

Jayant Khanuja
Interior architect + design
researcher
Interaction designer

page 1

Bachelor of Interior
design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC.
Barcelona. Spain.

portfolio

Jayant Khanuja

Index

Content

Coverpage, Index

Page 1 , 2 , 3 .

Under graduate thesis - Understanding algorithms in design with reference to Voronoi diagrams. ●

Page 4 , 5 , 6 .

Under graduate final year design project - Bombay Art Center.

Page 7.

Under graduate Extra Curricular - Light installation, Hobberman Sphere installation, short film

Page 8.

Under graduate Office training 3rd Semester - Work at sP+a architects, Bombay.

Page 9.

Sketches.

Page 10.

Work as an assistant designer at andBlack Design Studio, Ahmedabad.
Projects executed - Parametric Bamboo bridge, Papertube pavillion, Copper cube installation

Page 11 , 12 , 13 ,14, 15.

Work as a principal designer at Algo Design Studio, Ahmedabad.-

Page 16.

project executed as a consultant for andBlack design Studio. Ahmedabad - Muquarna installation.

Work as a principal designer at Algo Design Studio, Ahmedabad.-

Page 17.

project executed as a consultant for Openideas design Studio. Ahmedabad - Responsive facade. Reacting to sunlight.

Workshops and lectures conducted as a tutor at architecture Schools

Page 18.

Jayant Khanuja
Interior architect + design
researcher
Interaction designer

page 2

Bachelor of Interior
design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC.
Barcelona. Spain.

● URL's for extra
information and
videos provided.

Index

Post Graduation - Work at IAAC . Barcelona. Spain.
Investigation into Mycellium as a building material. ●

Page 19 , 20 , 21 .

Post Graduation - Work at IAAC . Barcelona. Spain. As interaction designer
Project - Hack - a - light. ●

Page 22 , 23 .

Post Graduation - IAAC . Barcelona. Spain. As interaction designer
Electives : Generative / Digital tools. ● Elective : Encrypted Rome. ●

Page 24.

Post Graduation - IAAC . Barcelona. Spain. As interaction designer
Electives : Fabrication / Bamboo. Elective : Physical Computing / Interactive facade. ●

Page 25.

Abstract written for DCA conference 2014. ●
OCS Competition Entry for a sculpture design in Kuwait. ●
Interactive canvas: a group project for festival delaimagen. ●
Explorations with processing. ●

Page 26.

Jayant Khanuja
Interior architect + design
researcher
Interaction designer

page 3

Bachelor of Interior
design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC.
Barcelona. Spain.

● URL's for extra
information and
videos provided.

Chapter One.
Introduction-Voronoi Geometry

A Brief History
2D Voronoi
Centroidal Voronoi Tessellation
3d Voronoi
Other types of Voronoi

Chapter two.
Voronoi Geometry in nature

Dragonfly wing
Soap Bubbles

Chapter three
Understanding Algorithms as a tool in Design

Algorithmic Techniques

Spiralling
Packing
Weaving
Blending

Chapter four
Tessellation/Tiling

Cracking
Flocking

Understanding Voronoi algorithm as a tool for tessellation

Case Studies.

Chapter five - Dragonfly installation

Chapter six - Water Cube Pavillion

Chapter seven
Voronoi Algorithm in interior scale
Case Studies.

C_Wall

Smart Cloud

Vessel Chair

Paradise Pavillion

Chapter eight
Investigation into Digital methods and
manufacturing

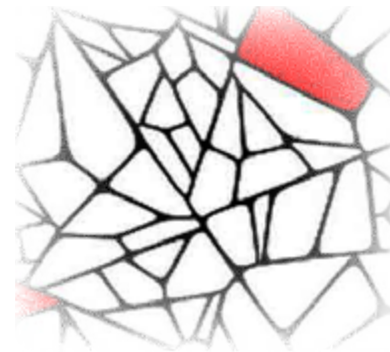
Chapter nine - Conclusion

T H E O R E T I C A L
F R A M E W O R K

A N A L Y T I C A L
F R A M E W O R K



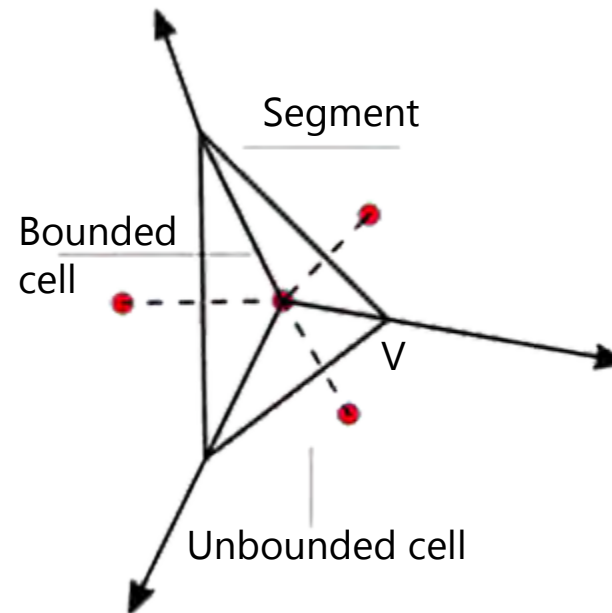
Understanding algorithms in design with reference to Voronoi diagrams



Dissertation
Submitted to the Faculty of the
Interior Design, CEPT University.



Guide : Architect Abhishek Bij.



Jayant Khanuja
Interior architect + design
researcher
Interaction designer

page 4

Bachelor of Interior
design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC,
Barcelona. Spain.

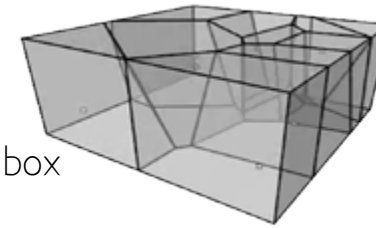
Research thesis

An algorithm is not
only a computer
implementation,
a series of lines of
code in a program,
or a language, it is
also a theoretical
construct with deep
philosophical, social,
design and artistic
repercussions.

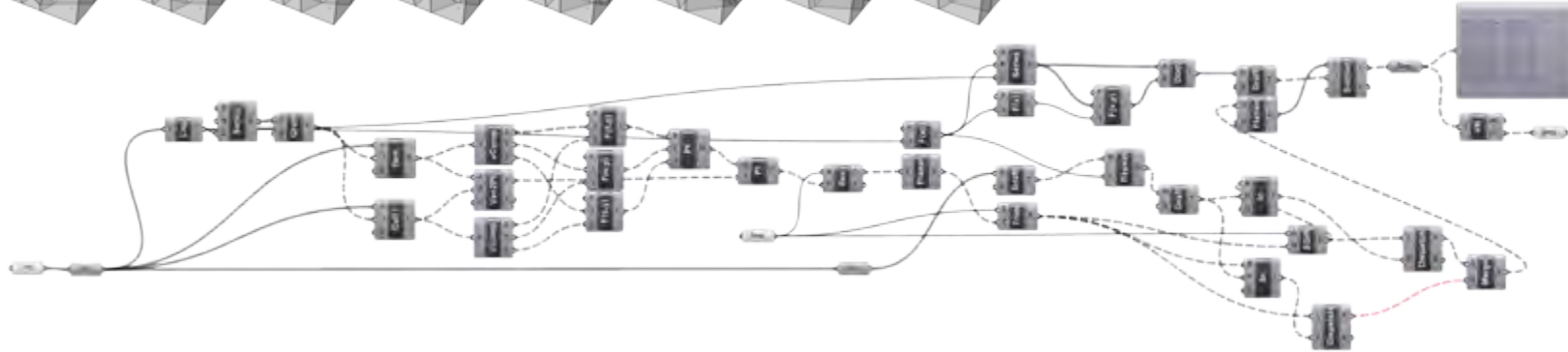
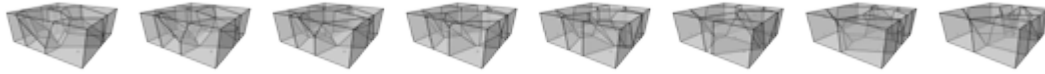
[http://issuu.com/
jayantkhanuja/
docs/thesis-voronoi-
algorithms-by-jayant](http://issuu.com/jayantkhanuja/docs/thesis-voronoi-algorithms-by-jayant)



Final Output
3D Voronoi of the random set of points.
The black spheres are the points (highlighted)



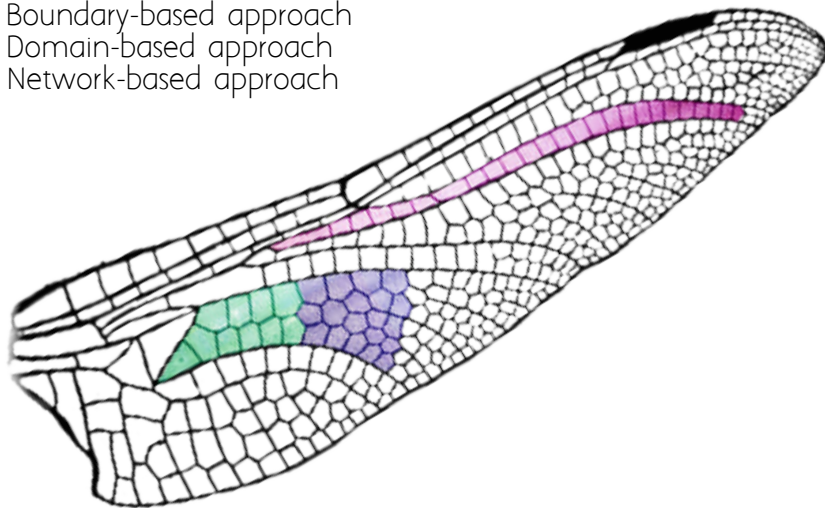
The output is confined with respect to the bounding box defined at the earlier stage



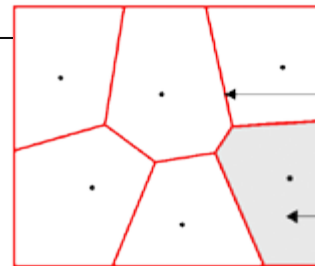
ANALYSING VORONOI:

Boundary-based approach
Domain-based approach
Network-based approach

voronoi network

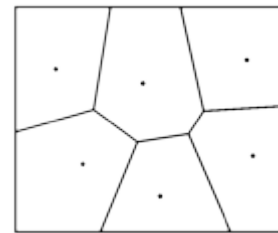


- Cells in a single row between two ribs.
- Cells in two rows between two ribs.
- Cluster of cells.

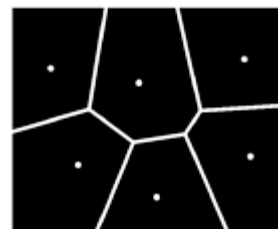


boundary
(tangible output)

domain
(intangible output)



boundary



domain

Jayant Khanuja
Interior architect + design
researcher
Interaction designer

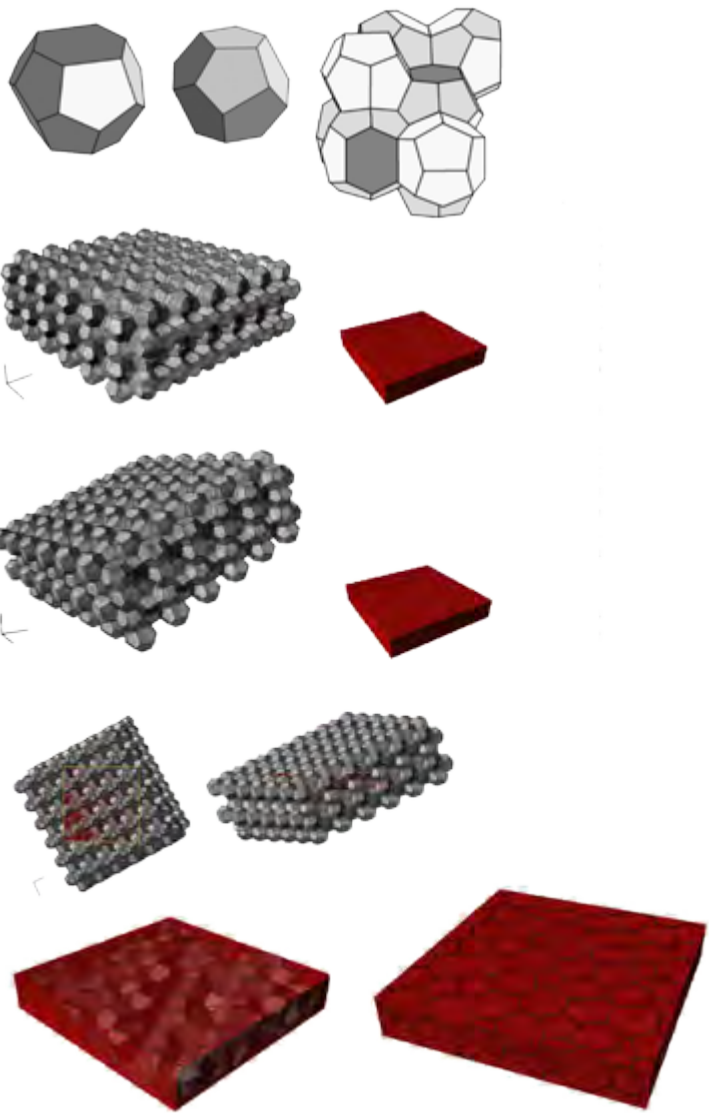
Bachelor of Interior
design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC,
Barcelona. Spain.

In order to understand
the output of Voronoi
tessellations in design,
these are some defined
design variables that are
taken into consideration.

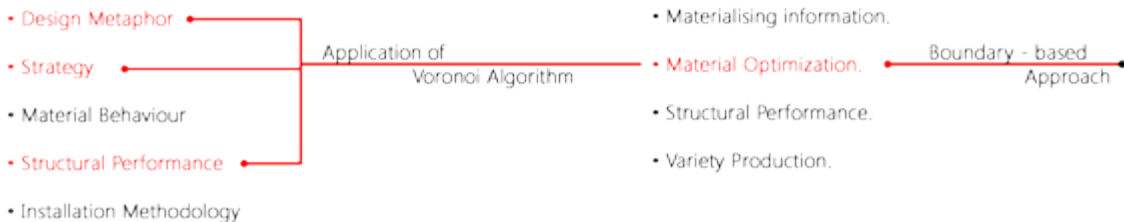
Materialising information.
Material Optimization.
Structural Performance.
Variety Production.



In spite of its complete regularity, when it is viewed at an arbitrary angle it appears totally random and organic.

Based on two 12-sided and six 14-sided polyhedrons, the cells are packed together in three-dimensional space to infinity. This repeating unit tiled in space is then rotated and cut along prescribed axes along the exterior to form the exterior geometry of a box, and then the interior cells are sliced to form the large interior spaces for the swimming facilities, etc. The polyhedron surfaces were then replaced with the building membrane and the edges became structural steel tubes. Where the steel members meet one another they are welded to large spherical steel nodes to form solid moment connections.

In Water Cube Pavilion the application of Weaire-Phelan structure was initially for the purpose of achieving a particular design metaphor, but it not only helped the project to achieve a desired look but it also affected the overall strategy of the project. Eventually it resulted into structural performance of strength for the skin. It optimized the material that was used for the outer structure, though not desired initially but this variable can be seen as the most affected due to the application of Voronoi algorithm. Thus in this project the boundary based approach is very evident.



Jayant Khanuja
Interior architect + design
researcher
Interaction designer

Bachelor of Interior
design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC.
Barcelona. Spain.

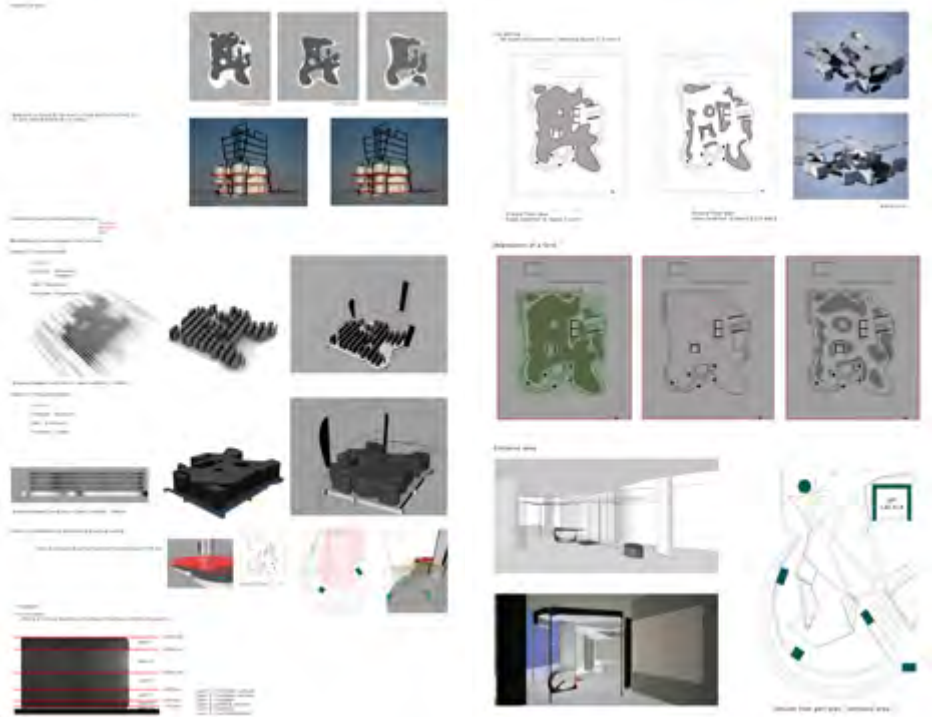
Based on the study of
Water cube pavilion,
in this project Voronoi
algorithm is applied as
a design metaphor, but
except that it also helps
in material optimization.

Type of Voronoi Algorithm
used - Centroidal Voronoi
Algorithm.

Application - 3 dimensional.

Maximum affected category Strategy.
Material Optimization.

Defined Approach based on analysis - Boundary based approach.

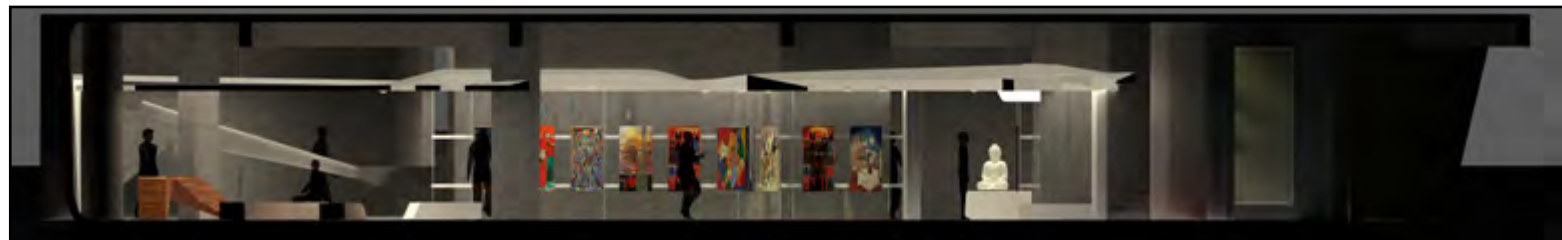


Jayant Khanuja
 Interior architect + design
 researcher
 Interaction designer

Bachelor of Interior
 design
 School of Interior design
 CEPT University Gujrat,
 Ahmedabad, India.

Visiting Faculty.
 CEPT University.
 Gujrat, Ahmedabad,
 India.

Currently pursuing.
 Masters In Advanced
 Architecture
 Institute of Advanced
 Architecture Catalunya.
 IAAC.
 Barcelona. Spain.



PROJECT : Bombay Art Center
 Brief: To design an auction house
 related to paintings and statues.

Process: The Architectural skin of the
 built form being in the language of
 Blobitecture, while the internal structure
 being a beam column framework there
 was already a visual conflict.



Interior language debate at first was to
 whether enhance the skin (language)
 or the internal structure.

Finally the concept developed through
 neither responding to the skin or the
 internal structure but rather have its own
 language .

To implement this the idea was to fill
 the internal volume with mass in such a
 way that it doesnot touch anything, and
 then to carve out elements within the
 inserted mass.



PROJECT : LIGHT
INSTALLATION
Extra curricular

Brief: To make
an installation in
a double height
volume for CEPT
Festivals.

Idea was to create
floating structures.



Implementation:
Insert tubes inside
a black box from
all four sides and
the box is lit from
inside letting the
light flow inside the
tube.



PROJECT : HOBBERMAN
SPHERE
Extra curricular

Brief: To understand
the geometry behind
hobberman sphere and
the replicate it in form
of physical model

Process: Understanding
existing sphere in
terms of geometry and
computing it digitally.



Laser cutting laminate
sheet based on the
generated drawings.

Understanding the
junctions and details.

Finding a solution to
make these detail
junction for this scale.



Using paper rivets for
the details and rotation
movement.

OVERALL DIAMETER:
In closed condition :
300 mm
In open condition : 600
mm



Jayant Khanuja
Interior architect + design
researcher
Interaction designer

Bachelor of Interior
design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC.
Barcelona. Spain.

PROJECT : Movie made in
School reflecting the lifestyles of
students
Team partner: Vineet Agarwal
Priya Shah



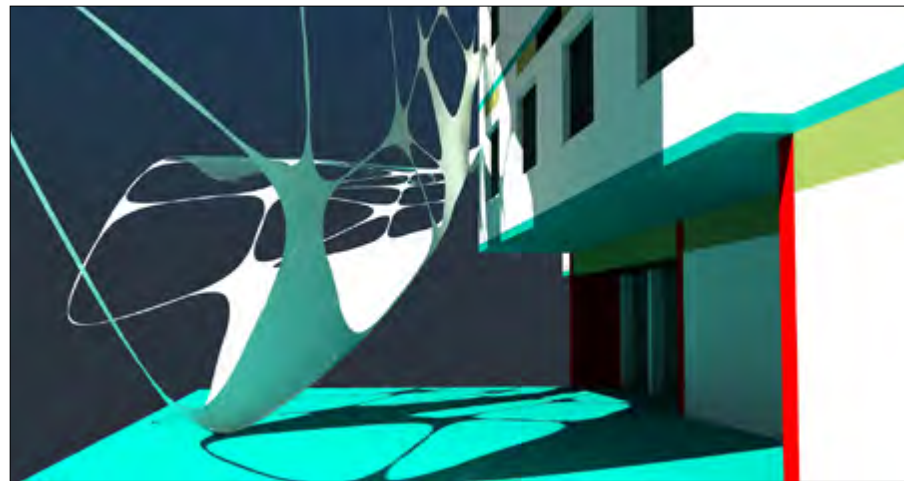
Poster which was released in
parts to maintain the aspect of
something new which went
on for 12 days



Masks/Costumes and stage
were made for the movie.



Conceptual Entrance View



Hotel Bhaskar Palace
Location : Hyderabad, India.



Kitchen View



Residential Apartment
Location : Mumbai, India



Sitting area View



Lounge
Location : Hyderabad

Jayant Khanuja
Interior architect + design
researcher
Interaction designer

Bachelor of Interior
design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC.
Barcelona. Spain.

Office Training - 3rd
Semester
sP+a Architects
22-C Off Turner Road,
New Kantwadi Road
Bandra West, Mumbai
-400050

Areas Explored:
Physical modelling.
3d modelling.
Rendering.
Site execution,

Duration : 4 months.
Softwares explored
Autocad.
Rhinoceros.
Vray.

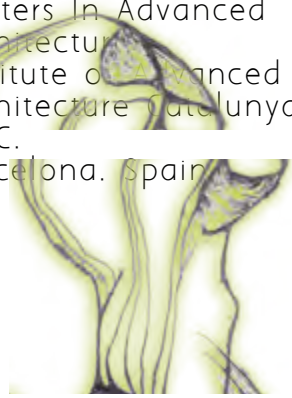


Jayant Khanuja
Interior architect + design
researcher
Interaction designer

Bachelor of Interior
design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC,
Barcelona. Spain

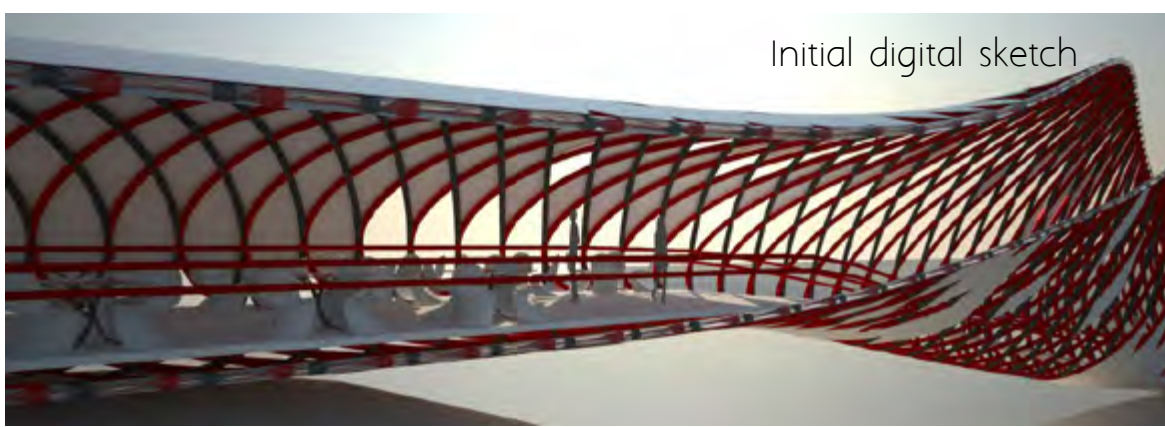


Sketching

Abstract
Sketches.
Pen sketches



Physical model
Photographs



Initial digital sketch



Realistic Renders



Detail Explorations



Rhombus connection detail Option 1



Rhombus connection detail Option 2



Rhombus Overlapping Option



Rib connection detail

Logic : Twisting of ellipses and shifting the central line of axis.

Materials : Bamboo for the rings
MS plates for the connecting details

Basic components : Ribs
Connectors

Total number of Ribs : 28

Jayant Khanuja
Interior architect + design researcher
Interaction designer

Position : Assistant Designer
Duration : February 2012 to February 2013

andblack design studio
A-71 Orchid Woods,
Corporate Road, opp. Vodafone Office, Prahlad Nagar, Ahmedabad 380015

Areas Explored:
Physical modelling,
3d modelling,
Rendering,
Site execution,
Simplification and analysis of complex forms.
Scripting,
Logic building.

Project Name :
Eco Tourism Center
Site Location :
Kevdi, Surat Gujarat

Mainly involved in development of the bridge.

Size of the bridge :
Span : 52 meters
Width : Diameter of ellipse 9 meters

Analysis and practical assesment in Rhinoceros

Deck Surface



80 mm Thick sawn polewood

SHS 40 X 40 X 3.2 diagonals.

ISA Verticals 65 X 65 X 6 mm

Engineered bamboo 80mm X 10mm Thk

Overlapping Stress LAM.

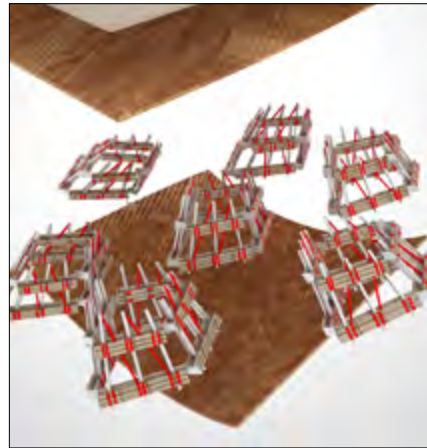
Plate P3 480 X 200 X 10 mm.

80 mm Thick sawn polewood

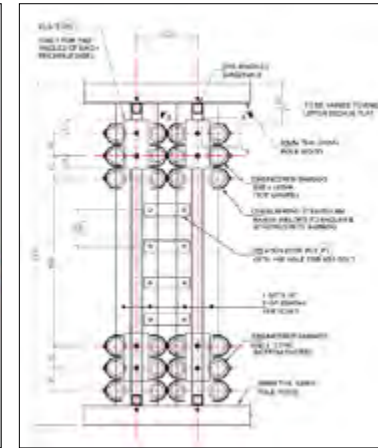
View showing the lower deck area



On Site photographs for other parts of Site

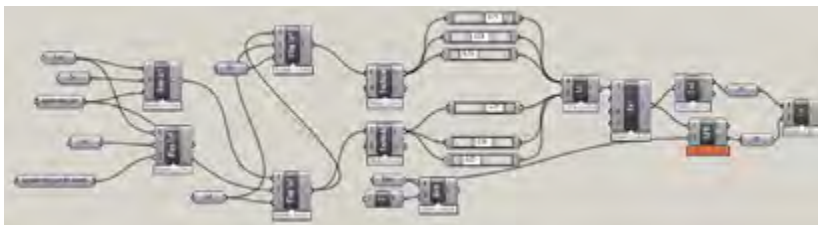


Exploded View of the lower deck area



Reference Drawing from structural engineer.

Virtual Render of Guest houses on site.



Scripting different Options in Grasshopper.

Jayant Khanuja
Interior architect + design researcher
Interaction designer

Position : Assistant Designer
Duration : February 2012 to February 2013

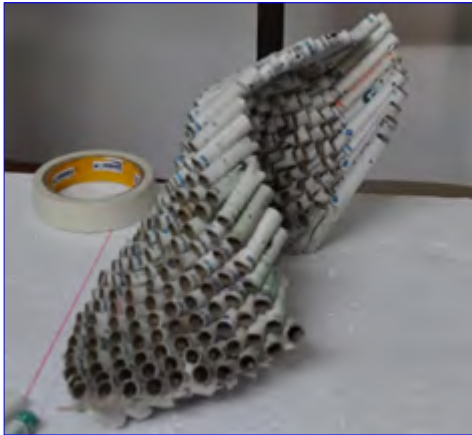
andblack design studio
A-71 Orchid Woods,
Corporate Road, opp. Vodafone Office, Prahlad Nagar, Ahmedabad 380015

Areas Explored:
Physical modelling.
3d modelling.
Rendering.
Site execution,
Simplification and analysis of complex forms.
Scripting.
Logic building.

Material Schedule		Quantity		Weight		Volume	
Item No.	Description	Unit	Qty	Weight (kg)	Volume (m ³)	Weight (kg)	Volume (m ³)
1	80mm Thick Sawn Polewood	m ³	100	1000	100	1000	100
2	SHS 40 X 40 X 3.2 Diagonals	m	500	5000	0.5	5000	0.5
3	ISA Verticals 65 X 65 X 6 mm	m	1000	10000	1.0	10000	1.0
4	Engineered Bamboo 80mm X 10mm Thk	m ³	200	2000	200	2000	200
5	Plate P3 480 X 200 X 10 mm	m ²	100	1000	0.1	1000	0.1

Data sheets for BOQ and waight analysis

Physical model Photographs



Stacking and interlocking



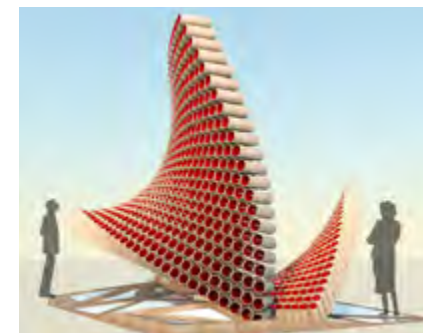
Interlocking and folding



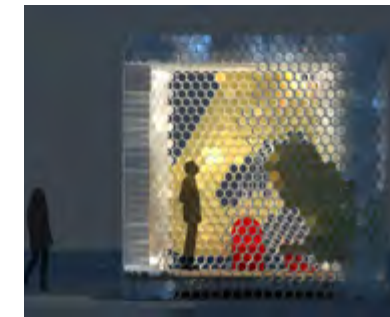
Horizontal stacking and swarm



Form exploration with finalised technique of WEAVING



Initial Explorations



Realistic Render



Jayant Khanuja
Interior architect + design
researcher
Interaction designer

Position : Assistant Designer
Duration : February 2012 to
February 2013

andblack design studio
A-71 Orchid Woods,
Corporate Road, opp. Vodafone
Office, Prahlad Nagar, Ahmedabad
380015

Areas Explored:
Physical modelling,
3d modelling,
Rendering,
Site execution,
Simplification and analysis of
complex forms.
Scripting,
Logic building.

Project Name : Paper tube
pavilion
Site Location : Installation

Involved from explorations to
execution.

Size of the structure
Width : 4 mts x 4.5mts

Logic : Weaving as a
dynamic phenomenon

Materials : Papertubes
Wood for base

Basic components: Papertubes
of diameter 75mm.

Length 290mm

Total number of tubes : 4500

Execution trial in Ahmedabad. Photographs



Papertube with metal insert in some of them



Weaving of a single strip with SS cable.



Further weaving of these strips with each other to create an adaptable and responsive surface

Detailing and Joinery



Hollow rivets to be fixed on the holes on tube to avoid frictional wear and tear



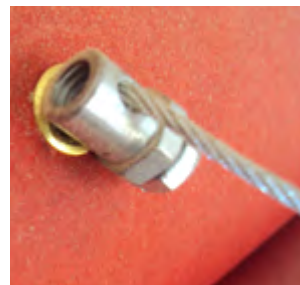
Wire hull used to hold the cable from sliding inside.



2mm diameter SS cable

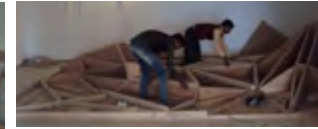


Washer placed at critical end conditions to stop the wirehull from tearing the tube due to pull and strain



End conditions of each tube

Making of the base



Final Output



Jayant Khanuja
Interior architect + design researcher
Interaction designer

Event - IDF 2013 Delhi.

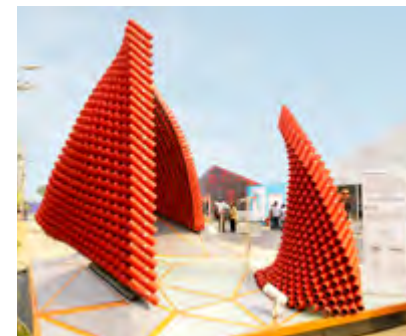
Execution and assembly was done in Ahmedabad to check and manage the structure.

The component aspect thus came into play as the whole structure was suppose to be moved to Delhi in a very modular system.

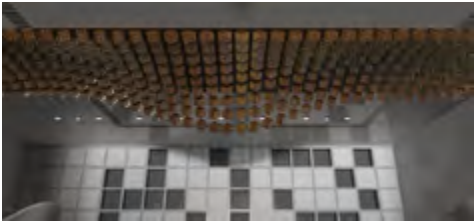
Thus the two surfaces and the base were constructed in such a way that these surfaces can be loosened and folded and the base can be open in parts.

Time constrain on the execution part on Site(i.e IDF) determined and guided the phases of assembly.

Transportation factors also played an interesting role in the later stages



Virtual Renders : Explorations



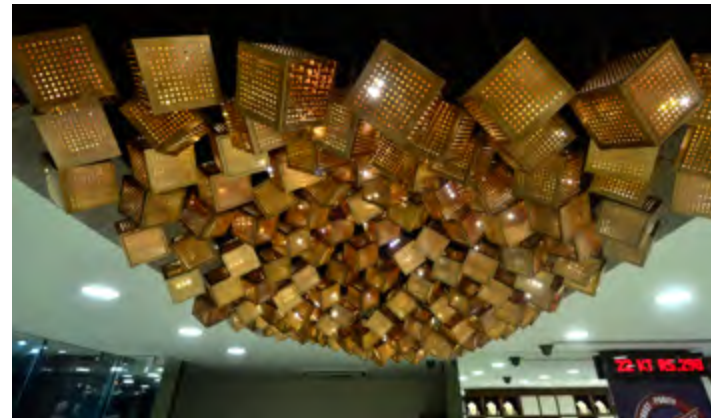
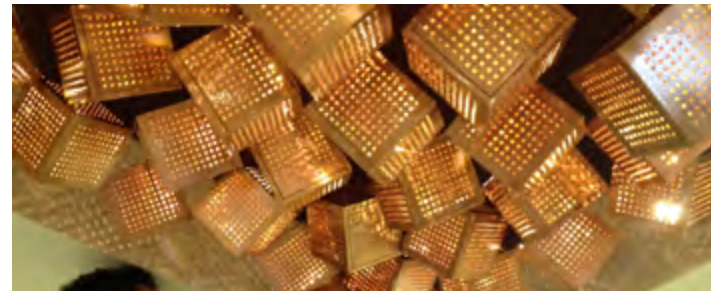
Process Photos



On Site Images



Each cube has a led lights fit on the faces from inside.
One face was left openable for maintenance.



The installation was completely assembled on site and was supported on boxes on each side. Once all the cubes were tied to the perforated sheet of plywood, it was lifted and assembled in the ceiling

Jayant Khanuja
Interior architect + design
researcher
Interaction designer

Position : Assistant Designer
Duration : February 2012 to
February 2013

andblack design studio
A-71 Orchid Woods,
Corporate Road, opp. Vodafone
Office, Prahlad Nagar, Ahmedabad
380015

Areas Explored:
Physical modelling,
3d modelling,
Rendering,
Site execution,
Simplification and analysis of
complex forms.
Scripting,
Logic building.

Project Name : Forever
Showroom
Location : Ahmedabad CG
Road

Involvement : Chandelier

Criteria : To enhance the
overall ambience of the
showroom to generate an
appealing and attractive
experience for the customers.
Also to keep in mind that the
impact doesnot overpower
the products i.e jewellery

Tasks : Virtual Exploration
Physical Manifestation.

Components : Copper cubes
Each rotating at a different
angle



A single geometry. Profile is of Hexagon.

For tagging purpose all the pieces were given a particular name, to make it manageable in layers. There are - main surfaces upper surfaces. internal connectors. overlapping connectors. and triangles.

The range was of hexagons, pentagons and octagons.

Input given in the script of curves



Output of unrolled surfaces in chart form with tagging.

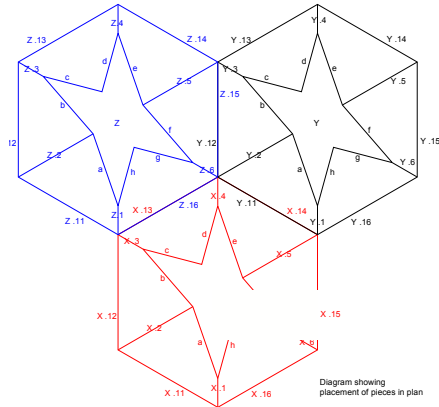


Chart and Diagram explaining the order of tagging.



First layer. Installation made out of mdf.



Final Output : Artists from the regional parts of India creating motifs and patterns on the structure.



Second layer : A layer of putty applied onto it.

Jayant Khanuja
Interior architect + design researcher
Interaction designer

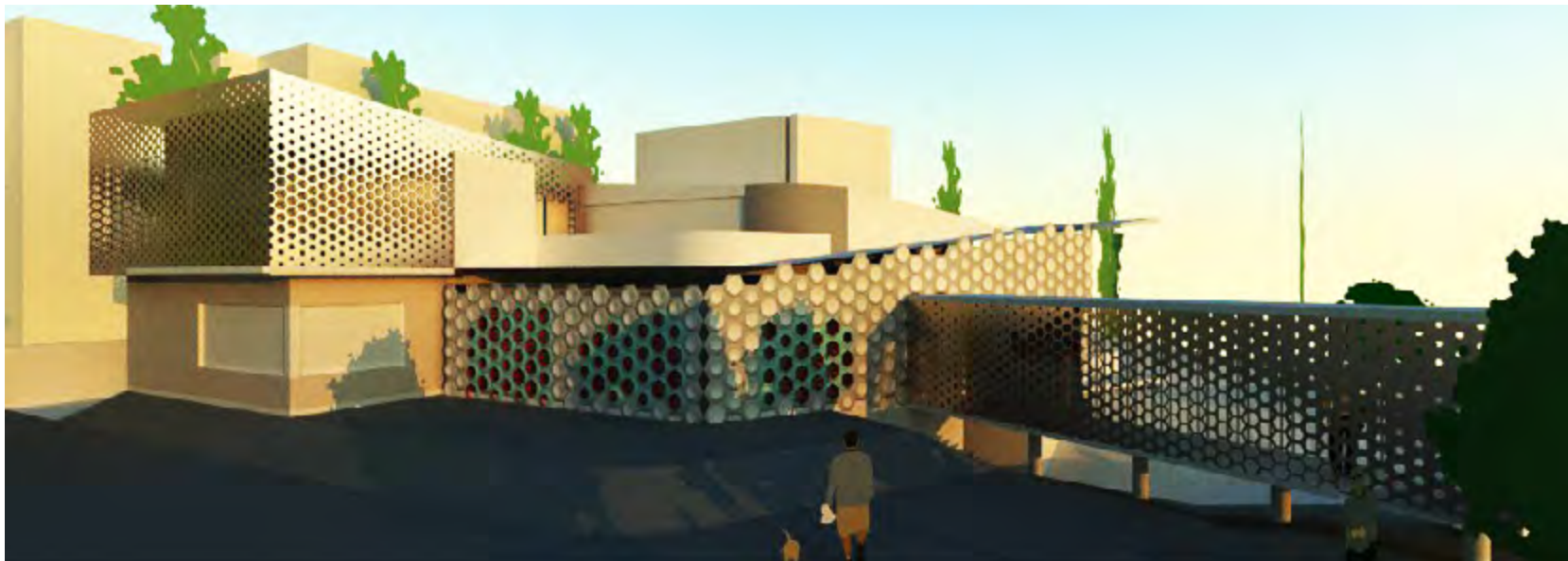
Position : Principal Designer
Company : Algo Design Studio.
Duration : March 2013 to current
As a consultant for andblack design studio

Project Name : Muquarna.

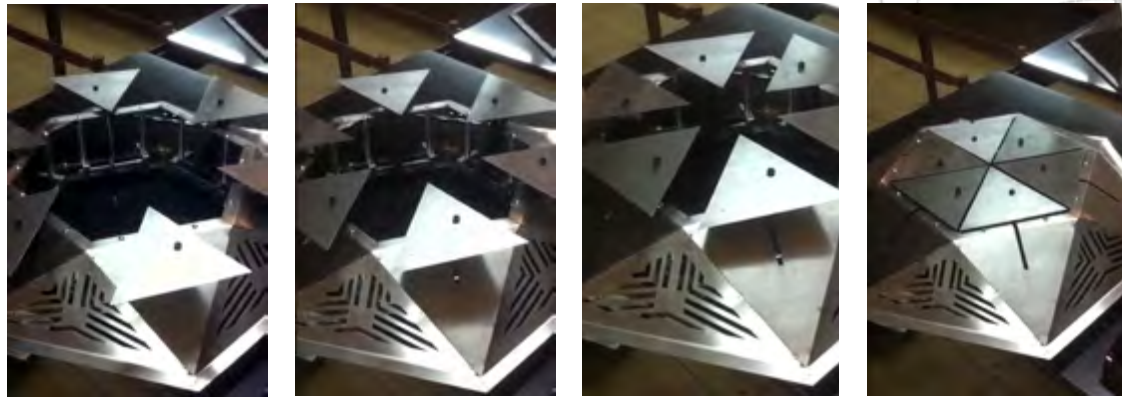
Client Brief : To come up with a generative ceiling, having seven modules which represent seven nights.

As a consultant the responsibility was to come up with such a script in grasshopper that when used it takes just a modulated surface as an input. The script generates the final design with a few flexible variables and also unrolls each and every piece with their particular tags. 3d printing not being an option, the complete dependency was on laser cutting. Each installation consisted of almost 100 geometries and each geometry consisted of 36 pieces.

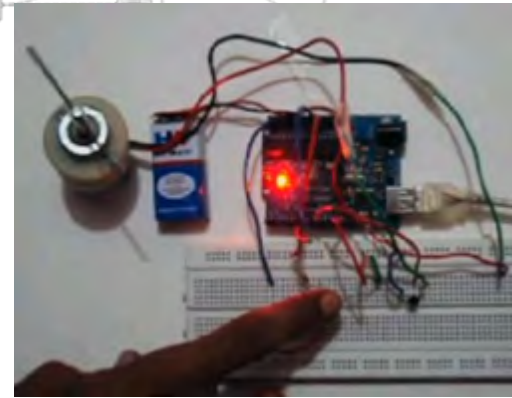
Thus 3600 pieces for each installation was supposed to be unrolled and tagged to get the laser cutting done.



The facade on the central volume was finalised to be a controlled facade with arduino based mechanism, which opens and closes alongwith the movement of sun.



After a lot of iterations with mdf models. This prototype was made with MS sheet, to understand the mechanism better. This movement is suppose to be controlled by a light based sensor through an arduino board for this prototype. Later a circuit board with more strength is suppose to be made.



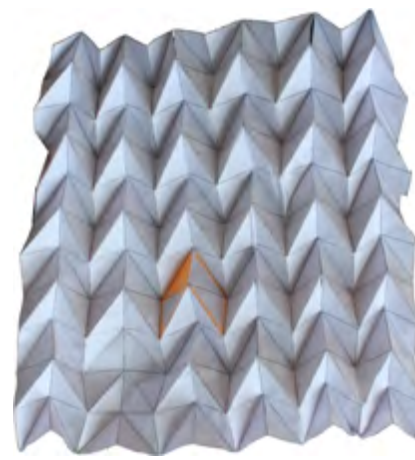
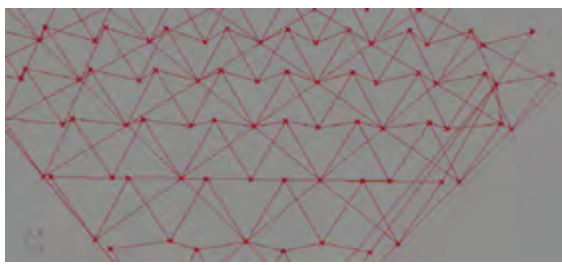
Experiments with a DC motor and arduino board. A few explorations were done with firefly and GH as well.

Jayant Khanuja
Interior architect + design
researcher
Interaction designer

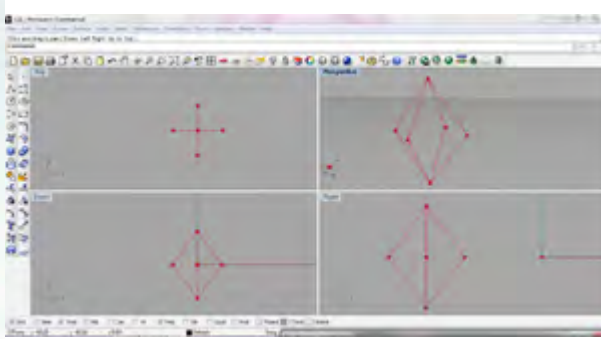
Position : Principal Designer
Company : Algo Design
Studio.
Duration : March 2013 to
current
As a consultant for andblack
design studio

Project Name :
Residence in Surat
Client Brief : To Design
a Sensor based facade

As a consultant on the
facades, the responsibility
was to come up with an
interesting
hexagonal composition
for the coverings on the
walkway and the upper
volume, which
was achieved by a
logic of point attractor
callibrated with the
directions of sunlight.



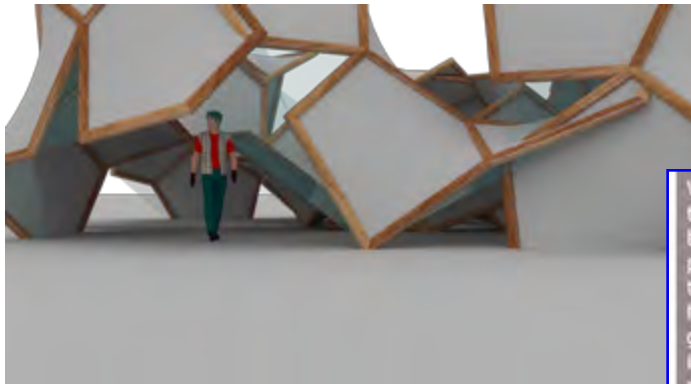
Jayant Khanuja
Interior architect + design
researcher
Interaction designer



Students work
of MIAD batch
2012/2013

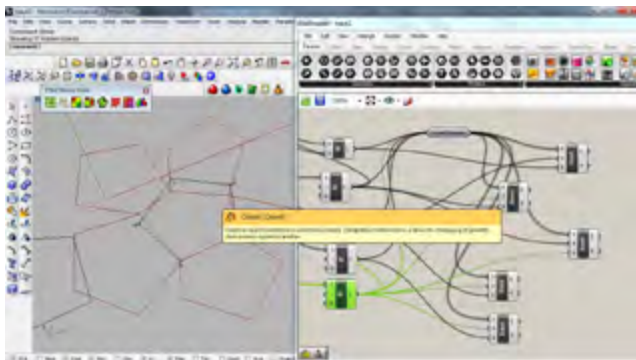
Lectures/Workshops.

Workshops conducted in
MIAD 2012/2013, CEPT
University for application
of digital tools in
design.



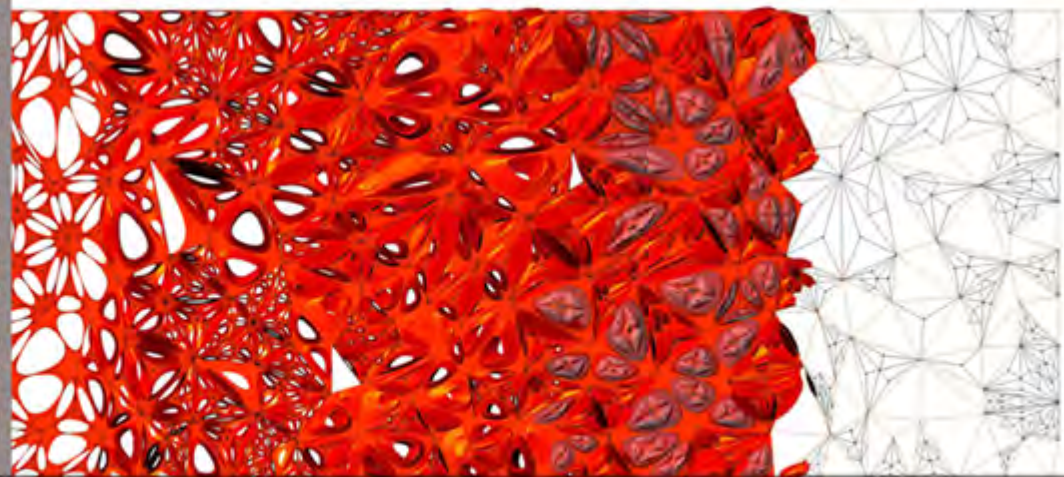
Lectures/Workshops.

Lecture conducted in APIED
on Importance and Impacts
of computation in
architecture



With changes in global scenarios due to technology and time; Computation has become an important part of design process. The lecture is focused on how these computational techniques can be helpful in understanding design as a generative process. It looks upon the importance of algorithms in such processes and focuses on it as a design tool. Practical implications of such processes have enabled designers to develop complex systems that create built-forms; which possess varied behaviours and can respond in real-time. The later part of the lecture is focused on deciphering and analyzing such spatial systems which are performative/adaptive and can behave like living organisms.

Date: 20th March 2013
Time: 11:15 am to 12:15 pm
Venue: Red square, DC Patel School of
Architecture, Vallabh Vidyanagar.



Gaṇanā

A Lecture on Importance & Impacts of computation in architecture
by Parantap Bhatt & Jayant Khanuja

Work at IAAC . Barcelona. Spain.

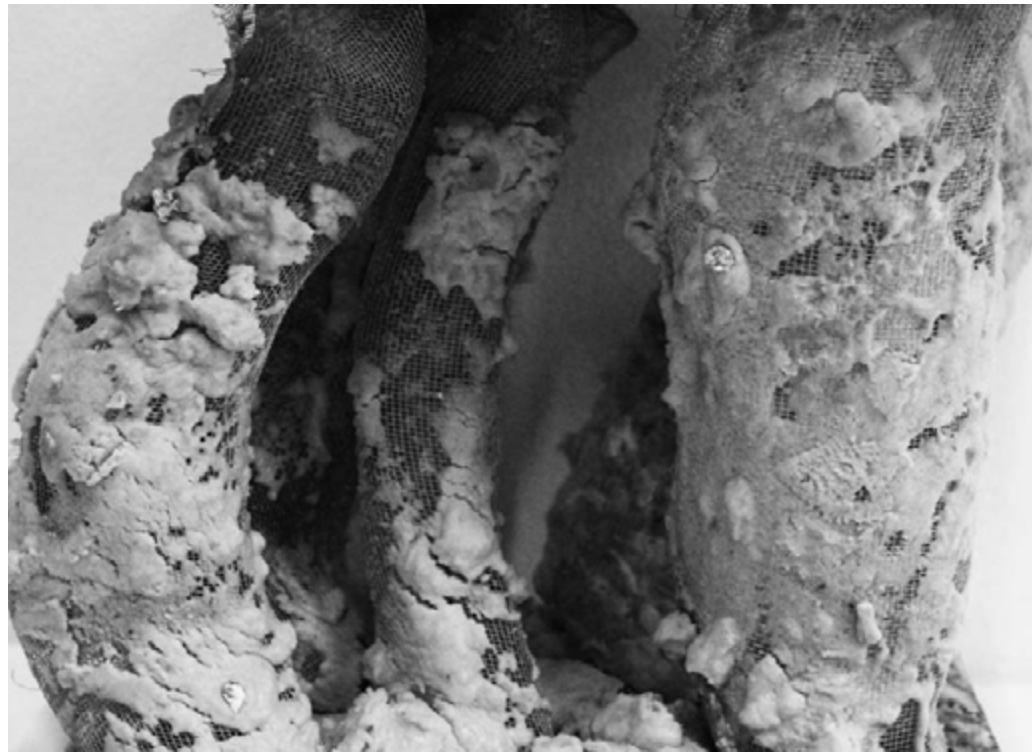
Investigation into Mycellium as a building material

FACADE SYSTEM.

- * Can be Changed in realtime in the design phase.
- * Usable. Filtered Spaces.
- * Can adapt itself to different structures.
- * The density can adapt to the structural configuration.

TECHNICUES EXPLORED.

- * Spraying.
- * Extruding.



Jayant Khanuja
Interior architect + design
researcher
Interaction designer

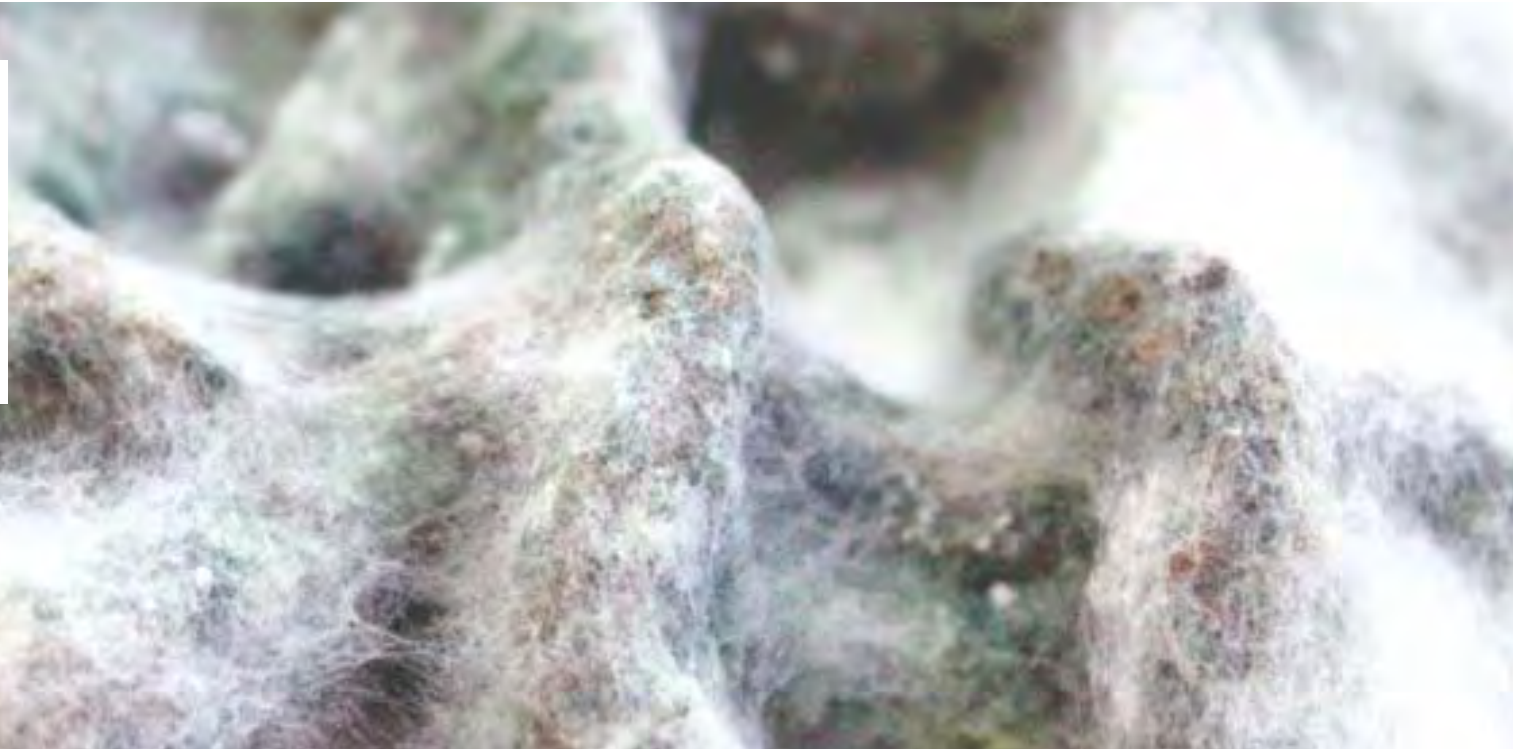
page 19

Bachelor of Interior
design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC.
Barcelona. Spain.

Understanding the potential of mycellium as a material which grows onto the substratum, intially using it as a growing agent, later decomposes itself into a strengthening agent for the substratum making it a building material by locking its configuration.



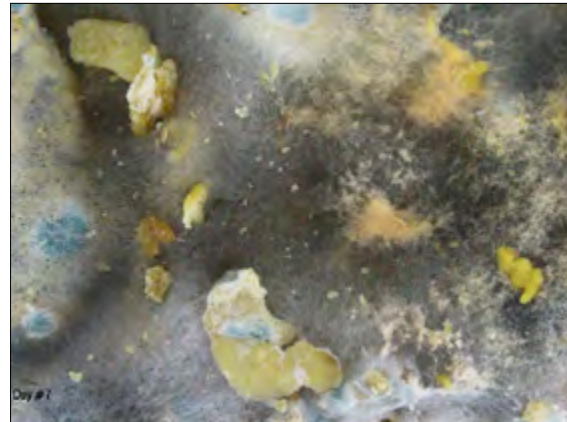
Testtube experiments.



Manual extrusions.



Spraying tests.



Jayant Khanuja
 Interior architect + design
 researcher
 Interaction designer

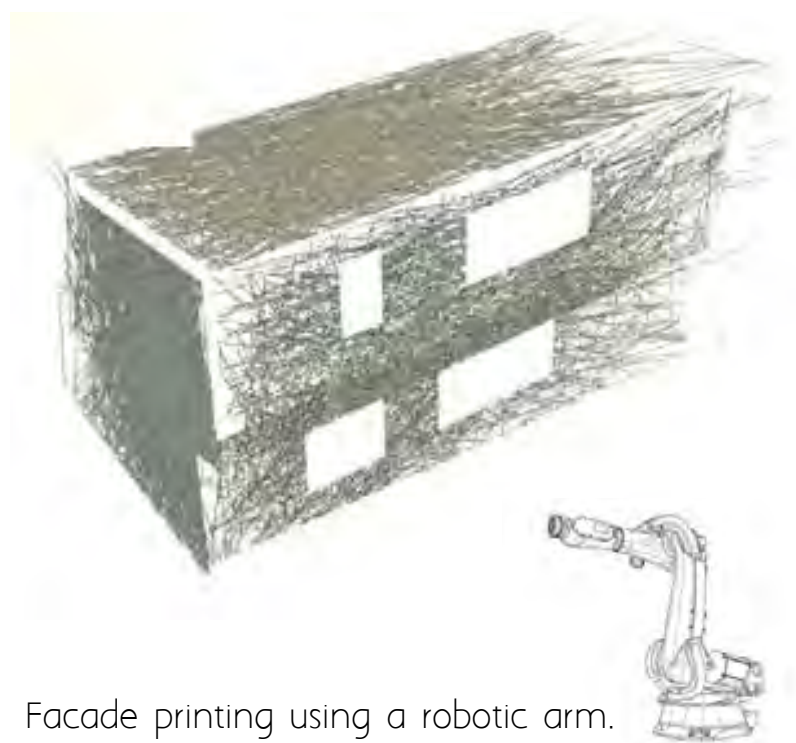
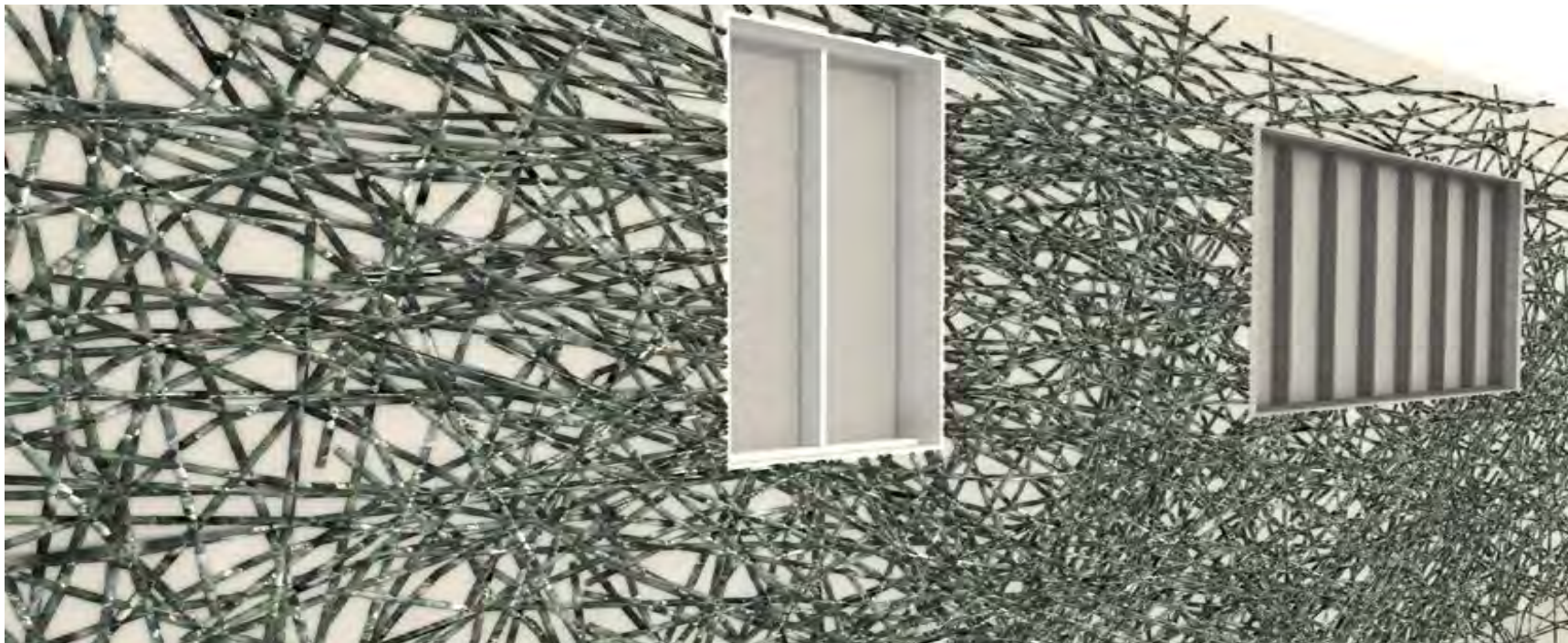
Bachelor of Interior
 design
 School of Interior design
 CEPT University Gujrat,
 Ahmedabad, India.

Visiting Faculty.
 CEPT University.
 Gujrat, Ahmedabad,
 India.

Currently pursuing.
 Masters In Advanced
 Architecture
 Institute of Advanced
 Architecture Catalunya.
 IAAC.
 Barcelona. Spain.

Complete project
 details :

<http://www.iaacblog.com/maa2014-2015-torre-baro-energy-district-g1/2014/11/torre-baro-energy-district-midterm-group-1-team-7-3/>



Facade printing using a robotic arm.

1 month



6 months



12 months



Jayant Khanuja
Interior architect + design
researcher
Interaction designer

page 21

Bachelor of Interior
design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC.
Barcelona. Spain.

Exploring the possibility
of extruding the
material using a robot.
Each configuration
of printing can be
altered based on the
configuration of facade.
Computing the process
helps in understanding
the context in terms
of density of the
layer in and thickness
of extrusion and
number of layers to be
extruded. Thus it helps
making the system
more adaptive and fast
in terms of application
on an existing facade.

Work at IAAC . Barcelona. Spain.

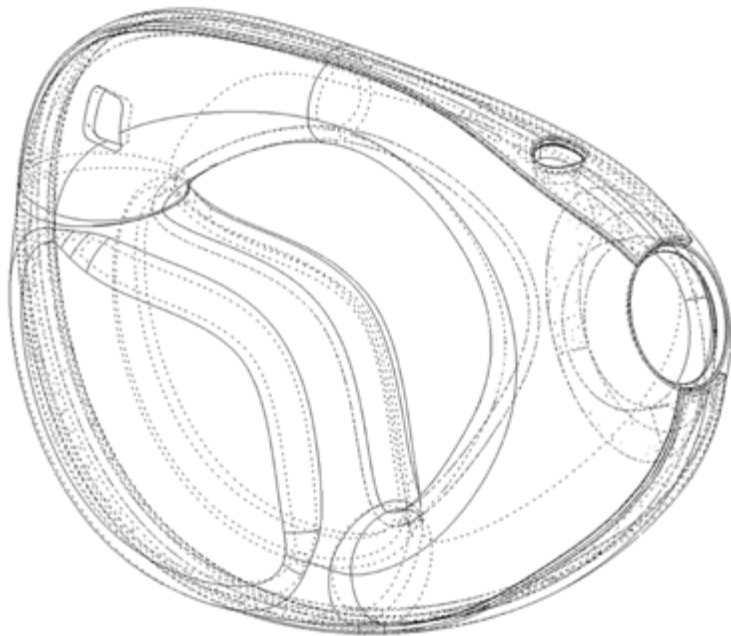
Interaction Design.

Exploring Embedded Systems.

The work in research line of interaction design revolves around the concept of making the invisible, visible.

Project Name : **HACK -a- LIGHT**

Project Details : <http://cyclicprocess.wix.com/interactiveprojects#services/cees>



Jayant Khanuja
Interior architect + design
researcher
Interaction designer

page 22

Bachelor of Interior
design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC.
Barcelona. Spain.

Extension of human
senses has always been
a tempting proposition.

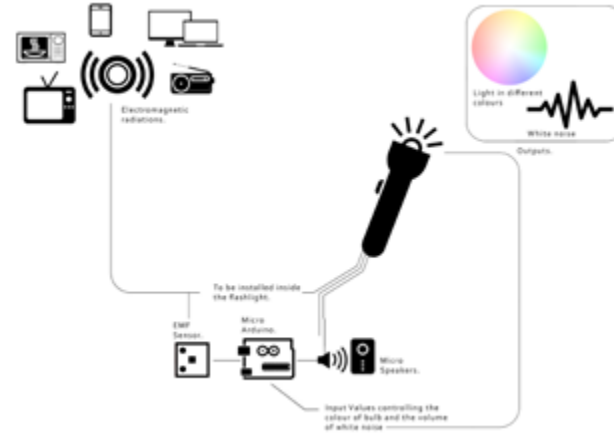
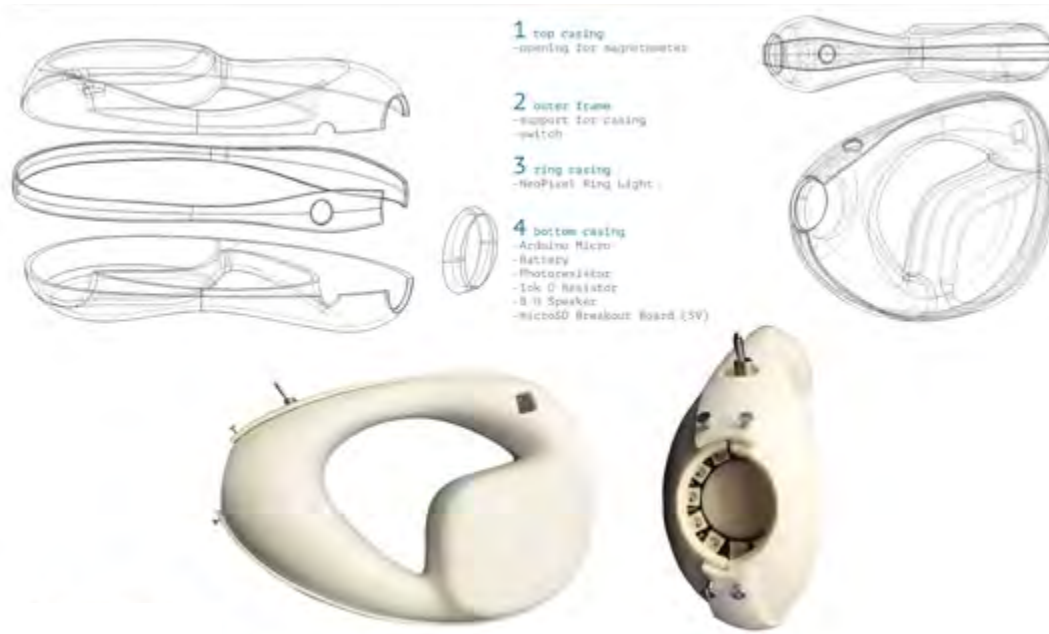
Hack a light is a similar
attempt to make
invisible, visible to
human eye.

The project is designed
in phases and revolves
around the idea of
hacking a daily usable
object and with the
help of embedded
systems make it a tool
for extension of sense to
see invisible, or less seen.

The design.

Idea : the beginning of absorption

Jayant Khanuja
Interior architect + design
researcher
Interaction designer



Bachelor of Interior design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

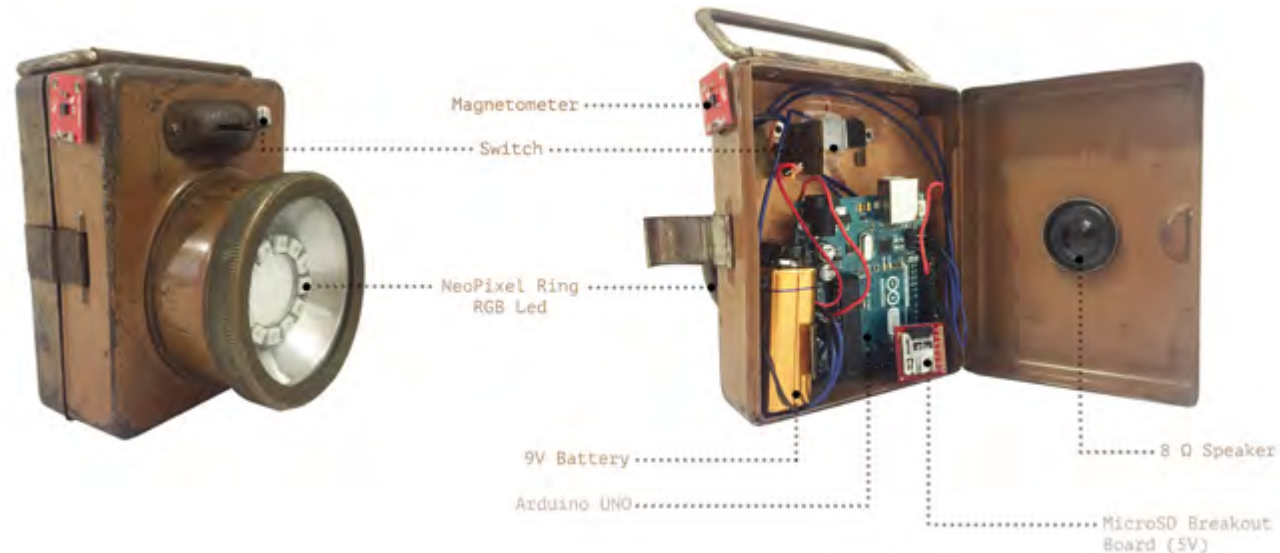
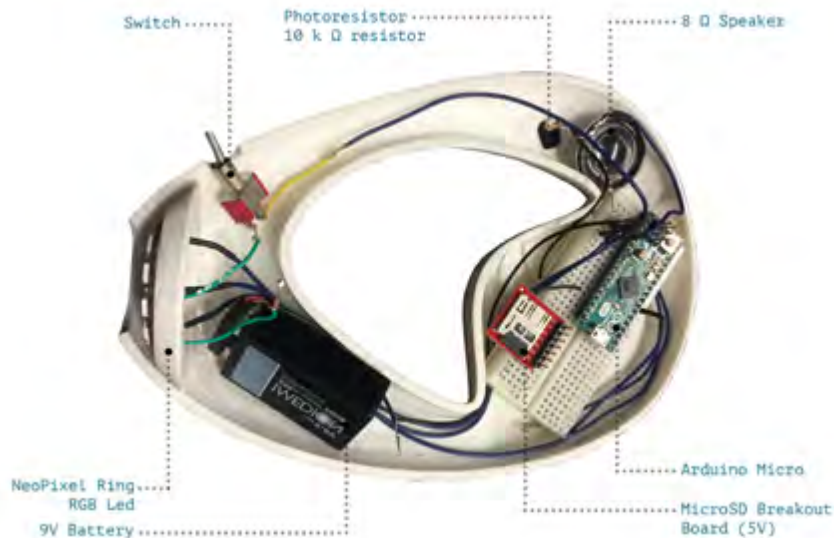
Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC.
Barcelona. Spain.

Design brief : To hack an object and be expressive.

Requirements : To make the invisible that surrounds us visible.

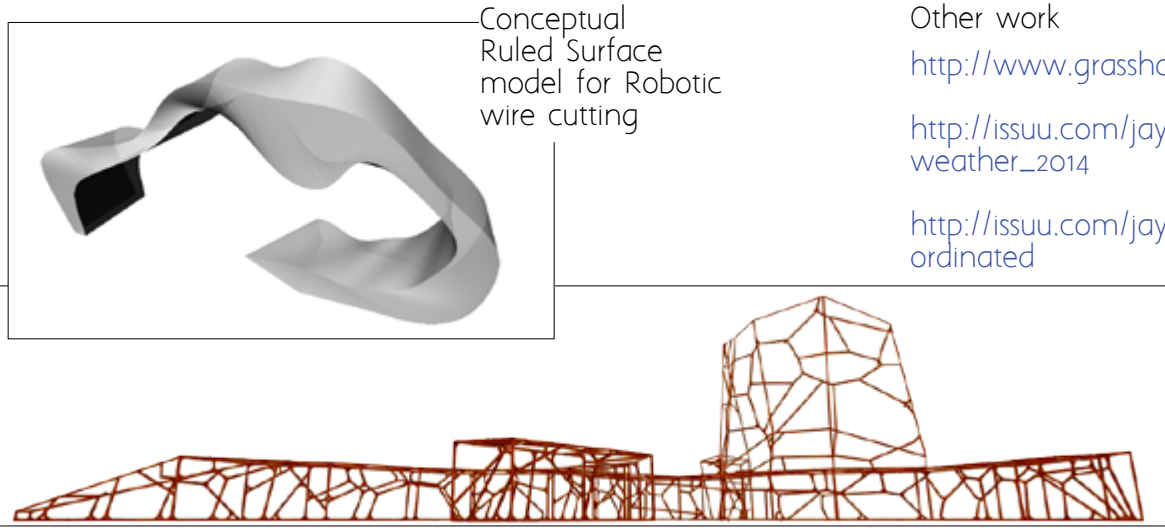
Deliverables : Old and new flashlight which reads Electromagnetic waves and projects the readings in varied color ranges.

The device.



Electives. Electives being an important medium to investigate digital tools, fabrication techniques and embedded systems

Designing Associativity and Digital Tools.



Conceptual Ruled Surface model for Robotic wire cutting

Other work

<http://www.grasshopper3d.com/profile/jayantkhanuja>

http://issuu.com/jayantkhanuja/docs/map_barcelona_weather_2014

http://issuu.com/jayantkhanuja/docs/the_routes_coordinated

Voronoi urban bench. Inter School competition entry

Encrypted Rome.



for complete information:

<http://www.iaacblog.com/maa2014-2015-encrypted-rome/2015/03/castelli-2050-economy-of-enough/#more-249>

Bachelor of Interior design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC.
Barcelona. Spain.

In the project we presented a different future to Castelli, and the growth of Rome city, This Alternative was the main stream of the society in Israel during the 1950-1970 and is called Kibutz. Our alternative suggestion for Castelli is based on similar ideas- Bottom Up solutions, Gradual growth, and Socialism.

Videos:

<https://vimeo.com/124700513>
<https://vimeo.com/124697586>

Understanding bamboo behaviour.
Product: lamp



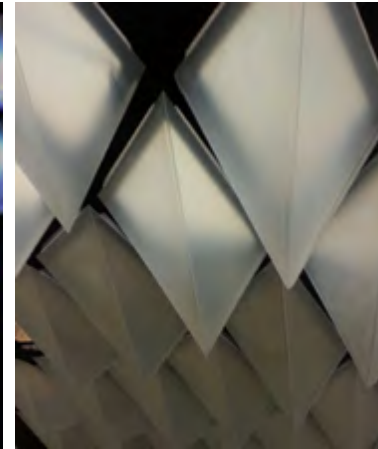
Jayant Khanuja
Interior architect + design
researcher
Interaction designer

Bachelor of Interior
design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC,
Barcelona. Spain.

Interactive facade.



Videos:

<https://vimeo.com/126061948>

Interactive facade is a project
working on UV Sensor.

Each panel is painted with
electro chromic paint. So
when the facade is exposed
to sunlight the panels change
color based on the intensity
of sunlight.

These changes get recorded
into an integrated system
which triggers the leds in
each panel at night. So the
LED's change colour based
on the recordings of UV
throughout the day.

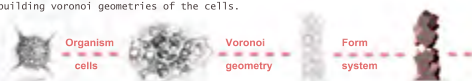
Abstract written for DCA conference 2014.
Entry Selected .

http://issuu.com/jayantkhanuja/docs/jiv_-dca_2014/1


OCS Competition Entry for a sculpture design in Kuwait.

The process


Actuation- FORM: The actuation process of any living organism can be defragmented to its process of origin. Abiogenesis is a natural process by which life arises from simple organic compounds forming a complex system of organisms. These actuators use different patterns of morphologies and are perceived in the sculpture as form building voronoi geometries of the cells.



Generation- IDENTITY: The generative process is where a system is derived from its components through a pattern or topology. The cells form a unified whole resulting in varied expressions of the system, here the actuators come together to bring out the essence of Kuwait in its expression, "kuwait" is derived from the Arabic Akwat, the plural of kut, meaning "fortress built near water". Thus the overall expression of the sculpture is perceived as an abstract to this identity of history and context.



Delusion- CHARACTER: The delusion process is to create a sense of introspection the transition between the past and the future and the present is in a constant state of Flux. Mirrors are used to deconstruct the massive character of the sculpture and create a sense of mystery to its appearance. Each cell made of stone is fixed in a steel frame with a possibility of movement where people can interact with the sculpture. The people can see the huge 3D Voronoi cells made of stones; giving a notion of heaviness at first but when they interact with it an antithesis is created by the notion of lightness.




Jīva OSC Competition: Kuwait city 2013-14
AL Shaheed park reversion project

Code ID: CPB.132

Design team : Parantap Bhatt Jayant Khanuja

The concept

The sculpture is conceptualized as a synthesis of three processes of Actuation, Generation and Delusion. It comprehends the idea of transience and the philosophical ideology of hylozoism; where all matter including the universe as a whole is viewed in some sense as alive. Named "Jiva"; the word itself originates from the Sanskrit Jivās, meaning to live. It has the same Indo-European root as the Latin word vivus; "alive". The Al Shaheed park is made within Kuwait's Green Belt to create the transition between the old city of Kuwait and the new expansion. The sculpture also intends to mark upon the process of being alive which is full of adaptation, mutation and transition.



Jīva OSC Competition: Kuwait city 2013-14
AL Shaheed park reversion project

Code ID: CPB.132

Design team : Parantap Bhatt Jayant Khanuja

For complete details: http://issuu.com/jayantkhanuja/docs/osc_competition_entry_for_kuwait_ci/1

Interactive canvas: a group project for
<http://www.festivaldelaimagen.com/es/eventos/exposiciones/2435-membrana-telematica>
Video : <https://vimeo.com/126178709>

Explorations with processing:

Currently working on a project of creating a physical environment made out of fiber optics. These fiber optics are used to transmit data and illuminate . This physical environment is controlled by a virtual interface where people from any part of the world can interact and change the conditions of this physical environment. They will be given a live feed of the changes that happens in this physical environment.

Jayant Khanuja
Interior architect + design
researcher
Interaction designer

Bachelor of Interior
design
School of Interior design
CEPT University Gujrat,
Ahmedabad, India.

Visiting Faculty.
CEPT University.
Gujrat, Ahmedabad,
India.

Currently pursuing.
Masters In Advanced
Architecture
Institute of Advanced
Architecture Catalunya.
IAAC,
Barcelona. Spain.

Thank You