

Sustainable Resources 11

Greenhouse Horticulture Lesson 2

Greenhouse Horticulture



Horticulture:

Garden Cultivation (Latin definition)

3 fields

1. Fruits, vegetables, ornamental plants

a. Fruits: pomology

– Tree fruits (citrus, apples, etc.)

– Small fruits (berries, grapes, strawberries)

b. Vegetables: olericulture = all vegetables including melons and rhubarb.

c. Ornamental plants: ornamental trees, shrubs, groundcovers, turf and floriculture.







2. Forestry (non-ornamental trees)

3. Crop science

Grains (wheat, barley, oats)

Pasture grasses (fescue, timothy,
broom, orchard)

Fiber crops (cotton, flax, hemp)

2. Christmas Trees



2. Pine Tree Farm



2. Replanting Trees



3. Wheat Farms



3. Fescue Pasture



3. Broam Pasture Grass



3. Cotton Farms



3. Flax



Greenhouse Horticulture: Greenhouse Garden Cultivation

Mainly vegetables and ornamental plants



Greenhouse industry in BC

BC is great for this industry because:

1. efficient use of expensive land
2. excellent climate (low heating costs)
3. good market (large local population)
4. cheap energy (natural gas & coal)
5. cheap and plentiful water
6. infrastructure in place (wholesalers, suppliers, manufacturers, etc.)

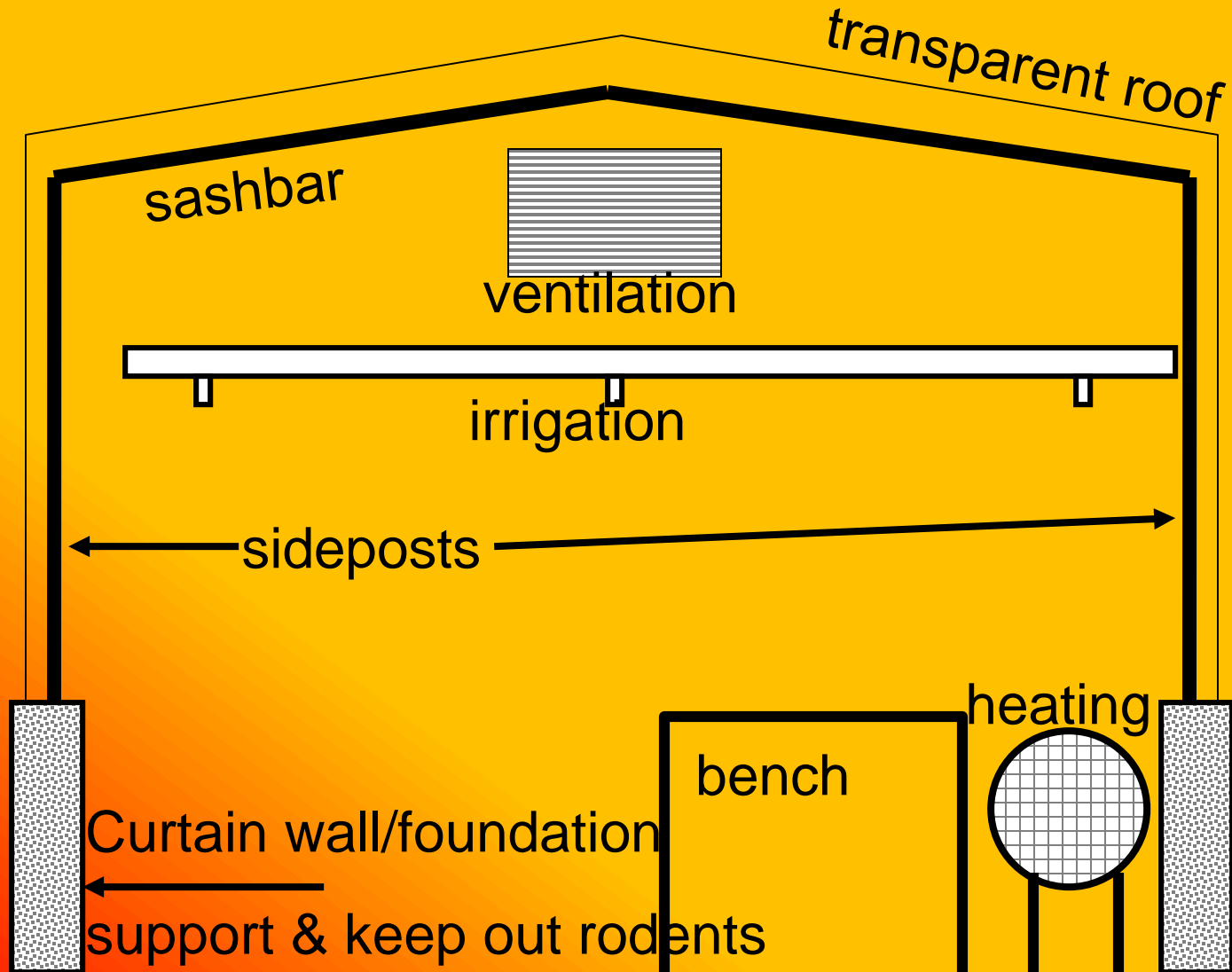
BC's crop breakdown

50% vegetables (peppers, tomatoes, cucumbers)

25% annual bedding plants (like us)

25% house plants, cut flowers, nursery stock, specialty crops.

Greenhouse Layout

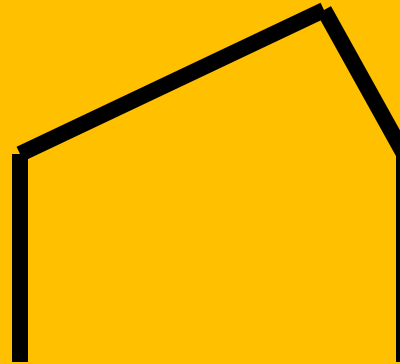


Types of Greenhouses

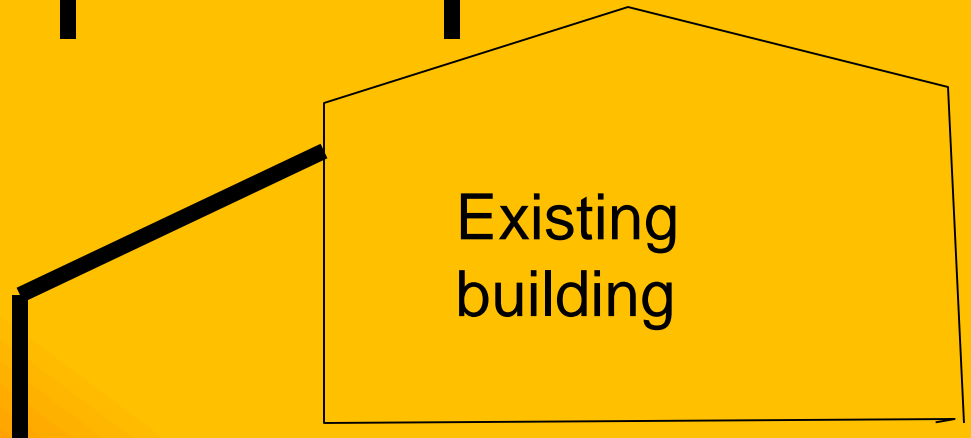
1. Even span
(SSS)



2. Uneven span



3. Lean to

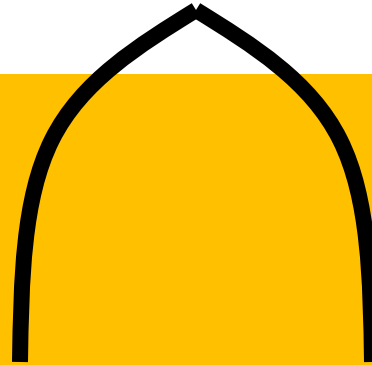




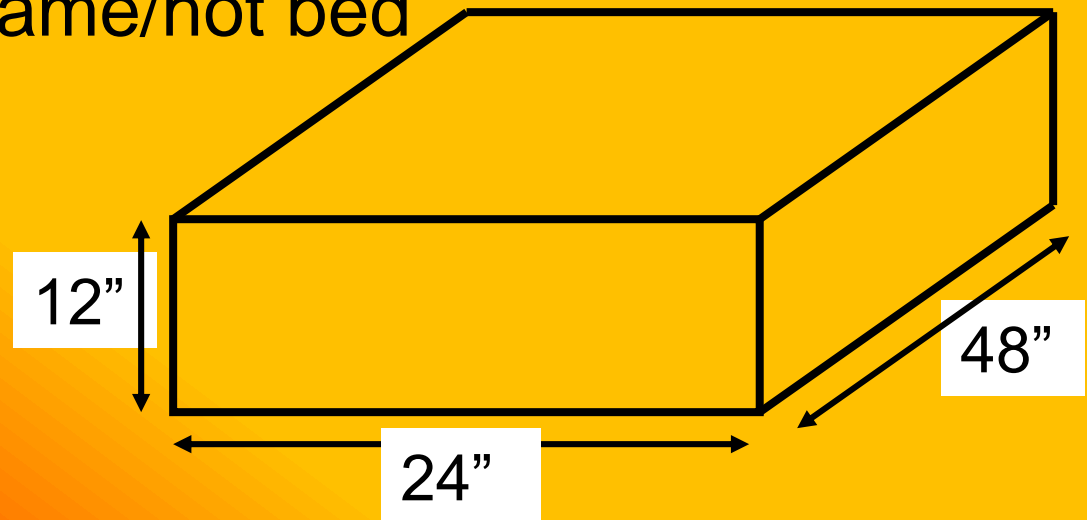
– 4. Quonset



– 5. Gothic arch

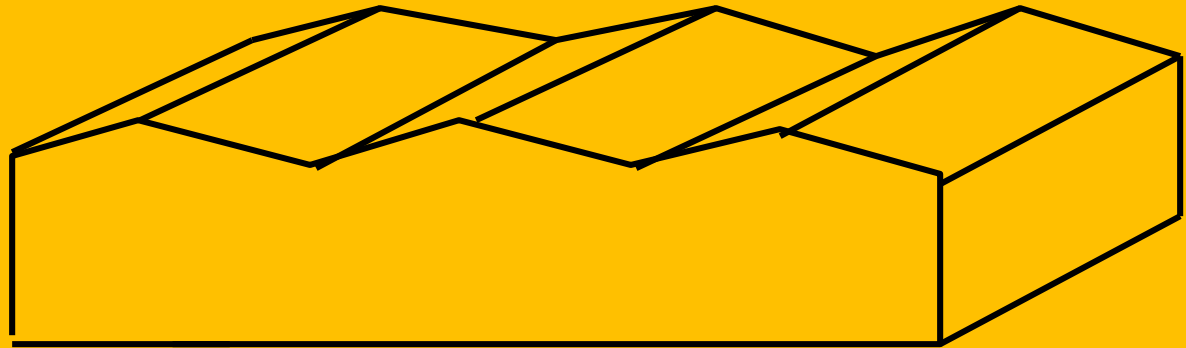


– 6. Cold frame/hot bed

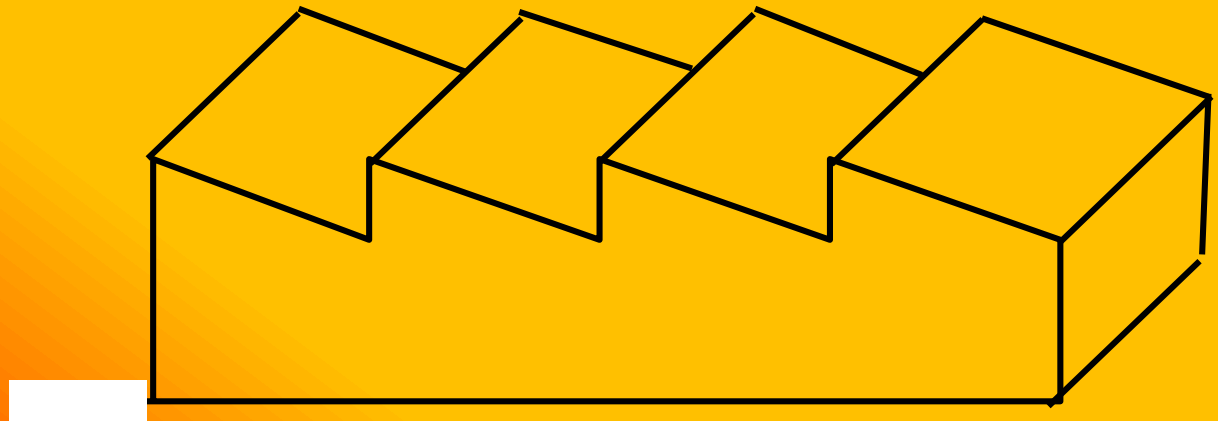




7. Ridge and Furrow

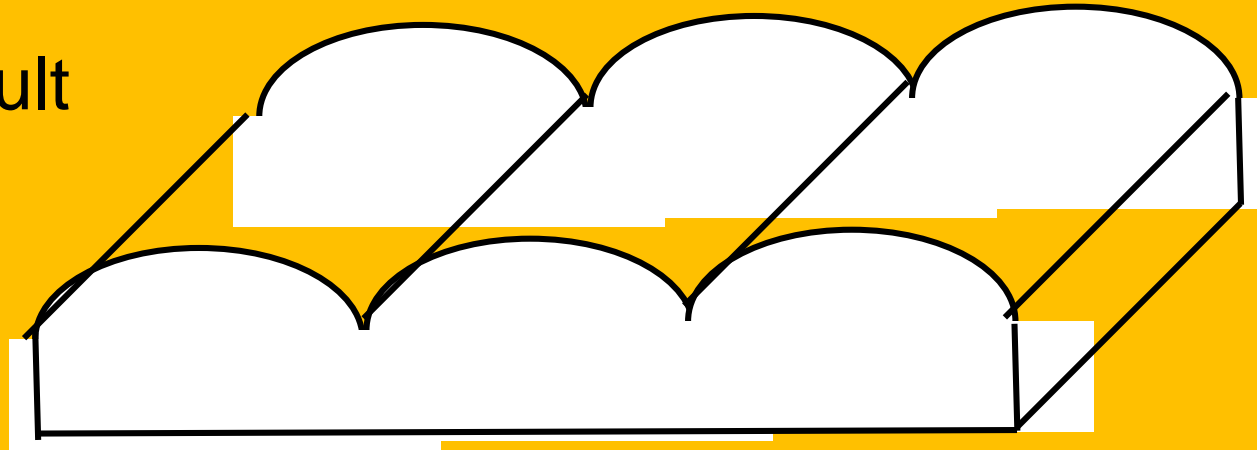


8. Sawtooth

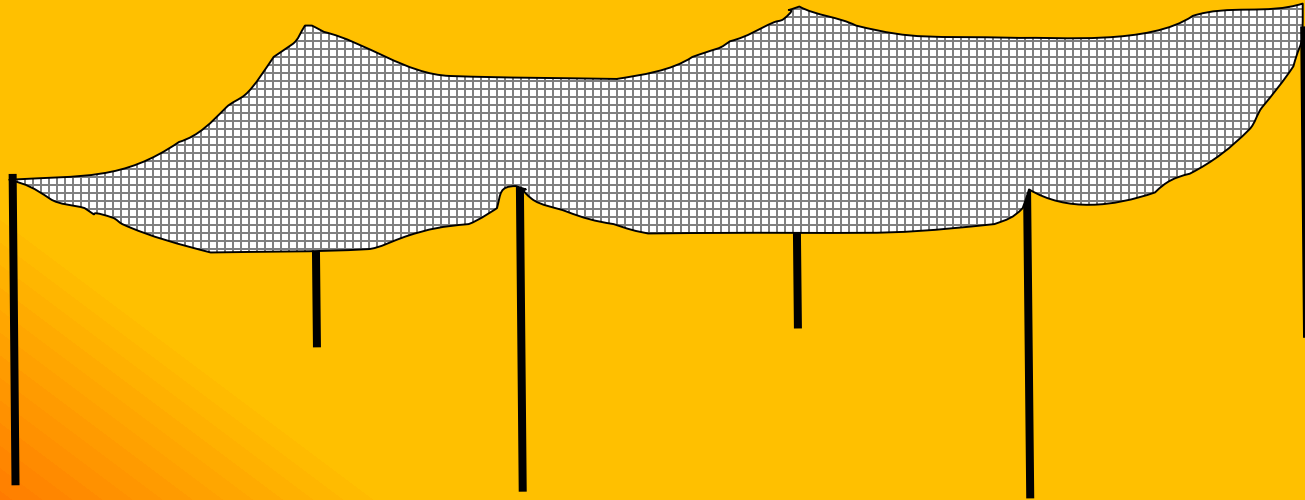


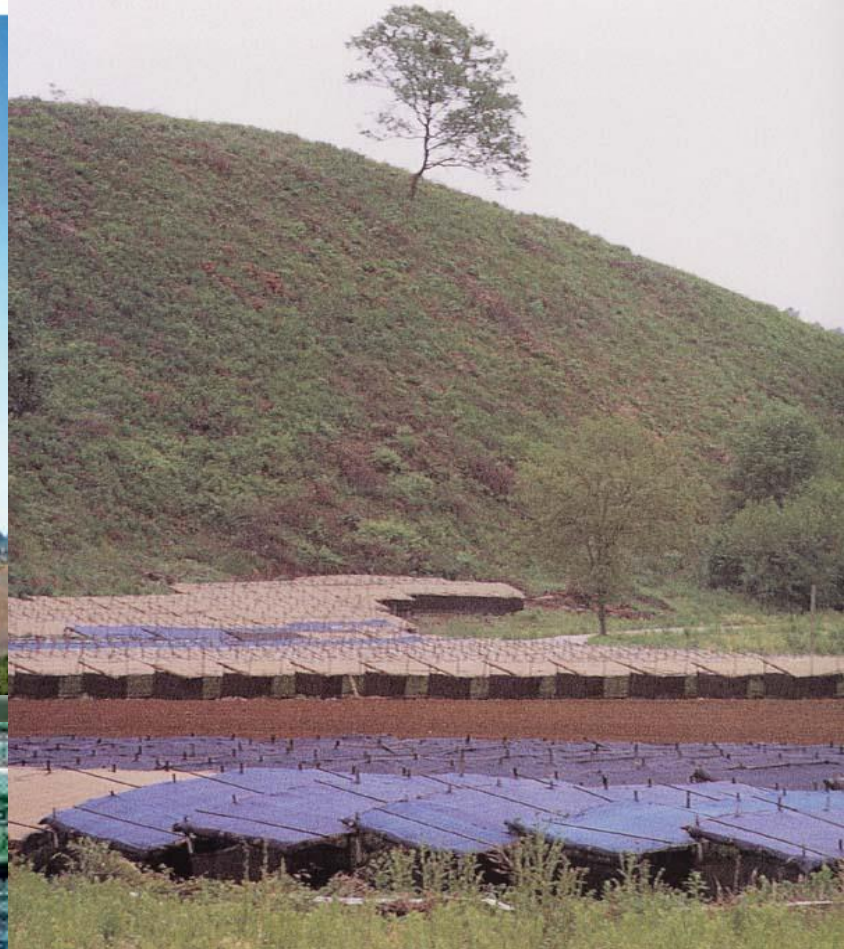


9. Barrel vault



10. Saran covered





Materials Used to cover GH's.

1. Glass:

- Adv: lasts forever
- Disadv: expensive (\$500,000/acre, heavy

2. Polycarbonate (SSS walls today):

- Adv: lasts 20+ yrs, light weight, insulates
- Disadv: \$350,000/acre, breaks down from gas fumes

3. Fiberglass (SSS walls use to be):

- Adv: strong, cheap (\$100,000/acre)
- Disadv: flammable, less light transmitted

4. “Poly” = polyethylene (SSS roof today)

- Adv: cheap (\$250,000/acre), light weight
- Disadv: 4-5 yr life span

5. Saran mesh: black plastic weave mesh that simulates the shade of a rainforest for tropical plants (i.e. gingseng)

- Adv: light, cheap, 10+ yr life span

6. Reemay: White covering for insulating plants.

GH Building

1. curtain wall/foundation

- Concrete, cedar, pressure treated wood

2. side posts

- Aluminum, galvanized steel, pressure treated wood

3. sash bar

- Aluminum, galvanized steel



Sun

Greenhouse Effect:

Light from the Sun enters the glass GH and energy is absorbed by the soil, plants and other objects

Energy (heat) absorbed by these objects is then re-radiated as longer wavelengths which cannot pass through the glass.

greenhouse



- Do GH Hort' WS #1 (40 mks)