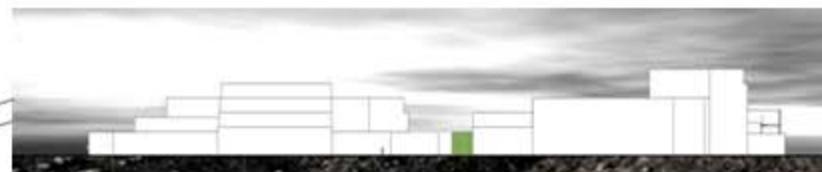


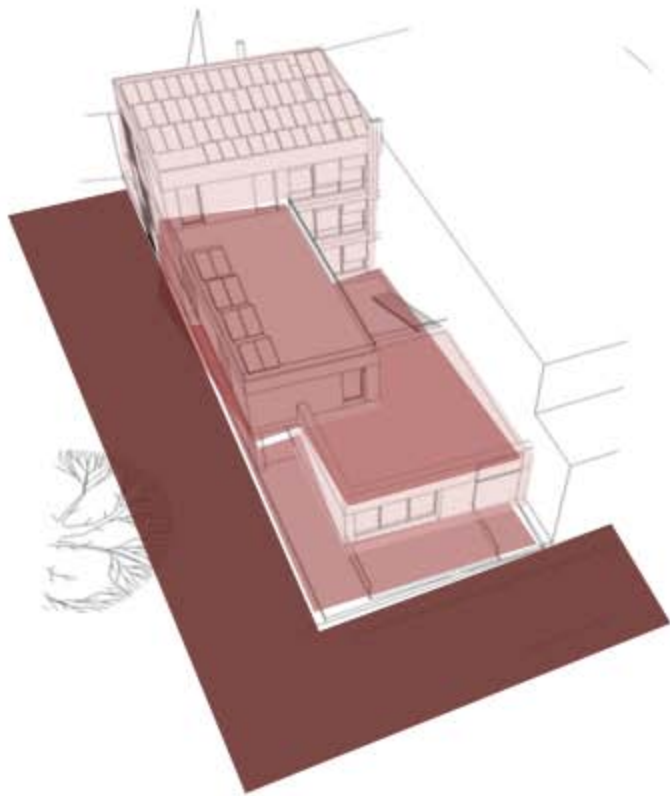
Dwelling for a community





- block 64004a
- plot area: 313 m<sup>2</sup>
- max. building area: 2.2 x plot area
- max. footprint area: 70% of plot area

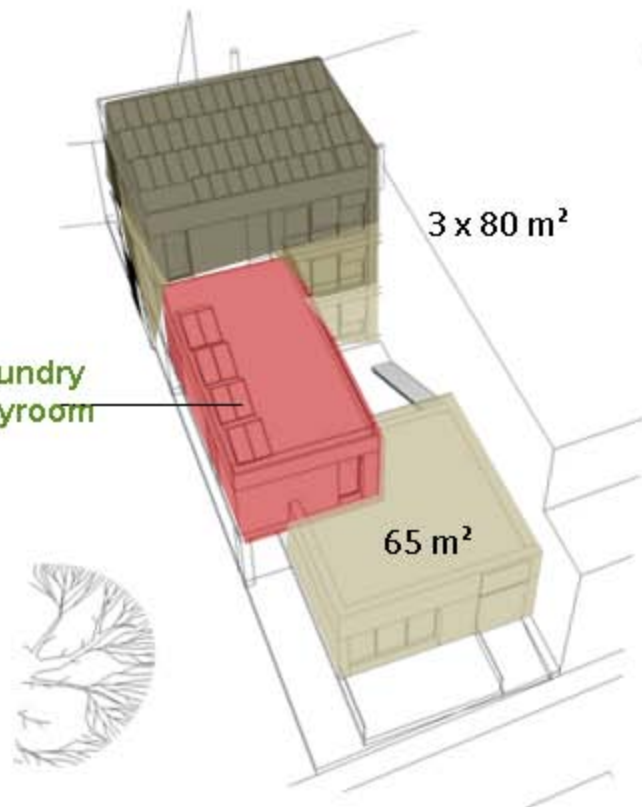




public use



private use



communal laundry  
& playroom

3 x 80 m<sup>2</sup>

65 m<sup>2</sup>

spaces for common use

apartments





10.00

12.00

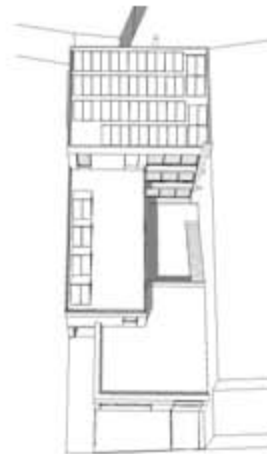
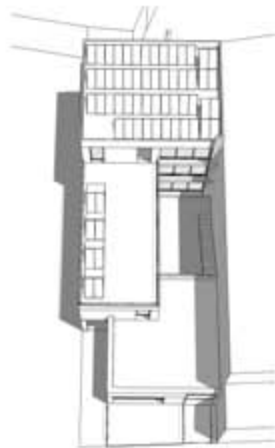
14.00

16.00



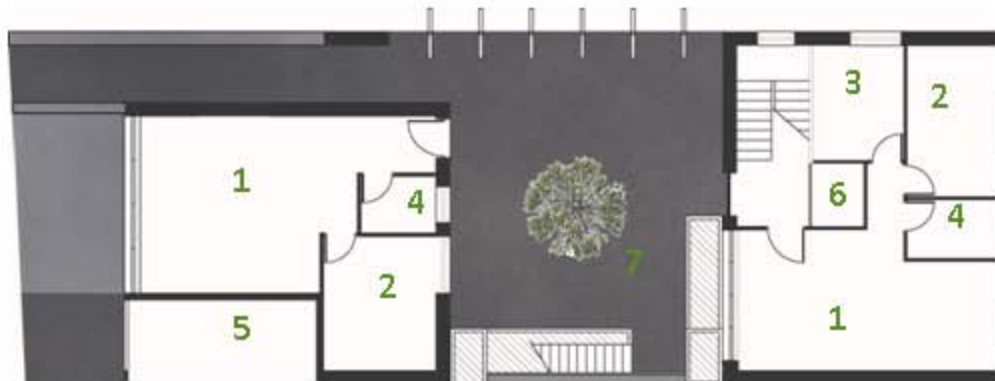
DECEMBER

orientation

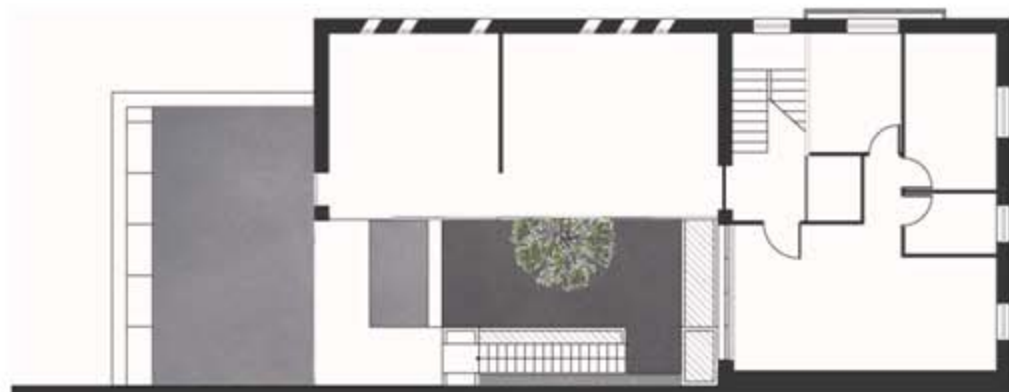


JUNE

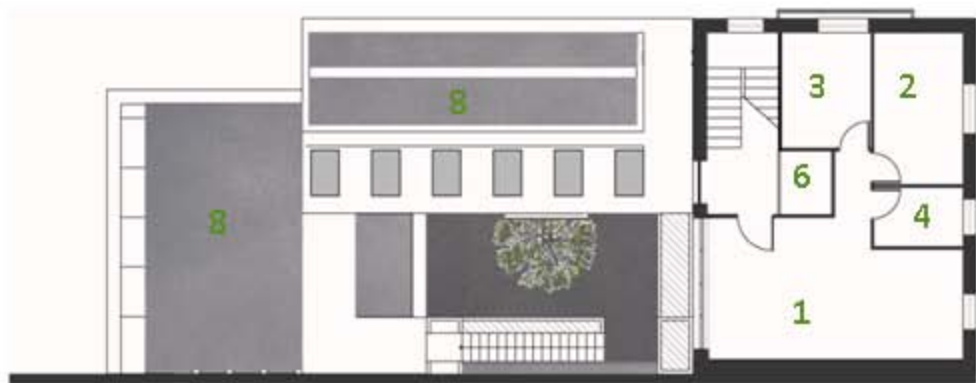
Sun study



floor plan



1<sup>st</sup> floor plan

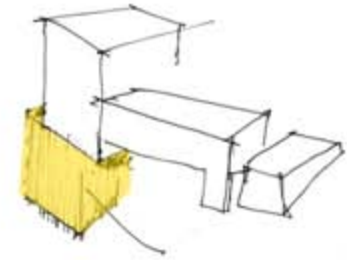


2<sup>nd</sup> floor plan

1. living room-kitchen
2. master bedroom
3. bedroom
4. bathroom
5. parking
6. elevator
7. open yard
8. planted roof

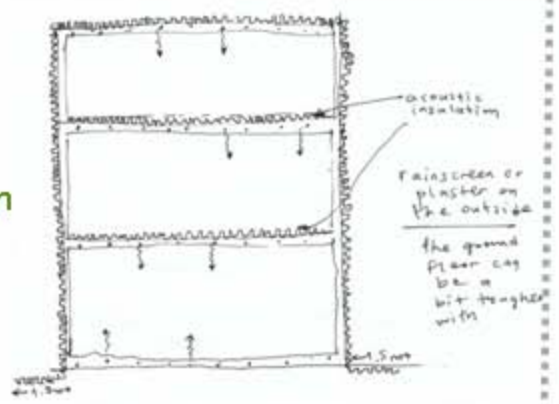


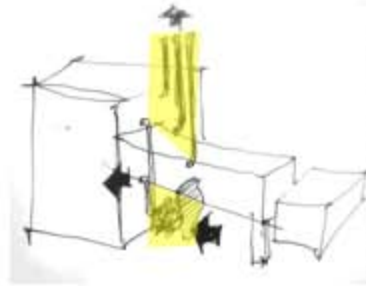
reduce consumption  
educate users



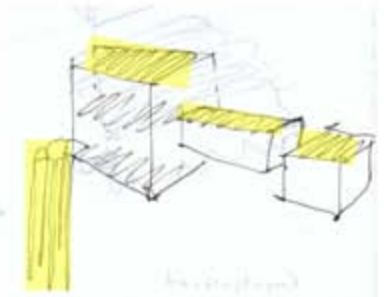
collect rain water

external insulation



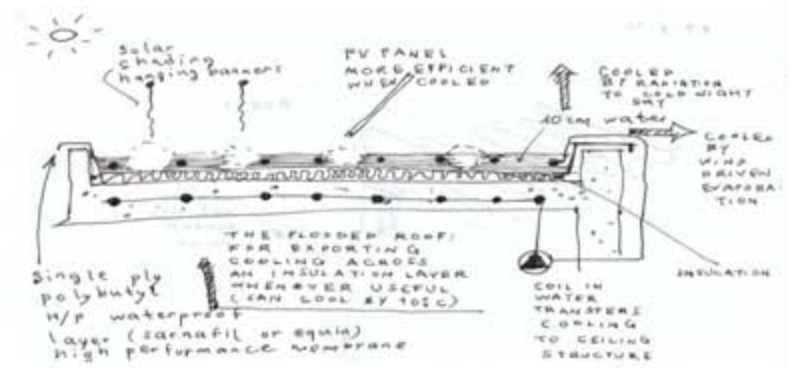
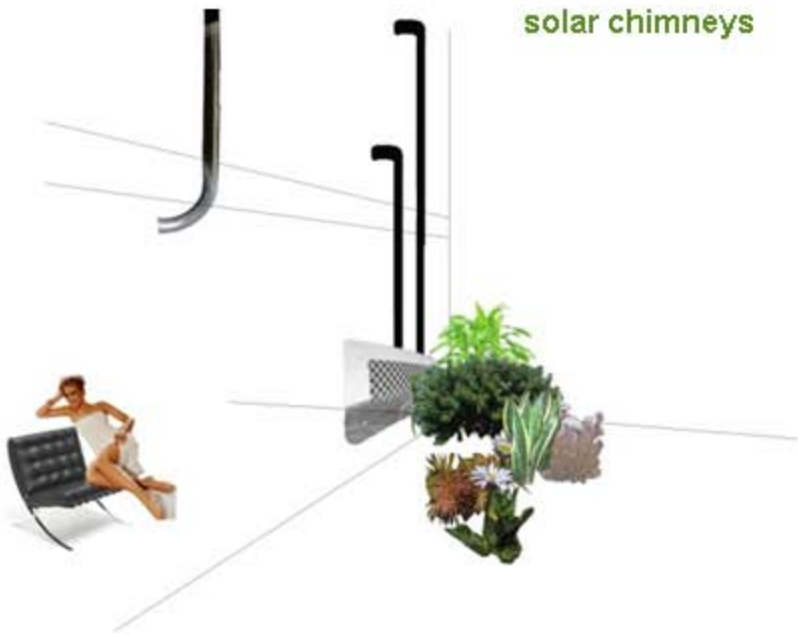
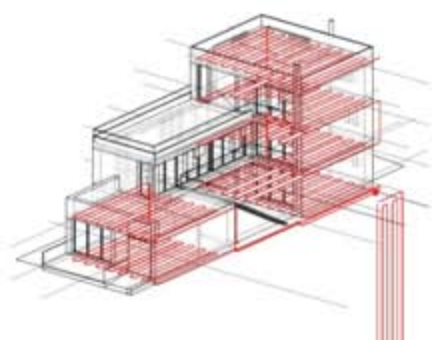


solar chimneys



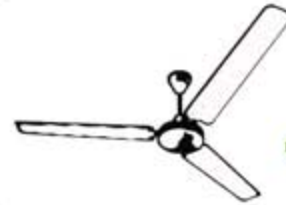
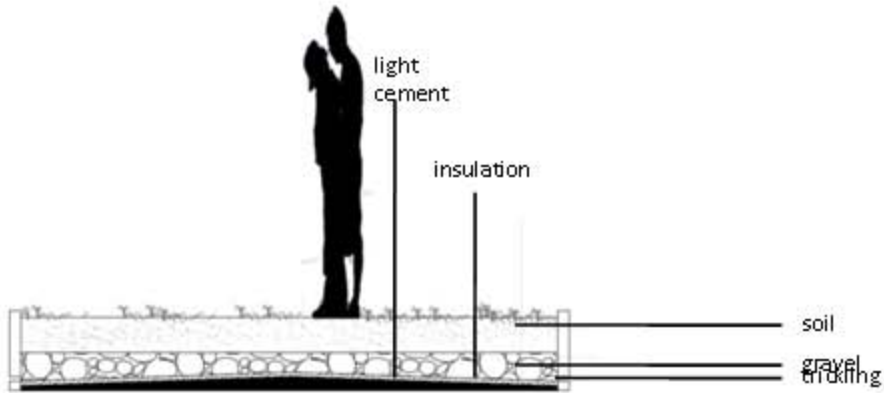
flooded roof cooling

borehole heating





planted roofs



ceiling fans



recycle bins



car pool system

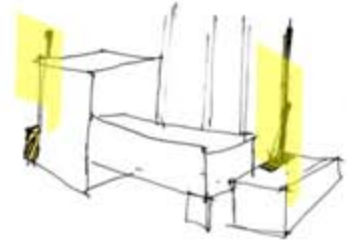
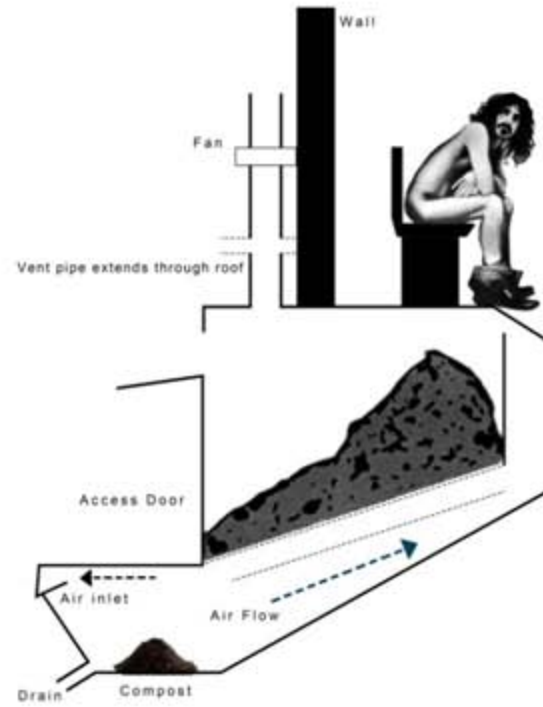


bike shed










reed bed



compost toilet

T = 250 gr  per day

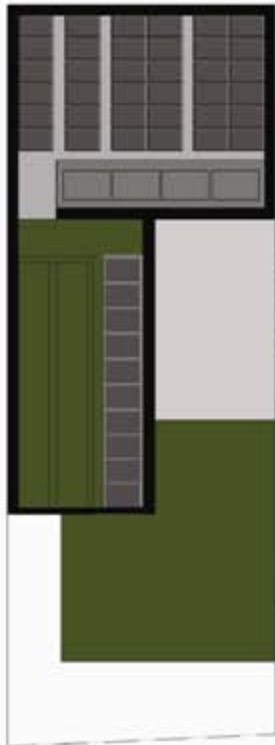
 x 15 = 3,7 kg  per day

after 6 months: 650 kg  > 11 kg 

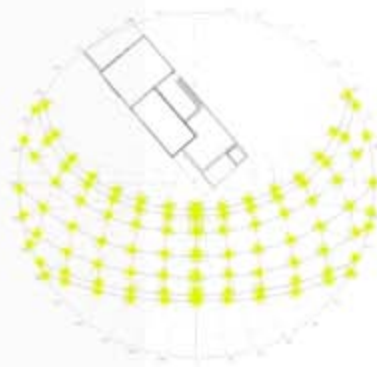




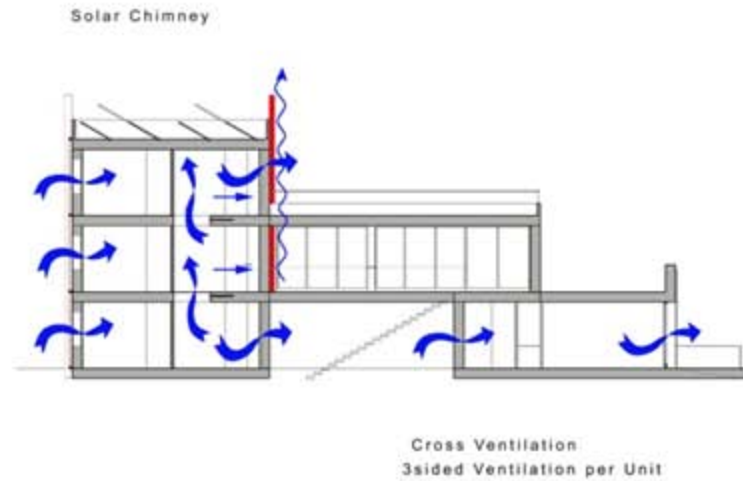
solar thermal and PV panels



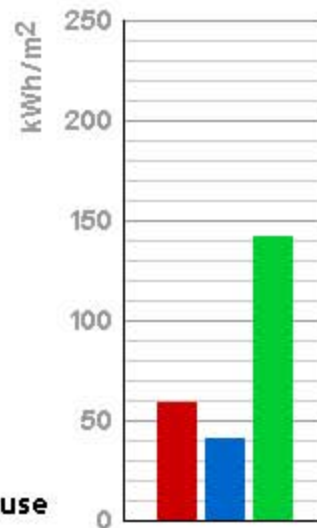
- 90 m<sup>2</sup> PVs
- 14m<sup>2</sup> Solar Thermal Panels
- planted roof



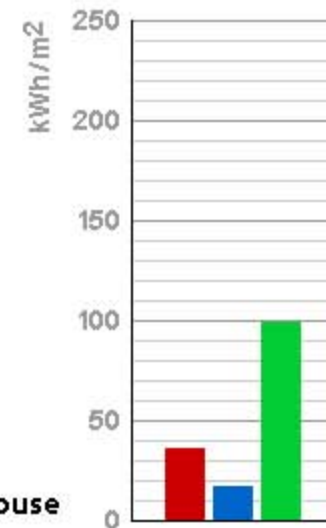
ventilation



Cross Ventilation  
3sided Ventilation per Unit



Conventional house



Sustainable house

|   | heating energy (kWh/m <sup>2</sup> ) | cooling energy (kWh/m <sup>2</sup> ) | lighting energy (kWh/m <sup>2</sup> ) | total energy (kWh/m <sup>2</sup> ) | Reduction by | CO <sub>2</sub> emissions (kg/m <sup>2</sup> ) |
|---|--------------------------------------|--------------------------------------|---------------------------------------|------------------------------------|--------------|--|
| Conventional design   | 58.8                                 | 40.5                                 | 142.1                                 | 241.4                              |              | 48.3   |
| Sustainable design<br>(using green roof, high thermal mass, external insulation, high performance windows and with shading) | 36.2                                 | 17.0                                 | 99.1                                  | 152.3                              | <b>37%</b>   | 30.5   |



1. wooden vertical louvers for protection from the west radiation



2 vertical openings for ventilation and protection from the west radiation



3. shading roller blinds



# ZERO Carbon

# VS

# LOW Carbon

- solar thermal & PV panels
- compost toilet
- reed bed
- car pool system
- recycle bins
- bike shed
- ceiling fans
- planted roofs
- borehole heating
- solar chimneys
- flooded roof cooling
- solar chimneys
- collect rain water
- external insulation
- reducing consumption-educatin users



Thank you Brian Mark !!!!!

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