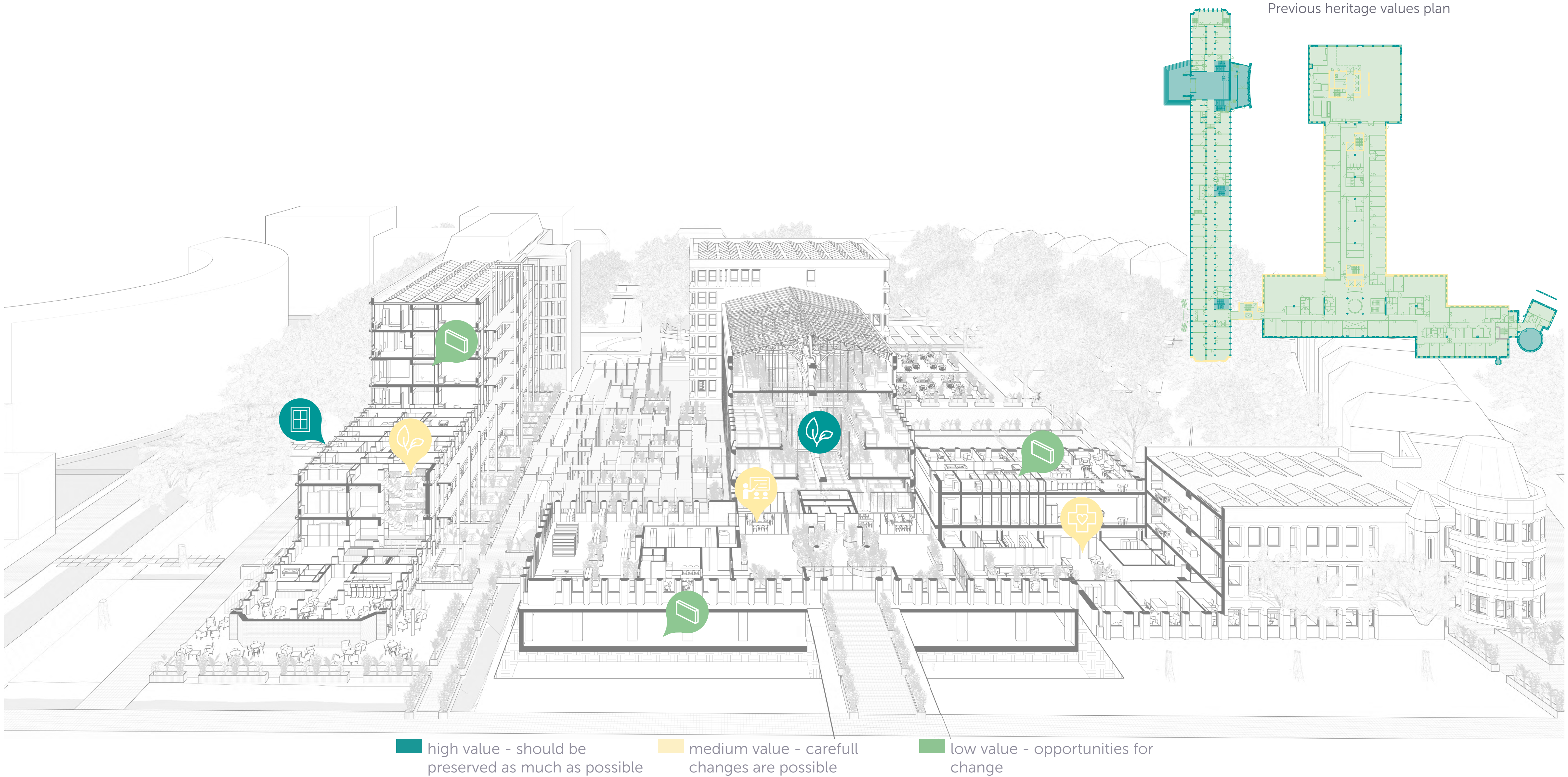
02 Humans + Humans - human experience & creation of community

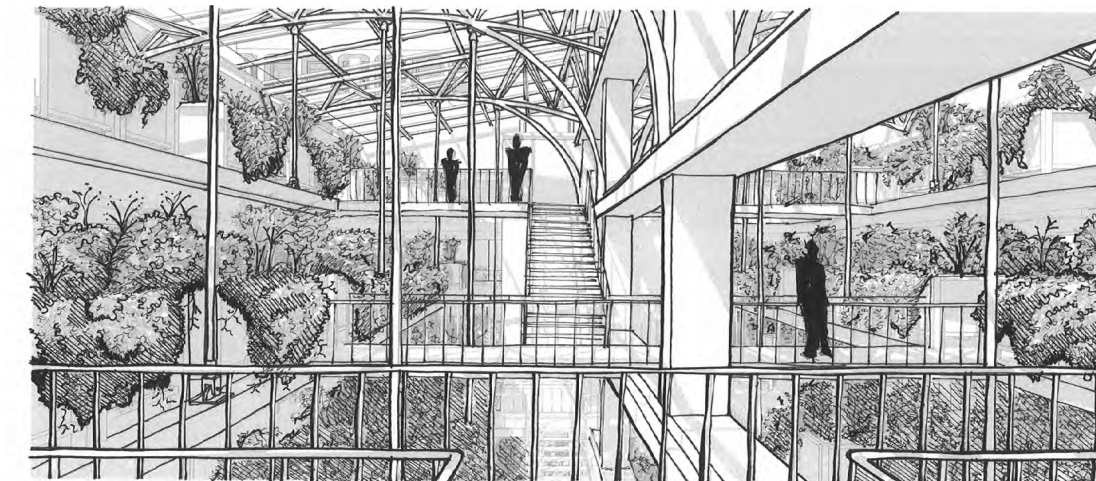
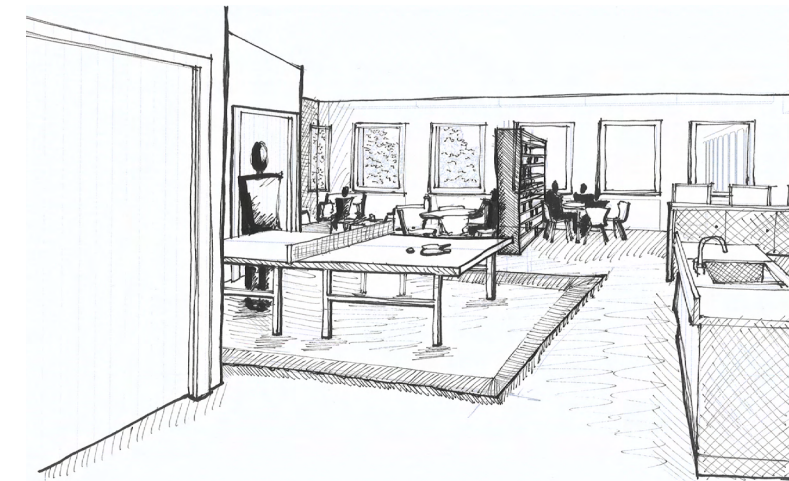
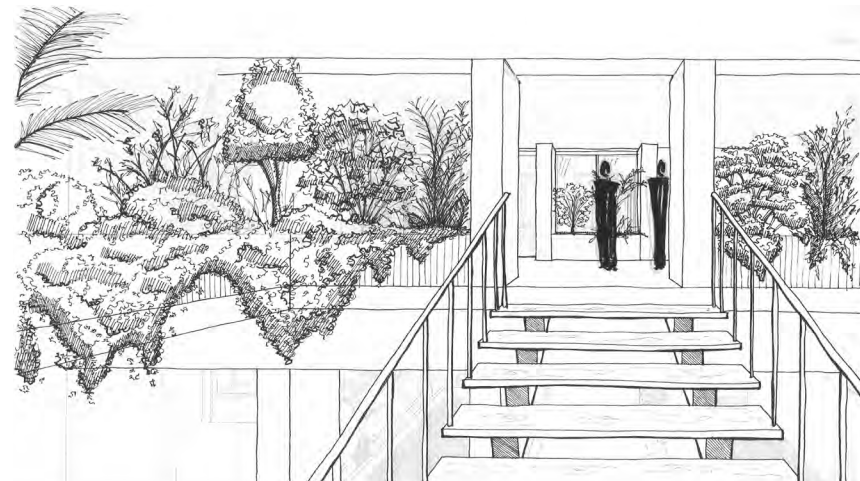


Balance between **public**, **collective**, and **private** spaces in relation with **nature**, stimulating **social interaction** and **healthy living**, while allowing **personal growth** within the building



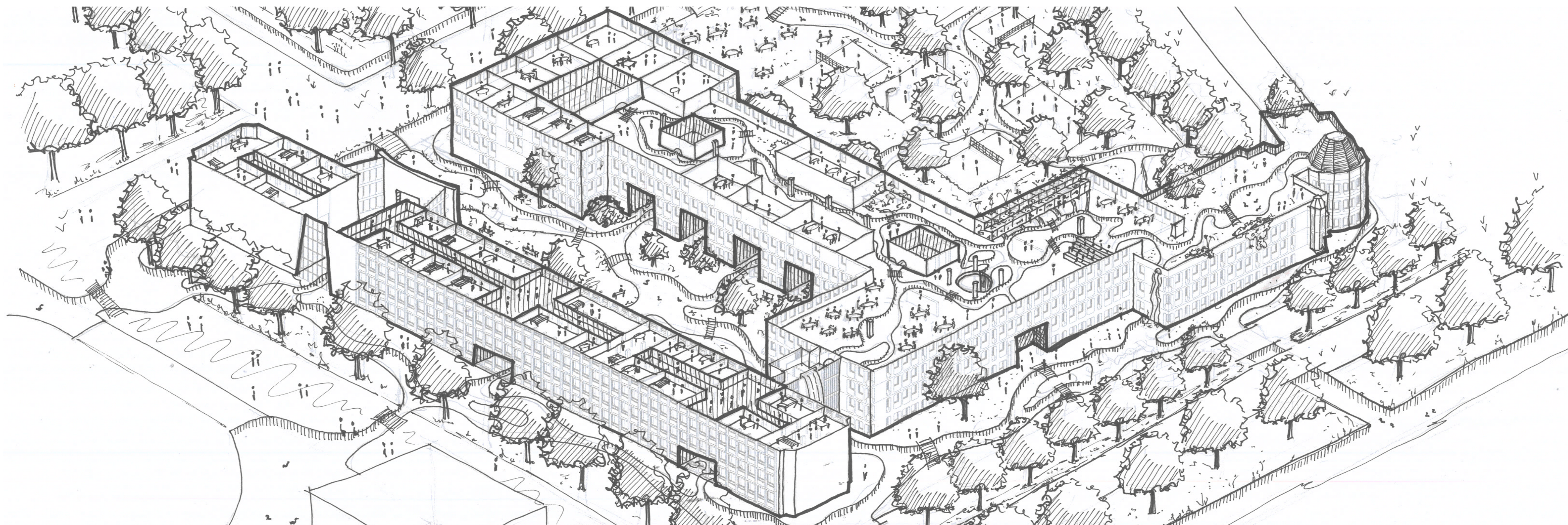
03 Humans + Buildings - enhance existing values & creation of new values





How will we live together?

a strategy to transform vacant heritage into cyclifiers, buildings that have a positive impact on their environment by creating a way of living together in balance with nature, humans, and buildings



design proposal - floor plans

