

①

5-31-22

# Grow tent + 2.0

Need full plan proposal  
by June 12<sup>th</sup>

- Present + plan to public at committee
- Need to generate full plan
- - needs to do the following
  - add parking for city vehicles (only way to get free city land)
  - need to show that there is an ability to add jobs (not just community helpers)
  - need to add housing
  - need space for seed production
  - need access to city stockpile of compost
  - need to determine scaled price of microgreens racks
  - need to add public housing
  - need to create work ergonomic plan for workers on the farm
  - need to make a distribution plan for the grown plants.
  - need to make a profit plan

# ② grow tent 2.0

Do tonight!

5-31-22

- send request for what the building looks like, how structural it is, and more
- ~~review~~ review more about their current proposal
- Need:
  - Finance plan outlining \$14 million. ~~spent~~ spent on planning already
  - cost estimates for community areas and other parts
  - funding outline
  - operational financials
  - strategy for ~~remediation~~ remediating the site
- Current~~fix~~ city will currently give EPNI 3 acres for free, but will still make a 4 acre parking lot
- with current system can use the microgreens to remove arsenic from soil (can then transport arsenic away)

(3)

## grow tent 2.0

6-1-22

• Need access to city stockpile of compost

• Plan: keep current parking lot. Allow for city to use parking lot for anything. Resurface the lot.

24 bins cheapest rack @ costco \$59.99  
 36 x 14 x 54 (4 shelves) (6 levels) (metal)

• HD home depot  
 12 in x 36 in single shelf 22.46.

- Best metal  
 11.42 x 59 x 21.3 in (7 levels) 54.99  
 (5 shelves) (metal)

- also consider  
 24 x 12 x 48 (4 shelves) 37.15  
 plastic (3 levels)

~~min~~ Menards 38 ft  
~~24 bins~~ - 24 x 48 x 12 plastic 22.24  
~~3 bins~~ (4 shelves) (3 levels)

16 bins - 36 x 72 x 18 plastic 34.70  
 5 shelves (4 levels)

(4)

# grow tent 2.0

6-2-22

- Racks can also be sourced from elsewhere, like foreclosed department stores
  - also can be sourced from the same place that department stores get their shelves
  - perhaps the old Kmart on Lake street has some shelves

## an old delivery truck

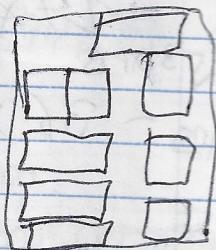
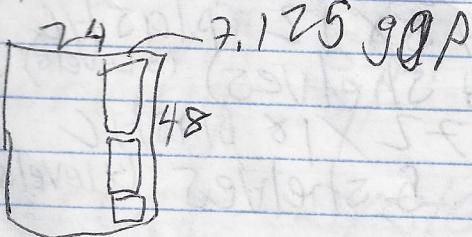
### Bins

•  $12\frac{7}{8} \times 9\frac{1}{16} \times 5\frac{1}{8}$  Mengards ~~\$1.89~~ each

• home depot  $13\frac{5}{8} \times 8\frac{1}{4} \times 4\frac{3}{8}$  (mine) ~~1.78~~ each

~~high sides~~

$24 \times 48$



\* \$5x8 lamps ~~\$5.86~~ \$5.86  
\* \$8x6:84  
X8:59 \$5x8:79

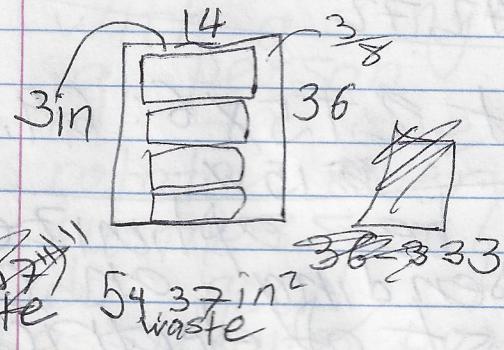
(5)

grow tent 2.0

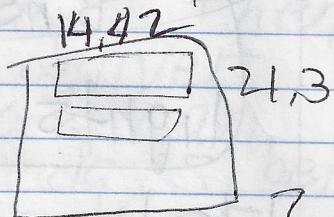
6-2-22

$$\text{Bin: } 13\frac{5}{8} \times 8\frac{1}{4} \times 4\frac{3}{8}$$

$$36 \times 14$$



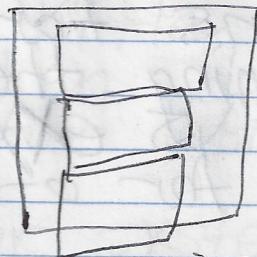
$$14.42 \times 21.3$$



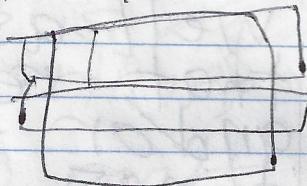
~~$$194.73 \text{ in}^2$$~~

waste

$$24 \times 12$$



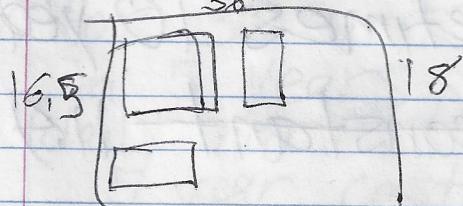
$$11.42 \times 21.3$$



49.21 in² over  
(may be fit)  
one fits

54.816 in² over  
with 18.19 in² over  
one fits

$$36 \times 18$$



4 bins  
198.375  
waste

⑥

grow tent

6-2-22

Best rock is  
cost co 36X54X14 for \$59.99  
 $(3.5 \text{ ft}^2)$   
24 bins each  
Bins are \$2.72

\$ lights 3 feet ~~27.5X6:~~ 69.99  
~~15W~~

- likely can be optimized further depending on cost of labor, cost of electricity, and price that selling boxes of greens for as well as determining the timeline that repayment is expected and/or timeline for other things

on a timeline of 5 years expected return on investment (as it is common to have 5 years tax free, sometimes 10 years)

assuming a constant 11.48% / year

assuming a price increase of 2.43% per year of electricity cost

⑦

grow tent

6-2-22

- person takes full rack and delivers bins
- assuming a business needs all 24 ~~take~~ that come with a single rack then a person can deliver all to one place can rotate every 7 days between businesses, as greens do good staying in fridge
- assuming paying person about minimum wage or a little more \$17/hr then daily max is ~~\$138~~ \$136 for labor (No overtime or something)

for system of 30 racks  
Assume as each day a rack is filled and one is loaded  
• \$5,57928 in elect cost per day

105+<sup>f2</sup> for 30 units  $\frac{\text{elect}}{\text{wage}}$   $\$5181 + 10182.186 + 248700$   
in 5 years it would pay off  
(daily harvest)  
5 year cost: 263563, 186  
bins produced in 5 years = 43800

sell bins for ~\$7 per box

(8)

## grow tent 2.0

6-2-22

for 60 racks (87600 bins/year)  
~~48200  
5181  
107  
10182186  
3.5 ft<sup>2</sup>~~  
~~10362 + 20364 + 248200 =~~  
~~278926~~  
~~\$3,184 / bin profit~~  
~~210 ft<sup>2</sup>~~

for 90 racks (131400 bins/year)  
~~15543 + 30546,558 + 248200 =~~  
~~294289,558~~  
~~\$2,2396/Bin to profit~~  
~~315 ft<sup>2</sup>~~

for 120 (193200 bins/year)  
~~20724 + 40728,744 + 248200 = 309652,744~~  
~~\$1,602757/Bin to profit~~  
~~420 ft<sup>2</sup>~~

for 150 (241500 bins/year)  
~~25905 + 50910,93 + 248200 = 325015,93~~  
~~\$1,3458/Bin to profit~~  
~~525 ft<sup>2</sup>~~

- Need to determine several things
- price to sell
- how to sell (business or otherwise)
- if not roof depot, where else
- Kick starting with my own labor (what is cost savings)
- tax implications

(9)

## grow tent 2.0

6-4-22

- non profit status
  - benefit, cost benefit
  - is it possible to house people
  - add in cost of spray bottles or other systems of watering
  - Determine cost of remodeling oak hill (contact real estate agent)
  - determine cost or price per bin
- unrelated is there a method to reduce freight delays on ~~Amtrak~~ lines
- possible to contact freight unions (Perhaps a Saturday/Sunday holiday weekly)
  - what is the basement of loring manor look like  
can't be used? Is it just like sequoia building basement room (aka huge)
  - Distribution
    - cargo bike idea is interesting
      - might be good idea
    - small cargo ~~or~~ electric Van
      - might be able to contain a huge number of bins
      - would have a number of associated costs

⑩

# Grow tent 2.0

6-4-22  
(to Chicago)  
via Amtrak

4  
5  
6  
7  
8  
9  
10  
11  
12  
13

- Cost of distribution
- Vehicle (electric) (need charging equipment)
  - E-transit (2022) \$46295
    - 76-126 mile range
  - Rivian
  - Bright Drop Zero (GM)
  - Peugeot e partner
  - Vauxhall Combo-e
  - Might have to get regular electric car and outfit it
    - electric cargo bike (greens aren't heavy (maybe bike trailer is best))
  - would it be best if there were a pickup style instead (maybe not, would likely increase gas expense for other people)

review

- When back home checkout the amount of bins able to fit in dog trailer

- Take Chevy Bolt or Chrysler minivan electric (remove seats)

- calculating when it is better to quit and start doing full time

(12)

grow tent 2.0

6-4-22

assume assuming I want to make \$120,000 per year

- and assuming 30 rack configuration
- assuming my own labor

48300 bins per 5 years (9660 bins/yr)

\$10182 elect per year

\$5182 one time payment of equipment

$$\text{so } 5182 + 10182 + 120000 \\ = 135364 \text{ per year}$$

with this amount sell bins for \$14/bin

- \$160 Bin configuration

~~19320~~ 19320 bin/yr

$$10364 + 20364 + 120000 \\ = 150728/\text{yr} \text{ expense}$$

\$7,802/bin to profit

- 90 Bin configuration (28980 bins/yr)

$$15546 + 30546 + 120000 = 166,092$$

\$5,73/bin to profit

- 180/120 config 38640 bins

$$203280728 + 40728 + 120000 = 181456$$

\$4,696/bin to profit

① grow tent 1,2 6-12-22

## statistics

- P B1 : 6 boxes on 6-12-22  
- Box 1: grew micro hemp (harvested)  
~~REMOVED~~ harvested on 6-12-22  
- note: Bitter and stringy (<sup>7 days</sup>)  
Experiment: what happens if soil is mulched after harvest?  
Soil is mulched after harvest, left about .5 inches of plants  
mulched it into soil  
Planted rainbow radishes

- P B2 : Box 2: grew broccoli, harvested on 6-12-22  
- note: small harvest But very good, also super fast (<sup>7 days</sup>) planted on 6-5-22  
• continue growing Broccoli (6-12)

- P B3: soil & rainbow radish planted (6-12)  
P B4: soil & super food micro mix (6-12)  
P B5: soil & red cabbage (6-12)  
P B6: soil & ~~cabbage~~ Broccoli (6-12)  
P B7: coir Broccoli (6-12)  
B8: Just coir (see how much water it absorbs) 6-12  
P B9: soil & Radish 6-13-22  
P B10: soil & cabbage 6-14-22  
P B8: coir (soaked) mix 6-14-22  
m B6: B3, B1, B4, B7 into light (single) 6-14  
~~m B2~~  
m B5: B3, ~~B6~~, B9, B2, into light (single) 6-14

①

# grow tent 1,2 statistics

14+4  
22 spots  
6 tall spots

- P B11 soil & mix 6-15  
P B12 soil Broccoli 6-15  
M B11 B12 into single 6-15
- P B13 soil & rainbow (double seeds) 6-16-22  
B14 soil soy beans soak 6-16-22  
B15 white beans soak 6-16-22  
P B16 soil red cabbage 6-16-22  
P B17 soil broccoli 6-16-22  
P B18 soil & mix 6-16-22  
M B19 into single light 6-16-22  
P B20 soil radish  
P B21 soil cabbage  
P B22 soil & soy  
P B23 soil pea

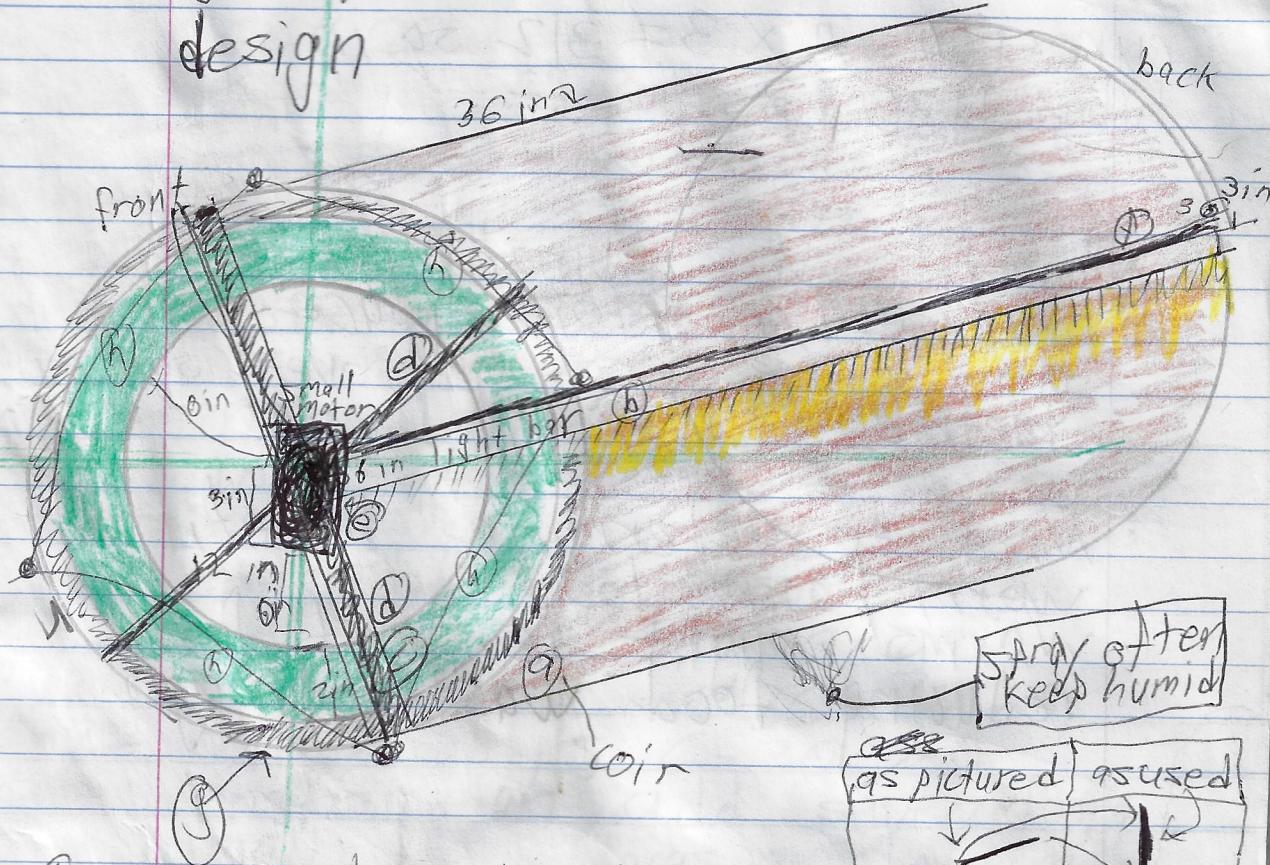
note: hand trowel filter installed  
see how it works new  
monitor: pressure (PSI) 6-18 (so. air)  
500 good  
PSI very low tight tent, vacuum wrap  
B7 dying on side, seems too dry  
M B10 single

Note: research worm growing  
M B18 B17 B13 single light  
P B20 B25 soil hemp (tall grow)  
P B24 soil mix 6-18  
P B25 B23 soil Broccoli 6-18 tall

①

Idea on pipe micro  
greens  
design

6-18-22



⑥ 36 inch light bar  
Broccoli greens max height

⑦ wire spocs

⑧ small motor/triple light

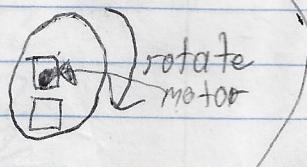
⑨ pipe support  
hanging down

⑩ seed layer  
⑪ is .25 in thick bar:

⑫ connect

for water  
dripping instead of  
spraying

$C = 27\pi$



⑬ diagram

36 in max

2 ft three 12 in x 32 in coin

②

## pipe micro green

$$\text{area: } 104 \text{ sq in} \times 3 = 312 \text{ sq in}$$

$$\text{tube: } 1130.97 \text{ sq in}$$

- benefit over having pipe is 362.49% more space of grow space per light over soil method
- Need to determine benefit of worm farm too.
- worms might be best for reducing food waste though

③

# grow tent statistics

h B9 @ 6-18-22

m B21 single (blue)

P B25 cabbage soil lentils (2+bls) soil 6-19-22

P B26 cabbage coir (soak) (coir soak) 6-19-22

S B27 lentils soak (1 bls) 6-19-22

add mushroom box

H B1 6-20-22 worm bin

m B24 into light 6-19-22 6-20-22

m B22 into light (B19) (B20) (B23) 6-19-22 6-20-22

P B28 soil hemp tall 6-20-22

P B29 soil cabbage 6-20-22

P B30 soil cabbage 6-20-22

P B26 cabbage coir 6-20-22

P B27 soil & lentils 6-20-22

note: construction add several small fans (focus on bottom racks air circulation) (add blower fan)

M B25 6-21-22

H B13 B4B3 6-21-22

P B13 B4B3 6-21-22: recycle soil: radish

M B13 into light 6-21-22

P B4 mix recycle 6-21-22

P B3 radish recycle 6-21-22

P B1 soil & cabbage 6-21-22

P B15 soil & cabbage 6-21-22

P B31 soil & mix 6-21-22

M B28 single yellow 6-21-22

~~P B17~~ Single

MB27 single yellow 6-21-22

Deadline, all must be harvested by 7-15-22

#### ④ growing statistics

M B26 B33 B25 B28 B27 into yellow  
note ~~B8~~ B8 is dead

- worm food

mushrooms doing really good

note B18 doing poor

note B19 is very larky

note soy beans ~~do~~ look like green beans  
(tasty though) B21

note B22 (white peas) look like asparagus  
but taste like peas and asparagus

P B32 B33 rad 6-22-22

P B34 B35 mix 6-22-22

P B36 Broc 6-22-22

M B4 B3 Blue 6-23-22

M B13 B26 Blue 6-23-22

M B21 B25 B23 fall 6-23-22

H B21 6-23-22 (partial)

note: lentils are very weak and thin

also more water for B18 B10 B8 make fuller

also mushrooms doing good

M B31 yellow M B30

A B5 B20 B16 B12 B10 B2 B6 B17 B7 B19 B18 B11 B24 B13 6-24-22

M B15 B1 Blue B32

M B33 B36 B35 B34 into blue(B33) yellow(otherwise)