



Project 1

Bicycle scapes workshop

Place- Auroville

Duration- 1 month

Priyanka Marawar
IDC IIT Bombay 2009

INTRODUCTION

The bicycle friendly area design workshop was conducted in the city of Auroville, Tamil Nadu for design, architecture students and young professionals. 16 students, 10 mentors, sponsors and hundreds of aurovillians came together to improve the bicycling experience in Auroville.

ABOUT AUROVILLE

The project of auroville, located approximately 12 kilometres north of puducherry in south india, was formally inaugurated on 28th February 1968 with the aim of becoming a universal township dedicated to realization of the ideal of human unity.

The founder of Auroville, a French lady born Mira Alfassa in paris, who later became known as the Mother after being give the cahрге of the Sri Aurobindo ashram in Pondicherry, followed its development until her demise in 1973.

The auroville charter comprises of the following

- Auroville belongs to no body in particular. Auroville belongs to humanity as a whole. But to live in Auroville one must be a willing servitor of the divine conciousness.
- Auroville must be a place of an unending education of constant progress and a youth of never ages.
- Auroville wants to be a bridge between the past and the future. taking advantage of all discoveries from without and from within, Auroville will boldly spring towards future realisations.
- Auroville will be a site of material and spiritual researches for living embodiment of actual human unity.

Auroville was planned to be an international township where men and women of all the countries are able to live in peace and progressive harmony above all creeds, all politics and all nationalities.

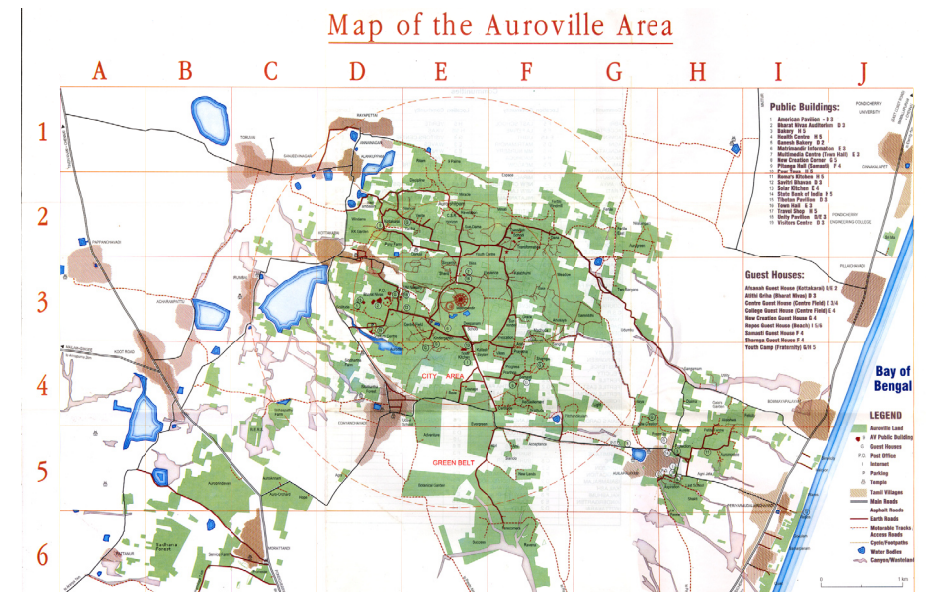
Since the time of its inception Auroville is an Eco city in the making. it offers good willed people the opportunity to experiment and develop their expertise.

The city is physically radial in nature. The matrimandir (meditation centre) is the centre of the city. the city's geographical premise is 5 kms diameter. Its divided into four zones as follows, cultural zone, International zone, Industrial zone, Residential zone. 2.5km diameter is the city area while the next 2.5 kms is the green belt area.

The current population of Auroville is around 2000 people while the city is being built to eventually accomodate a population of 50000 people.



Matrimandir



The people that were a part of bicycle friendly area workshop

Participants

Kumarappan
Rishabh
Nash
Shiba
Priyanka.B
Yamini
Silky
Mukta
Anshu
Richa
Dipti
Vidya
Animesh
Supratim
Akshay
Priyanka.M

Mentors

Alok
Bindu
Chandresh
Hemant
Min
Mona
Prashant
Raghu
Suhasini
Uma

Special Invitees

Jeff
Lalit
Maggie
Tency
Thulasi
Toine
Vivek

A collaborative offering with

Auroville Community Transport L'Avenir
d'Auroville
Aurore
Auroville Design Consultants
Center for Scientific Research College Guest
House
Mona Doctor-Pingel
Prashant Hedao
Raghu Kolli
SAIIER
Ulrich Blass
Upasana Integral Design

Logistics

Kumaran

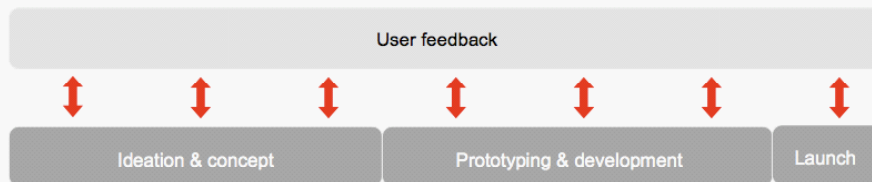
all Aurovillians



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User Centered Design Process



Continuous user inputs through out the product development life cycle

THE PROCESS

Its defined as a user centered process where the user in this case being the citizen of auroville is interacted with for feed-back at regular intervals during the entire process. Changes are made in the process and the solutions depending upon the feedback recieved.

The stipulated duration for the workshop was 4 weeks and it consisted of the four following phases the final demonstration being on the 16th of june.

Week-1 : Orientation and Field research

Date	Early	Morning	Afternoon	Evening
S 16 May			Arrival	
S 17 May		Arrival	Arrival	
M 18 May				Movie
T 19 May	Option			
W 20 May	Option			
T 21 May	Option	Field research	Field research	AV Experience
F 22 May		Field research	Field research	
S 23 May		Plenary presentations	Concept briefing B-3	Team dinner
S 24 May		Free	Free	

Orientation and research

Week-2 : Ideation and concepts

Date	Early	Morning	Afternoon	Evening
M 25 May		Ideation	Ideation	Movie
T 26 May	Optional	Ideation	Ideation	
W 27 May	Optional			AV Experience
T 28 May	Optional			
F 29 May				
S 30 May		Plenary presentations	Design briefing B-4	Team dinner
S 31 May		Free	Free	

Ideation and concepts

Week-3 : Design

Date	Early	Morning	Afternoon	Evening
M 1 Jun		Design	Design	Movie
T 2 Jun	Optional			
W 3 Jun	Optional			AV Experience
T 4 Jun	Optional			
F 5 Jun		Design	Design	
S 6 Jun		Plenary presentations	Prototyping briefing B-5	Team dinner
S 7 Jun		Free	Free	

Detail design

Week-4 : Prototyping and construction

Date	Early	Morning	Afternoon	Evening
M 8 Jun		Prototyping/Construction	Prototyping/Construction	Movie
T 9 Jun	Optional			
W 10 Jun	Optional			AV Experience
T 11 Jun	Optional			
F 12 Jun		Prototyping/Construction	Prototyping/Construction	
S 13 Jun		Plenary presentations	Demo briefing B-6	Team dinner
S 14 Jun		Free	Free	

Construction

Week-5 : Presentation and Demo

Date	Early	Morning	Afternoon	Evening
M 15 Jun				Preparation
T 16 Jun				Closing dinner
W 17 Jun				
T 18 Jun				

Demonstration - 16 June



ORIENTATION

The 16 participants of the workshop underwent a short orientation before the actual commencement of the design process. This orientation program was done quite informally where we became familiar to the mentors, their expertise and respective fields of work. We were introduced to facts about Auroville. This helped us to familiarize with the environment and its resources. This orientation also comprised of a long bicycle riding experience which took us all around the city to understand, feel the bicycle pathways better. It helped us understand the problems, variations in terrain and other various aspects.





Bamboo research

we were also taken to the industrial units in and around auroville to get a glimpse into the availability of technical, industrial resources in the area. we were also taken to centres that are involved with scientific, architectural research and development to get a glimpse of Auroville technology and techniques. we were taken to art and craft units, cultural centres, national pavilions to understand the culture of Auroville better.



Auryaj granite workshop



Earth Institute

One very important event that was a part of the orientation process was the visit to the Matrimandir(meditation centre) which is the soul and the physical centre of Auroville. The visit to the matri mandir was truly a breathtaking experience owing to its innovative and unique architecture and the substance that it stands for.

Other activities that were undertaken were improvisation workshop, yoga somatics, plays, performances and organic farming which gave us a further insight into the rich culture of Auroville.



RESEARCH

The scope of the data collection process was to get the following data.

What do users 'feel' about cycling ?

Values, concerns, fears ...

What are the issues of cycling environment ?

Paths, shelters, parking, barriers, weather ...

What are the routes and traffic issues ?

Signs, destinations, context ...

What do users wear and carry ?

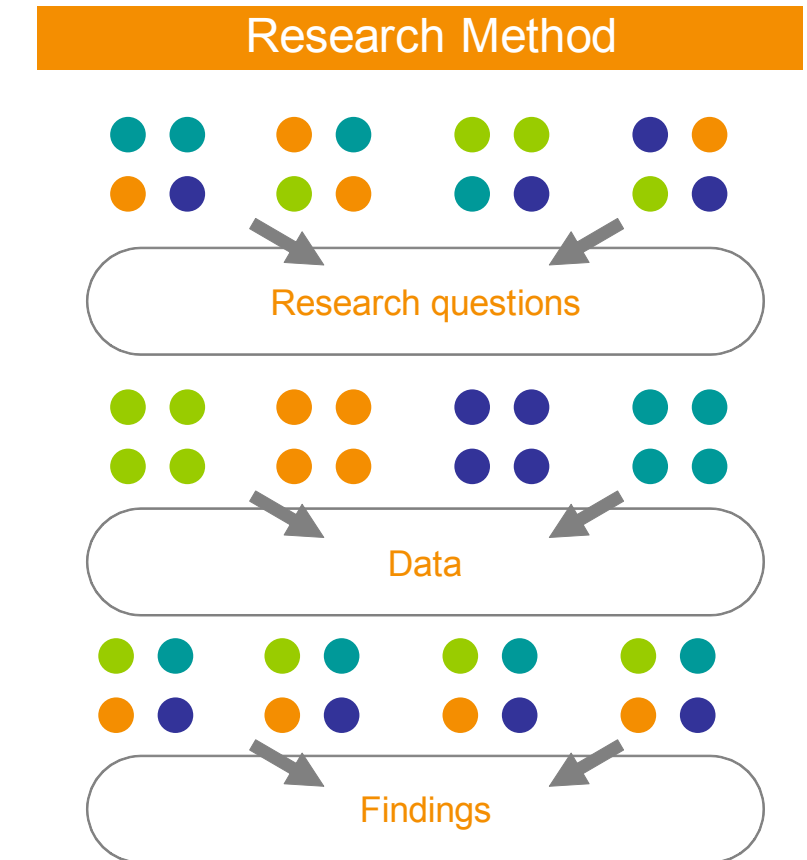
Bags, passengers, masks ..

The data was collected using the following methods. the nature of the data to be collected decided the mode of data collection.

- Photo observations
- Spot questionnaires- these were conducted to get quantitative data
- Detailed interviews- people with specific profiles were chosen for detailed interviews to get various insights into different peoples problems
- Focus group discussions- people with specific profiles were chosen for this group discussion to ensure that the group contains aurovillians of all kinds to get balanced point of views.

The data collection was done by splitting up the group of 16 into smaller groups of 4 each. After the data collection the data was filtered and the groups of 4 people were shuffled again such that the new group contains 1 member from the previous group each. This was done to ensure constant collaborative inputs. the data was analysed in these groups. Each group took 1category for data analysis.

- Feelings, personas
- Routing, traffic and wayfinding
- Environment, Weather, Paths and Shelters
- Products and accessories, things carried on the bike



Research findings

Feelings, personas

We got an insight into the various reasons why people cycle. Each group of people have distinct problems. People expressed their deepest greivances and concerns.



Guests



Avid cyclists



Non cyclists



Functional cyclists



Passionate cyclists





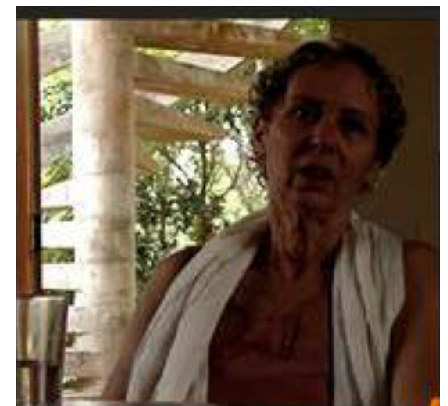
"I hate riding at night. I just hate it." (lighting solutions are needed)

"Thorns are our only enemies" (paths need maintenance)

"I feel like I am a second class citizen" (preference for cyclists)

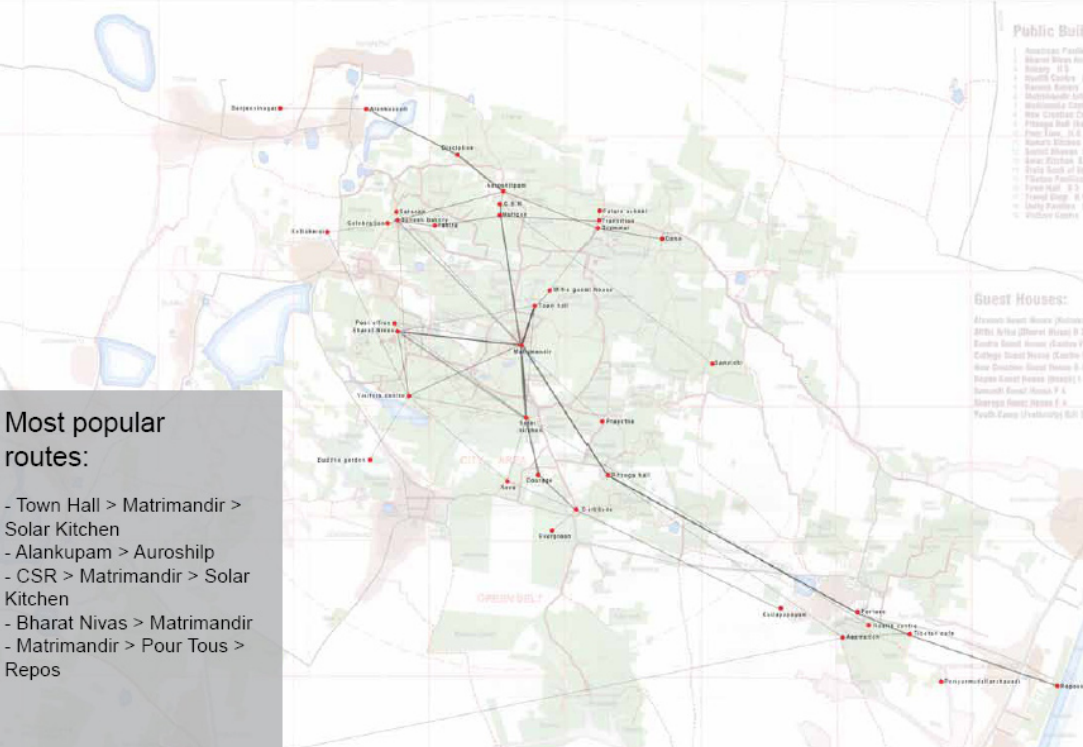
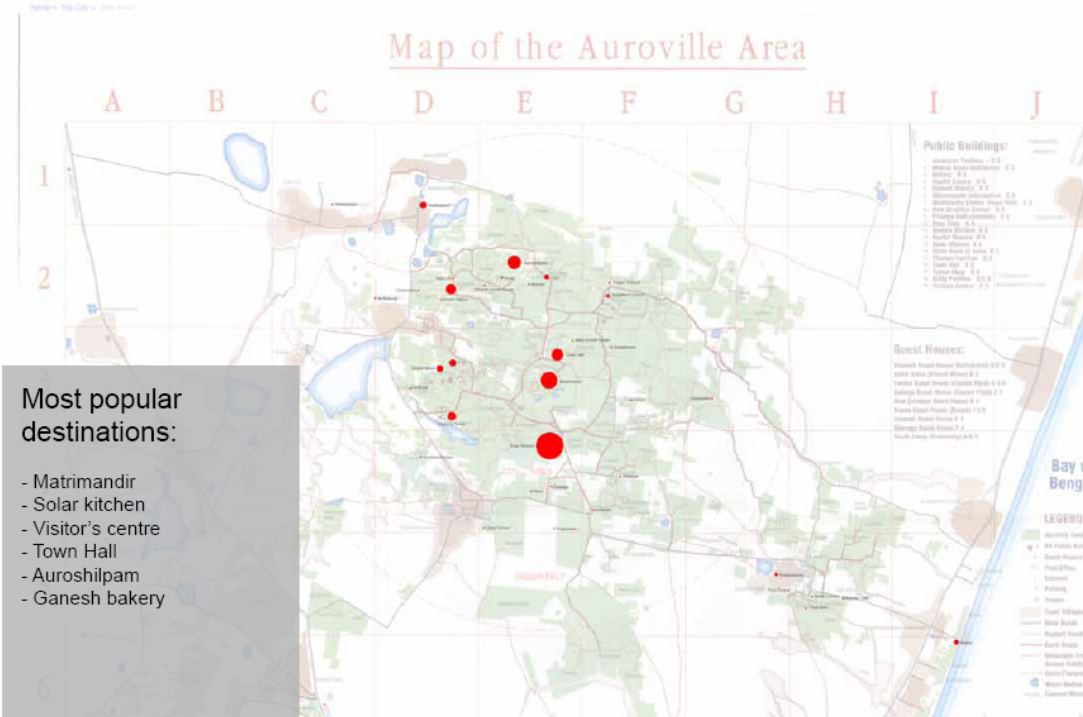
"People get confused because they don't know where they are. For visitors its quite frightening!" (guest map)

"I cycle because im concerned about the environment and not because its good for my health."



Routing, traffic and wayfinding

Most popular routes and destinations were determined.





Different kinds of junctions were studied to study the traffic problems around them



Existing signage systems are quite irregular, bilingual. It lacks a system approach with the rest of the routes.

Other observations

- people cycling in from the villages
- people want some aloof routes (privacy)
- paths are not part of the holistic mobility plan
- routes that are aloof do not have light
- absence of two separate lanes
- Wayfinding system is needed as multilingual and graphic based
- sorting/streamlining of traffic (at crossings) is needed
- absence of pedestrian paths

Environment, Weather, Paths and Shelters

- Cyclists prefer a more natural, open and fresh environment to tread
- Dust is a health concern to a lot of Aurovilians
- Summer months become too hot and in monsoon's paths becomes slippery hence some cyclists use alternative modes of transport (Motor Cycles and Moped's)
- Most people don't cycle in the night as the paths are not lit and there are safety concerns
- The paths have undulated, uneven terrain. (worry for people with ailments)
- Wheelchairs, pedestrians have no specific place on the roads which causes confusion and accidents
- The most commonly visited places should be well connected with cycle paths





Aurovilians prefer taking backways or more isolated paths from the main road



Difficult to identify cycle pathways because of lack of proper indication.



The cyclists have to get down while going through the motorcycle barrier. this causes inconvenience.



There needs to be a specific place for parking for bicycles that is safe and the bicycles dont get stolen



Need arose for points on a cycle path where people could meet friends, stop for water, shelter from rain, make emergency calls etc.

People would prefer a facility of taking a public transport from the place they park their bike incase they want to travel long distances

Usage on the bicycle



People ride alone or with pillion(child, adult)



People wear all kinds of clothing on the bicycle



People carry backpacks, side bags, hang baskets on the handle, use the carrier



People carry tiffinboxes, water, logs of wood



People have special attachments to carry certain things

IDEATION

The entire group of 16 people collectively contributed to the ideation process. since it was such a large group of people, certain techniques were employed to tap this immense creative energy.

The ideation week commenced with the very inspiring activity called a dream catchers session. The entire group sits in a large circle at 6:00 am when the nature is at its best. Everyone expresses their dreams, whims and fancies about the concerned topic which in this case was the bicycle friendly area for Auroville. The ideas are all welcome. no one evaluates them.

The next activity that was taken up is consecutive brainstorming sessions that are focussed towards a specific problem. These were called co- creating cafe where the group of 16 members was divided into four groups of 4 people each. Each group ideated on different aspects of the same problem. after a set duration of 30 mins the members from the groups would shuffle themselves. This was done to ensure constant collaborative inputs.

After shuffling twice there would be a feedback session to evaluate the ideas that came up during the co-creating cafe session. This session was carried out for the following problems.

- 1- Paths and barriers
- 2- Shelters and parking
- 3- Way finding
- 4- usage on the bicycle(bicycle accessories)

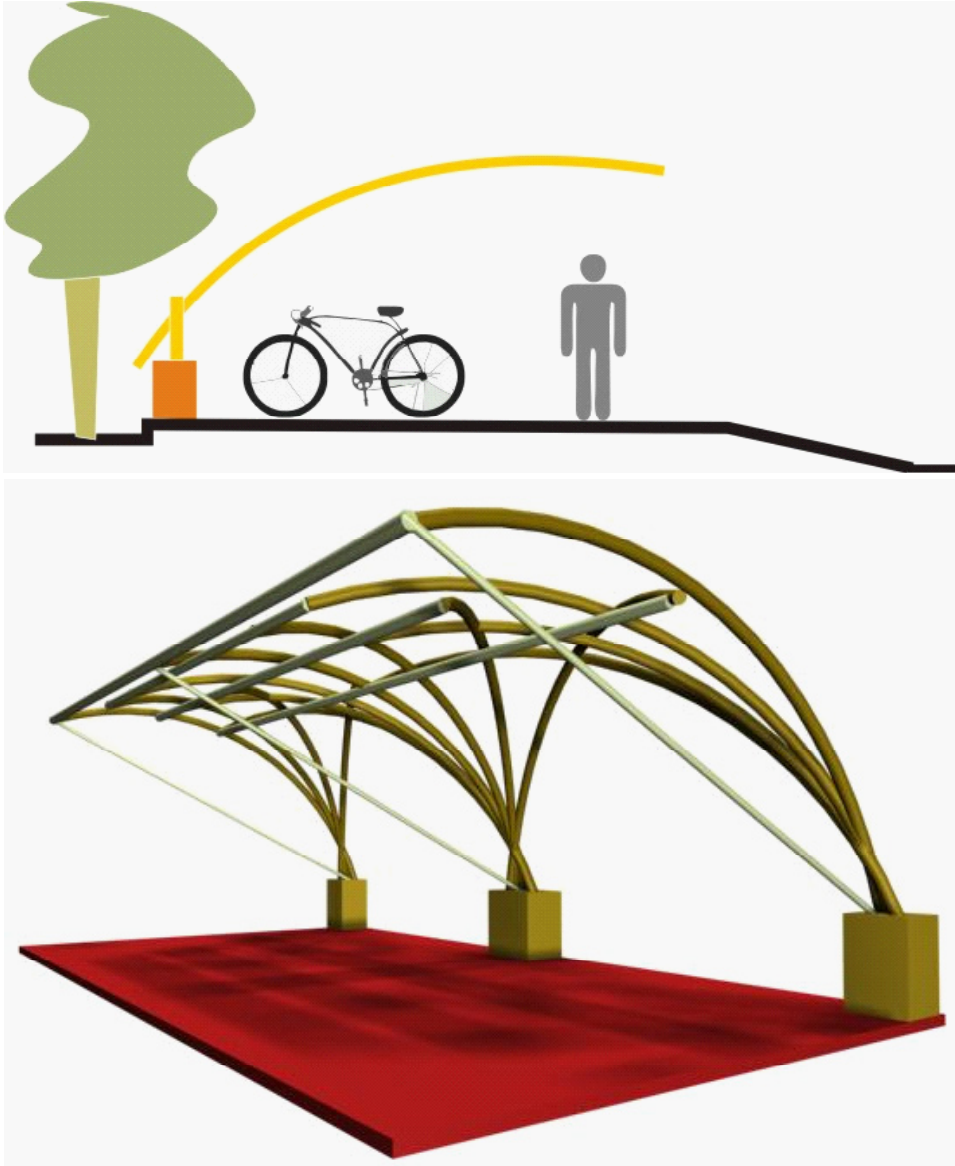
After the cocreating cafe activity was carried out for each of these categories, the selection of potential concepts was done with mentors. The ideas were selected based on feasibility according to timeframe, budget and resources.

After the selection of concepts the entire group was split up into smaller groups to take forward each concept.

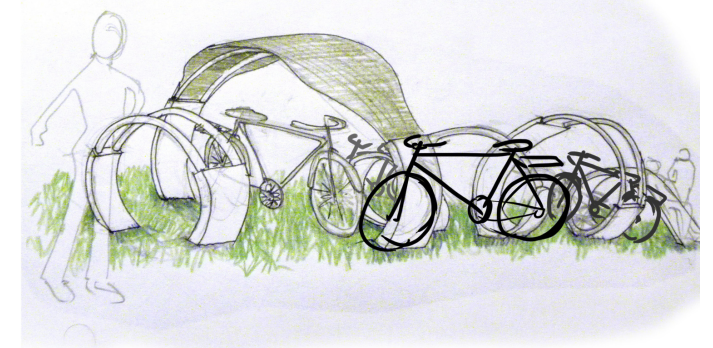
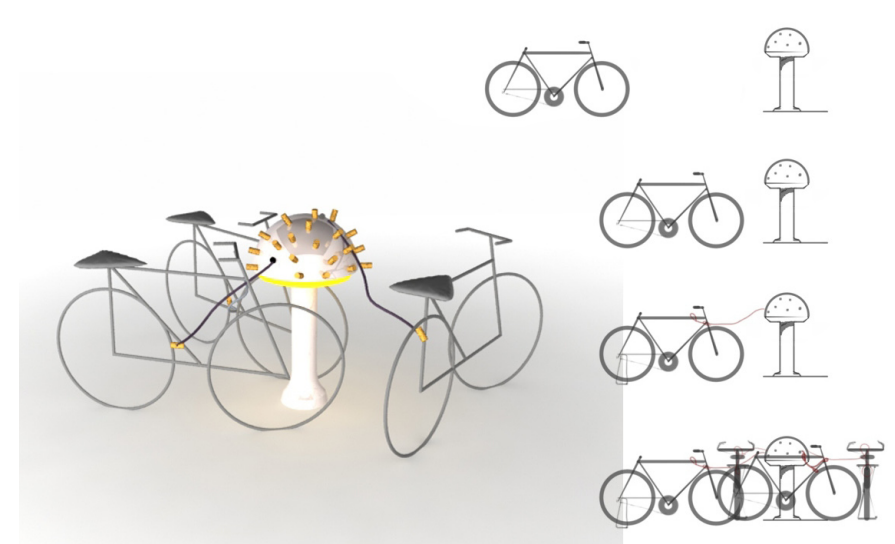
In the ideation week we also selected a demo site where we could showcase all our proposed solutions. The site chosen was the area outside solar kitchen.



Selected concepts

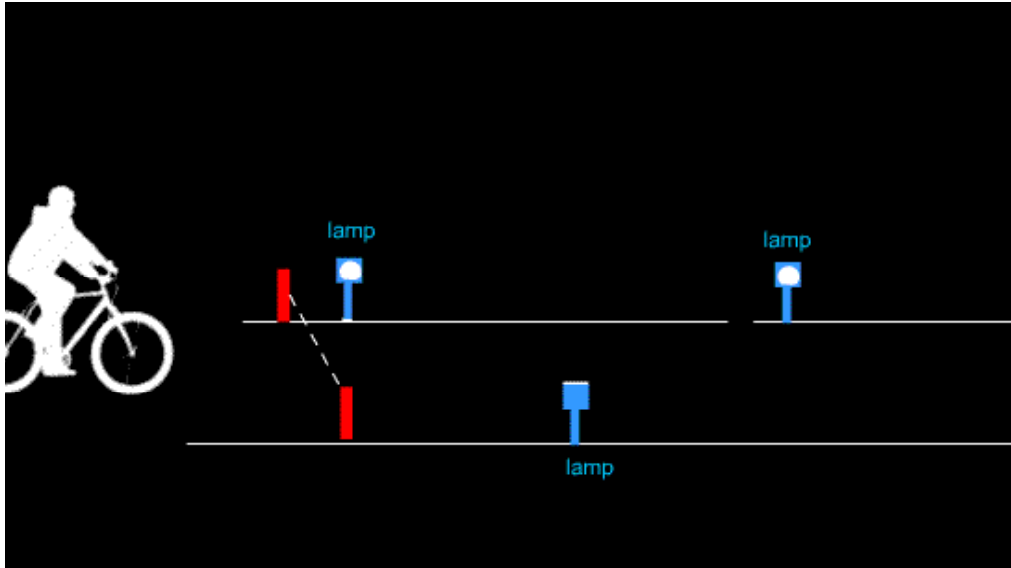


Covered shelters for parking are designed in bamboo and brick.

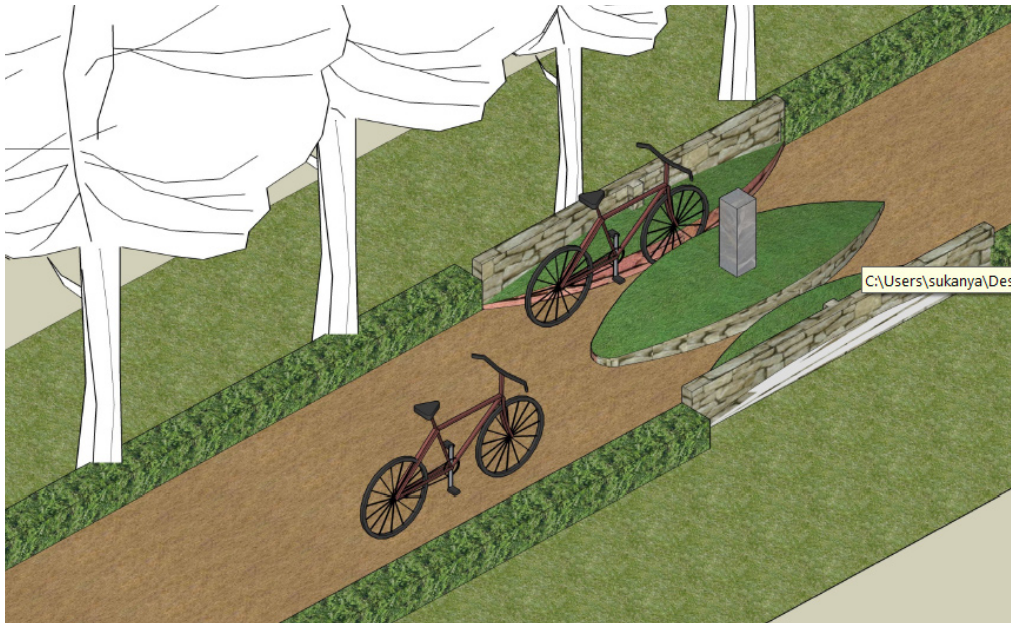


Open parking

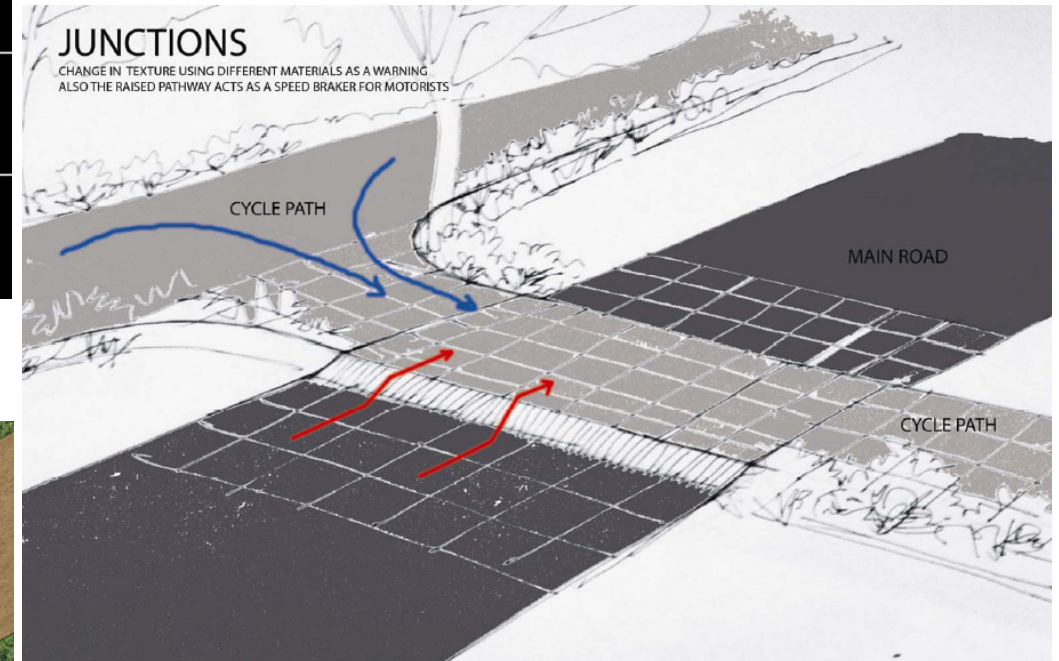
slinky- sculptural structure in ferro-cement which has multiple spots for securing the bicycle
 medusa- a dock gives out retractable cords which u can entangle into your bicycle to secure it



Lighting that gets triggered when the cycle passes through a point and gets detected through the motion detector. the path gets lit up for a few seconds.



A motorcycle barrier that is placed at the beginning and the end of the bicycle path that allows the bicycles to pass through and blocks the motorcycles



Junction- The bicycle path goes over the motorcycle path such that it forms a speed breaker for the motorcycles and they slow down while the cyclists get preference.

REST STOPS

I was a part of the rest stop group. Out of the research, need arose for an area at certain points along the path where people can meet friends, take a break from riding, shelter themselves from the rain, drink water, and make emergency calls.

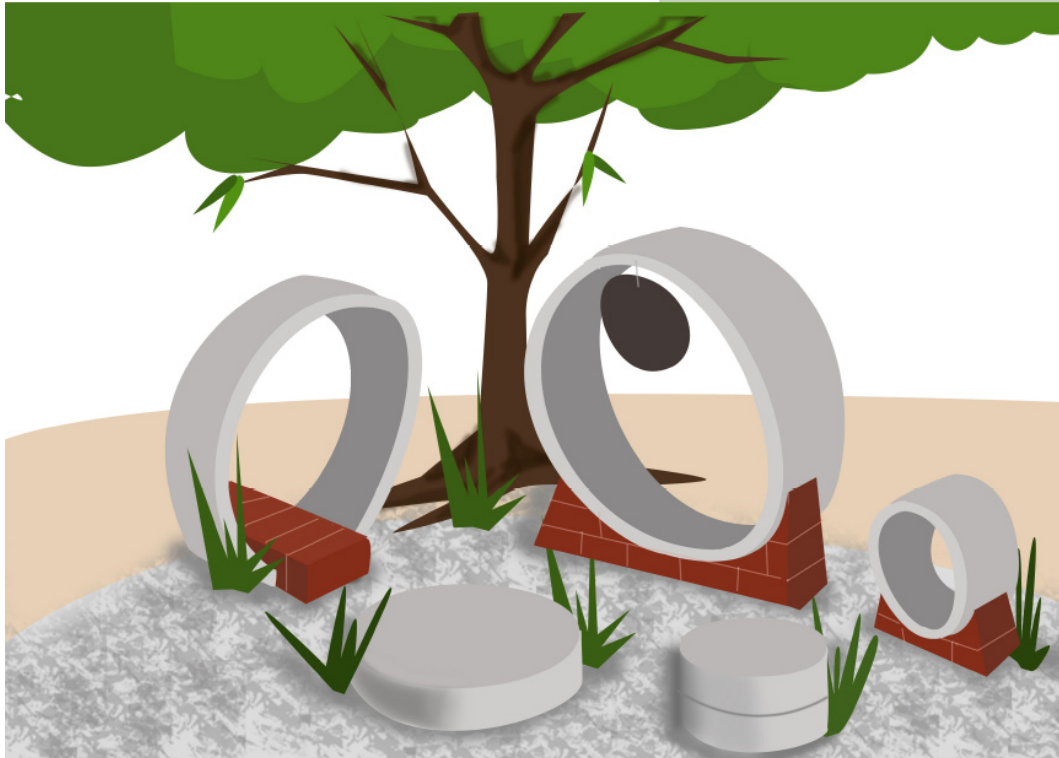
concept 1 pottery lounge -Here we propose to use broken pottery as seating surfaces. We also added a musical instrument as an interactive element to the space. We used the shade of the tree as the chosen location had a tree.

concept 2 Solar spot-Here we propose to use the precast concrete rings and brick as seating surfaces. By orienting them in different ways we have a good play of different surfaces

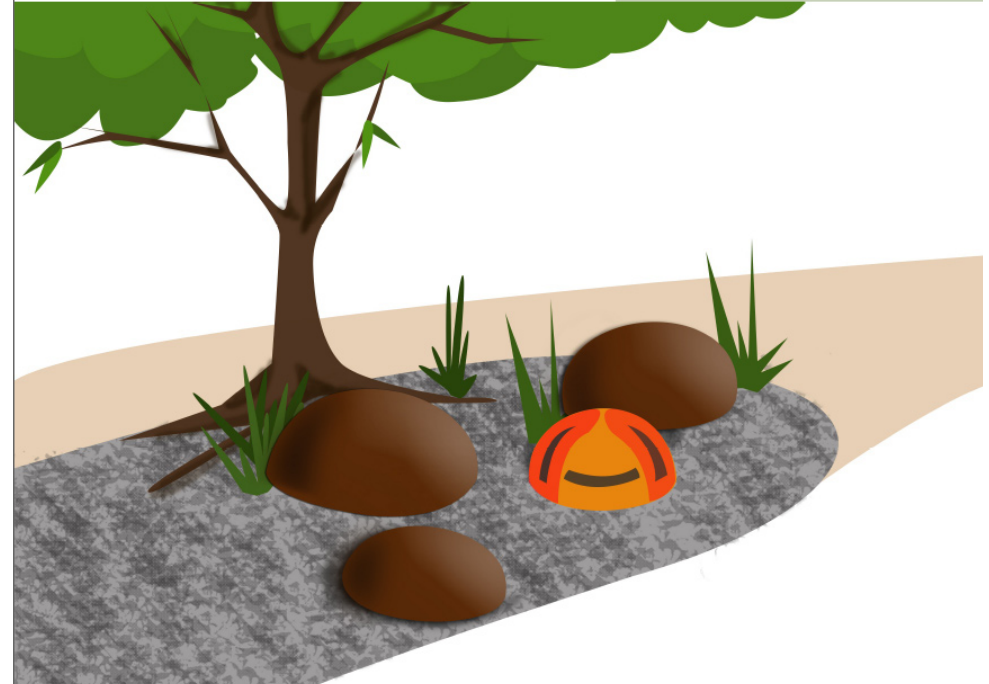
concept 3 holistic energy

Here we propose to use granite boulders and granite waste for seating surfaces. we also add a wind chime to give it one more dimension.

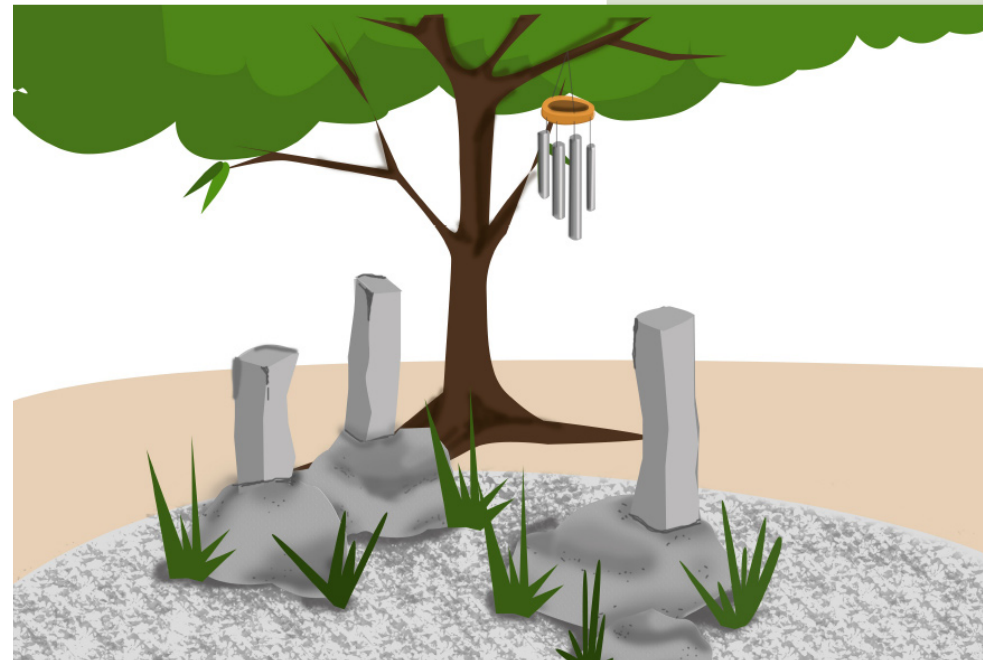
CONCEPT 2 – SOLAR SPOT



CONCEPT 1 – POTTERY LOUNGE



CONCEPT 3 – HOLISTIC ENERGY



DETAILING

We evaluated the concept based on the following factors

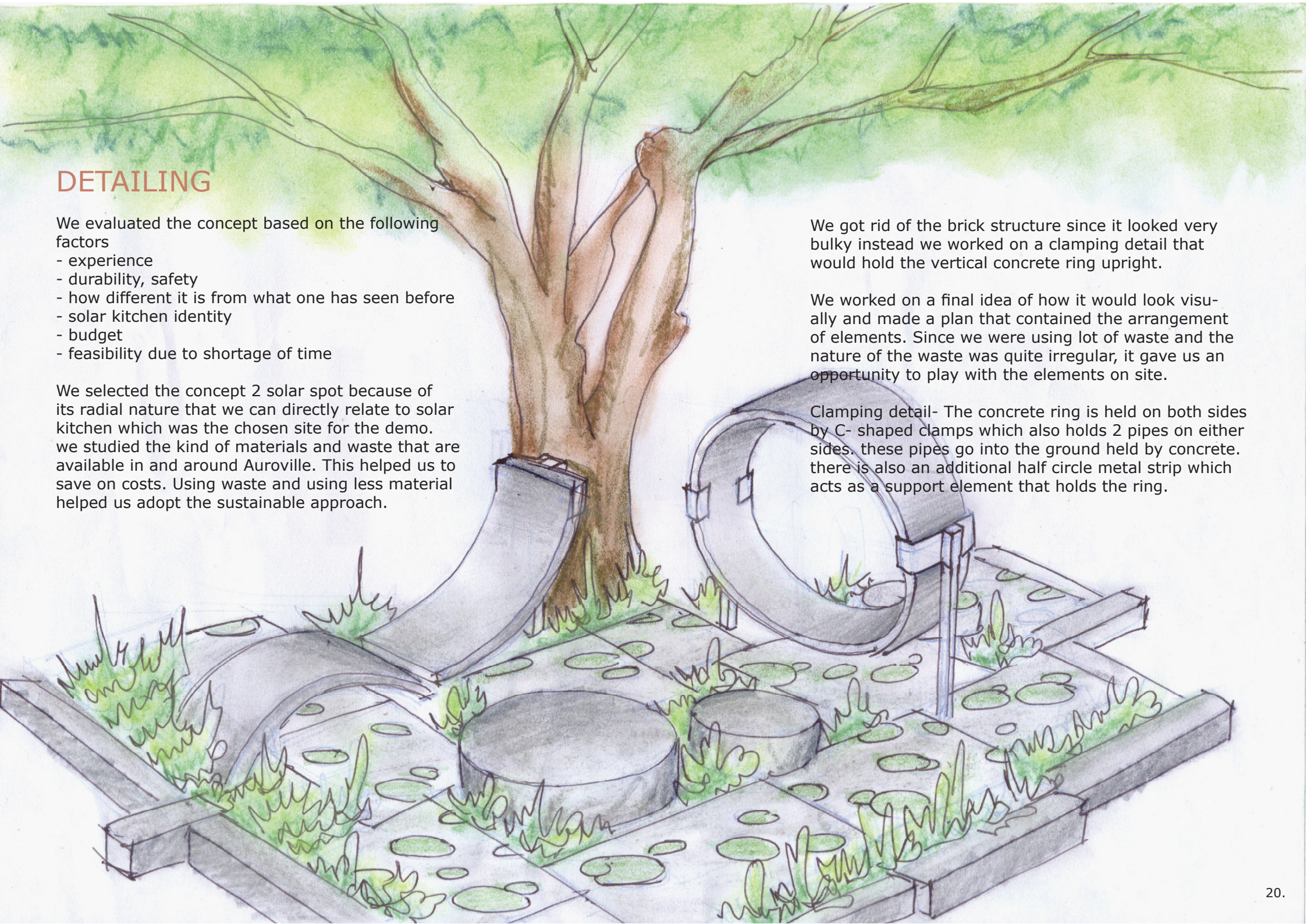
- experience
- durability, safety
- how different it is from what one has seen before
- solar kitchen identity
- budget
- feasibility due to shortage of time

We selected the concept 2 solar spot because of its radial nature that we can directly relate to solar kitchen which was the chosen site for the demo. we studied the kind of materials and waste that are available in and around Auroville. This helped us to save on costs. Using waste and using less material helped us adopt the sustainable approach.

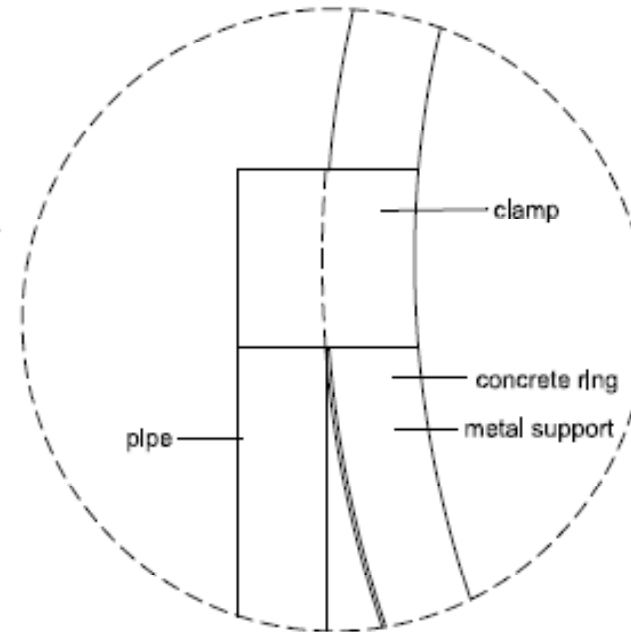
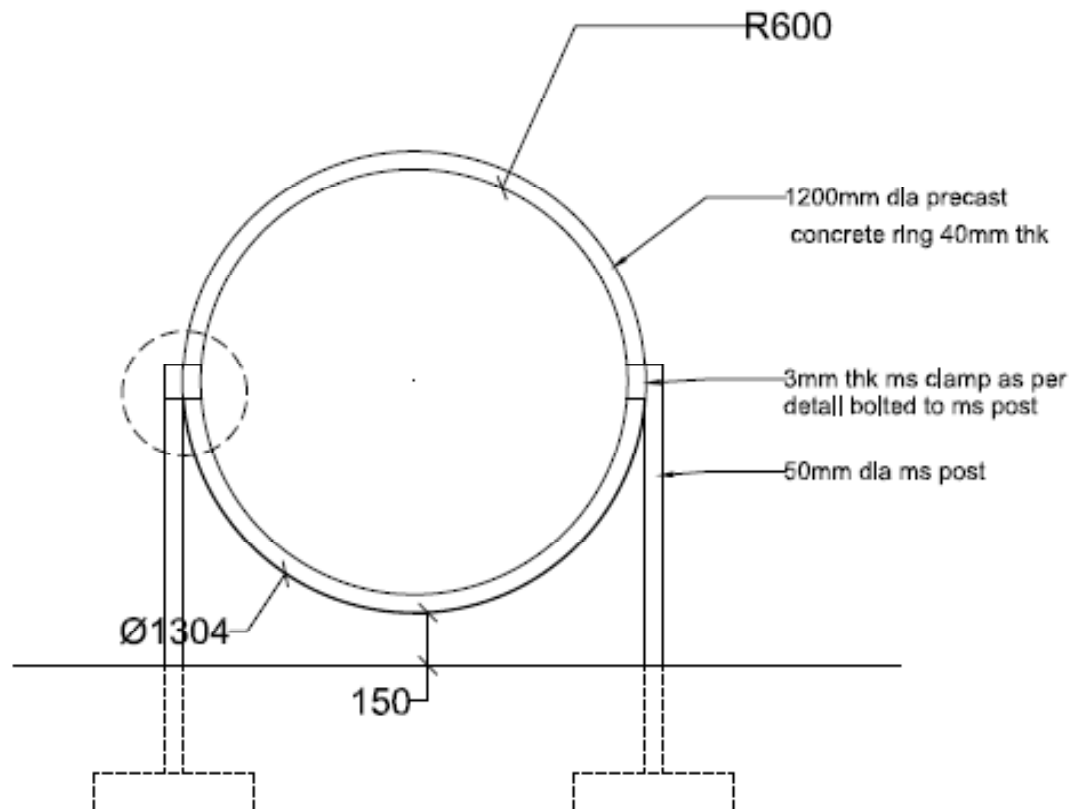
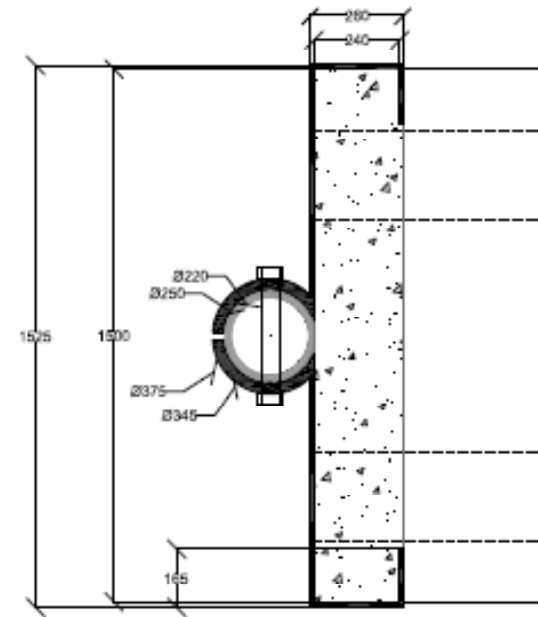
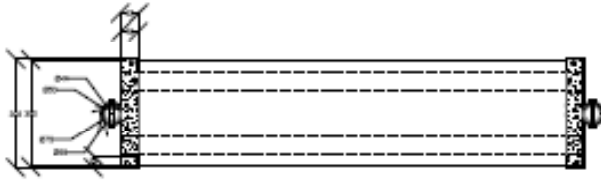
We got rid of the brick structure since it looked very bulky instead we worked on a clamping detail that would hold the vertical concrete ring upright.

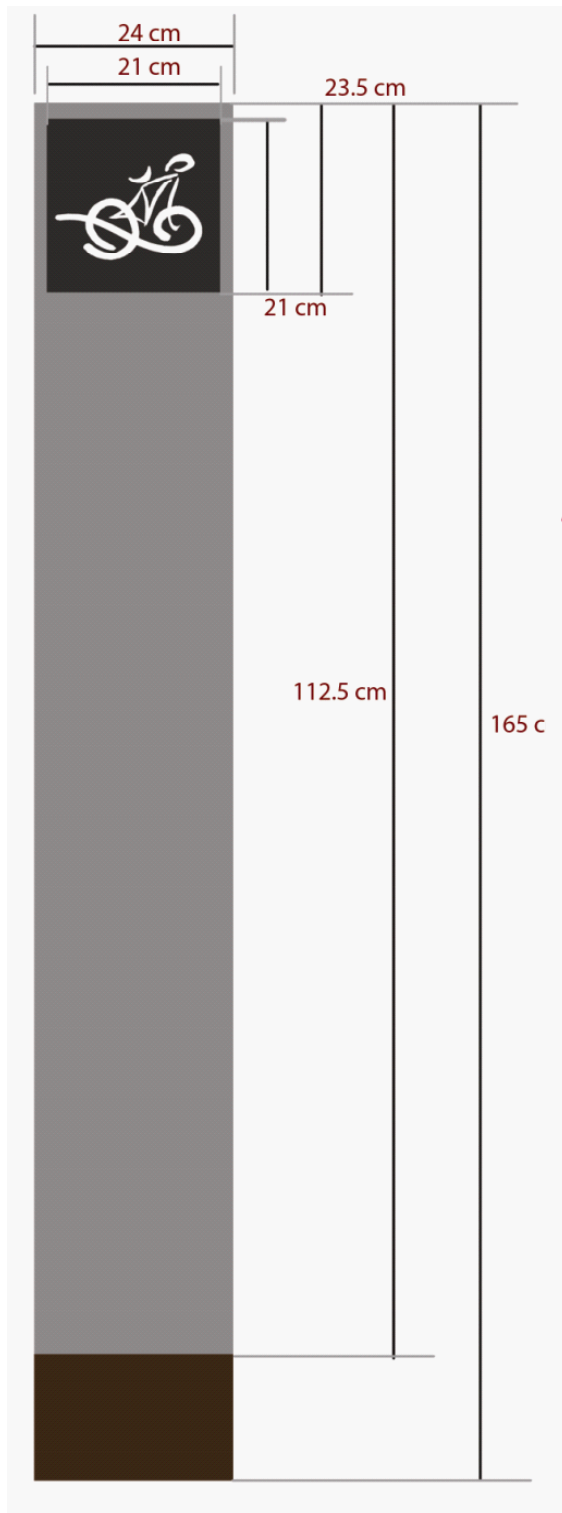
We worked on a final idea of how it would look visually and made a plan that contained the arrangement of elements. Since we were using lot of waste and the nature of the waste was quite irregular, it gave us an opportunity to play with the elements on site.

Clamping detail- The concrete ring is held on both sides by C- shaped clamps which also holds 2 pipes on either sides. these pipes go into the ground held by concrete. there is also an additional half circle metal strip which acts as a support element that holds the ring.



Clamping detail





Granite pillar for identification of cycle path

Through the research we also realised that there was no specific way of identifying the cycle paths. we propose a granite pillar with a logo of the bicycle friendly area workshop on it. The logo will be in golden pink as thats the colour for the residential zone. Solar kitchen lies in the residential zone. The logo will be in lustre glazed ceramic which will reflect in the night too.

Model making

We also made a scaled model of the rest area

Budget

	Contents	Price/ item	Quantity	Total Amount
1	Pre-cast Concrete Rings			
	60 cm (With base)	275	2	550
	90 cm (With base)	940	1	940
	120 cm	875	1	875
	100 cm x 25 cm Half ring	200	1	200
	80 cm x 28 cm Half ring	150	1	150
	Labour charges			200
	Transportation			300
	Precast Jaali 3'x2' Option 2	32/ Sq ft	6	1152
	Transportation			300
	Labour charges			200
3	Granite Pillar			
	Ceramic embedding			
	Polishing of Pillar			
	Transportation	150		150
	Installation			
				2000
4	2" pipe with Metal Clamp for Ring seat with paint	1000	3	3000
5	Wind Chime		1	Donation
6	Granite edges			Donation
7	Plants (Sansiverra, Pedalantus, Kalanchola)			200
8	Soil		2 vendi load	1000
9	Compost		1 vendi load	600
10	Concrete for fixing pipes			500
11	Labour charges (1 mason, 1 helper)	500	3	1500
12	Miscellaneous			2000
	Total			15817

CONSTRUCTION

the duration for the construction was about 10 days. we started with procurement of materials. first the ground was leveled then the main elements were placed at their tentative positions. next was the granite boundary to define the area. a granite fence was made behind the area and some plants were planted behind them. next was the fixing of the clamps on the vertical ring and the half cut ring. then the foundation was made in concrete to hold the pipes and clamps in place. the next step was to use the granite pieces for paving the surface of the floor.

we then planted plants in the area that require very less water and need very less maintenance. the finishing touch was the hanging of the windchime to add an additional musical element.

we also designed a signage that is used to identify the cycle path. it was fixed into the ground by digging a deep pit. a foundation was made to keep it in place.





FINAL PRODUCTS

The rest of the projects were also almost completed



Medusa



lighting



slinky- open parking



junction



landmark



Barrier



parking shelter



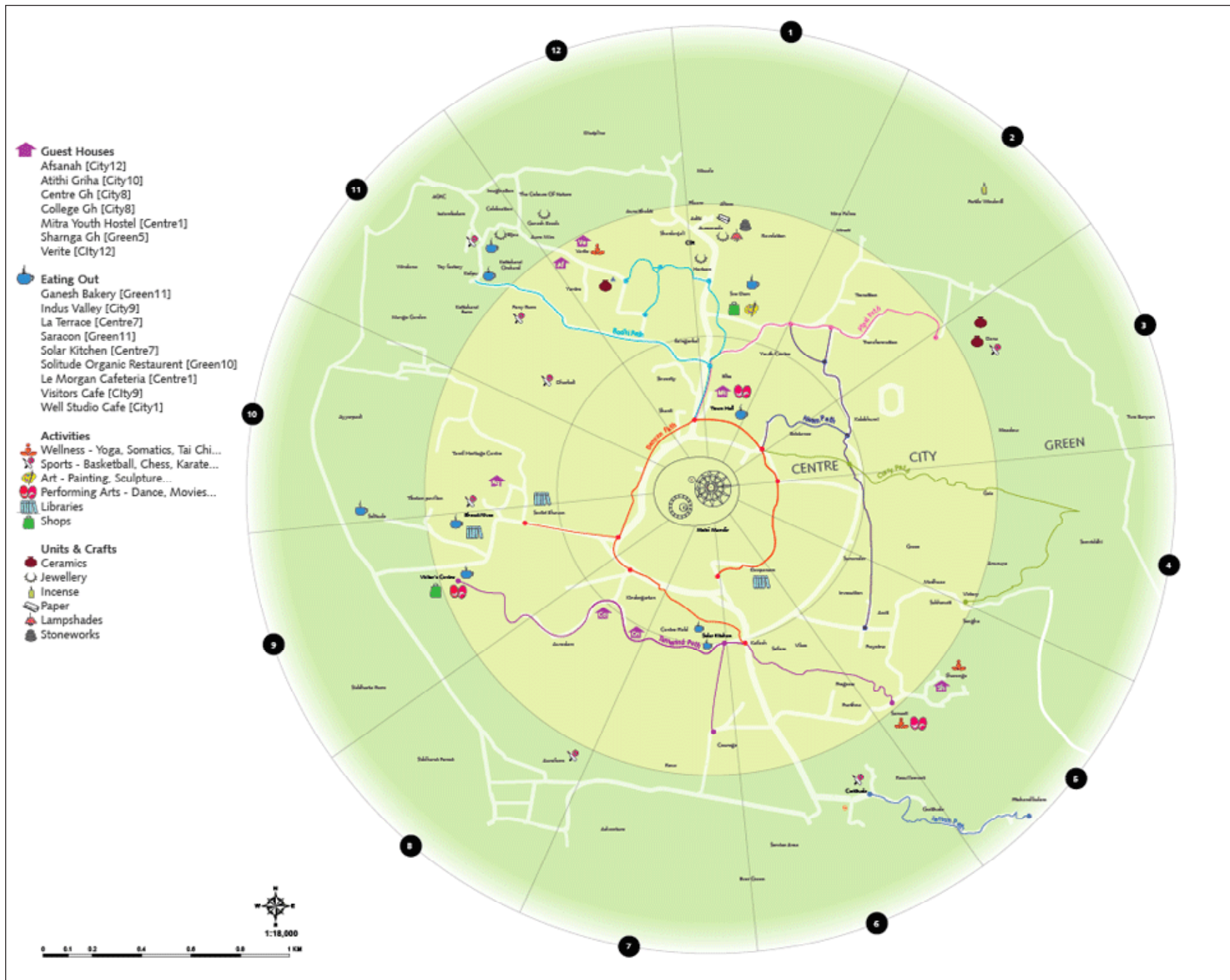
Saddle bag that can be folded and it becomes a seat for the pillion rider.



Universal hooks that can be attached at various points on the bicycle. Hooks can be used to hang things.



universal torch holder that can be fastened on the handle.



Guest map

EXPERIENCE

I have lived in bombay for almost all my life, suddenly i was put into this world which seemed almost surreal. I was so close to nature. Pure bliss! I was welcomed by the most friendly people. Every little experience seemed like an adventure. The whole month was full of fun filled surprises. Even though the whole month was really grueling and drained me physically and mentally it was still totally worth the experience.

I met the most inspiring people, learnt a new way of living, witnessed the most inspiring art and architecture. Through this workshop I also learnt a new methodology to work in a large group of people who have varied expertise. I also learnt new idea generation techniques. Also the most interesting aspect was to work for the people of Auroville which meant catering to the needs of the most diverse set of people who belong to different nationalities, cultures etc.

I also learnt a methodology to collect considerable qualitative data in a very short duration.

I was introduced to sustainable way of living where people "use less" and "Re-use". Through the entire project our approach was to use minimum resources and use waste.

On the whole coming to Auroville gave me a unique opportunity to have my perfect vacation and also contribute to their community.



The path, the bicycle and the cy

Thank you