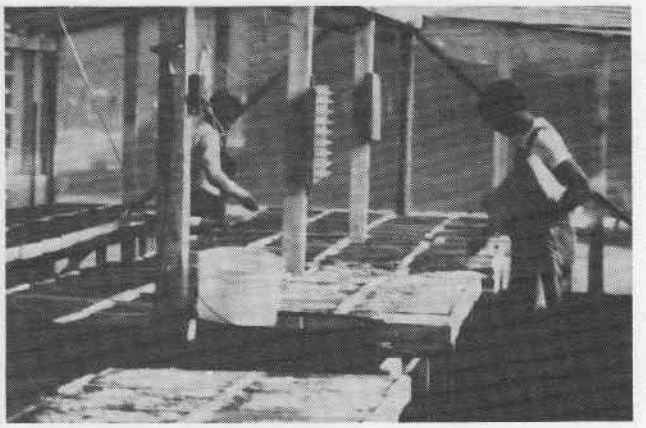
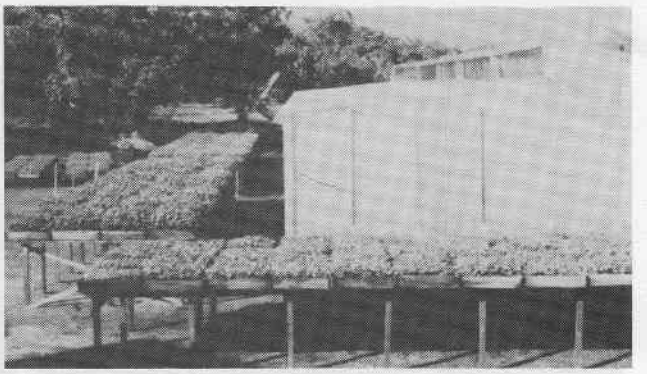
Building an Inexpensive Seedling Greenhouse

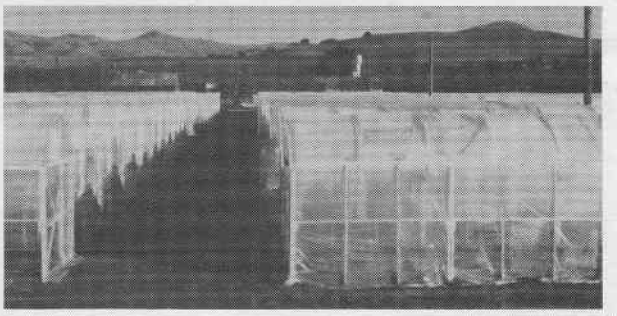
Growing plants from seed ahead of the normal planting season has a number of advantages: . . .



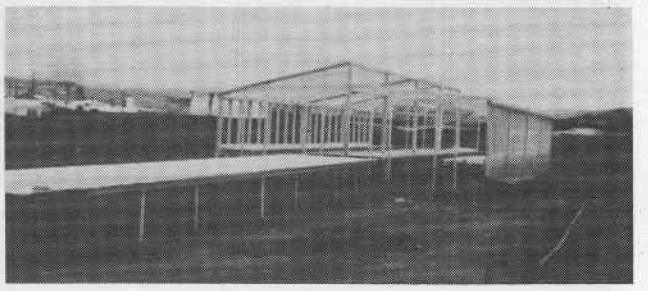


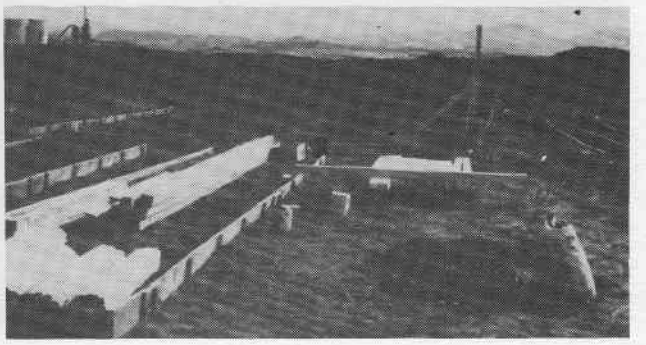
. . . the plants are stronger and more vigorous, they mature earlier, produce more uniform and larger yields, cut costs on weed and insect control, etc.

Transparent fiberglass and clear plastic sheets have drastically simplified greenhouse construction. Today there are many types, sizes, and shapes of greenhouses. But not every design or shape of structure is best suited to grow quality seedlings.



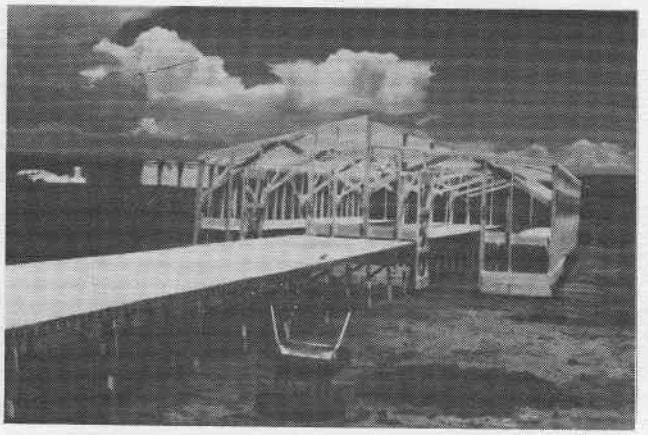
This chapter deals with construction of a seedhouse which is simple in design, easy and quick to construct, very inexpensive, and highly functional. This type of construction simplifies growing procedures and produces strong seedlings with minimum effort and reasonable care.



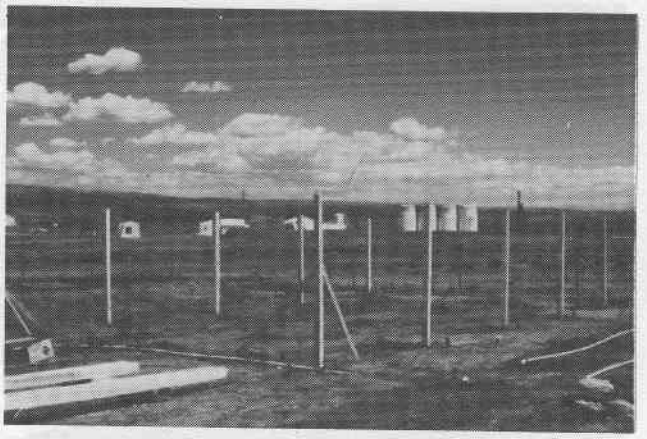


Orientation

Choose a flat, level area, large enough to accomodate the size of structure desired, with additional space to expand if necessary.

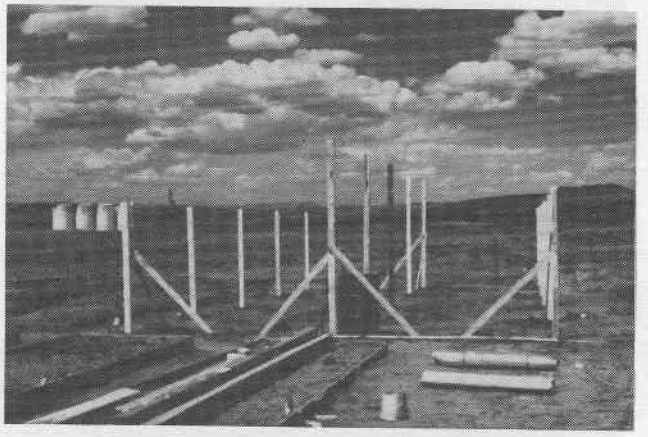


Full sunlight is essential. In the northern hemisphere, face the length of the building east and west. This gives the broadside a southern exposure and all the plants get maximum light when the days are short and the sun is farthest south.

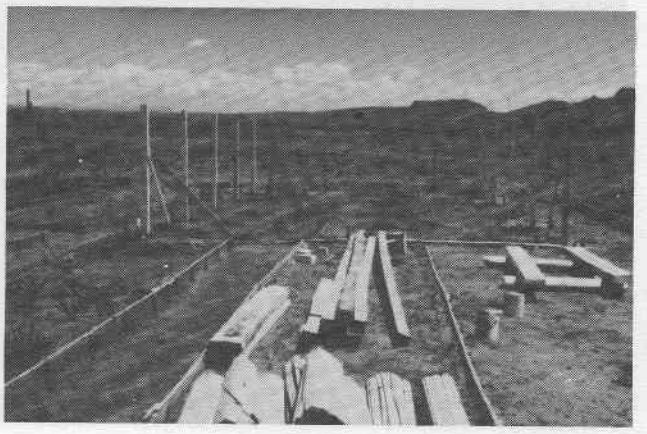


Construction

The size can vary to fit the need. Because of the size of our project, this chapter deals with a structure 20′ wide × 40′ long and 8½′ high at the peak. (Yours can be proportionately sized to contain the seedlings you need.) The frame is made of 4 × 4 posts and 4 × 4 stringers. If the posts are pine or fir they should be of treated lumber to resist termites and rotting.

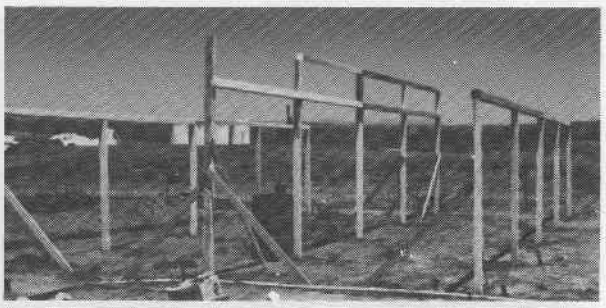


The first step in construction is to clear and level the area. Then set stakes for the 4 × 4 posts. The posts are 10′ apart each direction.



The posts for the sides of the building are 8′ long and are set in the ground 18″ below the level of the floor.

The top of the side posts is 6½′ above the floor level. Stringers 4′ × 4′ × 20′ are nailed on top of the side posts.



For the center row, use 4 × 4 posts that are 10′ long. These too, are set in the soil 18″ below the floor level. The posts are tamped firmly.

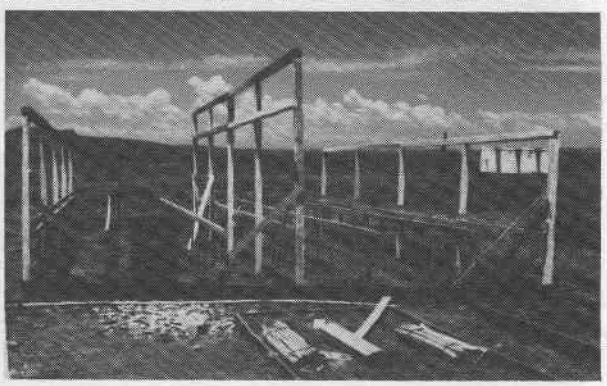
NOTE: Before the center posts are set in place, notches 1¼″ × 3¾″ are cut in one side of each post. The notch is down 18″ below the top-end of the posts. When the posts are set in place the notches should face south.

Two rows of 4 × 4 stringers are nailed to the center posts.

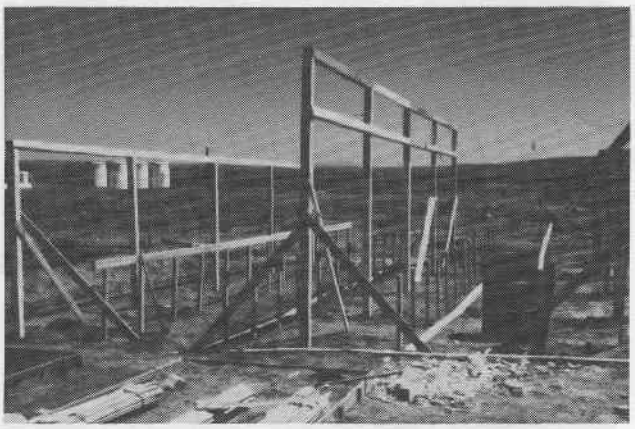
One row is nailed on top of the posts.

One row is nailed 18″s below the top.

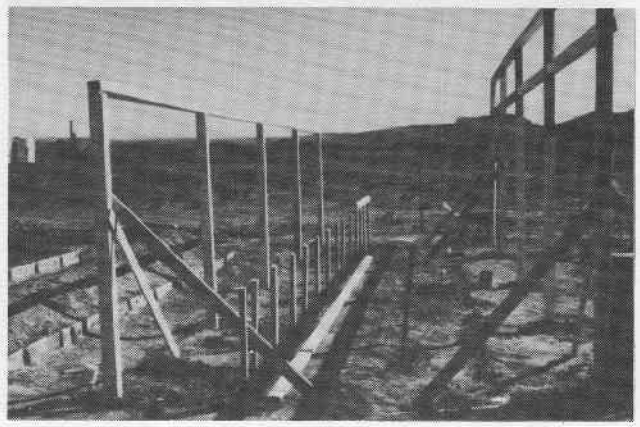
Before the 2nd row of stringers is nailed to the posts, notch one side of the stringers to match the notches made on the posts. Match the notches to fit into each other and nail securely.

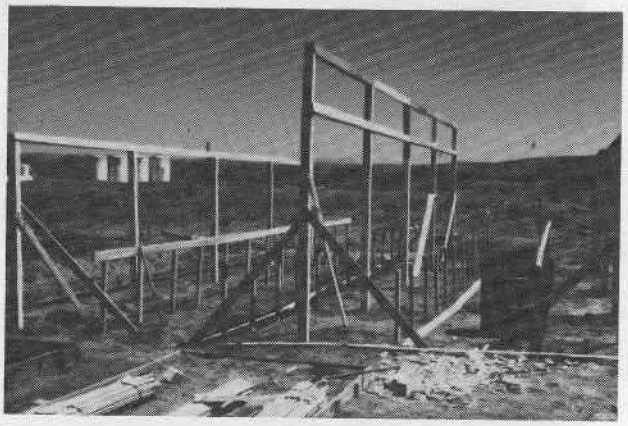


Trays containing seedling plants should *never* be set on the ground. Therefore, tables with flat, level tops, are a vital part of a successful greenhouse operation.



Tables 30″ high × 36″ wide running the full length of the building are made along the side walls. And one table 30″ high × 72″ wide is made down the center. The aisles between the tables are 3½′ wide. (If your seedling greenhouse is smaller, you may skip the center table.)

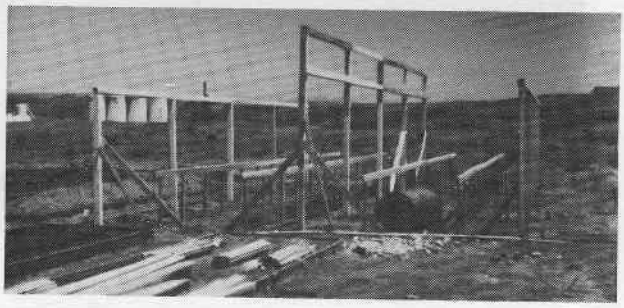




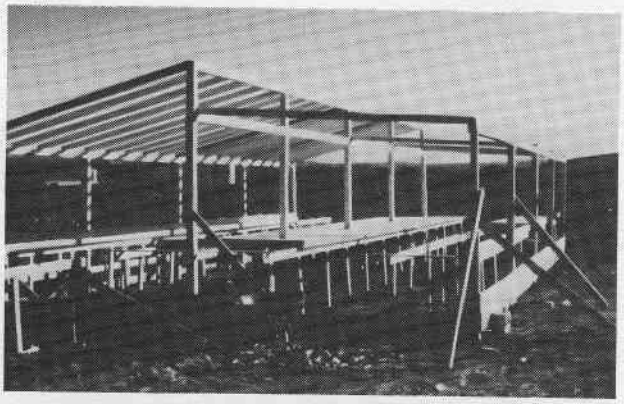
The tables are built strong and sturdy.

The table legs are 2 × 4 stakes 36″ long, pointed on one end. The table legs are driven into the ground 6″ to 8″.

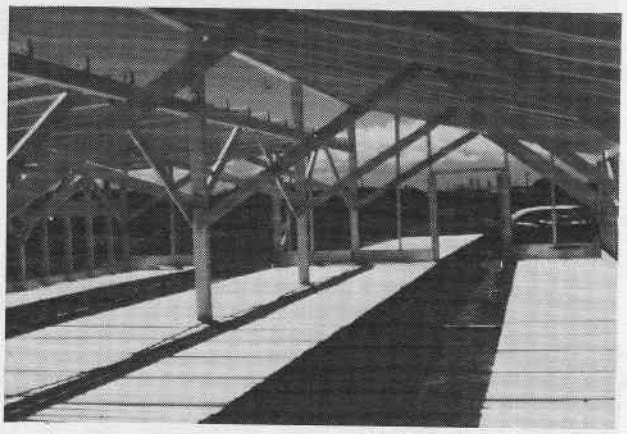
Each table has two rows of legs (stakes). One row of stakes is 30″ in from the inside edge of the 4 × 4 posts. The other row of legs is in line with the inside edge of the 4 × 4 posts. The space between the legs in the first row is 28″. The space between the legs in the second row is 24″.



The center table is made just like the side tables. There are two rows of legs 30″ away from the center 4 × 4 posts, one row on each side of the posts. A third row of legs is in line with one edge of the 4 × 4 posts. The legs in this row are 24″ apart.



The top-edge of properly placed 2 × 4 table legs is level throughout and in a straight row. The next step is to nail 2 × 4s *on edge* on top of each row of table legs.



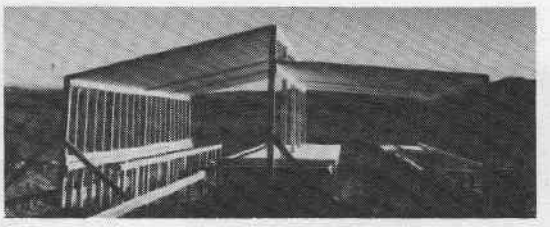
To complete the tables, nail 1 × 4 boards 36″ long on top of the 2 × 4s on the side tables, and 1 × 4 boards 72″ long to complete the center table.

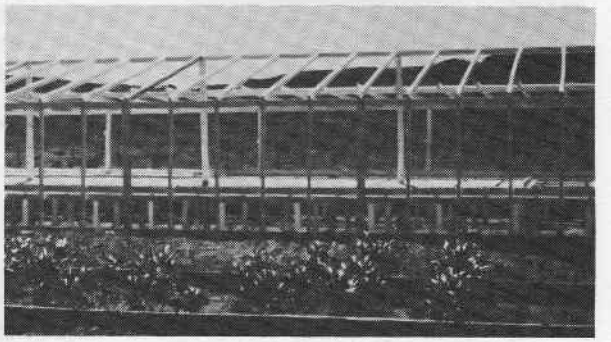
Note: Nail the boards across the 2 × 4s. Separate the boards with 1″ space between them.

The table-top boards have a 6″ overhang past the table legs into the aisles.

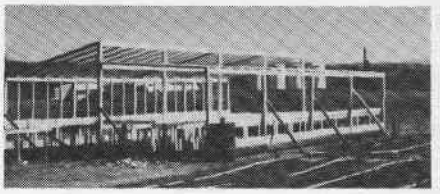
The roof support of the seedling greenhouse is made of 2×3 wood rafters 10′ long. The space between the rafters is 24″.

Note: The rafters for the north slope are cut to fit and one end is toe-nailed into the 4×4 stringer at the peak—flush with the top edge. The lower end is nailed on top of the 4×4 stringer—flush with the outside edge.



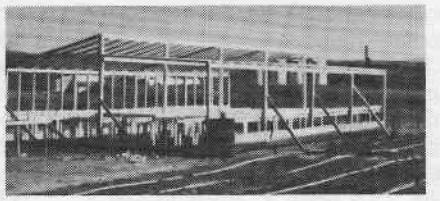


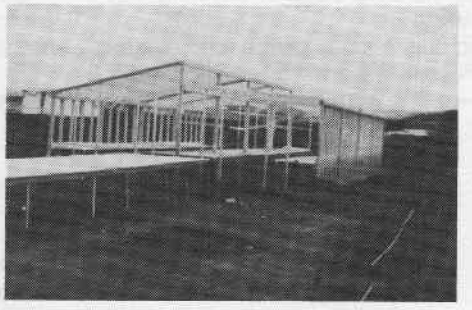
The studs for the sides of the building are 2×3s 6′ long. These are spaced 24″ apart to match the roof rafters. The top end of the studs is toe-nailed into the bottom-side of the 4×4 stringers. . . .



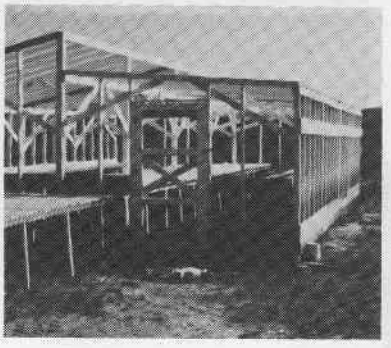
...and the bottom-end is nailed to a 1″×8″ board which is nailed along the outside edge of the building near the floor level.

Both ends of the 2×4 rafters to make the roof with the south slope are nailed on top of the 4×4 stringers. The ends of the rafters are flush with the sides of the stringers.

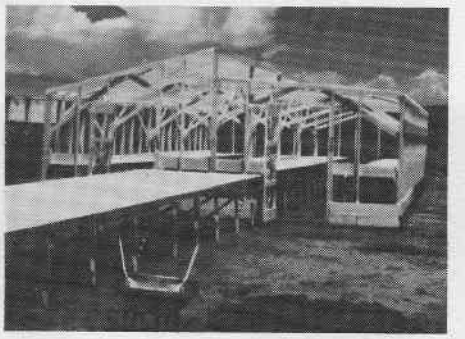




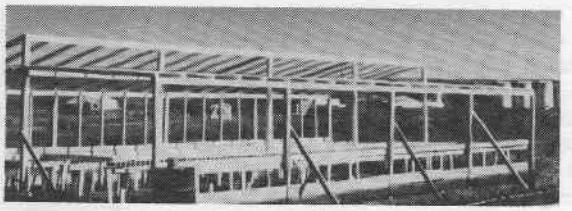
The ends of the building are made of 2×3 studs which are cut to fit and nailed in place. The space between the studs is 24″, except for the doors.



Doors 30″ wide × 6′ high are recommended.



Cold winds blow from the northwest or north. Therefore, the door hinges should be installed on the north side of the door frame. When the doors are opened, they will tend to block the wind from blowing on the plants in the greenhouse.



The 18″ opening along the length and ridge of the building, just above the south-slope roof is a continuous ventilator. This opening is necessary to control the temperature throughout the greenhouse. This simple ventilator eliminates fans and cooling pads.

Making the Ventilator

Notice the opening at the peak of the greenhouse. The ventilator is open.

To make the ventilator so that it can be opened and closed easily and quickly, start with a piece of clear plastic as long as the building and 24″ wide. Using lath or other narrow strips of wood to secure the edge of the plastic strip, nail it securely to the edge of the 4×4 top stringer on the *inside* of the greenhouse, just under the peak.

Next, nail the bottom edge of the plastic securely *between* two layers of 2×2s (random length), the length of the ventilator. *Do not* nail the 2×2 edge to anything—let it hang free.

Next, take a small gauge rope (clothesline). Fasten one end securely to the 2×2 edge—in line with the center 4×4 posts. Thread the rope through a metal eye installed in a 2×3 rafter overhead on the north-slope roof and about 5′ in from one end of the rafter. Allow 4′ of slack in the rope and tie a knot on the end.

Next, drive a 4″ nail 2″ deep into the side of the center 4×4 posts. This nail is merely a hook to hold the rope when the ventilator is opened.

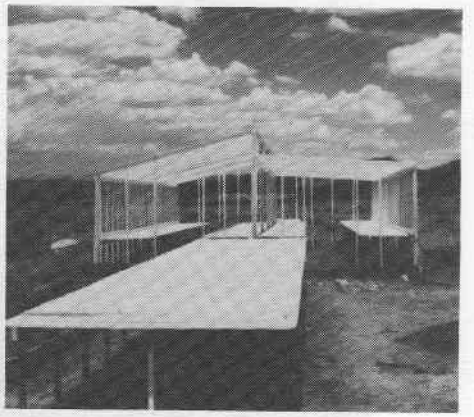
Repeat this process at every 4×4 center post.

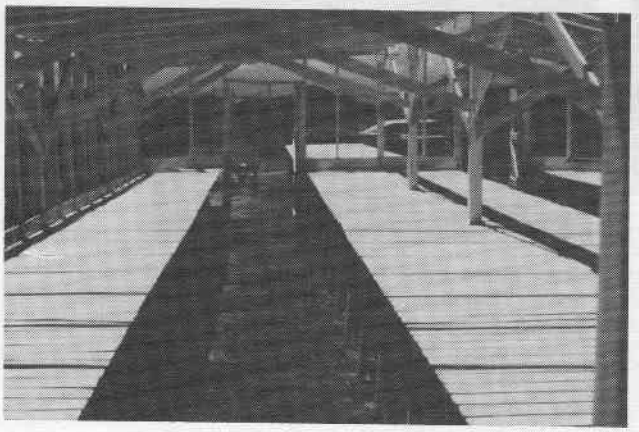
Now, to open the ventilator, just pull on the ropes—one at a time by each post—and hook the ropes on the 4″ nails.

(Please notice the open ventilator in the photograph of the plastic-covered greenhouse.)

To close the ventilator just release the ropes from the nails.

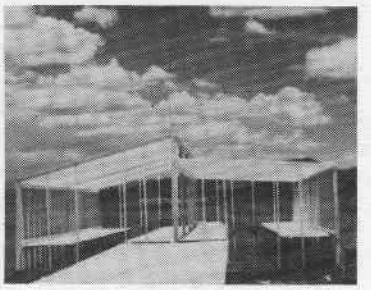
Outside tables with flat, level tops 30″ high are built in full sun close to the greenhouse. The construction is the same as the tables in the greenhouse. These tables are necessary for "hardening off" the seedlings before they are transplanted into the field or garden.

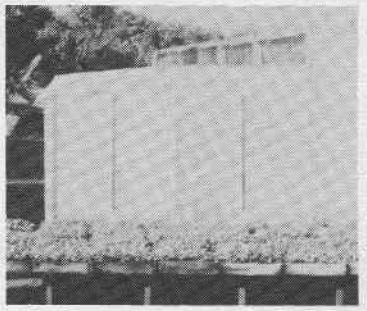




To strengthen, stabilize, and secure the greenhouse, pieces of lumber such as 1×4s 48″ to 60″ long are used for cross braces. The braces are nailed to the posts, rafters, and stringers.

Paint is optional but highly recommended. It gives a finished appearance, preserves the wood, and increases the light factor in the greenhouse.

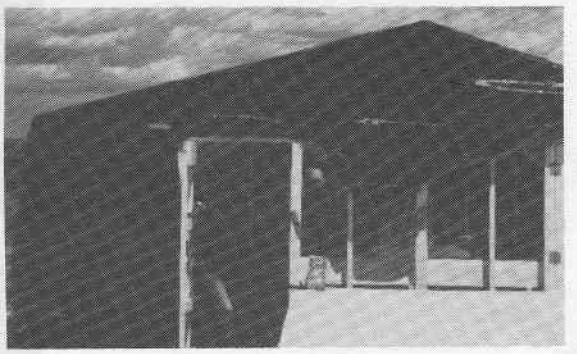


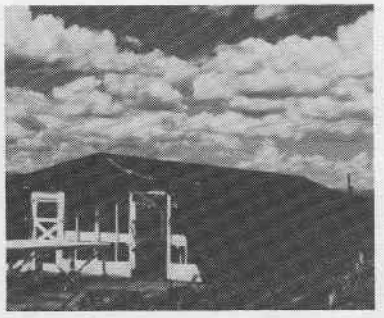


Special plastic materials are available to cover greenhouses. The clear plastic is pulled over the top of the building as one sheet. Lath is placed on top of the plastic along the rafters and nailed to the rafters. This secures the plastic.

Plastic-covered greenhouses require some type of shading to lower the temperature and diffuse the bright sunlight during hot weather, or the leaves on young seedlings will scorch from sunburn and the plants will die.

There are several types of synthetic materials available. These can be purchased to fit nearly any size structure, and in various shading percentages. Where temperatures are above 95°F, 62 to 68 percent shade density is recommended.





This type of shading is quick and easy to use. Just pull the shade-cloth over the greenhouse frame—plastic cover and all—in one sheet.

The shade-cloth provides uniform shade throughout the greenhouse and effectively modifies (lowers) the temperature inside the greenhouse.

During hot weather, the temperature in the greenhouse can be stabilized between 80 and 90°F., just by opening the doors and the continuous ventilator and covering the greenhouse with shade-cloth.

During short days and cooler weather plants do best in full light. To accomplish this, just pull off the shade-cloth and store it properly until needed again.

Nearly everyone can build a structure of this design and be proud of their workmanship. The greenhouse is plumb, strong, and solid, with a life expectancy of 20 years continuous use.

What is most important is that the essential factors necessary to grow quality plants with minimum effort . . .

. . . are part of the design and structure.