AGE-FRIENDLY DESIGN FOR ELDERLY IN THE TARWEWIJK, ROTTERDAM



ARCHITECTURE GRADUATION STUDIO

TU DELFT BOUWKUNDE MSC ARCHITECTURE, URBANISM AND BUILDING SCIENCES AR3AD110 - DESIGNING FOR HEALTH&CARE



AGING INDEPENDENTLY IN TARWEWIJK



RESEARCH QUESTION

How can the living environment in, for instance, Tarwewijk be improved to enable elderly people to live independently at home for longer?

SUB QUESTIONS

- 1. What is the current housing situation for elderly people in Tarwewijk?
- 2. What are the needs of the elderly regarding their living environment?
- 3. Which elements from existing age-friendly reference projects can be applied to the living environment in Tarwewijk?



FIELDWORK LOCATIONS



FIELDWORK LOCATIONS



Note. This image is retrieved from Google LLC (2022)

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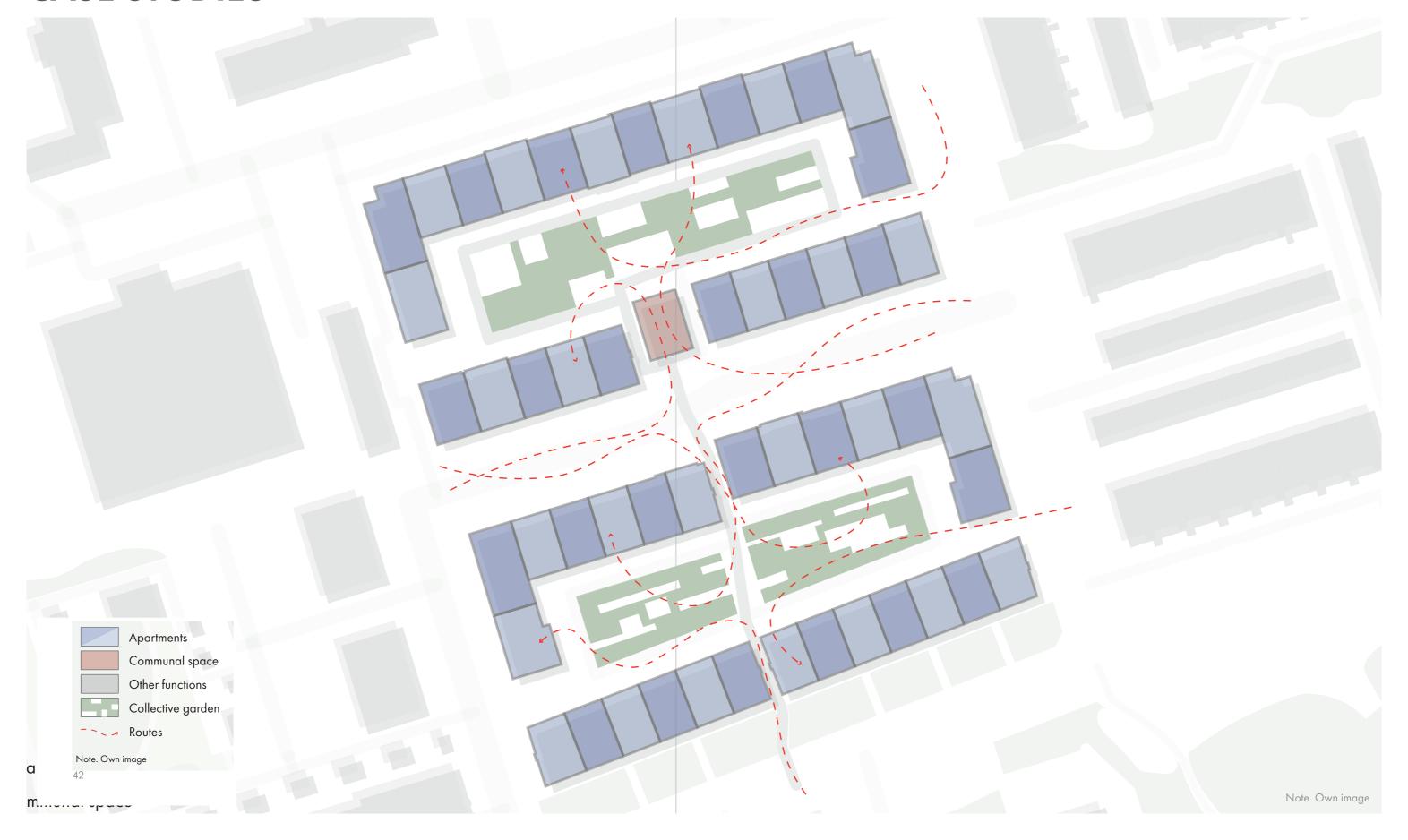
CASE STUDIES



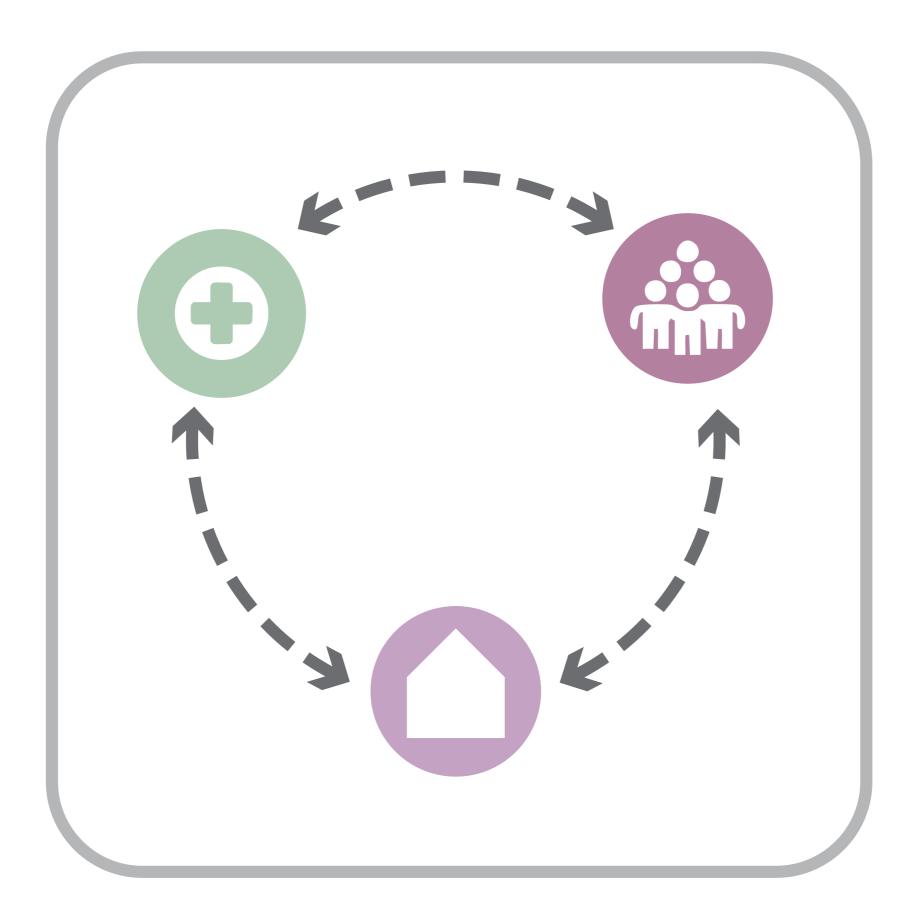




CASE STUDIES



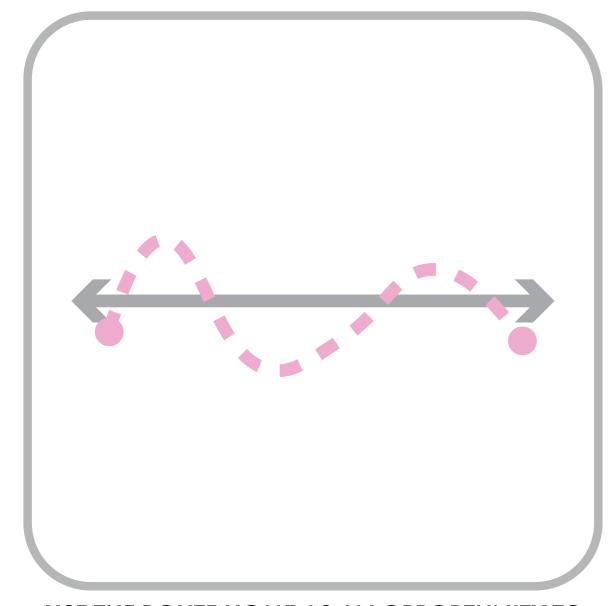
THREE PILLARS: CARE, COMMUNITY, AND BUILDING



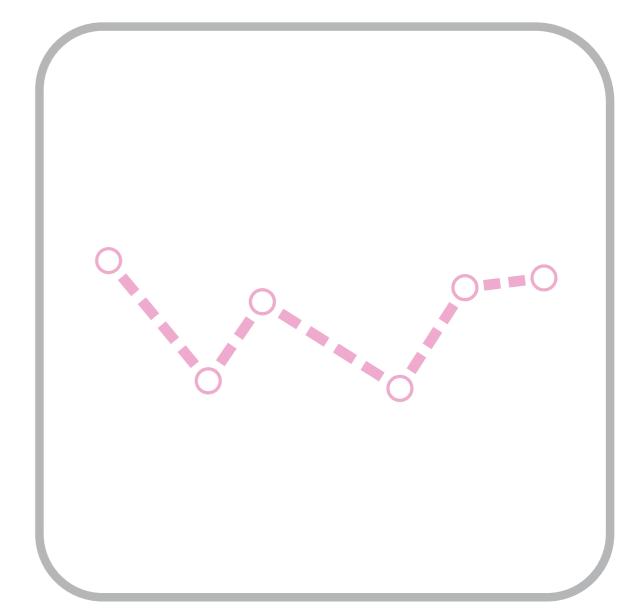
Three pillars: care, community, and building

Note. Own image

ROUTE



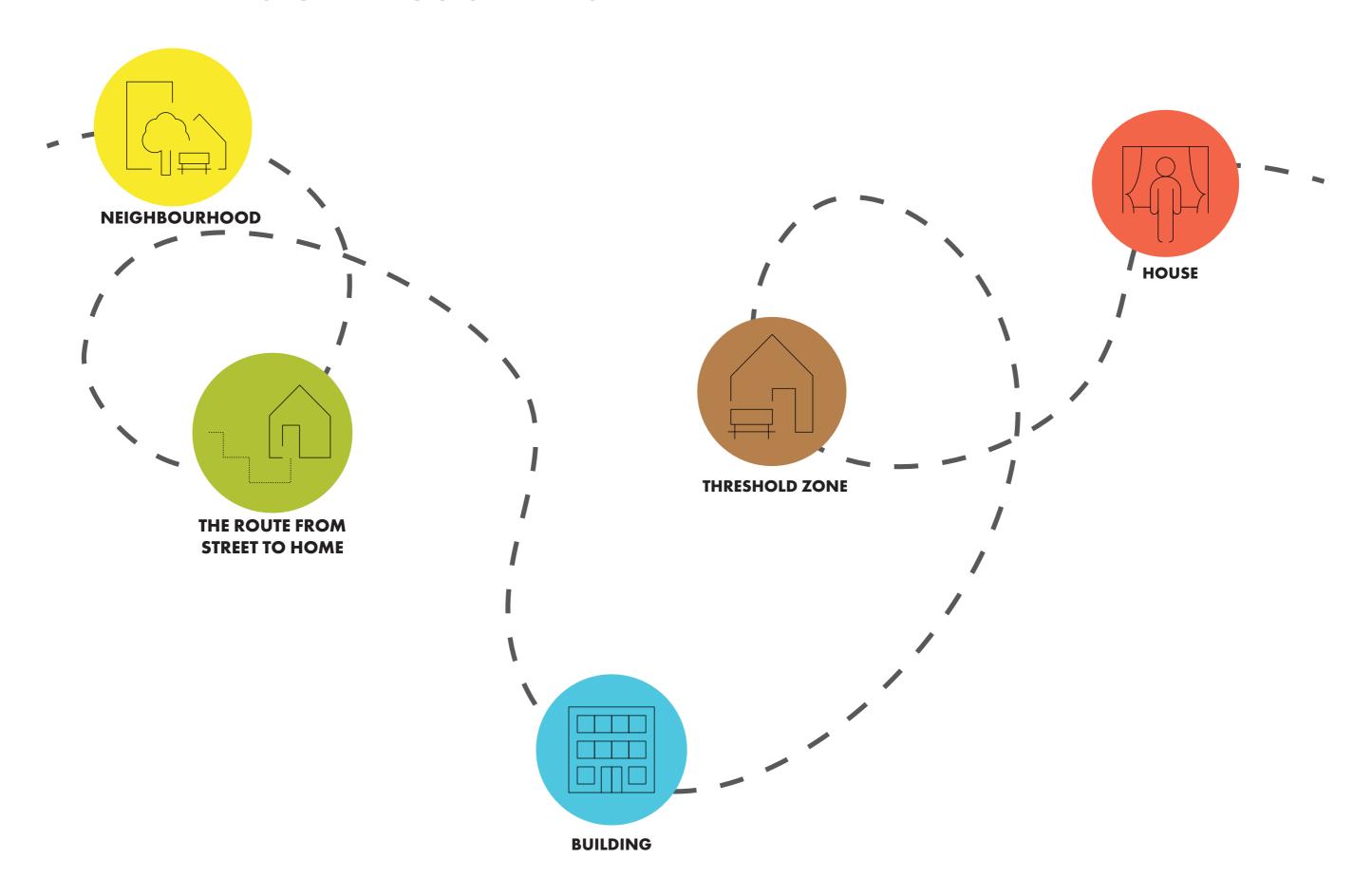
USE THE ROUTE HOME AS AN OPPORTUNITY TO MEET EACH OTHER. ALONG THE WAY, PROVIDE PLACES TO PAUSE AND STAY. SLOWING DOWN IS MORE IMPORTANT THAN SPEED.



PROVIDE PLACES TO STAY ALONG THE ROUTE SO THAT PEOPLE CAN MEET EACH OTHER.

Note. Own image

DIFFERENT LEVELS OF ENCOUNTERS



Note. This image is retrieved and adapted from Mantingh and Duivenvoorden (2021)

DESIGN PRINCIPLES



PROVIDE KEY AMENITIES LIKE GENERAL PRACTITIONERS, PHARMACIES, AND SUPERMARKETS WITHIN A 500-METRE WALKING DISTANCE.



ITS ENSURE SAFE AND ACCESSIBLE ROUTES TO KEY



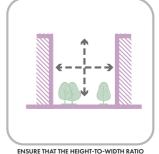
IN ADDITION TO HOUSING AND COMMUNITY
ELEMENTS, INTEGRATE
CARE SERVICES INTO THE LIVING
ENVIRONMENT. LEVERAGE EXISTING CARE
FACILITIES NEARBY FOR SMALLER-SCALE
PROJECTS OR INCLUDE ON-SITE CARE
SERVICES THAT ALSO SERVE THE SURROUNDING
COMMUNITY, NOTE THAT A



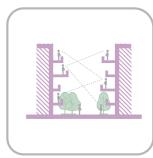
ENSURE THAT A SHOP, PHARMACY, AND GP ARE AVAILABLE WITHIN A 500M RADIUS FOR THE ELDERLY.



CREATE SMALL MEETING SPACES IN LOGICAL LOCATIONS WITHIN THE CITY WHERE ELDERLY CAN ENCOUNTER EACH OTHER



ENSURE THAT THE HEIGHT-TO-WIDTH RATIO REMAINS APPROPRIATE FOR THE HUMAN SCALE.



ENSURE THE CONNECTION IS MAINTAINED IN HIGH-RISE BUILDINGS, ALLOWING RESIDENTS TO CONTINUE SEEKING CONTACT WITH ONE



PROVIDE ACCESSIBLE OUTDOOR SPACES WITH WELL-MAINTAINED PATHS, KERBS, AND CROSSINGS, PAYING PARTICULAR ATTENTION TO RESIDENTS WITH MOBILITY JUNITAINONS, SUCH AS WHEELCHAIR OR MOBILITY SCOOTER USERS.



DESIGN HOMES THAT ACCOMMODATE DIVERSE CARE NEEDS, WITH FLEXIBLE LAYOUTS THAT CAN BE ADAPTED AS CARE REQUIREMENTS CHANGE, ENABLING RESIDENTS TO AVOID RELOCATING.



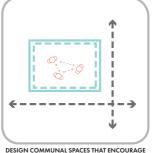
ENCOURAGE THE USE OF SHARED FACILITIES, SUCH AS COMMUNAL ROOMS OR GARDENS, TO ACTIVELY INVOLVE RESIDENTS IN THE COMMUNITY. ENSURE THESE SPACES ARE WELCOMING AND ACCESSIBLE.



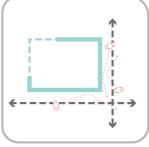
ENSURE A DIVERSE RESIDENT GROUP WITH A BALANCED MIX OF AGE GROUPS. DURING A HOUSING SHORTAGE FOR OLDER ADULTS, CAREFULLY MONITOR THE ALLOCATION TO MAXIMISE AVAILABILITY FOR SENIORS.



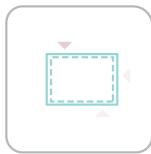
ENSURE CIRCULATION ROUTES RELY ON LOW-TECH SOLUTIONS; DO NOT SOLELY DEPEND ON LIFTS, CONSIDERING THE POSSIBILITY OF MALFUNCTIONS.



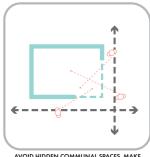
ESIGN COMMUNAL SPACES THAT ENCOURAGE SPONTANEOUS MEETINGS, SUCH AS SEATING AREAS IN HALLWAYS, GARDENS, AND OTHER CENTRAL GATHERING PLACES



AVOID HIDDEN COMMUNAL SPACES. MAKE COMMUNAL SPACES AS VISIBLE AS POSSIBLE



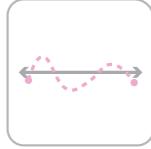
AVOID DESIGNS THAT LIMIT SOCIAL INTERACTION, SUCH AS SEPARATE ENTRANCES



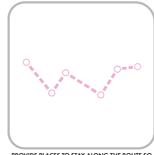
AVOID HIDDEN COMMUNAL SPACES, MAKE



CREATE PATHWAYS THAT NATURALLY
ENCOURAGE ENCOUNTERS
AMONG RESIDENTS, FOSTERING
SPONTANEOUS INTERACTIONS. AVOID
SEGREGATED ROUTES TO INDIVIDUAL HOMES.



USE THE ROUTE HOME AS AN OPPORTUNITY TO MEET EACH OTHER. ALONG THE WAY, PROVIDE PLACES TO PAUSE AND STAY. SLOWING DOWN IS MORE IMPORTANT THAN SPEED.



PROVIDE PLACES TO STAY ALONG THE ROUTE SO THAT PEOPLE CAN MEET EACH OTHER.



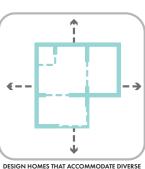
CREATE OPPORTUNITIES FOR RESIDENT PARTICIPATION, SUCH AS INVOLVING THEM IN ORGANISING ACTIVITIES AND MANAGING THE BUILDING. MANY OLDER ADULTS REMAIN ACTIVE WELL INTO LATER LIFE.



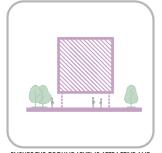
PROVIDE OPPORTUNITIES FOR RESIDENTS TO MAINTAIN AND EXPAND
THEIR SOCIAL NETWORKS THROUGH SHARED ACTIVITIES AND EVENTS. THESE NETWORKS MAY CONSIST OF CASUAL ACQUAINTANCES RATHER THAN CLOSE FRIENDS, AS WEAK SOCIAL TIES ARE OFTEN HIGHLY VALUABLE.



ESTABLISH CLEAR COMMUNICATION CHANNELS
BETWEEN RESIDENTS
AND MANAGERS, ENSURING RESIDENTS ARE
ACTIVELY LISTENED TO AND
RECEIVE PROMPT RESPONSES TO THEIR
REQUESTS.



DESIGN HOMES THAT ACCOMMODATE DIVERSE CARE NEEDS, WITH FLEXIBLE LAYOUTS THAT CAN BE ADAPTED AS CARE REQUIREMENTS CHANGE, ENABLING RESIDENTS TO AVOID RELOCATING.



ENSURE THE GROUND LEVEL IS ATTRACTIVE AND INVITING, AS PEOPLE LOOK AHEAD RATHER THAN UP, SO FOCUS MOST ATTENTION AND DETAIL ON THE BASE



PAY ATTENTION TO THE TRANSITION FROM PUBLIC TO PRIVATE, PARTICULARLY AT THE FRONT DOOR.



PAY ATTENTION TO THE TRANSITION FROM PUBLIC TO PRIVATE. CREATE A THRESHOLD ZONE THAT RESIDENTS CAN USE. THIS WILL LEAD TO MORE INTERACTIONS.



PAY ATTENTION TO THE TRANSITION FROM PUBLIC TO PRIVATE. CREATE A THRESHOLD ZONE THAT RESIDENTS CAN USE. THIS WILL LEAD TO MORE INTERACTIONS.



ENSURE A FLEXIBLE AND ADAPTABLE LAYOUT, SO THAT THE APARTMENT REMAINS SUITABLE IN THE EVENT OF CHANGING CARE NEEDS.



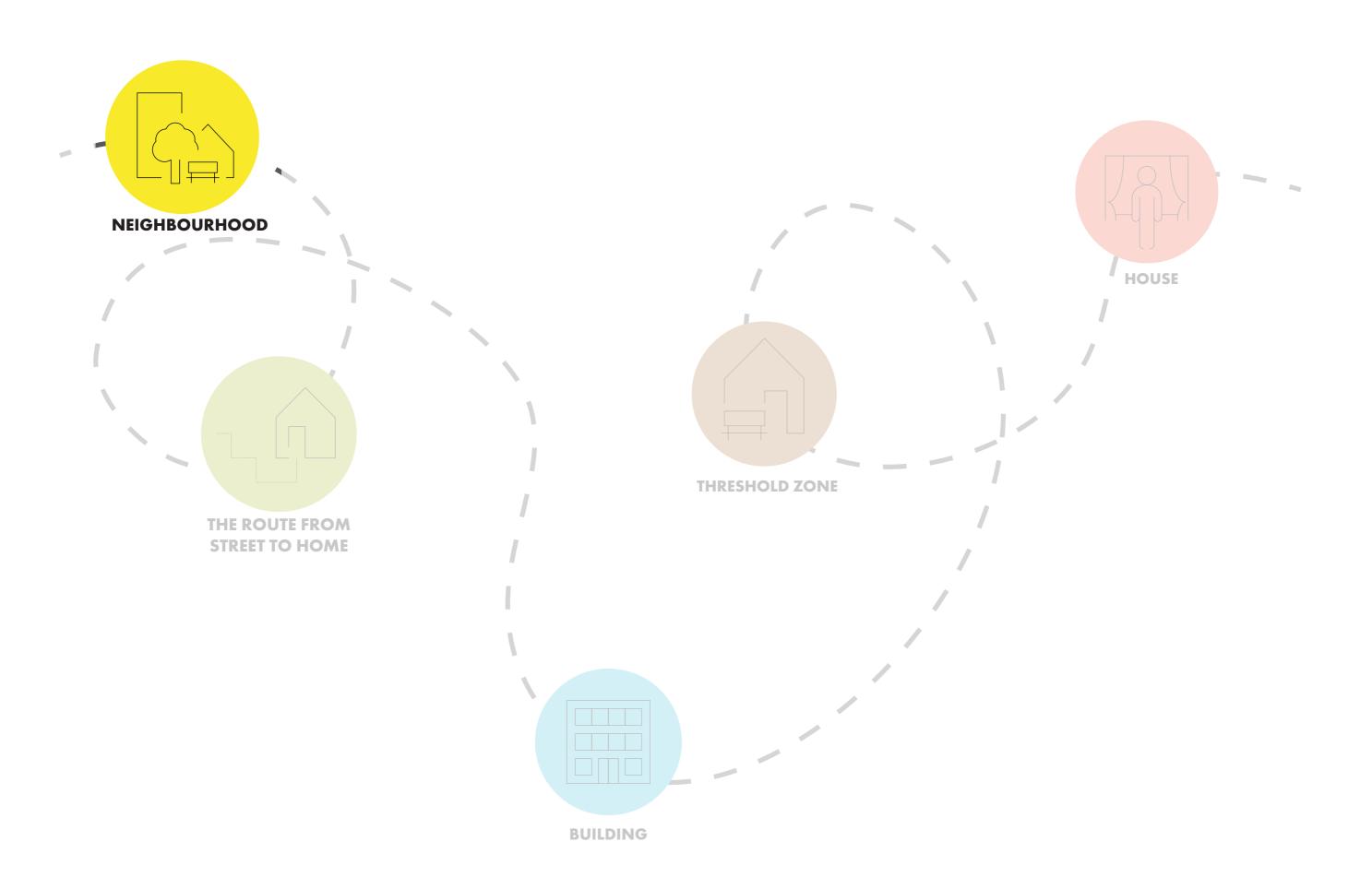
PAY ATTENTION TO THE TRANSITION FROM PUBLIC TO PRIVATE. CREATE A THRESHOLD ZONE THAT RESIDENTS CAN USE. THIS WILL LEAD TO MORE INTERACTIONS.



EMPLOY CLEANERS WHO ALSO SERVE AS SOCIAL CONTACTS FOR TWO OR MORE HOURS A WEEK. THESE SOCIAL CONTACTS CAN SUPPORT ELDERLY INDIVIDUALS.



IN A MULTICULTURAL GROUP OF RESIDENTS, TAKE NOTE OF LANGUAGE AND CULTURAL DIFFERENCES AMONG RESIDENTS AND PLACE MULTIPLE HOMOGENEOUS GROUPS TOGETHER.



SITE ANALYSIS

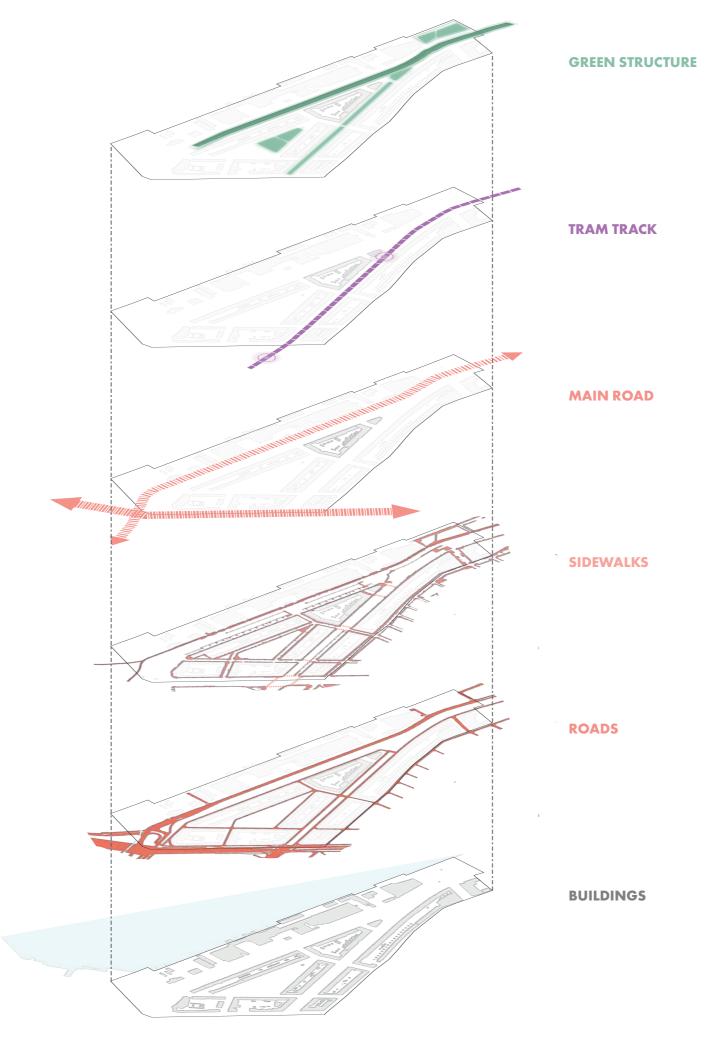


Note. Own image

CARE FACILITIES

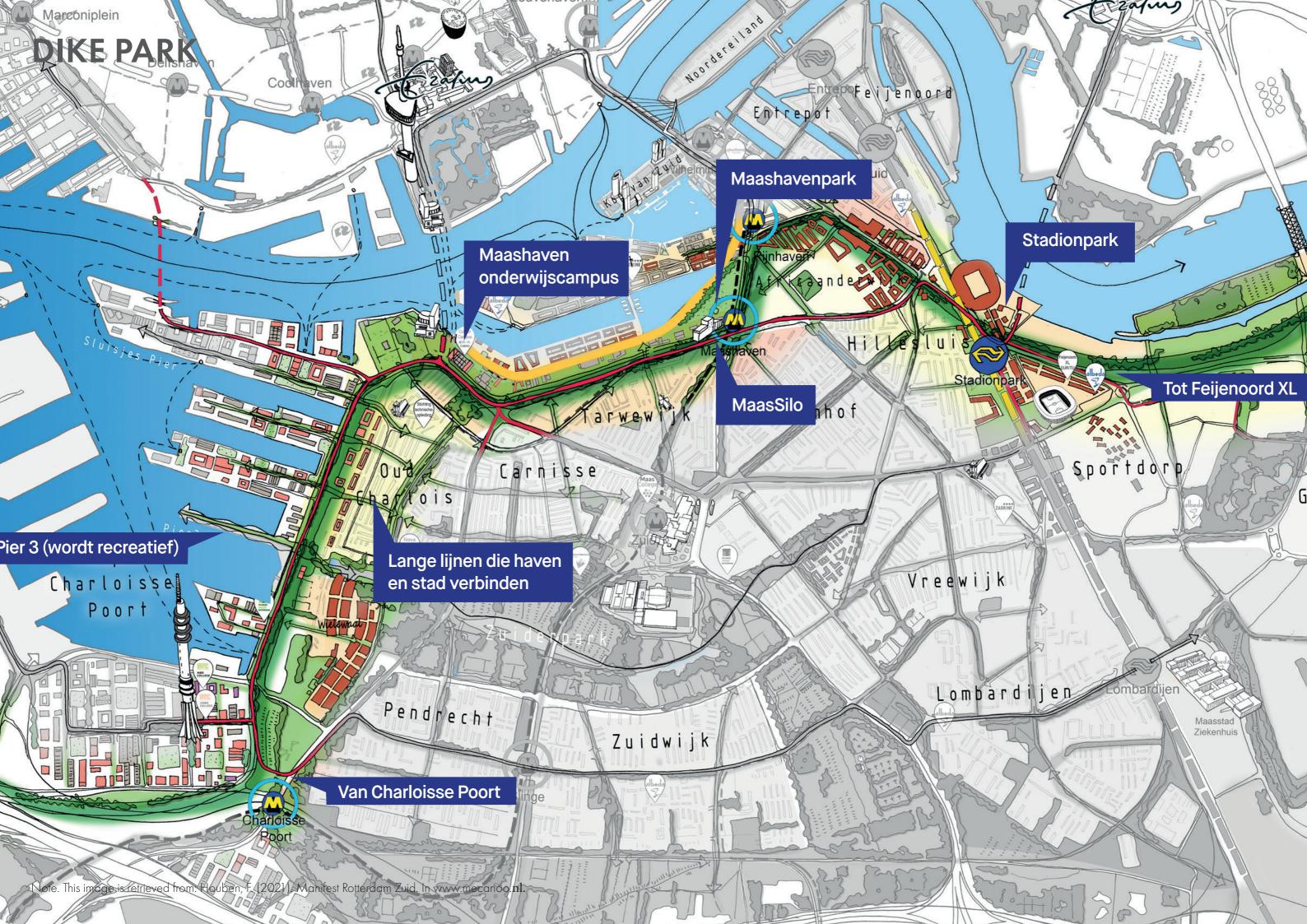


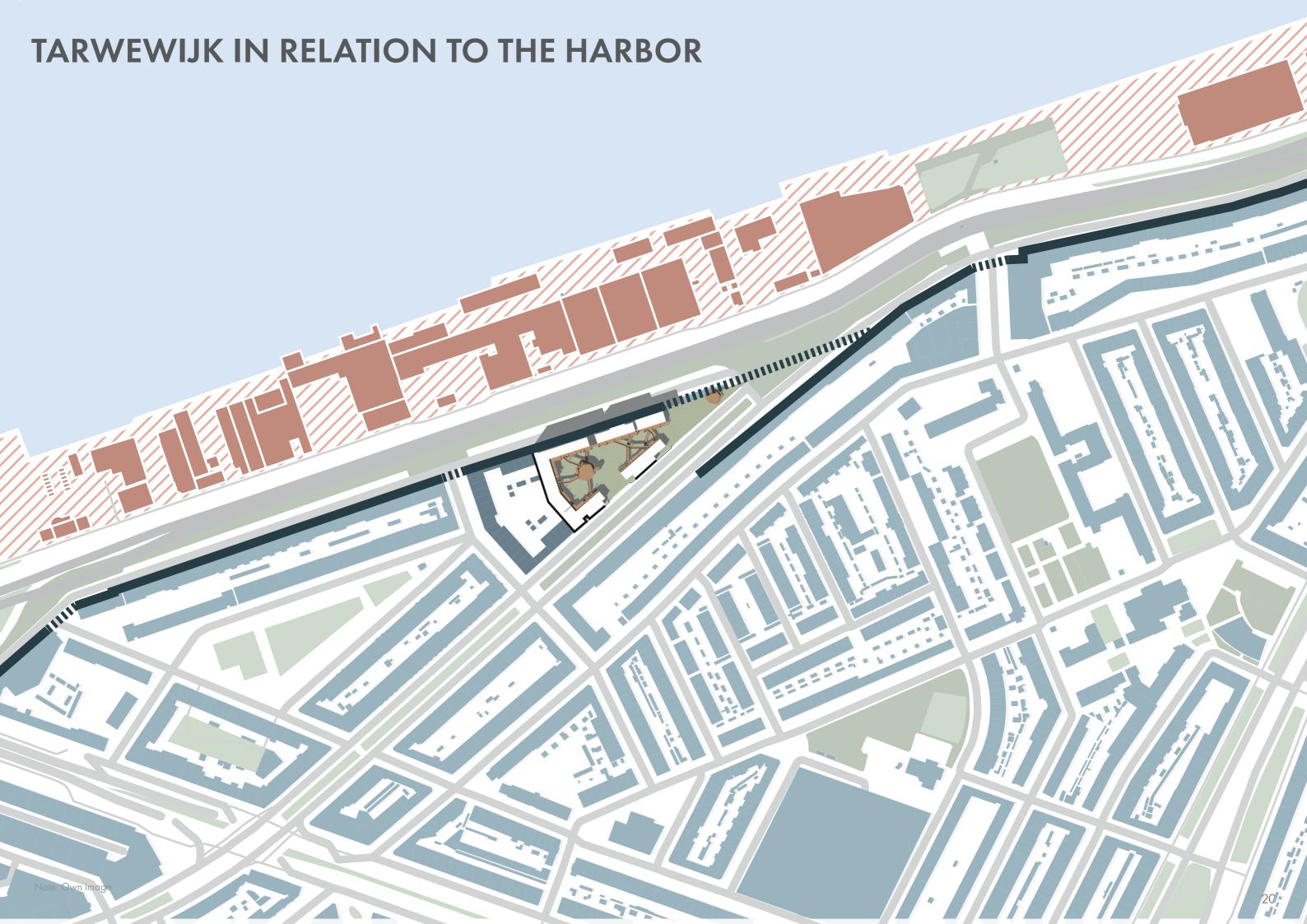
INFRASTRUCTURE





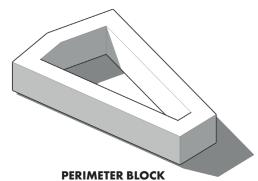








CONCEPT DESIGN

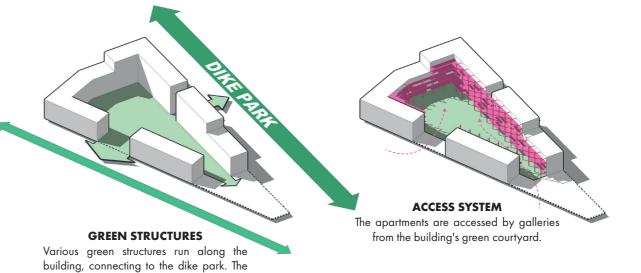


A standard perimeter block serves as the basis for the design.



NOISE PROTECTION

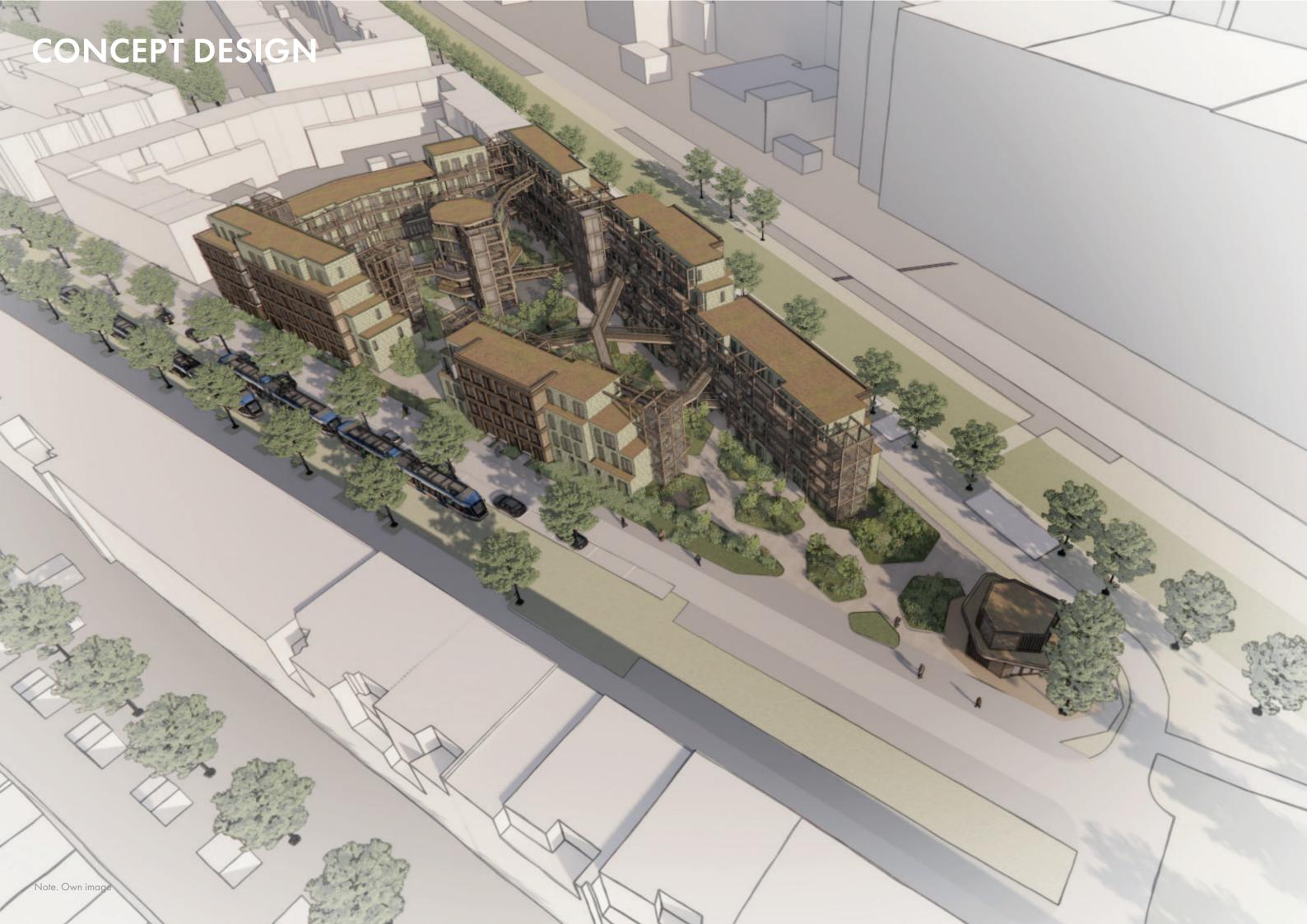
The building is located on the edge of the Tarwewijk district. On the western side of the building, there is a busy harbour and a high-traffic road. To shield the residences from noise pollution, the section near the harbour is elevated, while the volumes towards the neighbourhood are lowered.



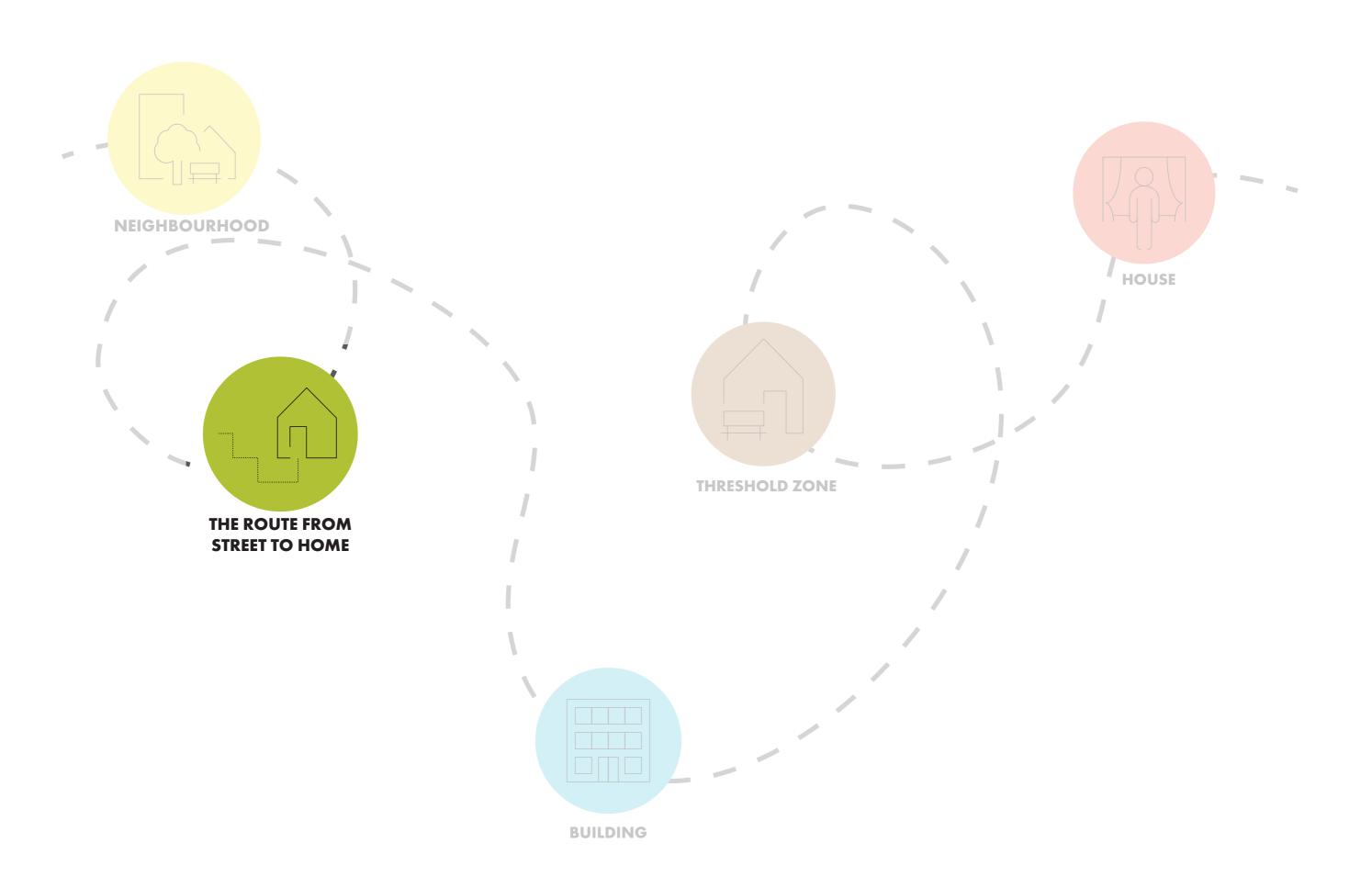
inner area is integrated with these green

structures, drawing the greenery inward.

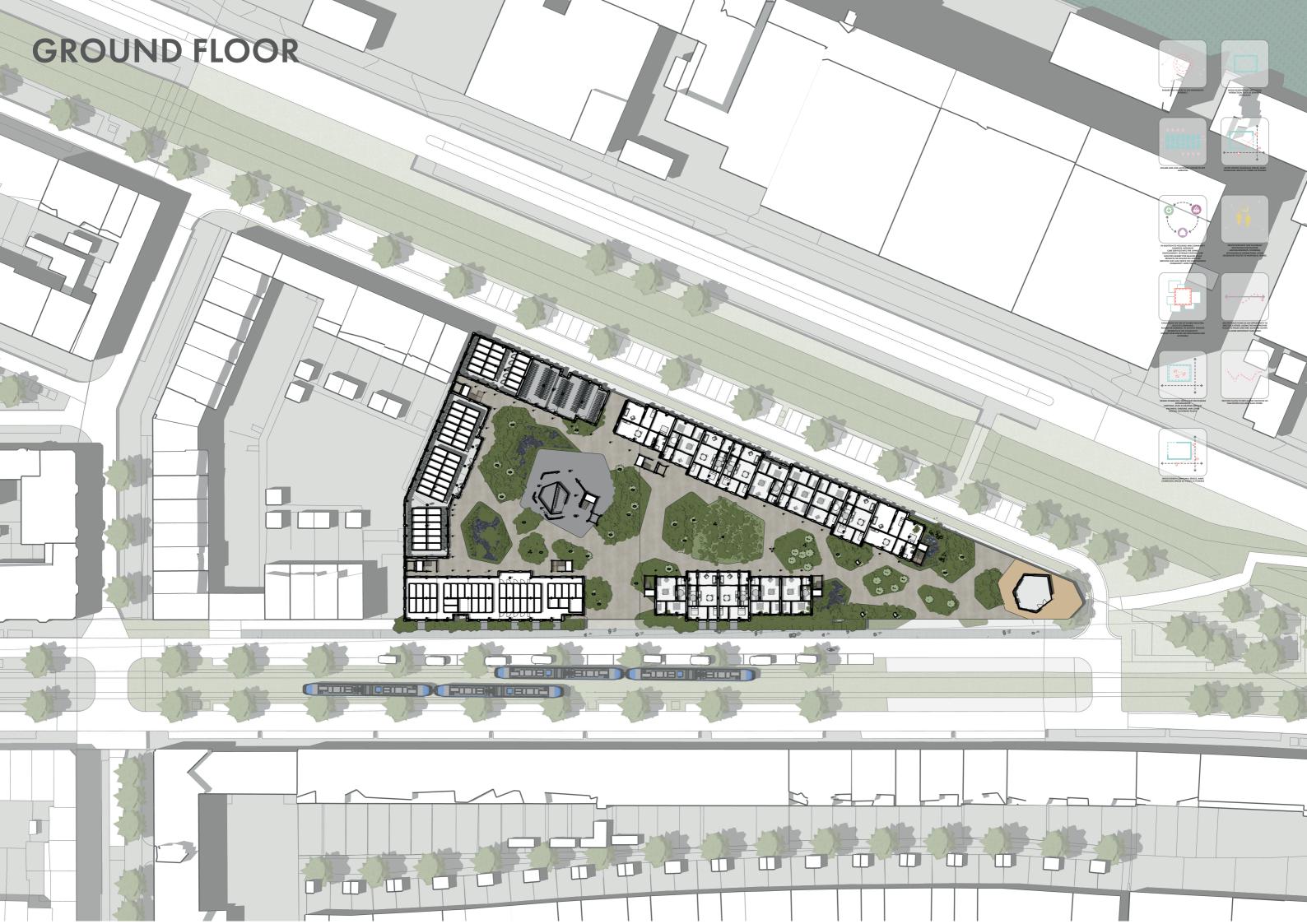
To foster encounters, the route to the apartments is designed so that residents can interact with each other. Several shared functions are also located along the route.





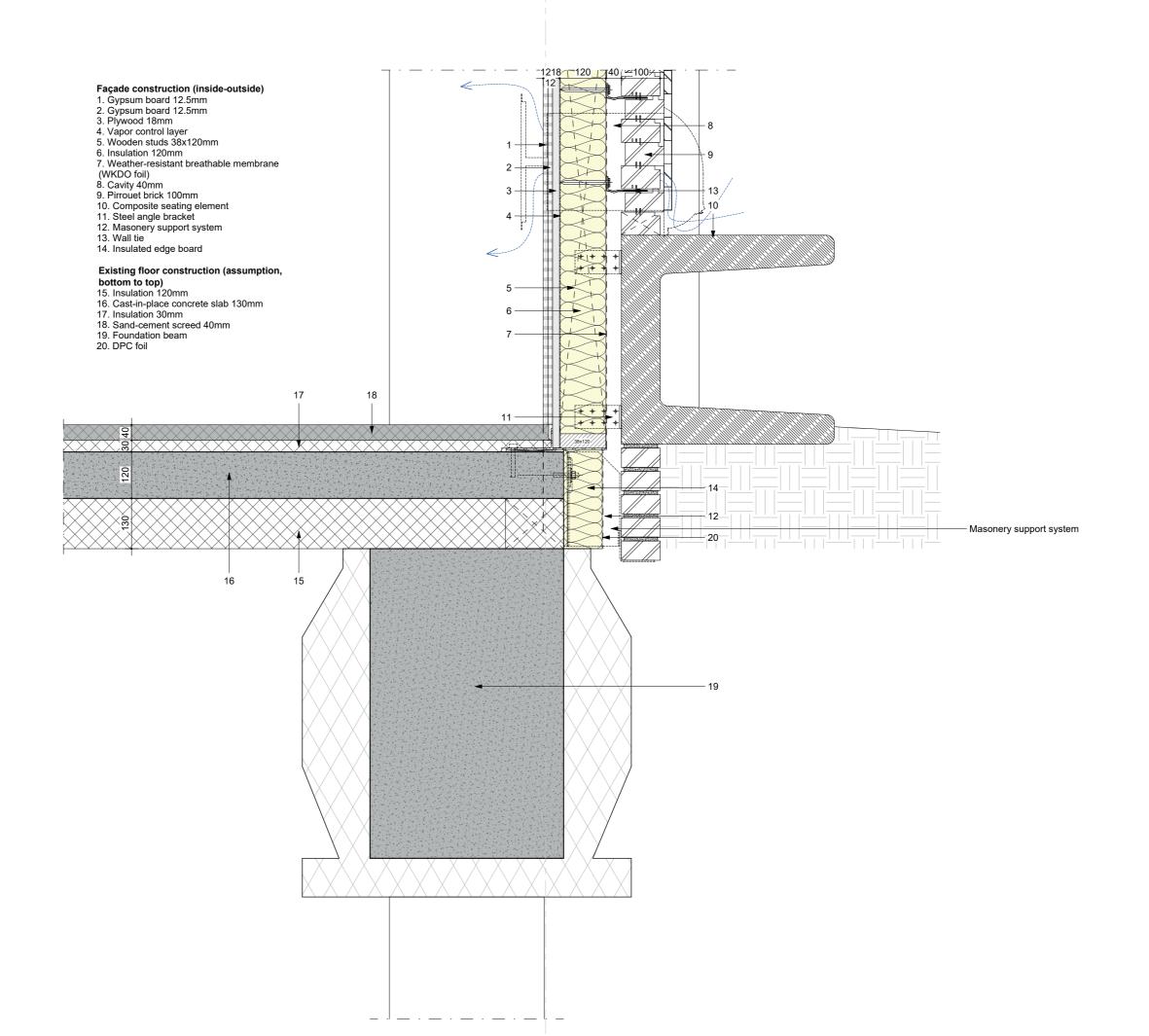


MASTERPLAN

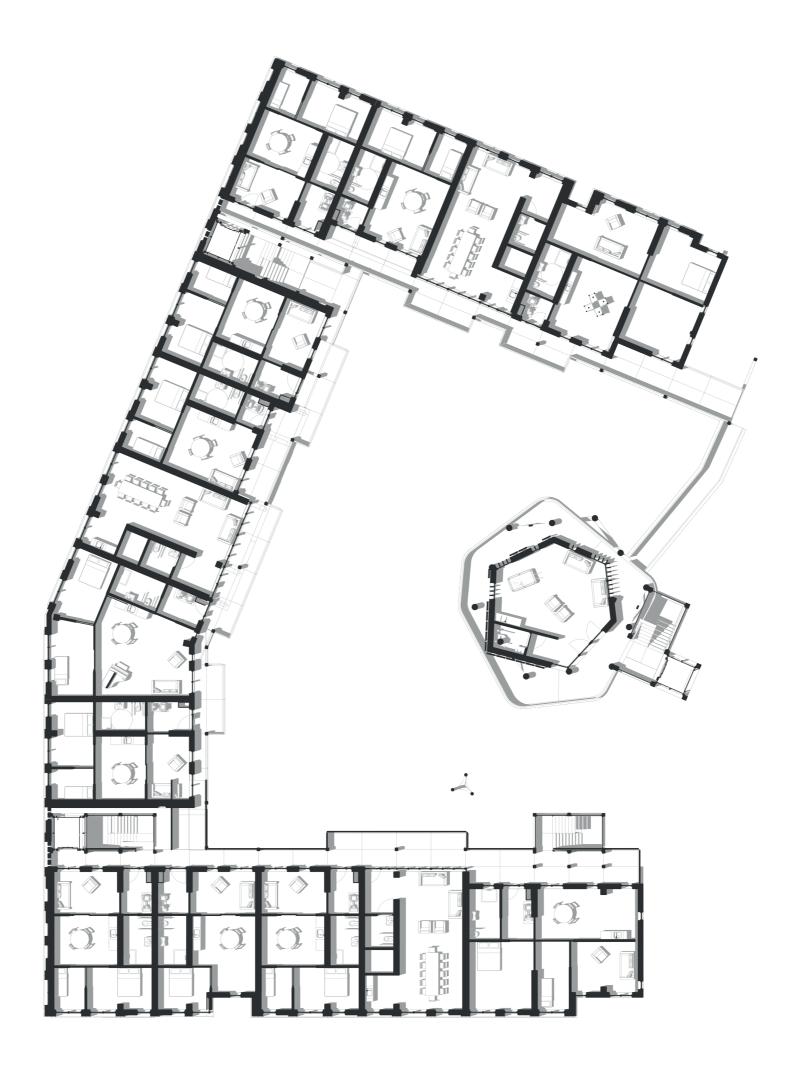




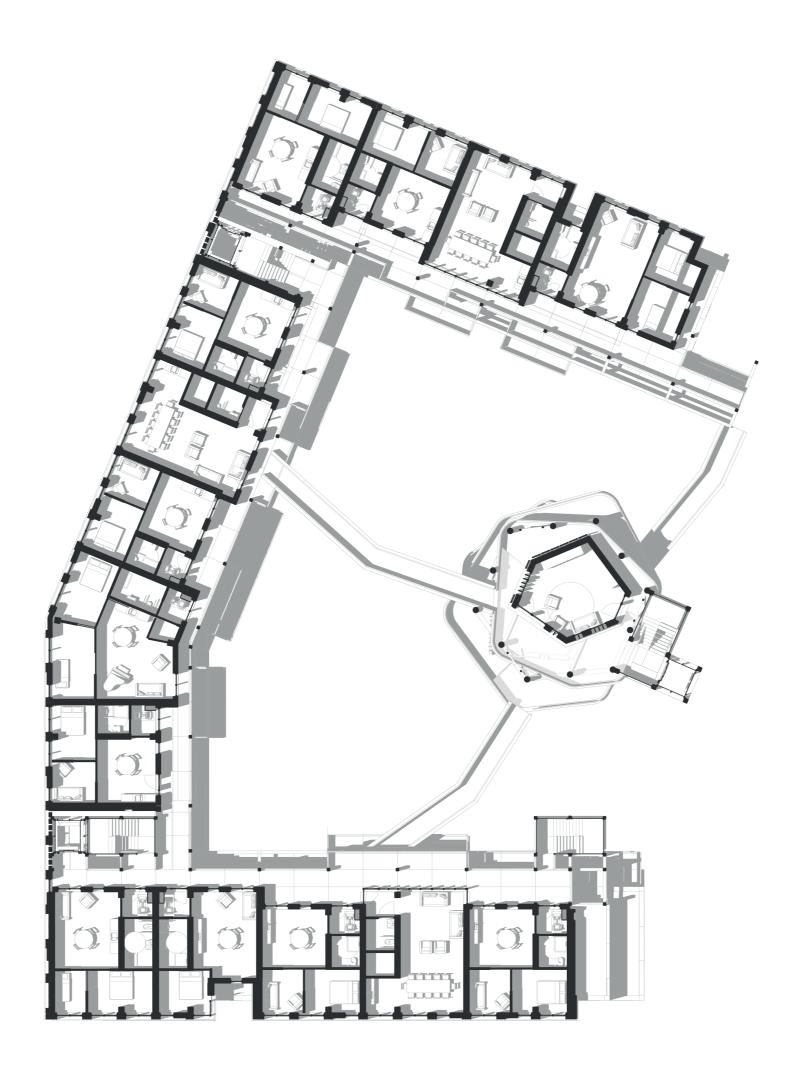




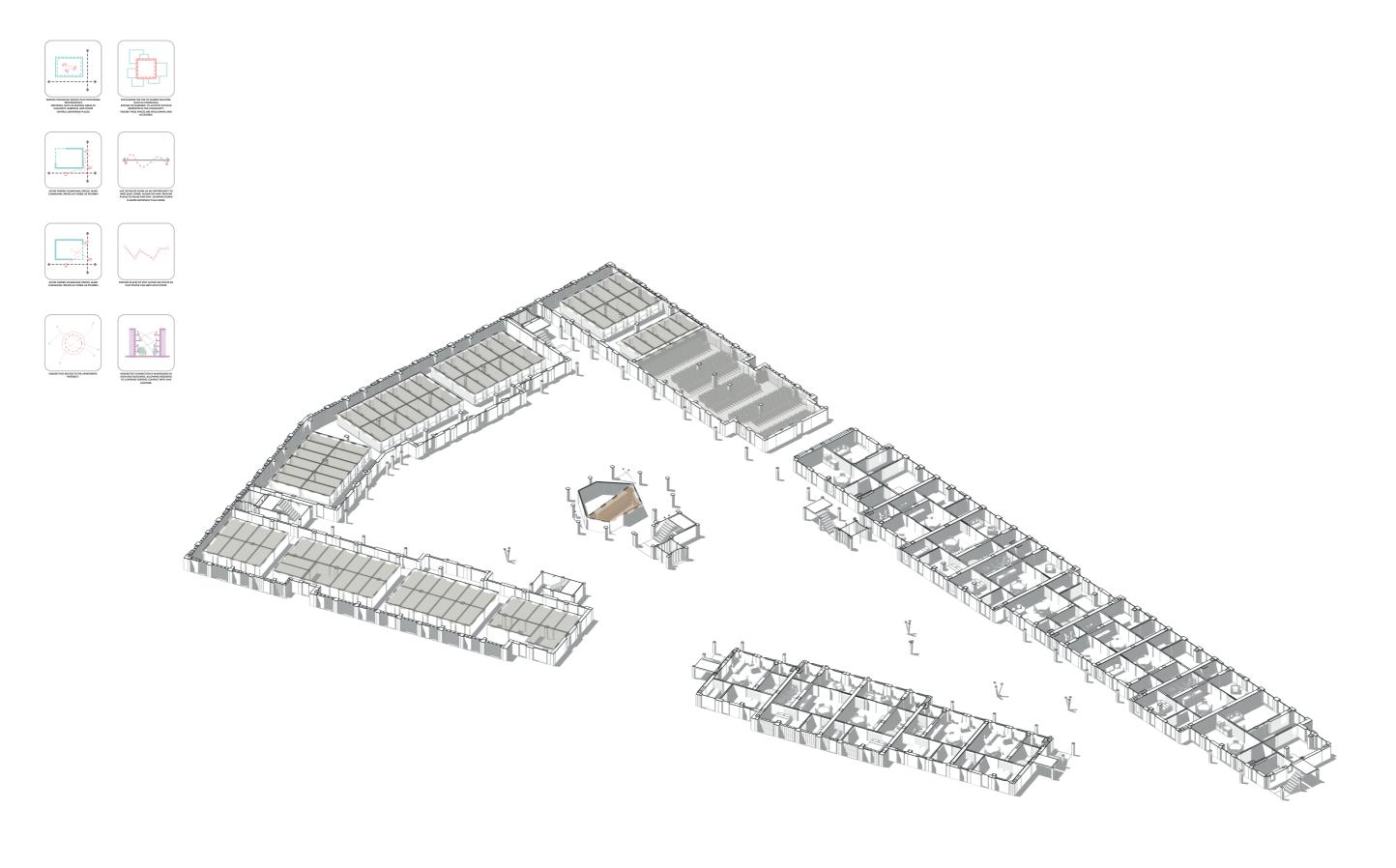
FIRST FLOOR



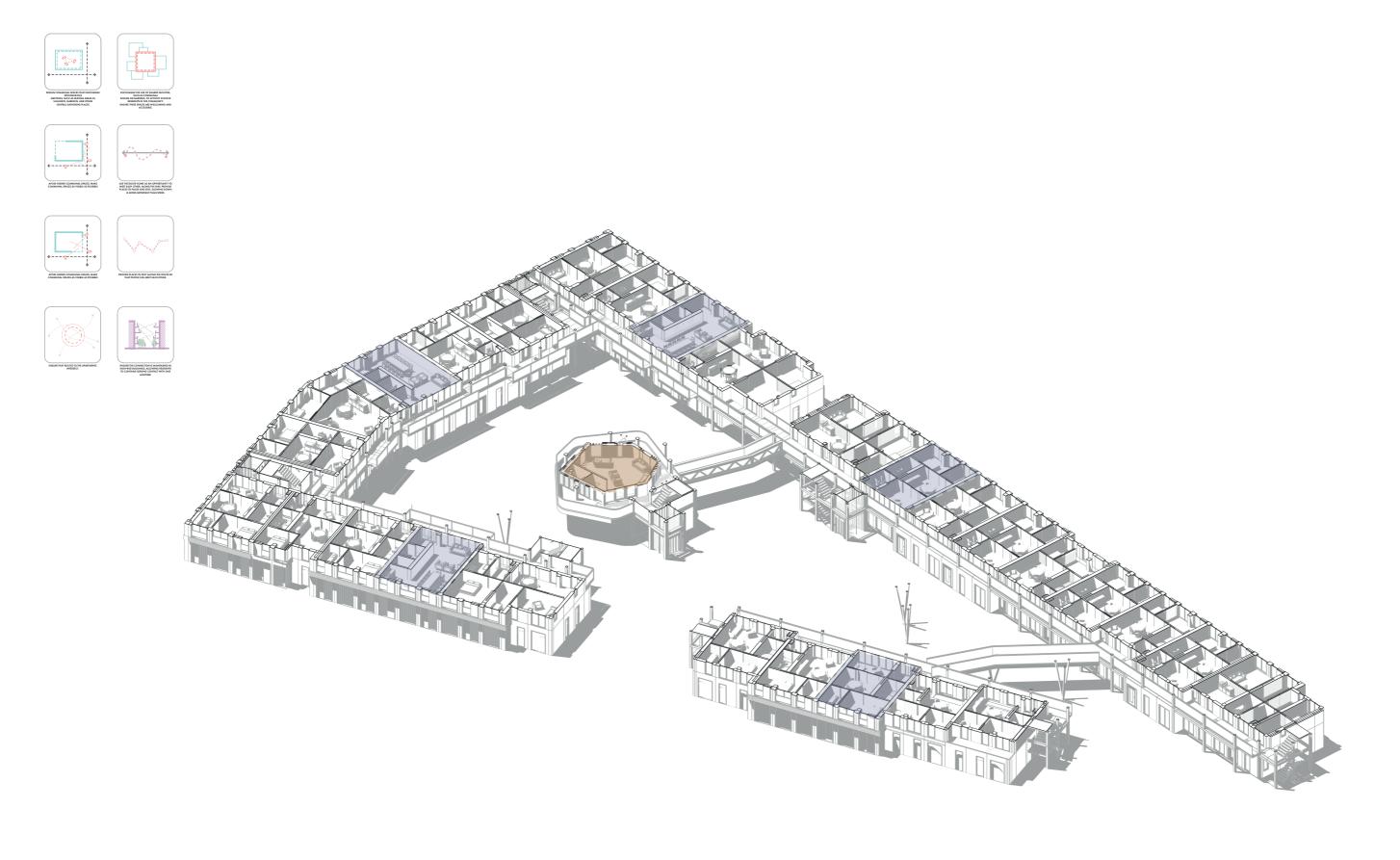
THIRD FLOOR



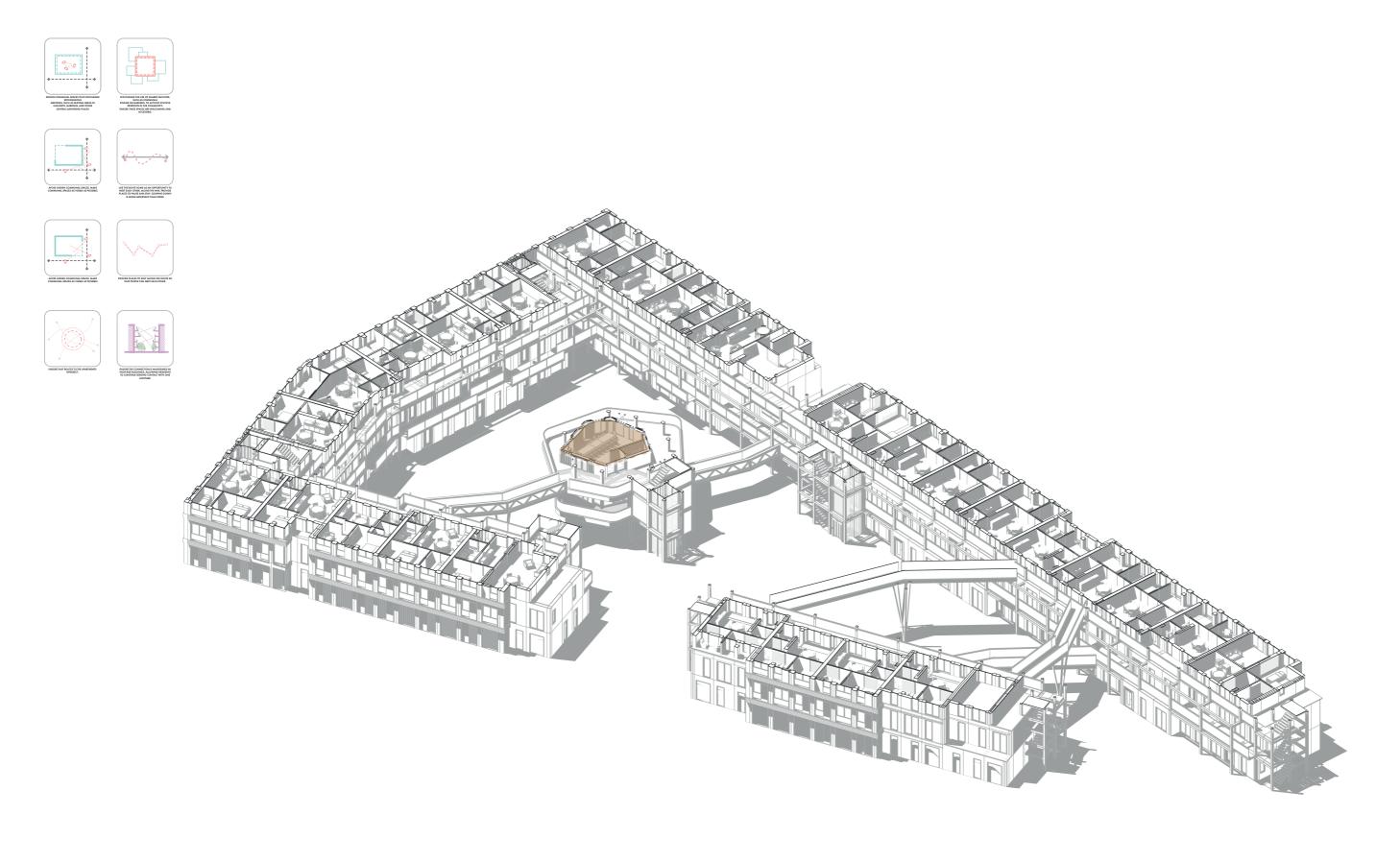
AXONOMETRY - GROUND FLOOR



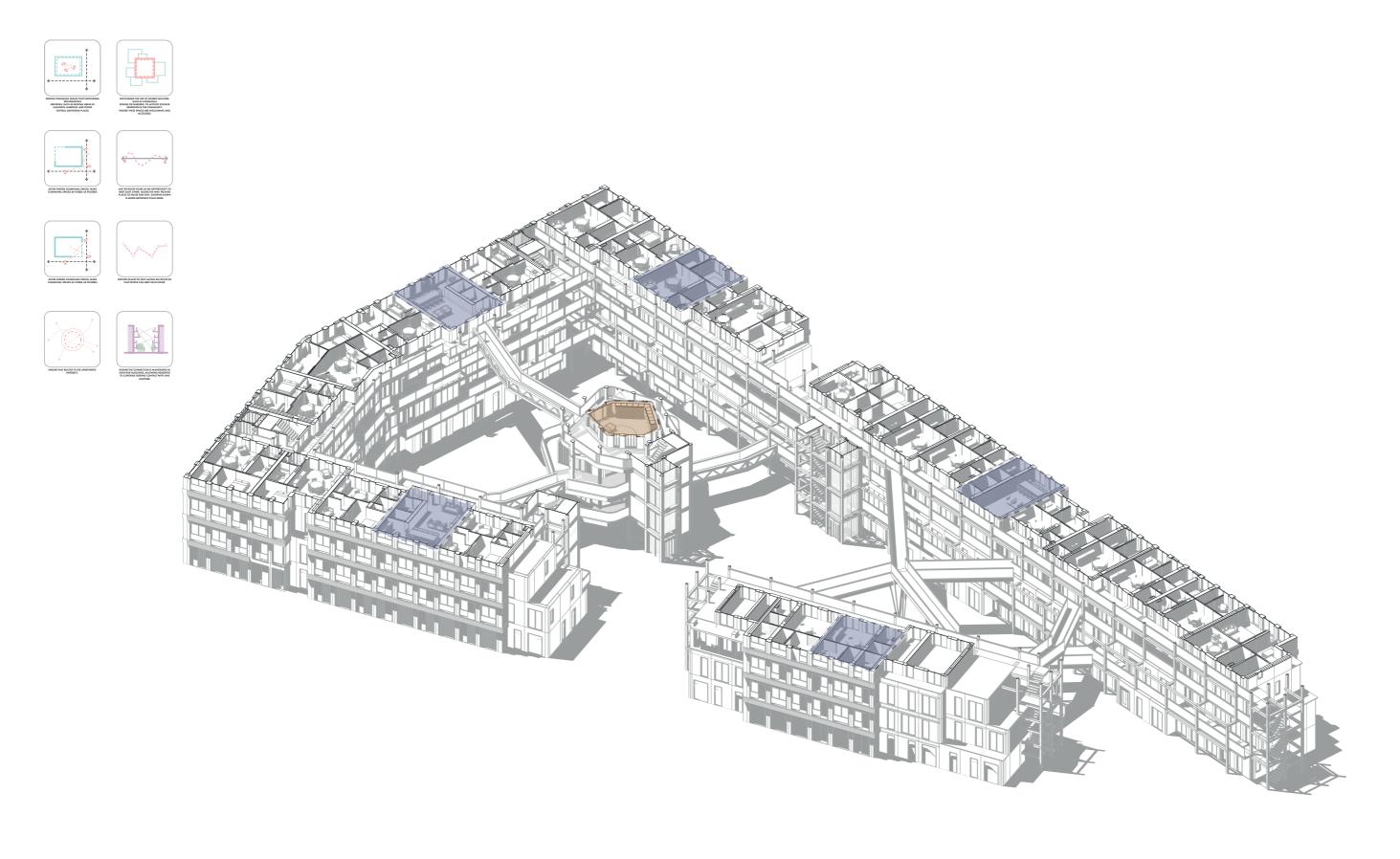
AXONOMETRY - FIRST FLOOR



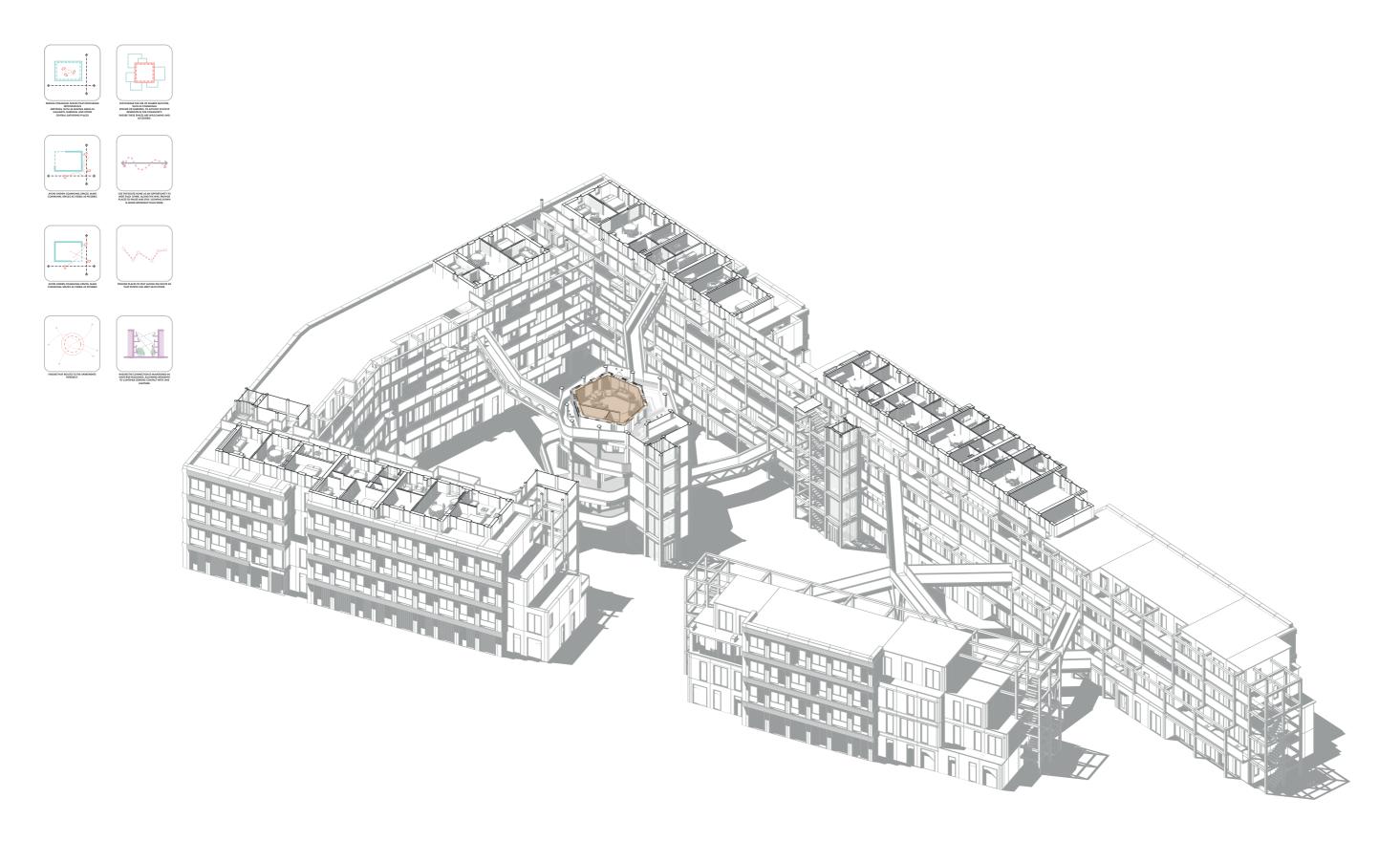
AXONOMETRY - SECOND FLOOR



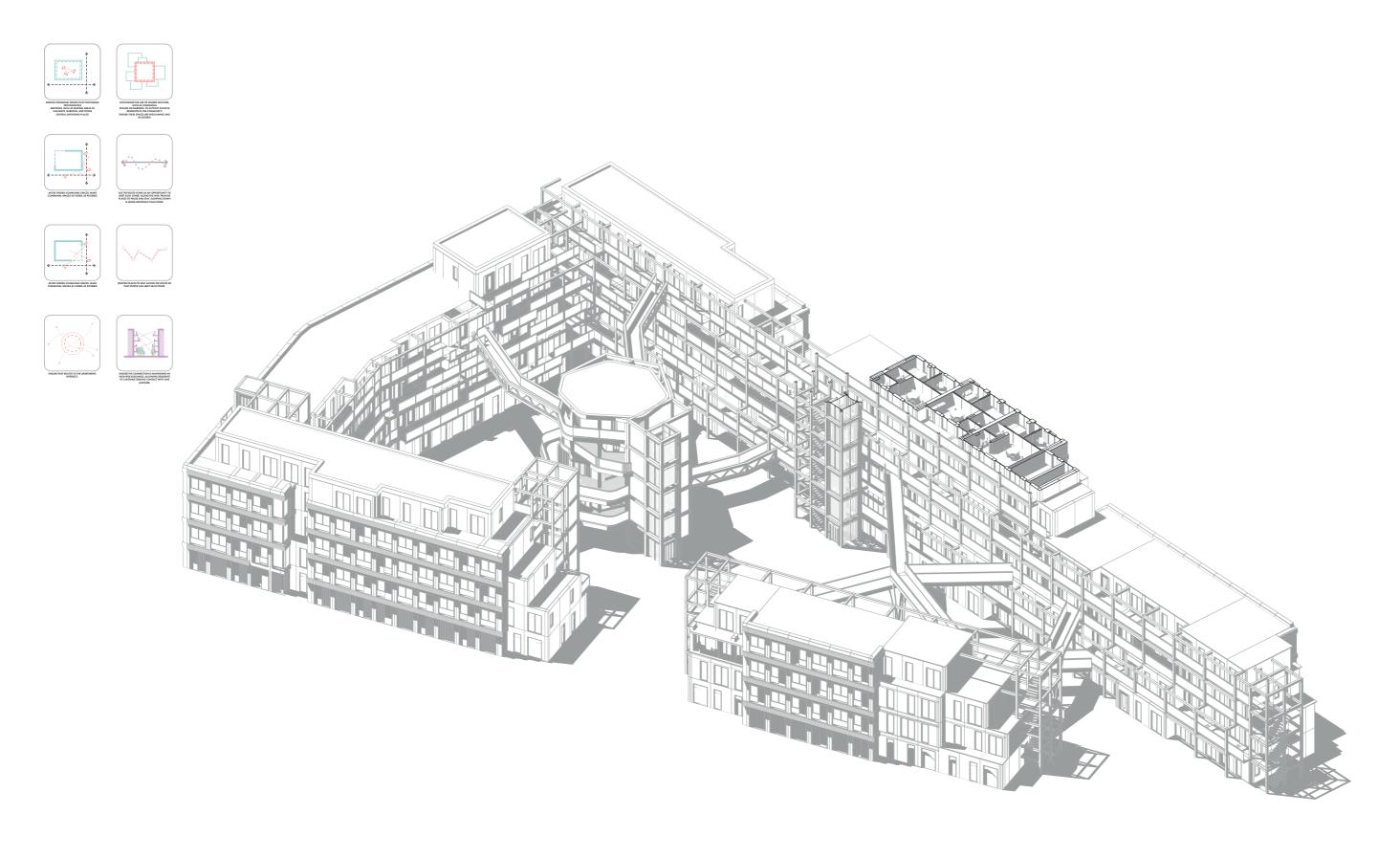
AXONOMETRY - THIRD FLOOR



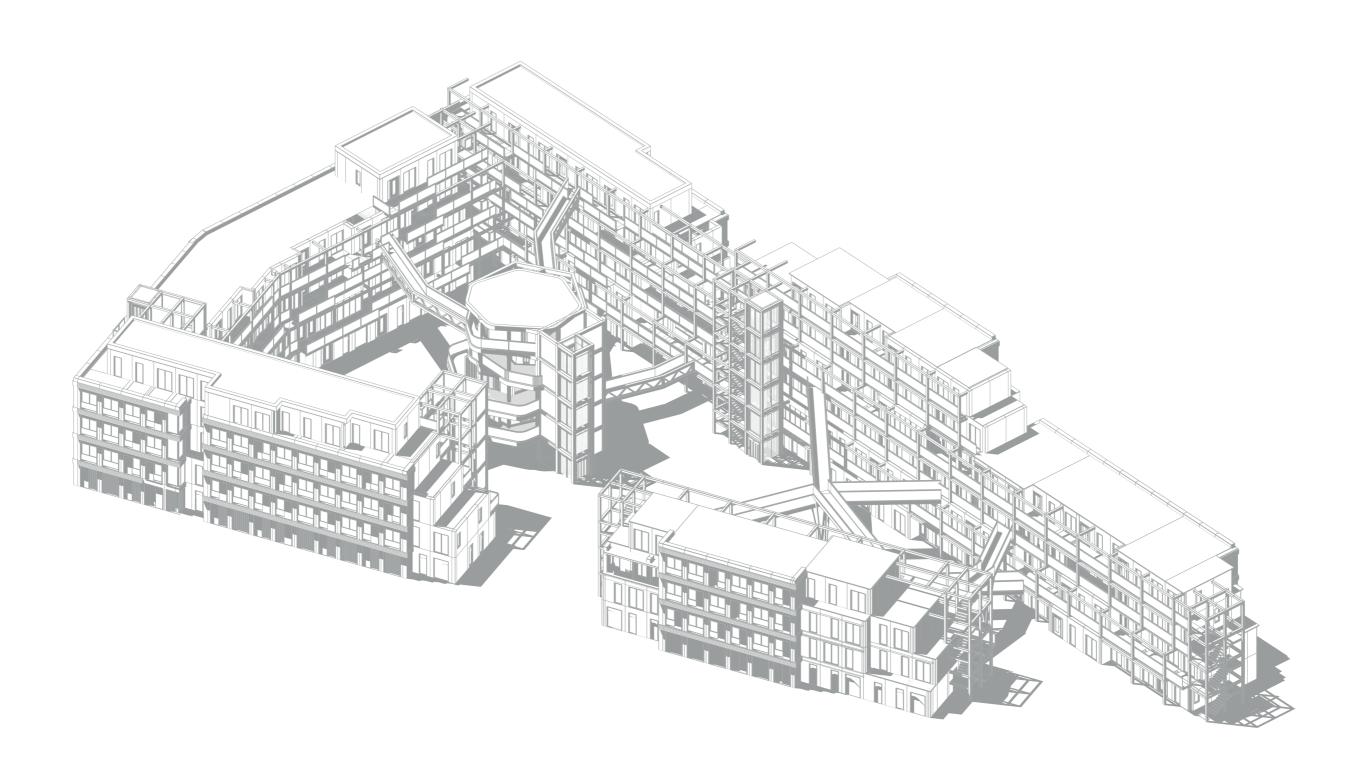
AXONOMETRY - FOURTH FLOOR



AXONOMETRY - FIFTH FLOOR



AXONOMETRY - ROOF



PROGRAM

SHARED FUNCTIONS

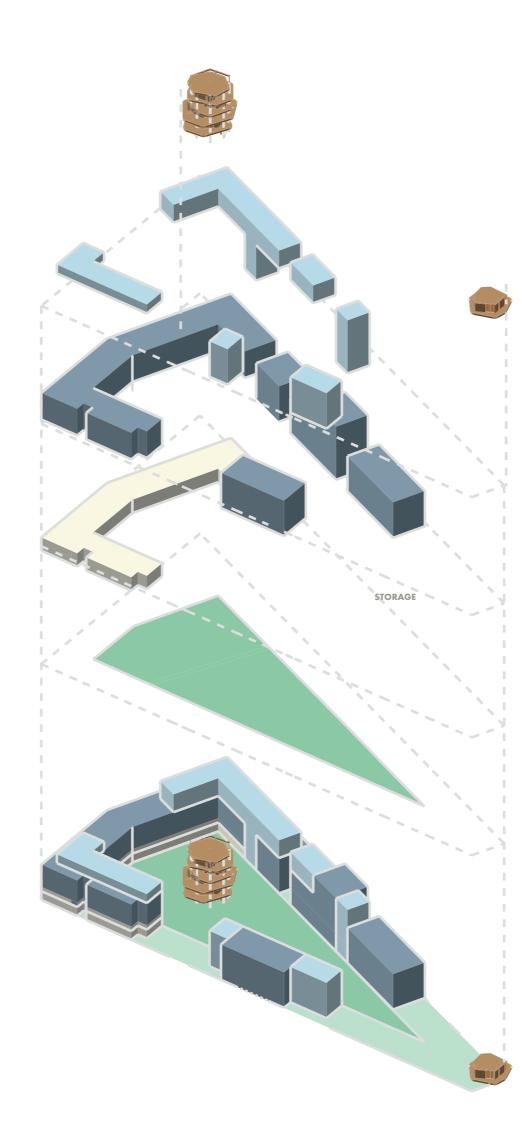
APARTMENTS 50m²

APARTMENTS 75m²

STORAGES

COURTYARD

BUILDING BLOCK







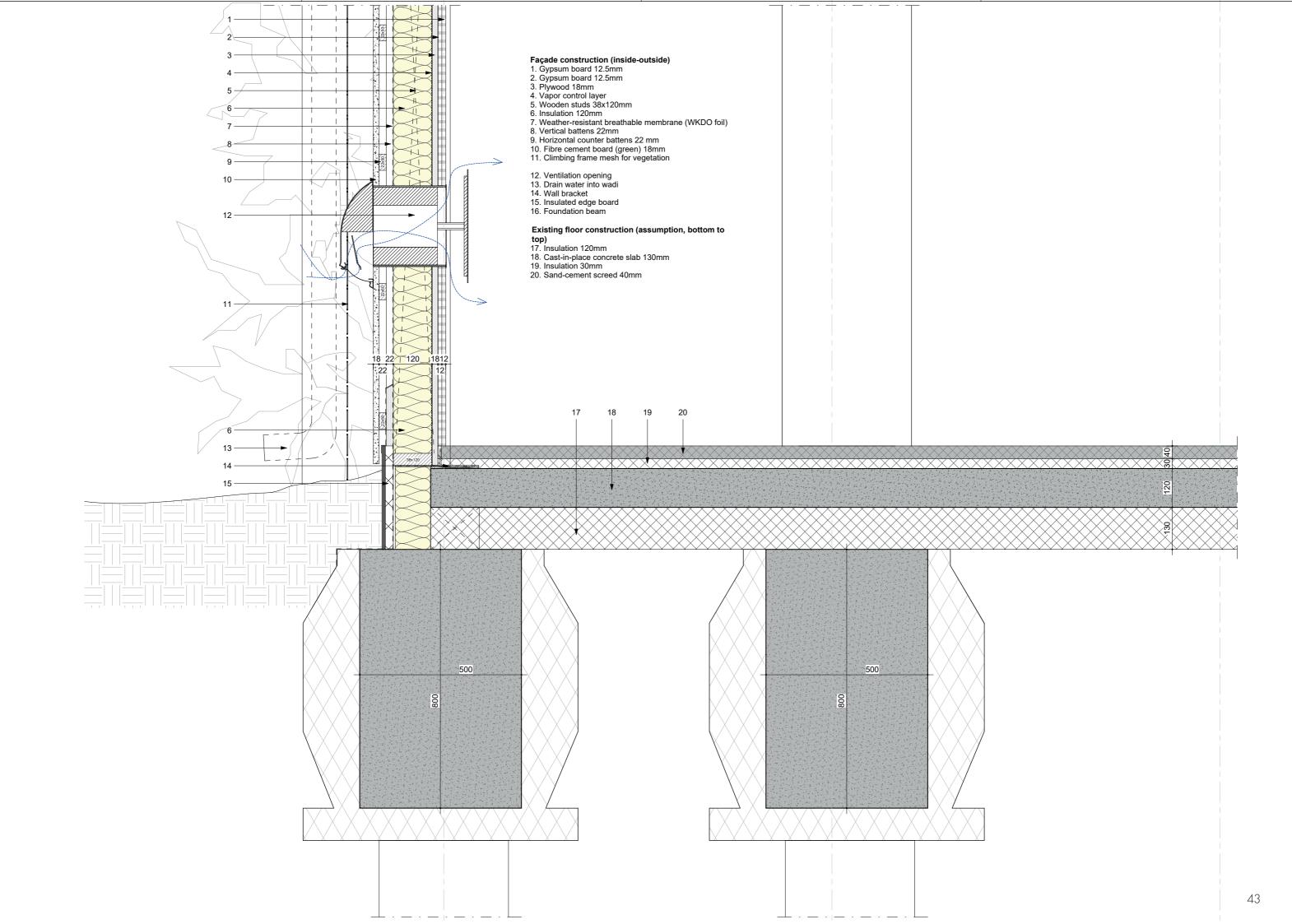


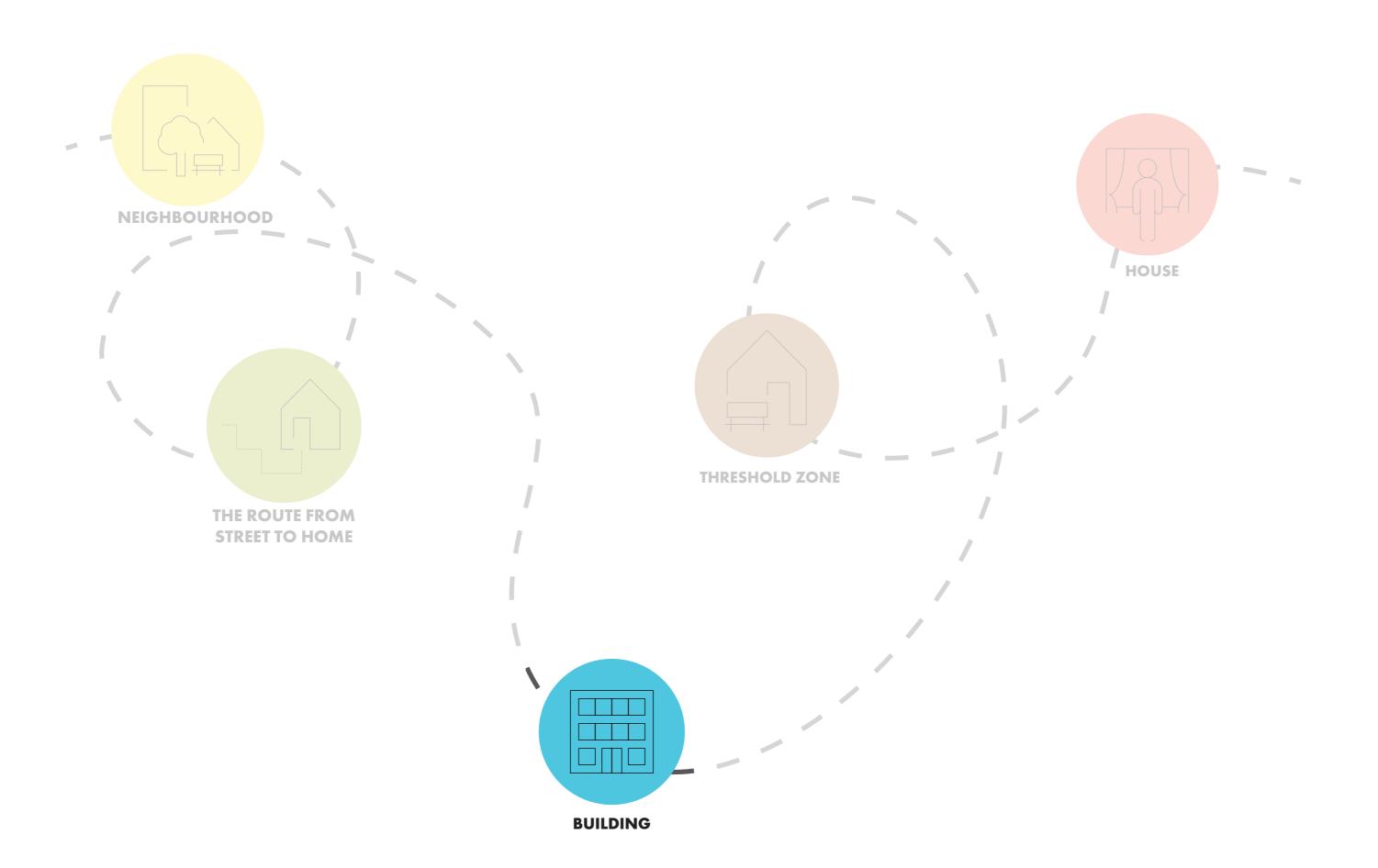


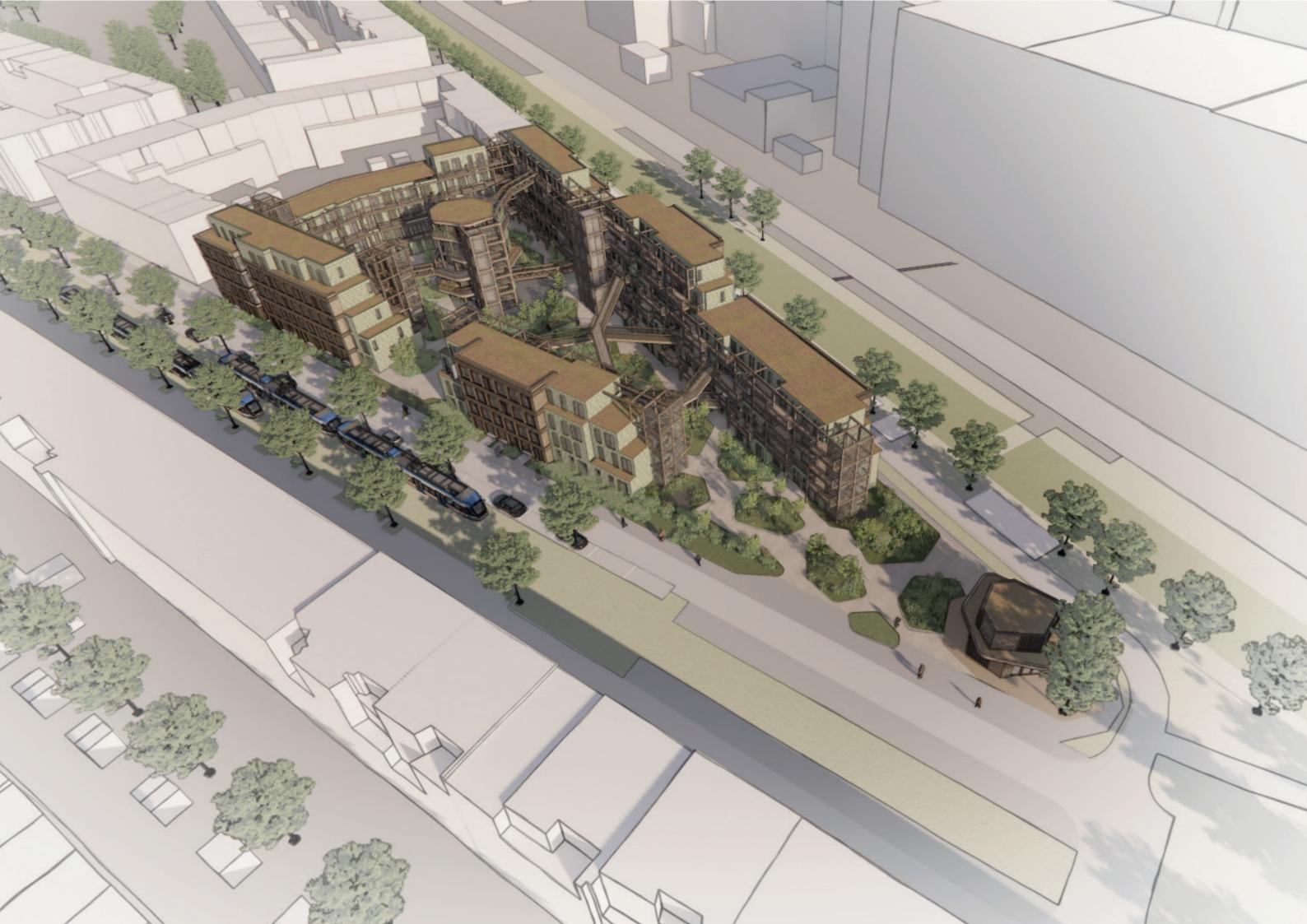


COMMUNITY NATURE WADI

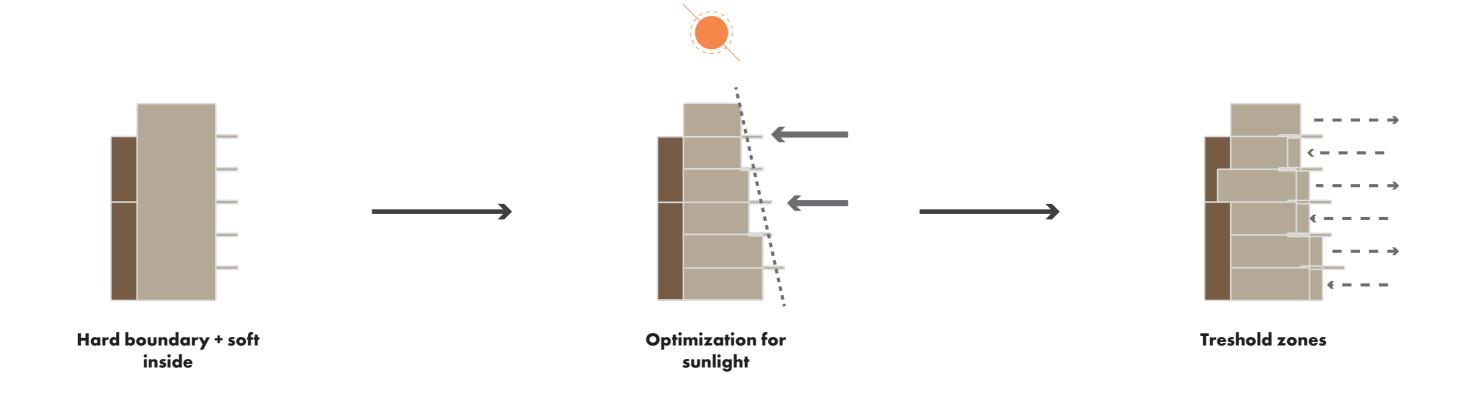
GREEN IN COURTYARD COLLECTIVE SPACE WANDERING IN NATURE COLLECTIVE COURTYARD VEGETATION ON ROOFS WADI

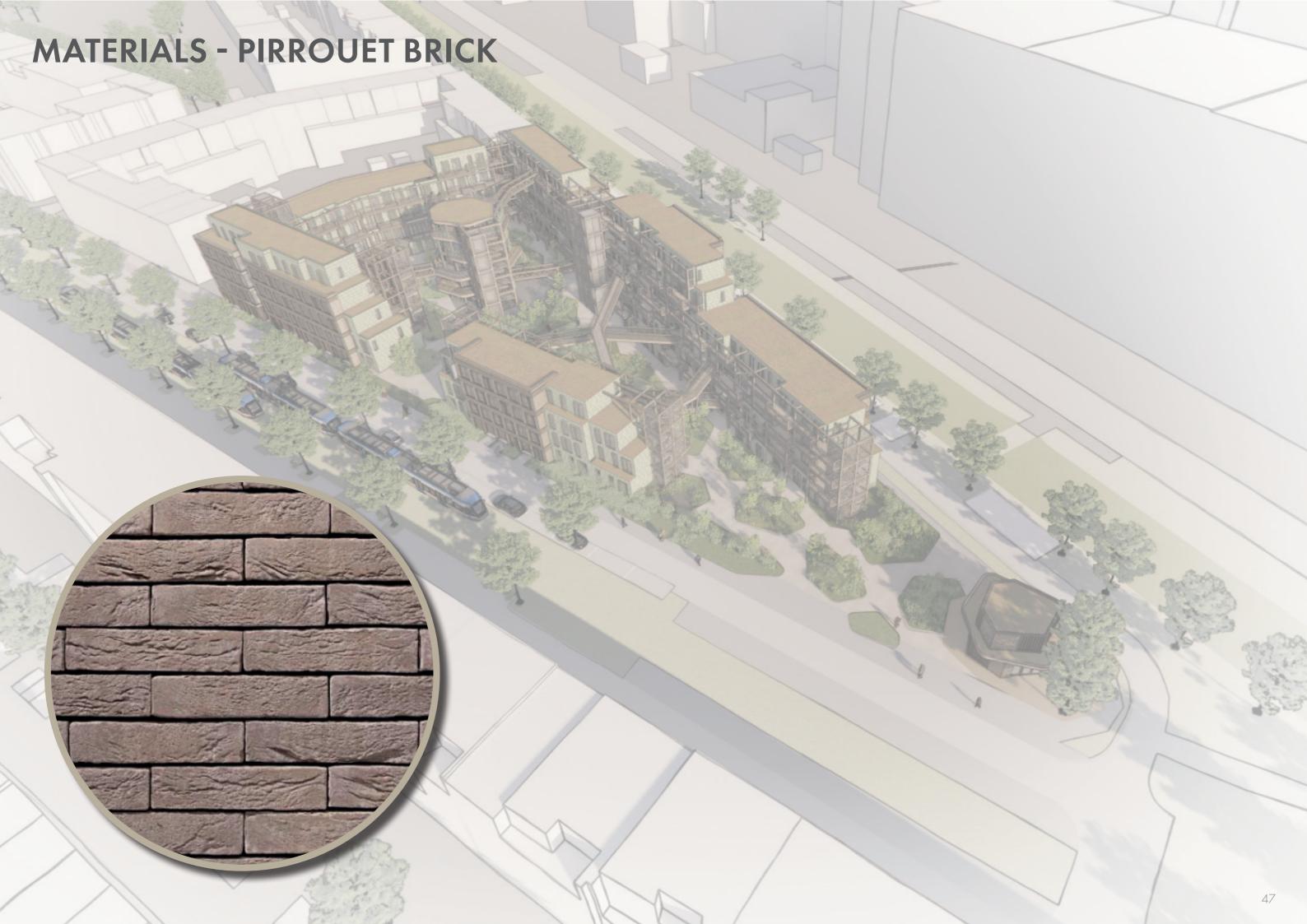


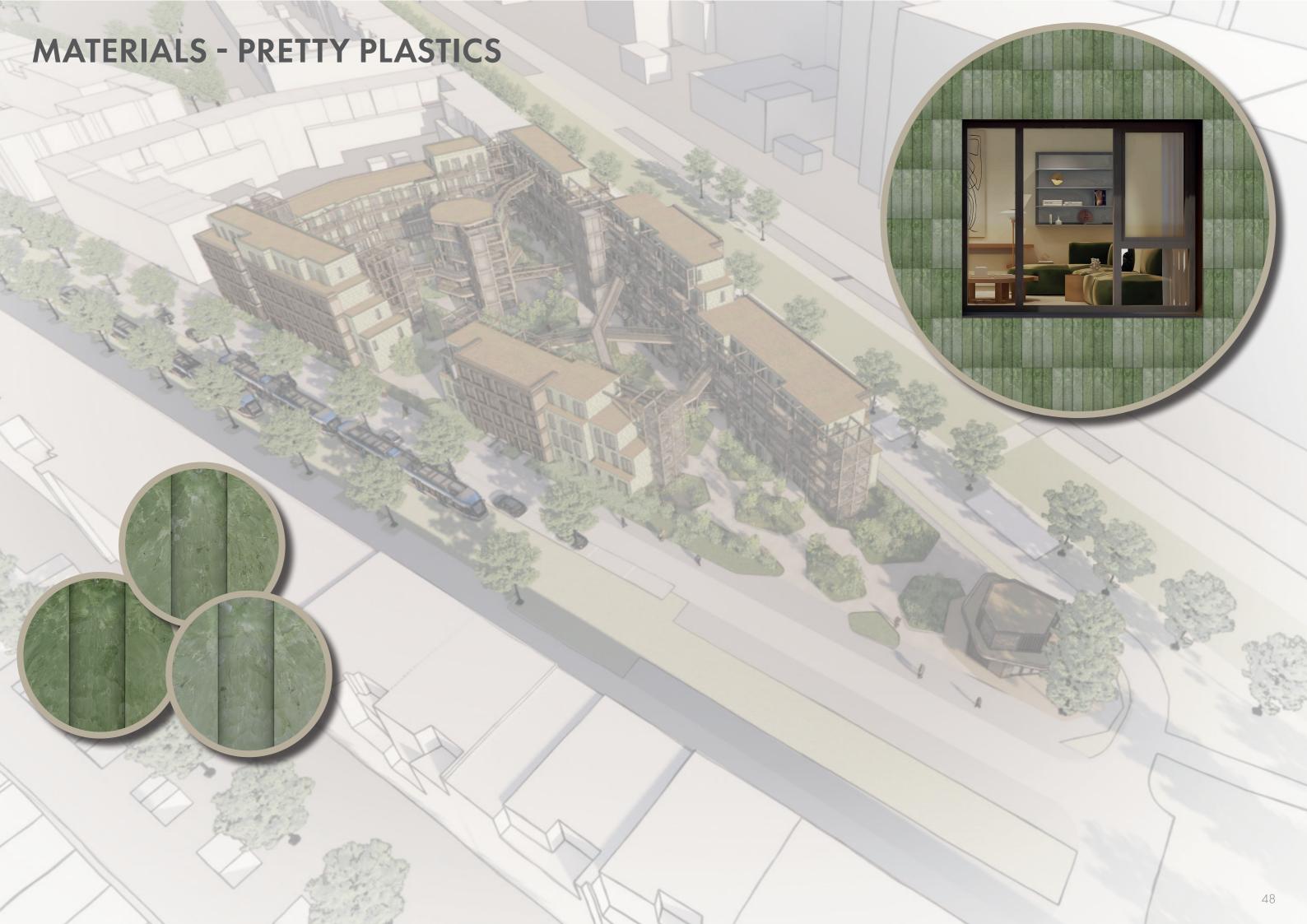




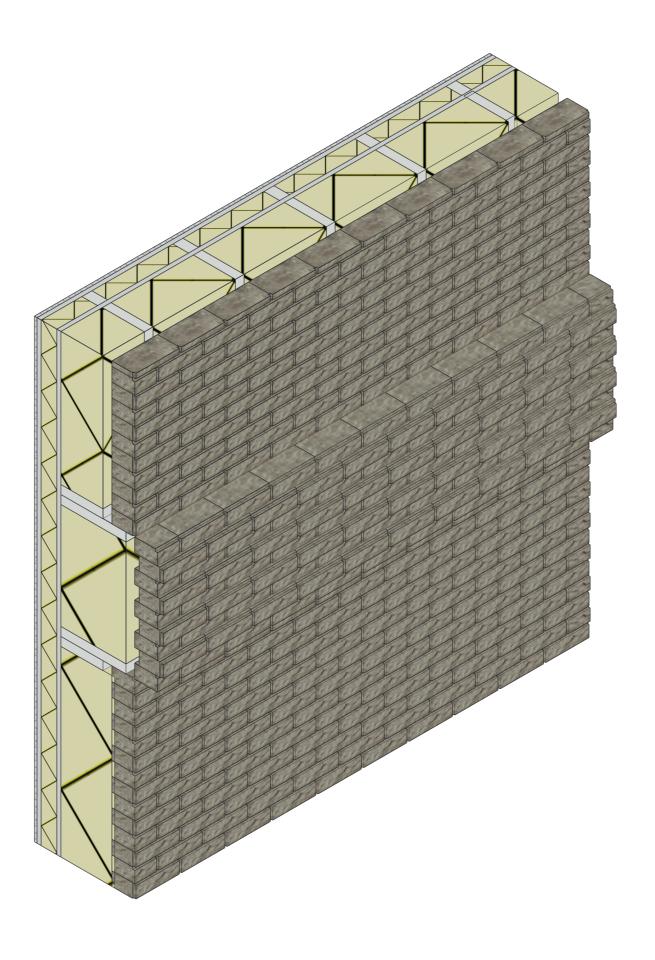
CONCEPT



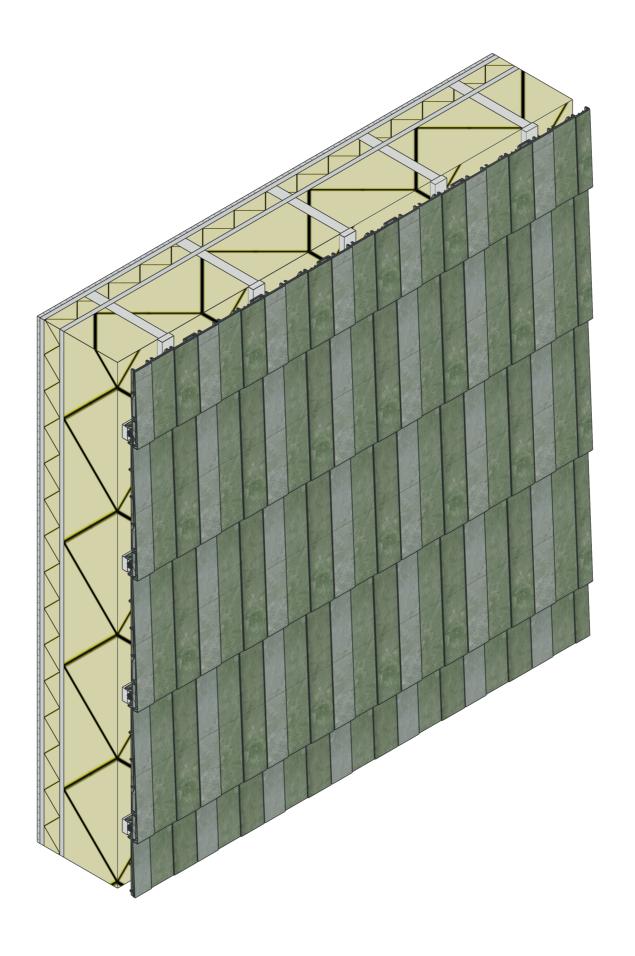




BRICK FAÇADE



PRETTY PLASTICS FAÇADE

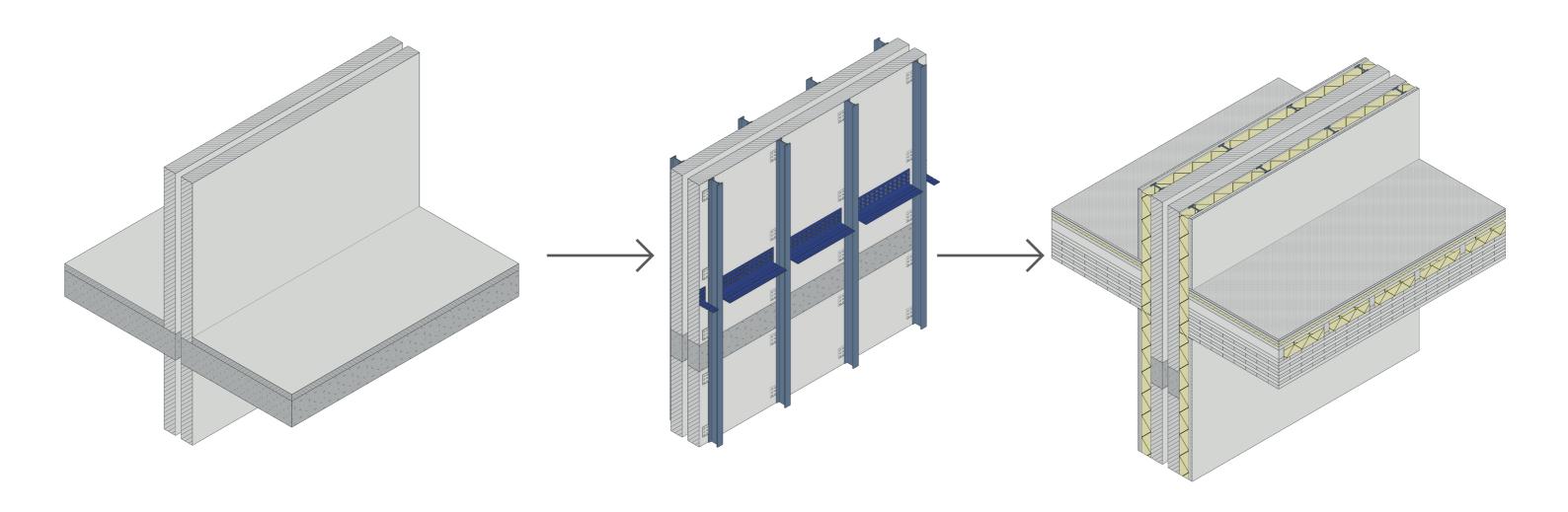




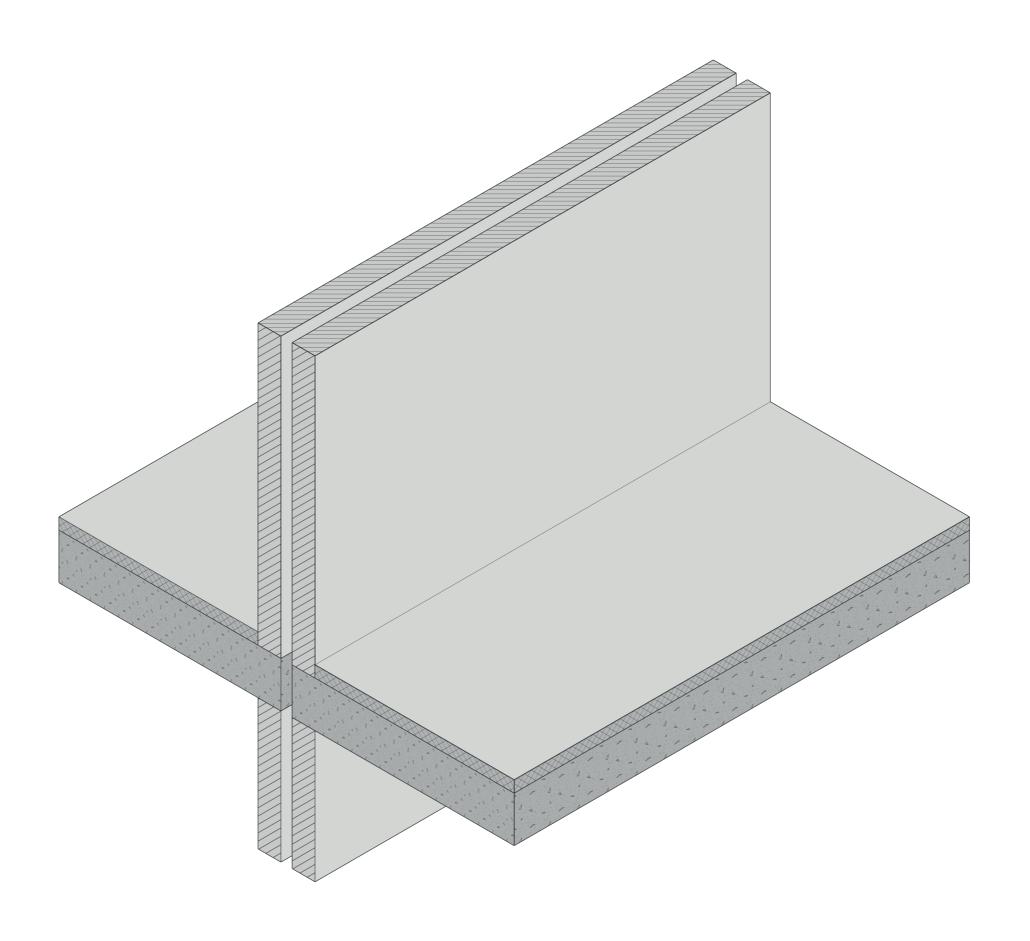




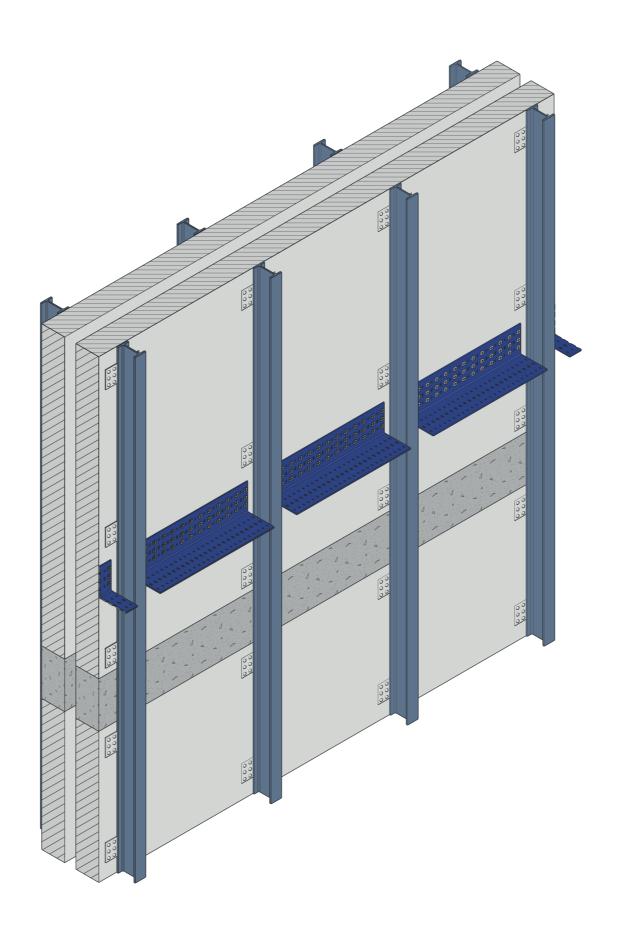
REUSING EXISTING LOAD-BEARING STRUCTURE



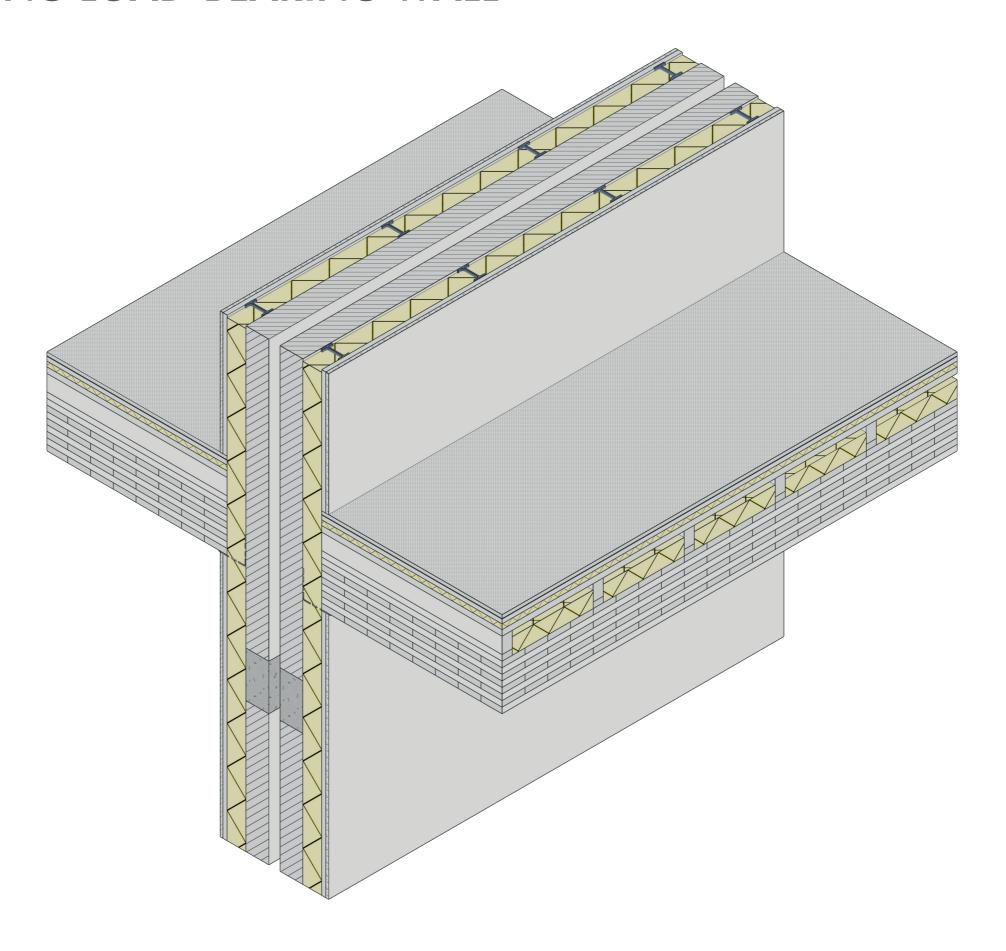
EXISTING LOAD-BEARING CONCRETE WALL



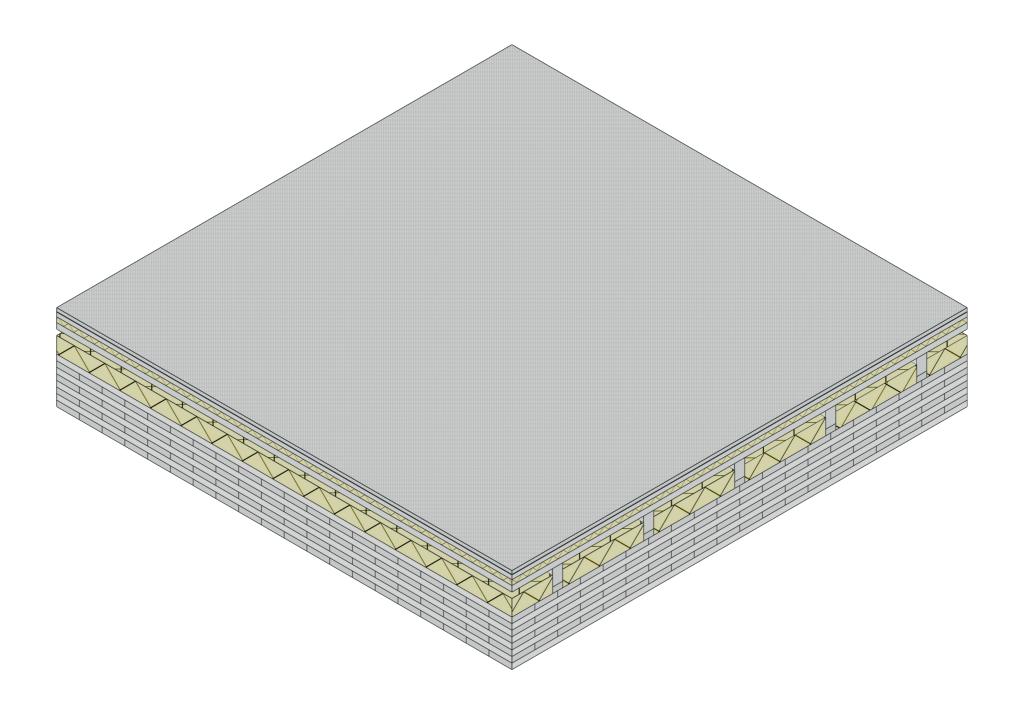
REINFORCING EXISTING LOAD-BEARING WALL



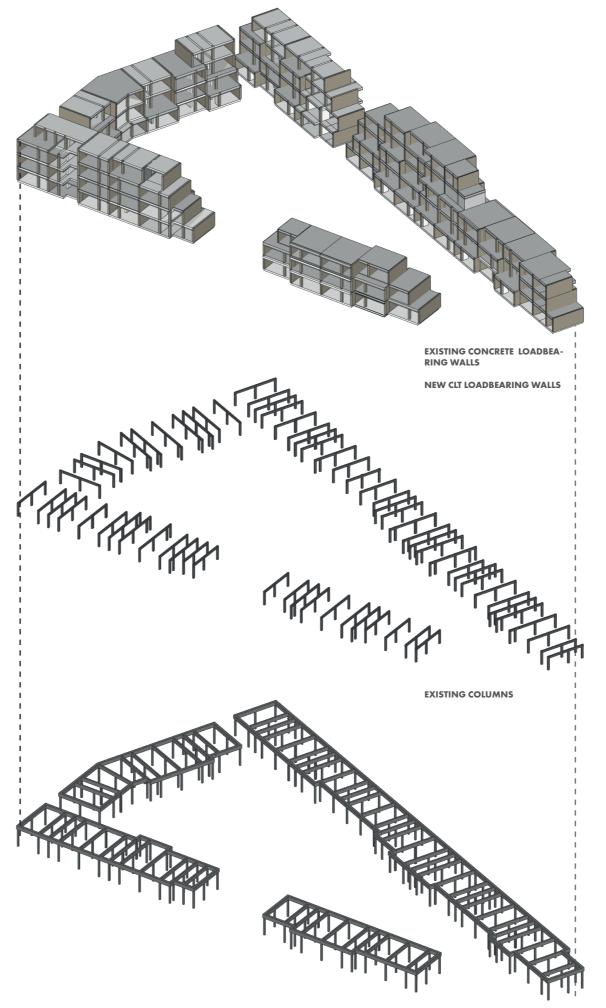
REUSING EXISTING LOAD-BEARING WALL



CLT FLOOR

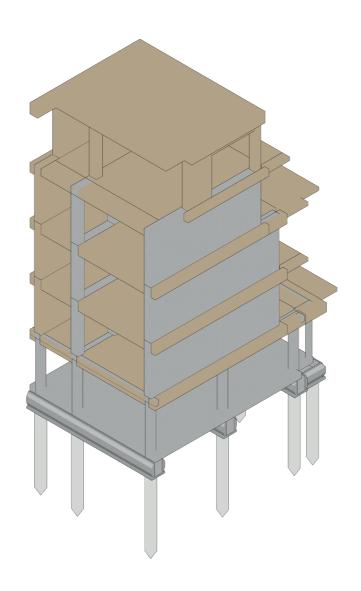


STRUCTURE

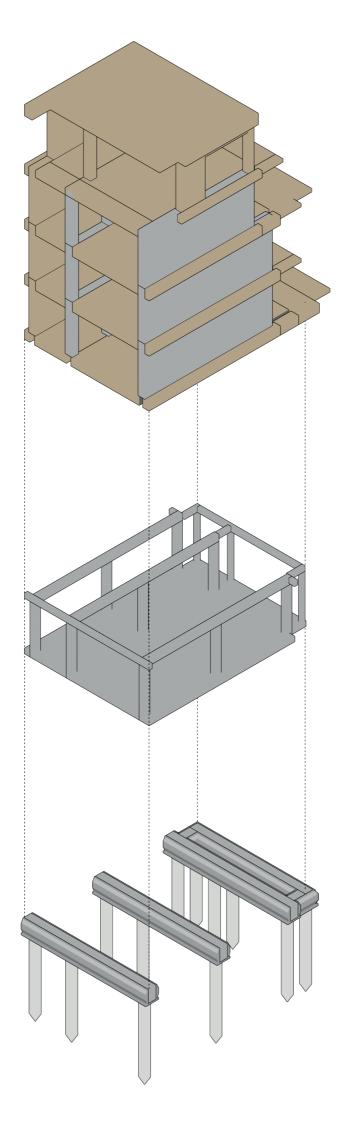


EXISTING FOUNDATION

STRUCTURE - 1:50 FRAGMENT



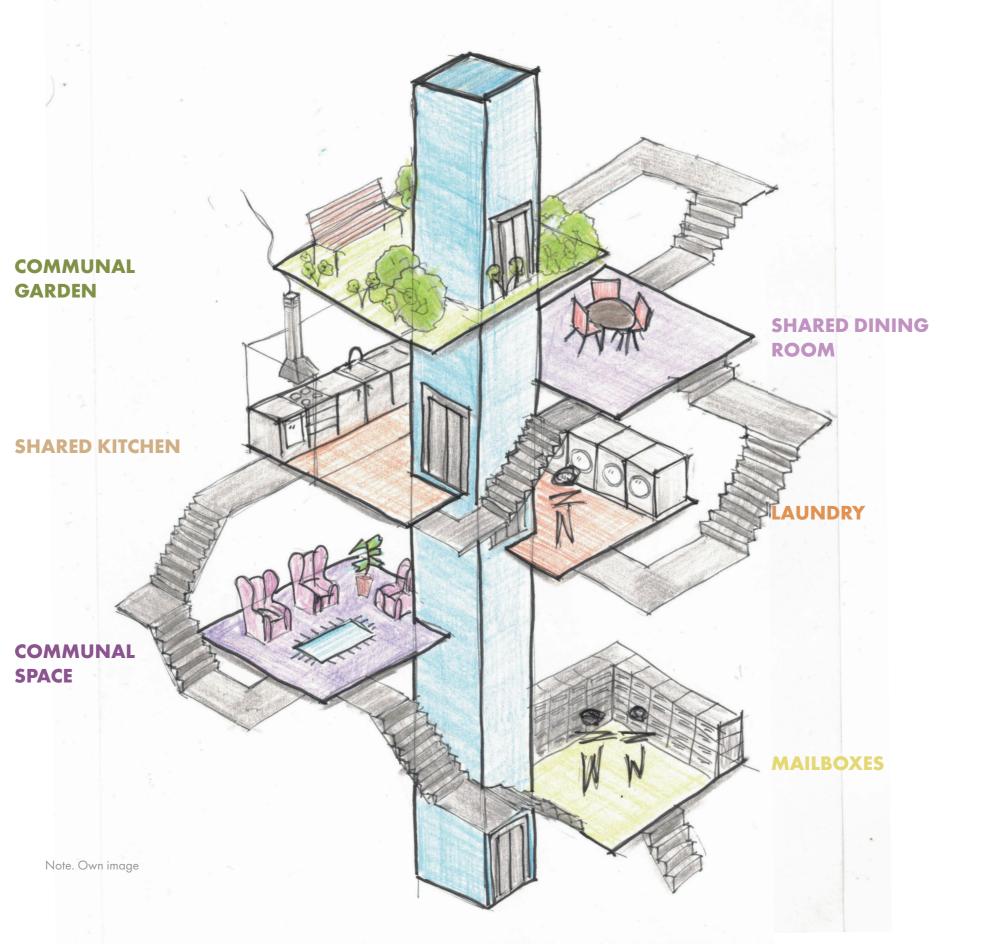
STRUCTURE - 1:50 FRAGMENT



SHARED FUNCTIONS IN COURTYARD



SHARED FUNCTIONS IN COURTYARD











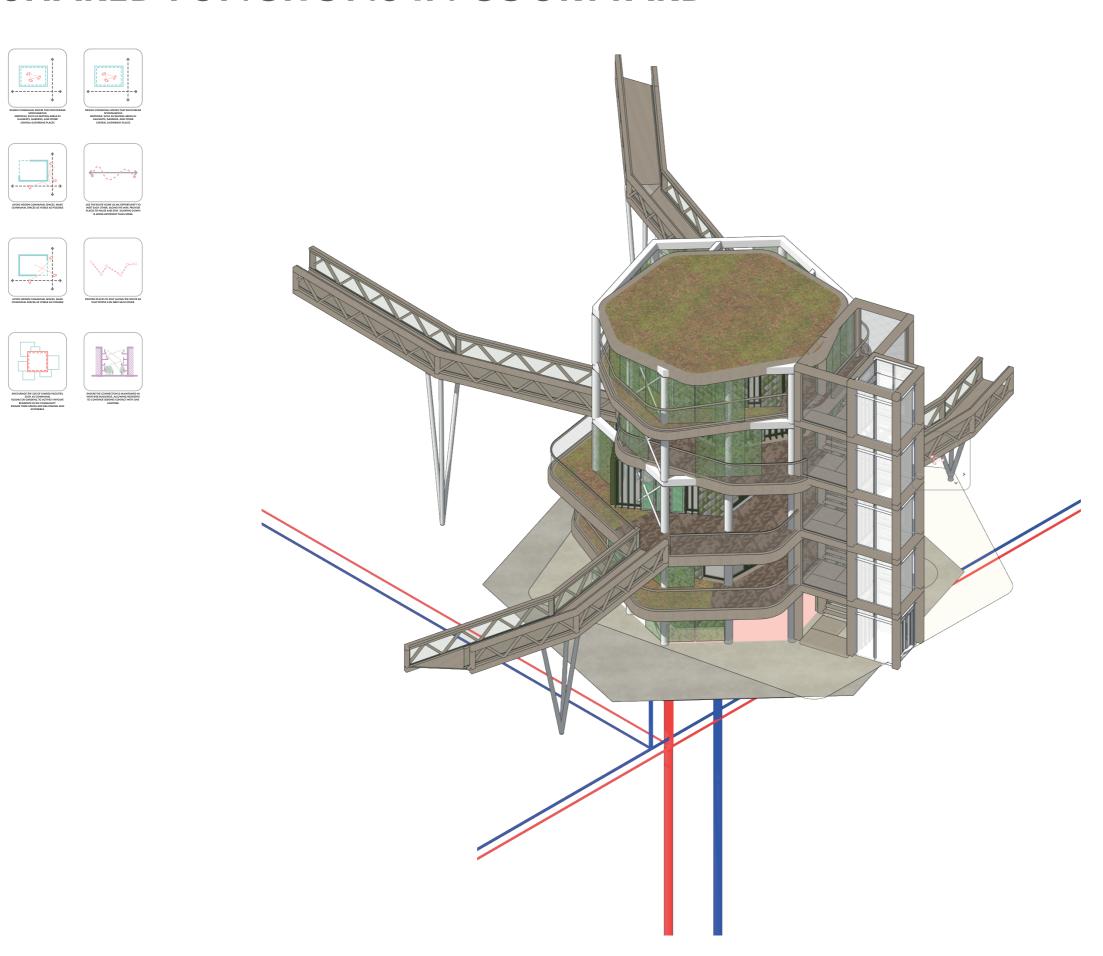




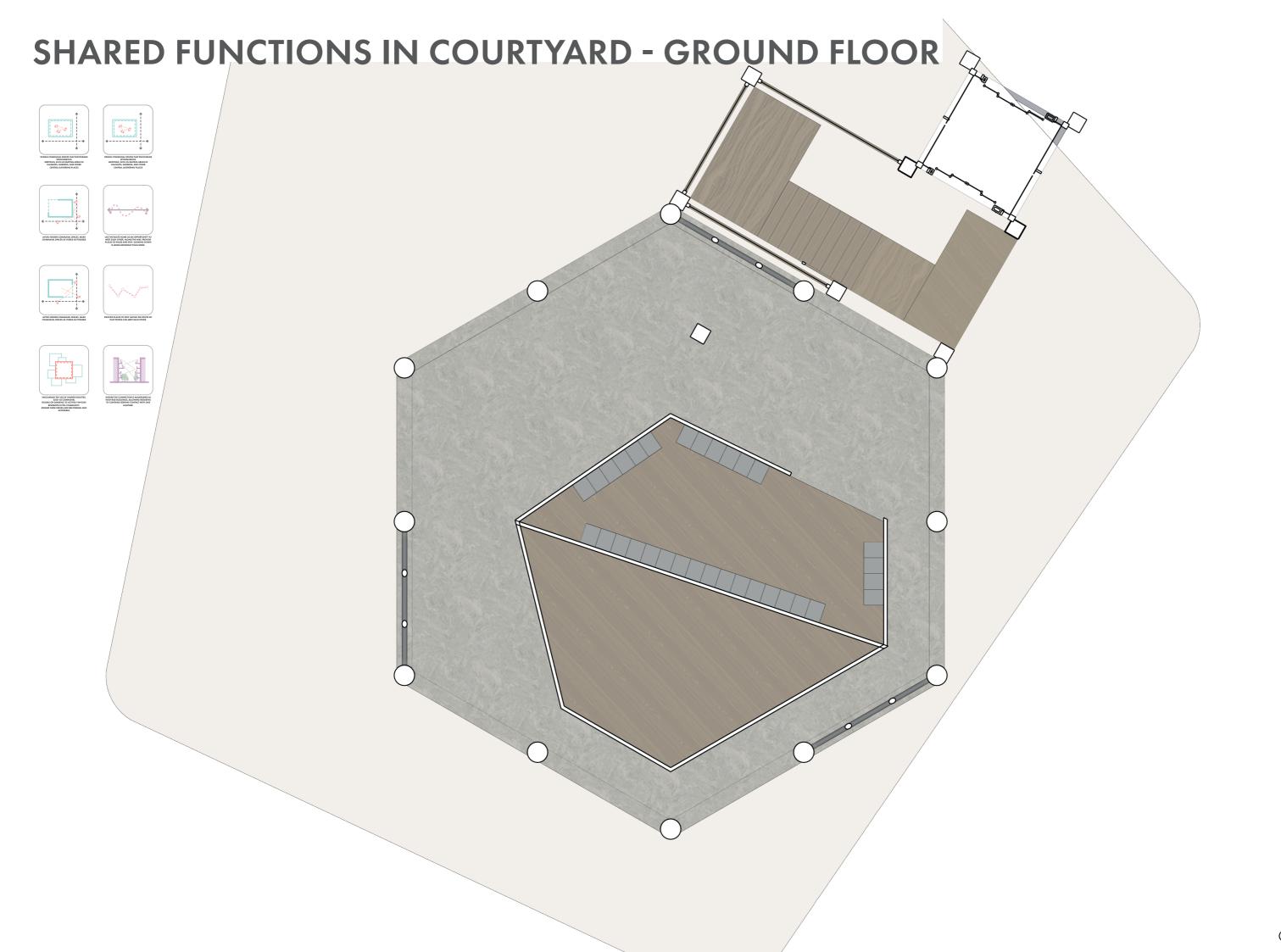




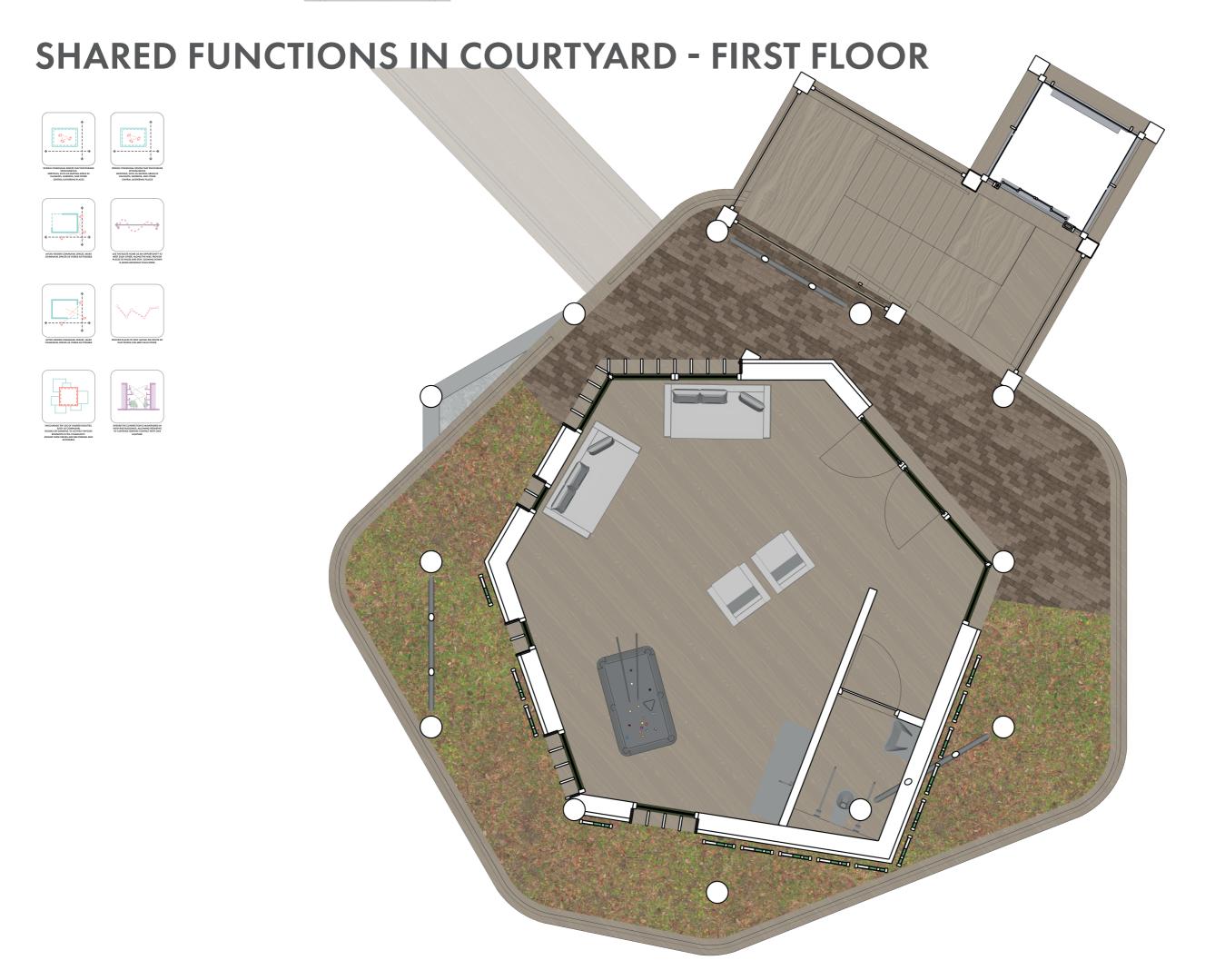
SHARED FUNCTIONS IN COURTYARD



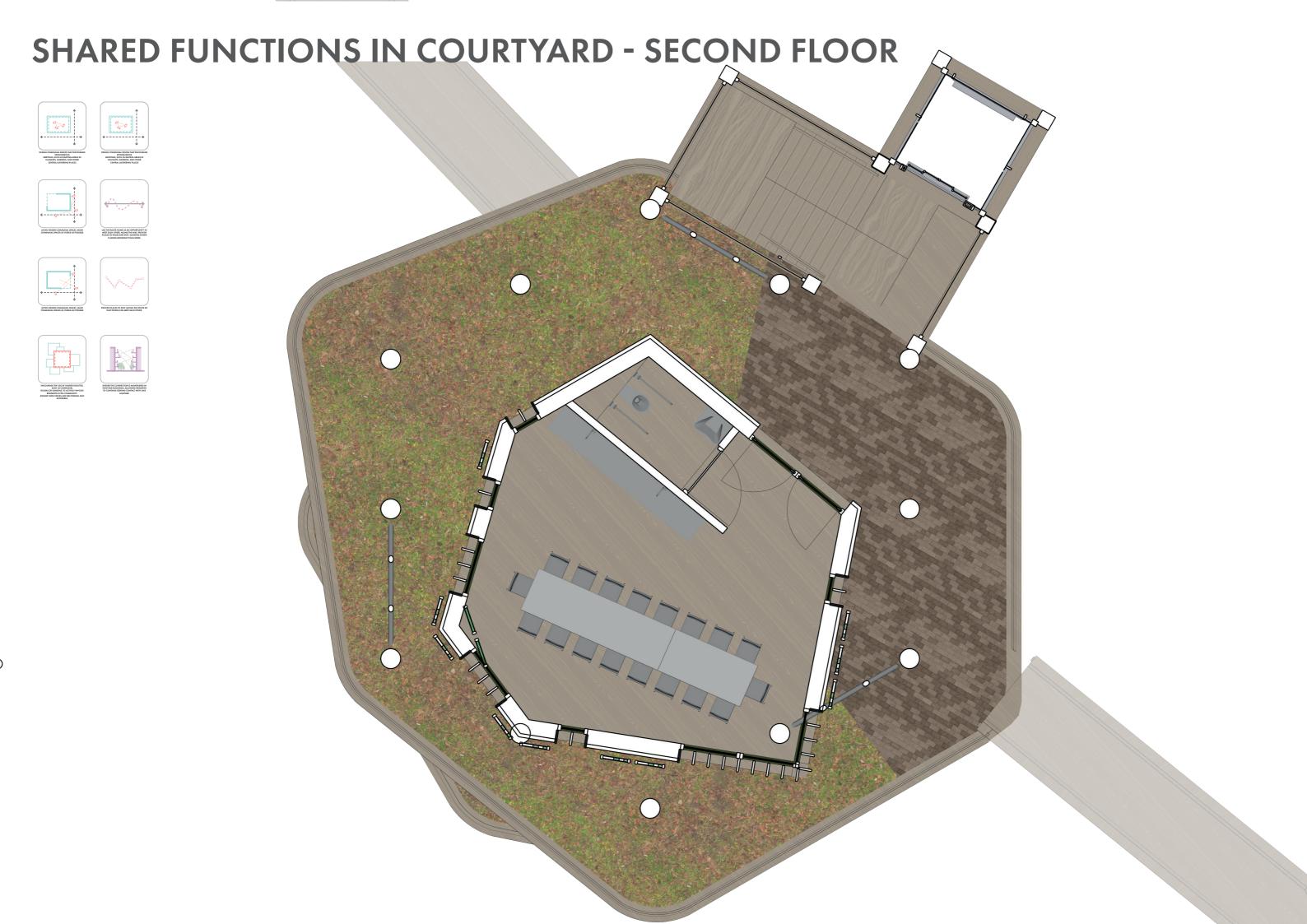










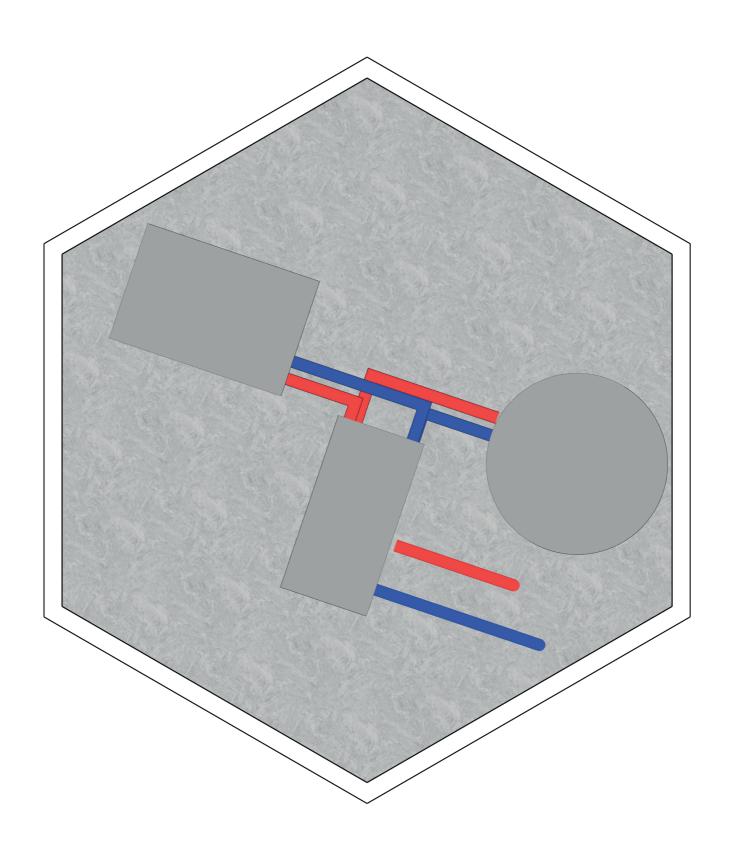




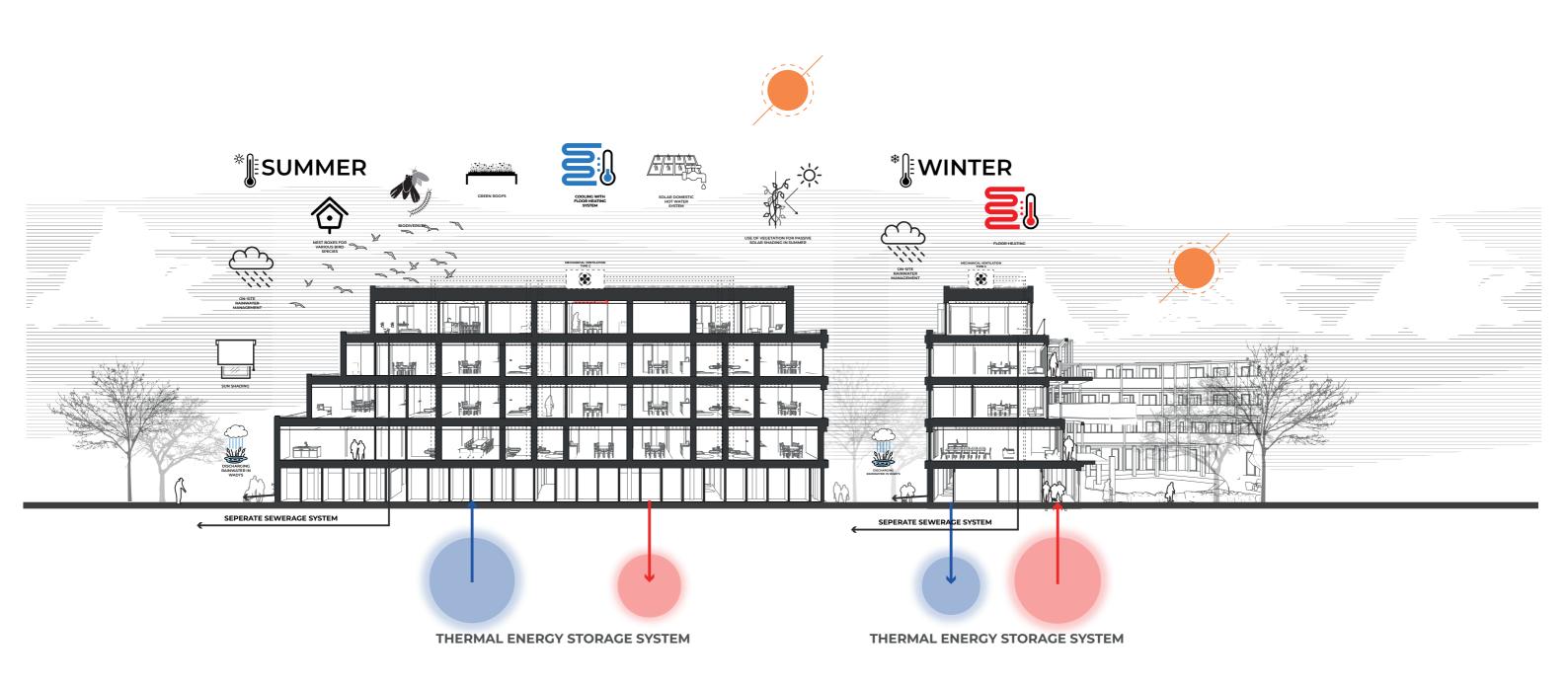
SHARED FUNCTIONS IN COURTYARD - EXPLODED VIEW



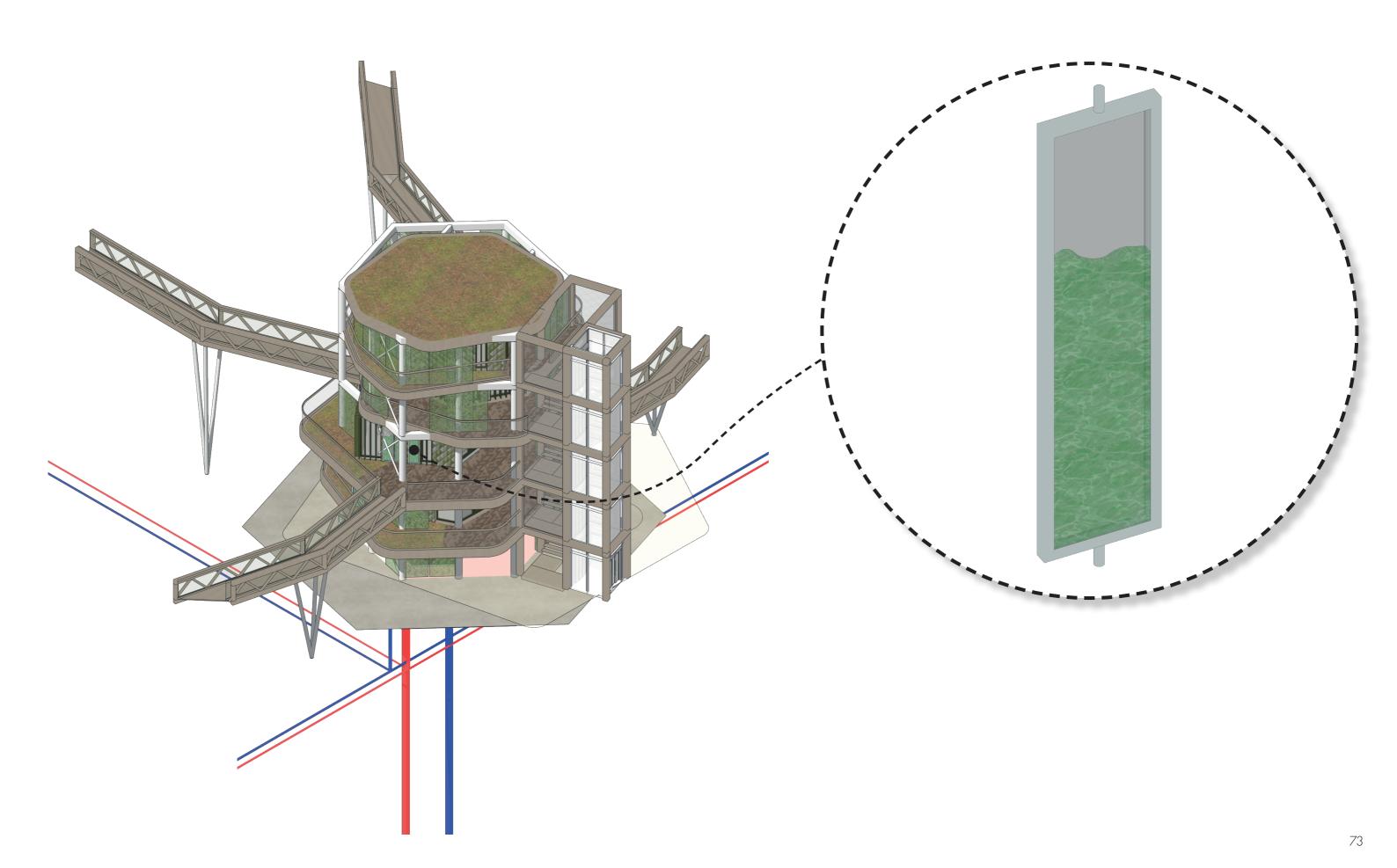
SHARED FUNCTIONS IN COURTYARD - BASEMENT



CLIMATE SECTION



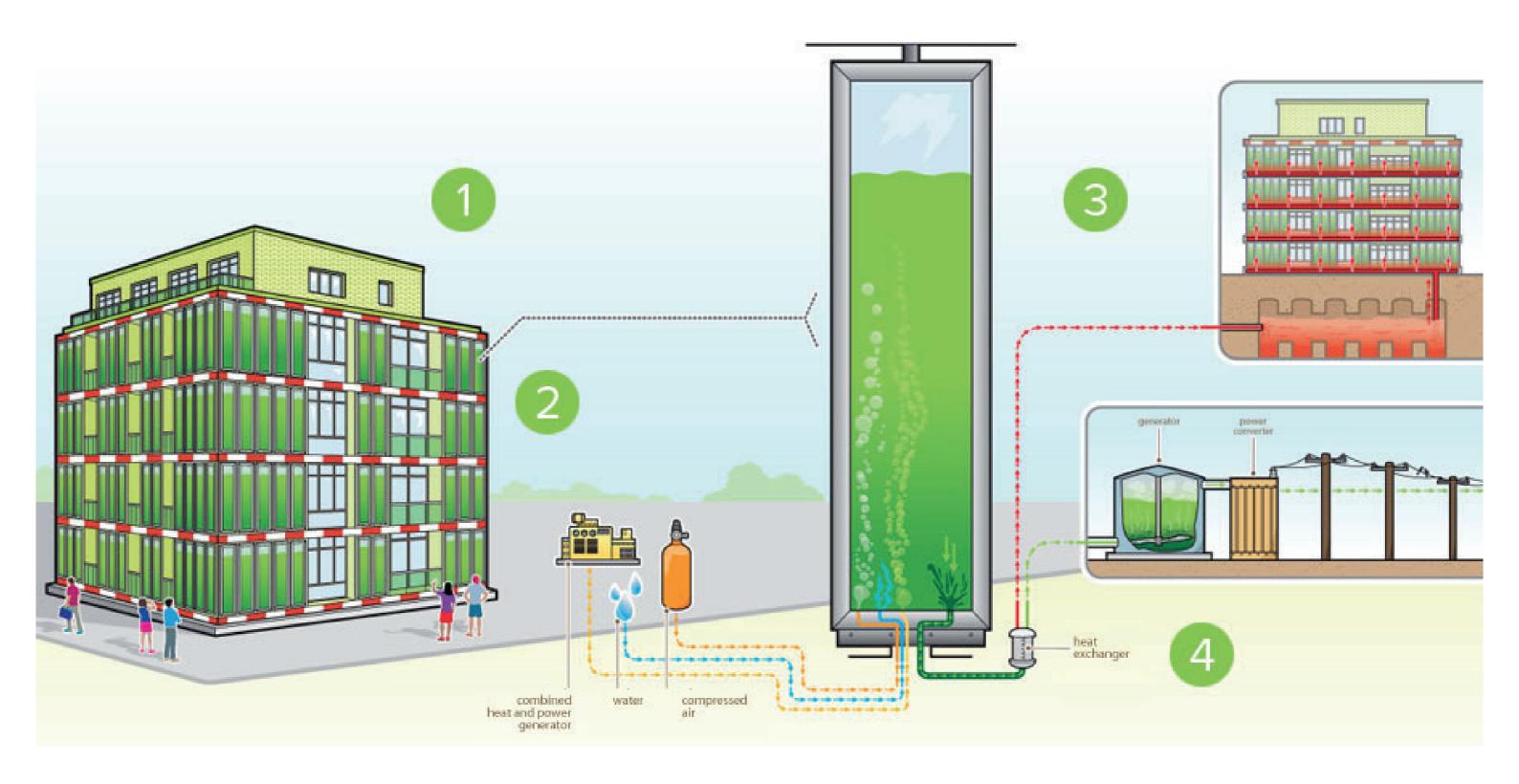
ALGAE FACADE

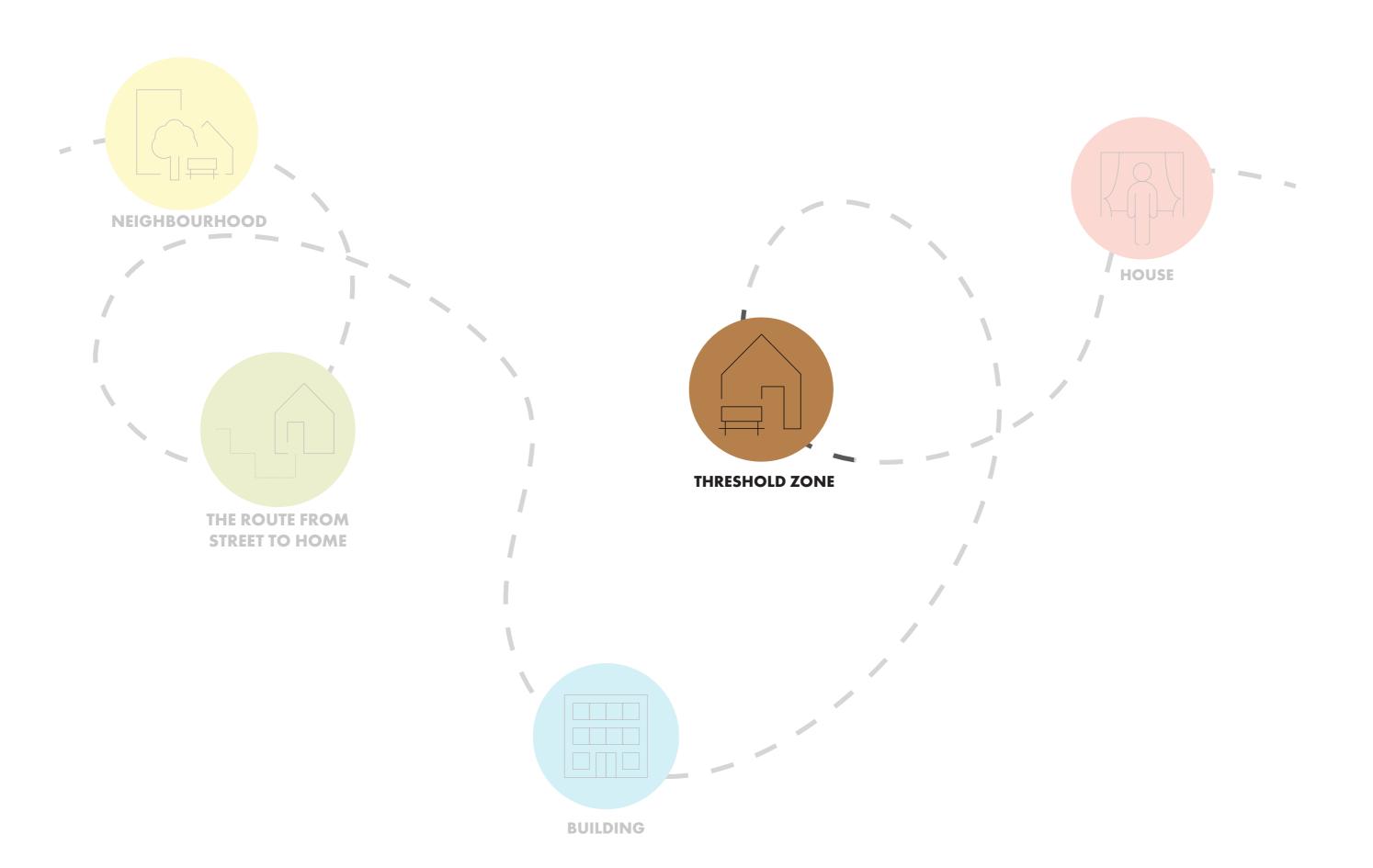


ALGAE FACADE



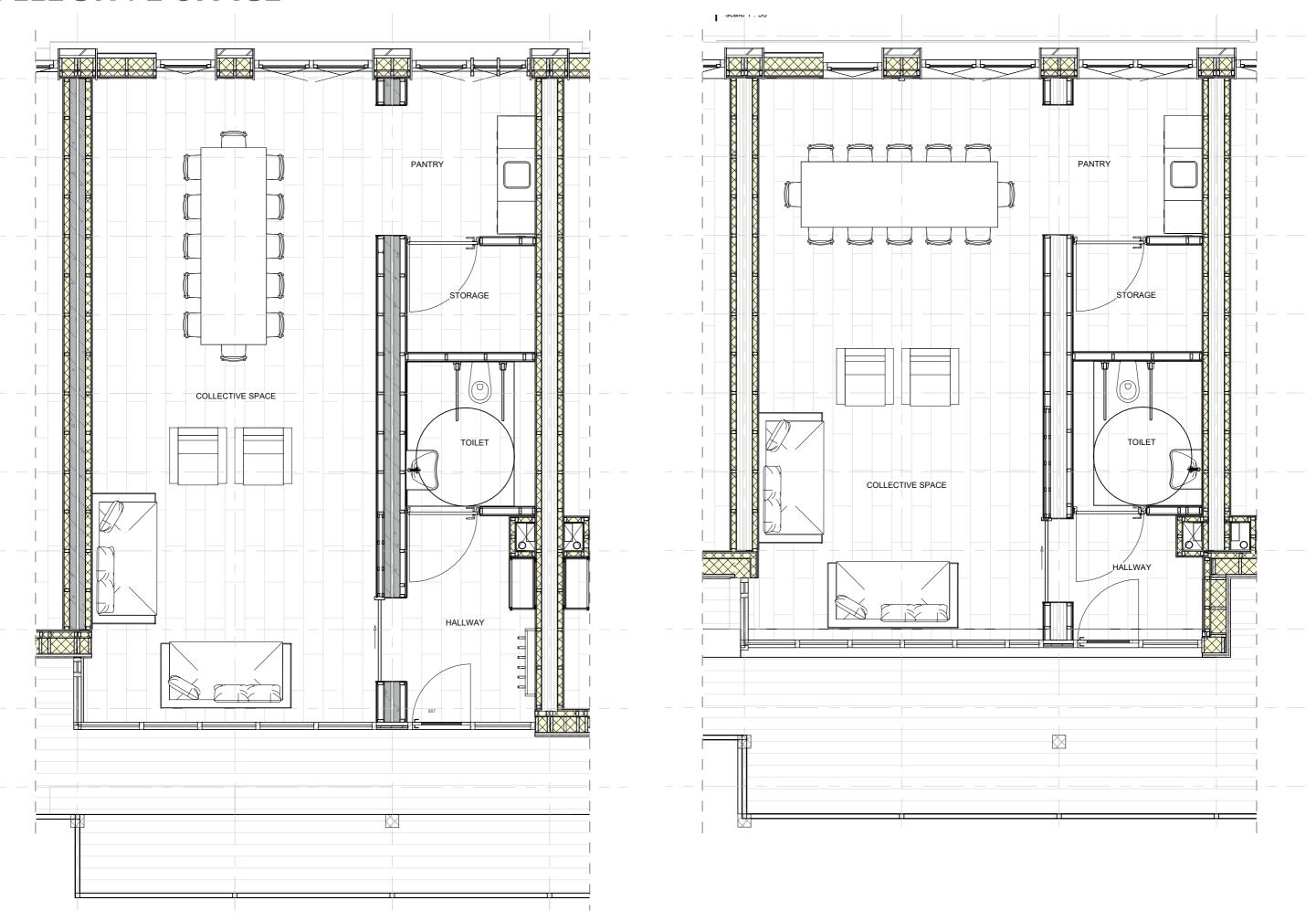
ALGAE FACADE



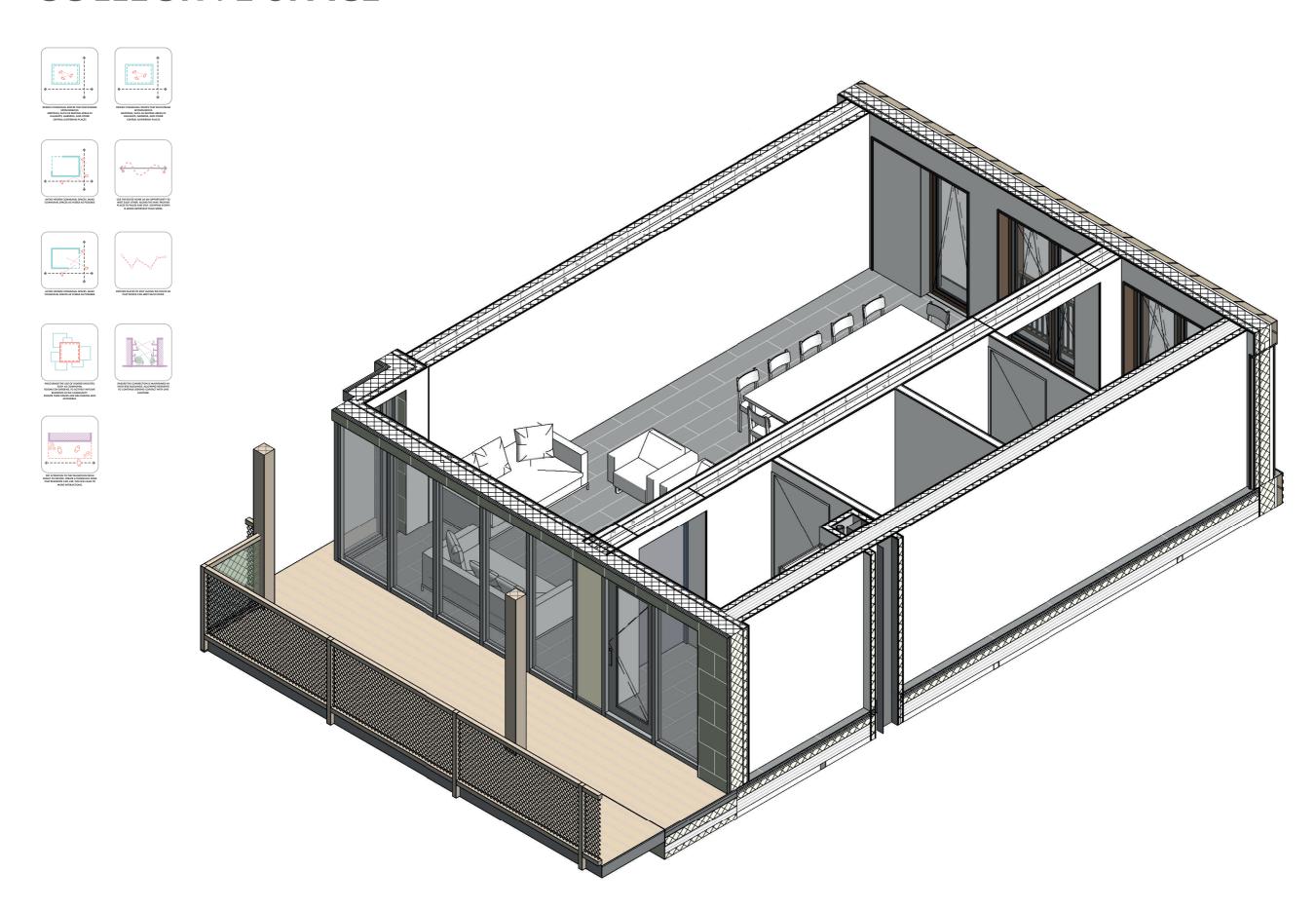




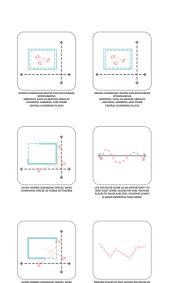
COLLECTIVE SPACE



COLLECTIVE SPACE



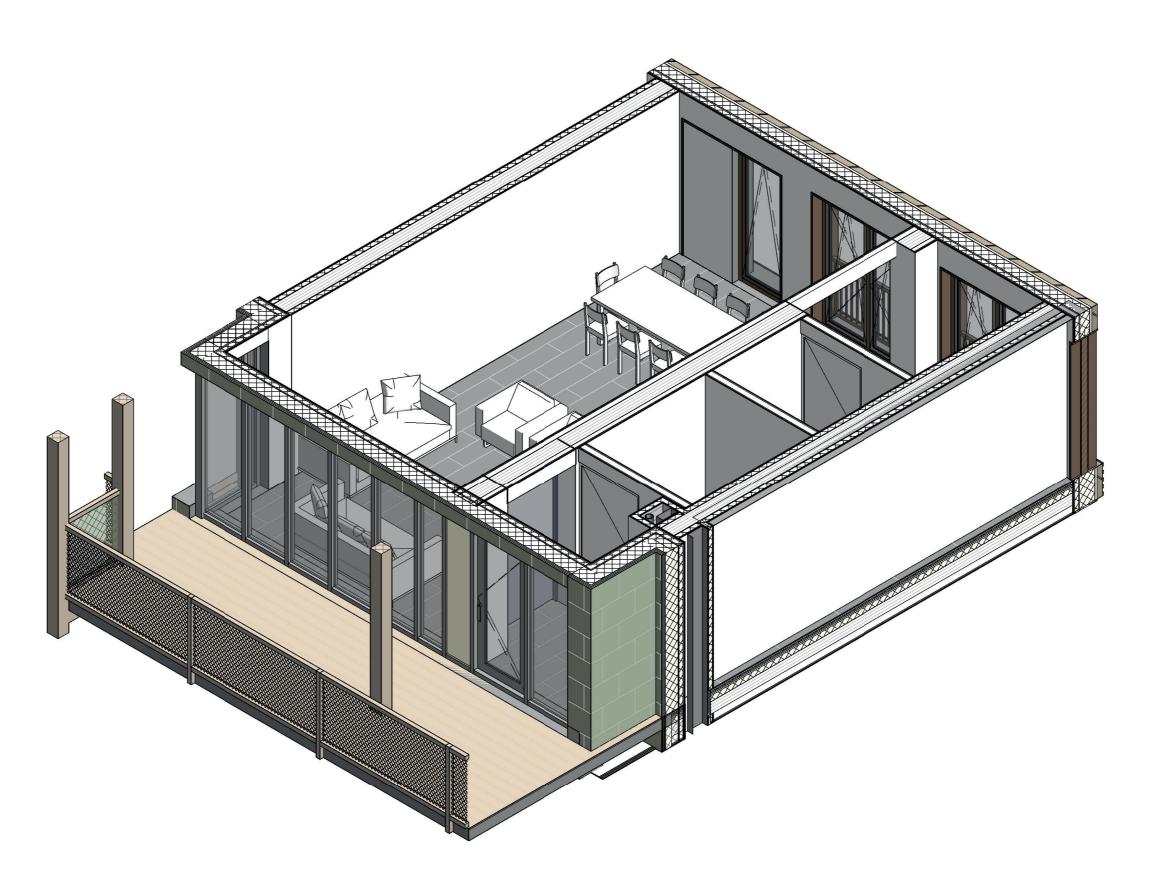
COLLECTIVE SPACE







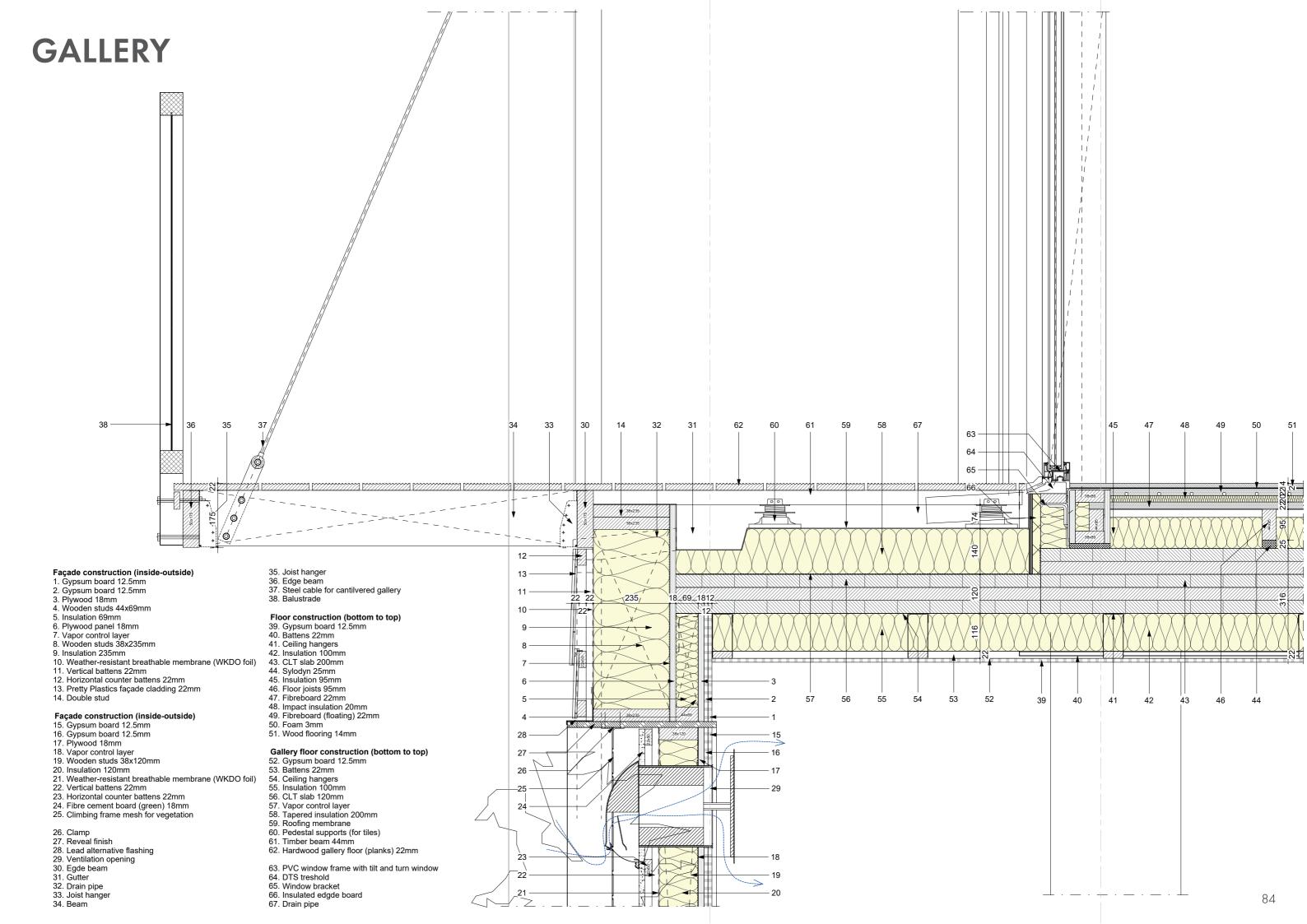


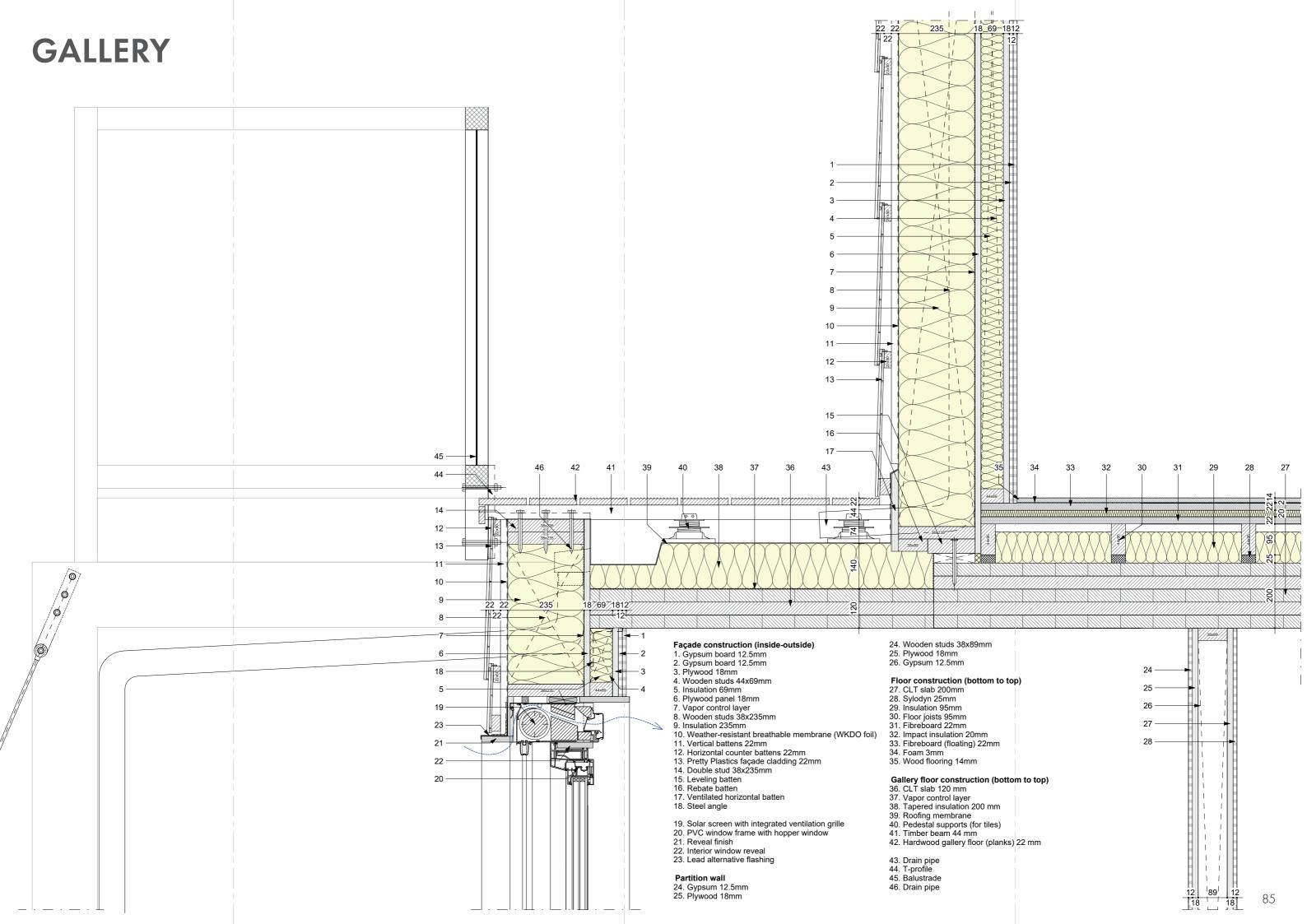


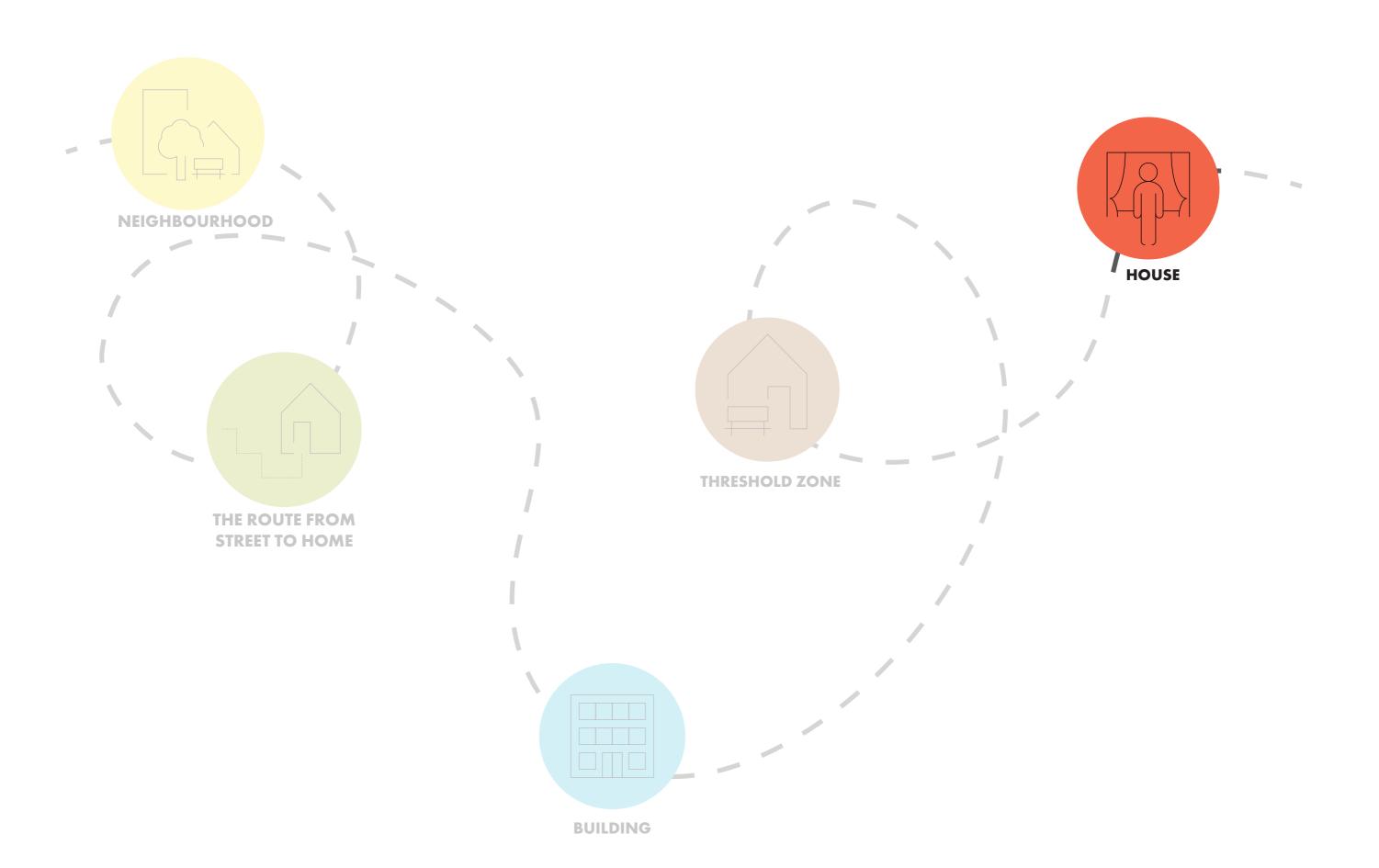




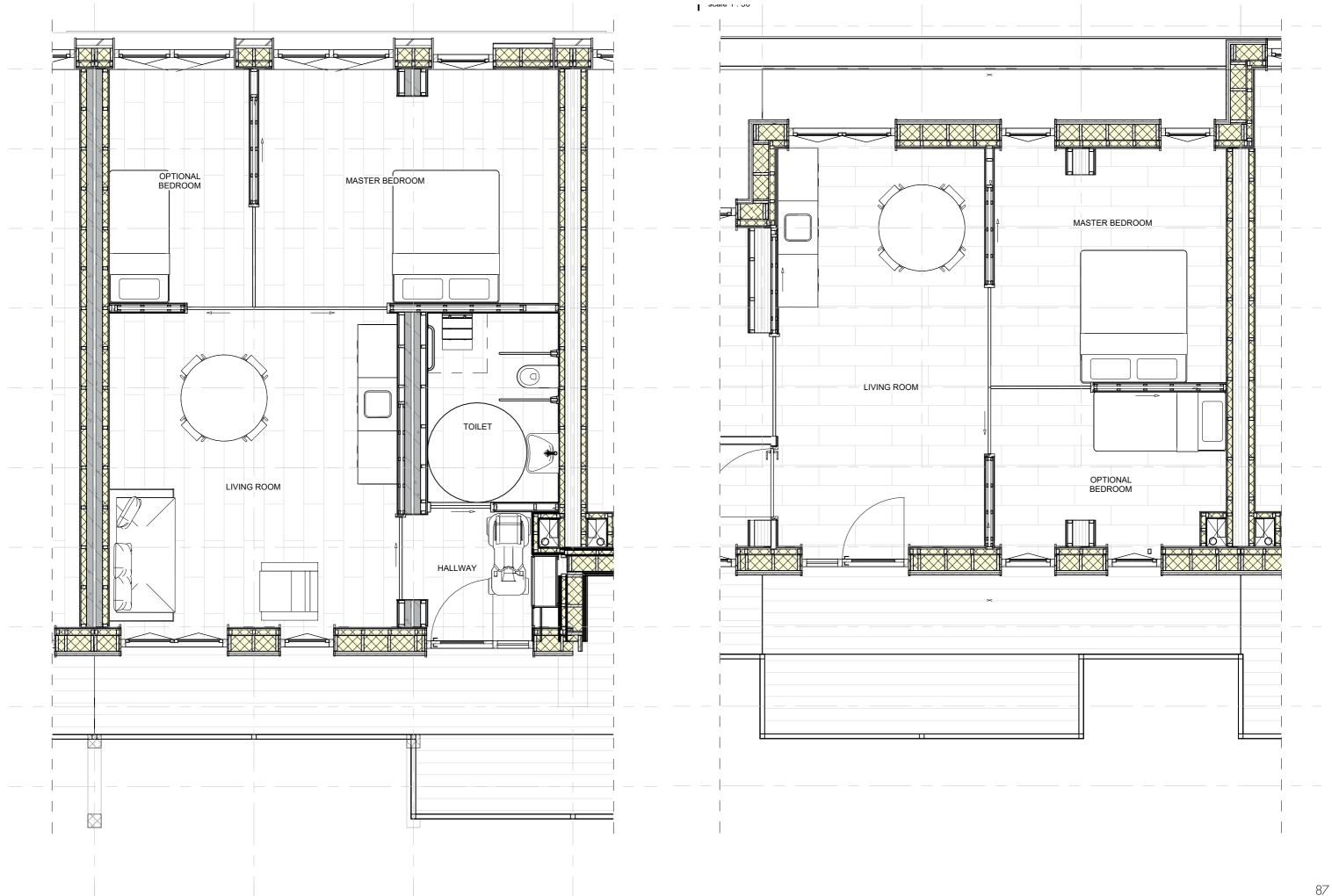








APARTMENTS



APARTMENTS



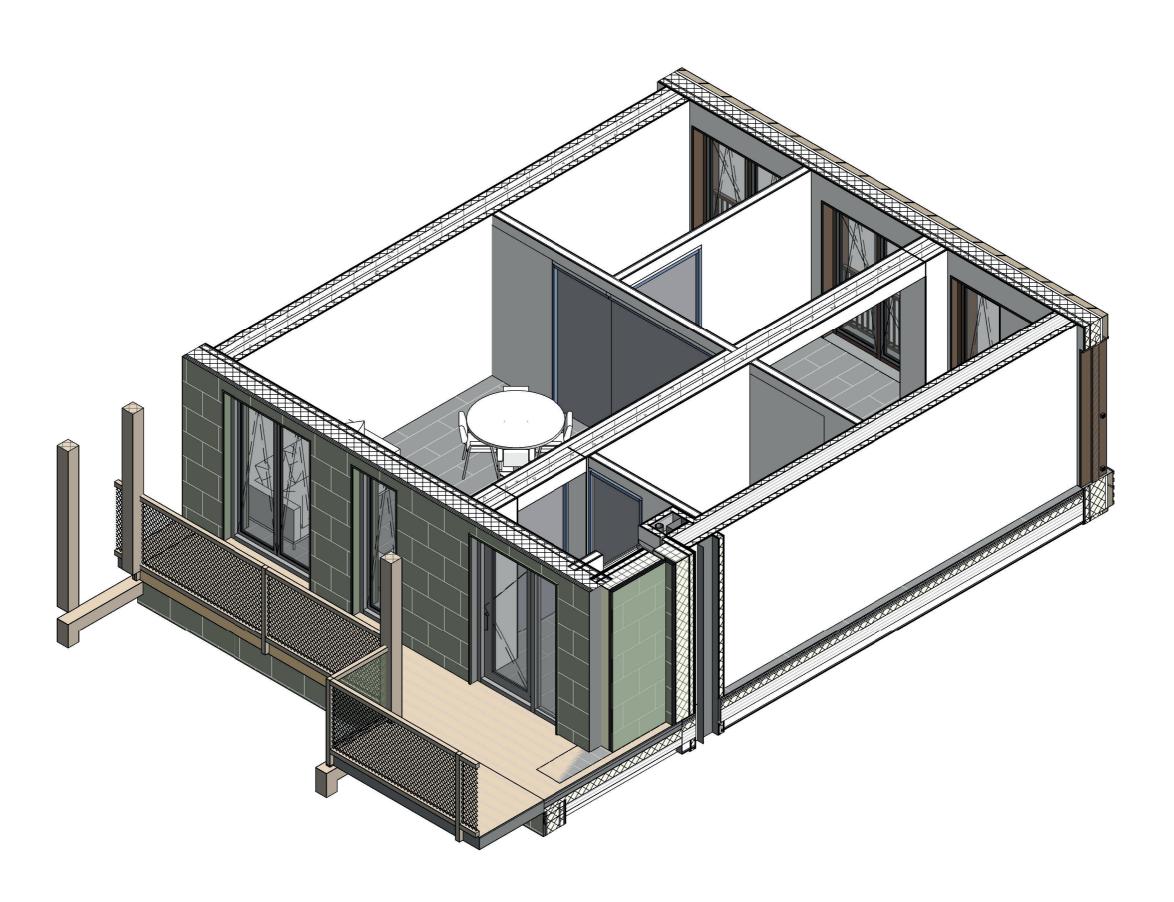












APARTMENTS













