

Revitalization of the Akcaya Park in Pontianak City for Green Open Space Planning

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Abstract: Akcaya Park is one of the open green spaces that plays an important role in providing recreational facilities, supporting social interaction, and improving environmental quality in Pontianak City. However, the park's existing condition shows a decline in the quality of its facilities, aesthetics, and spatial utilization, making revitalization efforts necessary. This study aims to design a revitalization concept for Akcaya Park that can optimize its ecological, social, and aesthetic functions in accordance with community needs and technical standards for green open space planning. The methodology includes field surveys, collection of primary and secondary data, analysis of existing conditions, and the preparation of a design concept based on landscape planning principles and relevant technical guidelines. The design takes into account spatial arrangement, circulation, supporting facilities, lighting, vegetation, and environmental sustainability. Based on the design results, the revitalization of Akcaya Park focuses on improving accessibility, comfort, and optimizing the park's functions, which include upgrading the children's playground, relaxation garden, parking areas, public toilets, basketball court, waste management facilities, and lighting. This design is expected to meet community needs and contribute to the creation of a green, comfortable, and sustainable city.

Keywords: Akcaya Park, Area Design, City Park, Revitalization.

1. Introduction

Rapid urban development requires continuous change and innovation in public spaces to meet the needs of the community. Revitalizing public spaces in urban areas is a crucial approach to reviving urban areas that have declined in function or potential, with the aim of making them vital and attractive centers of activity [14].

The concept of revitalization emphasizes not only physical improvements, but also enhancements in the quality of function, aesthetics, and sustainability of spaces. In this context, city parks are one of the most important public spaces for revitalization.

Akcaya Park is a city park located in the center of Pontianak

City and serves as a public space that is easily accessible to people from all walks of life. This park is not only a place for social interaction, but also serves as a center for entertainment, sports, and education. However, Akcaya Park has experienced a decline in function due to a lack of supporting facilities such as public toilets, sports facilities, children's play areas, and inadequate lighting. These conditions do not comply with national standards and regulations [2]-[4], indicating the need for revitalization.

Based on the results of a questionnaire conducted on 50 respondents, it was found that most of the community strongly desires improvements to Akcaya Park, with 86% needing lic

toilets, 58% requiring lighting, 40% sports facilities, 30% parking spaces, and 24% improvements to the children's play area. Therefore, the author chose the title "Revitalization of the Akcaya Park Area in Pontianak City" as an effort to maintain and develop public spaces that serve as facilities for recreation, social interaction, sports, and education for the city's residents, as well as to provide a reference for more efficient and sustainable development throughout this document. Some components, such as multi-leveled equations, graphics, and tables are not prescribed, although the various table text styles are provided. The formatter will need to create these components, incorporating the applicable criteria that follow.



Figure 1. Location of Akcaya Park in Pontianak City

2. Literature Review

Revitalization is defined as the process of restoring vitality to urban areas experiencing a decline in function or aesthetics [4]. The concept of revitalization is also explained in national regulations, which define it as a strategic intervention to improve spatial quality, economic value, and environmental sustainability within the framework of sustainable development [8].

Urban parks function as ecological buffers, social interaction spaces, and recreational facilities. National regulations classify city parks as part of urban green open space intended to provide greenery and accessible recreational functions [7]. Relevant technical guidelines also include standards for child-friendly playgrounds [13], outdoor lighting requirements [12], public toilet design standards [5], and sports facility regulations [9].

National standards relevant to park design include:

2.1. Child-Friendly Playground Requirements

According to national standards for child-friendly playgrounds [13], playground areas must be equipped with at least five types of play equipment arranged with a minimum spacing of 1.8 meters between units. Equipment dimensions must be adapted to children's age, weight, and height to ensure safety and accessibility. These technical requirements serve as the foundation for designing safe and functional play areas.

2.2. Outdoor Lighting Standards

Outdoor lighting in public spaces must meet the requirements of uniform distribution, adequate visibility, and

minimal glare [12]. Design considerations include pole height (H), spacing (E), illumination angle (I), and area width (L). The standard specifies installation types such as wall-mounted poles, single poles, double poles, and high-mast poles for large outdoor spaces like parking areas and intersections.

2.3. Waste Management Systems

Solid waste is material that requires proper management to prevent environmental pollution [10]. Based on its type, waste consists of organic and inorganic waste. Waste containers serve as temporary storage. Placement follows SNI standards, with a maximum distance of 100 m, a capacity of $\pm 50-70$ liters and emptied at least once a day.

Table 1 presents standard waste generation values based on source components [14]. These standards are used as reference parameters to estimate the daily volume of waste in public open spaces.

No.	Komponen Sumber Sampah	Satuan	Volume (liter)	Berat (kg)
1.	Rumah permanen	Orang/hari	2,25-2,250	0,350-0,400
2.	Rumah semi permanen	Orang/hari	2,00-2,25	0,350-0,350
3.	Rumah non-permanen	Orang/hari	1,75-2,00	0,250-0,300
4.	Kantor permanen	Pegawai/hari	0,50-0,75	0,025-0,100
5.	Toko/ruko	Petugas/hari	2,50-3,00	0,150-0,350
6.	Sekolah	Murid/hari	0,10-0,15	0,010-0,020
7.	Jalan arteris	m/hari	0,10-0,15	0,020-0,100
8.	Jalankolektor sekunder	m/hari	0,10-0,15	0,010-0,050
9.	Jalan local sekunder	m/hari	0,05-0,10	0,005-0,025
10.	Pasar	M ² /hari	0,20-0,60	0,100-0,300

The required number of waste bins can be estimated using the following equation:

$$nTPS = VS \times VT$$

Note : $nTPS$ = Number of TPS required
 VS = Volume of waste pile
 VT = Volume of box dimensions

2.4. Public Toilet Standards

Public toilet facilities must meet minimum requirements for ventilation ($\geq 10\%$), lighting intensity (100–200 lux), and layout [5]. Additional technical specifications require separate access for men and women, adequate sanitation features, and fixtures such as sinks, mirrors, jet showers, and exhaust fans to maintain hygiene and user comfort [6].

2.5. Sports Facility Standards

The Waste is solid waste that must be managed so as not to pollute the environment [10]. Based on its type, waste consists

of organic and inorganic waste. Waste containers serve as temporary storage. Placement follows SNI standards, with a maximum distance of 100 m, a capacity of $\pm 50\text{--}70$ liters and emptied at least once a day.

These guidelines serve as the technical foundation for planning and designing Akcaya Park's revitalization.

3. Methodology

This study uses a descriptive qualitative approach supported by quantitative calculations to assess existing conditions and formulate a revitalization design for Akcaya Park. The research procedure consists of three main stages: data collection, data analysis, and design development.

3.1. Data Collection

Data were obtained from two primary sources:

3.1.1. Primary Data

Primary data were collected through:

- Field observations, including documentation of existing facilities, circulation, vegetation, and lighting conditions.
- Interviews with visitors and informal discussions with park users.
- Questionnaires distributed to 50 respondents to identify user needs related to toilets, lighting, playgrounds, sports facilities, and parking.
- On-site measurements of park dimensions, facility placement, and environmental characteristics.

3.1.2. Secondary Data

Secondary data include:

- City maps and satellite imagery.
- Technical standards such as child-friendly playground requirements [13], outdoor lighting standards [12], and public toilet and sports facility regulations [5], [6], [9];
- Relevant literature, policy documents, and previous studies related to public space revitalization.

3.2. Data Analysis

Data analysis was carried out in several stages: Visualization, prepared using AutoCAD and SketchUp for layout drawings and 3D renderings.

- Assessment of existing conditions, covering spatial layout, accessibility, vegetation, playground conditions, lighting, toilets, sports facilities, and waste management.
- Identification of user needs, interpreted from questionnaire results and field observations.
- Suitability analysis, comparing existing conditions with national technical standards [5], [7], [9]–[13] to identify deficiencies and improvement priorities.

3.3. Design Development

The design phase includes:

- Concept formulation, based on revitalization principles, sustainability, safety, and user comfort.
- Zoning arrangement, dividing the park into recreation, sports, and access areas.
- Facility design, including playgrounds, lighting, toilets, parking, circulation, and landscape elements.
- Technical calculations, such as determining the required number of waste containers using the formula:

$$n_{TPS} = \frac{V_{\Sigma}}{V_T}$$

- Visualization prepared using AutoCAD and SketchUp for layout drawings and 3D renderings.

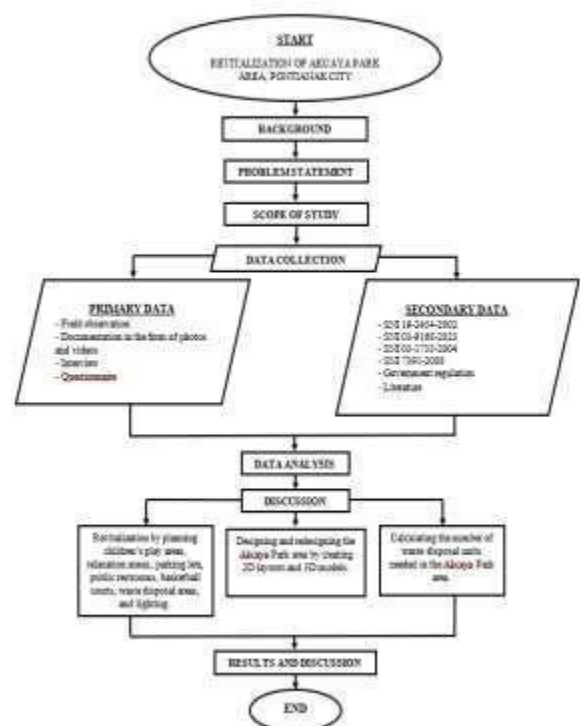
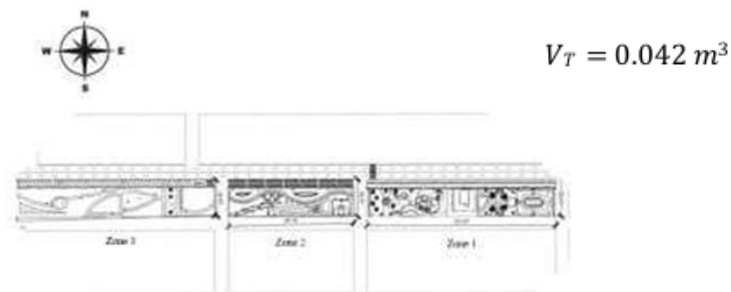


Figure 2. Research Methodology Flowchart

4. Result and Discussion

The revitalization design of Akcaya Park was developed for three main zones, each serving different user activities and design priorities.



4.1 Zone 1 (Flores-Seram Streets)

Zone 1 measures 131.27×25.43 meters and is designed as a recreation and relaxation area for families. This zone includes a children's playground, a relaxation garden, and a lighting system. The playground design complies with national standards for child-friendly playgrounds, which require a minimum distance of 1.8 meters between play equipment [13]. The installed facilities include swings, slides, and climbing structures placed on impact-absorbing surfaces to enhance user safety.

The relaxation park combines seating areas, ornamental plants, and shade trees to enhance visitor comfort. The lighting system uses decorative and functional lamps arranged to improve nighttime visibility and aesthetic quality, in accordance with national outdoor lighting standards [12]. concrete.

4.2 Zone 2 (Sumbawa-Flores Streets)

Zone 2 measures 87.10×25.43 meters and functions as the park's primary sports and activity area. Facilities include a basketball court, public toilet facilities, and a motorcycle parking area. The basketball court is designed in accordance with national sports facility standards [9], with a half-court dimension of 14×15 meters, a ring height of 3.05 meters, and a ring diameter of 45 cm. In addition to its sports function, the court also serves as an informal public open space. Public toilet facilities comply with national sanitation regulations [5], [6], providing separate access for men and women, natural ventilation, and a minimum lighting level of 100 lux. The motorcycle parking area follows formal parking management guidelines [1], ensuring efficient circulation, adequate capacity, and unobstructed pedestrian movement.

4.3 Zone 3 (Madura-Sumbawa Streets)

Zone 3, located along the Madura–Sumbawa Road corridor, measures 25.43×138.27 meters and functions as the primary vehicular access area. This zone includes a parking area and supporting lighting infrastructure. The parking layout follows national parking management guidelines, applying a 90° configuration with standard parking dimensions of 2.3×5 meters per vehicle [1]. Lighting is provided by double-arm lamp posts installed at intervals of 25–30 meters to ensure uniform illumination and safe visibility for both drivers and pedestrians.

4.3 Waste Management and Environmental Design

Based on a standard waste generation rate of 0.6 L/person/day and an estimated 500 visitors per day, the total daily waste volume is calculated as:

$$V_s = \frac{0.6 \text{ L/day} \times 500 \text{ person/day}}{1000}$$

The waste $V_s = 0.3 \text{ m}^3/\text{day}$ designed bin has

dimensions of 0.35 m x 0.30 m x 0.40 m, resulting in a volume of:

Using Equation (1), the required number of waste bins is:

$$n_{TPS} = \frac{V_s}{V_T} = \frac{0.3}{0.042} = 7.14$$

The calculation indicates that 8 waste bins are required for each park zone. Accordingly, a total of 24 waste bins is distributed across the three revitalization zones.



Figure 4. 3D visualization of the playground area in Zone 1



Figure 5. 3D Visualization of the Public Toilet in Zone 2



Figure 6. 3D Visualization of the Sports Facility in Zone 2

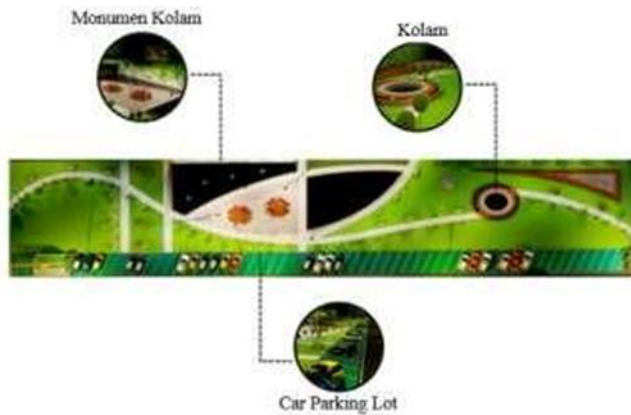


Figure 7. 3D Visualization of the lighting layout in Zone 3

Overall, the revitalization concept integrates ecological and user-based principles. Green elements such as shade trees and open lawns improve air quality and microclimate. The proposed design enhances spatial organization, accessibility, and visual harmony, transforming Akcaya Park into a more inclusive and sustainable urban public space.

5. Conclusion

Revitalization design of Akcaya Park emphasizes improved accessibility, comfort, and multifunctionality. By applying national standards (SNI) and sustainable design principles, the proposed concept successfully restores the environmental, social, and aesthetic functions of the park.

Further research is also needed to evaluate the park's management and maintenance strategies after the revitalization process, including designing a financing system, increasing community involvement, and clarifying the roles and responsibilities of the managing agencies so that the park can function optimally in the long term.

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References

- [1] Directorate General of Land Transportation, Technical Guidelines for Parking Management, Jakarta, Indonesia, 1996.
- [2] Google Earth, "Akcaya Park, Pontianak, Indonesian," Jul. 31, 2025.
- [3] Journal of Regional and Rural Development Planning, "Community perceptions," Journal of Regional and Rural Development Planning, vol. 8, no. 2, pp.146-160, 2023.
- [4] W. Martokusumo, Revitalization of the Old City Area: Approach and Implementation, Yogyakarta, Indonesia: Gadjah Mada University Press, 2006.

- [5] Ministry of Culture and Tourism, Public Toilet Design Standards in Indonesia, Jakarta, Indonesia, 2004.
- [6] Ministry of Public Works and Public Housing (PUPR), Regulation No.14/PRT/M/2017 on Standard Toilets, Jakarta, Indonesia, 2017.
- [7] Ministry of Public Works, Regulation No. 05/PRT/M/2008 on Urban Green Open Space, Jakarta, Indonesia, 2008.
- [8] Ministry of Public Works, Regulation No. 18/PRT/M/2010 on Urban Area Revitalization, Jakarta, Indonesia, 2010.
- [9] Ministry of Youth and Sports (Kemenpora), Regulation No. 15 of 2022 on Sports Facility Standards, Jakarta, Indonesia, 2022.
- [10] National Standardization Agency (BSN), SNI 19-2454:2002 – Technical Procedures for Urban Waste Management, Jakarta, Indonesia, 2002.
- [11] National Standardization Agency (BSN), SNI 03-1733:2004 – Urban Housing Environment Planning, Jakarta, Indonesia, 2004.
- [12] National Standardization Agency (BSN), SNI 7391:2008 – Procedures for Planning Street and Outdoor Lighting, Jakarta, Indonesia, 2008.
- [13] National Standardization Agency (BSN), SNI 9169:2023 – Child- Friendly Playground Requirements, Jakarta, Indonesia, 2023.
- [14] A. Nurhadi, "Dynamics of Urban Public Space Revitalization (Case Study: Urban Heritage Area of Jalan Tunjungan, Surabaya City)," Master's thesis, Gadjah Mada University, Yogyakarta, Indonesia, 2022.