

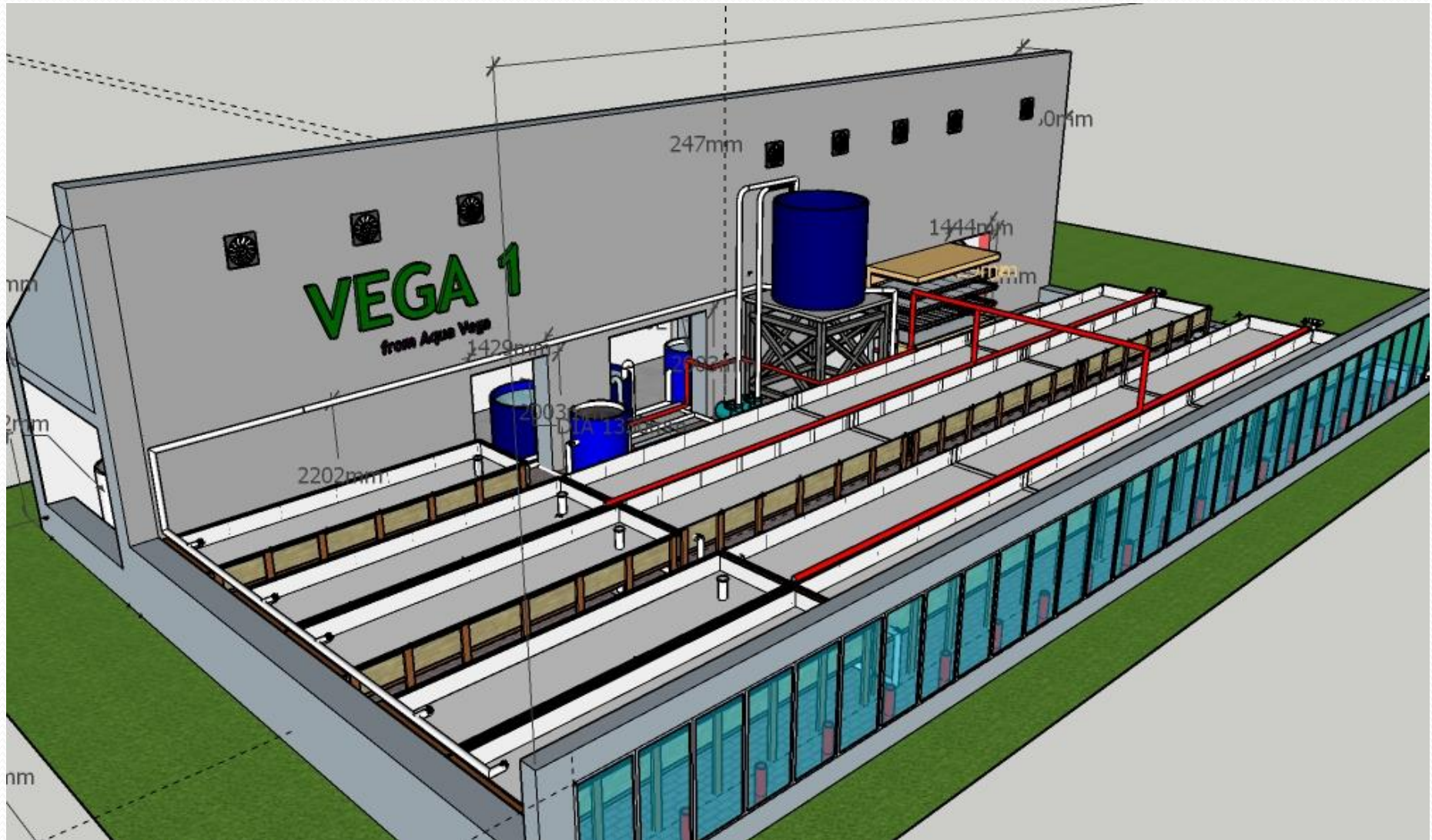


# Vega One

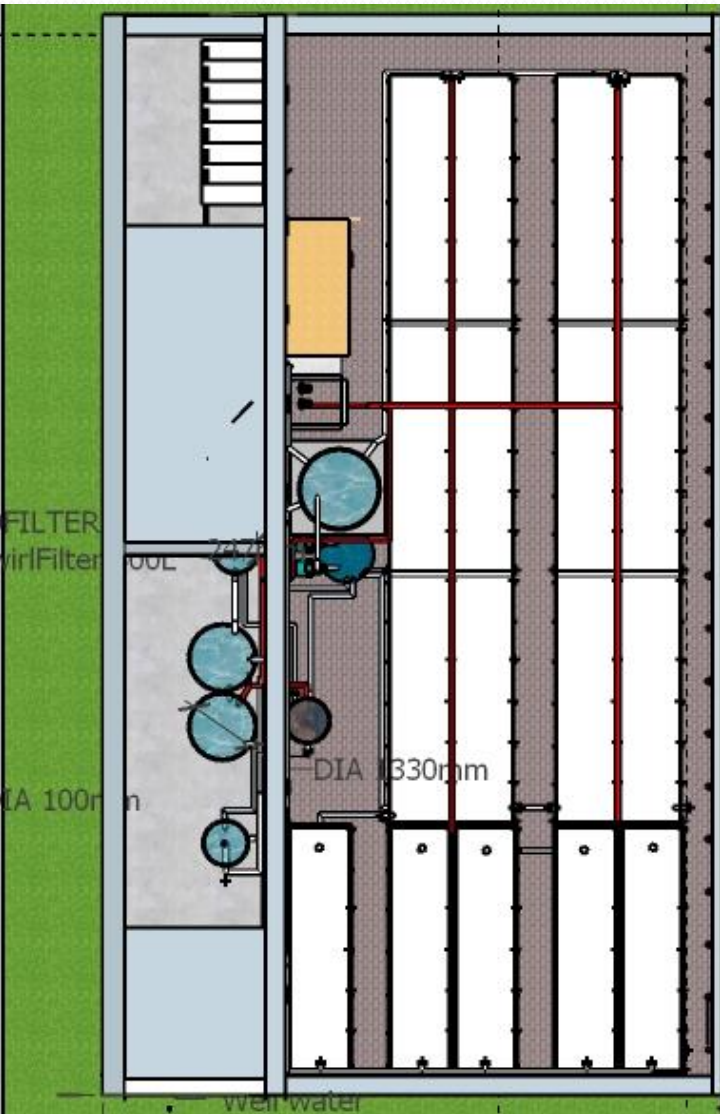
from Aquavega (Mike Ivkin)  
Russia

for commercial use under Aquavega license  
for constructing in  
Kaluga region and in Segiev-Posad

# SKETCH /DIAGRAM OF AQUAPONICS SYSTEM



# SKETCH /DIAGRAM OF AQUAPONICS SYSTEM



S m2 = **252 m2**

S growing area = **97 m2**

Media Beds: **5**

Raft beds: **12**

Header tank: **1**

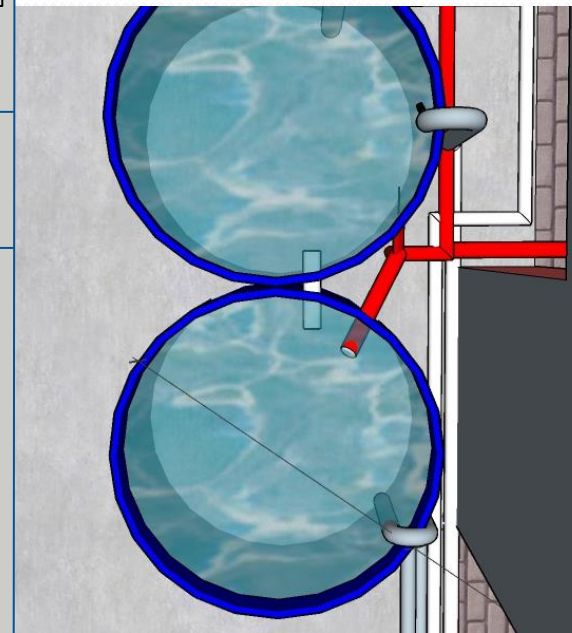
Fish tank: **2**

Settlement Tank: **2**

Mineralisation tank: **1**

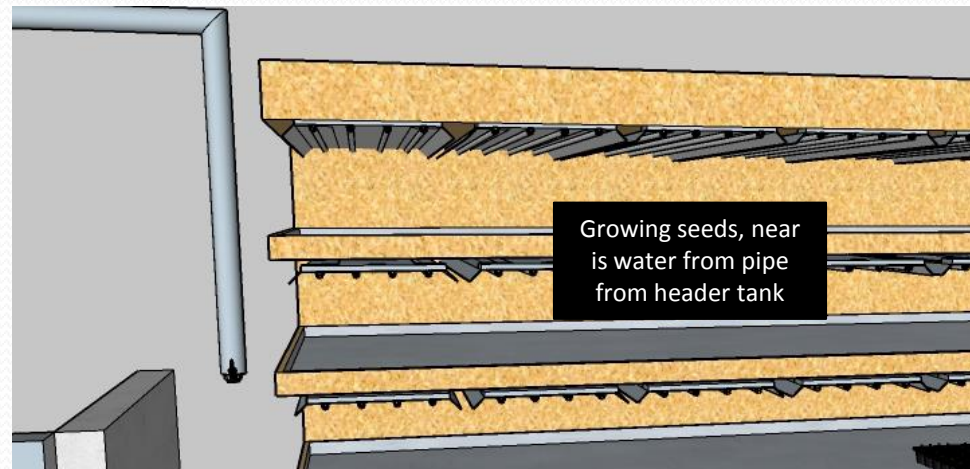
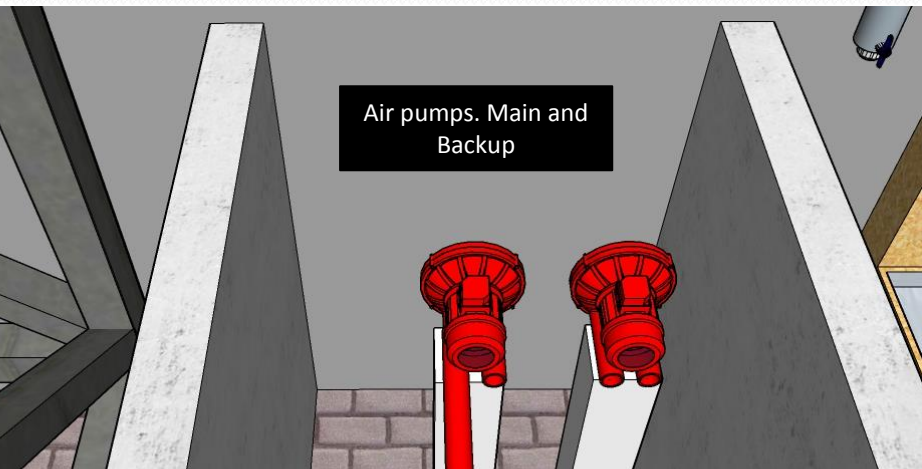
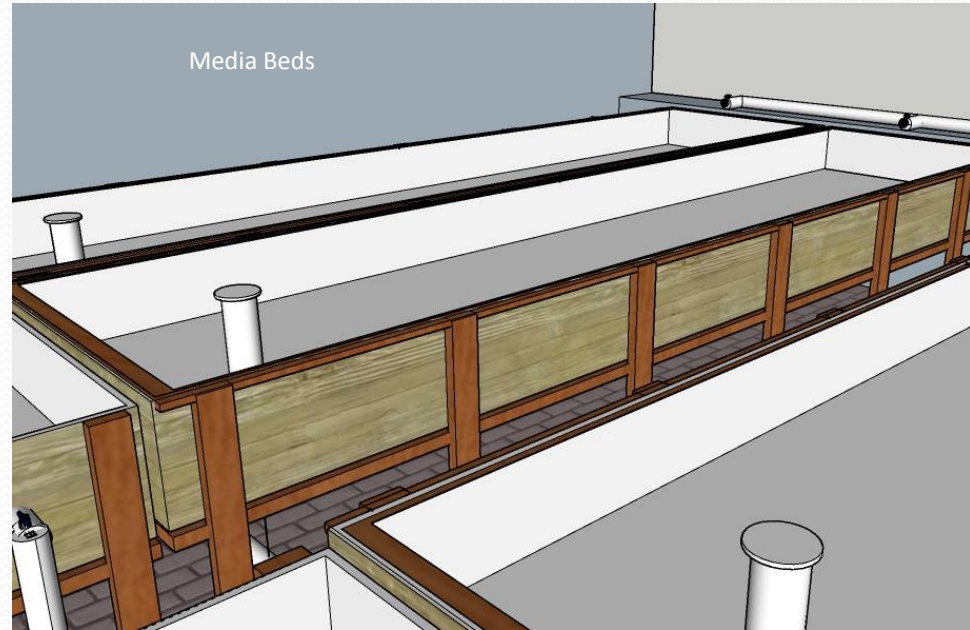
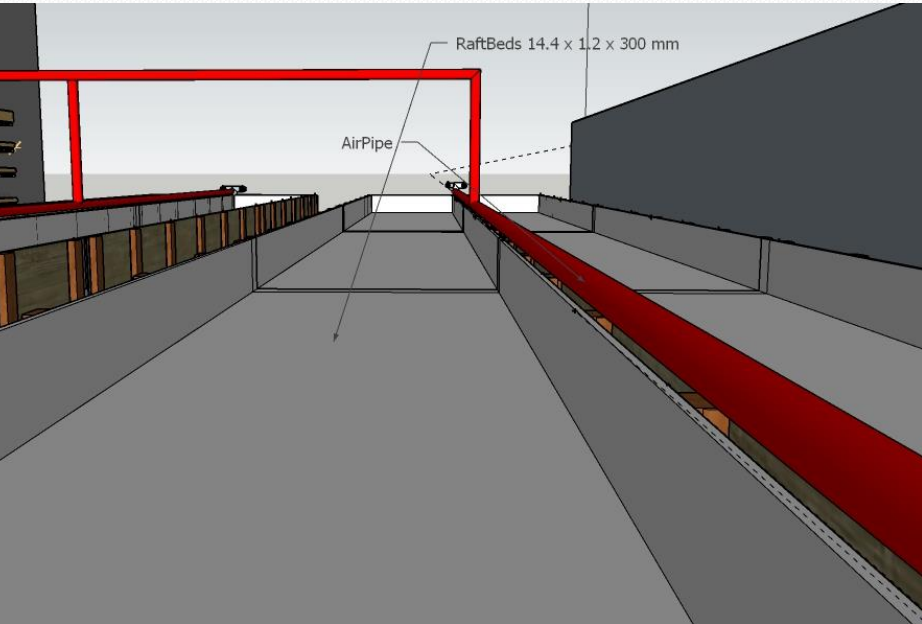
Biofilter tank: **1**

Sump tank: **1**

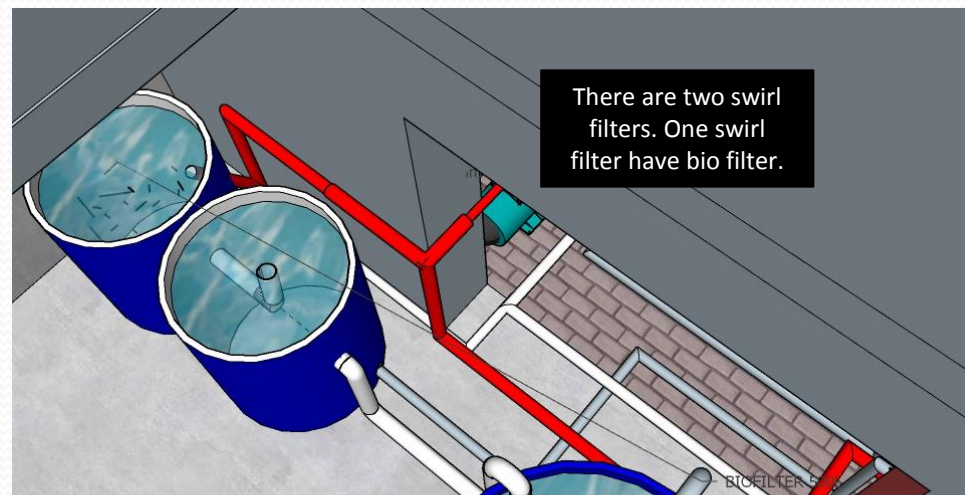
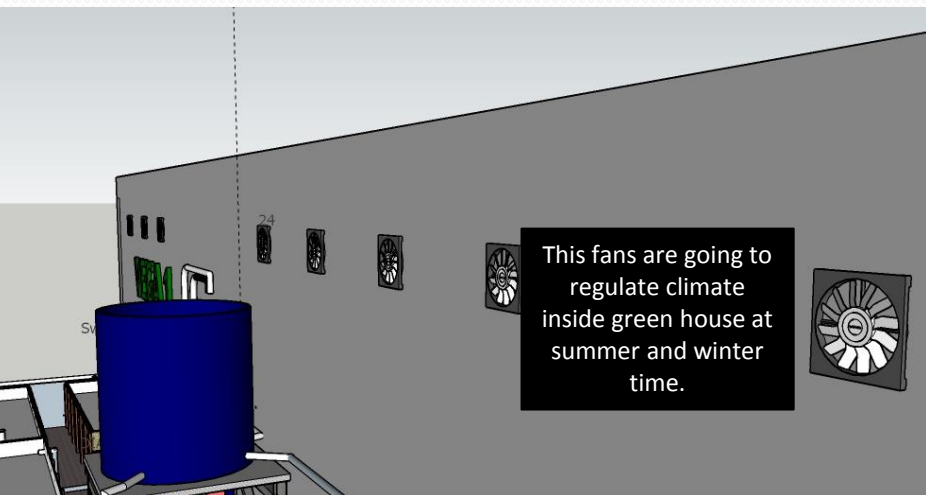
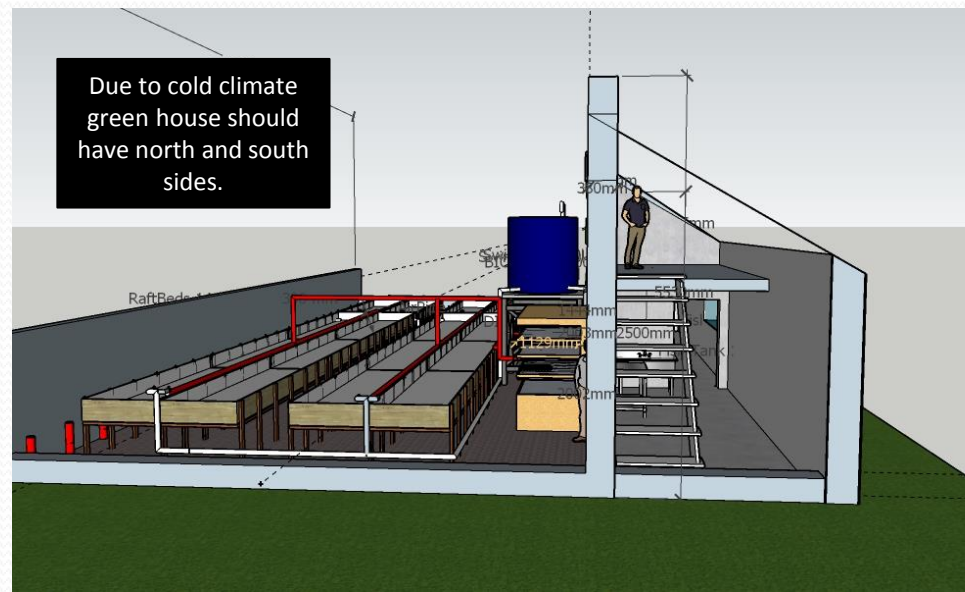
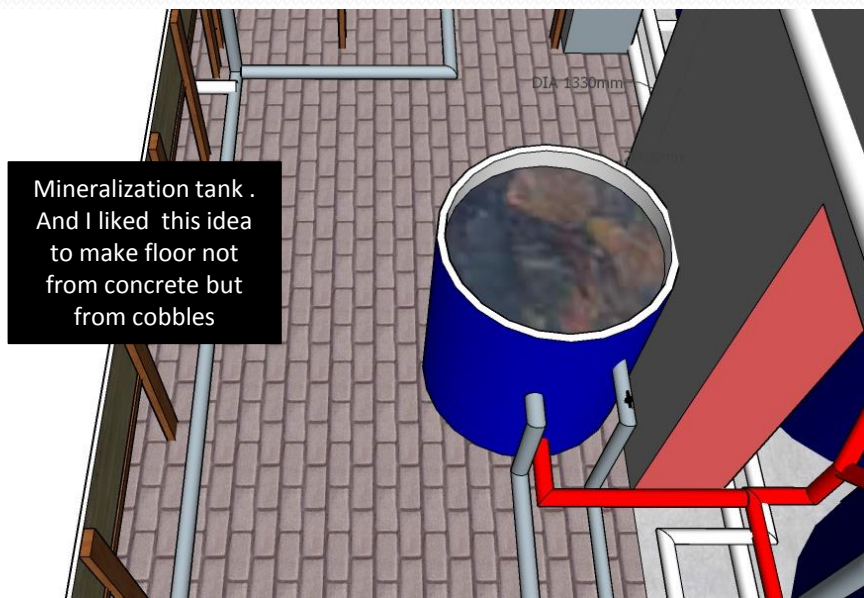




# SKETCH /DIAGRAM OF AQUAPONICS SYSTEM



# SKETCH /DIAGRAM OF AQUAPONICS SYSTEM

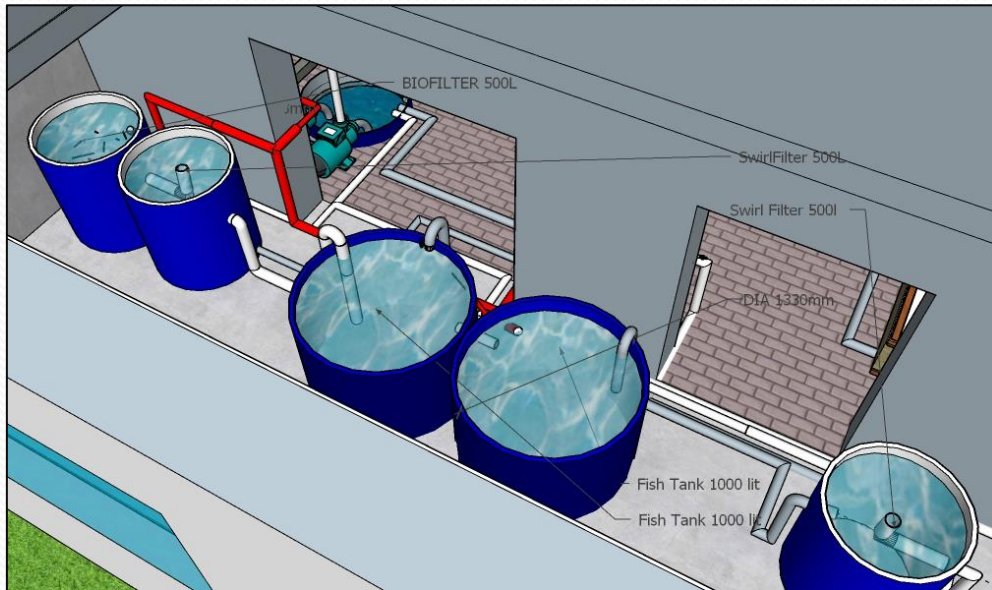




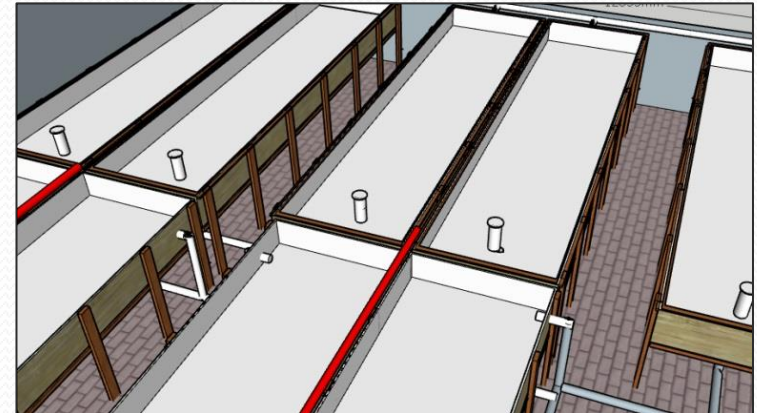
# SKETCH /DIAGRAM OF AQUAPONICS SYSTEM

## Flow:

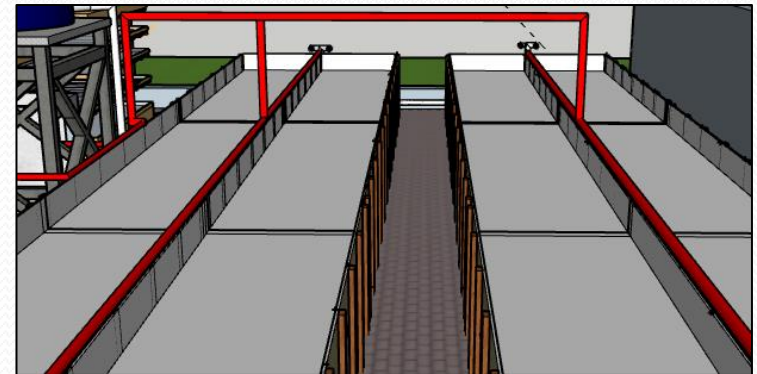
Fish tank , Swirl Filter, Media beds  
Raft Beds, Sump tank



Media beds:



Raft beds:



# SITE MAP

There are two projects I am working. **Vega One** (that mean 100 m2) is for Sergiev – Posad and the second project is **Vega 4** (that mean 400 m2) that is goind to be build in Kalyzskaya area.

## Vega One

Sm2: **800 m2**

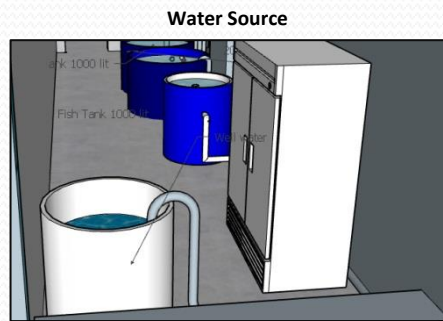
**Water Source:**  
Well water, Lime. Not Tested.

**Electricity:** 15 kWt

**Location:**

- Moscow (60 km)
- Sergiev-Posad(20 km)

**Vehicle access:**  
Yes.



Before 2017



After 2018



## Vega 4

Sm2: **50 hectare**

**Water Source:**  
Well water, Iron and Lime. Not Tested.

**Electricity:** more that 10 000 kWt

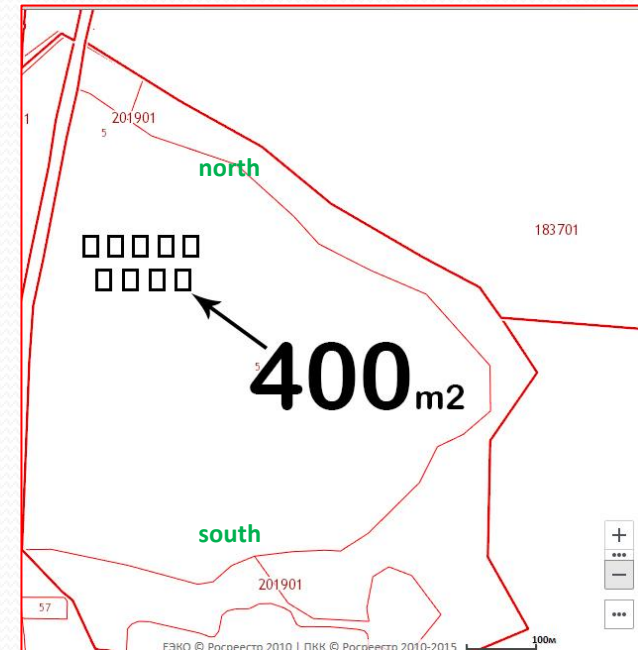
**Location:**

- Moscow (100 km)
- Obninsk (40 km)
- Serpukhov (40km)

**Vehicle access:**  
Soil. Need to be build.

**Additional info:**

Trees are from the North. Sun is not blocked. Land is for Agriculture. At the moment we are trying to get this land from government.



# INVESTIGATE AND RECORD

	Vega One	Vega 4
Is the power supply reliable?	Yes	Yes
What back up systems will you have in place?	Backup system for AIR and Electricity. Additional generator	
What species of fish are suitable for your climate and what are available, or permitted to be grown?	Common Carp, 500-600 gr, in 9-11 months, Bottom-feeding. Later it will be trout and macrobrachium rosenbergii	
Will you need to heat the system?	Yes we are going to use several options. Geo-Thermal Heating from the Sun and Ground. This system invented Russian physicist A.V.Ivanov. (1898-1971) You put hot air from the sun and store it in the ground. Later when night come you use that heat from the ground. The average temperature can be from 18C to 23C . In addition we are going to use heat floor, and GEO – Liquid heating.	
What are you going to grow?	Salad, Lettuce then Tomato, Peper	Frisee, Kale, Rocket Arugula, Basil, Salvia officinalis, tomato, pepers



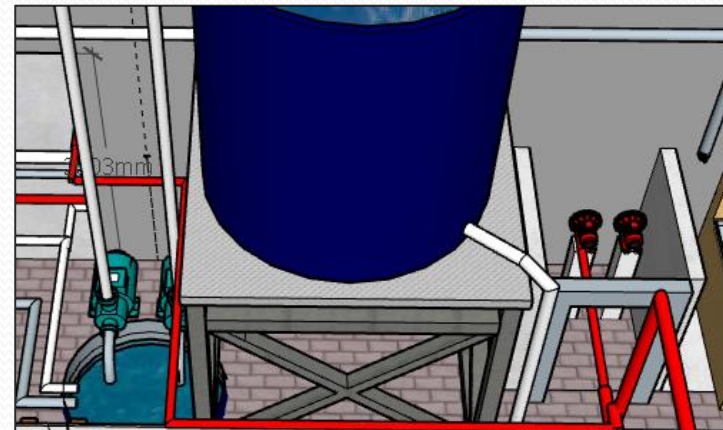
# INVESTIGATE AND RECORD

	Vega One	Vega 4
<b>What will the beds be constructed of?</b>	Beds will be constructed from wood.	Beds will be constructed from fiberglass. More experience in building this project.
<b>What are your tanks made from?</b>	Tanks are all from plastic. From one russian company.	Tanks are all from plastic. From one russian company.
<b>What pumps and air blowers will you use?</b>	Pump and airblowers will be from Grunding.	Pump and airblowers will be from Grunding.

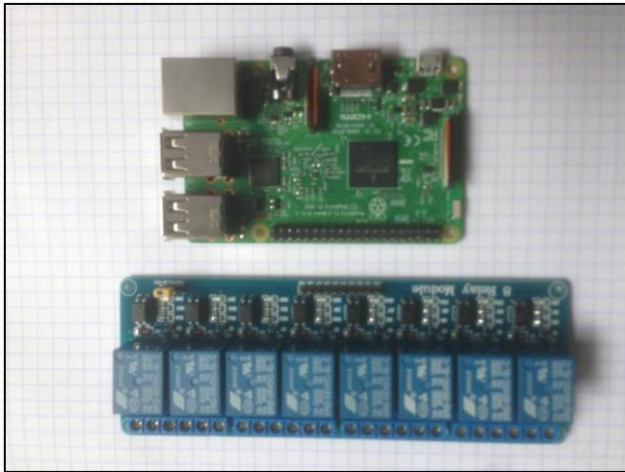
## Indicate the pumps and air blower positions.

Sump pump from the left side, the main and the reserve , and air blowers from the right side inside small facility because they can be very noise.

Vega One



# MANAGEMENT PLAN



## **This is Raspberry PI 3 Model B 1Gb with relay.**

It is the most simple and reliable way to control everything in your green house and in aquaponics system. This is only small parts. I have just started to build this small computer. This is something I know how to build. It is going to control: flow, humidity, temperature, lights when to turn off or on, and I have found original module that can measure ph. It will send all reports right away.