PERCEPTION OF LIVING IN LOW-INCOME HOUSING CASE STUDY: PETOGOGAN ROW HOUSES

Ristya Arinta Safitri Department of Architecture, FTSP, Universitas Trisakti email: ristya.arinta@trisakti.ac.id

ABSTRACT

Indonesia has backlog issue against landed houses. While the needs of houses increase every year, land availability decreases in cities that causes landed house prices become unaffordable. One of the solutions offered by the government is RISHA (Rumah Instan Sederhana Sehat) or a simple design innovation of healthy house especially for low-income family. One of its successful projects was Petogogan Row Houses. However, after few years of occupancy the occupants perceive that there are some things which are considered incompatible with the rooms they inhabit. The qualitative approach applied in this study is to uncover the occupants' perception of the post occupancy of RISHA row houses. Through this research it was found that things that are considered inappropriate by occupants are caused by (1) the furniture (non-fixed elements) capacity exceeds the RISHA room standard; (2) the physical elements (fixed-elements) of walls and ceilings set by RISHA do not provide possibilities for occupants to install non-fixed elements; (3) inadequacy of indoor natural light capacity related to the improper occupants' considerations.

Keywords: RISHA row houses, occupants' perception, room physical elements.

INTRODUCTION

In Indonesia, the needs for landed houses has raised to 2% every year. In the late 2017, the sales of landed houses have reached 5.636 or equals to 7,1 trillion rupiah. It is estimated, therefore, that in 2020, the needs for landed houses will reach 31 million units. The data indicated that Indonesians prefer landed houses than the high-rise ones. This situation is in contrary with that of the land availability in most Indonesian cities. The Ministry of Public Works and Public Housing recorded that there is a backlog issue towards the housing needs. Therefore, an effort to fulfil the needs for the community has to be rapidly constructed with high quality housing. Housing provision needs to also consider the user, health, comfort, and financial needs.

RISHA is a simple design innovation of healthy house that is quickly produced. It should be constructed in the form of compact component and modular size with a knock-down system. It is believed that RISHA will be able to resolve the housing needs and the raising price issues in Indonesia. One of the RISHA housing projects in Jakarta is located at Petogogan Row Houses Kebayoran Baru, South Jakarta. Petogogan Row Houses used to be a slum settlement in the middle of Jakarta Area. DKI Jakarta's Governor, Joko Widodo, reconstructed Petogogan Row Houses into a healthy and comfort settlement in 2014.

(Kannes, 2015) through his research reveals that RISHA has fulfilled the legal requirements of liveable public house although it has not been stipulated in the Housing and Settlement Law. Further, Kamajaya, et.al (n.d.) states that houses applying RISHA system can save 50%-60% of volume and development cost compared to that of conventional system. Therefore, RISHA structural system is calculated to be more appropriate and efficient. **LivaS**: International Journal on Livable Space Ristya Arinta Safitri

Petogogan Row Houses applies а combined top-down and community participation approach in the planning process. The process involves community trust and commitment, leadership, and government control (Qisthi, 2017). Olivia Yuni Rahayu; Popi Puspitasari; and Indartoyo Indartoyo (2016) conducted study in Petogogan Row Houses applying quantitative and qualitative method reveal that the culture of inhabiting maintains the occupying space in which the occupants arrange the space by the concept of 'nearly adequate.' The occupants arrange the spaces in a more flexible and economic way because they need to accept and appreciate the government aids sincerely. Fulfilment of housing needs for low-income community is a common problem that has to be solved especially in developing countries. Yougin (2013) discovers through his research that uncertainty of providing low-income housing in China is related to three issues, i.e.: the failure of the central government to carry out its mission, the lack of local government commitment and exclusive policies towards migrants.

Rent (1978) states that satisfaction of lowmiddle-class dwellers in several locations in South Carolina is related to reasons, such as, the ownership of permanent residence and living in a single-family unit which promote to a more positive life orientation. Occupant's satisfaction is not related to the length of stay at the new or old location. Further, Olivia Yuni Rahayu; Popi Puspitasari; and Indartovo Indartovo, (2016) support the opinion through their research at Petogogan Row House Kebayoran Baru, South Jakarta, in which the occupants stated that the most important for them was the ownership of the house. While the insufficient space area can be overcome by using flexible and multifunctional way. In line with that, Rohe, William & Stegman, (1994) discover that home ownership has an effect on increasing life satisfaction, while housing conditions affect self-esteem and life satisfaction.

Referring to the above findings, it is suggested to conduct further research of Olivia Yuni Rahayu; Popi Puspitasari; and Indartoyo (2016) on post-occupancy based on occupants' perception about issues such as, fixed, semi-fixed, and nonfixed of interior elements that are considered uncomfortable.

THEORITICAL REVIEW

RISHA as a form of engineering technology uses reinforced concrete that doesn't consume lots of natural materials. This kind of technology focuses on the construction of simple healthy house. The dwelling is directed to low-income people. to refugees, to people who are in emergency situation, and to those who need non-permanent buildings. RISHA is an excellent technology because it exhibits several factors such as, simple, durable. and fast. flexible. strona. environmentally friendly. (http://eproduklitbang.pu.go.id/risha/retriev ed on13/1/2019). It is believed that RISHA technology can overcome the problem of low-income families towards the high-cost of residential land. The technology covers building structures (columns, beams, and floor plates) and non-structural elements such as walls and floors. The panels on RISHA can be strengthened by mixing them up with cast concrete so the installation can be easily constructed by builder.

According to Frick, Heinz; Mulyani; Hesti, (2006) a house needs to ensure the interest of a family to grow, dwell, and provide pleasure, happiness, and comfort to all the family members. Furthermore, Ching (2007) highlights that in designing and arranging spaces, designer needs to consider the basic needs of the occupants to improve the quality of life by enhancing the function and aesthetic so as to increase the psychological comfort.

There are two elements which affect the interior space, i.e. enclosure elements and furniture. Enclosure is actually a room boundary (Ching, 2007). Enclosure in building comprises walls, roofs, ceilings, and lighting or opening. These components can create a sense of comfort, safe, and quite for the occupants.

Whereas furniture elements are entity that support the occupants' activities. The furniture used inside must be in accordance with the scale of the space so it doesn't hinder people movement.

The activities inside the house are in line with the basic human needs. The basic needs according to Maslow's Hierarchv include: psychological needs, Theory security and protection, compassion, self-actualization appreciation and (Maslow, 1943). In meeting their needs, people modify their environment within three main elements, such as, fixed (elements that cannot be changed), semifixed (elements that complement which can sometimes be changed), and nonfixed (elements that can be changed based on the activities and behaviour of the residents (Rapoport, 2005: 24).

METHODS

This is a qualitative study employing observation, interview, and focus group discussion with the occupants of Petogogan Row Houses as data collection methods. The population covered 230 families resided in Petogogan Row Houses and random sampling was used by considering the number of furniture, the number of occupants, and the function of the house (as a full residential space or coupled with a commercial space). In this study, the element of spatial planning that reduces residential comfort will he identified so that the qualitative method is appropriate for this type of study.

RESULT AND DISCUSSION

Context

The government built non-permanent houses into permanent healthy and comfort houses by employing RISHA technology. At that time, there were 230 families lived in this area and 137 of them occupied houses employed RISHA technology. There are three type of houses at Petogogan Row Houses, (1) the 36-type of house, (2) the 18-type of house, (3) the refurbished-type of house.





Source: Field observation, 2018

The 36-type is 3x6 meters of 2 floors, while the 18-type is 3x3 meters of 1 floor (figure 1 and 2).

The space design is based on Indonesia's National Standard (SNI) which highlights that a person should occupy a 9 squaremeter area with the assumption that four people can occupy a 36-type of house.

Existing structural enclosure elements at Petogogan Row Houses are those using RISHA technology in the form of panels which are arranged into walls, floors, columns, beams (the panels are then casted) and stairs. In the process of data collection, the RISHA panels are made flat so the protrusion appeared on the column only (figure 3). **LivaS**: International Journal on Livable Space Ristya Arinta Safitri



Figure 3. RISHA panels Source: RISHA Guideline, 2015

From the field observation, most of the residential at Petogogan Row Houses employs Maisonet-Type of RISHA house with 2-floor and a 3-meter distance between houses. This area was chosen as the focus of study for this was a high-density with small-land area. The object of study was the 36-type of house with 2 bedrooms, 1 bathroom, and 1 living room/guest room.

Findings

 (1) Inadequate space occupancy compared to the large numbers of goods/furniture

In residential areas, the protrusion column was instead used as a separator between activity areas (figure 4). Whereas the area under the stairs is used as storage and cooking are. Furniture as the interior element at the residential area is unavoidable because people require it to support their activities. The number of activities carried out in the house will affect the amount of furniture stored in the house.

Based on 50 sampling, it can be classified the type of furniture owned by each resident. Every house has to own cooking utensils and cutlery although RISHA house isn't equipped with a kitchen area. Instead, the area under the stairs and a small portion of cooking area on the residential terrace is used for the cooking area. There are 88% of the occupants have bedroom furniture, and the rest rely on mats to sleep. Surprisingly, 92% of the occupants have one or two big cabinets for storage both on the ground and upper floors (figure 4 and 5).

Based on the results of the interviews, almost all of the samples stated that they did not buy new furniture instead brought old ones to the new occupants. This becomes problem since the size of their previous occupants is larger than their current occupants at Petogogan Row Houses. This is coupled with the sense of ownership of unused goods such as, some decorative furniture (jars, ceramics, ornaments, flower vases, etc.) and other used clothes. The piling-up of furniture limits the movement of the occupants. In addition, some of the occupants utilize the



Figure 4. Cabinet in the house Source: Field observation, 2018



Figure 5. Merchandise stock Source: Field observation, 2018

space as the grocery store and loads it with merchandise stock which interfere the comfort of the occupants.

There are several points derived from the above findings in terms of problems faced by the occupants, i.e.: (a) decision making without considering the space area and the furniture size; (b) the decision making by considering the wider space of the previous dwelling without considering the capacity of the current dwelling that leads to the increasing sense of distress.

(2) The specified physical elements (fixed-elements) do not provide

possibilities for occupants to install non-fixed elements

The 30x30 white ceramics cover the floor elements to have a more spacious and cleaned area. Based on the interview, the occupants felt comfortable with the use of ceramic floor on the ground and upper floors. Whereas the wall element uses bricks without plastering which is difficult to exploit for damaging the material. In fact, the area can be used as a storage space by putting shelves and setting up the furniture (figure 6).



Figure 6. Coloum as room devider Source: Field observation, 2018

The floor-plate uses RISHA panels which limits the use of ceilings as decorative space because the use of massive panels complicates the installation of decorative elements such as additional lamps, fans, etc. The enclosure elements include openings, doors, windows, and any lighting aimed at providing the inhabiting experience to the occupants. This experience is related to the taste it creates, such as lack of lighting will create the feeling of narrow, dirty, and seedy about the house.

The above findings conclude that the border element of rooms does not regard the possibility of adding non-fixed element which is considered as inflexible

3) Inadequacy of indoor natural light capacity and improper occupants' considerations On the upper floor, the initial design of the house was constructed without separation. Some house-owners have installed the room dividers on the upper floor to become two or three rooms. The additional divider is non-permanent by using wood/plywood or curtain fabric. Yet, the natural lighting becomes obstructed with this separator, the closed parts to the opening are exposed but the rest becomes dark and stuffy.

Each house at Petogogan Row Houses has a similar opening; one front-door, twowindows at the ground floor, and twowindows are equipped with some grids at the upper floor (figure 7). The door is made of timber whilst the window is made of aluminum-frame.



Figure 7. Openings at the house Source: Field observation, 2018

The openings at every house performed well especially on the upper floor. During the day without using additional light, the house is still bright by natural lighting. Yet, the openings on the upper floor still carry the heat into the room so it feels hot during the day. On the ground floor, the openings actually carry enough light into the room, but a few rows of houses facing the boundary wall outside the village block the natural light so the inside space on the ground floor becomes less illuminated. **LivaS**: International Journal on Livable Space Ristya Arinta Safitri

In addition, some houses that were used as sampling applied dark colored on the wall so that the room appeared dark and narrow. This situation reduces the comfort of the occupants especially when the activities were conducted on the ground floor. It can be concluded therefore, that structural elements do not play significant role in reducing comfort to RISHA occupants.

The above findings conclude that: (a) the inadequacy of room lighting is related to the setting of room divider without considering the location of the light source; (b) the choice of colors does not support the adequacy of bright light in the room although RISHA design has considered the adequacy of light in each room.

CONCLUSION

Based on the above discussion, the elements that reduce the comfort of spatial planning in RISHA is related to the arrangement of fixed, semi-fixed, nonfixed elements. RISHA standardized elements need to facilitate the possible addition of non-fixed elements. The addition of semi-fixed and non-fixed elements by the occupants needs to be guided so that they are able to meet the requirements of healthy space and sufficient lighting.

It is suggested that the occupants need to select and reduce the furniture based on their actual needs. They also have to rearrange the residential space with furniture appropriate to the scale and dimension of the house so that the comfort of the occupants can be increased.

REFERENCES

- Ching, F. (2007). Architecture: Form, Space & Order,. John Wiley & Sons, Ltd.
- Frick, Heinz; Mulyani; Hesti. (2006). Arsitektur Ekologis. Yogyakarta: Kanisius.
- Kamajaya, Edgina; Budiyuwono, H. (n.d.). Penerapan Sistem Struktur Risha

pada Kampung Deret Petogogan, Jakarta (Universitas Katolik Parahyangan, Bandung). Retrieved from file:///C:/Users/POPI PUSPITASARI/AppData/Local/Packa ges/Microsoft.MicrosoftEdge_8wekyb 3d8bbwe/TempState/Downloads/4.-PENERAPAN-SISTEM-STRUKTUR-RISHA (1).pdf

- Kannes, F. Z. (2015). Kedudukan Rumah Instan Sederhana Sehat (Risha) Dikaitkan Dengan Peraturan Perundang-Undangan Terkait. Fakultas Hukum Universitas Padjadjaran Bandung.
- Maslow, A. H. (1943). *Hierarchy of Needs: A Theory of Human Motivation*. Toronto: York University.
- Olivia Yuni Rahayu; Popi Puspitasari; Indartoyo Indartoyo. (2016). The Concept of Space Inhabitation: "Nearly Adequate." *LivaS* -*International Journal on Livable Space, 1*, 29–38.
- Qisthi, R. P. (2017). Proses Perencanaan Kampung Deret Petogogan dengan Metode Peremajaan dan Teknologi Risha (Rumah Instant Sederhana Sehat) Berdasarkan Pendekatan Gabungan Top-Down dan Partisipasi Warga di Kelurahan Petogogan, Kota Jakarta Selatan. Universitas Gadjah Mada, Yogyakarta.
- Rapoport, A. (2005). *Culture Architecture and Design*. Chicago: Locke Science publishing Company, Inc.
- Rent, G. S. C. S. R. (1978). Low-Income Housing: Factors Related to Residential Satisfaction. *Environment and Behavior*.
- Rohe, William M & Stegman, M. A. (1994). The Effects of Homeownership: on the Self-Esteem, Perceived Control and Life Satisfaction of Low-Income People. *Journal of the American Planning Association*, 60(2).
- Youqin, H. (2013). Low-income Housing in Chinese Cities: Policies and Practices. *Cambridge University Press*, *212*, 941–964.

Vol. 04, No.1, February 2019: 16-21 Perception of Living in Low-Income Housing