



*The Renewable Energy site for Do-It-Yourself*

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## Solar Windows

Adding a window on the south wall of your house can provide very useful winter heat gain.

Windows are very good solar collectors -- they are just as efficient as a commercial solar collector you might add on your roof, and can be less expensive and less complex to install. No ducting or plumbing required.

This section gives plans for a retrofitable solar window design that is simple, and less expensive than installing a commercial window. It uses very simple framing, and can be built for little more than the cost of the glass itself.

These plans are excerpted from the book "Passive Solar Energy" by Bruce Anderson and Malcolm Wells. The full book is available for free download [here](#).

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A couple additional notes:

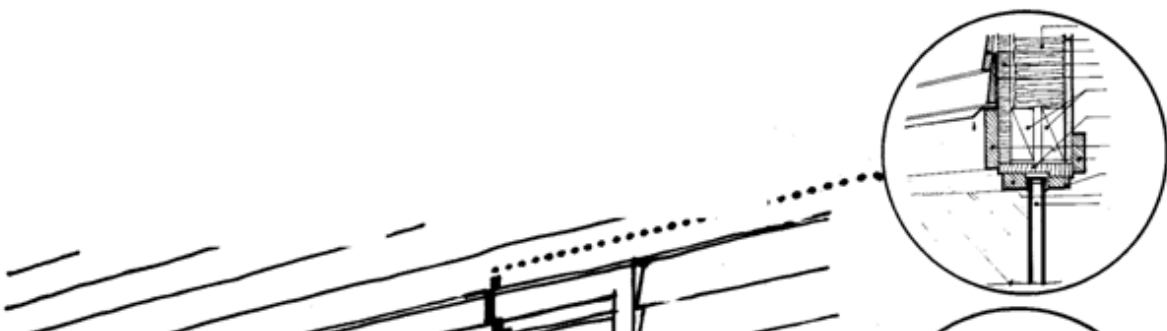
- Adding some form of insulating thermal shade to the window will greatly reduce night heat loss. While windows are very good collectors, they do lose a lot of heat at night, so some form of insulating shade is very important to reduce night losses.
- You should include some means to shade the window during the summer. Unwanted solar gain through an unprotected south facing window during the summer can aggravate cooling problems. There are many ways to [provide shading](#).
- The window cutout may require structural framing beyond that shown in the pictures below. Consult a home building book with a good section on framing to see if more framing is needed in your case.

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From "Passive Solar Energy", B. Anderson, M. Wells

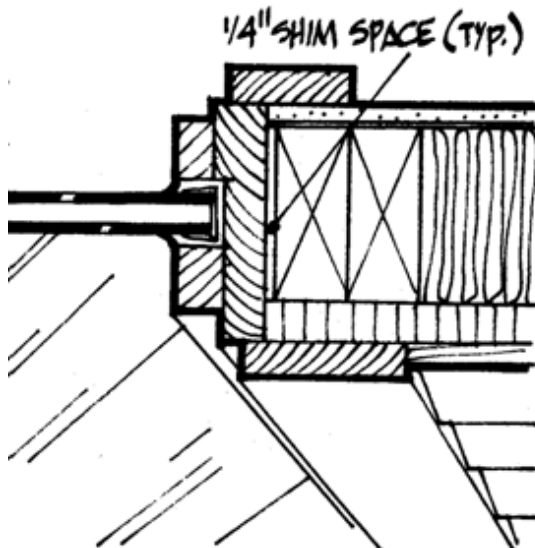
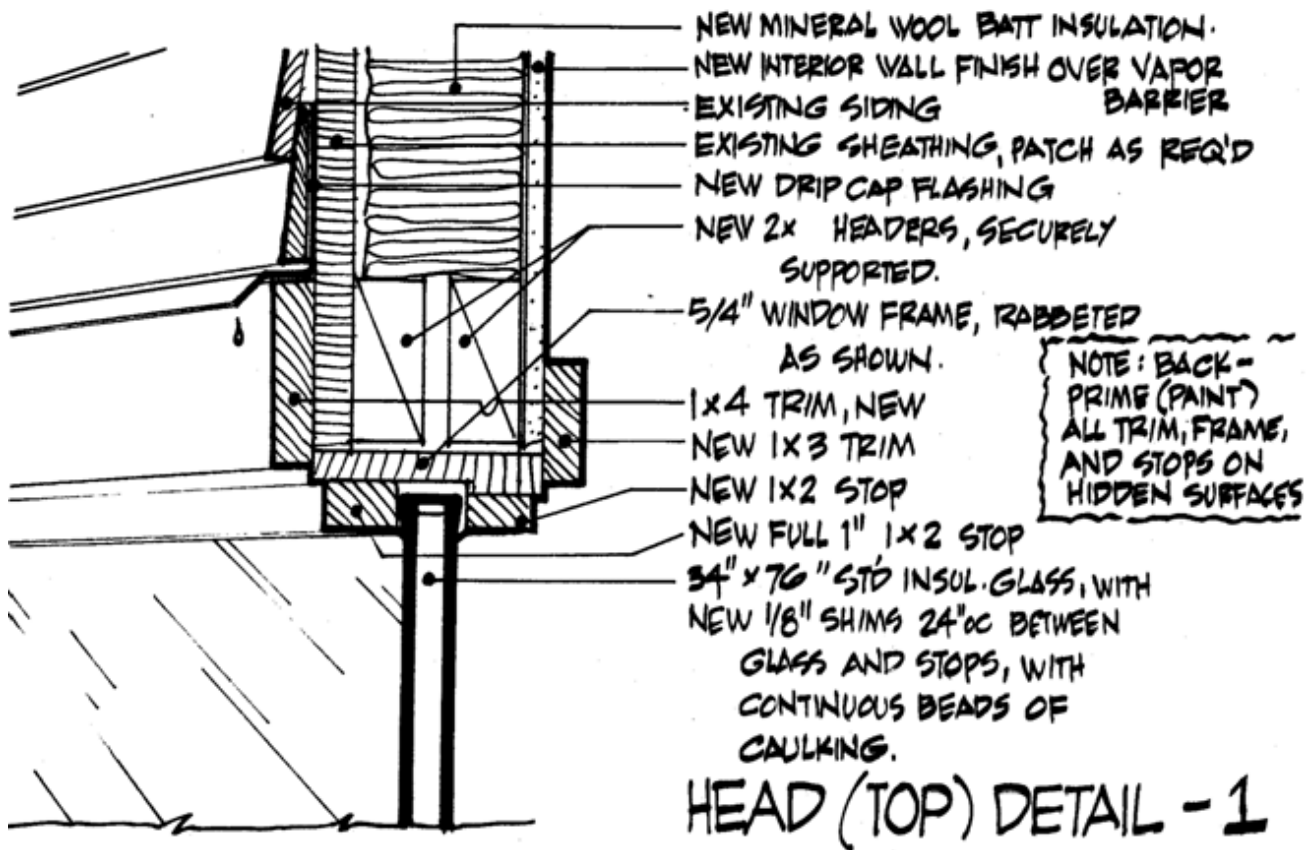
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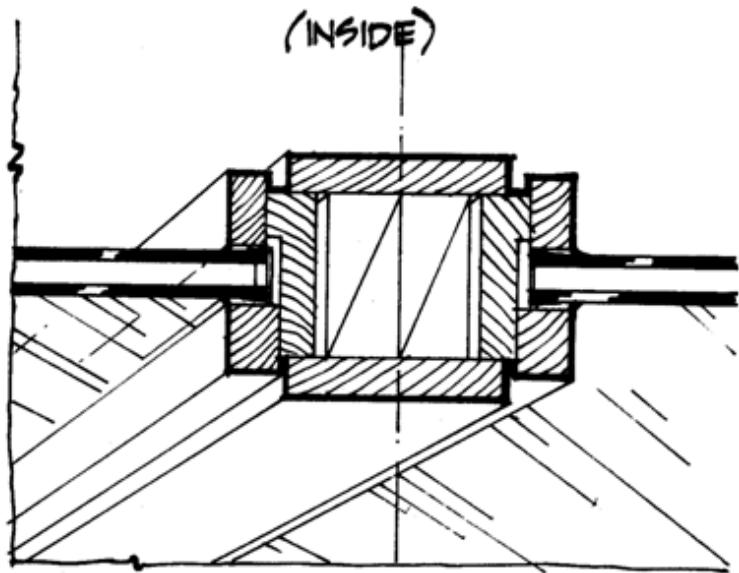


## 132 Construction Details



MEMBERS SHOWN  
 AT LEFT ARE THE SAME  
 AS THOSE NOTED ON THE DETAIL ABOVE.  
 NOTE ABSENCE OF FLASHING.  
 CAULK BETWEEN SIDING AND 1x4.  
 JAMB (SIDE) DETAIL - 2

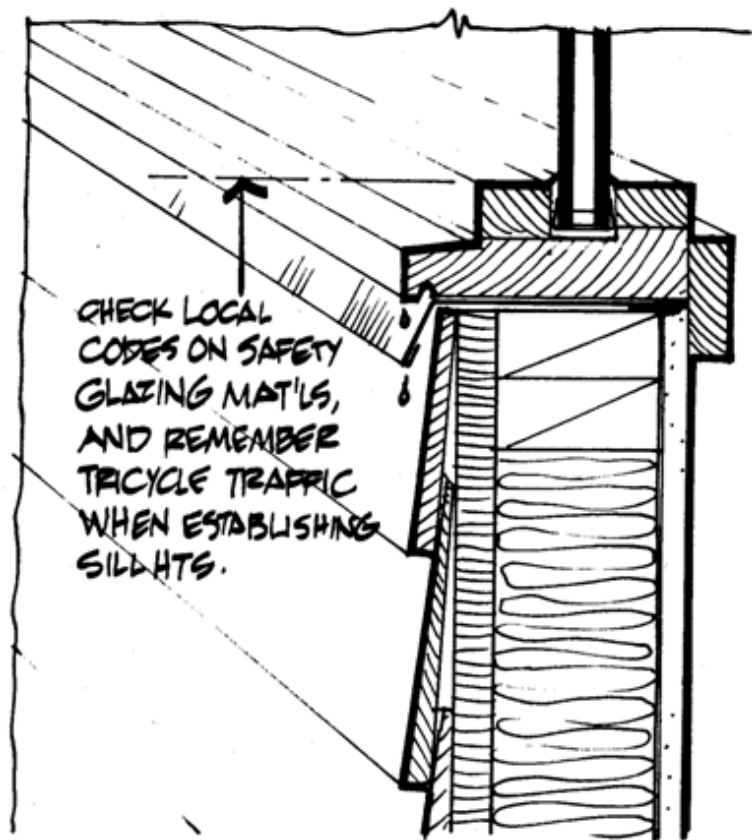
AGAIN, THE DETAIL IS SIMILAR  
TO THE HEAD DETAIL  
BUT NOTICE THAT THE  
5/4" WINDOW FRAME  
IS 3 1/2" TO MATCH THE 2x4'S,  
AND THE COVER TRIM,  
INSIDE AND OUT, IS  
4 1/2" WIDE



MULLION (POST) - 3

SILL DETAIL - 4

NOTE THAT THE  
WINDOW FRAME AT THE SILL  
IS MADE OF 2x MATERIAL  
WITH TWO RABBETED STEPS  
ON TOP AND ONE  
DRIP SLOT ON THE  
BOTTOM.  
CAULK THE UNDERSILL FLASHING  
NEAR THE INDOOR SIDE.



Some additional thoughts:

- ☀ Choosing standard size glass units such as those used in sliding door units will usually result in a cost saving.
- ☀ Glass supply houses may be willing to sell you units that they have been ordered incorrectly, or have slight defects for much lower than retail prices. I have actually been offered the "take it away, and its yours deal".
- ☀ If having a clear view out the window is not a requirement, you might think about substituting double or triple wall Polycarbonate glazing. This material is virtually indestructible, is easier to work with than glass, and normally cheaper. Be sure to get the type that has a UV resistant layer on the sun side. This material has become quite common as a greenhouse glazing.

Gary 05/11/06

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