A Greenhouse in Your Garden


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Many kinds of greenhouses are available

There are as many definitions for “greenhouse” as there are types of greenhouses. A good general definition is a building designed for the protection of plants against excessive cold or heat. Maybe you want to grow vegetable or ornamental plant starts for a larger outdoor garden, or you need a controlled environment for orchids or bonsai, or a space to overwinter your potted plants from an outdoor deck. If so, you might need a greenhouse.

Types of greenhouses

There are all types of greenhouse designs and sizes just as there are home designs. The space available, the purpose of the greenhouse and the simple aesthetics that appeal to you can help define what you like. Some of the more common designs:

- Lean-to: A simple three-sided shed/building with a single sloping roof typically attached to the side of an existing building.

- Gable roof: A four-sided building with a simple roof with two sloping sides and a gable (triangular wall) at each end. This is the most typical design. Most greenhouse kits available today represent this form.

- Gambrel roof: A four-sided building with a roof that has two sides, each of which has a shallower slope above a steeper one. This form is sometimes referred to as a “farmhouse” roof style.

- Hoop house: A rounded structure made up of a bending skeletal frame covered with a plastic material. This design can range from a cold frame hooped over a few garden rows in a backyard to a fully-enclosed, freestanding commercial greenhouse.

How big a greenhouse do you need?

A lean-to greenhouse is limited in size by the structure it leans against. But the other three designs described above can be constructed in a wide range of sizes from the very smallest hobby greenhouse to a very roomy workspace.

There are lots of things to consider when deciding how big a greenhouse you want:

- Are you using the greenhouse as just a seed starting area or a seedling nursery?
- Do you want to grow plants and vegetables inside the greenhouse?
- Are you planning to throw greenhouse garden parties on a regular basis?

Think about what you want to do with the greenhouse, including how much space you have, and how much time and money can you dedicate to a greenhouse project and its ongoing maintenance.

A little joke (and very true) among the master gardener community is, “Whatever size you think you’ll need; you’ll find out it should have been bigger.”

Upper Right: Gable roofed greenhouse covered with shade cloth. *Photo by Hank Davies.* **Upper Left:** Gambrel roofed greenhouse structure. *Photo by Claire Cotnoir / WSU Skagit County Extension Master Gardeners.*

Where to locate your greenhouse

Once you have decided on installing a greenhouse, the next step is determining its location in your garden. Since one of the main reasons for a greenhouse is to concentrate light and heat, you will want the best exposure to the sun as it passes overhead and as much southern exposure as you can find. Plan the long side of the greenhouse to be in an east-to-west orientation (that is, facing south). In the Pacific Northwest we have short winter days and the sun passes low in the southern sky. If you are building a lean-to type greenhouse, attach it to a southern facing wall if you can.

The other considerations are whether you want a water supply and an electrical source in your greenhouse. The water source can be as simple as a nearby hose bib and garden hose or rain barrel, or as sophisticated as an underground pipe from your main system into the greenhouse with plumbing and a sink. Keep in mind that if you use plumbing, you will need to prevent pipe-freeze in the winter.

The electrical system can be an outdoor-rated extension cord if your electricity needs are modest. If you intend to run a fan, a heater (and/or heat mats), and lighting, you are going to need a more permanent installation that is sourced from your home electrical system or a “off-grid” solar panel or wind turbine system.

Greenhouse materials

Whether you are planning to build from a kit or your own design, the first consideration when building any structure is what will support it. You will need to support the walls and floor of the building with footings. It could be simple block footings or a concrete pad. Another option would be to lay down a block patio to support the wood structural frame, and then completed the floor with screen, gravel, and landscape cloth.

The next consideration is choosing what materials to enclose the greenhouse. The original greenhouses used glass to achieve the need for heat and solar transmission through the walls. Some greenhouses have been built from reclaimed window frames with great results. More modern forms now use polycarbonate walls that provide solar heat and light transmission with more insulation, lighter weight, and less fragility than glass. Another possibility is heavy semi-transparent plastic sheeting. This option is generally used for hoop houses, from small lightweight kits to large agricultural operations.

Inside the greenhouse, you will probably need some lighting, fans and/or vents for airflow, and a heating source if you plan on using the structure during the winter. Obviously, the more complexity you add, the more expensive it will be. But you will have a greenhouse that will be useful all year long.

Another detail to consider, depending on the size and purpose of the greenhouse, will be shelving, benches or tables to provide for workspace, plant container support—or your wine glass.

RESOURCES:

- Building Your Own Greenhouse, Mark Freeman and Heather Bellanca, Stackpole Books.
- Greenhouse Grower's Companion: Growing Food and Flowers in your Greenhouse or Sunspace, Shane Smith, Fulcrum Publishing
- Greenhouse Growing – Ag and Natural Resources Fact Sheet #528. https://www.ea.gr/ep/organic/ACTIVITY%206/GREENHOUSES/Greenhouse.pdf
- Hobby Greenhouse Construction, J.R, Kessler, Jr., Alabama Cooperative Extension Service. https://theedibleterrace.com/wp-content/uploads/2017/09/ACES-Hobby-Greenhouse-Construction-Plans.pdf
- Portable Field Hoophouses, Carol Miles, PhD, and Pat Labine, PhD, WSU Extension Manual ES 015. https://s3.wp.wsu.edu/uploads/sites/2071/2014/04/Portable-Field-Hoophouse-em015.pdf