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hydroponics  
style ideas

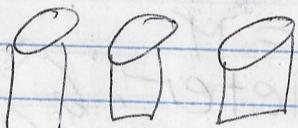
## types of hydroponics

Steven  
Glasford  
7-10-22

- Deep water
- drip
- Ebb and flow
- nutrient film technique
- wicking systems
- Aeroponics

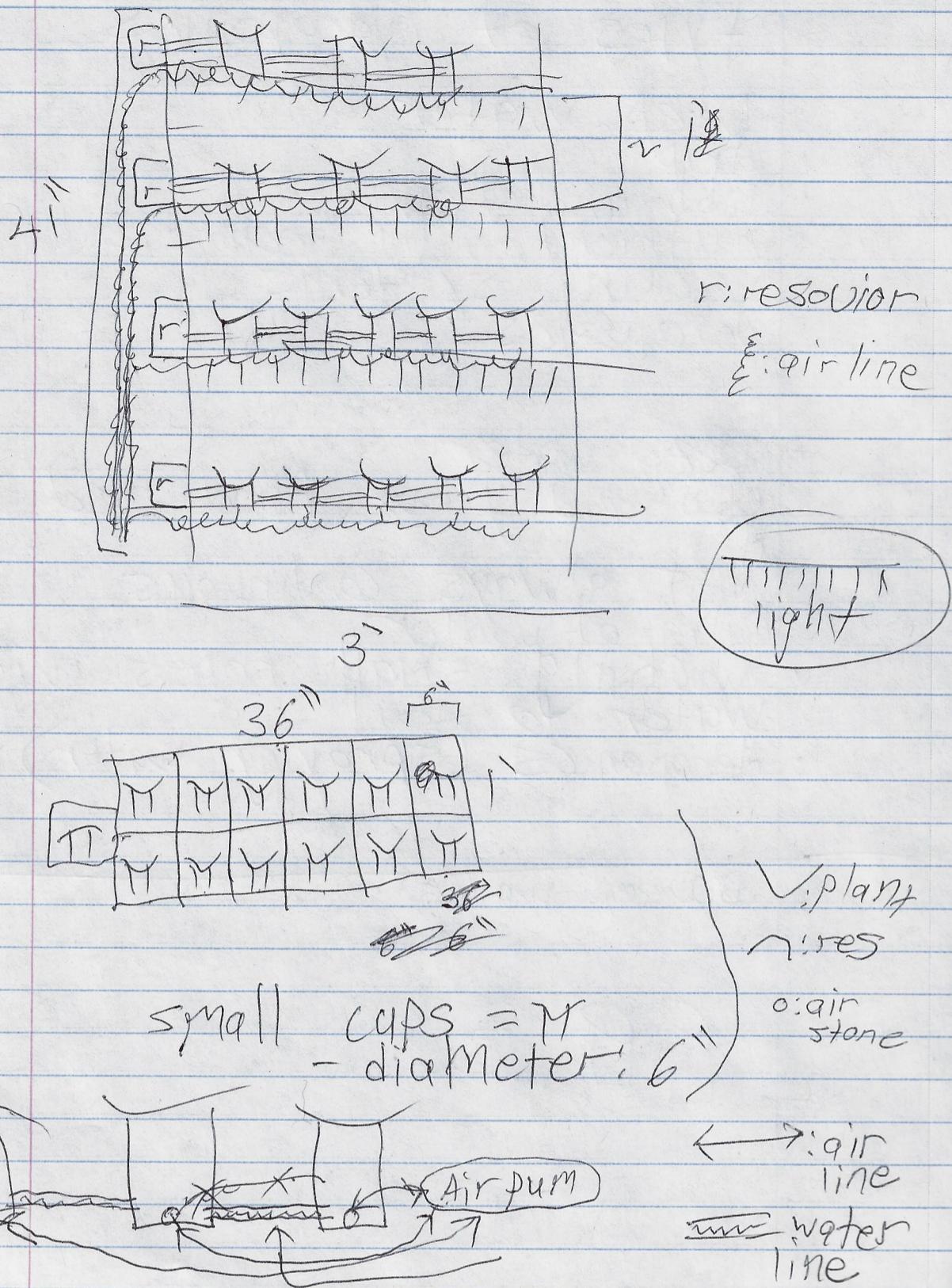
- Deep water
- ebb and flow, flood and dry
- NFT, always continuous film of water
- wicking, small ropes wick water to soil
- Aeroponics (spraying water)

### Deep-water



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## ~~Day 3~~ DW

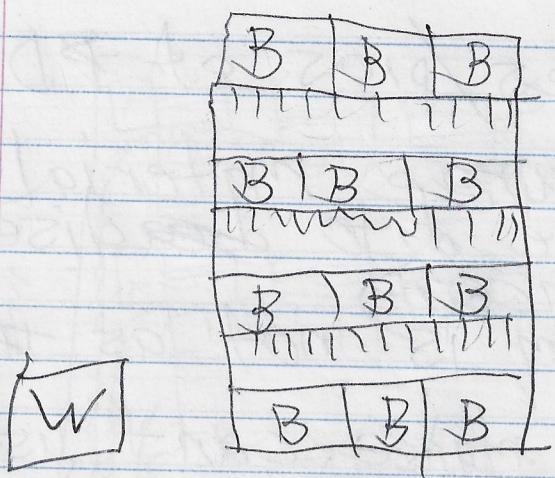
- disadvantages/pros of BDW
- easy to source materials
- more prone to disease  
*(major concern)*
- bin system is not as ~~the~~  
*useful*
- need to make, can't use premade (too expensive)
- difficult to really scale  
*(too many moving pieces)*
- good for smaller experiments

## Soil

- easiest to source
- dirty
- stinky
- bug prone
- not long term stable
- difficult to maintain

(4)

WORMS



W: worms  
B: plants

- use worms to recycle nutrients
- disadvantage/good
  - gross
  - stinky
  - complicated
  - very work intensive
  - prone to rot and over watering (serious)

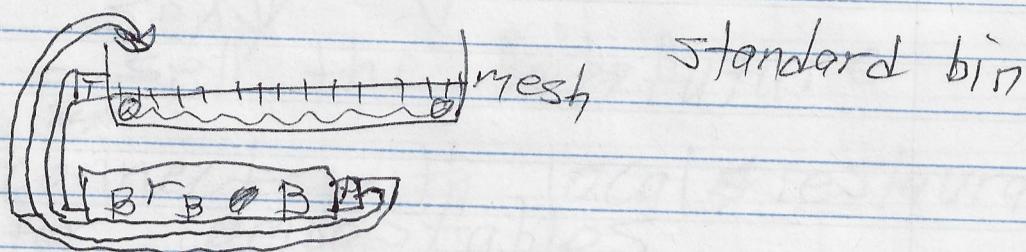
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## Hydroponic Systems

Drip: favorite so far

Similar to DW

- bins



- constant top of water  
(longest running flow of water)
- need ensure PVC pipe is able to refresh water
- can use PVC pipe to ensure mesh is raised
- need larger seeds (sunflower)
- don't need much fertilizer  
(or any at all)  
try with and without fert

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Glastford INC.

steven  
Glastford

or Glas INC

7-10-22

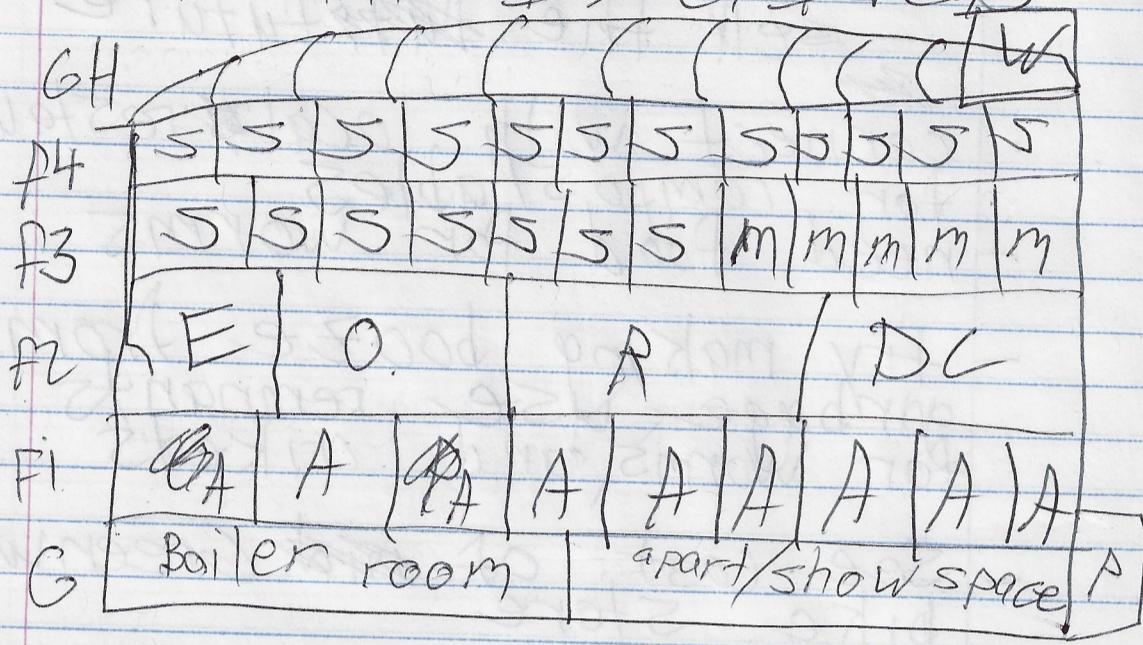
- grow food in small space
- employ people
- grow worms for food
- cricket farming
- change food for all
- buy ads that ~~make~~ eating regular food not ~~sexy~~
- sell the ~~future~~ ~~sex~~
- connect with local restaurants for compostables
- need food for worms
- try making booze from garbage, use remnants for worms and crickets
- See cost of ~~the~~ Greenway bike store
- find costs of apartment building (oak hill)
- Determine cost of developing and labor costs
- Determine permit fees
- If permits are restrictive

2

*[Signature]*

Glastord INC

- might be best to build on outside of city borders
  - Determine costs for Oak hill
  - oak hill ~~idea~~ Ideas



Show space: public, home, grocery  
A: living quarters, apartments  
B:

A: living quarters, apartments  
P: power supply, heat, light

P: power supply battery

E: Experimental room

E: Experimental room  
W: Water

W: Wrigg's

s; s'prout space

mushroom space

~~can't~~

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# Glasford INC

O: office space

R: processing area (#clean  
room)

DC: Day Care

Boiler room: (make fully electric  
(add filters for water)

GH: open roofed / one  
enclosed green house

Bubble (grow tomatoes or other  
vines)

Building needs some important  
thing

- must be helping community
- needs an outdoor area
- workers shouldn't need to  
travel for work
- needs to be able to  
access via public transit
- Apartments need to be  
reserved for workers, then  
can be transferred to ownership
- must have a day care at  
no cost / extremely subsidized

Glasford inc should not  
make much of a profit

(3)

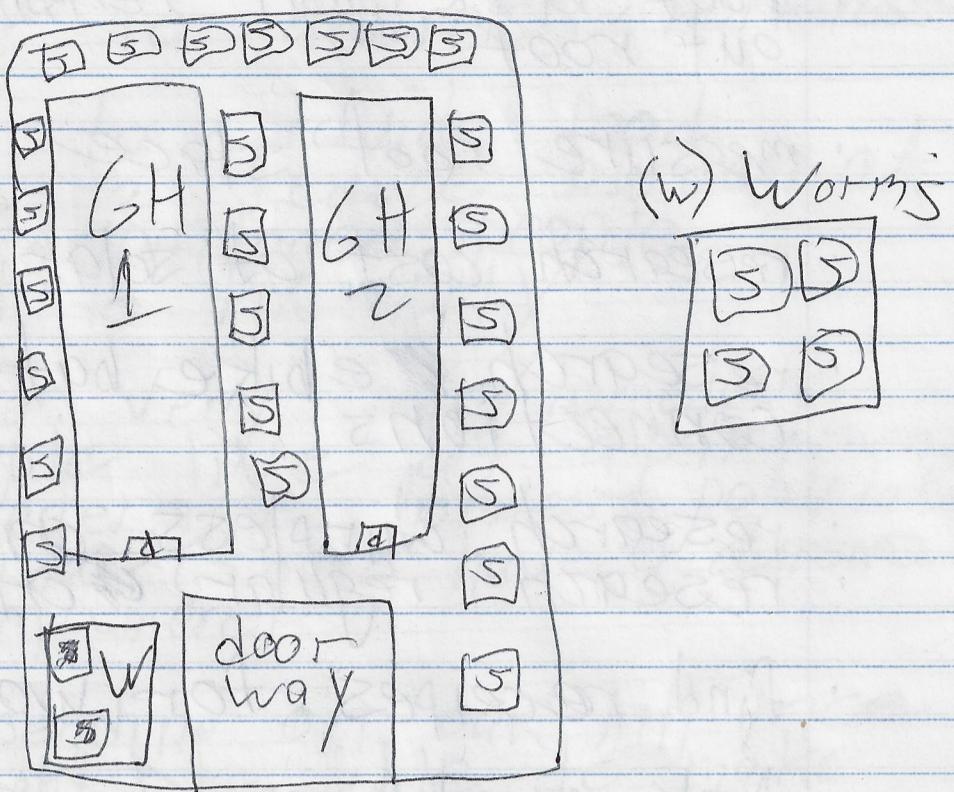
# Glaston INC

- Need to reduce poverty
- need to address homelessness
- need to provide food
- need to reduce burden of disadvantaged people
- need to fix city
  - Idea: Very poor/homeless people live at apartments
    - Determine homeless population size (should have a census somewhere)
  - Depending on oak hill price
    - might be able to make total taxable income zero
- ? how to fix homelessness  
youth going to school

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## Todo with Roof

Roof

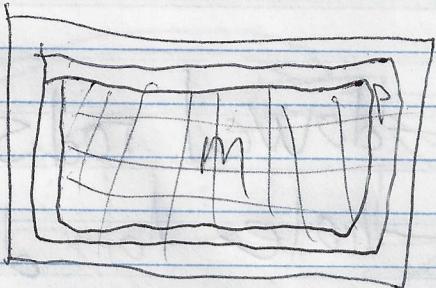


- solar panels
- battery storage for panels
  - might need a car for the battery
- determine space available for greenhouses and remaining space for solar panels

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# Kiwanis Water new bins BP

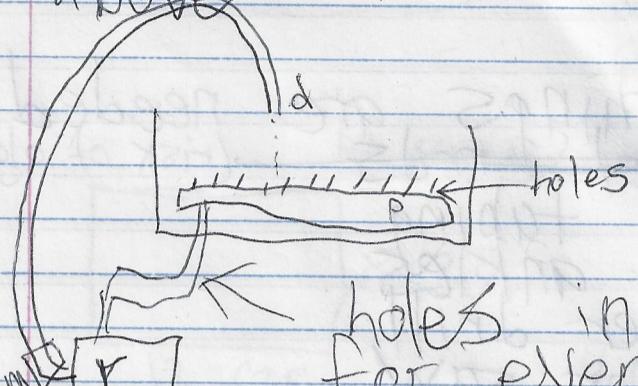
7-17-22



P is pvc  
pipes and  
dowel rods

M is mesh

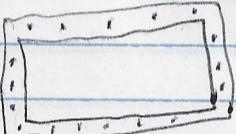
- Plants kept about .5 inches above



Holes in PVC allow for even draining into reservoir

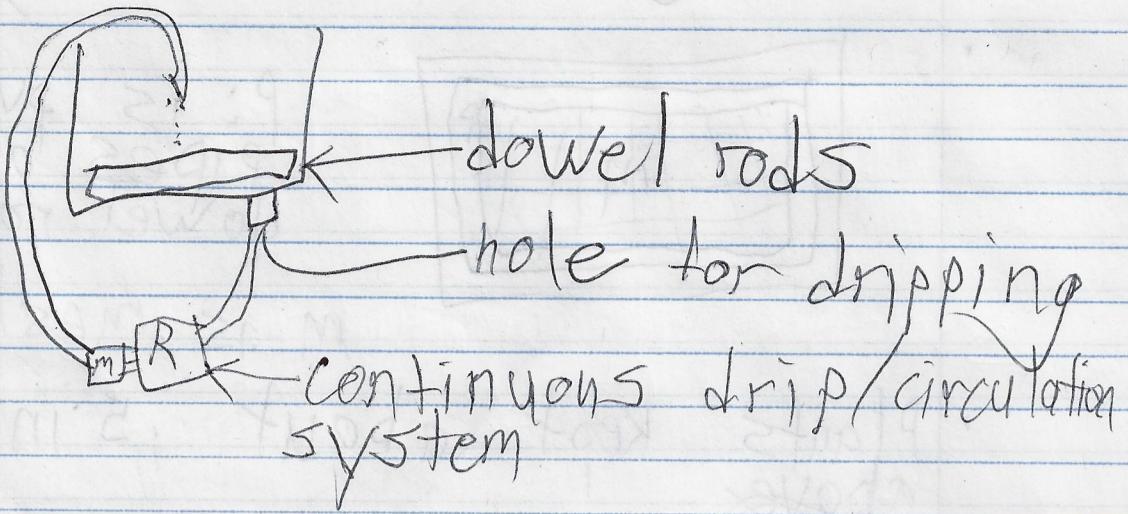
M is small motor constantly circulating water

D is constant supply of circulated water dripping into middle of bin



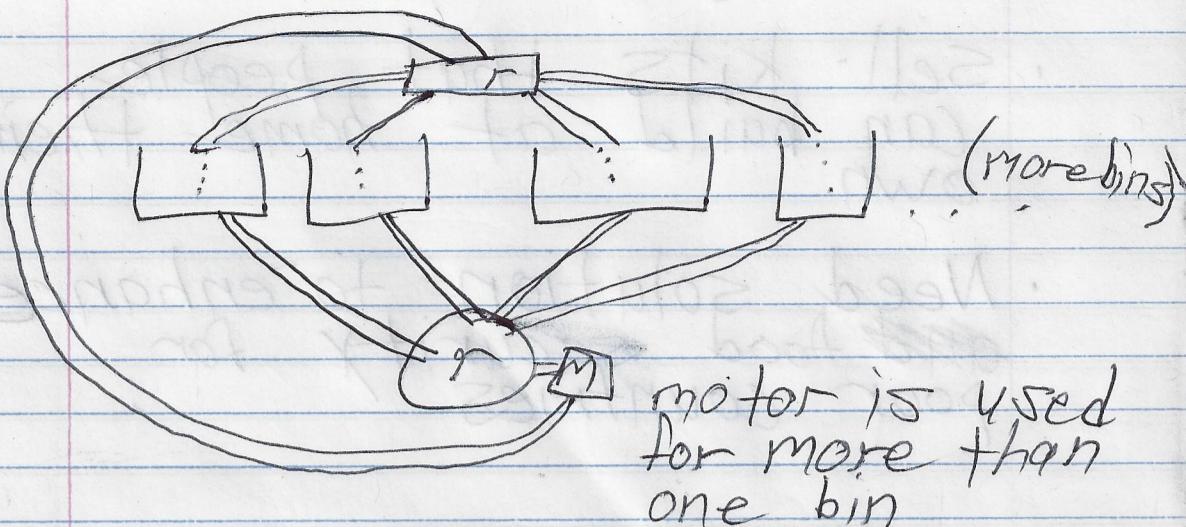
PVC holes on top

## ② New Bins Blueprints 7-17-22

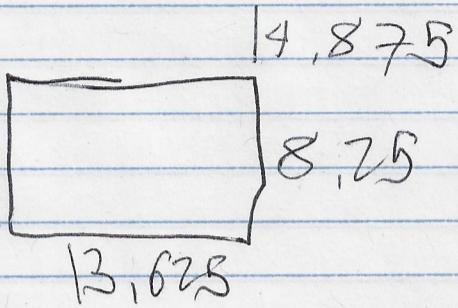


- Couple things are needed
  - ✓ ~~dowel rods~~ (risk of algae growth)
  - ✓ - PVC tubing
  - ✓ - PVC ankles
  - ✓ - power drill
  - ✓ - power saw
  - ✓ - mesh, try a couple different types (mesh, and plastic)
  - ✓ - hot glue gun
  - ✓ - hot glue sticks
  - ✓ - .24" diameter tubing
  - ✓ - simple tubing (just like the air tubing) (should be black)

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New Bins BP 7-17-22  
cont

motor is used  
for more than  
one bin



3/4"  $\times$  1" PVC

$$4(13.625 \times 2 + 8.75 \times 2) \\ 17.5 \text{ ft} \\ \cancel{14.58}$$

2-10' cut into 5'  
~~4x5' L 94" d~~  
~~4x5' L 1" d~~