Apartments with Organic Architecture Approach in Cilandak South Jakarta

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Abstract. Jakarta as the capital city of Indonesia has a high rate density of population. The city center, Central Jakarta has been overpopulated. The increased density continues to spread across Jakarta. A new center of activity in South Jakarta is known as the Simatupang corridor, located in Cilandak neighborhood with its many office building, retails, and shopping center. Therefore, there are many domiciled employees moved into or near the area, especially Japanese expatriates. Designing an apartment building as a respond to its current issues, which are the high growing need for homes, limited land area, and poor environment qualities. The design of the apartment will be based on the theory of Organic Architecture.

Keywords: organic architecture, Cilandak, apartment, human settlement

1. Introduction
Jakarta is a Metropolitan city with population more than 7 million. This has led to urbanization that began at the center of activity in Central Jakarta which then expanded to urban areas such as the Cilandak Sub-district of South Jakarta. This development was marked by the construction of office buildings, CBD and shopping centers in the Cilandak District which made the area become a new center of activity in Jakarta. Property observer and practitioner Ali Tranghanda explained that many "tenants" have moved offices to the TB Simatupang area because it is close to the Jakarta Outer Ring Road that connects residential areas in South, West and East Jakarta [1]. This gives the impact of urbanization which increases the need for shelter. Based on Colliers International Indonesia's records, by 2017 more workforces will inhabit new office buildings in the region. Because the supply of new office space that will enter the market in the next three years will be 236,128 square meters. The area of the building, 60 percent have received confirmation from building tenants who incidentally have a certain number of employees. Based on Colliers analysis, if the ratio of occupants to room area or one employee requires space of 10 square meters, there will be 23,612 new employees working here. Not to mention the existing offices which reach a building area of around 2 million square meters, the total office occupants in the Simatupang Corridor are 223,612 employees [2].

With limited land, the development of a residence will move vertically, in addition to overcoming the limitations of vertical building, it will be better to utilize the site as a green open area where this improves the quality of life for residents and the environment. In general, the office space thatat TB Simatupang is filled by the oil and gas sector which indirectly invites many foreign workers to have a
career here. Expatriates or foreign workers tend to prefer living in apartments rather than houses. According to Colliers' data, specifically in the Simatupang corridor itself, expatriates from Japan and South Korea dominate the market [3]. The expatriates (foreigners) still idolize the South Jakarta area as a residential location. Some locations that are chosen are Pondok Indah, KebayoranBaru, Kemang, Cilandak, Cipete, Pejaten, and Permata Hijau.

The presence of expatriate raids and limited land in South Jakarta makes rental prices continue to rise. In a note from property consultant Colliers Internasional Indonesia, the increase in rental prices is quite significant. "Because occupancy for expatriates in South Jakarta is limited, rental prices continue to rise up to 40%," said Colliers International Associate Director Ferry Salanto, Jakarta, recently. According to Ferry, the expatriates are looking for rental houses in the South Jakarta area because it is closer to international schools."Expatriates want to find a rental house that is close to international schools so inevitably they are looking for in the southern region which is located strategically" [4].

To preserve the building’s good impact on the environment and occupants, an organic architecture approach is needed. The approach is a pioneer of sustainable architectural concept proposed by Frank Lloyd Wright in 1914[5]. With Frank Lloyd Wright's view of rational awareness of buildings in serving the intended functions while perceiving nature as the "body of God", it is necessary to harmonize structure and nature based on cherishing natural beauty. This philosophy is based on an integrity between buildings, nature, and humans that are mutually sustainable as a whole. Based on this background, the problem formulation that will be addressed in this study is the limited land in designing apartment in high-pollution surroundings while maintaining residents’ privacy and comfort in busy site locations or around the activity center. The design objective is to provide apartment dwellings with a healthy living environment as a response to the increasing need for apartment dwellings especially for Japanese expatriates. Literature study that needs to be discussed specifically is about organic architecture and apartments. "Ideal organic architecture is how a building gives style, life to integrity in accordance with the building was formed to serve certain purposes, a thought also in other words the taste process”[6].

2. Research Method

According to John Mascai’s book titled Housing about designing an apartment, it needs a review and aspects of the design to fulfill the function of the building properly, namely [7]:

1. Data Gathering
2. Surface
3. Subsurface
4. Climate
5. Hazards
6. Traffic
7. Visual conditions
8. Building Programs

Next step is entering the residential unit itself where there are several factors that determine the design, namely:

1. Combination, residential types in apartment buildings to achieve a good level of efficiency.
2. The size of the unit, gross square meters in residential units need to be clearly determined whether including architectural elements such as walls, corridors, partitions and balconies.
3. Room size, room size must be given roughly in order to keep alternatives to the design available.
4. Residential spaces, residential spaces should be designed so they have restrictions on formal spaces such as bedrooms which must have a special room with flexible spaces such as study rooms and living space.
5. Dining room, should clearly be referred to as a room that is combined with other spaces, such as the dining room-family room, dining room-kitchen, or a separate room alone.
6. Kitchen, kitchen cabinet space requirements should have clear specifications and whether the space accommodates other activities.
7. The bedroom, the bedroom program attached or opposite or separate and how many bedrooms are in the unit. Can the bedroom be functioned as a family room?
8. Bathroom, how many top room programs and activities are accommodated by the bathroom space, and which bathroom space should use a tub or shower.
9. Storage space, each storage space should be defined via linear legs because it is standard.
10. Entry, the function of the entrance room must be clearly defined whether it accommodates other activities besides circulation or the reception desk.
11. Exterior space, depending on the level of elevation in the unit so it affects whether the unit has a balcony, and what role the balcony has for security and privacy for the residential unit.
12. Soundproofing, this needs to be determined between the apartment with one another and the other areas of the building.

Then the discussion about the building itself consists of three main determinants, which are the building type, the privacy of the community, and the orientation. The service functions of the residential building to users are also included, which cover:
1. Fire Safety
2. Vertical transportation
3. Lobby
4. Storage
5. Recreation, variations on activities defined by the user by age category: adult or children, or mixed. Location categories: indoor or outdoor.
6. Abolition
7. Plumbing
8. Electrical
9. Security

In designing this apartment, researcher used the organic architectural approach put forward by Frank Lloyd Wright. The organic architecture approach will affect several aspects in the design of the apartment, namely the surface, the building period, the material, and the building program.

3. Results and Discussion
3.1. Footprint

Footprint location is on Pangeran Antasari Street No. 36, Puri Sakti Buntu I RT 01 RW 01, South Cipete, Cilandak District. This location is referring to RTDTR of South Jakarta City, Cilandak District, using R7 Vertical Housing Zoning with sub-district flats [8], as shown in Figure 1.

![Figure 1. Footprint location](image-url)

| KDB   | 40%   |
|-------|-------|
| KLB   | 2.40  |
| KB    | 8 layer |
| KDH   | 35%   |
| KTB   | 50%   |
| GSB EAST | 5m |
| GSB NORTH | 3m |
| GSB SOUTH | 3m |
Southern boundary: Puri Sakti Buntu Street
Western boundary: Settlement of large 2-storey houses
Northern border: Asem Road
Eastern border: Antasari Road / Antasari Flyover / Steam Wash and CarWorkshop.

Based on the design aspects of the apartment according to [7] accompanied by the organic architectural approach, there are 11 main elements according to Frank Lloyd Wright [5] which influence the design of the apartment, as detailed in Figure 2.

| Illustrations | Elements and Description |
|---------------|-------------------------|
| ![Illustrations](image1.png) | **Human Value**
| | Humans are the main element in the design of organic architecture, so in determining the spatial program, the scale and proportion in space is determined by the traditional Japanese way, namely: the arrangement of the Tatami. With one of these methods, users who are Japanese expatriates will feel familiar with Living Space in Apartment residences. |
| ![Illustrations](image2.png) | **Building and Site**
| | The first step in making the building period is to adjust the offset in the building to the site and the environmental response so light and air circulation can be channeled properly by maintaining the quality of each apartment unit. The building is raised high to get morning light from the east which will allow plants to live with the aim of planting vegetation so it can be processed into parks or recreation spaces. This is consistent with the theory of Organic Architecture where the architecture has the ability to improve site quality. A semi-public space in the form of a park with a mass of buildings to convey the impression of harmony between the building and nature in accordance with the theory of Frank Lloyd Wright so architecture can respect and preserve nature. Besides, it functions as a filtering and improvement of air quality |
| Illustrations | Elements and Description |
|--------------|--------------------------|
| **Material** | Building materials in organic architecture use natural and local materials. In addition to increasing natural elements it also increases efficiency in the distribution of raw materials. |
| **Shelter** | Shelters are a principle in which buildings protect users from climate exposure, but this should not limit human relations to the environment. Therefore, in this apartment design using the Bring the Inside Out principle. With the effort to bring outdoor elements into the indoor space. |
| **Space** | A space is not only limited by walls and roofs but also through differences in height and boundary of view. |
| **Proportion dan Scale** | The period and shape of the building do not dominate the environment, but proportions. It also applied to humans. |
| Illustrations | Elements and Description |
|---------------|--------------------------|
| **Nature**    | As an increasingly rare element, this design will bring back natural elements in the residential environment. |
| **Calmness**  | With the presence of nature on the site it will increase the calm for the residents. |
| **Ornamentation and Grammar** | Ornament is an element that becomes a unity with the function of the building, not a patch element. Grammar that resembles datum is the language of each building, which has its own uniqueness. |
| **Simple Building Scheme** | Bubble diagrams in the macro context discuss the circulation within the site and the relationship of the site to the building. A lobby of an apartment building is a transitional space from an outdoor space to an indoor space where there is circulation to a zone that is more private than the public zone. This concludes the lobby becomes a major impression of the apartment building. In the space relationship where the lobby is the center of circulation in the building with the context of the site that connects with outdoor spaces such as facilities, parks, basements, and parking areas will be the key to the security of the apartment occupancy. In addition to bubble diagrams it is then necessary to determine its spatial requirements, which are then placed on the site and respond to environmental analysis. |
| Illustrations | Elements and Description |
|---------------|-------------------------|
| **View Analysis** |
| The north side of the site has an elegant view where large units and high privacy are placed, on the east side there are streetscape Antasari and Kemang Road. The west and south sides have panoramic 2-storey dwellings and mid-rise where this side has the advantage of privacy because it is contrary to the highway. On the south side there is a view towards TB. Simatupang which is currently in the process of building road laying, toll roads and cityscape offices. |
Figure 2. Design of the apartment

4. Conclusions
Applying organic architecture approach in designing apartment building is an objective endorsed by the UN Habitat Agenda. This approach aims to apply planning and designing human dwellings by taking into account the aesthetic quality, sound, and sustainability that serve to enrich and improve the quality of average human life. This has become one of the design principles of the apartment as a new residential option. Through the application of an organic architecture concept that adheres to the harmony between human and natural values, buildings designs and architecture are exemplary efforts to improve the quality of human life and the environment.

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