

"I work a little bit like a sculptor. When I start, my first idea for a building is with the material. I believe architecture is about that. It's not about paper, it's not about forms. It's about space and material."

-- Peter Zumthor

2005-2006 Design for 2020

2006-2007 Eye
IT Park
Internship at Khosla Associates
Internship at MOAD

2007-2008 Springs
IAAC- Pixel House

2008-2009 Ten Images for Ithaca
Dissertation- Regeneration of Connaught Place
Indian RUpee Symbol

2009-2010 IAAC- Swarm City

CW

first signature

portfolio of carola winnie i

software park

new delhi

ribs

Being the second project in the fourth year of my undergraduation, this was the last project before my internship. This was a real-time proposal in Delhi, the capital, which is on an expansion spree with some of the most expensive infrastructural and urban development projects in the country. The software park was house to two of the biggest giants in the industry and four smaller ones.

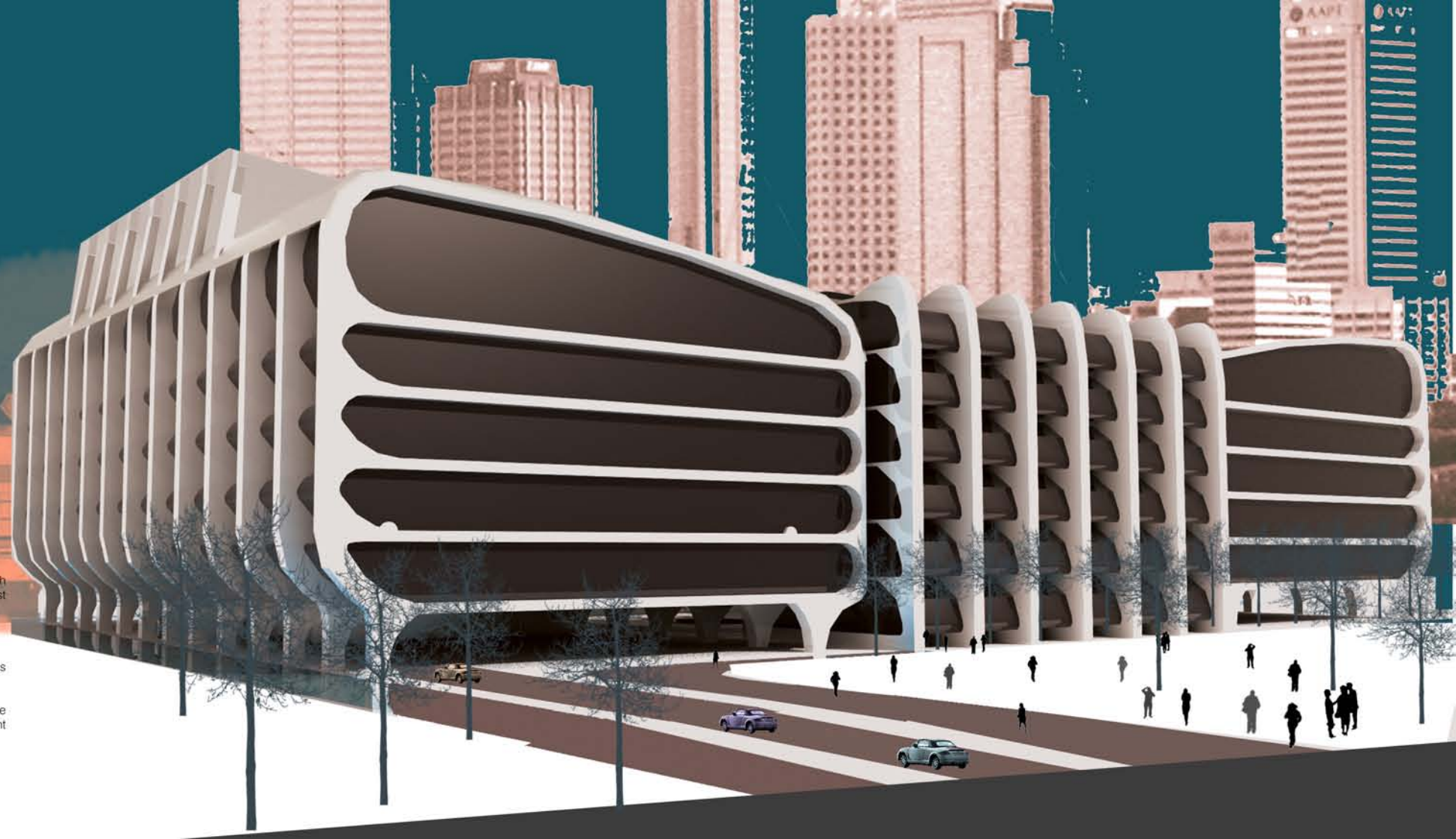
My experiment here was to give a break the box experience to the people who walked in and out and passed it everyday.

The birth of the software industry has created a breakthrough not only in the economy growth but also in every aspect of the way the urban man lives in the city. It has breathed new life into cities.

Ribs is the blatant expression of this new behavior cult that is taking over the city. It is metaphorically the lungs of any living form. The skeletal steel which seamlessly curve from beams to columns encage the lung space within it. The central plaza inhales and exhales as it opens wide to the sky and is the life of the building that shows to sight that life dwells in there. Giving life to this building from the cellular level are the people who work here and synthesise it.

Let the city breathe.

academics. CW



the eye

winner of second place, akriti, pragyan '06

Pragyan is a national level symposium conducted by National Institute of Technology, Trichy. Akriti is one of the many design competitions triggering young talents from the nation to create path-breaking designs and ideas in building engineering and architecture. In the year 2006, it called for entries for the most innovative designs in cinema and movie theatres.

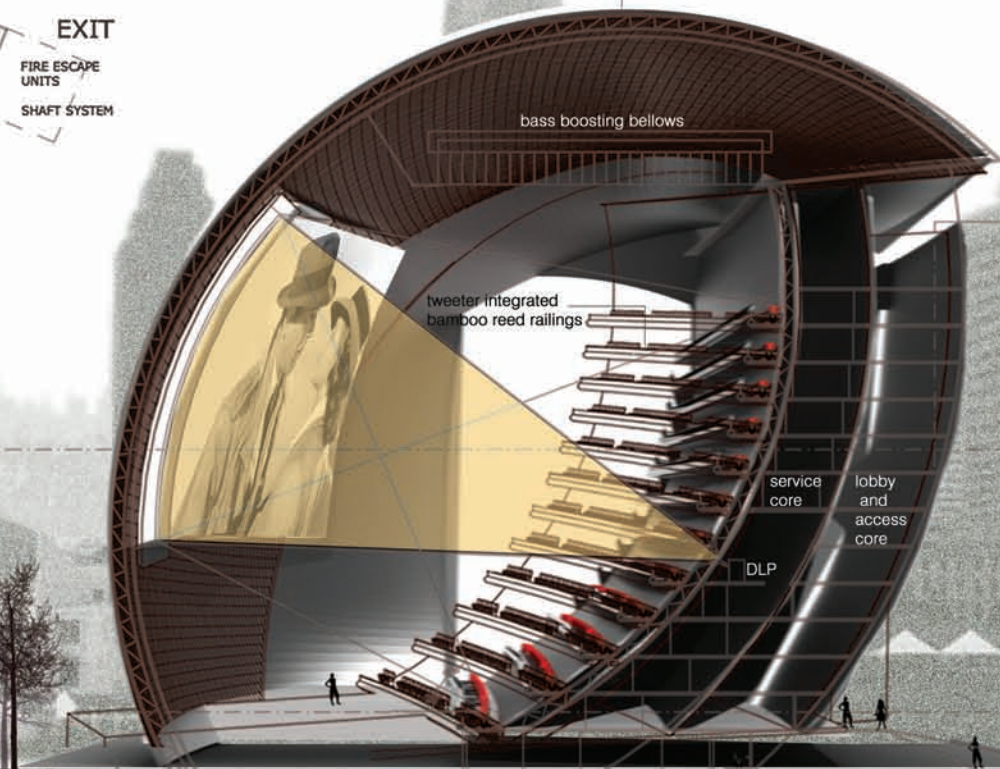
The intention to make cinema the most stunning real-life experience beyond the 70mm was the constructivist theory outlining the design. The white eyeball marble-like building is etched in the cityscape as a standout landmark along with the unmistakable identity of a movie theatre. The most exiting part of the design was the evolution of the eye from a subtle curve to a complete dome. Every feature of the design moulded itself into this dome perfectly.

making the eye see

The Digital Light Projector projects on to a concave paraboloid screen giving the feeling that the screen runs to the back of the viewers head making it an experience far more amusing than today's silver screens and IMAX theatres. The concavity of the roof, takes care of acoustic reflections. The bellows suspended from the ceiling act as bass boosters that strike down like thunder under the seat. For enhanced fidelity of sound, each row of seating has a bamboo reed integrated with the railing and tweeters are opened in front of every seat.

There are twelve floors in the building and each floor corresponds to a row of 100 seats, stating that there is nothing between the viewer and the screen, making it a real-time experience.

Fibre reinforced concrete with steel bracing

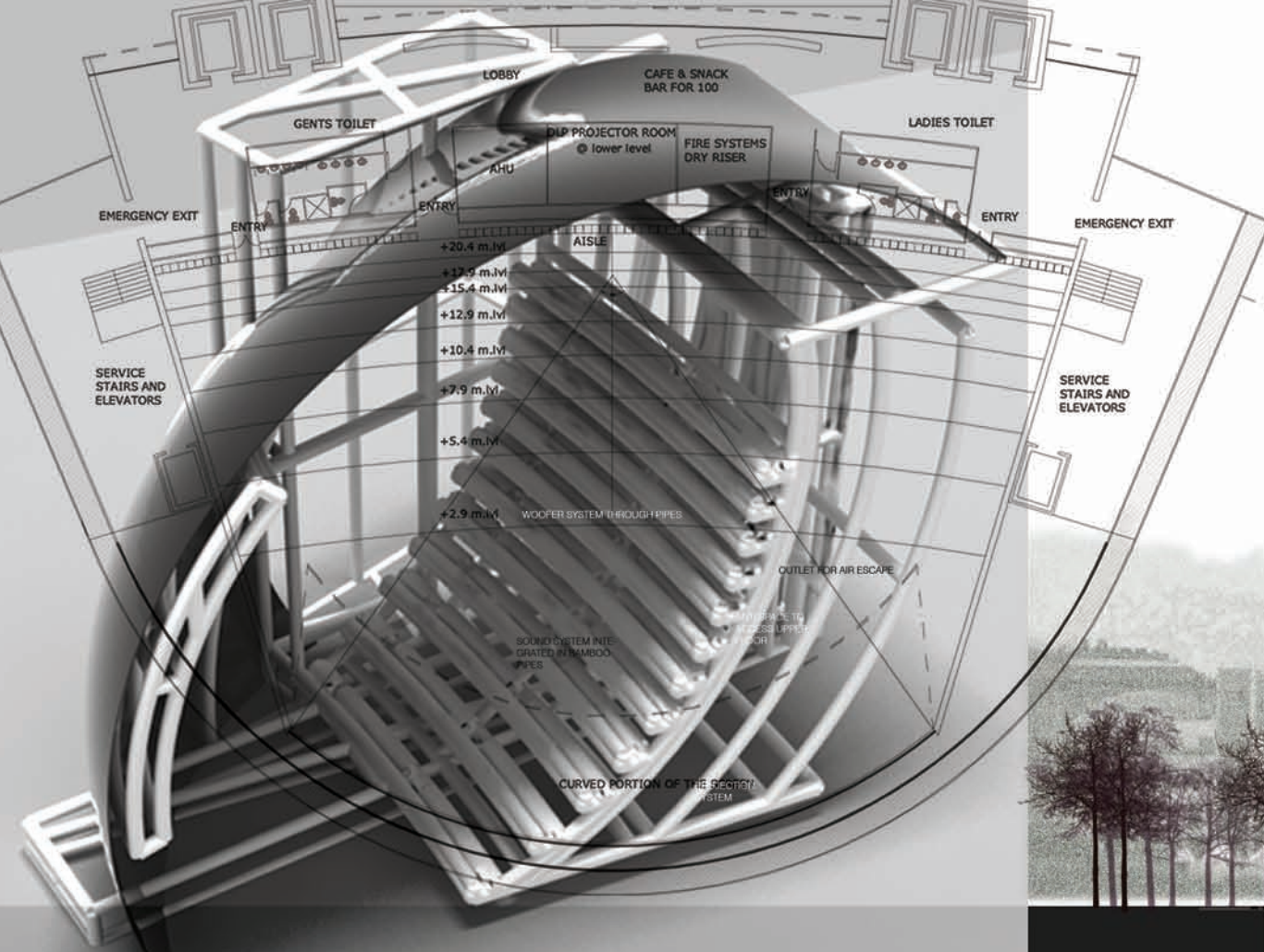


sectional perspective

EXIT

FIRE ESCAPE UNITS

SHAFT SYSTEM



view of skeleton and membrane

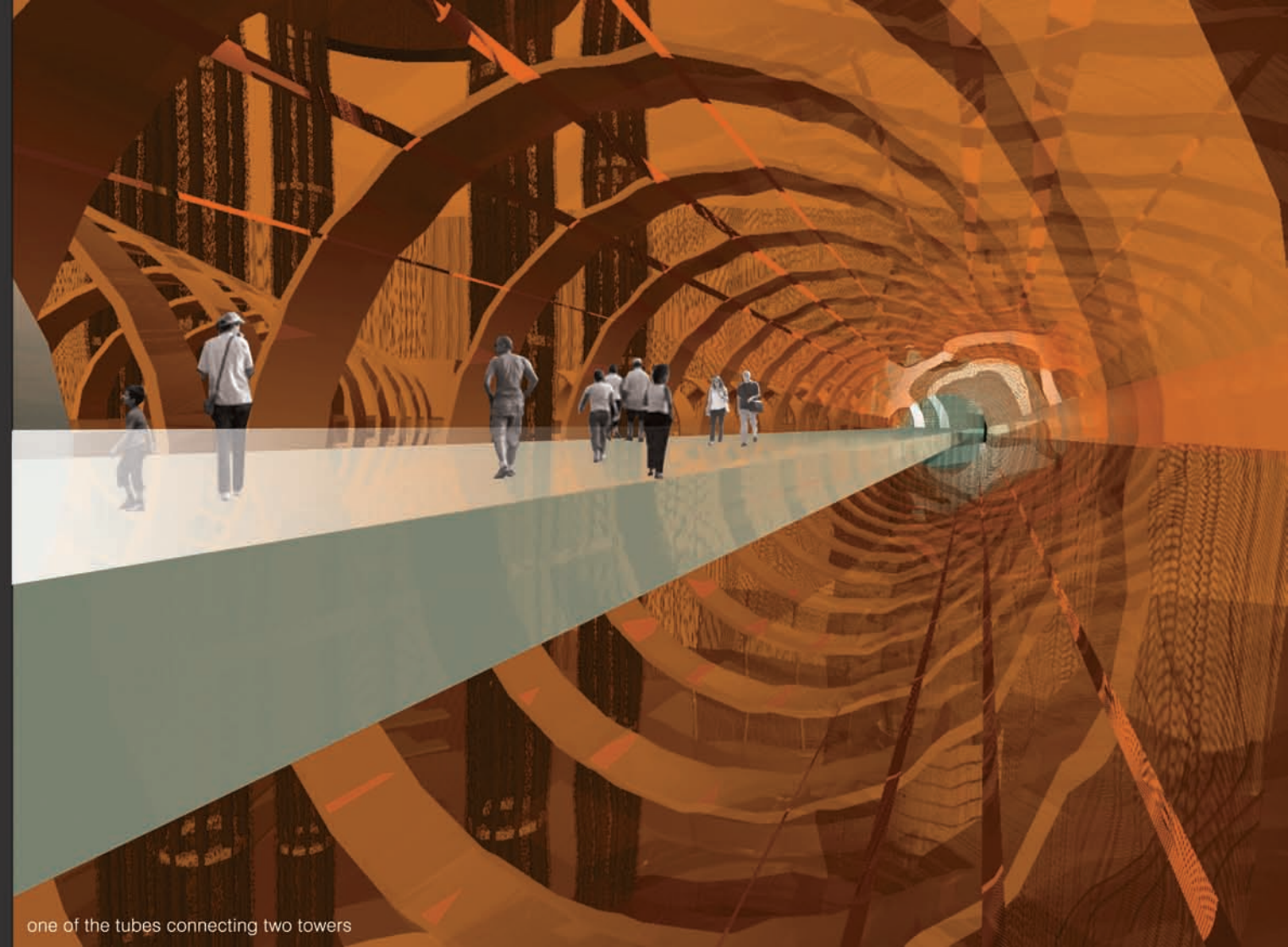
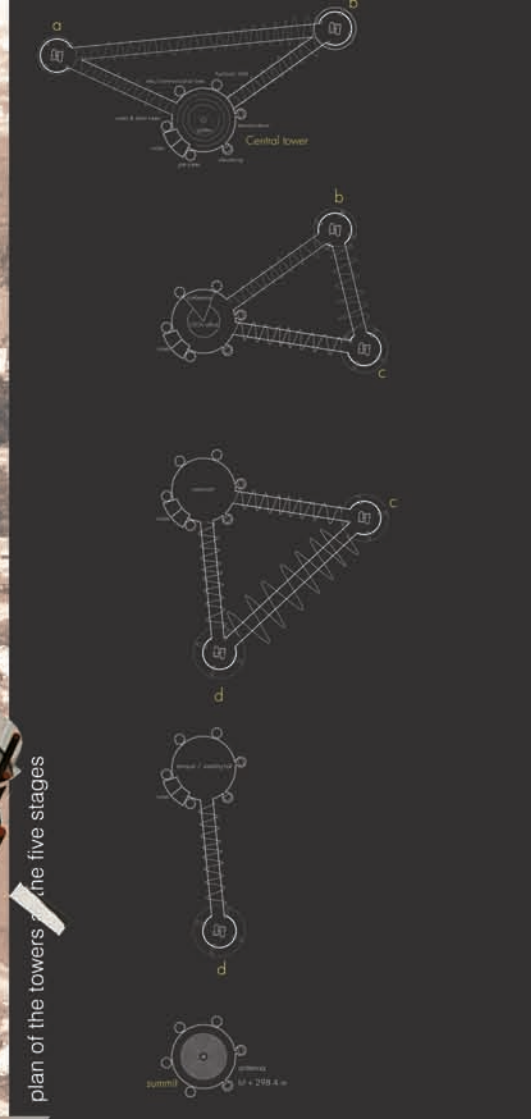
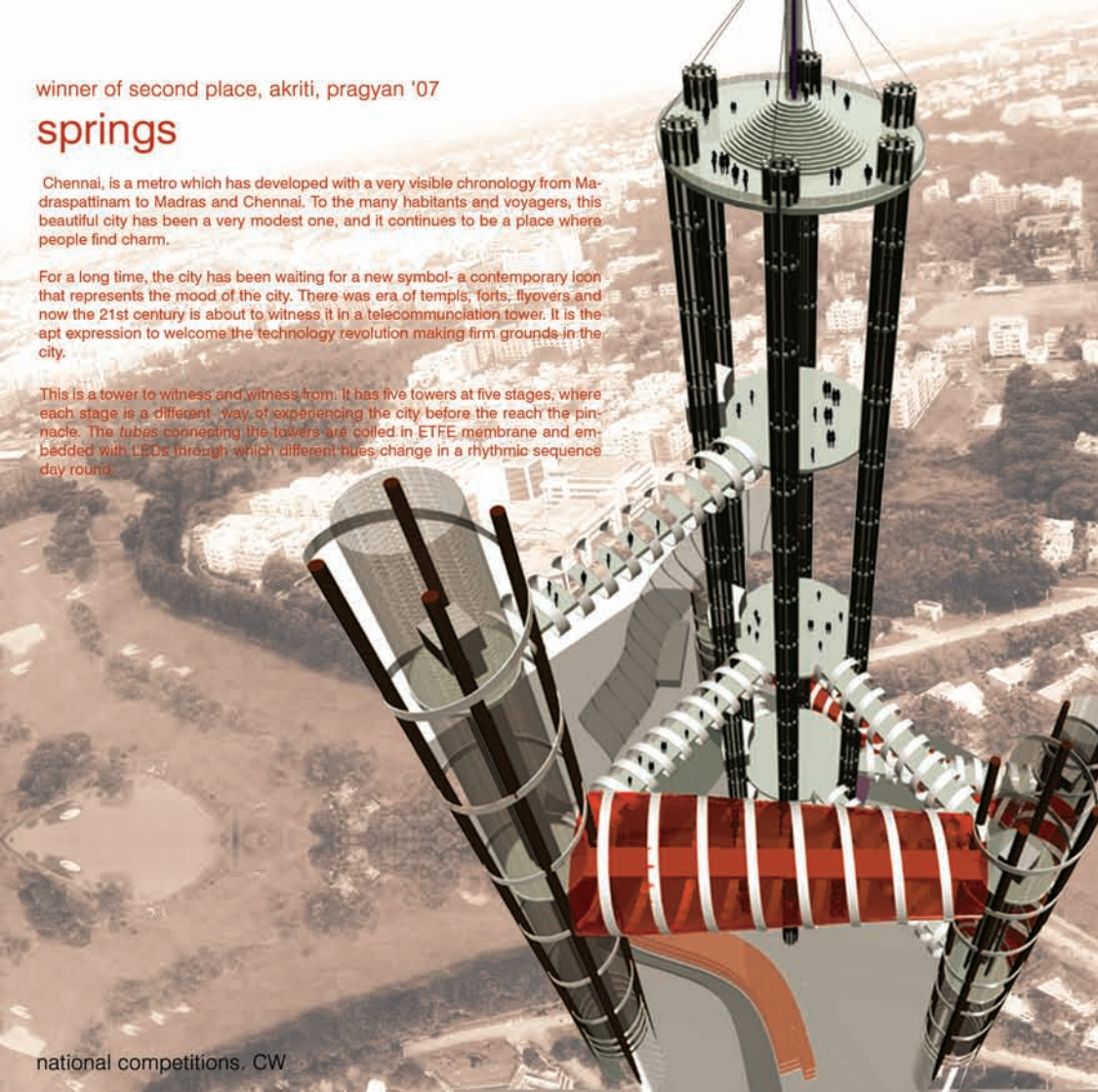
winner of second place, akriti, pragan '07

springs

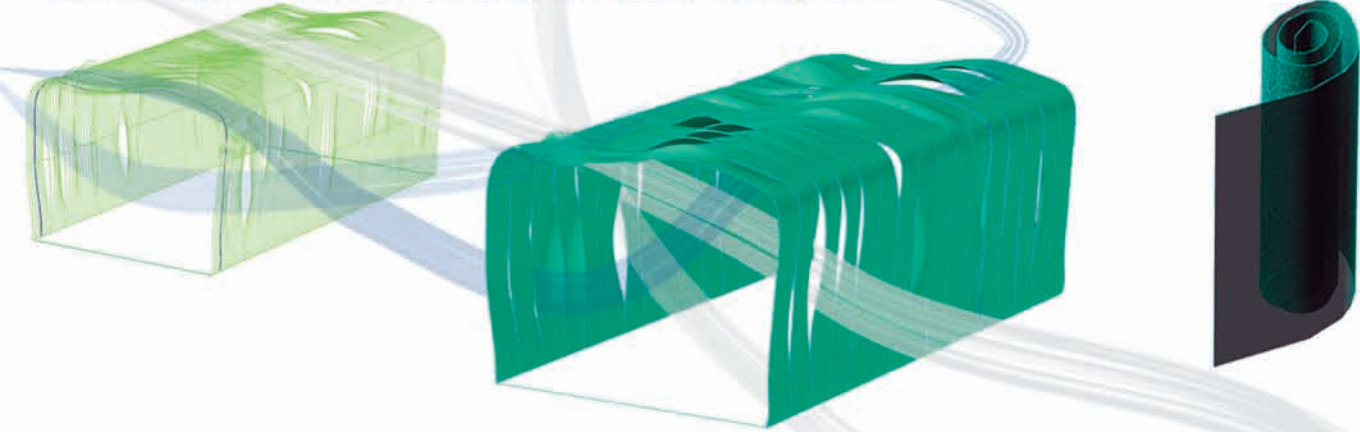
Chennai, is a metro which has developed with a very visible chronology from Madraspattinam to Madras and Chennai. To the many habitants and voyagers, this beautiful city has been a very modest one, and it continues to be a place where people find charm.

For a long time, the city has been waiting for a new symbol- a contemporary icon that represents the mood of the city. There was era of temples, forts, flyovers and now the 21st century is about to witness it in a telecommunication tower. It is the apt expression to welcome the technology revolution making firm grounds in the city.

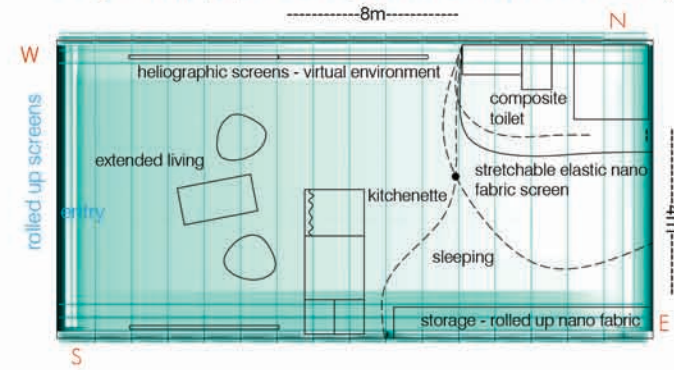
This is a tower to witness and witness from. It has five towers at five stages, where each stage is a different way of experiencing the city before the reach the pinnacle. The tubes connecting the towers are called in ETFE membrane and embedded with LEDs through which different hues change in a rhythmic sequence day round.



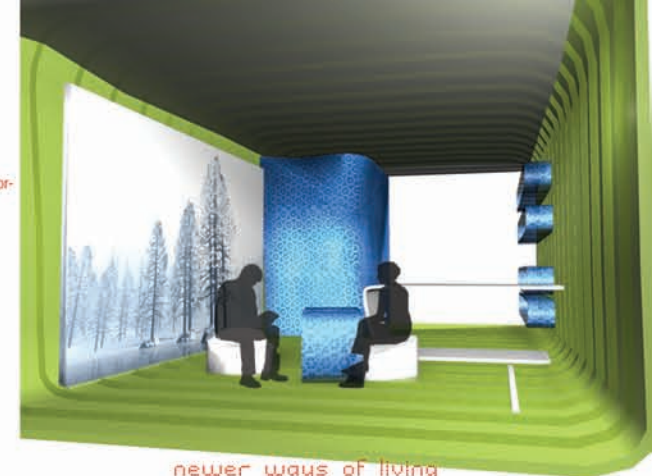
responsive - reactive dual layered nano fabric skinexpanded and torn skin allowing wind flow



living for two people - working in a networked service industry



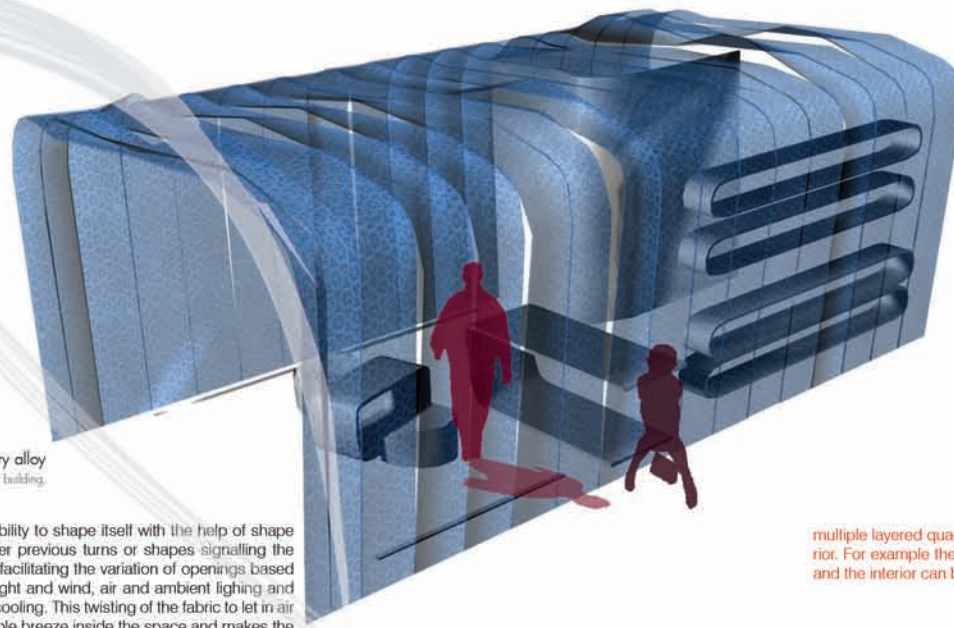
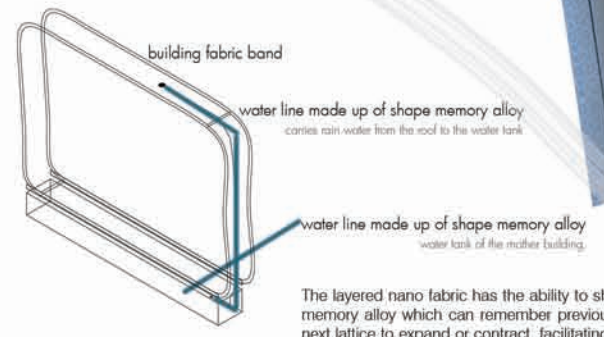
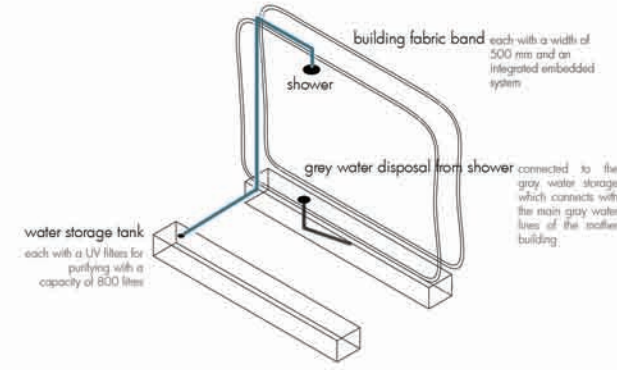
studio model house- 8.0 m x 4.0 m
 area - 32 sq.m or 345 sq.ft
 total height - 3.6 m
 height the dwelling unit - 3.0 m
 height of the livable space - 2.7 m
 height of the inflattable air cavity insulator- 0.3 m



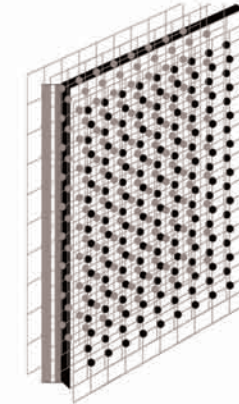
newer ways of living

THE PIXEL HOUSE

The pixel house of 2035 is a metabolism of controlled spaces. This is the ultimate quest that man has been looking for—to entirely hold sway of his immediate niche. The advent of this new age was not a sudden boom but a gradual offshoot of the rapid change in technology, lifestyle and nature's demands have challenged.



The layered nano fabric has the ability to shape itself with the help of shape memory alloy which can remember previous turns or shapes signalling the next lattice to expand or contract, facilitating the variation of openings based on the external conditions of sunlight and wind, air and ambient lighting and dehumidification and evaporative cooling. This twisting of the fabric to let in air causes an aerodynamic fin to enable breeze inside the space and makes the structure very dynamic - flexing like a muscle in the skyline.



pixels in action

multiple layered quantum dots can project varied projections for interior and exterior. For example the exterior skin can project an image inviting people to a party and the interior can be sequel from *the matrix*.

human interaction and living pattern has completely absorbed technology in a much more dynamic fashion than physical interaction combatting distance and time.

the idea is that people make use of virtual environments to work, share and distribute knowledge. in an era of quantum computing where millions of computations are possible using a single nano quantum dot, the walls or skin become a resolution of trillion pixels.

such responsive environment strengthens human interaction, augments internet shopping etc by literally creating any possible mood or environment. it also helps the couple to stay together and work from home.

easy to construct homes with the use of flexible shape memory alloys and nano fabric as construction materials.this makes the house easy to assemble in a couple of hours - easily rolled up and carried or transported.

nano technology redefines the way material size and embedded technologies relate. changing material properties at nano level gives the same desirable material characteristics but making it carbon free and hence a green material.

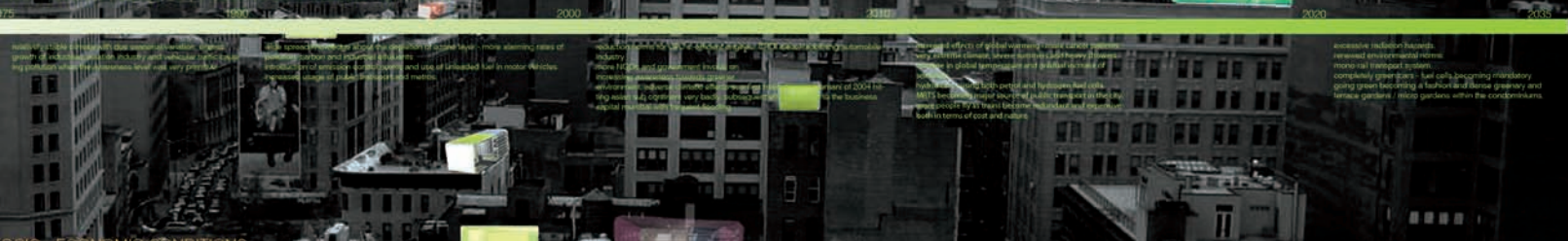
rapid urbanisation - with more urban agglomerations in the suburbs, with city sprawling more than 100 km and to and
phased development of roads, metro and railway line connections, targeting 2020
developmental norms emphasising compulsory green building and zero carbon buildings and urban renewal programmes
networked and intelligent infrastructure support systems, more and more rural people migrating to cities and predominantly settling in the fringes design and emphasis on skyline and its attributes
shifts in living concepts - radical urban concepts with augmented sense of ephemerality appealing technology

tracing pixels across the skyline

HUMAN FACTOR



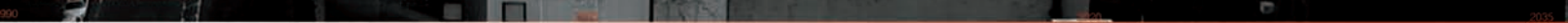
ENVIRONMENT / CLIMATE / POLLUTION / TRANSPORTATION



SOCIO-ECONOMIC CONDITIONS



SCIENCE & TECHNOLOGY

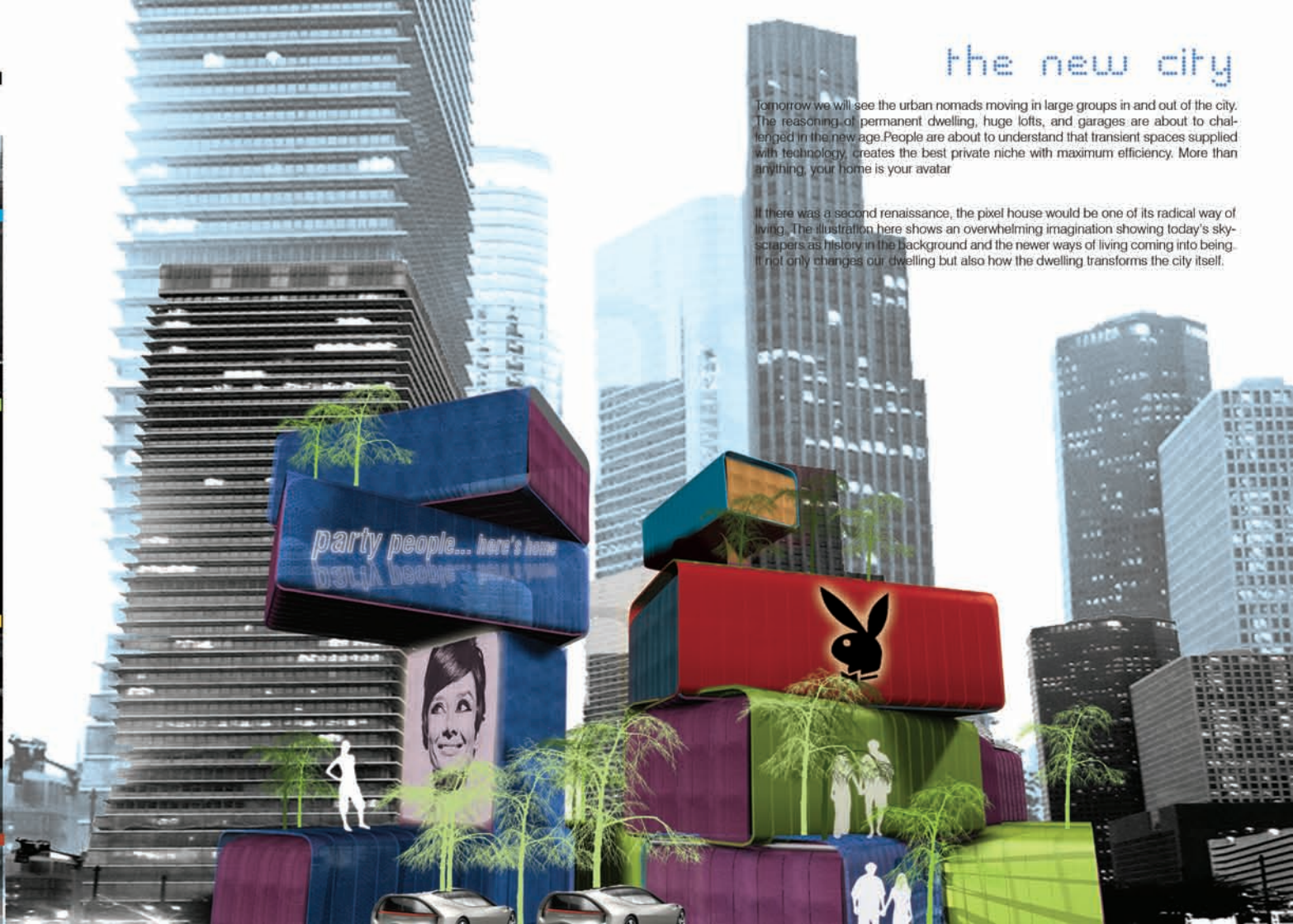


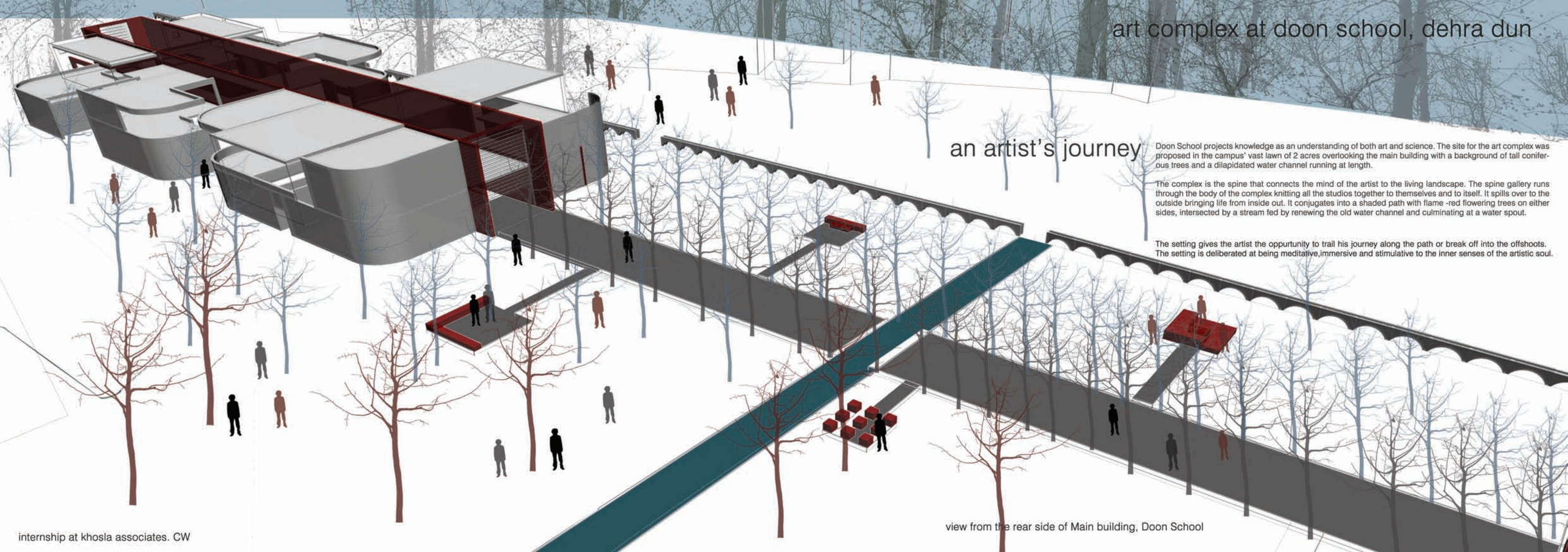
international competition. CW

the new city

Tomorrow we will see the urban nomads moving in large groups in and out of the city. The reasoning of permanent dwelling, huge lofts, and garages are about to be challenged in the new age. People are about to understand that transient spaces supplied with technology, creates the best private niche with maximum efficiency. More than anything, your home is your avatar

If there was a second renaissance, the pixel house would be one of its radical way of living. The illustration here shows an overwhelming imagination showing today's skyscrapers as history in the background and the newer ways of living coming into being. It not only changes our dwelling but also how the dwelling transforms the city itself.





an artist's journey

Doon School projects knowledge as an understanding of both art and science. The site for the art complex was proposed in the campus' vast lawn of 2 acres overlooking the main building with a background of tall coniferous trees and a dilapidated water channel running at length.

The complex is the spine that connects the mind of the artist to the living landscape. The spine gallery runs through the body of the complex knitting all the studios together to themselves and to itself. It spills over to the outside bringing life from inside out. It conjugates into a shaded path with flame-red flowering trees on either sides, intersected by a stream fed by renewing the old water channel and culminating at a water spout.

The setting gives the artist the opportunity to trail his journey along the path or break off into the offshoots. The setting is deliberated at being meditative, immersive and stimulative to the inner senses of the artistic soul.

view from the rear side of Main building, Doon School



THE BEACH VILLA AT MERADHOO SPA

meradhoo spa, maldives

Meradhoo was one of the uninhabited islands of Gaafu Alif Atoll, Maldives, until its government decided to develop it expansively into a hub of spas and resorts on its clean shores and blue waters.

Meradhoo's beach and water villas and cottages follow a common language of vernacular style of thatch and timber construction to with minimised use of concrete keeping in mind the marine life with special interest towards protecting coral reefs.

Wood throws in a natural warmth to the spaces added with a natural play of hues with the natural stones of Kota, Granite, Cuddupah, yellow and green Slate.

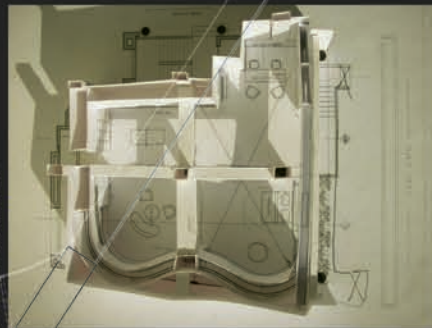
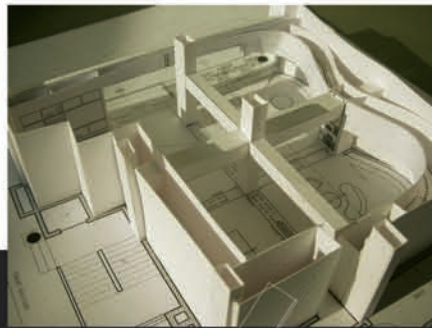
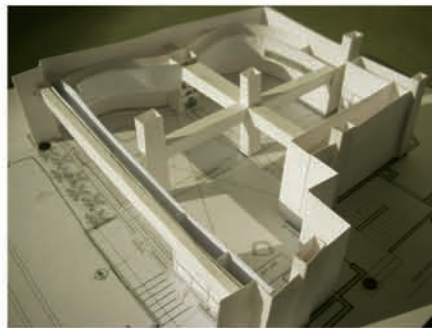
The spaces are juxtaposed with a play of alternate openness and closeness set amidst the vast ocean and the altruistic coconut palms that fill the beach sands. Infinity pools merge seamlessly into the endless ocean.

All this make experiencing *'The Lost Island'* true to its every word.



atmosphere pune, india

Walking into atmosphere.pune is to immerse yourself into a vast drape of white chiffon, the wave defined by the graceful spline on the wall surface in pure white are the backdrop to showcase the vast collection of fabrics in the store. White underplays the curved wall which keeps your attention on the fabric.



STUDY MODELS



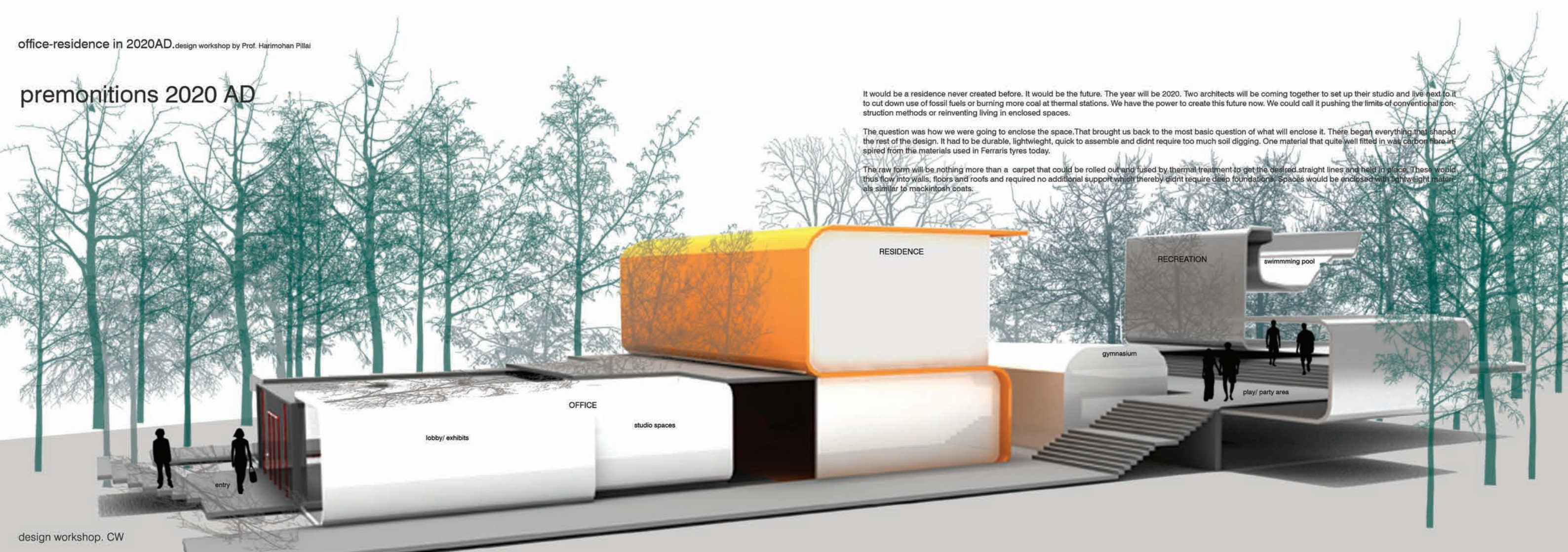
ELEVATION C
internship at khosla associates. CW

premonitions 2020 AD

It would be a residence never created before. It would be the future. The year will be 2020. Two architects will be coming together to set up their studio and live next to it to cut down use of fossil fuels or burning more coal at thermal stations. We have the power to create this future now. We could call it pushing the limits of conventional construction methods or reinventing living in enclosed spaces.

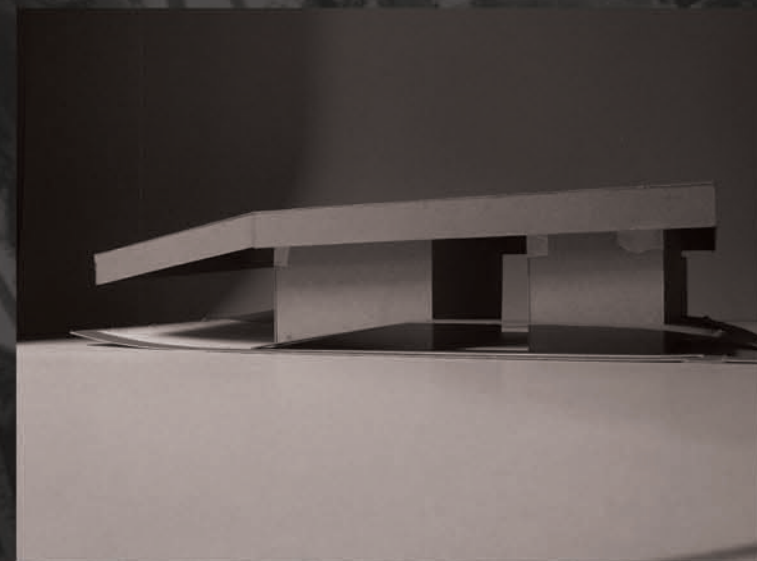
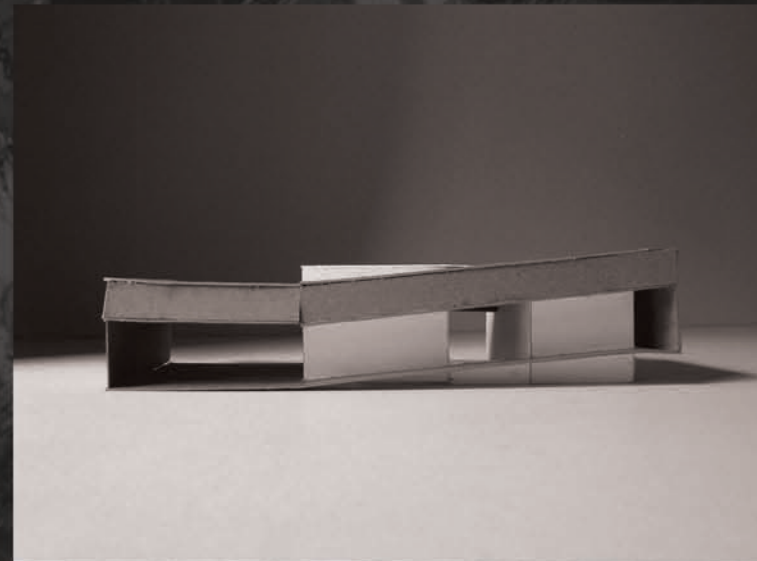
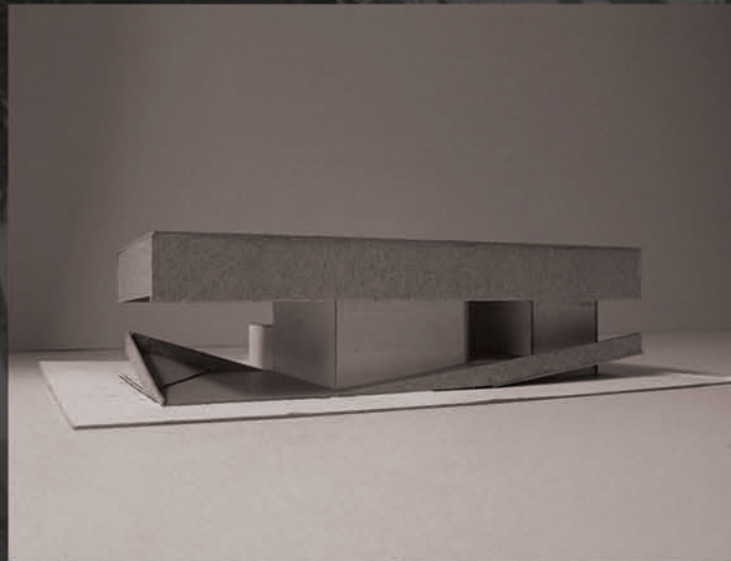
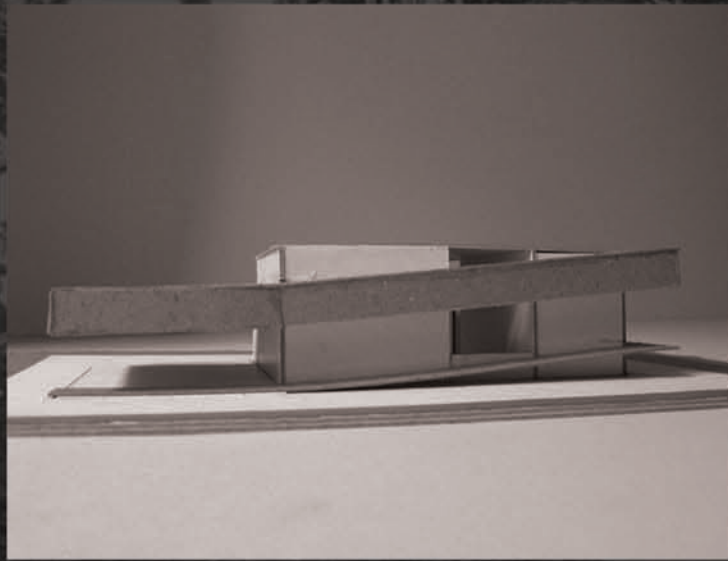
The question was how we were going to enclose the space. That brought us back to the most basic question of what will enclose it. There began everything that shaped the rest of the design. It had to be durable, lightweight, quick to assemble and didn't require too much soil digging. One material that quite well fitted in was carbon fibre inspired from the materials used in Ferraris tyres today.

The raw form will be nothing more than a carpet that could be rolled out and fused by thermal treatment to get the desired straight lines and held in place. These would thus flow into walls, floors and roofs and required no additional support which thereby didn't require deep foundations. Spaces would be enclosed with lightweight materials similar to mackintosh coats.



shiloh house annexe

kozhikode, kerala



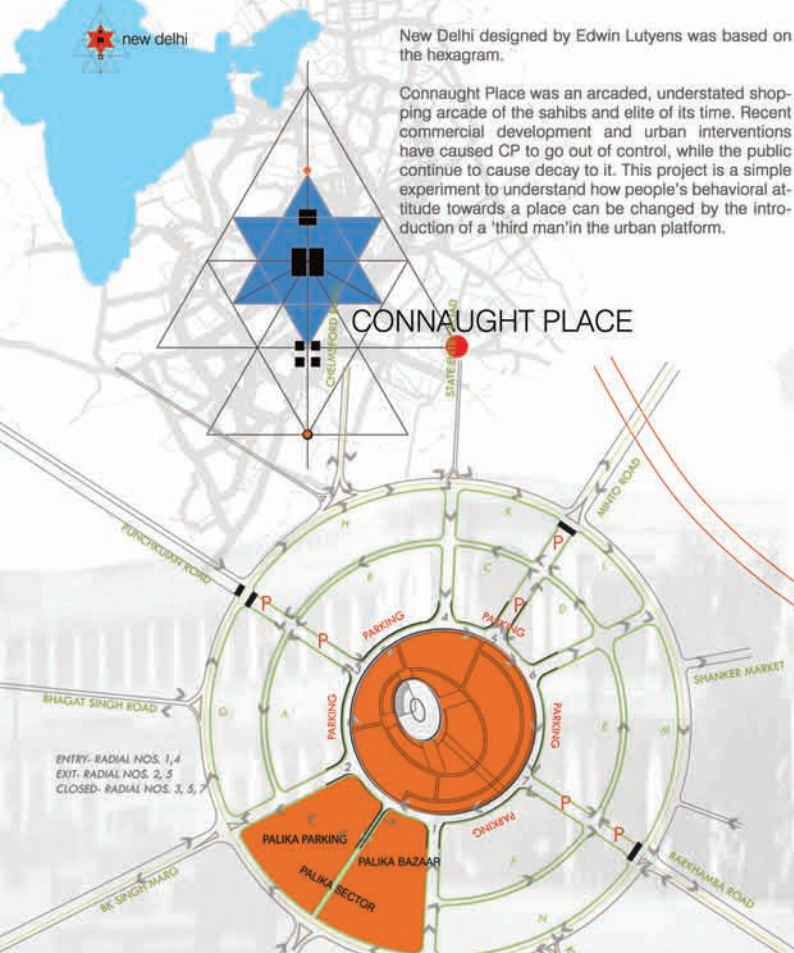
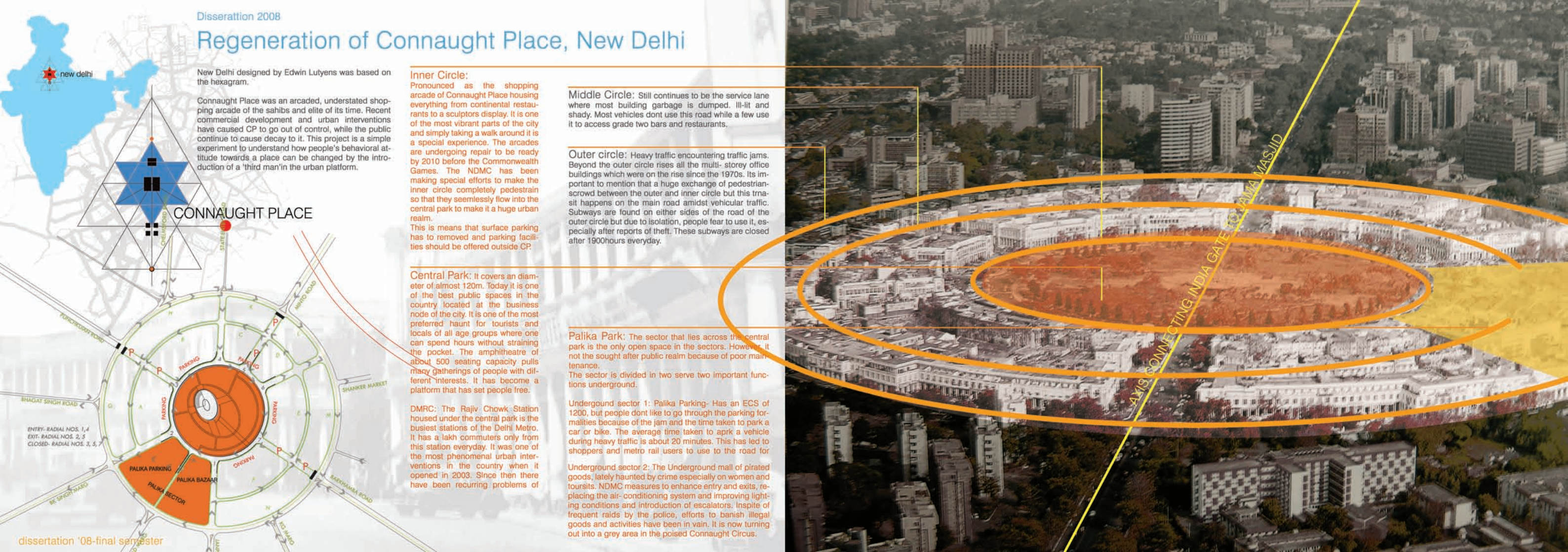
The Shiloh house was an a subtractive cube with a polyplanar terracotta hat on it. The house was made to belong there by reinterpreting the traditional kerala house. Unlike the master, we attempted to exhibit the annexe of Shiloh house as a mellow version of its counterpart. It had to house a living, bedroom and a coconut store garage.

The beginning of our experiments were mostly 'wrapping' the two cuboids in terracotta. Our intent was to fuse the characteristic of a paper wrap in terracotta like warping and flipping. These warps beautifully transferred itself into natural slopes and ramps and a coconut storage garage.

The wrap experiment was tried on almost 14 models, without inhibitions or presumptions, allowing the design to play each time. Each wrap gave amazing language and quality to the design. The experiment goes on.

A coconut grove and its fertile sands merging effortlessly into the Arabian sea, precisely defines the site where Shiloh house and its annexe sit.

Regeneration of Connaught Place, New Delhi



New Delhi designed by Edwin Lutyens was based on the hexagram.

Connaught Place was an arcaded, understated shopping arcade of the sahibs and elite of its time. Recent commercial development and urban interventions have caused CP to go out of control, while the public continue to cause decay to it. This project is a simple experiment to understand how people's behavioral attitude towards a place can be changed by the introduction of a 'third man' in the urban platform.

Inner Circle: Pronounced as the shopping arcade of Connaught Place housing everything from continental restaurants to a sculptors display. It is one of the most vibrant parts of the city and simply taking a walk around it is a special experience. The arcades are undergoing repair to be ready by 2010 before the Commonwealth Games. The NDMC has been making special efforts to make the inner circle completely pedestrian so that they seamlessly flow into the central park to make it a huge urban realm. This is means that surface parking has to be removed and parking facilities should be offered outside CP.

Central Park: It covers an diameter of almost 120m. Today it is one of the best public spaces in the country located at the business node of the city. It is one of the most preferred haunt for tourists and locals of all age groups where one can spend hours without straining the pocket. The amphitheatre of about 500 seating capacity pulls many gatherings of people with different interests. It has become a platform that has set people free.

DMRC: The Rajiv Chowk Station housed under the central park is the busiest stations of the Delhi Metro. It has a lakh commuters only from this station everyday. It was one of the most phenomenal urban interventions in the country when it opened in 2003. Since then there have been recurring problems of

Middle Circle: Still continues to be the service lane where most building garbage is dumped. Ill-lit and shady. Most vehicles dont use this road while a few use it to access grade two bars and restaurants.

Outer circle: Heavy traffic encountering traffic jams. Beyond the outer circle rises all the multi- storey office buildings which were on the rise since the 1970s. Its important to mention that a huge exchange of pedestrian-scrowd between the outer and inner circle but this transit happens on the main road amidst vehicular traffic. Subways are found on either sides of the road of the outer circle but due to isolation, people fear to use it, especially after reports of theft. These subways are closed after 1900hours everyday.

Palika Park: The sector that lies across the central park is the only open space in the sectors. However, it not the sought after public realm because of poor main tenance. The sector is divided in two serve two important functions underground.

Underground sector 1: Palika Parking- Has an ECS of 1200, but people dont like to go through the parking formalities because of the jam and the time taken to park a car or bike. The average time taken to aprk a vehicle during heavy traffic is about 20 minutes. This has led to shoppers and metro rail users to use to the road for

Underground sector 2: The Underground mall of pirated goods, lately haunted by crime especially on women and tourists. NDMC measures to enhance entry and exits, replacing the air- conditioning system and improving lighting conditions and introduction of escalators. In spite of frequent raids by the police, efforts to banish illegal goods and activities have been in vain. It is now turning out into a grey area in the poised Connaught Circus.

the city...the sculpture...the media

media facades-dynamic buildings- a direct interpretation of information.

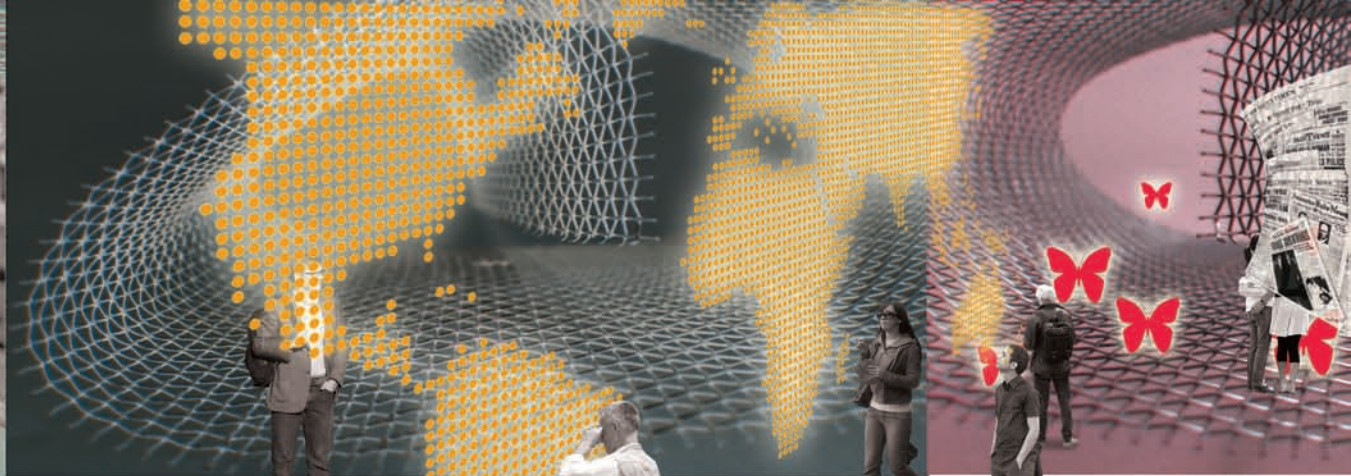
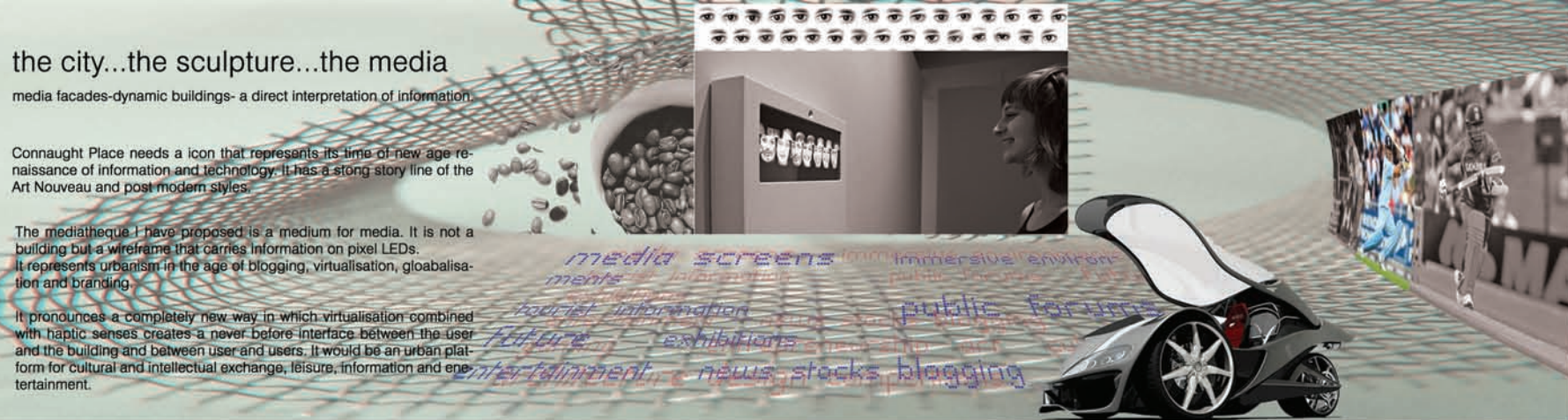
Connaught Place needs a icon that represents its time of new age renaissance of information and technology. It has a strong story line of the Art Nouveau and post modern styles.

The mediatheque I have proposed is a medium for media. It is not a building but a wireframe that carries information on pixel LEDs. It represents urbanism in the age of blogging, virtualisation, globalisation and branding.

It pronounces a completely new way in which virtualisation combined with haptic senses creates a never before interface between the user and the building and between user and users. It would be an urban platform for cultural and intellectual exchange, leisure, information and entertainment.

The Palika sector will no more be a grey area of shady people and crime scenes but an opportunity for 'creative milieu'.

In the evenings the mediatheque is transformed into light, events and information. It could simply be transformed into a screen to watch a cricket match from Central Park.



LIC building

Outer circle

Palika sector with mediatheque and underground automated parking structure

Inner circle

Central Park housing the Delhi Metro rail underground

Inner circle

Block C

Middle circle

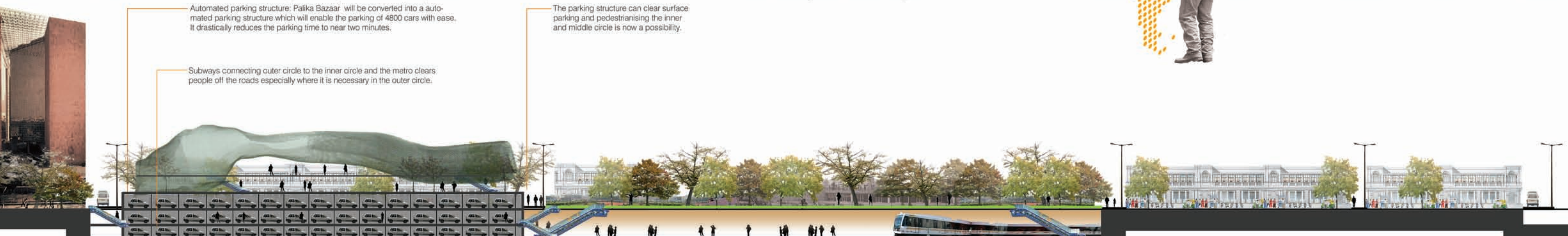
Block K

Outer circle

Automated parking structure: Palika Bazaar will be converted into a automated parking structure which will enable the parking of 4800 cars with ease. It drastically reduces the parking time to near two minutes.

Subways connecting outer circle to the inner circle and the metro clears people off the roads especially where it is necessary in the outer circle.

The parking structure can clear surface parking and pedestrianising the inner and middle circle is now a possibility.



SWARM CITY

voted as one of the top 25 entries to the 3rd Advanced Architecture Contest by IaaC and selected for entry into the book "The Self-Sufficient City" published by Actar

The year is 2065 AD.
Building the Self-Sufficient System happens at three levels:

1. THE CELL

Cell Systems:
The cell is designed as a polymer resin light weight structure that it can suspend itself in air with the help of carbon-nanotubes which return are fragments of a larger energy source.

2. THE ORGAN

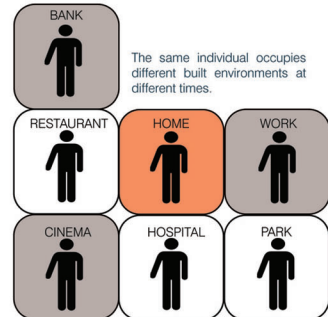
The Pod: The pod is a charged electric plate which is suspended in air by creating an energy field. It can float in air without physical support by the phenomenon of Electrostatic induction

Air Terrains: Each cell is equipped with an intelligent system which is programmed to direct wind in a particular manner according to the climate belt that the cell is situated in.

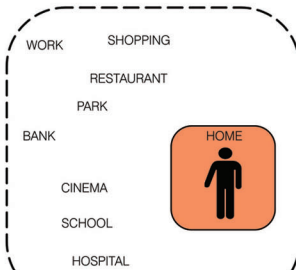
3. THE BODY

The SWARM CITY is a completely balanced system where every form of energy consumption is recycled and used.

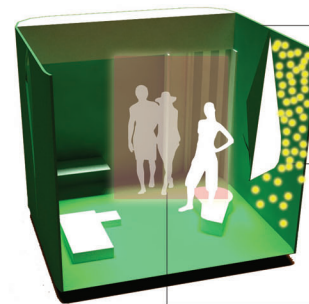
2009 AD



2065 AD



PROPOSED NATURE OF CELL OCCUPANCY BY 2065 AD



The skin of the cell is made of polymer resin fibres ...

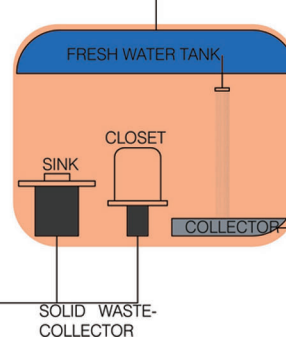
The skin acquires electricity from the carbon nanotube by which each cell is suspended.

Carbon nano screens can produce holographic images.

Solid wastes and organic garbage are reduced to fine powder rich in nitrogenous substances and urea. These are emptied on a frequent basis into the floating car which empties its contents in a central manure plant.



Carbon nano-tubes are the source of energy to the cell. Energy can be produced from any part of the skin of the cell which are supplied with micro-sockets



Fresh water is supplied to a cell from the closest water source from where it is transported and re-filled by a floating car for each cell.

Grey water from washing and bathing is collected in a temporary collector which is also collected on a regular basis by the floating car which converts it to fuel.



Salt piles from the sea. These can be processed and sold.

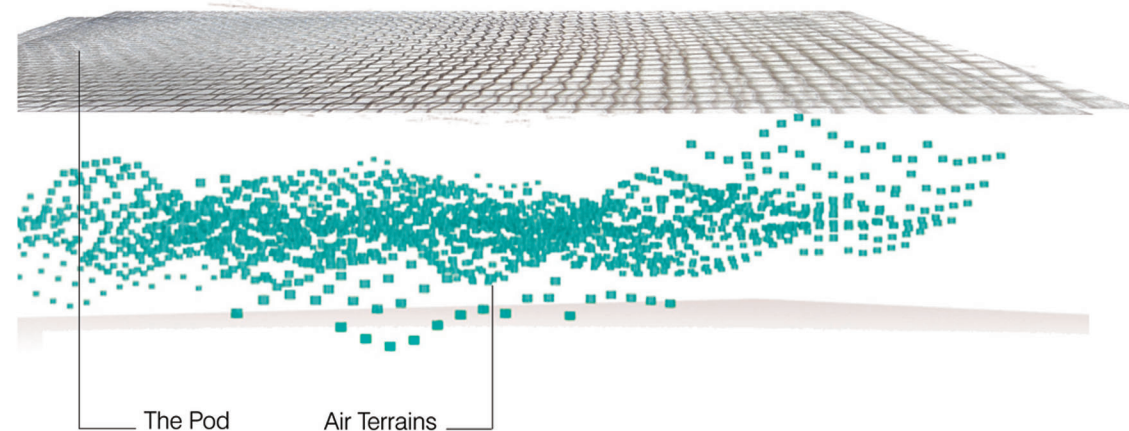
As we draw closer to the sea shore, the sand becomes a very good strata for growing coconut trees. Huge coconut groves can be planted along the shore.

Some naturally growing tropical fruit trees can be grown and their yields can be sold in the local community. Mangoes can grow rich in this soil and are low on maintenance

The fertile land available by the banks of the estuary are good for cultivating some crops like paddy and wheat.

Once the river body is clean of sludge and sewage, it becomes easily navigable by small boats which can be of tourist interest and also hold small shops and restaurants.

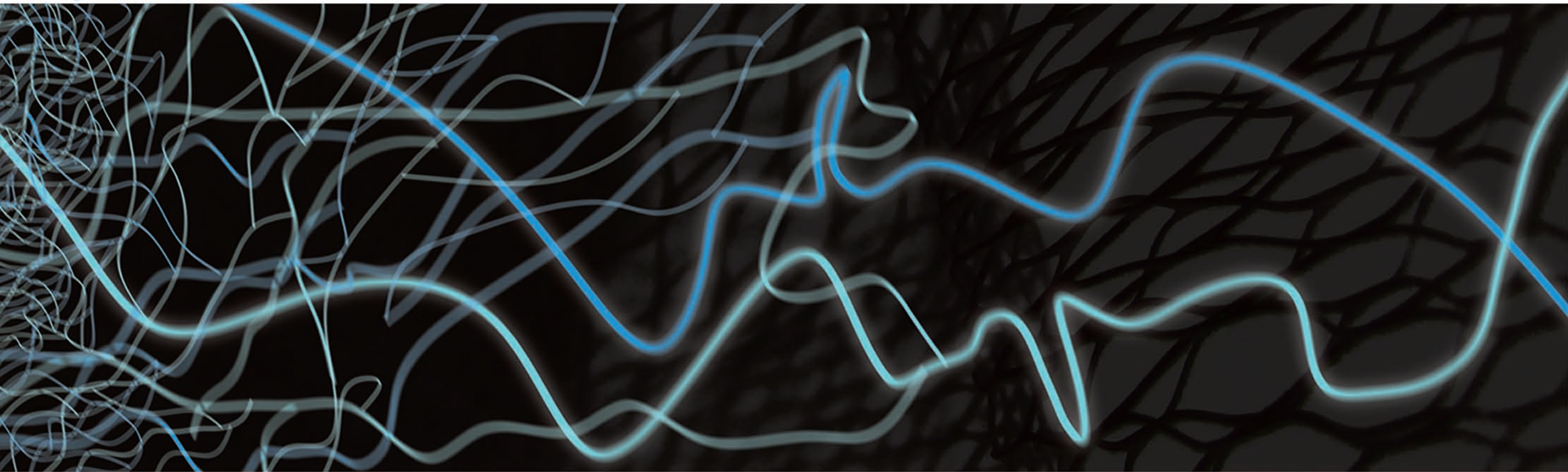
Floating cars: Double as transport machines as well as carriers of fresh water from reserve storage tanks to the houses and use grey water from the houses as a converted form of hydro-fuel. Processed solid waste is carried by these vehicles and dumped on a regular basis into a manure tank which will be used as fertilizer for plants.



The Pod

Air Terrains

ten images for ithaca '08 dream

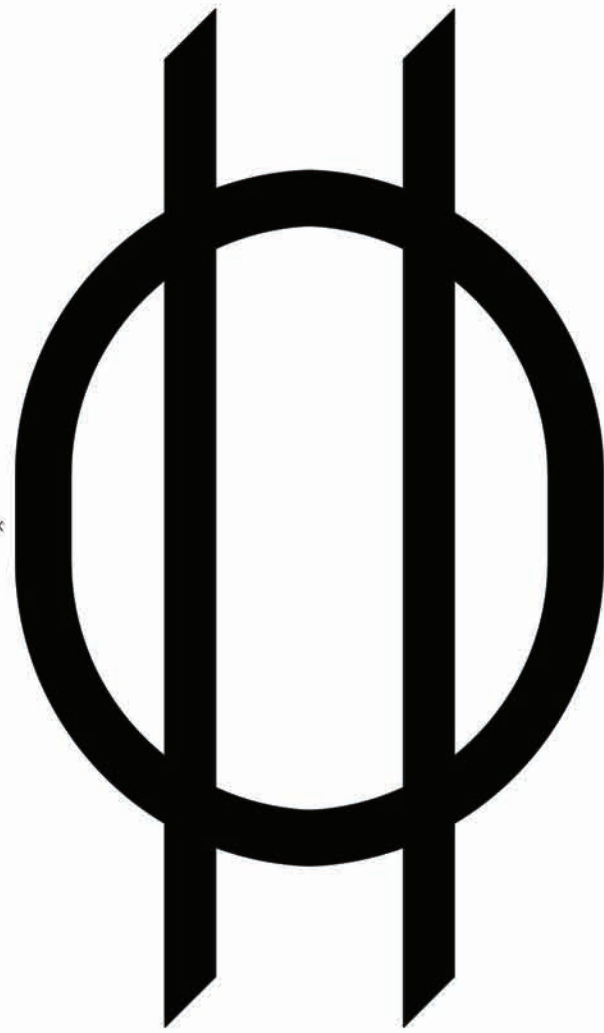
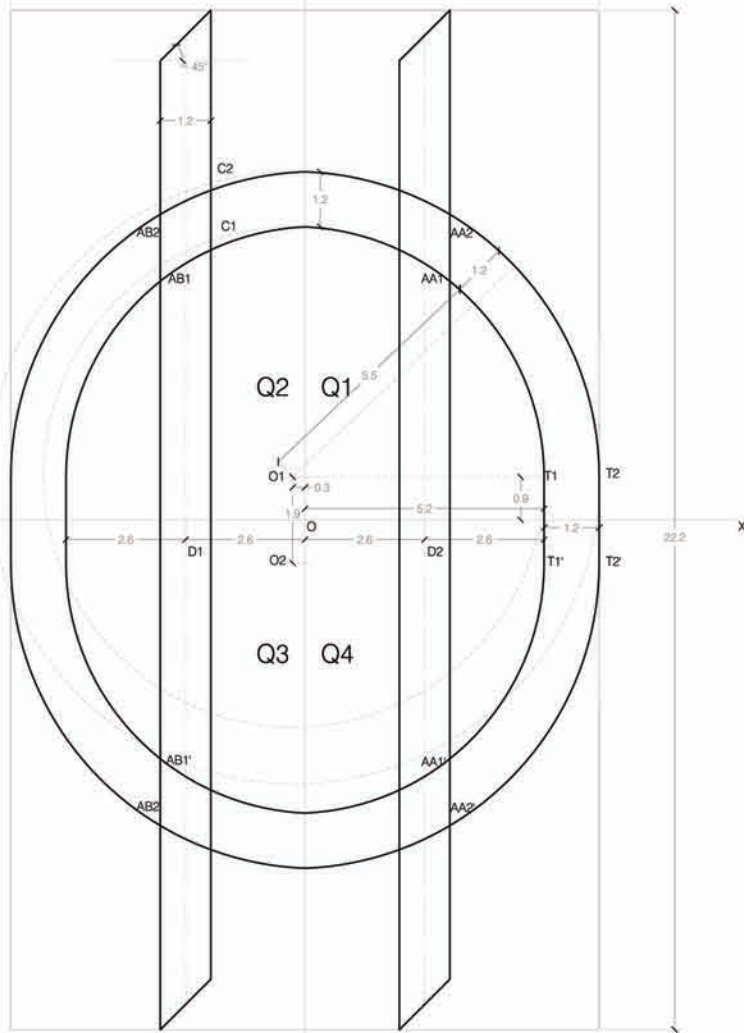


the opposites

mars or venus; male or female; optimist or pessimist; god or not; prodigy or ordinary; a portrait of the mind in a constant conflict with the opposites in pursuit of ultimate truth and trying to reach the ideal in the state of subconsciousness.

ten images for ithaca '08 is a poster competition. It began in 2002, by Fimios, Cultural Events of the Municipality of Ithaca, Greece, as an attempt to reinforce the cultural profile of the island, through the applied arts. Throughout the years, the competition has evolved to a whole group of events and exhibitions, so that, today, it is considered a point of interest for professionals, students and, generally, people that are interested in graphic arts. The contest's main goal is not only to accent Ithaca as a meeting point for creative people from all over the planet, but, also, to help create ideas that promote the art of visual communication.

<http://www.tenimages.org/abouttenimages.php>



'The only currency I value is the coin of the spirit. That's very important in my life.'
Kinky Friedman

the indian rupee symbol

THE CHAKRA-DANDA



size 72



size 50



size 42



size 32



size 24

I would like to define currency as the 'Spirit of the Coin'. The Spirit of the Coin is what it can express in a thousand words or by a few powerful strokes of a pen. It is like a universal signature that belongs to the nation and is forever embedded in history for people to remember a nation by for all the years to come.

It is an outcome keeping in mind India's long term visions, ideals and its relevance in the world yesterday, today and tomorrow. The parameters I had in mind while framing this design was to make it simple in representation but powerful in expression.

The first part of the symbol is the circle or 'chakra'. It conveys two important senses about itself.

1. The Chakra or the circle is an expression of continuity, dynamism, change, unity and integrity which are very important aspects to become a powerful nation of tomorrow.

2. The second most important expression of the chakra is the 'zero' which will forever be Aryabhata's and hence one of our greatest pride. I thought it very important to remind people every time they looked at the Indian currency note to think how immaculate an invention we gave to mankind.

The second part of the symbol is the sceptre or 'danda'. Derived from the Sanskrit expression, the 'Double Danda' is used to mark the end of a sentence or a start of a 'New Beginning'. The Danda also refers to the Kings' sceptre that stood for sovereignty and peace.

The two parallel lines define themselves as lines stretching on either side endlessly by which we mean that India's charisma stretches endlessly across the globe.

MARRIAGE OF THE CHAKRA AND DANDA

The circle is an interpretation of femininity and womanhood which is our mother India and the Danda or Sceptre she holds is the Indian National flag which significantly personifies India to whom we should be forever loyal and take great esteem in preserving what this symbol means to every citizen in the country.

Every day, my ride on Bangalore's public transport buses takes me through different variables of the city. Titled a cosmopolitan and the work hub of the country it contains everything from buzzing street shopping centres to mundane corporate houses. Here is an urban collage capturing the flavor of the Indian city with the use of what I have in handy, a cameraphone.

To a greater extent these observations have been my starting point to derive my utopias along with a sense of appreciation of what gives the city its rich flavour.

glimpses of the Indian city



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