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Where & When you were, are and will be?



Picture. Space-Time Reality in seconds. Photograph from Internet

Architecture as the Carrier of Space-Time Reality

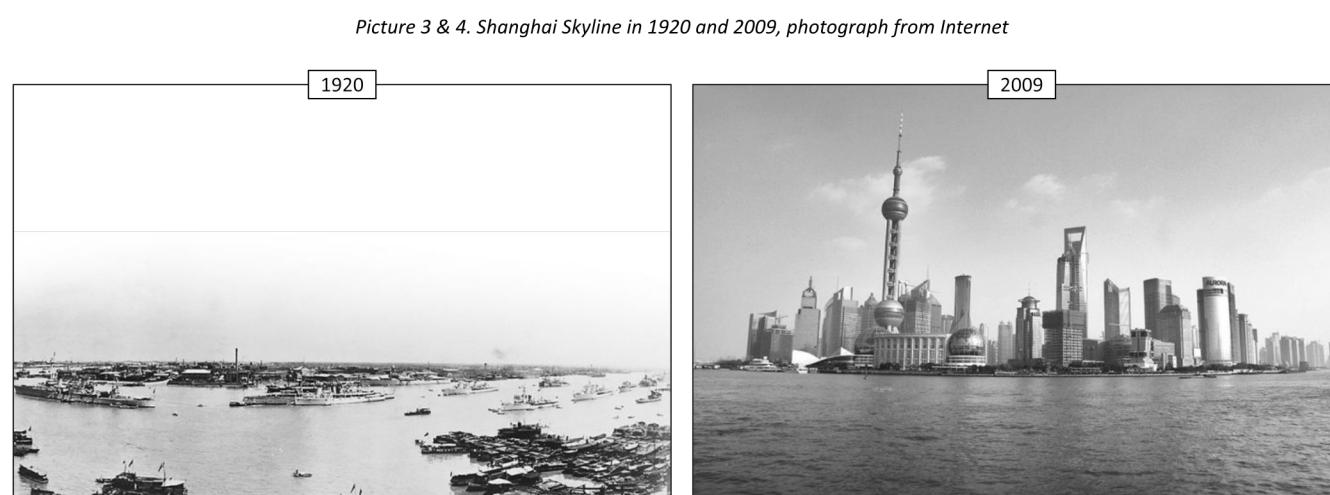


Picture 1 & 2. Glacier Retreating Situation in 1978 and 2004, photograph by Lonnie G. Thompson

In 2017, when I took summer courses at University of British Columbia, I got an opportunity to visit Athabasca Glacier in Jasper National Park. We took a huge bus up to the glacier for a walk and I had a good view of the the glacier situation. As our excellent guide kept talking about how the glacier retreated during the last decades of years because of greenhouse effects, I found that I could observe the movement clearly just from the site geographic traces, although it had been moving for such a long time.

On the ground far away from our bus, canyon was left because of the glaciers melting, where remained nothing but broken rocks and some ground cracks. Near the glacier, there was a lake, and on its boundary, it directly connected the glacier with a slope. Ice on the slope was constantly thawing these years, which pushed the canyon further into the glacier. When I tried to reconstruct all these geographic traces from my point of time, I had a vague vision of what happened over the past decades of years, and these geographic traces are spacetime transition clues of the glacier.

To some extent, the geography, the physical environment, is the earliest architecture. In the billions of years of nature development, the physical environment kept shaping themselves through the spacetime transition and today's geographic situation is not only a result of these transitions, but also suggests the transition process. In this case, natural architecture is being spontaneously formed and informing humans of the hidden facts of global climate warming. This experience reminds me that some facts crossing spacetime often remain out of people's perception unless unveiled by specific mediums.

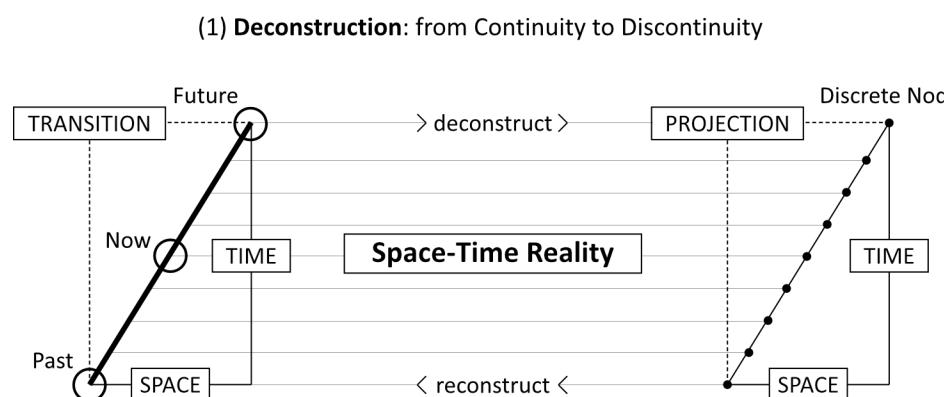


Picture 3 & 4. Shanghai Skyline in 1920 and 2009, photograph from Internet

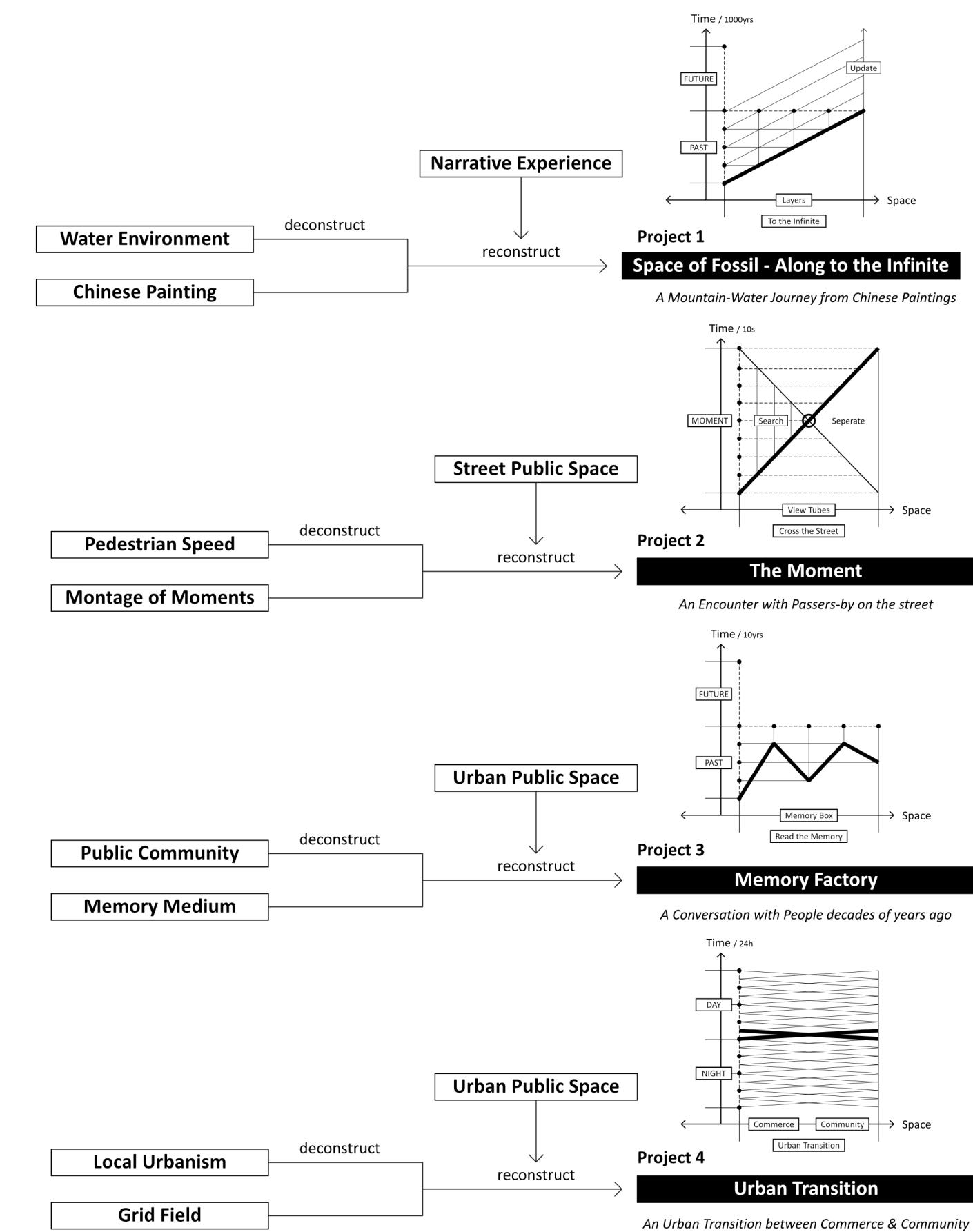
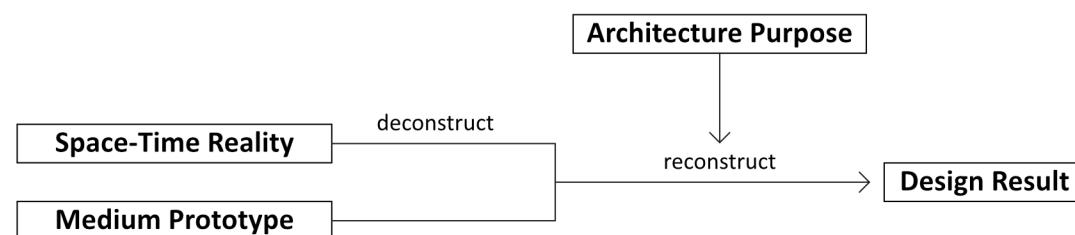
Deconstruction and Reconstruction of Space-Time Reality

Spacetime reality is a mixing container of multiple mechanisms, including physical laws, ideology system, social relations, cultural fields and so on. These concepts, which are closely related to us all the time, are often abstract and cannot be seen directly. According to theoretical physicist Carlo Rovelli, time is an illusion and our naive perception of spacetime doesn't correspond to physical reality. He argues that our perception of time's flow depends entirely on our inability to see the world in all its detail because Quantum uncertainty means we cannot know the positions and speeds of all the particles in the universe. In other words, people feel the spacetime transition not in a objective perspective, but in a narrative within a personal acknowledgement. In such a spacetime of continuity and uncertainty, reality cannot be accurately seen by individuals. From this viewpoint, I want to be a narrator of spacetime reality, treating architecture as my language and a carrier, to inform people with the hidden facts or mechanisms in our world.

In my thesis work, I study and deconstruct the spacetime reality in a two-dimensional framework, Space and Time, with different quantitative indexes, including water levels, pedestrian speeds, community block numbers, urban activity frequency and so on, just like physicists design and conduct their experiment with various parameters, through which I could have a good analysis of the hidden mechanism, just like water environment change mechanism, community production mechanism, etc. Then, forms are generated based on specific chosen mediums, including Chinese traditional paintings, chronophotography and montage, hard disks, physical fields, and so on. In the final step, forms of these mediums are applied to reconstruct the spacetime reality. Under this design system, I successfully conduct my designs in natural, cultural and urban environment. Forms of spacetime elements and mediums change in different cases, but the inherent core of design and research remain consistent: the exploration that aims to bring closer the reality of spacetime and individual perception.



(2) Reconstruction: Combined with Architectural Grammatical System

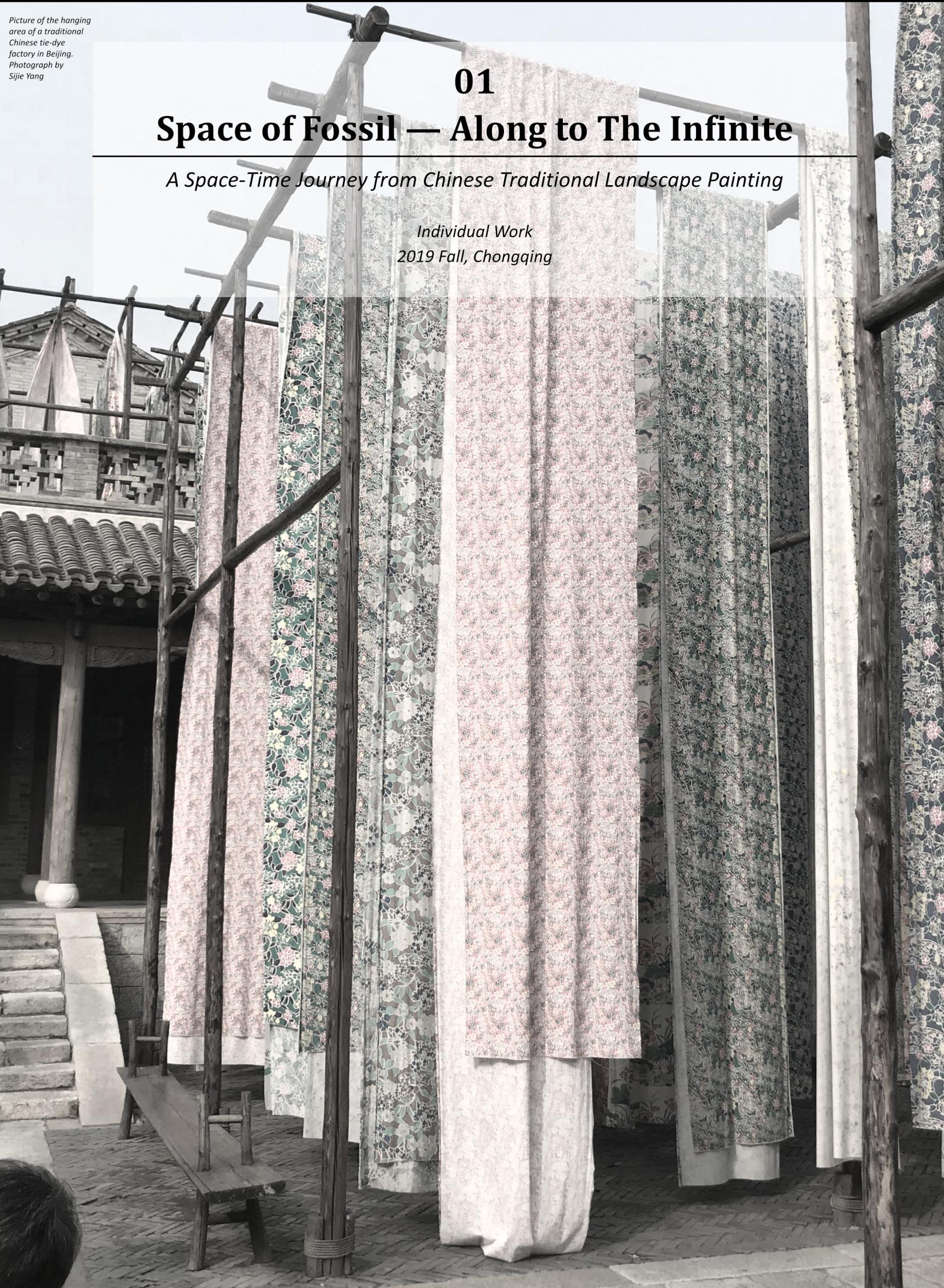


01

Space of Fossil — Along to The Infinite

A Space-Time Journey from Chinese Traditional Landscape Painting

Individual Work
2019 Fall, Chongqing



"There are three kinds of **Infinite Space** in Chinese Landscape culture: Looking up to the peak from the bottom of the mountain (infinite height); Look into the back of the mountain in front of it (infinite depth); Look forward from near mountain to mountain faraway (infinite far)."

Guo Xi, Ancient Chinese Literati Painter

"All the techniques of landscape painting could be summarized to compress the **Vast and Infinite Universe** in the small paper with imagination. We can only see one **Layer** of mountain, but we could image our **Journey among Layers** of mountain."

Shen Kuo, Ancient Chinese Literati Painter

[1] From Reality to Layers - Deconstruct Hidden Space Concept of Ancient Painters in the Chinese Landscape Painting

Chinese landscape painting and Chinese garden are two important mediums for ancient Chinese literati to express their ideas of space. From the Chinese point of view, the universe is infinite and vast, which is one of the core ideas of ancient Chinese philosophy and often symbolizes the broad mind and temperament of Chinese literati. But at the same time, the medium of expression of literati is limited. How to express the infinite space in the limited space has become one of the core topics of ancient Chinese art creation. In Chinese terminology, this is called seeing the big in the small.

Because of the special recognition of space and art creation, the space expression of Chinese landscape painting is very unique. There is no physical perspective in Chinese landscape painting, and we can only see the superposition, the layers, of the landscape one by one. In such a superposition, ancient Chinese literati painters sought for the rhythm of aesthetics and the expression of the infinite world. Moreover, those famous painters with high techniques never drew their paintings according to what the real world looks like, but reconstructed their journey in the nature, the hidden journey of literati, with their residual image memory.

[2] From Layers to Space-Time Journey - Reconstruct Chinese Landscape Experience based on Real Environment

The project explores how to deconstruct the space concept in the Chinese landscape painting, the infinite space and the hidden journey of literati, and how to reconstruct this Chinese landscape space in the real environment, building a Chinese landscape narrative experience. The design process of reconstruction repeated the creation mechanism of Chinese landscape painting: how to create the infinite space in a limited space, and how to hide the journey among the layers.

Ancient Chinese also had an advanced understanding of time. They believed that time was not only infinite, but also reincarnated. Through active observation, they became one of the first people in the world to set a time scale and they created the lunar calendar. Year after year, they used 24 solar terms according to the moon's changing track to help them with their agricultural production. In this project, time is served as an additional dimension, which is related to the local water environment yearly changes and is associated tightly to the layer element, to complete the creation of the whole spacetime journey.

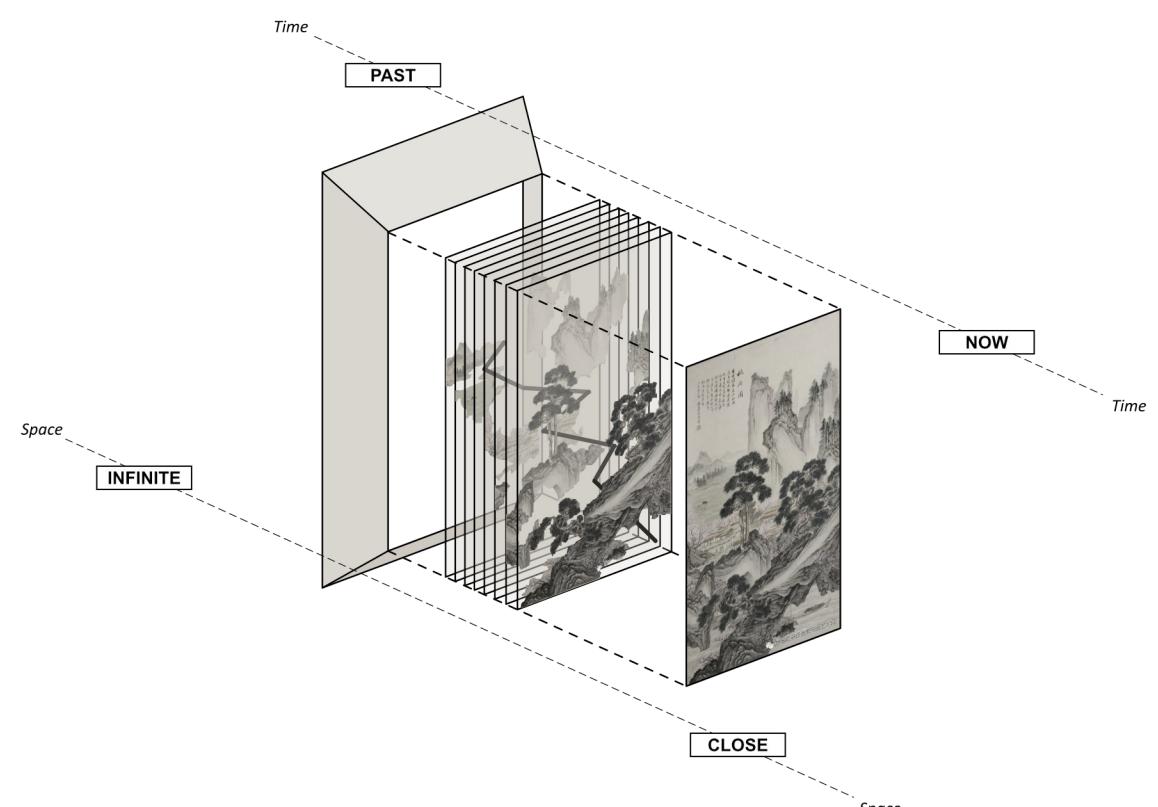
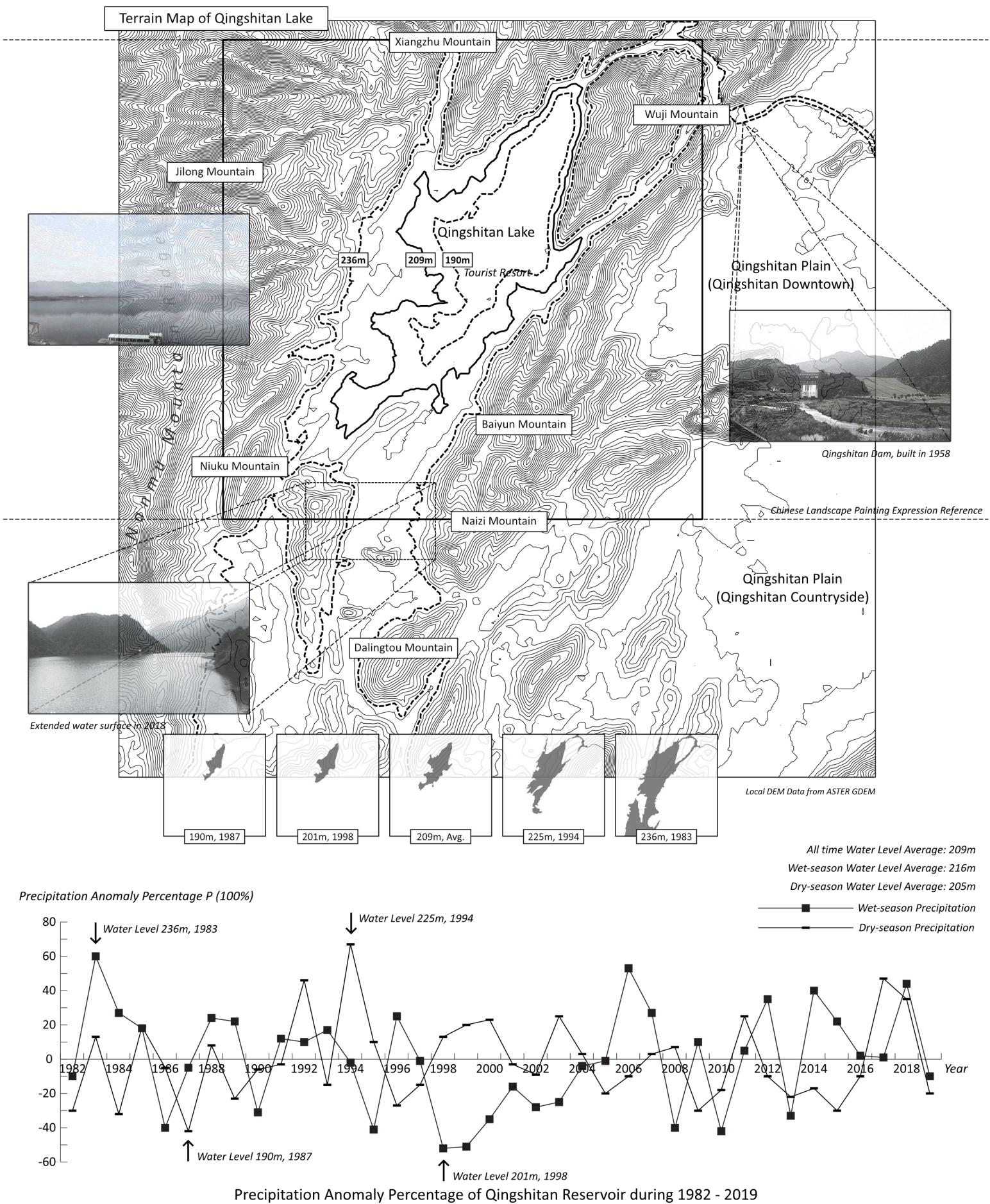


Figure. Analysis Diagram of Hidden Journey Space in the Chinese Traditional Painting

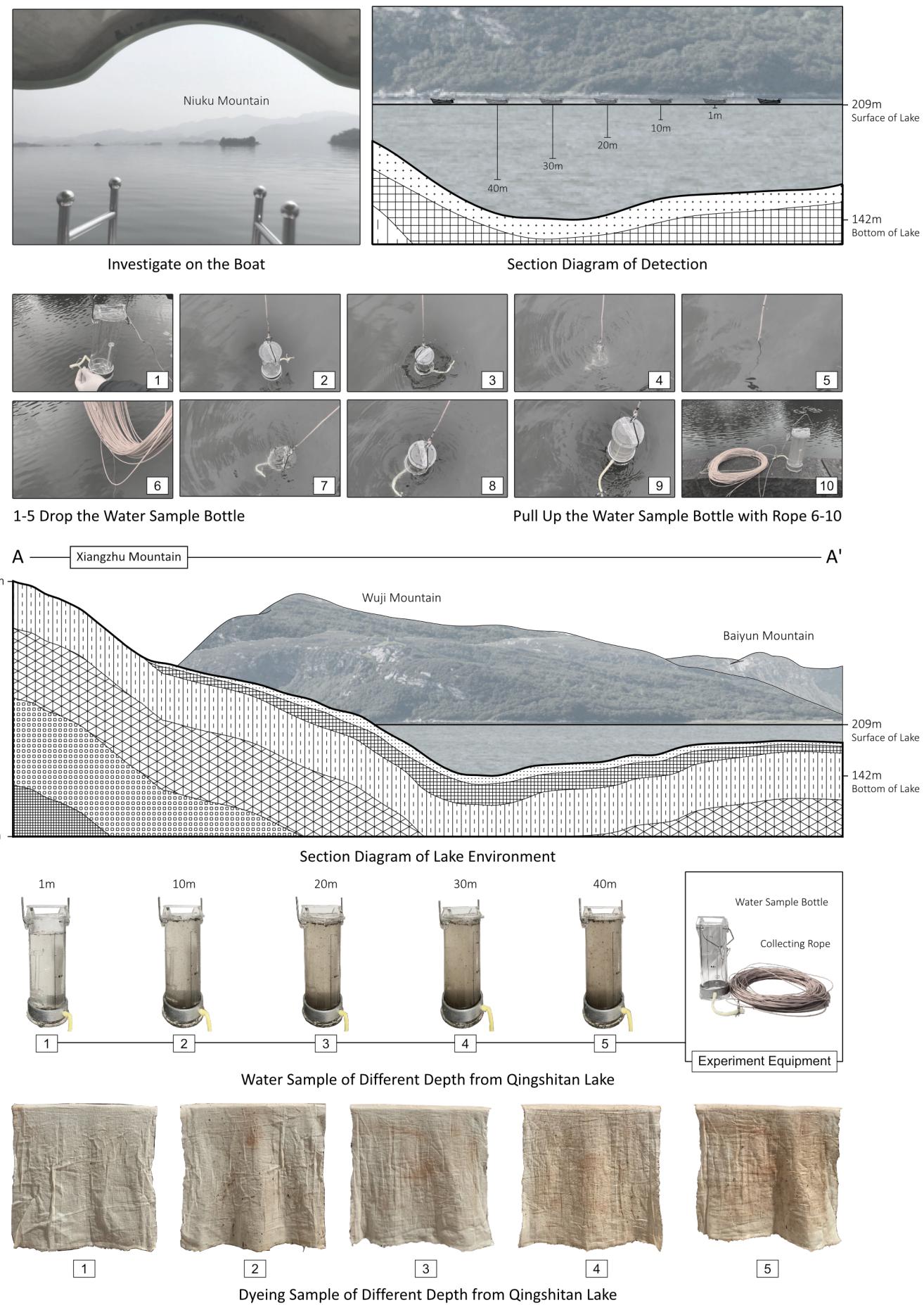
Water Environment Changes in Qingshitan Lake (Space-Time Reality)

Located in Guilin, Guangxi, water level and water environment in Qingshitan Lake change every year. During the wet season each year, with rainfall and less transpiration effects, water level tends to rise significantly and lake is connected to surrounding rivers. There are often large numbers of fish and strong currents in the lake, and when there is heavy rainfall, there can be flooding. In the dry season, there is an opposite situation because if high temperature and more water evaporation, though high precipitation sometimes. The water level drops and fish stocks dwindle.



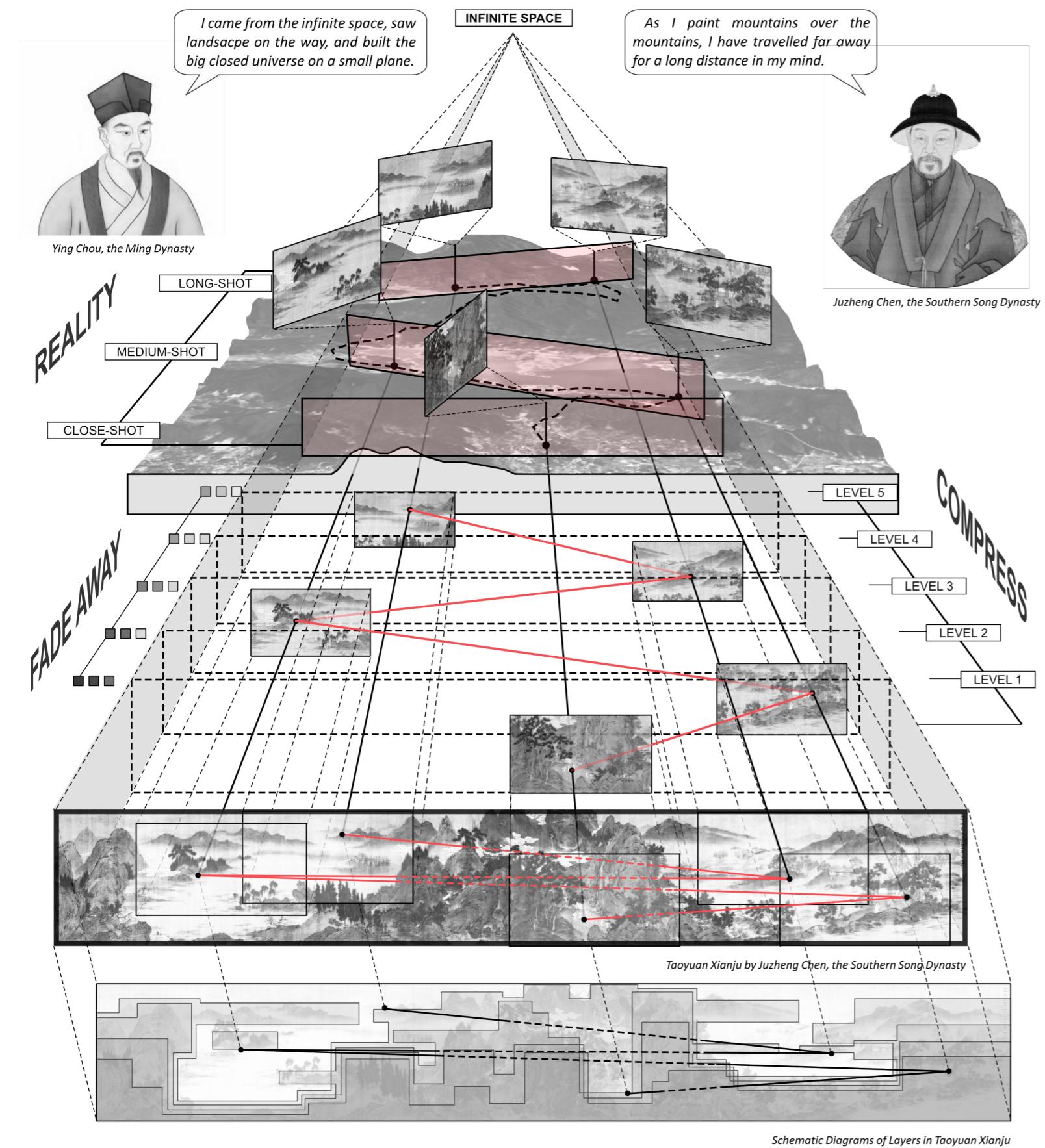
Detection of Water Environment in Qingshitan Lake (Deconstruction)

Further, I tried to detect the water environment through some professional equipments, water sample bottle and collecting rope, which could help me to get to know more about the water quality and its relationship with the depth of the water. After the sampling on the boat, clear differences could be observed on samples from different heights of the lake: the deeper, the more turbid. Dyeing effects of these samples also showed the same tendency. This phenomenon may be because the water near the bottom is much easier to mix with soil under the lake.



Chinese Landscape Painting Expression - From Reality to Layers (Medium Prototype)

In order to express the infinity and vastness of natural space, there is no physical perspective in Chinese landscape painting. The painter shows the depth of field by adding layers to layers. In the process of creation, they do not start from a specific point of view, but rather collage the images of different locations he had been during the journey to complete the whole work. Layer is the main method of their creation, and they also hide their journey in layers. This symbolizes that the ancient Chinese scholar himself lived freely in the vast nature.



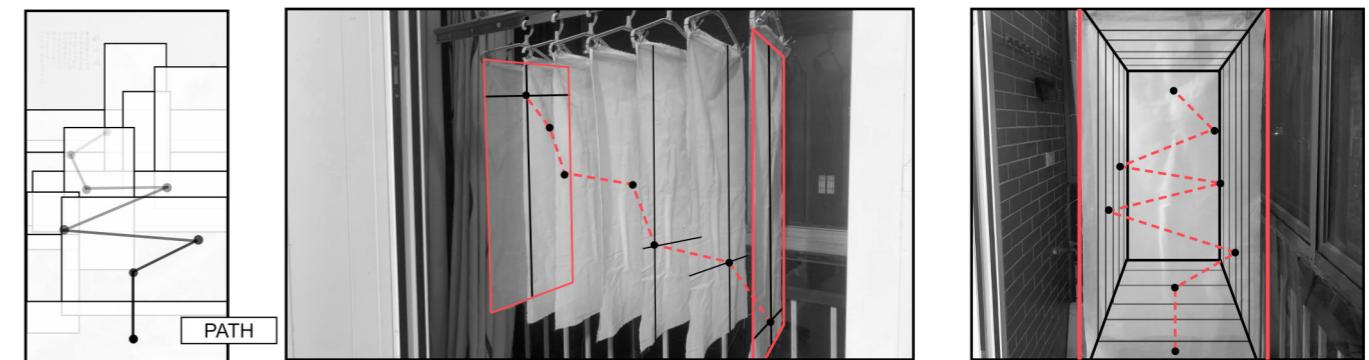
From Layers to Space-time Journey (Reconstruction)

Based on the concept of layers, the design reconstructs the space and translates the two-dimensional painting space into the three-dimensional reality. Each layer is a separate dyeing machine unit, and the special one-layer effect is achieved by dyeing and record the water environment at the bottom of the lake at a certain time. Different layers are designed to record different water environment at different time, in order to be a document of water environment changes. The superposition of the layers eventually forms the whole space and space-time experience. The paths are interspersed among different levels to form a unique spatial narrative experience for people, making people feel the spacetime concept of Chinese.

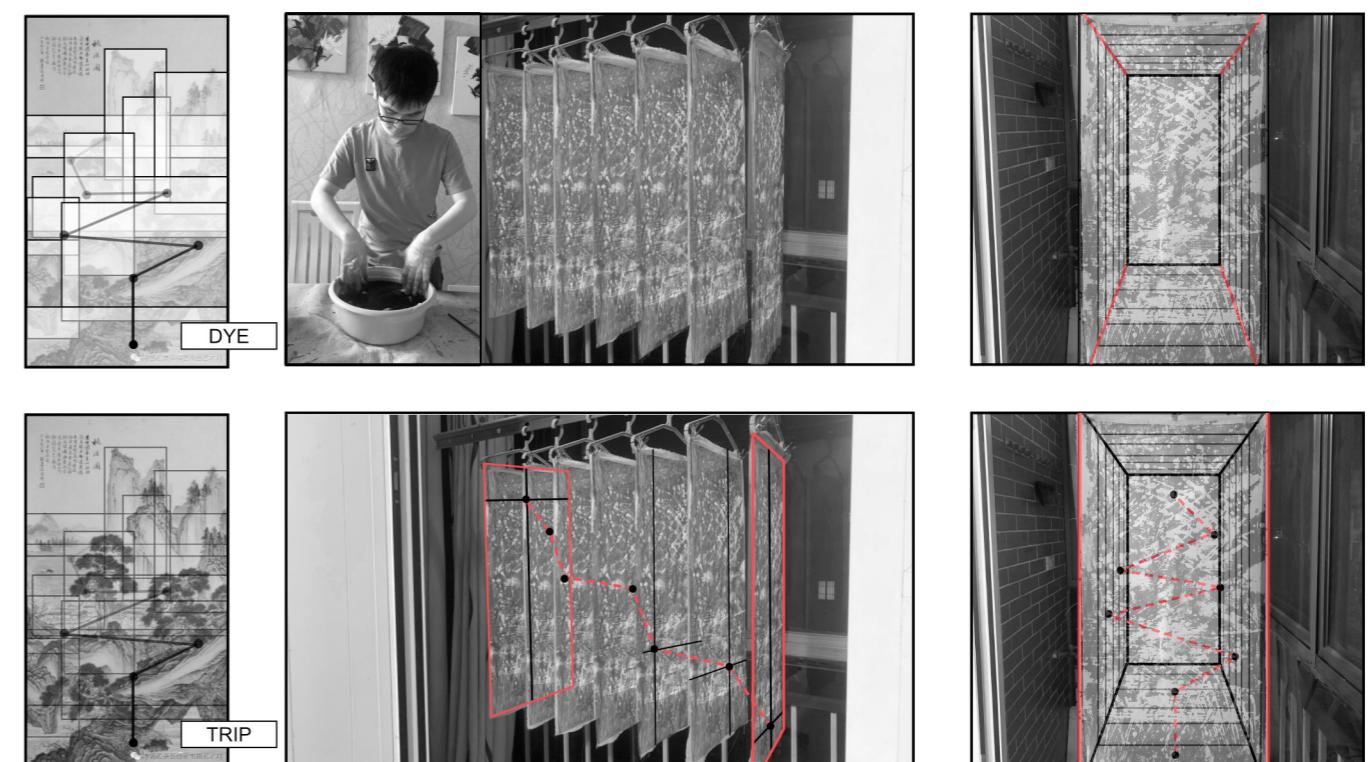
Step 1 - Layer: Identify the layers as the basic elements for the space. And deform these layers to reconstruct the infinite space.



Step 2 - Path: Design and create the path and narrative space experience through the layers, connecting those separate levels into a physically complete journey.

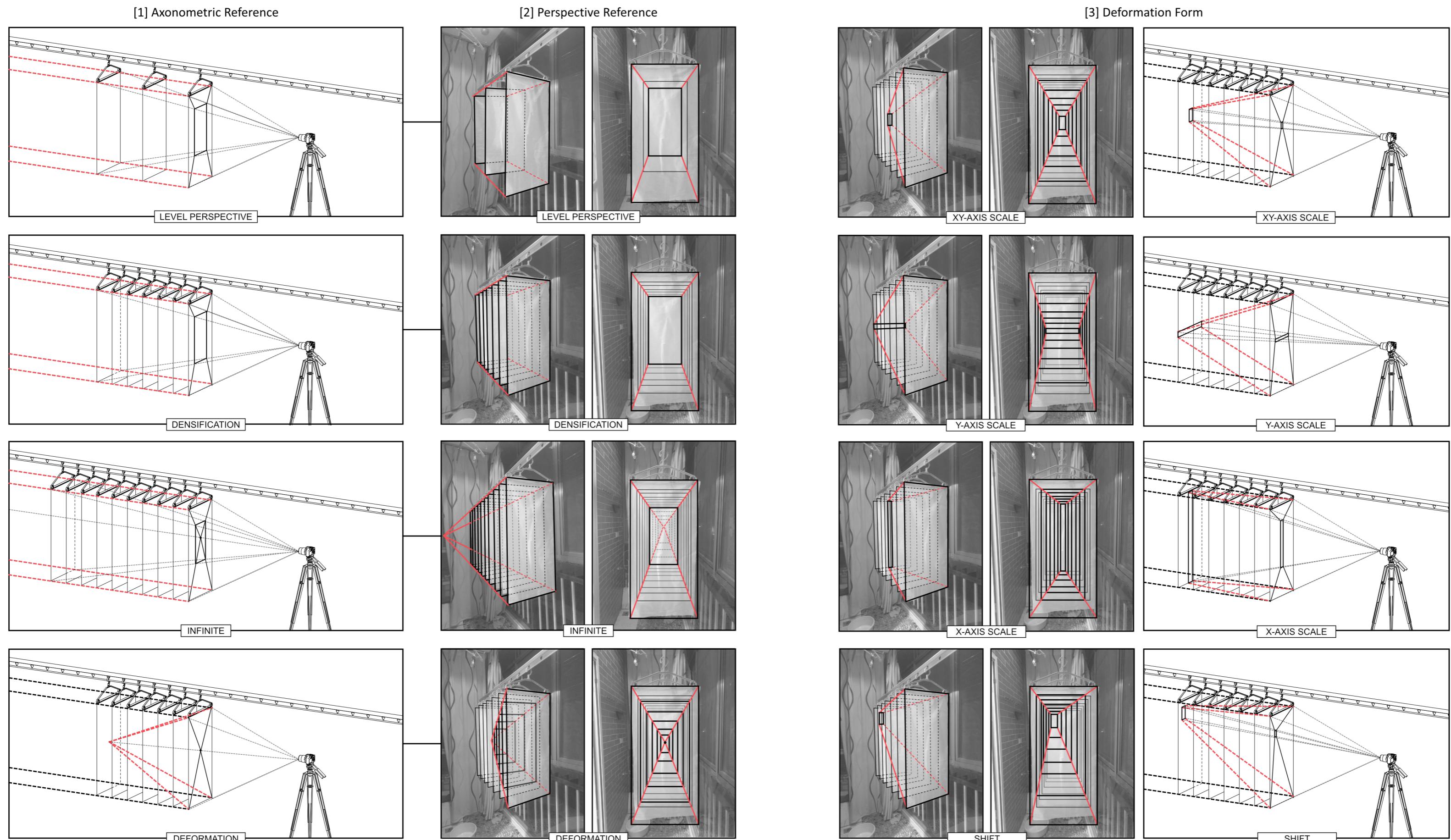


Step 3 - Dye: The dyeing device and the final dyeing effects of water environment finally form a complete space experience. All the layers' effects come together to be a document of water environment changes. And the experience is inserted a time axis and become a space-time journey.



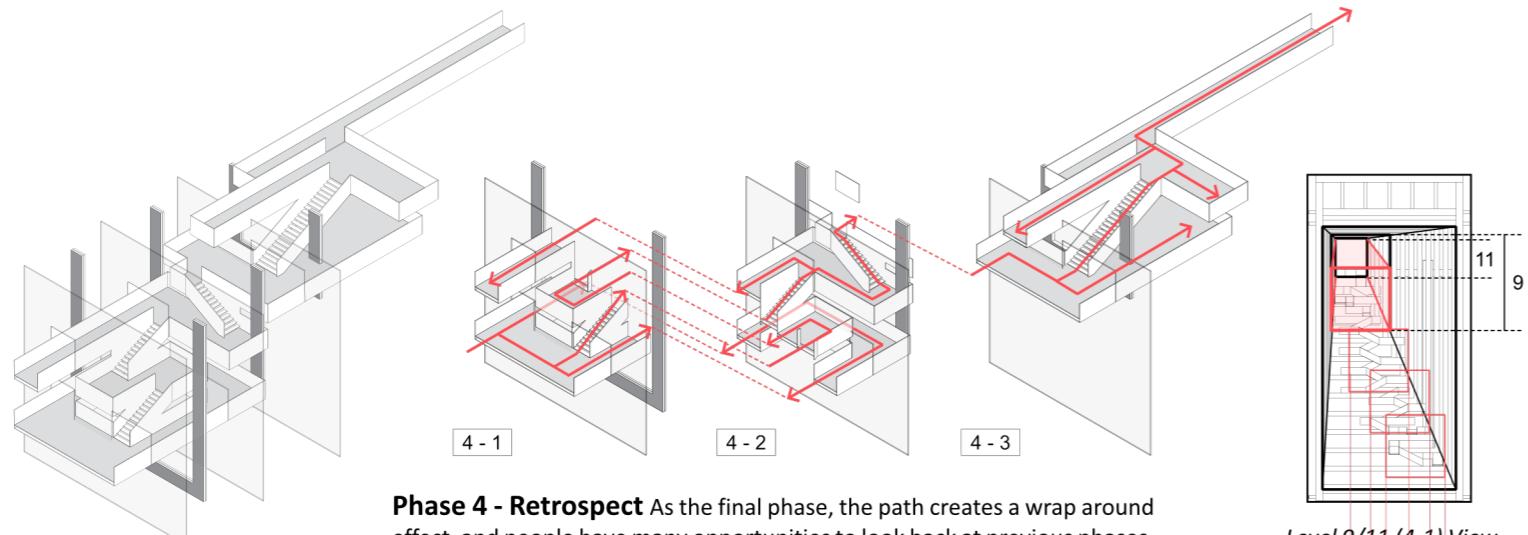
Deformation of Infinite in the Limited Space

After identifying the layer as the basic element of space, these layers need to be deformed so that the infinite can be expressed in a limited space. Through controlling of the size and position of the layer and creating gradual changes, the infinite space comes into being. In order to fit the slope angle of the mountain in the site, the infinite space is transformed to the top of the frame.

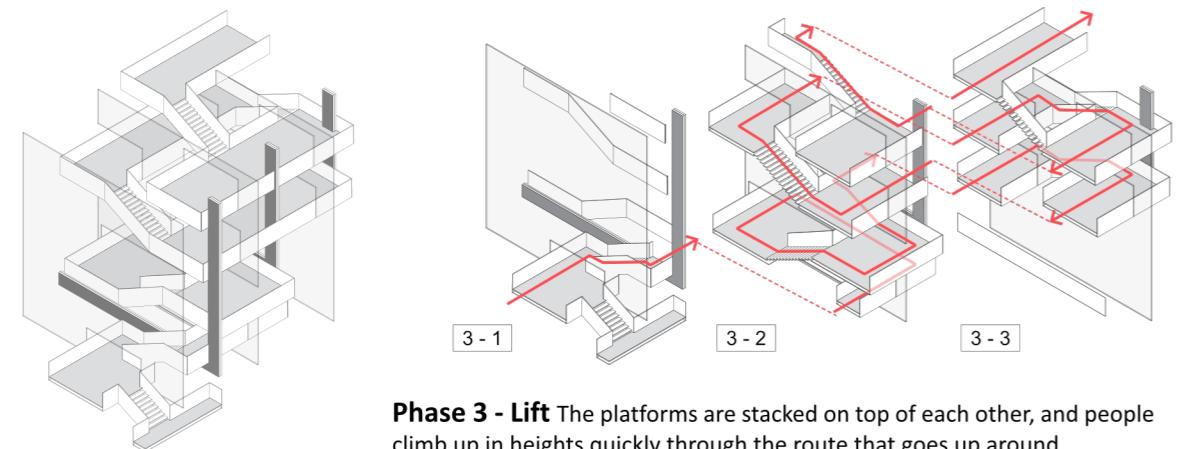


Path System Up to Infinite Space - Narrative Experience & The Philosophy of Yin and Yang

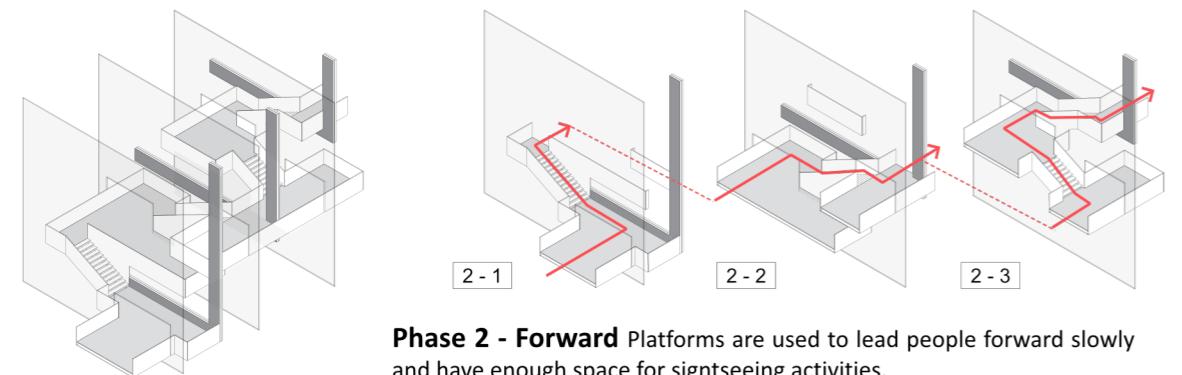
After the infinite space is formed by the layers, people need a path to experience the space process. The different relationships among the path, the platform and the layer structure constitute the whole narrative space experience. In addition to the path of space journey to the infinite space, space out of the infinite space (the chaos space) has its own path, which shows the the philosophy of Yin and Yang.



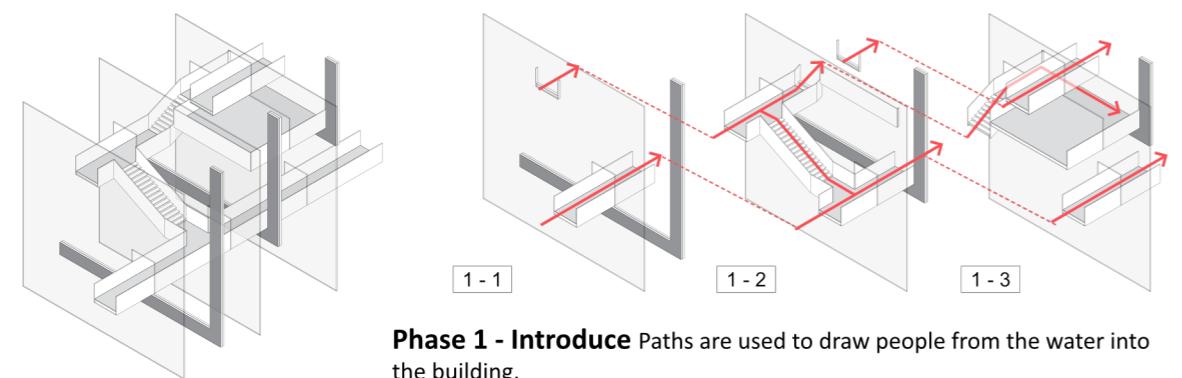
Phase 4 - Retrospect As the final phase, the path creates a wrap around effect, and people have many opportunities to look back at previous phases.



Phase 3 - Lift The platforms are stacked on top of each other, and people climb up in heights quickly through the route that goes up around.

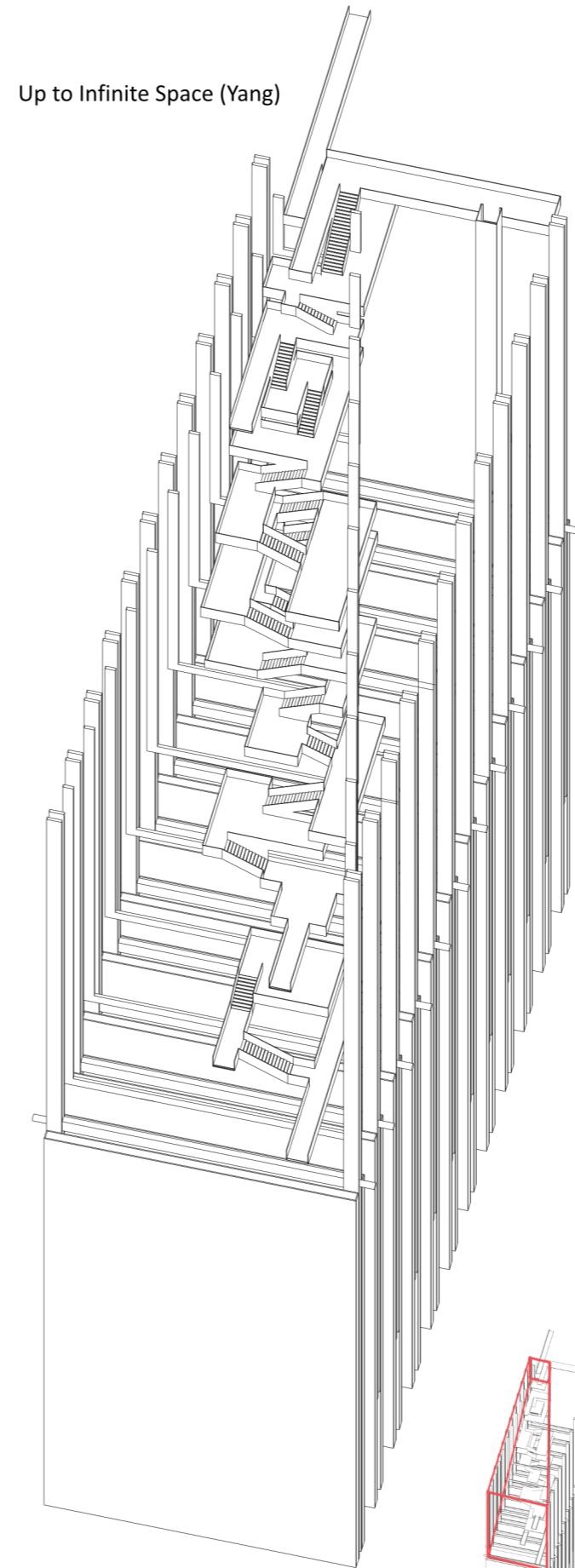


Phase 2 - Forward Platforms are used to lead people forward slowly and have enough space for sightseeing activities.

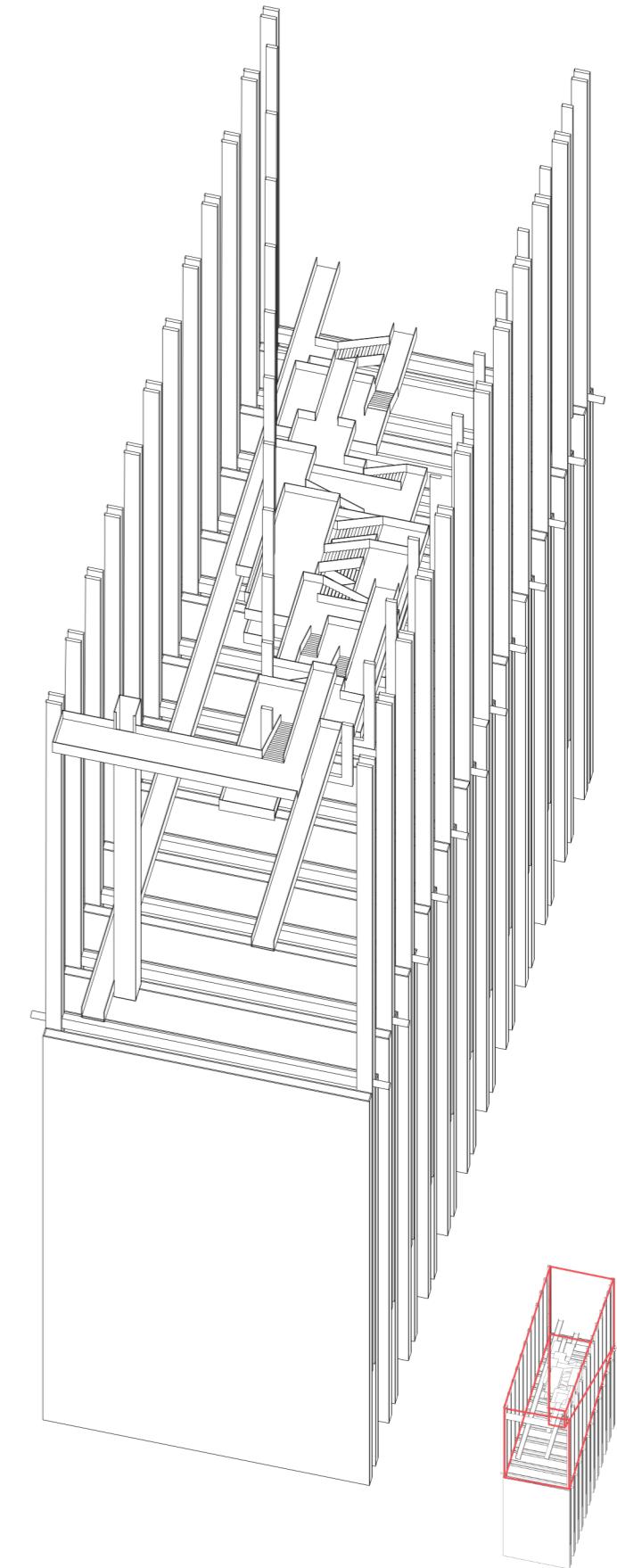


Phase 1 - Introduce Paths are used to draw people from the water into the building.

Up to Infinite Space (Yang)



Out of Infinite Space (Yin)



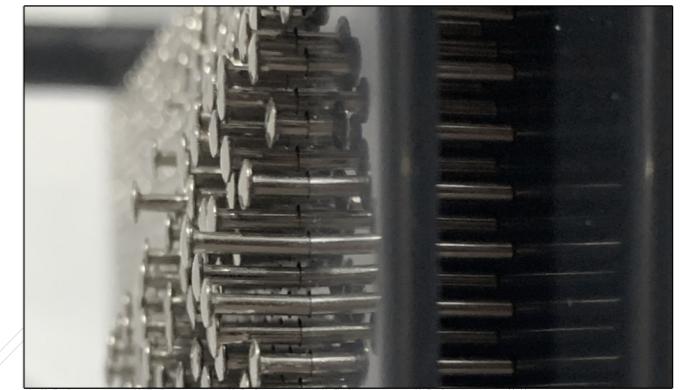
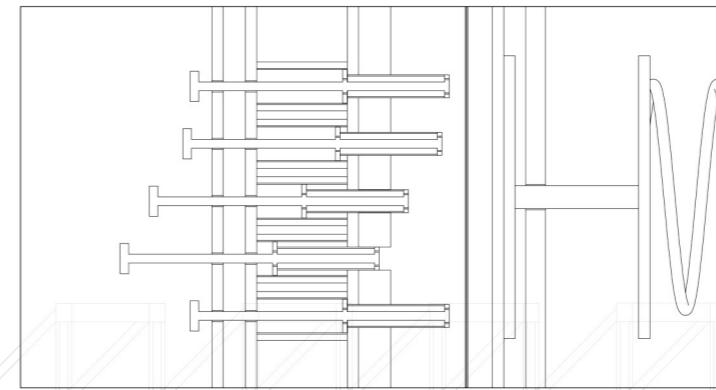
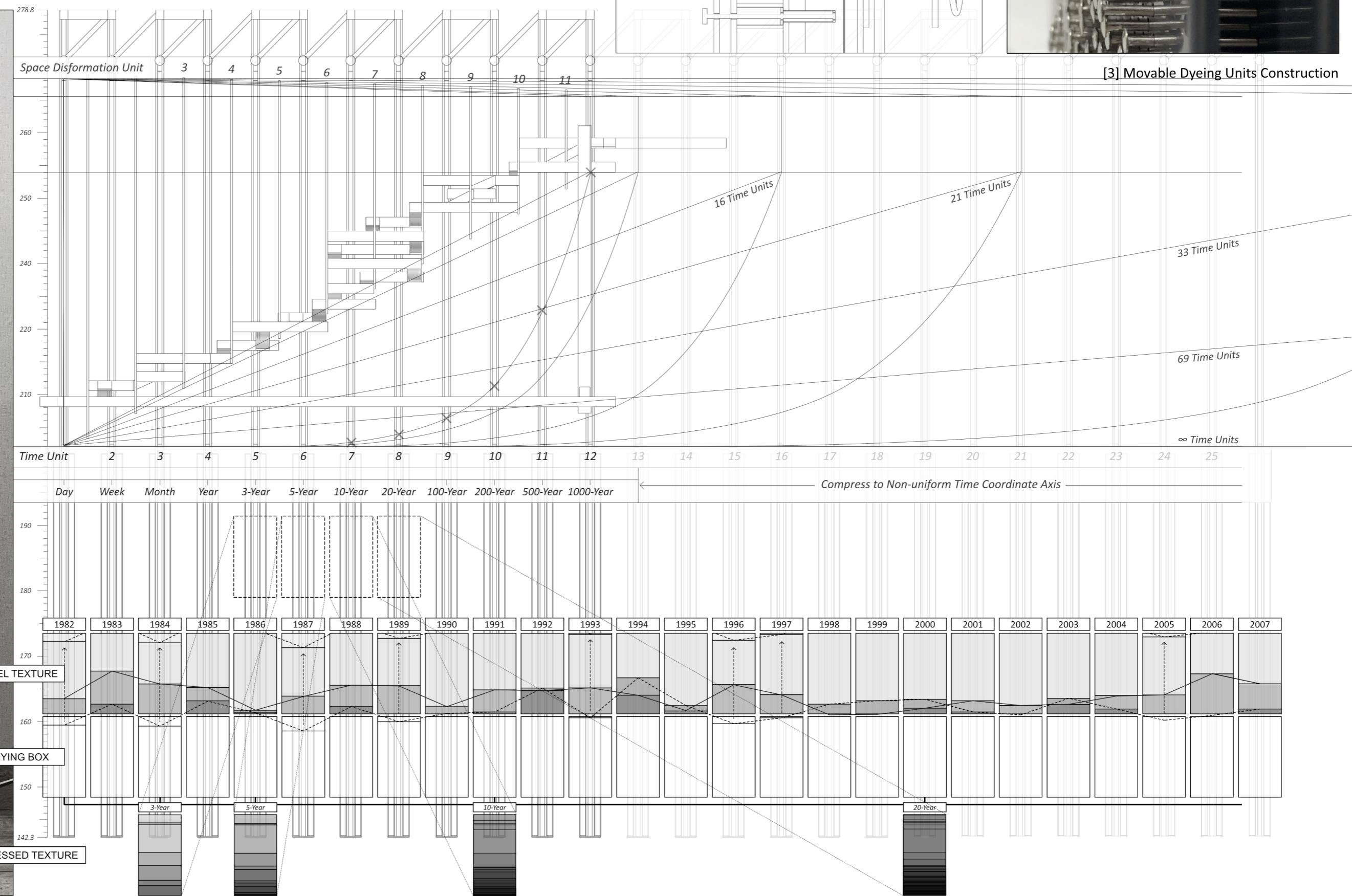
Level Unit of the Space-time Journey - A Dyeing Apparatus

Layer unit is the basic component of Space-time Journey. In space, its set completes the expression of infinite space and supports the path structure to create the narrative experience. In terms of time, it is a dyeing machine, which is used to record the changes of water environment at different moments, form a history document and materialize time. The mechanical lifting structure at the top and the dyeing and timing structure at the bottom make up the whole dyeing system.

[1] Dyeing Apparatus



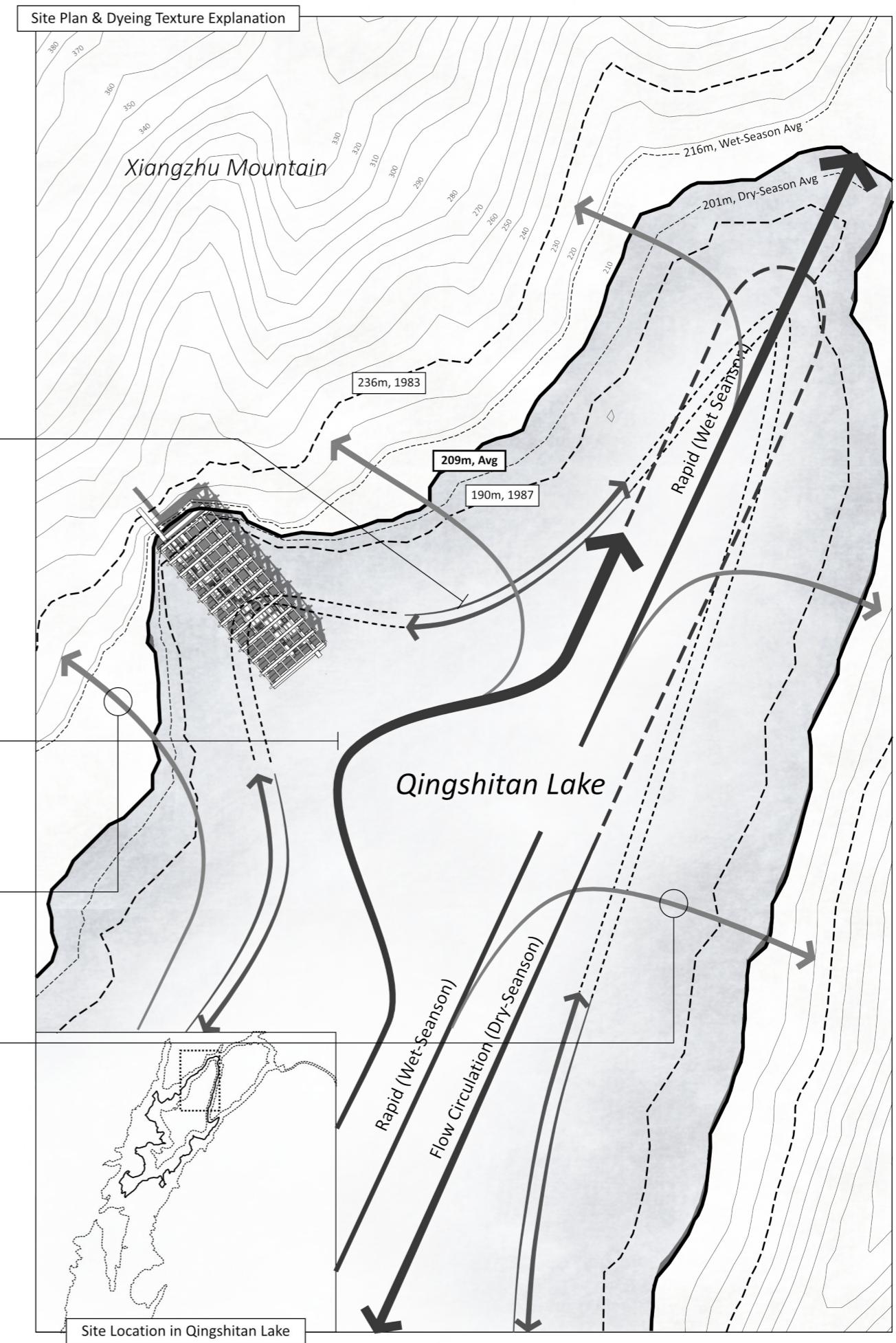
[2] Spacetime Disformation Section Diagrams



[3] Movable Dyeing Units Construction

Unit Dyeing Texture of Water Environment Changes

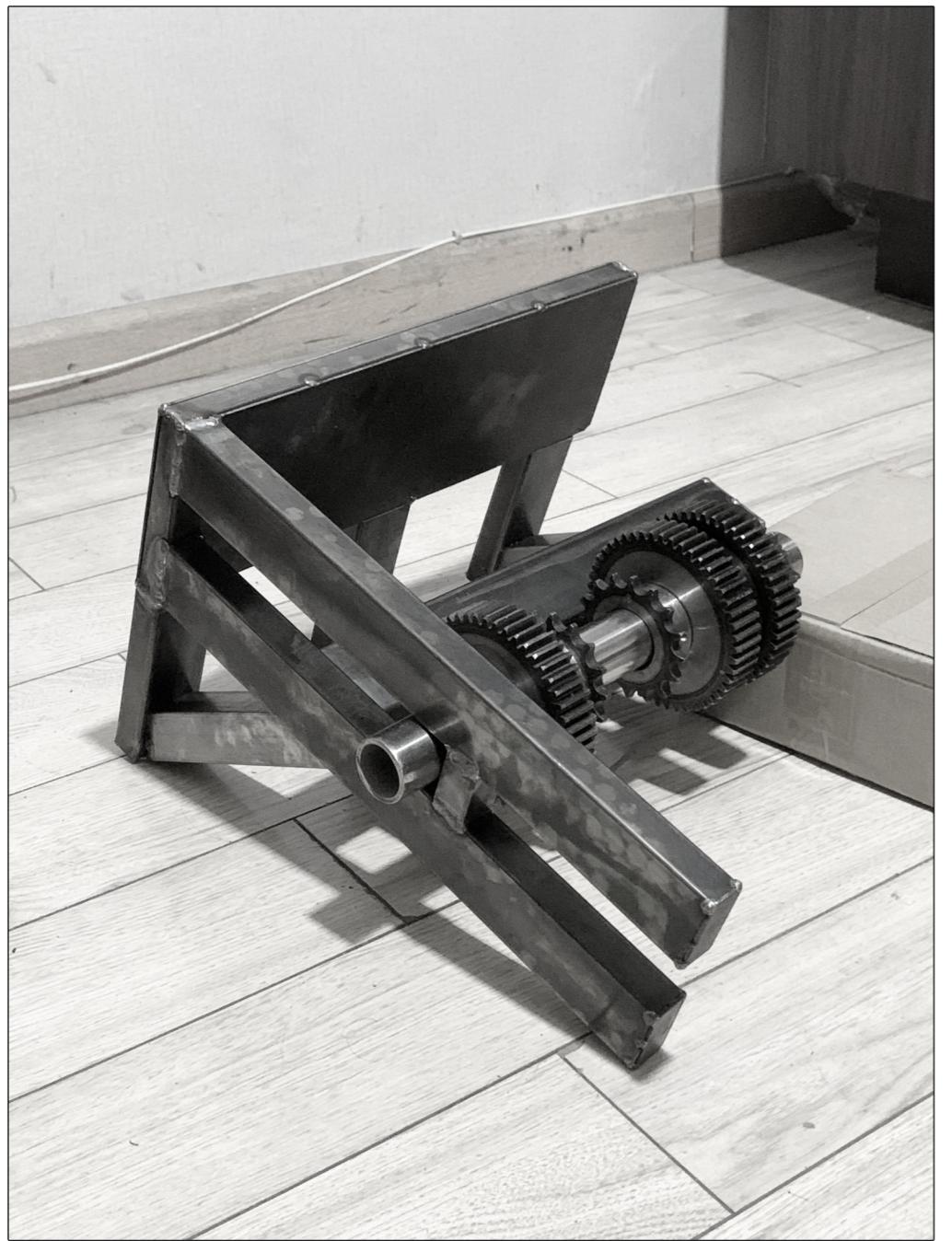
After being affected by the change of water environment, the movable dyeing units present different textures, which are finally produced on the dyeing clothes. These textures will reflect the changes of water environment in different years in Qingshitan Lake, including fish schools, rapids, floods, earthquakes, and so on. As a record through spacetime, the dyed clothes with textures become an important part of the spacetime experience construction.



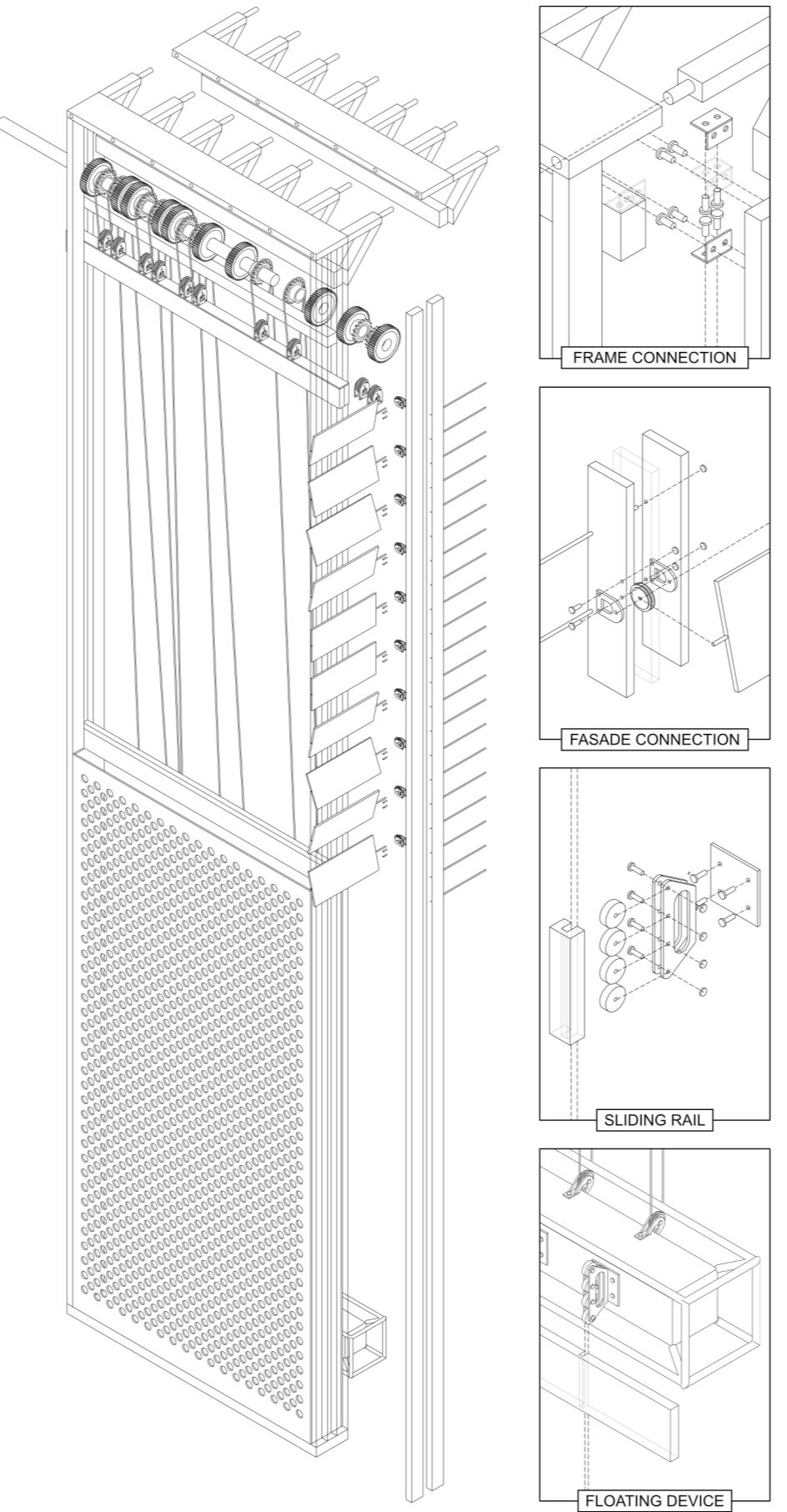
Construction Detail - Dynamical System and Fasade System

At the top of the device is a dynamical system consisting of five sets of gears that pull ropes to control whether the dyeing cloth rise or fall, thereby controlling the dyeing process. The gears are powered by a buoy in the water, which pulls the ropes by floating up and down. The buoy uses airbags to control its weight, which finally controls what depth it floats in the water. The whole apparatus consists of 12 units, and the structural connections among these units eventually becomes the basic form of the facade system.

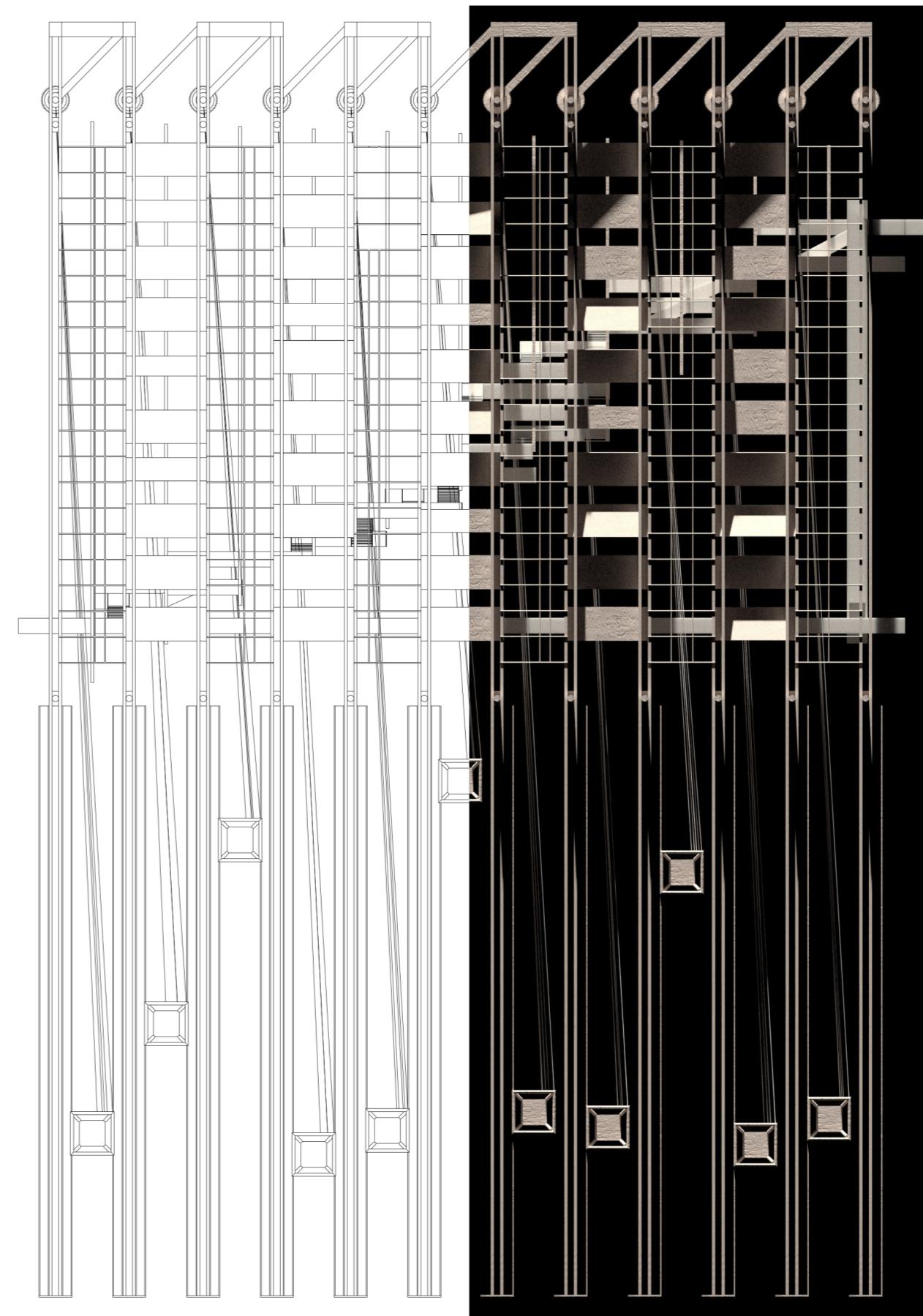
[1] Gear Construction Model



[2] Construction Drawing



[3] Fasade System

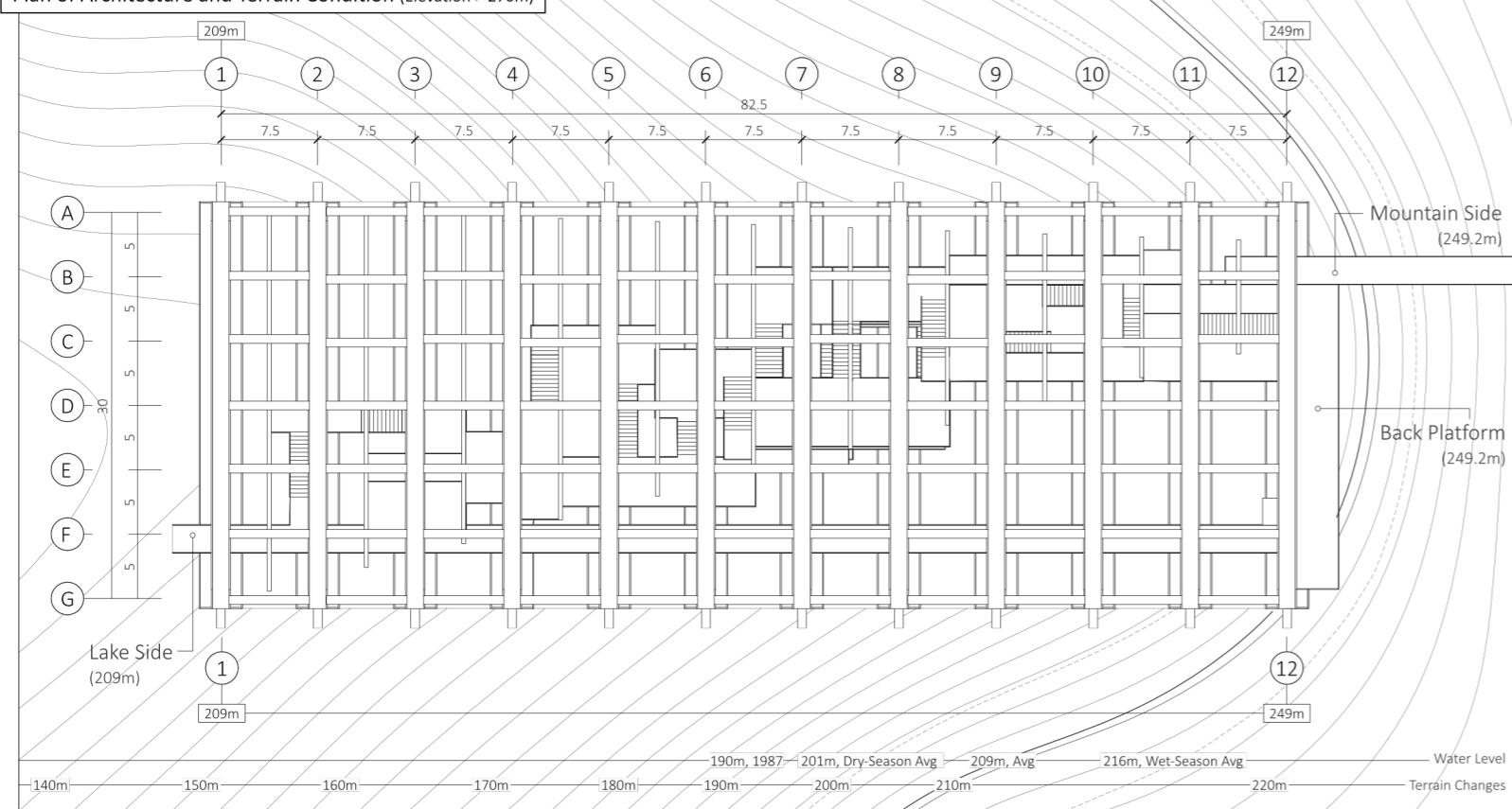


From Lake to Mountains

Lake and mountains are the two main elements of nature in Chinese philosophy, and ship was the main tool to connect them in ancient times. There is a saying that says "*I greet my friends on water, see off my friends back to water*". In this context, the building serves as a pier connecting the lake and mountain, welcoming the tourists from the water. At same time, it connects different elevation differences of the local mountain terrain, providing people with unique narrative experiences. Eventually, visitors could leave by boat.

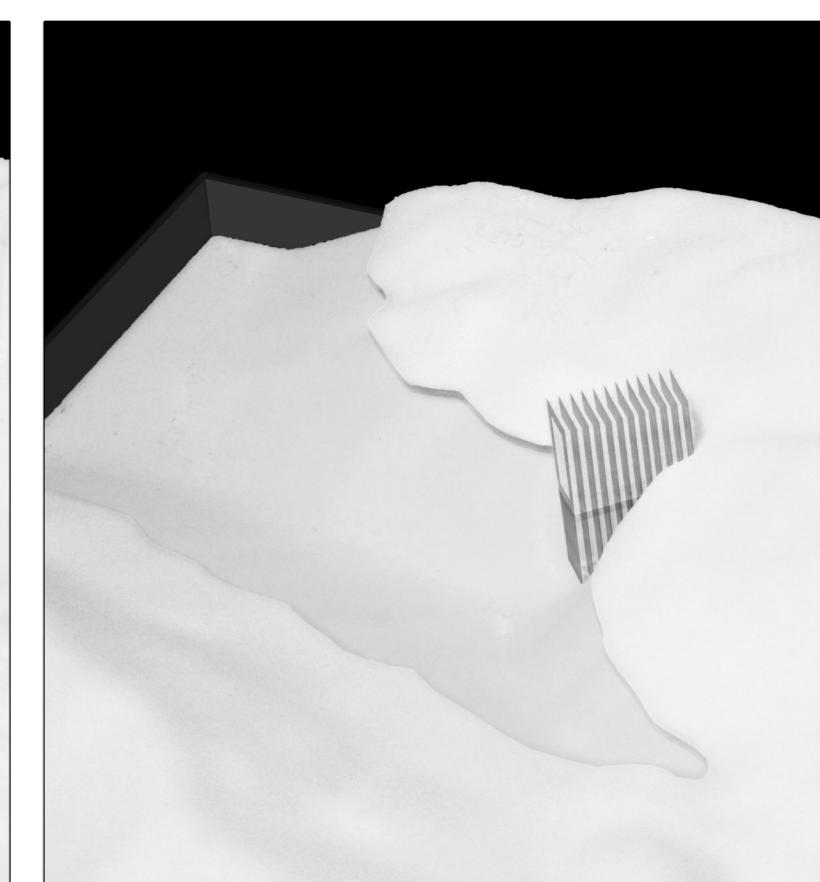
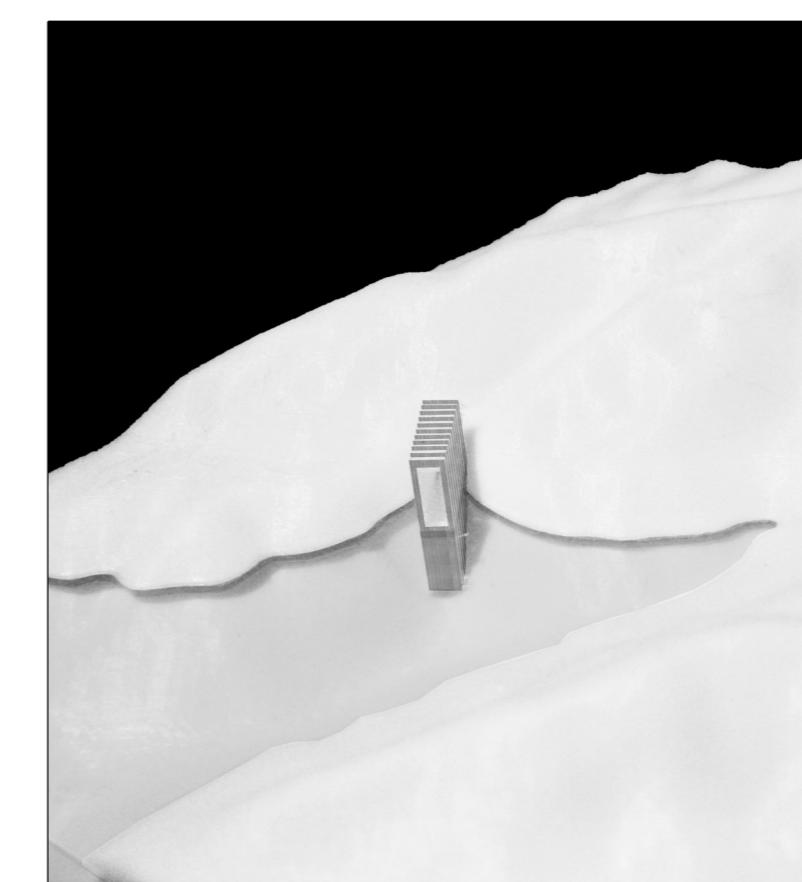
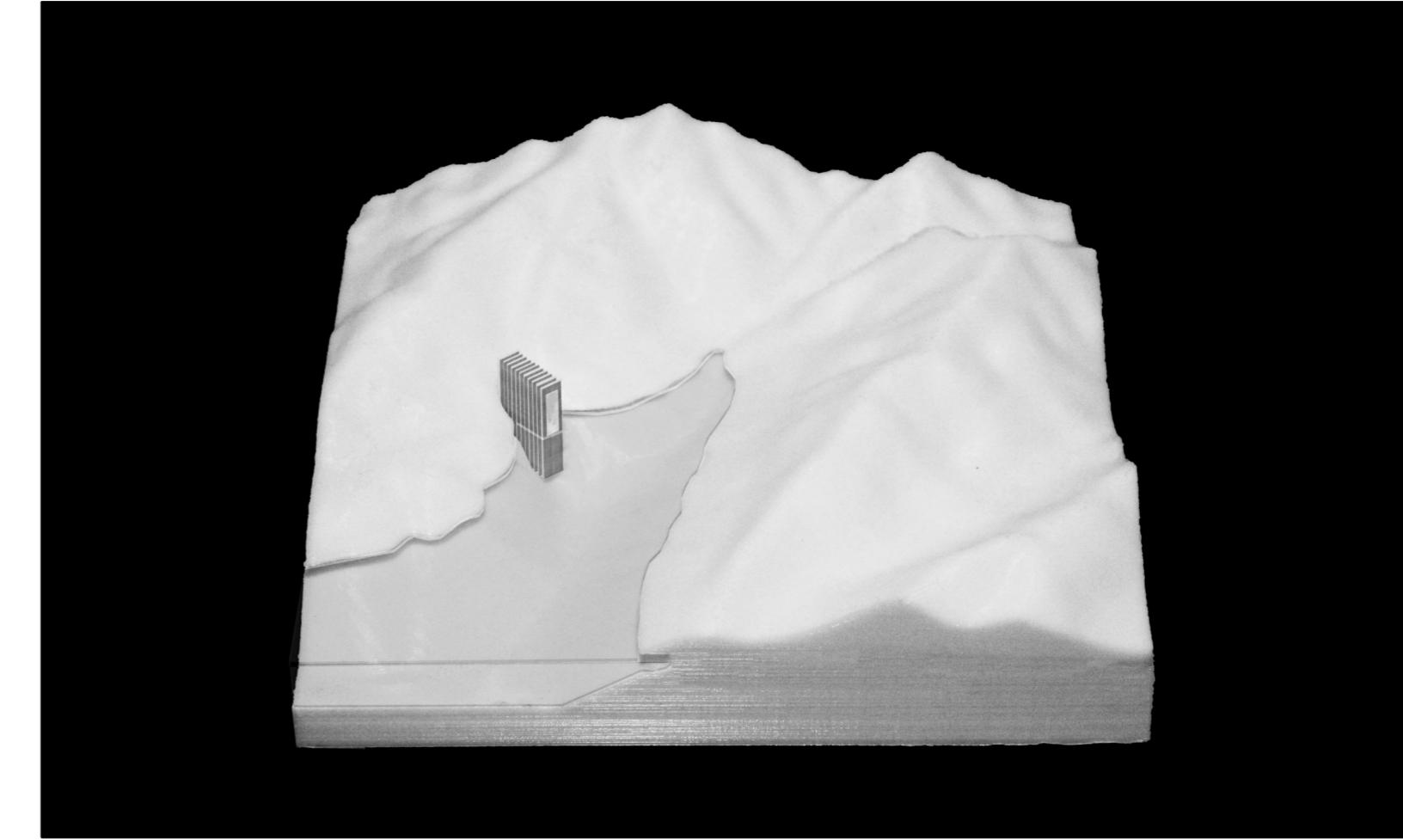


Plan of Architecture and Terrain Condition (Elevation > 270m)



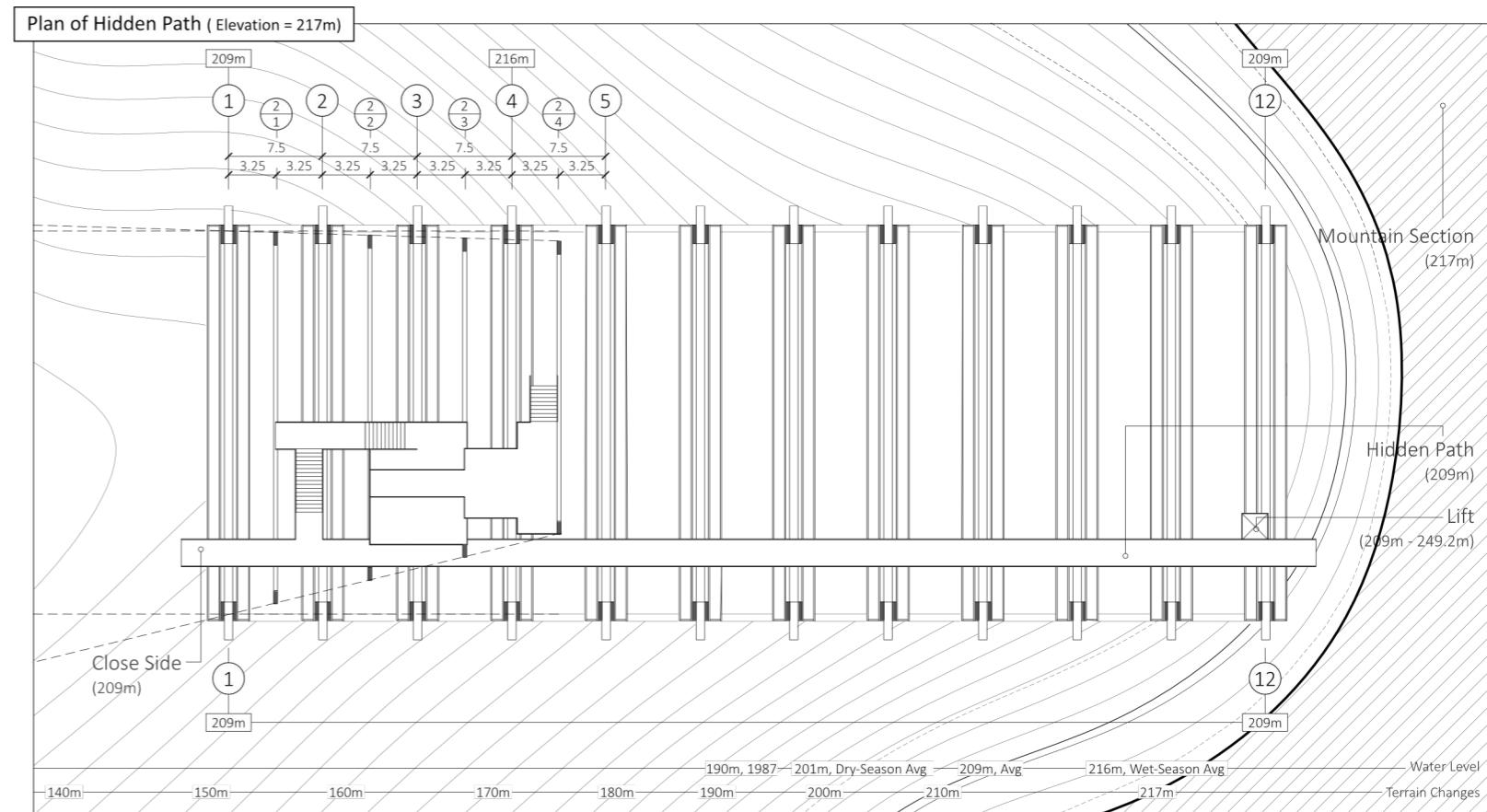
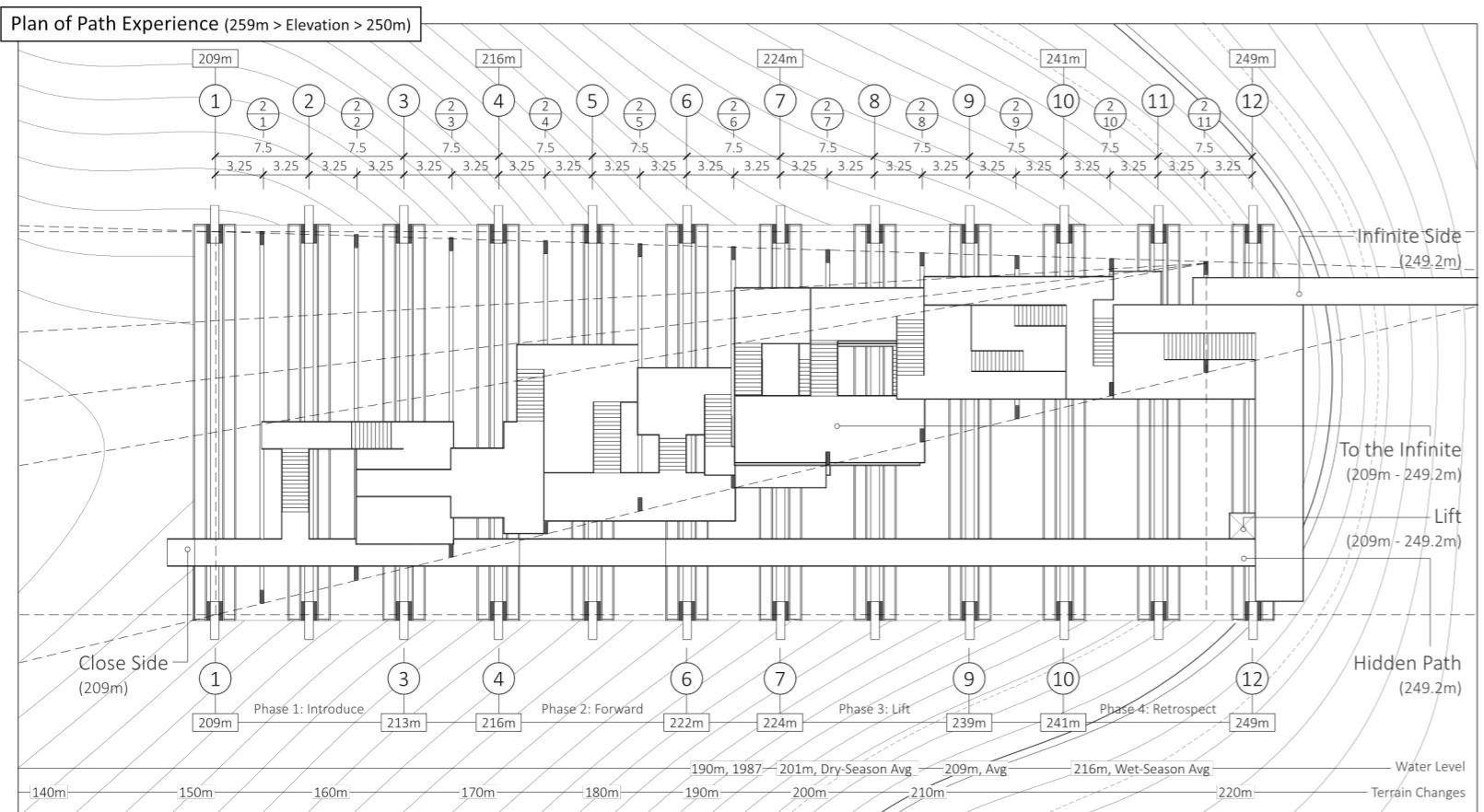
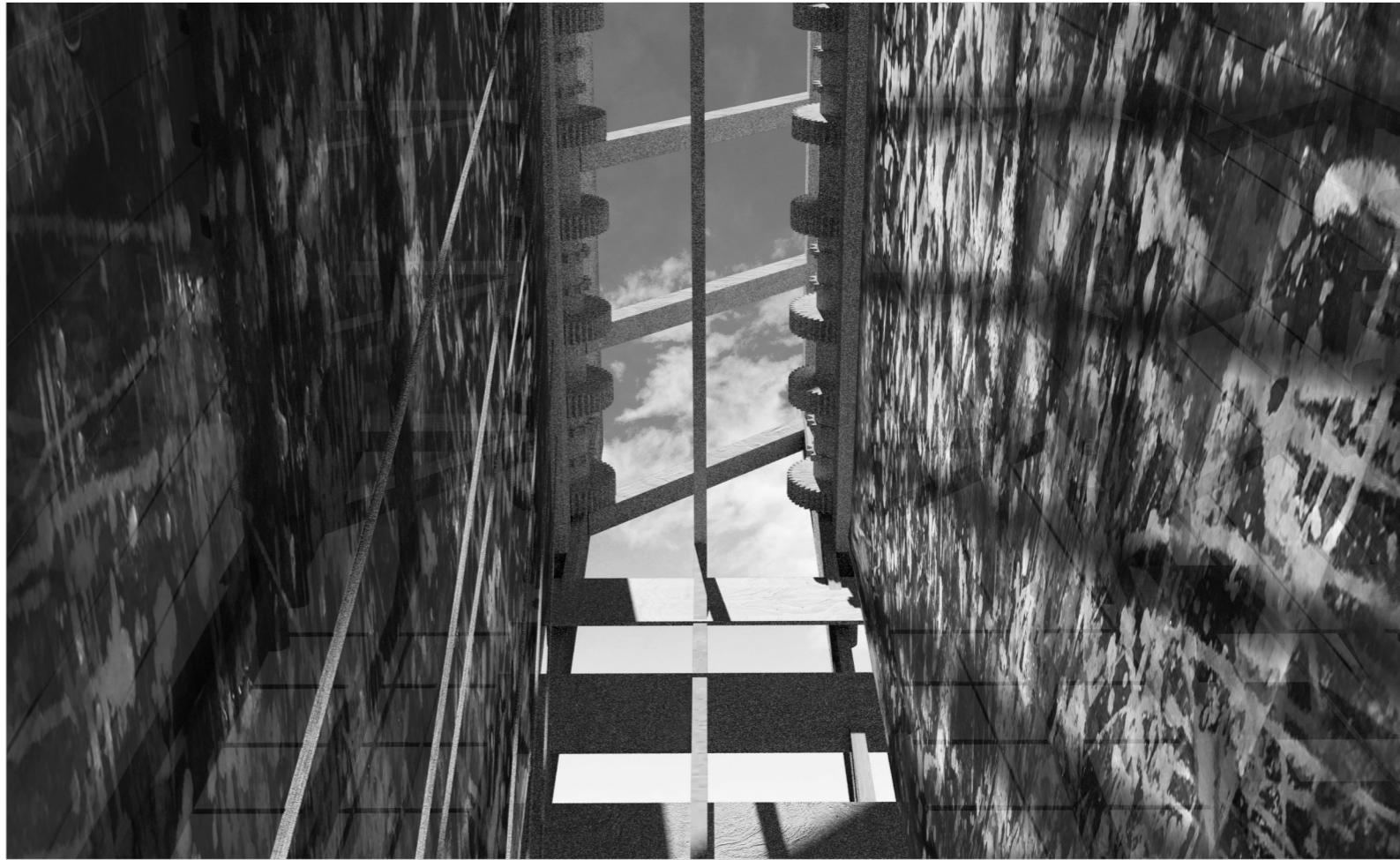
Integration with Mountains Environment

Mountains environment surrounding Qingshitan Lake is a very typical one in Chinese landscape artistic style. The building is embedded in the mountains, accompanied by mountains and the lake. In the natural environment, it symbolizes a humanistic existence, but with the passage of time, it will eventually be integrated with nature. The mechanism designed to the work, the dyeing mechanism crossing spacetime, helps it achieve this fusion.



Path Experience - Climbing to the Infinite, and the Mountains

The experience of the path is not only a process leading to the Infinite, but also a process of climbing the mountain. This isvipassana space and time, and each step will bring different experiences in people's spatial perception. The whole path is divided into four phases according to the intention of the space of traditional Chinese landscape, that is, Introduce, Forward, Lift and Retrospect. Moreover, as visitors walk along the path, they also walk through the dyed cloth, through the space and time reconstructed by the dyed cloth.

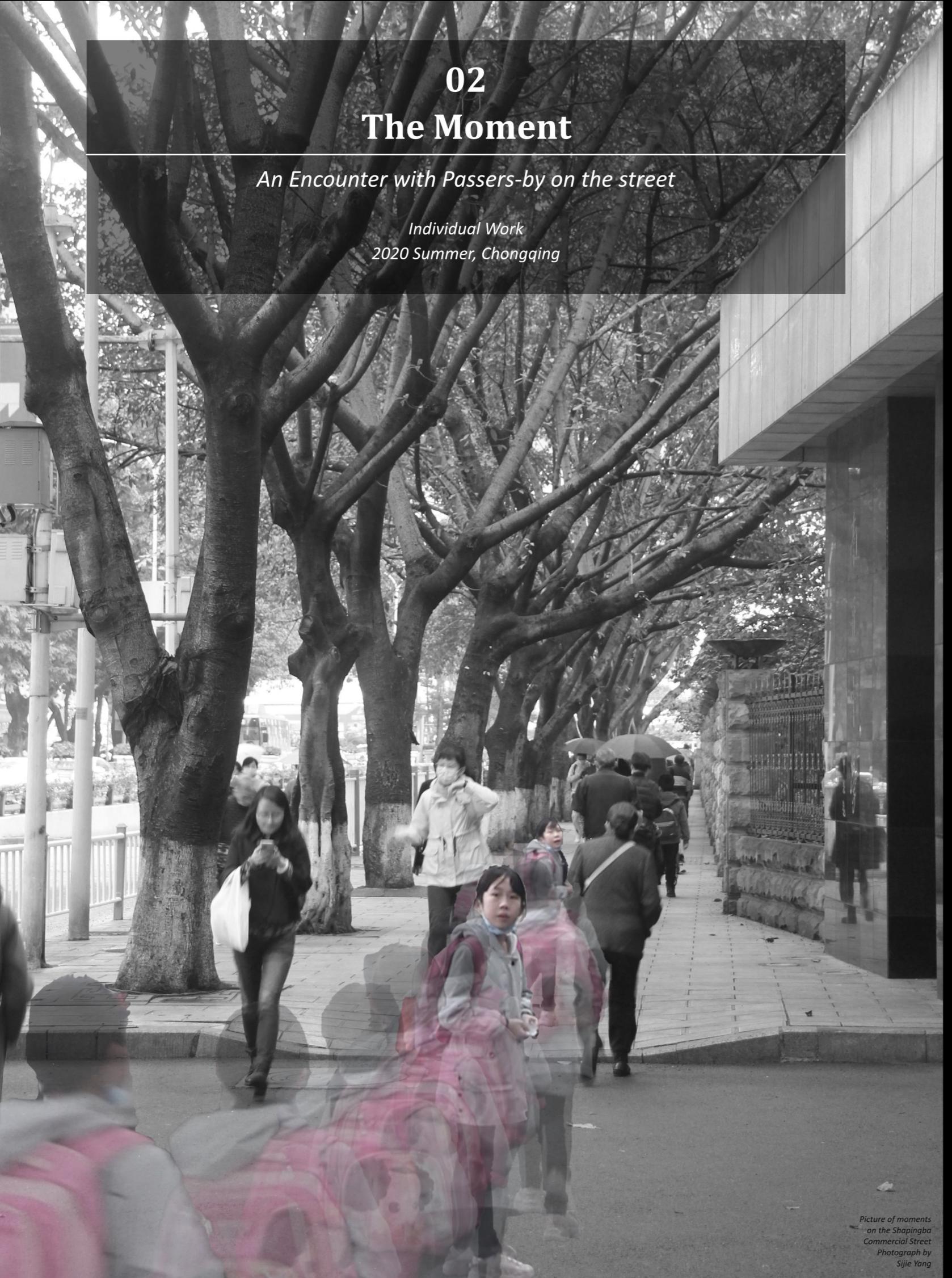


02 The Moment

An Encounter with Passers-by on the street

Individual Work

2020 Summer, Chongqing



Picture of moments
on the Shapingba
Commercial Street
Photograph by
Sijie Yang

"Oop! **The Moment** on the streets! Once you miss it, it is gone forever."

"Street photography is not documentary, but intuition, a **Poetic Experience**."

"To me, photography is the **Simultaneous Recognition**, in a fraction of a second, of the significance of an event as well as of a **Precise Organization** of forms which give that event its proper expression."

Henri Cartier-Bresson, Street Photographer

"**Montage** is an editing technique in which a series of short shots are sequenced to condense space, time, and information, which is always a literary, musical, or artistic composite of juxtaposed more or less heterogeneous elements."

Merriam-Webster Dictionary

[1] From Continuous Spacetime to Instantaneous Spacetime - Deconstruct Pedestrians' Perception of Existence

In early June, when people finally came back to normal life after the pandemic quarantine, I got a good chance to record people's public life after quarantine in Chongqing. When I used my camera to record what was happening and capture moments on the street as an absolute observer, I had a completely different feeling from what I had felt before. When I saw the smile of that little girl, I made a direct view connection with her at that moment and I finally figured out what was the situation.

People keep crossing bidirectionally on the sidewalks every day. In this continuous process, most people do not have a persistent focus of this physical environment, and they usually observe the streets in a moving frame of reference, which finally leads to few memory and a vague feeling about the street space and related pedestrians. To be more specific, most of time, in the continuous and moving spacetime on the streets, these pedestrians are not able to perceive the existence of any other individuals, let alone further communication.

Different from normal pedestrians on the streets, street photographers always would like to observe the street space "in a fraction of a second". The observation of moments on the streets provide them an absolute viewpoint to understand the spacetime and the world. Compared with walking people, it is always much easier for a street photographer to have a strong feeling of surrounding environment including people.

Observing the world in a continuous or instantaneous perspective will bring pedestrians different feelings and recognition of the street space and other people there. Creating more moments on the street is a good way not only to reconstruct individuals' feelings about public space like streets, but also to bring more public communication and benefits.

[2] Montage of Moments - Reconstruct Pedestrians' Experience through Narratology

This project explores to build a process on the streets, which could reconstruct pedestrians' experience and make them transfer from a continuous perspective to an instantaneous one, creating moments, connecting strangers together and constructing a good public space.

Montage, the filmmaking technique, is used in this project as an important method to sequence the moments and build a poetic experience for pedestrians. Three phases are designed for a narrative experience: Capture, Focus and The Moment, which lead pedestrians to construct view relations with other people walking in the same direction or in the opposite direction on the other side of the device. Many other public functions like street landscape, shops and small paths could also fit into the device prototype quite well, building a complete public space.

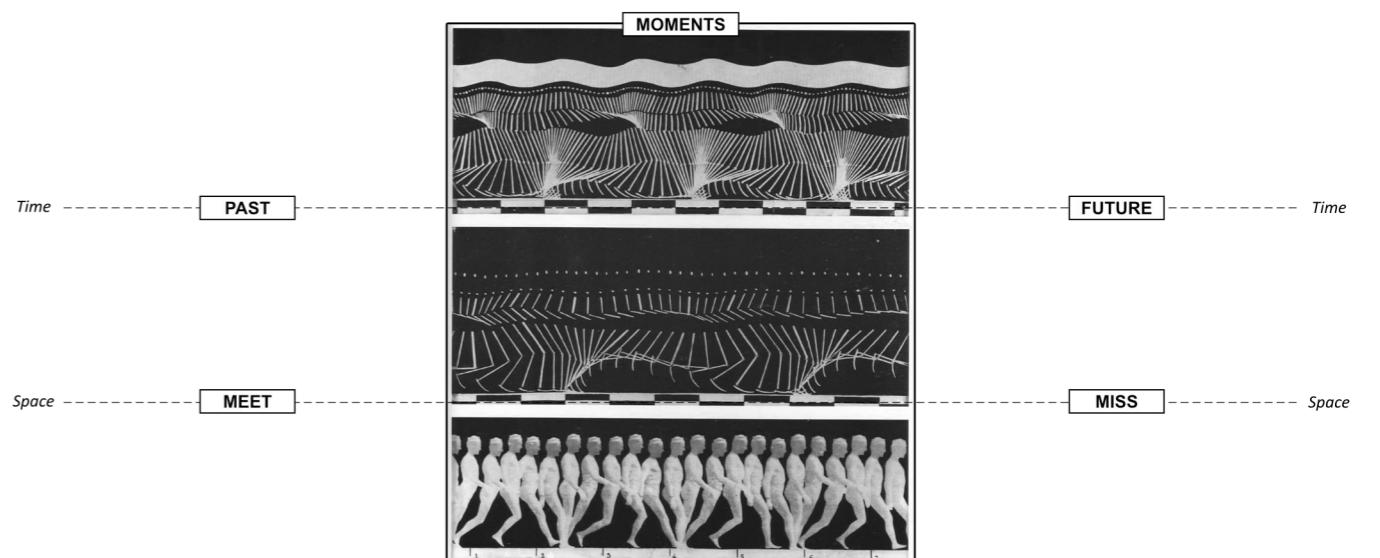
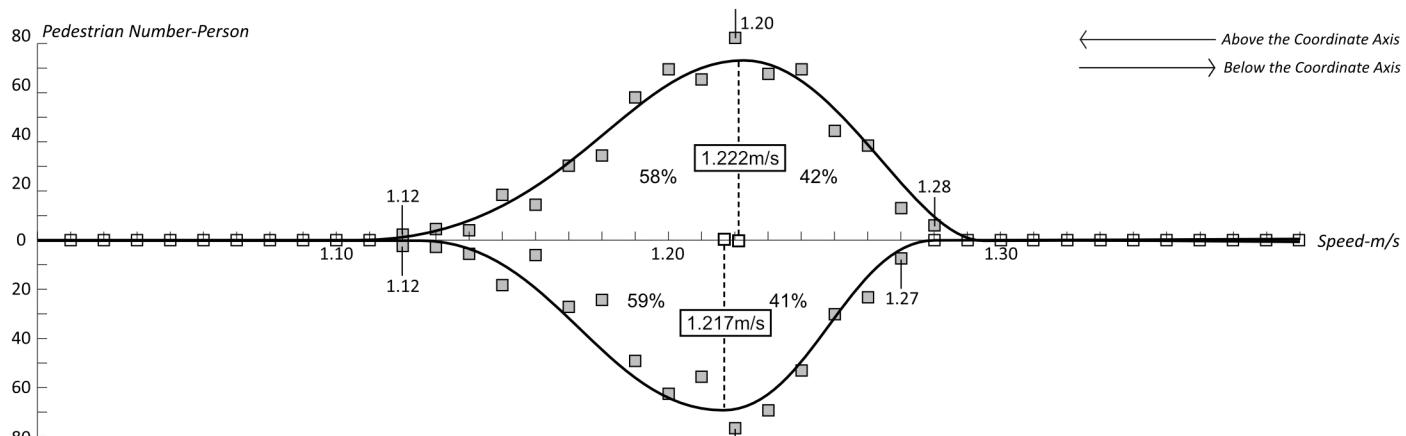
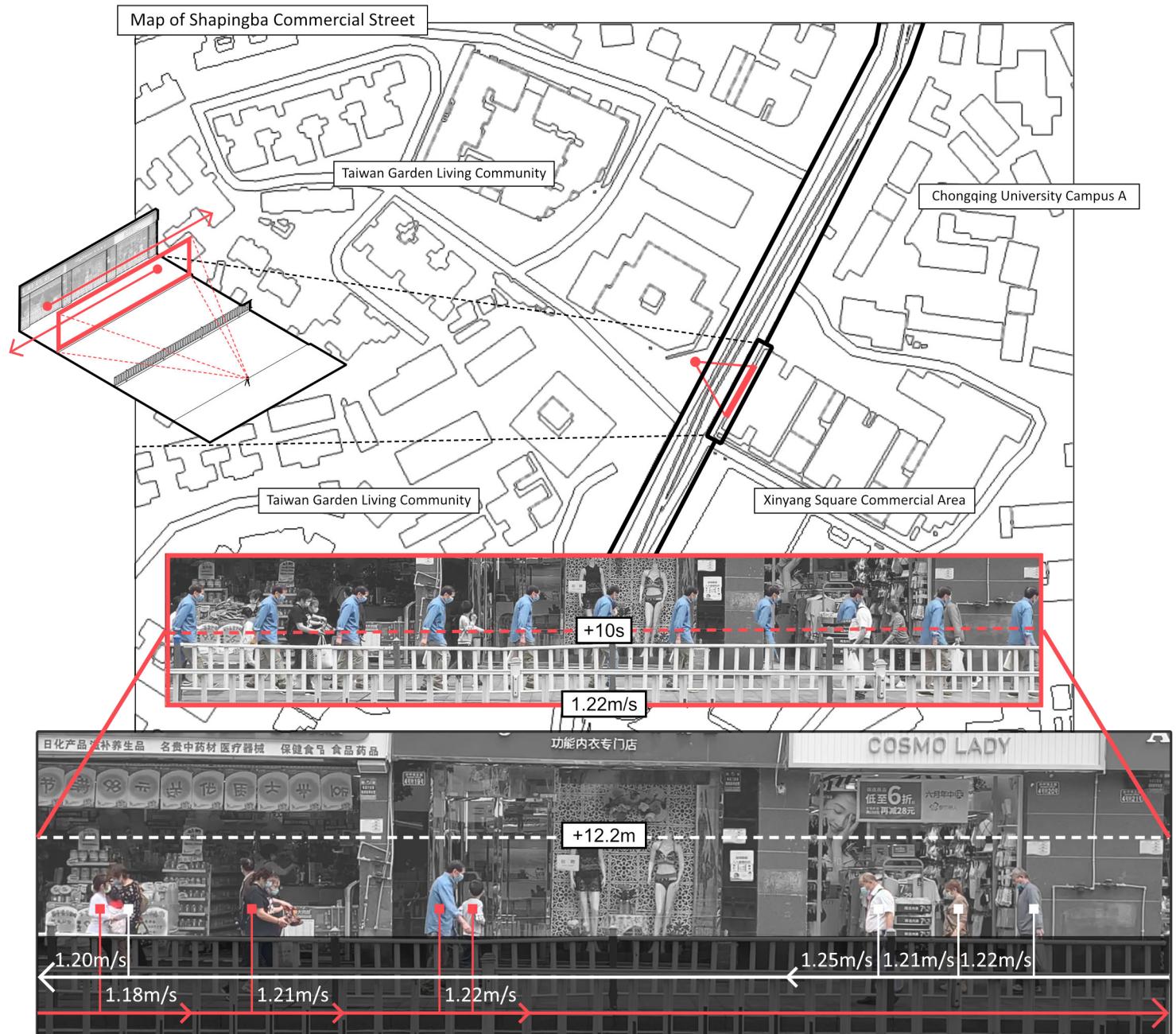


Figure. Analysis Diagram of Chronophotography, Record of Moments, by Étienne Jules Marey (1885)

Pedestrian Speed on Shapingba Commercial Street (Space-Time Reality)

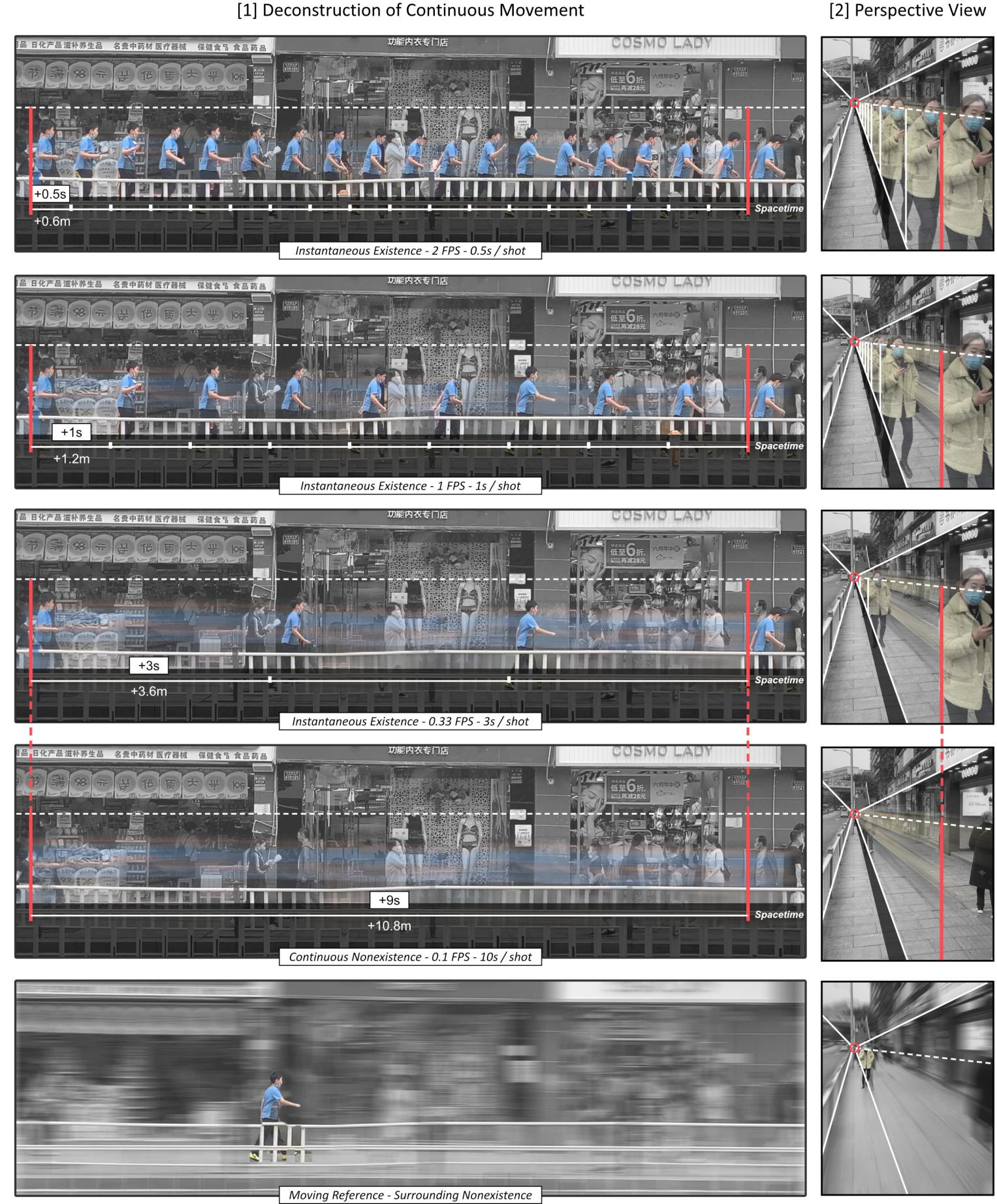
Located in Guilin, Guangxi, Qingshitian changes its water level and water environment every year. During the wet season each year, with rainfall, water levels tend to rise significantly and lakes are connected to surrounding rivers. There are often large numbers of fish and strong currents in the lake, and when there is heavy rainfall, there can be flooding. In the dry season, it's the opposite. The water level drops, fish stocks dwindle, and the water is very calm, with only a small amount of cyclical fluctuation.



Pedestrian Speed Survey in Shapingba Commercial Street during 3:00pm-4:00pm on Jul 11th (Saturday)

Instantaneous Existence to Continuous Nonexistence on Streets (Deconstruction)

Through the observation of the crowd on the street, it can be found that the crowd is constantly moving. In different time scale, the individual person's sense of existence is not the same. When every moment is captured, every detail of human behavior can be found. But when the time scale is enlarged, the sense of human existence will be weakened and finally become nothingness. Viewed from a human perspective, the surrounding streets are empty on a large time scale.



Montage & Time Scale Adjustment - Capture the Instantaneous Existence (Reconstruction)

In order to perceive the existence of the moment in a continuous process, we need to break the process into instantaneous parts and montage different moments to reconstruct a narration. This montage eventually is realized by an operation of architectural space. The montage should be narrative, not just one with average parts. The montage of walking process consists of three phases: capture, focus and the moment. For the fixed-point observation, possible prototype to build this narrative montage could be a wall system to guide pedestrians' visibility of other people.

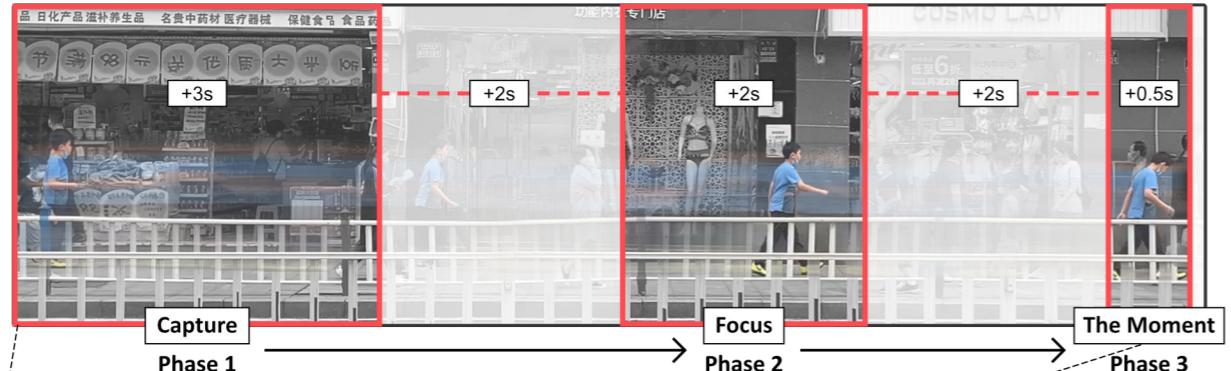
Step 1 Average Montage

Break the continuous nonexistence process by extracting average short segments of it. Then, transform the continuous nonexistence into a narrative montage of instantaneous existence.

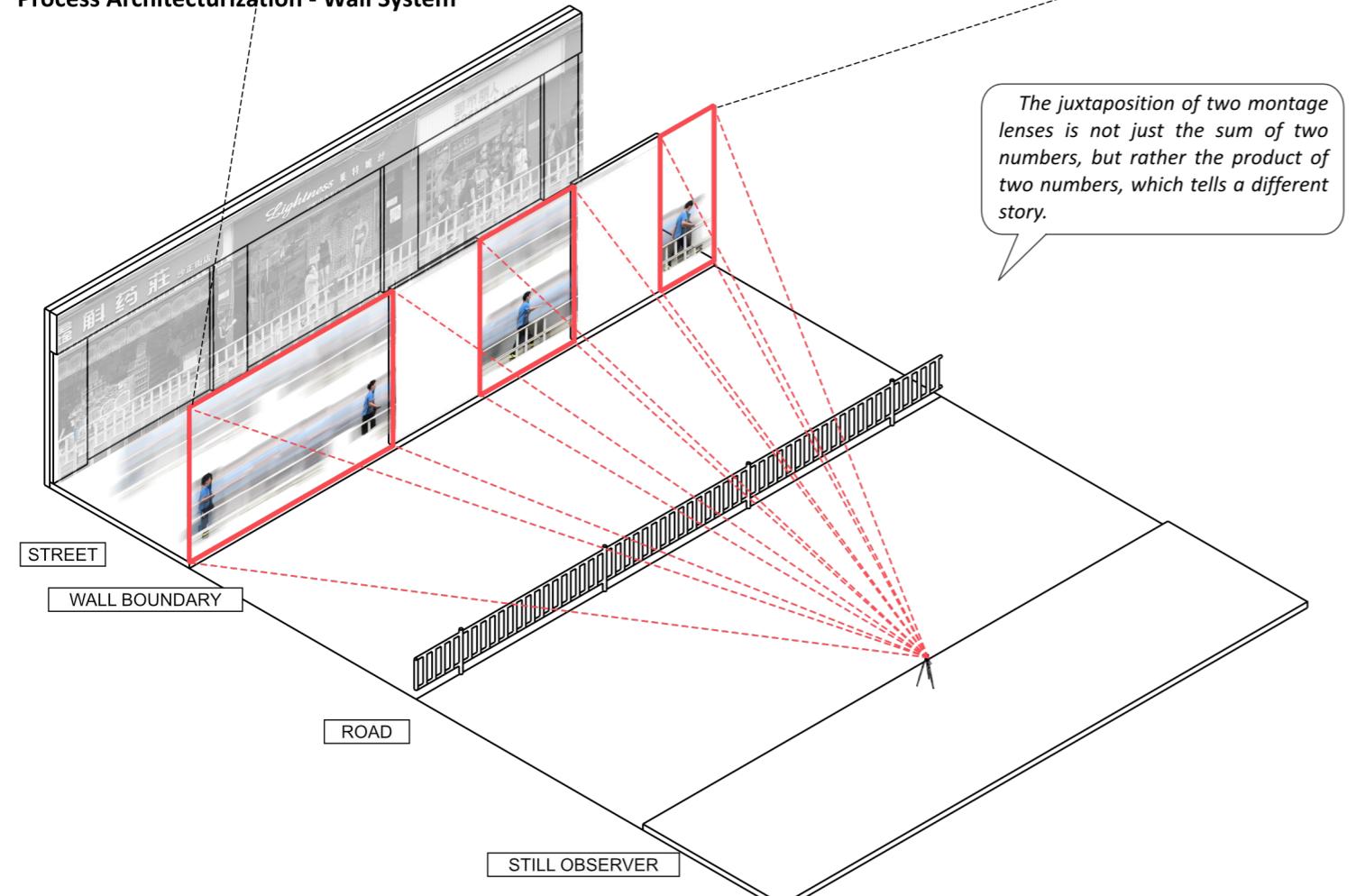


Step 2 Scale Adjustment

It is often difficult to catch a person on the streets where many people walk without a searching process. It takes a gradual process to capture his moment and find his existence.



Step 3 Process Architecturization - Wall System

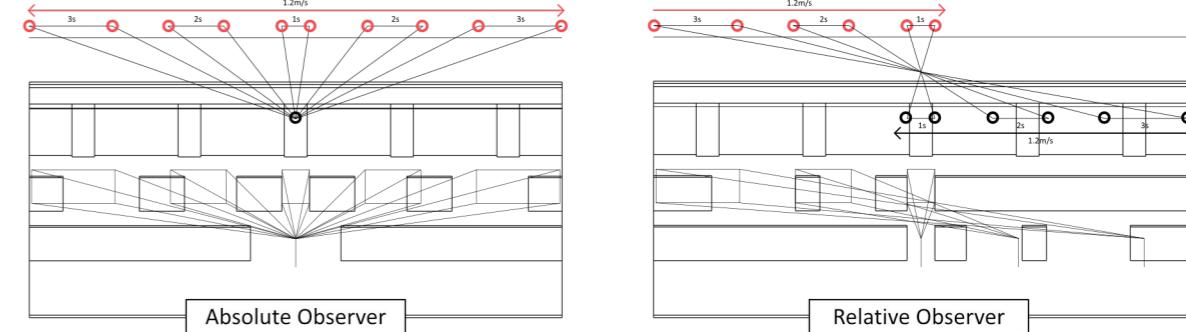


From Absolute Observer to Relative Observer - From Wall to View Tube

The wall barrier is designed for the fixed-point observation, for Absolute Observer. When the point of view changes to the person walking on the street, observation becomes mutual, where there are Relative Observers. In such situation, wall system is a weak shield of sight, and it's not that effective to guide sights for people crossing the street. The View Tube is a great way to guide pedestrians' eyes with consistent and directed shield. Through this way, the narrative experience could be conducted mutually from both sides of the street.

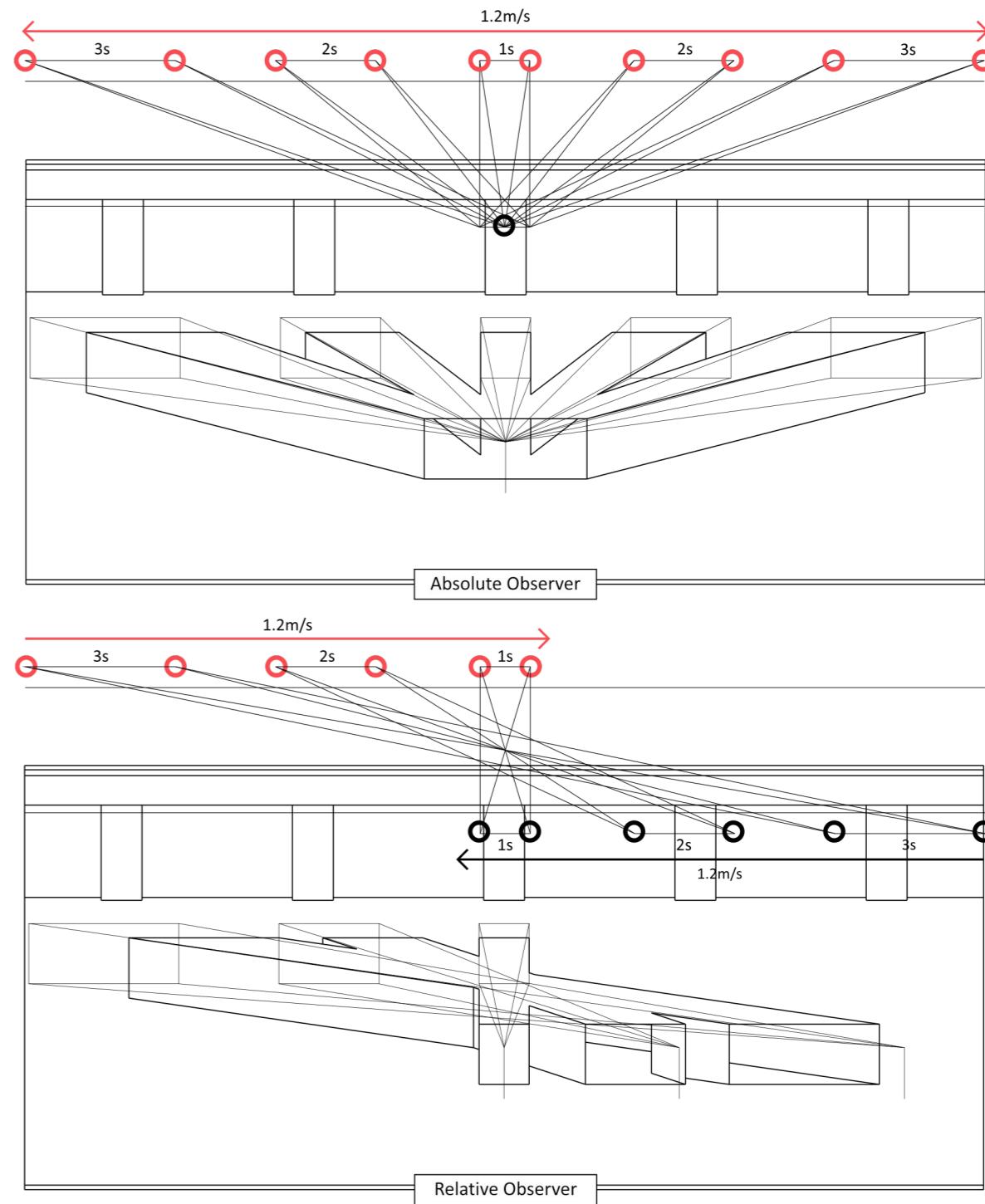
[1] Wall as View Shield

Wall system is an effective way to guide sights of absolute observer with its view framework, but it is useless under a mutual observation situation without a directed view shield.



[2] View Tube as View Shield

View tube system can guide sights directly with a tube for each observation phases, which is a good prototype for both absolute observers and relative observers.

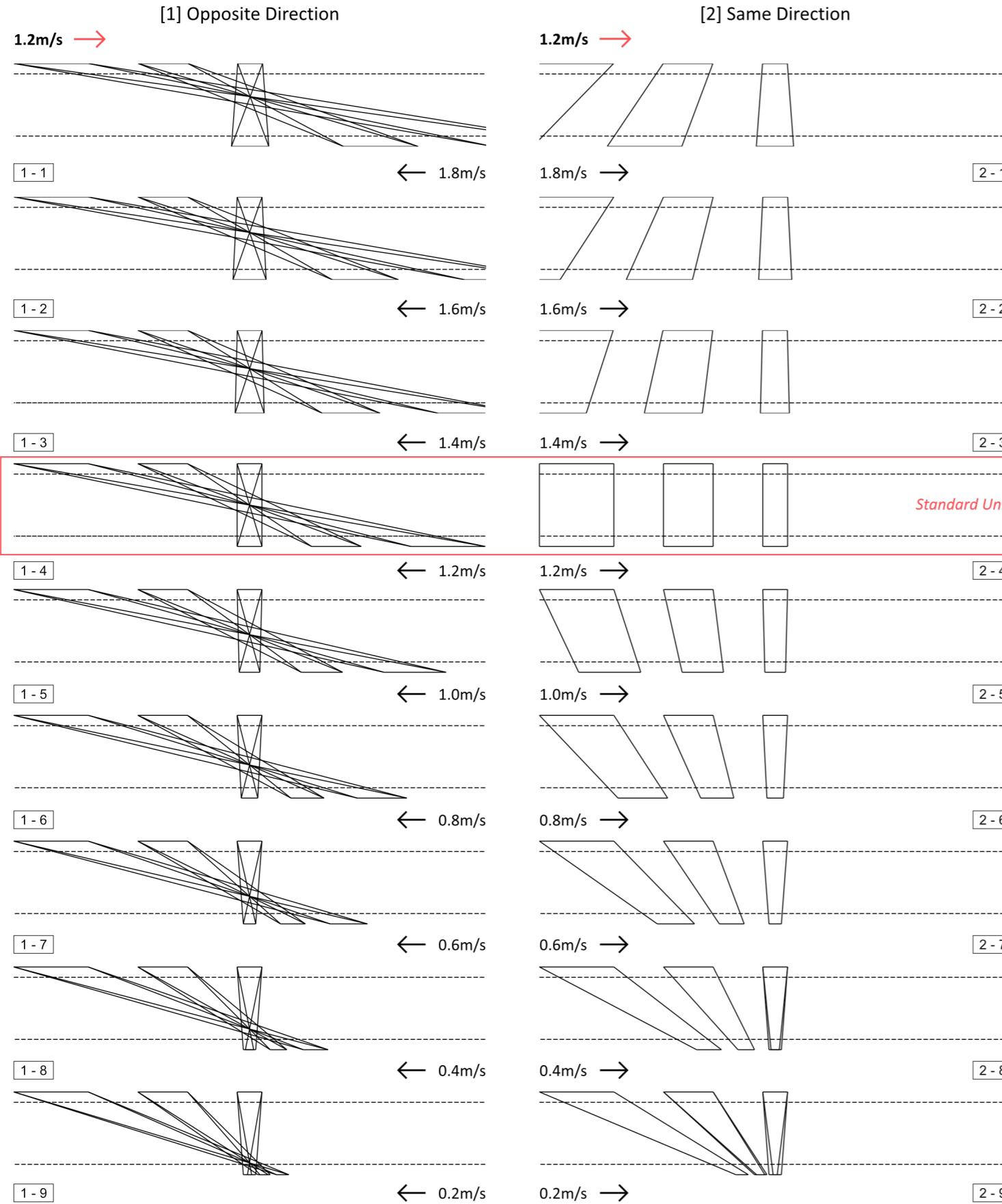


*Absolute Observer & Relative Observer

Different movement patterns provide different narrative experience to people and lead to specific forms, which finally strengthen the observation behavior.

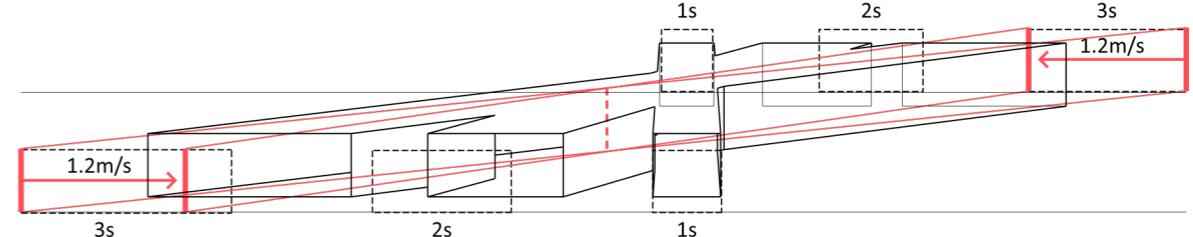
Possible Pedestrian Speed Extension for the Montage Process - Unit Variation

From the site investigation, the normal walking speed of pedestrians on the street is about 1.2m/s. However, the chasing behavior makes it possible for the existence of people with other speed. Those people may accelerate or decelerate if they want to catch up the person they are observing through the view tube device. Different speed will disform the standard view tube defined by 1.2m/s. As some relative observer adjust their speed for catching up the other observer, there come to be one more phase between capture phase and focus phase to explain. In this phase, the observer will see the signal and have time to adjust their own speed if they want to put themselves into the montage process. As different disformation results are provided, the observer needs to change to certain speed.



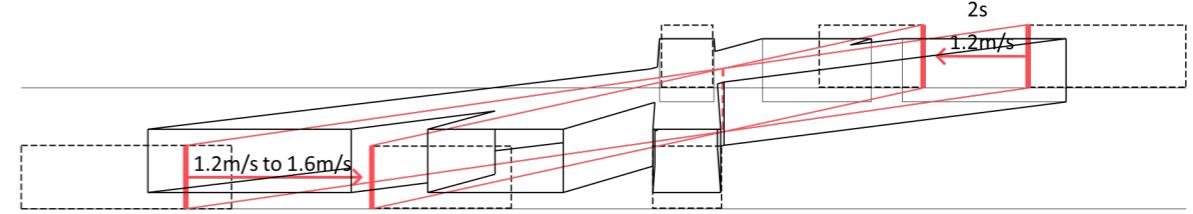
Phase 1 - Capture

In the capture phase, two relative observers both have the normal pedestrian speed 1.2m/s and they can capture each other easily just as a standard view tube. In the capture phase, they have the longest time to search for each other.



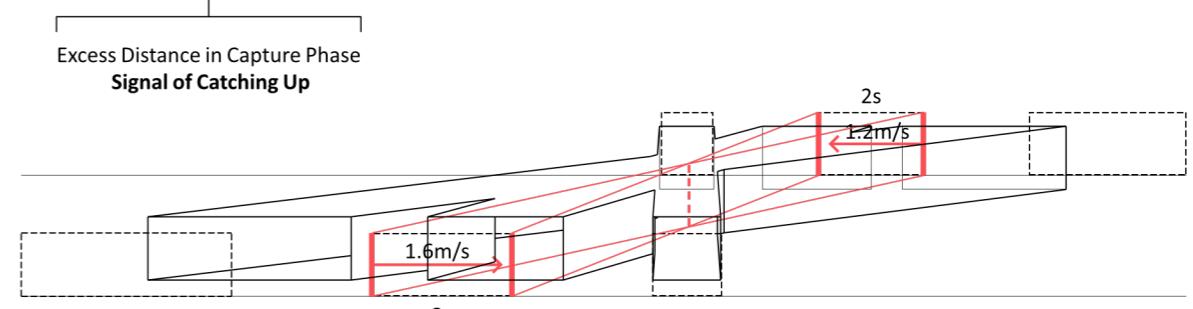
(Phase 2 - Chase)

Once after the capture phase, one observer will find out that he has excess distance of the capture phase frame. In this case, he may accelerate and try to catch up the montage process.



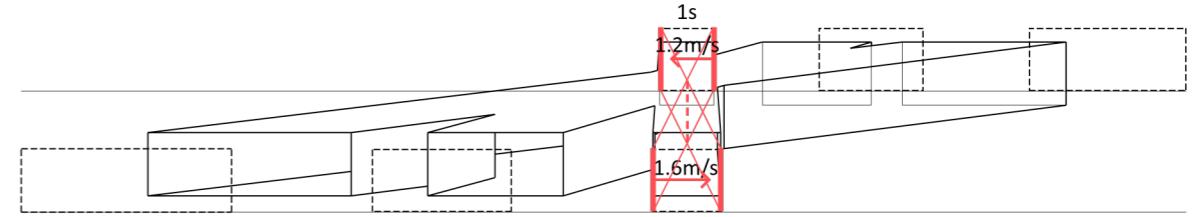
Phase 3 - Focus

In the focus phase, two relative observers will focus on each other in detail after having a glimpse during the capture phase. The phase gives observers 2 seconds to concentrate on each other. This phase is making preparation for the final phase, the moment.

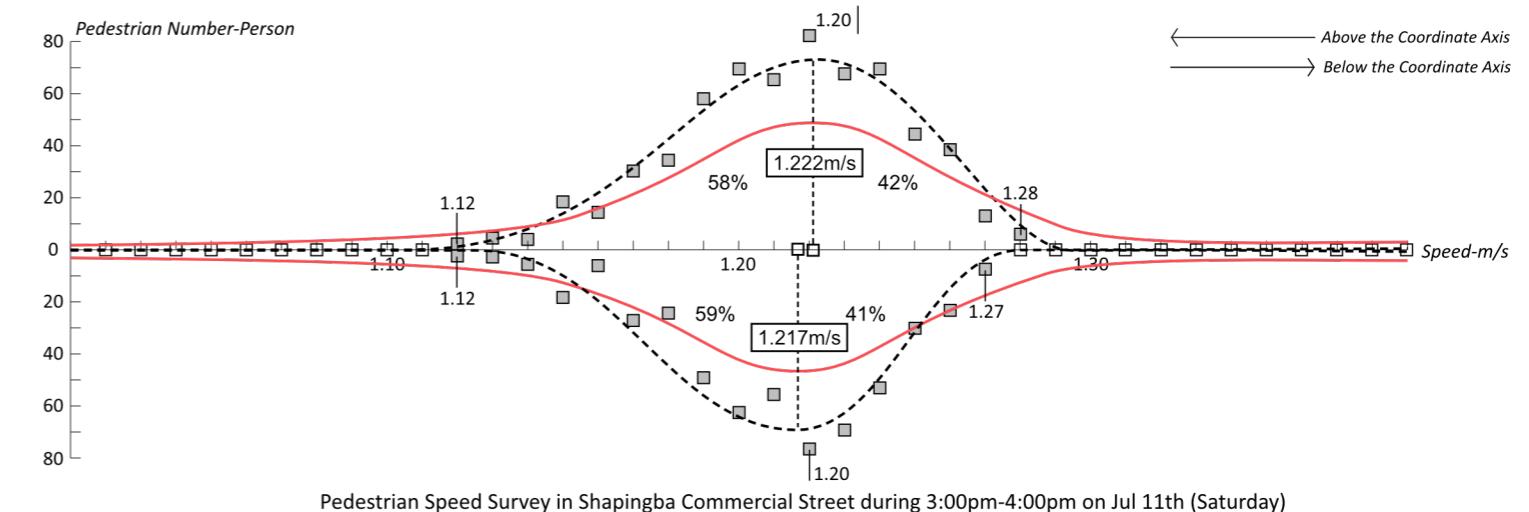


Phase 4 - The Moment

After two-phase long preparation, they get to the closest approach. The moment is much shorter than the former phases, but observers can see each other clearer, which is regarded as a precious moment.



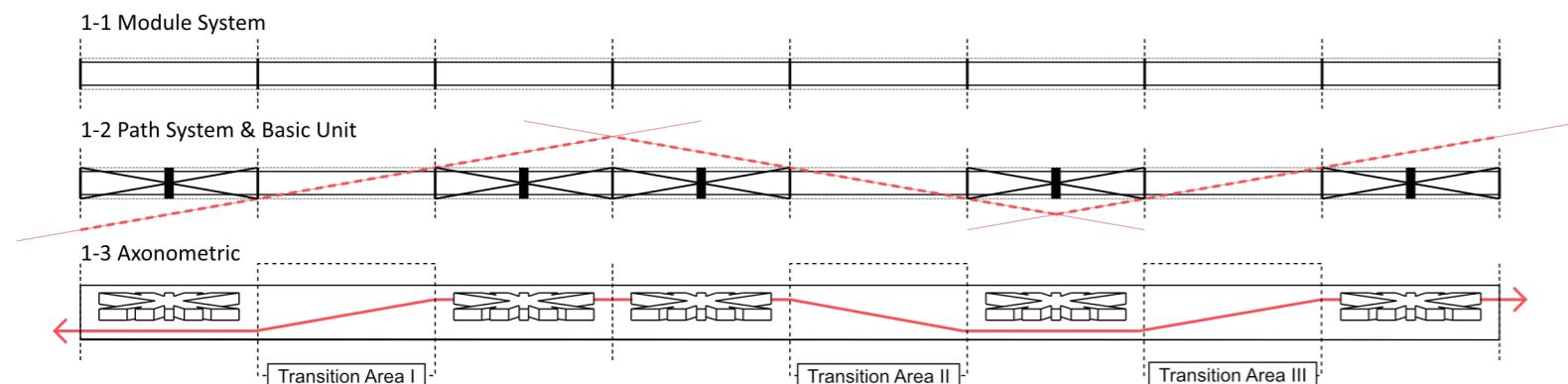
Possible Speed Extension



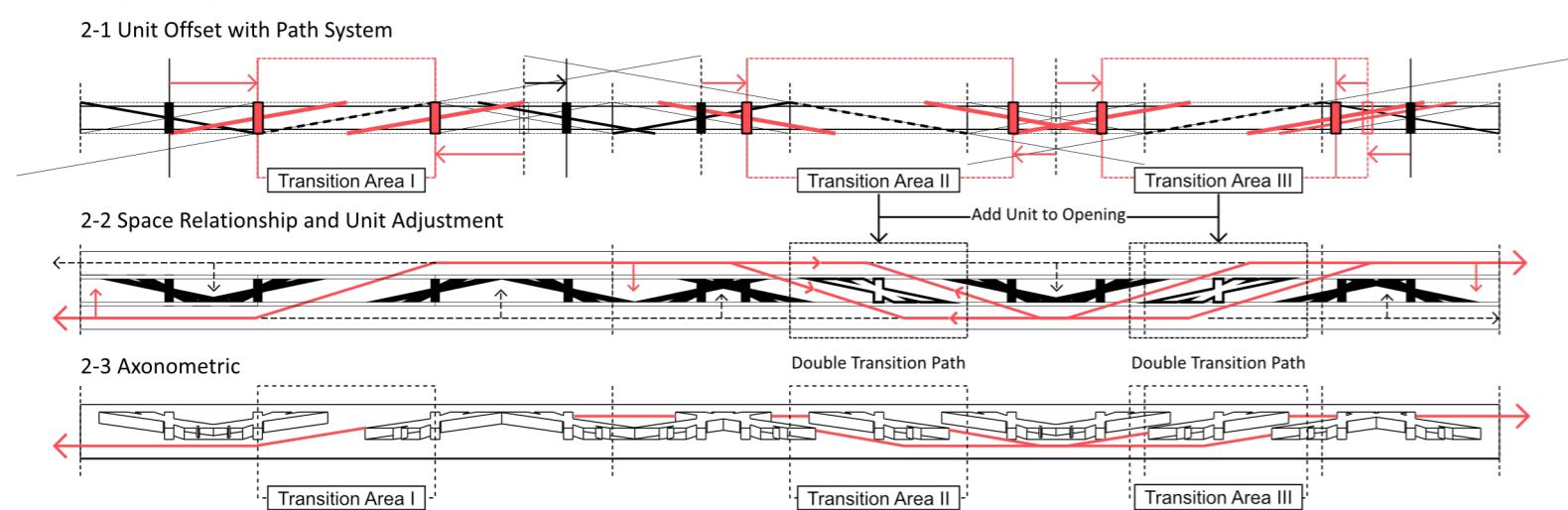
Site Design Generation - Combination Prototype of Unit

Based on the possible unit variations generated from different pedestrian speeds, five design prototypes are formed from the combination of different units. Finally, the site design is generated following certain design steps, based on a module system, to create a systematic and various space experience. The site design finally comes to have certain public functions at different places.

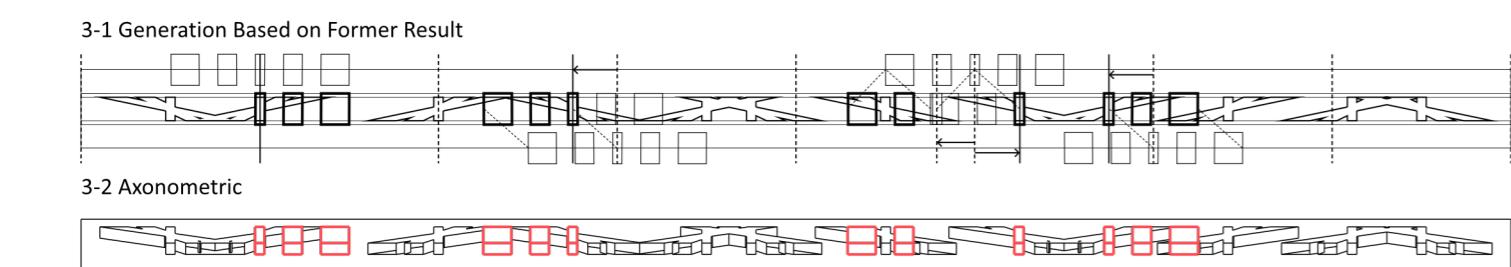
Step 1 - Basic Module and Crossing Path



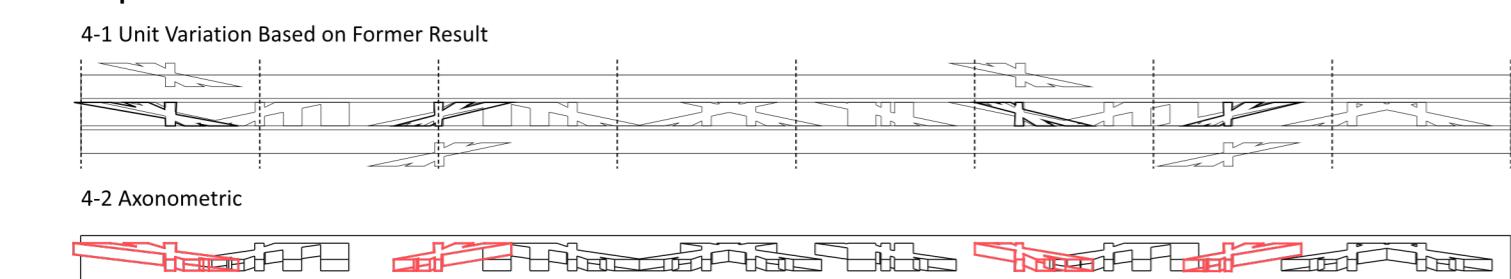
Step 2 - Opposite Direction Part Generation



Step 3 - Same Direction Part Generation

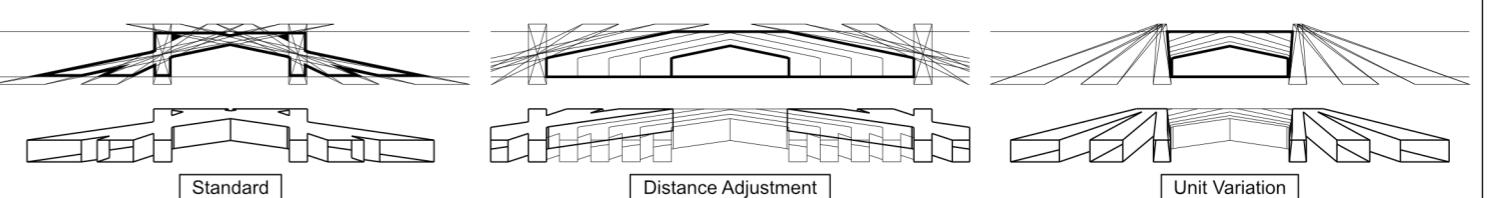


Step 4 - Unit Variation



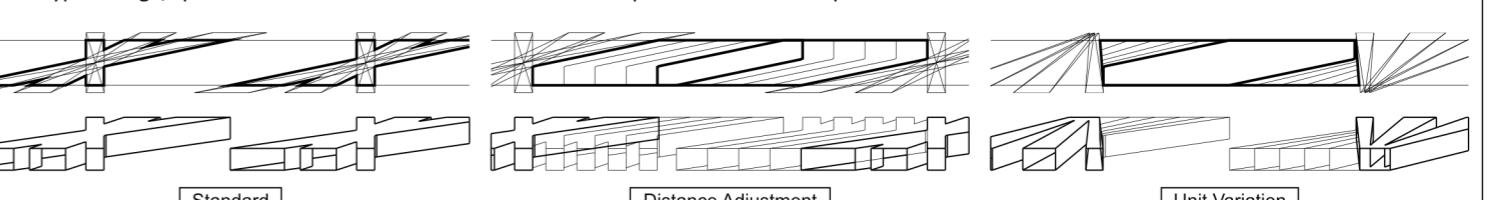
P1 Prototype 1 - Intersection

When two standard units intersect, enclosed space is created with only one side open. Adjustment of distance and prototype can change the form of the enclosed space. Space can fit into different functions, such as public space or grocery store.



P2 Prototype 2 - Parallel

When two standard units are parallel to each other, space for a path is created, which can serve as a part of the sidewalk system. As the distance and prototype change, space can have more functions and serve more possible activities of pedestrians.



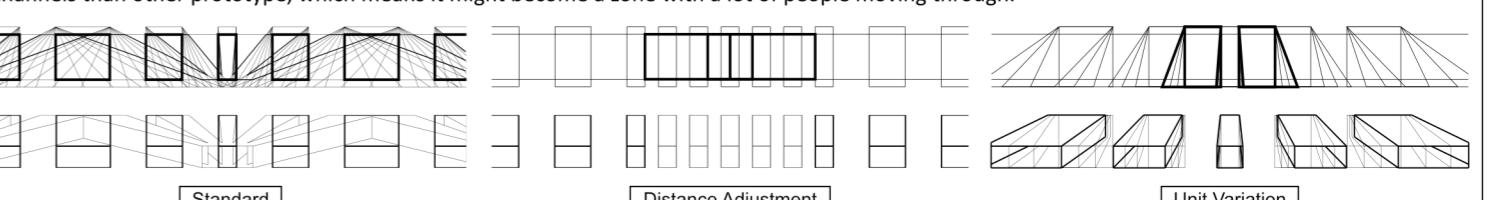
P3 Prototype 3 - Addition of Same Direction Unit

When same direction prototype is added into the combination, a bunch of small spaces are created. As the distance and prototype change, some enclosed space will become more open and even be a passage channel, serving for the sidewalk system or public activities.



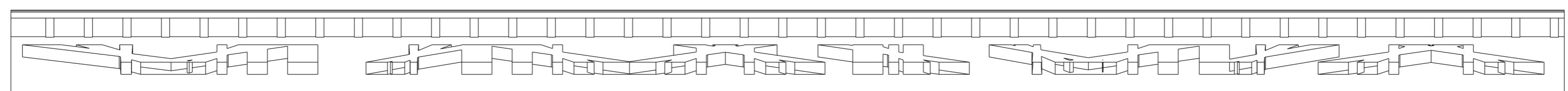
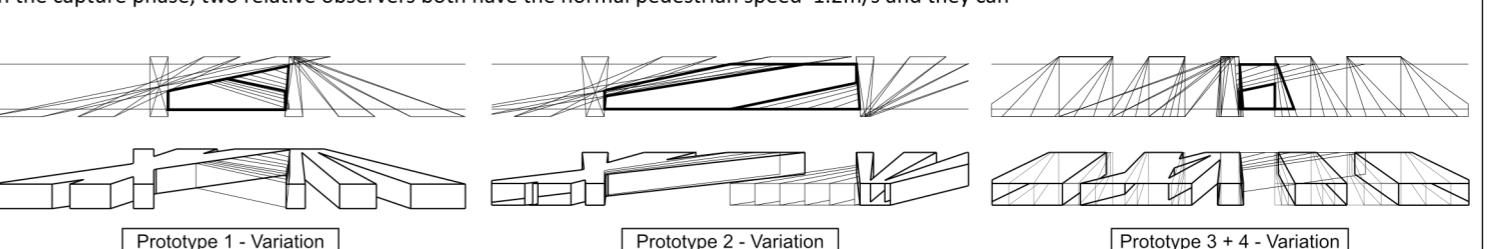
P4 Prototype 4 - Variation of Same Direction Unit

The same direction unit's form is much more simple than the opposite unit and it also could have a variation process. This prototype has much more channels than other prototype, which means it might become a zone with a lot of people moving through.



P5 Prototype 5 - Unequal Unit Variation

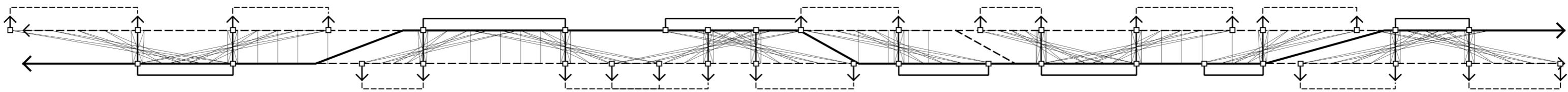
In the capture phase, two relative observers both have the normal pedestrian speed 1.2m/s and they can



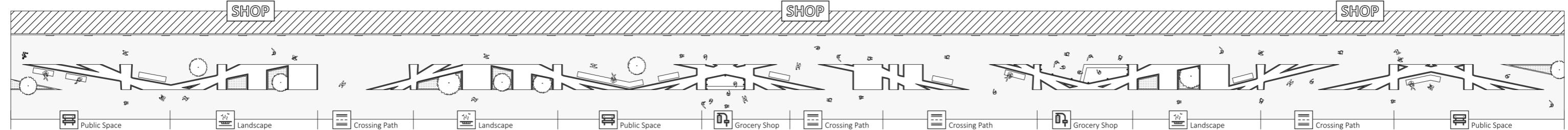
Public Space with Vision Exchange

Different public functions can be combined with this public narrative device, including rest space, landscape and even shops. The insertion of these functions makes this design much more popular among people and have a good sense of place. A variety of activities would be carried out in such a interesting public space. Landscape and shop units could be designed to fit this device quite well in those void space of the design and possible construction drawing is listed below.

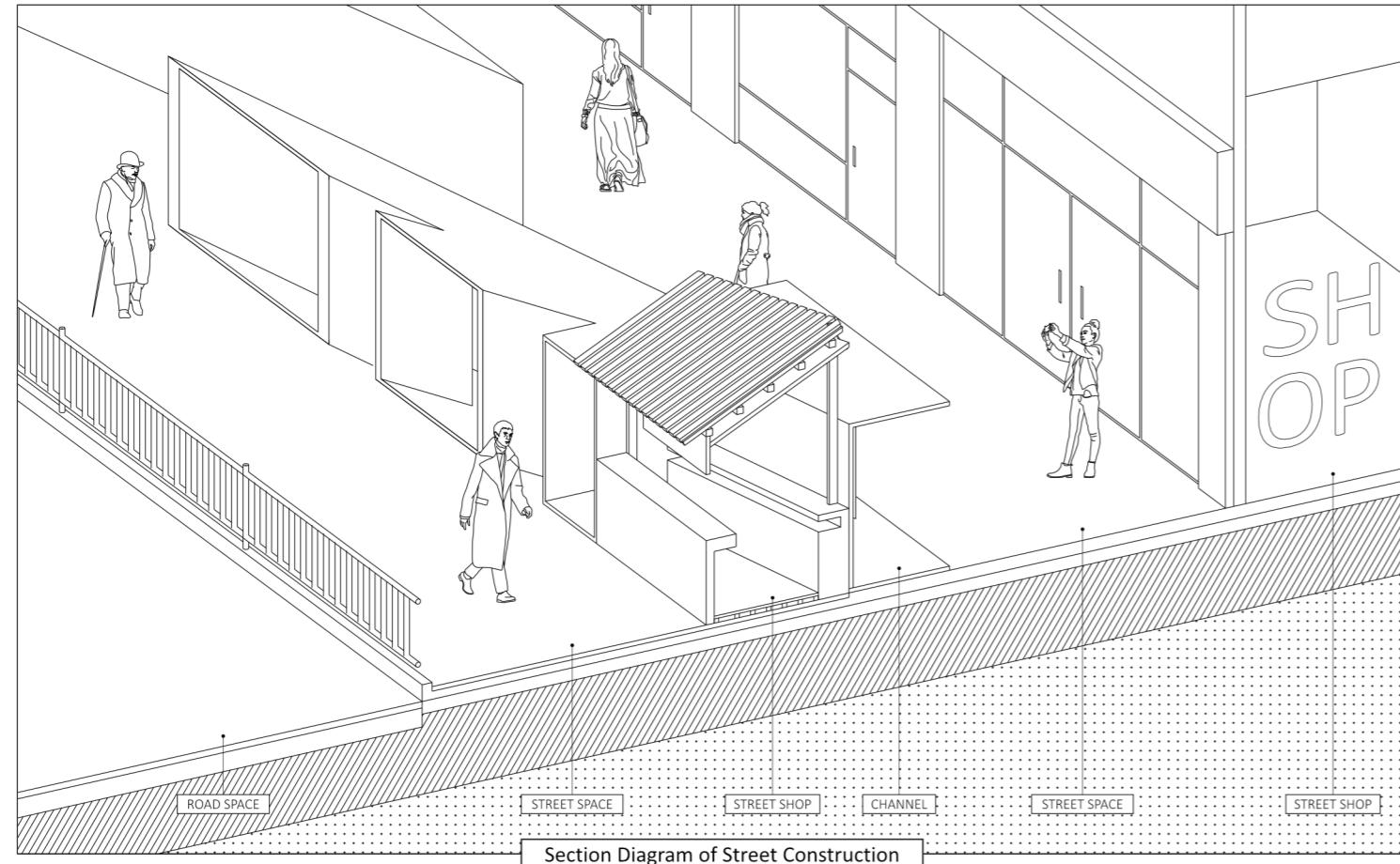
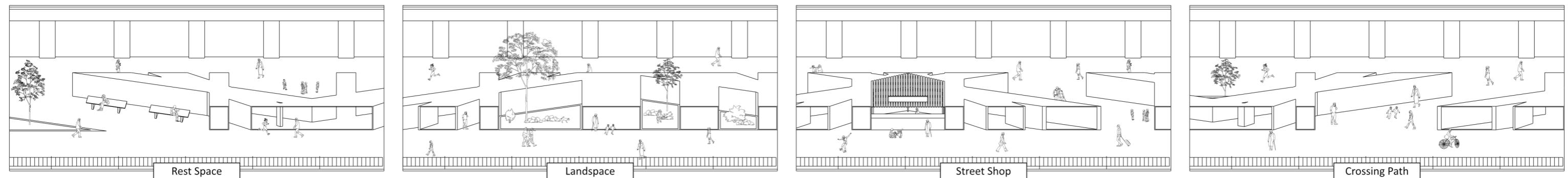
[1] Field of Vision Exchange



[2] Plan



[3] Unit Scenario



Section Diagram of Street Construction



Section Diagram of Street Construction

03 Memory Community

A Memory Factory for Living Community based on Abandoned Factories

Advisor: Yang Zhenjing Teammate of Original Project: Yang Han

Individual Design Development based on Collaborative Studio Work with Yang Han

95% Individual Idea and Drawing

2019 Spring, Chongqing

"**Invented Tradition** is taken to mean a set of practices, normally governed by overtly or tacitly accepted rules and of a ritual or symbolic nature, which seek to inculcate certain values and norms of behavior by repetition, which automatically implies continuity with the past."

Eric Hobsbawm, *The Invention of Tradition*, 1992

"**Community is Imagined** because the members of even the smallest nation will never know most of their fellow-members, meet them, or even hear of them, yet in the minds of each lives the image of their communion."

Benedict Anderson, *Imagined Community*, 1991

[1] Community Production Mechanism - Deconstruct the Replacement of Public Community in China

Based on the community theory of Anderson, the imagined community is not a type of community, but a cognitive process to perceive the existence of the whole community. The process is stimulated by repetitive self-organized activities and traditions, and it is also a part of the community production. Without related process, community may not be built or formed successfully.

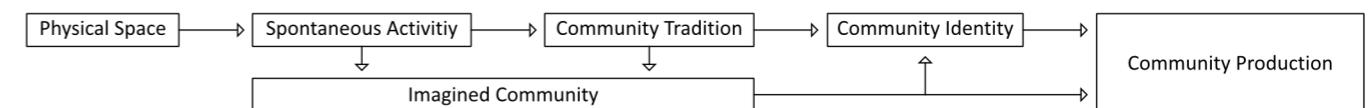


Figure. Community Production Process based on the Imagined Community Theory

When we try to use the community production theories to understand status quo of nowadays physical public community in Chinese cities, we could find that real estate is the most common and modern community built with strict capital interference and calculation, which finally makes it fail to be a good living community. Generally, the developer will not care about whether residents in the real estate living community do have the same spontaneous behaviors, interests or traditions with other residents or not, based on their business benefits. On the other side, residents also don't have the right to choose their ideal neighbors. Moreover, out of economic thoughts, real estate is always designed to be a block with lots of compact living units without large public living space and open boundary to other street blocks. All these factors lead to the lack of self-organized activities and traditions in most real estate living communities in China.

Internet community is replacing the living community to serve as a public sphere, as the real estate living communities are not built successfully. Although with some limitation to the global internet, the internet community and several domestic social media provide open platforms for citizens to have spontaneous discussion and invent internet-based traditions for their online community. The internet community is also one with commercial mechanism, which is not a system with strict capital control and interference, making netizens have better chances to generate repetitive activities and traditions and finally build a community.

[2] Memory Factory as a kind of Medium - Reconstruct Physical Community through Community Imagination Construction

This project explores to reconstruct the local physical community based on the imagines community theory. Through the community imagination construction, physical community is expected to be built within a series of mechanical processes. Each mechanical process in the imagination construction is based on Production, Transportation, Exchange and Storage of citizens' individual memory.

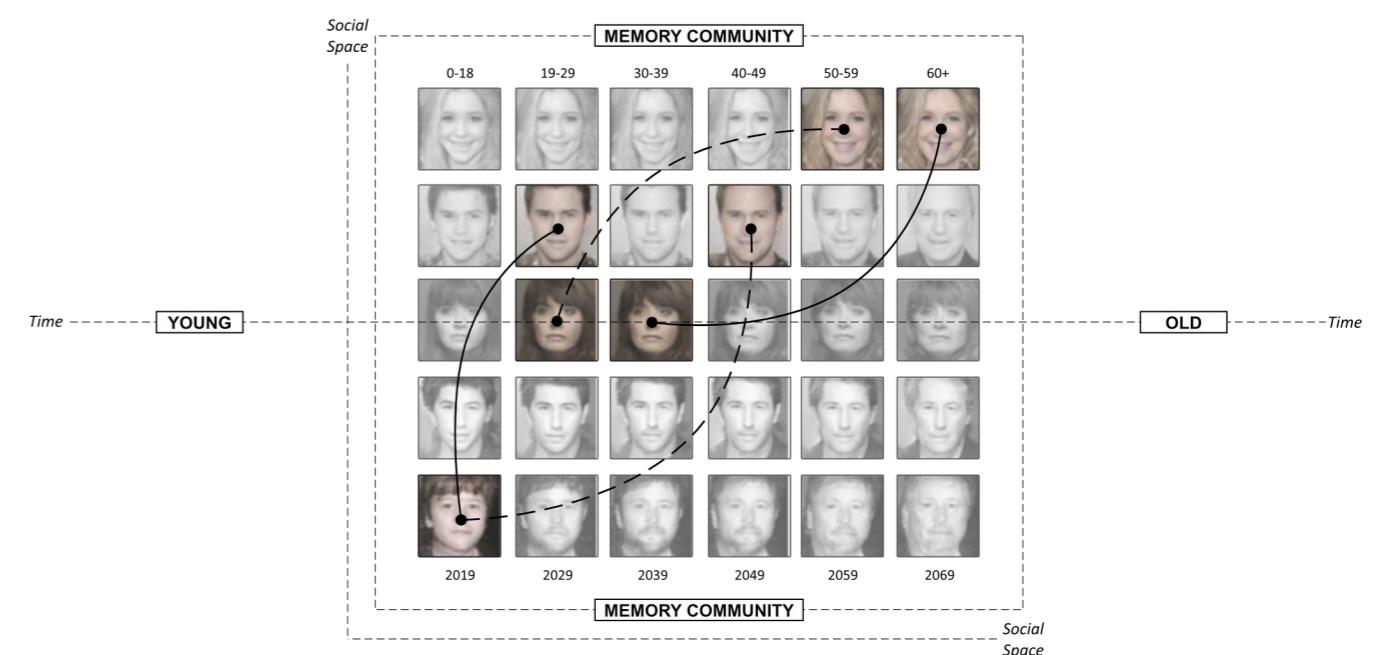
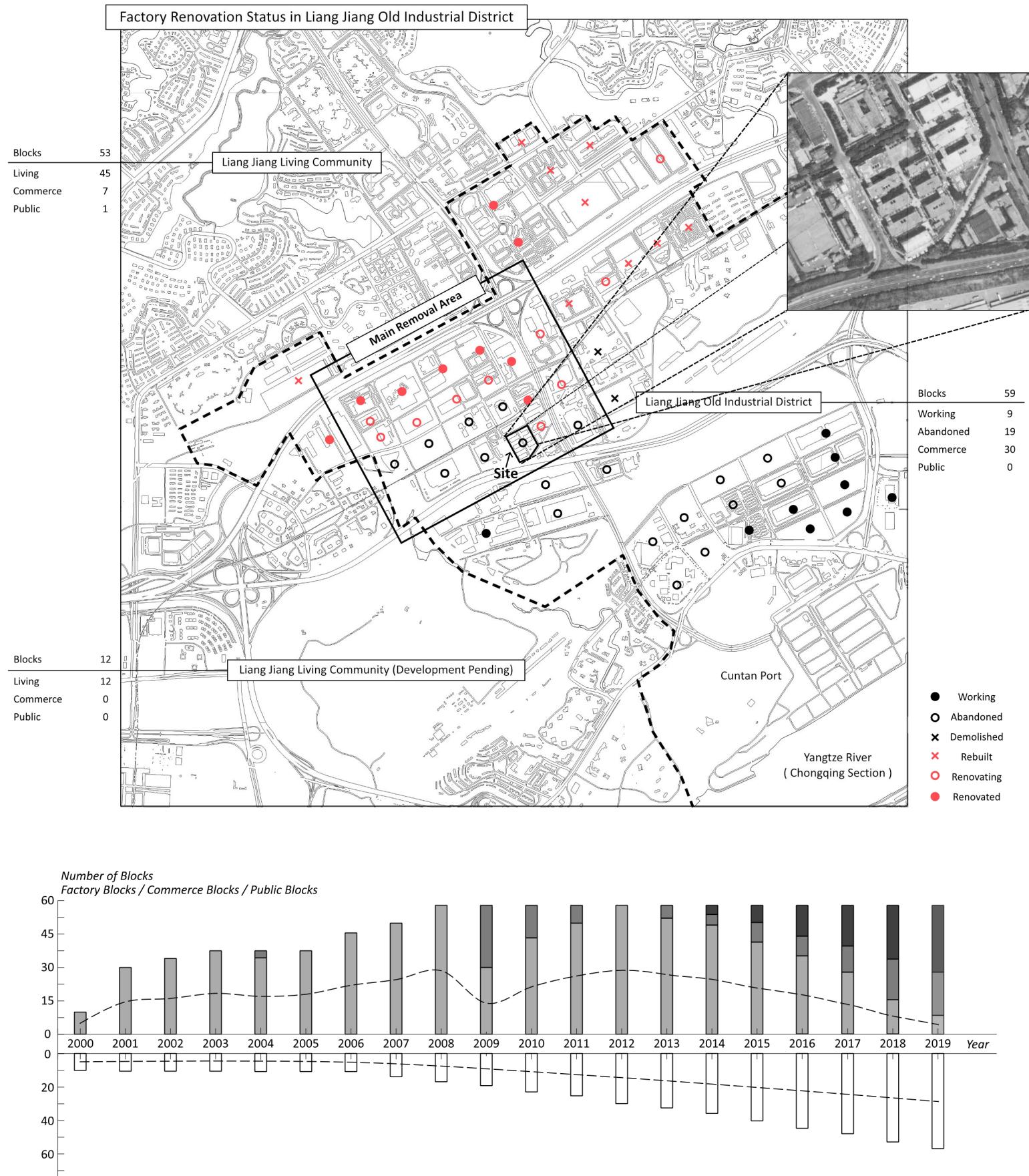


Figure. The Connection among Citizens in Memory Community crossing Space-Time

Removal of Industrial District and Growing Real Estates in Liang Jiang New Area (Space-Time Reality)

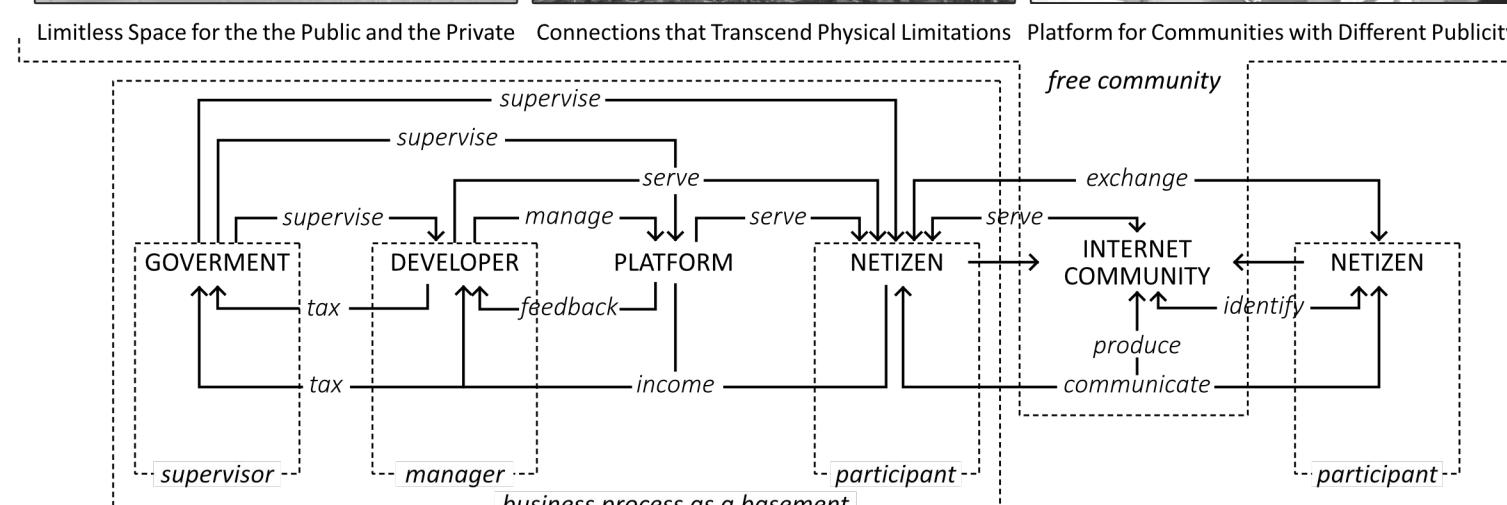
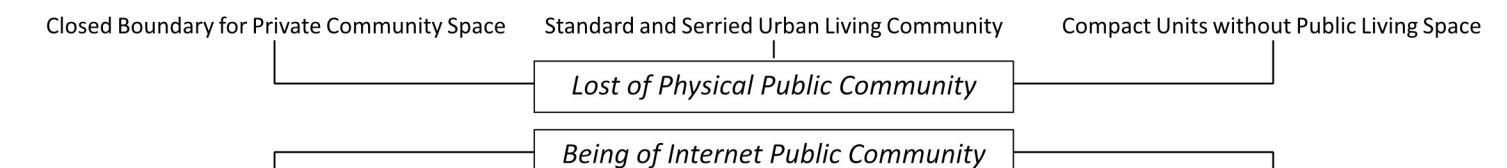
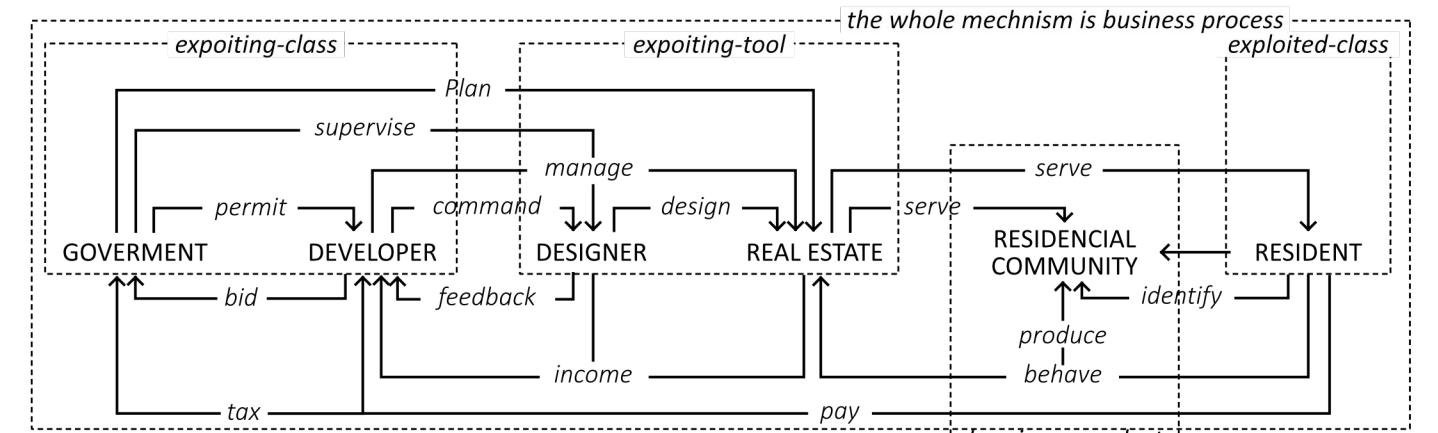
With the expansion of Chongqing's urban boundaries, the old industrial area, Liang Jiang New Area are facing migration and are gradually replaced by modern high-density residential communities, the real estates. Many industrial plants have been demolished or renovated to serve new residential communities. In this process, many old Danwei (working unit) communities built around factories will be or have been replaced by residential communities, and public community relations in the region are faced with new organization and planning.



The Lost of Physical Public Community in the Real Estate and Internet Development (Deconstruction)

China's real estate industry is a pure capital housing system. In order to gain more economic profits, developers often try to cram as many residential units as possible into a limited area. As a result, the design of settlements tends to become utilitarian and mechanistic, which indirectly reduces the possibility of physical public space and communities construction. The development of the Internet industry has provided another possibility for the establishment of regional communities. Eventually, community space in Chinese towns and cities is being shifted.

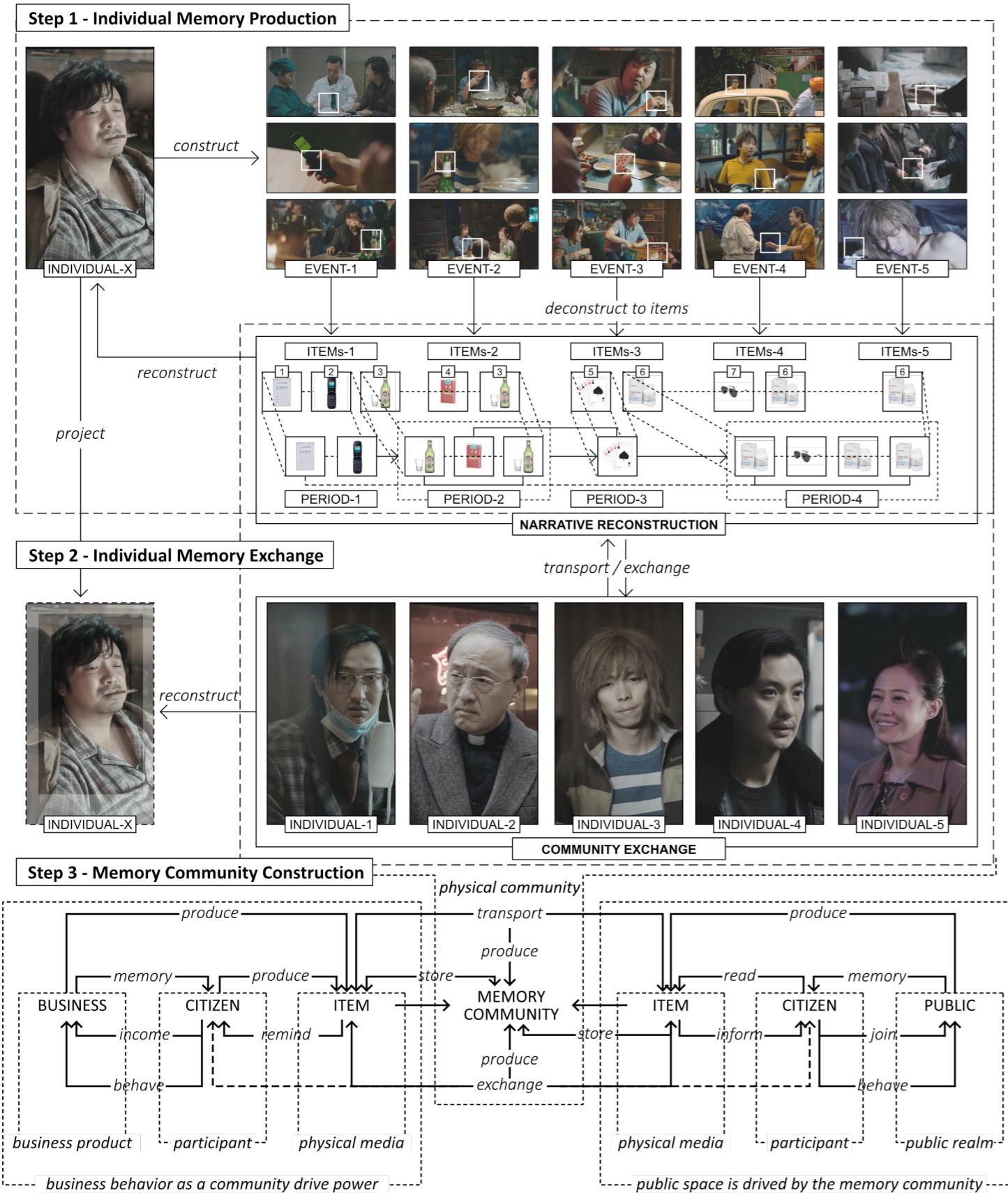
[1] Modern Urban Real Estate Mechanism Leads to Exploit of Public Interests



[2] Internet Replaces the Missing Public Community because of Free Open Community

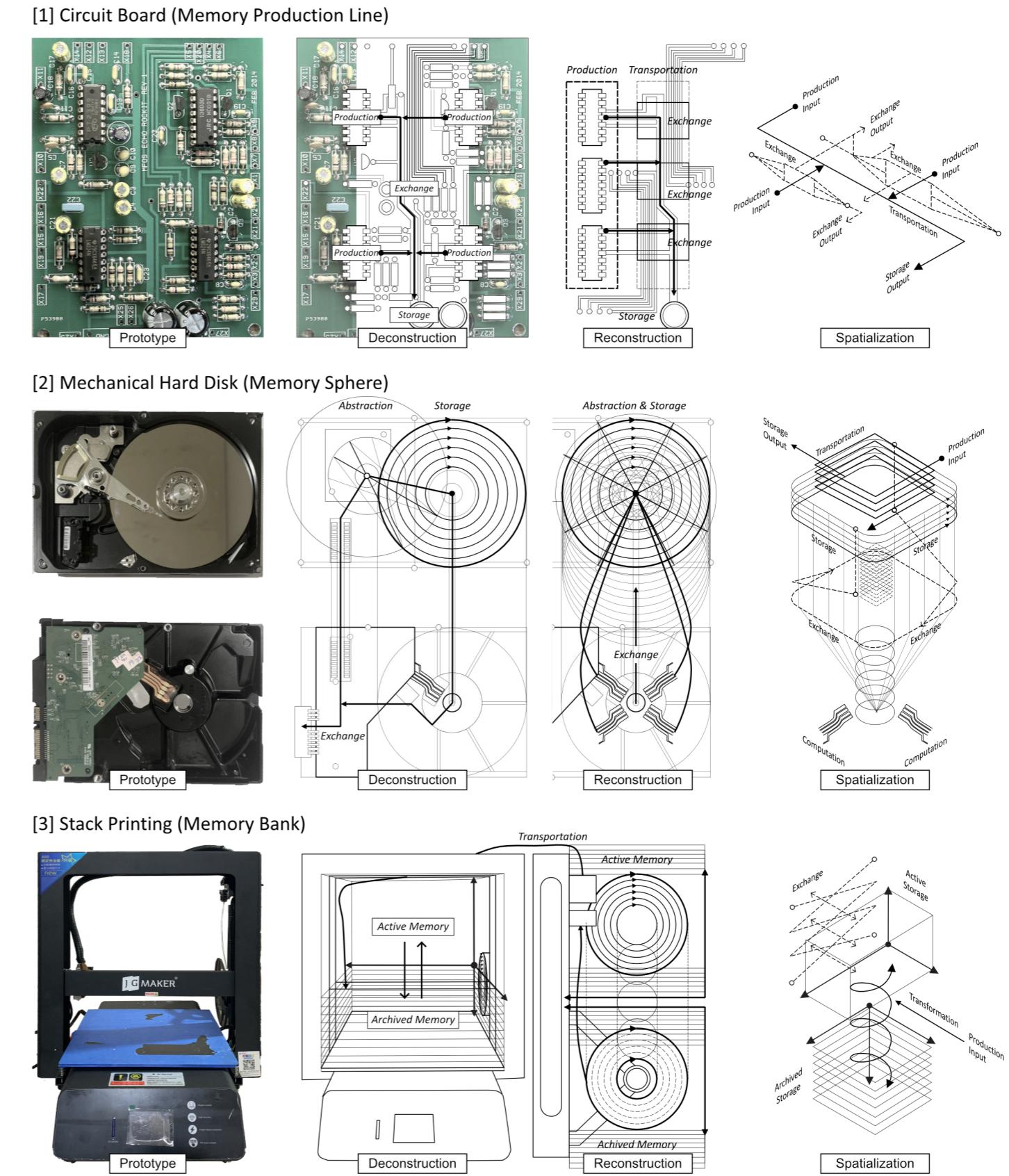
New Physical Public Community based on Individual Physical Media Memory System (Reconstruction)

This design attempts to propose a new model for the establishment of physical public communities. In an era where human connections are being virtualized, the production of personal material media connects people in a physical way. The production of physical media is based on individual memories and experiences, which are reorganized and then transported, exchanged and stored to complete the construction of the entire physical public community. Community behavior is defined as a series of mechanized processes that help individuals to perform community imagination and complete community production.



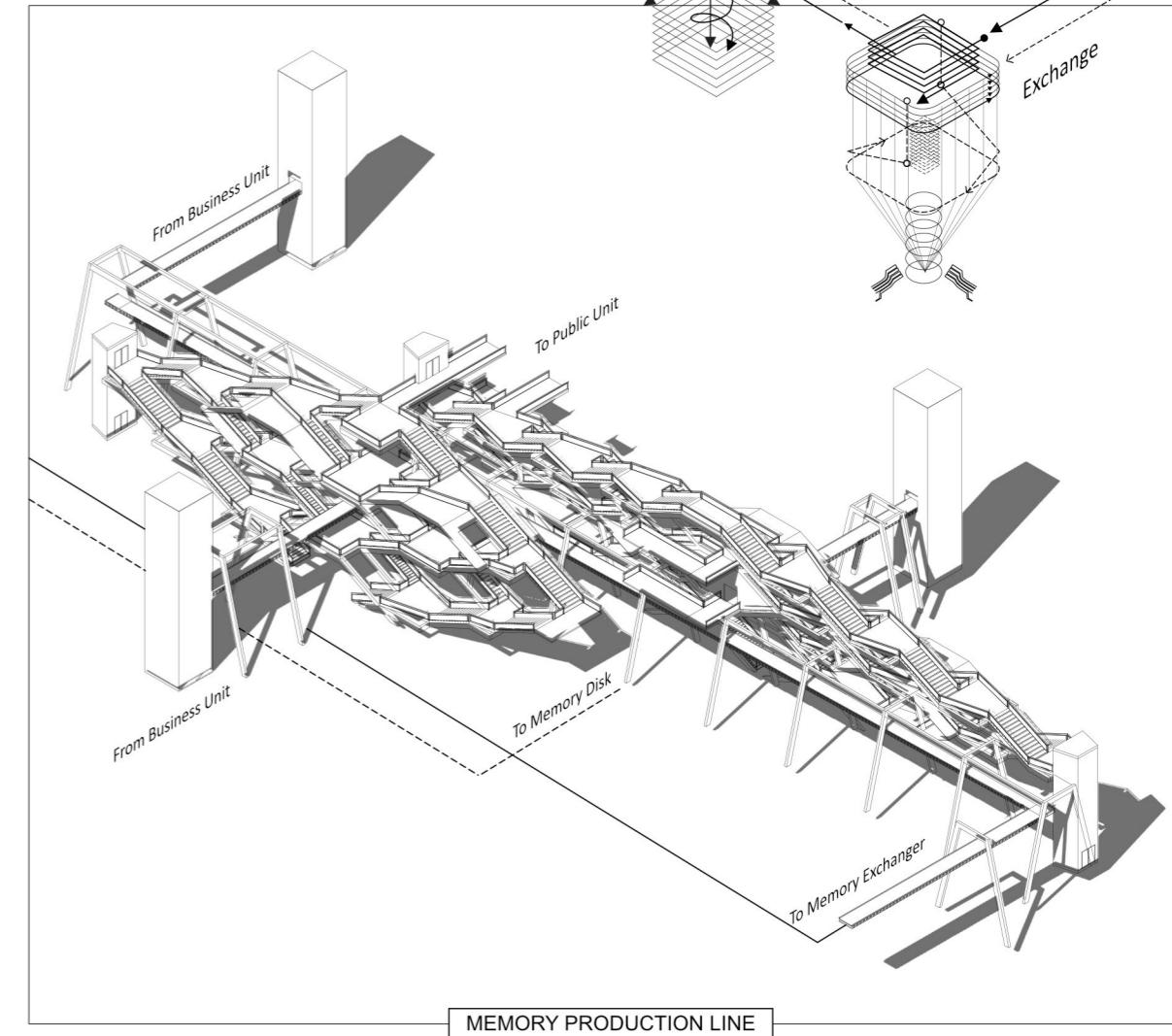
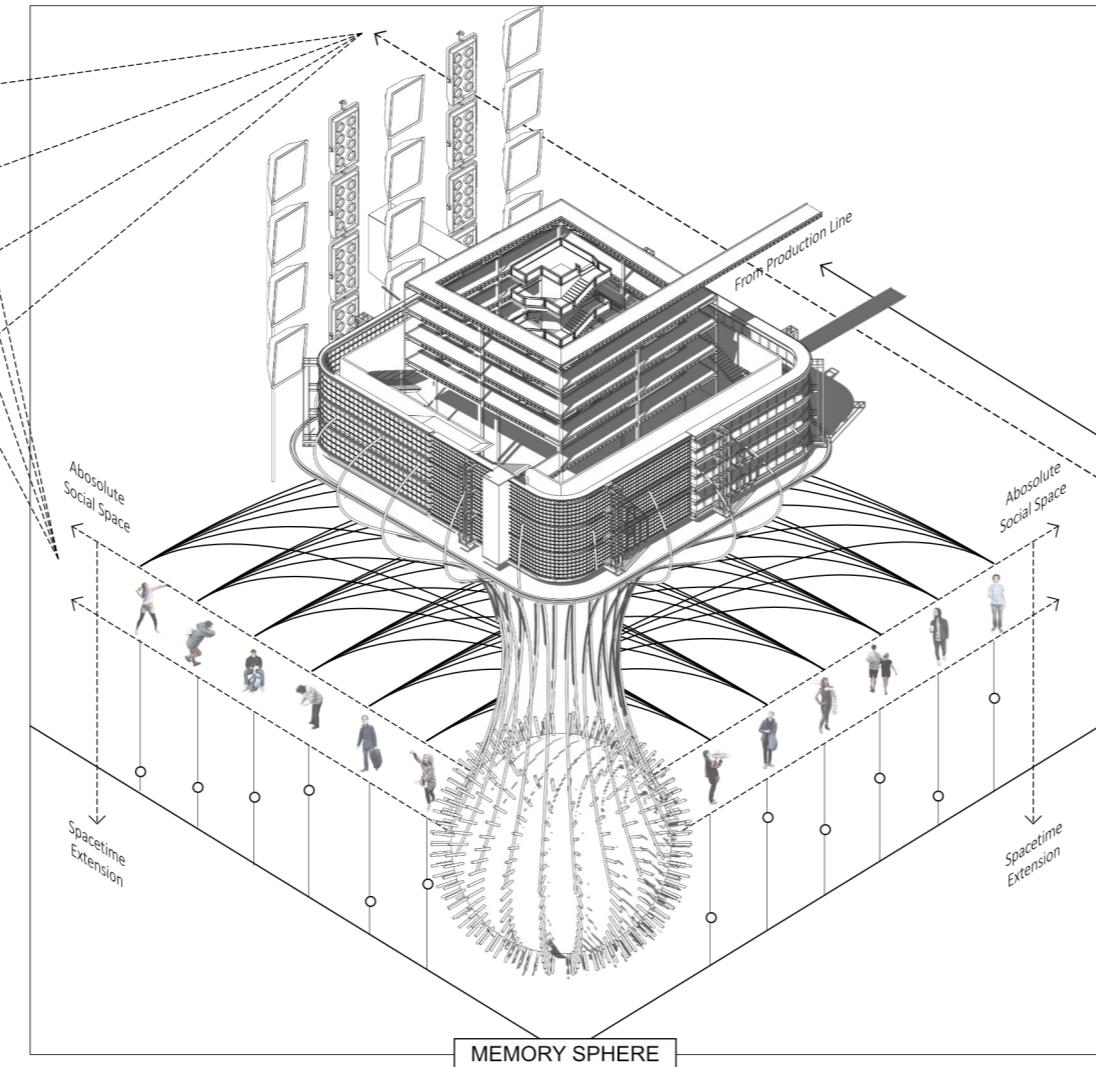
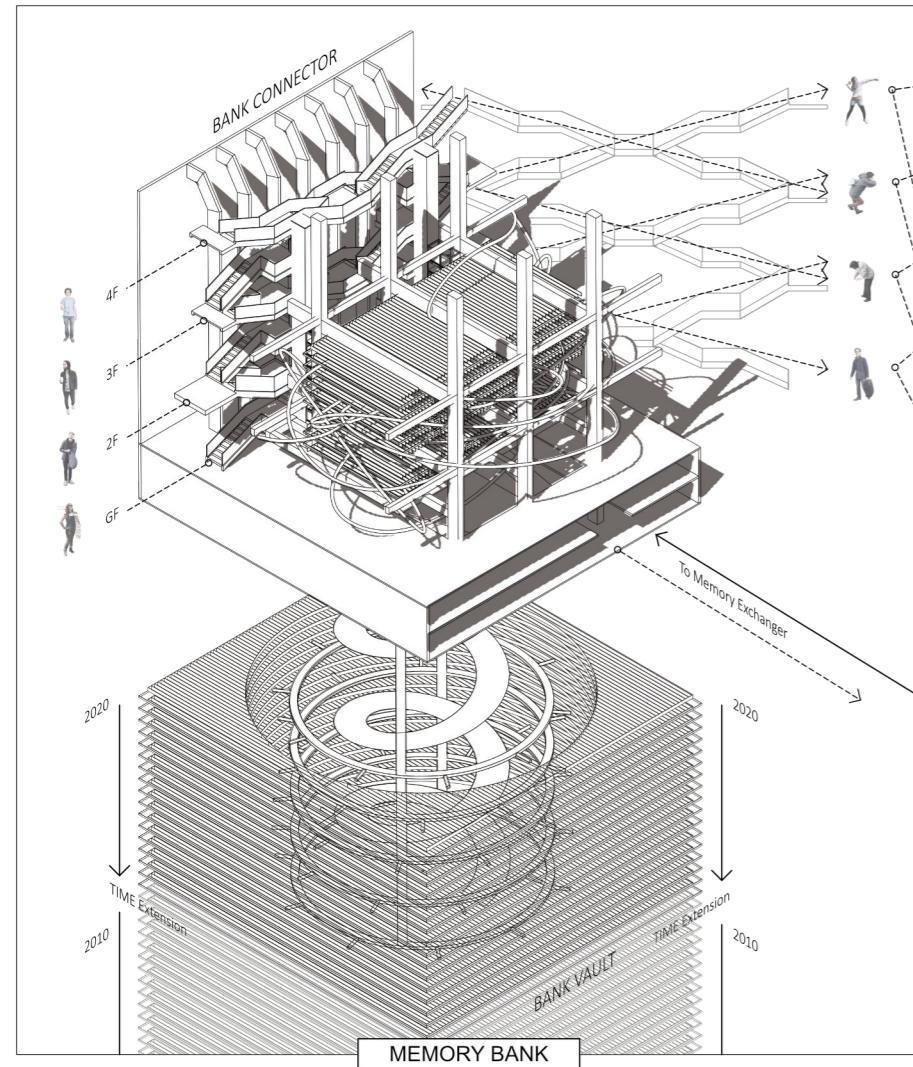
From Medium Prototype to Community Space

The specific spatial mechanism in the design stems from the systematic study of memory media. Through the deconstruction and reconstruction of three typical memory production media, namely circuit board, mechanical hard disk and stack printer, the prototype of mechanical process with production, transmission, exchange and storage as the main core steps was obtained and spatialized, finally becoming an important part of community space. These prototypes are pieced together and organized on the whole based on the community production theory, and finally form the whole memory community system.

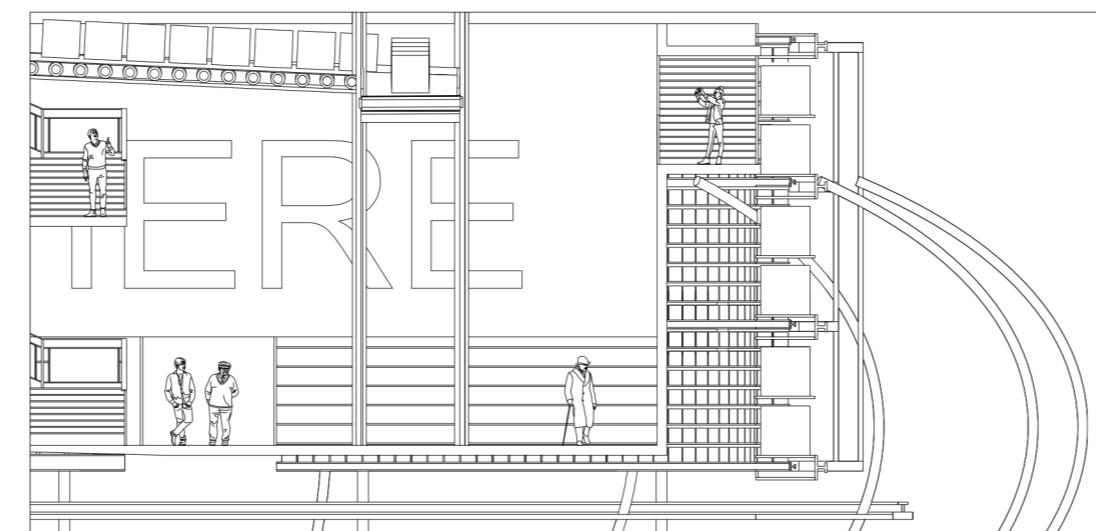
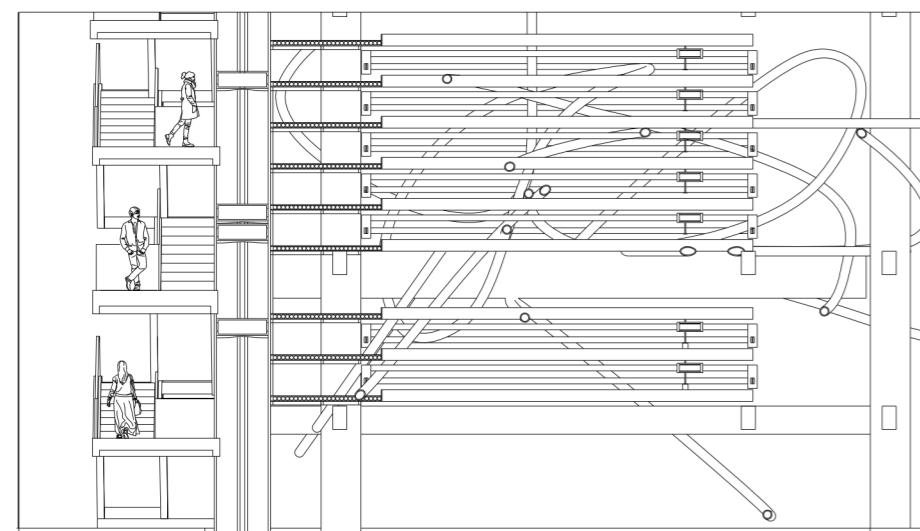


Memory Community System Reconstruction

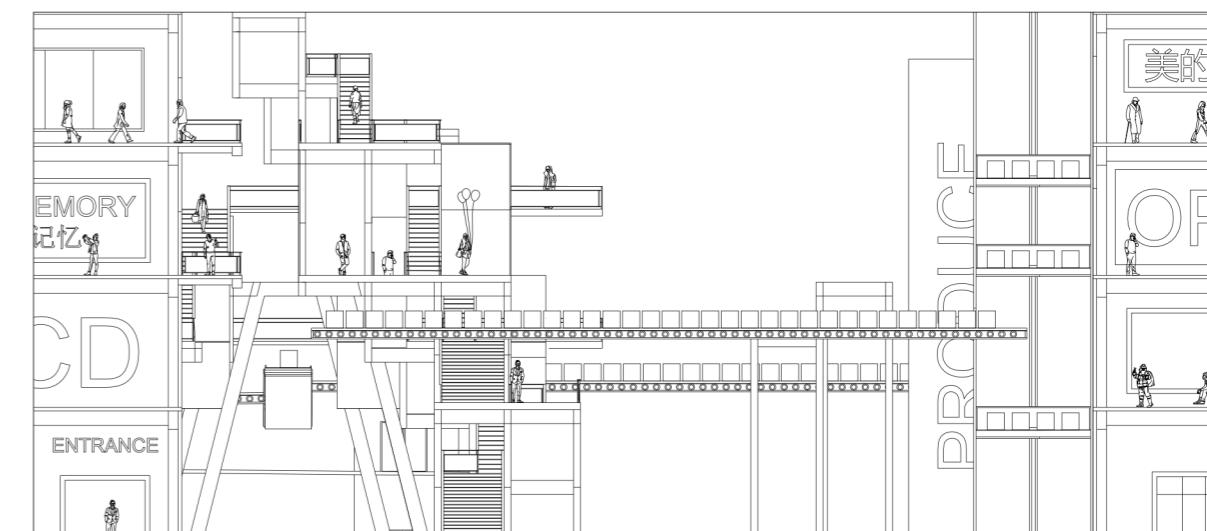
Based on the prototype of three kinds of memory media, the memory community system with production, exchange and storage as the main body is generated. In such a system, person-to-person communication is transformed into person-to-thing communication and becomes part of the overall community production. From a macro point of view, physical media streamlines and crowd streamlines interweave through the whole system, fully providing people-to-thing communication opportunities in different forms in each process of community production.



The storage system provides both active memory and archived memory, which can be selected by the physical media owner. The active memory is built into the structural framework of the original factory, combined with a staircase system, which can be visited by anyone at any time. The archived memory is built underground, accessible only to the owner, providing an individual privacy service to the physical medium.



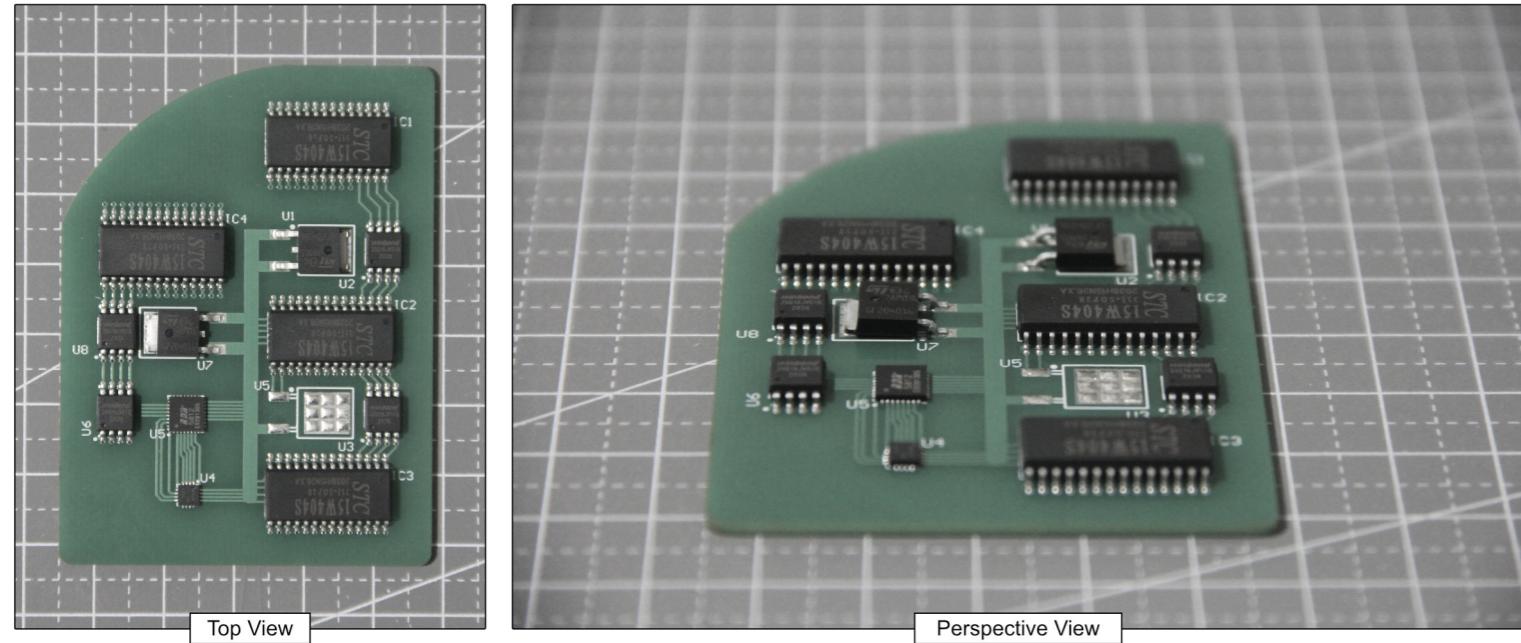
The Memory Sphere provides open space for the exchange of material media. As a kind of public sphere, it is used for public communication between people and between people and things. It is also a place for the transition and display of material media. All physical media, after produced, are publicly exchanged and displayed here, and eventually stored in the Memory Bank. The circular transportation track forms an open platform in the middle, providing space for people to communicate.



Site Model of Memory Community - Site Systematic Design from Circuit Principle

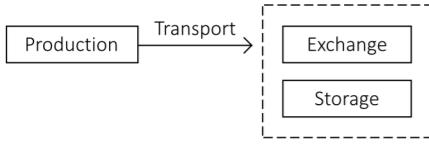
The memory community production mechanism, which is based on production, transportation, exchange and storage, is transformed into the circuit board design, and finally applied to the site by projection. The circuit principle provides a good framework for the systematic design of the site. Combined with the existing environment and memory community production mechanism on the site, the circuit schematic diagram was designed, providing an important reference for the systematic design of the site in terms of form and function. The two form a mapping relationship.

[1] Site Circuit Board Model

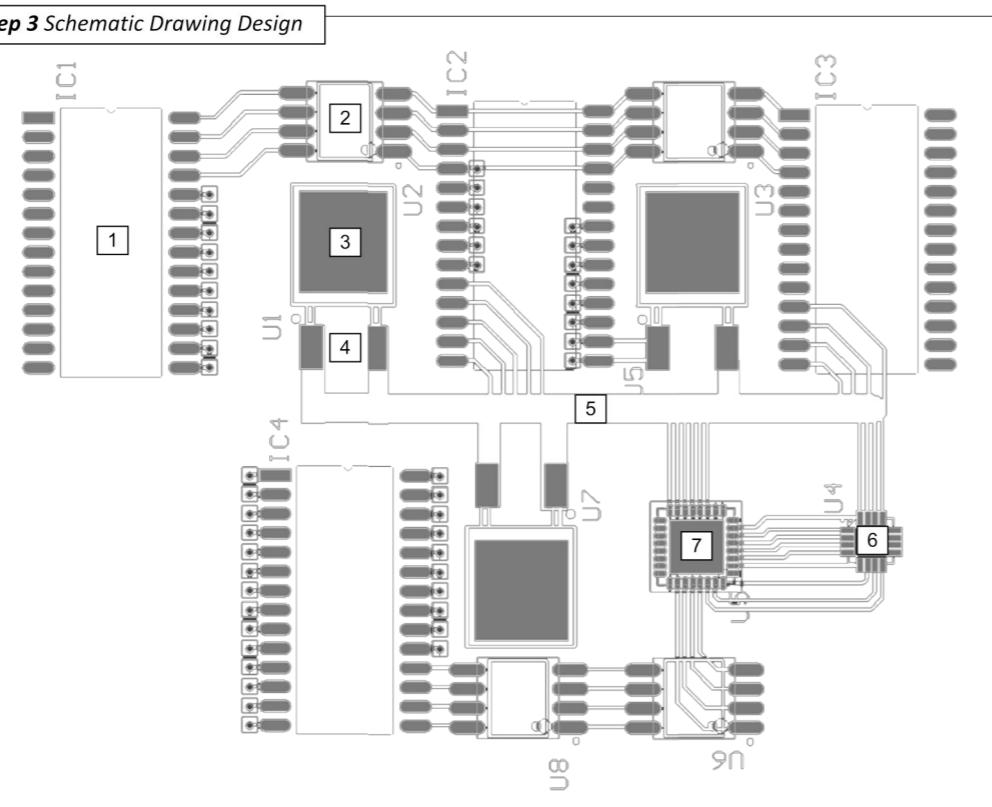


[2] Site System Schematic Generation

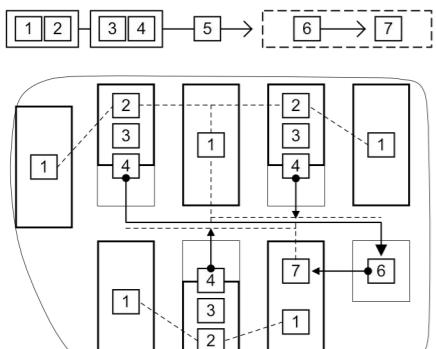
Step 1 Main Mechanism



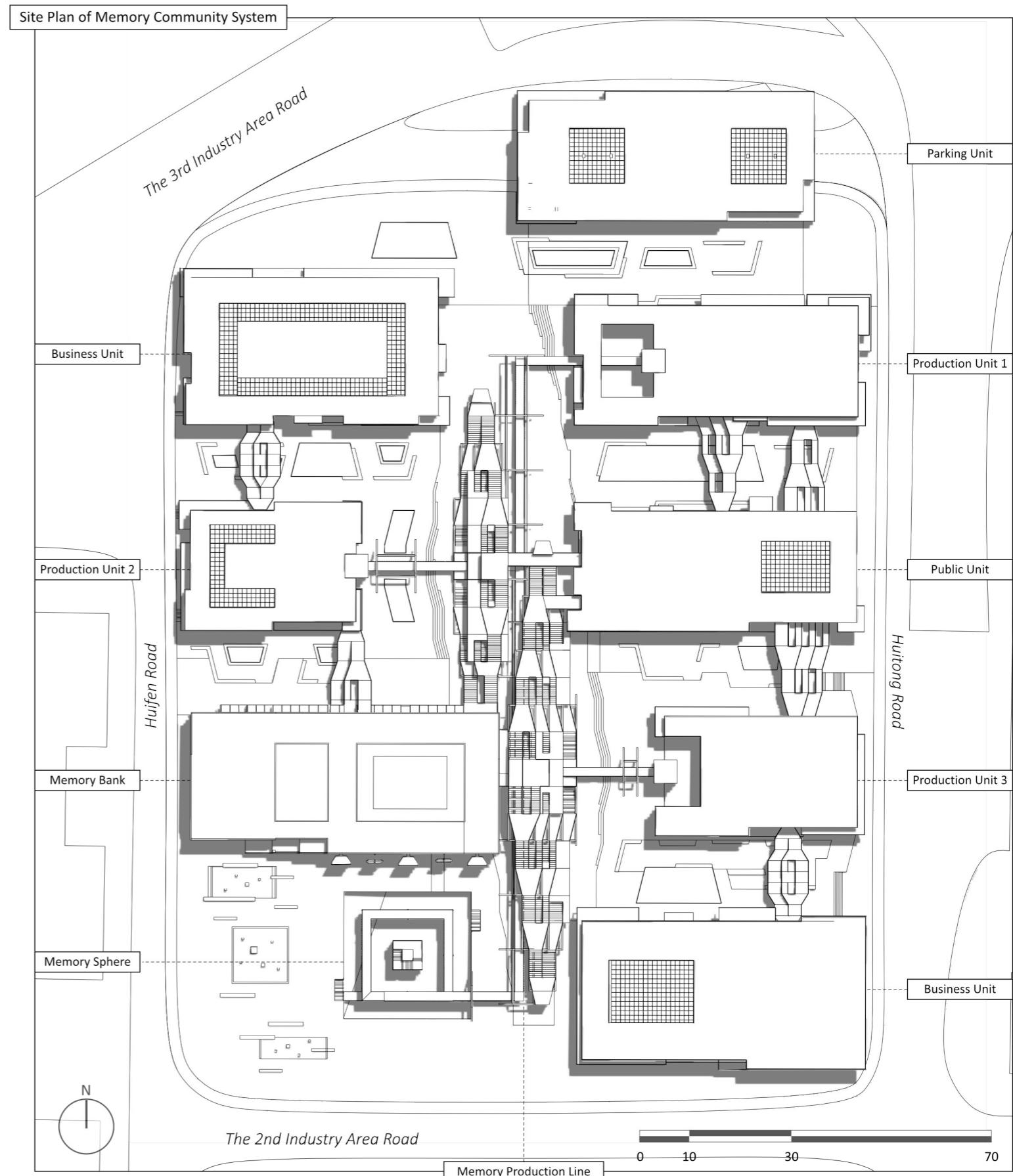
Step 3 Schematic Drawing Design



Step 2 Site Subtask Arrangement



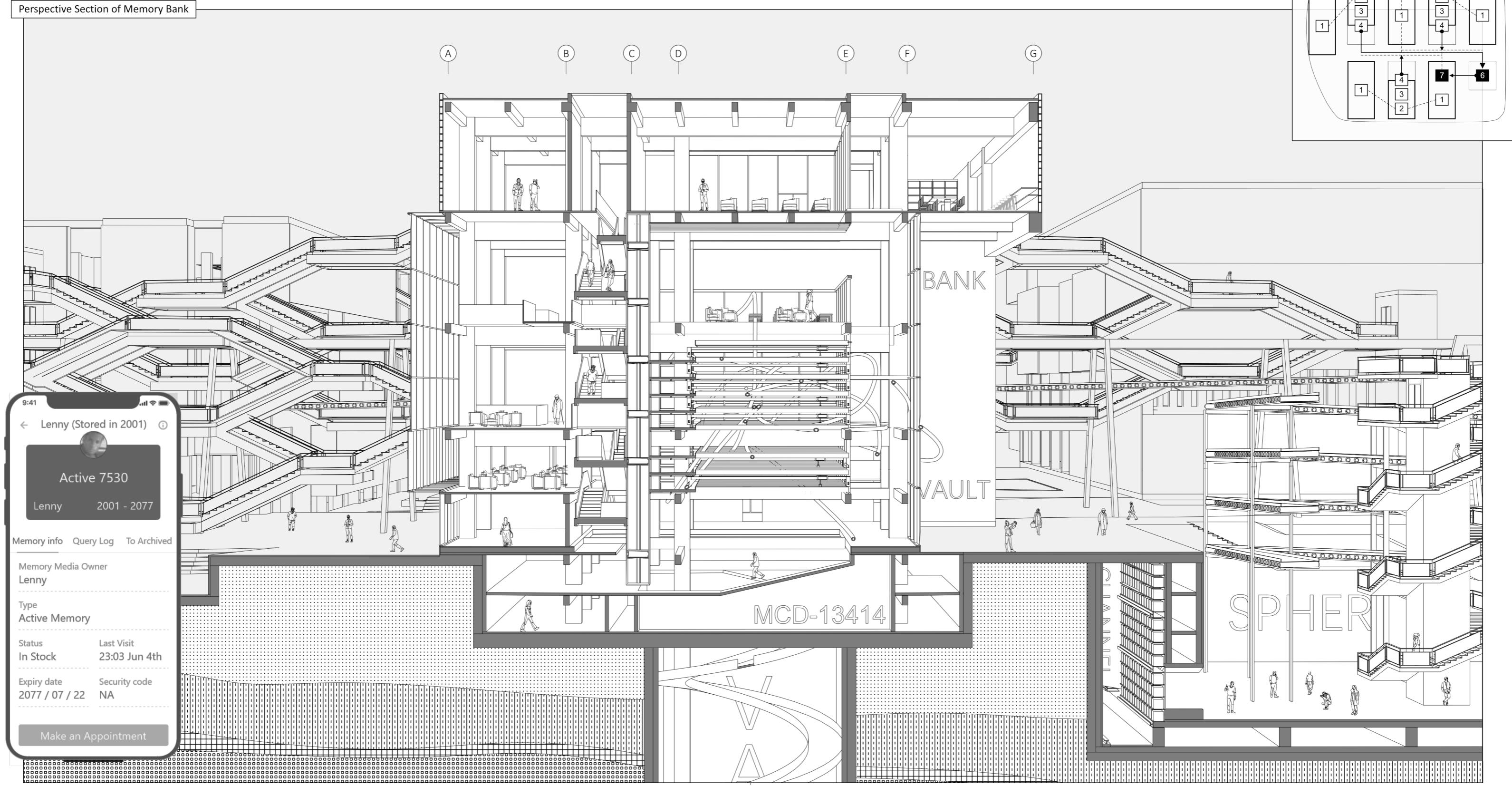
- [1] Public / Business Space
- [2] Transition Space
- [3] Production Factory
- [4] Factory Outlet
- [5] Transportation Bridge
- [6] Memory Sphere
- [7] Memory Bank



Memory Bank - Storage Device in a Framework of Abandoned Factory

The Memory Bank is built within the structural framework of an old factory building. As the terminal of the entire memory production line, the Memory Bank is responsible for the final storage of individual memories. People can come here to query and extract the physical medium of memory from the memory community. There are two main types of storage. The first is Active Memory. For Active Memory, these physical media can be extracted and read by anyone at will, which is a completely open system and provides open areas of communication in conjunction with various service Spaces and public Spaces within the building. The second is Archived Memory, which is stored in such a way that the memory can only be retrieved by a limited person, as a way of storing the memory as a medium, either individually or collectively.

These two storage modes can be flexibly converted at any time, depending on the personal needs of the memory media owner. In terms of spatial organization, the Memory Bank and Memory Sphere are connected by underground channels. Underground channels are not only the transmission channel of Memory material media, but also the channel for people to walk through the two places. As the two most important places in the whole memory community, the strengthened traffic connection is conducive to the operation and production of the whole memory community.

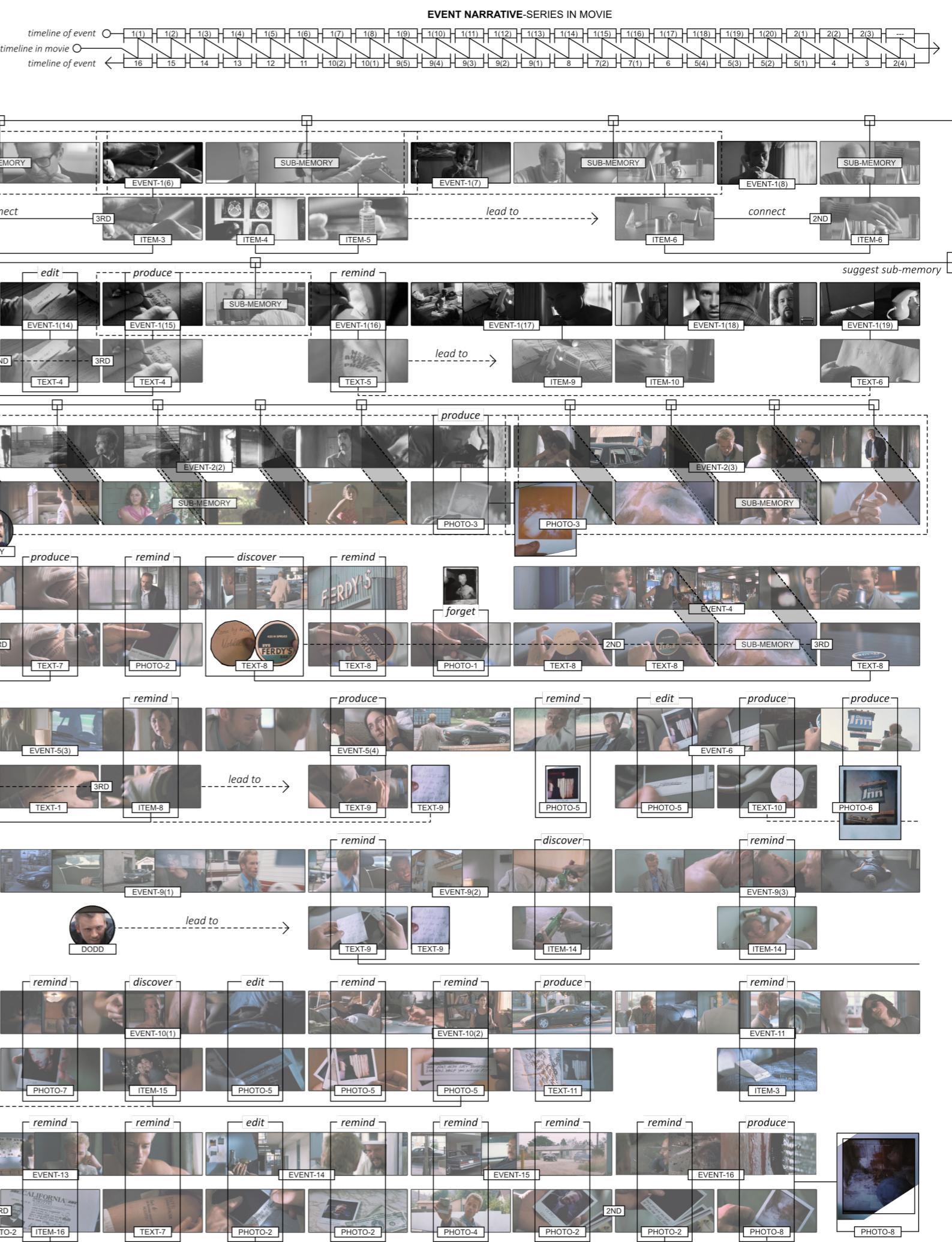


People can use apps on smart phones to maintain information connection with the Memory community. One of the functions is to query the storage of Memory media in the Memory Bank. People can make an appointment with the App to receive a specific Memory media.

To Archived Memory Space - Memory Vault

Individual Physical Media Memory System in Memento - A Literary Projection of Personality

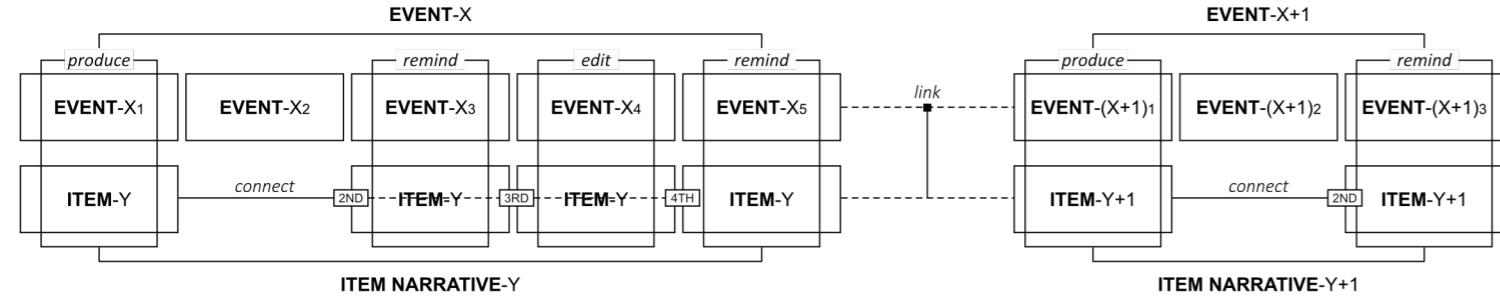
In the film *Memento*, Lenny, the hero, as a patient with traumatic memory loss, loses his ability to remember after a certain point. Although he has only a short memory, he has created a memory system for himself using physical media such as photos, texts and items, which is a process of reconstruction and deconstruction of reality. There is a huge deviation between his personal narration and reality, but it is a good literary projection and transformation of his individual personality.



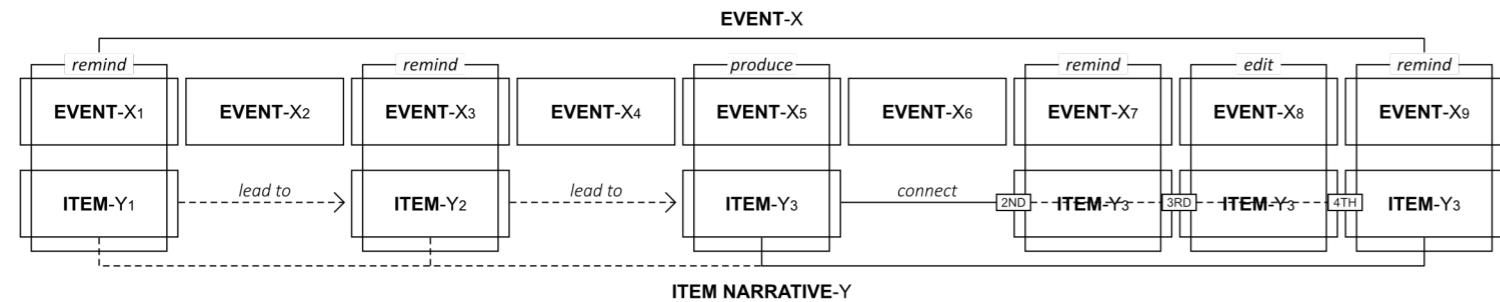
Narrative Structure of Individual Physical Media Memory System in Momento (Deconstruction)

The physical media memory system created by the hero Lenny in the movie *Memento* has a hidden grammatical structure. Lenny takes photos as the main physical medium, and combines text and other types of objects to complete the reality reconstruction with strong self-attributes. Director Nolan combines this grammatical structure with the film narrative, and reconstructs Lenny's life for us. In the film, an event can be projected onto one or more objects and eventually strung together into a complete narrative.

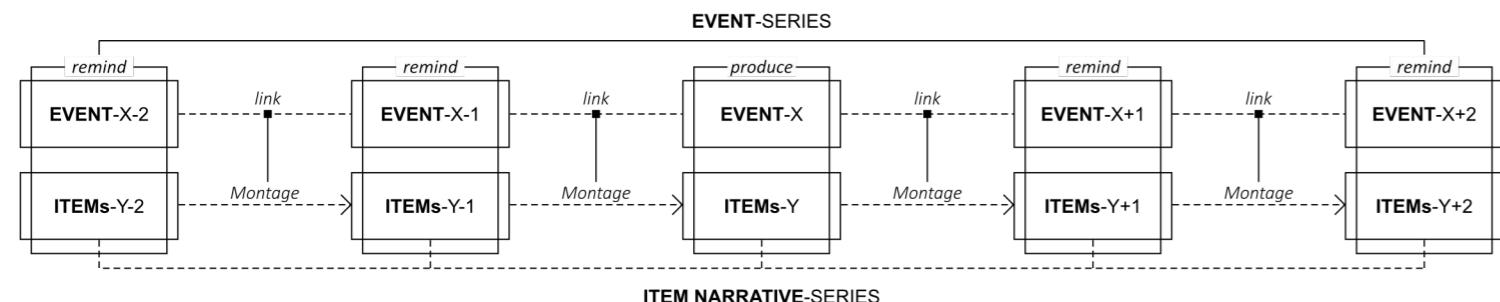
[1] Single Item for a Single Event: Produce, Edit and Remind



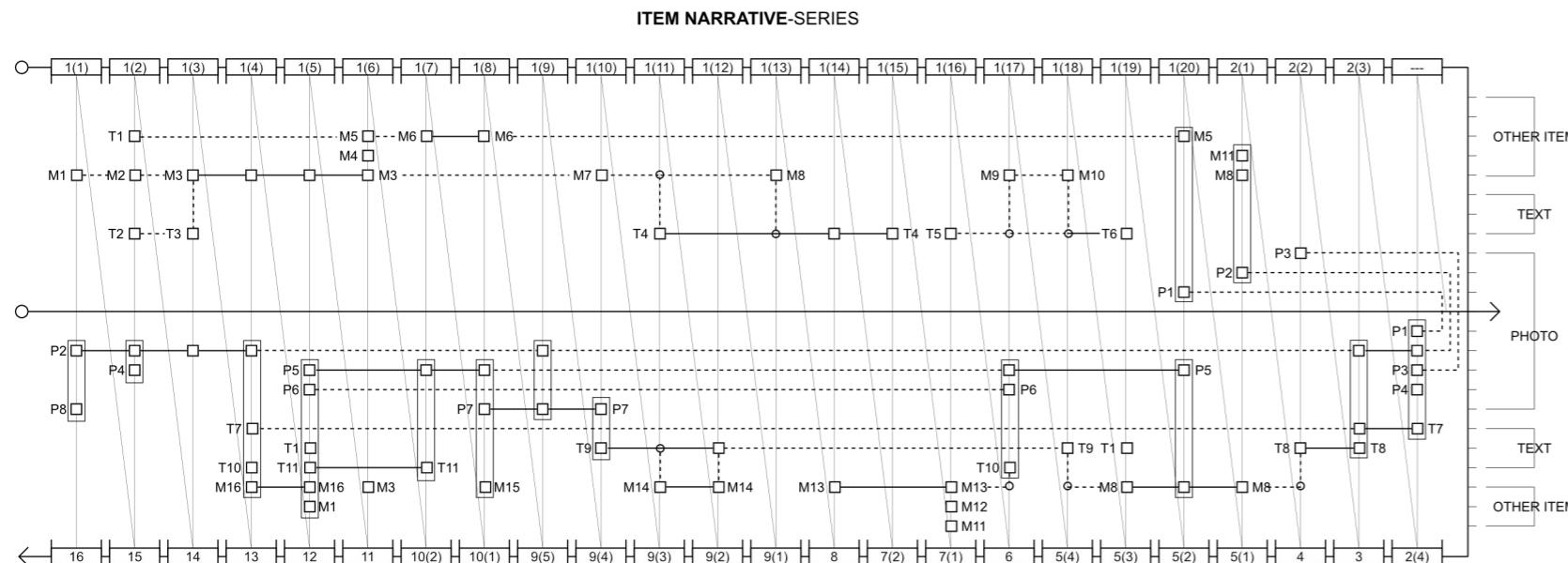
[2] Multiple Items for a Single Event: Casual Relationship



[3] Multiple Items for Multiple Events: Event Narrative and Item Projection

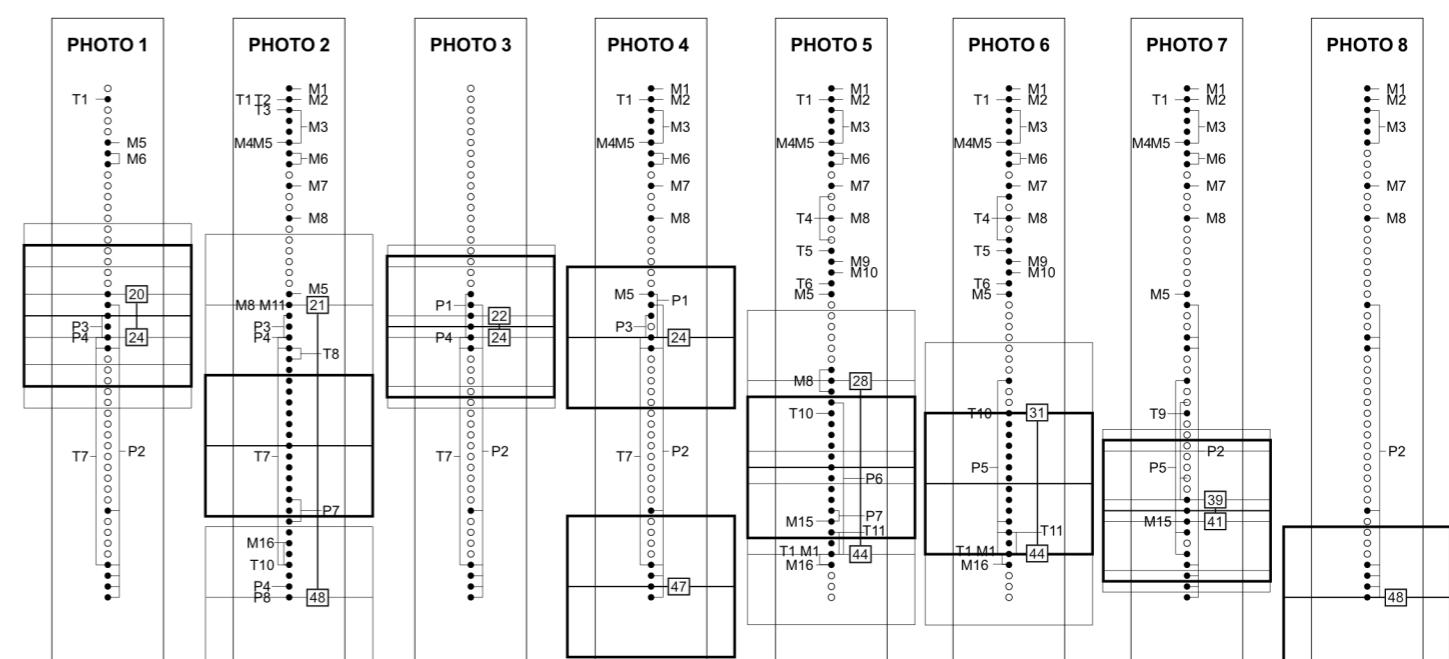
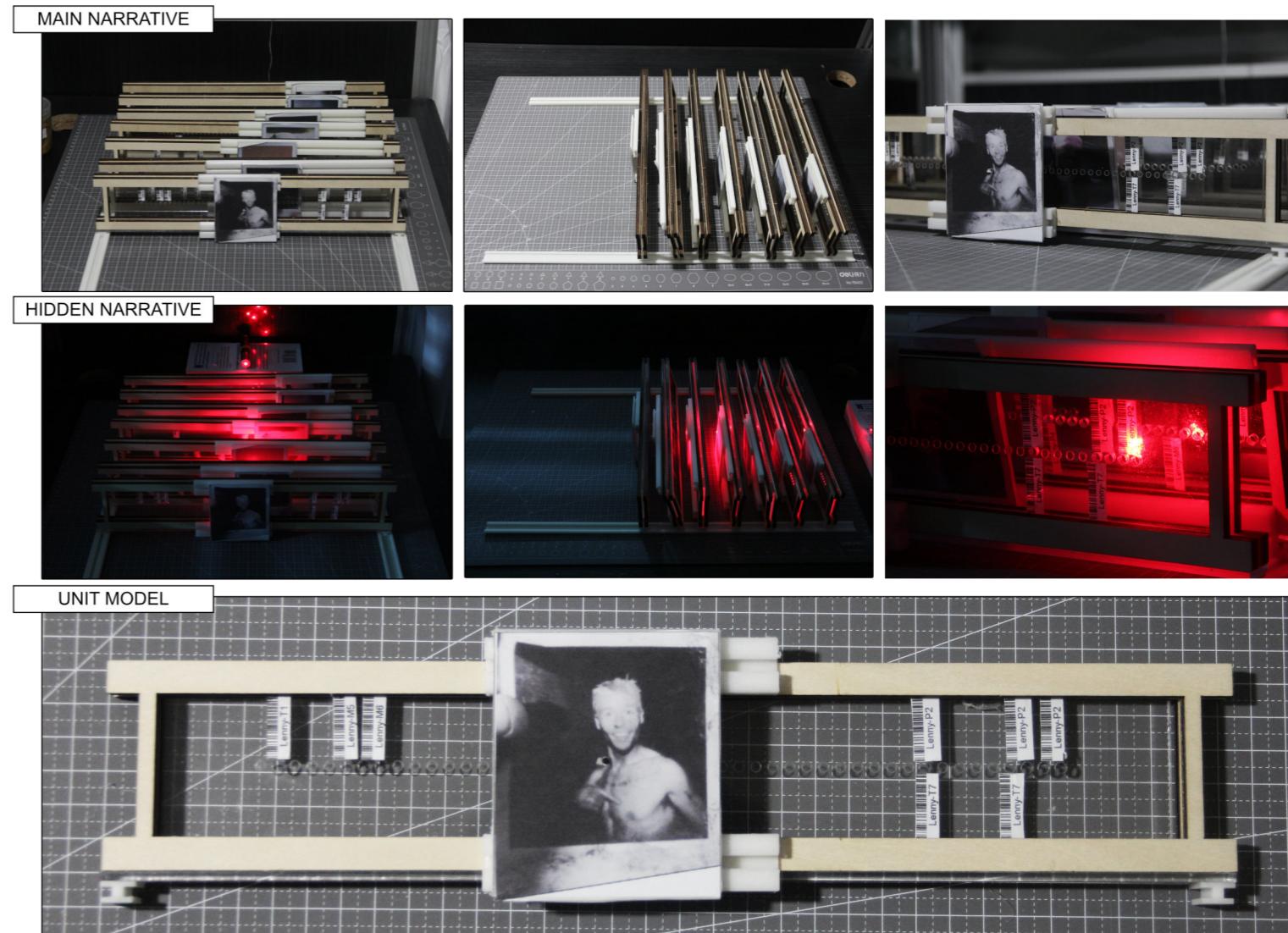


[4] Reconstruction of Events from Items: Item Montage Narrative



Individual Memory Production - Narrative Reorganization (Reconstruction)

After completing the narrative deconstruction of physical media in series in Momento, individual memory production started from the eight photos made by Lenny himself to find the connections between different material media and reconstruct the whole narrative. The whole memory production device is divided into two modes. The Main Narrative mode leads the bystanders to read the narrative forward, while the Hidden Narrative mode leads the bystanders to explore the hidden narrative line through the laser pointer to explore the positions of different photos.



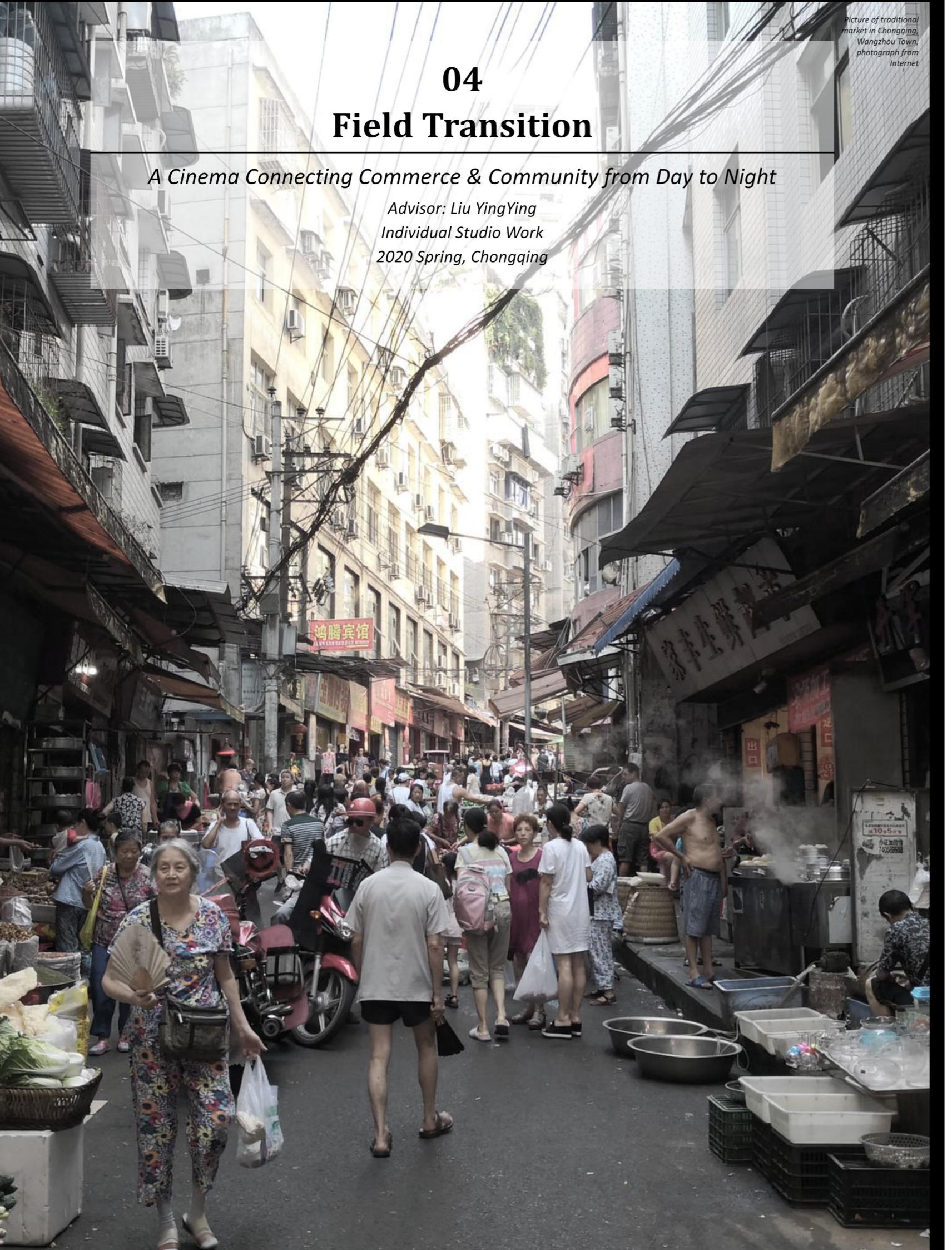
04

Field Transition

A Cinema Connecting Commerce & Community from Day to Night

Advisor: Liu YingYing
Individual Studio Work
2020 Spring, Chongqing

Picture of traditional market in Chongqing,
Wangzhou Town;
photograph from
Internet



"The Field describes a space of propagation, of effects. It contains no matter or material points, rather functions, vectors and speeds. It describes local relations of difference within fields of celerity, transmission or careering points, in a word, what Minikowski called the world."

Sanford Kwinter, 1986

"Field Condition are bottom-up phenomena, defined not by overarching geometrical schemas but by intricate local connections. Interval, repetition and seriality are key concepts. Form matters, but not so much the forms of things as the forms between things."

Stan Allen, Points + Lines, 1999

[1] Urban Condition in the Field - Deconstruct the Cultural Conflicts of Local Urbanism

As urban condition is one of the most complex systems in the physical world, hidden orders or rules exist under the surface of daily urban transitions. With the study of field, although it is hard to capture every detail elements affecting the urban condition, we can learn from certain urban elements which determine these orders systematically on the macro level. In a short-term behavior such as daily transition, physical built environment is the main factor to construct the urban field and groups of people are the units being affected. In a long-term development, these daily behaviors accumulate and finally turn into a culture, which is actually a field crossing spacetime.

Chinese traditional market is such a kind of fields crossing spacetime, and finally forms a urbanism culture. Along thousands of years, people in the living community have a habit to come to an open space and make trades with each other. Even in today's Chinese cities, such kinds of space exist in every living communities, keeping forming a field affecting people's daily life. However, new commercial system has come since the economy reform from the last century, leading by the supermarkets and retailers, which have their own field and affect the original traditional market field continuously.

Urban fields build people's daily behavior and life. As the modern field comes in and expand itself constantly, the traditional field, the traditional urbanism culture, is in danger during the urban development. While the modern commercial field is more systematical and efficient, the traditional field is more natural and tightly related to the construction of living community. It is the critical time to protect the old field from being replaced.

[2] Field as a Design Methodology - Reconstruct Transition between Fields in Reality

People don't feel the urban environment with the macro perspective. The elders in the living community have no experience of the nearby commercial complex and the young people have no idea what the traditional markets like. This project explores how to deconstruct the local condition in a field system, but also how to reconstruct the fields and the transition between fields, the hidden facts, in the reality.

In this process, field is a method both to investigate and design. After field condition is represented in a structural system, this system can be applied directly to the reconstruction design. Within the field system, relationships of the field are able to well reconstructed and showed with a obvious form in the reality, which can be easily perceived by people groups. At the same time, the design is also served as a way to ease the conflicts between two urbanism cultures and give the old field a strong stand to protect it from the new one.

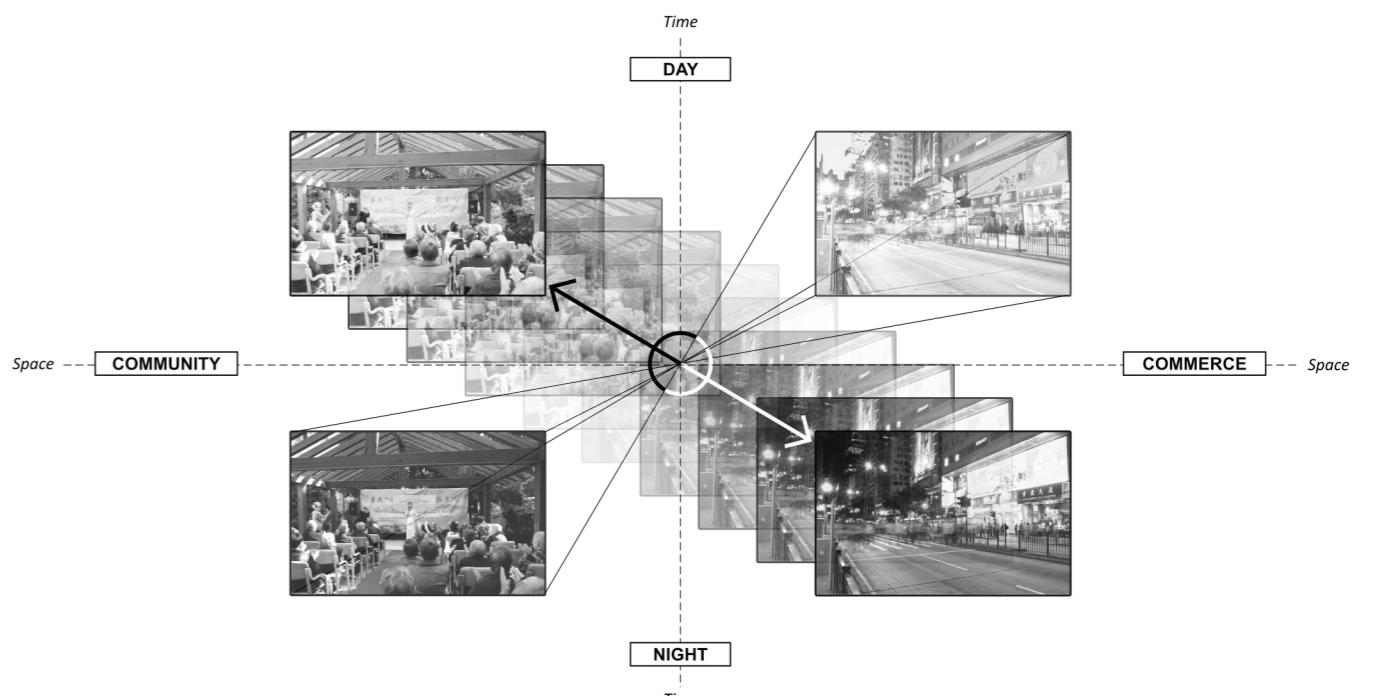
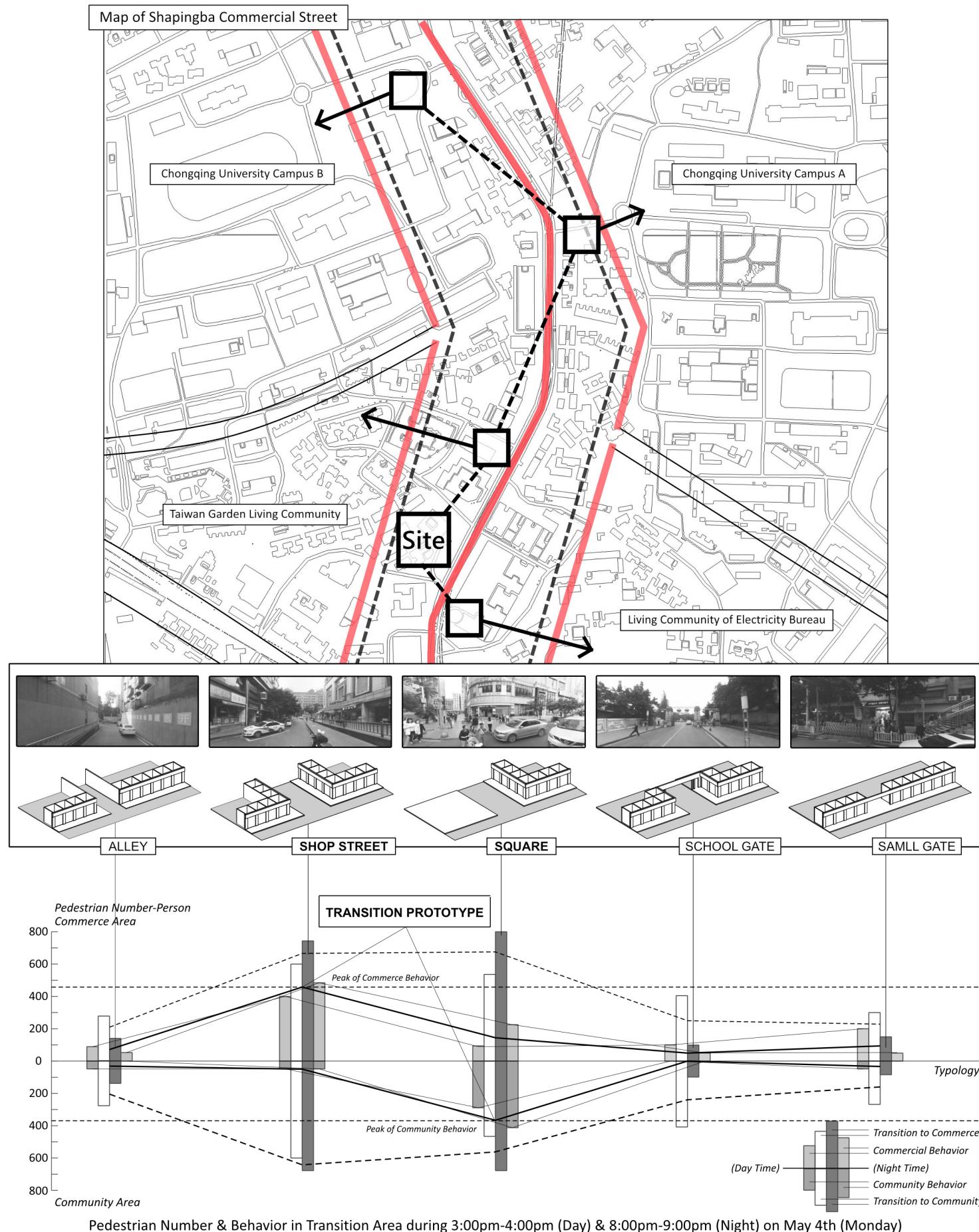


Figure. Hidden Transition between Different Fields of Different Urbanism in Shapingba Commercial Street, Chongqing

Daily Transition between Commercial Area and Community Area in Shapingba (Space-Time Reality)

Shapingba Commercial Street is surrounded by schools and several residential communities. As the only commercial street around this area, it has fuzzy boundaries with those nearby communities. Transitions happen daily between the commercial street and communities in certain transition zones, including alleys, school gates and some other types. In the site investigation, pedestrians' behavior in different areas was surveyed to evaluate the activity situation in different transition zones.



Pedestrian Number & Behavior in Transition Area during 3:00pm-4:00pm (Day) & 8:00pm-9:00pm (Night) on May 4th (Monday)

Field Condition in a Grid System - Cultural Conflicts of Urbanism (Deconstruction)

The daily transition is actually connected to two different urbanisms. As a spatial cultural relic, the life pattern of China's traditional market has a certain conflict with the modern commercial street model. Through grid system analysis, we can better understand how the two urbanism cultures coexist and maintain their independence in the urban spatial environment, just as they form unique fields and influence each other. And the site is in the key position of transition between the two urbanisms and has the potential for conflict mitigation.

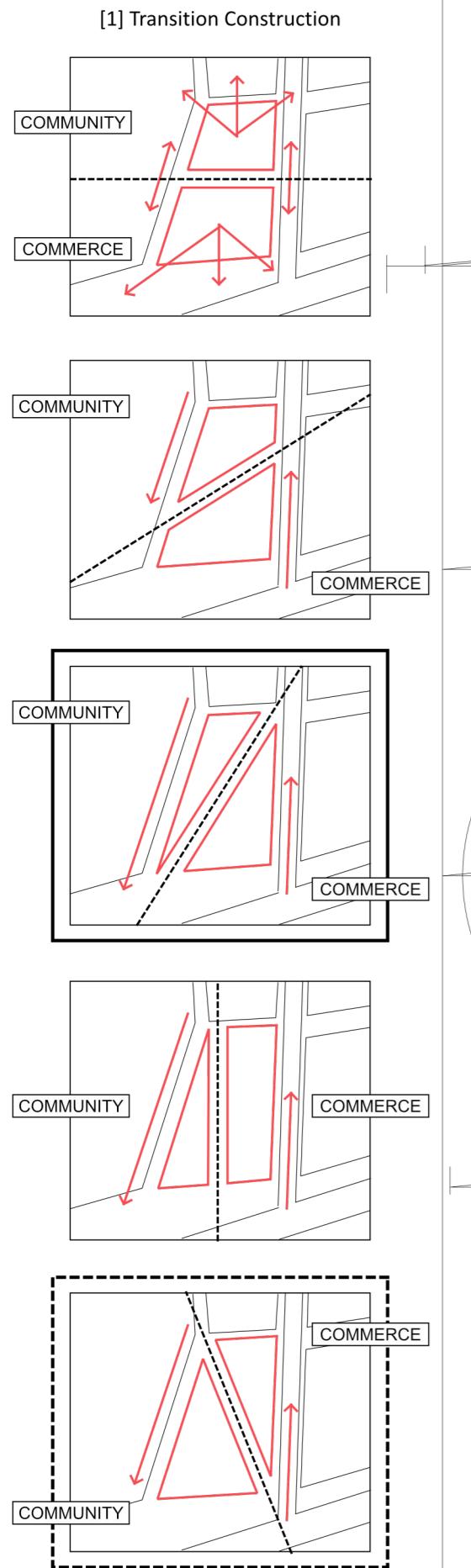
[1] Urbanism of Chinese Traditional Market / Community



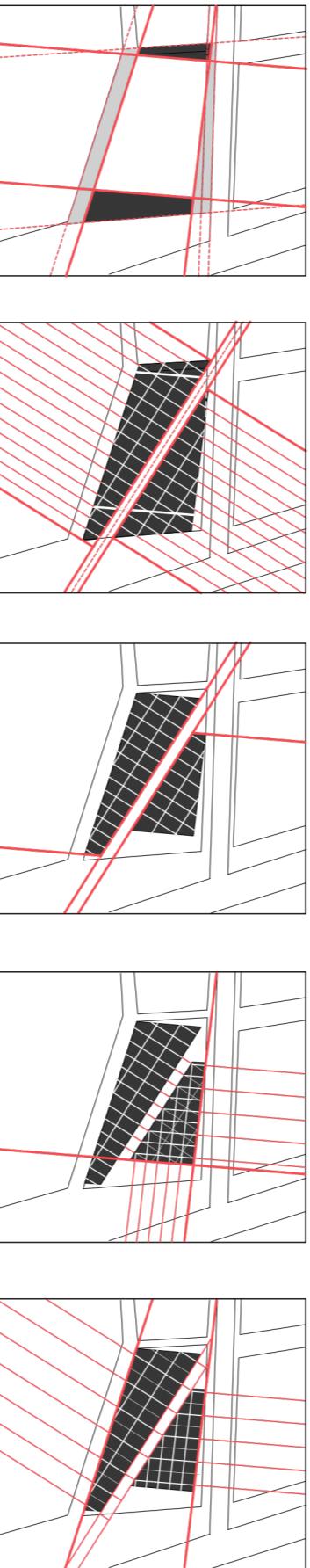
[2] Urbanism of Modern Commercial Street

Transition Construction in the Grid System (Reconstruction)

According to the site status quo, design starts from site connectivity study. Better form of transition is chosen by geometry analysis based on graph theory. The site is divided into two parts by a path, responsible for community and commercial functions respectively. Then, based on the position of this transition in the grid system, a series of derivations of site grid system is carried out, and the basic form of site field is finally preliminarily determined. The whole building is embodied in the combination of two systems, including function and grid field form.

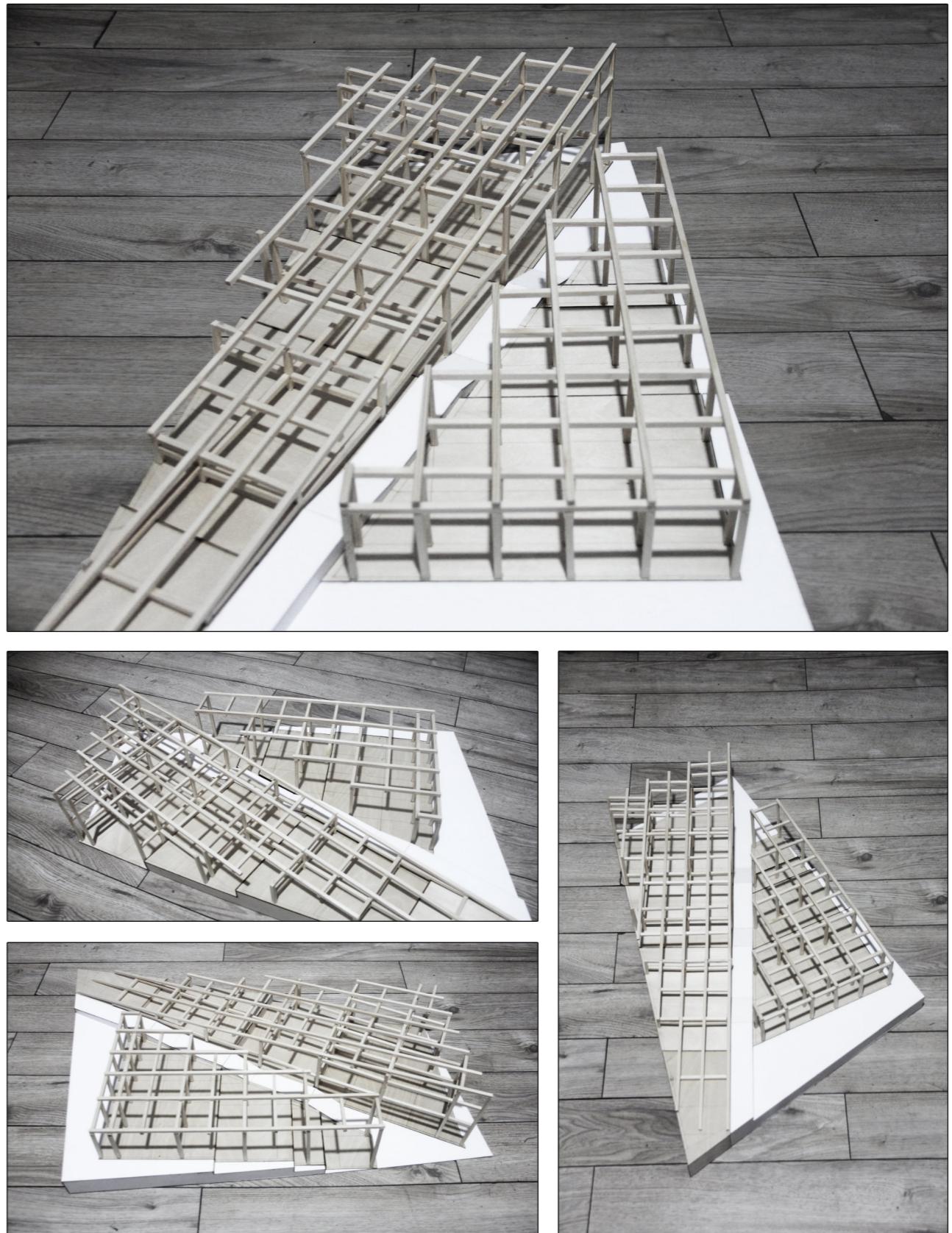


[2] Grid System Generation



Site Model of Transition under the Grid System

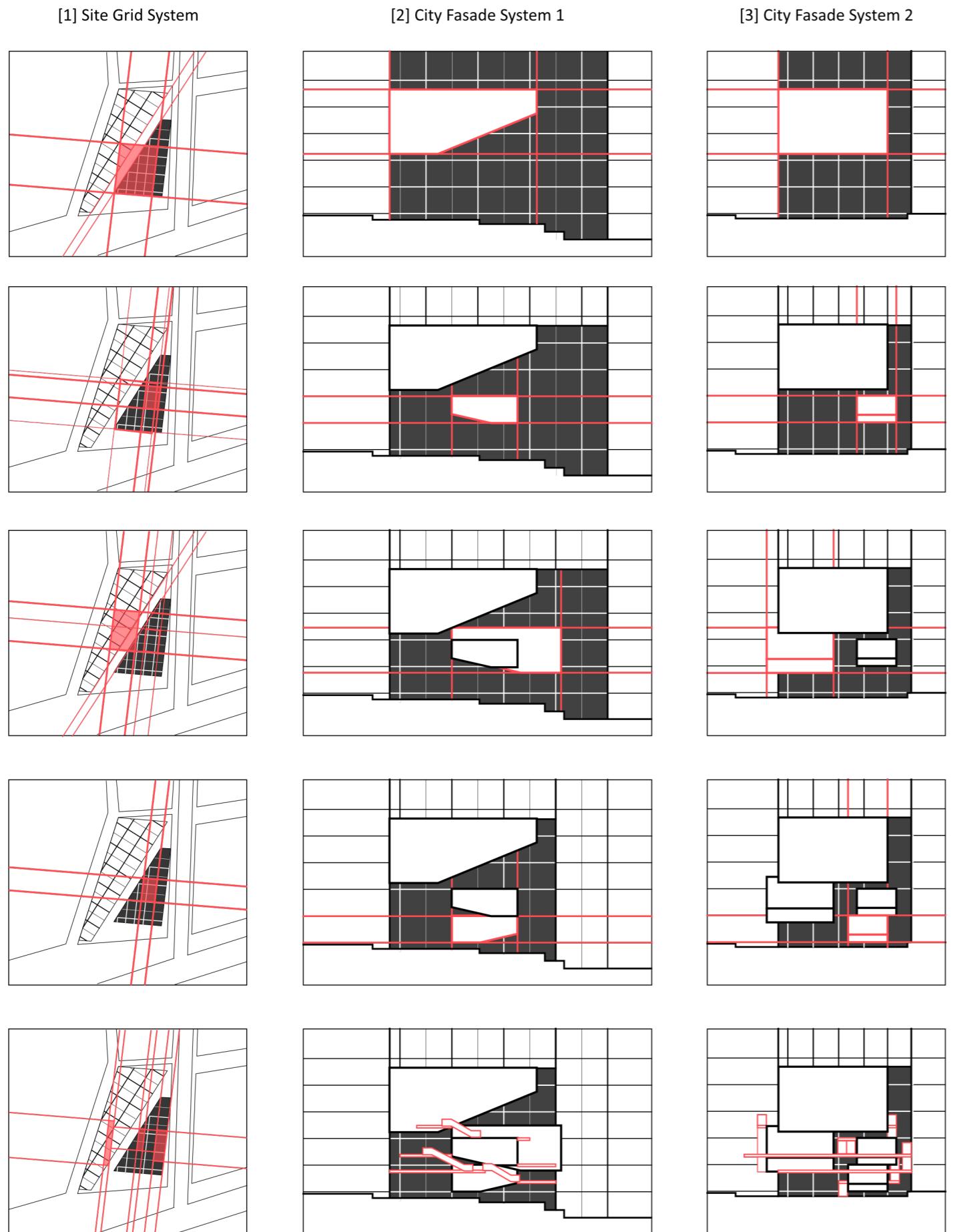
The basic grid framework is established and becomes the basis of field transition design. The community volume is constructed as a city square, while the commercial volume is constructed as a multi-storey commercial building. The whole site has obvious topographic elevation differences, which provides more diversified possibilities for the overall spatial transition form. This is a preliminary result of development of the site conditions, and further functional placement will generate the spontaneity of the site and influence these grid structures.



The site framework model based on the grid system well demonstrates the relationship between the two functional volumes and the Transition Path, as well as the overall terrain relationship. Such a site framework will further deepen the design as a whole system.

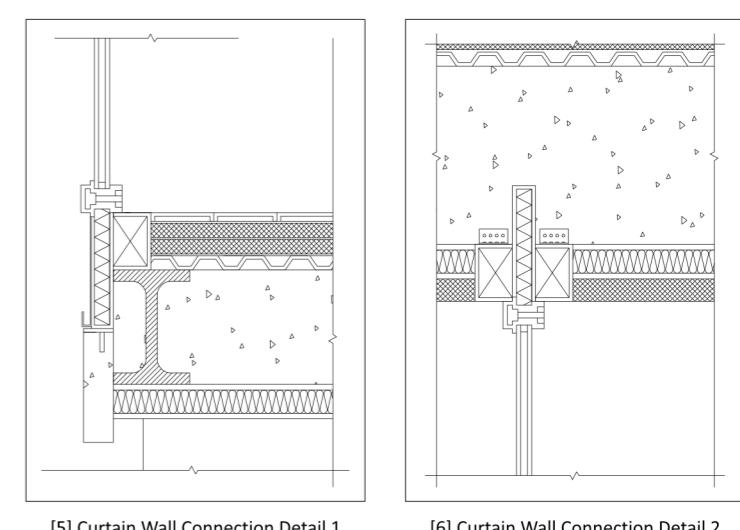
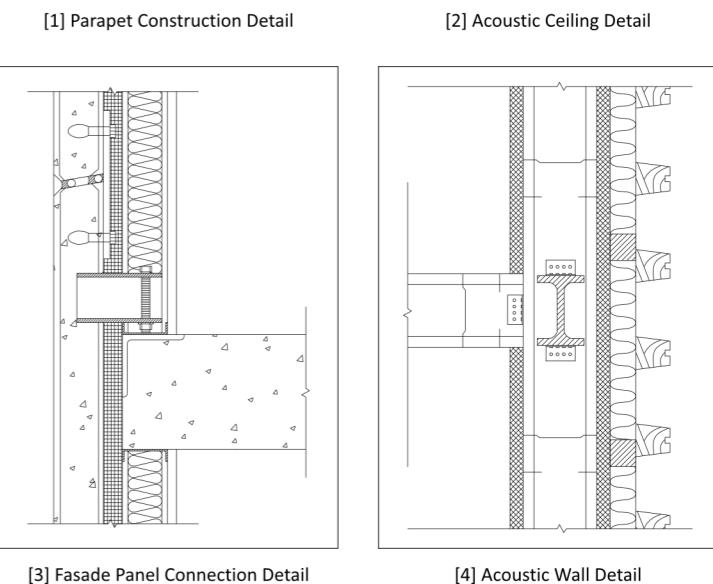
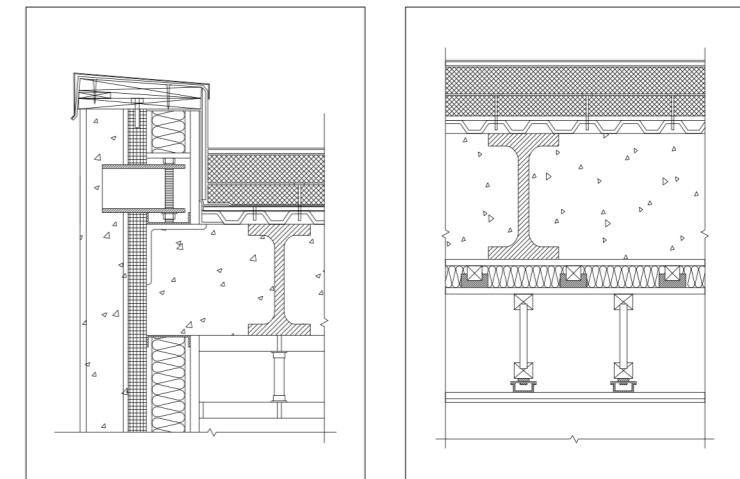
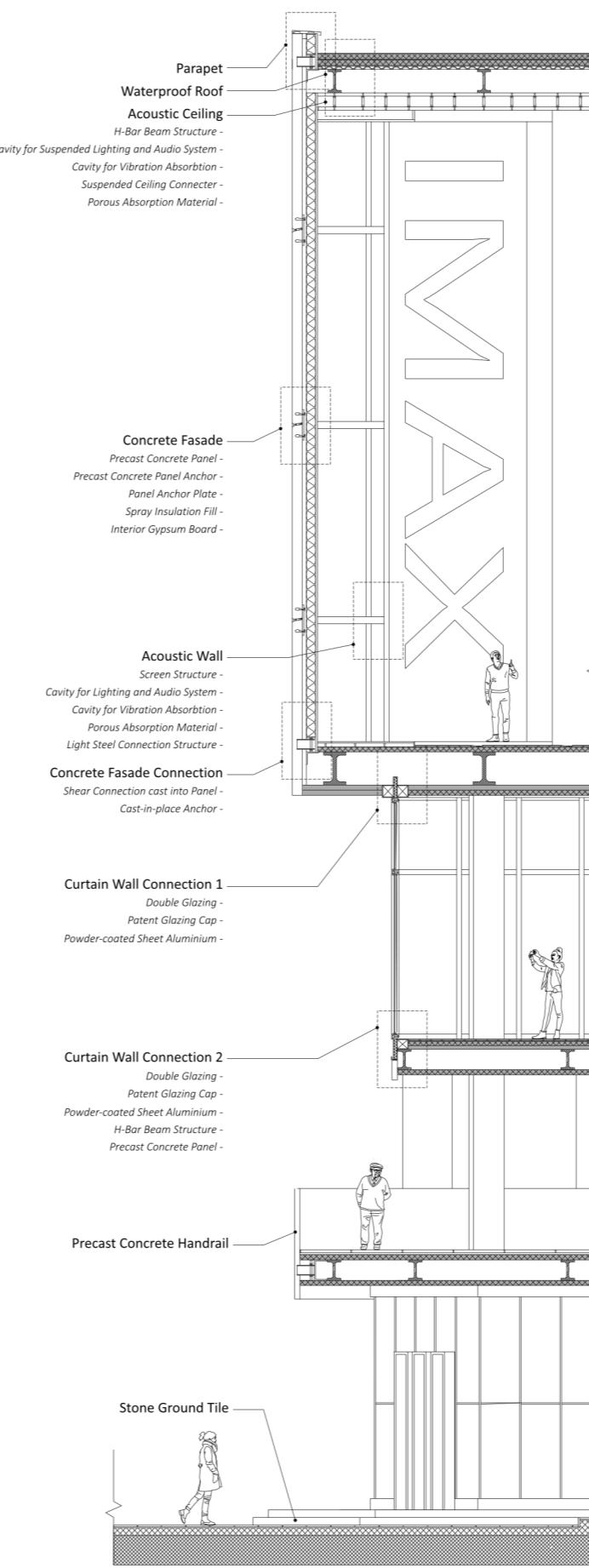
Commercial Part Construction in the Grid System (Reconstruction)

Based on the site grid system and considering the relationship of the form and function of the two urban facades, the multi-storey commercial section is designed. Cinema and building traffic is modularized and embedded into the grid system in a certain order. The layout of the grid system is very flexible, which provides a variety of possibilities for the design and makes it easy to compare the advantages and disadvantages of different layout schemes, leading to a design result which is able to fit the site field quite well.



Fasade Construction Detail

The facade construction is mainly presented by precast concrete panels and glass curtain walls, reflecting the changes in architectural functions. The inner wall and ceiling structure emphasizes sound absorption construction to ensure a good acoustic environment inside the cinema, including sound-absorbing material and cavity for vibration absorbtion, which could protect the cinema from urban noise and provide the customers a great movie experience.

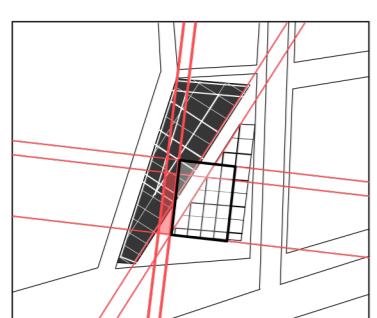
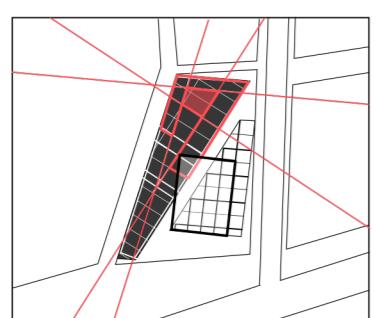
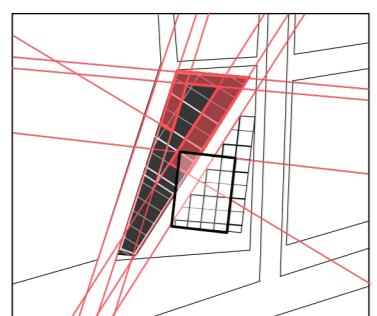
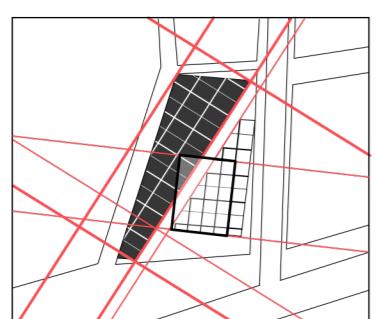
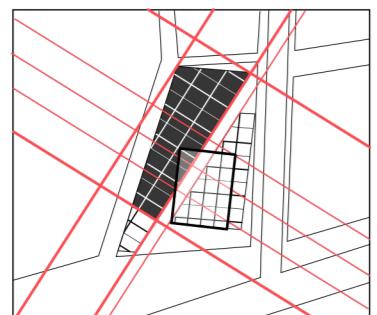


The accumulation of different functional spaces and corresponding constructions on the facade highlights the variety of space, including interior of auditoriums, indoor public space, open public space, etc, and also makes the facade have a good sense of space hierarchy.

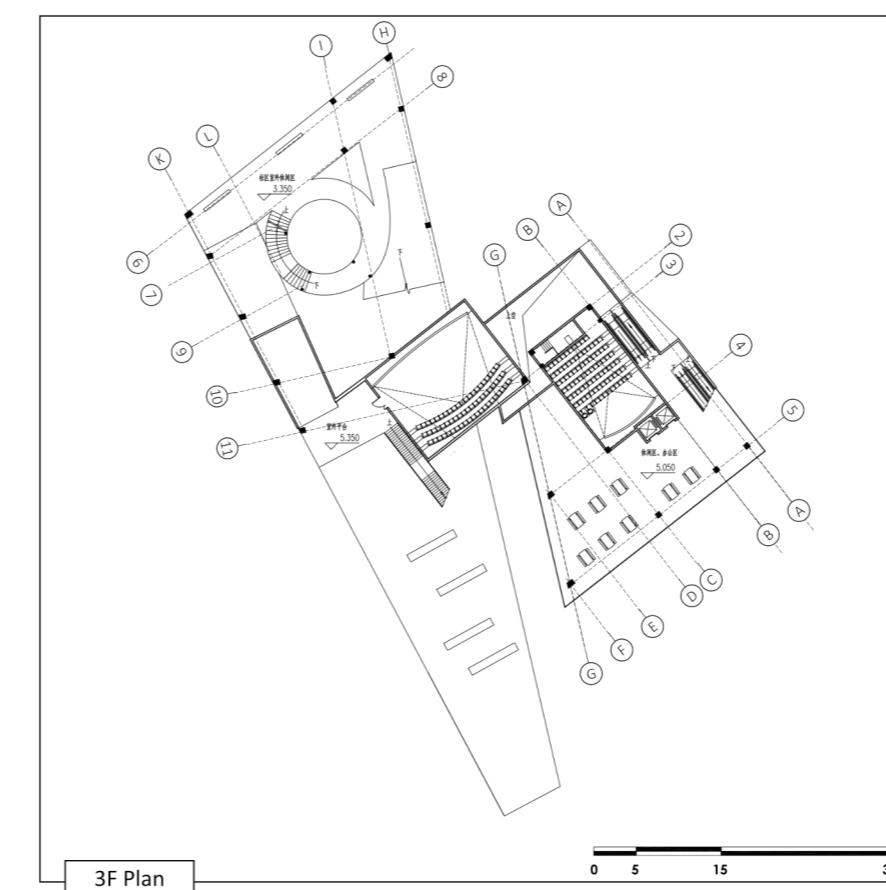
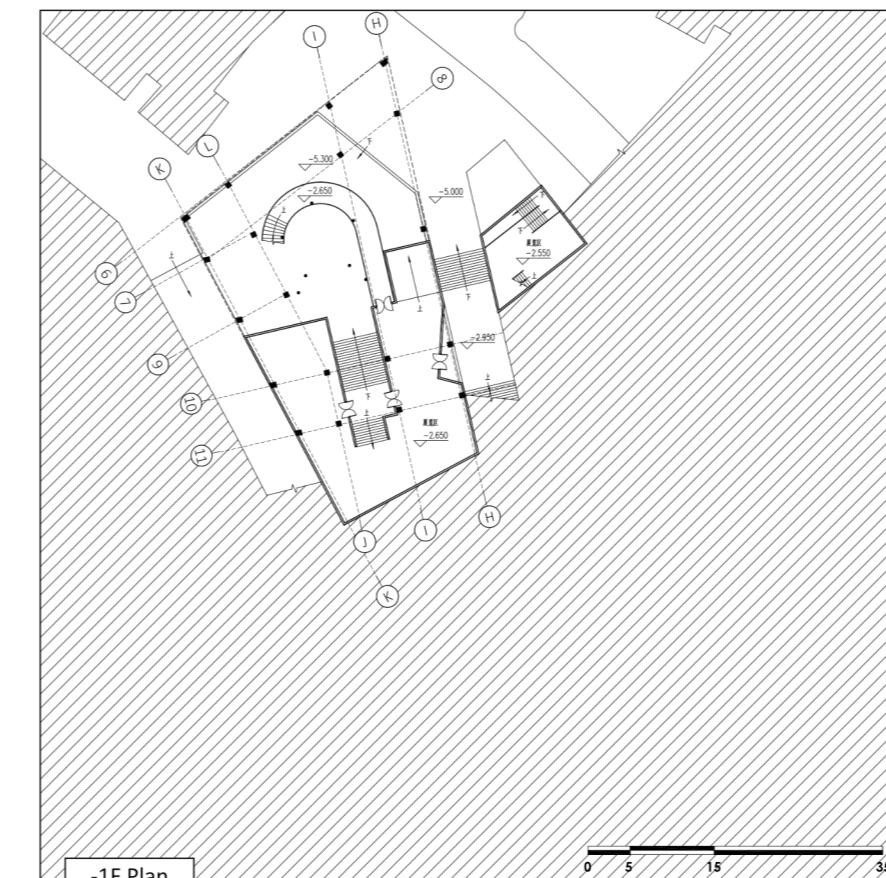
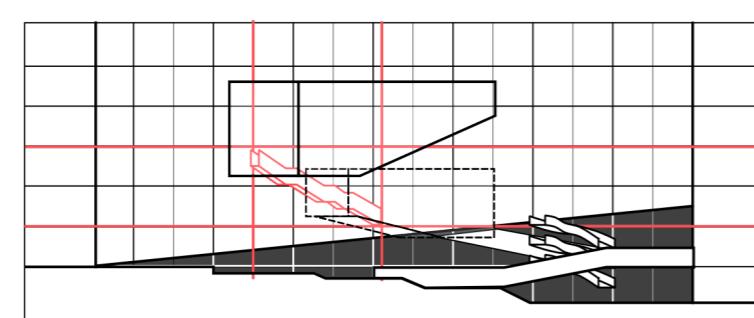
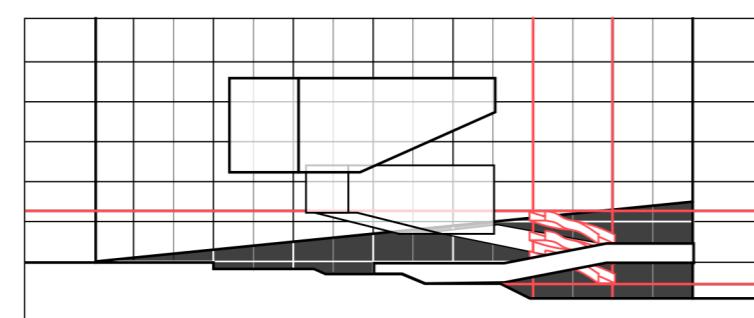
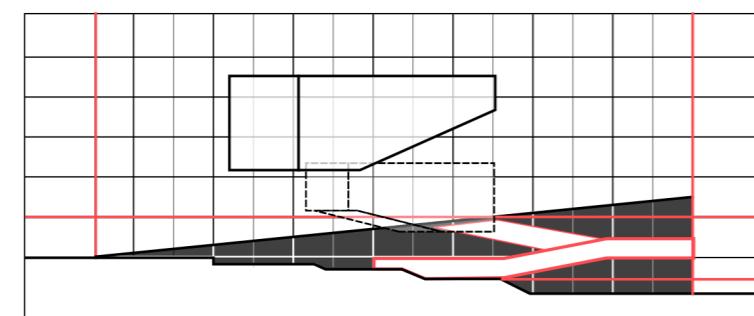
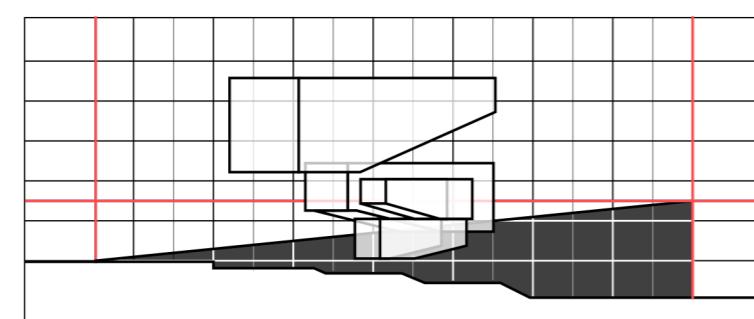
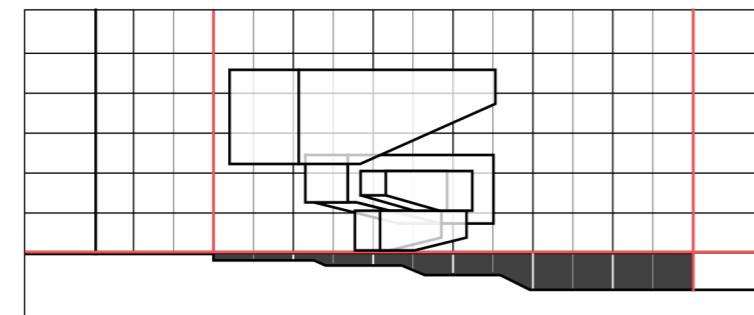
Community Part Construction in the Grid System (Reconstruction)

In the construction of the community section, the initial design framework of the site was changed to accommodate the new functional requirements in order to create ramps connecting different heights. The new grid system integrates with the original design framework and becomes the grid architecture of the final solution. This grid structure can be directly adopted by the architectural design.

[1] Site Grid System

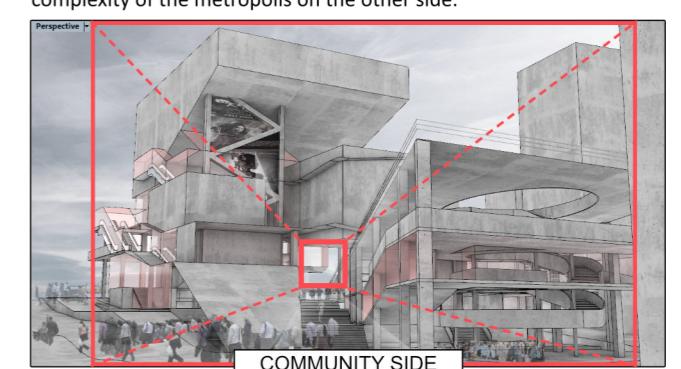
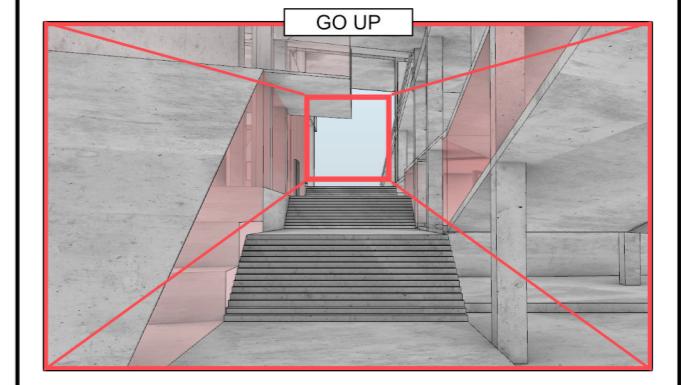
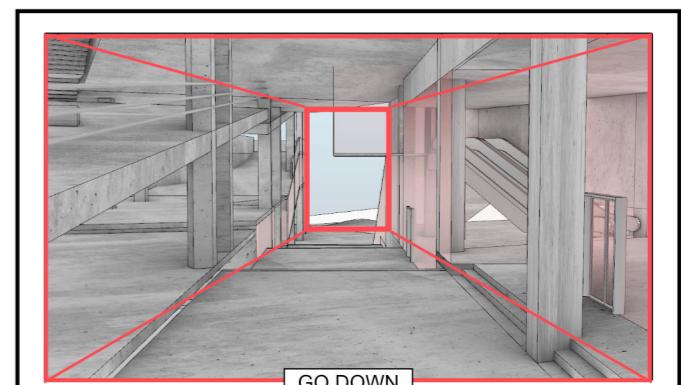
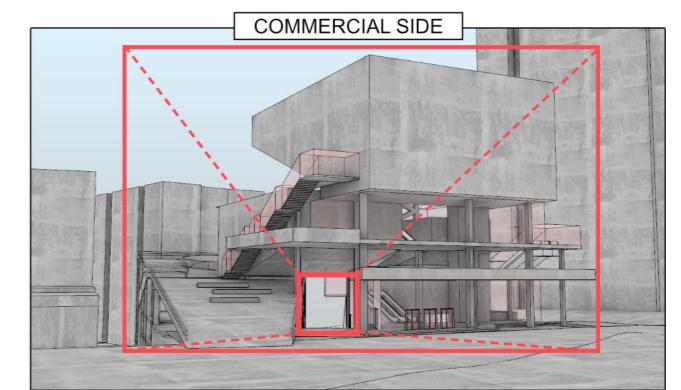
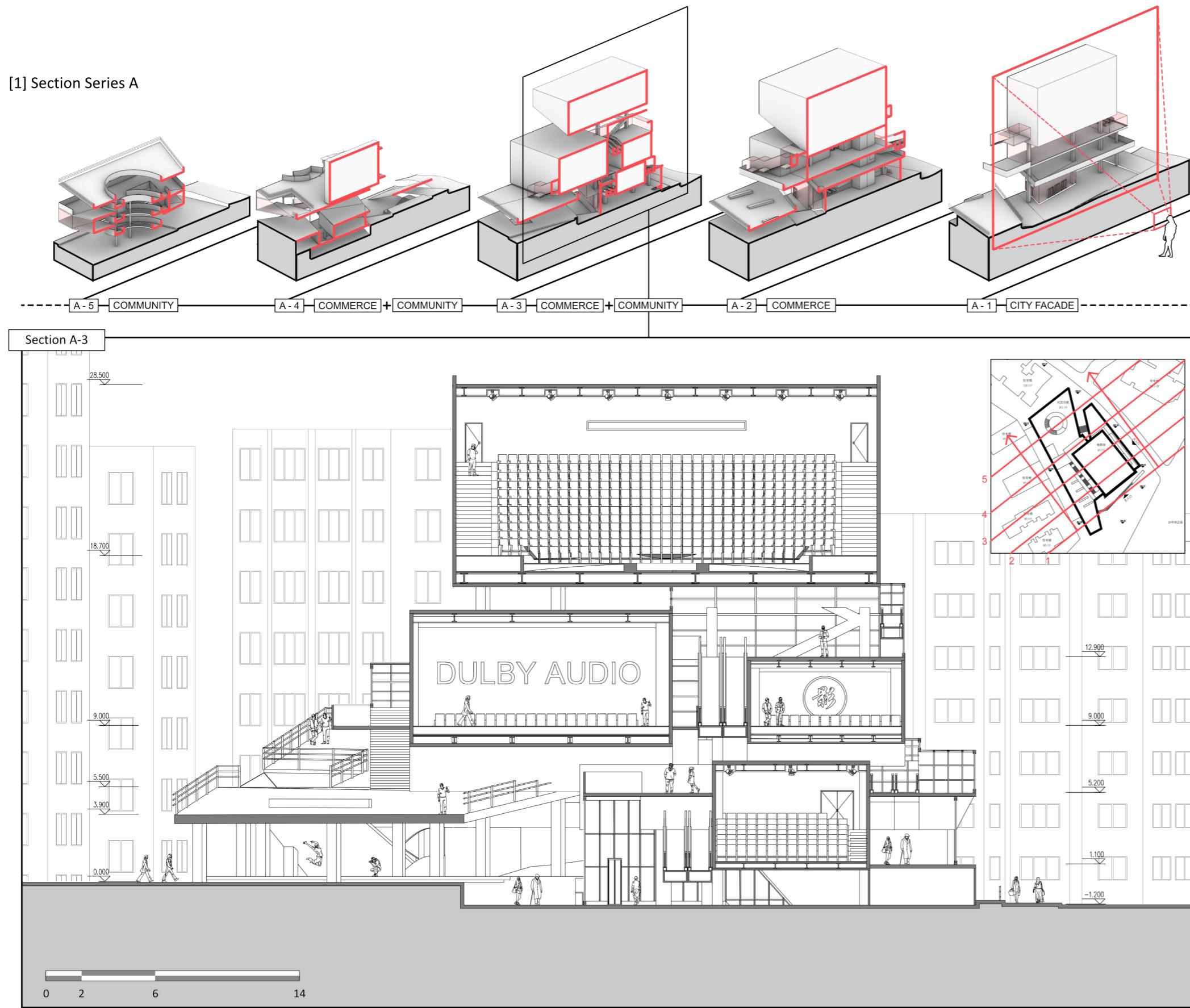


[2] Transition Fasade



Space Transition from Commercial Part to Community Part (1)

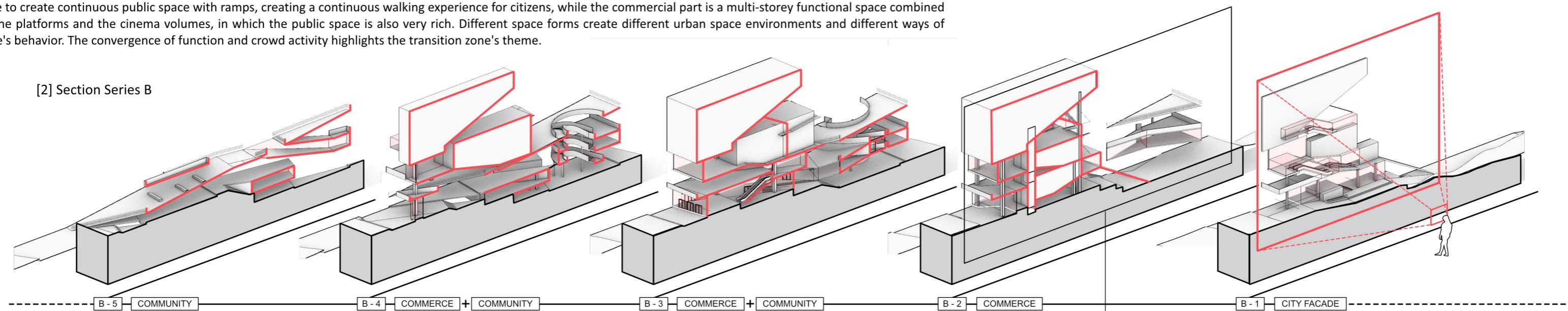
When people enters from the commercial street side to the community side, space keeps transform due to different functions and properties of these two sides. This process can be divided to several phases. On the commercial side, the space is a little more instructive with relatively complete city facade and descending path steps. On the community side, the space is much more diversified and open, and more public space can be used for community activities, which forms a three-dimensional fasade.



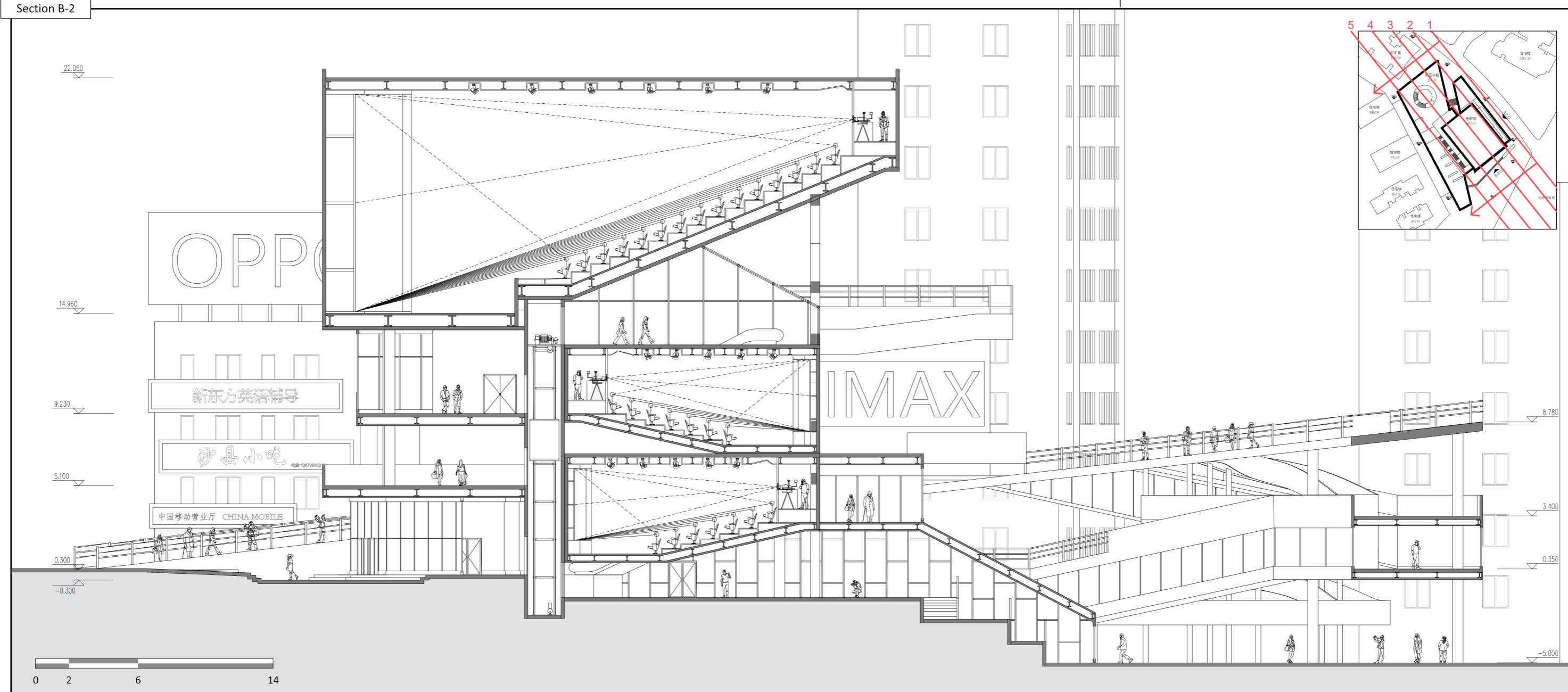
Space Transition from Commercial Part to Community Part (2)

From the long sections, we can also see the transition and change of functional space from the commercial part to the community part. The community part combines with the city square to create continuous public space with ramps, creating a continuous walking experience for citizens, while the commercial part is a multi-storey functional space combined with the platforms and the cinema volumes, in which the public space is also very rich. Different space forms create different urban space environments and different ways of people's behavior. The convergence of function and crowd activity highlights the transition zone's theme.

[2] Section Series B

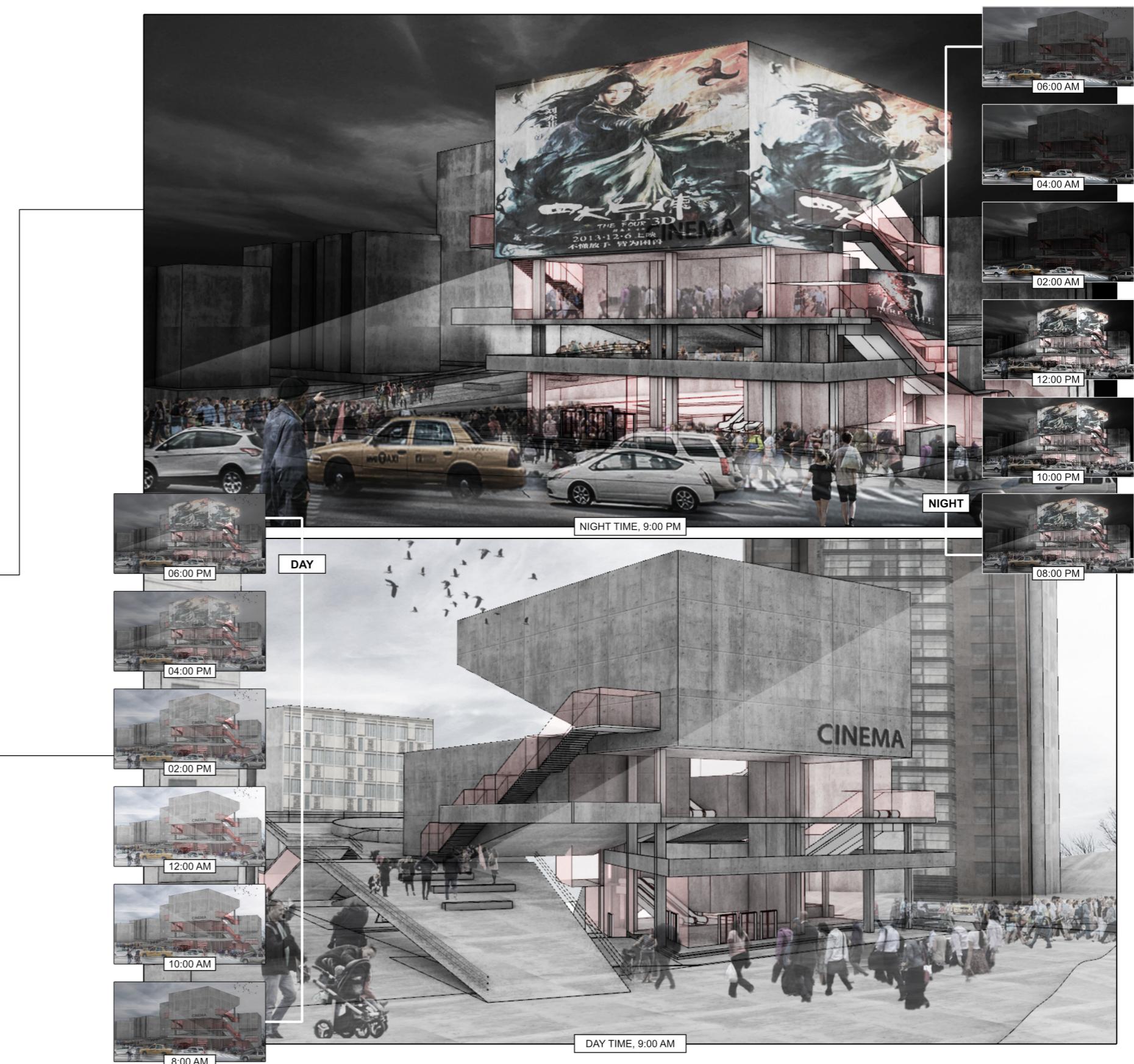
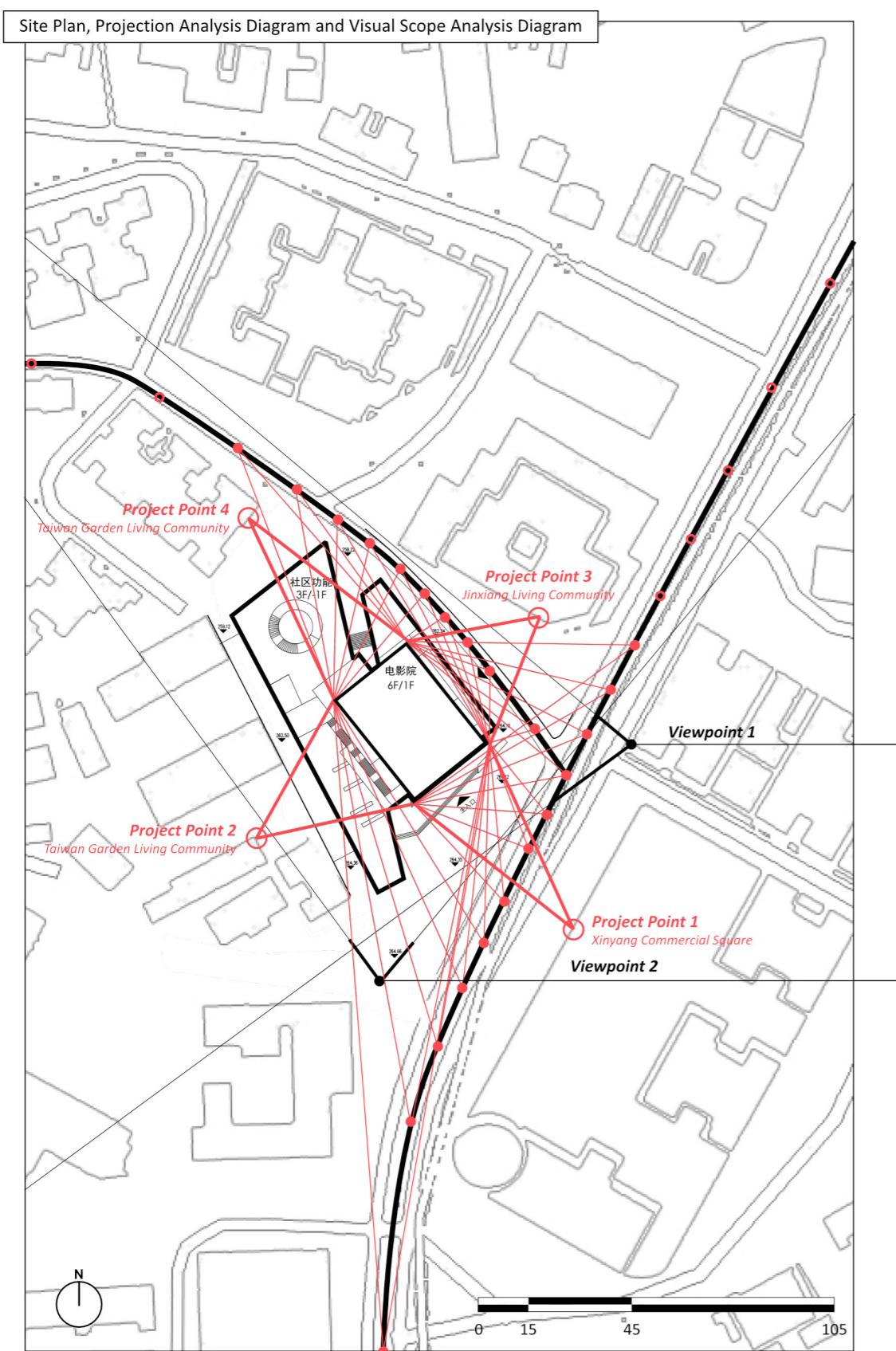


Section B-2



Time Transition from Day to Night

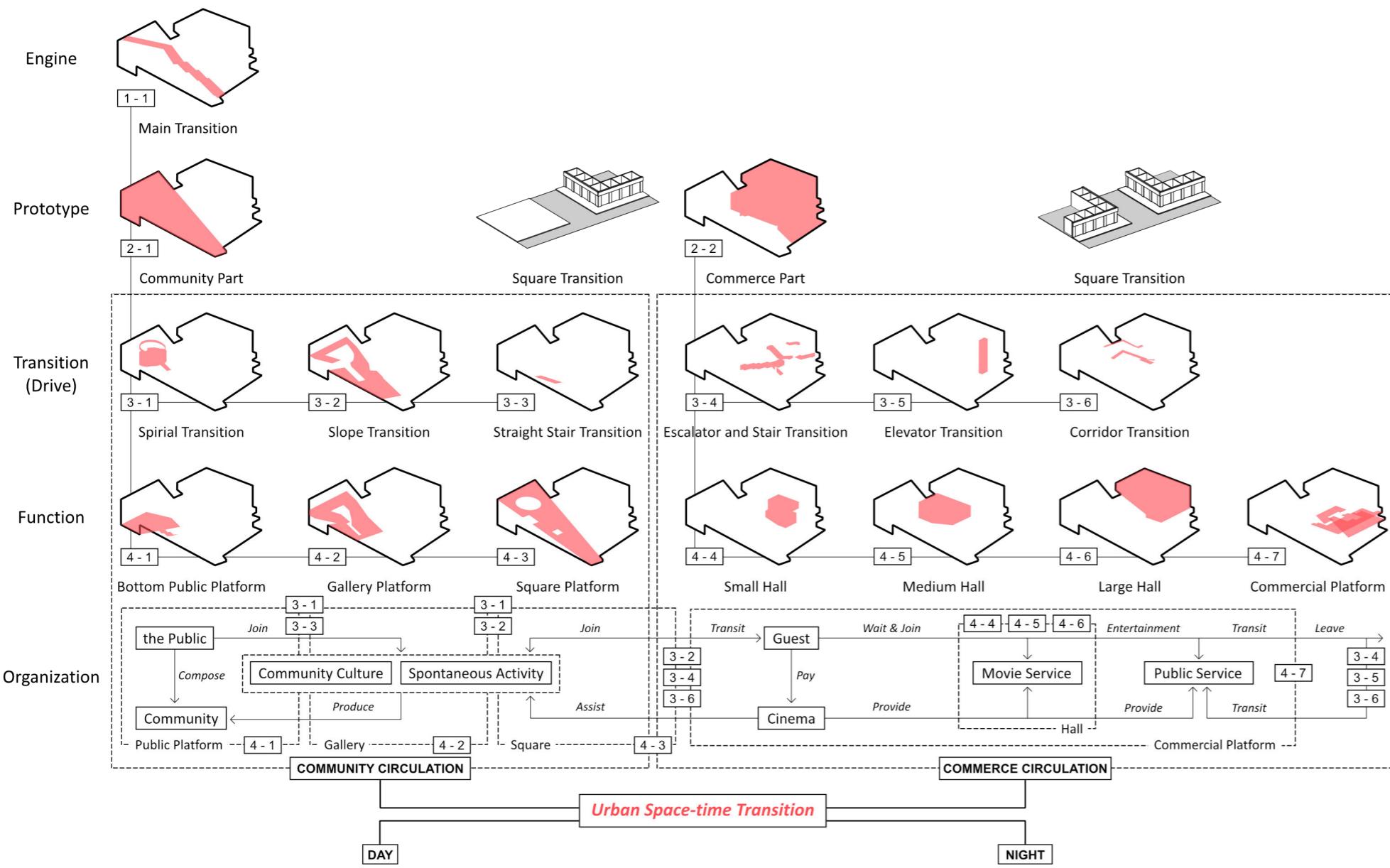
As a collection of commercial space and community space, the design provides space for two different kinds of activities that cover the whole day. Projectors around the site provide a different atmosphere for the two kinds of activities at different times. The site is dominated by commercial activities at night and community activities during the day. Such a device reinforces people's perception of two different urbanism fields



Urban Transition as a Complex System Powered by Daily People Flow

Two important transition prototypes which perform quite well in promote commercial activities and community activities relatively are transformed and applied to the community part and the commerce part. Components are created and composed following the system initiated from these two prototypes, combining with functional organizations. As the engine of the whole system, the main transition in the middle introduces people flow daily and tries to push the complex system into running.

[1] System Component Classification



[2] Daily Urban Space-time Transition

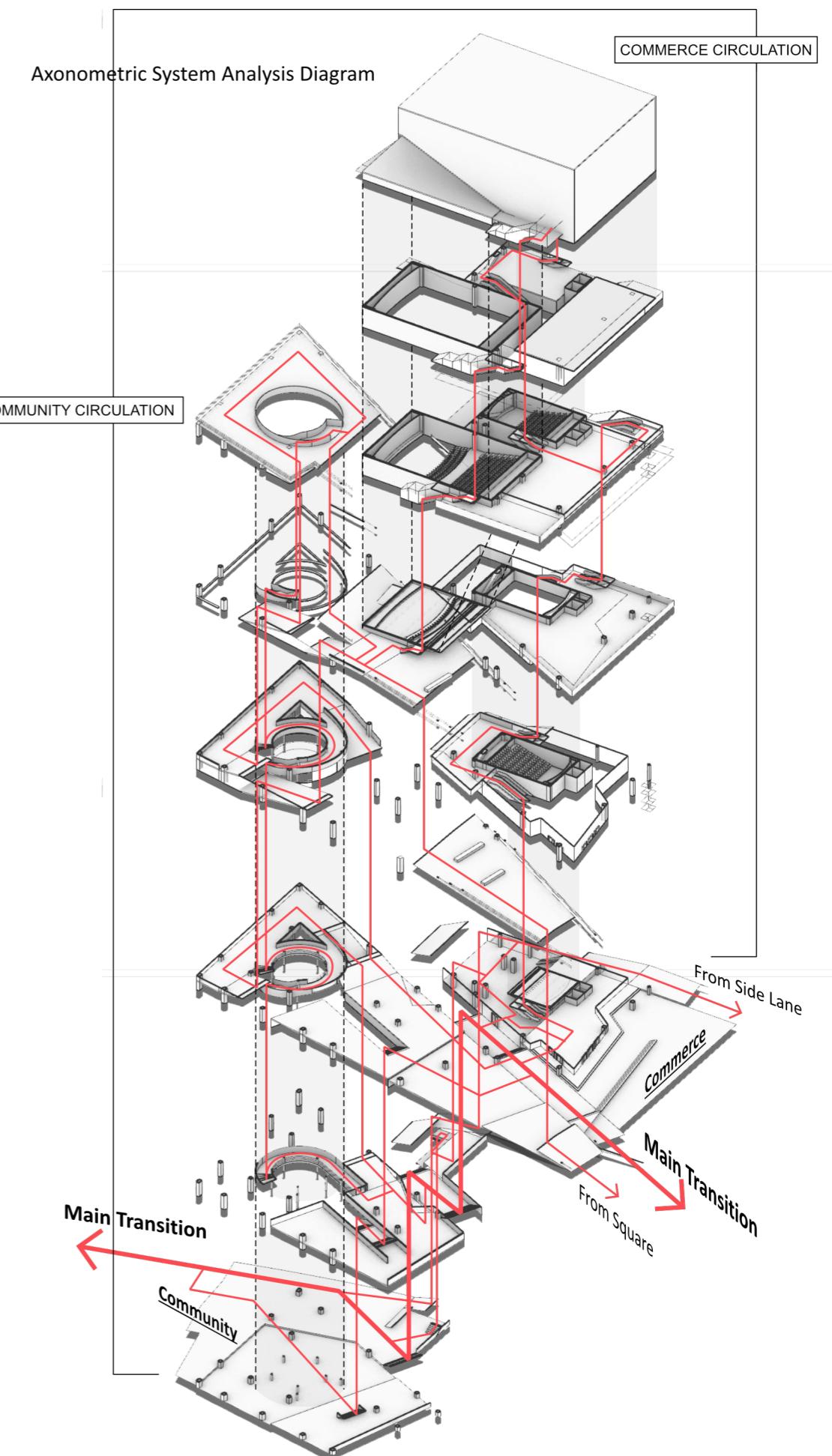
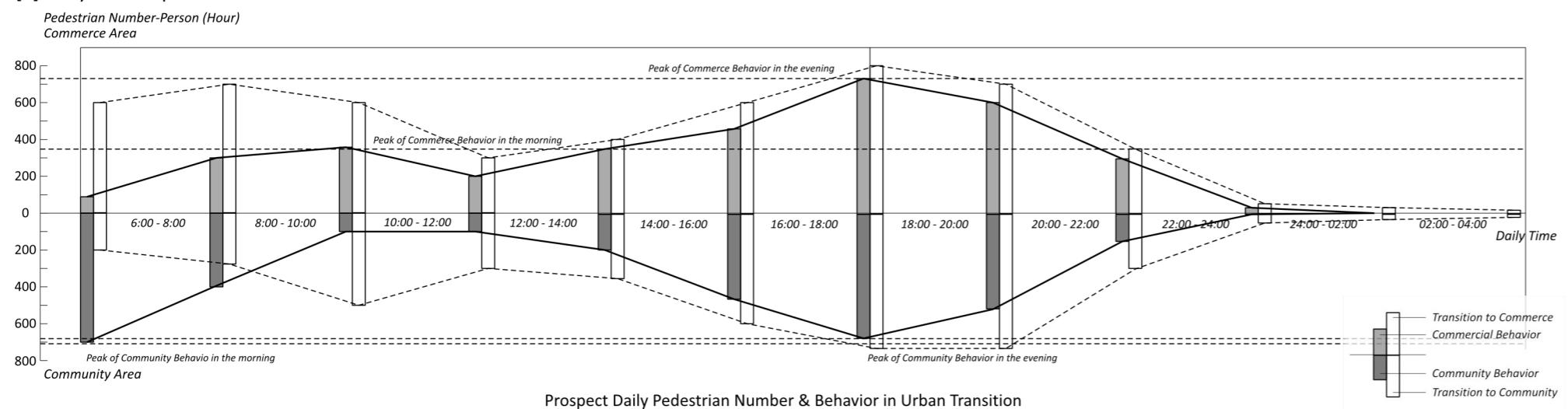




Image. Front view of Space of Fossil.

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