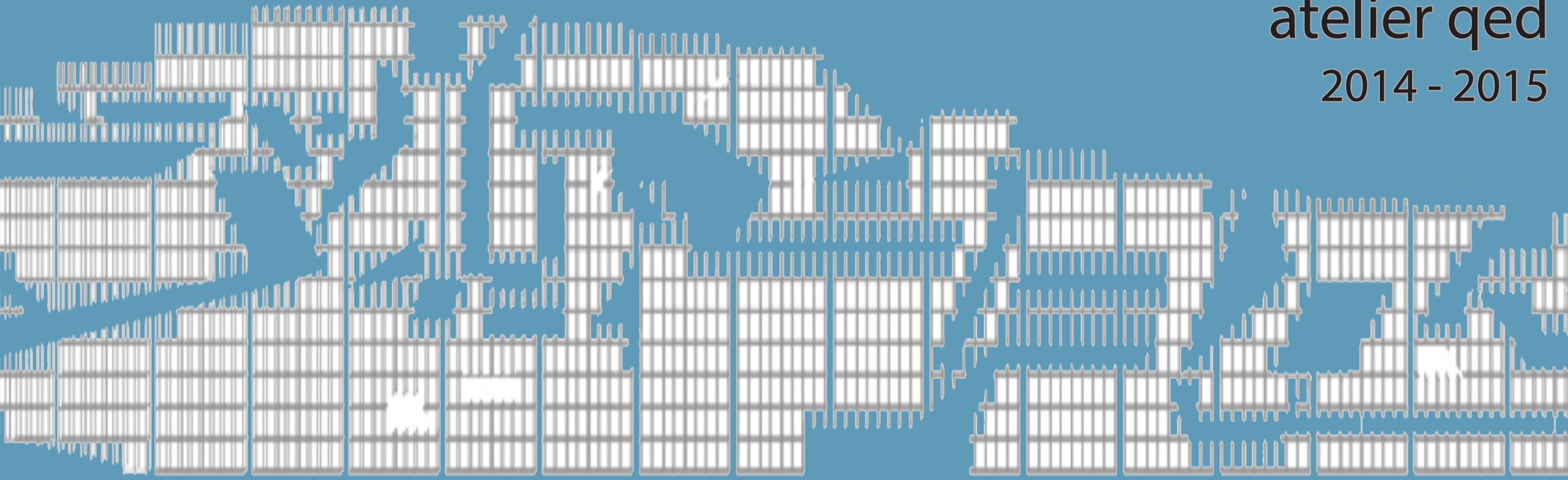
msa MArch

atelier qed

2014 - 2015



atelier qed // 2014 - 2015

we are qed

Staff // Colin Pugh // Siobhan Barry // Dominic Sagar

Year 5

Mohammed Ezzad Abu Bakar // Irina Adam // Hakym Ahmad // Daniel Bramah // Gavin Chan // Cheryl Chin // Mark Eden // Muhammed Akmal Waluddin Mohd Kamaludin // James Lawrence // Siew Yong Lim // Siti Sazali // Basil Wong

Year 6

Aidin Ahadzadegan // Seyedeh Ladan Alavi // Steven Anton // Ching Yee Chan // Charlotte Garrett // Padraic Gorman // Yinghua Luo // Alan Pun // Reece Singleton // Zlatina Spasova // Boyana Stoeva // Aiste Strazdaite // Mohd Fakhruradzi Bin Tajuddin // Seong Cheng Teh // Tiffany Wong // Xinyue Yang

Cover image: 'Open Space Within the Wall', Reece Singleton

atelier qed // 2014 - 2015

qed is an initialism of the Latin phrase quod erat demonstrandum, meaning '*which had to be proven*'. Traditionally placed at the end of a mathematical proof or philosophical argument, the abbreviation signals the completion of the proof. We think, we design, we test, we prove.

Civilisation is intrinsically rooted in the built environment, the development of science and technology and related societal organisation. The contemporary epoch is characterised by the development of a more profound understanding of how the human species affects the global ecosystem of which it is an integral part. This emergent knowledge field is fuelled by the increasing capacity and sophistication of computational processing that enables complex models to be developed that simulate our existence and cultural operation. We are poised on a threshold where systematic and holistic ecological models will promote a paradigm shift in the concept of development as it is applied to operations that take place in the realms of air, land and water.

The atelier is concerned with the operation of buildings over time and as a result promotes simulation as a point of departure for conceptual thinking and a methodology for presenting the flow of design construction, use and adaptation. Rethinking the ecology of building and landscape use and the instrumental competence of materials, construction and environmental systems in an increasingly urban world is a critical aspect of the unit agenda. Understanding the concept of ecology promotes the development of strategic attitudes to sustainability and ecologically viable approaches to building design, use and adaptation that meet the challenges or exceed the expectation of aspirations for our relationship with the environment in a global ecology.

qed continues to employ international competitions as an embedded part of our learning culture developing the acuity of student understanding in a global discourse on sustainability. This also reinforces excellence in the communication of research led design consistent with the professional aspirations we promote in our students. The outward facing nature of our pedagogy is enhanced through the further development of active collaborations with professional practices in architecture and related academic disciplines. Zlatina Spasova has fostered this collaborative approach in her role as UK Coordinator of The Architecture Students Network.

Students undertook study tours and research workshops in Havana (Cuba) , Nicosia (Cyprus) and Florence (Italy). qed hosted the Horizon2020 International Airport Symposium with the University of Florence and eight other project partners that included lectures from distinguished visitors and hands on workshops on the future of aviation and airport design.

qed global thesis projects were thematically described as qed `air, qed `land` and qed `water` reflected in the programmes for specific projects developed by final year students.

Staff team // Colin Pugh, Siobhan Barry, Dominic Sagar

qed wishes to thank our collaborators and contributors for their continued support:

Anhui Normal University (China) - Professor Weidong Cao

BDP - Ronan Connelly

Bruntwood - Bilal Alam, Lee Treanor

Bridge Architects - Russell Bridge

CUJAE (Havana) - Professor Dr. Reuben Bancroft, Professor Dr. Jorge Pena

Foster and Partners - Colin Ward

Grimshaw Architects – Eduard Ross

Ken Oliver - Steel Consultant (formerly Tata Steel)

Michael Hyde and Associates - Jodi Carr

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Munster School of Architecture - Professor Herbert Buhler

RSA North West

Severfield - Jarrod Hulme

University of Exeter - Environment and Sustainability Institute, Dr. Chris Bryan

University of Florence - Professor Maria Antoinetta Esposito, Paolina Ferruli

University of Nicosia - Markella Menikou, Adonis Kleanthus

WCEC Group - Richard Bowman

Wilson Mason LLP - Alan Williams

atelier qed // Year 5

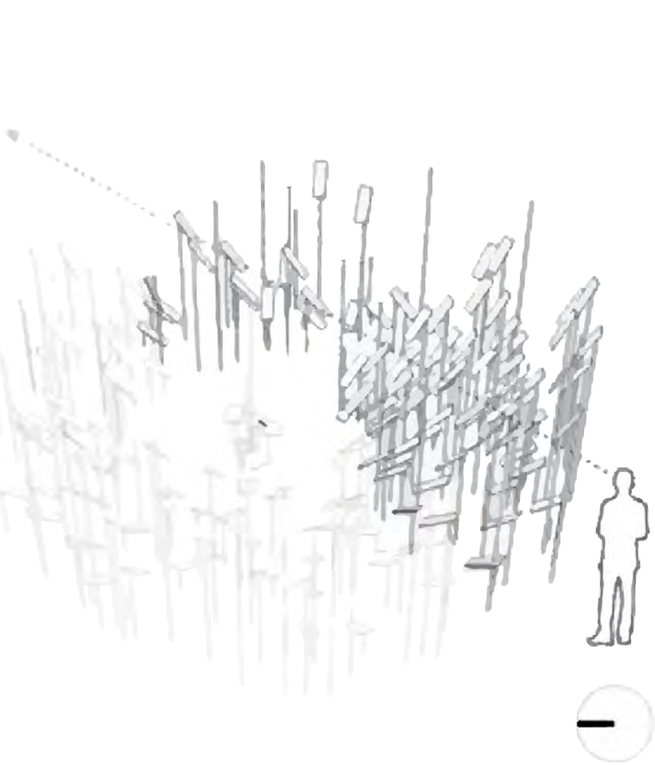
ArchTriumph - Bloom

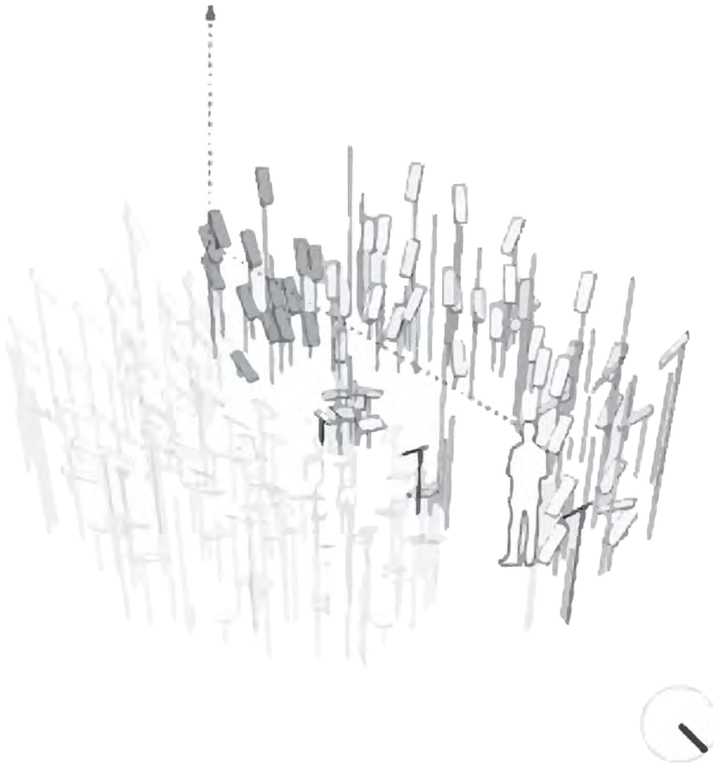
James Lawrence, Gavin Chan, Daniel Bramah

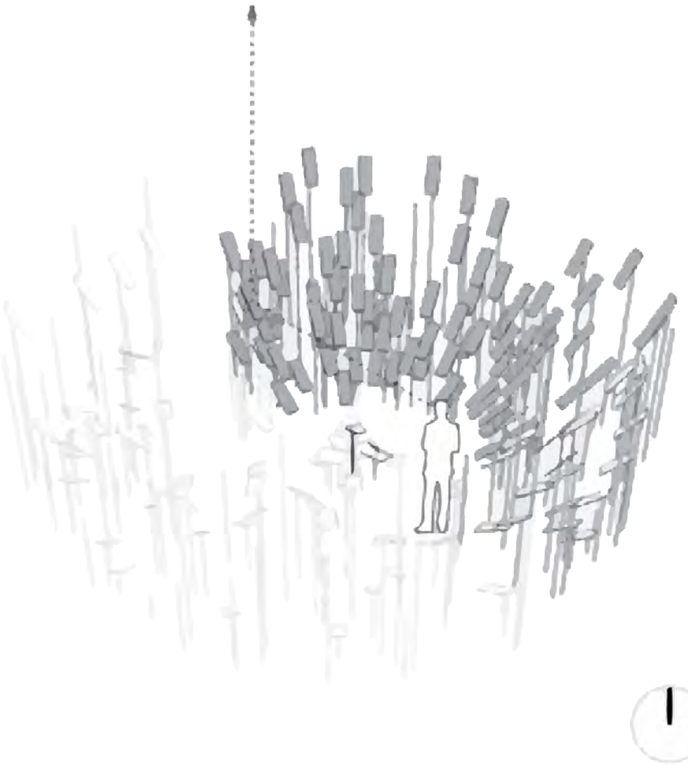
Bloom is a dynamic and fragmented reflection of the sky. Due to the form of the pavilion a parallax is created when viewed from around the park. The pavilion is a work of land art, a sculpture to be explored as well as viewed.

The design is intended to be experienced over a period of time. During the day the dynamism of the pavilion will become more apparent as the reflections change and, similar to a sun-dial, shadows are cast amongst the stems.

Just like the sky, Bloom can never be viewed twice in the same manner. Therefore each individual visitor's experience becomes uniquely idiosyncratic based upon the time and position.







SILVER LINING

Basil Wong, Siew Yong Lim, Cheryl Chin

'There does a sable cloud
Turn forth her silver lining on the night,
And casts a gleam over this tufted grove.'

'Comus: A Mask Presented at Ludlow Castle', 1634
by John Milton, English Poet

To us, 'Sky' is a celestial entity shared by all things on Earth, with no boundaries and has always amazed us beyond our wildest imagination. It is also a huge 'common space', so vast that its presence is often forgotten or taken for granted.

'Every cloud has a silver lining', optimism is one of the most noteworthy conceivable human belief that leads to achievement but it is constantly overlooked, just like the sky.

We are aware that there is often a lack of getaways for stress relief in a densely populated urban area. Urban living is often related to stress and anxiety that might affect a person's well being.

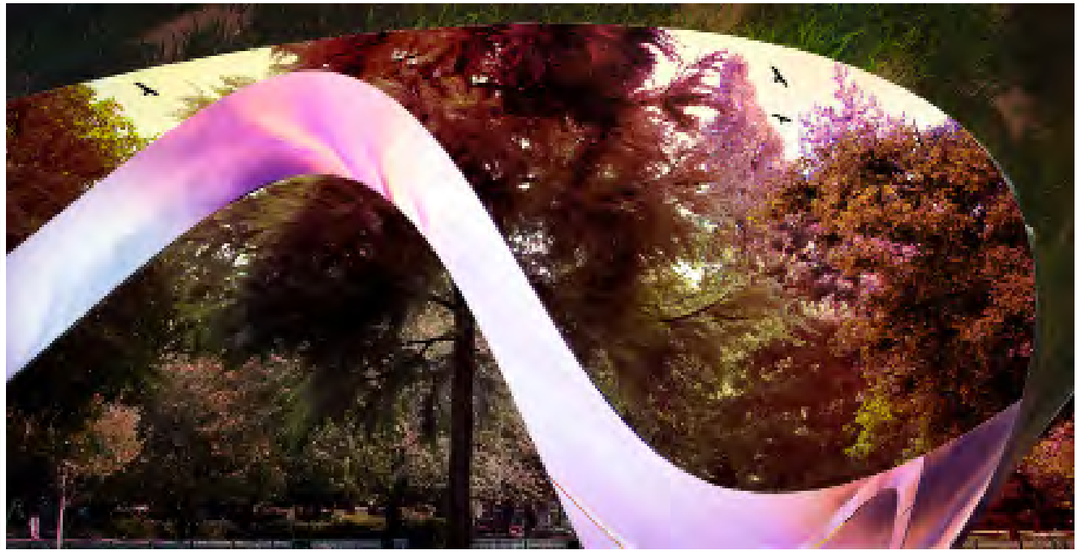
Hence, our approach is prompted by a thought to construct a momentary transportable structure that acts as a motivational space in which people of all gender and backgrounds can share their own life experience and positive life tips with each other in a top-notch ambience while engaging with the flawlessness of sky.

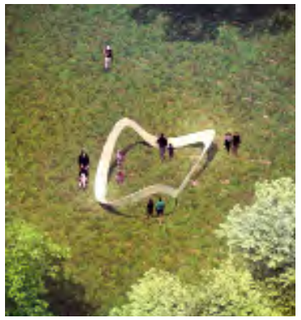
To express this notion, we have proposed a sculptural pavilion that looks like a silver ribbon in the sky, acquired by a thoughtful dialogue of parametric form and ergonomic research to produce endless optical effects of the sky and flexibility in order to achieve the effect of dimensionless. The magnificent curvaceous shape of the pavilion energizes visual and spatial association while at the same time empowering diverse arrangements to oblige a mixed bag of activities to generate harmony between urban furniture and open space.

The pavilion itself is a lightweight; cost-effective and easy to construct structure that has taken careful consideration of the form-force equilibrium principle in order to attain utmost stability. The differentially sized openings that lead visitors' movement provide numerous experiential outcomes as visitors enter and interact with the sculptural pavilion.

THE CHILDREN'S SKY

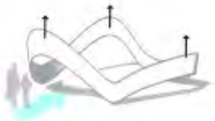
As adults, we perceive 'sky' differently compared to children. We feel that the pavilion is specially dedicated to children. Thus, we try to look at the sky from the eyes of children. Children are always fascinated by the stars. clouds, rain and snow etc. These are their source of joy and fun. As such, we wish to translate these characteristics of sky into a 'playground'.





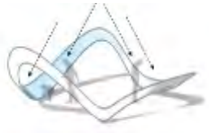
CONTINUOUS FLOW

A circular ring shape is formed to display unobstructed 360° view.



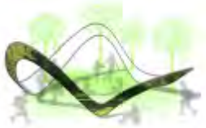
ACCESSIBILITY

The ring is lifted up to form archways for promoting accessibility and initiate continuation inside out.



TILT

The ring is tilted and orientated at different angles to enhance maximum sky reflection.



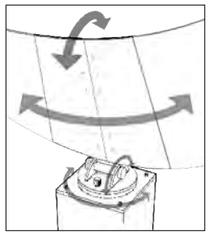
BLEND IN

The highly reflective mirror-clad structure is almost invisible as it blends seamlessly into the Museum Garden.

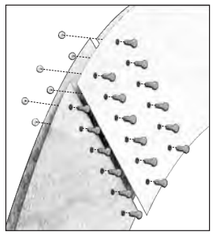
Viewing from a further distance

Viewing from a closer distance

Self reflection in the 'Sky'



i. The system provides space for expansion of the plywood layers on a hot day and vice versa.



ii. Two layers of plywood are cut in such a way that they overlap each other when assembled to maintain a smooth curve and an even transfer of load.

1.Concrete Block

Provide a solid foundation for securing the flitch plates.

2.Adjustable 2-axis Steel Flitch Plate

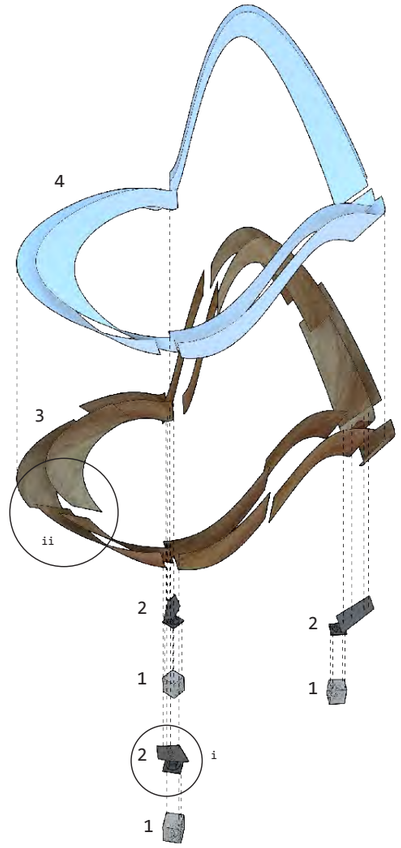
Allows maximum flexibility during assembly. Prefabricated off-site.

3.Plywood

Two layers of plywood of 18 different profiles are prefabricated (laser cut) off-site and will be bolted to the flitch plates.

4.'Mirror Effect' Vinyl Film

Easy to use stick-on vinyl film is applied after assembly.



LUMOS Pavilion

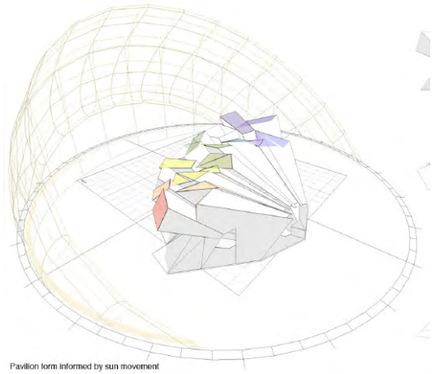
Irina Adam, Mohammad Abu Bakar, Mark Eden

The sky is an unpredictable force of light, which we can catalogue into the colours of the spectrum. The enclosure separates the user from the environment and uses light to create an engagement with the sky, through tinted frames that filter the light.

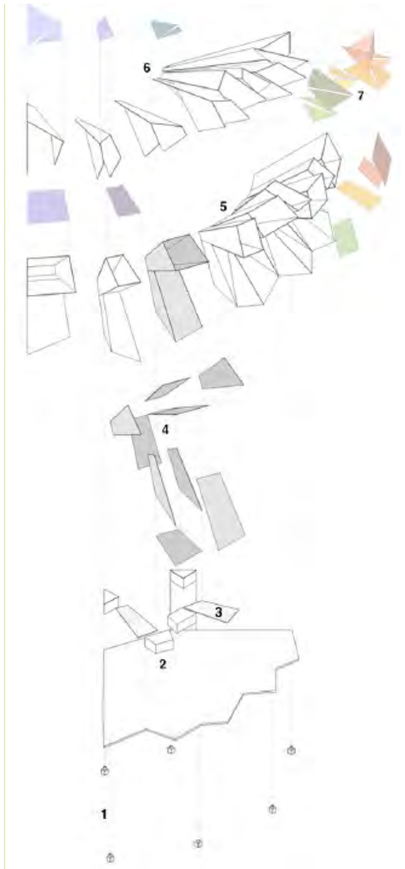
The playful Observatory is a place where people can come to observe, reflect and engage in a visual dialogue with the sky and its luminance, creating an engagement with the sky through tinted frames that filter the light.

The Pavilion's form is oriented to follow the journey the sun makes each day. Each visit will provide a different experience, as each viewfinder celebrates a specific moment of the day.

Carefully angled periscopes and frames allow people to use the pavilion as an observatory from where they can enjoy the filtered light and sky views.



Pavilion form informed by sun movement



Mirrors are used to create reflections of the sky onto the ground, the floor itself becoming the stage of animation. Light becomes a chronology of events to be enjoyed and experienced.

As the sun changes position during its day, so does the light inside the pavilion. The sky is ever changing from the weather and daytimes, creating a pavilion that is truly orchestrated by the sky.

Immerse Pavilion

Hakym Ahmad, Muhammad Akmal Waliuddin

Mohd Kamaludin

Sky is limitless region between the points where an individual stand to unbound distance. It is a norm to experience the sky through looking at it. However, what is the experience if the sky is at the same level with us? The concept of the pavilion is to bring the sky closer to the user, the idea is to bring down the sky to the ground level visually. The main space of the pavilion where it is surrounded by two-way mirror and pool floor is the main apparatus to capture the sky.

People will be immersed, closer with the sky through the reflected images. Through two-way mirror, the main space without compromising its optical effect, propagates the experience to the external of the pavilion thus create indirect relation between two different spaces. People around the pavilion indirectly feel the same experience as the people inside it.

The form of the pavilion is sculpted from the sun coverage of the Museum Garden in order to minimize the potential of glaring inside the pavilion. The façade enclose the corridor around the main space is design to comprehend the interaction between the exterior of the pavilion with its interior and create dark space for the visual effects formed by the two-way mirror.

The atrium space the main focal point of the pavilion where individual will experience being engulfed with the sky through the reflection within it.

The corridor space creates the indirect connection between the atrium space and surrounding environment. The two way mirror projects the environment of the atrium space, where people are easily engage with the same experience.

The Borrowers

Irina Adam, Mohammad Abu Bakar, Mark Eden

The Borrowers propose a system of processes that allows office workers to create their own environment using ready made components. The office architecture invites participation, allowing users to build their own identifiable culture.

Jonathan Hill categorises users into three clearly distinct roles: passive, reactive, and creative. Many office environments today simply force users to remain passive. They come with expensive furniture and predefined spaces that do not allow people to have a say in how their environment operates.

As Jonathan Hill states, the user is a "subject of functionalist spatial dogma". Problems arise when architecture is impersonal and unadaptive, because productivity suffers when people are forced to adapt to prescriptive environments that they can't identify with.

Whilst a reactive user modifies the physical characteristics of a space, there is still the problem that the user can only modify their environment through a narrow and predictable range of configurations largely defined by the architect.

The Borrowers offer an open system of fabrication that invites people to become agents of change by implementing their own creative ideas. Nothing is fixed: you define your kit of parts and decide how to assemble them.

By creating architectural ‘operations’ that embody this new subjectivity, we argue that we can by “Borrow” any ready-made components, to can create a “SYSTEM” of processes that the user can use to set up their own office environment. With this system, the components can be processed in different ways, allowing the user and occupy their own architecture.

By breaking down the proposed ‘System’ to simple construction techniques that anyone can follow. These are processes that will use readymade components that can be changed, adapted and customised using almost ANY as long as the system is followed. The system is designed to allow any client to set up and not be inhibited by cost. The system means that it can be designed using recycled materials. These can be sourced using social media

RSA - Carnival

James Lawrence, Gavin Chan, Daniel Bramah

The RSA competition was created to come up with a proposal to adapt to the temporal nature of the office environment.

Office Carnival Proposal
Our final rpopsal for the project was a cultural shift in the way people come to work. Instead of coming to work to use the office fucrniture, you would bring your own pop up envrionment whcih could then be adapted to any working condition.

‘Wearable Office’

Basil Wong, Lim Siew Yong, Cheryl Chin

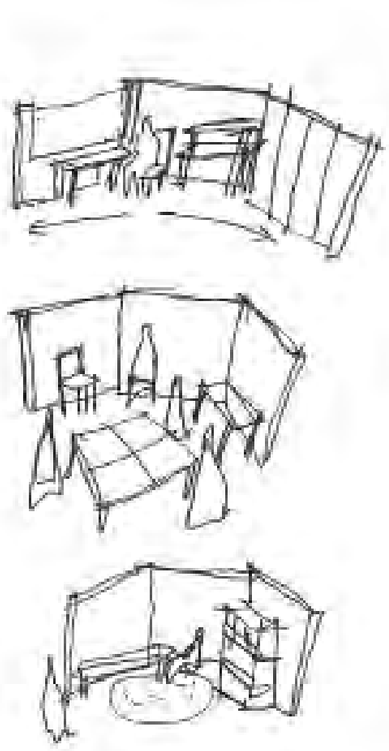
By incorporating highly fashionable traits in working outfits that enhance branding of a company but at the same time achieve maximum flexibility to enable people to work from anywhere and anytime comfortably. ‘Nothing really makes a good-match, it just goes together’ is the concept we are trying to promote in the new future office. A personalized visual experience is offered with the invention of this wearable office. A garment? A partition? A chair? Or an office? It is all up to you to define!

The Assemblage

Hakym Ahmad, Muhammad Akmal Waliuddin Mohd Kamaludin

The Assemblage comprises office furniture recreate by using reclaim office furniture or electronic devices. The designs are categorised from the material source, the reclaim office furniture and reclaim electronic devices while sculptural is combination of both.

The designs suggest the idea of assemblage reclaimed office furniture and electronic devices as well as promoting the customisation by the user. The approach exposed the possibilities of reusing materials and redefines the ecology of use.



The vast possibilities of recreating furniture reusing various parts of office furniture and electronic devices can end up with many kinds of furniture designs that is purely an expression through the limitation of the materiality and the way to adapt with it positively.

The Conference Table.

The conference table is primarily made from wooden pallets and reuse table platforms as its surface.

The Workspace Table.

This workspace table is made of wooden pallets and reuse table platforms as its surface.

Development of open plan work-space types.

These culture of recurposing could then be extended to create more configuration to suit the purpose of a workspace from individual spaces toward integrating it with team mates to create a creative environment. The idea could be translated into creating awareness of sustainability practice in workplace and thus becoming the work ethics of the company could be aspiration to create the culture of use.

3.
how
then?

Bruntwoods Cornerblock - Disconnect

James Lawrence

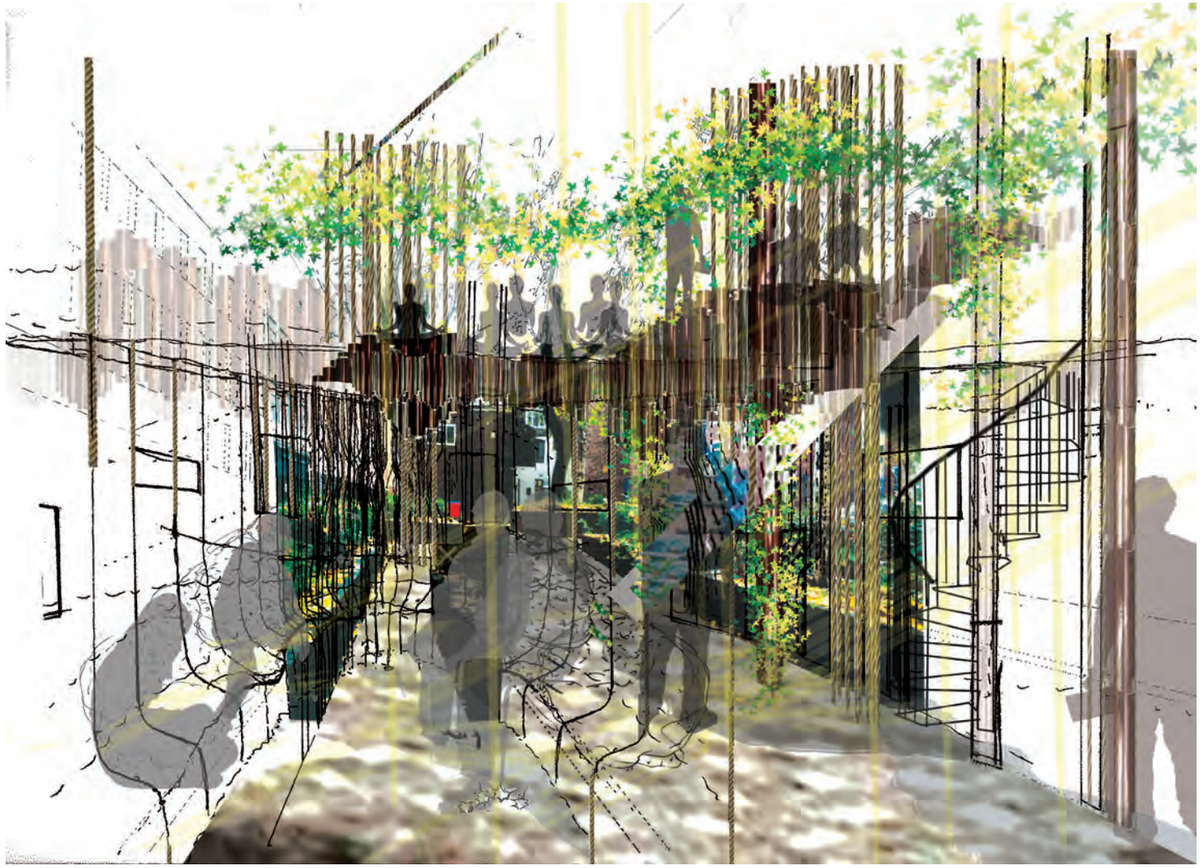
This competition was set up by Bruntwoods, and was done in colaberation with students from the University of Nicosia.

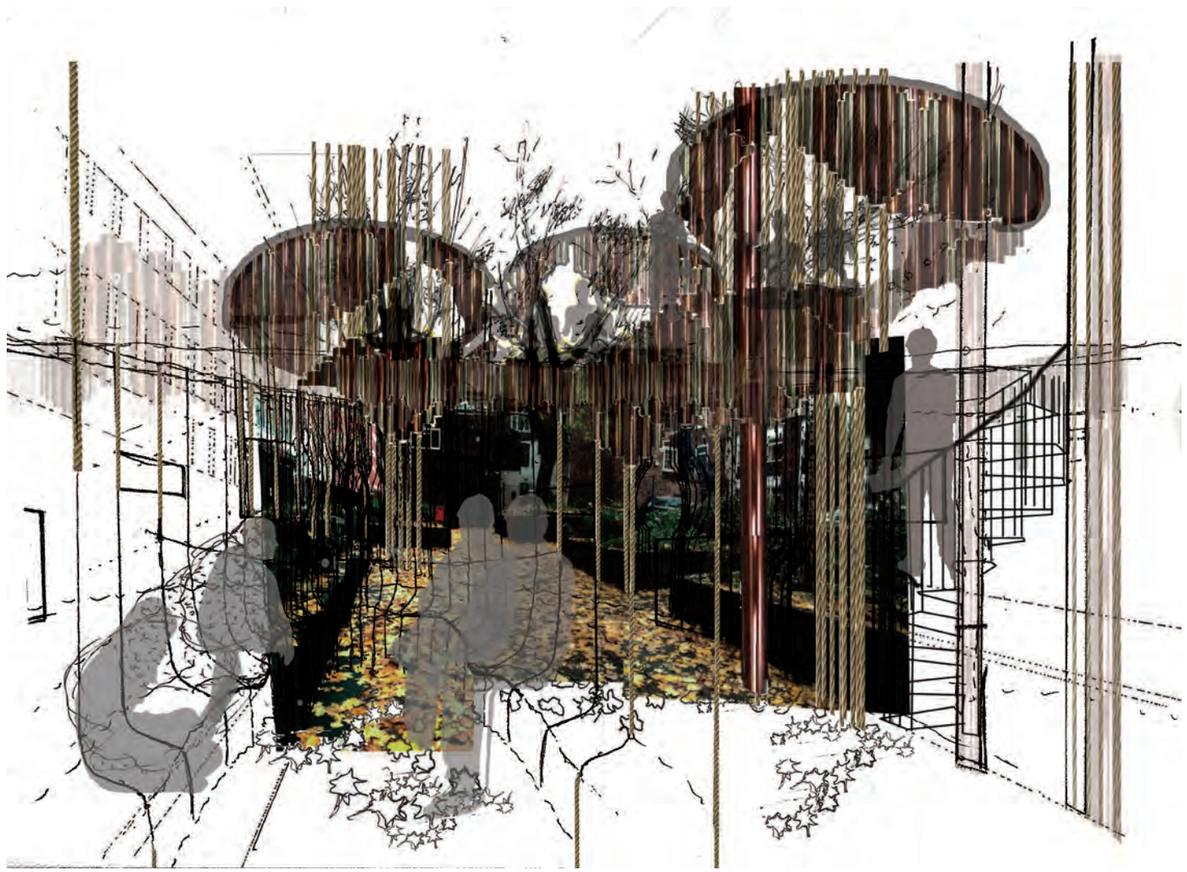
The brief was to design a pavilion to be situated within the grounds of gated square. Indended to be used by office workers.

Working with students from overseas, we were challenged by working from different stand points and with a significant language barrier. This lead to much of our work being produced and communicated through hand drawings.

Winning Design - Disconnect

Our design was based around the needs of the office workers. We are more connected today than ever before. This allows us to be more mobile and flexible within our everyday lives, however it also undermines our privacy.
My teams final design was successful enough to win the competition.





The final design was to create a system of faraday cage lined pods within the trees. The could then be accessed by the office workers and used as a safe haven away from the telephone calls and internet which they are bombared with throughout their daily lives.

‘Make a Wish’

Stephanie Zavalli, Cheryl Chin, Katrina Pandelidi

By utilising personal belongings of space users, an open yet insulated environment is created with the concept of collectiveness to achieve space seperation effect, Different nature of spaces will be formed by taking consideration.

TREE CAPSULE

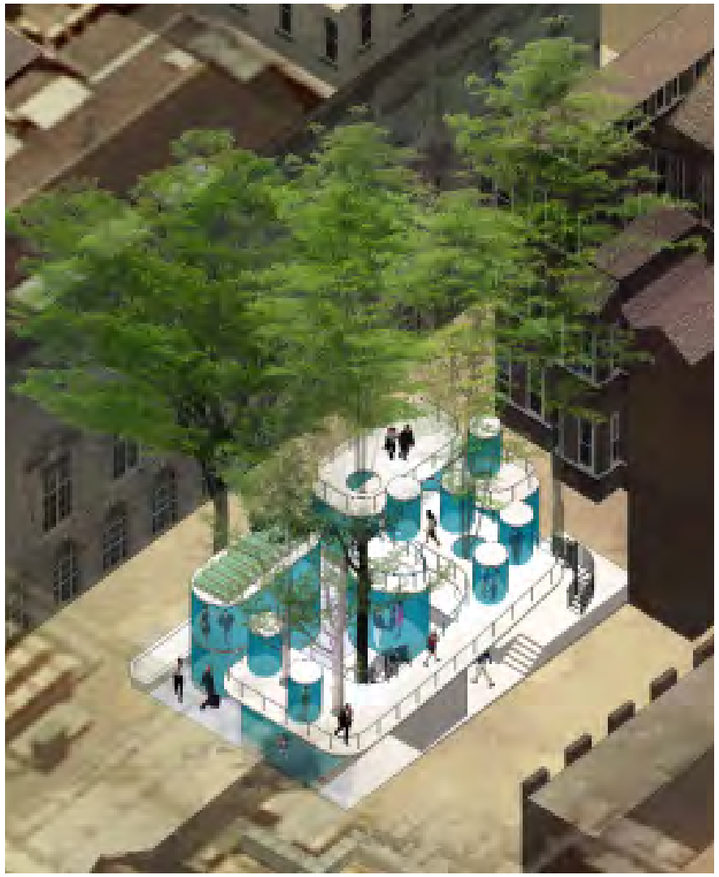
BASIL WONG, THALIA ANDREOU, IOULIA MITSIDI

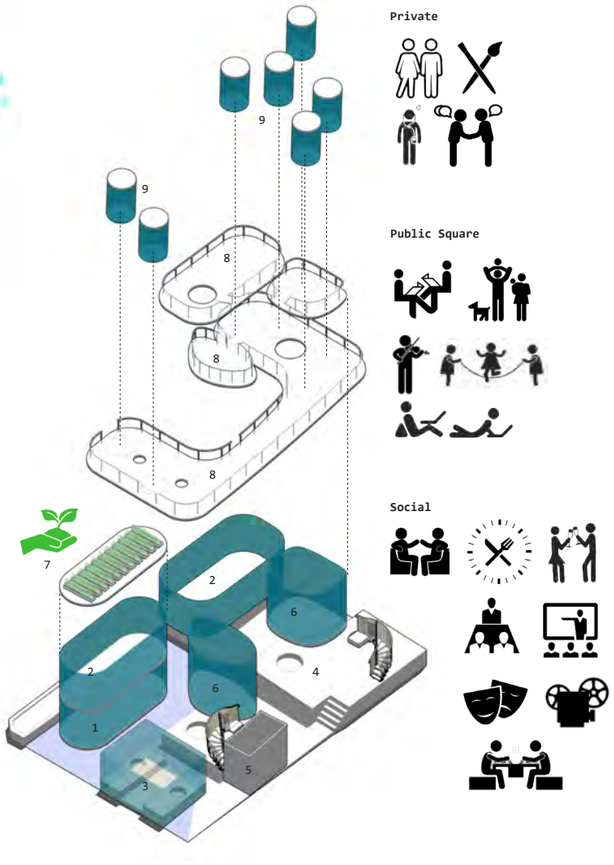
'A FUTURISTIC SPACE OF 'FANTASIES' FOR PEOPLE THAT WISH TO ESCAPE TEMPORARILY FROM THEIR ROUTINES'

The 'Tree Capsule' is a lounge built around into the environment rather than built onto it. The bespoke 'Tree Capsule' design is nestled in a secluded courtyard space surrounded by a mixed typology of business buildings. From a business point of view, it is a challenging space for running any form of businesses due to its disconnected site properties, both visually and experientially.

Thus, our design is prompted the thought of implementing a new and refreshing architectural language, contrasting the 1960s building style in order to create a point of attraction within this disconnected environment. Our design is driven by our vision to create a motivational space in which people of all gender and backgrounds can indulge themselves in a multitude of past time activities that can be carried out during their lunch break from work or after work.

The intention behind the transparent architectural structure, tucked away in a sea of lofty trees, is to merge man-made industrial design with a small piece of nature to create a futuristic space of 'fantasies' for people that wish to escape temporarily from their routines.





GLASS USE

Maintaining the visual connectivity between the site and the surrounding buildings has always been our top agenda. Thus, we think that glass is the perfect material for our vision. For this building, we want to make it small and chick, probably a bit futuristic. We visualized our building to be modern, streamlined and intimate.

Cornerblock - All Work, All Play

Daniel Bramah

Working hard in the office all day every day is a challenge. There comes a time every day when you need a break. There comes a time every once in a while where you need a different focus. There comes a time where you need to get out of the office.

We aim to provide a contradictory space to the office. A space where fun and interaction is incouraged. A space which provides social areas and private areas. An activity zone and a reflection zone. A space which can be deconstructed and reconstructed to meet individual user needs.

"All work and no play makes Jack a dull boy"
"All play and no work makes Jack a mere toy"
- Maria Edgeworth

"All work and all play makes Jack a more productive worker"
- All Work, All Play team

Cornerblock_Unfold

Lim Siew Yong, Stavros Chrysanthou, Demetris Demetriou

Surrounded by tall buildings, the site remains programmatically excluded; the gate bounding it, commands when it can be used and by whom. As a result, it remains secluded, but also preserved. Its atmosphere provides a contrast to its surroundings, but it can be better experienced when one becomes immersed within it. This natural realm, can be enriched if it can be allowed to absorb the surrounding programmes as it is transformed into a melting pot of users. This can then be where the present activities of the area reveal themselves to the visitors.

Adult Cribs

Mohammad Abu Bakar, Gavin Chan, Tsitsi Michelle Chihuri

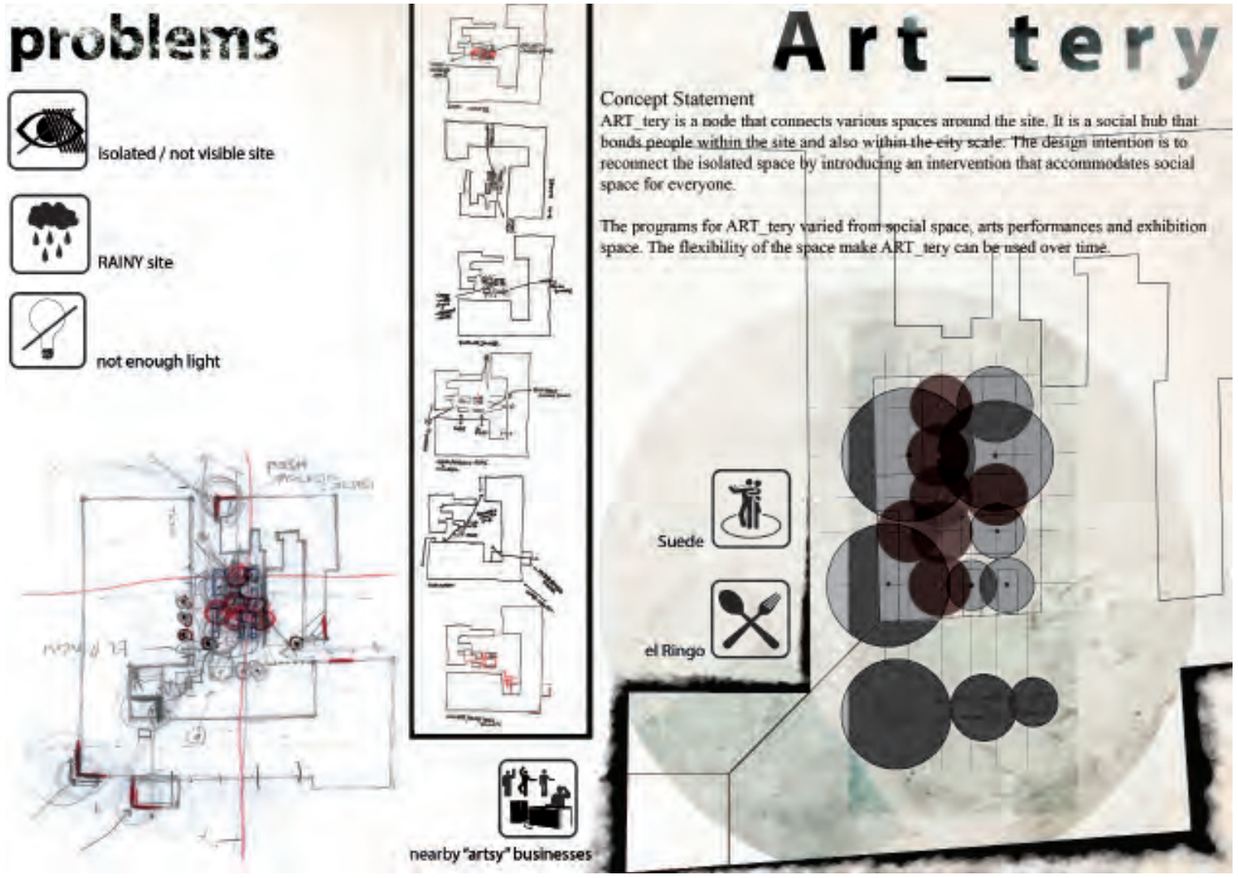
'Adult Cribs' acts as a raw framework for various systems to be hung on to, to suit a variety of programmatic needs. Systems could vary over time depending on cultural or social changes. For example, one scheme could incorporate the use of fabrics to act as seating or shading which can be placed in a number of different configurations to suit specific requirements. Each worker may own their own unique piece of fabric to which they are responsible for.

Within the scaffolding framework will be a permanent glass room specifically for meetings and presentations. This space can be made bigger using fabric curtains to extend the area beyond the room. Wet services are located adjacent to the main presentation room. A raised timber decking will be laid due to the sloped nature of the ground surface, at the same time as allowing for piping and cables to be hidden underneath.

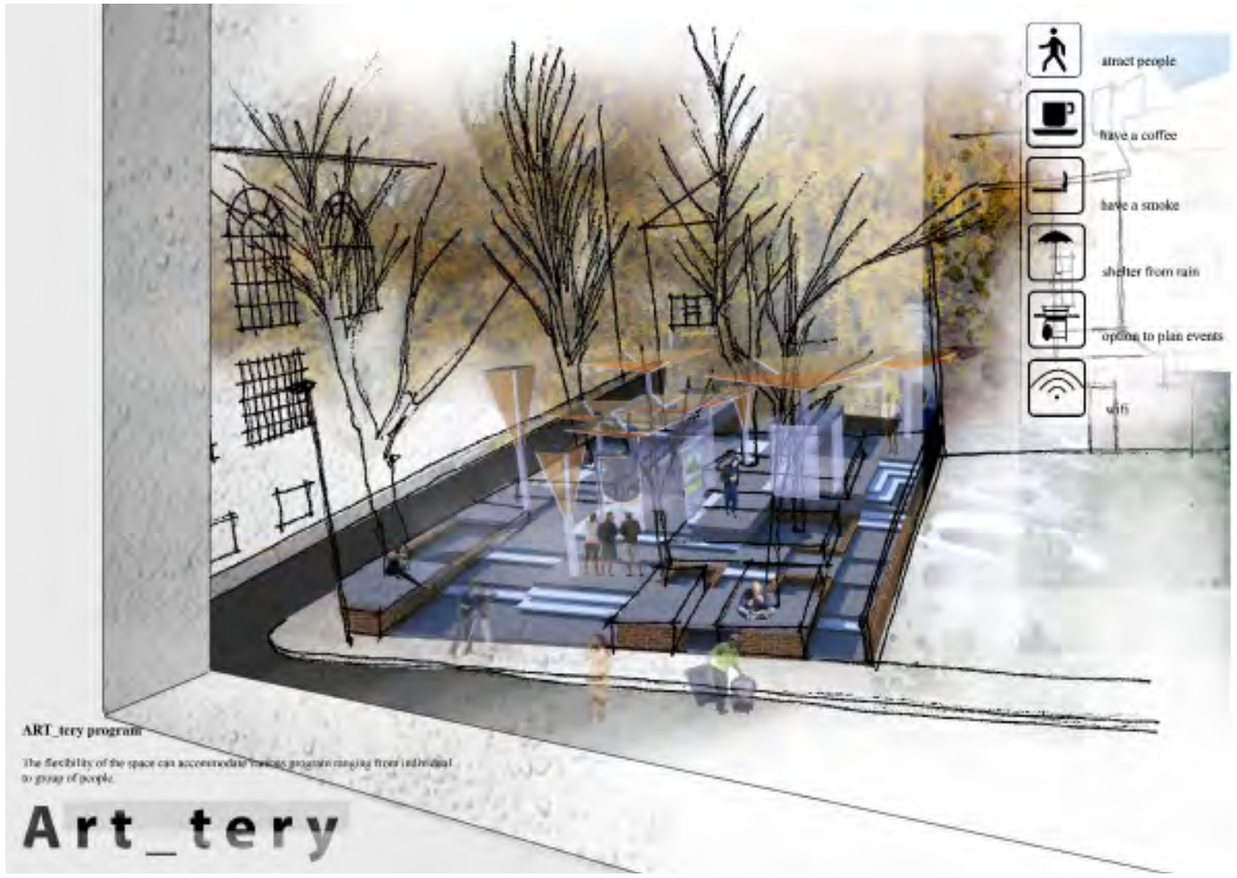
Art_tery

Muhammad Akmal Waliuddin Mohd Kamaludin,

Marios Starrinides, Elena Staurou



ART_tery is a node that connects various spaces around the site. It is a social hub that bonds people within the site and also within the city scale. The design intention is to reconnect the isolated space by introducing an intervention that accommodates social space for everyone.



The programs for ART_tery varied from social space, arts performances and exhibition space. The flexibility of the space make ART_tery can be used over time.

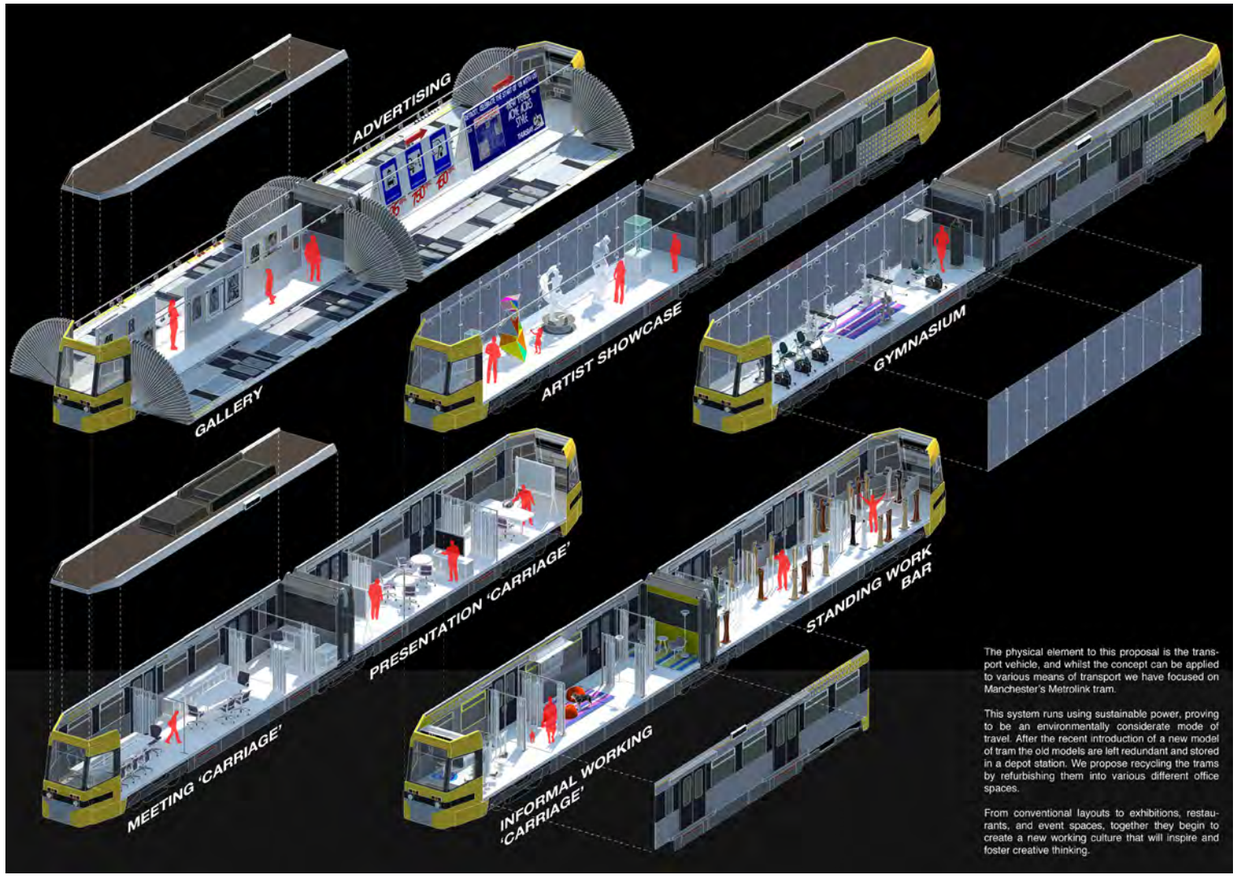
Creative Conditions - Locomo Think

Hakym Ahmad, Mohammad Abu Bakar,
Daniel Bramah, Cheryl Chin

Shortlisted for both:
- RSA Student Design Awards 'Creative Conditions'
- MSA Future Architect of the Year Award

Sitting in a stagnant room, gazing hopelessly at the fragmented sky reflecting of the neighbouring office block, desperate for a scrap of inspiration. This unfortunately is the current situation many office workers face on a daily basis.

Locomo-Think offers the chance to escape this scene, open up the mind, and think creatively. By recycling redundant transport vehicles and refurbishing them into movable offices, workers are able to experience an ever changing environment whilst getting away from their normal location, two scenarios that greatly improve creative thinking.



The physical element to this proposal is the transport vehicle, and whilst the concept can be applied to various means of transport we have focused on Manchester's Metrolink tram.

This system runs using sustainable power, proving to be an environmentally considerate mode of travel. After the recent introduction of a new model of tram the old models are left redundant and stored in a depot station. We propose recycling the trams by refurbishing them into various different office spaces.

From conventional layouts to exhibitions, restaurants, and event spaces, together they begin to create a new working culture that will inspire and foster creative thinking.

IdeaFACTORY

Basil Wong, Lim Siew Yong, Akmal Waluddin,

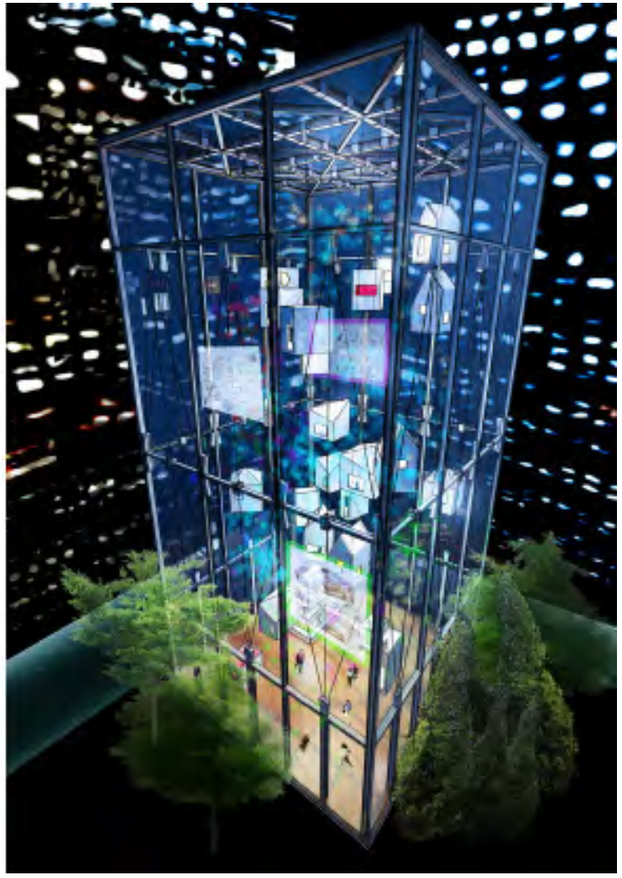
Siti Syamimi Sazali

Our proposal-Idea Factory is a place for you to unleash creativity either as an individual or as a group, physically or virtually. We welcome children, students, adults and corporates from different fields to experience our interactive Idea Pods with smart lighting control that is entirely yours during the hire session. We know that different lighting is important for different task and moods, so you are able to personalize your pod with different lighting intensity or various light colours to choose from. Idea Pod experience does not only limited to that, it becomes more fun as you also have the freedom to change its height from the ground!

We realize that people not only need a fun place to enhance creative thought process but also a place where ideas can be shared, collated and reviewed. Let the members know your idea or share it anonymously via our bespoke software application that can be accessed anywhere at anytime with your computer or mobile devices. We provide multi-touch display screens at Idea Factory for a real-time viewing of the shared thoughts and allow users to leave opinions, favourite your idea or even fund it. Feedback from people of different background always help to develop ideas creatively.

Everyone has the freedom to express and play

As a part of design process, we envision the building as a place that is suitable for everyone; e.i children, adult, students, or corporate etc thus we think of a place that people can interact with each other as well as interactive. We belive that element of ‘play’ in daily life is also important to encourage collective creativity, at the same allow people to have freedom of self-expression.



Carribean Winter School

James Lawrence, Mark Eden, Gavin Chan

To begin the Carribean Winter School, three students were selected to take part in a competition in Havana Cuba. As part of the Caribbean Winter School. This was an excellent opportunity to work with students from all over the world on a project situated just on the outskirts of Havana in a site called Habana Del Este.

Cuba is a country on the brink of economic ruin, reliant heavily on the gifts of other socialist countries in Latin America such as Venezuela. This meant that the project produced by us had to be centered around a viable economic model for the site. While being sensitive to the socialist situation within Cuba.

CUBA - Frameworks

James Lawrence

Following the Carribean Winter School, I brought this project back to Manchester to develop and build upon.

The site was Habana Del Este is satellite town of Havana, designed as a pet project by Fidel Castro and Che Guevara. It has become a housing estate totally reliant on the Capital in order to function. All the occupants of the area must travel via the P9 bus to the center or the few who own a car may take the tunnel.

My proposal was for a system of framework which would allow the residence of the local area to adapt to it over the coming years.

This was then intended to created a socially, economically, and resource independant area within Habana Del Este

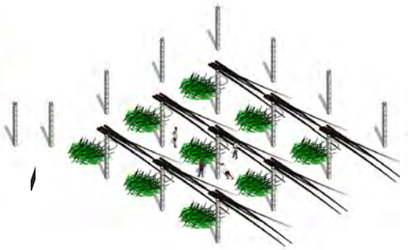
Concrete Lights and Frame

Bamboo shoots planted and concrete Framework errected

Grown Shade

Bamboo grows providing shade for smaller plants and concrete framework lights space at night

Bamboo Processed

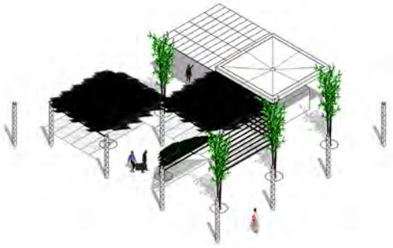


Bamboo is felled at full height processed removing smaller branches from larger trunks

Market built from Bamboo

Low cost structures can then be built using framework provided, and bamboo shoots can be replanted

Structures upgraded



Income generated then used to upgrade shades, building solar energy production and rain water collection

The Facade of Center is intended to represent the grid structure imposed on the site in the from of the framework. Taking a similar style to that of the traditional Cuban colonnade* the concrete superstructure acts as a capping element to the huge framework beyond it, and a landmark for people arriving from the pier - a gateway to the new Habana Del Este.

6th Caribbean Winter School 2015

Gavin Chan

The aim was to discuss new design strategies that met the specific social and economic needs of the people of Cuba. In this case, the project was located within "Havana del Este," a district which was built after the Revolution in the philosophy of the "Charter of Athens."

The three week workshop included selected applicants from different universities around the world (Including Germany, Poland, and of course Cuba) to collaborate together in tackling the issues presented on the chosen site. This was the 6th successive year of the programme, hosted by münster school of architecture in cooperation with ETSAB, Escola Tècnica Superior d'Arquitectura de Barcelona UPC and Technical University CUJAE, La Habana.

Upon returning back to the MSA, the project was carried through to the end of the semester.

OUTSIDE-IN

Outside-in engages in tackling the problem of revitalising the site of Reparto Camilo Cienfuegos by operating on the outside edges of the promenade. The aim is to create densification in the borders to allow the building programmes to draw people onto the site. The design in it's simplest form involves the placement of three geometric shapes (rectangle as theMarketplace extension square as the cultural centre and circle as the amphitheatre).

VIEW OF PROPOSAL FROM THE APHITHEATRE

A series of metal frame structures are positioned in a linear format along the stretch. Not only does this connect the three entities together, but also serves as possible shading throughout the day and night lighting to the site during the evening. This provides safety and a direct route to the amphitheater where performances can occur throughout the day.

CULTURAL CENTRE

The centre allows for different cultural activities to occur on varying heights. Much like a rainforest where different species habitate on different levels, each layer will house for different functions. This is purposely made visible from the exterior. The use of columns allows the ground floor to be open and spacious, at the same time as providing shading from the sun, whereas other floors are more enclosed for more private functions such as the library.

CONNECTION

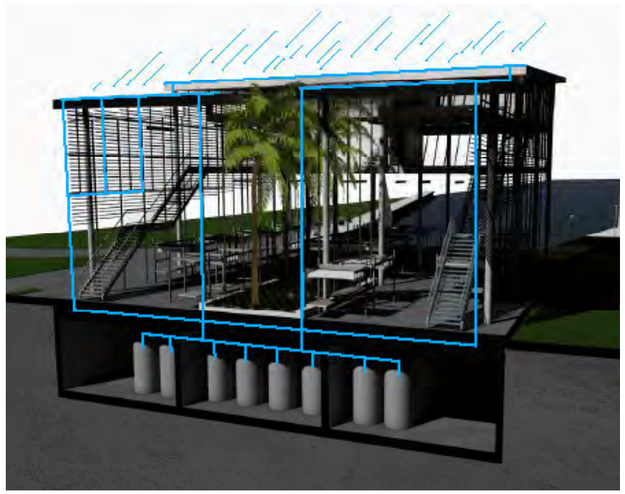
The cultural centre serves as a physical connection between the school and the site. It also acts as a metaphorical connection between the younger and older generations by containing workshop spaces for this integration to occur. Extensive shading is paramount in which greenery can be used to not improve the surrounding air quality, but also provides the cultural centre with a certain visual aesthetic that promotes awareness for the 'green trend'.

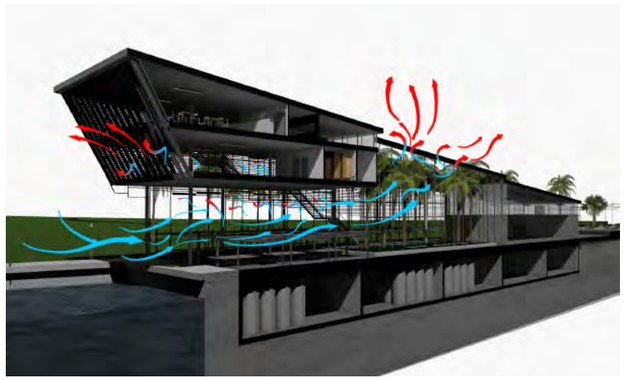
EDIBLE HAVANA

Mark Eden

Demonstrate how planning can close the loop of the food cycle. By facilitating a model that creates a dialogue and control of local urban agriculture, we can reduce waste, promote renewable energy, whilst creating a social culture which will benefit neighbourhoods and communities. We aim to show how we can use Urban Agriculture and adapt it to the urban situation it is located and be used as a tool in creating a continuous productive urban matrix.

Organopónicos are a system of urban organic gardens in Cuba. They consist of low-level concrete walls filled with organic matter and soil, with lines of drip irrigation laid on the surface of the growing media. Organopónicos first arose as a community response to lack of food security after the collapse of the Soviet Union. They are publicly functioning in terms of ownership, access and management, but heavily subsidized and supported by the Cuban government.





ROCHDALE POINT

Basil Wong

THE CO-WORKERS' PLACE

Strategically located at the point of intersection between three Manchester's most prominent canals: the Bridgewater Canal, Rochdale Canal and Ashton Canal, Rochdale Point is set to bring together the best of working, living and leisure in one place. The building is a hybrid of an office, visitor centre, and cafe. At Rochdale Point, you can enjoy a range of activities for tourists as well as office workers.

The ground floor consists of a grand lobby, cafe and bar. The lobby is intended to work like a 'landscape'; it is a public open space, an art gallery and a mini boat terminal, open to both the local residents and visiting tourists spread over one single fluid space that connects the lobby, cafe, bar and the pier. It provides a seamless network of services, social space, space to study and relax, restaurants, cafés and beautiful outdoor spaces. The street furniture provides different gathering spaces for both personal and group use.

For the working space, there are two main spatial concepts that characterize the functions: co-working space and the Transit Office Suite, of double height lobby space is connected with the first level of the co-working office at the mezzanine level. The Transit Office Suite is a modern and compact guest room specially designed to merge both the working and living space. It is meant to be an office during the day and by night-time, it can be transformed into a private bedroom by tucking the furniture away. The co-working office space takes up four levels in the building, all interconnected by a series of double height lounge areas.

On the forth floor is a private office for long-term leasing to larger businesses. On the rooftop is a premium 'penthouse' office space. Situated within the Piccadilly Basin next to the iconic 111 Piccadilly, Rochdale Point offers panoramic views of the city and Rochdale Canal from the Rooftop Office.

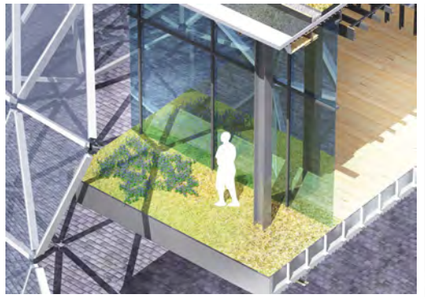
Here for a business trip but can't wait to enjoy the best of Manchester? Book a place at our Transit Office Suite and enjoy a business class luxurious living and working experience at an affordable price. Or, get a desk at our Co-working Office and enjoy the range of services we have here including an ultra-fast internet connectivity, unlimited free coffee and tonnes of fun and exciting events at The Pier.

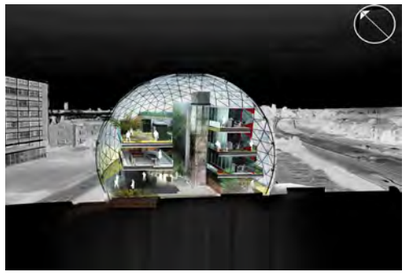
CO-WORKING OFFICE

The building offers a variety of excellent specification, flexible office suites within modern, contemporary space. The office space is customized to promote collaboration and seamless interaction between all workers while maintaining a good level of privacy.

THE PIER

The historical canal lock is the 'Rochdale Nine' which is the ninth locks on the Rochdale Canal. The location of the site is very strategic on the canal networks. The canal junction adjacent to the building is the junction that connects the Ashton Canal. Further to the west is the Dale Street Lock which is the junction into the Bridgewater Canal. The Pier functions as the final stop of the Bridgewater Canal tour from Castlefield where tourists can stop for refreshment or for transiting to Piccadilly Train Station. At the same location, visitors can continue their tour to Ashton Canal or continue down the Rochdale Canal.





‘The Shell’

Cheryl Chin

The bio-dome structure establishes a new visual focus to add more characters to Chorlton. The aim of proposing a biodome is to provide inviting and usable open space comprises of multi-generational features such as exhibition space, open green space for community use, green corridor on every single floor.

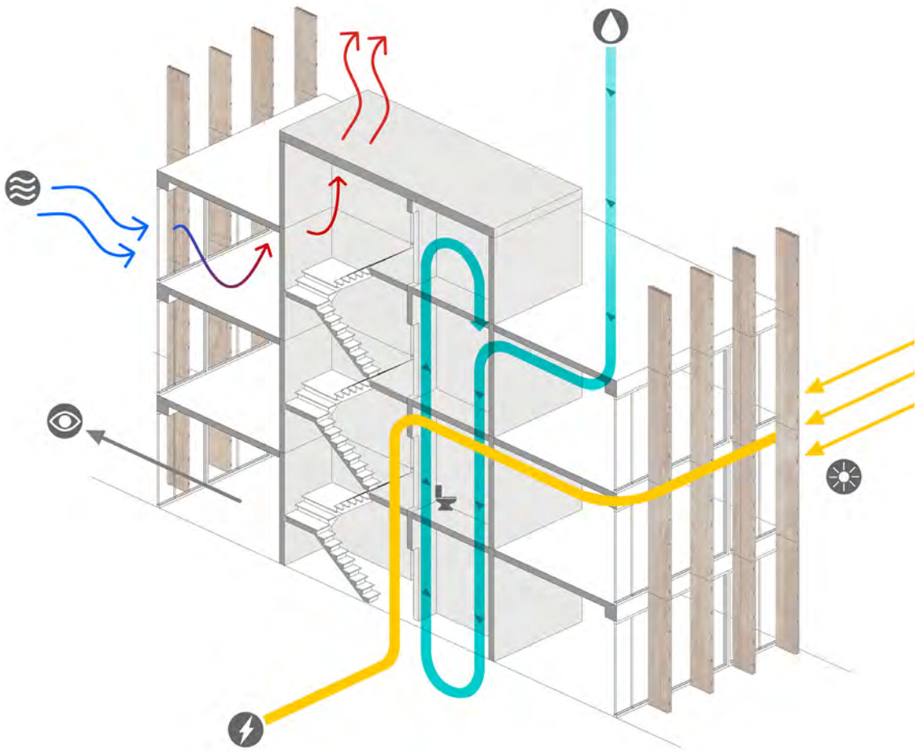
iWe - Suburban Office

Daniel Bramah

This suburban workspace aims to provide individuals and small businesses of Chorlton a suitable working environment. The challenge was to create an easily adaptable internal space to cope with the ever changing office requirements for small and unpredictable businesses.

By strategically positioning two cores containing circulation and facilities, steel beam grid floor structures were able to be constructed without the need for internal columns, thus creating a large open plan volume on each floor to contain the flexible workspace. Enclosing this building is a louvred timber facade system which changes throughout the day to allow daylight in, views out, but also act as a solar shading solution.

Ecological overview of some of the key performance attributes



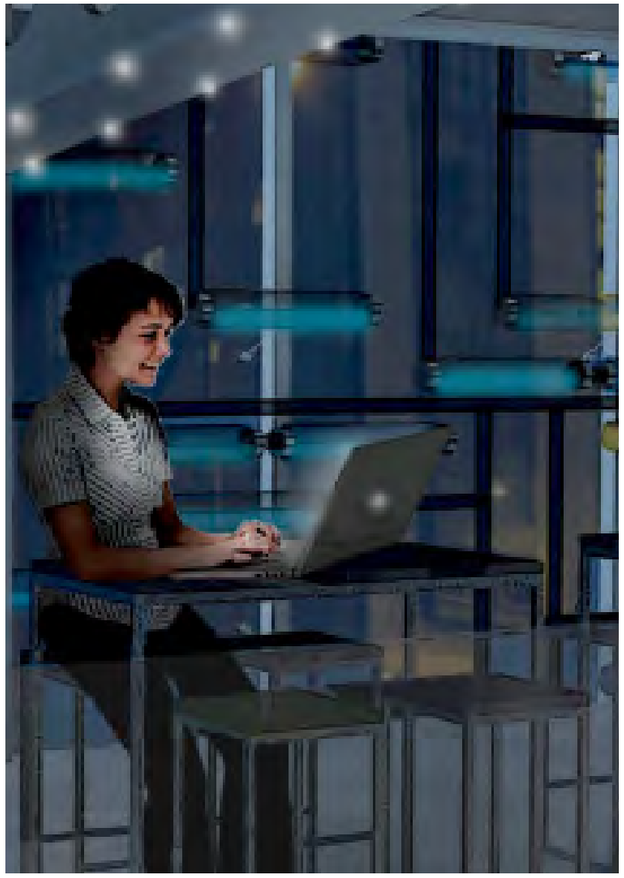
The proposed flexible workspace culture is utilised on the roof top as well as inside the main work space.

BIOLUMIPHIL BUILDING

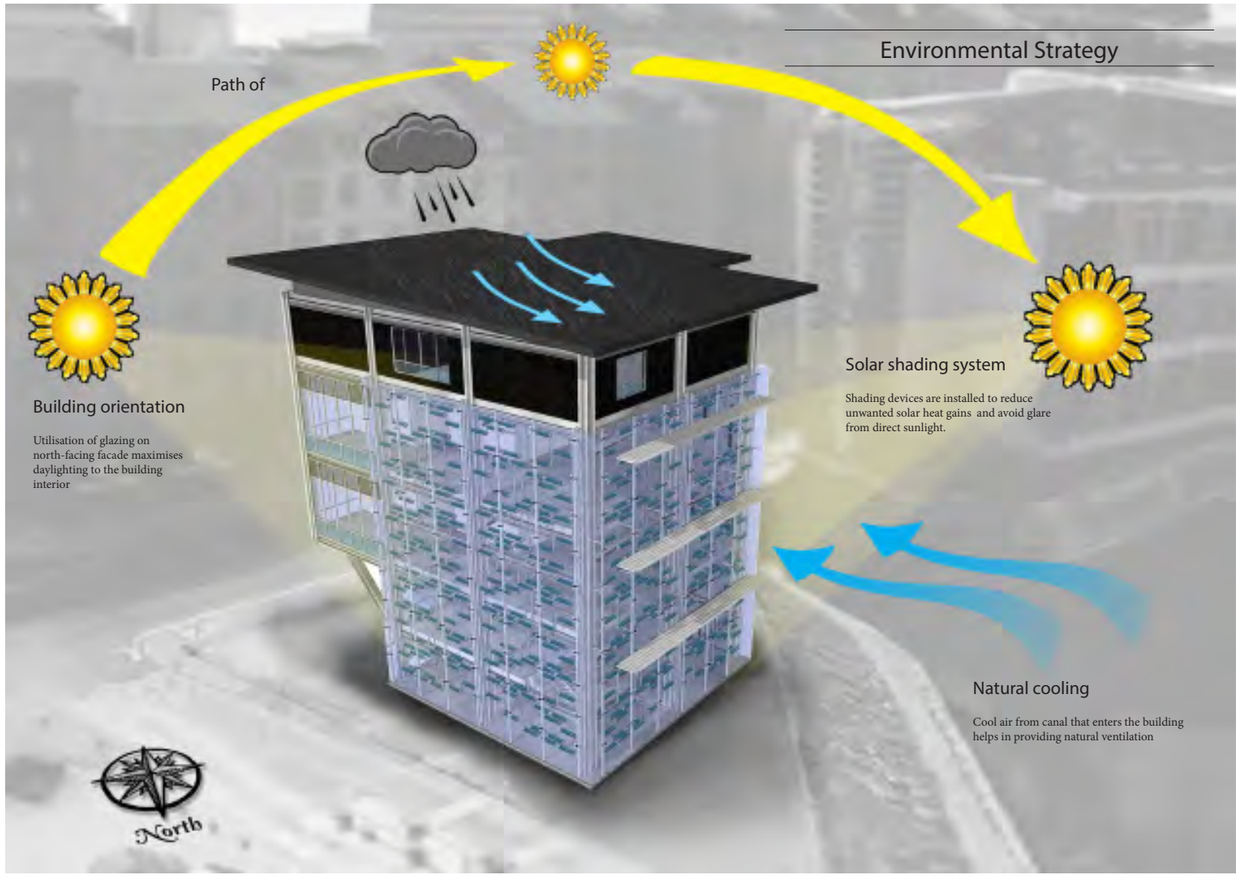
Siti Syamimi Binti Sazali

'Biolumiphil' is an office building that aims to extend our natural way of sourcing natural light by making use of existing bioluminiscent organisms. At night, ambient lighting produced by bioluminiscent bacteria in saltwater will be activated by pumping in oxygen and methane gas into the biolight cylinders via silicone tubes that connect the cylinders together. These gases are the product by biogas waste digester located in the basement of the building.

The aesthetic value of bioluminiscent lights installed at Biolumiphil encourage building users to minimize the amount of energy used for artificial lights as the natural lights are efficiently visible only in dark surrounding. Although low-energy artificial lights will still be utilized in the building, users may not find it diffcult to do their jobs with dim lighting as information work in general demands the use of computer technology which are already installed with backlights.

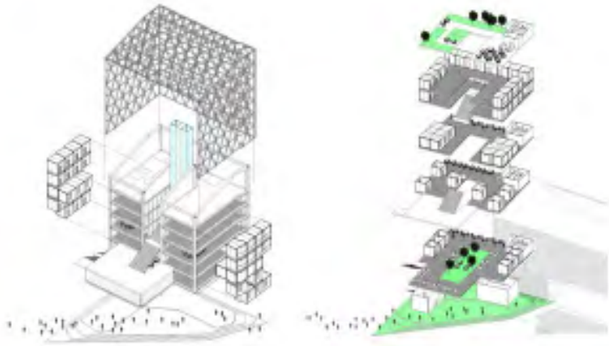


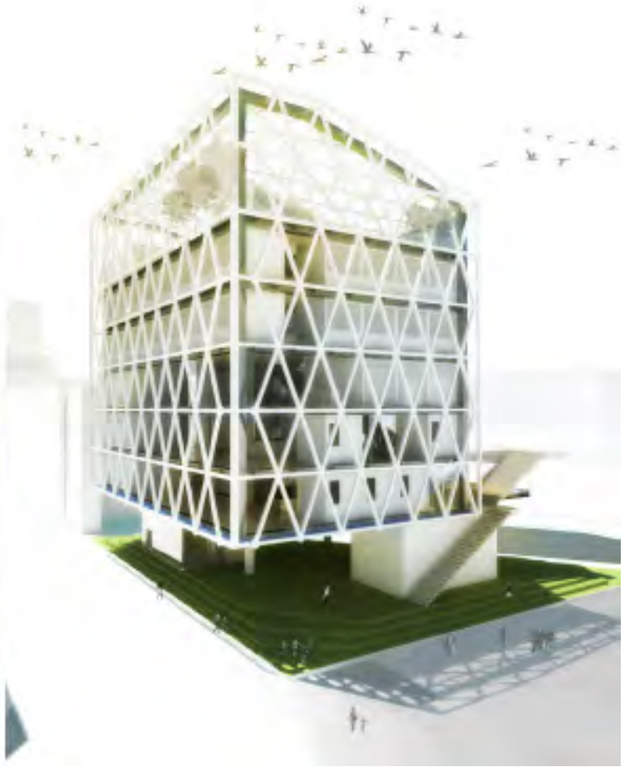
The ground floor of Biolumiphil building is designed as an open space to allow various activities to take place. It can be used as a space for informal meetings as well as to accomodate small functions and events.



The Park Office

Lim Siew Yong





The park office provides a flexible modular workplace by transforming the conditions of traditional office environment in a modular way; increasing flexibility and adaptability of building performance. The proposal also re-create legacy and culture of traditional office by offering information workers a unique office place that bring work, play and stay together as a single entity.

Social & Community Engagement

By forming the outdoor communal stairway, it creates a physical space which provide settings for social interaction and information workers can experience working in a unique environment. Integrating the communal stairway also indirectly provides settings for promoting community interaction and keep the spirit of togetherness,as well as community spirit around the site.

i:We // PIXELS OF CHORLTON

Hakym Ahmad

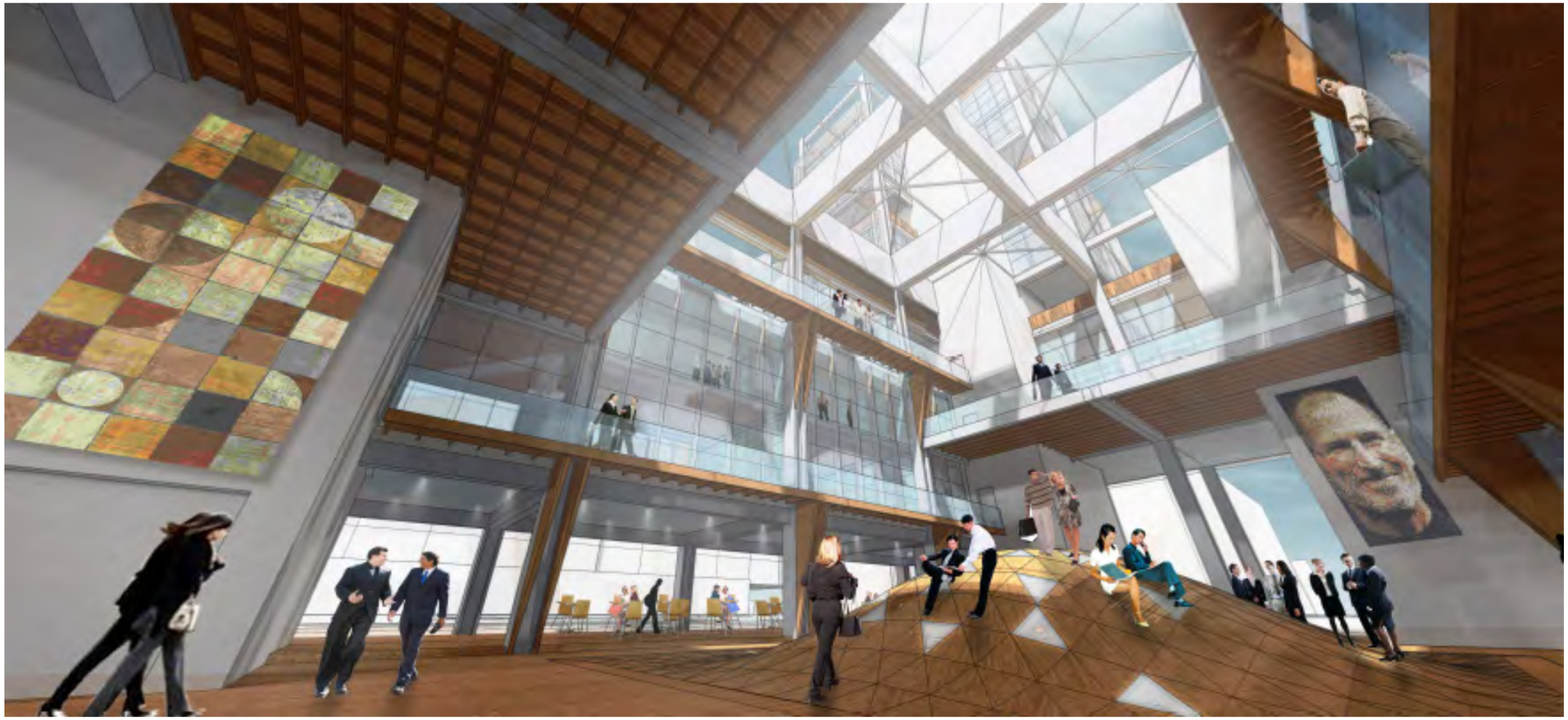
Information workers nature of work, which did not exist in isolation, no matter how big, or how small it needs to be connected with one another. However, to be working under one one roof will always subject to the individual's or even small group's dilemma to be in the most con- ducive environment.

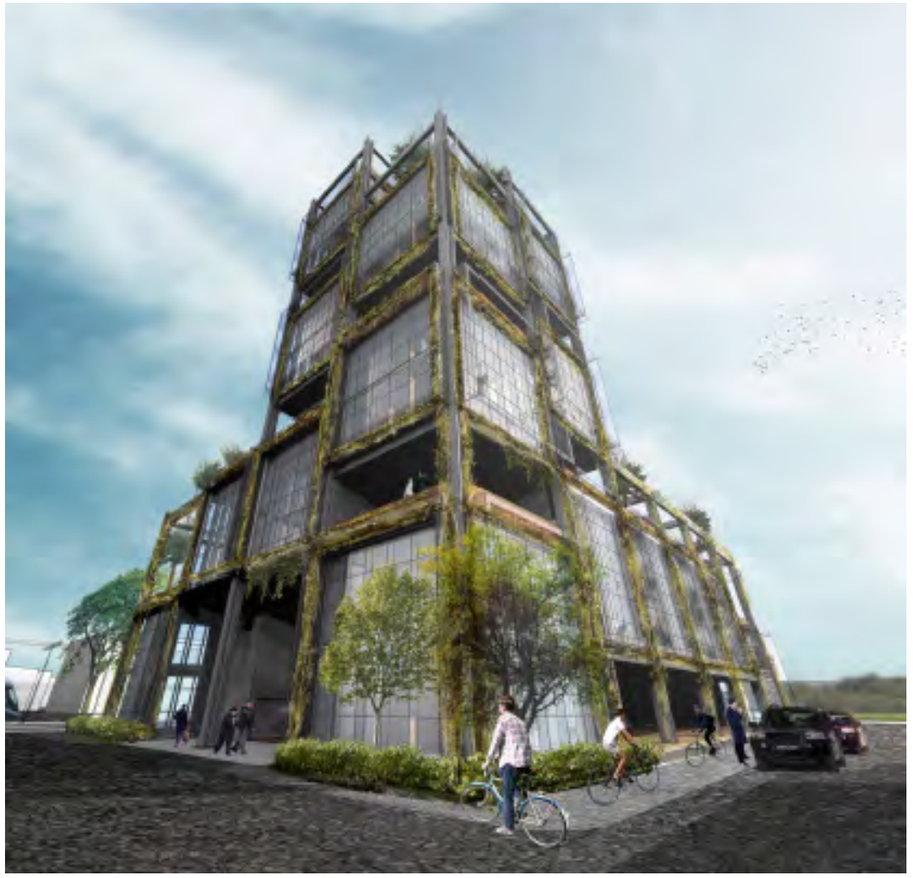
The era of advanced technologies nowadays have naturally allows and trained human beings to always dynamically change their environment on a personal level through time.

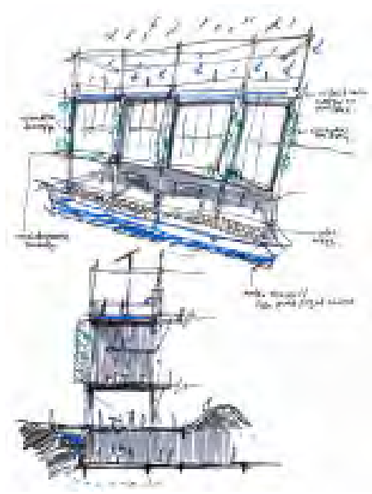
They have moved from just having the freedom to change their laptop wallpapers or the color of their cellphone housings to defining their own lifestyle and finding out new ways of doing things.

As a result, a typical open planning office with fixed cubicles is no longer a preference for anyone. They prefer to work in cafes or parks where they feels most comfortable with and declaring the space 'their spot' to themselves, only for that moment of time as for tomorrow it might not feel as conducive because the environment is dynamically evolve.

Pixels of Chorlton offers a working environment in such promotes community engagement while still celebrating preferences from the individual level towards bigger collaborations. With a range of micro spaces with different kind of environments, users have the choice of spaces to their pref- erence to work in and generate impromptu collaborations.

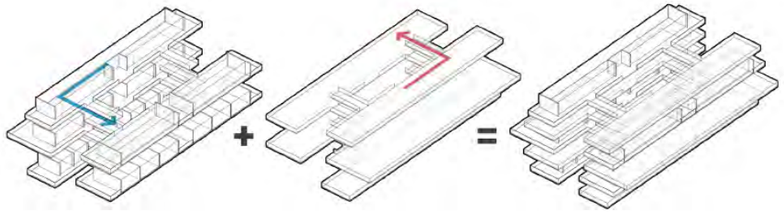


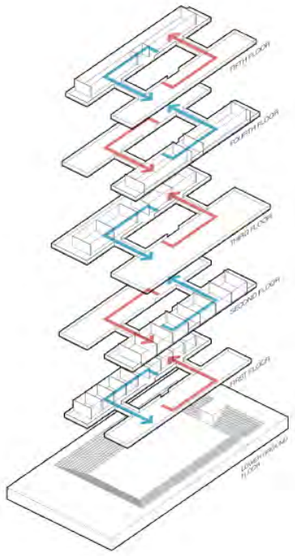


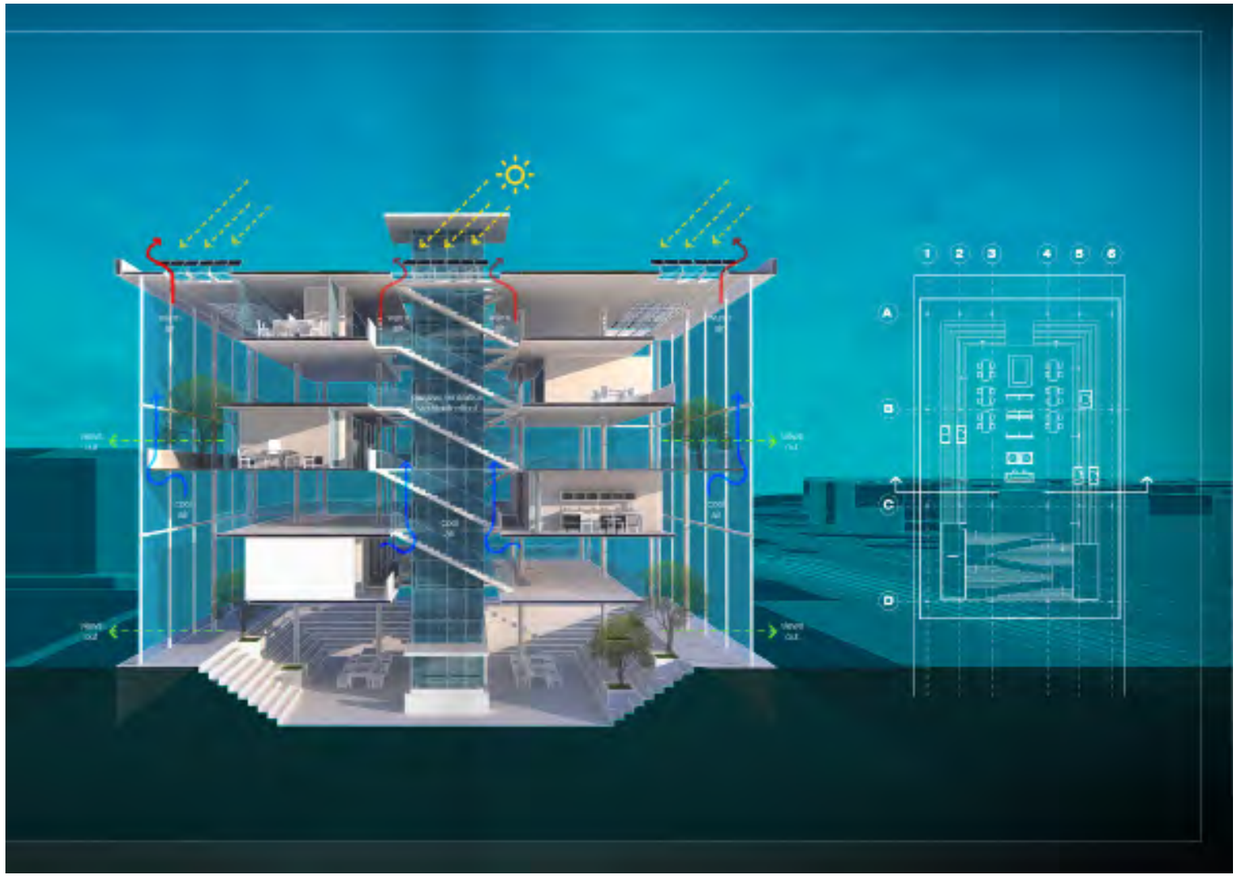


‘Synergy’

Mohammad Abu Bakar







Synergy - is the creation of a whole that is greater than the simple sum of its parts. ‘Synergy’ proposition is not only to have numbers of places and offices to work within it, but also to develop a ‘balanced ecosystem’, which encourages companies to collaborate as well compete with each other for business.

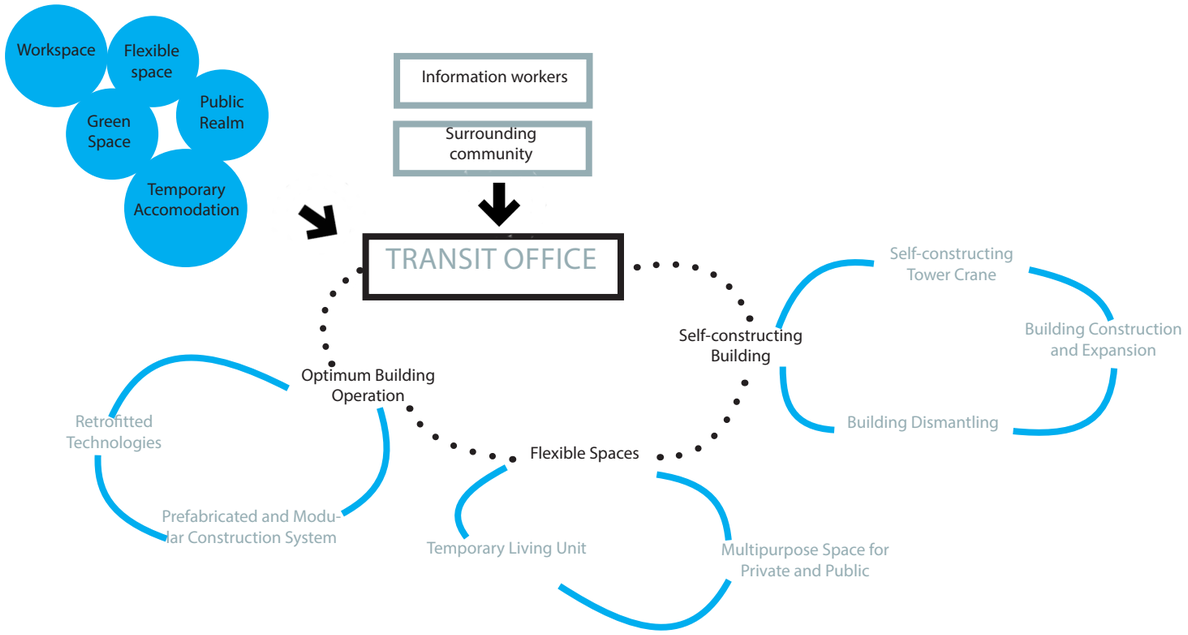
In information work environment, there will be a lot of collaborative work, and collaborative working has led to positive commercial results for the businesses and notably an increase in sales/income, clearly highlighting the benefits of these activities.

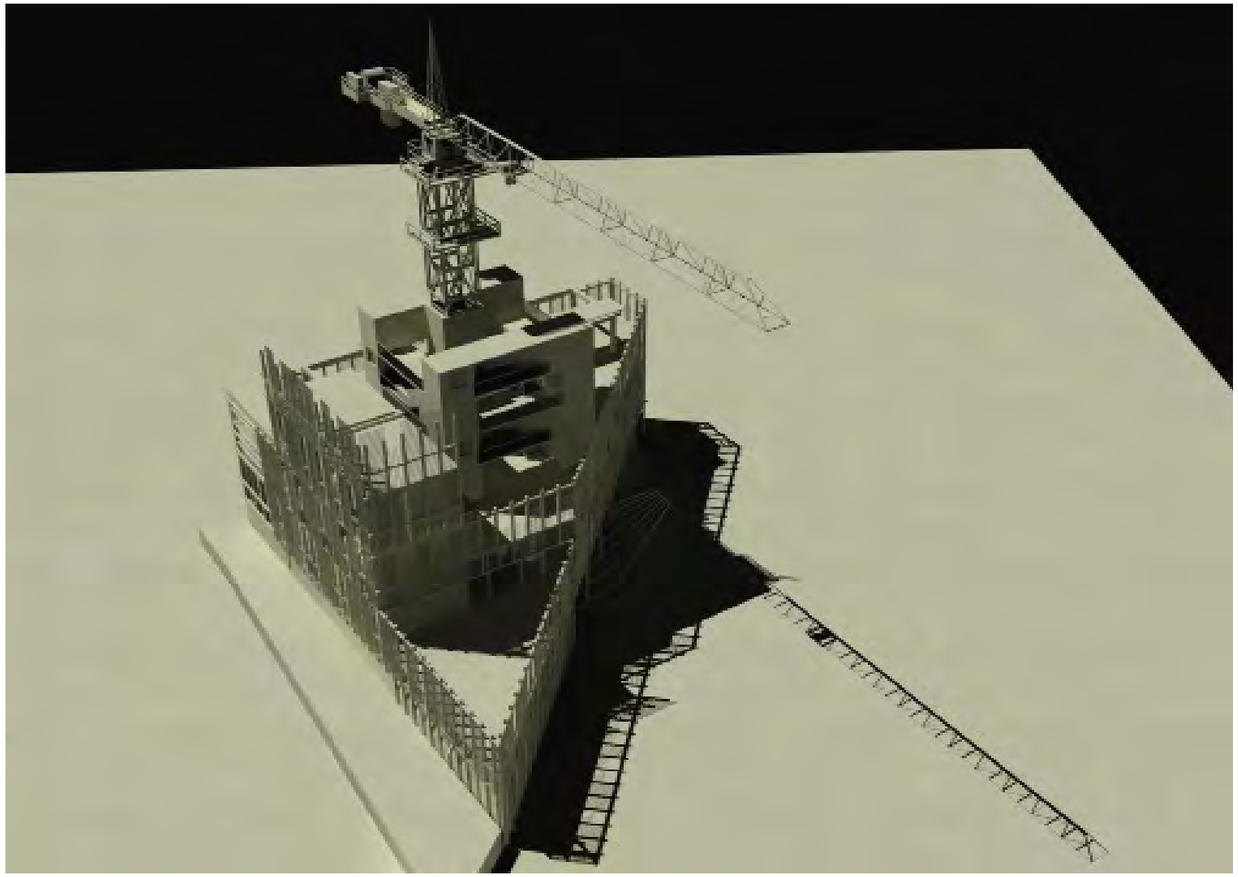
NETWORKING
Physical networking is as crucial as digital networking, and it has been increasingly neglected. 'Synergy' proposed to incread amount of physical network by having a dedicated open space that are flexible for collaborative environment, where everything is under one roof.

EVENT FUSION
In addition, 'Synergy' scheme proposed to have strong sense of community by having a very open and highly public ground floor, that are 'sunk' to give more volume to the spaces. The sunken floor also act as an event space, where 'Synergy' also intended to fuse event function within its programme

Transit Office

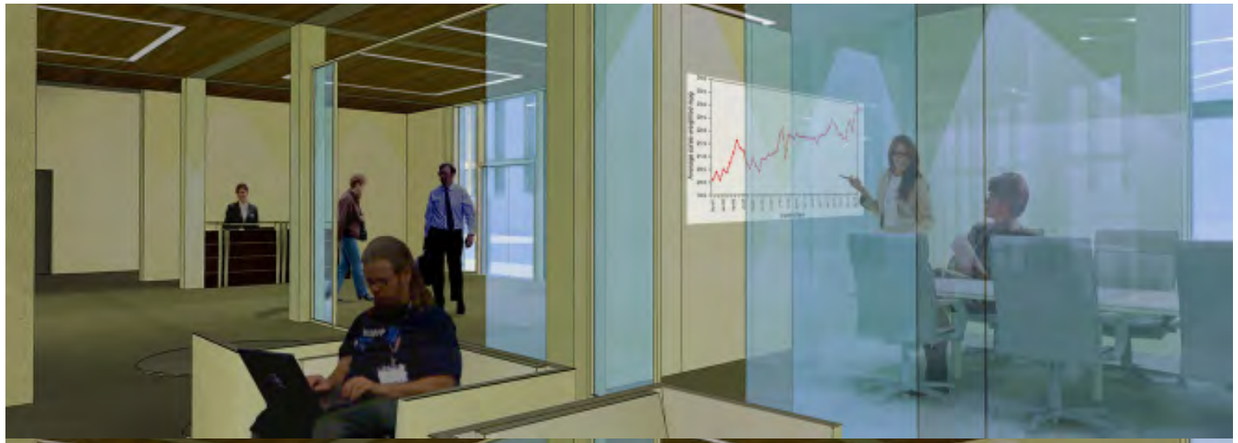
Muhammad Akmal Waliuddin Mohd Kamaludin

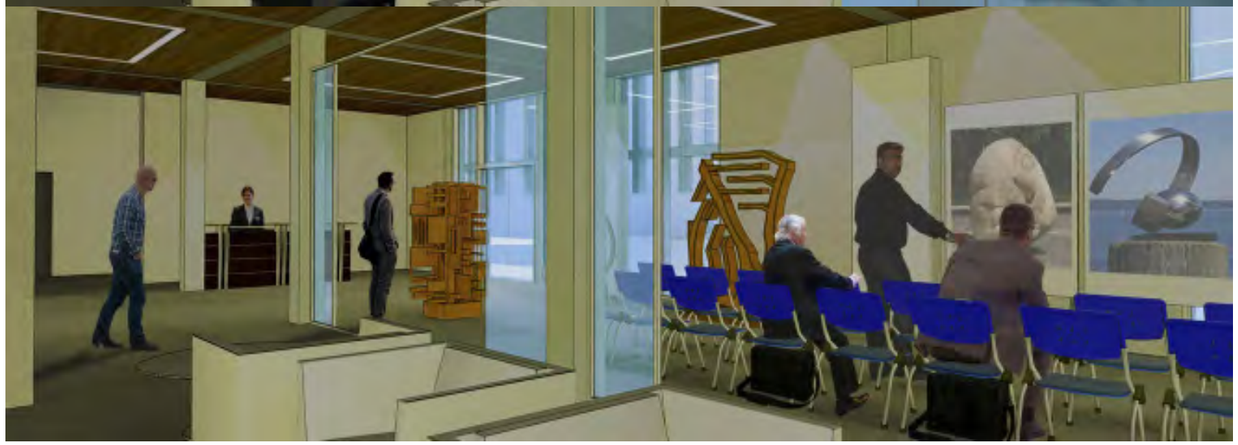




iWe is a project that concentrates on designing a workspace for the information workers. The concept for this project portrays the nature of information workers that is ever-changing and always on the move for their works. The building is a self-construct and expanding where the space and the use of the building are progressively change to the needs of its users. The spaces are flexible from as small as the individual pods to the entire office floor, easily retrofitted to response with various needed.

The concept of the building portrays the life of information workers, the main user for this building which is always on the move. Transit office is a temporal space to cater different needs of information workers, where the building is flexible changing through the needs of it user. The spaces of the building are ever-changing, self-expanding as if a living building responses to the needs of its own performance and the needs of its user.



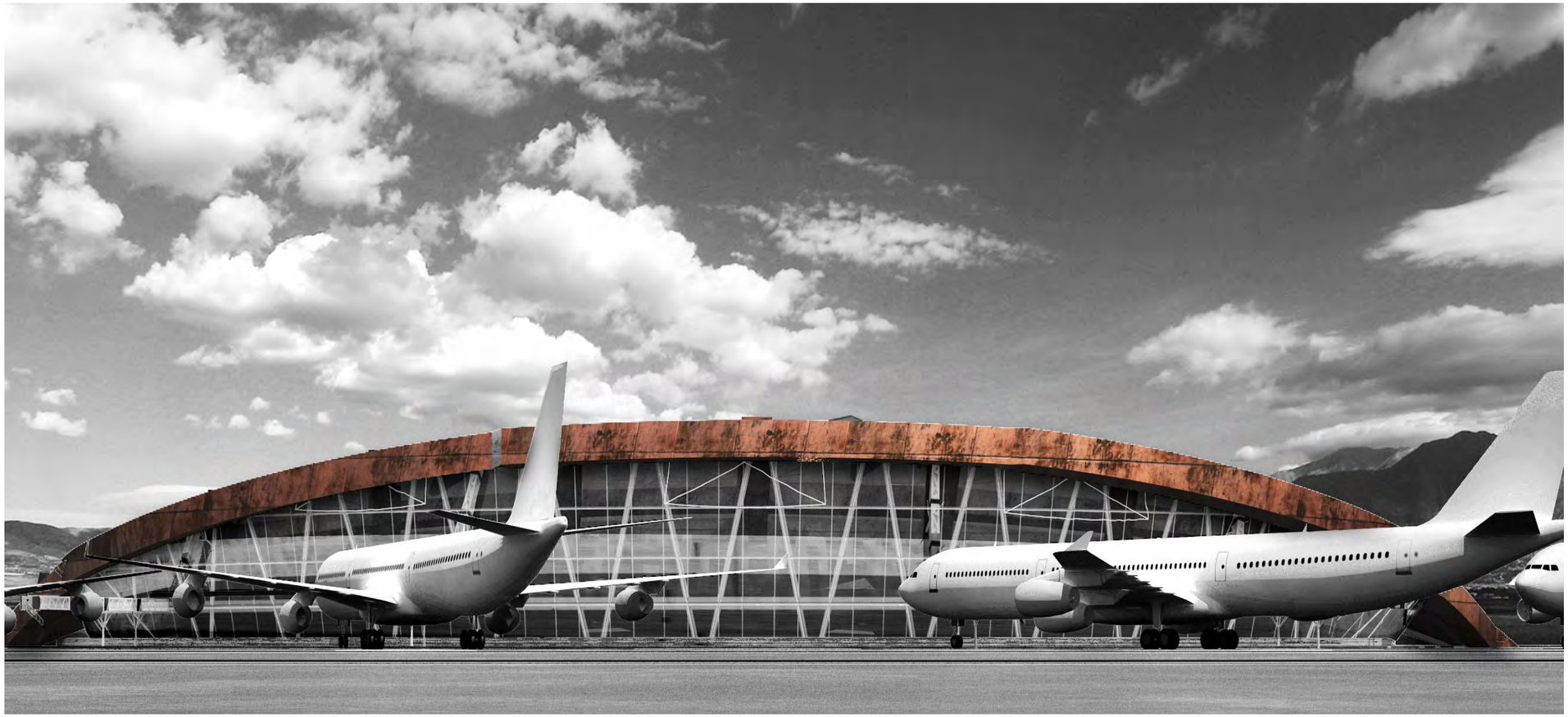


The spaces are designed to accomodate programmes that related to the public activities. The lobby area is designed to be flexible where the space can accomodate both private meeting to open events. The space is utilises with sliding glass door and lightweight wall panels where the space change from open space to conference rooms.

atelier qed // Year 6

qed global thesis // AIR

We live in an era of unprecedented speed and mobility. The aviation industry connects more people, further afield, but it must also meet higher demands in security and sustainability and plan for changeable market conditions. Bearing this in mind, qed AIR tackled international sunstainable aviation projects in the UN Green Zone, Cyprus, Townsville, Queensland, Australia and Melaka, Malaysia. Students travelled to the University of Florence to take part in an research workshop, qed then hosted the Horizon2020 International Airport Symposium at MSA to discuss the future of sustainable aviation design with our international partners.



NICOSIA AIRPORT REVIVAL

Aidin Ahadzadegan

The project is about how architecture might affect the relationship between two groups of people;two different groups with experience of conflict in the past.
The context for this project is the island of Cyprus. The site is located in the Buffer zone between the Turkish Cypriots and Greek Cypriots.

Nicosia airport was closed since 1974. The new airport proposal will accommodate both sides, Greek and Turkish Cypriots in a bi-communal space mixed with international travellers visiting the island; this is in order to facilitate interaction in an environment,away from political and religious differences. The aim of using the airport is obvious for its users, but what this project is trying to achieve is to prepare a process of normal airport activities in order to make it easier for both sides to understand these common connections when they sit next to each other.

This concept will follow with one of the airport models which is a medium sized airport city with distributing its features and programmes plus the sustainable strategies for reducing carbon emission and maintaining old terminal in terms of be more sustainable and making a greener environment. By this mean the amount of carbon produced by airport which is very high can be reduced.

Based on the specific situation of the island, moving towards 'connection' has been considered as opposed to 'separation' as a concept for an 'architecture of reconciliation' in this project. In the process of designing the airport, creating spaces in which both sides can be together will be the focus.

In this project the airport building has been proposed as a neutral location between the Turks and Greeks. This method has been employed to achieve an architectural solution to solve the problem of integration process, but that doesn't mean that the current social situation and cultural aspects of each group would not be considered.

ABSTRACT
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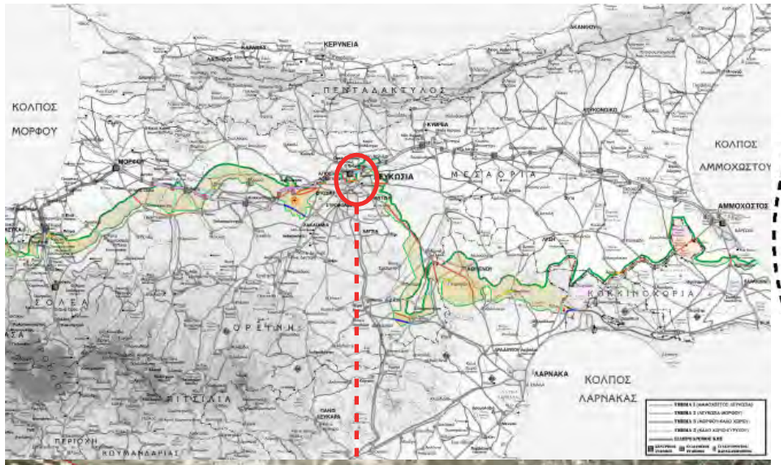
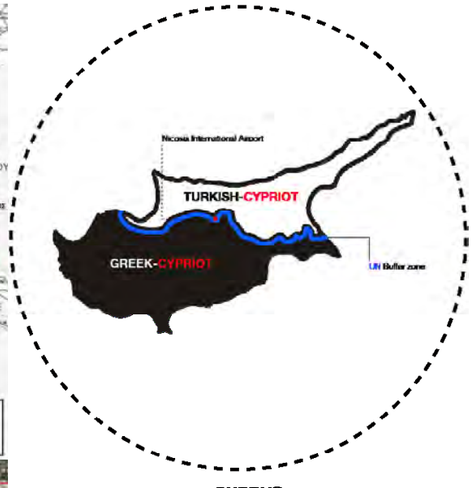
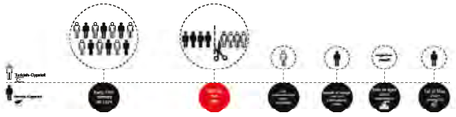
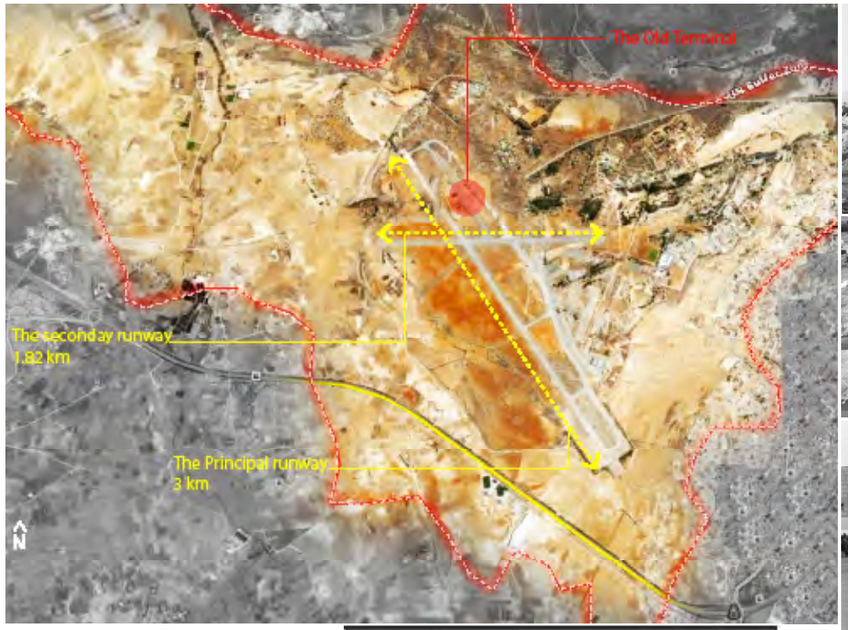
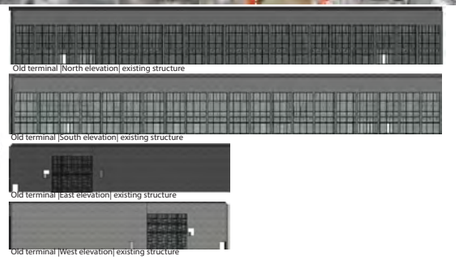




CYPRUS

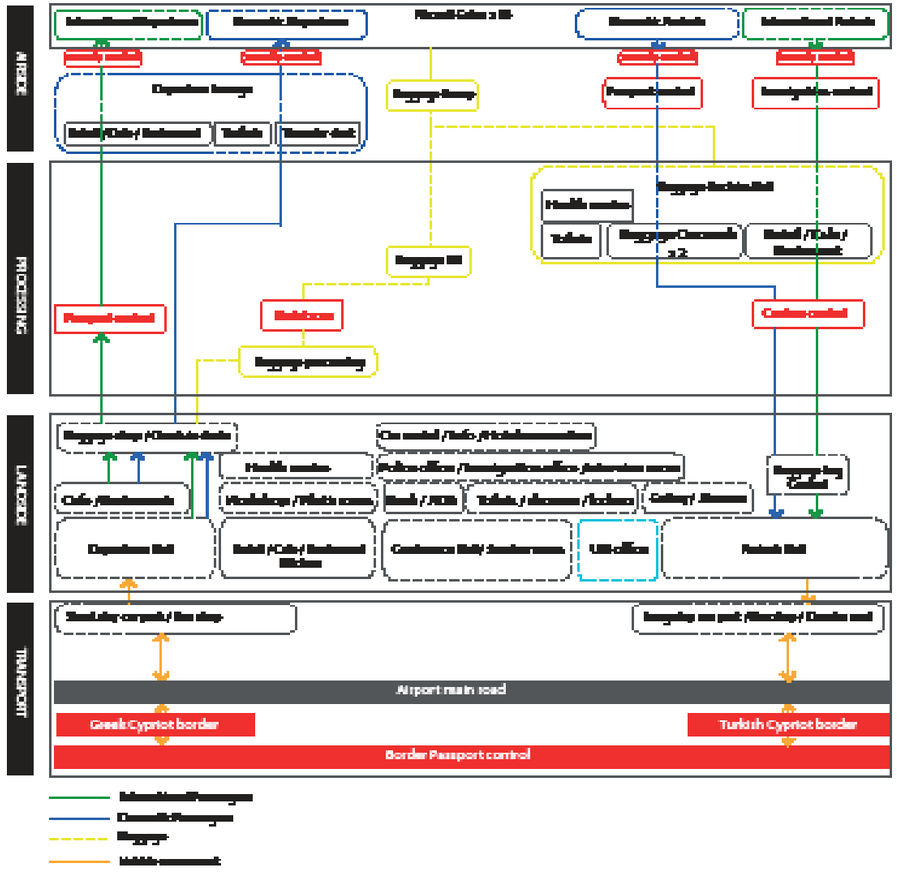


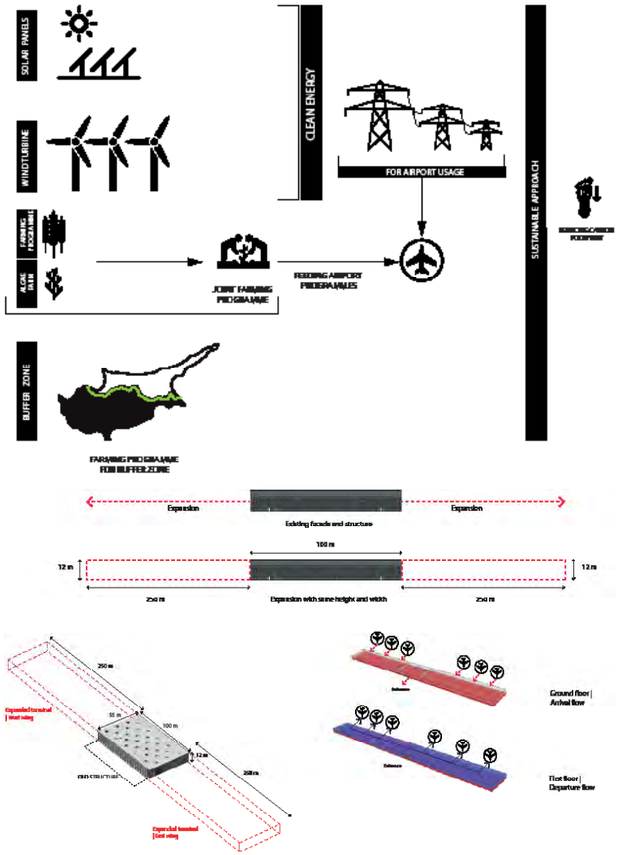




Nicosia airport was closed since 1974. The new airport proposal will accommodate both sides, Greek and Turkish Cypriots in a bi-communal space mixed with international travellers visiting the island; this is in order to facilitate interaction in an environment,away from political and religious differences. The aim of using the airport is obvious for its users, but what this project is trying to achieve is to prepare a process of normal airport activities in order to make it easier for both sides to understand these common connections when they sit next to each other.

This concept will follow with one of the airport models which is a medium sized airport city with distributing its features and programmes plus the sustainable strategies for reducing carbon emission and maintaining old terminal in terms of be more sustainable and making a greener environment. By this mean the amount of carbon produced by airport which is very high can be lesson.



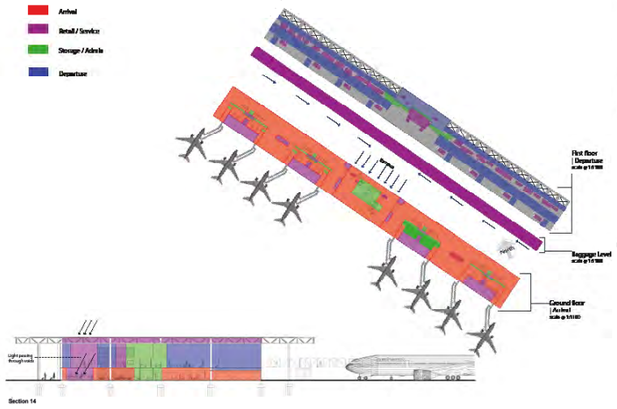


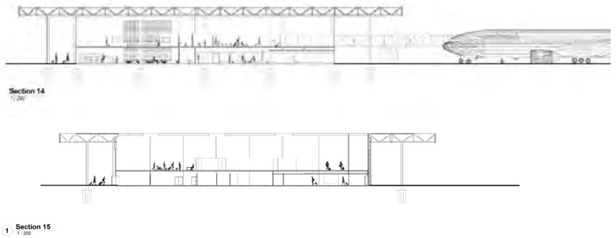
Based on the specific situation of the island, moving towards 'connection' has been considered as opposed to 'separation' as a concept for an 'architecture of reconciliation' in this project. In the process of designing the airport, creating spaces in which both sides can be together will be the focus.

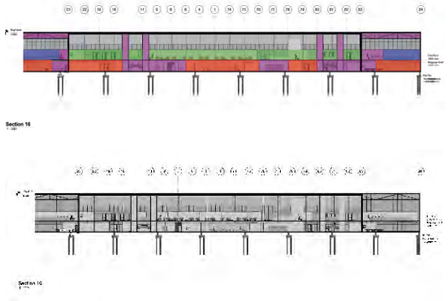
INTERNAL ARRANGEMENT

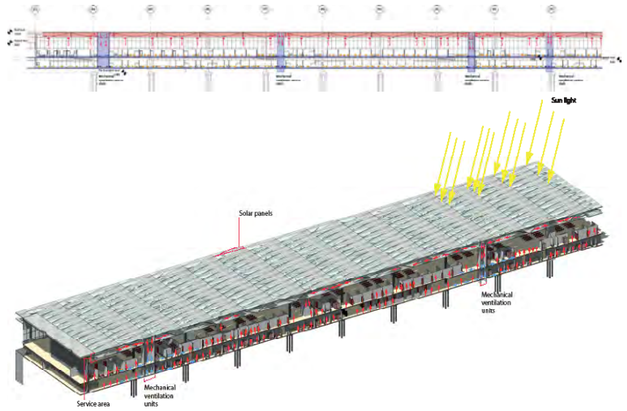
The internal organization uses different levels to split passenger flows.

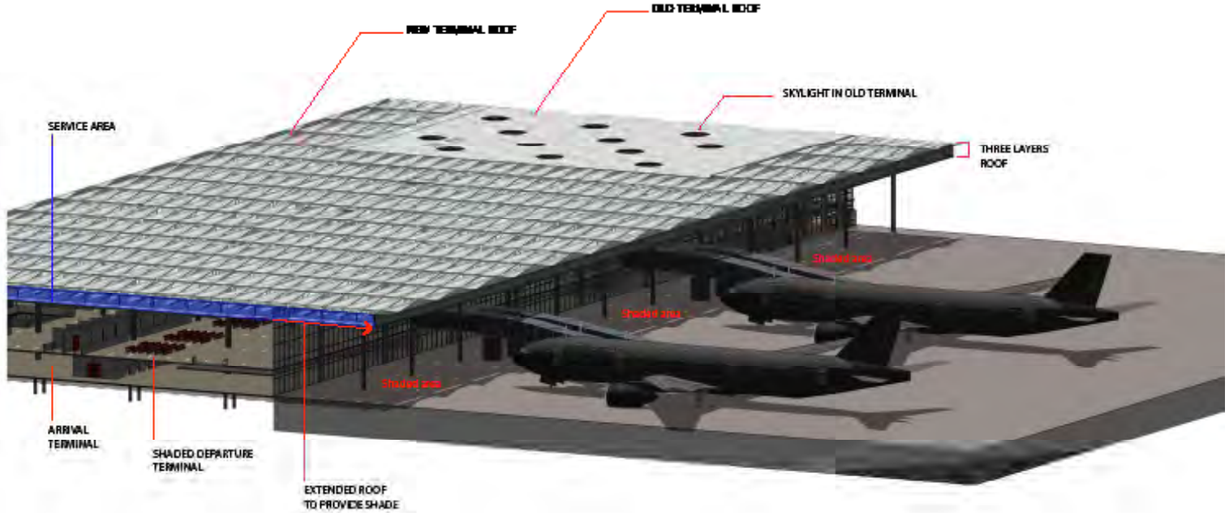
Departing passenger use the upper concourse which allows free movement along the long span of the terminal and enjoy the wide space with the nice view of the runway. Passengers then drop down into the gates on south side of the terminal which has eight gates. But all the Baggage processing and passport checking,security control,metal scanning and check-in happens in the central building.

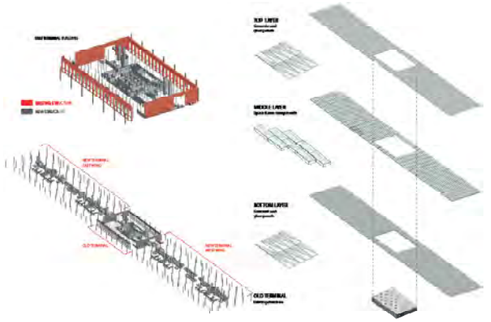


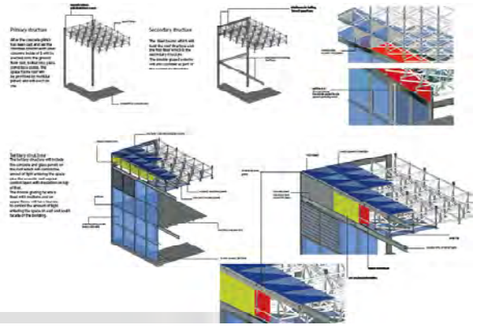


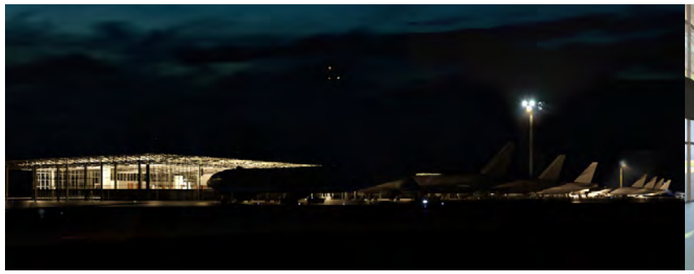












Arriving passengers use the ground floor, they enter from the central part of the Terminal and will expand on East and West wing of the terminal to procedure before take-off. Natural light is directed down through the voids above from first floor on North side of the building.

AIR MALAYSIA

MOHD FAKHRURADZI TAJUDDIN

THE DISTRIBUTIVE MODEL

Airports are detrimental to the environment. Architects have little influence to tackle the rising carbon emission compared to engineer and scientist. Passenger too arre unhappy with the air travel experience. By 2050, there must be 50% reduction of carboon produced in airport. So how do we solve this problem?

Air Malaysia is designed based on the concept of distributive model where it the function of the airport will be distributed to the train station. In other words, it seeks to integrate air transportation with rail transportation. By doing so, hopefully, it can persuade people to not travel by their own car and ultimately will reduce the carbon emission.

The airport is located in Melaka, Malaysia. It intends to leverage on the proposed high speed rail connecting two major cities in ASEAN namely Kuala Lumpur and Singapore. In 2025, there will be a need for the new airport for these two cities. Instead of building a new airport at each cities, Air Malaysia will sit in the middle and become the hinterland airport for the two cities.

Air Malaysia set to become the point-to-point regional airport with the capacity to handle up to 15 mil passengers per year. It has 9 gates and one aero train to connect the air terminal to the high speed rail station.

The Distributive Model consist of two major compnent: the train station and the airport. The train station is connected by high-speed rail that connect major cities. This is the place where almost all the airport functions be placed.

The check-in, luggae drop off, security check and immigration clearance are taking place at the train station rather than at the airport. Therefore, airport will be liberalated from the stressful experience for passenger.

COMPONENTS IN DISTRIBUTIVE MODEL

KUALA LUMPUR

CITY

HIGH SPEED TRAIN

250 KM / 45 MINUTES

CITY

SINGAPORE

HIGH SPEED TRAIN

280 KM / 50 MINUTES

HIGH SPEED TRAIN STATION

MELAKA

COMPONENT ONE

AERO TRAIN

1.9 KM / 5 MINUTES

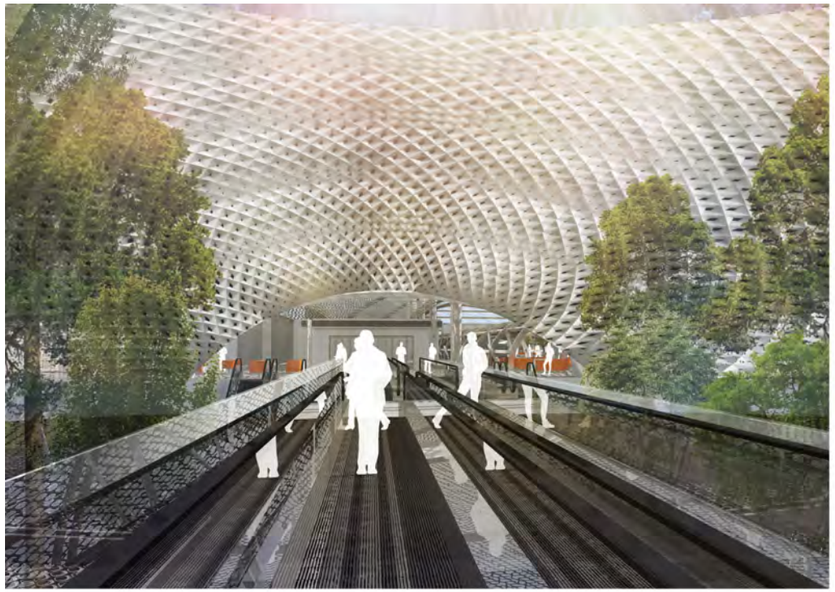
AIRPORT

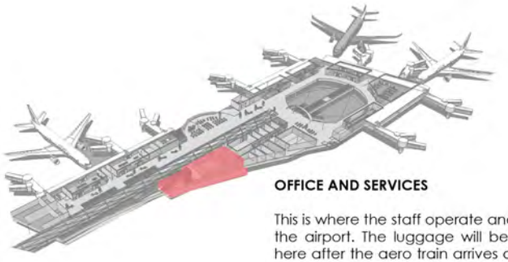
MELAKA AIRPORT / AIR MALAYSIA

COMPONENT TWO

TOWARDS THE AIRPORT

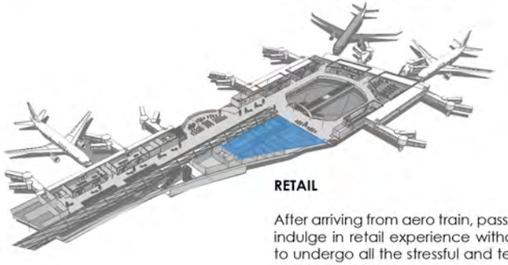
AERO TRAIN ARRIVAL





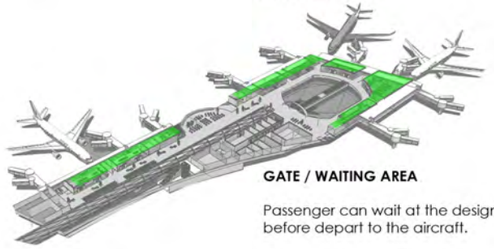
OFFICE AND SERVICES

This is where the staff operate and manage the airport. The luggage will be delivered here after the aero train arrives and will be arranged to the aircraft at the ground floor.



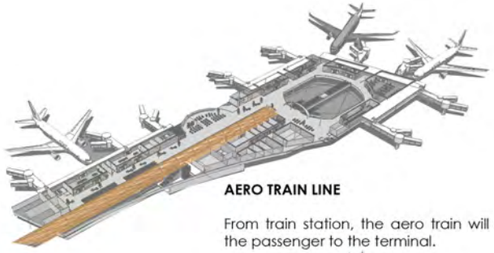
RETAIL

After arriving from aero train, passenger can indulge in retail experience without having to undergo all the stressful and tedious process in the airport.



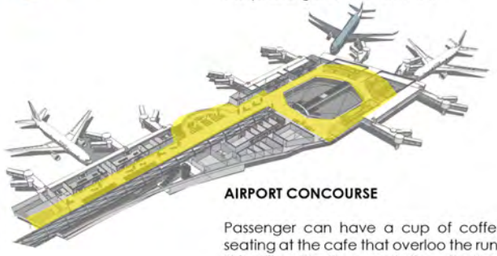
GATE / WAITING AREA

Passenger can wait at the designated gate before depart to the aircraft.



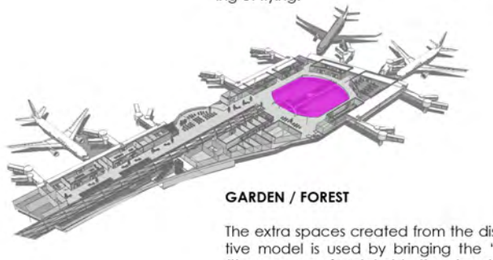
AERO TRAIN LINE

From train station, the aero train will carry the passenger to the terminal.



AIRPORT CONCOURSE

Passenger can have a cup of coffee by seating at the cafe that overloo the runway. This will excite them and stimualte the feeling of flying.

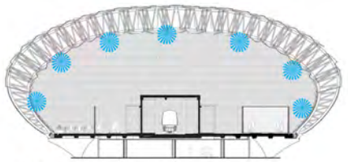


GARDEN / FOREST

The extra spaces created from the distributive model is used by bringing the 'forest (the essence of Melaka) to the airport.

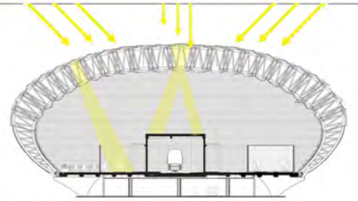
SPACE ARRANGEMENT

ENVIRONMENTAL STRATEGIES



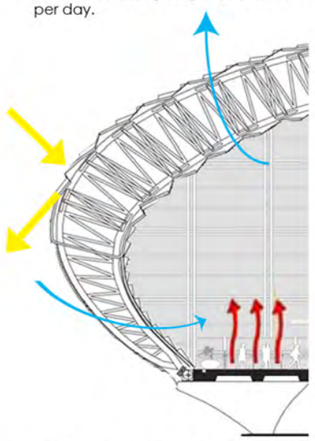
ELECTRICAL LIGHTING

The terminal needs an eletrical lighting as the weather is not always sunny and the amount of daylighting is only up to 8 hours per day.



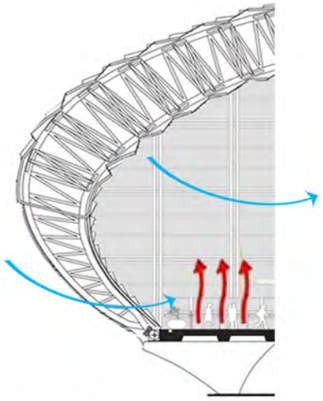
DAYLIGHTING

The building incorporates natural daylighting element through double skin facade. It aims to capitalise the sunny day in Malaysia.



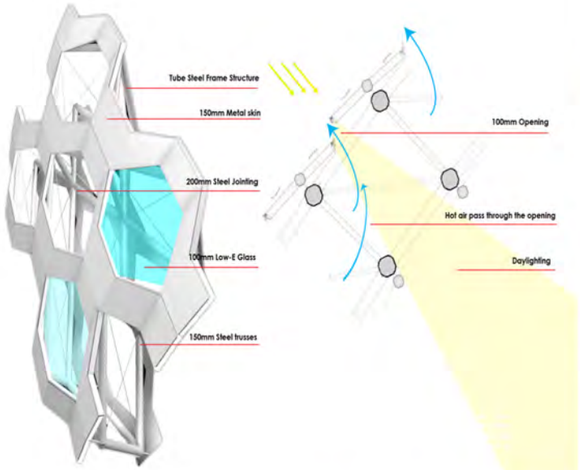
COOLING & VENTILATION DAY

Passive and mechanical extract system are in operation to remove hot stale air. Solar gain is reduced by pumping cool water through the hydronic system.



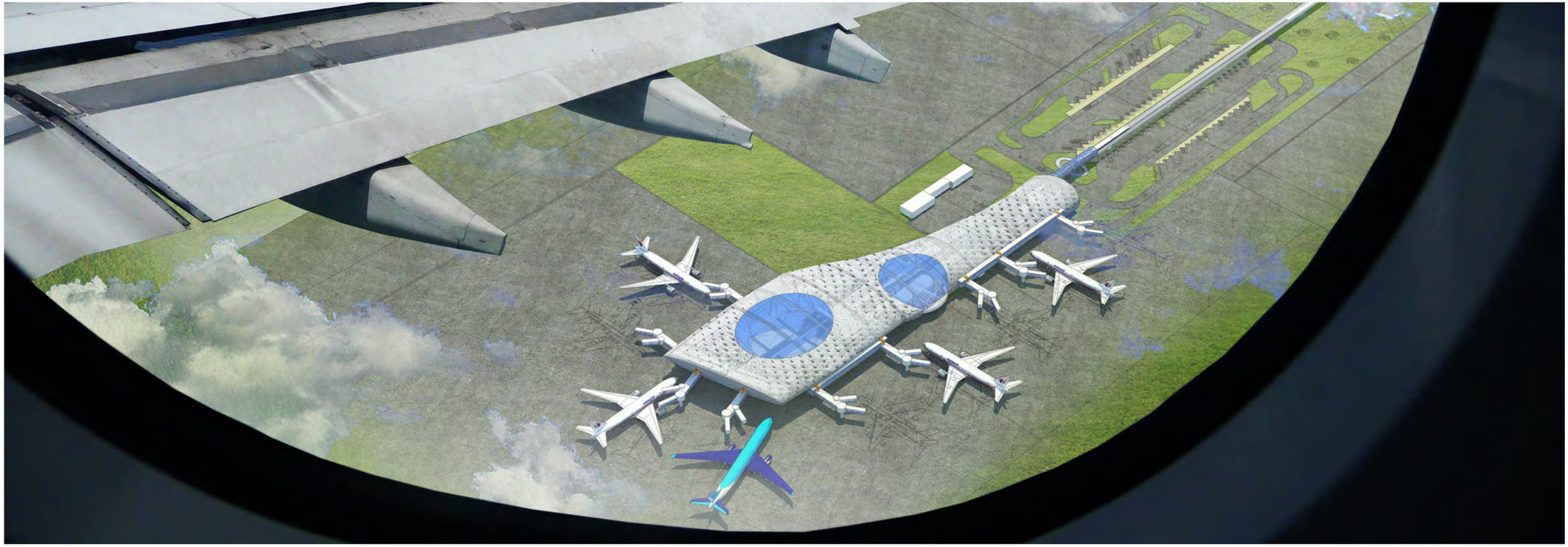
COOLING & VENTILATION NIGHT

Passive air outlets to remain open with the stack effect enhanced by the cooler external temperature, purging the built up stale air from daytime use.



With the hexagon structure of the façade as basis, the geometry of the spatial grid follows the diagonal lines of the building envelope in order to avoid obstructing visual connections through the double skin facade that can be caused by horizontal and vertical structural members. The architectural intention is to create a hexagons-shaped façade with openings that vary smoothly across the façade from fully open to almost close.

AERIAL VIEW



PROTOCELL AIRPORT

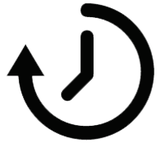
BOYANA STOEVA

Aviation is one of the fastest growing industries worldwide. With popularization and the establishment of low-cost airlines, air travel has become in high demand. Furthermore with economic growth in developing countries like China and India, there is a predicted passenger increase from 3.3 bln to 7.3 bln per year in the next two decades (according to ATAG). As a result the terminal building and ground facilities are rapidly becoming redundant and exceed their capacity before even being completed. This poses the issues of over use of land, resources and overall carbon footprint.

Due to its convenience aviation is predicted to account for 50% of carbon emissions in the next 50 year. As architects there is nothing much we can do to reduce fuel emissions, however, the airport ecosystem can be redefined in order to meet the increasing capacity needs of the terminal building and achieve the 50% reduction of its carbon footprint by 2050.

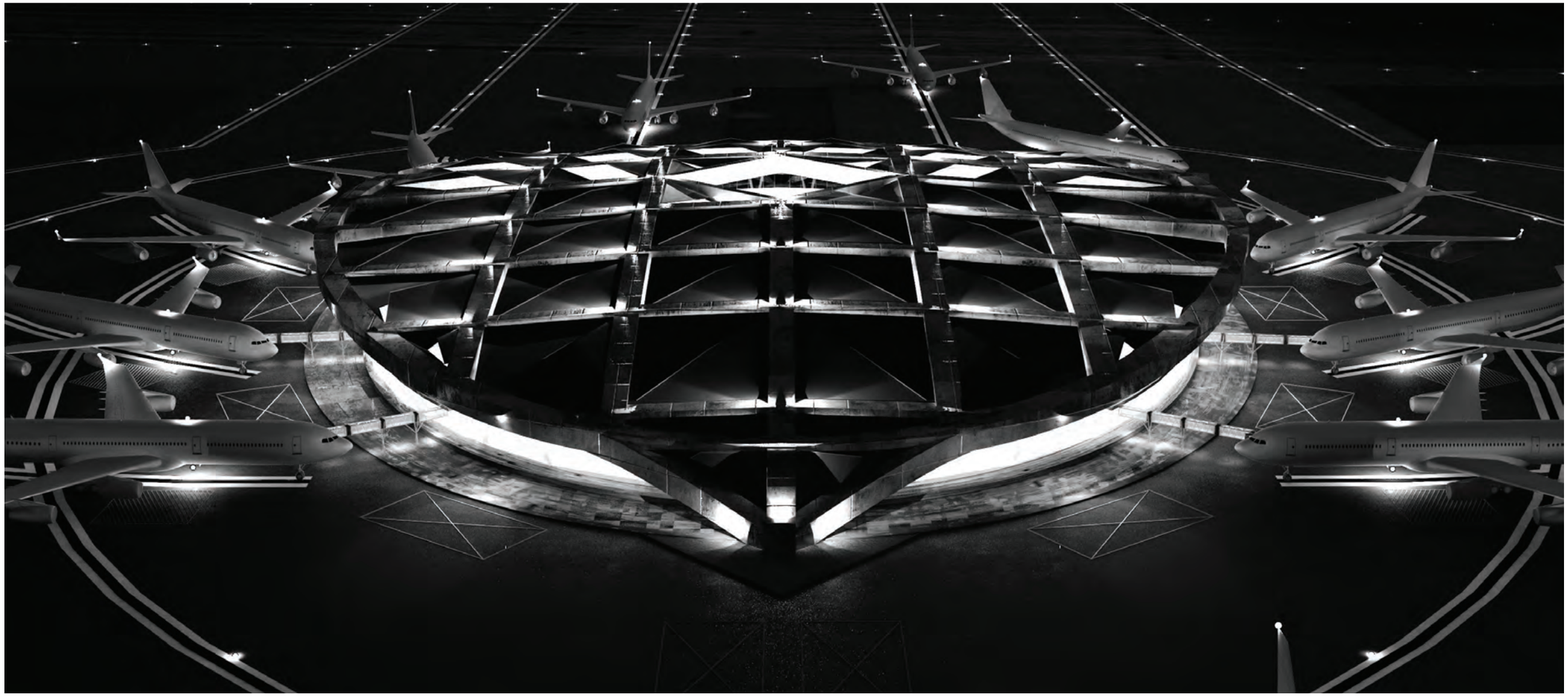
This thesis seeks to explore how the airport building can be remodeled to reduce its impact on the environment and improve the passenger's experience while at the same time retaining high capacity and economic viability.

Create an airport ecosystem that can reduce carbon footprint and use of land.



Improve airport experience through reduction of processing and transfer times.

Reduce time and costs of construction of ground facilities.



The concept primarily aims to tackle the issue of land use and habitat destruction in the process of developing the ground facilities. By reducing the terminal's size to 250m x 175m and retaining a capacity of 22mln pax/year the airport becomes a typological building that can handle capacities similar to Dubai Terminal 1. Furthermore due to its size, the design allows for 24h operation of the airport improving passenger processing, as well as reducing the enrgy demand of the building.

4BLN PAX/YEAR

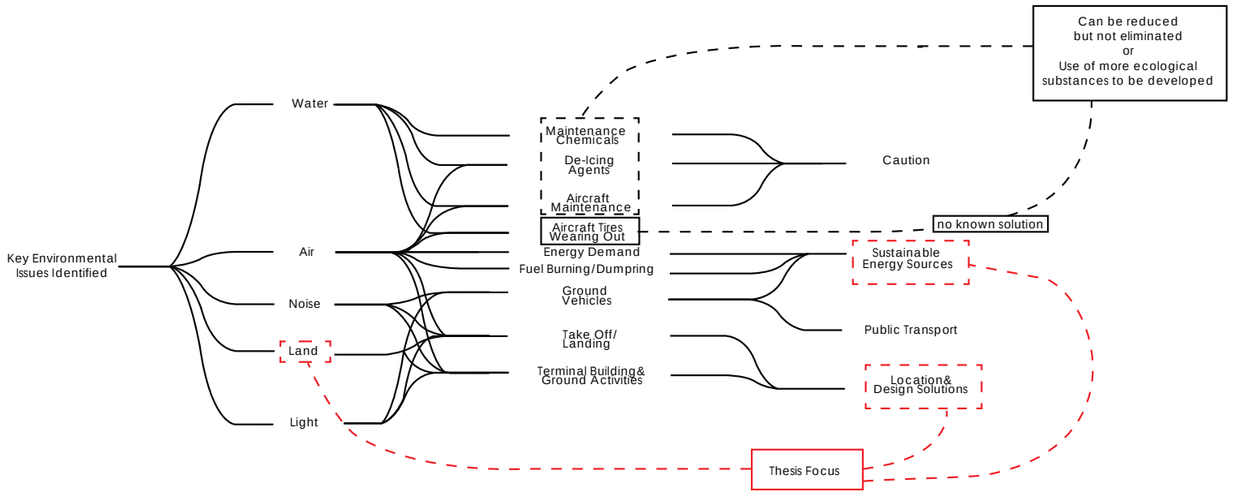
expected passenger growth in the next 20 years

4 - 16 KM2

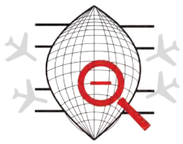
average size of airport facilities

- 50% CO2

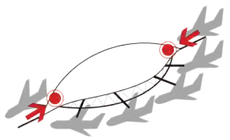
aimed decrease of emissions by 2050



Reduction of size to 250x175m

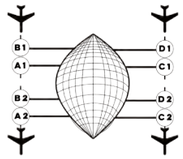


Dual entry system



Capacity of 22mln pax/year

Conveyor belt taxi-ing

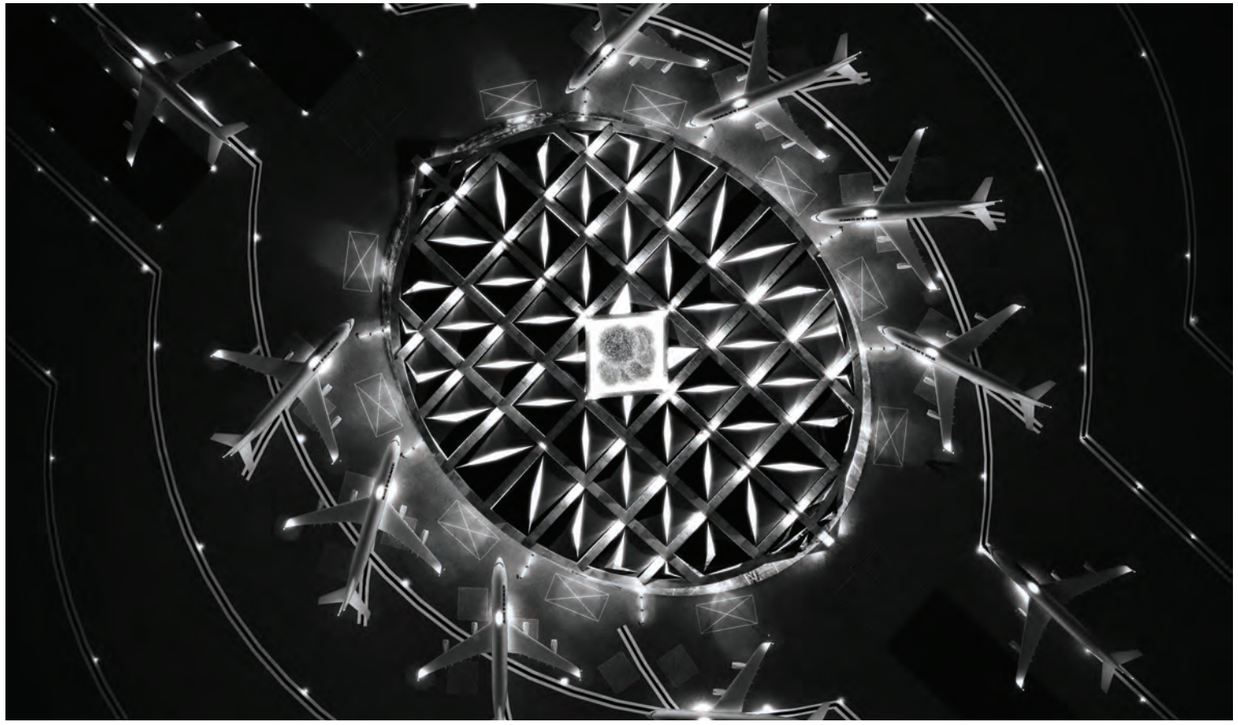


Vertical circulation

22MLN/YEAR

16/HOUR

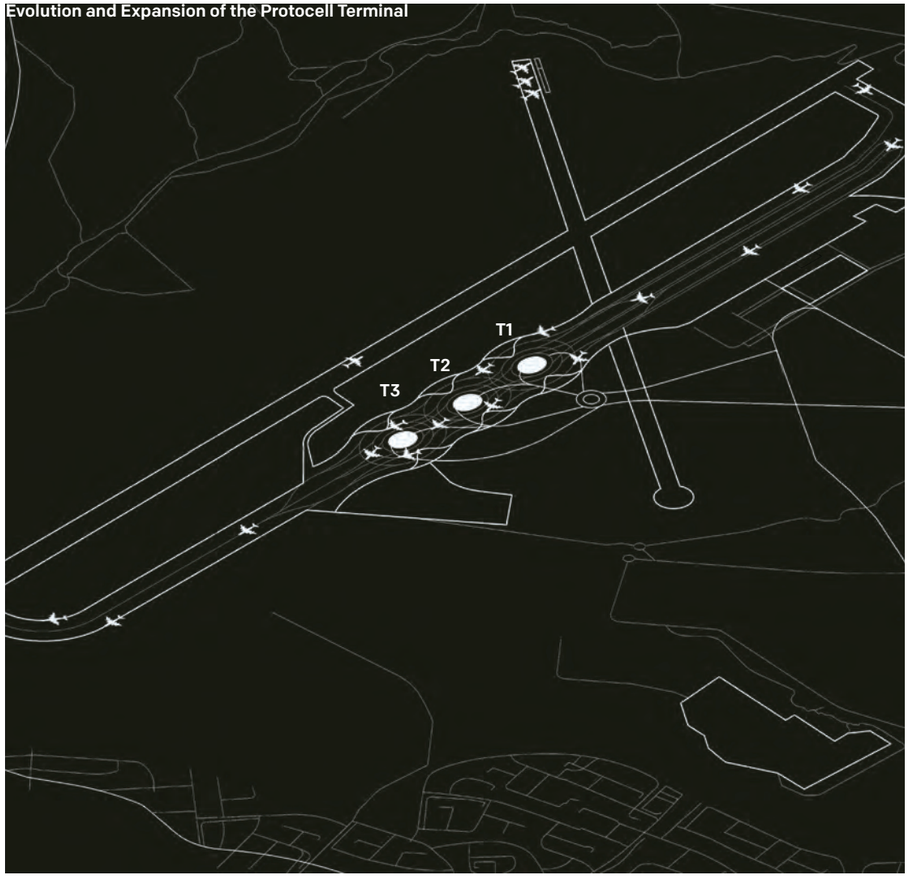
M2 160,000M2



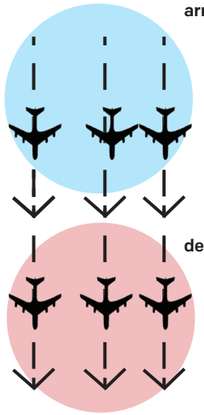
The proposal revolves around the introduction of a dual entry system that allows for a breakdown of the incoming crowds, splitting the condensatino to two designated areas each with a capacity of 11mln pax/year. Instead of the traditional lateral spread, the P.A.T actually allows for a more vertical circulation through the building, meaning that all retail facilties are located on large 12m wide ramps allowing for the passengers to swiftly pass through while retaining the possible income from stores and duty free.

The Protocell Terminal is inspired by the replication of naturall cells. Instead of expanding the building laterally and making it span kilometers, the P.A.T gives precedent for swift replication of the model along the taxi-ing lane allowing for the creation of multiple terminals with the least amount of costs and effort, as well as with small need for renewal of the infrastructure.

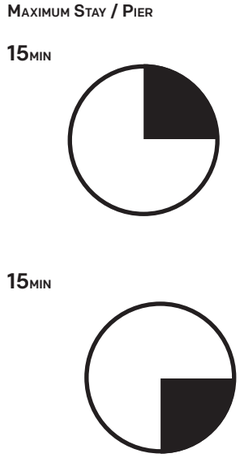
Evolution and Expansion of the Protocell Terminal

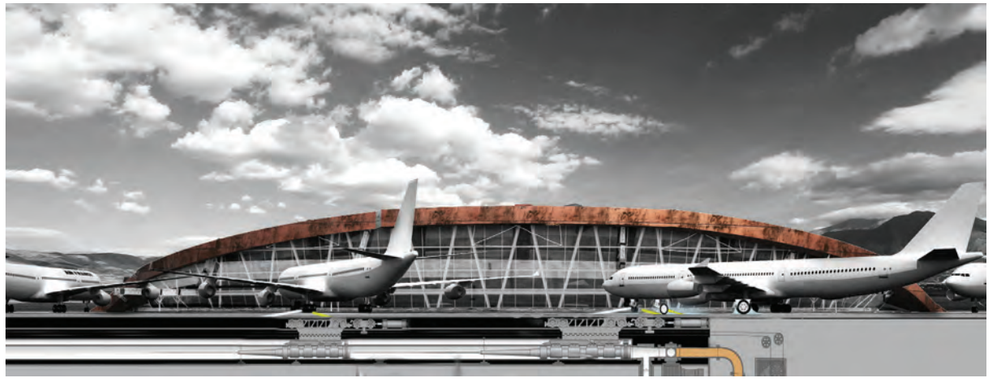


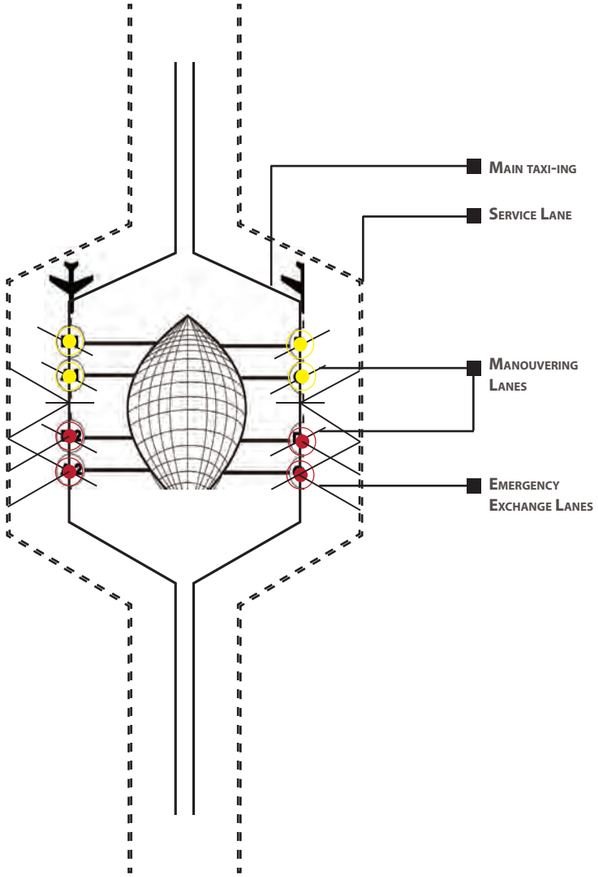
Conveyor Belt Taxi-ing Strategy



Maximum Stay / Pier





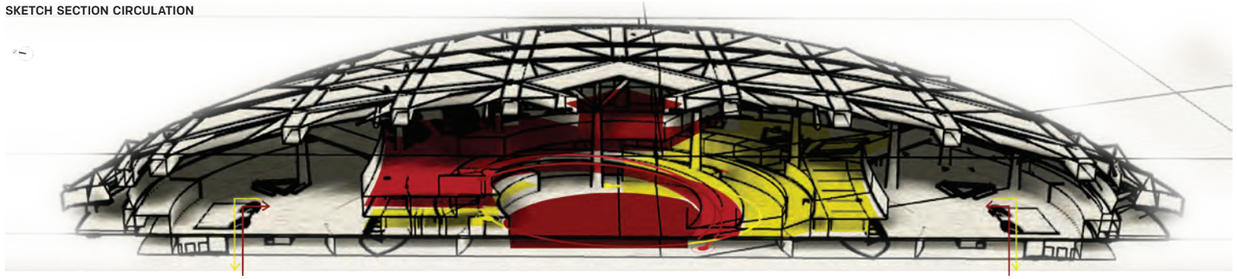


In order to improve the efficiency of aircraft circulation around the building and in order to reduce the fuel aircrafts use while taxi-ing, I have devised a new type of circulation inspired by the electromagnetic propulsion systems used in the military.

Upon Arrival the aircraft's front wheel is being strapped onto the system which then pulls it slowly through its path. The diagram on top represents the allocated stops on the piers where each plane doesn't spend more than 15min. Thus improving circulation and reducing waiting/transfer times.

With reduction of size there came the issue of condesatino of people and how to move them along. Thus my design proposes a set of ramps that span through the middle of the building and connecting arrivals and departure zones. The diagrams below present the circulation concept of the building, which shows how much of time both arrivals and departures will spend at each zone, allowing you to compare the average total time currently spent to the time you could spend in an airport prior/after your journey.

SKETCH SECTION CIRCULATION



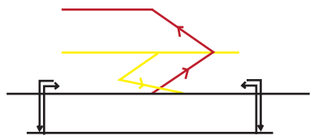
timetable
ARRIVALS

							TOTAL
CURRENT	4.0MIN	4.6MIN	9.1MIN	0.8MIN	5.9MIN	2.6MIN	27.0MIN
P.A.T	1.0MIN	4.6MIN	4.5MIN	0.8MIN	5.9MIN	2.6MIN	19.4MIN

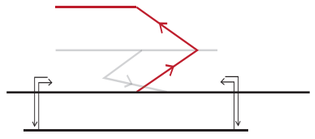
timetable
DEPARTURES

							TOTAL
CURRENT	5.6MIN	18.4MIN	2.3MIN	23.7MIN	2.5MIN	8.0MIN	74.0MIN
P.A.T	3.2MIN	8MIN	2.3MIN	15.7MIN	0.5MIN	2.0MIN	42.2MIN

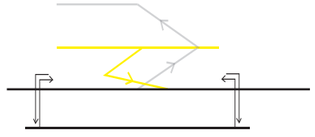
VERTICAL CIRCULATION MODEL



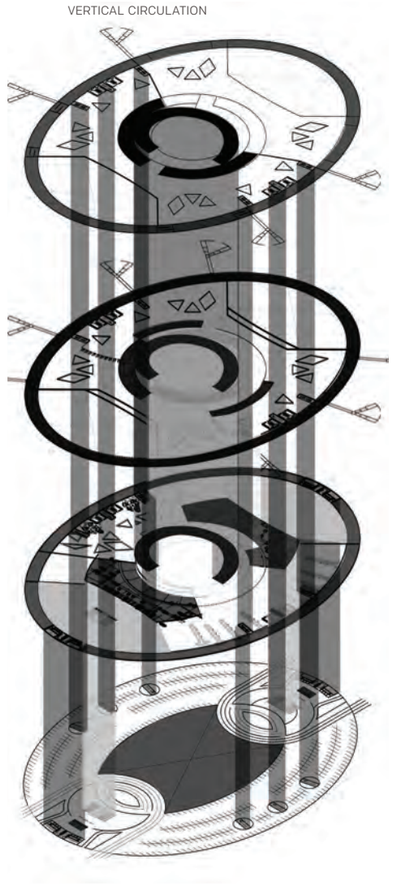
DEPARTURES



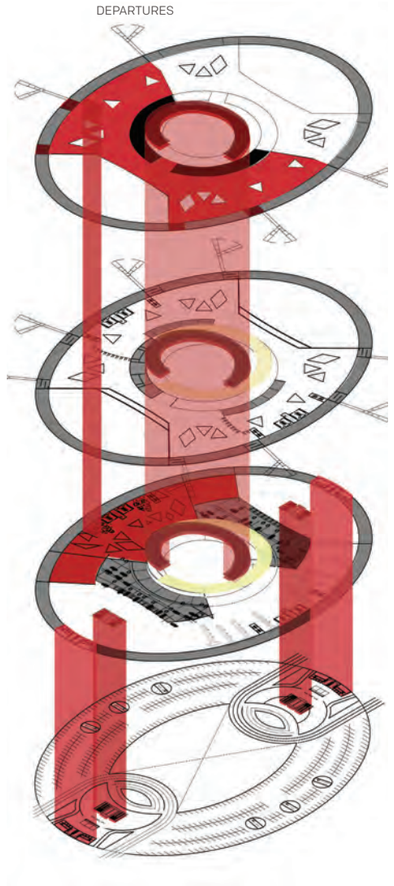
ARRIVALS



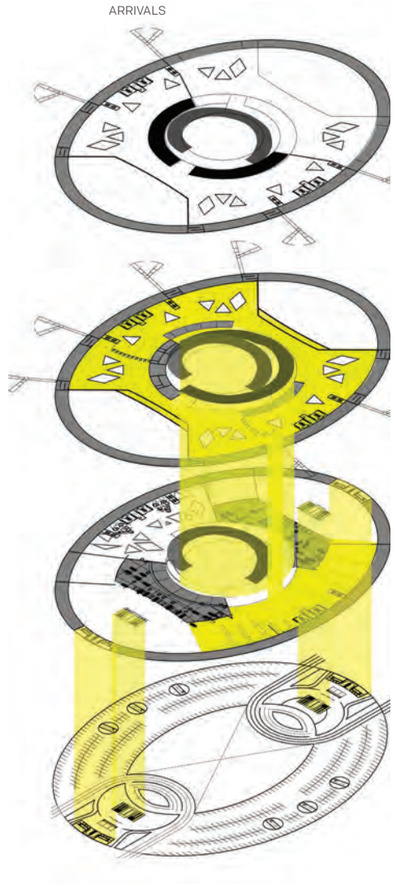
VERTICAL CIRCULATION



DEPARTURES



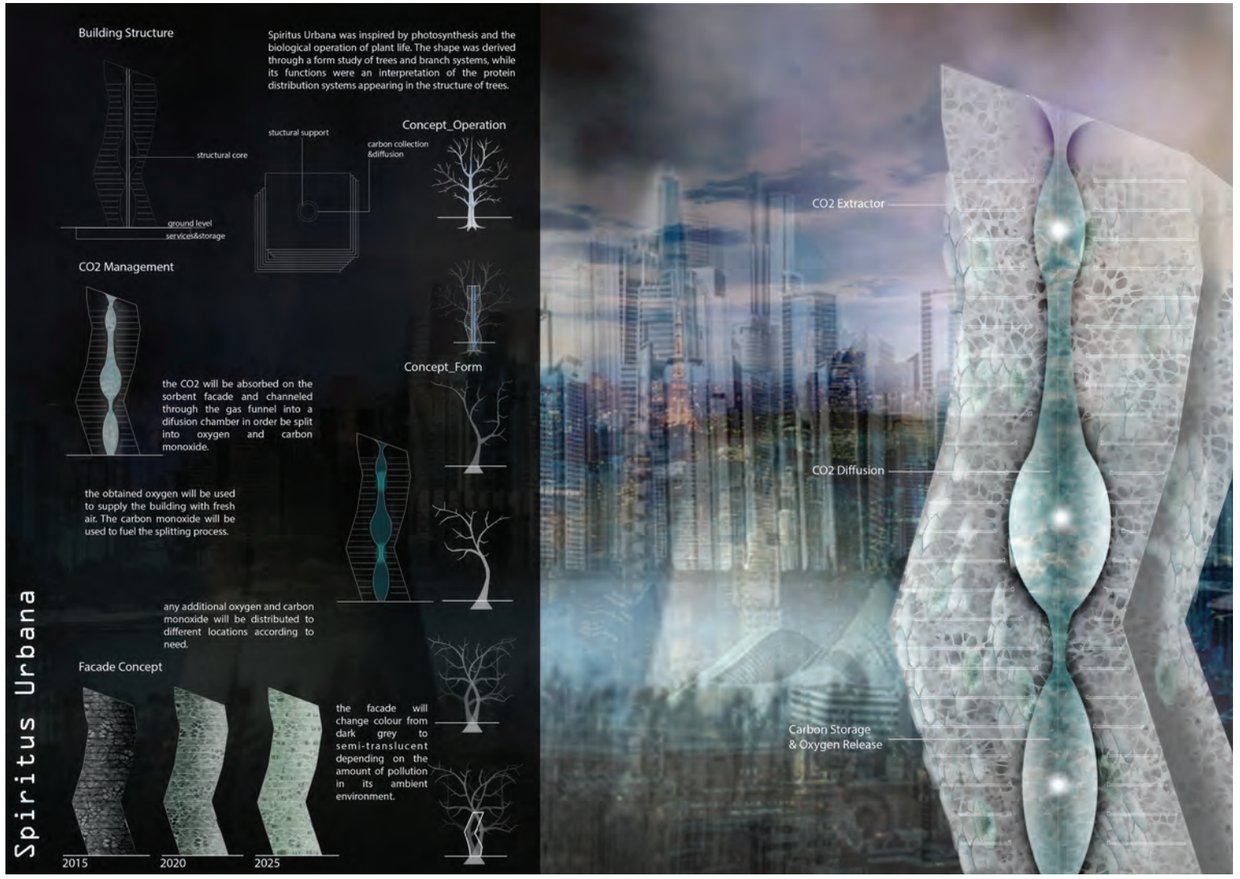
ARRIVALS



Additional Images

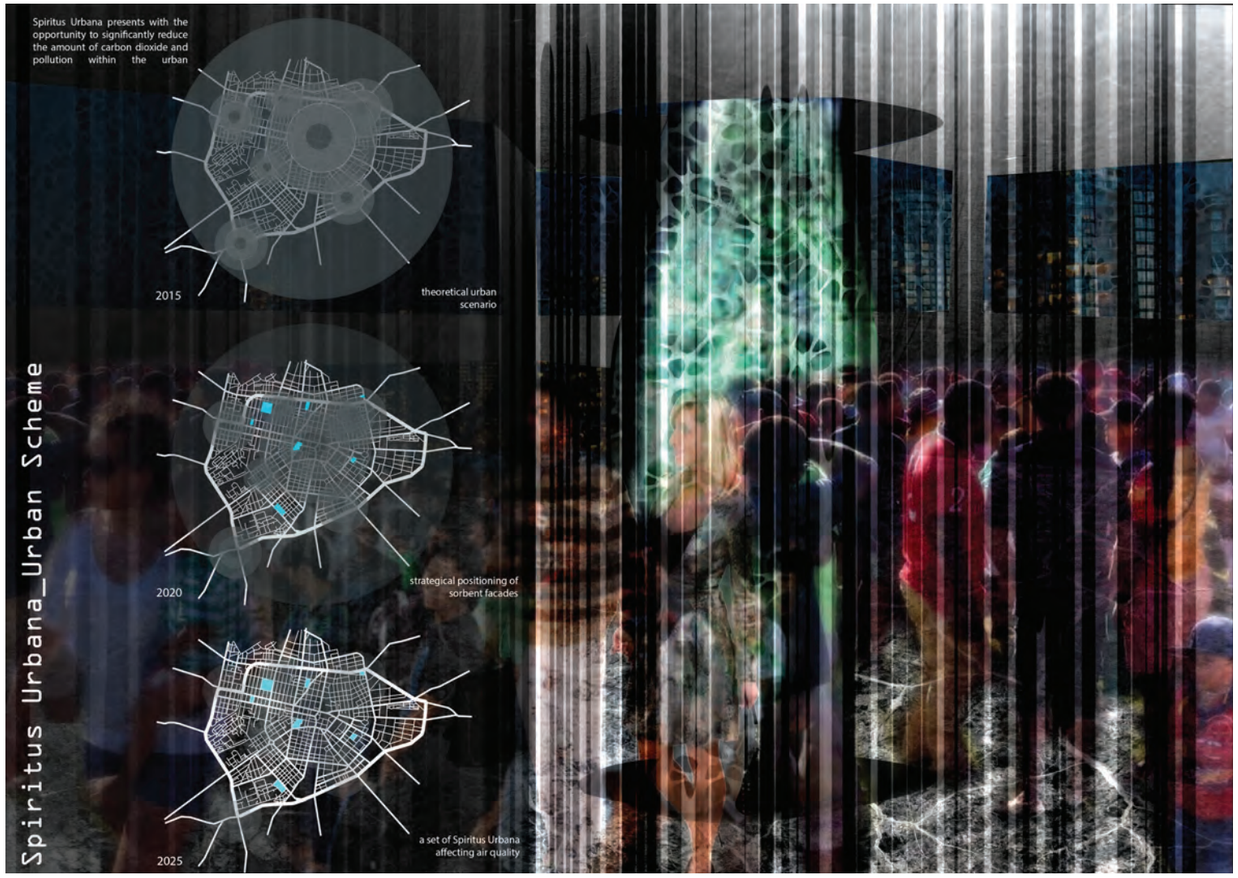
The Archi-World® Academy Awards is a two years (2013/2015) lasting competition giving young architects and architects of tomorrow coming from the entire world the chance to present their best projects in a new topic "Architecture for Tomorrow". No other architecture contest on such a wide scale has ever been organized before. The topic this year:

«Architecture of Tomorrow»



The building design was inspired by photosynthesis and the biological operation of plant life. The shape and structure were derived through a form study of trees and branch systems, while its functional characteristics are an interpretation of the protein distribution in trees.
The key feature of the project is the sorbent façade that would absorb carbon dioxide (CO2) when in contact with its ambient environment. In scientists research it shows that collecting CO2 from the atmosphere could be not only easier but cheaper and more efficient than any scheme developed to catch it at the source.

Thus the façade is a hybrid of a sorbent and an ETFE pillow that would allow for good thermal performance and efficient collection of CO2. The gas will be captured by the CO2-sorbent-ETFE façade and channeled through the gas funnel into a pressurized container in order be split into oxygen and carbon monoxide. The obtained oxygen will be used to supply the building and its surroundings with fresh air, while the carbon monoxide can be used as fuel. Any additional oxygen and carbon monoxide can be then distributed to different locations according to need.



Similar to the smog engulfing our cities the facade will change colour from dark grey to semi-translucent depending on the amount of pollution in its ambient environment. However, this will not hinder the view or the amount of daylight entering the building.
Spiritus Urbana aims to create a typology that would develop a systematic approach to urban architecture. One sustainable building does not make a sustainable city, however, a set of sustainable structures aimed at cleansing the air can put the foundations to a better urban environment.

NICOSIA AEROVILLAGE, CYPRUS

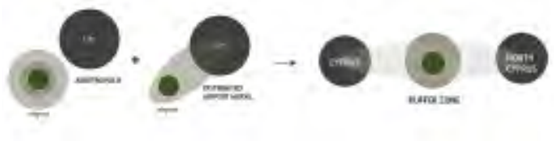
Seong Cheng Teh

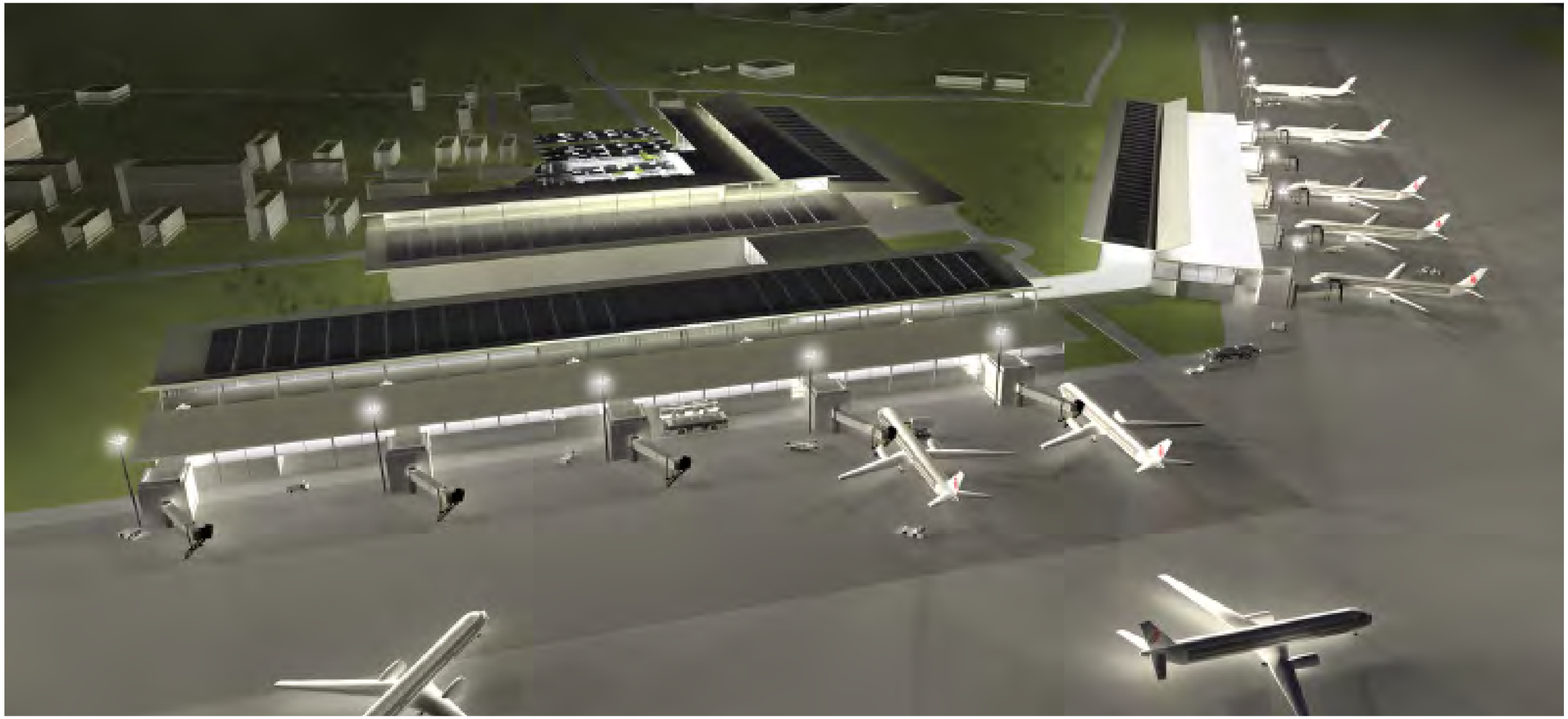
Cyprus is an island country in the Eastern Mediterranean that is partitioned into two main parts, separated by a United Nations controlled buffer zone. The chosen site for this project is the abandoned Nicosia International Airport in the buffer zone. Growth in tourism, foreign investment and international trade resulted in increasing needs of air travel in Cyprus; therefore a new airport with capability to grow in future is needed. This may even provide an added incentive for progress on a peaceful resolution of Cyprus dispute through non-political approach.

The buffer zone links a unique succession of landscapes and topographies and constitutes a cross-section of the many habitats and ecologies of the island. By acknowledging the political situation on Cyprus island, this provides an opportunity to bring life back into the long abandoned buffer zone; turning it into a neutral zone - the third country on the island where it is free of the disputes and political issues of both side.

The concept of Aerovillage is developed as the foundation for a lively and sustainable development around it within the buffer zone. By retaining majority of existing buildings including the old airport, this can significantly contribute to the sustainability of the development by avoiding the demolition and disposal of existing building.

Proposed airport is located in Aerovillage which is a sustainable development using existing buildings and infrastructure to accomodate non-aviation activities; allowing the airport to be as compact as possible. The focus on flexibility on the design strategies allows the development of Aerovillage to start in relatively minor scale with the capacity for continual growth and future phased development as demand increases.





New Airport Typology

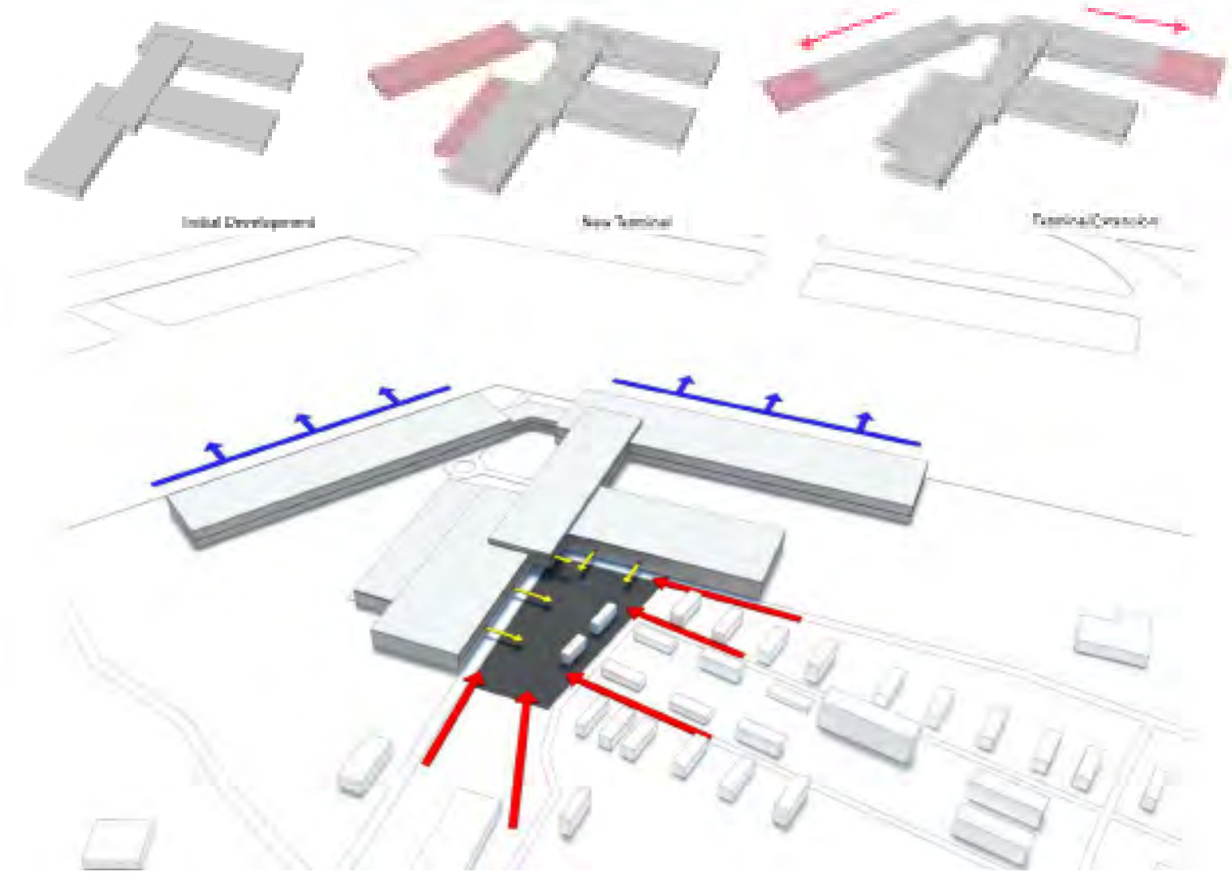
Converting the buffer zone into a third country allows the airport to be more effective and efficient, preventing conflicts between both sides. It is a new airport model which is the combination of aerotropolis and distributed airport model. Locating in the neutral buffer zone, the airport can be accessed from both sides through the immigration control points established in certain points along the buffer zone.

Site Strategy

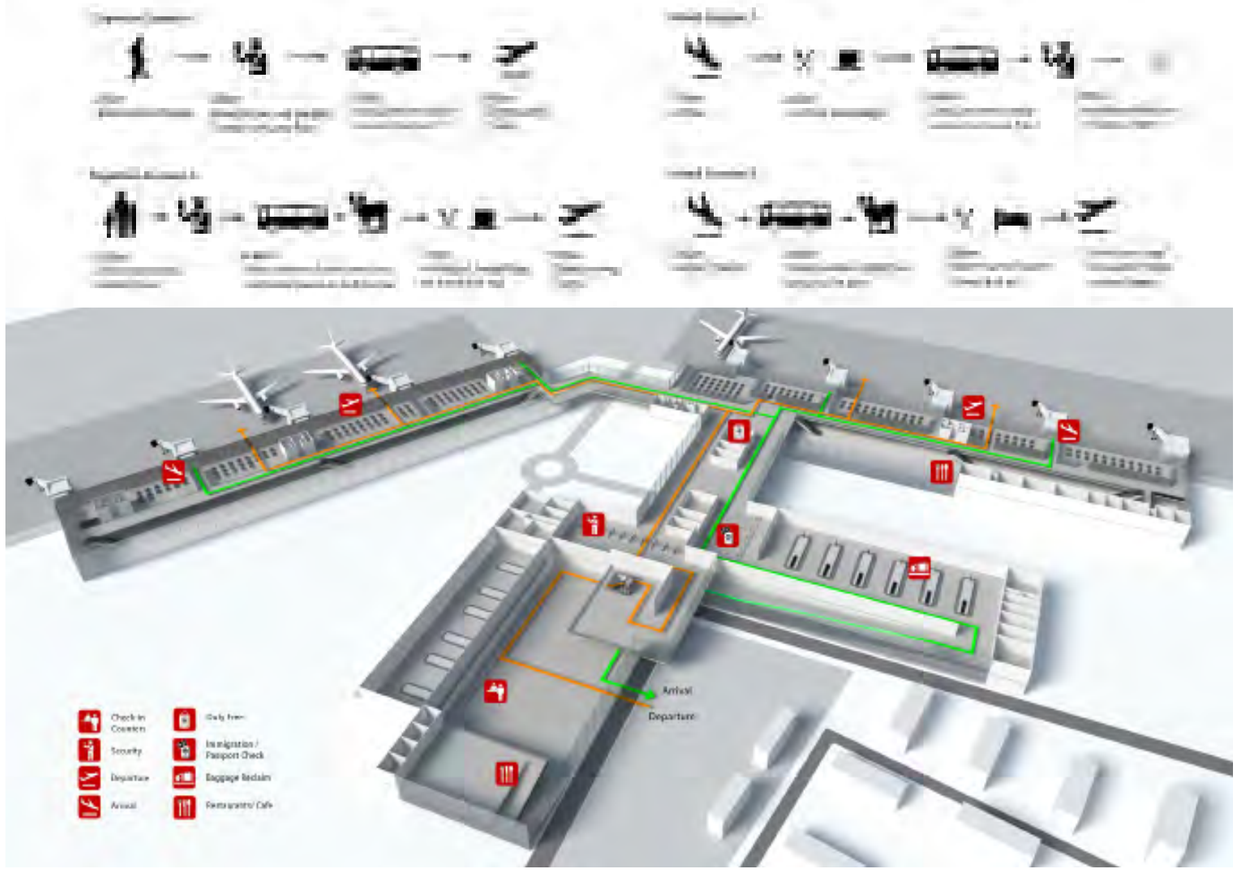
In recognition of environmental benefits of retaining rather than replacing existing buuldings, the buildings on site will be refurnished and reused for redevelopment of buffer zone. The overall strategy seeks to reinforce the ecological, socio-economic and political benefits of both Greek and Turkish Cyprus; providing an alternative solution to ease the political tension in Cyprus.

Airport Form | Phased Developments

The form of the airport is derived based on the consideration of existing airport, existing runway orientation, and development of Aerovillage using surrounding buildings/ infrastructures. The concept of AeroVillage is to integrate phased development of the airport that allows future growth. By seperating the flight interface and passenger processing, this will allow for future development or expansion without any major disruption of ongoing airport operation.



Different Scenario for Arrival & Departure Passengers

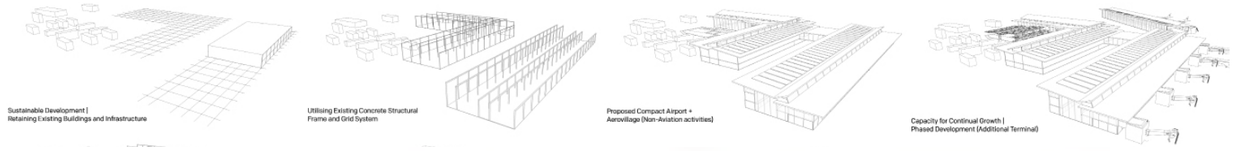


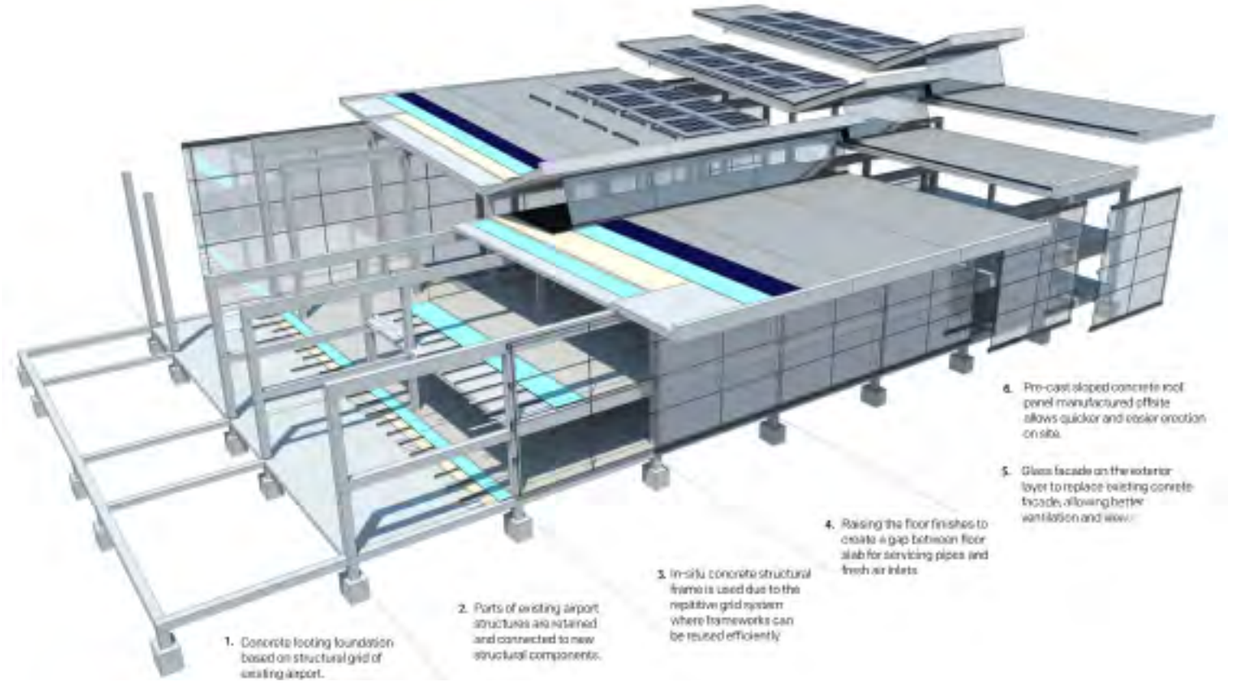
Spatial Arrangement

The layout of airport is straight forward and simple; seperated into processing in main airport building and flight interface in the terminals, in order to increase the efficiency of passenger and baggage flows.

Structural Strategy

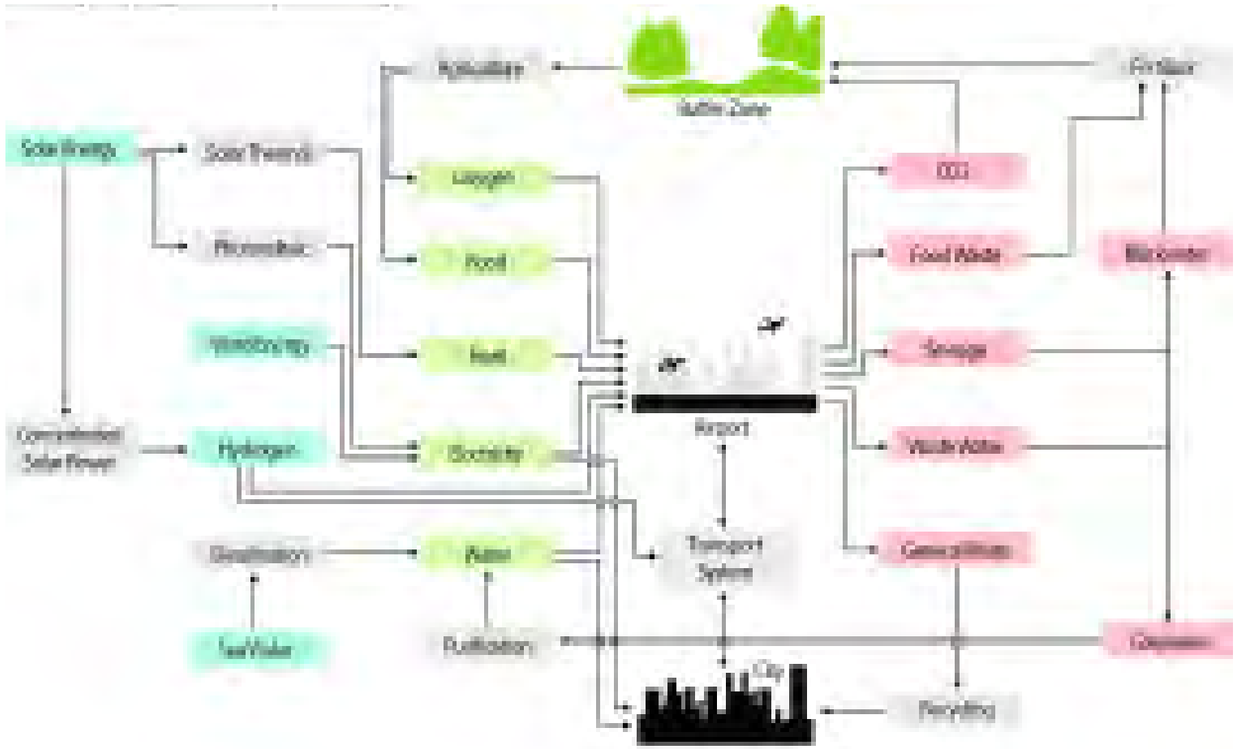
Since the concrete frame of existing airport is still sufficiently robust and the structural grid system is effiecient for future expansion, it is suitable to be retained and reused for construction of new airport. This can significantly contribute to the sustainability of the development by avoiding the demolition and disposal of the structure, and construction of a new replacement resulted in immense CO_2 savings.





Double Height Space in Terminal Building

Public Square that connects Aerovillage & Airport



Closed-loop Ecological system

The ecology of AeroVillage is developed based on the principle of Craddle to Craddle. The whole ecology system is close-loop; reducing the impacts on surrounding environment. Sustainability and self-sufficiency are key principles in the development of AeroVillage.

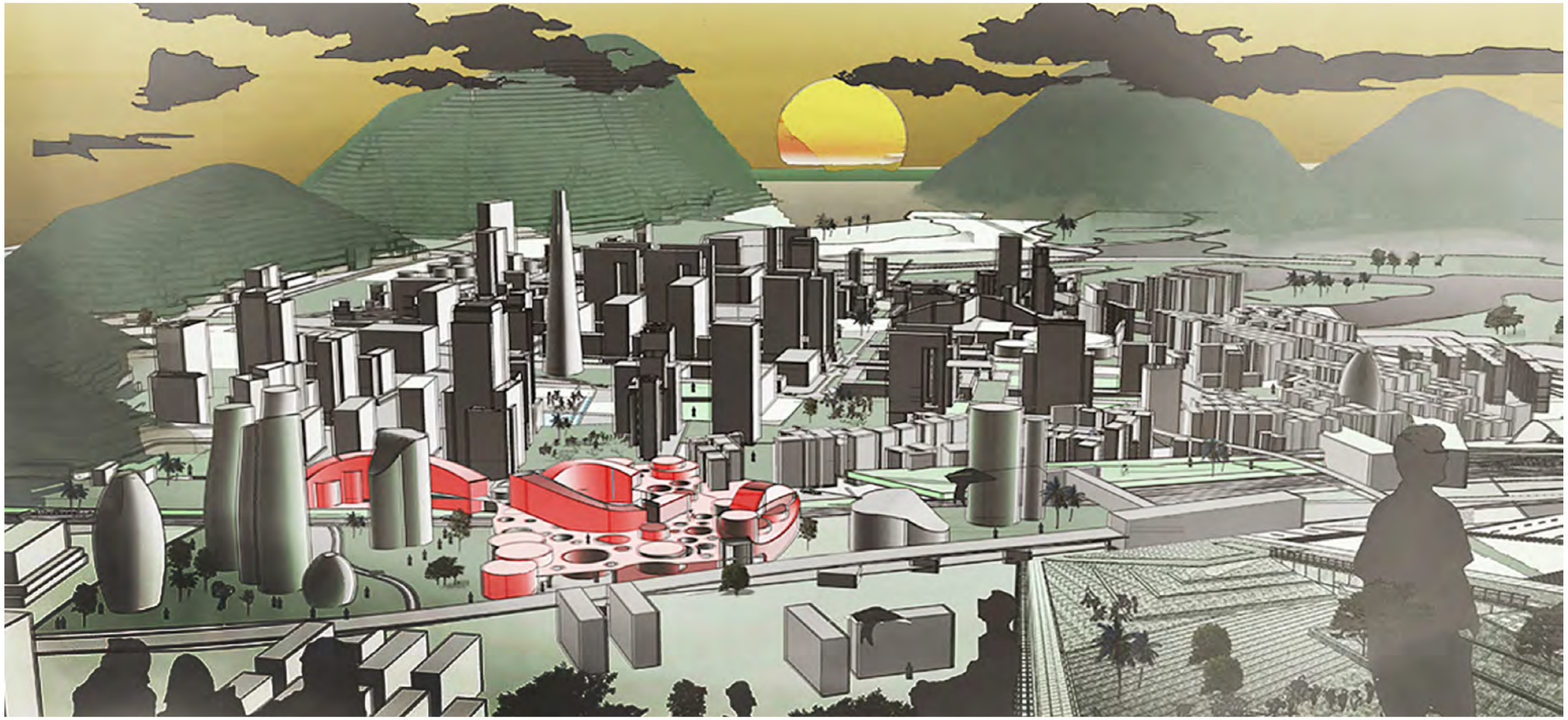
Main Hall in Airport Building for Passenger Processing

View of Arrival Hall into Aerovillage Public Square

qed global thesis // LAND

Shenzhen, the site for qed LAND, stands as a symbol for the power of rapid urban change, shaped over mere decades by the flow of people, goods and ideas. Early masterplanning formed part of group enteries to the international Schlindler Award. Through a comparative and collaborative approach students contributed their ideas for their Shenzhen of the future, addressing some of the most urgent environmental, social and economic issues that societies face today and tomorrow.

Considering the interface between mobility and the city, student thesis projects address the challenges presented by globalisation and urbanisation, through the vehicles of higher education, migrant housing and health, logistics and biological research institutions. Analytical design proposals use mobility as both a catalyst and coduit for urban change related to Shenzhen and its local and regional relationships in the Pearl River Delta. The interface of mobility networks within the built environment of the city and region must be considered in a global context.



RESOURCES TRANSLOCATION

Logistics Research Center in Shenzhen, China

Xlinyue Yang

The site locates in the Sungang- Quingshuihe (SQ). It is a neighborhood of approximately 2.5 square kilometers, locates in Louhu, one of the oldest districts in the east of Shenzhen.The urban environmental system is proposed to deal with resources, energy production and energy efficiency within the context by taking consideration of possible future scenarios and the micro climate.

As proposed, The site is divided into five main fields to decrease the distance to reach daily facility and to create walkable field. Each of the fields acts like a mini city which contains a central educational center to improve the quality of living and to promote entrepreneurship and technology. In addition it plays a very crucial role in securing economic and social progress.

Concerns about the environmental impact of urban freight transport are growing along with population density and urban congestion. Thankfully, awareness of the need for sustainable urban development is also on the rise and the coordination of resources and logistics is receiving greater attention. The concept of City Logistics has been proposed to address these challenges. It's time to create real visions for City Logistics, which presents us with three targets: mobility, sustainability and livability.

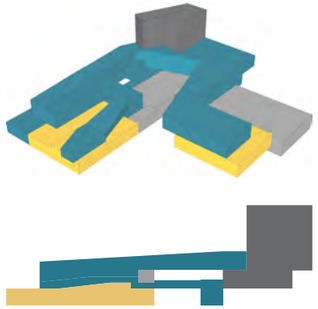
Under the goal, the purpose of this design is to develop an operational model for logistics higher education management, aiming to provide a research center to drive local economy by dealing with outstanding resources translocation, terminal form of food retailing and self-engine cooperative education.

The Logistics Research Center contains two warehouses for training of food processing and food packaging, design studios for the design of logistics facilities, apartment of computational training and spaces for logistics competition. Fresh foods that produced by students in warehouses are served in the food market, retail market and restaurants. Dormitories are designed for students, invited professors and workers who worked in the logistics company in the building. The building also provides a gym and a theatre that open to both that public and the building users.

SQ-QSH logistics park is the only which is in the center of Shenzhen. Although there are many logistics industry leaders now in site, but the logistics industry as a whole in Shenzhen is still in medium and small scale, scattered and in disorder. Various modes of transportation are in poor convergence. Inventory backlog is too big and logistics facilities are repeatly used.

1		2		3
Early industrialization	⇨	Late industrialization	⇨	Age of information
Production Processing industry		Distribution of goods relays on the production and sales		Logistics becomes the main income of enterprises

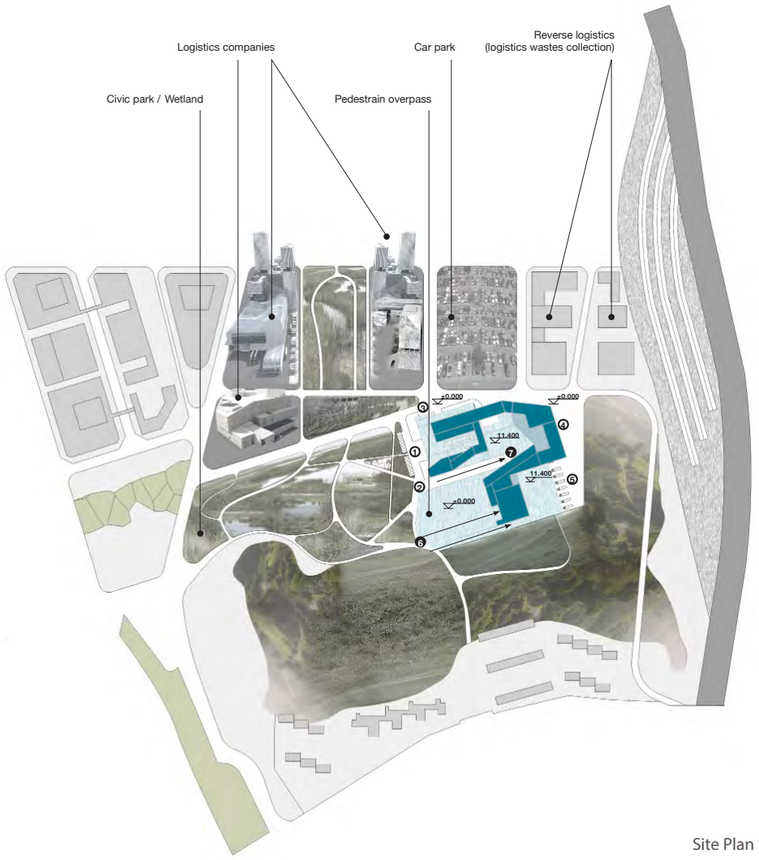
Program Arrangement



- Education / Offices
- Food market / Theater
- Warehouse / Logistics
- Dormitory

Vertical circulation / Ground floor circulation

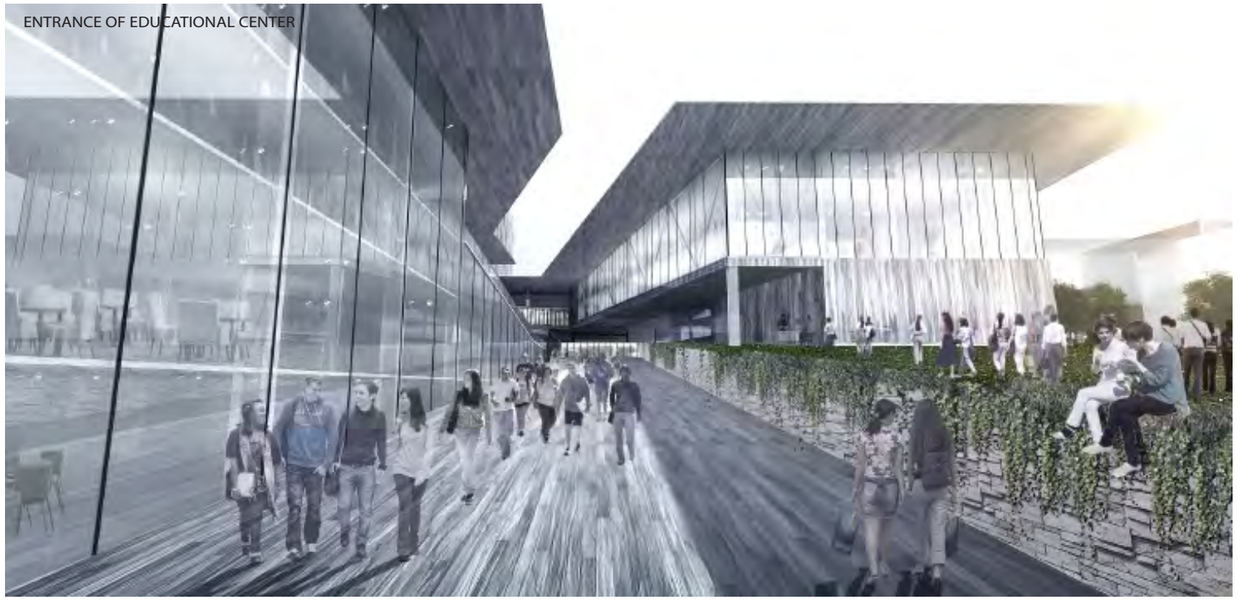
- Students / Teachers / Citizens
- Students / Logistics workers / Employees of the logistics company
- Goods



Site Plan

Seperated entrances
1 - Main entrance for studenhts / visitors / food buying customers
2 - Entrance for workers of food market and furniture retail
Entrance for workers of logistics companies
3/4/5 - Entrance of goods / logistics workers
6 - Entrance of actors and speakers / goods and facilities
7 - Entrance of audiences and sports players

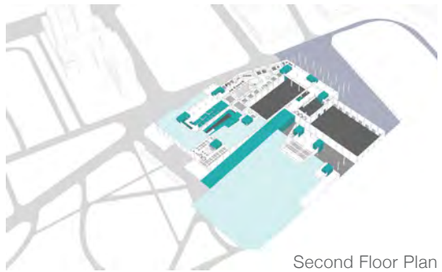
ENTRANCE OF EDUCATIONAL CENTER



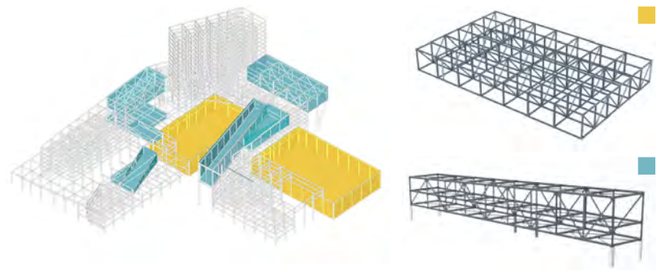
COURT YARD

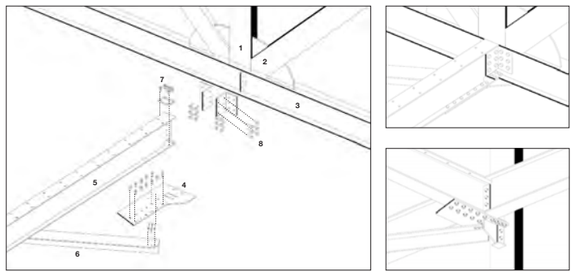
Ground Floor Plan

First Floor Plan



Second Floor Plan



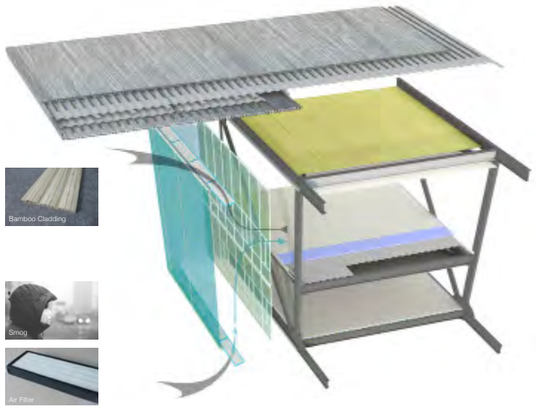


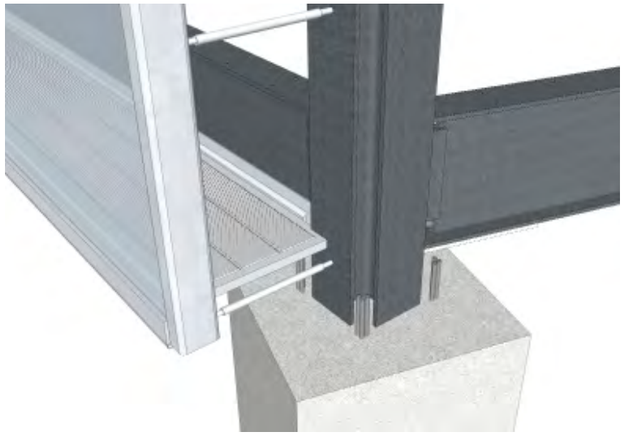
1. 400x200mm Steel column
2. 400x200mm Steel inclined beam
3. 600x200mm Main steel beam
4. Steel plate hitch
5. 600x200mm Second steal beam
6. 400x200mm T steel beam / Inclined beam
7. r= 15mm Chemical bolt
8. r= 25mm Chemical bolt

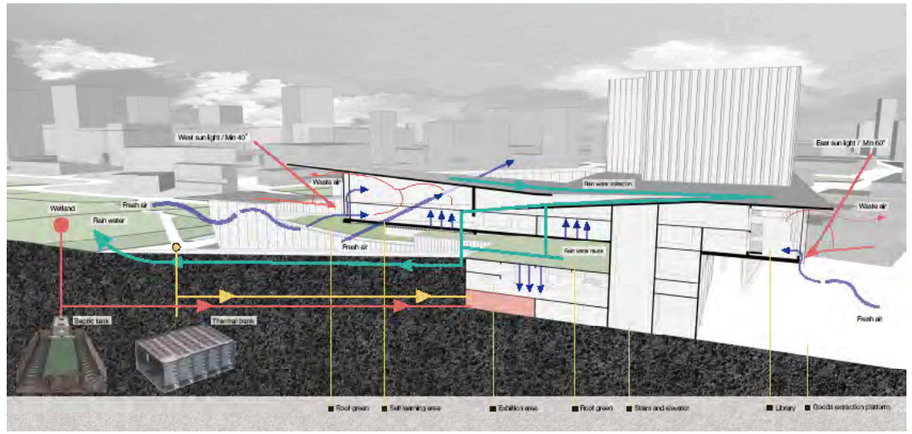
Wetland has a rich ability to recover and thus can perform as a green lung. As the wetland is located at the west of the building, the eco-cycle is generated. Waste water is gathered from the roof and green platforms of the building, and is flowing into the wet land without using extra passive mechanism. Food waste is collected from the building and used to provide gas which is used in the restaurant , kithchens in dormitories and labs in the research center.

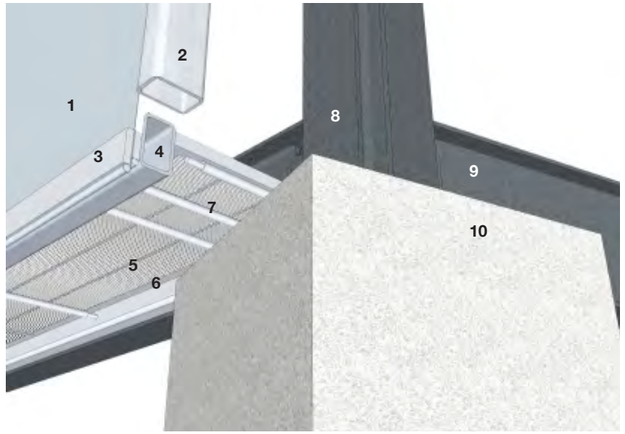
RESTAURANT

DORMITORY









1. One layer ETFE film outer facade
2. 400x200mm Steel square vertical support of the ETFE facade
3. Steel sealer
4. 400x200mm Steel square horizontal support of the ETFE facade
5. Air filter
6. 600x200mm Steel square horizontal support of the ETFE facade
7. Steel components
8. 600x600 Steel column
9. 800x200 Steel beam
10. Concrete column

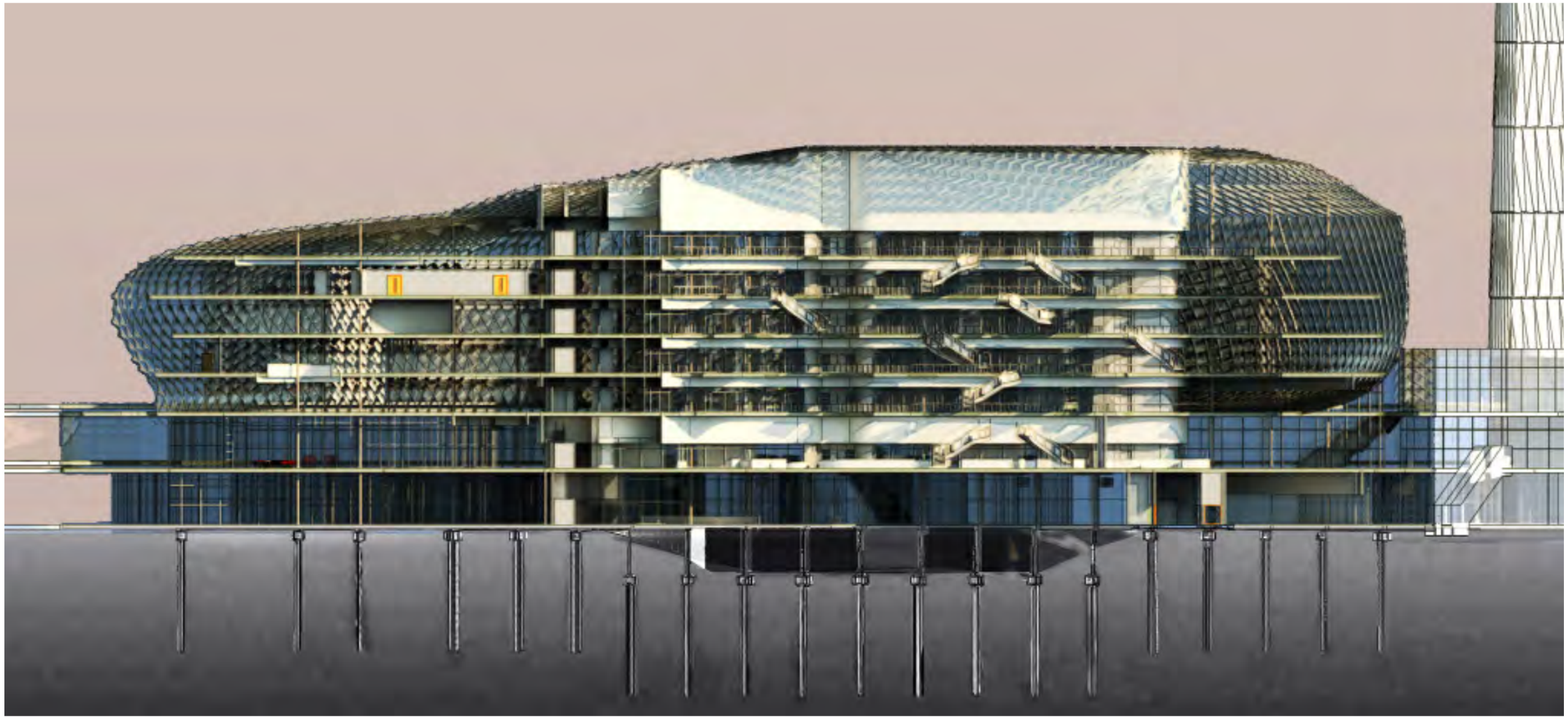
Su Song Innovation Hub

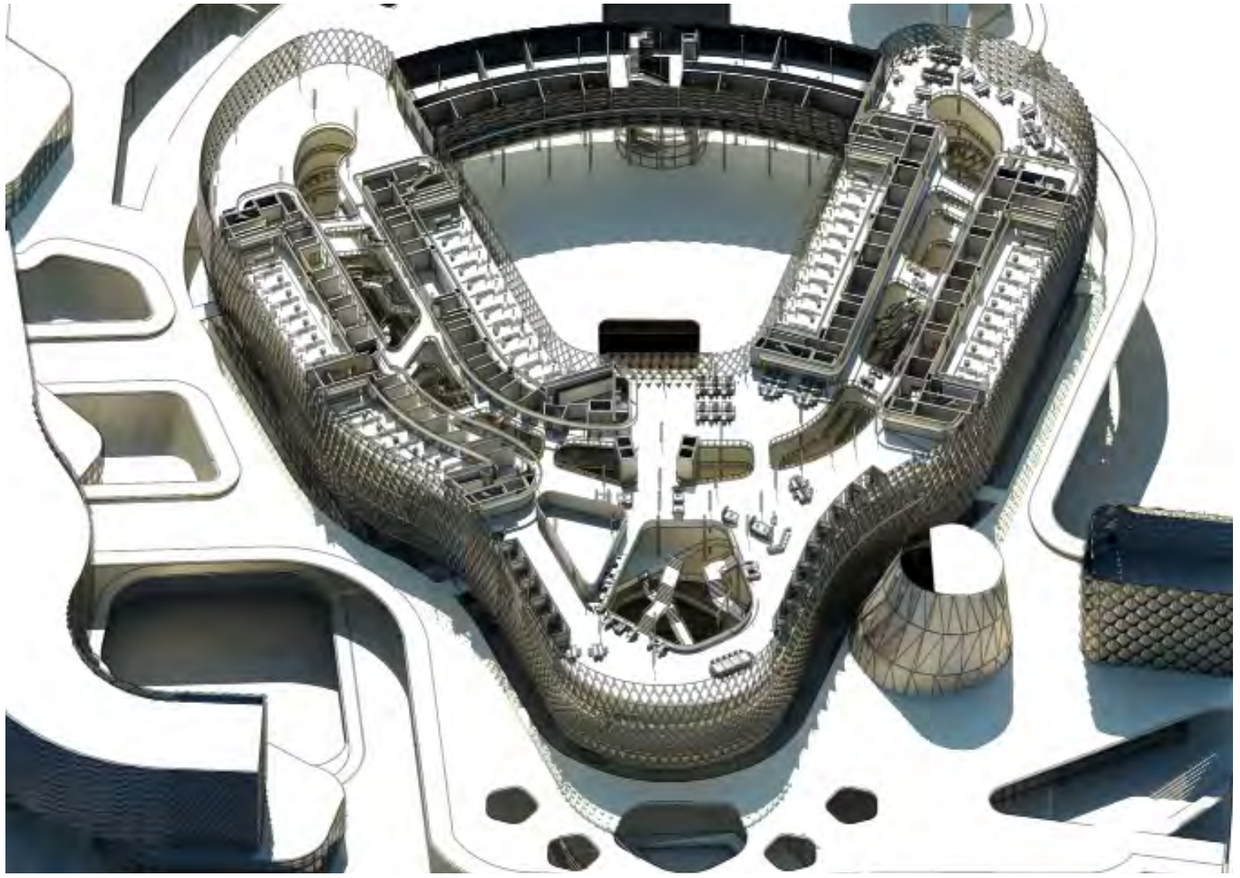
Steven Anton

The institution positions itself as part of a campus as a centre for experimentation in the field of clean technologies on a scale to meet the challenges related to a dense urban environment, promoting new types of learning styles and operating as an educational incubator. The campus will contain cross disciplinary fields as varied as:

advanced materials technology
biotechnology
solar power and hydrogen research

The institution will take part in the process of transition for the traditional role of Shenzhen as an area for high tech production to one of high tech knowledge creation. The institution aims to set partnerships in motion and to mobilise those involved in the economic and scientific fields to generate growth in these sectors by encouraging innovation in the region and attracting new investors. This must be achieved while preserving and improving the quality of life of the inhabitants of the Qingshuihe district of Shenzhen through a significant contribution to the issues of climate, air water and noise. Shenzhen's ambition is to become a leader in cleantech and in the development services for manufacturing, transport, construction and urban services markets.





The complex will act as a catalyst or seed that will start to grow and create new value and allow new functions to develop as it expands outward to regenerate the city. The complex will become a singular object with high visibility and landmark character that will act as a visual reference from both rail track and highway entrances to the city. Hands-on learning is embraced through an engaging and collaborative education environment. The building integrates teaching and research laboratories in addition to manufacturing and engineering research laboratories.

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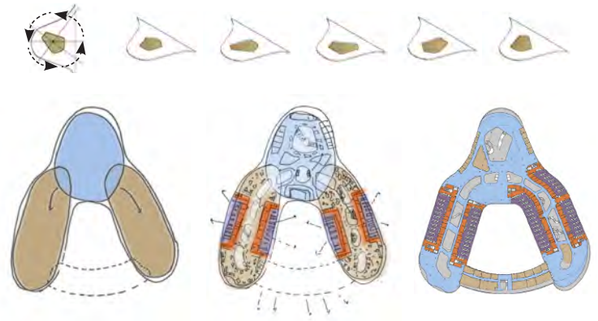
atrium shading strategy



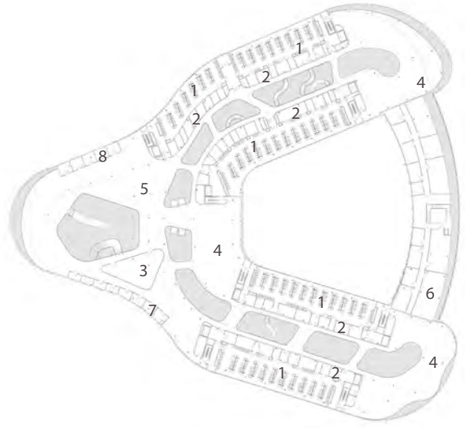
concept | zoning | typical floor plan

atrium/ multi-purpose space | write-up areas | laboratory | laboratory support

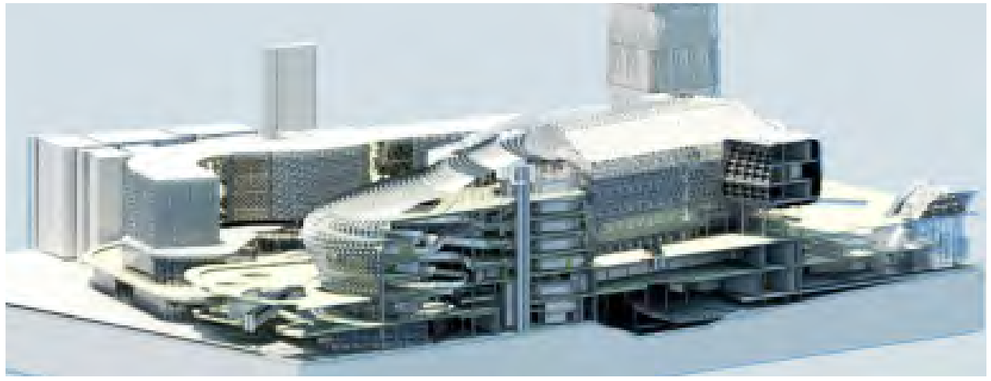
Ground Floor Plan

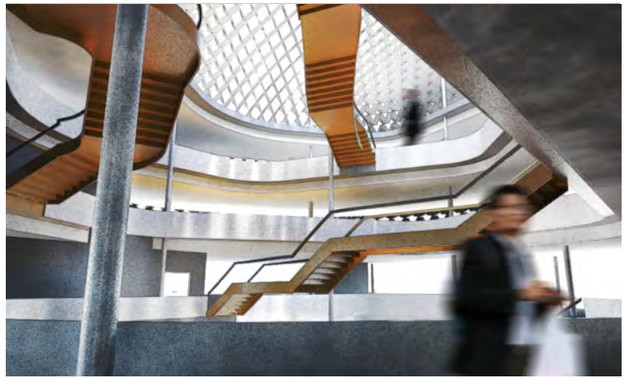
key

1. laboratories
2. lab support
3. computation suite
4. write-up spaces
5. study spaces
6. office space
7. meeting rooms
8. small classrooms



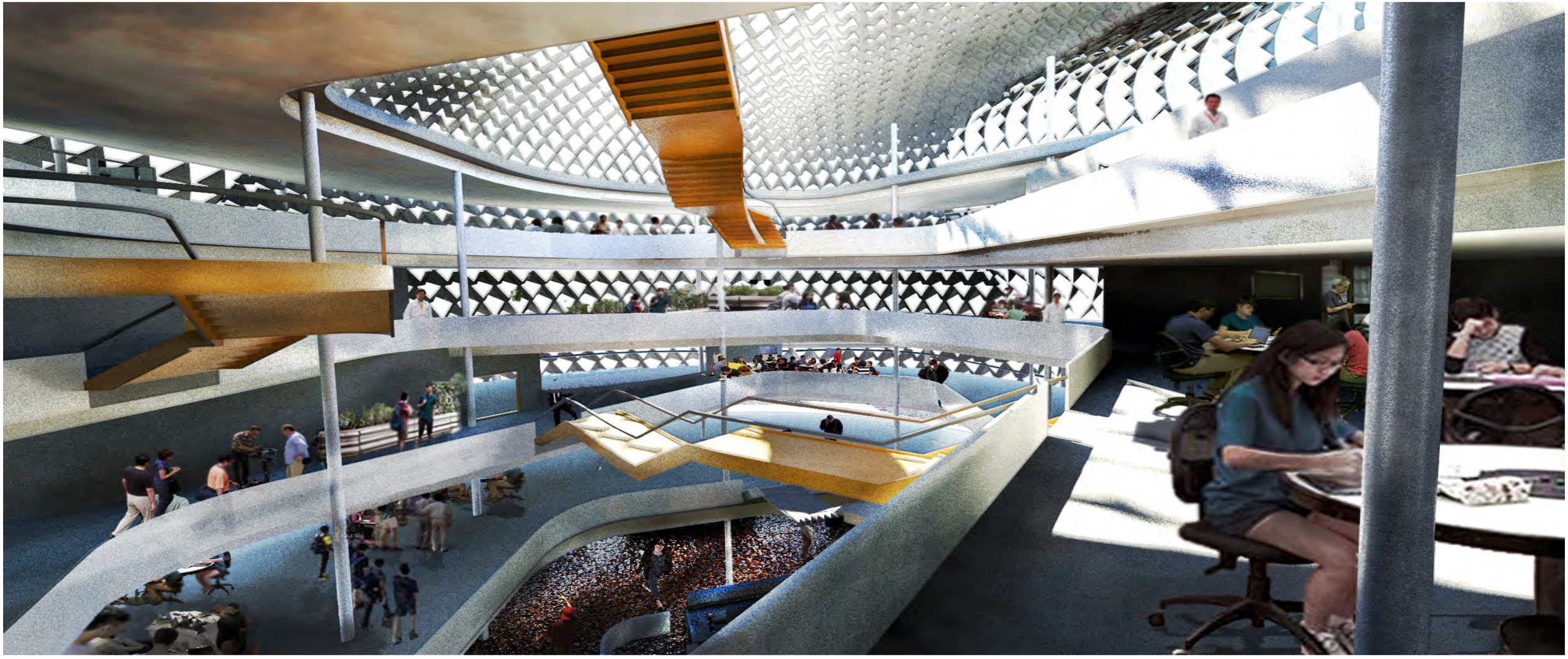
0 8 16 m





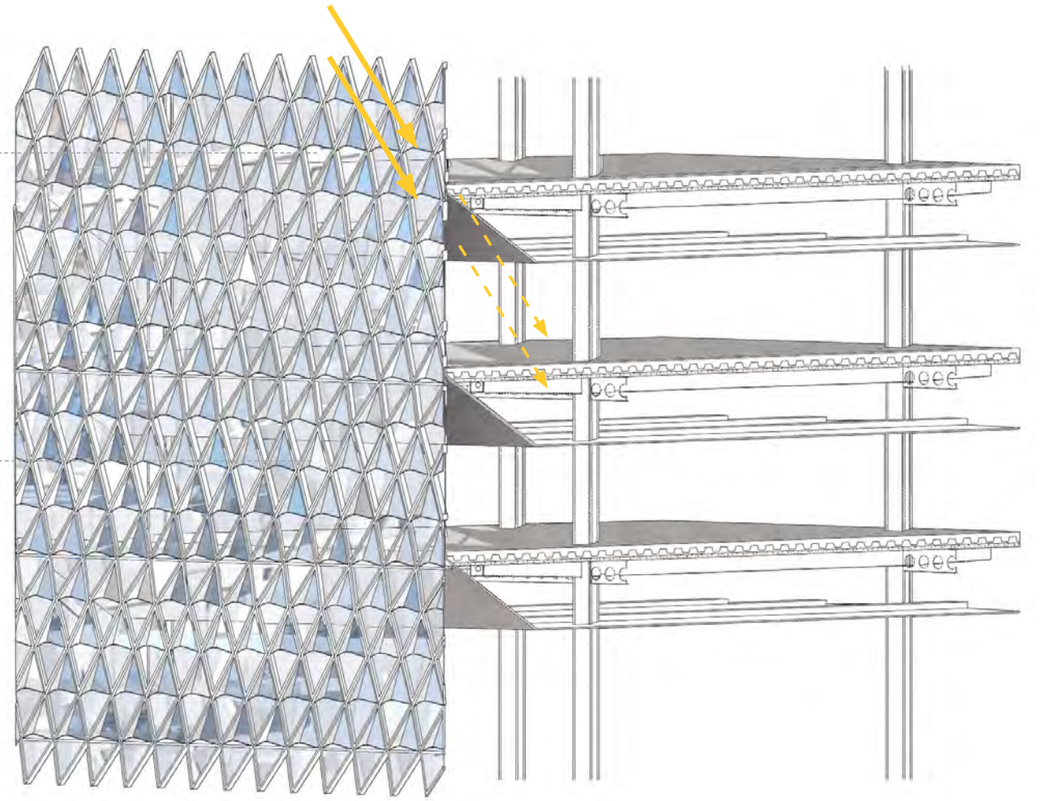
BIOENGINEERING LEVEL 5

The complex consists of bench scale laboratories, specialist laboratory suites, workshops as well as offices and support spaces for administration staff, researchers and management. The requirements for natural light and outlook led to an arrangement of two radiating wings from a central atrium. Each wing is divided into laboratory and office/write up spaces with support spaces arranged between the two. The atrium houses public functions and study spaces for undergraduates. Laboratory planning follows a modular 3.1 metres format, which enables flexibility and adaptability.



Angled fritted and coated glass for peak solar performance

Anodised aluminium shading panel is designed to improve daylight, reduce heat gain and solar glare and maintains visual connection to the external environment.



SQ T-HUB

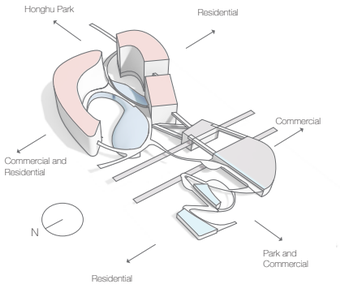
Yinghua LUO

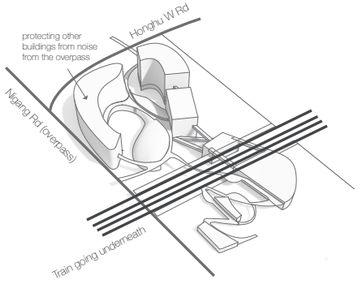
The T-HUB is an incubation centre for innovative and creative local business based on the combination of creative and business education program and working environment for SME. The building is designed to be part of the city ecology ribbon functioning as resource re-generator and ecology landscape in the master plan.

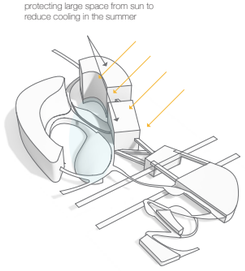
The master plan propose a closed system for water and waste as eco-infrastructure that are adaptable for future scenarios of the city with varies size and density.

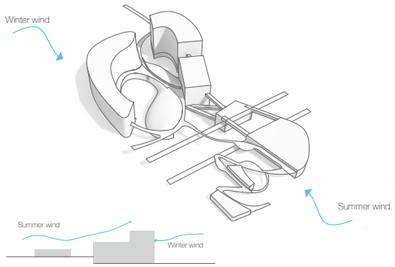
The Higher education building proposal aim to support small and medium-sized enterprises on site and in Shenzhen. The local market has potential in art and fashion business and also cultural goods. The program assists creative designers to start up business on the site by offering entrepreneurs course. The course do not only open to fashion and creative designer but also entrepreneurs from small and medium-sized enterprises (SMEs) from the nearby area. The course will collaborate with new media industry to establish a new media platform for entrepreneurs, customers and industry leaders. The students will be taught about Green and Eco-strategy for their business. The student will be holding community event for local residents and children to encourage Green perception that using recycled materials to make cloths and craft. The community event will also use new media platform to improve the fetters of community and endorse new fashion enterprises.

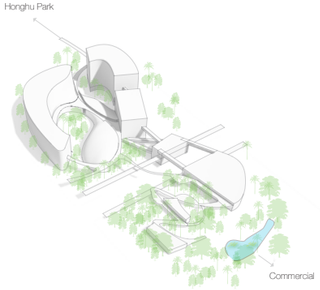
A new train station links with the higher education building and its related business environment to create a place to grow for local SME. Therefore to create an environment to create job, attract talented people and link with the local communities. The program is proposed to benefit the local site and people in the site.

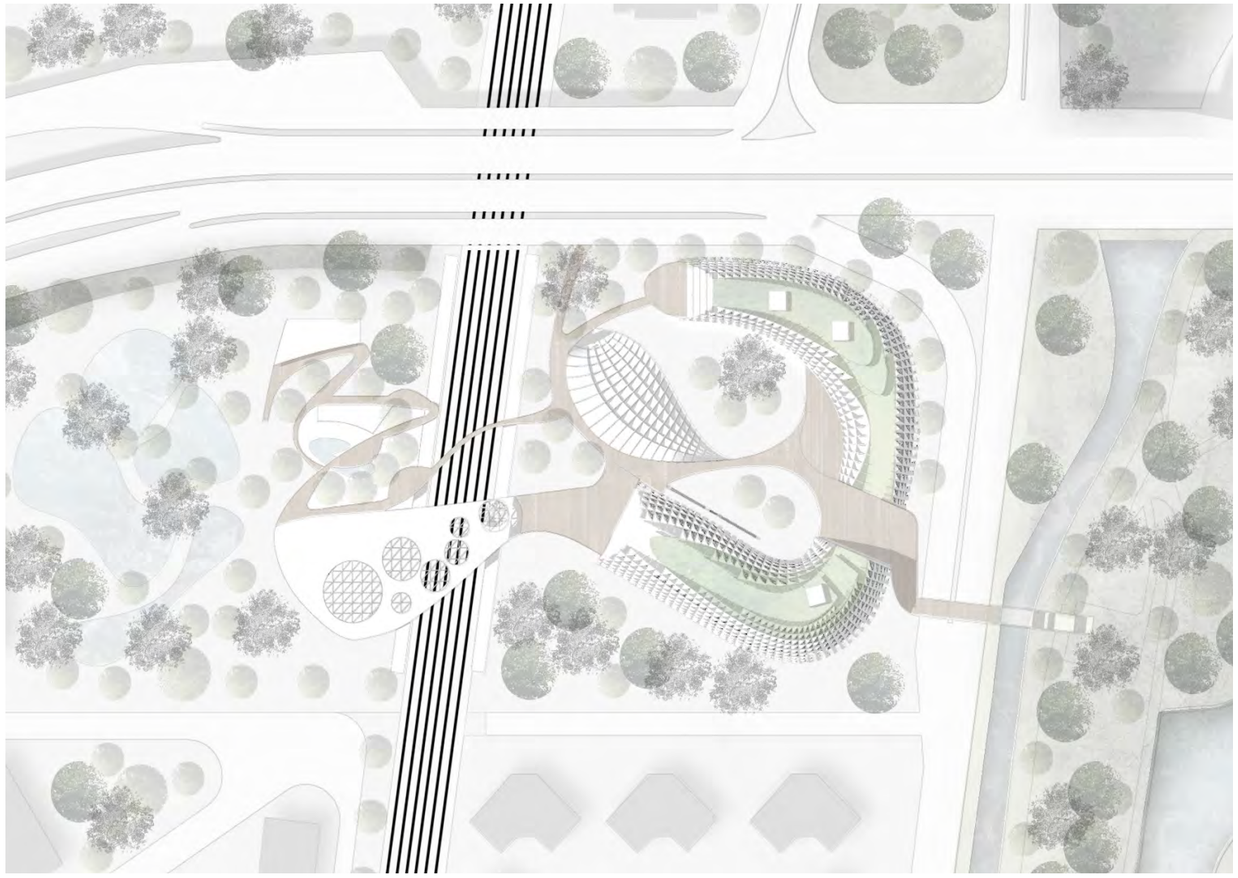

Honghu Park
Residential
Commercial
Commercial and
Residential
N
Park and
Commercial
Residential

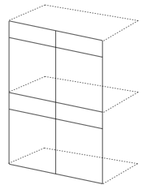

protecting other
buildings from noise
from the overpass
Honghu W Rd
Nigang Rd (overpass)
Train going underneath


protecting large space from sun to
reduce cooling in the summer


Winter wind
Summer wind
Summer wind
Winter wind

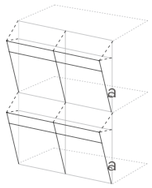

Honghu Park
Commercial





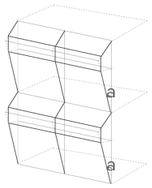
Standard Curtain Panel

1



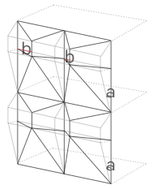
Rorate Angle a

2



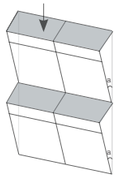
straighten the upper paneel to reduce length of bracket arm

3

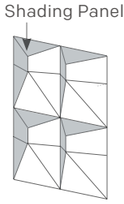


Length b

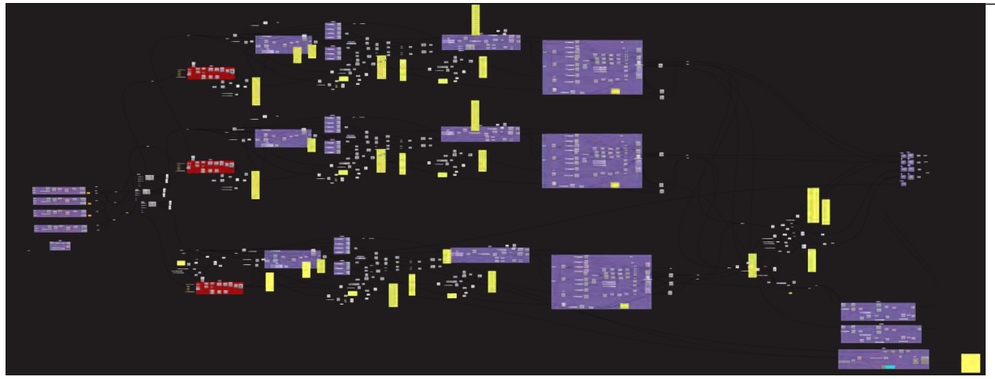
Shading Panel

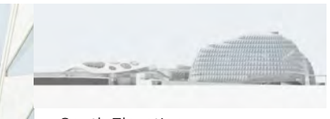


Shading Panel



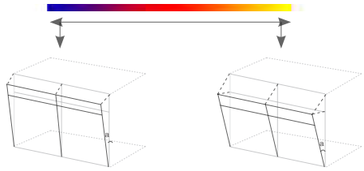
The school uses curtain system on the facade. In area like Shenzhen, shading is quite important reduce energy consumption in the summer by reducing the heat gain. The transformation of the curtain wall facade starts from a regular curtain panel. It aims to provide shading and maximum day light into the building. The transformation envolve direction radiation anallysis input into design process.
The first tranformation provide shading for direct sun light from the top due to the high angle of sun in the summer.
The third transformation protecting the space from west radiation in the afternoon when most of the heat gain comes from a low angle of sun.





South Elevation

Notrh Elevation



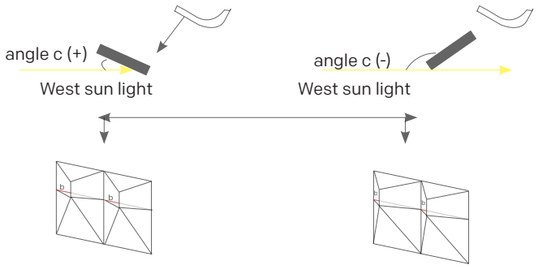
Rule 1

Radiation $\propto \angle a$

Rule 2

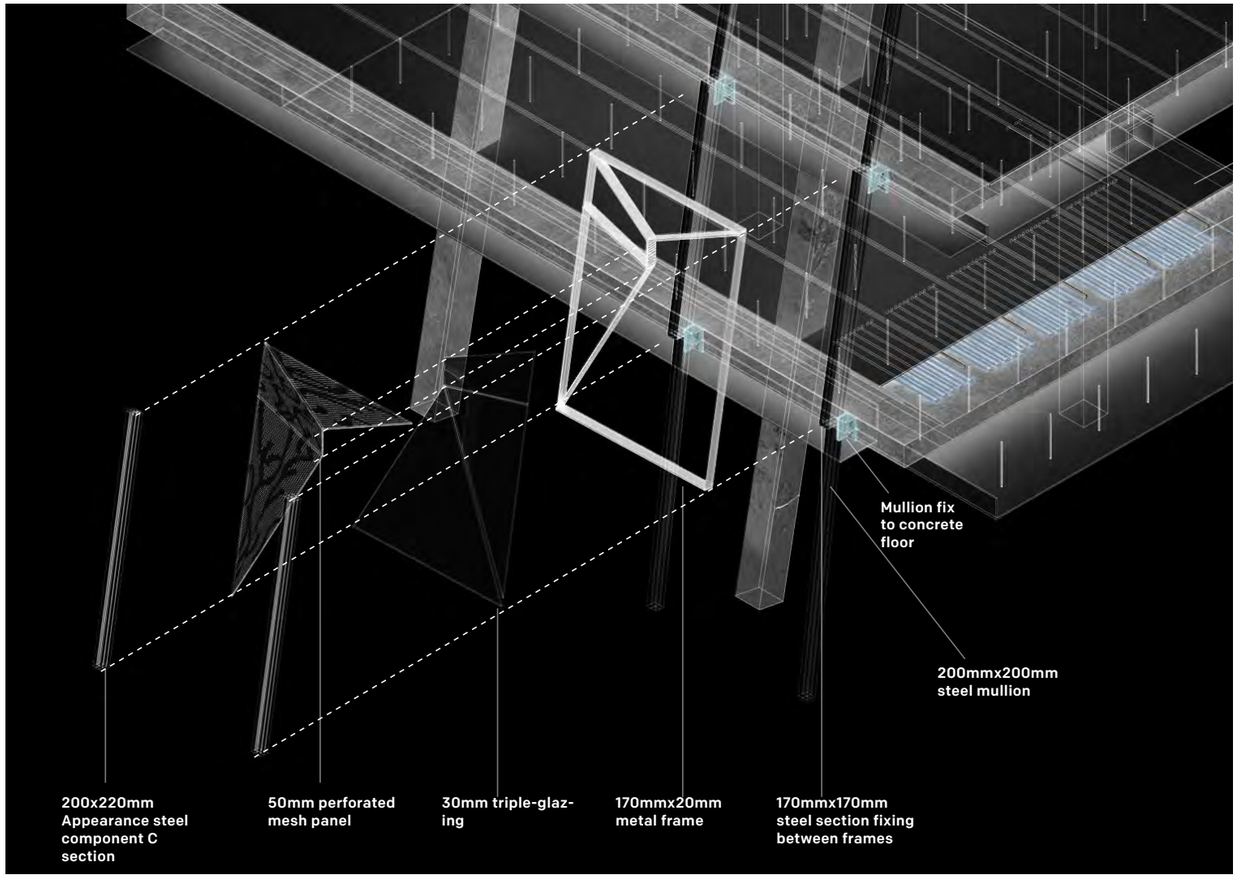
If $0<c<180$, $\angle c \propto b$

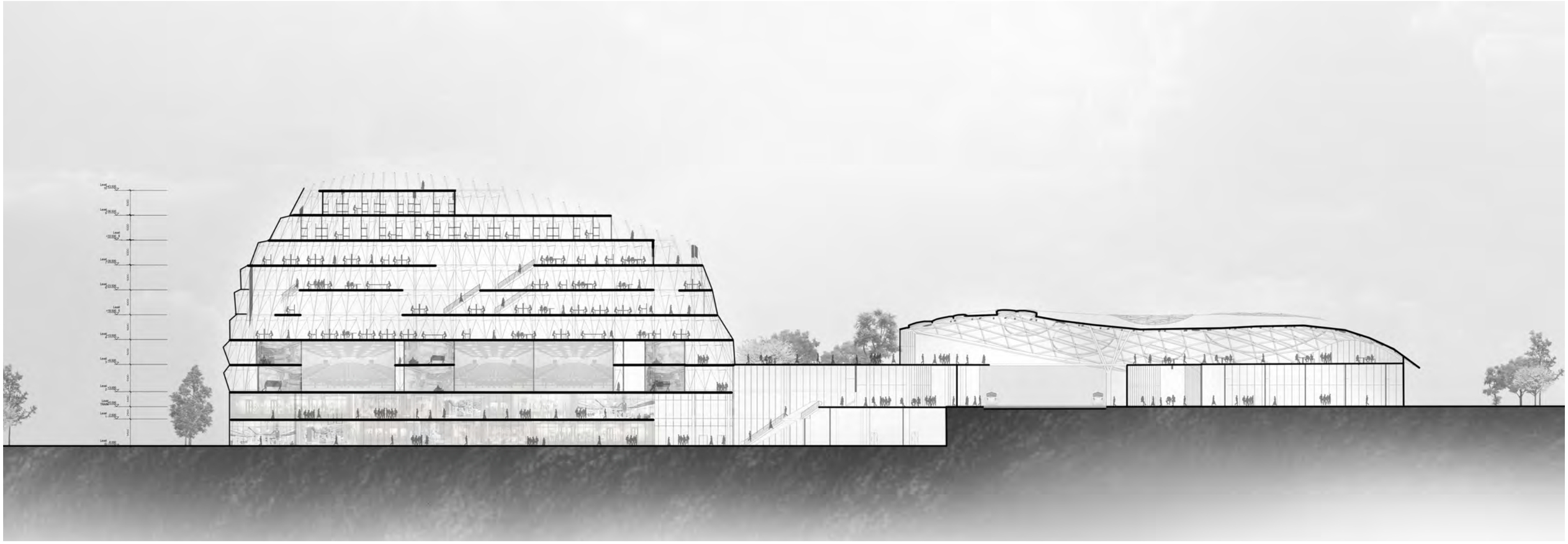
If $c<0$, Minimun = b



There are two rule apply to the façade to manipulate the panels. First rule being angle a increasing as the radiation receive on the surface increasing.

second rule: lenth b increasing if the angle to the west from the surface is increasing


Mullion fix to concrete floor
200mmx200mm steel mullion
200x220mm Appearance steel component C section
50mm perforated mesh panel
30mm triple-glaz-ing
170mmx20mm metal frame
170mmx170mm steel section fixing between frames



House of Many

Charlotte-Frances Garrett

A modular housing prototype from off-the-shelf components for the migrant working population in China. Many new affordable housing units are needed to serve China's under-represented migrant workers from rural China.

This prototype serves to mitigate growing tensions between the rich and the poor, the rural and the urban, and to integrate the two disparate communities. It is an attempt to address China's fragmented cities through spatial, social and cultural segregation of the two demographics.

The scheme is flexible and adaptable to any site within China, whilst accommodating small scale and large scale change. It is a mixed-use amalgamation of residential, retail, and cultural programs connected through a network of common/shared and private circulatory programs, with affordable compact housing for the transient and permanent populations. The system enables families to grow, adopt potential opportunities and communities to integrate.

It is predicted that 300 million people will migrate from rural areas to urban cities in the coming decade, which means that China needs to accommodate new housing for this increasing demographic. There is an ongoing and increasing demand for more appropriate housing that can address the social reality, so a more contextual housing typology can emerge in the existing monotonous housing market economy.

House of many, seeks to reclaim individual and community expression within the urban realm through the integration of all people.

A modular housing prototype from off-the-shelf components for the migrant working population in China. Many new affordable housing units are needed to serve China's under-represented migrant workers from rural China.

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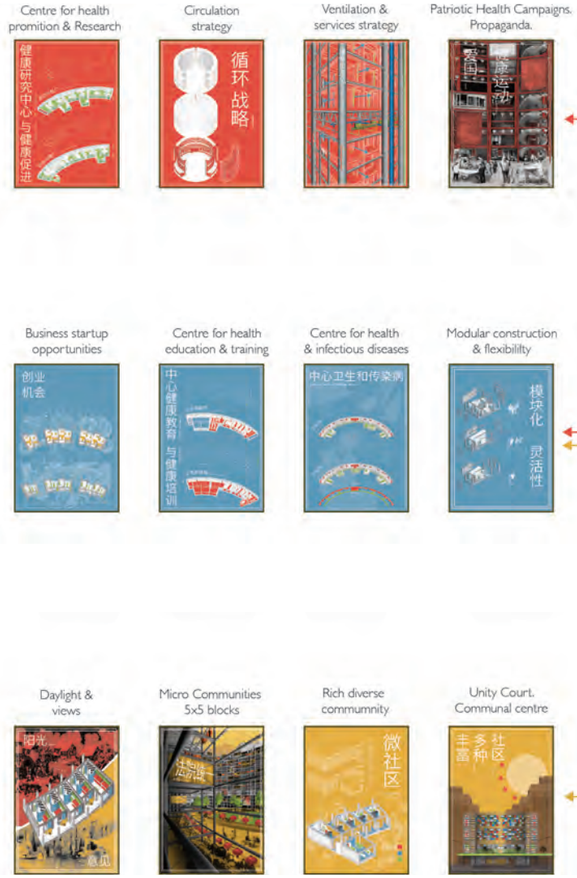
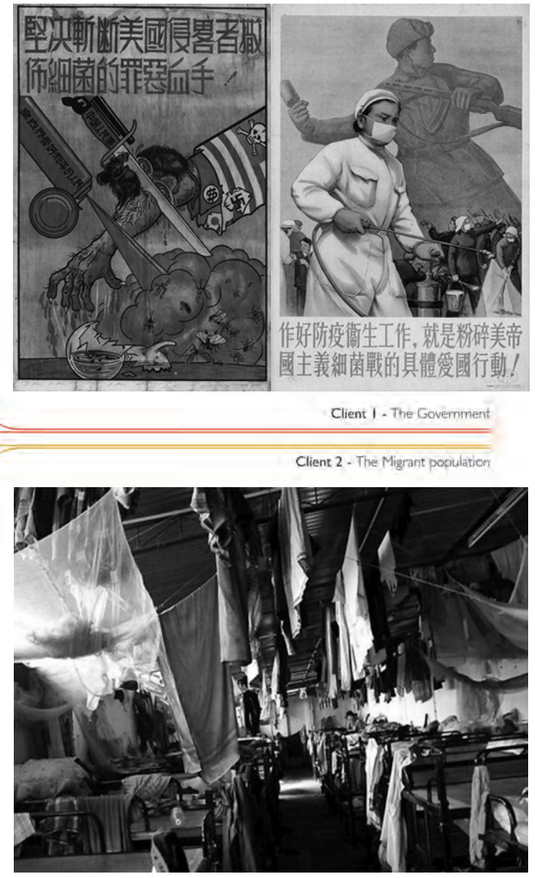
Sungang Qingshuihe - Migrant Working population

A proposal for a new 'Central Cultural District within Shenzhen China is under way, which seeks affordable housing for the migrant labour force. The migrant workers, without the Urban Hukou status, do not have any access to public housing. The work unit dormitories provided often by the employers are generally very poor compared to the permanent population. Smaller living spaces, fewer rooms and crowded conditions.

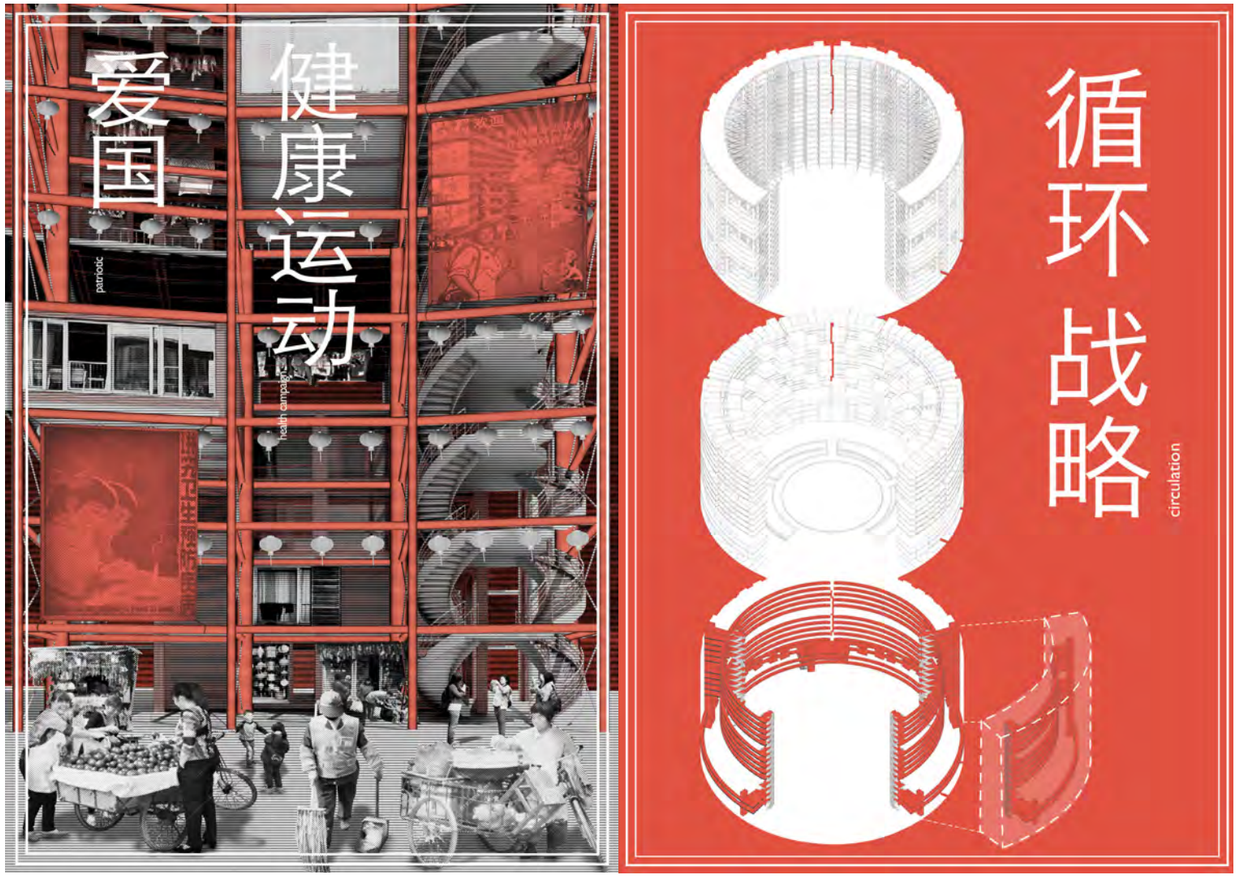


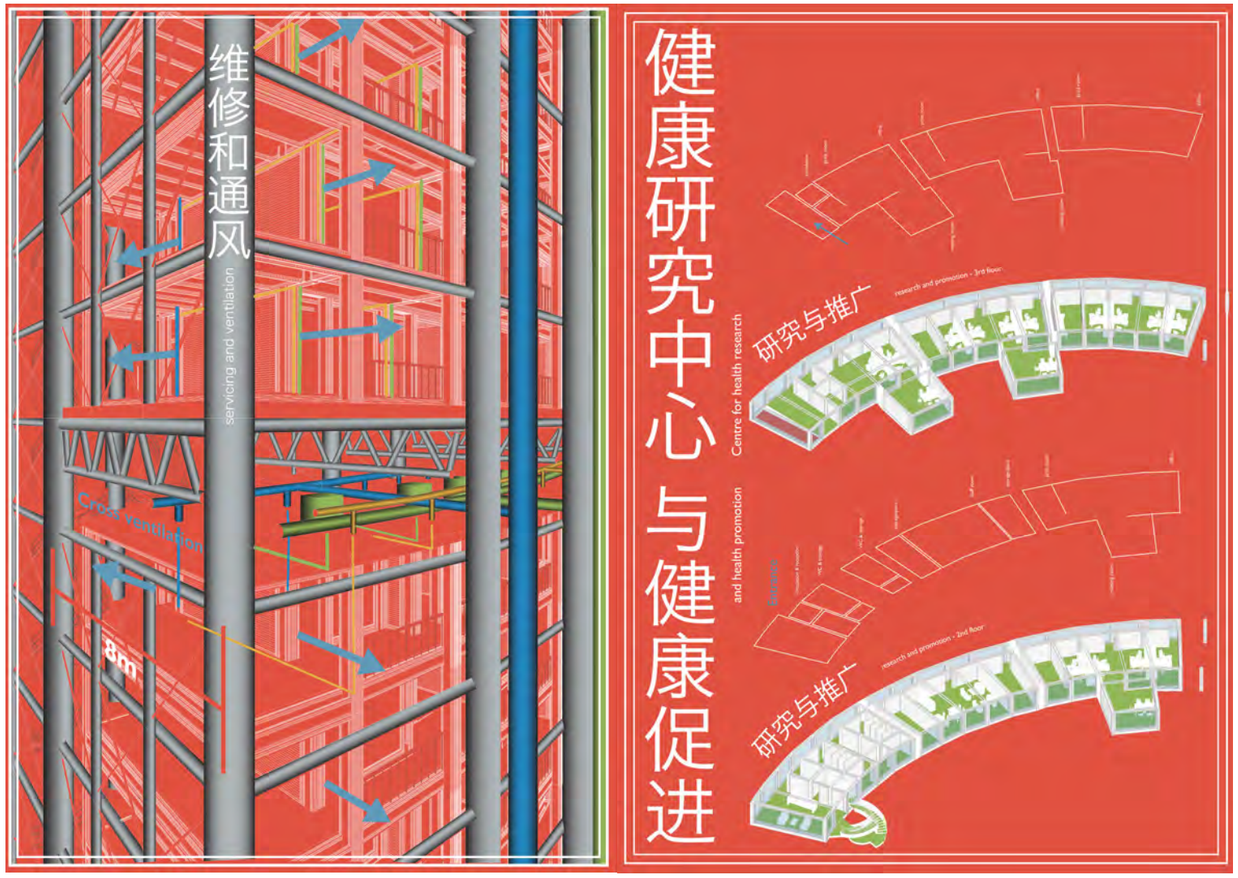


Propaganda - Patriotic Health Campaign

There are twelve over arching design strategies that formulate the final scheme. The first four design strategies are designed from a government perspective. The next four principles are beneficial to both parties with overlapping interests. The last four strategies benefit the inhabitants and the wider population of SQ. These principles are primarily based on enhancing the lives and prospects of those living there.

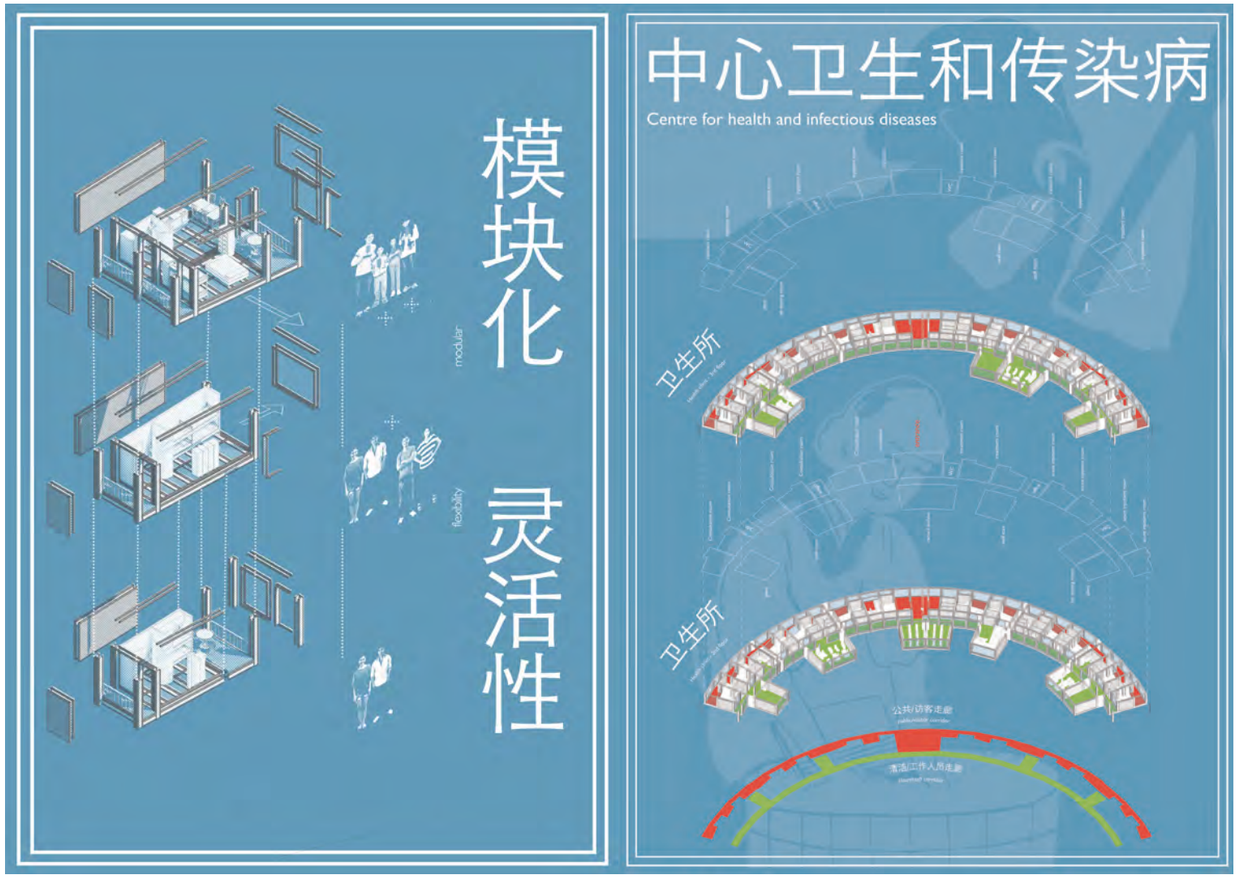
Patriotic Health Campaign - *Design Strategies*
The structural skeleton accommodates the ongoing success of the patriotic health campaigns. Providing a stage for the posters to be hung and be visible to the masses.
Circulation - *Design Strategies*
Circulation is designed to accommodate each quadrant independently from the other. The residential circulation is independent from public programs.

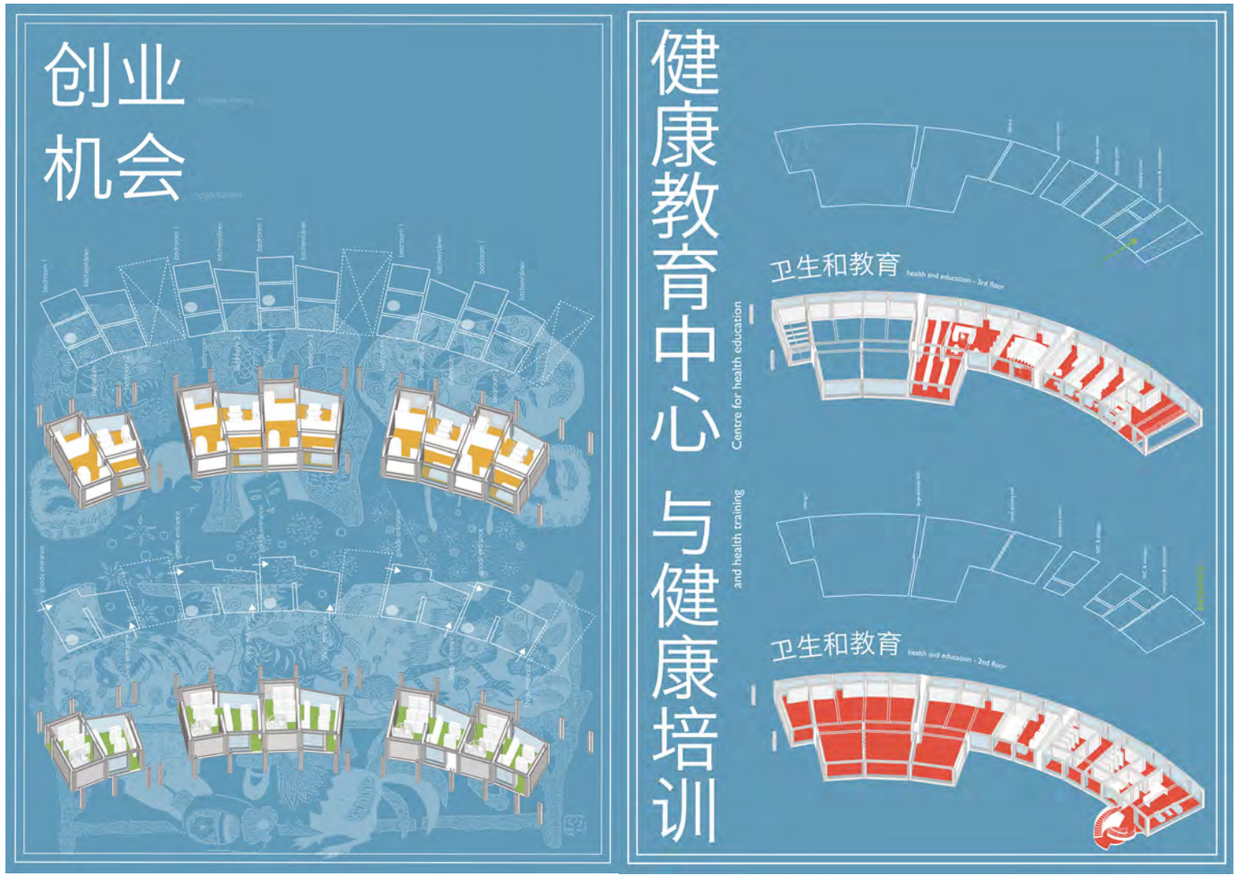




Centre for Health Research and Health Promotion - *Design Strategies*
The Centre will address the promotion and research of positive health through the continuation of health campaigns exhibited on the facade and encourage participation through activities in daily lives.
Ventilation and Servicing - *Design Strategies*
Seeks to aid the project in being a flexible structure where spaces are maximised and allows infinite reconfigurations to suit new future conditions.

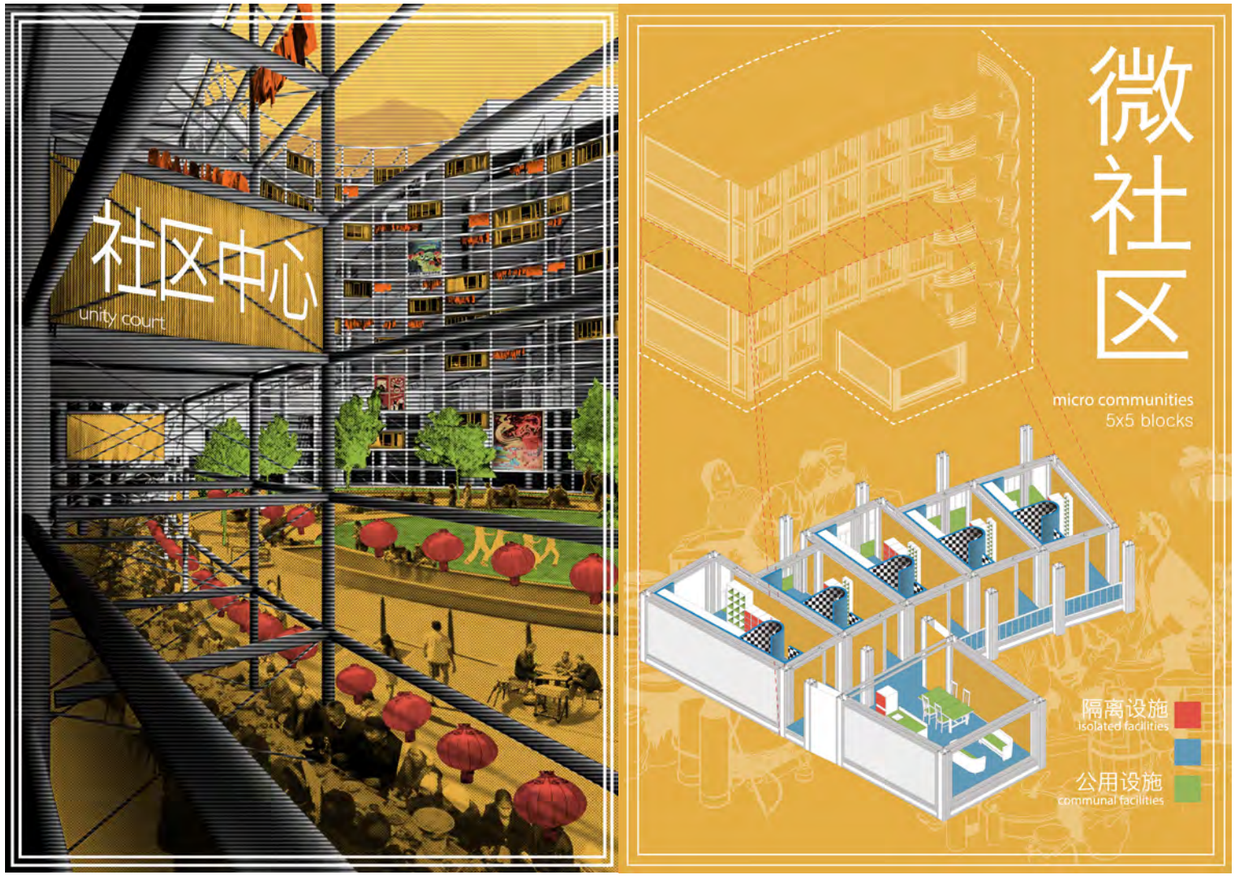
Modular Construction - *Design Strategies*
The modular design is composed from off-the-shelf components that are inspired by the Cradle to Cradle concept. It can be easily adapted to the changing needs of the habitants whether that is to grow, shrink or update.
Centre for Health and Infectious Disease - *Design Strategies*
Designed to prevent and minimise the spread of disease . Any patients that are in isolation are only accessible through an airlock.





Business Start-Up Opportunities - *Design Strategies*
It will initiate a shift toward migrant workers integrating successfully into urban environments, boosting the economy and their social status and retain some cultural distinction within the larger context.
Centre for Health Training and Health Education - *Design Strategies*
Seeks to integrate medical health knowledge and promotes population health improvements as a priority government agenda.

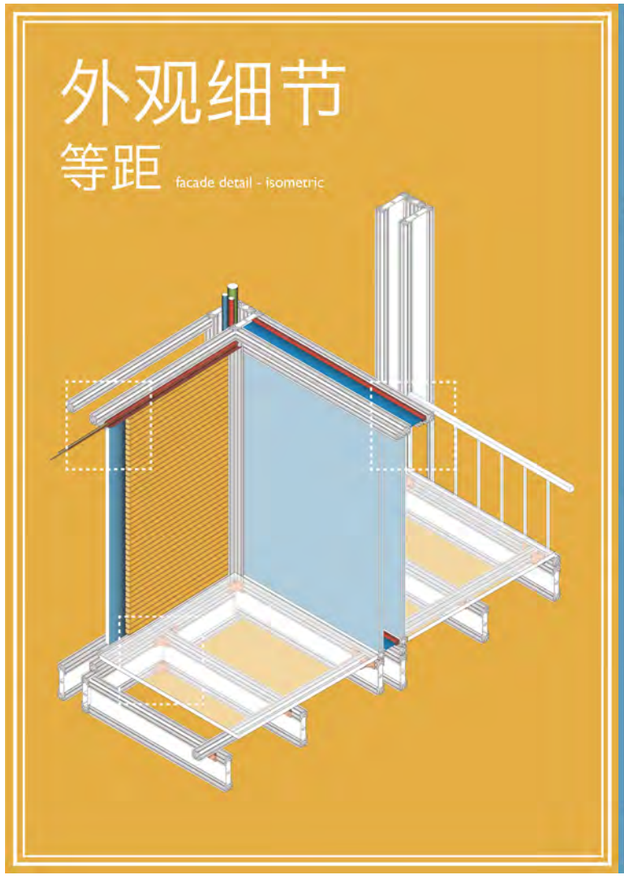
Unity Court - *Design Strategies*
Provides ventilation and sunlight, a place to gather and work, and increases privacy and safety. The building is designed symmetrically around this point, much like traditional housing.
Micro Communities - *Design Strategies*
The 25 unit micro communities replicate the multi-generational communities from rural China, giving them a sense of belonging and identity.

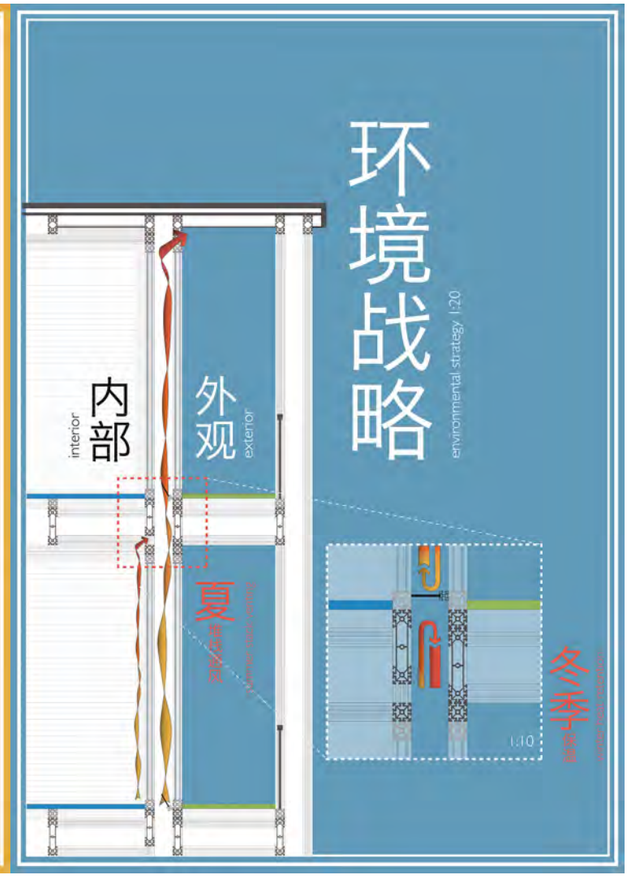


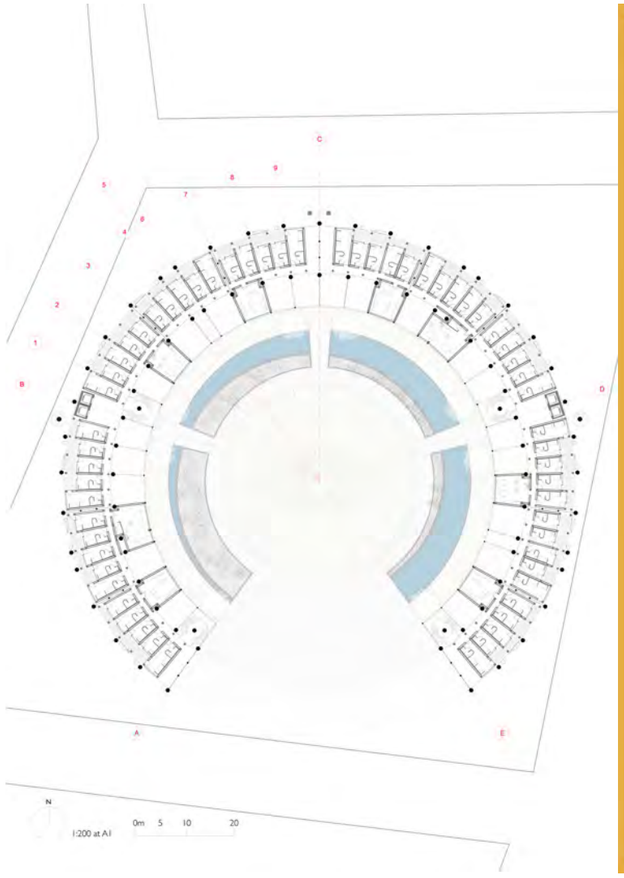
Rich Diverse Communities - *Design Strategies*
To create a more social and connected building to increase cultural richness and diversity through the residential communities. This is made possible with varying unit sizes, accommodating varying group types with shared facilities.
Ventilation and servicing - *Design Strategies*
Every unit has been designed with ample natural light whilst maintaining a comfortable thermal temperature through shading and building form.

Facade Bay & Environmental Strategy
During the summer months, the dampers on each floor level are opened to allow the heat to exhaust through stack effect up out from the parapets.

During the winter months the damper is closed to retain the heat within the air gap, and can also release warm air into the room through the ventilating slots at the top of the wall.







Plan
An aluminium modular construction system that is housed inside a larger steel superstructure. It is intended to be provocative, to mimic the transient culture and lifestyle of the migrant working community, how they adapt to numerous sites and rapid change in the socio-political and economic position on a local and national scale.

entomoHUB

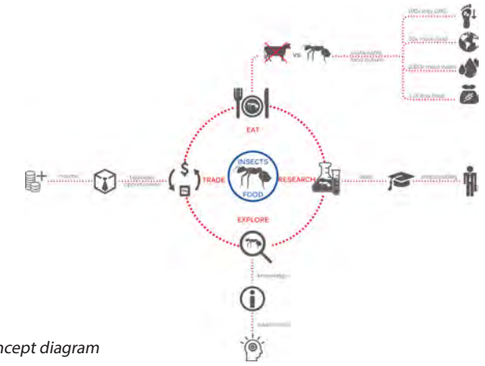
Zlatina Spasova

The 'entomoHub' is a vision for a better future that is healthy, social and adaptable. It is set within a master plan proposal developed for the Sungang-Qingshuihe area in Shenzhen, a young experimental city within the Special Economic Zone (SEZ) of China in the Pearl River Delta.

Recognising that education is a powerful generator for urban development, the 'entomoHub' sets a framework for a higher-education hybrid programme which promotes sustainable food culture for the city dedicated to the research of insects as food products, bringing together and educating students and the general public alike.

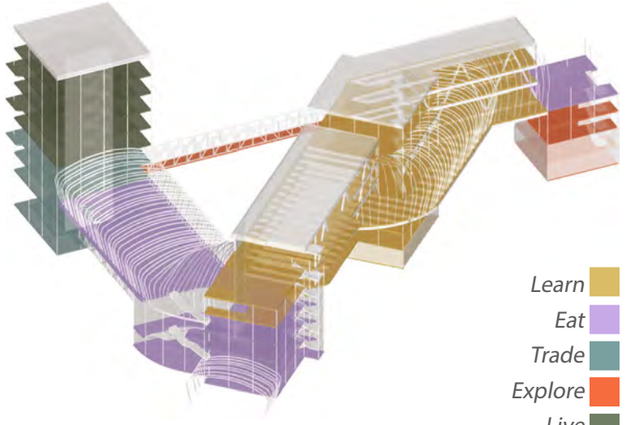
'Entomo' stems from entomophagy: the practice of eating insects. This concept addresses the global implications that rising population and changing diets (such as eating more meat) have. If agricultural production remains in its present form, increases in greenhouse gas emissions, as well as deforestation and environmental degradation, are set to continue. Edible insects are a sustainable alternative to the existing diet practice.

The building comprises of education and research facilities designed for 1,000 students, exploration and learning zones accessible to students and the public, eating areas for tasting insect-products, trade-facilities to facilitate revenue for the building and accommodation spaces for students, visitors and permanent residents.



Concept diagram

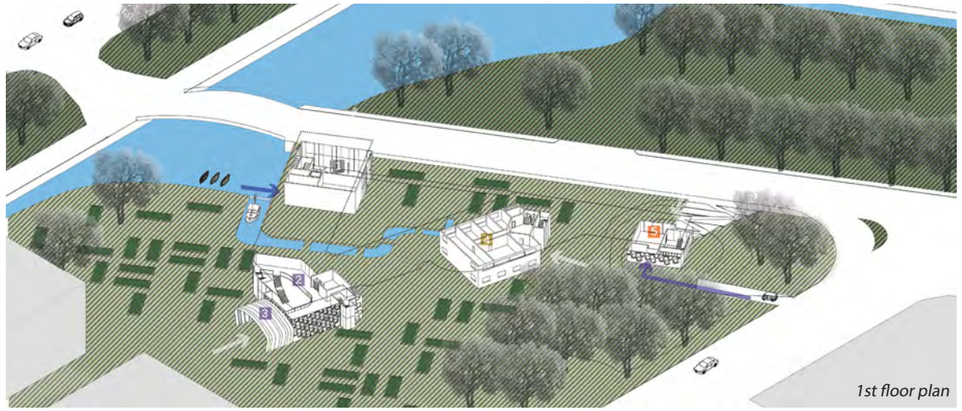
Building integrated within a master plan framework



Hybrid programme

The ‘legs’ of the building are positioned to make full use of the site context, where the canal, pedestrian and vehicle routes are used for goods delivery and access to and from the building.

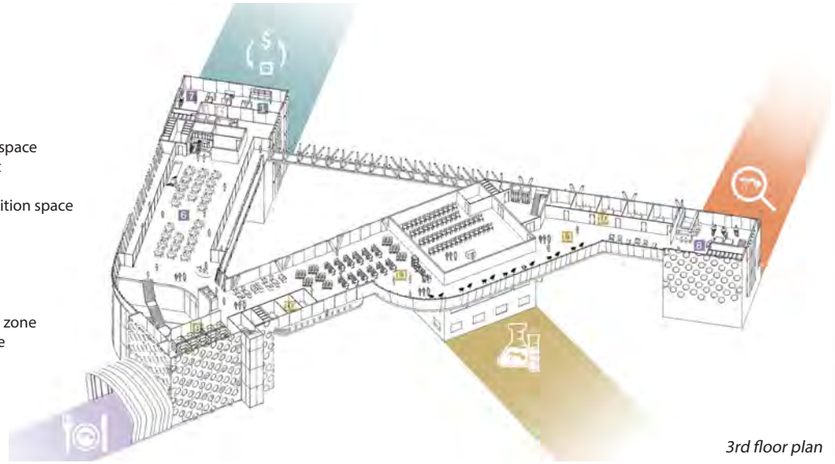
The four legs rise up and merge on the 3rd floor level, the spatial organisation of which promotes interaction between students and the public and links the otherwise fragmented parts of the building



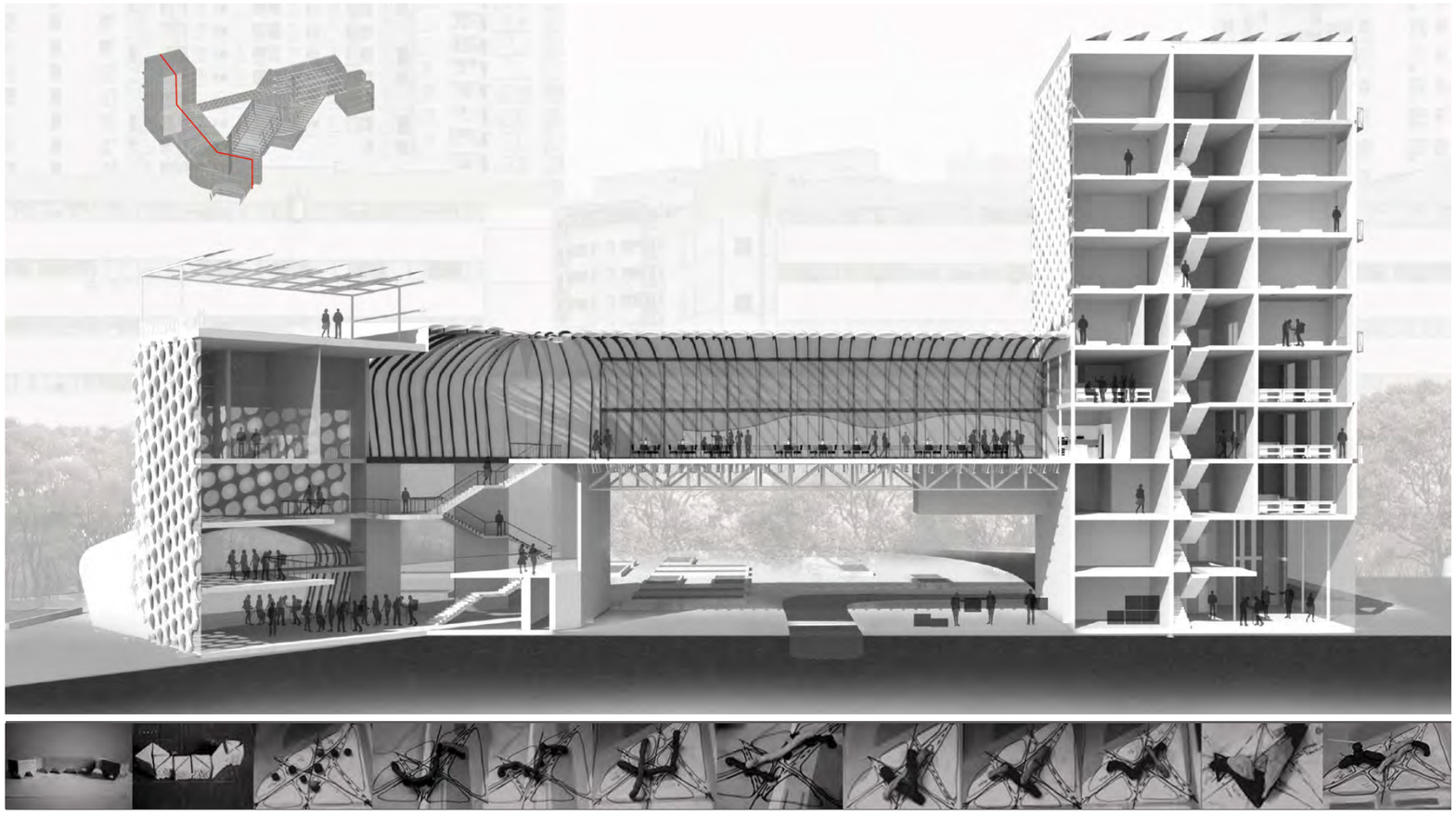
1st floor plan

Legend:

1. Office space
2. Pop-up market space
3. Covered market
4. Insect labs
5. Learning/ exhibition space
6. Restaurant
7. Kitchen
8. Café
9. Administration
10. Studio spaces
11. Informal study zone
12. Lecture theatre



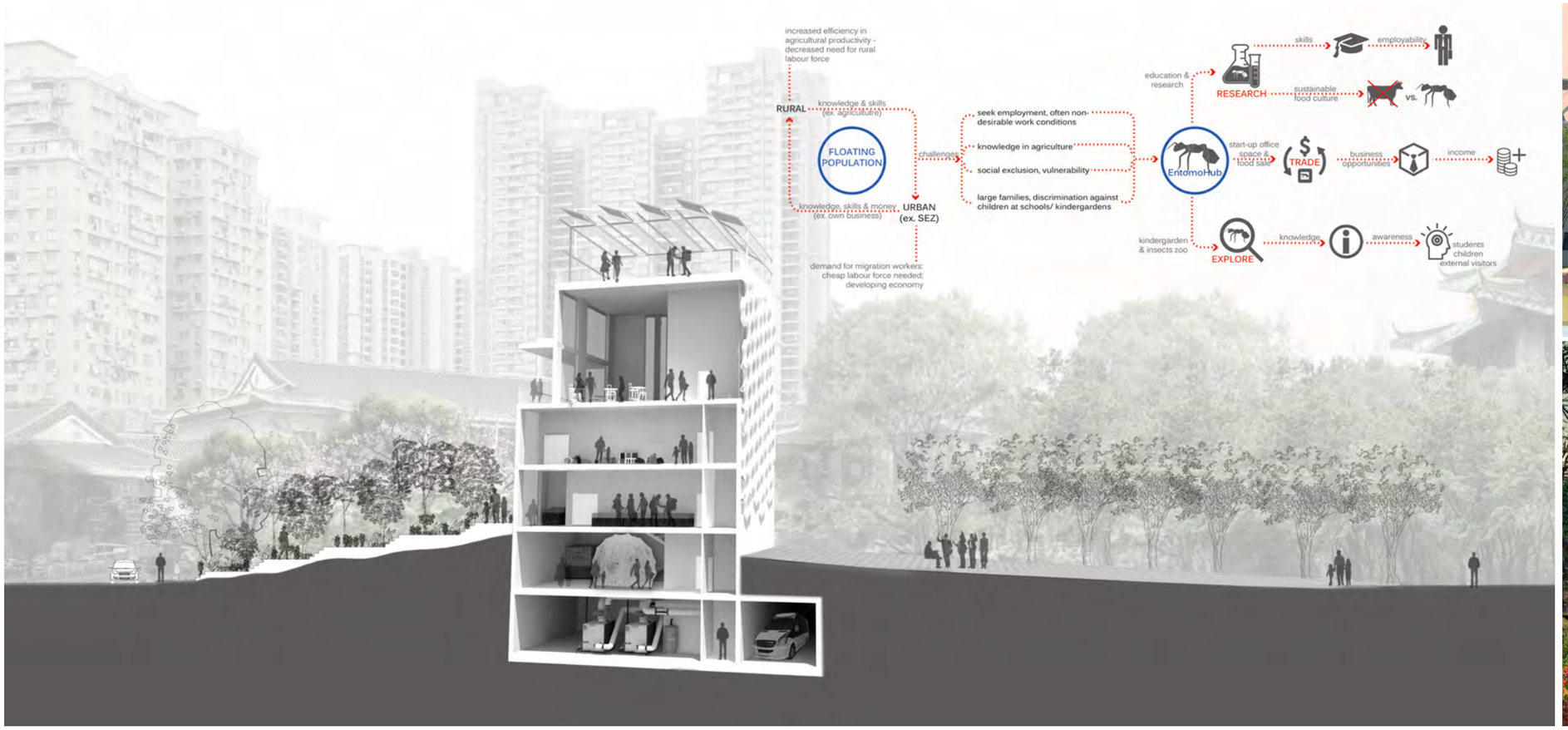
3rd floor plan



Insect food trade spaces within the building are interconnected and easily accessible from different points internally and externally. They are located closer to the canal, which allows to use it efficiently as a sustainable means of goods delivery and insect products export to the rest of the city.

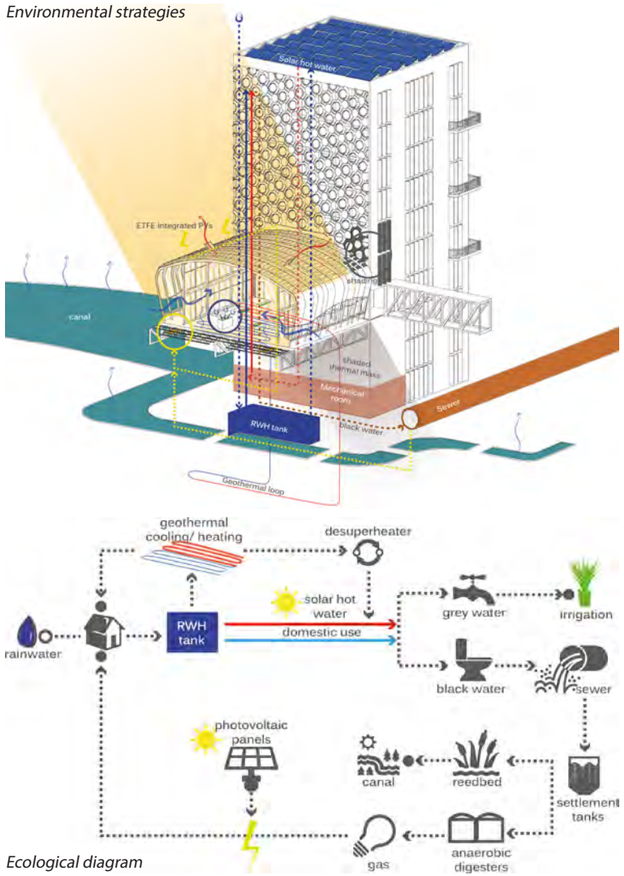
Users

Apart from targeting students to spread the knowledge of insects food culture across the globe, the 'entomoHub' also addresses the needs of the 'floating' population (migrant workers) in Shenzhen by providing them with knowledge in a prospective food culture and thus, with employability skills, and by creating community spaces that will strengthen their sense of belonging.



The eastern part of the building is also the lowest, from where studying parents with their children are most likely to enter. The entrance is lifted to the first floor level, interrupting the even topography of the site and thus creating a more exciting and accommodating route through the butterfly garden.

Environmental strategies

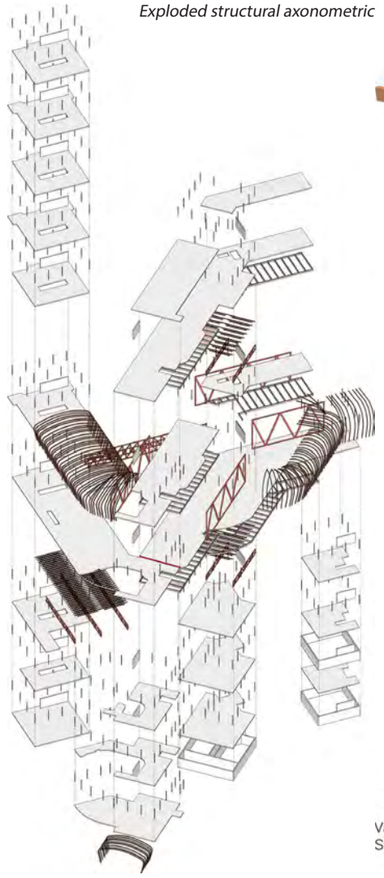


Ecological diagram

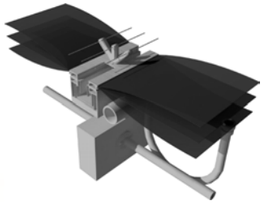
Restaurant interior

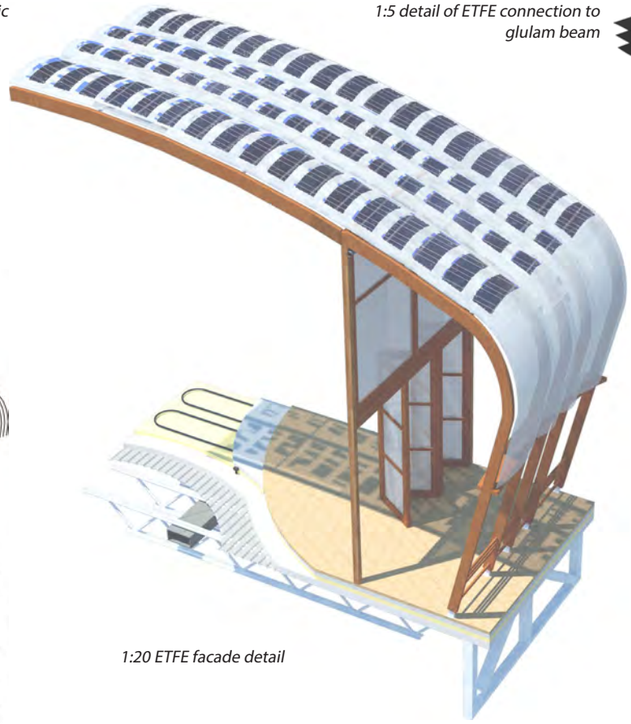
The spanning structure between the legs of the building is supported by steel trusses, eliminating the need from using structural columns mid-space, and creating open floor spaces apt for flexible use and changing needs.

Exploded structural axonometric



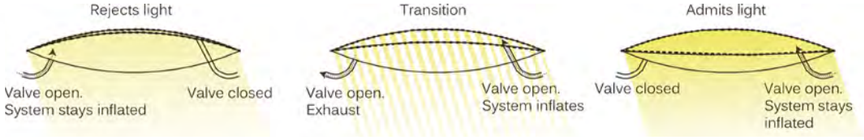
1:5 detail of ETFE connection to glulam beam





1:20 ETFE facade detail

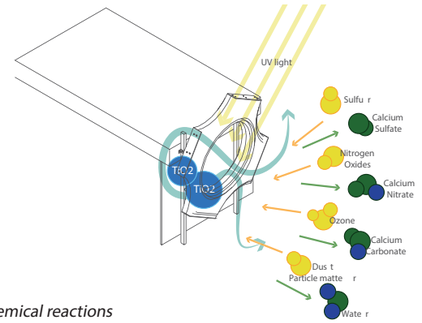
ETFE shading mechanism



ETFE material is used as it creates controlled environment which to protect against the hot climate. Glulam timber is chosen as its supporting structure to create warmer, more natural and organic feel of the interior spaces.

Bearing in mind the subtropical humid climate in Shenzhen, the main part of the building is raised and it only touches the ground in 4 locations, in order to:

- Allow wind breeze to pass through and cool the site
- Create shaded public spaces with cool thermal mass to minimise UHI effect
- Maximise public space



TiO_2 chemical reactions

Pollution-neutralising skin

A decorative, modular-tile exterior shading system coated with a fine layer of TiO_2 has been used. The complexity of its pattern maximises the surface area exposed to the air, potentially allowing a higher rate of toxic chemicals from the air to come into contact with it and be neutralised.

Walled Village - Shenzhen, China

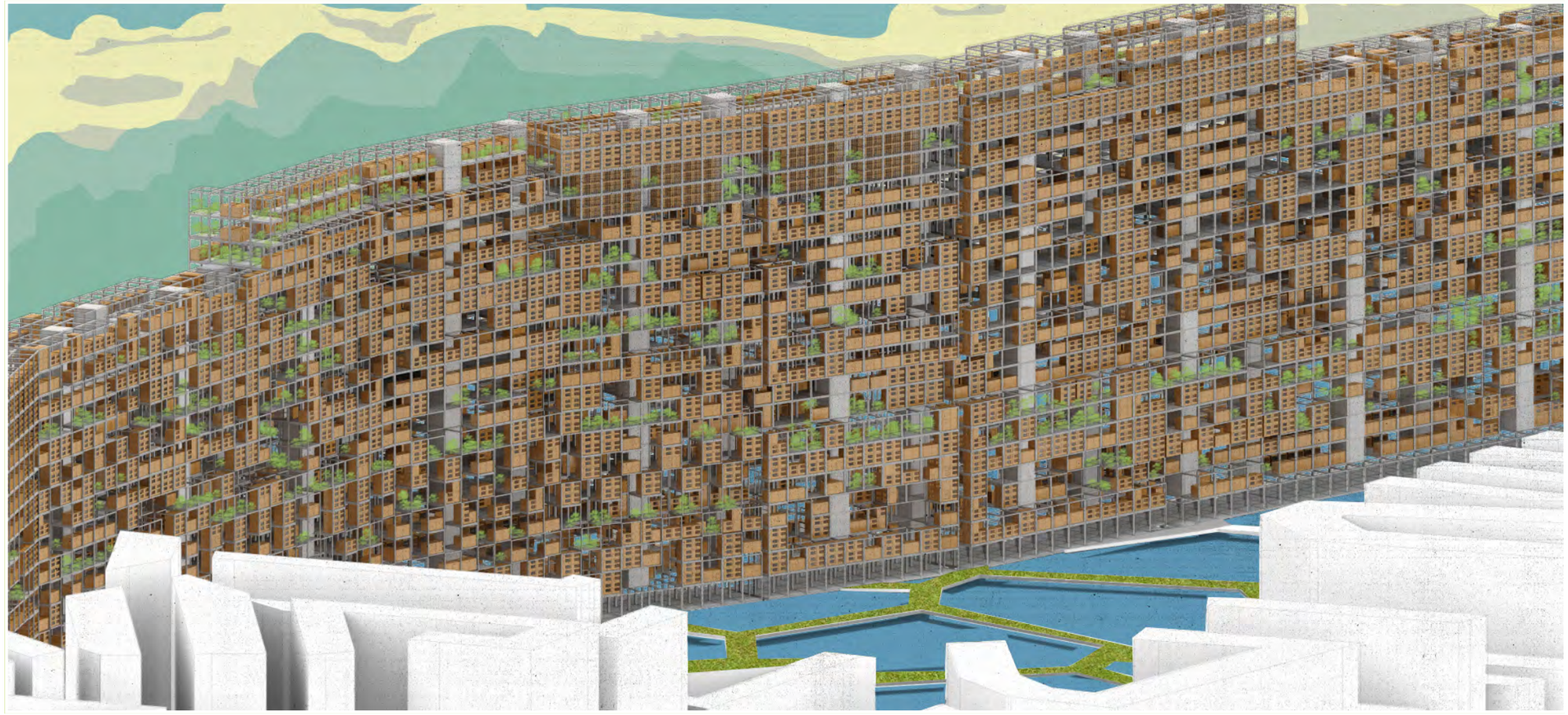
Reece Singleton

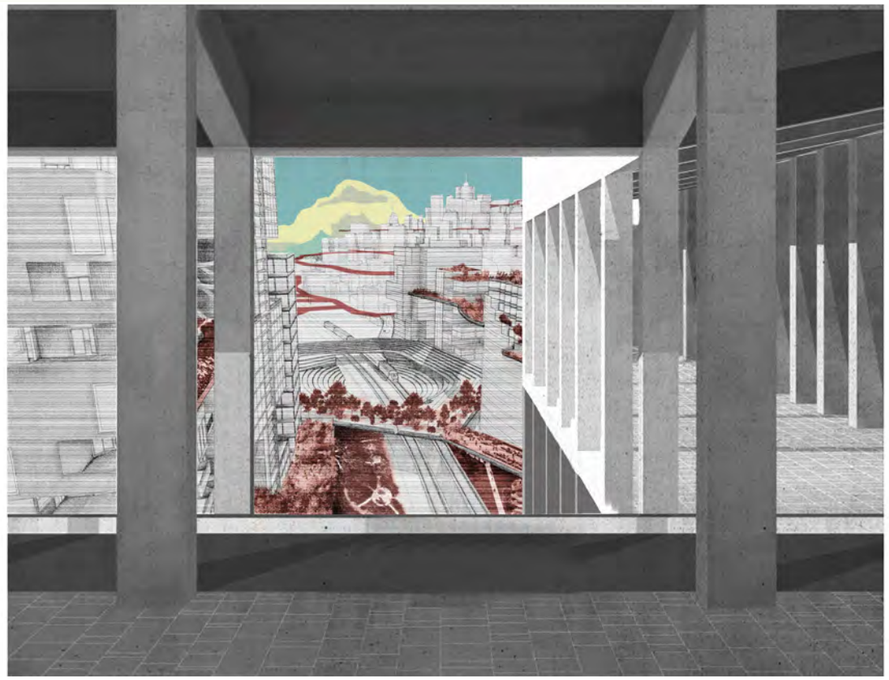
The building is divided into two basic structural parts. The first part of the system is a large scale superstructure that will contain the main arteries of servicing and circulation and will give the initial mega-scale form. This superstructure can be said to be divided into 25 100x40m segments in plan. The height of each segment varies depending on the parametric algorithm that has been identified in the earlier super-scale masterplan. The superstructure is assembled to form a grid structure that comes together to create the idea of a nuanced wall. Although the structure is light and open in appearance its structural integrity is formed through this interconnected grid. This gives the idea of the wall as a filter, with punctuated open spaces that allow for storage, servicing and open public space that is vital for the lifestyle that will need to be adopted when living within a vertical environment.

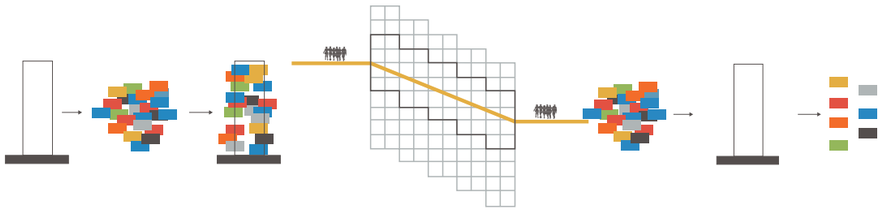
The actual live-able sections of the building are on a smaller modular scale that sit within the frame of the superstructure. These modular units must conform within set dimensional limits and use some standardised components such as major flooring decks, to allow for servicing of the units. Other than this, design guides are given so that a mixture of materials and designs can be used, breaking up the aesthetic of the village environment and allowing distinctive neighbourhoods and areas to form.

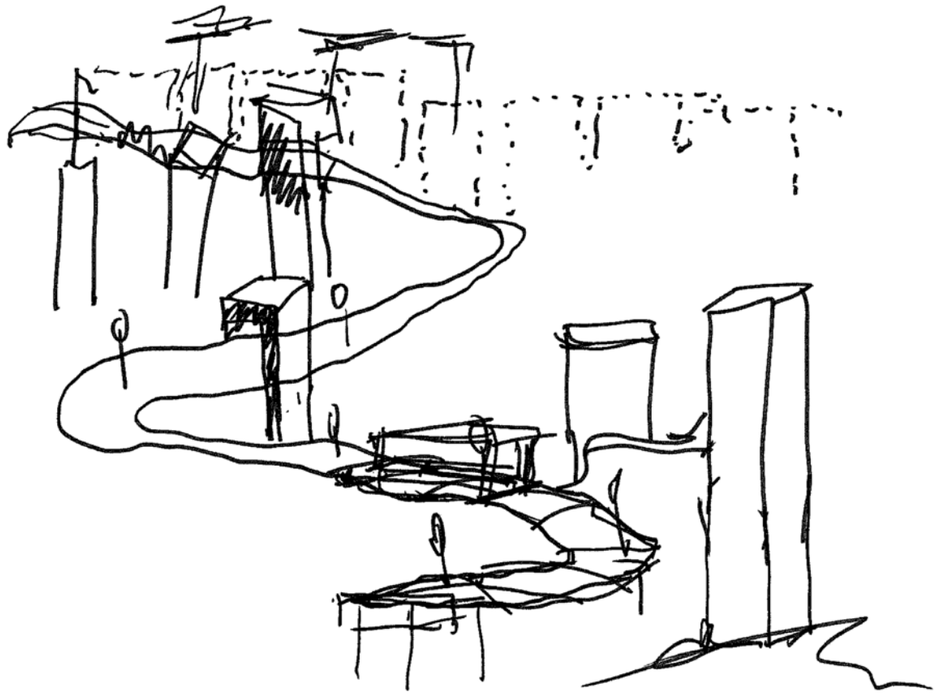
The concept behind the walled village is to allow for perpetual change within the urban fabric of the vertical structure. The village can grow and re-adapt as necessary over the life of the modular unit whilst still inhabiting the same superstructure. It could be said that the superstructure is akin to the road and plot layout of a traditional city plan and the modular units are the individual dwellings and structures built within the urban grain.

By expanding Shenzhen's urban villages up along the vertical plane, Shenzhen's characteristic urban pattern of patchwork typologies can accommodate a wider range of functions. Residential, commercial, educational, cultural, and infrastructural functions will be arranged at the human scale to enable walking distance between all vital functions.





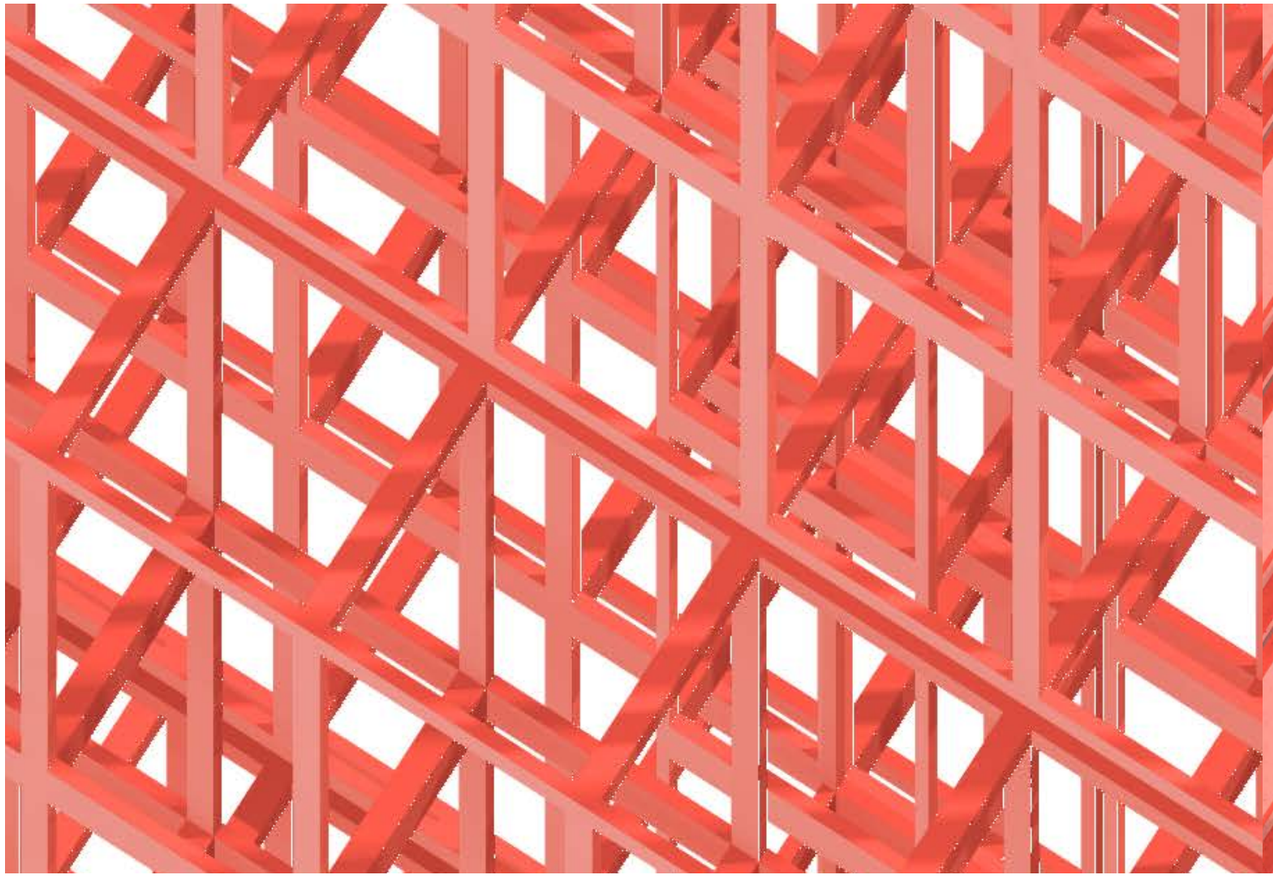


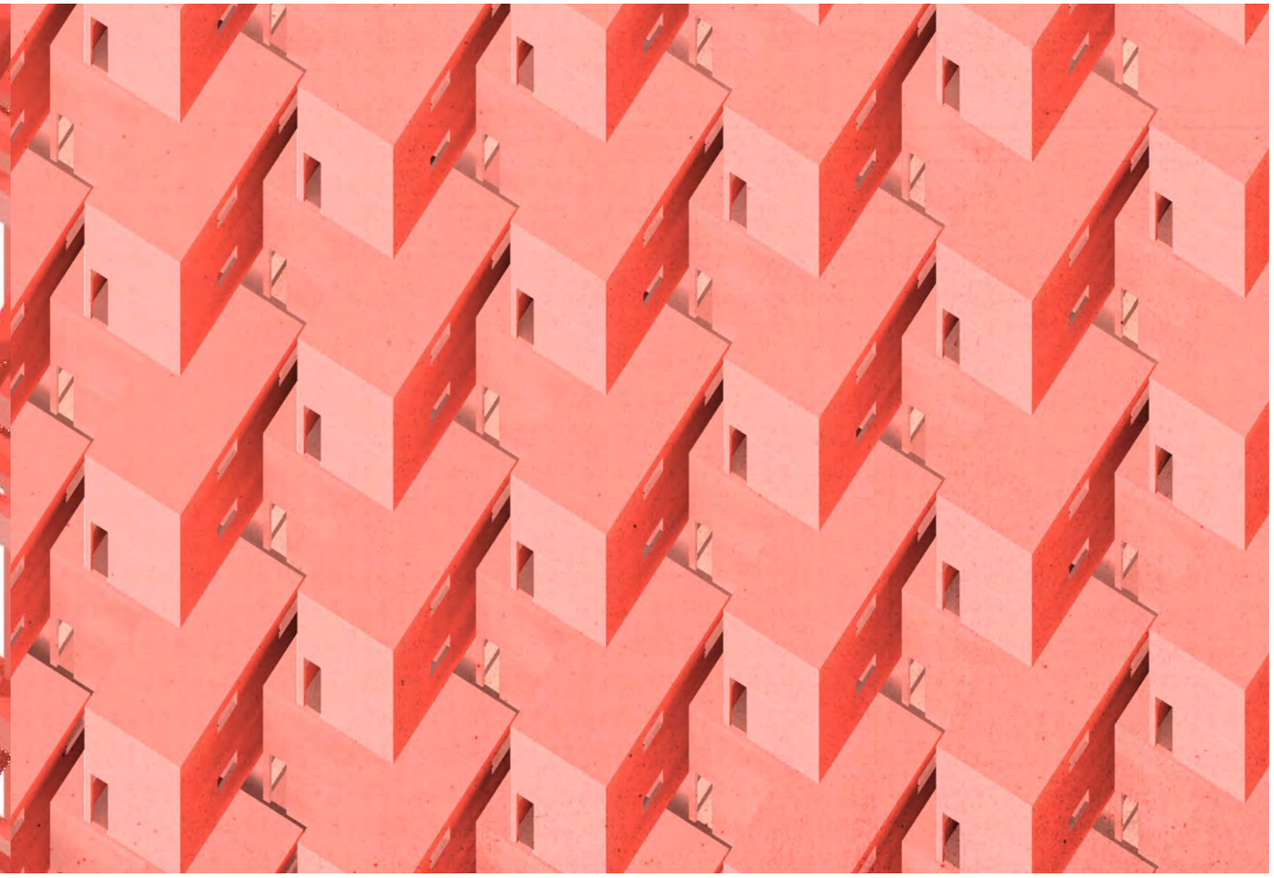


The programmatic concept behind the wall is to allow for an organic organisation of programme. The modularity of the components can be adapted and extended as needed based on 2 main module sizes. This allows for a more recognisable and 'human-scale' identification of neighbourhoods and recognisable locales within the wall increasing liveability and pushing the desire to remain and inhabit the wall.
Spacialisation of the wall is dependant on a series of interconnecting large scale blocks linked with numerous passages, bridges, stairs and corridors. These conduits vary in scale from large scale open spaces to small intimate passages lining together to provide a sense of townscape within what could otherwise be a homogeneous block. The wall acts as a barrier to contain the culture of SQ so is less porous at lower levels and opens up at upper levels.
Even though the concept of 'wall' is intended to act as a pseudo barrier and container of SQ the wall is intended to also built in a way that is akin to a filter. The idea that the wall is broken to allow light and air into the structure help to reinforce the idea of a village whilst still allowing for purpose of a liveable wall to establish. To enable structural stability the way in which the building is built and the amount of develop-able space is restricted on each level.

The building is divided into two basic structural parts. The first part of the system is a large scale superstructure that will contain the main arteries of servicing and circulation and will give the initial mega-scale form. This superstructure can be said to be divided into 25 100x40m segments in plan. The height of each segment varies depending on the parametric algorithm that has been identified in the earlier super-scale masterplan. Each of these segments are then connected with bespoke bridges, buttresses and turrets that are assembled and designed as required, linking the wall together.

The superstructure is assembled to form a grid structure that comes together to create the idea of a nuanced wall. Although the structure is light and open in appearance its structural integrity is formed through this interconnected grid. This gives the idea of the wall as a filter, with punctuated open spaces that allow for storage, servicing and open public space that is vital for the lifestyle that will need to be adopted when living within a vertical environment.





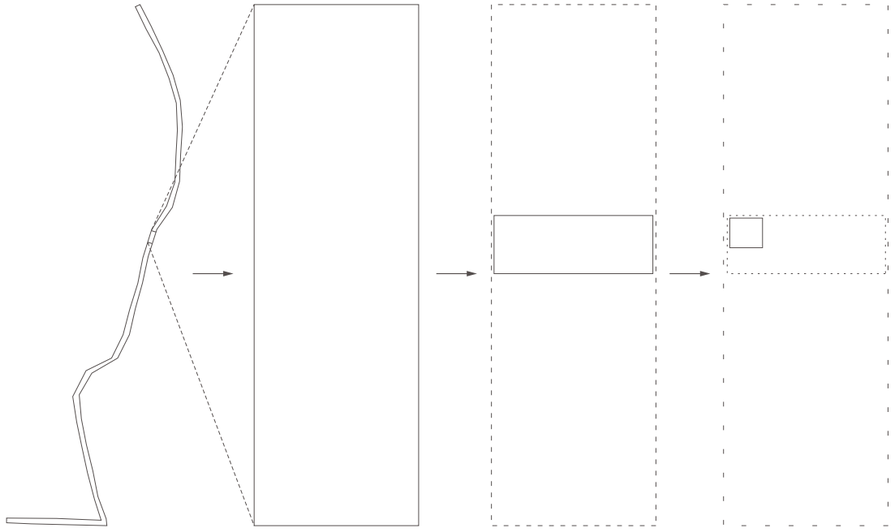
The actual live-able sections of the building will be on a smaller modular scale that fits within the frame of the superstructure. These modular units must conform within set dimensional limits and use some standardised components such as major flooring decks, to allow for servicing of the units. Other than this, design guides are given so that a mixture of materials and designs can be used, breaking up the aesthetic of the village environment and allowing distinctive neighbourhoods and areas to form.

The freedom of materiality will be limited only by the necessity for lighter-weight materials as the structures will only need to be self-supporting. The lack of prescription of material will also allow for traditional, colloquial and vernacular architectural styles and forms to develop. This can also then relate to the cost of construction and inhabitation, diversity within districts and also programmatic units.

The superstructural grid is based on a 10x10x10m grid so modual units must be dirivtive of this. The Modular units will compromise 2 standard sizes of 5x5x5m and

The programmatic arrangement within the Wall is to allow for an adaptable development of spaces and uses within the superstructure frame. Due to the regimented nature of the superstructure and therefore the dictated spaces of the modules, programme must fit within the spaces provided.

The arrangement of programme is open to modification and any programme may be installed within an area. This is within limits as programme must be kept proportional to each other and some uses may need to be located in particular areas, such as retail units nearer to servicing cores.

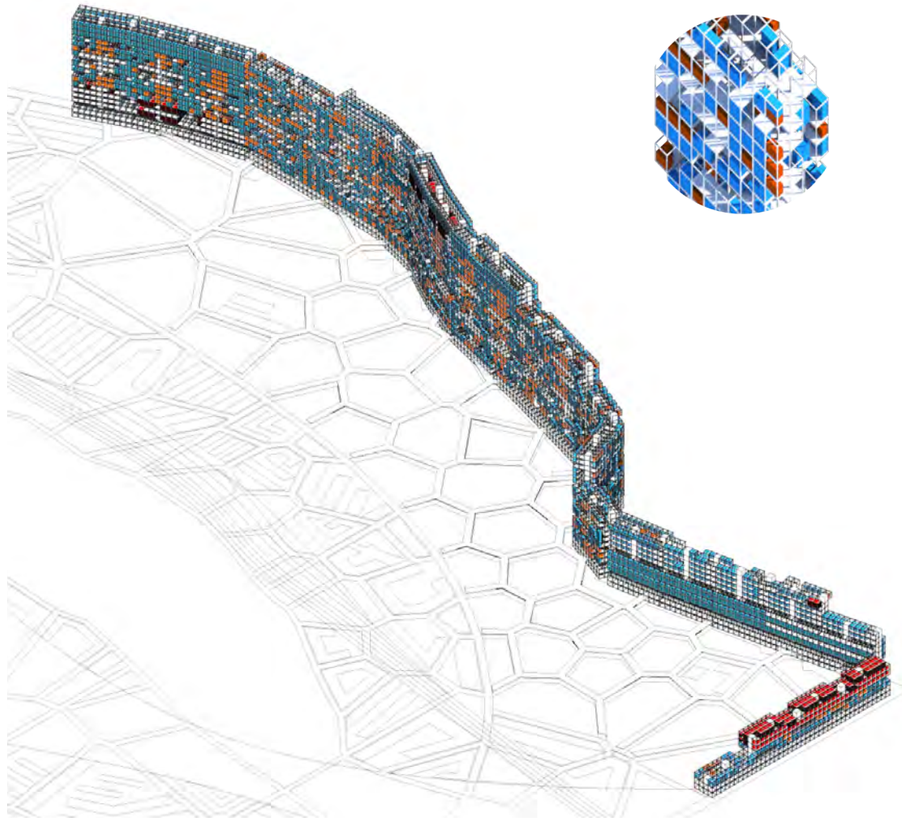


Mega - wall
complex structure of the whole

Macro - Block
Indivdual block within the wall
Self serving, with indivudal core. linked to all other blocks through the 'mega' scale. Blocks are 100m long. there are 25 of them giving just over 2.5km when counting the 10m gap between each.

Meso - Module
Neighbourhood Module consisting of a series of bays. Services a neighbourhood but plugs into the main services of the block physically and experientially with the mega structure.

Micro - Building
A modular component that only must support itself. The programme can be a number of things. Plugs into Block servicing and are used to create the circulatory space within the 'macro structure'. Assembled from standard parts and standard versions but create bespoke 'meso' spaces by their arrangement.



Shenzhen University Institute of Virology

Health and Wellbeing Park

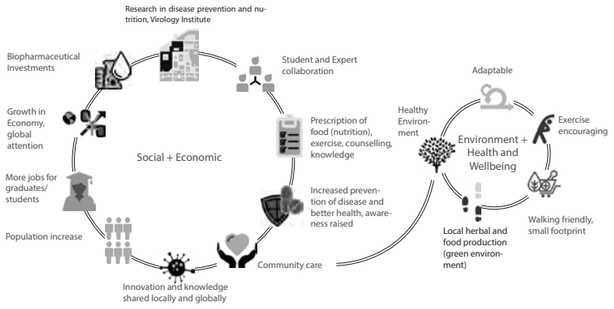
Tiffany Man - Wah Wong

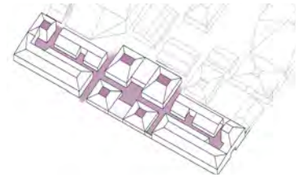
Location: Sungang - Qinghuihe, Shenzhen, China

My thesis project is a Virology Research building, a higher education program and investment into improving public health both for the city of Shenzhen and globally. The site concept encourages healthy living providing prescription of medication, food, knowledge, counselling and exercise.

Shenzhen is leading in China's healthcare research industry that has attracted many foreign experts to work in the city. Shenzhen University Institute of Virology is a proposal providing higher education, student and expert collaboration of multiple biomedical sectors and open public access to the knowledge of public health and disease prevention. The Government's centre for disease control & prevention is also located in the same district.

With the rise in population, living and healthcare costs are increasing and migrants are faced with financial pressures and struggle to afford better healthcare and remain uneducated. There is an increasing number of people with Kidney disease and Diabetes and hospitals in the area are overcrowded. A dense, hot and humid city also serves as a breeding ground for pandemic viruses and bacteria. The proposed site program serves to prescribe food, counselling and healthy activities within a healthy environment.

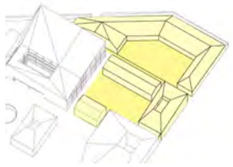




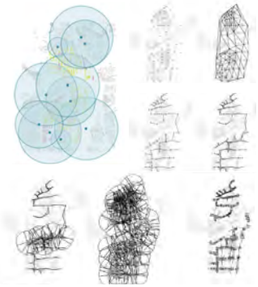
Markets/Cafes/Canteens
Streets circulation

Consultation
Classrooms

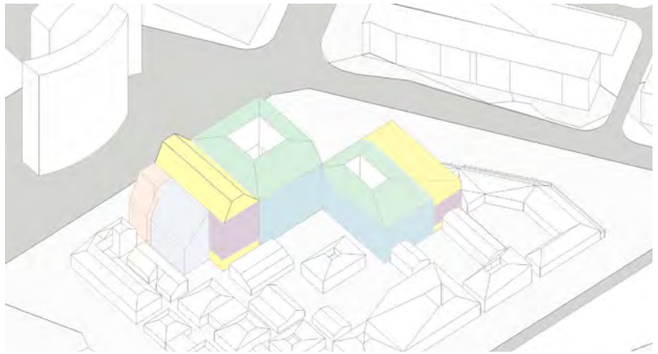
Sports Facilities
Green swquares



Nutrition Labs
Herbal/Food gardens



HEALTH AND WELLBEING PARK
My site is based on a 6000 x 6000 mm grid. The design is vernacular, relating back to the design of traditional Chinese courtyard houses. A major influence is the use of passive ventilation strategies: the use of open lanes for ventilation into the courtyard, the rain collection from the roof for courtyard cooling, and the journey from public to private spaces. These values in chinese traditional design were taken into consideration into my form design.



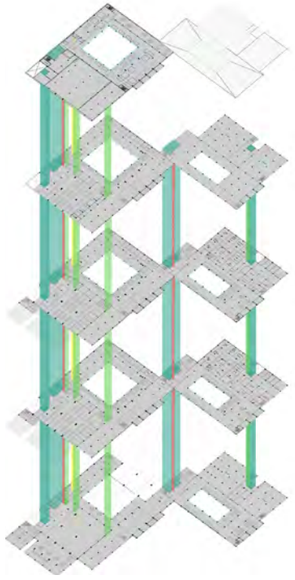
5th floor
Semi Public
Indoor garden
Open classrooms
Informal study/collaboration spaces

4th Floor
Private
BSL-1 Laboratories + Write up
BSL-2,3 AHU, Mechanical Rooms

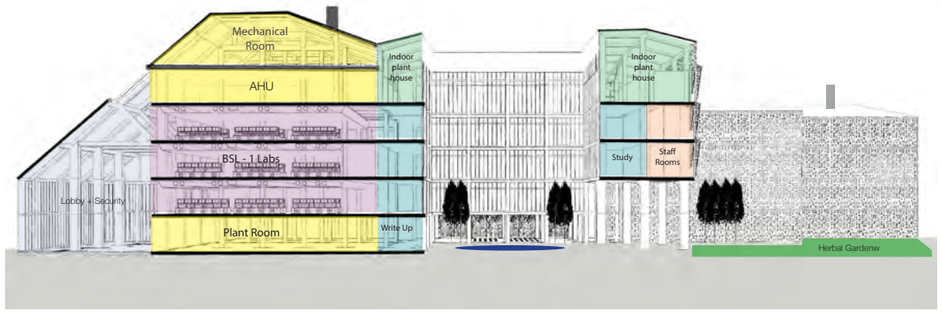
2nd, 3rd Floor
Private
BSL-1,2,3 Laboratories + Write up
Study areas

1st Floor
Private
BSL-1,2,3 Laboratories + Write up
Study areas

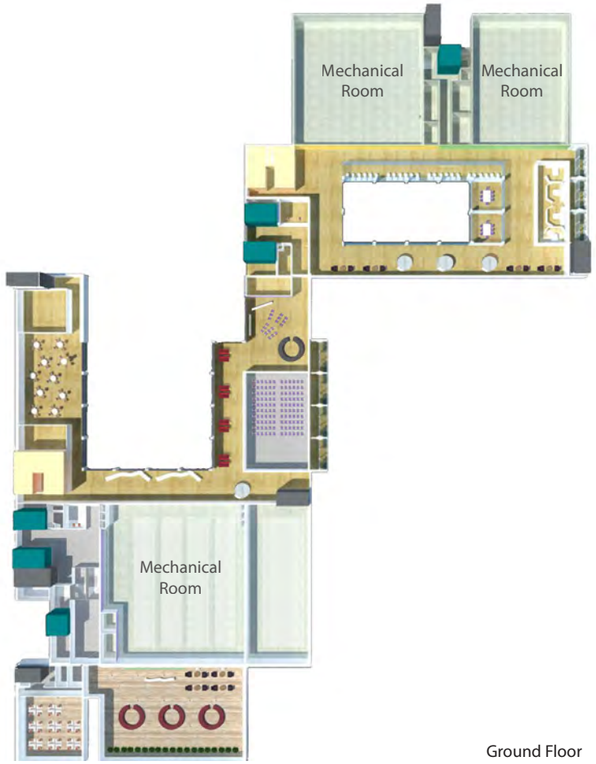
Ground Floor
Accessible to public
Lectures and rentable spaces
Laboratory Mechanical Rooms



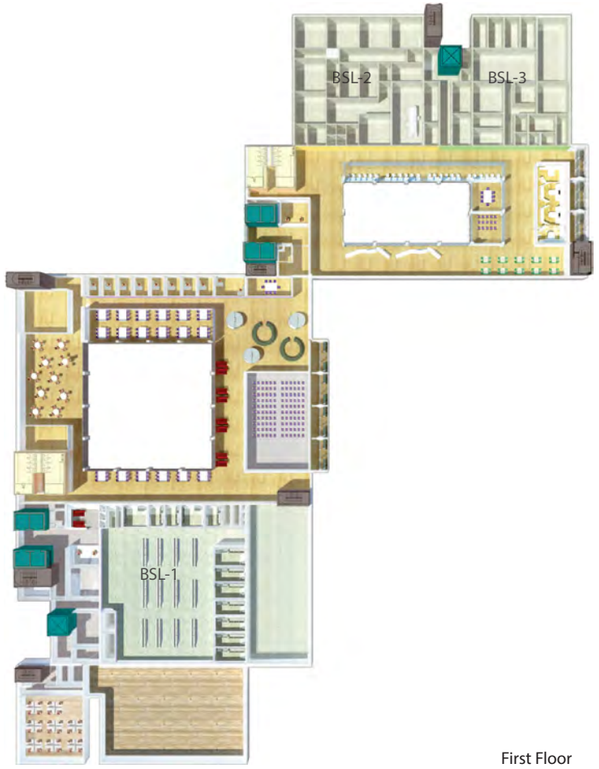
- Lifts
- Stairs, fire exits
- Toilet soil stack pipe/ vent pipes
- Service risers
- Hose reel



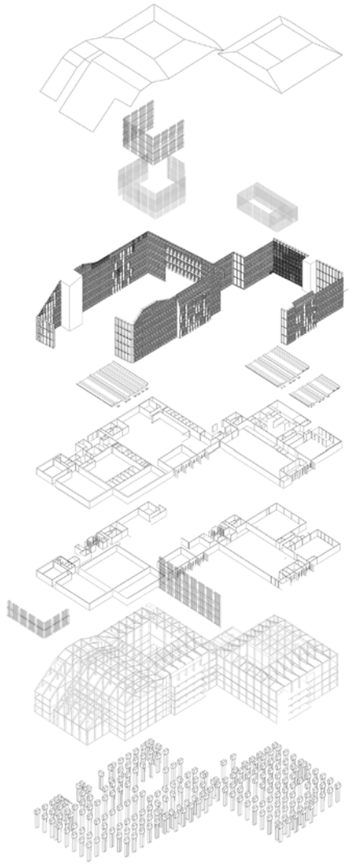
FLEXIBILITY
Study areas have mobile furniture. There are different spaces available for studying and write up, ranging from individual to group spaces for collaboration, formal to informal. Folding glass walls in write up areas allow flexibility and change of program. BSL-1 laboratory has moveable facilty units.



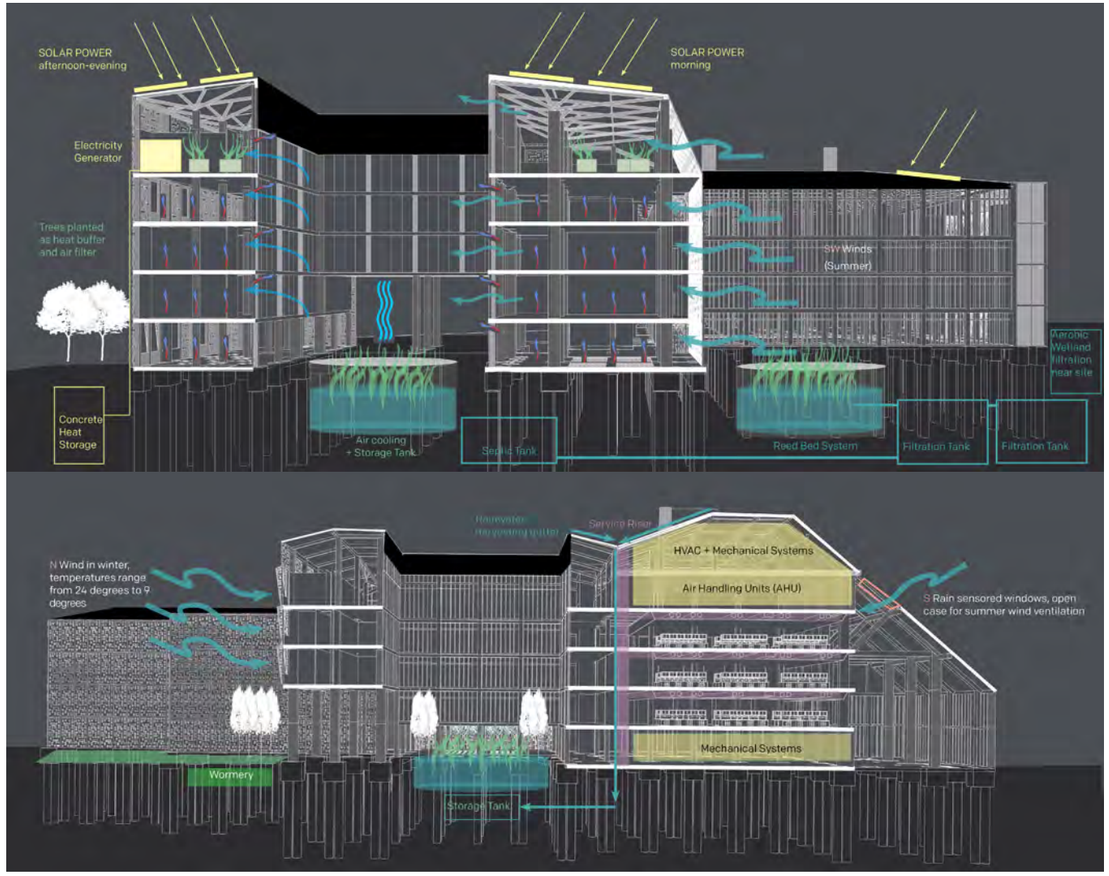
Ground Floor

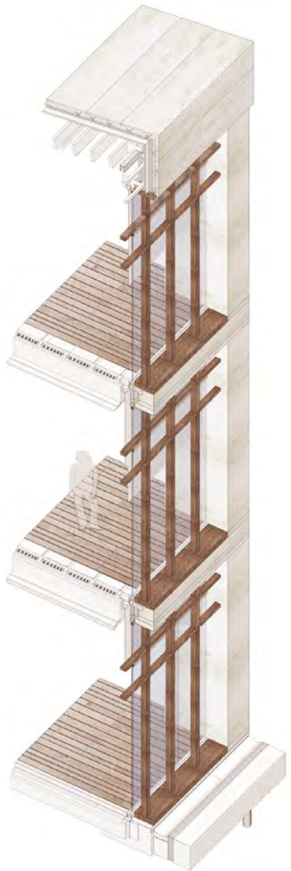


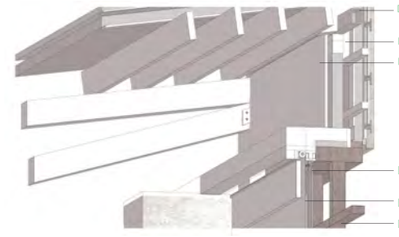
First Floor




healthy
for life

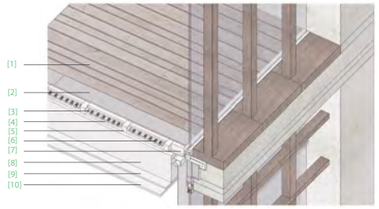

SOLAR POWER
afternoon-evening
SOLAR POWER
morning
Electricity
Generator
Trees planted
as heat buffer
and air filter
SW Winds
(Summer)
Concrete
Heat
Storage
Air cooling
+ Storage Tank
Septic Tank
Reed Bed System
Filtration Tank
Filtration Tank
Aerobic
Wetland
filtration
near site
Rainwater
Harvesting system
Serving Risar
HVAC + Mechanical Systems
Air Handling Units (AHU)
N Wind in winter,
temperatures range
from 24 degrees to 9
degrees
S Rain sensored windows, open
case for summer wind ventilation
Mechanical Systems
Wormery
Storage Tank





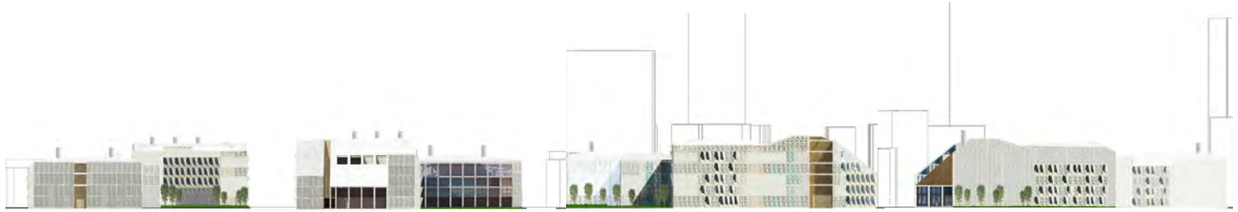
[1] 200x100mm Hollow rectangular hot formed steel tubes
[2] 200mm Thermal insulation
[3] 12.5mm Plasterboard
[4] 2500/3500mm Silver grey aluminium frame, low e coating double glazed window
[5] Manual blinds, full user control
[6] 300mm Timber subframe

[1] 40mm Treated concrete (clear acrylic spray)
[2] Mineral fibre firestop insulation
[3] Corrosion resistant panel connection cast into concrete
[4] Waterproof membrane (3 layer)
[5] 95mm thermal rigid foam insulation
[6] 20mm Vapour barrier
[7] 18mm plywood
[8] 200mm Thermal insulation
[9] 50x200mm Timber purlins



[1] 30mm Bamboo engineered flooring
[2] 30mm Floor screed
[3] Pipe tray
[4] 60mm Cotton floor insulation
[5] 90mm Timber battens
[6] Cooling/Heating pipes, connected to concrete heat storage
[7] Acoustic perimeter seal
[8] 300mm Reinforced concrete slab
[9] 15mm plywood on 20mm lining channel
[10] 13mm plasterboard

[1] 30mm Bamboo engineered flooring
[2] 20mm Vapour barrier
[3] 200mm Pressure resistant thermal insulation
[4] 300m Reinforced concrete slab
[5] 1400 x 2700 x 2500mm Pile foundation
[6] Basalt gravel, water drain
[7] Precast Concrete, L Curb



NORTH, SOUTH, EAST, WEST ELEVATIONS

Shenzhen Business School, China

Alan Pun

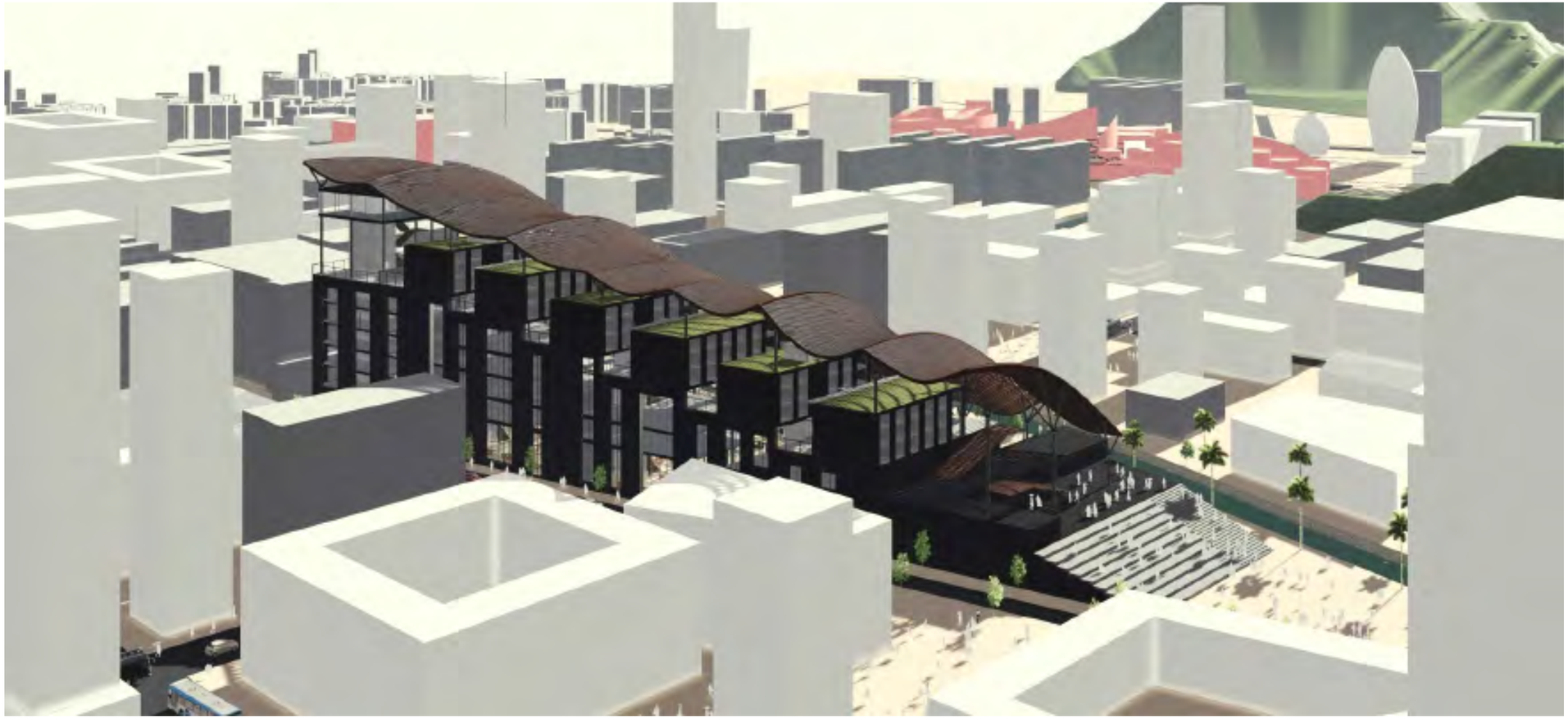
Seed Planning, a term borrowed from Richard Sennet, means planting architectural 'seeds', distinctive, non-replaceable buildings, throughout a city, which will act as urban condensers and catalyst for social and economic growth.

The Shenzhen Business School is one of such buildings

In order to create a village effect to strengthen community bonds within the students, the nessesary programs of living, learning and social are all under one roof.

The learning aspect itself is split into a trifecta of learning (of theory), Making (of product) and Marketing to the public and this is reflected in the programming.

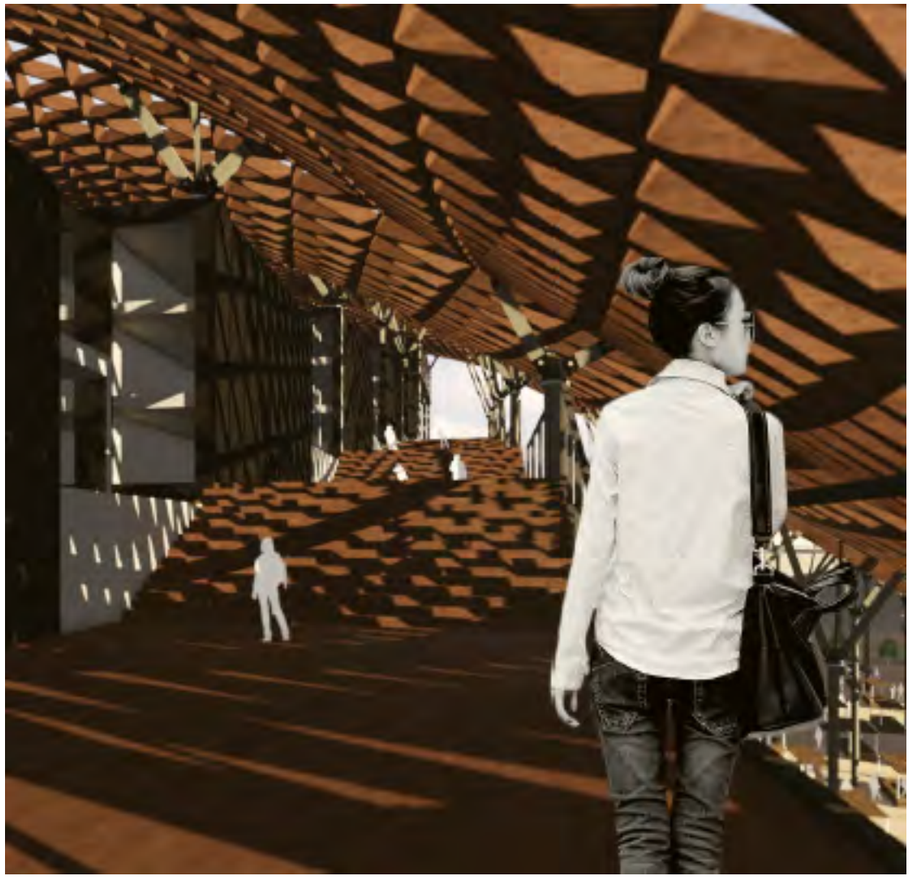
Having a mixed used building will also reduce carbon footprint as the students can walk everywhere. The role of the canopy is to reduce the solar gain entering into the building, reducing energy use and air pollution from the use of air conditioning, a major problem in a hot and humid city like Shenzhen.

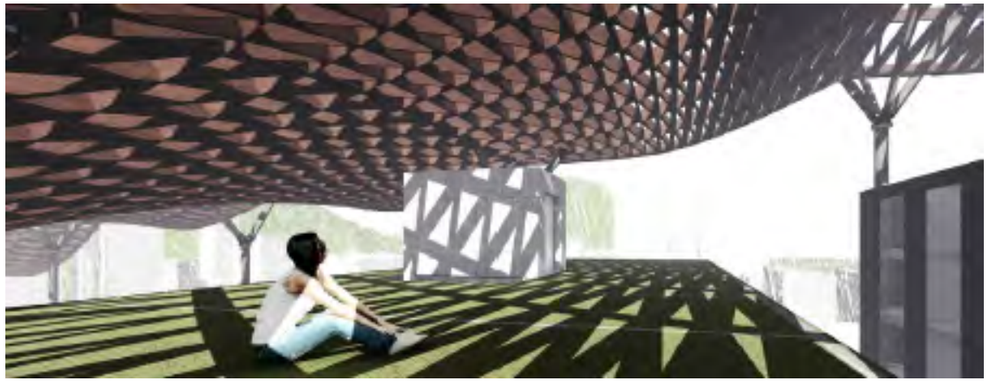


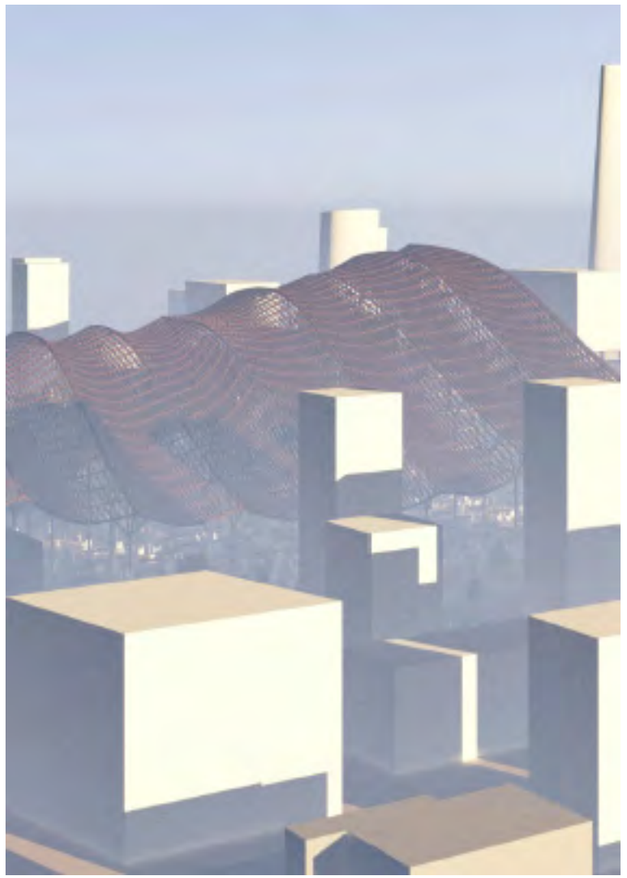
Living, Learning, Social

In order to create a village effect to strengthen community bonds within the students, the nessesary programs of living, learning and social are all under one roof. The learning aspect itself is split into a trifecta of learning (of theory), Making (of product) and Marketing (of product) and this is reflected in the programming. Having a mixed used building will also reduce carbon footprint as the studentscan walk everywhere.

Climbing up the Building
Both the students and public can climb up these stairs, while being able to look down at the market beneath and enjoying the patterns of shadows being cast by the canopy.







qed global thesis // WATER

qed WATER engaged with environmental forces on their most basic level. Climate change will increase our exposure to urban flooding. Adapting to and mitigating against both the causes and effects of climate change are enormous challenges for the way in which we design, plan and build. Do we protect or relinquish our current coastline and what of our coastal settlements?

Defending our communities from rising sea levels and urban flooding from rivers and run-off requires brave fresh thinking and new approaches to architecture and engineering. The long term nature of climate change and the inevitably long term approach necessary to adapt drives innovation. This will have implications for spatial and infrastructure planning. If we harness the cross professional nature of the response new possibilities emerge, as well as a chance to reassess the very essence of our relationship with water.

QUAY OF THE STRAND

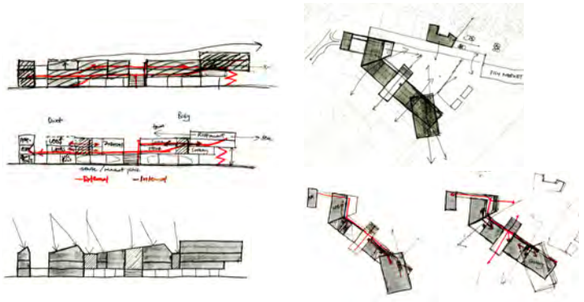
Ching Yee Chan

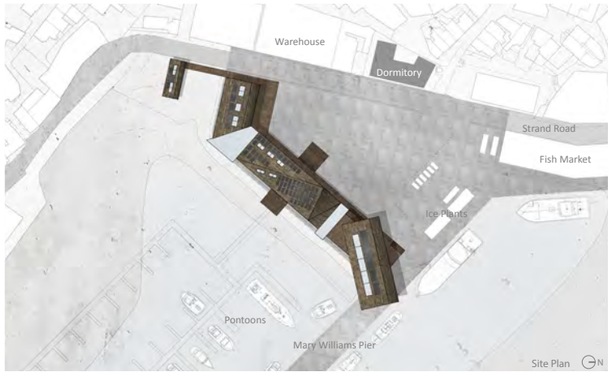
Quay of the Strand is setting at the edge of Newlyn harbour abutting the Strand. Newlyn is the most important fishing port in Cornwall and a community integrated with art which attracts many tourists to visit every year. The planning of public space is crucial as Newlyn lacks of social place for accommodating the Fish Festival held once a year and other activities. The aim of the thesis is to regenerate a hybrid educational programme which benefits to the Newlyn's community in both marine research and fishing-related industries. The design appreciates the spectacular view of the sea as well as the natural landscape in Newlyn. It reinvents and revitalizes the community and creates a sustainable and modern waterfront.

Design Strategy

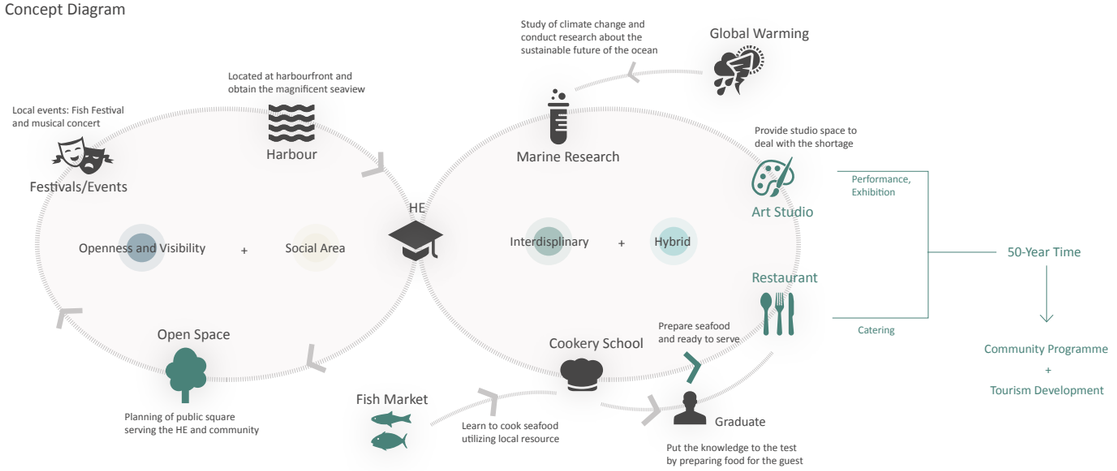
Interdisplinary + Hybrid + Social Area + Openness and Visibility

There are four main strategies in designing HE:
- Interdisplinary - different faculties will create a vibrant educational environment
- Hybrid - facilities and functions are fused together
- Social area - campus planning is the significance of social area
- Openness and vsibility

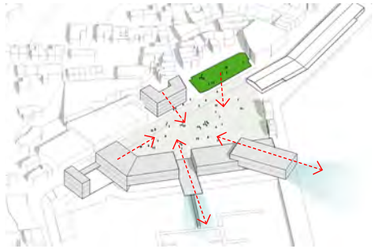




Concept Diagram



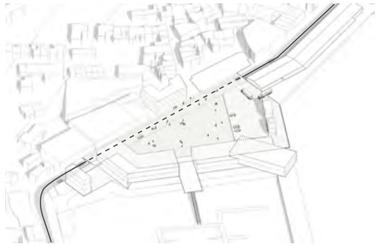
Concept Diagram



Public Space

All buildings designed in the site are overlooking to the center. They obtain the visual connection to the seascape and the landscape of Newlyn. This site planning creates a large event area suitable for any festivals which is hardly to find in the community.

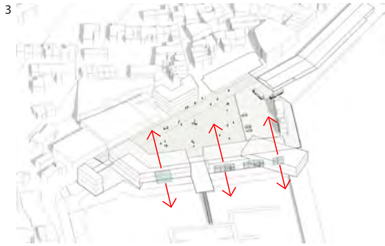
2



Traffic Road

The Strand, the only vehicular road passing through the site, is very narrow and the place is lacking of pedestrian path. The paving pattern of the section of the road is designed to be the same as the public square for reducing the traffic speed. It creates a pedestrian-friendly environment within the area.

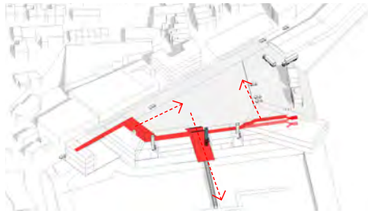
3



Ground Floor Planning

The main design is to create a central piece of public space for events and festivals in Newlyn. The building is elevated to increase the accessibility of waterfront and establish the opportunities for view corridors.

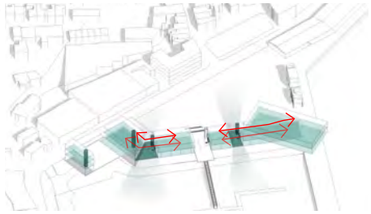
4



Public Circulation

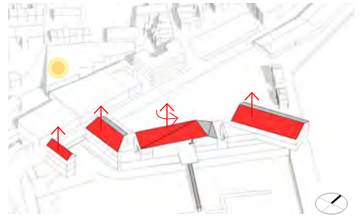
After passing the square, people reach the main entrance which is a viewing platform overlooking the inner harbour of Newlyn. A continuous pathway runs from the back to the front of the building. The external public circulation promotes visual penetration to the seascape as well as the central square.

5



Private Circulation

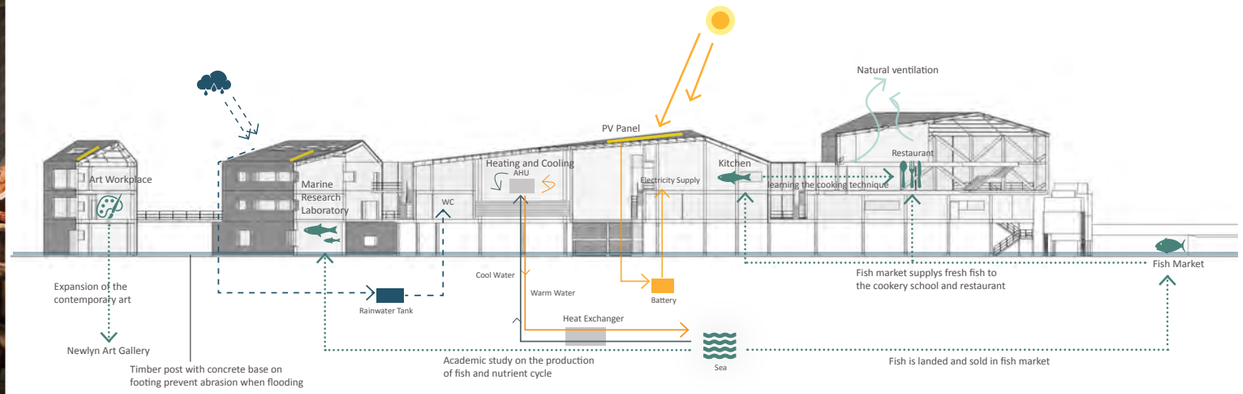
An atrium is designed in each wing providing vertical access within the building. They divide the space and give visual penetration from the back of the site to the sea.



Roof Form

Different roof forms are studies based on the solar access. There are three pitched roof which is south facing. And one of the roof is set at an angle of 15 degrees towards the east to obtain the maximum solar gain. The atriums are extended out to get more daylight.

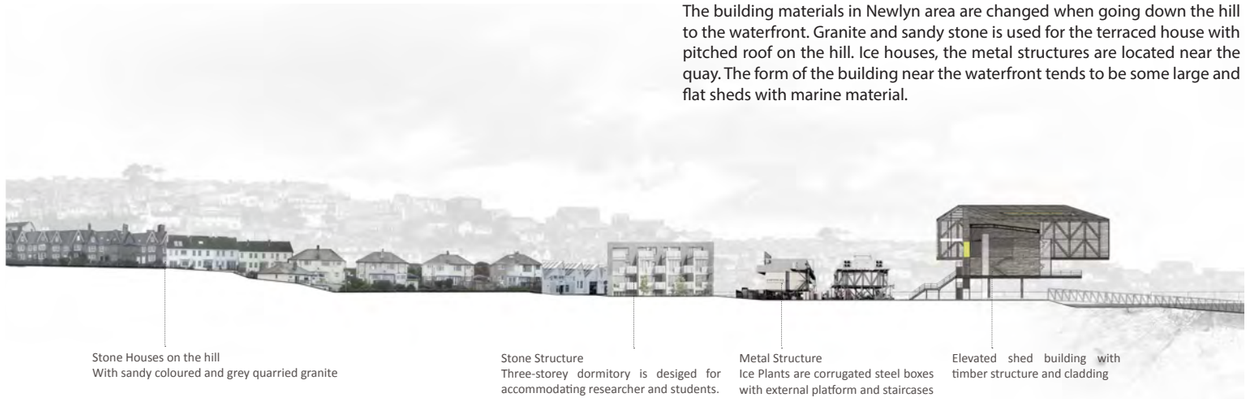
The fine dining seafood restaurant occupies the top floor of the building. After learning the cooking technique at the Cookery School, students can put their knowledge to the test by preparing food for the guests. The design of the restaurant is to frame the spectacular view of St. Michael's Mount. The skylight allows natural lighting and ventilation improving the interior environment.



Ecological Diagram

Marine research laboratory studies on the scientific method to increase the production of fish and the nutrient cycle in the ocean. Fish is landed and sold in the fish market and also to the cookery school and restaurant. The building is provided with PV panel and rainwater recycle system. Central heating and cooling system is using seawater through the heat exchanger to release heat. Natural ventilation removes the indoor gas through the skylights and openings.

The building materials in Newlyn area are changed when going down the hill to the waterfront. Granite and sandy stone is used for the terraced house with pitched roof on the hill. Ice houses, the metal structures are located near the quay. The form of the building near the waterfront tends to be some large and flat sheds with marine material.



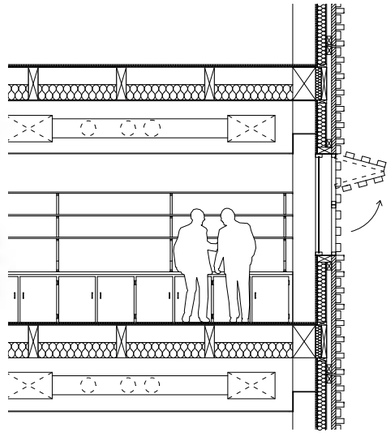
Stone Houses on the hill
With sandy coloured and grey quarried granite

Stone Structure
Three-storey dormitory is desiged for accommodating researcher and students.

Metal Structure
Ice Plants are corrugated steel boxes with external platform and staircases

Elevated shed building with timber structure and cladding

Material I Site Section



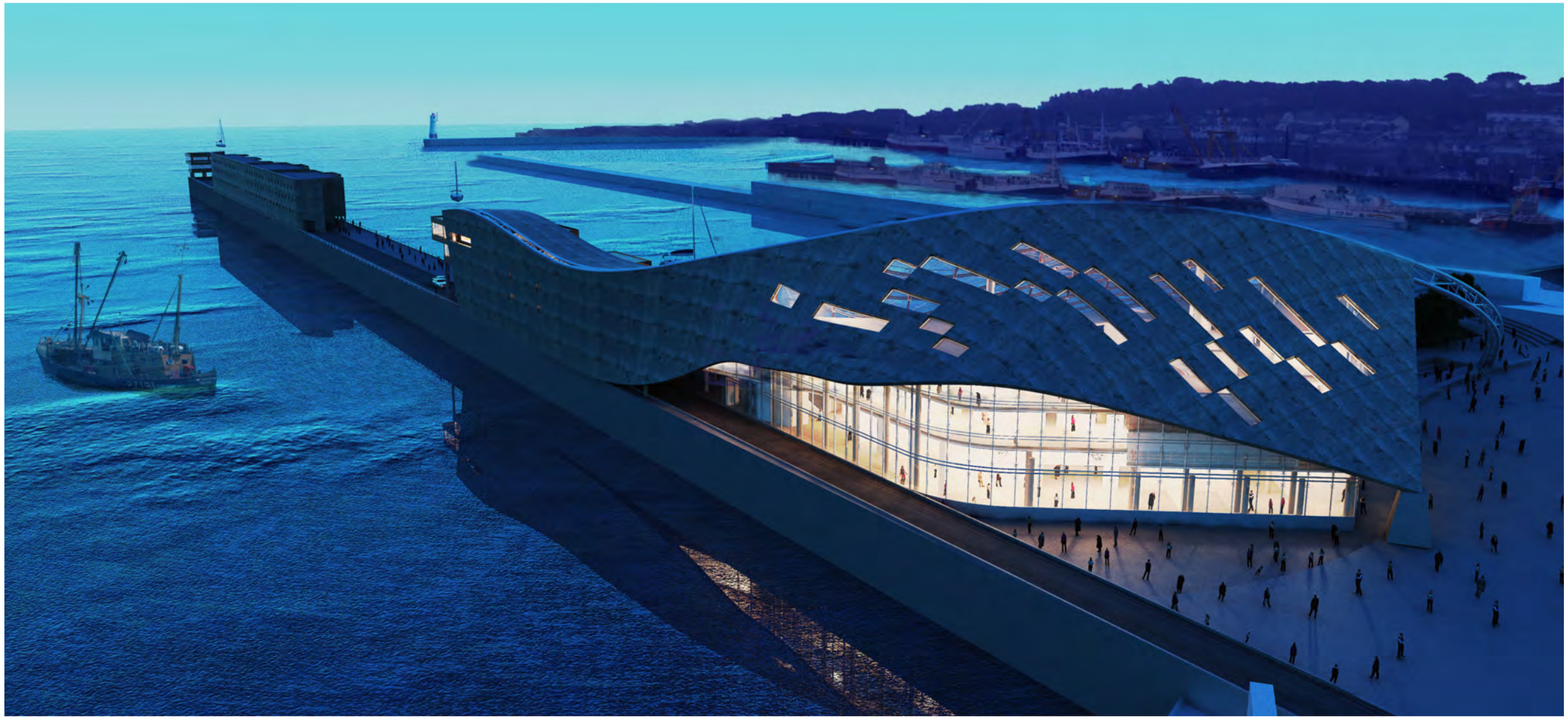
Facade I Foldable Louver

The foldable louver controls the sun exposure and composes a permanent animation of light and shade over the course of sun. The facade of the building is shut down when there is heavy storm and rain.

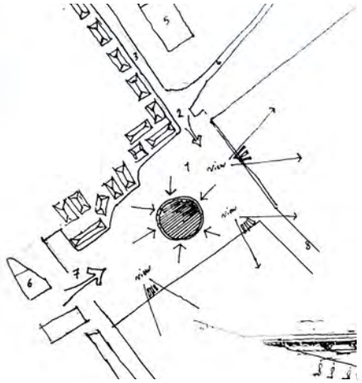
NEWLYN WAVE

SEYEDEH LADAN ALAVI

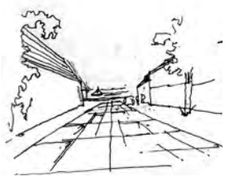
Newlyn wave is an interdisciplinary marine science and art institute located in Newlyn , Cornwall .Institute's goal is to lead cutting-edge research into solutions to problems of environmental change in maritime community.
Purpose of design was to develop an environment of higher education with scientific understanding of the sea and also connect it to the local economy and how it coexist with social, cultural ,local and environmental frame work of Newlyn.



Site location is on a new break water proposed by Newlyn council. The purpose of this proposal is to demonstrate how this new breakwater can be used not only as a defense mechanisms against oceanic storms and flooding in order to protect the erosion of fragile coastline, but also be inhabited to respond to future growth of urban expansion and rise in population growth in coastal towns.

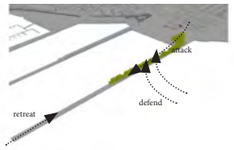


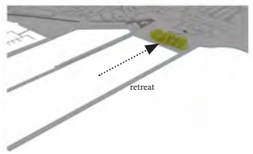
Critical views and access from the breakwater



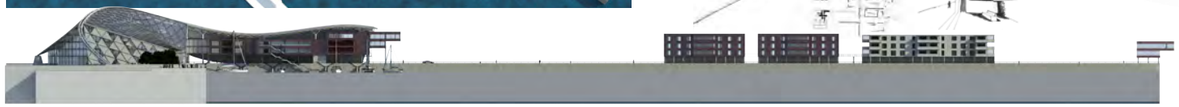
View from the Newlyn art gallery

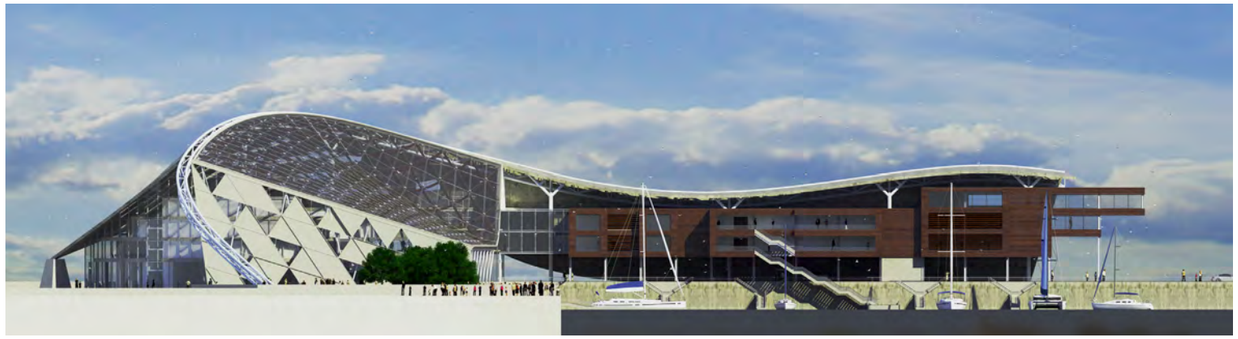
View from the Newlyn memorial and fishermen's mission

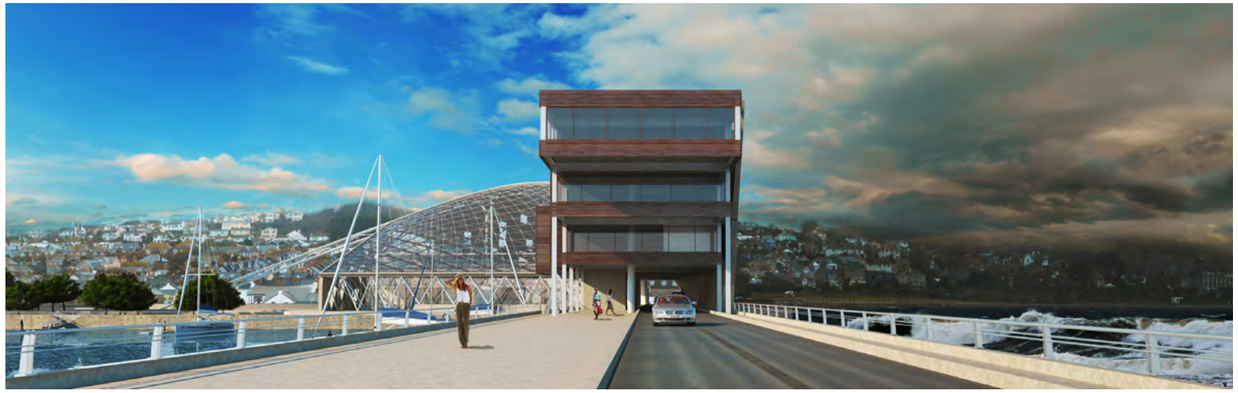


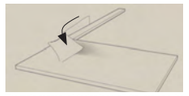


Occupying the break water with respect to three phylosofies of attack , retreat and defend could result in different arrangements. The best way of positioning the building on the site was to combine the three phylosophies all together.

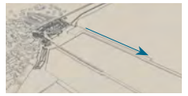








The main concept of design is a wall that protects the scheme from flooding and storm surge.

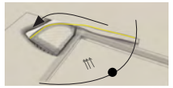


Continuous linear form cause problems with access and distribution of the program on site.

breaking up the masses was a strategy to avoid long linear plan and helped the circulation through out the scheme

The components were positioned under the skin

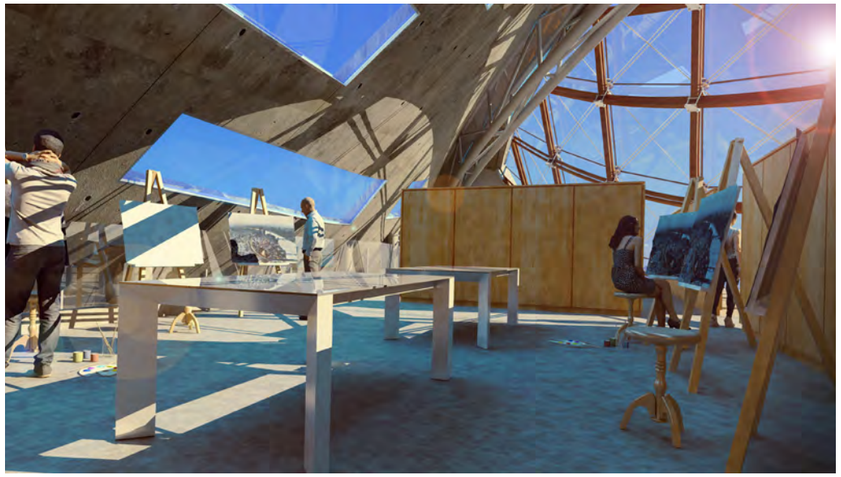
The wall closes the access to North edge of the Break water. The building is lifted up and there is a transition route under the building.

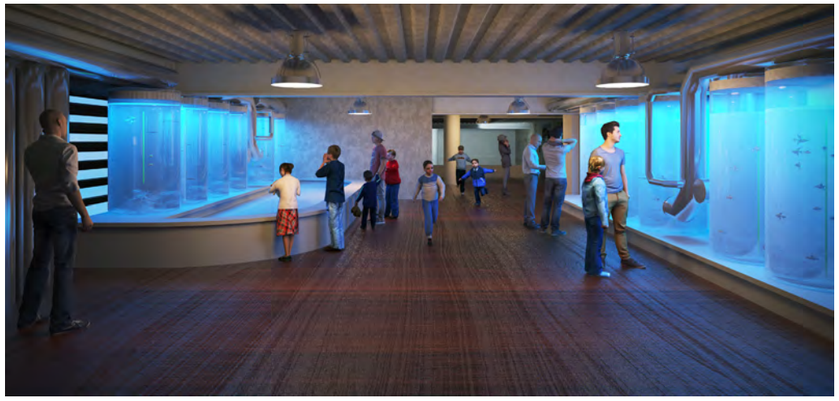


Direction of the sun path and prevailing winds has informed the shape of the building . The building is open from South West and the components of the building are positioned in a way to gain most sunlight and shelter from the undesirable sea breez

The form is inspired by the topography of the site and the ocean waves as part of the concept behind the project was the search of knowledge , the search to discover more about the ocean . Also the strategy behind the generation of form is the adaptation and mitigation to climate change in the future.

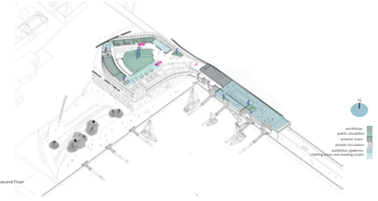
The main goal of the scheme is to encourage innovation to attract investors and tourists to boost the economy of Newlyn therefore spaces for science and Art collision has been provisioned to provoke innovation in the learning environments.



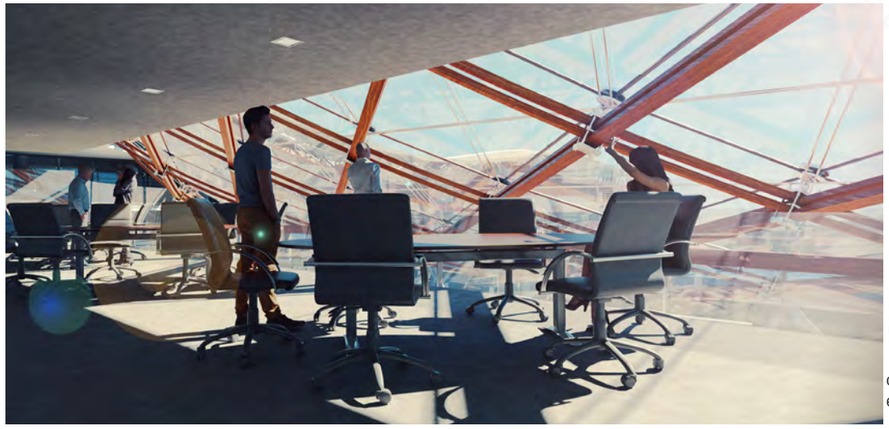


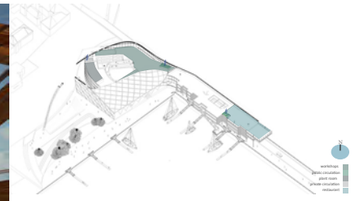
Ground Floor

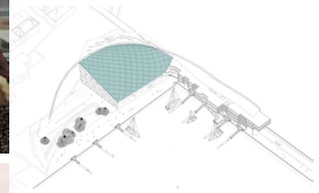
First Floor



Second Floor

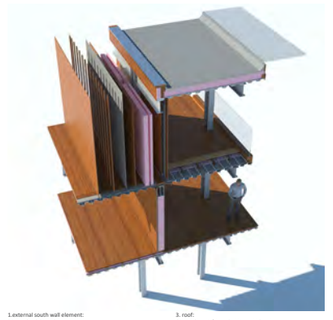






cross pollination fields to maximize learning efficiency

Public space is the main design area that connects the building to the town and its surroundings. There are famouse ceremonies happening in Newlyn in christmas and summer . Newlyn festival is one of them which could act as the main public gathering point during this time.



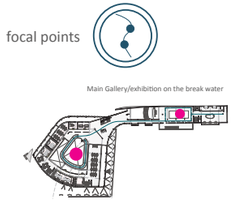
1.external south wall element:
20 mm larch boarding
30 mm battens
moisture-diffusing windproof layer
21mm laminated-softwood sheeting
280 mm mineral-wool insulation
12.5 mm gympsum fire board
vapour barrier
2. 30 mm timber floor boards
timber joists
100 mm room for services(under floor heating , electricity , waste , water)
50 mm thermal insulation
70mm steel ribdeck floor with pured concrete screed

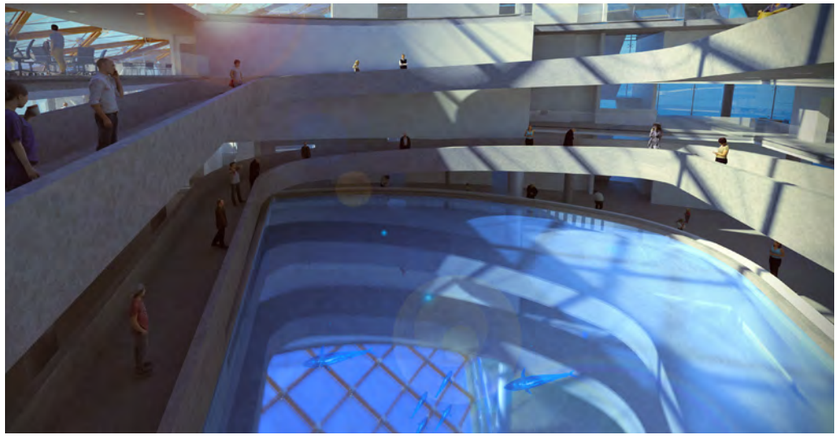
3. roof:
60 mm layer of gravel,seperating layer
two-layer bituminous membrane
20-120 mm rigid-foam insulation
120 mm rigid foam insulation
self adhesive vapour barrier
30 mm gympsum board
70 mm steel deck
4.steel columns are all hot deep galvanized coated to stand the corrosion.

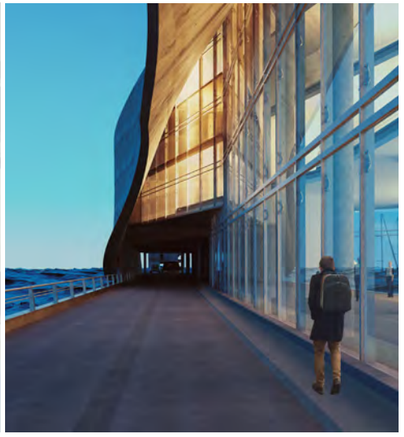
linking higher education to local economy of Newlyn and the maritime and art community.

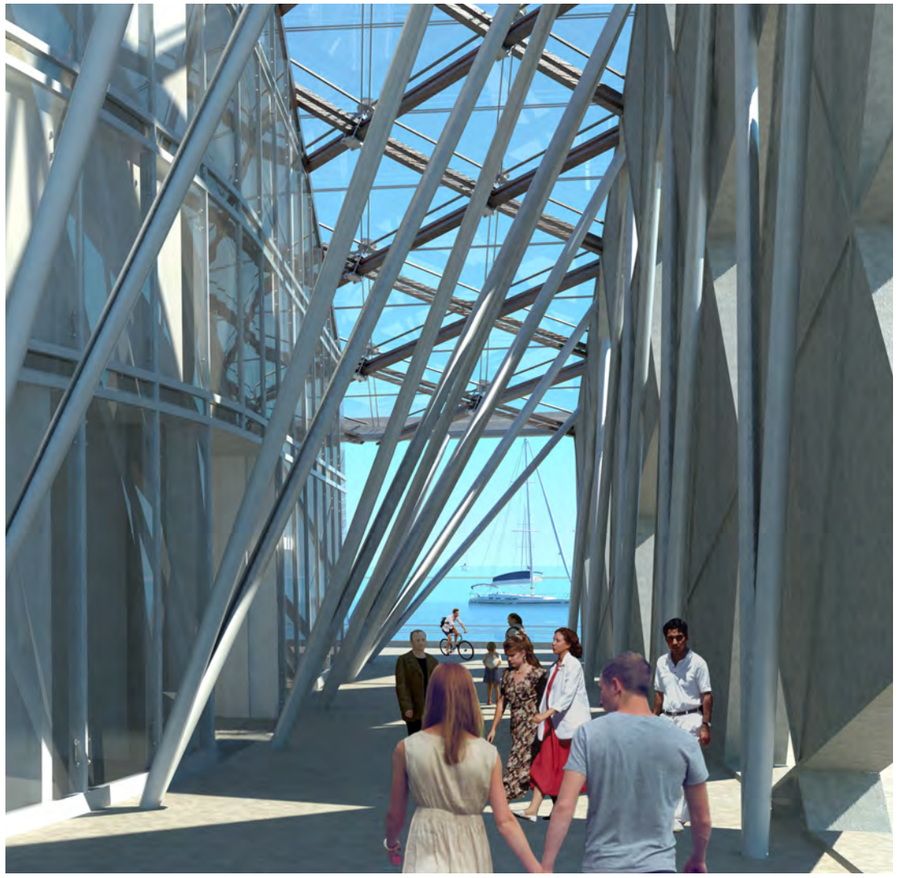
There are offices on the ground floor that could be let to any bussinesses related to marine science , art and fishing industries in collaboration with Newlyn harbour commissioners. The restaurant has the most spectacular views and serves the best type of fish dishes in Newlyn.

The organization of spaces are in a visitable sequence and the gathering spaces in exhibitions are designed to empower visitors instead of following a linear path. This required main vertical circulation points.
There are two main focal points in the building; ramp is located on the deck and exhibition gallery on the breakwater . These are the focal points to have acces to all the floors vertically.









THE BEAUTY OF THE BUJI

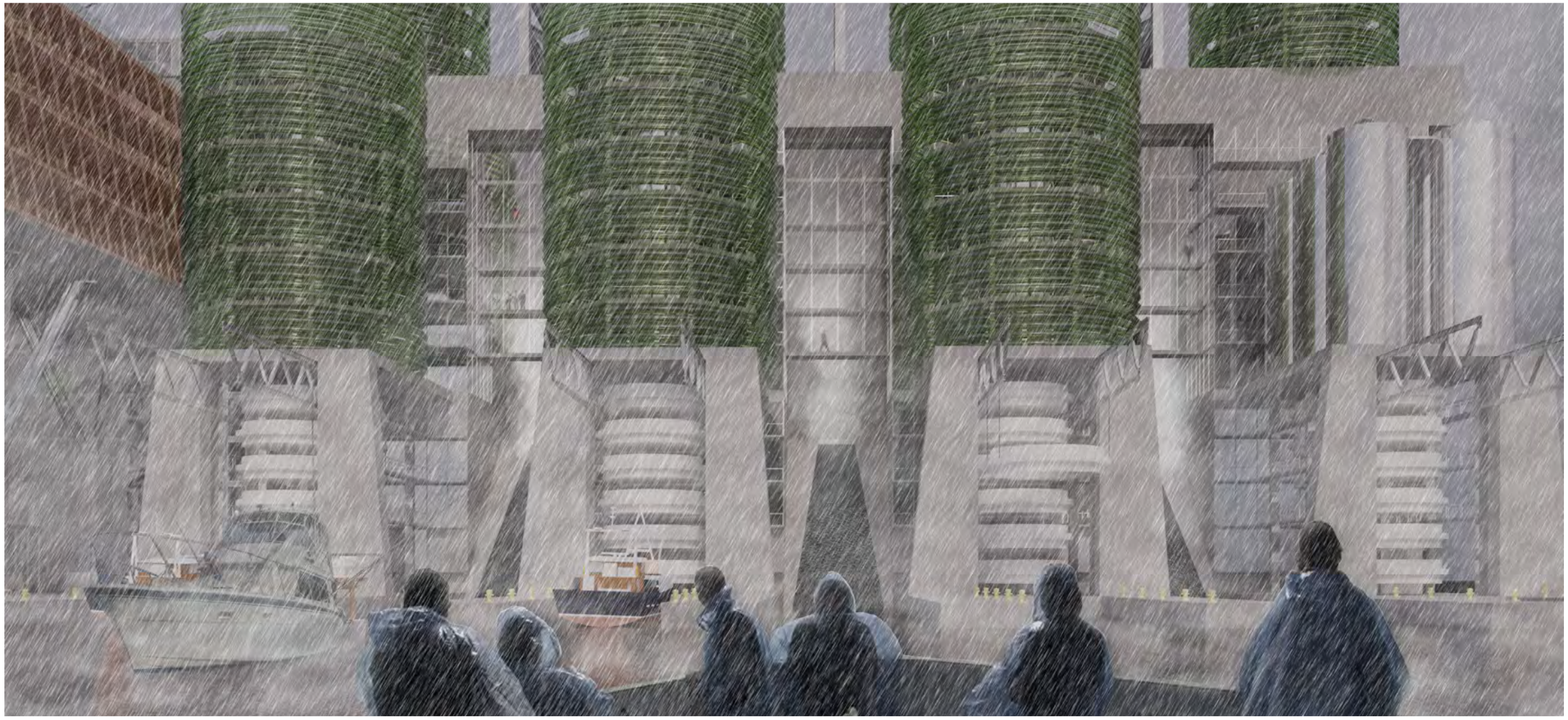
Padraic Gorman

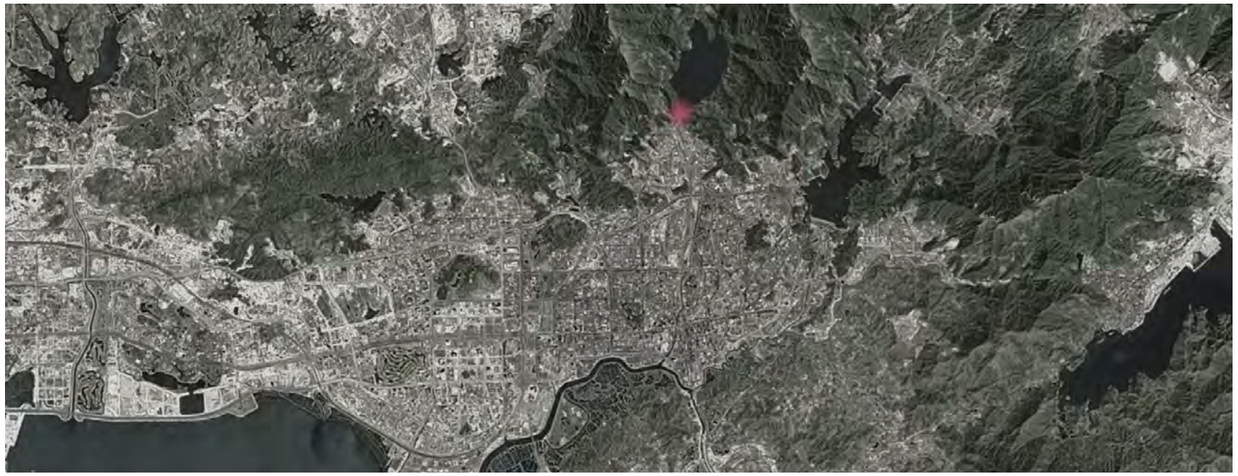
A hydroelectric bioremediation dam, providing Shenzhen with naturally clean water, sustainable power, fuel and food.

The year is 2024. The past 40 years have seen the unbelievable growth of the Shenzhen special economic zone. Currently 87% of all global electrical goods are now produced within the zone, amounting to the largest industrial area that the planet has ever seen. This sudden increase of industrialism has seen the area economically prosper but the natural environment has had to carry this burden. Local waterways are clogged with algae due to changes in the PH of the water, meaning wildlife can no longer survive in this environment.

Since 2014, the local Shenzhen government have been implementing a masterplan within the Sungang-Quingshuihe region of the city to bring in a new Central Cultural District. This district would be an area of the city where nature come first, a place where every citizen can enjoy the outdoors only a stone's throw away from the busy Central Business District. The key focal point of the master plan is the redirection of the river Buji, It currently flows down the far extremities of the masterplan and is subsequently ignored. The river is to be redirected through the centre of the CCD, in order to create a focal point. but also a new environmentally friendly transportation system.

In order for the river to be redirected, it must be controlled. Each monsoon, the Buji bursts it's banks causing large parts of Shenzhen to flood. To stop flooding and to control the river a new dam and reservoir is proposed, one and half kilometres North of the district. This will provide clean drinking water, hydroelectricity, a new source of fuel and food to the city of Shenzhen. The dam will become a resource, providing jobs, income through tourism and a new lease of life to the city.





Location of the Shenzhen Dam and reservoir

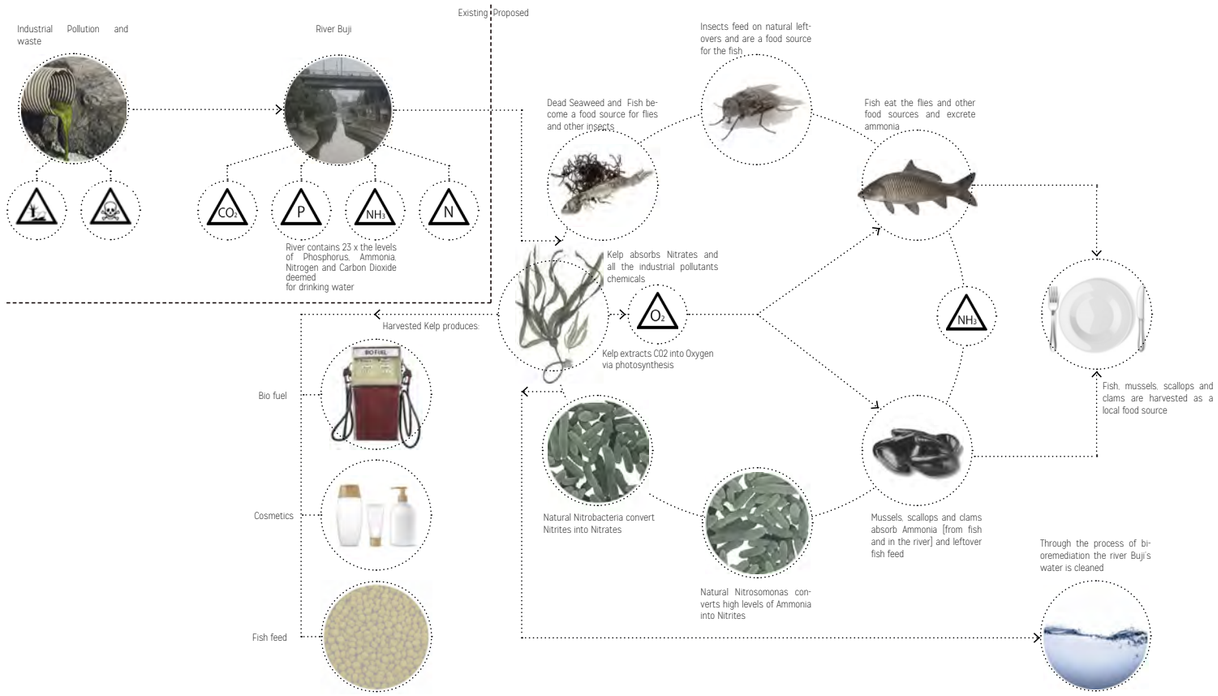
Shenzhen City

930,000 tonnes of untreated water is dumped into the Shenzhen River network daily

85% of Shenzhen water stations were related below level 5 or 'extremely poor' in 2014

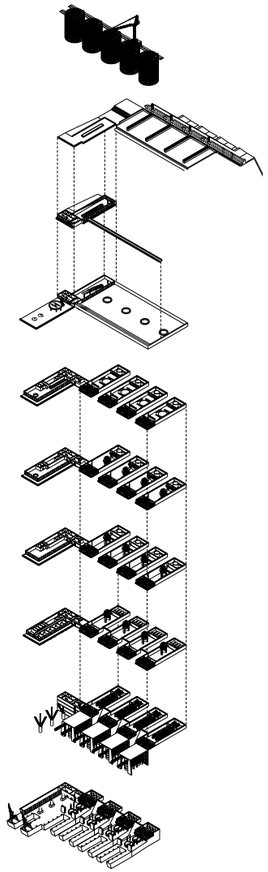
4 main Shenzhen rivers - Longgang, Maozhiou, Guanian and the Buji - the most polluted rivers in the entire Pearl River Delta

30B Yuan - The amount Shenzhen city has spent on water pollution since 2000

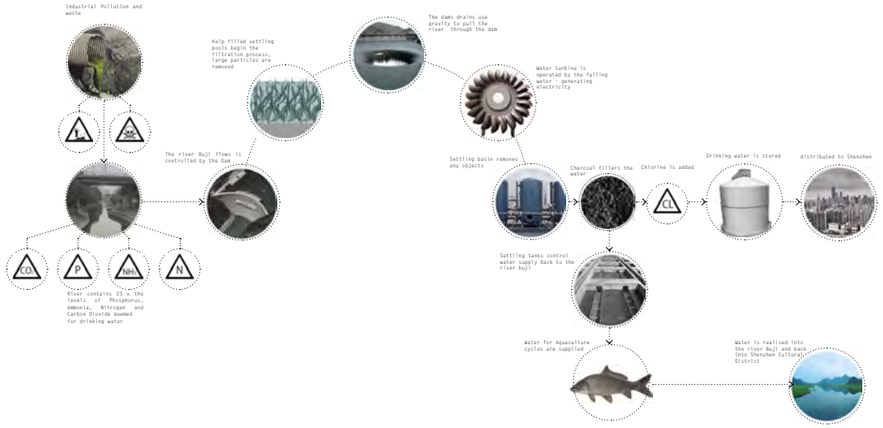


Bioremediation Approach

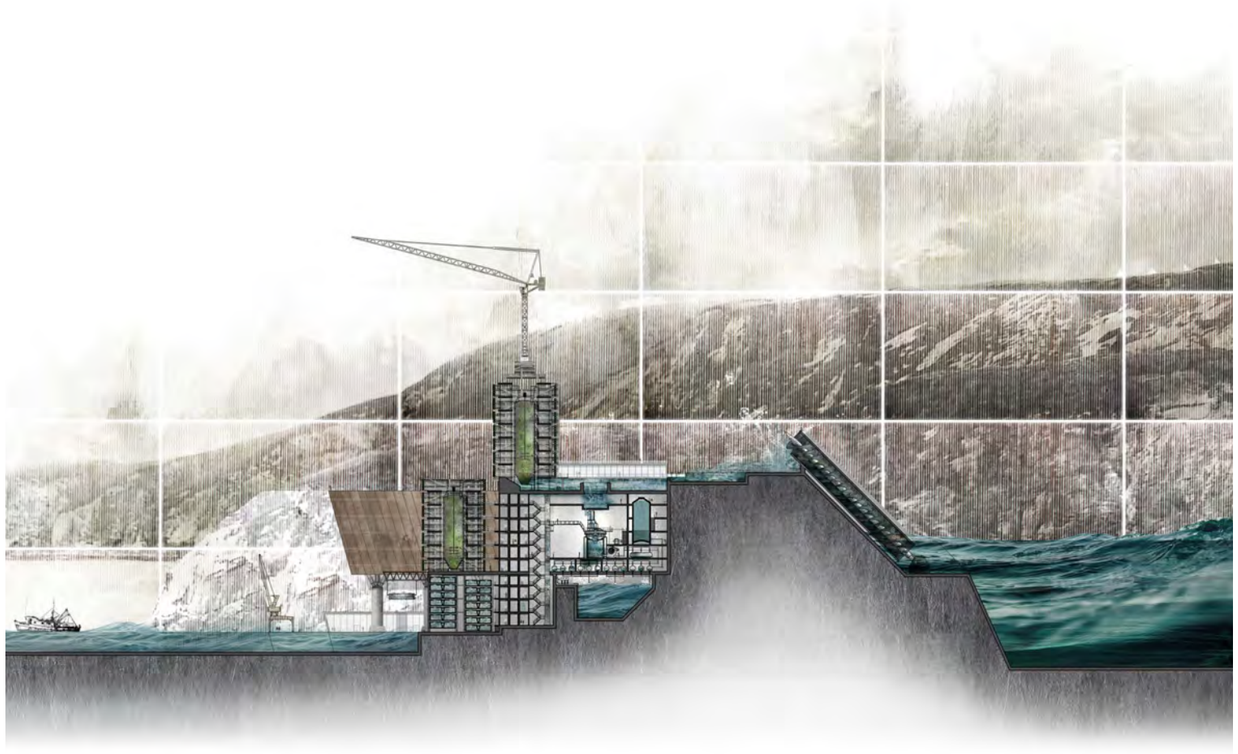
The cradle to cradle diagram illustrates the bioremediation process that the Shenzhen dam incorporates. This process cleans the highly polluted Buji river water through a natural process using kelp, fish and molluscs. The outputs of the process include electricity, biofuel, sustainable farmed fish, molluscs and clean drinking water.



Exploded Isometric



Bioremediation Process Diagram

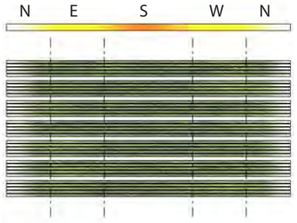


Section AA

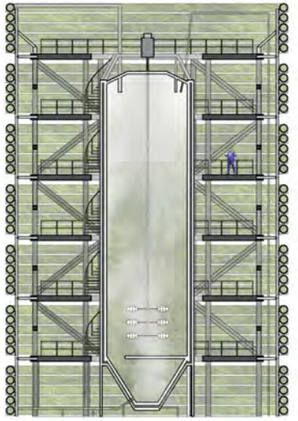
Bioreactive Algae Facade

The facade has been designed to enable the process of biofuel production. Algae grows naturally through the process off photosynthesis. production rate of algae is determined through the efficiency of the light transmission to microalgae, determining the south facing position. The cylindrical shape also provides the most surface area providing more area for photosynthesis to take place - producing more algae

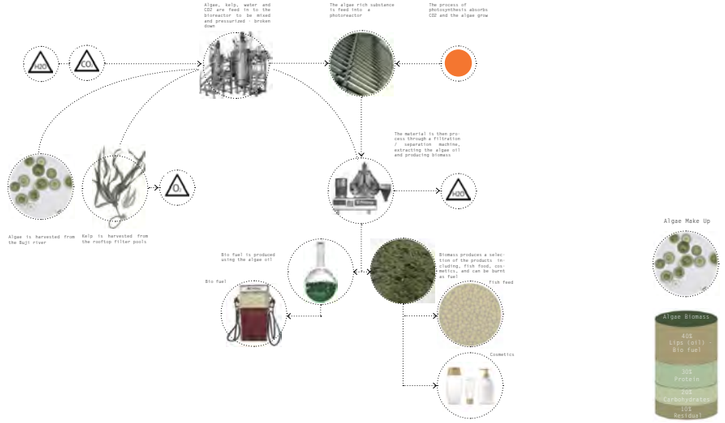
Photoreactor facade unfolded



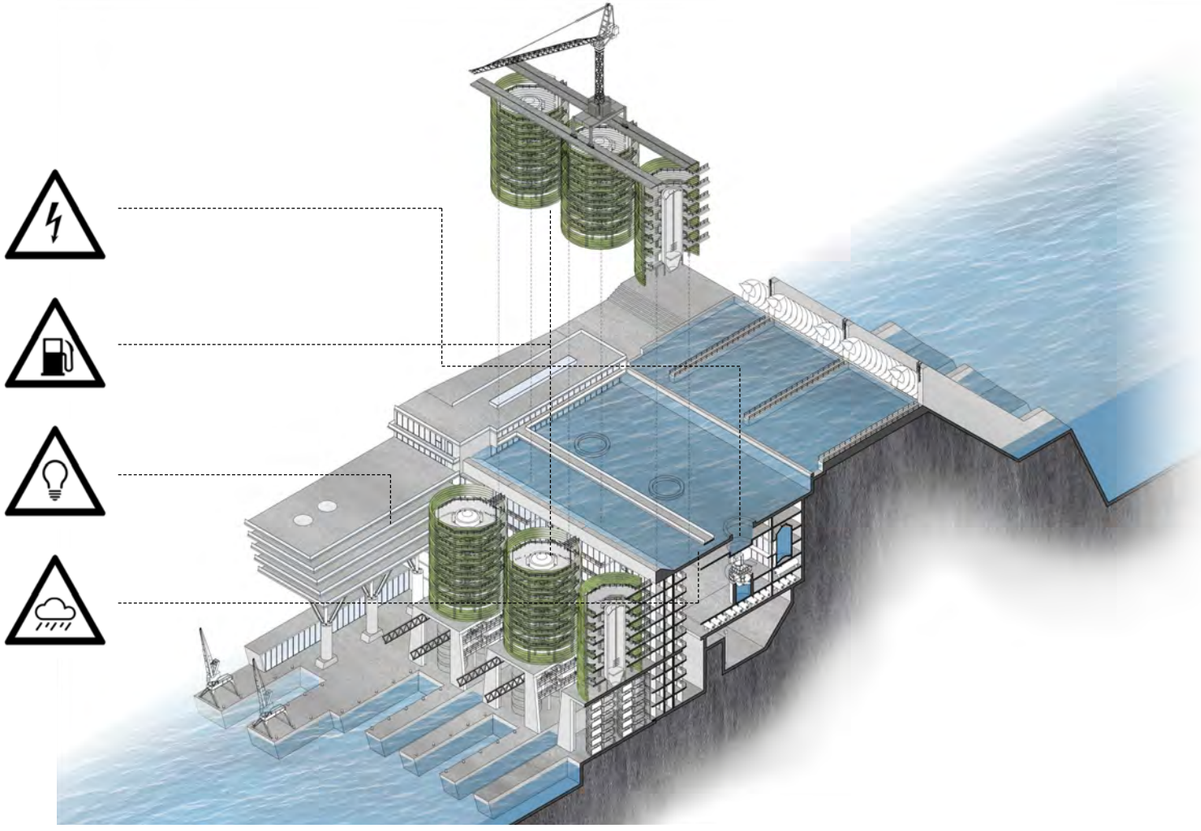
Surface Area -
Tube - 38.562 SQM
Photoreactor - 1349.62 SQM
Entire Plant - 10796.96 SQM



Bioreactor Section



Biofuel Process Diagram

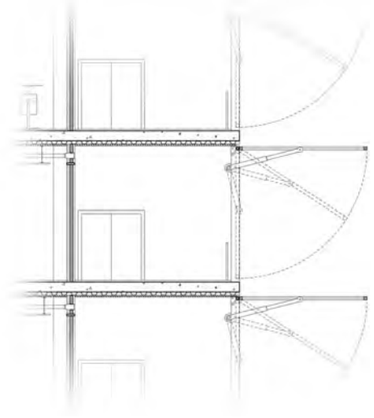


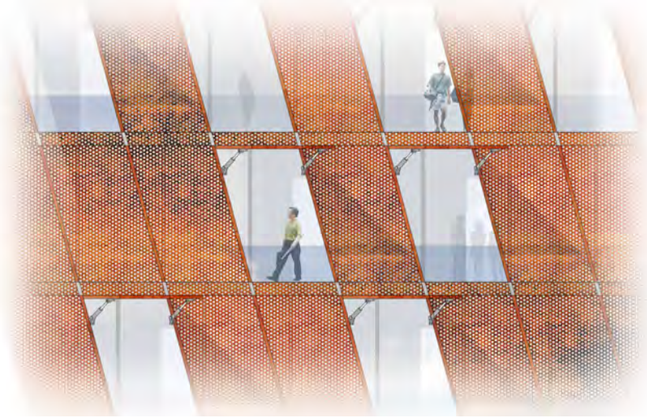
Isometric Section highlighting energy production

Plant Yearly Production
1 SQM / 43L Biodiesel - Yr
Plant production - Approx
465000.00
Litres of biodiesel per year

The Visitors Centre component of the dam aims to educate the user in the various processes that the dam incorporates, four levels of exhibition space, a high class fish restaurant, various viewing decks and platforms allows visitors to fully understand the dam.

Internal Perspective -
Bioremediations Exhibition





Visitors Centre Facade Study

Perspective Visitors Centre Section -
highlighting the adaptive solar
shading facade


水族景房