

Energy Consumption in CEA Facilities

February 26, 2020

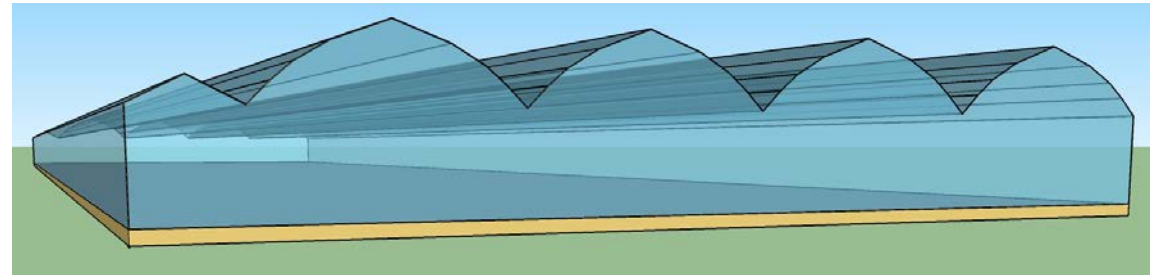


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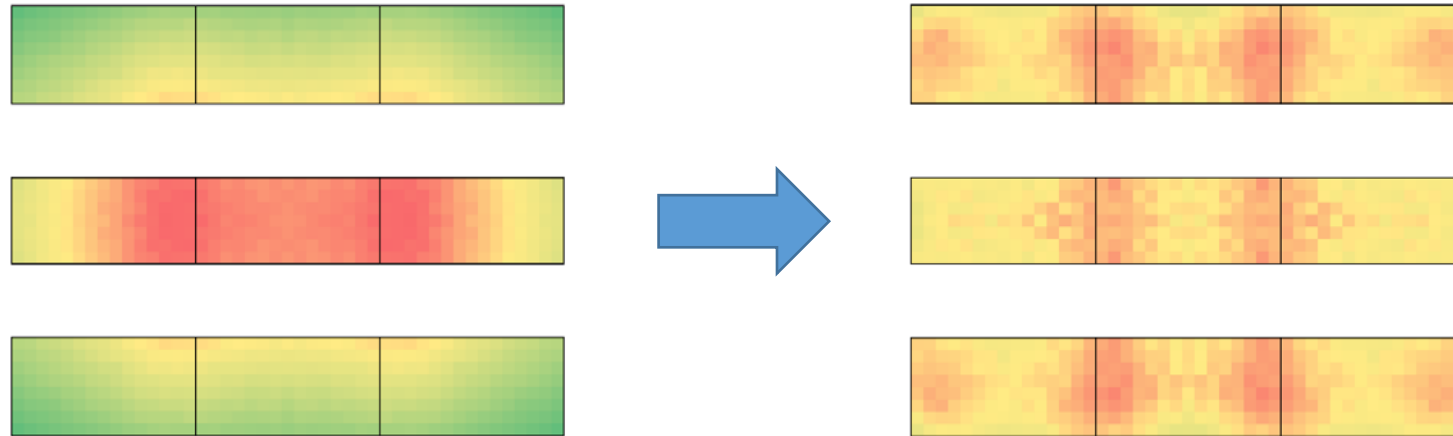
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Virtual Grower 4 – coming soon

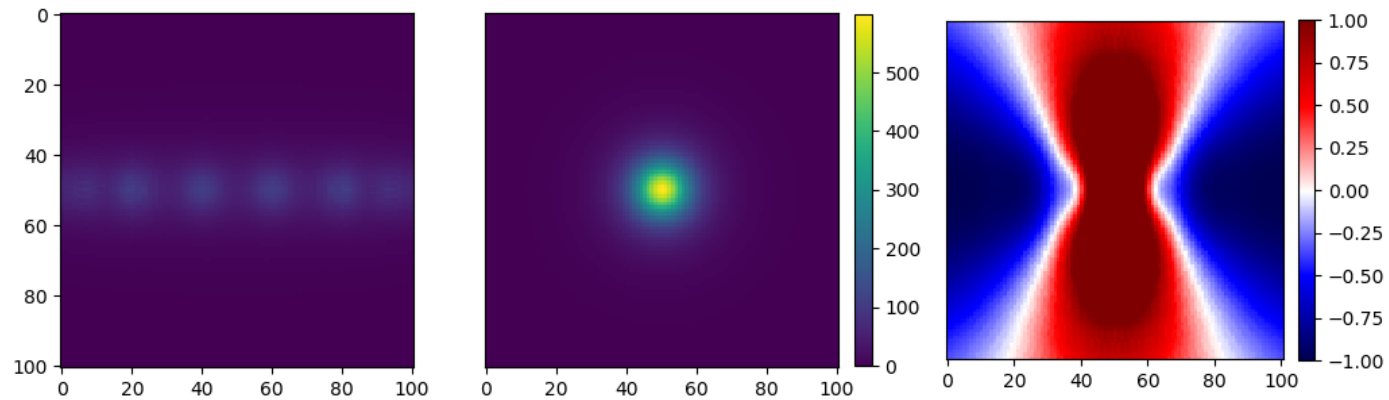
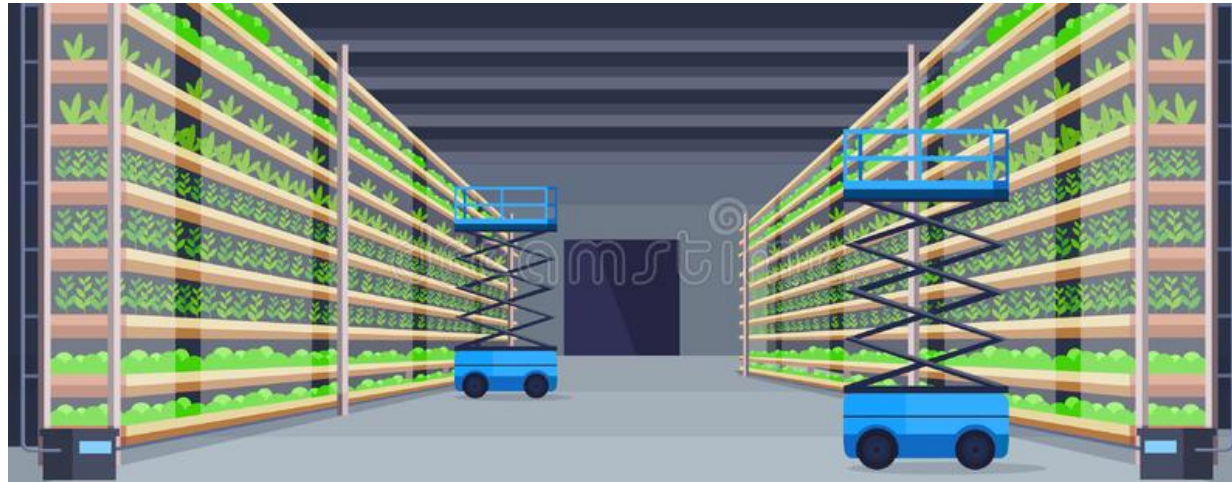
- Energy modeling improvements
- Lighting system update
- Lighting control algorithm simulation
- Cost comparisons
- Grower and research modes
- Custom building geometry



Spatial uniformity in supplemental lighting



Near-field optimization



Drones in greenhouses?

- Autonomous flying and mapping
- Obstacle avoidance
- Mobile sensors
- UV/IR imaging



Ways to save energy and/or money

- Do your due diligence before you build anything
- Install a thermal curtain
- Use lighting control systems that minimize supplemental light usage
- Install luminaires with high efficacy
- Ensure you have the right amount of supplemental light
- Install HVAC systems appropriate to your location/climate/crop
 - Don't design for the absolute worst case
- Use most favorable utility rate schedule for your business
- Check with local utilities for incentive programs
 - Does the program have a natural gas penalty for using LED over HPS?

Thank you



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