



BES: Journal of Built Environment Studies

P-ISSN: 2086-2636 E-ISSN: 2356-4644
 Journal Home Page: journal.ugm.ac.id/v3/BEST



ENHANCING SUSTAINABILITY THROUGH SLUM SETTLEMENT UPGRADING. A CASE STUDY AT KAMPUNG MOJO, SURAKARTA

Fikrian Rafika Dewi, Yenni Yosita br Barus*, Findara Illa Nursyifa, Asri Ambar Kinasih, Ardhya Nareswari, Ahmad Sarwadi

Department of Architecture and Planning, Faculty of Engineering, Universitas Gadjah Mada, Yogyakarta, Indonesia

ABSTRACT

The slum upgrading of Kampung Mojo is one collaborative program aimed at improving the quality of slum settlement by supporting basic infrastructure and providing housing. One of the challenges of upgrading slum settlements is how post-upgrading settlement development can contribute to creating sustainable settlements. The objective of this study is to explore the usage of outdoor space using three pillars of sustainability criteria: social, economic, and environmental. The method used in this study is qualitative descriptive with data collection techniques through observation and interviews. The findings of this study underscore a diverse array of activities in outdoor spaces that yield positive implications for raising the sense of community, creating new economic opportunities, and productive land usage to contribute to achieving Sustainable Development Goals (SDGs).

***Corresponding Author**

Fikrian Rafika Dewi, Yenni Yosita br Barus*, Findara Illa Nursyifa, Asri Ambar Kinasih, Ardhya Nareswari, Ahmad Sarwadi
 Universitas Gadjah Mada
 +6281264810866
 Email: yennyositaabrbarus@mail.ugm.ac.id

Keywords:

Sustainability pillars, settlements, post-upgrading, outdoor space usage, community.

1. Introduction

The Surakarta City Government initiated a collaborative slum upgrading program in Kampung Mojo to improve the quality of settlements that were initially slums. This project aims to transform these areas into better living environments by providing 569 certified housing units, initially built on illegal land (owned by the city government, also known as HP). The project includes the provision of basic infrastructure such as access to clean drinking water, streets, drainage networks, waste management systems, domestic waste processing plants, and fire protection. The project was completed in two stages, in 2021 and 2022.

The primary objective of this upgrading program is to enhance the quality of slum settlements by improving the physical conditions of housing and basic infrastructure. This, in turn, is expected to trigger the community to improve their quality of life from both economic and social perspectives without exploiting the environment, thereby creating sustainable settlements. Settlement sustainability refers to concepts and practices that ensure residential areas can support a good quality of life for their residents now and in the future without damaging the environment or excessively depleting natural resources, guaranteeing these settlements can

survive and develop holistically. Since the completion of the upgrading program in 2022, observations can be made on how the residents of Kampung Mojo utilize the outdoor spaces around the settlement to support their needs, both at the individual and community levels. This background leads to the aim of this research, which is to explore the use of outdoor space and its relationship to the three pillars of sustainable development—social, economic, and environmental. The goal is to provide insights into the sustainability of a settlement after upgrading.

This research aims to contribute to understanding how outdoor spaces can enhance the sustainability of settlements by examining the interactions between social, economic, and environmental factors. By doing so, it seeks to offer valuable insights into improving urban settlements.

2. Literature Review

2.1.Sustainable Architecture

Sustainability is a crucial aspect of development (Farhanawan et al., 2022). According to David Satterthwaite, an urban development expert from the Institute of Development Studies, sustainability involves

creating an environmentally friendly, socially inclusive, and economically sustainable environment (Satterthwaite, 1997). In the context of architecture, sustainability refers to design approaches and practices aimed at creating buildings and environments that are environmentally, economically, and socially friendly in a balanced manner (Nimmo, 2005). In developing a sustainable settlement, these three pillars can provide a comprehensive overview to ensure the settlement meets sustainability criteria holistically (Putra *et al.*, 2022).

1. Economic sustainability focuses on the financial feasibility of a building or settlement, ensuring it does not harm the environment or society. This includes the impact of changes on the local economy, such as potential job opportunities, economic growth, and the empowerment of the local community.
2. Environmental sustainability emphasizes the importance of reducing environmental impacts. This includes how changes in the settlement affect the surrounding environment, including increases or decreases in the consumption of natural resources such as water and energy, the use of environmentally friendly materials, waste management, and green enhancements such as tree planting or the use of renewable energy technology.
3. Social sustainability highlights how these changes affect social life and residents' quality of life. This includes improving accessibility and security for communities and increasing access to education, health, and transportation facilities. Additionally, it is essential to consider whether these changes support and strengthen community bonds.

These three sustainable development pillars above are mutually reinforcing and have a significant influence on local-level planning and policy (Kusumawanto & Astuti, 2014; Ardhi *et al.*, 2022)

2.2. Outdoor Spaces

Outdoor space can be defined as areas available for the general public, including parks, playgrounds, streets, and other open areas (Darmawan & Utami, 2018). In a broader sense, public open space can be divided into two main categories: landscape (green open space) and built open space (Haryanti, 2008) (Darmawan & Utami, 2018). Landscape includes green spaces like parks, while built open space encompasses areas like streets, alleys, or home yards.

1. Streets: These are circulation routes that connect various parts within a settlement. Streets can be the primary access for vehicles and pedestrians, influencing their spatial layout and activities (Dipta, 2015).
2. Alleys: Alleys are neighborhood circulation routes within urban settlement environments. The alleys are often used as both private and public spaces by residents, where they can be used as playgrounds for children, informal social interaction spaces, and venues for specific events (Karya *et al.*, 2021).

3. Terrace or Home Yards: Terrace or home yards are areas around the house that can be used for various activities, such as relaxation, playing, or gardening. Terraces or home yards can also serve as places for interacting with neighbors and fostering social relationships within the settlement (Darmawan & Utami, 2018).

The physical functions of these open spaces are diverse, serving as green areas for air circulation and water reserves, as well as centers for social activities and interactions. Public spaces facilitate daily activities like shopping, commuting, and leisure activities such as strolling or enjoying the scenery. Social interactions involving individuals and groups in various contexts are also key to public space utilization.

2.3 Usage of Outdoor Space Post-Upgrading

In the context of upgrading slum settlements, emphasis on using outdoor space as a means to integrate and promote the three pillars of sustainability becomes crucial. Upgrading slum settlements generally involves enhancing basic infrastructure and housing to improve the quality of life for residents. In sustainable urban development, there is more opportunity to strengthen the social, economic, and environmental aspects by investigating post-upgrading outdoor space usage. According to a study by Amin *et al.*, 2019, applying sustainable architecture principles in planning the Sustainable Food Village in Mojosoongo has resulted in significant achievements in three main aspects: social, economic, and environmental. Community environmental activities have enhanced social interactions among residents, while economic strategies have helped improve the local economy through support for micro and small businesses. On the ecological side, implementing urban ecology principles and water and waste management has assisted in maintaining ecosystem balance and conserving natural resources. Furthermore, research conducted by Caesandra *et al.*, 2020 highlights the importance of utilizing multifunctional public spaces in slum settlements. Through an analysis of the use of parks as public open spaces in slum settlements, this research emphasizes the importance of interaction, diversity, and harmony related to social and environmental aspects in designing public spaces to create inclusive and sustainable environments.

Regarding these studies, reviewing post-development settlements with an approach encompassing all three sustainability pillars is essential. This ensures that the changes made provide balanced benefits for society, the economy, and the environment. Therefore, this research will undertake such an approach but within the context of post-upgrading planning that has been implemented in Kampung Mojo, Surakarta City, to identify and understand the role of post-upgrading outdoor space utilization in supporting sustainability based on the three main pillars of sustainability. Alfian & Akbar, 2020 highlight the importance of addressing the multidimensional nature of urban poverty and inequality

beyond just the technical aspects of infrastructure development. It emphasizes the need for a more inclusive and participatory approach to urban development, which takes into account the perspectives and experiences of the slum dwellers themselves.

3. Research Method

The data utilized in this research comprises primary data and secondary data obtained from a literature study related to the slum upgrading program in Kampung Mojo.

4. Result and Discussion

4.1. Research Area

Kampung Mojo is one of the 'kampung' in the Pasar Kliwon Subdistrict that is listed as a slum area, covering an area of 15,369 hectares. According to Minister of Public Works and Housing Regulation No. 14 of 2018, concerning the Prevention and Improvement of the Quality of Slum Housing and Slum Settlements, slum areas exceeding 15 hectares are under the central government's jurisdiction for intervention.

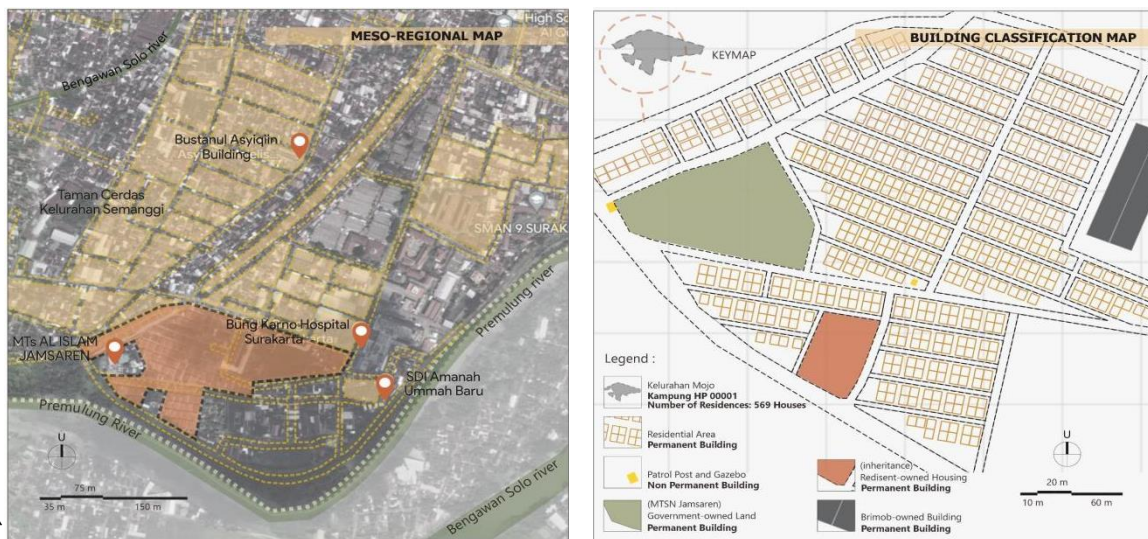


Figure 1. Research Location

Source: Author, 2023




The primary data was acquired through various data collection techniques, including observation to understand the physical condition and function of outdoor spaces and interviews with representative informants to gather information about the usage of outdoor spaces. The data analysis process uses a qualitative descriptive approach by describing the use of outdoor space based on the three pillars of sustainability (social, economic, and environment) to implement sustainable settlement in the slum upgrading program of Kampung Mojo.

This program included providing houses with basic infrastructure facilities such as paved road networks, drainage systems, electricity networks, drinking water networks, and domestic waste management (in the form of a communal wastewater treatment plant). This program carried out in two phases, has brought significant changes to the settlement area visually and in terms of settlement quality (houses and basic infrastructure facilities).

4.2. Analysis of Outdoor Spaces Function and Their Relationship with Three Pillars of Sustainable Development

Outdoor spaces are identified in the area using the following criteria: 1) they must be situated outside of residential houses, and 2) they must be used and/or managed for social and/or economic purposes on an individual and communal level. The highlighted characteristics are spatial location, form, physical conditions, and their relationship to sustainability's economic, social, and environmental pillars. These are the identification's outcomes.

Table 1. Three Pillar of Sustainable Development Analysis				
Outdoor Space	Physical Condition	Sustainability Pillars		
		Economic	Social	Environmental
<p>Neighborhood Street. A neighborhood street functions as Kampung Mojo's primary access. Observations indicate that the neighborhood street serves as an entryway for access to the Madrasah in the Kampung Mojo region and is utilized by both Kampung Mojo residents and the wider community, including commuting vendors.</p>	 <p>Form: square Dimension: 5.15 meters and 9.05 meters Material: Paving. This street is covered by drainage systems on both sides of the street connected to the city's sewer system.</p>	 <p>Economy Activities Opportunity: The economic activities found in this area include buying and selling transactions or vending activities. The potential of the street as a vending activity is its ability to attract buyers from outside Kampung Mojo.</p>	 <p>Social Interaction Space: Streets impact their users most because the street's width creates ample leftover space. Streets are used for social interaction among residents. Playground for Children: The neighborhood street is also a playground for children because there is no designated space for children's play in Kampung Mojo.</p>	<p>Currently, the street has no impact on the environment. However, it may be possible to redevelop it by implementing the addition of trees along the street to reduce heat from the sun for the residents</p>
<p>Neighborhood Alleys. Neighborhood alleys Alleys are shared spaces between community houses used and controlled by multiple residents.</p>	 <p>Form: Linear, followed by the settlement's layout Dimension: 1.2 meters in width Materials and Structure: Paving.</p>	 <p>Economy Activities Opportunity: Residents using alleys as selling points create additional economic opportunities for the local community. Neighborhood alleys are used as places to put up banners or carts.</p>	 <p>Social Interaction Space: Using neighborhood alleys for domestic activities and community interaction among residents strengthens social relationships and enhances community cohesion. Playground for Children: Since kids have no play areas, they play on the neighborhood alleys.</p>	 <p>Gardening Place: Using neighborhood alleys as planting areas contributes to increased environmental sustainability by lowering carbon emissions and improving air quality.</p>
<p>Terrace. The terrace functions as a semi-public space for the community</p>	 <p>Form: rectangle Dimension: 1x6 meters Material: Ceramic, cast concrete,</p>	 <p>Economy Activities Opportunity: Using the terrace as a place to sell by residents has created additional economic</p>	 <p>Social Interaction Space: Using the terrace as a place for interaction between residents strengthens social</p>	 <p>Gardening Place: Terraces used to grow plants in pots also positively impact environmental</p>

Outdoor Space	Physical Condition	Sustainability Pillars		
		Economic	Social	Environmental
	plaster, or paving blocks. Several residents added a canopy as a roof cover to prevent leaking when it rains	opportunities for the local community, which in turn can increase economic sustainability at the local regional	relations and increases the sense of togetherness in the community.	sustainability. Potted plants add to the environment's visual aesthetics and help improve air quality by absorbing carbon dioxide and producing oxygen.
Community Meeting Space	 <p>Form: Square Dimension: 55 meters square Materials and Structure: Iron Frame and Zinc Roof</p>	Though no economic activity is currently underway, the space's construction leaves an opportunity for potential economic activities in the future.	Social Interaction Space: The space was constructed through the community. The locals use the place as a base camp for the Kampung Mojo Youth Community and a multipurpose venue for social events, including meetings and gatherings.	Land Preservation: This area serves as a means of environmental management within a community to prevent it from being used for unsuitable activities or may negatively impact the environment.
Public Space (Multifunction Space)	 <p>Form: Square Dimension: 38 meters square Materials and Structure:</p> <ul style="list-style-type: none"> Open space and completed with a wood-structure gazebo The area is furnished with concrete seating, lighting fixtures inside and outside the gazebo, and vegetation 	Economy Activities Opportunity: The Kampung Mojo community owns and operates catfish farms in this area. The catfish are raised and offered for sale to residents of the region.	Social Interaction Space: Provides space for various community activities such as receiving guests, signing documents, interacting, or being a resting place for mobile vendors, etc. Playground for Children: Children utilize the gazebo for playing (it is always bustling from morning to night).	Land Preservation: This area serves as a means of environmental management within a community to prevent it from being used for unsuitable activities or may negatively impact the environment.
Ngudi Lestari Garden	 <p>Form: Square (Productive Land) Dimension: 66 meters square</p>	Economy Activities Opportunity: The occupants cultivate fruits and vegetables in this garden. The relevant	Social Interaction Space: The residents typically engage in gardening activities as a group, with some watering the	Land Preservation: This area serves as a means of environmental management within a community

Outdoor Space	Physical Condition	Sustainability Pillars		
		Economic	Social	Environmental
	<p>Materials and Structure: Land and bamboo fence</p>	<p>city department provides seedlings, which are then handled by the POKJA (Kelompok Kerja) and made available to those who want to plant them on available land. The garden's product is sold to the occupants and partners working with them.</p>	<p>plants, some loosening the soil, and others planting.</p>	<p>to prevent it from being used for unsuitable activities or may negatively impact the environment.</p>

(Source: Author, 2023)

Based on the findings of the analysis, the usage of outdoor spaces in Kampung Mojo reflects a balanced integration of three pillars of sustainability: economic, social, and environmental. The diverse activities conducted within these alleys provide financial benefits to the community, strengthen social relationships, and support ecological sustainability within the local environment.

The function of the terraces, neighborhood alleys, and neighborhood streets reflects the sustainability pillar—the economic pillar. As previously explained, the neighborhood street is accessed by residents of Kampung Mojo and people outside Kampung Mojo, making the neighborhood street a strategic location for economic activities. The selection of the neighborhood street for conducting economic activities is based on the concepts where the most critical factors in selecting a business location are access, visibility, and the environment to attract more customers (Hidayat & Zuliarni, 2014). The area on the neighborhood street of the settlement provides high visibility to the economic activities conducted by the community in Kampung Mojo. Simple carts owned by the community located on the neighborhood street, neighborhood alleys, and terraces are more easily seen by pedestrians and drivers, thus increasing customers' awareness of their presence. This becomes one of the factors that cause the people of Kampung Mojo to engage in economic activities in the neighborhood street area due to high exposure to customer traffic. The people of Kampung Mojo also expressed this through interviews. One of the residents mentioned that they sell in front of their house because it has started to get busy, and there are no similar vendors around it. Additionally, another resident stated that the neighborhood street is frequented by schoolchildren and outsiders from outside the kampung, resulting in a significant income. Carts located on the neighborhood street can attract customers spontaneously, thus increasing the likelihood of impulse purchases. External communities not residing within the Kampung Mojo area will be interested in stopping by

and shopping. These characteristics ultimately drive the community to expand with economic activities in the neighborhood street area. This is in line with John Turner's argument, which says that after the improvement program is implemented, the community will have a sense of responsibility to manage their settlements, which will also have an impact on economic conditions (Winarso, 2022)

The social and environmental pillars are the next pillar of sustainability integrated into outdoor space functions. As previously mentioned, Kampung Mojo lacks spaces designated aside for social gatherings. Since human activities in the context of residence contain personal and social needs, the need for space for social activities is essential. In response to the need for places for social interaction, specific communal spaces are now in place and are the product of community self-help initiatives. Interviews with the POKJA and the RT Chairman showed that Kampung Mojo is the place for several social and community organizations. These include the Posyandu (integrated health service post), associations for pregnant women, community groups, RT/RW associations, Farmers Group (POKTAN), associations for catfish farming, and exercise activities.

It was also found that people use alleys and street spaces as interaction spaces to respond to limited land and the lack of communal space, deliberately designed for social interaction, which often happens in urban village settlements such as in Gondolayu Yogyakarta. People in Gondolayu utilize unplanned spaces such as house areas, mosques, and road corridors, which should be circulation routes for social activities. That's where it becomes essential to provide communal spaces that can accommodate community needs (Sofia *et al.*, 2021).

The rationale behind the connection between communal spaces and the growing sense of community is that they offer a space for social interaction to grow community ties (Tamariska *et al.*, 2019). Planned and unplanned communal spaces provide a social purpose (Tamariska *et al.*, 2019). This is relevant to the Kampung Mojo case, in which the requirement for a place to gather

for social activities can be fulfilled by communal spaces that were not planned but constructed through community self-help initiatives.

Community activities, such as those related to economic, social, and cultural needs, can be accommodated in communal spaces (Darmiwati, 2000 in Widiananda, 2018). Communal and multifunctional spaces are essential in urban settlement communities where familial ties are still strong, and community activities are prevalent. Owned by the community, communal spaces will encourage a sense of responsibility to use and maintain these spaces well, strengthening the sense of community following the social pillar's principles. The creation of outdoor spaces for community activities is not only integrated into the social pillar but also the environmental pillar. One example is the establishment of a garden community. This area serves as a means of environmental management within a community to prevent it from being used for unsuitable activities or may negatively impact the environment. The control mechanisms implemented by the community in the Kampung Mojo area also serve as mechanisms that support environmental sustainability to prevent the settlement from becoming a slum again.

5. Conclusion

The outdoor spaces created following the Slum Upgrading Project in Kampung Mojo are parts of sustainable development, where the implementation of the three pillars of sustainability—social, economic, and environmental—is evident. They created a space to accommodate community activities there. To achieve sustainability, people and communities must use and manage built environments in ways that go beyond their physical characteristics.

Spaces for social activities are the representation of a sense of community. Urban settlements maintain strong kinship ties, and communal spaces become crucial for accommodating existing social activities to sustain life in the settlement. The outdoor spaces created provide new economic opportunities for individuals and the community. This indicates the emergence of economic prospects following the implementation of the upgrading program. The community's financial activities are initiated by themselves with support from the city government. Collaboration between both parties is expected to continue sustainably and provide impact for the involved community. Environmental sustainability is an implication of the preceding social and economic pillars. Utilizing space without harming the environment, coupled with effective management by settlement overseers, endeavors to preserve the environment towards achieving sustainable settlements. Hence, completing the three pillars of sustainability is not solely attainable through physical development but also through active community participation and a full awareness of ownership and responsibility for nurturing their settlement's environment. Based on the research findings of (Aldhila *et al.*, 2021), the study focuses on

slum areas in the Deli River watershed, Medan. The location is in an area with a low property rate but still faces challenges in managing ecological and economic sustainability and dealing with illegal land status. Meanwhile, this study highlights the importance of social sustainability and community participation in kampung Mojo. There are differences in the success levels of implementing sustainability indicators and the specific challenges faced at each location.

6. Reference

- Aldhila, A., Warsono, H., Suwitri, S., & Astuti, R. S. (2021). Management of Slum Settlements based on Sustainable Development in the Deli Watershed of Medan City. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 4(2), 2791–2799. <https://doi.org/10.33258/birci.v4i2.1988>
- Alfian, F., & Akbar, T. (2020). Upgrading Slum Area, Development and Hidden Inequality (Case Study: Kampung Warna-Warni and Kampung Tridi). *Review of Urbanism and Architectural Studies*, 18(2), 70–79. <https://doi.org/10.21776/ub.ruas.2020.018.02.6>
- Amin, M. N., Winarto, Y., & Marlina, A. (2019). The Application of Sustainable Architecture Principles in the Planning of Sustainable Food Villages in Mojosoongo, Jebres District, Surakarta City. *Jurnal SENTHONG*, 2(2), 383–394.
- Ardhi, P. H., Rejeki, V. G. S., & Ardiyanto, A. (2022). Strategi Penataan Permukiman Nelayan Keberlanjutan di Tepi Sungai Kaliyasa. *Review of Urbanism and Architectural Studies*, 20(1), 1–11. <https://doi.org/10.21776/ub.ruas.2022.020.01.1>
- Caesandra, V., Wiranegara, H. W., & Sugihartoyo, S. (2020). Tingkat Keberlanjutan Pemanfaatan Ruang Publik Multifungsi di Permukiman Kumuh. *Tataloka*, 22(3), 354–365. <https://doi.org/10.14710/tataloka.22.3.354-365>
- Darmawan, S., & Utami, T. B. (2018). Pola Pemanfaatan Ruang Terbuka Pada Pemukiman Kampung Kota. *Vitruvian: Jurnal Arsitektur, Bangunan, Dan Lingkungan*, 7(3), 127–136.
- Dipta, A. (2015). *Karakteristik Ruang Koridor Jalan Panggung Pecinan Kembang Jepun Surabaya Sebagai Koridor Wisata Urban Heritage*. 7(2), 1–18.
- Farhanawan, A., Agussaini, H., & Fuady, Z. (2022). Analisis Keberlanjutan Permukiman Nelayan Gampong Alue Naga Kota Banda Aceh. *Rumoh: Journal of Architecture*, 12(2), 45–52. <https://doi.org/10.37598/rumoh.v12i2.195>
- Haryanti, D. T. (2008). *Kajian Pola Pemanfaatan Ruang Terbuka Publik Kawasan Bundaran Simpang Lima Semarang. [Study of Public Open Space Utilization Patterns in the Simpang Lima Semarang Roundabout]*. 168.
- Hidayat, R. T., & Zuliarni, S. (2014). Pengaruh Lokasi Usaha Pada Volume Penjualan. *Jurnal Ilmiah Akuntansi Dan Bisnis*, 9(2), 92–100.
- Karya, S., Making, P., Muzady, F. A., Wibisono, T. K., Indonesia, U. I., & Belakang, L. (2021). *Kajian Pemanfaatan Jalan Gang Sebagai Ruang Belajar Daring Selama Pandemi Covid-19 Di Bintaran Kidul, Kota Yogyakarta*. 186–196.
- Kusumawanto, A., & Astuti, Z. B. (2014). Green Urban Waterfront Management Case of Solo, Indonesia. *Journal of Architecture&ENVIRONMENT*, 13 (2), 175. <https://doi.org/10.12962/j2355262x.v13i2.a880>
- Nimmo, J. (2005). Sustainability and Cities: Overcoming Automobile Dependence. *Landscape and Urban Planning*, 2

7(9), 76–77.

<https://doi.org/10.1016/j.landurbplan.2005.01.009>

- Putra, R. P., Hendra, F. H., & Poedjioetami, E. (2022). *Pendekatan Arsitektur Berkelanjutan Terhadap Bentuk Fasad Bangunan Pada Kawasan Pembudidayaan dan Pengolahan Kopi di Kota Kediri, Jawa Timur*. 2(1), 127–137.
- Ratna Darmiwati. (2000). Studi Ruang Bersama Dalam Rumah Susun Bagi Penghuni Berpenghasilan Rendah. *DIMENSI (Jurnal Teknik Arsitektur)*, 28(2), 114–122.
- Rosy Tamariska, S., Lestari, A. D. E., Nungky Septania, E., & Shoful Ulum, M. (2019). PERAN RUANG KOMUNAL DALAM MENCIPTAKAN SENSE OF COMMUNITY STUDI KOMPARASI PERUMAHAN TERENCANA DAN PERUMAHAN TIDAK TERENCANA. *Jurnal Koridor*, 10(1), 65–73.
- Satterthwaite, D. (1997). Sustainable Cities or Cities that Contribute to Sustainable Development? *Urban Studies*, 34(10), 1667–1691. <https://doi.org/10.1080/0042098975394>
- Sofia, R., Raharjo, W., Susetyaningtyas, O., & Arsitektur, J. (2021). *Seminar Karya & Pameran Arsitektur Indonesia 2021 Sustainable Architecture & Building Performance Peran Ruang Komunal Sebagai Wadah Interaksi Sosial Di Kampung Kota Studi Kasus: Kampung Gondolayu Yogyakarta*.
- Widiananda, A. B. (2018). Peranan dan Pemanfaatan Ruang Publik Pada Permukiman Kampung Vertikal Rusun Pekunden Kota Semarang. *Jurnal Pembangunan Wilayah & Kota*, 14(1), 1. <https://doi.org/10.14710/pwk.v14i1.17996>
- Winarso, H. (2022). Slum-upgrading through physical or socio-economic improvement? lessons from Bandung, Indonesia. *Journal of Housing and the Built Environment*, 37(2), 863–887. <https://doi.org/10.1007/s10901-021-09859-4>