



Before you sign a contract

Sales are good. You need more growing space. It's time to replace some of those old hoop houses with a new, efficient open-roof, gutter-connected house. Wait! Before you get quotes and sign a contract there are many decisions and things that have to be considered. Here are a few pointers.

Before you buy

Developing a good set of specifications is important to receive comparable quotes. Even with good specs, it is sometimes difficult as manufacturers tend to be sketchy on details.

Your specifications should include information on:

- **Size and type of greenhouse.** Width and length dimensions, bay width, gutter height, energy truss, snow and wind loads, floor material and section dividers if required.
- **Glazing.** Roof, sidewall and end wall glazing.
- **Ventilation.** Style of open-roof system, sidewall vents (guillotine or hinged), fans and shutters, horizontal-airflow system.
- **Heating system.** Although unit heaters or floor furnaces can be used, a boiler system is usually better for more uniform temperatures and root-zone heat. If floor heat is to be included, this has to be coordinated with the floor installation. Detail the fuel choice and whether single or multiple fuels will be used.
- **Energy/shade curtains.** With an open-roof structure a double-curtain system is preferable (one for shade and one for energy conservation).
- **Environmental control.** Although thermostats work, electronic controllers with software are a better choice for a system.
- **Benching.** Type and construction materials.

Compare prices

Get quotes from two or three manufacturers or suppliers. There may be differences of 10 to 20 percent in price. You can usually negotiate the price some.

Once you receive the quotes, make up a comparison sheet to see how close they are to what you want in the greenhouse. There will probably be differences in the quality of materials and equipment. Check to see that the size of heating and cooling equipment is adequate. I have seen quotes where the heating system was oversized by 75 percent or undersized by 35 percent.

Many trades' people are needed to build a greenhouse, so comparable quotes for these services may be required. Site preparation, concrete work, steel erection, glazing installation, electrical, plumbing and heating system work are usually done by separate contractors. Coordination is also needed and is sometimes done (by the greenhouse supplier, a general contractor or by the grower).

Contractor duties

The contract usually specifies what the contractor will supply and what the owner is required to supply. It is important to read all of the fine print. If you have to provide some of the contract items, they can add significant cost to the total job. Usually the supplier will provide all the material for the greenhouse structure but will probably hire an outside erector contractor to build it. It is best to specify that the erector and other contractors have at least five years experience in building greenhouses. Also get references of growers who have had work done by the contractors and suppliers.

A detailed set of drawings should be provided by the manufacturer/supplier to get the required zoning and wetlands and building permits. Structural drawings, stamped by an engineer licensed in your state, may be required by the building inspector (This transfers the liability of the design to the engineer). The cost of this may be several thousand dollars.

Insurance to provide complete protection during construction is usually supplied by the contractor. The insurance should include worker's compensation, public liability, property damage, and builder's risk insurance. Check to see that there is adequate coverage. A grower may want to provide owner's protective liability insurance in the event of claims that arise from the project.

Grower duties

The grower frequently agrees to supply site preparation including placing driveways, grading and seeding of disturbed areas using a local contractor. The grower may be responsible for hiring for the concrete work with the erector doing the layout for the foundation walls and piers.

Setting up power, water and phone service to the site is usually the grower's responsibility. These may have to be coordinated with the power and phone companies and should be scheduled in advance as considerable lead time is frequently needed.

The manufacturer may specify that unloading and storage of materials is the grower's responsibility. A forklift or skid-steer may be required. Security is usually the grower's responsibility. The contract should specify who will provide cleanup services and whether a Dumpster is required.

Other contract items

Time of completion. Starting and completion dates are important to the grower so that crop timing can be established. A penalty clause is sometimes added to the contract to cover delays.

Payment schedule. The time of payments is usually spelled out. These are usually based on completing certain stages of construction (foundation, frame, glazing, equipment installation and final cleanup).

Alterations or extra work. Generally, the grower has the right to request changes but they should be in writing and payment is expected before the final payment is made.

Service manuals. Provided by the equipment manufacturer. Frequently, instruction in the operation of equipment such as controls, boilers and ventilation equipment is specified.

Warranty. The contractor is responsible for faulty materials or workmanship for a specified time period, usually one year.