

Collective Housing @ Xialapu Village

Xialapu Village is located in Wamaxiang, Longyang District, Baoshan City, Yunnan Province. The local government aims to construct a collective housing to improve the housing conditions for the elderly in the village. They also plan to rent out the vacant rooms at a low price to families of left-behind children who have to travel a long distance to school. The rental income will be used for the daily maintenance and expenses of the collective housing. This project represents an innovation and exploration of the living arrangement for future elderly rural residents and school-age children.

The project adopts a construction strategy that utilizes local materials, local craftsmen, and local techniques. It incorporates passive design principles that are suitable for the local climate conditions. Modern improvements have been made to the traditional rammed earth construction technique, optimizing soil material ratio, structural design, template tools, and construction processes. While ensuring safety, earthquake resistance, and a comfortable indoor environment, the project also maintains the traditional appearance of local rammed earth buildings and achieves extremely low energy consumption and carbon emissions throughout the building's lifecycle.

The project is a collaboration between the local contractor, No.10 Architect and 1U1V team, with the team serving as consultants for rammed earth construction techniques. The construction is carried out by a construction team led by Mr. Zhu Jianguo (a team of villagers trained specifically for this project). The construction was completed by the end of March 2023 and passed the acceptance inspection, after which it was put into use. The project has received widespread acclaim from the local government and villagers after its completion. It not only solves the accommodation needs of the elderly and children but also enriches the local public activity spaces. The project has attracted villagers from surrounding villages and government officials to visit and learn from it, with the hope of further improving and promoting this new type of rural collective support and elderly care model.



Click the link to learn more details:

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(Photography: Huang Xianzhi)

Our Projects



Site Location: Gaoliangdi Village, Xiyang Township, Jinning District, Kunming City, Yunnan

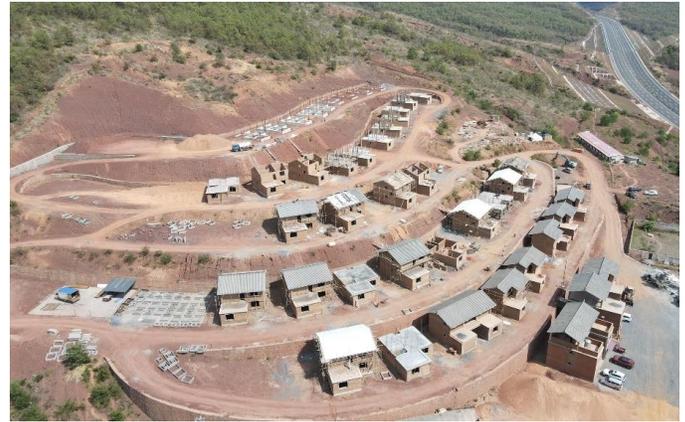
Project Nature: Earth Building (Whole Village Rebuilding Plan)

Teams: CUHK & Kunming University of Science and Technology

Project Duration: Oct 2018 – Sep 2023



Gaoliangdi Village is located approximately 110 kilometers from the city center of Kunming. It is a minority ethnic village predominantly inhabited by the Hani and Yi ethnic groups. The majority of the old houses in the village, which are mostly earthen houses, have deteriorated over time, showing varying degrees of tilting and damage. After visiting and learning from the Dabaiyi Village project, the local government decided to implement a comprehensive village transformation in Gaoliangdi Village using new rammed earth construction techniques.



Throughout the project, there have been delays caused by issues such as changes in land planning, the COVID-19 pandemic, intrusion of Asian elephants, and fluctuations in building material prices. However, with the active promotion by the local government and communication with the design team to optimize the layout design, the 1U1V team resumed construction work in Gaoliangdi Village in 2022.



The village planning and architectural design are led by Professor Zhai Hui's team from Kunming University of Science and Technology. Taking into account the current building material prices, budget, and feedback from the villagers, the final decision was made to adopt a two-story form with three different housing types, totaling 42 units.

The site leveling of the project was completed in 2021. By early 2022, the construction team had completed the foundation work for approximately 20 house-holds, and in October, the construction of two demonstration houses was finished. As of now, the main structure of 33 buildings has been completed, and the rammed earth construction of one floor has been completed for nine house-holds.





Site Location: Baipoxiang, Miyi County, Panzhihua City, Sichuan

Project Nature: Earth Building

Teams: CUHK & Kunming University of Science and Technology

Project Duration: May 2022 – Sep 2023



Since 2017, the 1U1V team has rebuilt a total of 16 rammed earth rural houses in Baipoxiang, addressing the housing needs of the local villagers. In May 2022, the team began a new phase of the project. Due to the impact of the COVID-19 pandemic, there has been a slight delay in the progress of the project. Currently, main construction of six houses have been completed, while construction is still underway for two houses.





Site Location: Panlianzhen, Caochang Town and Binggu Town, Panzhihua City, Sichuan

Project Nature: Earth Building

Teams: CUHK & Kunming University of Science and Technology

Project Duration: May 2022 – Sep 2023



Since 2017, the 1U1V team has been involved in rural reconstruction projects in Panlianzhen and Malongxiang, both located in Miyi County. The team successfully completed the initial phase, reconstructing nine households, which received positive feedback from the local government and villagers. Subsequently, six households in Panlianzhen, three households in Caochang Town, and one household in Binggu Town, also opted for seismic-resistant rammed earth reconstruction for their homes.

Currently, five houses have been completed and undergone acceptance inspections, while the remaining five houses are undergoing interior renovations.





Site Location: Xiaohe Village, Wamaxiang, Baoshan City, Yunnan

Project Nature: Earth Building

Teams: CUHK, No. 10 Architect and Kunming University of Science and Technology

Project Duration: Dec 2021 – Oct 2022



In July 2021, the 1U1V team, invited by the local contractor, No. 10 Architect and the local government, conducted an investigation trip to Wamaxiang. After the trip, four households in Xiaohe Village decided to adopt the new rammed earth construction technique for the reconstruction of their houses. The team collaborated with No. 10 Architect to optimize the design plans while considering the preferences of the villagers. They also signed cooperation agreements with the local government and villagers, and the construction was carried out through a self-building approach by the villagers.

In December 2021, craftsman training was conducted and the construction of the four households was completed and passed the final acceptance inspection by October 2022.





Site Location: Eternal Life Church, Miyi County, Panzhihua City, Sichuan

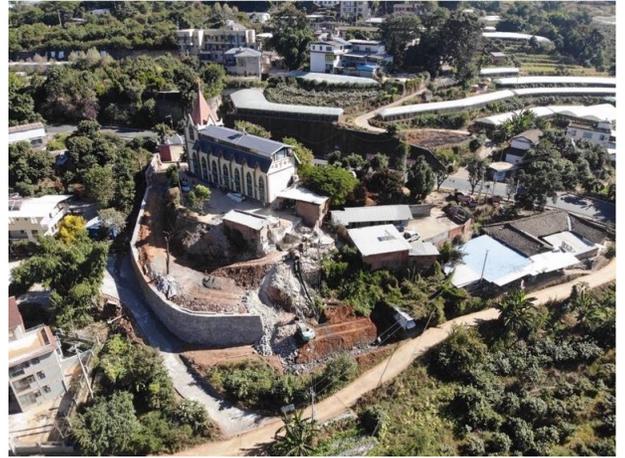
Project Nature: Rural Service Facilities Earth Building Project

Teams: CUHK & Kunming University of Science and Technology

Project Duration: Jul 2022 – Sep 2023



The Eternal Life Church in Miyi County is located approximately 15 minutes away from the county town. It has around 500 believers, mostly from the surrounding villages, with a significant portion being elderly individuals. While the main worship hall of the church is still usable, the affiliated facilities are in a state of disrepair due to age. The land where the facilities are situated has uneven settlement and significant height differences, resulting in a disorganized site. The church lacks a space for congregational meals after worship, and the pastor also desires to establish elderly care residences to better cater to the needs of the elderly in their later years.



Given the positive feedbacks of the new rammed earth rural houses constructed by the 1U1V team in the Miyi area, the pastor has sought the assistance of the team. They hope to utilize the new rammed earth construction techniques to rebuild the affiliated facilities of the church, providing better services to the surrounding villages in an environmentally friendly and sustainable manner. Additionally, the rebuilt facilities will serve as a demonstration and showcase site for high-quality new rammed earth construction in Miyi County.



Currently, the project has completed the design, site survey, and site preparation work. Construction of the foundations is planned to commence after the rainy season, with the aim of completing the main building construction before the next rainy season, expected to be within the coming year.





Site Location: Resettlement Site in Anbang Village, Wamaxiang, Baoshan City, Yunnan

Project Nature: Earth Building

Teams: CUHK, No. 10 Architect and Kunming University of Science and Technology

Project Duration: Dec 2022 – Nov 2023



On August 1, 2022, the Xiaohé Village in Wamaxiang experienced a devastating mudslide disaster, resulting in severe damage to numerous houses. There was an urgent need to construct relocation and resettlement sites to move 205 households comprising 874 individuals to a geographically better and safer area. Prior to this, the 1U1V team had already initiated the construction of new rammed earth houses in Xiaohé Village. The team's work and concepts were well recognized by the local government and villagers. Therefore, the local government decided to relocate the affected households in batches and provide them with the option to choose the construction model.

For the first phase of the Anbang Village resettlement site, consisting of 30 households who decided to adopt the new rammed earth construction method. The design team, led by No. 10 Architect, the local contractor was responsible for the project, and local villagers participated in craftsman training before organizing self-construction. Currently, the main structures of 18 households have been completed, while the construction of the remaining houses is still in progress.





Site Location: Resettlement Site in Ji Town, Wamaxiang, Baoshan City, Yunnan

Project Nature: Earth Building

Teams: CUHK, Kunming University of Science and Technology and No. 10 Architect

Project Duration: Feb 2023 – Mar 2024



This project is the first phase of another relocation and resettlement site following the mudslide natural disaster in Wamaxiang. It involves the relocation of 17 households classified as low-income households in Xiaohe Village. The government has decided to relocate them collectively to the resettlement site in the Ji Town of Wamaxiang, providing them with focused care and assistance. Currently, the main construction of 10 houses has been completed, and construction is underway for the remaining 7 houses. The villagers who have not planned to build houses will decide whether to adopt the new rammed earth construction before the start of the next phase of the project.



So far, the 1U1V team has trained nine local construction teams in Baoshan region with total of 55 individuals, including 15 women. These construction teams will gradually participate in the construction of two comprehensive relocation projects related to geological disasters in Wamaxiang.



Terra Centre (The Research and Development Centre for Rural Revitalisation in Yunnan)

Over the past year, the 1U1V team has focused on craftsman training, research, and experimental work on rammed earth construction in the Terra Centre. They have provided soil analysis, mix design, and mechanical performance testing for various rural rammed earth construction projects. In May, they invited Zhou Shihao, the founder of No. 10 Architect, to be the keynote speaker at the 4th Salon, where he shared his team's practices and insights.

The students and faculty of the School of Architecture and Urban Planning at Kunming University of Science and Technology have also organized several teaching-related exhibitions at the Terra Centre. These exhibitions include showcases of the results of the "Materials and Structures Fundamentals" cognitive internship and the "Architecture and Urban Planning School Rural Revitalization Summer Social Practice" exhibition. Its Youth League Committee and the Graduate Student Union also hosted the 2nd Music Festival, which attracted the participation of many students and faculty members.

Furthermore, in May 2023, the "Field of Being: Traditions of Yunnan Architecture" exhibition toured in Washington, D.C., where the exhibits from the Terra Centre were also displayed.



Planning Ahead

Earth building projects:

In the future, the 1U1V team will continue to carry out rammed earth rural construction projects in Kunming, Baoshan regions in Yunnan, as well as in Miyi and other areas in Sichuan. They will also focus on improving public service facilities and the living spaces of the elderly, children, and women in rural areas. Additionally, the team plans to initiate new long-term projects in Aba Prefecture in Sichuan and Qiandongnan Prefecture in Guizhou to explore and study the innovative development of traditional Tibetan rammed earth architecture and Dong ethnic group's timber structure architecture. Moreover, the team also plans to expand their activities internationally and conduct research in potential project locations in the mountainous regions of Nepal.

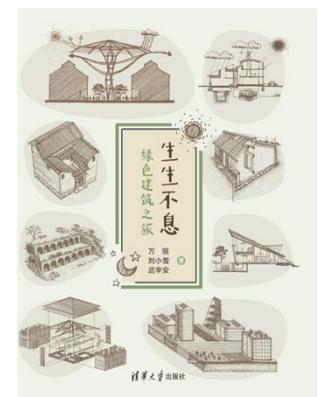


Promotion & Publicity

Academic Outreach:

Dr. Wan Li and Dr. Chi Xin'an, members of the team, have participated in various academic conferences and events, including the 5th International Summer School organized by REEDCOB, the 2022 International Forum on Earth Education and Sustainable Construction, and the Symposium on Contemporary Rammed Earth Architecture and Rural Sustainable Development. They delivered keynote speeches at these events.

In addition, the International Union of Architects (UIA) Sustainable Development Goals Commission has been collecting exemplary projects since February of this year to compile the 2023 edition of the "UIA Guidebook on Sustainable Development Goals for Architects 2030." Both the "1U1V Rural Sustainable Development Assistance Programme" and the "Terra Centre Project" have been selected as exemplary projects. Furthermore, the Hong Kong Institute of Architects has released an e-book titled "UN SDGs: Hong Kong Architects in Action," which features the "Post-earthquake Reconstruction Demonstration Project of Guangming Village" and the "Terra Centre Project" by the 1U1V team.



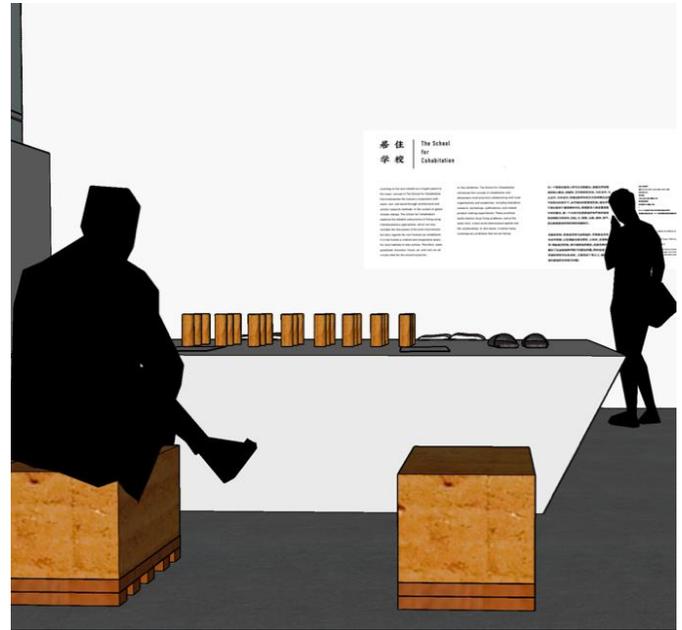
Publication: The popular science book "生生不息：綠色建築科學繪本", co-authored by Wan Li, Liu Xiaoxue, and Chi Xin'an, has been published and distributed by Tsinghua University Press.

Award: The Terra Centre Project has received an Honorable Mention Award in the Public Amenity Institutional Buildings category at the ARCASIA Awards for Architecture 2022.

Exhibition / Workshop (by Invitations):

May 2023: The team participated in the exhibition workshop titled "Walking China: Stories yet to be told" held at the Institute of Contemporary Arts at NYU Shanghai. In the workshop called "Black Tent Meeting #4: Origins," the team shared a thematic presentation on "Learning from Disasters," elaborating on their ideas and reflections.

September 2023: The team was also invited to participate in the Shanghai Urban Space Art Season 2023. Collaborating with Cao Minghao & Chen Jianjun Studio and Mume Design, they created a series of works with the theme "Residential School." The exhibition opened on 24th September.



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