

Typology of Flat Towers in Indonesia

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Abstract House has become basic human needs; however this is critical problem especially in urban areas. In order to uncover housing shortages, the government has programmed to build walk up flat, due to that horizontal housing has bad following impacts. Walk up flat is possible alternative to be considered to solve existing problems. The goal of this study is to understand walk up flat typology in Indonesia. Besides that it is hoped that it can be explained dwellers' behavior and their adaptation mechanism has been done. Qualitative method with case study approach has been used in this research. Several walk up flats in big cities in Indonesia has been selected as case studies. Observation results and study show there are many types of walk up flat in Indonesia, either in terms of ownership status, developers, number of floors, layout, dimension of floor space unit, goals of development, etc. Urban societies in Indonesia have no meaningful problems live in walk up flat. They can adapt, and able to adjust live in walk up flat. Live in walk up flat enhance their tolerance, and lower the privacy standard they enjoyed. Many social activities have been created to establish community's sense and to improve dwellers' capacities. Almost no considerable problem found, either in term of social live or in term of security in walk up flat. Small cases may happened, however dwellers perceive that it is common and they believe that the life will back to normal afterwards.

Keywords: walk up flat, apartment for society, cultural adaptation, Bali

I. INTRODUCTION

Anyone cannot avoid that house is an essential need for community because it is not only serve to protect them physically against various natural disturbances, but more importantly because the house has function of social, economic and cultural. House or home is mainly the first place for living of a family where children born, grow up and knitting the future for the kids. Now, it serves as a place of production where families making money to meet their needs. Humans being were interacted: born, grew up, grow and died in the house. Therefore, it is very important role for human life [1].

However, the housing continues to be mainly a crucial problem, especially associated with the gap between supply and demand which is the need against availability. In urban area especially, at least about 20 percent of population do not have a proper house due to less affordable. Horizontal orientation of house development has a lot of consequences which is phenomenally as high level of land conversion. That is threatens the ecology and also provide a critical safety implications of food. The fact that thousands of hectares of rice fields taken for housing by the cities in Indonesia each year. This phenomenon cannot be allowed to be continued and alternative solutions have to be looking forwarded immediately. Tower housing (Flat = Rusun) is

one of integrated alternative solution to solve those problems. Rusun is also to be an alternative for low-income communities (MBR) which also can reduce the land conversion rate and improve the efficiency of land uses. It also has a positive ecological impact on the environment of the city. In addition, flat can also reduce, avoid and even eliminate inhabitant in slums area. A negative impact of slums area faces of the city image, it also potentially has negative affect physically and mental health of the occupants. Therefore, this research is necessarily to be done. The aim of this study was to identify types of flat in Indonesia, to know the behavior of people occupying the flat in the use of space and to know of how the occupant adaptations and the way they changes the space available in the flat.

II. RESEARCH METHODS

This research was conducted by observing several flat towers in several big cities in Indonesia, including Denpasar, Surabaya, Semarang and Jakarta. The three cities in Java had chosen where central or regional governments worked together to build flat towers to provide solution of the each problems faced which has already begun in the year of 1970s. The study is a qualitative research by Bungin (2009) with questionnaire instrumentation [2], [3]. In-depth interviews were also conducted by using resource:

occupant/residents, coordinators of flat towers, or other related the parties [4], [5]. Data were also obtained through study of documents provided by each institution associated to be cases for each flat development. Observations are systematically carried out on the physical of towers, either through measurement, documentation (photos and videos) to understand the patterns of activity and occupant behavior, adaptations and getting on to be done, both inside and outside of the dwelling units. The data analyzed relatively more on qualitative analysis to look for interesting themes in the lives of occupants of the flat.

III. RESULT AND DISCUSSION

A. Several Flat Towers of Big Cities in Indonesia

A.1 Towers in Jakarta

Local government of Jakarta was included to be one institution to provide a very progressive development plans for the flat towers. Since the 1970s, flat has been built for both rented and property owned in the capital city of Indonesia. According to the Head of Housing Department and Local Government Building of Jakarta, in the year of 2016 alone they began to build 38 towers located in Rawa Buaya, Tegalar, behind Pasar Rebo, Pulo Gebang, Pondok Pindang, Tidung, and others. The towers in Jakarta were built in five different areas which spread over several locations. Program of flat towers in the capital is one solution to reduce the deficit of housing, urban renewal, relocation and development of the city. Several flat towers will be described below.

Rusunawa Tambora consists of three towers; each tower has 16 floors built on an area of 21.743 square meters. This flat has facilities such as elevators, parking lots, health clinics, and shopping complex on the second floor. In this area, the flat provided 549 units of 30 m² each. Of the total units available, 477 were occupied by existing inhabitants, while the rest (72 units) occupied by other residents affected by the relocation program. The flat was built since August 2013 and they required 17 months to construct it. Flats in this region was inaugurated by the governor of Jakarta province on 24 February 2016, along with the other towers built in East Jakarta region such as in Pulo Gebang, Jatinegara Kaum, and Cipinang Besar Selatan. If this flate managed privately, each unit can be sold for 400 million rupiah by private sector (developer).

Bandar Kemayoran flat is most likely for private property unit called rusunami and the rest was rented flate called rusunawa. This flat was built on land belong to Perum Perumnas where the land area is nearly 76 thousand square meters located in Kebon Kacang subdistrict Kemayoran, Central Jakarta. The aim of development is to improve the living standards of the urban poor and reduce slums in the capital, Jakarta. There are four sectors in Bandar Kemayoran rusuna namely Dakota, Conver, Boeing, and Apron. Dakota area consists of 15 blocks with an area of approximately 24 thousand m²; there are 6 blocks in

Conver sector with an area of over 13 thousand m², Boeing provided 5 blocks with an area of 16 thousand m², and Apron 8 blocks with an area of over 21 thousand m². Rusun Conver, Apron and Boeing are all rusunami; on the other hand the Dakota divided of some as rusunami and others is rusunawa.

Rusun in Pulo Gebang typically is a rental flats to be built on land under the management rights status of Perumnas located at Jalan Raya Cakung East, Pulo Gebang village, district of Cakung, municipality of East Jakarta. Flat of Pulo Gebang consists of two units of five-story twin buildings with a capacity of 240 units of which 192 are residential units and the remaining 48 units are public facilities/ social/ business, built in the year 2000 and it has sold two years later. Office of Speciality Regional Business Rental Houses of Jakarta (Branch II as part of Public Company: Perumnas) used to manage rusunawa which has responsible for physical buildings and facilities /environment, and administration for occupant such as selection, allocation, lease agreement. The rusunawa of Pulo Gebang have facilities such as parking lot, open spaces and green open space (RTH) / garden, lighting (PLN), provide clean water (PDAM), and gas installations (PGN).



Fig. 1. Towers conditions in the capital city of Jakarta

A.2 Towers in Semarang

As one of big city in Indonesia, Semarang has a difficult issue of settlements/housing. High level of urbanization caused local government was unable to provide decent housing for all citizens. In this province, housing deficit is also experienced by the residents, especially for those on low incomes. Therefore, slums area remains to be a major problem. To address this issue, Semarang government tried to rejuvenate some slums area by constructing tower structures such as Pekunden flat located at Jalan Pekunden, Pekunden village, district of Semarang. That is the first flat built in Semarang, even in the entire Central Java. The flat

consists of 5 (five) blocks of four-story building, which is three blocks parallel to the Semarang river and two blocks building perpendicular to the previous one. At the ground floor, all the buildings was used for public facility: small shops/stall in block A, parking lot in block B, C and D, multipurpose space available in block D and a common area (kitchen) located at block E. The first floor (level 2) to level 4 used for as a residence (unit per unit flat) with different types. In surrounding area of building is also provided playgrounds, both for children and adolescents as well as for adults. Lobby building units used to be placed on the inner side enabling orientation towards inside and to form a patio. The stairs of the building laid out such certain points to provide access equitably for the occupants.

Units in the sector Pekunden tower can be distinguished by total are based on the types available: 81, 54 and 27 m². Type 81 m² is composed of three bedrooms, living room, dining room, kitchen, and two bathrooms/WC (water closet). Type 54 consists of two bedrooms, living room, dining room, kitchen and a bathroom/WC. While type of 27 only consists of one bedroom, a bathroom/WC and a multipurpose space. These units are based on structural module Of 3.60 x 7.50 m². The types of other unit are a multiplication of the structural modules. The smallest one (type 27 m²) was obtained from simulation of a single module, two and three modules for types 54 and 81, respectively.

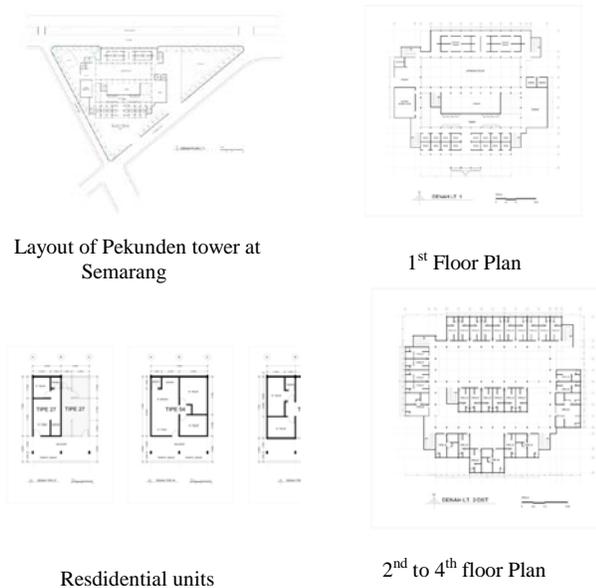


Fig. 2. Pekunden Tower at Semarang, Central Java.

A.3 Towers in Surabaya

Surabaya becomes a city along with the towers which had been built since the 1980s as a solution for various problems of urban residential. Some towers are built such as tower of Dupak Bangunrejo, Urip Sumoharjo towers, and Sombo Surabaya towers. The flat of Dupak Bangunrejo is a rental flat (Rusunawa) which built on state land of 0.35 ha.

Initially, the place was not habitable (slums) then it had been rejuvenated in the form of towers with 120 residential units in it. That was the government policy to address the problem of urban slums with development without displacing them. Urip Sumoharjo towers built in 1982 as a solution to 120 households as the victim after fire grounded of 3 ha. Initially, the flat considered of three blocks of four-storey building which each level provided 10 units (type 21) to include bathroom/WC and a balcony. Due to the flat considerably was not feasible, then rejuvenation has made in 2003. Participation approach by stakeholder, the towers was rebuilt with three blocks building consists of 124 units complete with multi-purpose building and a mosque. Sombo tower was built to solve the problem of existing slums on location of 1.9 ha. The existing residential was very poor condition in which 469 low-income households living with erratic income. This is the second flat towers in Surabaya city after Dupak Bangunrejo tower inaugurated on December 14, 1989.

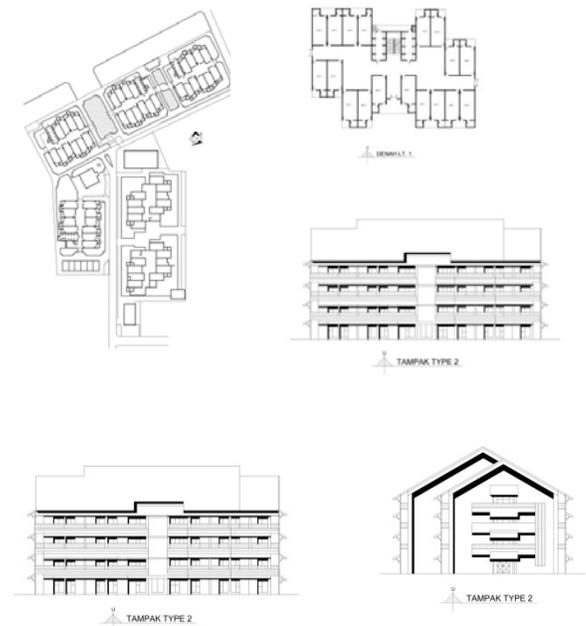


Fig. 3. Layout plan and elevation of Sombo building, Surabaya

A.4 Towers in Denpasar

Unlike the case of other major cities in Indonesia, cities in Bali are still remaining a little the presence of significant flat towers. It may be the only possible cause is that people's rejection of the towers in this region. Towers in this area were initiated by Police department in Bali which built towers in the 1990s. They built several towers located at Supratman Street, Diponegoro Street in Denpasar, and typical hostel tower for Brimob (police brigade) in Tohpati Denpasar-Gianyar, as well as in Klungkung regency. They actually want to build towers in all regency in Bali. However, due to limited budgets available, then they prioritize some. Since the 1990s, this institution has built a

few blocks square-shaped towers of eight with each block consisting of four floors. Each block has a different unit: types 36, 45, and 54. In 2015, this institution has some funding from the central government through the Ministry of Public Works and Public Housing (PUPERA) to construct towers. The aim is to solve problems such as limited land owned by police department, high price of land in the city of Denpasar, and very limited capacity of the dorms to accommodate people whom have to be garrisoned. Therefore, idea came up and tried to build a dormitory in the vertical direction so that the capacity of dormitory can be increased significantly.

Four floors flat/dormitory at Sanglah area consists of three unit block building with octagonal shape that has been built in the 1990s, and the other two is rectangular shape with three-story structure. Types of flat provided such as type 36 was built for 47 units, 35 units of type 45 and type 54 are 24 units. One octagonal-shape block at the ground floor used to be a public facility (parking lot and common room). Hostel for the local police in Sanglah located at Diponegoro Street, no 240, Dauh Puri Kelod Village, West Denpasar District, in Denpasar-Bali used the land of 512.74 m² from the total land area of 9,500 m² available as use rights status. While the hostel towers for Police Department in Bali built in Klungkung consists of type 36 for 48 units was supported by the Ministry of PUPERA in 2015. Dormitory-shaped flat towers of brigade Polda Bali is located in Gianyar Tohpati was also contribution of the Minister PUPERA which was built in 2013 by spending at about 9 Billion Rupiah. This is part of a national scheme for housing program to reduce the gap of existing housing. Ministry of Housing (PUPERA) in 2013 allocated funding of 1.8 Trillion Rupiah for providing housing throughout Indonesia for various institutions that need the facilities such as: government agencies, private sector as well as a college for student dormitory.



Tower for Police Department in Sanglah



Tower for Police Department in Sanglah



Tower for Police Department in Tohpati



Tower for Police Department in Tohpati



Tower for Police Department in WR Supratman



Tower for Police Department in WR Supratman

Fig. 4. Circumstances of towers for Police Department in Bali

B. Typology of towers in Indonesia

Result of observation and study of literature, it can be found that there are various typologies of flat towers in Indonesia. In terms of ownership, there are at least two types of flat towers: rented and private property. Rental flats used to be owned by the government, generally a relatively simple flat is intended for low-income communities (MBR) and it used to be built on state land. These residential units are varying greatly depending cities and local government policy which is generally provided subsidies to residents. On the other hand, the property right owned for flats occupants generally has use rights that can be extended further in accordance with agreements and regulations. The term of right generally used to use it in the range of twenty years.

In terms of the development, flat towers have built by several stakeholders to include: the government, developers/private sector, cooperative sector, state company, etc. The government is generally represented by the ministries of Public Works and Housing, PUPERA, either represented by local governments or joints venture among them. Several government agencies such as the police department obtain assistance from the ministry PUPERA for tower constructions. Police members who live in the flats have to pay the rent as a retribution which the payment based on their own institution regulation. On the other hand, private company/developers used to build towers for middle to high class of society tent to have flat property as known as the apartment which the flat is majority with owned status (strata title). Even though it is still rare, the cooperative agency also built housing in the form of either regular houses or flats. The state company who built towers more often is Perumnas since the New Order (*Orde Baru*) era, this institution commissioned to build housing in the whole country (Indonesia). In some big cities in Indonesia, Perumnas built many towers for the MBR.

In terms of construction, flat towers are typically more than four to five floors using stair for vertical transportation system. There is no lift facility for typical simple towers for vertical movement. Ground floor of this flats used for public interaction such as for business, public facilities (office manager, multipurpose room, playroom, parking, etc.), the rest (entire floor) uses for dwelling unit. Every tower used to have a manager to include structural organization in accordance with the needs. Typically, dwelling unit used to

be small type of flat in the range of 18 to 21 m², and intermediate type are 36 to 45 m², and the large type are 54 to 72 m². The large one is generally belong to the government agency which is designated for the member who has higher position/higher ranking officer. By design, the towers in Indonesia used to adopt two design models: the interior corridor (single loaded or loaded corridor double) and exterior corridor. Tower model or multi-tower is generally an apartment model for middle up to upper class.

C. *Behaviour and adaptation of occupant within the towers in Indonesia*

The majority of the tower inhabitants in Indonesia are migrants who used to come to the city for various reasons and they worked in various sectors, especially of informal worker. Generally, they use the flat towers to be a residential only and a tiny portion using the towers for business settlement. Most of the time, the occupant used to spend outdoors. Nevertheless, a strong relationship and kinship can also be formed within the flat environment. The tower community feels kinship or feel at the same boat and they have various social activities including religious activities. Social organization units have been formed to accommodate the needs of occupants. The design and condition of the towers has limited space, very crowded situation made them to be sensitive occupants and more tolerant of each other.

Adjacent residential units with high tension within the crowd used to provide friction, misunderstandings and problems of living together. The occupants tried to maintain the harmony of life and to keep and respect the privacy of each other. They avoided interfering among each other and sometime they have to sacrifice privacy standards which they need. That is the adaptation mechanisms of occupant within the flat/apartment to get a balance between the needs and realities. Such problems may be occurred for some time, but they assume to be still in normal level and there is nothing too serious. Therefore, they generally feel comfortable to stay in the flat. Occupants used to have adjustments for the space available especially for flexible dwelling units. They used to provide insulation to get more room or a cubicle depends on their needs. That is also an important dynamics mechanism of occupant within the towers in Indonesia which was to be realized of the very diverse needs of residents, therefore the flat could not have to be designed uniformly. Nevertheless, the majority of occupants used to have adjustment for the space needs, even though for most of the units of flat towers are designed permanently.

IV. CONCLUSION

Various typologies of towers in Indonesia indicate that there are a wide variety of housing issues which are unique to each region and institution. Therefore, there are many

efforts and variety of the most appropriate solutions to solve the problem. Housing problem cannot be considered to be a uniform and the development of flat has to be designed in accordance with the circumstances, conditions and context, both in terms of tenure status and type of unit, facilities, organization, number of floors, number of units, etc. Urban communities in Indonesia can live comfortably and relatively more feasible in the flat compared with the previous (existing) residence. They can adapt and adjust to live in the house vertically, away from the ground [6]. There is no significant issue experienced by occupants of the flat. Social activities of the occupant go well and increased the relationship of the residents and improve their tolerance. Social organizations of occupants also play an important role in increasing comfort ability of staying in the flat. By considering of relatively limited spaces and environment of towers, the residents have to use a little bit lower standard of privacy they get. In terms of attitude of residents, they also have to promote tolerance to one another to avoid conflicts. If any conflict occurs then they solved the issue very well soon. Various physical adjustment mechanisms were done by the occupants in order to have some space with some division of residential units to meet their needs. There are intervening the spaces to get more for bed room, the living room or family room, a small shop in the house, and so on [7], [8], [9]. There also are placing potted plants on the patio or balcony that residence was cooler / green.

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