

**Jobenomics National Grassroots Movement**  
focus is on mass-producing small businesses and jobs.



# **Controlled Environment Agriculture (CEA) Program**

**For Baltimore**

**Chuck Vollmer**

Jobenomics Founder & President

**23 May 2019**

# Controlled Environment Agriculture (CEA)



- A process of growing plants inside a grow room or greenhouse.
- CEA allows a grower to maintain light, carbon dioxide, temperature, humidity, water, pH levels, and nutrients to produce crops in ideal growing conditions with maximum yields.
- Jobenomics' CEA program is focused on mass-producing agribusinesses, micro-farms and agricultural-related jobs.

## Ailing U.S. Small Farm & Food Manufacturing Industries

*Source: U.S. Department of Agriculture,  
U.S. Bureau of Labor Statistics*

	Employment		New Jobs	Percent Growth
	Year 2000	Latest Data		
<b>Hired* Farm Workers</b>	1,332,000	1,344,000	<b>12,000</b>	<b>0.9%</b>
<b>Food Manufacturing Jobs</b>	1,562,500	1,628,200	<b>65,700</b>	<b>4.2%</b>
<b>Private Sector Nonfarm Jobs</b>	110,246,000	128,068,000	<b>17,822,000</b>	<b>16.2%</b>

**Farm & Food Jobs % of Total      0.4%**

*\*Not including family farmworkers that decreased by from 8 million in 1950 to 2 million in 2000. Today, small farms are in crisis with fewer people entering the industry and worsening economic conditions.*

**CEA can create tens of thousands of micro-businesses and jobs in under-resourced rural and urban communities.**

# Under-Resourced Rural & Urban Areas

## 8,700 Designated Opportunity Zones

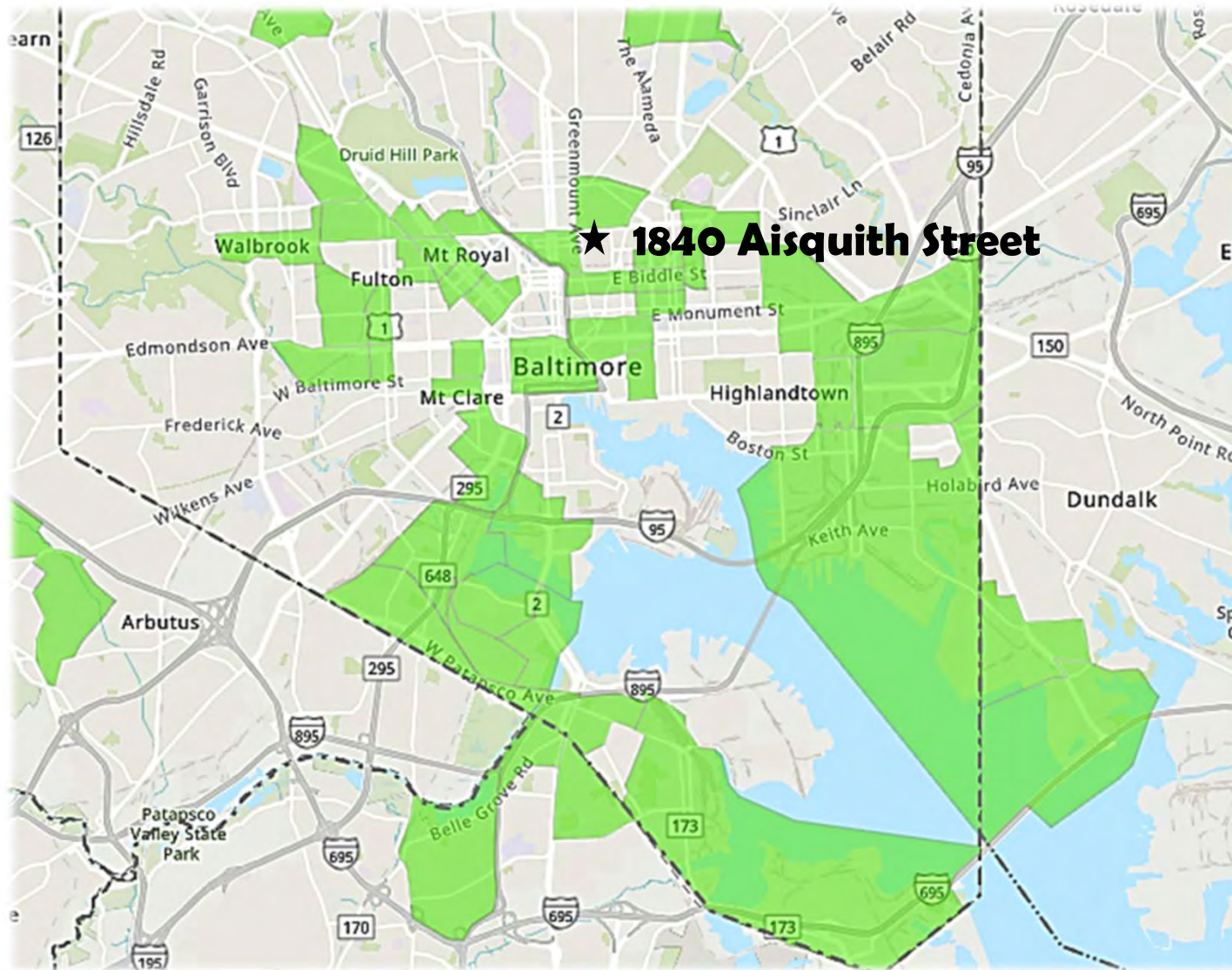
The poorest 12% of all U.S. census tracts



Part of the 2017 Tax Cuts and Jobs Act, Opportunity Zones promise positive social impact by driving billions of dollars in long-term investment into under-resourced urban and rural census tracts.



# Baltimore Opportunity Zones



**Jobenomics has obtained commitment from three Opportunity Zone Funds (\$150 million) for Urban Agriculture Projects.**

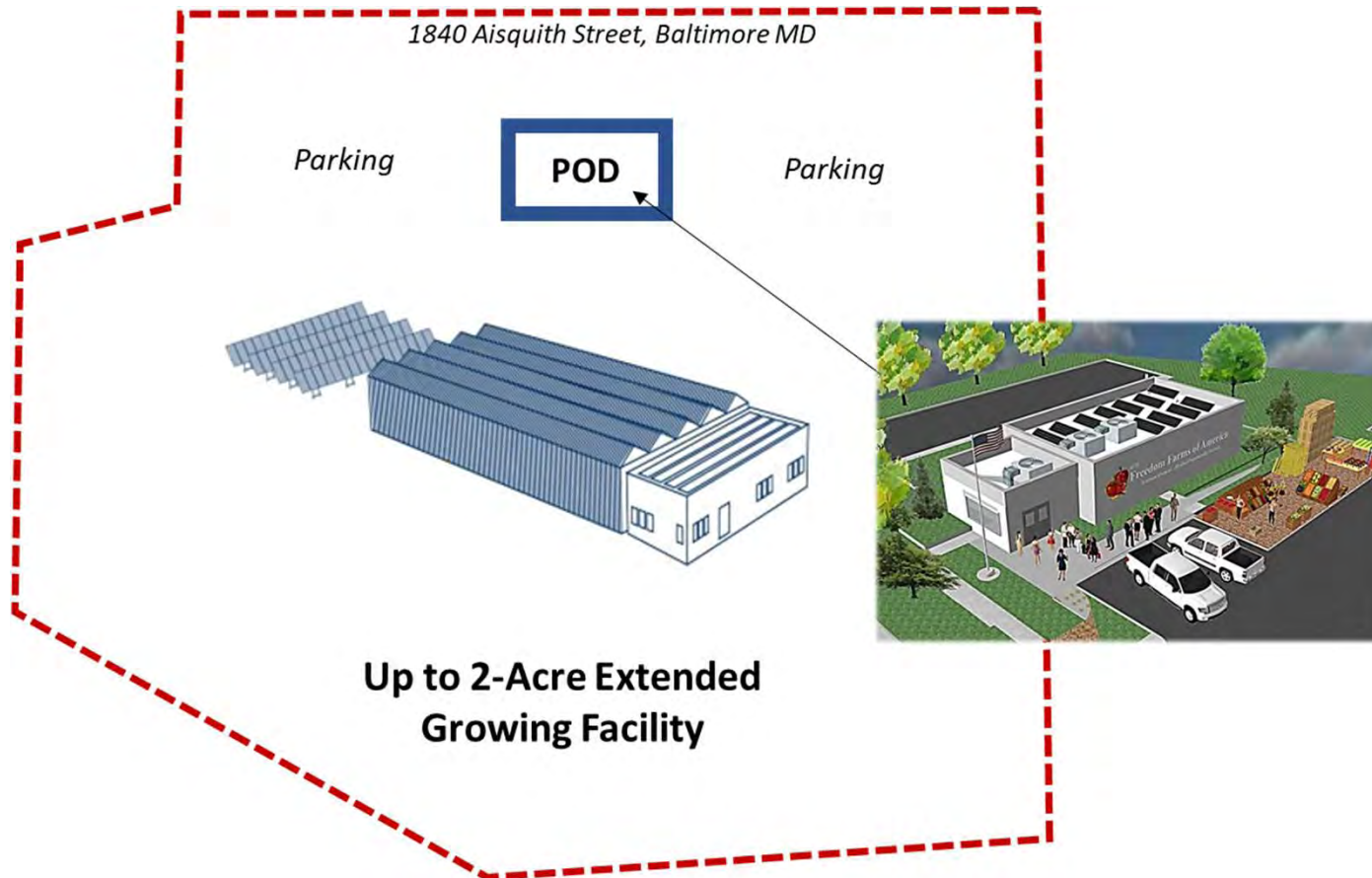


# 1840 Aisquith Street



**≈135,000 sq. ft. lot (≈3 acres)**

# 1840 Aisquith Street **Option 1**

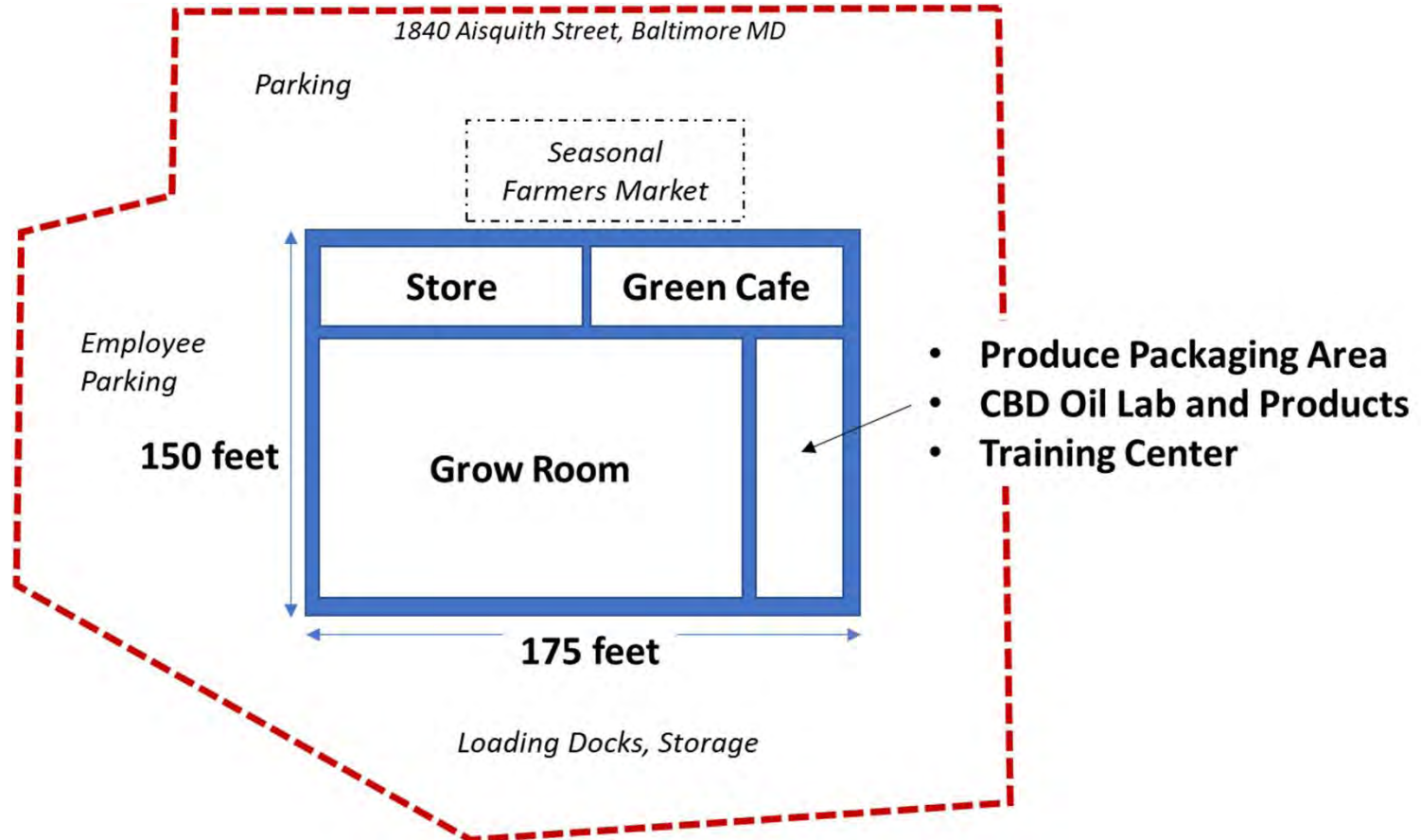


## **Option 1: ACTS FFA Product On Demand (POD) System**

2,500 sq. ft. POD with Growth to 2-Acres Via an Extended  
Controlled Environment Growing Facility

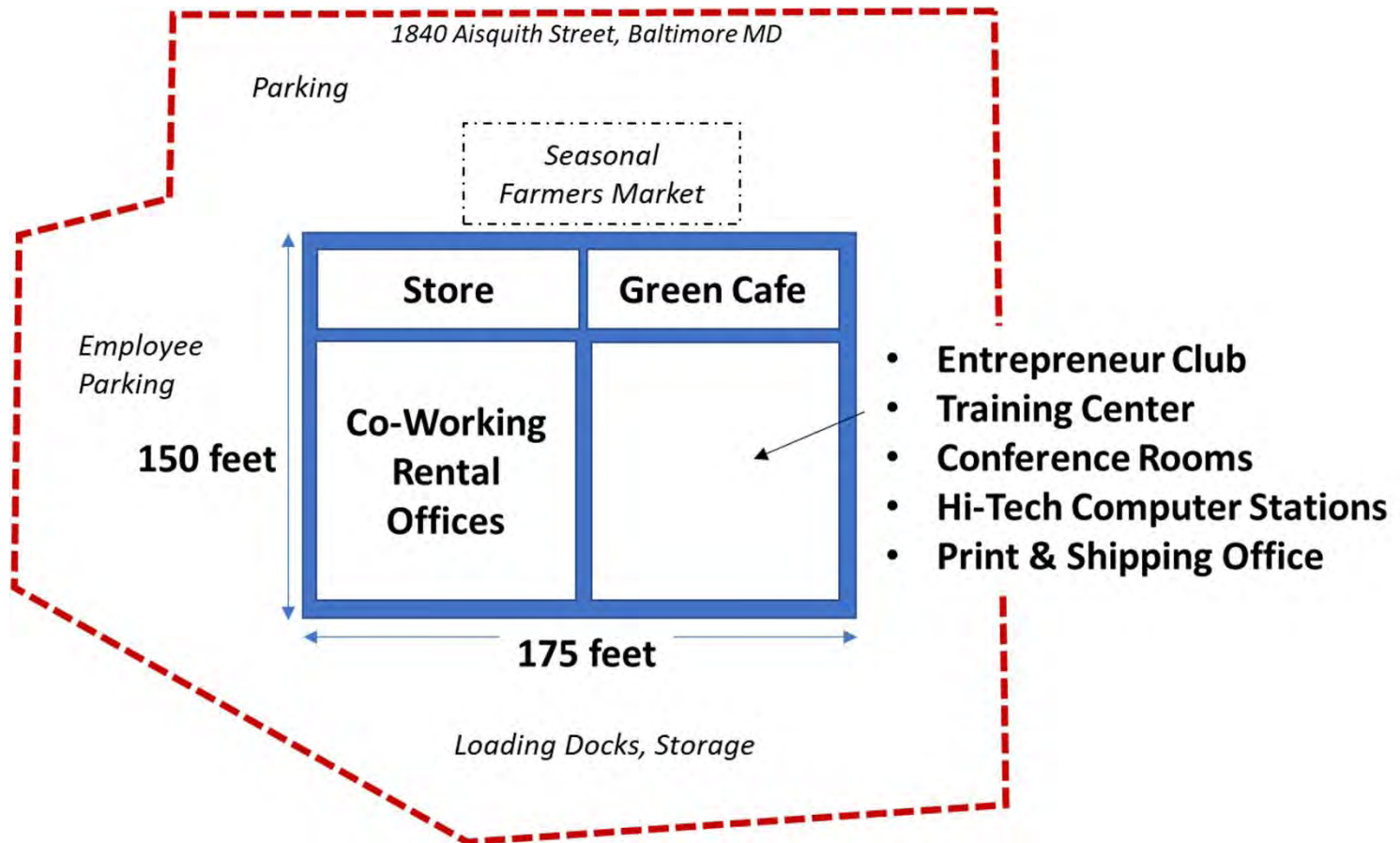


# 1840 Aisquith Street Option 2



**Option 2: ACTS FFA Indoor Grow Only**  
**Steel Frame Building with Cerarmix Panels & Skylights**  
≈26,250 sq. ft. lot (175' x 150')

# 1840 Aisquith Street **Option 3**

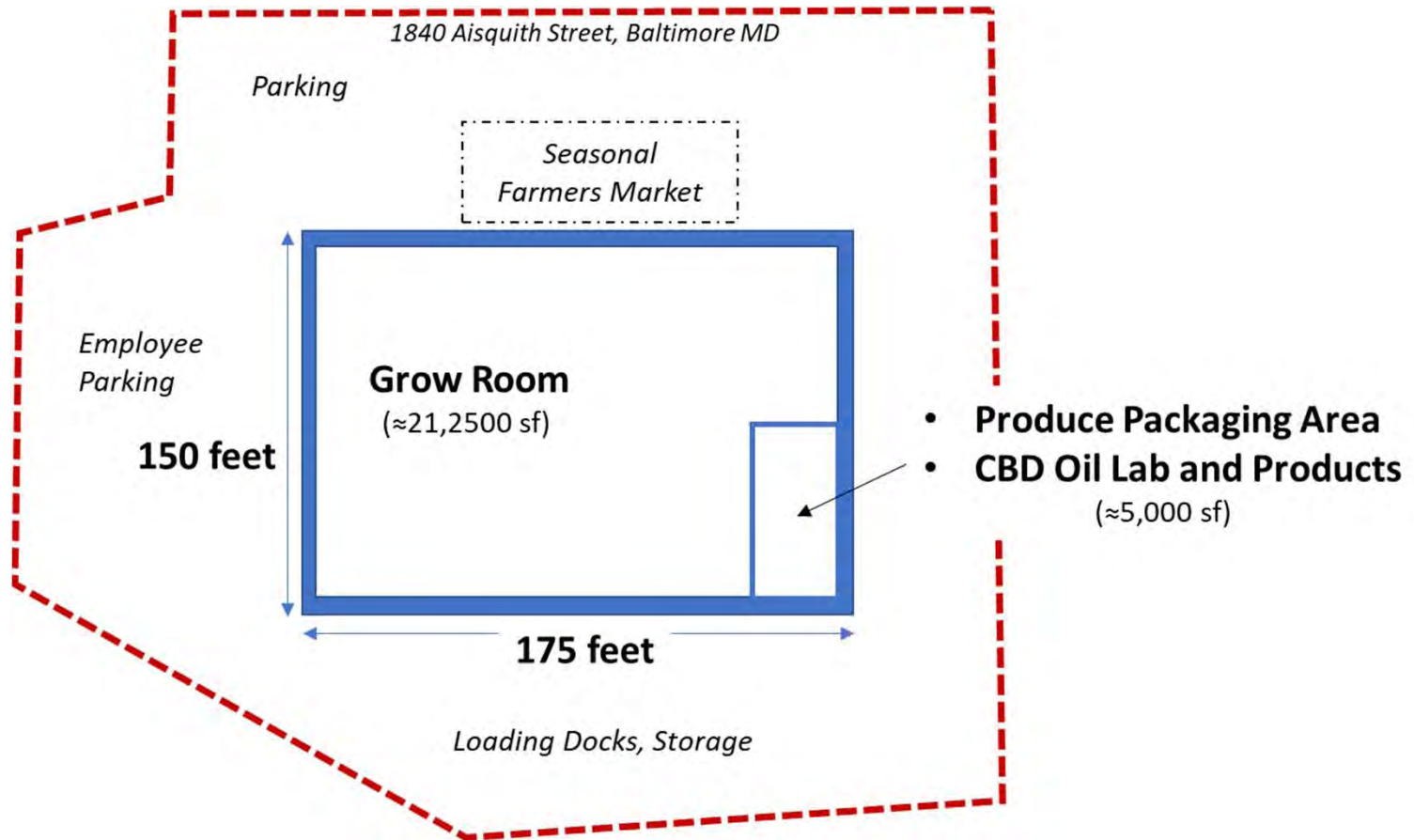


## **Option 3: ACT\$ FFA & Club-E** **2-Story Steel Frame Building**

Ground Floor ≈ 26,250 sq. ft. (175' x 150')



# 1840 Aisquith Street **Option 3**



## **Option 3: ACT\$ FFA & Club-E**

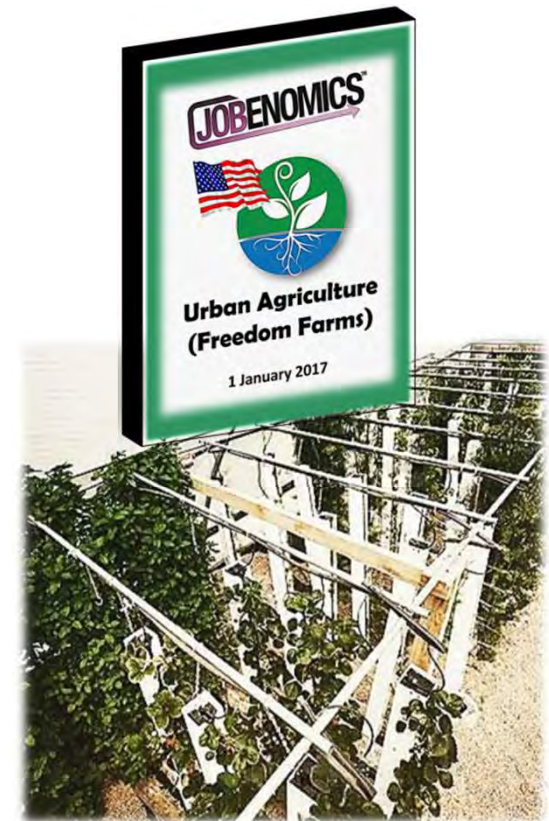
**2-Story Steel Frame Building with Cerarmix Sprayed Interior**

Second Floor ≈ 26,250 sq. ft. (175' x 150')

# Jobenomics Urban Agriculture

- Team: Jobenomics is teamed with ACTS Freedom Farms of America (ACTSFFA).
- Mission: Provide a solution to food shortage through self-sustaining and supportive live-work communities.
- Vision: Provide quality foods in harmony with the global environment, while empowering individuals to become an important partner in high-tech controlled environment agriculture.
- Strategy: 1) home ownership combined with an agriculture career, 2) corporate owned indoor commercial growing operations and 3) train high-tech controlled environmental agricultural farmers.

**JOBENOMICS™**  
Controlled Environment Agriculture



ACTS

**Freedom  
Farms**  
of America



**Chuck Vollmer also serves as the ACTSFFA Advisory Board  
Vice Chairman & Corporate Chief Development Officer**

# Jobenomics Urban Farming



- Initial cadre will be mostly veterans (vetting and financing considerations) but will also include non-veterans.



**Converted  
Warehouse  
With Controlled  
Environment & Vertical  
Farming Systems**



- AG Core is the corporate team that manages and trains new recruits until they are capable of assuming the responsibility to run entire operation.
- Each micro-farm will consist of the land and a leased greenhouse that will be equipped and supplied by AG Core.



**Secure Produce On  
Demand (POD)  
Greenhouse**

**GAP, GHP, FSMA  
Compliant Greenhouse**



**Base earnings will be \$35,000 to \$40,000 annually with bonuses and profit sharing upon completion of first year.**



# 1-5 Acre Controlled Environment Agricultural Project



**Jobenomics/ACTSFFA are currently pursuing 1-5 acre CEA pilot projects in Iowa, West Virginia, Las Vegas, Washington DC, Chicago, Erie PA, Montgomery County MD, Puerto Rico, and Alberta Canada.**



# Produce On Demand (POD) Business

**JOBENOMICS™**  
Controlled Environment Agriculture



- **Year End Cash Balance:** Year 1 = \$350,000, Year 2 = \$650,000.
- **Indoors versus Outdoors:** 5-acre comparison: Indoor is 18-times more productive, Indoor generates 50% more revenue, Indoor EBIT is 434% higher than outdoor agriculture.

*Earnings Before Interest & Taxes*

**Significantly more efficient and cost effective than outdoor farming.**

# Typical Income Statement

Washington DC POD, February 2019



	2019	2020
Revenue*	\$746,567	\$846,613
Cost of Goods Sold	\$142,016	\$144,066
Gross Profit	\$604,551	\$702,548
Expenses	\$298,573	\$238,573
EBITDA	\$305,978	\$463,975
Depreciation	\$209,588	\$378,834
Operating Income	\$96,390	\$85,141

\*Crop Revenue

Spinach 25%

Arugula 25%

Kale 25%

Basil 25%

Starting Capital	\$300,000	\$322,571
Ending Cash Balance	\$322,571	\$567,963

**ACTSFFA team will meet with local buyers and conduct a detailed financial assessment before contract award.**



# Produce On Demand (POD) Off-Grid Configuration



A POD is for growing.  
Processing and packaging will  
be either conducted in the  
POD or secondary sites.

**100kW Solar Array**

**Modular  
Growing Facility**

**EV Refrigerated  
Truck & Charging Station**

**HVAC/Power  
& 20kW  
Storage Station**

Produce will be harvested every 30-60-90 days depending on crops.

# Affordable & Sustainable POD System



- **Highly-scalable designs based on integrated solutions**
  - Design-build project delivery with advanced building, materials, energy and environmental technologies
  - Increased use of modular systems and pre-fabricated units
- **Sustainable single-family, multi-family & community programs**
  - Increase usage of single-family accessory dwelling units
  - Implement new multi-generational, multi-family concepts
  - Create dedicated workforce business/housing communities
- **Revitalize under-resourced communities and neighborhoods**
  - Mass-produce micro businesses and jobs with livable wages
  - Mobilize community-leaders and officials to streamline permitting, zoning and land use regulations
  - Maximize Opportunity Zone and private sector funding

**Efficiently produce high quality, lower cost homes and businesses.**

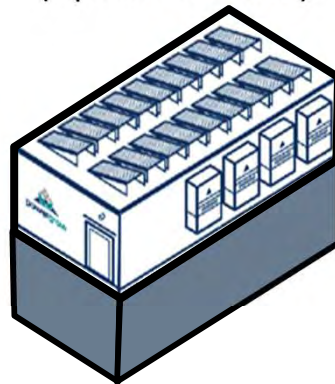
# Modular Construction

- Affordable multiuse configurations: micro farms, homes, offices.
- Livable: from 1,000sf to 3,000sf units.
- Environmental: LEED certified, insulated, mold resistant, solar.
- Suitable for small lots (1/8 acre) & spaces:



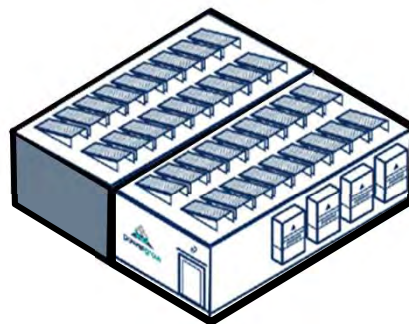
## Vertical Configuration

(up to 3 stories)



## Horizontal Configuration

(Attached or Detached Units)



## Modular/Portable



## Proven



(TV Star Rick Harrison's Pawn Plaza in Las Vegas was built with the same manufactured modules as a POD)

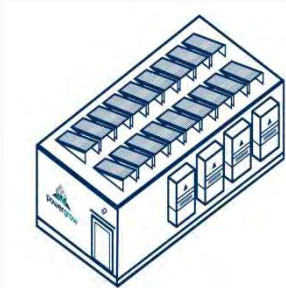
**Our modular units have even been utilized for shopping centers.**



# Scaling Into Local Markets

Launch – Expand – Scale

## POD LAUNCH

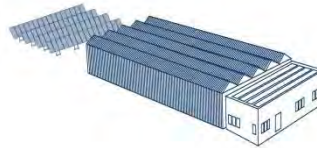


Growing Crops and  
Generating Revenue in  
60 to 90 Days

3-5 Direct Jobs

**YEAR 1**

## 1 ACRE POD EXPANSION or 1 TO 5 ACRE GREENHOUSE

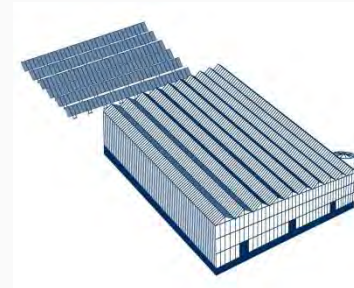


Expandable Footprint  
for Market Expansion  
and Multiple Crops

20-30 Direct Jobs

**YEAR 2**

## 5 TO 15 ACRE GREENHOUSES



Maximizes Economies  
of Sale, Revenue  
and Profits

150 Direct Jobs

**YEARS 3 - 5**

10-50 PODs located  
throughout major metropolitan areas.

1-3 complexes  
in counties and regions.

# POD Features

- **Easily Scalable Modular Facility**
  - Expandable modular construction for increased production
  - POD can be sited on any flat surface with limited site preparation
- **Food Safety Compliant**
  - Good Agriculture Practices (GAP)
  - Good Handling Practices (GHP)
  - Food Safety Modernization Act (FSMA)
- **Smart Technology**
  - Remote & Cloud-based Systems
  - Facility Management
  - Food Production Knowledge-Base
  - Security Access
  - Labor Management
- **Climate Controlled Growing**
  - LED Lighting
  - HVAC Systems
  - Fertigation Systems
  - CO2 Generation
  - De-Humidification Systems

**Our POD systems are ideal proof-of-concept programs.**

# High \$ Value CEA Products

## Common Crops

- Culinary Herbs
- Lettuce
- Spinach
- Tomatoes
- Strawberries
- Peppers
- Cucumbers



## Specialty Crops

- Medicinal Herbs
- Flowers
- Mushrooms
- Ground Covers
- Ornamental Grasses
- Bamboo
- Hemp Products

The highest value crop is hemp. Cultivating hemp for CBD oil can generate as high as \$75,000 per acre in controlled conditions.



# Hemp Products



**Body-Care Products**



**CBD Oil**



**Food Supplements**



**Apparel**



**Fertilizer**



**Capacitors**



**Biofuels**



**Paper**



**Rope**



**Hempcrete**

**The highest value crop is hemp. Cultivating hemp for CBD oil can generate as high as \$75,000 per acre in controlled conditions.**

# Cannabis

Same Species With Different Chemical Compounds And Applications

## Hemp

*Cannabis Sativa*



## Marijuana

*Cannabis Indica & Sativa*

- **Legal** (2018 U.S. Farm Bill)
- Usage: agricultural, industrial, medical & pharmaceutical
- Primary compound: **CBD** (Cannabidiol) grown for its non psychoactive properties
- Main markets: medical, body-care, nutritional, construction materials, fibers, animal food
- Federally **illegal** (10-States legal)
- Usage: mainly recreational with a few medical applications
- Primary compound: **THC** (Tetrahydrocannabinol) grown for its psychoactive properties
- Main markets: mood-enhancing (smoking, edible, vaping & infused beverages) products

**The U.S. hemp-CBD market is growing faster than marijuana and will be a \$22 billion industry by 2020 (up from \$600m in 2018).**

# Hemp CBD Oil Extraction



- **Industrial hemp** extracts include pharmaceutical - grade **CBD oil** used for illnesses and pain relief.
- CBD market will grow 700% to \$2.1 billion market in 2020.
- USDA 2018 Farm Bill includes language that legalizes hemp cultivation and production.
- CBD oil extraction systems fit in our highly-sanitized cube.



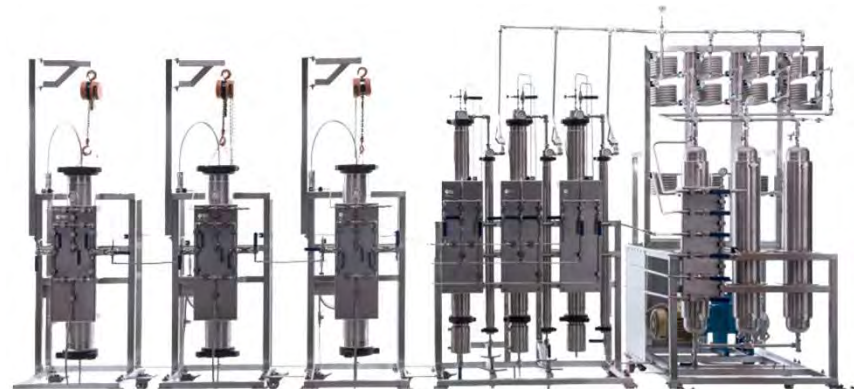
## Apex **Commercial** CO2 Extraction System

Model 5000-20Lx20L2ST, Revenue/Day \$25,424-\$76,463



## Eden Labs **Industrial** CO2 Extraction System

Model 2x20L FX2, Revenue/Day \$163,440-\$217,920



**CBD oil extraction services are as profitable as cultivating hemp.**



# ACTS FFA Management Team



Business Innovation, Analytics, Fulfillment And Business Economics Experts



**Michael Buehler**

CEO & President  
Business  
Innovation



**Bill O'Connor**

Chief Analytics  
Officer  
Project Financing  
Expert



**Robert Flegal**

Chief Operating  
Officer  
Fulfillment Expert



**Chuck Vollmer**

Advisory Board Vice  
Chairman



**ACTS Freedom Farms Advisory Board Members include  
controlled environment agriculture and fertigation experts.**

# ACTS FFA Support Programs



Federal, State, Local & National Team

## ■ Financial

- Land Acquisition, POD & Equipment Funding, Operating Capital

## ■ Operational

- Food Safety: GAP, GHP, FSMA
- Organic Certification
- Staff Augmentation with Subject Matter Experts

## ■ Sales & Marketing

- National Retail Produce Off-Taker Programs

## ■ Growing Expertise

- Upstart University, U of A CEAC, Master Grower Services
- ACTS FFA extensive training ongoing.
- Local Universities and colleges will utilize PODs as remote training centers for students.

**ACTSFFA will manage CEA joint ventures from cradle-to-grave.**

## **Contact Information**

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