

# GREEN TO GO



*Supported by:*



## About SGFA

Shalini Ganendra Fine Art (SGFA) is an independent exhibition and cultural space based in a purpose-built, award-winning building, Gallery Residence. SGFA, established in 1998, moved to this current location in Kuala Lumpur, in January 2011.

SGFA focuses on contemporary Asian art and design, with particular emphasis on emerging movements and regions. The Gallery represents an eclectic range of primarily mid-career artists, hosting at least six exhibitions annually. The Gallery also hosts the landmark VISION CULTURE LECTURES which brings international curators and art personalities to Malaysia to speak at public lectures and participate in related programs, in addition to the Vision Culture Art Residency program for mid-career international artists.

A key component of SGFA's focus is non-profit activities that promote vital cross-cultural dialogue, education and environmental sustainability through a number of programmes such as GREEN TO GO.

## Green to Go - Vision

To create site specific work of environmental art, which will endure for 1 year – and then transfer the green to alternative public and private spaces.

## Overview

GREEN TO GO is a non-profit community initiative organized by Shalini Ganendra Fine Art (SGFA) in collaboration with select children's charities in the Klang Valley and a local design school. The project will create a site-specific work of art designed using native, drought-resistant plants. It will grow for one year at SGFA's Gallery Residence, and then to be transferred to alternative community spaces.

GREEN TO GO will serve three primary purposes:

- (1) a manufacturing/product design exercise for Taylors University students;
- (2) an educational, empowering and community initiative for under-privileged children; and
- (3) an environmental sustainability project.

Because Malaysia is only just beginning to host and support environmental sustainability initiatives, GREEN TO GO will not only engage the wider community in both an artistic and environmental endeavor, but also educate our youth about "green" practices in a creative and innovative way.



*Installation of winning Car Group Project @SGFA*

This green art project will incorporate approximately 100-150 potted plants, designed using Xeriscape principles, selecting primarily indigenous plants that are sustainable, beneficial to the local environment and do not require regular attention. The plants have been selected so as to be well-suited to grow together in their habitat *cum* art design.

The guidance of Xeriscaping principles will create a drought-resistant and low maintenance environment within the art project, so that no one person from the community will be required to continually devote time and energy to the project's upkeep. The project will thus continue to be easily sustainable in locations outside of the art gallery, making it a true piece of public and community focused art.

The creation of 'holders' or frames for the plants were designed as part of a select competition held with Taylor's University. 160 students participated. Six (6) projects were shortlisted and two (2) winners selected.



Installation of Car Group Project @SGFA

Selection criteria included:

1. Outstanding, durable and functional outdoor design
2. Creative use of locally sourced materials
3. Qualification as landscape art
4. Economy of means

After the year-long installation of the project at SGFA the children's charities will reclaim segments of the project to be installed on their premises. This will ensure the ongoing utility and educational nature of the project, which will not only be aesthetically pleasing but also environmentally beneficial, with some parts even useful in the kitchen!

The planting itself is to be carried out by children from the children's charities, so that they can learn about indigenous plants that can be cultivated in sustainable, low-maintenance ways.



*Installation of winning Green Tin Wall Project @SGFA*

# Adaptation

Durability was a key requirement and each winner's design and plant selection were modified after their respective installations and testing, to ensure such. Upon installation, plants were lush and attractive, but after a short time, we discovered that either the design did not provide adequate rain water catchment or the plants were not suitable for xeriscaping. Adaptive modifications resulted, showing the practical aspect to good design - that designers must ensure that the product continues to fulfill its long term purpose.

# WINNING PROJECTS

# DYNAMSION – GREEN MOTOR

## Group members:

Chin Yin Huei  
Gooi Keng Sheng  
Ananth A/L Subramaniam  
Shamil Tsakayev  
Syed Abu Bakar  
Yuvraj Dwarka  
Low Ley Soon  
Loi Pei Yin  
Jamie Yap Suet Mun  
Melika Aghabeigi  
Michelle Kno Hwee Tinn  
Ong Chin Ai  
Yoon Chan Hon  
Wong Woon Khai  
Chin Wen Khye  
Wong Chiou-Zhen  
Toh Soon Chen  
Mohammed Azif Bin Sahadan  
Wan Izz Naufal Bin Wan Ismail  
Reuben James A/L Raju  
Thevinkumar A/L Thiagaraja  
Ng Jia Wia  
Lim Jia Ling  
Tan Lay Shang  
Nur Khalisah Binti Burhanudin  
Allya Syafiqah Binti Mat Isa  
Lee Jin Win



# DYNAMSION

## DYNAMIC + DIMENSION

**DYNAMIC:**  
 REGULAR ANGLES, CORNERS, CONCAVE AND CONVEX SURFACES FORM DIFFERENT SHADE AND TEXTURE WITH A VARIETY OF COLORS AND CHARACTERS.

**DIMENSION:**  
 VEHICLE STRUCTURE IS TO SHOW A CAR COMING FROM A DIFFERENT DIMENSION FROM THE WALL, A CAR FROM OUR DIMENSION INSTEAD OF AN ANGLE TO SHOWAL DIMENSION VISIT OUR WEBSITE FOR FURTHER INFORMATION AND CONTACT.

### ESTIMATED COST

WALL	
1. Expanded Mesh	RW 670
2. Acrylic Epoxy Adhesive (metal based)	RW 400
3. Paint	RW 70
4. Concrete with	RW 20
5. Plastic strips	RW 50
<b>Total Request</b>	<b>RW 1146</b>

CAR	
1. Hot dipped galvanized wire mesh	RW 110
<b>Total Request</b>	<b>RW 110</b>

PLANTER BOX	
1. Wire Mesh	RW 240
2. Plastic Wire Mesh	RW 241.50
<b>Total Request</b>	<b>RW 481.50</b>

PLANTS	
1. Coconut Husk	RW 60
2. Duranta Erecta	RW 120
3. Alternanthera ficoidea	RW 105
4. Alternanthera Defensa	RW 100
5. Coleus	RW 145
6. Creeping	RW 340
<b>Total Request</b>	<b>RW 930</b>

ESTIMATION OF TOTAL COST: **RW 2672.50**

### PROPOSED PLANTS



ALTERNATHERA FICOIDA  
 CHAIR PLANT



DURANTA ERRECTA  
 THUNDER BOLT

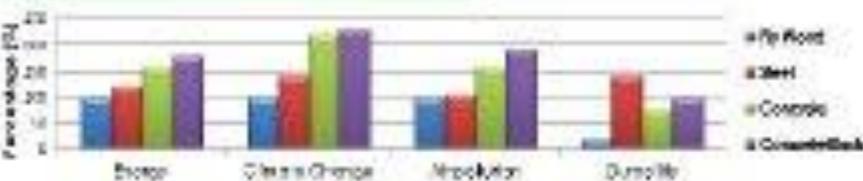


ALTERNATHERA DEFENSA  
 POLYCHROMA



ALTERNATHERA DEFENSA  
 BEAUTIFUL PINK HEAT

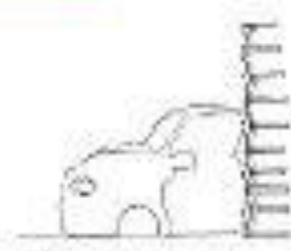
### LIFE CYCLE ASSESSMENT



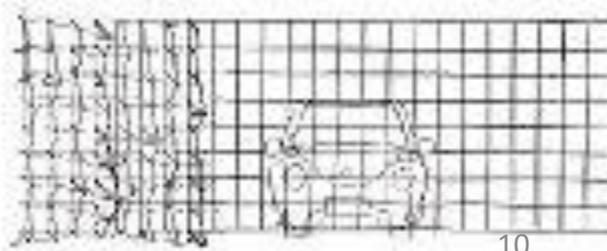
### DRAWINGS



PERSPECTIVE VIEW



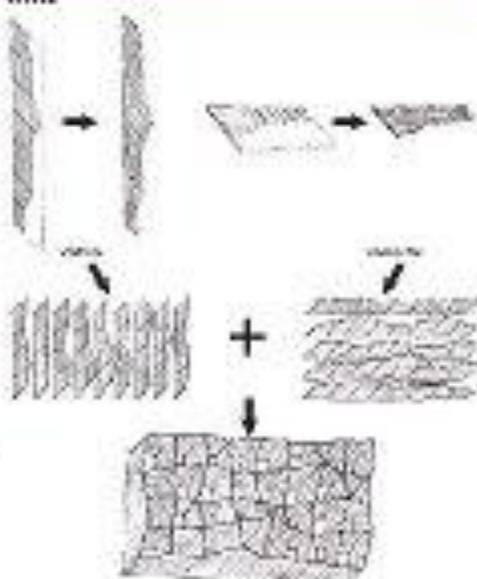
SIDE ELEVATION



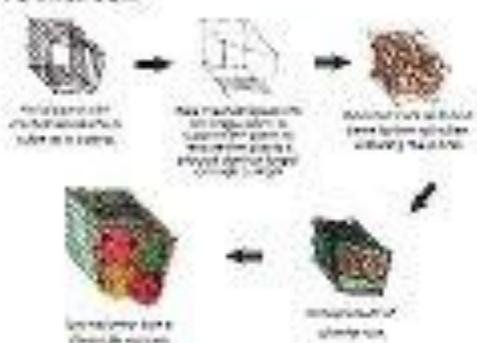
FACADE

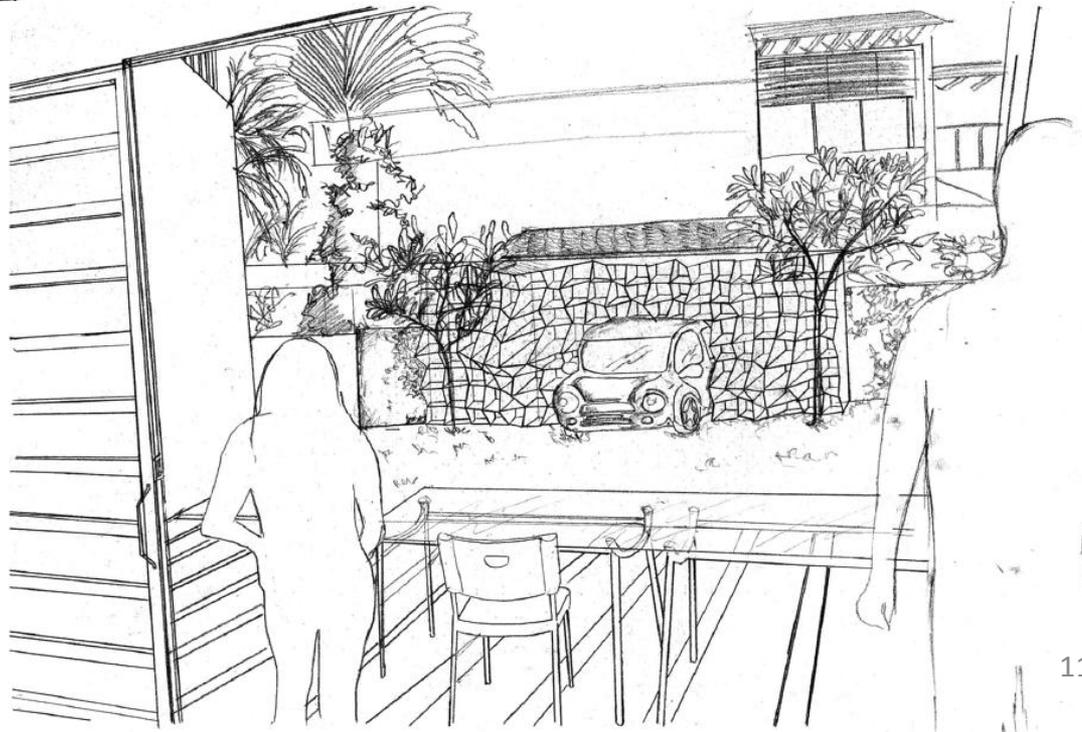
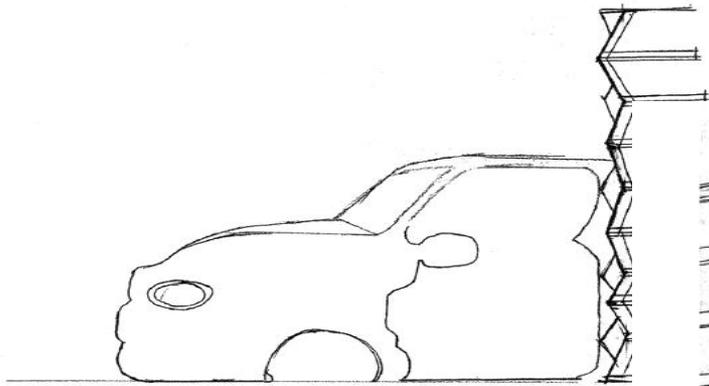
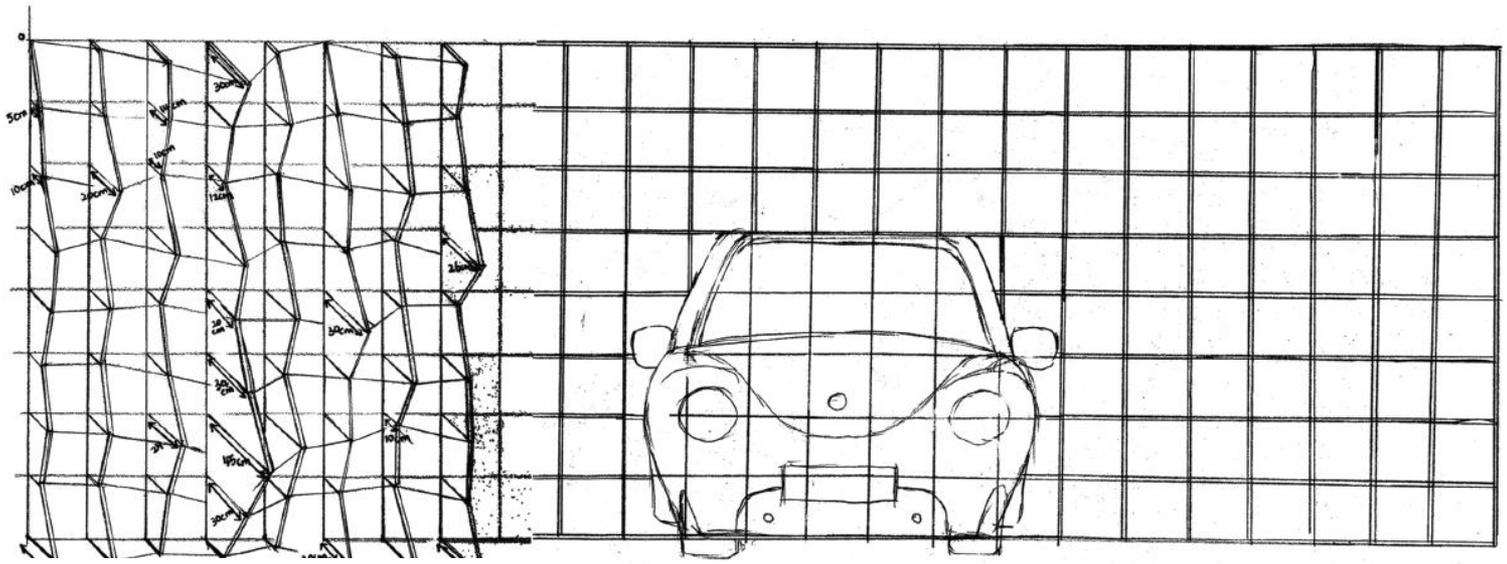
### CONSTRUCTION

#### WALL



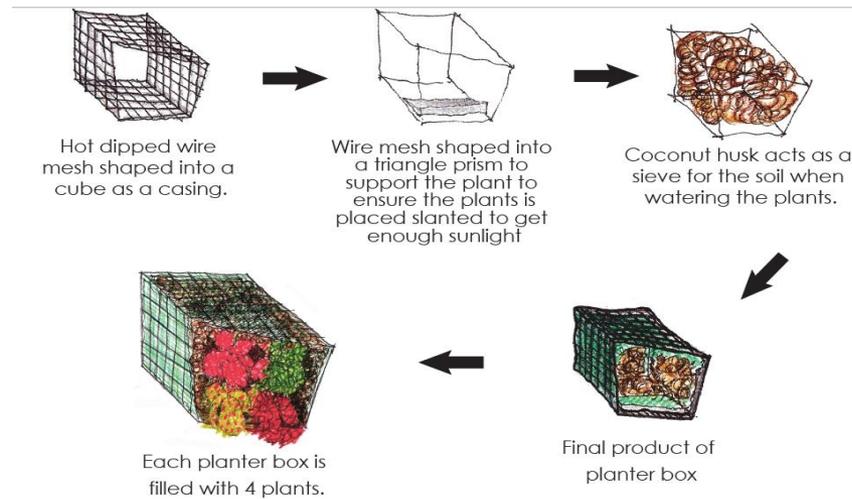
#### PLANTER BOX





The concept of our green wall revolves around the idea of an agent of sustainability (the car) coming from another dimension to save us from the pollution we are drowning ourselves in. The reason we choose to use a car is because we feel it is very effective in capturing their imagination and leaving a lasting impact on the minds of our future users - young children.

In today's urban society, everything that we do requires energy. This energy comes at a great cost to the environment and to us. Having a green wall in a house garden is beneficial in many ways. It allows you to plant more plants in a tiny plot of land. Such effects of the green wall include reducing the surrounding temperature. This means the house can spend less electricity on cooling and use natural ventilation which makes the environment healthier for everyone.



Children can relate better to things they recognize and these youngsters can recognize the shape of the car instantly through the main objects of car components (headlamps, tyres, number plate, etc.). If we can plant an idea in a child's mind and associate it with an exciting feeling that circulates an idea that is bound to sink into his/her subconscious mind. We can call it a form of informal education. It can give them an idea that might influence them to ask their parents about having a green concept in their very own house. They might grow up living in cities that are even more congested and will try to have gardens of their own because of the lesson learnt when they were young. They will see how simple and fun it is, thus more likely for them to maximize the use of space with green walls with the experience that they have been exposed to before.

On the other hand, the wall celebrates the appearance of the car. Its uniqueness in the concave and convex edges promotes the feeling of being in a different world. The different shape give a different perspective at different angles viewed. The feeling of the wall will never get old because a new picture can be viewed from various positions. The view from the front is a square. When the edges get pulled from viewing the box from a different perspective, a new shape is produced.

The wall teaches us about how we can view things differently in life. Nothing is always fixed and we should open our minds to new things. The practical thing about the box is that it is easy to work with. Plants can be easily slotted in and arranged neatly. Three to four plants can be fitted into the 30cm x 30cm space given.

# Green Tin Wall

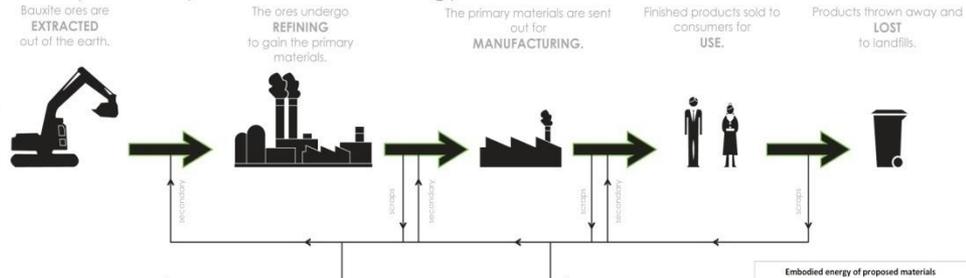


## Group Members:

Heong Wai Sin  
Yeo Wei Tsiang  
Lee Chao Qun  
Leong Chee Chung  
Cheryl Lai Kar Yean  
Chin Yan Jun  
Lim Yu Jin  
Eugene Lim Yeng Yong  
Jason Ng Chi Kai  
Tan Jean Yi  
Lim Tian Jing  
Ng Chang Ren  
Lee Ho Jun  
Pinky Tan Jun Inn  
Lee Seng Kiat  
Wong Kwow Kenn  
Yew Kwan Yang  
Lim Meng Yeow  
Choong Li Hva  
Luiz Ong Ing Jhek  
Tan Lo Ming Marvin  
Navid Hamzeheinejad  
Nicole Teh Siew Heong  
Chong Wei Liam  
Shaun Paul Lee Wei Loog  
Murshid Bin Mahmud  
Kwan Yi Tong



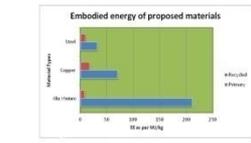
# Life Cycle Analysis & Embodied Energy



Scrap aluminum is used instead of recycled

## Material Costing

- 1 Pot RM10 x 60 RM600
  - Soil 1 pkt. RM10 x 5 RM50
  - Cocomat RM2 1 pkt x 5 RM10
  - Structure (aluminum, screws, transportation, manufacture) approx. RM 1000
- Total : ~ RM1660



Hydrocarbons, Nitrogen oxides, NH3, Dry and warm climate, Hydrocarbons, Nitrogen oxides, COPPER has the highest photochemical ozone creation potential at 0.02 kg Ethene Eq. / kg.

Air pollution, NOx, SO2, H2S, Fertilisation, Waste, NO3, NH4, COPPER has the highest eutrophication potential at 0.02 kg Phosphate Eq. / kg.

ALUMINIUM has the highest global warming potential at 0.13 kg CO2 Eq. / kg.

ALUMINIUM has the highest acidification potential at 0.13 kg SO2 Eq. / kg.

# Plants



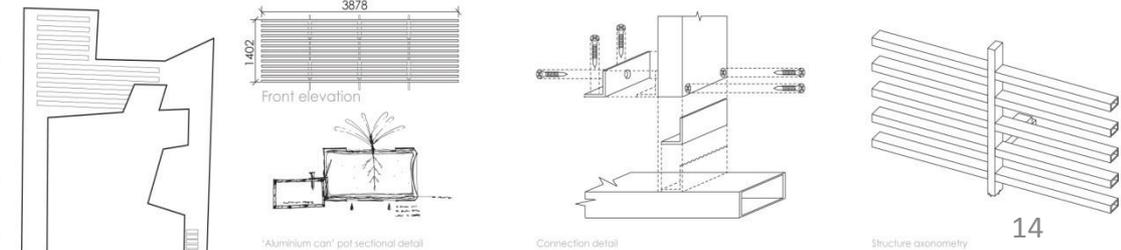
**Concept**

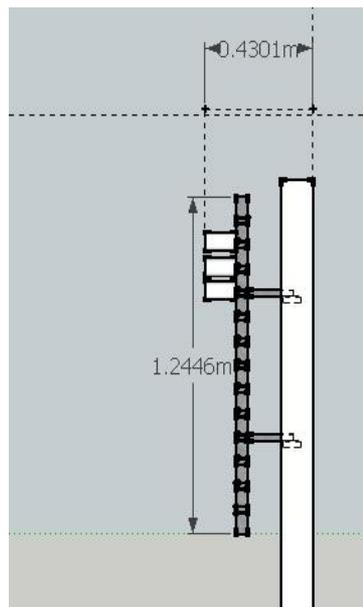
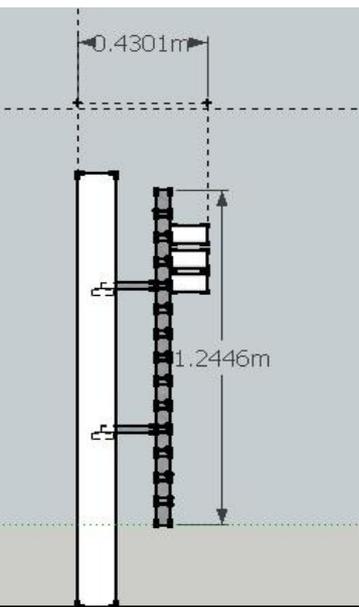
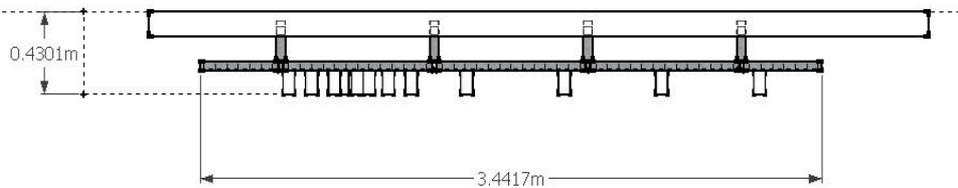
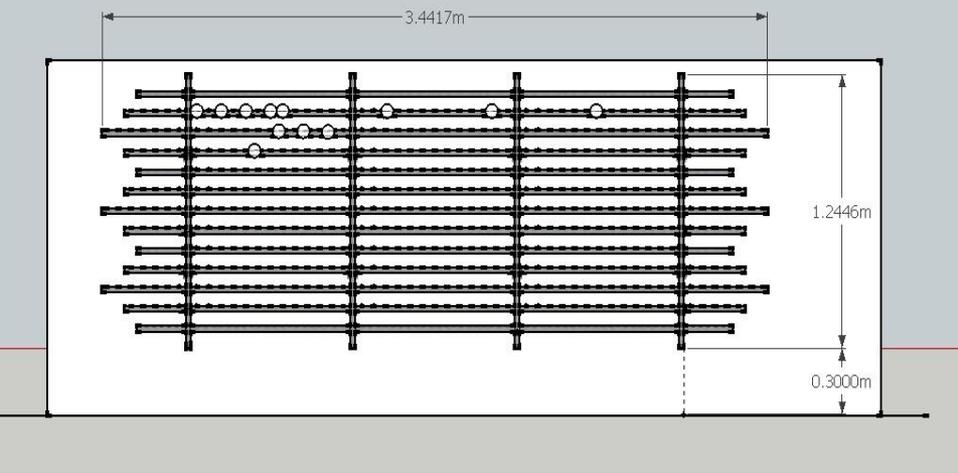
The dominating concept behind our green wall design is embodied in the statement: "more than just a passive green wall, Green walls in urban environments can help to lower the overall temperature of the building and increase carbon neutrality, or merely as an aesthetic pleasing element. Rather than designing just another green wall, we decided to add a degree of interactivity and practicality to our green wall. The interactivity aspect of our green wall was inspired by the enigma of solving jigsaw puzzles. In

solving jigsaw puzzles, the pieces are intended to take single, separated units or pieces and join them together in order to form a complete picture. Taking inspiration from this, we created individual pots and attach them to the wall in any location they wish. Slowly but surely, the pots will collectively create a sort of abstract picture like an collage, framed by the structure of the green wall, its meaning decided by the people who observe it. The artists and designers can

take inspiration from this as well. As for the productivity of the green wall, the plants that would be grown in the pots would be of the edible variety. With proper gardening skills and food management, this green wall would become a recurring, self-sustaining source of food, reducing the user's dependency of outside sources of sustenance.

## Drawings



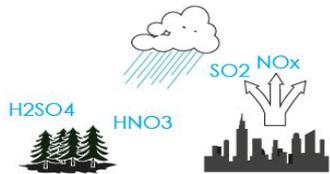
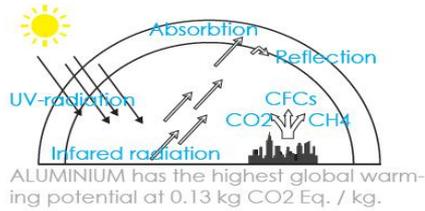
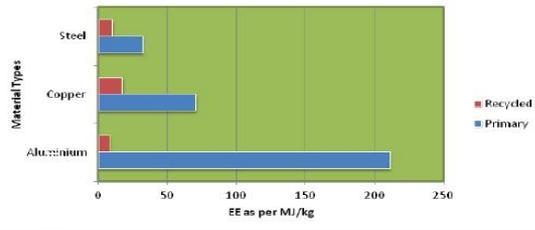


The main purpose of a green wall is to provide a place for plants to grow. They are normally built for aesthetic purposes and also for environmental reasons. However, our green wall goes beyond that. By using herbs as our choice of plants, the user gets access to fresh herbs of their choice, and the green wall will also give a variety of smells. In addition, our green wall can also be an expression of the user's creativity because of the free arrangement of the planters. To explain that concept, the planters in our green can be removed and attached to any part of the structure, enabling for freedom in arrangement.

The idea of this green wall originates from the concept of Lego bricks. The concept of arranging the building blocks to form whatever pattern or shape that you desire. We implemented that concept in our green wall design by allowing the user to free arrange the planters to any position that they desire. Eventually, the arrangement of the planters will be an expression of the creativity of the user.

This green wall is an example of a minimalism approach to design. We wanted to keep the design as simple as possible, and hence the structural look. The reason we took a minimalist approach is because this is also the same approach that Ken Yeang made when designing the Shalini Ganendra Fine Art Gallery. By having a similar approach, the design will look one with the site.

### Embodied energy of proposed materials



Aluminium has the highest acidification potential at 0.13 kg SO<sub>2</sub> Eq. / kg.



The main structure of our green wall is made out of aluminium, noting else. There is no plastic, or any other non-biodegradable materials in the structure, everything can be recycled.

For our aluminium usage, we used the aluminium bars before it is being recycled, therefore saving the processing process. The planters are made out of aluminium cans and to make the planters child friendly, we have bent the edges after cutting out the opening, to avoid any injuries.



Spearmint



Rosemary



Thai Basil

The types of plants that we have chosen are herbs. The reason we chose herbs are because they are small enough to be able to fit in the planters. Different herbs also give out a variety of smell to counteract the dusty smell of the roads.

The examples of herbs that we have chosen are rosemary, lemon balm, Thai basil, sweet basil, oregano and spearmint. These herbs also happen to be few of the most common herbs used in culinary. And hence, they also provide the user easy access to fresh herbs without the need to travel to the supermarket.



Sweet Basil



Oregano



Lemon Balm

# THE FINALISTS

# Finalist

## Group Curvation

Our groups' proposed design seeks to create a symbiotic yet contrasting relationship with the Shalini Ganendra Fine Art building. The design is curvilinear, rustic and utilizes natural materials while the gallery itself is rectilinear, industrious, modern and concrete.

We believe that the two opposing parallels of the green wall and the building would be complimentary and seek a subtle softness to the courtyard. Therefore, our group had the intention of using natural materials (such as wood) and utilizing the inherent 'soft and warm' qualities of wood to achieve the design concept. The main materials are wooden pallets and aluminum tins, both of which are entirely free and collected from factories, local businesses and households.

Furthermore, our proposed design comprises of modular system of crates and aluminum tin planters. In other words, the structure is a series of repetitive elements joined together to form a whole. The main advantage of a modular system is the ease of installation.



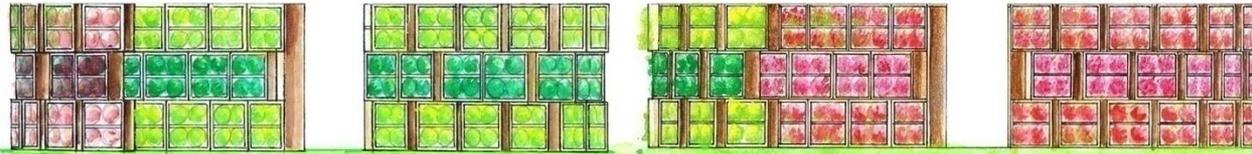
### GROUP MEMBERS:

- Christina Chan Pen Win
- Au Soung Hui
- Chan Chee Kiong
- Chanel Wong Kai En
- Chia Shook Qing
- Chloe Wong Choy Hoong
- Chong Hui Ken
- Chong Sheng Xin
- Clinton Tham Vun Khee
- Foo Hui Lin
- Foo See Jia
- Ho Khai Yin
- Joseph Wong Shun Hua
- Khor Cynthia
- Lee Pei Wen
- Lim Chee Siang
- Lim Chi Wooi
- Michelle Chung Chien Yin
- Ng Pei Hong
- Nik Muhammad Shafie Bin
- Nik Muhammad Hanafi
- Pua Wan Ling
- Sia Hong Rui
- Tan Hong Loong
- Tay Ke Tian
- Thuang Huah Jiunn
- Vanessa Yong Chau Yeau
- Yeo Chin Sheng

# GREEN WALL THE CURVATION

NORTH ELEVATION

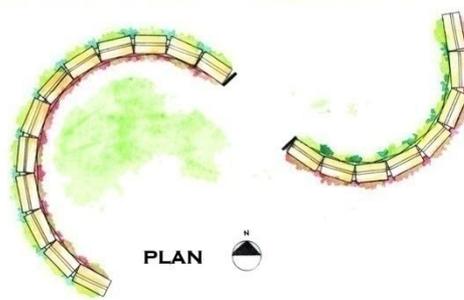
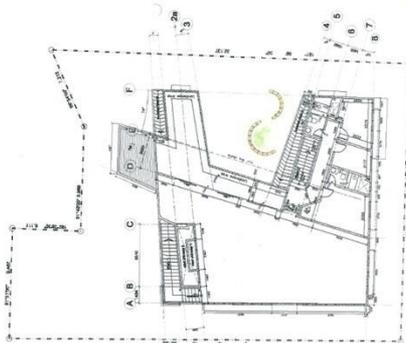
SOUTH ELEVATION



EAST ELEVATION



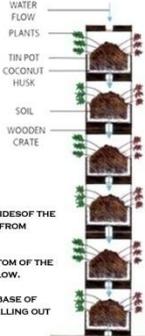
WEST ELEVATION



PLAN

## CONSTRUCTION METHOD

IRRIGATION AND DRAINAGE

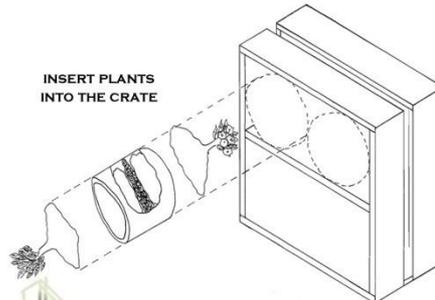


SEMI-CIRCLES ARE CUT OUT FROM THE SIDES OF THE TIN POTS. THIS IS TO PREVENT THE SOIL FROM POURING OUT.

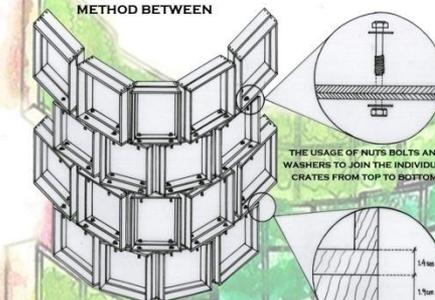
HOLES ARE CUT INTO THE TOP AND BOTTOM OF THE TIN POT, TO ALLOW WATER FLOW.

COCONUT HUSK IS USED TO LAYER THE BASE OF THE TIN POT, TO PREVENT SOIL FROM FALLING OUT YET STILL ALLOWING WATER FLOW.

INSERT PLANTS INTO THE CRATE



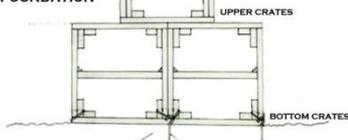
CONSTRUCTION METHOD BETWEEN



THE USAGE OF NUTS BOLTS AND WASHERS TO JOIN THE INDIVIDUAL CRATES FROM TOP TO BOTTOM.

THE MOST BOTTOM ROW OF CRATES ARE MADE UP OF PLANKS WITH THICKNESS OF 1.9CM WITH THE REST WOULD USE PLANKS OF 1.4CM.

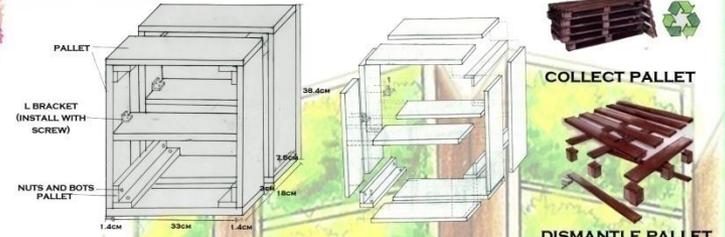
FOUNDATION



WE INTEND TO STABLE THE BOTTOM STRUCTURE BY USING TENT PEGS AND ROPES. WITH TENSION OF ROPES, THE BOTTOM CRATES WILL BE ABLE TO WITHSTAND THE LOAD OF UPPER CRATS.

## MATERIALS SELECTED

WOODEN CRATES



COLLECT PALLET

DISMANTLE PALLET

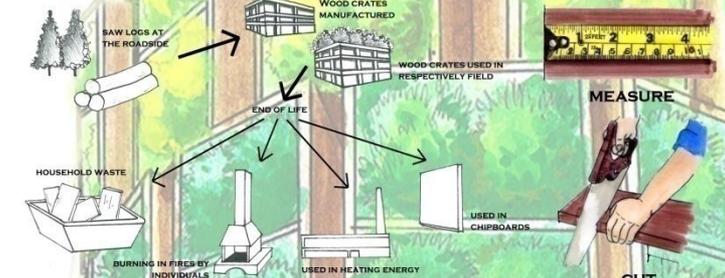
MEASURE

CUT

POLISH THE WOOD SURFACE



PUT ON SHELLAC



CHARACTERISTIC

- A RENEWABLE RAW MATERIAL
- WOOD IS AN ASSET AGAINST THE GREENHOUSE EFFECT
- A NATURAL MATERIAL, AND SO A NON-POLLUTING MANUFACTURE WITHOUT CHEMICAL ADDITIVES AND WITH LOW ENERGY CONSUMPTION
- RECYCLABLE: ONCE COLLECTED, THE RECOVERED WOOD IS SHREDDED AND OFFERS MANY OPPORTUNITIES: CHIPBOARD, WOOD FUEL, COMPOST
- MAINLY DONE IN THE LOCAL AREA AROUND THE PRINCIPAL AGRICULTURAL PRODUCTION SITES, WHICH POSITIVELY IMPACTS ON TRANSPORT COSTS

WHY CHOOSE WOOD INSTEAD OF RECYCLED ALUMINIUM?

1. ALUMINIUM IS HARD TO GET.
2. CANNOT GET ENOUGH ALUMINIUM.
3. ALUMINIUM COLLECTED IS TOO IRREGULAR.
4. PALLETS ARE FREE.
5. PALLETS ARE EASY TO COLLECT AND IN LARGE AMOUNTS.
6. MONEY SAVED ON WOOD IS SPENT ON SHELLAC.
7. THE OVERALL SIZE OF THE WALL IS REDUCED TO SAVE COSTS.
8. PALLETS (WOOD) SUIT THE INTENDED AESTHETIC BETTER THAN ALUMINIUM.

CHARACTERISTICS

ANNUAL SHRUB  
HEIGHT AND SPREAD: 1 TO 3 FEET

REQUIREMENTS  
TOLERATES HIGH SUMMER HEAT AND SOME DROUGHT  
PLANT IN FREE-DRAINING SOIL  
SHIELDED FROM SCORCHING SUN AND WIND

MAINTENANCE  
AVOID FERTILIZING LATE IN THE GROWING SEASON  
THE KEY TO WATERING IS WATER DEEPLY AND LESS FREQUENTLY

DURANTA YELLOW



CUPHEA WHITE



COLEUS BLUMEI



CHARACTERISTICS

- GROWS ANNUALLY  
- HEIGHT AND SPREAD: 8 TO 15 FEET  
- GROWS WELL IN TROPICAL REQUIREMENTS  
- TOLERATES SUN, PART SUN AND SHADE  
- NEED MOST BUT DON'T OVERWATER

REQUIREMENTS

- OCCASIONAL PRUNING  
- WATER BRIEFLY 2 OR 3 TIMES PER WEEK  
- MULCHES HELP PREVENT WATER LOSS DURING HOT, WINDY OR SUNNY WEATHER  
- USE FERTILIZER WITH A HIGHER NITROGEN CONTENT

MAINTENANCE

- THE KEY TO WATERING IS WATER DEEPLY AND LESS FREQUENTLY

PLANTS SELECTED

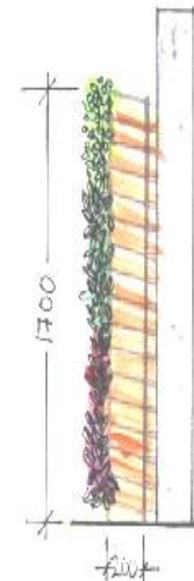
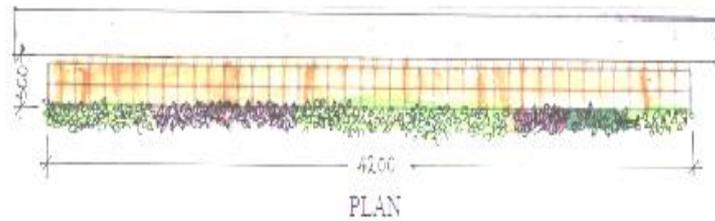
PROCEDURE OF MAKING CRATES

# Finalist

## The Green Cell

The initial concept came from an embryo which is corresponding to the phenomenon of a baby receiving the oxygen from the mother. We as a humankind are just like an infant-inhaling oxygen from nature. So, the structure of the green wall is designed in an organic shape to represent a cell. We use bamboo as the main material, which is renewable due to its rapid growth without the use of fertilizer. The facade of the green wall creates the aesthetic appearance by the natural colour of plants. We insisted upon minimizing the use of unrecyclable materials.

The children will be asked to place the plants regarding the colours. This creates an interaction between the children and the green wall; and psychologically the colours of the plants increase their excitement and triggers their imaginaries and creativities. The initial outlook of the green wall is only the grid of the BRC galvanized wire mesh with our proposed shape. In addition, bamboo is used as plant pots for its aesthetic properties - due to its natural colour and texture. Lastly, various colours of the plants enhance the appearance of the structure to reach the aesthetic value of our green wall.



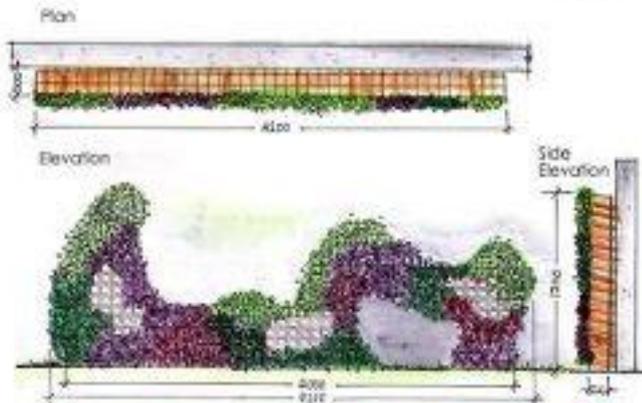
### Group Members:

- Christine Ting Tien Nee
- Goh Yow Feong
- Michele Tan Mei Juen
- Kelvin Teoh Kai Wen
- Ng Jing Tze
- Ong Yin Wei
- Look Yik Yeong
- Wu Hao Wen
- Pang Kian Ming
- Lau Hau Jye
- Ng Shu Qin
- Ng Choo Han
- Lim Yen Yin
- Liew Zhen Shearn
- Stephanie Mah Chiew Lynn
- Wong Dao Min
- Poh Mun Lee
- Phum Boon Wei
- Yap Wen Yi
- Chua Mer Sie
- Chew Mee Koon
- Loh Pei Zhen
- Lee Xiao Hui
- Martin Wong Tuong Ying
- Choong Siu Fai
- Astari Razak
- Mohamad Nazreen
- Ali Suleman Rizwan
- Loo Man Lok

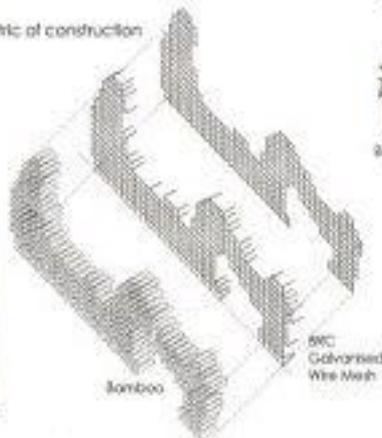
**Project :** Green Wall  
**Site Location :** No 8, Lorong 16/7B, Petaling Jaya, 46350, Selangor, Malaysia  
**Building Name:** Shailini Ganendra Art House

**Design Concept**

The concept of the design is derived from the embryo. The people who are sitting in the structure are receiving the fresh oxygen from the surrounding plants. It is corresponding to the natural phenomenon of a baby receiving oxygen from his mother. The arrangement of the pots is according to the colour of the plants, which illustrates an abstract on the green wall. It represents the idea of invagination of the embryo.



**Anomeric of construction**



**Materials**



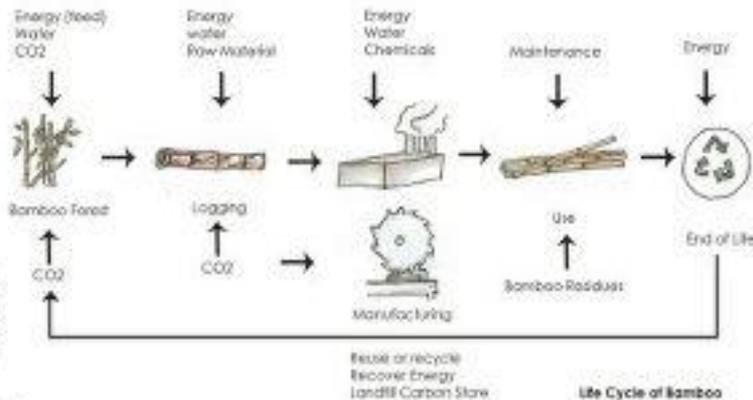
Bamboo

- Advantages:**
- Aesthetic value
  - Light weight, but durable and resilient
  - Low maintenance
  - Natural and renewable (rapid growth - harvested in 3-6 years) without the help of fertilisers.
  - Non-polluting & does not produce waste



BRC Galvanised Wire Mesh

- Advantages:**
- Lowest than other commonly specified protective coatings for steel.
  - Last long as the coating life is reliable
  - Outstanding resistance to mechanical damage in transportation and erection.
  - Low maintenance
  - Faster erection time as they are ready to use after they are assembled



**Plants**



Light: indirect or dappled sunlight.  
 Price Selling: RM5.30/per with pot  
 Pot Size: 6-7cm diameter  
 Water Needs: Medium  
 Maintain: Low

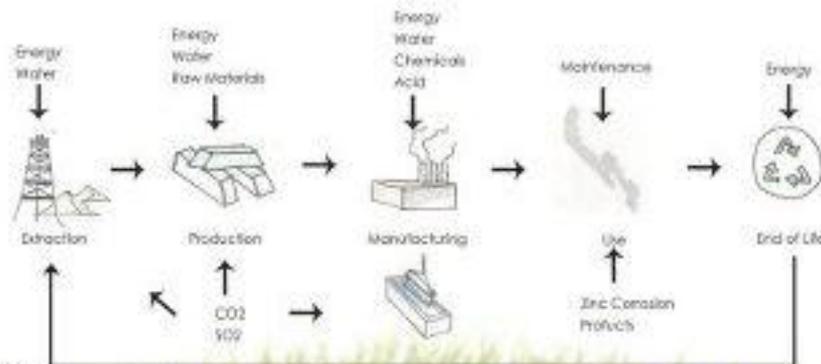


Light: indirect or dappled sunlight.  
 Price Selling: RM5.50/per with pot  
 Pot Size: 6-7cm diameter  
 Water Needs: Medium  
 Maintain: Low



Hamigraphis alternata (purple)

**Common Name:** red flame ly  
**Type:** Herbaceous perennial  
**family:** Acanthaceae  
**Sun:** full sun to part shade  
**Water:** Medium  
**Maintenance:** Low  
**Problem:** No serious insect or disease problems; watch for scale and aphids.



Steel & zinc recycle loop (100%)

Life Cycle of BRC Galvanised Wire Mesh

**Features of Sustainability**

- using bamboo as main materials, which is renewable due to its rapid growth without the fertiliser.
- improve the surrounding air quality as the plants give off oxygen into the environment.
- creating the aesthetic appearance by the natural colour of plants.
- using the materials that durable requires low maintenance
- minimize the use of unrecyclable or unusable material.
- does not require irrigation system that consume electricity

**Overall Costing**

Plant	RM70.00
Bamboo	RM400.00
Steel	RM1500.00
Total	RM1970.00

Perspective View

# Finalist

## The Green Wall

Project idea:

- To increase awareness of current environmental issues
- To abstract ideas from brush strokes of an abstract painting.
- To evolve a line into a linear plane acting as a shelf for plants
- To signify the importance of lines to a face or façade
- To create a floating garden visual effect from the linear plane
- To stimulate the simplicity of a façade.

Recyclable and biodegradable materials are used. Embodied energy of certain materials is considered via the use of materials that require less energy during production.

Children learn to enhance their creativity when putting the pots into the shelves by playing with the arrangement of multicolor varied plant. Children gain their sense of responsibility when they handle the plants and taking care of them.

Instead of just simple lines, curves are designed to enhance its aesthetic function. Climbers on wire mesh acts as the main façade giving it a green look as well as forming its main façade. Plant chosen are multicolored and hence and appeals to the eye.



### Group Members:

Ooi Shin Tze  
Audrey Chna Chu Sien  
Bernard Ling Ching Chiong  
Bong Hong Chun  
Chen Kah Yee  
Chew Zhen Joon  
Chong Wan Yee  
Chong Zohan  
Choong Wan-Huey  
Chuah Phaik Lin  
Eric Kwan Zheng Hao  
Irwin Adiputra Bin Abdul Samat  
Kiu Guan Ying  
Lau Wei Ann  
Look Kit Yean  
Muhamad Akmal Bin Mohd Yazit  
Nathaniel Ng Yingqian  
Nurul Azmi Bin Zulkifli  
Rahim Rizwan Bin Rahimazlan  
Rania Mohamed Mohieldin Ali  
Soon Jia Wei  
Tan Kai Xin  
Teh Deryan  
Teh Tsu Tsen  
Tiow Tze Jinn  
Wan Haziq Hilmi Bin Wan Zainudin  
Wong Chea Yee  
Wong Shyang Tsair

# THE GREEN WALL

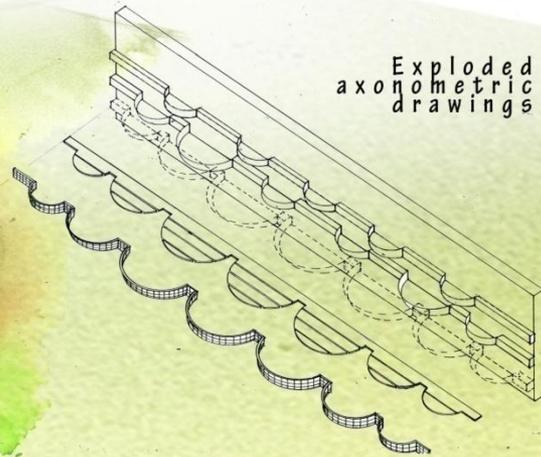
## Design Concept

Layers of green shelves parallel to each other displaying flowing lines that form a rhythmic wave all together like a picture. Symbolizing the continuous flow of a paintbrush when it is used to stroke beautiful flowing lines that merge together with other lines to form a beautiful work of art.



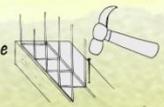
## Construction Methods Details

Exploded axonometric drawings

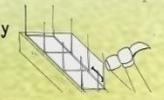


## How? Process of Installing

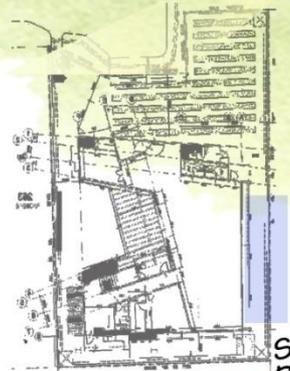
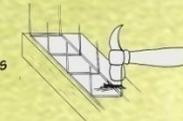
First, hammer the nail into the wood plank.



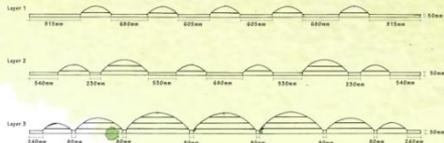
Second, hammer the nail sideways so it would tilt towards where the wiremesh is



On side ways, hammer it vertically until the nail presses onto the wire mesh, holding it in place.

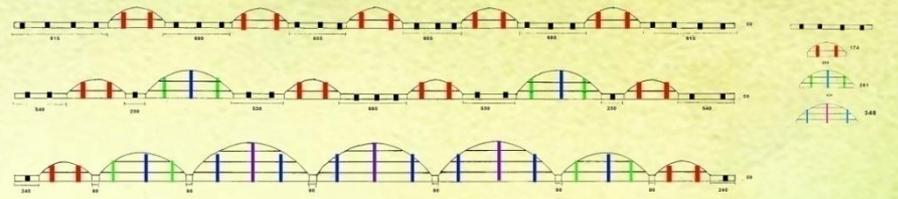


Site Plan not to scale



Plan Detail not to scale

## Brackets Dimension

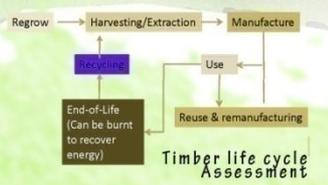
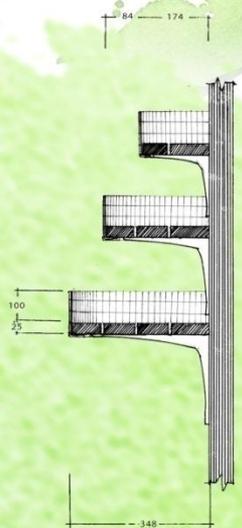


The coloured lines represents different dimensions of brackets that are to be used in the constructions

Colour	Bracket dimension (mm)
Black	100x100
Red	100x150
Green	200x100
Blue	200x150
Purple	300x150

Section not to scale

## Material Analysis



Timber life cycle Assessment



Steel Life Cycle Assessment



Name: Colour Blazer: Painted Nettle (Hasi basi)  
Soil: Any balanced potting mix  
Light: Bright light  
Watering: Once per day  
Maximum height: 300mm  
Color: Green edges of color ranging from blood-red to brown  
Function: Treat stomach pain, digestive problems  
Supplier: Villa Gate Garden, Sg. Buloh  
Cost: RM 2.50 per bag  
Quantity needed: 150  
Total Cost: RM375



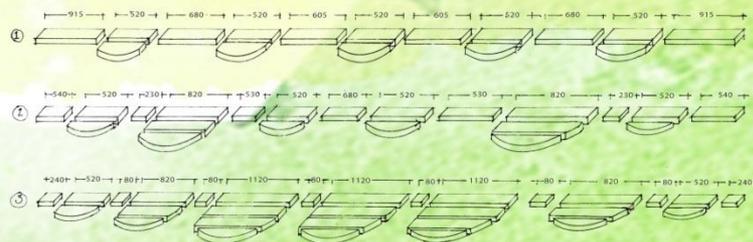
Name: Morning Glory (Climbers)  
Soil: Any balanced potting mix  
Light: Bright light  
Watering: Once per day  
Maximum height: No limit, will continue grow along support system  
Color: Green leaves with purple flower  
Supplier: Pang Kat Florist, Sg. Buloh  
Cost: RM 10 per pot  
Quantity needed: 20  
Total Cost: RM200

Plant Pot  
Diameter: 100mm  
Height: 80mm  
Material: Plastic  
Advantages: Light-weighted, always keeps plants moisture  
Disadvantages: Color fading  
Supplier: Pang Kat Florist, Sg. Buloh  
Cost: RM0.60 per pot  
Quantity Needed: 150  
Total Cost: RM90



## Plants

## Curve Dimensions



## Costing

Supplier	Item #	Description	Unit Price	Quantity	Total Price
SUPPLIER: SEE HUP HARDWARE	14820	wood plank	3.30	150	500.00
	7520	16C wire mesh (spacing 50mm x 20mm)	3.50	150	525.00
	3520	16C L-shaped brackets (around 30mm)	4.00	30	120.00
	2220	16C L-shaped brackets (around 100mm)	4.00	30	120.00
	820	medium L-shaped brackets (around 100mm)	6.00	6	36.00
	1020	medium L-shaped brackets (around 300mm)	6.00	3	18.00
SUPPLIER: Top Kat Florist	1020	16C L-shaped brackets (around 300mm)	6.00	3	18.00
	320	large L-shaped brackets (around 300mm)	6.00	3	18.00
SUPPLIER: Paling Indah Florist Sg. Buloh	15020	16C L-shaped brackets	2.50	150	375.00
	2020	16C L-shaped brackets	2.50	150	375.00
	15020	16C L-shaped brackets	10.00	150	1500.00
	15020	16C L-shaped brackets	0.60	150	90.00

# Finalist

## Eco Tube Wall

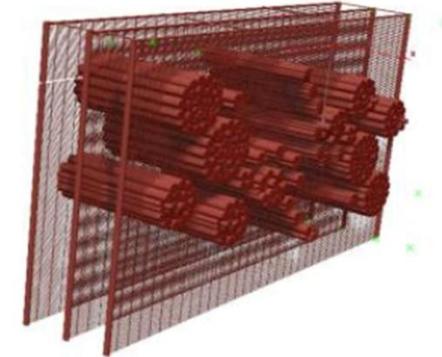
Our design began with the idea of a floating garden and in order to achieve structural stability and at the same to keep within the proposed budget we decided to use wire mesh as it could achieve a rather non-opaque surface.

When it comes to the materials involved our project is mainly made out of galvanized iron and bamboo. The reason for the galvanized iron is not only for aesthetic looks in regards to the concept of the project, but rather its strength to withstand the shear weight of 150 bamboo pieces, where each bamboo is 70 cm in length.

The basic idea was to merge man-made elements with nature as we believe the gallery itself is a fine example of intersection with nature.

As for the interaction between the structure and the children audience, the concept behind it was to make a structure the height of an average adult so not only the kids can participate in activity, but the parents can actually life up the child to plant the pots into the bamboo pieces.

In a sense a busy average parent having a fun day with their kids, making it a family orientated activity where families can get closer with their kids and the plant that becomes the symbol of family growth.

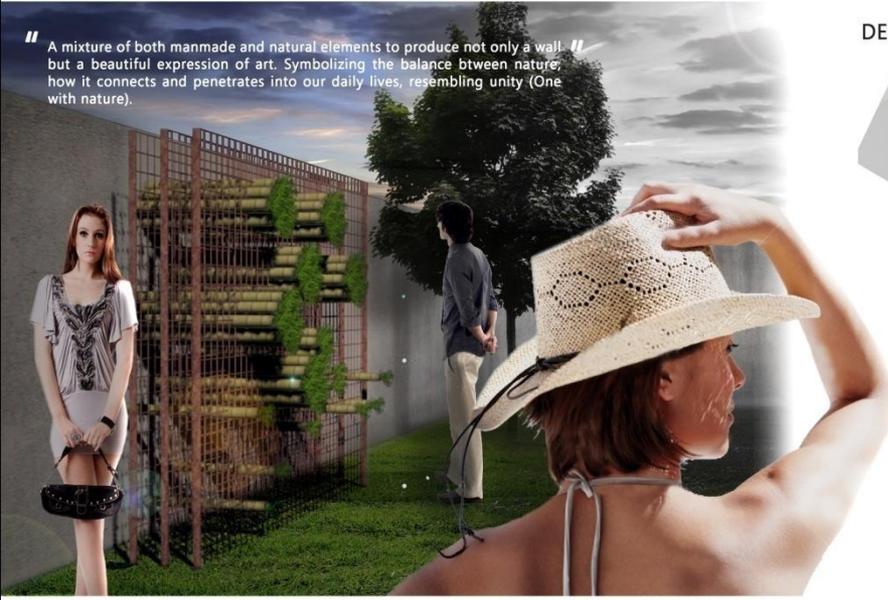


### Group Members:

Yash Khandelwal  
Noor Deenas Abdul Talib  
Mohd Ashraf Amran  
Qua Yu Xuan  
Wong Man Hou  
Alice Wong Kie King  
Siow Yee Sin  
Melissa Kong Wyeng-Tse  
Michael Kon Keeh Yih  
Khairil Azwan  
Deborah May Kenneth  
Tan Hop Kins  
Tan Wan Chyi  
Rebecca Toh Jia Hui  
Yap Teng Ji  
Soh Hui Xiang  
Nur Aida Rosdi  
Nikki Hills  
Ahmed Shabin Habeeb  
Raymond Sentamu  
Bong Jia Kai  
Asyraf Riduan  
Goh Qi Xian  
Adi Ashraf  
Aryo Dhaneswara  
Low Jeng Foong

# GREEN WALL PROPOSAL

"A mixture of both manmade and natural elements to produce not only a wall, but a beautiful expression of art. Symbolizing the balance between nature, how it connects and penetrates into our daily lives, resembling unity (One with nature)."

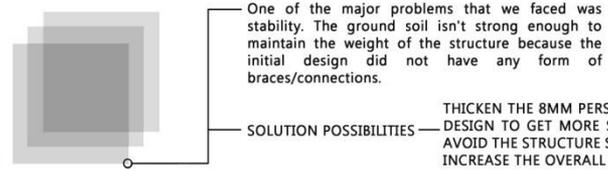


## DESIGN PROCESS AND CONCEPT RATIONALIZATION



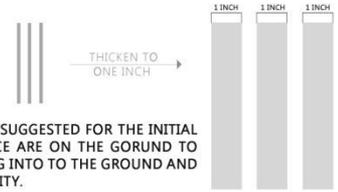
Diagram 1.1

### DIFFICULTIES FACED WITH OUR INITIAL DESIGN



#### SOLUTION POSSIBILITIES

THICKEN THE 8MM PERSPEXES SUGGESTED FOR THE INITIAL DESIGN TO GET MORE SURFACE AREA ON THE GROUND TO AVOID THE STRUCTURE SINKING INTO TO THE GROUND AND INCREASE THE OVERALL STABILITY.



Although the perspex being thicker might solve the problems faced. It created another problem, "budget", hence the idea was withdrawn.



### SOLUTION

#### Keep Concept, Change Materials

In order to achieve structural stability and at the same time to keep within the proposed budget we decided to change the perspex into wire mesh. The idea was to keep the concept of the floating garden. Although wire mesh might not be completely transparent, we still achieve a rather non-opaque surface.

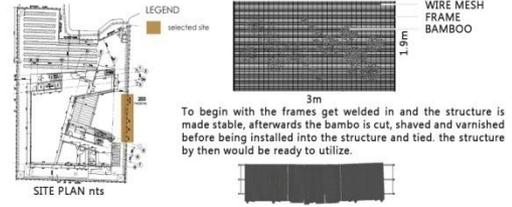
## FINANCIAL DETAILS

Material	Quantity	Price/unit	Total Price	Contact Details/Source
1 Wire Mesh A-10	3	RM45 (6x12ft)	RM135	Hardware shop, Mr Eric, 016-2368650
2 Galvanised Iron Bar	3	RM35 [20ft]	RM105	Hardware shop, Mr Eric, 016-2368650
3 Bamboo	0	RM0	RM0	Private Orchard, Group mate Khairi's neighbour, 017-6184818
4 Plastic pot	4	RM10 [42 units]	RM40	Evershine Garden, Raju, 012-3170630
5 Ophiopogon japonicus 'Kyoto Dwarf'	50	RM2	RM100	Evershine Garden, Raju, 012-3170630
6 Euphorbia aureum (Money Plant)	17	RM10 [3 pots]	RM170	Parling Horticulture Sdn Bhd, Bernards, 012-3722006
7 Hemigraphis Alternata	50	RM1	RM50	Evershine Garden, Raju, 012-3170630
8 Welding (Workmanship)	1 Welder	RM120 [1 day]	RM120	Factory Manager, Wong Wing Kan, 012-2710799
9 Cutting of Bamboos (Workmanship)	0	RM0	RM0	Taylor's University Carpentry Workshop.
10 Transportation (Lorry)	1	RM350 [1 day]	RM350	Advertisement.
11 Rope	20	RM2 [1 metre]	RM40.00	ACE Hardware.
GRAND TOTAL:			RM1,141.50	

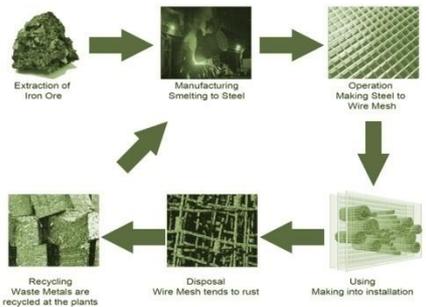
## PLANT USED (SPECIFICATION)

Plant	Mondo Grass	Money Plant (Golden Pothos)	Metal Leaf Plant, Red Ivy, Red Flame Ivy
Scientific Name	Ophiopogon japonicus "Kyoto Dwarf"	Epipremnum Aureum Family Name: Araceae	Hemigraphis Alternata
Growth Height	6 - 12 cm	7.5 - 20 cm	15 - 30 cm
Light Requirement	Medium to high	Low light (indirect light)	Medium Partially shady place
Soil Moisture	Well-drained soil	Medium water Allowing the surface to dry out between each watering	Medium, well drained soil
Characteristics	Slow growth plant Uses as decorative plant, ground cover Can withstand 15 - 24 Celsius	Soil type: humus or organic - enriched potting mix holds moisture. Uses: Ornamental foliage plants Suitable as climbing vine on poles, trellis, fences or wires.	Spreading horizontally Uses: foliage plant, mass planting, and ground cover

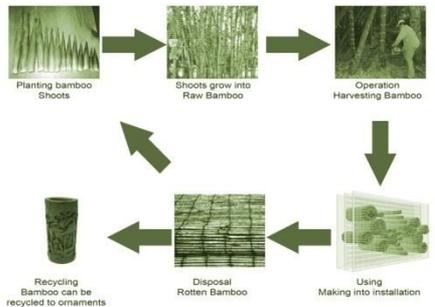
## CONSTRUCTION PROCESS



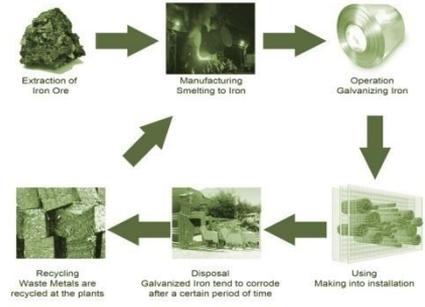
### STEEL WIRE MESH (LCA)



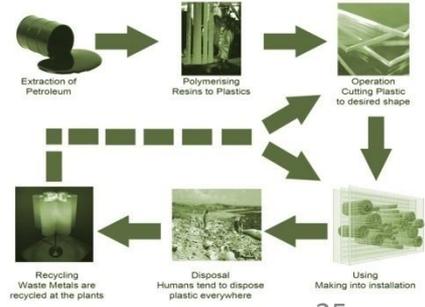
### BAMBOO (LCA)



### GALVANIZED IRON (LCA)



### PLASTIC (LCA)



# SHALINI GANENDRA FINE ART

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