Greenhouses

Transcript – Greenhouse Style

Hello and welcome to Honor's Lab, Greenhouse Construction. This is module two. So, in this module we're going to explore what style of greenhouse you may want and whether or not you want to build your own design or buy a kit. So different greenhouse designs will do better in different climates. So, let's explore the different greenhouse design options. The most popular greenhouse designs are free-standing, pit greenhouses, geodesic domes and attached greenhouses. So, if you think back to the first module, we calculated approximately how big your greenhouse needs to be to feed your family. Most personal greenhouses are between 400 and 800 square feet, so keep this in mind as we talk about what style that you might want.

So, let's start with the free-standing greenhouses. A free-standing greenhouse is one that is not attached to any other buildings. They can be quite large or small. The roof types are typically gothic which is like a triangle or quonset which is like a circle. The quonset design is used in places with less snow. The gothic style is for getting the snow to slide better off the roof. So, I have both and we can get quite a bit of snow in one storm and both styles seem to work just fine right here where we're at. All of my buildings are free-standing buildings and I feel that this is an advantage in that you can get more light in them because you can orient them perfectly. So free-standing greenhouses come in kits or you can build your own design and it will do good in any climate.

All right attached greenhouses. It's usually attached to a house. It can be used to supplement heat to your house in the wintertime and sometimes they're attached to barns or garages. The attached greenhouses are usually on the south side of the building. In the advantages of attached greenhouse, it can provide heat for your house and you already have one wall. Attached greenhouses are typically small. They're about eight to 10 feet wide and are about 10 to 20 feet long. So, the disadvantages is they may not be big enough to feed your family and they can let in bugs and mold, humidity and excess heat into your house. You can get kits for attached greenhouses and they are best in moderate climates to cold climates.

Pit greenhouses are greenhouses that are sunk into the ground usually about four feet deep. The north wall is insulated, and the south wall has the glazing to let in the sunlight. So, our pit greenhouse, it will not freeze inside until the outside temperatures go below zero. So being four feet down in the soil helps to keep the greenhouses from freezing temperatures. So, if it's going to be cold, I can throw a frost blanket over the plants, so no heat is required for us. So that is one of the advantages; no heat systems are required for growing in the wintertime. And a 400 to 800 square foot layout is perfect for this type of greenhouse. And the disadvantages is you need stairs to get in them so you're going up and down the stairs a lot and typically you have to build it from scratch because there are no kits that are available for pit greenhouse unless you would modify an attached greenhouse kit. And pit greenhouses are good in any climate, but you'll need to make sure that you don't have high groundwater, so it doesn't fill with water.

Geodesic domes are the next type and this greenhouse is made out of pentagons, octagons or triangles and they are cut and fit over a wood or a metal frame. While they're great to look at, I find them to be inefficient use of space and they are usually quite tall. So, the advantages of domes is that they are more aerodynamic in high winds and are very strong and can withstand heavy snow loads. You can buy a kit for a geodesic dome greenhouse or you can design your own. The disadvantages is they're hard to plan out your grow beds because they're circular on the interior and they're really hard to insulate and venting seems to be very difficult for these buildings. I feel like there's a lot of wasted space in them. Domes are good in moderate climates, but I feel they might be hard in cold climates and in hot climates. In the cold climates, it feels like they may be too cold unless you add a lot of mass.

Okay, the next question is do you want to buy a kit, or you want to build your own. So I think greenhouse kits are great because they come with all the specific parts that you need to build your greenhouse and the kits also include everything whereas designing your own, you may not think of all the parts that you need. So, kits are usually easier for a beginner to put together and faster because all the parts are there together in one place. The advantages of building your own design is that you can custom size your greenhouse to fit in a specific location. So, if you have construction skills and can build your own greenhouse, then this is a nice way to get exactly what you want.

So how do you decide what you want? So first figure out if you have the skills to design your own or you want a kit that includes everything. So, the second thing to consider is size. So, an attached greenhouse will usually be small; say around 200 square feet or less. So, if you're wanting an 800 square foot greenhouse, then an attached greenhouse probably is not going to work for you. Then at that point, you want to look into a free-standing type. Number three is weather. Your weather may determine what building style that you want. If you live in a place where you're going to get snow and wind, you're going to want to get a greenhouse with bows that are four feet apart; probably a gothic style. So, if you're designing your own, you'll need to consider snow loads and wind loads, but if you're ordering a kit, they will specify the wind loads and the snow loads that the building can handle. So, they can also recommend the proper glazing for your snow and your wind.

So, number four is your climate. So, if you live in a hot climate, an attached greenhouse may make your house too hot. If you live in a cold climate, then a pit greenhouse will save you on heating costs. So, your climate is going to determine what type of greenhouse that you want and the last one is cost. I find that kit greenhouses can be really cost effective because the builder can buy all the materials in bulk, making it cheaper for them to build so that they can sometimes offer you a kit for a cheaper price than you can find all the materials and build a custom design. You might want a greenhouse that matches your house and you're wanting a specific unique look and cost doesn't matter, then a custom design might be your ticket.

So, the shape, the cost and the style is up to what you want. All the types of greenhouses will work well in their respective climates. All right, for your homework this week, go visit a few greenhouses. Try to find a free-standing greenhouse, an attached greenhouse, a geodesic dome and a pit greenhouse and see how different they can feel when you're inside them. And then talk to the owners to see how they like their design. They can give you some really good insights as to how it's working out for them. So, if you can't find one locally, look online at the designs and think about what it would be like to grow your food inside of one of them. All right this is the end of module two. I want to thank you for watching and the next module is about greenhouse foundations, so I will see you in the next module.