



# 臺灣農村住宅整建及新建原則之探討\*

## A Study on the Principles of Building and Remodeling Farmhouses in Taiwan

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### 摘 要

本文首先剖析農宅在農業生產及整體建設中之重要性，其次對臺灣農宅現況、問題及改變趨勢做一簡述，最後討論農宅整建及新建之基本原則，其中包括了下列各項：

1. 整建原則：A. 生活空間之改善。  
B. 基本設施之改良。  
C. 傳統建築風格之維護。
2. 新建原則：A. 平面設計。  
B. 造型設計。  
C. 農宅造價。

關鍵字：臺灣農宅，農宅更新，更新準則。

### ABSTRACT

This paper first of all analyzes the importance of farm building in agricultural production and construction in general. Secondly, it gives a brief description of the present circumstances, problems and changing trends of farmhouses in Taiwan. Finally, it discusses the basic principles of constructing and remodeling farm building and also introduces some planning proposals. The important principles regarding the remodeling farmhouses and building farmhouses are analyzed as follows:

1. Remodeling farmhouses: A. The improvement of the living area.  
B. The improvement of basic facilities.  
C. Preserving the traditional architectural style.
2. Building farmhouses: A. The design of the plan.  
B. The design of the shape.  
C. The farmhouse construction cost.

Key words: — Taiwan Farmhouses  
Remodeling of Farmhouses  
Principle of Remodeling

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## I. Introduction

Taiwan has a total of 870,000 rural households, or 23.3 percent of all households on the island. Many of these houses were built at least ten years ago, and some even date as far back as the time of the Japanese occupation. The state of Taiwan's economy, the agricultural management style and the social structure, etc., were all in those days significantly different from what they are today. The main function of agricultural buildings at that time was to enable people and animals to have a place of rest and to provide harvested crops with a place for storage.

During the past fifteen years, Taiwanese society has already clearly progressed from one that is agricultural to one that is industrial. The mechanization of production and automation can already be constantly seen in every sphere of production, such as in the textile, building materials and other industries. In order to increase productivity in the agricultural domain, many implements and machinery, such as the rice transplanter, the hulling machine and the tractor, have been brought in to replace traditional manpower in production operations. However, the vast majority of rural buildings remain just as they were in the past, without any noticeable change having taken place.

For the last ten years, the government has constantly made great efforts to promote the modernization of agricultural infrastructure. However, the main focus of attention has been on increasing productivity, with comparatively little importance being attached to the life of the farming community and their living surroundings. Along with the rapid economic growth and the rising living standards, the problems with which farm buildings are confronted today are no longer purely concerned with raising the quality and quantity of agricultural production or with the rather low incomes of farmers, but go a step further to develop every stratum of life, including every aspect of culture, substance and society. These problems need to be gradually resolved by means of appropriate rural planning, farm design, farm building construction and so on. In addition, only by simultaneously modernizing both the livelihood and living surroundings of the farming community will there be less likelihood

of Taiwan's rural areas becoming unbalanced in the process of modernization. Therefore a comprehensive plan embracing the reconstruction and remodeling of farm buildings, their extension, the use of farmland, and the development of the community constitutes an extremely important topic for further study in the modernization of rural development.

## II. The Importance of Farmhouses

### (1) The relationship between farmhouses and agricultural production

The process of modernization has brought to agricultural production many changes and brand-new appearances. The largescale use of agricultural machinery has been one of the important items in the government's past and present drive to promote rural modernization. It causes the cultivation pattern, the management concepts and the work-site location, etc., of the farming community to undergo a huge transformation. If one adds the introduction and extension of the concept "the living room is the factory", many farmers bring into their houses a number of practical and labor- and time-saving small-scale processing instruments and even machines, adding to the time they spend working in their homes. For instance, tea growers nowadays manufacture tea through many processes such as tossing, burning, kneading and curing the tea leaves inside their residences by using traditional skills coupled with modern machinery and facilities.

Therefore, today's farm buildings, in addition to providing the farming community with quiet and comfortable living circumstances, still need to satisfy all kinds of production and working conditions.

### (2) The influence of farmhouses on the overall infrastructure

People's requests concerning the living environment follow the progress of the times and rising living standards, and are undergoing a gradual transformation. In recent years, the economic growth of Taiwan, the increase in income, and the demands made by farmers with respect to their living conditions have also

gradually been transformed from being merely concerned with quantitative aspects to encompass the importance of qualitative considerations. In other words besides needing to have enough space in order to satisfy all the functions of living and working, the dwellings must have good, modern hygiene, machinery and facilities, as well as healthy surroundings. Moreover, at present the space provided by and the function of traditional farm buildings is already unable to satisfy the living and production needs of the agricultural community. If one adds to this the fact that the environmental hygiene in the areas where these buildings are located is not good and public facilities are insufficient causing a large part of the rural population and latent manpower to successively move away from these rural areas, this leads to the aging of the rural population structure. Furthermore, because the young and able-bodied members of the agricultural population are moving away, this results in a vicious circle whereby it is not easy to extend the modernization farm buildings. Therefore, in order to effectively be able to prevent the farming population from drifting away, not only do farming villages need to be able to benefit, but also the problems associated with excessive concentration in cities and metropolitan areas need to be resolved.

From what has been discussed above, it can be realized that, in order to design and plan good farmhouses, the improvement of agricultural production and the people's living accommodation are both equally beneficial. At the same time, the upgrading of the farming community's living and production environment can also redress the problem of outward migration in rural areas. Therefore, the remodeling and reconstruction of farmhouses ought to be an important link in the construction of agricultural modernization.

### III. A General Description of Farmhouses In Taiwan

In terms of living conditions and structural changes, Taiwan's rural areas may be characterized by:

--- Rapid economic growth and rising living standards

--- A general increase in rural education standards

--- A gradual tendency for families to become small in size

--- Farm operations that are being influenced by a shift from labor-intensive to capital-intensive patterns of production, resulting in further continual change.

The problems concerning Taiwan's farmhouses today can to a large extent be summarized under the following headings:

--- A number of the old and useless buildings are still constructed with pieces of earth or other simple and crude building materials. Such structures are always characterized as having insufficient natural lighting, they are dark and damp inside, there is not enough ventilation, the fire prevention equipment is no good and so on. In terms of the basic standards of health that dwellings ought to meet today, these old and dilapidated farmhouses, in addition to being unable to satisfy the exacting demands of human life and physiology, are also at the same time incapable of meeting the minimum standards with regard to the prevention of contagious diseases and accidents.

--- Because of the outward migration of people from rural areas, some of these farmhouses have become uninhabited, and have thus fallen into disrepair over the years. On the other hand, there are some houses which are excessively crowded, as they are too small in size and too close together. This results in some temporary problems concerning living in the buildings, and makes living in rural areas appear to be very disorderly.

--- Farmers often bring modern agricultural machinery to rural areas, but there is always a lack of appropriate places such as sheds in which to keep these appliances. In addition, these people who live in rural areas lack the basic knowledge required to look after and safeguard this machinery. Thus it is easy for the machinery to get damaged, resulting in a lowering of the efficiency of the machines.

--- The rate of usage of modern households' electrical appliances, tools and power driven

transportation has in recent years risen along with agricultural household income, and thus these appliances have gradually become increasingly common. However, a great majority of farmers' living quarters are very limited in size, and some of the modern pieces of equipment, such as televisions, vehicles and so on, need an appropriate amount of space in which to be kept. If old and useless farmhouses are not refurbished while all this new equipment and furniture is brought in, apart from some electrical products that are not able to function properly, there is also the problem whereby the interior of the building, due to improper use, becomes very disorderly.

--- The traditional sheds for livestock or birds are often combined with the farm family's living accommodation. Nowadays, the farming community's demands for a better living environment have increased, and since people and animals living together means that the conditions of hygiene are not good, it is necessary for this situation to be improved.

--- In order to improve living conditions and matching production requirements, some old and detached farmhouses have already been replaced by new urban-style apartment blocks. These new urban-style apartment blocks, no matter whether one is looking at them in terms of the choice of building materials, in terms of whether the buildings blend with the surrounding topography or whether the landscape is preserved, rarely satisfy their inhabitants, not to mention the lack of consideration for the special characteristics of the locality. These new apartment blocks and traditional farmhouses, regardless of whether they are new or old, do not fit well together, and are damaging to the landscape and the distinguishing features of the surrounding scenery.

#### **IV. The Principles of Building and Remodeling Farm Residences**

In the renewal and reconstruction of buildings, attention should in principle be paid to the

combining together of some of the modern requests made by the farming community such as for hygiene, facilities, the use of buildings and so on, with some of their traditional living habits and concepts. However, the terms "traditional" and "modern" are always antagonistic to each other. Some old-fashioned and languishing agricultural councils, although due to the ingenious workmanship of their craftsmen they have restored their refined outward appearance, in terms of their traditional plans regarding the inner area, are mostly unable to satisfy the needs of today's rural living and working conditions and family size. Moreover, although some of the more modern apartment blocks, established in the green and shady spots in rural areas, in terms of their usage and function are comparatively superior to traditional farmhouses, their urban outward appearance and style do not fit in with the traditional farmhouses and rural landscape.

The building and remodeling of agricultural buildings should, by means of improving the farming community's living environment and safeguarding the rural landscape, have the purpose of achieving an increase in production morale and productivity. A basic principle regarding the construction of farmhouses may be analyzed as follows:

##### **(1) Remodeling farmhouses, and**

##### **(2) Building farmhouses**

Both these aspects are discussed in turn:

##### **(1) Remodeling farmhouses**

The areas in which building farmhouses differ from other forms of construction include those of rebuilding, adding extensions, and carrying out building repairs.

The paragraphs which follow are directed towards the kinds of problems that are encountered in traditional farmhouses in rural areas today. An attempt is made to divide the problems into, firstly, those that are concerned with the improvement of the living space, secondly, those that are concerned with the improvement of the basic facilities, thirdly, those that are concerned with the preservation of the traditional architectural style, and, lastly, those that con-

cern the promotion and implementation of policies related to farmhouse improvement. In doing this, mention will be made of some basic standards and criteria, which may serve as a means of reference, as a foundation for the work of renovating farmhouses, and also to guide the reconstruction of farmhouses along a timely and ideal path.

#### **A. The improvement of the living area**

Today, the vast majority of the living and working areas of farmhouses are still based on the traditions that have been handed down by the Taiwanese agricultural society of former times. In those days, the pattern of cultivation was by and large very dependent on a large supply of manpower. The working pattern and also the way in which these rural communities enjoyed their leisure did not differ a great deal. Furthermore, there were not many requests for such things as separate living areas or personal privacy.

Because agricultural machinery has nowadays come to be widely used in the process of agricultural production and farmers have come to be engaged in different methods of cultivation and use different kinds of equipment, farmers who are therefore engaged in these different activities have different demands with regard to the usage of the available working space. These demands are not only being transformed in terms of their size, but at the same time reveal variations in the requests for functioning production space.

As a result of the promotion of agricultural machinery, the improvement in agricultural expertise and the making use of modern household electrical appliances, there has been a sharp reduction in the number of hours worked by the farming community. In terms of their lifestyle, it has been quite common for the farming community to need consumption and enjoyment even to the extent of having another work place.

From what has been said above, in carrying out the work of reconstructing farmhouses today, one ought first of all to understand that by being engaged in different kinds of agricultural production, it is the farmers' actual living and working styles, together with technological progress, that proceed to control the

farmers' psychological needs (such as longing for the living spaces and facilities within the city houses, etc.) This requires carrying out appropriate plans to reorganize the lines from one room to another, the size, the structure and the environmental aspects of old-style farmhouses.

#### **B. The improvement of basic facilities**

The spatial area of Taiwan's farm dwellings today that can be used is not enough, and some buildings are incapable of matching the modern farm production industry. This is one of the problems that is very common in rural areas today. For instance, the working space and living accommodation of traditional small-scale family farm operations, in order to operate economically and attain an appropriate standard of work efficiency, are usually built on top of the living quarters of the animals. However, under the promotion of modernized working conditions, scientific developments in raising animals and appropriate management methods, the amount of time that the farmers need to spend to look after their livestock or fowl has been reduced a great deal. Therefore, for the animals' quarters to be separated from the actual farmhouse itself is not necessarily going to create difficulties for the farmers by causing them to spend much more time looking after the animals. By keeping the animals and people in separate places, this can not only improve the farmhouse's hygiene, but at the same time it is easy to coordinate the overall plan of the farmhouse and its forecourt (field). Having looked at this, the concept of separating men and animals ought to be given more serious consideration in construction work in the future.

#### **C. Preserving the traditional architectural style**

Farmhouses are somewhat generally different from city houses. They have their special characteristics and shapes. The building of farmhouses, in addition to being able to satisfy today's farming community in terms of the many requests they have concerning their living and working, and also how to achieve an economical and sturdy goal with regard to the building structure, should also take into consideration the development of the outward appearance of the

building and the carrying on of traditions. Therefore, what is most important in the work of constructing the old-style houses is basically to preserve the traditional farmhouses and to hold on to the valuable historical and cultural building skills. It is also important to maintain the original special features of the building and its setting in order to restore the traditional farmhouse principles.

## **(2) Building Farmhouses**

In recent years, the structure of farming families in the Taiwan area has already changed from being one in which there are large traditional families to one in which these larger entities are gradually breaking down and becoming small nuclear families. The form that these small families takes has produced new demands regarding farmhouses. At the same time, in the old farmhouses, some of the repair costs are not economically justifiable and therefore these dilapidated farmhouses need to be remodelled or rebuilt. Added to this, after implementing these new plans, some of the former occupants of these houses to be rebuilt have to wait before they can move into the new houses. This is one of the reasons why there have been many requests made in this regard in Taiwan in recent years. Therefore, the process of remodelling farmhouses should take into account the changes taking place in rural areas which should fit in with the work of constructing farmhouses in the future.

In what follows, we shall in turn look at three different things, namely, farmhouse plan design, style, and building cost.

### **(A) The design of the plan**

The construction of modern farm buildings needs to match the farming community's present-day cultivation, production, distribution and operational methods. A schedule for all these things has to be designed. Following the improvements and developments in the process of agricultural mechanization, newstyle farmhouses need to have appropriate space in which to install and store the modern production implements.

However, the management of farm produc-

tion and the farmers' lifestyle have followed the process of industrialization and economic development in Taiwan and have likewise been constantly changing, while the development and usage of agricultural mechanization is also continuing. This changing pattern of history has exerted different degrees of influence on the use of and construction of buildings. Therefore, in order to be prepared for all these changes in the future, both those that can be foreseen and those that cannot, the design of today's farmhouses calls for flexibility and multi-objectivity, in order to enable farmhouses to adapt to the changes that will take place with regard to the construction of the building and its spatial area in the future. For example, when designing the farmhouse structure, the most attention should be given to reconstructing and extending the relatively simple structure of wooden beams and cross-supports, without merely relying on the heavy walls that support the roof that is frequently the case in traditional farmhouses. As another example, if arrangements are being made for a room in which to store fertilizer, it should be installed in a place where both transportation and workers have easy access. If consideration is given to mechanizing the application of fertilizer, the fertilizer machine and the land to be fertilized should be positioned such that the work can proceed in an orderly fashion. It is during the planning stage that these matters should be taken into consideration and an appropriate plan drawn up.

### **(B) The design of the shape**

The design of the farmhouse, in addition to analyzing and considering the functional aspects, requires that attention be paid to the farmhouse's outward appearance, as its blending in with the scenery and the overall environment are very closely related.

In principle, the construction of farmhouses can follow the structures of urban houses, and copy the urban houses in terms of their modern electrical facilities, in order to make the farmhouses comfortable, economical and practical, and achieve the same standards as city buildings. However, the design of the building should retain the special characteristics and the style of

the countryside. Furthermore, the external appearance of the farm buildings must not damage the surrounding natural scenery, the appearance of the villages and streets, or the special characteristics of the local buildings. The purpose of this guiding principle is to achieve a rural scenery that is unified, harmonious and which has its own special features.

Those aspects of construction that affect the shape of the building include the roof, the outside walls, the number of stories, the building materials used, the color and so on. Since the outside of the building is exposed to the natural terrain, climate and the environment which all differ greatly from one region to another, it is not possible to standardize the regulations. The discussion concerning the roof in what follows may serve as an example.

For farmhouses and other buildings with few stories, the influence of the roof on the surrounding scenery occupies a very important position. A complicated style of roof will usually damage the scenic aspects of rural life. Therefore the pursuit of an appropriate color to blend with the terrain and climate, as well as the angle of the slope, is very important. The materials and the colors used for the walls also give a certain impression. In the case where the house can be seen from a distance even greater attention needs to be given to see to it that the colors and materials fit in with the surroundings.

### **(C) The farmhouse construction cost**

The design of the farmhouse, in terms of its function, facilities and appearance, must conform to the standard requested. However, from the viewpoint of the costs involved in the construction, the amount required to pay for the work should in general not be beyond the reach of the farmers. The decision as to how much to spend on construction will mostly depend on the size of the house and the land price. Thus the area of the farmhouse should not be too small, but also should not be too large, in order to avoid an unnecessary increase in construction costs. The decision as to how large the area of the farmhouse should be should depend on the number of people living there, the amount of space required for the work performed there and

the way in which the passages from one room to another are arranged. The appropriate design of the farmhouse can not only attain a practical goal, but can also have the effect of reducing construction costs.

The use of other appropriate structural designs, styles of construction and building materials may also serve to effectively lower the cost of work done inside. However, care has to be taken not to use inferior building structures and low-grade building materials, for, as time goes by, the costs of maintaining the farmhouse will within a very short period exceed the economical expenditures originally made. Therefore, the economic cost of preserving the farmhouse needs to be estimated properly at the time the design is made, and before the material to be used is selected.

The construction of farmhouses consists mostly of smallscale engineering. In addition, the sites are often far from the city and scattered in many different villages. In principle, use ought to be made of the latent construction labor force in those neighborhoods. This enables some of the skilled craftsmen in these rural areas to engage in more than one occupation, and is also the most economical method. Therefore getting the members of the farming community to cooperate together to do the work of construction is a method that is feasible and worth encouraging.

### **V. Concluding Remarks**

The traditional concepts held by the farming community with regard to the preservation of their buildings and surroundings are more deeply ingrained than those of their city counterparts. However, with the transformation that is taking place in terms of agricultural production and management, the appearance of rural areas is rapidly changing and traditional buildings in rural areas are being confronted with the challenges of progress. In order to improve the living standards of the farming community, to raise the quality of life and avoid uneconomical production because of the old farmhouses, the work of renovating and remodelling the traditional farmhouses needs to be carried out without delay. At the same time, sturdy, attractive and useful

farmhouses are necessary conditions that confirm the progress and modernization of Taiwan's rural areas. Therefore, the overall carrying out of research and analysis concerning farmhouses ought to have its own importance and urgency. To this end, it is sincerely hoped that the concerned government authorities and research establishments will take positive steps to undertake farmhouse planning, resulting in the overall construction of Taiwan's beautiful rural areas.

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