Friendly vertical housing: case of walk-up flat housing development in Yogyakarta

Deva Fosterharoldas Swasto
Department of Architecture and Planning, Faculty of Engineering, Universitas Gadjah Mada, Yogyakarta, Indonesia

E-mail: devafswasto@ugm.ac.id and devafswasto@yahoo.com

Abstract. In Yogyakarta Province, the local government have developed walk-up flats housing for more than ten years since the mid of the 2000s. Yogyakarta City and Sleman Regency was pioneering the construction with some blocks of flats in several locations. However, after this period, there is limited evaluation about the effectiveness of the occupancy. One of the issues is related to the sustainable housing development. Concerning this situation, it is proposed to examine how the development of walk-up flats housing in Yogyakarta City and Sleman Regency can be evaluated based on specific housing indicator, as a part of sustainable housing development concept. This paper would like to explore the phenomenon on how ‘friendly’ the flats is. The researcher will qualitatively assess variables from the walk-up flat cases in Yogyakarta City and Sleman Regency. The results suggested that the physical quality of the vertical housing situation could be enhanced to meet residents’ satisfaction.

Keywords: sustainable housing development, friendly vertical housing, walk-up flats, Yogyakarta City, Sleman Regency

1. Introduction
The national government of Indonesia has built walk-up flat housing in many cities, which started in the 1980s, and then delivered the units in large-scale in the 1990s and 2000s. The authority developed this type of vertical building as an alternative solution for particularly urban low-income people. There are two types of walk-up flat housing in Indonesia in general. First, flat to relocate people that are within the framework of urban renewal concept. Secondly, flat to add housing stocks or usually to house low-income group in general.

In Yogyakarta Province, the local government has developed walk-up flats for more than ten years. They were Yogyakarta City and Sleman Regency that initially constructed a number of blocks of flats in the mid of 2000s. The buildings were built along the Code riverbank in Yogyakarta City, while in Sleman Regency, are erected on village owned land. During these years, there is significant growth of walk-up buildings from around 20 twin blocks in 2011 to around 60 as reported by the Department of Public Works of Yogyakarta Province (2016). These numbers include dormitories or walk-up flats for the student, flats for the national army or police officer (TNI/POLRI) and flats for the general low-income group.

The Law No. 20/2011 describes walk-up flat housing as a multi-storey building, which consists of a number of units. These rooms functions in both horizontal and vertical structures. The residents may own or rent and live separately in the units since the buildings come with land and infrastructure that is
shared among the owners or renters. In general, walk-up flat housing in Indonesia has the maximum height of 4 to 5 floors (sometimes until 6), based on the concern of not having vertical movement equipment except stairs (Swasto, 2012). The authority arranged the absence of lift or elevator to press the tight budget.

Although the walk-up flat has several positive sides, the authority reported that not all parts of the community want to live in this housing unit in later developments. Most people still prefer to live in landed houses for various psychological, social and cultural reasons. Arguably, they still want to live in a low-rise building or landed house that directly connects to the ground or garden to grow crops, nurtures pets, to play with kids, and socialize (Yudohusodo et al., 1991: 351-353; Kusno, 2012). In addition, they need to live to be close to the yard surrounding the house. They do not like also to engage too much by several rules that apply for living in the flats.

In 2008-2010, based on research to several flat cases in Yogyakarta, the community, both the residents and the surrounding, relatively have no difficulty in adapting their habits when shifting their daily life experience from a landed house or horizontal situation to vertical housing or walk-up flat (Swasto, 2010). However, after this period there is limited evaluation about the effectiveness of the occupancy, in which one of the issues is related to the sustainable housing development. Therefore, the development of walk-up housing in Yogyakarta City and Sleman Regency is proposed to be examined and evaluated based on ‘friendly housing indicator.’ Several concept indicators are related to living convenience (or physical aspect), environmental impact to surrounding (or environment concern) and the effect of the flat to the resident and surrounding people (socio-economic influence).

2. Research Method

This paper would like to explore the phenomenon on how friendly the vertical housing is. The researcher assessed the variables from the walk-up flats in Yogyakarta City and Sleman Regency. The focus on these locations was based on their length of occupancy that is the earliest among other regencies. The cases are Cokrodirjan (or Code), Jogoyudan (or Gowongan) and Juminahan (or Tegalpanggung) flat in Yogyakarta City, and Gemawang, Mranggen and Dabag (or Seturan) flat in Sleman Regency.

The researcher conducted the study through qualitative approach, supported by 52 questionnaires to the residents. The researcher carried out in-depth interview to the residents of walk-up flats as well as to surrounding communities. Keywords or issues from people’ responses were then converted to find themes or sub-themes to assess the indicators. There were three aspects of assessment, which were: (1) evaluation of flat facility, (2) adaptation of living in flat, and (3) other comments. The research was not distinguishing the result in detail based on respective walk-up flats area, but merge it to demonstrate general situation. In the end, this paper is expanded from the research by Swasto (2016 and 2017), in terms of updated data and new findings related to friendly housing issues.

3. Conceptual Framework

3.1. Vertical living concept and walk-up flat

As argued by authors (Towers, 2000; Yuen and Yeh, eds., 2011; Chiu, 2013), the term vertical housing can best be replaced with multi-storey or high-rise building. Towers (2000) explained that this type of building, as a housing policy approach by the government, has an inter-related history with slum clearance, mainly in Europe. In Indonesia, the walk-up flat is delivered for housing urban low-income people in particular. The concept is also related to slum clearance or urban renewal. Authors (Chandler, Clancy, et al., eds., 2010: 67 and 95; Chen, Stephens, et al., eds., 2013) categorized walk-up flat as a low-rise housing based on specific criteria. Moreover, they stated that this type of housing has advantage because it is efficient, flexible and becomes a livable solution for families as well as attractive to singles and empty nesters (since it saves expense for daily maintenance, compared to a single or freestanding house). Also, this type may support a good transition from less to more dense
housing types in mixed-type housing communities since it is built tightly together, saves efficient land use, allows higher densities and preserves open space.

The basic concept of vertical housing policy is to place people (usually) from low-rise or landed condition into a vertical situation. With regards to slum clearance circumstances, the created idle or vacant space after removing overcrowded buildings can be utilized as a green or open space. There are several assumed consequences upon the implementation of vertical housing approaches, such as the change of dwellers’ behavior or habits, impact/implication to surrounding environment, change of land value and others (Towers, 2000). People categorized these conditions into physical, social and economic impact.

3.2. Adaptation and adjustment

Berry (1976) stated that the term of adaptation means a relationship between behavior changes with the environment. He said further that this situation usually leads to a reduction of dissonance in a system to enhance the harmony. Bell (2001) mentioned that the process of suiting environmental conditions on the individual is known as adjustment. Here, a person tries to change his physical environment. Conversely, sometimes a person changes his behavior to suit with circumstance conditions. Authors called this suitability process between the individual and his environment as adaptation.

Furthermore, Berry (1976) stated that there are three types of adaptation taken by individuals as the mechanism to reduce dissonance. First, adaptation by adjustment. This is an action to reduce conflict by doing self-adjusting. People conduct this action to achieve harmony with the environment. Second, adaptation by reaction. Persons make changes to the physical environment in order to enhance their environments. The last type is adaptation by withdrawal that is an action by moving to another place to reduce environmental pressures.

4. Contextual Setting

Yogyakarta Special Province has an area with size about 3,185.80 km², which is inhabited by more or less than 3 million people in greater Yogyakarta (2016). It consists of five cities and regencies, namely Yogyakarta City, Sleman Regency, Kulon Progo Regency, Bantul Regency and Gunung Kidul Regency. Yogyakarta City is one of the main cities in Indonesia (particularly in Java Island), in which the urban-rural situation blended in (urban) kampong situation. The land limitation, particularly in the city centre, causes the expanded development to the surrounding regencies and a vertical situation.

Until 2012, the authority had built 26 flats and distributed in the city and regencies. The total number of the unit is 2,306, in which one building (twin block) usually consist of 68-96 room respectively. In 2016, the authority recorded the number of flats around 60s, including student dormitory and army
officer buildings. In general, these housings are dedicated for low-income people and formerly being a part of upgrading or renewal program. The Ministry of Public Works and the Ministry of Public Housing have developed all of the buildings.

### Table 1. Data of Walk-up Flat in Special Province of Yogyakarta in the Year 2011 and 2016, based on Regency or City.

| No | Location                | 2011 | 2016   |
|----|-------------------------|------|--------|
| 1  | Yogyakarta City         | 6    | 524    |
| 2  | Sleman Regency          | 12   | 1132   |
| 3  | Bantul Regency          | 6    | 554    |
| 4  | Kulonprogo Regency      | 2    | 96     |
| 5  | Gunungkidul             | 0    | 0      |

Source: the Local Department of Public Works, Special Province of Yogyakarta, 2011 and 2016

### 5. Analysis and Discussion

#### 5.1. Flat facility assessment and physical-environmental impact

From the questionnaires collected by the Department of Public Works of Special Province of Yogyakarta (2016), the researcher found that 80% of the water provision in the flats of the case studies was not appropriate. On the contrary, the electricity supply was 80% sufficient, similarly to the condition of sanitation, drainage, waste disposal and road network. This data means that, except water supply condition, the physical facilities are relatively good.

In addition to above analysis, most of the residents said that they are happy to live in the walk-up flat (Swast, 2016). Living in walk-up flat, as they said, has many benefits compare to their situation before in a landed houses. The relocated people mentioned that their room is better, livable, secure, safe, comfortable, and convenient. Furthermore, they stated that the completed facility is one the main positive factors. The social and public spaces, sports yard, and parking area are among the new facilities that they did not have in the past. There are also completed equipments within the unit, such as the bedroom, kitchen, bathroom, corridor and an outdoor terrace for drying area.

The residents also gave similar main issues to the above finding by the department of public works, which were the bad water quality and imperfect completion of the building. For the walk-up flat building located near the Code river (in the case of the three walk-up flats in Yogyakarta City), the water quality is muddy and undrinkable. Therefore, the residents have to supply themselves with water from surrounding wells for daily use or to buy mineral bottles. In terms of building condition, the finishing is not perfect since there are leakages in some parts or units.

With regards to a non-physical aspect, the respondents said that the rent is inexpensive and the location is quite strategic or can be simply accessed (Swast, 2016). The researcher found that most of the residents provided positive assessment on this aspect. Conversely, they mentioned that the six years temporary tenancy is relatively too short. They further stated that there is no follow-on housing as the alternative accommodation like owned walk-up flat (rusunami). There is an aspiration to extend the rental period or to have other lodgings.

The surrounding communities stated relatively neutral to positive remarks, which were parallel to residents’ perspective, in terms of physical-environmental impact. They said that one of the positive impacts is the infrastructure improvement like local road and drainage network. One of the concerns is that the noise was too disturbing during the construction due to the close site location. The surrounding community added a different assessment in a non-physical aspect. They stated that the impact is relatively minimal, although some people said that their location is now denser.
Table 2. Questionnaire related to overall experience.

| Question                  | Yogyakarta City (30 people) | Sleman Regency (22 people) | Percentage (%) |
|---------------------------|-----------------------------|----------------------------|----------------|
| Better Quality            | Yes                         | 43                         | 64             |
|                           | No                          | 3                          | 5              |
|                           | So-so                       | 43                         | 32             |
|                           | n/a (not answered)          | 10                         | 0              |
| Want to move out          | Yes                         | 10                         | 68             |
|                           | No                          | 80                         | 32             |
|                           | n/a (not answered)          | 10                         | 0              |
| Overall assessment        | Good                        | 40                         | 45             |
|                           | Just enough                 | 47                         | 45             |
|                           | Bad                         | 0                          | 5              |
|                           | n/a (not answered)          | 13                         | 5              |

Source: Swasto, 2016; survey 2016

The quantitative questionnaires illustrated parallel result to qualitative interview. Most residents provided range of fair to good review for the facilities condition, which means positive assessment. The concern is water supply and flood risk that become negative impacts. In addition, many surrounding people stated neutral opinion with regards to this physical-environmental issue. Most of them declared that the condition after the building completion is similar compared to the existing. There is neutral assessment of health, convenience and security. This means that the physical assessment of the building and surrounding is relatively fine or friendly.

5.2. Adaptation for living in flat and social-economic impact

The data from the Department of Public Works of Special Province of Yogyakarta (2016) mentioned that 80% of the green open space was not sufficient. However, in general, the residents of walk-up flat gave opinion that they face no difficulty in shifting their experience from horizontal to vertical living (Swasto, 2016). It means that despite the lack of open spaces, the residents may adapt to live socially with their neighbors. They stated that living in the flat has no difference with regards to their earlier landed house. Although there are new norms and social conditions in the vertical building, the occupants demonstrated that they were able to adjust their life despite many limitations. Swasto (2010) suggested that there were many actions of this adjustment within limited space, such as expanding the unit, dividing the room, creating social space, and utilizing open space. He considered these as a creative effort.

Furthermore, Swasto (2016) stated that the residents has also no difficulty to interrelate themselves to the surrounding people. He suggested that persons in the flat could still conduct social harmony. However, the neighbors said that the social bond is dynamic compared to the former condition. They mentioned that the interaction is better than today situation due to an extensive connection. In summary, the social relations is excellent.
Table 3. Questionnaire related to social situation.

| Question          | Response | Percentage (%) | Yogyakarta City (30 people) | Sleman Regency (22 people) |
|-------------------|----------|----------------|----------------------------|----------------------------|
| Adaptation        | Easy     | 47             | 41                         |                            |
|                   | Difficult| 0              | 0                          |                            |
|                   | n/a (not answered) | 53            | 59                         |                            |
| Problem in flats  | Yes      | 30             | 18                         |                            |
|                   | No       | 50             | 45                         |                            |
|                   | n/a (not answered) | 20            | 36                         |                            |
| Socialization     | Good     | 47             | 50                         |                            |
|                   | Just enough | 23            | 23                         |                            |
|                   | Bad      | 10             | 14                         |                            |
|                   | n/a (not answered) | 20            | 14                         |                            |

Source: Swasto, 2016; survey 2016

Similar to physical-environmental aspect, the quantitative questionnaires of social-economic impact illustrated analogous result to qualitative interview. Most residents said that they do not have trouble to adapt to live in the flat, which means also positive assessment. The occupants form community association (paguyuban) and conduct regular meeting. However, the situation is dynamic due to not all of the residents participate actively. One of the reasons is the temporary situation of renting. Furthermore, the surrounding people provided neutral opinion that the situation is just usual after the building completion. Some people mentioned that there is an economic opportunity due to a more potential customer who are the flat residents. This means that the social-economic assessment of the building and surrounding is well or friendly.

5.3. Other comments

Beside above assessments, there are also issues related to the friendliness of the flat building as raised by the residents of walk-up flat and supported by the surrounding communities’ opinion. Those issues are as follows.

5.3.1. Aspiration to live in landed house in the future. Although most residents said that they ‘enjoy’ living in the walk-up flat, they mentioned that dwelling in vertical housing is just a temporary situation (Swasto, 2016). They are aware that they cannot live there too long or even forever regarding renting condition and the need to raise children when they grow up. The residents know that one day they have to move out, in which therefore they have to prepare for that by at least doing the saving, building a small house in somewhere else, or looking for follow-on contract house. Furthermore, there was at least one person in every flat who organize him/herself to move out, considering one of the above reasons.

5.3.2. Compatibility and flexibility of the building. Swasto (2016) suggested that the residents principally might adapt or adjust to their circumstances when moving to the flats. However, the characteristic of the residents is various regarding the related occupation. Some of the residents said that they also have to shift their existing job since living in the vertical building means that there is a limitation in conducting preceding work habit. For the resident who has previously worked as a service provider such as a tailor, he/she cannot open their home based enterprise as formerly happens. Residents who work as a trader with a mobile chart or as food stall seller will then have difficulty in continuing their business since the unit space has limitation to store their goods and other necessary equipment. Conversely, the neighbors stated that this constraint becomes an economic prospect. They can provide alternative daily goods that the residents cannot supply themselves.
6. Conclusion and Recommendation

The walk up flats in Yogyakarta City and Sleman Regency is friendly enough. Although the authority has not delivered the building perfectly, most of the residents provided positive remarks on physical and social aspects. Although living in a vertical situation is different to landed situation, the residents are keen to live in the flat. The indicators are the willingness to continue renting after the temporary period, the convenience reaction as demonstrated on the daily life, and the safety and security feeling as mentioned in the interview. One of the flat’s positive factors is the cheap rent and strategic position.

Most of the residents still enjoy living in the flats despite imperfect delivery and different circumstances. They stated that there is no difficult adaptation. Swasto (2016) stated that this effort is carried out by reshaping social value in relatively new space or environment. Since the occupants have a new neighbor and experience different social norms, they then have to live in harmony and social tolerance, by creating new community association within walk-up flat, new (appointed) social space, and new social interaction within a friendly atmosphere.

This paper suggested further research on follow-on housing, study on different flat location (such as in oceanic location) and exploration towards cost-benefit measurement of living in the higher building compared to landed situation.

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