

Analyzing Social Sustainability of Housing Estates in Yangon

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Abstract: Nowadays, Yangon is experiencing rapid urbanization and accelerated development and is also unprepared in many ways. In Yangon, most of the residential areas have been provided with low amenities and low quality, especially facilities for community and recreation facilities. People need many social amenities and services for residents in their daily life. This study develops the indicators for Social Sustainability assessment of Housing Estates and applies it to analyze Social Sustainability of Housing Estates in Yangon. This research successfully interpreted weak points and best conditions of residential development in Yangon. The resulting synthesis from the research shows that the housing estates have poor condition of social and recreation spaces and the inhabitants cannot do their social activities and relaxation within their housing estates. Eventually, the result shows that some of social and recreation facilities are really need to provide within housing estate to sustain a social well-being for a long time.

Key Words: social sustainability, the indicators for Social Sustainability assessment, Housing estates, Yangon.

1. INTRODUCTION AND BACKGROUND:

Yangon is experiencing rapid urbanization and accelerated development and is also unprepared in many ways. Since 1988, migration of people to Yangon have been steadily streaming over the years due to availability of employment, raising the population growth from 0.7 to 2.3 present. ⁽¹⁾ For that, housings are needed urgently, shortage of housing becomes one of the major problems. Moreover, at least 25 to 30 percentage of Yangon's population is squatters. ⁽²⁾ At the same time, housing patterns were changed from one or two story houses into six or eight story apartments to meet the rising of population. The quality of such housing cannot satisfy with people requirements in terms of space, ventilation, and basic services. It is not easy: with all the pressures of modern-day development, design professionals faced with the issue of more challenges than ever. However, we are also discovering that it does not cost more, or compromise much, to start seeing buildings, spaces, and people as inseparable elements of a complex matrix.

The specific aims and objectives are to develop knowledge on how residential design relates to social sustainability and to define social sustainability and explore the main themes and indicators at the heart of this concept of local communities. This is the aim to analyze the current conditions of social sustainability of housing estates in Yangon and focus on developing long-term sustainable solutions for housing design.

2. METHODS AND MATERIALS:

The research methodology comprised an initial study of the problem statement and explored a relevant literature review. A review was undertaken of existing frameworks that measure the social dimensions of sustainability. Five individual frameworks were considered in detail. These five frameworks namely A Neighborhood Vitality Index: An Approach to Measuring Neighborhood Well-being, Measuring Socially Sustainable Urban Regeneration in Europe, Design for Social Sustainability, The Social Side of Sustainability, and Neighborhood Sustainability Assessments: Evaluating Residential Development Sustainability in a Developing Country Context were considered to be relevant.

Following the developing of the indicators for Social Sustainability assessment, the characteristics of Public Housings in Yangon were overviewed to select the local case studies. Pyi Yeik Mon Housing, Hlaing Thiri Housing, Htee Hlaing Shin Housings were practically studied as local case studies since they are affordable housings that are located in the urban and suburban area with various estates facilities.

Following this, selected housing estates were analysed according to the indicators which are ordered chronologically and reveal two main themes concerning the evolution of the measurement of social aspects of sustainable development. Finally, the resulting synthesis was done to find out some considerations for socially sustainable housing estates in Yangon that would be lead find out the design guidelines for the planning system and aesthetical achievement of greenery environment for future housing community estate.

3. LITERATURE REVIEW :

3.1 Social Sustainability — A Background

Over the last two decades, the Brundtland Report has stated the sustainable development as one of the critical issues. Sustainable development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (Mrs. Brundtland, 1983) ⁽³⁾

There are three main pillars in sustainability namely, Economy, Environment, and Society. These three pillars have considered the different level of attention by the various organizations. The various organizations described the sustainable development with different dimensions and their relative importance. In the 1980, the environmental issue has been considered mainly for the sustainable development. Subsequently, the economic issue was also included in the debate. In the late 1990, social issues have been considered equally in the debate after the formulation of Agenda 21 (UNCED, 1992).

The idea of social sustainability is simple –. It is about understanding people’s needs and desires, considering the effects of our actions on the wider community and anticipating and embracing social change to allow people to provide for their social wellbeing in the future.



To sustain a high level of social wellbeing for along time .

3.2 Developing the indicators for Social Sustainability assessment

The research develops the indicators for Social Sustainability assessment. It is important to know which communities are really in distress to sustain a social-wellbeing for a long time. There are two main themes namely amenities and social infrastructure and the relation between urban settlement and human activities for the evolution of the measurement of social aspects of sustainable development. Table 1 lists the main themes, purpose of each main theme and indicators.

Table 1: Choosing a shape for the overall framework of Social Sustainability Measurement

| Main Themes | Purpose | Indicators |
|---|---|--|
| <i>Amenities and Social Infrastructure</i> | To indicate Social Wellbeing Indicate access to facilities including meeting space and play space Indicates opportunities for social interaction at community facilities such as school, park, library | 1. Utilization of space within the housing estate 2. Access to Local Services and Facilities within the Neighborhood 3. Accessibility and Safety |
| <i>The Relation between Urban Settlement and Human Activities</i> | To indicate Social and Cultural Life To provide public spaces to promote interaction and communication | 4. Analysis of Human Activities and Used Space within the housing estate 5. Service Radius of Amenities within the Neighbourhood |

4. EMPIRICAL INVESTIGATION ON SELECTED CASE STUDIES:

In Yangon, public housing has been provided for low and middle-income people more than 30 years in the urban area. High density built environment developed rapidly in order to fulfil the demand of the housing. Consequently, housing facilities were developed by solving the congestion problems of population growth. However, there are given low attention to the lifestyle of residents, the habits of Myanmar people and their culture. More Affordable Housings are becoming available in Yangon Potential Zone of housing estate development is Sub Urban Area.

Pyi Yeik Mon Housing , Hlaing Thiri Housing and Htee Hlaing Shin Houing are going to study as local case studies since they are affordable housings that are located in urban and suburban area with various estates facilities. Table 1 provides general information of selected housing estates.

Table 2: General information of Selected Housing Estates

| Housing Estate | Year | Location | Site Area | No of Storied | Density Du/Acre |
|------------------|------|-----------------------------------|---------------------------|---------------|-----------------|
| Pyay Yeik Mon | 2000 | NanafTaw Road in Kamayut Township | 28532 sqft (0.65Acres) | 6 | 165 |
| Hlaing Thiri | 1995 | Insein Road in HlaingTownship | 80100 sqft (1.8 Acres) | 6 | 222 |
| Htee Hlaing Shin | 2000 | Hlaing Tar Yar Township | 685949 sqft (15.74 Acres) | 6 | 576 |

3.3 Pyi Yeik Mon Housing

In Pyi Yeik Mon Housing, it comprises 6 stories Building and associated amenities including religious building and opens pace. The width of main streets is 15th feet. There is no specific area for car parking. So, they use the land area to park their private cars. This can lead to some difficulties to access the fire trunk in the emergency case.

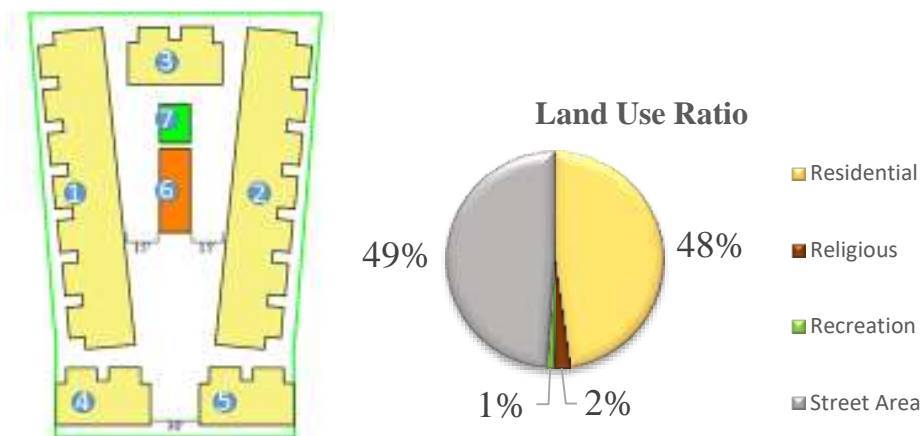


Figure 1: Land utilization of Pyi Yeik Mon

They created the religious building for their social occasions. The habitants said they are convenient to do their social occasion in this building. For the Recreation, the open space within the housing is not sufficient for all the inhabitants. Our observations show that the recreation space is in poor condition. So, people cannot do their recreation within the housing estate. Table 3 also presents the analysis of human activities and used space within the housing estate.



Figure 2: Social and Community Facilities within the housing estates

Table 3: Analysis of Human Activities and Used Space within the housing estate

| Type of Facilities | Area (sqft) | Social Activities | Frequency | Time of Using |
|--------------------|-------------|--|-----------------------|-----------------------|
| Recreation Space | 200 sqft | Recreation, Communication (Talking with the neighbours) | Every day | 8 – 12 hours per day |
| Religious Building | 1400 sqft | Their religious and social occasions (Food Donation for many people, some matter like funeral and other traditional festivals of Myanmar people) | At Least Once a Month | At Least Once a Month |

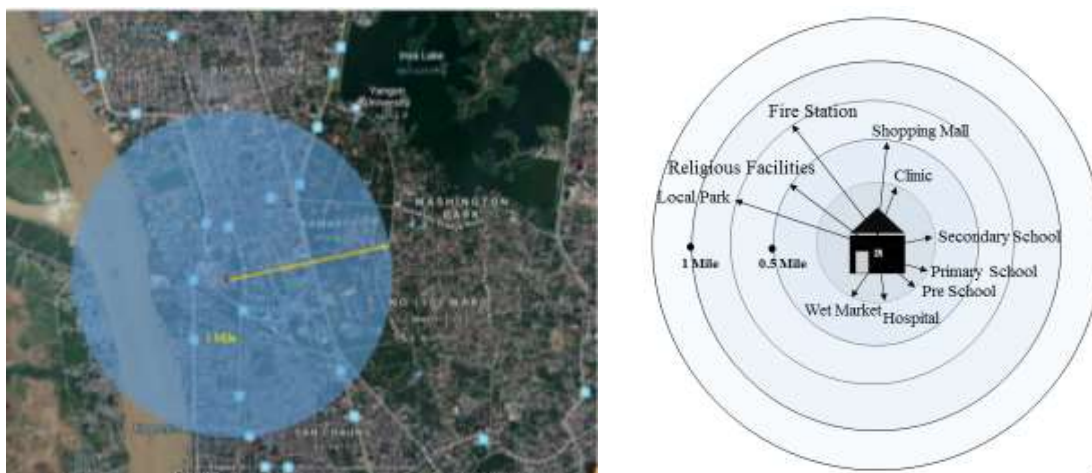


Figure 3: Local Services and Facilities within Service Radius 1 Mile

Residents are generally satisfied with the public transportation system to local Service and Facilities Amenities. Educational facilities are located within the service radius 0.25 mile and residents are generally indicates their satisfaction with this facility. Although most of the facilities are located within service radius 1 mile, there is no playground for recreation within the service radius 1 mile. They really need the recreation space for inhabitants in their daily life. Parents are afraid of sending their children alone to a friend’s place, cycling and across the road and to send the local park. The mean score for the children’s playground indicates their dissatisfaction with this facility.

3.4 Hlaing Thiri Housing

Among the selected case studies, it is found that Hlaing Thiri Housing has no facilities for community and recreation facilities for their daily life activities and traditional activities. So, they can’t do their social occasions and recreation within the housing estate. According to the Questionnaire survey, they said that they have weak communication with their neighbours. There is no social integration and traditional activities within the housing estate. In the case of some matter like a funeral, it has to be done at one’s own home a week after death, ending with a meal-offering ceremony. In this case, people who live in this housing are not convenient. They express low satisfaction for their recreation and community facilities.

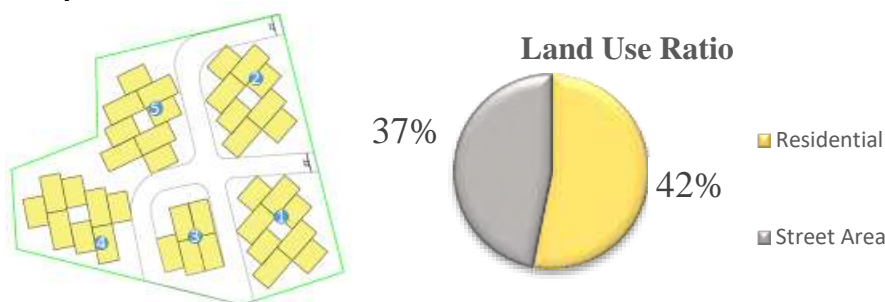


Figure 4: Land utilization of Hlaing Thiri Housing

The width of main streets is 22nd feet. There is no specific area for car parking. So, they use the land area to park their private cars. The Residents use private cars, Motorcycle, bicycle and trishaws within the housing estate.

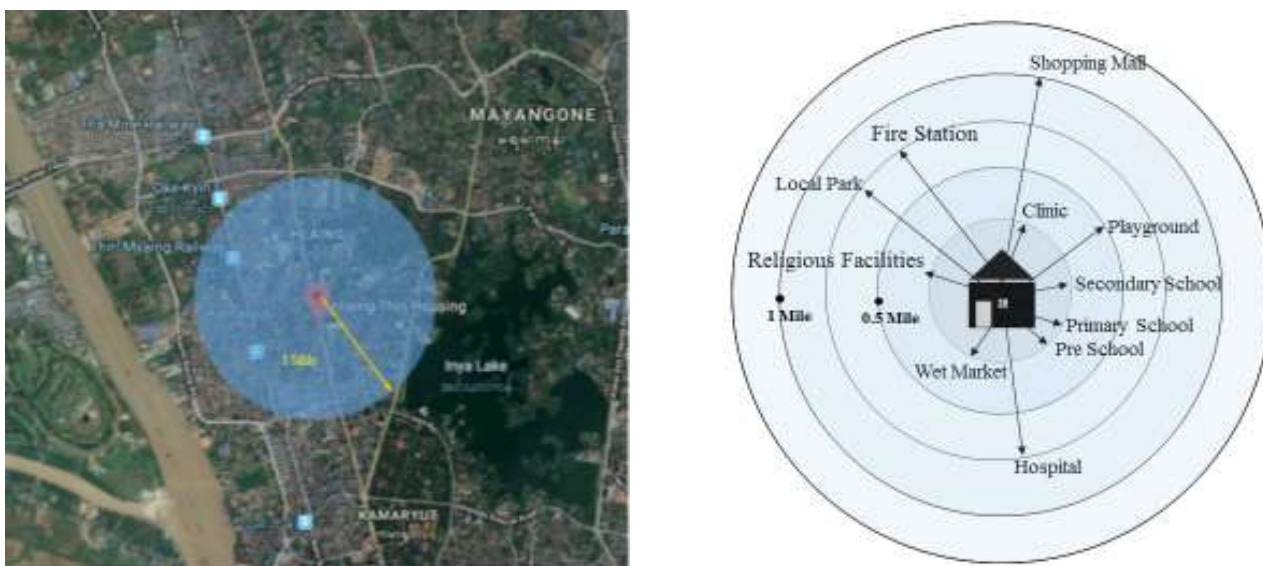


Figure 5: Local Services and Facilities within Service Radius 1 Mile

Residents are generally satisfied with the public transportation system to local Service and Facilities Amenities. All of the local service and facilities are located within the service radius 1 mile. Although recreation facilities are located within service radius 0.75 miles, they express the low satisfaction level for this. Most of the residents do not usually go to that place. The children have to go to schools and tuitions after their finishing school time. So, they have no time to go a long distance to that place. They express low satisfaction with the recreational facilities around the housing estate.

3.5 Htee Hlaing Shin Housing

In Htee Shin Housing, there is 30 % of land use ratio for recreation and community. Inhabitants can do relaxation within their housing estates. There is a community building to do their social occasions and other gatherings. According to the Questionnaire Survey, there is high satisfaction level for their Recreation and Community Facilities. Table 4 also presents the analysis of human activities and used space within the housing estate.

The width of main streets is 40th feet. There is specific area for car parking for each block. The fire trunk can easily access to housing estates. The Residents use private cars, Motorcycle, bicycle and trishaws within the housing estate.

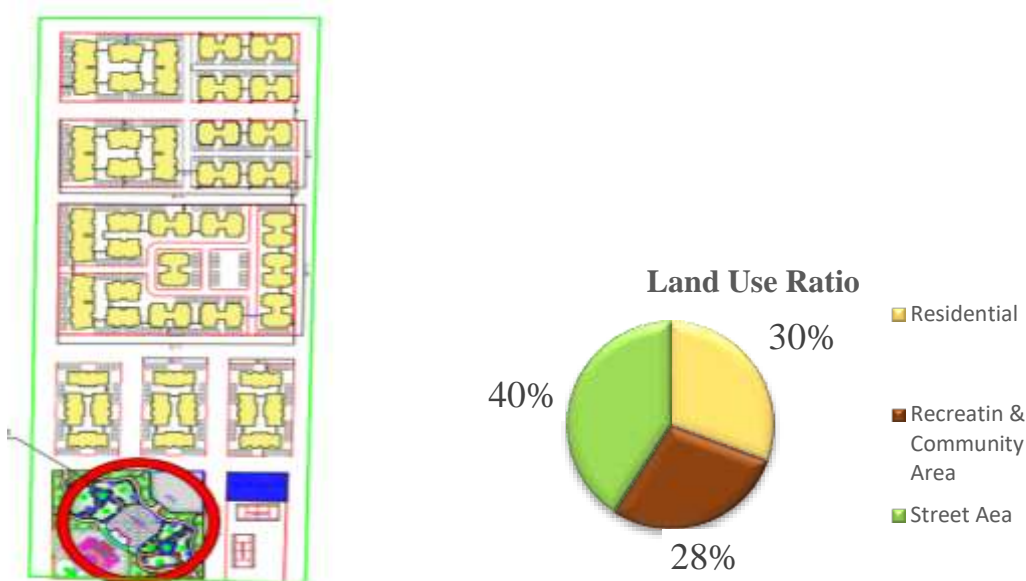


Figure 6: Land utilization of Htee Hlaing Shin Housing



Figure 7: Social and Community Facilities within the housing estates

Table 4: Analysis of Human Activities and Used Space within the housing estate

| Type of Facilities | Area (sqft) | Social Activities | Frequency | Time of Using |
|--------------------|-------------|---|-----------------------|-----------------------|
| Recreation Space | 4 Acres | Recreation, Communication (Example: Talking with the neighbours) | Every day | 8 – 12 hours per day |
| Community Building | 1400 sqft | Their religious and social occasions (Example: Food Donation for many people, some matter like funeral and other traditional festivals of Myanmar people) | At Least Once a Month | At Least Once a Month |

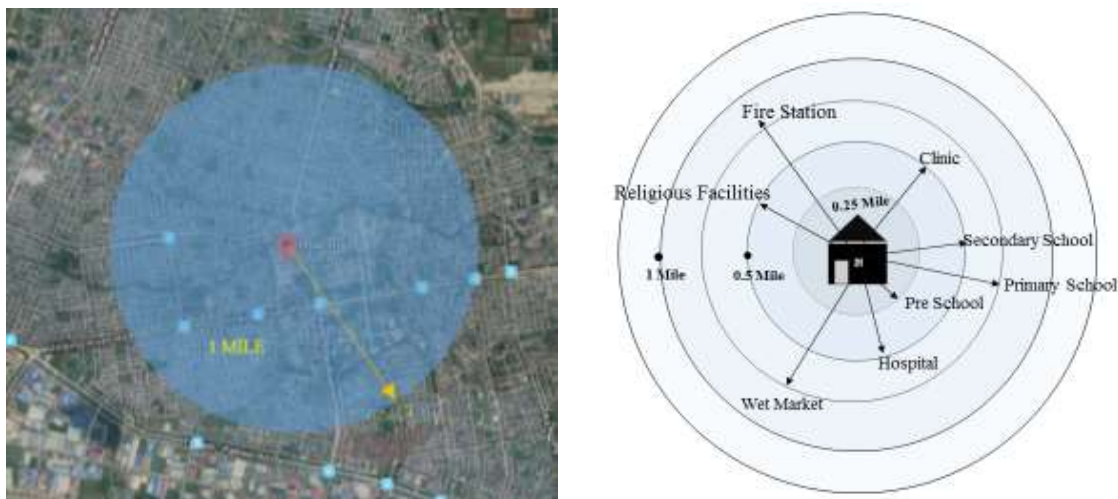


Figure 8: Local Services and Facilities within Service Radius 1 Mile

Although most of the facilities are located within the service radius 1 mile, the Local Park and playground are not located within the service radius 1 mile. For the educational facilities, the preschool and secondary school are located within the service radius 0.5 mile. The primary schools are located within the service radius 0.75 mile.

5. RESULT SYNTHESIS:

5.1 Utilization of space within the housing estates

Among the selected housing estates, Hlaing Thiri Housing has no facilities for social activities and relaxation. In Pyi Mon Housing, it is provided 3 % of the site area for the social and relaxation area. They created the religious building and open space within the housing estate. But, this area is not enough with its population. In Htee Hlaing Shin Housing, it is provided 28 % of the site area for the social and relaxation area. The area for the population is enough and the inhabitants can easily do their social occasions and relaxation within the housing estate.

Table 5: Analysis of Land Use in Housing Estate

| No | Housing Estate | Site Area (Sq.ft) | Residential | | Social /Recreation | | Road Area | |
|----|------------------|-------------------|-------------|----|--------------------|----|-----------|----|
| | | | Sq-ft | % | Sq-ft | % | Sq-ft | % |
| 1 | Pyi Yeik Mon | 28532 | 13591 | 48 | 856 | 3 | 13980 | 49 |
| 2 | Hlaing Thiri | 80100 | 33397 | 42 | - | - | 46703 | 58 |
| 4 | Htee Hlaing Shin | 685949 | 205785 | 30 | 192066 | 28 | 274380 | 40 |

5.2 Analysis of Human Activities and Used Space within the housing estate

It is certainly important to understand the relationship between Human Activities and Used Space within the housing estate. According to the local case studies, it is found that provision for relaxation and social occasions are very important to create socially sustainable communities within the housing estate. Table 5 lists provision for relaxation area, area sqft for each dwelling unit and Effects of Social Infrastructures on Social Interaction in Housing Estates in Yangon.

Table 6: Provision for Relaxation and their Effects of Social Infrastructures on Social Interaction in Housing Estates in Yangon

| Provision for Relaxation Area | Area Sqft./Dwelling unit | Effects of Social Infrastructures on Social Interaction in Housing Estates in Yangon |
|-------------------------------|--------------------------|---|
| No Facilities | - | <ul style="list-style-type: none"> • Most of the children play on the road. • It is not Safety and comfortable environment for their activities and recreation |
| 200 Sqft | 1.2 sqft | <ul style="list-style-type: none"> • There is not enough area for its population. • There is only 1 % of the inhabitants can use this space. • The older people, female, and children don't want to use this space. • Not Suitable for Recreation. |
| 5800 sqft | 10.2 sq. ft. | <ul style="list-style-type: none"> • Children are playing in the evening. • The inhabitants can do their leisure activities for the youth. • The family is walking around their house. • They express high satisfaction with the recreational facilities. |

Table 7: Provision for Community Occasions and their Effects of Social Infrastructures on Social Interaction in Housing Estates in Yangon

| Provision for Religious and Community Occasions | Area Sqft./Dwelling unit | Effects of Social Infrastructures on Social Interaction in Housing Estates in Yangon |
|---|--------------------------|---|
| No Facilities | - | <ul style="list-style-type: none"> • There are weak communications among the neighbours. • There is disconnect with social integrations. • The inhabitants who live in the upper floors have some difficulties for making social occasions. • In the case of some matter like a funeral, it has to be done at one's own home a week after death, ending with a meal-offering ceremony. In this case, people who live in this housing estate are not convenient. |
| 1400 sqft | 10.2 sq. ft. | <ul style="list-style-type: none"> • People make the social occasions and traditional activities. • In the case of some matter like a funeral, it has to be done at one's own home a week after death, ending with a meal-offering ceremony. In this case, people who live in this housing estate are convenient. • They express high satisfaction with the community facilities within the housing estate. |

5.3 Access to Local Services and Facilities within the Neighborhood

Although most of the facilities are located within the service radius one mile, the inhabitants have difficulties to access with this facility. Table 8 also lists provision for relaxation facilities within the neighborhood, service radius, and Effects of Social Infrastructures on Social Interaction in Housing Estates in Yangon.

Table 8: Recreation Facilities within the Neighborhood and their Effects of Social Infrastructures on Social Interaction in Housing Estates in Yangon

| Recreation Facilities within the Neighborhood | Service Radius | Effects of Social Infrastructures on Social Interaction in Housing Estates in Yangon |
|---|----------------|---|
| Local Park | 0.5-0.75 Mile | <ul style="list-style-type: none"> It is difficult to use because they are either at a long distance away from the housing estate and inaccessible to the families. There is no time to go a long distance for their recreation because the children have to go schools and tuitions after their finishing school time. Parents are afraid of sending their children alone to a friend's place, cycling and across the road and to send the local park |
| Playground | 0.5-0.75 Mile | |

5.4 Service Radius of Amenities within the Neighborhood

There are various range of provision for Service Radius of Amenities within the Neighborhood in different countries. Therefore, it is needed to compare the current conditions of Range of Service Radius of Housing Estates in Yangon and with this various range of standards. Preferred Service Radius Miles of Facilities within the Neighborhood are also considered according to (table 1) which provides a planning indicator for open spaces required in any new housing project implemented in Yangon.”

Table 9: Preferred Service Radius Miles of Facilities within the Neighborhood

| Name of Amenities | Standards Range of Service Radius (Mile) Min-Max | Introduction to planning regulations in Yangon (Mile) | Housing estates in Yangon Range of Service Radius (Mile) Min-Max | Preferred Service Radius Miles of Facilities within the Neighborhood |
|--------------------------------|--|---|--|--|
| Educational Facilities | | | | |
| Pre School | 0.25 | 0.5 | 0.25-1 | 0.25 |
| Primary School | 0.25-1 | 0.5 | 0.25-1 | 0.5 |
| Secondary School | 0.5-1 | 1 | 0.25-0.75 | 0.5 |
| Recreational Facilities | | | | |
| Local Park | 0.25 | 2 | 0.5-1> | 1.5 |
| Playground | 0.15-0.5 | 0.5 | 0.5-1> | 0.5 |
| Health Facilities | | | | |
| Clinic | 0.5 | | 0.25-0.5 | 0.25 |
| Hospital | 1 | 2 | 0.25-1 | 1 |
| Commercial Facilities | | | | |
| Wet Market | 0.25-0.5 | 0.5 | 0.25-0.75 | 0.5 |
| Super Market and Shopping Mall | 1 | 2 | 0.25-1> | 2 |
| Bank | 0.5 | NA | 0.25-1> | |
| Community Facilities | | | | |
| Fire Station | NA | NA | 0.5-1 | 2 |
| Police Station | NA | NA | 0.5-1> | 2 |
| Public Library | NA | NA | 0.25-1> | 2 |
| Religious Facilities | | | | |

| | | | | |
|-----------|----|----|----------|---|
| Monastery | NA | 1 | 0.25-1> | 2 |
| Church | NA | NA | 0.25 -1> | 2 |
| Mosque | NA | NA | 0.25-1> | 2 |

5.5 Accessibility and Safety

It is important to ensure that every residential development has to consider for Accessibility and Safety. For the fire and emergency case, all access ways to exits should be kept free from obstruction. According to our observations, most of the housing estates have poor conditions for provision of fire exist and it can't access to the open space. This condition can lead to many difficulties in the fire and emergency case.

Table 9: Accessibility and Safety

| Housing Estate | Mean of Egress |
|------------------|---|
| Pyay Yeik Mon | <ul style="list-style-type: none"> • There is no Fire Exist. • Emergency Stair can't access to safety place. • The cars blocked the drive way of the fire trunk in the emergency case. |
| Hlaing Thiri | <ul style="list-style-type: none"> • There is no Fire Exist. • Emergency Stair can't access to safety place. |
| Htee Hlaing Shin | <ul style="list-style-type: none"> • Exist can provide continuous mean of egress to the exterior Building. • There is no access for fire exists for each floor. |

6. CONCLUSION:

The concept of housing should include more than shelter. It should contain social and physical infrastructures in place for the inhabitants to support their daily life activities. It should contain access to social infrastructure that promotes indicators of living in individual homes, shops, schools, and open spaces. It should be considered open urban areas, urban green spaces, and playground as a part of the required infrastructure of the housing estate development to sustain the social well-being of its population. The lack of open spaces in poor urban quality can severely constrain the well-being of the people.”

According to the local case studies, it is found that these type of open spaces and community facilities are needed to be provided according to the age group of user to sustain a social-wellbeing for a long time in the housing estate. The recommended minimum service radius of amenities are also considered according to (table 1) which provide a planning indicator for open spaces required in any new housing project implemented in Yangon.

According to the resulting synthesis, some of the facilities are really needed to provide within a housing estate. It is worthwhile to mention that some recreation spaces were found around the housing estate, but they were found to be out of reach because they are either at a long distance away from the housing estate and they are inaccessible to the families. They need recreation space for inhabitants in their daily life. Parents are afraid of sending their children alone to a friend's place, cycling and across the road and to send the local park. The mean score for the children's playground, community hall indicates their dissatisfaction with this facility. They express low satisfaction with the recreational facilities around the housing estate

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