The application of threshold space concept on culinary center in Jakarta for sustainable architectural design

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Abstract. The Central Jakarta area is the largest contributor to retribution for DKI Jakarta, and most of its population expenditure is in the food sector. The need for a new culinary center that can become a new communal space for urban communities requires a design approach that supports the creation of sustainable architectural designs in terms of social aspects. The application of the concept of threshold space is done through qualitative design methods in designing culinary centers in Palmerah - Central Jakarta that provide and sell food and drinks. The design of this culinary center is expected to become a new communal space that functions as a recreational space and a space for social interaction that functions well. Threshold space concept was chosen to be applied in the design because it functions as a transition space that connects one function to another, so that integration between spaces is also well created.

Keywords: culinary center, social interaction, threshold space.

1. Introduction

One of the supporting sectors of Indonesia’s economic growth is from the business sector. According to the Head of the Central Statistics Bureau (BPS), Suhariyanto, all business fields in Indonesia have positive growth. The non-oil and gas industry are one of the contributors to regional retribution with an increase in growth from 4.8% in 2017 to 5.03% in 2018. Within the non-oil and gas sector there is the role of the food and beverage industry, which increased from 7.7% in 2017, to 12.7% in 2018. DKI Jakarta Province is the highest province that dominated 17.54% of the value of the Indonesian economy in 2017. The trade, food and beverage sector managed by Micro, Small and Medium Enterprises (MSMEs) in Jakarta is also one of the biggest contributors to retribution for DKI Jakarta Province. According to the publication of the 2016 Jakarta Provincial Economic Census by BPS, the percentage of MSMEs in DKI Jakarta reached 98.78% of the total number of businesses in DKI Jakarta. The trading business dominates the number of MSMEs with almost 37%, followed by the business of providing accommodation and the provision of food and beverages with the amount of 29%. The two sectors have the opportunity to absorb labor, which has absorbed more than 2.5 million workers. According to the 2018 DKI Jakarta Regional Statistics data, the Central Jakarta region is the administrative region with the highest contribution to Jakarta, which is around 24%. This is because the average monthly expenditure of the population in Central Jakarta is dominated by food and drinking needs. In addition, the largest number of MSMEs is also found in the Central Jakarta area [1].

The issue of sustainable development also concerns that the development must pay attention to ecological or environmental aspects, economic aspects and social aspects, then efforts to provide a
culinary center where architectural design can support sustainable development need to be developed and applied in building and environmental design.

One concept of spatial planning to create unity and good integration between spaces with various functions is to apply the Threshold Space concept. This concept has 6 parameters, namely [2]:

1. Delimitation
   Limitation on Threshold Space area that is open or closed.

2. Sequence
   The arrangement of space in the Threshold Space area can be passed by continuous circulation or not, space can be more free or direct.

3. Geometry
   The shape of the Threshold Space area that is designed must be easily recognizable, can be formally arranged or free and dynamic in shape.

4. Topography
   Threshold Space position can be embedded as an integrated part of the building, or be independent and stand alone.

5. Materiality
   Selection of materials used in the Threshold Space area. For example, the use of glass as a wall or boundary can provide an open atmosphere, because visitors in the outdoor space can look into the inner room. Another example is the selection of outdoor materials in transitional spaces, such as paving or vegetation that can provide information about the different spatial functions in the Threshold Space area.

6. Furnishing
   The use of furniture elements that function as ornaments or as part of the shape of space and its boundaries, which provide information on the different functions of the Threshold Space area.

![Figure 1. Concept diagram of the application of Threshold Space in architectural design.](image)
Some researchers and architectural designers explain and use the term Threshold Space to express "contact areas for life" or as social areas, to express "connections" or as connecting spaces and transition spaces [3, 4, 5, 6, 7].

The application of the Threshold Space concept in a culinary center can provide opportunities for the creation of sustainable architectural designs, namely architectural designs that meet ecological or environmental aspects, social aspects and economic aspects. How to apply the concept to the culinary center design in Jakarta that supports the realization of sustainable architectural design will be explained in the following study.

2. Methodology

The study of the application of the Threshold Space concept at a culinary center in Jakarta that supports the realization of sustainable architectural design was conducted using descriptive method. Collecting data was done through literature studies on Threshold Space concept theory, culinary center design standards including precedents from similar projects, and field observations at the site to be built, namely in Tanah Abang - Central Jakarta. The Central Jakarta administration area was chosen as the location of the culinary center development because it is the most influential region in economic domination in the city of Jakarta, especially in the food and beverage sales sector.

The analysis is carried out by observing the user aspects until the space program and the relationship between spaces are obtained, the environmental aspects are analyzed until the basic form of mass composition is obtained on the site, and the building aspect is carried out until the mass composition form is observed and applies the parameters of the Threshold Space concept.

3. Result and Discussion

The location chosen as the site for the Culinary Center is on Jalan Palmerah Utara, Tanah Abang District, Central Jakarta. The total land area is ± 4000 m². The selected site area is the trade, service and mixed sub zone area.

![Figure 2. Selected site that will be built culinary center.](image)

Space Program Analysis is done by looking at users (visitors, managers and employees) and their activities, as well as their space requirements. The result of the calculation of the space program is that...
the area in the building is 5391 m² including circulation in the building. After the space program is obtained, an analysis of spatial relations is carried out as well as the application of the Threshold Space concept at the culinary center. Following below is the table of spatial relations and zoning of space in buildings (see table 1).

**Table 1.** Relationship between spaces & zoning in the building.

| Spatial relations | Zoning in building |
|-------------------|--------------------|
|                   |                    |

Building Mass Development is carried out by following the parameters presented in the guidelines if the designer will apply the Threshold Space concept. Table 2 and table 3 provide an overview of the results of mass transformation analysis by considering the Threshold Space concept.

**Table 2.** The results of mass transformation analysis using the Threshold Space concept.

| Analysis of Mass Transformation |
|---------------------------------|
| 1. The basic shape of the mass adjusts the shape of the existing site, and determines the area that will become the Threshold Space. |
| 2. The middle area becomes the Threshold area, the shape that extends in the middle can be a transition area. |
| 3. The shape of the mass adjusts to the shape of the site and the conditions of the surrounding environment. |
4. Mass transformation by circulating around buildings aims to facilitate access to mobility and security within the site.

5. Transforming the masses by advancing the front of the building, to form an attractive and inviting main access point.

6. The shape of the building produced by applying the concept of Threshold Space (Delimitation, Topography, Materiality, and Furnishing, Sequence, Geometry).

Table 3. Results of zoning analysis of space in buildings.

| Zoning Analysis of Space |
|--------------------------|
| 1st floor                 |
| Zoning 1st floor is dominated by a restaurant and food court area specifically for MSMEs |

| 2nd Floor                 |
| Zoning 2nd floor is dominated by a rental and workshop area. |

| 3nd Floor                 |
| Zoning 3rd floor is dominated by restaurant and food court areas. |

| 4nd Floor                 |
| Zoning 4th floor is dominated by the fine dining restaurant & service area. |

The explanation above illustrates that the spaces in the culinary center are expected to be able to accommodate the needs of eating and drinking activities, which at the same time also function as culinary social and educational spaces, by applying threshold spaces as connecting spaces between one space and the space the other, or between one mass with another mass. This concept makes the building more open with the green space in the middle of the building that can function as a space for positive social interaction. Culinary center building design that uses the Threshold Space concept can support the realization of sustainable architectural design because it pays attention to the sustainability of ecological aspects, social aspects and economic aspects.
4. Conclusion
The development of the culinary center by applying the Threshold Space concept supports the government program to provide new communal space as a place for positive interaction, which is creative, as well as opportunities for new business opportunities for micro-small-medium entrepreneurs, and provide green space in the city center for help reduce the temperature of the region in urban environments.

Threshold space concept was chosen because it can place the transition space as a connecting room and green space as well as being an access point and social space for visitors without any gap or boundary between the end of the diverse characteristics and economic levels. Thus, the culinary center that applies the concept of threshold space can support the realization of sustainable architectural design.

5. References
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