

國立交通大學
建築研究所
碩士論文

圖像建築
Digramming Architecture

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Competition

Nangang District
Urbanizing Industrial innovation

The Vertical Village -Workshop
'CITROEN CREATIVE AWARDS'

Content



Abstract

人類具有群居特性，剛開始是為抵禦外來環境威脅，而建築基本功能也為遮風避雨，在這基本需求與時空的變動中，今日科技工業技術的快速進步後，也面臨地球資源改變，氣候異常，人口數量爆炸等問題，尤其是當今全球化文化現象的快速變動下，如REM Koolhaas認為「曼哈頓的建築是一種壅塞（congestion）的開拓之範型，曼哈頓已產生自己的大都會都市主義——壅塞文化」（Rem Koolhaas, 1994: 293），對於新的現象出現，使用者最原始的建築居住功能產生了新改變與需求。但是人與人最基本的關係互動卻是永恆的，建築可以是裝載著生活的容器，也可以是媒介著新文化的引信，它可變化產生密度大小、使用分區或混合使用、歷史記憶或統一性、垂直性組合或單一性，也使環境帶來協調與獨特氛圍辨識性。

隨著全球化的改變，影像輕易填著生活，它可以是記錄、保存在紙質媒介、膠片等等對光訊號敏感的介質上，但也可以是建築具體紀錄著使用者行為的記憶場所。

因此本研究不論是地域性的自然圖像，如台灣梯田中的稻浪到西方托斯卡尼原野上的防風林圍籬，到探討環境與居民群體在台灣歷史上重新定義建築的方式，甚至到是親密的家庭關係中，皆試圖找出人的記憶與圖像互相影響的建築方式。

Abstract

Humans inherently social features, the first for defense against external threats to the environment and the building also cover the basic functions of the wind and rain. Therefore, under the basic needs and the changes of time, today's rapid technological progress in the technology industry, we face changes in the earth's resources, climate anomalies, such issues as population explosion, especially in today's rapidly changing global cultural phenomenon.

For example: REM Koolhaas said that "Manhattan building is a pioneering congestion of paradigm, it has produced its own metropolitan urbanism - congestion Culture", for the new phenomenon, the user's most original architectural features create a new living and demand change.

But the fundamental relationship between human interaction is eternal. The architecture can be loaded with a container of life, it can also be a new culture medium fuse, it can produce changes in density of contrast, mixed use zoning or land use, historical memory or vertical combination or unity and environment identification of coordination and unique atmosphere.

With globalization, the images easily filled with our life. It can be recorded, stored in the print media, film and so the signal light sensitive media or that specific record of building a user places the memory behavior. Therefore, this study project is regional in nature, images and diagram. Such as planted rice in terraced fields in Taiwan and in the wilderness of Western Tuscany on windbreak fences, then studying the environment and residents groups in Taiwan's history to redefine the way construction, even to a close family relationship.

Therefore, the diagramming architecture was trying to find the memories and diagramming affect each other construction method.

The Rice waves

Chapter_01
 Advisor : Ying-Chao Kuo
 Location : Taiwan/Taipei
 Time:3/2010



Farmland

秧田

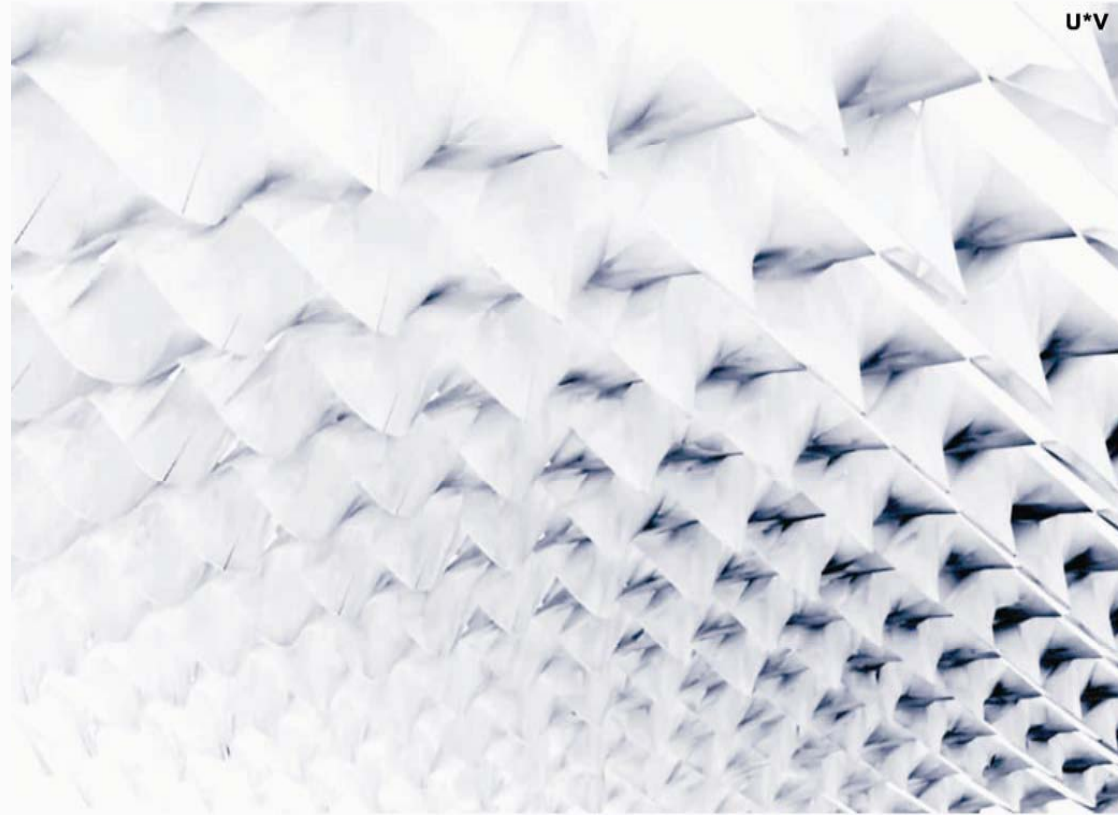
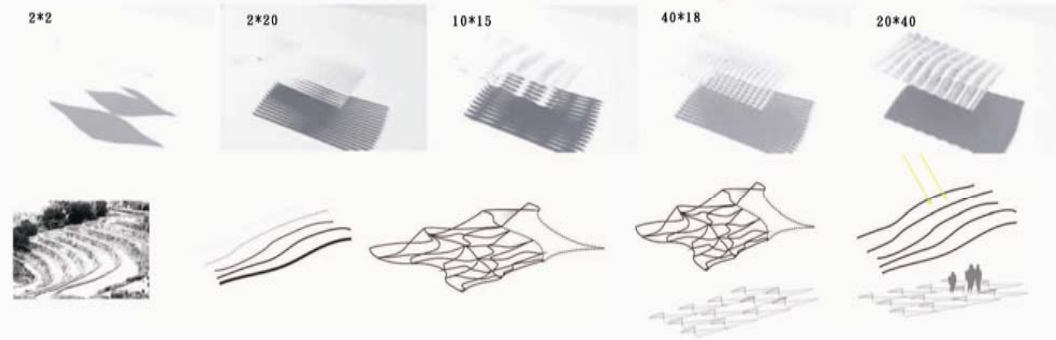
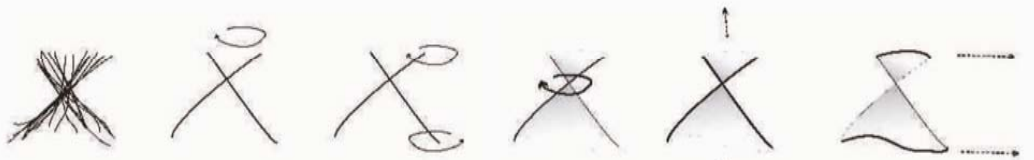
Rice is the seed of the monocot plant *Oryza sativa*. As a cereal grain, it is the most important staple food for a large part of the world's human population, especially in East, South, Southeast Asia, the Middle East, Latin America, and the West Indies. It is the grain with the second highest worldwide production, after maize .

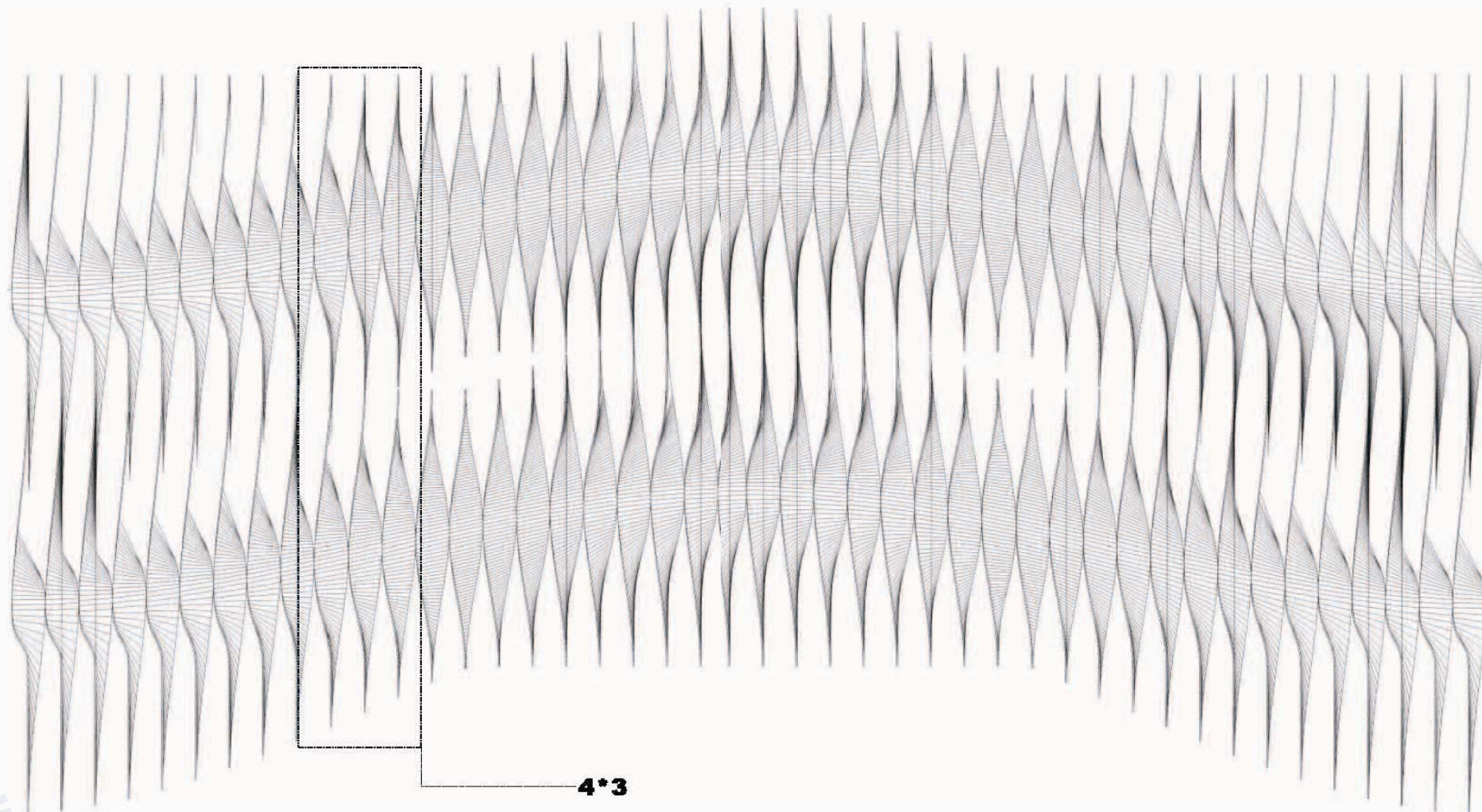
Since a large portion of maize crops are grown for purposes other than human consumption, rice is the most important grain with regards to human nutrition and caloric intake, providing more than one fifth of the calories consumed worldwide by the human species.

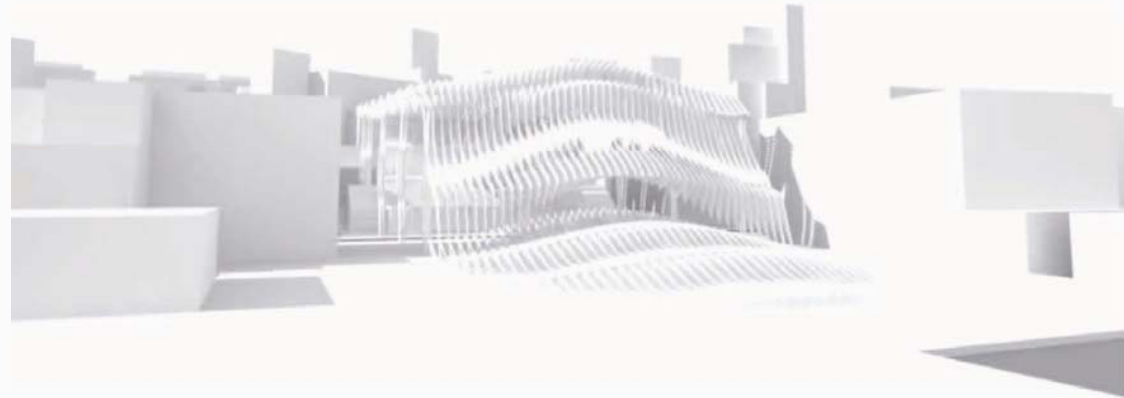
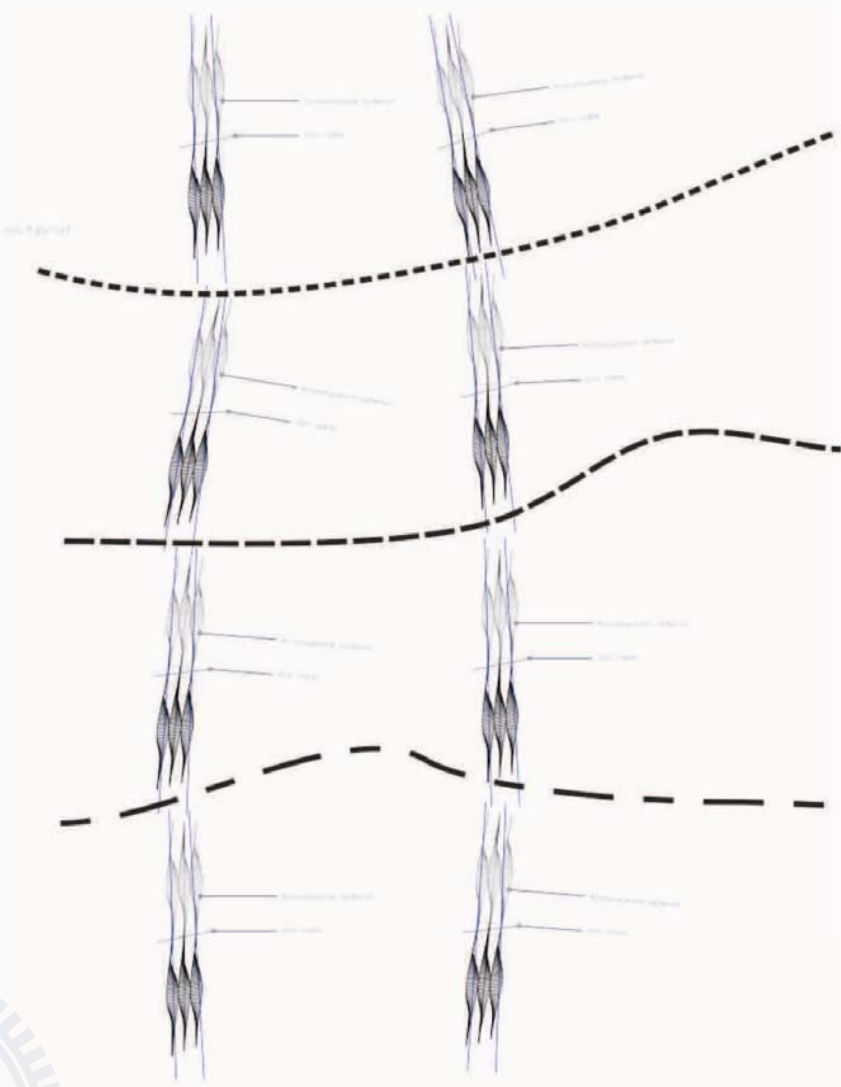


Concept

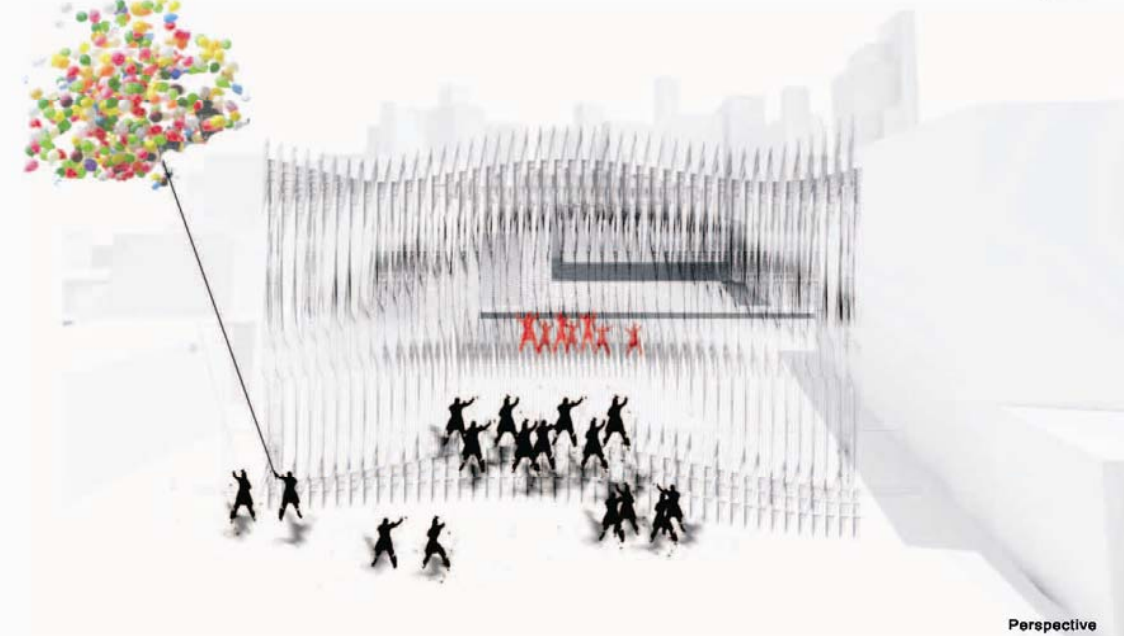
The concept of staggered through two straw.
The way for the use of staggered rotation angle and
different lengths of straw woven into mesh with
each other.





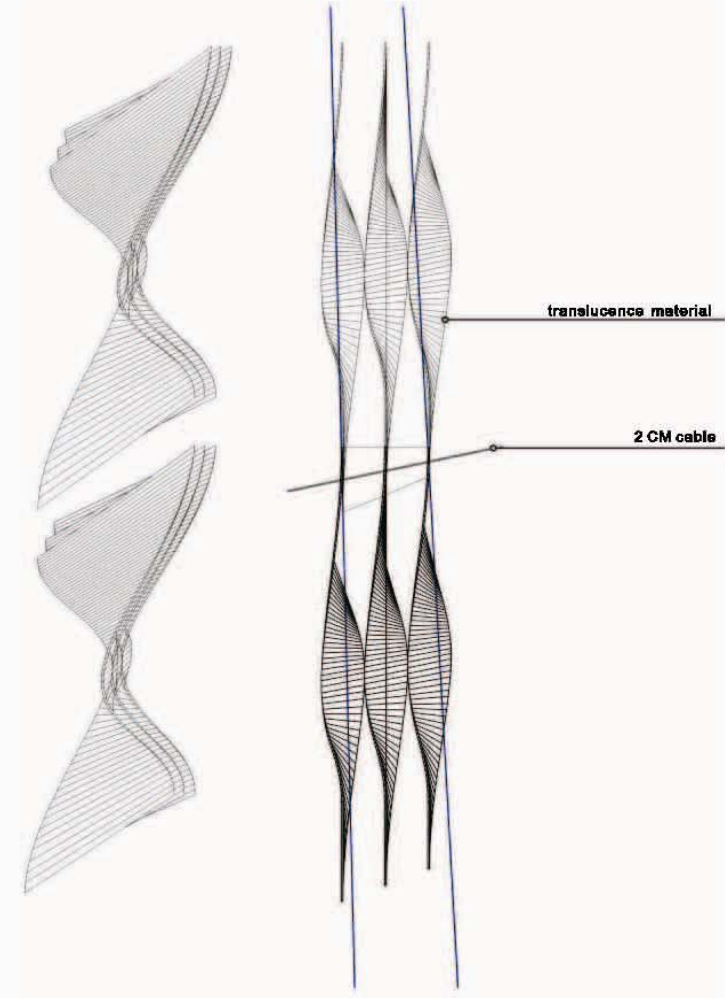


Perspective



Perspective

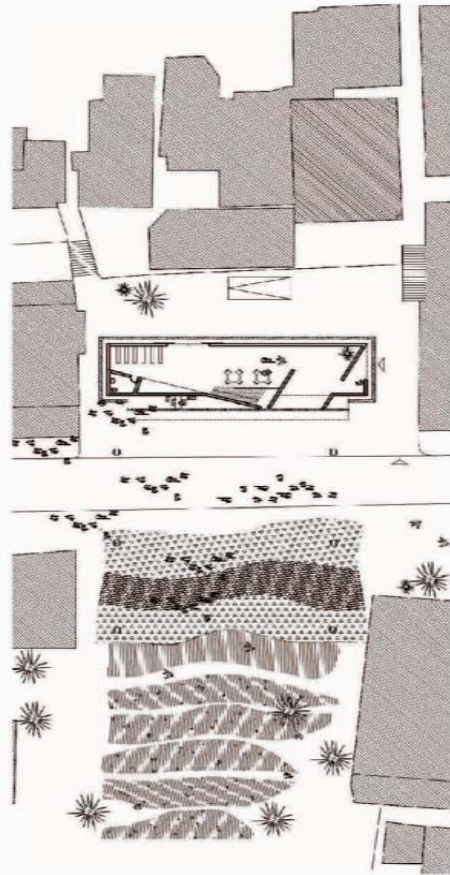






Rice

The seeds of the rice plant are first milled using a rice huller to remove the chaff (the outer husks of the grain). At this point in the process, the product is called brown rice. The milling may be continued, removing the 'bran', the rest of the husk and the germ, thereby creating white rice. White rice, which keeps longer, lacks some important nutrients; in a limited diet which does not supplement the rice, brown rice helps to prevent the disease beriberi.



1F plan



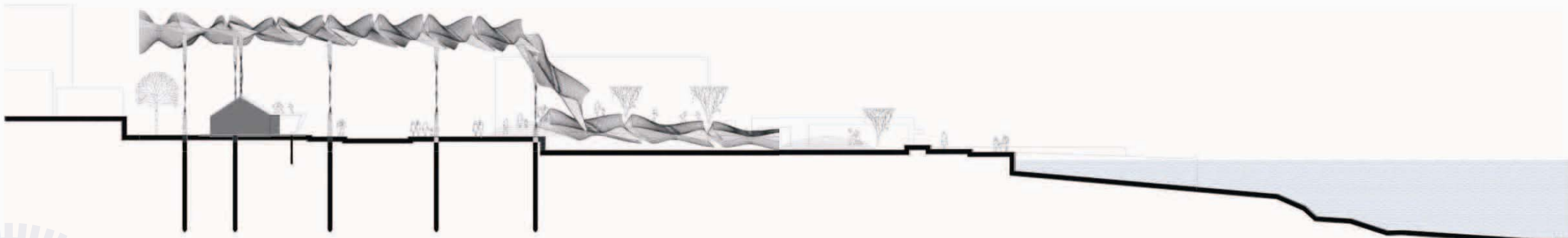
2F plan

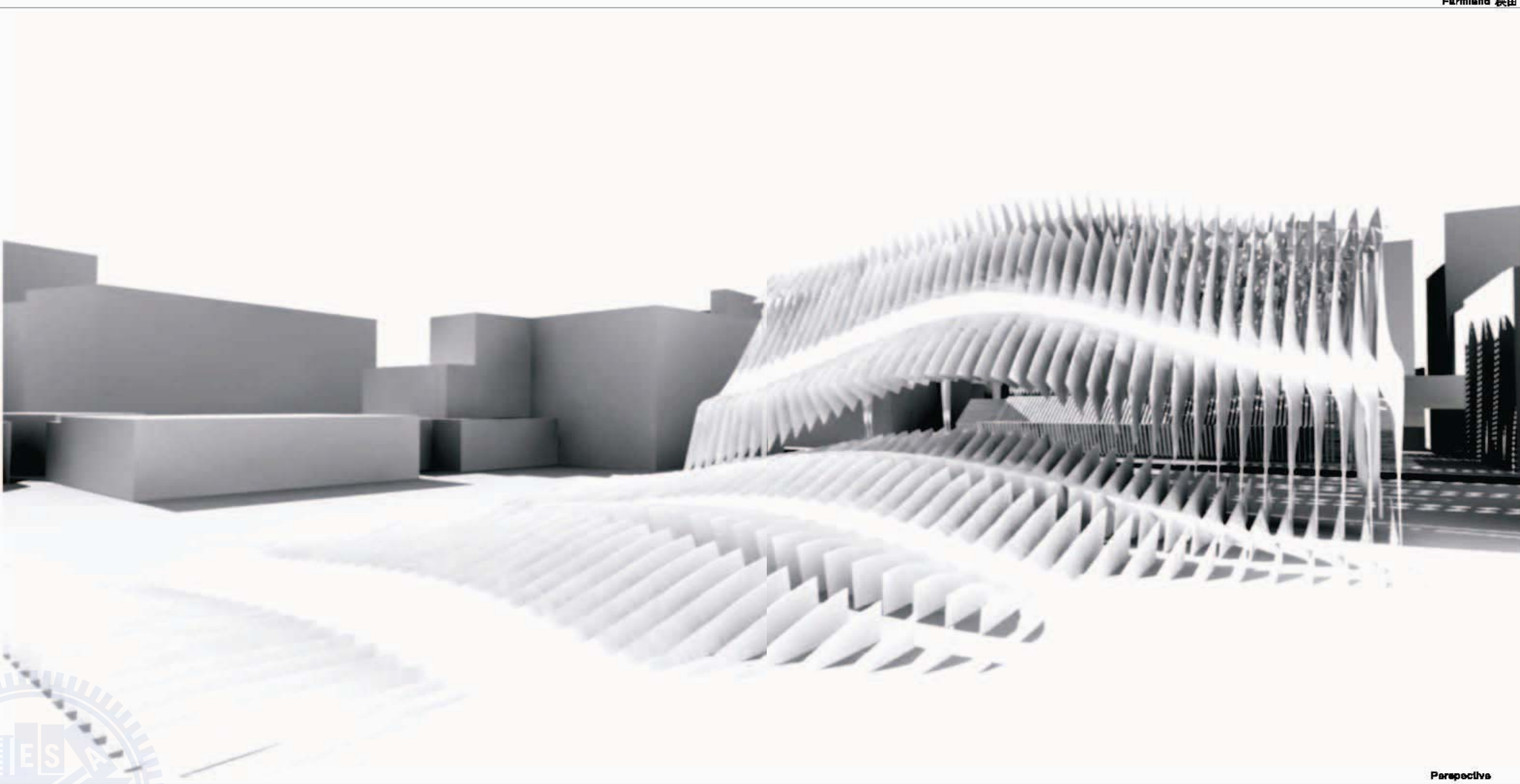


concept plan



Site plan





八卦

The eight trigram



The eight trigram

Chapter_02
Advisor: Ying-Chao Kuo
Location: Taiwan/Taipei
Time:4/2010

《易經》，因為流行於周朝所以又稱《周易》，是中國最古老的文獻之一，被儒家尊為「五經」之首。

《易經》以一套符號系統來描述狀態的變易，表現了中國古典文化的哲學和宇宙觀。它的中心思想，是以陰陽兩種元素的對立統一去描述世間萬物的變化。

萊布尼茨是第一位接觸中華文化的歐洲人。漢學大師布維（Joachim Bouvet，漢名白晉，1662年~1732年）向萊布尼茨介紹了《周易》和八卦的系統，他們兩人一直是好朋友。

在萊布尼茨眼中，「陰」與「陽」基本上就是他的二進位的中國版本。他曾斷言言：「二進位乃是具有世界普遍性的、最完美的邏輯語言」。

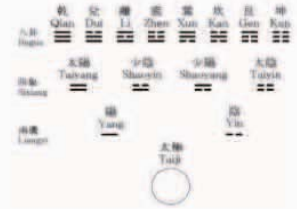
目前在德國圖林根，著名的郭塔王宮圖書館內仍保存一份萊氏的手稿，標題寫著「1與0，一切數字的神奇淵源。這是造物的秘密美妙的典範，因為，一切無非都來自上帝。」

當時萊布尼茲正在研製乘法計算機，他反覆試驗了許多種方法，卻總是無法提高機器的運算速度。於是他認為，要提高速度，就必須採用一種適合機器運算的記數方法。可是，他苦思了很長的時間，也沒有想出一個好主意來。結果就在這個時候，萊布尼茲收到了白晉寄來的兩張易圖，這不但引起他的興趣，更啟發了他的靈感。

萊布尼茨以二進制解讀易經的六十四卦。萊布尼茨在《致德雷蒙信》中指出，易經中的六十四卦圖形，恰恰與他在二十多年前發明的二進位計數法相類似：陰爻可以用0表示，陽爻可以用1表示。

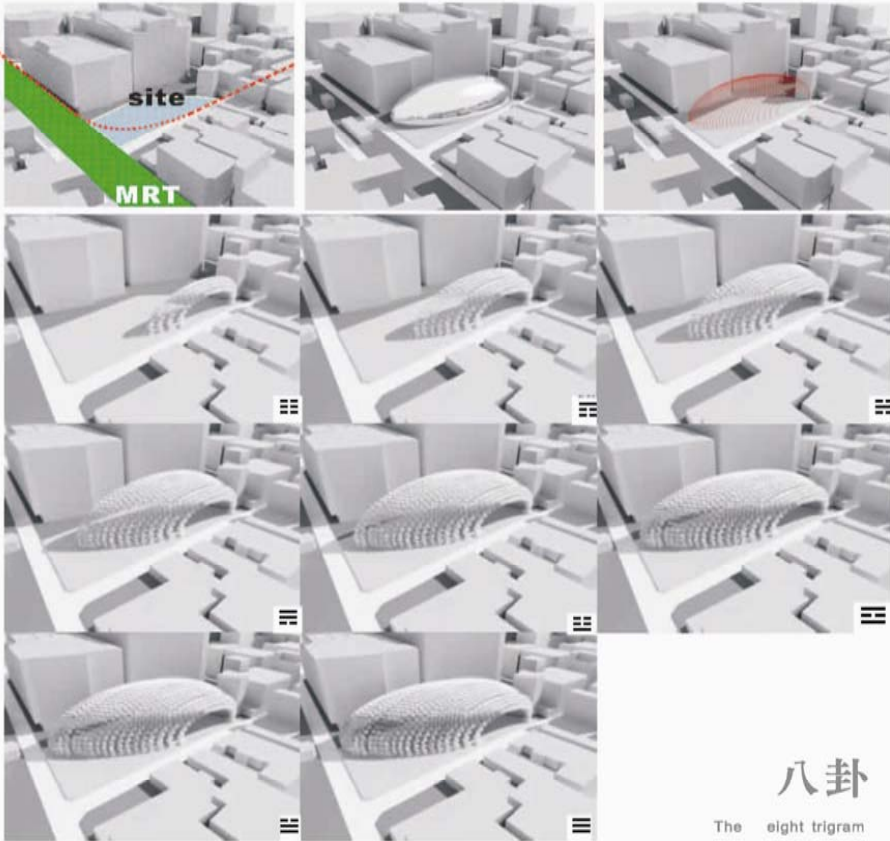
One of the most ancient Chinese literature

A symbolic system to describe the state of Variation

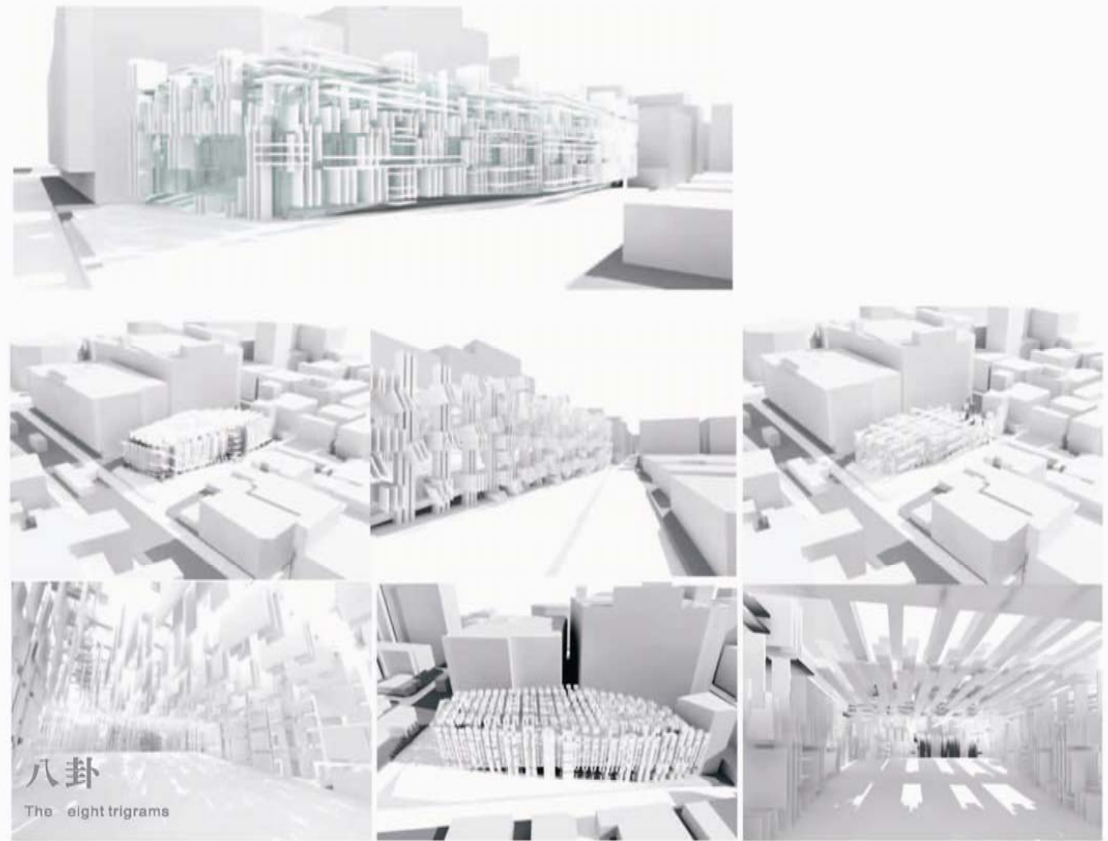


坤	艮	坎	巽	震	離	兌	乾
000	001	010	011	100	101	110	111
0	1	2	3	4	5	6	7



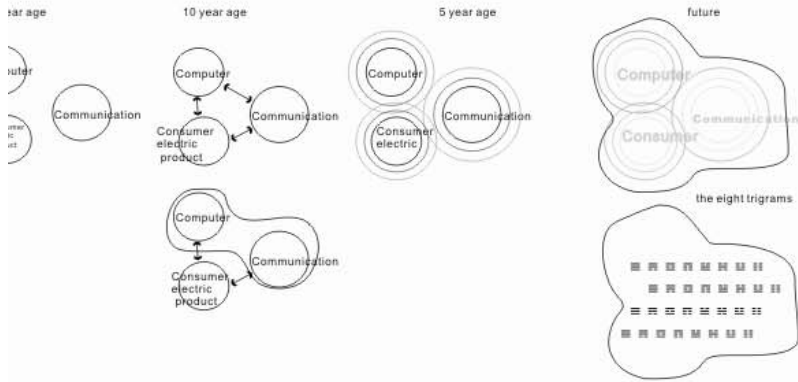


八卦
The eight trigram

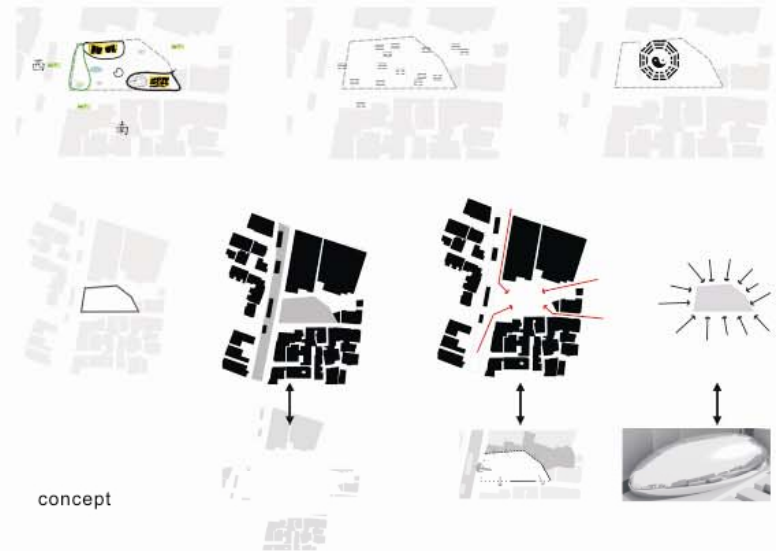


八卦
The eight trigrams





天	為圓、君、父、金玉、石、寒、冰、良馬、老馬、木果、鋼鐵、西北、京都、老人、官臣、宮門中人、為名人、剛健勇武、五金、秋、金玉珠寶、高堂、大廈、樓臺等。
地	為母、方、布、釜、吝嗇、母牛、文、眾、黑、霧氣、陰雲、田野、平地、西南方、農夫、為鄉人、眾人、大腹人、眾多、為小人、牛、百獸、田舍、矮屋、倉庫等。
雷	為龍、長子、肋、肝膽、東方、樹木、鬧市、竹林、蛇、百蟲等。
風	為長女、繩直、工、青綠色、長、高、進退、臭、四肢、指、東南方之地、草木、花果菜園、山林仙道之人、為僧道、骸股、風疾、雞、百禽、山林中之禽、蛇、蟲等。
水	為溝瀆、隱伏、橋樑、弓輪、腎病、耳痛、腰腿、膀胱、子宮、經血、男女生殖器。又為中男、月、露、雨、雪、霜、水、北方、江湖、溪間、江湖之人、賊盜、匪。
火	為目、電、中女、兵戈、天、眼、美麗、大腹、心臟、南方、文人、聰明材學等。
山	為路徑、小石、門闕、胃脾腸、腿足、皮膚、少男、少子、狗、鼠、土、山徑、山城、墳墓、丘陵、東北方、閑人、山中人、童人、骨、鼻、背、土中之物、狐、百獸。
澤	為少女、巫、口舌、毀折、妾、羊奴、耳環、金銀、沼澤、新月、山崩地裂之地、歌妓、奴僕等。



乾 天地 大震、樓臺 BIG UNIT

坤 地 矮屋、農事 SMALL UNIT

震 雷 樹木、竹林 PLANT, TREE

巽 風 草木、花果菜園 GREEN LAND

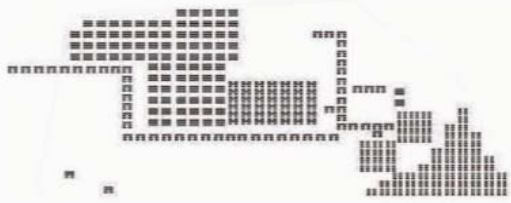
坎 水 水 POOL, FOUNTAIN

離 火 眼視野 VIEW

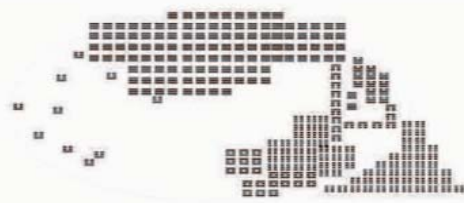
兌 澤 路徑 PATH, CIRCULATION

艮 山 山崩地裂之地 FLOOR VOID

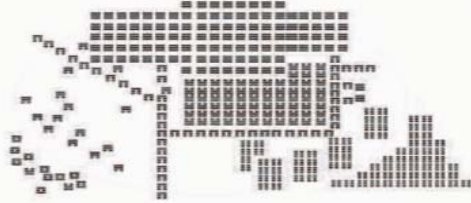




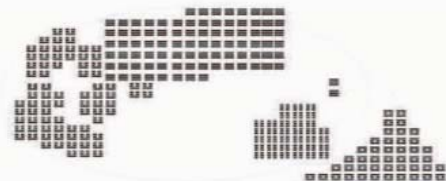
B1 Plan



1F plan

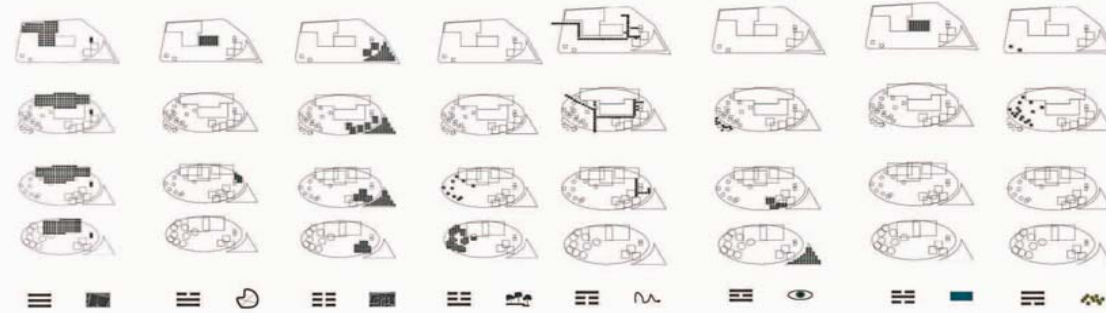


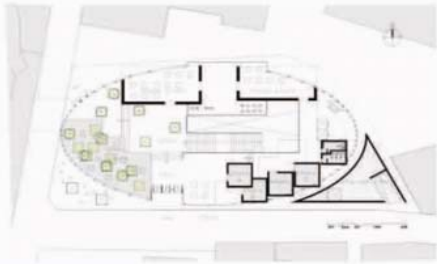
2F plan



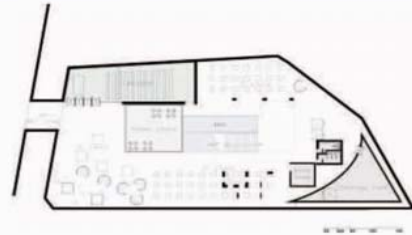
3F plan

天 澤 地 雷 山 火 水 風

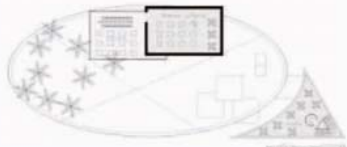




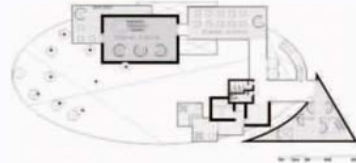
1F Plan



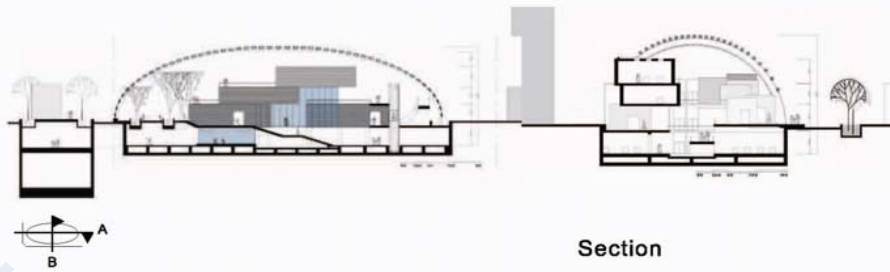
B1 Plan



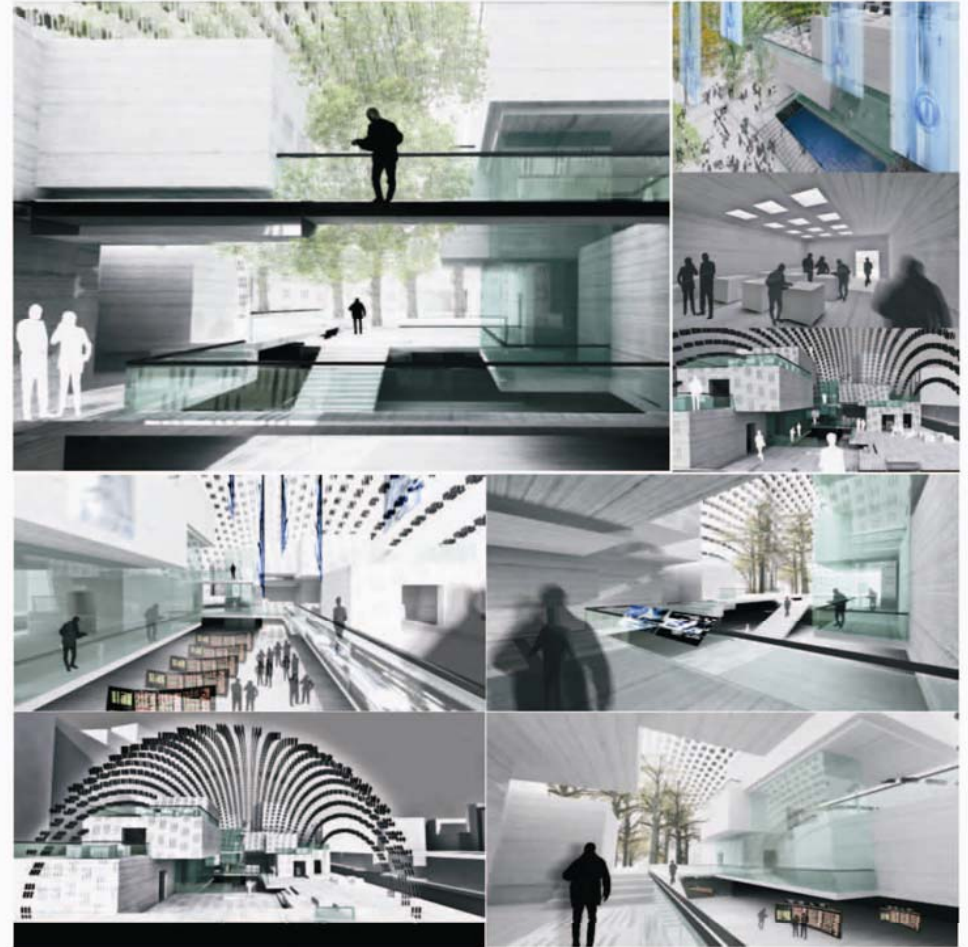
3F Plan

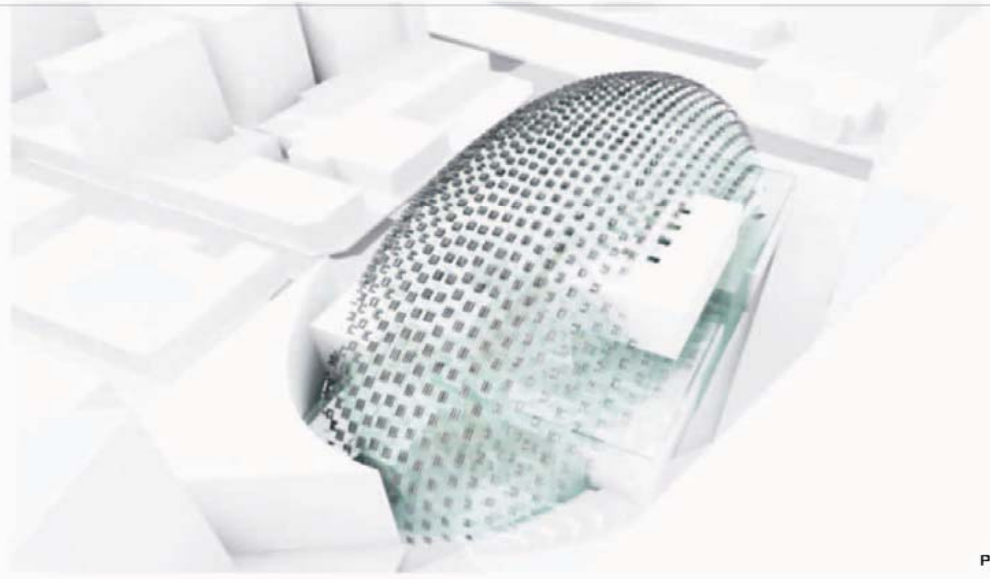
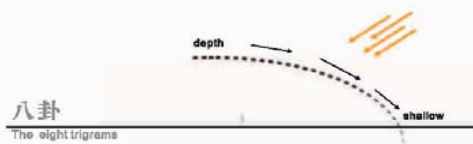
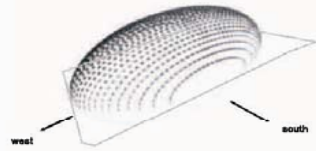
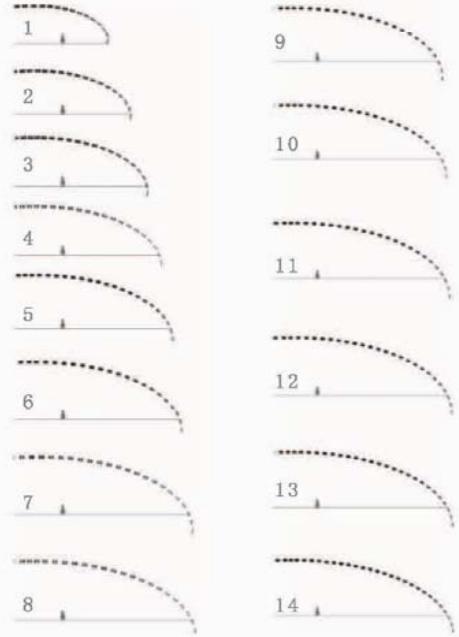
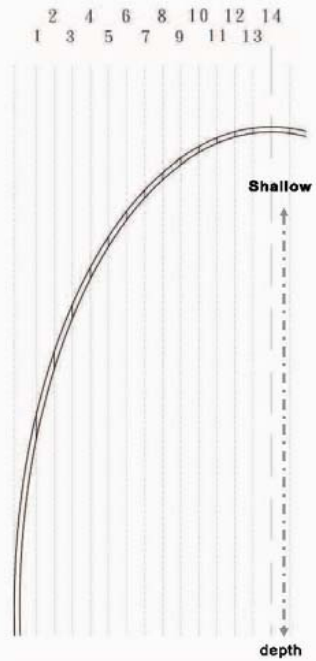


2F Plan



Section





Perspective





Border-TheWall

Border

In the past many borders were not clearly defined lines, but were neutral zones called marchlands.

This has been reflected in recent times with the neutral zones that were set up along part of Saudi Arabia's borders with Kuwait and Iraq (however, these zones no longer exist). In modern times the concept of a marchland has been replaced by that of the clearly defined and demarcated border.

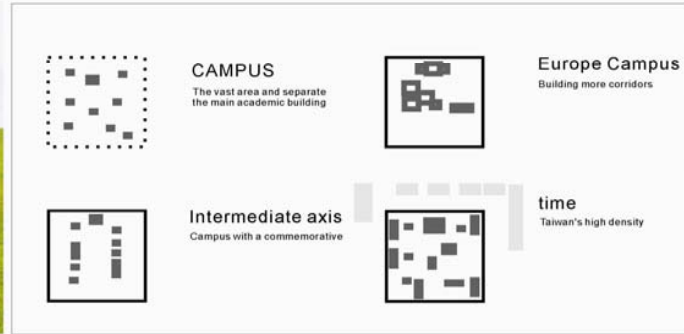
For the purposes of border control, airports and seaports are also classed as borders.

Chapter_03
Advisor : David Tseng
Location : Taiwan / Hsinchu
Time : 9 / 2009





The Italian Cypress Tree
Latin Name: Cupressus sempervirens
Country of Origin: Persia/Syria
Height: 20 to 25 m
Uses:
windbreak, furniture/coffin making,
essential oil production and decorative use.



Rene Francois Ghislain Magritte



The forest of wall



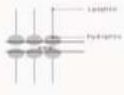
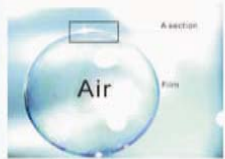
the shade of a tree



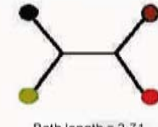
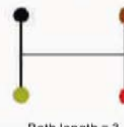
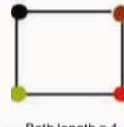
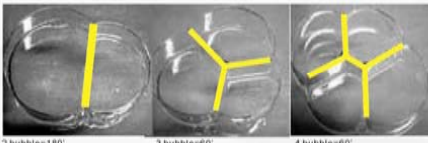
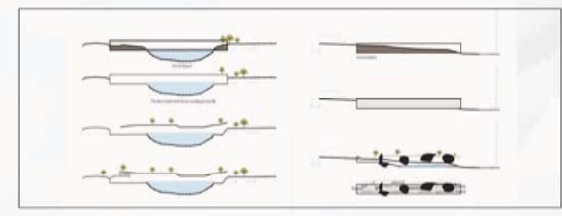
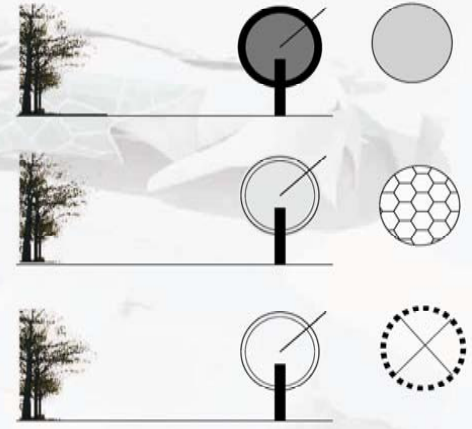
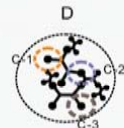
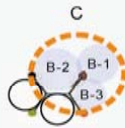
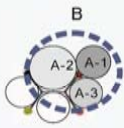
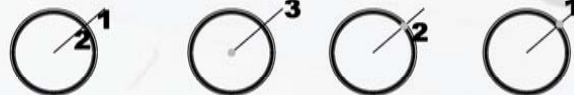


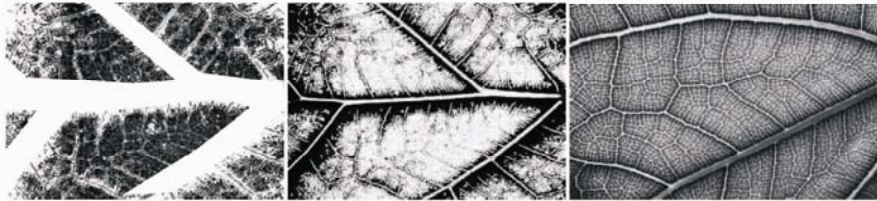
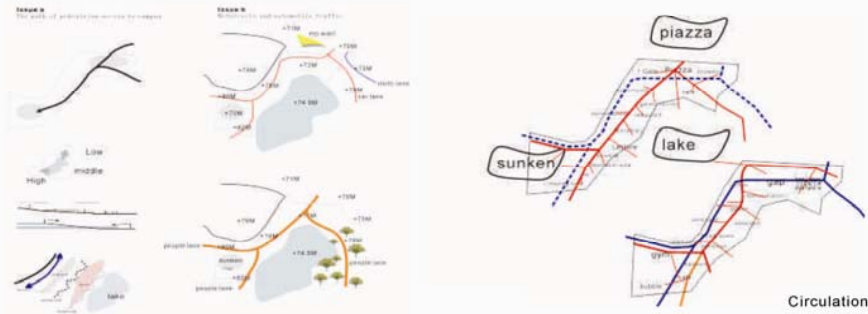
Dew

Dew is water in the form of droplets that appears on thin, exposed objects in the morning or evening. As the exposed surface cools by radiating its heat, atmospheric moisture condenses at a rate greater than that at which it can evaporate, resulting in the formation of water droplets.



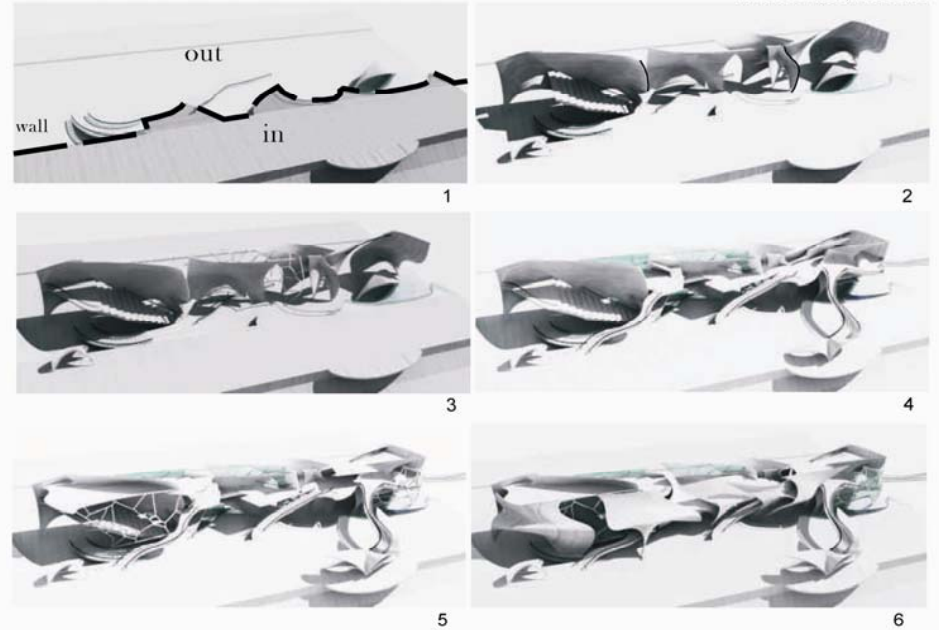
- 1 Discharge of liquid film
- 2 Membrane rupture
- 3 Gas diffusion





RP model photo

Model section process 1-6

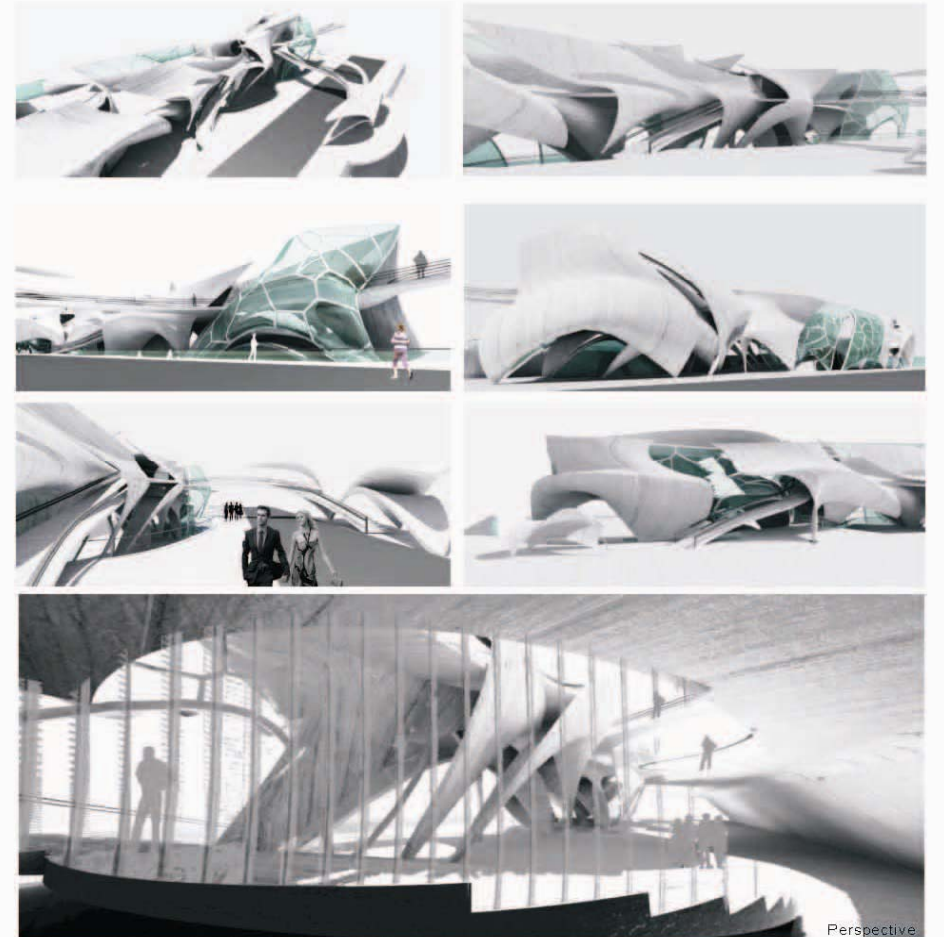
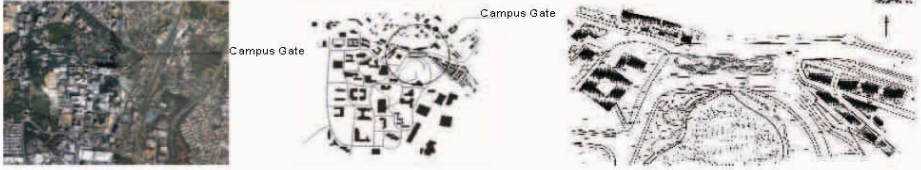


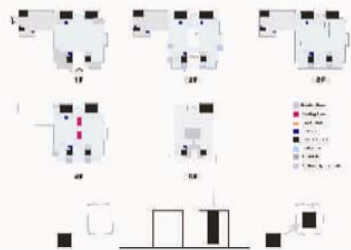
Elevation



Elevation





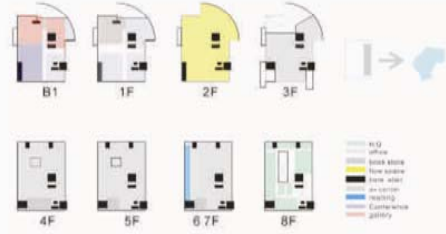


NTU Library

National Taiwan University Library addition to the main library, there are laws Society of Medicine 2 University College and the branch library, as well as physics, mathematics, chemistry, atmospheric, oceanic, biological and map data and other seven departments library.

Lending Library provides books, reference, interlibrary cooperation, resource use guide, e-learning courses, paper and digital collections, information search, information system development services. Library opening hours up to 96 hours per week, and a 24-hour study room for students to use.

Library collection of books and materials to meet the teachers and students in teaching, research, learning mainly to the collection of more than 4,401,450 copies by the end of 2007 (kind of) (including electronic resources), is currently Taiwan's largest collection of data volume University Library.



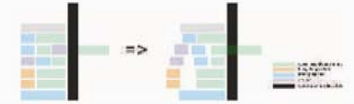
NCTU Library

About National Chiao Tung University Library
The new NCTU Library building opened for academic and public use in 1998, and is the focal point of the campus covering approximately 32,000 square meters. The library is set in scenic surroundings with a Chinese garden, gallery and an art and technology area.

The Library is well equipped with online and Internet facilities that provide users with fast and comprehensive access to information. Combining technology, art and leisure, this multifunctional library also hosts exhibitions, concerts and performances.

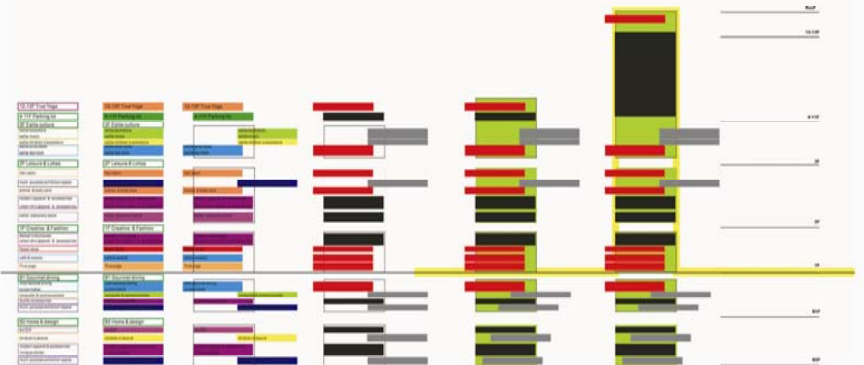
Historical Sketch
1958: Founding of the Library Room, located at the Bo-Ai Campus
1967: Renamed as the Engineering College Library, National Chiao Tung University
1970: Completion of the Bo-Ai Campus Library
1979: Renamed as the National Chiao Tung University Library
1981: Main building relocated to the Kuan-Fu Campus
1998: Official opening of the Hao-Ran Library and Information Center

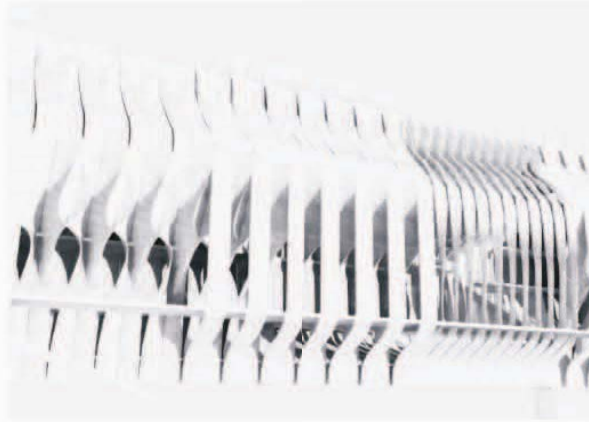
Shih Chien University No: H building



Park lane by CMP

Eslite



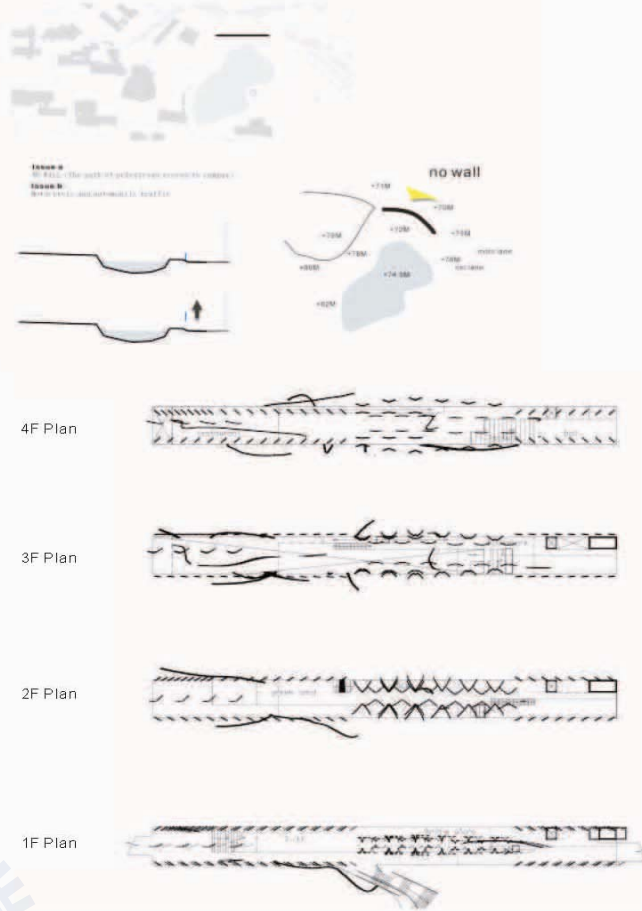


Study process

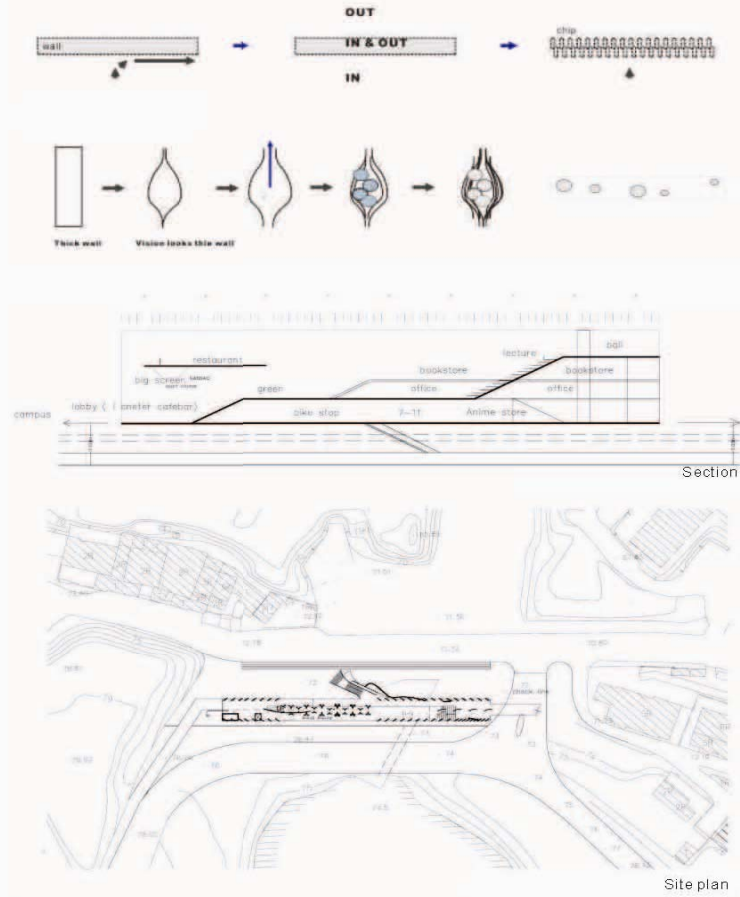




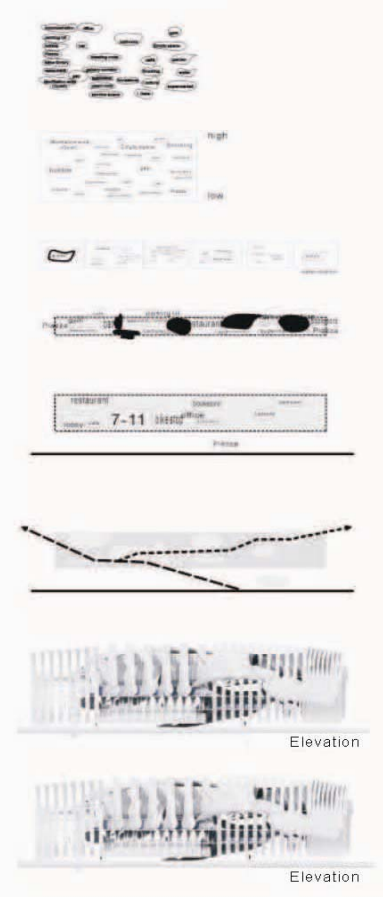
Concept 1

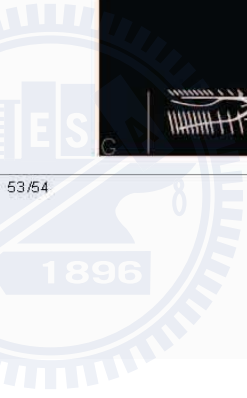
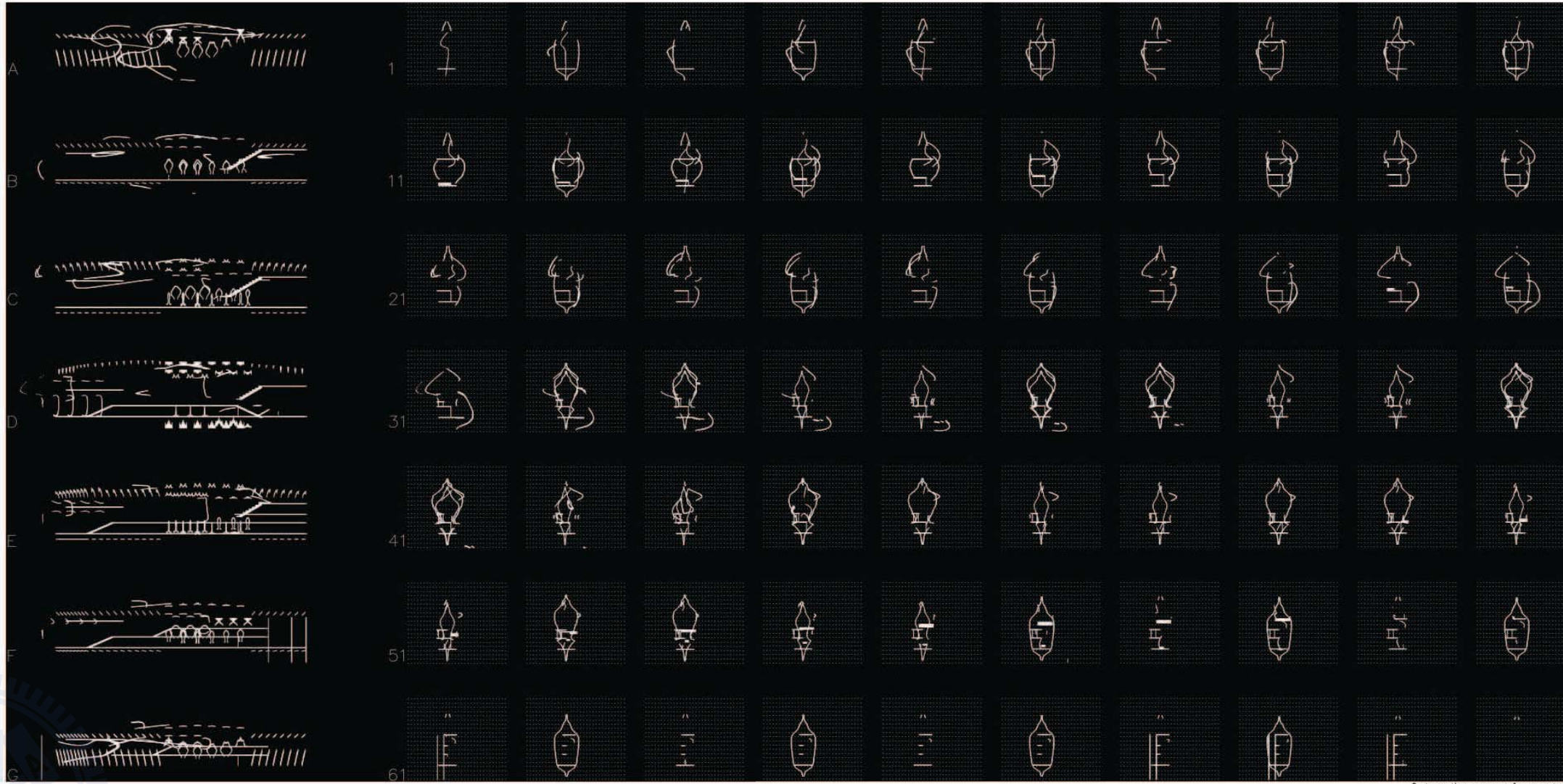


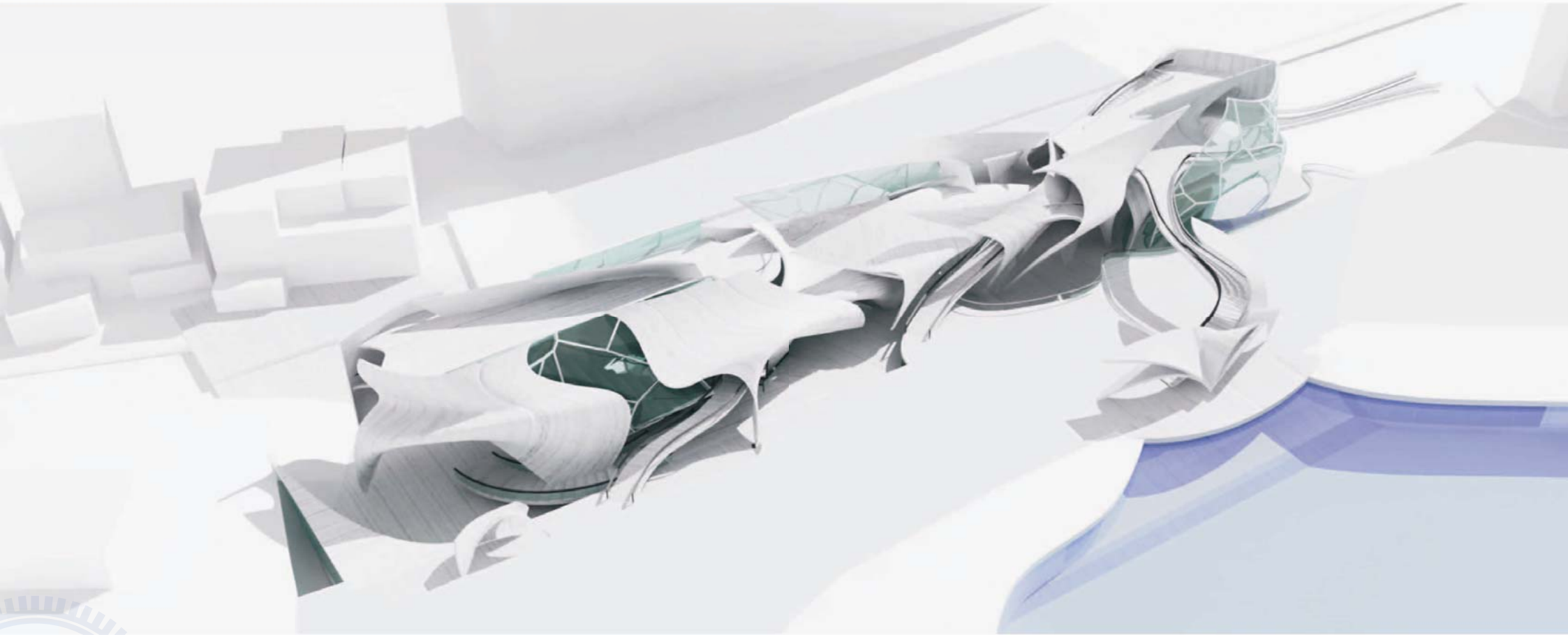
Concept 2

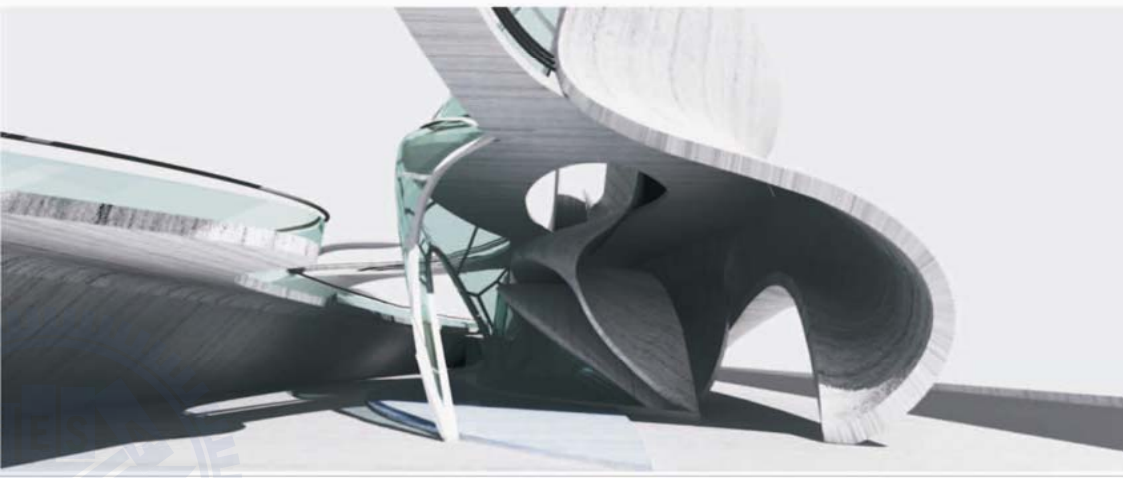
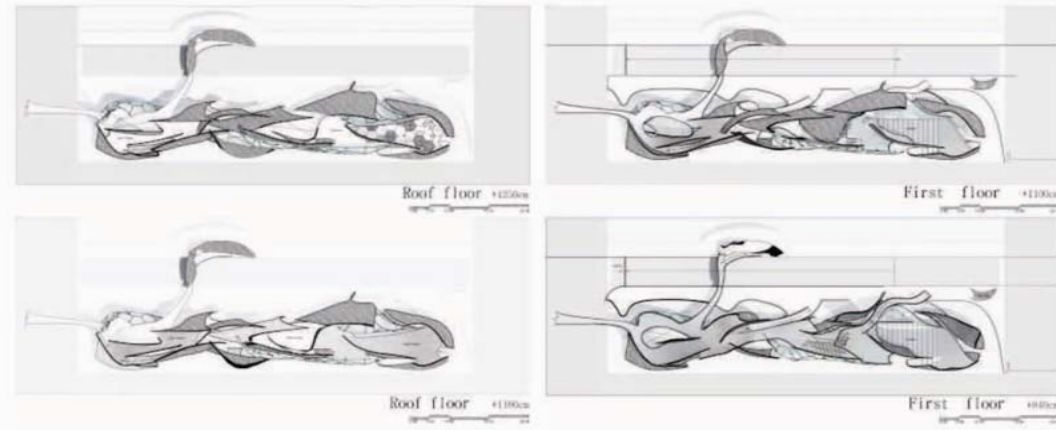
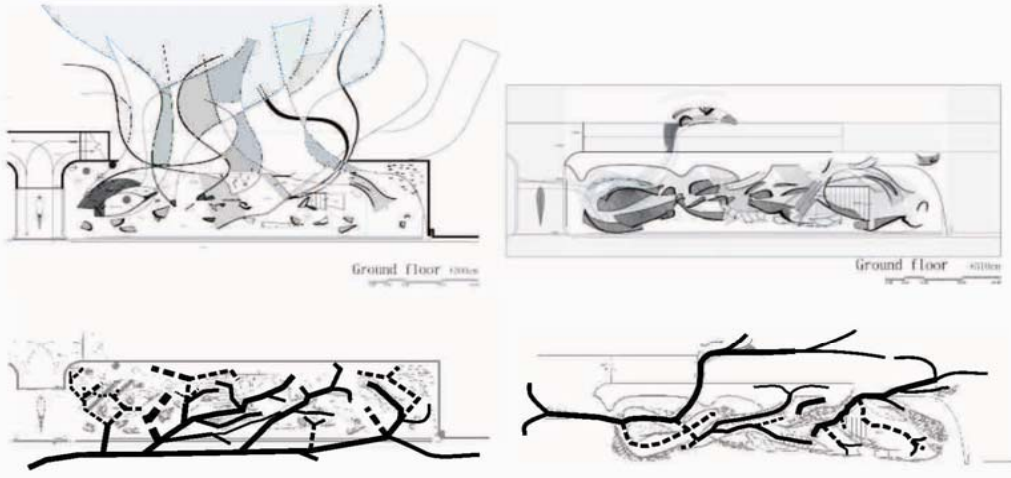


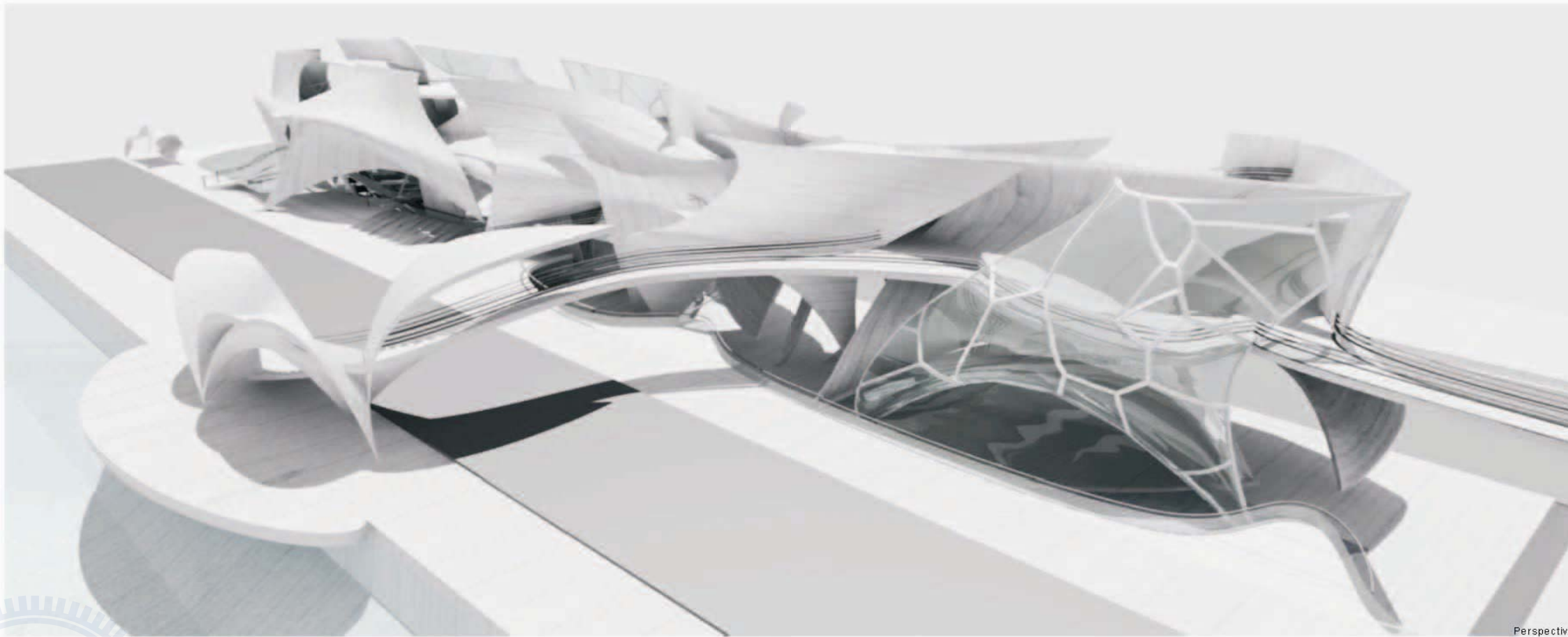
Concept 3











Perspectiv



The vertical village Treasure hill

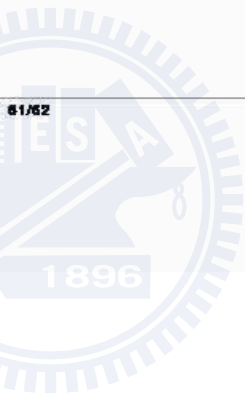
Chapter_04
Advisor: Kuo-Chian Shen
Location: Taiwan / Taipei
Time: 3/2008

Treasure Hill, on behalf of Taiwan immigrants 50-80 years of life-style. Over time, the reality and adaptation to the environment, began the development of organic and interlocking of the space environment.

Moreover, the residents have built their own homes, so each household has a different mode of development and interdependence.

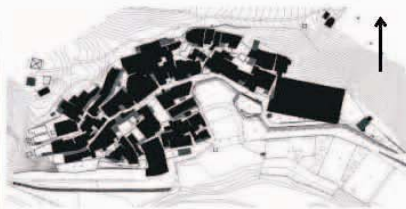
Therefore, we can see that people use the landscape, materials, environment, and life to develop a relationship between architecture and space to get along.

So keep some space for the quality of the Central Plains case independent living means of communication with residents, will be the future direction of development of collective housing.





Photos of the temporary buildings to provide residents opportunities to communicate.



SITE PLAN



LANE 230



vertical path



living path



all



collapse building (garden)



green land

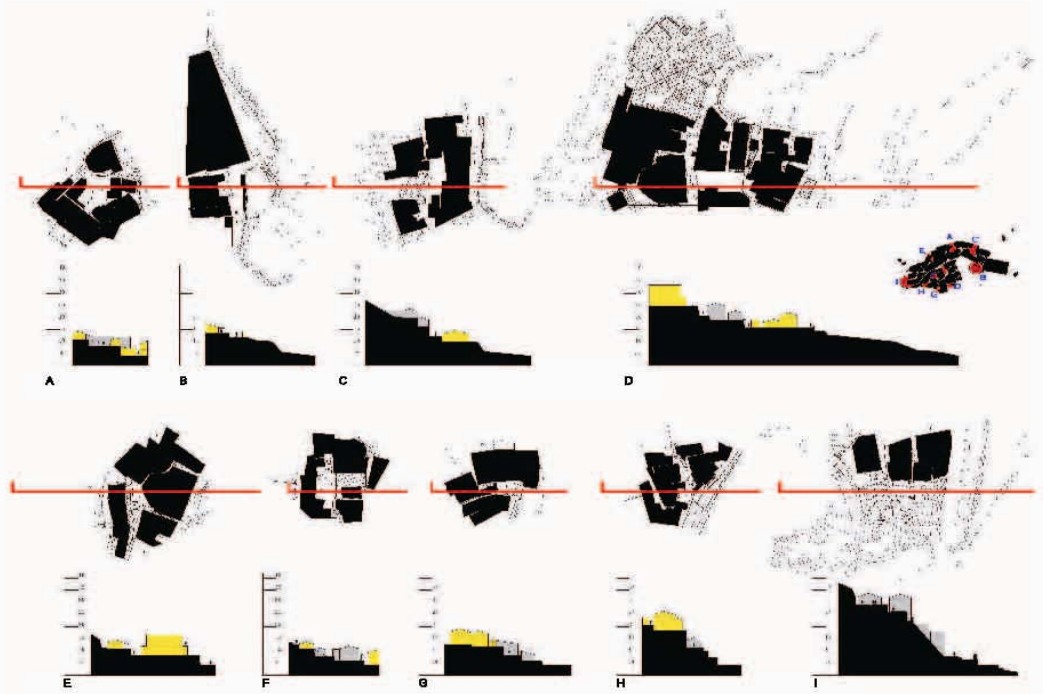


communicate space



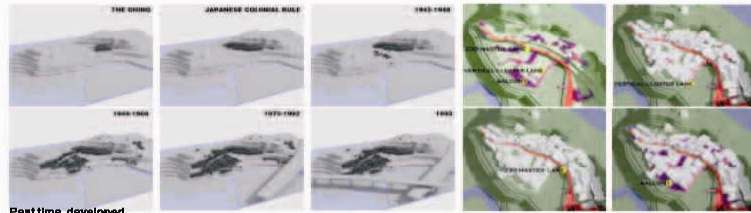
public space

the relation analyze of community



the relation analyze of community: section





Pasttime developed.



Ground between high and people's Vision.



The direction of building openings and Vision.



Retaining wall height and roof of the building and the visual impact of the balcony.



Collapses of the building re-use and green space and Winding roadway interesting.



The relationship between buildings and hillside.



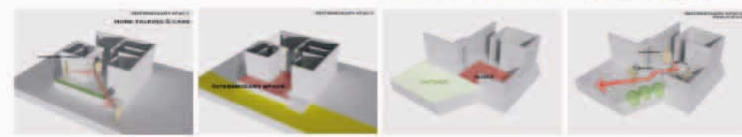
Courtyard scale and the relationship between people.



Upper neighbors when they go out through the lower of the households would say hello!



Residents use an intermediary space to chat with neighbors playing chess.



Residents routine use of intermediary space activities such as eating to create a number of neighbors chatting.



The fence and rain cover defines the intermediary space. It can increase the identification of the residents.



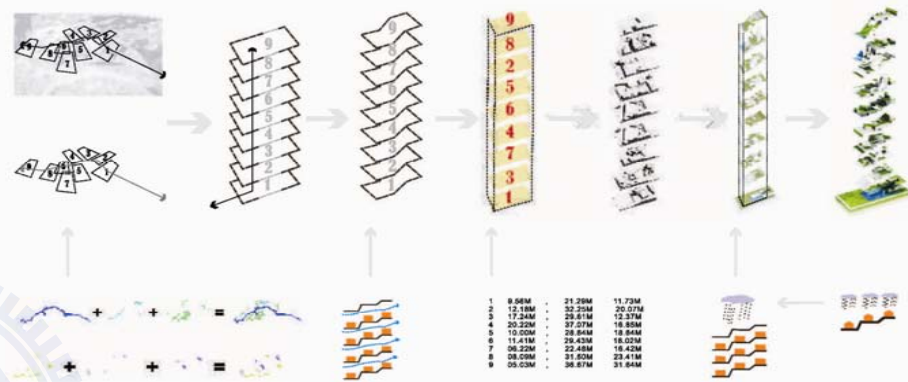
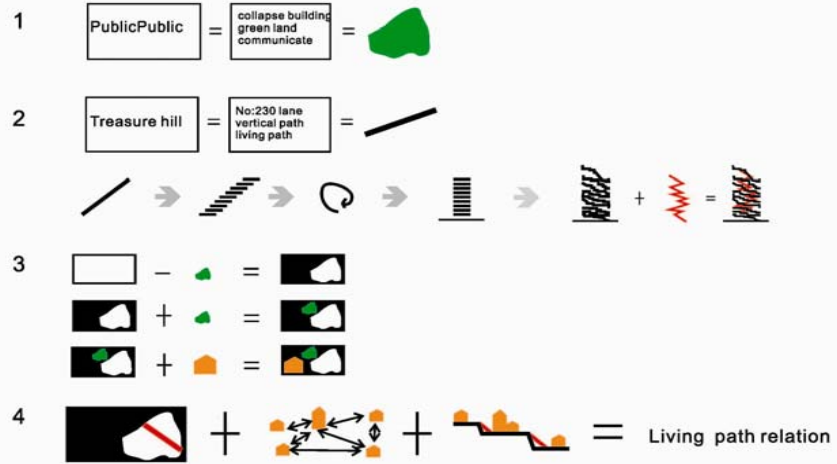
Combination between elements of the diversity of architecture. Resulting in increased access.



The community's way of life affected by slope. Increase contacts between people.



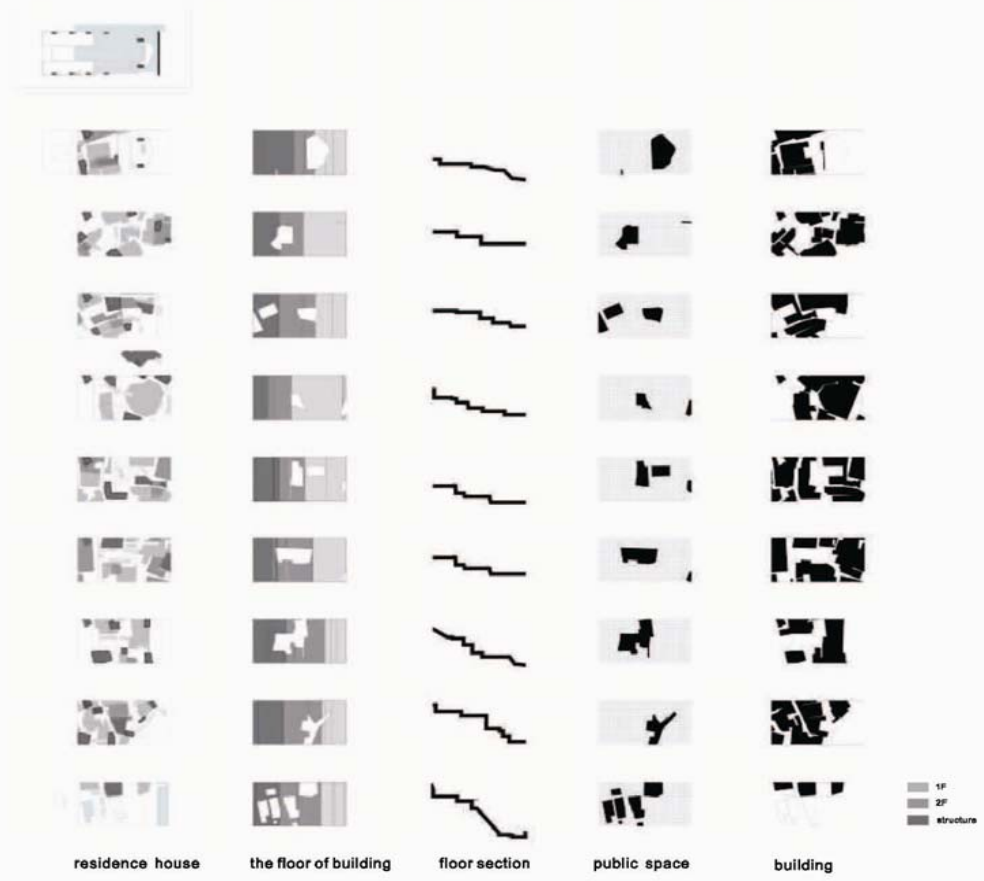
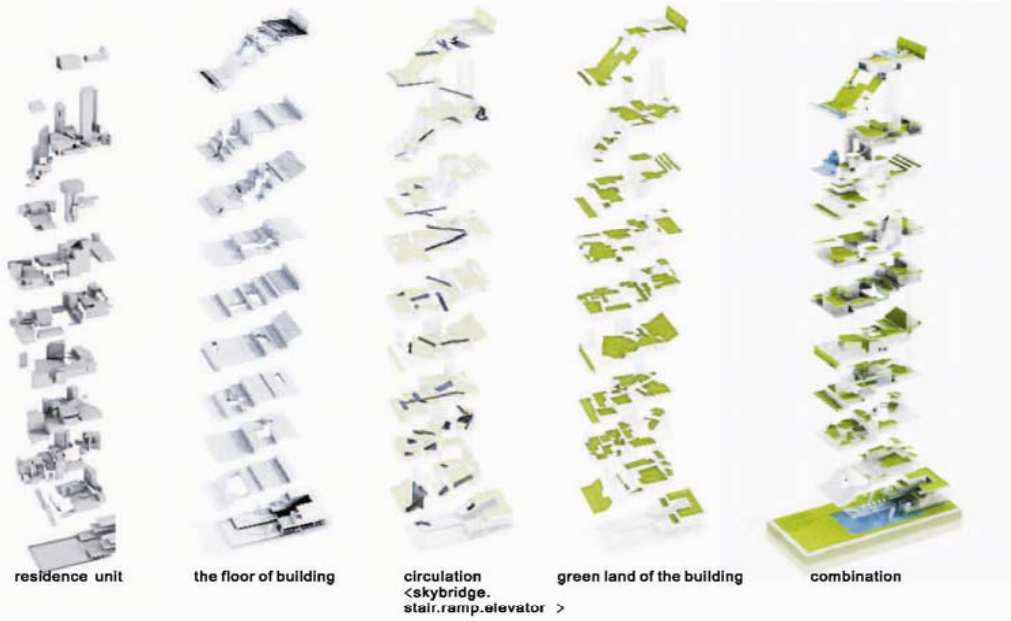
the relation analyze of community : concept



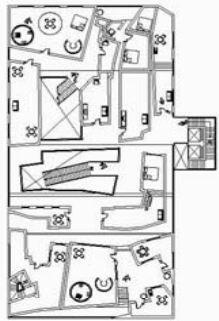
Perspective



Residence house decomposition chart



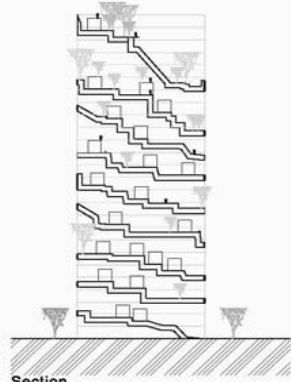
Residence house of develop process: different types of program



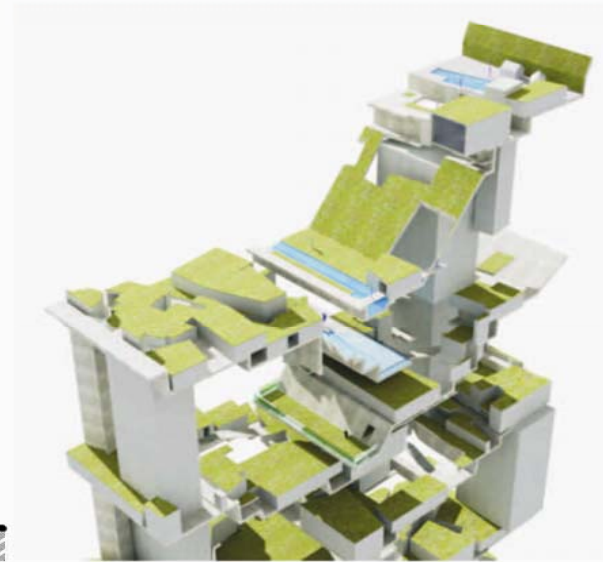
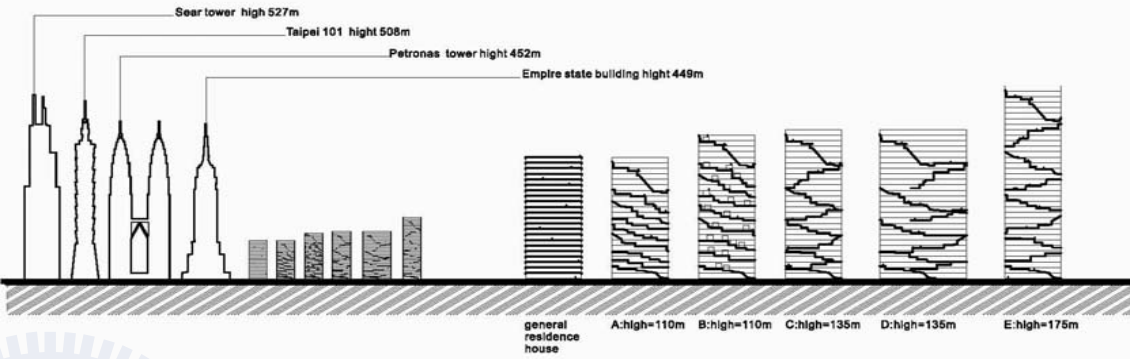
6F plan



Elevation



Section



Program process





Perspective



Perspective





Perspective



Perspective





Perspective



Spiral House

Chapter_05
Advisor : Jay Wen – Chieh Chiu
Location : Taiwan/Taipei
Time:3/2009



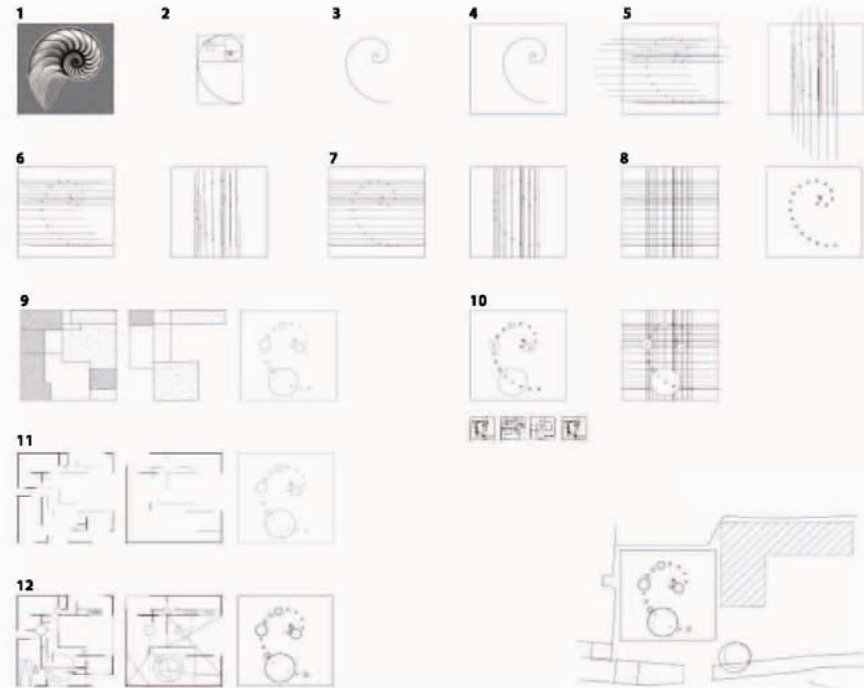
Rose

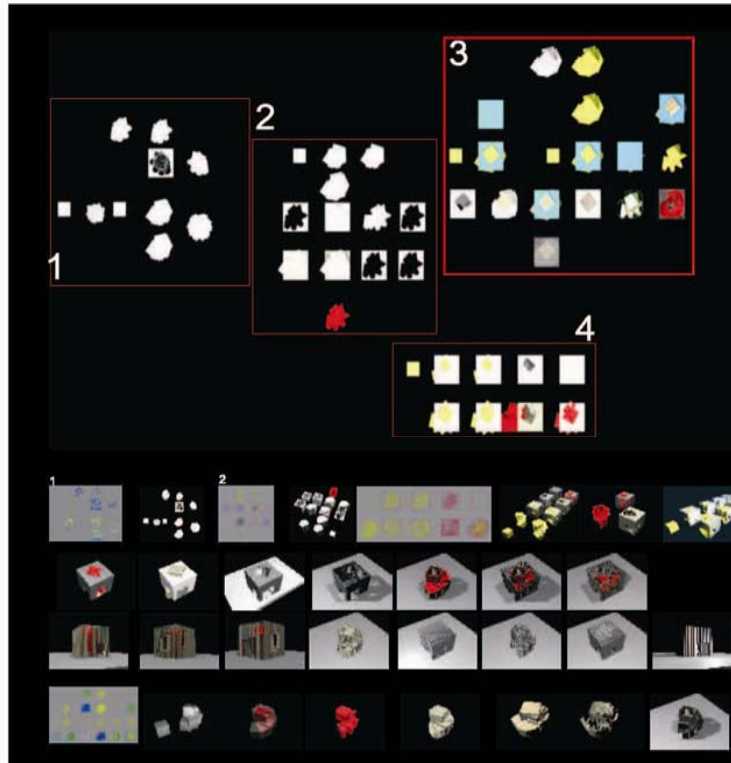
Rose represents our relationship.
In the 12 box to start our lives.
In the 12 grid center point of trajectory.

Site plan



Transfer process





- 1. 8 units (6m cube) arranged in a spiral .
 - 2. 8 units (3m cube) arranged in a spiral .
 - 3. 8 units (3m cube) arranged in a spiral gradually rise.
 - 4. 8 units (3m cube) arranged in a spiral.
- The average height of 50 cm increased unit and the total height not more than 6 meters high.

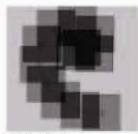




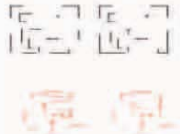
Rose



Spiral



12 Cube



Steel

Wood



Transfer process



Section



The roof of spiral house

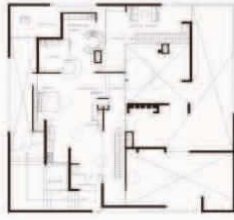


Interior



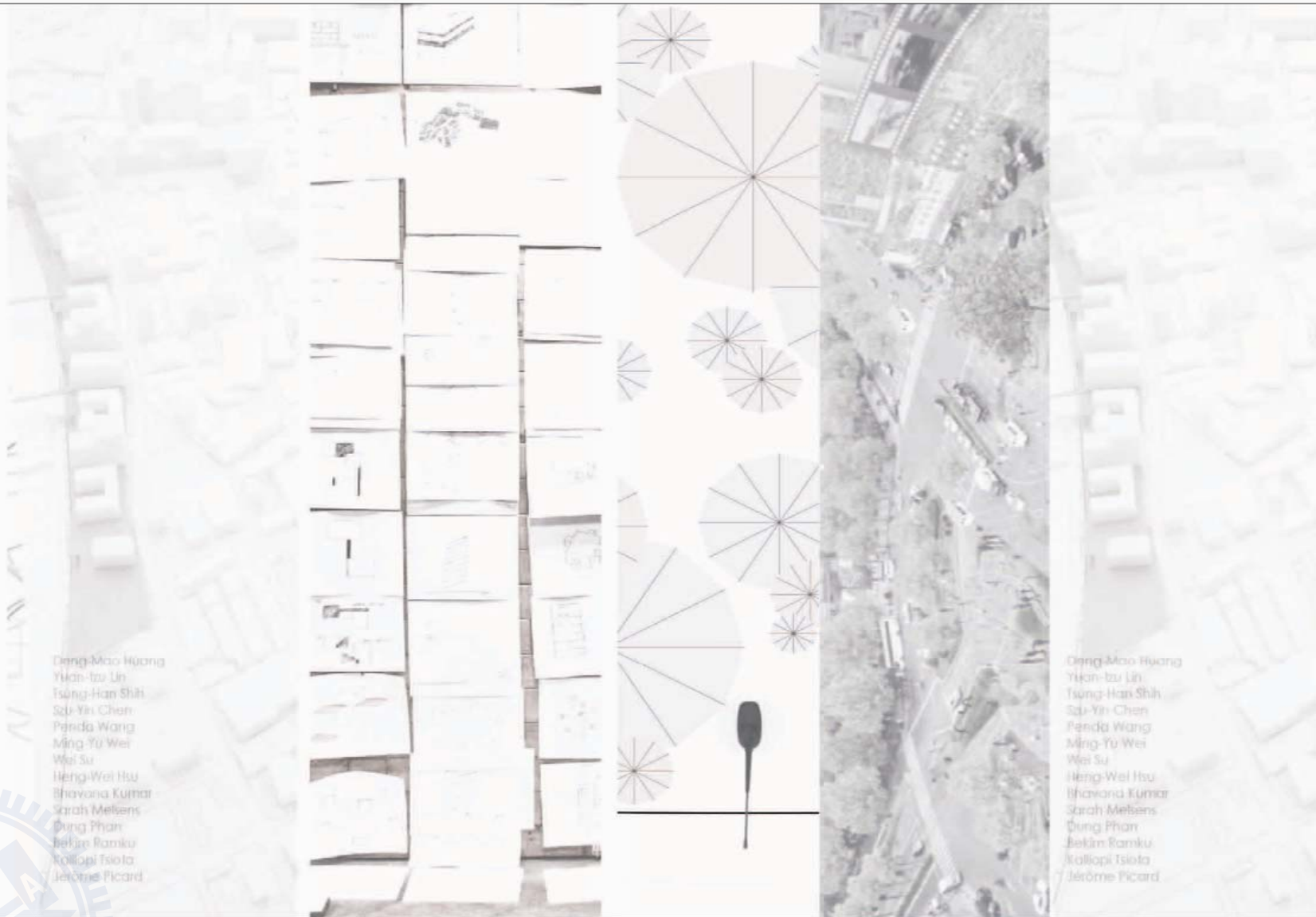


Plan 1F



Plan 2F





Deng-Mao Huang
 Yuan-tzu Lin
 Tsung-Han Shih
 Szu-Yin Chen
 Penda Wang
 Ming-Yu Wei
 Wei Su
 Heng-Wei Hsu
 Bhavona Kumar
 Sarah Meikens
 Dung Phan
 Bekim Ramku
 Kalliope Tsota
 Jérôme Picard

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 Ming-Yu Wei
 Wei Su
 Heng-Wei Hsu
 Bhavona Kumar
 Sarah Meikens
 Dung Phan
 Bekim Ramku
 Kalliope Tsota
 Jérôme Picard

Chape 6 Competition

6-1
 Nangang District
 Urbanizing industrial innovation
 NCTU AA collaboration

Advisor : Charles Lin
 Lawrence Barth
 Dominic Papa
 Location : Taiwan/Taipei , Hsinchu
 Time:3.2010

6-2
 The Vertical Village -Workshop

Advisor :MVRDV
 Location : Taiwan/Taipei
 Time:3.2010

6-3
 'CITROEN CREATIVE AWARDS'
 CITROEN DS3

Location :French/Paris
 Time:6.2010

6-4
 Eco -Fresh Life Manufacturing
 To be selected collaboration

Advisor :Charles Lin
 Location : Taiwan/Hsinchu
 Time:4.2009



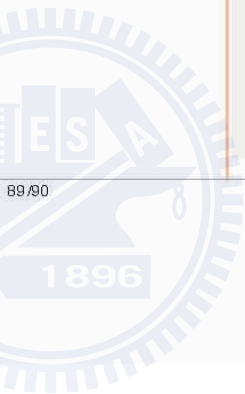
Nangang District Urbanizing Industrial Innovation



Deng-Mao Huang
Yuan-tzu Lin
Tsung-Han Shih
Szu-Yin Chen
Penda Wang
Ming-Yu Wei
Wei Su
Heng-Wei Hsu
Bhavana Kumar
Sarah Meisens
Dung Phan
Bekim Ramku
Kallopi Tsiola
Jérôme Picard

Thesis

Innovation is urban.
Looking at industry as part of a fabric, fully urbanized including civic facilities to support augmented network and sustain polycentric region.
How architecture and type can be the driver of this urban strategy?



The vertical village workshop

Hutong in Beijing, Tokyo, town houses and single-family house in Taipei city, these small-scale traditional and informal urban spaces constitute a very intensive exchange of close-knit community and form a tremendous and one by one the cities with the characteristics of the opposite sex villages. In the past decade, in response to pressure brought by the densely populated East Asia, there were many large buildings in the city, gradually replaced the more traditional, independent, organic, urban landscape, "The Vertical Village" would like to explore: When the existing old community to face the future things will be turned into a giant the intention of the threat, whether through other means to solve the density problem for these regions, and also reached Yuanyou community preservation and character.



'CITROEN CREATIVE AWARDS' competition theme

Context:

Citroën provides the option of obtaining graphics that can be applied to the Citroën DS3 dashboard and roof. Candidates must propose creations based on 2D visuals of the CITROËN DS3 provided by the organiser that satisfy the specifications contained in article 6 where:

Developing projects:

Candidates must propose creations based on 2D visuals of the CITROËN DS3 provided by the organiser that satisfy the specifications contained in article 6 where:

The different aspects to be considered are:

- Respect the values of the DS3 (audacity, dynamism, optimism, personalisation)
- The project's international dimension
- The quality of the delivered project
- The ease of realising the project on production models (see the specifications)

Project selection process

Project selection involves 3 stages.

1. Acceptance

Projects will be sorted as they are received. Only those projects that comply with the technical and functional specifications will be accepted.

The organisers reserve the right to not retain any drawings that do not appear to comply with these rules.

2. Selecting winners

The best projects will be selected between July 5th and August 30th 2010 by the jury of the following people in limited session:

- Thierry METROZ, Director of Style Citroën
- Estelle ROUVRAIS, DS3 Citroën Product Manager
- Frédéric SOUBIROU, DS3 Exterior Designer
- Xavier DUCHEMIN, Citroën Marketing Director
- Mathieu WANDON, Citroën Graphic Designer
- Jean Pierre PLOUE, Style Peugeot Citroën Director
- Sonia PERRIN, Fondation Cartier Director
- Xavier DIXSAUT, Jury Chairman and Louis Vuitton Malletier Innovation Director
- Arthur KING, Konbini.com Artistic Director
- Anne BOULAY, GQ Magazine France Editor

Selection criteria:

- Relevance of the solution to the competition challenge provided by the project
- Ease of use / integration of innovations
- Creativity and impertinence
- Originality

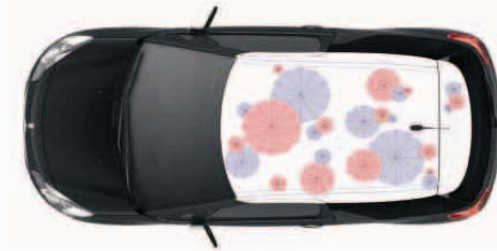
- Application for mass production and internationalisation of project
The project that best satisfies the selection criteria will win the competition.



Paper umbrella

Paper umbrella in the Hakka custom, because the "paper" and "child" of the Chinese homophones, representing the circle, the meaning of reunion. At the same time, the "umbrella" word has four more symbols and more children on the paper umbrella to do so mostly Hakka dowry.

Paper umbrella also features a manual and practical appreciation of folk decorative features such as gift collections sustainable legend, but also represents the art of skilled and sophisticated spirit of cultural heritage.





Eco-Manufacturing & Fresh Life

Creating eco-city, comfortable and nature life in Kaohsiung.

The concept is creating eco-space from Kaohsiung city center and people would live with biology and nature. The eco-planing is providing a nature sustainable quality which is a comfortable space of streets and fresh city image.

On the other hand, it's also providing the nature education environment for students having interesting walk on the way to school, and cooperating with schools to keep the city space sustainability.

Carbon emissions

Reference
2004 Taiwan NO. 18
Industrial
2004 Taiwan NO. 1
(Kaohsiung 55%)

The average carbon dioxide emissions

Kaohsiung	↑ 14.72t./pre
Taiwan	↑ 11.1t./pre
OECD country	↑ 10.96t./pre
Global	↑ 3.96t./pre

How to give a better life for Kaohsiung citizen?



New eco-city operation system

Sustainable system
Saving the earth and biological habitats, we need new system.



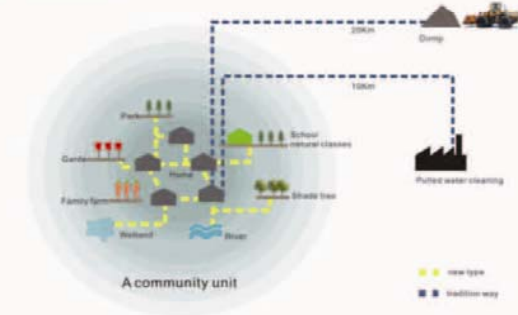
New conception of the Food Chain

New: balance food chain system
Human should be added to the cycle of nature food chain. The higher population density and land will provide more nutrients. Become a part of the ecological cycle.



City recycle circulation in traditions and new type

City recycle circulation in traditions and new type



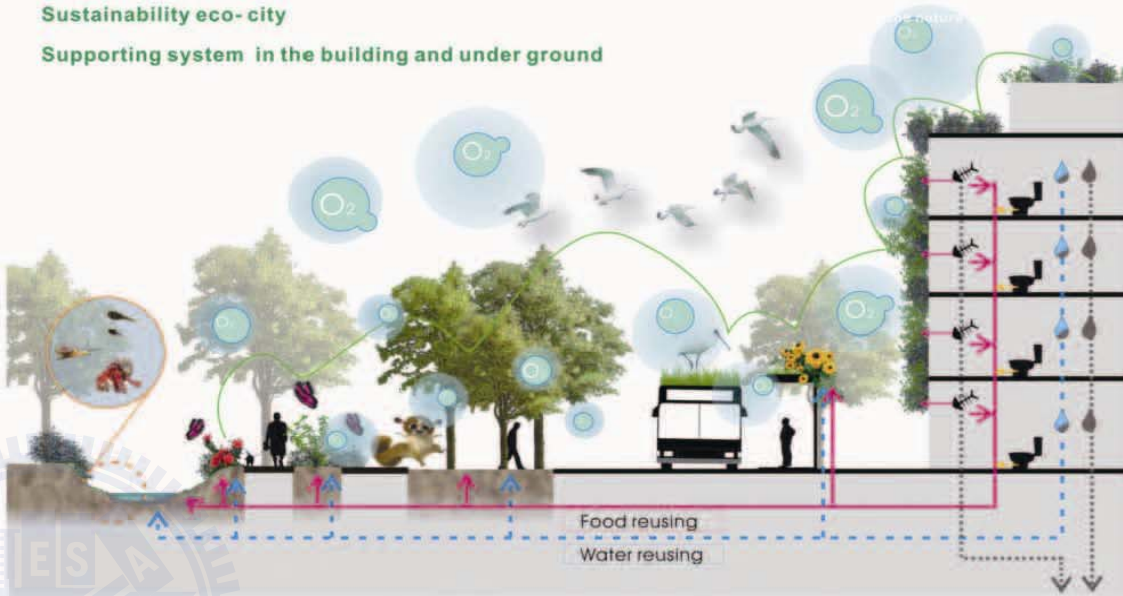


Biological diversity and cooperating with schools
 1. Combining the space of campus and streets
 2. Preserving the urban eco space by "school adoption mechanism"
 3. Educate purpose



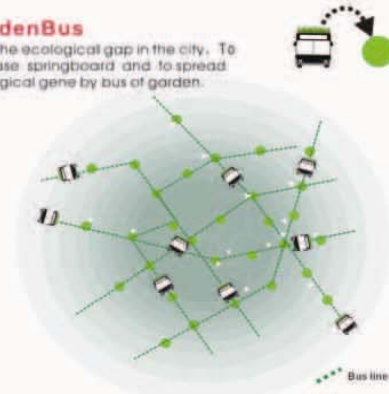
Sustainability eco-city

Supporting system in the building and under ground



GardenBus

Infill the ecological gap in the city. To increase springboard and to spread ecological gene by bus of garden.



Surface of building

It's a food exchange interface and temporary stay place

