

## Neo-Vernacular, new details and new attitudes

### Abstract:

If there is Vernacular Spirit, I think it doesn't mean "undeveloped". Perhaps Vernacular Spirit contains the attitude towards technology. We should be in low-technique mode when we design Neo-Vernacular Architecture. Low-technique refer to the average level of the building technology of the certain district. In 1997 we had a chance to attempt to do an experiment on Neo-Vernacular Architecture when we commence to design a group of buildings. We decided to use many many screws and screw nuts to structure those details. I think this project provide architects with a new way to consider the design of Neo-Vernacular Architecture.

keywords: neo-vernacular architecture, technology, new details, screw

### *THE BASIC CONCEPTION OF VERNACULAR*

"Neo-Vernacular Architecture" is not a new phrase to architects all over the world. Although the buildings belonging to this style are very few, most architects appreciate them. Let's look at what Neo-Vernacular Architecture means at first.

Perhaps every body has his own opinion about the word Vernacular. It is really not a very simple and clear conception. I think it comprises varied meanings mainly relate to nature and local culture. It also means anti-urban. Some body says it refers to a kind of style and culture that deviate the formal rule and are more undeveloped than the average district even keep a far distance from the cultural center of its country during a certain period. Certainly you can appreciate it, but it is still backward.

### *THE SUITABLE ATTITUDES TOWARDS TECHNOLOGY*

Neo-Vernacular Architecture is a kind of architecture that improves vernacular tradition. However, architecture is a little different from the other categories of culture. Vernacular architecture is always restricted by the undeveloped technology. I mean that it is a wrong conception what handicaps us applying new or high technology when we conceive a building in neo-vernacular style. At the age of agricultural civilization the natural environment and the instruments limited the appearance of all architecture. Communion between different areas is very difficult so each area had its own vernacular architecture. And after a long time they become a component of vernacular culture. This condition leads to the primary disadvantage of vernacular architecture, the limited technology. It seems inevitable.

But if you are careful enough you probably find that undeveloped technology in vernacular architecture is not the original intention of ancient designers. It is a constrained result. I think ancient designers must be in urgent need of new technology. Because nobody can deny the convenience of it. Nevertheless, the circumstance has changed. We have varied means of communion among different districts. So there is no problem when you apply new technology in Neo-Vernacular Architecture.

I consider that the most important point within is the architects' attitude towards building technique. High technique has become a usual factor in the process of raising huge buildings in large cities. But we are confused when we are involved in vernacular environment. What should we learn from ancient designer? The undeveloped technology? Definitely not. Some people regard new technique as the enemy of vernacular architecture, but it is not so simple. We can imagine the original circumstance when building technique was still undeveloped. If you were an architect of that time, what was your attitude? You would not abandon an attempt to use any new skill because it can make your work easier. So the conceptions of

Vernacular Architects seem not be very “vernacular”. On the contrary, the ancient designers appreciate new technique. Perhaps they were not very successful. Even they had not considered technology as a determinable element in designing activity.

If there is Vernacular Spirit, I think it doesn’t mean “undeveloped”. Perhaps Vernacular Spirit contains the attitude towards technology —— In large city we can show off high-technique because large cities are the representatives of contemporary technology. Jinmao Mansion in Shanghai is a good example. SOM, a very famous American architecture design corporation who designed this building, says Jinmao Mansion is a imitation of ancient Chinese towers. However, few people can realize this implication if they had not heard about the explanation from SOM. It mostly expresses a high-tech conception. And we think it is a reasonable project in Lujiazui area only because we should reflect new development of technology there. High-tech buildings show a new image of the city to people all over the world. So in large cities architects could apply most advanced technology. But things become different outside of cities. In the countryside, mountain valley or any other natural environment we can not do so. Since we must show respect to natural world at first and it is not advisability to compete with cities in the field of technology. Then technology becomes the secondary element in these areas, and yet people can not show off it. But architects may select feasible building means befitting the circumstance. I suggest we should be in low-technique mode when we design neo-vernacular architecture. Low-technique refer to the technique at the average level of the building technology of the certain district. We should not abandon an attempt to apply feasible technique. This is the only way neo-vernacular architecture could survive.

#### *WE ARE IN PRACTICE*

The most important thing in our practice is how to apply low-technique method to build new and special buildings. Fortunately, we had a chance to attempt to do an experiment on Neo-Vernacular Architecture in 1997 when we commence to design a group of buildings in the countryside of Tonglu County, Zhejiang Province. This project was named The Architecture Design of Baiyunyuan Scenic Spot. Baiyunyuan is a toponym of a river valley. There are several disperse spots among the mountain. Some are at the foot and some are on the mountainside of it. The buildings in this scenic spot perform complex functions, such as hotel, commercial contents, restaurant, and watching building, though each part of them is not very large in area. Apparently they can not be conceived only according to functional principle. They must be beyond it.

Around Tonglu County there are some neo-vernacular architecture. Most famous ones of them are the excellent works of professor Ge Ru-liang (1926~1989) from Tongji university, include Xixi Villa and Yaopu Garden, etc. Xixi Villa is a good footnote to the style of neo-vernacular. You know Xixi, in Chinese, means breeze. As its name you can feel cool breeze in the rooms of the villa in summer. Since the designer introduced the cool air from rear mountain cave into each room of the building like natural air conditioning. This method expresses clearly a correct attitude towards technology, as what I have just mentioned, the attitude of low-technique. It is not necessary to apply advanced technique here but architects could create new local technique by simple method. Neo-vernacular architecture could progress in this way.

Before we began our work in Baiyunyuan Scenic Spot we made a review of those excellent neo-vernacular architecture at first. The base circumstances are different from theirs. We must find a new springboard. We considered ourselves as ancient craftsmen. Confronting silent mountain, clear water and hard rock, what did craftsmen think about? Would they hanker to bring about special and beautiful appearances use their superb skill? They no doubt wanted to display their skill. Here Skill is somewhat equal to Technique. Is this what we call low-technique? Surely. But what is the average level of

contemporary building technique? I think there is little different among those small towns all over our country in technology field. The most representative characteristic of building technique in these districts compared with that of cities are artificial skill and labour power because there are more abundant human resources and fewer machines. Human power is the main force during a building process.

We recognized the limitation of local building technique and didn't want to make a breakthrough. We could get benefit from low-technique, we thought. Then we spend much time on researching the details of the local buildings' construction carefully. Every one knows that the traditional Chinese buildings are in a system of wood construction. This is our jumping-off place though few architects notice these contents. Going ahead we found it was very interesting and challenging. Since we did not want to be involved into the lamentable imitation of Big Roof, our works were getting along slowly.

Finally we brought to mind a little accessory usually used in mechanical engineering, screw. We decided to use many many screws and screw nuts to structure those details. This kind of technique is general and does not belong to high-technique but it is very special in buildings. Because in the traditions of wood construction the connector between two components should be tenon. Screws are often used on modern wooden furniture. I think this new construction system emphasizes the logical relations among varied components. Wooden accessories mostly appear as decorations except any as frameworks of small buildings or parts of them.

### 1. Wooden handrail and wooden beam

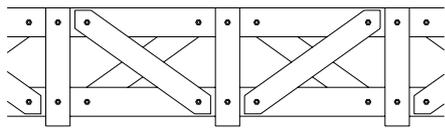


Figure 1 basic screw system

Figure 1 is an illumination of basic screw system. Sometime we installed them on flat roof as handrails and sometime we substituted them for beams within some small buildings where they can bear a light load. Then they become components of structure.

As each unit consists many small staffs the architectures are kept in small scale. It is also a necessary characteristic that neo-vernacular architecture differs from urban architecture.

### 2. Wooden roof framework

Wooden roof framework of traditional Chinese architecture has its mature system. Actually its form is clear, concise and practical. On the basis of this characteristic we conceived a series of wooden roof frameworks with screw. The primary intention is to reveal the beauty of structure so there is no redundant component.

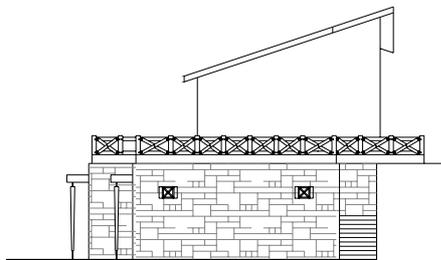


Figure 2 architectures are kept in small scale

Figure 3 shows a section of a roof of a corridor in front of Wuyan Hotel. According to former classification it belongs to rafter type. The whole roof framework system is composed of a lot of triangular frames. All frames are the same ones. Each unit is a combination of staffs and screws. Different materials have different mechanical advantages. The bottom staff will be pulled and at the same time the others will be pressed when roof framework works. Thus we used a metal staff in the middle of the bottom line of triangular frame instead of a wooden one. It makes the framework more rational.

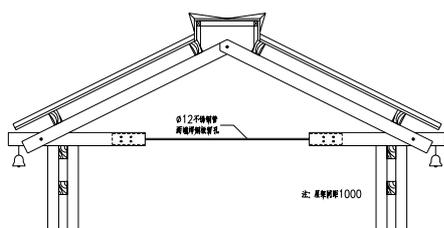


Figure 3 a roof framework unit

Figure 4 is the side facade of the corridor. You can find two rows of joists along both sides of eaves.

One reason is that they can enhance the stability of roof framework. On the other hand we take advantage of them to form a integrate appearance. The image of this corridor is not only rational but also humanized.

### 3. Wooden column

The columns of the corridor are very similar to roof framework. Each column is divided into two staffs and a 80mm-wide interspace is kept between them. We inserted wooden blocks into these spaces at any important positions and installed screws as connectors. In this way we assured unified style in this building. Furthermore it express a conception of our designer that wooden screw-connected staffs should be main elements to construct building. At the bottom of the columns we conceived a special detail structure which prevented the wooden staffs from touching the ground. So the building looks like floating on the earth. Figure 5 is an explanation for this conception. This kind of detail appeared in foreign architecture before.

In addition to columns of Wuyan Hotel there are more vernacular details in the other little scenic spot buildings. Another good example is a triangular pavilion. The shape of plan results in special settlement at each corner. Of course you could use a normal column. But we wanted to produce a interesting one. Actually we used three fir staffs to form a column as that figure 6 shows. Three screws fix the staffs then they could clamp three wooden beams among them.

I think this project provide architects with a new way to consider the design of neo-vernacular architecture. This research has not been limited by the custom of architecture design. We took a new attitude towards building technique. All techniques applied in the architecture of Baiyunyuan Scenic Spot are not high- techniques but some of them are new ones. We can say that we designed a series of low-techniques. Now we realize architects have a obligation to conserve any traditions of vernacular architecture not only continueing to use the old symbols but also adding some new contents to develop it. Technology of traditional vernacular architecture that is originally its defect should be improved. This is the only correct attitude towards technology which some architects have not realized till today.

If there is something called Vernacular Spirit, we can reconstruct it in this way.

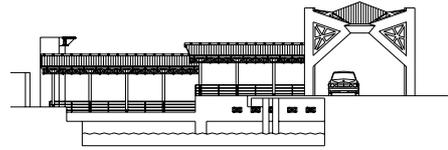


Figure 4 side facade of the corridor

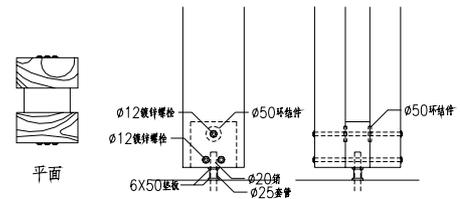


Figure 5 bottom of the column

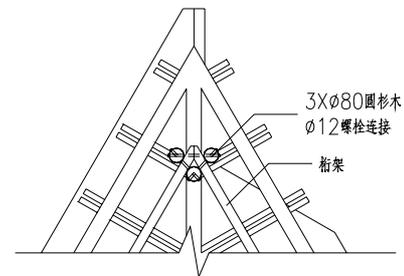


Figure 6 corner of the pavilion

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