

Last Quarter Capture

Trade shows from coast to coast, speaking on panels, presenting our knowledge and hiring in engineering - it's been a busy time at Surna.

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Chillin' with Surna

SUMMER 2018

In the Grow

In this section, Surna shares some of its expertise in controlled cultivation environments. In this edition learn about cultivating on a flip, what it is and why we recommend it.

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60 Seconds with... Brandy Keen

Our Co-Founder and Senior Technical Advisor, takes a minute (or two) to answer questions she frequently gets on social media.

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Newsletter



LAST Quarter Capture



Last quarter was a busy time for us here at Surna! We are delighted to share that our Engineering team welcomed two new Mechanical Design Engineers, Emad Ismael and Blake Irwin. Emad is a graduate of the University of Colorado Denver and a Colorado native. Blake, a recent graduate from the Colorado School of Mines, is also a Colorado native. We also give a huge Surna welcome to our new Design Engineering Intern, Dean Hanson, entering his Senior year at Pennsylvania State University!

Our friends at Cannabis Business Times featured Surna in 10-page special report, "Control Your Grow", in their May issue. The special report enlightens readers on how their plants' environment is key to cultivation success. The piece also features an executive letter from Brandy Keen, our Co-Founder and Senior Technical Advisor, as well as a Q&A with Troy Rippe, our Senior Technical Advisor. Follow the link [here](#), to learn more about climate control solutions, technologies, how to optimize your resource efficiency and preventing crop loss and diminished yields!

Our Director of Marketing, Jamie English, attended NCIA's Lobby Days in Washington, D.C. A three-day event where cannabis industry professionals advocate for our industry on The Hill. Jamie's team met with several representatives and shared the difficulties the industry has with banking and taxes.

This last quarter we were also busy on our summer trade show tour! We started down south in New Orleans – where we enjoyed three days of exhibiting and over 70 speakers. MJBizConNext proved to not only be a good time, but a chance to see our wonderful customers and hear about their progress! We made our way west to the CannaGrow Expo in sunny Palm Springs, California. We had an incredible time making new connections and sharing our knowledge about climate control solutions that improve the cultivators overall crop quality and yield as well as how to optimize their resource efficiency. We trekked up to the Northeast and had a blast at the Lift & Co. Expo in Toronto, Canada! Our industry takes root in ingenuity and the entrepreneurial spirit, two topics our Director of Marketing, Jamie English, spoke about during a panel discussion regarding the difficulties in marketing in our industry. A huge thank you to Lift & Co. for another great show in a wonderful city, and to the attendees who visited our booth! We jumped across the border to Michigan, to attend CannaCon Detroit for a weekend with our Midwest customers. Our Co-Founder and Senior Technical Advisor, Brandy Keen, enjoyed the chance to educate future cultivators about how small changes in their cultivation style and facility can have a big impact on their bottom line!

We are excited to share a few of our on goings and look forward to the next quarter! Stay connected with us on social media and keep an eye on the hashtag [#letsgrowtogether](#) for Surna updates!

July
25-27

NCIA

San Jose, CA
Booth 414

Cannabis Business Summit & Expo is NCIA's longest running conference and trade show. This year, the event celebrates its 5-year anniversary!

August
14-16

MJBizCon INT'L

Toronto, ON
Booth 647

Join leaders from around the globe focusing on the role of the cannabis global marketplace in the most impactful nation in the industry today.

September
7-8

Grow Up

Niagra Falls, ON
Booth 1103

Focused on the education, collaboration and growth of the cannabis growing industry. Meet licensed producers, suppliers, equipment manufacturers, investors, lawyers, government officials and growing enthusiasts.

Upcoming **Events**

September
27-29

CWCBExpo

Los Angeles, CA
Booth 422

CWCBExpo is a business-to-business forum that focuses on educating and connecting professionals who recognize the unparalleled business opportunities within the U.S. cannabis industry.

October
22-23

CCIA

Anaheim, CA
Booth 620

The only industry association trade show preparing California cannabis for success in the largest adult-use market in the U.S., bringing together industry leaders to convene on best business practices and operations.

November
14-16

MJBizCon

Las Vegas, NV
Booth 3819

Join leaders from around the globe focusing on the role of the cannabis global marketplace.

In the Grow

According to urbandictionary.com, if you flip something you make a profit out of it. The same could be said in our industry for the term flip. There are a several good reasons to operate your grow on a "flip." This basically means to never run all your grow rooms on the same schedule. Why is this important? To understand this, we must understand peak energy times. How much energy you use (consumption) is not the only determination of how much you pay for electricity. In addition to Energy Charges, based on a cost per kilowatt-hour, a portion of your bill may also be determined by time of use charges, based on cost for kilowatts charged during various times of the day. You could also pay a peak demand charge—basically a tax based on the most energy you use at any given time, even if that peak use only lasts for a brief time.

Peak energy times, also known as time-of-use energy rates, is how energy companies bill its customers. Your energy bill will be higher during peak times and can be much lower during off-peak times. Shoulder time is somewhere in the middle. Peak time is usually (however, not always, so check with your local energy company), 2pm–8pm weekdays, shoulder time 7am–2pm and 8pm–10pm on weekends and off-peak is all other times. Currently, all commercial, industrial and agricultural customers in California are required to be on a time-of-use plan. California’s plan looks like this, with red being high-price periods, yellow being moderate-price periods and green being the low-price periods.

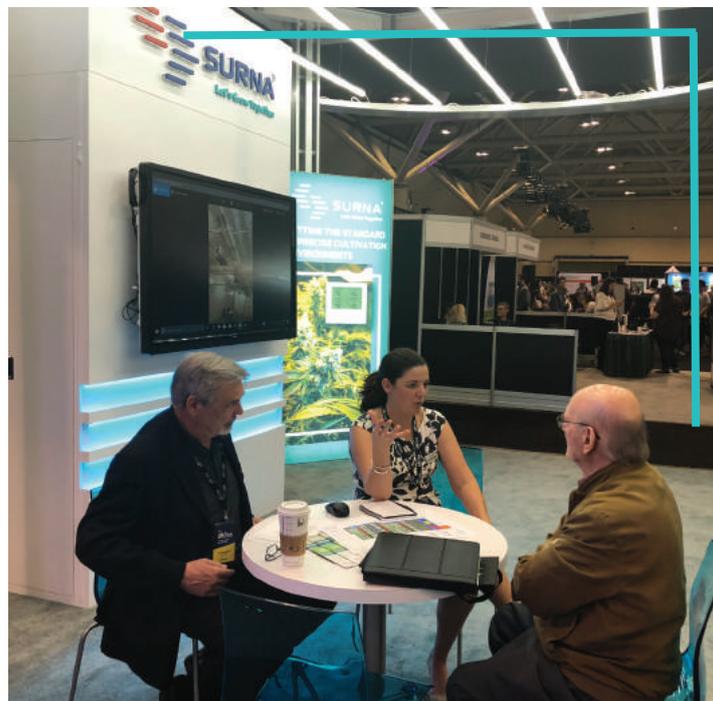
Energy efficient technologies can improve both the total energy use and peak demand of a facility. Operating schedules, on the other hand, play a critical role in minimizing peak demand over the month. Grow rooms, particularly in the flower stage, represent the largest sources of peak energy needs when factoring in lighting, cooling and ventilation. All grow room schedules should be staggered over the 24-hour period so the minimum number of rooms run concurrently. Any overlap of schedules, even for one hour or less, leads to higher spikes in peak electricity demand and higher costs. Similarly, other energy-intensive processes such as extraction, cleaning or electric heating can be staggered and scheduled carefully with lighting cycles to minimize peak power demands. So back to operating on a flip. When operating on a flip, you will stagger your grow rooms lighting schedule. As an example, running on a 12-hour lighting cycle, you would run your lights in room one from 6:00am to 6:00pm. Then your energy would flip to room two and those lights would run from 6:00pm to 6:00am. In this manner, you are never running full capacity at any single time.

	Weekday	Weekend
Early Morning	Green	Green
Midday	Yellow	Green
Afternoon/Evening	Red	Green
Overnight	Green	Green

In addition to reducing your energy consumption during peak times, and reducing your exposure to peak demand charges, there are several other cost savings benefits to operating on a flip. Your overall energy infrastructure is lower because you can share power sources between lights in opposite rooms (and sometimes mechanical systems). This allows you to run more square footage on less overall power. With Surna’s chilled water systems, you can also share compressors between rooms without sharing air between them! This allows you to spend less on your mechanical system in general, and use less electrical infrastructure to operate it, while still isolating cultivation rooms. So running your operation on a flip, saves on construction costs AND ongoing energy costs, which drops to your bottom line.

I am currently using a three gallon cooler to hold chilled water, from cooler to icebox chiller back to chiller in separate rooms. A fan is pulling air from the chiller into the rooms, I then add ice to keep the temperature down. Can the reservoir I'm using be too small and is my pump defeating chiller efficiency?

The most likely culprit in this scenario is that you don't have enough chiller capacity to match the amount of heat the Ice Box is absorbing from your lights or room. While the pump does add a small amount of heat, it's unlikely to be the cause of the issue you're seeing. The Ice Boxes will absorb varying amounts of heat depending on a number of variables—air flow, ambient temperature, wattage of lights, etc. It's tricky in our industry because there are so many small nutrient style chillers that are rated for a certain number of gallons of water. These numbers are largely accurate when they're cooling nutrient reservoirs with a minimal heat load, but when they're cooling an active heat load you really have to go by BTU's of cooling, not gallons of water. The BTU's of heat are what really matter, and when you are actively adding heat to the water, the number of BTU's you have to remove is much higher (an analogy we often use is that when you're cooling nutes you're basically cooling a pan of room temperature water, but when you add the Ice Box you've done the equivalent of turning on the burner under the pan—lots more heat to take out). Generally speaking, and keeping in mind this number might vary based on the situation, you should account for about 4000-4500 BTU's of heat for each light when you're using Ice Boxes (the number is higher when you are using air handlers as those units both cool and dehumidify, but the Ice Boxes are for cooling only and you don't have to account for a dehumidification load). Read the fine print on the chiller you select to ensure that it's capable of producing the right number of BTU's for your set up. Feel free to give us a call at the office to speak with tech support if you need more help.



How big does my veg room need to be in relation to my flower room to maximize my facilities efficiency?

The nice thing about veg is your plants are generally smaller and the canopy isn't as dense as flower, so double stacking is relatively easy and can save a lot of floor space if you're trying to maximize square footage. Generally speaking, depending on how long you plan to veg, you'll want to allocate veg canopy space at somewhere between 15-30% of your overall flower canopy space.

What do you see as opportunities for women in leadership roles in the cannabis industry?

I'm not sure that there needs to be a distinction for leadership opportunities for women specifically. There are a wealth of opportunities for men and women in any emerging economy—capable leaders will have the vision and the courage (and sometimes the lucky timing) to take advantage of those opportunities. Our industry happens to be home to a number of exceptionally capable women in leadership positions, in all aspects of the industry from cultivation to consumption and climate control to software.



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