





empty a greenhouse and start over. It is always good to start fresh.”

Understanding markets also is essential in greenhouse arrangement, Verhoeven said. “Having a good sense of your market helps in reducing consolidation, and that is something we are constantly trying to do.”

**“Bigger containers we like to put with other bigger containers, because they are going to have a similar growth trajectory and water requirements. And smaller plants, we will put with other smaller plants.”**

— Ben Verhoeven of Peoria Gardens, Albany, Oregon

Verhoeven also believes it is important to move out plants as soon as they are ready. “Once that plant is ready to go, once it has completed its growth cycle and is up to a sellable stage, we want it to head out the door. We want to move it right onto a truck because it is occupying good space,” he said.

#### Grouping plants by need

Grouping plants with similar needs can help in operational efficiencies, as well as facilitate efforts to clear a greenhouse before refilling, according to the nursery operators.

“Things that like it dry, we like to put next to things that also like it really dry,” Verhoeven said. “Bigger containers we like to put with other bigger containers, because they are going to have a similar growth trajectory and water requirements. And smaller plants, we will put with other smaller plants.”

“And we like to put young things with other young things, because they are going to finish close to the same time and

have similar needs in terms of heat and fertilizer,” Verhoeven added. “We want to avoid putting something like a four-inch zucchini next to a gallon lavender. Their needs are totally different.”

Hicks agreed: “I like to put all the *Sedums*, the *sempervirens*, the succulents

all into one area,” he said. “Then you have your shaded plants, like the ferns; they all like heavy shade, moist conditions. I like to get all those together.”

“You always want to put sun by sun, shade by

shade,” Hicks said. “And if you have a lighter or a heavier shade, you have to consider those factors, too. And then you want to go by irrigation requirements, as well.”

House plants also go together at Little Prince of Oregon

Nursery, Hicks said. “They need the warm, humid conditions with shade,” he said. “We have about a 90,000 square-foot gutter-connect house where we are running

bottom heat, and all of our house plants basically go into that house.”

#### Clearing a greenhouse

Completely clearing a greenhouse has several advantages over partially clearing houses before refilling, Hicks said. At times, he will even consolidate plants if it serves that end.

“I will find a house that is completely

empty or mostly empty and maybe consolidate that house with a couple of others that have similar timing, then replant the whole thing,” he said. “Now you’ve got all of your young plants together, and you can treat the house as a whole, as opposed to a block-by-block arrangement.”

“Also, once you clear the house out, you can now drive vehicles in there and pull the trailer in to unload right from the trailer, instead of having to carry a couple of plants at a time into the house,” Hicks said. “It makes building the house a lot easier, and it is also a lot easier on the irrigators, because all of the plants are at a similar stage, water and growth wise.”

Hicks also said it is important to consider the space needs of a plant when arranging a greenhouse. “We grow everything ‘can tight,’ for the most part, and try and sell them before the point where we would have to space them,” he said. “But there are certain varieties, like lavenders and salvias, that you have no choice but

**“Spending a little time planning and organizing and thinking about the plants individually and as a whole definitely helps you out!”**

— Mike Hicks of Little Prince of Oregon Nursery, Aurora, Oregon

to space them. So, you have to plan for that part, as well.”

#### Keeping things moving

The Peters, who counsel clients on the Lean strategy that is employed in multiple industries, said one of the biggest mistakes they see in greenhouse arrangements is the propensity of greenhouse operators to clog aisles or other access points to plants.



Crops are irrigated at Smith Gardens.  
PHOTO COURTESY OF SMITH GARDENS

“That is a touchy subject, because nurseries make money by growing and selling plants,” Rick Peters said. “And as long as they have a market for it – the more plants they can grow and sell – the more money they make.”

Packing a greenhouse to the point that it inhibits a worker’s ability to access plants is more than an inconvenience for

workers, he said. It can be detrimental to a nursery’s bottom line. He and his wife, Elizabeth, co-founders and owners of The Peters Company, said they have seen several instances where an overfull greenhouse has resulted in crews picking up and moving plants to access the plants they need to work with.

“So, all of a sudden, you’ve got

motion,” he said, referring to the fact that motion is one of several forms of waste identified in Lean. “You’ve got transportation because you are moving product; you’ve got over-processing because you are over-handling things. And, by doing that, you are introducing more waste, and therefore more cost.”

Transportation and overprocess- ➤

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## Arranging for efficient greenhouse production

Fertilizer present in recycled water can be used the next time around, which saves on chemical costs.

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ing are also considered forms of waste.

“If they haven’t provided access to the product throughout its growing cycle, they have introduced a number of problems that are sometimes hard to account for, and some growers don’t pay too much attention to that,” Peters said. “We’ve seen numerous incidents where it is costing them more than if they just left a few plants off to create reasonable walkways or accessways every so many aisles. Access to the product is really important.”

### Planning time pays dividends

The Peters identified several other examples in greenhouse arrangement where adopting Lean could improve a nursery’s bottom line, including: ensuring tools are readily available for workers; arranging greenhouses so workers have “line-of-sight,” a Lean term regarding a worker’s ability to see an entire operation from a particular vantage point; and even proper signage, so a seasonal or part-time worker knows where to go to fulfill a job assignment.

It also can be beneficial for greenhouse operators to keep things on wheels whenever possible to accommodate flexibility. “At any point, you might find a better way to do a process,” Elizabeth Peters said. “So, you should try to minimize bolting things down.”

Also, Rick Peters said, one form of waste often spills into other forms. “Oftentimes, the bad news is when we engage in one form of waste, we automatically create more types of waste to go along with it,” he said. “The good news is, once we discover what we are doing, we have the opportunity to not only eliminate that one waste that we were targeting, but it can take out other forms of waste as well.”

Ultimately, Hicks said, organizing a greenhouse comes down to knowing a plant’s growth habits and its needs, and arranging the house to meet those needs and those of your workers. And it is worth spending some extra planning time when arranging a greenhouse to achieve that.

“In the springtime, when everybody is just crazy busy and it is all we can do just to get some plants in, you just do what you can at that point,” Hicks said. “But for the rest of the year, spending a little time planning and organizing and thinking about the plants individually and as a whole definitely helps you out.” ☺

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