

### ENERGY SMONTH

Turning on the switch to cleaner energy.

### 2021





### Oct 27th, 12-1PM **Pathways to Sustainability: Local Solutions**



### Welcome to a SUSTAINABLE LIFE

1

solar energy

**S** BATTERY

**STORAGE** 

CALUMINUM RECYCLING

INVERTER DRIVEN HIGH

FNCY AC UNITS

' NIGITAI CAMPUS'

### SOLAR CARS AND CHARGING STATIONS

**5 100%** OF SEWAGE RECYCLED FOR IRRIGATION PURPOSES



RETENTION POND TO REDUCE WATERSHED POLLUTANTS

LIGHTS

**VIRGIN ISLANDS MONTESSORI SCHOOL & PETER GRUBER INTERNATIONAL ACADEMY** 

COMPOSTING

RAIN ROAD RUN-OFF CATCHMENT FOR IRRIGATION PURPOSES

ATER CISTERNS / SOLAR REFRIGERATOR CARTS / RECYCLED ASPHALT DRIVEWAYS / REPURPOSING USED UTILITY POLES /

# HILLING HIPLING olar Energy



Solar charging stations for electric cars - staff can charge all day!

1009

TFM 570



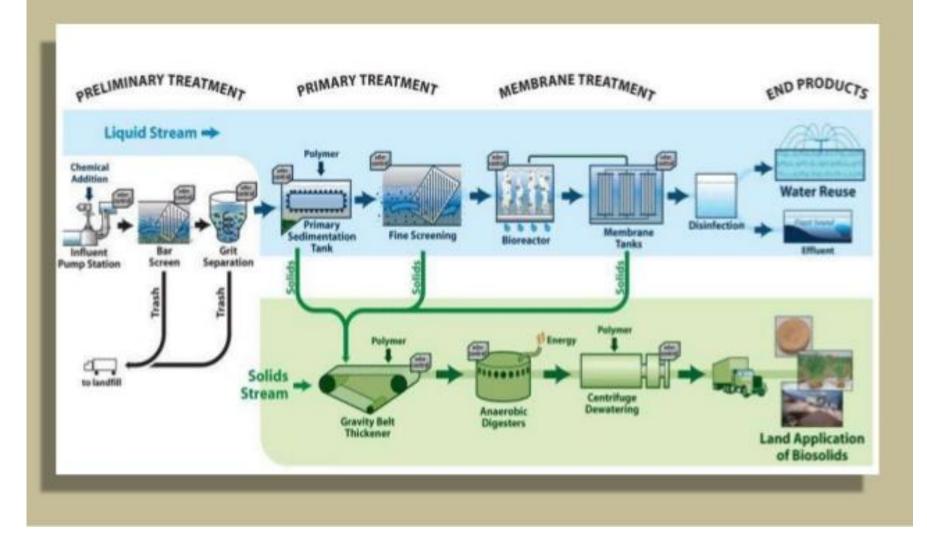
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# - HARD Han HIPLEY COMPANY Sewage Recycling

### **Sewage Treatment Plant**



# HIRING HIPPING Retention Pond











### HILPING HIPPING ender Aspest Pervious Drive

### HIHHmanHIHLIGH <u>Organic Gardenne</u>

# HIHHMMAN Beehives

# HARD Han Harden Bar Bathouses

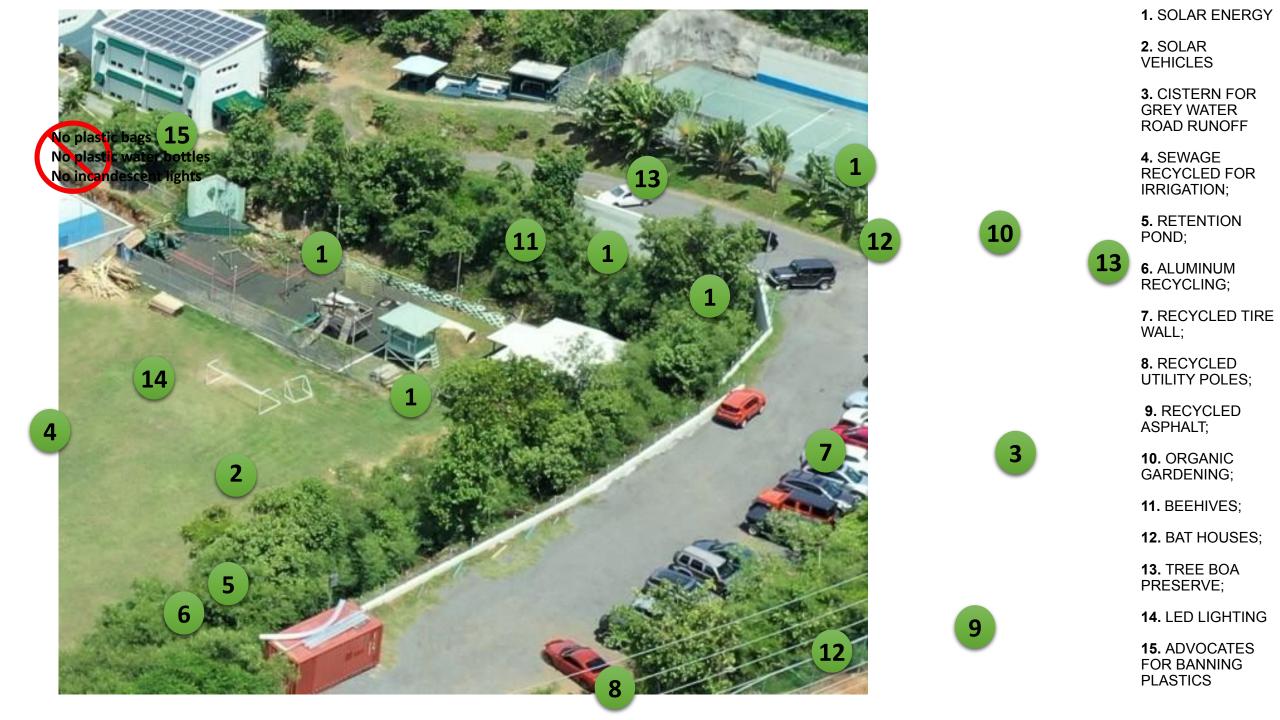
# The ALLER Man Hall Contraction Free Boa Preserve











### Three Growing Technologies for Education, Sustainability & Resilience



Ken Mills Head of School kenmills@giffthillschool.org **Three Pillars** of a **Gifft Hill** School Education



- Academic Rigor
- Experience-based
- Commitment to Community

EARTH



### Our Signature Experience-Based Program

- Environment And Resilience Through Horticulture
- 10+ Year Partnership with Iowa State University

EARTH Program Toddlers to 12<sup>th</sup>Grade





Multi-Disciplinary Learning

- Science
- Math
- Art
- History (Virgin Islands!)









ART Work Built into Terraced GardenWall





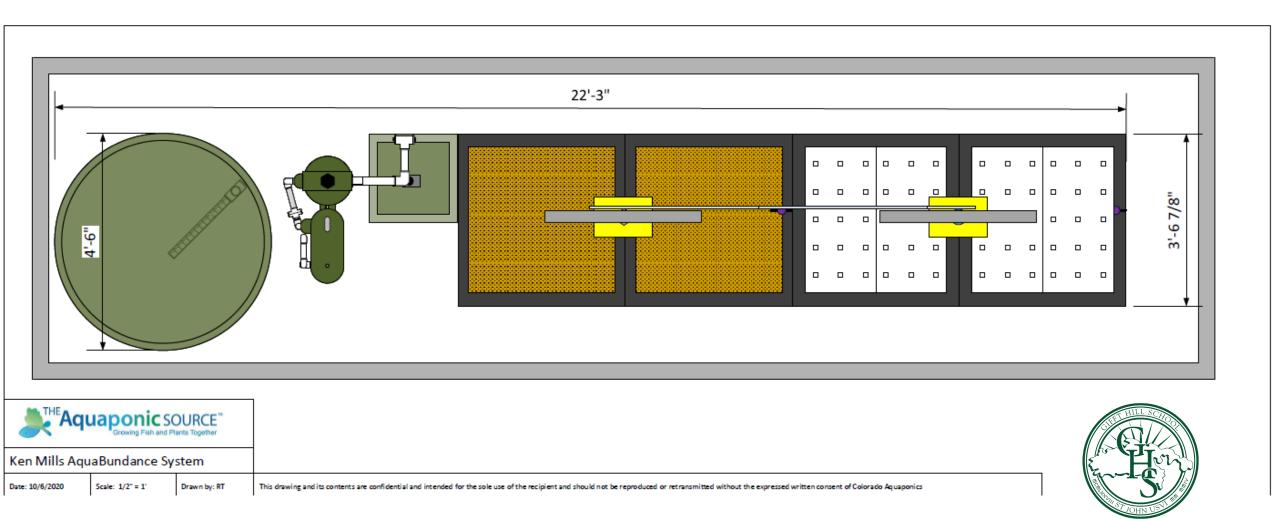
Aquaponics: @ GHS

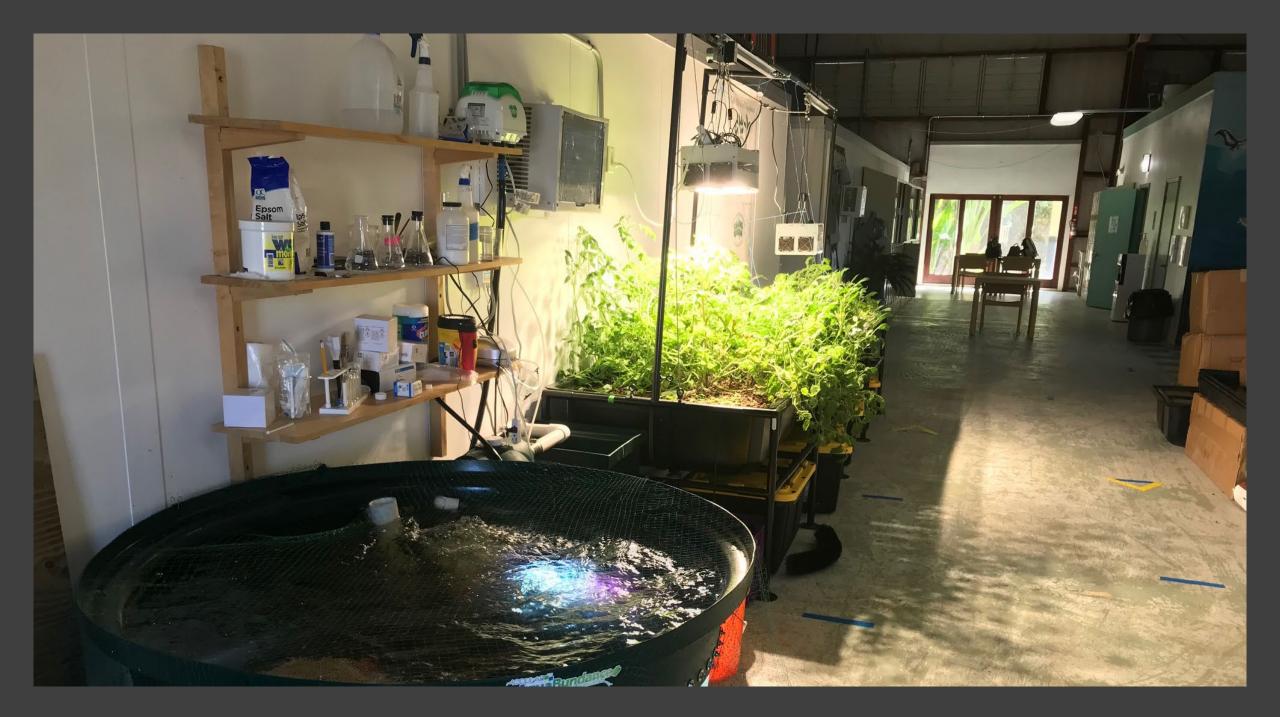
An (almost) closed system





- Soil Free
- Solar Powered Lights & Pumps
- Low Water Use (100,000 Gallon Cistern)

















**Aquaponics:** @ GHS Like the EARTH program is vertically integrated into the curriculum





- 1<sup>st</sup> Grade
- 5<sup>th</sup> Grade
- Upper Campus: 6<sup>th</sup> 12<sup>th</sup> Grade



10 Gallon Fish Tank Aquaponics System for 1<sup>st</sup> Graders



# 50 Gallon Aquaponics System for 5<sup>th</sup>- Graders



# FARM-BOT

An open-source CNC farming system utilizing a programmable farming "robot"



### Multi-Disciplinary Learning

- Horticulture
- Programming
- Robotics
- Electrical and Mechanical Engineering





# EARTH, AQUAPONICS, & FARM-BOT @ GHS



## Three Growing Technologies for Education, Sustainability & Resilience

- Multi-Disciplinary Learning
- Vertically integrated through the curriculum
- Community/Culturally appropriate agriculture



# Caribbean Green Technology Center Energy Month 2021

Automated Robotic Water Distribution Plant Plaza Extra East Presented by the Yusuf Family St Croix, USVI





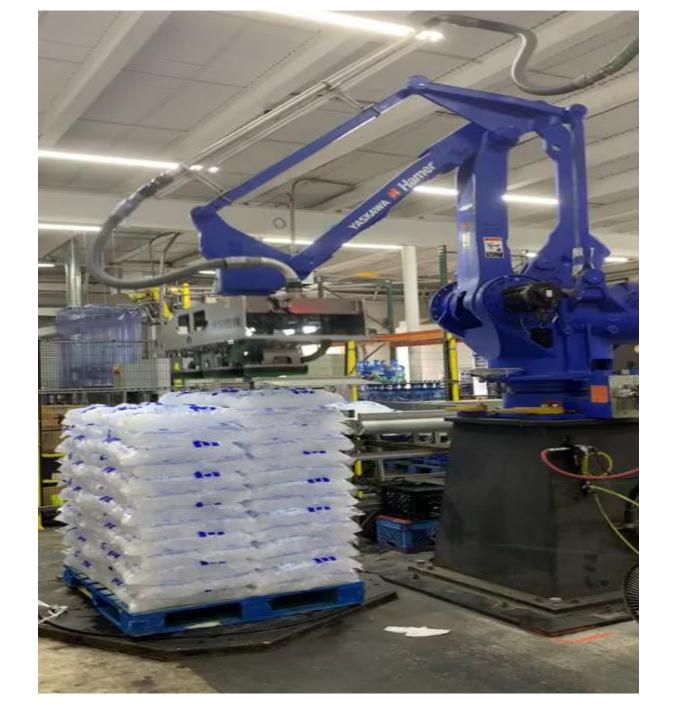


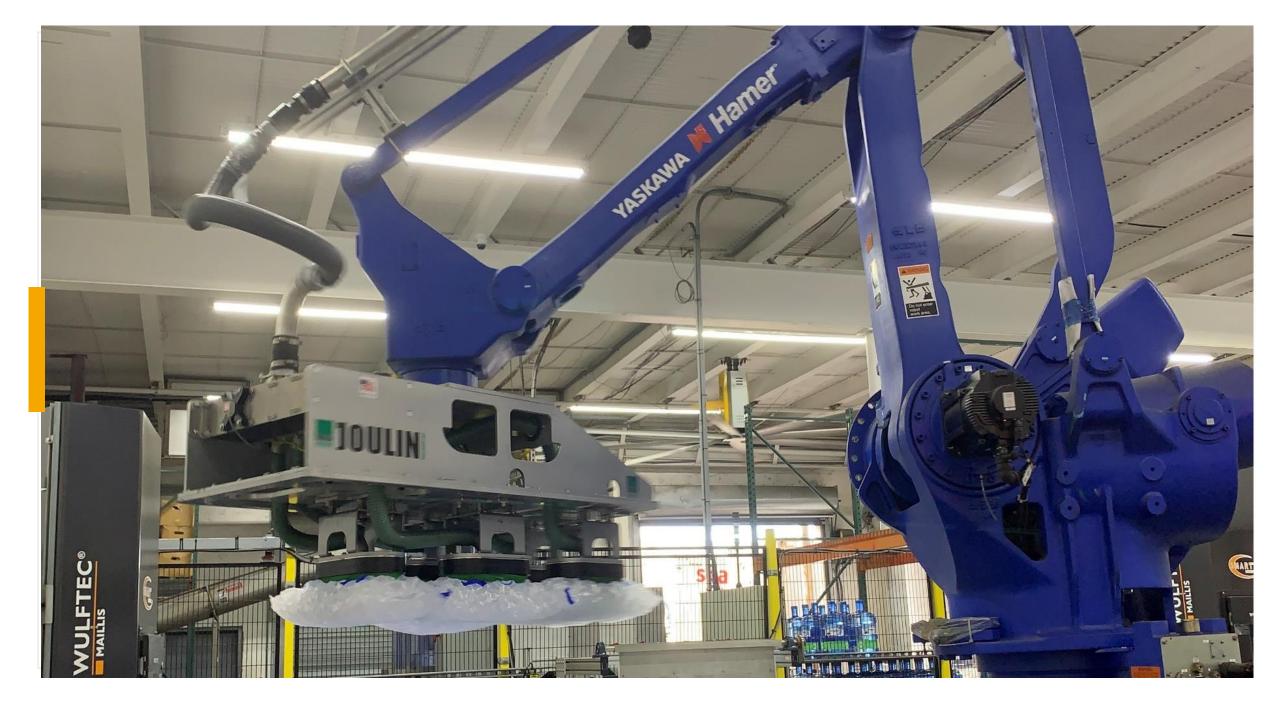














On behalf of the Yusuf Family

• Questions -- Thank you!



PATHWAYS TO SUSTAINABILITY Caribbean Green Technology Center

October 27, 2021

Leatherback Brewing Company Aaron Hutchins Co-founder and Managing Partner



#### **Our Mission**

To produce well-crafted beer with authentic Caribbean influences and unique island-grown ingredients alongside traditional beer styles. To deeply engage our island communities and celebrate culture with our brand <u>and to cherish and steward Caribbean life!</u>





Major Milestones: March 2017– Leatherback established March 2018– On-island brewing began July 2018– St. Thomas sales began November 2019– Exports to Puerto Rico began October 2020– Exports to Florida began November 2020– St. Thomas brewery opened

#### **Production**:

- Current rate of 5,200 BBLs
- 2022 Target of 7,500 BBLs
- Space capable of 15,000+ BBLs





LeatherbackBrewing.com / Caribbean Crafted



#### Renewable Energy Systems:

- 75KW System in STT- Status: Online
- 225KW System in STX- Status: Installation Ongoing
- 900KWH of energy storage capacity.
- Carbon Offset of 500,000 pounds/year in the VI!
- Power Purchase Agreement (no upfront costs)
- Cheaper, higher quality and more reliable power

PENITH 100% L





#### Locally produced is far more sustainable!

- Main ingredient by volume and weight is VI rainwater. Full-service brewery is more sustainable!
- Kegs offer a durable, closed-loop reusable package system
- Premium consumer experience
- Higher volume efficiencies than cans
- 1000+ Leatherback kegs in circulation









"Show Your Island Love" Reuse and Recycling efforts:

- On St. Croix we are a significant community recycler
- Aluminum cans are 100% recyclable in the Caribbean!
- Cans are safer, more efficient and better for beer
- Brewery grain given to local farmers
- Heavy staff and volunteer engagement













Much more to come!



Starting at 5pm Condado Plaza Live Band Turista & DJ Velcro

NO



Beer Launch

In Support of Shark and Marine Conservation Conservación in Puerto Rico and the Virgin Islands by: Con<mark>Ciencia</mark>

CRAFT BEER

LeatherbackBrewing.com / Caribbean Crafted

GK

Home Grown Solar Water Pumping!

### **EVERYONE CAN HAVE SOLAR POWER!**

It is not Rocket Science!

### **DC Water Pumping: System Components**



#### **SOLAR PANEL (S)**



#### 12 OR 24 VOLT dc PUMP.





#### **CHARGE CONTROLLER**

#### BATTERIES

## **THINGS TO CONSIDER**

- □Solar panels (PV modules) and batteries and have a long after life.
- **Solar panels have warranties to produce Power for 25 years.**
- (I have solar panels that are 28 years old and still producing power, running drip irrigation!)
- □Solar panels have no moving part, require no fuel, other than sunshine, require almost no maintenance and make no noise!
- □ Batteries are recyclable! Auto parts stores will PAY you for your old batteries, that they send to be recycled.

# Thank you

