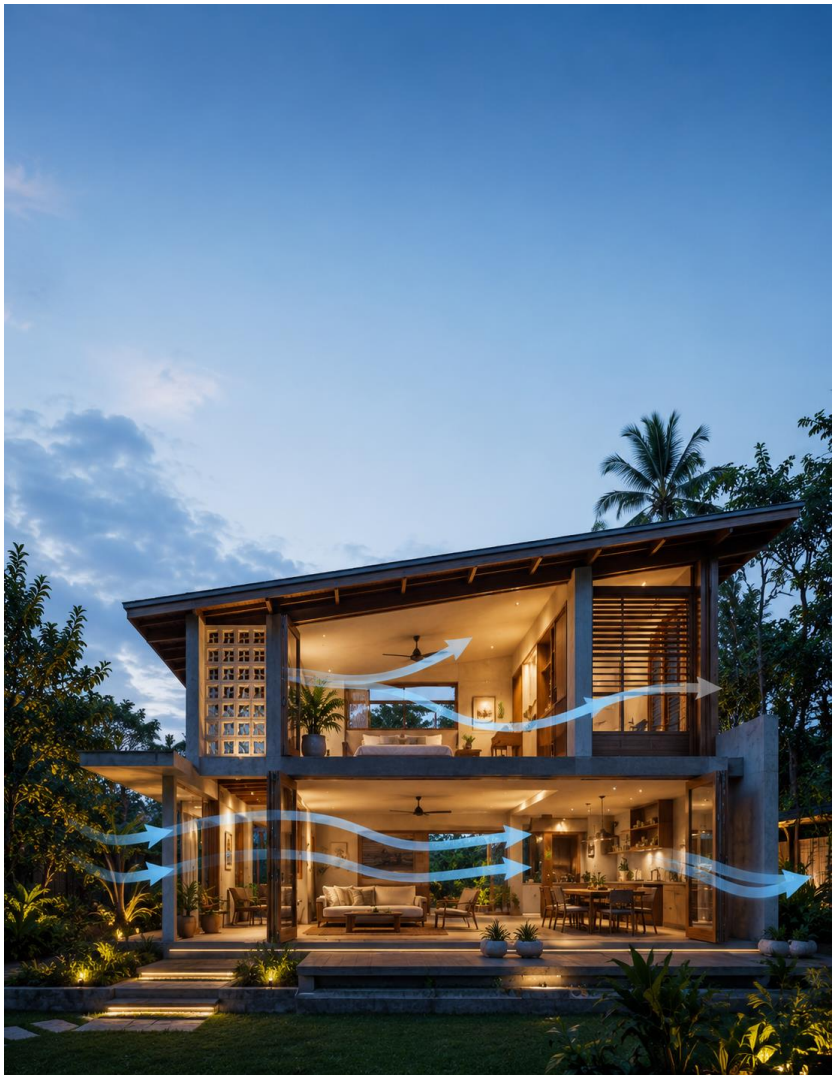
LIVING SPACES › HOME DESIGN › PASSIVE DESIGN

NATURAL VENTILATION PLANNER

A Room-by-Room Window Placement Worksheet

Companion to: How to Position Windows for Better Ventilation (ARCNET, LS-SA-003)



How to Use This Planner

This planner turns the Window Ventilation Design guide into a working document. Print it, or fill it in digitally, one room at a time. It follows the same four-step order used in the article's Airflow Checklist, because each step depends on the one before it.

BEFORE YOU START

Work through pages 1 to 4 for every main room — bedrooms, living areas, and kitchens benefit the most. Pages 5 and 6 apply once per home, not once per room.

What's Inside

Page	Worksheet	Fill This In
3	Exterior Wall Audit	How many exterior walls each room has access to
4	Window Placement Matrix	Your room's matching ventilation strategy
5	Opening Size Calculator	Floor area and openable window area, per room
6	Airflow Path Map	What blocks the path between your inlet and outlet
7	Climate Strategy Selector	Your climate type and window-opening schedule
8	Room-by-Room Checklist	A final pass/fail check for every room

PRO TIP

Keep one printed copy per floor of your home if you have a multi-story house. Ventilation strategy often changes floor to floor, especially between a ground floor with garden access and an upper floor exposed to stronger wind.

Worksheet 1: Exterior Wall Audit

List every main room in your home and count its exterior walls. This single number determines which ventilation strategy is realistic for that room, so do this first.

WHY THIS MATTERS

A room with only one exterior wall cannot achieve true cross ventilation, no matter how its single window is placed. Knowing your wall count now prevents wasted effort later.

Your Rooms

Room Name	Exterior Walls (count)	Which Walls Face Outside?	Notes
Example: Living Room	*2*	*North, East*	*Corner room, good cross-ventilation candidate*

PRO TIP

Walk the outside perimeter of your home with this worksheet in hand. It is easier to count exterior walls from outside than to guess from indoors, especially in homes with irregular floor plans.

Worksheet 2: Window Placement Matrix

Match each room from Worksheet 1 to its correct ventilation strategy using the reference matrix below, then fill in your own inlet and outlet plan.

Reference Matrix

Exterior Walls	Best Strategy	Inlet Position	Outlet Position
One wall	Single-sided	Low, on exterior wall	High, same wall, spaced apart
Two opposite walls	Cross ventilation	Low, windward wall	High, leeward wall
Two adjacent walls (corner)	Cross ventilation (diagonal)	Low, windward wall	High, adjacent wall
No exterior wall	Stack ventilation	Low vent from adjoining room	High vent, clerestory or shaft

Your Plan

Room Name	Strategy Chosen	Inlet Window/Vent Location	Outlet Window/Vent Location
Example: Living Room	*Cross ventilation*	*Low window, north wall*	*High window, east wall*

COMMON MISTAKE

Choosing a strategy based on which wall already has a window, rather than which wall faces the prevailing wind. If your existing window faces the wrong direction, plan for a second opening on a better-facing wall instead of working around the wrong one.

Worksheet 3: Opening Size Calculator

Check whether your existing or planned windows give you enough openable area for reliable ventilation. The target range is 12 to 20 percent of floor area, based on common building guidance and code minimums.

The Quick Formula

1. Measure your room's floor area (length × width).
2. Measure the openable area of each window (the part that actually opens, not the frame).
3. Add up all openable window areas in the room.
4. Divide total openable area by floor area, then multiply by 100 for a percentage.

TARGET RANGE

Aim for 12 to 20 percent. Below 10 percent, airflow becomes noticeably weak. Above 25 percent, you start trading ventilation gains for extra heat gain and glare, especially in hot climates.

Your Calculations

Room Name	Floor Area (sq ft / sq m)	Total Openable Window Area	Openable % of Floor Area
Example: Living Room	*180 sq ft*	*27 sq ft*	*15%*

PRO TIP

Only count the part of a window that actually opens. A large fixed picture window with a small operable pane only contributes the operable pane's area to your ventilation calculation, even though it looks much bigger.

Worksheet 4: Airflow Path Map

Stand at your inlet window and look toward your outlet window. Anything between them — furniture, closed doors, partition walls — weakens the airflow. Use this page to map and clear that path.

Sketch Space

Use the box below to sketch a simple top-down outline of the room, marking the inlet, the outlet, and anything currently sitting between them.

Path Obstruction Checklist

- ☐ Sofa, bed, or large furniture blocks the direct line between inlet and outlet
- ☐ Heavy curtains or blinds are kept closed during ventilation hours
- ☐ An interior door along the path is usually kept closed
- ☐ A wardrobe, shelf, or partition wall sits across the path
- ☐ Window screens or security grilles reduce the effective opening area

> **COMMON MISTAKE**
> Fixing window placement but leaving the path between windows untouched. Even a perfectly positioned inlet and outlet move very little air if a closed door or large furniture piece sits directly between them.

Worksheet 5: Climate Strategy Selector

Window placement does not change by climate, but your daily window-opening schedule should. Find your climate type below and set your habits accordingly. This applies once per home, not once per room.

Reference: Climate Response Table

Climate Type	Example Regions	Best Time to Ventilate
Hot-Humid	Mumbai, Chennai, Singapore, Bangkok	Most of the day, whenever breeze is available
Hot-Dry	Riyadh, Phoenix, inland Australia	Late evening through early morning
Temperate	London, much of Europe, coastal US	Daytime in summer; brief periods in winter
Cold	Northern Europe, Canada, Scandinavia	Short daily bursts to clear humidity

Your Climate & Schedule

My Climate Type	My Local Conditions	My Window-Opening Hours (Summer)	My Window-Opening Hours (Winter)

TWO SEASONS, ONE PLACEMENT

If your region has a clear hot season and a clear cool season, plan two different schedules rather than one fixed routine. The window placement from Worksheets 2 through 4 does not change — only when you open and close stays seasonal.

Worksheet 6: Room-by-Room Airflow Checklist

A final pass-or-fail check for every room you have worked through. Mark each item Yes or No for each room, then use the results to decide where to focus first.

The Checklist Items

- ✓ **I know how many exterior walls this room has access to.**
- ✓ **This room has openable window area between 12 and 20 percent of floor area.**
- ✓ **The inlet and outlet windows sit on different walls, not the same wall.**
- ✓ **The inlet window sits lower than the outlet window wherever possible.**
- ✓ **Nothing blocks the direct path between the inlet and outlet openings.**
- ✓ **The main openings align with the site's prevailing wind direction.**

Your Room-by-Room Results

Mark Y (yes) or N (no) for each room against each checklist item above, numbered 1 to 6.

Room Name	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6
Example: Living Room	*Y*	*Y*	*Y*	*N*	*Y*	*Y*

PRO TIP

Any room scoring three or more "No" answers is your highest-priority fix. Start your renovation or rearrangement budget there before spreading effort evenly across every room.

Worksheet 7: 30-Day Action Plan Tracker

Use this tracker alongside the worksheets you have already completed. Check off each task as you finish it, and note the date so you can see your progress at a glance.

Week 1 — Audit Existing Windows

☐ Completed Worksheet 1: Exterior Wall Audit for every main room

☐ Completed Worksheet 3: Opening Size Calculator for every main room

☐ Flagged rooms below 10–12 percent openable area

Week 2 — Identify Airflow Paths

☐ Completed Worksheet 2: Window Placement Matrix for every main room

☐ Identified prevailing wind direction using the ribbon test

☐ Completed Worksheet 4: Airflow Path Map for every main room

Week 3 — Improve Ventilation

☐ Rearranged furniture blocking identified airflow paths

☐ Replaced heavy curtains where privacy allows

☐ Installed or adjusted louvered vents in single-sided rooms

Week 4 — Reduce Mechanical Cooling

☐ Completed Worksheet 5: Climate Strategy Selector

☐ Tracked one week of natural-ventilation-only hours

☐ Completed Worksheet 6: Room-by-Room Airflow Checklist

> **KEY INSIGHT**
> The first three weeks of this plan cost nothing beyond your time. Only consider longer-term fixes, like adding new openings, after testing how far rearrangement and scheduling alone can take you.

Continue Exploring

This planner is the companion to one article in ARCNET.STUDIO's Passive Design content cluster. These related guides build on the same ideas.

- How to Position Windows for Better Ventilation — the full guide behind this planner.
- Passive Cooling Strategies for Tropical Homes — how shading, materials and ventilation work together.
- Understanding the Stack Effect in Residential Design — a deeper look at vertical airflow.
- Climate-Responsive Home Design: A Beginner's Guide — hot-dry, hot-humid, temperate and cold strategies compared.

ARCNET ARTICLE SYSTEM

Field	Value
Resource ID	LS-SA-003-PLANNER
Linked Article	LS-SA-003 — Window Ventilation Design
Hub	Living Spaces
Category	Home Design
Content Cluster	Passive Design
Audience	Homeowners
Last Reviewed	June 2026

ARCNET.STUDIO publishes evidence-based, climate-responsive architecture guidance for homeowners across India, Asia and global audiences. This planner is part of the Passive Design content cluster within the Living Spaces hub.

End of planner.