Natural Ventilation

Natural ventilation relies on the wind and the "chimney effect" to keep a home cool. Natural ventilation works best in climates with cool nights and regular breezes.

The wind will naturally ventilate your home by entering or leaving windows, depending on their orientation to the wind. When wind blows against your home, air is forced into your windows on the side facing into the wind, while a natural vacuum effect tends to draw air out of windows on the leeward (downwind) side. In coastal climates, many seaside buildings are designed with large ocean-facing windows to take advantage of cooling sea breezes. For drier climates, natural ventilation involves avoiding heat buildup during the day and ventilating at night.

The chimney effect relies on convection and occurs when cool air enters a home on the first floor or basement, absorbs heat in the room, rises, and exits through upstairs windows. This creates a partial vacuum, which pulls more air in through lower-level windows. The effect works best in open-air designs with cathedral ceilings and windows located near the top of the house, in clerestories, or in operable skylights.

Passive solar homes are often designed to take advantage of convection to distribute heat evenly through the home. These homes are often amenable to natural ventilation by ventilating them near the top.

Natural ventilation can be enhanced or diminished through landscaping. Depending on the house design and wind direction, a windbreak—like a fence, hedge, or row of trees that blocks the wind—can force air either into or away from nearby windows.