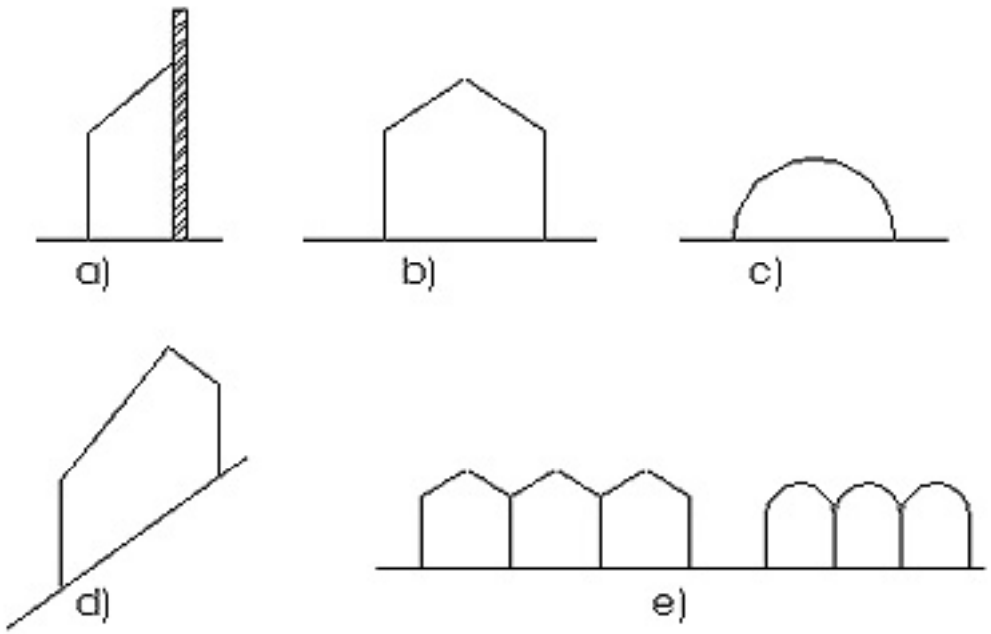
In the name of God

Greenhouse


a)
b)
c)
d)
e)

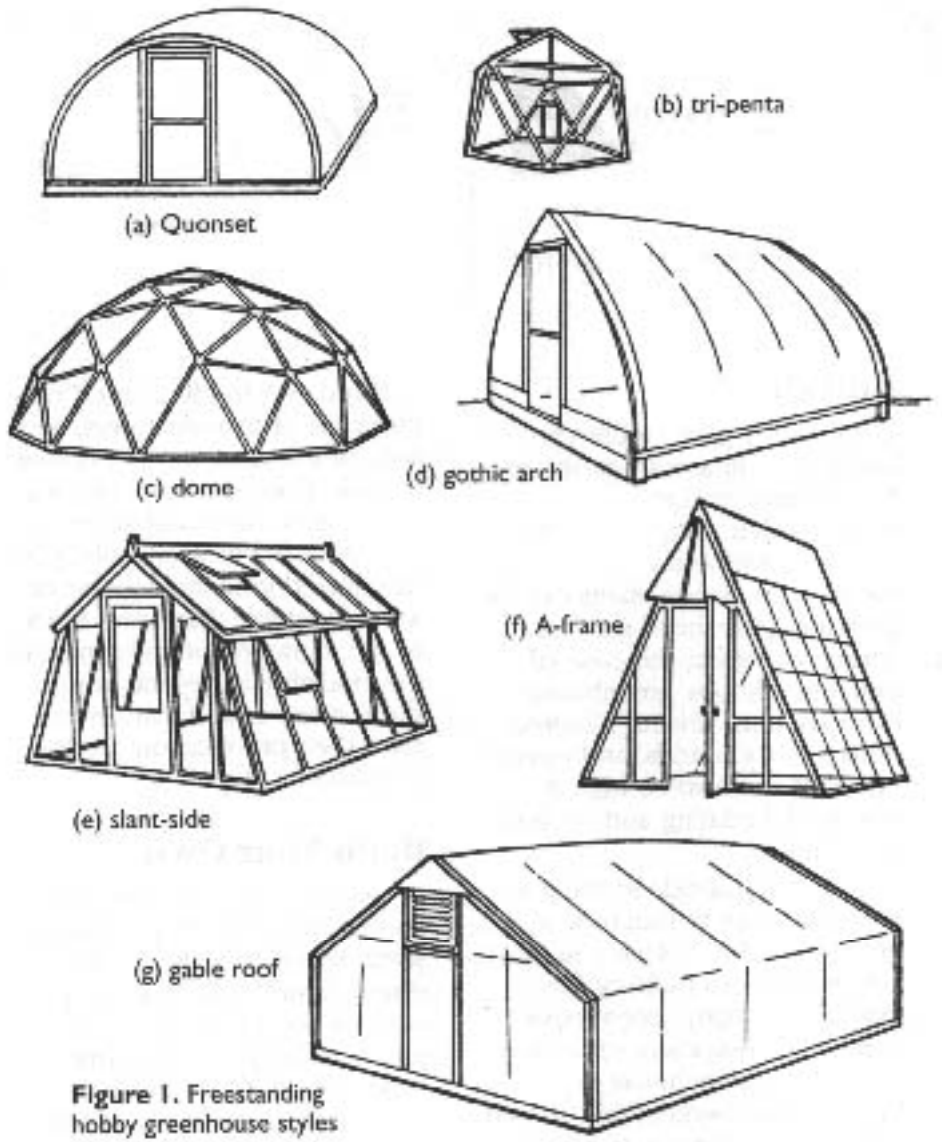


Figure 1. Freestanding hobby greenhouse styles

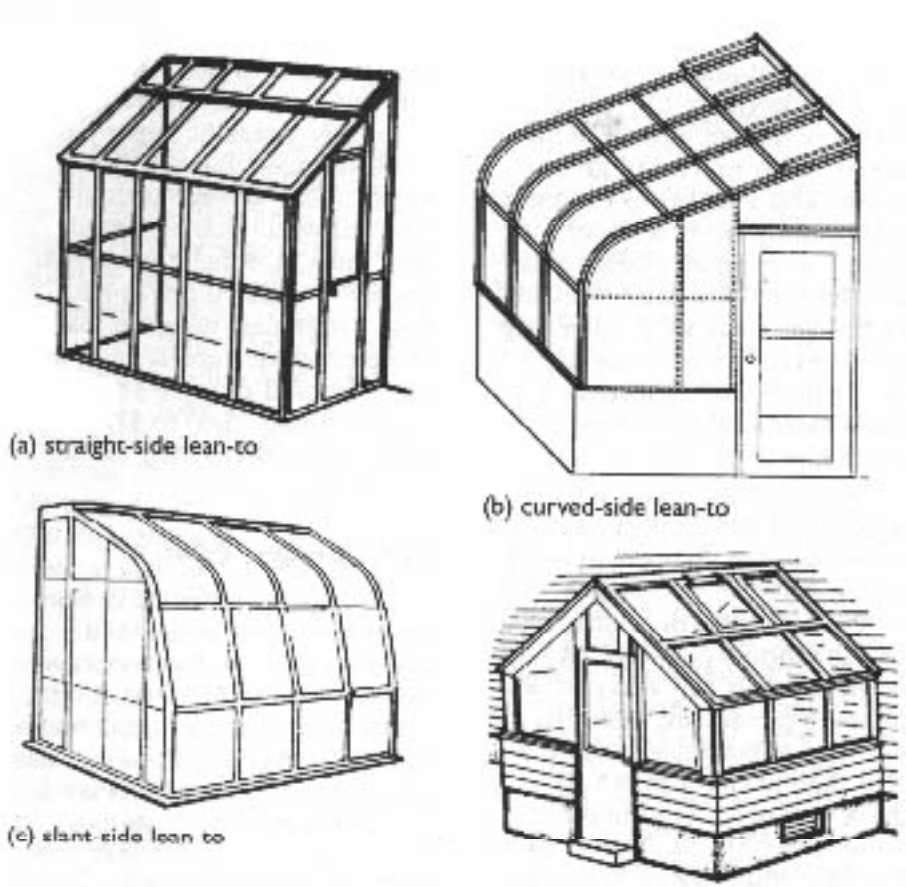


Figure 2. Attached hobby greenhouse styles

EVEN SPAN GRENHOUSE

UN-EVEN SPAN GREENHOUSE

LEAN-TO GREENHOUSE

QUANSET GREENHOUSE

GOTHIC GREENHOUSE

DOME TYPE GREENHOUSE

EVEN-RIDGE-AND -FURROW

GOTHIC RIDGE –AND-FURROW


06/12/2005

SAWTOOTH GREENHOUSE

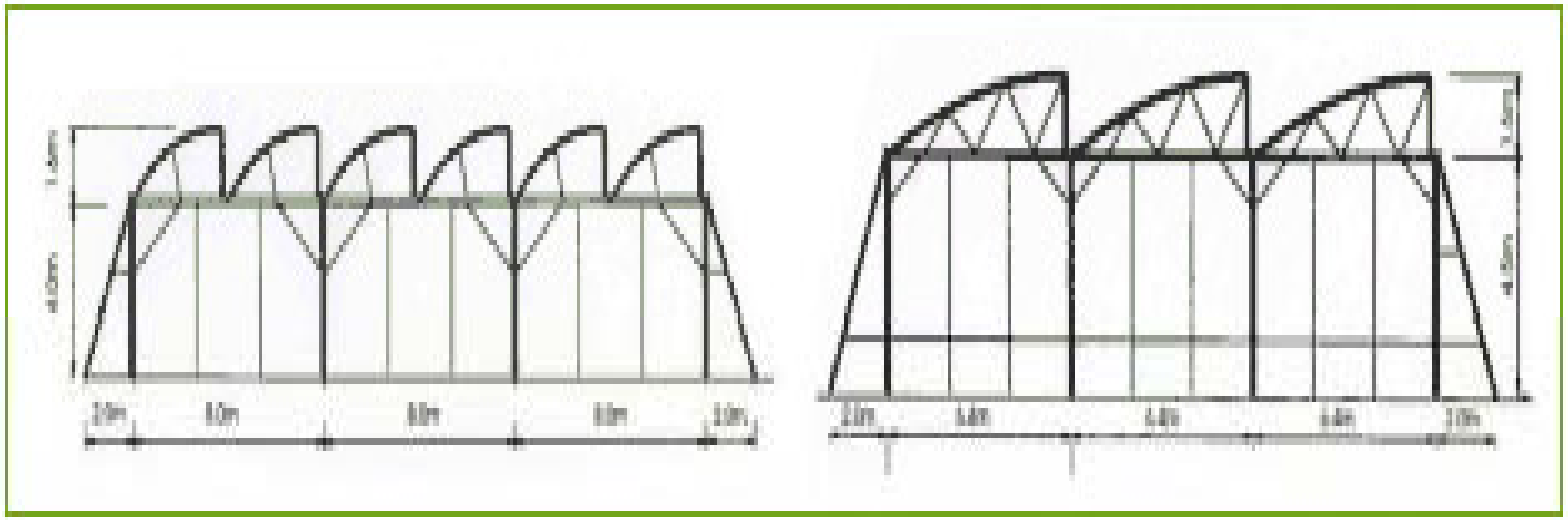
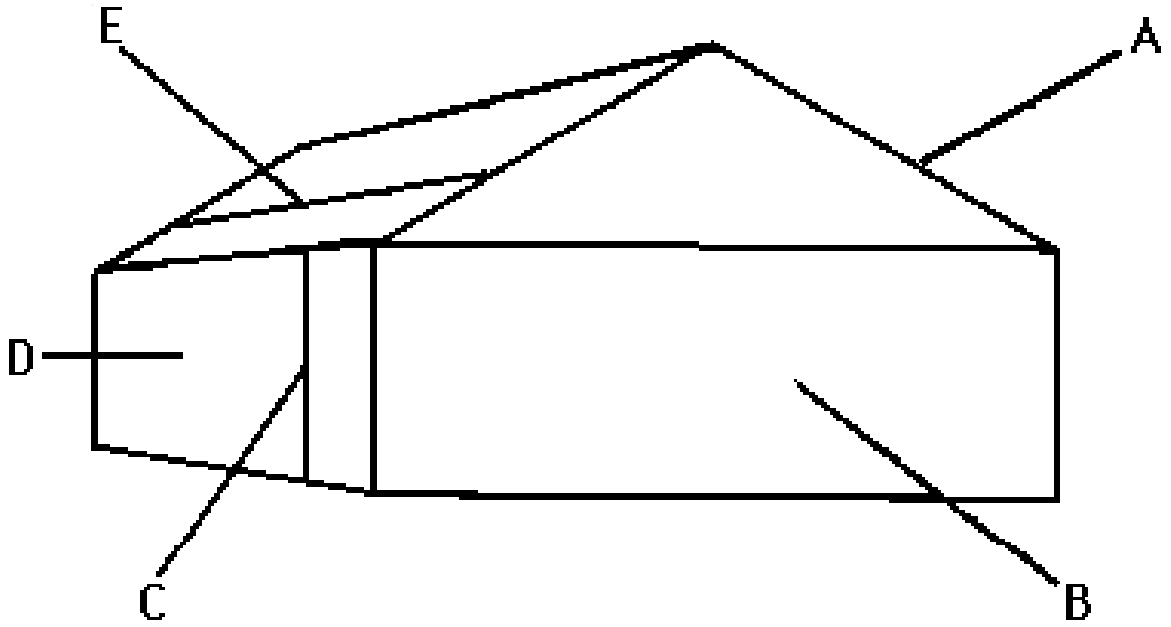


Figure 2. Basic structural components of a greenhouse: A)rafter, B) end wall, C) side post, D)side wall, E) purlin.



TRUSS FRAME GREENHOUSE

PIPE FRAME GREENHOUSE

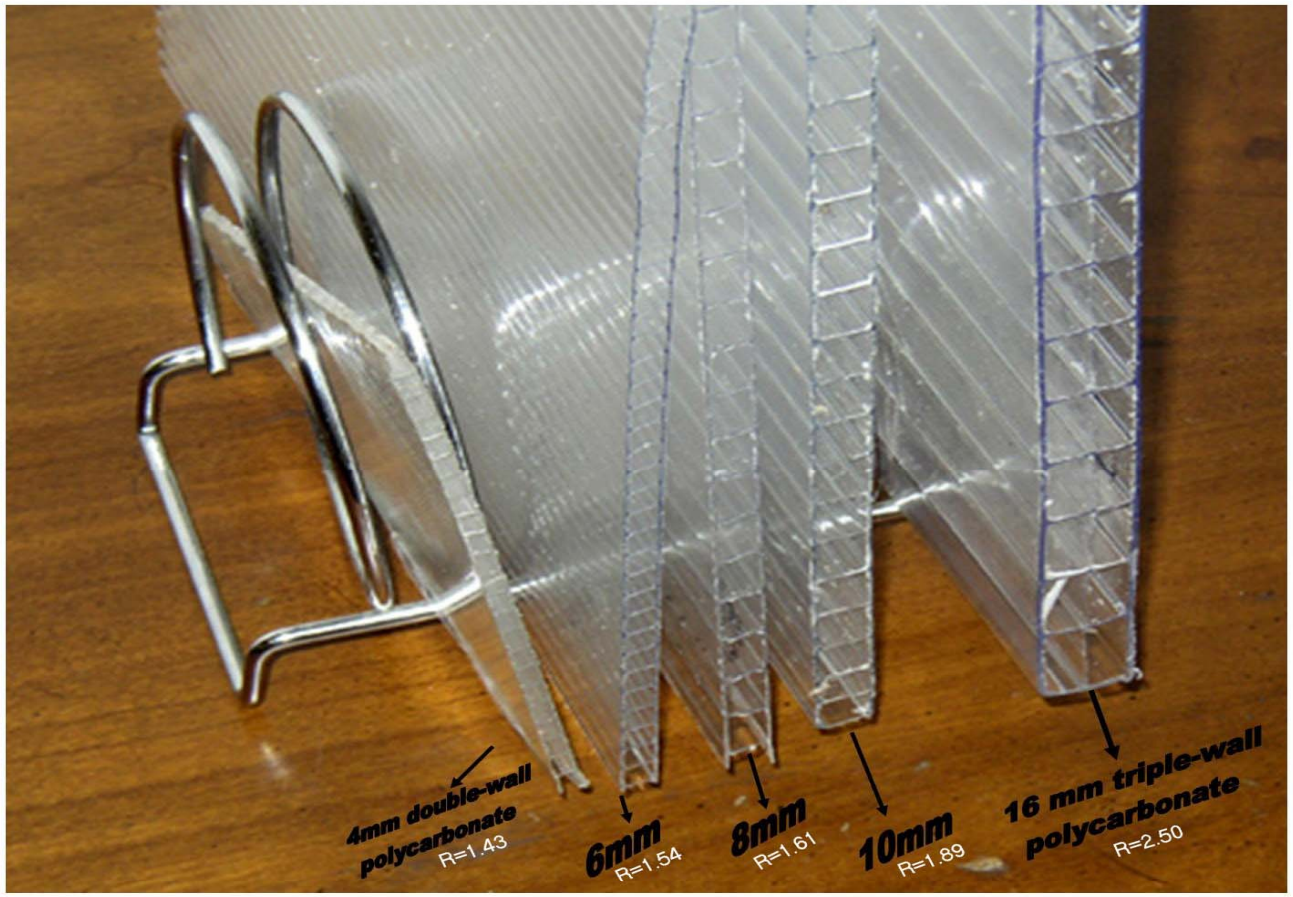
WOOD FRAME GREEMHOUSE

GLASS GREENHOUSE

GREENHOUSE ROTATES TO FACE THE SUN

PVC GREENHOUSE

POLYCABONATE COMPARISON

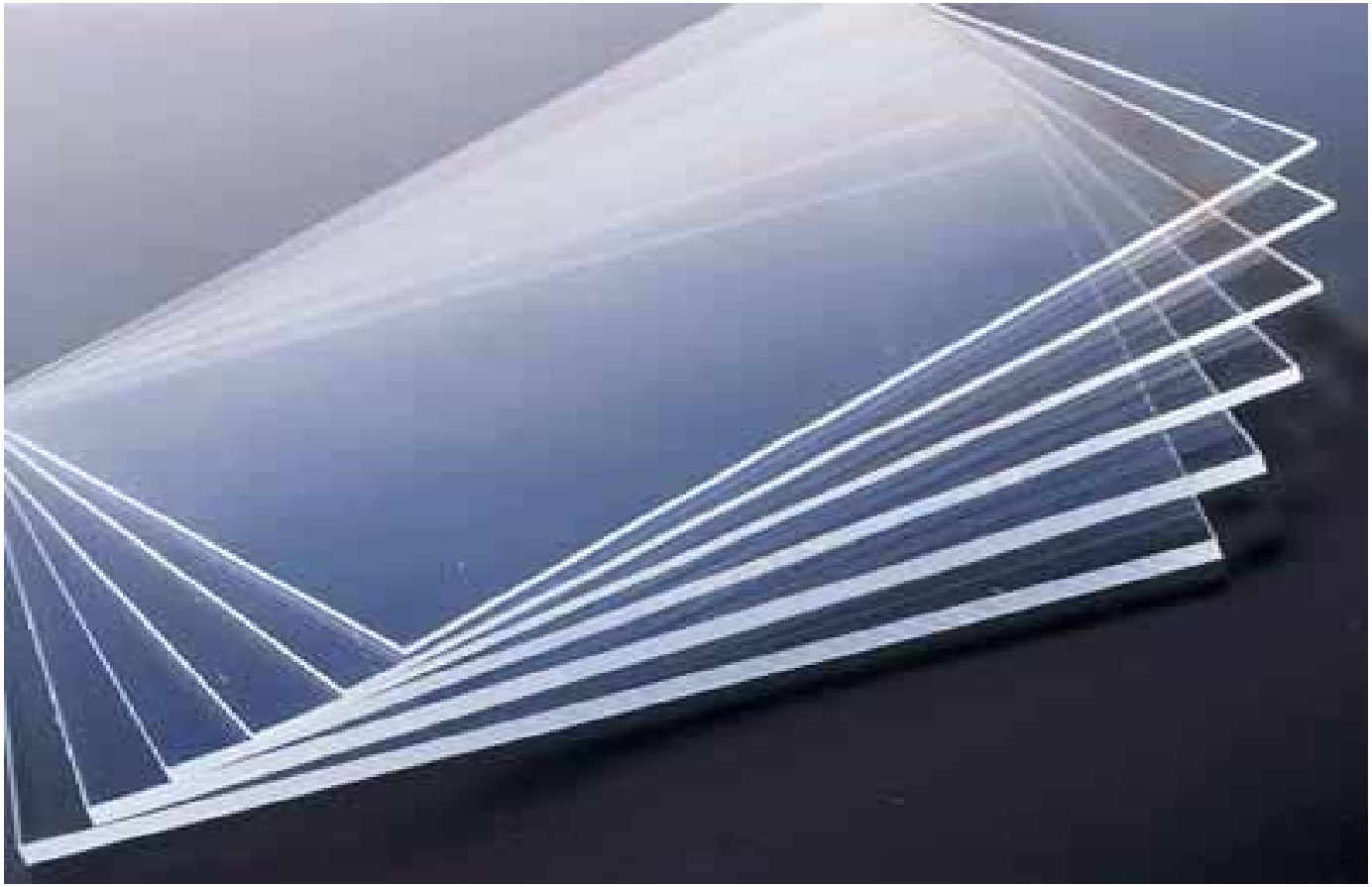


POLYCABONATE

POLYCABONATE GREENHOUSE

POLYCABONATE GREENHOUSE

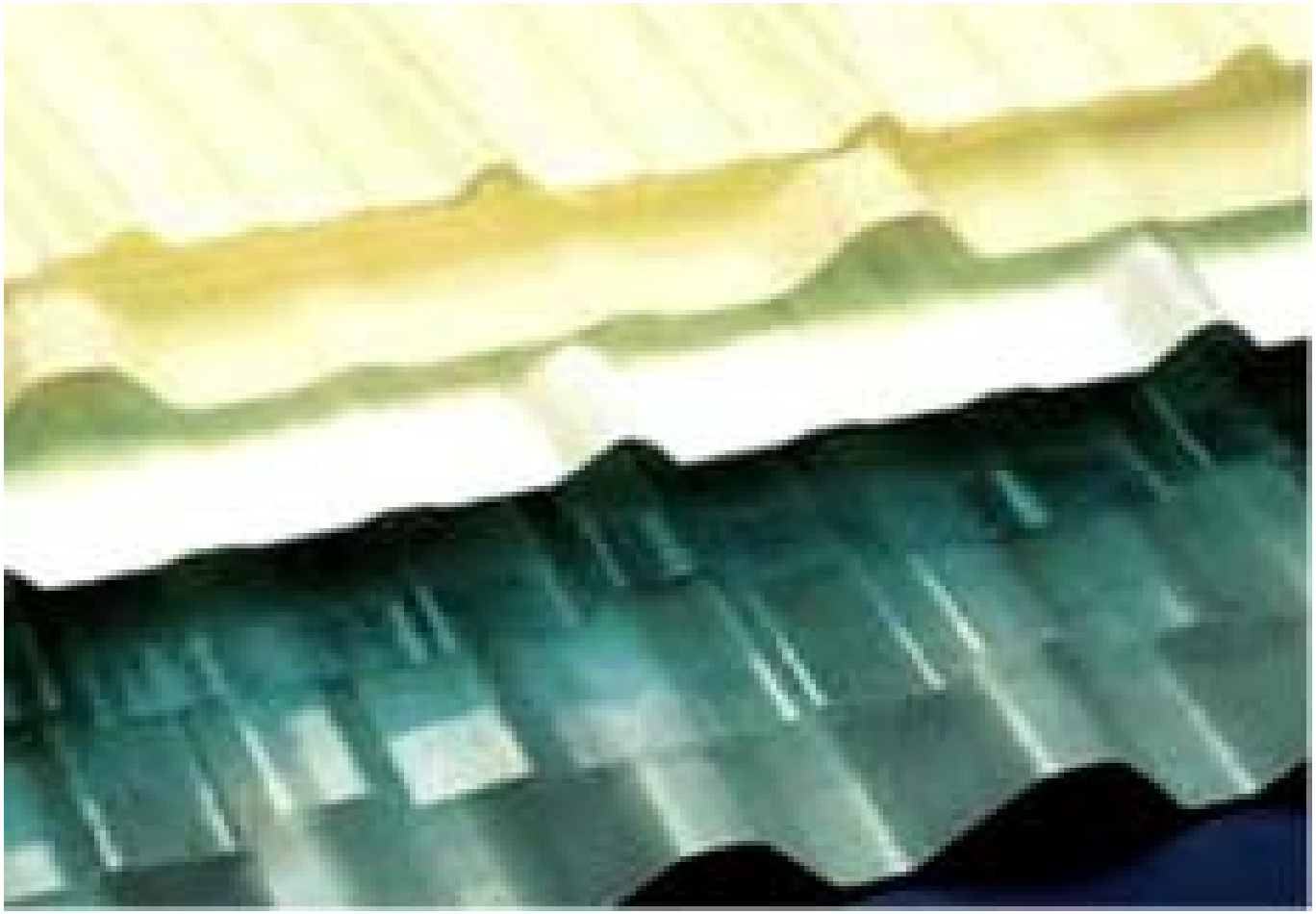
ACRYLIC -SHEET



ACRYLIC BLOCKS

Greenhouse Fiberglass Panels

Acrylic Modified Fiberglass

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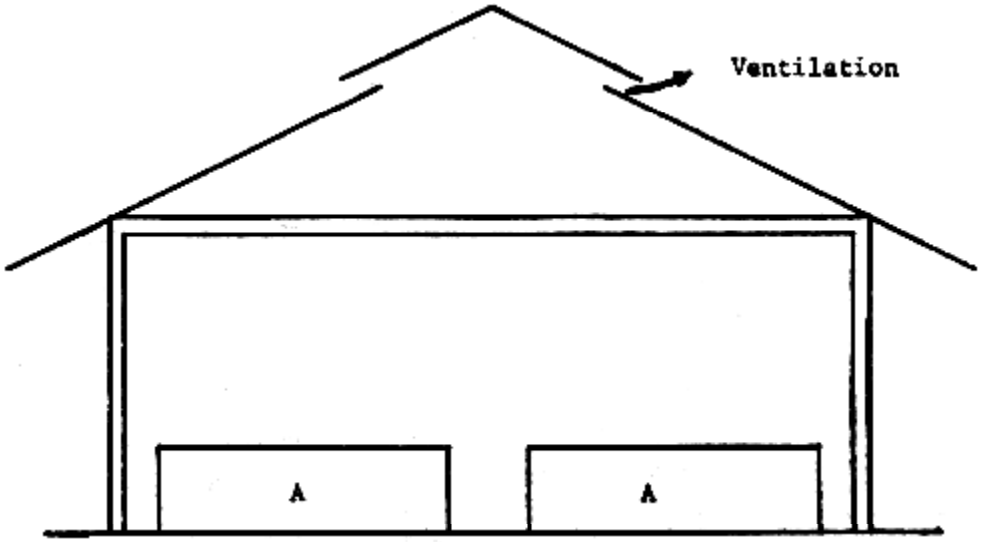
ROOF VENT

VENTILATION

ROOF WINDOW

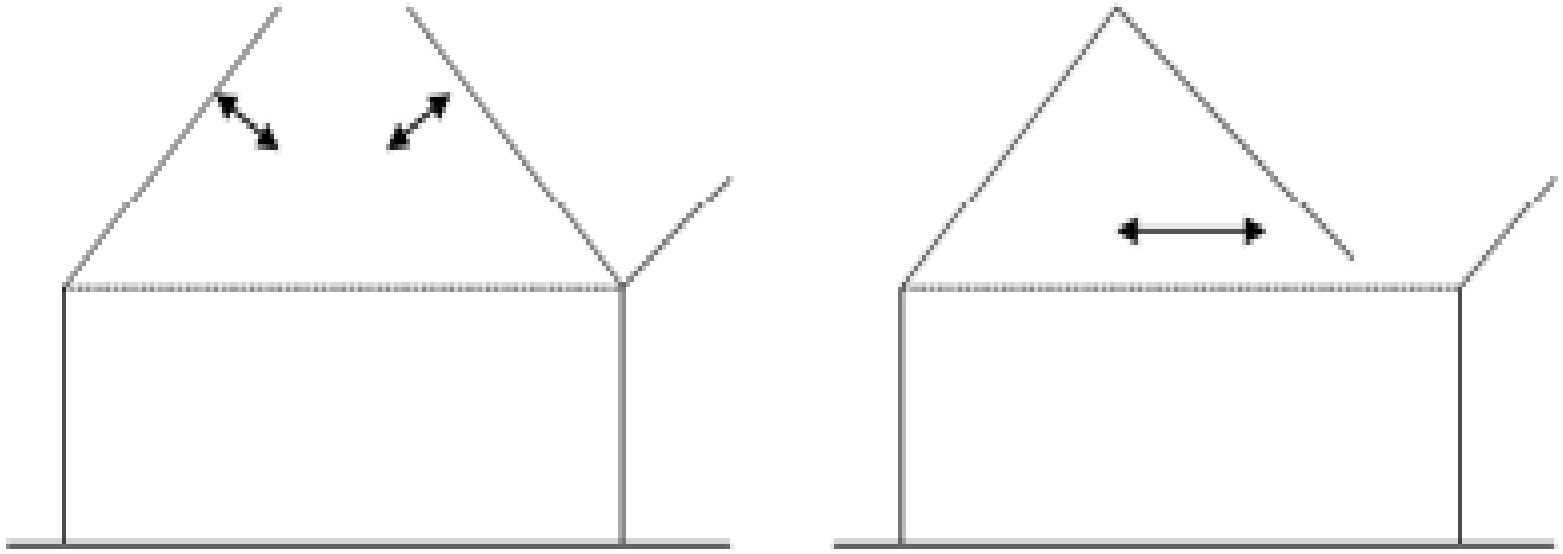
Manual Vent Opener

Automatic Vent Opener



A. Hatchery tank

Two types of articulating open-roof greenhouse designs



OPEN ROOF

CO2 SYSTEM

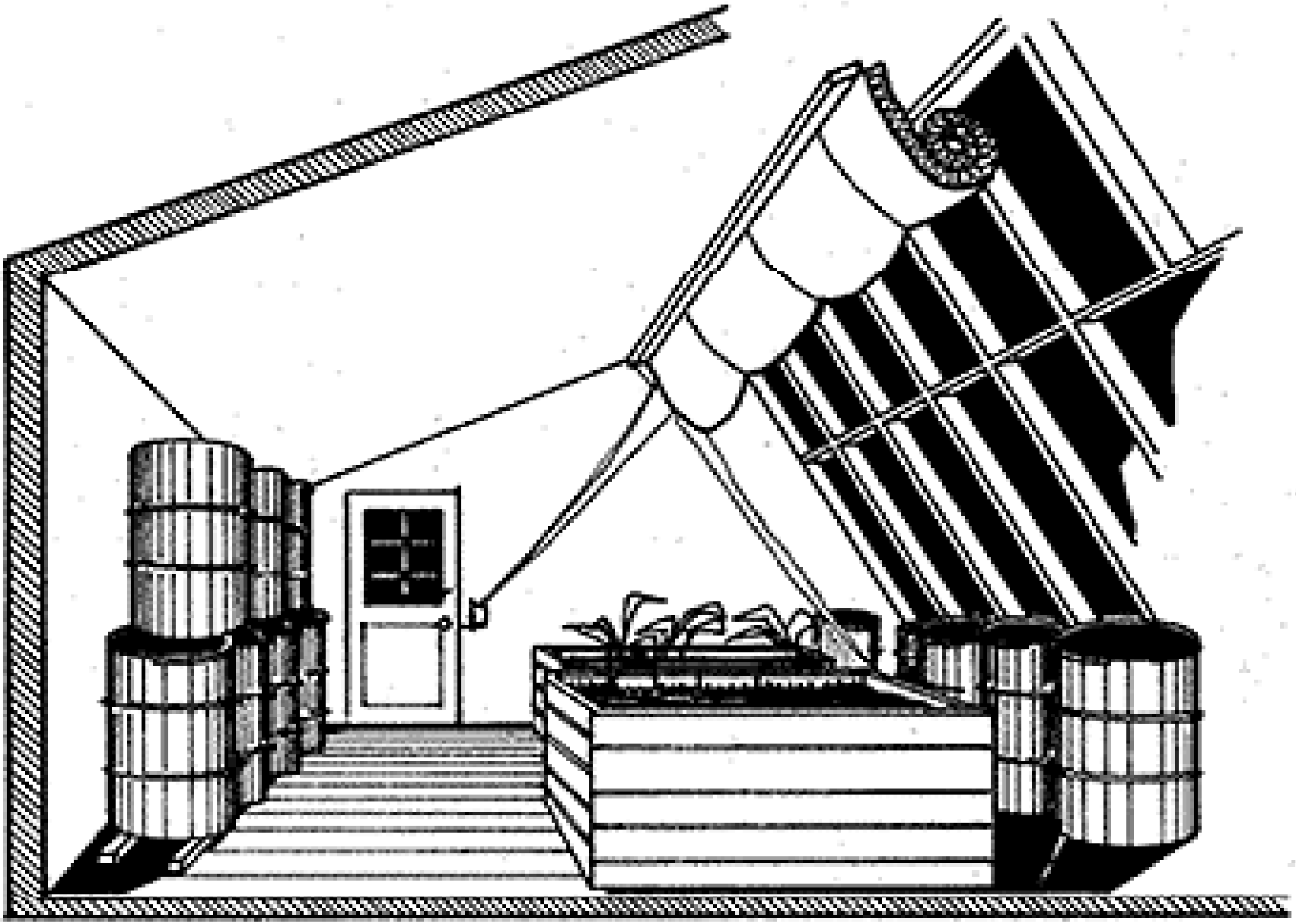

DA

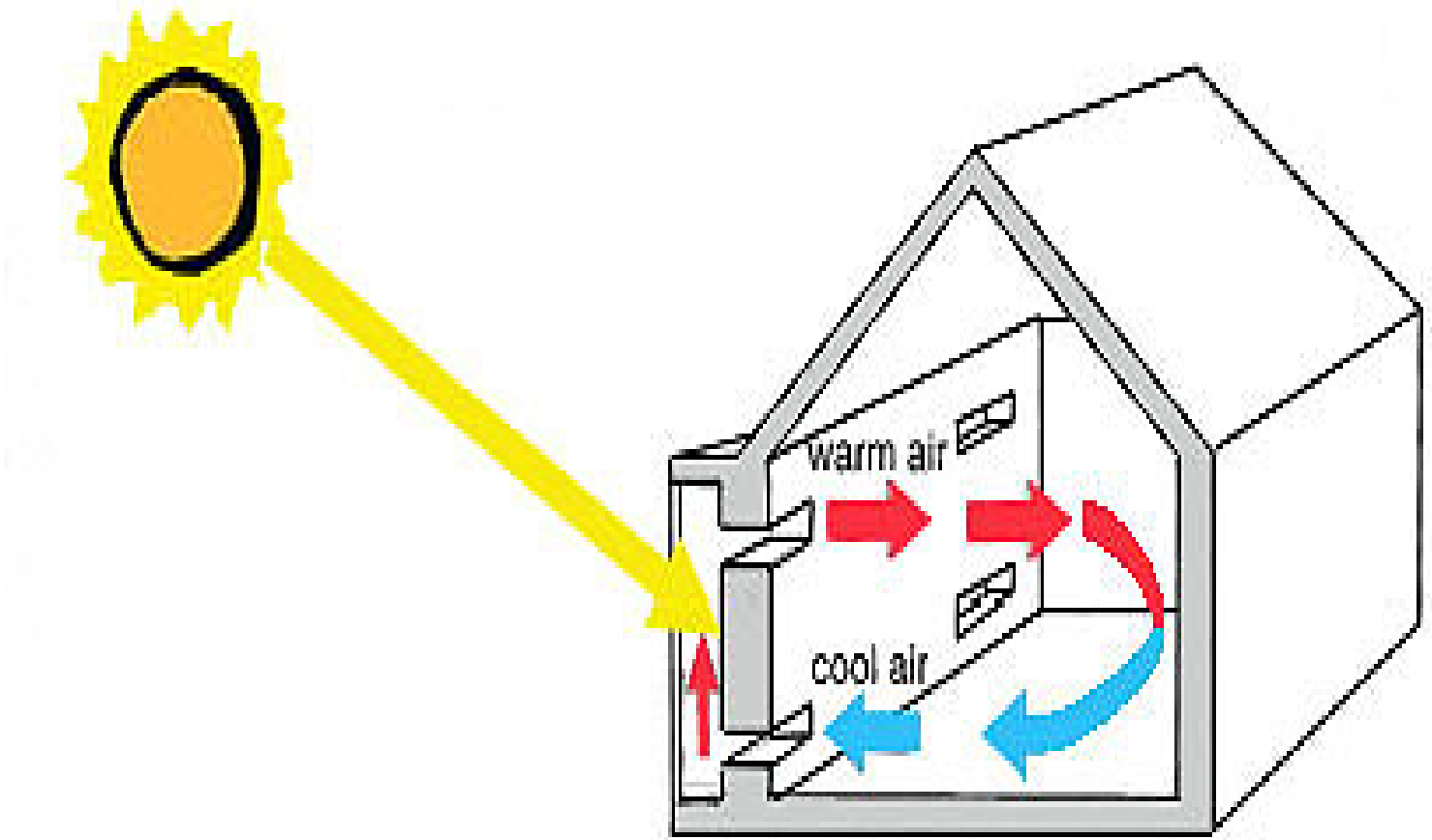
CHLORINE-DIOXIDE-SYSTEMS


05/20/2007 11:47 am

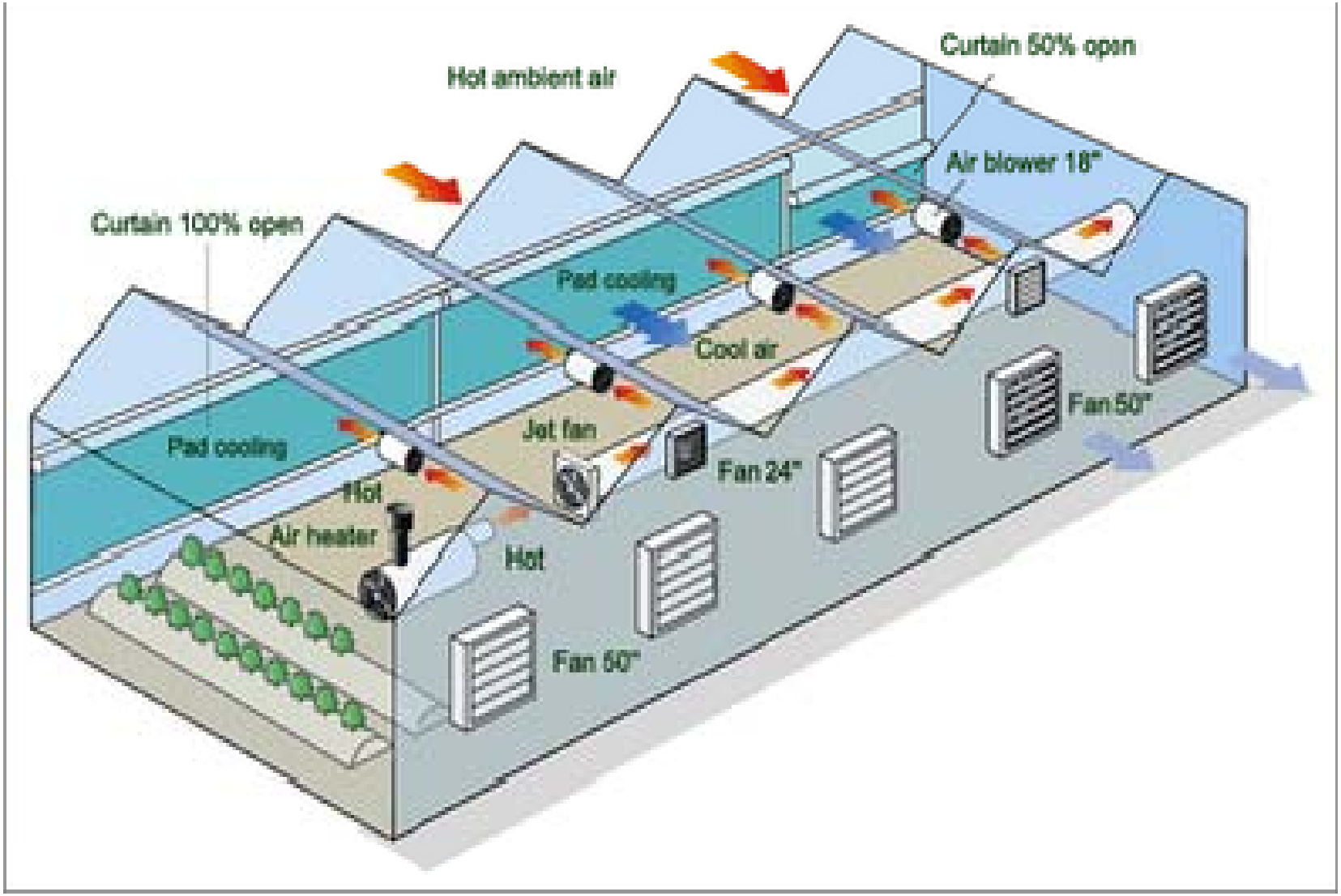
Radiant bench mat heating is installed throughout the greenhouse on the benches. The system (seen here) is used for propogation. This system was installed in one greenhouse for testing purposes and has since been used throughout the remaining 20 greenhouses at this growers location. The cost to heat your greenhouse is dramatically reduced with the used of the bench heating system due to its direct heating at the roots of the plant

This picture shows the way in which the mats are used with plants growing with the help of the Radiant Root bench mat heating system. As you can tell, David Chiaro is very satisfied with his new bench heating system




warm air
cool air

SOLAR GREENHOUSE


Curtain 50% open
Hot ambient air
Air blower 18"
Curtain 100% open
Pad cooling
Cool air
Fan 50"
Jet fan
Pad cooling
Fan 24"
Hot
Air heater
Hot
Fan 50"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Pad and Fan cooling

The most common type of supplementary evaporative cooling is probably the pad and fan system. It is often applied in southern countries, where outside atmospheric humidity is frequently low. It offers effective cooling because the humidity is added to the outside air (with low energy content) before it is brought into the greenhouse. The greatest disadvantage of this system is the temperature gradient that is created between the pad on the one side-wall and the fan on the other.

Roof irrigation

In the case of roof irrigation, evaporative cooling is used primarily to cool the greenhouse roof. Plants can cool off through radiation of the crop to the cooled roof. At the same time some of the cooled outside air is sucked in by the ventilation.

Fogging

Fogging in the greenhouse has the same effect on the greenhouse climate as crop transpiration. It is important that the introduced humidity evaporates completely and does not settle as drops on the crop. The finer the fog and the higher the greenhouse, the greater the chance for the water to evaporate. A fine fog often goes hand in hand with increased pressure, which demands better water quality. The cooling capacity of fogging or transpiration can be calculated

Evaporative Cooling Systems

Choose from a few different approaches to evaporative cooling systems....

SHADING-OUTSIDE –”TOP”

SHADING-INSIDE –"TOP"

Greenhouse park

FLOATING HYDROPONICS GREENHOUSE