

EXTEND

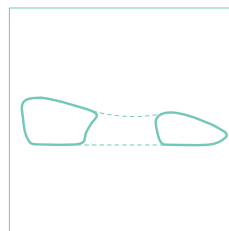
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Data Sourced from: US Navy NGA, GEBCO
Data © 2009 MIKUMI



Structure



Shockproof Core

Location | Barkam, Sichuan
Scale | Primary school

Shockproof Core

此案將重點放在木構造的合理構築與木構造創新之間的平衡,以達震災區重建安全建物之範例。

SITE

四川省馬爾康縣(Barkam)(馬爾康,藏語意為“火苗旺盛的地方”,引申為“興旺發達之地”)。氣候:高原季風氣候,特點是“冬乾夏濕、雨熱同季、日照充足、晝夜溫差大”,年均氣溫8~9°C,年降水量753毫米,年均日照2000小時以上,絕對無霜期120天。

地理座標:北緯30°35'~32°24'、東經101°17'~102°41'。東西長134公里,南北寬90公里,面積6632.73平方公里。地處四川盆地西北部,青藏高原東部,邛崃山脈北段,屬高原峽谷區。平均海拔3000米,地形呈不規則長方形,地勢由東北向西南逐漸降低。

RESEARCH

藉案例分析來理解太陽能建築與校園建築如怎麼被整合。並透過木構造之結構行為快速將學校的輪廓成型,便利當地學童的學習與生活。

ISSUE

民俗:思考小學設計跟藏族信仰及文化怎麼結合?

社區:思考藏人一年的生活習慣會不會因為學校的出現產生更好的影響與契機?

自然:思考馬爾康本土的自然景觀與防震的想法如何被引用在現有基地環境中,並思考活動在其中能否順勢產生?

能源:依馬爾康氣候類型來設計舒適的學習及生活空間,並且有效降低能源。

CONCEPT

依據氣候,地震及風的影響設計橢圓型的結構物,立面設計特定的斜率來柔性抵抗風壓,並利用其設置太陽能光電板及強化導水功能。

PROGRAM

- 01.教學空間
- 02.學生洗手間
- 03.教室置物
- 04.圖書室
- 05.機電室
- 06.管理室
- 07.學生宿舍
- 08.學生衛浴間
- 09.老師宿舍
- 10.行政空間

RESEARCH

Through the case analysis, we're able to understand how to integrate solar energy architecture with campus. By the wooden structure construction behavior to finalize the rough sketch of school quickly, provide convenience to the study and life of local students.

ISSUE

Custom: how to combine the design of elementary school with Tibetan culture?

Community: Is it possible that the appearance of school brings better influences and turning points to Tibetan living habits?

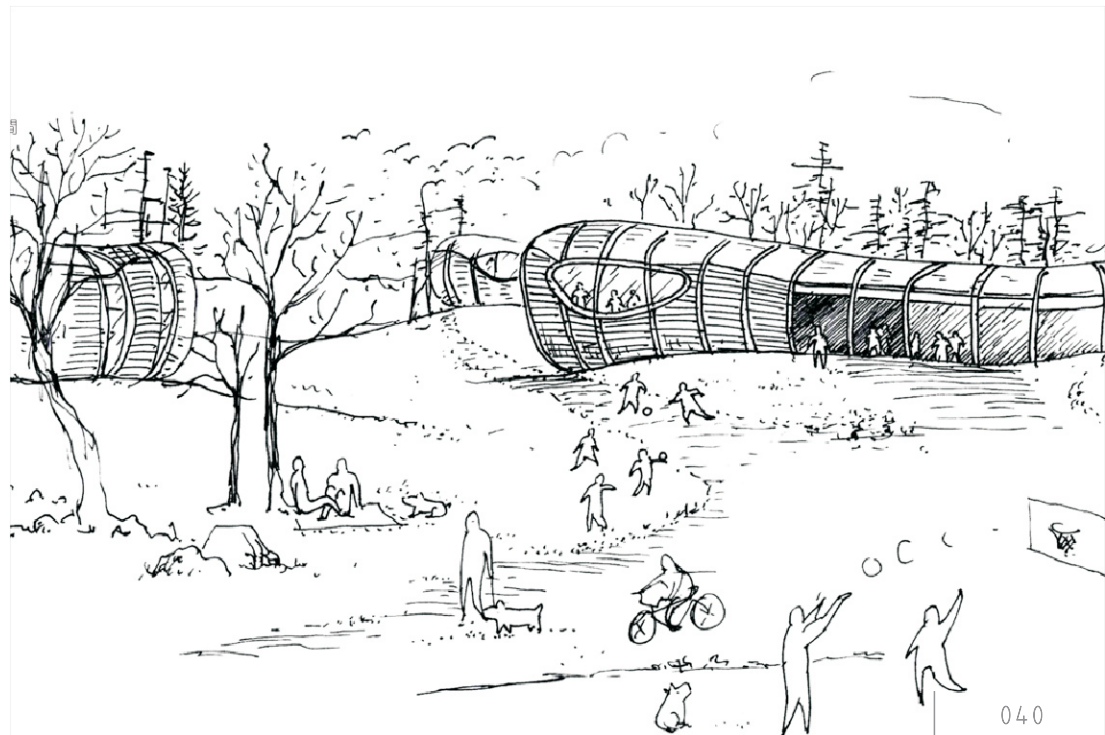
Nature: how to apply Barkam theory of local natural landscape and precaution against earthquake in present base environment? Are the activities able to produce in it?



Energy: according to Barkam climate types to design comfortable study and living space, and reduce energy effectively.

CONCEPT

According to the theory of Barkam, the influences of climate, earthquake and wind force creates the oval building, which resist the wind pressure by specific slope. Through the specific slope, we can install solar module and strengthen drainage function.



CASE Study__

瀬戸市立品野台小學校

建設單位:瀬戸市

地址:愛知縣瀬戸市上品野1234

基地面積: 31,044.14m²

建築面積: 5,649.49m²

建築總面積: 5,642.46m²

結構:鋼筋混凝土結構及鋼結構

層數:地上1層

最高高度: GL+9.90m

停車輛數:20輛

工期:1997年10月~1999年2月

Shinanodai Elementary School

Owner: SETO City

Location: Seto city, Aichi
prefecture

Site Area: 31,004.14m²

Building Area: 5,649.49m²

Total Floor Area: 5,642.46m²

Structure "RC, S

Floors "1 floor above grade

Building Height: GL+9.90m

Parking Capacity: 20 cars

Construction period:

Oct. 1997 to Feb. 1999



興辦開放式小學是該校建校主要方針、目的。因校址搬遷，所以設計方案採取社會公開招標，並且得到廣大教職工、學生和孩子父母們的共同支持、努力，一所開放式學校最終得以建成。

校園內校舍沿著綠色小山丘排列佈置、全部規劃為平房。培養孩子們的個性，與[重教]相比更要[重學]，所以從教室到手工教室、都盡量朝多功能方向發展、並且與教師辦公室連成一個整體、方案規劃重在構築一個開放式教學空間。

特殊教室的規劃目的是向社會普遍開放、為大眾提供一個便於進行終生教育的場地，所以佈置在比較方便的角落。鋸齒狀屋頂可以靈活運用自然光線和自然通風，運用調光板的反射光可以調整頂棚很高教室內光線，太陽能發電、雨水利用等、充分利用綠色能源將學校建成一所生態小學。

校園裡還種植白樺樹、規劃有自然園，孩子們可以在這裡和自然界的生物、植物作親密接觸。

The elementary school aims at establishing an "Open School", with proposal for public offering accompanied by the plan for relocation school, and the cooperation of the children and the parents was well realized, in addition to school administration and teaching staffs' roles. One-story building for the school is being arranged at the place adjoining green small mountain. It was proposed as open school that its space in which students' individual characters would be raised, and students would be familiar with "learning" other than "taught" would be built, and that such space would cover the space from the classroom to the work space and multi-purpose plaza, united with the staff rooms. Special-purpose classrooms were designed to be opened easily for the district as the area of lifelong learning, and to make the zone, which could be easily used. As well, the school was focused on becoming ecologically-used school which would be equipped with saw roof utilizing natural light and ventilation, high ceiling with classroom applying light shelf's reflected light, utilizing photovoltaic generation system and rainfalls, etc. The environment to be easily familiar with living things and plant life was considered, arranging the school ground with shallows and biotope.





Shockproof Core In Barkam

Location: Barkam county of Sichuan province
(Barkam, which means place of abundant flames in Tibetan language, extend in meaning to be “place of develop flourishing”



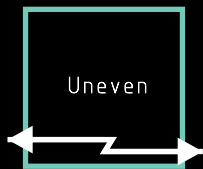
Climate: plateau monsoon climate, the characteristics are “arid in winter and humid in summer, rain and hot in the same season, sufficient sunshine, big temperature difference between day and night”, average temperature in a year is 8-9C, rainfall in a year is 753 millimeter, average sunshine hours in a year are more than 2000 hours, absolute frost less periods are 120 days.

Geographic coordinate: 30°35'~32°24' North Latitude, 101°17'~102°41' East Longitude, 134 kilometers long from east to west, 90 kilometers wide from south to north, surface area 6632.73 square kilometers. Locate in northwest of Sichuan basin, east of Qing-hai-Tibetan plate-au, north of Qionglai mountains, constitute plateau canyon area. Average altitudes are 3000 meters, terrain appears irregular rectangle, physical features fall from northeast to southwest.

Analysis__ Shockproof

×

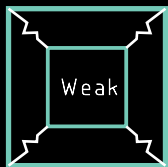
○



Horizontal Seismic Force

×

○



Structure Strength

Analysis__ Learning

×

○



Space

×

○



Same Circumference



Issue

Shockproof:

How to shockproof in existing base surroundings

Learning:

How to create a comfortable space for children?

Folk Custom:

How to link the school design with Tibetan belief and culture?

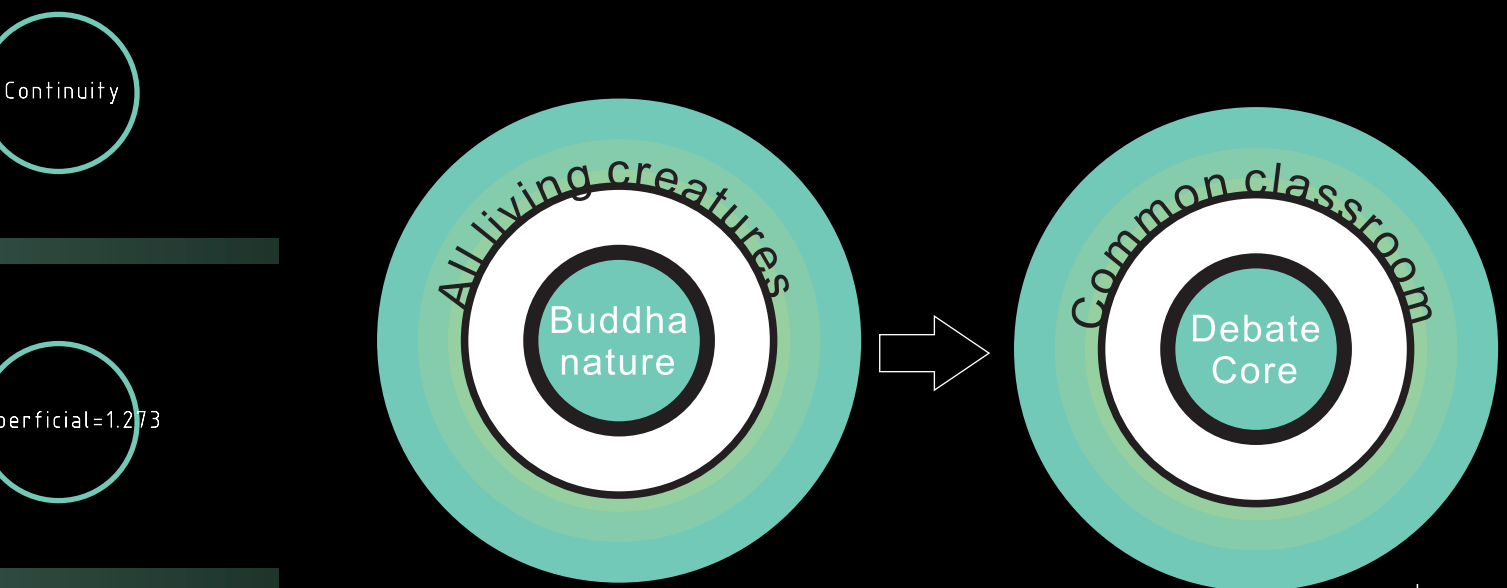
Energy Resources:

Design comfortable space of learning and living according to Barkam climate, and reduce the consuming of energy resources effectively.

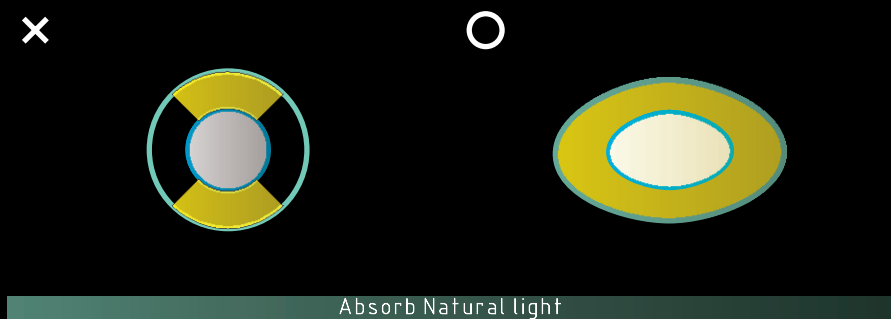
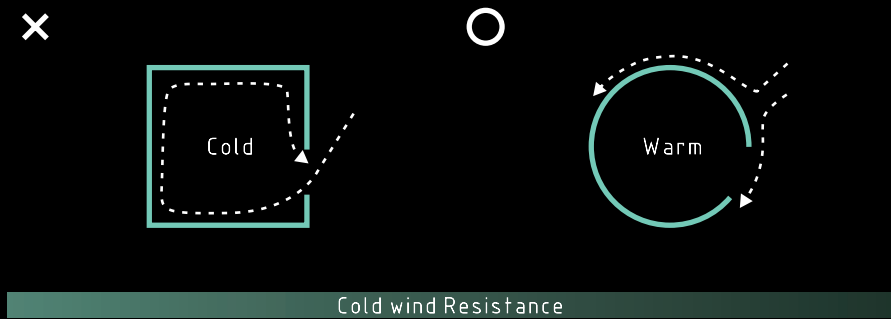
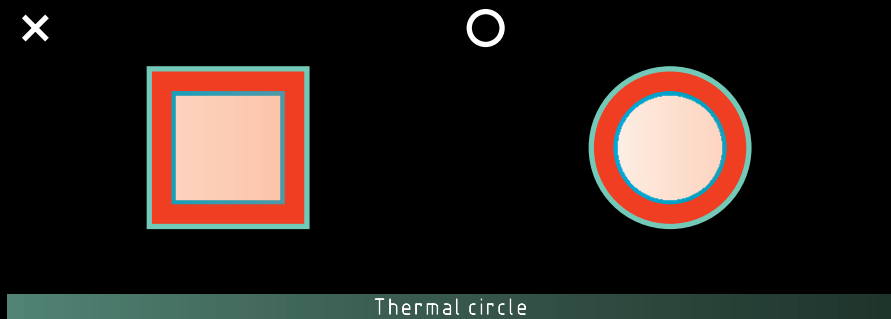
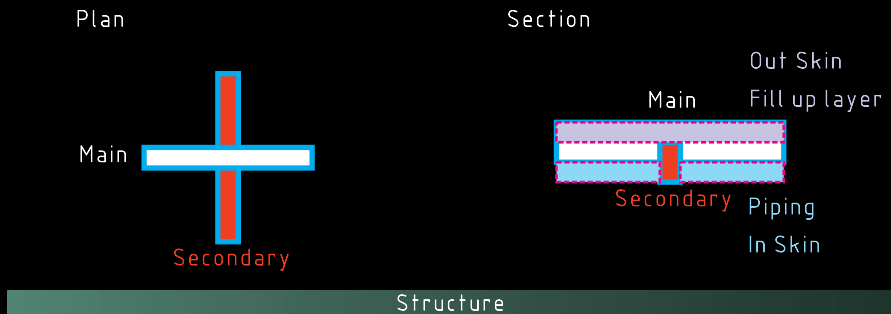


Altar City center: Buddha

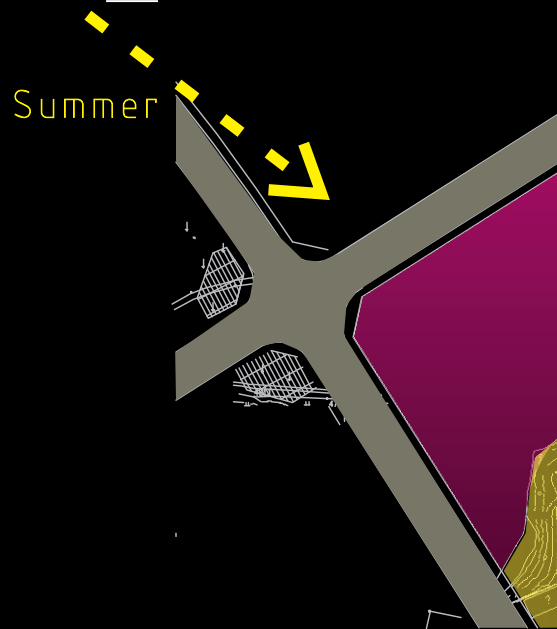
Analysis_Folk Custom



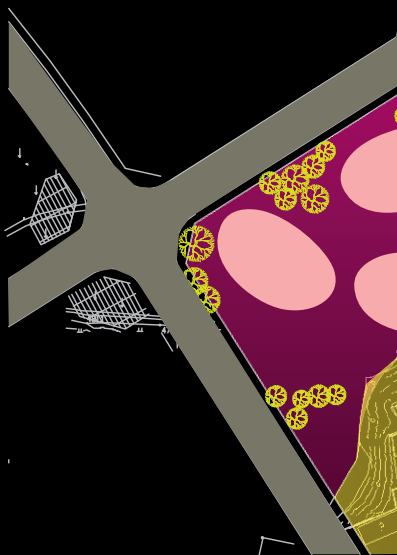
Analysis_Energy Resources



Site_the Wind Dire

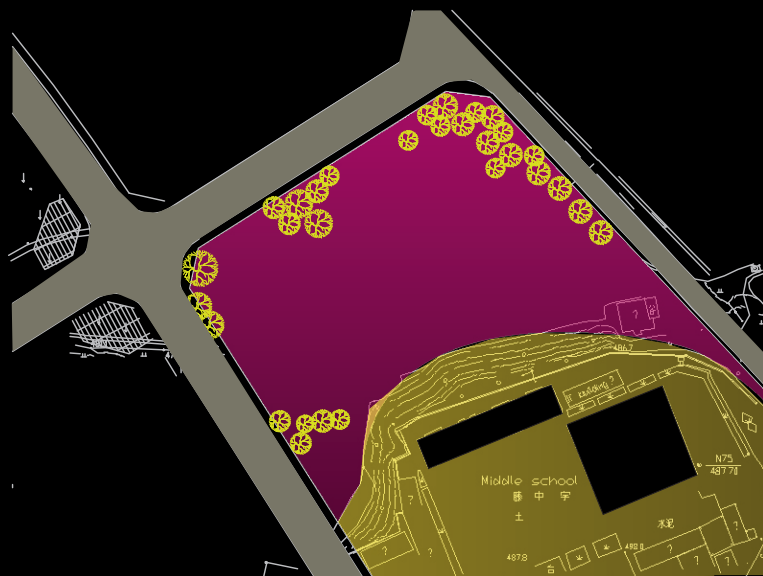
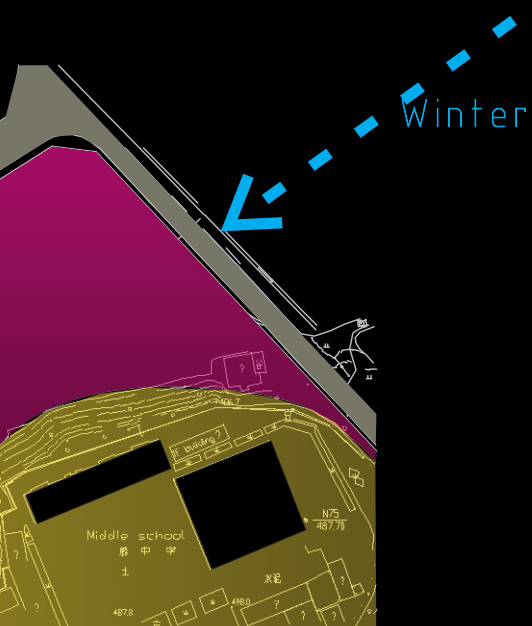


Site_Setup the B



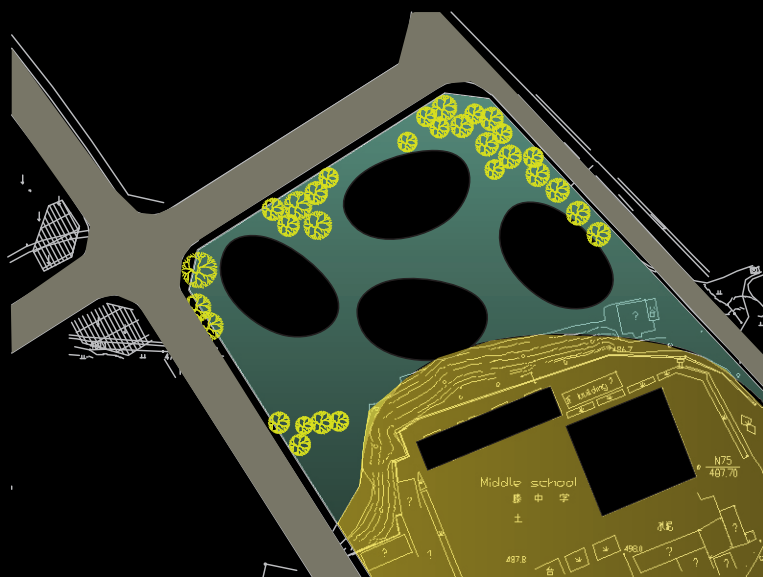
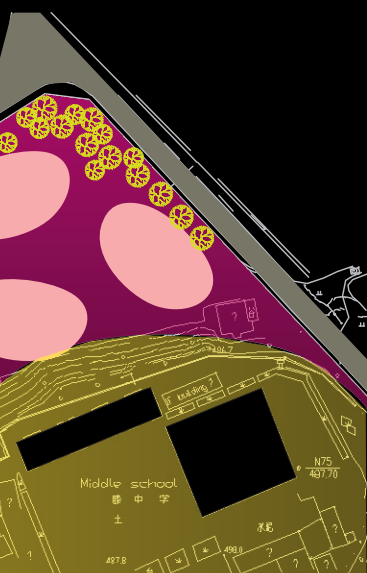
ection ■ ■

Site__ Planting plan ■

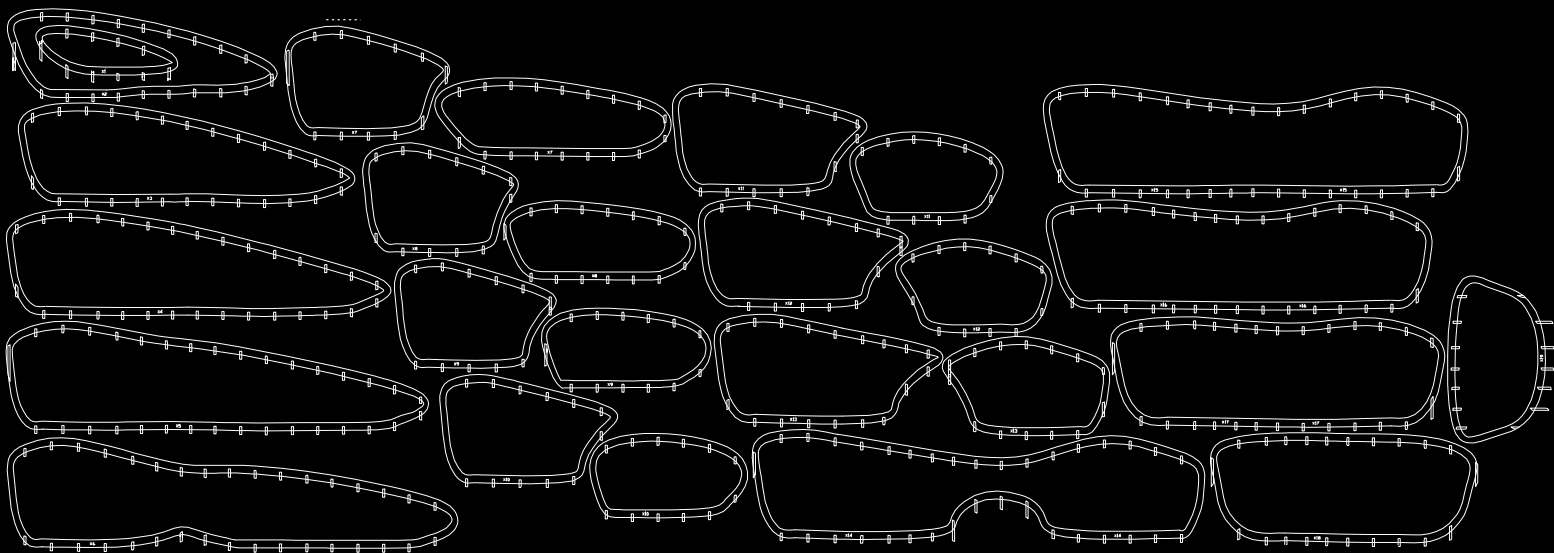
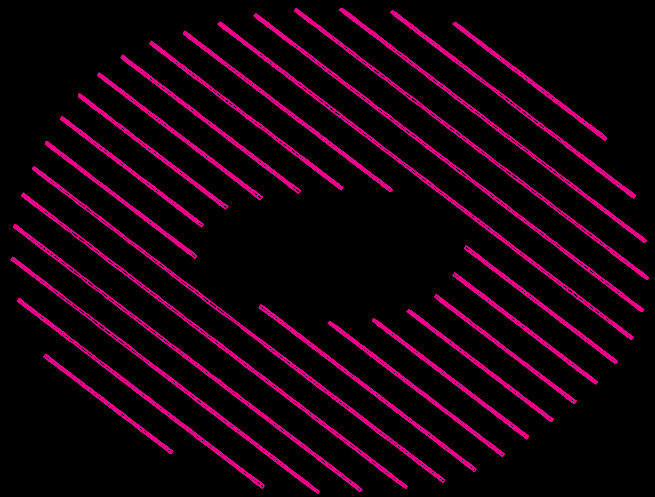
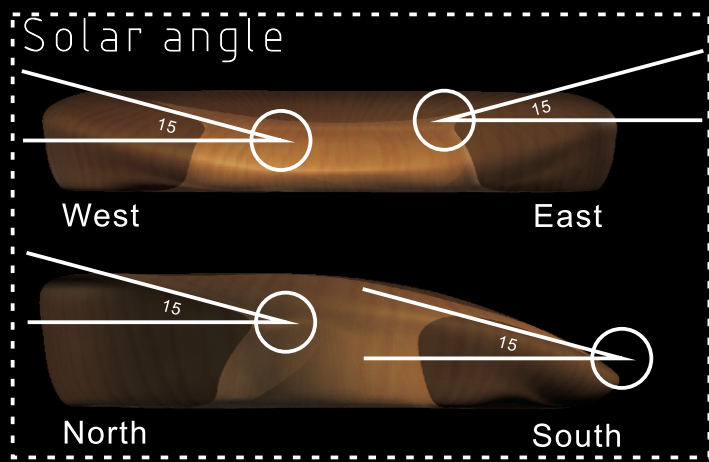


Building Unit ■

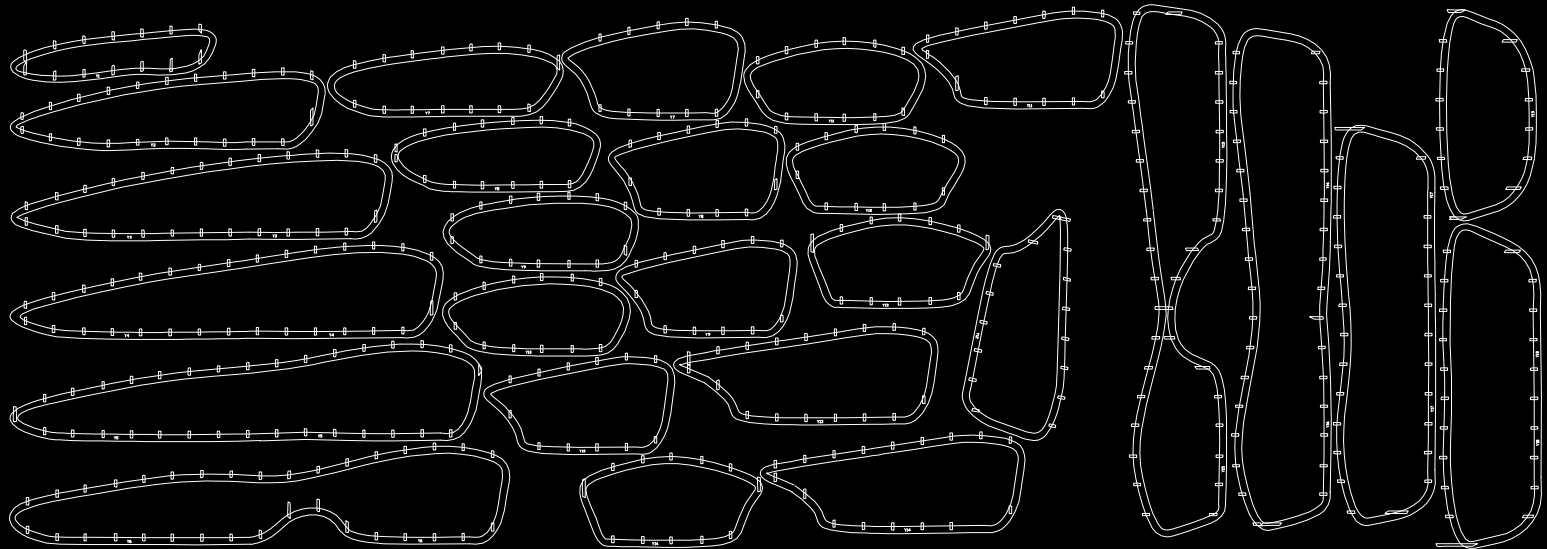
Site__ Sport field + Circulation ■



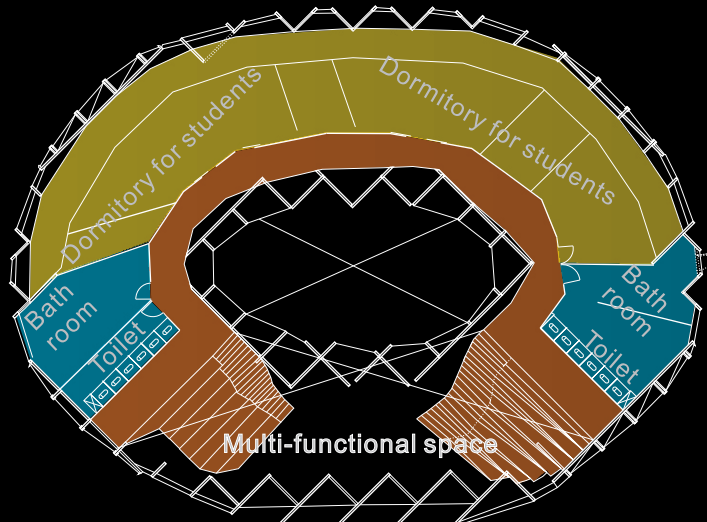
Structure_Skeleton_X axis_STRESS



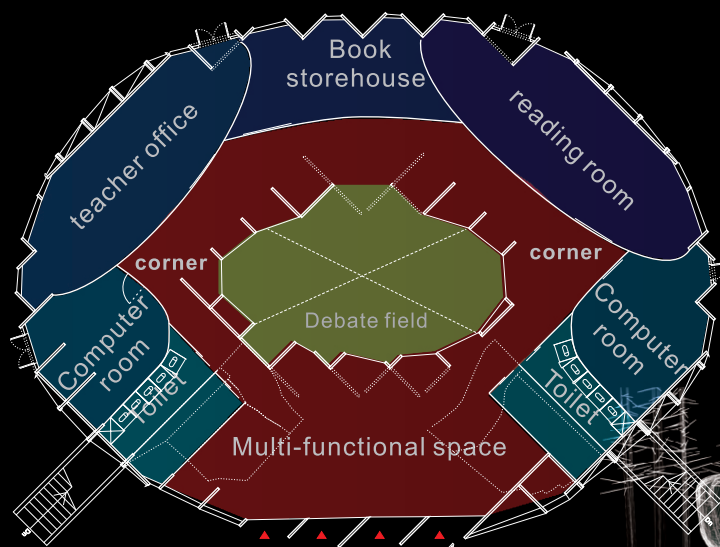
Structure_Skeleton_Y axis_TENSION



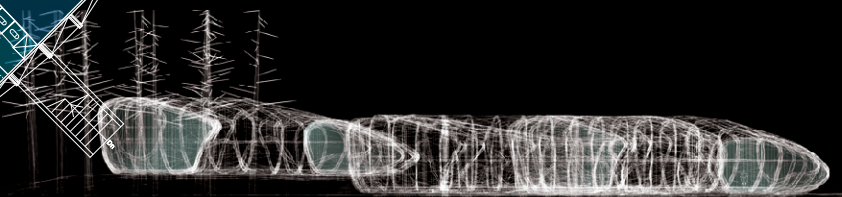
Plan of Multi-function Building



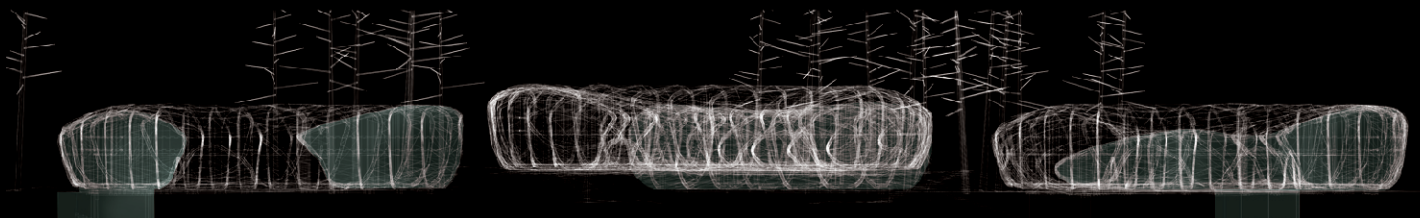
Second level



Ground level



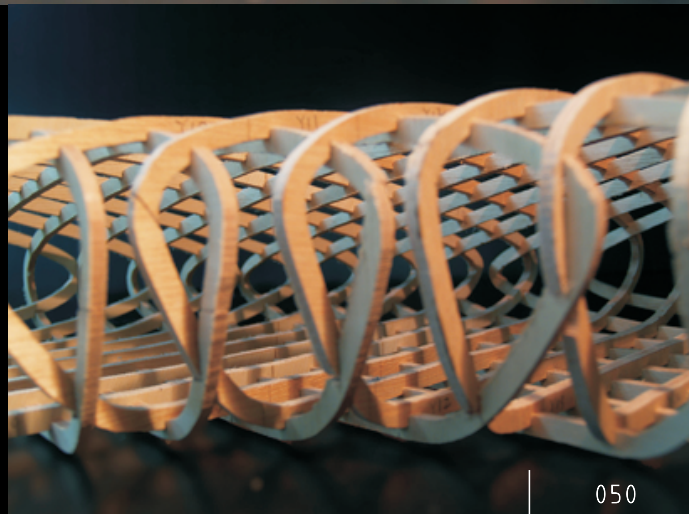
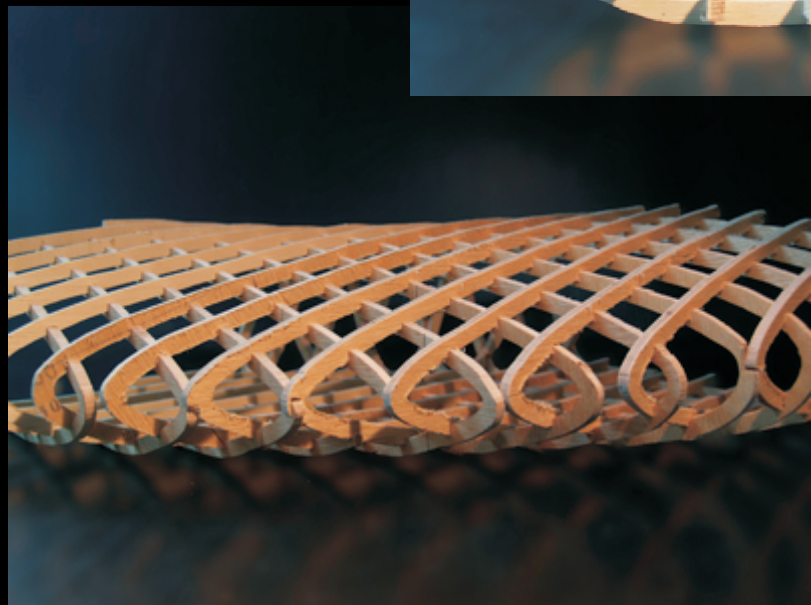
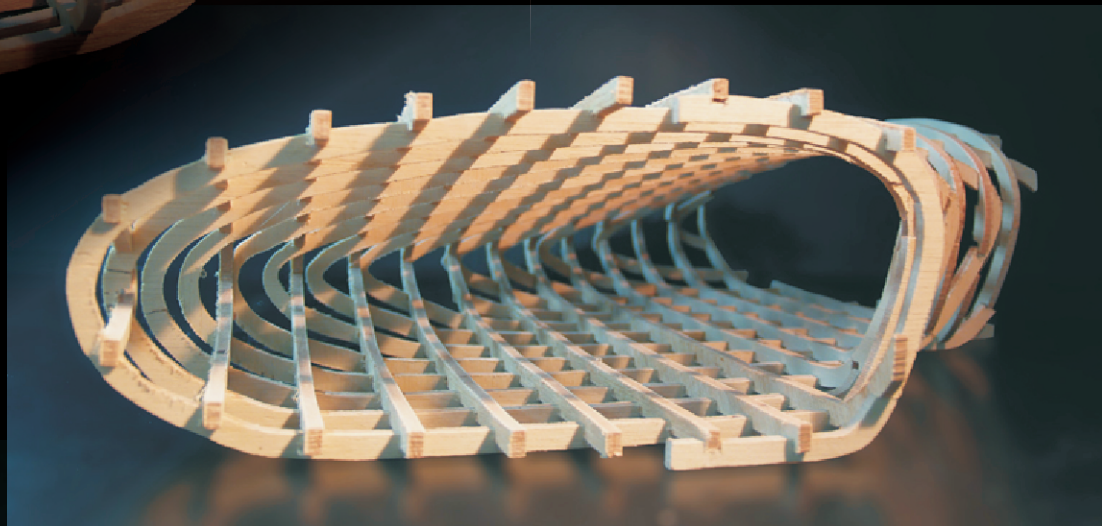
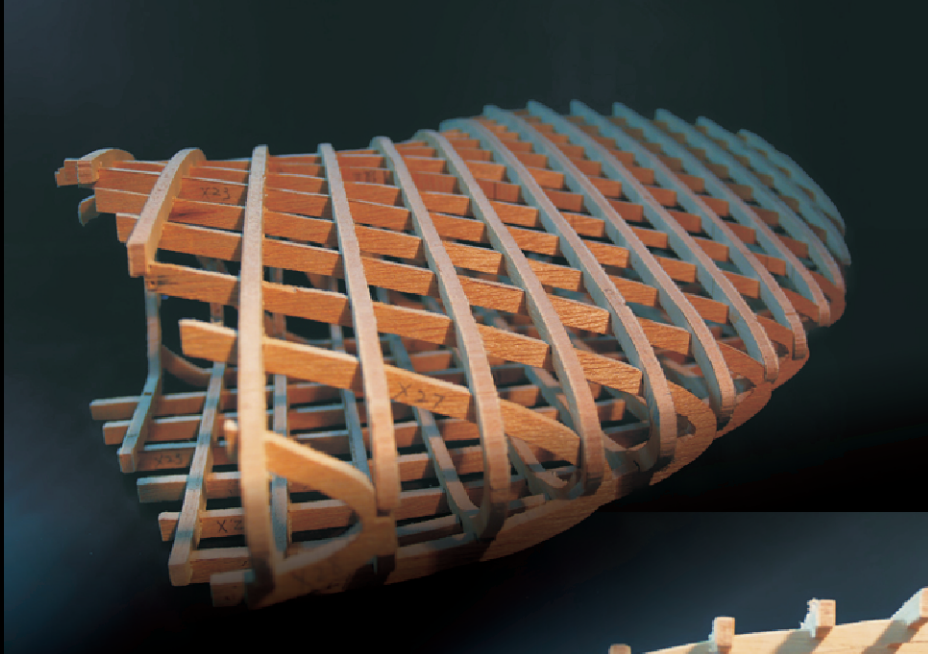
Section of Site 01



Section of Site 02

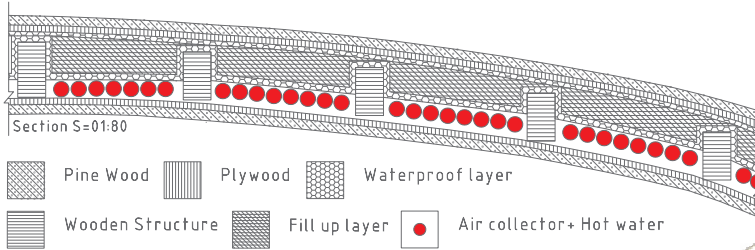


Partial Models of Structure of Shockproof Core



Diagrams of Energy Resource

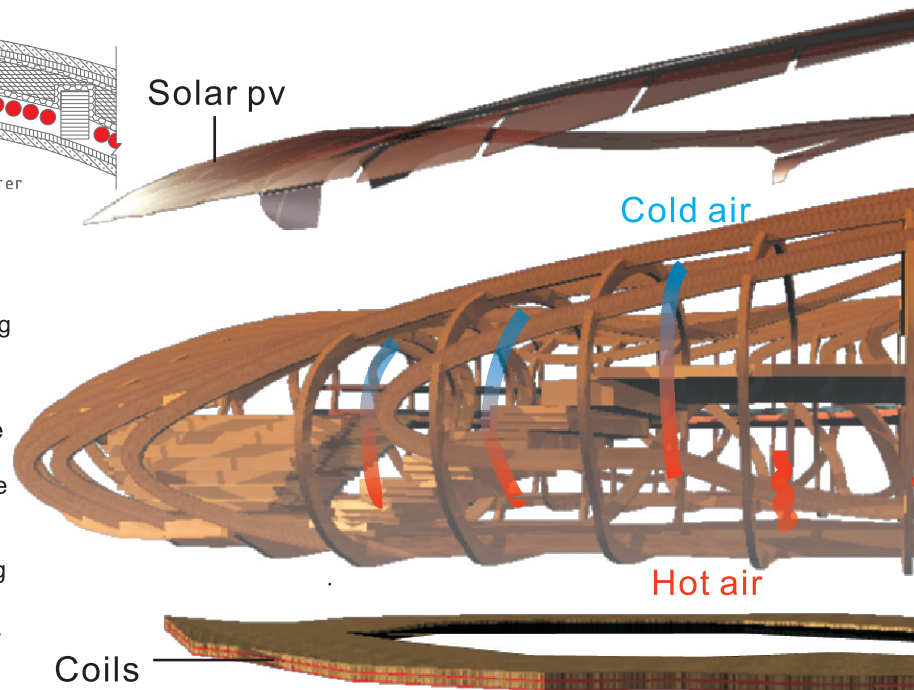
Materials



Energy resources:

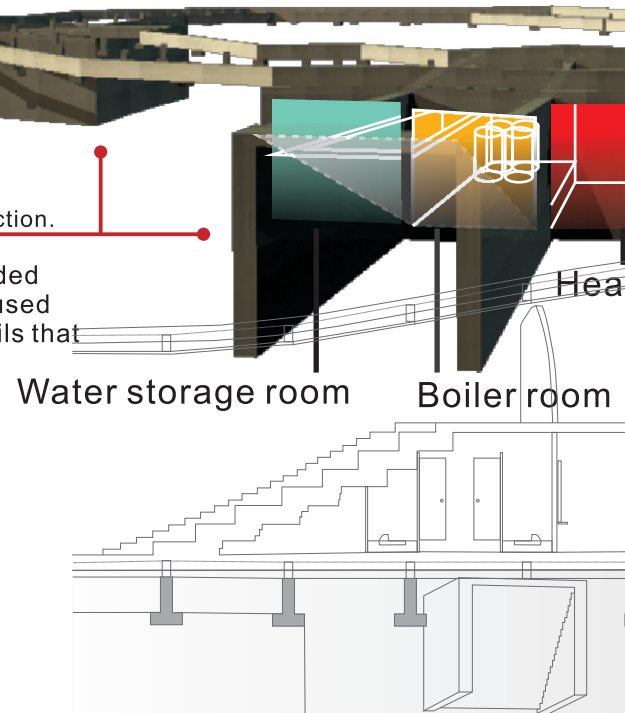
The two climate characteristics in Barkam, "big temperature difference between day and night" and "sufficient sunshine", match the necessity of setting solar energy devices.

Place the pebbles for storing heat and the coils for filtering hot water below the ground layer, the purpose is to provide heat energy quickly and store the filtered middle water (recycle the sewage) in the water storage rooms. In the daytime, solar pv will transform cold air outside into hot air inside for the classrooms on the 1st floor, the heat inside the first floor will continue storing into the 2nd floor. At night, students go back to the dormitory on 2nd floor, the dormitory would keep warm.

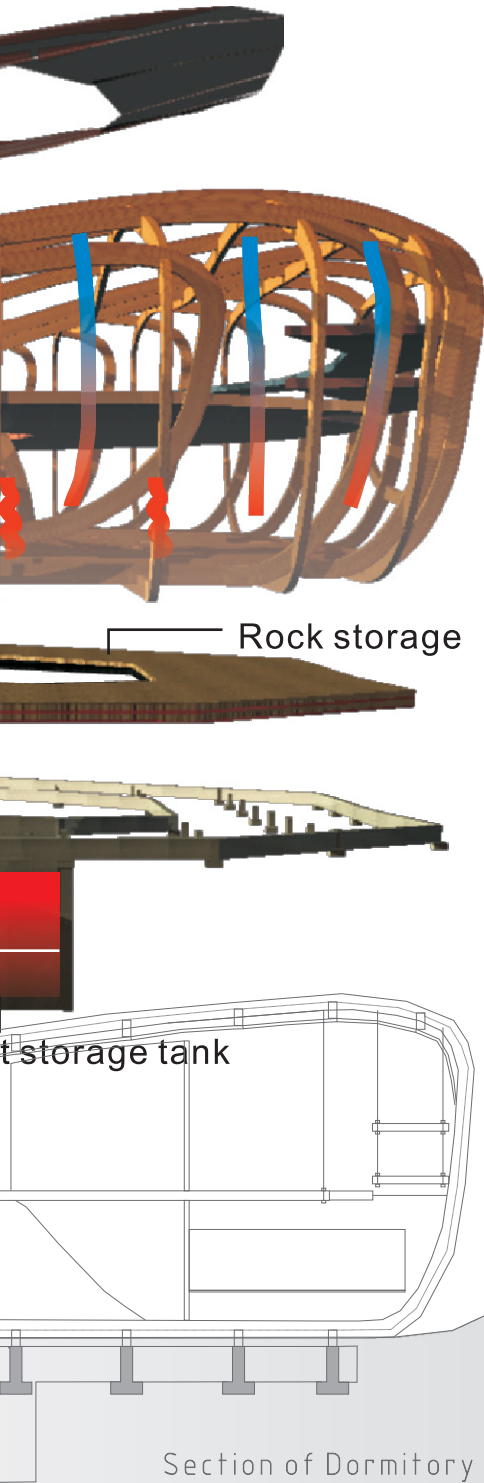


The designer combine solar opto-electrical, solar hot water with construction, and set up two water storage rooms and boiler rooms right below the base construction.

The hot water of solar energy would be useful at night: the hot water provided at night is using up water (water from rain) heated by solar controller, the used hot water will flow into the water storage room through the peddles and coils that will keep warm until next day. Middle water will be used to toilet washing, grass watering, street washing and car washing etc



Components of Shockproof Core



Partition+ Stairs

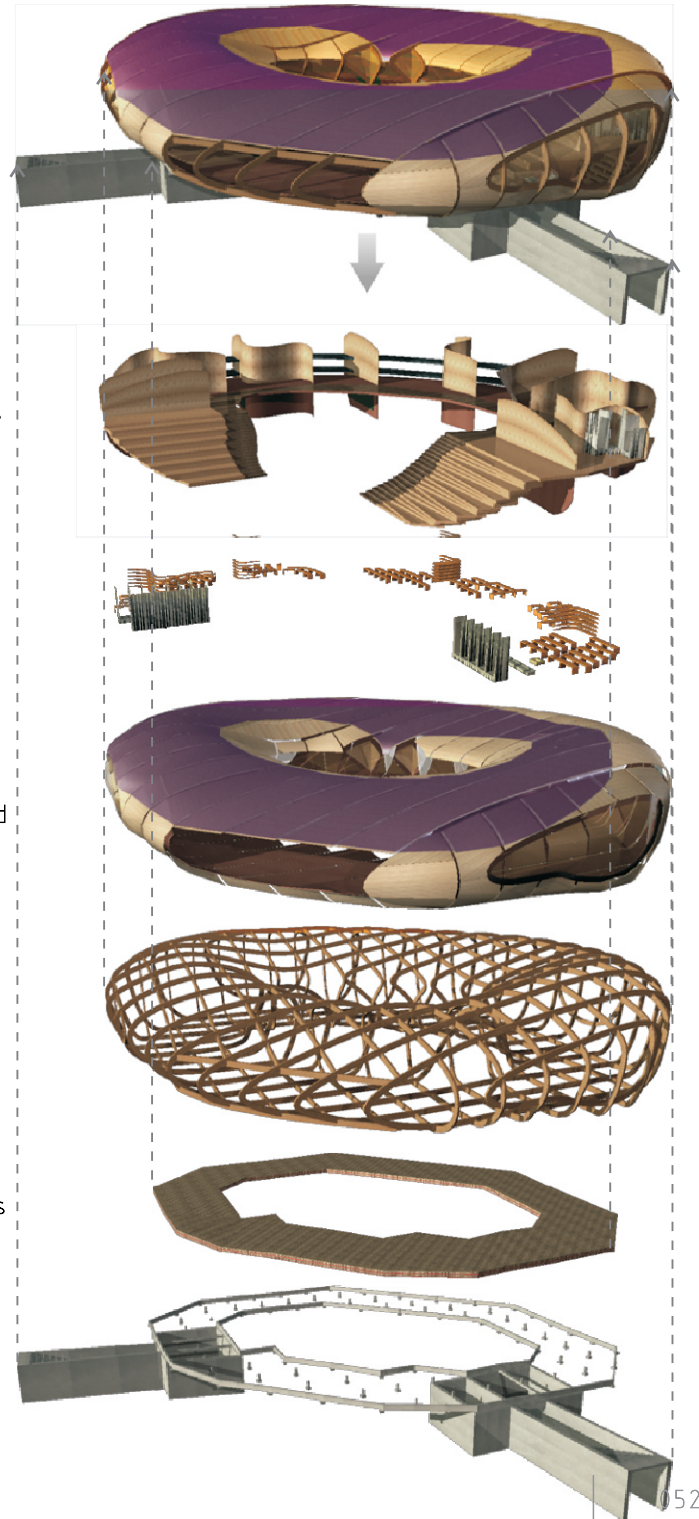
Furniture

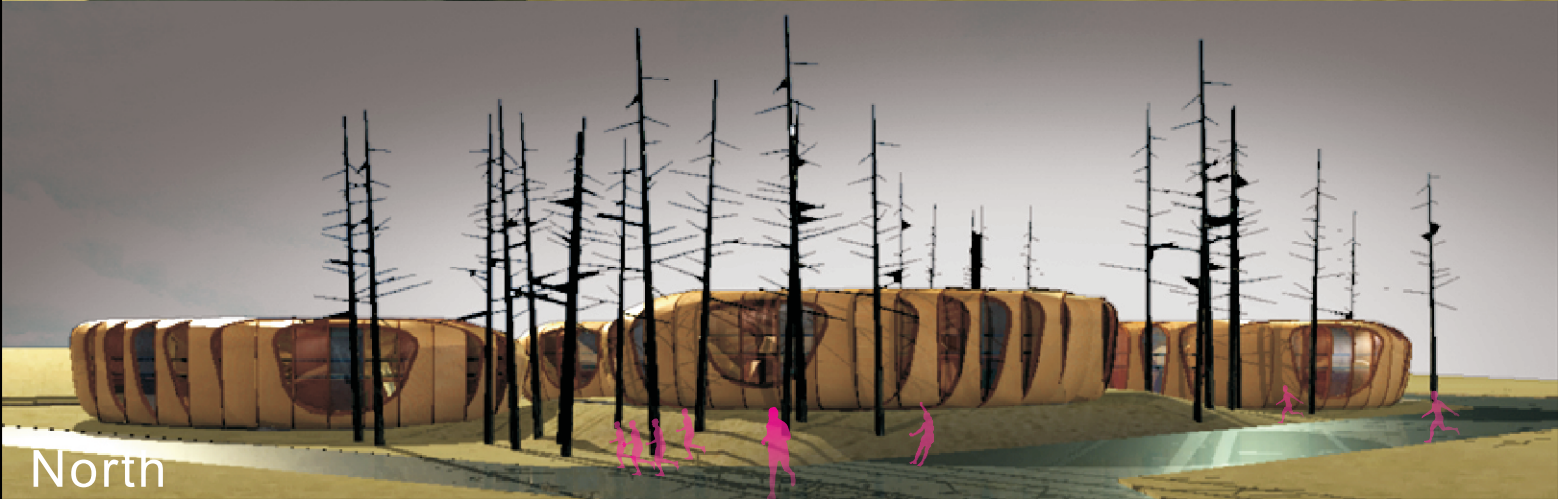
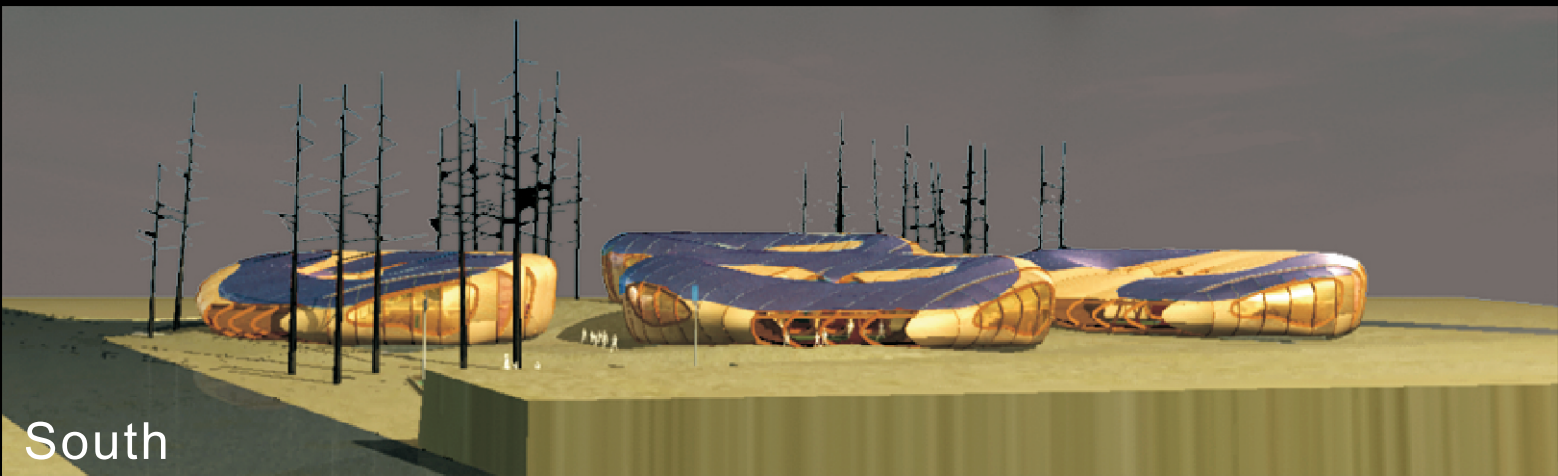
Skin+ Solar PV
+ Courtyard

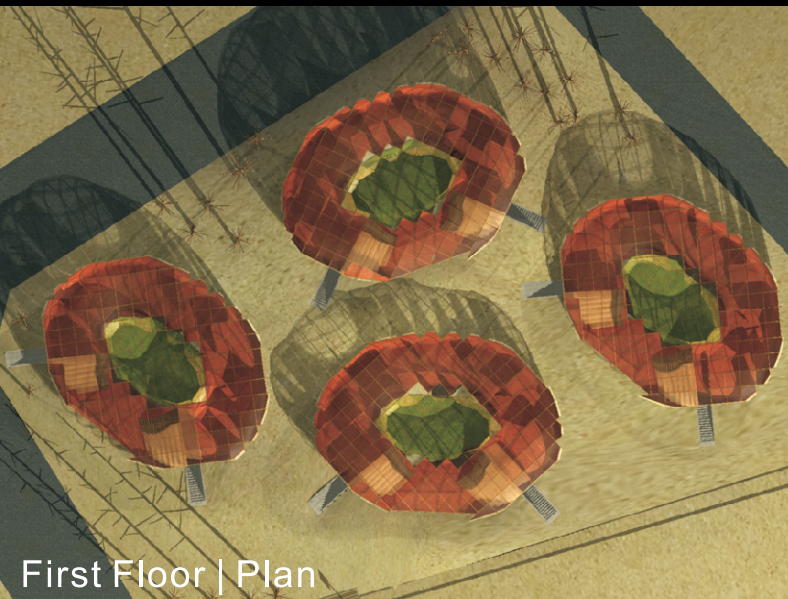
Skeleton

Peddle+ Coils

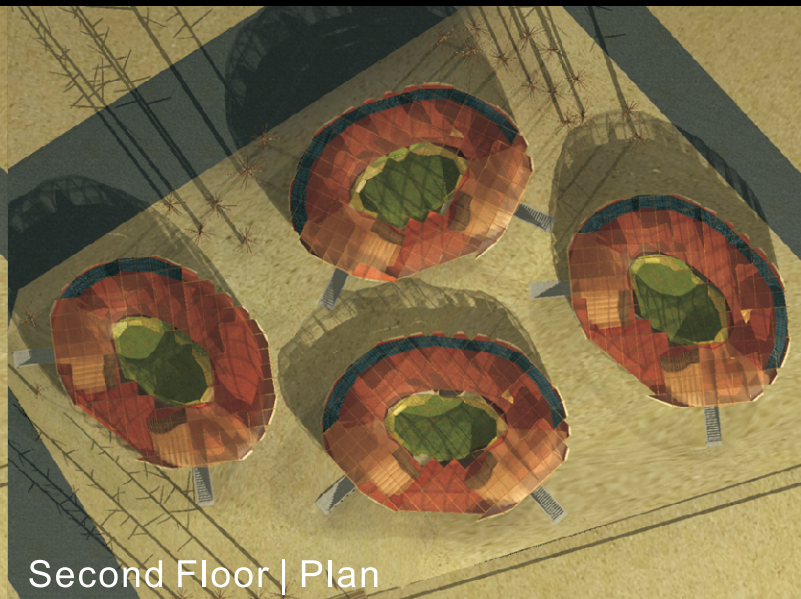
Foundation



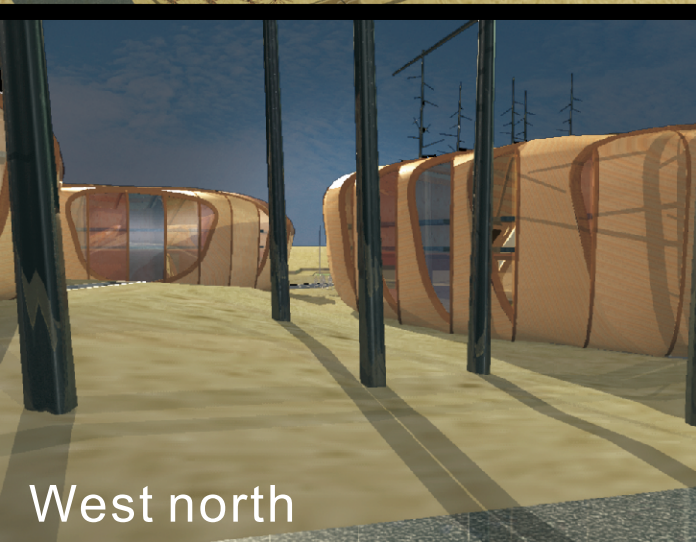




First Floor | Plan



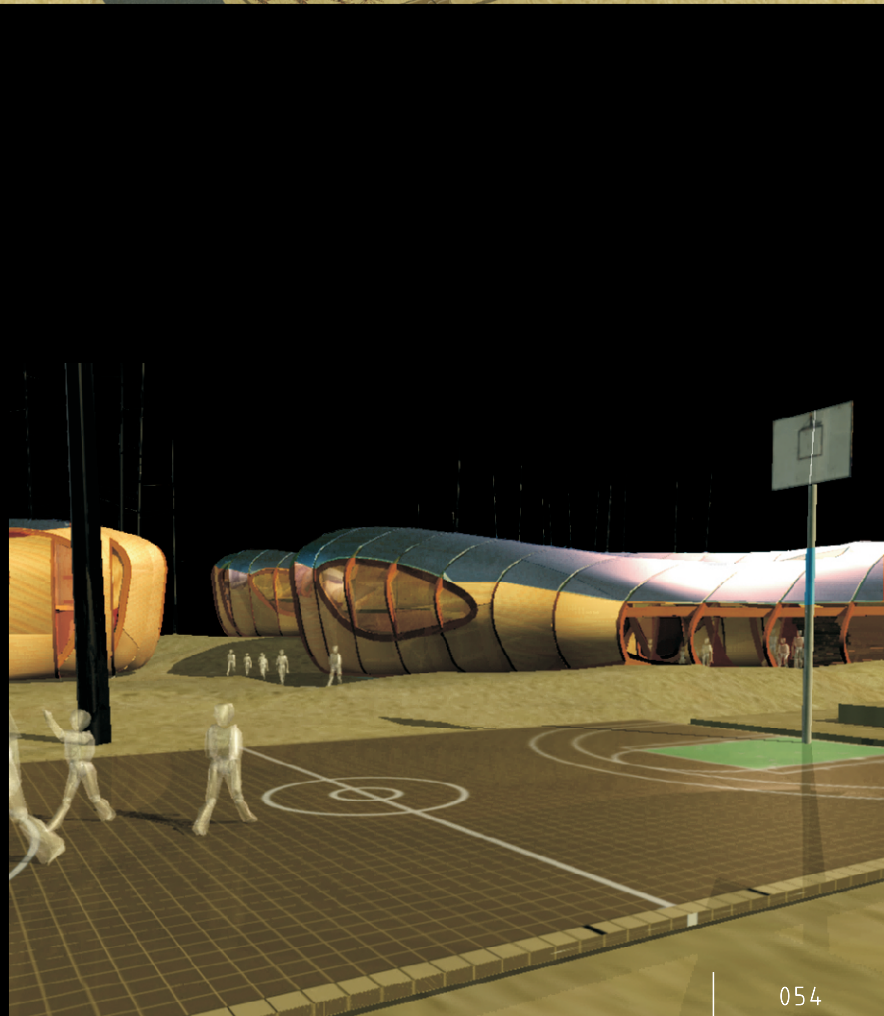
Second Floor | Plan



West north



West



EXTEND

FU



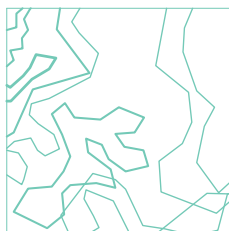
Image © 2009 DigitalGlobe



unction

Space

©2008 Google



Cortex

Location | SOGO department store
_2 floor, Hsinchu, Taiwan

Scale | Shop

056



Cortex

此案是經由都市中的物件觀察，進行尺度或物理現象的分析。透過階段性的延伸與抽象物件的本質使得最後設計被放進基地時有更多空間與機能層次的表現。

SITE

位於新竹火車站前的SOGO百貨二樓，空間包括咖啡店與3C與家電等品牌經銷門市。

RESEARCH

新竹市常見電線杆上的廣告看板，透過不斷地貼上與撕下的過程，留下許多迷人的膠痕，我將膠痕的層次間的關係放大到可被討論的尺度，透過測繪，圖表，剖面及立面的分析，更透過模型研究膠與膠之間若即若離或被撕裂或被壓實的狀態。

CONCEPT

- 01.空間: A. 被看見的洞。B. 被掩蓋的洞。
- 02.機能: A. 黏合。B. 剝離。C. 混沌/ 複合。

PROGRAM

賣場空間包含的咖啡店，3C及家電門市將被前面分析的結果被整體設計成具多重層次的複合空間。

This project is the analysis of scale or physics phenomenon through the observation of the objects in cities. Through phasis extension and the essence of abstract objects, the final design will have more expressions about space and function when it's put into the foundation.

SITE

Second floor of SOGO department store in front of Hsin-Chu train station, the space includes café shop, 3C and household appliances brand retail sales.

RESEARCH

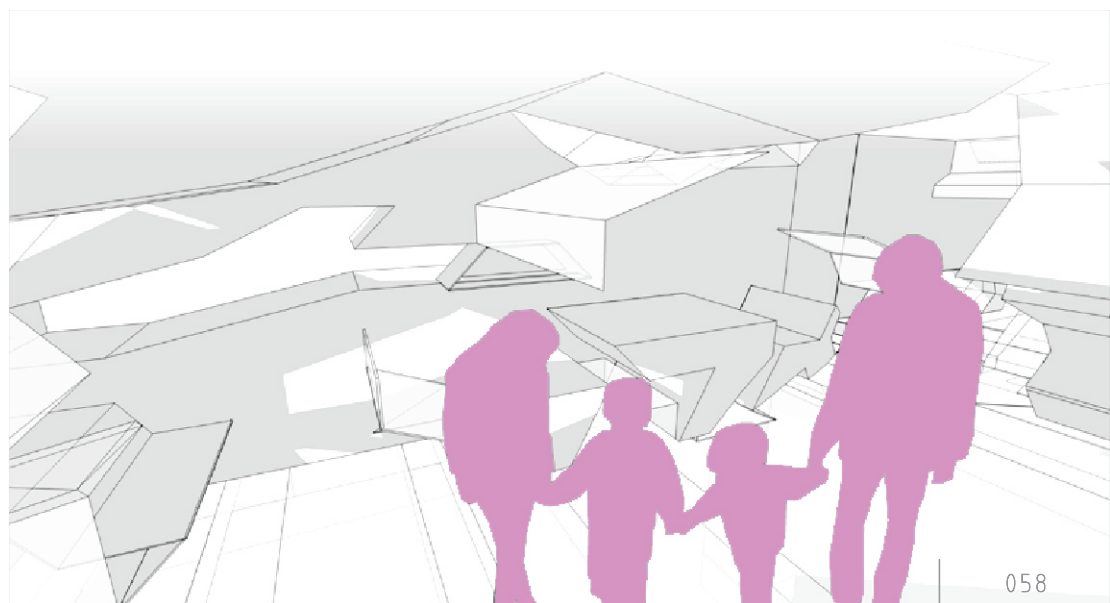
The advertisement boards on wire poles are common in Hsin-Chu city. Through continuing process of pasting and tearing, they left charming glue mark. I enlarge the relationship between glue mark layers to the criterion which is able to be discussed. Through the analysis of measurement, draw, diagram, section and façade, I set up a model to research the status of torn or pressed between the glues.

CONCEPT

- 01.Space: A. Seen holes.
 - B. covered holes.
- 02. Function: A. Gum.
 - B. Peel off.
 - C. Chaos / composite.

PROGRAM

The space, including café shop, 3C and household appliances retail sales, will be designed to multiple composite spaces by the analysis results.



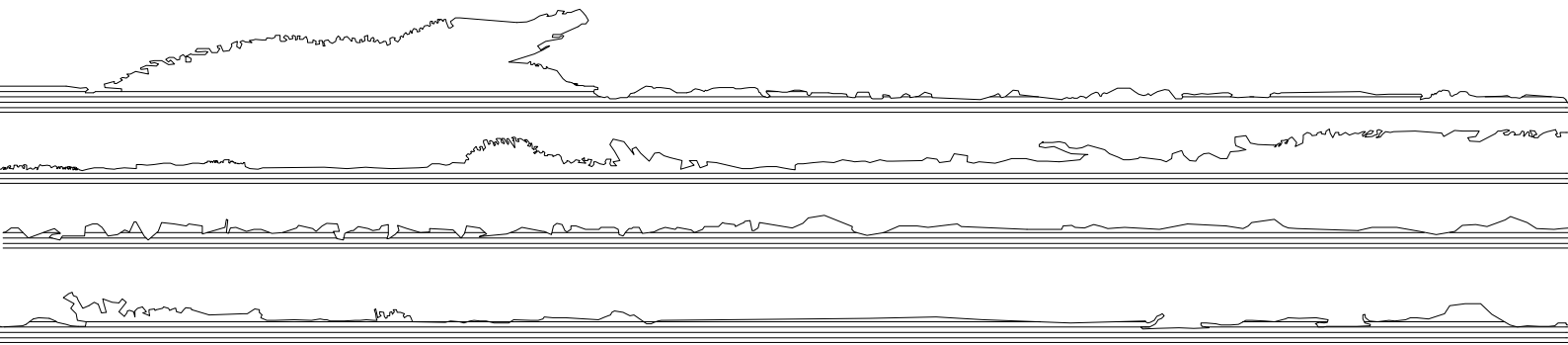
Urban Elements__Trace of Plastic



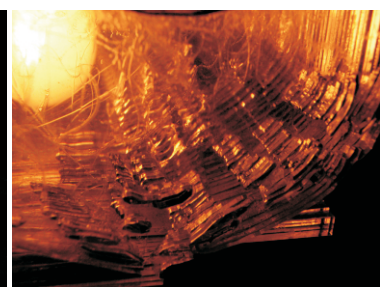
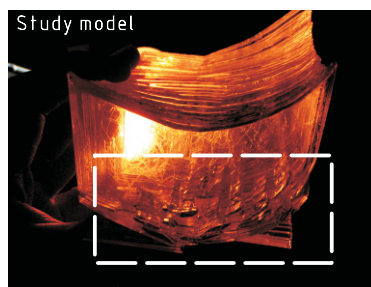
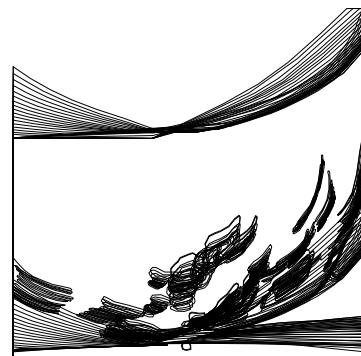
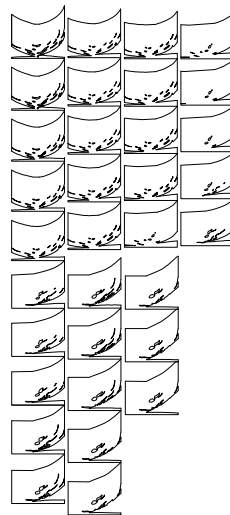
The design of similar rally, continue to challenge our own thinking in the term! I must find out how can be operated some media from Urban.



Beginning draw objects are fairly fully, and then search any clues from the depiction of Plan.



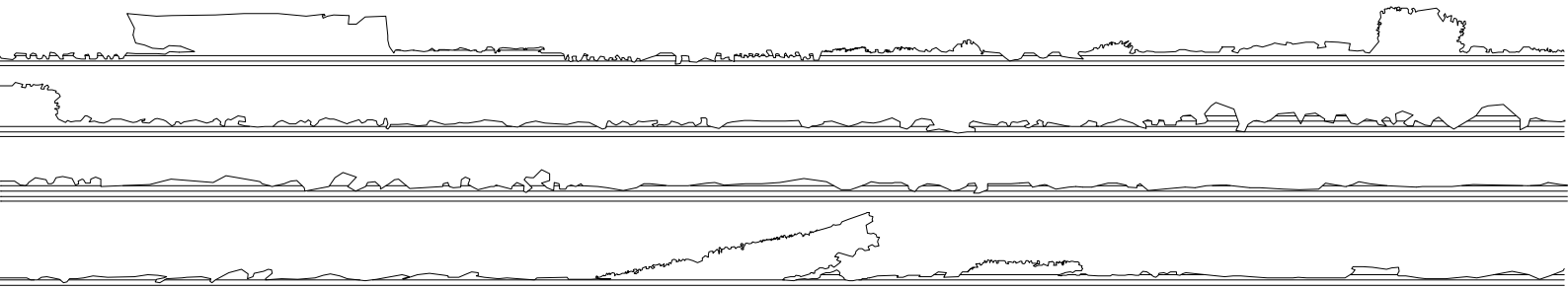
Trace patterns+ Drawing of several layer



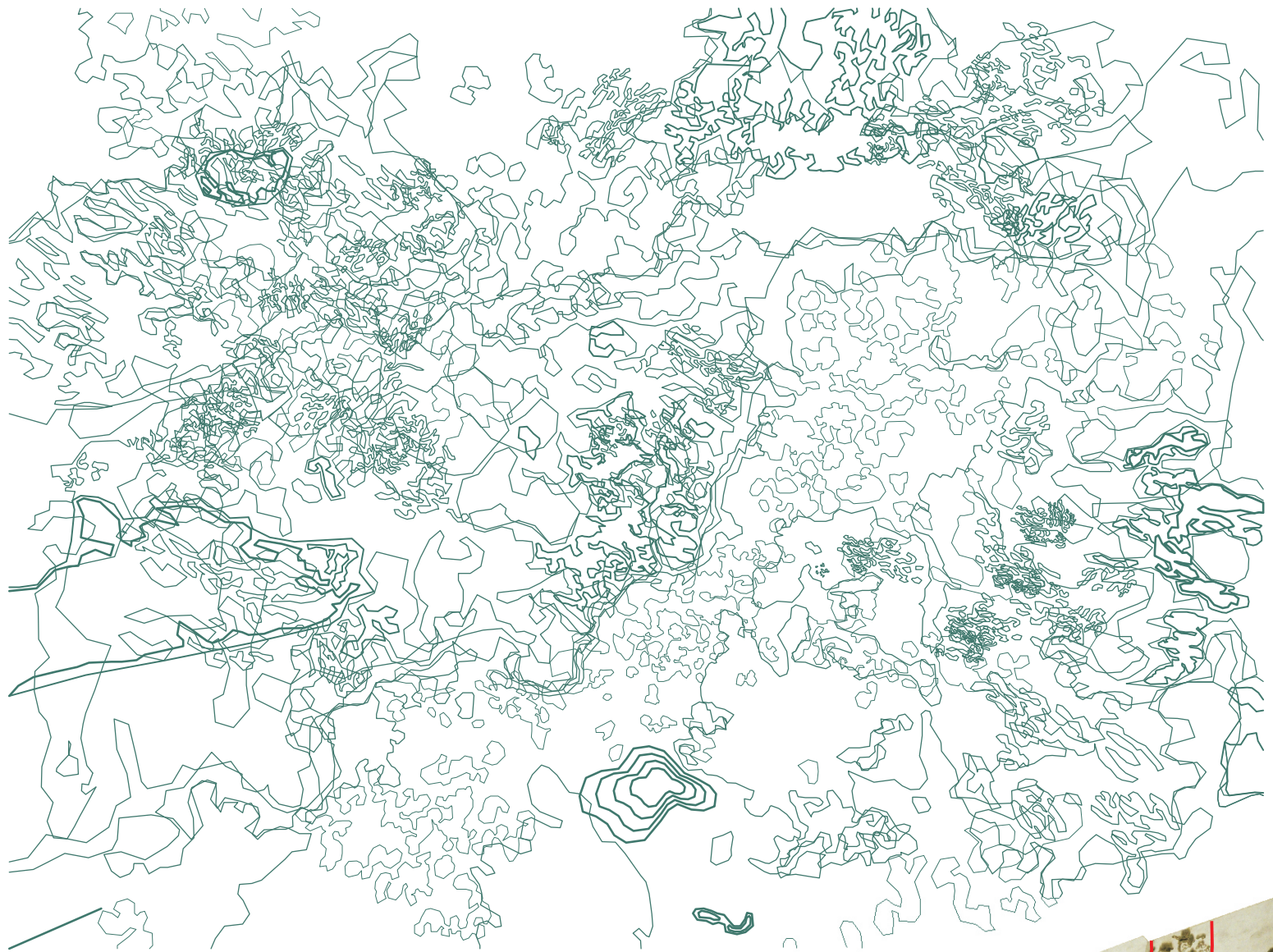
Trace of plastic _ Plan



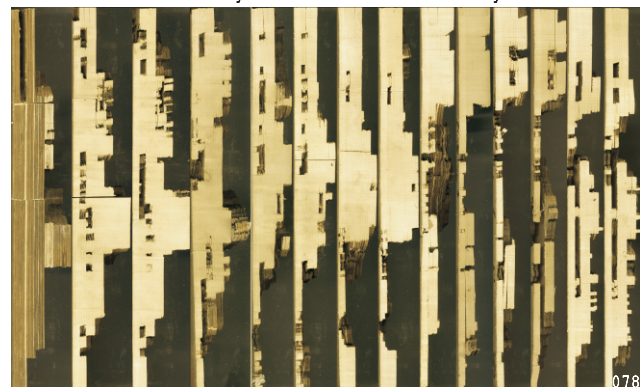
Trace of plastic _ Elevation



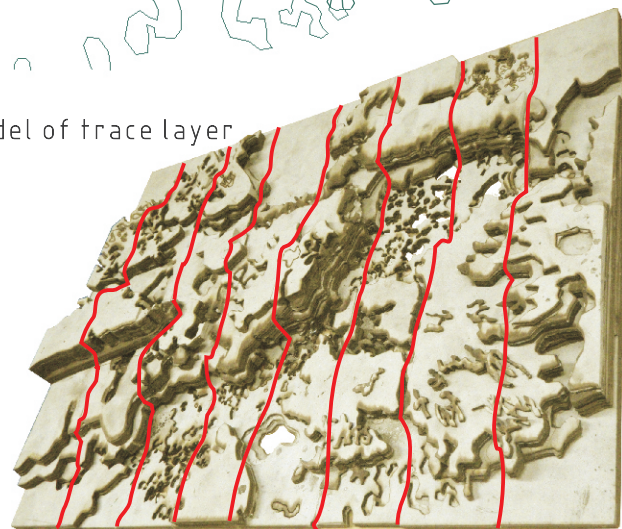
Trace of plastic _ Section
060

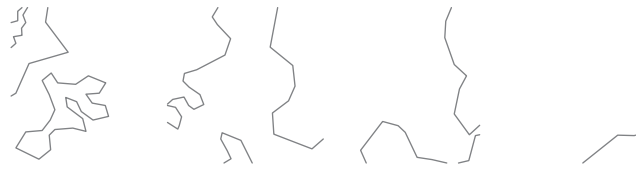
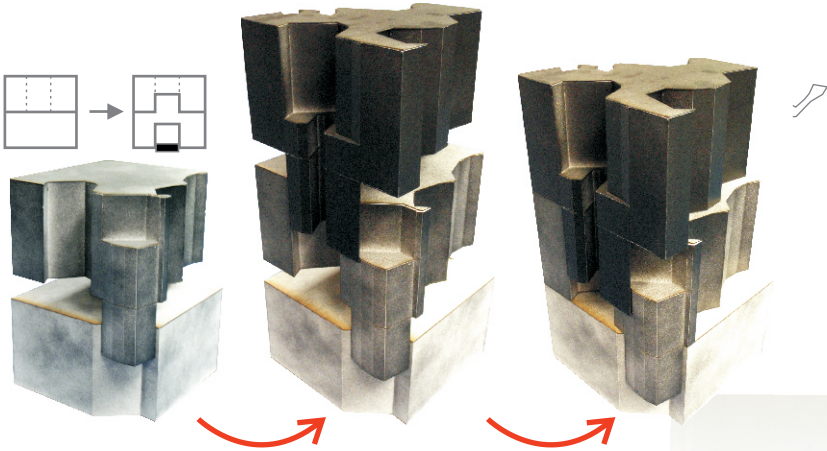


Section of Study model of trace layer



Study model of trace layer





- 01.Space: A. Seen holes.
 B. covered holes.
02. Function: A. Gum.
 B. Peel off.
 C. Chaos / composite.



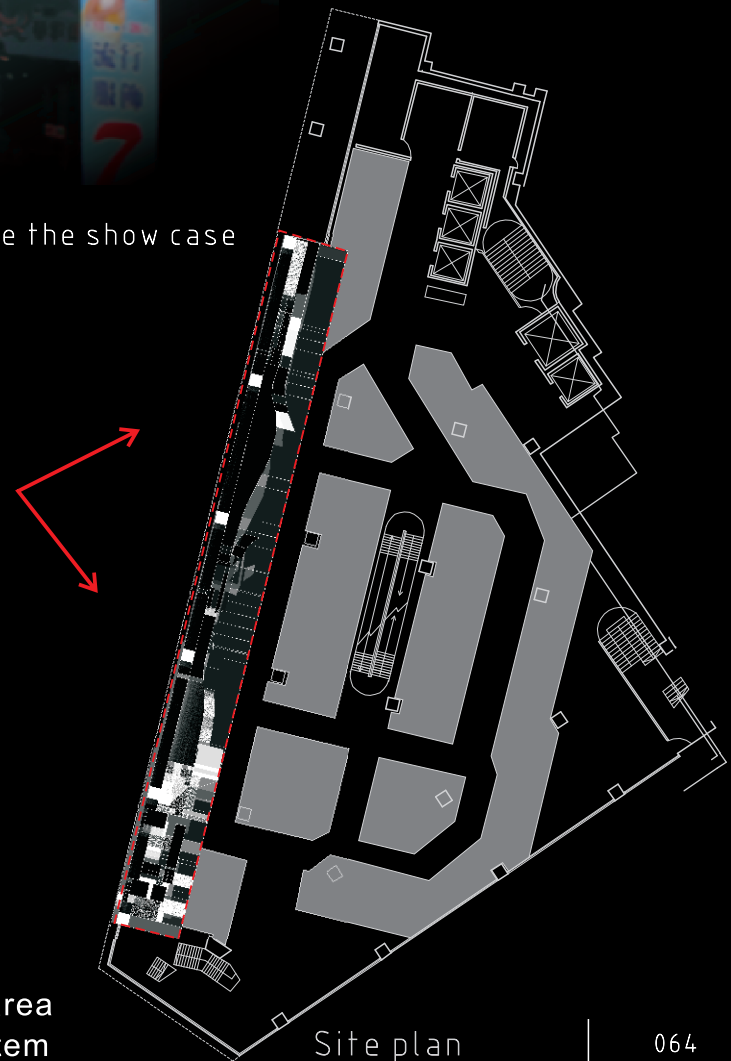
S=01:40

Layer and layer
 begin to be merged
 or interlocked
 because the cavity
 insert the layer.





To imagine the show case



- Traditional market area
- New show case system

Site plan

Elevation| Shopping Space: Coffee Shop+ 3C Product Trial Area

Scale| 1:50



Top Plan| Shopping Space: Coffee Shop+ 3C Product Trial Area

Scale| 1:50



Elevation| A Show Case

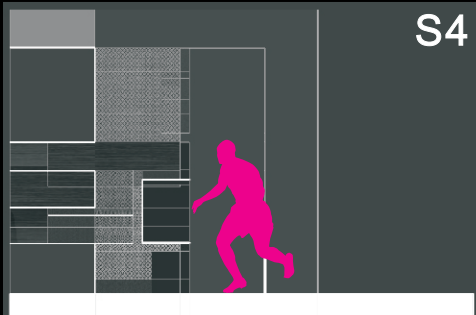
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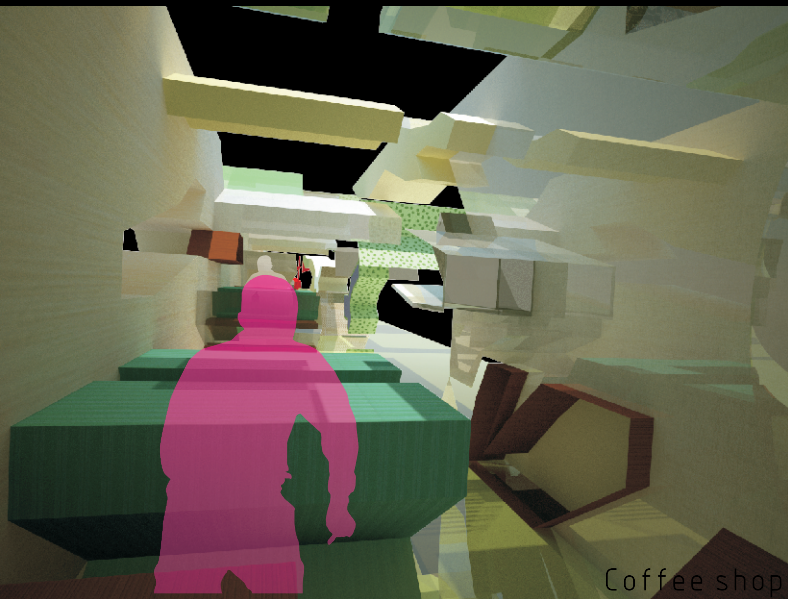


Section*6

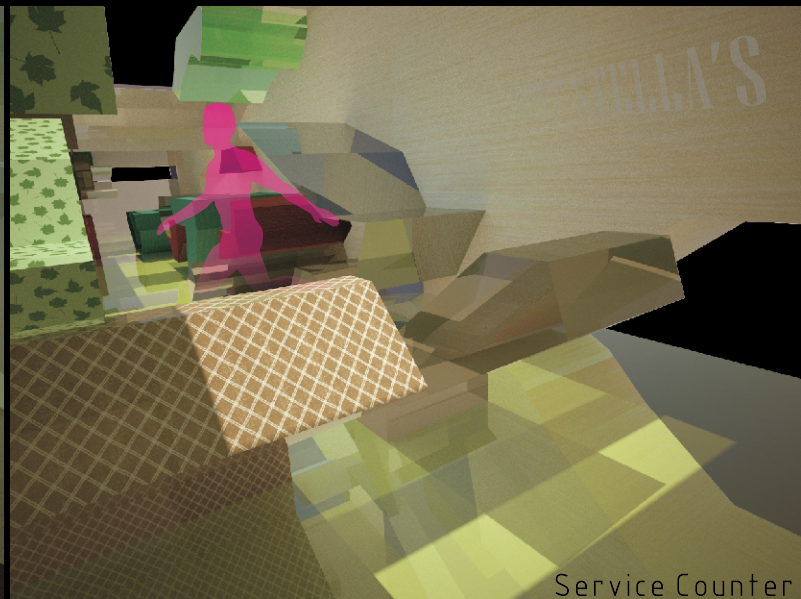


Ground Floor | High ceiling

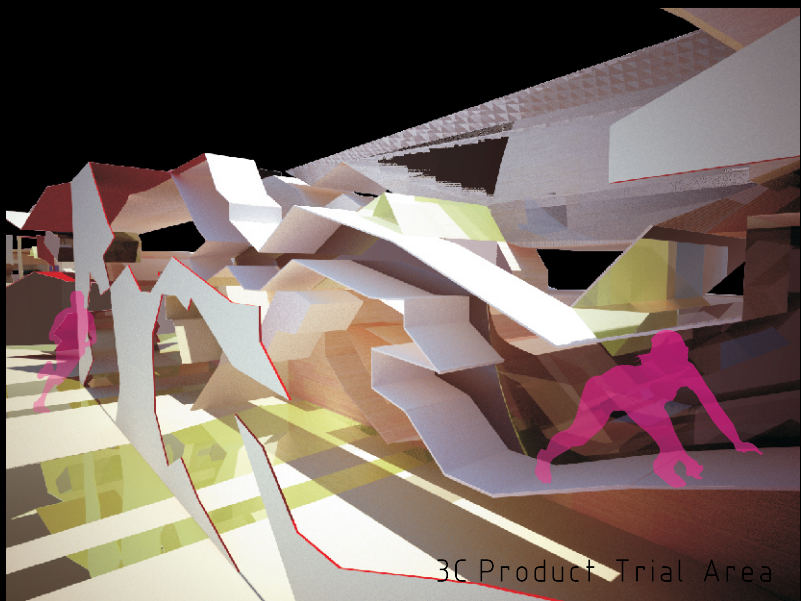




Coffee shop



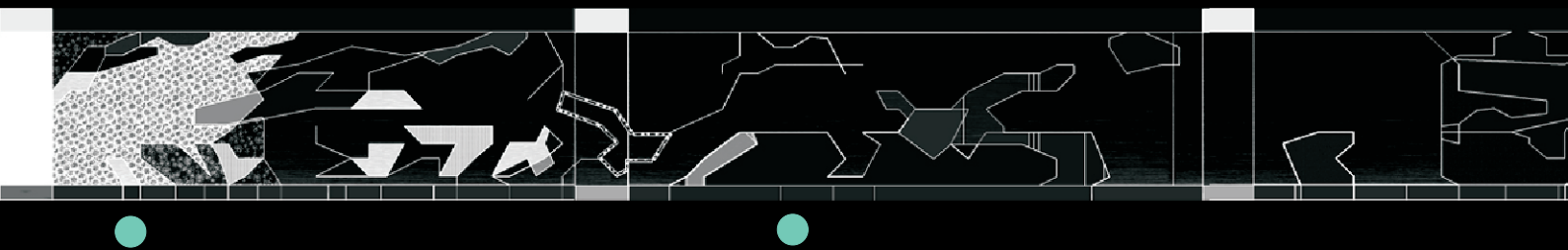
Service Counter



3D Product Trial Area

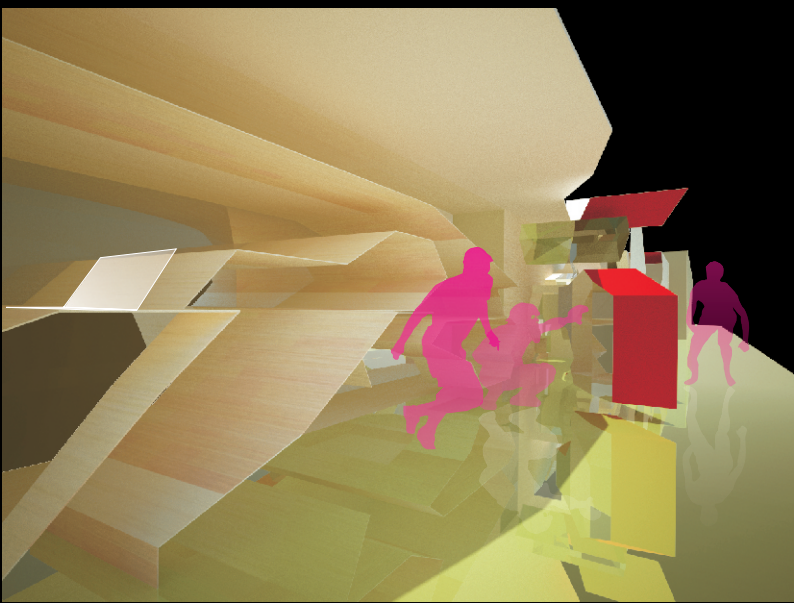
Coffee shop

Service Counter

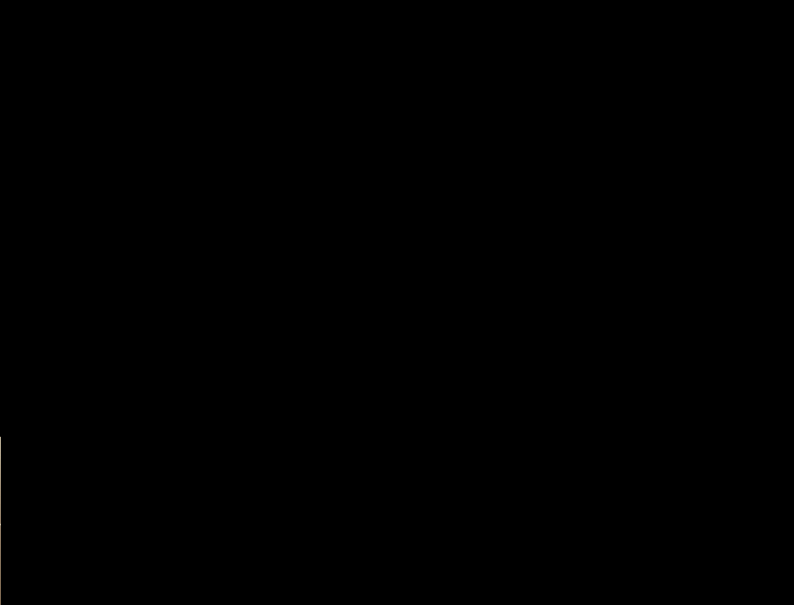




3C Product Trial Area



3C Product Trial Area



3C Product Trial Area

