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PLUS: WHAT MAKES SOIL GREAT FOR CANNABIS?



Marc Finch

*Director of operations,
DominionAG*

Cannabis growers have traditionally taken a do-it-yourself approach to construction, largely due to the illegal nature of the crop and the need to operate under the radar. But the commercialization of marijuana opens the door for partnerships with larger building companies and requires entrepreneurs to go through proper permitting to ensure compliance.

Dominion Builders, a commercial general contractor based in Florida and licensed in multiple states, recently launched its DominionAG division to focus on agricultural facilities, including cannabis production greenhouses.

“We’re bringing the real-world development process to the cannabis cultivation world,” says director of operations Marc Finch, who brings more than 15 years of construction experience to the cannabis industry.

SunGrower: What are some of the major differences in greenhouse design between cannabis and traditional agriculture?

Marc Finch: Really what we’re finding with cannabis is that there’s a lot of head grower involvement. The systems are generally the same; even tomatoes to cannabis are very similar. The plants need a soil temperature of 50 degrees and above, being a sub-tropical plant. So the systems are relatively the same — fully automated irrigation/fertigation controls, shading, etc. The only differences really are in the minute details with input from the head grower or owner, things that can be changed and tweaked. And the security aspect is much greater on the cannabis side. That’s the major difference.

SG: What do you think greenhouse growers of cannabis can take from traditional agriculture to learn more about their own craft?

Finch: As far as the agriculture goes, I think they understand it very well, but notes can be taken from the produce world. Since greenhouse production has been done successfully in large, large quantities since the ‘60s, it’s been figured out. I think talking to professionals that already have that knowledge base would be invaluable to them.

SG: What are some of the biggest mistakes you’ve seen in cannabis growers who are making the jump into greenhouse production?

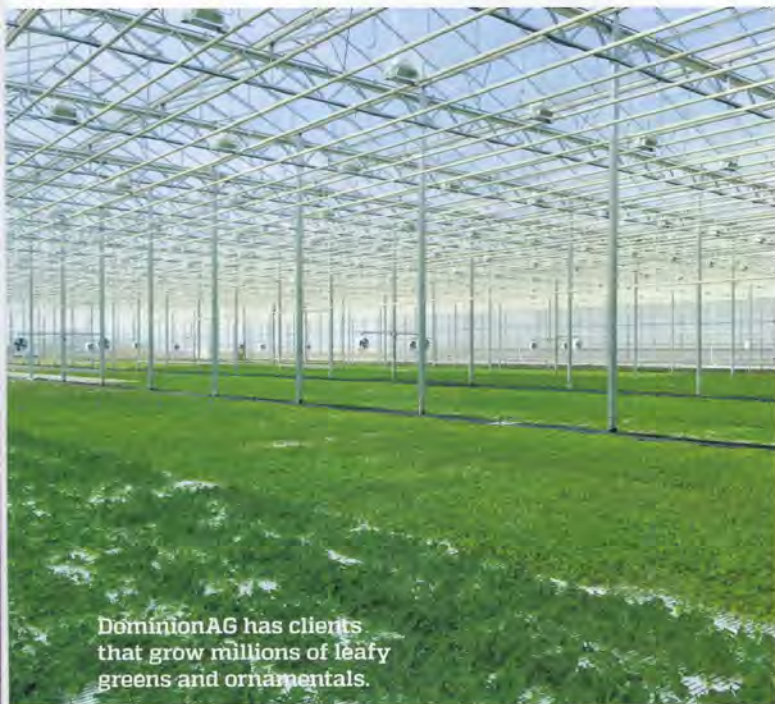
Finch: Usually it’s planning ahead. They’ll grow in the future, and mostly that’s power requirements because of lighting. A little bit of planning on the front can be a huge savings in the end.

Also code requirements. A lot of people think these are agricultural greenhouses, but the International Building Code has already come in and made some changes to building codes under the processing side. So it will be more based on commercial buildings, not an agricultural space any more, especially when you produce medicine.

SG: Being that most of the cultivation processes are similar to crops like tomatoes and peppers, do you see people looking differently at cannabis in terms of an agricultural designation?

Finch: I think the agricultural designation now is prevalent, but in the future with the medical aspect tied to cannabis in a lot of states, I think that pharmaceutical companies or universities doing research may approach it on a different level than it is now, so there may be a clean room aspect, just like typical pharmaceuticals. The testing aspect will probably become more prevalent as well. This is a situation where it’s very profitable for the owners, but you want to protect the owners’ investment in making sure everything’s built to code and specs. Just in case there was an accident, the owner wouldn’t be at fault for having a facility that’s not up to code.

SG: You mention clean room requirements. Can a greenhouse be set up with a clean room standard comparable to some of these lab-style indoor grows?



DominionAG has clients that grow millions of leafy greens and ornamentals.

PHOTO COURTESY DOMINIONAG

Finch: I believe it can, but we haven't done one to that spec. I'm not sure if the grow will ever equal what the head house and processing side does right now, but it may. It all depends on what the municipality and local authority require.

SG: Are there any areas in the country you think are unsuitable for greenhouse production of marijuana?

Finch: Not so much. Our greenhouse builders have built all over the country in vastly different climates. What we find in the cannabis realm is the humidity is the biggest evil to the plant. Then it comes into the control side — it's fresh air, humidity control and your flooring. We'll do radiant floor heating in a cooler climate to suck out the humidity the plant produces. In a warmer climate, you can do chilled water systems with fans or a chilled air handler. There are different types, but there is a solution for most climates, so I don't believe there are any regions it couldn't be done in.

SG: We've had discussions with people who say a place like Illinois, for example, with harsh winters and limited sun, wouldn't be suitable for greenhouses.

Finch: A good example is the 200,000-square-foot facility we did for a produce client and they do about a million pounds of leafy greens a year in one facility in Illinois. The sun's value versus a light bulb that you pay for is invaluable.

SG: Most cannabis growers have experience in indoor facilities where they have total control over the environment, so a lot of people believe greenhouses are too risky, lack full environmental controls or are too expensive to set up properly for cannabis. What's your response to that?

Finch: It's about cost versus price. Eventually, they're going to end up paying more growing indoors than growing in a greenhouse because of the electricity. It doesn't cost them as much, but the price they pay is much more than what they pay in the future.

Systems can be 100% automated, so the head grower and 10 of their growers have an app on their phone, and it will send notifications out whenever anything goes wrong. This is standard practice in the vegetable world that's just coming to the cannabis world. It does cost more than growing in mom's basement the way cannabis has been, but now greenhouses are becoming more prevalent and the system is totally automated.

SG: Can you talk more about these automated systems and how far greenhouses have come in terms of technology?

Finch: Greenhouse construction actually dates back all the way to the 1400s in Rome. Moving forward, Holland hothouses took hold in the 1800s. In the 1960s, that's when you get the gutter-connected tomato systems where you see the mass production of produce, and it's been successful ever since.

That technology has been honed and automated for years. These automated systems are very user-friendly now. It'll control your lighting and your shading. It'll control irrigation, fertigation. It will notify you if doors are open.

The systems are similar to a commercial BMS, or building management system, so it's nothing new, but we're bringing the technology to the grower as well. These are real businesses and they generate a lot of revenue and people need to protect themselves and have a functional business that's profitable through lower electricity costs. It helps with sustainability as well, so we're going to recapture all the rainwater for reuse in irrigation.

SG: For those who are just getting started and researching options, how vital is the location of the greenhouse? A lot of entrepreneurs are trying to balance where they live and where their customers are located with the ideal greenhouse growing climate.

Finch: As far as location of the greenhouse, I would pick the sunnier location if I could. But once you think about it as a whole package, the greenhouse is going to magnify any daylight. It's still a benefit to have some sort of a greenhouse structure versus growing indoors. The cost versus price might not be as viable as it is in Arizona, or a different climate where the sun's more prevalent, but the benefit is still there.

We can help produce a yield calculation based off other houses we've done in the region.

SG: What's the most common size of greenhouse being used for cannabis production?

Finch: 30,000 square feet seems to be the typical size we've been asked to spec. For the big commercial clients, those ones are massive. But the smaller guys are just as frequent. There's a good economy of scale. Every feature the large greenhouses have can be included in the smaller ones.

This interview has been edited for length and clarity. ■