

ECOWEEK 2010

GREEN HOUSE OF ZERO EMISSION

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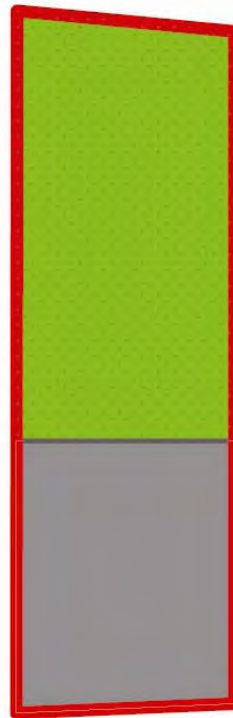
Office: AREA™



Maximum lot coverage
70%

PLAN

street



Proposed lot coverage
40%

PLAN

street

	M ² /person living space	M ² /person green
GREECE	30 - 35m ²	2,5m ²
EUROPE	>20m ²	7 - 10m ²

PROPOSAL	25m ²	12m ²
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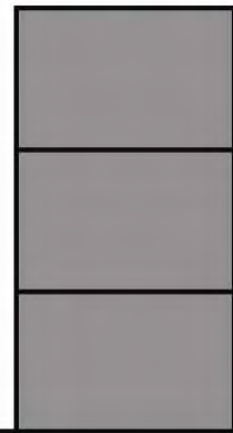
PLOT AREA 313,84m²

The building's floor area is reduced in order to get more green space at the lot in the city center and reduce the urban heat island effect



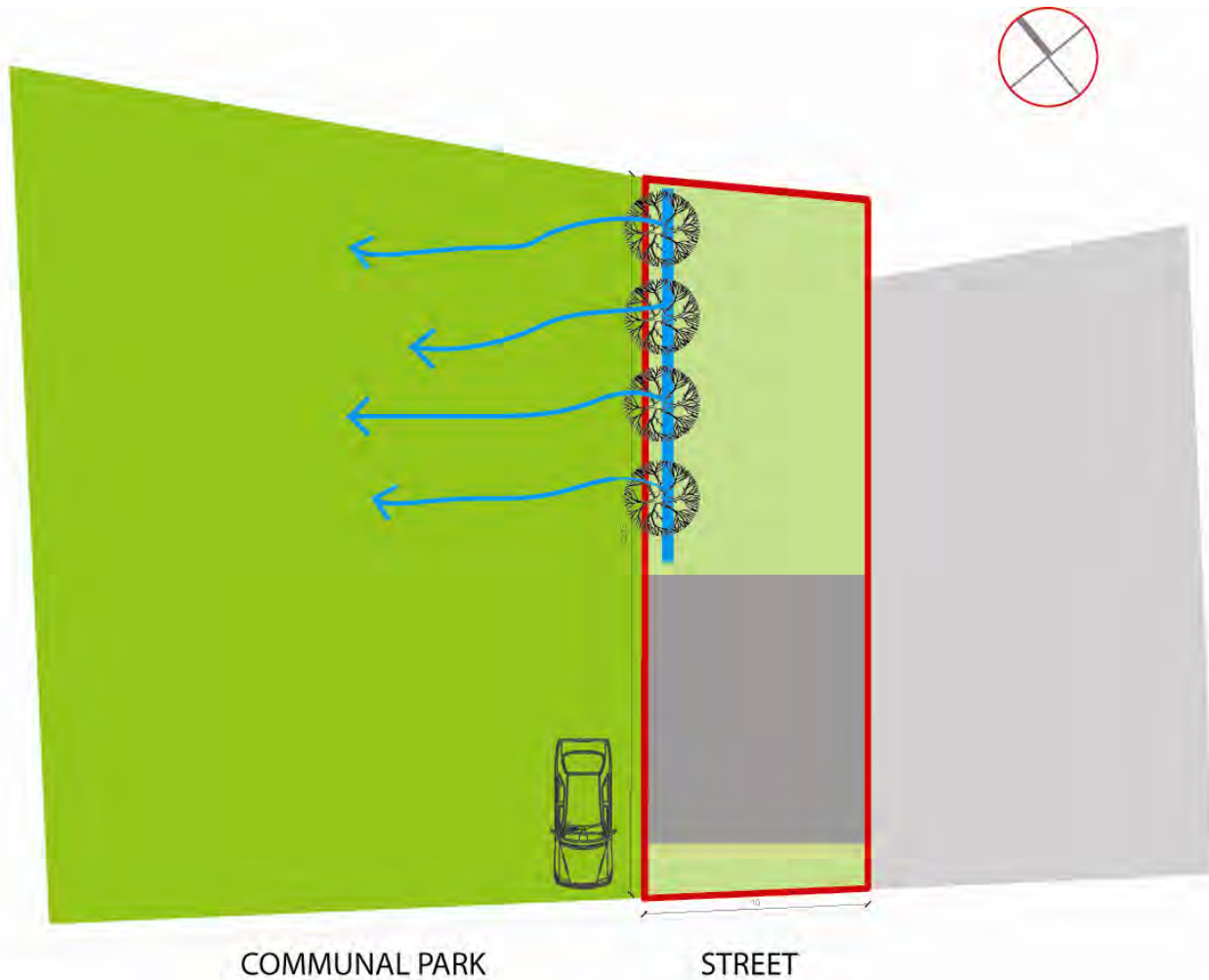
Typical 3 story building

SECTION



3 family apartments
organized split levels

SECTION



- We create a natural fence of trees by placing them in a row in order not only to ensure the privacy for the habitants but also to help the natural irrigation towards the communal park.
- We adopt the car club strategy: one car is being used by the whole building. We manage to reduce the use of the car by limiting the parking spaces.

SUSTAINABILITY AT THE SCALE OF THE NEIGHBOURHOOD



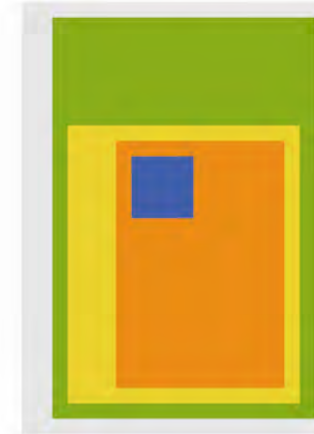
NEUTRAL PLAN AND SECTION
PLACING SPACES ACCORDING TO
IDEAL TEMPERATURE

PROPOSED PLAN AND SECTION
PLACING SPACES ACCORDING TO
IDEAL TEMPERATURE, PHYSICAL
LIGHTING AND CIRCULATION








PLAN



PLAN



IDEAL TEMPERATURES FOR EACH USE

	BATHROOM	22 °C	
	LIVING ROOM	20 °C	
	KITCHEN	18-20 °C	
	BEDROOM	16-18 °C	
	STAIRCASE	12 °C	
	HALLWAYS	12 °C	
	LAUNDRY ROOM	12 °C	
			COOLER

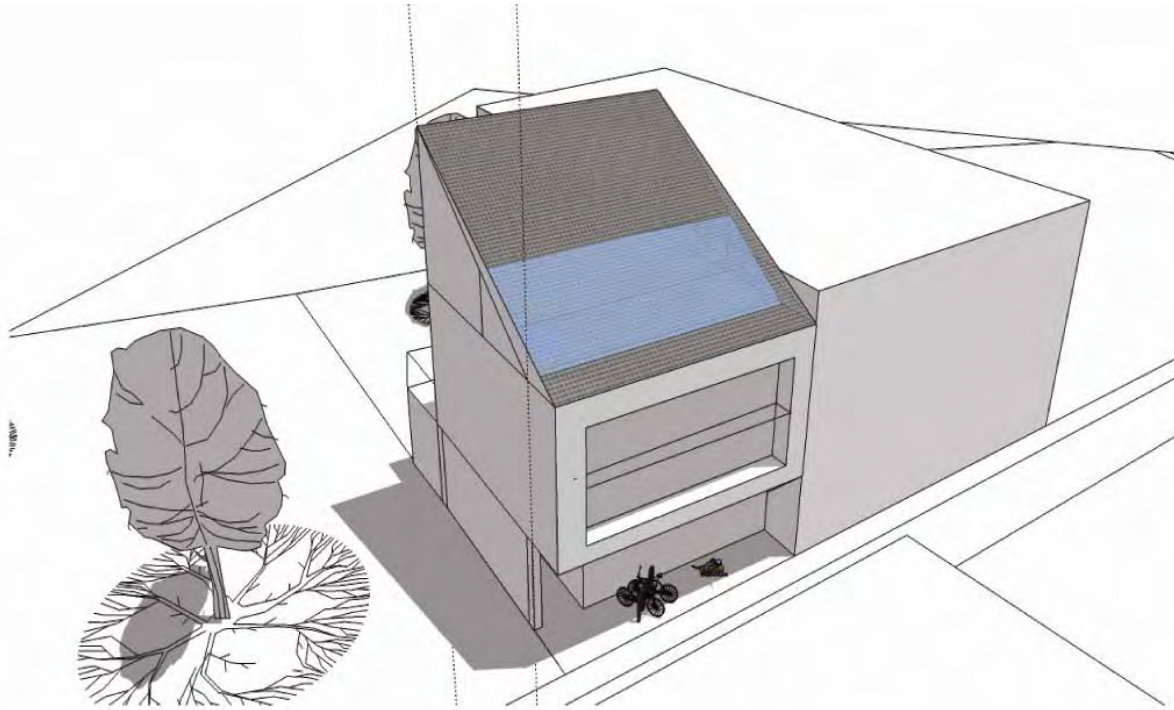
SECTION



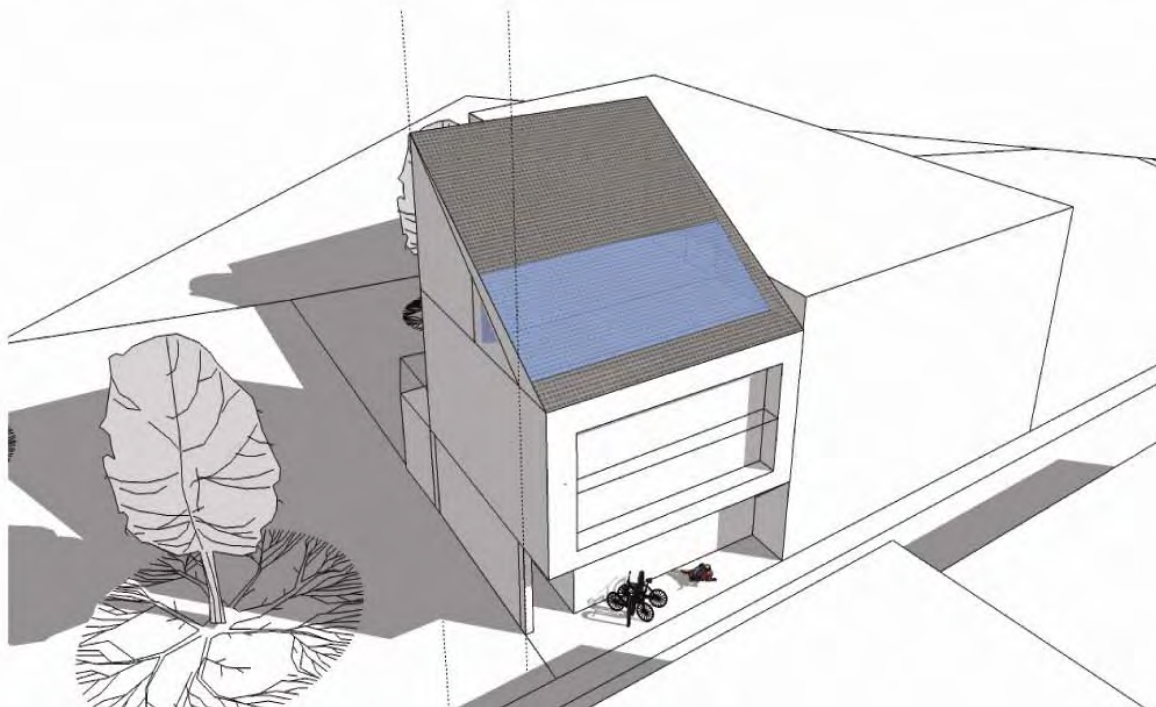
SECTION



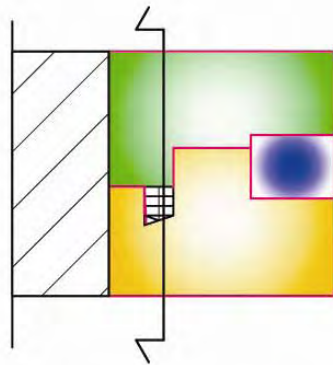
THE MATRYOSKA DOLLS STRATEGY



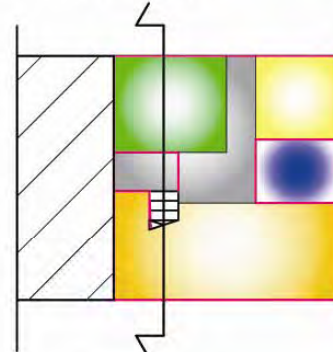
POSITION OF SHADOW ON JULY 21



POSITION OF SHADOW ON DECEMBER 21

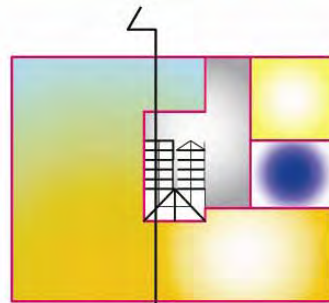


ground level

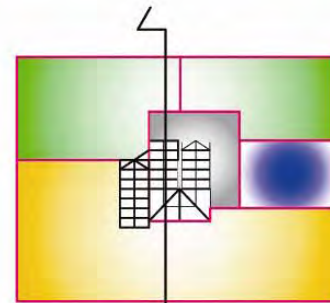


ground level

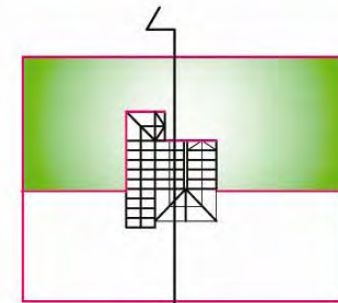
ONE FAMILY - 4 MEMBERS



1.

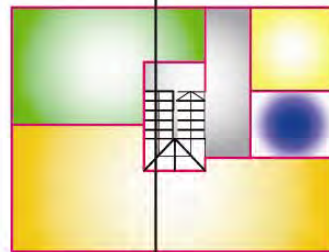


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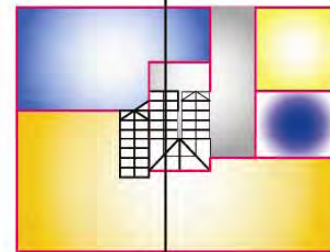


gallery

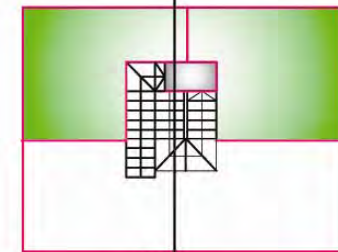
TREE FAMILIES - TOTAL 8 MEMBERS



1.



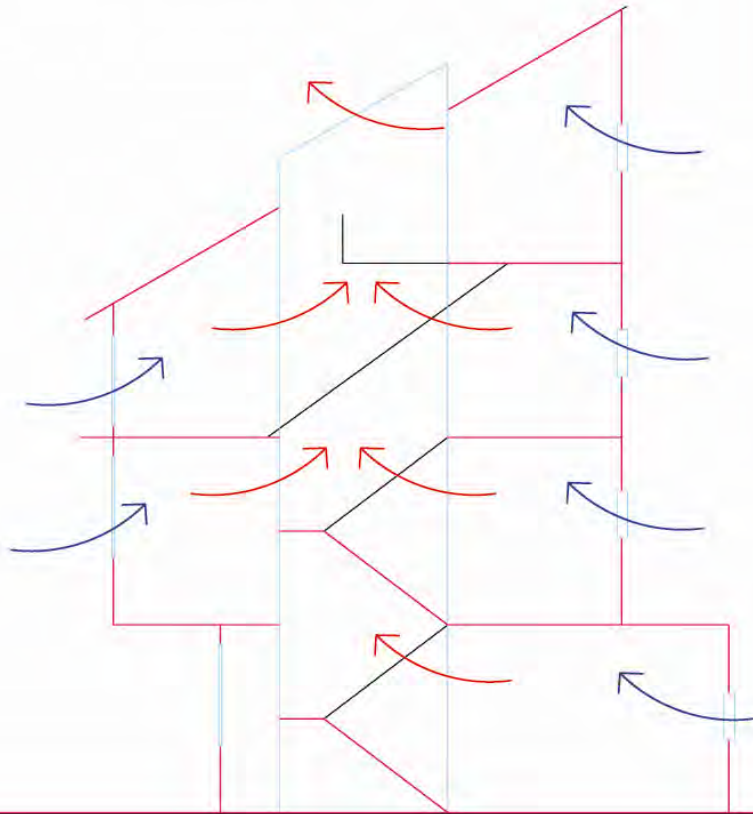
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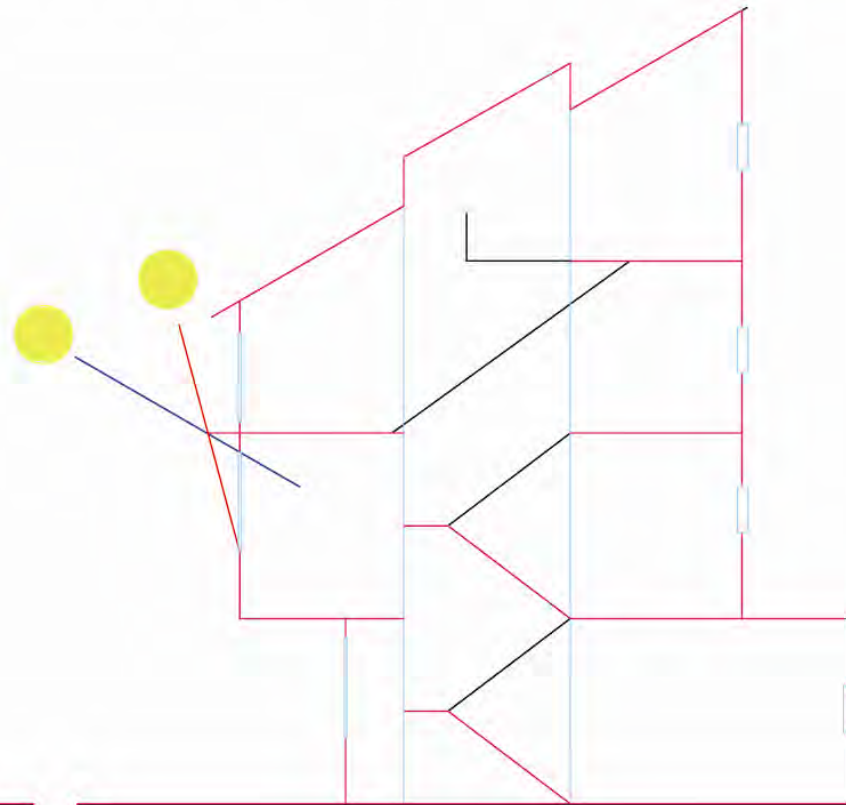
gallery

TYPICAL SECTION

AIR CIRCULATION DIAGRAM



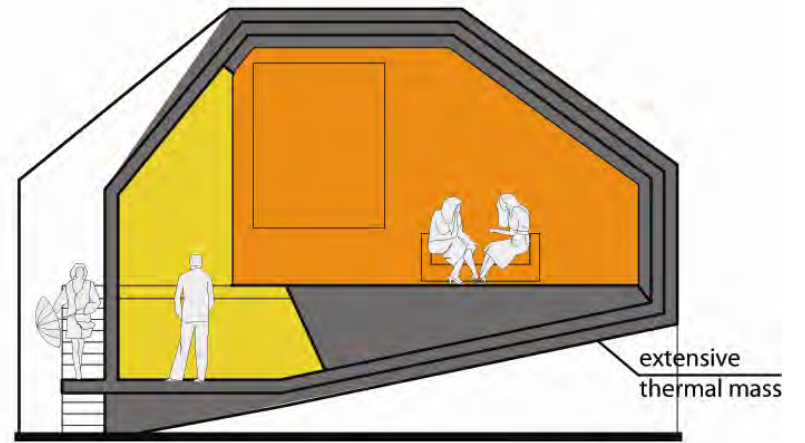
SUN DIRECTION DIAGRAM



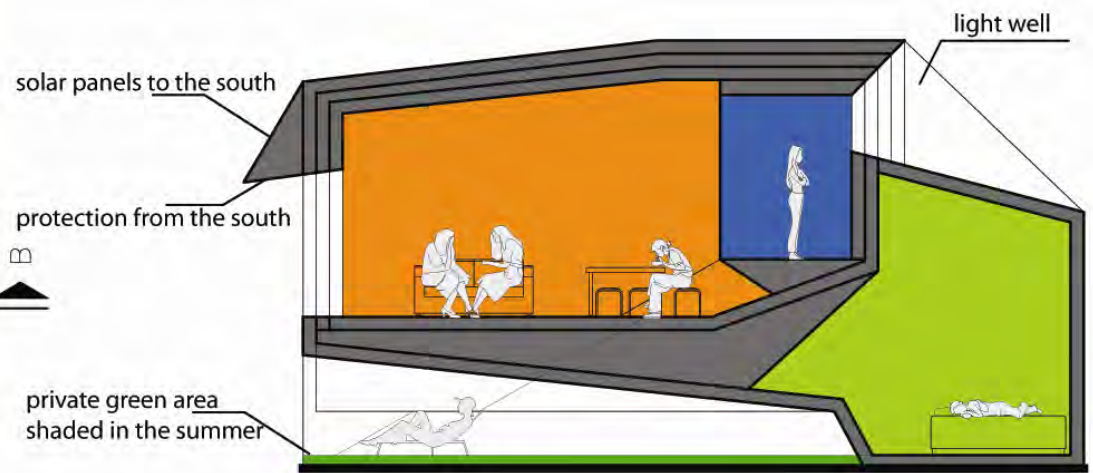
TYPICAL PLAN



STREET

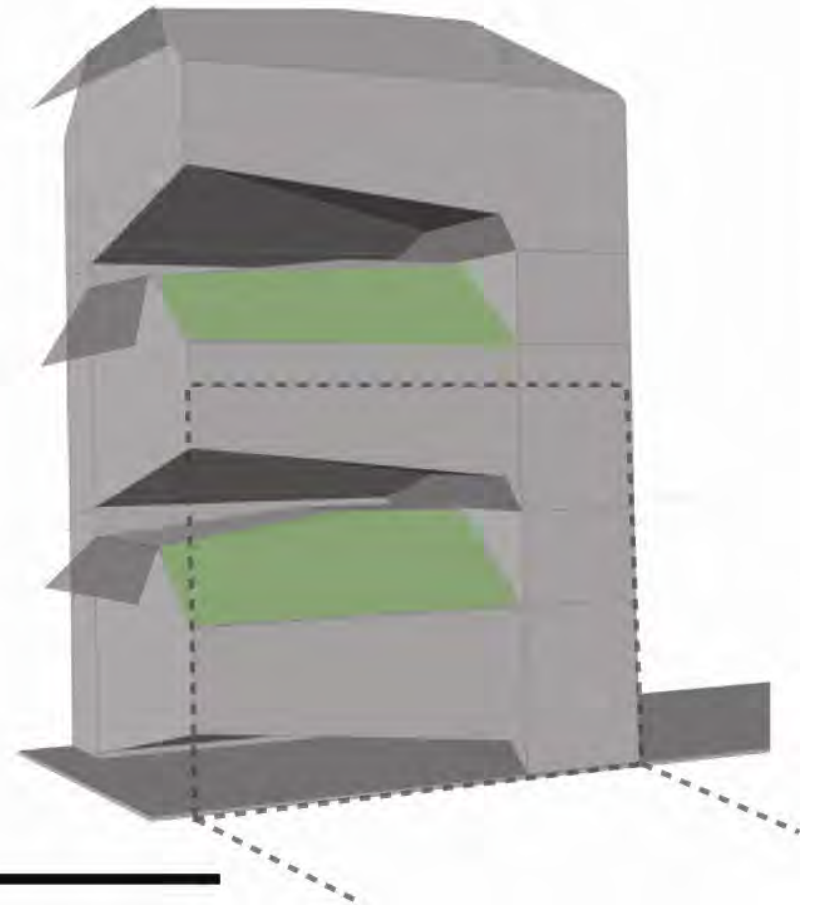
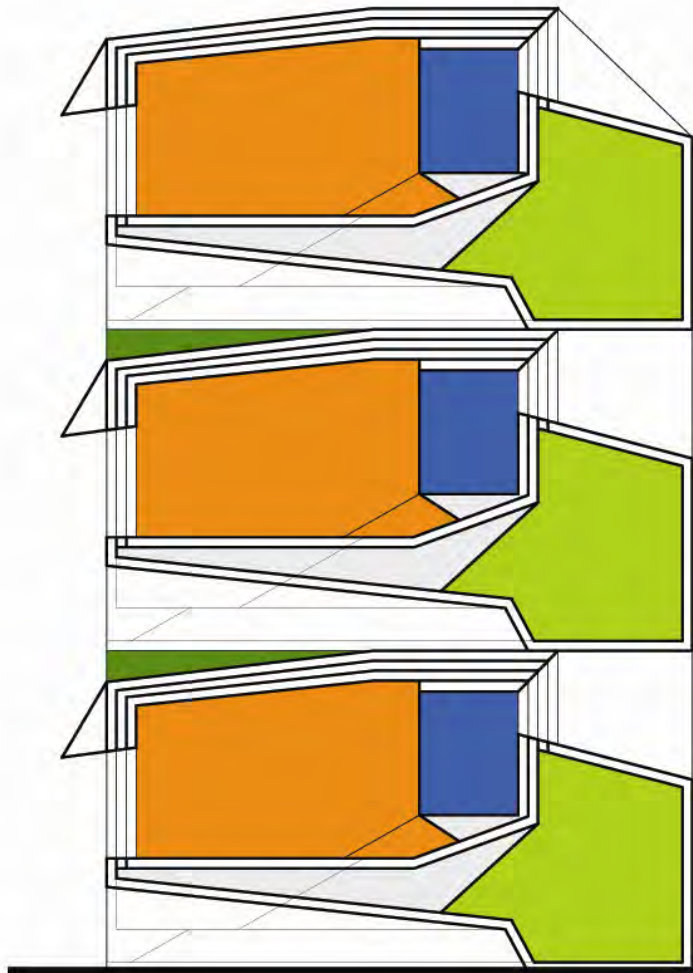


SECTION B



SECTION A

POSSIBLE FUTURE EXPANSION OF THE FAMILY UNIT VERTICALLY



Materials and techniques used

- Heat pump for heating and cooling
- Solar thermal collectors (extra heat collected in summer is stored in rockbin under ground)
- Stairways space used for ventilation and cooling
- Materials:
 - Traditional brick wall with 15cm insulation
 - Double glazing windows shaded with overhangs, whose size is bound by the sun angles in winter and summer