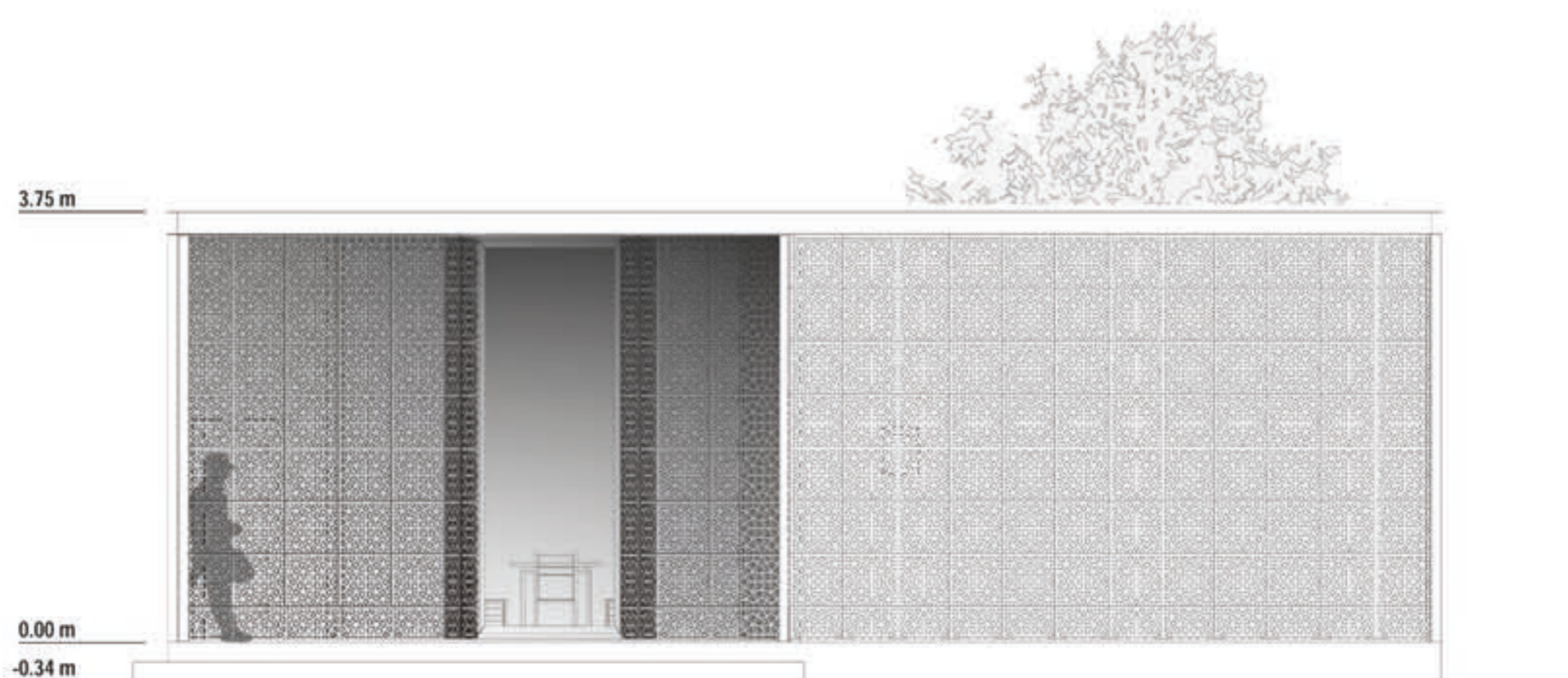
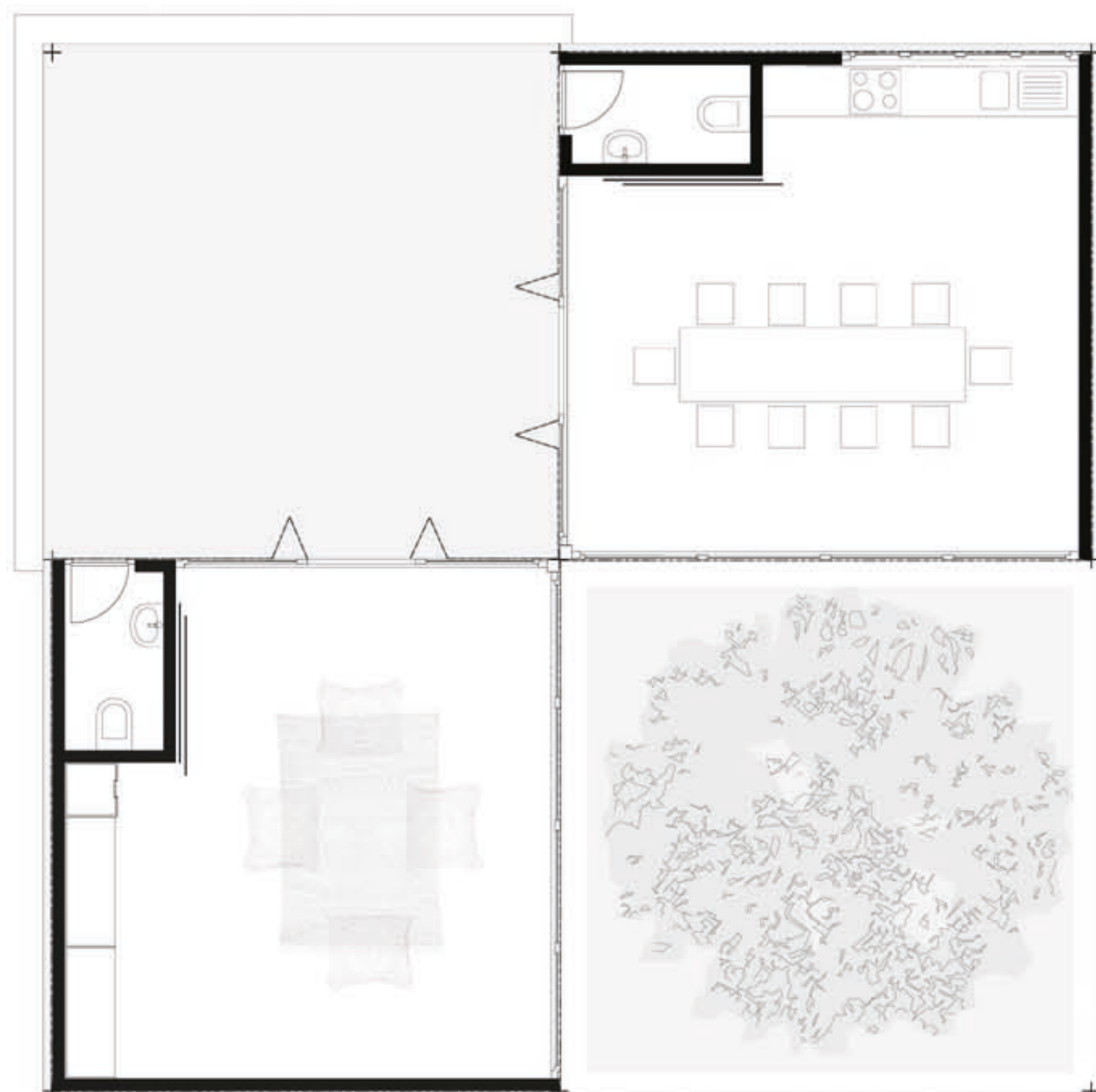


THE ROMMAN PROJECT

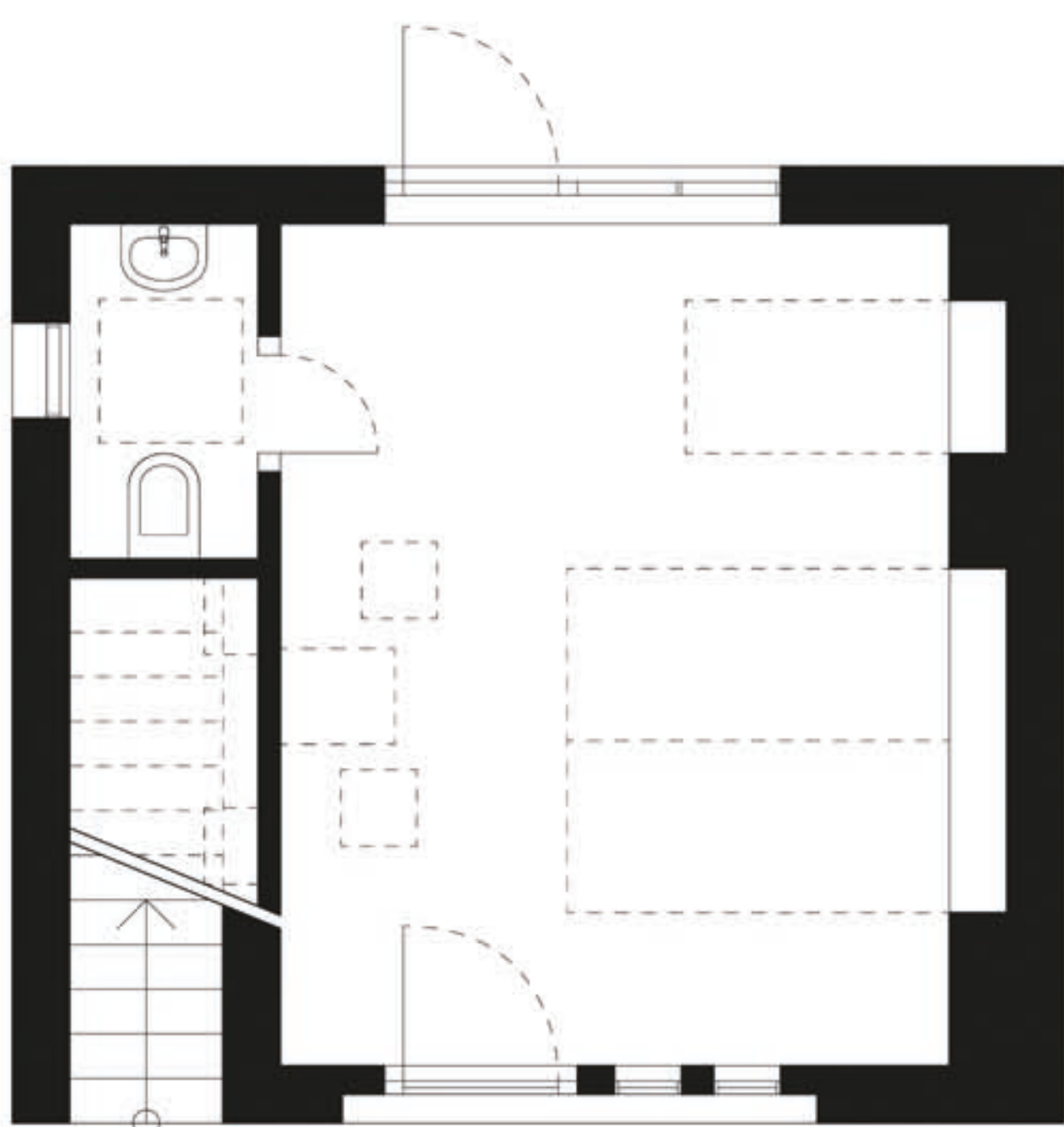












2.0 m | 1.0 m | 0.0 m

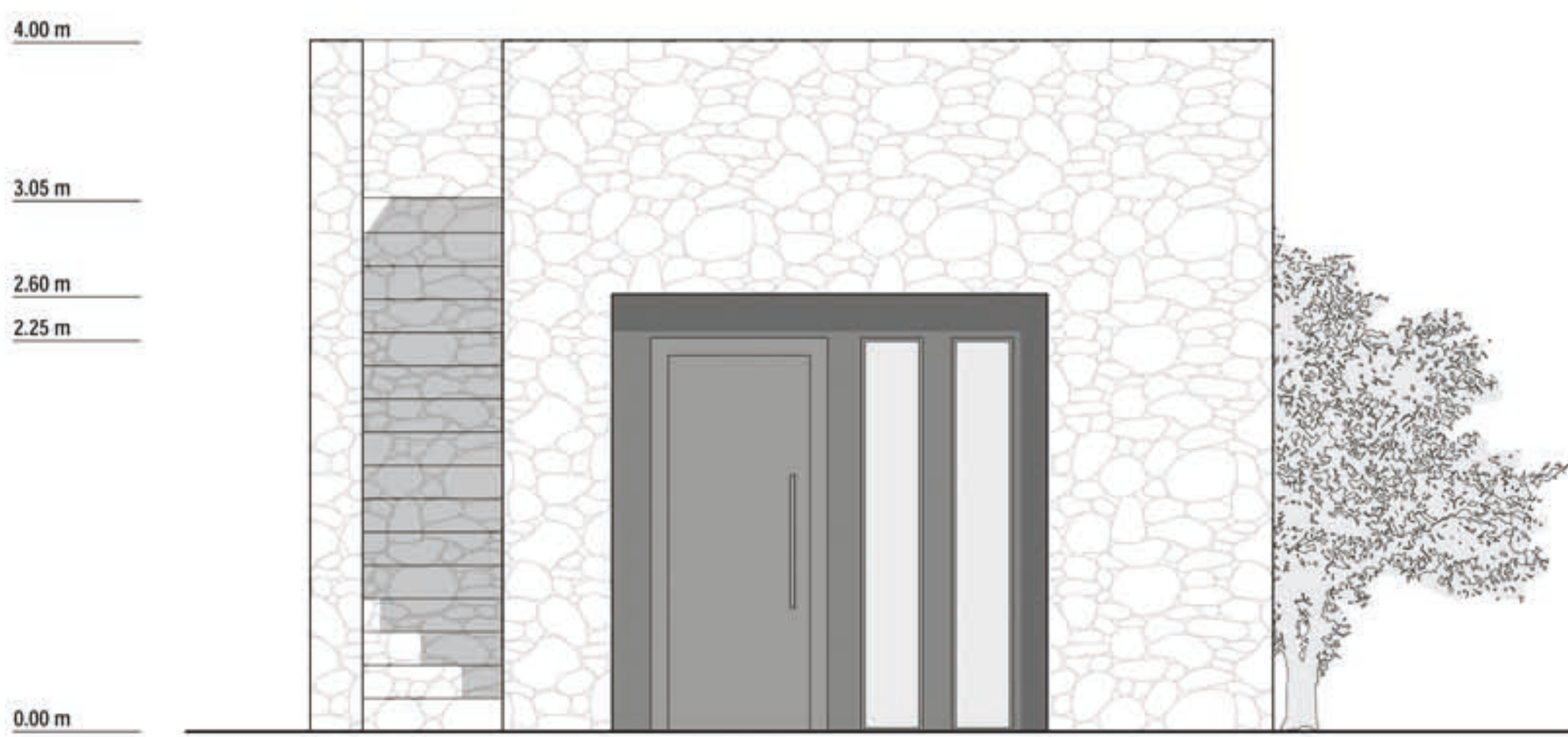
ground floor\_living unit



2.0 m | 1.0 m | 0.0 m

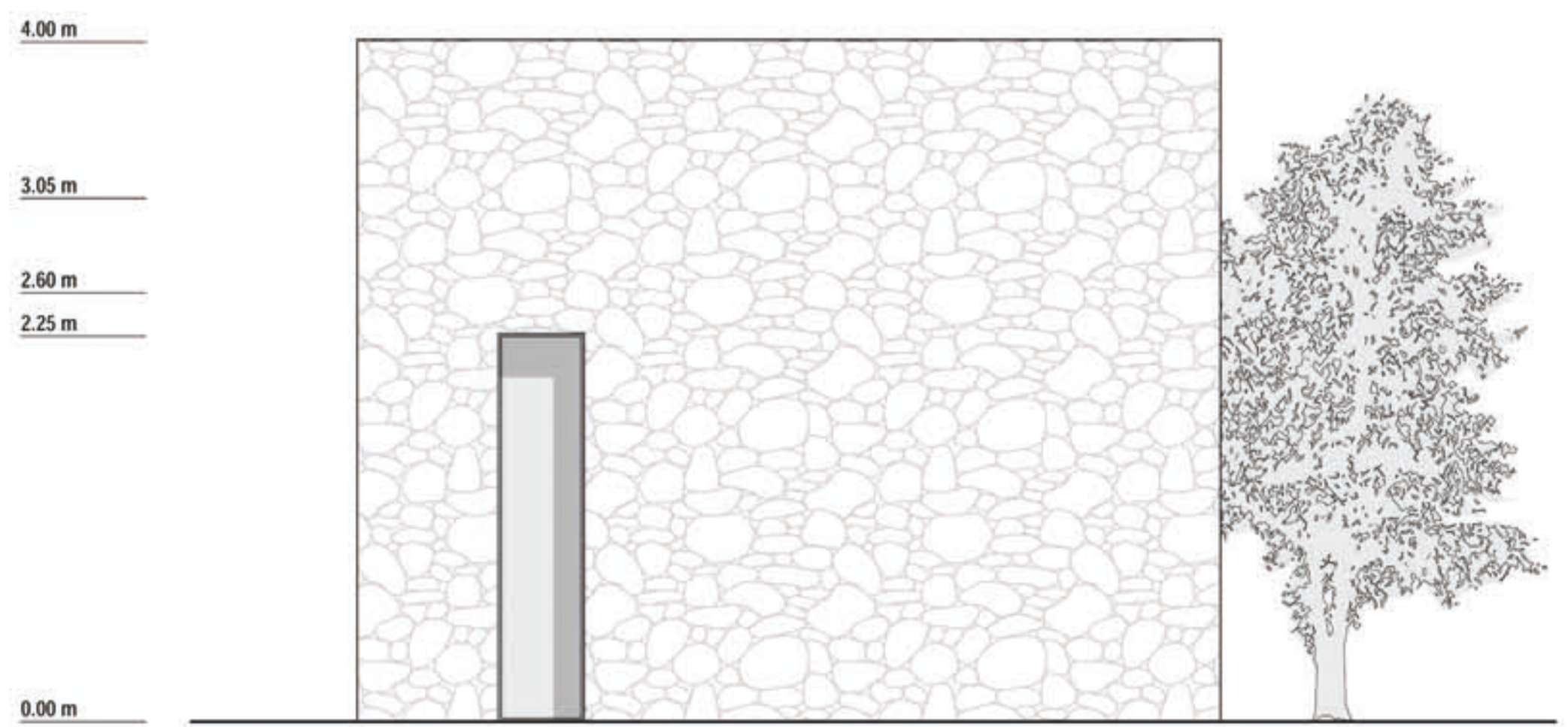
section\_living unit





south elevation\_living unit

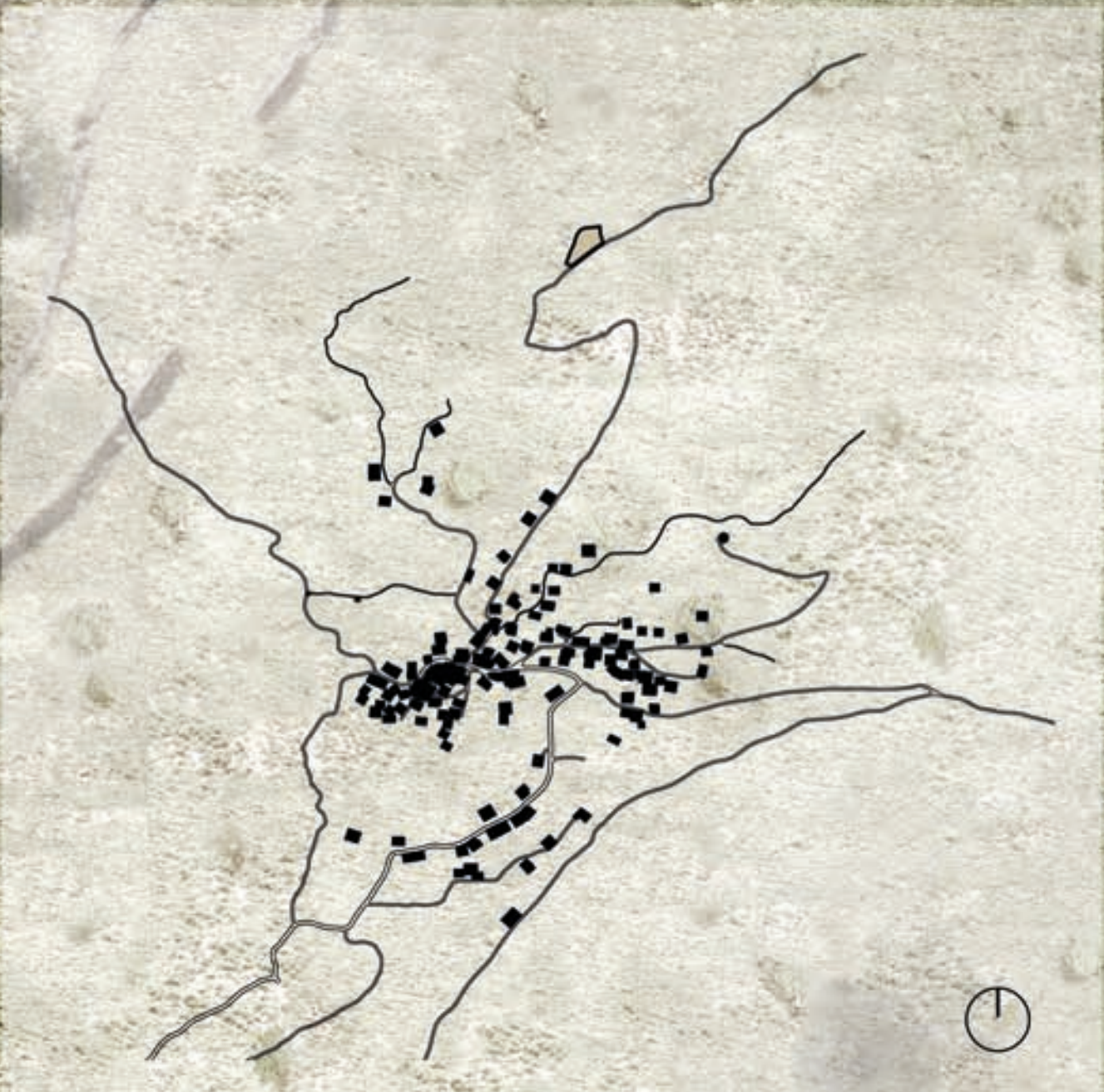
2.0 m | 1.0 m | 0.0 m



west elevation\_living unit

2.0 m | 1.0 m | 0.0 m









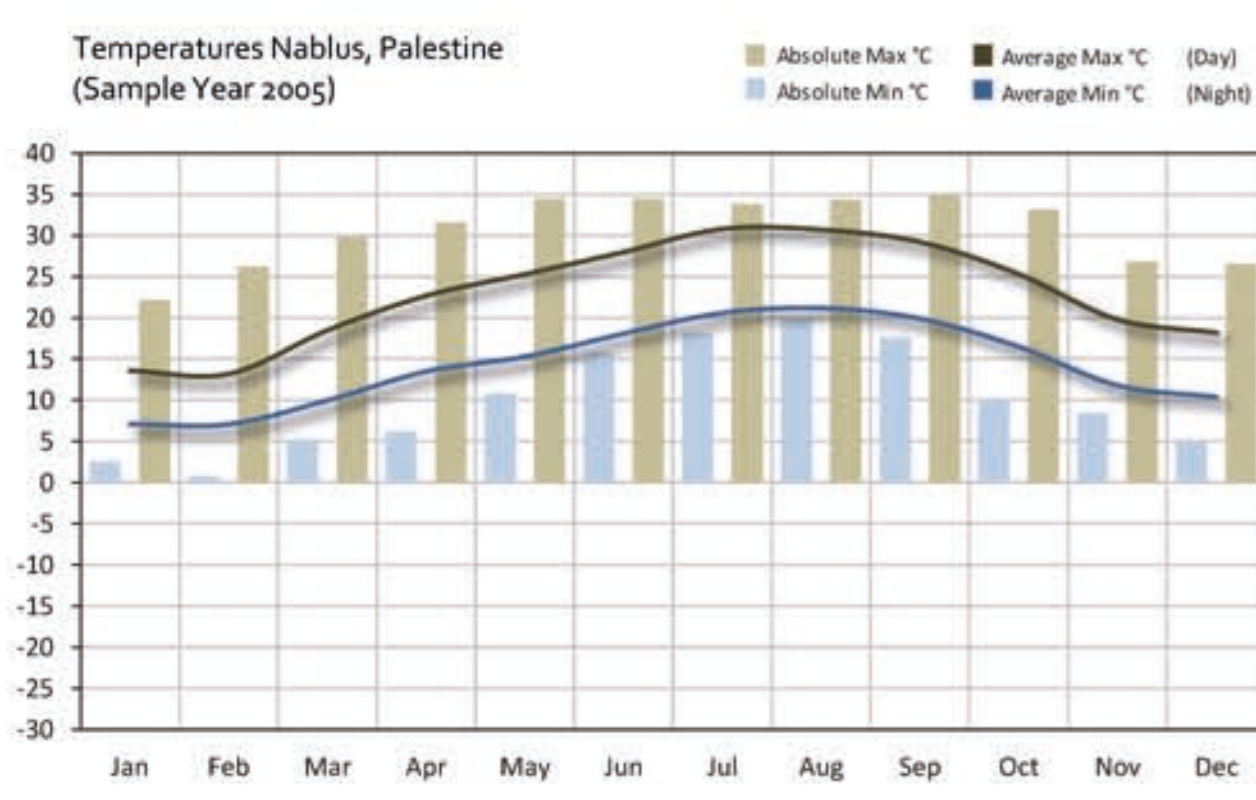
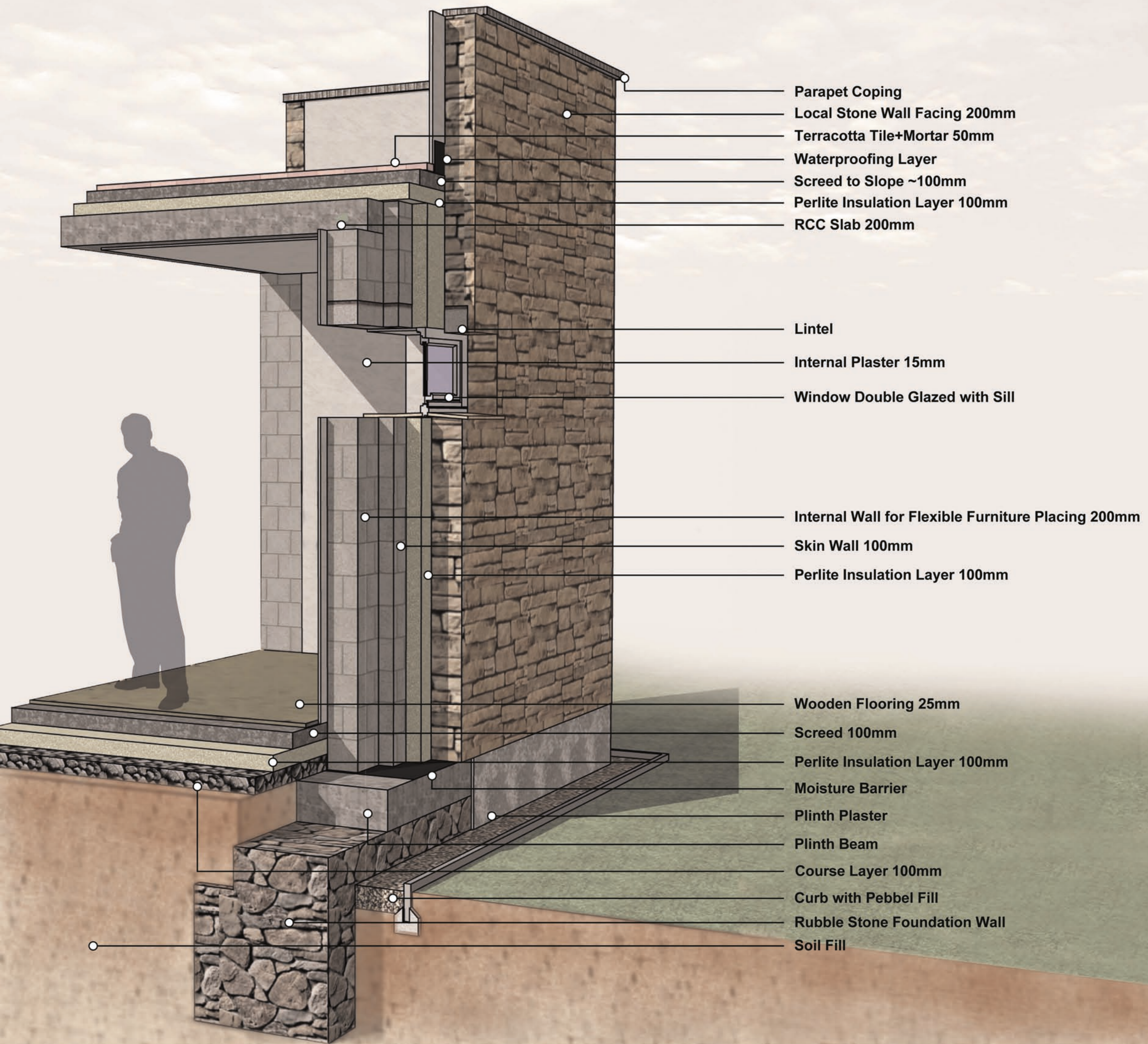
bird's eye view of the area





bird's eye view of the area





**General Project Data**

Location: Kafr Ruman, Palestine  
 Global Solar Radiation: ~2200 kWh/m<sup>2</sup>a  
 Primary Operation Profile: Residential  
 Evaluation Date: January 2013

**Building Geometry Data**

Net Floor Area: 18 m<sup>2</sup>  
 Building Shell Area: 125 m<sup>2</sup>  
 Gross Volume: 90 m<sup>3</sup>  
 Window Wall Ratio: 0.17  
 A/V Ratio: 1.39

**Specific Annual Demands:**

Net Heating Energy: 66 kWh/m<sup>2</sup>a  
 Net Cooling Energy: 5 kWh/m<sup>2</sup>a  
 Total Net Energy: 71 kWh/m<sup>2</sup>a  
 Note: Thermostat Range 17 – 26 °C

**Sustainable Design Considerations:**

The sustainable aspects in this project have been considered through energy efficient design, ecological building construction and an active dialog with the contextual environment and future users. Special emphasis is laid on the passive design and usage of renewable energy resources to fulfill the need for heating, warm water and power supply of the future inhabitants.

As the numbers of the parametric energy simulation show an increased need for heating in the winter months we recommend installing an autarkic Solar-Air-Twin System which delivers heat, fresh air and hot water using solar power, wherein 1m<sup>2</sup> of collector area can heat and ventilate up to 30 m<sup>2</sup> of living area in the Mediterranean climate. The system automatically switches over to water heating when the living temperature is reached.

It shall be further proposed that a centralized photovoltaic field is installed on the community building of the development so as to collect solar energy and save it as power using it in the centralized public and the private spaces of the community. Considering these recommendations we can not only comply to latest thermal performance standards of the region but also label the development a 0-Impact built environment respecting nature and bringing about a mind change to the inhabitants, visitors and local community members.

The thermal insulation incorporated in the building envelop is keeping the heated internal space warm in winter and cool in summer, which is supported by the excellent internal thermal mass and the shading consideration for the windows.

The architectural and environmental design of the development will blend with the unique nature in Palestine and the idea of having a recreational retreat not impacting on the environment.

