



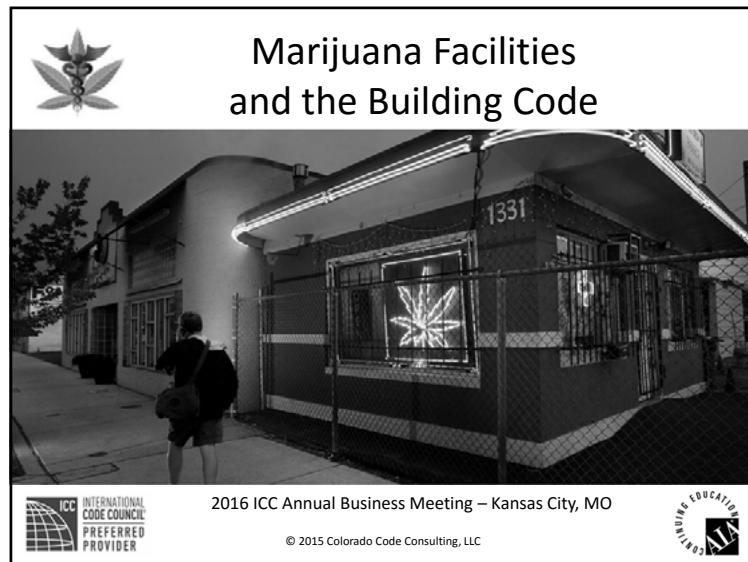
Marijuana Facilities and the Building Code



2016 ICC Annual Business Meeting – Kansas City, MO

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**Marijuana Facilities
and the Building Code**

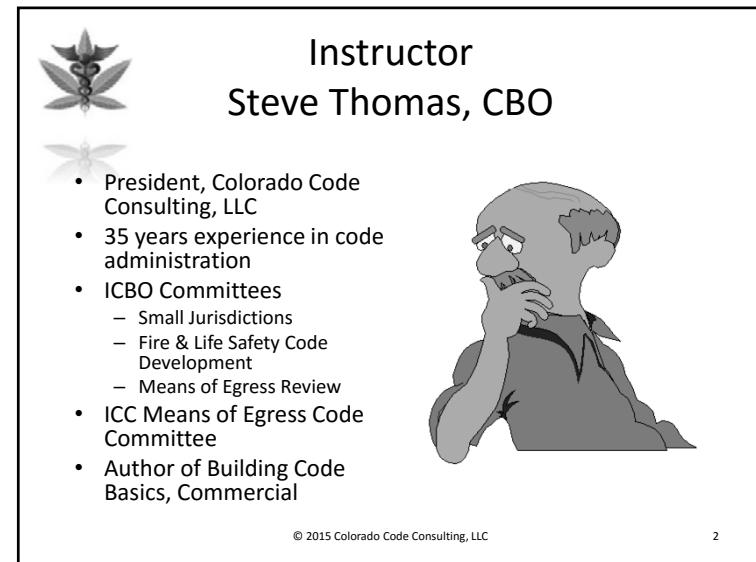
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ICC INTERNATIONAL CODE COUNCIL PREFERRED PROVIDER

ALIA CONTINUING EDUCATION

A person walking past a building with a large illuminated marijuana leaf sign.



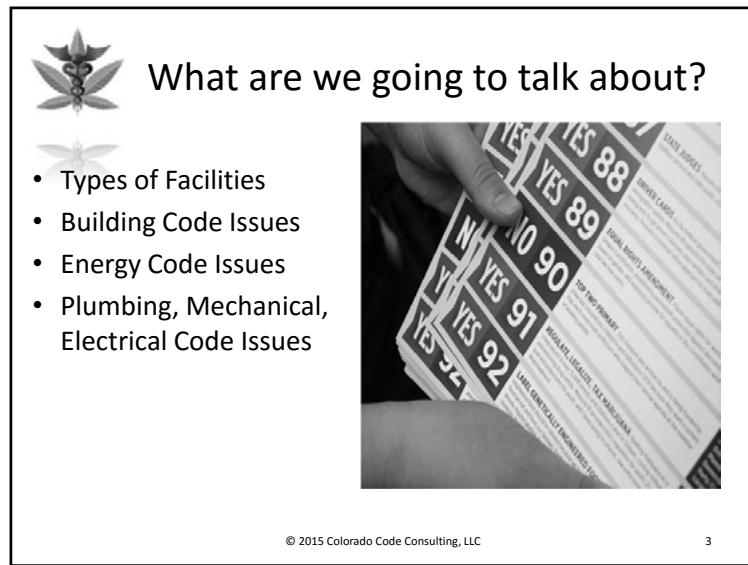
**Instructor
Steve Thomas, CBO**



- President, Colorado Code Consulting, LLC
- 35 years experience in code administration
- ICBO Committees
 - Small Jurisdictions
 - Fire & Life Safety Code Development
 - Means of Egress Review
- ICC Means of Egress Code Committee
- Author of Building Code Basics, Commercial

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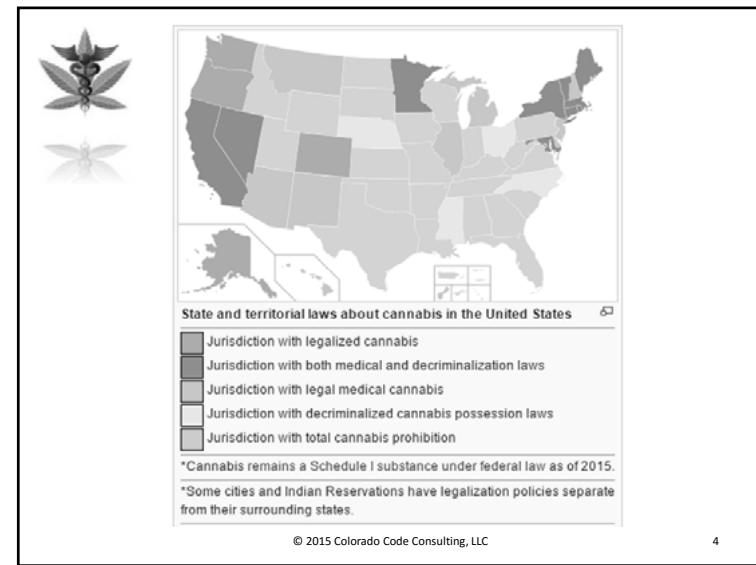
What are we going to talk about?

- Types of Facilities
- Building Code Issues
- Energy Code Issues
- Plumbing, Mechanical, Electrical Code Issues



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State and territorial laws about cannabis in the United States

| |
|-----------------------------------------------------------|
| Jurisdiction with legalized cannabis |
| Jurisdiction with both medical and decriminalization laws |
| Jurisdiction with legal medical cannabis |
| Jurisdiction with decriminalized cannabis possession laws |
| Jurisdiction with total cannabis prohibition |

*Cannabis remains a Schedule I substance under federal law as of 2015.
*Some cities and Indian Reservations have legalization policies separate from their surrounding states.

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Profitable Business

- National Institute on Drug Abuse states:
 - Approximately 5 million regular marijuana users
 - If each user used one ounce per year
 - Annual consumption would be 5 million ounces
 - = 312,500 pounds
 - = 156 Tons
- With an average price of \$3,000 per pound, the value of the product that would be consumed is:

\$937,500,000

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Facilities Categories

- Retail Shops
- Commercial Grow Operations
- Drying/Curing/Trimming/Processing
- Bakeries/Food Products (Edibles)
- Extraction Processing
- Testing Labs
- Personal Grow Operations
- Coffeehouses
- Vacation/Spa Experiences
- Grow Supply Stores
- Mixed Uses

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Taxes – WOW!

Colorado's marijuana tax revenues nearly double last year's figures

- State brought in nearly \$73.5m in the first seven months of 2015
- Colorado on pace to take in \$125m, compared to just \$44m last year



● Marijuana for sale is kept in jars for customers to sample smells on opening day of a new outlet in Aurora, Colorado. Photograph: Brennan Linsley/AP

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What is it and why do we care?

- Issues for building departments
 - Occupancy classification
 - Security (State Laws)
 - Electrical (High Demand)
 - Ventilation (Odors)
 - Political Pressure
- Legal Issues
- Vulnerable Neighbors



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The proponent side

- Treating adult marijuana use as a crime
 - (1) Allows law enforcement resources to be focused on violent and property crimes;
 - (2) Generates new state and local tax revenue for education, health care, research, and substance abuse prevention; and
 - (3) Takes marijuana out of the hands of illegal drug organizations and brings it under a tightly regulated, state-licensed system similar to that for controlling hard alcohol.



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The opponent side

- Vulnerable youth & effects
- Negative neighborhoods
- Public use
- Crime
- DWS



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Terms

- Edible Retail Marijuana Product"
- means any Retail Marijuana Product which is intended to be consumed orally, including but not limited to, any type of food, drink, or pill.



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Terms

- "Limited Access Area"
- means a building, room, or other contiguous area upon the Licensed Premises where Retail Marijuana is grown, cultivated, stored, weighed, packaged, sold, or processed for sale, under control of the Licensee.



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Terms

- "Medical Marijuana Business"
- means a Medical Marijuana Center, a Medical Marijuana-Infused Product Manufacturing Business, or an Optional Premises Cultivation Operation.



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Terms

- "Restricted Access Area"
- means a designated and secure area within a Licensed Premises in a Retail Marijuana Store where Retail Marijuana and Retail Marijuana Product are sold, possessed for sale, and displayed for sale, and where no one under the age of 21 is permitted.



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Terms

- "Retail Marijuana Cultivation Facility"
- means an entity licensed to cultivate, prepare, and package Retail Marijuana and sell Retail Marijuana to Retail Marijuana Establishments, but not to consumers.



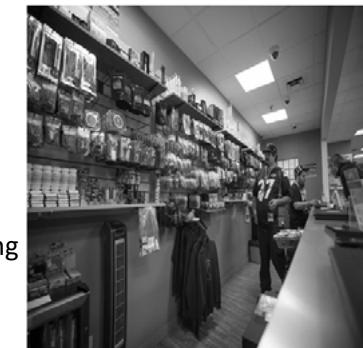
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Terms

- "Retail Marijuana Establishment"
- means a Retail Marijuana Store, a Retail Marijuana Cultivation Facility, a Retail Marijuana Products Manufacturing Facility, or a Retail Marijuana Testing Facility.



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Terms

- “Retail Marijuana Products Manufacturing Facility”
- means an entity licensed to purchase Retail Marijuana; manufacture, prepare, and package Retail Marijuana Product; and sell Retail Marijuana and Retail Marijuana Product only to other Retail Marijuana Products Manufacturing Facilities and Retail Marijuana Stores.



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Terms

- “Retail Marijuana Testing Facility”
- means an entity licensed and certified to analyze and certify the safety and potency of Retail Marijuana.



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Local Regulations

- Councils & Boards
- Proximity to sensitive uses
- Zoning Rules
- Odor Issues
- Negative neighborhood perceptions
- Crime

Breckenridge voters reject marijuana on Main Street in advisory election

By Phil Lindemann
Summit Daily

PUBLISHED: 10/20/2014 10:45 AM MDT | UPDATED: 10/20/2014 10:45 AM MDT

Breckenridge voters have spoken: They don't want retail marijuana on Main Street.

On Tuesday, just days after retail marijuana hit the market, the town of Breckenridge held a nonbinding, advisory election on whether to change or uphold an ordinance banning small dispensaries downtown. Residents voted against retail marijuana by a margin of more than two-to-one, with 935 votes against and 400 votes for Main Street shops.

The turnout represents nearly half of all registered voters — easily one of the largest showings for a special election in Breckenridge, town officials said.

After missing the deadline for a November ballot question, the town council opted to hold a special election in December. The result isn't binding, but the overwhelming no vote will likely influence the council's final decision.

Get more on this report about a vote on retail marijuana on Main Street in Breckenridge on [SummitDaily.com](#).

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Opening Day

- The biggest news event of the decade!
- Lots of excitement & anticipation!
- Really high prices!
- Overuse of the word Wow!
- Terrible driving!



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Facility Locations



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- Location, location, location...
- How many businesses does your community want or need?
- Help your politicians understand the mixed uses
- Hazards & Impacts?



Retail Dispensaries



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- Stand-alone retail shops
- Group M Occupancy
- Means of Egress
- Ventilation & Odors
- Security (State laws)
- Vulnerable uses
- Liquor comperable

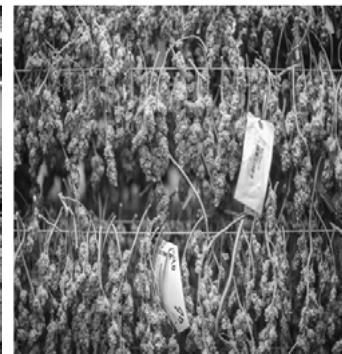


Commercial Grow

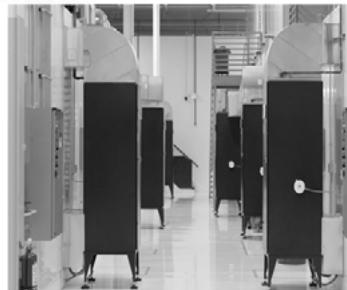


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Commercial Grow



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- Group F Occupancy
- High-Tech Facilities
- Very controlled environments
- Ventilation & Odors
- CO₂ Enrichment?
- Low occupant loads
- Mad science



Commercial Processing



- Group F-1 Occupancy
- Moderate occupant loads
- Means of Egress
- Ventilation & Odors
- Human work environment
- Trimming & packaging

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Bakeries/Food Products



- Group F-1 Occupancy
- Most use extracted THC product
- Typical industrial kitchens
- Low occupant loads
- Near invisible use
- Low impact

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Extraction-specific Terms



- BHO
- Hash Oil
- Honey
- Wax
- Hydrocarbon solvents
- Desired concentrates
- Lucrative
- Baking & Medical

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Extraction Nightmares



- Flammable gases being used without proper safeguards
- Tragic results
- Emergency orders
- Ratcheting the code
- Tarnishes the industry
- War stories?

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Extraction Facilities



- Group F-1 Occupancy
- Group H-? Occupancy
- High quality process
- Use-Closed Systems
- Sophisticated science
- Like processes?
- Same concerns of any industrial use

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Testing Facilities



- Group B Occupancy
- Lab environments
- Low occupant loads
- All retail products will be required by law to be tested for potency and purities
- Labeling/Dosage
- Near invisible use

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When journalists experiment

The Opinion Pages | OP-ED COLUMNIST

Don't Harsh Our Mellow, Dude

JUNE 3, 2014



Maureen Dowd

The caramel-chocolate flavored candy bar looked so innocent, like the Sky Bars I used to love as a child.

Sitting in my hotel room in Denver, I nibbled off the end and then, when nothing happened, nibbled some more. I figured if I was reporting on the social revolution rocking Colorado in January, the giddy culmination of pot Prohibition, I should try a taste of legal, edible pot from a local shop.

What could go wrong with a bite or two?

Everything, as it turned out.

Not at first. For an hour, I felt nothing. I figured I'd order dinner from room service and return to my more mundane drugs of choice, chardonnay and mediocre-movies-on-demand.

But then I felt a scary shudder go through my body and brain. I barely made it from the desk to the bed, where I lay curled up in a hallucinatory state for the next eight hours. I was thirsty but couldn't move to get water. Or even turn off the lights. I was panting and paranoid, sure that when the room-service waiter knocked and I didn't answer, he'd call the police and have me arrested for being unable to handle my candy.

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Personal Grow



- IRC Buildings
- Plants limited by law
- Odor Issues
- Neighborhood Issues
- Crime
- Who will regulate?
- Talk to your politicians before bad things happen

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Coffeehouses?



- Now that it is legal, let's see how far we can push the agenda?
- Pot tourists are discovering the strictness of the laws
- Open/Public Use
- Liquor comparison

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Spas/Retreats



- Industry ramping up in CO and WA
- Group R-1 hotel occupancy if overnight?
- Group B Occupancy for day-use?

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Grow Supply Stores



- Soils, fertilizers, lights, and some butane canisters
- Group M Occupancy?
- Watch your quantities
- Otherwise, just your typical garden store

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Mixed Uses



- Group M, F-1, B Occupancies
- Managing the varied environments for code issues
- Larger facilities
- Will be common in your locale
- Ordinances should match

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Colorado Regulations Examples

- State of Colorado
- City of Denver
- Other CO Cities
- Licensing
- Permits
- Procedures



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Marijuana Facilities

- Each Licensed Premises shall have a Security Alarm System, installed by an Alarm Installation Company, on all perimeter entry points and perimeter windows.



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Marijuana Facilities

- Each Licensee must ensure that all of its Licensed Premises are continuously monitored.
- Licensees may engage the services of a Monitoring Company to fulfill this requirement.



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Marijuana Facilities

- At all points of ingress and egress, the Licensee shall ensure the use of a commercial-grade, nonresidential door locks.



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Marijuana Facilities



- Prior to exercising the privileges of a Retail Marijuana Establishment, an Applicant must install a fully operational video surveillance and camera recording system.
- The recording system must record in digital format and meet the requirements outlined in this rule.

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Waste Disposal

- Retail Marijuana and Retail Marijuana Product waste must be made unusable and Unrecognizable prior to leaving the Licensed Premises.



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Waste Disposal



- Grinding and incorporating the marijuana waste with non-consumable, solid wastes listed below such that the resulting mixture is at least 50 percent non-marijuana waste:
 - Paper waste;
 - Plastic waste;
 - Cardboard waste;
 - Food waste;
 - Grease or other compostable oil waste;
 - Bokashi or other compost activators;
 - Other wastes approved by the Division that will render the Retail marijuana waste unusable and Unrecognizable; and
 - Soil.

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Waste Disposal

- Rendered waste shall be:
 1. Disposed of at a solid waste site and disposal facility that has a Certificate of Designation from the local governing body;
 2. Deposited at a compost facility that has a Certificate of Designation from the Department of Public Health and Environment; or
 3. Composted on-site at a facility owned by the generator of the waste and operated in compliance with the Regulations Pertaining to Solid Waste Sites and Facilities (6 CCR 1007-2, Part 1) in the Department of Public Health and Environment.



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Waste Disposal

- A Licensee shall not dispose of Retail Marijuana and Retail Marijuana Product waste in an unsecured waste receptacle not in possession and control of the Licensee.



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Here we grow!

- Why the environments are unique
- Where the codes fit, and where they may not
- Industrial comparisons



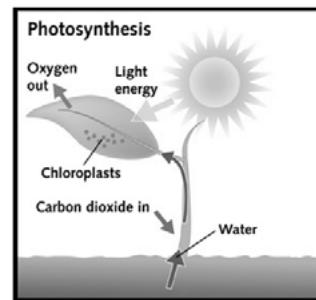
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Plant Growth Process

- Osmosis
 - The plant takes up water and minerals from the soil through its roots and transfers it to the leaves through the stem and branches.
- Photosynthesis
 - The plant uses absorbed light and air to transform water and minerals received through osmosis into plant tissue.



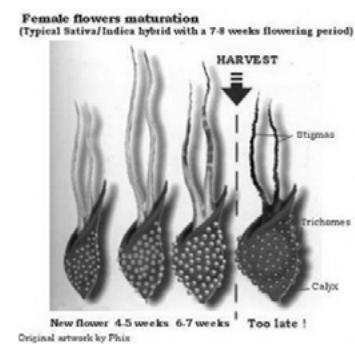
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Plant Life Cycle

- Germination
- Seedling
- Vegetative Growth
- Pre-Flowering
- Flowering



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Reproduction

- Plants can be reproduced by:
 - Germination of seeds, or
 - Cloning
 - A clone is always taken from an adolescent female plant
 - Will have the same characteristics of the mother plant



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Harvesting/Drying

- Plants are trimmed and hung upside down for curing
- Hang plants upside down
- Place buds in canning jars



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How Do They Grow It?

- Heat and Temperature Control
 - Ventilation
 - Fans
 - Air Conditioning
- Temperature Control is KING
- Lights & ballasts give off lots of heat



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What Does It Need To Grow?



- Water
- Air
 - Often enriched with CO²
- Medium
- Nutrients
- Chemicals
 - To control pH levels

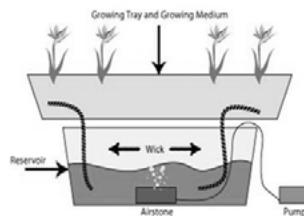
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Hydroponics

- Grow plants in an inert, sterile growing medium instead of soil.
 - Rockwool
 - Perlite
 - Clay pellets
- Flowering begins in 2-4 weeks
- Harvest two months later



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Hydroponics

- Nutrients
 - Nitrogen (N)
 - Phosphorus (P)
 - Potassium (K)
- Basic plant food
 - Liquid
 - powder



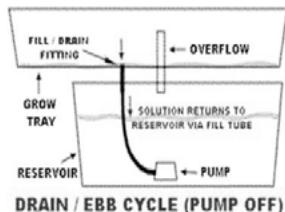
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Hydroponics

- Ebb & flow system
 - Reservoir with solution
 - Pump on timer
 - Pumps water and nutrient solution to the plants
 - Solution drains back to reservoir



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Ventilation

- Large amounts of plants, photosynthesis uses up all the carbon dioxide and fills the room with oxygen
- Plants need a fresh supply of CO₂ in the room or they stop growing



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Temperature



- Marijuana grows best at 68 – 72 degrees and will stop growing at temps above 90 degrees

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Clandestine & Small Ops Concerns

- Heat
- Electrical Loads
- Ventilation Rate
- Carbon Dioxide
- Egress
- Humidity
- Odor



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Ventilation Equipment



- Large Squirrel Cage Fans
- Inline Fans
- Blowers
- Induction Fans
- Flex Hose Insulated Ducts

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Ventilation Equipment

- Oscillating Fans
 - Move the CO²
 - Strengthen the stalks
 - Cool the plants
- Exhaust fans to eliminate the heat and excess oxygen



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High Humidity



- No Code Requirements for excessive humidity

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Environmental Equipment

- CO₂ Bottles
- CO₂ Generators
- Environmental Controllers
 - Temp
 - Humidity
 - CO₂ Levels
- Carbon Filters



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Environmental Equipment



- Charcoal Filters
 - Reduce Odors
- Ionizers
 - Reduce Odors
- Ozone Generators
 - Odor Control
 - Humidity Control
- De-Humidifiers

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Types of Grow

- 3 Stages
 - Propagation
 - Vegetation
 - Flowering
- Outdoor
- - Plants harvested 6'-10'
- Indoor
- - Plants harvested < 4'



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Types of Grow

- Propagation to Harvest
 - 90 – 110 days
- Minimum 3 crops per year
- Advantage
 - More yield per plant
- Disadvantage
 - Plants need more space, water, nutrients, electricity and care

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Types of Grow

- 2 stage
 - Eliminates Summer stage
 - Propagation and Flowering
- Timers set with equal amount of daylight and darkness (12 hours ea.)
- Smaller flowering plants at harvest
 - 20" – 36"



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Lighting



- High Intensity Discharge (HID) Grow Lights
 - High pressure sodium
 - Metal halide
- 250-1,000 watt bulbs
- Requires ballast
 - = increased heat and fire hazard

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Lighting



- Compact Fluorescent Grow Lights
 - 300 W
- LED Grow Lighting
 - Lower temperature

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Lighting

- Lighting Reflectors
 - Ceiling and walls
 - Directs lights onto plants
 - Reduces waste of lighting
 - Mylar used on walls



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Home Based Grow Issues

- Electrical
 - Unsafe electrical practices
 - Open wiring
 - Inadequate fuses or circuit breakers
 - Bad connections
 - Overloading of circuits
 - 24 more times likely to catch fire



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Home Based Grow Issues

- Lighting Hazards
 - Grow light surface temperature
 - Approximately 500 degrees
 - Grow lights are under pressure



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Residential Power Consumption

- Average Home utilizes between 700 – 1200 KW per month
- Most homes can probably handle the increased loading of 305 HID lamps without additional wiring



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Home Based Environmental Issues



- Carbon Dioxide Poisoning
 - Propane CO2 generators
 - Vent furnaces and water heaters into grow rooms
 - Normal levels
 - 300 – 600 ppm
 - Desired grow levels
 - 1,000 – 3,000 ppm
 - Lethal Level
 - 100,000 ppm
 - OSHA
 - 30,000 ppm

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Home Based Grow Issues



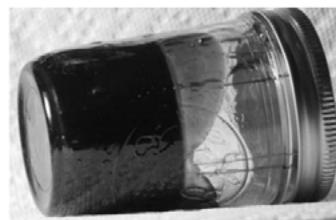
- Mold
 - Heat
 - Humidity
 - Cellulose
- Optimal conditions for mold growth

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Home Based Hazards



- Chemical Hazards
 - Explosive/toxic fumes from “weed oil” extraction
 - Butane, Sulfuric Acid, Methanol, Isopropyl Alcohol, Toluene
 - Fertilizers
 - Plant & water conditioners

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Big Picture...



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What are these things?



- Dispensaries
- Grow Facilities
- Processing and Packaging
- Extraction (Evolving)
- Edible products
- Legal vs. Illegal Facilities

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Dispensaries

- Mercantile Group M occupancy includes, among others, the use of a building or structure or a portion thereof, for the display and sale of merchandise and involves stocks of goods, wares or merchandise incidental to such purposes and accessible to the public.



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Grow Facilities

- Group F-1

Factory Industrial Group F occupancy includes, among others, the use of a building or structure, or a portion thereof, for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations that are not classified as a Group H hazardous or Group S storage occupancy.



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Grow Facilities

- Group U Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:
 - Agricultural buildings

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Processing & Packaging

- COMBUSTIBLE FIBERS.**
 - Readily ignitable and free-burning materials in a fibrous or shredded form, such as cocoa fiber, cloth, cotton, excelsior, hay, **hemp**, henequen, istle, jute, kapok, oakum, rags, sisal, Spanish moss, straw, tow, wastepaper, certain synthetic fibers or other like materials. This definition does not include densely packed baled cotton.



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Processing and Packaging



| [F] TABLE 307.1(1) MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD ^{J,M,N,P} | | | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------|---------------------------|-------------------------------------------------------------|-------------------------|---------------------------------|-------------------------------------------------------------|-------------------------------|---------------------------|----------------------------------------------------------|
| MATERIAL | CLASS | GROSS WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED | STORAGE ^K | | | USE-CLOSED SYSTEMS ^L | | USE-OPEN SYSTEMS ^M | | |
| | | | Solid pounds (cubic feet) | Liquid gallons (pounds) | Gas (cubic feet at NTP) | Solid pounds (cubic feet) | Liquid gallons (pounds) | Gas (cubic feet at NTP) | Solid pounds (cubic feet) | Liquid gallons (pounds) |
| Combustible liquid ^P , ¹ | II III III III | H-2 or H-3 H-2 or H-3 N/A | N/A | 120 ^a 330 ^b 13,200 ^c | N/A | N/A | 120 ^d 330 ^e 13,200 ^f | N/A | N/A | 30 ^a 80 ^b 3,300 ^c |
| Combustible fiber | Loose baled | H-3 | (1,000) | (1,000) | N/A | (1,000) | (1,000) | N/A | (20) (200) | N/A |

- Group H-3**

- Buildings and structures containing materials that readily support combustion or that pose a physical hazard shall be classified as Group H-3. Such materials shall include, but not be limited to, the following:
- Combustible fibers, other than densely packed baled cotton

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Closed Extraction Systems



- A solvent is used to extract the oil from the dried plant.
- The product is dissolved in the solvent.
- The solvent/oil solution is then boiled to evaporate the solvent to leave the oil.

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307.1.1 Uses other than Group H

- 3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
- 8. The storage or utilization of materials for agricultural purposes on the premises.



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Flammable Extraction

- Solvents include
 - Alcohol
 - Naphtha
 - Ether
 - Butane
- All flammable liquids or gases



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Extraction

- Depending on the amount of solvent that is used, the extraction area could be classified as a Group H-2.
- Ventilation is required regardless of occupancy classification.



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Is it a Group H Occupancy?

- 307.1
- High-hazard Group H occupancy includes, among others, the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in **quantities in excess** of those allowed in control areas complying with Section 414, based on the **maximum allowable quantity limits for control areas set forth in Tables 307.1(1) and 307.1(2)**.



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Table 307.1(1)

TABLE 307.1(1)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD^a, J, M, N, P

| MATERIAL | CLASS | GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED | STORAGE ^b | | | USE-CLOSED SYSTEMS ^b | | | USE-OPEN SYSTEMS ^b | | |
|--------------------------------------------------|----------------------|-------------------------------------------------------|------------------------------|-------------------------------------|--------------------------|---------------------------------|--------------------------------|-------------------------------------|------------------------------------|--------------------------------------|-----------------|
| | | | Solid pounds (cubic feet) | Liquid gallons (cubic feet) | Gas cubic feet at NTP | Solid pounds (cubic feet) | Liquid gallons (cubic feet) | Gas cubic feet at NTP | Solid pounds (cubic feet) | Liquid gallons (cubic feet) | |
| Flammable gas | Gaseous Liquefied | H-2 | NA | NA (150) ^c | 1,000 ^c NA | NA | NA | 1,000 ^c NA | NA | NA | |
| Flammable liquids | IA IB and IC | or H-2 or H-3 | NA | 30 ^c 120 ^c | NA | NA | NA | 30 ^c 120 ^c | NA | NA | 30 ^c |
| Flammable liquid, combination (IA, IB, IC) | NA | or H-2 or H-3 | NA | 120 ^c NA | NA | NA | 120 ^c NA | NA | NA | 30 ^c | |

Butane = Flammable Gas

Ethyl Alcohol = Class IB Flammable Liquid

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Maximum Allowable Quantities MAQ

- Butane
 - 150 pounds storage
 - 150 pounds closed use
 - N/A open use
- Ethyl Alcohol
 - 120 gallons storage
 - 120 gallons closed use
 - 30 gallons open use



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Table Footnotes

- d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.
- e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, day boxes, gas cabinets, gas rooms or exhausted enclosures or in listed safety cans in accordance with Section 5003.9.10 of the International Fire Code. Where Note d also applies, the increase for both notes shall be applied accumulatively.



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Is it a Group H Occupancy?

- Probably Not
- However, Section 414 still applies
 - Control Areas
 - Ventilation
 - Explosion control
 - Storage, dispensing and use
- IFC Requirements



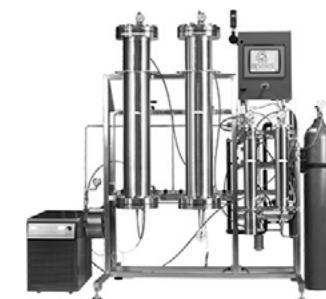
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CO₂ Extraction

- Equipment isolates cannabinoid oils with a CO₂ extraction process.
- No part of the cannabis plant is wasted.
- The cannabis by-products that would usually be discarded as waste are used in the extraction process.
- The CO₂ equipment uses cannabis "trim" to produce a clean oil extract that can be used in food products and vape pens.



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CO₂ Extraction

- Compressed gas
- IFC Requirements
 - Chapter 53
 - Storage
 - Use & Handling



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Fire Sprinklers

- F-1 exceeding 12,000 square feet
- All Group H Occupancies
- Group M Occupancies fire area exceeds 12,000 square feet.



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Means of Egress

- Security Issues
- Egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.
- Will need to evaluate locking arrangements



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Mechanical Ventilation

- IMC Section 403.3
 - Smoking Lounges
 - 60 cfm of outdoor air per person
 - All air must be exhausted including air in excess of that required by Table 403.3



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Exhaust Discharge IMC 501.2.1

- Product Conveying Exhaust
 - 10' from the property lines; 3' from exterior walls and roofs; 10' from operable openings into buildings; 10' above adjoining grade.
- Environmental Air Exhaust
 - 3' from property lines; 3' from operable openings into buildings for all occupancies other than Group U, and 10' from mechanical air intakes. Such exhaust shall not be considered hazardous or noxious.

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Odor Ventilation

- Local requirements
 - Ventilation rates
 - Charcoal filters
 - Exhaust termination
 - Effect on neighboring properties

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City of Boulder Ventilation Requirements



- “A medical marijuana business shall be properly ventilated to filter the odor from marijuana so that the odor cannot be detected by a person with a normal sense of smell at the exterior of the medical marijuana business or at any adjoining use or property”.

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City of Boulder Ventilation Requirements

- Walls should be sealed between units to avoid odors from migrating into adjacent spaces.
- Exhaust from space filtered with a listed & labeled filter to avoid odors.
- Inlet for ventilation system located in area of highest contaminant concentration.



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Required Outdoor Ventilation Air IMC Table 403.3



- Cultivation Facilities ?
 - Meat processing?
 - Other similar?
- Dispensaries
 - 7.5 cfm/person (retail sales)

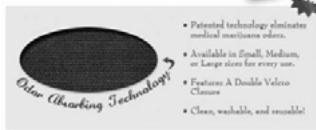
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Introducing

ODOR FREE
420 BAGS



Contaminant sources IMC 401.6

- Stationary local sources producing airborne particulates, heat, odors, fumes, spray, vapors, smoke or gases in such quantities as to be irritating or injurious to health shall be provided with an exhaust system in accordance with Chapter 5 or a means of collection and removal of the contaminants.
- Such exhaust shall discharge directly to an approved location at the exterior of the building.

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Plumbing Issues

- Backflow Protection?
 - Lawn Irrigation system
 - Chemical fertilizer dispensers
- Pipe installations
 - Support
 - Sizing



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Energy Code Issues

- Total connected interior lighting power
Exceptions:
 - 6. Task lighting for plant growth or maintenance



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Electrical Code Issues

- Illegal installations
- Total Electrical Load
- Wiring methods



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Electrical Code Requirements

- One-line diagram
 - Existing system
 - Proposed electrical system
 - Include main electrical service
- All electrical equipment to be listed and labeled by an approved testing agency



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Electrical Code Requirements



- Flexible cords not permitted to be substituted for fixed wiring systems
- Can't run through walls, doors, ceiling, etc.
- Approved wiring methods required
- NM cable not allowed for use in damp locations such as cultivation facilities

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What needs to happen in your jurisdiction?

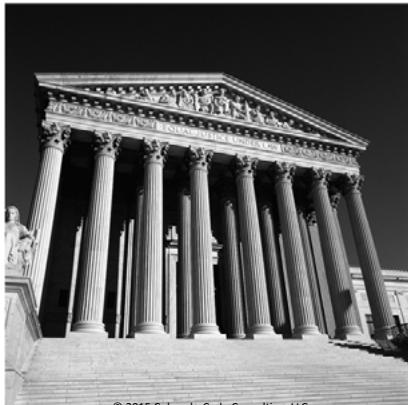
- Writing your own ordinances – Mirror others
- Evaluating limits? Number of facilities? Number of retail shops?
- Moratoriums?
- Public Education?
- Equal Justice
- Be flexible going forward

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Other Legal Considerations



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Equal Protection Clause

- Clause to the Fourteenth Amendment
- Ensures that state governments do not arbitrarily discriminate in applying laws to different individuals or groups of people.
- Code provisions must be applied consistently to persons and buildings.
 - Residential provisions to Residential
 - Commercial provisions to Commercial

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Discriminatory Enforcement



- A legal concept that looks at whether some person or group was impermissibly singled out for enforcement.
- Permit issuance and enforcement can be discriminatory IF inconsistent

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