A STUDY OF THE ARCHITECTURAL ASPECTS OF TRANSMIGRATION SETTLEMENTS IN SEPULUH RAMAN - LAMPUNG

Nieyo Sawarno

ABSTRACT

The impact of the differing ways of life of transmigrants on the subsequent development of their settlements is a unique phenomenon. This paper presents the results of analysis based on observation and measurement of the physical environment in Sepuluh Raman transmigration villages in Lampung, concerning particularly the architectural aspects developed in these settlements. Employing descriptive and univariate analyses, the study concludes that the transmigrants have modified their initial housing provision to suit their aspirations and ways of life, in line with their ethnic origin. Analysis also reveals that Balinese villages and houses have distinctive features, forms, and spatial formations.

1. INTRODUCTION

Given that the changing social and economic structures of transmigrants in Sepuluh Raman Lampung may have an impact on their housing and settlements, the aim of this study is to investigate the physical environment of the settlements, in relation to the opinions and expectations about their future development. By assessing the architectural features of the samples, analysis at this stage has two main objectives: to identify the post-development forms and features of transmigration settlements, and to determine the common factors influencing this development.

Investigation of the social and cultural aspects in relation to the built environment have been conducted by many researchers in several years (Oliver, 1983). All these required a comprehensive interpretation of a number of different socio-cultural elements over several different environmental features (Rapport, 1983; Oliver, 1985). However, these are categorized more as qualitative research, and usually employ a descriptive approach of analysis (Cohen & Manion, 1985).

Data collected in the study area formed the basis for this empirical study. This is important, since there are no completed empirical studies investigating the impact of migrants' cultural backgrounds on the development of their settlements in destination areas.

Nieyo Sawarno is Senior Lecturer at the Department of Architecture, Universitas Gadjah Mada University, Yogyakarta.
2. METHODOLOGY

The built environment is always in a process of transformation rather than at a standstill (Rapoport, 1987). Hence research methodology should investigate the transformation of the environment. He also suggested that a comparative framework is essential in any kind of research of the built environment. Therefore, the steps of this analysis are: first, to investigate the variety of spatial formations of transmigration settlements; and second, to assess the architectural features of the case samples. By comparing the present transmigration settlement and the transformed traditionally built settlement in the origin areas, the needs, perceptions and aspirations of the transmigrants can be understood.

In order to provide analysis of the built environment, the investigation required detailed observations and on-site measurements of the housing component. The maps of six sample villages (Rejo Arix, Rama Khaton, Rama Dewa, Rukti Harjo, Rama Gunawan and Rama Murti) were used to assess the architectural features of the transmigration settlements subsequent to development. This assessment covered village land-use, village spaces and facilities, village patterns and spatial formations.

Figure 2: The arrangement of variables for computation

3. GENERAL VIEW OF THE SETTLEMENTS

3.1. Initial Housing

The initial housing provision for Sepuhh Raman comprised 14 standardised villages, each housed in an inflexible spatial arrangement with standardised housing provision. Each village comprised an assortment of community units, a village centre, a tempeh farm, village infrastructure, and housing units incorporating services and facilities. No consideration was given to the needs and opinions of the transmigrants regarding their living environment.

3.2. Improvements in Housing

In general terms, the villages sampled have been somewhat improved since first built 35 years ago, although some villages more so than others. Improvements in housing differed depending on a number of factors. All villages sampled are undergoing a continuous process of development in terms of their social, cultural, socio-economic and physical aspects. The settlers have made many adjustments, alterations and modifications to both their villages and their houses to suit their living activities and ways of life. The dwellings have been rebuilt using either modern building materials or locally available materials purchased or collected from the surrounding areas, or traditional building materials imported from the transmigrants' places of origin.

4. ASSESSMENT OF THE ARCHITECTURAL FEATURES OF THE VILLAGES

4.1. Uses of the Village Land

The uses of village land today are similar to those initially set up, with each village basically comprising four land-uses: house-yards, rice-fields, village square, and village land used for other purposes. However, the forms and features have been modified and altered by transmigrants to suit the community's needs and aspirations. Some villages have altered the use of village lands in line with their perceptions, customs and traditions. The Balinese for instance have altered part of the village square to build shrines; the Javanese and Sundanese, mosques.
4.2. Functions Of Village Spaces

Village spaces in the six settlements have mostly been used up, such that the function of these spaces has changed or even disappeared. The only remaining spaces are village squares, however, the functions, size and features of these have been modified and altered. The spaces are now occupied by facilities such as schools, offices, markets. In the case of villages predominantly settled by Balinese such as Rama Dawa and Rama Muri, all the space, and even spaces in the periphery of the village, have been used to build shrines for religious activities.

4.3. Spatial Formations

Fieldwork shows that initially most of the villages followed a linear pattern of settlement. This is basically still the case, but further development of the settlements has resulted in a variety of spatial formations, depending on whether the village is single-ethnic, multi-ethnic, or mixed-ethnic. For example, Rejo Asri predominantly settled by Javanese, now follows a nucleated pattern.

4.4. Village Forms

These spatial formations of the villages indicate the forms of the villages, which can be categorised as Javanese, Sundanese, Balinese, or mixed-ethnic, each of which has its own specific characteristics and features. For example, having the form and characteristics of a rural village in Java, Rejo Asri can be categorised as a Javanese village. Here, some alterations have been made to accommodate the activities of the Javanese transmigrants, particularly evident from the use of the village open space as the village centre, and from the presence of the houses with open spaces on the outside which express a Javanese village form (Priyono, 1988). Occupied mostly by Balinese transmigrants, Rama Dawa and Rama Muri, are categorised as Balinese villages. The characteristics of these two villages are quite different from those of a Javanese or the similar, Sundanese villages. For instance, each village has its own village gate adorned with Balinese crafted ornaments. Also, since the village space has been developed to form the village centre containing “Pura Bule Agung”, and with other shrines occupying other open spaces, the spatial formations of these villages are quite different from the other villages sampled. In the multi-ethnic group villages, such as Rukti Harjo and Rama Gunawan, religious facilities have been developed separately according to ethnic origin.

It seems clear then that the standardised settlements initially provided in Sepultah Ranan failed to accommodate the living activities of the transmigrants, such that they have modified, adjusted and altered their village in different ways depending on ethnic group to suit their particular needs and ways of life. It is also evident from this descriptive analysis that the form of the Balinese villages is quite distinctive from that of the villages of the other ethnic groups.

5. ASSESSMENT OF THE ARCHITECTURAL FEATURES OF THE HOUSES

5.1. Descriptive Analysis

Descriptive analysis of the house samples using data from visual observation of the area can provide an understanding of the variety of house types in the study area. The initial housing provision in Sepultah Ranan comprised a single 5.00 m x 6.00 m wooden structure forming a living room and bedroom. The roof was made of corrugated iron sheets and the floor of pounded earth. The kitchen was located behind the bedroom, and a small veranda behind the living room (see fig. 5.1.1).

Figure 5.1.1: Plan of initial house provision in transmigration settlements

The houses were standardised and structured to facilitate rapid construction, but failed to match the living patterns of the transmigrants. As such, most of the transmigrants in Sepultah Ranan have modified their dwellings to suit their different ways of life and living patterns. These houses can be classified into four different groups according to the ethnic origin of the occupants: the Sundanese house type; the Banyumase house type; the Javanese house type; and the Balinese house type.
5.1.2. The Sundanese house type

The Sundanese house type in Sepuh Raman resembles very closely the original Sundanese house type in West Java with its single, relatively small construction, with a covered veranda at the front of the house, kitchen at the rear, and animal shed behind the kitchen. Some of the houses have a small Islamic chapel, or ‘langgar’, usually located behind the main house (see fig. 5.1.2).

Figure 5.1.2 : Plan of Sundanese house type in West Java and in Sepuh Raman

5.1.3. The Banyumase house type

Likewise, the Banyumase house type reflects very closely the houses of the rural Banyumase in West Java, constructed as a single building with kitchen and granary close by at the rear of the house. Since many of the Banyumase transmigrants are experienced brick-makers, producing and selling bricks to surrounding villages, their brick ovens are located close to the house. The Banyumase house has no special place for worship, since these people normally pray in the village mosque. However a place in the middle of the house is regarded as sacred, reflecting the Banyumase syncretism (see fig. 5.1.3).

Figure 5.1.3 : Plan of Banyumase house type in Banyumas and in Sepuh Raman

5.1.4. The Javanese house type

Like the rural dwellings of East and Central Java, the Javanese house type at this transmigration settlement usually comprises one large building with an annex to the main house used as kitchen, granary, storage space, or toilet. Typical of Javanese houses, the main building has a veranda at the front, and, like the Banyumase houses, a sacred place in the centre of the main house. Animal sheds are located close to the annex, and sometimes in the front yard (see fig. 5.1.4).

Figure 5.1.4 : Plan of Javanese house type in Wongsari, Central Java and in Sepuh Raman
5.1.5 The Balinese house type

Following a different religion from the other ethnic groups, the Balinese in Sepuh Raman have developed their houses in a rather different way. The most obvious variance is in the place of worship: the Balinese locate a shrine in front of the house, either to the left or right, in accordance with the tenets of the Bali-Hindu religion. The main house comprises a single building surrounded by a wall and plants, with well and toilet located behind the main house close to the animal shed. Unlike traditional Balinese houses, many of the elements of the traditional house in Sepuh Raman do not conform to a set pattern, but its spatial features can nevertheless be recognized as Balinese (see Fig. 5.1.5).

Figure 5.1.5: Plan of Balinese house type in Bali and in Sepuh Raman

Clearly then, there are significant differences between the house types in transmigration areas, depending upon the ethnic origin of the inhabitants. The standardised housing provided at Sepuh Raman did not match the needs and aspirations of the transmigrants and as such they have modified their houses to suit their traditions, customs, ways of life, and religious practices.

5.2 Statistical Analysis

5.2.1 Univariate analysis

Univariate analysis can also be employed to analyse the houses sampled enhancing understanding of the effect of the migrants’ cultural backgrounds on the future development of their settlements.

Of the techniques of univariate analysis, descriptive super-imposed analysis involves generalising the house samples, based on the respective ethnic origin of their inhabitants. Each group of data is then analysed by superimposing one on the other (Jackson, 1976). The resulting multiplication of building components can be drawn on a plan, showing the inter-relationship between these components (Fig. 5.2.1).

Figure 5.2.1: Super-imposed analysis of houses sampled

This analysis reveals that the spatial formation of the houses in the sample group differs according to the origin and ethnic group of the transmigrants. For instance, the Javanese place of worship is in the middle of the house, the Balinese, in front of the main house. Since the Javanese use their cows or buffalo to cultivate their farms, the animal sheds in Javanese houses are very often in the middle or front yard. So, clearly the customs, traditions and ways of life of the transmigrants have a bearing over the development of their houses.
5.2.2. Statistical super-imposed analysis

Statistical super-imposed analysis involves analysing the architectural features of the house samples using univariate analysis, revealing means of group variables (Norusis, 1986; Shaw and Wheeler, 1985). Group means are then drawn back into the house plan of each ethnic group, showing the layout of the house components of each sample group, based on the means of its variables. From these layouts, the interrelationships between the main house and the place of worship of the houses sampled for each ethnic group can then be derived. Average layouts for the house components of each group can also be drawn, facilitating an understanding of the relationships between the house components of each sample group (fig. 5.2.2).

Moreover, by comparing these layouts, the differences in house design, and organisation of house components among the ethnic groups can be understood. For instance, this analysis revealed the closest distance between the kitchen and the grave yard in the Sundanese houses sampled, and the farthest distance in the Banyumese houses - this is because the Sundanese usually store rice above the kitchen stove, while the Banyumese store it in the granary, close to the brick oven.

Univariate analysis, then, reveals significant differences in the spatial formation of the houses sampled, depending on the transmigrant's place of origin and ethnic group. It also indicates that the layouts of the houses sampled relate to the transmigrants ways of life, and that the customs and traditions of the migrants influence the subsequent development of their houses and settlements.

6. CONCLUSION

Analyses of the fieldwork findings indicate that the residents of Sepuh Ramañ have modified their initial housing province on their own initiative, and incorporating their own ideas. Descriptive and univariate analyses of the architectural aspects of both the village and house samples reveal that their development has resulted in a range of forms and features. Analysis also indicates the distinctive form and features of the Balinese houses and villages, reflecting their singular customs and traditions.

To understand these unique phenomena more clearly it is necessary to assess these data intensively into multi-variate analysis by employing Advanced Statistical Analysis program, e.g. Discriminant analysis, Cluster Analysis, etc.

7. ACKNOWLEDGEMENTS

The contribution of Dr. A. Graham Tippett of Newcastle University to this assessment is highly appreciated. Moreover, thanks is extended to the staff of the Department of Transmigration both in Jakarta and Lembang, those who were voluntarily involved in the data collection for this study.

8. BIBLIOGRAPHY


PEMANTAUAN DEFORMASI PERMUAKAN GUNUNG MERAPI DENGAN PENGUKURAN SUDUT DAN JARAK

T. Ari Suwanto

ABSTRACT

Merapi volcano is one of 129 active volcanoes in Indonesia. Volcanic risk (primary hazard and secondary hazards) is the most spectacular and widely feared of natural disasters. Volcanic hazard has taken tolls of life and property. In order to anticipate and mitigate volcanic hazard, volcano observation must be done in term of routine monitoring. Monitoring and forecasting of volcanic eruption are closely related.

Ground surface deformation monitoring is one of methods used in volcano monitoring. In Merapi volcano, there is a network for three dimensional monitoring by using optical instrument (angular data) and electrical instrument (distance data). The period of monitoring observation is carried out once a year. The network consists of two reference stations and seven monitoring stations. The deformation computation is carried out by least square adjustment and statistical tests.

The result shows that one year observation period of seven monitoring stations had undergone (its resultant) 6.1 cm to 38.7 cm displacement.

1. PENGANTAR


1In base: Teknik ITS