

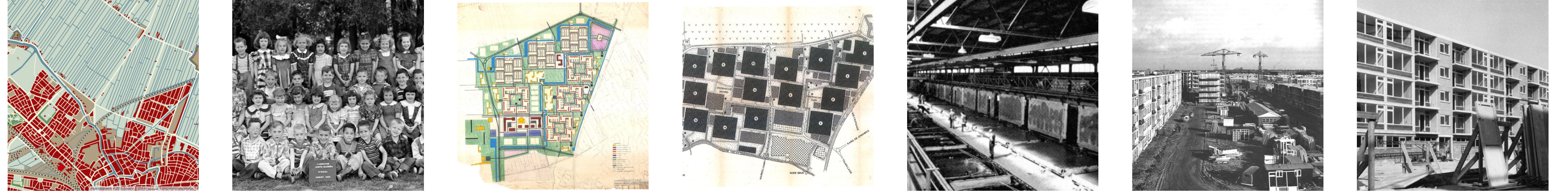
# RE HOUSING

## INTERVAM

@ Camera Obscuradreef in Overvecht Zuid, Utrecht



**HISTORICAL BACKGROUND (-1965)**



**QUALITY OF "LIGHT AIR SPACE" (1965-70s')**



**INTERVENTION AND CHANGE (1980s'-now)**



VAM is one of many building systems with non-traditional building-methods that were invented and built on a large scale in the post-war mass housing reconstruction in Utrecht. The graduation project deals with re-housing of Intervam flats at Camera Obscuradreef, Overvecht Zuid. Based on research and analysis, the existing housing needs something extra with privacy regulation to its future upgrade. The project focus on constructing the physical environment with all sorts of signals to clearly identify the existence of territories at various scales (borders, entrance and areas), to bridge the missing link between the urban public and private dwelling and to support the group of residents to regulate their interaction with others.

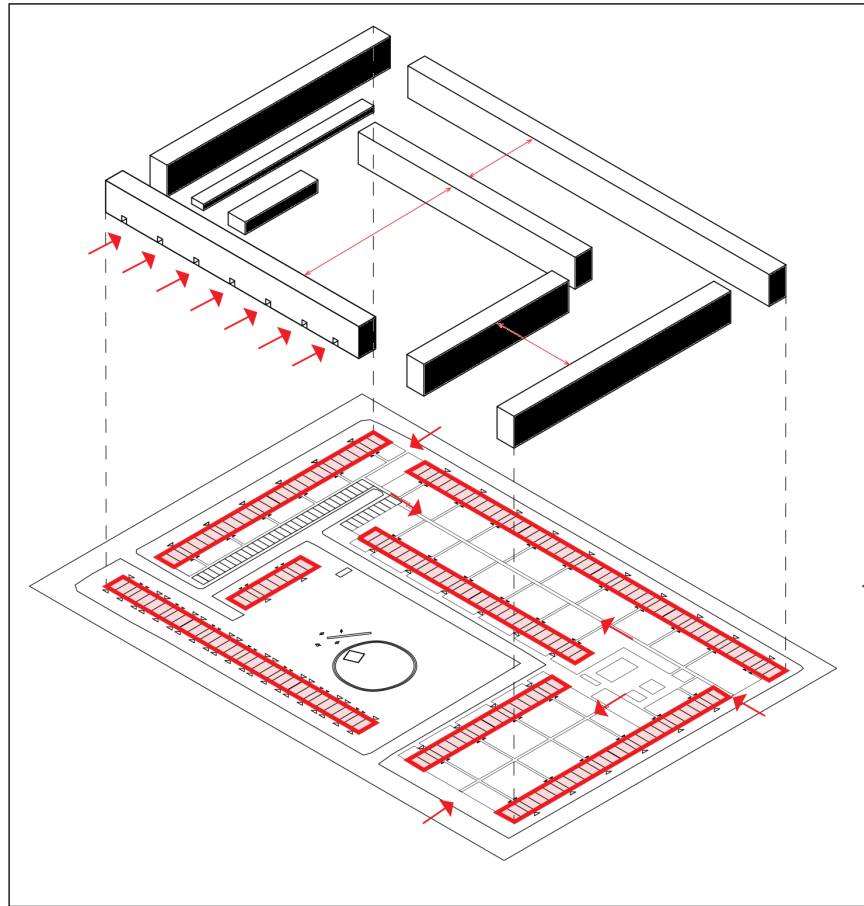
### SITE

### STRUCTURE

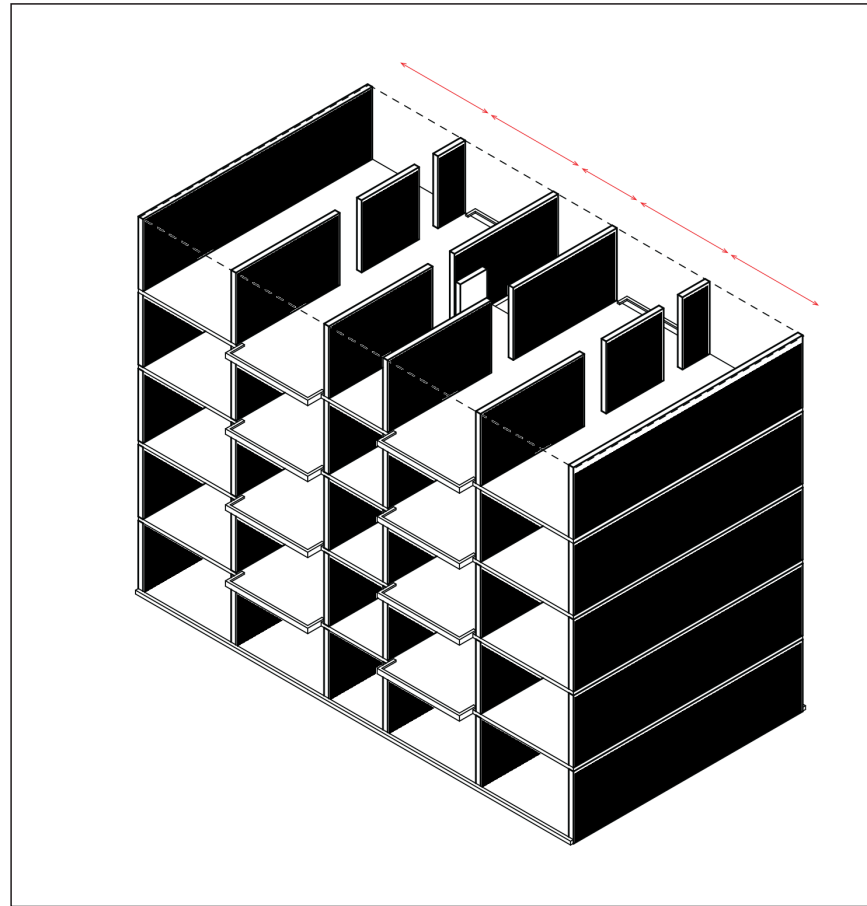
### SKIN

### SPACE & STUFF

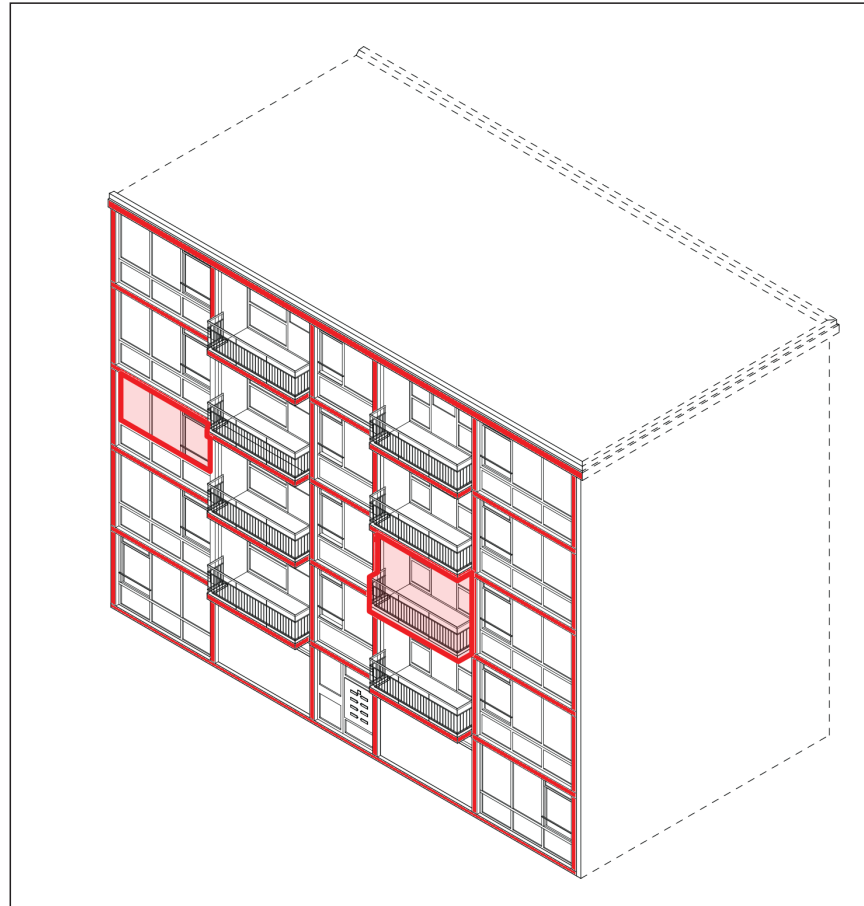
#### CULTURAL VALUE



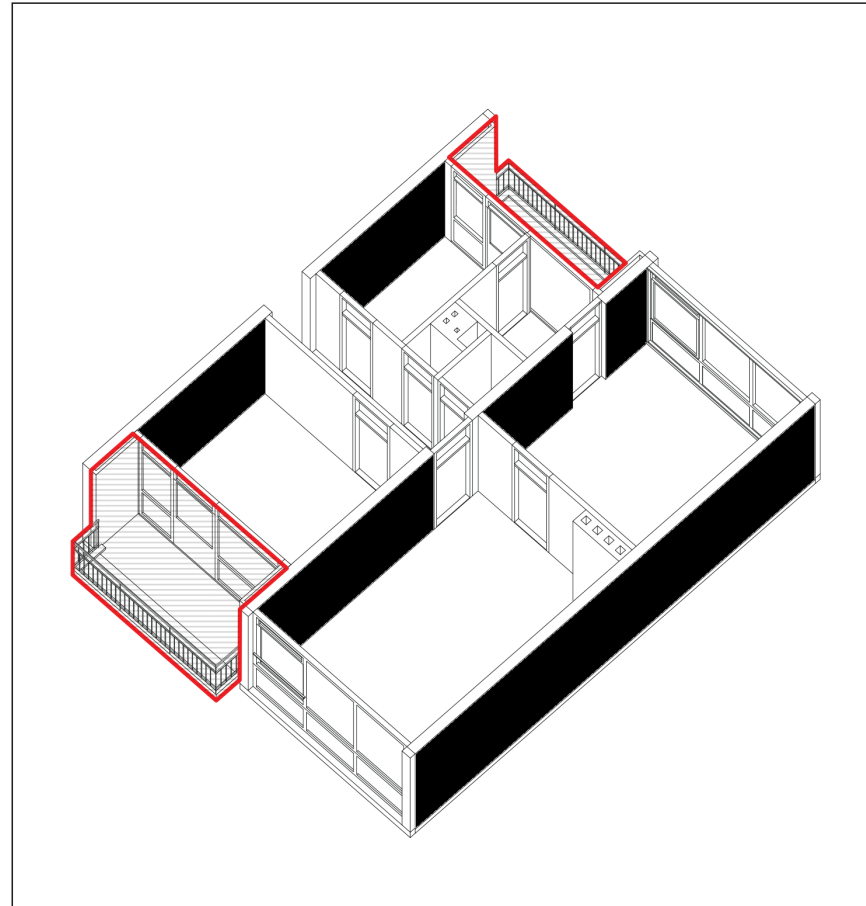
With its spacious and open character, the green structure in Camera Obscuradreef was the physical representative of the historical value of "Light, Air and Space"



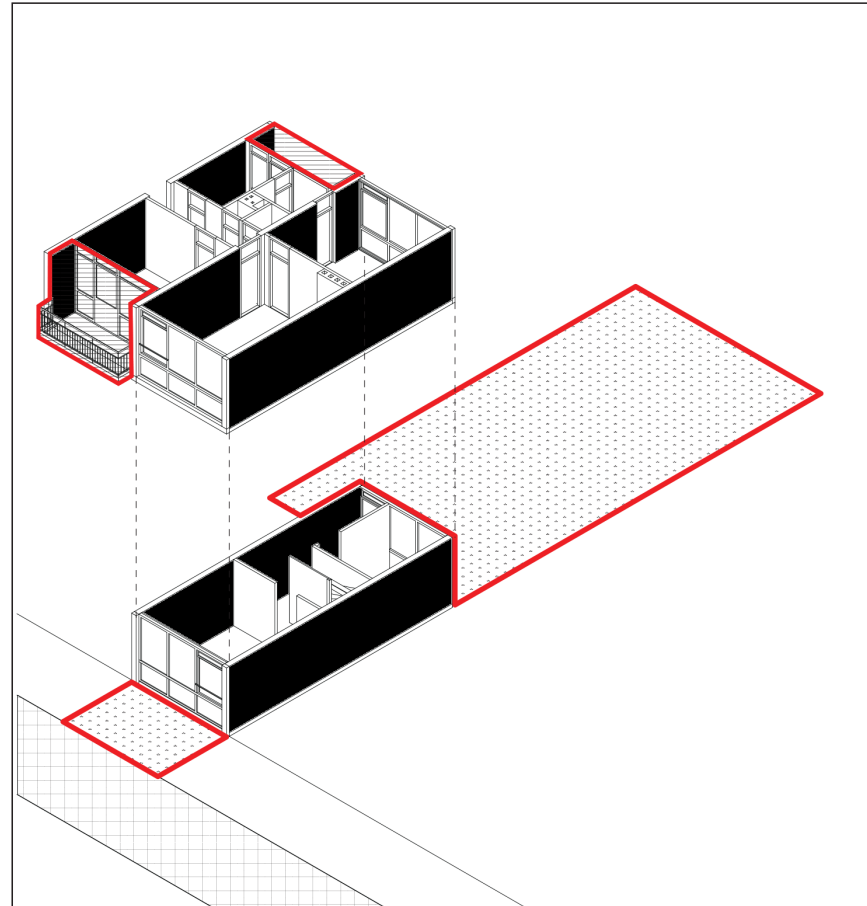
VAM structure, as the most significant characteristic of non-conventional building method system, embodies the use value and historical value of post-war rational reconstruction



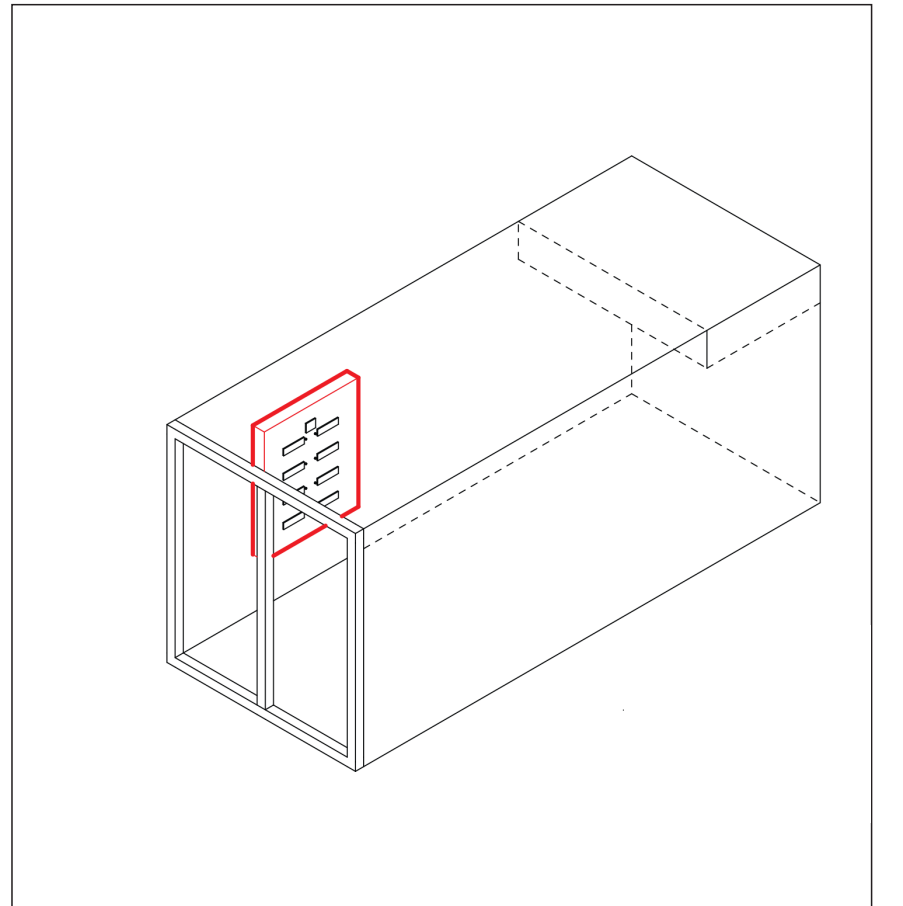
The form of grid is one of the main characters of the post-war non-conventional VAM system. The large window and balcony are the design product representing the historical value of Light, Air and Space.



Two balconies in one household were a luxury at that time.

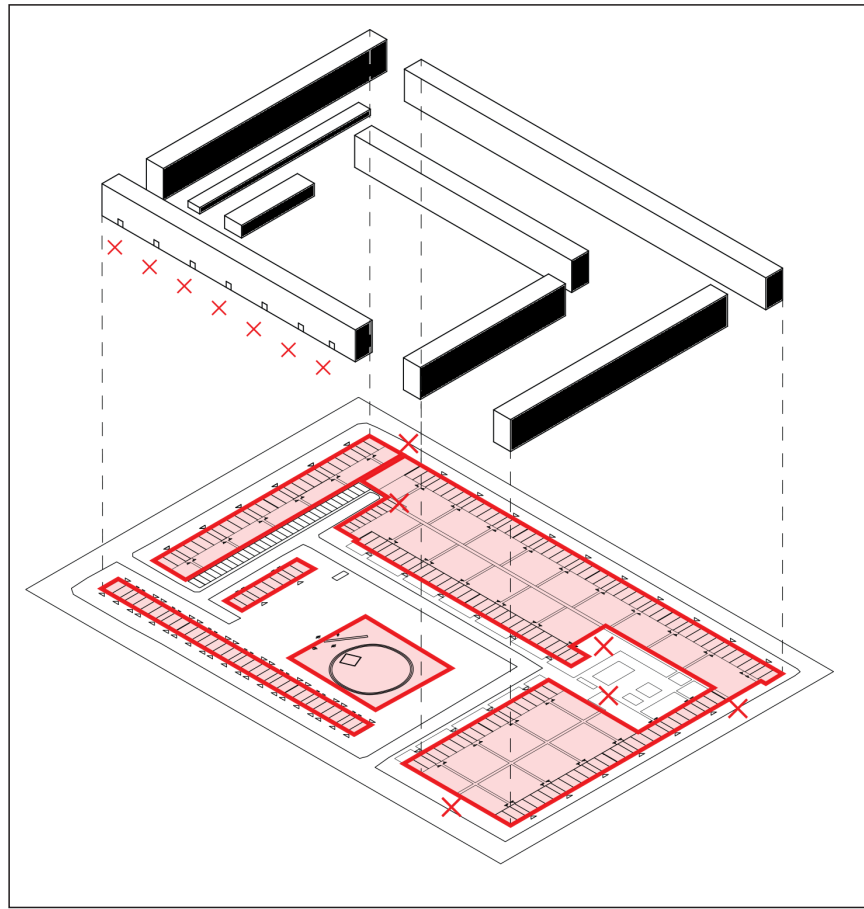


In terms of space, rooms with large window, balcony and garden exemplify the historical value of Light, Air and Space.

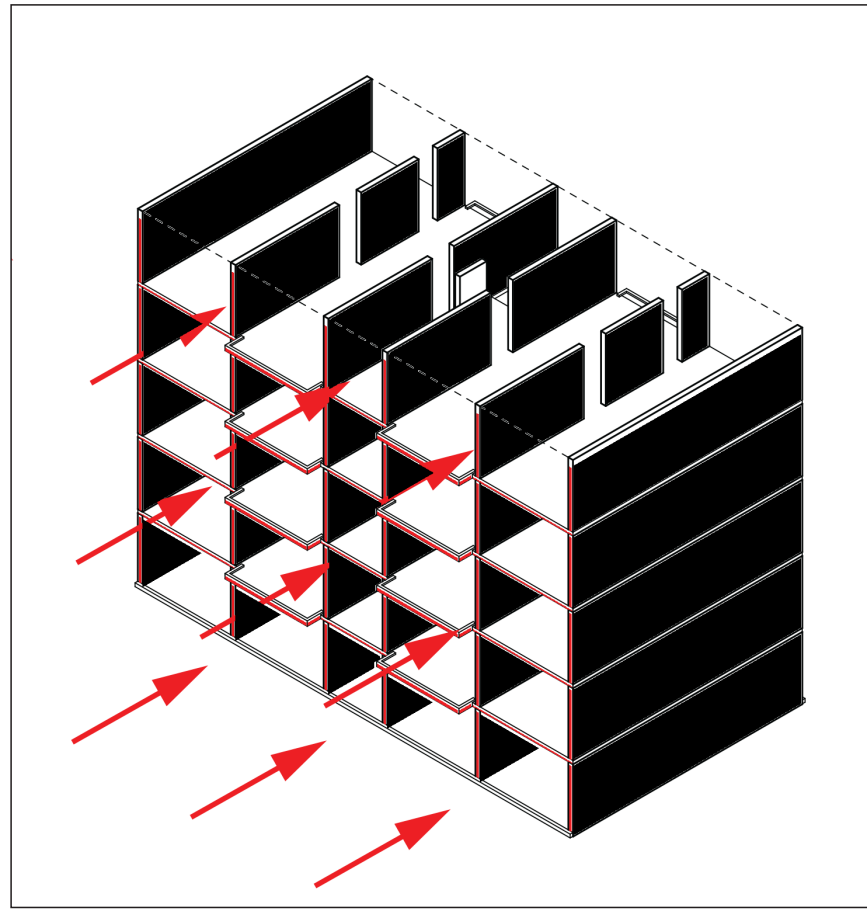


The original entrance was with the characters of openness and transparency, indicating the quality of Light, Air and Space.

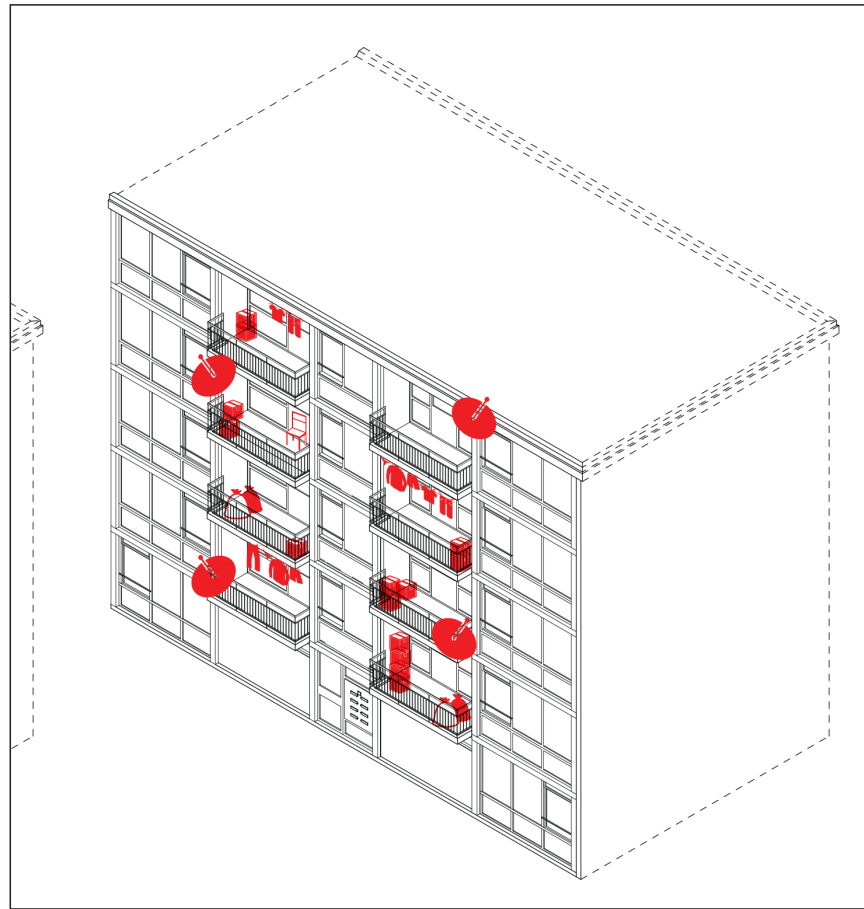
#### CURRENT SITUATION



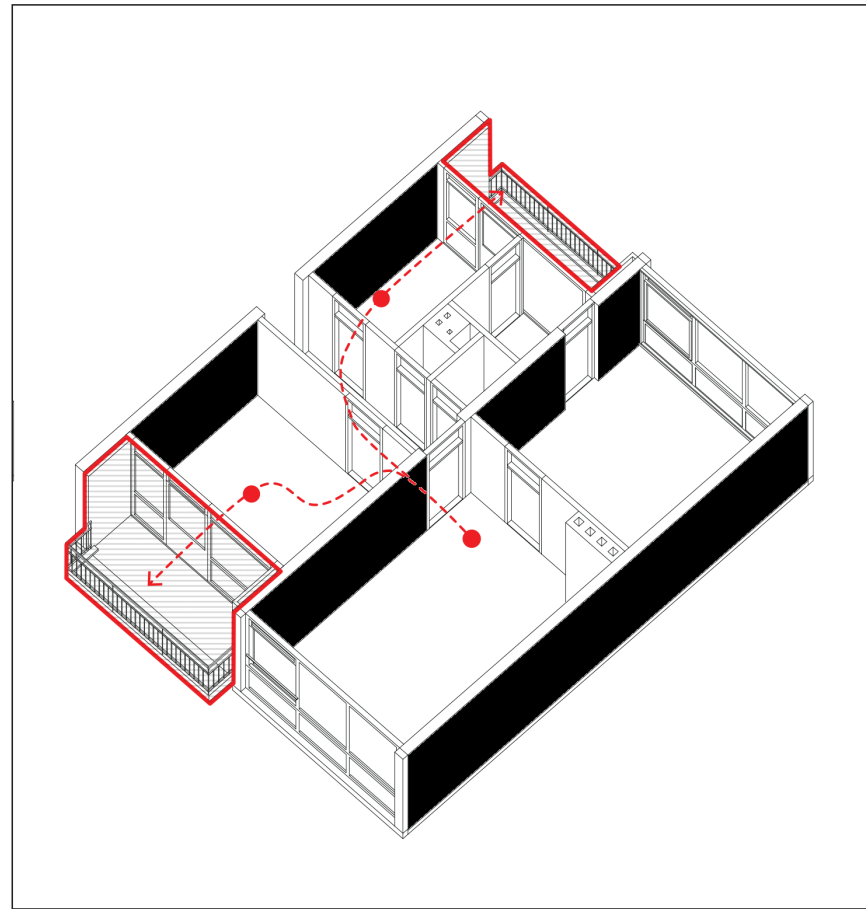
The spatial structure and inconvenient route of the green space breed the segregation, the lack of use and the lack of maintenance.



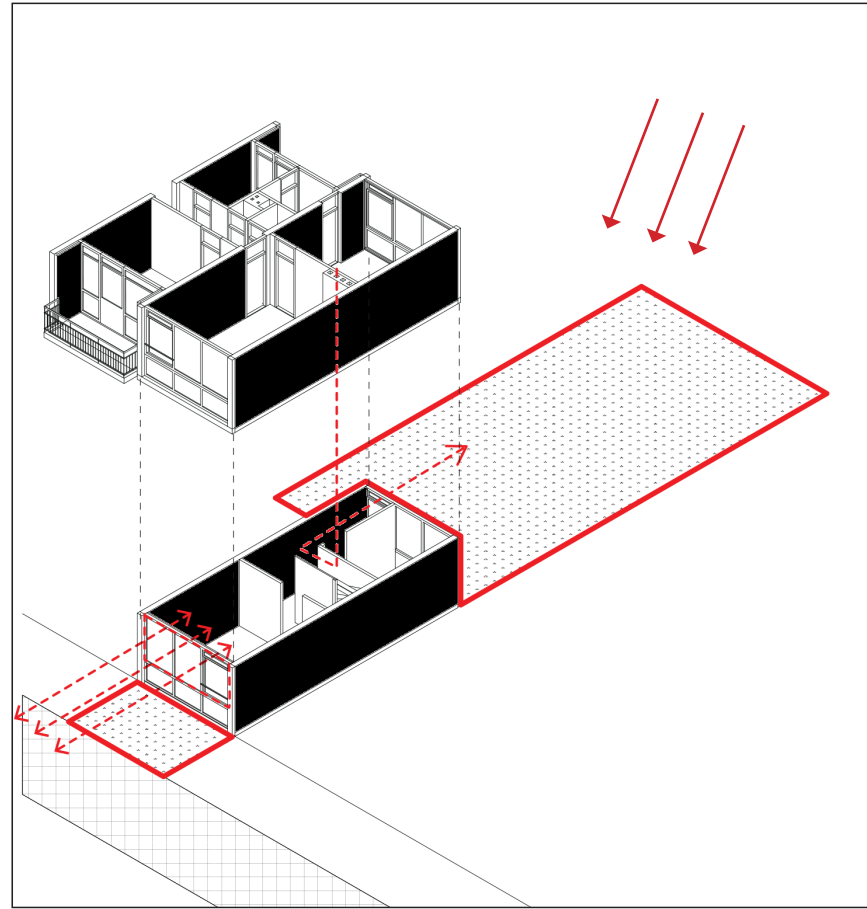
Technically, the structure is still in good condition to be reused but with poor insulation.



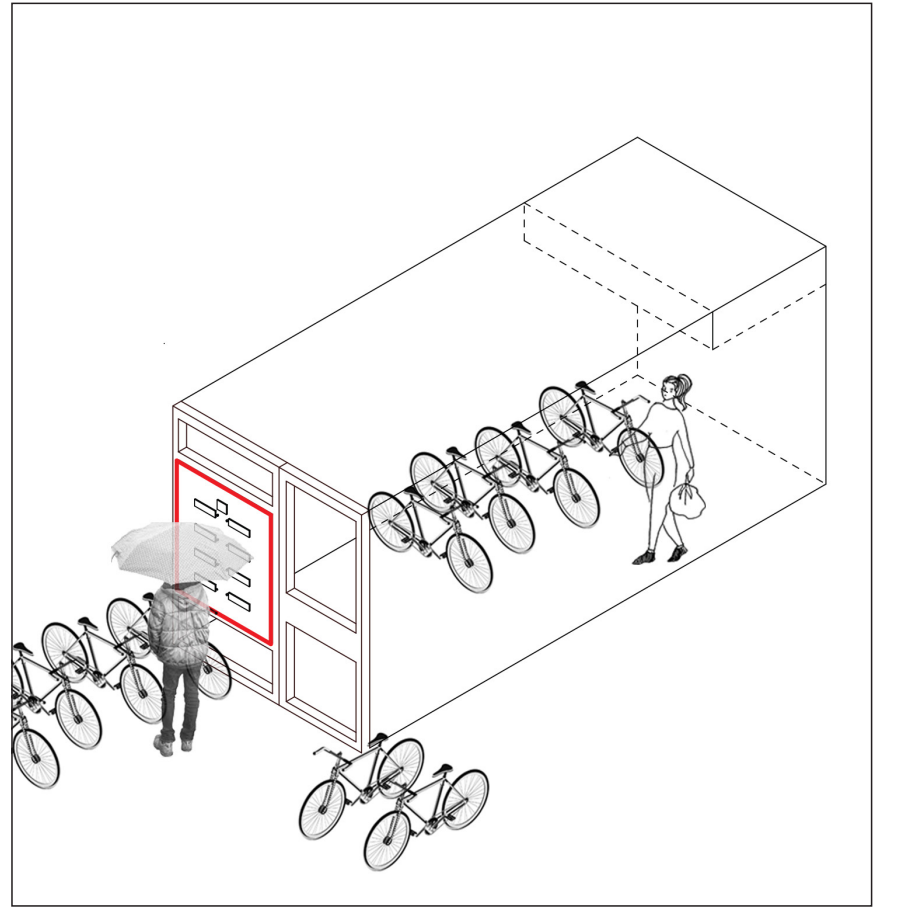
In general, the whole skin is poorly insulated, and its aesthetic value is undermined by maintenance problems. Chaotic appearance of the balcony faces pressure from exterior.



The scale of them are quite small. The location of the balcony next to bedroom turns out to be more private, thereby undermining its use. Clothes, storage, satellite dishes and even garbage clutter the small bonus space of the balcony



The bedroom with large windows on the ground floor is facing the public street and causes privacy problem. Inconvenient accessibility and overlooking are big downsides of the garden.



The harsh border causes inconvenient use in rainy days. Moreover, some residents park their bicycles inside and narrow the space for safety reasons.

### Early of 20th Century



### Nieuwe Bouwen movement | Light Air Space



### Current Situation



GAP  
SOMTHING EXTRA

### QUALITY OF LIVING

#### NEW DEMANDS

#### PRIVACY REGULATION

#### GENEROUS PRIVATE OUTDOOR SPACE

(health/view/social link...)

#### MORE SPACE/ BONUS SPACE

#### GENEROUS STORAGE

#### COMFORT

(light/ air/ thermal/ acoustic...)

#### MAINTENANCE

(Easy to maintain/less maintenance/durable material)

#### ECONOMY

(Low energy and maintenance cost in a long run)

#### SOCIAL INTERACTION & COHESION



# RE HOUSING

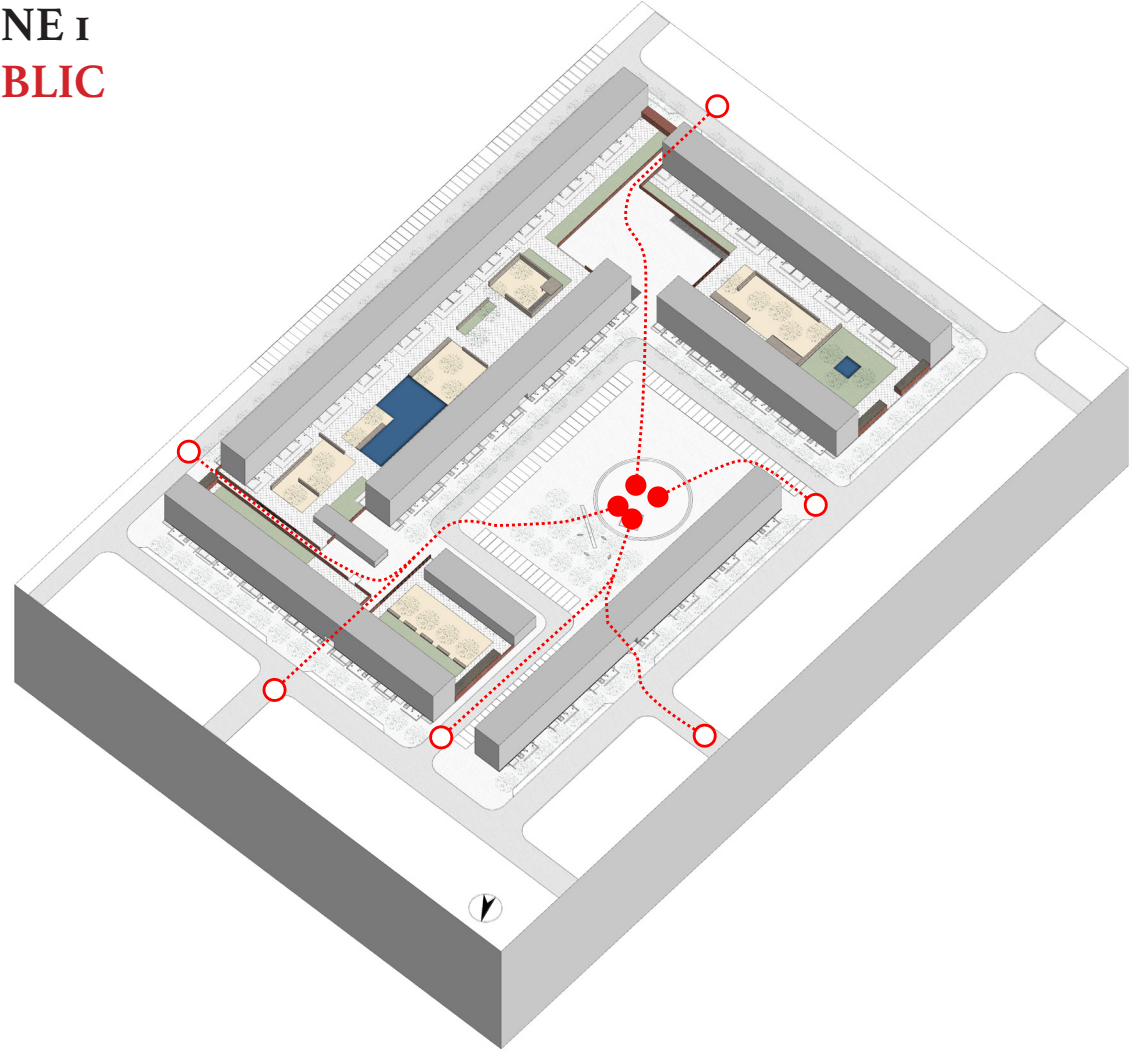
INTERVAM

@ Camera Obscuradreef in Overvecht Zuid, Utrecht

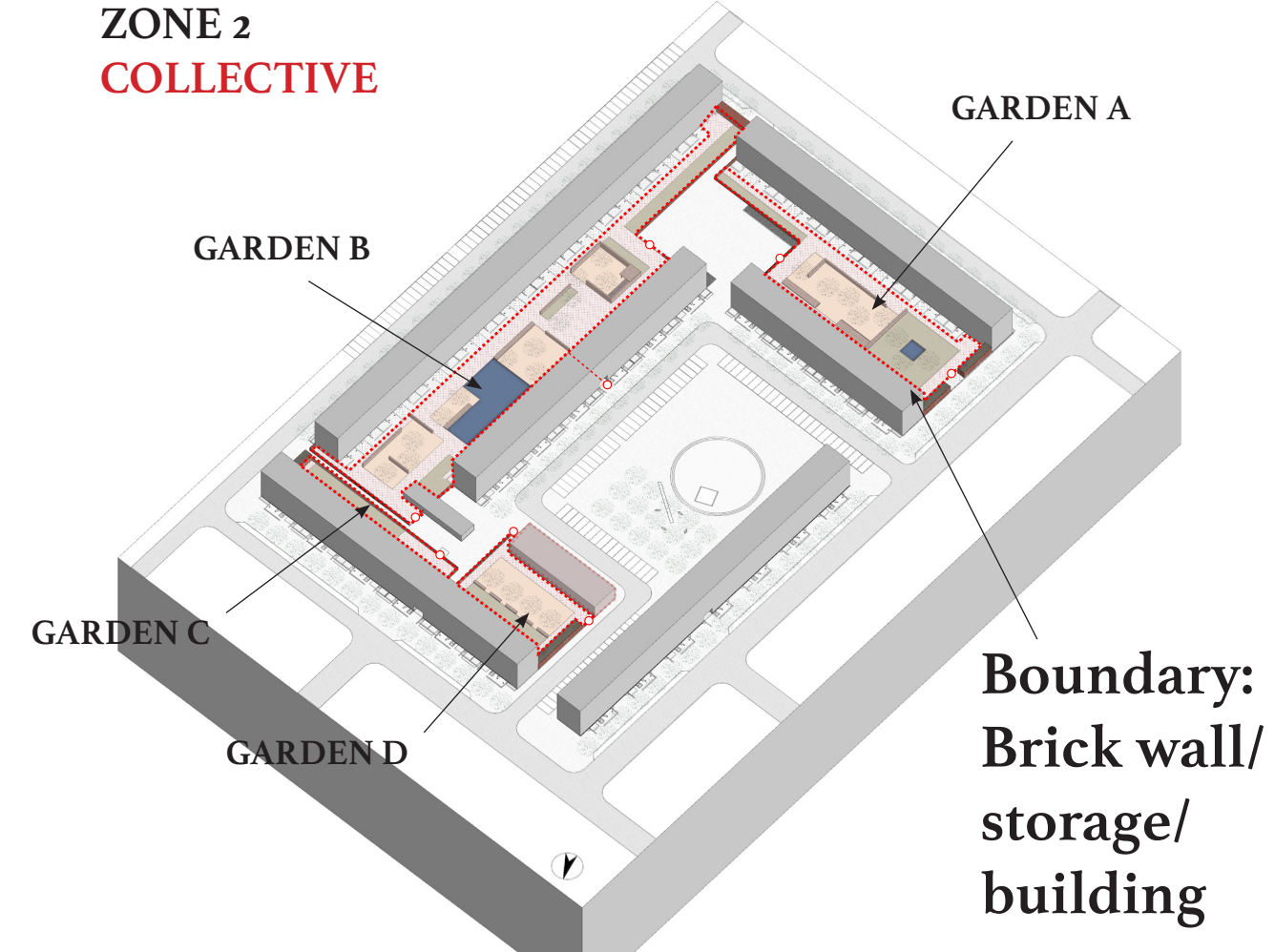
QUALITY OF LIVING=  
SOMETHING EXTRA ∞  
PRIVACY REGULATION

## SITE ZONING

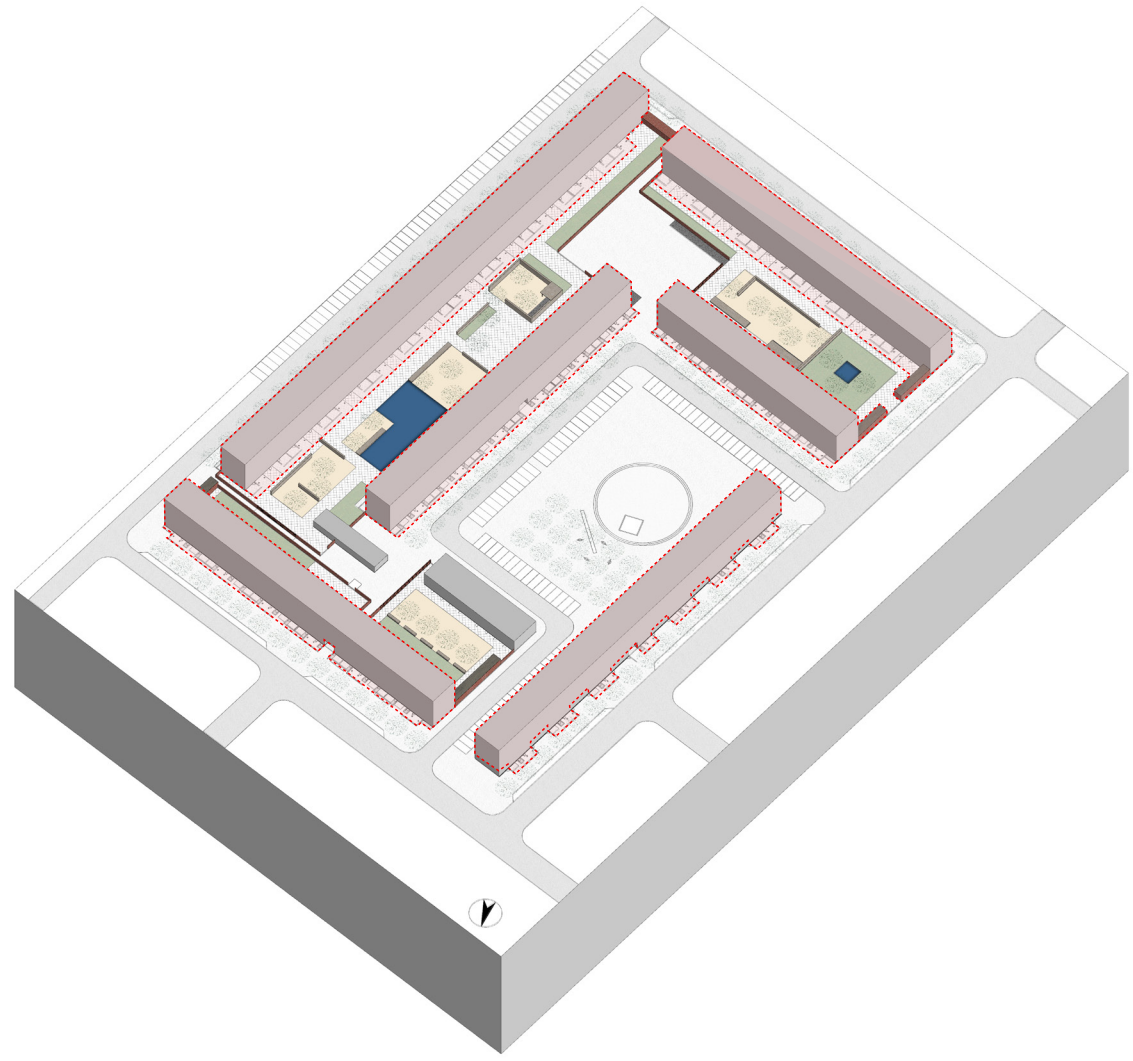
ZONE 1  
PUBLIC



ZONE 2  
COLLECTIVE



ZONE 3  
SHARED PRIVATE/ PRIVATE



COLLECTIVE GARDEN B



Boundary:  
Concrete wall (lower than 1.5m)



GROUND FLOOR PLAN 1:500

## FACADE ZONE (SKIN & SPACE)

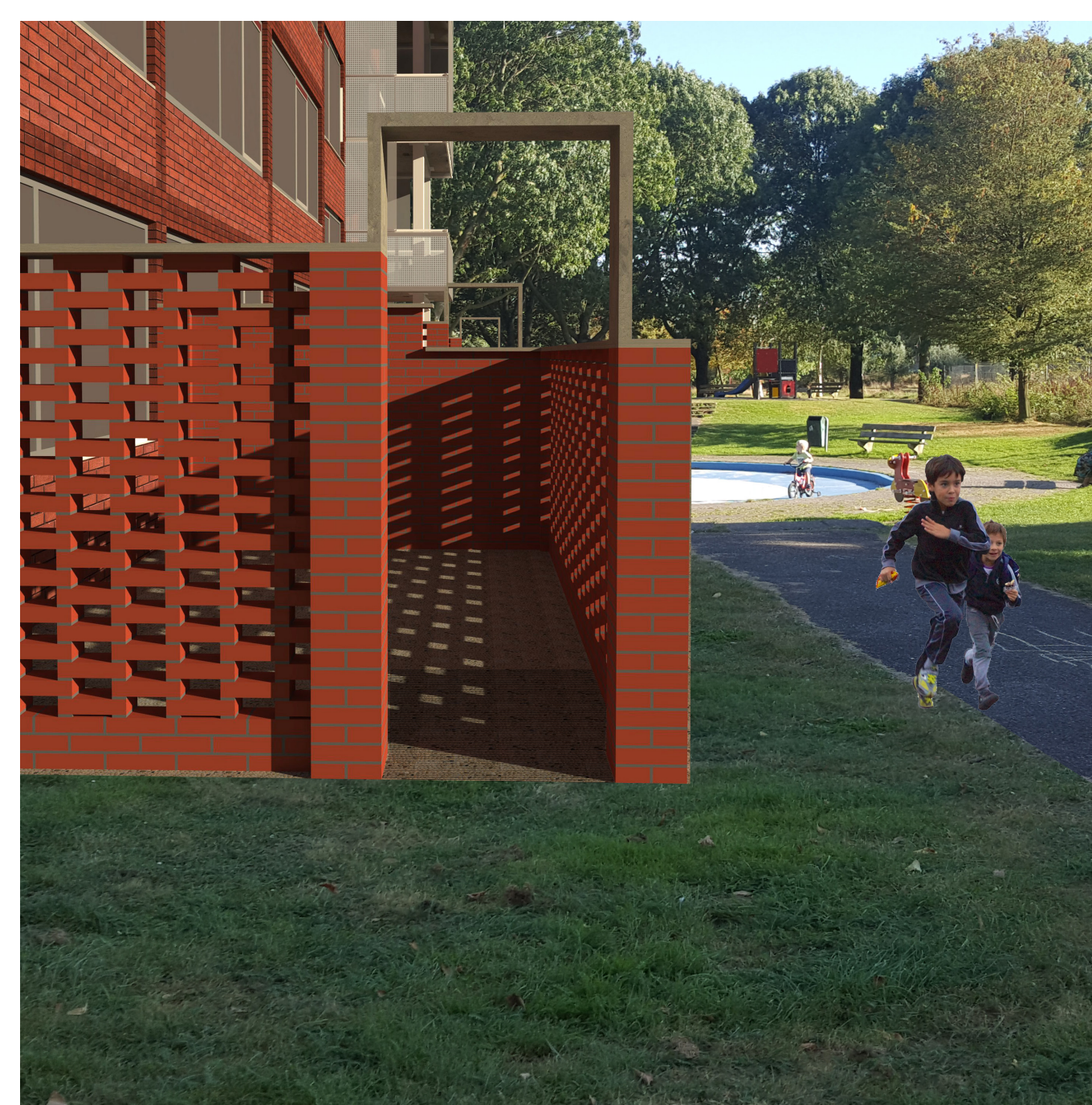
INBETWEEN ZONE 3 and ZONE 1,2



SKIN & WINDOW



BALCONY



GARDEN



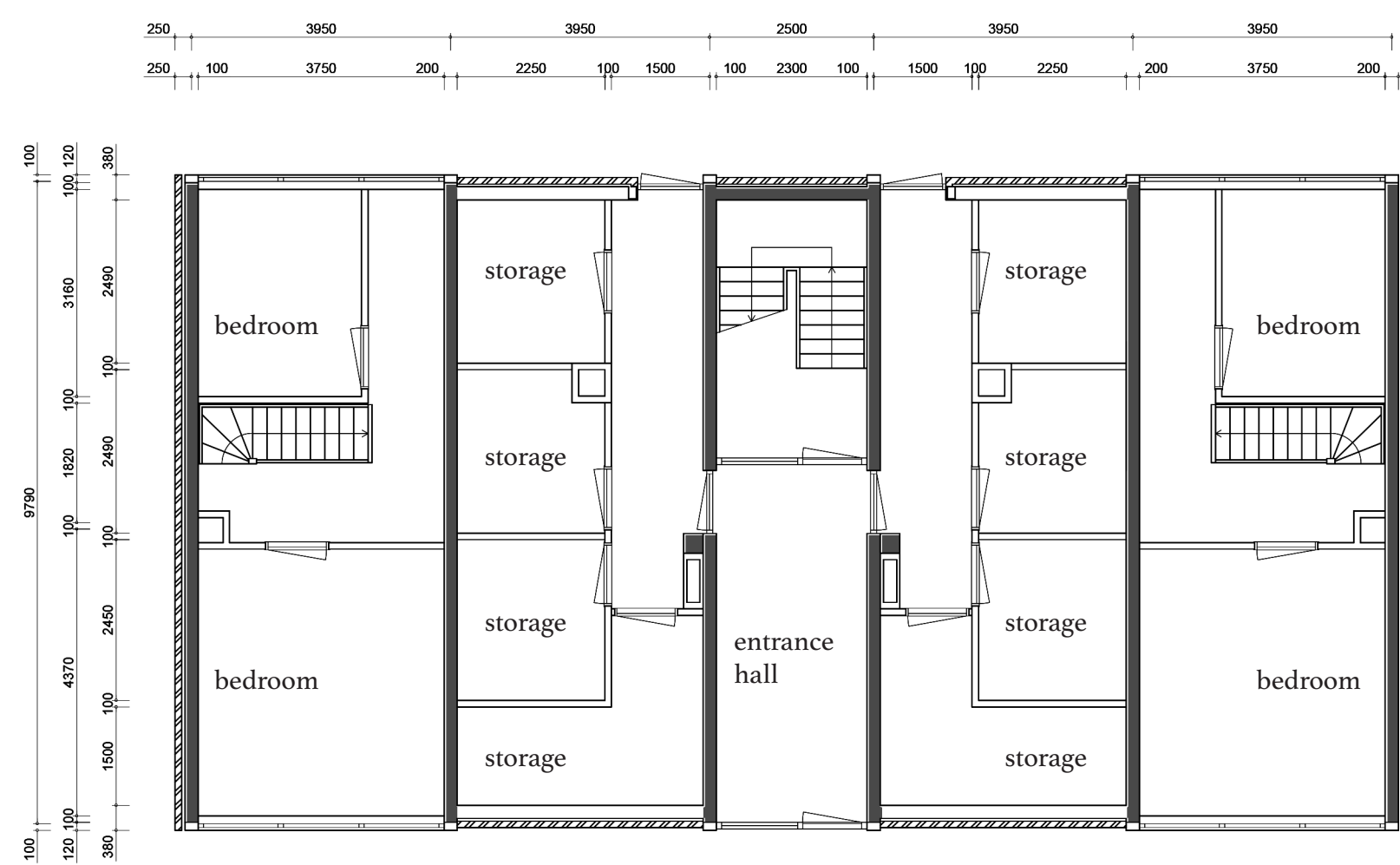
ENTRANCE



FRONT ELEVATION 1:100



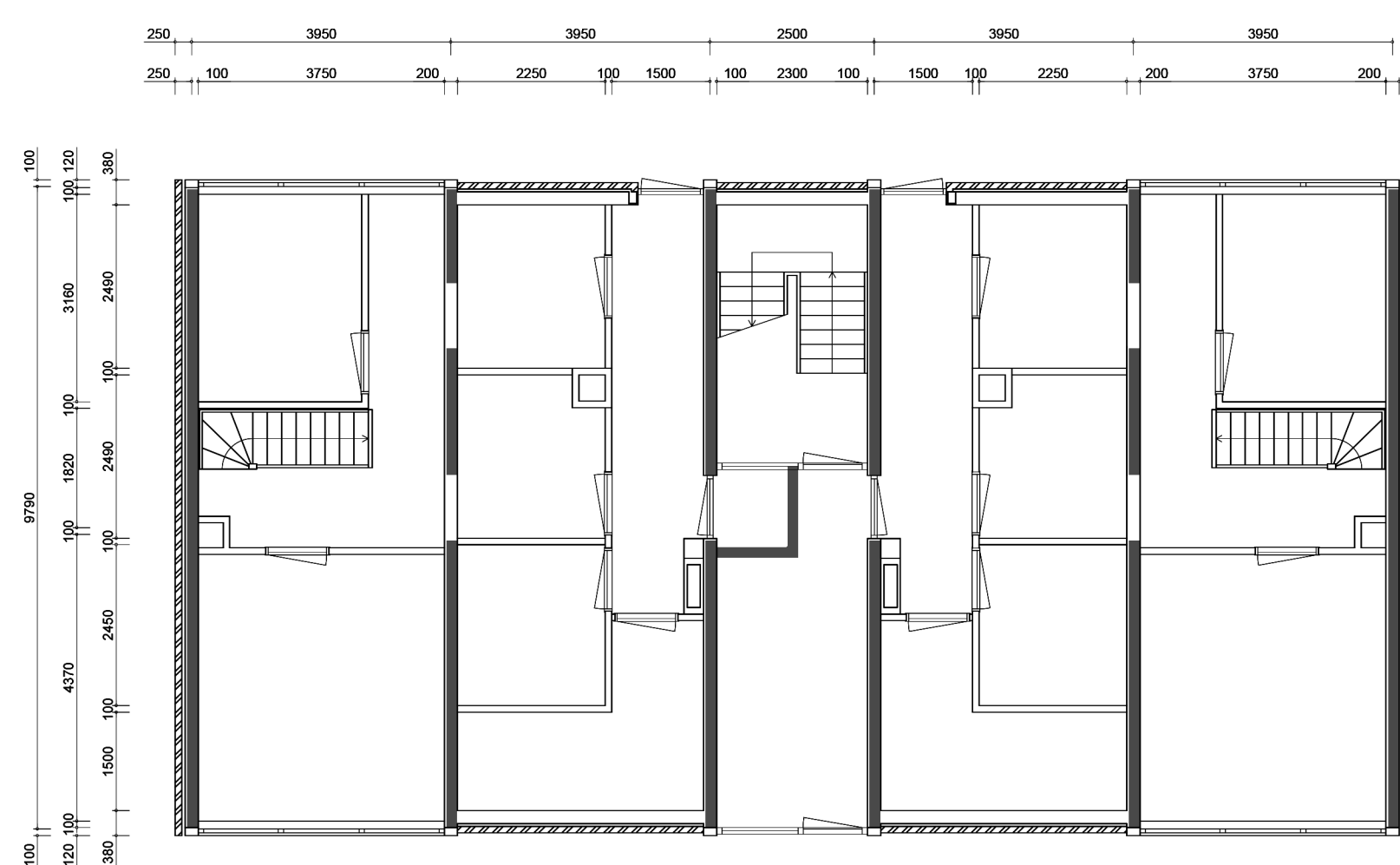
EXISTING PLAN



GROUND FLOOR PLAN 1:100



FIRST FLOOR PLAN 1:100



2nd-4th FLOOR PLAN 1:100

NEW PLAN



GROUND FLOOR PLAN 1:100



1st-4th FLOOR PLAN 1:100



1st-4th FLOOR 1:100

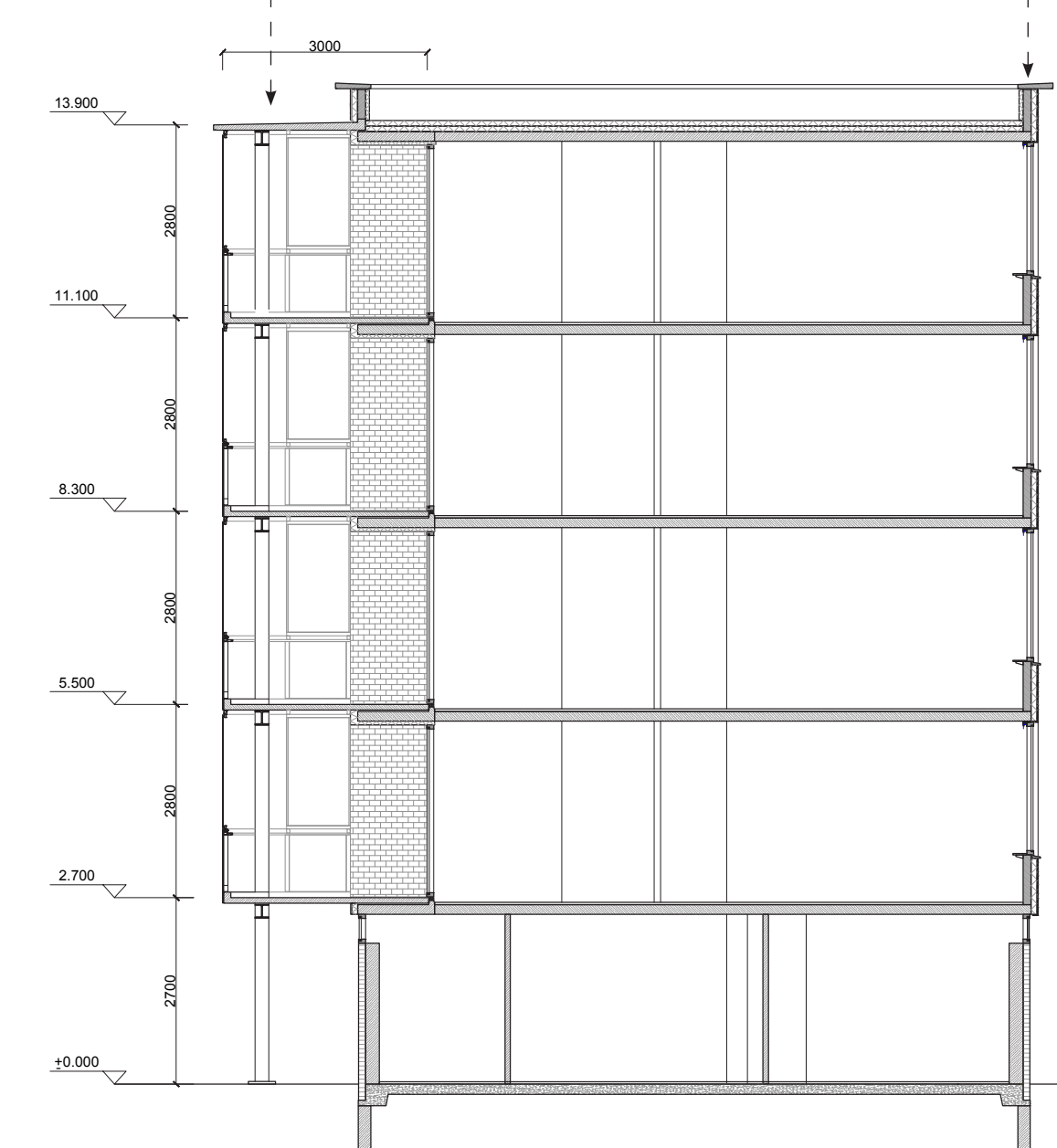


1st-4th FLOOR PLAN 1:100

TRANSFORMATION

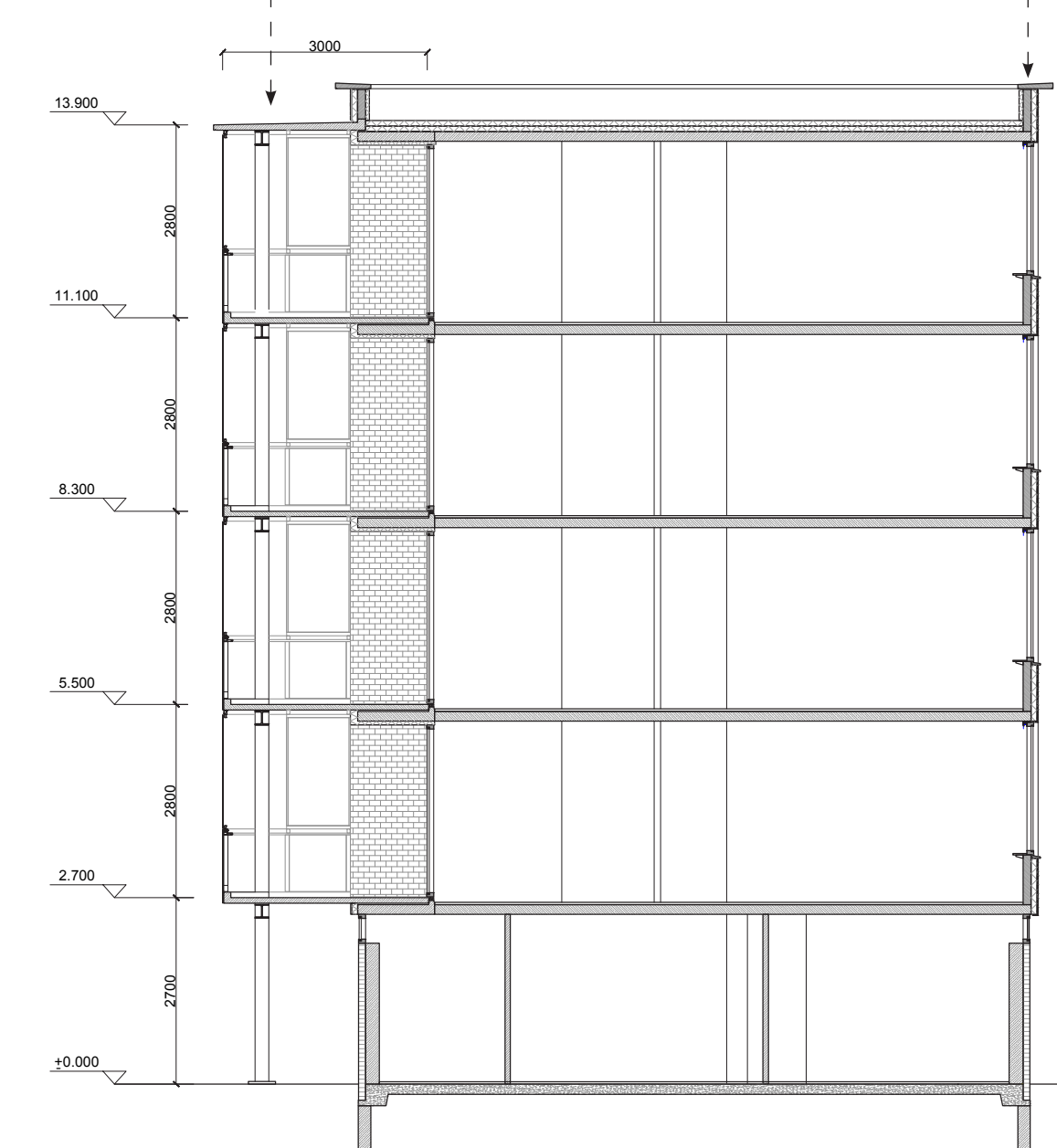
- Existing (ground floor): two bedrooms
- New: one-bay house with entrance zone and private garden
- Existing (1st-4th floor): two small balconies
- New: one interiorized-window zone the other privatize-extended balcony
- Existing portiek: entrance with harsh border
- New: entrance zone from public to shared private

FACADE ZONE BALCONY



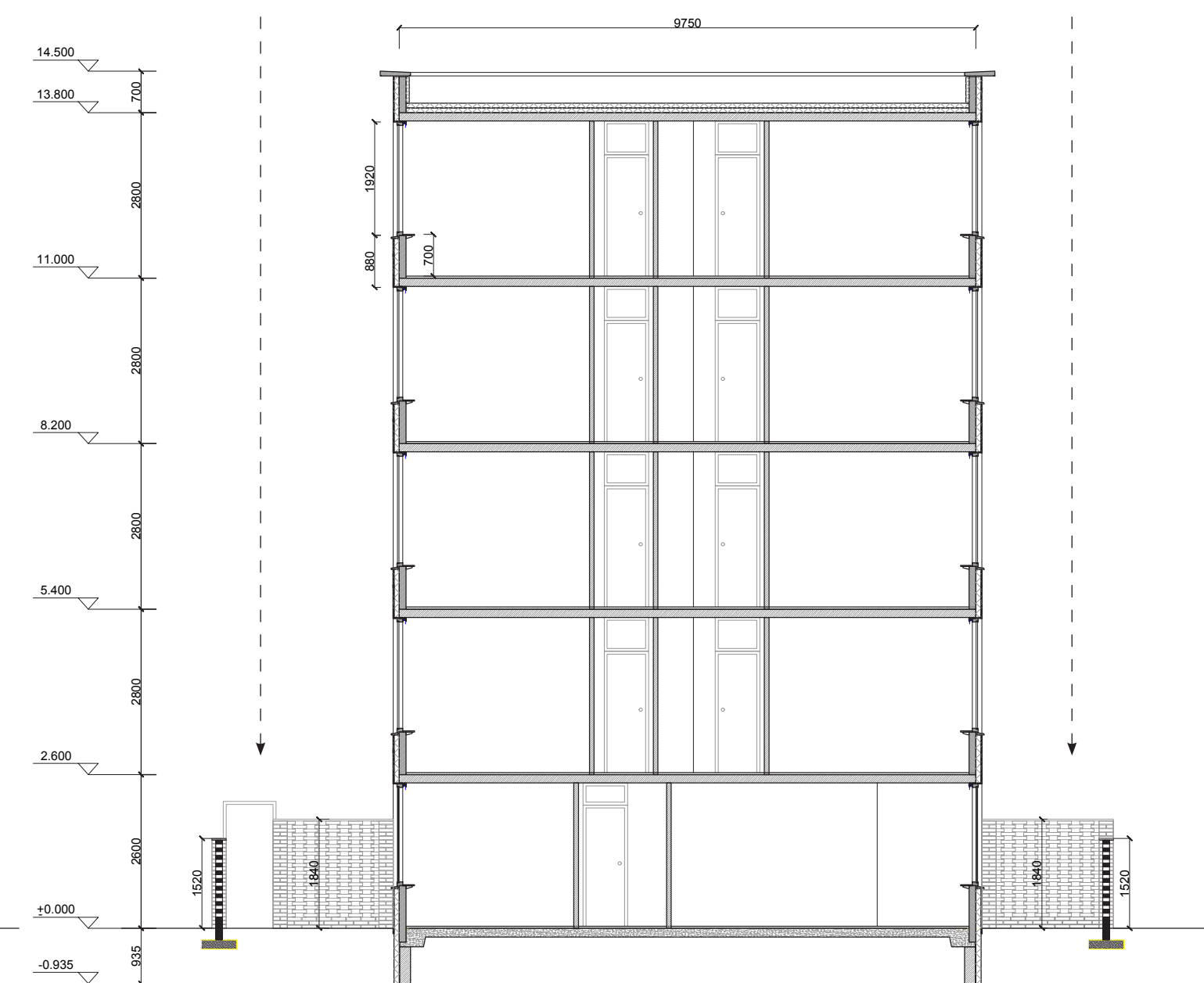
SECTION A-A 1:100

FACADE ZONE WINDOW



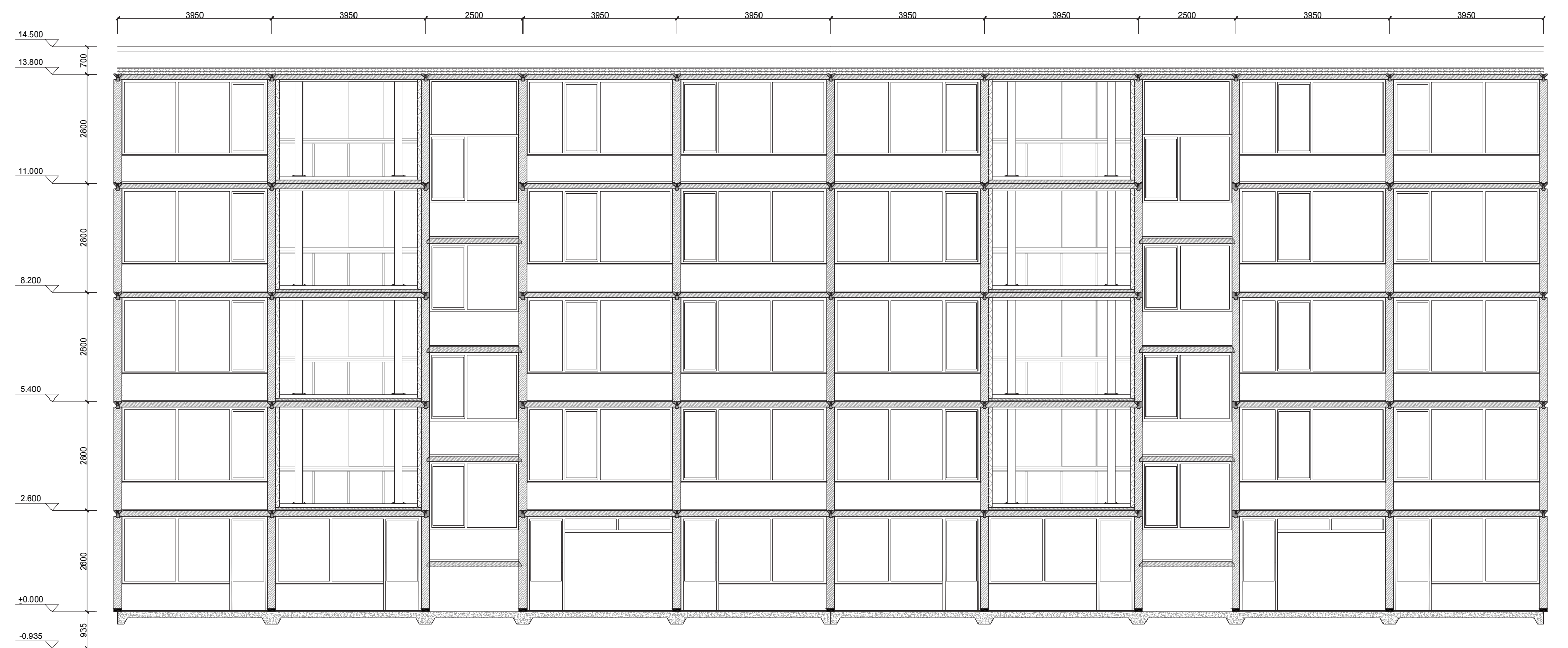
SECTION B-B 1:100

FACADE ZONE GARDEN



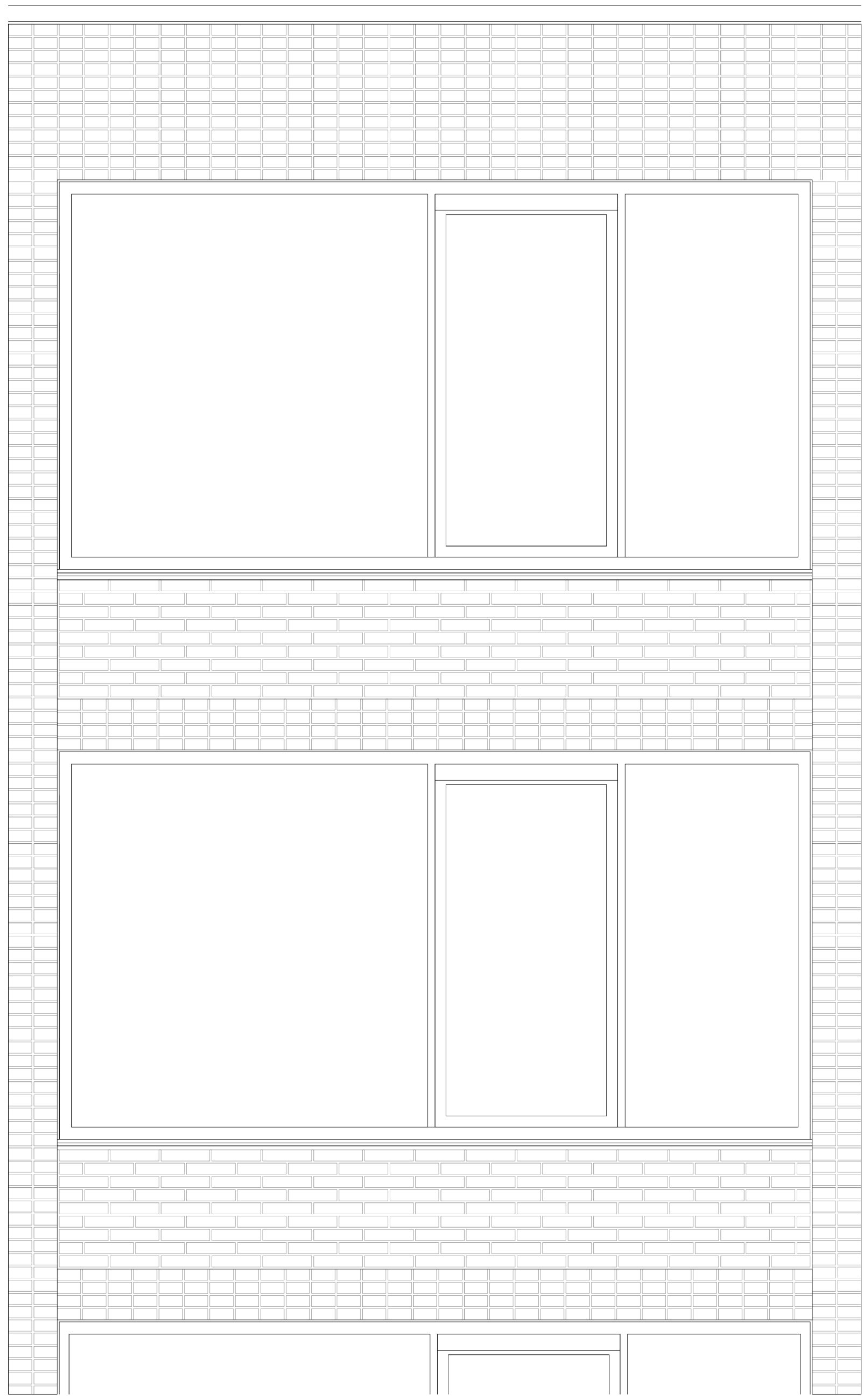
SECTION C-C 1:100

FACADE ZONE ENTRANCE

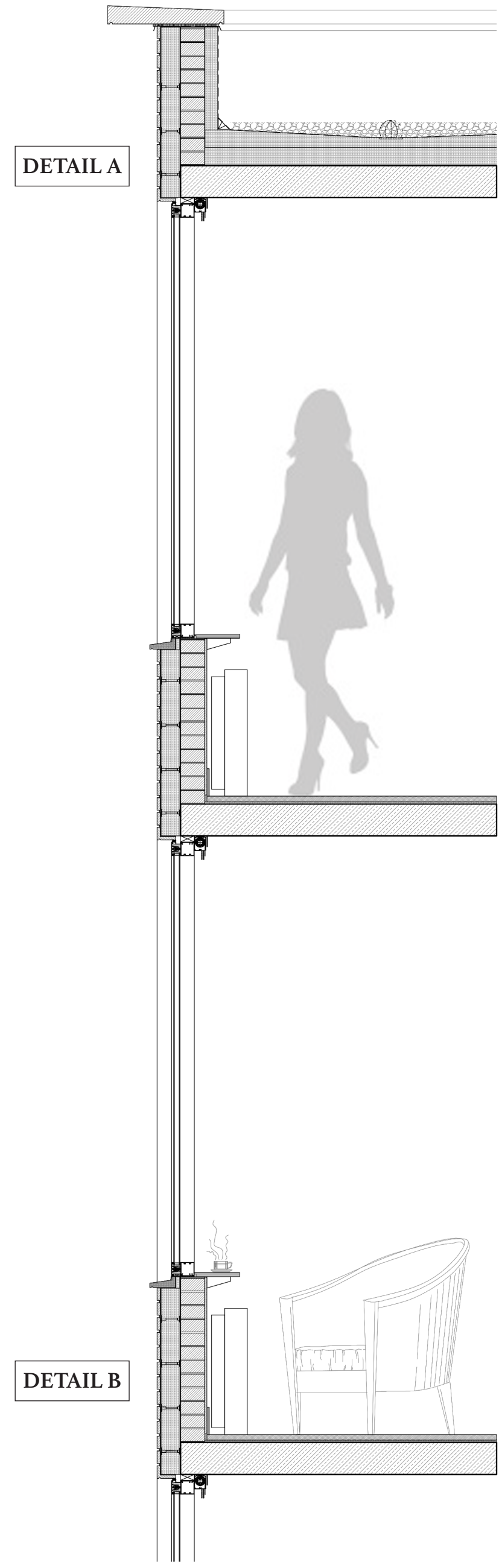


REAR ELEVATION 1:100

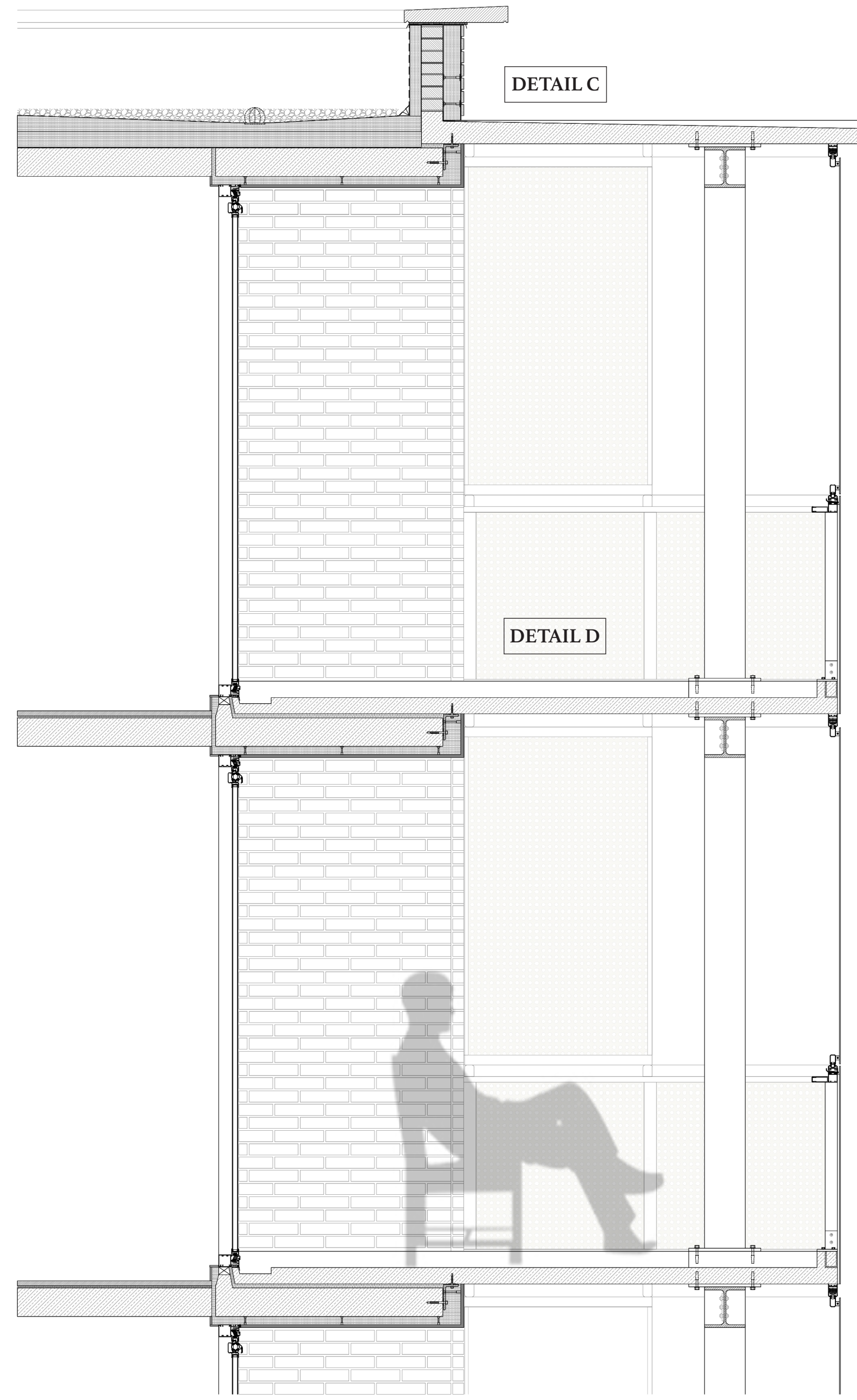




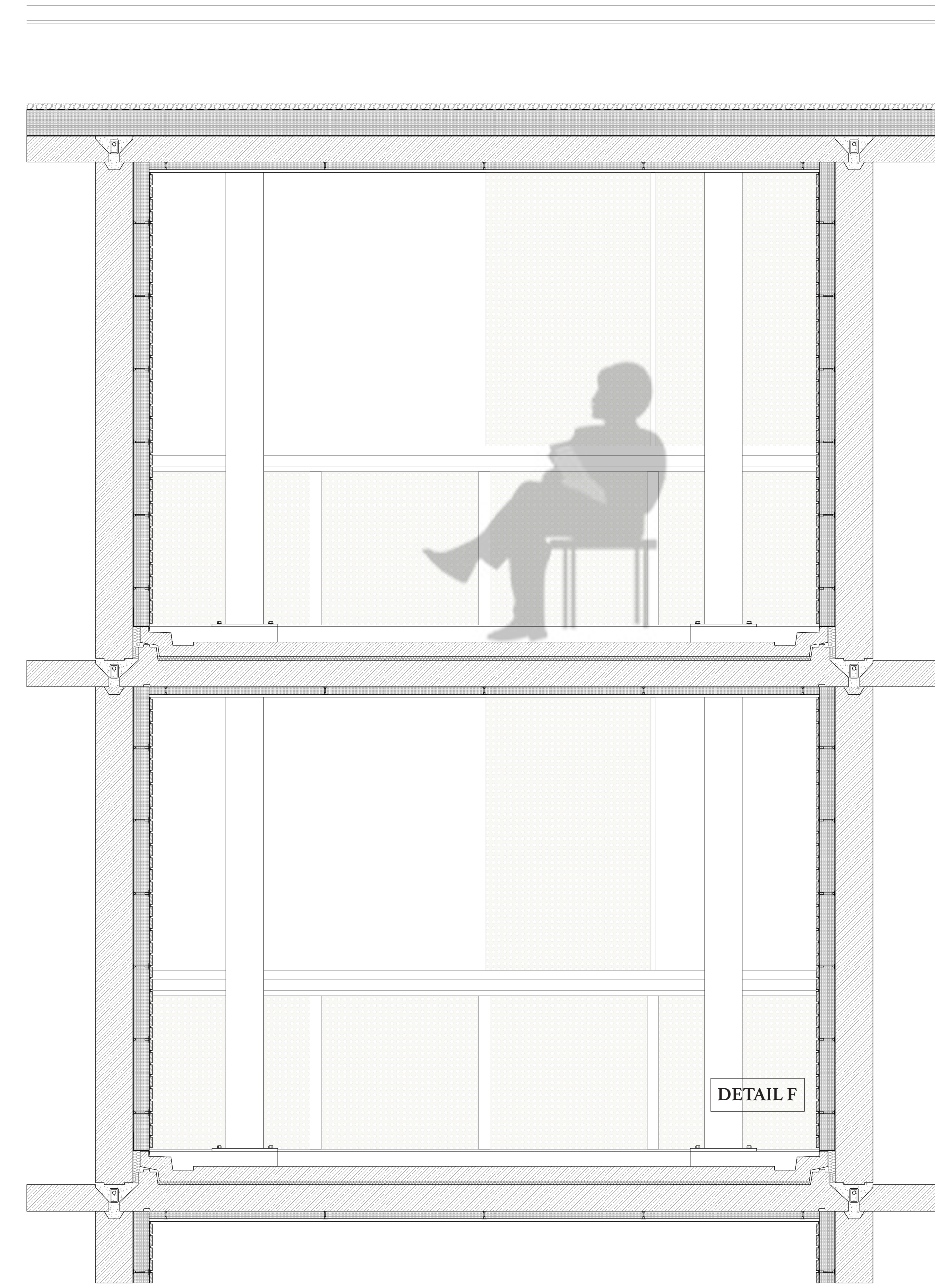
ELEVATION 1:20



SECTION 1-1 1:20



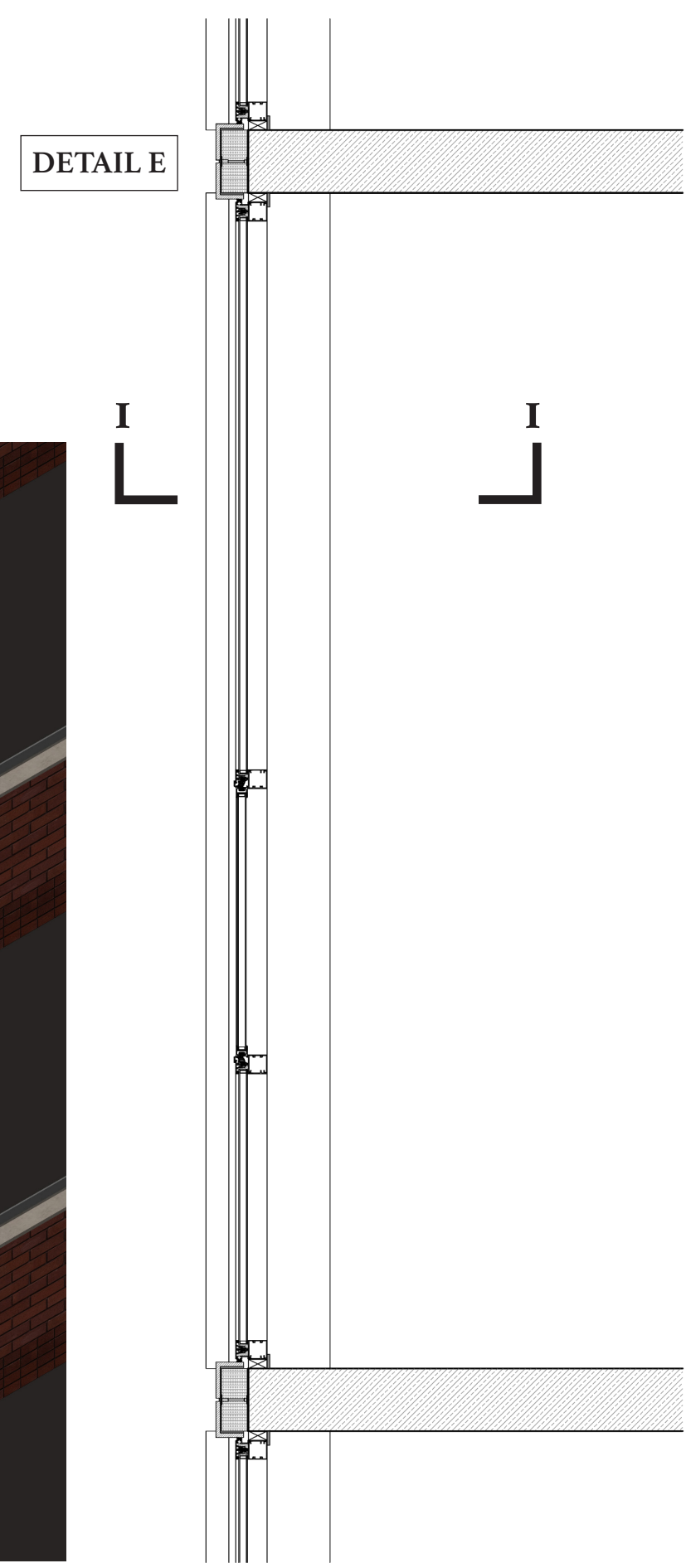
SECTION 2-2 1:20



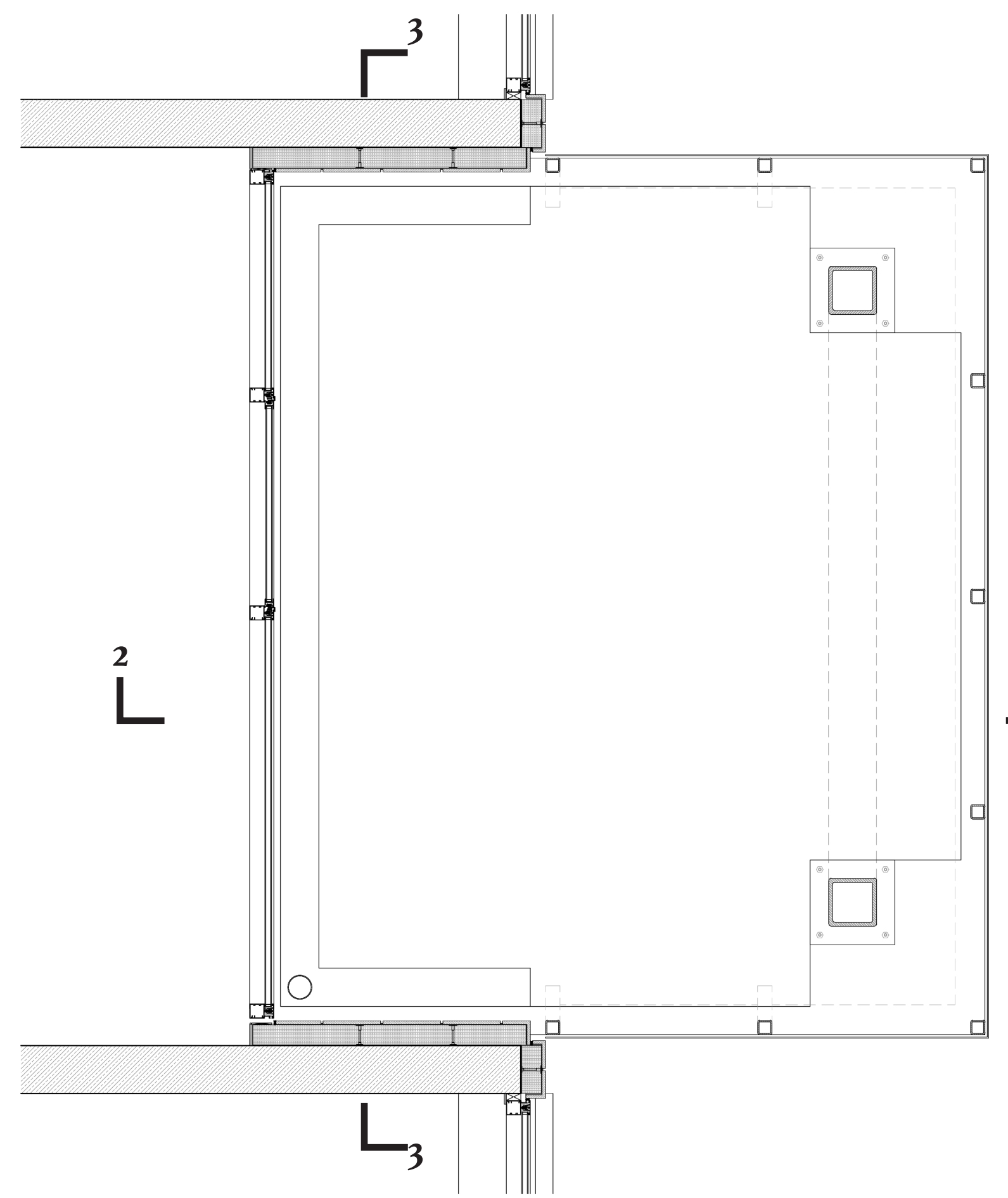
SECTION 3-3 1:20

**FACADE ZONE-WINDOW**

EXISTING PRIVACY DEGREE	PRIVATE	SHARED PRIVATE	COLLECTIVE	PUBLIC
OWNERSHIP	●			
PHYSICAL ACCESSIBILITY	●			
VISUAL ACCESSIBILITY	●	---	---	●
VIEW TO OTHER ZONES	●	---	---	●
NEW PRIVACY CONTROL	■	■	■	■



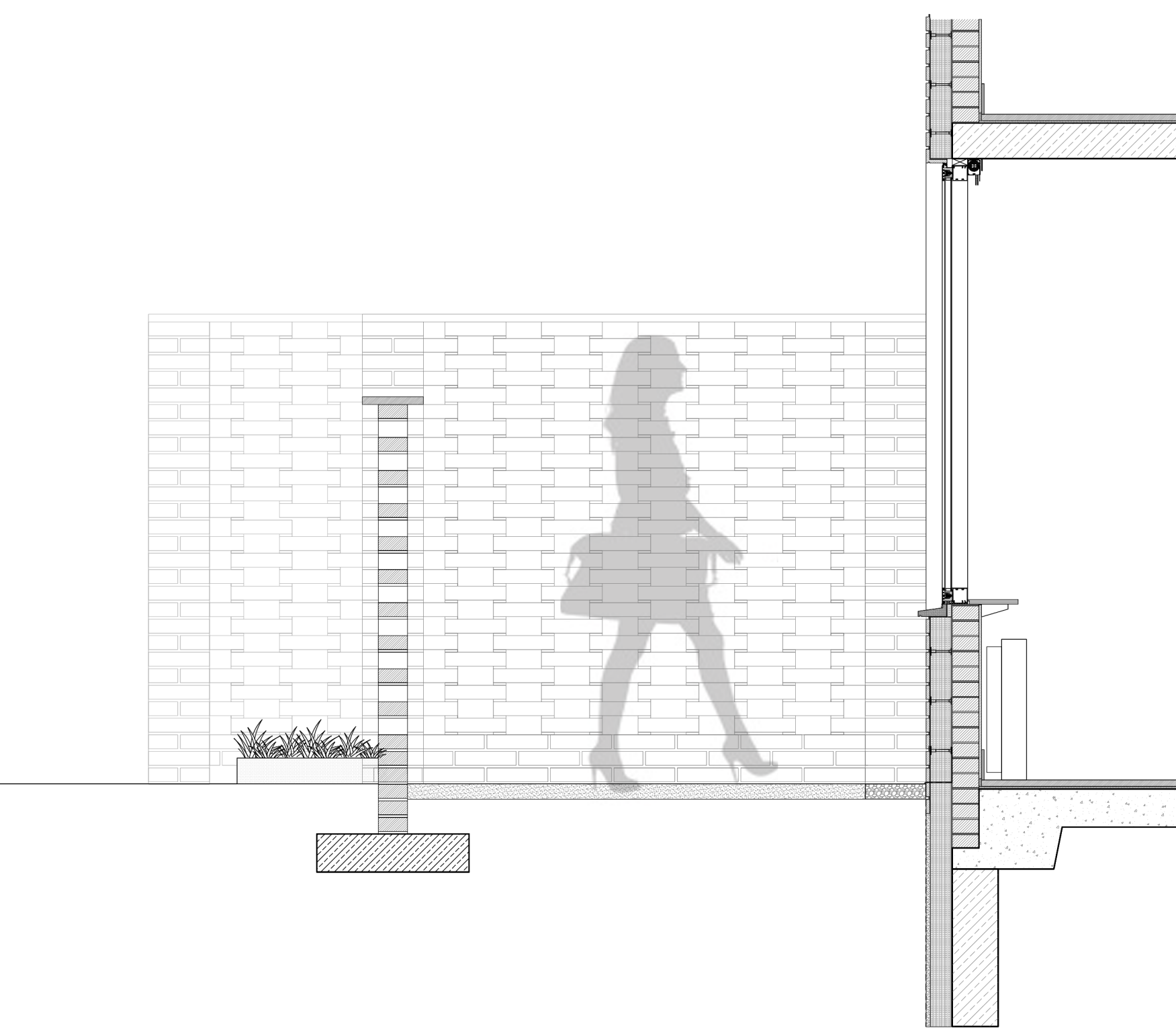
PLAN 1:20



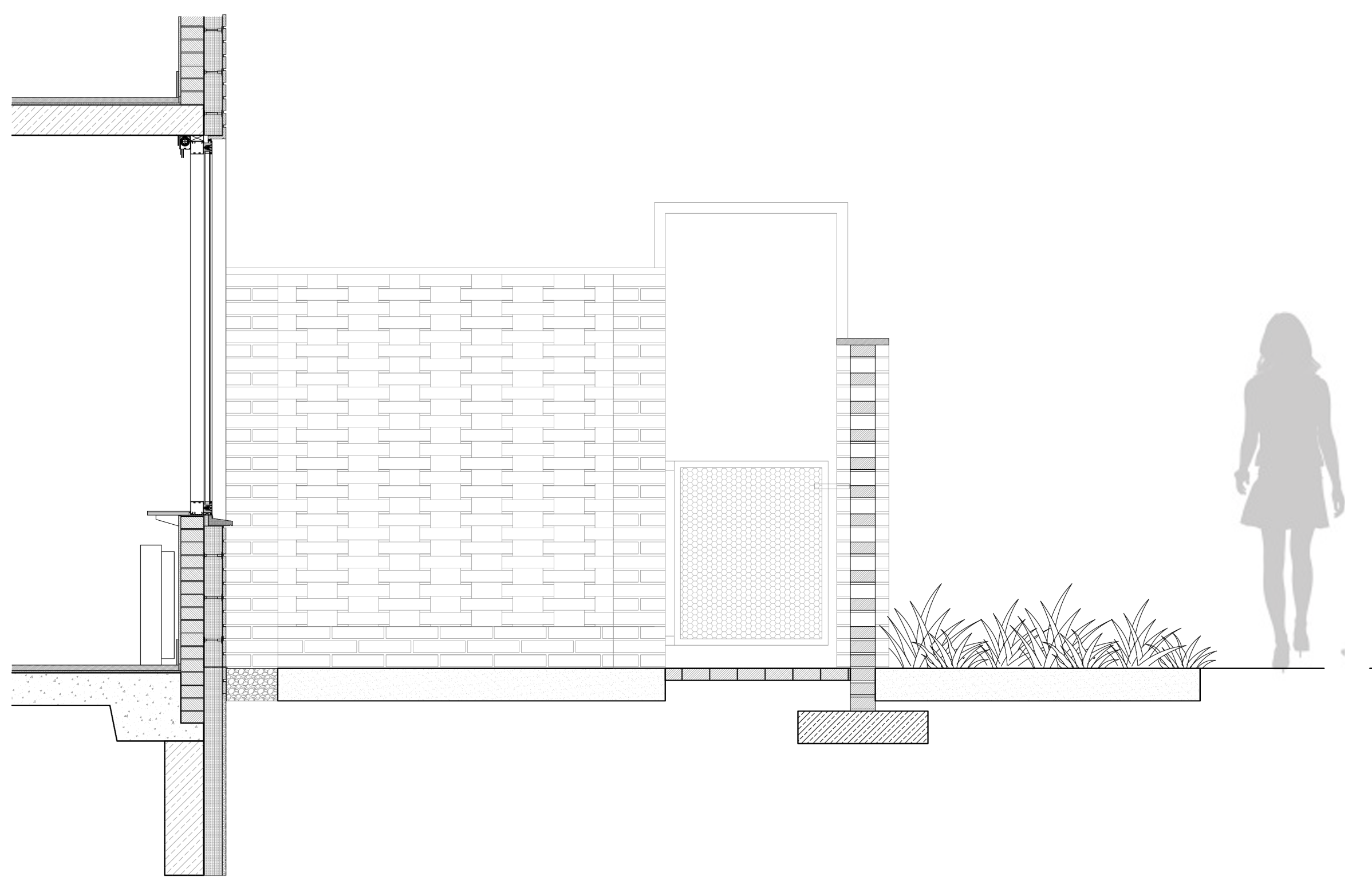
PLAN 1:20

**FACADE ZONE-BALCONY**

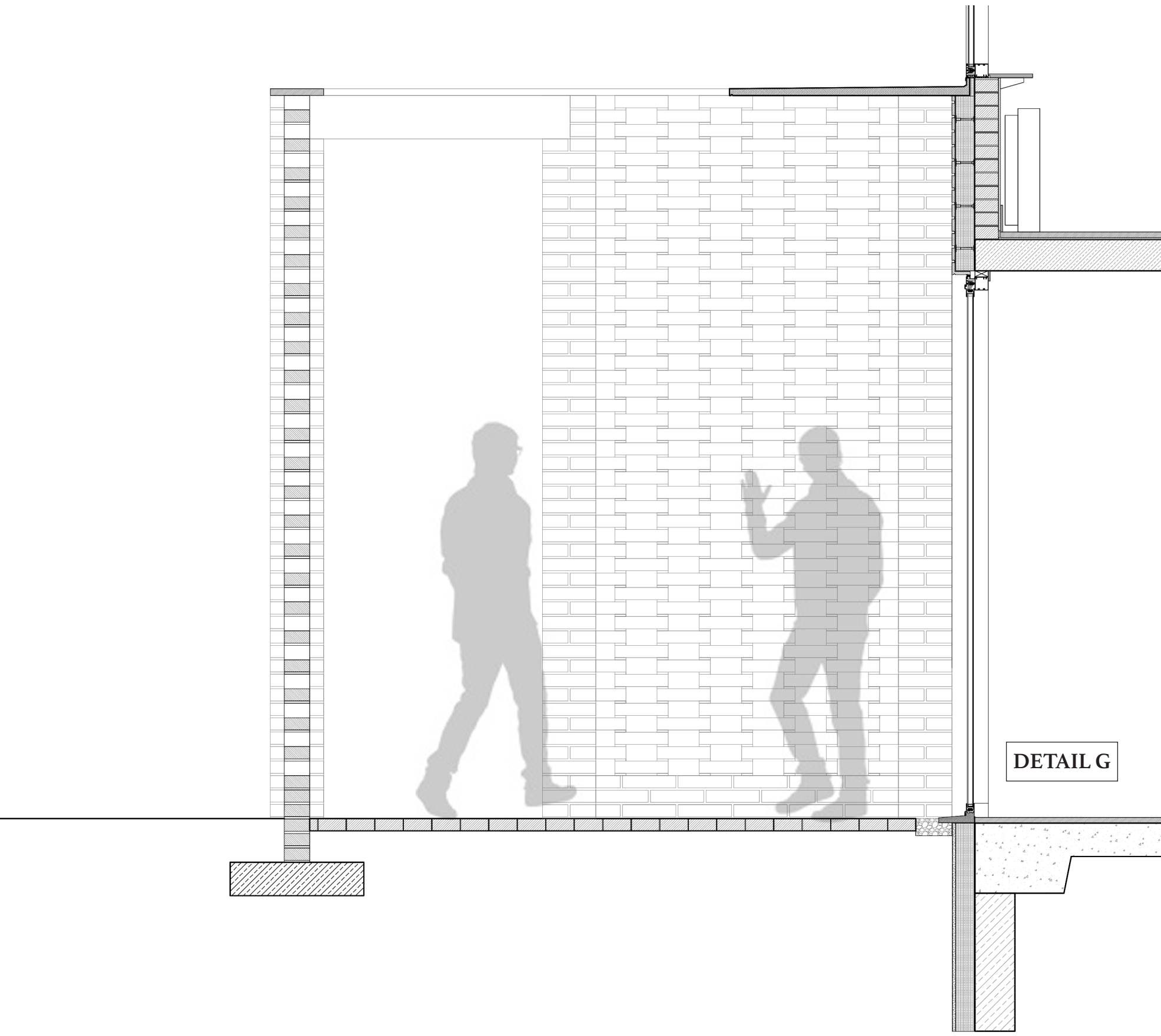
EXISTING PRIVACY DEGREE	PRIVATE	SHARED PRIVATE	COLLECTIVE	PUBLIC
OWNERSHIP	●			
PHYSICAL ACCESSIBILITY	●			
VISUAL ACCESSIBILITY	●	---	---	●
VIEW TO OTHER ZONES	●	---	---	●
NEW PRIVACY CONTROL	■	■	■	■



SECTION 4-4 1:20



SECTION 5-5 1:20



SECTION 6-6 1:20

**FACADE ZONE-PRIVATE ENTRANCE**

EXISTING PRIVACY DEGREE	PRIVATE	SHARED PRIVATE	COLLECTIVE	PUBLIC
OWNERSHIP	●			
PHYSICAL ACCESSIBILITY	●			
VISUAL ACCESSIBILITY	●	---	---	●
VIEW TO OTHER ZONES	●	---	---	●
NEW PRIVACY CONTROL	■	■	■	■



**FACADE ZONE-PRIVATE GARDEN**

EXISTING PRIVACY DEGREE	PRIVATE	SHARED PRIVATE	COLLECTIVE	PUBLIC
OWNERSHIP	●			
PHYSICAL ACCESSIBILITY	●			
VISUAL ACCESSIBILITY	●	---	---	●
VIEW TO OTHER ZONES	●	---	---	●
NEW PRIVACY CONTROL	■	■	■	■

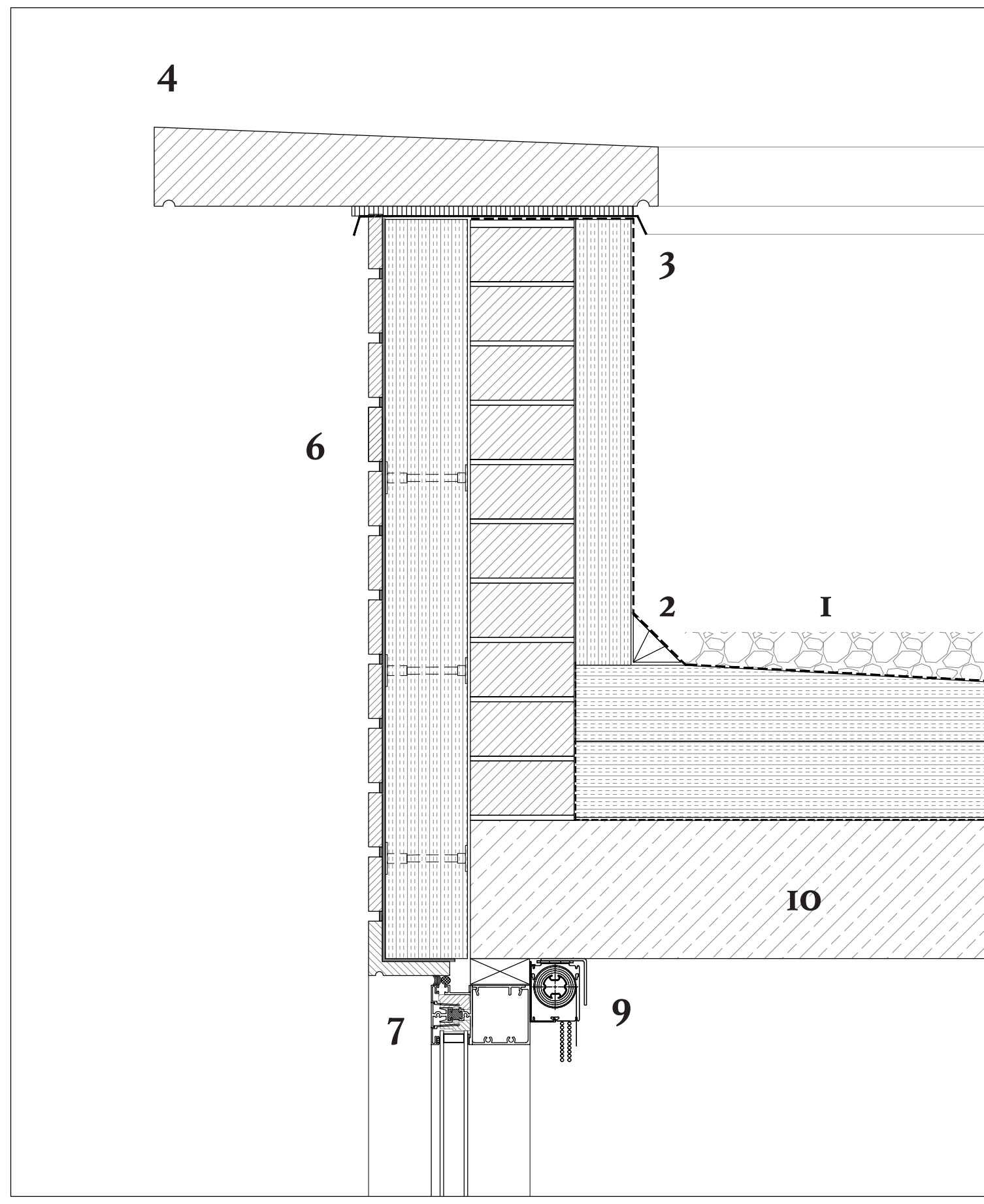


**FACADE ZONE-PORTIEK ENTRANCE**

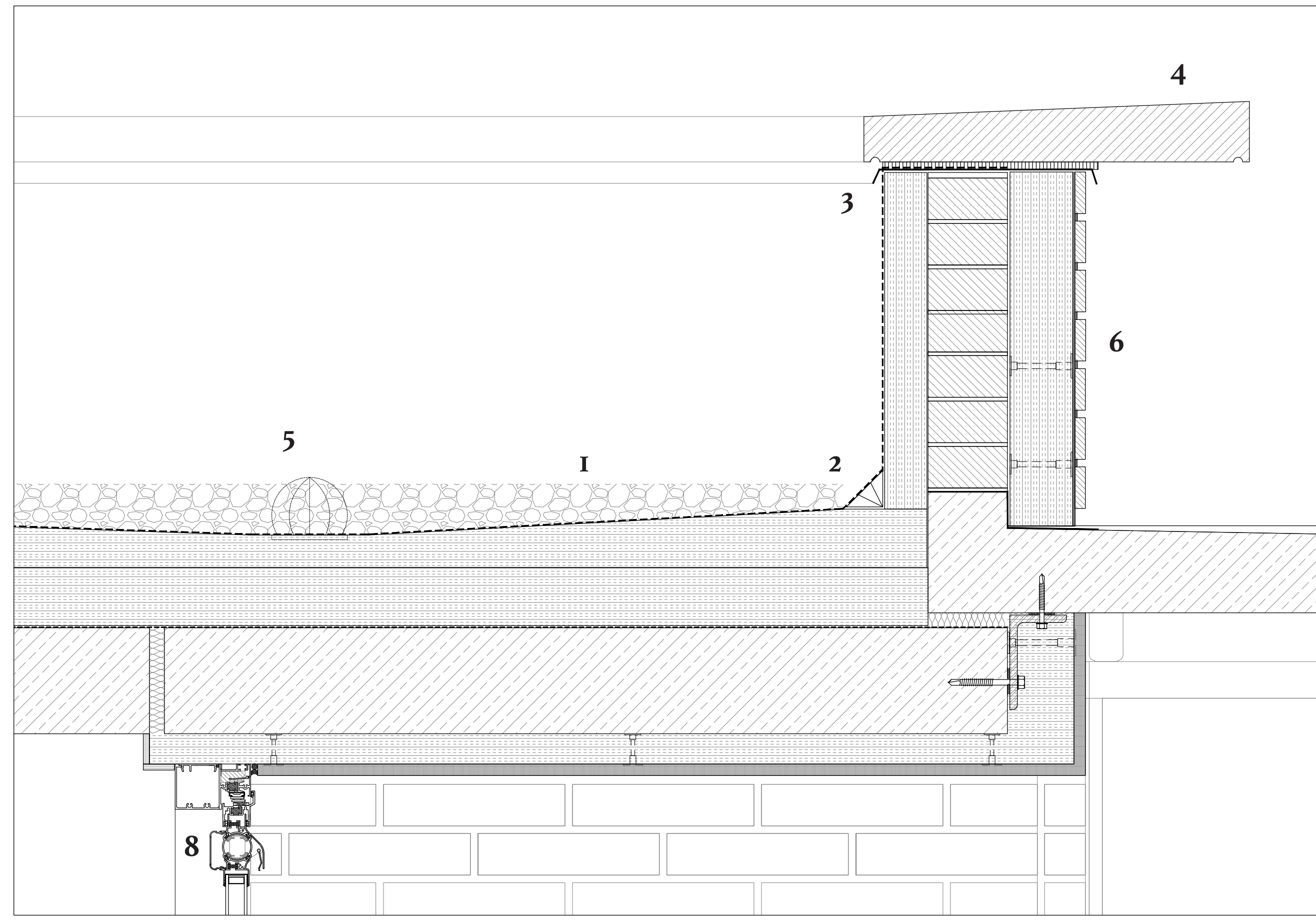
EXISTING PRIVACY DEGREE	PRIVATE	SHARED PRIVATE	COLLECTIVE	PUBLIC
OWNERSHIP	●			
PHYSICAL ACCESSIBILITY	●			
VISUAL ACCESSIBILITY	●	---	---	●
VIEW TO OTHER ZONES	●	---	---	●
NEW PRIVACY CONTROL	■	■	■	■



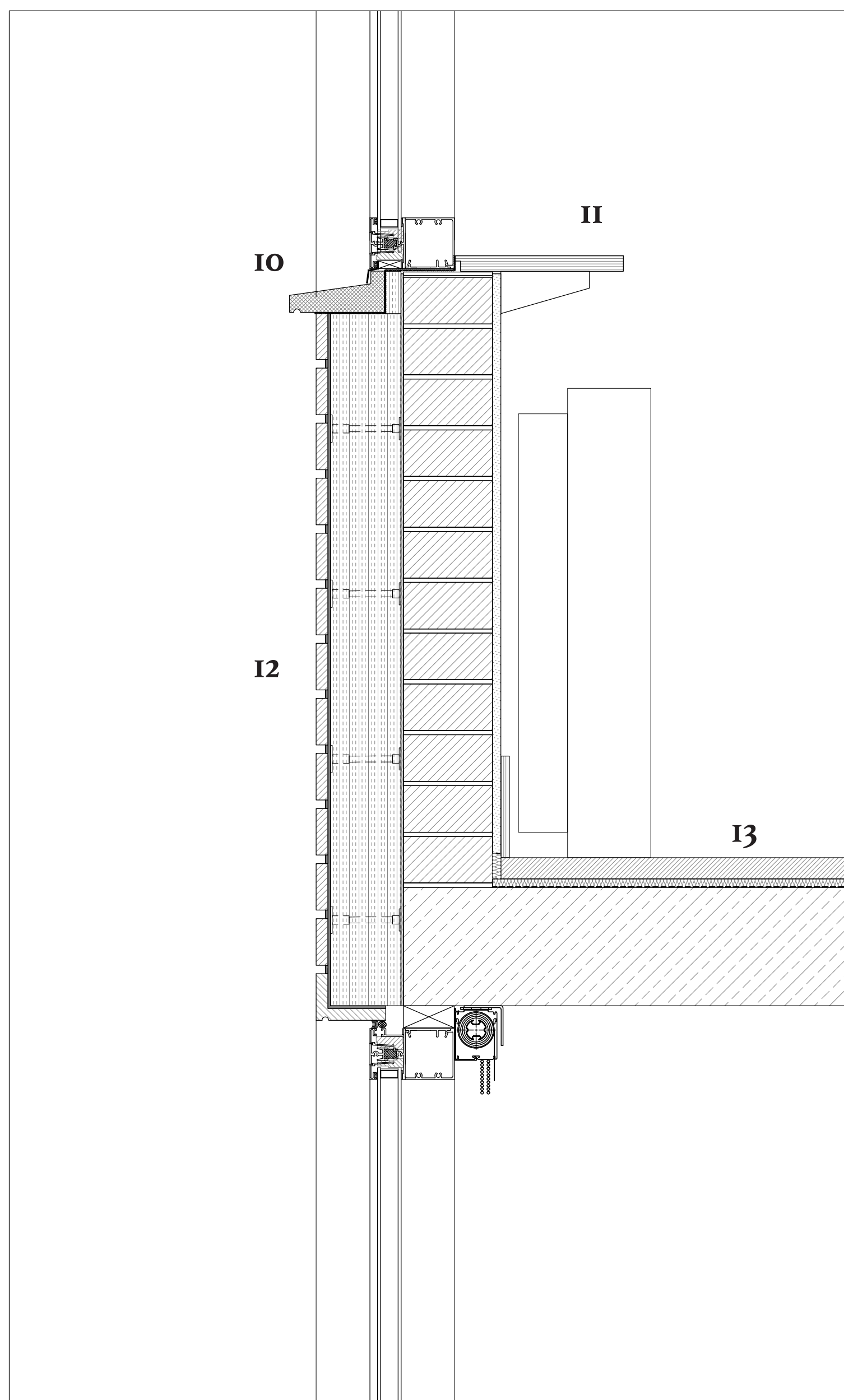




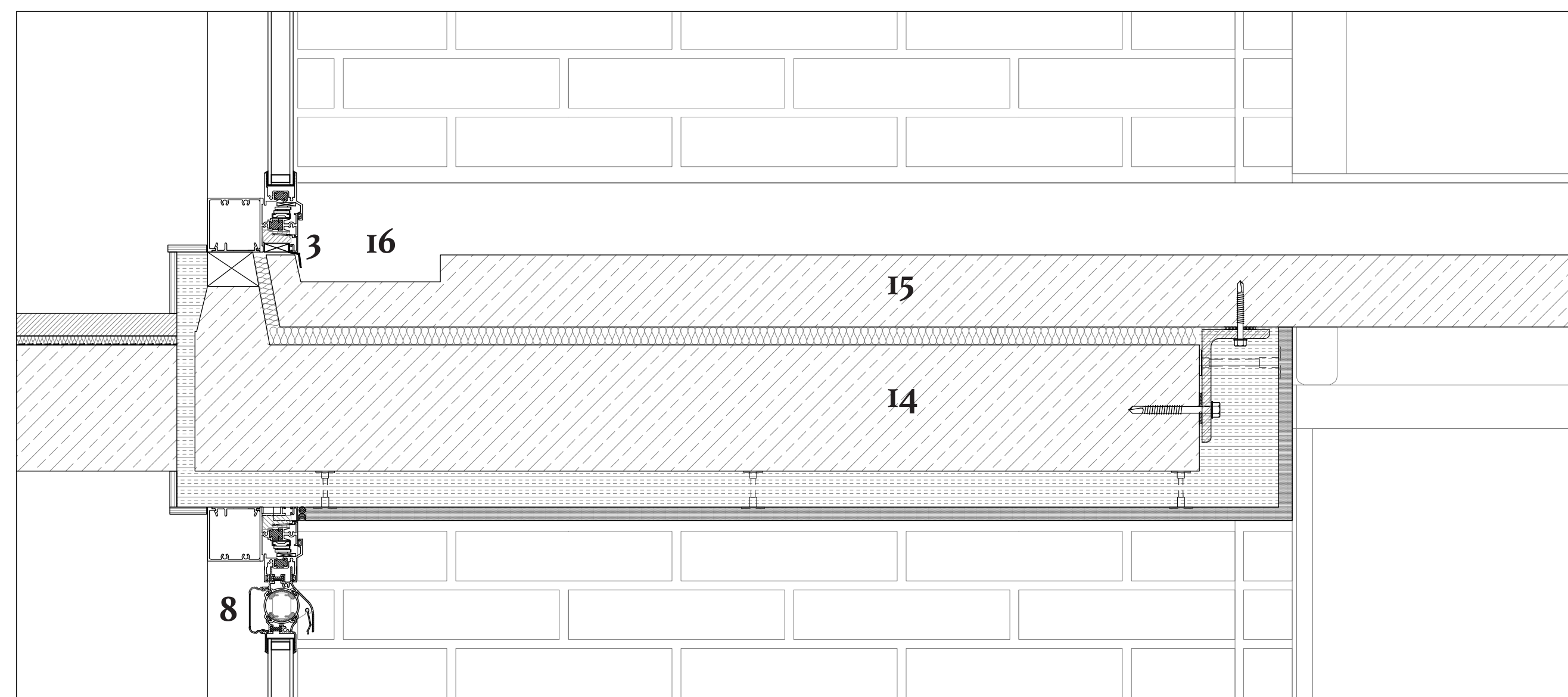
DETAIL A 1:5



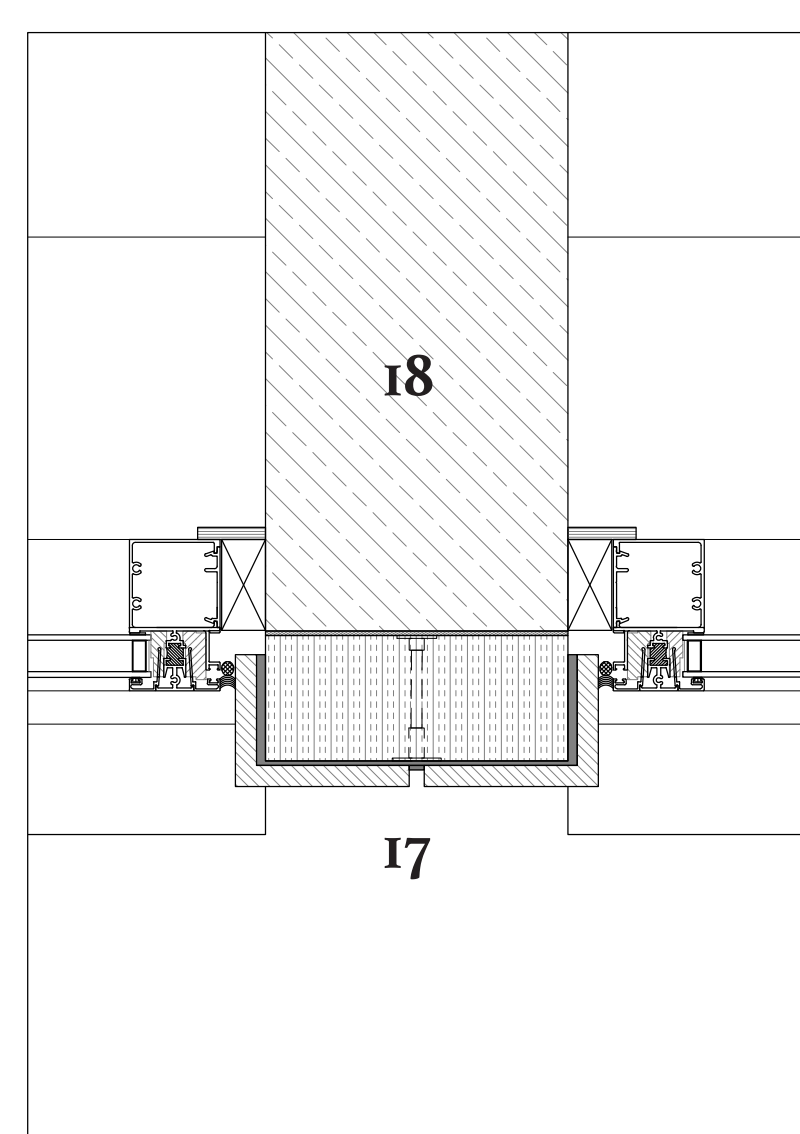
DETAIL C 1:5



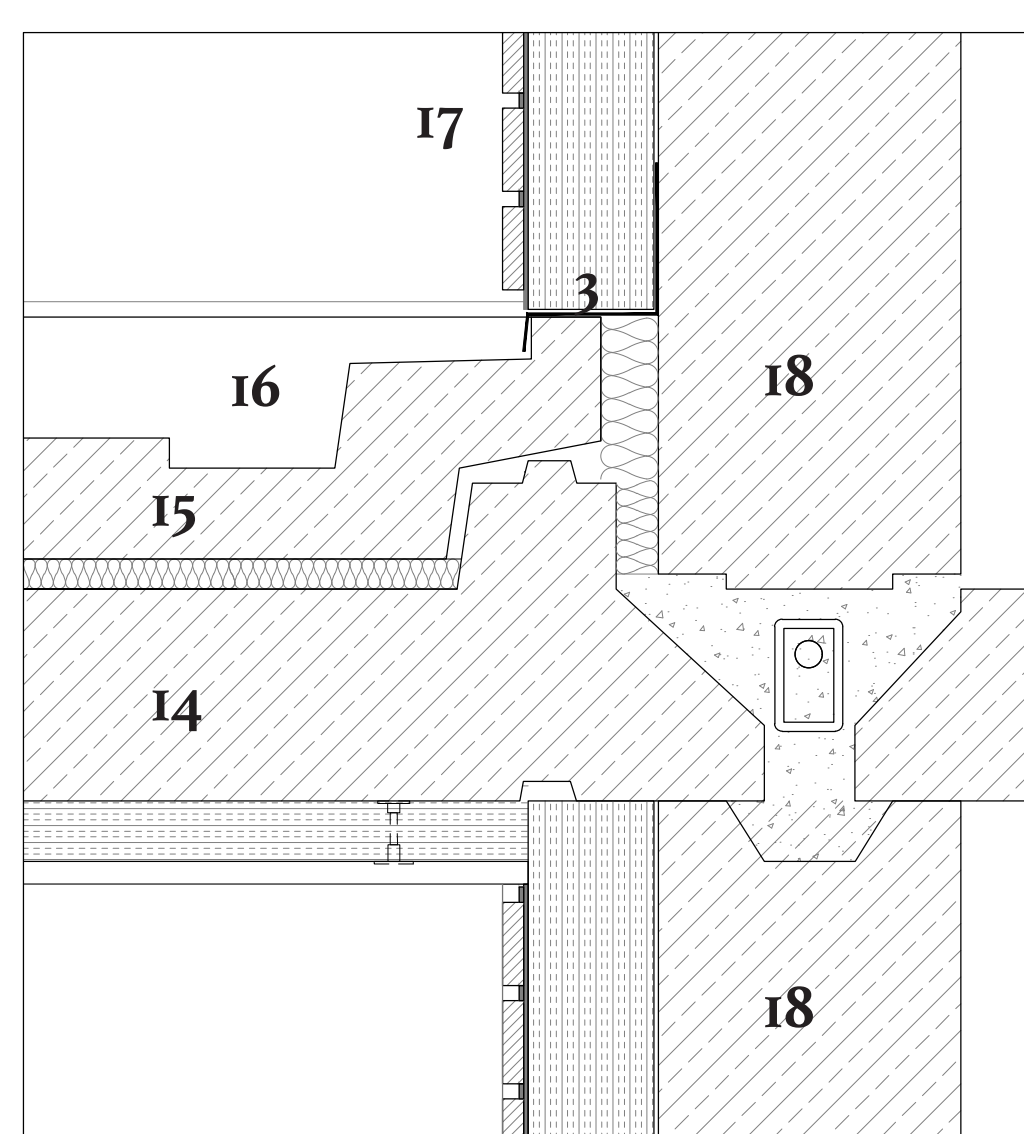
DETAIL B 1:5



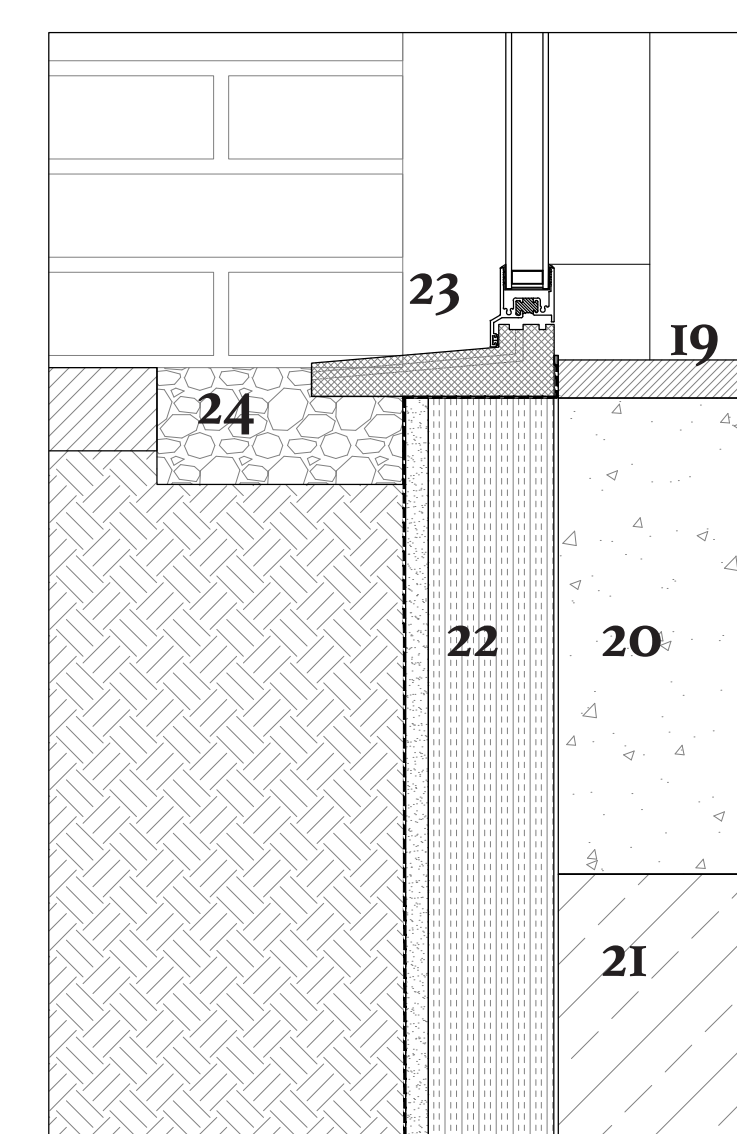
DETAIL D 1:5



DETAIL E 1:5



DETAIL F 1:5



DETAIL G 1:5

**ROOF** U=0.234

- 1. bed of gravel on filter mat bitumen coating
- mineral wool 80 mm x 2
- vapor barrier sd=100 mm, 0.5mm
- existing concrete slab 140mm

- 2. cant strip
- 3. aluminum flashing
- 4. aerated concrete coping
- 5. drainage pipe

- 6. thermo steen with polyurethane insulating foam 100mm
- aerated concrete parapet
- polyurethane insulating foam 60mm

**WINDOW**

- 7. double glazing with aluminium frame
- 8. openable window/door with natural air intake grill, painted red
- 9. curtain
- 10. light concrete sill (exterior)
- 11. wooden sill (interior) with mental support

**WALL**

- 12. thermo steen with polyurethane insulating foam 100mm
- aerated concrete parapet h=720mm
- cement plaster finish 10 mm

**FLOOR**

- 13. floating screed construction: cement screed 35mm
- impact sound insulation 10mm
- damp proof membrane
- existing concrete slab 140mm

**BALCONY**

- 14. existing concrete slab 140mm
- 15. new floor FRC 80mm
- 16. drainage
- 17. thermo steen panel 100mm
- 18. existing load bearing wall

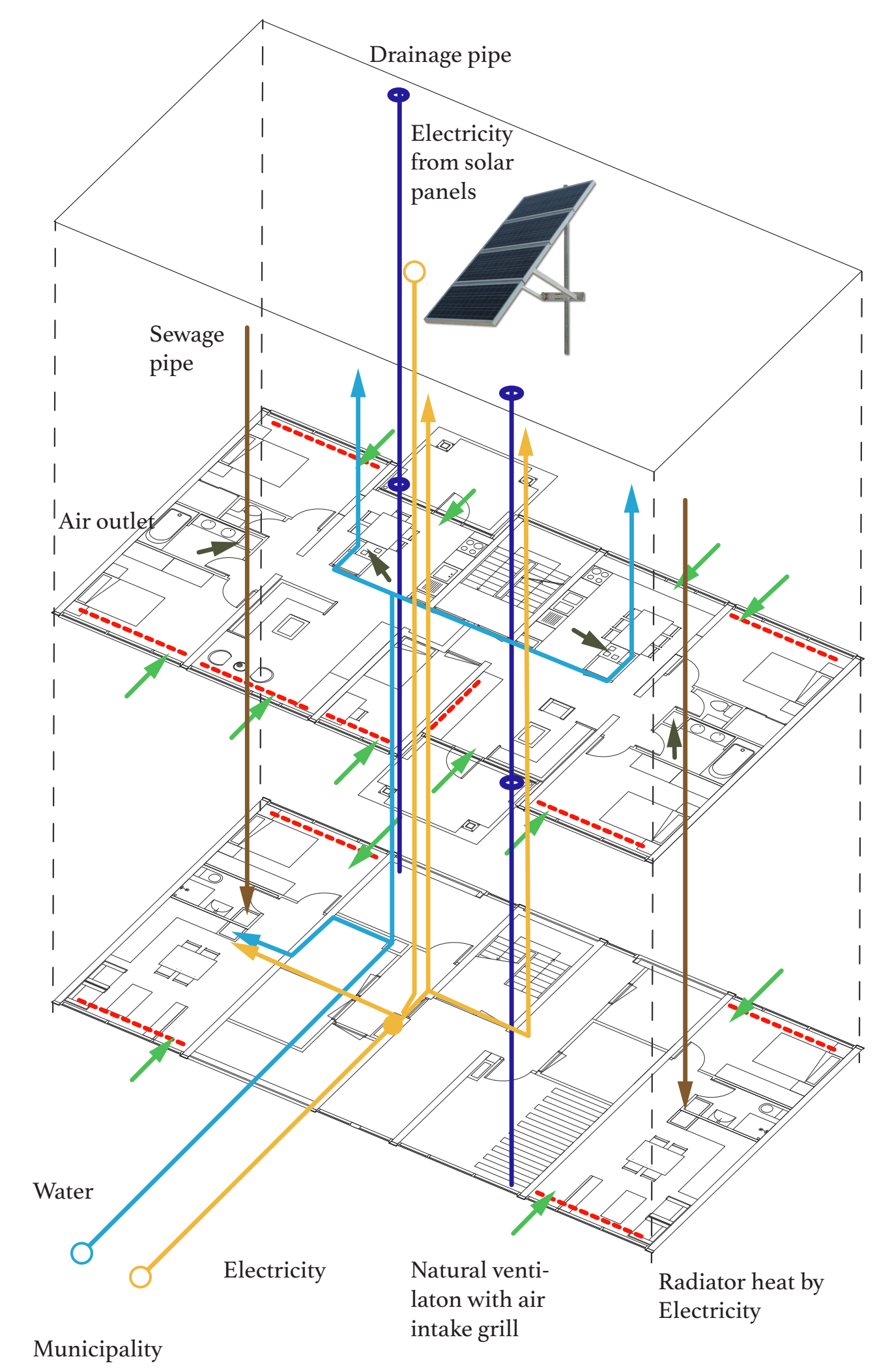
steel structure:  
square steel column 200x200mm d=16mm  
I beam 200x200 mm d=9mm  
fin connection with bolts  
(see section 2-2)

balcony skin system:  
aluminium baluster, rail, sliding track  
perforated aluminium screen  
(see section 2-2,3)

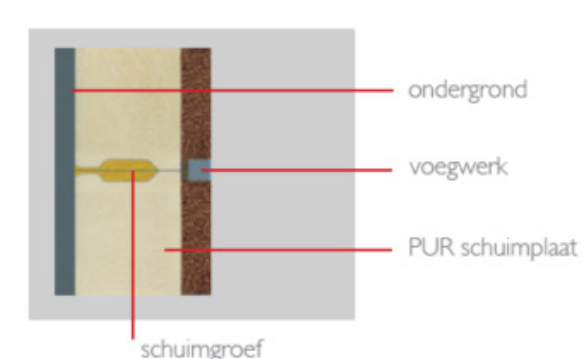
**FOOT**

- 19. cement screed
- 20. concrete slab foundation cast on site 150 mm
- 21. prefab concrete beam
- 22. polyurethane insulating foam 80 mm
- 23. door dorpel with drainage channels
- 24. gravel

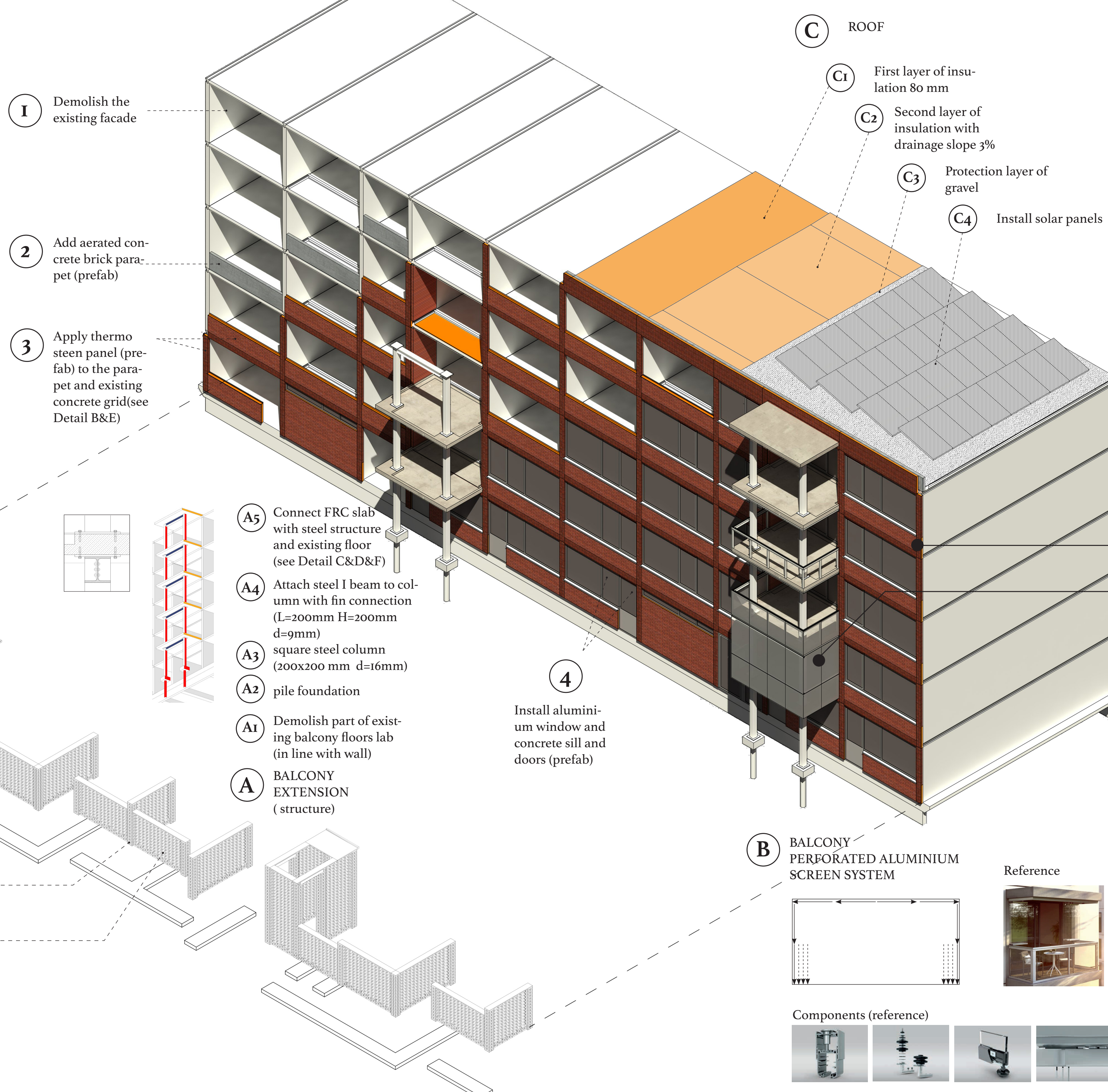
**SERVICE INSTALLATION SCHEME**



**STRUCTURE AND ASSEMBLY SCHEME**

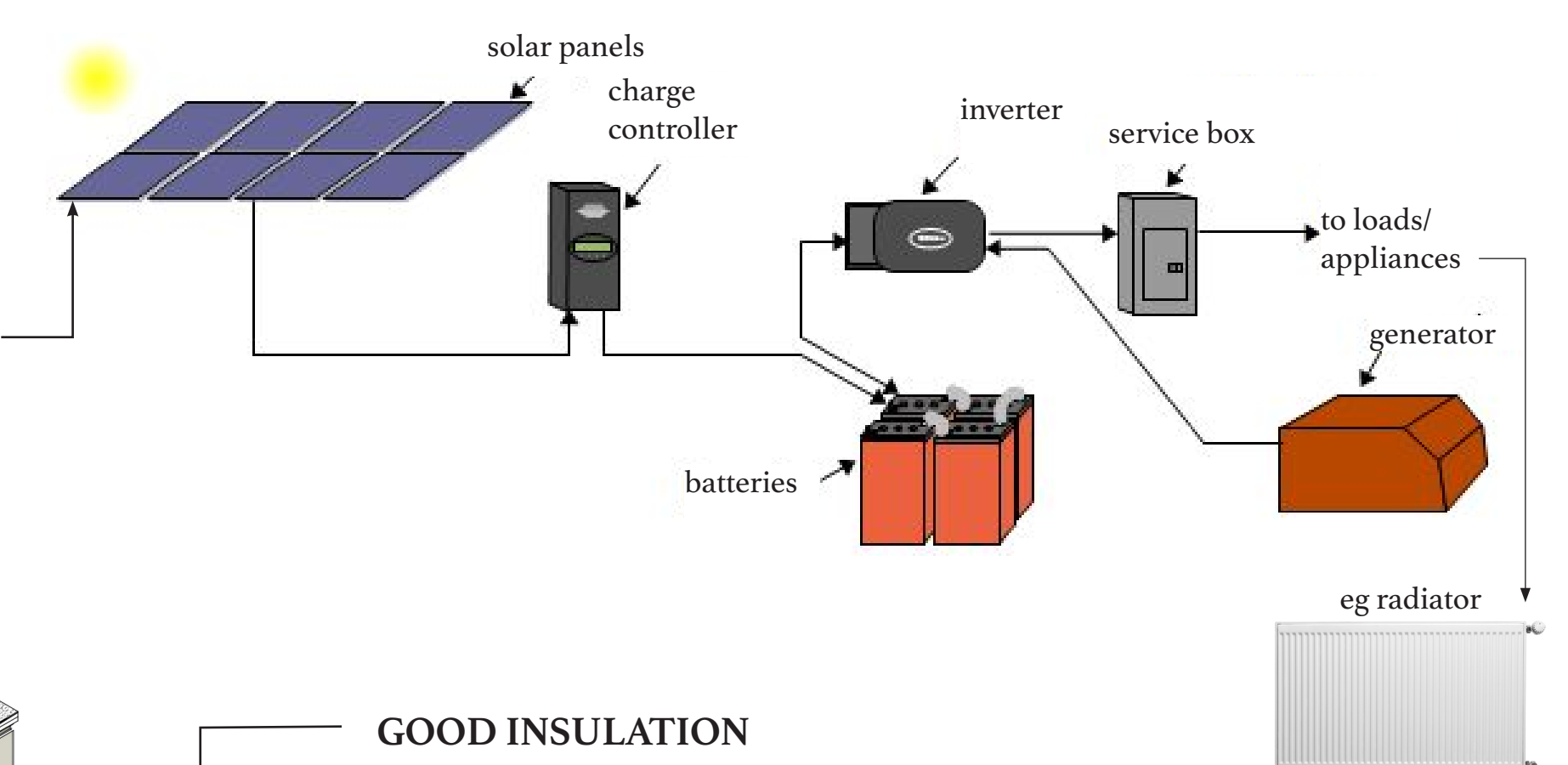


Thermo Steen is a durable cladding system that stones and isolation integrates into one system. The elements consist of a first-class brand thin surrounding ceramic fired bricks of 17 mm thick, which form a single unit together with polyurethane insulating foam. The ceramic stones are during the production part of the total plate, and thus not glued! Because the light-weight prefabricated elements can be mounted by a quick, easy, and clean way in the entire year. This results immediately in a considerable saving compared with separate insulation and a traditional brick facade.



**CLIMATE SCHEME**

**ENERGY PRODUCTION**



**GOOD INSULATION**

**thermo steen**  
Thickness: 100 mm  
U-value: 0.29 W / m<sup>2</sup> \* k  
RC value: 3.44

**ADJUSTABLE BALCONY SKIN SYSTEM**

**Hot summer**



**Windy / Noisy**



**Winter daytime**



**Winter night**

