

Re-Envisioning Rural Urban Development
in Dali, China

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ABSTRACT

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In order to confront the country's impressive rate of development, the Chinese government is planning to move 250 million rural residents into newly constructed mega cities by the year 2025. Villages are to be demolished and farmland paved over to make room for these mega cities. Villagers will be forced to relocate to brand new environments and to start learning to live an urban life. As a result, the Chinese people will lose a sense of belonging and local identities will be erased.

In response to the demolition of existing villages and emergence of mega cities, this thesis proposes a new framework for mid-rise high density development in rural China. As opposed to the complete destruction of the existing fabric, this new framework calls for incremental transformation to preserve regional identities and help local residents adapt to the changes caused by rapid urbanization.

Concurrently, this thesis investigates a duplicate mixed-use tower typology, and suggests a smaller human scale mixed-use development with courtyards and public squares, which is integrated with local culture and life. In the proposal, basic infrastructure and building frames will be provided to the residents, who are encouraged to build their own units. The customized self-built solution will support flexible incremental growth and add richness to the new construction that draws upon the cultural traditions of these rural communities.

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CHAPTER 1. INTRODUCTION

1.1 Problem Statement

Recently, China has achieved an impressive rate of development of its economy and increase in its global influence. With the rapid growth of China's economy, the demand for new buildings increases and had led to the recent construction boom. Many international architects have been invited to participate in all kinds of design competitions for landmarks in China. China has quickly become an experimental land for global architects. At the same time, Chinese architects have also tried to apply Western theories and shifted their designs from being local and traditional to a more global, modern architecture, in order to raise international recognition. When the Chinese government and architects became open-minded, and started to accept and utilize Western architectural theories they also began to disregard and neglect the richness of Chinese traditional architecture. With the increasing demand for new commercial centers, residential apartments, and mixed-use high-rises, remarkable old residential houses, and traditional buildings have been demolished. Western modern architecture started to take over contemporary Chinese cities and Chinese architecture is facing the problem of losing its identity. Often times, in order to maximize profit in the shortest possible time period, developers have tended to borrow and copy from other projects. As a result, more and more Chinese cities are looking the same with similar office and residential towers as well as commercial mixed-use complexes.

At the same time, in order to make room for these new constructions, traditional houses are demolished and villagers are forced to relocate. Many of them moved to a small

apartments in a high-rise apartment towers, where they have no space to plan trees and flowers, no space to hang clothing or hang out with neighbors. The recently constructed apartment towers were not designed to support their lifestyle but were designed for urban families. A large number of farmers are also forced to give up farming, which they've been doing for generations. They are now living in urban cities, but their farming skills have not prepared them for any jobs in big cities. With the high competition in urban cities, if they are lucky, they might be able to find jobs on construction sites or sometimes in small restaurants. Often times, it takes them months to get a job in big city to support their living expenses.

The rapid urbanization has raised Chinese urbanization rate and impressed the world. The fast paced and large scale urbanization has also causes many issues: the losing of cultural identities, loss of important urban fabrics and architecture, and it has also changed millions of farmers' life. This thesis will investigate the issues of rapid urbanization and globalization in China and ask the question of how Chinese architecture can be anchored in its cultural context serve the needs of local residents while China is searching for global recognition.

1.2 Thesis Overview

Facing the globalization and modernization, this thesis searches for ways to maintain regional identities and culture importance while participating in the modern civilization. Instead of building modern mega cities with identical towers, this thesis calls for attention to local values and regional identity. As opposed to complete destruction of existing fabric and erase of local identity, this thesis searches for a new framework for incremental transformation to preserve regional identities and help local residents adapt to the changes caused by rapid urbanization.

Concurrently, this thesis investigates the issues of duplicate mixed-use towers typology, and suggests a smaller human scale mixed-use development with courtyards and public squares, which is integrated with local culture and life. In the proposal, basic infrastructure and building frames will be provided to the residents, who are encouraged to build their own units. The customized self-built solution will support flexible incremental growth and add richness to the new construction that draws upon the cultural traditions of these rural communities.



Figure 1. Demolition of villages for new construction

CHAPTER 2. THEORETICAL FRAMEWORK

2.1 Background of Contemporary Chinese Architecture

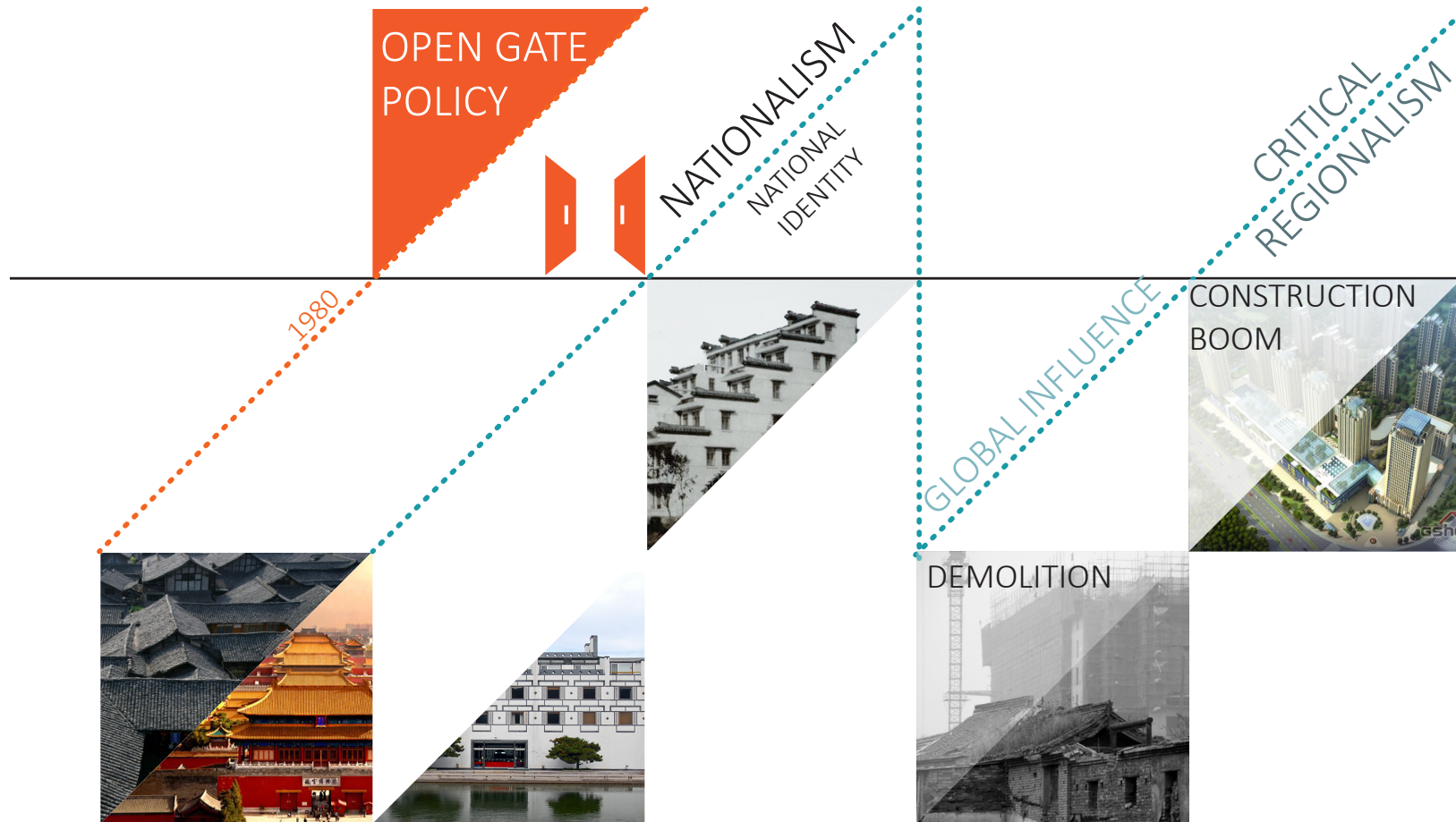


Figure 2. Background of Chinese Architecture

BEIJING
OLYMPIC



SEARCHING FOR GLOBAL RECOGNITION

REFLECTIVE
REGIONALISM

2008



LANDMARKS



STADIUM



CONFLICT



CHAPTER 2. THEORETICAL FRAMEWORK

2.1 Background of Contemporary Chinese Architecture

1980s – “Open Gate Policy” and Nationalism

During early 1980s, the Chinese government established the “Open Gate Policy”, which encouraged cooperation between state-owned firms and foreign companies. This policy attracted considerable foreign investment and led to a construction boom with residential buildings, commercial buildings as well as corporate office buildings. Working with foreign architectural firms opened Chinese architects to Western theories and advanced building technologies. With the influence of Western countries, China was quickly brought up-to-date with contemporary industries abroad. This situation exposed China to a dilemma faced much earlier with the introduction of modern civilization in the West. This problem was identified by Paul Ricoeur, stating that:

“In order to take part in modern civilization, it is necessary at the same time to take part in scientific, technical, and political rationality, something which very often requires the pure and simple abandon of a whole cultural past. It is a fact: every culture cannot sustain and absorb the shock of modern civilization. There is the paradox: how to become modern and to return to sources; how to revive an old dormant civilization and take part in universal civilization”.¹

Western civilization was regarded as the model and frame for modernization. In

¹ Paul Ricoeur, Canizaro, Vincent B. 2007. *Architectural regionalism: collected writings on place, identity, modernity, and tradition*. New York: Princeton Architectural Press.

order to grow and participate in “modern civilization”, China was absorbing modern technology, ideas and theories from the Western world. However, Chinese civilization was suspended from 1949 to 1980 due to the Cultural Revolution and other political issues. Until 1980, Chinese civilization was still at the same stage as when the Qing Dynasty ended around 1916. Therefore, there was a big gap between Western universal civilization and Chinese civilization. While Chinese architects eagerly absorbed western theories and advanced technologies in the 1980s, it was hard to fill the gap. Chinese culture could easily be abandoned and replaced with world culture. The question was raised: how to respond to and participate in the universal modernization and revive old Chinese civilization and maintain cultural diversity.

In Chris Abel’s article, “Regional Transformation”, he discusses when Modernism was exported from Western countries to developing countries, it caused a break with the past and brought an accelerated rate of development. For developing countries, *“the business of deciding what does or does not belong in their region acquires political and emotional dimensions that smack of basic struggle for cultural survival, frequently couched in the plaintive terms of a ‘search for identity’.”*² In this situation, local architects were searching for ways to build in response to culture, place and climate that was lost in international modernism.

Some Chinese architects in 1980s realized the problem of losing cultural identity and argued that there needed to be a balance between tradition and modernity. The idea

² Abel, Chris. 2000. *Architecture and identity: responses to cultural and technological change*. Oxford: Architectural Press.pg. 143.

of a "National Form" became their approach in searching for identity. The supporters argued that: "Chinese architecture should only be modernized with a 'national identity'."³ As a result of this situation, some Chinese architects searched for forms and symbols in traditional Chinese architecture and tried to engage these forms and symbols in contemporary architecture.

One such example is Chinese-born American architect I.M. Pei, who was invited by the Chinese government in the 1982 to design the Fragrant Hill Hotel. While the form of the building is simple, several traditional elements were placed on this abstract volume. For example, Pei utilized a pitched roof to decorate the clean roof line. He also incorporated a picturesque garden space around the building. In addition, the window openings are designed to reflect historical post-and-lintel construction. Traditional elements are therefore used to express "Chinese Identity." Following the construction of I.M. Pei's project, pitched roofs, picturesque gardens and historical decorative motifs were applied to many contemporary buildings with the hope to define a Chinese identity. However, these traditional elements were used in contemporary buildings as icons that stand for Chinese culture, rather than for their cultural meaning. Indeed, the pitched roof was traditionally used for emperors' palaces, which does not apply to a school, a hotel or residential apartments.



Figure 3. I.M. Pei, The Fragrant Hill Hotel.

³ Haddad, Elie G., and David Rifkind. 2014. *A Critical History of Contemporary Architecture*. Farnham: Ashgate Publishing Ltd. <http://public.eblib.com/choice/publicfullrecord.aspx?p=1610003.pg.401>.

1990s – Influence of Critical Regionalism

The Chinese economy continued to develop at a fast pace in the 1990s. After the experiments of “National Form”, Chinese architects understood that merely applying traditional elements to contemporary buildings did not solve the problem of losing their cultural identity. With more and more western theories being translated, and the return of some Chinese architects who were educated abroad, new theories and ideas were spread in China and started to change Chinese architectural education and design process. The idea of “concept design” was introduced to both Chinese students and architects. The design is no longer merely based on a building’s function but also on the conceptual speculation of the architects. The concept of “space” also influenced Chinese architects and shifting attention from superficial form making to interior spatial quality.

In the meantime, a group of Chinese architects were influenced and inspired Kenneth Frampton’s ideas of “critical regionalism” and his discussion of the “poetics of construction.”⁴ From their perspective, “critical regionalism” provided ways to resist the global modernization. As wrote by Frampton, “*the fundamental strategy of Critical Regionalism is to mediate the impact of universal civilization with elements derived indirectly from the peculiarities of a particular place.*”⁵ Critical regionalism aimed to “cultivate a contemporary place-oriented culture.” “*It is important to distinguish between Critical Regionalism and simple-minded attempts to revive the hypothetical*

4 Frampton, Kenneth. 2002. *Labour, work and architecture: collected essays on architecture and design*. London I: Phaidon Press. 26.

5 Ibid.

forms of a lost vernacular."⁶ Critical regionalism is not merely a formal approach for culture preservation but also emphasize on the tectonic and materiality.

As Tao Zhu has argued Frampton's writings, particularly those on critical regionalism, encouraged Chinese architects "to explore the notion of 'an architecture of resistance' through the mediation between 'universal civilization' and regional specificity".⁷ Due to his influence, architects were investigating the solution to modernization while maintaining their cultural identity at a tectonic and cultural level. Under the influence of Critical Regionalism, Chinese scholar, Feng Jizhong responded to superficial national form by arguing that one must not only considered the hardware of Chinese tradition but also the software, such as the spirit, culture, and similar related elements. Despite their subtle and intangible nature, these influences must also be recognized.⁸

With the market reforms in China during 1990s, many young Chinese architects were able to open their own firms instead of working in large companies and institutes. More freedom was given to these architects, as they had the opportunity to experiment with their own theories. Yung Ho Chang was among the group of young Chinese architects. Chang received his M.Arch degree from University of California Berkeley and taught in the U.S. for 15 years. In 1994 he decided to return to China and opened the first private Chinese architecture firm, Atelier Feichang Jianzhu: A Chinese Practice. Chang's work

6 Frampton, Kenneth. "Towards a Critical Regionalism: Six Points for an Architecture of Resistance," in *The Anti-Aesthetic: Essays on Postmodern Culture*, ed. Hal Foster (Seattle: Bay Press, 1983), 21.

7 Haddad, Elie G., and David Rifkind. 2014. *A Critical History of Contemporary Architecture*. Farnham: Ashgate Publishing Ltd. <http://public.eblib.com/choice/publicfullrecord.aspx?p=1610003>.pg.401.

8 Ibid.

related to the rapid development and the new creation of a vast unnatural landscape, stripped of topography, mature trees, indigenous vegetation, and any identity. Facing the problem, Chang took an acupuncturist approach to treating the giant body of China. Chinese acupuncturist treat the body as a system, by fixing one part, it will fix the whole system. If the city is considered as one system, "each building, each piece of architecture is an essential part of the totality".⁹

Chang avoided the massive projects that were typical in China at that time. Each of his project is modest, with a reflection of site context but also an incorporation of international theories. With the influence by Western theories, and the economic reform, a young generation of architects emerged and paid tremendous attention to Chinese contemporary architecture and its cultural influence.



Figure 4. Yonghe Zhang. Xishu Book Store

⁹ Zhang, Yonghe, Gutierrez, Laurent, and Portefaix, Valérie. *Yung Ho Chang, Atelier Feichang Jianzhu : A Chinese Practice = Une Pratique Chinoise*. Hong Kong : New York: Map Book Publishers ; Available in North, South and Central America through Distributed Art Publishers, 2003. 10.

2000s – New Experiments (Issues & Opportunities)



Figure 5. Herzog & De Meuron. Beijing National Stadium Birds Nest, Beijing, China.



Figure 6. OMA. Beijing CCTV Headquarters in Beijing

In the year 2001, Beijing was elected as the host city for the 2008 Summer Olympic Games. In searching for global recognition, increasing numbers of international architects were invited to design landmark buildings. China thus became a testing ground for their own experimental ideas. As a result of the construction boom, a great number of iconic buildings were constructed in China with little consideration of the country's context and cultural background. The design of the CCTV Headquarters by OMA was one of the most iconic landmarks built in Beijing. At that time, the technology used in the building was also one of the most advanced in the world. Since its construction, this building has attracted considerable attention from around the world. However, as a pure formal expression, the building shows little respect to its physical context and to Chinese culture. In fact, Beijing's citizens have named this building the "big boxer shorts". People read the building as a form but not a space. It has no relationship to its surrounding context or its cultural background. The glazing is typical of that used everywhere around the world in high rise buildings. In this and many other respects it could be placed anywhere in the world and still function in the same way—as an icon of contemporary form and technology.

Recently the Chinese government has become aware of the need for architecture that values its physical, social and cultural context. During the a high-profile symposium on the arts on Oct. 15, 2014, the president of China, Jinping Xi, called for an end of

what he called the “strange-looking buildings”¹⁰. Since the “Open Gate Policy” of the 1980s, China has been blindly accepting western ideas with little self-reflection. Now Chinese society has become sensitive to the problem of losing identity with all the iconic examples of global architecture. In his recent writings, architect Xiaodong Li has argued that today China needs independent thinking, generating its solutions, forms and spaces based on reality. This approach corresponds with Alexander Tzonis and Liane Lefaivre’s discussion of critical regionalism, which they assert: “recognizes the value of the singular, circumscribes projects within the physical, social, and cultural constraints of the particular, aiming at sustaining diversity while benefiting from universality.”¹¹ According to this view, it is important that the design responds to its site condition at the same time as taking advantage of global influences. The new generation of Chinese architects are experimenting and searching for solutions to this problem by maintaining China’s cultural identity while aiming for global recognition.

Identity is the most significant characteristic of a place, and plays an important part in its understanding and perception. Chris Abel points out that “human identification with a place presupposes that places have ‘character,’ that is, attributes which distinguish each place from any other and lend to it its unique ‘presence’ or ‘genius loci’.”¹² Natural, social and cultural factors vary from place to place. These various factors contribute to the specific characteristics of a place, which becomes the “genius loci”.

10 Li, Cao. “Under Xi, China’s Wave of ‘Weird Architecture’ May Have Peaked.” *The New York Times*, December 19, 2014. Accessed May 1, 2015. http://sinosphere.blogs.nytimes.com/2014/12/19/under-xi-chinas-wave-of-weird-architecture-may-have-peaked/?_r=0.

11 Lefaivre, Liane, and Alexander Tzonis. 2003. *Critical regionalism: architecture and identity in a globalized world*. Munich: Prestel. Pg.20.

12 Abel, Chris. 2000. *Architecture and identity: responses to cultural and technological change*. Oxford: Architectural Press.pg. 143.



Figure 7. Star Architects in China

According to this view, the loss of such character, as result of modern architecture and urban development “has disastrous consequences for man and for society, and we are now beginning to be aware of these effects.”¹³ With the construction of global modern architecture, places share more similar qualities and there are fewer distinctive aspects that remain in each place. Due to the large land area of China, identities are varied based on the specific regions. Defining Chinese identity can thus be almost impossible. As architects, searching for identity, it is important to understand the unique ‘presence’ of the specific place. In considering the issue of identity in architecture in China, the design of buildings should speak for the site based on the characteristics of the site.

Chinese architects are still searching for the means to respond to global modernization at the same time maintain cultural identity. A new generation of architects have developed a variety of perspectives. Li Xiaodong, the founder of Li Xiaodong Atelier and a professor at Qinghua University, is one of the leading Chinese architects who are investigating into the issue of losing identity. His projects show close attention to Chinese philosophy, spatial conception and local context and climate. The built works are products of modernization but also maintain cultural identity. Wang Shu, another leading architect in China, reveals the lost cultural past through building materiality. In the design of Ningbo Museum of Art, he utilized old building materials to recall memories of the site. Materials were given a new tactile quality in contemporary building to reveal the cultural past.

13 Ibid. 143.

2.2 Literature Review

Culture as Architectural Soul

“Beijing Charter –The Future of Architecture” by Liangyong Wu

Culture, which is “the accumulation of history”, remains in the architecture, blends in people’s lives, and invisibly influence urban construction, public attitudes and behavior.¹⁴ It is the soul of the city and architecture. Global technology and production processes have separated people from traditional space. Regional culture diversity is declining and vanishing. Since the soul of architecture is rooted in cultural tradition, architecture is facing the challenges posed by global and regional changes.

In *Beijing Charter*, Wu points out these challenges, including nature’s revenge, overwhelming urbanization, technology as a double-edged sword and genius loci default. Facing these issues he emphasizes the importance of the culture of architecture. As he discusses:

*“The culture of architecture comes from a local accumulation of history. It manifests itself among the built forms and in day-to-day living, exerting a voiceless influence on the experience and behavior of the inhabitants. In a sense, it is the soul of our cities, towns and villages.”*¹⁵

14 Wu, Liangyong. *UIA Beijing Charter : The Future of Architecture* = Guo Ji Jian Xie “Beijing Xian Zhang” : Jian Zhu Xue De Wei Lai. 第1版.; Di 1 Ban. ed. Beijing: Qing Hua Da Xue Chu Ban She, 2002. pg. 5.

15 Ibid, 9.

The influence of culture can only be seen through people's behaviors, it is deeply rooted in people's minds. Wu emphasizes on the importance of local culture and history in urban development. He sees the culture and history of region as the soul of the region. It is thus necessary to recognize the importance of cultural context in contemporary development.

Wu also argues that the development of technology must be related to human factors. He incorporates Alvar Aalto's idea that technological development of architecture should be rooted in its cultural context. "*The local condition should be the base point and foreign ideas can be integrated into its own later on. Then integrity and variety can be achieved.*"¹⁶ Even though architecture derives from local context, it is not a product of regional past. Rather, regional architecture derives from the concerns of the future. Sharing experience among various countries should be encouraged but it should not be merely copying or imitation. The sharing of experience is a way to stimulating local imaginations.

A society's understanding of architecture will influence the quality of local architecture. The cultural and architectural education of a decision-maker is a determining factor for the quality of a building project.¹⁷ In this sense, the understanding of architecture should be emphasized in every society. Architecture is designed for everyone in the society. Good design of architecture cannot merely rely on architects but also the decision makers, the governors, the developers and also the end users. It is a

16 Ibid.

17 Ibid, 69.

collective effort that involves the whole society.

As Wu argues, “the human dimension of culture is the ultimate judge of economic and technological progress. Culture should orient the development of science and technology, in other words, people should be the ultimate concern”.¹⁸ Culture is the accumulation of a city, it reflects its development over time. Culture should be the driven force for the economic and technological progress. It is the force that shapes the city, the ideas and behaviors of its citizens. Under rapid development, people should not let the technologies or economy drive the future but deeply reflect the culture, the soul of the city.

Rapid development based on the economy has separated people from their local tradition. The diversity and local culture gets lost. The standardization and commodification of cities and buildings erases architectural meaning.¹⁹ Especially when China is aiming for global recognitions, achieving economic goals is considered most essential. The loss of culture and local identity becomes the result of rapid mass production due to commodification. Facing this situation, Wu is calling for the protection of local culture identity.

Therefore, he proposes to stress cultural development in parallel with economic and technological development in two specific ways.

- First, he argues that culture has rich content and we need to identify the

18 Ibid.

19 Ibid, 87.

construction and application of knowledge as a critical component.

- Second, he argues that “the construction of cultural environment is an essential part of construction of human settlements”²⁰. Even though, in recent development, all the emphasis is given to economy and technology, eventually the development should contribute to the construction of a rich cultural environment and serve human needs.

Identity of certain region in a certain time period followed by certain groups

The ‘Real’, the Hyper, and the Virtual Traditions in the Built Environment by Nezar Alsayyad

The question of what is Chinese identity has always been an important topic of discussion in China. When examining Chinese identity, most people think about ancient temples, the metropolitan cities filled with residential towers and shopping malls or the 2008 Beijing Olympic. Therefore, Chinese identity does not equal Chinese tradition. Especially in a global world, with constant cultural exchange, there is no singular pure identity or culture, the identity or culture of a place has always been a hybrid. Therefore, there is no need to preserve one singular culture but to be true to the reality and present the complexity .

Under the current situation in China, it is also important to avoid mainstream tradition and official identity, as Nezar Alsayyad argued:

“Political units that formed nations were expected to be homogenous units with a common history, culture and tradition, composed mainly of people from one ethnic

20 Ibid, 95.

origin, one race and one religion. The reality was otherwise, because the nation-states that emerged from World War I and II –and which now form the bulk of Second and Third Worlds –were mainly put together by international deals which displayed little interest in the will of the people who inhabited these lands.”²¹

There are limitations to national identity and national identities are never complete. As Alsayyad argues, traditional built form can only symbolize national identity as observed by certain groups at specific points in time, and not necessarily by an entire nation. In the Chinese condition, there are many dynasties and ruling groups from the ancient times. The identities represent a specific time under specific ruling ethnic group. A national identity is impossible to include the identities of all the groups and reflect every dynasty. As Alsayyad argues, “identity is composed of more than one discourse, as composed always across the silences of the other, as written in and through ambivalence and desire”.²² Identity is constantly changing according to its location, time and participants. It often is not about a singular discourse but several. It is associated with a certain time and arouse sympathy of certain groups of people.

Moreover, there are many ethnic and regional cultures and traditions existing. To unify the nation, the current governing elite turns to present a singular “national” symbol and neglects the other culture and traditions. As Alsayyad argues, the national identity, as perceived by the government, is inherently tied to the image of a country in the international arena and the image or ‘vision’ the government wishes to project

21 Alsayyad, Nezar. *Traditions : The "real", the Hyper, and the Virtual in the Built Environment*. 2014. Pg. 107.

22 Ibid, 109.

to the world.²³ The new constructions for the Beijing Olympics is one good example. The design of the national stadiums relied on international star architects to convey of 'vision' and image of Beijing as a modern international city. The star architects like Jacques Herzog and Pierre de Meuron, Rem Koolhaas and Zaha Hadid brand the city with international modern buildings, which become the symbols of a nation which they had no affiliation. As discussed by Broudehoux, the product of these built forms were also an attempt by the city's middle and upper classes to keep 'a comfortable distance from the "other China" that is increasingly perceived as backward, hostile, and dangerous'.²⁴ By avoiding "the other China", the middle and upper classes are avoiding the reality in China. Trying to create an image of global modern city does not improve the backward, hostile and dangerous China. A development of a city should base on the social reality. While creating a new global city, they also deny and ignore the existing situation.

Globalization has made the issues of identity, traditional, and representation in urbanism very cumbersome and has cast doubt on their ability to represent the peoples and cultures of many nations.

23 Ibid, 112.

24 Davis, M., & Monk, Daniel Bertrand. (2007). *Evil paradises : Dreamworlds of neoliberalism*. New York: New Press : Distributed by W.W. Norton &.

2.3 Precedents Study

Xiaodong Li

Background:

Xiaodong Li, one of the leading architects and scholars in China, focuses on a Chinese architecture that brings tradition, culture, contemporary theories and technologies together. Li received his undergraduate degree from Qinghua University, master and PhD from Delft University of Technology in 1993. After graduation, he taught and practiced in Singapore for 10 years before returning back to China in 2003.

Unlike a majority of Chinese architectural firms that participates in massive competition works, Li findd sponsors and like minded clients to investigate or donate to small, non-profit community projects. With his target clients or sponsors, he was given the freedom to decide the appropriate site and programs. Most of Li's works are located in areas with a rich cultural and building history, as well as meaningful natural context. Design begins with the research and analysis of local context, materials, construction methods and people's lifestyle. After carefully studying of the site, tradition and culture, and engaging with the locals and local craftsmen, design emerges. Many of the projects are in a temporary form, but the locals feel emotionally connected.

Theory: Reflective Regionalism, Chinese Conception of Space

When Li studied in the Netherlands, Li was highly influenced by his professor, Alexander Tzonis, and the ideal of critical regionalism. However, from his perspective, critical regionalism is not suitable for the current situation in China. He proposed

his theory of “reflective regionalism”, which is more appropriate for contemporary Chinese architecture. “Reflective regionalism” emphasizes on three major aspects “harmony”, “interactivity” and “Identity”.

The first is the “Harmony”, which is related to Critical thinking, which Li regards indispensable in architectural thinking process.²⁵ External criticism should be achieved through individual’s ideological balance and harmony instead of conflict architectural forms.²⁶ Followed by “interactivity” – reflective thinking is a micro self-criticizing process.²⁷ The “reflective regionalism” also examines the regional value based on modern value system, “reflective regionalism” also needs to rely on local value, and questioning the reasoning and legibility of modern values.²⁸

Chinese Philosophy

Li believes Chinese philosophy plays an important role in Chinese spatial conception. His design of School Bridge was highly influenced by Chinese philosophy, the theory of acupuncture. The concept of acupuncture believes that the human body is a whole system; if any part of the body has a problem then it will affect the whole system. “With acupuncture, meridians are connected and sometimes one little acupoint can

25 Interview with Archiplein - Paperhouses.” Paperhouses. October 16, 2013. Accessed March 17, 2015. <http://paperhouses.co/interview-with-archiplein/>.

26 Ibid.

27 Ibid.

28 Ibid.

cure the whole system”²⁹. The School Bridge is based on this philosophy and tries to do one gesture and solve several existing issues. The School Bridge is located in a rural village in Fujian Province. Two castles were separated by a creek and there was not much communication between the two communities. The School Bridge links the two castles, brings the old communities together. At the same time, the School Bridge also links the young generation with the old generation by providing classrooms and library to the kids and performance stage for elder villagers. Fun sliding slides are also incorporated to provide play areas for children. The School Bridge acts as a multi-functional space, school, stage, bridge and community space are all contained in one building. The acupuncture idea successfully solves the existing local problems, while also connecting and enlivening the two old communities.

Chinese Conception of Space

In Li’s book *Chinese Conception of Space*, through study of Chinese history, culture, literature and philosophy, Li states the definition of space in Chinese culture. Li argues that in western culture, architecture is considered as a separate entity; it is an object.³⁰ However, in Chinese history and culture, “space is and can never be

29 PASCALL, BIANCA. “*Interview with Architect, Li Xiaodong.*” *The Still Life*. N.p., 26 Aug. 2014. Web. 12 Mar. 2015. <<https://biancapascal.wordpress.com/2014/08/26/interview-with-architect-li-xiaodong/>>.

30 “GLOCAL CHINA Interview with Wang Lu, Li Xiaodong and Zhu Wenyi.” Interview by Xiaodong Li. *Digital Architectural Papers* 03 Apr. 2013: n. pag. PERIODICALLY PUBLISHED DIGITAL ESSAYS. Web. 10 May 2015. <<http://www.architecturalpapers.ch/index.php?ID=108>>.



Figure 8. Xiaodong Li. School Bridge in Fujian

treated as an absolute 'object'.³¹ There is no distinction between the building and its context and environment. The architecture is seen as part of the environment rather than a separate entity. Therefore, the conception of the space involves movement through the space rather than a view from a distance as an object. The "enclosure is appreciated as it relates to impending departures or arrivals, that is, in terms of movement from one space to another; it is dynamic."³² The enclosure defines and links spaces as well as guides the movement.

Li expresses his understanding of the Chinese conception of space in The Screen project which was constructed in 2013. The Screen is built in the mountain range in Dichen Valley, Zhejiang Province. It is part of an architectural complex and it functions as offices for manager, staff and workers on site. In the building, all the spaces are linked, the edge of a space guides the movement. As Li discusses in an interview: according to Lao Zi, what is important is what is contained, not the container. Throughout Chinese history, architecture has never focused on the form.³³ Space in the building is never read from the exterior but only from inside. The form of the "container" is never the focus of the project. What is important is the contained space. The Screen, a contemporary architecture, is deeply embedded in the Chinese conception of space, the building is not an object but a series of linked, permeable spaces.

31 Li, Xiaodong, and Kang Shua Yeo. "Epilogue" In Chinese Conception of Space, 17. 1st ed. Beijing: Tsinghua University Press, 2007. Pg, 183.

32 Ibid.

33 Pascall, Bianca. "Interview with Architect, Li Xiaodong." The Still Life. N.p., 26 Aug. 2014. Web. 15 May 2015.



Figure 9. Xiaodong Li. The Screen in Ninbo, Zhejiang, China.

Relationship to Site Context

Nature has played an important role in Chinese culture and history. In Xiaodong Li's "Chinese Conception of Space", he discusses that nature is a "reduced cosmos, embraces man, and man lives in Nature, surrounded by the natural landscape to whose caprices man is subject."³⁴ The natural landscape has a critical role in determining the spaces which people inhabit. "The religious beliefs of the Chinese were influenced by their surrounding geographical features which overwhelmed man, inspiring deference in him."³⁵ Chinese admire and worship nature, especially mountains which were momentous. Nature is a crucial in Chinese culture and religious beliefs.

In the design of Xiaodong Li's work, nature and site context become an important elements that shapes the building form. His works respect Chinese culture and the Chinese conception of nature. In his design of the Water House, he tries to balance the natural power according to Chinese culture. The Water House is at the foot of Yulong Mountain in Lijiang. In Chinese culture, "mountains were imbued since ancient times with sacred power as manifestations of nature's vital energy (qi)."³⁶ The Water House was designed to emphasize horizontality and built with local materials, which helps to keep the building clam and modest next to the mountains. According to Chinese

34 Li, Xiaodong, and Kang Shua Yeo. "Chinese Perception of Nature - Landscape." In Chinese Conception of Space, 17. 1st ed. Beijing: Tsinghua University Press, 2007.

35 Ibid.

36 "Nature in Chinese Culture." Heilbrunn Timeline of Art History. New York: The Metropolitan Museum of Art. 2000. Accessed May 1, 2015.



Figure 10. Xiaodong Li. The Water House Courtyard in Lijiang, China.

theory of yin and yang, mountains obtain strong yang energy. Li balances the strong yang energy with yin energy by creating an enclosure of courtyards and body of water - extending the building into landscape. The enclosure of the courtyards provides the feeling of security in the large landscape. At the same time, by using the bamboo scree, the courtyard is never fully separated from the surrounding environment. It is still part of nature, which also refers back to the traditional Chinese belief: there is no distinction between nature and build form. Buildings are not separated from nature but integrated with nature.

Even though, Li criticized "critical regionalism", some of his work still shows its influence. His works are rooted in the local context and respond to local climate and light. The Liyuan Library is designed to enhance the appreciation of the natural landscape.³⁷ Therefore, the use of materials, lighting condition and ventilation are all based on the local context. The building is constructed with wood. Li chose to use wooden sticks, which are usually used for heating and cooking in the village. The wooden sticks are layered on the façade to filter the natural light. Since it is a library for the community, it is important to provide indirect light. The wooden sticks are placed in two to three layers to block the harsh sunlight and provide perfect reading ambiance. However, people can also experience change of the natural light in different times of the day and through various seasons. The use of wooden sticks as filters also provides a good lighting condition for reading at the same time remain the characters of local light. The building is also natural ventilated. Since the building is next to the river, in the summer time, building draws cool air from water surface. Upper operable

³⁷ "LiYuan Library / Li Xiaodong Atelier." ArchDaily. July 24, 2012. Accessed May 14, 2015.



Figure 11. Xiaodong Li. The Water House Courtyard in Lijiang, China.

windows bring the hot air out. The air ventilation in the building also acts as breeze to cool down the space. During the wintertime, the top double glazed roof allows the sun heat up the interior space. The wooden sticks are not treated, in the future, plants will grow and it will attract birds. Li hopes the building process becomes a natural revolution. The building is rooted in the nature and it becomes part of the nature. The design response to the local climate, light and topography at the same time utilized modern technology.

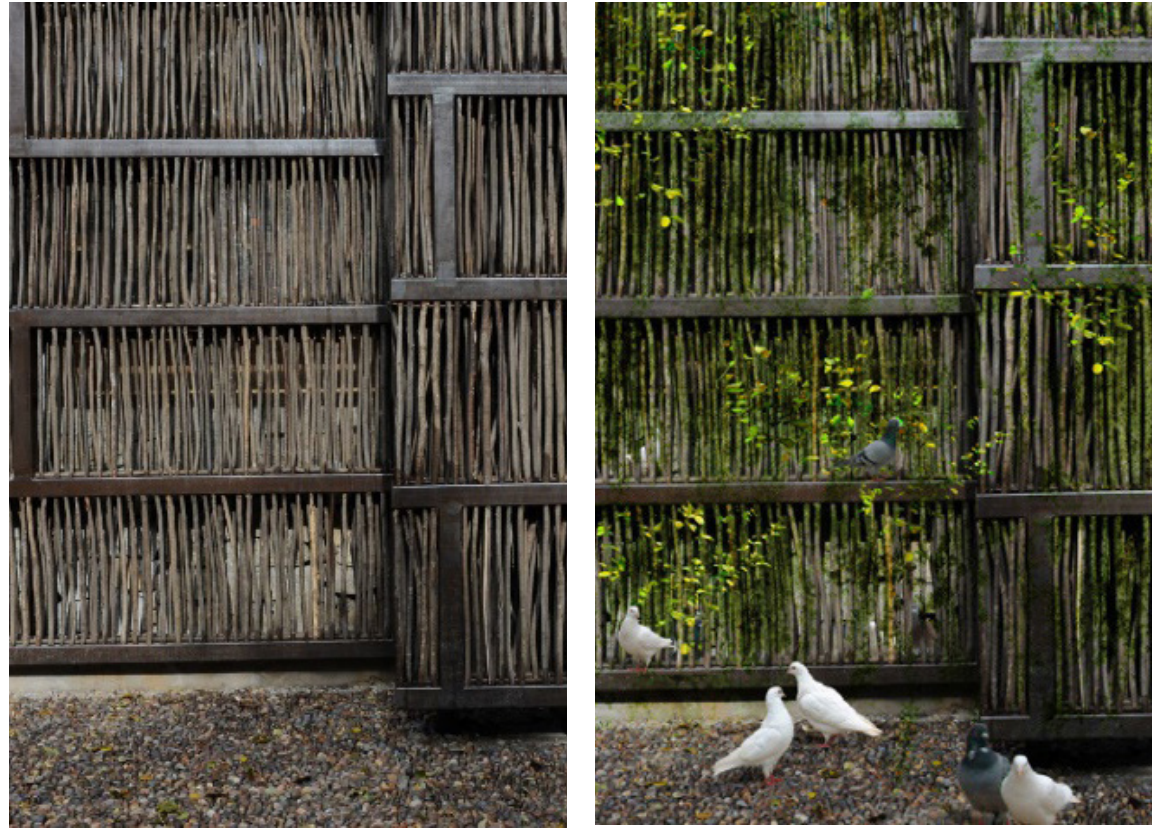


Figure 12. Xiaodong Li The Liyuan Library.

Li Hua

*"Tradition is transforming; it is not static. It always evolving, only when tradition can get evolved with our contemporary situation, it could survive."*³⁸

Background:

Hua Li, who founded TAO Architecture in 2009, is one of the leading architects in China. He received his undergraduate study at Tsinghua University, and then received his master degree from Yale University. His practice is rooted in China but he studied contemporary Western theories in the US. Therefore Hu has a good understanding of both traditional Chinese architecture and international theories. In Li's practice, his ambition was "to explore 'a sense of space; a response to climate, material and construction methods; and an effective use of resources."³⁹ Through Hua's work, a local culture and tradition reveals. Diversity of his work is inspired by local identity: the culture, material and construction technologies.

Li closely evaluates the site and program. Before accepting a project, the most important thing is the feeling of space and the exchange opinions with the owners on program requirements. Only when both site and program are persuasive Li will accept the commission. Then he spends tremendous time on site visiting and writing

38 Hua, Li. "关于中国传统空间意境的几点 On the Consciousness of Space in Chinese Tradition." TAO. 2005. Accessed January 17, 2016. <http://www.t-a-o.cn/on-the-consciousness-of-space-in-chinese-tradition>.

39 Trace Architecture Office: Hua Li interview (2013) / [moving cities.org](http://movingcities.org)

a mission statement. In his perspective, the purpose of writing a mission statement is through personal observation of the site to deeply understand the meaning of site and significance of the project, rather than simply accept a predetermined approach.

Practice

Gaoligong Museum of Handcraft Paper, one of his well-known projects, was built in the south west of China. It was built to preserve and celebrate the handcraft of the paper making process. The museum was built by using native materials, involving local craftsmen and with a respect for the natural environment. Therefore, the museum is designed to reflect local craftsmanship, architectural traditions and the natural environment with a contemporary form and character. The building belongs to the site and becomes a true representation of current the conditions, environment and atmosphere. It also grows and decays with the surrounding environment.

Relationship to Site Context

The Museum of Handcraft Paper was built at the foot of the Gaoligong Mountain, a world ecological preserve area. Since most local dwellings are built in wood, Hua Li decided to use wood for the Museum. This allows the building to become part of the village and blend into the surroundings. The design respects the natural context with its low scale. Hua Li always believes that "architecture belongs to a specific site and context in both an environmental and culture sense. Design is a journey of discovery,

not manipulation of form.”⁴⁰ During the process of designing, Hua Li visited twice every month to feel the site, people, culture and atmosphere. He sees the context as an essential part of the design. The design should not only respect the natural environment but also respect the local villagers and their traditions. It should not be a modern industrial building that is translated from the city to the village, but a design that highly relates to local traditions. In his mind, “architecture is not about finding the new but about revealing the origin and essential” (Veco Interview). Unlike some of contemporary architects who spend most of their time creating new forms and materials, Hua Li spends a tremendous amount of time in understanding the site.

The museum is not built to attract visitors through its form but what attracts visitors is the true representation of the local culture, especially the paper making process. The museum is designed as a cluster of several small buildings and each building shows one step in handcraft paper making process. Walking through each of the buildings, visitors not only experience the process but also experience the museum as a micro scale of the big village.

Use of Local Materials

At the beginning of the process, Hua Li envisioned the Handcraft Paper Museum to be rooted in the local environment. Therefore, he maximized the use of local materials and hoped the building with local materials can become part of the land and the

40 “TAO.” Office Profiles Architects. Accessed January 17, 2016. <http://www.chinese-architects.com/en/tao/source:search/index:1/count:1>.

local village. Nowadays, in most industrialized cities and towns, steel-concrete is the cheapest material to use. However, since Gaoligon is still not industrialized, and has a poor transportation system, so using local materials is still more economical and consume less energy. Because they decompose natural materials also create less impact on the environment. Suggested by the local craftsman, Shan wood was used for the columns and beams of the museum. Bamboo was used as roof material. During the construction process, the color of bamboo altered from green to brown and showed the change over time. These local, degradable materials, with time's passing, will become worn and fade into a more harmonious color with the landscape.⁴¹

Building construction process

Comparing to most fast-pasted building construction, the construction of this museum takes much longer time due to the design process and participation of both architects and local craftsman on site. The construction process, which involved local craftsmen, allows the building to build its relationship and emotion with local villagers. Although, the architects had prepared CAD drawings for every detail of the building, local craftsman had a hard time to read the drawings. Therefore, the best way to communicate become building large scale models. At the same time, one of Hua Li's assistant stayed on site and communicated with local craftsmen to make sure the design details worked with the traditional building methods. In order to create certain spacial quality and building composition, there are many sloped roofs in various angles. To local craftsmen, building all the roofs in various angles was a challenge

41 Ibid.



Figure 13. Museum of Handcraft Paper under Gaoligong Mountain, Li Hua

that. It required creative innovation. Therefore, the building did not merely copy traditional building methods, but developed the traditional technology.

Through the building process, the architects and local villagers also realize the potential of the traditional, Sun Mao, wood connection. Sun Mao is a nail-less connection that is used in most of traditional building construction. There are many advantages of using this traditional building method. Without use of nails, during earth quakes, wood has the flexibility to move and has a small amount of distortion, but if nail are used, once the metal is bent, it remains in this state. With the Sun Mao connection, the building is easy to take down and put back together. In the village, once a family needs to move, they simply take the building apart and reassemble them once they have moved. Therefore, compared to steel and concrete construction, which is impossible to move or takes tremendous energy to move –the Sun Mao wood system buildings are easy to transfer. This system saves lots of energy and materials during the process of moving. Hua Li's decision to use Sun Mao for the museum preserves this building method and gives it a rebirth.



Figure 14. Museum of Handcraft Paper, Model Making Process

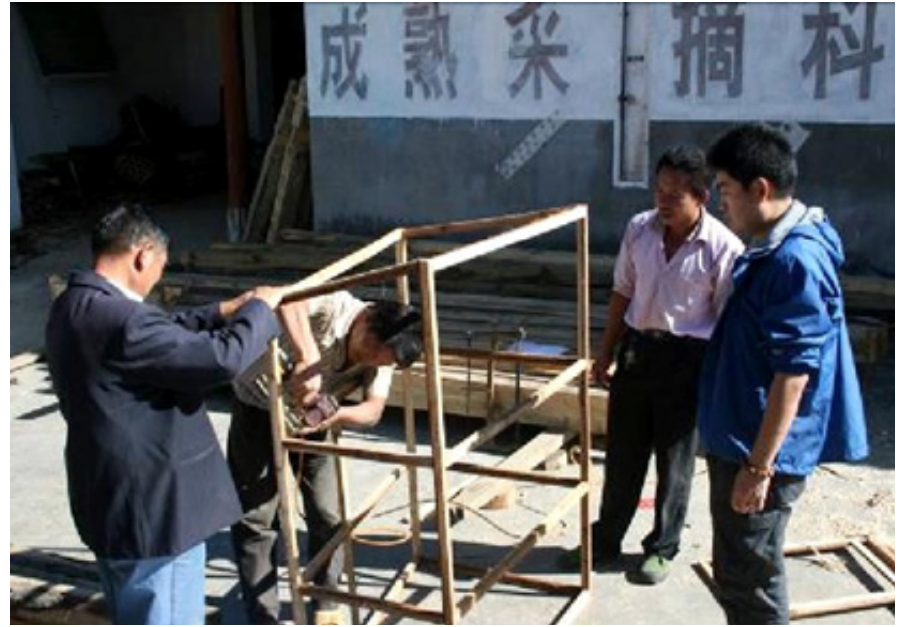


Figure 15. Museum of Handcraft Paper, making a mock-up

2.3 Precedents Study

West Village - Basis Yard

Location: Chengdu, China

Architect: Liu Jiakun

Completion: 2014

West Village is a mixed-use complex located in the city center of Chengdu. The goal of this project is to reproduce a lifestyle that was in the region and form a new community. The complex has a large courtyard in the center with running tracks, sports field, outdoor movie theater, and various community activity space. Housing units and small creative work offices are along the perimeter of the complex. Unlike most of the isolated and gated mixed-use towers development, this project brings the community back together. The complex also provides a wide variety of space for different community activities.

The architect, Jiakun Liu, pays close attention to the materiality and tactile quality of the building. The complex is built with most common materials in China, concrete. Jiakun, creatively used weaving bamboo mats when casting concrete and gives concrete an unique texture that local residents are familiar with. Jiakun also invented the "rebirth brick", which is made out of debris from the demolition. These bricks act as small planters, new live grow out of the ruins. The "rebirth brick" gives a new life to the demolition debris and suggests a sustainable way of recycling construction debris.



Figure 16. West Village, Courtyard and running track



Figure 17. West Village, Rebirth Bricks



Figure 18. West Village, Bamboo mat casted concrete



Figure 19. West Village, Outdoor Movie Theater

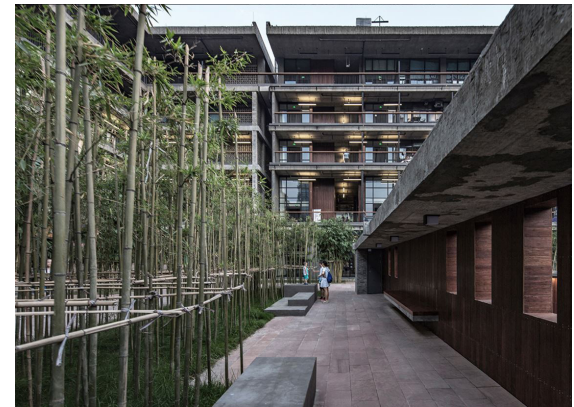


Figure 20. West Village, Bamboo Garden

2.3 Precedents Study

Quinta Monroy

Location: Sold Pedro Prado, Chile

Architect: Alejandro Aravena

Completion: 2003

The Quinta Monroy project was built as social housing for low income families. In order to cut down the budget and provide more housing units, Alejandro Aravena's team decided to build half of the house with all the elements that people will not be able to finish by themselves. Kitchens, bathrooms, stairs and partition walls were built by the architects. Then overtime, the residents can build on the existing structure, fill in the gaps and build more rooms according to their needs. It involves participation of the each families. Unlike most of the social housing projects, which are in form of building blocks, Quinta Monroy encourage its residents to build their own half of the house in their favorite color, style and sizes. As an result, the project provides more space with lower construction cost and the collective effort made by the residents made the architecture diverse and rooted in its context. Quinta Monroy project does not only provide better living environment with a relatively low budged, but more importantly it brings the community together and encourage everyone to build their customized "half houses".



Figure 21. Quinta Monroy, before occupation



Figure 22. Quinta Monroy, with self-built units

CHAPTER 3. METHODOLOGY

3.1 Thesis Goals and Objectives

The thesis aims to respond to the problem of identity in contemporary Chinese architecture through a design that is rooted in the region and reflects the reality of the place. The study and analysis of the site, its cultural history and current development becomes an important component in the design process. The first part of the thesis will involve site analysis, study of local materials and architectural traditions and the cultural background of the region. In order to be rooted in the context, a good understanding of the cultural past is indispensable. Then the program will evolve based on the findings. The program should address the social needs of the region.

This thesis site is in Dali, a city where I grow up in. Since this thesis is addressing the issues of losing culture identity during rapid urbanization process, Dali is a city that is facing the issue right now. Dali Has a rich and diverse cultural traditions but is under rapid urbanization in recent years, the cultural traditions and natural environment has been under threatened. Dali is also known as one of the most popular tourist destinations in China. The cultural history is one of the major attractions. If the identity of Dali is erased under the urbanization process, Dali will lost the attraction to tourists. Therefore, urbanization with respects to existing contexts becomes essential for Dali's development. The program of the thesis will be mixed-use complex, since mixed-use complex is the driven architectural typology in recent urban development. This thesis proposes a new mixed-use development based on the local needs and intended to:

- Engage the new immigrants, tourists and the local residents, providing space for cultural and economic exchange
- Develop a architecture that is rooted in cultural context and yet universal
- Create a prototype that can applied in other new developments
- Increase the public awareness of cultural importance in real-estate development

3.2 Site Selection and Analysis

Location

Dali Bai Autonomous Prefecture located in the central west of Yunnan Province. The Prefecture includes Erhai Lake and Cang Mountain. Dali Bai Autonomous Prefecture's average elevation is 2090 meters, has a total area of 29,459 square kilometers. 83.7% of the total area are mountains. The maximum horizontal distance is 320 kilometers, the maximum longitudinal distance is over 270 kilometers.

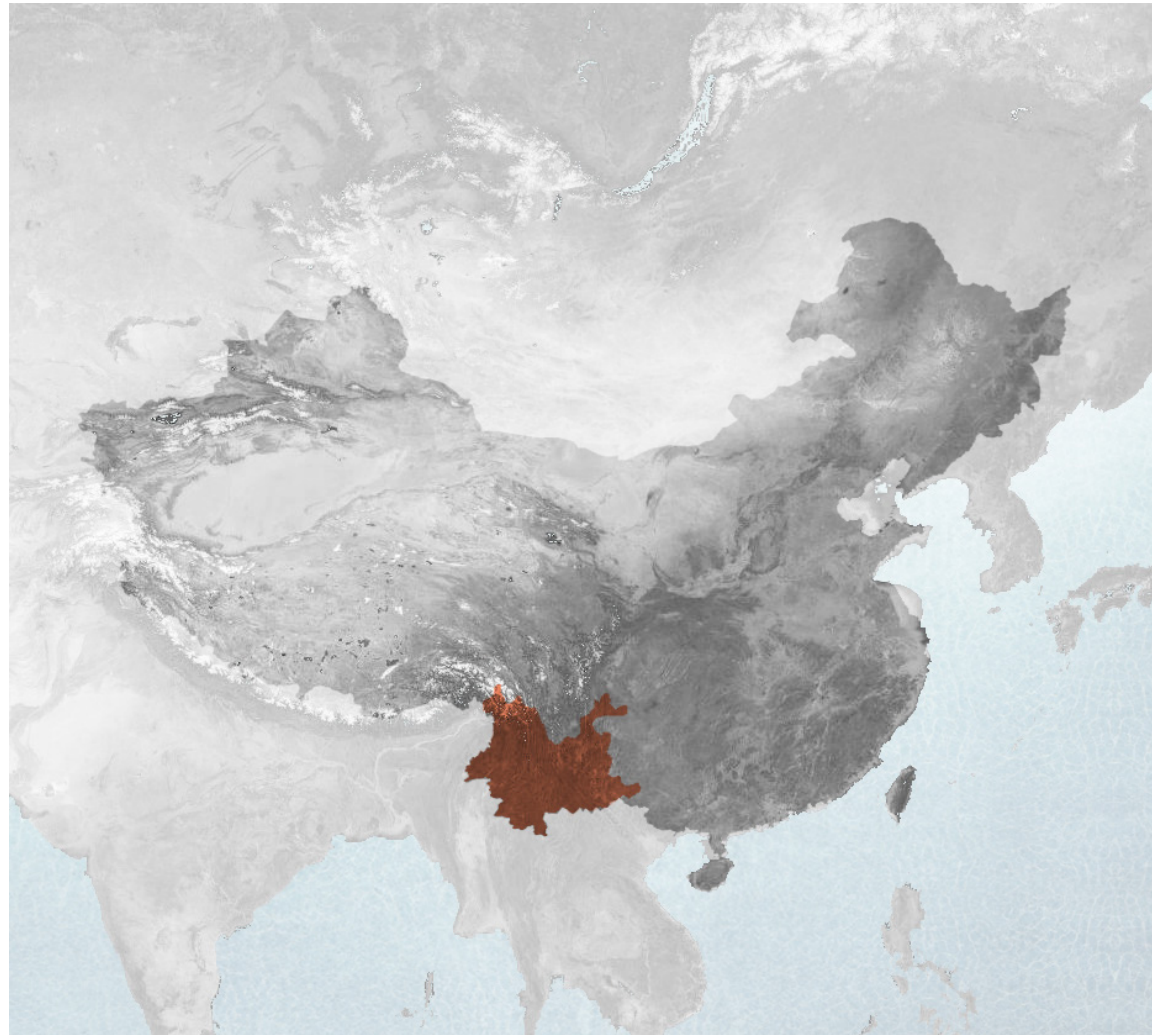


Figure 23. Map of China

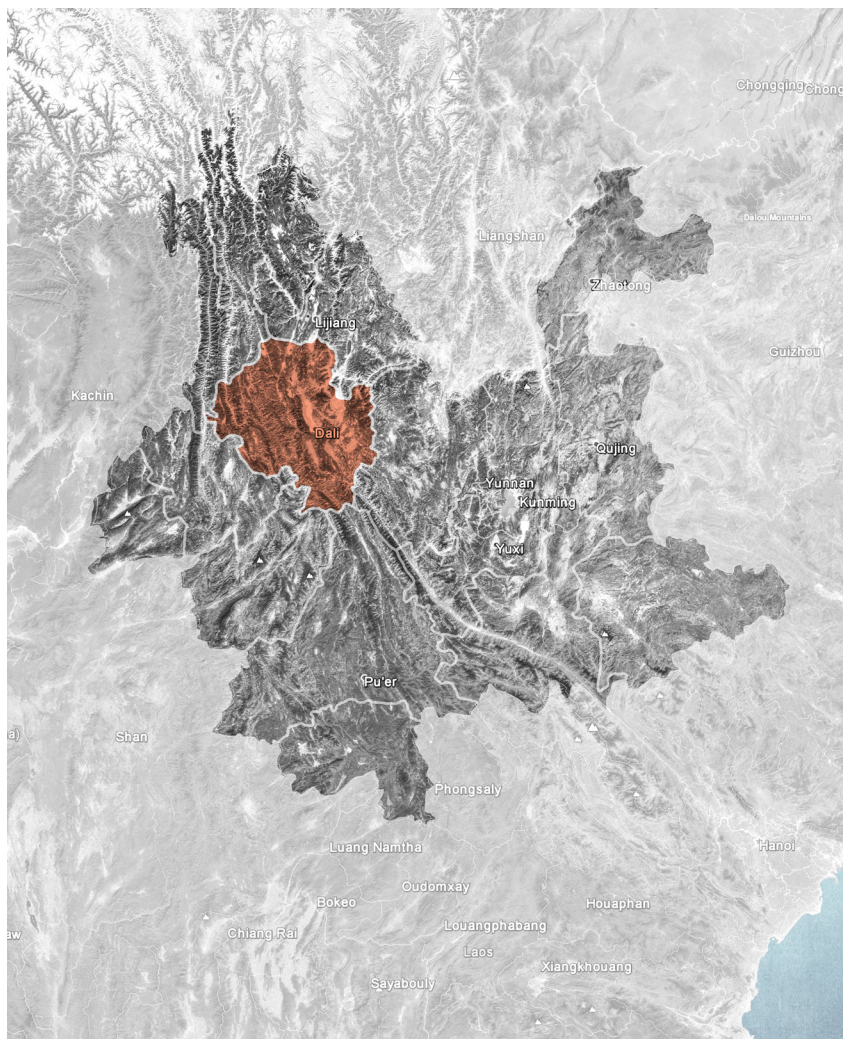


Figure 24. Map of Yunnan

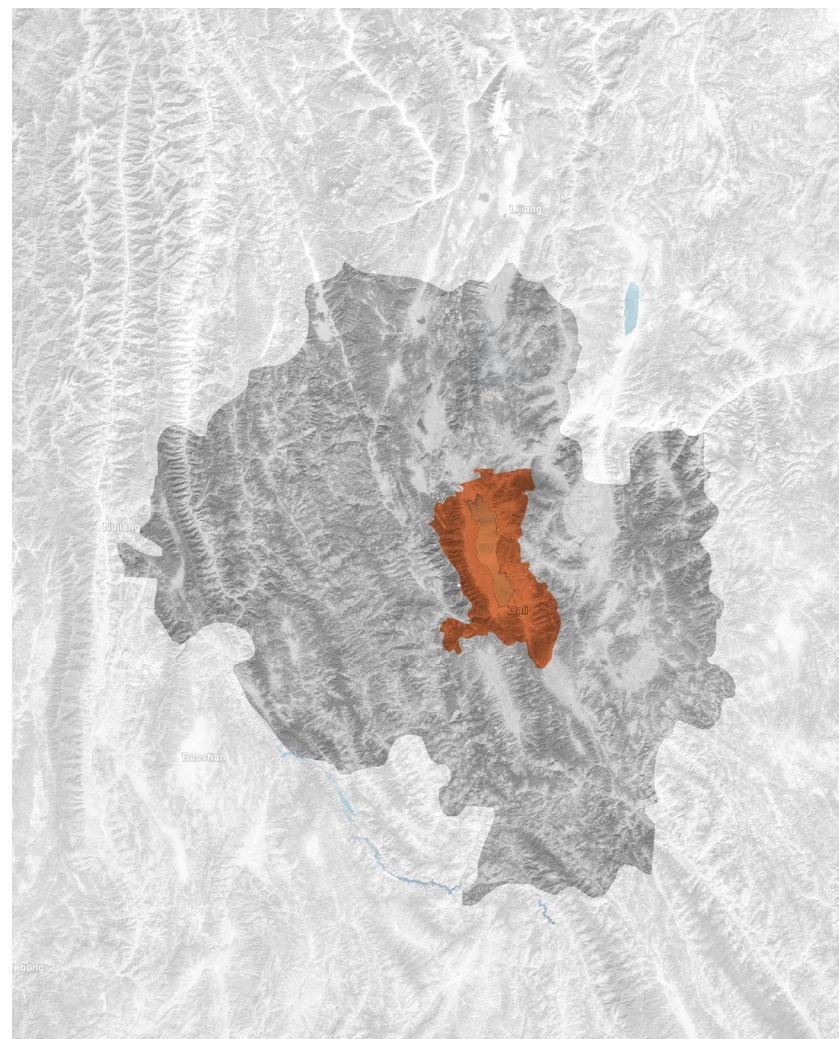
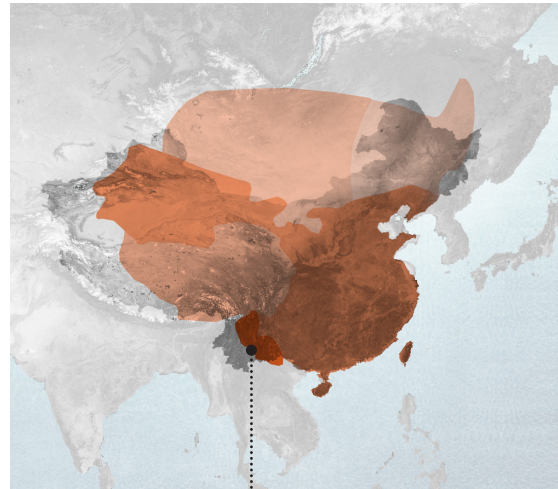


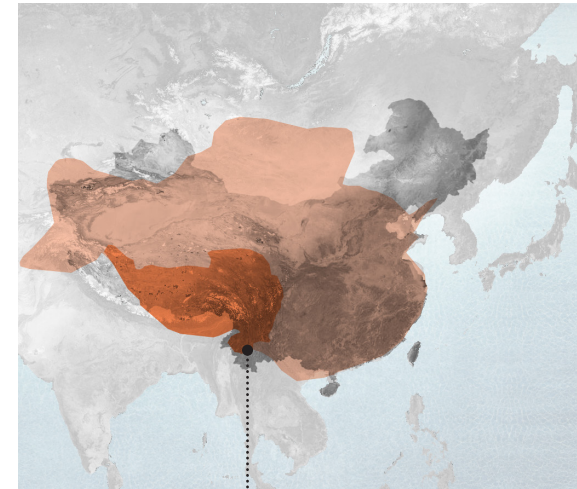
Figure 25. Map of Dali County

History of Dali

Dali has been controlled by various kingdoms over the past 2000 years. In 937, Dali was established by Duan Siping. It was conquered by the Mongol Empire in 1253. Dali Kingdom's history and culture has always been an attraction to visitors. Part of the city walls from Dali Kingdom has remained till today.



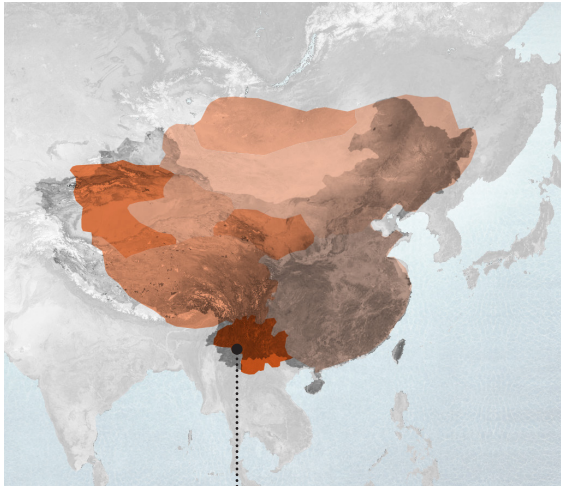
The Han Dynasty set up Yizhou County in Yunnan to welcome immigrants. Parts of the Shu refugees also move to Yunnan Province.



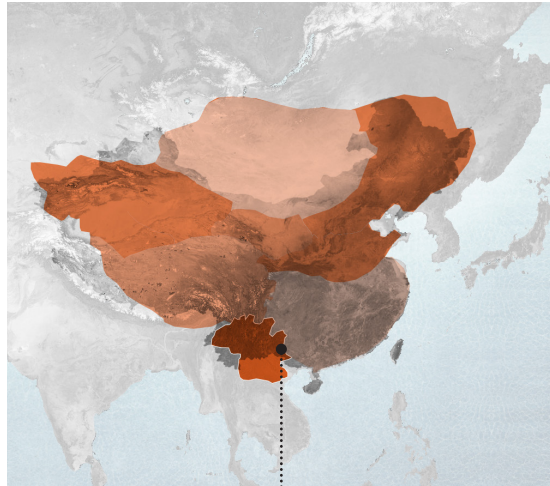
During Song Dynasty Dali Kingdom (Nanzhao Kingdom) was established in Dali.



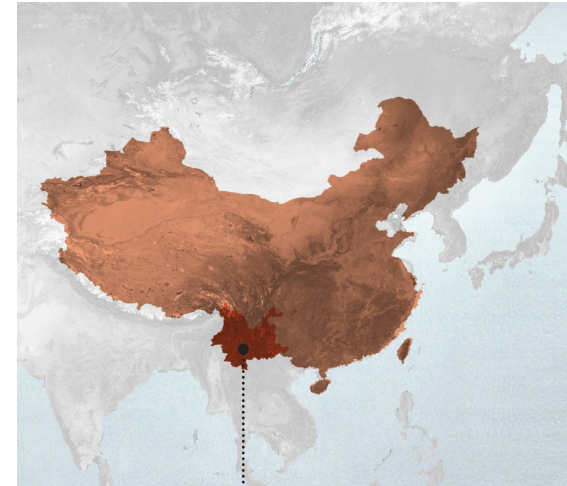
Figure 26. History of Dali



Dali segment regime destroyed the emperor and unified Yunnan province. A large number of people immigrated to Dali from Sichuan , Guizhou and Guangdong.



1950s
In order to implement the construction of the western frontier , a lot of people immigrated from Sichuan, Shanghai , Beijing to Yunnan and work in education , health care and other industries.



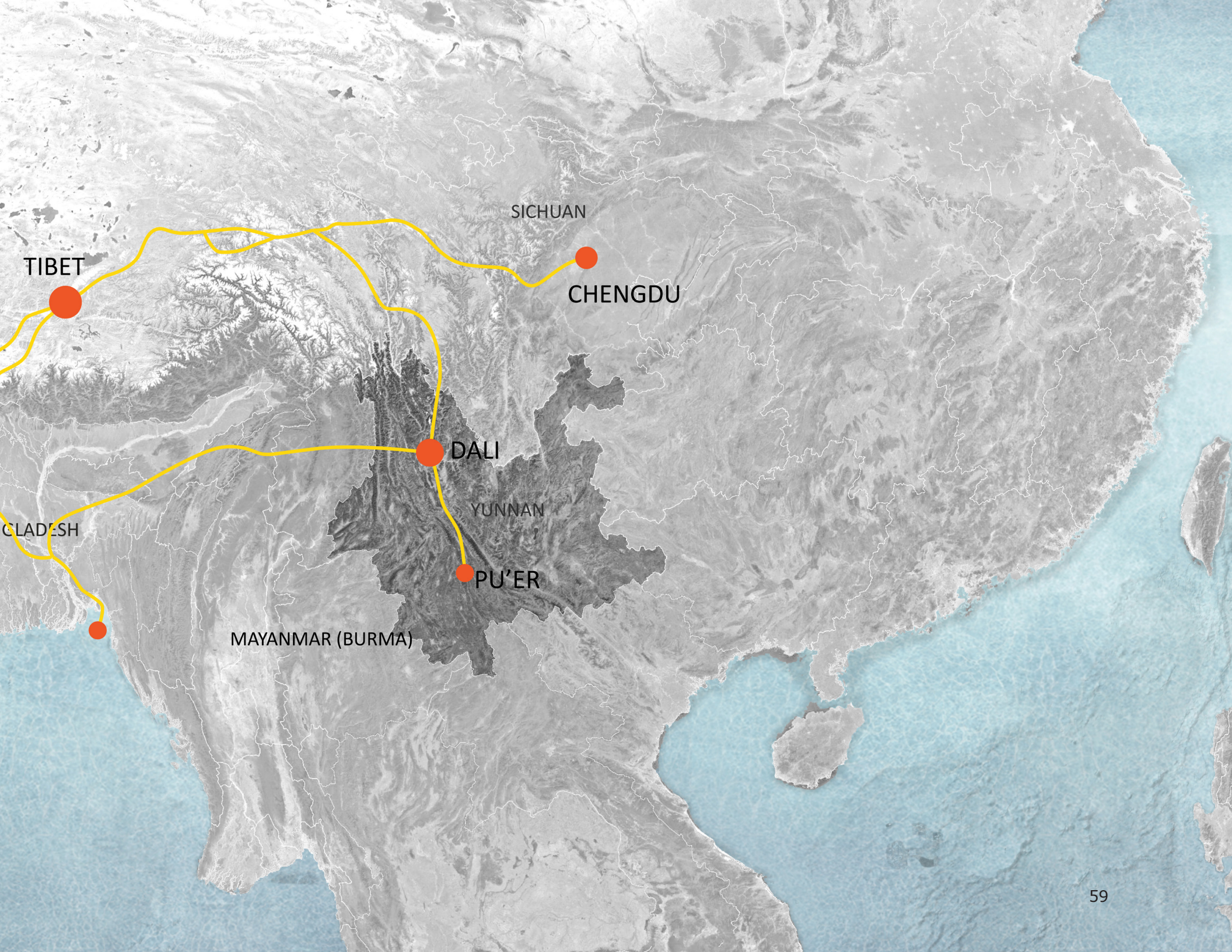
Chao 朝	Tang 唐	Song 北宋	Song 南宋	Yuan 元	Ming 明	Qing 清	PRC 中华人民共和国
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Ancient Tea Route

Dating back to Song Dynasty (960 – 112), Dali was an important transportation center on the Ancient Tea Route (also known as the Ancient Tea Horse Road), which is part of the Southern Silk Road. It played an important role in the ancient trade market. Since WWII Dali became an important transportation hub on Highway 320 linking China with Burma and Highway 214, which connected southwest China and Tibet. With convenient transportation, Dali has always participated in international trade and global civilization. As a transportation hub, Dali culture has a mixed influence from Central China, Tibet and Southeast Asia.



Figure 27. Ancient Tea Route



TIBET

SICHUAN

CHENGDU

DALI

YUNNAN

PU'ER

MAYANMAR (BURMA)

GLADESH

Dali City Ethnic Diversity

Dali is also home for many ethnic groups. There are 56 ethnic groups in China and 26 of them are in Yunnan Province. In Dali city, 51% of the population belongs to an ethnic group. Bai Ethnic is the dominant ethnic group in Dali City.

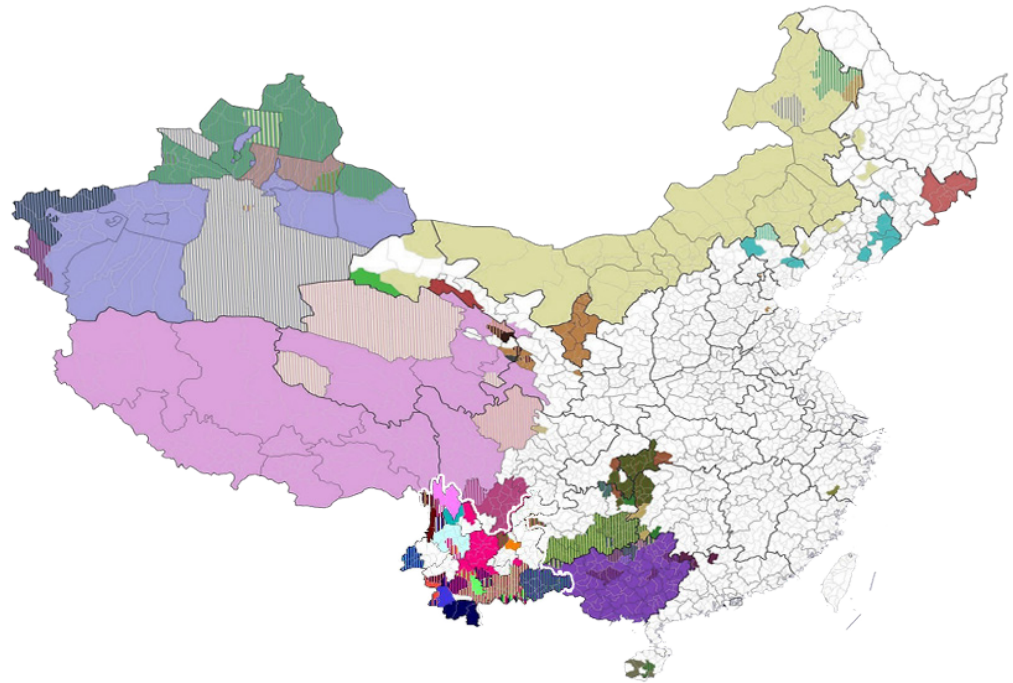


Figure 28. Chinese Ethnic Diversity Map

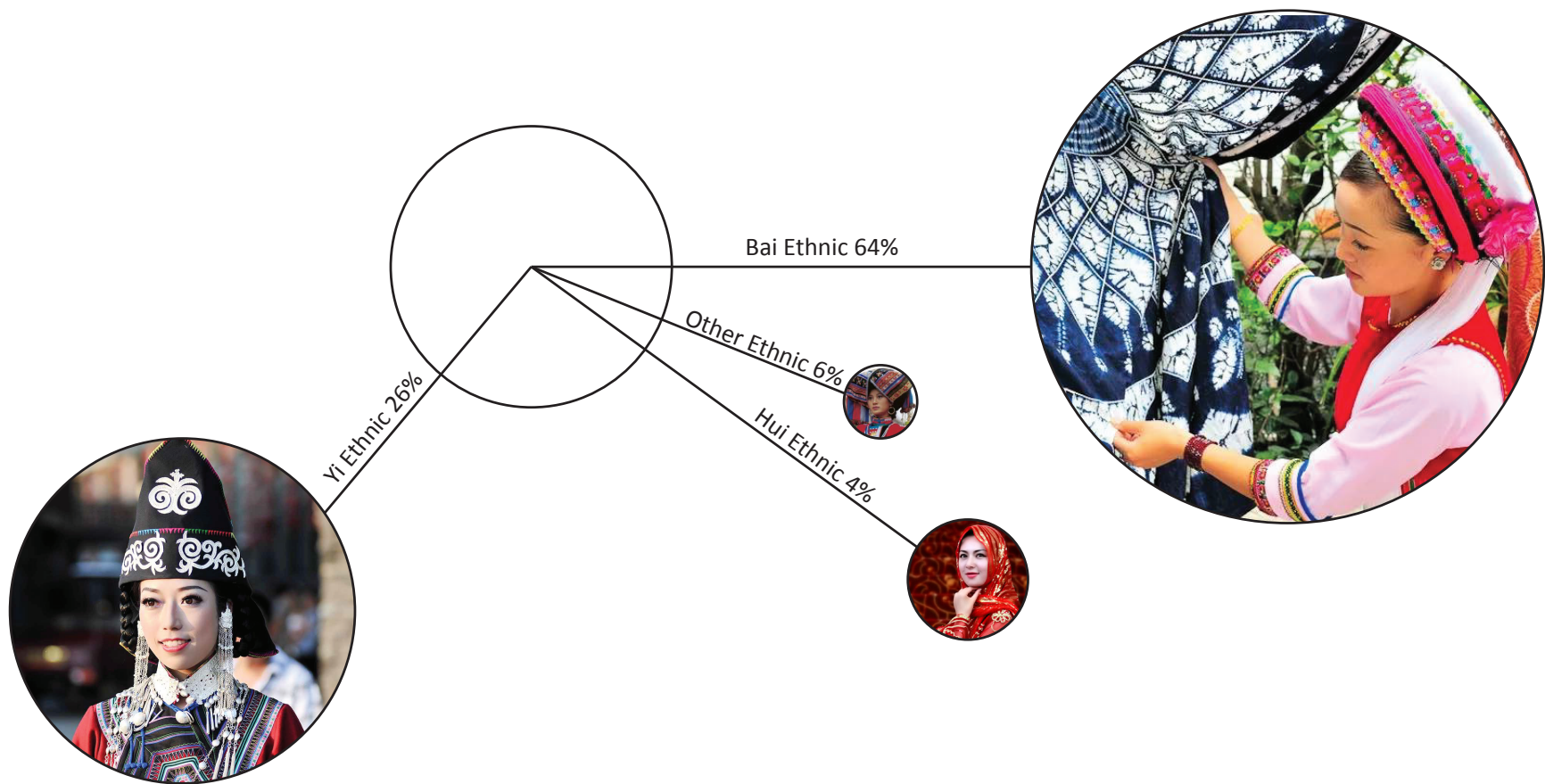


Figure 29. Ethnic Groups in Dali City

Dali City Urbanization

Since 2000, Dali has been under going rapid urbanization. Dali's urbanization rate has increased from 15% in 2000 to 51.5% in 2010. It is expected to increase to 72% in 2020. In comparison, China's average urbanization rate is 35% in 2000 and 54% in 2014. US's urbanization rate in 2014 is 81%. Dali's urbanization has increased dramatically during the past 20 years.

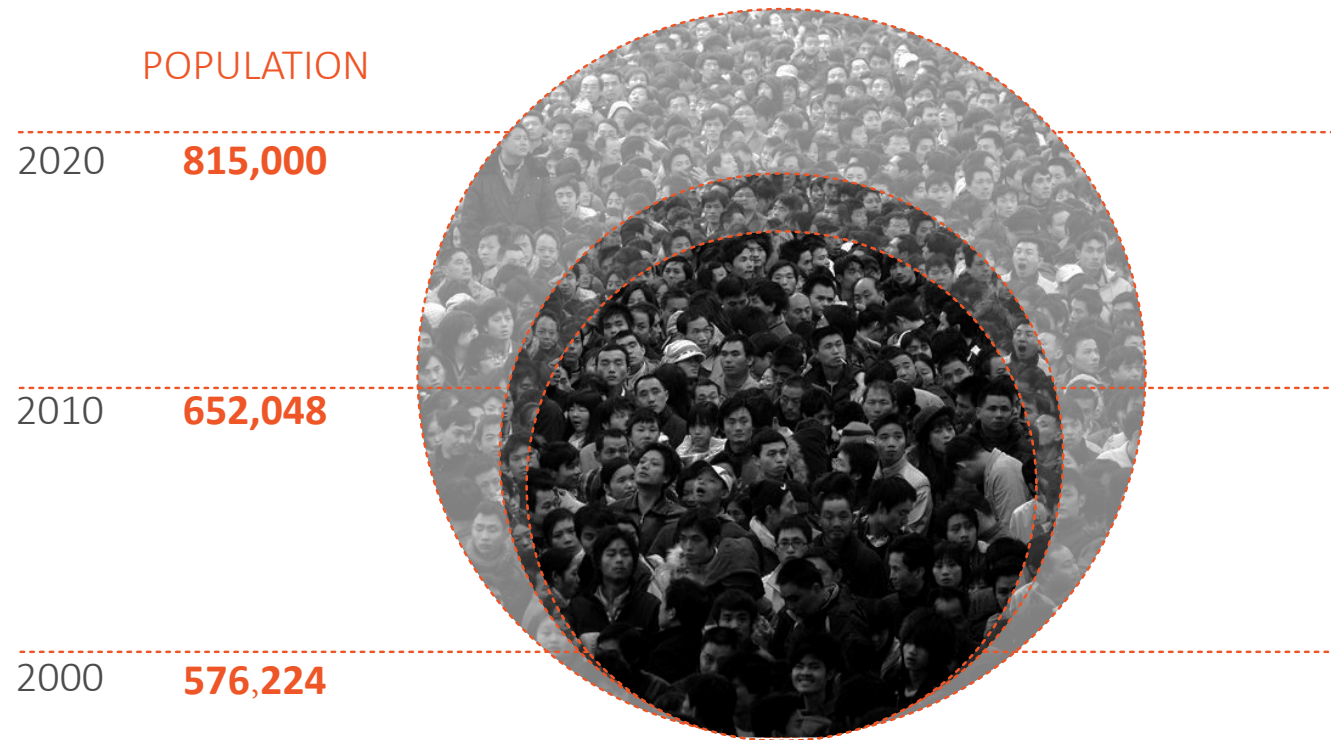


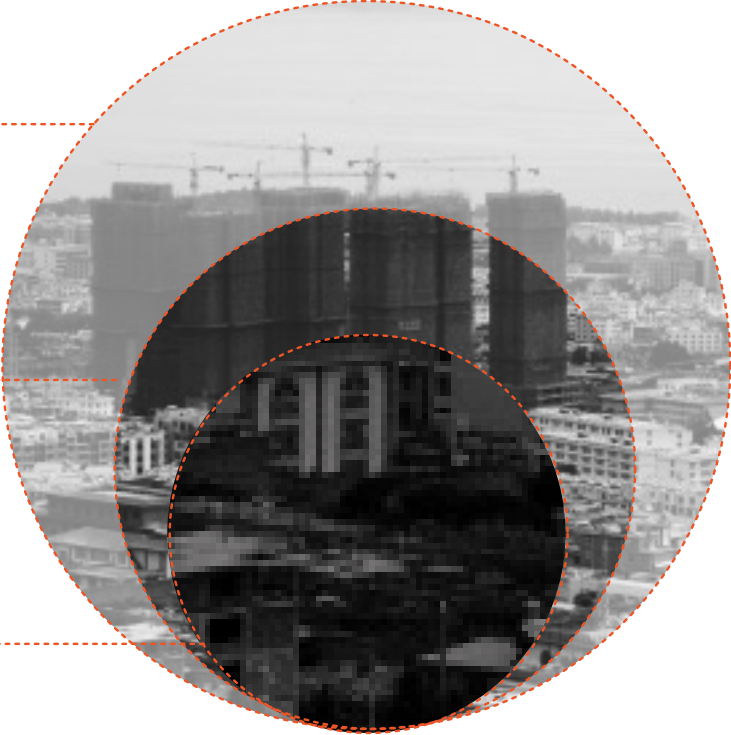
Figure 30. Population and Urbanization rate in Dali

URBANIZATION RATE

2020 **72%**

2010 **52%**

2000 **15%**



Counter-Urbanization

Counter-urbanization is a social process, where people move from urban cities to rural areas. Due to high air pollution, urban lifestyle, traffic, living costs and overcrowding, many people start to move out of large cities and search for peaceful places in rural China. Taking air pollution as an example, recently in many cities, the levels of fine particulate matter has reached 40 times the recommended exposure limit set by the World Health Organization. Rural areas with better air quality and natural environment becomes the choice of some urbanites. Dali's recent increasing urbanization is under the influence of counter-urbanization. In comparison to Beijing or Shanghai, Dali is a much smaller city in a beautiful natural environment. The beautiful landscape and peaceful lifestyle in the region has attracted people from many big cities and all around the world. Many people move to Dali in the past and open stores, or hotels and live near the beautiful Erhai Lake, one of the biggest fresh water lakes in China.

This counter-urbanization phenomenon has brought people from developed areas and set up an environment for cultural exchange. New immigrants bring new ideals and technologies to the region and inspire local creativity. However, sometimes, when too many immigrants move to Dali, it can cause over development and put the local cultural in danger.



Figure 31. Counter-Urbanization

Real-estate Production Line

In recent construction, concrete factories are often built near the construction site to support the large demand. In Dali City, especially the newly developed east-coast has become an area for the mass production of buildings. Mixed-use residential towers have been built in several months. However, many of them remain vacant for years until the site is populated. Some of them are only occupied by tourists for a couple of months per year.



Figure 32. Real-estate Production Line in Dali



Development of Dali City Tourism and Real-Estate

Dali has always been a tourist attraction. Every year there are more than a more than 10 million visitors come to Dali for its diverse cultural tradition and beautiful landscape. In 2012, around 18,472,900 tourists visited Dali. It has become the second most visited tourist city in Yunnan Province. Dali does not only attract visitors but also immigrants.

Due to the great number of tourists and immigrants visiting and moving to Dali, real-estate has become the major driving force for Dali's economic development. As shown in the Real Estate Investment diagram, there is a major increase in the real-estate investment since 2010. A great number of mixed-use, vocational housing, cultural museums and civic center developments have taken place in the region especially on the south and east coast of Erhai Lake. Almost all the developable land was under construction and in transition to a mega shopping center and mixed use area.

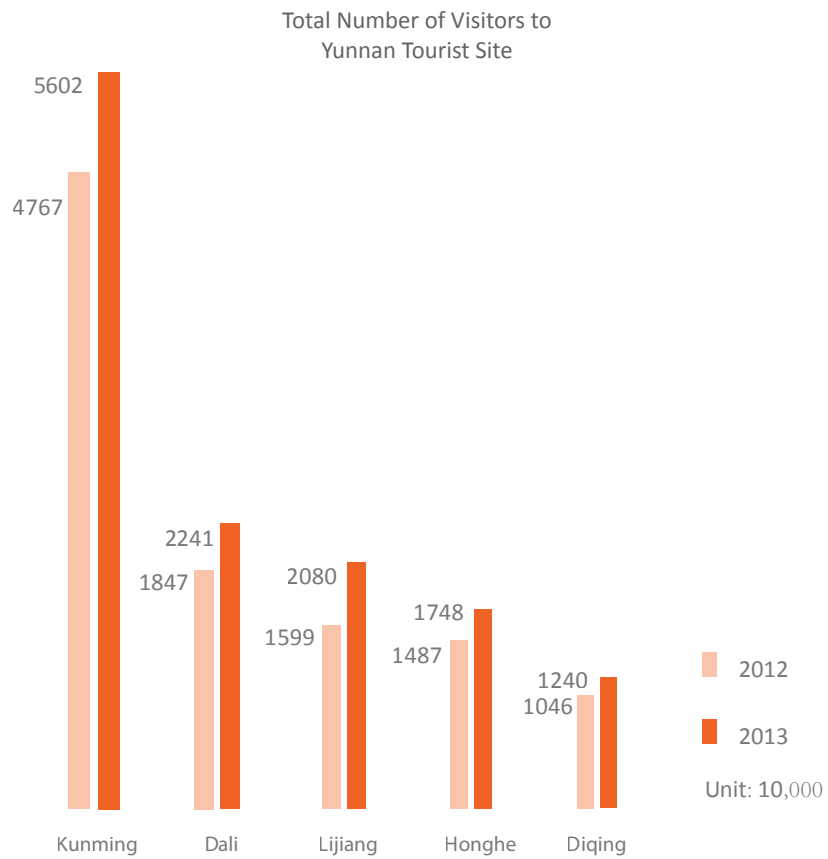


Figure 33. Total Number of Visitors to Yunnan Tourist Site

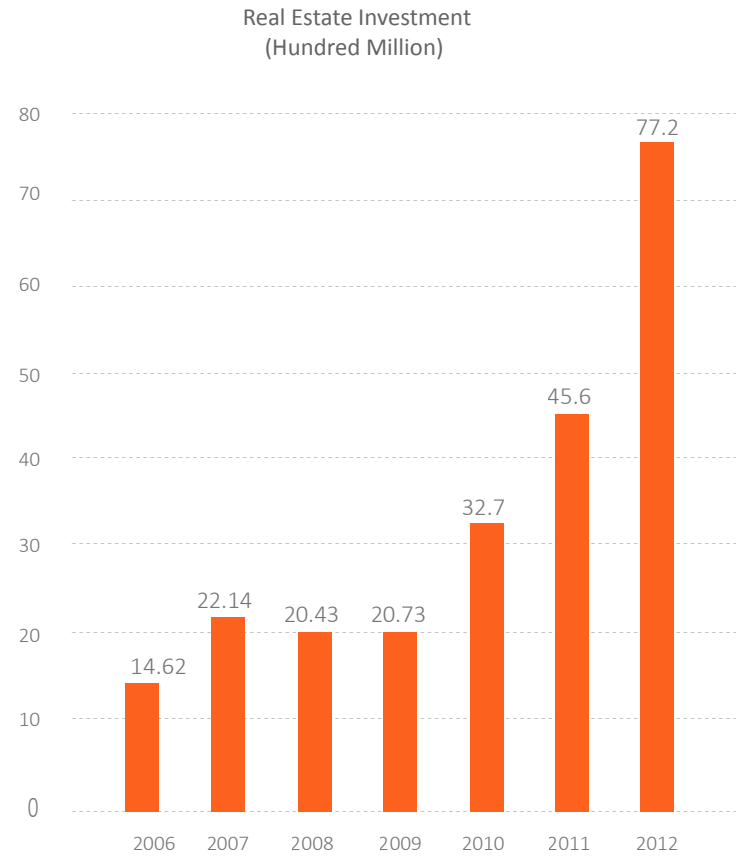
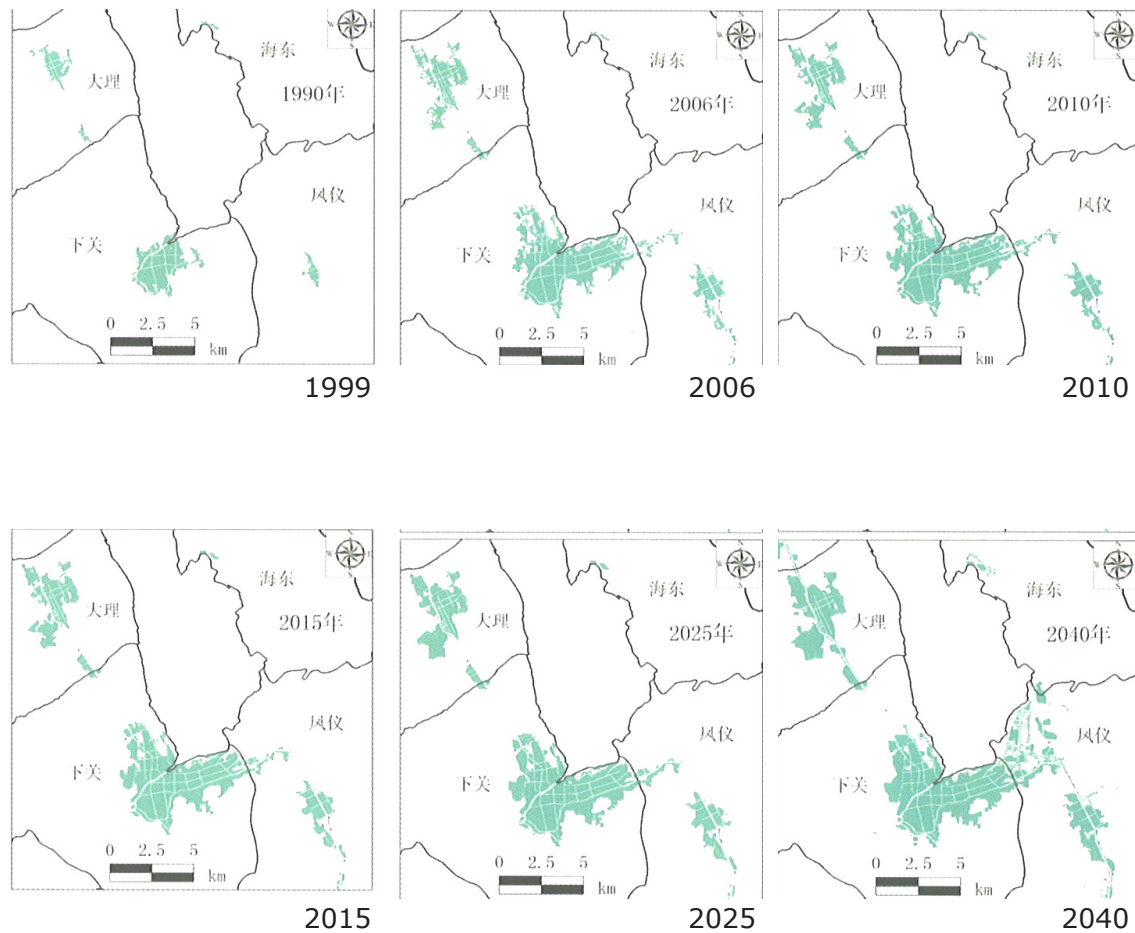


Figure 34. Real-estate Investment

Development of Dali City



To the left is a diagram of the prediction of the development in Dali City from 2007. It shows the development from 1990 to 2040. However, as shown on the Dali Development diagram to the right from 2013, Dali's development has far exceeded the prediction of 2040 development. Most of the land in Dali are mountains and a lake, which are forbidden for development. There is some farmland, where development is also restricted. The east coast of Dali was not a favorable area for construction since most of the area is steep hills. In response to the rapid development, the east coast of Dali is also developed by real-estate companies as vacation homes, hotels and shopping malls. Real-estate development is taking over all the developable land in Dali City.

Figure 35. Projected Development Condition in Dali from 2007

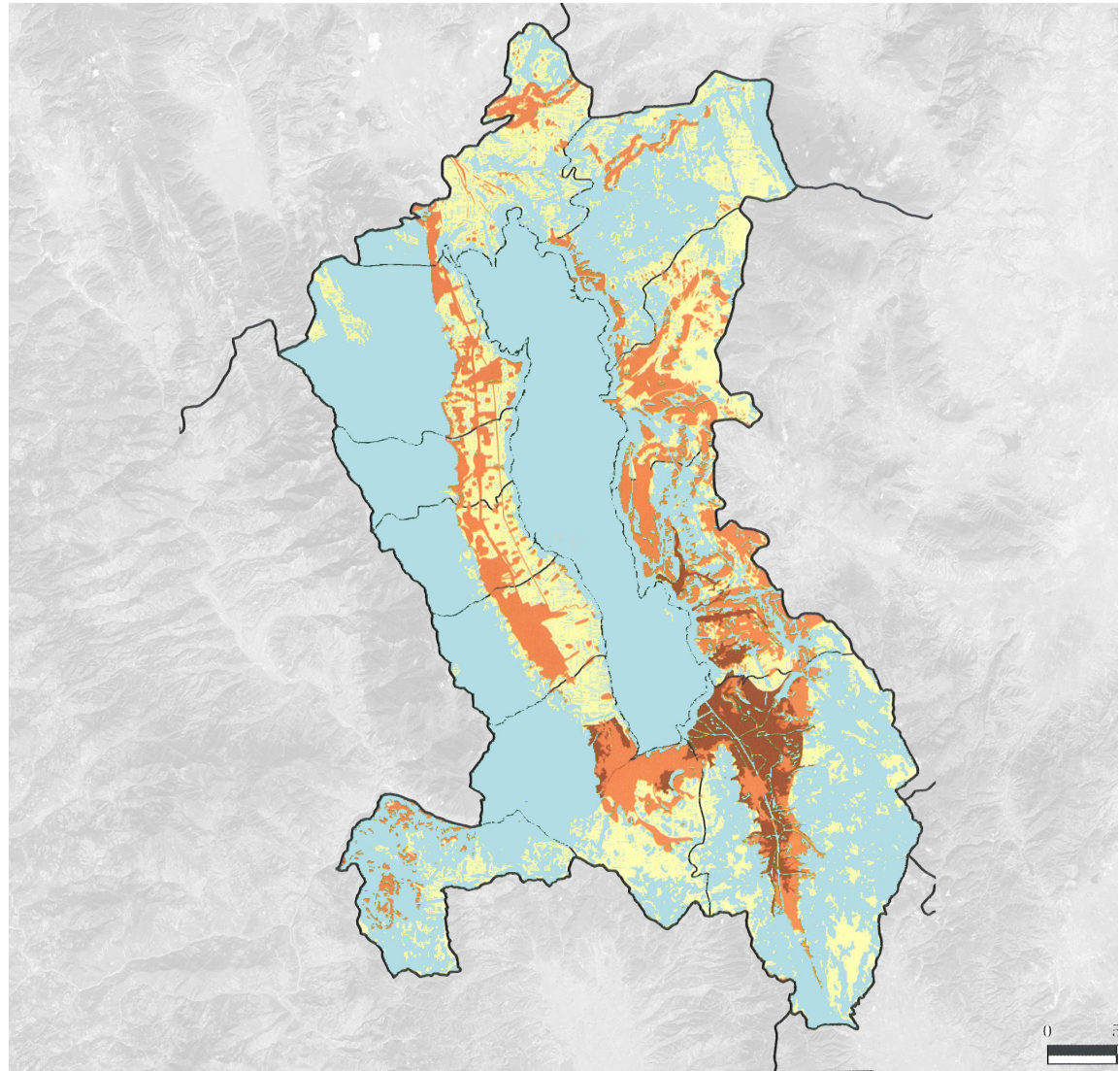


Figure 36. Dali Development Condition in 2013

Development of Dali City

Dali City includes three major areas: the existing urban center on the south side of the lake, the Ancient Dali City on the west side, and the new development zone on the east side of Erhai Lake. Dali City has a total area of 1815 m² , with 70.5% of the mountain, 15.8% flatland and 13.7% being Erhai Lake. It is a city surrounded by the beautiful landscape. Since a large area of land is mountain and lakes, which is difficult to build on, Dali has not been over-developed.

In the new tourism development proposal, the local government proposed two major tourist routes. One route is along the west coast of Erhai Lake, which focuses on the culture, history and tradition of Dali, as well as recreational activities. The second route is along the east coast of Erhai Lake leading to one of the most famous Buddhist temple complex in China. This tourist route emphasizes on the nature, countryside life and religion. The existing urban center acts as a large transportation hub for Yunnan and southeast Asia.

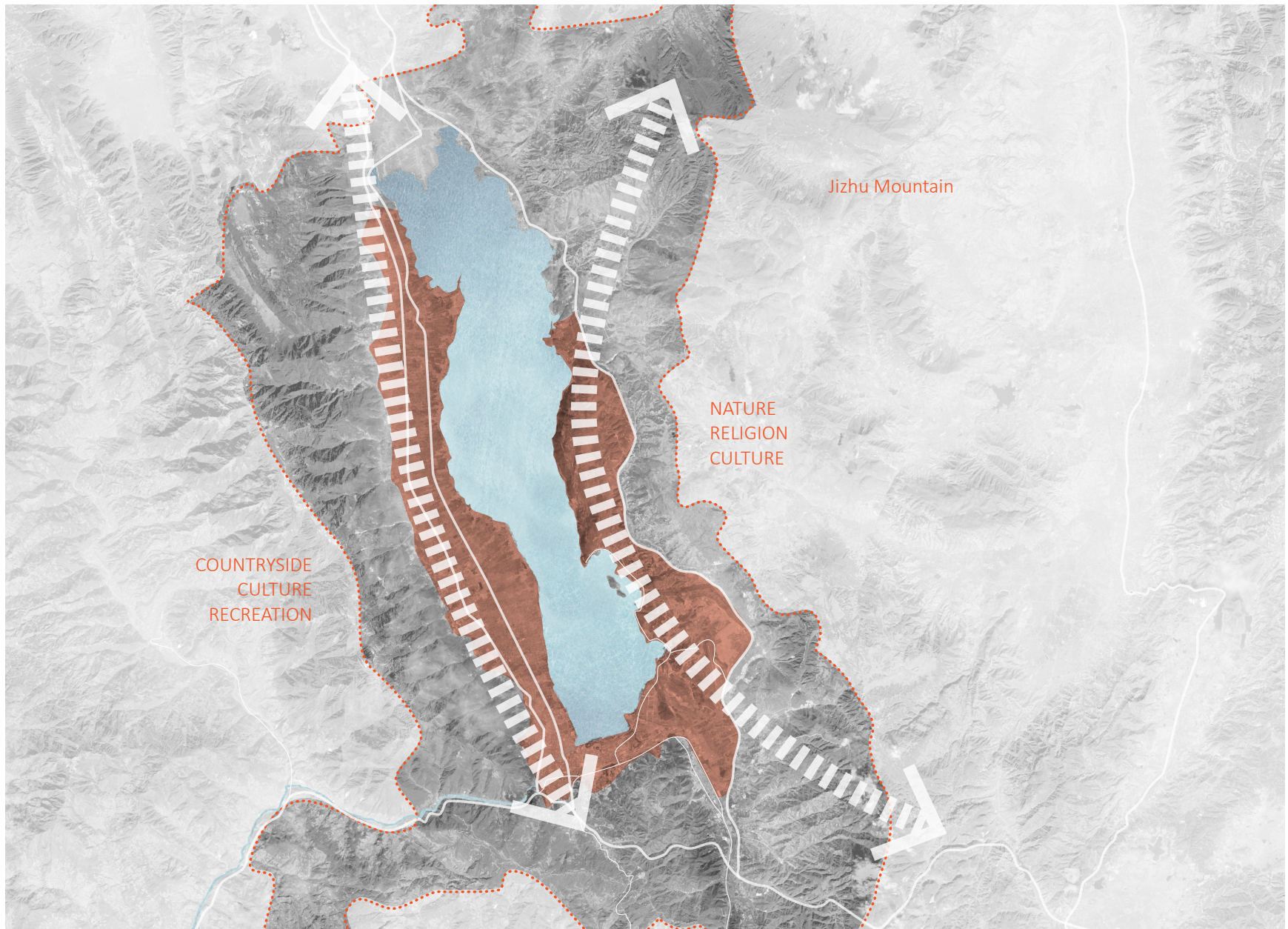


Figure 37. Dali Tourism Development Plan

West Coast

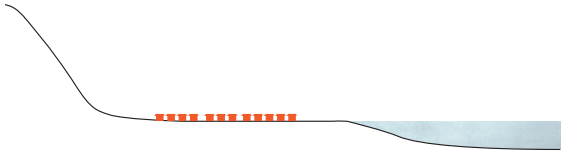


Figure 40. West Coast of Dali Section Diagram

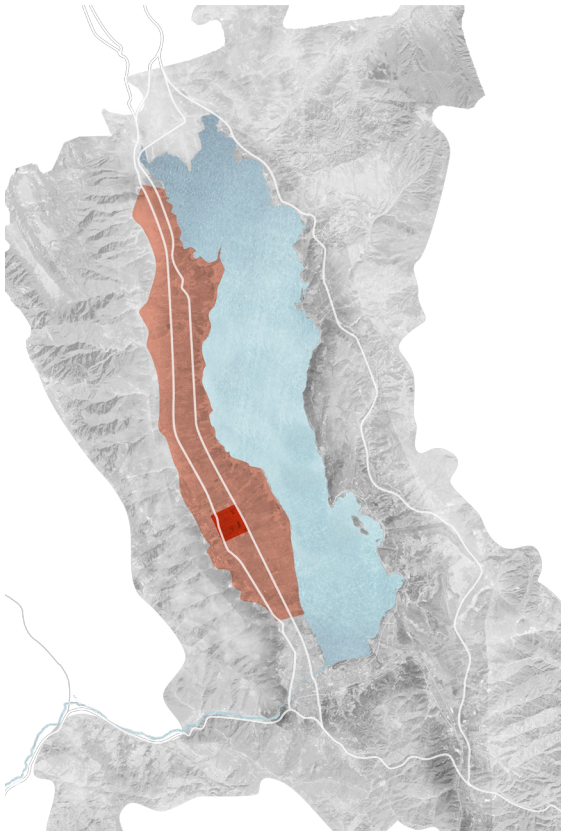


Figure 38. West Coast of Dali with the Ancient City



Figure 39. West Coast of Dali with Farmland and Villages

Central District

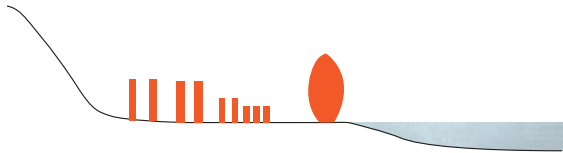


Figure 43. Section Diagram of the city center



Figure 41. Existing city center



Figure 42. High-rise mixed-use buildings in the city center

East Coast

The mountain on the East Coast of Erhai is very steep, which makes it hard to develop. Only recently, it was developed to meet the fast growth of the area. Most of the new developments are single family luxury vacation housing for outside investors and hotels for tourists. There are several small islands in the area which are also developed to accommodate the need of tourists.

Shuanglang Town: Green economic town, historical cultural center and ecological tourism
Wajiao Town: tourist products trade center, processing industry characteristic town

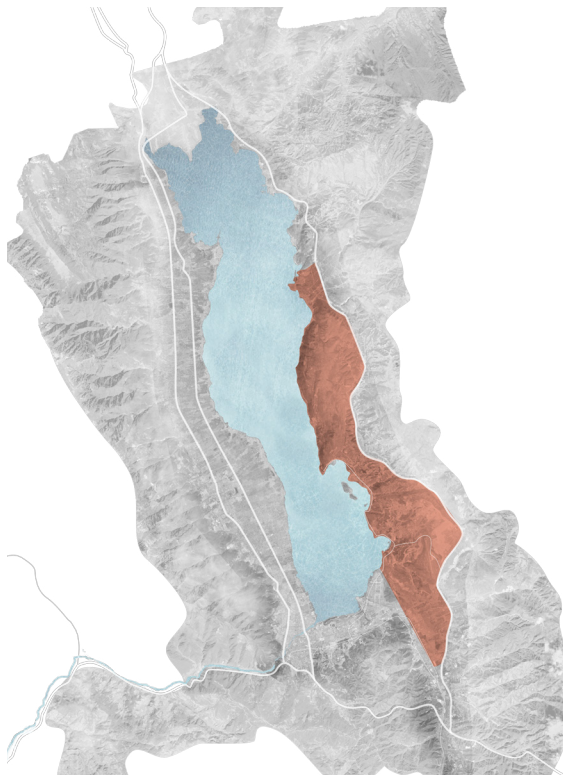


Figure 44. East Coast of Dali Plan

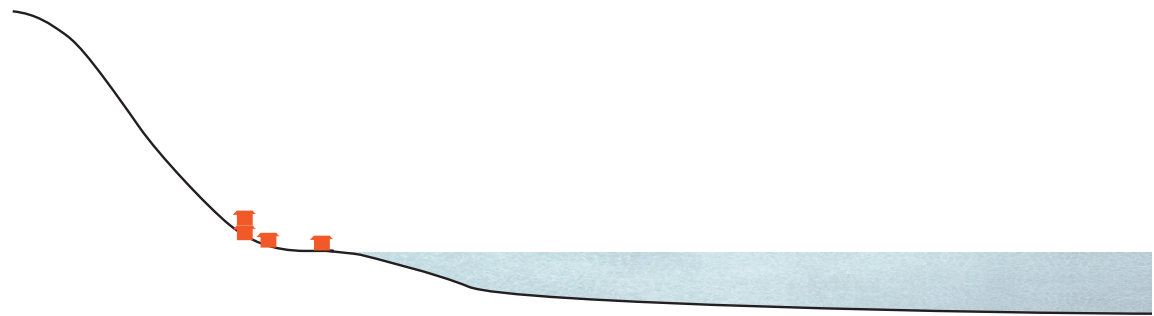


Figure 45. Section diagram of East Coast of Dali



Figure 46. East coast landscape

Climate

Since Dali has a high elevation and relatively low latitude, the temperature remains mild all year long. The average temperature in winter is around 48 F (with average low of 38 F and average high of 61 F); and average temperature of 70 F in summer (with average low of 61 F and average high of 76 F). There are 126 days in the year with temperature around (54-66 F), which is the most comfortable temperature.

The best temperature of a year is considered March. Therefore, Bai minority's festivals are usually in March and April so people can enjoy the nice weather and beautiful nature. As it is described in local song that "the scenery of Dali in March is good"¹.

The annual temperature range in Dali is not great but daily fluctuations are significant in winter months. Due to its high elevation, Dali has sufficient sun exposure all year long even in the winter months. The rainy season in Dali is usually from June to mid-October. Therefore, for rainwater drainage purpose, traditional buildings all have relatively deep sloped roofs.

1 "Dali Weather." : Climate with Weather Forecast, Best Time to Visit. Accessed November 18, 2015. <http://www.travelchinaguide.com/climate/dali.htm>.

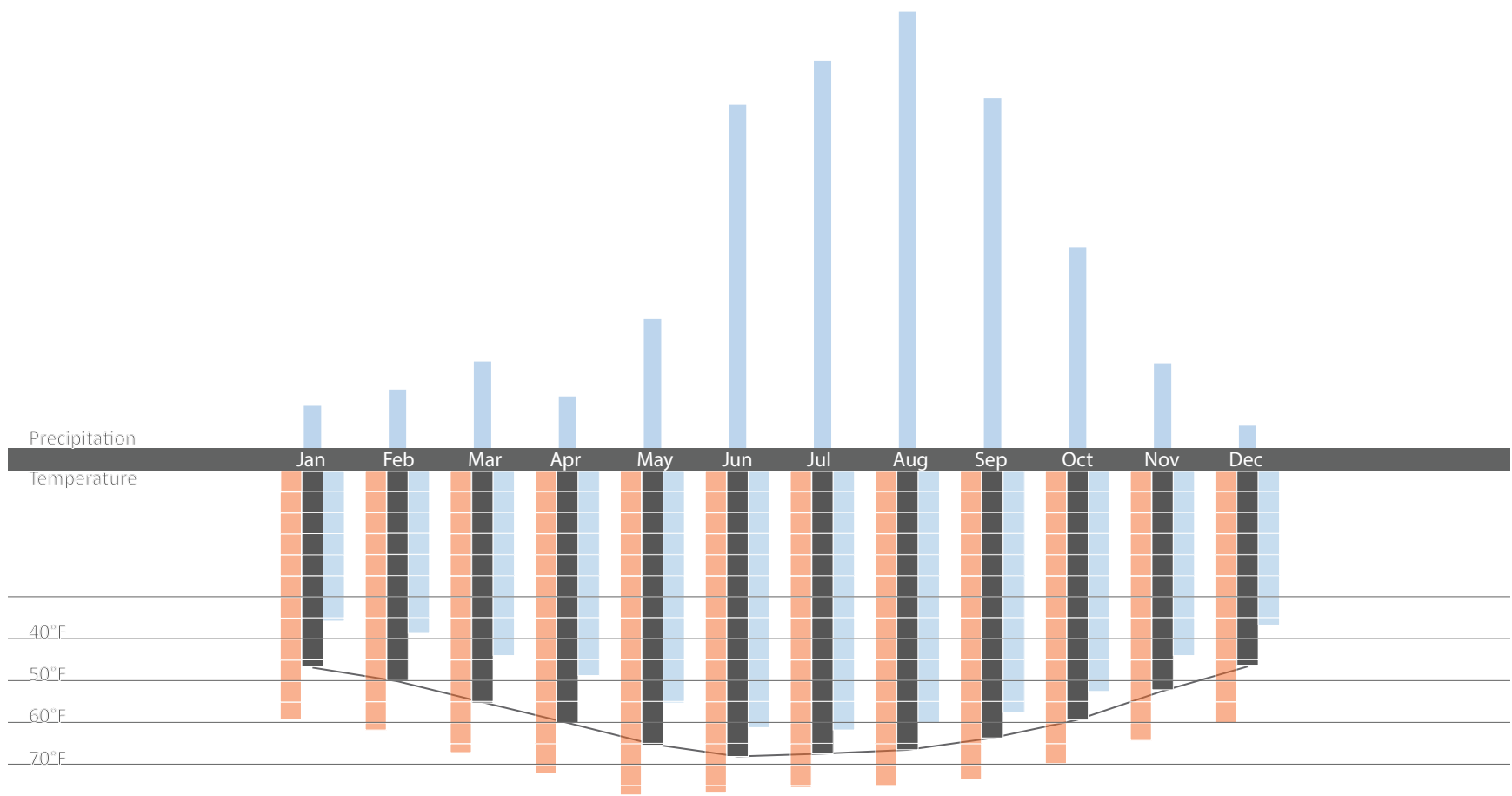


Figure 47. Dali Climate

3.3 Building Tradition in Dali

Housing types in Dali vary according to the financial condition of the families. The housing can be categorized in two types, small and medium ones for common people, the large ones for people with higher social status and businessmen.

Building layout

Most Bai housing are closed with a courtyard in the center. For common people, the courtyard is often used to dry crops. For wealthy families, the courtyards are used for landscaping, plants and planting flowers. The major rooms are facing east with the back towards west. Therefore, since the front of the rooms are facing the courtyard, the back walls are usually facing the street. Following are several reasons that illustrate why the master rooms are facing east.

- As a response to pavilion wind: the pavilion wind is very strong in the region and is from west and southwest all year long, especially in zone B. Therefore avoiding strong wind becomes a crucial point in the housing layouts.
- Take advantage of topography: the major mountain ridges run north south, most of the houses are built on the west coast of Erhai with mild topography. Therefore, having the back facing the mountain and higher elevation eases the construction process.
- Cultural and spiritual beliefs: Bai minorities believe that the master rooms need

to face a mountain ridge, so the people in the families can live well. Since on the west coast, the mountains are located on the west side, most houses face east.

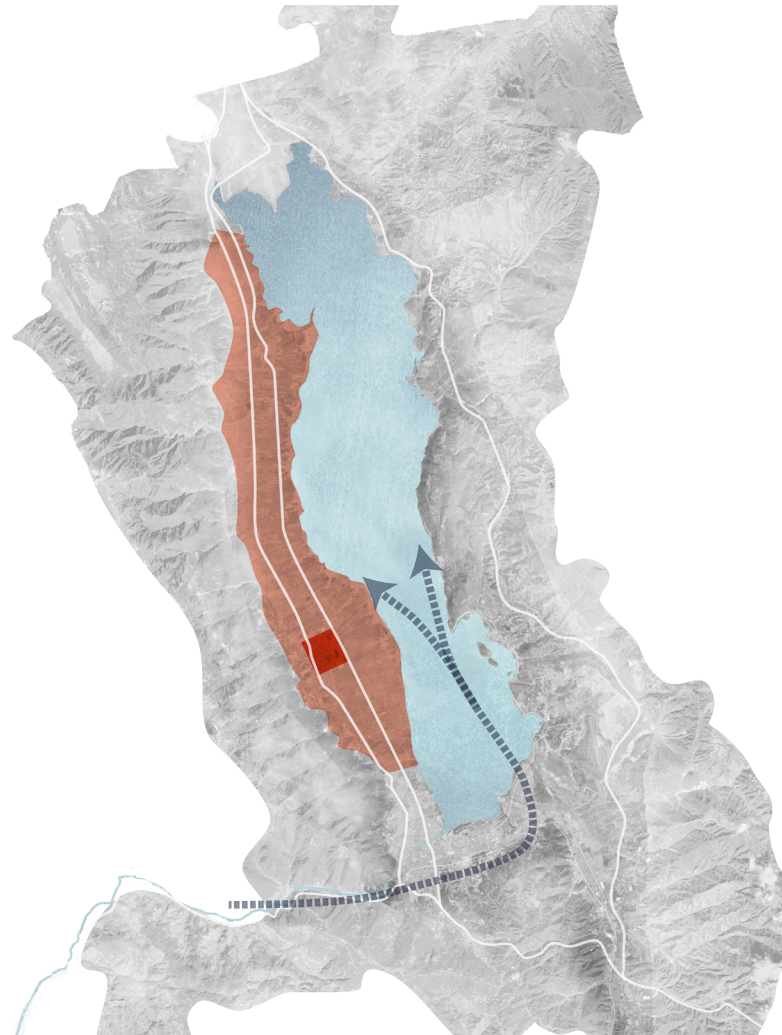
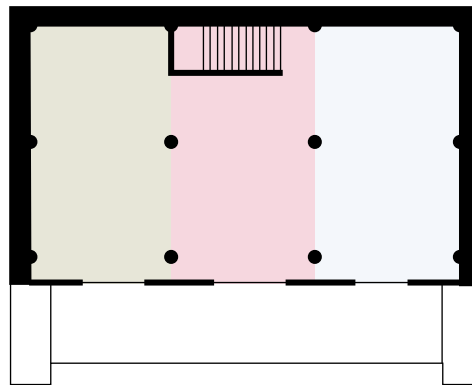


Figure 48. Prevalent Wind direction in Dali

Spatial Arrangement

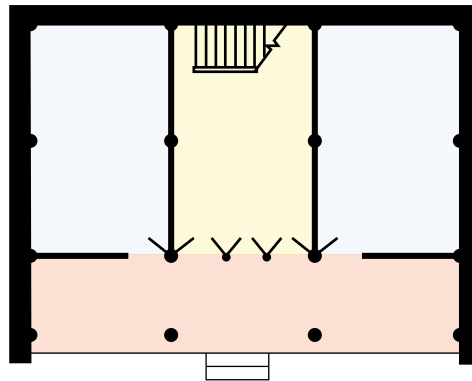
Fang

Housing in Dali is counted with the unit Fang, which is a two-story unit with 3 divisions. Fang is usually the unit used when people buy or sell houses. In a typical Fang unit, there are three rooms on the first floor with a corridor. The central one is the living room, where the host great friends and visitors. The two rooms on the side are bedrooms. On the upper level, there is no partition walls to allow air ventilation. The central room is used for worshipping. The side rooms are used for storage. Sometime, one of the side room is converted to bedroom. The corridor on the first level has good daylight and is often used for housework activities or relaxing. During the windy and raining days, the corridors also block the rain from getting into the rooms.

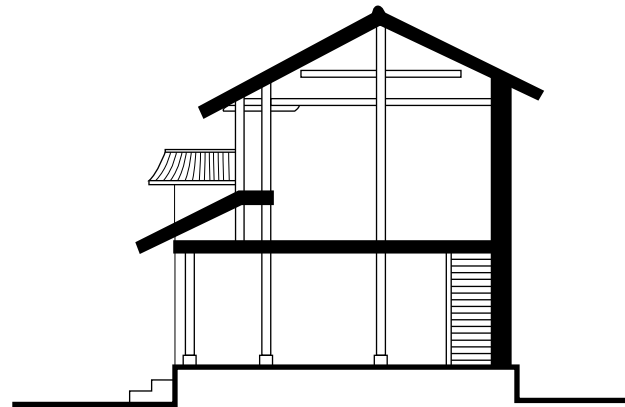


level 2

- corridor
- storage room
- worship room
- living room
- bed room



level 1

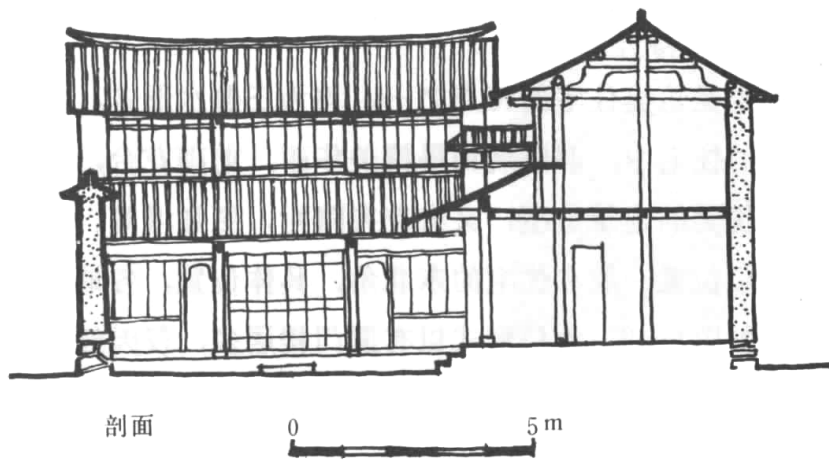


cross section

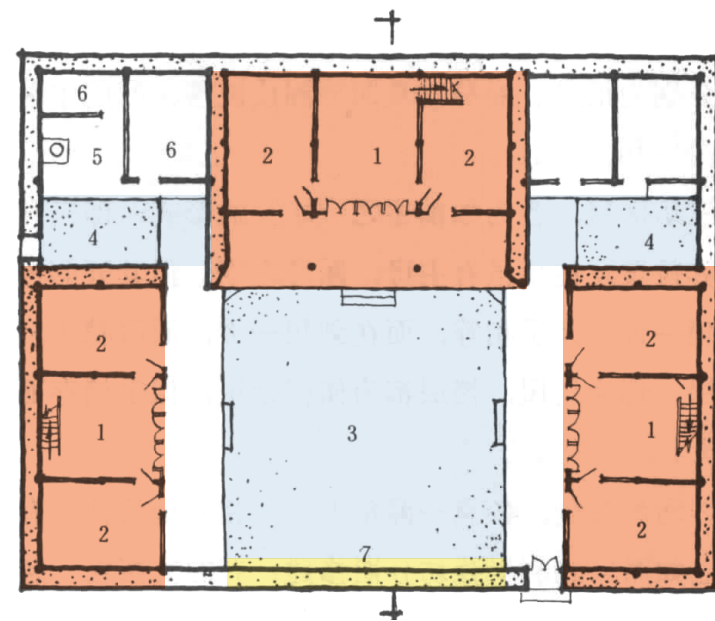
Figure 49. Traditional Fang unit plan and section

Three Fang One Screen Wall

Three fang one screen wall type of layout is very popular in Dali. Even with topography and financial limitations, families still try to reserve space to build the Three fang one screen wall layout. There are several reasons for this. First, with the major fang facing east and a screen wall shorter than the fang, sunlight will shine into the courtyard early in the morning. The lower screen wall will also preserve the views to the sky. Second, the white screen wall bounces light into the courtyard and solves the issue of lacking daylight. Third, the three fang one screen wall layout builds vertically, it occupies less space compared to a regular courtyard house. Forth, Bai people love to stay in the corridors when they are relaxing. They also love art and craftsmen. Therefore, sitting in the corridors, facing the screen wall will give them an opportunity to decorate and design the screen walls. It will bring fun to life.



- 1. living room
- 2. bed room
- 3. courtyard
- 4. light well
- 5. kitchen
- 6. pigpen
- 7. screen wall



- fang
- light well
- screen wall



Figure 50. Traditional courtyard house arrangement

Rammed Earth Wall

Rammed earth walls are relatively cheap, therefore they are utilized the most. The foundation of rammed earth walls are usually built with stones. The stone foundation is usually 50- 80 cm above the ground. Then there is a 10 cm thick stone slab placed on top of the stone foundation as a base for the rammed earth walls. The exterior of is clad with cobble stones and recycled tile debris.

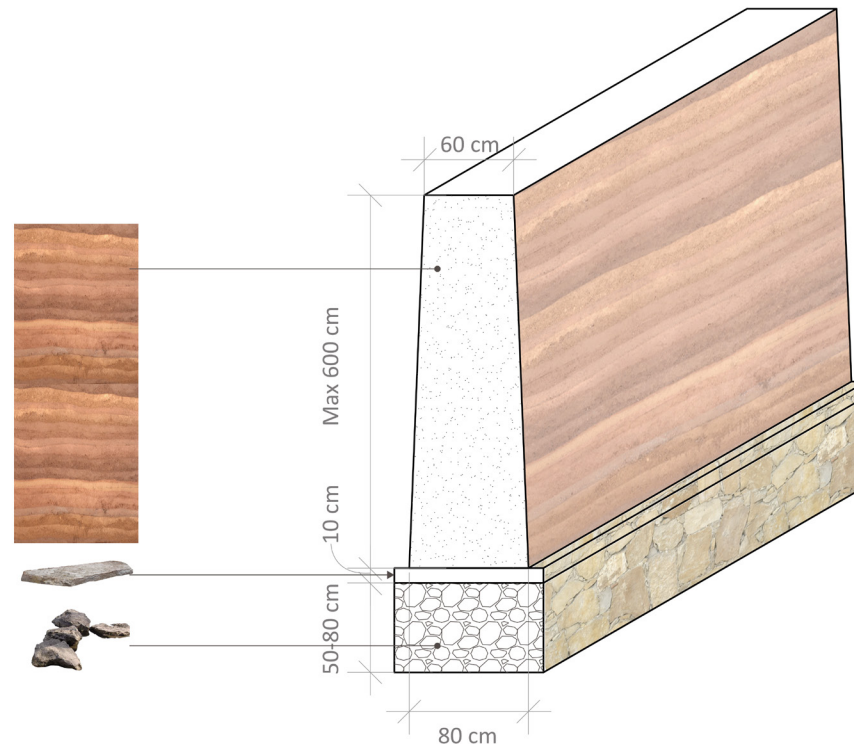


Figure 51. Traditional rammed earth wall

Stone Clay Wall

Stone wall, gaps are filled with clay. The cutting of the stone does not need to be perfect, allow some tolerance.

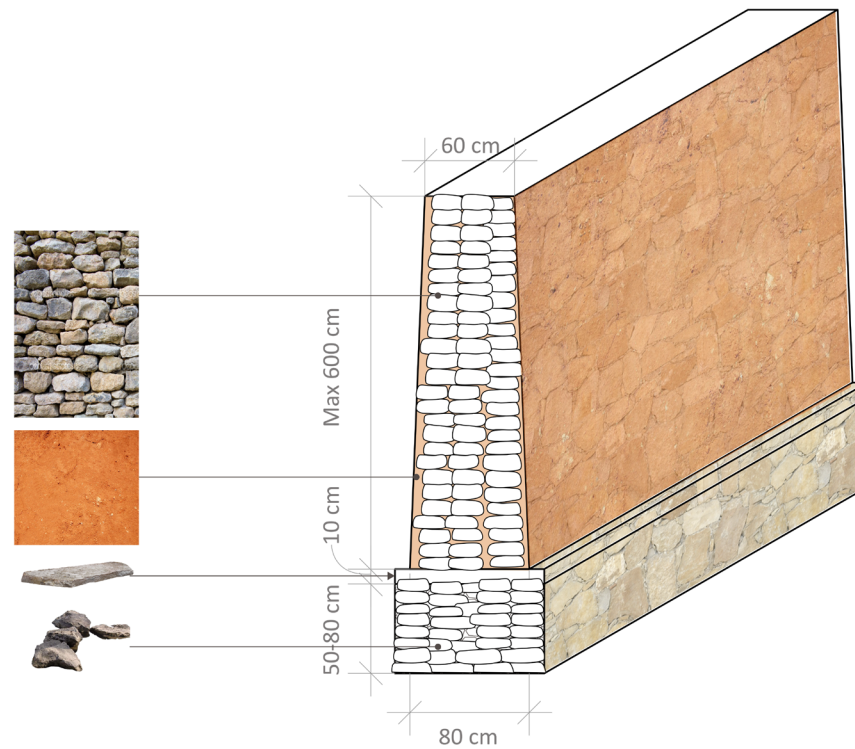


Figure 52. Traditional stone clay wall

Cobble Stone Wall

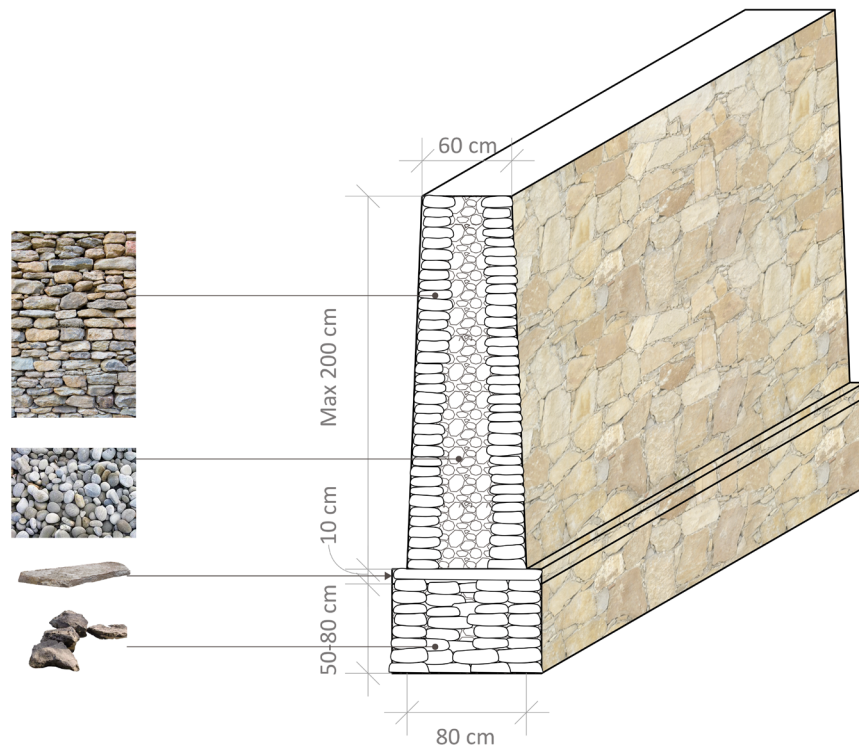


Figure 53. Traditional cobble stone wall

Figure 54. Traditional cobble stone wall photos

Pure Stone Wall

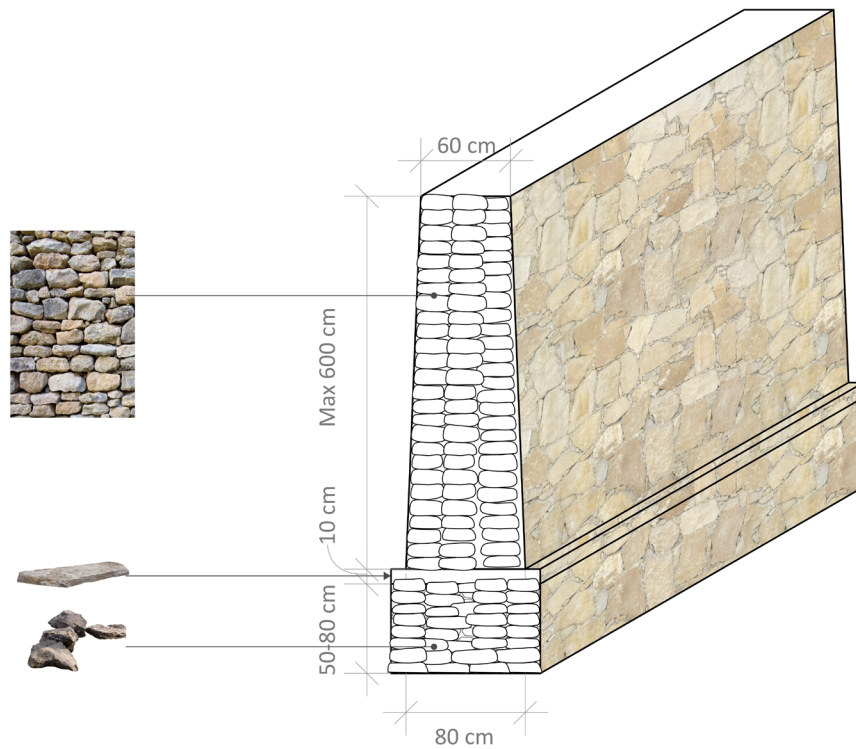


Figure 55. Traditional stone wall



Figure 56. Stone wall construction photo

WOOD FRAME

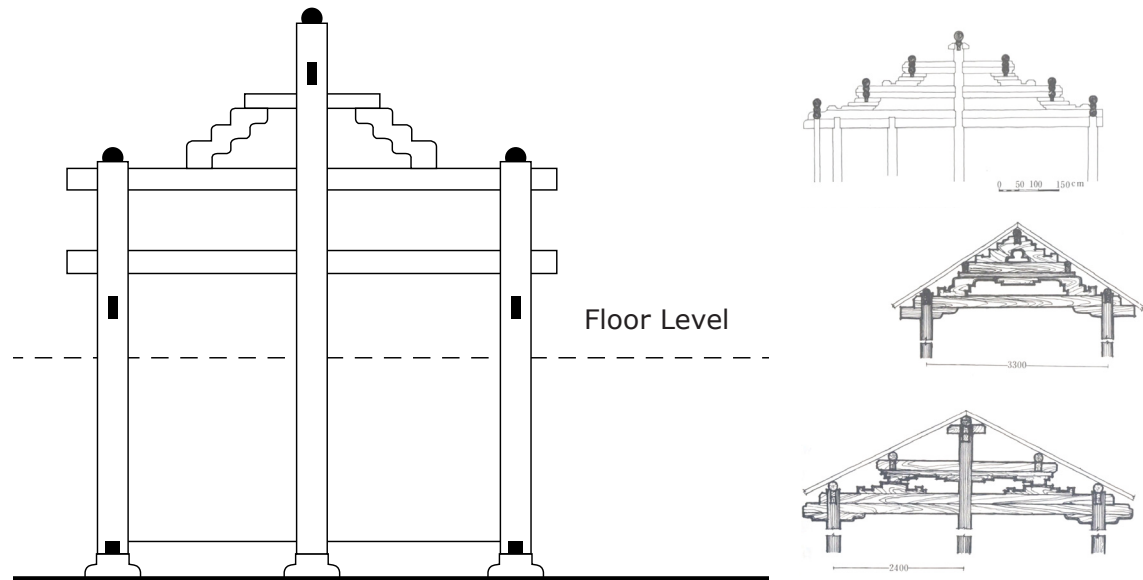


Figure 57. Wood frame construction

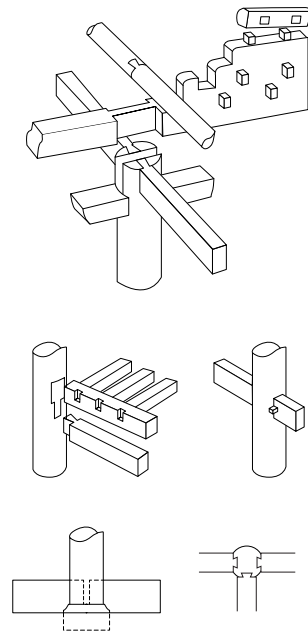
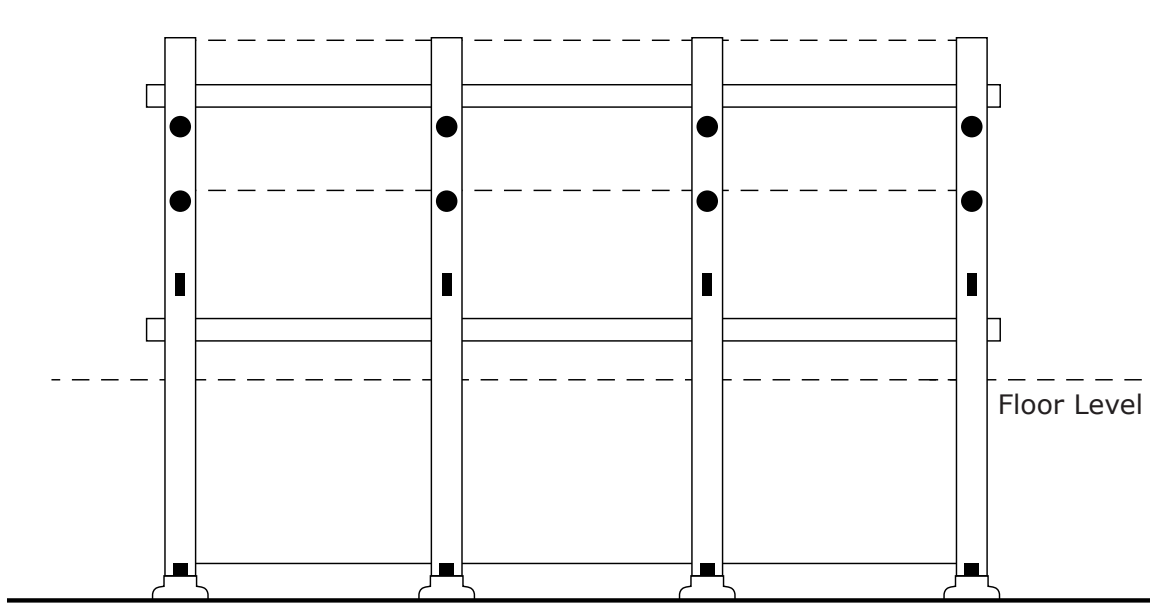


Figure 58. Wood frame construction with details

Dali Marble

Dali marble (大理石) is produced in Dali, originally with black and white patterns, which can form a beautiful natural landscape painting. In the ancient time, Dali Marble is often chosen to be framed and placed on the entrance wall in Dali residential houses. Later the name of “Dali Marble” evolved into a variety of color patterns for buildings and furnishings. In China, the highest quality of marble is from Dali.



Figure 59. Dali Marble framed on screen walls



Figure 60. Dali marble as a landscape painting

3.3 Cultural Tradition in Dali

Wood Carving

Wood carving has long been a traditional craftsmanship in Dali Region. Locals start to learn wood carving when they are very young. Well-crafted wood carving is used for shading screens, folding doors and sculpture. In recent years, when concrete has taken the place of traditional wood structure, wood carving techniques are less favoured and in danger of being lost.



Figure 61. Dali residents sanding wood carving piece.



Figure 62. Dali typical house



Figure 63. Wood carving



Figure 64. Wood carving



Figure 65. Wood Screen



Tie Dye

Dali is known for its textile dyeing technique. This way of making tie-dye fabric has started since 3rd and 4th century and it is still used today. Locals have been making beautiful tie dye for generations. In tradition, men work in the farmland and women stay home sewing, and dyeing the fabric. Nowadays, when young generation move to urban city to look for new opportunities, only elderly ladies still makes tie-dye.



Figure 66. Tie-dye making.



Making Patterns



Dyeing Fabric



Drying Fabric



Sewing



Tieing Fabric based on patterns



Final Product

Figure 67. Tie-dye making Process

Home-made Cheese



Figure 68. Hanging home-made cheese



Figure 69. Local Cheese making process

3.5 Preliminary Findings

In response to the rapid development in Dali, a large area of farmland has been paved over to make space for new development. Therefore, local residents are forced to give up farming and many of them are only able to find job on a construction site. In addition, five million visitors come to Dali every year. In order to support the huge demand of tourism, many local residents also start to work in hospitality industry.

Local residents, who live in Dali full year long have to give up what they have been doing to support the tourists, who only come for a week or two. The values embedded in the local traditional industries is under-estimated. On the other hand, the local lifestyle is one of the major tourist attractions, if the lifestyle no longer exists, Dali will lose its culture value. Therefore, it raises the question: is there a way to engage the two communities and allow traditional industries to be part of the tourism?

Number of Months Spend in Dali Per Year

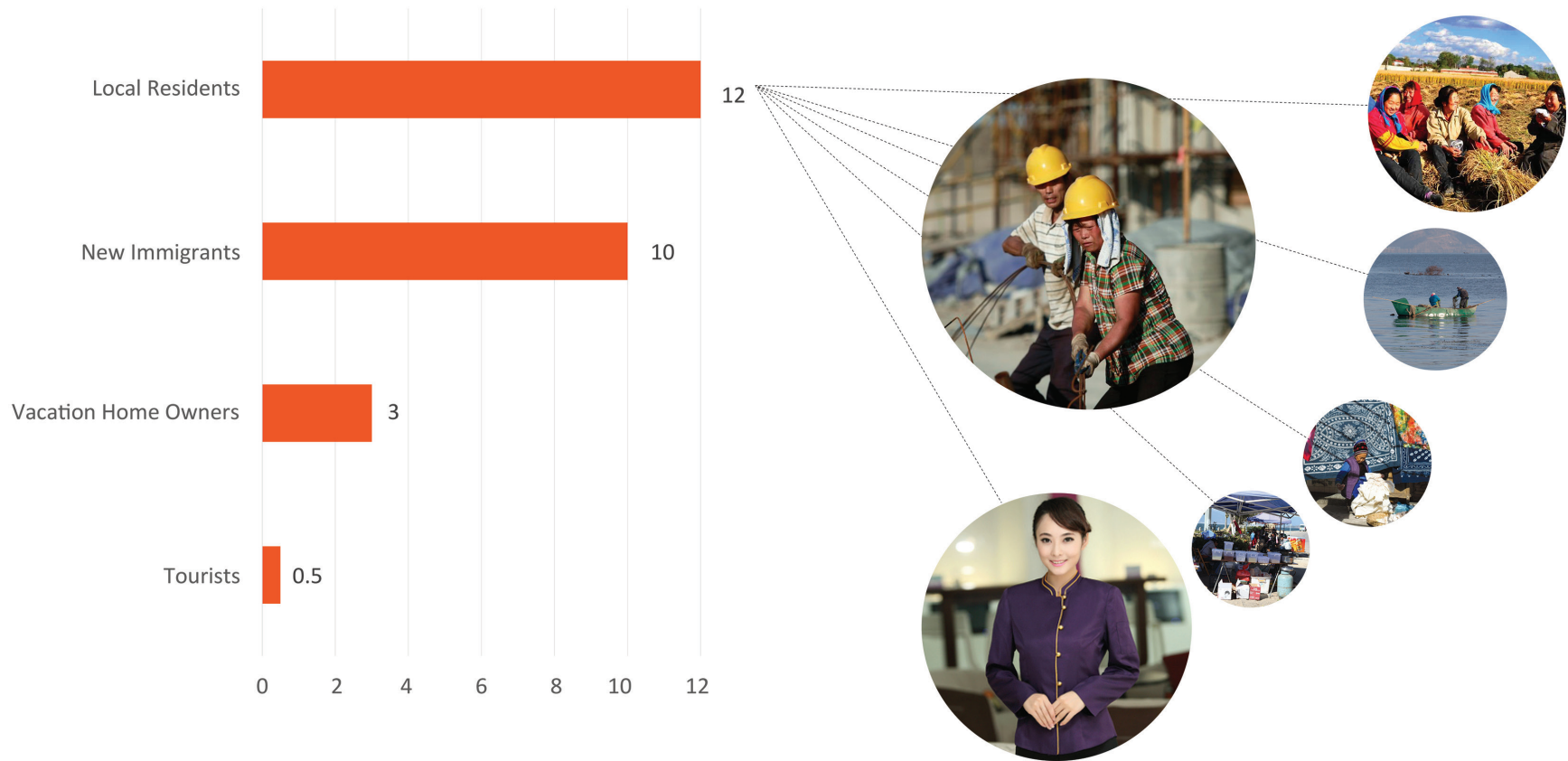


Figure 70. Time spent in Dali per year

Culture Exchange

While new immigrants move to Dali, they bring new technologies and creative ideas with them. They made the decision to move to Dali, oftentimes because they are attracted by the local culture, tradition and lifestyle. Therefore, they will make the effort to preserve the local value. For instance, an artist, Sheng Jianhua moved to Dali from Shanghai and found that the local people have a strong talent in pattern and colors. Then he started to teach the elderly ladies, who cannot do farm work, to paint. He only taught them how to use the paint, and let the ladies choose what to paint and what colors to use. The paintings that came out from the collaboration are beautiful. Sheng then helped them sell the paintings and the elder ladies were able to make some money to support their life even though they could not work on the farm. This thesis proposes a series of common spaces for interaction and cultural exchange between the new immigrants and local residents.

Cultural Exchange



New Immigrants
& Tourists

Local Residents

Figure 71. Culture exchange between new immigrants and local residents



Figure 72. Painting by Dali local residents



Figure 73. Guangqi is painting



Figure 74. Painting by Dali local residents



Figure 75. Dali local resident is painting

Project Site

The project site is located on the east-coast of Dali, which is under its rapid development. Dali City Hall has already moved from south side of Dali to its new location. In order to activate the area, Dali Technical school and Dali Medical School have also moved to east side of the project site. There are European Towns and high-end vacation homes being built on the new east development zone. In local government's vision, the site is planed as mixed-use commercial center. There are also new real-estate development projects on the east side of the city hall. A mega city is under construction. The east side of Dali will become the new city center.

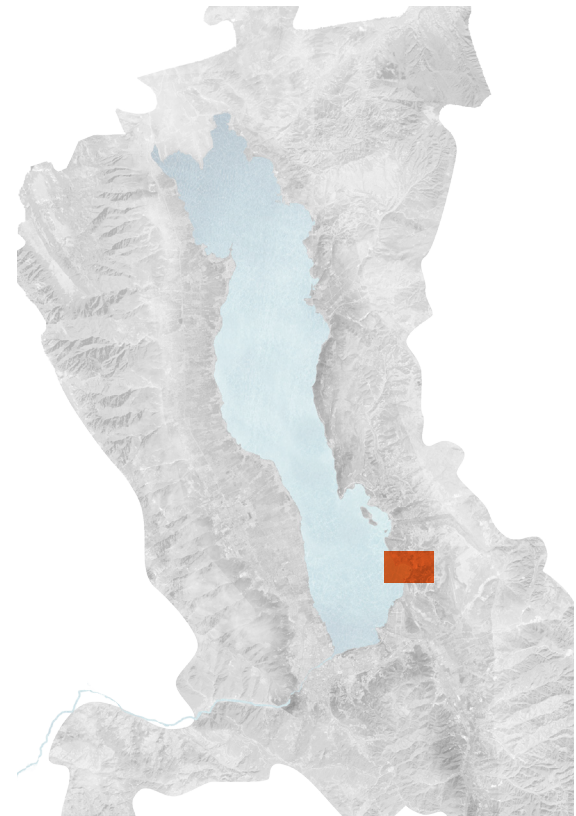


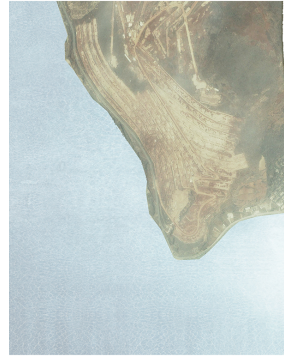
Figure 76. Map of Dali City, site is highlighted



Figure 77. Regional site plan

Site Condition from 2007 to 2015

To the right is a series of aerial maps of the site from 2007 to 2015. Before 2007, there is only a small settlement, Xiahe village on the site. Local villagers rely on fishing and farming. Recently, when Dali became a popular tourist destination, mountains were taken over for high-end vacation homes. Farmland was destroyed to make room for the road construction and new mixed-use development.



2007



2009



2014 January



2014 January

Figure 78. Aerial views of the site



2011



2012 February



2012 April



2014 May



2014 November



2015 March

Site Photos

The project site is surrounded by several mountains and facing the Erhai Lake. In Xiahe Village, some traditional houses still remain. Three story concrete single family houses were also built to fulfill the increasing needs. Restaurants and hotels were built along the major street and the coast. A natural wetland, which is along the edge of the lake, is often visited by tourists when they travel around the lake.



Figure 79. Site photo

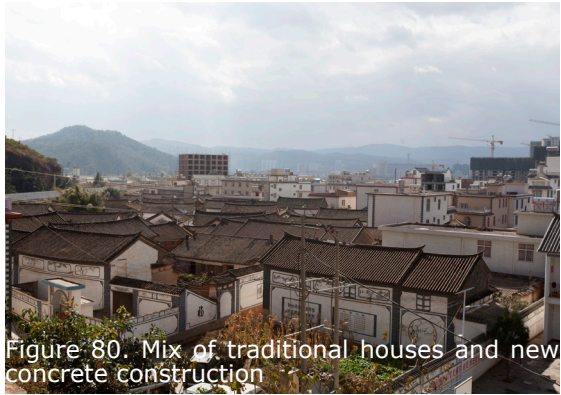


Figure 81. Photo taken along the waterfront street

Figure 82. Erhai Lake and fisherman

Existing Site Condition

The existing settlement of Xiahe Village is surrounded by mountains on three sides and water on the fourth side. Local villagers have been living here for generations, supporting their families through fishing, farming and craftsman work. Therefore, if any new construction takes place on this site, the villagers will be the ones who will be affected the most.



Figure 83. Existing village

The site is usually accessed through the south street along the waterfront. It is also the most popular tourist route when visiting Dali. Often times, tourists rent scooters and ride on this street to travel around Erhai Lake. The Airport express highway is along the south end of the site. The site also acts as a gateway to the city of Dali. A new railway to the east side of the site is under construction. When finished, it will become a new public transportation to access the site.

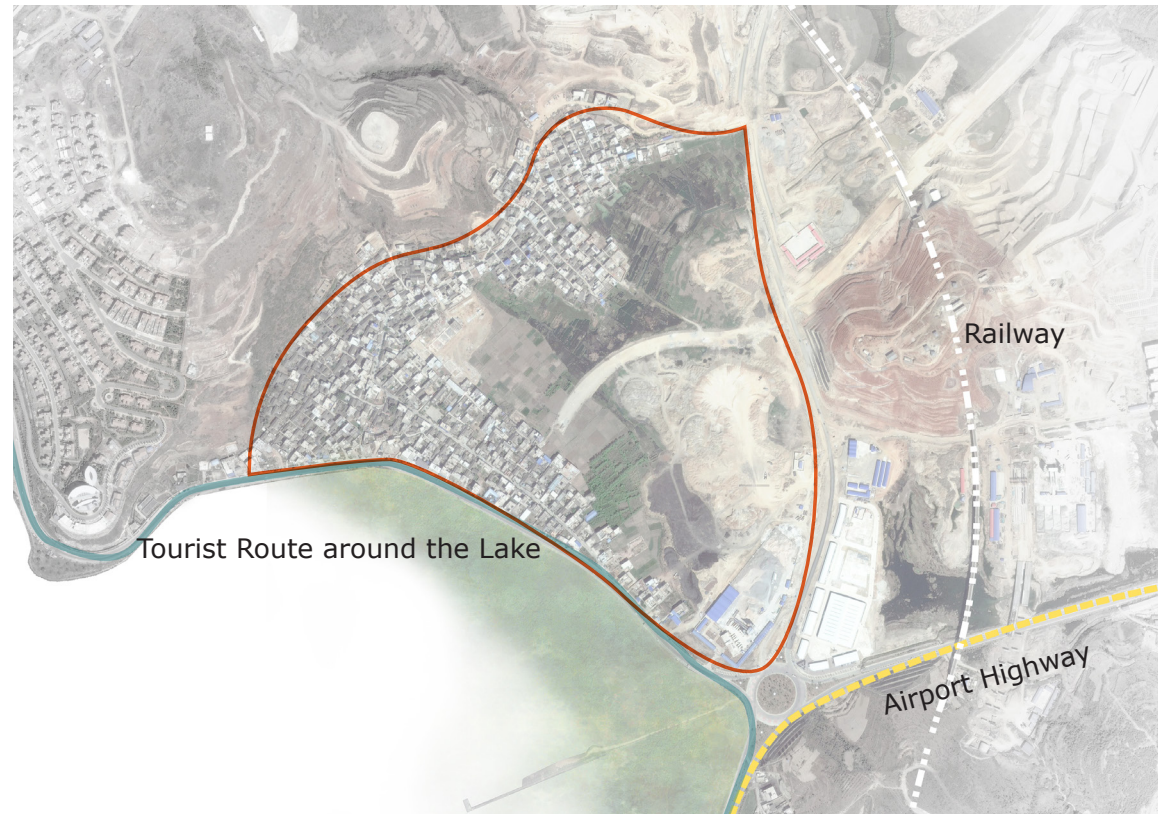


Figure 84. Transportation

Master Plan Proposed by the Local Government

To the right is a new master plan of the site proposed by the local government. The existing village will be completely demolished and replaced with mix-used residential towers. Villagers will be relocated to other parts of the city or to some of the small apartment units in the residential towers. Farmland will be taken over to make room for streets and an artificial landscape/park on the south side of the site. An iconic building is proposed in the center of the park to attract attention and make the new landmark of Dali city. The master plan represents a typical top-down urban planning process in China, which the local government only focuses on a final, fixed state. There is no flexibility in the process. If the economy goes well, it might become a new mega city center. However, if the economy does not go well, and the project lacks investment another “ghost city” will arise. Moreover, relocating the villagers is not easy and repopulating the site once the construction is finished will be even harder. With the demolition of the village, the soul of the place will be gone.



Figure 85. Master plan by local government

Existing Village

To the right is an aerial map of the site before any construction started. The village is surrounded by farmland. The southwest of the village is facing a large area of wetland and Erhai Lake. The east side of the site is a nature hill where people used to hike and get a nice view of the lake, the village and the farmland.

Surrounded by all the beautiful landscape, there is no need to create an artificial park. Instead, this thesis proposes to preserve the farmland, to allow the villagers keep farming while the city is slowly developed. The farmland also will act as landscape and a park. In the future, once the city is developed, the farmland can turn into urban farming. With more attention on organic food, an urban farm could become a new attraction on site.



Figure 86. Nature environment

CHAPTER 4. DESIGN RESPONSE

A Framework for Incremental Growth

Phase 1



Figure 87. Site Plan - Phase 1

The south side of the site becomes open plaza for local residents as well as visitors who come to see the wetland.

Phase 2



Figure 88. Site Plan - Phase 2

New development starts to happen along the popular tourist route. Farmland is preserved for locals to farm.

Phase 3



Figure 89. Site Plan - Phase 3

New development appears along secondary road and east side of the site to support future development of the east side of Dali. Farmland serves as a park.

Phase 4



Figure 90. Site Plan - Phase 4

Development spreads to the foot of mountains and west of the site. Farmland is preserved and serves as urban farming.

Scale of Incremental Growth

The village is composed with courtyard houses. The 75' by 75' square courtyard houses allow the existing village to maintain its small human scale. Each of the courtyards contains one or two houses and some time two light-wells. In the new development, the small courtyard scale should be maintained. All the new development will be constrained in the 75' by 75' parcels.

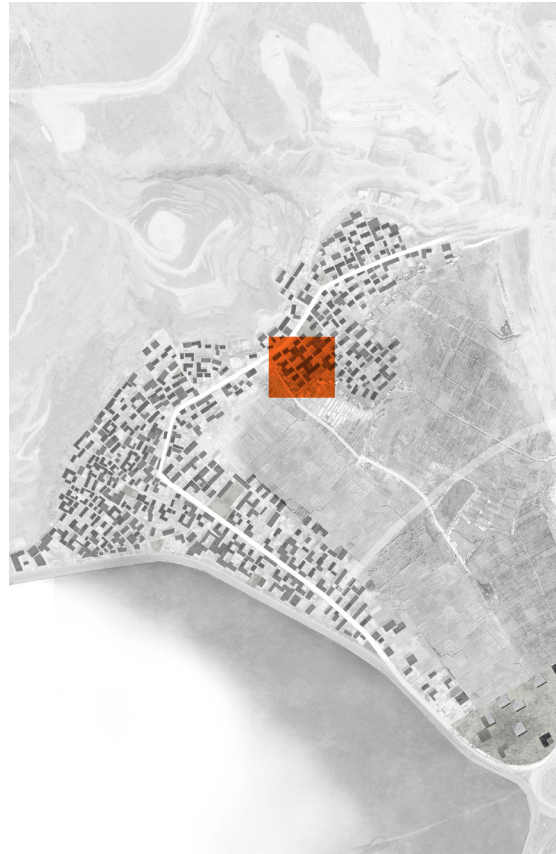


Figure 91. Site Plan



Figure 92. Zoomed in aerial view

The 75' by 75' lot is a good size for two to three story small business buildings and live-work units. In the later stage of the incremental growth process, four of the 75' by 75' lots can be combined as one 150' by 150' lot, which is a typical size for mid-rise office towers in China.

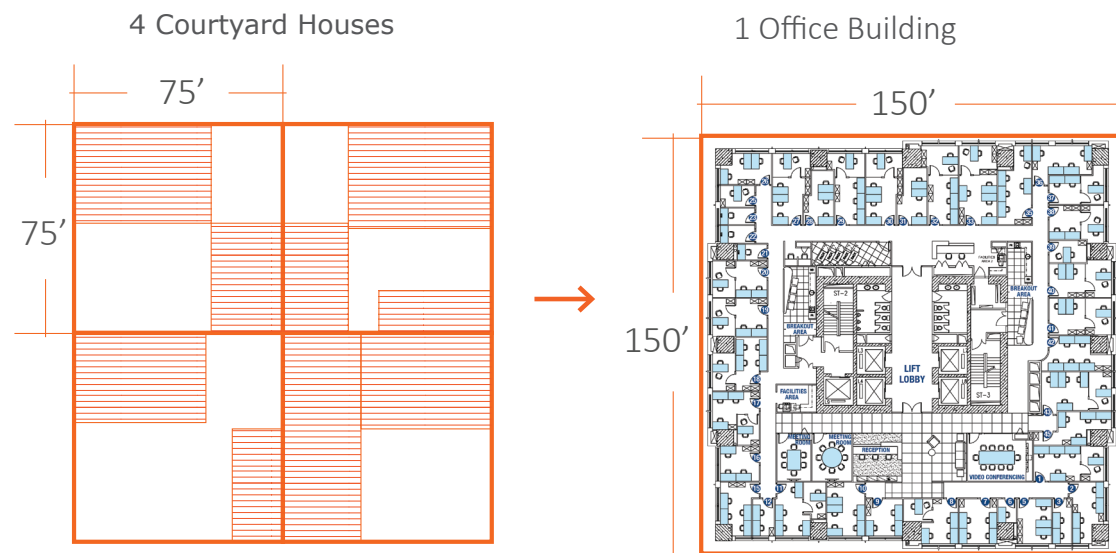


Figure 93. Size of four courtyard houses = A typical office building

Incremental Growth - Phase 1

Farmland will be preserved and the south side of the site will be developed as a public plaza to serve the villagers and visitors, who come for the wetland. Small scale new construction will start from the south end of the site.



Figure 94. Site Plan - Phase 1



Figure 95. Perspective - Phase 1

Incremental Growth - Phase 2

In phase 2, small investors will start building two to three story live-work units or small offices and start their own creative industries. Small investors will contribute to the diversity of the region. With the small scale, people are encouraged to build with local building materials and incorporate traditional construction methods and new technologies. Mid-size communal space is also provided off street for outdoor activities such as sculpting or playing chess.



Figure 96. Site Plan - Phase 2



Figure 97 · Perspective - Phase 2

Incremental Growth - Phase 3

During phase 3, another floor might be built on top of the small live-work units based on need. Larger scale three story office buildings can be built with communal space inside. The new construction of the large office buildings will be built to support future growth on top. A large area of farmland will be preserved and turn into urban farming and park.



Figure 98. Site Plan - Phase 3



Figure 99. Perspective - Phase 3

Incremental Growth - Phase 4

In phase 4, if there is more demand, 10 story office towers can be constructed on top of the buildings that were built in phase 3. The tall towers are located on the north side of the new development to allow solar exposure for the previous developments. All the buildings will be developed by different investors to insure diversity. In comparison to the top-down master planing process, bottom-up incremental growth will allow more small and diverse investors to start their own businesses. The slow process will help local residents to adjust to the change.



Figure 100. Site Plan - Phase 4



Figure 101. Perspective - Phase 4

Incremental Growth - Existing Fabric

The existing village is mainly composed with courtyard houses and a central plaza at the center. The courtyard houses are built very close to each other and leave little room for any new construction. Arrangement in each courtyard house also varies but there is always a courtyard in each unit. This courtyard becomes a potential space for new construction.



Figure 102. Plan - Existing

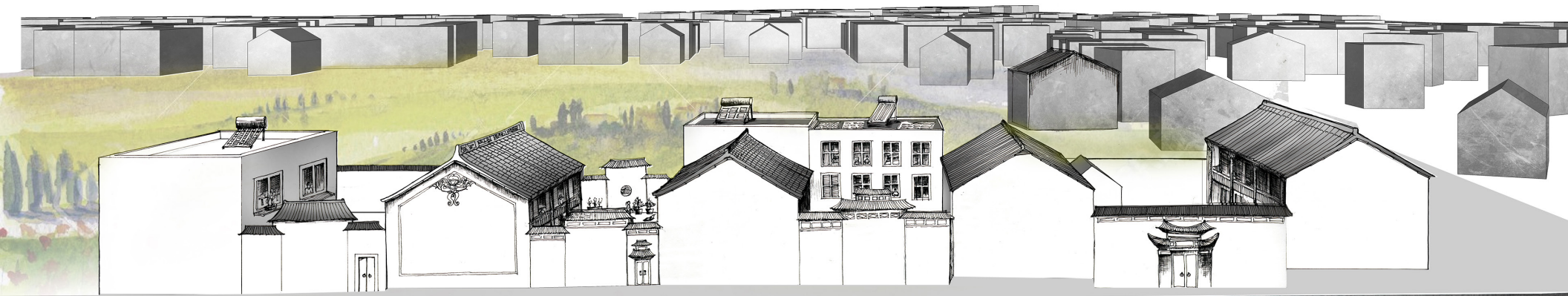


Figure 103. Section Perspective - Existing

Incremental Growth - Phase 1

Column Placement & Basic Structure

The new framework will be built on top of the existing fabric. The structure of the new framework will be based on the existing urban fabric. During the first phase, columns will be placed in the courtyard spaces and a base structure will be built. A light frame can be constructed on top of the base structure. The columns can also be used for vine planting or to support other activities.



Figure 104. Plan - Phase 1

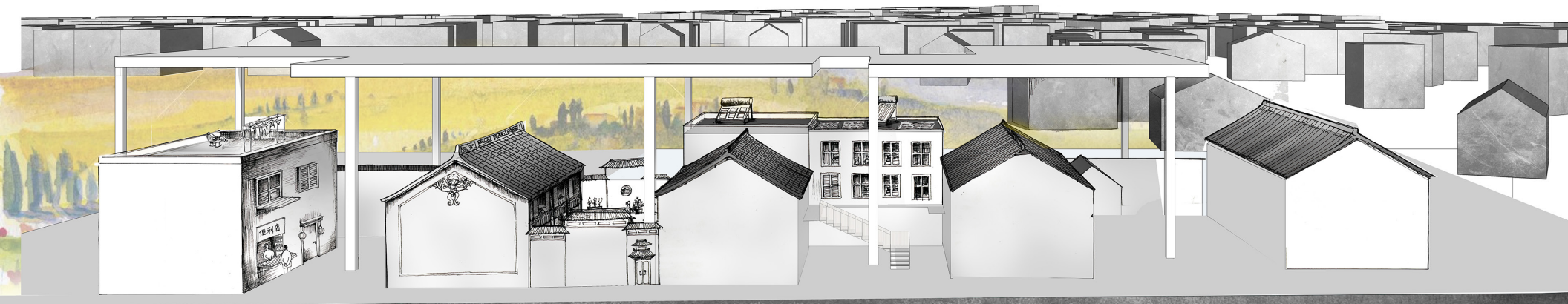


Figure 105. Section Perspective - Phase 1

Incremental Growth - Phase 2

Basic Infrastructure & Circulation

During the second phase, two circulation staircases, basic infrastructure and a structural frame will be constructed. A concrete structure frame is provided to encourage local residents to build their own units with their preferred materials. Solar panels and solar hot water tanks will be constructed on the rooftop and support the demand of both the new and existing residents.



Figure 106. Plan - Phase 2

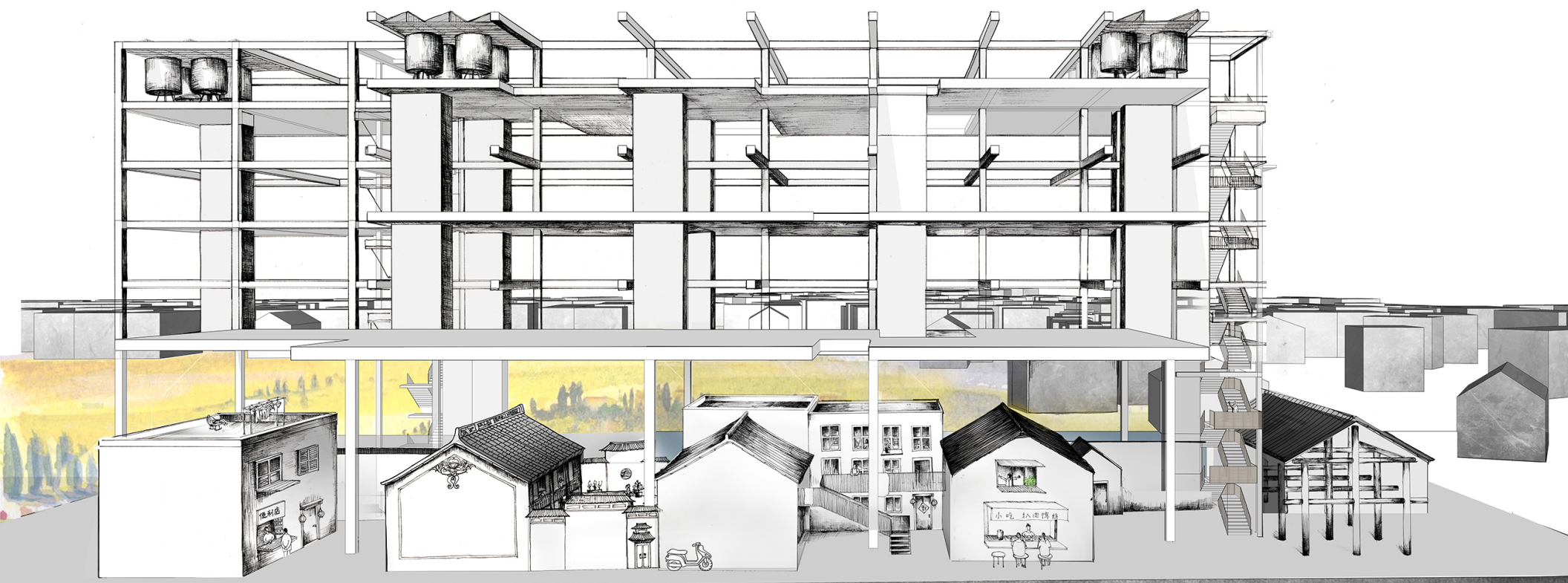


Figure 107. Section Perspective - Phase 2

Incremental Growth - Phase 3

Self-built Houses Inside of the Framework

After all the infrastructure is built, residents can start building their own unit based on the infrastructure location. Between every other units, space is saved for semi-private courtyards, which can be shared by two or three families.

Local craftsmen can start their wood carving workshop in the new framework to build wood doors and wood screens for the new constructions. Visitors and new immigrants can also come to learn traditional wood carving. New immigrants and visitors come with their creative ideas and exchange knowledge with local craftsmen.



Figure 108. Wood Workshop

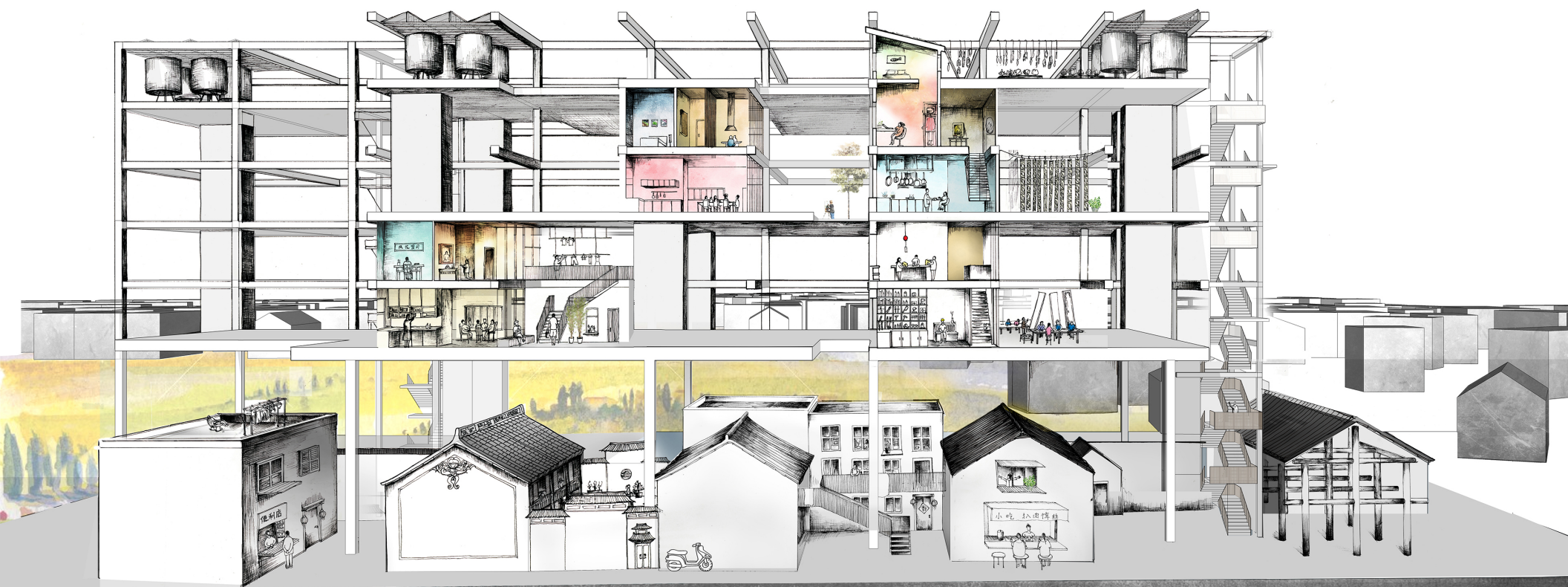


Figure 109. Section Perspective - Phase 3

Incremental Growth - Phase 3

Self-built Houses Inside of the Framework

Elevation Studies with Local Materials



Figure 110. Elevation Studies

Building with Dali marble and curtain wall system: Each marble piece is unique and represents a family.

Building with carved wood shading screens: Tracks for hanging the sliding wood screens can be built within the basic structure. All the screens are carved specially according to each family.

Building with carved wood shading screens: Windows can be punched openings with a wood screen behind them.

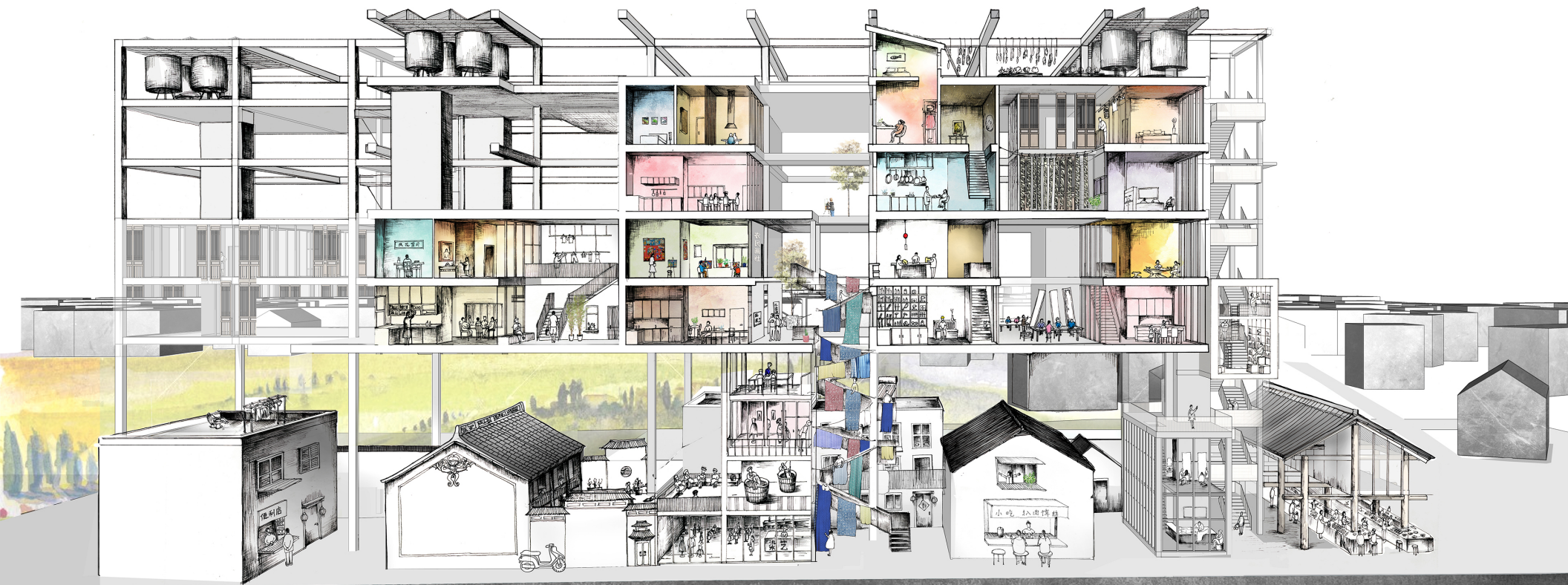


Figure 111. Section Perspective - Phase 3

Incremental Growth - Phase 3

Self-built Houses Inside of the Framework

Existing houses might be torn down over time and new structure can be built to connect the new frame with the existing courtyard. A tie-dye master in the village can open a tie-dye workshop with a store on the ground floor, a sewing and dyeing area on the second floor, a fashion studio on the third floor and a graphic pattern design studio on the fourth floor. A new set of staircases are built in the courtyard. Tie-dye fabric is hung on the railings and creates a new tourist attraction. When residents or visitors walk up the stairs, they see the beautiful tie-dye fabric and also experience the tie-dye making process.

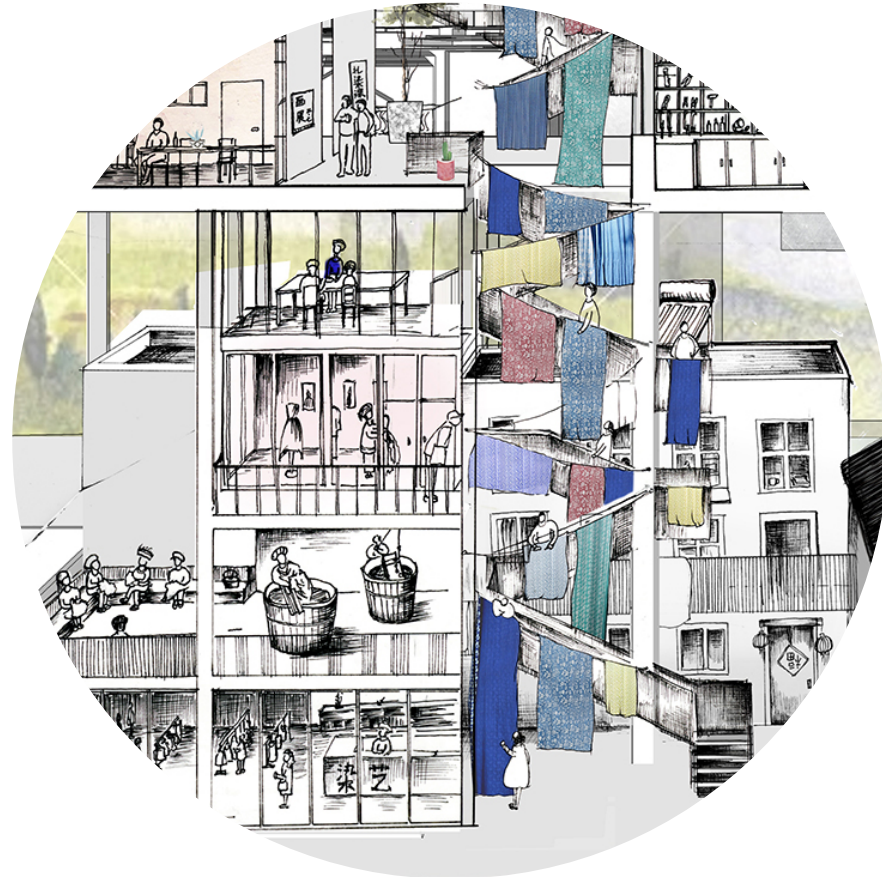


Figure 112. Tie-dye Workshop

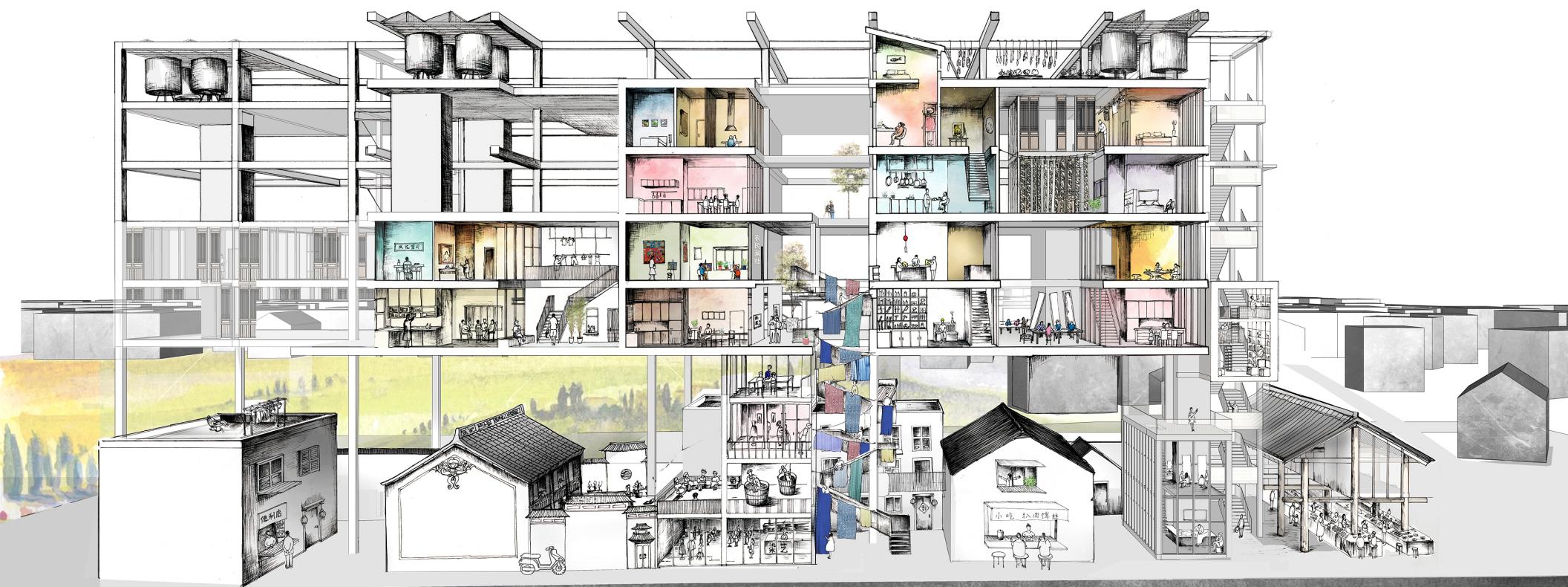


Figure 113. Section Perspective - Phase 3

Incremental Growth - Phase 3

Self-built Houses Inside of the Framework

Since many of traditional houses are built with a wood frame and rammed earth walls. The walls can be taken down and the frame can be moved and re-purposed for other uses. For example, the lower parts can host a market and the upper level can still be housing units.

Other convenient stores such as a sewing shop, salon and cafe will be provided on the street level to support daily life.

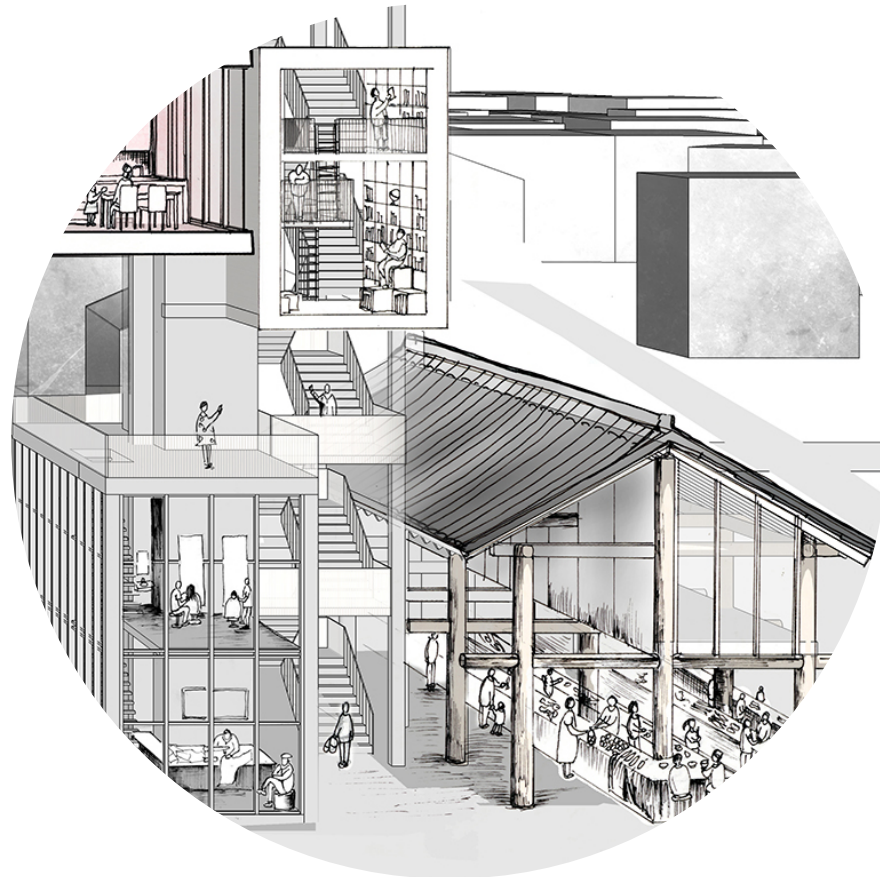


Figure 114. Sewing shop, hair salon, library and market

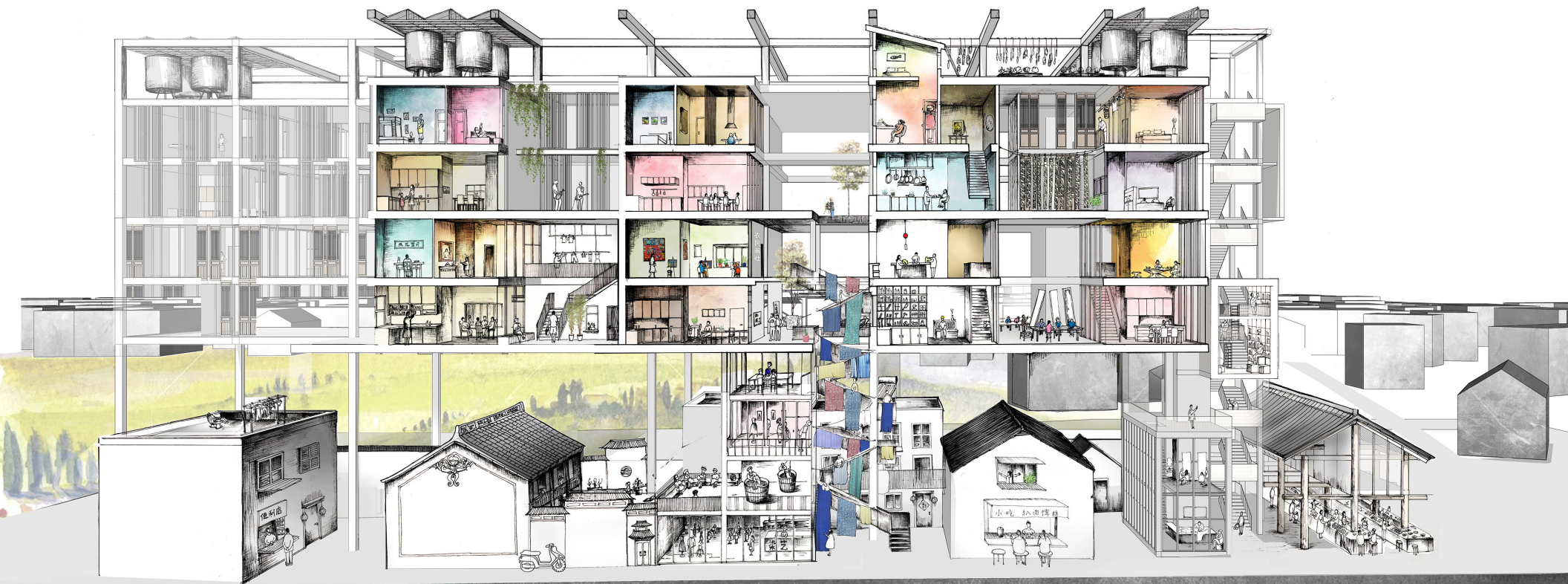


Figure 115. Section Perspective - Phase 3

Incremental Growth - Phase 4

Structure Hanging down from the Framework

Once the frame is filled up with workshops and housing units, space can be hung from the frame to preserve the existing houses below. For example, a structure is hung from the framework and serve as a community movie theater. The slope of the roof will provide theater seats.



Figure 116. Movie theater



Figure 117. Section Perspective - Phase 4

**New Community Integrated with
Local Culture and Life**

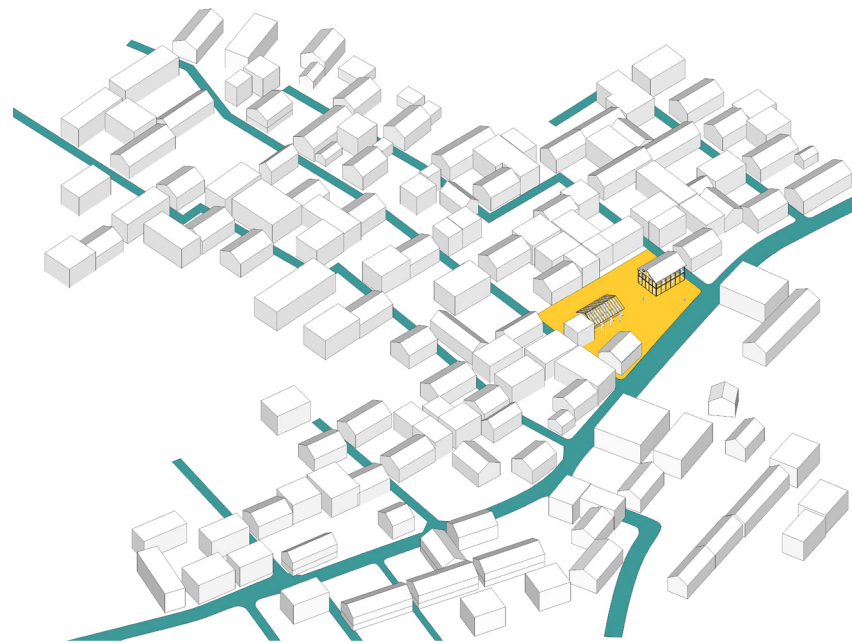


Figure 118. Existing Urban Fabric

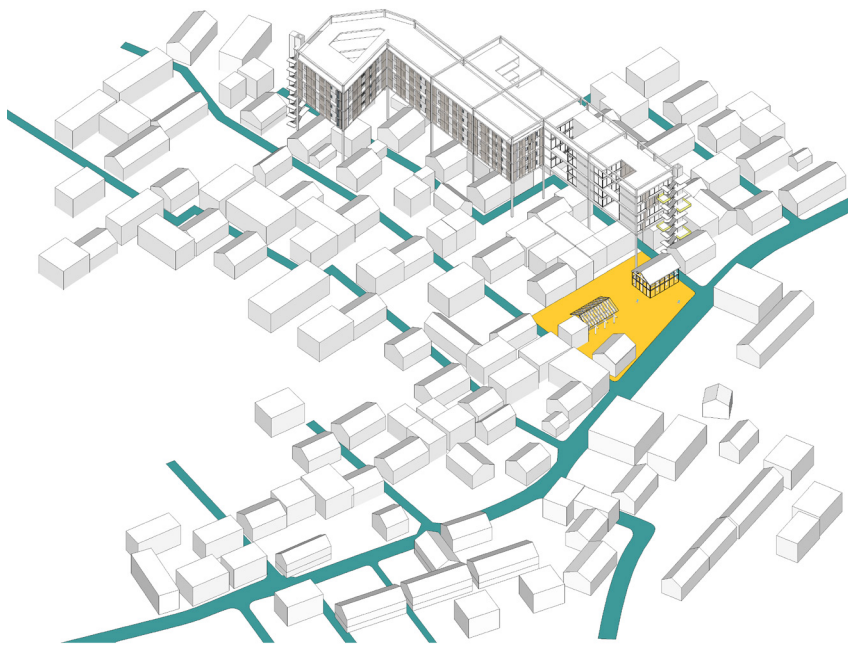


Figure 119. First framework built along public plaza

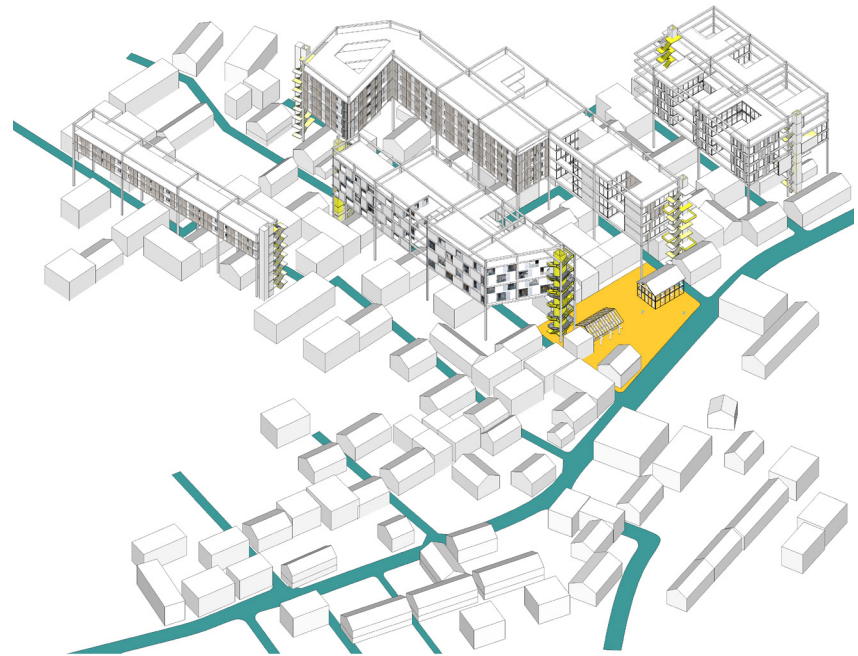


Figure 120. A collective of framework

Community around Central Plaza

The construction of new frameworks are centered around the existing public plaza. People exercise, talk and gather in the plaza. An indoor community center can be added and support the community activities. A green house can also provide a place for locals to share their experiences. The new framework is arranged according to the existing plaza, the heart of the community.

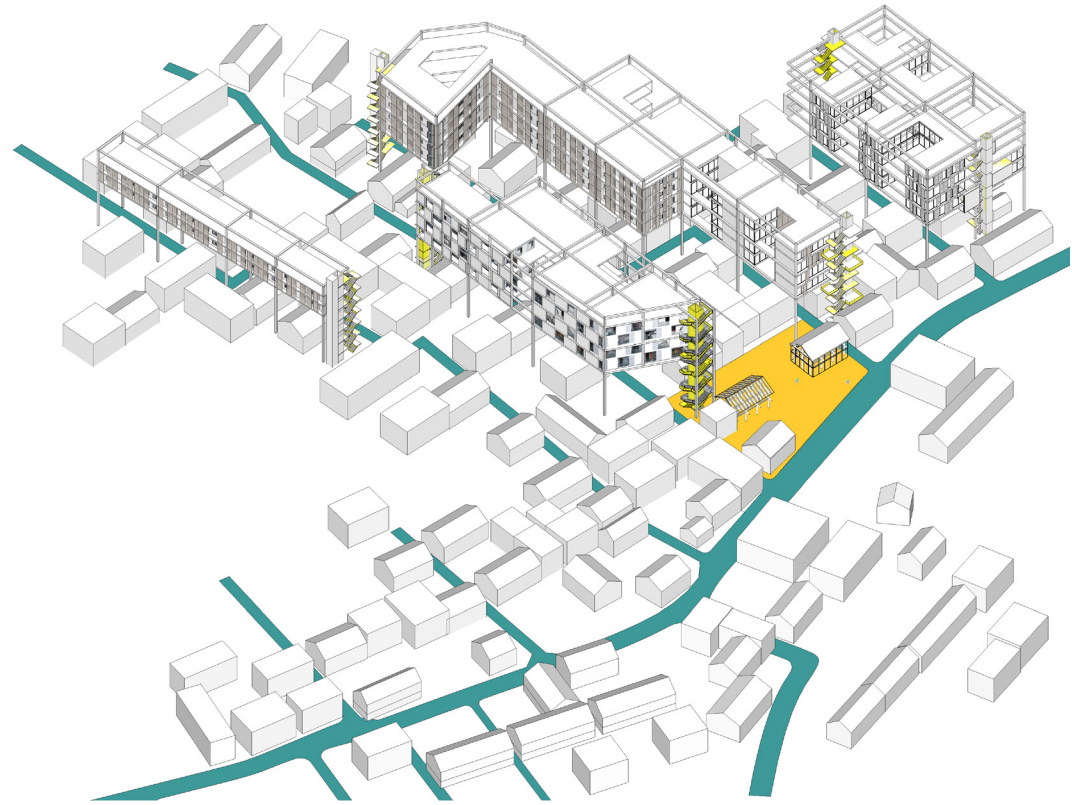


Figure 121. Framework Around Public Plaza



保护耕地，造福子孙!

社区活动中心

Figure 122 Public Plaza

Activity Rooms inside Staircases

Activity rooms are plugged into staircases, where everyone passes by in their daily life. Majiang room provides a space for people to play a game and chat together. The community library provides a place for book sharing and exchanging. The various activity rooms encourage interaction among various residents on a daily bases.



Figure 123. Activity room inside staircases

Majiang Game Room



Figure 124. Majiang Room

Community Library in Staircase



Figure 125. Community Library

Suspension Bridge Links Communities

Existing streets in the village are running parallel. Once the new frameworks are built, a secondary upper level circulation (suspension bridges) will be added to link the community and provide circulation that is perpendicular to existing ones. The suspension bridge can also be occupied by residents for hanging tie-dye fabrics, chatting and viewing the city.

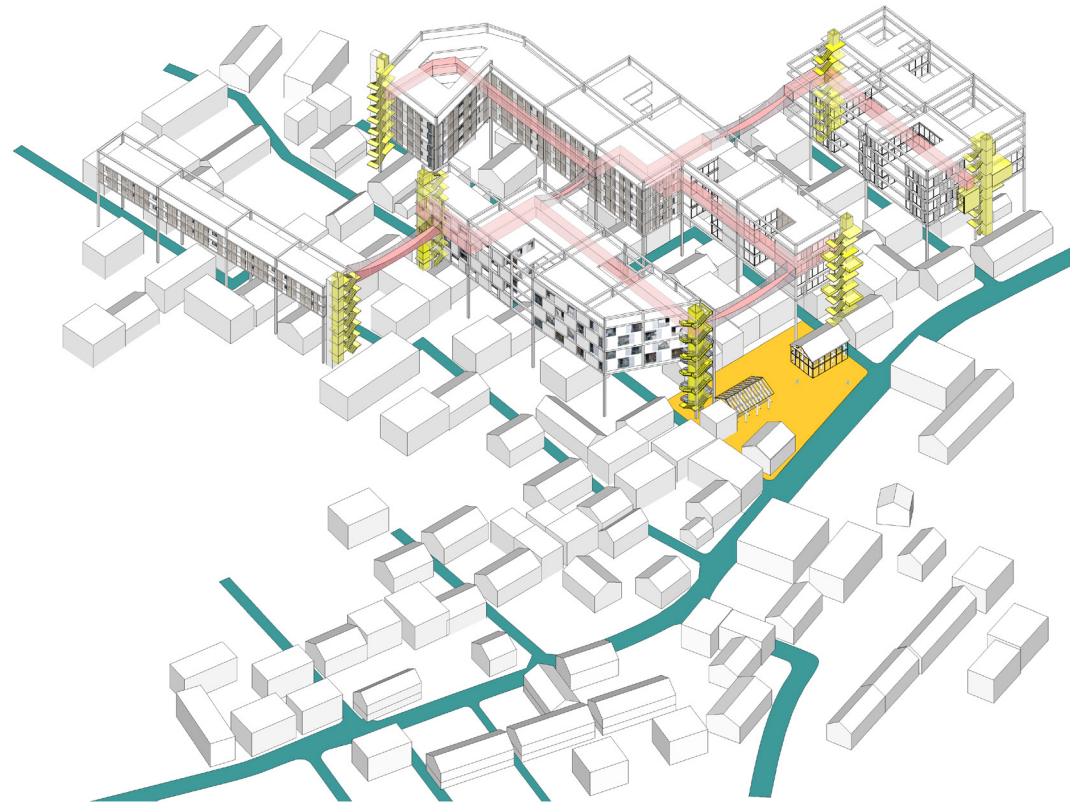


Figure 125. Suspension bridge network



Figure 126. View of the suspension Bridge

Semi-private Courtyard

In each framework, semi-private courtyards are provided for two or three families to share. Residents are encouraged to build their own houses with materials that they are familiar with. Each unit acts as a traditional "Fang", and a large family can occupy two or three "Fangs" and have their own family courtyard. The design is less about a single house as an object but the interacting space composed by the houses. It is about the activities and life that happens inside the space instead of the form of the architecture.



Figure 127. Semi-private courtyards in all the buildings



Figure 128. Courtyard shared by two families

Rooftop for Public

The rooftop of the frame is open to the public and allows everyone to enjoy the beautiful views from a high elevation. Local residents can come to the rooftop for a picnic or sunbathing. The rooftop provides more public space and encourages various groups of residents to share and communicate. The rooftop is also designed to hold solar panels and solar heated water tanks, which will provide hot water to all the residents.

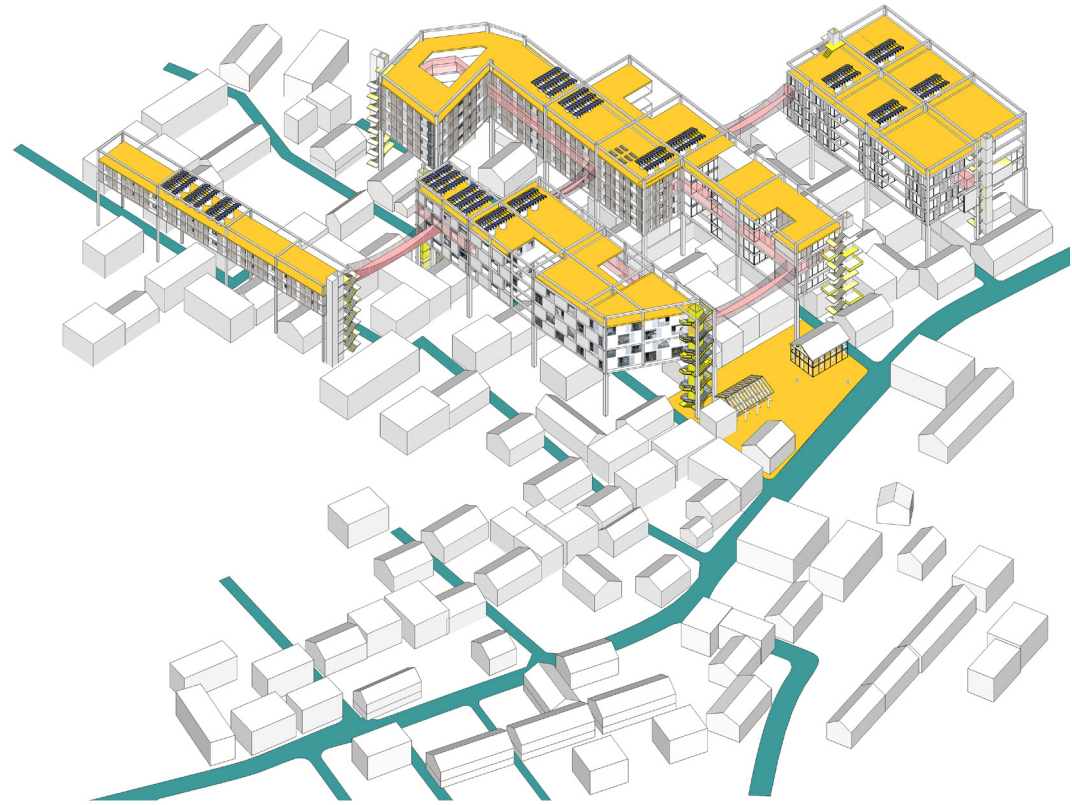


Figure 129. Rooftop for public



Figure 130. View of the rooftop

CHAPTER 5. CONCLUSIONS

There have been so many houses demolished in China. So many farmers have been forced to relocate to cities. The culture and identity of many places has been erased. Because the Chinese economy is slowing down, it is time to rethink urban rural development. The rapid urbanization process has caused many social issues. In response to these issues, this thesis proposes a new framework for incremental growth, which is based on regional identity and the lifestyle of local residents. The design values the unique characteristics a place has to offer and engage tradition with the contemporary situation to allow for a culturally sustainable growth.

To address the issues caused by rapid urbanization and make a change to the current top-down master planning process, a collective effort is needed from the government, architects, local residents, immigrants and everyone who lives in the area.



Figure 131. Framework

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