

Passive Design Strategies

Building Orientation

Building is oriented so that the hot afternoon sun shines on the wall with the bunk bed wall has small, thin, but wide windows to allow in some light while blocking the hot sun.

The wall with the most windows faces northeast to let in light without warming the space.

Front facade faces north west. This allows the western winds to enter the structure at it's widest point.

Water

Inward slope of the roof allows water to collect and drain into water tank.

Water tank provides water for gray-water treatment system.

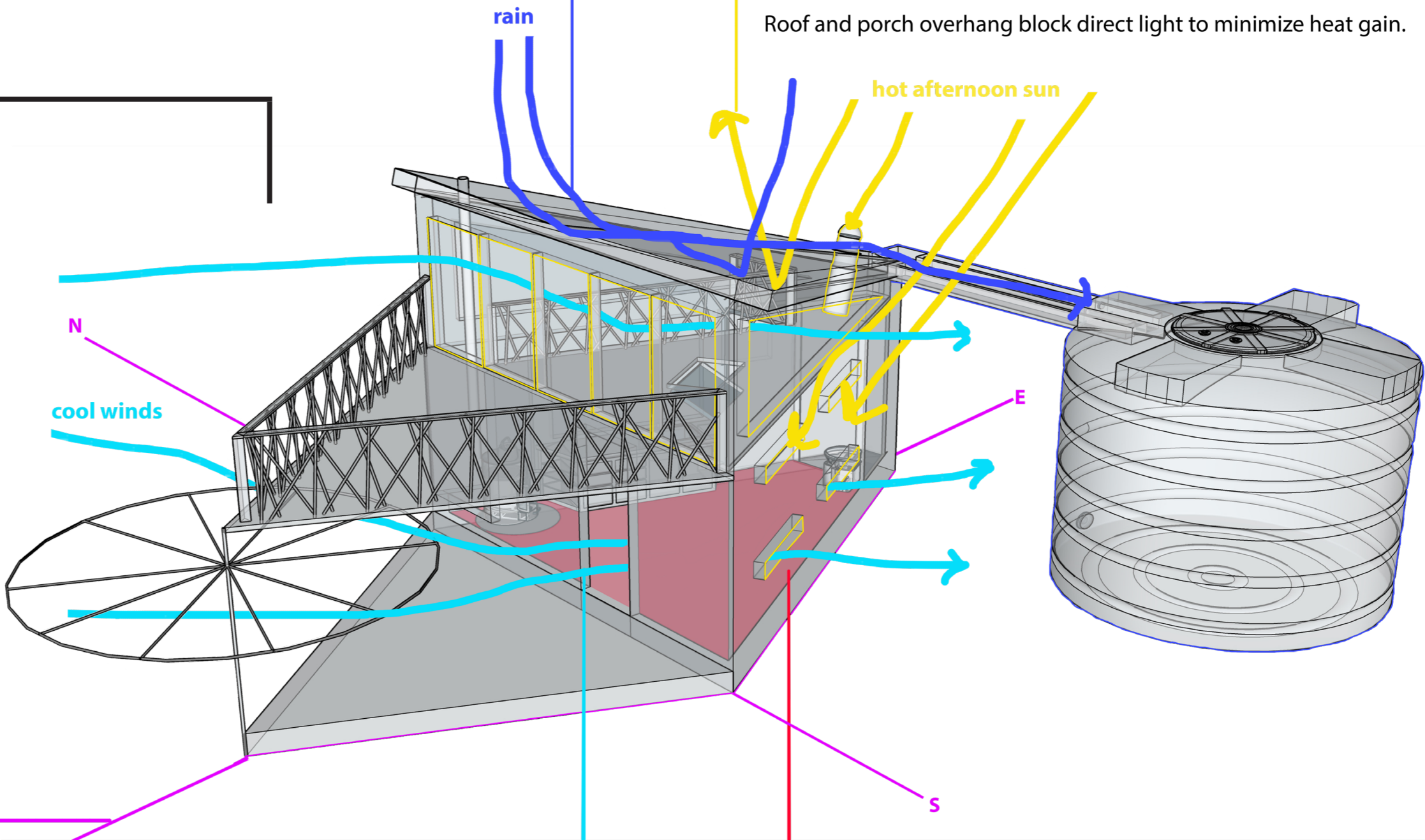
Daylighting

We focused most of our windows on the upper section of the building to bring light in indirectly.

Upper loft acts as light shelf, bringing light into the entire space

Solar tube extends from the back of roof down into the bathroom to combat use of electrical light

Roof and porch overhang block direct light to minimize heat gain.



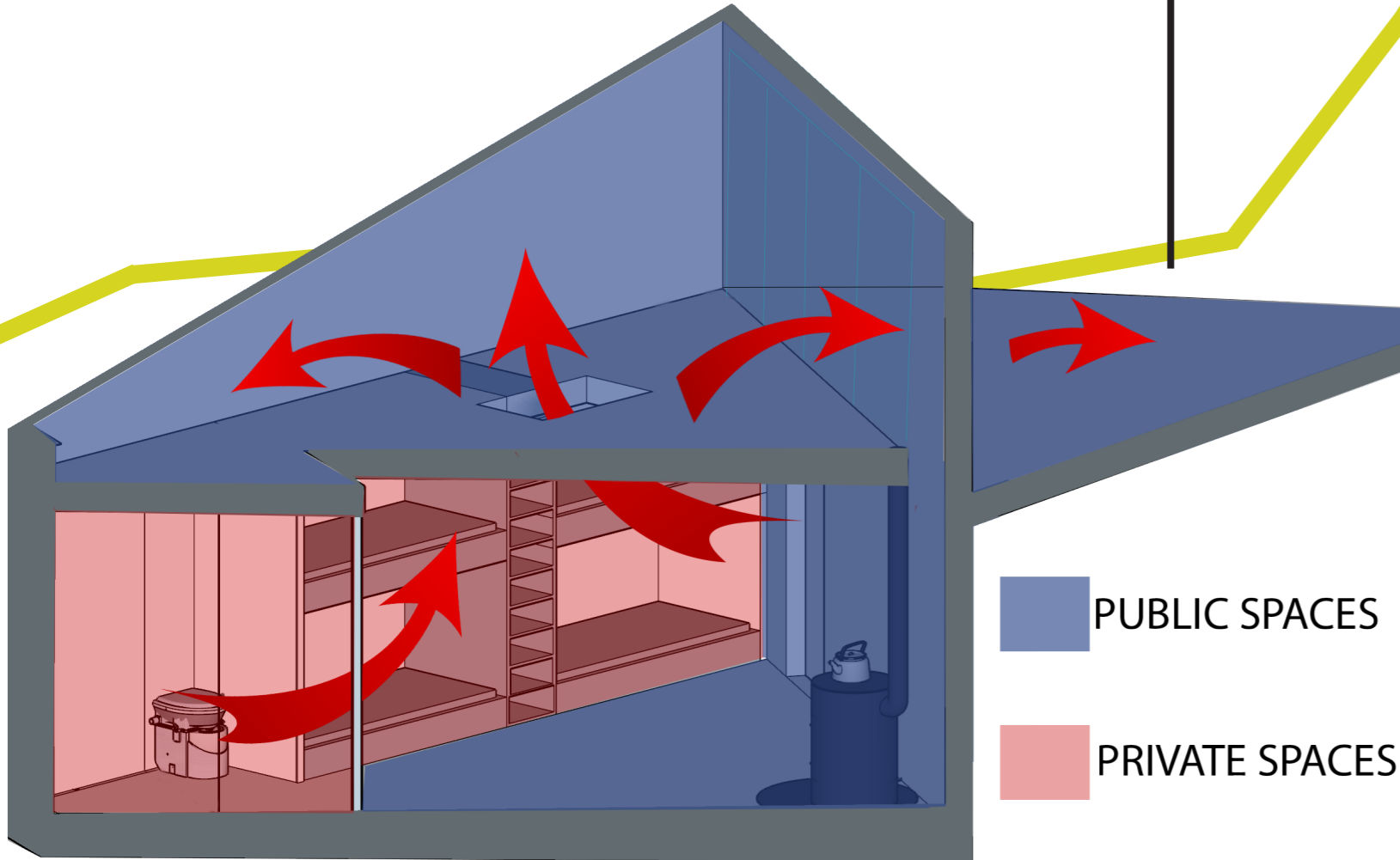
Circulation/Public/Private

Ventilation

Operable windows on all sides of the building allow wind to easily pass through via cross ventilation

Thermal Mass

Building has concrete floors and walls, allowing the heat from the sun during the day to keep the building warm in the evening through radiation.



Diagrams