Efforts of the occupant to change physical quality of residential unit through the change of building material at low cost flats in Jakarta

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Abstract. Low cost flats in Jakarta – Indonesia is provided by the government for low-income people in urban areas, in line with the program to redevelop or renew slum areas. Low cost flat is built with the minimum standard of building materials. The purpose of this study is to know efforts of the occupants to change of building materials at residential unit of low cost flats. The research was conducted by descriptive method at four of low cost housing in Jakarta: Rusuna Bendungan Hilir I, Rusuna Tambora IIIA, Rusuna Bidara Cina, and Rusuna Sukapura. The results showed that physical changes which happened in low cost flats are aesthetic (residence paint color change), or improvement of physical quality of residential unit (change of building material), become dominant aspects done by residents in four rusuna.

1. Introduction
Jakarta as a government city, centre of economy, and services city in Indonesia, is still the main destination of migrants from various regions to seek a better life and improve their welfare. Immigrants who come and stay in Jakarta - Indonesia are not as found among workers in an industrial society. They are immigrants from the suburbs or the countryside who have limited skills and economic capacity, as well as low levels of education, so that they become low-income people living in the city with rural culture. They also tend to have lower levels of income and more work in the informal sector, so most of them lack the ability to obtain a decent house or dwelling. They live crowded into the village area around of city centre [1,2].

In order to improve the quality of neighborhoods and city kampong which crowded and slum, as well as to increase providing habitable housing for low income people in Jakarta, the Government of the Special Capital Region (Daerah Khusus Ibukota [DKI]) Jakarta provided urban renewal program, redevelopment program, or low cost housing program (Rumah Susun Sederhana/Rusuna/simple flats/Low cost flats).

The construction of low cost flats that has been started since 1983 is still regarded as a new form of modern living room by low-income people in Jakarta. Low cost flats which provided by the government or the private sector is a form of vertical housing which adopts modern housing for urban society in the developed countries. It massively built and designed with typical form and limited area in dwelling unit. The low cost flats are built with the minimum standard of building materials.
Currently the residents who stay in low cost flats have been done the change of building materials at their housing unit (see figure 1).

![Figure 1](image)

**Figure 1.** The change of building materials at housing unit of low cast flats.

The purpose of this study is to know efforts of the occupants to change building materials at residential unit of low cost flats.

Based on the results of previous studies, people who live in public housing (low cost flats) in Indonesia do require adaptation and adjustment process [2]. Adaptation process is actions to change of nonphysical factors of inhabitants (norms and behavior). Adjustment process is actions that did not only the changes of nonphysical factors of inhabitants, but also changes the physical factors of their residential unit, in order to realize the house which expected the residents. The physical changes are depending on the level of residents satisfaction on their residential unit [3,4,5].

2. **Research methodology**
   The research was conducted by descriptive method through surveys and field observations at four of low cost flats in Jakarta. The population of this study is the earliest inhabitants who has owned dwelling unit, and stay in housing unit from the beginning until the time when the study was conducted.

The low cost flats (rusuna) which selected as the study cases are Rusuna Bendungan Hilir I in Central Jakarta, Rusuna Tambora IIIA in West Jakarta, Rusuna Bidara Cina in East Jakarta, and Rusuna Sukapura in North Jakarta.

The data were analyzed by descriptive approach to answer the research problem. Conclusion is prepared to answer questions about efforts of the occupants to change building materials at residential unit of low cost flats.

3. **Results and discussion**
   The results of the analysis on the four rusuna owned by Rusuna Bendungan Hilir 1, Rusuna Tambora IIIA, Rusuna Bidara Cina and Rusuna Sukapura, show that there are similarities and differences in the types of physical changes made by residents in four rusuna case studies. The following is a descriptive description of the types of physical changes found in the rusuna belonging to the study case.
In Rusuna Bendungan Hilir 1, the pattern of physical changes of residential unit (adjustment) that occur and dominant done by residents, that is by changing the color of residential wall paint (done on 46% of units), or change building materials (26% of units). The next aspect that also happened in adjustment process related with the residential function, which is to improve the function of units in the rusuna, which is done by residents by (1) changing the function of the existing room (done on 14% of units) in the form of exchanging the function of the existing room or increase its functionality in the same area, and (2) expand the residential unit to a larger extent the size of the room, or add new function to this expansion area (12% of units), (3) renovation wall / door / window as it is damaged, or due to the expansion of residential (only 2% of units). This indicates that in Rusuna Bendungan Hilir 1 more adjustment to improve the physical condition of the dwelling than the effort to make improvements (performance) function of the dwelling or the room.

In Rusuna Tambora IIIA, the pattern of physical changes of residential unit (adjustment) that occur and dominant done by occupants are changes in the quality of units, that is by changing the building material (done on 40% of units) or changing the color of residential walls (30 % of units). The next aspect that happened in adjustment process related with the function of the dwelling, which is to improve the function of existing dwelling. The efforts made by the occupants to change the performance of the function of the dwelling is by (1) changing the function of the existing room (done on 26.7% of the dwelling) in the form of exchanging the existing room function or redefining its function, (2) can be expanded the size of the room, or add new function to this expansion area. The second way is only done on 3.3% of units. This means that on Rusuna Tambora IIIA, more adjustments to improve the physical condition of the dwelling than the effort to make improvements (performance) function of the dwelling or the room.

In Rusuna Bidara Cina, the pattern of physical changes of residential unit (adjustment) that occur and dominant done by residents, that is by changing the building material (done on 46% of units), or change the color of residential wall paint (27% of units). The next aspect that also happened in adjustment process related with the function of the dwelling, which is to improve the function of residential unit in the rusuna, which is done by residents through (1) changing the function of the existing room (done on 14% of units) in the form of exchanging the function of the existing room or increase its functionality in the same area, and (2) expand the residential unit to a larger extent the size of the room, or add new function to this expansion area (12% of units); (3) renovation the wall / door / window as it is damaged, or due to the expansion of residential (only 1% of units). This shows that in Rusuna Bidara Cina, more adjustments to improve the physical condition of the dwelling than the effort to make improvements on aspects of residential function or room.

In Rusuna Sukapura, the changing physical pattern of the residential unit which is done dominant by the occupants is the change of residential quality by changing the color of the residential wall paint (43% of units), or changing the building material (35% of units). The next aspect of the adjustment process is related with the aspect of the function of the dwelling, which is to improve the function of the existing residential in the rusuna, which residents do by changing the function of the existing room (done on 22% of units) in the form of exchanging the existing room function or add function in the same area. No occupancy expansion or demolition of walls / doors /windows by residents. This shows that in Rusuna Sukapura, more are doing adjustments to improve the physical condition of the dwelling than efforts to make improvements in aspects of residential function.

The results of the analysis of physical changes in the four rusuna properties illustrate that the dominant physical changes occur in four rusuna is aesthetic (residential paint color change), or improvement of physical quality of residential units (changes in building materials). Both types of change can be categorized to aesthetical and physical adjustment. While the other three types of physical changes (functional change, expansion, wall / door / window renovation) are physical changes related to the fulfillment of the residential function in the rusuna, so it can be categorized as functional adjustment.
3. Conclusion

From the comparison between the types of physical changes made by residents in four rusuna owned, namely at Rusuna Bendungan Hilir 1, Rusuna Tambora IIIA, and Rusuna Bidara Cina, and Rusuna Sukapura, it can be seen that physical changes are aesthetic (residence paint color change), or improvement of physical quality of residential unit (change of building material), become dominant aspect which is done by residents in four rusuna. Meanwhile, from the aspect of physical changes that are functional, almost all activities included in the physical changes related to the functional aspects (changes in the function of space, the expansion of occupancy, the renovation of walls/doors/windows) is done in three rusuna (Rusuna Bendungan Hilir 1, Rusuna Tambora IIIA, Rusuna Bidara China). While at Rusuna Sukapura, only the change of the function of the room is done by the residents, while the activities of expansion of residential or demolition of the wall/door /almost not done by residents in Rusuna Sukapura.

The above description shows that residents of Rusuna Sukapura are more able to control themselves against physical changes in their dwelling. This can be controlled because there is a manager role assisted by the agency to oversee the changes that may or may not be made by residents in the flats. So far only physical changes related to aesthetics and improvement of the quality of residential (change of paint color of residence and changes in building materials), or changes in space function (replacement of space functions) that many residents do at Rusuna Sukapura.

References

[1] Bahri S 2005 Rumah susun sebagai bentuk budaya bermukim masyarakat modern Jurnal sistem teknik industri 6 97-102
[2] Nurdiani N 2012 Adjustment and self-help approach for improving housing unit quality in multi-storey housing Applied mechanics and materials 174-177 3463-3466
[3] Mohit M A, Ibrahim M, and Rashid Y R 2010 Assessment of residential satisfaction in newly designed public low-cost housing in Kuala Lumpur Malaysia Habitat International 34 18-27
[4] Awanyo L 2009 Meeting housing-space demand through in situ housing adjustments in the greater Accra metropolitan area Ghana Environment and Planning C: Government and Policy 27 302-318
[5] Sinai I 2001 Moving or improving: housing adjustment choice in Kumasi Ghana Housing Studies 16 97-114