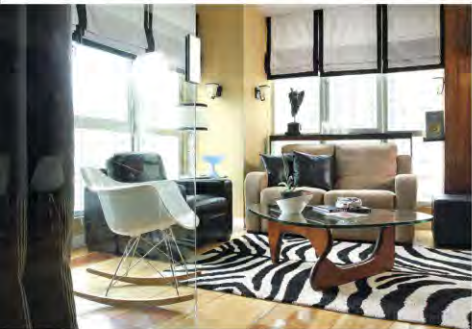


# Cool by design

AWARENESS AND PLANNING CAN BRING DOWN THE SEARING TEMPERATURE AS WELL AS YOUR ELECTRIC BILLS BY DEVI MADRID



ABOVE: Shades bring down temperatures significantly. (Photograph by Jovell Laranza)  
RIGHT: Cooler colors like green help raise your comfort in hot weather. (Photograph by Milo Sogweco)



■ MARCH BEGINS the hottest days of the year, and augurs nightmarish electrical bills. Achieving comfort in your home with reduced energy consumption is the ideal that every homemaker aspires for. Two experts in the field share valuable tips on the progressive approach to cooling your space.

## Cooling through passive and active design

*Architect Devie Madrid teaches Tropical Design at the University of the Philippines College of Architecture. She emphasizes the importance of design in attaining an ideal environment.*

Human comfort is based on air temperature, humidity, radiation and ventilation. An ecologically designed building is responsive to these factors. Achieving comfort can be attained through passive and active designs.

Passive design uses the building's form to lower energy use. A cooler environment starts with good building orientation. Most activities should be concentrated in areas facing north and south, which are cooler. The service activities, like cooking, laundering, pressing, should be positioned in east and west sections, which tend to be warmer.

Also, the size and position of openings for ventilations should be given much attention. There should be more windows on the north side, some windows on the south and minimal windows on east and west, as these are hit by direct sunlight.

Remember that for good ventilation, winds must have a channel to enter and to exit.

Shading devices significantly bring down temperatures inside a building, and these should be placed where the sun hits hardest. The rule of thumb is that for north and south sides, horizontal sunshades are best, and for east- and west-facing windows, vertical sunshades are recommended.

Double walls and insulated walls reduce internal heat. Plants can be used to cover walls, not just as a decorative touch but to cool the interior, as well.

Do remember that light-colored paint absorbs less heat, white being the most ef-



Ceiling fans and furniture that allow air to move will make your condo much cooler. (Photograph by Wilton Ong)

fective as it reduces heat transfer by as much as 36%.

As for active design, it promotes cooling with the use of products operated by electrical and mechanical means. Air conditioning, mechanical blinds and lighting control systems fall under this category.

## Top Tips for heat reduction

*Liza Oranga is a LEED-certified architect, who honed her skills in New York with a high profile design company before returning to Manila to start her own business. Liza and husband Robert run Philippe Gregoire, Inc., a resource for energy-efficient home and industrial products. Liza shares some tips:*

**Window panes.** Reflective films and spray-on treatments significantly reduce heat coming in from window panes. Thick curtains are decorative and also aid in bringing down indoor temperatures.

**Appliances and positioning.** A lot of the new air conditioning models are now more efficient, but positioning is also key. Direct cooling units close towards the source of heat, i.e., blowing towards the window.

Position cooling units above heads of the occupants. Do remember that warm air rises to the top, cool air usually stays at the bottom.

- Use more efficient light bulbs such as CFLs, LEDs, T5 metal halides and traditional incandescents give off much heat.

- Look for appliances that have the Energy Star rating, a certification that a product meets stringent requirements for energy efficiency. Typically, energy-efficient products give off less heat.

- An induction cook top is a good choice over conventional stoves as it only heats the surface of the metal pan and not the surrounding areas. It also cooks for a fraction of the time, thus, less heat generated (and less energy consumed) over all.

- Try to incorporate ceiling fans into the design of your home; the gentle breeze improves ventilation and increases the comfort level.

- If you are on the topmost floors, consider putting insulation on the underside of the roof deck slab.

- Stone products, such as marble, granite and sandstone, are poor conductors and retainers of heat. They are the better options for walls and ground cover. ❁

## TAKE NOTE

Especially helpful to remember during hot times:

- 1 Fluorescent bulbs convert 75% of electricity consumed to heat.
- 2 Sensor-suggested products are now available, automatically adjusting air conditioning settings whenever there are less people in a specific area.
- 3 Bare condos give you the utmost flexibility to lay out spaces, and make the arrangement more free-flowing, allowing air movement between spaces.
- 4 Reducing indoor humidity makes space seem cooler. Minimize mid-day washing and drying clothes, showering, and cooking. When doing these tasks, turning on the fans help dissipate the moisture from the air.
- 5 Washers, dryers, dishwashers, and water heaters also generate large amounts of internal heat and humidity. It is advisable to seal off these appliances from the rest of the house.
- 6 When leaving your house, draw the blinds to keep the heat out.
- 7 Keep heat-generating appliances (TV, fans, computers, etc.) away from thermostat-guided cooling units.
- 8 Metals absorb heat, so keep metal accents and furniture away from heat sources.
- 9 In the design world, visual temperature pertains to the psychological impact of colors. Opt for cooler colors like blue or green, as opposed to red and yellow.