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## A Unique Approach

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One of the first things I noticed when I toured the Cleburne, Texas-based Eden Green Technology greenhouse facility in September was the climate. In the main aislesways, you could definitely feel the heat of the Texas sun. However, in the aisles between the vertical “walls,” the climate was much different.

Why? The PVC vertical hydroponic pipe system creates a microclimate around the plants with 2,500 gallons of water per minute coursing through 17 miles of pipeline from top to bottom to bring nutrient-rich irrigation water through for consistent growth, according to the folks there. That system allows for optimal temperatures of 68 to 70 degrees F around the herbs and leafy greens being grown in the system, providing the right temps for nutrient uptake.

It's just one example of several that sets this greenhouse facility apart from any others I've seen since I've been writing about controlled environment agriculture. Let's back up, though, and talk about how it started and where it's going.

### Looking back on the journey

This isn't the first time we've written about Eden Green. We covered them in the Under an Acre section in GrowerTalks in 2020, documenting the history as South African engineers Eugene and Jacques Van Buuren developed the hybrid technology concept as a way to combat hunger amid a growing population. In 2017, they brought the technology to North America and the

Cleburne facility was born, starting as a smaller poly house designed for proof of concept.

*Pictured: From seed to start is about 10 to 14 days and then they get transplanted into the main greenhouse. From here, the growth cycle ranges from 24 to 28 days, depending on the crop.*

When our author wrote about the company then, they'd trialed over 200 plant types in the system, including ornamental edibles, peppers and tomatoes. As CEA began to boom during the pandemic, the company built Greenhouse 2, a 62,000 sq. ft. higher tech space and converted the original Greenhouse 1 to a propagation house. There's also a cold storage, packing and a shipping area totaling 20,000 sq. ft.

It's clear, too, as soon as you pull up to the greenhouse why it's located where it is. It's a stone's throw (albeit a Major League Baseball throw) from enormous Walmart and Amazon distribution centers. And according to

CEO Eddy Badrina, that is 100% intentional.

“We based it here to prove a thesis,” he noted. “You cut the mileage to one quarter of a mile.”

Customers for Eden Green, which grows under the Robinson Fresh brand, include retailers like Walmart, as well as Cava, along with wholesalers and distributors like Cisco, hospitals and restaurants.

*Pictured: It's often hard to tell what's happening inside those pods, so then-Grower and Data Specialist Chelsea Lee pulled one out to show me the root structure—check that out!*

Locating there doesn't just provide close access to suppliers, either. It also allows them to “draft” off of the local distribution centers for workers. You see, Cleburne is a bit ... well ... remote. But having those distribution centers there gives them a labor pool, as well as allow them to be competitive on salary ranges.

## Where they are today

Currently, they've edited down from the initial trial phase to offering 10 herbs, plus leafy greens. Those 10 herbs are: chives, parsley, cilantro, basil, dill, rosemary, sage, thyme, oregano and mint. They harvest daily and ship in either bulk 5-lb. or 1-lb. boxes, as well as leafy greens in clamshells depending on the market.

With the newer greenhouse space, they've added a pretty nifty mobile lighting system because, while there's lots of sunlight in Texas, it's not always at optimal levels, particularly for a vertical growing operation the way they're set up.

Then-Grower and Data Specialist Chelsea Lee (she's since moved to a different company), explained the system as we watched them in action. The LED supplemental lights are operated through the Hoogendorn system where sensors report back when a section has hit its lighting target and the LEDs move down. There are three different sections where the lights stop, and once completed, they shut off.



*Pictured: Here you can see the unique supplemental lighting system that ensures all plants receive the same amount of light per day. It'll lower one more level after this before shutting off for the day.*



And while the automation is there, it's not the main focus—that's still the plants and their health, said Senior Director of Operations Tejas Rane. Their goal is to use tech where needed, but to train a workforce that also knows the plants and CEA growing. He came from a vertical farm startup that was far more tech-focused.

“Here, we're not as tech handicapped; we can pivot depending on what we need to do,” he said. “We've been proactive to be employing folks around this area, and paving the way for new skill sets and careers in agriculture.”

Eddy agreed. “Creating processes around automation is incorrect; the

right way is to create processes for plants and customize from that,” he said, noting they establish standard operating procedures with human labor, then automate where they can drive a level of cost efficiency.

It’s that cost efficiency that’s the end goal, in equal measure with consistency and quality. Consistency has already brought them customers in the bulk market, which is a challenging area to play in (but the one they’ve chosen, as it’s exorbitantly expensive to launch a retail brand). It’s forced them to be more efficient so they can compete with bulk prices, however, offering consistency alleviates a little of that price challenge.

Eddy walked me through how it works: If a distributor customer is bringing in bulk shipments from elsewhere (sometimes from out of the country) that aren’t meeting quality control standards consistently, that’s money and time that’s lost. If Eden Green can provide a fresh product that meets or exceeds competitor quality and is consistent and reliable, then they win the day. And that’s what’s happened.

## **What’s next?**

They’re keen to scale slowly as they focus on achieving unit economics, and continue to focus on the mission and the right way to treat workers as they build out further expansion.

And, as with many in the CEA arena, expansion is the goal. Right now, they have plans for a third greenhouse with 125,000 sq. ft. of growing space at the Cleburne location, as well as a 65,000-sq. ft. head house with the goal of expanding SKUs and adding more packing lines. That is set for construction soon to be completed by the fourth quarter of 2025.

Future goals include building up to 10 bigger facilities in the next five years and not all in Texas.

“If we can grow here with a ton of rain, sunshine and 40-degree temperature swings, we’re battle-hardened—we can be in multiple states in different environmental zones,” Eddy said, adding they’re looking to create a grower network as well, with a line of growers operating on a centralized chain of command with a head grower at the top.

“We have the ability to provide consistency domestically at a really affordable pricepoint. And we think others should join in that.”