

Retrofitting Existing Urban Voids

-- Taking the Yixing Huanglong Mountain Mining Area as an Example

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Abstract. As an abandoned mining area, Huanglong Mountain Purple Sand Mining Area in Dingshu Town, Yixing City, Jiangsu Province has entered a state of suspension of production. This study draws on successful cases and retrofits the abandoned mining area in Huanglong Mountain into a “source of purple sand” community park. With purple sand (the represent of the urban) as the core, museums are built to realize the restoration of the ruins and at the same time display the culture as well as history of the development of purple sand mining and pottery industry through photos and historical documents. This community park also provides ordinary pottery artists with opportunities to display their works and participate in cultural inheritance through workshop, narrating their learning experience to encourage youngsters. Some basic facilities like teahouses, restaurants, hotels and bazaars associated with local elements are created in the park to help tourists to experience the local pottery art life and boost economy prosperity of the city.

Keywords: Huanglong Mountain; Purple Sand Teapot; Ecological Restoration; Cultural Spread.

1. Introduction

China has a long history of mining, but with the increasing number of depleted mines, people have begun to pay attention to the ecological restoration of abandoned mines and try to use the unique terrain left by mining and the relics of special mining areas to integrate with local resources to build special parks or museums with local elements such as Yixing Qinglong Mountain Ecological Park and Nanjing Niushou Mountain. On the one hand, it can protect mining and geological relics and popularize relevant scientific knowledge. On the other, we can realize cultural inheritance and promote the development of local tourism.

2. Research Background

2.1 Research Motivation

My hometown Yixing is famous for its purple sand and tea plantation. In the 21st century, it has been a trend for youngsters to migrate from villages to cities, which dilutes their concepts of purple sand development and cultural heritage inheritance. Due to social pressure and changes in lifestyle habits, tea houses were abandoned as well. According to the data report from Wen Huibao, there used to be 45% of people in Dingshu Town engaged work related to pottery. The expectation of purple sand culture passed down through generations inspires me to design the abandoned mining area as a community that integrates science, education, cultural dissemination and entertainment.

2.2 Research Objective

The objective of this research is to carry out ecological restoration of Huanglong Mountain abandoned mining area and transform it into a community park associated with local pottery to create a pleasant space for slow life, revitalize and promote the communication of community activities and give full play to the historical and cultural value of historical remains, providing local residents and tourists with scenery and regeneration space to experience purple sand culture.

3. Research Process

3.1 Some Questions are Aroused

Through field research, I saw that abandoned mines were over exploited—the surrounding plants were cut down and the environment was destroyed. In the transformation of the mining area, it is necessary to strengthen the mountain mass of the abandoned mine to eliminate potential safety hazards; at the same time, plant cultivation is used for ecological restoration. In addition to the above questions, I also considered the following issues during the planning and design project.

First, before the investigation, I discovered that there are two spaces can be chosen to retrofit, one is Huanglong Mountain (mining area) and another is Gunan Street (a cultural heritage). How do I choose? Second, how to ensure that the environment is not destroyed in the process of innovation? Third, how can the community park gather local people and attract foreign visitors? Fourth, how to improve cultural spread and preserve traditions of the city?

3.2 Research Methodology

Before planning, the research is mainly carried out in the form of case studies and research interviews. We hope to learn from successful cases to understand how to carry out ecological restoration and culture relics protection on the basis of preserving the original topography and landform and how to combine local purple sand cultural decoration. Through the interviews, we learned more about the customs and people's expectations of the community and reflected them in the design.

3.2.1 Case Studies

Case one: Yixing Qinglong Mountain--a successful case of abandoned mine restoration and management. As early as the 1950s, the stone in Qinglong Mountain, Dingshu Town, Yixing, was mined in large quantities. The management began in 2017 and after the management, Qinglong Mountain Ecological Park has been restored through lush and green grass, landscapes and facilities such as waterfalls and mountain squares.

This study inspires me that by restoration and regeneration, abandoned area can be transformed into cultural community.

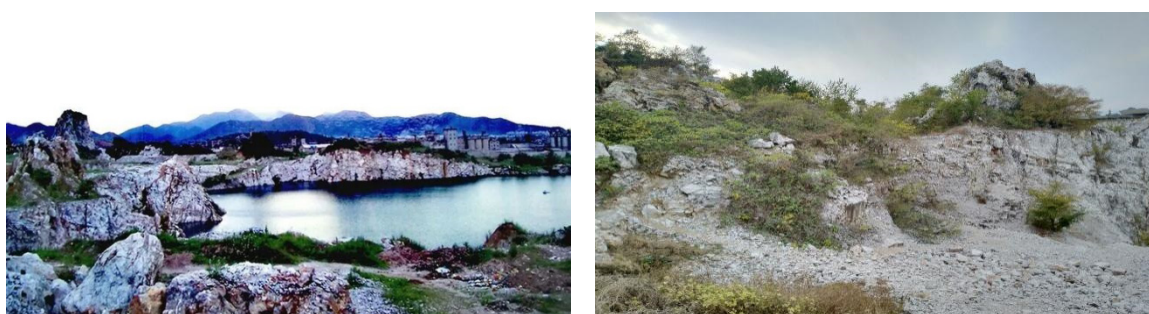


Figure 1. Landscape of Yixing Qinglong Mountain before retrofitting



Figure 2. The landscape after retrofitting Yixing Qinglong Mountain (Photographed by grandfather)

Case two: China Academy of Art's Folk Art Museum—how a traditional clay-based building material is used in contemporary design. The folk art museum in Hangzhou was previously a tea field that formed a hillside. The structure of the museum is covered with tiles hung by stainless wires.

This study inspires me about the structural and architectural material of my design.



Figure 3. Applying old tiles for both the screen



Figure 4. The outer wall is covered tiles and the roof

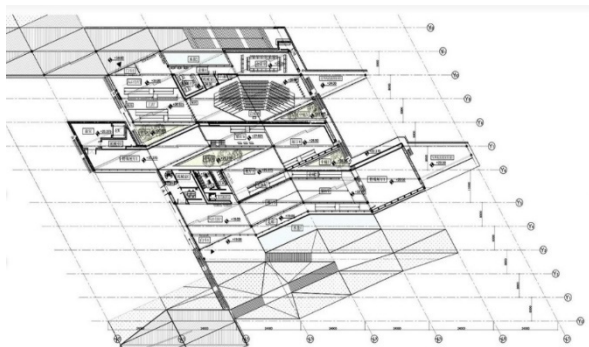


Figure 5. The interior structure of the museum

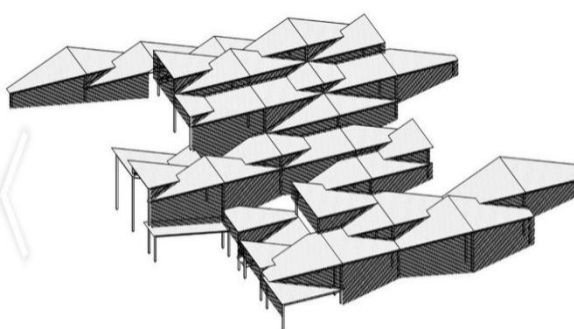


Figure 6. The exterior structure of the museum

(Architected by Kengo Kuma & Associates, structural designed by Konishi Structural Engineers, facility designed by P.T Morimura & Associates. Ltd, photographed by Eiichi Kano, China Academy of Arts' Folk Art Museum, 2015.)

3.3 Research Interview

I interviewed with my grandmother, a normal craftsman. (see details in interview appendix from bibliography) She narrated about her experience of making teapots when she was young and challenges she overcame. From the interview, I think that the first step to preserve is providing a stage for these normal craftsmen, playing their value in the city, which can inspire the youngsters and boost vitality. Moreover, a tea house should be built to preserve tea culture and strengthen their understanding related with this tradition.

Are young people still willing to learn handmade pottery? To this end, I also interviewed a local senior arts and crafts artist, Mr. Fang Xiaolong, who was born in a pottery family and is a representative inheritors of intangible cultural heritage projects, who told me that there are still many purple sand lovers, and unlike in the past, many people with art backgrounds are willing to come to Yixing to learn handmade pottery. He hopes to provide a platform for ordinary purple sand lovers and craftsmen to learn, communicate and display their works in reality.



Figure 7. My grandmother was decorating the Ceramic artifacts



Figure 8. Mr. Fang Xiaolong was making a teapot

(Photos are provided by myself)

4. Design Plan

4.1 Design Ideas

The overall area of the project is nearly 230,000 square meters, close to Zisha Road in the south, Shuanglong Road on the north side, Baidang North Road in the west, and Liyuan Community in the east. In the planning and design of the community, the first idea is to create an atmosphere, a public space where local residents can start a business, stay in the house, date and communicate, and at the same time attract tourists and purple sand lovers from all over the world.

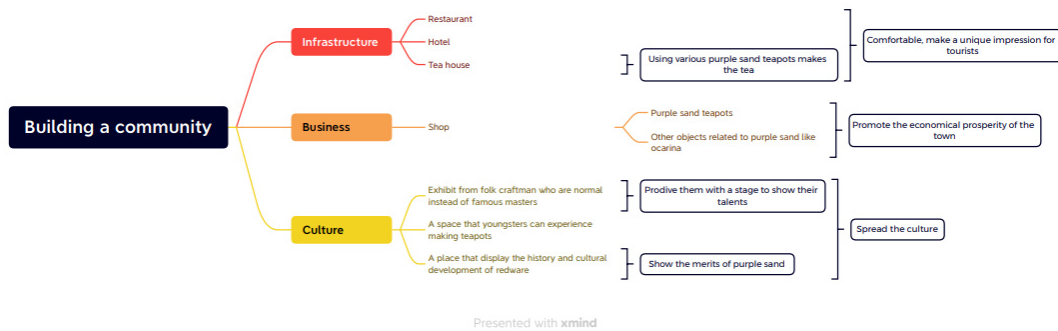


Figure 9. Necessary facilities need to be built in the community park and their purposes

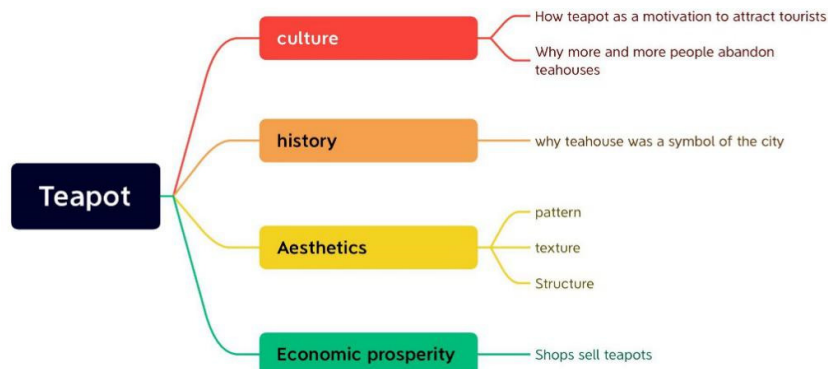


Figure 10. Teapot is the theme and purpose derived from the design core



Figure 11. The relationship between Huanglong Mountain and nearby areas in Dingshu Town

4.2 Functional Structure

We divided the original mining area into four areas to achieve the functions of functional science education, cultural inheritance and leisure and entertainment. The four areas are the Museum District on the southwest side, the workshop on the southeast side, the homestay on the northeast side and the tea house, restaurant, market and drama stage on the northwest side. There are three entrances, which are located on the west side of Purple Sand Source Square, Purple Sand Road in the south and Shuanglong Road in the north. A visitor’s center and a parking lot are also created to satisfy tourists’ needs

The design scheme is shown in the figure.

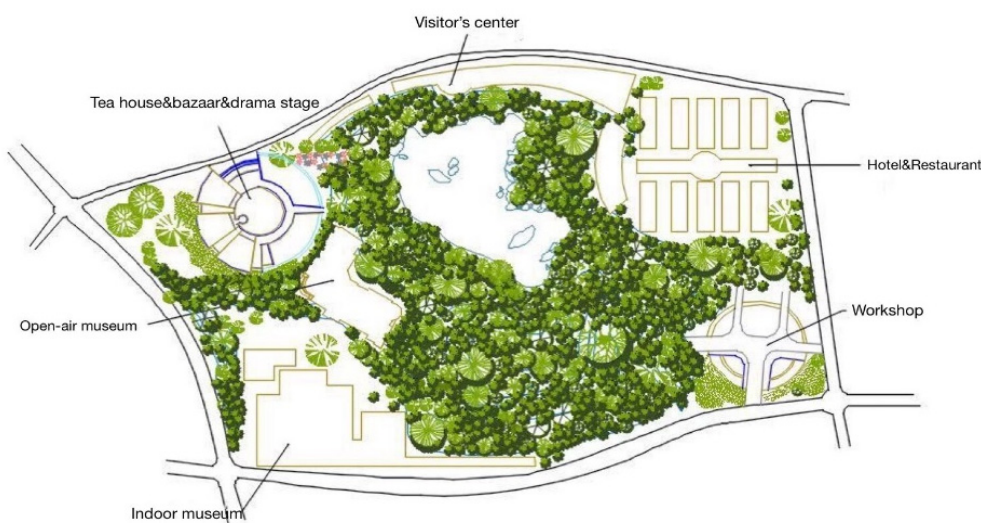


Figure 12. The design scheme of Huanglong Mountain Cultural Community

4.2.1 Museum



Figure 13. Huanglong Mountain mass and rock layers from bibliography

Open-air museum is built along the mining area. The design of it is to respect the original topography and minimize disturbances to nature. The Huanglong Mountain in this project is about 60 meters high with a total five mining wells as shown in Figure. Huanglong Mountain is the source of

purple sand mine, according to relevant information, purple sand was formed in 350-260 million years, so Huanglong Mountain itself is the best science education material. In the design, Huanglong Mountain is the center of the open-air museum, which is reinforced and repaired. And the site of No.4 well, which has the largest amount of mining, is used as the entrance and mining machinery is set up, stimulating the mining and transportation process of that year through sculptures and other forms, so visitors can immerse themselves in the scene and understand the mining process of purple sand mine.

In the southwest of the open-air museum, it is designed as an indoor museum, which is used to display how purple sand work and the development of pottery industry in different periods. In the construction process, local material gives full play to the construction advantages of local materials and the selection of local waste pottery pieces for external wall decoration.

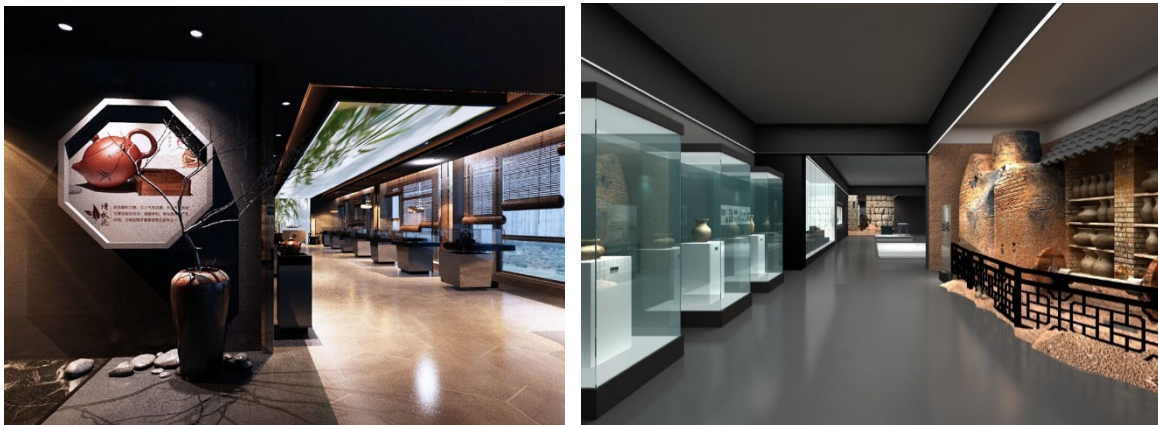


Figure 14. The interior construction of museum (Designed by myself)



Figure 15. The exterior decoration made by broken pottery pieces (Photographed by grandfather)

4.2.2 Workshop



Figure 16. The design of workshop (Designed by myself) and the display of ceramic artifacts (Made by my grandmother)

The workshop provides a place for immersive handmade pottery with regular invitations to local craftsmen to present their personal artifacts and teach pottery making for the purpose of cultural heritage and the youngsters can combine theory with practice. In the later stage, more experience courses such as sculpture, tea art, flower arrangement, seal carving will be developed in combination with local characteristics and the workshop will be built into a community college, accepting short-term learning for lovers of different ages and needs and creating more employment opportunities for local residents, so that more people are willing to stay and build their hometown.

4.2.3 Teahouse and Hotel

Since China has a long history of tea, tea house is the represent of this tradition. In the teahouse, local neighbors are gathered together to strengthen relationships and relieve pressure; merchants can introduce the difference in purple sand teapots made by various purple sand materials in the absence of competitive pressure in the market. The exterior construction is embellished with broken ceramic containers and surplus intact containers can be used for columns to connect the bench with ground. This extraordinary architecture can also attract tourists, which can broaden their comprehension of Chinese tea culture. The tea house is designed in a bamboo forest; the façade used dark carbonated wood panels and grilles which are rustic and natural, integrating with the surrounding environment. People can enjoy the scenery while drinking tea; a drama stage is designed in the old-fashioned tea house to provide traditional music performance.



Figure 17. The Design of Tea house and Hotel (Designed by myself)

To summary, the project of retrofitting Huanglong Mountain Mining Area corresponds with the concept of environmental restoration. The purpose is to strengthen cultural spread and create a pleasant slow life. After field investigation and relevant sources, Gunan Street represents nostalgia belonged to older generation. Before the 1990s, the mine produced about 2000,000 tons of purple sand mud per year as the source of purple sand, which can better show pottery culture. During the design process, I further realized that digging deep into the local traditional culture and developing a diversified interactive experience can attract more tourists, which can better protect and inherit the cultural heritage of purple sand. The success of the community must be inseparable from the participation of local residents who are the main body of urban construction, cultural inheritance and museum display. Only by strengthening and owing the sense of ownership of the purple sand culture and enhancing the residents' confidence and pride in the local history and culture can the local purple sand culture be passed on for a long time.

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Interview Appendix

Q: Grandmother, what inspired you to make teapots?

A: Well, grandmother is not a native of Dingshu Town and I came to Dingshu because of the compulsion of life. Without household register or job, I decided to get a job in architectural ceramics factory.

Q: I see; the purpose is to make a living. So, could you introduce the experience of making purple sand teapots?

A: Yeah, it requires time and efforts and I have no talent for it. The teapots must be accepted by the master of the architectural ceramics factory and it is difficult to pass one of the ten teapots at the beginning. I also practiced making teapots at home in my spare time. Gradually, more and more are qualified. However, completing qualified one with only a dime and two cents. If I change the variety, I need to find a new master. So, it is difficult to earn money.

Q: How do purple sand teapots influence the local population nowadays? Has this culture spread through generations?

A: Well, local people are all proud of purple sand culture. But, unfortunately, youngsters are not willing to inherit this tradition because normal craftsmen are always neglected and their artifacts are not appreciated by the public although they have exquisite skills. You know? Only those who are very outstanding can be called masters. So, the youngsters are told that you'd better not to make teapots like your elders since they think it is not promising.

Q: Yeah, and why among all of the ceramic artifacts, teapot is the represent of them?

A: Maybe teapot is the most practical one which related with traditional tea houses. You know? In tea houses, people use purple sand teapots to taste tea.

Q: Do the traditional tea houses preserve until now?

A: No. Many tea houses were transformed into cafes.

Q: I think it is due to the alternation of lifestyles.

A: It is a good guess. And other factors also contribute to it.

Q: I see; thanks for your interview, grandmother.

A: It doesn't matter. I am glad to provide some information for your research.