High Time in the Construction Industry: Precautions for Working in the Legal Marijuana Industry

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As of the beginning of 2019, 33 states allow the sale of marijuana for medical purposes with another 14 states permitting sales, but only under more stringent medical supervision. A total of 10 states have approved the sale of marijuana for both medical and recreational use. Only Idaho, Nebraska, and South Dakota have a total ban on the sale of marijuana.

In 2014, Colorado became the first state to legalize recreational marijuana. There are now 549 retail marijuana stores throughout the state, and in the first ten months of 2018, combined recreational and medical cannabis sales topped $1 billion.[1] A 2016 report from the Marijuana Policy Group estimated that ancillary jobs such as construction and HVAC specialists, legal and advisory services, and other business services equaled about 23% of direct cannabis industry jobs added in Colorado.[2]

Marijuana facilities present a unique design environment. While federal law continues to outlaw production and sales of marijuana, individual states, municipalities, and regulatory agencies are working hard to create an effective infrastructure to oversee, regulate and manage the industry boom where legal. Navigating the mix between legal and illegal activities presents challenges at every level from the basics of financial services to the more intrinsic stigma that lingers over the subject matter.

Like any construction project, each marijuana operation results from a collaboration between the business owner (and the owner's budget), design and construction professionals, and the locality involved. However, unlike the design of a school or hospital, which comes with standard expectations on use, occupancy, and contents, marijuana facility owners—particularly grow operations—look to design a facility to meet their own individual production and sales goals. Every grow operation has the potential to be entirely different in material aspects.

Figure 1. An example of a marijuana cleanroom.

As a result, marijuana grow "experts" are emerging as a burgeoning area of expertise called on more and more on the front-end—to assist with grow design strategy to meet the owner's vision and budget—and on the back-end in litigation over allegations of professional design or other commercial liability.[3] Once the door opened to legal construction of marijuana-related operations, facility owners, commercial landlords, and their attorneys wasted no time in filing lawsuits alleging errors and omissions in design and/or construction. However, individual municipalities are slow to catch up in their review and assessment of marijuana facility construction. While some municipalities have chosen to apply already-approved building codes to marijuana facilities, others remain silent on the issue, creating a void in this area of applicable regulation.

This paper presents an overview of key issues important for design professionals, their counsel, and insurers to consider as the

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legalization of marijuana spreads across the U.S. bringing greater opportunities for A&E professionals to get involved alongside the potential for exposure to liability in a developing legal landscape.

Background

Cannabis facilities offer a variety of operations, including: cultivation, processing, extraction, infusion testing, and sales.[4] Cultivation or "grow" facilities support the stages of the grow process, commonly known as Mother, Propagation, Vegetation, and Flower,[5] and include functional components such as reverse osmosis, water storage, fertigation (watering systems that deliver nutrients to the plants), and planting operations.

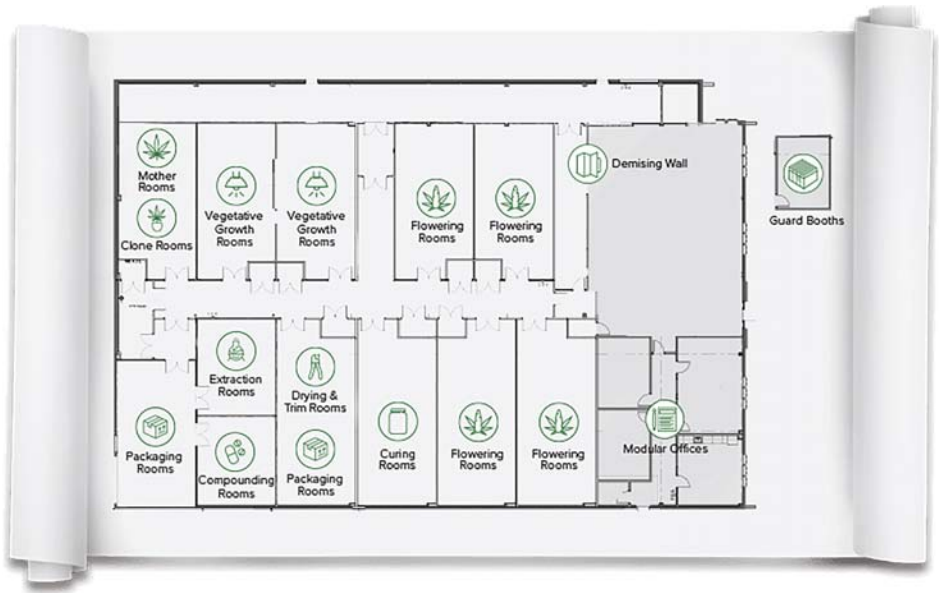

Figure 2. An example of a marijuana growroom blueprint.

Processing facilities support the treatment of the product from harvest of mature flower to drying, curing, bucking, and trimming. The product can then be packaged for wholesale or retail distribution, or developed into edible or nonedible products. For production of edible and nonedible products, an extraction process is used to remove the THC or CBD concentrates from the cannabis plant which is then infused into the products for sale. Testing facilities assist producers in establishing their products satisfy state limits or requirements for contaminants, heavy metals, pesticides, and potency.[6] Retail locations come with their own restrictions with respect to limited access and security.[7]

Design Criteria

Depending on the type of marijuana facility, design considerations can vary greatly. A marijuana grow facility will typically present more of an industrial environment where the main considerations include: the building envelope, HVAC systems, process flow, lighting, power capacity, and insulation. In contrast, a retail environment separate from a grow facility will not have the same complicated needs for design, but rather have other specialized needs for limited and strictly controlled access as well as security. Edible production requires its own unique standards as the production must be done in a commercially standard clean kitchen environment.

The grow "expert" or designer will ideally consider factors such as the number of plants per square foot, desired height of the plants

at harvest, type of lighting, and content and circulation of inside and outside air along with the type of irrigation method used, e.g. hydroponic or dirt grows.[8] Maximum productivity in a grow facility requires an understanding of the individual plant grow cycles, ratios of space available for each stage of growth, expected yields, as well as human exposure in the environment.[9] Depending on the different types or varieties of plants intended for growth, each stage of growth may require different environmental conditions depending on the individual strain's needs, multiplied by the number of different strains being grown.[10] In short, each facility has the potential to be a complicated and complex design environment!

HVAC design ranks among the most critical components of a marijuana grow facility as each grow "expert" develops their unique recipe for the mix of intended plants. Factors to consider include: air flow, temperature, humidity, oxygen, and CO2 exposure among others. The recipe for each room's environment must serve dual purposes of providing the right mix for plants to grow and thrive while preventing conditions that might foster mold, mildew, or other plant failure. Ultimately, the goal is to create a stable environment that will permit repeatable production.

Lighting tends to be the most expensive operational cost in cannabis cultivation. Products used vary from high-pressure sodium lamps (most popular) to LEDs (more expensive although increasingly more in use). Incorporating the correct lighting design for the grow design is critical. Certain types of plants may require more or less than a neighboring strain.

Intense lighting will generate heat. A single HPS lamp can produce 3,500 btu/hour. Water in the environment will generate humidity. Certain combinations of temperature and air quality will risk growth of mold or mildew which can quickly contaminate and wipe out a whole crop.

Energy requirements are high. Typical energy usage for a grow facility can range from 70 to 170 kilowatt-hour per-square-foot, per-year, compared to the typical energy usage for an average hospital of 28 kilowatt-hour per-square-foot, per-year.[11]

Odor is also a huge consideration where large-scale grow operations are constructed. Flowering cannabis puts off a strong, pungent odor. Plenty of HVAC options exist to address this factor. Local regulations governing what is permitted are often in play.[12]

Fire protection can be extremely important. Extraction processes use extremely dangerous, high-pressure flammable gases that must be considered. Security is also a huge consideration both with respect to the building's interior and exterior controls.

Finally, retail and wholesale operations must strictly control access, monitor interior/exterior activities, secure product storage and, where sales are involved, accommodate a large-scale cash operation.

Standard of Care

A design professional is required to apply the skill and learning, as it exists at the time, required of a similarly situated design professional in his or her community. The principle is axiomatic on its face to competent design professionals and their counsel. However, application of the standard itself to a brand-new industry, previously held illegal, presents some unique challenges for the designer in preparing the work, and counsel faced with defending against claims for negligence associated with the work. For example, where an engineer prepares an HVAC design for a marijuana grow facility a few months after recreational marijuana becomes legal, what is the expected standard of care? Answer: in the handful of matters in Colorado where this scenario occurred, there was no established standard of care to apply.

Defense of the design professional against claims of negligence often involves either allegations of failure to meet established and applicable building code provisions, or failure to meet the general community standard of care, or both. For a brand-new industry with unique design conditions, there may be no established building code provisions or generally understand community standards applicable to the needs at hand.[13] How then to argue the design professional met a standard of care that is undefined?

Since legalization of recreational use in January 2014, local Colorado building and planning departments have been working hard (or scrambling in some cases) to catch up to an industry where construction of new or remodeled facilities began instantly and has accelerated rapidly.[14] Many medical marijuana facility owners sought to take advantage of the anticipated legalization of recreational

marijuana by quickly transforming their facilities to accommodate a new business model. Municipalities and their building departments were flatly unprepared for the need nor nimble enough to put applicable code provisions in place quickly.

At this time, we are unaware of any professional negligence cases that have gone to trial or otherwise offer reported decisions on any standard of care. Anecdotally, the cases identified demonstrate a common fact pattern: newly-minted grow facilities struggling to grow product resulting in owner-directed professional negligence claims against the design and construction teams often seeking damages for millions of dollars in lost profits. As is often the case, professional liability policies present easy targets to those plaintiffs looking for financial compensation. Other factors to be explored include: unreasonable expectations for product growth, failure of the owner to authorize sufficient expenditures in support of the necessary HVAC design components, or incompetence in running and/or maintaining the facility operations.

In the course of discovery in the known cases, several municipal building department officials disclosed that at the outset of recreational legalization (the salient time period for these cases), there were no protocols in place for review of MEP designs, thus no basis to draw a connection between the design and any applicable code standard. While retained experts try to knit together pieces of historical building codes and opine the design professional failed to satisfy them, their testimony is in large part unsupported by the building officials or any other community standard of care. At bottom, we can conclude that the standard of care for design professionals can be wholly undefined at the point that marijuana activities become legal, followed by an expected time lapse before a developed and defined standard evolves. While we can anticipate that a reasonable standard of care for marijuana facility design will eventually come to pass, we should anticipate complications in the defense of design professionals during the interim time required to develop such a standard of care.

Financial Implications

As long as marijuana remains a Schedule 1 drug under federal law, the financial complications for the industry cannot be underestimated. For business owners, the opportunities for borrowing money to finance their build-outs are limited. This often leads to restrictions on initial design and construction budgets until “things are up and running.” When the product outcome does not reflect wide-eyed expectations, the design professional will remain an easy target to blame for poor production resulting in alleged lost profits.

For the architect or engineer trying to manage a professional services company, he or she needs to be mindful that payments for services will likely come in large amounts of cash which will require attention in ways not normally at issue. Because all banks are subject to federal law, and marijuana remains illegal under federal law, a bank that engages in financial transactions associated with the production or sale of marijuana could lose its federal charter. In addition, because all banks are subject to the Bank Secrecy Act, they must report to the federal government any suspected illegal activity, which would include any transaction associated with a marijuana business. These reports must be filed even if the business is operating legitimately under state law. As a result, marijuana businesses can only accept payments from customers in cash (as opposed to a credit card or debit card from a federally-charted bank), and can only consummate their commercial transactions in cash. Finally, insurance coverage may also present difficulties where certain insurers decline to cover claims deriving from work in the marijuana industry.[15] Design professionals would be well-served to confirm with their carrier(s) whether there might be any coverage issues before embarking on this type of work.[16]

Endnotes

[1] **http://news.medicalmarijuanainc.com/colorado-after-legalization-statistics-what-they-mean**.

[2] *Id.*

[3] Sample marijuana grow expert resume attached as Addendum A.

[4] Cannabis is the source of THC (tetrahydrocannabinol) and CBD (cannabidiol). THC is the chemical that creates the "high" associated with marijuana while CBD reacts differently with the brain, known to actually counteract the "high" from THC and used to treat a panoply of ailments including anxiety, sleep disorders, PTSD, seizures, and pain. CBD products when derived from hemp, and not marijuana, are no longer illegal under federal or state law. **https://www.brookings.edu/blog/fixgov/2018/12/14/the-farm-bill-hemp-and-cbd-explainer**.

[5] A "mother" plant is grown specifically for cloning new plants and is kept in a constant vegetative state, i.e., not permitted to go to flower. The clones developed from the mother plant then go through stages for growth and harvest for which individual growers may design wholly different ambient conditions.

[6] **https://www.colorado.gov/pacific/sites/default/files/171218%20Industry%20Bulletin%2017-09%20Testing%20Requirements%20Final.pdf**.

[7] See, 1 CCR 212-2, R403: Point of Sale: Restricted Access Area. While the total number of marijuana industry-related crimes remains stable, the most common (59%) industry-related crime is burglary. **http://news.medicalmarijuanainc.com/colorado-after-legalization-statistics-what-they-mean**.

[8] **https://www.marijuanapropagation.com/cannabis-led-facility-design.html**.

[9] Human exposure in the marijuana industry can be broken down into three main categories: biological, chemical, and physical. See **https://www.nesglobal.net/marijuana-industry-hazards/**. Biological hazards can result from exposure to the marijuana plants themselves, mold, or other natural allergens. Chemical hazards include exposure to carbon dioxide, carbon monoxide, poor indoor air quality, pesticides, disinfectants, nutrients, and cleaning/corrosive chemicals. Physical hazards include: compressed gas storage and use, ergonomic issues with repeated motion, electrical/heating equipment, lighting, extraction operations, etc.

Potential exposures associated with indoor marijuana growing operations, Martyny JW, Serrano KA, Schaeffer JW, Van Dyke MV, *J Occup Environ Hyg.*, 2013;10(11):622-39. **https://www.ncbi.nlm.nih.gov/pubmed/24116667**.

[10] **https://www.leafly.com/news/growing/differences-growing-sativa-indica-hybrid-strains**.

[11] *ASHRAE Applications Handbook 2015*, Chapt.36, Energy Use and Management 2003 data.

[12] **https://www.denvergov.org/content/dam/denvergov/Portals/771/documents/EQ/Odor/Rules%20Governing%20Nuisance%20Odors%20-%20draft.pdf**.

[13] See, **https://surna.com/engineering-for-the-cannabis-cultivation-industry-an-interview** ("I would say our biggest challenge is a lack of accepted industry standards. If you work in most other industries there is a governing body, like a trade association, that pushes to set standards for safety and quality and reliability and performance; but in the cannabis industry, we don't have that.")

[14] See, *e.g.*, Colorado:

(a) Boulder: **https://bouldercolorado.gov/planning/boulder-marijuana-facility-energy-requirements** (Boulder City ordinance requiring licensed medical and recreational marijuana facilities to report total energy usage and demonstrate proof of 100% of the licensed facility's electricity usage as offset by one or more available renewable energy source—02/2019); **https://www-static.bouldercolorado.gov/docs/PDS/forms/1205.pdf?_ga=2.120476232.1732743440.1555609187-115482540.1555353242** (Boulder City Building Permit Review Guidelines for Medical Marijuana Businesses—09/2012);

(b) Denver: **https://www.denvergov.org/content/dam/denvergov/Portals/696/documents/Denver_Building_Code/2016_Denver_Building_andFire_Code_Amendments_REDLINED.pdf** (City of Denver Amendments to the Building and Fire Code for the City and County of Denver, Chapter 39 Marijuana Operations—added 2016); **https://www.denvergov.org/content/dam/denvergov/Portals/723/documents/Common%20Inspection%20Requirements.pdf** (City of Denver Overview of Inspection Requirements for New Marijuana Businesses—2018).

Oregon: **https://www.oregon.gov/bcd/Documents/brochures/BldgCodeMarijuanaQAfinal.pdf** (Guide to the Oregon Building Code and Marijuana Operations—circa 07/2017 after recreational use passed in 2015); **https://www.portlandoregon.gov/bds/article/632799** (Oregon building and permit requirements for cannabis production and processing businesses – 2016).

Washington: **http://www.seattle.gov/Documents/Departments/SDCI/Codes/MJPermitting.pdf** (Seattle Department of Construction and Inspections Permitting for Marijuana Business—2017 update).

[15] See, *e.g.*, *The Green Earth Wellness Center, LLC v. Atain Specialty Insurance Company*, 163 F.Supp.3d 821 (D.Colo. 2016) (court analysis of specific language in insurance policy and whether coverage intended for loss of marijuana "crop"); *Mann v. Gullickson*, No. 15-CV-03630-MEJ, 2016 WL 6473215, at *4–5 (N.D. Cal. Nov. 2, 2016) (discussing historical conflict between federal and state law as applied to insurance dispute).

[16] See, also, *AIA Trust Guide to Marijuana Facilities Design*, Jeffrey Clay Ruebel, Esq. and Casey Ann Quillen, Esq. **https://www.theaiatrust.com/filecabinet/Guide-Marijuana-Facilities-Design.pdf**.

Addendum A: Sample Marijuana Grow Expert Resume

KRISTOPHER FOWLKES
5340 Tupper Court
Colorado Springs, CO
80923
(719) 900-8515

Interests:

Urban Agronomy

Mycology

World Travel

Cannabis

Membership:

National Cannabis Industry Association

Beta Gamma Sigma

Students for Sensible Drug Policy

Multidisciplinary Association for Psychedelic Studies

Marijuana Industry Group

KRISTOPHER FOWLKES

ABOUT: Owner of a group of cannabis businesses spread across the U.S. Raised in South Carolina, I developed an early love for human-plant interactions. Anthropochorous fauna that forms industry, beauty, and sustenance always intrigued me. My passion is to bring a level of professionalism to the cannabis industry allowing it to be treated as any other horticultural crop. My avenue of promulgating my passion is through research of efficiency techniques and collection of empirical market data.

EXPERIENCE:

Pinnacle Consultation: Founder 2009-present

Director of commercial operations responsibilities include production facility optimization, restricted licensing projects, and regulatory lobbying. Pinnacle serves clients internationally as subject matter experts in the operation of legal cannabis ventures.

Greenstone Limited: Founder 2011-present

Owner/operator of real estate holding company duties include maintaining a large staff over multiple permanent locations, maintaining compliant cannabis tenant operations in multiple jurisdictions, and facilitating long term employment opportunities for staff.

Dankert Capital, FSK Vending, The Dankery 2012-present

Owner/operator of four cannabis licenses operating in Colorado Springs, CO. These licenses include retail, manufacturing and cultivation licenses.

Green Farmers Pty Ltd, 2017-present

Owner/consultant of two Federal cannabis license operating in Melbourne, Australia. The two licenses are for cultivation and manufacturing of cannabis for international and domestic distribution.

COMMUNITY:

El Paso County Republican Party

Active member of the county and state Republican Party, serve as a delegate for El Paso County

American Heart Association

Serve as a sponsor and participant coordinator of the American Heart Walk in Colorado Springs

St. Jude's Children Hospital

Business Sponsor Colorado Chapter member

AWARDS:

High Times Solventless Extraction 1st Place 2012 Cup

EDUCATION:

Bachelor of Arts in Finance and Economics from Hassan School of Business, CSU-Pueblo 2010

EXHIBIT D

PINNACLE CONSULTATION INC

FEE SCHEDULE

Pinnacle Consultation Inc. charges the following rates:

$180 per hour of remote consultation services.

$250 per hour of on-site consultation services.