Development Direction of Building Technology Under Rural Revitalization

Wenfei Peng¹, Chaoyu Xie²*

¹²Architectural Engineering Department, Wenzhou Vocational & Technical College, Wenzhou, 325000, China
*Corresponding author’s e-mail: Xie_chaoyu@163.com

Abstract: In the context of rural revitalization, how to further develop construction technology to adapt to the needs of rural construction has become the spotlight. This paper analyzes from the aspects of the illumination of the rural culture and rural spirit by construction technology, the integration of modern technology and traditional technology, and the promotion of construction technology, etc. to figure out the development direction of construction technology.

1. Introduction

Contemporary rural bearing the responsibility of cultural heritage, as the contemporary people “nostalgia” carrier, the village is the people of agricultural civilization and local culture to pursue the "hometown." In the context of the revitalization of the village, began to appear in line with the development of rural construction tourism needs to build new rural buildings with local characteristics. Construction activities are also increasing to cater to the needs of rural tourism. Driven by this demand, many rural buildings, regardless of the actual situation to apply the so-called "local elements", ignoring the traditional construction technology in the cultural and social aspects, and stay in the surface, has become one of the contemporary Chinese rural construction activities in the exposure of the problem.

The influence of technology and culture is mutual, as an important aspect of shaping architectural form, the choice of technology is often affected by culture. On the other hand, the replacement of technology is also accompanied by the spread of culture, while the substitution of modern technology for traditional technology is often accompanied by cultural invasion. As the final expression of technological choice, built buildings as a material media also contains the will of the people, is a manifestation of cultural orientation, the result will also affect the judgment of cultural value.

2. Representation of technology and rural culture

2.1 The convergence of technology

The spread of modern technology makes it possible to imitate forms beyond time and place, which makes the traditional technical concept-"local adaptation" can only be a choice based on values, rather than as in the past is based on the "climate, culture, myth and craft synthesis reaction[1]." and the inevitable result. The development of logistics so that the original material can only be used in a place can appear in any corner of the world, the popularization of modern technology makes the traditional technology is gradually eliminated. Based on this social reality, the space-time nature of technology seems to have disappeared inch by inch. In the context of cultural convergence, the convergence of technology seems to be inevitable. Modern technology brings industrialization and standardization as
the basis of the production model, its superficial understanding makes the appearance of the building tends to be similar. Ignoring the local technological advantages based on historical culture and local materials, blindly chasing the trend of modern technology, making the development of rural buildings appear so broken and discontinuous.

2.2 Representation of traditional technique

The critique of material determinism in Amos Rapoport's "House Form and Culture", analyses the different forms of architectural forms under the same material conditions, which attributed to cultural differences, indicating the important influence of Culture on architectural forms or technological choices. Economic and technological developments make it possible and necessary for buildings to express local characteristics. In rural construction, the traditional architectural techniques catch the attention of public gradually, especially on the expression of “rural intention”, we can see that the architects` choices on building technology tend to be focus on the exploration of local traditional techniques, which affect the villagers’ choices on their house construction and the view on their traditional construction skills, people start to prefer to use the same way as their predecessors to build a house. The excavation, arrangement, and application of traditional techniques by architects reflect that the use of traditional techniques in new buildings can indeed serve its purpose.

2.3 Representation of modern technique

On the other hand, in the updating of technology, designers and builders began to think: whether or not the new technology and intention are in complete opposition. In the use of technology of contemporary rural construction, we can see the expression of “rural intention” in different ways.

Table 1 level of rural intention expression

| Expression Technique | Complete replication | Mechanical imitation | Structural reorganization | The expression of metaphor |
|----------------------|----------------------|----------------------|--------------------------|----------------------------|
| Definition           | Direct replication of traditional technologies | The pursuit of the true image in a realistic way | Replacement or change under its structural logic | The expression of rural intention conceptualization |
| Technique            | Copy | Pictograms. | Motif, prototype | Abstract |
| Example              | Copy of the wooden frame | Use of PE straw | Material substitution | Artistic conception |

Based on different expressions, the level of expression of the intention of the village is not the same, but need to recognize that the successful conversion is not superficial symbol simulation, but to understand the "rural intention" behind the real mechanism of formation, by selective use of appropriate traditional techniques, or rise the rural spontaneously formed way to a structured logical system, or conceptually extracting intentions, to make the function and cultural expression of the new construction system are equally important.
3. The implementation of technology and rural culture

3.1 Human kindness of technology implementation

Construction technology implementation process, that is, its construction methods are also directly related to culture. The traditional construction method is the basic expression of the relationship between the society and the region in which it is located. And a critique of modern architecture is based on standardization and industrialization of modern technology to alienate people. Such as Chaplin’s "modern times" in the expression of day after day on the assembly line of work, in the era of technology-oriented lost personality and creativity. This concern has led people to turn to the human kindness of technology and local technology, residents participate in this human kindness is an important manifestation.

3.2 Technology implementation process with mysterious activity

In the traditional construction process, ordinary technology also contains a deep cultural background. As an architect, who seems to be an outsider, relying solely on so-called research, does not understand the connotation clearly. Only by allowing the user to be the subject of the construction process at the same time, the culture will be able to present. In traditional rural construction, construction activities often contain ritual and religious significance. The construction of the beam, stand and other important nodes also accompanied by mysterious activities, the construction of this material behavior and cultural representation through these rituals, so that the construction of the material activities and cultural spiritual activities through the construction of Customs.

Figure 1. Girder Installation Ceremony of Guangxi Dong people

Figure 2. The Ring Ritual of Hsieh Jun's Light Steel System - Priest's Prayer

4. The cultural identity of the reaction to the introduction of technology

4.1 Culture invasion and technique

In contemporary rural self-built construction, brick-mixed structure, wall decoration with colored glazed tiles, and the common practice of adding elements such as European style in the decoration is also based on its understanding of "urban culture " approach, we can see the spread of Culture on the choice and application of building technology also has an impact. The invasion of urban culture has resulted in the urbanization tendency of residents’ technological choices. At this time in the village for “rural intention” technical choices, it is generally will be the current rural residents do not understand. This is a dilemma that contemporary architects will encounter in the countryside using new technologies. As Luo Deyin once said in an interview: "... the purpose is to achieve an ideal model house, as a medium for the villagers to change ideas so that it is also the advantage of the new construction method." [3] This is consistent with the attitude most architects have in the face of this cultural reaction, not to cater to this
alienation of cultural identity, but based on their understanding of the intention of the village, choose the appropriate expression of construction technology, thus affecting the understanding of the “village intention” of the local villagers.

4.2 Culture lag

At the same time it must be proposed that the “rural intention” is actually a concept of diachronic, its implication is constantly changing in the history of development changes, the American sociologist Ogburn proposed "culture lag theory" that is expressed in the material development (technology development) and cultural identity of the process is not synchronized, the development of technology is always the first. Performance in the construction technology that is reflected in the modern construction technology to mature, people's aesthetic image is still stuck in the traditional construction techniques show the form. It is because of this objective phenomenon, there will be previously mentioned in the brick wall or concrete wall in situ soil decoration situation. To some extent, the persistence of traditional forms affects the promotion of new technologies.

5, conclusion: two-way adjustment

The understanding of "rural intention" reflects the cultural identity of the contemporary village. The revival of modern traditional technology and the promotion of new technology have been hampered by the current rural alienation of the aesthetic identity. In this situation, what is needed is a two-way adaptation of cultural identity and technology. Single emphasis on the importance of certain aspects is unrealistic, the simple choice of any aspect is arbitrary. In the culture of the appropriate tone, the architect to "model room" and other ways of using technology to promote the improvement of rural aesthetic identity: in the ideal state, indeed can bring new values to the village upgrade; in the appropriate tone of technology, to seek the appropriate integration of rural cultural elements and modern building technology. Through the appropriate two-way adjustment, to achieve in the new era background, the appropriate expression of technology on the “rural intention”, in the background of technological development, learn from each other to obtain new development momentum.

References

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