Home industry area based on sustainable urban neighbourhood study case: SMEs industry area in Pulogadung Jakarta

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Abstract: As a developing country, SMEs (Small Medium Size Enterprises) has quite a role to improve the Indonesian economy. The government already gives opportunity to SMEs actors through some regulations, not only from financial access point of view but also regulations in providing the area to accommodate their activities. Jakarta has build a home industry area developed since 1981 named Pusat Industri Kerajinan Pulogadung (Craft Central Industry Pulogadung). Now, this area has been growing in line with the development of the city. It makes this Industry area surrounded by urban residential areas. This study is the result of a design scenario in one cluster of the CCI Pulogadung complex. This cluster is provided for home industry especially for SMEs leather industry. The design for this industrial cluster is not only must be in accordance with the vision and mission of the government but also should be suit with its surrounding environmental context. Therefore, the design is based on Sustainable Urban Neighborhood and the surrounding context that also focus on analyzing aspects: user, movement and land subdivision. The result of the study is expected create integrated industrial area between the whole existing industry area and the new cluster in harmoniously. As always become a point to achieved in community development as a part Sustainable Architecture.

Keywords: SMEs, home industry, sustainable urban neighbourhood, human settlement

1. Introduction
In fostering economic growth, the SMEs (Small Medium Size Enterprises) have a large contribution, especially in Indonesia, which has a status as a developing country. A positive contribution can move the wheels of the nation's economy and reduce the amount of unemployment and direct employment in the form of self-employment, micro-enterprises or small businesses. Referring to the Cooperative and SMEs Department’s data, the total value of Indonesia's Gross Domestic Product reaches Rp. 9,014,951.2 billion. In the SMEs sector contributed Rp. 5,440,007.9 billion or 60.34% of Indonesia's total GDP. Indonesia's MSME population reaches 57.9 million business units or 99.99% of the total business units in Indonesia, while the total workforce reaches 114.11 million people or 97.16% of all Indonesian workers [1]. The data shows that the role of SMEs in the Indonesian economy is very important in economic growth, employment and producing outputs that are useful for the community.

The Craft Central of Industry Pulogadung or known as PIK (Pusat Industri Kerajinan) Pulogadung is located in East Jakarta, precisely on Jalan Raya Penggilingan, Cakung Subdistrict, which was established by the Jakarta Government in 1981[2]. The purpose of this area (44 hectares)
as an activity area for SMEs to develop his business which fostered by the manager who facilitates the activities of SMEs. With an area of 44 hectares, around 23 hectares of land are still empty.

The SMEs activities in the Craft Industry Center itself is in the form of a handicraft industrial home, where residential and commercial activities become one unit. This is in accordance to the vision of the CCI Pulogadung manager that the area become the center of SMEs and also housing in an integrated settlement. The home industries are grouped into some blocks based on business sectors in the area. Initially, each existing business block was only designated by one type of business. However, in line with its development, other business sectors entered this Industry area. The types of businesses in the CCI Pulogadung area include garments, metals, leather and furniture. The increasing diversity of business ventures creates new difficulties because in the end their presence is mixed in one area. This condition is less favorable, besides the difficulty of fostering each business, but also in regulating visitors who only come to transact for one type of product.

The leather craftsmen association in Jakarta in collaboration with the Industrial and Settlement Environment Management Agency plans to establish a new zone which contains specifically for the leather craft industry. The home industry's leather zone is due to positive performance in this sector which has reached Rp. 7.62 trillion or quadrupled since 2017 [3].

2. Methodology
The design of this home industry area use reference from the housing design method written in the book Human Settlement Designing and Planning by CSIR Building Construction and Technology [4].

2.1 Collecting data
Observations and interviews are conducted to identifying user desires for both craft and residential activities. All of this information then used to support the design analysis.

2.2 Analysis
The data and information acquired are then classified according to the category used, then divided into several sections that are considered important. Data processing is linked between theory and design (home industry area - human settlement design - sustainable urban neighbors) to get comprehensive information.

3. Discussion
3.1 Analysis of Room Activity
Basically the analysis of space requirements is created from the patterns of activities. The pattern of activities that exist in the area consist of 2 activities: residential activities and work/commercial activities. From these activities, there are 3 users: residents, visitors and managers. From the activities of the three users, then used to determine a form space to meet the needs of each activities especially in category: residential and commercial activities.

3.2 Analysis of Movement Network
Activity of each user is very important on process movement networks analysis. Because the activities will present patterns of human movement and will affect social and economic activities. Movement analysis is also related to the concept of sustainable urban neighbourhood [5].
The entrance point is placed at the point where there is an intersection path in the area. This will make the penetration of movement from outside the site into the site. The area is designed to be pedestrian oriented which integrates the pedestrian path outside the area and the pedestrian path of the plan of home industry area. There are three movements that occur in the area, vehicular movement, pedestrian and both of them. These three movements were created consider not only to movement network but also the adjustment of sustainable urban neighbourhood idea. The existence of pedestrian oriented is to provide comfort in commercial and residential activities. Referring to the results of the analysis, which considers the distribution of raw materials for craftsmen, then a shared street is provided, where vehicles and pedestrians use the same road but are regulated so that vehicle speed (given traffic calm) is safe for pedestrians as well as user friendly.

In designing a home industry area, there are two main activities, namely residential and commercial activities. as the center of MSMEs, making many visitors will come to the home industry area. The number of visitors will make the circulation of residential activities and commercial activities potentially lead to circulation conflicts. To separate residential and commercial activities, a separate zone is made vertically, called a double deck. So that both residential and commercial activities can run together but do not interfere with each other including distribution channels for leather craft raw materials by utilizing the area under the double deck.
Double decks are used for residential activities so as not to interfere with commercial activities and the path of the distribution of raw materials for motorized vehicles that directly enter the home industry units. The separation of distribution channels is also expected to not interfere with commercial activities.

There is a movement of public transportation, namely buses. Making a bus stop will provide comfort for visitors and residents who want to use bus services. This bus stop is also connected to the vibrant street life area because it is a transition area in and out of the area.

3.3 Land Subdivision Analysis
In the land subdivision analysis, there are also other analyzes, namely, site assessment analysis, soft open space analysis, hard open space analysis and public facilities analysis in accordance with the book designing and planning human settlement made by CSIR construction and technology [4].
There are 4 types of land distribution patterns, namely, cluster patterns, grid patterns, cul de sac patterns, and loop patterns. In designing this home industry area, there are two aspects that must be considered, namely residential aspects and commercial aspects in determining the type of land distribution pattern. Grid pattern is the most appropriate pattern in this home industry because the pattern is felt to be most suitable in commercial areas so that all commercial units have an equality of location aspects where all of them get a good and strategic location. In designing this area, we also consider the extension of the area in the future, considering that there is still a large area of land around it. Therefore, it is provided a link between the area of the leather craft home industry with other home industry areas (future extension) by placing roads and soft open space as a transition area.

This industrial home area that was designed did not back up the development area so that it could be sustainable between one another. In general, there are three main zones in the home industry area: the home industry unit zone, the public facilities zone, and the service zone.

Locate separate public facilities with the home industry unit area so that the division of units for home industry can be optimized. Locate the parking area at the front to minimize the activities of motorized vehicles that enter the zone area of the home industry unit. The parking area is directly connected to the vibrant street life area and pedestrian lanes within the home industry unit zone.

Hard open space is also provided which functions as a community area that can be utilized for the leather craft community. This area is a kind of urban square [6], with utilization scenarios that are community activity, open air cinema, local market day and concert.
In this area, there are plenty of open spaces which can function as a social place, not only for visitors but also for residents in this leather craft home industry.

In the Land Subdivision Analysis, it also includes analysis of each of the home industry units. Each unit consists of two floors to separate residential and commercial activities. Between the residential and commercial activities there is a transition room in the form of a foyer.

The home industry unit has two orientations, the ground floor where it functions as a commercial space has an orientation facing the pedestrian path while the residential function has an orientation that faces the double deck as the orientation of the residential function.

4. Conclusion
The addition of space for leather craftsmen SMEs in the Pulogadung PIK (Craft Industry Center) area is answered with the results obtained in the design of this leather craft home industry area by applying the concept of sustainable urban neighborhood into the design.

The element of sustainable urban neighborhood is in accordance with the wishes of the manager of this area which wants to make the center area of UMKM and settlements an integrated and environmentally friendly mix area.

The results shown in the design are the results of three elements of the concept of sustainable urban neighborhood namely, walkability, affordability and community.

5. References
[1] Pulogadung Kementerian Perindustrian 2017 Informasi Umum Industri Kecil.
   Retrieved from
[2] Belarminus R 2016 *Menengok Perkampungan Industri Kecil di Pulogadung*. Retrieved from [https://megapolitan.kompas.com/read/2016/11/10/16121031/menengok.perkampungan.industri.kecil](https://megapolitan.kompas.com/read/2016/11/10/16121031/menengok.perkampungan.industri.kecil).

[3] Kemenperin 2017 *Investasi Industri Produk Kulit dan Alas Kaki Tembus Rp7,6 Triliun*. Retrieved from [http://ikta.kemenperin.go.id/2017/890/siaran-pers-kemenperin-investasi-industri-produk-kulit-dan-alas-kaki-tembus-rp76-triliun](http://ikta.kemenperin.go.id/2017/890/siaran-pers-kemenperin-investasi-industri-produk-kulit-dan-alas-kaki-tembus-rp76-triliun/).

[4] CSIR Building and Construction Technology 2000 *Humman Settlement Planning and Design*. Pretoria: CSIR Building and Construction Technology.

[5] Rudlin D 1999 *Sustainable Urban Neighbourhood*. Oxford: Plant a Tree.

[6] Lynch K 1990 *The Image of the City*. Massachusetts Twentieth Printime.