W16 – WORKSHOP (Tsipiras Kostas & Themis Ass.)

Kostas Tsipiras

Benjamin Gill

Elias Messinas

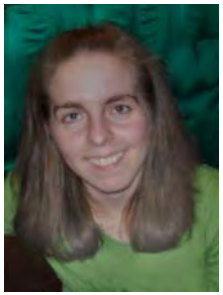
Michael Christensen

CONSULTANTS

Anna Afiotzi

Vasilis Dimitriou

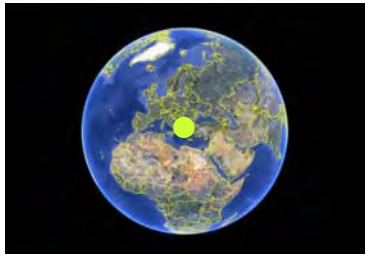
Thaleia Ioannidou



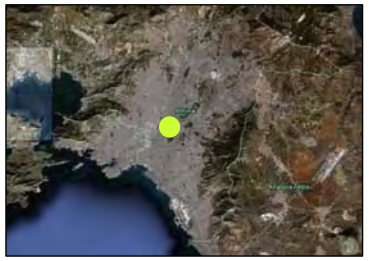
Polyxeni Prentou

Vasiliki Vallindra

WORKING GROUP


World


Greece


Athens


Thiseio

PROPOSAL FOR BIOCLIMATIC BUILDING IN THISEIO SITE

- **Study of the underground** → limestone, Hartmann nodes

- **Study of the local climate** → winds NE (9 months) and SW (3 months)
  temperatures -4° to 43° etc

- **Solar path diagram** → sun angle 30° -75°

- **Building code requirements** → 2 offices, one residence for a four member family

BUILDING – SITE RELATION

✓ **The building is located in the South side of the site**

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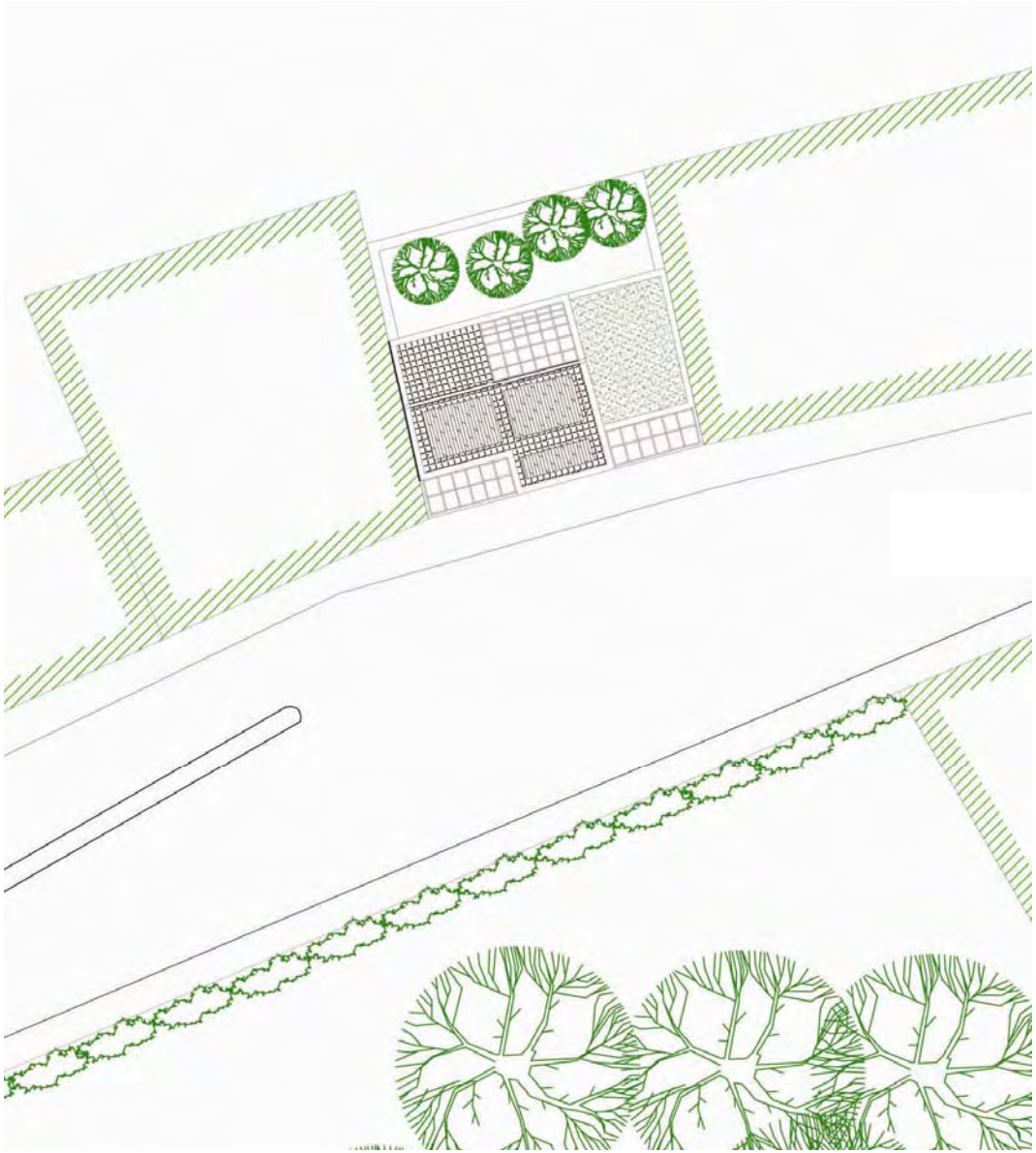
-To take maximum advantage of the daylight

-To get the maximum heat in the heating space in the winter

-To avoid shadowing from neighboring buildings

-To have a cool back yard for the summer



✓**Roof garden**

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-To let the cool air from the hill enter the city

-To have a relaxing terrace with view

-To cool the air in the summer through evaporation

✓**Recumbent roof**

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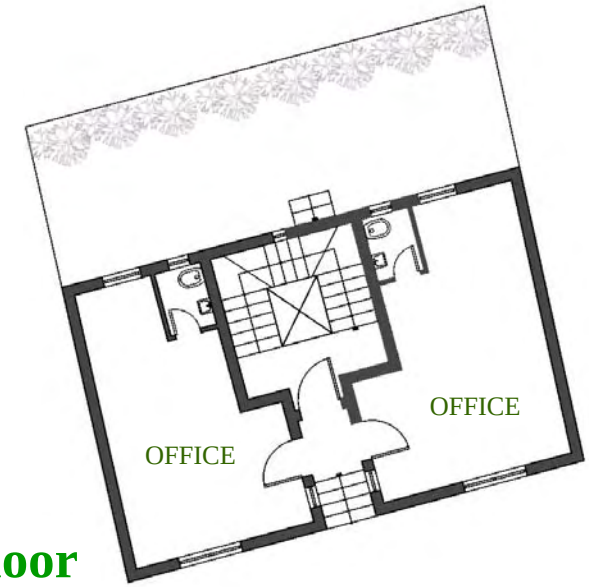
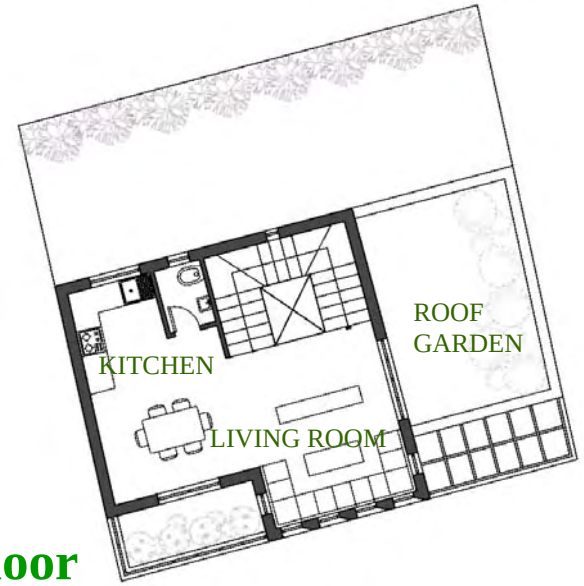
-To put the photovoltaic panels on an optimal angle and curved to the North to avert NE winds

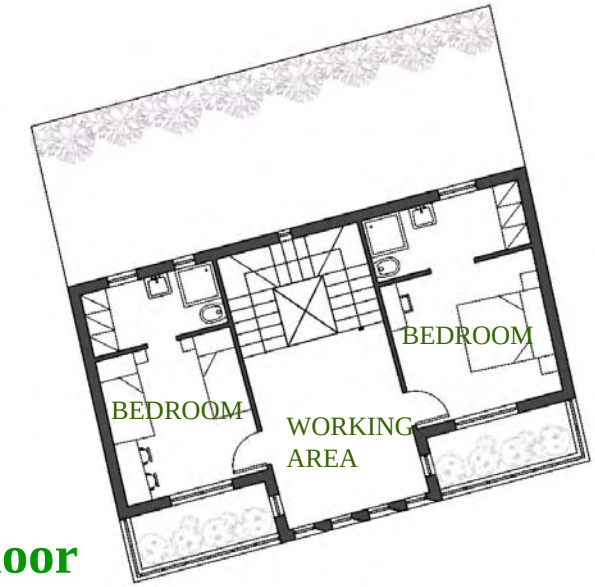
ARRANGEMENT OF LIVING SPACES



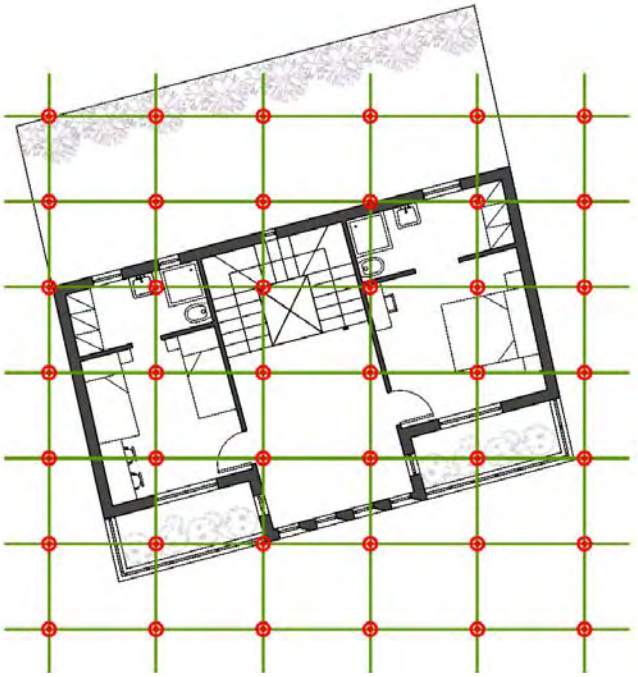
Ground floor



Second floor

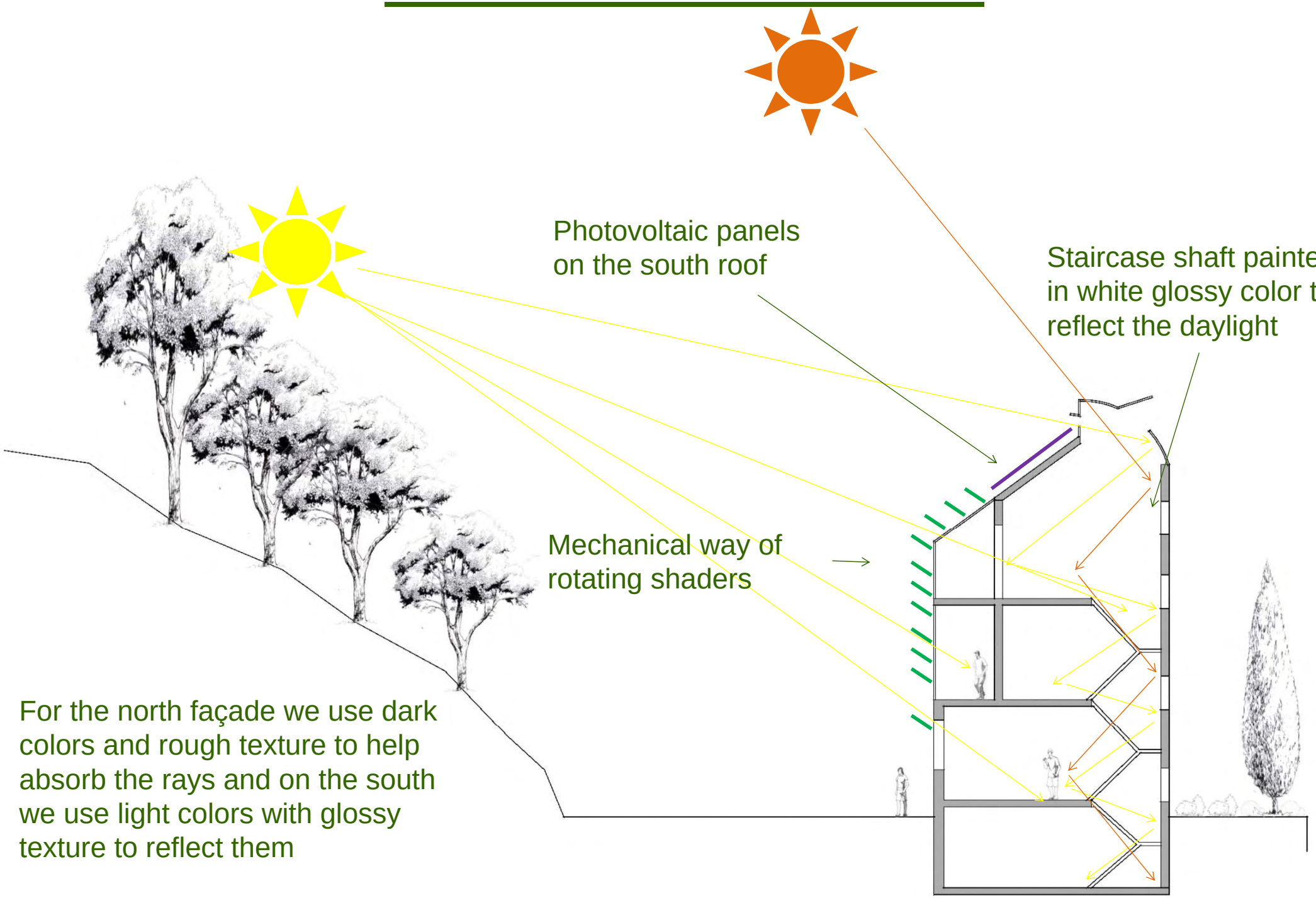


First floor



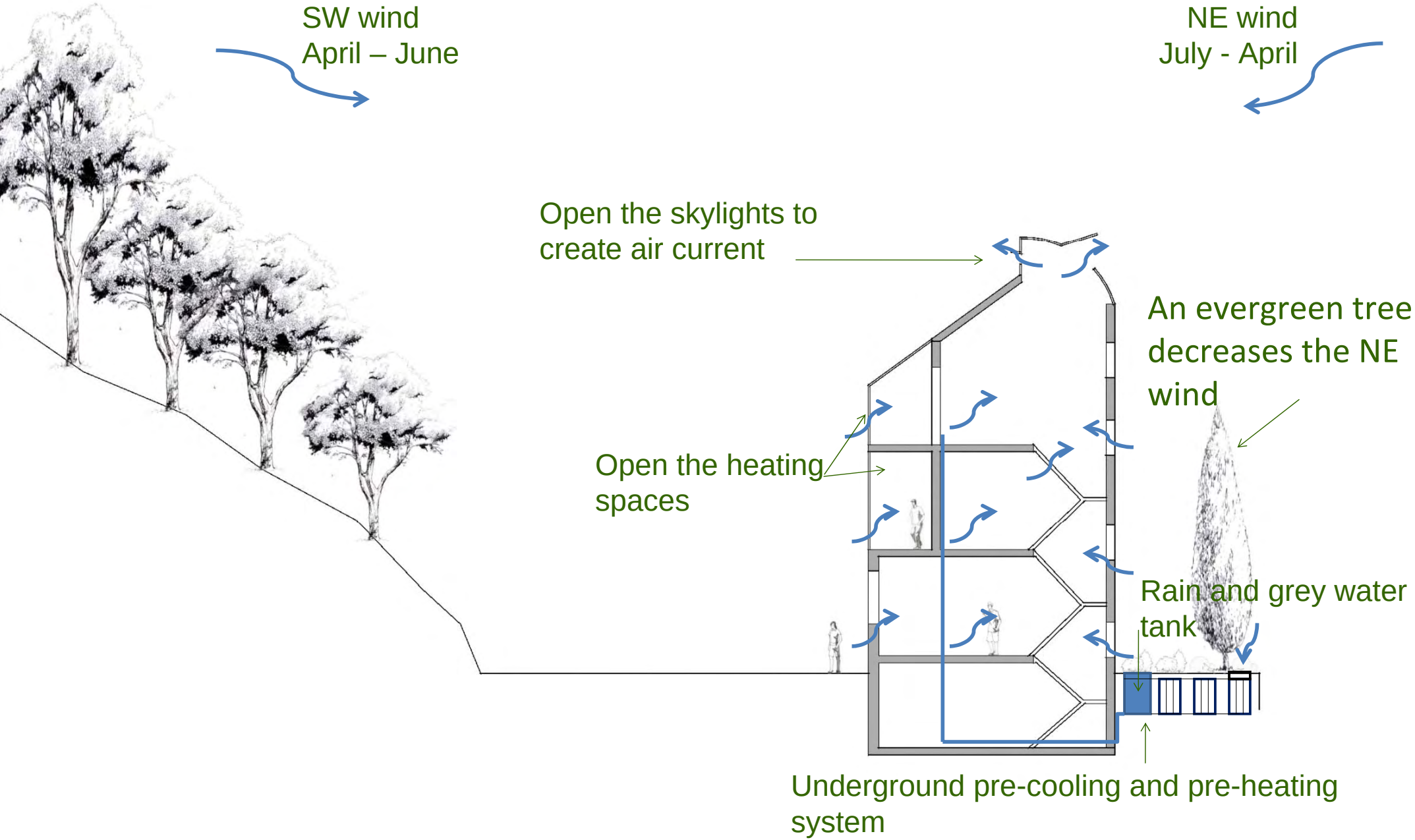
The Hartmann nodes on the first floor

USING THE DAYLIGHT

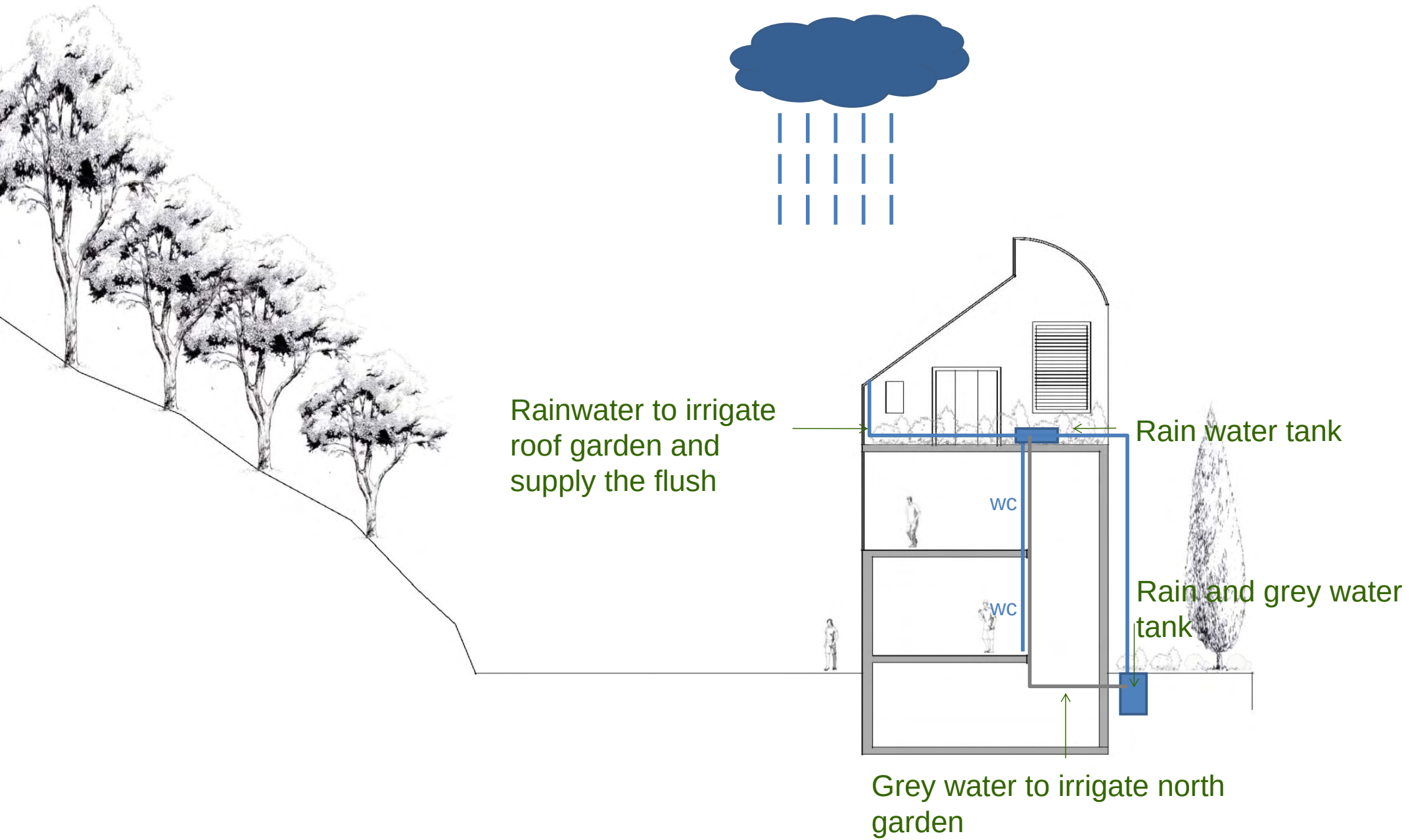


For the north façade we use dark colors and rough texture to help absorb the rays and on the south we use light colors with glossy texture to reflect them

USING THE WIND

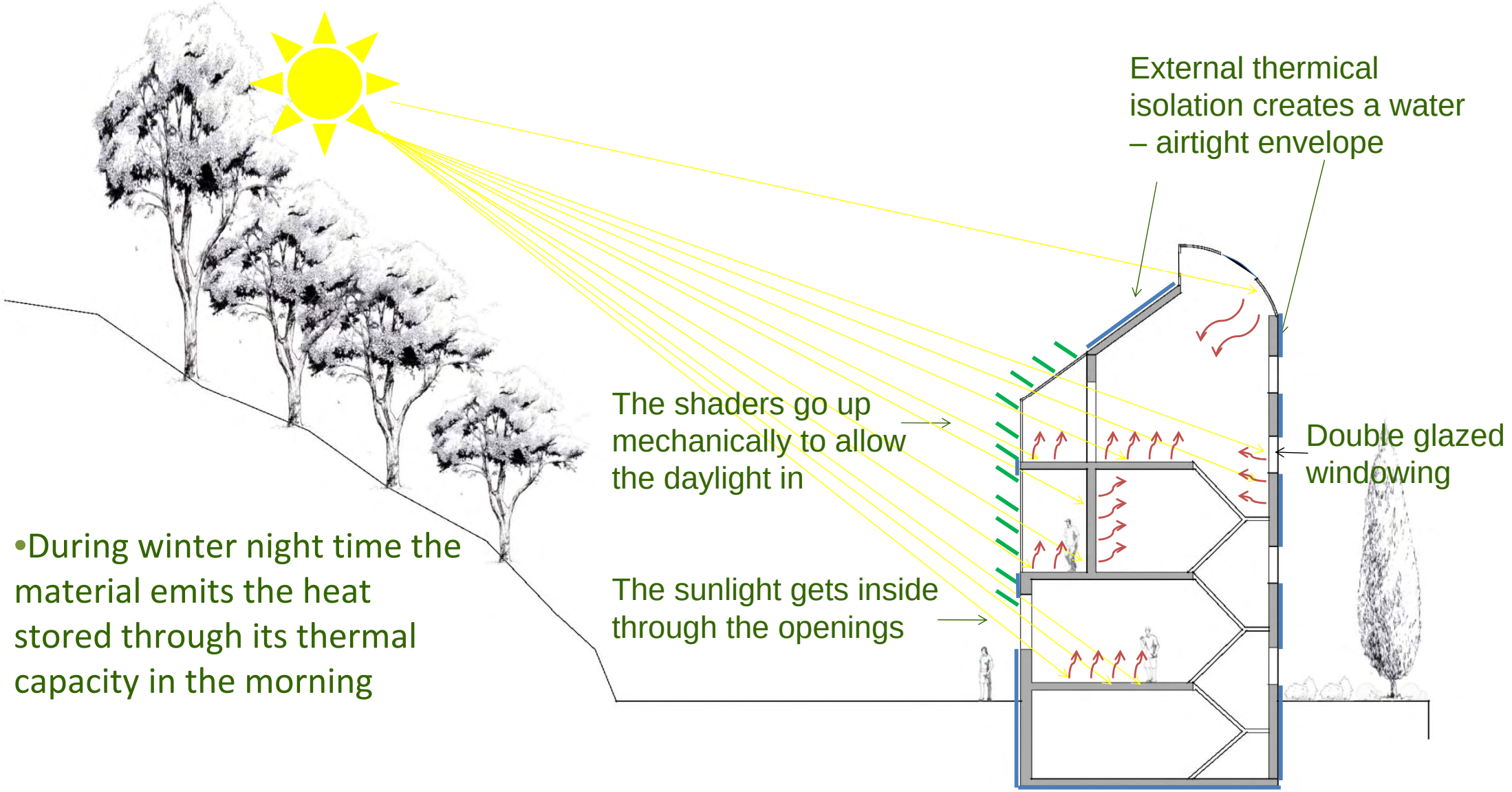


USING THE WATER



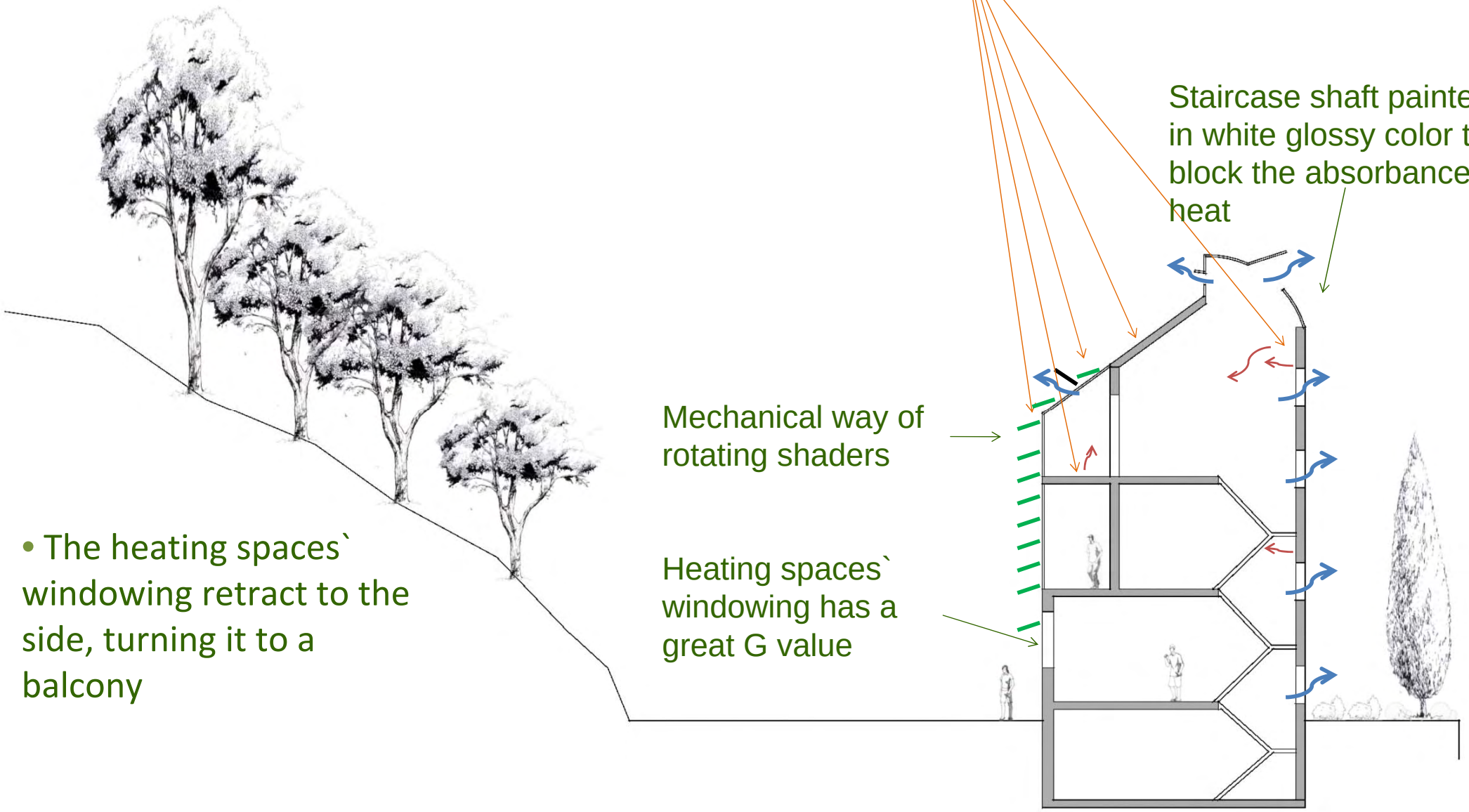
USING THE WINTER SUN

- Heat is emitted through the areas that have contact with sunlight
- The north openings have double glazed windowing (great U-value)



- During winter night time the material emits the heat stored through its thermal capacity in the morning

BLOCKING THE SUMMER SUN (DAYTIME)



- The heating spaces` windowing retract to the side, turning it to a balcony

COOLING DURING SUMMER NIGHT TIME

Heat is emitted that was stored in the materials during the day

Opening the windows and skylights naturally ventilates and cools the building