



## Greenhouses

### Transcript – Getting Started

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Hello and welcome to Greenhouse Construction Honor's Lab, module one. I'm Lynn Gillespie from the Living Farm in Paonia, Colorado and the first thing that you want to do after you decide that you want a greenhouse is to figure out what you're going to use it for, so once you know how you want to use it, this will then help you determine the size, construction materials and what equipment you are going to need. When growing in a structure, you really give yourself many advantages over growing outside. For example, my outdoor garden is active for 120 to 160 days depending on how diligent I am about covering the plants and in the greenhouse with just a few covers and low tunnels, I can grow vegetables 365 days of the year. This more than doubles my growing season and allows me to provide fresh vegetables year-round for my family, so I really, really love my greenhouses.

So, I primarily use my greenhouses year-round for four different activities. The first one is getting an early start in the spring. So, I use the greenhouses to start my summer crops like tomatoes and cucumbers to get a jumpstart on the season. So, I grow them indoors to get more production from them. In my zone, which is five, if I grow tomatoes outside, we'll have ripe tomatoes by around August 1st and we'll usually have our first garden frost somewhere around September 20th. This only give us a 50-day harvest and we can get a few weeks longer if I cover the plants. That's a really, really short season and I can start harvesting the tomatoes June 1st in the greenhouse and I can harvest them through October 15th. This gives me 137 days of harvest, so this is a really, really big difference.

Okay, number two is extending the growing the season on the fall end. So, I use my greenhouses to extend the growing season in the fall. I can protect the warm weather plants and get another six to eight weeks of production out of them and we can harvest cucumbers and tomatoes and other warm weather crops almost into November. So, we can get a lot longer season by being in the greenhouse.

Number three is growing winter vegetables. In the late fall, winter and early spring I can grow all the cold weather crops and keep harvest fresh vegetables all year. So, number four is getting my outdoor starter plants going. So, I use the greenhouse space in the spring to start my transplants for the outdoor gardens. Think about the ways you want to use your greenhouse. If you have a greenhouse, why not use it as much as possible. Let's plan on you wanting to do all four activities in your greenhouse. Here's a series of questions to ask yourselves, so you can start to figure out what kind of greenhouse and equipment that you are going to want.

Number one, how many people are you trying to feed? We can do crop charts for every vegetable and figure every square foot, but that would change every year depending on what you want to grow. An easier way to estimate the space wanted is to go by how many people you're wanting to feed. For a high performance, raised bed garden, the average square foot wanted per person is about 100 square feet including the aisle space. So probably double that if you're growing in an old-fashioned row garden style. Part of the determining factor will be how much greenhouse you can afford and how much space do you have to put up a greenhouse. For now, let's just figure on affordability and space as unlimited just for this exercise. We can back that off later. So, there are a lot of factors that could change this number, but we need a number to start with so we're gonna use 100 square foot per person to just start our figures for our greenhouse.

Okay, number two. What do you want to grow and are you willing to pay for heat and lights? There's two ways to go about running your greenhouse. If you're willing to pay for heating and running grow lights, then you can grow warm weather plants all year round. I have some greenhouses where we have heat and others where we don't have any heat. So, heats and lights can run you up to \$20 a night depending on your setup. So, if you're gonna go heatless and not add

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artificial light for your main crops, then you're going switch to the cool weather plants during the winter when the light is fairly low. Start thinking about what you want to grow and when in your greenhouse.

Number three, how much space will I need? This is a really loaded question. On one hand, you have to consider the cost of the structure and how many hours you would have to work in it and then you need to figure out what you want to grow. So, if we use the average number of 100 square foot per person, if there are four people you are wanting to feed all year round, then 400 square feet would be a good start. Another consideration is to put up a greenhouse and supplement it with cold frames and low tunnels outside of the greenhouse. So, the greenhouse could have your warm weather crops and you could be using the cold frames to grow your wintered over vegetables and your greens. So, if time is your deciding factor, then a good rule of thumb is you can take care of 200 square feet of greenhouse by committing only 15 minutes a day.

Number four, do you need space for transplants? You're going to need some space for your starter plants that will go into your outside garden. I would add another about 50 square feet just to dedicate to your starter plants. All right and number five is high-tech or low-tech, so there's many greenhouse designs out there and some are very low-tech, and some are very high-tech. Our buildings tend to run somewhere in the middle and we have a few greenhouses that have fans that run on thermostats to cool the buildings and we have a few that just open with flaps manually for us to cool the buildings. What you need to consider is how much technology you will need to automate depending on when you can be in your greenhouses. If you go to work early in the morning and you don't return home until late at night, you're going to want to automate your vents and your fans. If you're around the house most of the day, you can go with the manual flaps. Here are the two basic things to consider for manual or automatic. First one, heating and cooling. You will need to be home morning, noon and night to manually control the heating and cooling or you're really gonna want the thermostats to do that for you. Number two is water. Most greenhouses need to be monitored as possibly watered every day, so if you're going to be gone more than two days at a time, you will need to get a garden sitter or an automatic water system.

Number six, next thing to consider is rules and regulations. So, what type of permits are required in your area. Some areas have restrictions about putting up permanent buildings, some will allow hoop houses that are not permanent, so you're gonna have to ask around. So, you need to check with your county, your homeowner's association or other governing agencies to see what is allowed in your area. So, once you get the okay, then you will know what kind of building is allowed, so please check before you build.

Number seven is seasonal lighting. The next thing you need to figure out is how much light can you get in your greenhouse. This is really important as to how the plants will perform. So, winter light is lower in the sky and further south than your summer light. So, you need to walk around your yard and look up. Are there trees or other buildings blocking the light? Do you have a direct line of sight to the south? So, think about the sun angles in the winter. Would you get good light in the winter inside your building? By working your way through these questions, you should have a pretty good idea of the size and time commitment that it will take to have an operational greenhouse and just one more thing I would like to let you in on. You're going to love your greenhouse so much that you're going to want more space. You could go up to 200 square feet per person that you want to feed, and this would give you room to expand. So, if there's a lot of people that you want to feed and the time commitment is getting too big, then get them to help out. One thing I do know is growing your own food year-round is such a great feeling. Even after 30 years, I still drag all my vegetables and say, "Look what I grew." I also like to feel the control over what I eat. I know this food is nutritious, safe and costs very little.

Your homework is to contact your county, your homeowner's association and other governing agencies to find out what permits if any are needed to build your greenhouse. You can tell them approximately what size that you are thinking about. That will help tell you what you can actually do. So, I want to thank you for watching module one of Greenhouse Construction. In the next module, you're going to learn whether you want to design and build your own greenhouse or to buy a kit greenhouse.