

ECOWEEK 2010:
NIKOS ROUSSEAS TEAM - THISEIO PROJECT



TEAM:

IOANNIS ANDREOU

OLYMPIA DATSI

ANNA DIMA

MARIA DRY

DIMITRIOS MPESSIOS

ALKISTIS TOMPOULIDI

GENERAL FEATURES-DATA STUDY

The plot is squared and located near Theseio oriented North-South with a view to Filopappou Hill. The winds in the region are NE direction of small intensity.

Details:

Land area: 120,00 m²

SE: 2.1

Coverage: $0.7 * 120 = 84,00$ m²

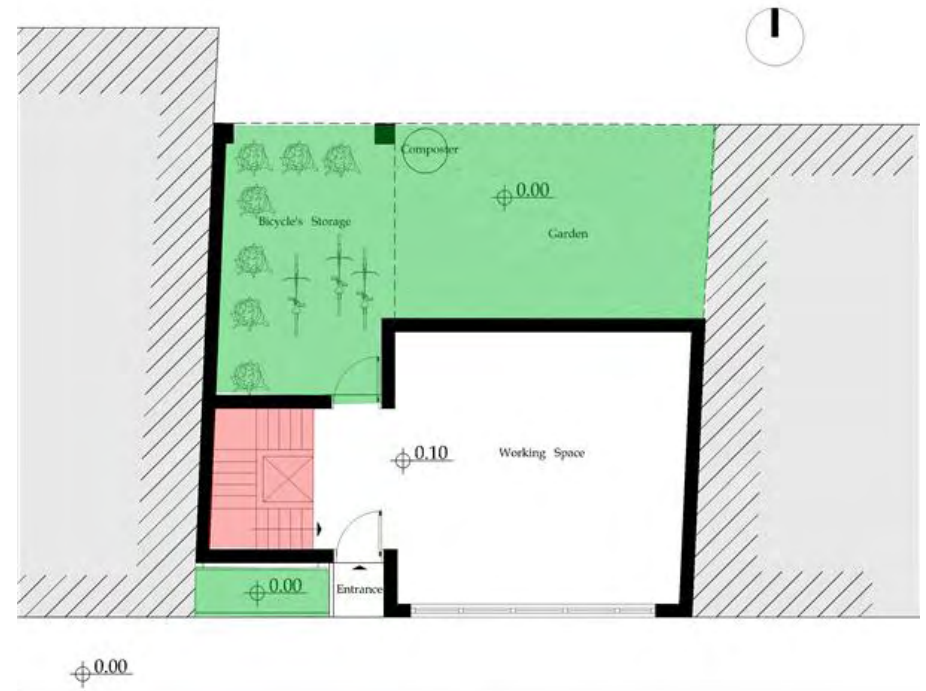
Permitted construction: 252,00 m²

Construction carried out:

Athens, 13-20 / 03 / 2010

CENTRAL IDEA

- **3 storey villa and office for a 5 persons family.**
- **Layout spaces:**
 - *Ground Floor:* owner's office, bicycle's storage and NE oriented vegetable garden.
 - *1st and 2nd floor:* living spaces
 - Basement for services and storage.
 - One angled roof.
 - Staircase and elevator.
- **Spaces orientation:**
 - Main living spaces oriented South
 - Secondary spaces facing North.
 - Kitchen and one bedroom facing East



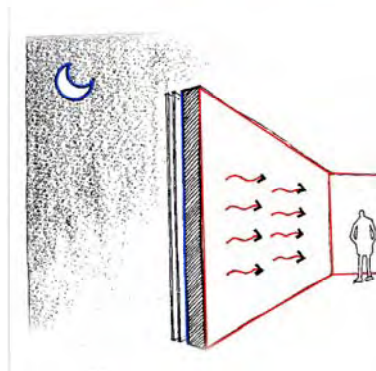
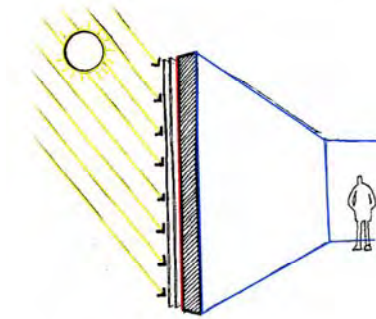
GROUND FLOOR



1st FLOOR



2st FLOOR



CONSTRUCTION MATERIALS

- Main frame of reclaimed steel and concrete slabs.
- Insulation: 7,5cm woodwool carefully placed to avoid thermal bridges.
- Bright coloured ecological coatings, floors of high thermal capacity (ceramic tiles) and wooden staircases.
- Aluminium framed windows with double glazing with thermal break

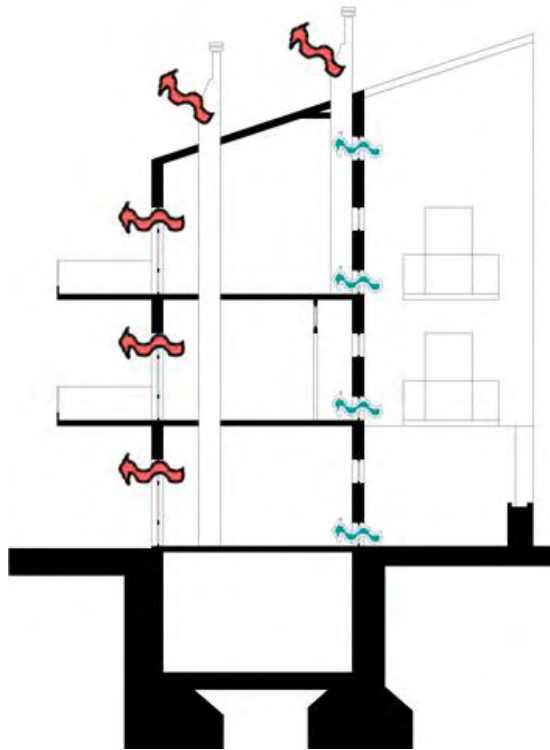


PASSIVE SYSTEMS

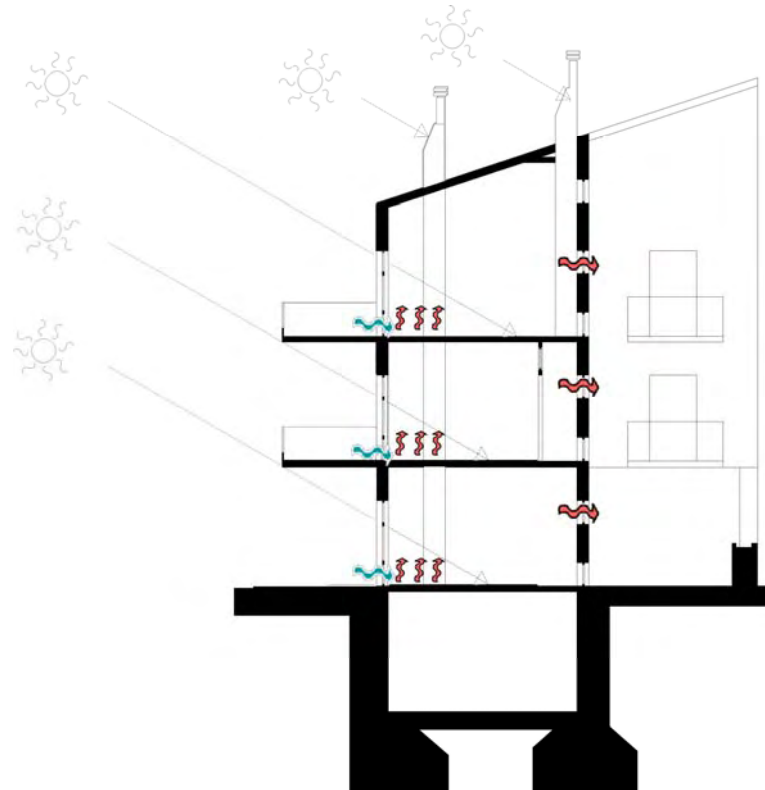
- Building open in the South side and closed in the North.
- Large openings in the South with horizontal shaders and pergolas wherever projections are not sufficient.
- Vertical shaders over east faced.
- Solar chimneys.
- Planting of evergreen trees north for NE wind protection and deciduous trees to shade south.
- Front staircase wall as mass. - Wall with vertical shaders.
- Side to Side ventilation for natural cooling
- Create a vegetable garden and flower beds with herbs
- Windows height to 2.90 m for deeper penetrating light diffusion.
- Garden Composter for household's organic waste recycling and use in the garden.
- Recycling bins at the entrance.
- Facades from Recycled wood.
- Indirect lighting for bathroom and basement from a ceiling window.



Natural Cooling

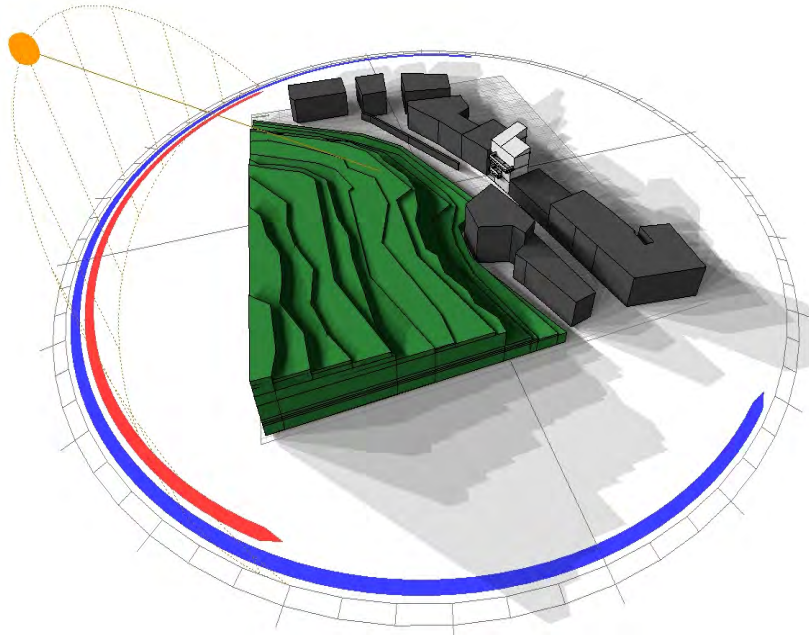
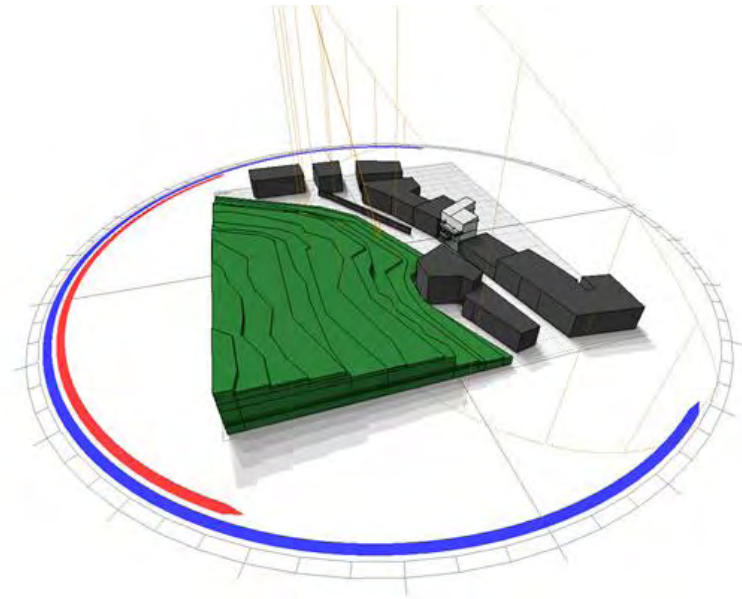
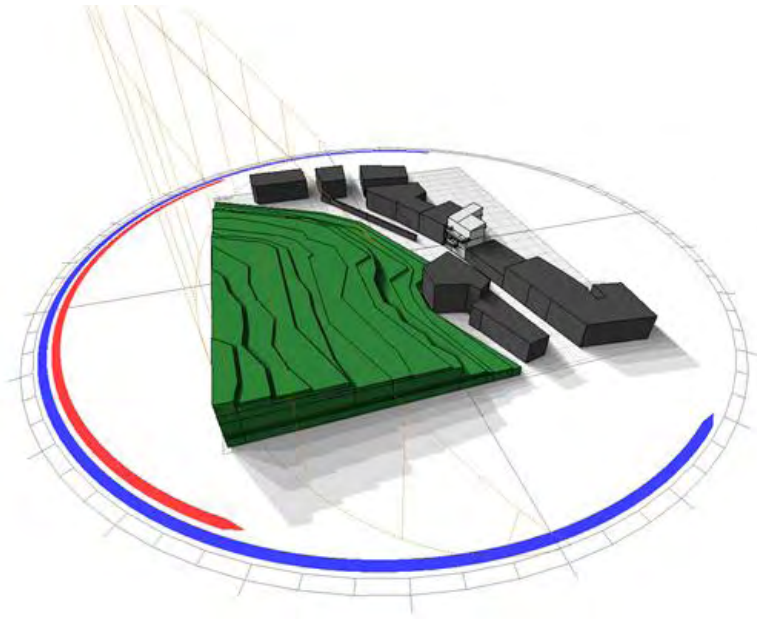


Summer

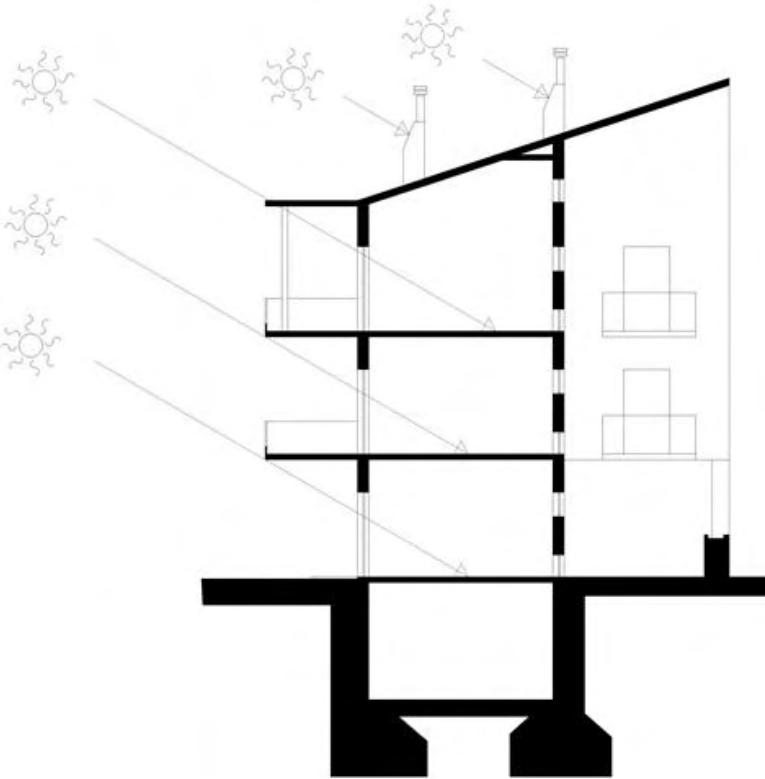


Winter

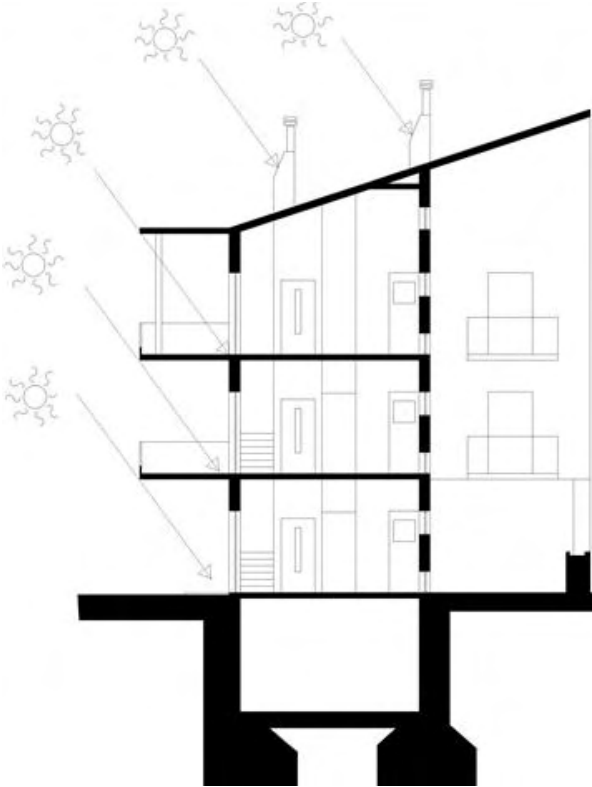
SOLAR ANALYSIS



SOLAR SECTIONS



21st DECEMBER



21st SEPTEMBER

ACTIVE SYSTEMS

- Energy fireplace.
- Underfloor heating using geothermal energy (heat pump).
- Inclined roof 33% of 75sq.m.
Photovoltaics of 7Kw and 15 sq.m solar panels for 250lt hot water.
- Air Ducts for cool air layered on the foundations.
- Rainwater tank in the basement for gardening and toilet.
- Use artificial light from energy bulbs.

