

MANIFESTO

Politecnico di Milano - Scuola AUIIC
Architecture-Building Environment-Interiors
A.Y. 2019/2020



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A MANUAL AGAINST TYPOLOGICAL STEREOTYPES

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This thesis is entitled “*Zero Type: a manual against typological stereotypes*”, and is structured in such a way as to become an instruction manual for the design of a residential building typologically flexible.

The basic idea is to look for a “zero” type, a model which can be followed in the design process in the respect to the needs of users.

The research work that accompanies this thesis is based on the identification of solutions capable of responding to the new housing demands.

We intend to investigate the theme of *spatial flexibility* from a typological point of view, drawing on the experience of nineteenth Century historical building to suggest solutions capable of withstanding over time.

In the first part of this thesis we explore the notion of *flexibility*, which is reflected in the multiplicity of strategies and solutions found in modern and contemporary buildings.

In particular, we intend to verify the characteristics of the typological flexibility, which were found predominantly in the residential heritage built in the nineteenth Century, and already introduced by LAN Architecture in the exhibition

“*Hausmann’s modele de ville*” through research on Haussmanian Parisian buildings.

The thesis develops the theme of typological flexibility through the following points: the *volume* of the space; *neutrality* of the plan and the facade; *polyvalence* of the living space; *modularity* and *distributive characters* to allow different aggregations of residential nuclei; the *uniformity* of the design arrangements.

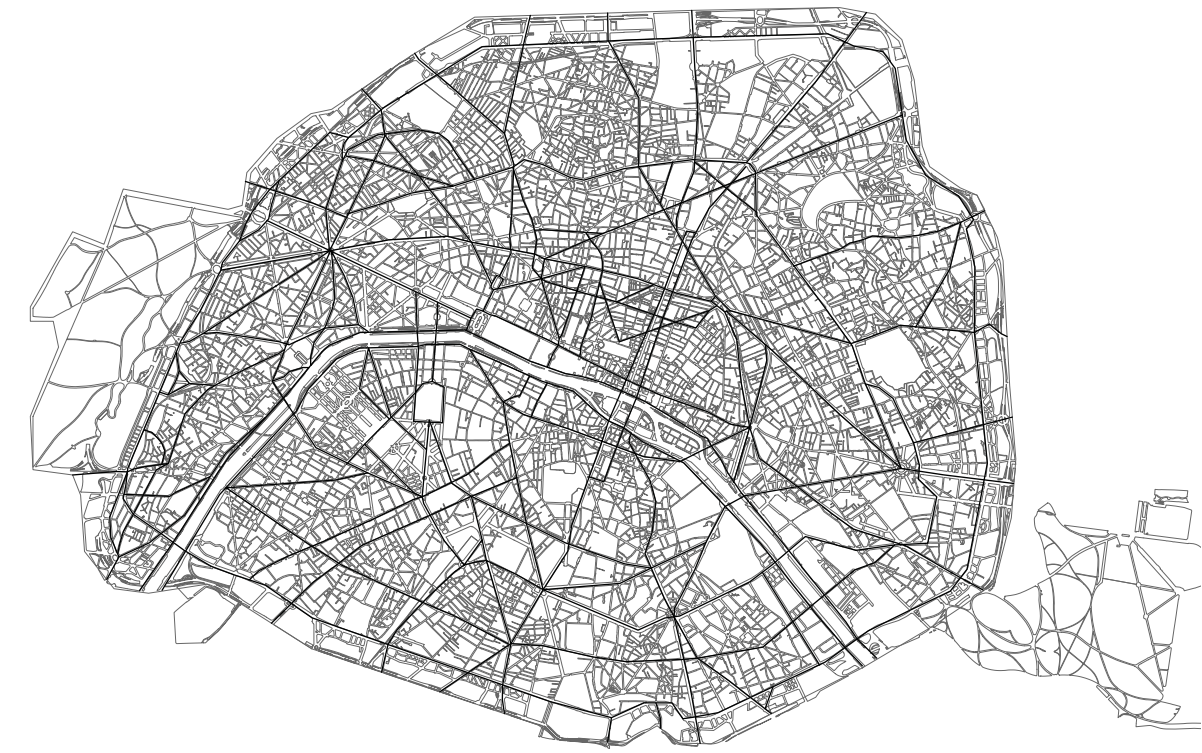
The last part of the thesis is the “putting into practice” of all the theoretical issues that compose this manual in order to realize a project typologically flexible. The site is in the intersection of Viale Tunisia and Via Lecco, in the Lazzaretto district (Milan).

The project that we propose wants to try to give qualified answer to the demand for differentiated housing, compared to the atrophy of the offer present today on the real estate markets. Today we assist to a housing offer which continues to reaffirm the functionalist paradigms of the Modern Movement in residential construction, seeking to recover the adaptive and resilient typology typical of nineteenth Century residential construction.

ANALYSIS

Plan Haussmann

Paris, France, 1853



0 4000 m



0 1000 m

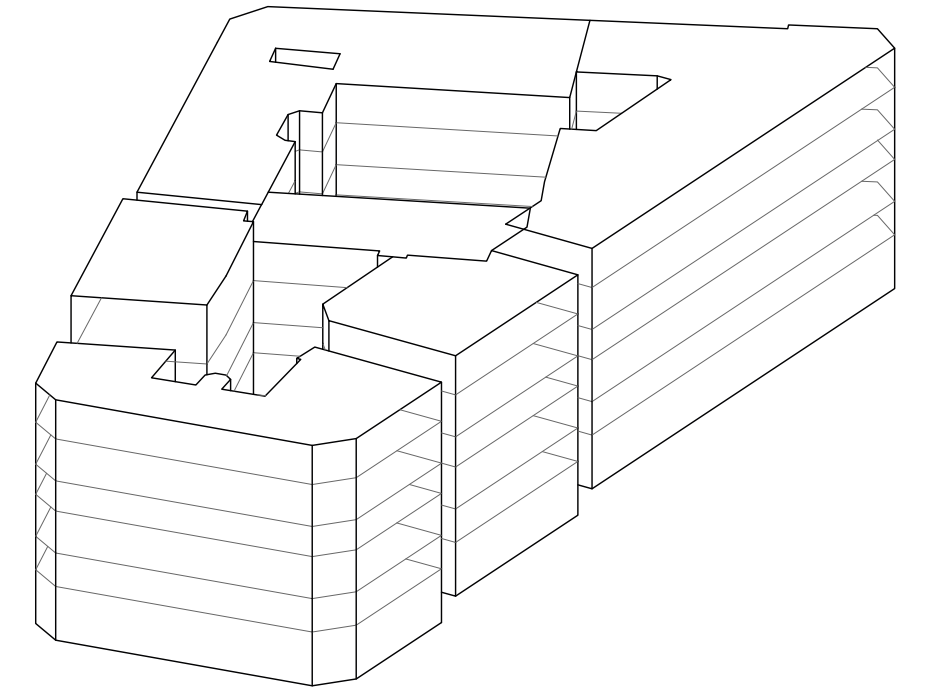
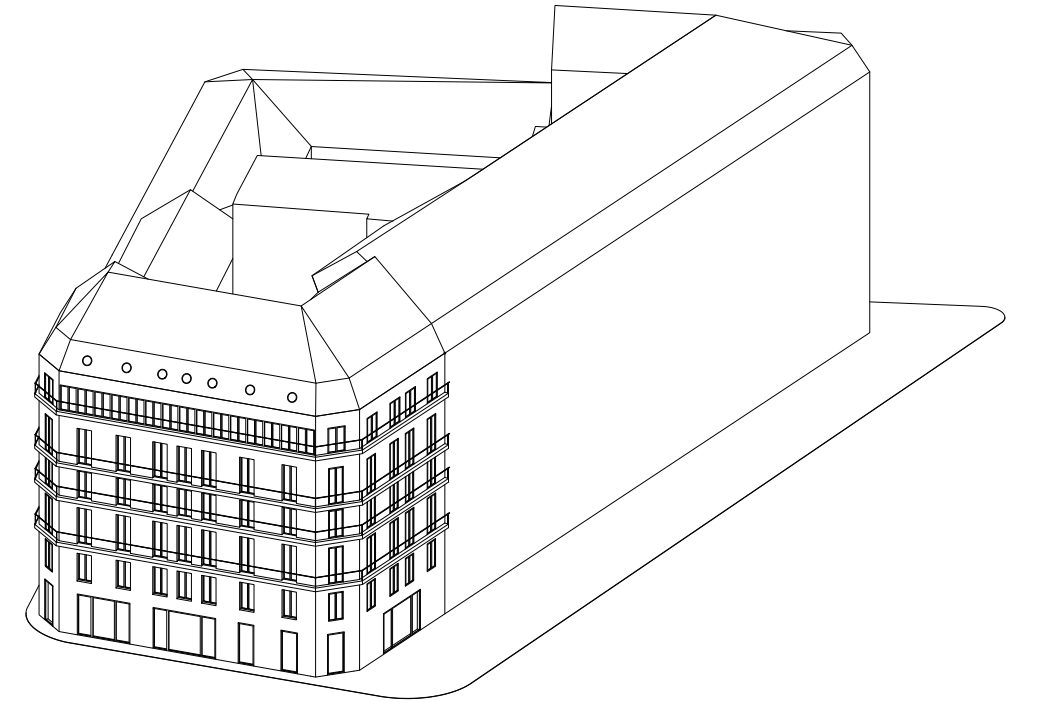


0 1000 m



0 400 m

47, Boulevard De Malesherbes



0 20 m

ZERO TYPE

ANALYSIS

Plan Cerdà

Barcelona, Spain, 1860



0 4000 m



0 1000 m

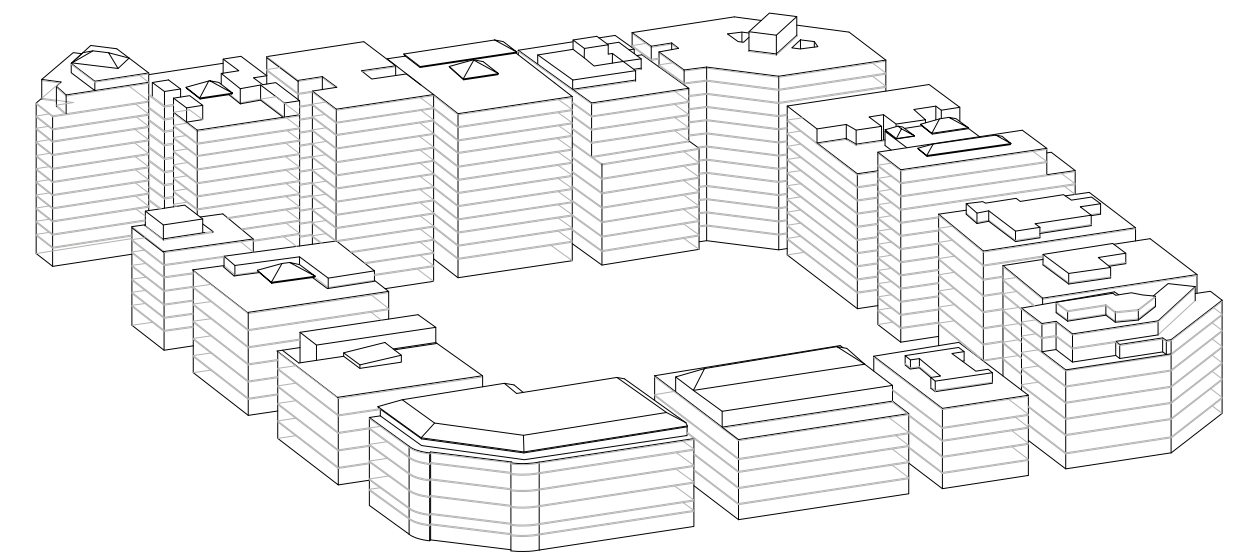
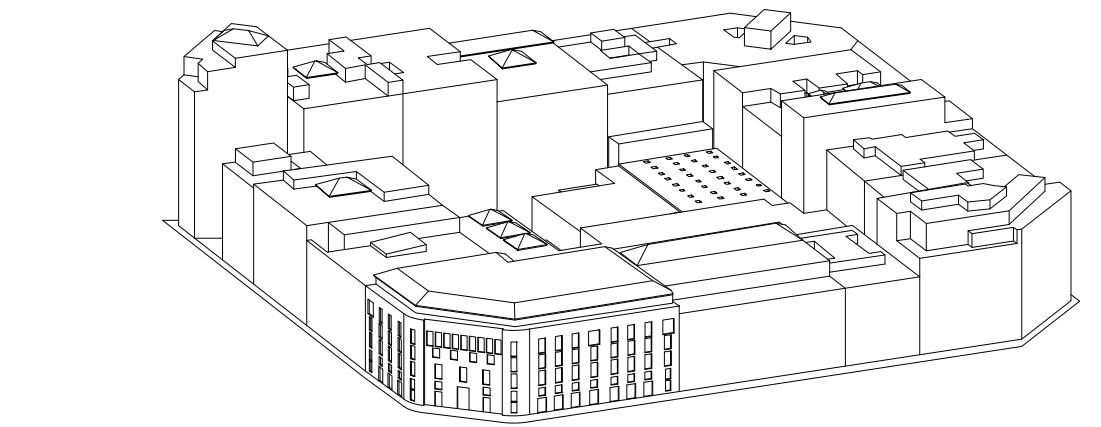


0 1000 m



0 400 m

33, Cas d'Ausiàs Marc



0 60 m

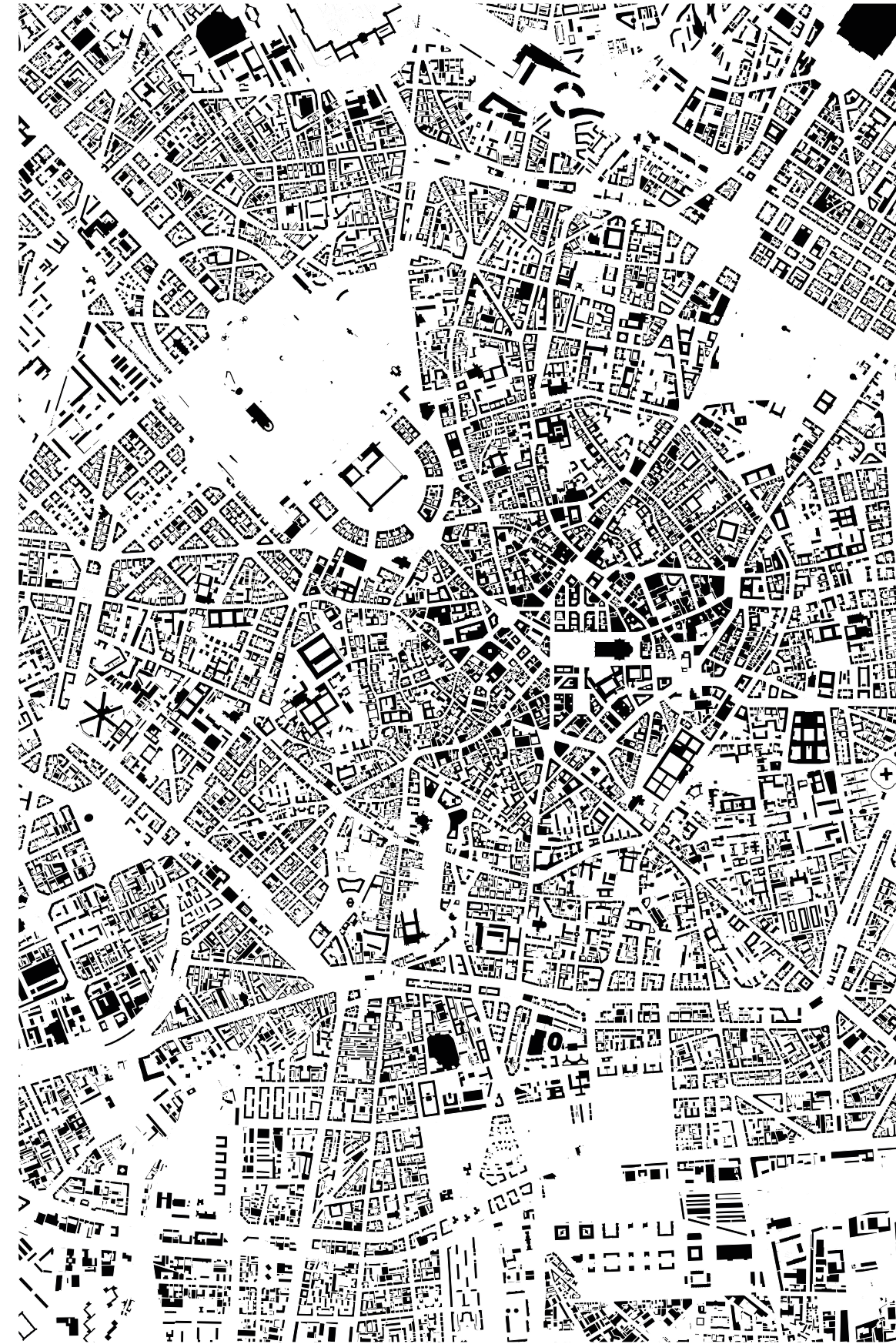
ZERO TYPE

ANALYSIS

Piano Beruto
Milan, Italy, 1884



0 4000 m



0 1000 m

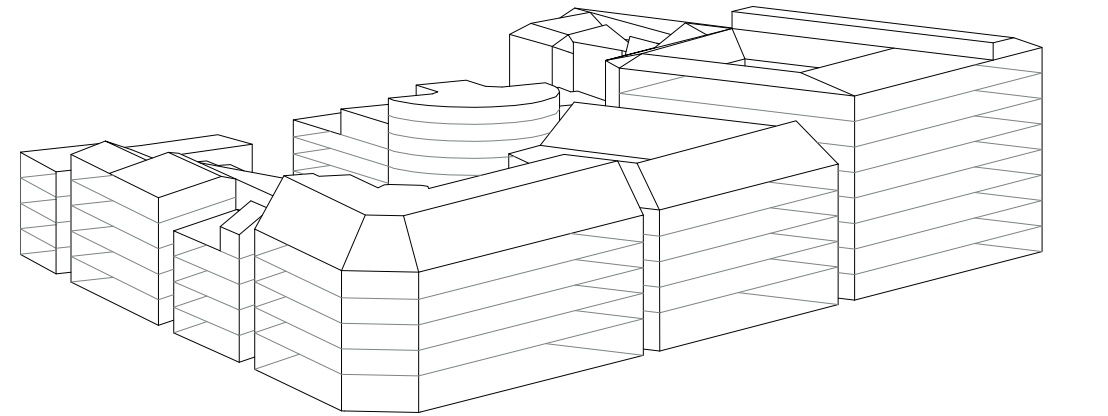
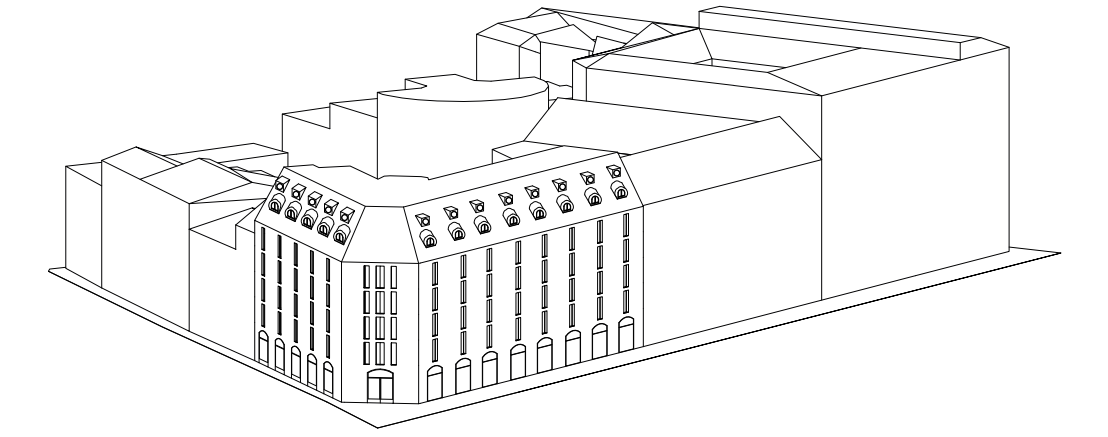


0 1000 m



0 400 m

5, Via Dante



0 40 m

ZERO TYPE

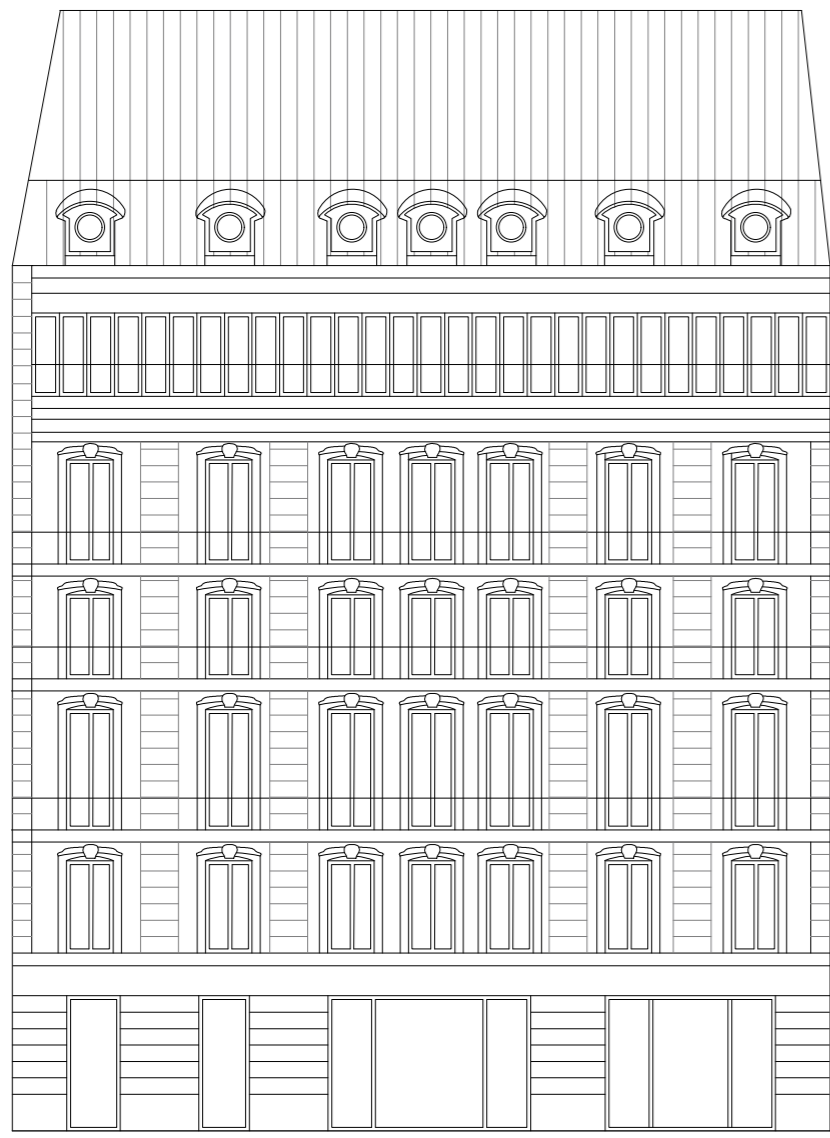
MAPPING CHARACTERISTICS

11, Boulevard de Sebastopol

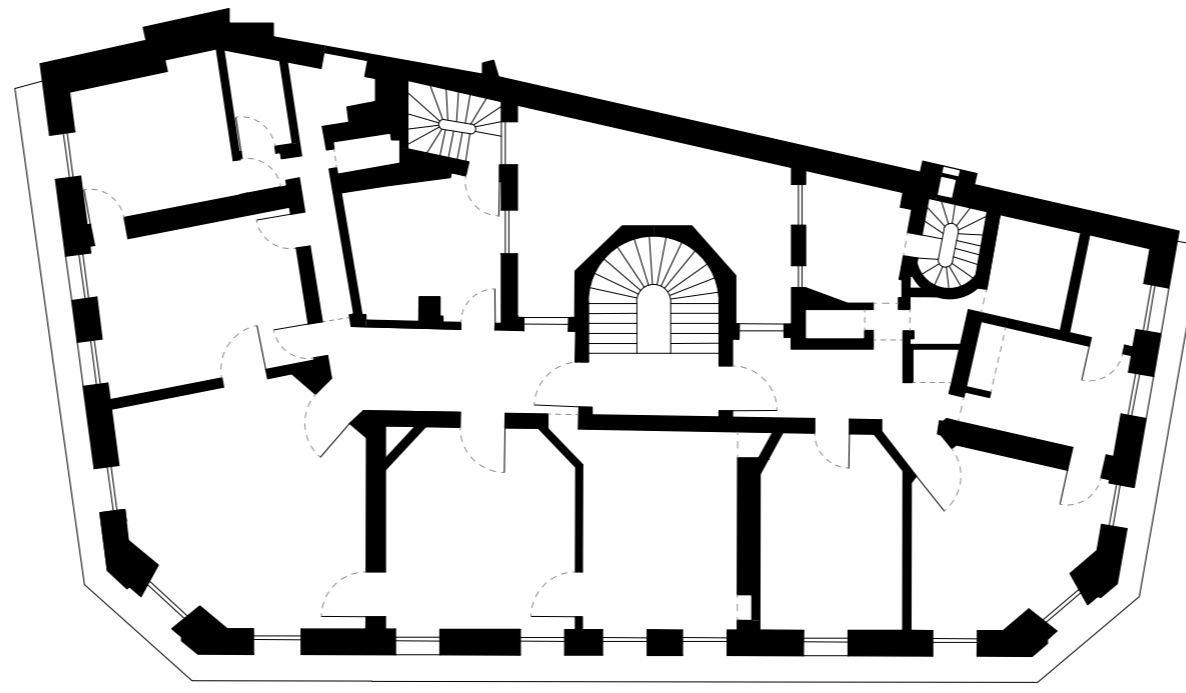
Paris, France, 1860

Architect : Blondel

0 10 m



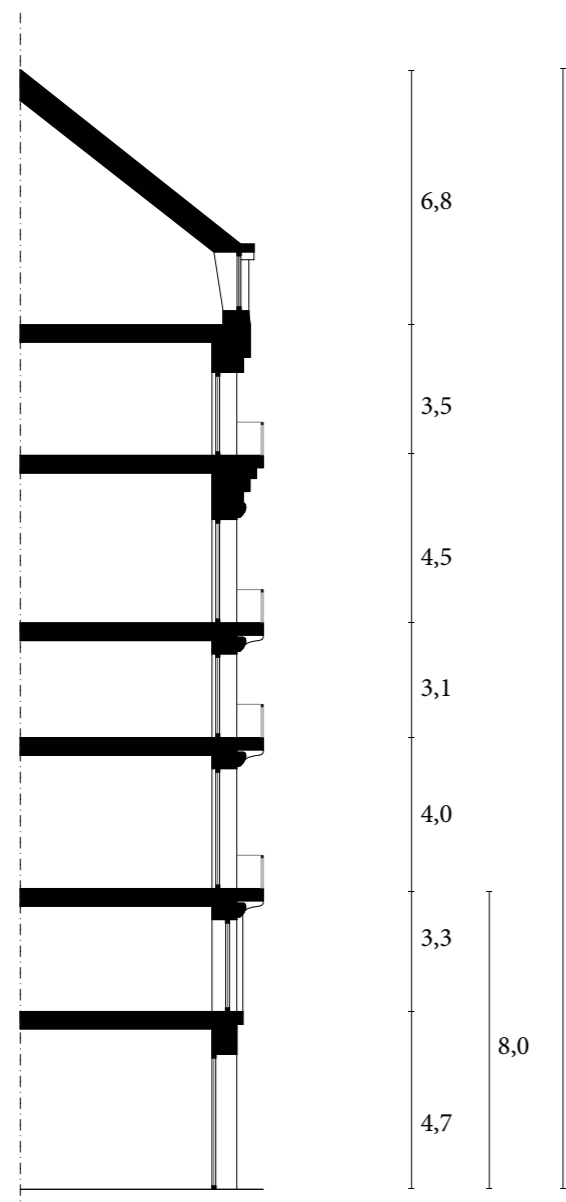
Elevation



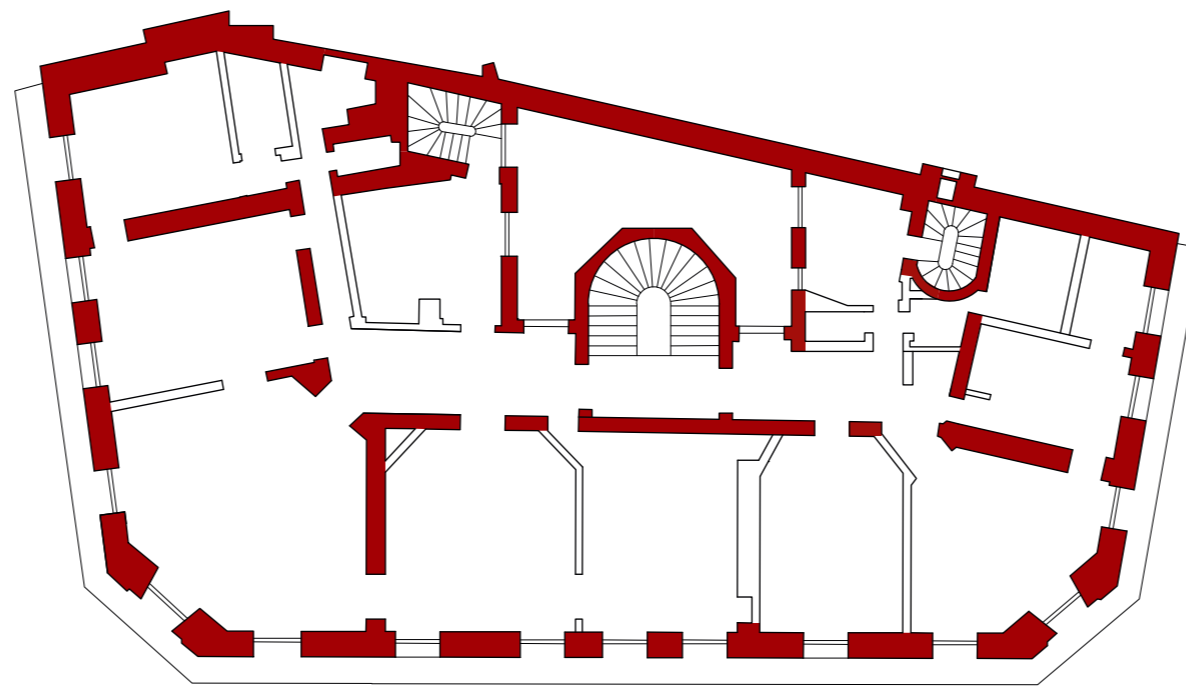
Typical residential floor plan



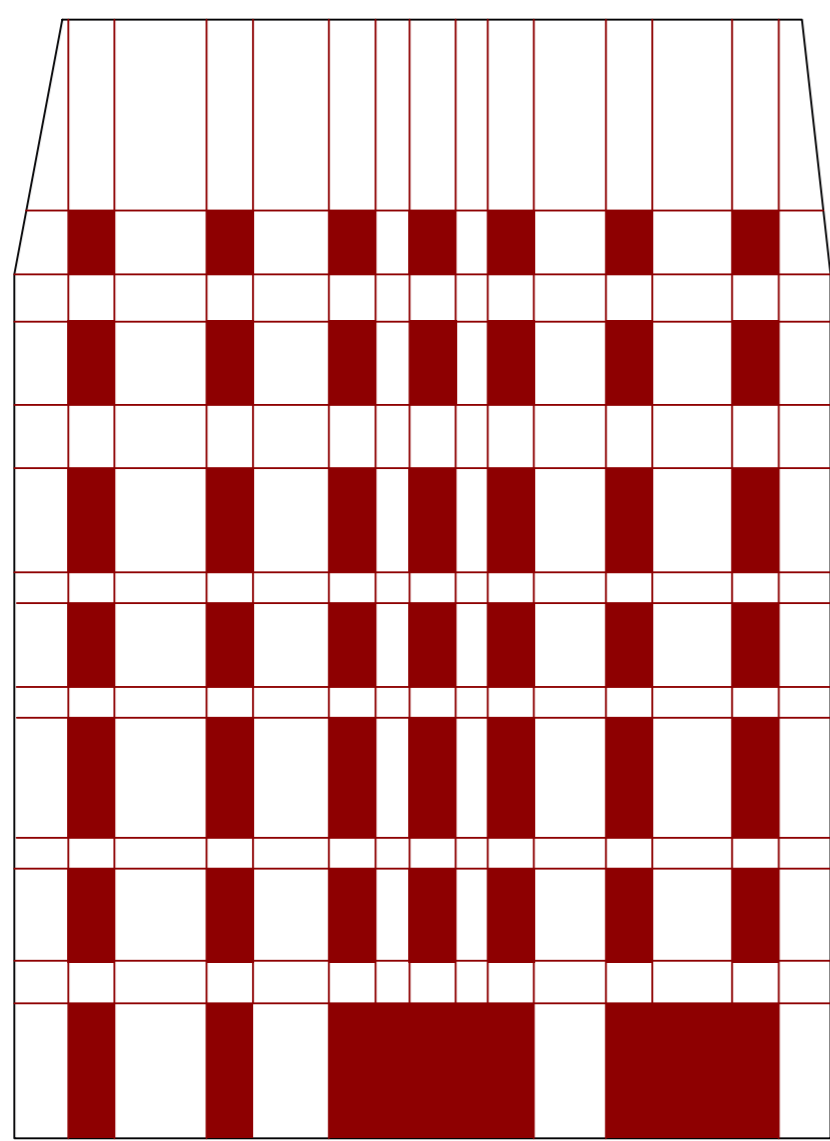
0 25 m
Block vertical porosity



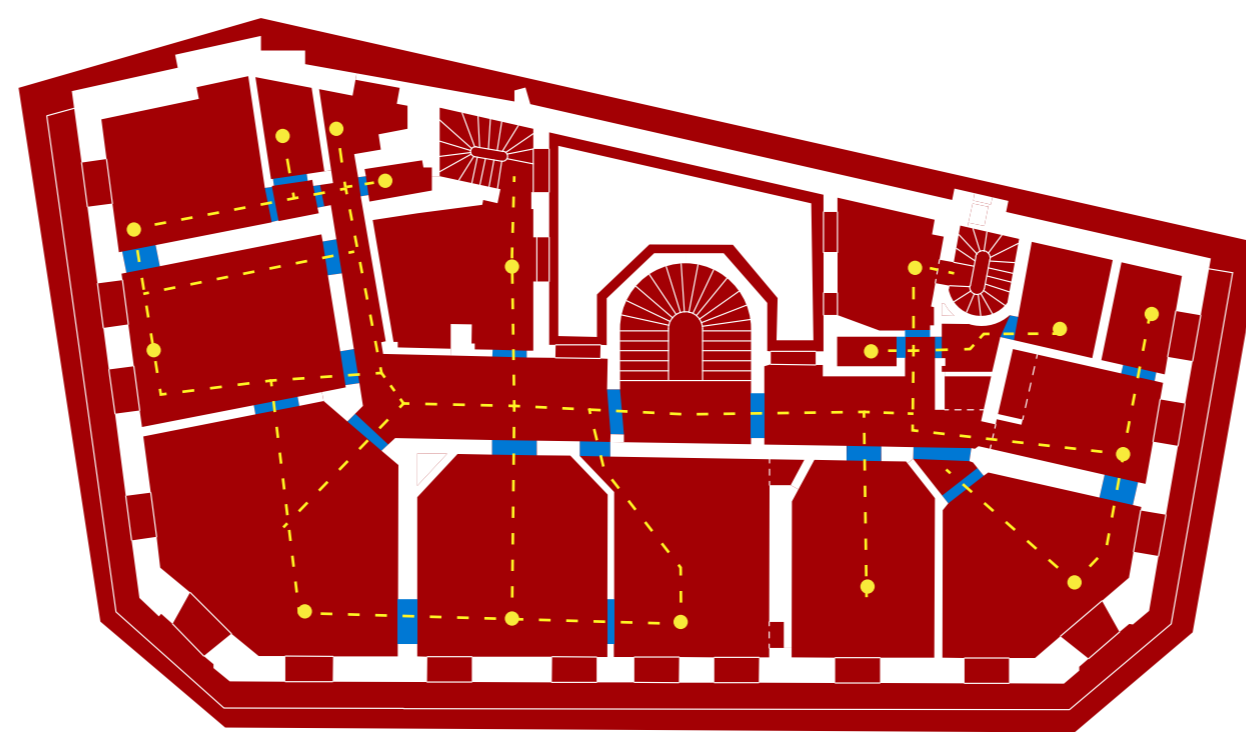
Height difference



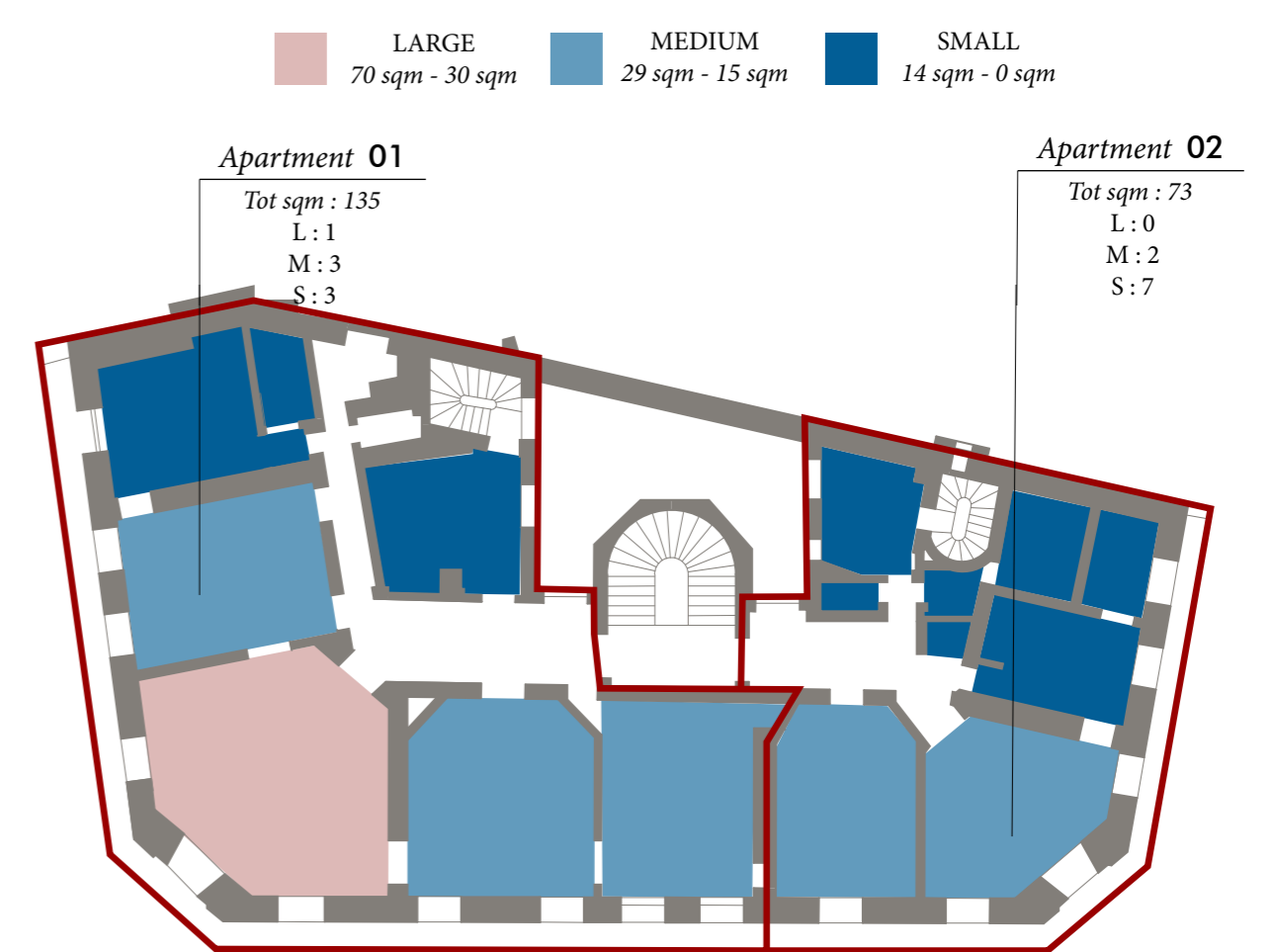
Structural clarity



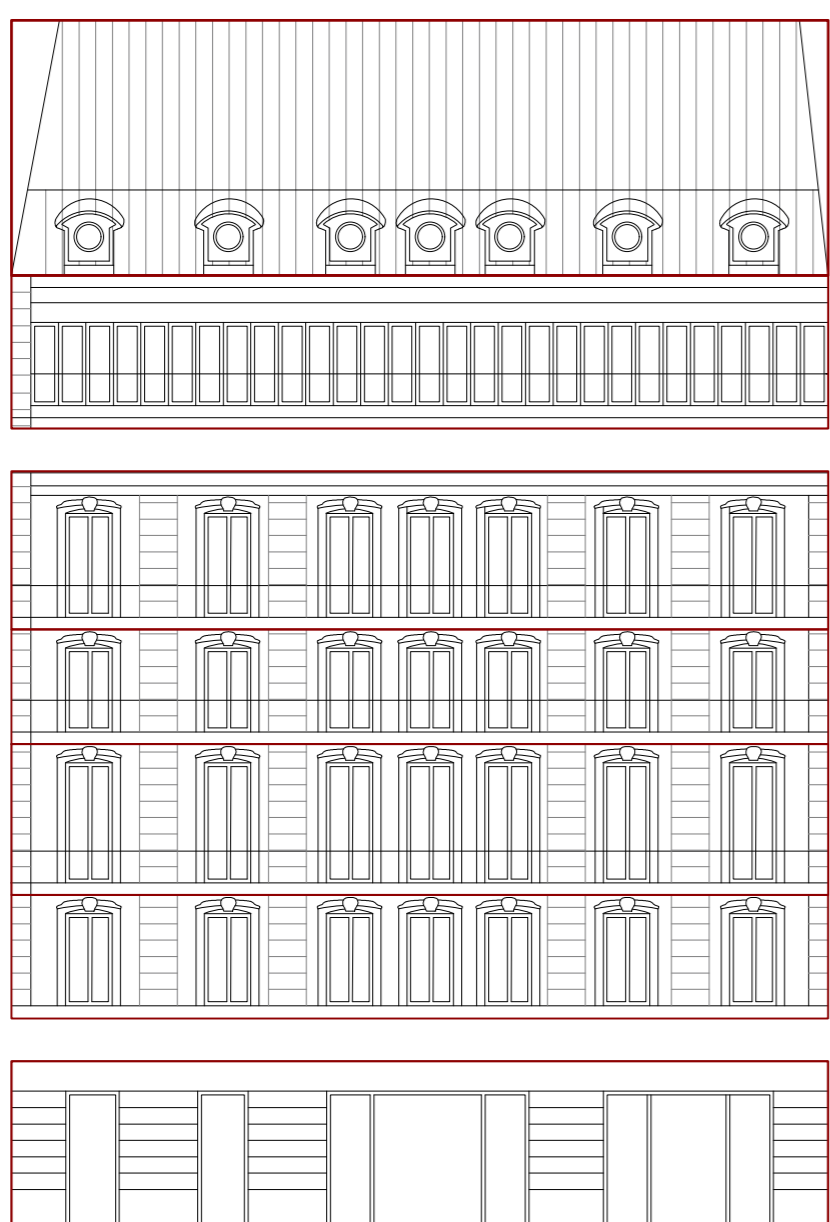
Facade grid regularity



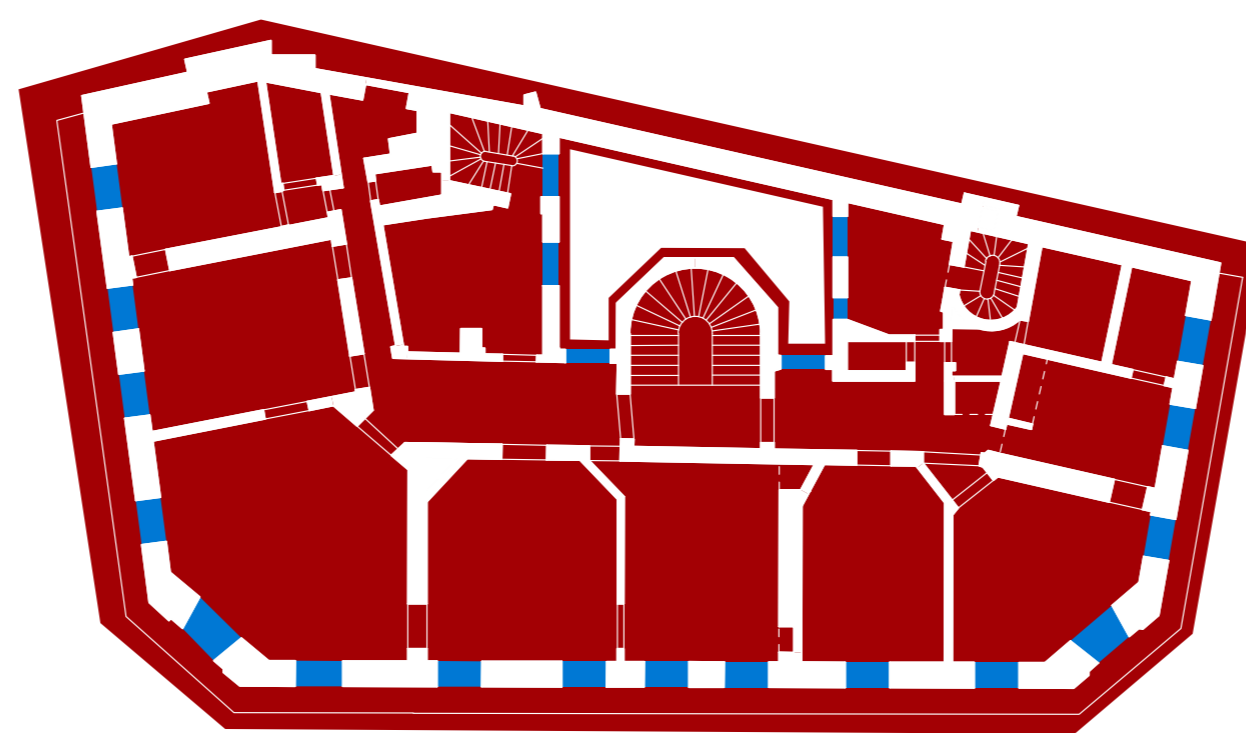
Circular distribution



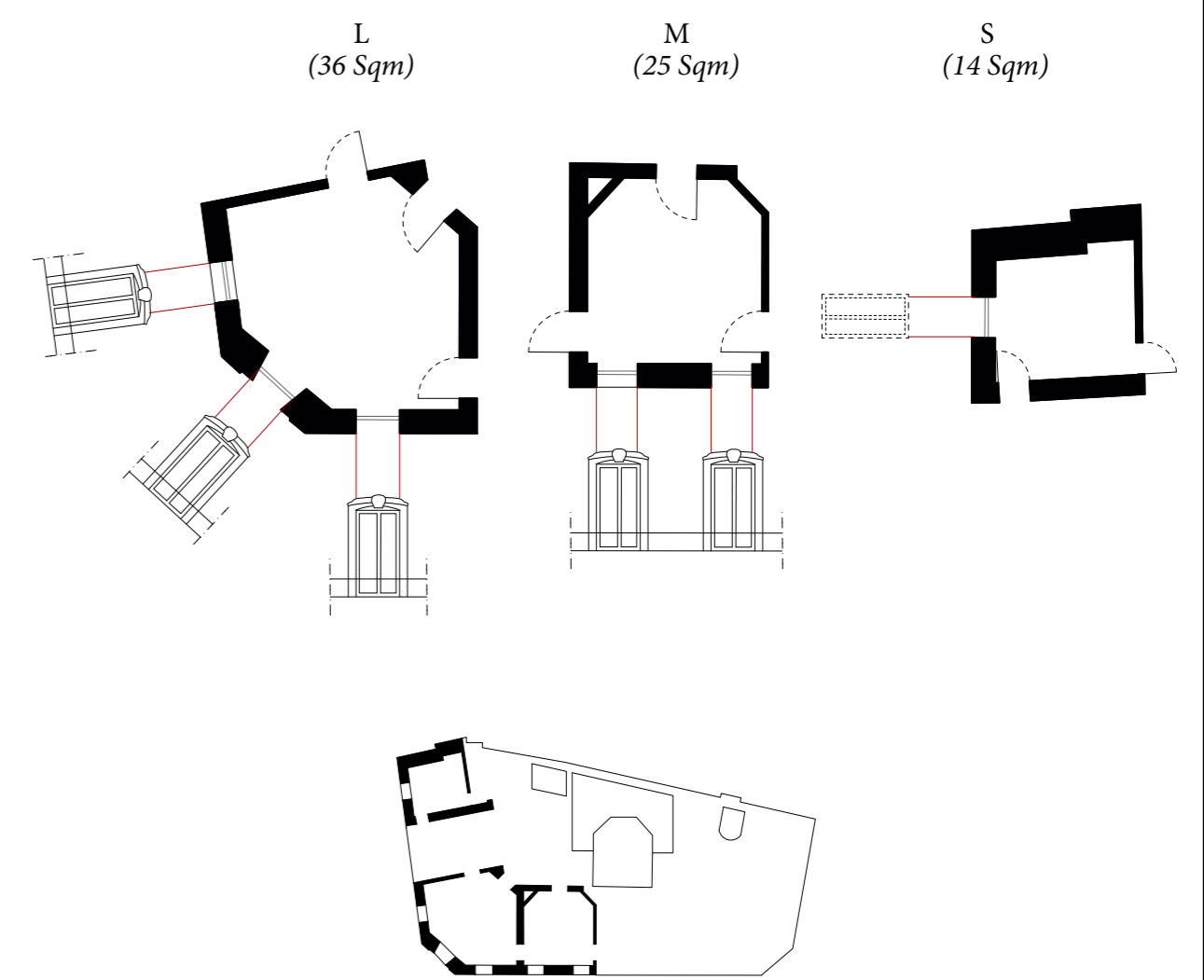
Plan composition



Facade composition



Windows redundancy



Rooms and windows Hierarchy

MAPPING CHARACTERISTICS

Abacus of elevations and blocks

Elevation

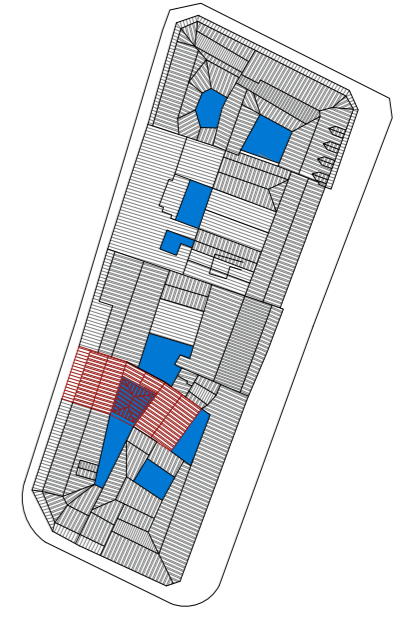
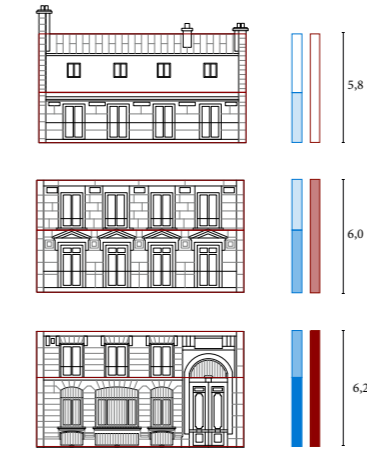
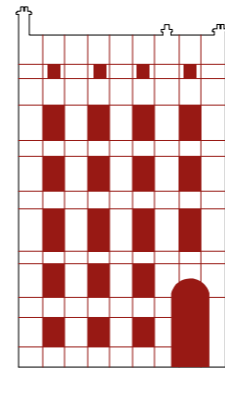
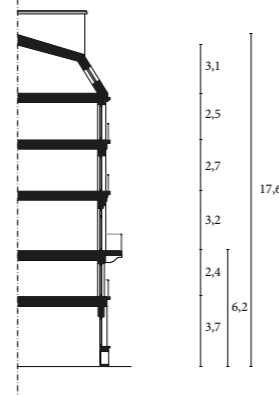
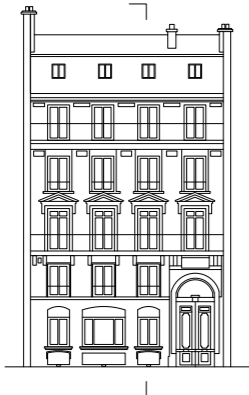
Height difference

Facade grid regularity

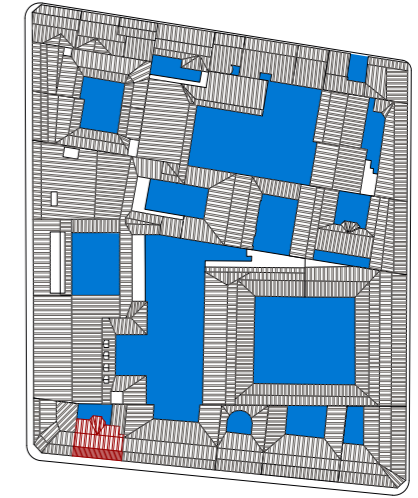
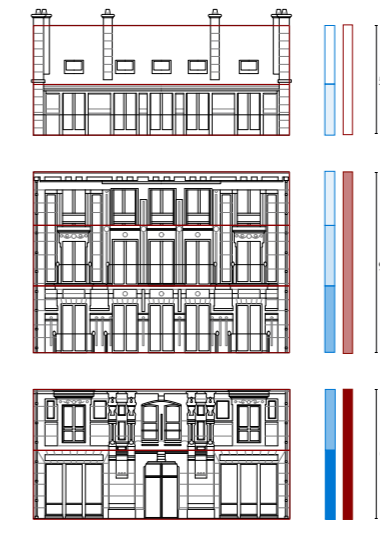
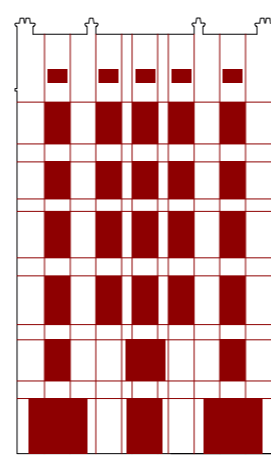
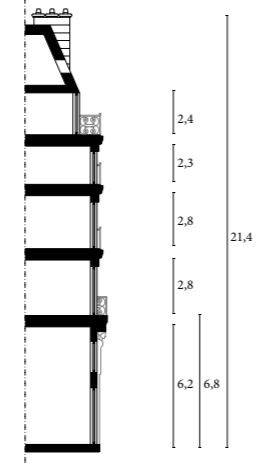
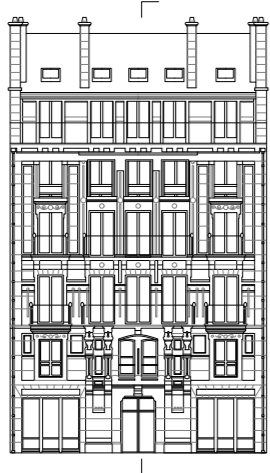
Facade composition

Block vertical porosity

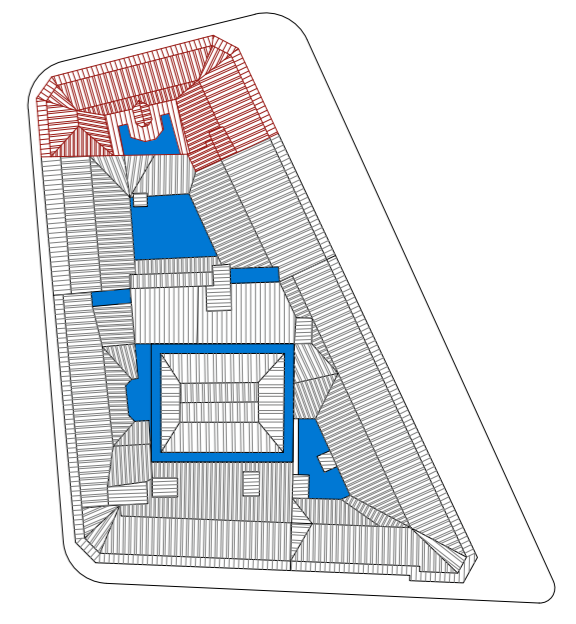
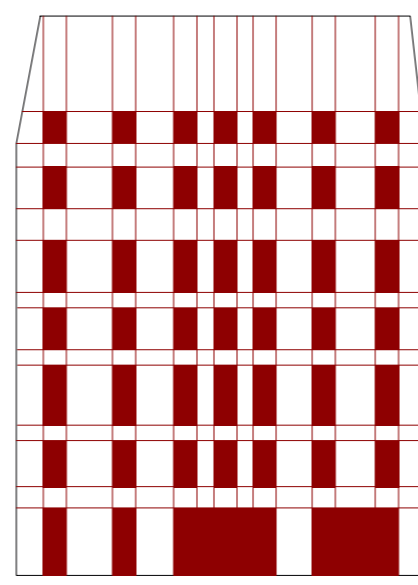
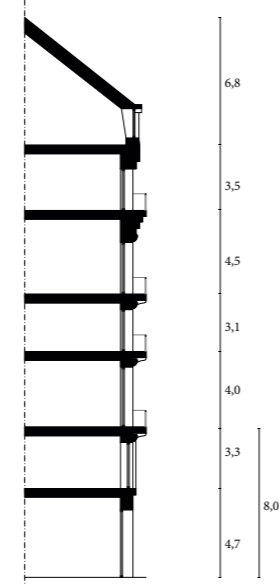
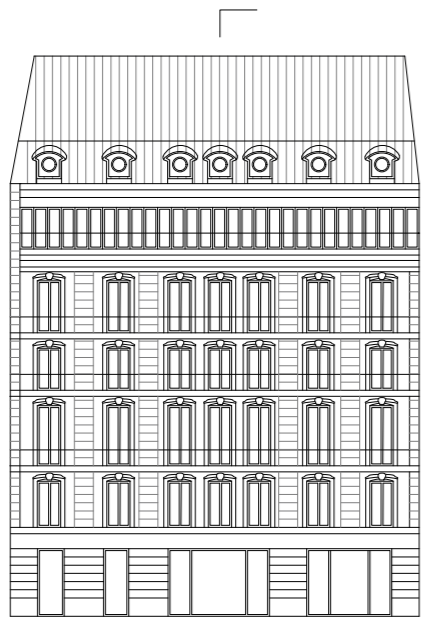
11, Boulevard De Sébastopol



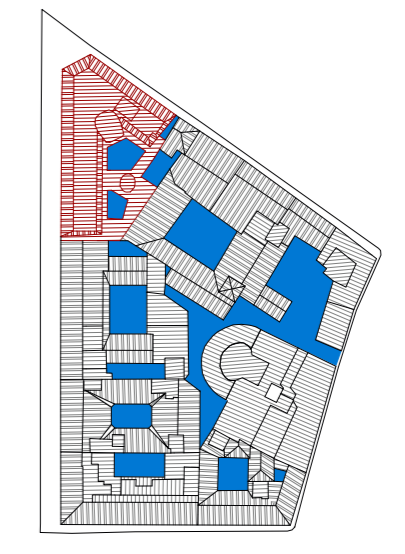
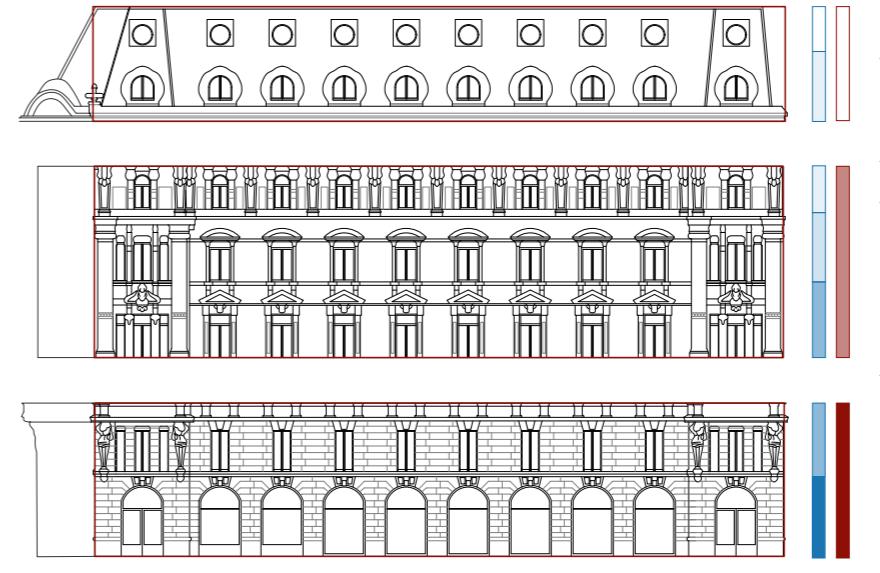
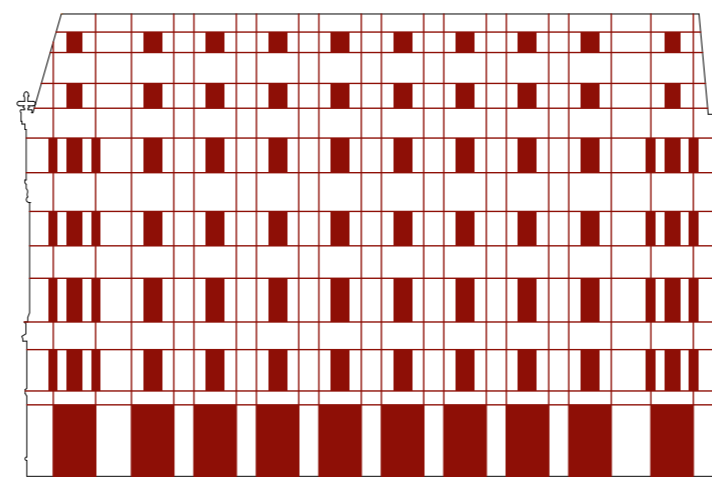
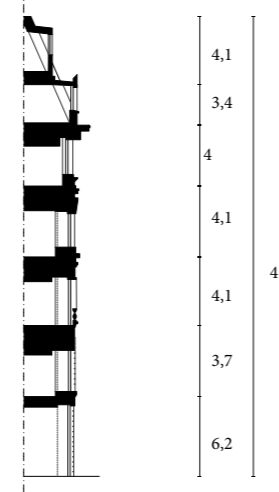
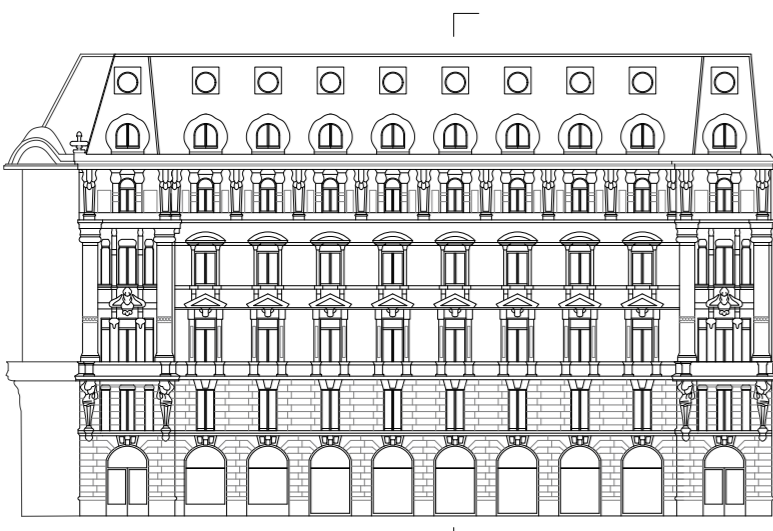
9, Rue Du Conservatoire



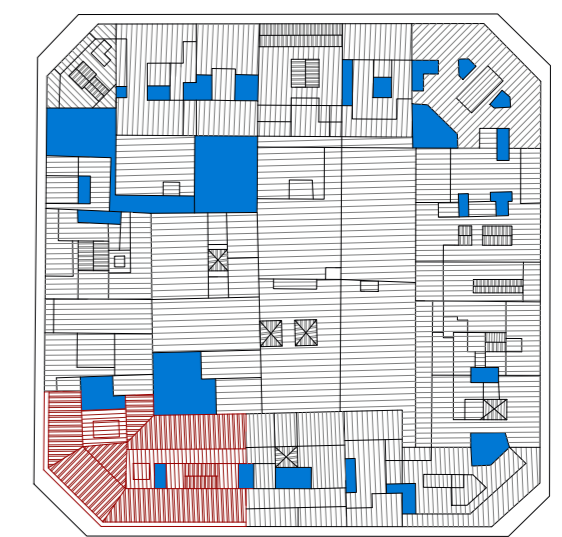
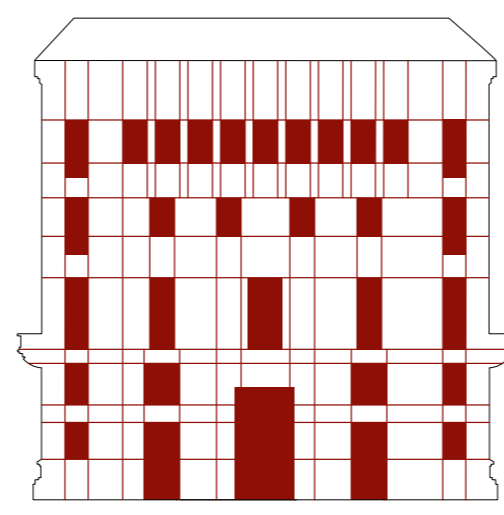
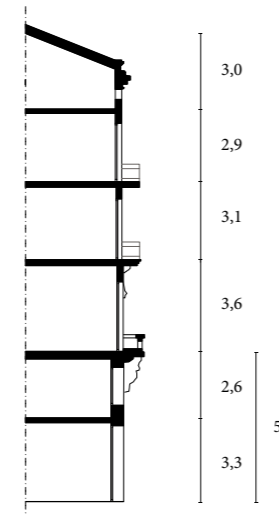
47, Boulevard De Malherbes



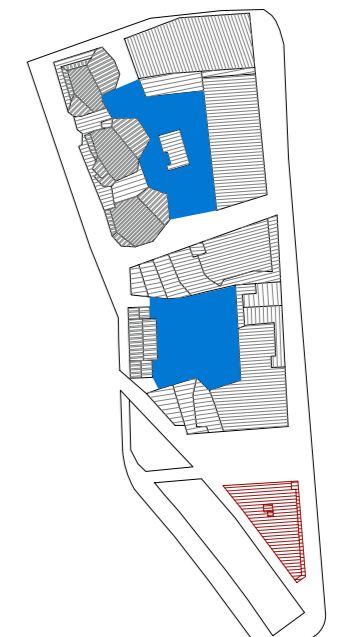
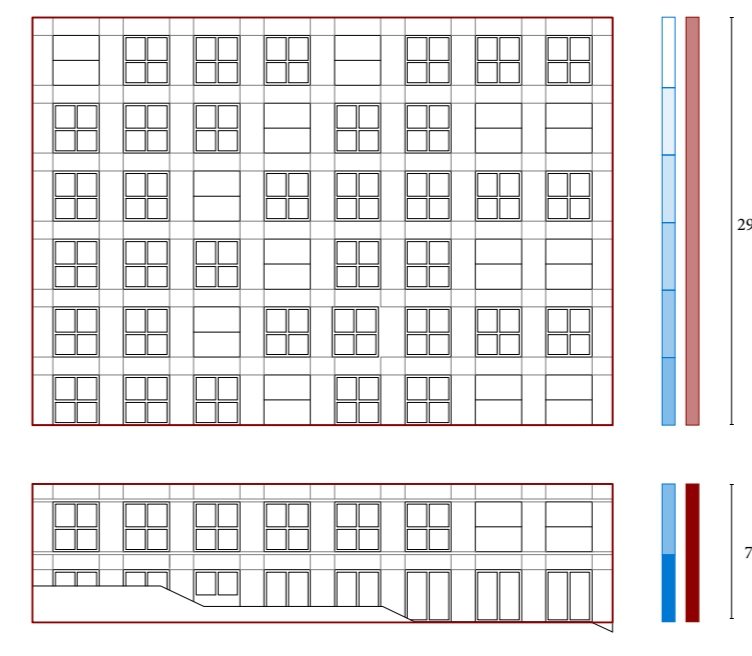
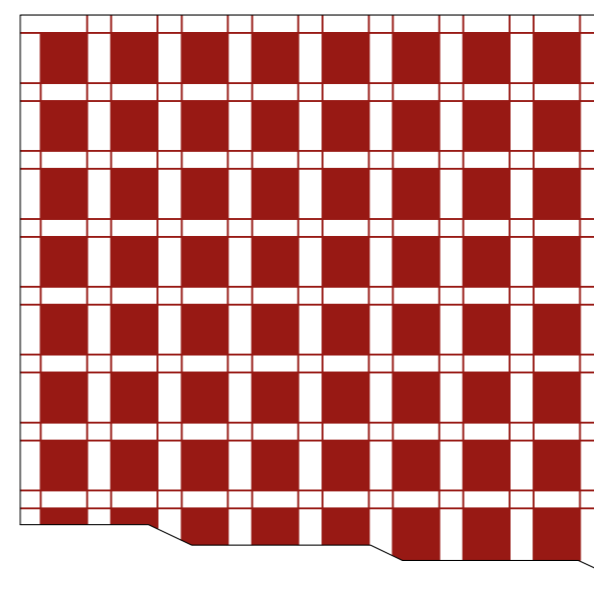
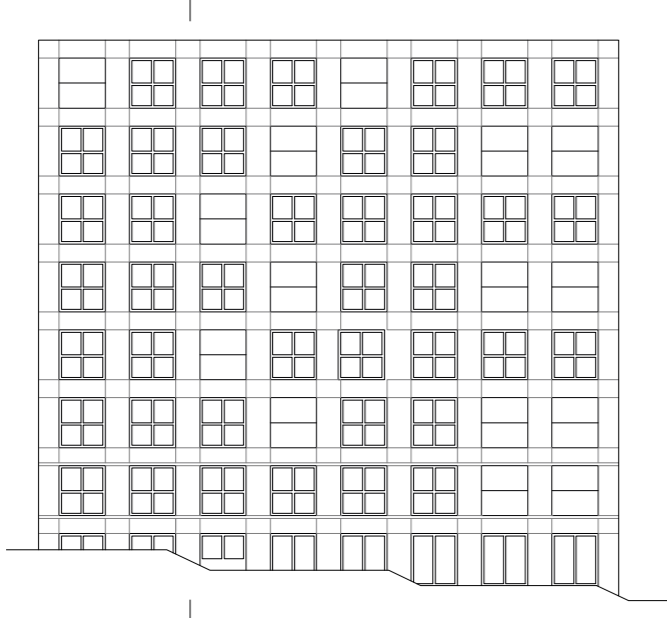
5, Via Dante 1891



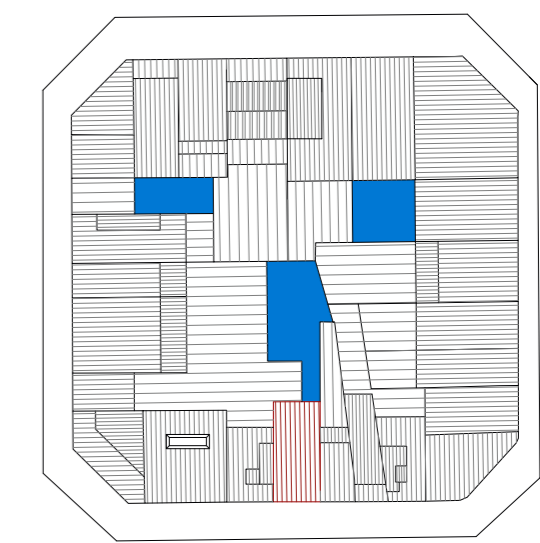
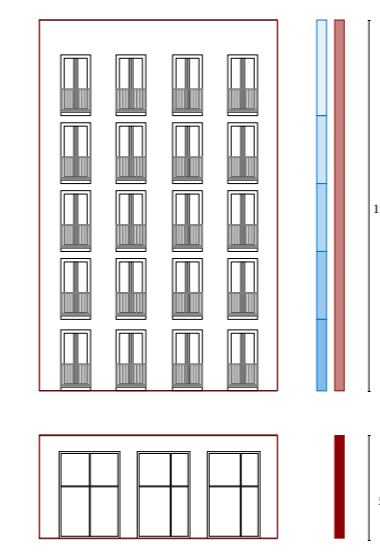
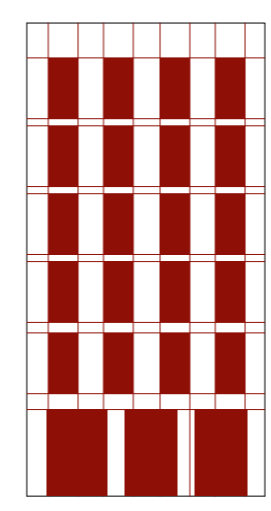
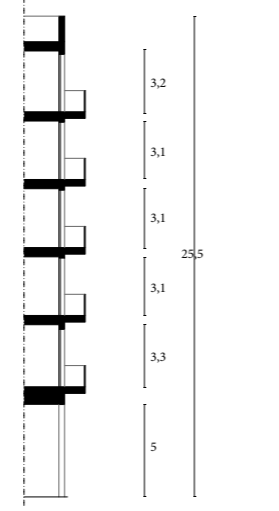
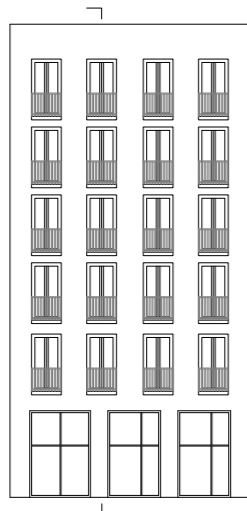
33, Carrer d'Audis Marc 1888



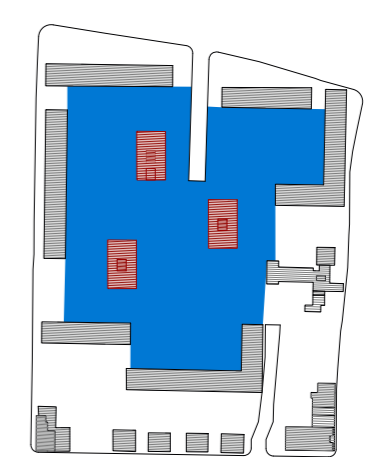
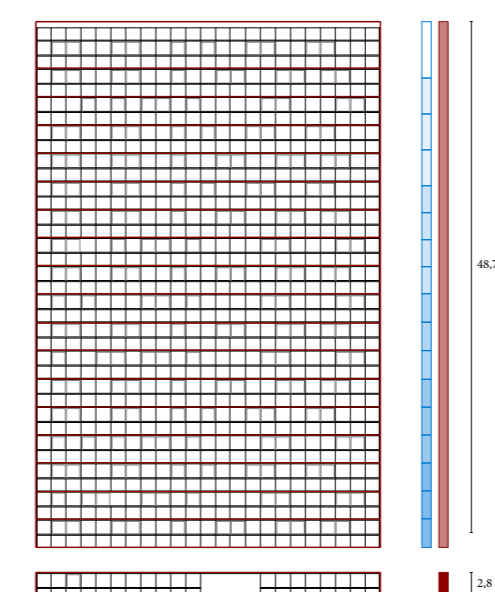
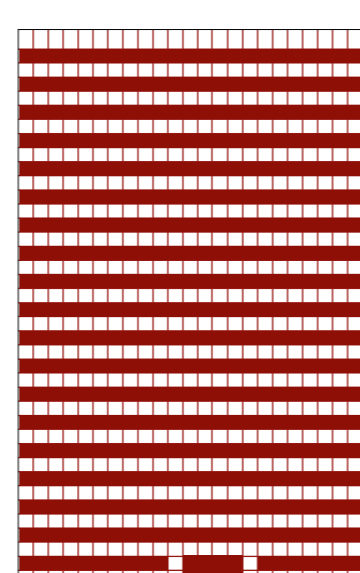
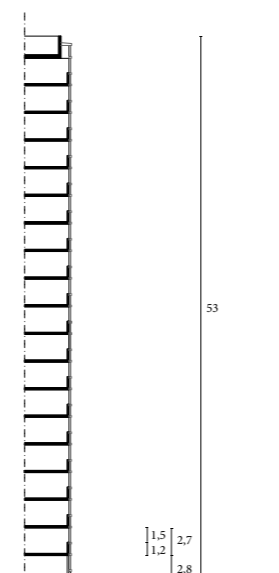
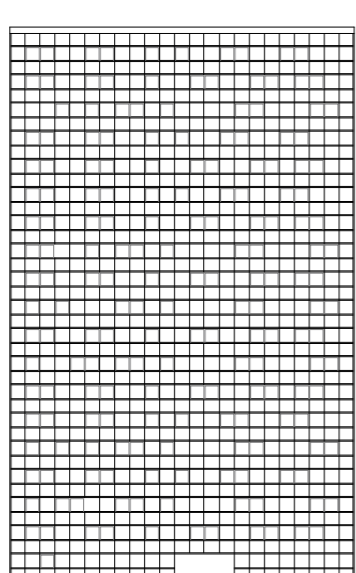
4-10, Rue George picquard 2015



203, Carrer de Provenca 2016



Urban Renovation Lormont 2015



MAPPING CHARACTERISTICS

Abacus of plans

Typical residential floor plan

Structural clarity

Circular distribution

Windows redudance

Plan composition

Rooms and windows Hyerarchy

Small Medium Large

L 19 sqm M 14 sqm S 7 sqm

L 29.5 sqm M 13 sqm S 3.5 sqm

L 36 sqm M 25 sqm S 14 sqm

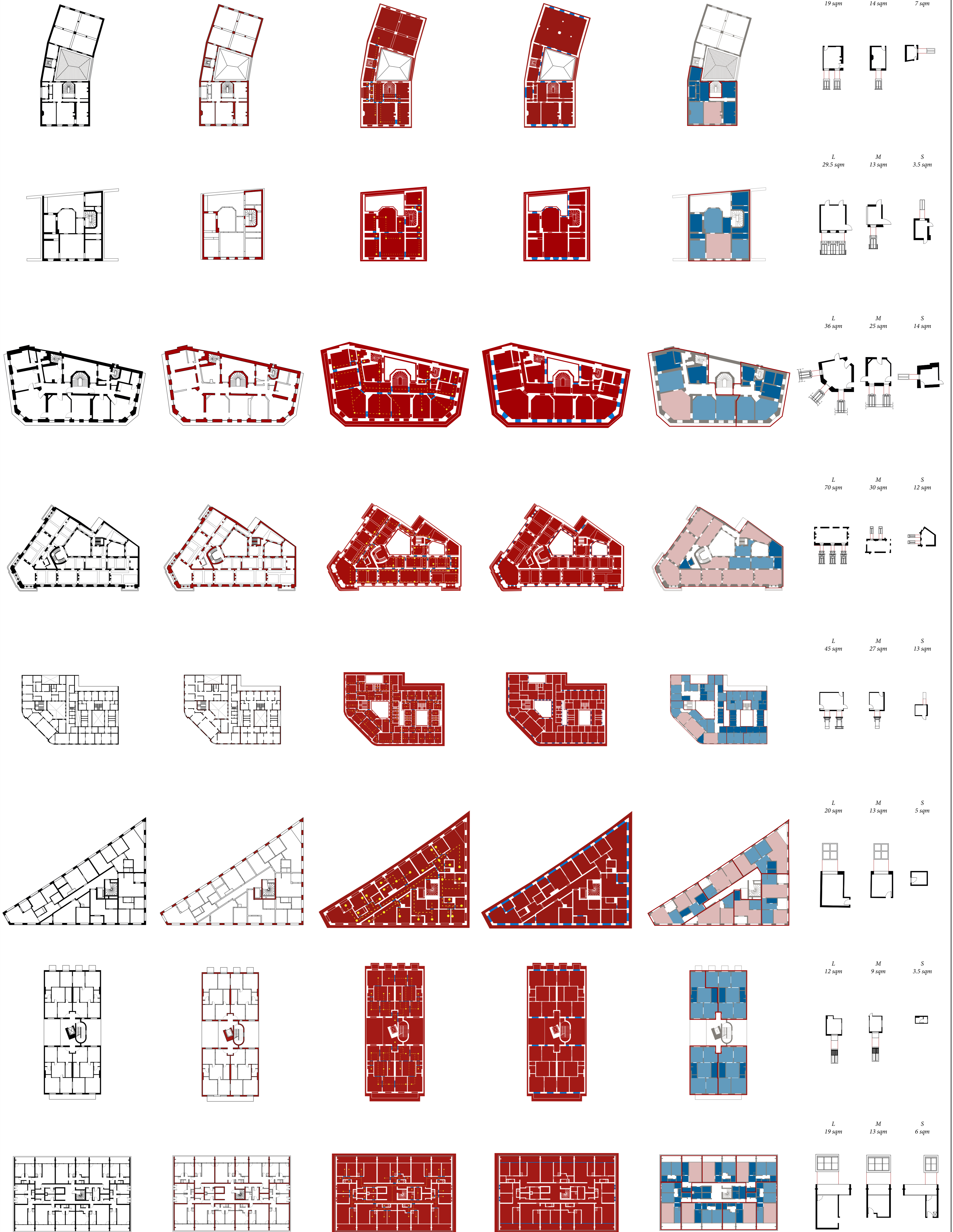
L 70 sqm M 30 sqm S 12 sqm

L 45 sqm M 27 sqm S 13 sqm

L 20 sqm M 13 sqm S 5 sqm

L 12 sqm M 9 sqm S 3.5 sqm

L 19 sqm M 13 sqm S 6 sqm



ANALYSIS

Piano Beruto

Milan, Italy, Lazzaretto District



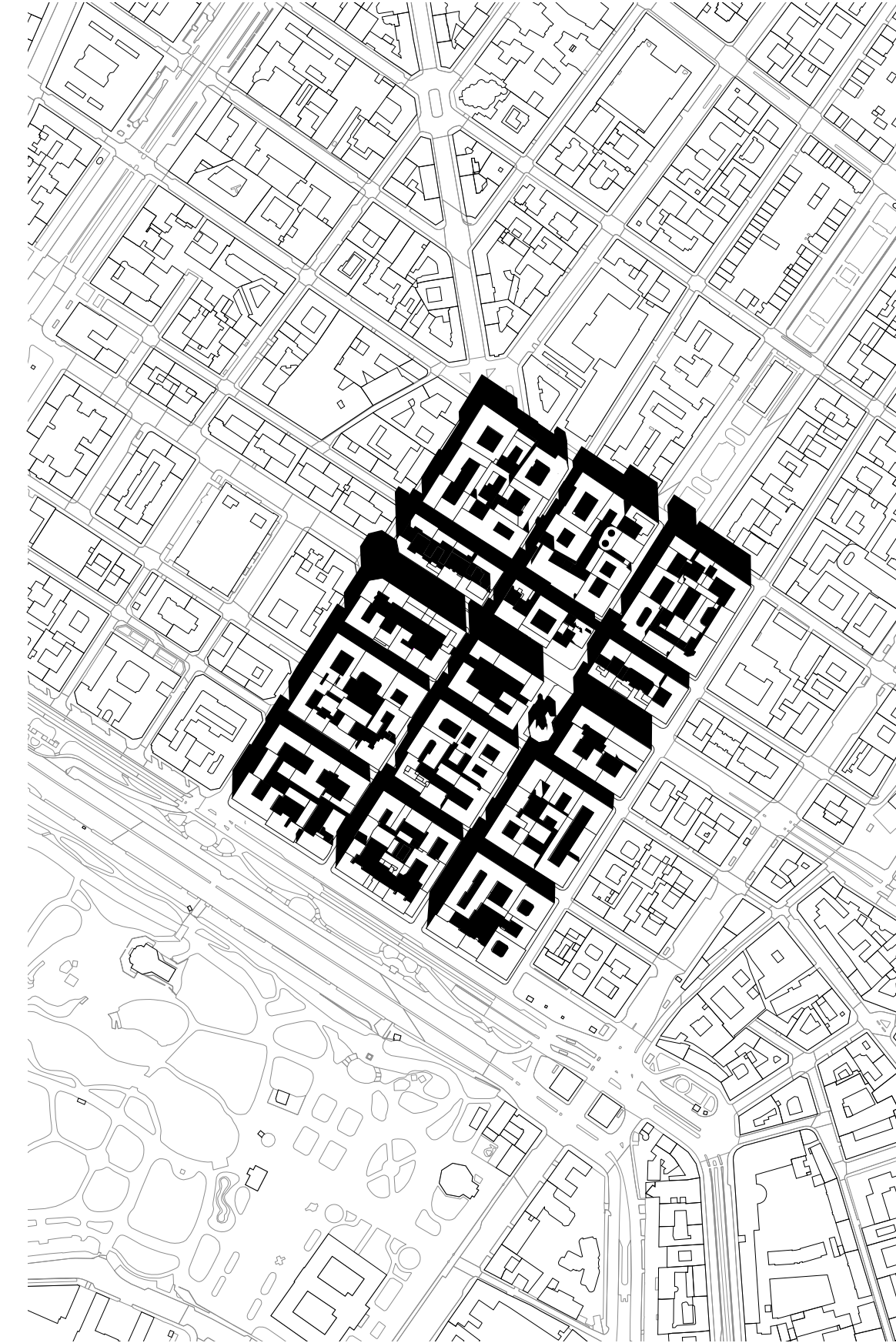
0 4000 m



0 1000 m

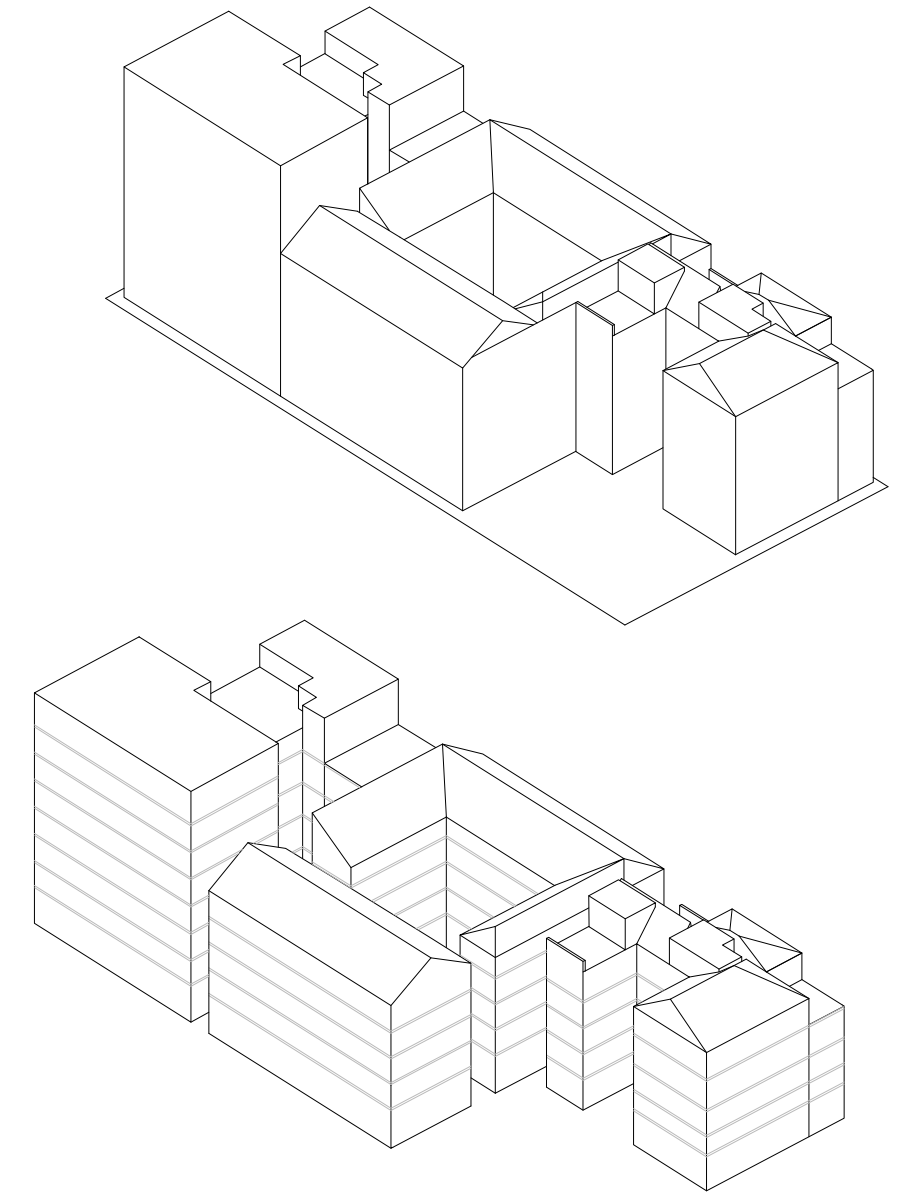


0 1000 m



0 200 m

33, Cas d'Ausiàs Marc



0 40 m

ZERO TYPE

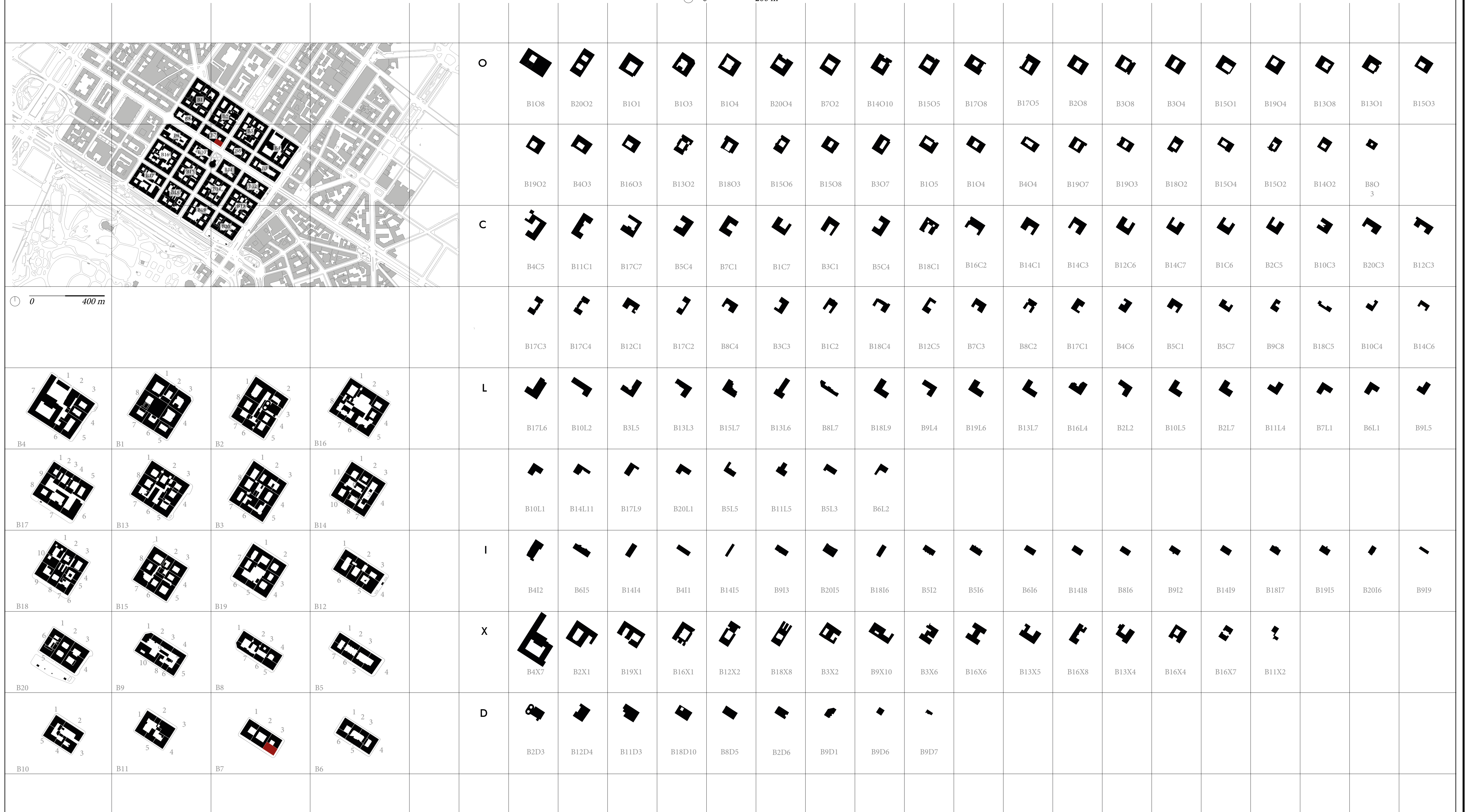
MAPPING TYPOLOGIES

Lazzaretto neighborhood

Masterplan

Blocks and Typologies classification

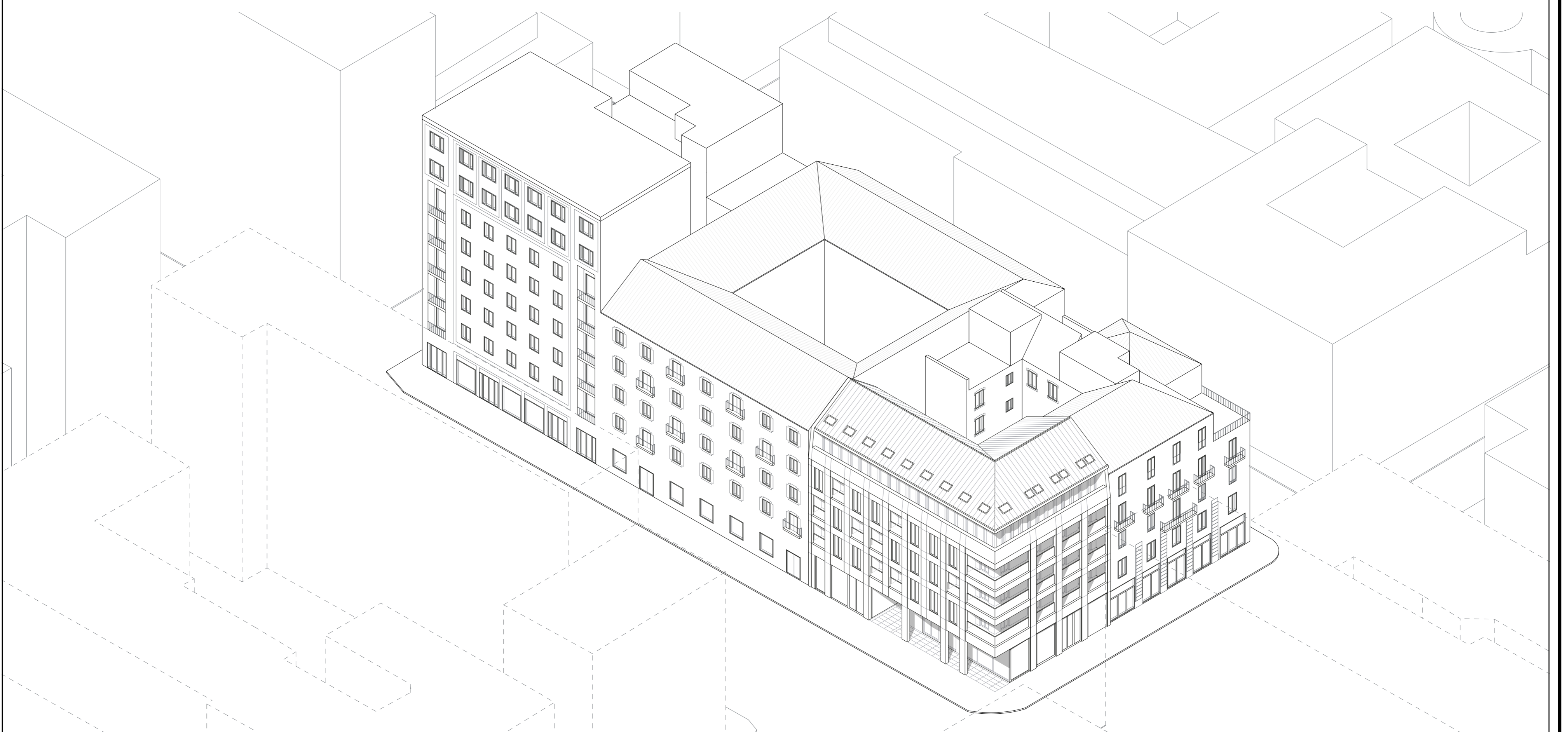
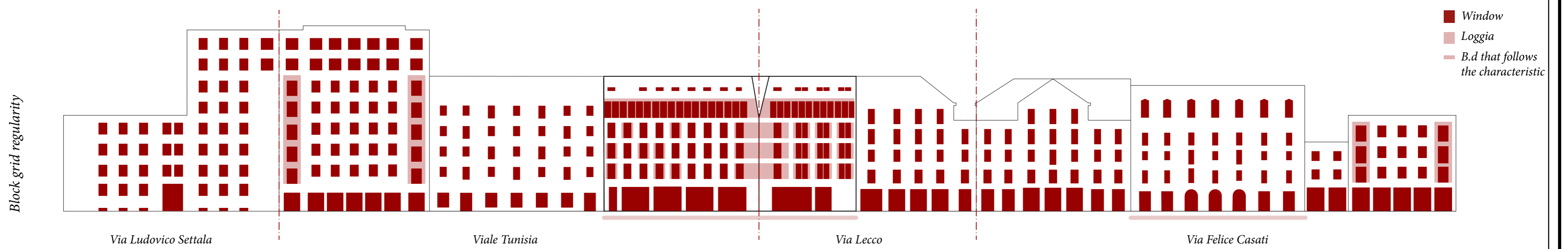
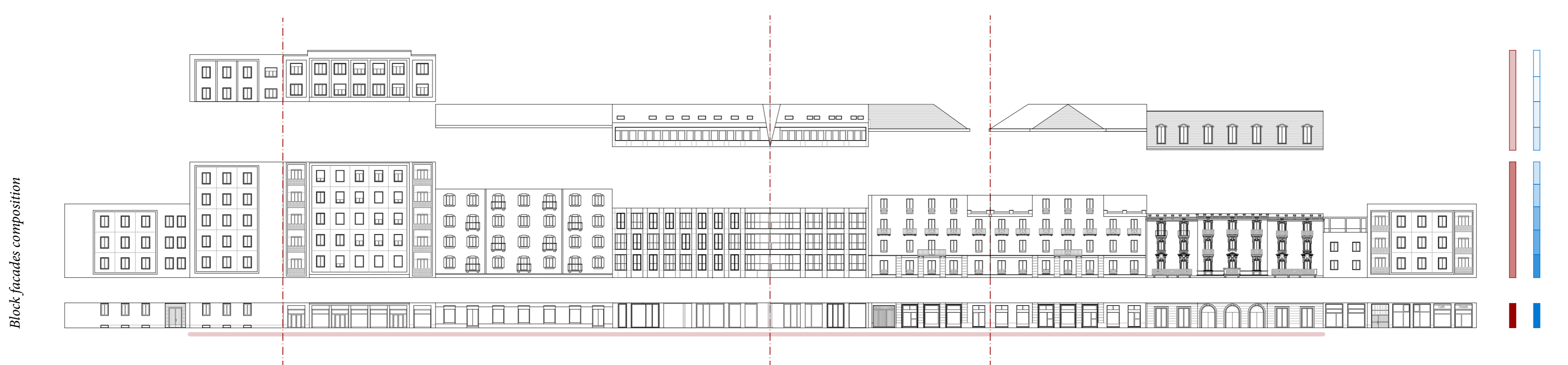
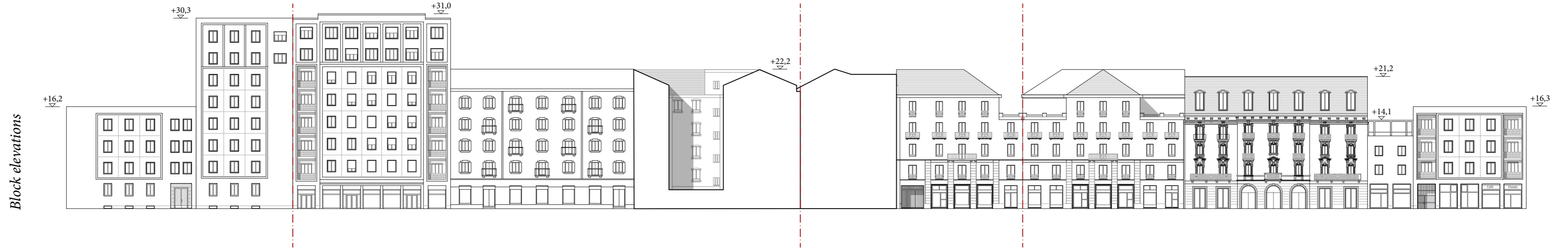
0 200 m



FACADE COMPOSITION

Open box neighborhood analysis

0 20 m



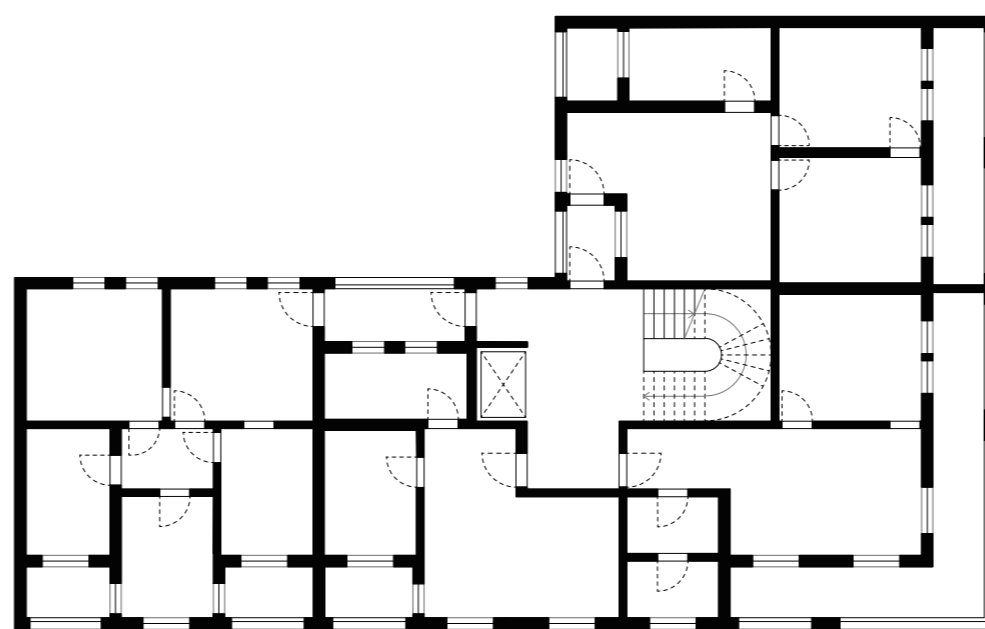
MAPPING CHARACTERISTICS

9, Via Lecco
Milan, Italy

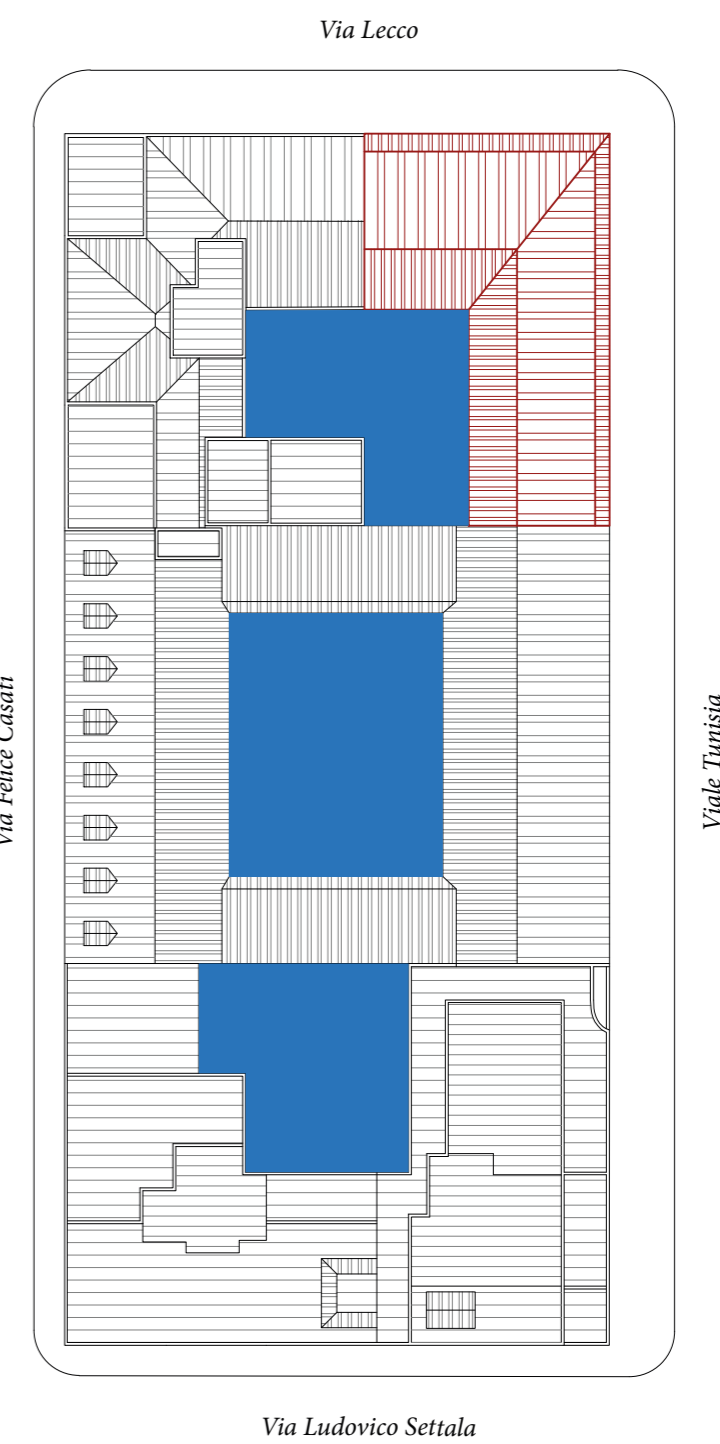
0 10 m



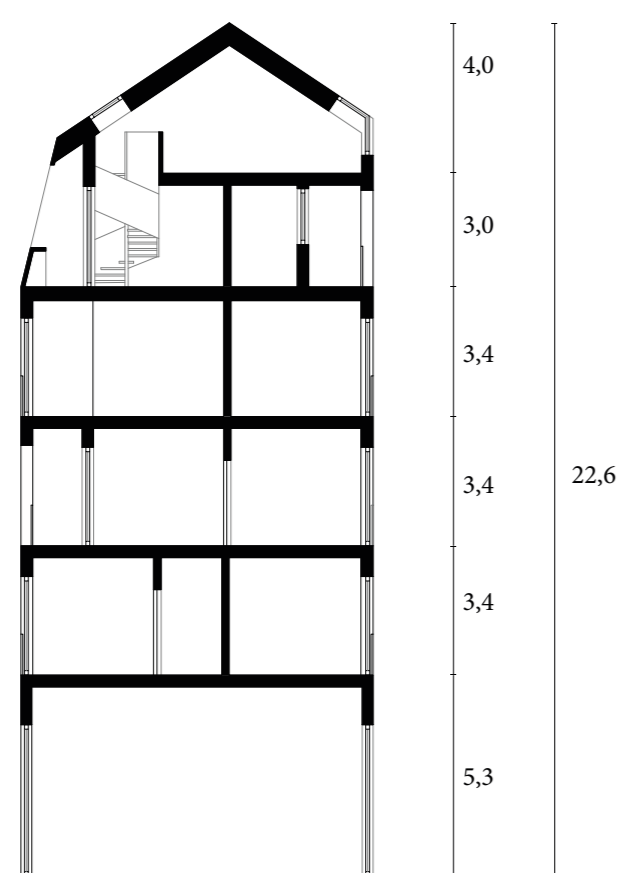
Elevation



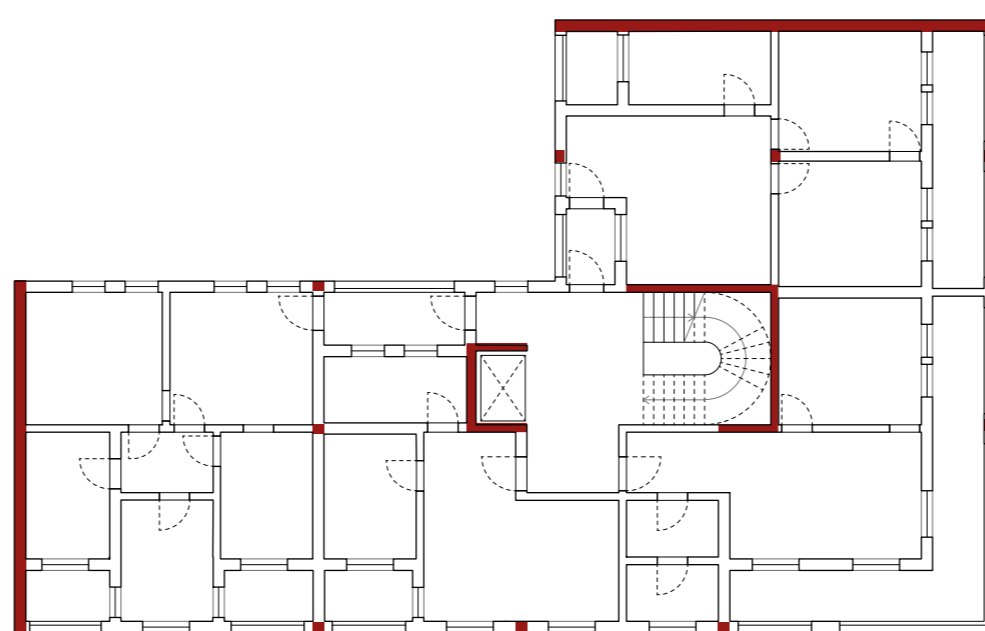
Typical residential floor plan



Via Ludovico Settala



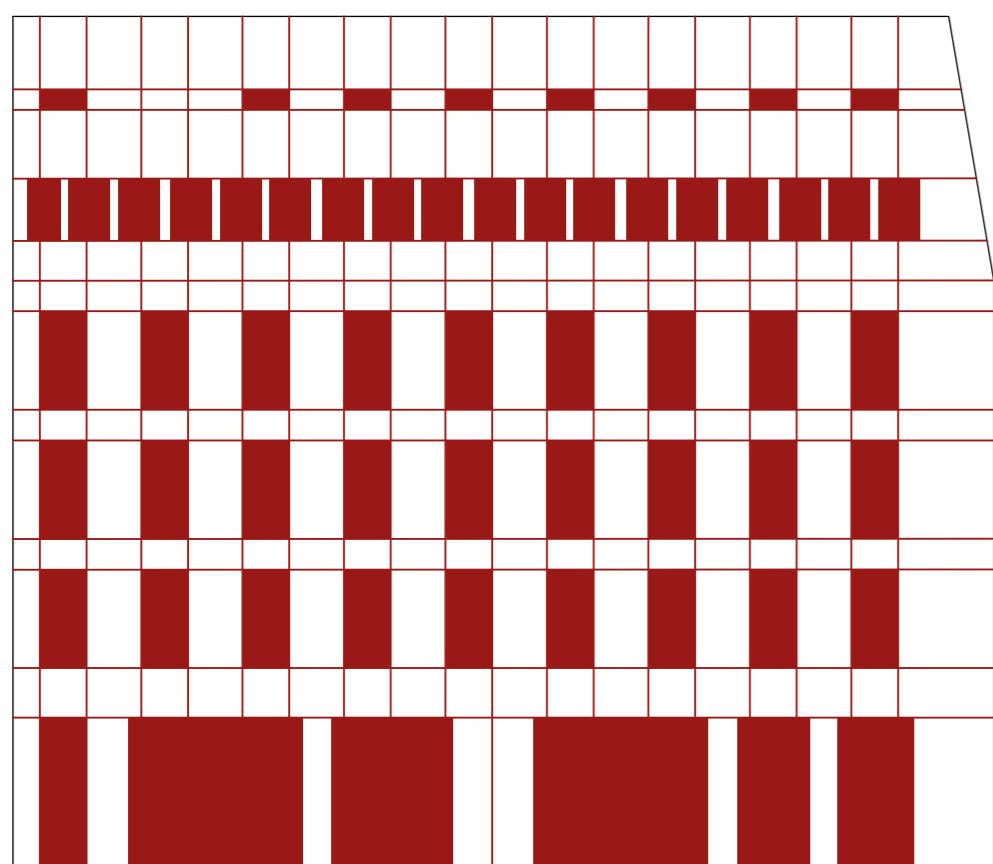
Height difference



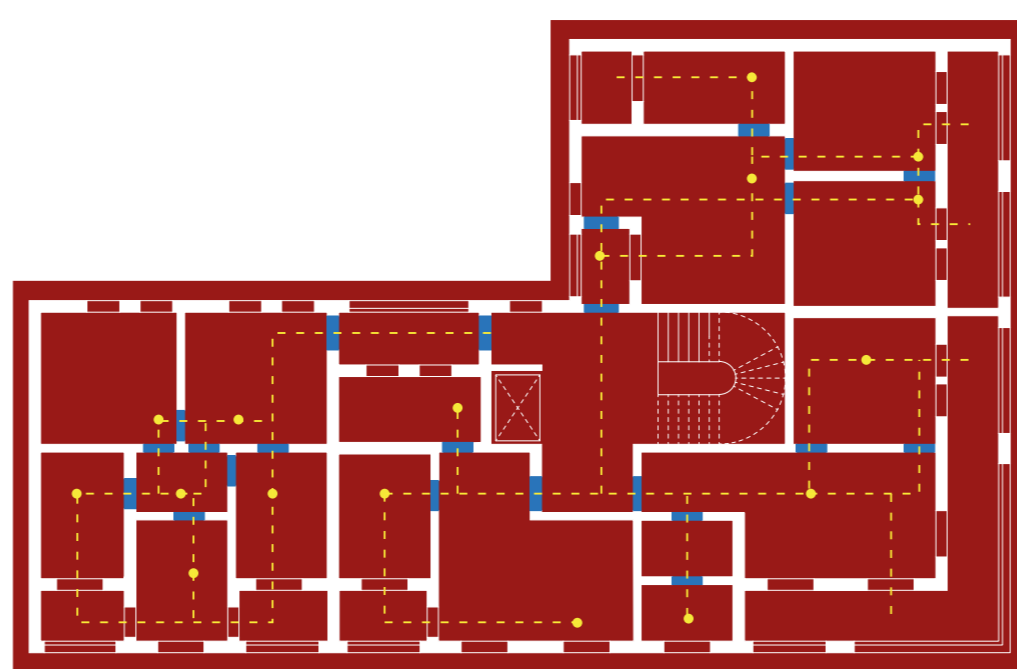
Structural clarity

0 25 m
Block vertical porosity

■ LARGE 70 sqm - 30 sqm
■ MEDIUM 29 sqm - 15 sqm
■ SMALL 14 sqm - 0 sqm
■ EXTRA SMALL 14 sqm - 0 sqm



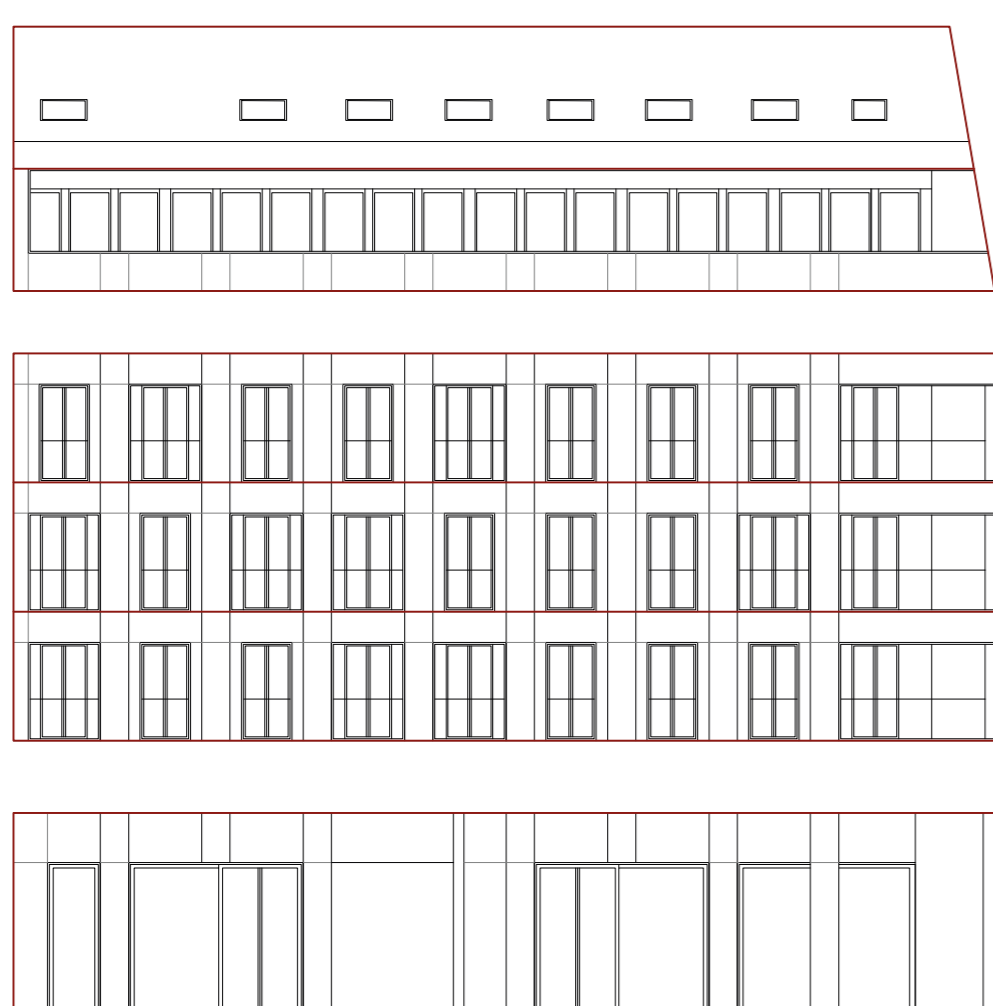
Facade grid regularity



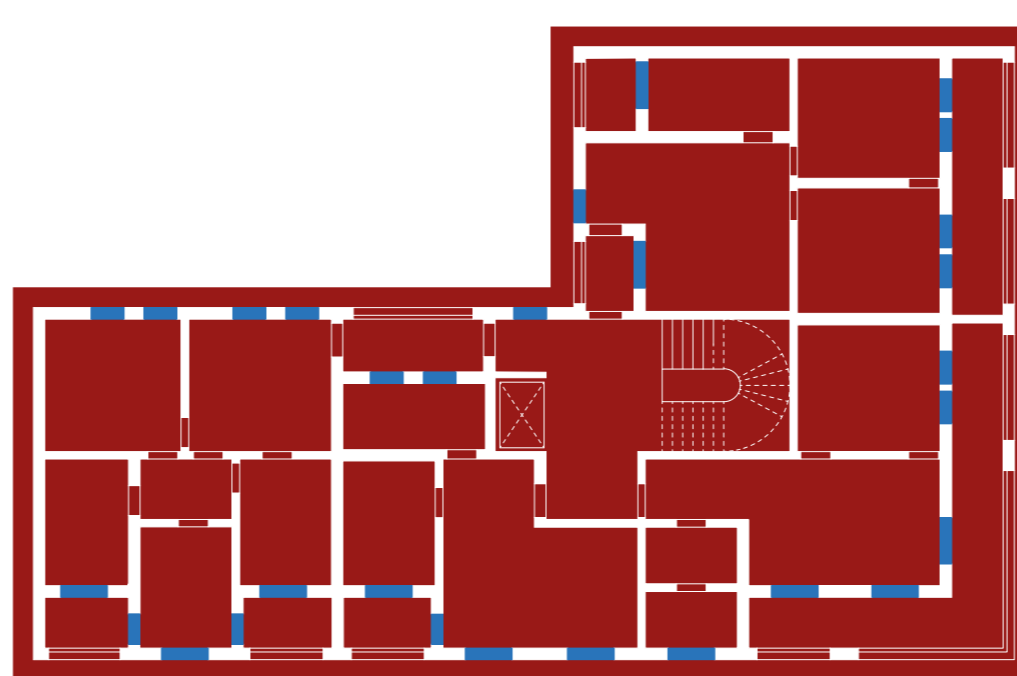
Circular distribution



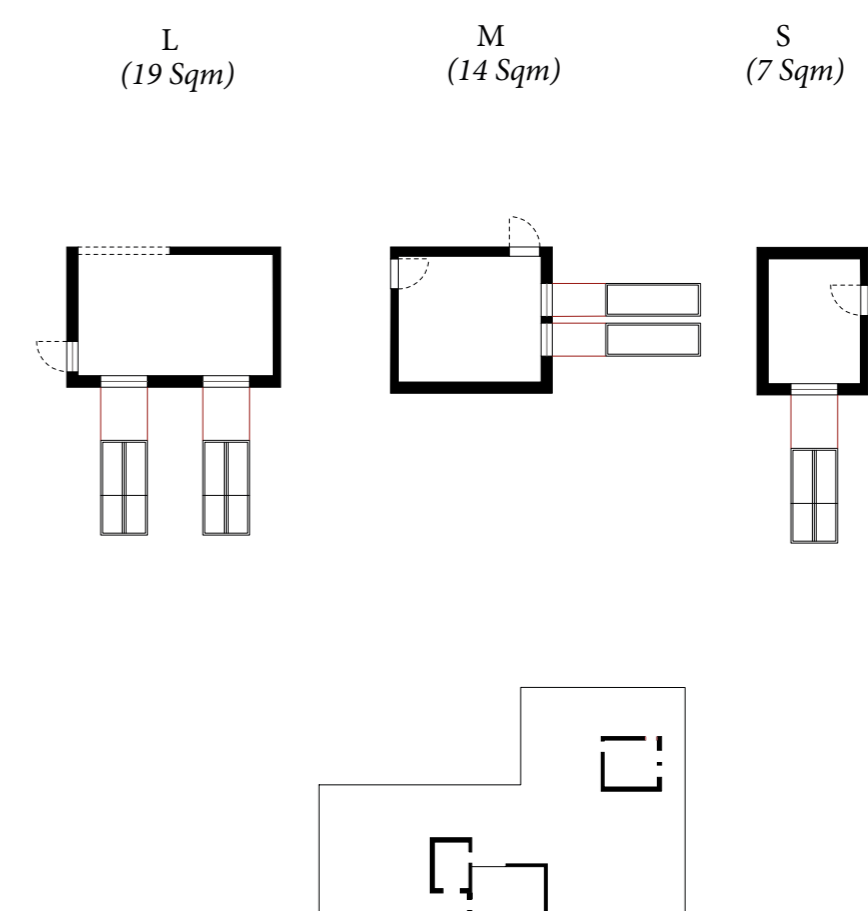
Plan composition



Facade composition



Windows redundance

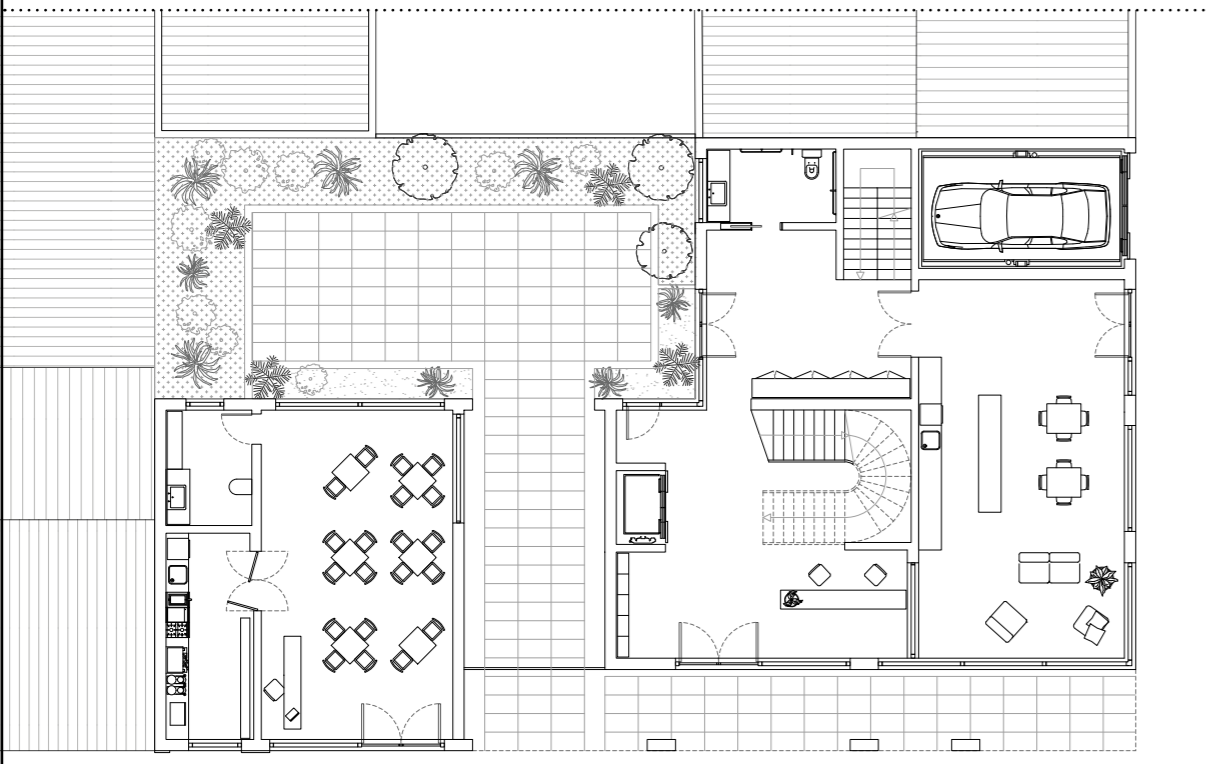


Rooms and windows Hierarchy

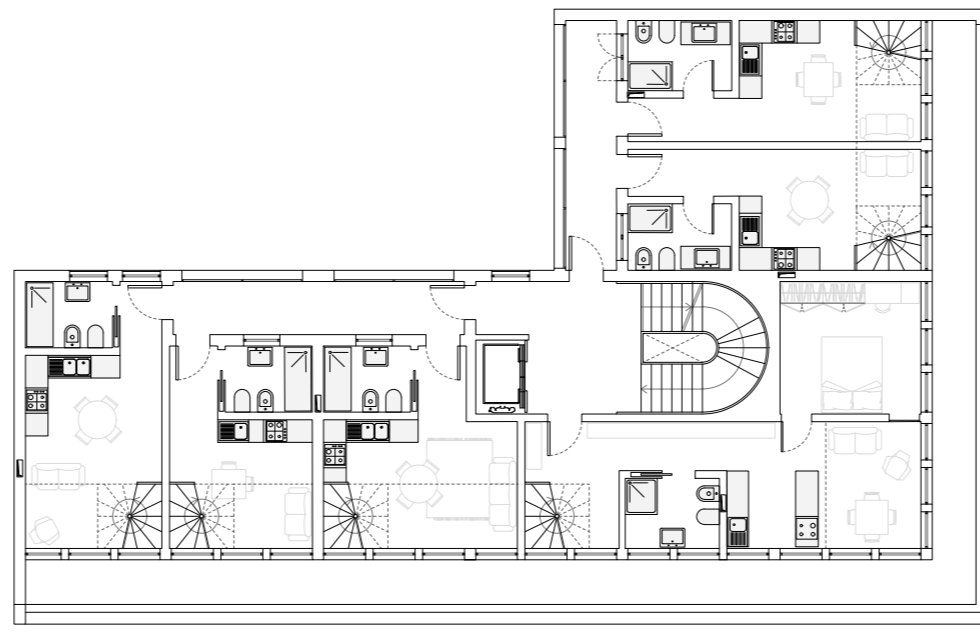
BUILDING COMPOSITION

Plans and elevation

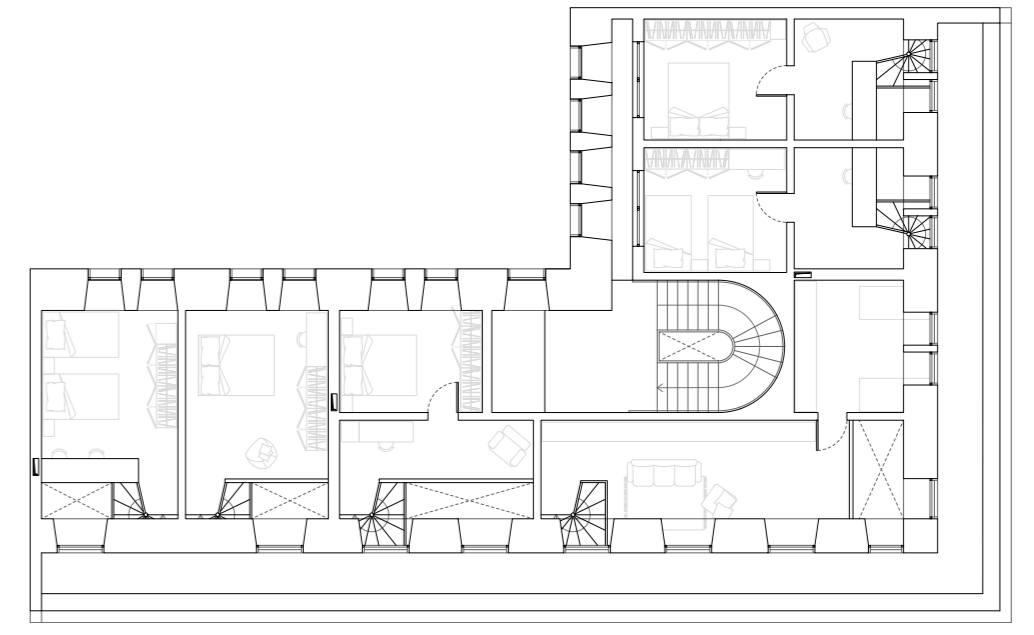
0 4 m



Groundfloor plan



Duplex fourth floor plan



Duplex fifth floor plan



Typical floor plan

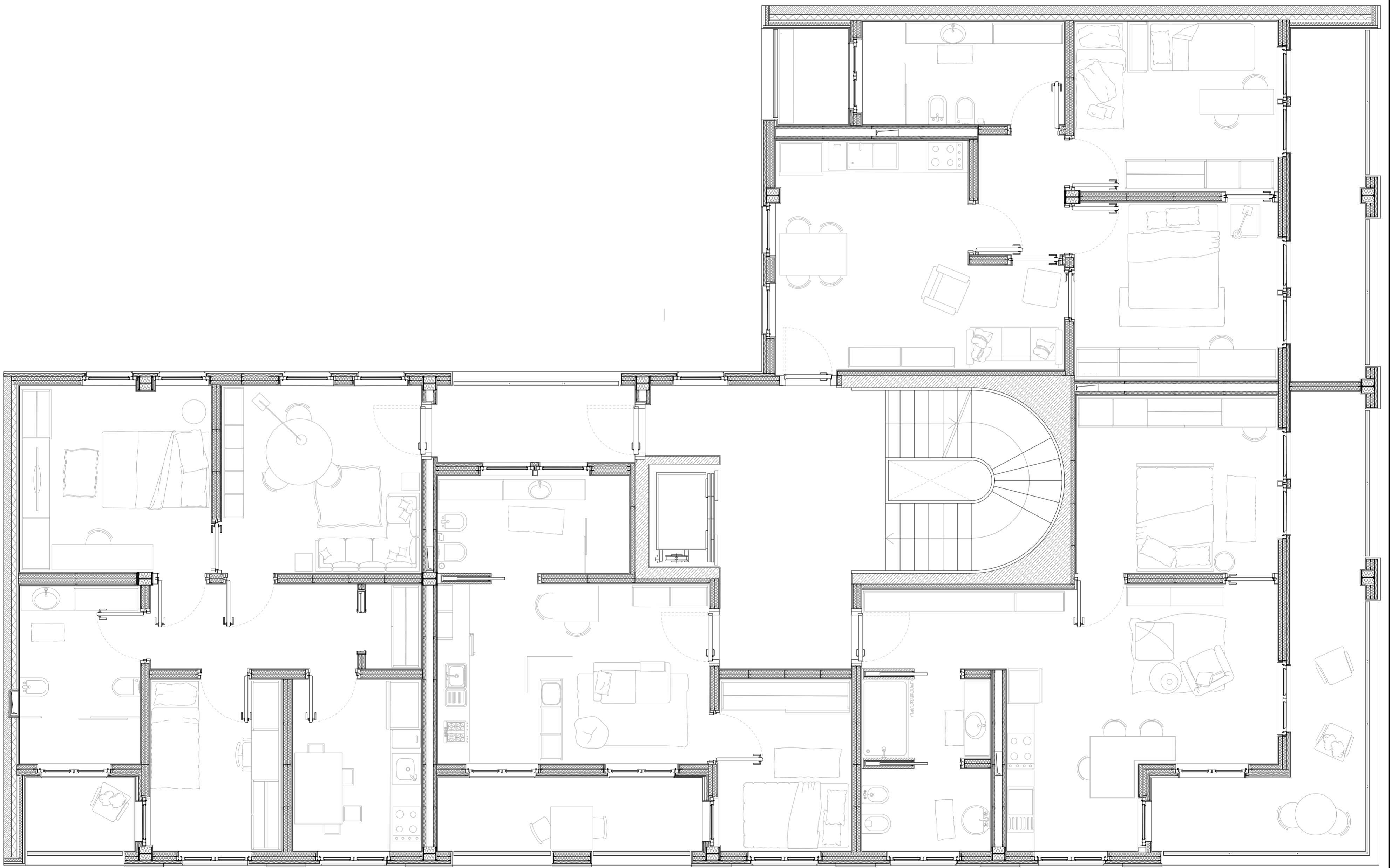




PROJECT ZOOM-IN

Typical floor plan

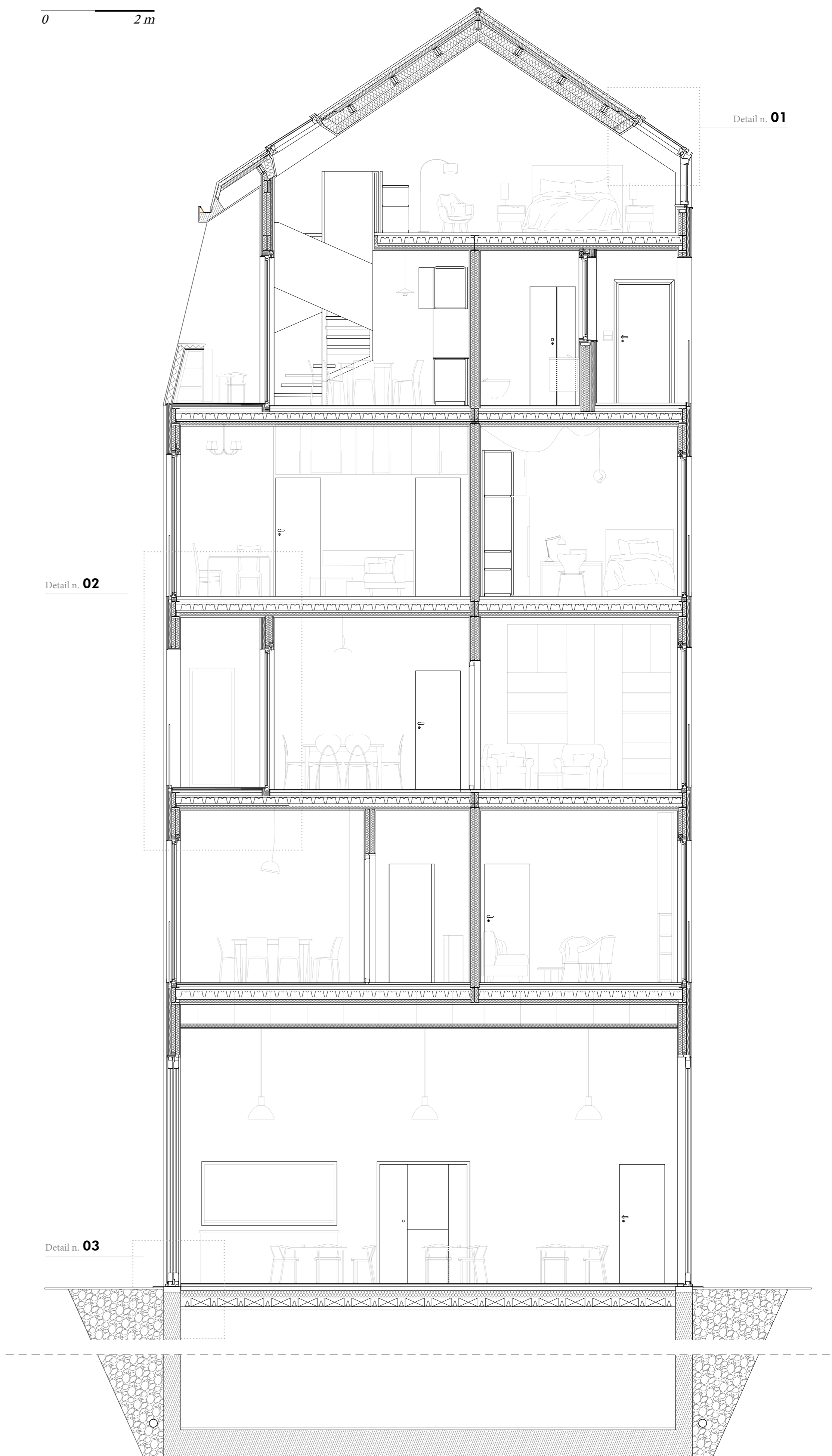
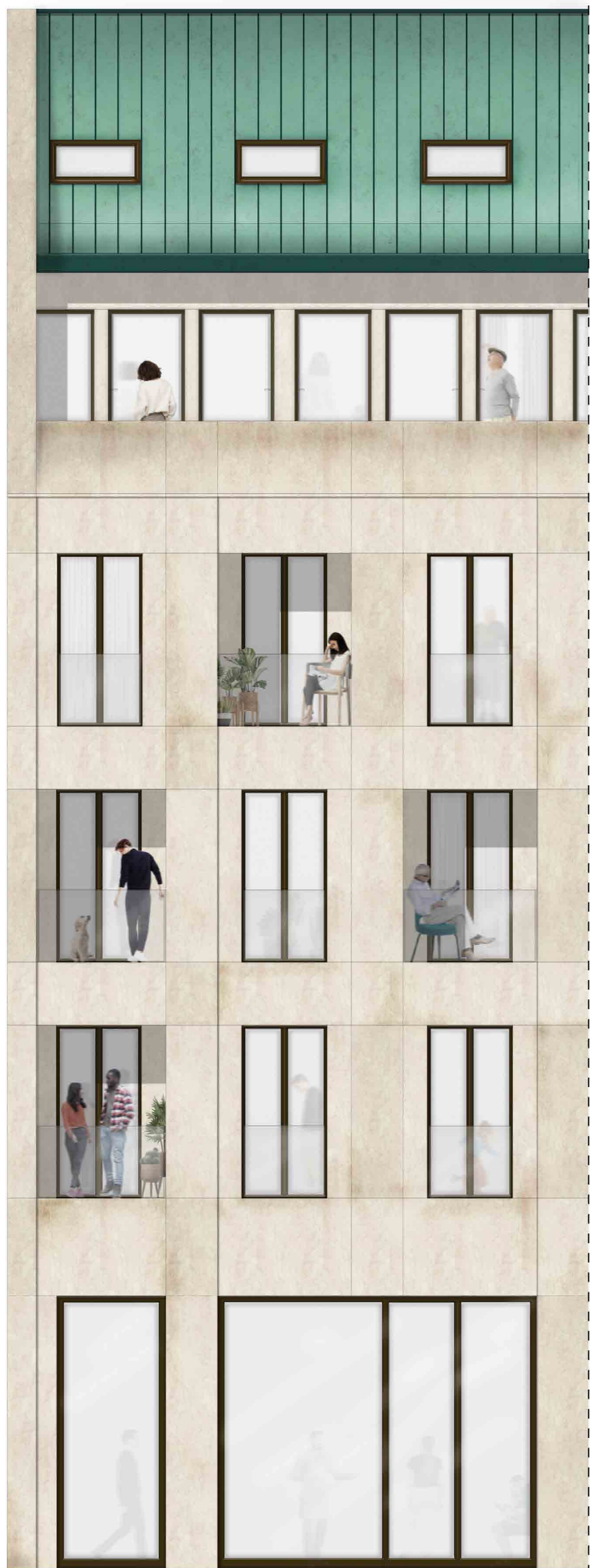
0 ————— 2 m



PROJECT ZOOM-IN

Cutout elevation, A-A' section, Details

0 2 m

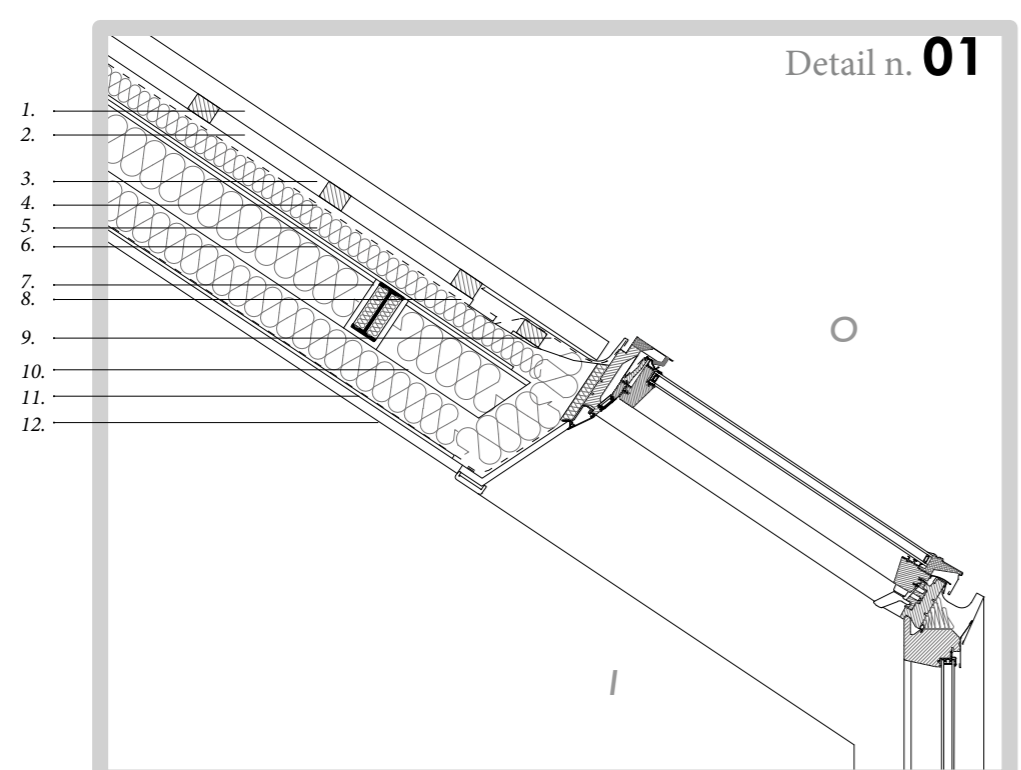


Detail n. 01

Detail n. 02

Detail n. 03

0 1 m

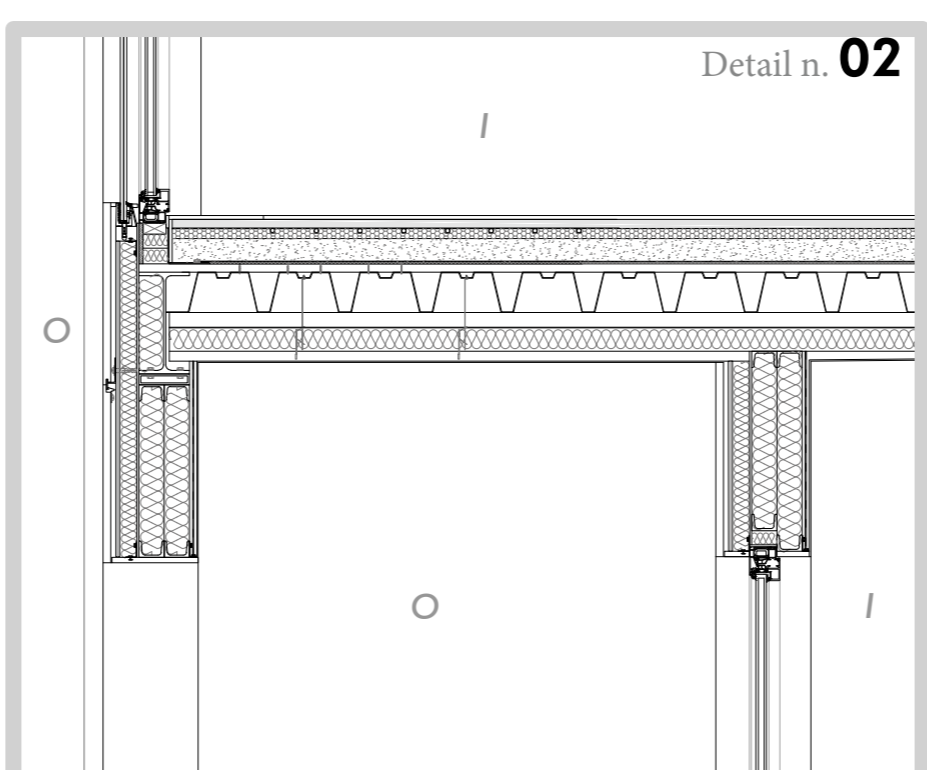


Detail n. 01

1.
2.
3.
4.
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11.
12.

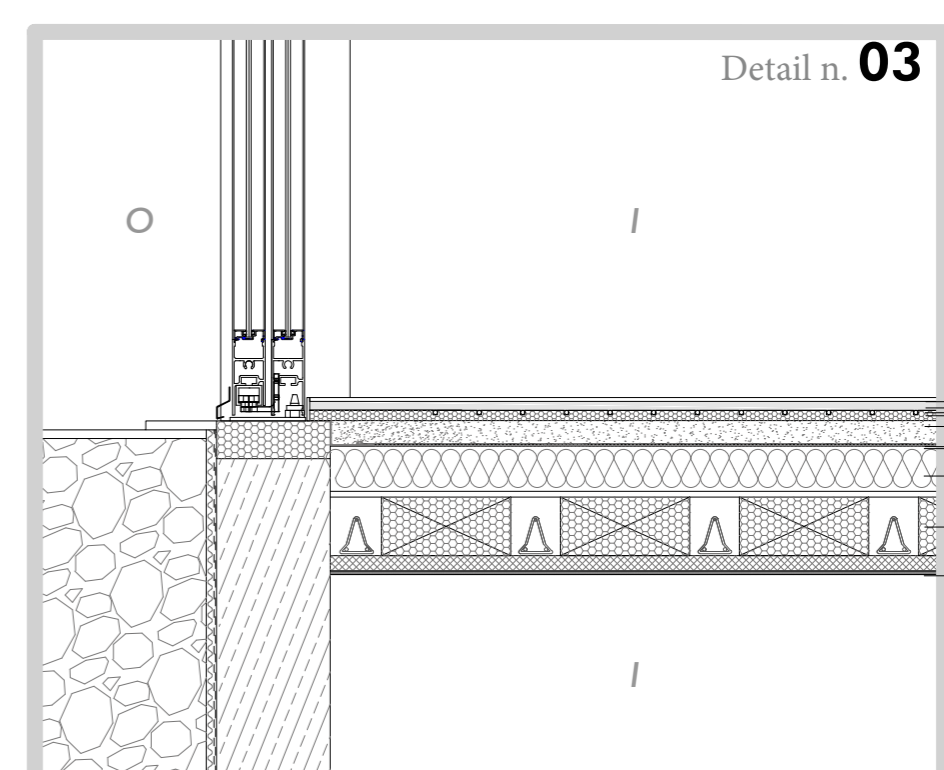
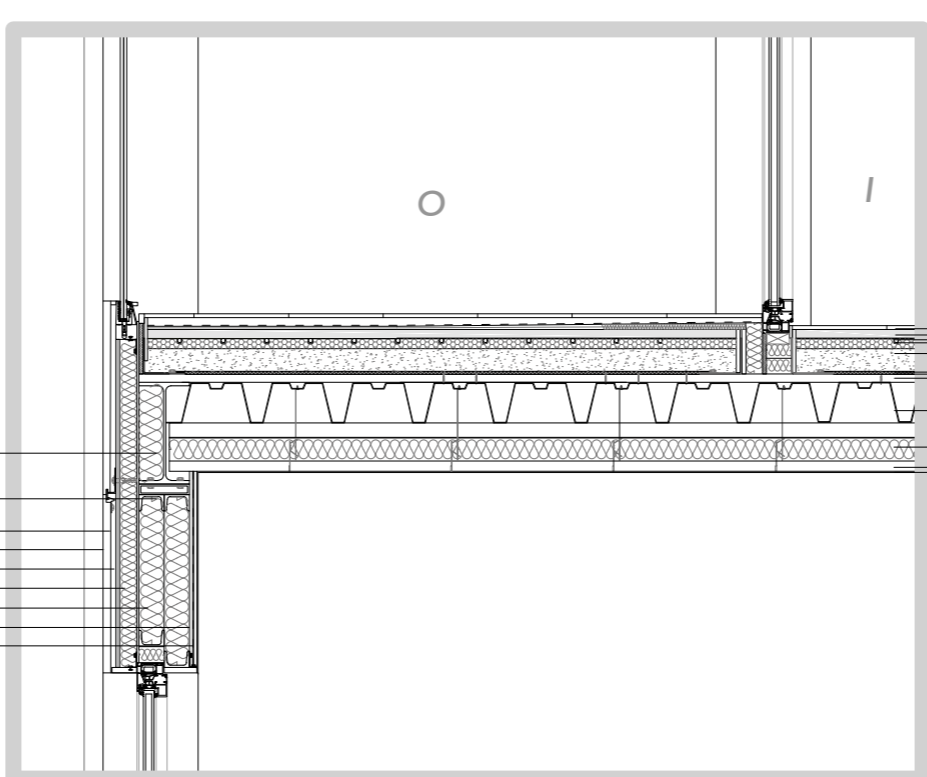
- | | | |
|-----|---|-------------|
| 1. | Roof - Prefalz covering system | th. 6 cm |
| 2. | Ventilated roof, emptiness | th. 8 cm |
| 3. | Support joists | th. 8 cm |
| 4. | XDP vapor permeable layer | |
| 5. | Rock wool insulation | th. 7 cm |
| 6. | Principal beam IPE 300 | |
| 7. | Secondary beam IPE 140 | |
| 8. | Water drainage gutter | |
| 9. | Roof supporting profile | |
| 10. | Double layer of rock wool insulation | th. 26 cm |
| 11. | XDP vapor permeable layer | |
| 12. | Plasterboard sheet | th. 1,25 cm |
| 13. | Flooring: Parquet | th. 1 cm |
| 14. | Gypsum-fiber layer | th. 2,3 cm |
| 15. | Double layer of load sharing in galvanized steel | th. 0,2 cm |
| 16. | Pre-shaped insulating panel in expanded polystyrene | th. 2,8 cm |

0 1 m



Detail n. 02

25.
26.
27.
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31.
32.
33.



Detail n. 03

- | | | |
|-----|---|-------------|
| 17. | Bed base with granular inert in perlite | th. 6 cm |
| 18. | Waterproof case layer | |
| 19. | Corrugated cardboard layer | th. 4,5 mm |
| 20. | OSB panel | th. 2,2 cm |
| 21. | Fretted sheet | th. 2 mm |
| 22. | Rock wool panel insulation | th. 12 cm |
| 23. | Plasterboard sheet | th. 1,25 cm |
| 24. | Finish | th. 0,5 cm |
| 25. | Steel beam IPE 270 | |
| 26. | Steel profile type C.65 | |
| 27. | Ventilated facade, emptiness | th. 1 cm |
| 28. | Stone slabs, Pietra di Trani | th. 3 cm |
| 29. | Ateel pillar HEA 280 | |
| 30. | Pre-shaped insulating panel in expanded polystyrene | th. 5 cm |
| 31. | Double layer of insulation | th. 15 cm |
| 32. | Plasterboard sheet | th. 1,25 cm |
| 33. | Finish | th. 0,5 cm |
| 34. | Insulation layer of lana di roccia | th. 12 cm |
| 35. | Structures in predalles slabs with lightened concrete casting | th. 15 cm |
| 36. | Plasterboard panels | th. 2 cm |

APARTMENTS FLEXIBILITY

Abacus I

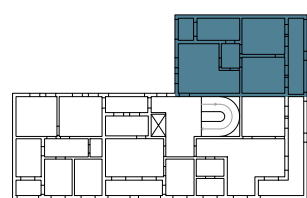
0 10 m

Fixed furniture

Daily movement

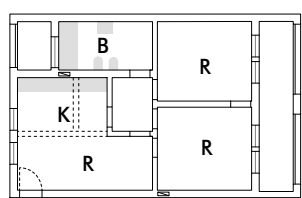
Circulation

APARTMENT LA

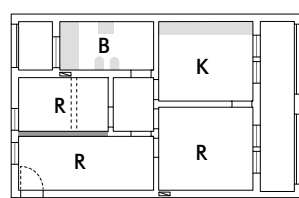


LARGE
70 > 56 sqm

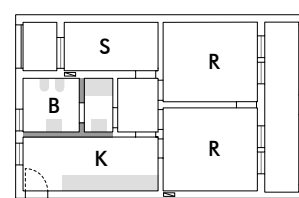
Apartment LA1 = 3R 1B 1K = 60 sqm + loggia 12,5 sqm



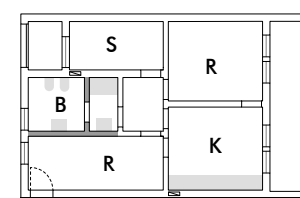
LA1.a



LA1.b

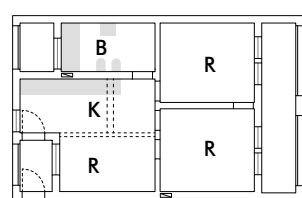


LA1.c

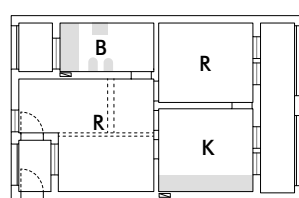


LA1.d

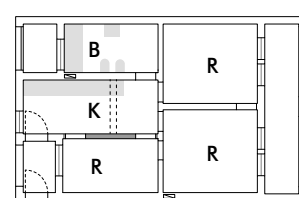
Apartment LA2 = 3R 1B 1K = 57 sqm + loggia 13,5 sqm



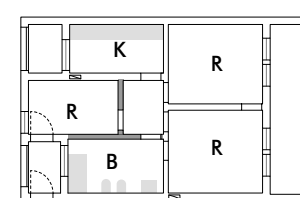
LA2.a



LA2.b

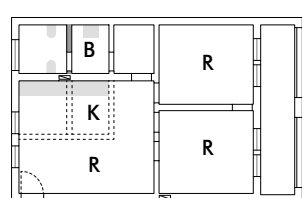


LA2.c

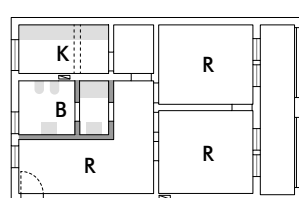


LA2.d

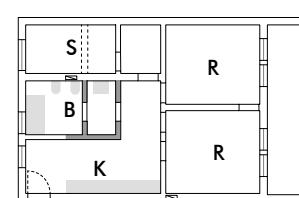
Apartment LA3 = 3R 1B 1K = 60 sqm + loggia 12,5 sqm



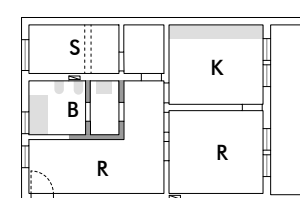
LA3.a



LA3.b

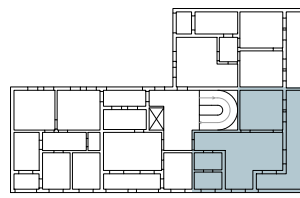


LA3.c



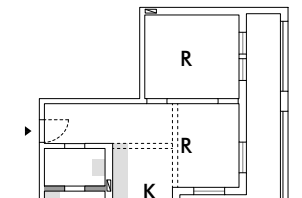
LA3.d

APARTMENT MB

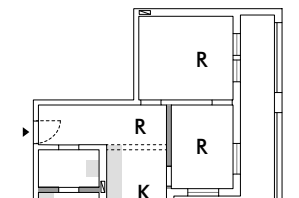


MEDIUM
55 > 41 sqm

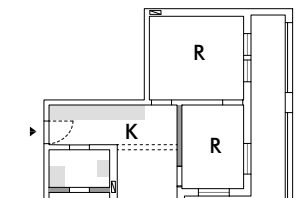
Apartment MB1 = 2R 1B 1K = 48 sqm + loggia 15 sqm



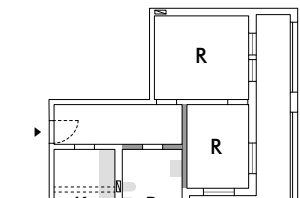
MB1.a



MB1.b

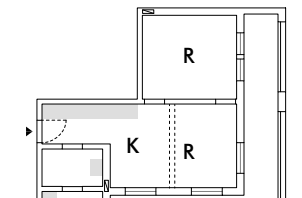


MB1.c

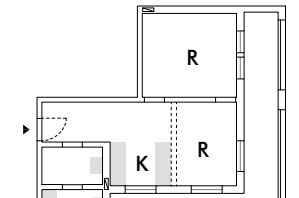


MB1.d

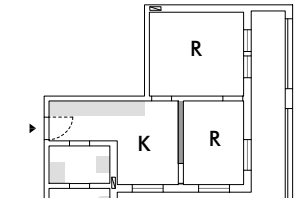
Apartment MB2 = 2R 1B 1K = 44 sqm + loggia 19 sqm



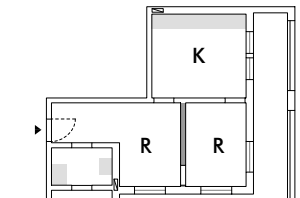
MB2.a



MB2.b

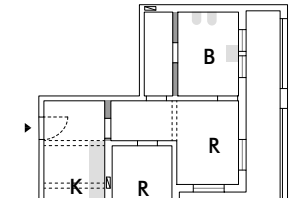


MB2.c

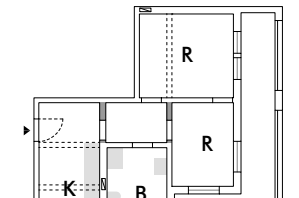


MB2.d

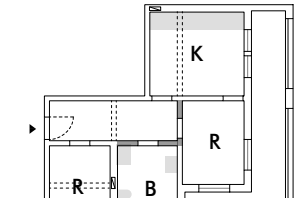
Apartment MB3 = 2R 1B 1K = 48 sqm + loggia 15 sqm



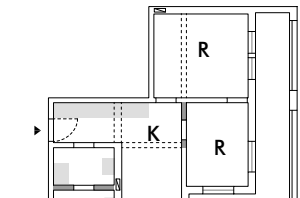
MB3.a



MB3.b

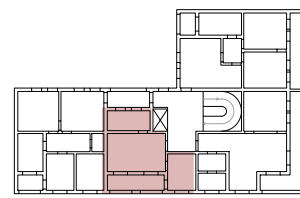


MB3.c



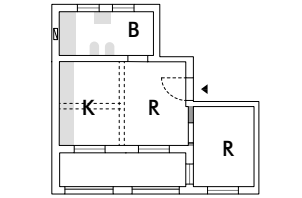
MB3.d

APARTMENT SC

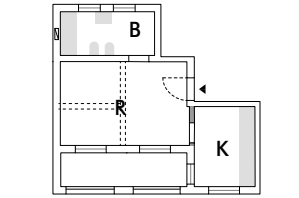


SMALL
40 > 30 sqm

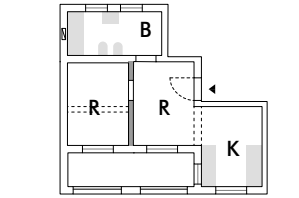
Apartment SC1 = 2R 1B 1K = 33 sqm + loggia 7 sqm



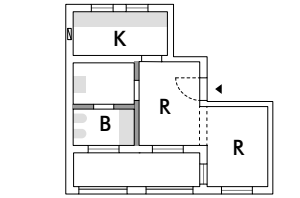
SC1.a



SC1.b

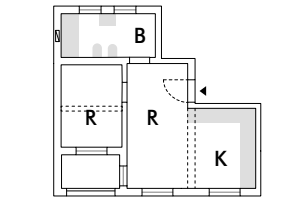


SC1.c

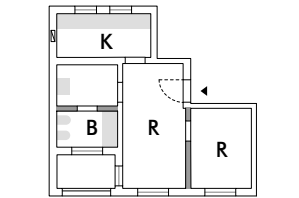


SC1.d

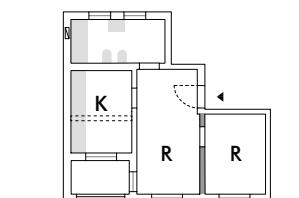
Apartment SC2 = 2R 1B 1K = 37 sqm + loggia 3 sqm



SC2.a

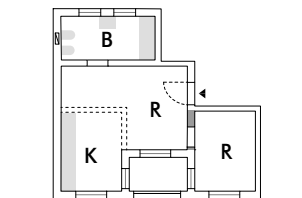


SC2.b

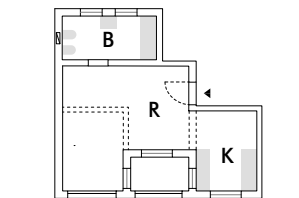


SC2.c

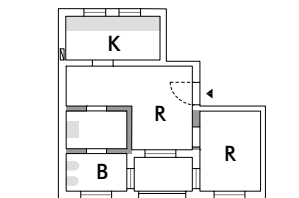
Apartment SC3 = 2R 1B 1K = 37 sqm + loggia 3 sqm



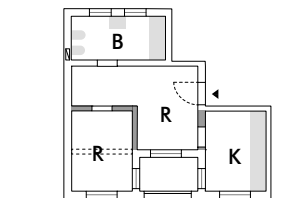
SC3.a



SC3.b



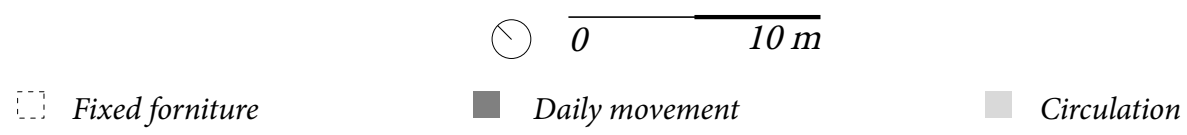
SC3.c



SC3.d

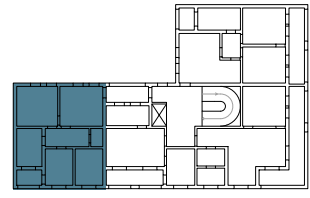
APARTMENTS FLEXIBILITY

Abacus II

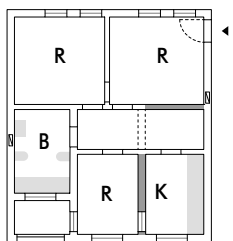


APARTMENT LD

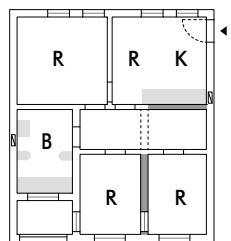
LARGE
70 > 56 sqm



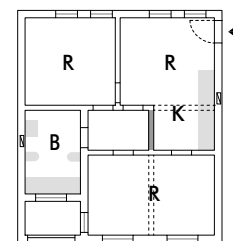
Apartment **LD1** = 3R 1B 1K = 62 sqm + loggia 3 sqm



LD1.a

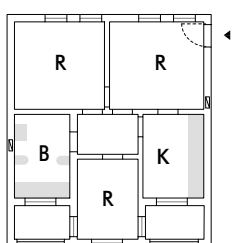


LD1.b

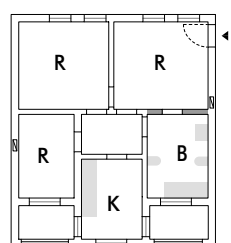


LD1.c

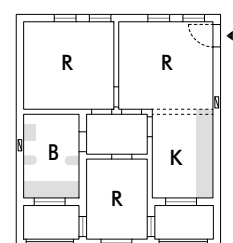
Apartment **LD2** = 3R 1B 1K = 59 sqm + loggia 6 sqm



LD2.a

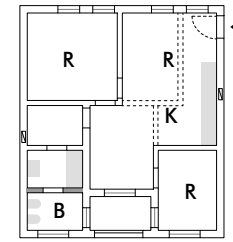


LD2.b

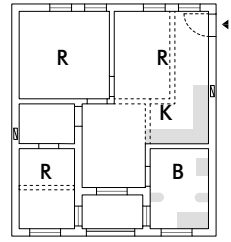


LD2.c

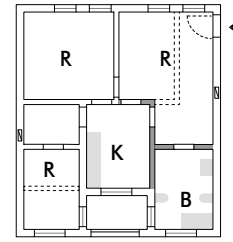
Apartment **LD3** = 3R 1B 1K = 62 sqm + loggia 12,5 sqm



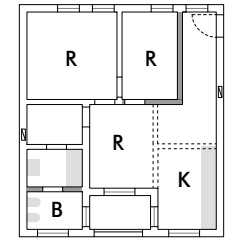
LD3.a



LD3.b

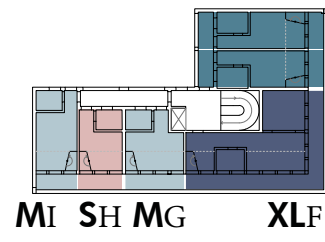


LD3.c

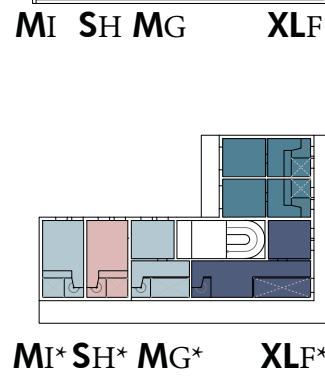


LD3.d

APARTMENT DUPLEX

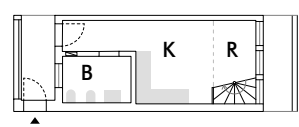


ME₁₁
ME₁

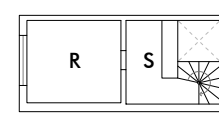


ME₁₁*
ME₁*

Duplex **ME** = 2R 1B 1K 1S = 47 sqm + loggia 9 sqm

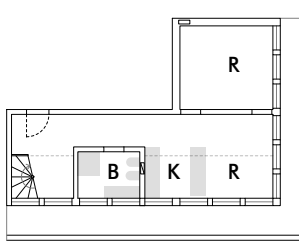


ME1

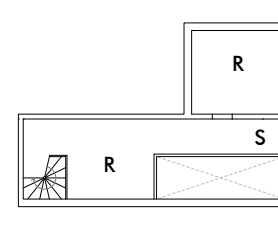


ME1*

Duplex **XLF** = 4R 1B 1K 1S = 81 sqm + loggia 23 sqm

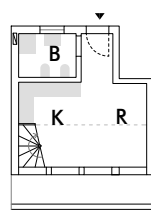


XLF

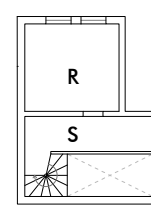


XLF*

Duplex **MG** = 2R 1B 1K 1S = 47 sqm + loggia 7 sqm

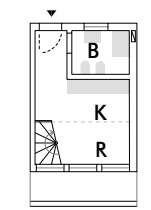


MG

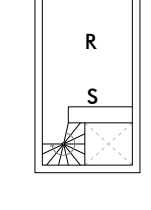


MG*

Duplex **SH** = 2R 1B 1K 1S = 40 sqm + loggia 5 sqm

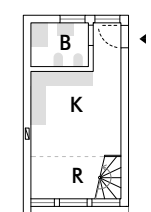


SH

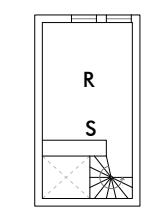


SH*

Duplex **MI** = 2R 1B 1K 1S = 45 sqm + loggia 5 sqm



MI



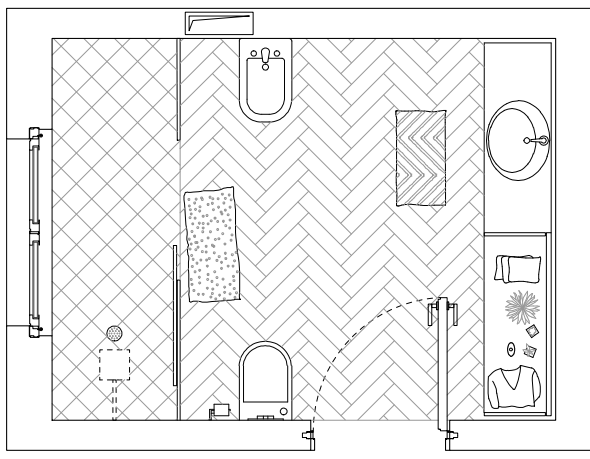
MI*

ROOM AND USES

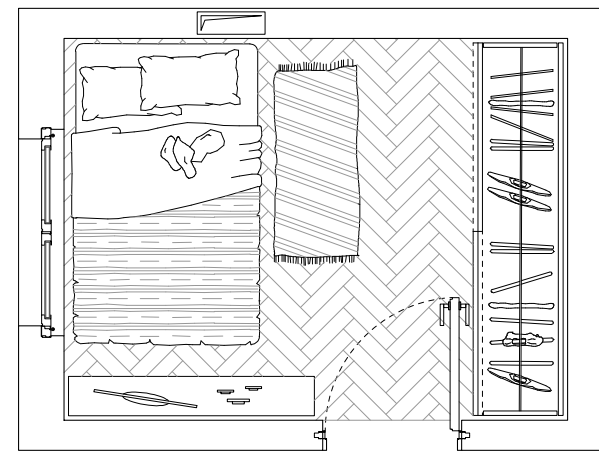
Abacus

0 ————— 2 m

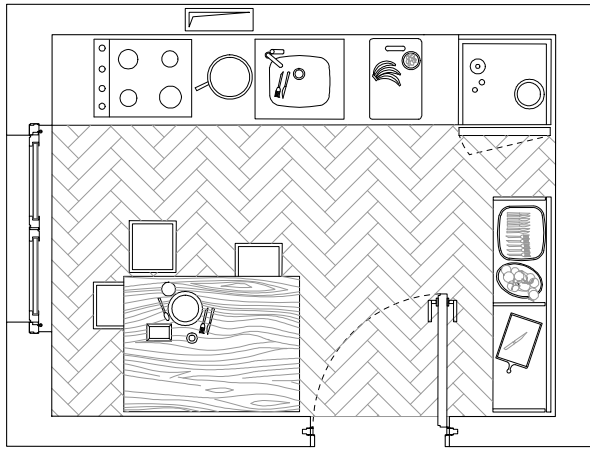
SMALL S
3,30 x 2,5 m
8 sqm



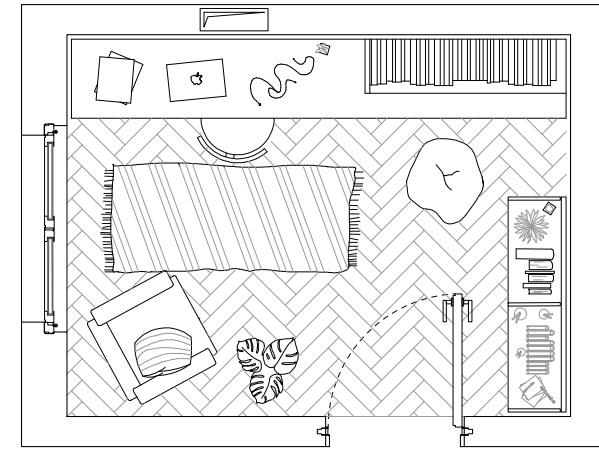
S_Bathroom



S_Single bedroom



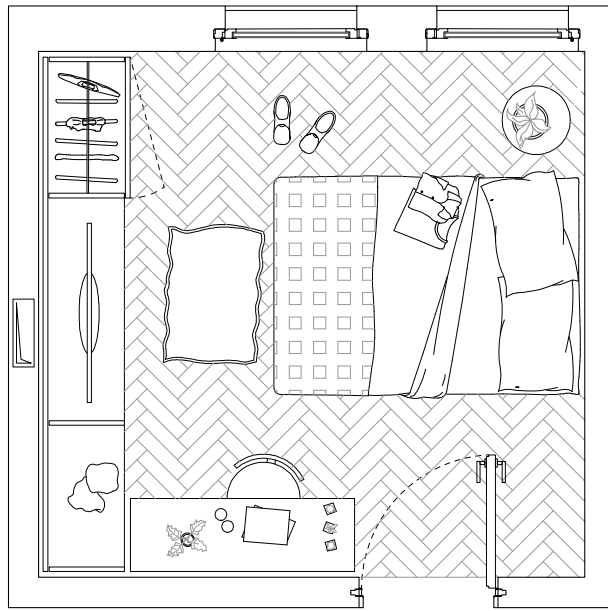
S_Kitchen



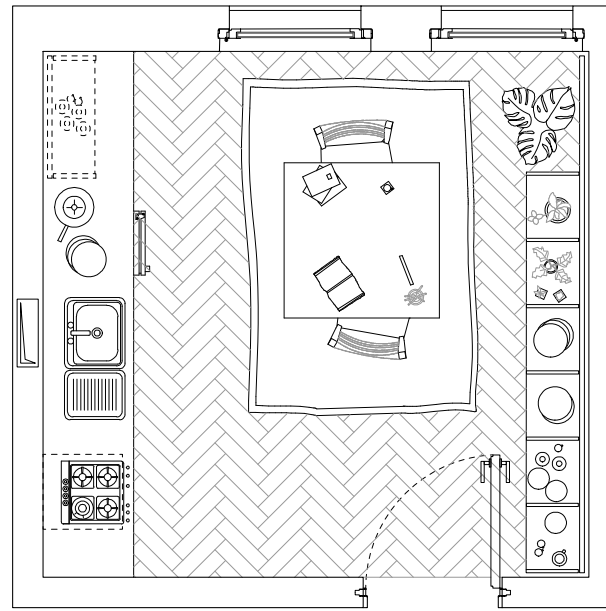
S_Study room

MEDIUM M

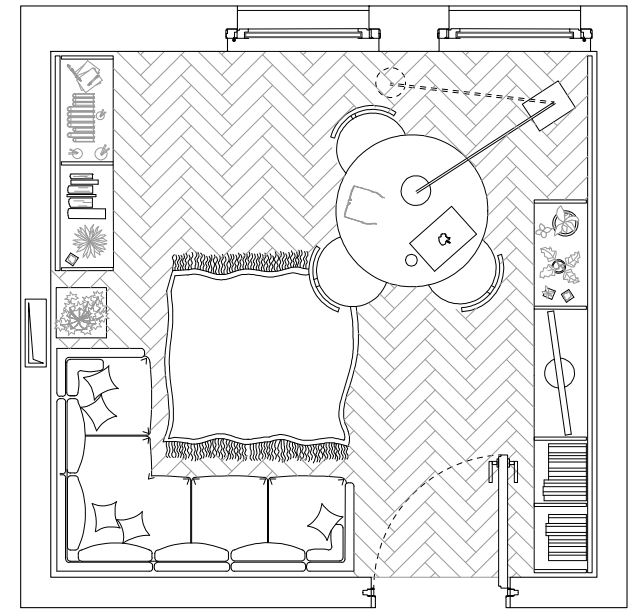
3,6 x 3,5 m
14 sqm



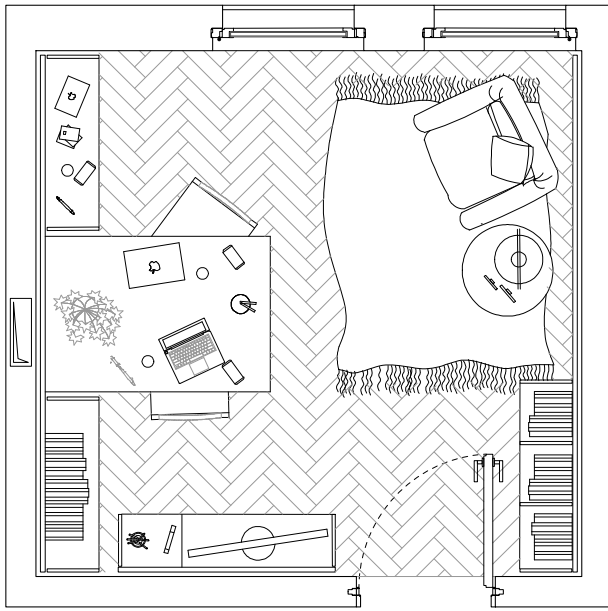
M_Couple bedroom



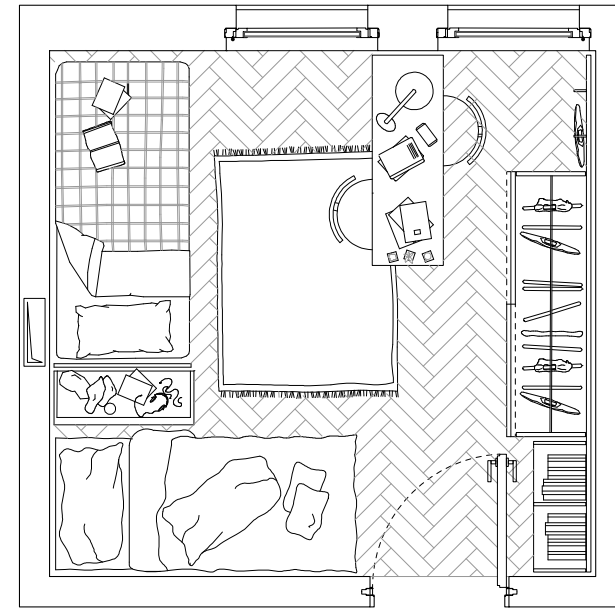
M_Kitchen



M_Livingroom



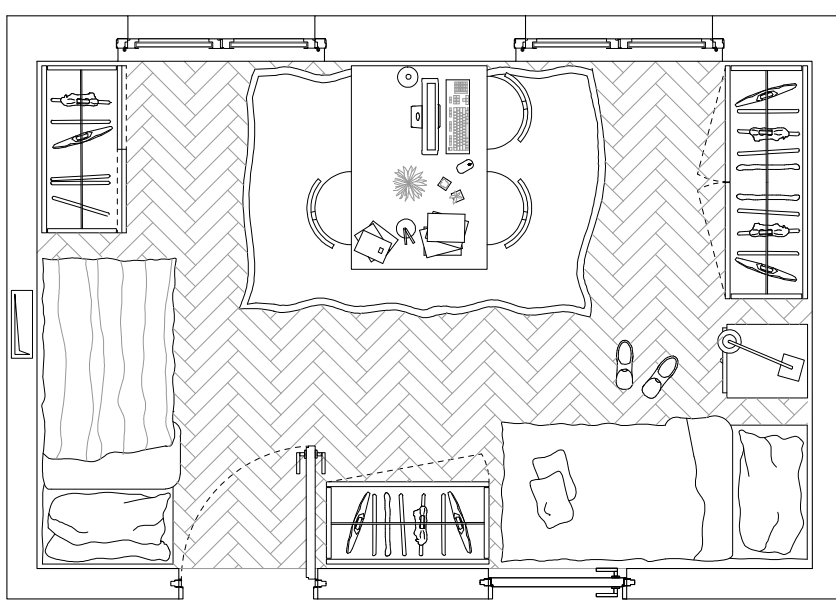
M_Study room



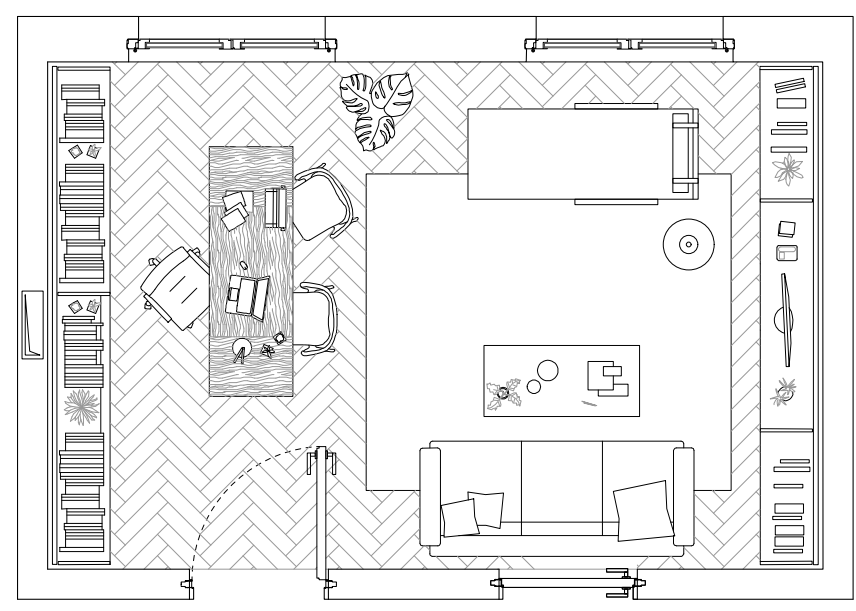
M_Double bedroom

LARGE L

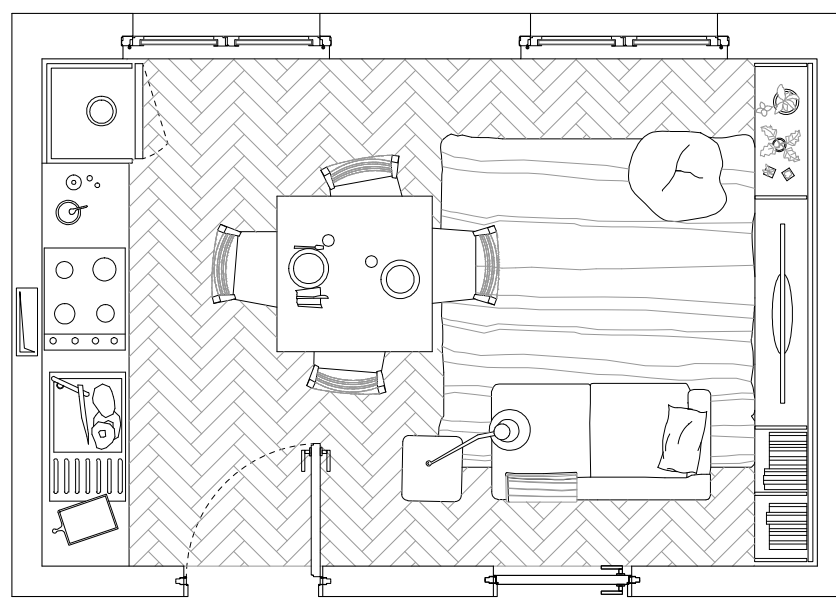
3,3 x 5,2 m
17 sqm



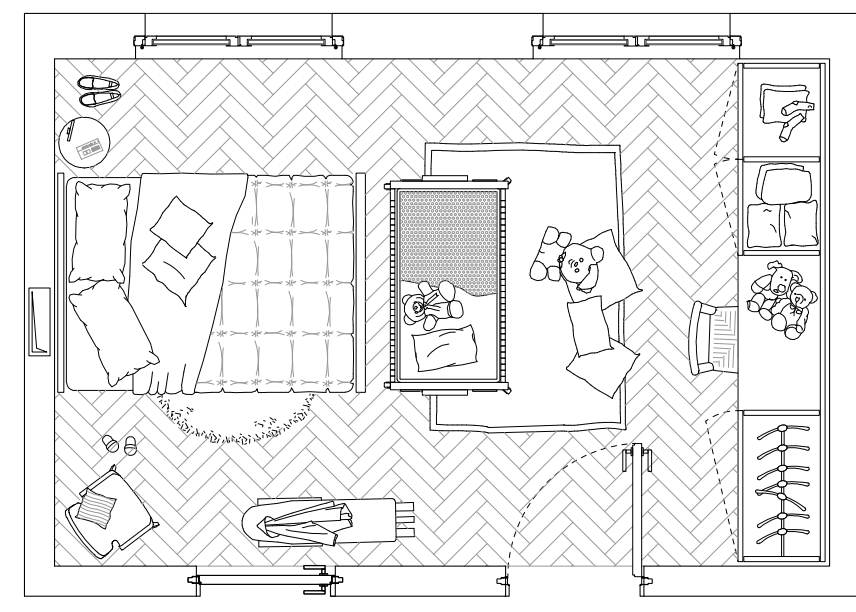
L_Double bedroom



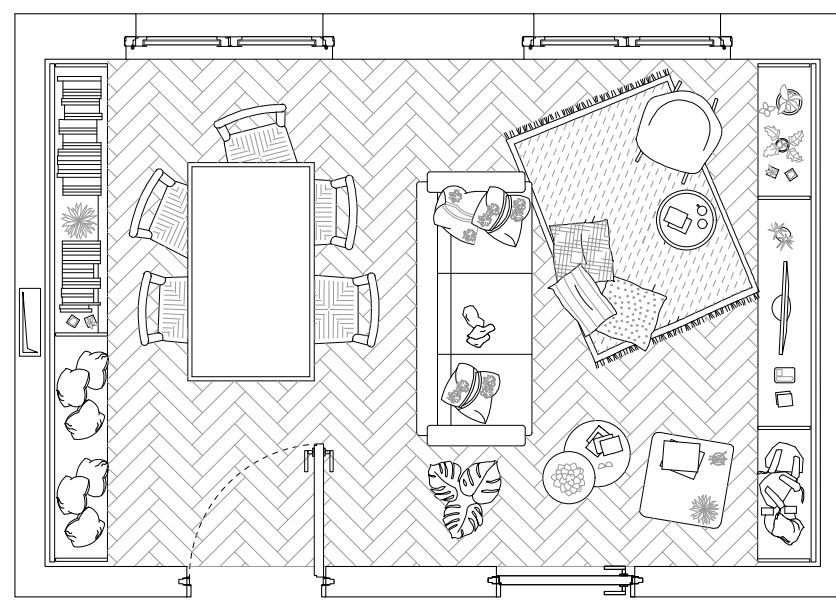
L_Professional Study room



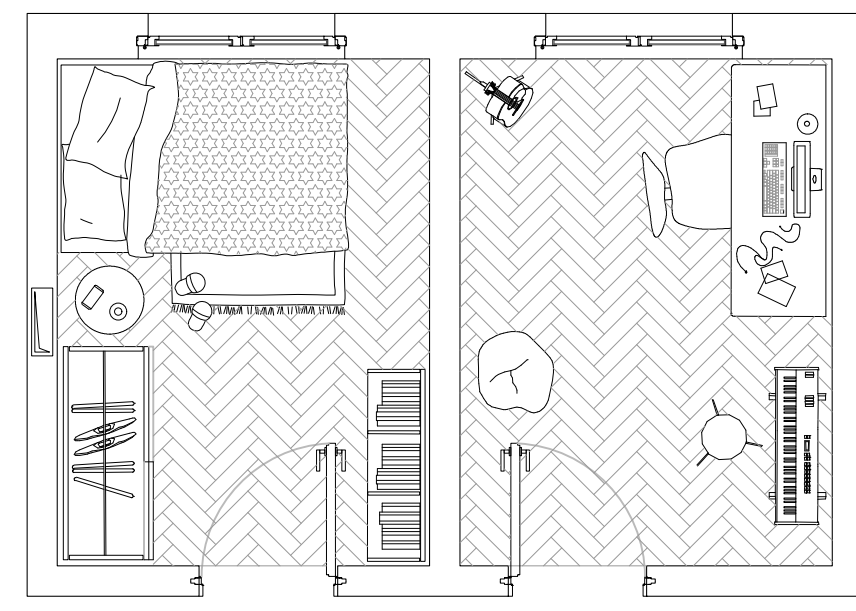
L_Kitchen + Livingroom



L_Couple bedroom + nursery



L_Livingroom

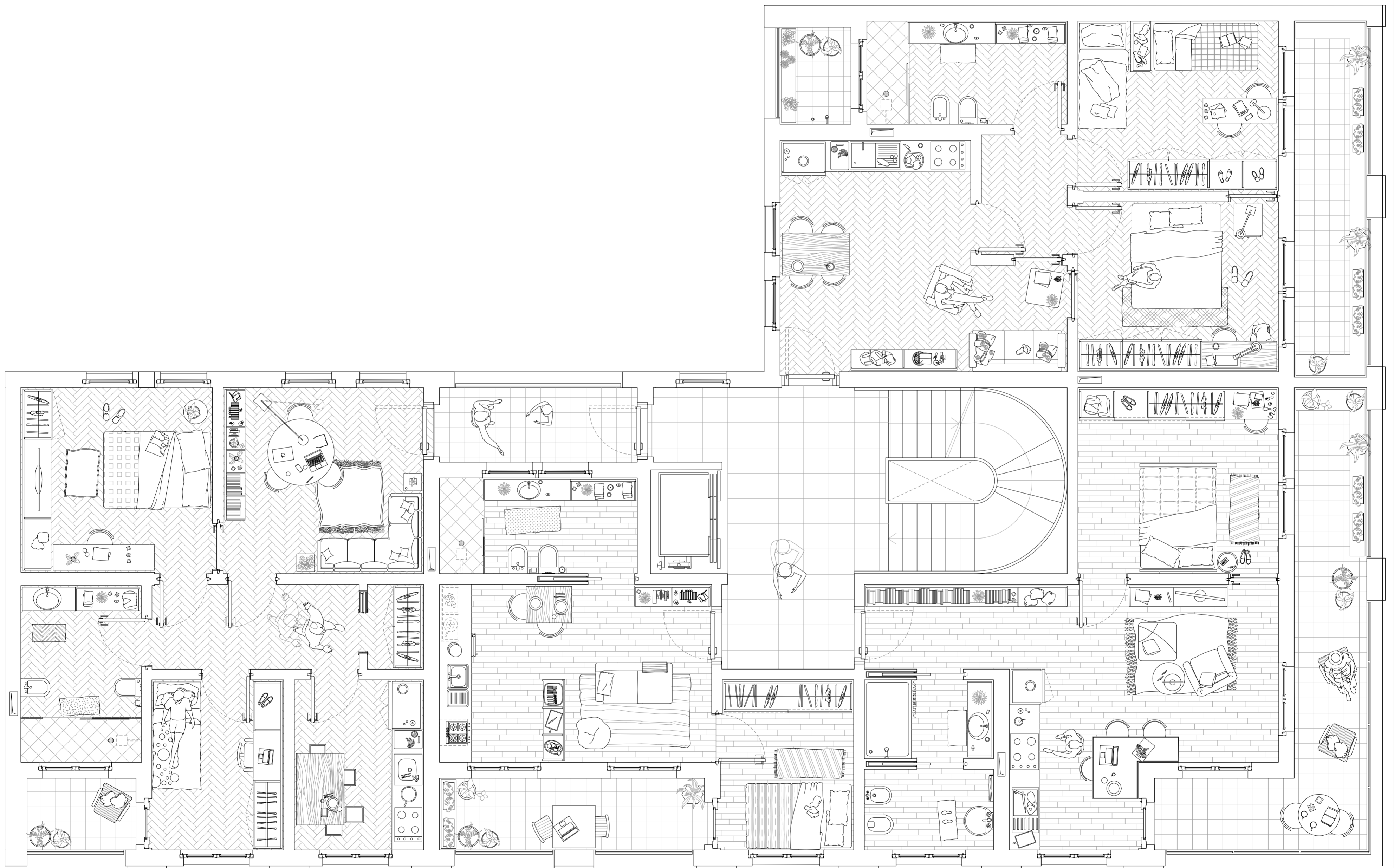


L_Study room + bedroom

PLAN COMPOSITION

Typical floor plan

0 2 m



TYOLOGICAL FLEXIBILITY

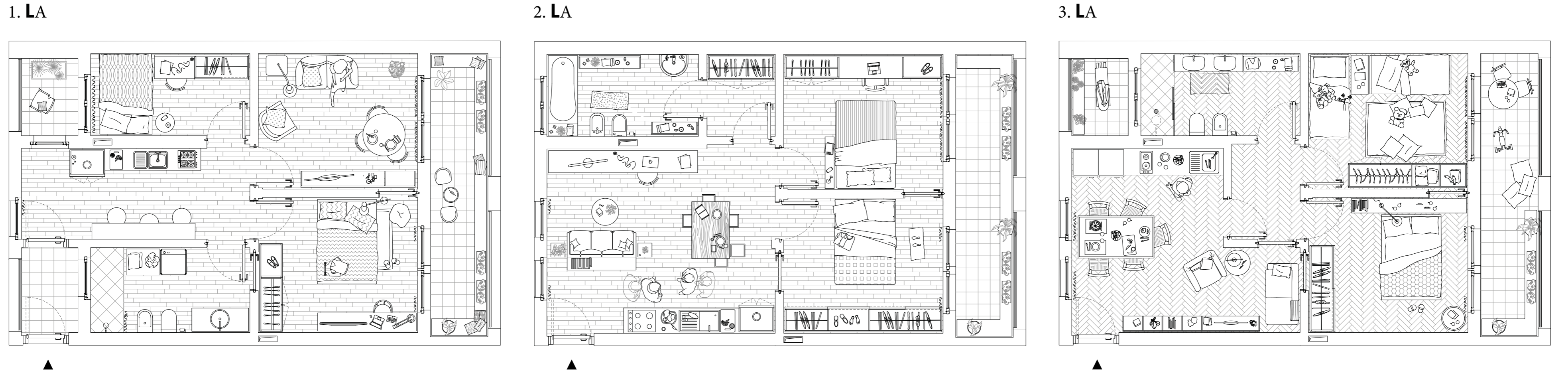
Abacus

0 3 m

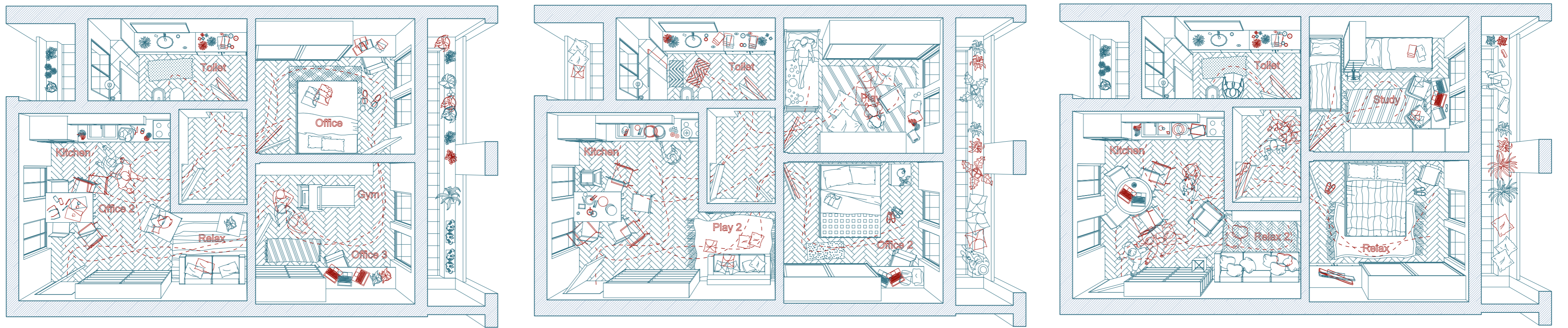


Fixed furniture Daily movement Circulation

Apartment A



Timeline changement of the apartment 3. LA



Couple
Alessandro, 30
Chiara, 27

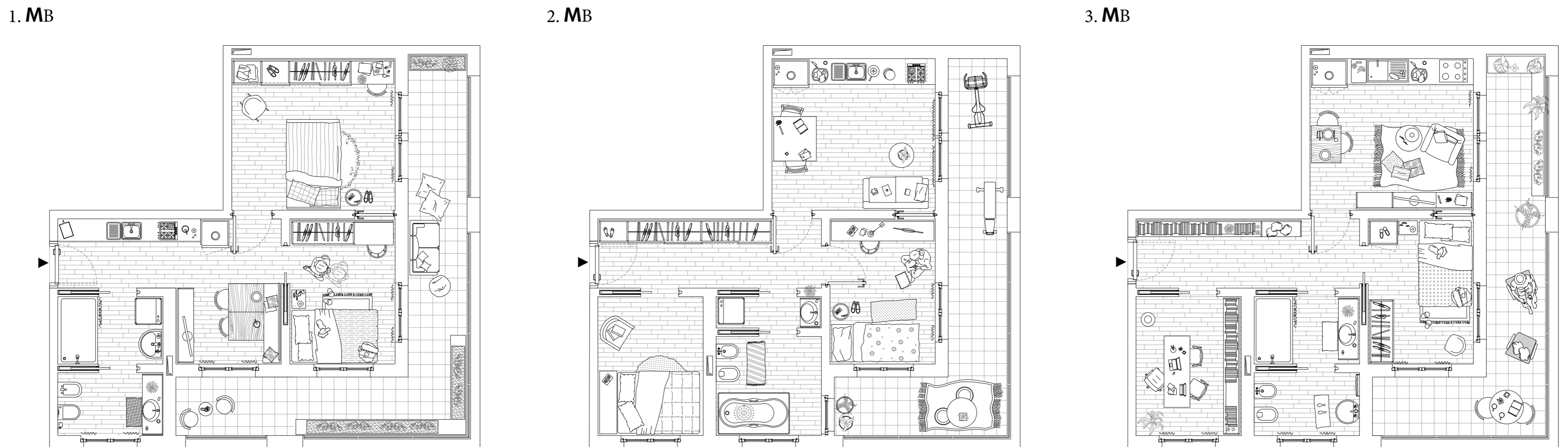


Family
Alessandro, 34
Chiara, 30
Giorgio, 4
Raffaele, 2

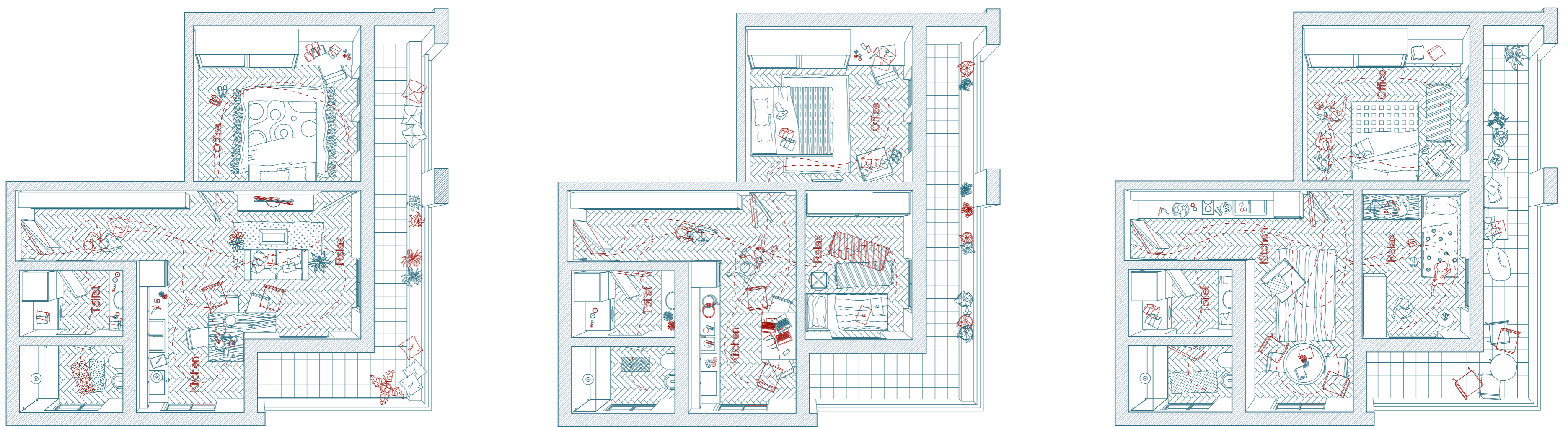


Family 2.0
Alessandro, 33
Chiara, 30
Giorgio, 20
Raffaele, 18

Apartment B



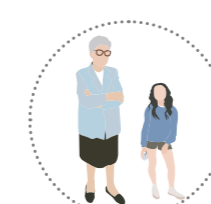
Timeline changement of the apartment 3. MB



Single worker
Pietro, 40



Mother + daughter
Rosina, 42
Giusy, 20

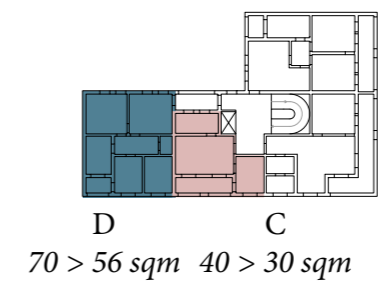


Grandmother + granddaughter
Rosina, 62
Giusy, 13

TYOPOLOGICAL FLEXIBILITY

Abacus

0 3 m



D C
70 > 56 sqm 40 > 30 sqm

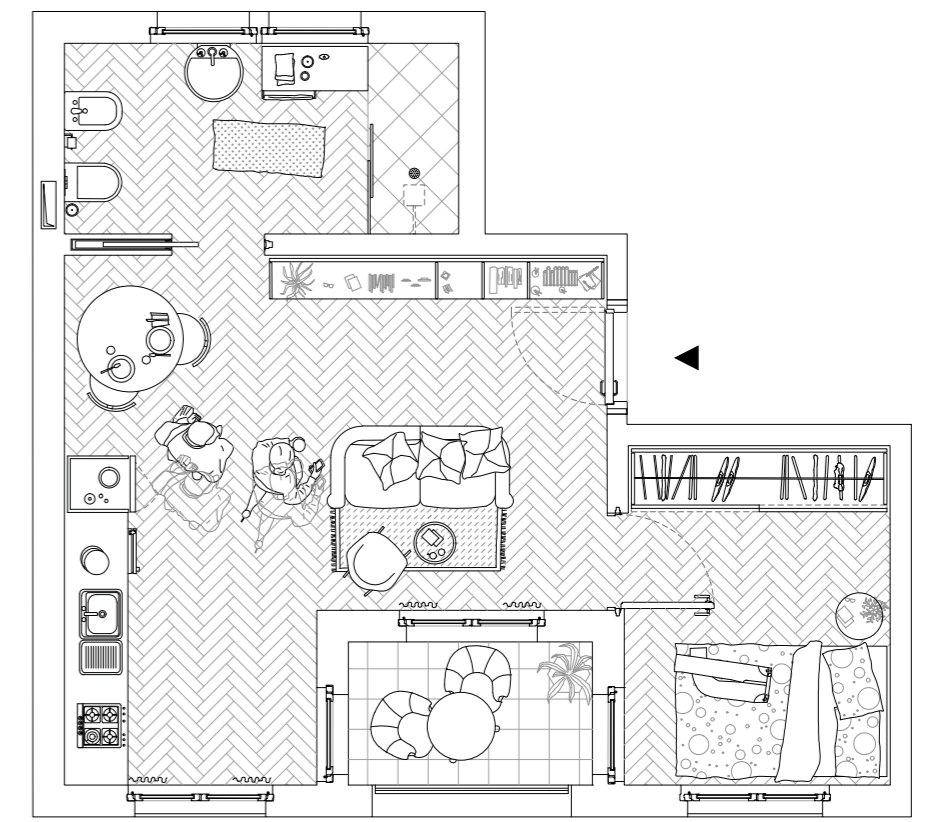
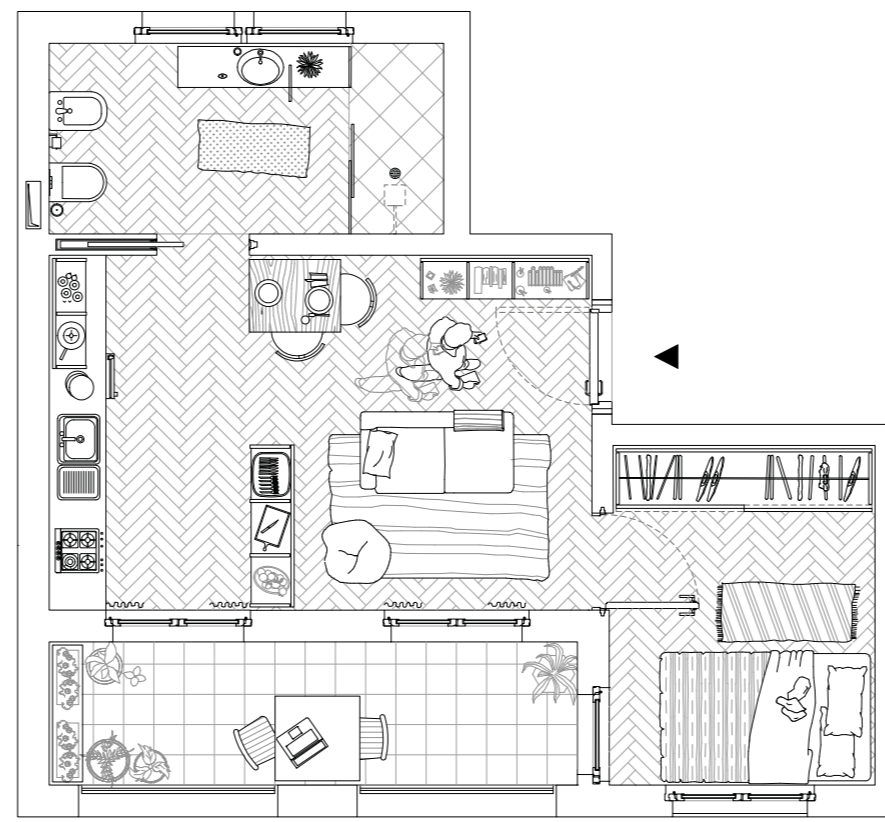
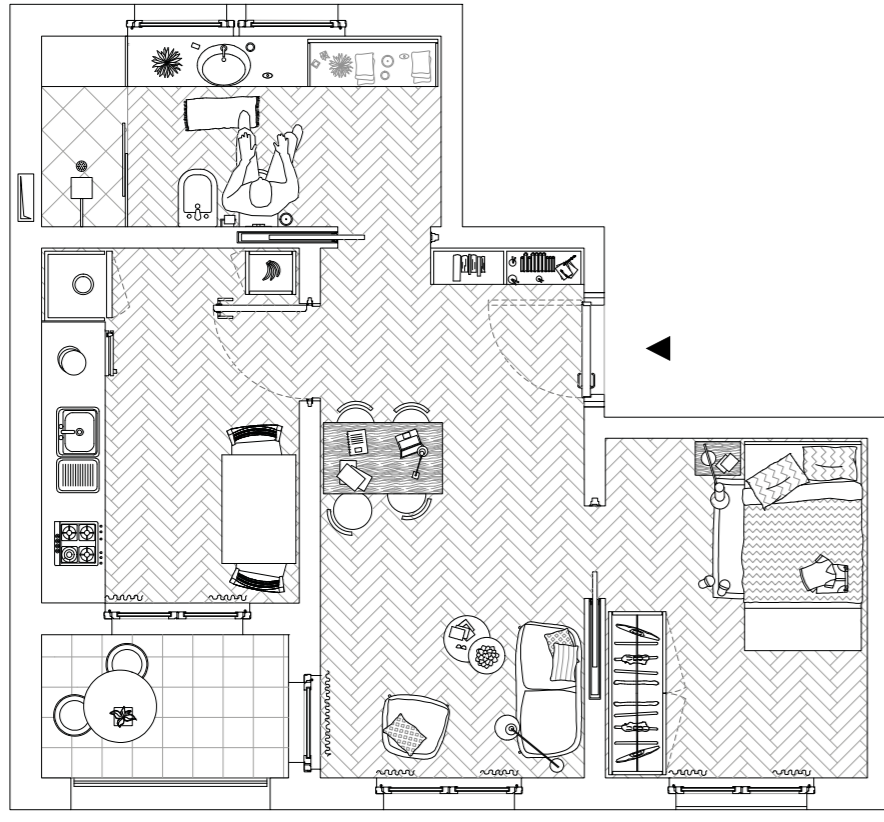
Fixed furniture Daily movement Circulation

Apartment C

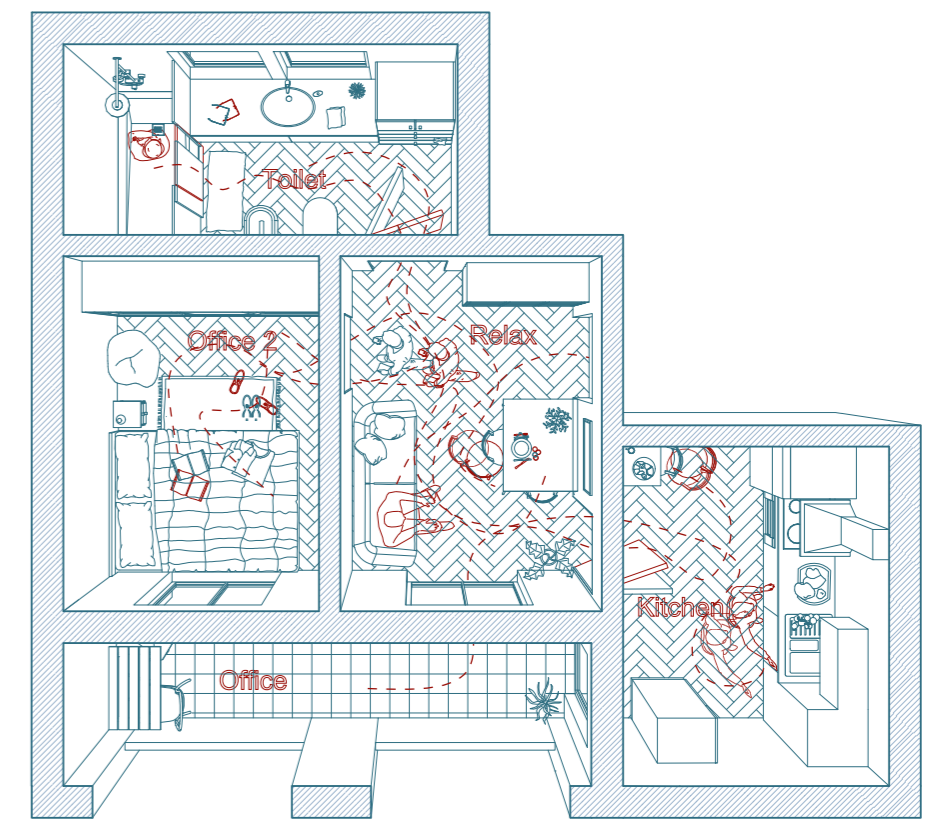
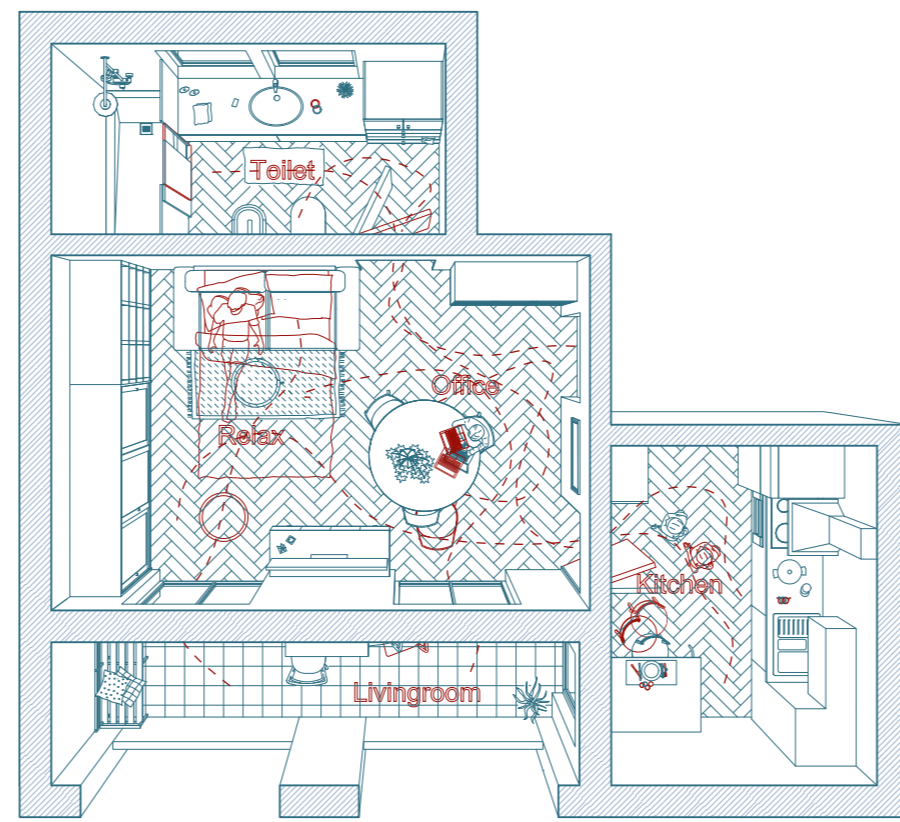
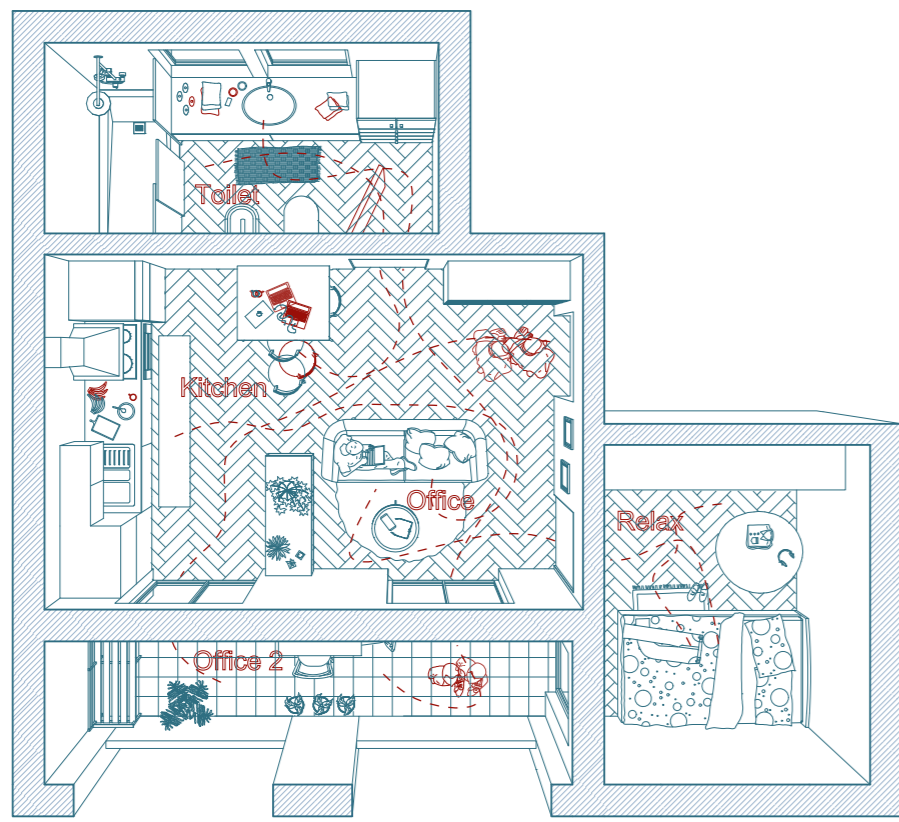
1. SC

2. SC

3. SC



Timeline changement of the apartment 3. SC



TODAY

4 YEARS LATER

20 YEARS LATER



Single student
Giuseppe, 23



Couple
Giuseppe, 28
Carla, 27

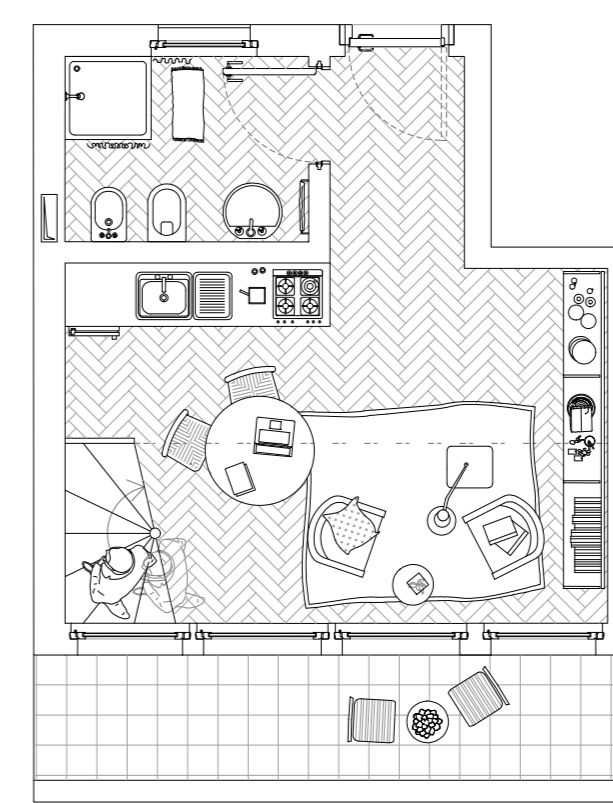
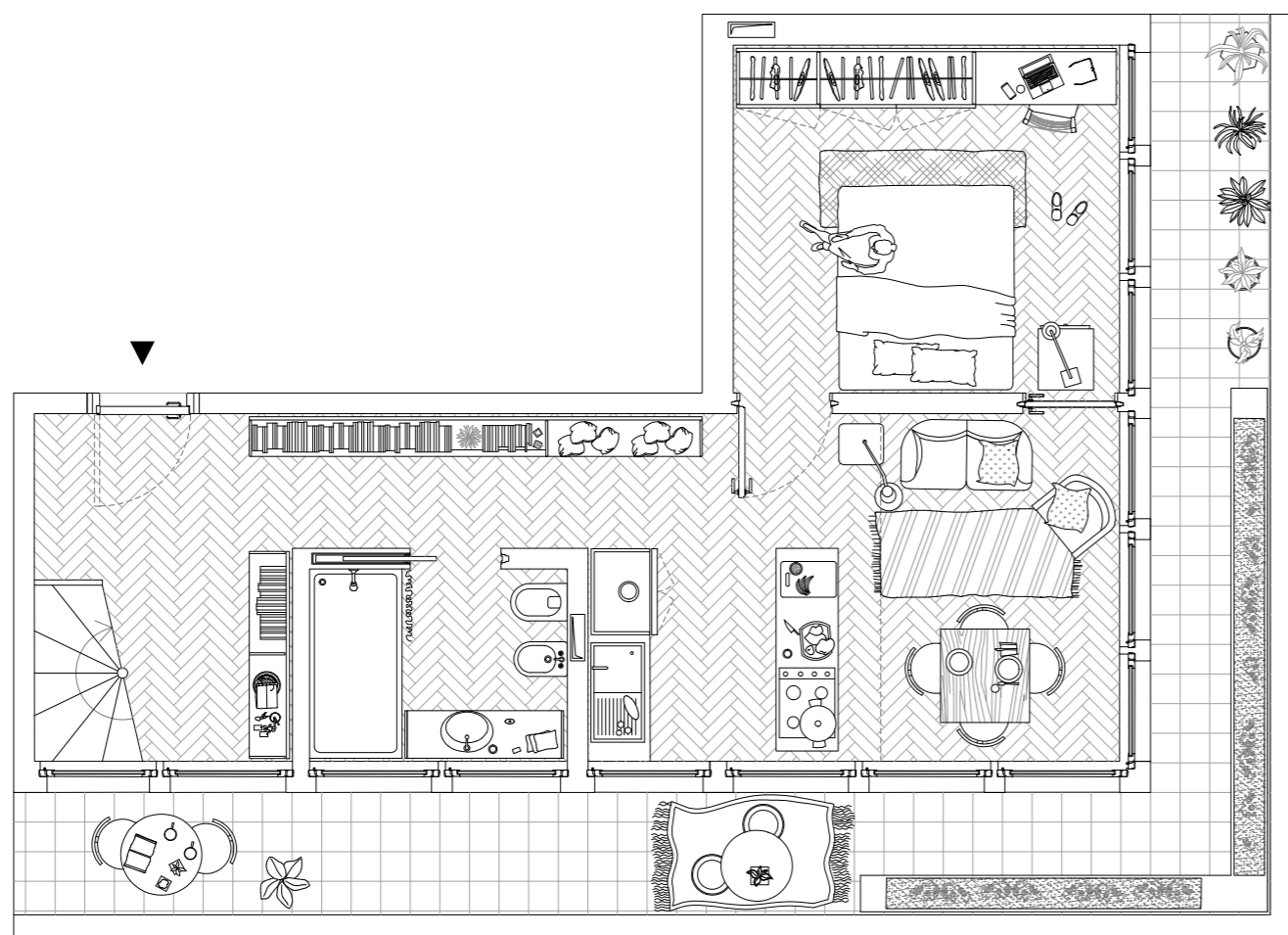


Adult worker
Giuseppe, 43

Apartments Duplex

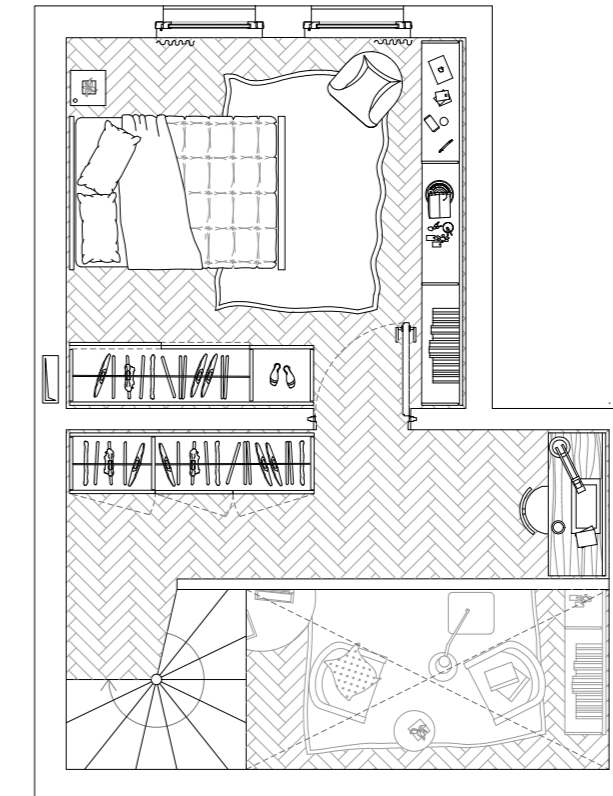
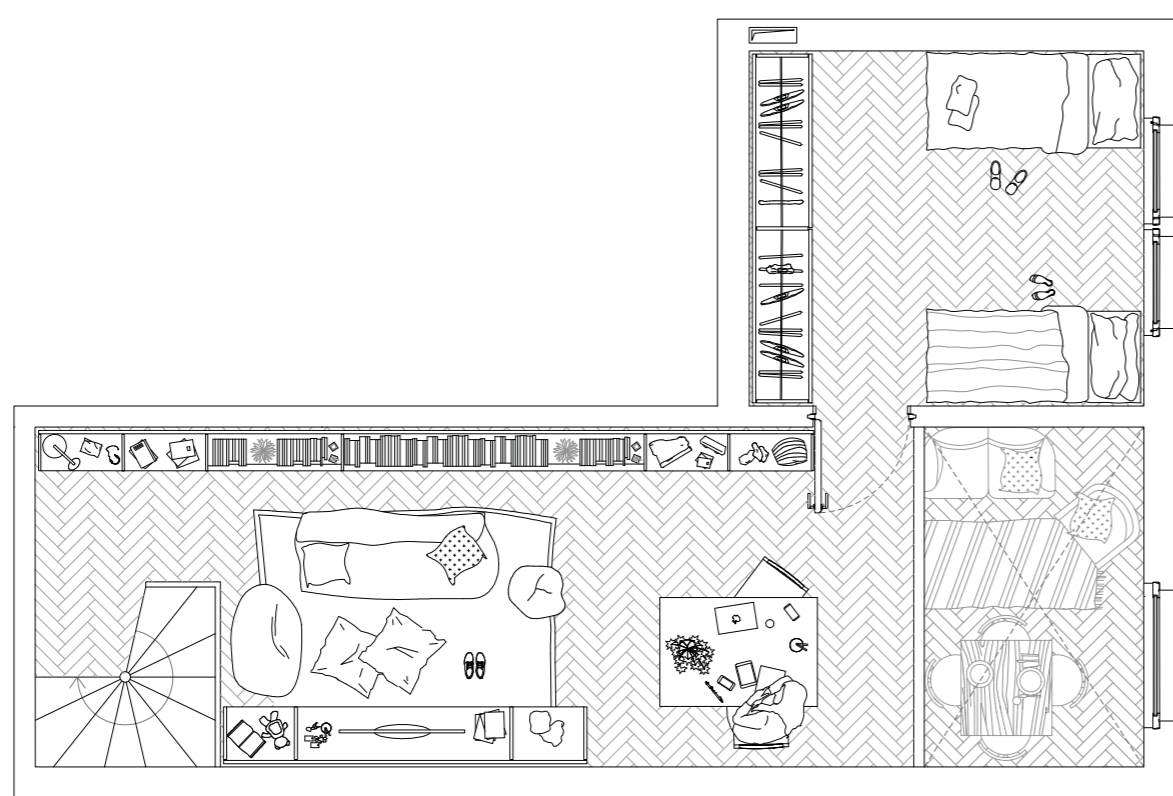
1. Duplex XLF

2. Duplex SH



Duplex XLF*

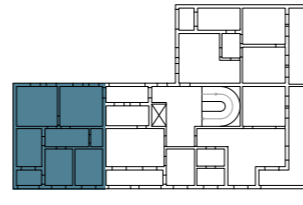
Duplex SH*



TYOLOGICAL FLEXIBILITY

Apartment D : trasformations according to users

0 2 m



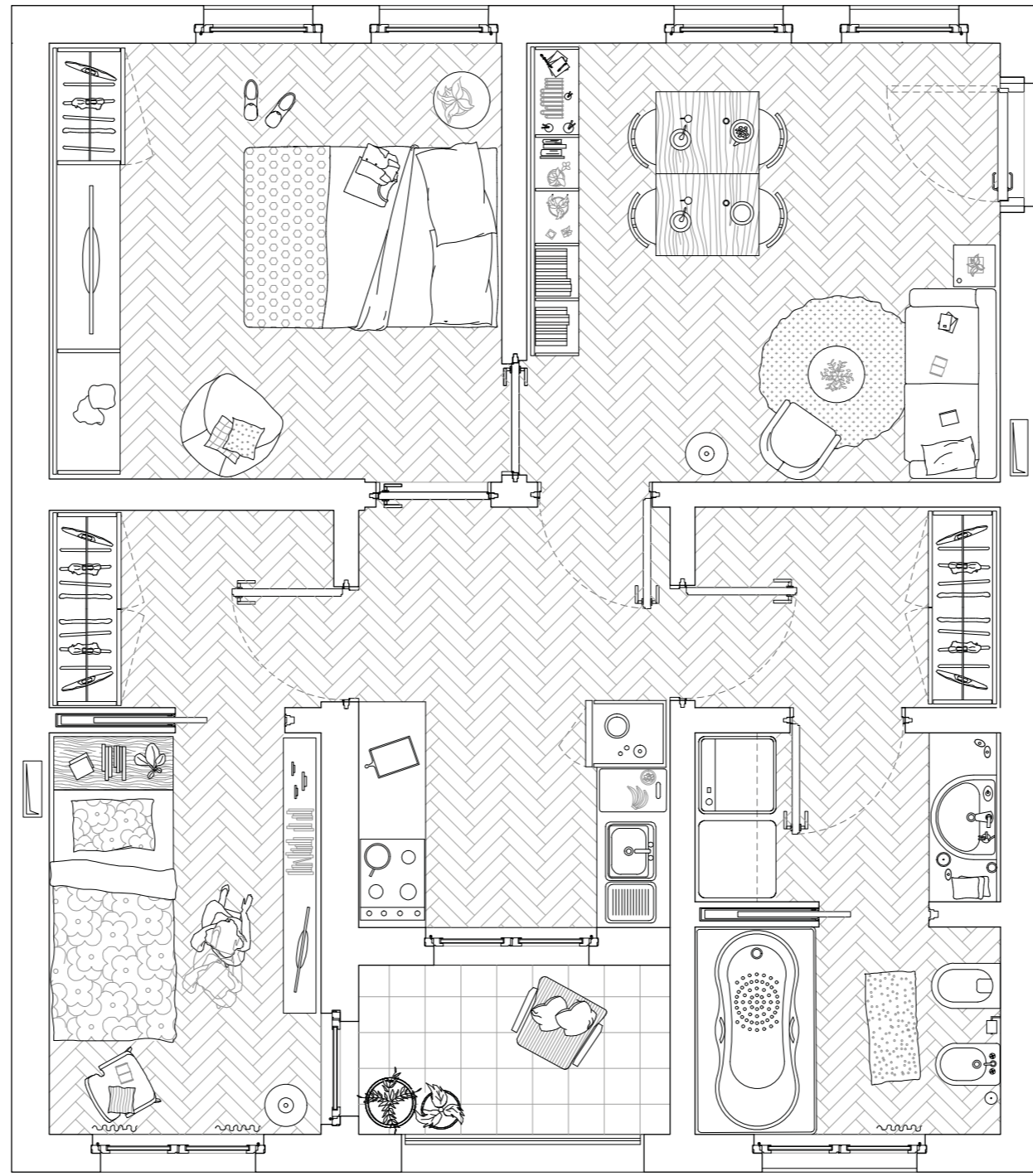
Adult + a Plus



62 sqm



- 1 bathroom
- 1 kitchen
- 1 single bedroom
- 1 single bedroom
- 1 livingroom



This category consists in single adult people living together.

Traditional Family

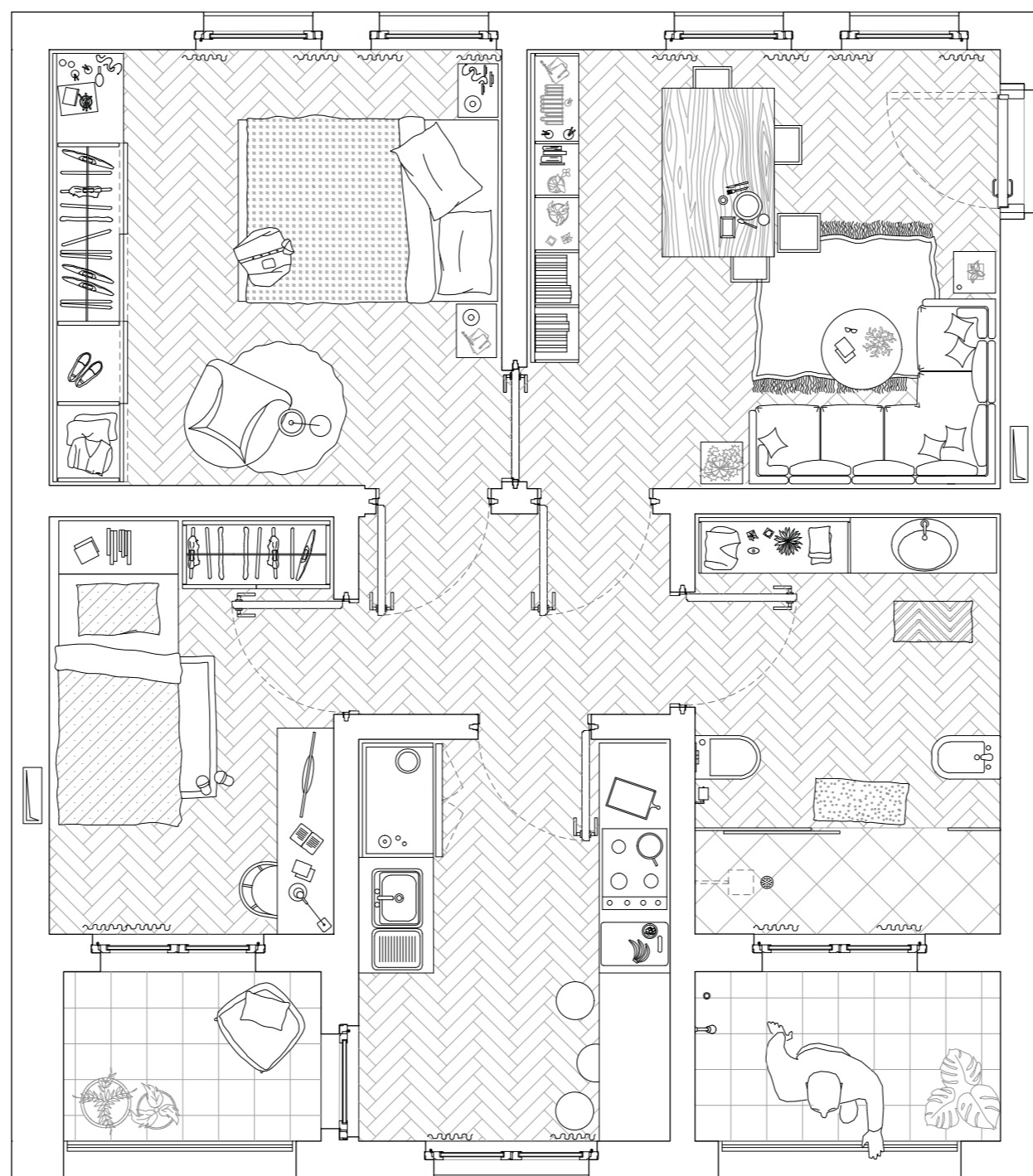


59 sqm



- 1 bathroom
- 1 kitchen
- 1 double bedroom
- 1 single bedroom
+

work space
- 1 livingroom



This category includes households composed by parents with children.

Adult + Adult(s)



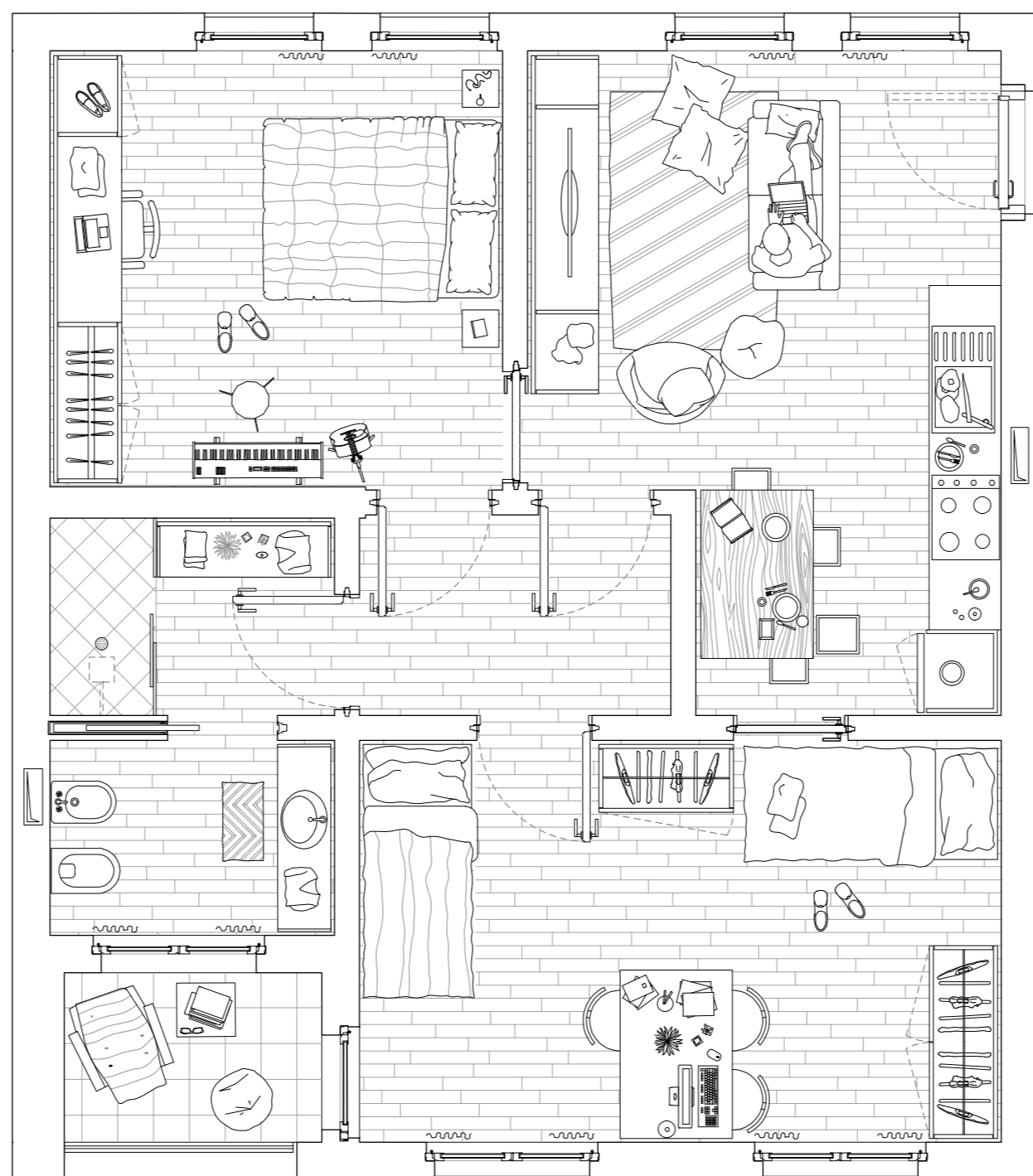
62 sqm



- 1 bathroom
- 1 kitchen
+

livingroom
- 1 single bedroom
- 1 double bedroom
+

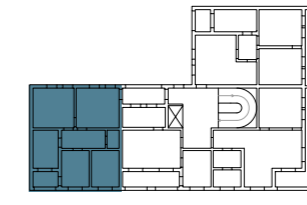
study space



This category contains single independent adults that decide to live together.

TYOLOGICAL FLEXIBILITY

Apartment D : temporal trasformations



0 — 2 m

Fixed furniture

Daily movement

Circulation

Family

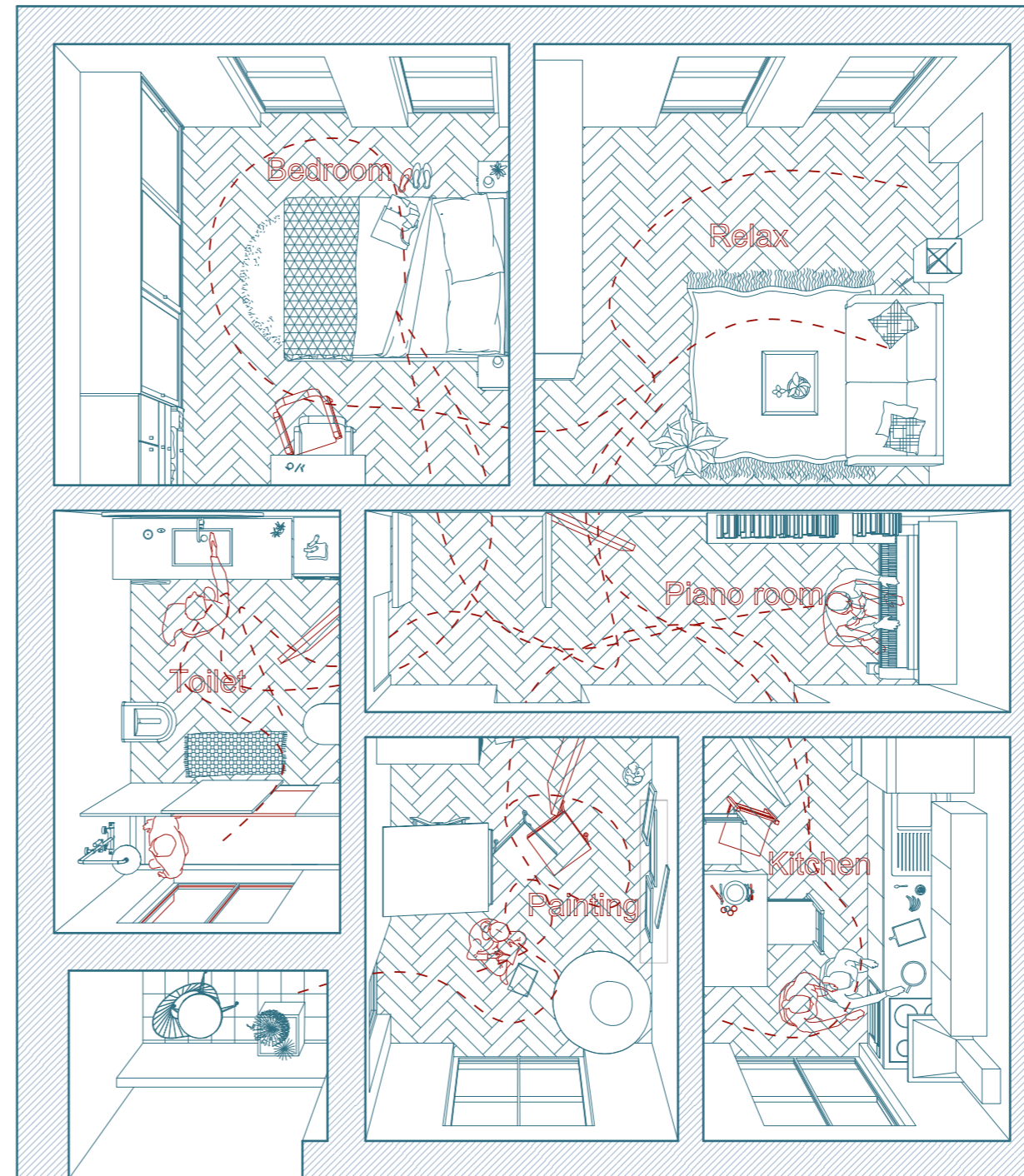
Nicolò, 48
Giorgia, 45



Nicolò and Giorgia have been married for 15 years. She is a doctor and he is an artist.

He loves to play piano, and he has a painting studio, because he is professor of artistic disciplines. On the contrary, she works all day outdoor.

TODAY



Family + erasmus

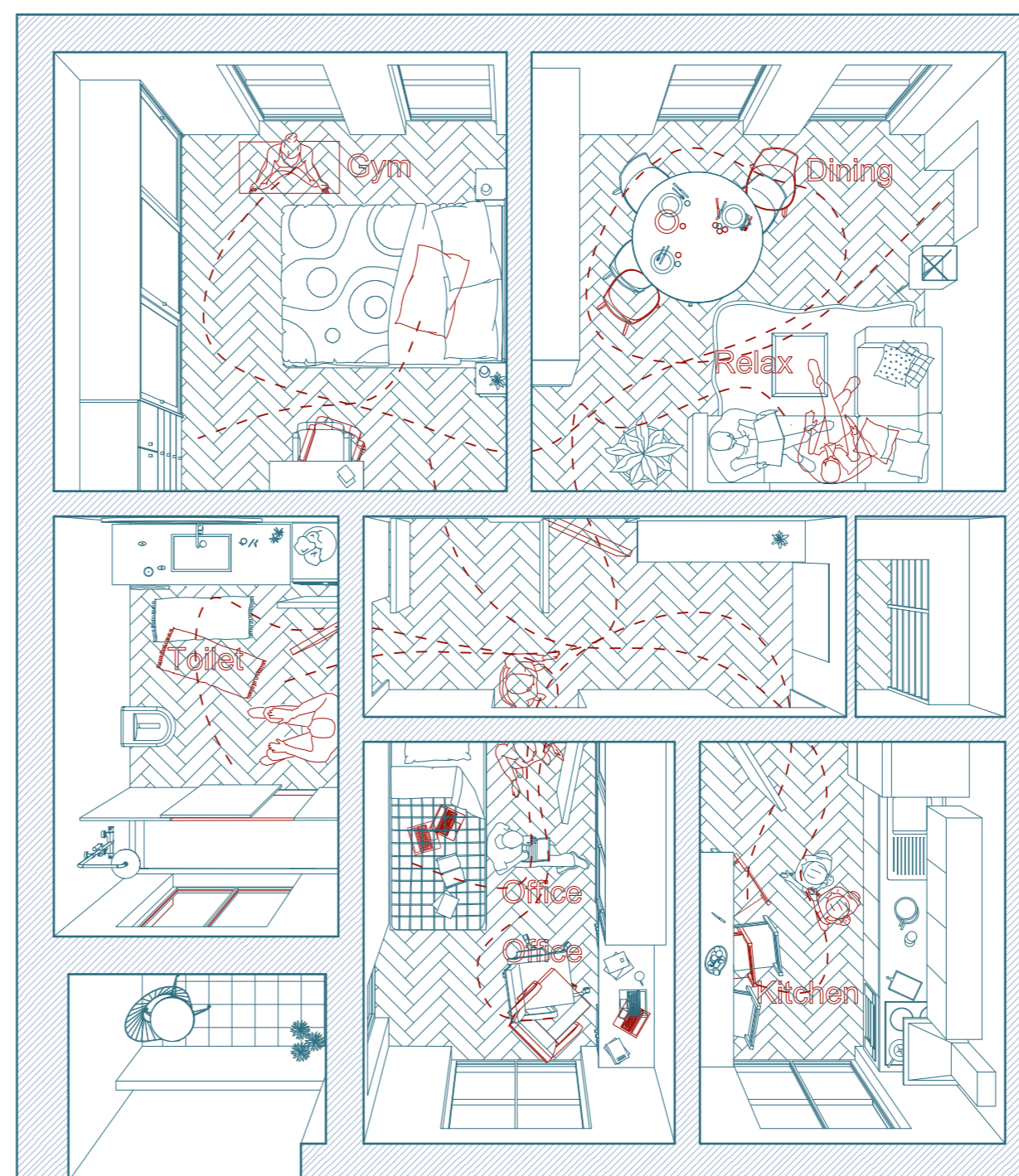
Nicolò, 52
Giorgia, 49
Milo, 24



Nicolò and Giorgia cannot have sons, so they decided to accommodate other people in their house. Today there is Milo, a greek student in erasmus in Milan.

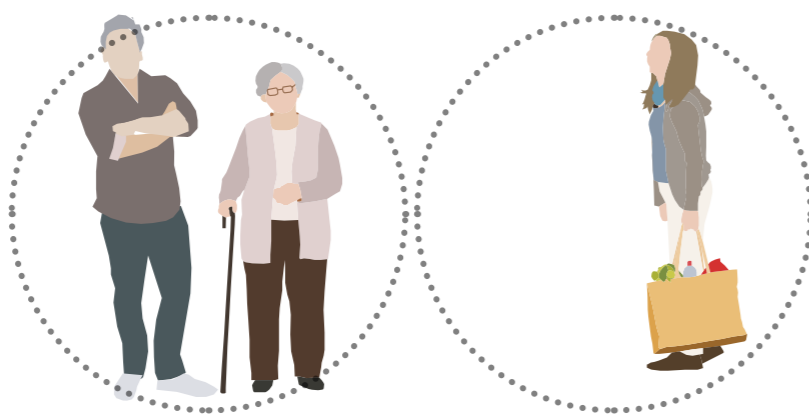
They arranged a room in the old Nicolò's painting room for their guest.

4 YEARS LATER



Retired people + caregiver

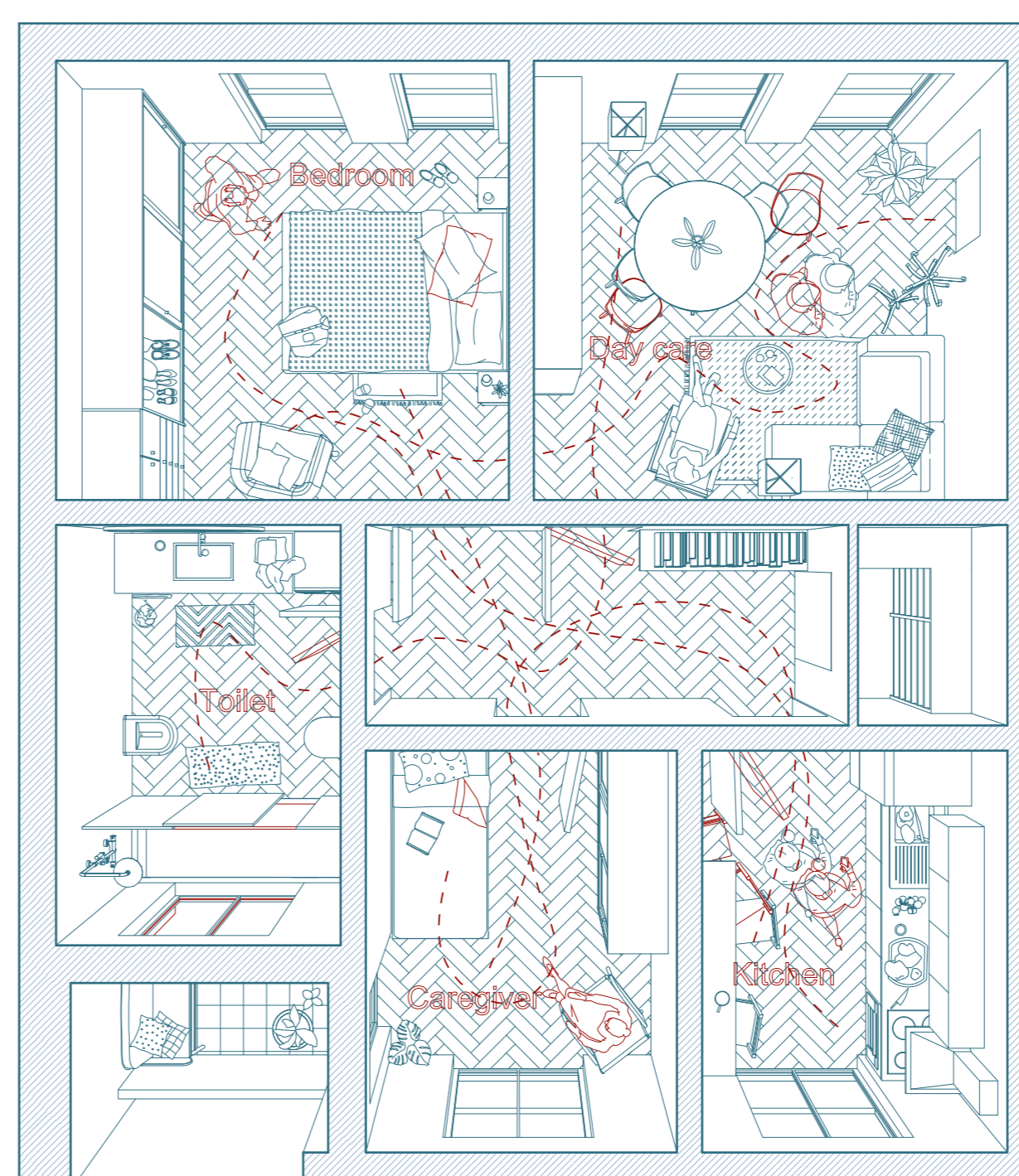
Nicolò, 82
Giorgia, 79
Carmen, 38



After twenty years, Nicolò and Giorgia, retired people, need care.

For this reason they rearrange the guest room for the caregiver, Carmen. In this way she can have her own room and privacy, and help them everyday.

20 YEARS LATER



LIFE INSIDE THE BUILDING

Section A-A'

0 ——— 2 m



LIFE INSIDE THE BUILDING

Perspective section

