

## WALL UP YOUR GREENHOUSES

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The north wall in most greenhouses wastes both light and heat.

There is more light passing out of the north wall of greenhouses than enters. This has been graphically shown by covering the north wall in an east-west greenhouse to the eave with aluminum covered building paper. The north bench, traditionally the poorest bench for growth, produced better than the bench next to it.

A glass sidewall may have 10 to 15 times the heat loss of a conventional wood frame wall with 4" insulation when radiant, convection and infiltration heat losses are considered. Radiant loss is heat waves passing out through the glass. Convection means transfer of heat to the glass from the air. Infiltration is air exchange through cracks.

Assume that the glass and glazing bars are removed. The studs, T1-11 siding, 3 1/2" fiberglass insulation, inside 1/2" exterior plywood wall, plastic vapor seal and aluminum building paper will cost (without labor) about \$.90 per square foot.

Heat loss attributed to the north sidewall may exceed 2 gallons of fuel oil per square foot per year. At 40¢ a gallon, the wall is paid for in heat savings in 1-2 years. The extra growth obtained from higher light is a bonus.

If it is impractical to rebuild the wall completely, covering the glass with aluminum building paper is a good idea. Fasten so as to provide an air space for greater insulation. It may cut heat loss by more than half while increasing light.

Aluminum building paper isn't the only reflective material you can use. It dulls in a few years and a new layer can be placed over the old. Mirrors would be ideal but expensive. Aluminum sheeting and white paint are quite effective. Can you suggest other materials?

The north gable end of a north-south house presents a more difficult problem in some houses, but the advantages are the same. In some situations it may be easier to build a false insulated wall inside the glass.

In any event, new construction should be designed to provide insulated, reflective north walls. It may reduce your heating bill 10%. This is 10¢ for every foot of ground you have covered.