DEVELOPMENT OF FLEXIBLE OPEN SPACES IN HOUSING
CONCEPTS FOR YANGON – REGARDING SOCIAL AND CULTURAL CONDITIONS IN MYANMAR

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ABSTRACT

High density built environment developed rapidly in order to fulfill the demand of housing with the growth of population after 1988 in Yangon. Consequently housing facilities were developed by solving the congestion problems of population growth. However, there was given low attention to the life style of residents, the habits of Myanmar people and their culture although Myanmar is a country with still strong culture and habitation. Special regard is given to open flexible spaces of Myanmar traditional housing which is in harmony with Myanmar people’s habits. Based on these weaknesses, this paper is intended to support and improve the flexible housing planning in Yangon with respect to local requirements.

Keywords: Yangon housing, Myanmar living habitation, open and flexible space housing.
INTRODUCTION

Yangon is the old capital city of Myanmar. It has the total area of about 598 sqkm. The total population is about 5.5 million in 2009. Due to the development of new satellite town since 1988, the north-wards sprawl of the city has changed to cross pattern housing on east-west axis because there was a change of Government policy from socialist economy to free market economy. 1) Most of the people from rural area migrated to Yangon for their better life because cities enable people to advance socially and economically. They have been trying to live in urban apartments. Due to the development of Yangon, the total population of 2.4 million in 1983 reached to 4.5 million in 2007. With the present population growth rate of 3.4, Yangon population will reach around 10 million in Year 2030. 2]

Under the new economic policy, many projects and actions effecting the housing sectors in urban development were launched. Various methods have been attempted to initiate housing and urban development. Some of them are due to the uncontrolled developments of residential buildings in public or private land known as squatter housing, the housing tasks have been carried out by different strategies: They are: (a) public and rental housing, (b) government’s joint housing, (c) site and service schemes, (d) slums and squatter upgrading, (e) programs for individual housing, (f) urban redevelopment projects, (g) area development projects and (h) low cost housing.3] By these different kinds of housing developing strategies, different kinds of housing project were developed. They are: walk-up apartment housing, condominium housing, aerial development housing, single family housing, and garden city housing. 4] Among them, the numbers of walk up apartments are more than other types of housing. The numbers of walk- up apartment of private and public sectors are 85 % of total housing projects in Yangon. 5]

PROBLEMS AND RESEARCH QUESTIONS

Because of the great and fast growing demand for housing and the lack of suitable planning concept, also in order to fulfill the demand of housing, high density built environment are formed urgently. So that, the existing housing facilities are object to critique according to different aspects: insufficient sleeping and living space, unavailability of fresh air due to the housing floor plan design and lack of recreation areas and open space. Moreover, some housing does not harmonize with the Myanmar cultural and social conditions. The housings are designed and planned such that they are not compatible with Myanmar living habit.

Therefore, there are the research questions in order to focus the peoples’ needs and used space in urban housing. They are: 1) Are people, living in Yangon housing facilities, satisfied with their functional interior spaces? 2) How can the indoor spaces in housing be improved in order to achieve more well being and quality of life for the residents? 3) What are ways of designing housing concepts, which harmonize with inhabitants’ needs?
METHODOLOGY

The selected apartments are analyzed according to the flexible zoning analysis which is compared with flexible Myanmar rural area spaces with the intention of analyzing the relationship between inhabitants’ social activities and flexible used space. Moreover, social and cultural performances in Yangon apartments are analyzed by the activities, used time, and spaces, social relationship between residents/ with visitors, and furniture arrangement and activities in order to know urban people’s life style and spatial quality of their apartments. The aim of analysis is to install a new thinking of flexible housing design in Yangon which is harmonized with users’ requirements.

RESEARCH AREA

The area of research is focused by three factors. They are location of housing, time and type of housing. Most of the housings are located in inner urban ring and outer urban ring in Yangon. Therefore the decision is made to choose the cases in the inner urban ring and outer urban ring. The time in which the cases are placed, ranged from 1988 to 2004. During that time most of the volume of the modern walk-up apartments were built, which give the reason to critical consideration. There are mainly 3 types of apartment, one bed room apartment, two bed room apartment and three bed room apartment, most of the people who migrate from rural area live in walk-up apartment housing. So that, the walk-up apartments in the inner urban ring and outer ring which were constructed from 1988-2004 are selected.

ANALYZING THE QUALITY OF FLEXIBLE AND OPEN SPACES

Zoning Analysis

Figure 1: Zoning analysis of Myanmar rural area single family house
There is an example of rural area house which has an open space or balcony at the back of the house. In this kind of house, we can see that it has many openings and flexible spaces for each activity even though there is no open courtyard space. The sleeping areas are divided by the curtain which can fold up at the day time. So that, the spaces can be used double functions; one is very flexible and open at the day time and another one has the enclosure function for the private activities at the night time by using flexible and foldable furniture.

In the Yangon apartments, there are three main zones: main activities zone, cooking and service zone and semi-open zone. The main activities zone is formed as a living and dining hall and others are bed rooms. In the hall type case, the main activities zone is formed as a hall room for the activities sleeping, living, and dining and so on. Semi-opened zone is formed as a verandah. But the people use this area as cloth drying space or reading, sometimes, guest receiving. In some housing, the people use this area for the shrine. Moreover, it can be also found that some people spend more and more time in tea shops and game centers which originally were placed at the corners of street’s junctions. So some people who live in the congested apartments spend most of their time outside. They use to return to their home at the sleeping and dining time. These problems can be found in the very congested urban areas.

**DISCUSSION FROM THE ZONING ANALYSIS**

In rural area house, the spatial quality of the space is mostly very flexible and comfortable for living. Living space is occurred in interior, exterior and semi-interior in the rural area houses. In tradition, kitchen (or) cooking area is detached (or) attached with the main building. It is intended to separate the public area and private area. Most of the Myanmar traditional houses have multi-functional hall which is mostly very flexible and indoor space with wide doorways. In the interior, exterior and semi-interior of traditional houses, only interior space exists for privacy. By observing the urban apartments, most of the spaces are all interior spaces and verandah space is only semi-exterior space. According to the development of life style and users’ requirements, living
and dining space (or) dining and cooking space are attached each other. And bed room
(or) sleeping area in tradition is developed to the master bed room attached with bath
and water closet. By focusing with the spatial quality of traditional houses and urban
apartments, the following factors are received. 1) Three types of spaces, interior,
exterior and semi-interior space can be found in the rural area houses. 2) The flexible
interior spaces provide the residents to be comfortable and flexible conditions. 3) Except
for the private space, others provide exterior and semi-interior spatial qualities which
are related to the nature and have open flexibility.

**ANALYZING THE ACTIVITIES, SPACE AND USED TIME**

<table>
<thead>
<tr>
<th></th>
<th>Cleaning</th>
<th>Hygiene</th>
<th>Eating</th>
<th>Working</th>
<th>Guest receiving</th>
<th>Cooking</th>
<th>Sleeping</th>
<th>Reading</th>
<th>Worshipping</th>
<th>Laundry</th>
<th>Children playing</th>
<th>Family gathering</th>
<th>Relaxing</th>
<th>Clothes drying</th>
<th>Hours/Day (about)</th>
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<td>●</td>
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*Figure 3: Analysis of people’s activities, used space and used time in Yangon apartments*

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<th>Working</th>
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<th>Cooking</th>
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<th>Reading</th>
<th>Worshipping</th>
<th>Laundry</th>
<th>Children playing</th>
<th>Family gathering</th>
<th>Relaxing</th>
<th>Clothes drying</th>
<th>Hours/Day (about)</th>
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<td>6 hours</td>
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<td>●</td>
<td>8 hours</td>
</tr>
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<td>●</td>
<td>●</td>
<td>●</td>
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<td>1 hour</td>
</tr>
</tbody>
</table>

*Figure 4: Analysis of people’s activities, used space and used time in rural area houses*

This analysis is done by the questionnaires survey to 20 families in both cases including
rural area houses, hall type apartments and room type apartments in Yangon. By the
analysis of hall type apartment and room type, we could know that hall way or living/
dining hall is mostly used for dominant activities and open verandah is mostly used for
alternative activities. Therefore, the living/ dining hall is the most important area in each
type of floor plan. To approach the analysis of domestic space use and people’s
activities, there are two questions, which spaces are used to interact each activities, how
many times/ day are used at each space. From this analysis, we could see that in the
rural area houses, the multi-functional hall and outdoor living are the most used spaces
for the longest time. Also in the urban apartment, we can see that living and dining hall
is the spaces for the most activities for the long time per day. But the difference between
the rural area houses and urban apartments is that the flexible space or wide space in Myanmar rural area houses is used as common used space (or) social interaction space. In apartments, it is found that living and dining area are the most used area and dominant space for residents’ activities. It is needed to be flexible and comfortable for the inhabitants of apartment.

ANALYZING SOCIAL RELATIONSHIP AND USED SPACE

By analyzing social activities and used space, the facts which space is required to be large, which is needed to be reduced and which is required to be combined are emerged. In the walk up apartments, residents can use only living and dining area at the day time and bed room is used for the social interaction space at the night time mostly. Most of the visitors are received and conversant at the living area in urban apartments. When several visitors arrived at the same time, they have to use the dining and bed rooms for receiving guests. The residents use the kitchen and fire escape for the interaction between the residents and neighbors.

Social pattern between residents and with visitors are analyzed. The used spaces are analyzed according the usage of residents in three different times, early morning, afternoon, and night.

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**Figure 5: Social Pattern between Residents in One Bed Room Apartments**

<table>
<thead>
<tr>
<th>Space</th>
<th>Time</th>
<th>Morning</th>
<th>Afternoon</th>
<th>Evening &amp; Night</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dining</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bed room</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Kitchen</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>Verandah</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>Bath and Water closet</td>
<td>-</td>
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<td>-</td>
</tr>
</tbody>
</table>

**Figure 6: Social Pattern between Residents in Two Bed Room Apartments**

<table>
<thead>
<tr>
<th>Space</th>
<th>Time</th>
<th>Morning</th>
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<tr>
<td>Living</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dining</td>
<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>Bed room</td>
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<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Kitchen</td>
<td>-</td>
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<td>-</td>
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<tr>
<td>Verandah</td>
<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>Bath and Water closet</td>
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<td>-</td>
</tr>
</tbody>
</table>
By questionnaire surveys in each housing type emphasizing on social relationship and used space of residents, the following findings can be carried out.

1. Living and bed rooms are still used as social space within the family in urban apartments.
2. Their social interaction time is mostly night time.
3. The difference of Myanmar house is that flexible space or wide space in Myanmar house is used as common used space (or) social interaction space. In apartments, it is found that living and dining area are the most used area.
4. When the combination of living, dining and kitchen area is provided, people use these areas for their social interaction and relaxation.
5. From cultural point of view, it is difficult to meet all member of inhabitant because father usually works out and most of the children have to go schools and tuitions after finishing school time. Therefore, it can be at night time for their social relationship to meet each other.
According to the questionnaire surveys on one bed room, two bed room and three bed room apartments, the followings are found. The space which is used for social interaction between residents and visitors is mostly living room. Bed room is sometimes used when many visitors arrive at the same time.

(1) Most of the residents use kitchen and fire escape area for the interaction between the residents and neighbors.

(2) Moreover, most of housewives cannot live in kitchen for the long time except for cooking function because of congestion space and lighting. They mostly use living room.

(3) Therefore, living room is the dominant space for urban residents and it is needed to be large or flexible for urban living.
SHRINE SPACE

Myanmar people emphasize their beliefs by placing the shrine place (or) altar at the upper storey in two storey building. In one storey building, the residents place the shrine at the higher level. In the walk up apartments, there is no defined space for shrine although there has still strong believes and cultural behavior in Myanmar. In most of the apartments, shrine spaces are found in living area by dividing living space or by placing at one corner of living area or by placing in living area near by entertainment things. If someone in household wants to pray Buddha, there can be disturbance while children are studying, or watching TV in living area. In some apartments, the people use verandah space as their shrine space.

EXISTING FURNITURE ARRANGEMENT AND ACTIVITIES

This analysis is presented the existing furniture arrangement, used space and activities of people in the urban housing. By using this way of analysis, it can be found that how the spaces are used according to the furniture arrangement and people's activities. Which space is being used for their activities mostly, which spaces are used for the multi- function and which spaces are needed to be functional for people's activities and their facilities are pointed out from this analysis. The following table shows the used space, activities, furniture arrangement and field photos to analyze furniture arrangement and activities.
By analyzing the furniture arrangement, providing area and occupying area for activities, it is found that some spaces in some housings are very congested for facilities, furniture
and utensils, and some are extra area. Some activities and spaces such as religious function are needed for residents. By looking the shrine area, it is evident that shrine space is also needed in the urban residents and it is needed to be as a separate area.

**CONCLUSIONS**

According to the analysis of zoning and flexible spaces, there is a common activity zone as a multi-functional hall in the urban apartments. It is formed in living and dining hall. Due to the changes of life style, people’s domestic spaces are changed. Therefore, it must be recommended that the relevant spatial quality harmonized with the urban life style should not be disappeared the Myanmar residential effects. The traditional spatial pattern cannot directly adapt to the urban context. It can be transformed to the similar traditional residential spaces as flexible and double functional spaces. Also bed rooms in urban apartments should not be really fixed rooms. It can be constructed with foldable partitions which can be folded at the day time when the people need to use wide more space. On the other hand, it can also support to the flexibility of living and dining hall for the residents’ activities and also for the social activities.

According to the analysis of people’s activities and used spaces for their social activities, the living and dining hall room is the most used area and it is needed to be flexible and good communication. Master bed rooms and bed rooms are developed due to the development of urban living style. By knowing that, the provided space for the sleeping function should be transformed as double used function. It can also be assumed that the residents in urban conserve their Myanmar cultural value by understanding the place of shrine. They use living area partially for their religious function.

In urban areas, there are now nuclear families consisting of the parents and children. It is different in living style between urban and rural area. By field survey, it is found that the neighbors want to connect each other, although the design arrangement can’t save access perfectly. According to their lifestyle and their business type and the required privacy, people usually close their doors.

It is needed to consider whether many bedrooms are required or not in the urban walk up apartments. As Myanmar is a rich country with natural resources, we found in the rural area houses that most of the furniture and household things are made by timber, bamboo and rattan which are very flexible to use and to fold up when we need to have more space. But in the urban apartments, most of the spaces are fixed with concrete walls. There has some mixed used function and spaces because of the fixed spaces. So that, some spaces as bed rooms should be recommended that: it should be double used function according to the day and night time by using foldable curtains or partitions. Also there should be a storage area in the apartment in which we can store furniture and the things easily which will use according to the space function and the time.
REFERENCES


