Quality of the Living Space

Larger = better?

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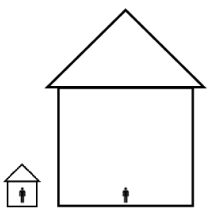
Key words:
Adequate shelter
Quality of the living space
Floor area per person
Efficiency in use
Semi-private space



Content

Abstract

The adequate house is not the same all over the world, because people live in different conditions. However, there is always a desire for good quality housing. Needed floor area per person and size of housing unit are the indicators, which show the most difference between countries. Preferences for housing depend especially on climate, economic situation, culture, lifestyle etc. The poor housing condition in Philippines is a well-known problem. There are several factors, which cause this phenomenon, including bad design in dwelling projects. A greater understanding of the daily life of users and applying this knowledge into design helps to create a better livelihood for the project. Using semi-private space efficiently could keep projects affordable and bring people better living space than they have now in many social housing projects.

Introduction

"*Adequate shelter means more than a roof over one's head. It also means adequate privacy; adequate space; physical accessibility; adequate security; security of tenure; structural stability and durability; adequate lighting, heating and ventilation; adequate basic infrastructure, such aswater-supply, sanitation and wastemanagement facilities; suitable environmental quality and health-related factors; and adequate and accessible location with regard to work and basic facilities: all of which should be available at an affordable cost."*[1]

What is an adequate space?

How many square meters does the average person need?

Which factors influence it?

How should that be reflected in the types of houses we build?

How could quality living space in social housing in countries such are the Philippines could be provided?

There is not one right answer about how adequate living space should look like. Obviously, there are a variety of factors that affect our need for space. Instead of thinking of how large a house should or should not be, we should consider how much space each individual needs and why the needs of people around the world are so different. In this paper I will try to highlight some aspects, which are important for understanding housing in general and also bring some solution for improving social housing in Metro Manila.

[1] 1996 *The Habitat Agenda Goals and Principles, Commitments and the Global Plan of Action*, United Nations

1 Housing quality

1.1 Architectural space and density

There are critical differences regarding human settlements in different regions and countries and within countries.[2] In general, there are two different perceptions of architectural spaces: one is producer´s and the other the user's. The first one is related to the density, the second is more describing the housing conditions.[3] Number of dwellings, sqm floor space and inhabitants per unit, but also how densities are perceived by the inhabitants and how housing conditions are affected by the level of density; are factors are crucial to evaluating the housing conditions. High density assures the maximization of public investments including infrastructure, services and transportation, and allows efficient utilization of land. It may guarantee high rates of return and efficient revenue generation, assuming that there are benefits derived from a concentration of people and activities.[4] The quality and size of housing, and the quality of the neighborhood in which the house located, are important for privacy, security and an enjoyable domestic life. If a home meets the needs and priorities of its residents, it also contributes to their physical, mental and social well-being.[5]

1.2 Floor area per person

The floor area per person is the most precise indicator for highlighting levels of housing conditions. Alternative measures of overcrowding are persons per room and households per dwelling unit.[6] In global context, floor area per person is highly variable among countries, the median reported floor area per person is 14,4 sqm, with a global range from 2 to 69 sqm (*see Figure 1*). Floor area per person increases consistently with economic development, from about 6 sqm per person in low-income countries to 35 sqm in high-income countries (*see Table 2*). Sub-Saharan Africa and South Asia have the smallest floor area per person, and industrialized countries have the largest.[7]

City averages for floor area per person in many cases don't show the reality, because they include all income groups and calculate the median. For example, the average floor area in the city is 15 sqm, so the results display a good living condition for the average family. However, there are areas where people live on 1-2 sqm, and on the other hand areas with more than 50 sqm per person. Apparently, the statistics do not show exact information. "In the households, if there are more than two persons per room, or the inhabitant have less then

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2 Saglie, Inger-Lise
1998 *Density and town planning* printed by Nordberg A.S.

3 Acioly, Claudio and Forbes Davidson
1996 *Density in Urban Development*

4 Acioly, Claudio and Forbes Davidson
1996 *Density in Urban Development*

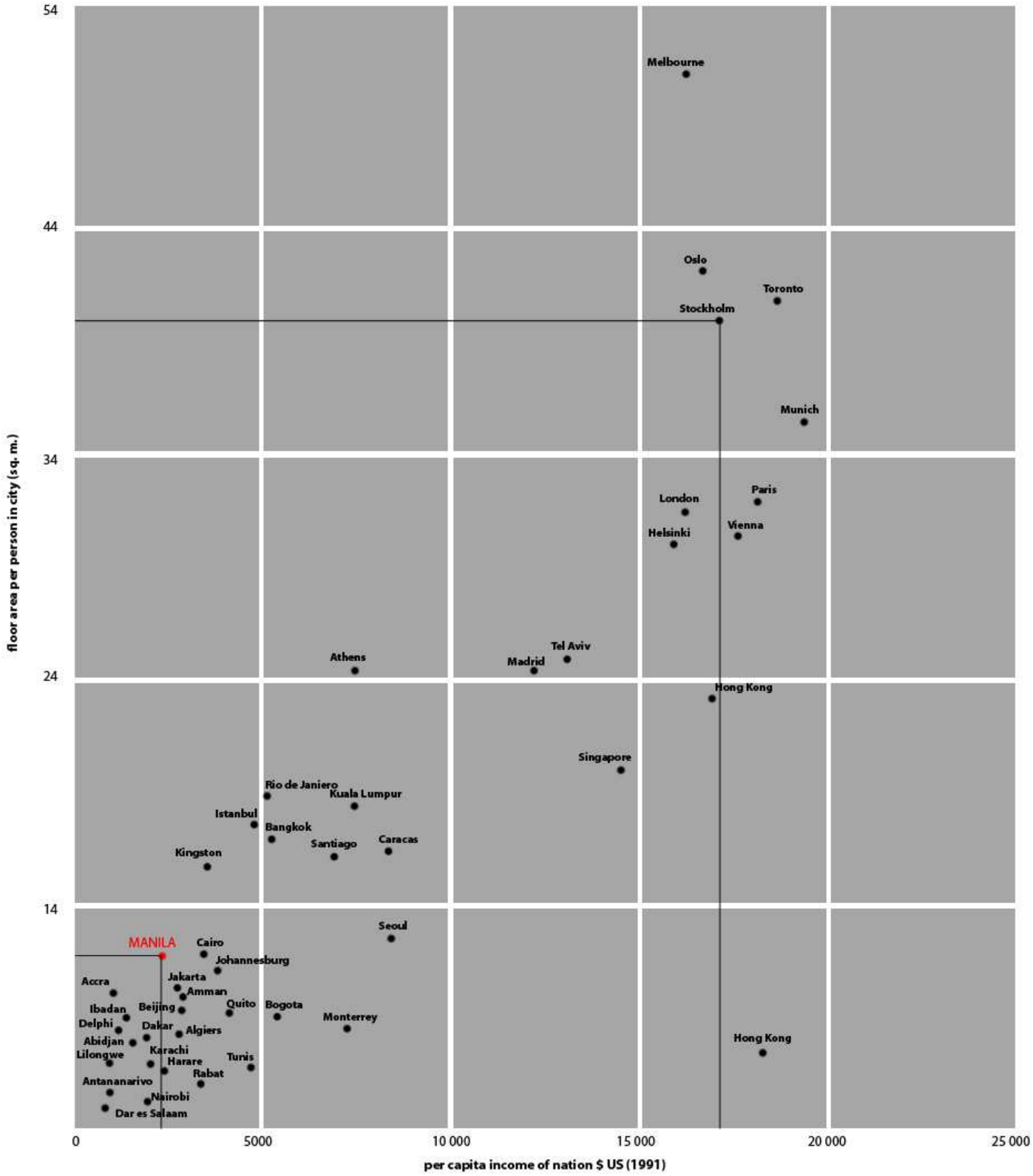
5 United Nations Centre for Human Settlements (HABITAT)
1996 *An Urbanizing World: Global Report on Human Settlements*

6 United Nations Centre for Human Settlements (HABITAT)
1996 *An Urbanizing World: Global Report on Human Settlements*

7 T.G. McGee and Ira M. Robinson
1995 *The Mega-Urban regions of Southeast Asia*

5 sqm each, the flat is considered overcrowding.“ [8] Among cities in low to middle income categories, Manila and Amman are the most overcrowded with 3 or more people per room.[9]

Figure 1: *Floor area per person – world comparison (1991)*



Source:United Nations Centre for Human Settlements (HABITAT)
1996 *An Urbanizing World: Global Report on Human Settlements*

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[8] 1996 The Habitat Agenda Goals and Principles, Commitments and the Global Plan of Action, United Nations

[9] United Nations Centre for Human Settlements (HABITAT)
1996 An Urbanizing World: Global Report on Human Settlements

2 Size of the housing unit

2.1 Factors and aspects

What makes such a difference between size of housing unit among the countries?

What infuences the way of living? Culture, climate, income, lifestyle, religion, type and size of household …

2.1.1 Climatic aspect

Architecture and climate (microclimate) are a dynamic couple. It is the cycle of the seasons of the year that is the basic estimation unit and criterion for climatic accommodation of architecture. And what is more important: only when we weave together the concept of life style and human use of existing geographical conditions does this basic relation become meaningful. [10] Basically, people prefer to be outdoor more than indoor, obviously because of natural conditions (temperature, humidity and light) which are more likeable for our bodies then indoor space, which has to be always be adapted by ventilation, heating, lighting, shading or insulation of the building.

Living indoors – cold climate countries

People in cold climate countries initially spend less time outdoors in the cold season time and therefore there is a need to make a living space spacious enough to spend entire day/weekend/week inside without feeling claustrophobic. One has to consider, that in these countries there is a difference in use of indoor space in summer (warm) season and winter (cold) season. Some activities are meant to be provided only indoors during the cold season, for example laundry, dining, cooking etc, so therefore they are put inside. This is one of the reasons why the average floor area per person and number of the rooms in the housing unit is much more bigger in cold climates than in hot climate counitries.

Living outdoors - hot climate countries

Daily life in these hot countries revolves around the outdoors most of the year. In many cases indoor space is not ventilated or lit enough, or is just too small, so people spend as little time at their houses as less time as possible. They use to doing laundry, cook, eat or even take shower outside. The perception of privacy in low income countries is not the same as in the developed high-income countries. People are very open, they like to live together in the big communities and participate in many activities. Indoor space is mostly used just for sleeping, even in this case it is common that parents usually to sleep with their children till they grow up.

2.1.2 Cultural-economical aspect

High-income countries

General perception of space needed in developed countries is „the bigger house, the better house“. The question is, does this actually help us to live better lives? Is it possible to live in

[10] Mänty, Jorma and Norman Pressman
1988 *Cities Designed for Winter*

slightly smaller spaces than those with which we have become accustomed, particularly if it proves to have a positive impact on our environment, traffic congestion and other quality of life issues? Is it really neccessery to make units so big, because of most of the time people spend at work. The bigger the unit (especially house), the more it costs initially and more expensive it is to maintain. Land use is basically not sustainable and causes „urban sprawl" by inefficient use of land.

In developed countries the indoor space is used more often by inhabitants compared to in developing countries, because there is need for more privacy. Unfortunately, people begin to live separately if too much privacy is provided, for example in gated communities with enormously big floor area per person (60 sqm and more) and provision of all amenities (such a swimming pool, gym, sauna, home cinema, tennis, billiard) inside the house. Consequently, public space is not in used that often, so it loses it cost. Another negative aspect is that people start to loose perception of social life.

Low-middle-income countries

For the low-middle-income countries it is very characteristic to live in a community, which is mostly based on and supported by religion. It is the most efficient way of life – everyone helps each other in daily life. It is also a natural process, because it is diffult to find another place to live for the young. So, in many cases big families or several generation live at the same place. Another case is, when different families live in the same unit, for example in Soviet union in 80s. Many families were forced to share one unit or to live several generation in one unit accordind to the lack of the housing units. In this case the perception of the privacy was suppressed. When families start to earn more, they immidiately move to a private apartment. The example of the Philippines, shows on the contrary how important communal life is for everyone. These people prefer not to move to detached houses and rather stay in overcrowded, but lively neighborhoods. These aspects must play the main role in housing design.

2.1.3 Household aspect

Table 1 shows how the number of households infuences the economic situation of the families, meaning that having many children does substantially increase the risk of poverty.[11]

Table 1: *Poverty Incidence of Families by Family Size in the Philippines*, 1997–2000 (%)

household	1997	2000
All families	31.8	33.7
By family size		
1	9.8	9.8
2	14.3	15.7
3	17.8	18.6
4	23.4	23.8
5	30.4	31.1
6	38.2	40.5
7	45.3	48.4
8	50.0	54.9
9 or more	52.6	57.3

Source: NSO FIES [M92], in Reyes (2002a)

Table 2: *Housing Quality*

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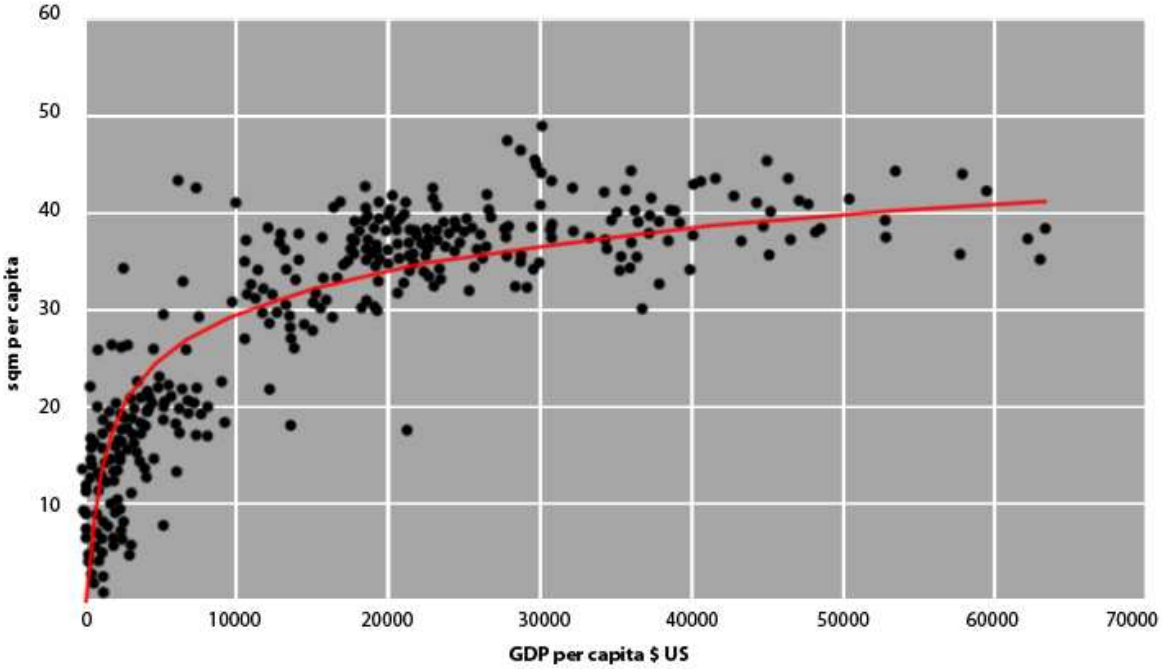
Income grouping; Cities in:	Floor area per person (sqm)	Persons per room
Low-income countries	**6.1**	**2.47**
Low-mid-income countries	**8.8**	**2.24**
Middle-income countries	**15.1**	**1.69**
Mid-high-income countries	**22.0**	**1.03**
High-income countries	**35.0**	**0.66**

Source: The Housing Indicators Program Volume III; Preliminary Findings, A Joint Programme of the United Nations Centre for Human Settlements (Habitat) and the World Bank, Wachington DC, April 1993

The relation between sqm per capita and GDP shows the phenomenon: the more prosperious is the country is, the more space people need for their living. However, this growth is not unlimited, because basically an average person doesn´t need too large space to live on (this limit is about 40-50 sqm). *Figure 2* shows culmination in 2 areas: around 15 sqm and 35 sqm, it means how basically the world is divided into poor and rich parts. In developing Asian, African and Latin American countries, the average person needs less space, around 10-15 sqm. In the developed European and North American counries is average sqm around 35. The interesting fact is, that there is almost no difference in sqm per capita among the GDP from $10 000 to 60 000, it varies from 30 to 50 sqm. But it deffers a lot from 0 to 50 sqm, when it comes to GDP from $ 0 to 10 000.

Figure 2: *Relation sqm per capita to GDP per capita (2001)*



Source: http://wiki.climatechangeadaptation.org.au/tiki-download_file.php?fileId=9

2.2 Comparison among chosen countries

The table below shows the comparison of factors which influence housing conditions, presented by floor area per person. Philippines, Russia, Czech republic, Canada and Australia were chosen to represent huge range of economic, climatic and demographic possibilities. There is an obvious dependency between density and floor area per person, as well as among average income and persons per family. On the other hand, it is not a rule, that in countries with hot climate the economics is lower than in cold climate countries (Philippines and Australia). The Philippines have extreme climate conditions, limited land, dependent economy, overpopulation and high natural growth, so all these factors cause poor housing conditions (as 12 sqm of floor area per person).

[11] 1992 June *Poverty in the Philippines: The Impact of Family Size*

Table 3: *Comparison of chosen counties (2010)*

Country	City	Density (pers/km²)	Floor area/ person (sqm)	Persons per family	Average income per capita $ US		Climate			
							Type	Humidity (%)	Mean annual temp. (°)	Annual rainfall (mm)
Philippines	**Manila**	**18 200**	**12**	**5**	**440**	**low**	**tropical wet and dry**	**71-85**	**26,6**	**2000**
Russia	Moscow	9 800	**17**	3,1	600	low-mid	humid continental	70-85	5,4	700
Czech republic	Prague	2 500	**23**	2,1	700	middle	oceanic	68-88	8,6	520
Canada	Toronto	4 000	**40**	2,6	1 600	high	humid continental	53-75	9,2	800
Australia	Sydney	2 000	**51**	2,6	2000	high	temperate	50-64	18	1200

The table was made by combining facts from several sources.
Sources: www.wikipedia.org, www.worldsalaries.org, www.citypopulation.de
United Nations Centre for Human Settlements (HABITAT)
1996 *An Urbanizing World: Global Report on Human Settlements*

3 The Philippines

3.1 The demographic profile of Metro Manila

Metro Manila´s population has been increasing rapidly since at least the end of the Second World War. Its expansion into a mega-region has been acknowledged since at least the early 1970´s. Its growth rate peaked at an annual average 4.9 % during 1960-70, and then declined to 3,6 % during 1975-80, in the next period 1990-1995 it reduced to 2,3% and in last decade 1995-2005 it was just 2%. For year 2010 it is slightly less than 2% (1,96 % – the 62nd place on the World population growth comparison).[12]

Economic growth has not been high enough to keep up with population growth: GNP per capita has lingered at around $1,000 for the past 20 years. Residential uses of land covered 37 % in 1980 and increased to 45 % in 1990. Meanwhile, open spaces have shrunk from 47.8 to 39.6 %. Such urban growth resulted in environmental deterioration, conflicting land uses, and inadequate provision of housing and services.[13]
Between 2010 and 2030, the number of members per household is projected to drop from 5,0 to 4,2. The average number of children under age 15 is projected to decrease from 3,02 per household in 1990 to 1,3 in 2030.[14] The study seems to be slightly overestimated and exaggerated, because the natural growth is still very high and is not decreasing so rapidly.

[12] www.indexmundi.com/g/r.aspx?c=rp&v=24, 10.04.2010
[13] T.G. McGee and Ira M. Robinson
1995 *The Mega-Urban regions of Southeast Asia*
[14] 1992 June *Poverty in the Philippines: The Impact of Family Size*

3.2 Social housing

3.2.1 Project examples of social housing in Philippines

Generally, social housing in Quezon city, Metro Manila is designed for people who used to live in slums, informal settlements or dangerous areas, inadequate to live in. Mostly the projects afford high quantity of housing units, but unfortunately very low quality of living. Basically, there are two types of social housing dwellings: 5-storey housing block (HURA homes, Smokey mountain developement,) or 1-2-storey family houses (Baseco – Gawad Kalinga, Habitat for humanity, NHA Muntinlupa city South ville). St. Hannibal empowerment center is a project combining both types, and provides the best living conditions in comparison of all projects. The housing block is just 2-storey high, but it has a ot of common space, galerias, so people use to grow plants there and basically maintain the corridors very well. It increases an overall quality of dwelling. Smokey mountain developement is a 5-storey housing block with 40 units (20 sqm each) per floor. It is an example of badly maintained semipublic space, because it doesn´t belong to specific people. Therefore they don´t take a responsibility to take care of it. While the interior of the units are small, but well-maintained, the common corridor is in a very poor conditions. In the project HURA homes the place for the laudry is situated on the roof, but it is also used as playground for children and as place to sit and talk for adults. The multi-use of this space seems to be most efficient in terms of reducing the cost of project and providing many functions.

3.2.2 Specific requirements for housing

How to design good quality living space within low budget and constrained floor area per unit?

With projected data, that average household size will decrease in near future and designing spacious private indoor spaces will be not relevant. An average family will not be able to afford spacious unit. The interest should be pushed to the public (better *semi-private space*), which has to be used more efficiently. *Public space* is neutral area, accessible for everyone, while *semi-private space* belongs to and it is owned by inhabitants of the residence (*see Figure 3).*

Designing housing units and semi-private space in the Philipines – what should be taken into consideration?

- minimum unit size for socialized housing 18 sqm [15]
- average household size 5 persons, more than third has more than 7 members
- 20 % of urban (27 % of rural) population has 4 or more children [16]
- extensible family
- income generating activities in the unit
- strong community life
- specific way of living – living outdoors

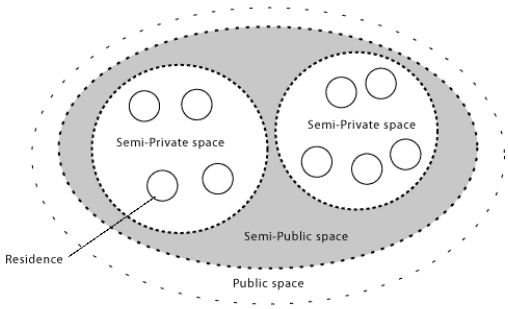


Figure 3: Spaces

[15] 2001 *Revised implementing rules and regulations for BP 220*

[16] 1992 June *Poverty in the Philippines: The Impact of Family Size*

Definition

Semi-private space	The access to this space is controlled and accessible to residents and associated people only. These spaces are not really private since they're shared, but since they're usually inaccessible to outsiders, they're not really public either.

Nowadays there is a lack of good quality neighborhoods in which can assure fully valued life for residents. Daily life on Philipino´s people mostly consists of spending time together outdoors wihin most activities. Usually there are benches missing, lack of greenery and poor materials which make the most housing projects an inadequate place to live. Services/ amenities of Philippino people´s daily life are: toilet, bathroom, sleeping area, kitchen, dining area, laudry, gardening, growing poultry, keeping pets, leasure activities – table games, pool, internet point, parking space, storage. What could be shared in the semi-public space considering specific income group, culture, climate?

3.2.4 Proposed improvements

Project: 5-storey housing block with 72 units (from 23 to 34 sqm)

Considering a very open way of life, it is possible to consider just toilets, bathroom and sleeping area as private, and consider the rest as semi-private. This solution will make the project economically cheaper and more affordable, also the amenities will be bigger and better equppied or furnished than if the ammenity is meant to be separate for each unit. The average size of the unit has to be preserved small or just slightly enlargened, in order for the units it still to be financially available, but efficiently used, so it becomes to be considered as „small" anymore. The aim is also to improve the social life by providing people a good quality space to do daily life activities together. The most services should be moved out to the community space – where can people perform their dailyroutine, especially women, who are stuck otherwise in their small units all day long and suffer from cramped space.

On the example of kitchen we have to consider how much it should be shared – of course, the fridge and sink should be in each unit, but oven and stove is more reasonable to put into the shared kitchen. Around the kitchen will be placed benches and nearby the dining area. Laundry space will be situated on the roof, parking motocycles and commercials on ground floor, shared kitchen (1 per 3-5 units) and dining area (1 per each floor) as a most frequent place, garden (big one on the roof and small on each floor), sarisari (1 per each floor), internet point (1 per all housing block, situated on the roof), entertainment point - table games, billiard (1 per all housing block), storage (1 per each floor) etc.

Conclusion

When designing housing for social group in Philippines, all specific aspects (culture, climate, demography and economy) must be taken into consideration to assure good design. It is more than important to understand daily life of people, to know their needs and specific requirements to make an adequate space for living. Focusing on the "semi-private" space, meaning communal space, instead of dividing space into "private" and "public", is the main idea of improving social housing. The solutions that are proposed in this paper are meant to be developed in the project and examined in real life.

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Glossary

Word/ concept	*Definition*
Space per person	Habitable space available per person in a dwelling.
Floor area per person	median usable living space per person (in sqm) over the last year of available statistics.
Habitable room/area	A room normally used for prolonged everyday activities e.g. living, sleeping, working.
Habitable space	Floor area in a dwelling excluding ser vice/utility spaces (kitchen, WC, bathroom, storage, hallways).
Household	A social unit consisting of a person or a group of persons who sleep in the same housing unit and have common arrangements in the preparation and consumption of food.
Average household size	Average number of people who live in the household
Semi-private space	The access to this space is controlled and accessible to residents and associated people only. These spaces are not really private since they're shared, but since they're usually inaccessible to outsiders, they're not really public either.
The quality of housing	Its size relative to the number of inhabitants, the quality of construction and the extent of provision for water supply, electricity, sanitation and drainage.