

S.M.A.R.T. Green House Project

Sustainability Management Automation Research Technology

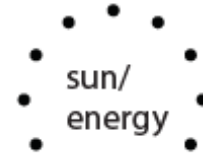
Sustainable Garden Design



Innovation Driven by Design



**Collective
Learning**



greenhouse



Soil/ Water/ Air

**Harnessing Renewable
Resources
Cleansing Existing**

References



Fog Catchers: Water



Bio Toile: Producing Energy



Green Shades: Temperature



Portable planting modules

Designed for inspiring workplaces

All Desks Seating Storage Tables



Studio Desk
Compact single person desk



Linnea Bookshelf
Elegant shelving by 57st. Design



Open Source Furniture - Tech

Purpose: To support responsible food growth through hands-on learning



WeGrow / WeConnect / WeLearn

Green House Space

[Area: 6 m x 8 m x H 4 m]

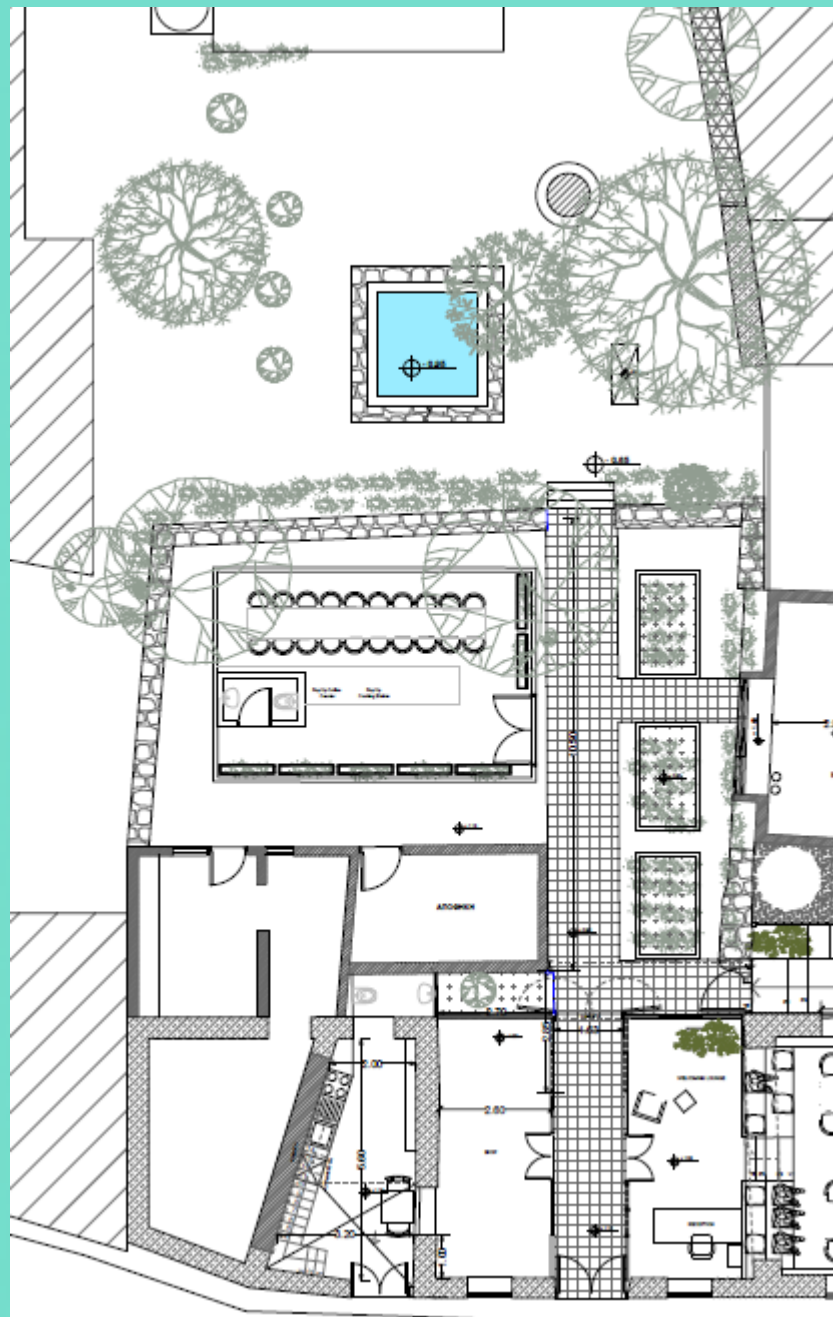
Cultivation of plant-based food

Room for training
(20 people capacity)

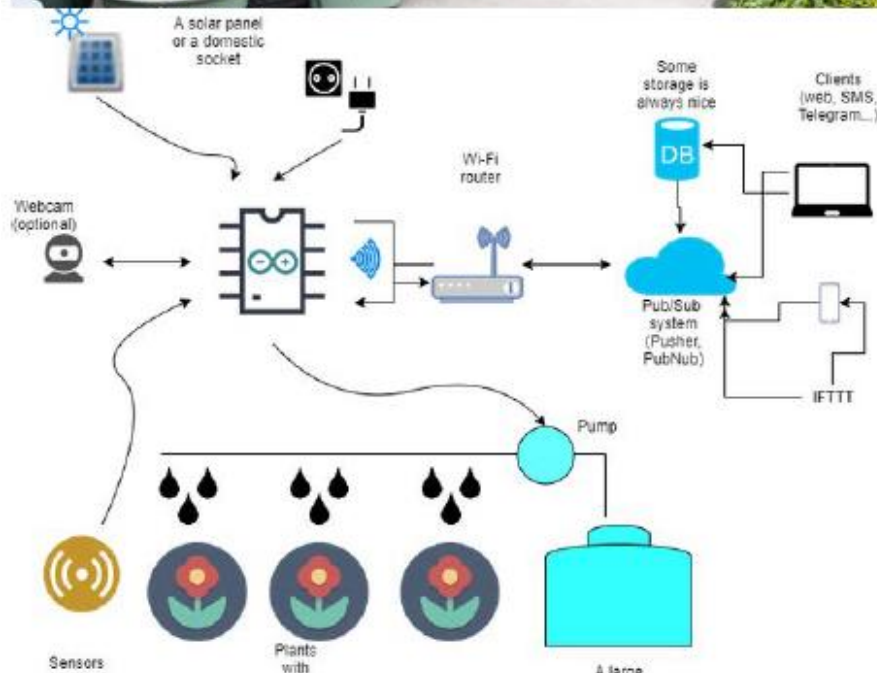
Space for cooking/ testing

Sensory Systems*

Proposed Design



Nature based solutions- vertical growing



Internet of things, sensory systems, data collection processing and optimization

Technology: opensource, affordable solutions



Building from Waste Material Experiments





BIOGENTS BG-Mosquitaire CO2 Outdoor Mosquito Trap + BG-Sweetscent Mosquito Attractant • Effective Against All Mosquito Species • Trap incl BG-Sweetscent Lure & BG-Booster CO2 Set • For Outdoor & Patio

Visit the Biogents Store
4.2 ★★★★★ 124 ratings

Currently unavailable.
We don't know when or if this item will be back in stock.

Style: Mosquitaire CO2

Brand	Biogents
Color	Brown
Style	Mosquitaire CO2
Number of Pieces	1
Is Electric	Yes
Target Species	Mosquito
Product Dimensions	15.4"L x 15.4"W x 16.5"H

About this item



Fly Away - 2 Pack Outdoor Fly Repellent Fan, Outside or Inside Table use, Restaurant, Barbeque, Events, Deter Flies, Wasps, Bees, Other Moscas and Bugs Away, Battery Operated, Tabletop, Hanging Hook.

Visit the Fly Away Product Store
4.4 ★★★★★ 418 ratings
800+ bought in past month

\$33.99 (\$17.00 / Count)

No Import Fees Deposit & \$17.07 Shipping to Cyprus Details
Available at a lower price from other sellers that may not offer free Prime shipping.

Brand	Fly Away Product
Color	Black
Style	Portable
Item Dimensions LxWxH	3.25 x 3.25 x 9.5 inches
Number of Pieces	2
Is Electric	Yes

See more

Current Challenges at the Gardens Pilot Area

I am writing few of the things we can work around:

1. Mosquitos/ Flies/ Ants in the 6 months a year: <https://www.amazon.com/BIOGENTS-BG-Mosquitaire-CO2-outdoor-mosquito-trap/dp/B09884YS4H?th=1> if you consider this a good solution may I purchase now and consider it part of our inventory?
2. Management of the GREEN House (Entrance access with fingerprint, know how many people are inside, lock/unlock remotely
3. Soil Condition with watering it seems it becomes hard over time- might be an issue with the water quality received from idatopromithia .
4. Noise control : if there is a way to control the high sounds coming in/ out of the smart house area
5. Cats puing on the food growth soil
6. Knowing in the water lastika an estoupposan
7. Being able to open the water remotely or know how much water is used
8. Temperature control (too hot too cold) controlling fans to restore temperatures
9. Understand the quality/sickness of the produce
10. Electricity consumption received from renewable sources (water movement. Wind, sun and any other) it seems that the photovoltaics are inconsistent and not enough. Some times there is a problem with photovoltaics and cant tell if it is the batteris or dirty panels. If there is a way to know great.

Technology - Sensory Systems – Input Data

Management	Sustainability (Environmental External Factors)	Human Condition (Internal Factors)
Access- fingerprints	Sensors relating to food growth management (water, soil, air , sickness)	Physical Senses: (Eyes)Ambiance Control (Sound)Noise Reduction (Touch)Mosquitos/ flies (sound wave production) (Smell) Scents
Counting People	Sensors relating to environmental quality (CO2, Humidity, other)	Emotional: Stress/ Calmness Concentration
Cameras/ Security	Systems that based on renewable energy (water filters, rain harvest, biogas waste, photovoltaics)	Model processing data to provide output function



wind speed
sensor



wind direction
sensor



All in one
sensor



Solar radiation
sensor



UV sensor



rain and
snow sensor



Negative oxygen
ion detector



Ultrasonic wind
sensor

Filter Choice: Affordable, Based on Renewable Energy, Easy to Use

Types of Sensors that can be used.

- 1) Air quality sensors - Air quality sensors measure levels of pollution, carbon dioxide and other particulates in the air.
- 2) Cameras - Capture visual data. Can track people, movements, location in the premises
- 3) Biomedical sensors - Biomedical sensors measure a person's vital signs, like heart rate and oxygen level. Using a wearable device like a bracelet.
- 4) Humidity sensors - Humidity sensors monitor humidity, or the amount of water vapor, in the air. Manage comfort and energy use.
- 5) Motion sensors - These sensors use infrared radiation or ultrasonic waves to detect motion, safety applications, trigger things.
- 6) Proximity sensors - These sensors bounce infrared radiation or ultrasonic waves off objects to detect their presence. Measure distance from a Point of Interest
- 7) Temperature Sensors - Temperature sensors detect changes in temperature, measuring the amount of heat there is in an environment.
- 8) Flow sensors - Flow sensors measure how quickly a liquid or gas flows past a certain point in a tube or pipe. A flow rate that's too fast or too slow could indicate a problem, like a leak.
- 9) Chemical sensors - Chemical sensors detect chemical changes like radiation and pH levels in air or liquids.
- 10) Earth observation satellites can be used to monitor the health of urban areas, including air quality, water quality, and noise pollution

Design Approach Work in Progress

S.M.A.R.T. GREENHOUSE

To support responsible growth through hands on education.

We-grow / We-connect / We learn.
#naturebased solutions

① ROOF (harvest water,)

SUN GREEN ROOF MODULES

MODULES

① ROOF SYSTEM

② WALLS

③ FLOOR

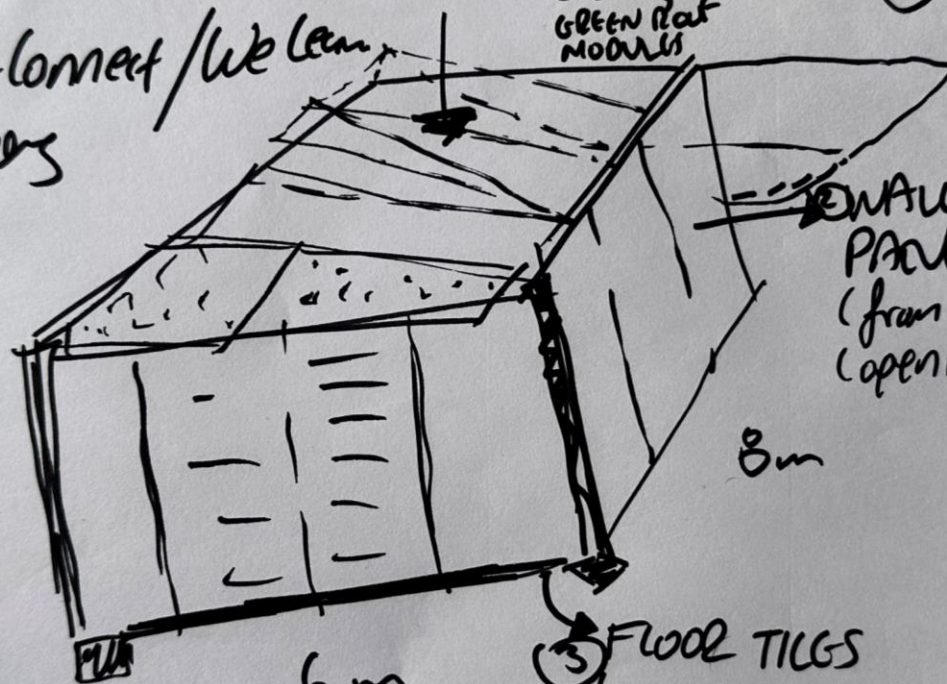
④ URBAN FURNITURE MODULES

- a. TABLE
- b. GROWBOTS
- c. NOTEBOARD
- d. WALKING ISLAND
- e. other???

⑤ PRODUCTS*

References

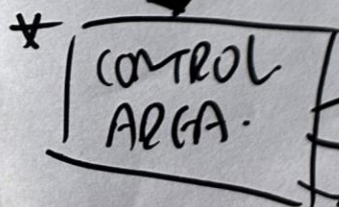
- Tropical House
- Identified Challenges
- Open-Source Systems



③ FLOOR TILGS
out of waste
(coffee etc.)

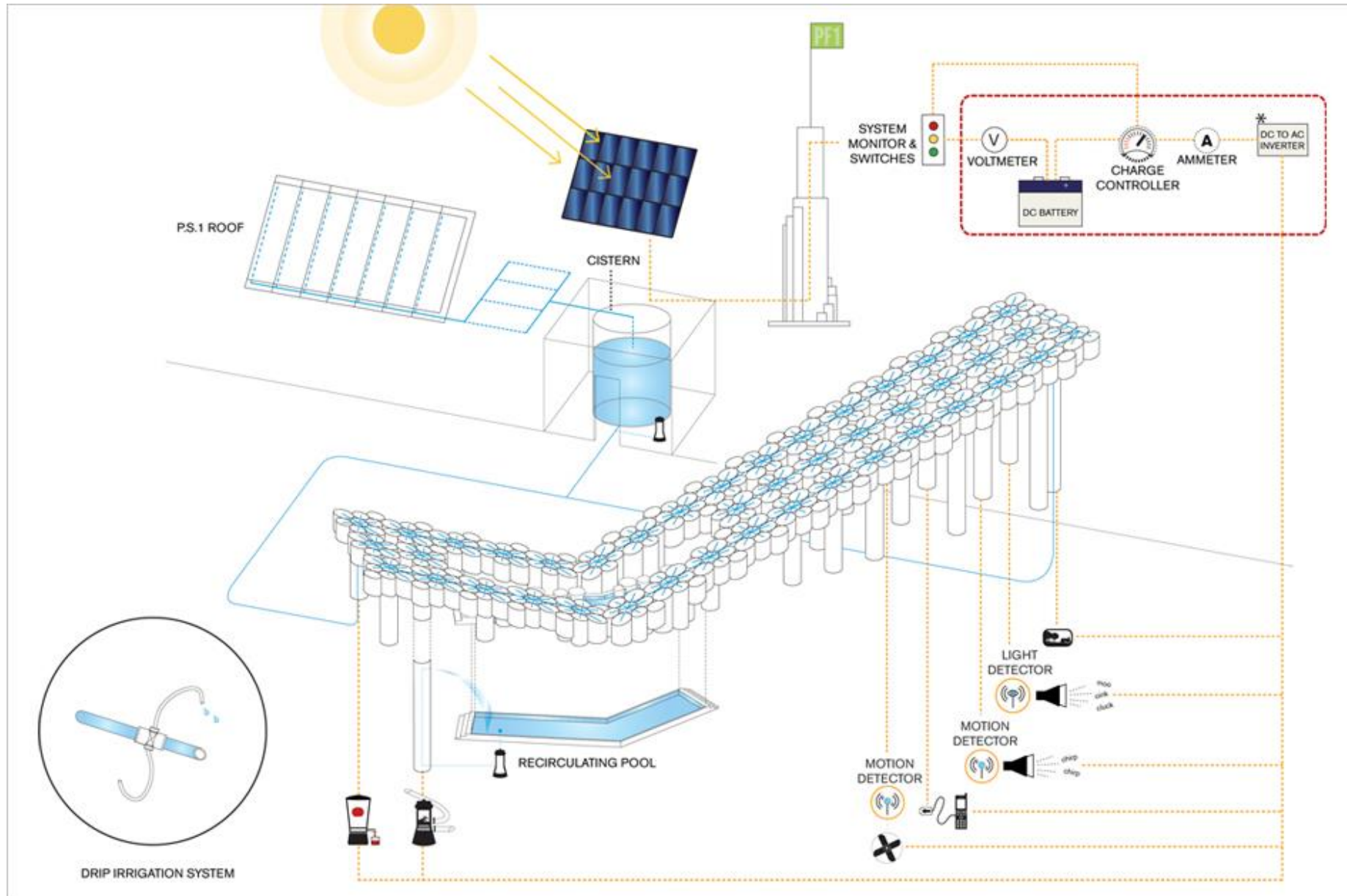
ENTRANCE

INNOVATION
DRIVEN
By Design



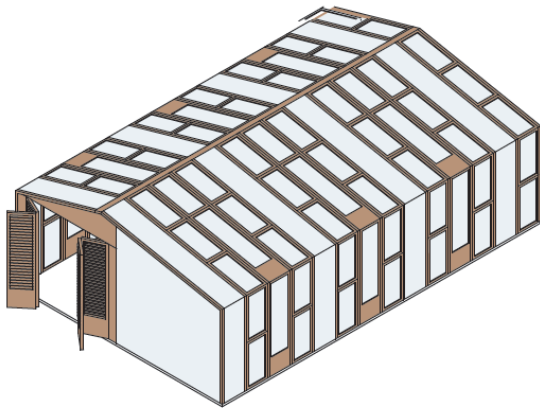
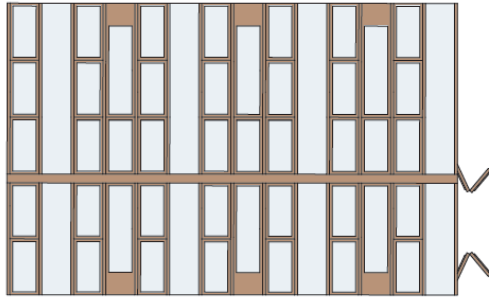
HUMAN
ENVIRONMENTAL
SPACIAL / Management

Design Approach Work in Progress

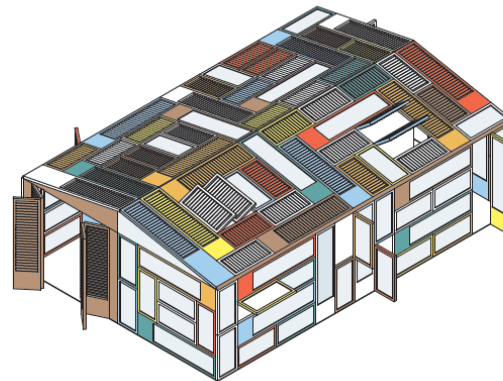
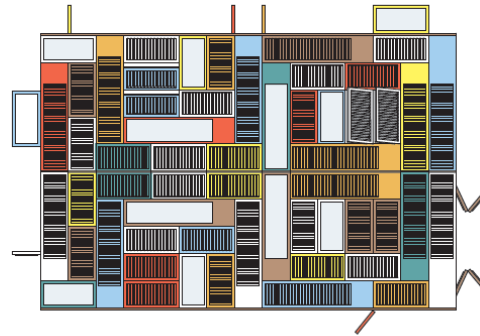


Design Approach Work in Progress

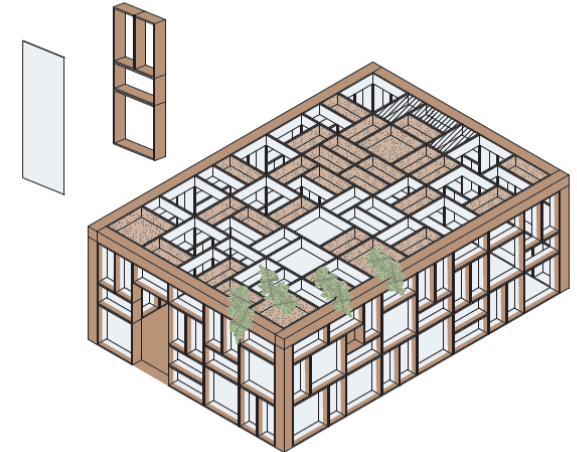
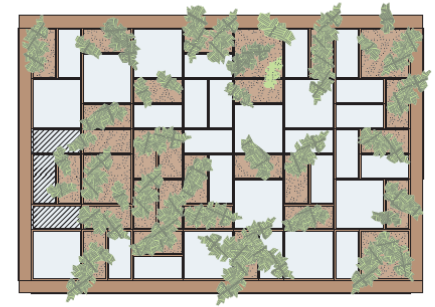
1st Idea (with upcycle windows)



2nd Idea (with upcycle windows)



3rd Idea (modules+green roof)



**“As social
entrepreneurs
We all have a
dream
And extremely
engaged
In reaching that
dream –
But we need
support to
Be able to do it.”**

*Anna Lindh,
Right to Play Sweden*

Thank you

Let's Stay in touch!!

hello@greenhouseproject.eu
<https://greenhouseproject.eu/>

Find us on social media

 smartgreenhouseproject

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