

GoodLeaf Holdings, LLC Presentation

Bolton Board of Selectmen Meeting

9/23/21

Activities Since Previous Selectmen's Presentation

- Sent Team biographies for Selectmen review
- Met/had calls with D. Lowe, V. Oorthuys, R. Longvall, J. Jacobson and Chiefs Nelson and Legendre from Town of Bolton
- Met with Bill Brookings: Nashoba Regional Board of Health
- Met with Bolton Board of Health/bill Brookings September 14th
- Prepared and published public notice in Bolton Independent for public/abutters meeting September 27th from 6-8 pm @Florence sawyer auditorium
- Drafted Proposed HCA using Temescal/IHP HCA that was previously unanimously approved by Bolton Board of Selectmen as basis for New HCA

Planned Activities: September 10- October 14, 2021

- **September 23, 2021:** Presentation to Bolton Board of Selectmen
- **September 27, 2021 6-8 pm:** Abutters/Public meeting: Florence Sawyer Auditorium
- **September 28-October 14, 2021:** HCA negotiations
- **October 14, 2021:** Receive approval for and sign HCA

GoodLeaf Corporate Citizenship-Good Neighbor Policies & Plans with Town of Bolton

- **Water resources and demands:**
 - Joel Frisch; NorthEast Geosciences, Inc
- **Septic and site water management:**
 - Jacob Lemieux; Hancock Associates
- **Water recycling/conservation:**
 - Erik Gath; BLW Engineers, Inc
- **Odor control:**
 - Erik Gath; BLW Engineers, Inc
- **Noise control:**
 - Ben James, GoodLeaf Holdings, llc
- **Traffic loads & management:**
 - Ben James, GoodLeaf Holdings, LLC
- **Security, diversion and emergency response planning:**
 - Ben James, GoodLeaf Holdings, LLC
- **Community impact plan:**
 - Ben James, GoodLeaf Holdings

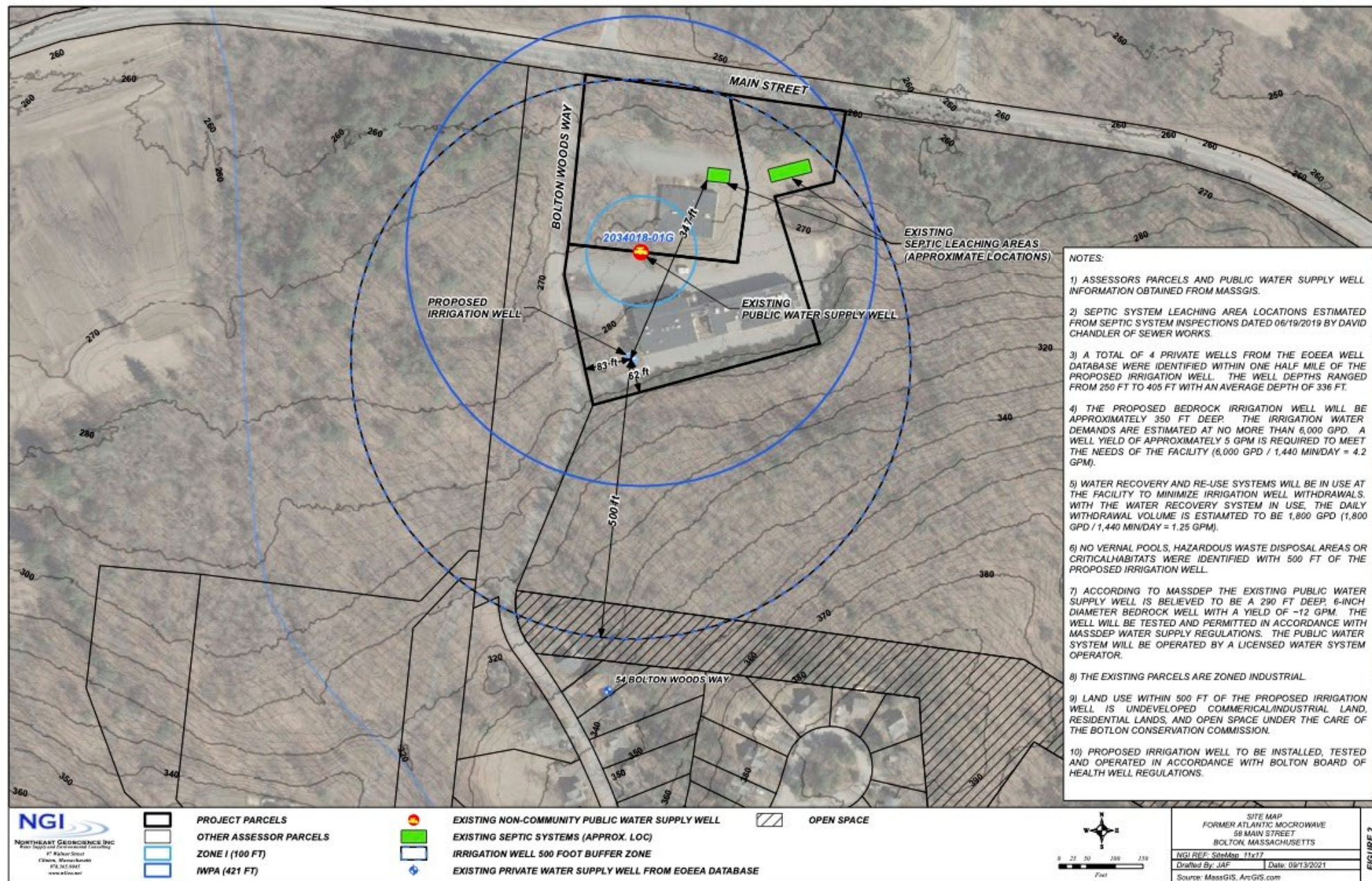
Water Demands:

1. Domestic Water - 960 gallons per day (0.67 gallons per minute)
 - *similar to previous water use at the facility*
 - *daily volume strictly limited by MassDEP*
2. Irrigation Water - 6,000 gallons per day (4.2 gallons per minute)
 - *separate water system from domestic water*
 - *will include water recovery/re-use system*
 - *actual daily water use will be ~1,800 gpd*



Water Sources:

1. Public Water Supply Well – Existing
 - *6-inch diameter bedrock well*
 - *permitted by MassDEP*
 - *operated by licensed professional who reports to MassDEP*
 - *testing to be conducted as directed by MassDEP*
2. Irrigation Water – Proposed
 - *6-inch diameter bedrock well*
 - *permitted by Board of Health*
 - *testing to be conducted as directed by Bolton/Nashoba BOH*



Septic and Wastewater:

Jacob Lemieux: Hancock Associates

- Non-Process Water: Two existing septic systems on-site:
 - The currently existing site septic systems have both passed a Title-V inspection in June of 2019.
 - Existing system designed to Title-V (310 CMR 15) requirements for 75 employees.
 - System to be re-inspected and remain in place to serve non-industrial wastewater needs pending Board of Health review.
- Process Water: New Holding Tank to be Installed
 - A new holding tank is required for process wastewater per 314 CMR 18.00.
 - Holding tank to have 500% daily flow capacity and a pumping schedule to be initiated.

Irrigation Water Use Recycling/Conservation: Option 1

Erik Gath: BLW Engineers, Inc.

- Proposed 20-30,000 SF of canopy (grow area).
- Plants will require an estimated 4,000-6,000 gallons of water per day.
- Water will be tested to determine if specialized water treatment is required or if standard filtration will suffice. Specialized treatment can potentially increase the water usage by 20%.
- Minimum of 1 day of fresh water is stored in a tank in the water room.
- Fresh water is injected with nutrients. The water is then pumped into the grow rooms to water the plants.
- 90% of the fertigation is consumed by the plants. The plants utilize the nutrients. The water is then transpired into the room. The dehumidification system is used to capture the transpired water from the air. The water is then pumped back to the water room to a condensate storage tank.
- In the water room, the condensate water is filtered and re-used. Condensate reclamation reduces the facilities water consumption by approximately 70-90%.
- Less than 10% of this fertigation water will percolate out of the soil-less grow medium as leachate. The leachate will drain through a separate drain system to a tight tank onsite. The tight tank will be sized for a minimum of 5 days of operation.
- With the condensate reclamation system, the facility will need between 400-1800 gallons of water per day.

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- In the water room the condensate water is then filtered and re-used. Condensate reclamation reduces the facilities water consumption by approximately 70-90%.
- Less than 10% of this water will percolate out of soil pot as leachate. The leachate will drain through a separate drain system to a tank onsite. The tank will be sized for a minimum of 5 days of operation.
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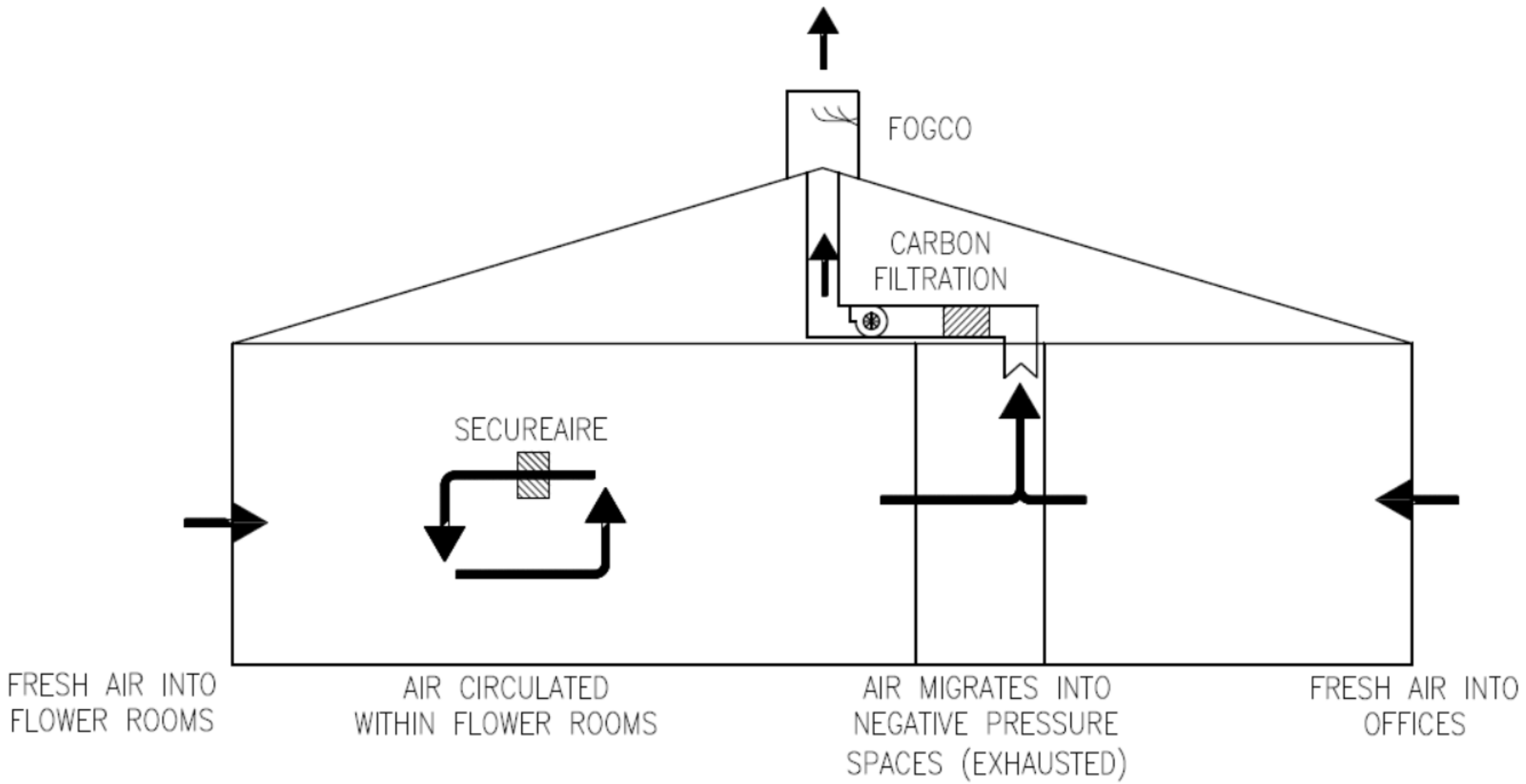
Odor Control Overview:

Erik Gath: BLW Engineers, Inc.

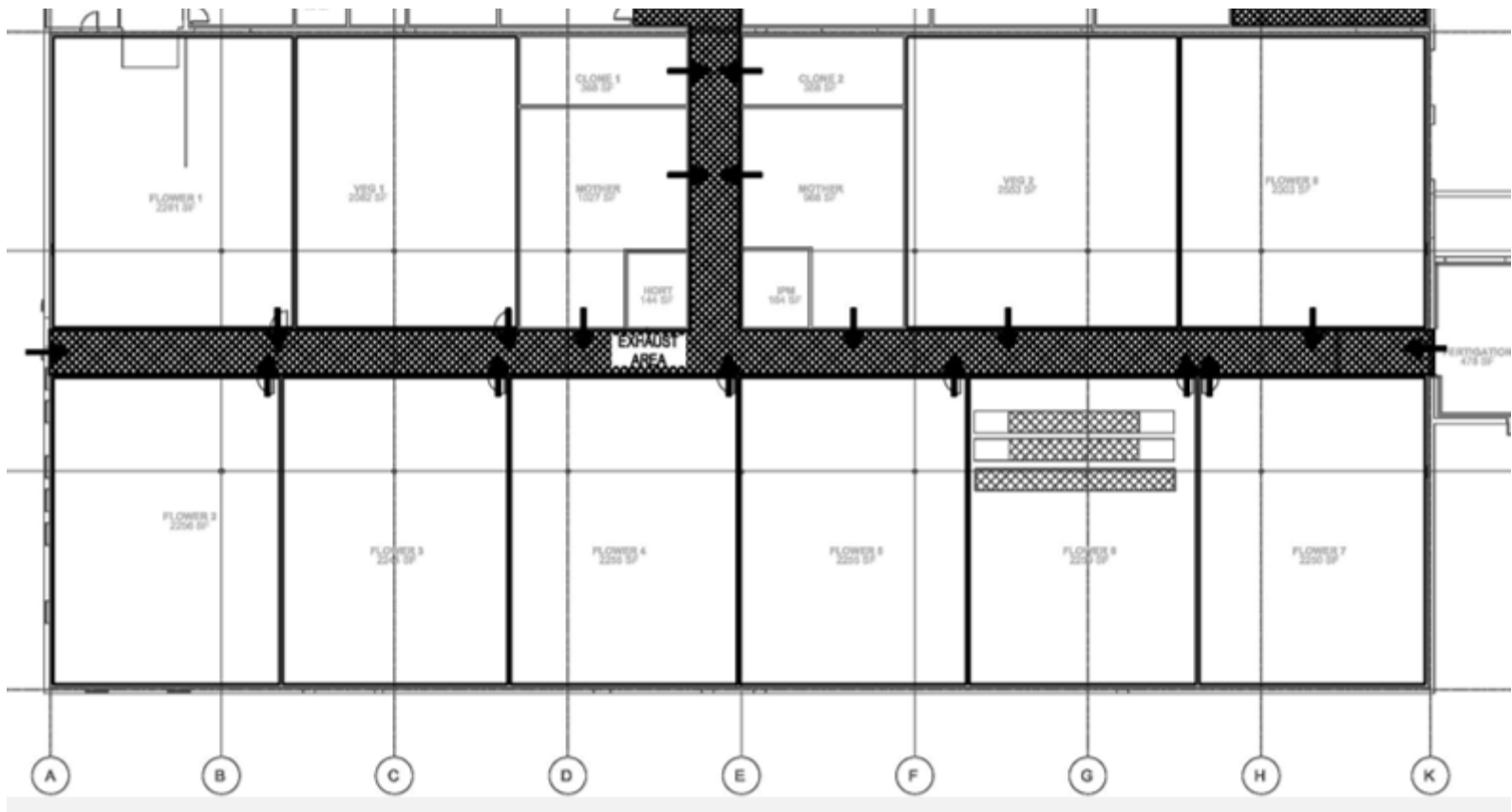
MULTI-FACETED APPROACH TO ODOR CONTROL:

- BUILDING PRESSURE
- SECUREAIR FILTRATION INSIDE OF BUILDING
- CHARCOAL FILTRATION
- FOGCO ODOR NEUTRALIZATION ON EXHAUST AIR

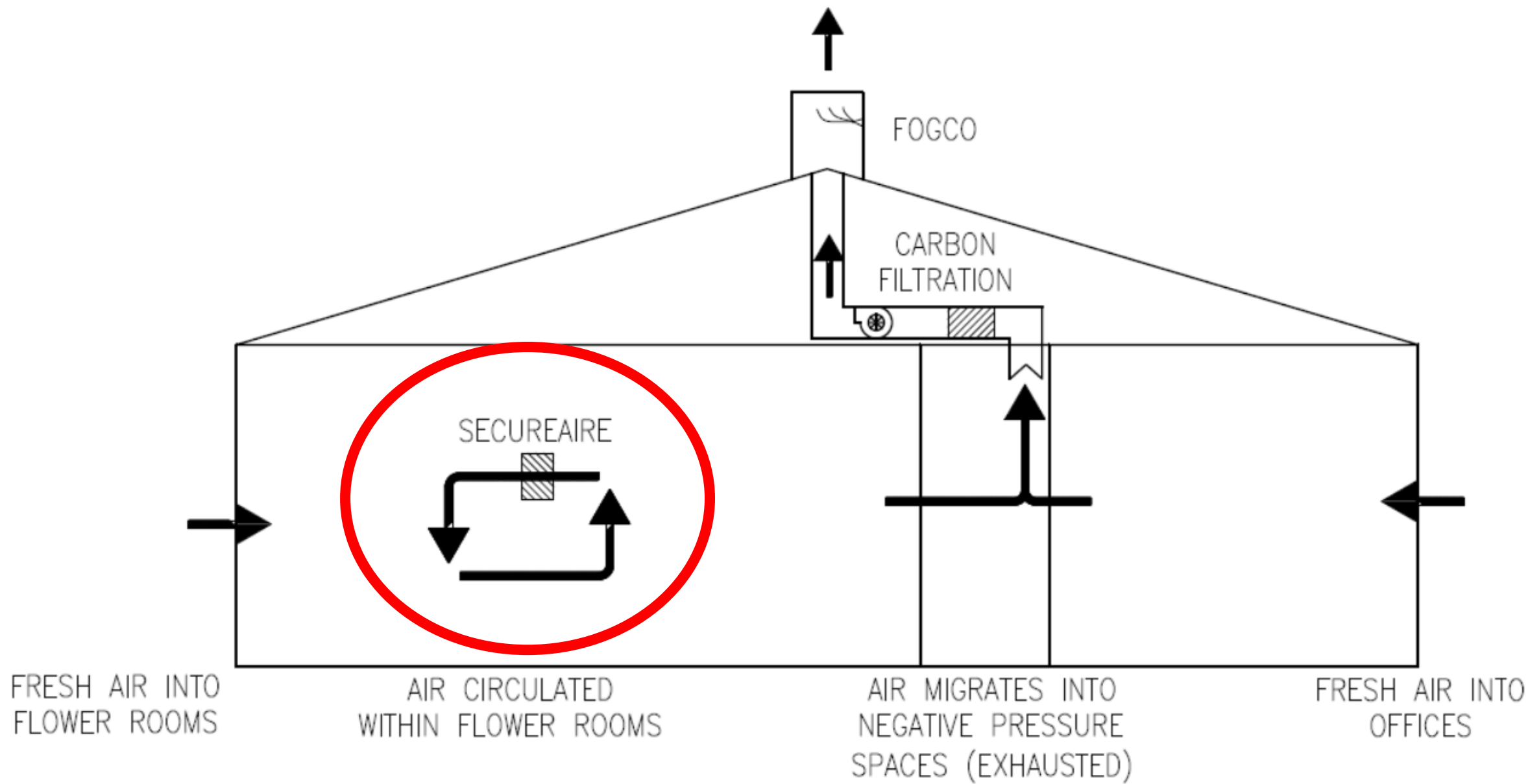
Multi faceted approach



1. BUILDING PRESSURE



2. secureaire



2. secureaire

- This system is being used at Non-Disclosed Facilities in CA, CO, FL and is currently being designed into the MA market.
- This is a proven Hospital technology that is being implemented into Cannabis Grow Facilities. As previously mentioned, SecureAire recently published a White Paper in the American Journal of Infection Control as written by Mayo Clinic Doctor Mark Ereth.
- This is how it works...



Advanced Collector System ACS



SecureAire has developed the most advanced and optimized Electronically Enhanced Air Purification System in today's marketplace. Prior to today, the market has provided devices that are mostly substandard and only partially deliver the performance and benefits that have been advertised.

SecureAire's Advanced Collector System or ACS utilizes semiconductor airborne contamination reduction technologies to increase the efficiency and effectiveness of SecureAire's proprietary filtration media. The ACS System results in the most advanced Electronically Enhanced Air Purification System while also providing an airborne pathogen inactivation benefit thru our INACTIVATE™ Technology. INACTIVATE reduces organisms ability to grow and provides the necessary voltage strength to oxidize and kill airborne pathogens.

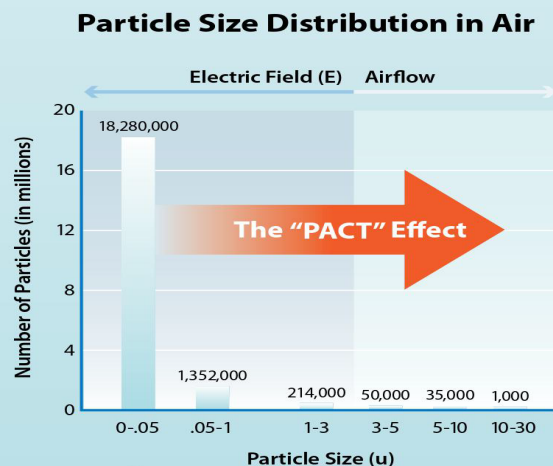
In addition, "the ACS is the only system" that utilizes Particle Control Technology which actually controls the movement of particles in a space. Particle Control Technology provides the ability to treat all airborne challenges (Particles, TVOC's, Smoke, and dissolved gases) the same.

Particle Control Technology is the combination of Electrostatic and Electrodynamic fields, which together combine to make airflow the dominant transport mechanism for airborne particles in any space. It is this combination of Electrical Enhancement that makes SecureAire's ACS System the most advanced system available today.

System Technology

The ACS System is based on three elements the **Particle Conditioning Unit**, the **Collector** and the **Internal Particle Collider**.

As unfiltered air moves through the ACS System, it first passes through the Particle Conditioning Unit (PCU). The PCU emits equal amounts of positive and negative charges at a high voltage and low current to avoid generating ozone. As particles move and pass through this section they will pick up these charges thus becoming conditioned. These conditioned particles are now more influenced by the electric fields, which increases their force of attraction, thus enhancing inelastic collisions between them.



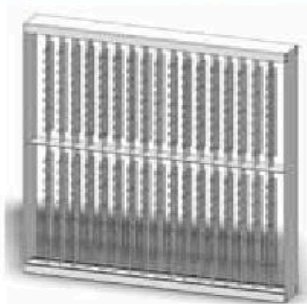
The PCU



The Collector



The Internal Particle Collider



The Collector by virtue of the associated electrical fields is polarized and provides high efficiency filtration up to MERV 15 levels as defined by ASHRAE 52.2. In addition, the constant High Voltage Electrostatic Fields provide the setting for our INACTIVATE Technology which targets any viable airborne pathogen that comes into contact with the system.

Lastly, the Internal Particle Collider uses a pulsed High Voltage Electrodynamic Field to condition any particles that may have escaped the Collector. This section is well

suited for all air flow applications. Both positively and negatively charged articles will pass through the Particle Collider and be forced to have inelastic collisions. These inelastic collisions will occur hundreds of times thus creating larger particles that have a net neutral charge. These particles will then proceed out into the occupied space to further collect other particles, TVOCs, gases, odors, bacteria, viruses, and other viable airborne particles. The ACS is today's most advanced electrically enhanced filtration system.

System Overview

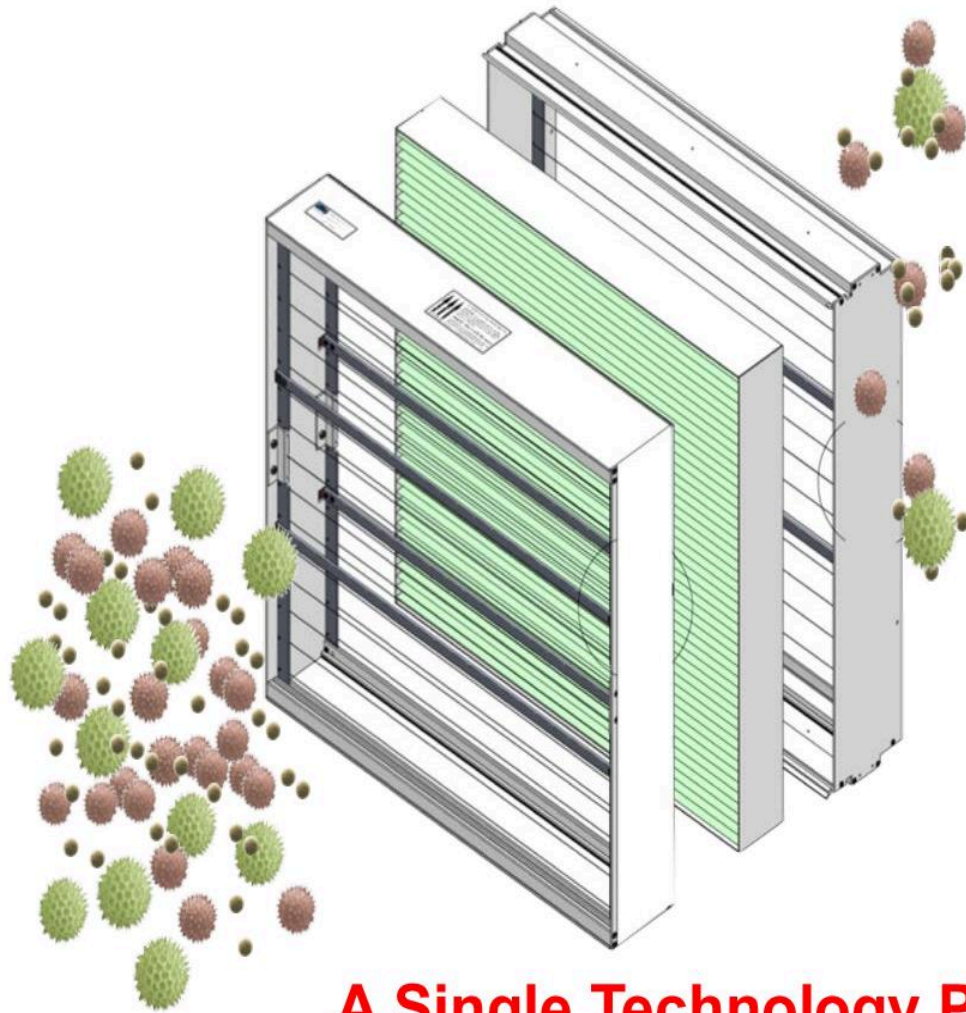
The ACS System consists of the following:

- **The ACS Units** are the basis of the system, which contain the Particle Conditioning Unit, the Collector, and the Internal Particle Collider.
- **The System Control Module (SCM-200)** contains all of the ACS system's embedded electronics including diagnostics, safety circuits and controls. It also provides the diagnostic interface between the ACS System and the building's automation and control systems. The SCM-200 notifies the user of normal operation as well as the need for service.

System Specifications

Standard Filter Sizes:	24" x 24", 24" x 18", 24" x 12", 18" x 24", 12" x 24", and 12" x 12".
Filtration Efficiency Rating:	MERV 15 per ASHRAE 52.2 Standard Test
Power Supply/Power Consumption	5 watts per filter position; 120/240 Single Phase VAC
Clean Pressure Drop	<0.25" WG at 500 fpm
Safety Current Protection	SB 0.5 A/250V fuses
Humidity Range	< 95% Non-Condensing RH
Overall System Depth:	9" in airway length
Racking Requirements	2" U-channel
Blank-offs	As required to prevent air bypass
Safety Interlocks	Turn off system if any AHU door is opened
BAS Integration	SCM easily integrates into a building's automation system

The SecureAire ACTIVE Particle Control Process



- Particles are “**Conditioned**” with Charge
- Charged Particles are forced to “**Collide**”
- Particles Gain Mass and are “**Net Neutral**”
- Particles are more easily “**Captured**”
- Captured Pathogens are Killed By **INACTIVATE™ Technology**
- “**Particles that Escape**” are Conditioned to “**Remove Critical Contaminants**” from the Treated Space

A Single Technology Platform for all Airborne Contaminants!

SecureAire

The SecureAire ACS System

Typical Installation



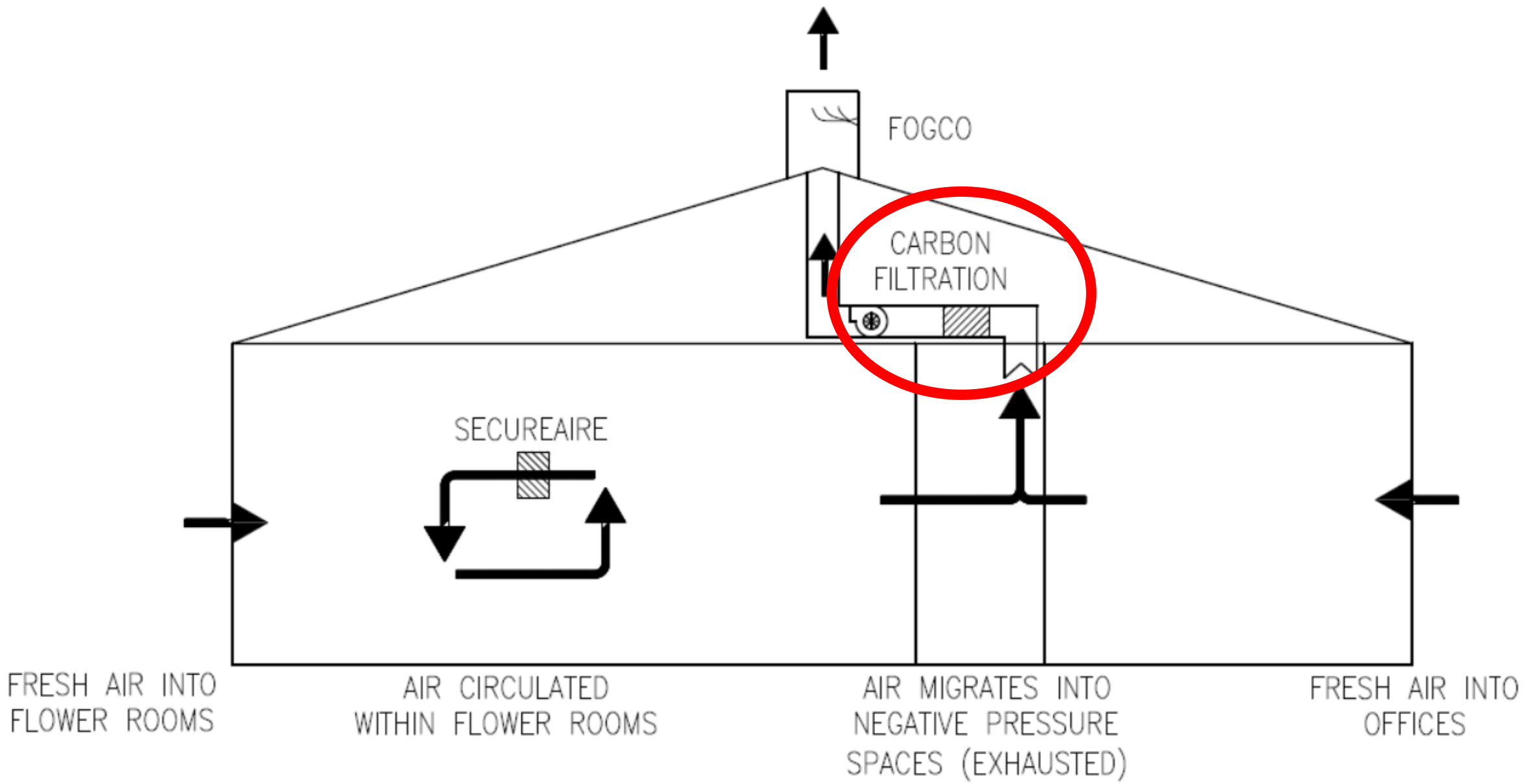
Side View



Performance Metrics

- The ACS has a 52.2 Filter Rating of **MERV 13 and 15**
- ACS INACTIVATE Technology kills up to **99%** of captured biological organisms
- The ACS has an initial pressure drop of **0.18 and 0.28** inches W.G.
- Particles that do exit the ACS are **conditioned** to go out into the occupied space and “clean it”
- Complete System Depth is 9”

3. Carbon filtration



3. Charcoal filtration

- Proven technology... Used in various industries to remove VOC/Odor
- This is how it works...
- This system is being used at the Following facilities...
 - Here are some big ones in Canada (we have 40+ Systems or more at each one) :
 - Aphria
 - Cannara
 - Cannatech
 - Sundial

MODERATE DUTY APPLICATIONS



Airport Jet Fumes



Cannabis
Grow/Extraction Odors



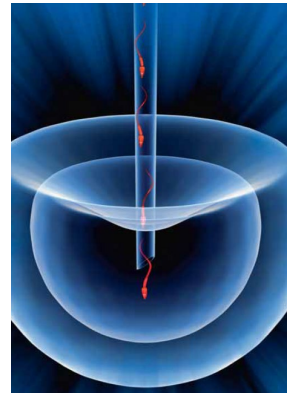
Hospital
Helipad Fumes



Wastewater
Treatment
Odors



Medical Products Warehouse
Ethylene Oxide Fumes



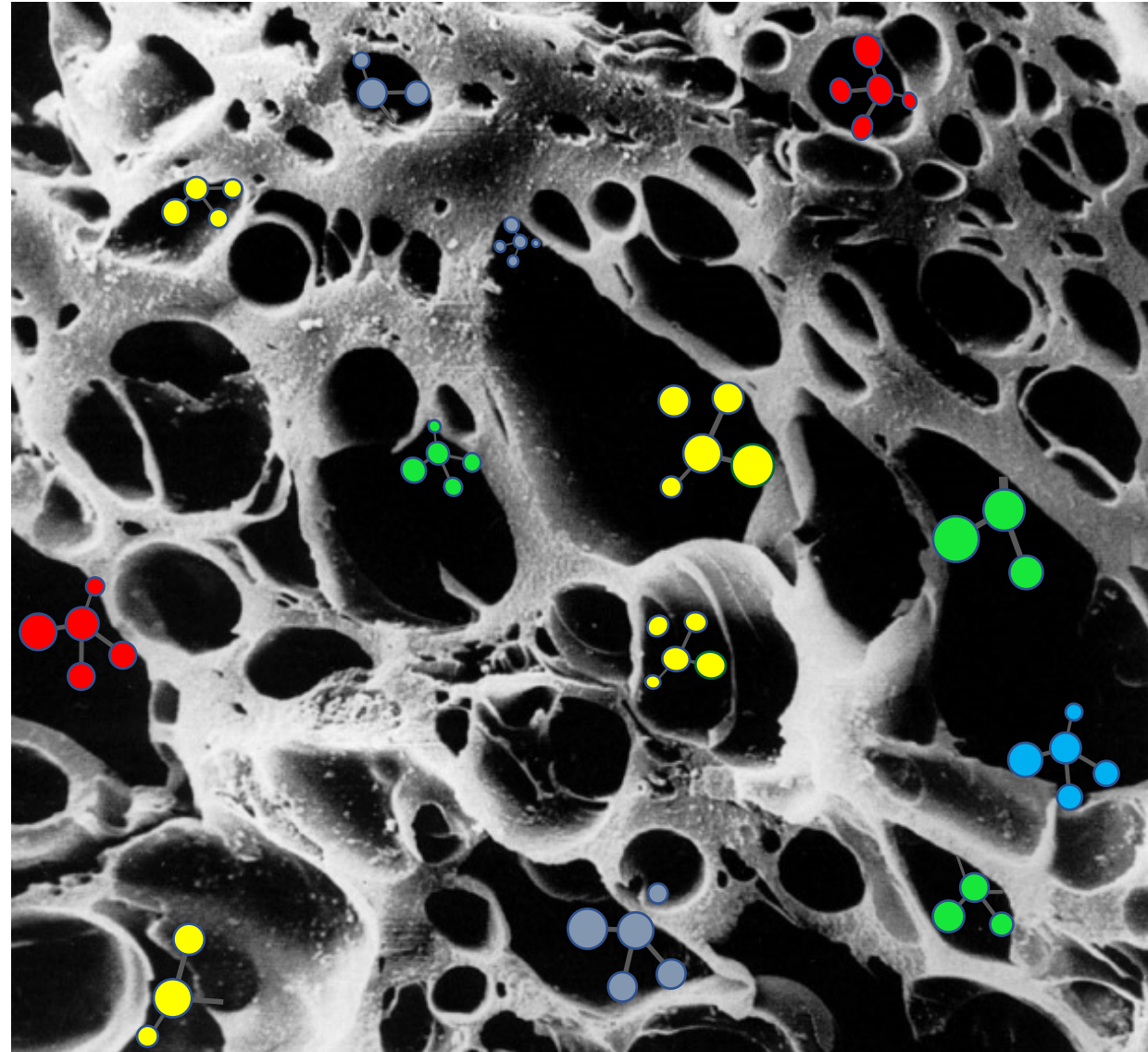
In-Vitro Fertilization
VOCs



Industrial Process Odors &
Fumes

HOW DOES MOLECULAR FILTRATION WORK: Physical Adsorption

- Relatively large and slow molecules travel into the network of pores and stick to the surface through light intermolecular forces (like a spider climbing a wall)
- Examples:
 - beta-myrcene (cannabis), ozone & nitrogen dioxide (traffic and jet fumes)
 - millions of VOCs

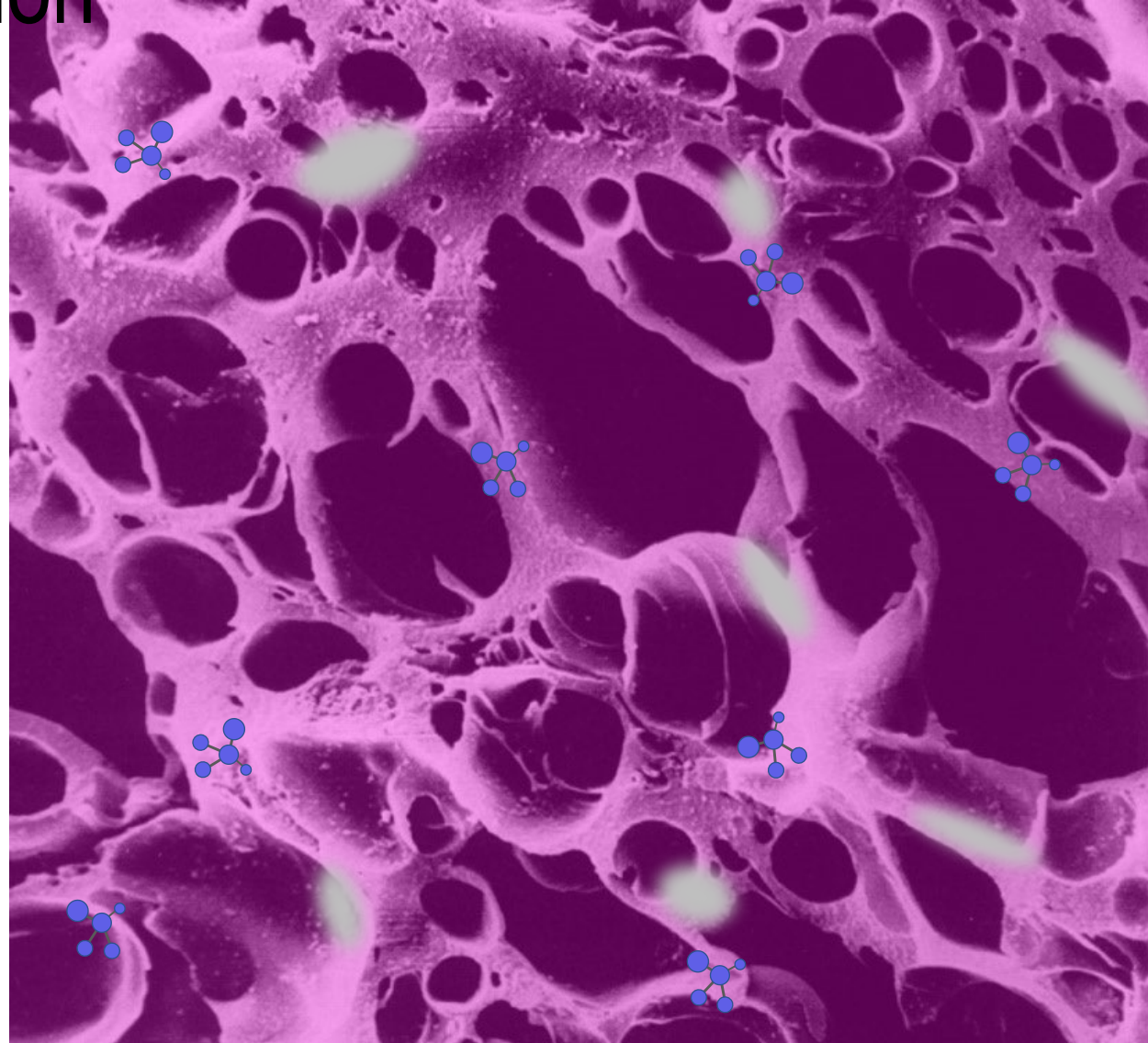




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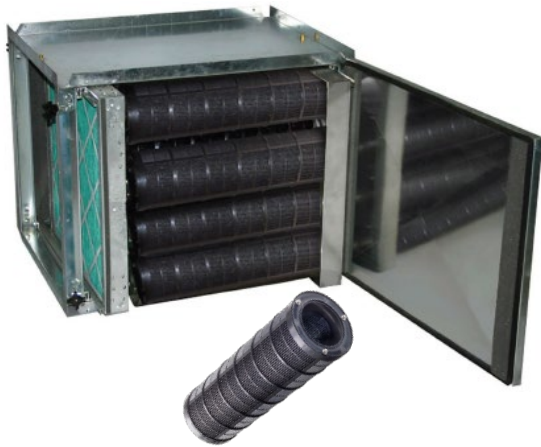
Chemical Adsorption

- Smaller and faster (aka- more volatile) gas molecules collide with the surface to create an irreversible chemical reaction (often discoloring the filter media)
- Examples:
 - hydrogen sulfide (wastewater)
 - formaldehyde (morgues)
 - chlorine gas (battery plants)

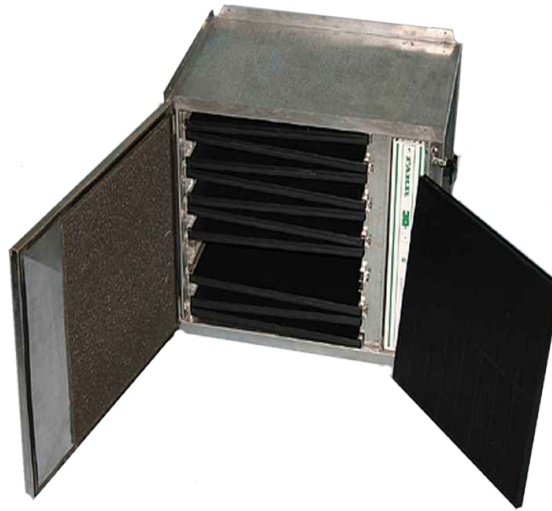


TYPICAL ODOR CONTROL FILTRATION SYSTEMS IN CANNABIS FACILITIES

(hundreds of pounds of activated carbon)



CamCarb CG Cylinders
with activated carbon media
Sized for 250 feet/minute
Excellent removal efficiency
Inherently leak-free
Exhaust or recirculation



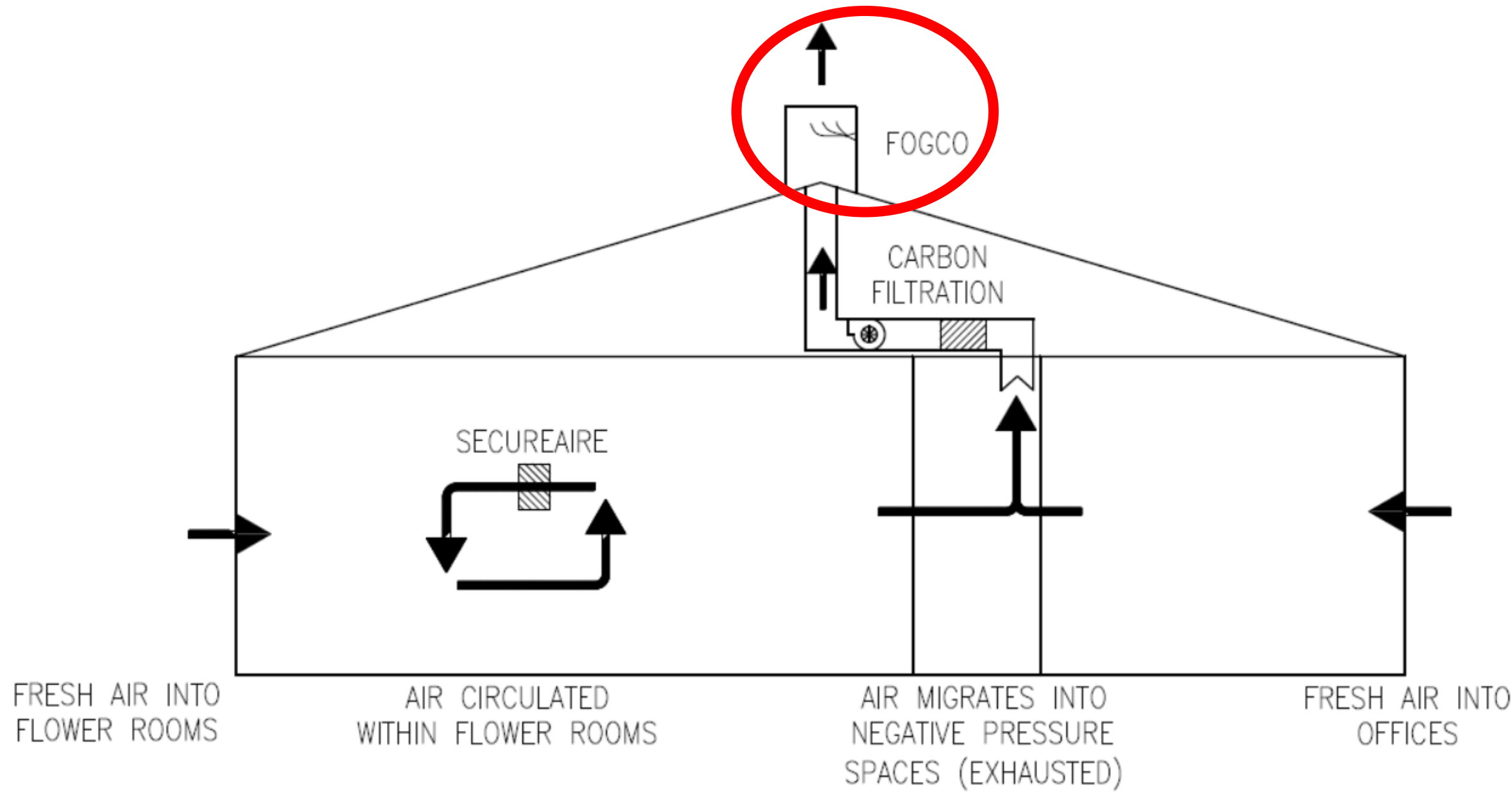
CamCarb PG Panels
With activated carbon media
Sized for 250 feet/minute
Good removal efficiency
Low pressure drop
Exhaust or recirculation



CamCarb PG Panels
4-8 Air Changes/Hour
Modular design
Cylinders in molecular state
Designed for recirculation

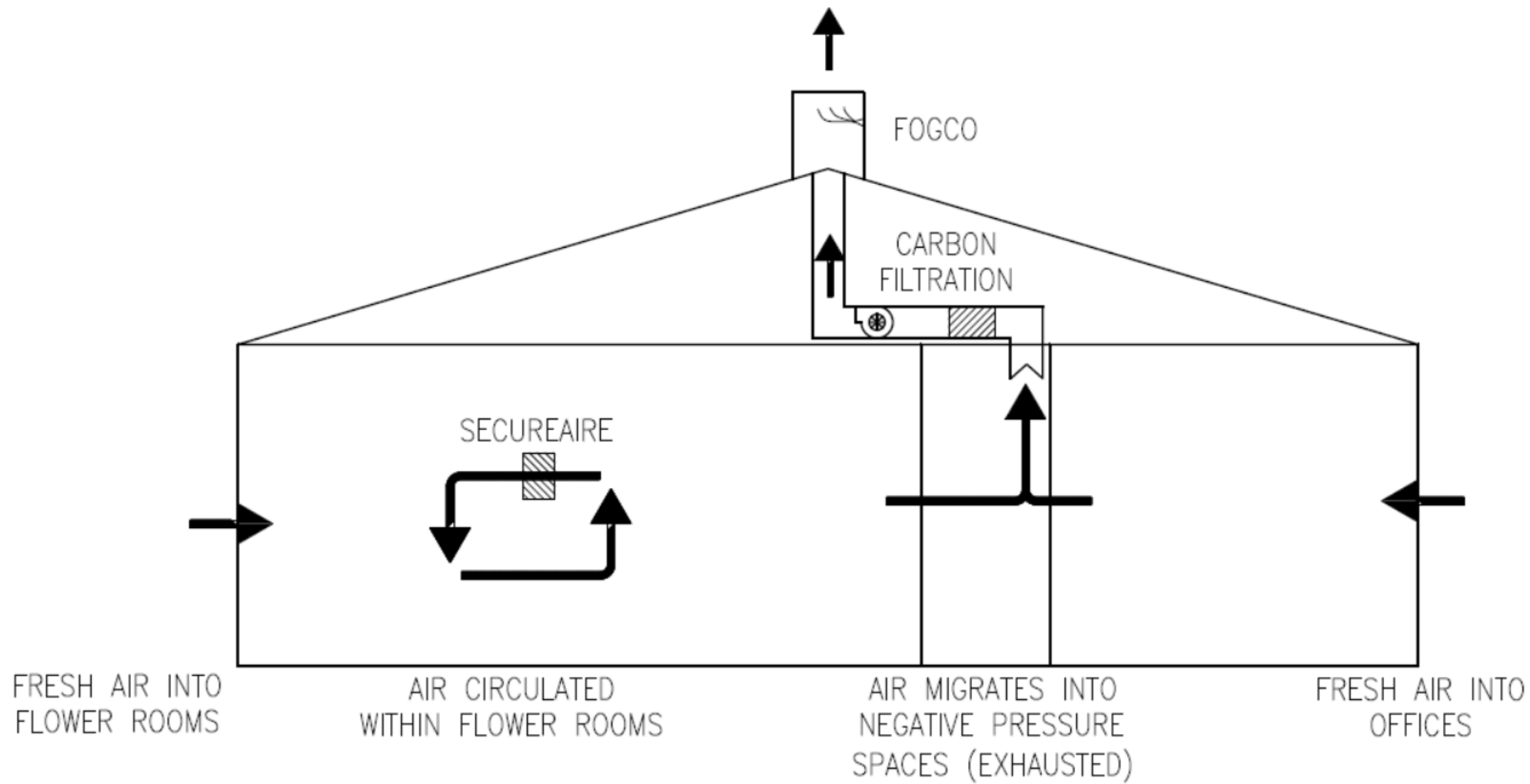
*Note: pleated carbon filters cannot handle the concentrations
of odors generated in a cannabis facility!*

fogco



- Fogco has over 20 years of odor mitigation experience in a variety of different industries to include industrial petroleum refining, sewage treatment plants, slaughterhouses and rendering facilities, waste processing and transfer stations, etc. Fogco was the first high pressure fog company to enter the cannabis space to provide odor control.
- Over 100 active cannabis facilities in the US and Canada with ZERO complaints
 - Osiris LLC - Glenwood Springs, CO,
 - Valley Crest Farms - Carpinteria, CA
 - Flower One - Las Vegas, NV (replaced competitive system due to complaints)
- Scientific **Subtractive Odor Control**[™] technology
 - True neutralizer - not an additive, masking agent or perfume.
 - How it works - Selected essential oils introduced via high pressure fog mix with airborne malodors resulting in a series of reactions to include antagonistic pairing, absorption and adsorption, and pluralistic effects modifying the chemical shape/structure of the odor molecule which in turn, neutralizes and eliminates the malodor.
 - Independently tested and proven by a third-party laboratory certified in ASTM International, CEN (European), and ISO method practices.

Multi faceted approach



Noise Control:

Ben James; GoodLeaf Holdings, Inc

- Phase 1

- Measure base line decibel level with sensors
- Obtain Mass DEP Community Policy Requirements for decibel levels (generally within 10 decibels of base line)
- Set goals to meet Mass DEP requirements

- Phase 2

- Work with engineers and noise consultants to select preliminary equipment
- Model how equipment will affect environment
- Finalize equipment selection to meet requirements

- Potential Equipment:

- Efficient internal HVAC equipment
- External Cooling tower
- Placement of cooling tower on North side

Traffic Control:

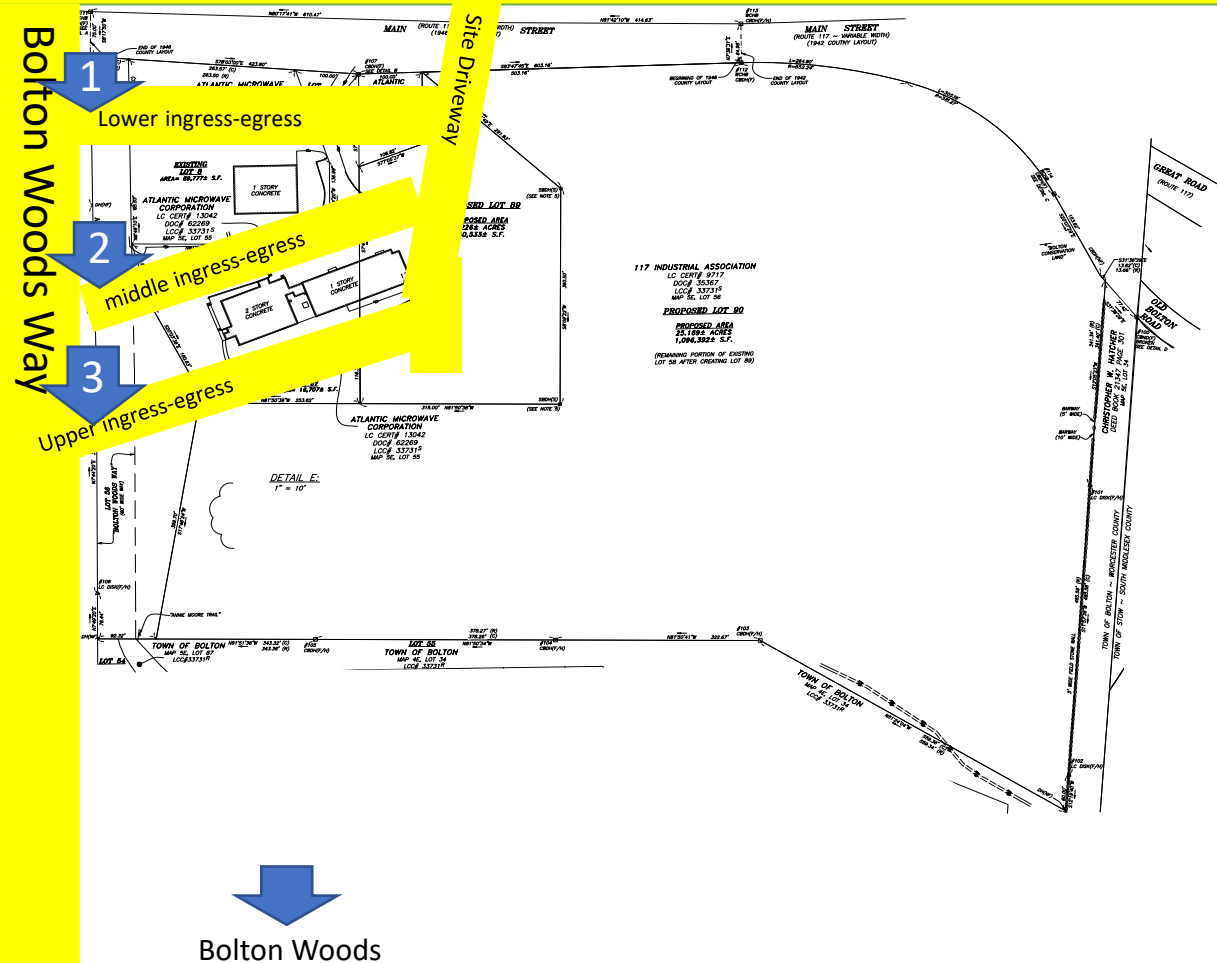
Ben James: GoodLeaf Holdings, Inc

- Egress/Ingress (refer to map on next page)
 - Currently, there are 3 means of egress/ingress between Bolton Woods and the site from Bolton Woods Way
 - Close off and landscape the upper and lower means of egress/ingress
 - Convert the middle egress/ingress to one direction and close off with a breakaway gate for emergency vehicle access only
 - All regular Egress/Ingress will be from the Site's dedicated driveway on route 117
- Traffic levels
 - Prior tenants had 75+ employees and received/made incoming and outgoing deliveries of supplies to build mechanical products and mechanical finished products, respectively
 - We plan to have approximately 55 employees. Incoming deliveries should be minimal, largely composed of light/small supplies
 - Soil deliveries will be infrequent
 - Traffic will be primarily employee cars and passenger trucks for approximately 55 employee
 - Out going Deliveries will be of light and small flower and finished goods handled by small vans

Site Map With Existing Egress/Ingress Traffic Flow and Proposed Changed

Main Street – route 117

- Lower ingress-egress:
block with planted landscaping
@ 1
- Middle ingress-egress:
Block with Breakaway Emergency Gate
@ 2
- Upper ingress-egress:
block with planted landscaping
@ 3



Security/Emergency planning:

Ben James: GoodLeaf Holdings, Inc

- Partner with Chiefs of Police and fire, Nelson and Legendre to develop CCC compliant diversion prevention and emergency SOPs
- Require all employees to participate in the CCC diversion training programs on a regular basis
- Implement comprehensive seed to sale tracking system and management reporting to maintain strict controls of inventory
- Collaborate with Chiefs to design and implement emergency notification and response protocols
- Collaborate with Chief of police to design and implement full camera/video system and exterior lighting that meets appropriate light pollution requirements
- Ensure sufficient internet access in interior capable of working in enclosed spaces with cement materials present
- Build in redundancy capabilities to manage security in power outages

Community Impact Plans:

Ben James: GoodLeaf Holdings, Inc

- **Vendors:** Where practical give priority to hiring local qualified vendors for the construction, maintenance and continued operation of the facility
- **Employees:** Where practical give priority to hiring qualified residents as employees, except for senior management positions
- **Compliance with local Law:** Work cooperatively with all necessary town boards, commissions, officers and officials to comply with all local laws and ordinances
- **Community impact Fees:** Work with town officials to agree on mutually acceptable community impact fees
- **Wetlands & public use trails:** Protect all wetland and existing public use trails, including preserving Annie's Hiking Trail near 72 Bolton woods

Projected Long Term Time-Line: October 15, 2021-May 1, 2023

- **October 15-December 15, 2021:** Special permitting process
- **October 15-December 15, 2021:** Site design: cultivation, production, offices, common areas and land
- **October 15-December 15, 2021:** Provisional license application preparation
- **October 16-April 30, 2022:** Provisional license approval
- **May 1, 2022-December 31, 2022:** Build out to completion
- **January 1, 2023- April 30, 2023:** CCC license inspections and approval
- **May 1, 2023:** Cultivation and production opening