

About One University One Village

The One University One Village (1U1V) Rural Sustainable Development Assistance Programme was launched by Professor Edward Ng Yan Yung and Dr Wan Li of the School of Architecture at The Chinese University of Hong Kong (CUHK) in 2014. It aims to bring together the expertise, knowledge and human resources of “a university” to improve the livelihood of “a village” and its needy villagers in a strategic, systematic and sustainable manner.

Most poor rural areas of China are mountainous areas. A considerable number of rural residents have chosen to migrate and work in urban areas, leaving behind the elderly and the children. Thus, these mountainous rural areas have lost their once strong sense of cohesion and have become a symbol of “backwardness”. The conventional rural modernization development model is unsuitable for poor rural areas in China. A new rural development paradigm characterized by a shift in the emphasis from “inward investment” to “endogenous development”, and from a “top-down approach” to “bottom-up model” must be crafted.

With the experience gained from previous rural projects carried out in Mainland China, the team led by Professor Edward Ng believes that the strategy implemented before was feasible. The projects were bestowed several awards both in China and overseas.

Each 1U1V project is supervised by a doctoral student at the CUHK School of Architecture. The results of the project form part of the thesis, while the student’s academic research is put into practice. In the process, talents of different professional fields from overseas and the mainland work together to improve lives in villages. They help the needy, promote education, protect the environment, and support cultural, social and economic development.



Our Experience

Ecological Demonstration Primary School
Maosi Village, Gansu (2003-2007)



A Bridge Too Far
Maosi Village, Gansu (2003-2005)



A School to Learn
Hongdeng Village, Guangxi (2007-2009)



Post-earthquake Reconstruction Project
Ma'anqiao Village, Sichuan (2008-2011)



Village Improvement Project
Datan Village, Gansu (2008-2011)



Our Projects



Site Location: **Qiunatong Village, Gongshan County, Nujiang Prefecture, Yunnan**

Project Nature: Rural Sustainable Development Assistance Programme

Teams: CUHK, Peking University & Kunming University of Science and Technology

Project Duration: Dec 2013 – Nov 2018



Qiunatong Village in Northwest Yunnan is located in mountainous areas with inconvenient transportation and arrested development. Ethnic minorities such as Nu, Lisu, Drung, and Tibetan live there and most believe in Catholicism. They have a unique ethnic culture, with their own languages, costumes, music, dancing, food, and oral literature. Qiunatong is a typical village with low per capita income in China that faces problems of low-quality living environment, insufficient common space and recreation facilities, inefficient energy use, poor hygiene, and limited economic and educational choices. While the villagers may reap some benefits of fast modernization, they struggle to maintain their locality and identity.



In Dec 2013, the 1U1V team launched its first project in Qiunatong Village and planned to provide long-term and fixed-point support to the village. Through university collaboration and resources sharing, the team conducted several investigation trips and survey exercises in the first year to identify the needs, evaluate the problems and find solutions based on the village's tradition. It also promoted sustainable development there. The scope of works including:

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| 1) safe and comfortable living environment | 2) heritage and local culture | 3) health and well-being of villagers |
| 4) waste and pollution control | 5) improved rural education | 6) local economy activation |

Since Feb 2015, the team has conducted several improvement works for Qiunatong Village, including a waste treatment proposal, health knowledge promotion, pavement construction, and pit toilet improvement work. The team also plans to implement the Permaculture Design methods in the village's agricultural system, production environment, economy and local culture development. In summer 2016, collaborating with the Service-Learning Centre of Chung Chi College at CUHK, and Hong Kong Child-Rity Association, the 1U1V team conducted the first "Early Childhood Education" (ECE) service with the theme of "Play-based Learning" in Qiunatong Village. The whole ECE service lasted for 12 days. Games were designed for about 60 village kids aged 3 to 12 and focused on the theme of "understanding oneself" and "knowing the village".





Site Location: Guangming Village, Longtoushan Town, Ludian County, Zhaotong City, Yunnan

Project Nature: Village Rebuilding Assistance Programme

Teams: CUHK, Cambridge University & Kunming University of Science and Technology

Project Duration: Oct 2014 – May 2016



Ludian County is located in mountainous areas of Northeast Yunnan. In Aug 2014, an earthquake of magnitude 6.5 struck the Ludian County. It claimed 617 lives. Over 3,000 people were injured, 80,900 houses collapsed and 129,100 were severely damaged. Most of them are local traditional rammed earth houses.

In response to the aftermath of the earthquake, the 1U1V team launched a village reconstruction programme for Guangming Village, with the Kunming University of Science and Technology and the University of Cambridge, in late October, 2014. Its aim was to design an anti-seismic village house of rammed earth with traditional features at a low cost, but at the same time, with an enhanced and comfortable living environment. Finally, the first demonstration house was completed in February 2015 and the household moved in before Lunar New Year. The on-site measurement data show that the thermal performance of the rammed-earth house is better than local conventional brick-concrete houses, while its construction cost is still lower. Afterwards, to further improve the anti-seismic performance of rammed earth structures, the team conducted shaking table tests and workshops to find the right mix of earth and materials. The team also completed a manual for anti-seismic rammed-earth house construction in May 2015.



In October 2015, the team started the design work for the second demonstration village house. It is for an aged couple whose only shelter was a simple canvas structure after the earthquake. The team hopes to build a rammed-earth building with good ventilation and lighting performance for them. The concrete belts are hidden in the wall so that the earth facade can be nicely integrated. Double-glazed windows and insulated roof are used to improve the thermal performance of the building. The strategy of “3Ls” (local technology, local materials, and local labour) is fully utilized in this project. The project was completed in May 2016. It not only rebuilds a home for the needy but also convinces the local government and local villagers that an earth house can be safe, clean, comfortable, and beautiful. It provides a demonstration for the local government to formulate reconstruction strategies.





Site Location: Xiaowu Village, Xinglong Town, Yubei District, Chongqing

Project Nature: Bridge Building Programme

Teams: CUHK, Chongqing Jiaotong University & Tsinghua University

Project Duration: Jun 2015 – Jul 2016



Xiaowu Village is located in a mountainous area of Chongqing City. Without a bridge, the villagers relied on a low stone board to cross the river. During the rainy season from the end of April every year, the water level can rise to around 1 to 1.5 meters in height. Water crossing becomes highly dangerous. In July 2012, a 70-year-old was flushed down the river and killed. The 1U1V team started the bridge project in January 2015, hoping to combine a PhD student's study on bamboo bridges and their practical use to improve the lives of Chinese villagers.



Chongqing Jiaotong University provided the laboratory and student helpers for the project. Columbian architects Xavier Pino and Eduardo Sales Delgado, and traditional Chinese bamboo craftsmen from Zhejiang and Anhui gathered in Chongqing to give professional advices on the project's technical details. The study of structure also benefitted from the guidance and advice of Tsinghua University Fellow Professor Chen Zhaoyuan.

In July 2016, the bridge was completed and named Yi Xin Qiao. It is a covered bamboo arch bridge measuring 13.5 meters long and 2.9 meters wide. Thirty people can go on it at the same time. Standing amid the shadows of trees, the bridge merges nicely with the surrounding environment. It not only provides a safe and convenient crossing for villagers, but also a space for them to gather and rest. An 89-year-old villager said he had never expected such a practical bridge made of bamboo in his life, although the material is ubiquitous in the region.



Yi Xin Qiao was built with the principles of environmental friendliness and sustainable development. The main structure was constructed with whole bamboos, while bamboo panels were used in the flooring. Little steel was used, only in the bolts and connecting parts, where angle steel bars were used. Moso bamboo which is abundant in southern China, only takes three to five years to become fully grown. It is more environmental friendly, less polluting, and cheaper than the common steel and concrete structures. After treatment with steam and chemical solutions, bamboo becomes mold and bug resistant. Its life will also be extended to around 15 years. The project uses prefabricated components, and they only have to be put together at the site. In this way, quality will be ensured and details more precise. Thus efficiency will be improved. The construction part was completed in only two months.

Plan Ahead

University Collaboration:

In May 2015, a Letter of Intent on 1U1V Project between CUHK, Peking University and Kunming University of Science and Technology was officially signed by the Presidents of the three universities. Following the recent success of the bamboo bridge project in Chongqing, a MOU between CUHK, Tsinghua University and Chongqing Jiaotong University will be prepared to jointly support future 1U1V projects and provide research and technical support to the student(s) concerned.



Project Status:

Building project - With the continuous support from Professor Bai and Professor Zhai of Kunming University of Science and Technology, the 1U1V team is planning to build more anti-seismic rammed-earth buildings in the villages of rural Yunnan. To achieve this, a research center will be set up for anti-seismic performance tests. It is hoped that a more efficient construction method will be deduced and a team of skilful local contractors can be engaged through training workshops to support and construct more rammed earth buildings in near future.



Bridge project - Following the completion of the first Yi Xin Qiao project, preparation work for the second one will begin soon. The 1U1V team hopes to improve the processing and shaping techniques of bamboo material through practice. It is hoped that a standardized method of bamboo-bridge building will be developed, so more mainland villagers will be benefitted. Workshops will be set up in the mainland for training, and to provide convenient locations for production and construction.



Village Assistance Programme – In Qiunatong Village, a local farmer hopes to start a family ecological farm by using the methods of Permaculture Design introduced by the 1U1V team. Based on the documentation and study of local vernacular architecture, the 1U1V team will try to work out the aspects of land use planning, environment design and construction planning for his farmland. During the building process, the team will invite local villagers to help and share their knowledge of Permaculture and vernacular architectural innovation with them.



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Knowledge creates Future