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Everything in Balance

Passive Solar Design - Overhangs and Shading

Keep the sun off the glass in the summer. Let the sun fall on the glass in the winter. How can you do both? Shade, of course.

Overhangs are one of the best (and least costly) shade design elements to include in your home. In the summer, when the sun is high in the sky, the overhangs should shade the room completely. In the winter, when the sun is low, the overhangs should allow the full sun to enter, warming the air, as well as the floor, wall and other features.

It's important that overhangs are properly sized. If they are too short and in the summer, your south-facing glass can act as a solar cooker for your living spaces. If they are too long, your living areas will stay dark and cool not only in the summer, but in the winter as well.

The best scheme to keeping your home cool is not to let it get hot in the first place, so use shade when possible. Besides overhangs, shading can be provided by several other means: cover panels over skylights, insulated drapes or shutters, exterior shades, awnings and landscaping.

Properly placed trees and vine-covered trellises can stop summer sun on the south, east and west sides of your home. Landscaping is one of the best methods to keep your home cool. The temperature inside your home can increase as much as 20 degrees or more if east and west windows and walls are not shaded.

Deciduous trees and vines make good partners with passive-designed buildings because they lose their leaves in the winter and permit more sunlight to pass through during the cold season. Trees also take overhangs one step further - they can lower roof and attic temperatures by shading the roof as well as blocking direct solar gain. Care must be taken in planting trees, however, so their shadows will not fall on solar collectors used for water heating.

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