Criteria for Sustainable Neighborhood in Urban Settlement Areas: Case Studies Green Pramuka Jakarta Indonesia

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Abstract: Urban neighborhoods face growing challenges in sustainability, regeneration, and livability, especially in rapidly urbanizing cities like Jakarta, Indonesia. This study develops a comprehensive assessment framework to evaluate urban areas based on Sustainable, Regenerative, and Livable Neighborhood criteria. The framework integrates global sustainability principles, Hamid Shirvani's urban design theories, and Jakarta's Detailed Spatial Plan (RTBL), adapting them to local socio-economic and environmental conditions. The Green Pramuka neighborhood serves as the case study for testing this methodology. This research employs a mixed-method approach, combining literature review, indicator development, and Likert-based quantitative scoring. Indicators are categorized into land use allocation, building design, circulation systems, green space, environmental quality, and community activity support. The assessment reveals that while Green Pramuka excels in mixed-use zoning and accessibility, it lacks community activity support, equitable green space distribution, and social inclusivity. These findings highlight the need for integrating social and ecological factors into urban design. The study presents a replicable framework for urban neighborhood assessment, adaptable across different contexts. The results provide practical insights for policymakers and urban designers, advocating for collaboration among governments, developers, and local communities. By addressing physical infrastructure and socio-economic dynamics, this research advances discussions on regenerative urban development in Indonesia and beyond.

Index Terms: Sustainable, Regenerative, Livable, Urban Neighborhood, Criteria

I. Introduction

1.1 Background

Jakarta faces major challenges in sustainability, regeneration, and livability due to rapid urbanization and lack of holistic planning. Air and water pollution, unmanaged waste, and shrinking green spaces worsen environmental degradation and the urban heat island effect. Social inequality is evident in unequal access to housing, transport, and public spaces. Traffic congestion, seasonal flooding, and gentrification further threaten inclusivity. Addressing these environmental and social challenges requires sustainable urban planning to enhance ecological resilience and social equity, ensuring a more livable and regenerative urban environment.

To address these challenges, urban design must integrate sustainability principles that balance present needs with future resource availability, ensuring that natural systems continue to support life. The Earth Summit (1992) framework defines sustainability as encompassing economic development, social inclusivity, and environmental conservation.[1] Sustainable architecture, as part of this broader framework, is designed to extend the lifespan of natural resources while maintaining ecological integrity. However, sustainability alone is insufficient—urban areas must also be regenerative, meaning they should actively restore and enhance ecological and social systems rather than merely minimizing harm. Additionally, achieving a livable neighborhood requires a human-centered approach that prioritizes accessibility, safety, and well-being.[2] This study aims to analyze the Green Pramuka area in Jakarta to assess whether its development aligns with these three principles. The research employs an assessment framework derived from Hamid Shirvani's urban design components and Jakarta's Detailed Spatial Plan (RTBL), with evaluation indicators structured around sustainability, regeneration, and livability.

The research process involves a literature review to establish theoretical foundations, extract key indicators, and contextualize the assessment within Jakarta's urban challenges. The evaluation framework categorizes elements that support or hinder sustainability in the case study area, with findings presented through data tables, color-coded mapping, and explanatory narratives. The study's results offer insights into the strengths and deficiencies of Green Pramuka, highlighting potential improvements for developing urban spaces that integrate sustainable, regenerative, and livable principles. Ultimately, this research seeks to inform future urban planning guidelines that can create more resilient, inclusive, and environmentally responsible neighborhoods.

1.2. Research Question

a) How to conduct an assessment of an area, within the framework of the context of Sustainable, Regenerative, Livable in a mixed use neighborhood in an urban area?
b) How do assesment criteria and indicators measure the achievement level of sustainable urban development?
c) How the Green Pramuka case study methodology can be applied?

1.3. Research Objectives

a) Compile assessment ratings based on sustainable, regenerative, and livable indicators.
b) Identify elements that support or hinder the implementation of these concepts in the context of the case study area.

c) Produce design criteria guidelines for areas that meet these three aspects.

1.4. Theoretical Studies of Concepts Sustainability, Regenerative, Livability dan Neighborhood

1.4.1. Sustainability Theory

The concepts of ecological or environmental design, green architecture, sustainable buildings and other similar terminology are essentially used interchangeably with the concept of sustainability [3]. Sustainable architecture is a way in which architecture seeks to minimize the negative impact of buildings on the environment through increased efficiency and moderation in the use of materials, energy, development space, and the ecosystem at large [4]and according to [5] The concept of sustainable architecture that seeks to minimize the negative impact of buildings on the environment by means of moderation and efficiency in the use of materials and energy, as well as development space and ecosystems. The main principles of sustainable architecture are energy efficiency, air conservation, waste reduction, and the use of environmentally friendly materials [6]. Sustainability guarantees many areas by protecting the natural environment from harmful human interference for their own convenience, without realizing that most energy-consuming solutions actually lead to many universal changes that threaten the world's ecological balance [7]. Maximizing energy efficiency and overall performance is paramount in sustainable architectural design. Building orientation has proven to be a strategic cornerstone in achieving sustainable goals [8].The following is a summary of the understanding of sustainability that the author has summarized in Diagram 1 below.

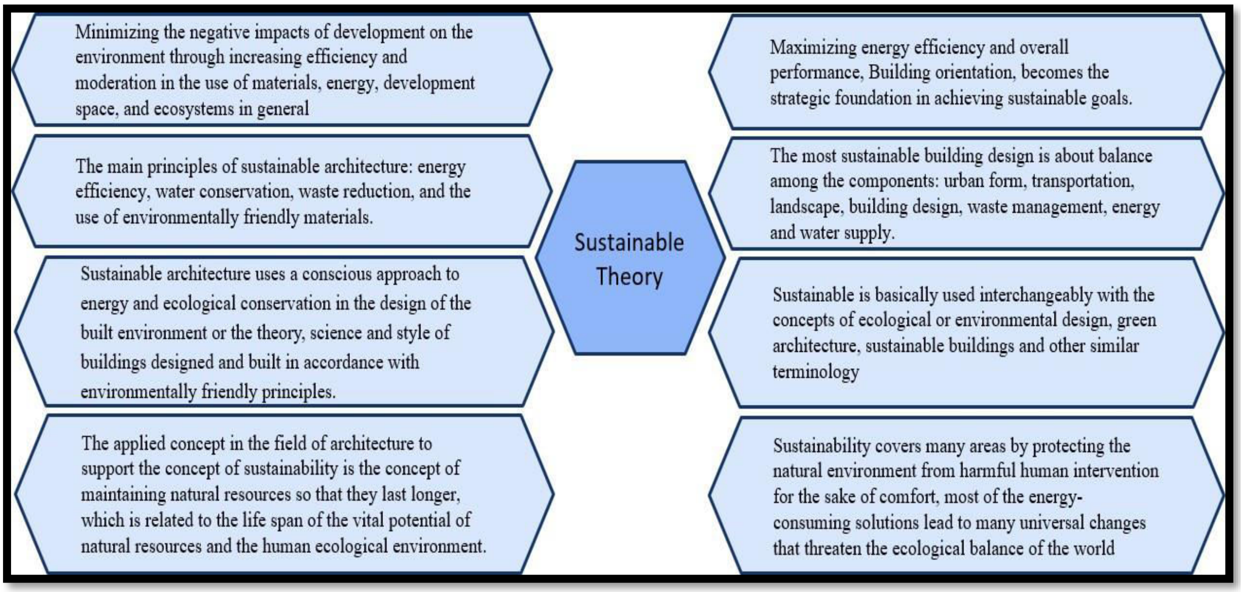

Diagram 1. The concept of Sustainable theory based on various sources

The various theories that underlie the understanding of sustainability itself have various indicators, among which can be measured physically. The following is the result of a summary of various indicators on the sustainable theory (Diagram 2.)

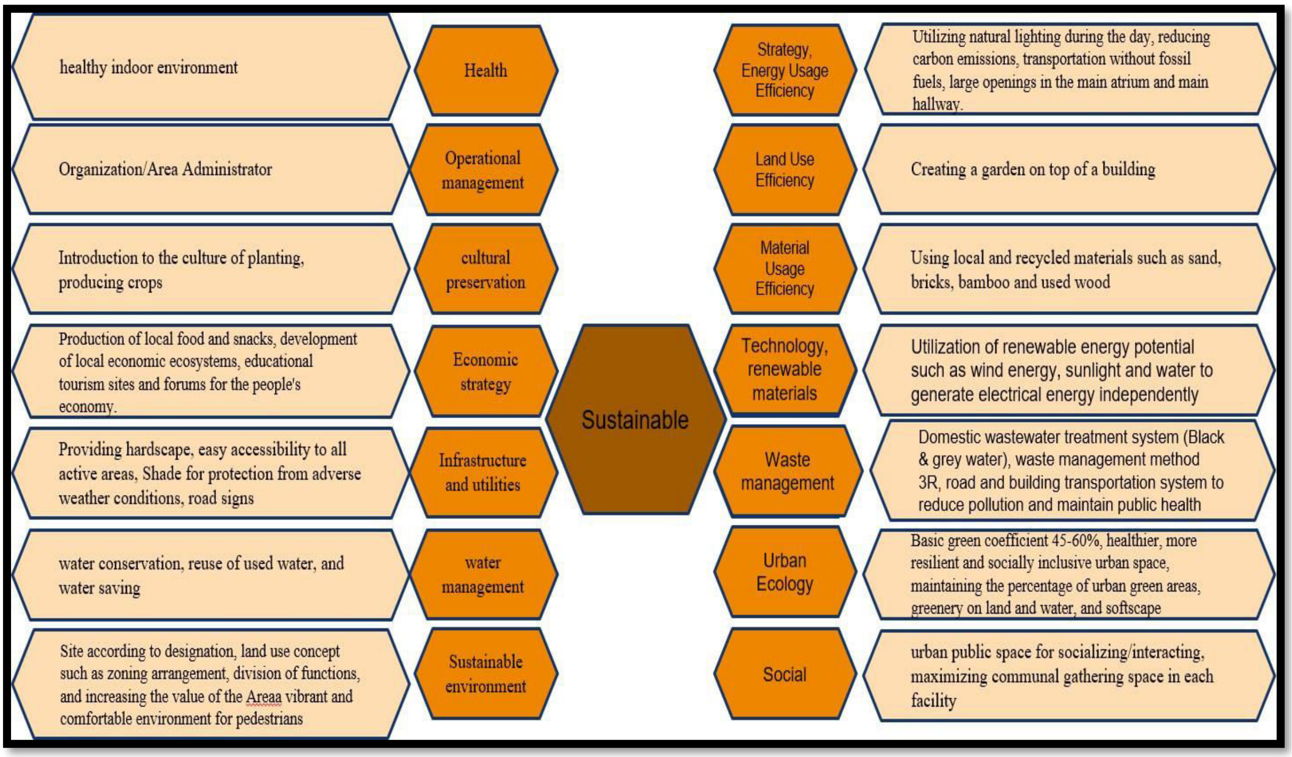

Diagram 2. .Sustainable assessment indicators are based on the Sustainable theory concept that has been created

1.4.2. Regenerative Theory.

Regenerative neighbourhoods are urban areas that designed to restore and enhance, social , and economic system, moving beyond mere sustainability to foster resilience and vitality. This concept emphasizes community involvement, integrated design, and the regeneration of urban fabric, addressing challenges such as urban decay and climate change. [9]. In a simple term, regenerative refers to the ability of a neigborhood or community to not only minimize negative impact on the environment but also to repairand enhance the surrounding ecosystem.This concept leads to a more holistic approach where the urban environment is not only sustainable but also proactive in creating social, economic and environmental regeration.[10].

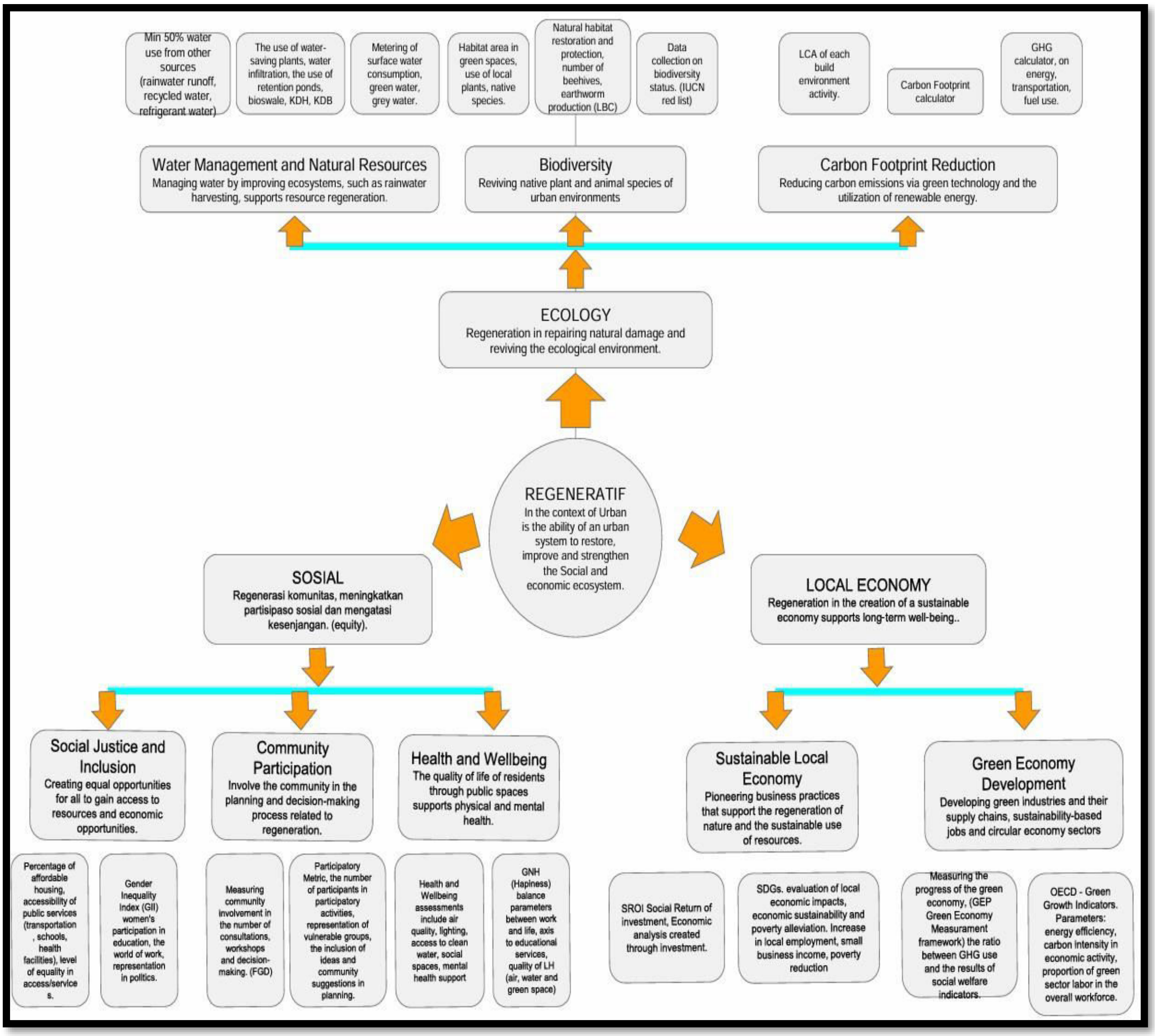

Diagram 3. The concept of Regenerative theory based on various sources

Regenerative neighborhoods aim to create sustainable urban environments by integrating ecological, social, and economic dimensions. This holistic approach seeks to enhance the quality of life while ensuring environmental health and economic viability. First is Ecological Dimension: Ecosystem Services: Regenerative design promotes urban projects that produce net-positive impacts on ecosystems, enhancing biodiversity and natural resource management, and also Ecological Diagnostics: Implementing ecological diagnostics helps inform design processes, ensuring that urban strategies align with local ecological conditions. [11]Secondly is Social Dimension which are Community partiipationa as a engaging community in the design and planning processes, and a cultural integration to emphazise the importance of local culture and community identity. Last are Economic Dimension with Sustainable Economic Practice and FianancialViablity.

There are three principles forming this regenerative neighborhood; first is Community Participation: Engaging local residents in decision-making proceeses to ensure that developments meet their needs. [12]. Second is Integrated Design: Utilizing a co-evolutionary approach that harmonizes social, cultural and ecological system. [13] Last is Sustainable Practices: The precint implementing green infrastructure and promoting biodiversity to enhance urban resilience. [14].

Regenerative has main goal is not only to reduce ecological footprint but also contribute positively to nature and human communities.[15] In addition to the understanding of regenerative environments, down below we summerised regenerative theory in a figure: (Diagram 3).

1.4.3. Livability Theory

If we want to talk about there and then, acting as a philosophical vision, then many academics interpret livability as habitability where this term focuses on the here and now, paying attention to physical conditions and active interventions.

LIVABILITY

- The design does not interfere with the residential units
- Adjusting to population density
- Supporting the diversity of land functions according to needs
- Availability of open space
- Supporting mobility and affordability
- Supporting cleanliness
- Support security
- Supporting comfort
- In accordance with local/surrounding culture (characteristics)
- Ease of access
- Equality
- Security
- Comfort
- Available services
- Ease of walking
- Convenience of public transportation
- Effective transportation integration
- Easy access from residence to workplace
- Access from residence to service center is easy
- Correlation between transit stations
- Easy and cheap
- Providing something useful and dynamic
- Having green belts as a buffer

- Having green hearts that connect open spaces around the city
- Having green ways as a corridor to the city center
- Support/propose Hypothetical open green space system
- Improve quality of life
- Providing clean air
- Enhance the beauty of the area
- Maintaining ecological balance
- Can serve: entertainment, sanitation, communication, education, and trade
- A quiet and peaceful place for residents
- Relieve boredom from urban noise and congestion
- The existence of facilities for affordable access
- Availability of health facilities
- The existence of facilities as a guarantee of safety and security
- Support children's play and learning activities
- Facilitate the process of socialization and relaxation
- Supporting walking and cycling activities
- Supports recreational activities, culinary, etc.
- Focus on what is now
- Focus on what's here
- Pay attention to physical conditions and active intervention
- Based on context
- Availability of open spaces, transportation zones, and public facilities

Diagram 4. Livability theory concept based on various source

That is what makes livability a fluid concept because it changes based on context conditions and provides a useful and dynamic translation of this intended vision.[29] In addition, the meaning of livability also depends heavily on the values and specific contexts of the community as a locally dominant social, economic, and cultural background, because of the personal feelings or desires of the residents of a particular place to regulate the level of habitability of the place.[29] The following are the components, attributes and indicators of livability as shown in Diagram 4 and 5 below.

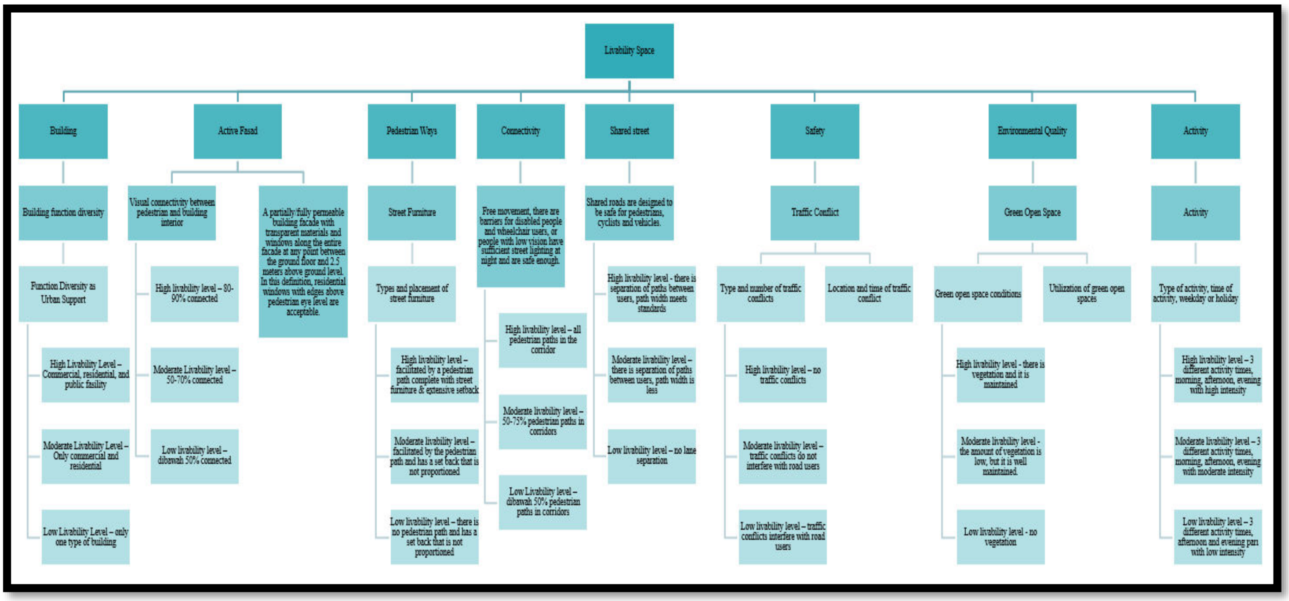

Diagram 5. Livability assessment indicators

1.4.4. Neighborhood Theory

Defining "neighborhood" is a complex undertaking, as it's a multifaceted concept encompassing both tangible characteristics and intangible qualities [16][17]. A neighborhood is a geographically localized community situated within a larger urban or suburban area. It's distinguished by a unique combination of physical attributes, social interactions, and shared resources. Importantly, neighborhoods are not static entities; they are shaped by social and political forces, including activism and research on socio-spatial relations, making their boundaries fluid and often contested [17]. The term itself has evolved over time and can vary across cultures and languages, further adding to its complexity [18].

Recognizing Neighborhood Boundaries:

Neighborhood boundaries can be defined by a combination of factors:

a) Physical boundaries: Geographical Context: A neighborhood is inherently geographical, rooted in urban morphology [16]. This includes physical elements like the built environment, land use patterns, and boundaries [16] Natural features (rivers, hills), major roads, or changes in land use can demarcate neighborhoods.
b) Social boundaries; Social and Political Influences: Neighborhoods are also social and political products, shaped by activism and research on socio-spatial relations [17]. This highlights the dynamic and contested nature of neighborhood boundaries. Perceived social distinctions, cultural differences, or variations in socioeconomic status can create informal boundaries.
c) Administrative boundaries: Official designations used by local governments for planning and administrative purposes can define neighborhood boundaries.

d) Multiple Dimensions: Neighborhoods are not solely defined by physical characteristics, but also by social interactions, shared values, and access to services [16].
e) Stakeholder Perceptions: Understanding the perceptions of different stakeholders, including residents, businesses, and local government, is crucial for successful urban regeneration [19]. This requires effective communication and collaboration among all parties involved.
f) Functional Elements: The services and amenities available to residents, such as schools, shops, healthcare facilities, and recreational opportunities, play a vital role in neighborhood life [17]. Access to these resources contributes to the overall livability and well-being of the community.

Tangible vs. Intangible Aspects:

Neighborhoods are characterized by both:

a) Tangible aspects: Physical layout, housing types, infrastructure, and demographic characteristics.
b) Intangible aspects: Social cohesion, sense of belonging, cultural identity, shared values, and lifestyle. [20] emphasizes the importance of "intrinsic qualities" of urban form and local social processes. [21] discusses the role of participatory design in shaping neighborhood identity and fostering a sense of community.

Therefore, while physical attributes are important, the intangible aspects, like culture and lifestyle, are crucial in defining a neighborhood's character and contributing to its overall livability and sustainability. [22] emphasizes the importance of participatory design and social communication in understanding and shaping neighborhood dynamics.

Citation: Understanding a neighborhood's characteristics, both tangible and intangible, is essential for designing livable areas that meet the community's needs. This knowledge enables:[23,17,24]

a) Targeted Interventions: By understanding the specific challenges and opportunities within a neighborhood, interventions can be tailored to address local needs and priorities.
b) Enhanced Livability: Considering the physical layout, social dynamics, and access to services allows for the creation of spaces that promote well-being, social interaction, and a strong sense of community.
c) Sustainable Development: Understanding the interconnectedness of different elements within a neighborhood enables the development of sustainable solutions that balance environmental, social, and economic considerations.
d) Community Empowerment: Engaging residents in the planning process, informed by a deep understanding of their neighborhood, empowers them to shape their environment and contribute to its long-term vitality.

Doing an assesment on a ngihbourhood need a holistic perspective, also not only the livable criteria have to be considered, but also more sustainable elements. [25262723] all these criteria need to employ to assest the neighbourhood. In this research the authors try to summerise the key aspect that need to consider to assesess the neighborhood for sustainable and livable criteria.

The tangible and intangible elements that composing a neighborhood, need to breakdown and examine further to understand the neighborhood as a whole.Theresearch highlights the importance of recognizing both physical and social aspects of a neighborhood, as they are interconnected and equally crucial in determining its overall livability and sustainability, underscoring the need for a multidimensional approach to neighborhood assessment

Neighborhoods play a crucial role in urban design and ecological systems, serving as vital units for human interaction and biodiversity. They are defined as regional segments of a city that maintain distinct characteristics influenced by social and physical dynamics. A neighborhood is a defined segment of a city characterized by its unique features and social interactions. [14] Neighborhoods are essential for fostering human connections and biodiversity, highlighting the need for sustainable urban planning that integrates ecological considerations.

Neighborhood in Urban has function as a facilitate social coherence and community engagement, addressing issues like crime and environmental pollution. They enhance living conditions and promote a sense of belonging among residents. Key parameters include urban morphology, public space, and architectural specifications, which influence ecological interactions. [12]Sustainable neighborhood regeneration focuses on improving physical and social aspects while considering environmental impacts. [9]

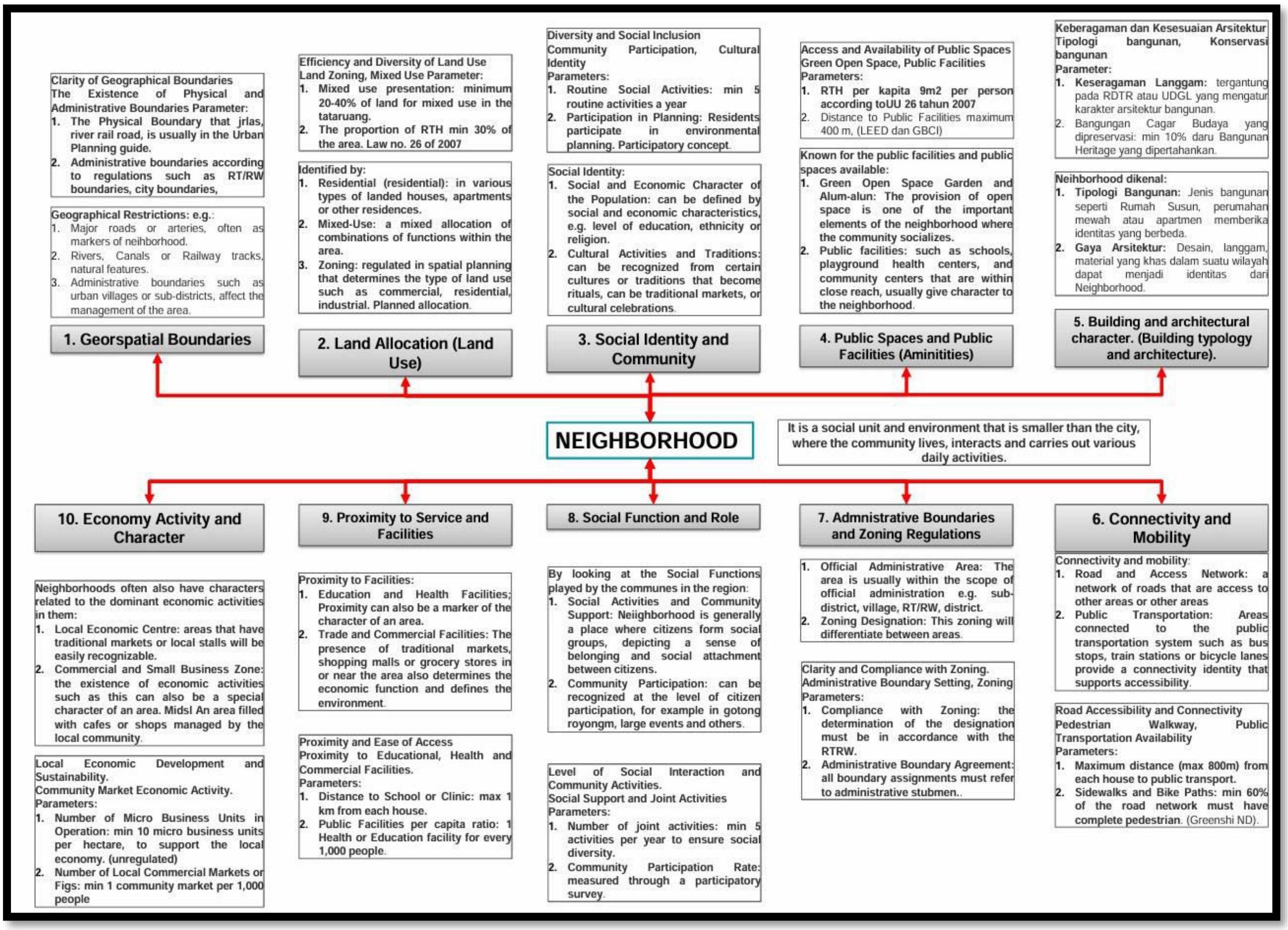

Diagram 6. The concept of Neighborhood theory based on various sources

1.5. Case Studies: Green Pramuka

Administratively, the location of the case study is partly RW 8 and RW 9, Rawasari Village, CempakaPutih District, Central Jakarta, as shown in Figure 1. This area is a residential, service, and commercial zone.

II. Research Methodology

This study is included in the quantitative research method. The method of data collection through literature studies and conducting observations in the form of observations at the research location. Literature studies are conducted to obtain design concepts. The design concept consists of matrix 1, matrix 2, and analysis tables. This design concept will be tested against residential and urban areas. The case study is in Rawasari Jakarta Indonesia with an area of 30 hectares. From this area will be divided into 30 sub-areas to be analyzed. The Likert scale was chosen for its ability to standartdize subjective evaluations, providing comparability across various urban sustainability indicators.

2.1. Formulation of Design Criteria Concept

a) Concept Formulation Matrix per Criteria

Based on the results of a literature study that produces the meaning of theory, components, and attributes per criterion sustainability, regenerative, livability dan neighborhood then the next step is to make Matrix I (Formulation of Indicator Concepts per Criteria) related to the RTBL + Hamid Shirvani design component. Matrix I is produced from theoretical analysis based on the results of literature studies which are strengthened by the existence of legal aspects (regulations) and precedents (examples) of the region. The following is an example of the Matrix I table used in this study.

b) Matrix of Formulation of Sustainability, Regenerative, Livability and Neighborhood Analysis Components

Matrix II is a matrix created after formulating the concept of indicators per criteria. The results of Matrix II are the combined results of the concept of sustainability, regenerative, livability and neighborhood indicators as well as assessment parameters per design component. The final items of the resulting parameters will be assessed and a linkert scale will be made as a reference for assessment. The following is an example of the Matrix II table that has been described.

Table 1. Matrix 1: Combination matrices that translate/explain theories or concepts on operational indicators; especially those that will be used in the context of an area or an build environment.

DESIGN COMPONENTS RTBL + HAMID SHIRVANI	COMPONENT OF ANALYSIS - FORMULATION OF INDICATOR CONCEPTS PER CRITERIA					
	(THEORY - PRESEDEN – LEGAL ASPECT)					
	SUSTAINABILITY/ REGENERATIVE/ LIVABILITY/ NEIGHBORHOOD					CONCEPT
	THEORY - CONCEPT	LEGAL ASPECT	PRECEDENT	PRECEDENT	PRECEDENT	INDICATOR
Land Use Structure						
Land Use Intensity						
Building Layout						
Circulation System and Connecting Paths						
Open space and green layout						
Environmental Quality Management						
Infrastructure - Utilities						
Activity Support						
Conservation/Preservation						

Table 2. Matrix II is an explanation of how the researcher identified each indicator in the Measurable form so that both the value and the rating can be

quantified.

DESIGN COMPONENTS RTBL + HAMID SHIRVANI	INDICATOR CONCEPT				
	LIVABILITY	SUSTAINABILITY	REGENERATIVE	NEIGHBORHOOD	FINAL KONSEP + PARAMETER
Land Use Structure					
Land Use Intensity					
Building Layout					
Circulation System and Connecting Paths					
Open space and green layout					
Environmental Quality Management					
Infrastructure - Utilities					
Activity Support					
Conservation/Preservation					

2.2. Likert Analysis and Scale Table

After creating matrix II, the next step is to create an analysis table equipped with a linkert scale with points 1-5. The number of final items of the concept and parameters will be multiplied by the maximum value of the linkert point which is 5. For example, in the components of the land use structure, the final concept and parameters amount to 7 items with a maximum value of 35 points, then they are mentioned in order, namely land use intensity (maximum 90 points), building planning (maximum 35 points), circulation system and connecting paths (maximum 110 points), open space and green management (maximum 25 points), environmental quality management (maximum 15 points), Infrastructure-Utilities (maximum 30 points), Activity Support (maximum 20 points), and Conservation/Preservation (maximum 30 points). So the total totallinkert points is 390 points.

Table 3. The assessment table is based on the Likert scale, in each component, this table will be used on the thirty data, which is obtained from the grid distribution from the "Green Pramuka" location map that will be evaluated. The output is that the researcher gets a rating or quality score from each data or series.

DESIGN COMPONENTS RTBL + HAMID SHIRVANI	FINAL CONCEPT + PARAMETERS	PROOF DATA	POINT LIKERT					SCORING		DATA NUMBER	
			1	2	3	4	5	POINT (N)	SCORING (B) (N) / (TN)	POINT	DATA
Land Use Structure								35	0,0897		
Land Use Intensity								90	0,2308		
Building Design								35	0,0897		
Circulation System and Connecting Paths								110	0,2821		
Open space and green layout								25	0,0641		
Environmental Quality Management								15	0,0385		
Infrastructure - Utilities								30	0,0769		
Activity Support								20	0,0513		
Conservation/Preservation								30	0,0769		
							TOTAL (TN)	390	1,00		

Based on a total point of 390, a weight (B) can be made per design component of points (N) divided by total (TN). For example, in the component of the land use structure, the weight is 0.0897, meaning that the total points of the land use structure will contribute 0.0897 from the total final assessment of the area. The following is an example of the analysis table used in this study.

2.3. Location Determination, Samples and Data Collection

The analysis table that has been explained in the previous section will be used as an assessment instrument (evaluation) of the case study to determine the extent to which the area is included in the criteria of a sustainable neighborhood. The case study of this research is in the RawasariCempakaPutih Urban Village, Jakarta, in the form of the Green Pramuka Apartment, residential areas, commercial areas, and green areas around Green Pramuka. The boundary of the research location is as shown in Figure 8 below.

Figure 1. Research location samples

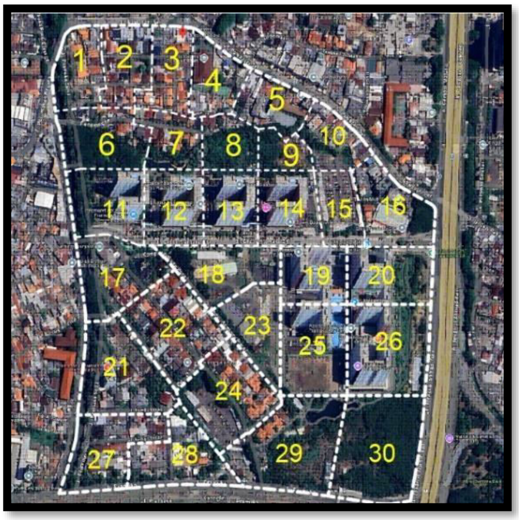

Figure 2. 30 research

The research site is divided into several sample areas with the assumption that the area is almost the same. The boundaries between areas are limited by imaginary lines based on road patterns or green open spaces. The divided areas are used as research samples totaling 30 samples as in Figure 9. According to [28] for correlation research, a sample of 30 respondents is required. These samples are analyzed through direct observation and assessed based on parameter items that have been equipped with a linkert scale and assessment weights. The details of the final values and weights will consist of: value weight 0-1 does not meet/suitable; value weight >1-2 less meet/suitable; value weight >2-3 quite meet/suitable; weight >3-4 already meets/suitable; and value weight >4-5 very meet/suitable. The results of the sample area assessment will be summarized and equipped with a color code. The weight value ≤ 1 is colored red, the weight value 1 to 2 is colored yellow, the weight value 2 to 3 is colored green, the weight value 3 to 4 is colored light blue, and the weight value 4 to 5 is colored dark blue.

III. Result and Discussion

These are the steps of How the author do the assesment from each grid from the map delineating of Green Pramuka Area.

a) The researchers divided the map into 30 grid areas, using roads as the basis for the grouping.
b) They employed the Likert scale as a tool to conduct an assessment, evaluating how each grid area addressed the sustainable and livable criteria.
c) After collecting data from the 30 grid areas, the researchers were able to determine the extent to which each area fulfilled the Sustainable, Regenerative, and Livable parameters that had been established.

d) Using the Likert scale, the researchers also determined the scoring for each grid area, and based on this data, they were able to ascertain the ranking of each grid.

e) The researchers then proceeded to conduct a spatial analysis to examine the distribution patterns of the data in the form of a map. Consequently, when a recapitulation was performed, a table emerged, wherein the colors representing the assessment results for each component of each grid area provided a clear picture of the Sustainable, Regenerative, and Livable suitability scales.

The data presented in the table allows us to analyze the relationship between the performance of each grid area and the overall assessment of the various elements within the neighborhood. The data presented in the table reveals that even if a grid area scores poorly in land use intensity, as indicated by a red color on the Likert scale, the overall score for that grid could still be relatively high. This is contingent on the other components, such as circulation, open space, and utility, being assessed as blue, signifying positive performance.

KOMPONEN	GRID	Land Use Allocation (Zoning)		Land Use Intensity		Building		Circulation and Connectivity		Open Space and Green Infrastructure		Environmental Quality		Infrastructure and Utility		Community Facilities		Conservation and Preservation				KOMPONEN GRID	RATING
STANDART	KRITERIA	35		90		35		110		25		15		30		20		30		390			
		NILAI	BOBOT	NILAI	BOBOT	NILAI	BOBOT	NILAI	BOBOT	NILAI	BOBOT	NILAI	BOBOT	NILAI	BOBOT	NILAI	BOBOT	NILAI	BOBOT	TOTAL POIN		DATA	
	BOBOT KOMPONEN		0,0897		0,2308		0,0897		0,2821		0,0641		0,0385		0,0769		0,0513		0,0769	1,00			
DATA	15	2,143	2,1429	1,222	0,0564	1,000	0,0179	2,682	0,1513	1,800	0,0231	3,000	0,0231	2,500	0,0385	1,250	0,0128	1,000	0,0154	144,0	0,2979	15	29,8%
DATA	18	2,143	0,0385	1,111	0,0513	2,429	0,0436	2,500	0,1410	2,200	0,0282	2,333	0,0179	1,667	0,0256	1,500	0,0154	1,667	0,0256	151,0	0,3150	18	31,5%
DATA	3	1,571	0,0282	1,222	0,0564	1,571	0,0282	2,500	0,1410	1,000	0,0128	5,000	0,0385	2,667	0,0410	1,500	0,0154	1,333	0,0205	149,0	0,3296	3	33,0%
DATA	4	1,571	0,0282	1,333	0,0615	1,571	0,0282	2,500	0,1410	1,000	0,0128	5,000	0,0385	2,667	0,0410	1,500	0,0154	1,333	0,0205	151,0	0,3316	4	33,2%
DATA	2	2,429	0,0436	1,333	0,0615	1,571	0,0282	2,500	0,1410	1,000	0,0128	5,000	0,0385	2,667	0,0410	1,500	0,0154	1,333	0,0205	157,0	0,3470	2	34,7%
DATA	27	2,714	0,0487	2,111	0,0974	3,571	0,0641	2,391	0,1349	1,400	0,0179	2,333	0,0179	3,167	0,0487	1,250	0,0128	1,333	0,0205	183,0	0,3638	27	36,4%
DATA	28	2,714	0,0487	2,167	0,1000	3,571	0,0641	2,391	0,1349	1,400	0,0179	2,333	0,0179	3,167	0,0487	1,250	0,0128	1,333	0,0205	184,0	0,3648	28	36,5%
DATA	5	2,286	0,0410	1,167	0,0538	1,571	0,0282	2,500	0,1410	1,000	0,0128	5,000	0,0385	2,667	0,0410	3,500	0,0359	1,333	0,0205	161,0	0,3774	5	37,7%
DATA	30	3,857	0,0692	1,444	0,0667	1,000	0,0179	2,864	0,1615	4,000	0,0513	2,333	0,0179	1,667	0,0256	2,000	0,0205	2,333	0,0359	182,0	0,3859	30	38,6%
DATA	16	2,429	0,0436	2,222	0,1026	2,286	0,0410	2,773	0,1564	3,600	0,0462	2,333	0,0179	2,833	0,0436	1,250	0,0128	1,833	0,0282	192,0	0,3870	16	38,7%
DATA	22	3,714	0,0667	2,278	0,1051	3,714	0,0667	2,261	0,1275	1,600	0,0205	2,333	0,0179	3,667	0,0564	1,000	0,0103	2,167	0,0333	199,0	0,4080	22	40,8%
DATA	17	3,571	0,0641	1,778	0,0821	2,714	0,0487	2,636	0,1487	3,400	0,0436	3,667	0,0282	2,000	0,0308	2,000	0,0205	2,333	0,0359	196,0	0,4326	17	43,3%
DATA	23	3,571	0,0641	1,778	0,0821	3,857	0,0692	2,304	0,1300	1,400	0,0179	3,667	0,0282	4,000	0,0615	2,000	0,0205	2,167	0,0333	196,0	0,4441	23	44,4%
DATA	1	3,714	0,0667	1,889	0,0872	1,571	0,0282	2,500	0,1410	5,000	0,0641	5,000	0,0385	2,667	0,0410	2,500	0,0256	1,333	0,0205	200,0	0,4698	1	47,0%
DATA	25	3,571	0,0641	2,278	0,1051	4,143	0,0744	3,609	0,2036	1,600	0,0205	4,333	0,0333	4,400	0,0677	1,500	0,0154	1,833	0,0282	238,0	0,4894	25	48,9%
DATA	21	4,143	0,0744	2,833	0,1308	3,571	0,0641	2,304	0,1300	3,200	0,0410	3,667	0,0282	3,667	0,0564	1,500	0,0154	2,667	0,0410	229,0	0,4945	21	49,5%
DATA	24	3,857	0,0692	2,444	0,1128	3,714	0,0667	3,435	0,1938	2,800	0,0359	3,667	0,0282	3,833	0,0590	2,500	0,0256	2,000	0,0308	246,0	0,5071	24	50,7%
DATA	19	3,000	0,0538	2,278	0,1051	3,571	0,0641	2,682	0,1513	2,600	0,0333	5,000	0,0385	3,333	0,0513	4,500	0,0462	1,500	0,0231	221,0	0,5109	19	51,1%
DATA	12	2,714	0,0487	2,056	0,0949	3,571	0,0641	2,864	0,1615	3,400	0,0436	5,000	0,0385	3,333	0,0513	4,000	0,0410	2,167	0,0333	225,0	0,5224	12	52,2%
DATA	11	3,143	0,0564	2,056	0,0949	3,571	0,0641	2,864	0,1615	3,400	0,0436	5,000	0,0385	3,333	0,0513	4,000	0,0410	2,167	0,0333	228,0	0,5301	11	53,0%
DATA	14	2,714	0,0487	2,056	0,0949	3,571	0,0641	2,682	0,1513	3,400	0,0436	5,000	0,0385	3,333	0,0513	5,000	0,0513	2,167	0,0333	225,0	0,5371	14	53,7%
DATA	29	3,857	0,0692	2,111	0,0974	3,571	0,0641	3,261	0,1839	4,800	0,0615	3,667	0,0282	3,833	0,0590	2,250	0,0231	3,000	0,0462	250,0	0,5448	29	54,5%
DATA	13	2,714	0,0487	2,056	0,0949	3,571	0,0641	3,227	0,1821	3,400	0,0436	5,000	0,0385	3,333	0,0513	5,000	0,0513	2,167	0,0333	237,0	0,5469	13	54,7%
DATA	20	3,429	0,0615	2,556	0,1179	3,571	0,0641	2,773	0,1564	3,400	0,0436	5,000	0,0385	3,333	0,0513	5,000	0,0513	2,000	0,0308	240,0	0,5575	20	55,8%
DATA	6	3,857	0,0692	1,556	0,0718	1,571	0,0282	2,864	0,1615	5,000	0,0641	5,000	0,0385	4,500	0,0692	3,500	0,0359	4,333	0,0667	236,0	0,5776	6	57,8%
DATA	26	4,714	0,0846	2,500	0,1154	4,143	0,0744	3,565	0,2011	3,200	0,0410	4,333	0,0333	4,500	0,0692	2,750	0,0282	3,167	0,0487	275,0	0,5900	26	59,0%
DATA	7	3,857	0,0692	1,778	0,0821	3,857	0,0692	2,955	0,1667	5,000	0,0641	5,000	0,0385	4,500	0,0692	3,500	0,0359	4,333	0,0667	258,0	0,6243	7	62,4%
DATA	10	3,857	0,0692	1,778	0,0821	3,857	0,0692	3,136	0,1769	5,000	0,0641	5,000	0,0385	4,500	0,0692	3,500	0,0359	4,333	0,0667	262,0	0,6275	10	62,8%
DATA	8	5,000	0,0897	1,778	0,0821	4,429	0,0795	3,864	0,2179	5,000	0,0641	5,000	0,0385	4,500	0,0692	4,500	0,0462	5,000	0,0769	298,0	0,7013	8	70,1%
DATA	9	5,000	0,0897	1,778	0,0821	4,429	0,0795	3,955	0,2231	5,000	0,0641	5,000	0,0385	4,833	0,0744	4,500	0,0462	5,000	0,0769	302,0	0,7089	9	70,9%

COMPONENT POINTS
4 - 5
3,2 - 4
2,4 – 3,2
1,8 – 2,4
1 – 1,8

RATING GRID ENVIRONMENTAL QUALITY
70-100% SPECIAL
50-70% VERY GOOD
30-50% GOOD
10-30% BAD
0-10% VERY BAD

Table 4. Recapitulation Table of Analysis Results

Furthermore, the table suggests that grid areas with a red-scale assessment can be elevated to a blue-scale, indicating the potential for those areas to achieve regenerative status. However, this would require the implementation of comprehensive strategies to improve the grid performance across the evaluated criteria.

		
Figure 3. Land Use Structure	**Figure 4.Land Use Intensity**	**Figure 5.Building Layout**
There are 5 sample areas that have a dark blue color which can be interpreted as an area that is very suitable for the components of the design of the land use structure.	Several areas that are considered not to meet or in accordance with the components of the land use intensity design. In particular, it can be seen in the sample area number 30 whose land use is only active and passive open space. In the recapitulation table, it is also clear that sample number 30 is the worst area for assessing land use.	Number 25 and 26 have a dark blue color code which can be interpreted as the area with the most building layout according to the sustainable neighborhood criteria. Meanwhile, the light blue color code is spread across residential areas or villages and most of the Green Pramuka apartment area.

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<td>Figure 6. Circulation Color Map and Connecting Path</td>
<td>Figure 7. Open Space Color Map and Green Layout</td>
<td>Figure 8. Color Map of Environmental Quality Management</td>
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<td>On the circulation component and the connecting path, two color codes can be seen, light blue and green. Where these two colors are interpreted as sufficient and have fulfilled the components of circulation and communication paths.</td>
<td>Starting from some areas that do not meet the requirements, two areas that are sufficient, 3 areas that have been completed, to many areas that fully meet the components of open space and green layout. The dark blue color is scattered in residential areas and the Green Pramuka area which looks like it has enough green open space.</td>
<td>The study area has better environmental quality in Green Pramuka apartments than surrounding organic settlements.</td>
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<td>Figure 9. Utility Infrastructure</td>
<td>Figure 10. Activity Support</td>
<td>Figure 11. Conservation-Preservation</td>
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<td>shows infrastructure and</td>
<td>The map in table 20shows</td>
<td>On the color map of the</td>
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</table>

utilities concentrated in Green Pramuka apartments and nearby housing, emphasizing the need for careful planning in residential and apartment developments.	a lack of activity support in organic settlements, contrasting with Green Pramuka apartments, indicating a social gap limiting residents' access to supportive facilities.	conservation-preservation component, it can be seen that the Green Pramuka area and its surroundings do not attach importance to conservation and preservation issues. So that the recapitulation of the assessment only ranges between less and enough. Although again in sample number 26 (Green Pramuka apartment area).

Based on the recapitulation table, the final rating of the assessment for 30 samples ranges from 0.3040 to 0.5915. Areas scoring 0.4130 to 0.5915 (green) meet sustainable neighborhood criteria, while those scoring 0.3040 to 0.3958 (yellow) do not. The final rating represents the average weight of each design component, where individual component values significantly impact the overall ranking.

The weight of each component is determined by the number of indicators and parameters it contains. A higher number of indicators increases the component's weight, affecting the final rating. However, if a component has a high weight but low Likert scale scores, the final rating will still be low. This is evident in the comparison between sample 20 and sample 26. It had more dark blue values (4) compared to sample 20 (3), yet its final rating was slightly lower. This discrepancy occurred because sample 20 had higher scores in the open space, green layout, and activity support components, increasing its final weighted value.

Furthermore, the color-coded visualization of each design component provides a clear spatial representation of sustainability levels. The bluer an area appears, the higher its Likert score, indicating better sustainability performance. Conversely, lower-scoring areas shift towards red, signifying poorer conditions. This visual mapping enhances the assessment's clarity by illustrating spatial variations in urban sustainability quality.

Color Distribution Map Table Based on Rating per Design Component

In addition to the image of the color distribution map of each design component, the following is an image of the visualization of the distribution map of the suitability of sustainable neighborhood criteria based on the final results of the assessment rating rating. There are two types of color codes, namely green which means enough to meet the criteria and yellow which means it does not meet the criteria of a sustainable neighborhood. The green color is scattered in the Green Pramuka apartment area and several housing or villages that have open spaces. Meanwhile, the yellow color code is scattered in residential areas or villages that lack open space and are close to the main road when viewed on the existing satellite map conditions.

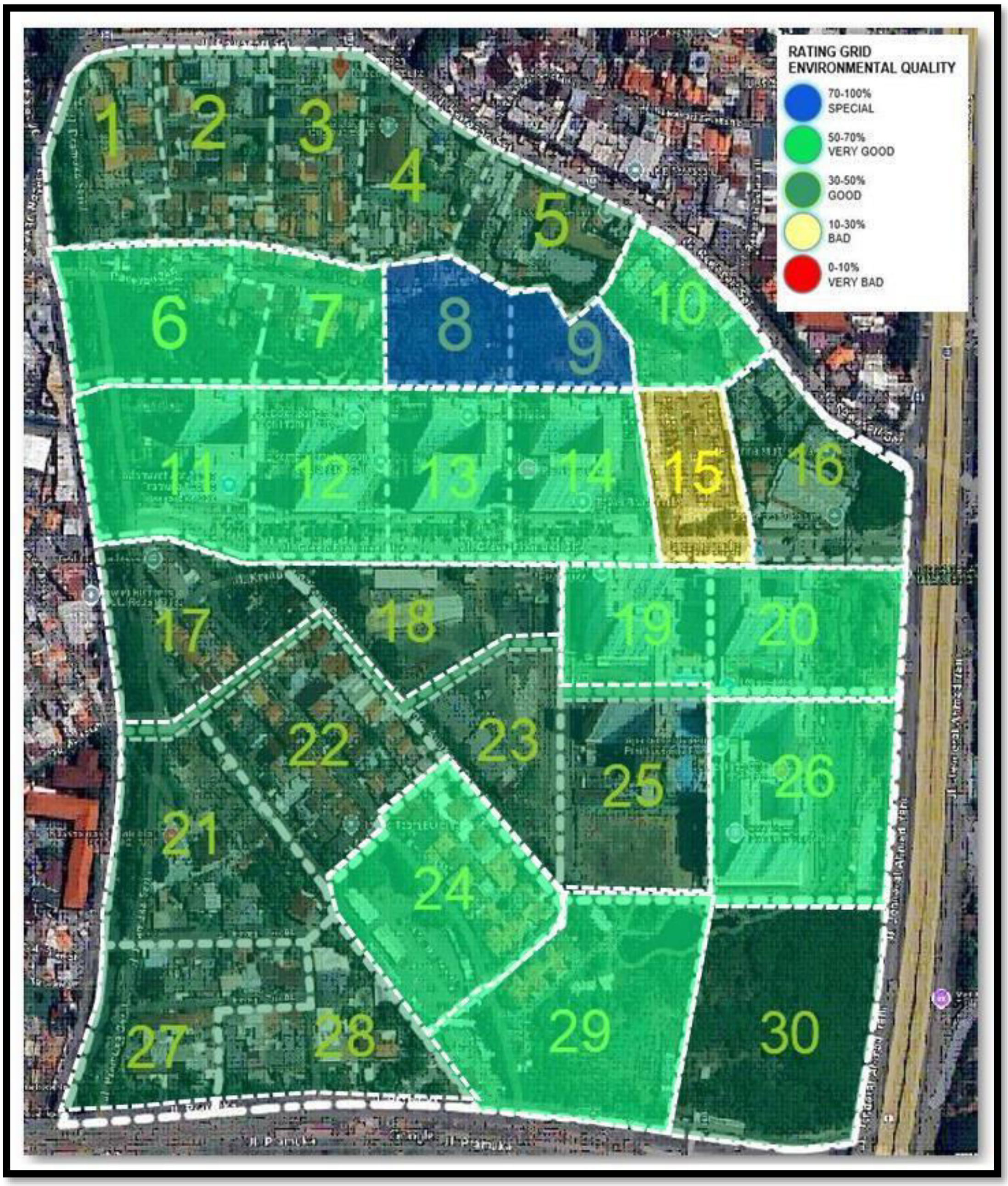

Figure 12. Color Distribution Map Based on Final Rating

IV. Conclusion

4.1. Key Findings

The assessment framework for this study was developed by synthesizing established global concepts of sustainability, regeneration, and livability, which were adapted to the local urban context of Jakarta. The choice of Hamid Shirvani's principles and the

RTBL design components as the foundational framework was guided by their relevance to spatial design and urban planning in densely populated areas. These frameworks provide a structured approach to evaluate physical, social, and environmental dimensions comprehensively. Moreover, the Likert scoring system was selected for its simplicity and ability to standardize subjective evaluations across multiple indicators, ensuring comparability between different elements of the study. This structured yet adaptable framework ensures that the evaluation aligns with both theoretical rigor and practical application in urban design, particularly for mixed-use developments like Green Pramuka.

This study shows that the Green Pramukaarea has significant potential to meet the criteria of Sustainable, Regenerative, and Livable Neighbourhood, although there are several weaknesses that need to be improved. The main advantage lies in:

- The structure of land allocation has met the principle of mixed-use zoning with the integration of residential, commercial areas, and green space.
- The building layout is relatively well planned, especially in the apartment area, so as to provide comfort and accessibility for residents.
- Adequate environmental quality management in several apartment areas with green facilities, ventilation, and good air quality.

However, this study also identified several shortcomings, including:

- Green open space and green layout are still limited to apartment areas, while the surrounding residential areas lack adequate green space.
- Infrastructure and utilities that are not completely evenly distributed, especially in organic settlement areas that tend to be underserved.
- Uneven activity support, causing a social gap between apartment residents and residents of surrounding settlements.
- Conservation and preservation are less of a concern, both in terms of historical buildings and ecological habitat preservation.

Overall, the Green Pramuka area is at the level of "quite fulfilling" in the criteria of sustainable neighborhood, but still needs improvement efforts to achieve regenerative and fully livable status.

While the scoring results provide valuable insights into the achievement levels of various indicators, it is evident that certain elements, such as activity support and the distribution of green spaces, performed poorly in the Green Pramuka study. This underperformance can be attributed to gaps in urban design planning, such as the limited integration of community-focused facilities and uneven accessibility to public amenities. These deficiencies highlight the need to prioritize inclusivity, equitable access to resources, and the enhancement of community infrastructure in future urban developments. The lack of balance between physical infrastructure and social well-being undermines the broader goals of sustainability and livability. Policy reforms should prioritze inclusive infrasturcture, equitable green space distribution, and stronger community in urban planning.

The evaluation offers numerous insights into enhancing an area's livability or even making it more regenerative. Using the provided parameters (table), designers can identify low-hanging fruit, allowing for improvements with minimal effort relative to the area's internal conditions. This approach provides urban planners with multiple options when undertaking urban renewal projects. Each component can potentially be improved to create a better-performing environment for residents. For example, if land use is poor, urban planners or designers can select components that will enhance the area within budget constraints, as cost is often a primary concern in urban revitalization efforts.

The rating system developed in this study can be easily applied to other areas to evaluate sustainability, regeneration, and livability. With an indicator, attribute and parameter-based approach, the system enables:

- Comprehensive: Combining various physical (land use structure, land use intensity) and non-physical (social quality and inclusivity) aspects.
- Adaptive: Indicators can be adjusted to the specific conditions of the region being assessed.
- Visual and Easy to Understand: The use of color recapitulation makes it easy to quickly analyze the condition of the area.

The application of these ratings to other regions also provides important insights for:

- Identify improvement priorities on specific components.
- Comparing the level of sustainability between regions, especially in the context of urbanization in big cities such as Jakarta.

4.2. Research Implications

This study's methodology is practical for evaluating urban neighborhoods and adaptable to various socio-economic contexts. The rating system applies to mixed-use and informal areas, identifying improvement priorities. Scalability requires localized data, while replicability depends on standardized data collection and GIS integration to enhance spatial insights for urban planners and policymakers.

4.3. The Importance of Collaboration.

Achieving a regenerative region requires collaboration among the government, developers, and communities. The government ensures sustainability standards and provides incentives for regenerative development, while developers integrate sustainable, regenerative, and livable principles, balancing economic, social, and environmental benefits. Communities actively participate in planning to align designs with local needs. This synergy fosters holistic sustainability, creating an inclusive, livable, and regenerative urban environment..

4.4. Recommendations for Further Research

Future research should refine sustainability, regeneration, and livability indicators for Indonesia, assessing their relevance in local social, cultural, and economic contexts. Integrating GIS-based socio-economic mapping can improve analysis of public facility access, economic activity, and infrastructure disparities, helping identify social inequalities and guiding inclusive urban planning for more context-sensitive sustainability strategies.

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