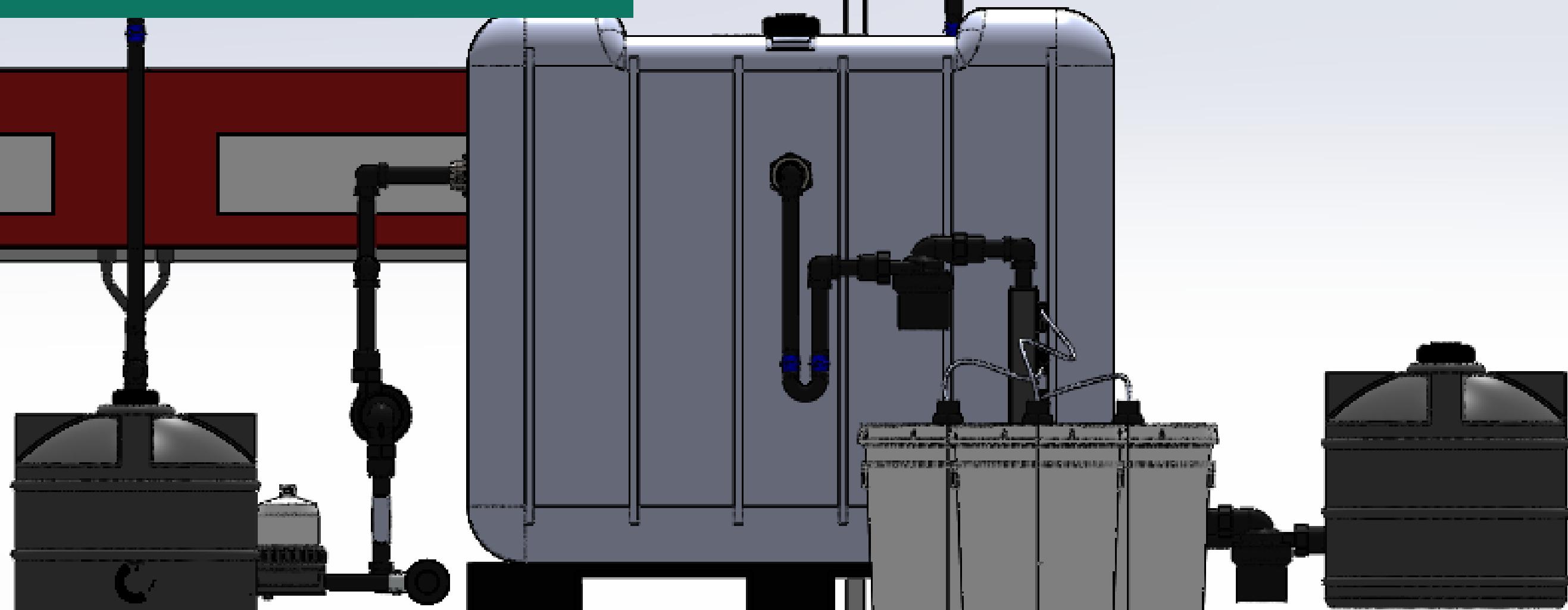




**QVFT**

## SPONSORSHIP PACKAGE



# ABOUT US

## OUR MISSION

Founded in Sep. 2019, QVFT is Canada's first student-led university vertical farming design team. Our mission is to develop a functional, small scale vertical farm. Drawing inspiration from the best current commercial practices, our goal is to gain a foothold as an innovator in a rapidly expanding industry.

Despite the pandemic, QVFT has made huge strides towards fulfilling its mission. The mechanical design has now been mapped out as a 3D CAD model, and the automation system has reached basic functionality.

Our fundraising goal for 2021-22 is \$5,000, which will be used to manufacture our first physical prototype.



# WHY VERTICAL FARMING?

## THE PROBLEM

A global trend of increasing concern is the diminishing supply of arable land per capita. Due to climate change, urbanization, and soil degradation, the United Nations Food and Agriculture Organization (FAO) projects that by 2050, arable land per capita will fall to one third of the amount available in 1970. A 2018 report by the Intergovernmental Panel on Climate Change (IPCC) raised further alarm, predicting that humanity will reach an environmental "point of no return" within the next two decades.

Given the existential threat of climate change, and the enormous toll taken by unsustainable agriculture on the environment, global food security in the coming decades will largely depend on our ability to adapt and overhaul existing cultivation practices.





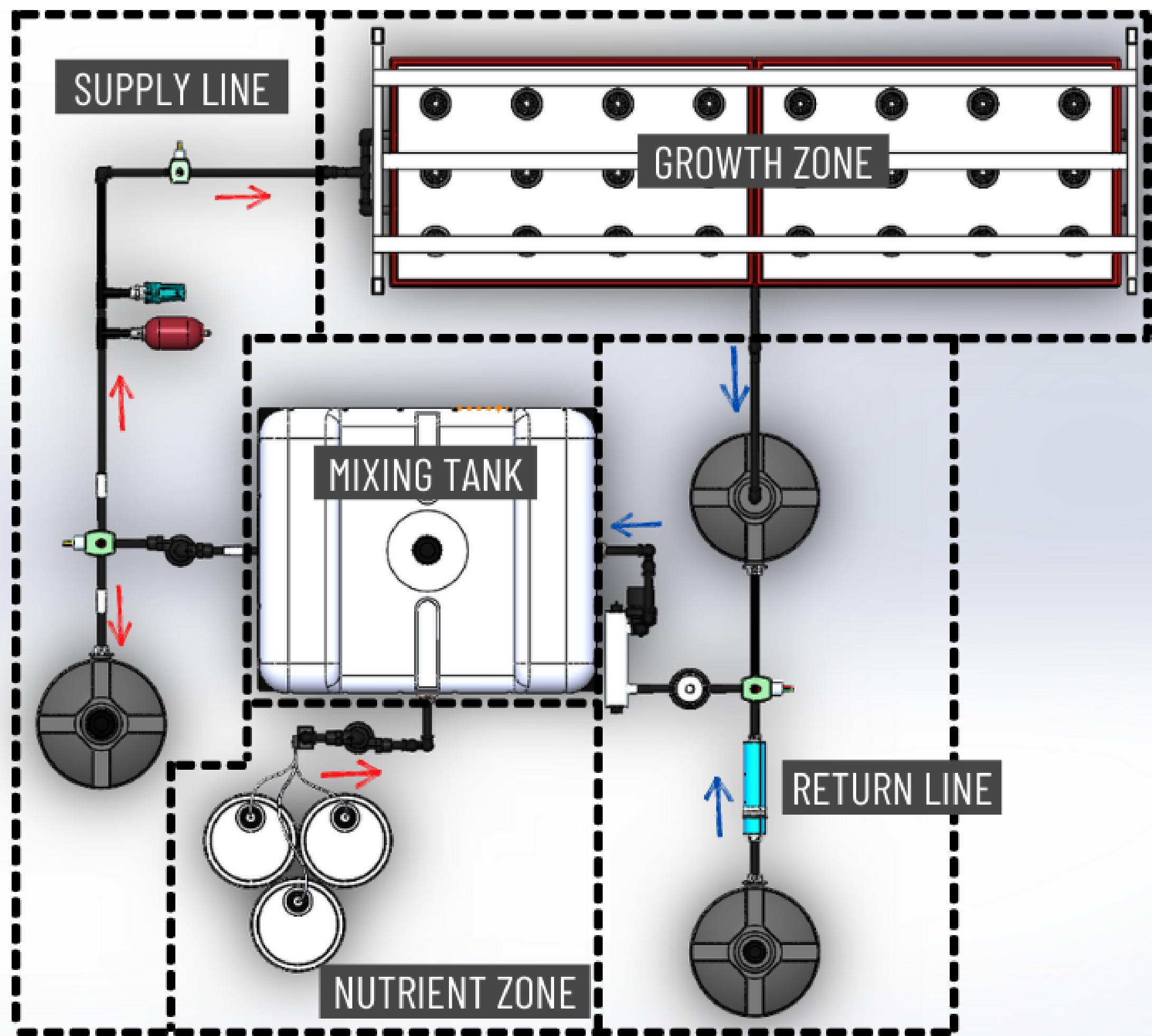
## THE SOLUTION

Vertical farming is a cultivation practice in which crops grow in an indoor, urban, climate-controlled facility. This approach is associated with dramatically reduced water consumption, slashed transportation costs, organic produce, massive improvements in per-acre land productivity, increased plant productivity, and the freedom to cultivate crops in any location, year-round. These benefits are made possible through controlled-environment agriculture (CEA), which allows for the artificial optimization of environmental inputs such as lighting, temperature, moisture, and nutritional availability.

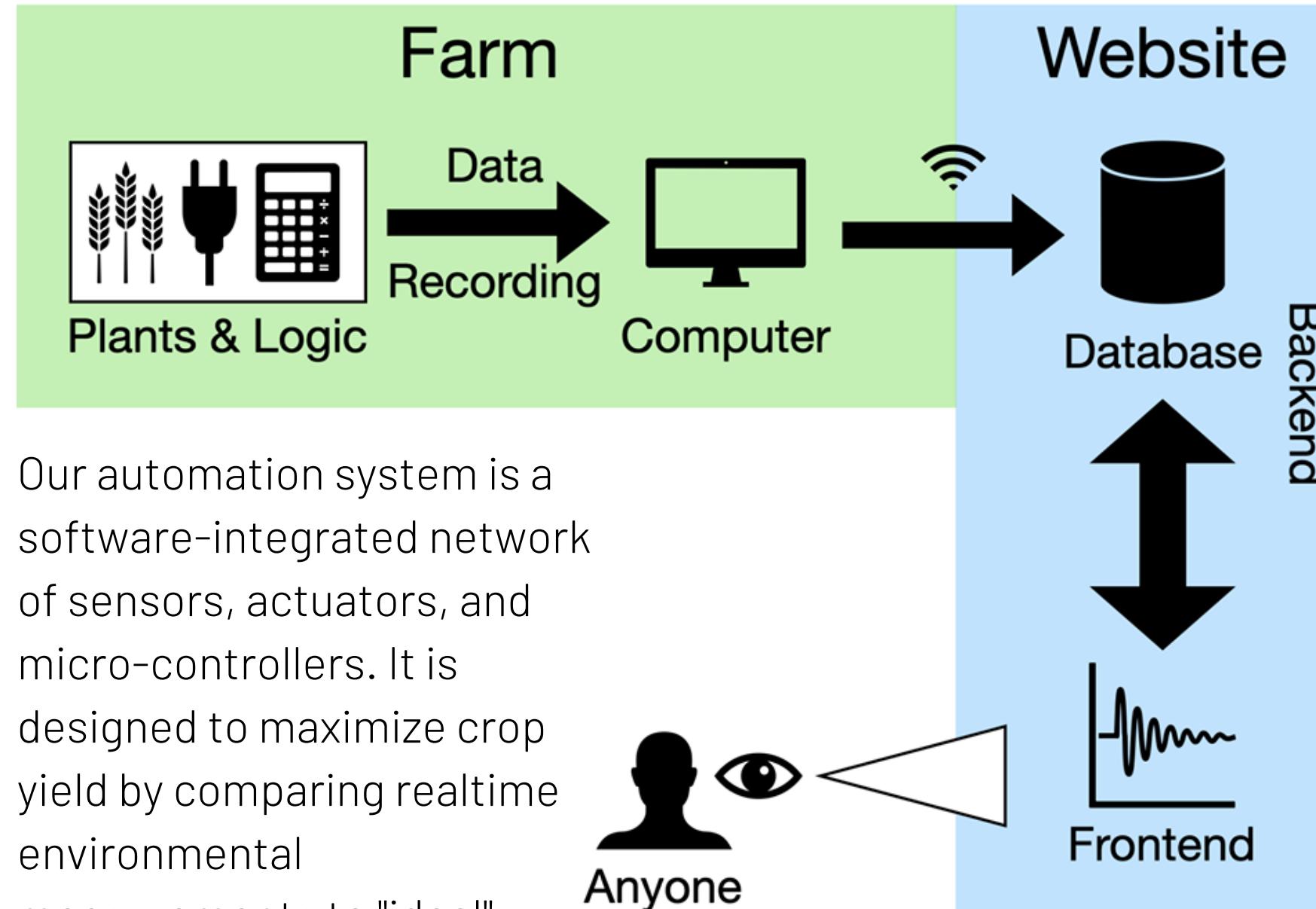
# WHAT WE DO

## AEROPONIC SYSTEM

QVFT employs an aeroponic cultivation method, in which nutrients are dissolved in water (fertigation) and misted directly onto roots via spray nozzles. Crops rest on a thin, porous substrate, through which their roots dangle in a basin below. Requiring no soil, this approach allows the grower near-complete control over the specific nutrient mix a plant receives. Shown on the right is an early-stage schematic of our proposed design.



## FARM BRAIN: SYSTEM MAP



## Plants & Logic

## Computer

Logical Farm Operation

Collects sensor data from farm

Arduino circuitboards

Formats to be human-readable

Interaction Between Parts

Connects to internet (unlike circuitboards)

Ex: Water Level too low ->  
Turn on pump

Upload sensor readings to database

## Database

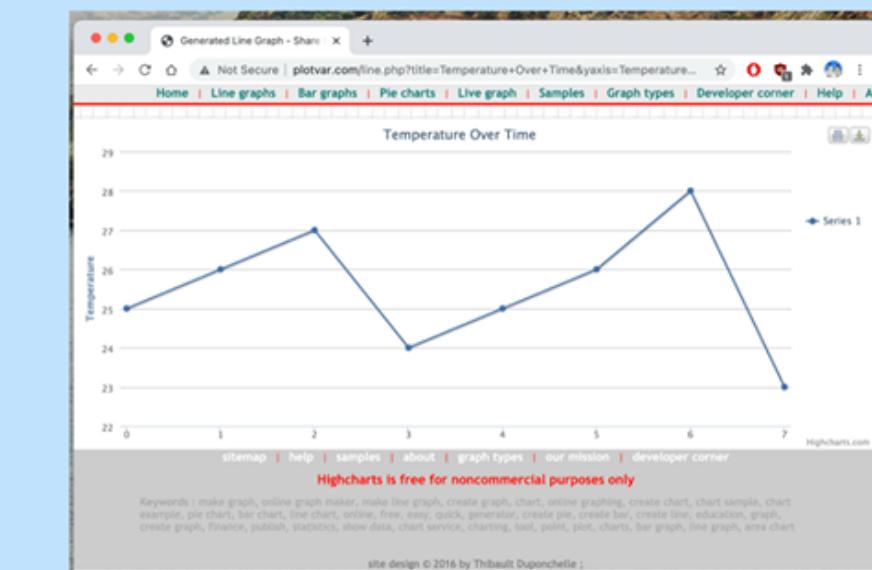
Raw Data Storage Online

Basic Format Only

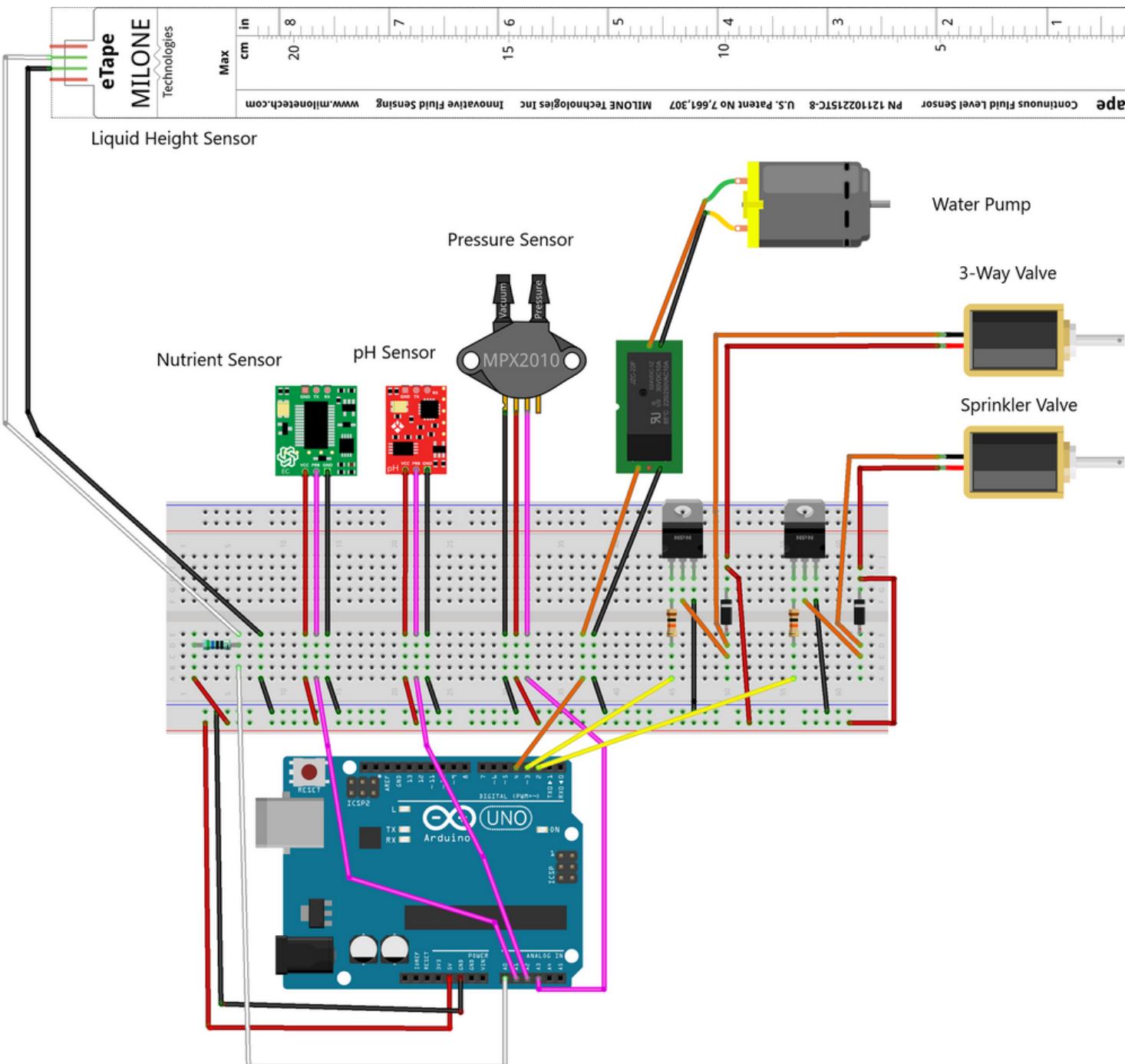
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1	light	2021-01-18 12:00	53
2	temp	2021-01-19 12:01	24.8
3	light	2021-01-20 12:01	53

## Backend

Facilitates communication between user-facing front-end and raw data



# FARM BRAIN: SENSORS & CONTROLS



## WHY WE CHOSE TUSCAN KALE

Vertical farming is a cost-intensive cultivation method. Current industry practices focus on small, premium crops that have short growth cycles and high automation potential.

Leafy greens are perfect for these systems due to their brief growth cycle of 50-65 days and high-market value. After extensive research, we have selected Tuscan Kale as our first cultivar due to the growing popularity of the product, the hardiness of the plant, and its suitability to our system. Future crops that we would like to explore include sprouts, strawberries, and nutrient-enhanced greens.



aerofarms.com

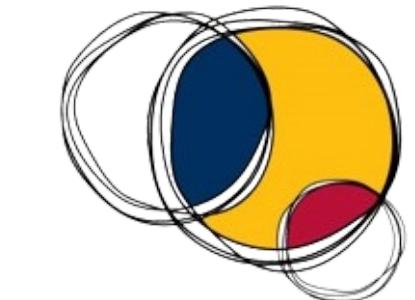
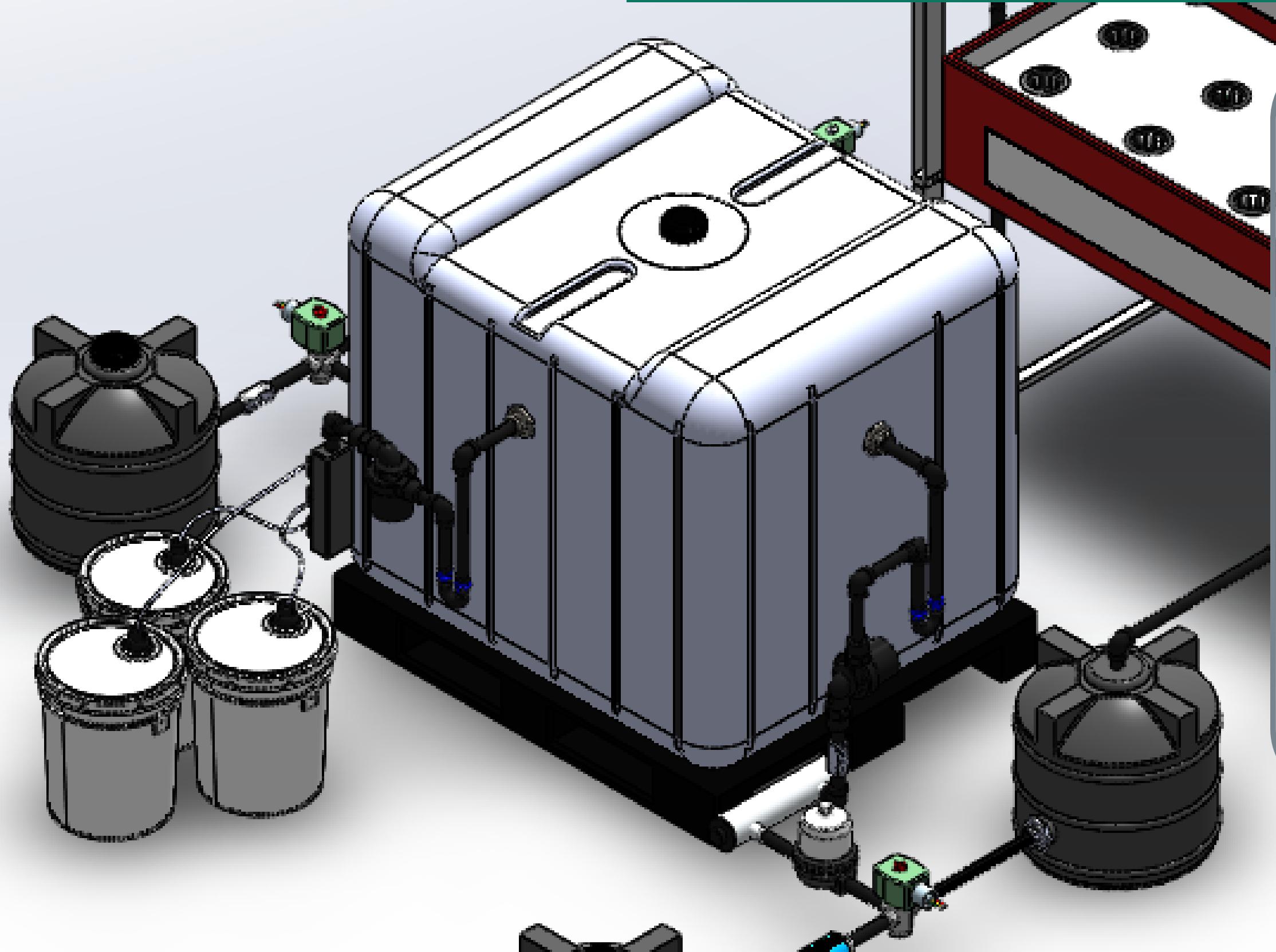
# PROMOTIONAL OPPORTUNITIES

**Conferences:** Prior to COVID-19, we attended the Queen's Water Environment Conference (QWEC), the Commerce and Engineering Environmental Conference (CEEC), and the Queen's Healthcare and Business Conference (QHBC) where we distributed materials, recruited students and informed attendees to the benefits of vertical farming.

**Online Presence:** QVFT has a website and several hundred followers on LinkedIn and Facebook.



# CURRENT PARTNERS



Dunin-Deshpande  
Queen's INNOVATION CENTRE

**ZIP GROW™**

**Queen's**  
UNIVERSITY

FACULTY OF  
ARTS AND SCIENCE



THE ENGINEERING SOCIETY  
OF QUEEN'S UNIVERSITY



**SIMBL**

**iGrow**

# SPONSORSHIP TIERS

Bronze

\$100+

- Display logo on website
- Print logo on team apparel
- Place logo on promotional materials

Silver

\$500+

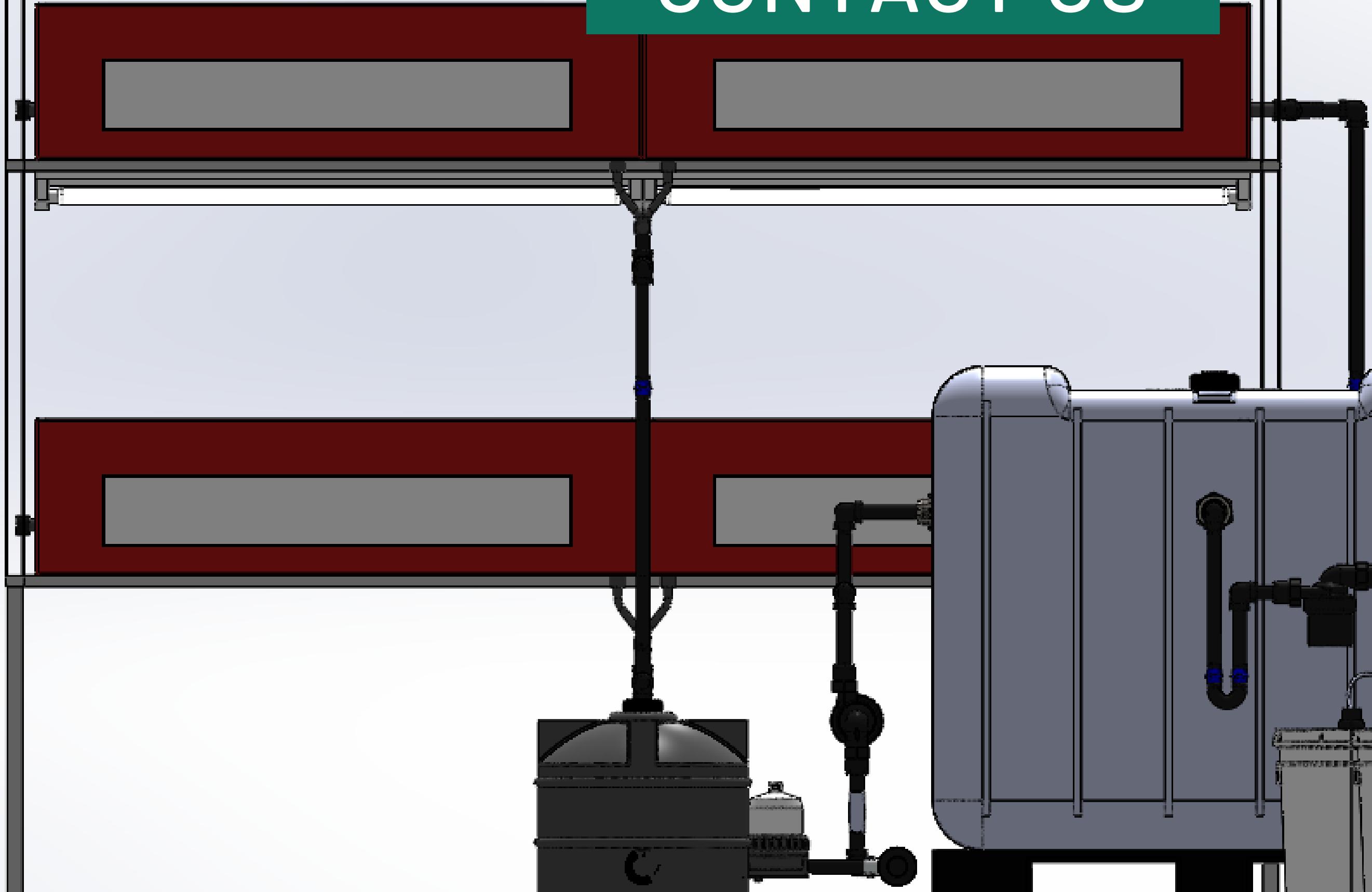
- Display logo on website
- Print logo on team apparel
- Place logo on promotional materials
- Provide social media coverage throughout the year

Gold

\$1,000+

- Display logo on website
- Print logo on team apparel
- Place logo on promotional materials
- Provide social media coverage throughout the year
- Imprint logo on completed system

# CONTACT US



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