

arch 4505  
assmt 3c  
roch belair  
4 / 16 / 2020

# a tempered junction.

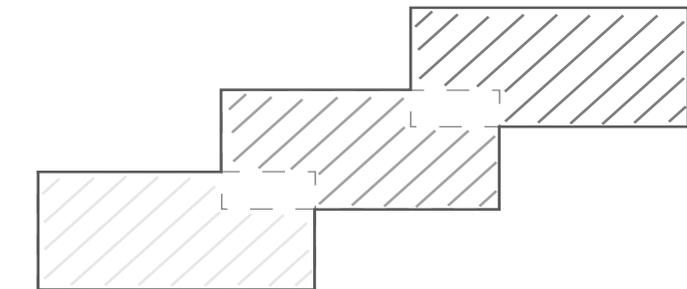
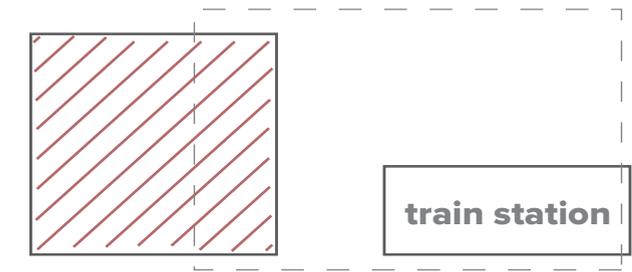
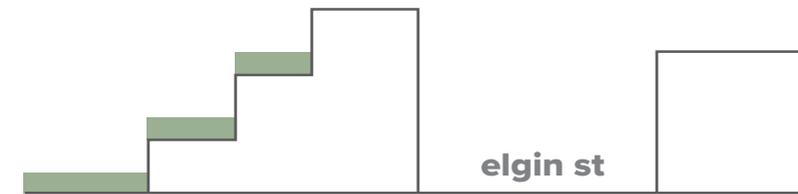
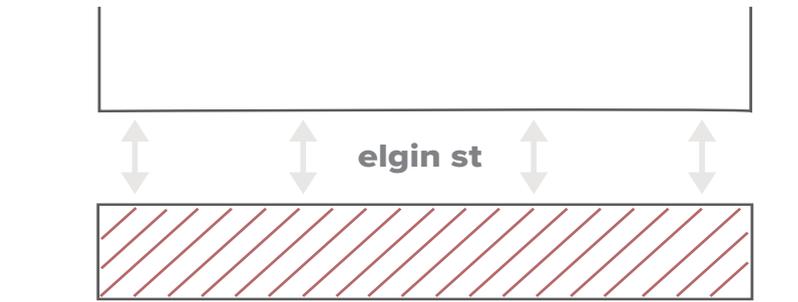
braeden martel + sarah wetteskind

# thesis

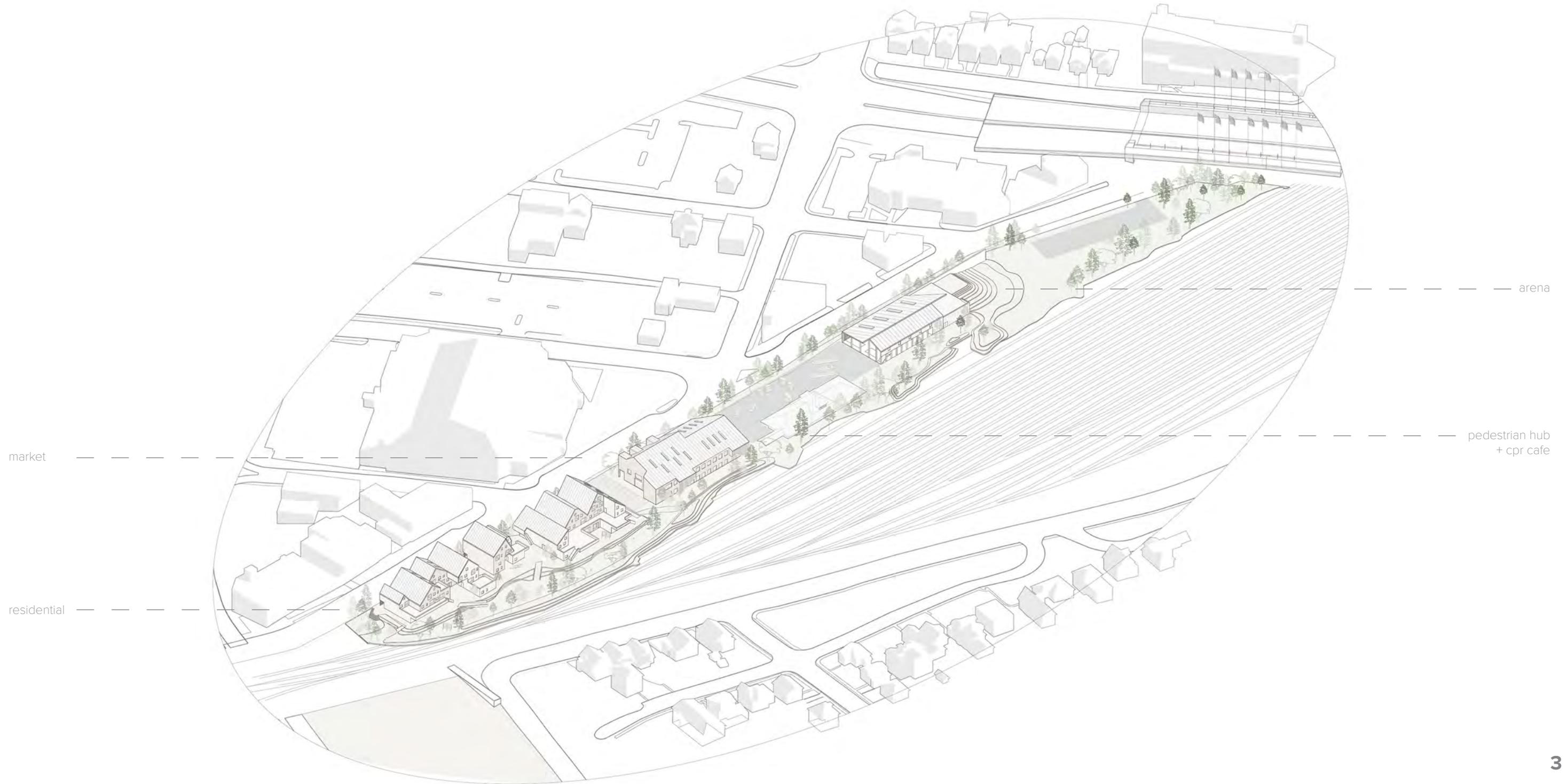
Given the transient nature of the downtown core our project aims to bring residential diversity and permanence back where it once was.

This will be done through:

- Offering public + semi - private space
- Housing at the scale of mid-rise cohousing
- Opportunities for personal + financial growth
- A sense of privacy + pride
- A greenway that acts as a residential street for shared activity
- A unique urban residential relationship through the overlapping of programs

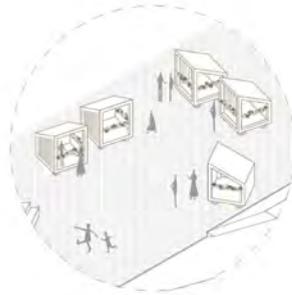


# site strategies // aeriél axo.

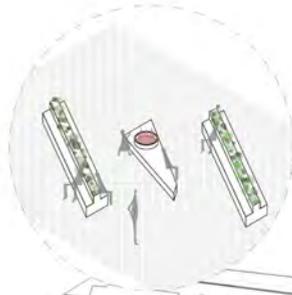


# site strategies // urban design.

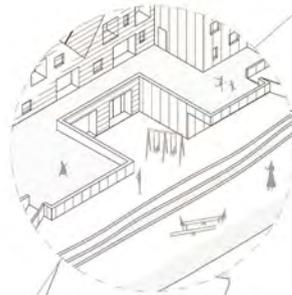
moveable market stalls in  
flexible pedestrian hub



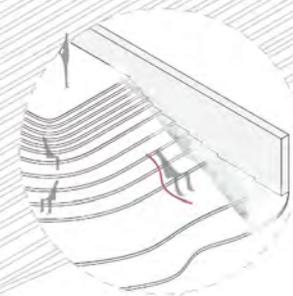
community firepit +  
green features



staggered privacy for residents  
+ greenway users



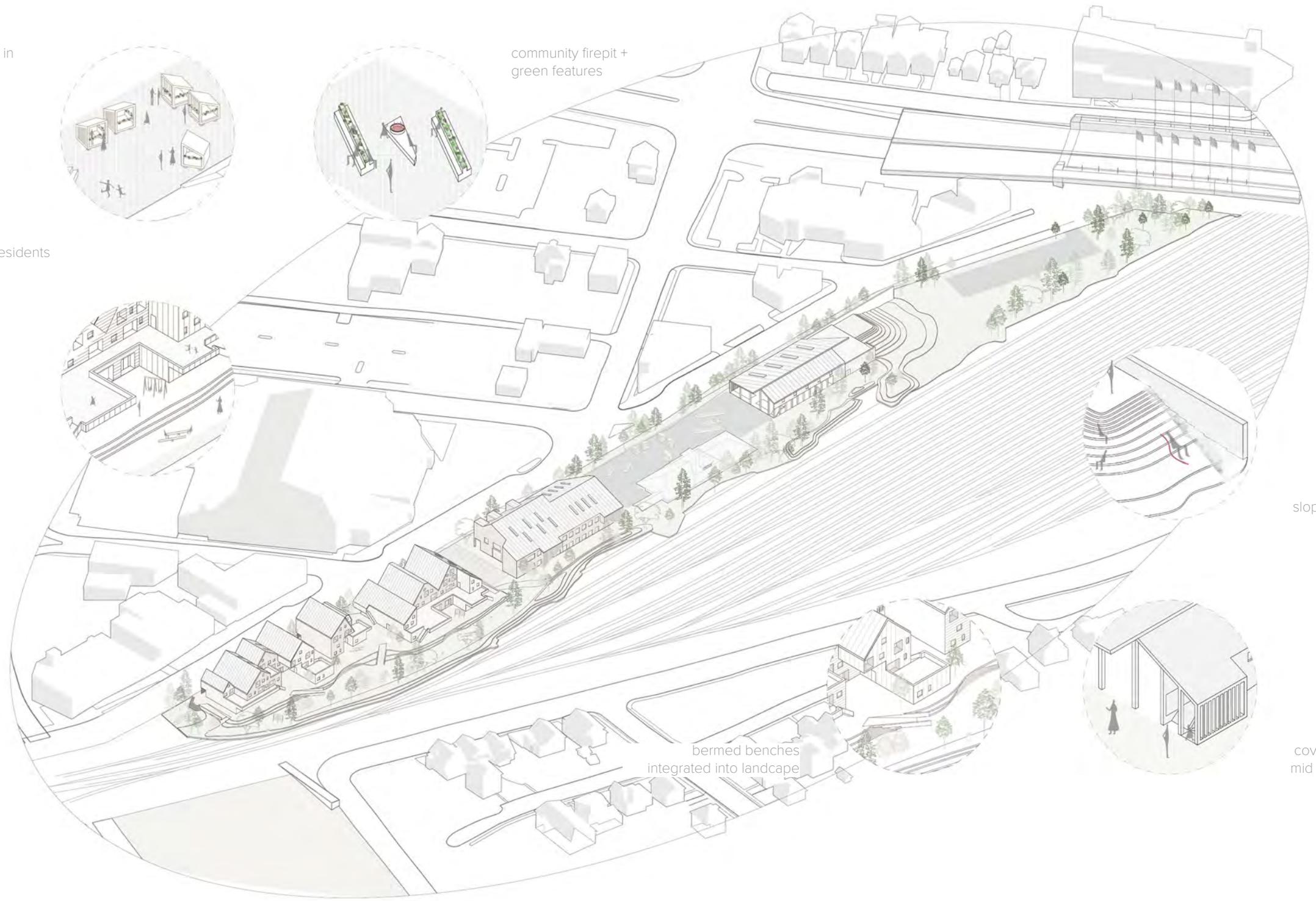
sliding hill +  
sloped green space



bermed benches  
integrated into landscape



covered arena viewing +  
mid site parking entrance



**site strategies** // elevated backyards.



# site strategies // pedestrian hub.



# site strategies // ground floor.

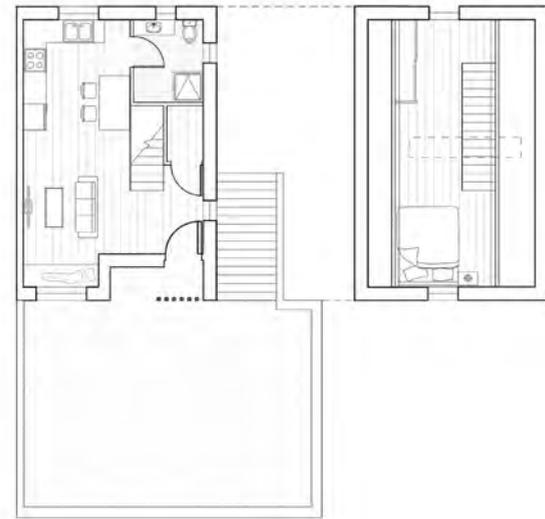
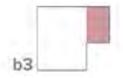
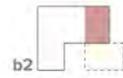


# site strategies // ground floor.

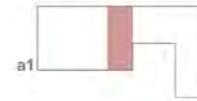


# site strategies // residential units.

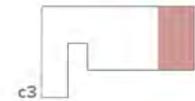
walk-out studio



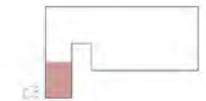
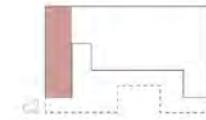
barrier-free one bedroom



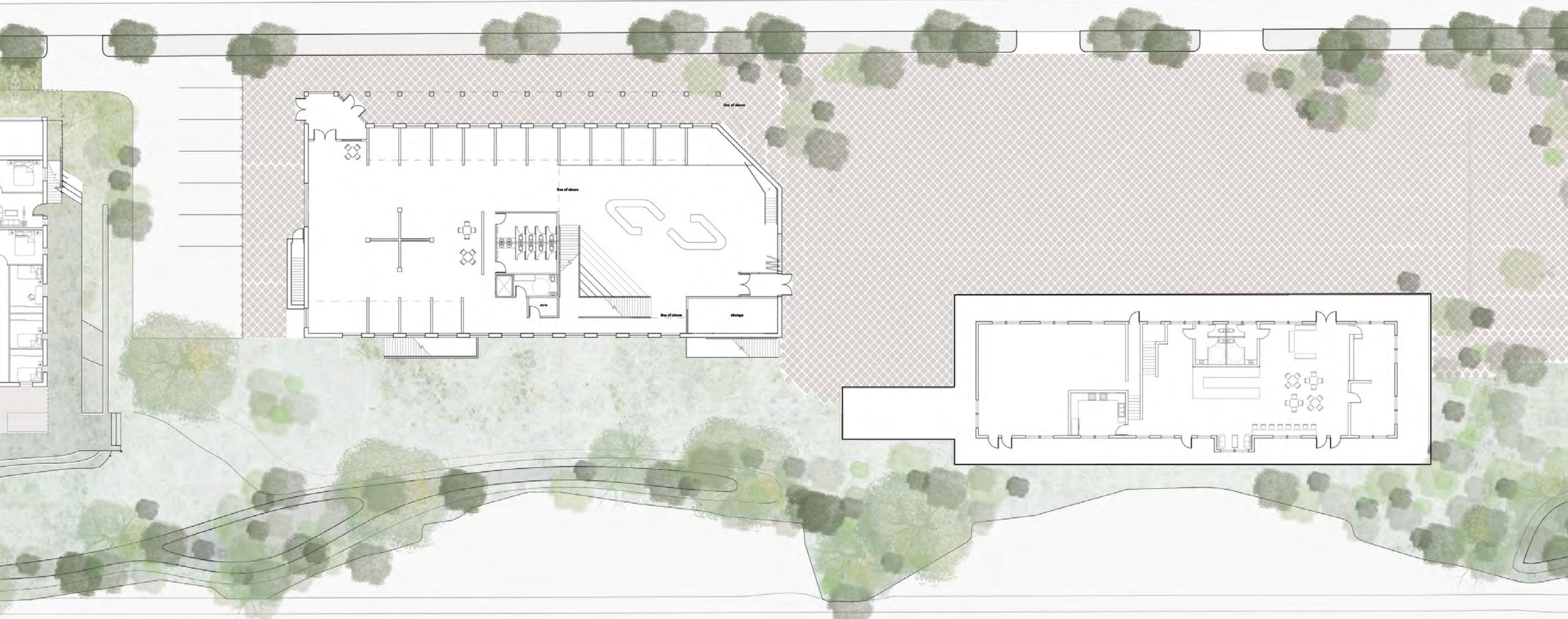
barrier-free three bedroom



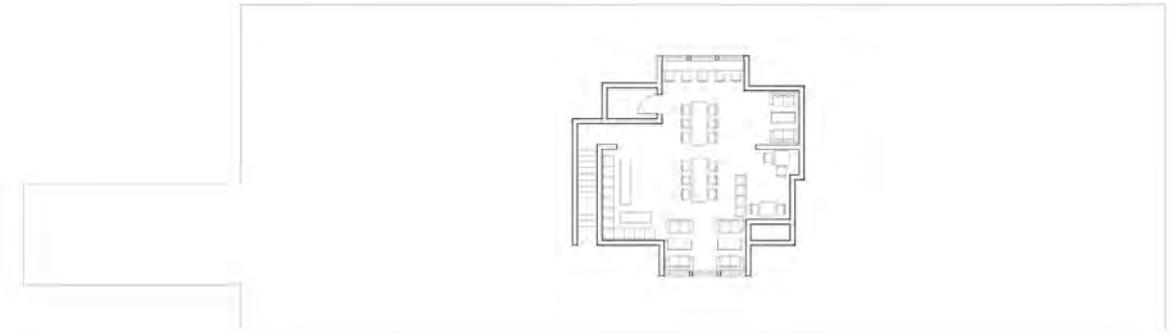
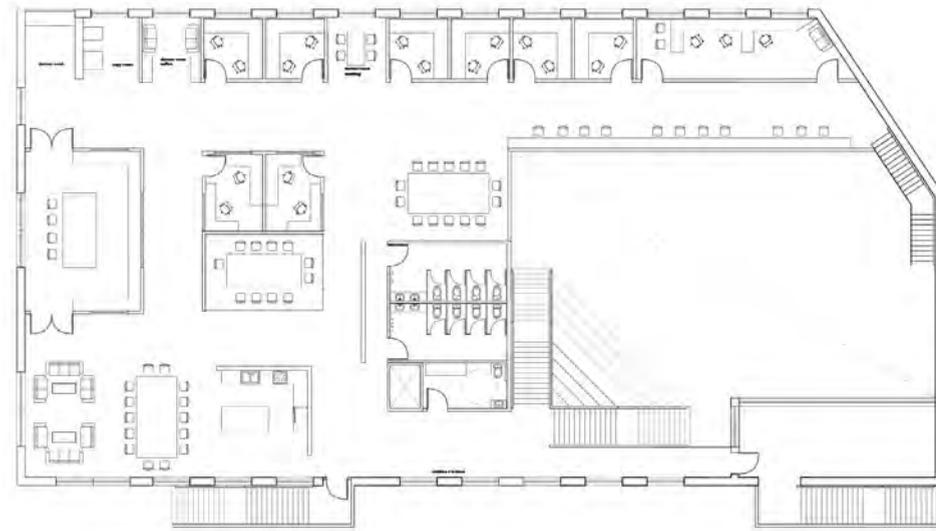
walk-out three + one



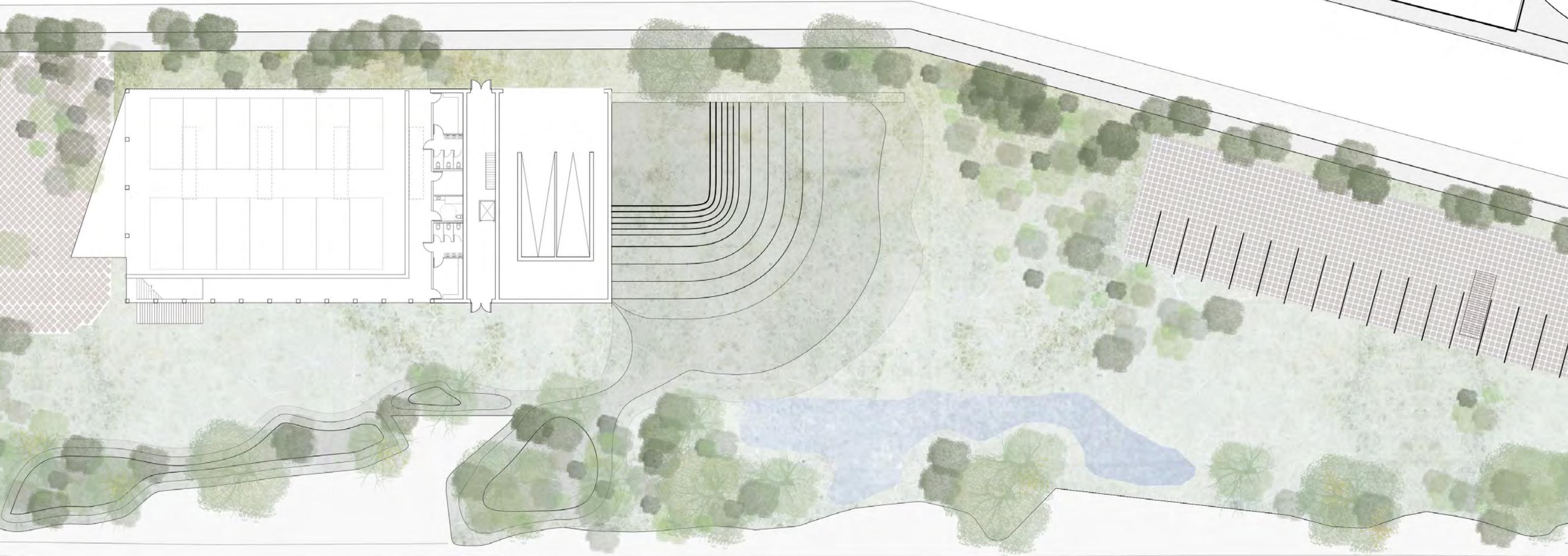
# site strategies // ground floor.



# site strategies // upper floors.



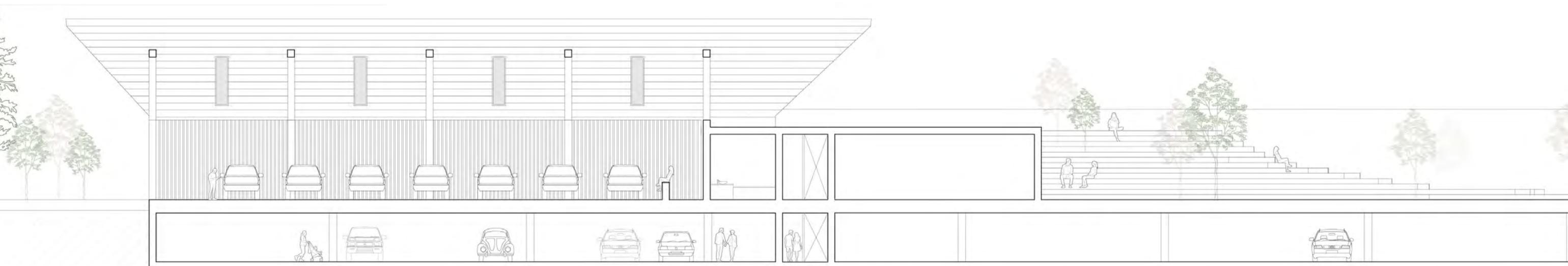
# site strategies // ground floor.



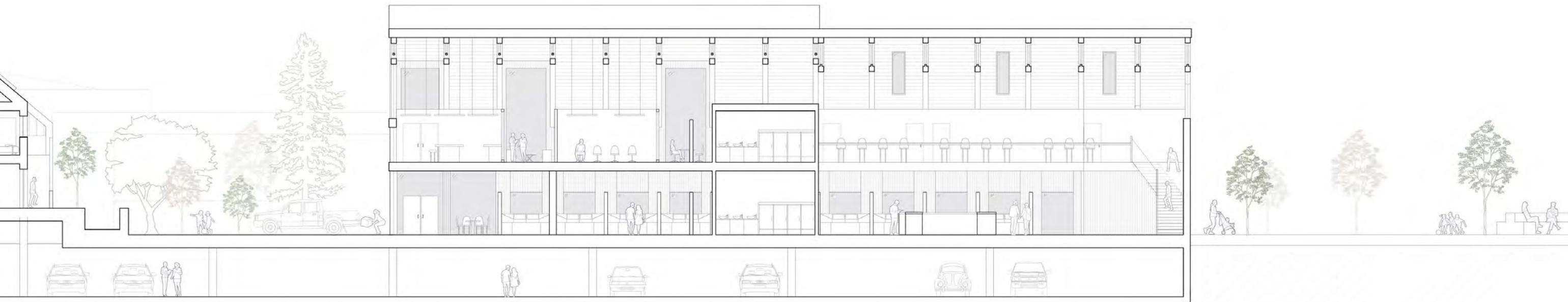
# site strategies // section.



# site strategies // arena section.



# site strategies // market section.

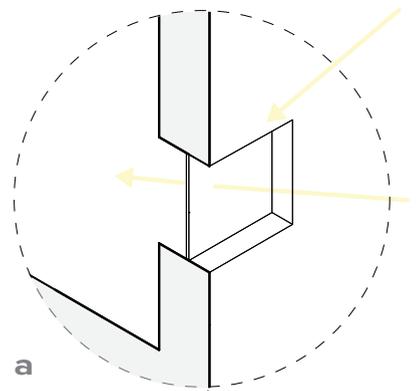
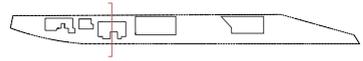


# site strategies // residential section.



# site strategies // passive + active.

summer



a

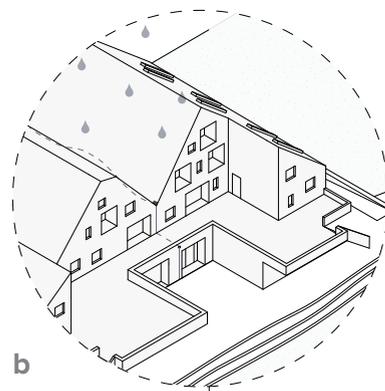
**a //** recessed windows  
minimizing overheating by blocking high angle sun

**b //** greywater collection  
pitched rooves and wedges collect rainwater

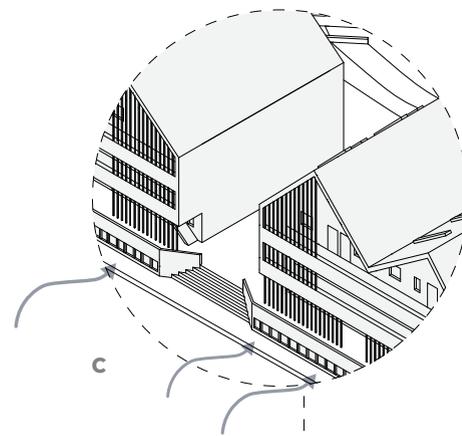
**c //** parking ventilation  
operable openings minimize need for mechanical hvac

**d //** solar collection  
southern exposure utilized through photovoltaics and solar thermal panels

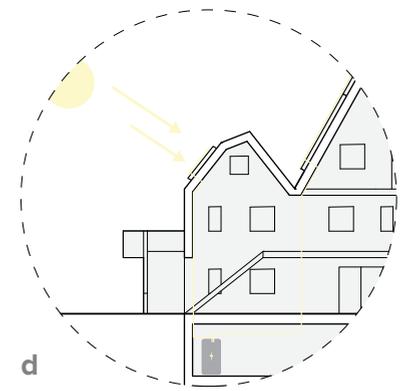
**e //** cross ventilation  
north/south units allow cross ventilation in warm months



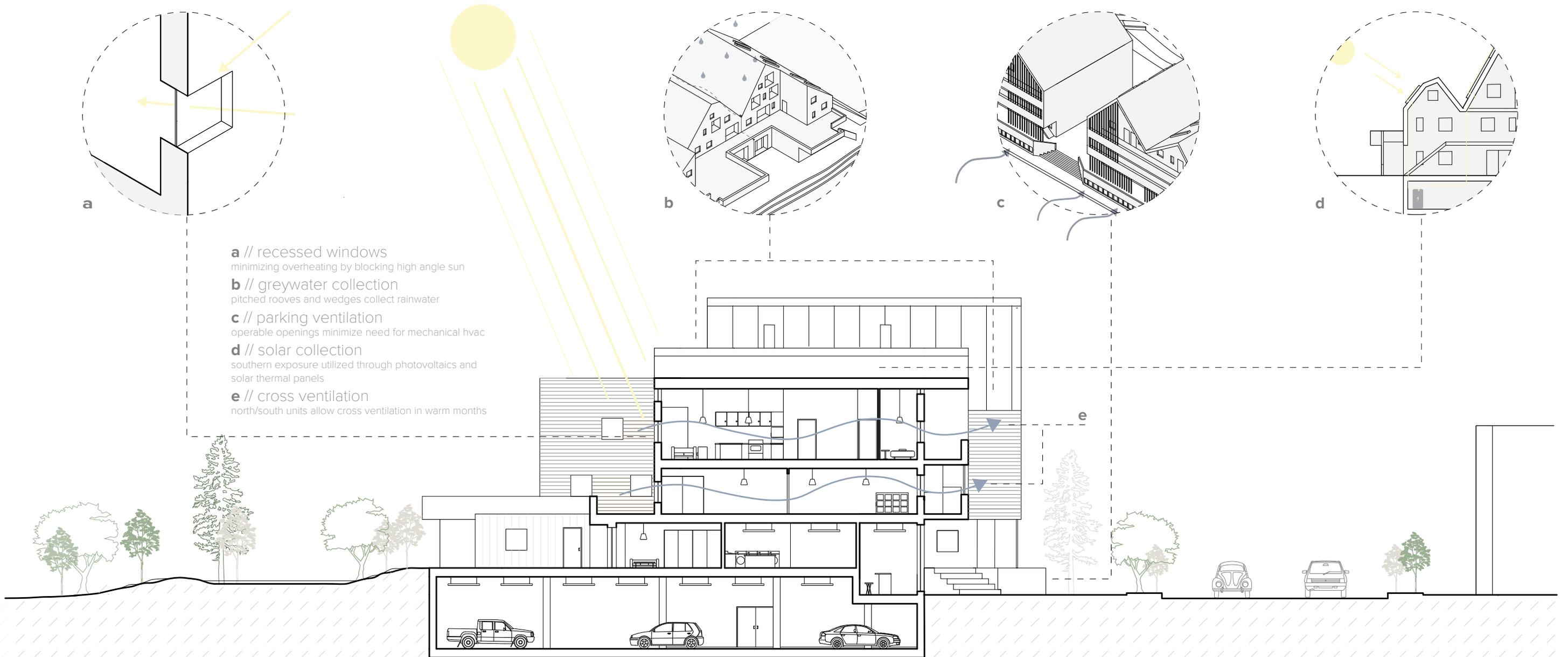
b



c

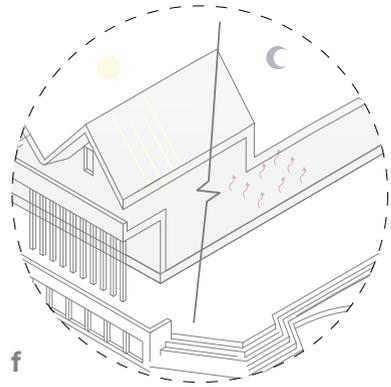
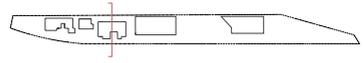


d

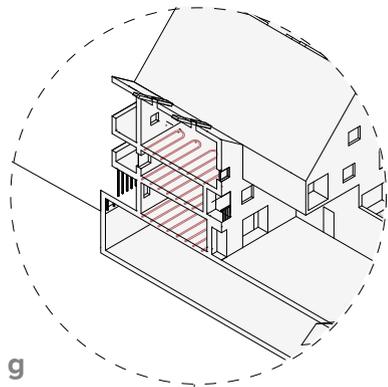


# site strategies // passive + active.

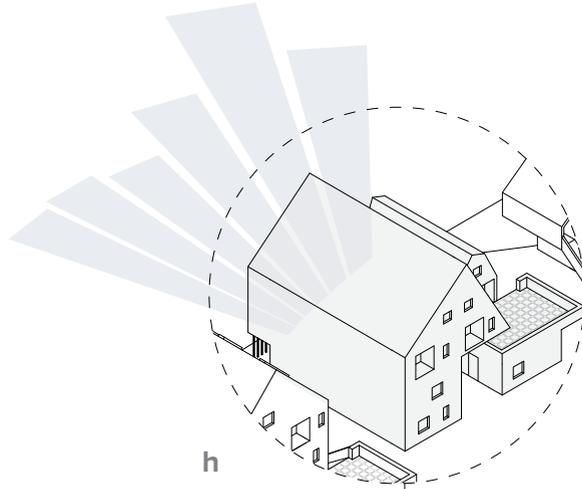
winter



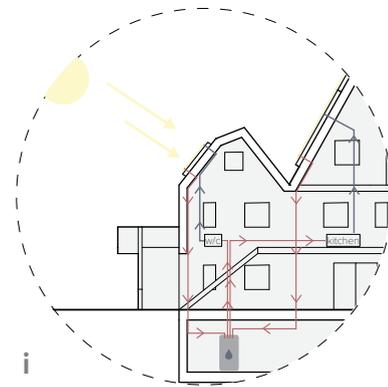
f



g

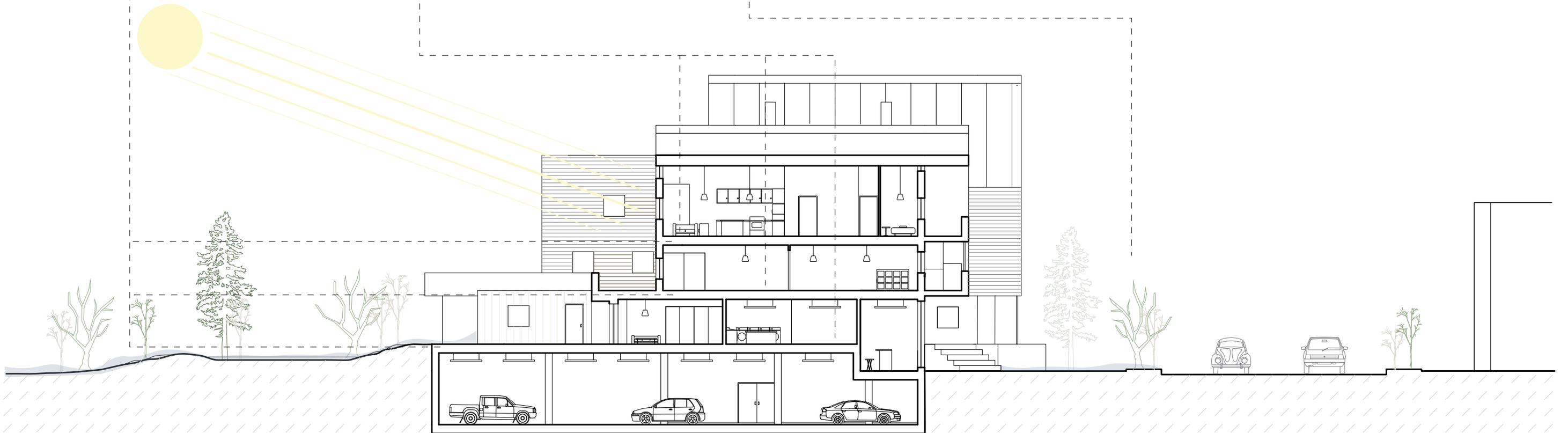


h



i

- f // thermal mass**  
concrete slab floors act as thermal mass, collecting heat from southern exposure in the day, releasing at night
- g // radiant in-floor heating**  
provides thermal comfort in spaces, minimizes heating
- h // orientation // shelterbelt**  
northern winter winds minimized in southern playspaces
- i // domestic hot water**  
solar thermal reduces energy use needed to provide tenants with hot water



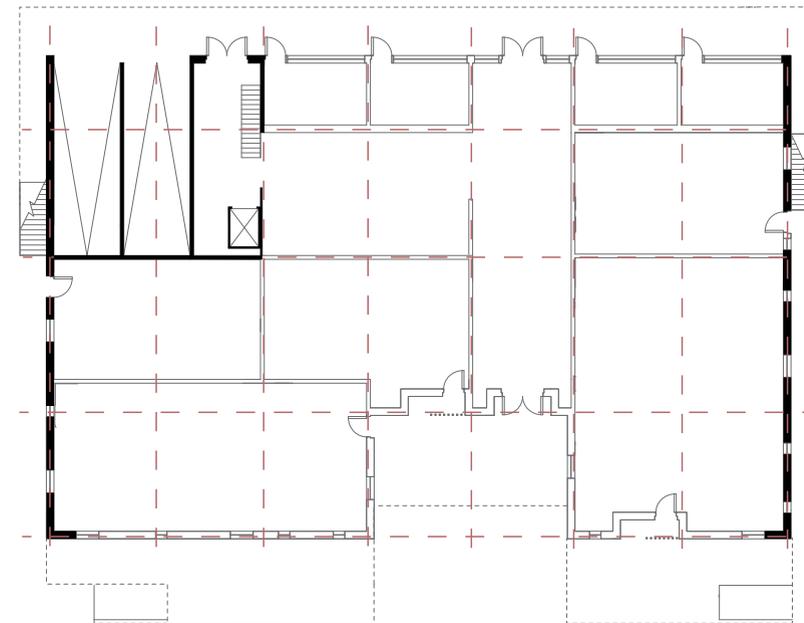
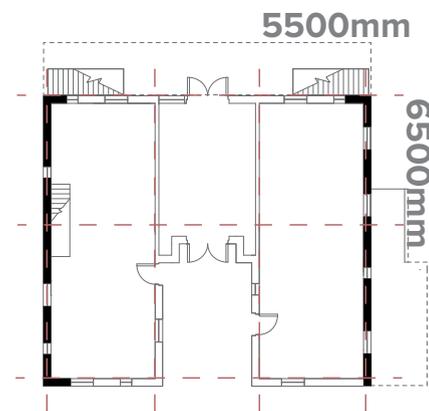
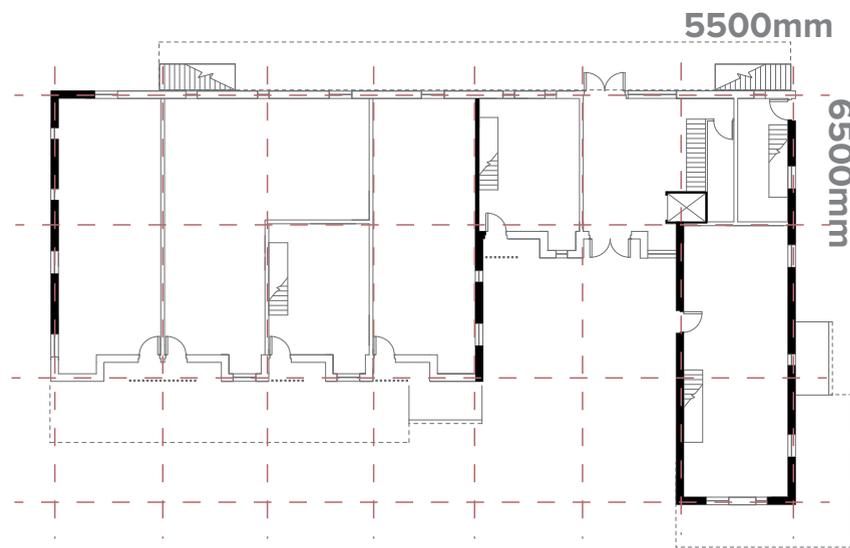
# structure // residential plans.

— — — — — structural grid

— — — — — shear support

load-bearing walls run in accordance to the grid, overhead beams run where walls do not.

transfer slabs separate each underground parking garage from its overhead programs



# structure // market plans.

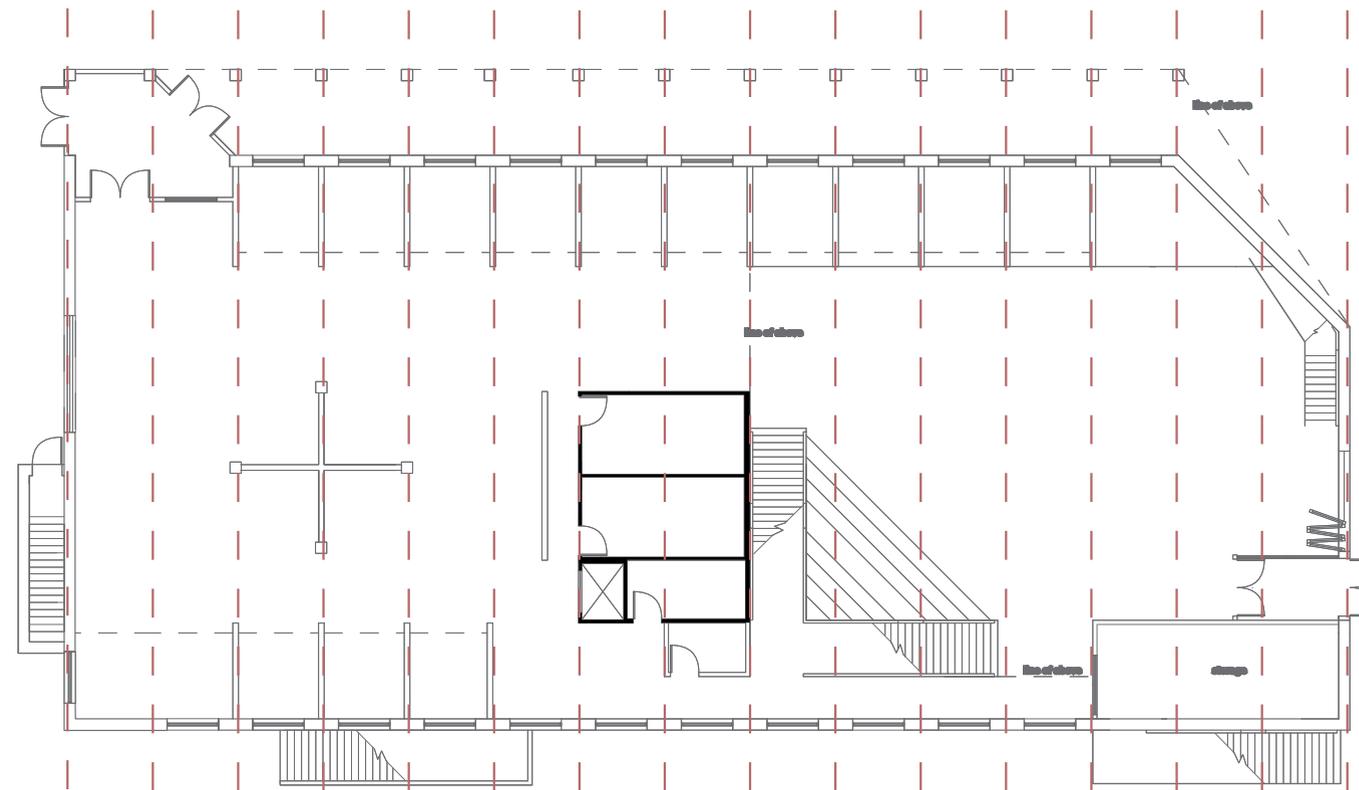
— — — — structural grid

▬ shear support

load-bearing walls run in accordance to the grid, overhead beams run where walls do not.

transfer slabs separate each underground parking garage from its overhead programs

3000mm



# structure // arena plans.

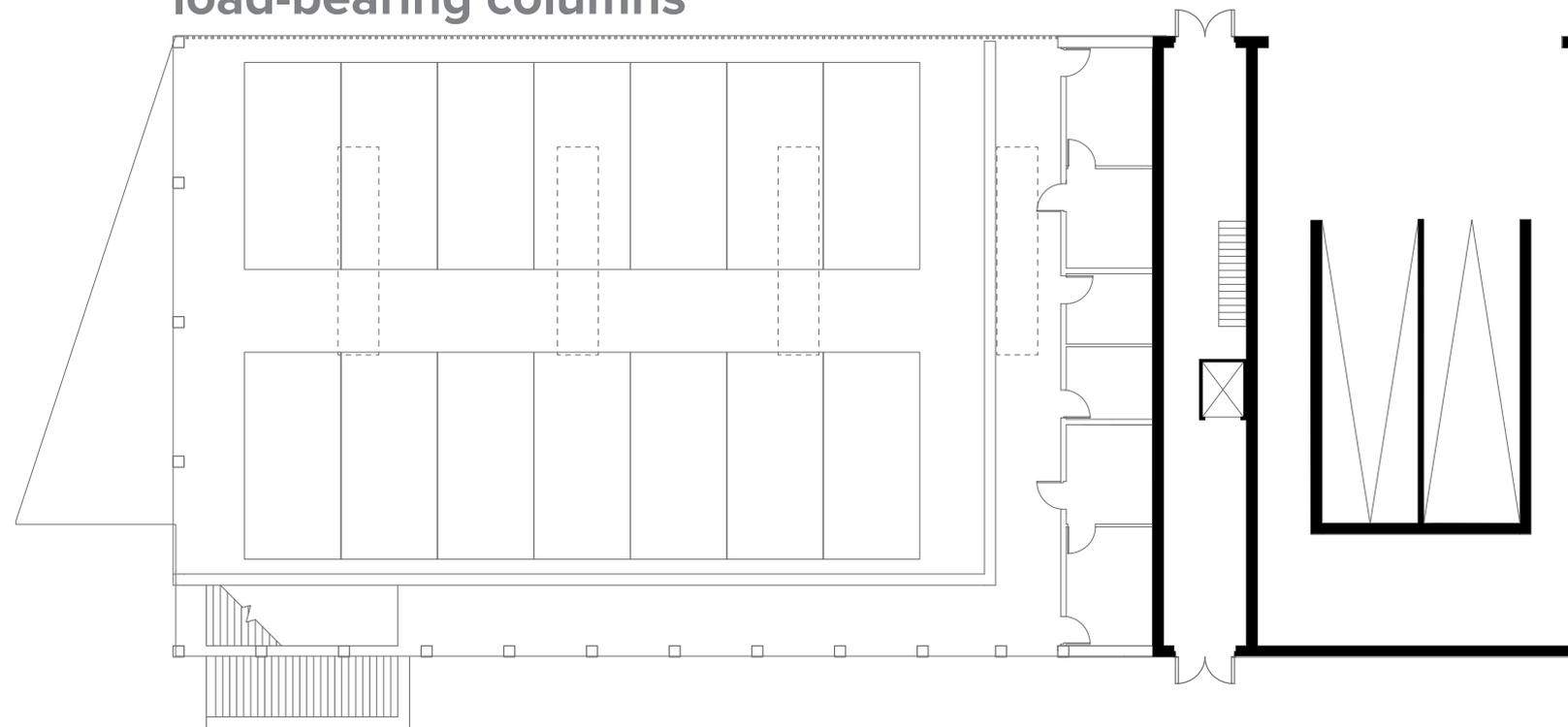
— — — — structural grid

— — — — shear support

load-bearing walls run in accordance to the grid, overhead beams run where walls do not.

transfer slabs separate each underground parking garage from its overhead programs

## load-bearing columns



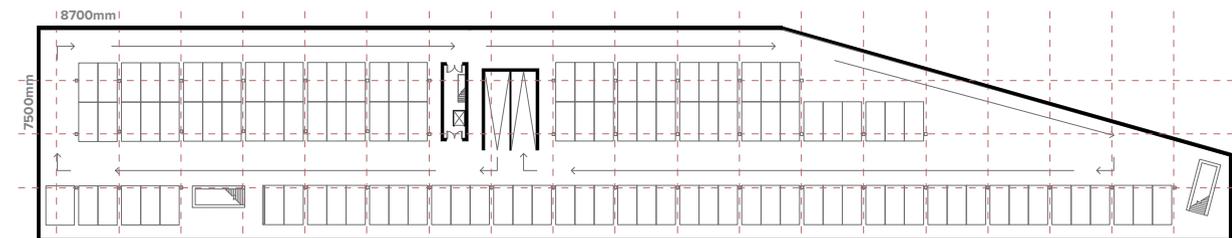
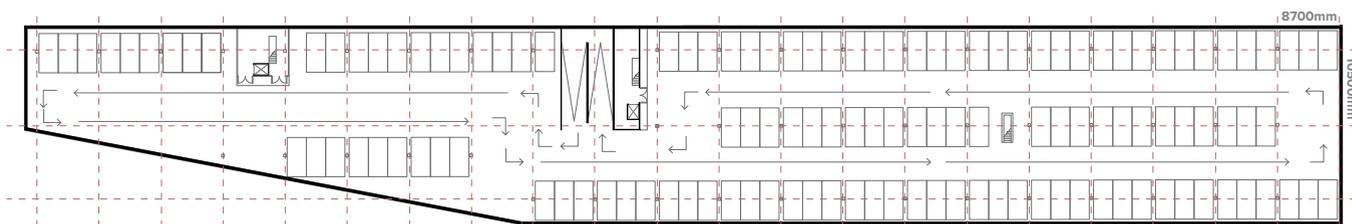
# structure // parking plans.

— — — — structural grid

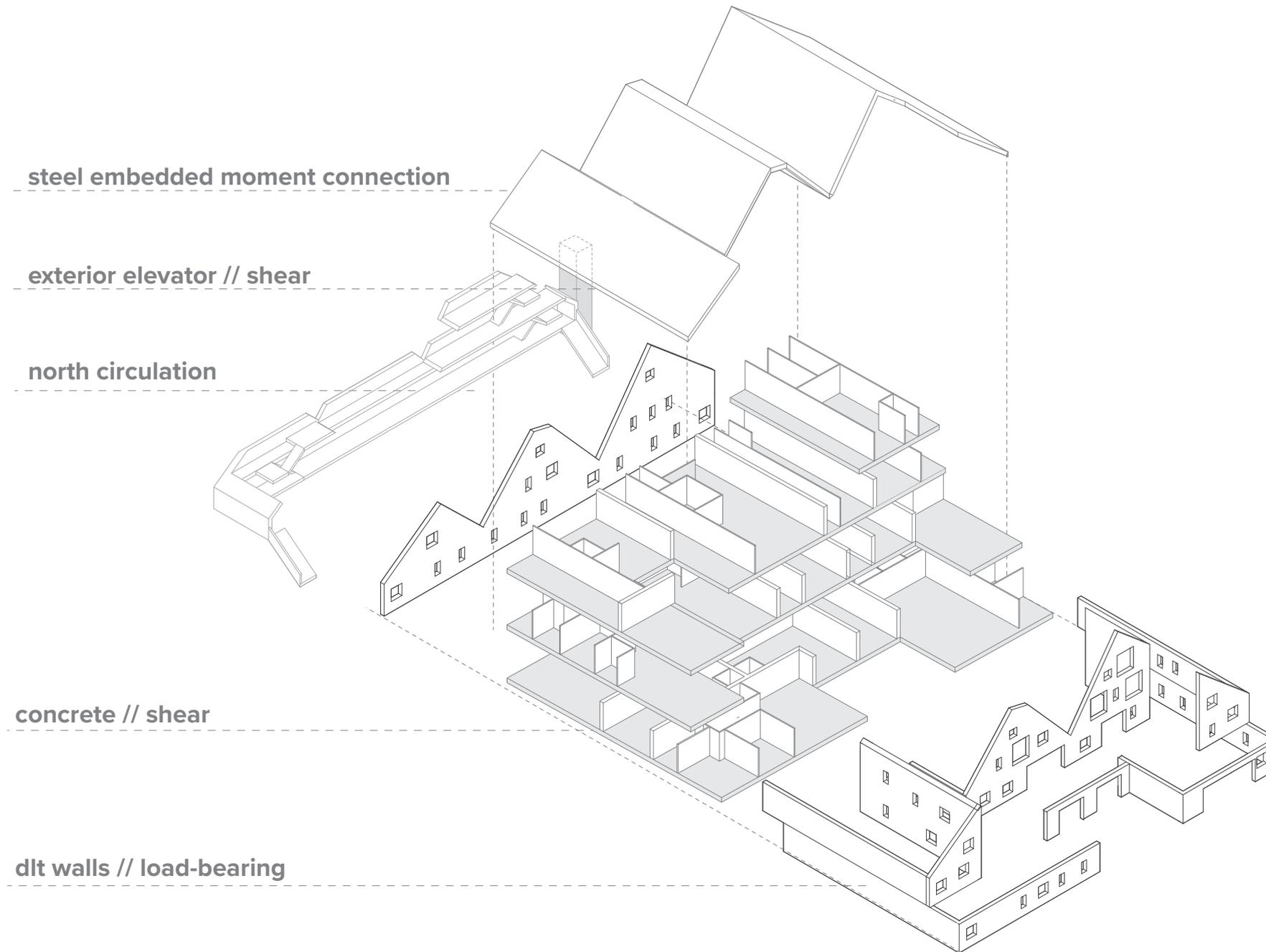
▬ shear support

load-bearing walls run in accordance to the grid, overhead beams run where walls do not.

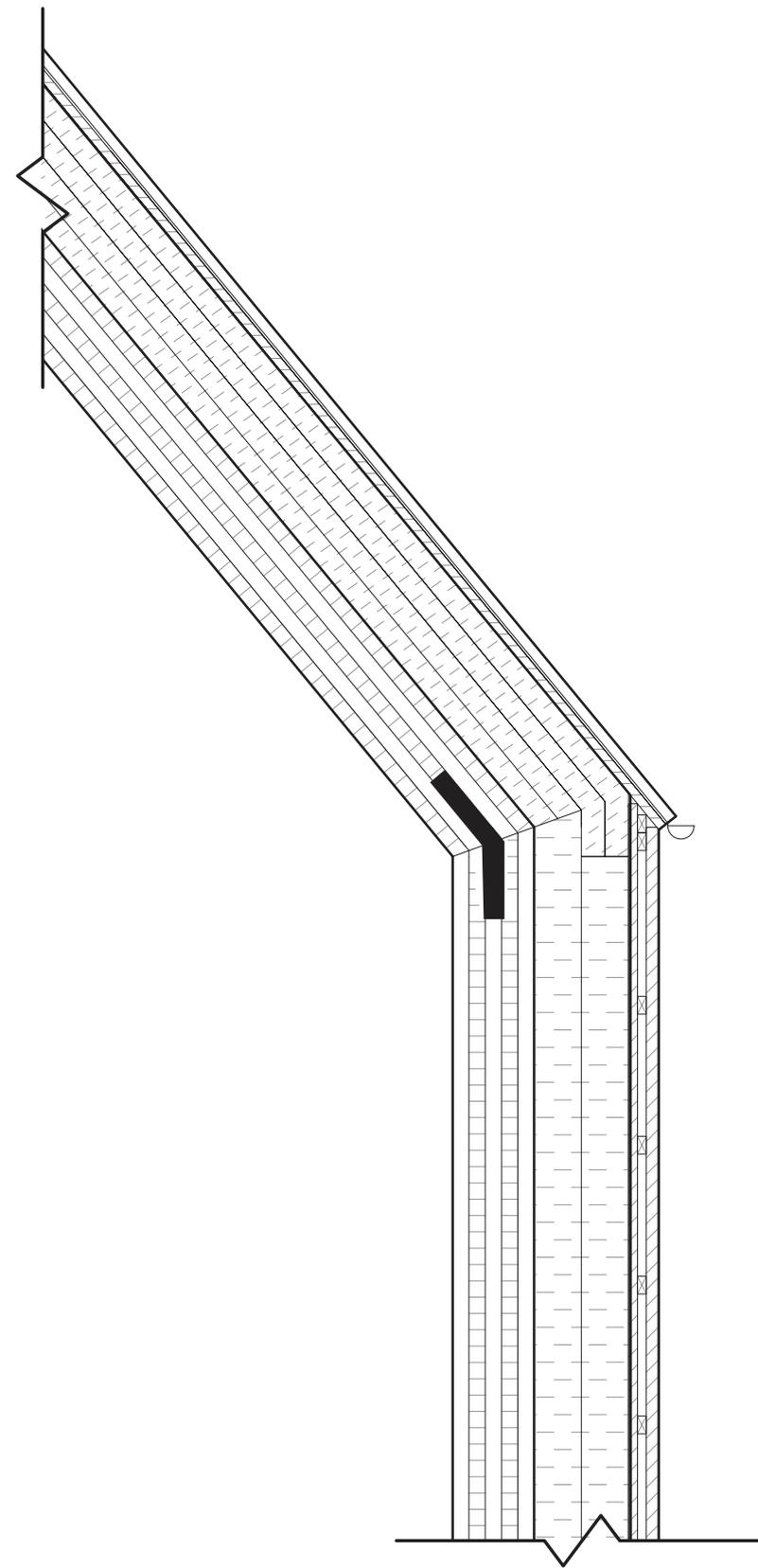
transfer slabs separate each underground parking garage from its overhead programs



# structure // residential axonometric.



# structure // roof detail.



## typical gable roof to wall detail diagram

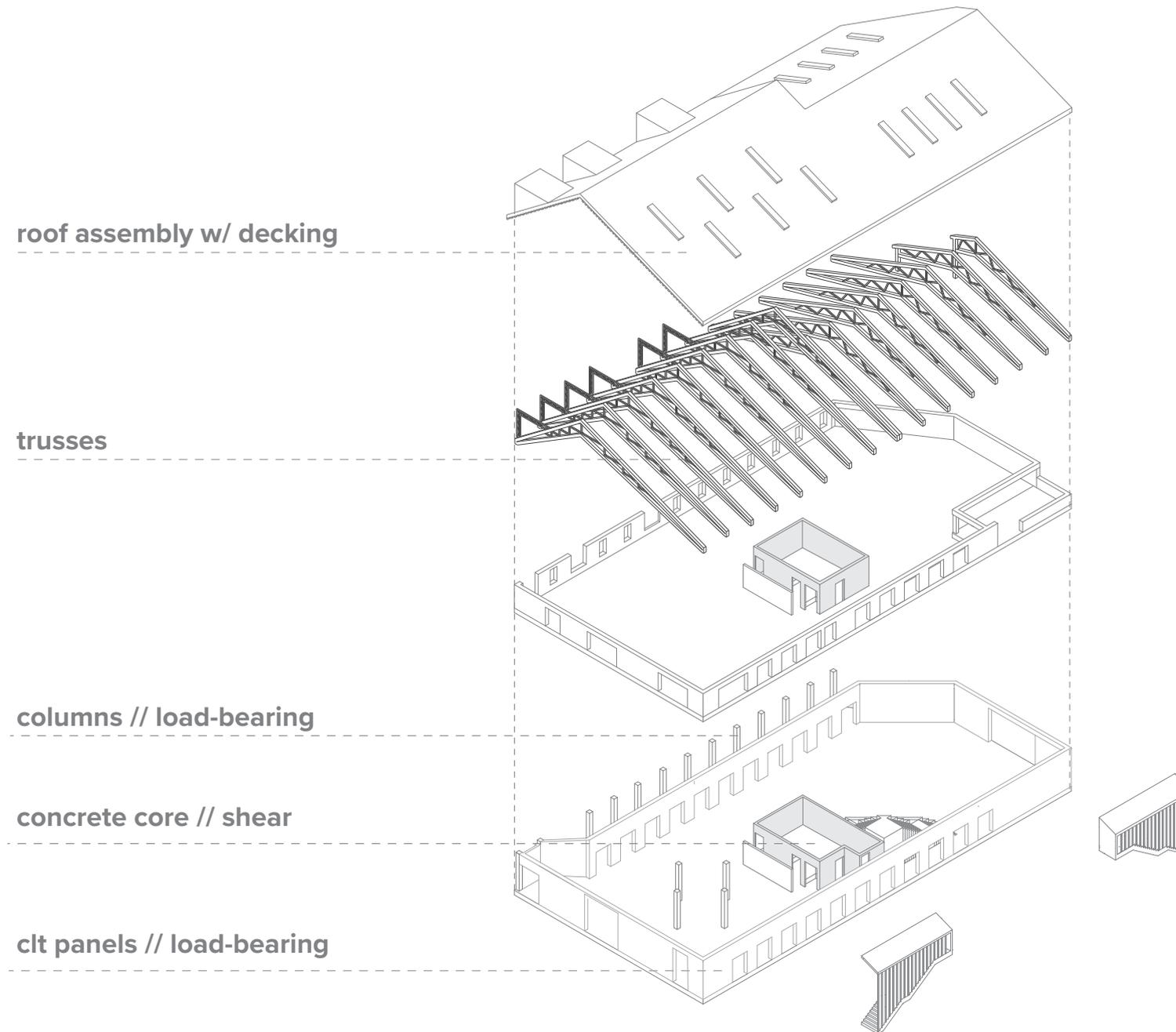
nts

offset seam insulation

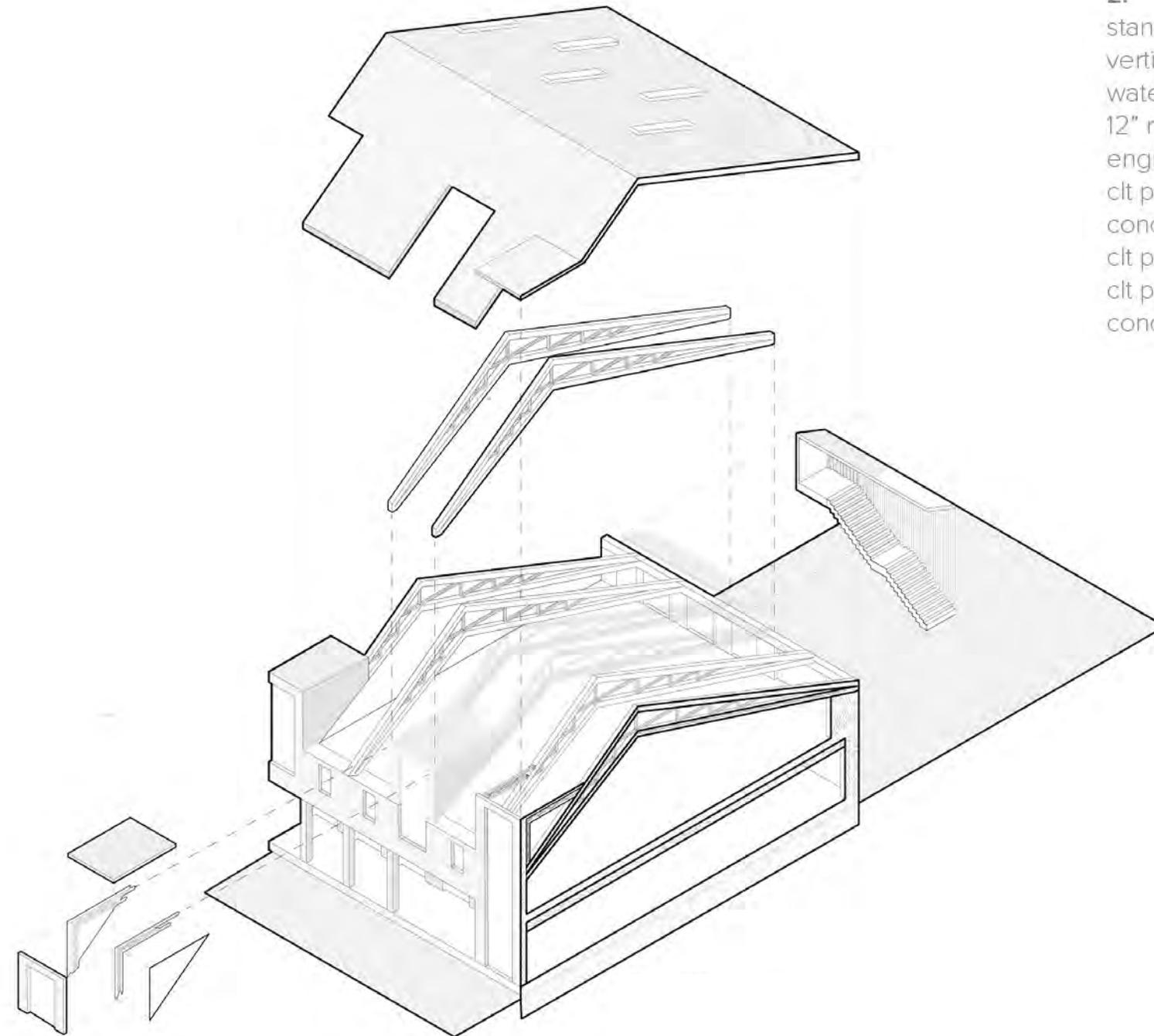
nordic prefabricated CLT joints

steel embeded CLT moment connection

# structure // market axonometric.



# structure // detail axonometric.



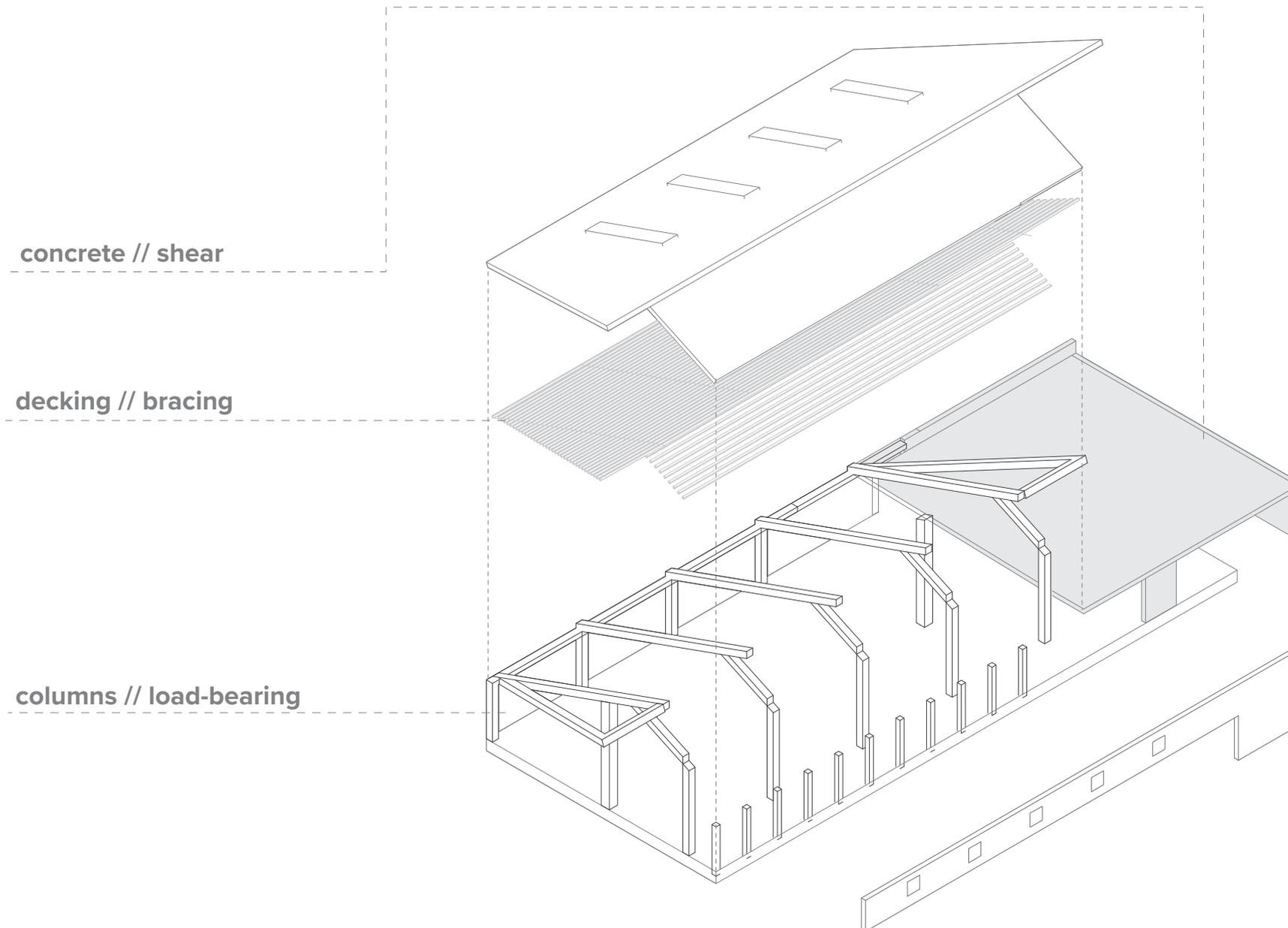
- 1. Dormer**  
cedar vertical cladding  
vertical + horizontal furring  
waterproof membrane  
8" rigid insulation  
dormer truss component  
notched clt wall

- 2. Market**  
standing seam metal roofing  
vertical furring strips  
waterproof membrane  
12" rigid insulation  
engineer lumber trusses  
clt prefabricated walls  
concrete topping  
clt prefabricated beams (joists)  
clt prefabricated walls  
concrete transfer slab

**structure** // market interior.



# structure // arena axonometric.



**structure** // arena exterior.



# envelope // site.



# envelope // arena.



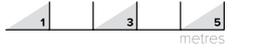
# envelope // market.



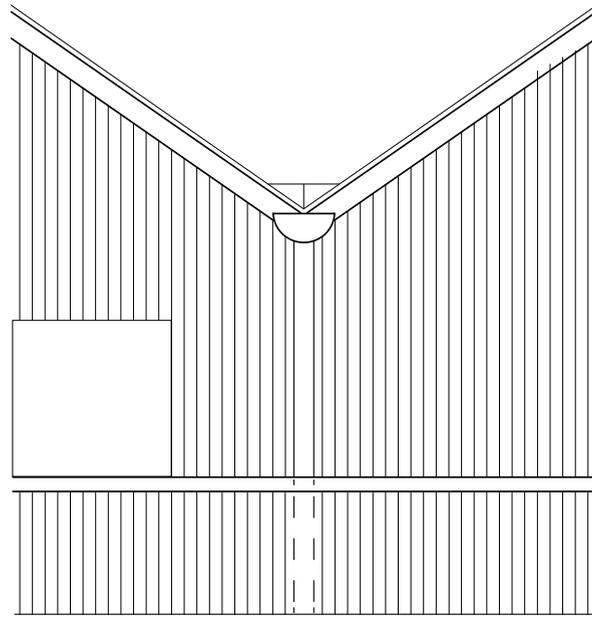
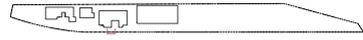
# envelope // market exterior.



# envelope // residential.



# envelope // residential slice.



## gable roof wedge + scupper diagram

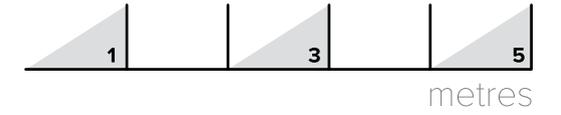
nts

standing seam metal roofing

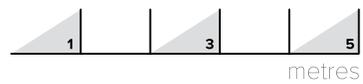
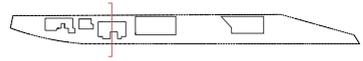
gable roof wedge

primary roof scupper

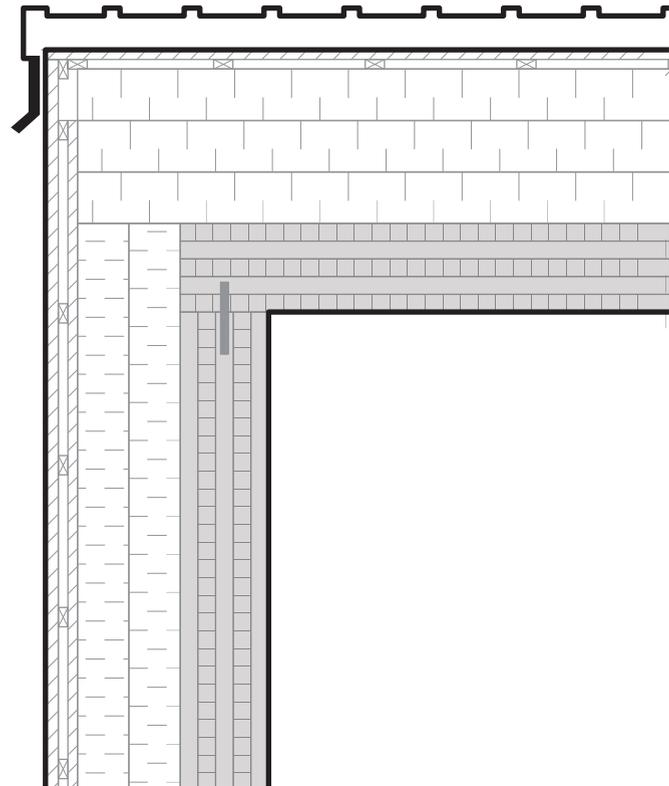
downspout



# systems // detail section.



# systems // wall to roof.



## typical gable roof to wall detail 1:15

### roof

1. weather  
standing seam metal roofing  
metal roof-flashing  
furring stripes, 24" o/c  
waterproof membrane

2. thermal  
3 layers of 4" rigid insulation (R60)

3. structure  
7.5" nordic x-lam CLT, 5 layer

4. finish  
clear, water-based protective finish

### wall

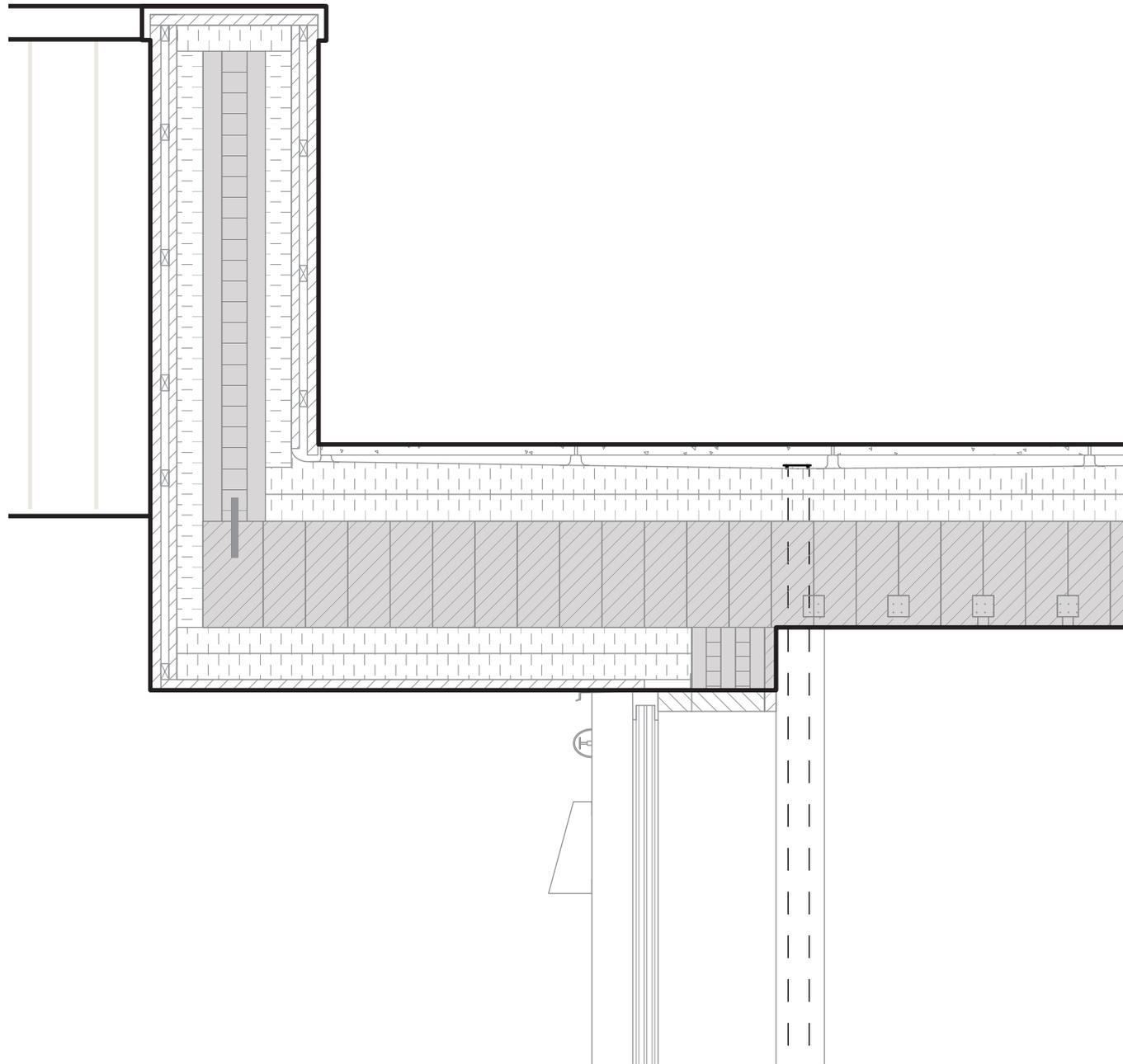
1. weather  
vertical cedar cladding (pre-aged)  
horizontal wooden furring strips, 24" o/c  
vertical wooden furring strips, 24" o/c  
waterproof membrane

2. thermal  
2 layers of 4" rigid insulation (R40)

3. structure  
7.5" nordic x-lam CLT, 5 layer

4. finish  
clear, water-based protective finish

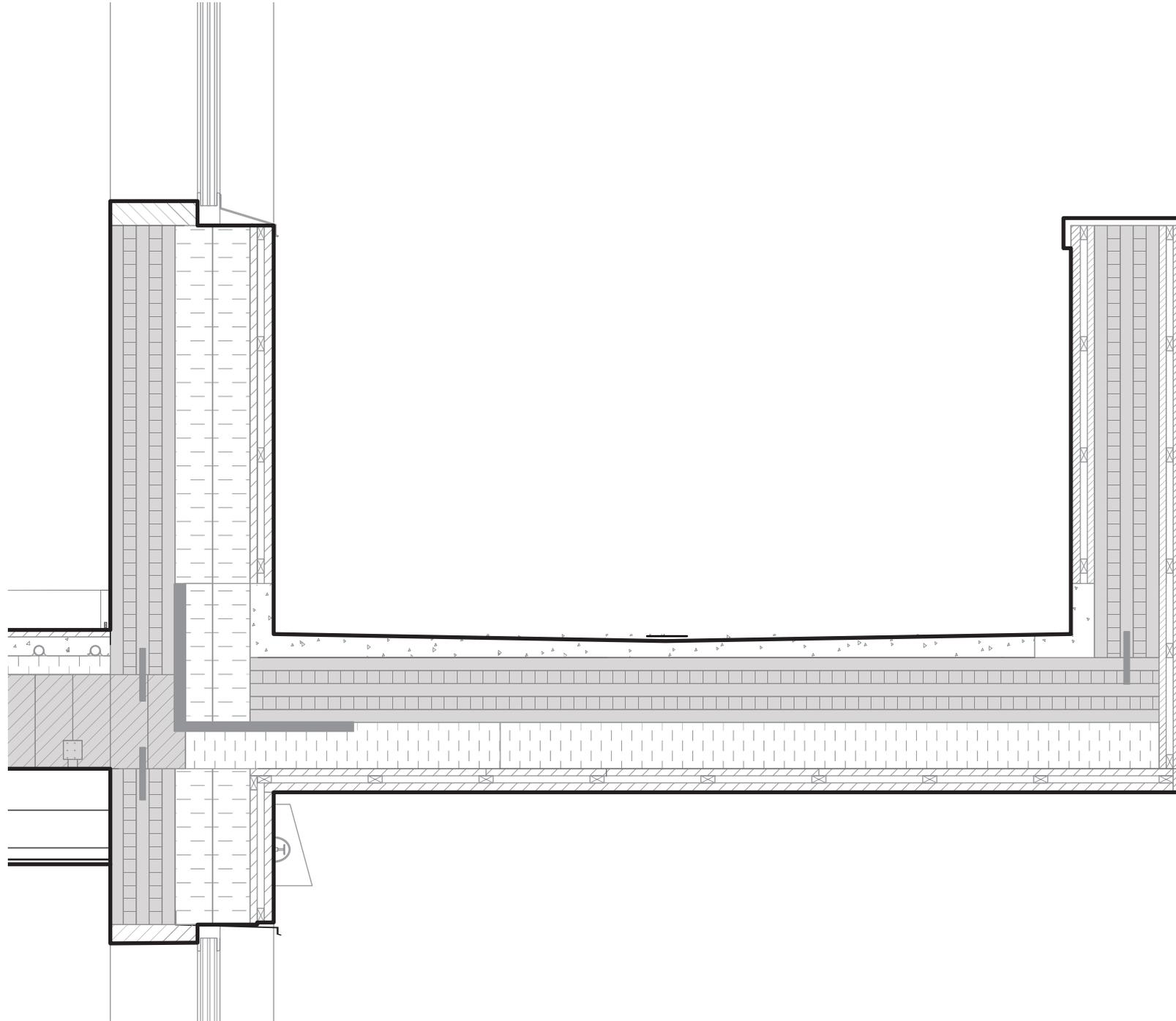
# systems // backyards.



## elevated exterior space roof detail 1:15

1. weather  
2' x 2' concrete paving stones  
adjustable leveling feet  
centered roof drain  
waterproof membrane
2. thermal  
2 layers of 4" rigid insulation, sloped
3. structure  
7.5" structurecraft dowel laminated timber  
acoustic profile  
electrical service profile
4. finish  
clear, water-based protective finish  
vertical bulkhead concealing roof drain  
plumbing

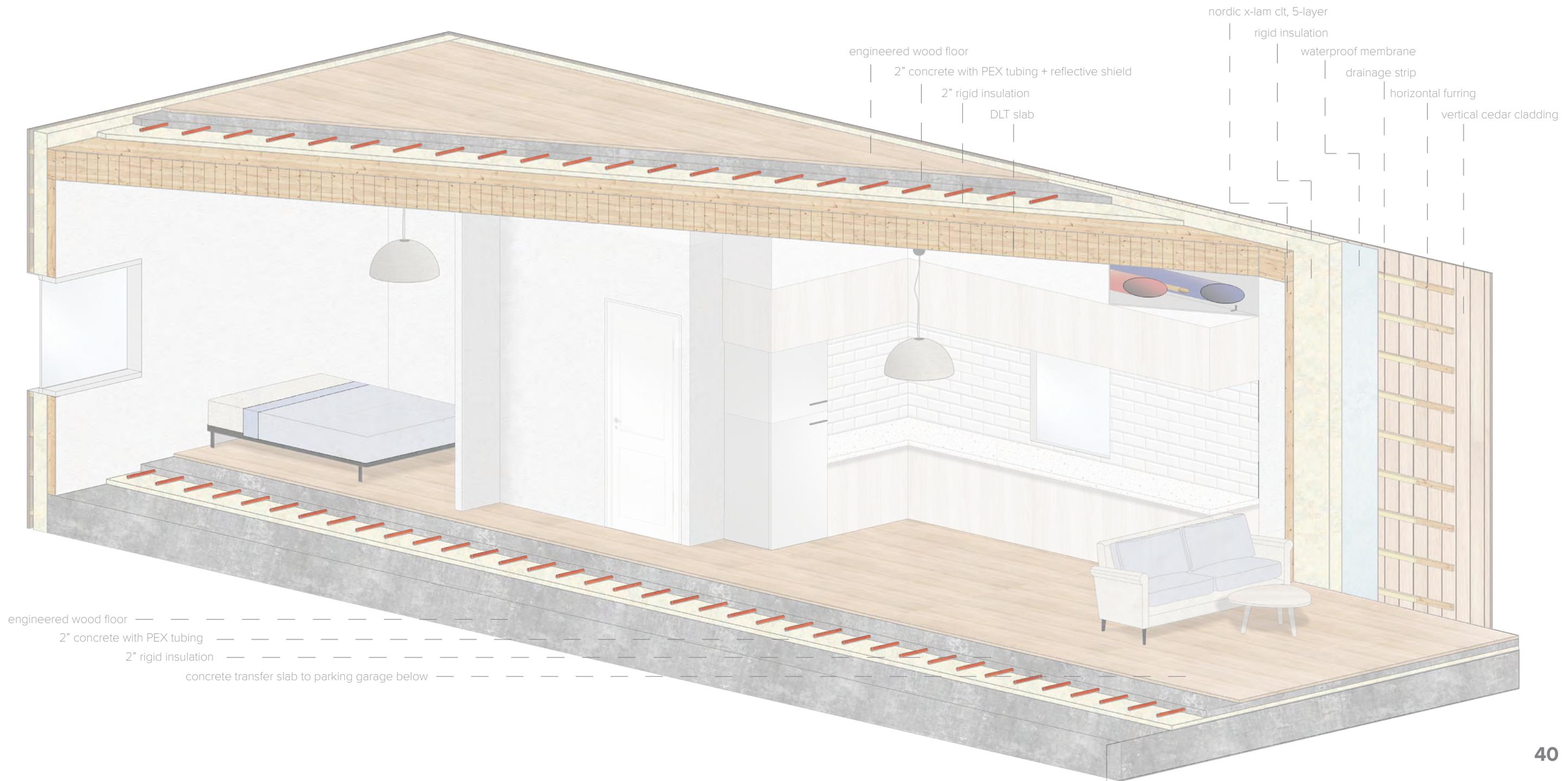
# systems // exterior corridor.



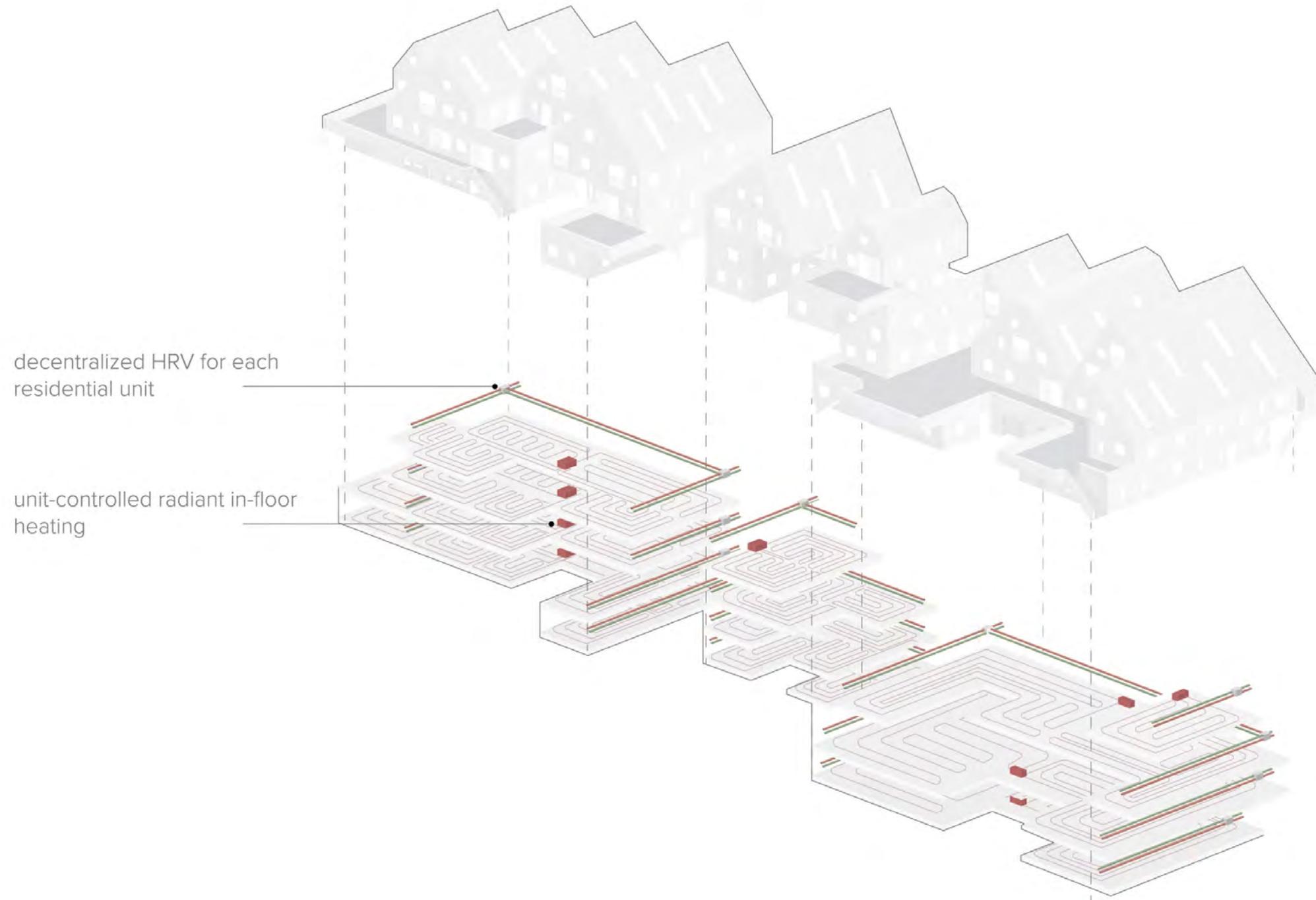
## exterior passageway detail 1:15

1. weather  
2" poured concrete topping  
sloped centered roof drain  
waterproof membrane
2. thermal  
2 layers of 4" rigid insulation
3. structure  
7.5" structurecraft dowel laminated timber  
1.5" steel plate connecting DLT to CLT
4. finish  
exposed concrete

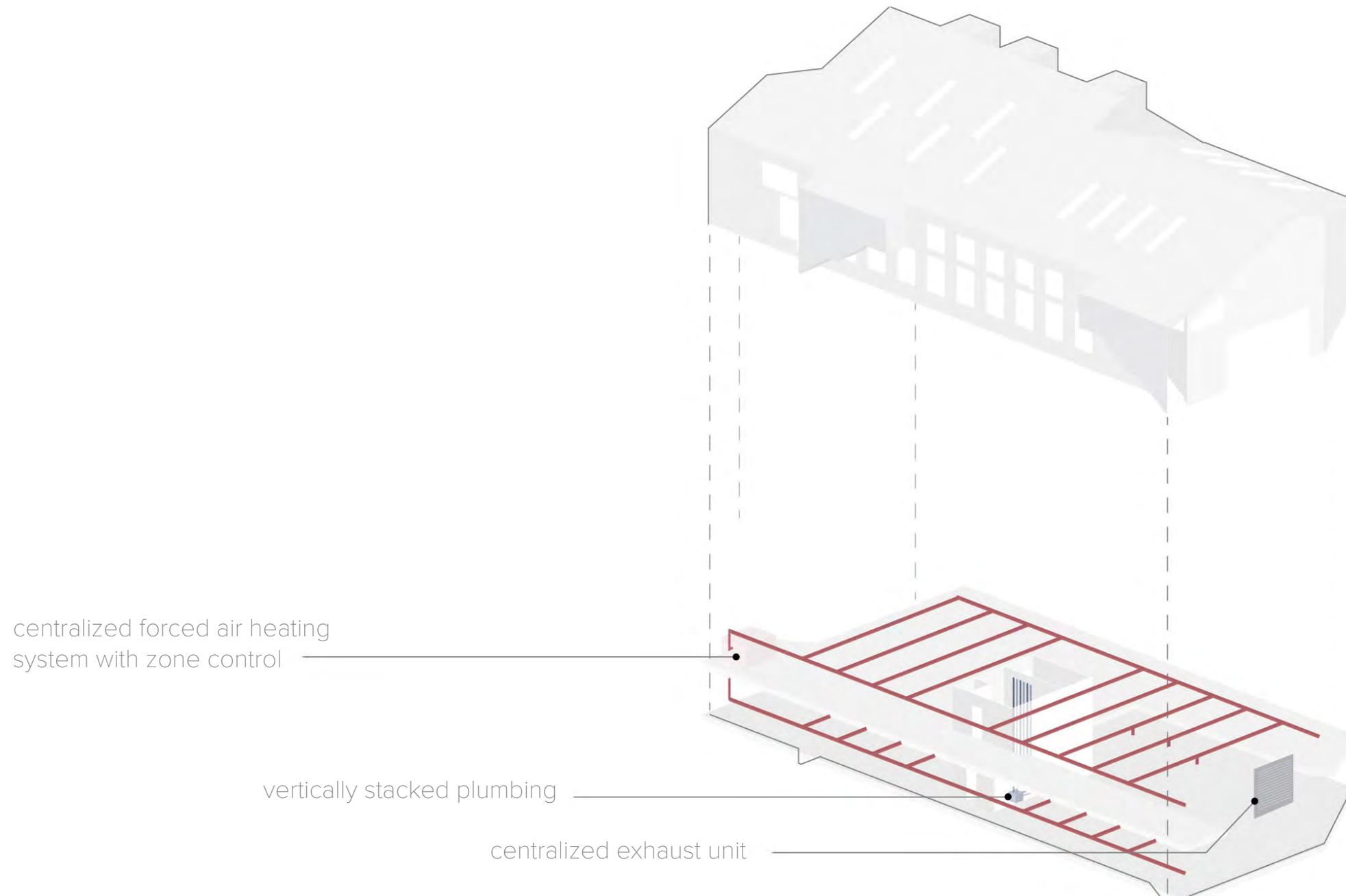
# systems // residential axonometric.



# systems // hvac strategy - residential.



# systems // hvac strategy - market.

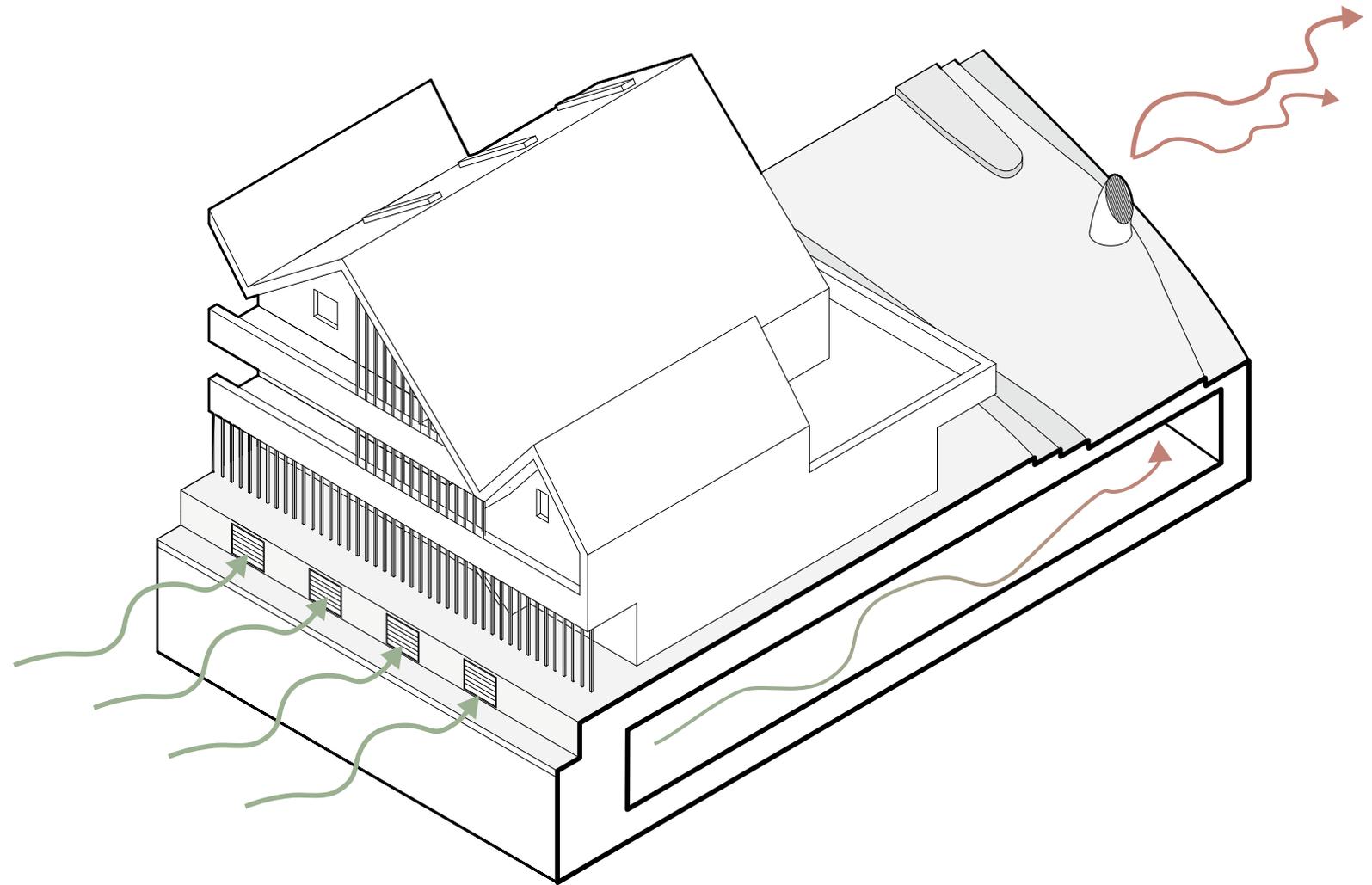


# systems // hvac strategy - parking.

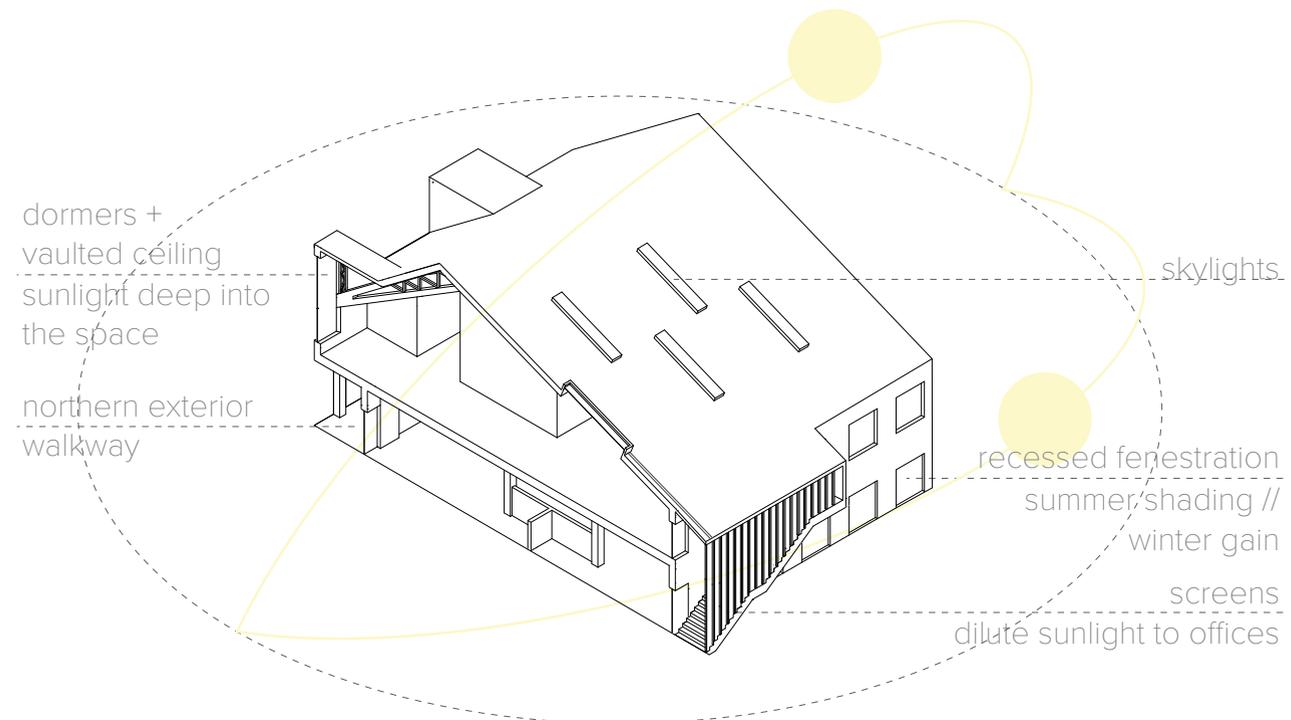
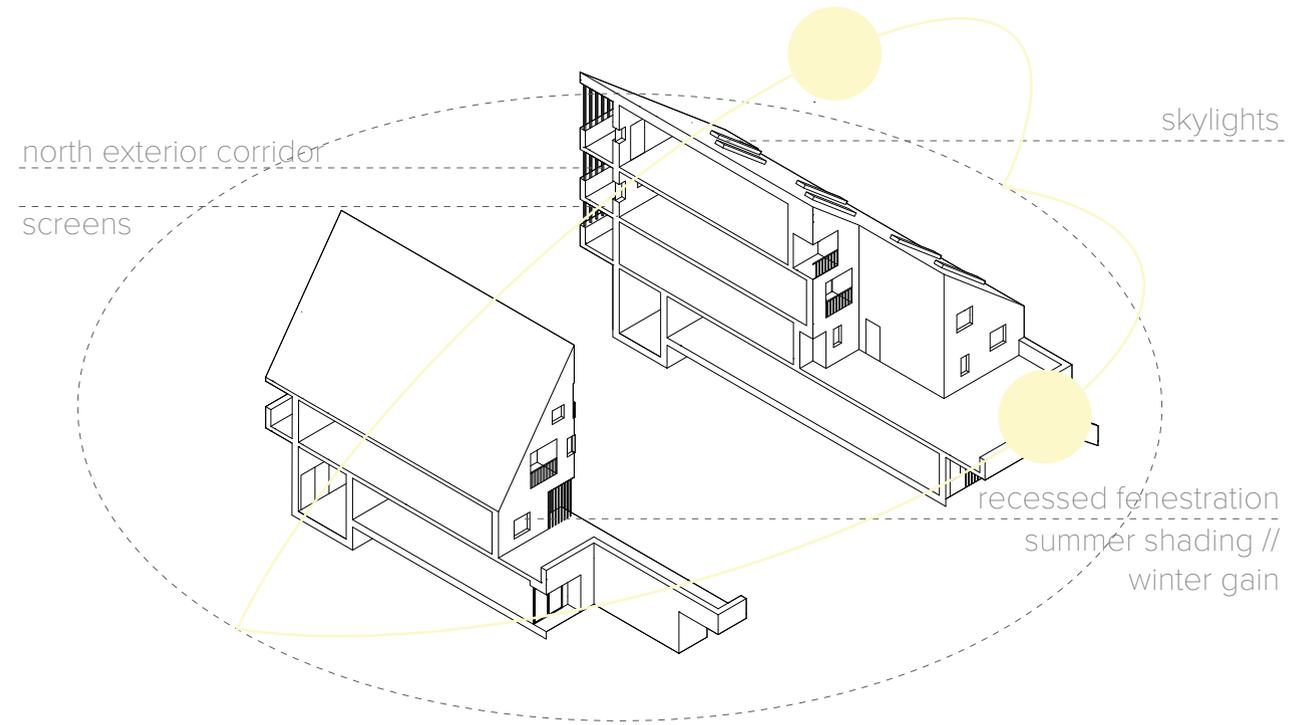
## underground parking ventilation

nts

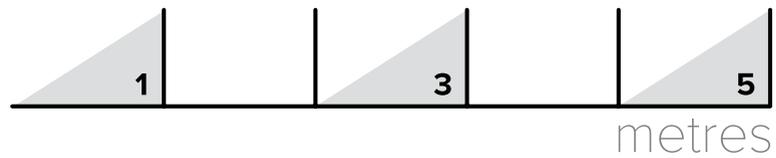
automated diffusers intake fresh air  
automated fans exhaust air out towards  
the railyard



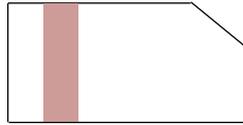
# lighting // daylight strategy.



# lighting // artificial strategy.



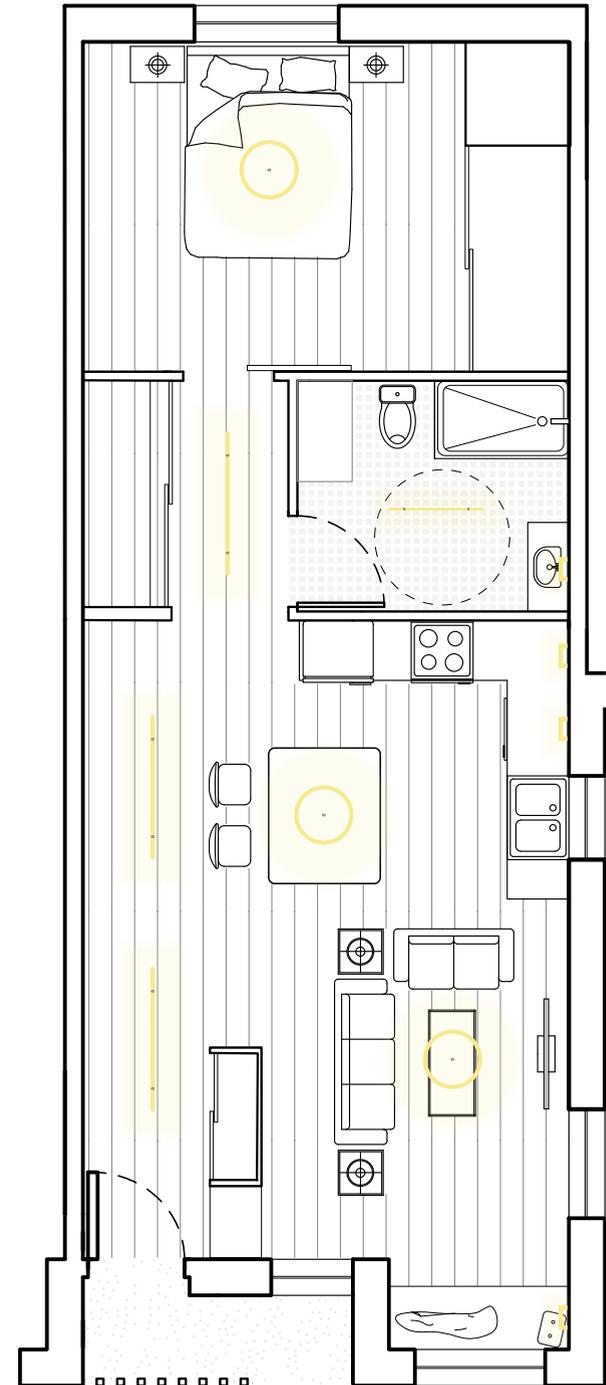
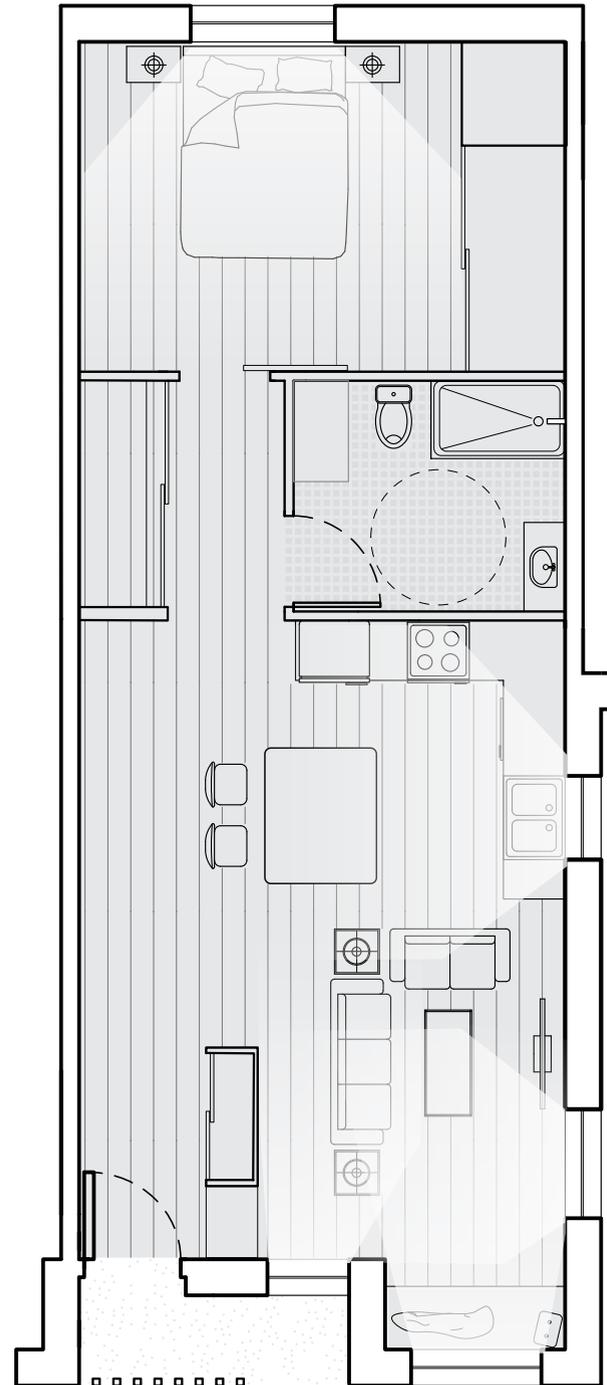
# lighting // residential plans .



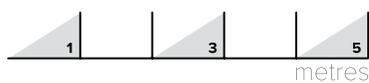
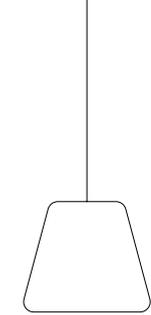
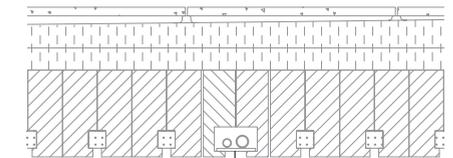
EAMES ACORN



TUNTO LED 60



dlt electrical service space  
profile + dlt acoustic profile



# lighting // residential interior.



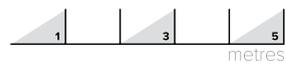
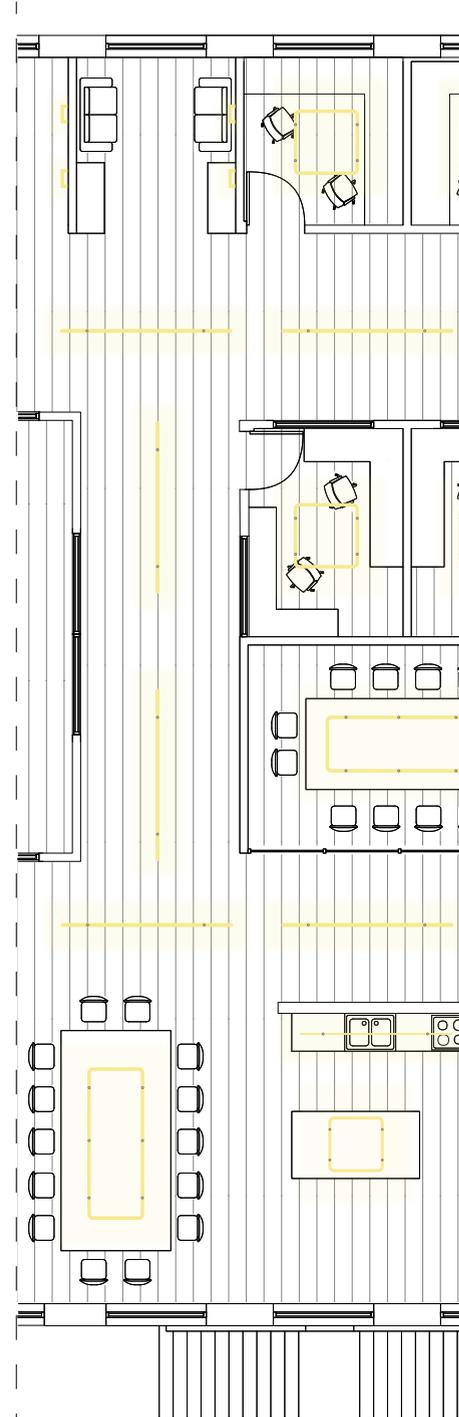
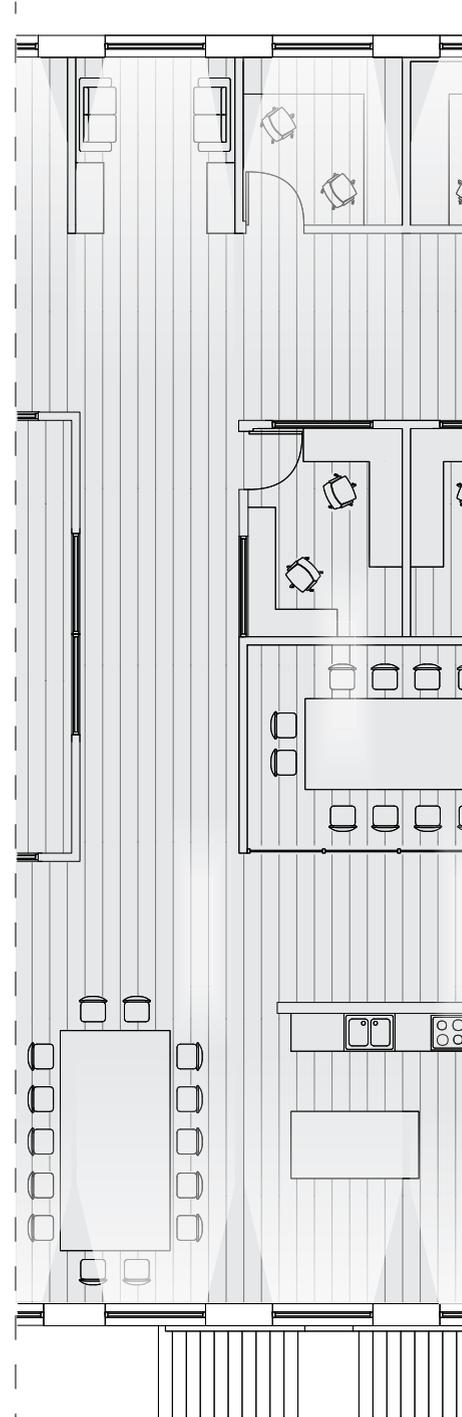
# lighting // coworking plans.



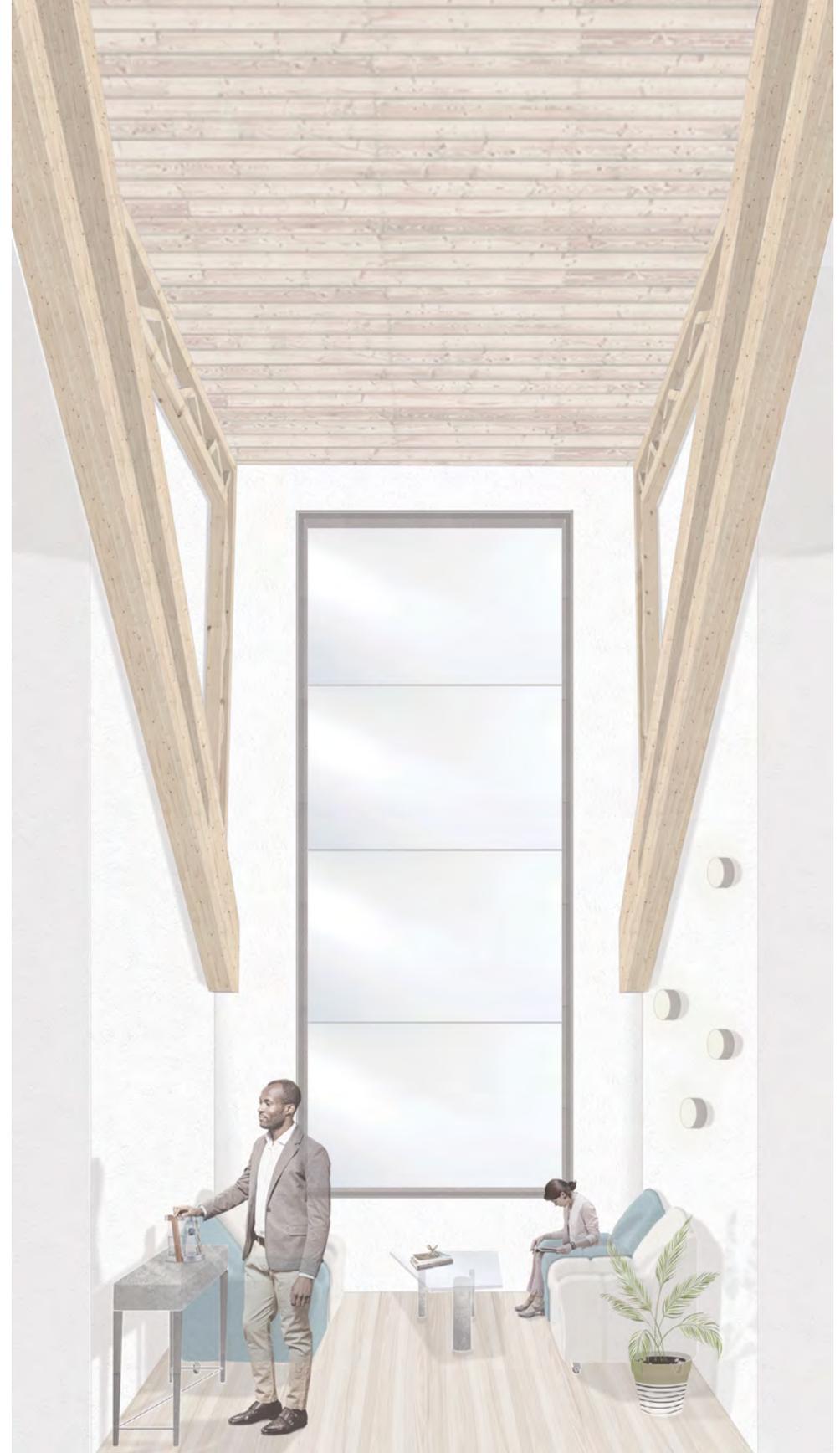
TUNTO LED 40



TUNTO LED 60



# lighting // coworking interior.



**a year-round community.**

