SANBORN REGIONAL SCHOOL DISTRICT

Facilities Committee Agenda

October 4, 2017
4:30pm – Sanborn Regional High School
17 Danville Road, Kingston, NH
SAU Office

1. Call to Order

2. Approval of minutes
   - September 5, 2017 Meeting Minutes (attachment)

3. HS Greenhouse Project Proposal (attachment)

4. Cost proposal for development of document to request proposals for partial / full demo of old HS facility (attachment)

5. SAU Office Construction - Update

6. Other

7. Adjourn

---------- Forwarded message ----------
From: **Frank Marinace** <fmarinace@marinacearchitects.com>
Date: Tue, Sep 19, 2017 at 11:00 AM
Subject: Re: Old HS demolition
To: Steve Riley <sriley@sau17.net>

Hi Steve,

Thanks for meeting with me yesterday at the old high school site.

Based on our discussion and site review, we can provide the following:

1. Prepare bid documents/specifications for your use in obtaining competitive bids from contractors for the demolition and removal of the old high school.

2. Bid documents will be organized to obtain 2 bids: one for the "wood building", and one for the total structure.

3. Exterior site items to be included in the work include: selected paving, concrete equipment pads, retaining walls, selected electrical wires and poles (overhead and underground) and underground drywell.

4. Demolition and removal will include foundations, underground mechanical chases and any furnishings and equipment left in the building.

5. Asbestos and other hazardous material identification and removal specifications are not included in our work, and should be completed prior to on-site demolition work.

6. Several items will be protected and remain, including 2 underground LP gas tanks, underground active sprinkler piping, fire pump and cistern tank.

7. We will schedule and attend a pre-bid site review for interested contractors.

8. We will assist in receiving and reviewing bids, evaluating, negotiating and making a recommendation for award of contract.

We assume the bidding will be preformed in the winter/spring of 2018, with work scheduled during the following summer.

We can provide the above services at an hourly rate, not to exceed $3,840.

Please let me know if you need any additional information.

Frank P. Marinace

Marinace Architects
P.O. Box 429
New Hampton, NH 03256
603-744-5144

growBOX

PREPARED FOR:

Sanborn Regional School District
Located in Kingston & Newton, NH

REVIEW SRHS GREENHOUSE PROJECT

ARCHSOLAR

Who We Are

ArchSolar develops low cost, high performing integrated solar projects, and provides solar structures, expertise and financing options.

(Based in Portland, Maine, ArchSolar offers three innovative Photovoltaic project models:)

Greenhouse projects

- PV integrated, climate-controlled environment structures
- LED lighting, heating, heat storage solutions, monitoring systems

Pre-engineered building projects

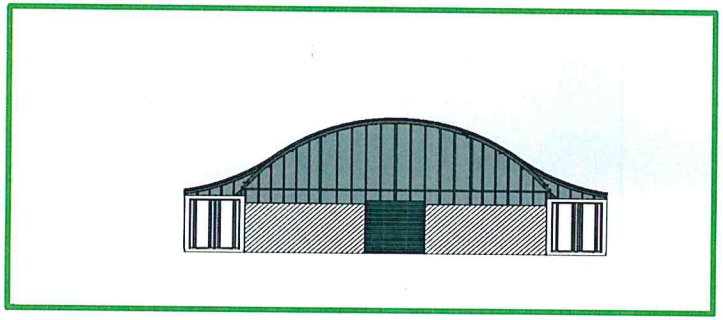
- Solidly constructed PV buildings capable of large clear spans
- Provide green electricity, create tax benefits and lower lifetime cost of ownership

GrowBox projects

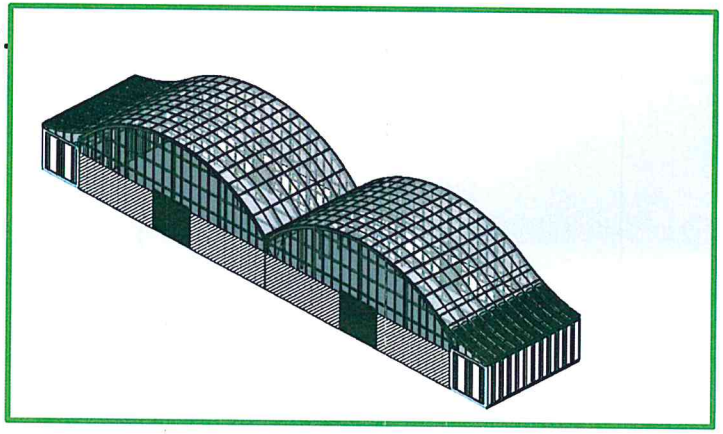
- Insulated indoor production and typical greenhouse spaces take advantage of benefits of natural light
- Best of breed technologies , a cost effective solution for the small to medium sized grower

Product Offering II:
GrowBox 20’ or 40’ Hybrid Greenhouse System

The GrowBox, is a hybrid climate controlled greenhouse structure integrating refurbished shipping containers in combination with our traditional greenhouse technology offering you indoor production space and a naturally lit canopy.



Each GrowBox ships with all of the equipment necessary to deploy a pop up farm structure. The insulated shipping containers are the sides of the greenhouse and serve as the foundation. They can be configured to meet a variety of uses.



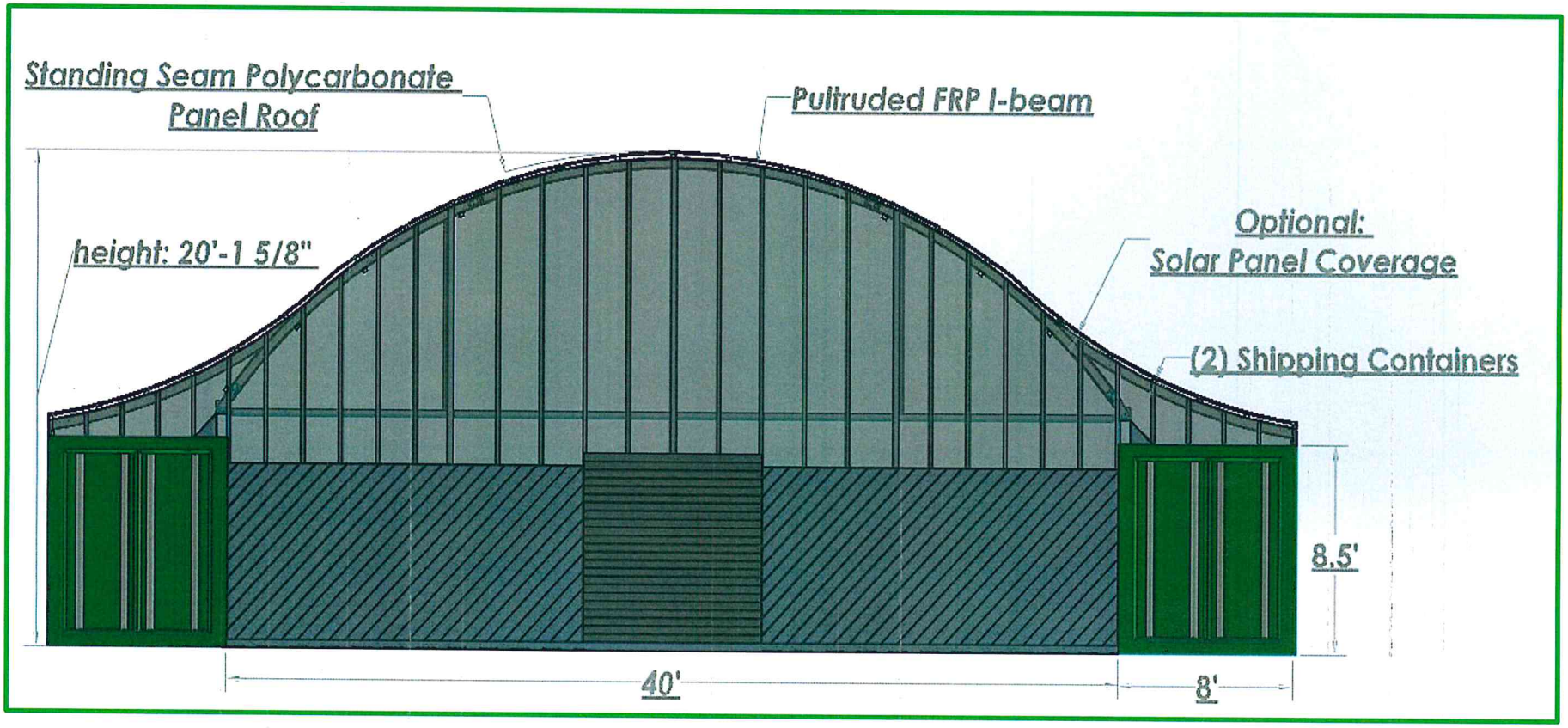
Features

- 1600 s.f. naturally lit growing space in each 40 foot unit
- Insulated indoor production space
- Blackout/Energy Curtain, Mechanical ventilation
- Climate sensors and remote dashboard

Benefits

- Speed of Construction/Time to harvest
- Hybrid allows for best of indoor and controlled environment growing with natural light
- Highly insulated, no foundation required
- Pre-configurable work spaces
- Ease of permitting – many jurisdictions grant temporary structure status

The GrowBox At-a- Glance



Prototype Photo

Prototype Photo

Easy to Use and Available Turnkey

growBOX

Configurable

Containers can be customized for indoor growing, propagation, processing, dry and cold storage, or heating, cooling, fertigation systems.

Do It Yourself

Simply prepare the site with insulation and gravel, a few concrete pads for the containers and you can be up and running within days of delivery. Our system can be assembled with a boom lift and standard carpentry tools.

Modular

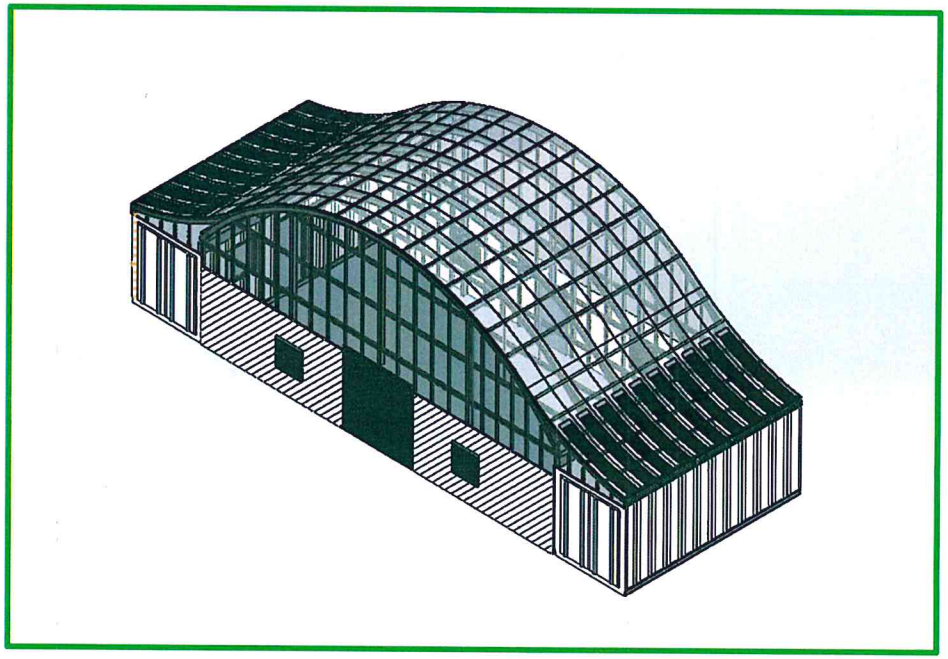
Our design is modular and can be easily expanded by adding support columns to the greenhouse bay(s) and shifting the shipping container out. It allows your facility to grow as you grow at a fraction of the cost of the original structure.

Your business is growing, grow with a GrowBox.

20’ Product Options

Smallest GrowBox unit is 20’ wide:

- Each Unit 1020 s.f.
- Ideal for the single caregiver in Maine



Standard Items:

- Two 20’ containers insulated
- Exhaust Fans and Louvers
- Light Deprivation
- Ridge Vent
- Exterior Doors

Price: $55,000 Installed

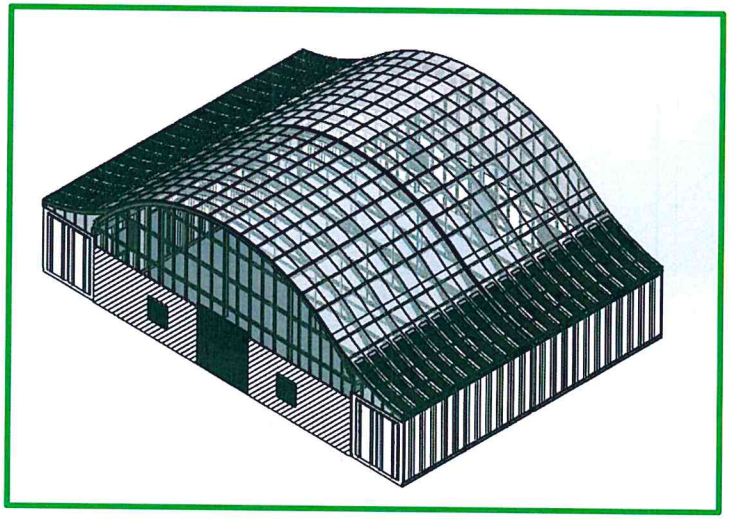
Optional Items:

- Roll-up Door
- Larger Fan Units
- Heating Systems customized to individual grower needs

40’ Product Options

Our standard 40’ is also the building block for larger greenhouses:

- Each Unit 2250 s.f.



Standard Items:

- 2 40’ foot insulated containers
- Light Deprivation
- Ridge Vent
- Exterior Doors

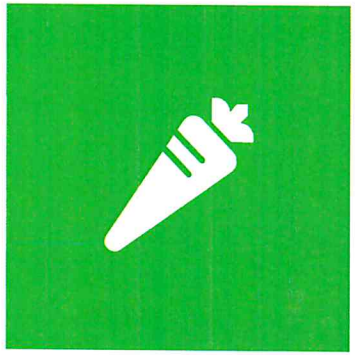
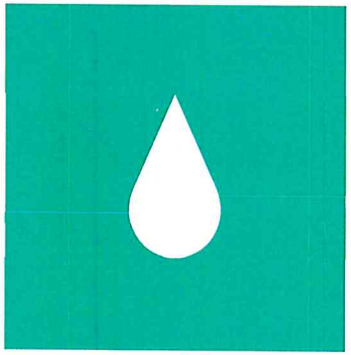
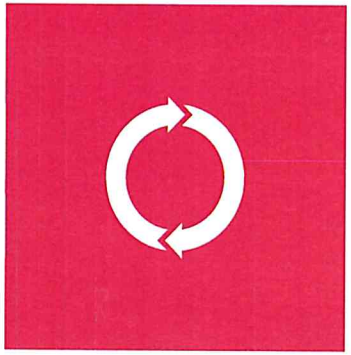
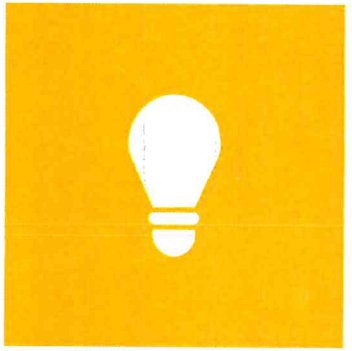
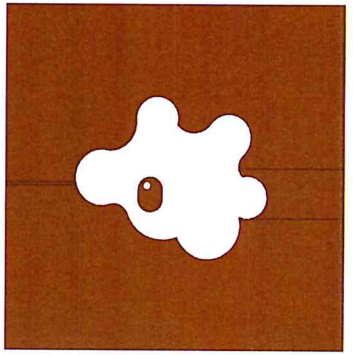
Optional Items:

- Roll-up Door
- Larger Fan Units
- Heating Systems customized to individual grower needs

Price: $110,000 Installed

Teach About The Environment

The Educational Opportunities Abound

Food
High-yield production of pesticide-free organic food for consumption, re-sale and education

Water
Smart water management/ conservation and rainwater harvesting

Waste
Sustainable waste management through vermiculture, composting and recycling

Energy
Efficient use of clean renewable energy resources

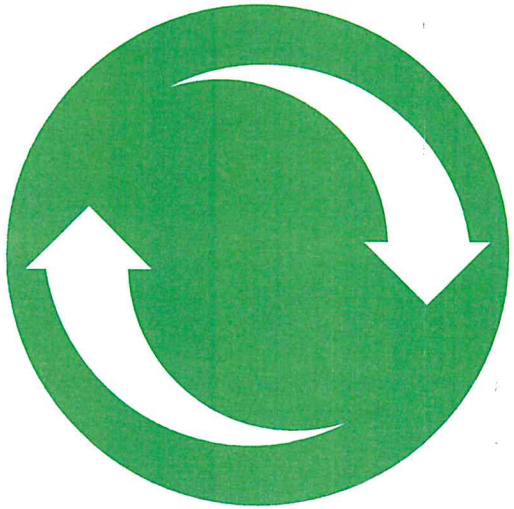
Biology
Operate natural biological systems with state of the art technology to Create symbiotic relationships

Technology

Potential Food Production Technologies

Hydroponic system

Hydroponics is the most common method of soil-less food production where nutrients are added to the water in a recirculating system.



In-ground Raised Beds

Radiant heated raised beds for organic growing of leafy greens, cold hearty crops.

Aquaponic system

Aquaponics is a combination of aquaculture and hydroponics, where fish can be cultivated for food and fish waste produces the nutrients for the plants.

Aeroponic system

Aeroponics is used in both hydroponics and aquaponics producing a fine nutrient-rich mist applied directly to the roots of the plants.

All of these methods of food production are up to 90% more water efficient than conventional outdoor soil baaed food production. The combination of these growing methods with a greenhouse controlled environment results in a highly productive year around facility

Program Goals

Educational: *(Integrated into curriculum, providing students with hands on learning)*

- Food systems
- Renewables
- Engineering
- Construction
- Science of growing, data collection and analysis

Entrepreneurial

- Business planning

Health and Well Being

- Improved diet

Vision

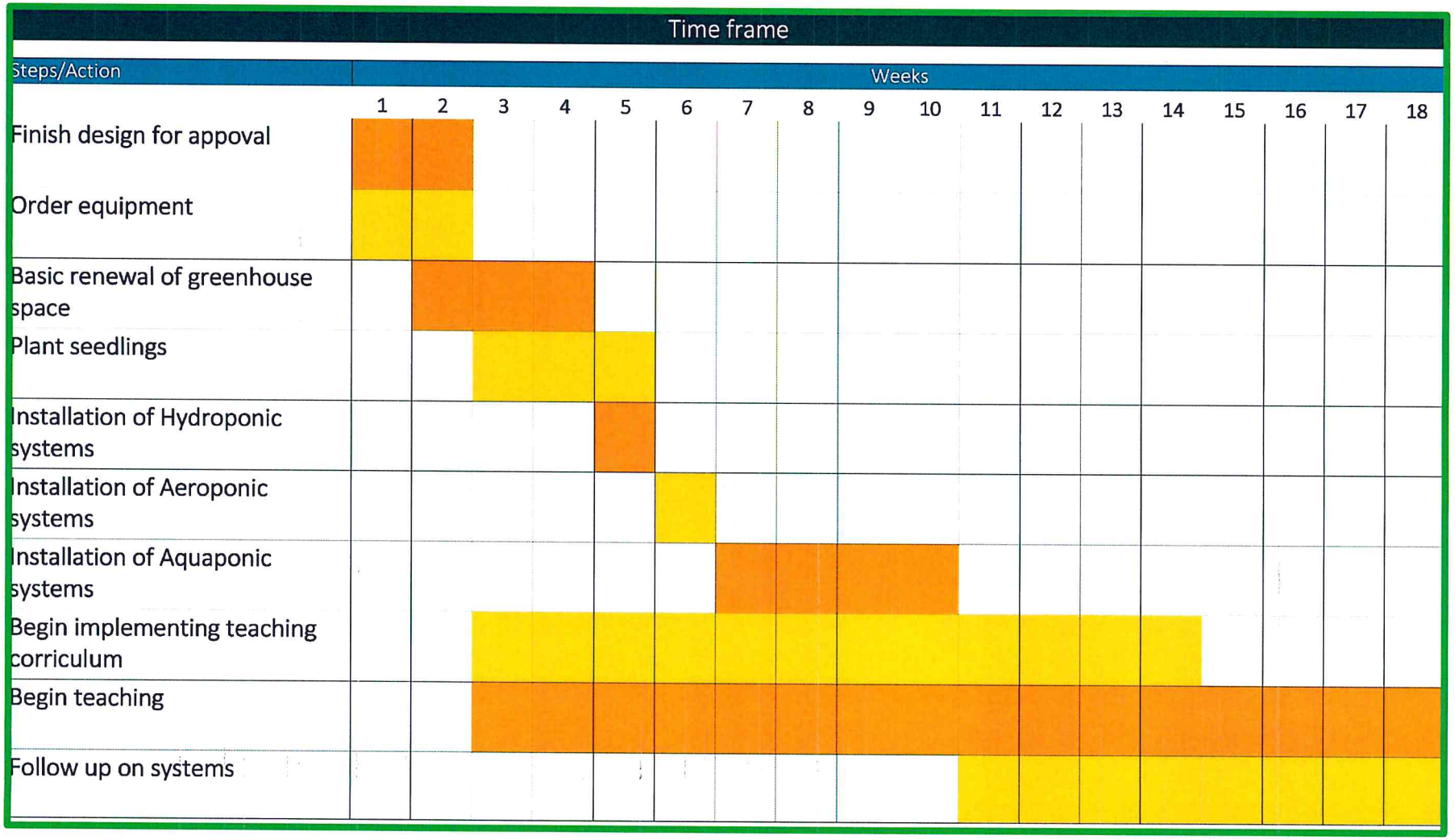
- From Planning to Execution Project is integrated into curriculum, including construction/ set-up etc.

- An opportunity for a hands-on educational experience, from building the structure to designing the interior, to gardening to cultivating seed strains to harvesting their labor and finally, bringing the bounty to the table.

- A great opportunity to get the community involved, from local farmers assisting in teaching growing methods, to inviting the community at large to partake in sharing the harvest.

- Excite students to be stewards of their health by growing healthy, quality foods.

Fit out Timeframe – Example



Grow System - Examples

Recommendations for a 40x40' greenhouse to include a mix of 150 vertical growing towers for leafy greens and herbs combined with 24-48 Dutch Buckets (type) for tomatoes, cucumbers, peppers, eggplant, etc. Interior can be arranged to mix production and education space with room for students.

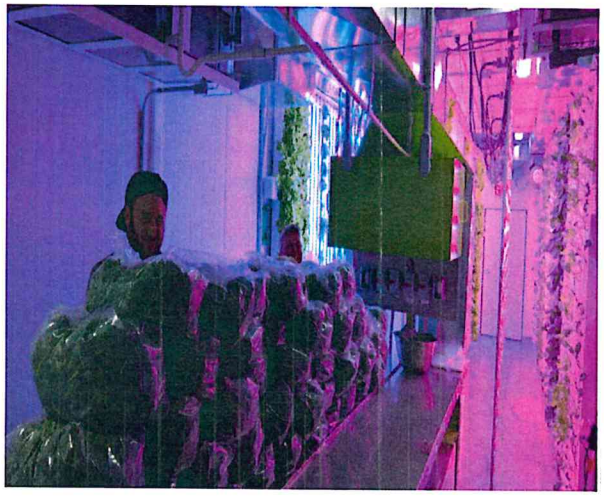
20' x 40' will accommodate 150 Vertical towers including 100 sq' for seedling propagation.

Remaining square footage 20 x 40 can accommodate 24-48 Dutch Buckets for Tomatoes and vine crops with room for students. Production will vary depending on number of buckets and crops grown

Estimated Cost for 12'x 20'
24 Dutch bucket system is $1,000

The Modular Farm System

High Density, Vertical, Hydroponic, Growing System



SRHS Vision & Phases

Sanborn Regional High School GrowBox Project vision and mission statement includes addressing the following:

- Create a hands-on educational experience, from building the structure to designing the interior, to gardening to cultivating seed strains to harvesting their labor and finally, bringing the bounty to the table.

- Get the community involved, from local farmers assisting in teaching growing methods, to inviting the community at large to partake in sharing the harvest.

- Develop hands on skills for growing and operating a greenhouse, business planning and execution, and the science of growing and sustainable energy systems.

- Excite students to be stewards of their health by growing healthy, quality foods.

SRHS Vision & Phases

Educational: *(Integrated into curriculum, providing students with hands on learning)*

- Food systems
- Renewables
- Engineering
- Construction
- Science of growing, data collection and analysis

Entrepreneurial

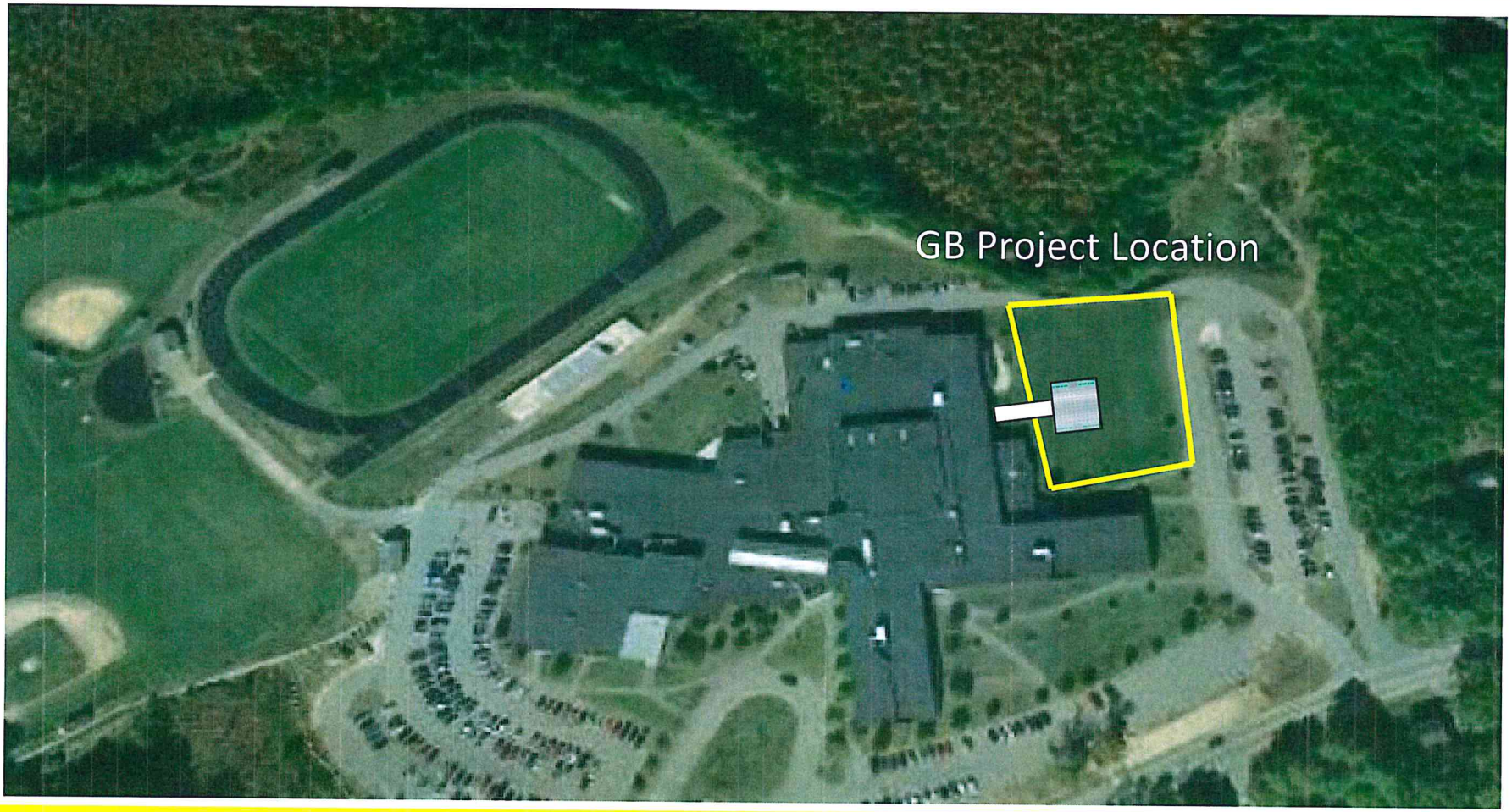
- Business planning

Health and Well Being

- Improved diet

Google Earth Proposed Site

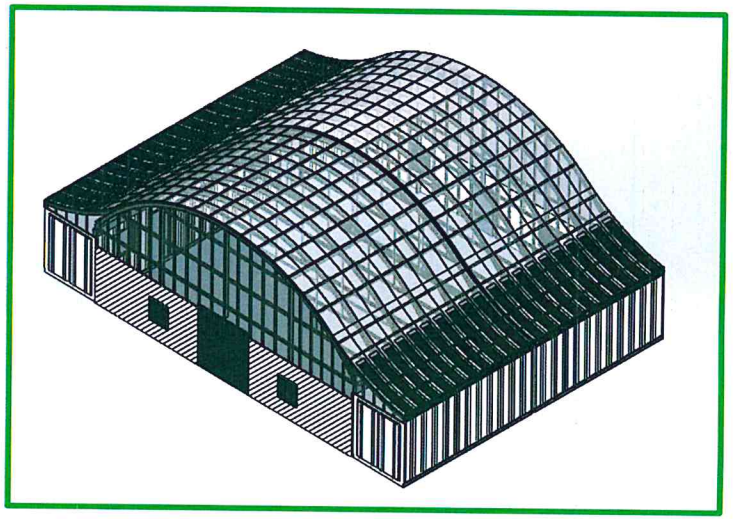
Sanborn Regional High School - SAU 17
17 Danville Road, Kingston, NH 03848



40’ Product Options

Our standard 40’ is also the building block for larger greenhouses:

- Each Unit 2250 s.f.



Standard Items:

- 2 40’ foot insulated containers
- Energy/Shade Current
- Ridge Vent
- Exterior Doors

Optional Items:

- Rolling Door
- Larger Fan Units
- Heating Systems customized to individual grower needs

Food Production Goals

State of the art Growing technology

Questions – Requiring a Response

Question 1: Stand alone structure vs. attached to building? If attached How to tunnel? Shipping containers?

Question 2: Define heating and water solution?

- Can we leverage any heating and cooling already in place? Are there opportunities to use a heat pump that would provide heating and cooling that could be used in the school? e.g. if cooling is required can we also develop hot water for use in the cafeteria?

Question 4: What are the school's fire and other building codes? Is there someone at SRHS who can take the lead in defining requirements and developing a strategy for meeting these requirements?

Question 5: What other complementary renewable technologies can we leverage?

- Solar? Solar Thermal?
- Do you want a Bio Anaerobic Digester?

Question 6: What is the vision for staffing and operating the structure?

Project Timeline – Phase 1

SRHS - GB Project Timeline Phase 1

Sanborn Regional School District
Located in Kingston & Newton, NH

Phases	1st Month	2nd Month	3rd Month	4th Month	5th Month	6th Month	7th Month	8th Month	9th Month	10th Month	11th Month	12th Month
Design & Engineering												
Manufacturing & Shipping												
Sitework												
Construction												
Commissioning & Launch												
On-Going												

Project Roles & Responsibilities

Role	Lead	Support	Who	Timing	Other Considerations
Program Strategy Design, Approvals, Fundraising	SRHS	AS	Brian		
Site Engineering	SRHS	AS			AS to provide typical foundation options and set of plans for arches and the GB
Site Preparation, Slab, Utilities	SRHS	AS			
Confirm building code requirements	SRHS	AS			
Providing Teacher Operations	SRHS	AS			
GrowBox Engineering		AS			
Greenhouse Design and System Designs	AS	SRHS	TC		
Heating, Plumbing	SRHS	AS			AS to provide estimated loads
Consulting	AS	UNH?			Local Relationship
Ongoing Operations	SRHS				AS site vists, unlimited email support
Lighting Design	AS				

Preliminary Project Budget

System	Pricing
• Greenhouse System	$82,750 (Heating, Fans, Shade Curtain)
• Heating & Plumbing	TBD by SRHS
• Lighting	$12,000 (Includes: Container/Over-bed lighting)
• Grow Systems	$56,250 - $85,000
• Installation	$13,500
	==========
Total GH Cost:	$164,500 - $193,250

Preliminary

Consulting

- In addition to this base-line cost, the CESD should budget approx. $35,000 for a consultant to get program up and running.
- TOTAL with Consulting $199,500 - $228,250

- Optional Solar: TBD