THE ANATOMY OF A GROW FACILITY

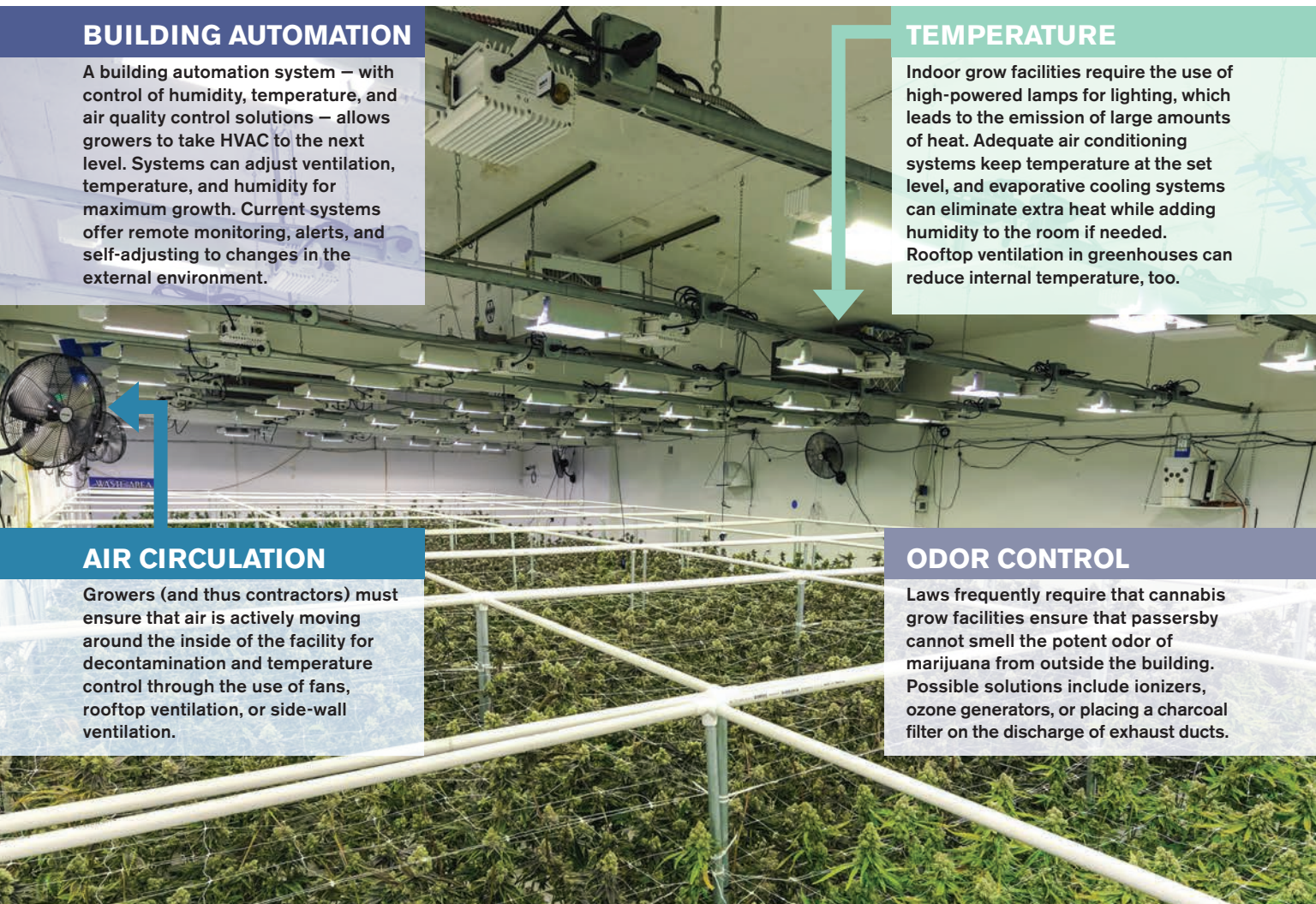
Grow facilities entail unique HVAC challenges and needs. Regardless of what the facility grows, whether cannabis, vegetables, or something else, contractors must be aware of a number of interweaving needs. Plants are an example of the need for precision HVAC care — small imperfections in ventilation, air quality, humidity, and temperature will have direct results on the yield and quality.

BUILDING AUTOMATION

A building automation system – with control of humidity, temperature, and air quality control solutions – allows growers to take HVAC to the next level. Systems can adjust ventilation, temperature, and humidity for maximum growth. Current systems offer remote monitoring, alerts, and self-adjusting to changes in the external environment.

TEMPERATURE

Indoor grow facilities require the use of high-powered lamps for lighting, which leads to the emission of large amounts of heat. Adequate air conditioning systems keep temperature at the set level, and evaporative cooling systems can eliminate extra heat while adding humidity to the room if needed. Rooftop ventilation in greenhouses can reduce internal temperature, too.



AIR CIRCULATION

Growers (and thus contractors) must ensure that air is actively moving around the inside of the facility for decontamination and temperature control through the use of fans, rooftop ventilation, or side-wall ventilation.

ODOR CONTROL

Laws frequently require that cannabis grow facilities ensure that passersby cannot smell the potent odor of marijuana from outside the building. Possible solutions include ionizers, ozone generators, or placing a charcoal filter on the discharge of exhaust ducts.

FUMIGATION

Fumigation can be used by growers to control pests and mold growth. However, the use of fumigation can require a permit, as chemicals can present a danger to anyone entering the fumigated space or to passersby if the chemicals leaked from the closed space.

HUMIDITY

Fog machines can be used as a humidity solution, since a fog system leads to a layer of mist forming on plants' leaves. The mist controls the transpiration rate of the plants, which reduces wilting. When humidity is too high, air conditioning systems can be used to keep the humidity levels at a proper level (though a separate unit for dehumidification may be needed when the lights are turned off).

CO_2 ENRICHMENT

Growers can use CO_2 enrichment systems to elevate the carbon dioxide level in a facility, leading to increased photosynthesis and plant growth. However, enriching a room with too much CO_2 can lead to health hazards, so systems come with controls and alerts to prevent excessive CO_2 levels in the grow facility.

Sources: "Marijuana Facilities: Codes, Standards, and Managing the Hazards – Expert Article" from Robson Forensics, by Stanley Jaworski, et al, March 9, 2016.
"13 Tips for Better HVAC," from *Cannabis Business Times*, by Sheila Bhattacharya, June 06, 2018.