

“一专一村”计划： 基于推动农村内源性发展的本地实践

ONE UNIVERSITY ONE VILLAGE PROGRAM: PROMOTING ENDOGENOUS DEVELOPMENT IN RURAL AREAS THROUGH LOCAL PRACTICE



万丽

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通过云南鲁甸光明村震后重建项目实践，生土建筑获得了更多关注和认可。据了解，在您的团队进驻光明村之前，村民普遍对生土建筑的安全性存在误解，而认为砖石建筑“更加牢固、更具地位象征”。在这种背景下，您的团队是如何在光明村开展生土建筑建造工作的？

万丽（以下简称万）：在2014年云南鲁甸地震中，很多传统的生土建筑损毁严重，导致人们产生生土建筑安全性不足的误解。基于这一认知，尽管灾后建筑材料运输不便、价格大幅上涨，但是当地政府和有一定经济实力的村民都希望在重建时能够改建砖石建筑。由于政府对灾后重建速度的迫切要求，在我们的团队进驻之时，很多村民已经在政府的帮助下迅速建好了统一的砖房。要

在这个时候扭转村民的观念，让他们接受生土建筑其实很难。单纯地讲文化、讲传统，对于村民来说很空洞。相较而言，如果能践行一场抗震性实验或建造一栋示范建筑，让他们看到生土建筑的坚固性、舒适性，以及低造价，村民的接受度就会大幅提高。最终，我们在当地找到了两户经济条件相对落后、难以以一己财力建造砖房的农户，并建成了两栋示范性建筑。

在重建时，我们会为村民提供资金和技术支持，邀请屋主乃至全村村民一同完成建造。光明村示范项目建成后，当地村民和政府对新技术的接纳度很高，也有其他地方政府工作人员在看到建造成果后，邀请我们去当地建造项目。项目建成至今，光明村所在地区再度发生过两次4级左右的地震，我们也从村民口中得知，地震没有对新建生土建筑

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摘要

本次访谈围绕中国西部农村地区生土建筑实践展开。受访人万丽以“一专一村”农村可持续发展支援计划的突出实践之一——云南光明村震后重建示范项目为例，阐述了建造工作中的难点和突破点，并就在不同地区开展生土建筑的异同及其应用前景进行了阐释。此外，通过详细介绍“一专一村”计划的工作模式及流程，受访人强调设计师应当尽力解决社会实际问题，承担力所能及的社会责任。“一专一村”计划希望通过持续的本土化探索，为世界其他具有生土建筑传统的地区提供案例参考，并唤醒民众及设计师的本土意识。

关键词

农村；震后重建；生土建筑；“一专一村”计划；本土化；全球视野

ABSTRACT

This interview is centered on the practice of earth architecture in rural West China, starting from introducing the post-earthquake reconstruction project in Guangming Village, Yunnan Province, as an outstanding example of the practice of the “One University, One Village” Rural Sustainable Development Assistance Program. Li Wan, the interviewee, explains the differences of design consideration and the difficulties in practicing earth architecture throughout China, while giving her prospect on its future application. Through a further introduction on the operation and project procedure of the Program by Wan and her team, the interviewee addresses that architects should take their responsibilities on solving social issues, with a hope that, through their site-based efforts, the Program could provide a global paradigm to similar earth architecture practices in other regions, rousing designers’ awareness of localization.

KEY WORDS

Rural Area; Post-earthquake Reconstruction; Earth Architecture; One University One Village Program; Localization; Global Vision

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1. 光明村震后重建项目外观
1. Facade of the post-earthquake reconstruction project in Guangming Village

造成任何影响。

文化不是显性的，它需要通过其他载体来反映。在我们看来，本地工匠、本土材料和本土技术就是很好的文化载体。如果能让村民在建造和使用生土建筑的过程中为之感到自豪，或是赋予他们对于生活的信心，那它就具有了某种文化内涵，也会让村民在情感上更容易接受这种建筑形式。

光明村项目是“一专一村”农村可持续发展支援计划所开展的项目之一。该计划在甘肃、四川、重庆、云南等多个地区均开展了生土建筑实践。面对不同的地理环境和人文特征，生土建筑实践的开展存在哪些异同？生土建筑在中国及世界范围内的应用前景如何？

万：首先，我们一般会考虑符合当地气候条件的被动式设计方式。比如西北地区偏干燥、冬季较冷，而西南地区气候潮湿，所以西北地区的建筑会加强被动式采暖和保温隔热措施，而西南地区的建筑则需要考虑防雨防潮的问题。而且，依据每个地区不同的抗震设防要求，建造结构也会有所差异。此外，根据不同地域居民不同的生活习惯和实际生活需求，我们在房屋布局及功能方面也

会做相应的调整。

传统的生土建筑历史悠久，遍布世界各地，已经具备良好的应用基础。这种就地取材、操作简单的建筑类型，不仅能耗极低，而且热工性能良好，在强调节能减排和可持续发展的今天，具有天然的优势。但是，作为一种非工业化建筑材料，生土建筑也有其自身的适用范围和局限性。如果能够在既有的适合建造生土建筑的地区，比如一些生土资源丰富、有生土建筑传统和工匠的地区，将其传承和发展下去，那么可供我们探索和施展的空间便已颇具规模。与其说如何应用和推广这种技术，不如说如何通过对当地技术的改良更新和知识转译，使当地村民和工匠作为建造主体再次彰显自身的价值，改善自身的生活环境，并回归体面的、有尊严的生活状态。在现代建造技术以及新材料的冲击面前，如何使这种传统的建造形式保持活力、适应新的环境、处理新的问题，以及如何让村民和本地工匠掌握和传承简单有效的设计方法和建造技术，是未来研究的重点。

您能否为我们介绍一下“一专一村”计划的工作模式及流程？

万：“一专一村”计划于2014年启动，涉及研究和实践两大部分，其理念是希望通过整合当地一所高校的资源，去定点地、长期地扶持一个村庄的可持续发展，这也是“一专一村”名称的由来。目前，我们的项目已经不止涉及一所学校或一个团体，而是整合了各种跨专业、跨学校资源进行通力协作。

在开始一个项目前，我们会从多种渠道主动发掘和遴选潜在项目。当了解到一个地方发生了地质灾害或具有迫切的民生改善需求，除团队内部收集资料、开展调研外，我们也会迅速联系当地合作院校和机构，请他们帮助寻找符合条件的项目。随后判断项目的可行性，确定是否进行进一步调研。我们倾向于选择有迫切需求，且有生土建筑建造意愿的项目。如果当地政府可以提供一定的支持，也会大大减小推行的阻力。

一旦确定了项目，我们就会对其进行长



1-0 甘肃华中农业大学“一专一村”团队

达三五年、甚至更长时间的长期定点支持。这个过程一般包括前期准备、施工建造和后期回访三个部分。通常，前期调研和准备阶段用时最长，且会涉及跨学科、跨专业的合作。例如，在光明村项目中，合作方昆明理工大学建筑与城市规划学院、云南省工程抗震研究所，以及剑桥大学的地震专家在抗震改良措施等方面为我们提供了技术支持。随着研究成果的积累，有些成熟的经验和技能可以被直接应用，这也会在一定程度上缩短准备周期。除技术研究外，有时我们也需要协助建设农村基础设施。相较而言，施工建造速度通常很快，一栋房子配备一个施工小组，只需大概三个月就可以完成土建部分的施工。而后期回访则包括对房屋抗震性、使用舒适度的使用后评价，以及技术指导和相关支持。我们会帮助村民把他们的设计思路及审美想法整理成简明易懂的施工参考图，并对涉及专业结构的内容进行调整，以确保村民自发建造的房屋能够顺利落地。

此外，我们还会与政府沟通合作，比如邀请他们观摩建造成果，或者帮助他们编制当地的抗震生土建筑建造规范等。通过这种方式，很多政府官员改变了他们对于生土建筑的既有认知。同时，我们也得到了许多社会人士的支持，比如现阶段的研究经费大多由一些香港的私人赞助者提供，他们希望通过我们的实践为推动中国农村地区的内源性发展做出自己的贡献。

在“一专一村”计划长期的定点支持项目中，除了生土建筑建造，工匠培训亦是一项重点工作。这种“授之以渔”的援助方式是如何开展的？

万：作为一个规模不大的研究团体，我们的实践项目大多属于示范性项目，其目的是培训当地村民的建造技艺。通过带领村民参与示范项目的建造实践并对其进行指导，我们已经培训了若干批工匠。虽然有关土壤配比、模具、夯土工具，以及设计等方面的技术一直在迭代更新，但操作的难度并没有增加，村民经过指导很容易掌握。我们初期

的建筑设计是基于农村传统院落式农宅的，现在已有一些经过改良、相对现代的方案，未来我们还会开发一套更加灵活的模块化设计体系，村民可以根据自家情况和个人喜好组合模块。这些迭代技术在我们已经出版的两本建造图册中亦有体现，一本是《抗震夯土农宅建造图册》，一本是《鲁甸地震灾后重建抗震生土建筑技术及示范项目简介》，目前我们正在筹备第三本图册的出版。我们希望通过这些直观的图像和简单的文字，让村民或专业人士更容易地了解、学习相关知识，以辅助相关实践的开展。

随着技术的进一步成熟，我们计划开展一些规模更大的项目，例如整村搬迁改造工程。西部农村地区存在大量此类工程的建造需求，这为工匠们在家乡或周边地区找到工作提供了机会，使他们不必再背井离乡外出打工。

在全球化浪潮中，设计似乎越来越趋于同质化。在这一背景下，您认为设计师应具备怎样的视野、意识，以及社会责任感？

万：每个设计师的兴趣点和擅长的领域不同，有的擅长城市住宅项目，有的擅长农村项目。不管选择深耕于哪个领域，都需要真正考虑使用者的需求，尽可能地去解决实际的社会问题。这对设计师来说固然是一种挑战，但也是很有成就感的过程。

我们一直以来所做的事情，是希望推动农村的内源性发展。与其说是在为村民建造房屋，我们更多的是在挖掘当地的能量与资源，以村民为设计主体和使用主体，鼓励本地工匠、利用本土材料、发展本土技术，把高科学、低技术的策略转化为能被大众吸收和模仿的工艺，以推动农村的可持续发展。这是我们所着眼的一处社会痛点，也是我们选择承担的社会责任。**LAF**

注释

了解关于“一专一村”农村可持续发展支援计划的更多信息，请访问www.1u1v.org。



2. 光明村震后重建项目建筑中庭

2. Atrium of the post-earthquake reconstruction project in Guangming Village

Earth architecture has gained a broader public attention thanks to the international recognition of the post-earthquake reconstruction project in Guangming Village of Ludian, Yunnan Province. As we know, before your team started the project, most villagers had a misconception that earth buildings were in poor stability and masonry buildings were “more stable and symbolizing a higher social status.” How did you end this prejudice and promote earth architecture in Guangming Village?

Li WAN (WAN hereafter): The common misunderstanding resulted from that many traditional earth buildings were heavily damaged during the earthquake in Ludian in 2014. As a result, the local government and many well-off villagers hoped to rebuild their homes with masonry regardless of the difficulty of trucking the construction materials and the largely increased prices due to the earthquake. Because of the tight timetable of the post-disaster reconstruction, the local government helped some villagers build a lot of brick houses in a uniform style, which brought us a larger obstacle to change the locals' mind and to promote earth architecture. Instead of preaching about culture and tradition, demonstrating the advantages of earth buildings, such as durability, comfort, and low-cost, is more convincing. Therefore, we built two demonstrative earth houses for two families who could not afford to rebuild brick ones.

In the project, we provided financial and technical supports to the two households, encouraging the house owners and other villagers into the reconstruction. After the completion, the demonstration project has gained a high recognition by the locals and the government — we were invited by some officers from other governments to conduct earth-building construction in their villages — and withstood two magnitude-4 aftershocks.

Culture is abstract and requires reflection, which, in our opinion, refers to local craftsmen, local materials, and local techniques. Its cultural significance can be appreciated if villagers feel proud of earth building and the construction process, and confident to their new life through reconstruction.

Based on the efforts by the “One University, One Village” Rural Sustainable Development Assistance Program (One University One Village Program or Program hereafter) across Western China, what are the similarities and differences of earth architecture practices in such diverse geographical environments and vernacular cultures? What do you consider the future application of earth architecture in China and the whole world?

WAN: First, local climate adaptive passive design is often employed in our practice. For example, the climate of Northwest China is dry and cold in winter, while it is humid in the southwestern area. As a result, passive heating system and thermal insulation materials are used in the former, and moisture proof methods are applied in the latter. Besides, architectural structures of seismic resistance vary according to specific local requirements. Moreover, with a respect to local residential needs and lifestyles, adjustments on spatial layout and function are allowed.

Through a low-tech, local-material construction method, traditional earth architecture has a long history and has been widely found all over the world. On one hand, its qualities like low energy consumption and good thermal performance make this traditional architectural type advantageous in responding to current environmental crises; on the other hand, its application sphere is limited by its inherent material characteristics, like other non-industrial construction techniques. If

we can extensively apply this technique in the areas of abundant earth resource and craftsmanship tradition, there will be a broad territory for us to practice and explore. Beyond technique popularizing, technological upgrading and training are more important in improving local villagers' living environment and enhancing their life quality. Under the impact of modern construction techniques and new materials, the future exploration of earth architecture focuses on how this traditional construction topology can be activated and adaptive to new environments, as well as current environmental problems, and how to train the local villagers with this simple, low-tech technique and educate them about related knowledge.

Could you please introduce how you work in the One University One Village Program and the related procedures?

WAN: Launched in 2014, the One University One Village Program establishes a combination of research and practice, with a concept of integrating academic support from local research institutes in architectural interventions to reach a long-term sustainable development of specific rural areas or places, which is also the origin of the name of this Program. At present, multidisciplinary explorations have taken place through efficient collaborations between universities and institutes.

We select cases through comprehensive studies. When we learn about a site damaged by disasters like earthquakes or having urgent demands of improving local people's livelihood, we would collect all the information we can get and conduct field investigation, together with asking help from local colleges and institutes. Before starting a project, we also assess the feasibility of the candidates and decide whether a further study is needed. The priority is often given to the cases with

urgent demands and strong willing of earth architecture construction. The support from local governments would facilitate the implementation of projects.

Once a project starts, it would last for three to five years, or even longer. Usually a reconstruction work consists of three phases: investigation and preparation, construction, and return visit. In most cases, the first phase takes long time and requires multidisciplinary collaborations. In Guangming Village project, for example, the partnership with the Faculty of Architecture and City Planning of Kunming University of Science and Technology, Engineering Seismic Institute in Yunnan Province, and the support from the seismic experts from Cambridge University, inform us developing anti-seismic improvement measures. The construction period can be shortened by applying mature techniques and grafting previous experiences. Besides of technical research, we also provide aid to local infrastructural construction. The construction phase is relatively short: generally, the whole civil engineering work of a building costs no longer than three months. In the return visit phase, villagers' feedback on building's anti-seismic performance and comfort in usage are collected, and technical guidance and support for villagers' future earth building construction are also provided. We also help the locals generate structural design plans for their residential buildings according to their own functional and aesthetic needs.

We also regard the communication with governmental agencies as important in the promotion of earth architecture. For example, by inviting local governors to visit built-up earth houses and helping them develop specifications on local anti-seismic earth construction, their misconception on earth architecture have greatly turned away. In addition, the



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3. 光明村村民经过培训成为工匠之后，和“一专一村”团队继续在云南大摆衣村参与项目建造。
 4. 大摆衣村危房重建项目一期工程于2017年12月完成。
3. After being trained as craftsmen, villagers from Guangming Village continued construction in Dabaiyi Village, Yunnan Province.
 4. The first-stage project of dilapidated building reconstruction in Dabaiyi Village was finished in December, 2017.

Program has received broad support from the public, for example, many of our current projects are financially supported by private individuals from Hong Kong, who hope to make their contributions to the endogenous development of rural China.

As we know, apart from building earth houses, craftsman training is a more important part in the One University One Village Program, through which local villagers are educated with sustainable and self-help knowledge and techniques to improve their life qualities. Could you please introduce how the craftsman training is implemented?

WAN: The Program has launched many demonstrative projects to train and educate villagers with the knowledge and techniques of earth architecture based on their local conditions, through which the number of craftsmen has greatly increased. Although the techniques and knowledge have upgraded fast in soil compounding, mould casting, ramming tools, and architectural design, villagers can easily get the know-how with guidance. For example, compared with the architectural topology of traditional courtyard that is commonly found in rural China in our early projects, now we build modernism houses with technological improvements through which the functionality and aesthetic of earth architecture have been gratifyingly enhanced — in future, a more flexible module-design would allow local users to freely combine the architectural modules based on their real needs. We also promote the upgraded techniques and knowledge through publications. Up to now, two detail-illustrated handbooks were published: *Anti-Seismic Rammed-Earth Village House DIY Construction Manual*, and *Introduction of Anti-Seismic Earth Construction Technique and Demonstrative Reconstructed Projects after Ludian Earthquake*. At present, a third

guidebook is under preparation. We hope these publications could help villagers and professionals learn the related knowledge in an explicated and explicit way and better guide their practices.

As techniques advanced, in future we could expand our practice territory to larger-scale projects like relocation and reconstruction for a whole village. This kind of construction is pressingly needed to many places in rural Western China, which also offers jobs for local craftsmen to work in or near their hometowns.

The process of globalization has caused a general homogenization in urban / town construction. What kind of vision or insight do you think designers need to have and what social responsibility should they take in such context?

WAN: With different interests and specific kinds of expertise, some designers work on urban housing projects, while some others devote themselves to rural projects. But designers all should respect users' real needs and address realistic social issues through their local practices, of which the challenges offer designers a sense of achievement in the meantime.

What we are doing now is to promote endogenous development in rural areas. While advocating this science-based low-tech construction strategy, we are not only to build houses, but also to explore local resources, academically and physically, in order to facilitate the sustainable development in the rural areas by encouraging traditional craftsmen, using local materials, and celebrating vernacular architectural topologies. This is the social issue we respond to, as well as the social responsibility we choose to take. **LAF**

NOTE

To learn more about the "One University, One Village" Rural Sustainable Development Assistance Program, please visit www.1u1v.org.