

*Elevate . Cultivate . Grow .*™



# **CONVERTING TO A VERTICAL FARMING FACILITY 5 THINGS YOU MUST KNOW**

Single-tier designs were the industry standard when cannabis cultivation took its first steps out of the garage and into the warehouse. At the time, single-level design made sense. You didn't want to change what worked, and LED lights weren't quite "there" yet. Well, times have changed, LED lights are "there" and have been for a while now.

As the industry and technology have matured, it has become more prudent and profitable to transition to a **multi-tiered LED system** to stay competitive. This is not something to take lightly, and it's no wonder that some companies are still slow to make the switch.

There are a ton of details to think about when making this kind of upgrade, but here are a few key points to ponder while looking upon your single-level grow room as you dream about the day you are fully tiered out, maximizing all your available space, and utilizing the latest technology to **take your business to the next level!**





# 1

## HAVE A SOLID PLAN

When working collaboratively with Pipp, our in-house design team will provide a racking design and layout that sets the foundation for the entire project. From there, consider every detail of daily operations. Get feedback from all department heads. These folks have their boots on the ground and play a vital role in a smooth transition by keeping the rest of the crew on task. **Take each person's strengths and weaknesses into consideration** and develop a plan that everyone will understand and get behind. Consider all the impact areas, from propagation to packaging, to develop solutions to mitigate bottlenecks.

Some critical questions include: How many plants are needed for the new design? When will you need to ramp up your propagation department or clone orders to meet those numbers? What are your increased nutrient quantities, and when to order? How much labor will you need to complete the care of the additional plants? Which Standard Operating Procedures (SOPs) will need to be adjusted, and someone who must be identified to update them? Usually, the switch to multi-tier happens immediately after harvest to finish before the next flip. **Be sure to consider your specific facility's needs and production plan** while evaluating options to install. The main goal is to get back up and running by quickly addressing anything that slows the process down. Being proactive and solving problems help keep things moving. Try to be as upbeat and as supportive as you can. Transitions are an opportunity to create a positive team-building experience.





# 2

## MAKE A CHECKLIST FOR EACH DEPARTMENT

This is a great time to have each department head create a list of needs for increased production, plant care, harvest, and post-harvest processing. **The first checklist will be construction needs.** Make sure you have every item you need on-site before the switch date, from brackets to hang the lights to the zip ties to button it all together. Getting caught halfway through a transition without enough bolts, wire, or tools will result in costly, unwanted delays. A week before the switch, utilize your checklist and do a run-through with your key people. Ensure everyone knows what they should be doing, go over any remaining questions, and make sure all supplies are on hand. Have everything accessible and sorted in the order you need it so you won't need to search.

Many hands make light work, so don't forget to account for enough tools for everyone to use, especially if you have more than one person on the same project. Be prepared to have your crew do prep work while waiting for the contractors to finish installing the new infrastructure. **Anything you can do beforehand will save you time when it counts,** from pre-making irrigation dripper lines to unboxing and prepping all your lights to hang. Create a journal and document day-to-day events to utilize efficiencies for the next room or project.



# 3

## ACCOUNT FOR THE INCREASE IN ENVIRONMENTAL & INFRASTRUCTURE NEEDS

Do you have enough power, HVAC, water, drainage, and staff? You will be doubling or tripling everything from the amount of water flowing through the system to the number of plants you need to move and harvest. When designing the irrigation system, having multiple zones helps you tightly control your watering events allowing you to stagger watering. Doing so can prevent overwhelming your drains with the increased volume of water. **Be proactive with ensuring proper airflow through multiple canopies.** This will be one of your biggest challenges for growers to adjust to, as the room is now 3-dimensional, heat rises, and stagnant zones can become serious problems. Pipp has already tackled this problem through the system designed by its subsidiary Vertical Air Solutions, **one of the best airflow products for managing the airflow** in your multi-tiered system. Dialing in the environment becomes slightly more difficult when you add multiple levels; utilizing sensors throughout each level will help you quickly dial in your VPD and will easily pay for itself in short order.





# 4

## ANTICIPATE THE DIFFERENCE BETWEEN GROWING UNDER **HPS VS. LED**

You can run the room a little warmer with an LED because the lights run cooler and are less stressful on the plants. Clean-outs are a little different as well. Since **LED lights don't penetrate as deep as the older HPS lights**, removing fan leaves earlier (ideally before day 18 of flower) will help lower bud sites get light while giving the plant enough time to fill back in. Foliar feeding the increased number of plants can be a challenge and usually involves the usage of OSHA-approved ladders or scaffolding to spray the upper levels. Using foggers for application is an option, but make sure your sensors and lights won't be damaged!

# 5

## BE PROACTIVE IN TRAINING YOUR STAFF ON EQUIPMENT, LADDER, AND SCAFFOLD USAGE

Proper use of spray equipment is essential when utilizing **OSHA-approved ladders and scaffolding**. Working at height exposes you to more hazards than single-tier growing, but proper training can reduce incidents. Anything dropped from a height onto someone below could be harmful, and scissors are especially problematic. Make sure staff keep the tops of ladder and scaffolding clear of anything and utilize a sensible scaffolding system for your space. Pipp racking has designed a great platform system called **ELEVATE® Platform System** that integrates seamlessly with their racks, eliminating many safety concerns and saving you time with easy setup and takedown.







## MAKING THE **SWITCH**

Depending on the size of your business and a host of other factors, you may want to do one room at a time or shut down the operation and complete all rooms simultaneously. Sometimes it is cost-effective to purchase all equipment needed at once instead of piece-mealing it together. Not to mention contractors and production disruptions. **Create a P&L analysis to ensure you're getting the most out of your transition.**

When you are making dynamic changes, it's nice to know you have support from someone who has been there and accomplished their goals. Pipp works with some of the best consultants globally and has more experience growing vertically than anyone else in the game. **Reach out to Pipp today** and see how they can help you plan out your next move and keep evolving competitively in an ever-changing business climate!





## ABOUT GUEST AUTHOR **ROBERT SANDOW**

Robert Sandow is a cannabis consultant and writer who has been in the commercial cannabis industry since 2014. Born and raised on a farm in Kansas and a graduate from Rutgers School of Pharmacy, Rob is an advocate for small farmers, steward of medicinal plants, and pioneer in multi-tier cannabis production. You can find more of his work at [lefttearup.com](https://lefttearup.com).

Contact **Pipp Horticulture's**  
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