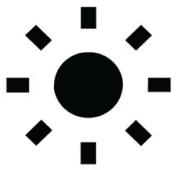


DAYLIGHT



① Daylight Provision

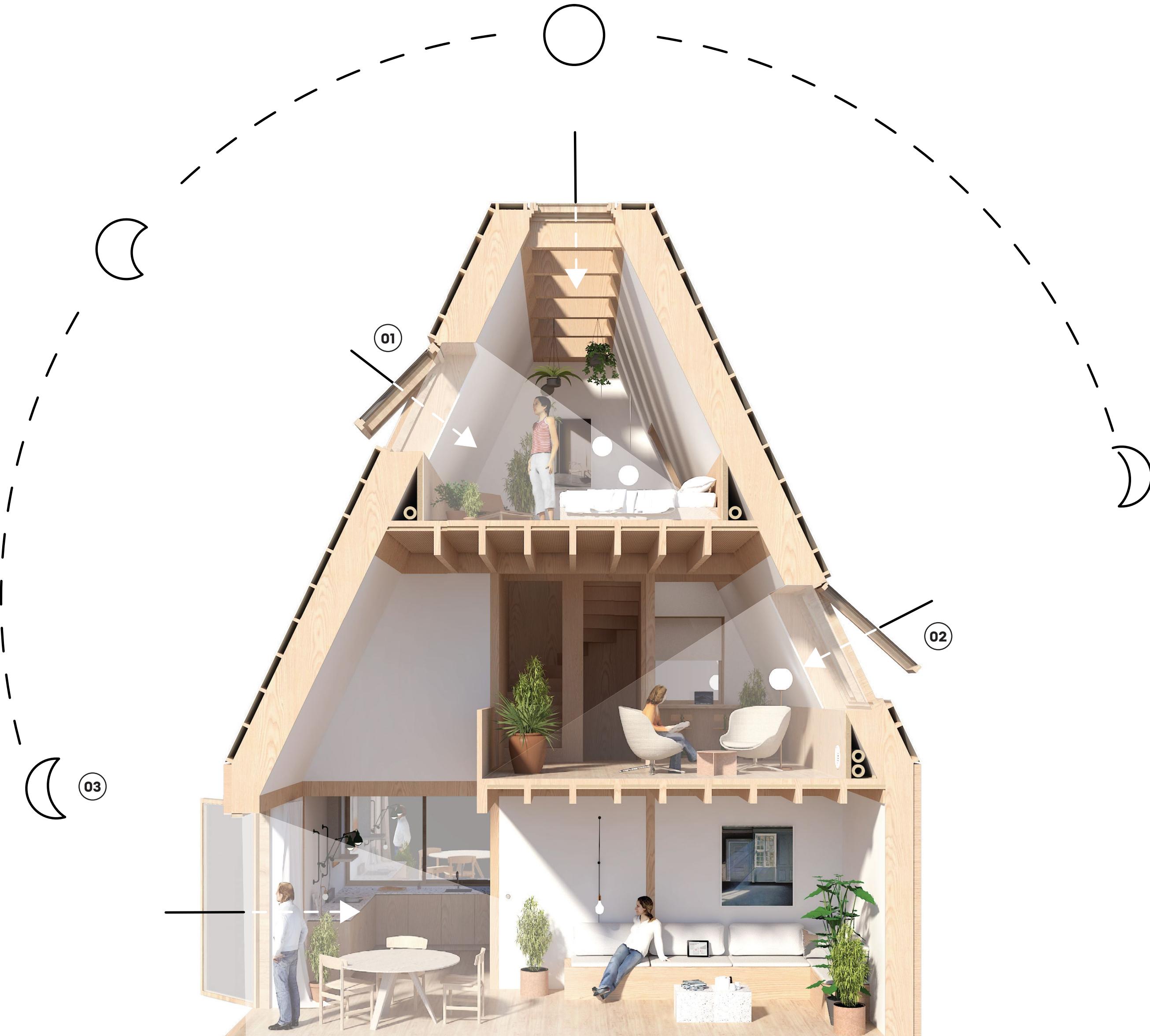
The daylight is composed of direct sunlight, diffuse skylight, and light reflected from the ground and surrounding elements. The architecture considers daylight of the orientation of each house, site characteristics, façade and roof, size and placement of windows and shading systems, geometry, and reflectance of interior surfaces. Good daylighting design ensures adequate light during daytime.

② Multiple directions

The positioning of windows will influence the distribution of daylight and decide the amount of 'useful' daylight inside the building. The window positions should also respond to the relation between the view to the outside and the eye level of the occupants. In Living Places, a variety of windows, in both roofs and facades, ensures a good distribution throughout the day with the changing sun position.

③ Circadian rhythm

Our wellbeing is influenced by 24-hour rhythms that control our sleep, alertness, performance, stress and body temperature: Circadian rhythms. They depend on the buildings we live in. Daily and seasonal variation of light is a critical factor in taking care of our circadian rhythms. Living Places are designed to nurture and heal our circadian rhythms and respect human nature and wellbeing.



THERMAL ENVIRONMENT



① Ventilative cooling

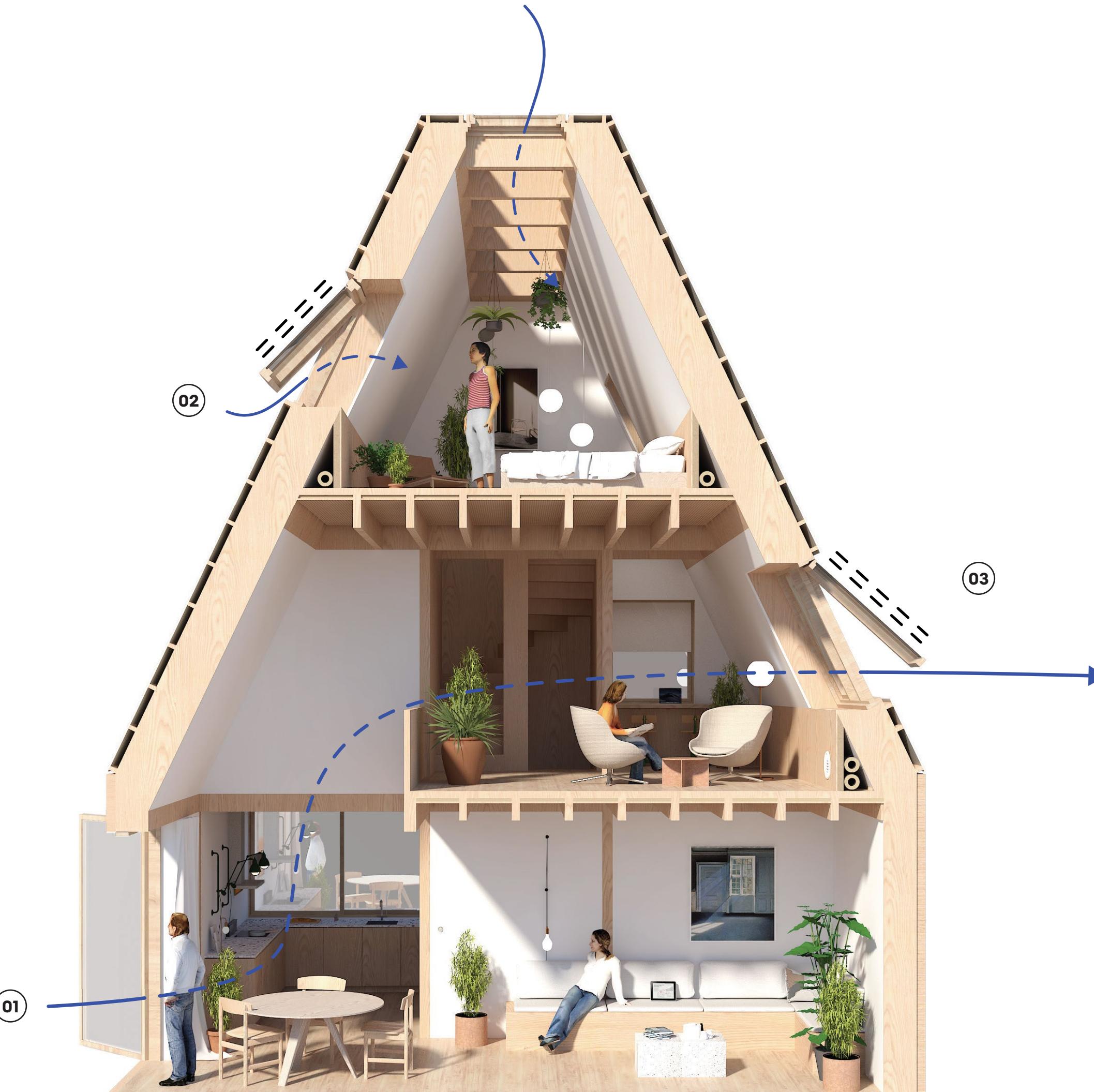
This method consists of natural or mechanical ventilation strategies to cool indoor spaces via outdoor air. The outside air reduces energy consumption while keeping thermal comfort. The natural ventilative cooling is done by opening windows. A direct and fast method. Open windows will cause increased air motion, and if the outdoor temperature is lower than indoors the room temperature will fall.

② Cross and stack ventilation

The Living Places use cross- and stack ventilation: Warm air is lighter than cold air. That causes the stack effect: Warm air inside a building will rise. The warm air leaves the building at the top, through open windows, and is then replaced by fresh outdoor air entering at ground level. For the stack effect to work efficiently, there must be passages across the house as well as open windows at the top and bottom.

③ Dynamic shading

Overheating in warm summer days can be reduced or eliminated, using solar shading. In Living Places shading block solar radiation and reduce heat. A sensor-based control system follows the sun, which gives a good and stable performance. If solar gain causes overheating, external shading comes into play, when it makes sense in relation to energy and comfort, the shading is deactivated.

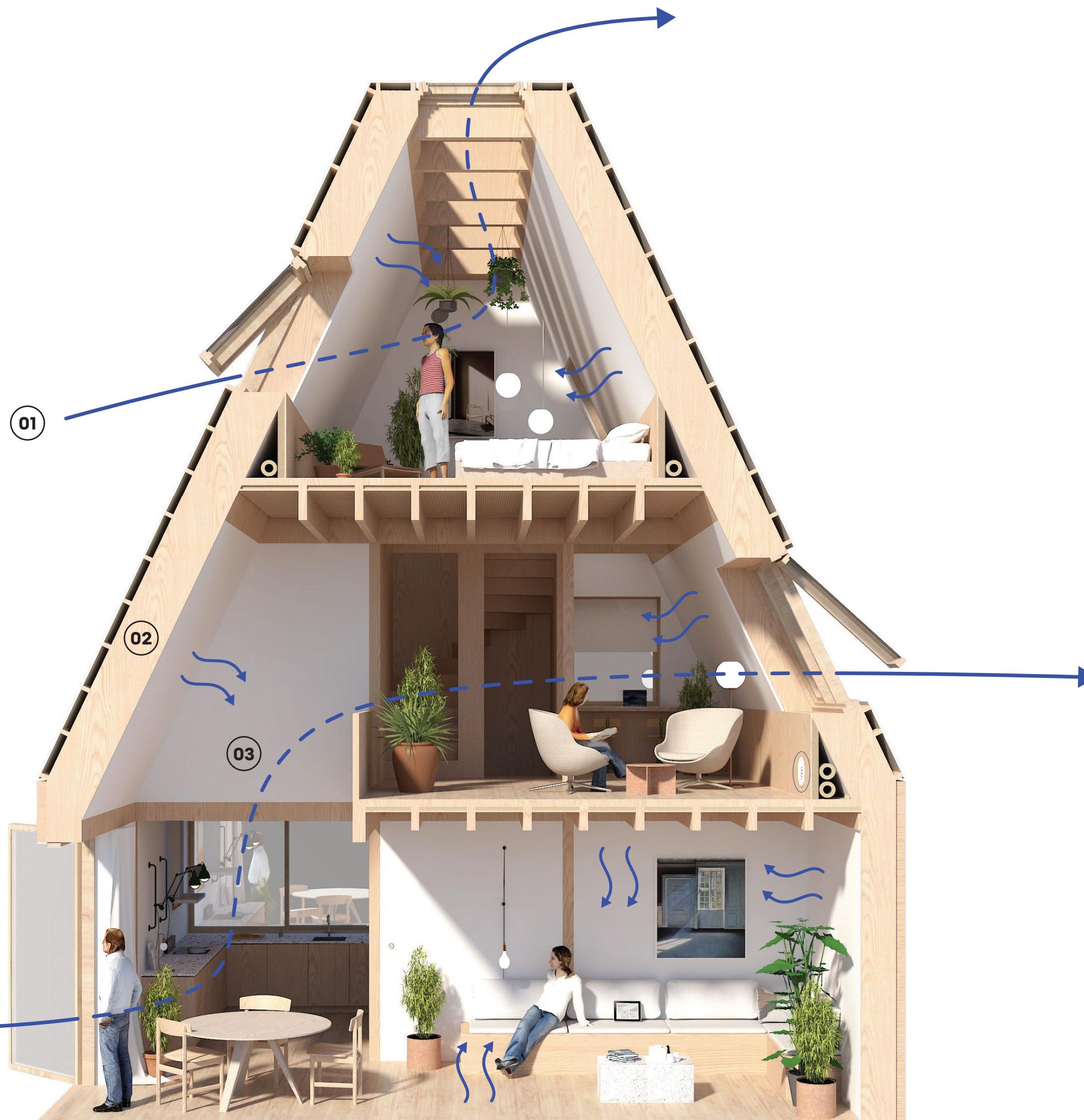


AIR QUALITY



① Fresh air

Living Places offer fresh air all year in any weather conditions, via a hybrid ventilation system, with the benefits of both natural and mechanical ventilation. This makes airing a comfortable part of the daily cycle, bringing wellbeing and health home. All windows should ideally be combined with a general system for basic fresh air supply using ventilation grilles in the facades or mechanical ventilation.



② Healthy building materials

New building materials such as furniture, insulation, flooring, paints, sealants and coatings can bring VOCs into interiors. VOCs are volatile substances of natural and artificial origins. They cause nose, eye and throat irritation and headaches to liver, kidney and central nervous system damage. To reduce the VOC concentrations inside Living Places, we carefully select products with low or no VOC emissions.

③ Effective removal of particles

Particles are emitted from all burning processes such as cooking. Although this is experienced as necessary and cozy by many, the facilities around them should be carefully considered. To preserve indoor air quality and maximize olfactory comfort in the Living Places, an effective kitchen hood will be installed to isolate and properly ventilate indoor pollution sources from cooking.

ACOUSTICS



① Noise insulation

The building envelopes will protect the interior from unwanted outdoor noise. Outdoor noise can have negative effects on health, mood and concentration. What we describe as noise in one situation can be perceived as sound in another. Birdsong in the early hours of the morning can be perceived as noise and disturb sleep. But at other times, it can be a soothing sound.

② Controlled sound transmission

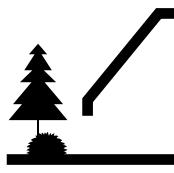
Buildings with 'soft' interior surfaces, like in Living Places, are often more appreciated. Typical examples of expected reverberation time are 3-10 seconds in a church; 2 seconds in a concert hall or auditorium; 0.6-1 second in a classroom; and 0.5 second in a home. Intelligibility of speech is often a key factor in a room – and large rooms, with hard, parallel surfaces, can be a challenge.

③ System noise

At night, the lowest possible noise levels are desired. It is important that occupants can adjust the settings of ventilation systems manually to limit noise levels. Noise from heating and cooling systems must also be limited. Modern, energy-efficient buildings have increasingly complex service systems, like heat pumps, and special attention to avoid excessive noise from this system should be taken.



OUTDOOR CONNECTION



① View of nature

Humans have been increasingly detached from nature, but nature is an important psychological aspect to us. The provision of daylight alone is not enough to satisfy user desires for views. Windows provide contact with the outside, supply information of orientation, give experience of weather changes and allow us to follow the passage of time over the day.

② Access to nature

The outdoor spaces at Living Places will inspire the occupants to spend more time outside, offering close contact to nature in all seasons. The many associated benefits from direct access to nature and green spaces include lower levels of anxiety and depression, as well as improved mental recovery from stress and fatigue. We have brought this 'biophilic' approach into the design of the Living Places.

③ Nature inside

Besides being fascinating and beautiful, incorporation of plants in the indoor environment is among others linked with decreased levels of depression and anxiety, better recovery from stress and illness and increased psychological well-being. We have done our best to ensure that the Living Places will become a place where both people and plants co-exist and thrive in fresh air and daylight.

