TEMPORAL FABRIC OF BOUNDARIES
顧 _ 界域時構

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前言
Introduction

古爵誌

相對於信仰 (智能) 對集體活動的明確指引，企圖藉由鬆解構築常態的依循限制，提供個體與其所處場域的對話空隙，進而推演築個體得以自我表態的自由與彈性。

馬祖場域因戰地政務解除呈現持續變動的特質，原來海防邊界與其舊有遺構在海島日 / 月 / 季的氣候更迭下，觀光活動與居民生活交疊又同步消長，使得 (地 - 海) 交界存在空間內涵混雜的 " 灰色 " 狀態。

1. 透過人群在公共空間的注視點分析，了解空間物件與人產生凝視認知的連結因素。

2. 以氣象數據推測土壤含水率與其裂紋型態關係，探索材料交界的關係處理。

3. 量化活動場域中材料接觸與溫度感知的互動性，推擬構材組織與環境感知的對應構想。

4. 分析取樣場域中存在的感知節點，導論異化活動的共存邏輯。

以建築去展現個體經驗與群體關係 (包括環境總體) 的認知參照；驅動構築狀態得以帶引時間觀點於空間感知當中。

在虛擬空間與島嶼地形的交疊處，我們挖掘馬祖隱含的層次 ― 這片領域不僅由其地理輪廓所定義，更由跨越其邊界的數據韻律所塑造。

我們挑戰基地分析的傳統界限。我們運用開放資料系統、開源程式和大型語言模型的民主潛能，揭示馬祖的隱藏維度。這些工具不僅是技術延伸，更是哲學性工具，質疑我們如何感知並與場所互動。

本計畫刻意跨越倫理閾限，採用網路爬蟲提取人類經驗的數位殘餘 ― 散佈於專有平臺上的照片、見證和短暫互動。在這微妙的提取過程中，我們承認自身矛盾立場：批評科技巨頭的霸權，同時利用其人類經驗的龐大知識庫。

此張力構成我們對馬祖時間織理探索的核心。我們探索的邊界不僅存在於實體空間，更在數位與類比存在的重疊時間性中。每個資料集、每張爬取的圖像、每個算法詮釋都創造新的時間褶皺 ― 過去印象與當下分析碰撞以預示未來可能性的時刻。

Chueh-Chih GUU

Rather than strictly guiding collective activities through belief or intelligence, this project loosens conventional construction norms, creating spaces for individual expression and dialogue with the surroundings.

Since the end of wartime governance, Matsu has been undergoing transformation. Coastal defense boundaries and historical remnants, shaped by the shifting climate, blend with tourism and daily life, creating a spatially ambiguous "gray zone" at the land-sea interface.

1. Study viewing points in public spaces to understand the connection between objects and perception.

2. Use meteorological data to relate soil moisture to material interfaces, like crack patterns.

3. Measure how materials and temperature affect perception to guide design.

4. Analyze key perception points to explore how different activities can coexist.

Architecture expresses both individual experiences and collective relationships, while construction integrates time into space, making it perceptible through spatial awareness.

Chia-Ching YEN

In the liminal space between digital infrastructure and island topography, we excavate the invisible layers of Matsu—not merely defined by its contours, but by the temporal rhythms of data flowing across its boundaries.Our work challenges conventional site analysis. We harness open data ecosystems, computational frameworks, and transparent language models to reveal Matsu's hidden dimensions. The project traverses ethical thresholds, employing web crawlers to extract digital residues of human experience—photographs, testimonials, and ephemeral interactions scattered across proprietary platforms.
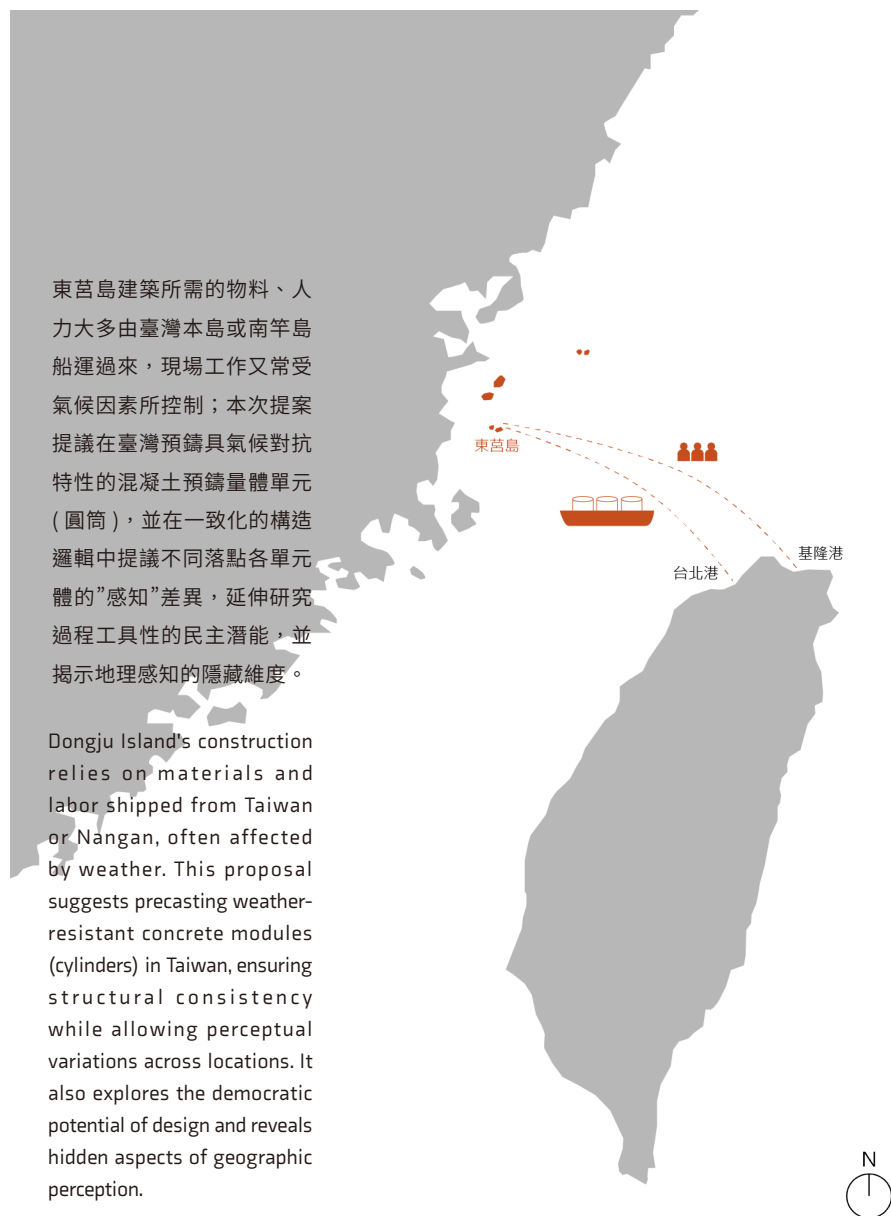
We acknowledge our paradoxical position: critiquing the hegemony of tech giants while leveraging their vast repositories of human experience.

This tension forms the core of our investigation. The boundaries we explore exist not only in physical space but in the overlapping temporalities of digital and analog existence. Each dataset, ecrawled image, interpretation creates a temporal fold—a moment where past impressions collide with present analysis to suggest future possibilities.
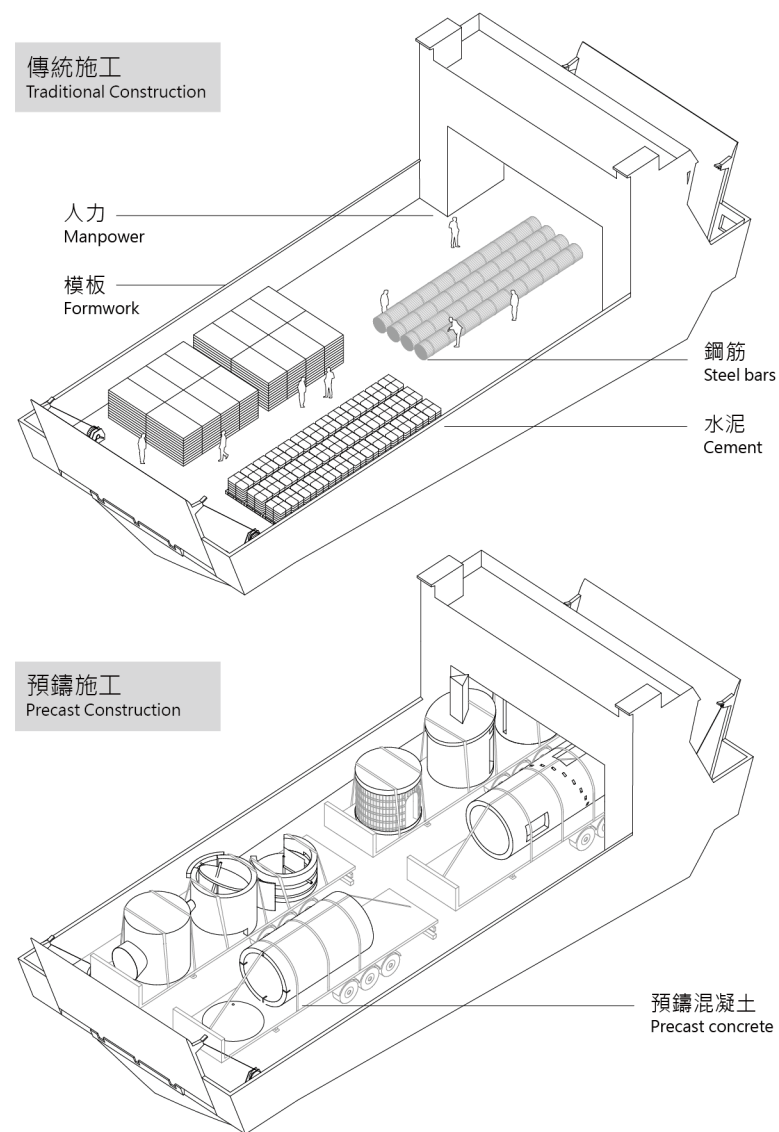
A Time Factor

B Time Factor

C Time Factor

D Environmental Factor

E Environmental Factor

F Environmental Factor

基地既有 3 座過去以"對抗"為屬性的構造定義了對應自然景觀的灰色場域：碉堡（侵略對抗）、安檢所（權力對抗）、混凝土海堤（邊界護坡），當"對抗性"因素消除並討論常時居民活動與季節性觀光活動的併置，建築應以何種姿態去表達地理感知的特徵是這次的提議重點。

The site has three existing structures—a bunker, a security checkpoint, and a seawall—once built for defense and control, creating a gray zone in the landscape. With these functions now obsolete, the proposal explores how architecture can foster a sense of place and connection for both residents and tourists.
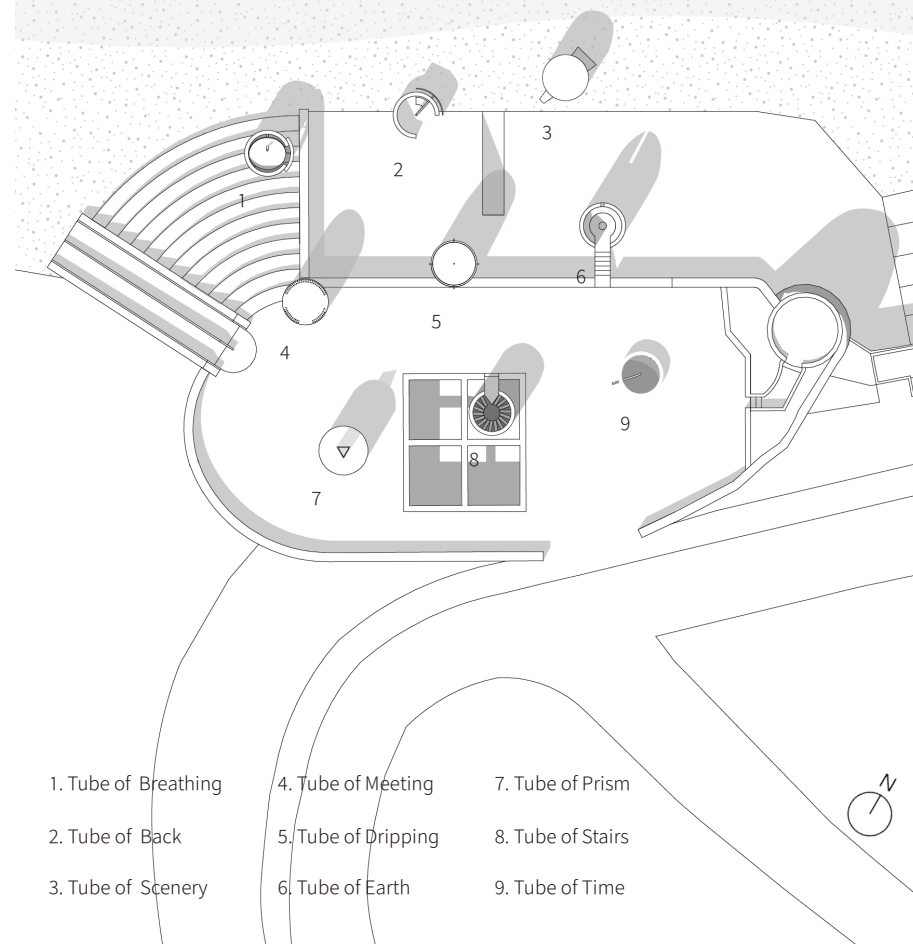
東莒島建築所需的物料、人力大多由臺灣本島或南竿島船運過來，現場工作又常受氣候因素所控制；本次提案提議在臺灣預鑄具氣候對抗特性的混凝土預鑄量體單元（圓筒），並在一致化的構造邏輯中提議不同落點各單元體的"感知"差異，延伸研究過程工具性的民主潛能，並揭示地理感知的隱藏維度。

Dongju Island's construction relies on materials and labor shipped from Taiwan or Nangan, often affected by weather. This proposal suggests precasting weather-resistant concrete modules (cylinders) in Taiwan, ensuring structural consistency while allowing perceptual variations across locations. It also explores the democratic potential of design and reveals hidden aspects of geographic perception.

馬祖地理位置關係。Matsu Location

傳統施工
Traditional Construction

人力
Manpower

模板
Formwork

鋼筋
Steel bars

水泥
Cement

預鑄施工
Precast Construction

預鑄混凝土
Precast concrete

預鑄與運輸系統。Precast and Transportation System

恆變的邊界場域並置 3 個控制為本的封固地構，提供了空間演化的時間特質 (temporal)；temporal 亦指人體中最複雜的的顳骨；除之中的內耳、神經及血管，又因氣化程度不同有各異的氣房特徵。企圖循此解構及形變產生空間群體的交互作用。
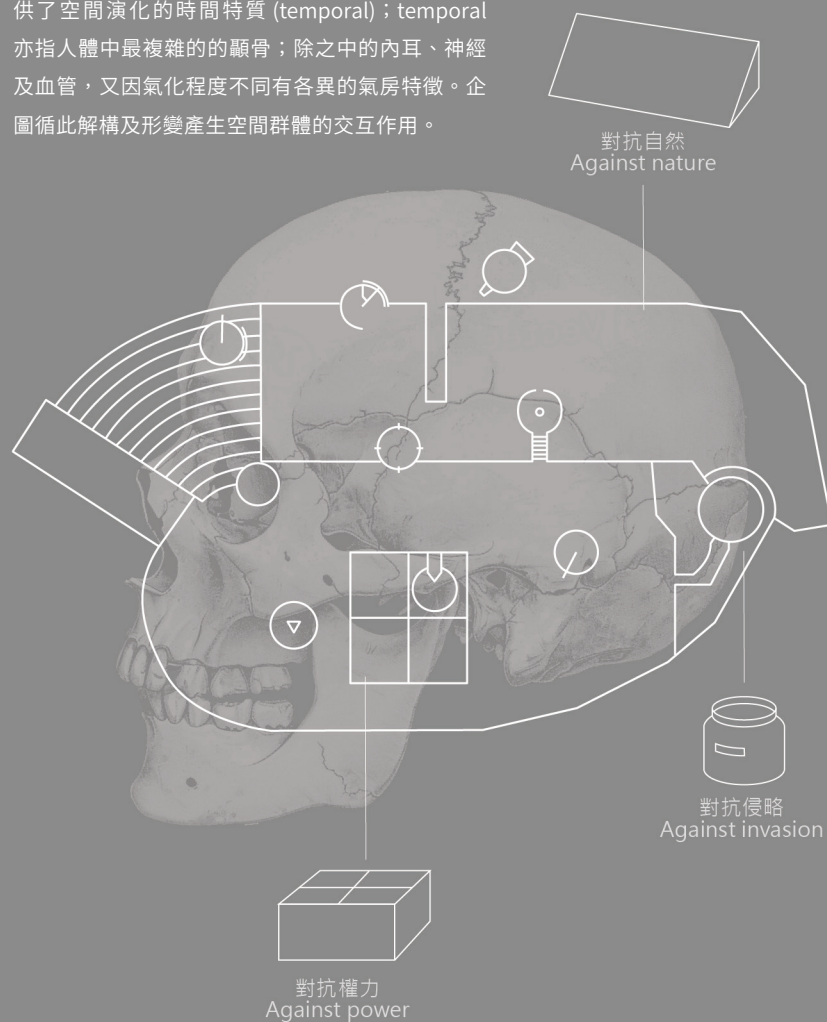
The ever-changing site boundary juxtaposes three types of control-based enclosed structures, enabling temporal-spatial evolution. "Temporal" also refers to the most complex part of the human body, the temporal bone. It contains distinct air chambers, which vary in aeration levels, along with the inner ear, nerves, and blood vessels. The aim of this project is to deconstruct and transform the concept of temporal, encouraging interactions among spatial groups.

對抗自然
Against nature

對抗侵略
Against invasion

對抗權力
Against power

概念圖。Concept

1. Tube of Breathing

2. Tube of Back

3. Tube of Scenery

4. Tube of Meeting

5. Tube of Dripping

6. Tube of Earth

7. Tube of Prism

8. Tube of Stairs

9. Tube of Time

全區配置圖。Site Plan

環境情緒分析 / 蕭國呈
Environment Emotion Analysis / Kuo-Cheng HISAO

以大量 google street api，依據經緯度點，獲取街景圖像做為研究資料。並分成三大分析項目，依序為圖像語意分割、街景色彩分析、環境情緒分析。這三大項目分別使用了不同的深度訓練模型，作為分析的依據。後面會再依序介紹。圖像語意分割結果會針對圖像中的物件，產出各環境中物件所佔的比例，街景色彩分析，將會產出該街景的環境色彩，與此色彩對人的情緒影響。環境情緒分析，將會使用 MIT 收集的百萬筆情緒資料，以此為判斷基準，來直接判斷對於該環境的六種情緒指標。上述的三種分析方法，將會匯進 QGIS 軟體中疊合 OSM 的底圖，轉化成情緒地圖，做為後續分析依據，與設計指標。

上帝視角跟行人視角的謬誤，決定了本研究資料出發點，為街景資料，做為資料基底。針對都市空間，本研究關注都市色彩、常民空間、民生物件的在實際空間的占比，藉此來判斷，環境中對於城市居民的影響。分別使用了兩個大數據模型，來對於空間環境中的情緒判斷。

This study begins with the fallacies of the "god's-eye view" and the "pedestrian perspective," using street view data as the foundation. It focuses on urban spaces, emphasizing urban colors, common spaces, and the proportion of livelihood-related objects, to assess their impact on residents. Two data models evaluate emotional responses to these environments.

Focusing on Nangan Island in Matsu and the traffic circle in Chiayi City, the study analyzes the influence of street view color characteristics and physical elements on residents' emotions. It employs big data and deep learning to uncover these effects. Findings are expected to show that color complexity and harmony significantly affect emotional perception. Specific objects may evoke responses such as creativity, beauty, safety, or fun. Moderate color complexity enhances vitality, but excessive complexity may cause fatigue. Harmonious colors improve aesthetics and safety. The study provides urban planning insights, recommending adjustments based on regional functions and targeted improvement strategies.
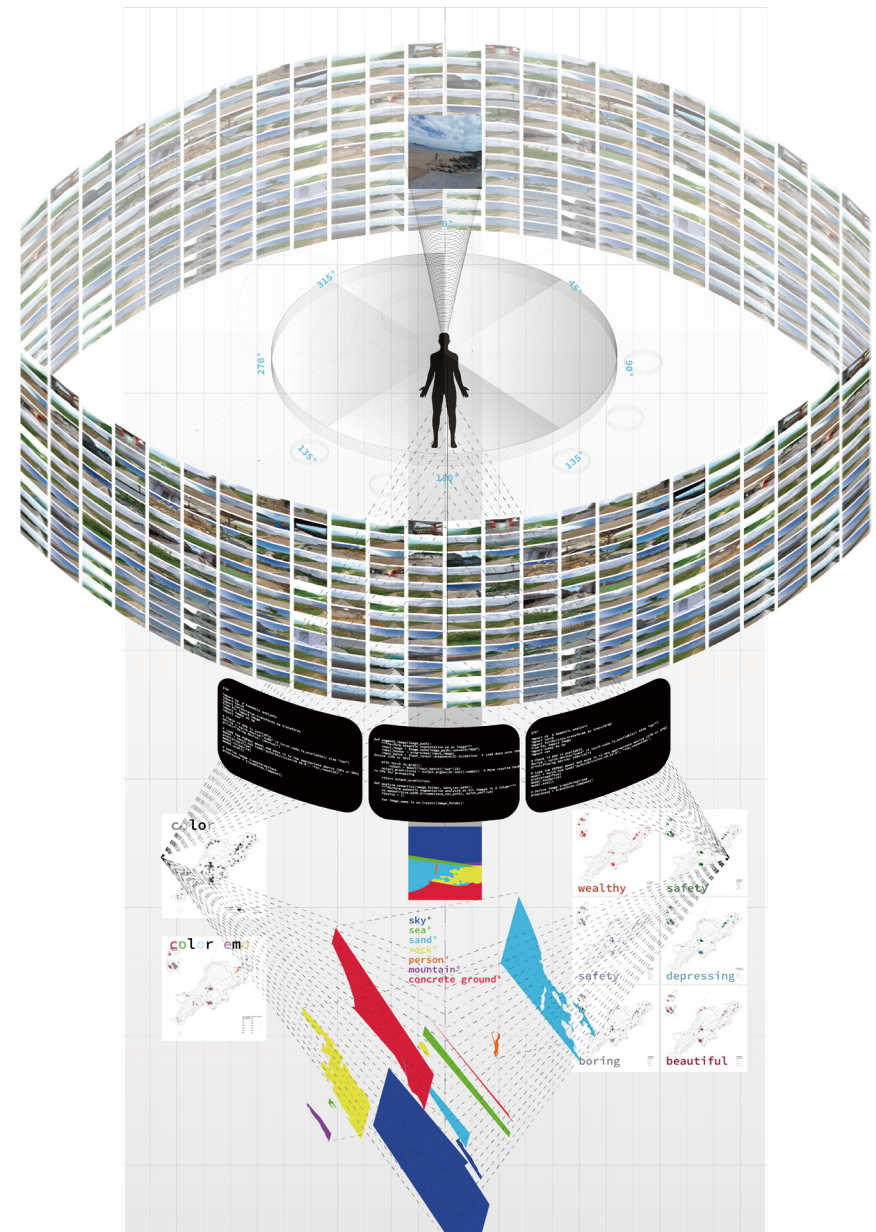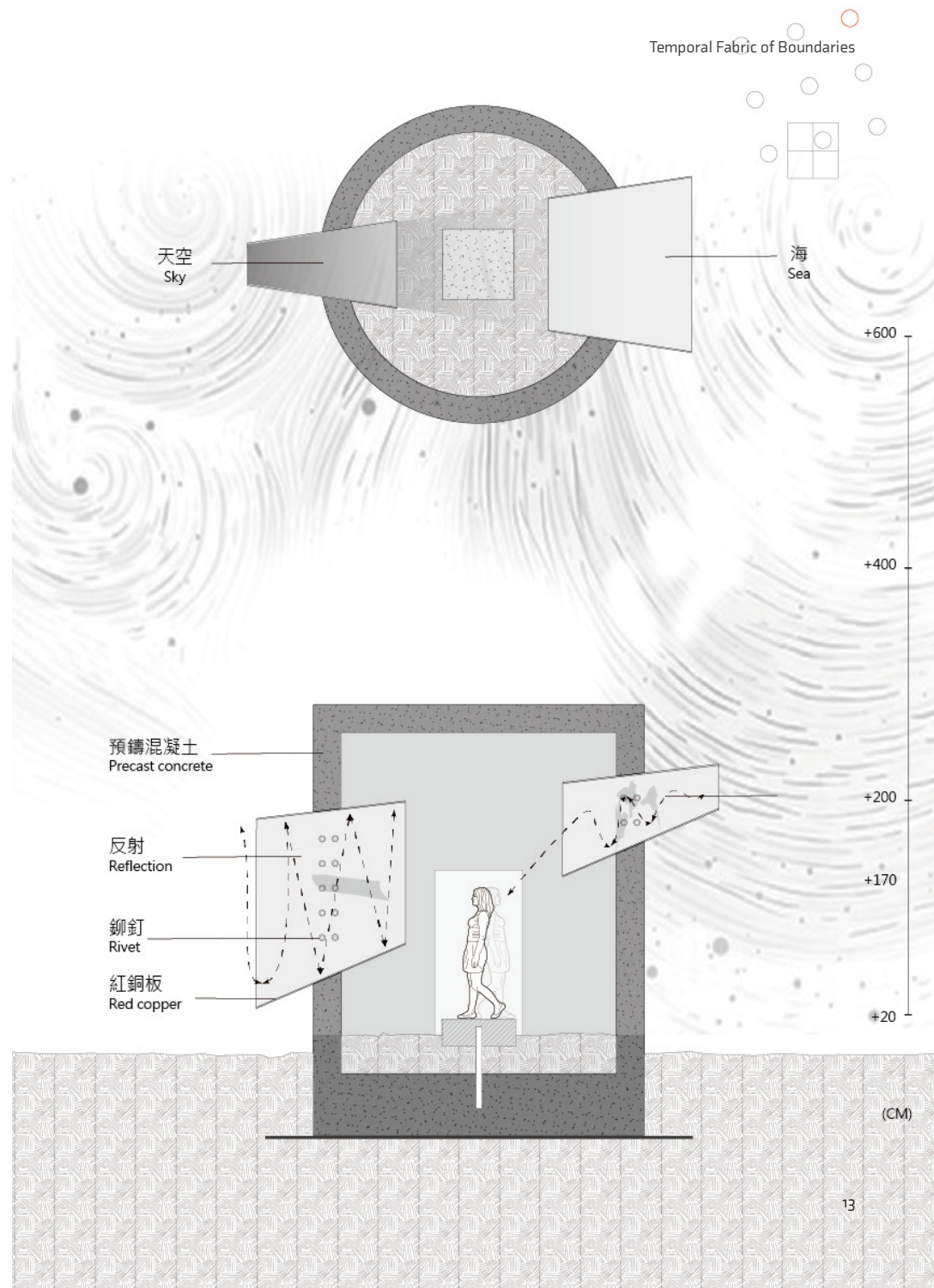
概念轉化 - 景之柱
Concept - Tube of scenery

將上述的概念轉化至此，觀看的方式成為這個研究想要凸顯的目的，有多少比例的海、天空、沙灘、樹，印入眼簾，而又該如何透過建築的方式改變這些比例呢？我置入了一個甜筒狀的銅片結構，分別對應向上的天空，與向下的海面與沙灘，同時在觀看的過程，又可因為紅銅片的反光，見到不同比例的畫面。同時甜筒的尺寸也成為一個向外互動的通道。
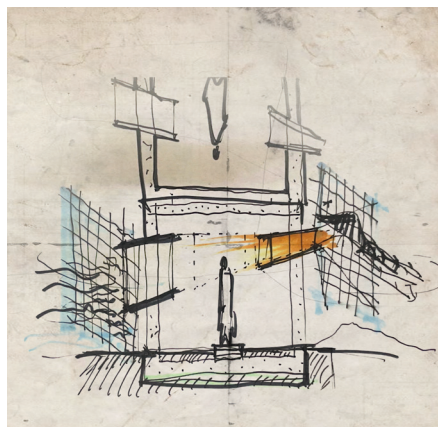
This research highlights viewing as its focus, examining how proportions of sea, sky, beach, and trees can be altered through design. A cone-shaped copper structure frames views of the sky and sea, with its reflective surface creating dynamic visual proportions, while the site acts a passage for the interaction.

天空
Sky

海
Sea

+600

+400

預鑄混凝土
Precast concrete

反射
Reflection

鉚釘
Rivet

紅銅板
Red copper

+200

+170

+20

(CM)

逕流揭示 / 林永捷
Revealation of Waterflow / Yung-Chieh LIN

降水是一地區的時間與空間紋理暗示，地表以上，我們能藉由其逕流路徑、速度判斷地形，地表以下則作為土質疏密與含水量的暗示。不同型態的落水揭示著點、線、面各階段的聚合與發散。

以基地沙灘作為研究對象，在移除海水影響，只考慮降雨的環境中，分析近十年降水與蒸發狀況，將季節劃分為乾季、梅雨季、夏季降水三個時節，透過水文模擬模型（模型：Hydrus-1d）深達三公尺的沙質土壤中，表層、30、50、100、200(公分) 五道不同深度剖面線，將產生不同含水率變化曲線。穩定的氣候狀態下，沙灘含水率主要維持在 4.9%，夏季降水時節則增加至 9.5%，為植物扎根生長的茂盛期揭開序幕。透過將土壤內部水分變化數值化、圖像化，將作為後續部分設計構想參照。

Through precipitation, the temporal and spatial textures of a region can be interpreted. Above the surface, the runoff pathways and velocities provide insights into the terrain. Below the surface, precipitation serves as an indicator of soil compaction and moisture content. Different forms of rainfall reveal the aggregation and dispersion of point, line, and plane elements at various stages.

Using the beach site as a study area, and isolating the influence of seawater to focus solely on rainfall conditions, this research analyzes precipitation and evaporation patterns over the past decade. The seasons are categorized into three periods: dry season, plum rain season, and summer precipitation season. By applying a hydrological simulation model (Hydrus-1D), moisture content variations are examined in sandy soil profiles up to a depth of three meters at five distinct depths: surface, 30 cm, 50 cm, 100 cm, and 200 cm. Under stable climatic conditions, the beach's soil moisture content remains around 4.9%, while during the summer precipitation period, it increases to 9.5%, marking the beginning of a flourishing phase for plant root growth.

Temporal Fabric of Boundaries
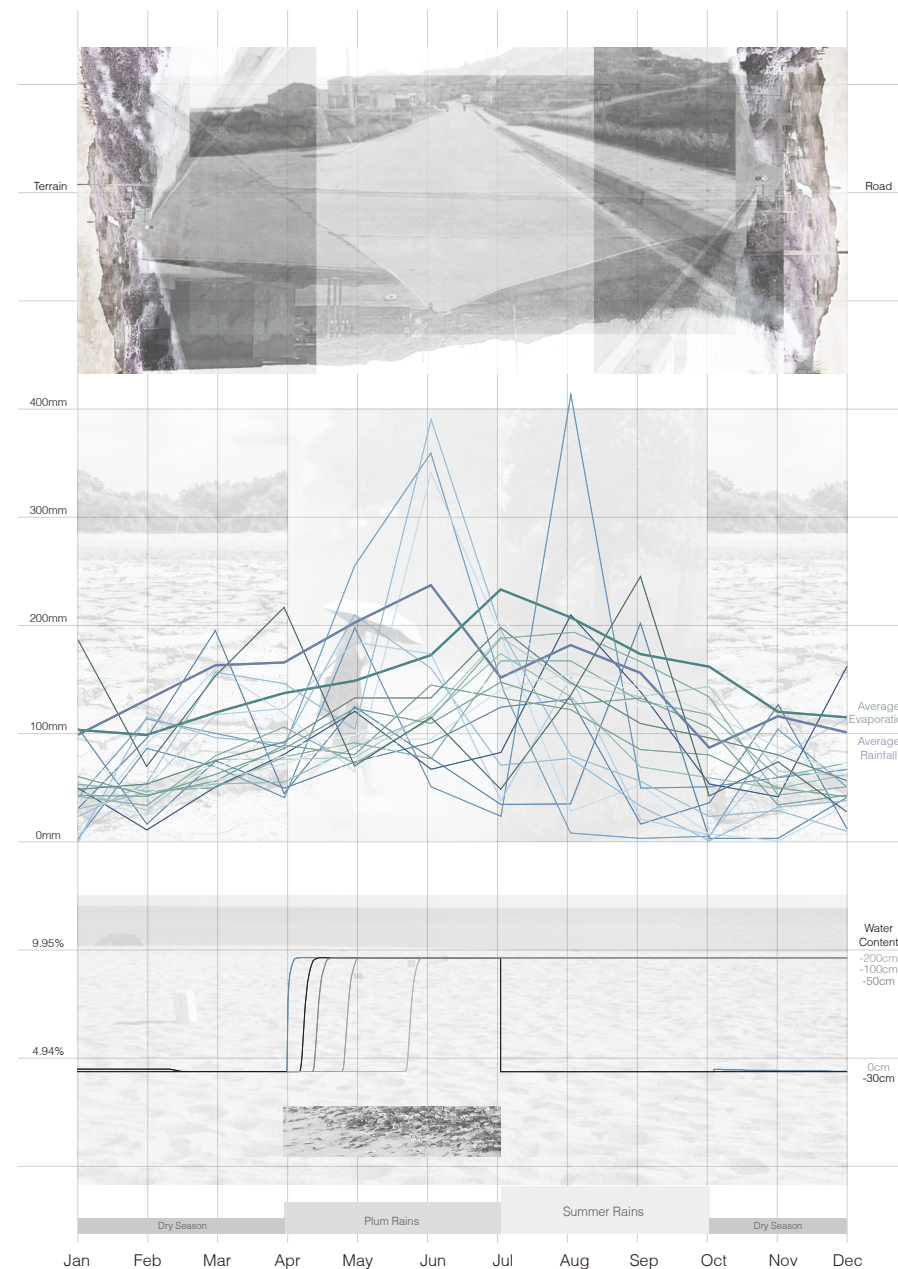
概念轉化 - 滴水之柱
Concept - Tube of dripping

雨水是界定地貌其中一種方式，與規律潮汐不同，難以預測與控制，面對其從天而降我們只能試圖定義其落地前的轉瞬。設計嘗試將面狀的落水聚合為線，透過重新詮釋形式與落點，落至不鏽鋼與混凝土地面的相異聲響、上方光源的流瀉，作為「時」的強化。
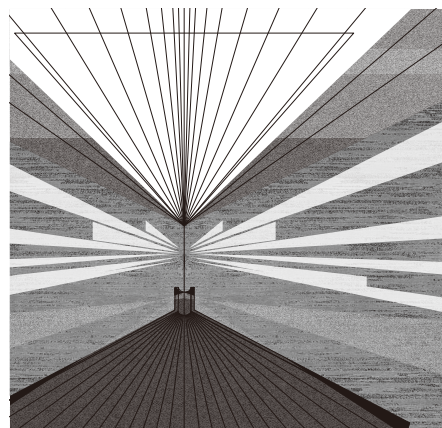
Unlike regular tides, we can only frame the moment of precipitation before falling to the ground. The relative sound of the water falling on the stainless steel and concrete floors, and the flow of light from above, trying to form an intensification of "ephemeral".

不鏽鋼
Stainless Steel

木頭
Wood Tenon

預鑄混凝土
Precast concrete

滴水
Drip

+700

+600

+400

+200

(CM)
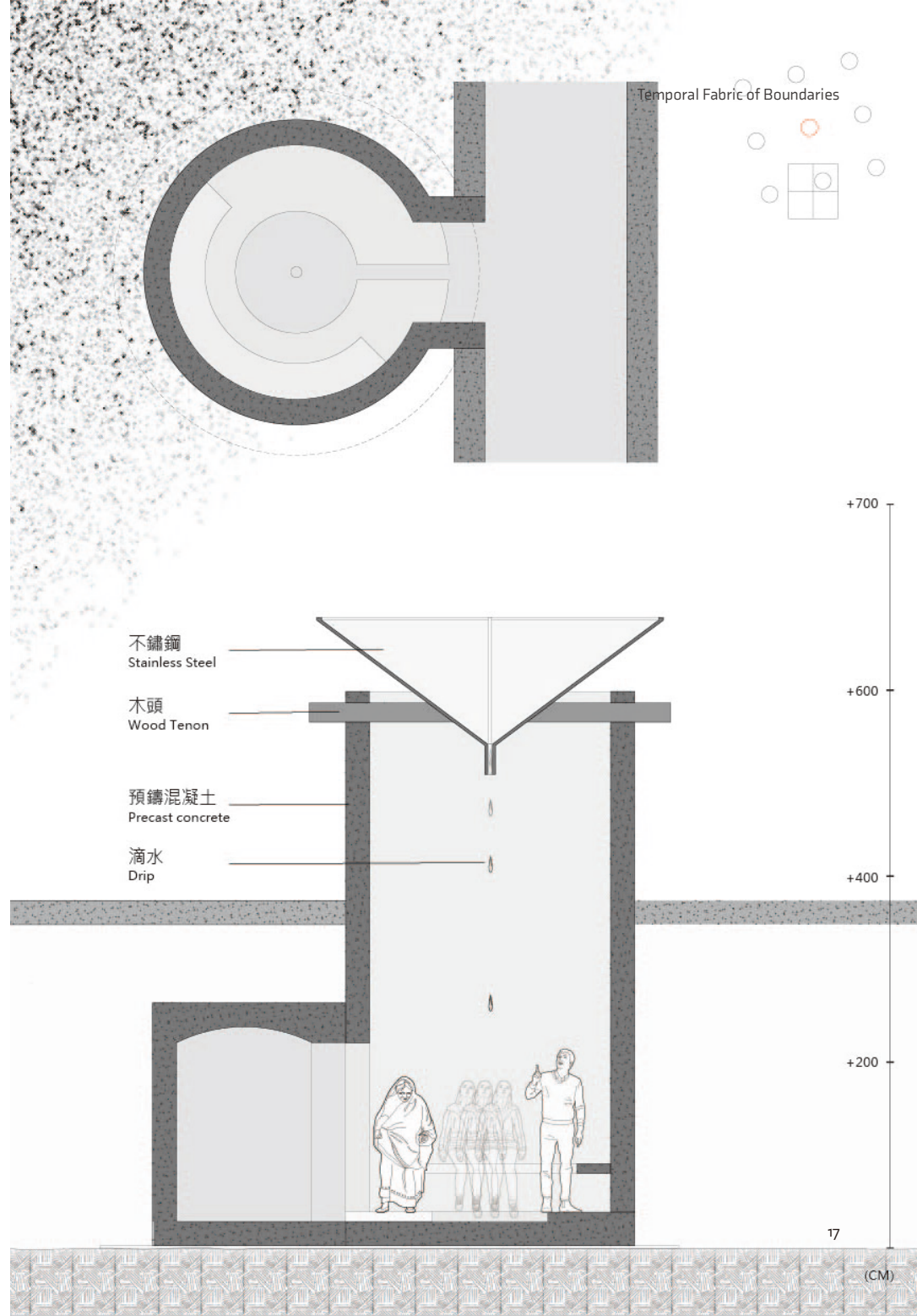
情緒感知熱點分析 - 情緒等高線 / 柯品瑗
## Sentiment Analysis- Emotional Contours / Pin-Yuan KO

我嘗試結合設計專題研究之內容，使用社群平臺上的貼文進行文字及影像的情緒和語意分析，試圖藉由大數據的資料收集與分析對設計議題產生影響。在我的操作中我嘗試分析並歸納都市空間中情緒與感知的節點，希望在物理客觀的環境條件外，整合情緒感知對一區域進行情緒與記憶節點的建構。

觀察到 Instagram 上資料的複雜性及情緒的無方向性，我希望以此平臺的資料作為研究的對象，挖掘自媒體時代下網路平臺傳達出的不同記憶與地區意象。同時，藉由開源軟體 Ollama 下的不同語意分析模型，對文字及圖像進行不同角度的探索與解構，統整出社交平臺上對馬祖的情緒感知與傳達如何影響當地或社群使用者的記憶建構。針對圖像中光影方向、對比度、色調與飽和度等因素，探討在這個四面環海而地形起伏的島嶼上，光的因素是否在情緒的波動上產生重要影響。

I integrated my design research with sentiment and semantic analysis of social media posts, using big data to influence the design topic. My approach analyzed nodes of emotion and perception in urban spaces, constructing emotional and memory points that incorporate sensory experiences beyond physical conditions.

Using Instagram data, I explored how memories and regional images are conveyed in the digital era. Through open-source Ollama models, I analyzed texts and images, synthesizing insights on how emotional perceptions of Matsu influence memory construction.

Examining factors like light direction, contrast, hue, and saturation, I found that cooler tones, lower contrast, and minimal light changes convey subdued emotions, suitable for personal and private spaces. In contrast, warmer tones and dynamic lighting suit public gathering spaces. By translating emotional analysis into contour logic, I observed a watershed-like emotional distribution across the site.
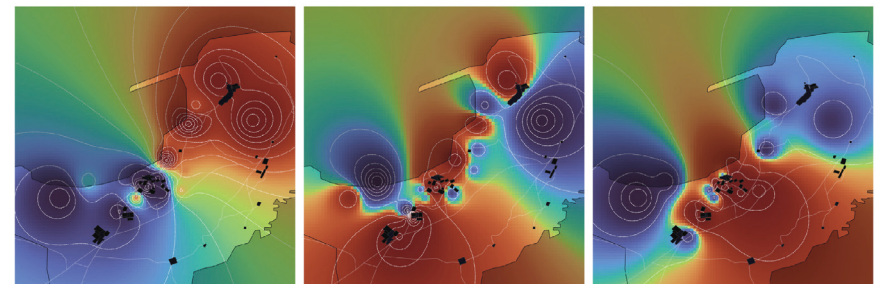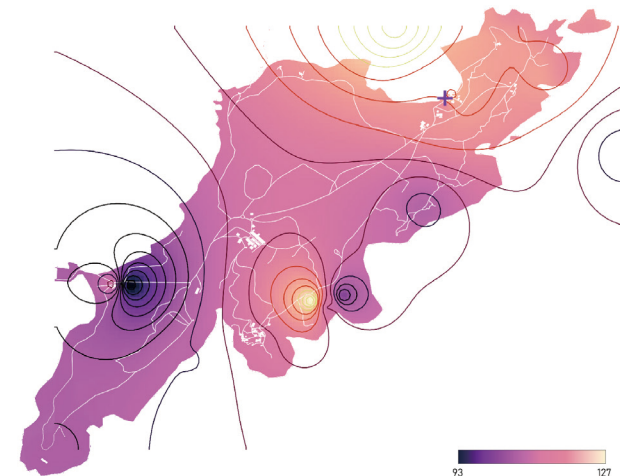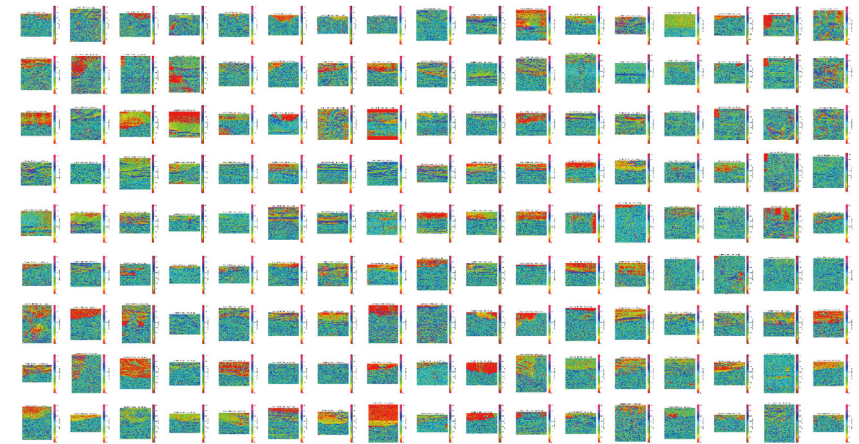
概念轉化 - 起落之柱
Concept - Tube of breathing

我的設計透過圖像中光影與情緒的分析轉化，試圖在公共空間中創造個人獨處的空間。藉由軟性布料與預鑄混凝土圓筒圍塑不同空間特質，並以一可改變開合程度的頂蓋創造不同空間封閉性，同時不同時間點的光影灑落與藍眼淚藍色螢光也透過不同大小開口溢出與進入圓筒，頂蓋開闔的機制在壁體上的固定點標示著光線進出的多寡及與外界交流的可能性，光影與情緒在一推一頂之間被可視化。

My design transforms light, shadow, and emotions from imagery to create spaces for solitude within public areas. I tend to use soft fabrics and precast concrete cylinders to vary spatial qualities emerge. An adjustable top cover alters enclosure, allowing light, shadow, and bioluminescent glow to flow through openings. Fixed points on walls mark the interplay of light, shadow, and external connection, visualizing emotions through movement.

中空板
Hollow Board

耐候鋼管
Corten Steel

半透明纖維網
Translucent Fabric

預鑄混凝土
Precast Concrete

+600

+400

+200

+0
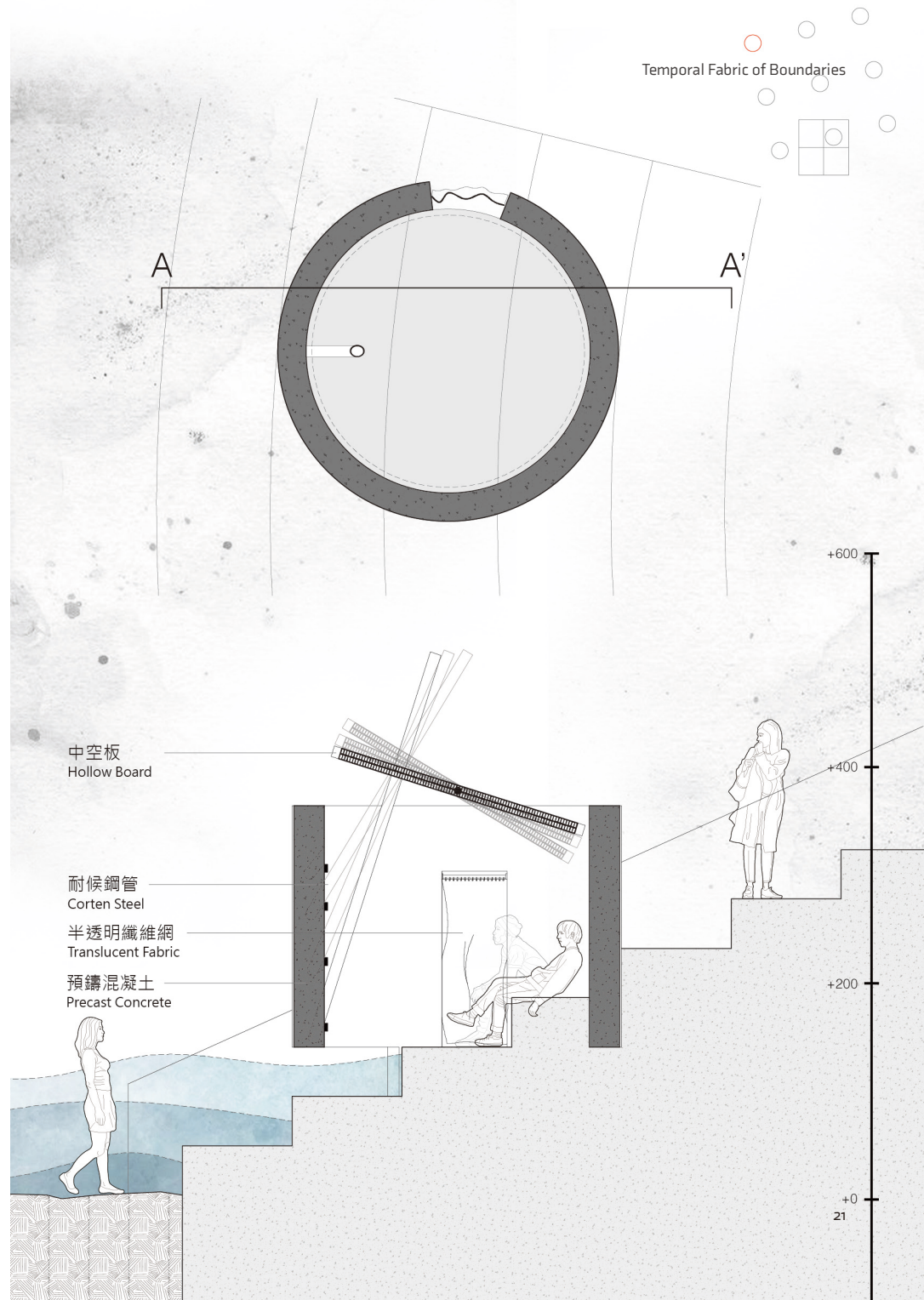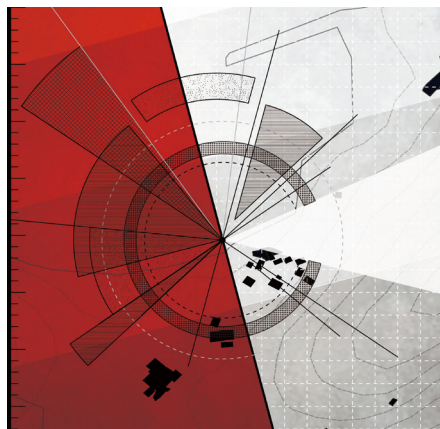
慢跑路徑地面溫度分析 / 金惟寬
Surface Temperature of Jogging Path / Wei-Kuang JIN

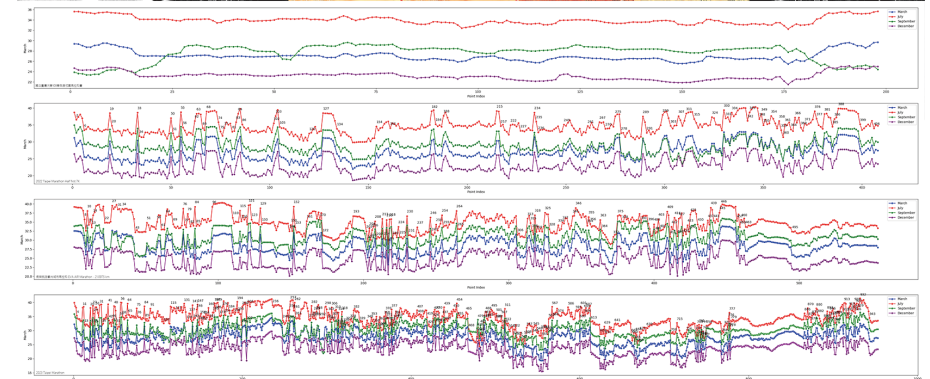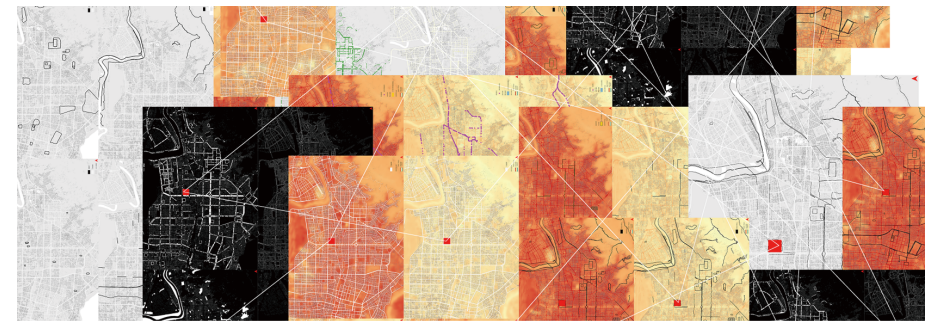此次 STUDIO 將透過 database 的真實環境數據去分析研究馬祖東莒島，透過衛星遙測地表的溫度，鋪面與綠地的分布以及真實大眾慢跑路徑的紀錄，去分析路徑大致的體感舒適度。

慢跑路徑資料的蒐集使用 STRAVA API 提供的公開數據，遙測衛星地表溫度的資料蒐集使用 USGS Earth Explorer 提供的 LST，時間以 2023.01.01 至 2023.12.31，從中抓取雲覆蓋較少的三月、七月、九月與十二月的 LST，作為四季的參考依據，並透過 GIS 裡的 SCP 去計算 LST 裡的 BAND10 與 BAND11 得到可以視覺化的地表溫度底圖，再分別以三月、七月、九月與十二月的鋪面、綠地分布去做加權計算，從而得到更接近真實體感舒適度的地表溫度圖。

透過點位綜合溫度圖表的比較，可以分析出東莒島在甚麼季節的甚麼地理位置較適合做為慢跑路徑，在後續規劃與建築設計時，能夠有參考依據去做思考，讓慢跑路徑的使用者在活動時能夠有更舒適的溫度環境，同時當有馬拉松與騎行單車活動的發生時，溫度環境的依據也可以做為路徑規劃與站點規劃的參考。

This STUDIO session will analyze Dongju Island in Matsu using real environmental data from a database. We'll utilize satellite remote sensing to gather surface temperatures, analyze pavement and green spaces, and review actual public jogging paths to assess perceived comfort. The findings will support design considerations for the island.

Jogging path data from the STRAVA API and satellite surface temperature data from USGS Earth Explorer, covering 2023 with minimal cloud cover months—March, July, September, and December—will serve as seasonal references. Using GIS SCP, we'll visualize surface temperatures from LST BAND10 and BAND11.

We'll apply seasonal distributions of pavement and greenery for weighted calculations to closely reflect actual perceived comfort. By analyzing comprehensive temperature charts, we'll identify the best locations for jogging paths during various seasons. This data will guide planning and design, enhancing comfort for path users and aiding in marathon and cycling event planning.
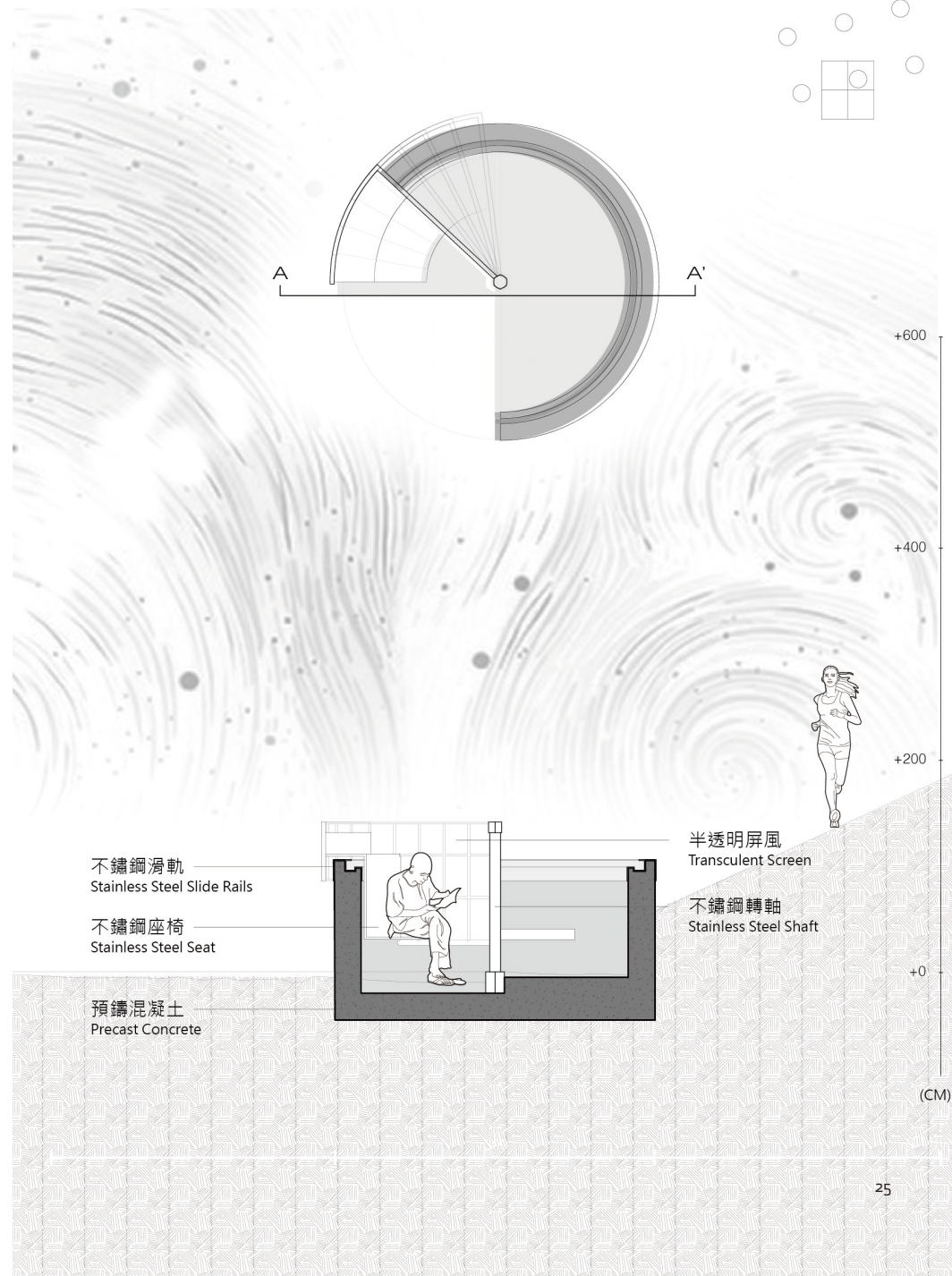

Dongju Fuxing Road to Daping Village

Dongju Tower

Fuzheng Beach

Mengao Port

From Mengao Harbour to Tai Po Rock Carvings

Jogging path points
Jogging path
building
boundary
CONTOUR WIDER

0   200   400 m

概念轉化 - 背之柱
Concept - Tube of back

我將東莒島慢跑時感受到的地表溫度變化，縮影於一座高 150 公分、寬 300 公分的可旋轉圓形裝置中。透過模擬海浪拍岸的節奏與沙灘溫度的細微差異，以及設置可自由轉動的座位，裝置邀請觀海者脫下鞋子，親身感受時間流轉與方位變化對鋪面溫度的影響。這種設計將自然的律動融入體感經驗，讓人在靜觀海景之時，同時沉浸於地景溫度變化的詩意之中。
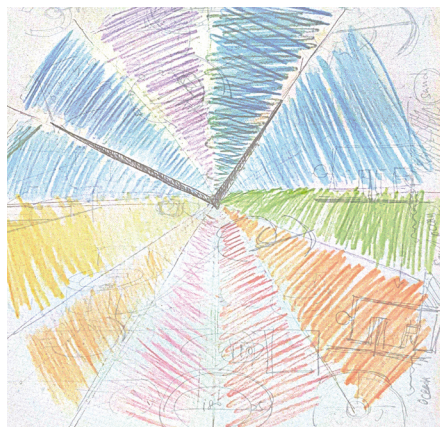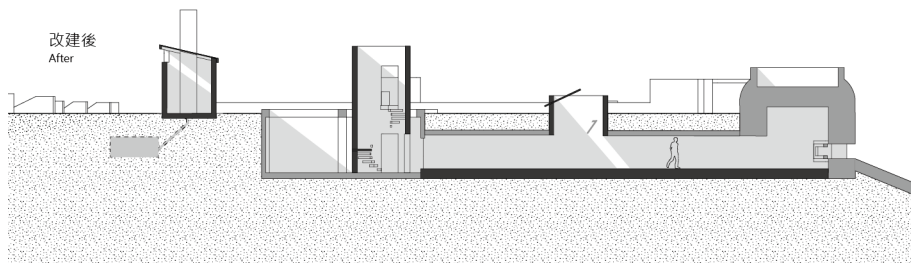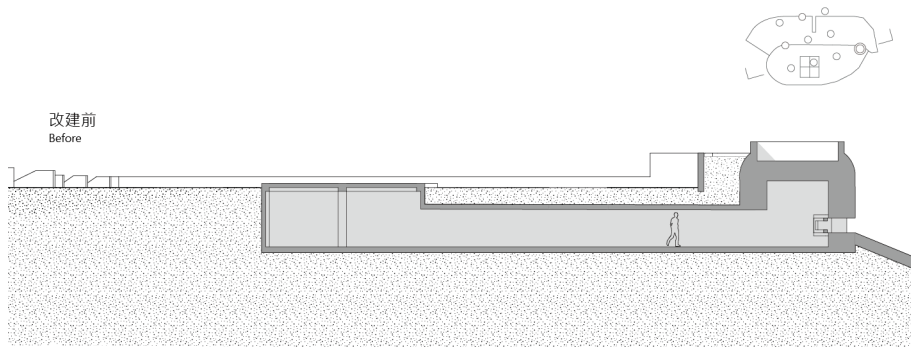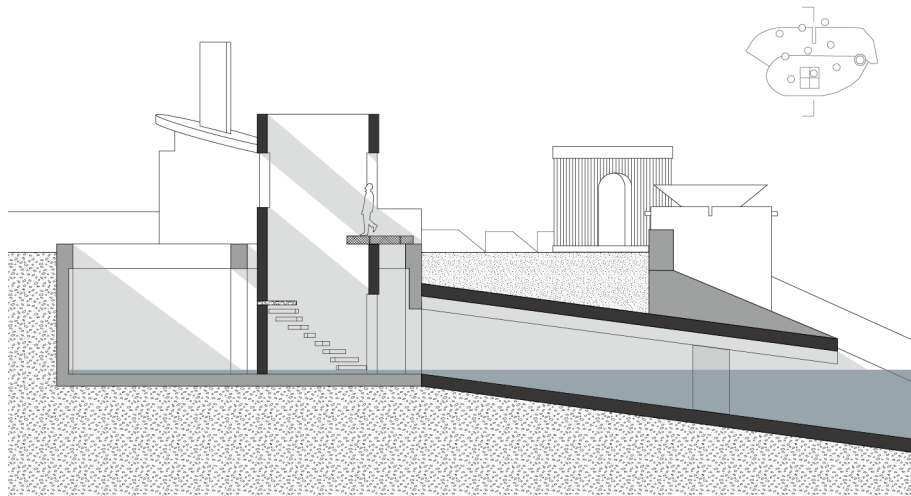
I will encapsulate the ground temperature variations from jogging on Dongju Island into a 150 cm high, 300 cm wide rotating circular installation. Simulating the rhythm of waves and sand temperature differences, with adjustable seating, it invites barefoot participants to feel surface temperature changes shaped by time and direction, blending nature's rhythm with a tactile, poetic experience of the sea.
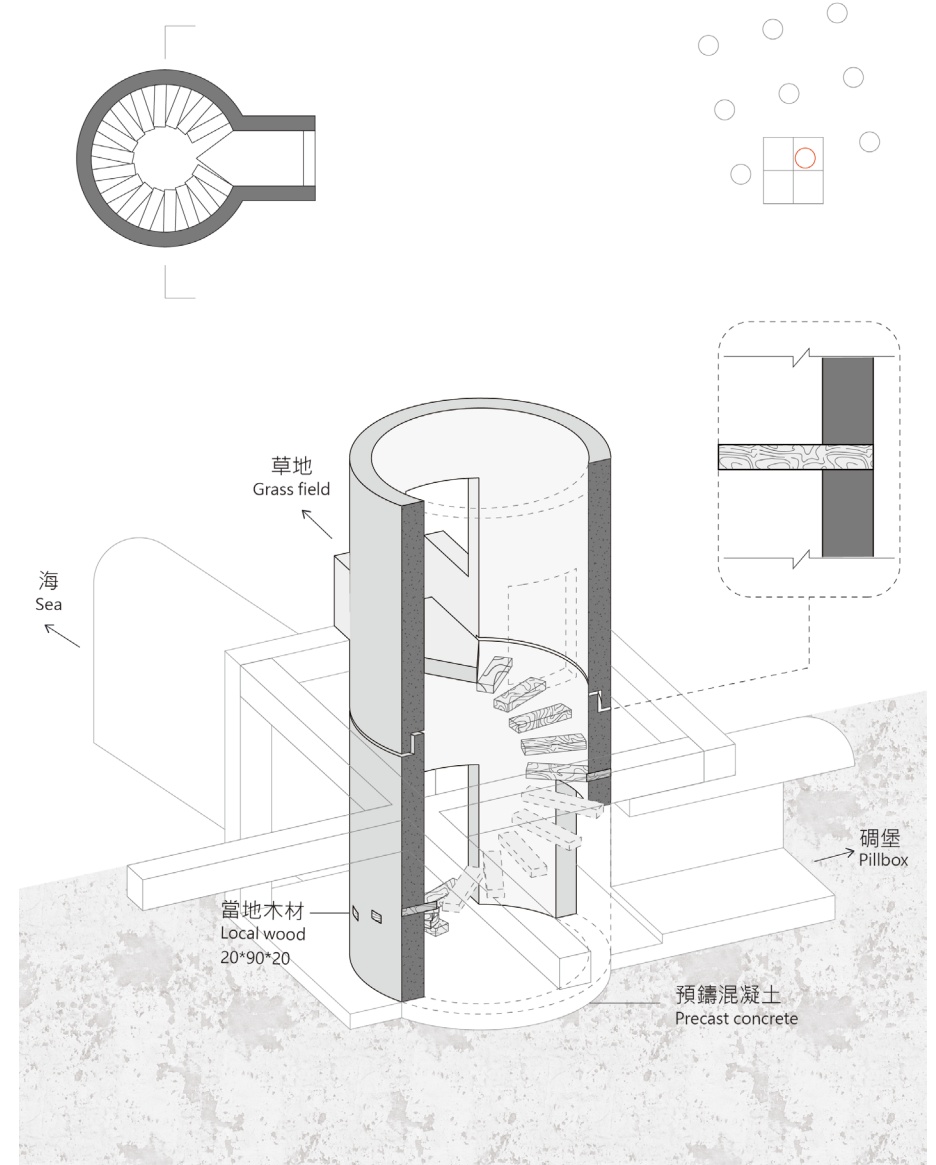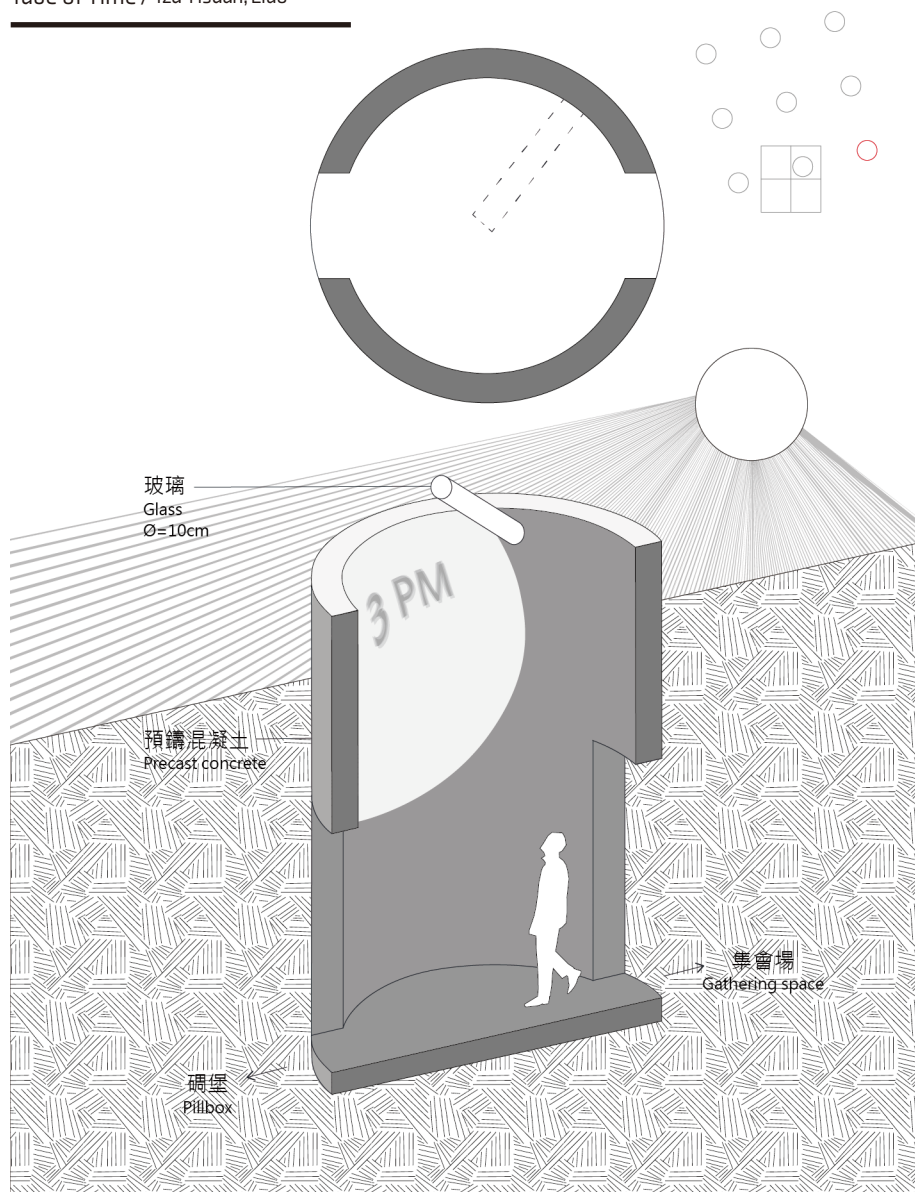
A ⟶ A'

+600

+400

+200

不鏽鋼滑軌
Stainless Steel Slide Rails

不鏽鋼座椅
Stainless Steel Seat

半透明屏風
Transculent Screen

不鏽鋼轉軸
Stainless Steel Shaft

預鑄混凝土
Precast Concrete

+0

(CM)

剖面圖 / 吳昀軒
Sections / Yun-Hsuan, Wu

梯階之柱 / 吳昀軒
Tube of Stairs / Yun-Hsuan, Wu

改建前
Before

改建後
After

草地
Grass field

海
Sea

碉堡
Pillbox

當地木材
Local wood
20*90*20

預鑄混凝土
Precast concrete

光陰之柱 / 廖子瑄
Tube of Time / Tzu-Hsuan, Liao

玻璃
Glass
Ø=10cm

3 PM

預鑄混凝土
Precast concrete

集會場
Gathering space

碉堡
Pillbox

相逢之柱 / 廖子瑄
Tube of Meeting / Tzu-Hsuan, Liao

集會場
Gathering space

樓梯
Stairs

草地
Grass field

預鑄混凝土
Precast concrete

雙層鋼筋
Two layer rebar
主筋 #6
箍筋 #4

耐候鋼板
Corten steel plate
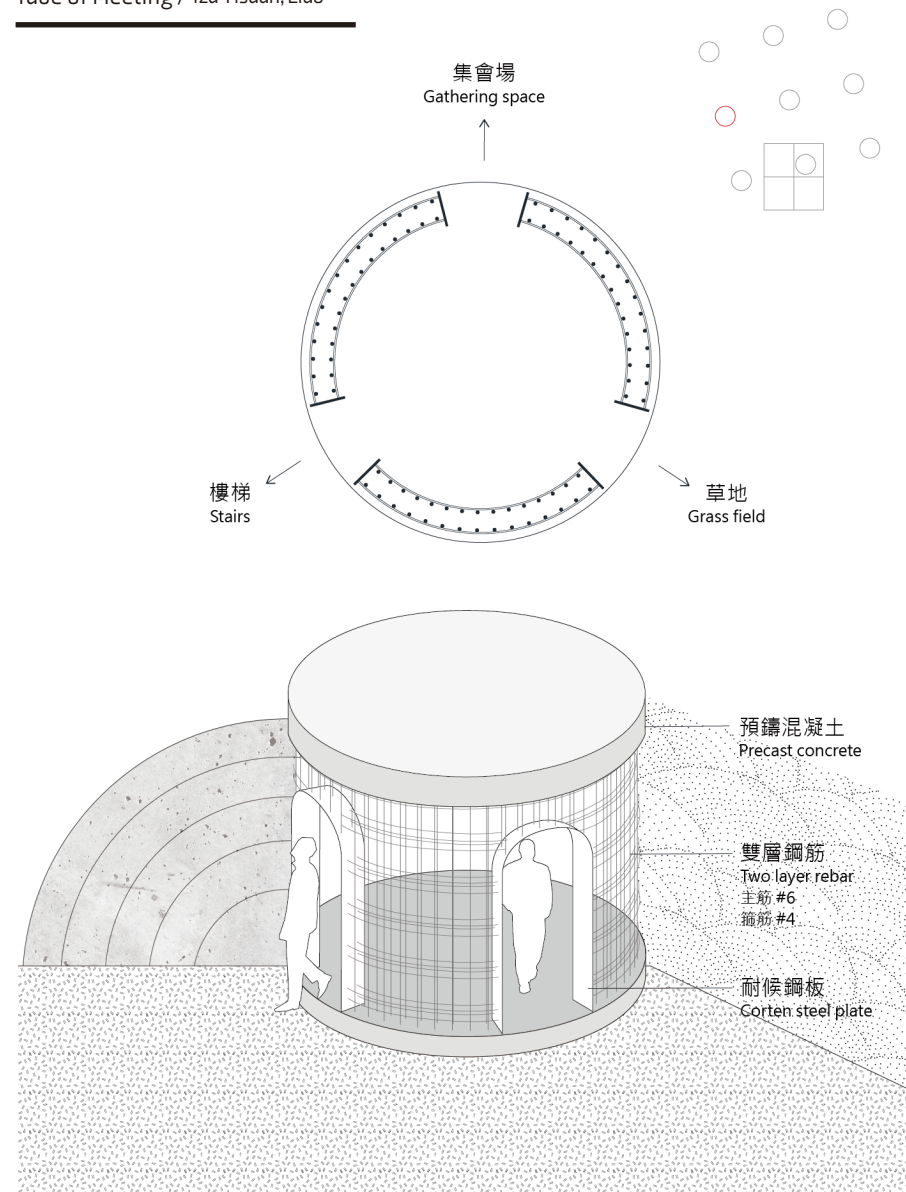
稜鏡之柱 / 曹詠行
Tube of Prism / Yung-Hsing, Tsao

玻璃通風管
Glass air duct
上層：透明玻璃
下層：霧面玻璃
Upper layer: Transparent glass
Lower layer: Frosted glass

銅板屋頂
Copper sheet roofing

方型鋼管
Square steel tube

預鑄混凝土
Precast concrete
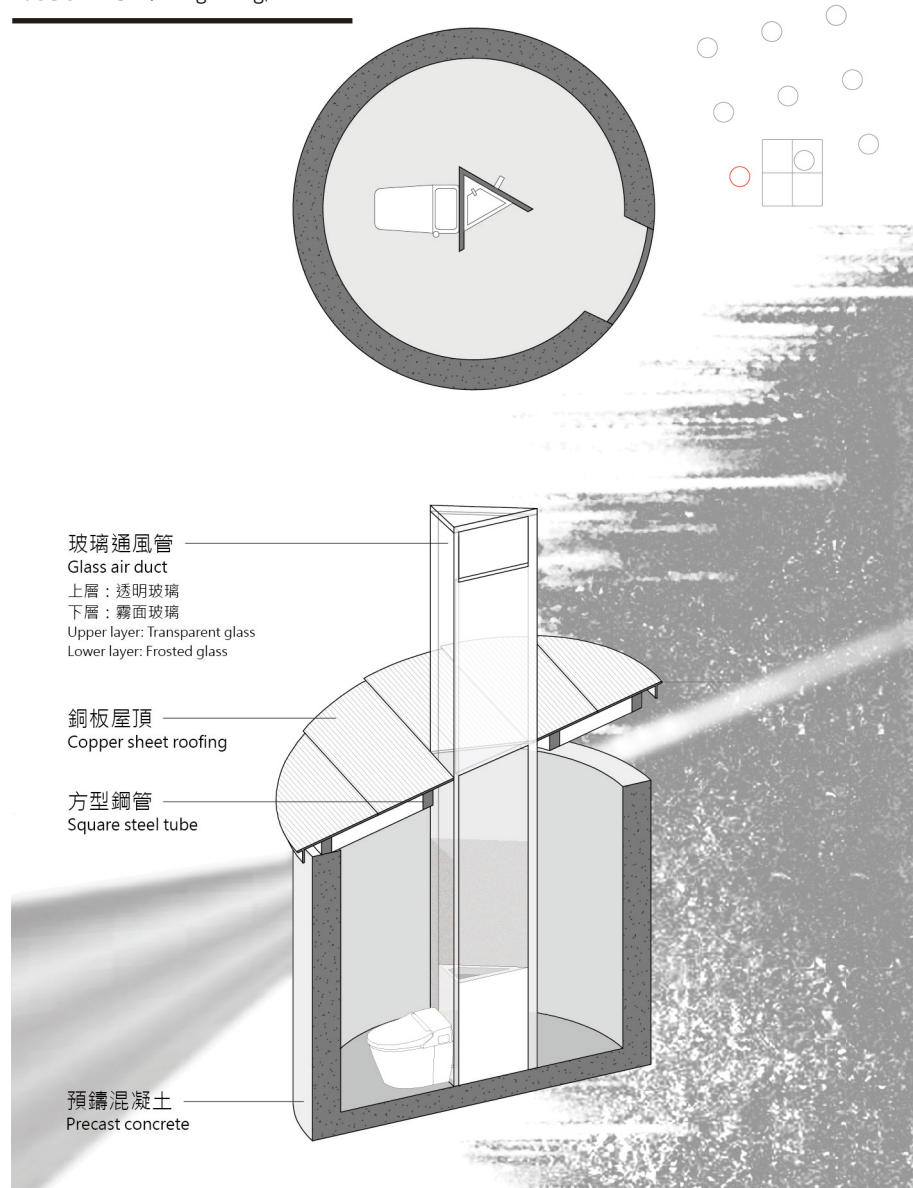
大地之柱 / 曹詠行
Tube of Earth / Yung-Hsing, Tsao

海
Sea

草地
Grass field

預鑄混凝土
Precast concrete

碎石地
Gravel landscaping

預鑄混凝土
Precast concrete
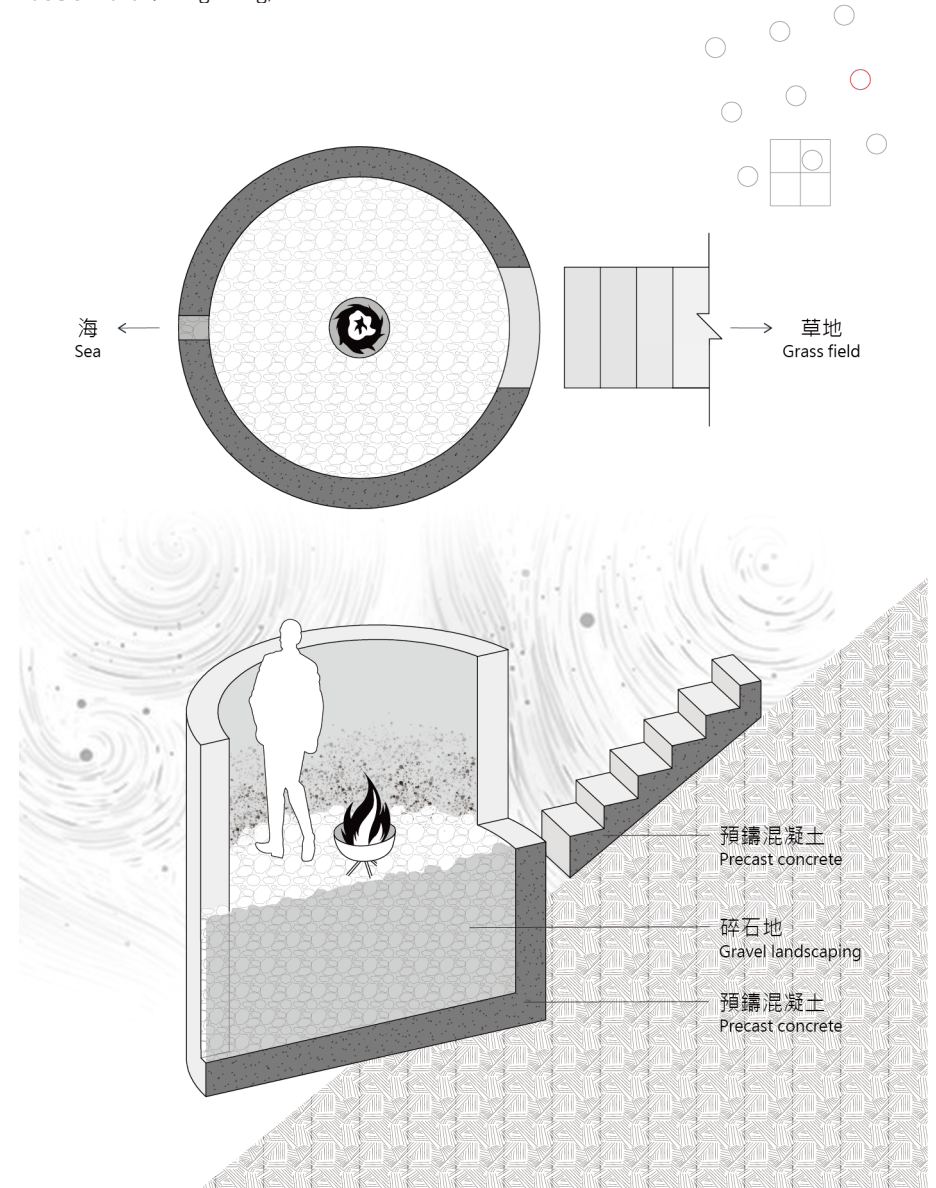
建築是各種協議的集合成果，其本質應存在對應差異的包容性、與適應環境的變動性。因此建築的展態存有不完整、非一致的討論，並著重於人本與環境之間的對話。在以控制為首要目標的集體意識潮流，智能信仰消減了人對所處環境產生連結的敏感度；在控制機制退化的設定，探討預鑄構件"現場"應變的建築發生。

Architecture, shaped by agreements, embraces inclusivity and adaptability. Its forms should remain open to dialogue, balancing incompleteness and change. In a control-driven society, reliance on intelligence weakens environmental sensitivity. This project explores how degraded control allows prefabricated components to adapt on-site.

全區透視圖。Perspective Drawing

顧 _ 界域時構
Temporal Fabric of Boundaries

The sealing phenomenon, rooted in control, deconstructs the limits that shape contemporary expressions of space and identity.

以控制為本的封固現象，剖構當代得以展態的地限刻記。

#Regional Archaeology & Topography   #時間錄像
#Points and Zone   #點與界域
#Chronotopic Recordings   #邊界滲透
#Precast On-Site Reassembly   #預鑄再場
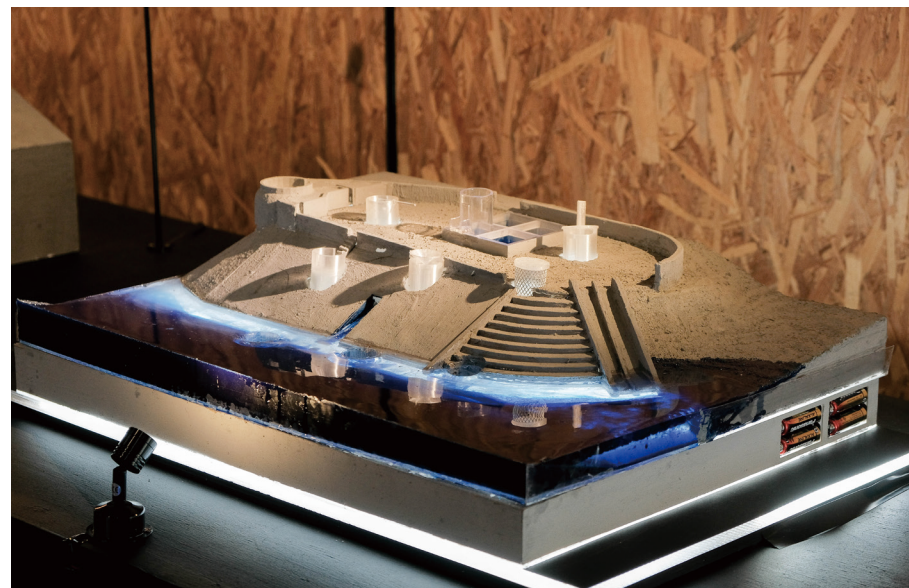
Temporal Fabric of Boundaries_Model

Temporal Fabric of Boundaries_Model
Photo by Pan-Yu Li

Temporal Fabric of Boundaries_Model
Photo by Pan-Yu Li

Temporal Fabric of Boundaries_Model
Photo by Pan-Yu Li