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THE EVALUATION OF ISLAMIC GARDEN DESIGN CHARACTERISTICS IN URBAN PARKS IN BANDA ACEH

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Abstract

Urban parks in Banda Aceh serve as vital public and green spaces. In Islamic tradition, gardens symbolise paradise and divine unity. However, despite the city's strong Islamic identity, contemporary urban parks often lack these design principles. This study evaluates five parks in Banda Aceh to assess their alignment with Islamic garden design, using 12 main indicators and 42 sub-indicators. The findings reveal that Putroe Phang Park most closely reflects Islamic garden principles (83.33%), while Krueng Neng Park ranks lowest (38.09%). The results underscore a disconnect between urban park design and the preservation of Islamic architectural heritage. This study recommends integrating Islamic design elements into future park development to strengthen cultural identity and historical continuity. These insights offer strategic guidance for the Banda Aceh government in enhancing urban parks, ensuring they reflect Islamic architectural values while serving as high-quality public spaces.

Keywords: Islamic garden, Urban parks, Green open space, Islamic architecture

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INTRODUCTION

Islamic gardens have historically served as earthly representations of paradise, embodying the concept of eternal bliss as described in the Qur'an (Clark, 2004). The term "paradise" is derived from the ancient Persian word *pairidaeza*, denoting an enclosed garden or walled sanctuary of beauty and tranquillity. In Islamic teachings, paradise is the ultimate aspiration for Muslims, a place of eternal happiness and divine reward. This vision has inspired the creation of gardens that offer peace, joy, and spiritual reflection (Jannah et al., 2015).

Banda Aceh, located in the westernmost region of Indonesia and serving as the capital of Aceh Province, is a predominantly Muslim city. According to the Central Bureau of Statistics of Aceh (2020), 89.6% of its population – 242,221 out of 270,328 residents – identify as Muslim. The region has a deep-rooted history of Islamic governance, with the implementation of Islamic Sharia law dating back to the era of the Aceh Sultanate, long before Indonesia's independence. This religious tradition was later institutionalised through Law No. 44 of 1999 and Law No. 18 of 2001, which strengthened the application of Islamic law in Aceh. Despite this strong Islamic identity, the design of many urban parks in Banda Aceh often fails to reflect the architectural principles and values rooted in Islamic tradition.

Acehnese society, grounded in Islamic values, traditionally diverges from the Western concept of urban parks, which tend to prioritise leisure and entertainment. In contrast, recreation in the Acehnese context emphasises social cohesion, spiritual fulfilment, and harmony with nature, reflecting a holistic relationship with God, humanity, and the environment. This contrast highlights the need for urban parks in Banda Aceh to reflect Islamic values and cultural heritage while fulfilling their role as functional public spaces.

This study develops and applies a practical, operational framework of 12 indicators and 42 sub-indicators to systematically evaluate Islamic garden design in contemporary urban parks. While previous works have mostly focused on historical case studies or conceptual discussions, this research demonstrates how Islamic garden principles can be translated into measurable criteria and applied to existing green public spaces in a Sharia-based city. In the specific context of Banda Aceh, the findings offer actionable guidance for municipal planners to integrate Islamic architectural and landscape values into urban park design, thereby strengthening cultural identity and spatial governance.

Accordingly, this study aims to evaluate the extent to which Islamic garden design characteristics are reflected in five selected urban parks in Banda Aceh. By assessing their alignment with these principles, the research generates concrete recommendations for the future development and management of urban parks in Banda Aceh. These efforts seek to enhance the quality of public open spaces, support the implementation of Islamic law, and promote Islamic tourism

unique to the region. Ultimately, the study advances planning practice by positioning Islamic garden design not only as a heritage reference, but as a contemporary framework for resilient, culturally rooted urban green infrastructure.

LITERATURE REVIEW

According to Banda Aceh Urban Qanun No. 2 of 2018, which amends Qanun No. 4 of 2009 on the Banda Aceh Urban Spatial Plan (2009–2029), urban parks in Banda Aceh form an integral part of the city's Green Open Space (RTH). This includes 38 urban parks and 4 urban forests distributed across various sub-districts. These parks serve as key recreational spaces for the community, offering alternatives to beaches and other outdoor recreational destinations.

Qardhawi (2000), as cited in Janna et al., (2015), emphasises that parks, as part of *muamalah* (social interaction), are governed by Islamic legal principles that permit artistic and creative expressions, provided they do not contravene Sharia law. Islam, as a comprehensive way of life, includes guidelines for the planning and design of gardens (Hapsari et al., 2018). The fundamental legal principle in Islamic garden design is permissibility, as long as it avoids elements that are explicitly prohibited (Ansari & Nazia, 2011). These prohibitions include anything associated with Allah (*shirk*), elements that do not benefit humans or nature, and the use of materials or designs considered excessive or inappropriate, such as statues, gold, and silver (Hanurrhaza et al., 2015).

Jannah et al., (2015) further developed a set of parameters for Islamic garden design based on the Qur'an and Hadith. These include aspects such as order, space, form, texture, pattern, light, movement, garden elements, and user considerations. Additionally, Tajuddin (1999), in *The Concept of Islamic Comparison*, highlights the principles of *Habluminallah*, *Habluminannas*, and *Habluminal'alam* as foundational to Islamic architecture.

Tajuddin (1999) explains that *Habluminallah* is derived from the Arabic words *Hablun* (relationship or bond), *Min* (from or with), and *Allah* (referring to God), signifying the relationship between humans and their Creator. *Habluminannas* (*Annaas* meaning humans) refers to the relationship between individuals and other people, while *Habluminal'alam* (*'Alam* meaning the natural world) represents the connection between humans and the environment. These three principles form the core of Islamic architectural and garden design, emphasising harmony across spiritual, social, and environmental dimensions (Hanurrhaza, Harun, Mansor, & Zen, 2017).

METHODOLOGY

This study was conducted in active urban parks in Banda Aceh, the capital of Aceh Province, Indonesia. Banda Aceh comprises 9 sub-districts and 90 *Gampong* (urban villages). The research focused on five selected urban parks: Tibang Urban Forest, Bustanussalatin Park, Trembesi Urban Forest, Krueng Neng Park, and Putroe Phang Park. These parks were chosen based on their activity levels, land size, and the availability of supporting facilities. The selection also considered their alignment with the physical and conceptual characteristics of Islamic parks, as described in the Qur'an and Hadith, including attributes such as beauty, shade, spaciousness, accessibility, and suitability as communal public spaces.

According to Hamdani Basyah, Head of DLHK3 Banda Aceh (personal interview, 2023), these parks are among the most active in the city and are equipped with comprehensive facilities such as children's play areas, parking spaces, *mushalla* (prayer rooms), toilets, park furniture, security personnel, cleaners, and easy visitor access. These features make them representative of public open spaces in Banda Aceh and suitable for evaluating the integration of Islamic garden design principles.

A descriptive qualitative research method was employed to systematically describe and analyse the application of Islamic garden design principles within the selected parks. The research aimed to identify existing issues, evaluate the degree of compliance with Islamic garden design parameters, and propose improvements based on the findings.

This study has several methodological limitations that should be acknowledged. First, the sample is restricted to five active urban parks in Banda Aceh, which limits the generalisability of the findings to the wider urban green space system. Second, the scoring approach is primarily descriptive and observation-based, which may introduce observer bias and does not formally address inter-rater reliability. Third, the absence of granular quantitative data at the sub-indicator level constrains the use of more advanced inferential statistical tests. These limitations mean that the results should be interpreted as indicative rather than definitive. Future research could expand the sample size, employ scoring instruments with tested inter-rater reliability, and collect more detailed numerical data to enable more robust statistical analysis and comparison.

The research process involved two main stages, namely 1) Literature Review: a comprehensive review of relevant literature and previous studies was conducted to define Islamic garden design concepts and establish the research parameters; and 2) Field Observation: structured field observations were carried out at each park using a pre-designed observation sheet to evaluate the application of Islamic garden design principles.

Data collection involved three main techniques, namely 1) Observation: guided by an observation sheet comprising 12 main indicators and 42 sub-indicators (Table 1), observations evaluated the degree of Islamic garden design application. A score of 100% represented full compliance. 2) Documentation: photographs and videos were taken using cameras and mobile phones to capture the parks' physical features and facilities. 3) Informal Interviews: conducted with stakeholders such as officials from the Banda Aceh City Hygiene and Beautification Environment Agency (DLHK3) to gain insights into park management and design considerations. The evaluation framework, based on Islamic garden design principles, included the following 12 main indicators, elaborated into 42 sub-indicators:

1. Order: Refers to balance and unity, achieved through symmetrical, asymmetrical, or radial layouts (Lehrman, 1980; Clark, 2004; Jannah et al., 2015).
2. Space: Involves varying spatial dimensions to support different uses and accommodate multiple users simultaneously (Lehrman, 1980; Jannah et al., 2015).
3. Form: Designs should avoid representations of humans or animals (Allah's creations) to prevent idolatry or association with Allah (Lehrman, 1980; Qardhawi, 2000; Ruggles, 2007; Jannah et al., 2015).
4. Texture: Emphasises natural, beneficial textures in line with Islamic aesthetics (Lehrman, 1980; Qardhawi, 2000; Jannah et al., 2015).
5. Pattern: Typically features Arabesque motifs inspired by flora and calligraphy, avoiding human or animal figures (Lehrman, 1980; Qardhawi, 2000; Jannah et al., 2015).
6. Light: Ensures adequate shade and comfort by avoiding excessive heat (Lehrman, 1980; Fireza, 2007; Jannah et al., 2015).
7. Movement: Concerns the flow of both visitors and water, promoting clarity and harmony in circulation (Lehrman, 1980; Simonds, 2013; Jannah et al., 2015).
8. Garden Elements: Encompasses soft elements (water, vegetation, fruits, animals) and hard elements (structures, doors, accessories like rugs, cots, and vessels) inspired by paradise (Qardhawi, 2000; Arifin & Nurhayati, 2000; Fireza, 2007; Jannah et al., 2015).
9. User: Gardens are open to the public, provided users adhere to Sharia principles regarding attire and behaviour (Clark, 2004; Sherer, 2006; Qardhawi, 2000; Jannah et al., 2015).
10. *Habluminallah*: Reflects remembrance of God through elements resembling divine unity, worship, the beauty of creation, and the inevitability of death (Tajuddin, 1999; Fikriarini, 2008; Handryant, 2010).

11. *Habluminannas*: Promotes social integration, open communal spaces, education, reminders of spiritual struggle, social welfare, and cultural tolerance (Tajuddin, 1999; Fikriarini, 2008; Handryant, 2010).
12. *Habluminal'alam*: Emphasises sustainable development, conservation, recycling, ecological regulation, and the promotion of sustainable living (McHarq, 1967; Sternloff & Warren, 1984; Tajuddin, 1999; Muhirdan, 2008; Fikriarini, 2008; Handryant, 2010; Simonds, 2013).

The collected data were analysed qualitatively. Field observations were conducted in the five selected parks using a structured checklist form based on previously formulated Islamic garden design parameters. Twelve main parameters were employed to evaluate the extent to which each site fulfils the characteristics of an Islamic garden. These twelve parameters were further operationalised into a total of forty-two sub-indicators, where full fulfilment of all sub-indicators was defined as 100% compliance with Islamic garden design characteristics. The sub-indicators were compiled into observation tables, which were used during on-site surveys to systematically record the presence or absence of each parameter in the study locations. This procedure enabled a clear assessment of the degree to which Islamic garden design characteristics are applied in each park. The resulting compliance levels were then compared across the five parks to identify patterns, strengths, and opportunities for improving the implementation of Islamic garden design principles.

RESULTS

1. Tibang Urban Forest

Tibang Urban Forest is characterised by extensive vegetation coverage and a non-symmetrical spatial arrangement. The urban forest park features clearly defined zones that facilitate visitor movement and navigation. However, from the perspective of the architectural principle of *habluminannas* (the human relationship with others), the park lacks essential facilities such as plazas, stages, or open spaces that promote social interaction. Although there is a designated children's play area, it does not sufficiently cater to the needs of adults seeking spaces for communal engagement.

In contrast, the principle of *habluminallah* (the human relationship with God) is relatively well-fulfilled, particularly due to the presence of historical tombs and graves. These elements serve as contemplative reminders of mortality and are unique among the parks studied. Nevertheless, the park does not incorporate traditional Islamic design elements such as the *chahar bagh* layout, curved domes, arabesques, calligraphy, or other characteristic Islamic patterns.

With regard to garden elements, several features commonly associated with Islamic gardens are absent. These include both soft and hard landscaping

elements, as well as traditional accessories such as doors, gates, pillars, rugs, cots, glasses, vessels, goblets, plates, and jars. Additionally, while artificial shading structures are not fully implemented, the park's dense vegetation offers ample natural shade during the day (Figure 1).



Figure 1: Tibang Urban Forest – dense vegetation provides natural shade, but the absence of artificial shade structures and Islamic architectural motifs is still evident.
 Source: Researcher Documentation, 2023.

To enhance Tibang Urban Forest's alignment with Islamic garden principles, specific design interventions are recommended. These include incorporating spatial formations and decorative patterns such as *chahar bagh* layouts, domes, horseshoe arches, arabesques, calligraphy, *mashrabiya* pergolas, and pillars. The integration of colourful tiles with Islamic, Arabic, or Middle Eastern motifs would further reinforce the park's cultural and aesthetic identity. Additionally, the introduction of artificial shading structures or shelters would significantly improve visitor comfort, addressing a current gap in the "light" indicator. While Tibang Urban Forest effectively promotes environmental sustainability and serves as an urban "lung," its design can be further enriched by these culturally resonant elements. Based on the evaluation, Tibang Urban Forest satisfies 33 out of 42 Islamic garden design parameters, achieving a compliance rate of 78.57% (Table 1), making it the second most compliant park in this study.

2. Bustanussalatin Park

Bustanussalatin Park, located in the city centre, serves as one of the main hubs for community activities. It is managed by the Banda Aceh municipal government and is leased for both commercial and non-commercial purposes. The park features a symmetrical landscape arrangement, centred and surrounded by pedestrian pathways and jogging tracks, though these paths are not yet fully connected (Figure 2). The zoning within the park is clearly defined, facilitating visitor movement. However, the presence of a large and visually dominant main stage building at the park's centre, alongside other substantial structures – such as the Handicraft Council building on the southern side – detracts from the

application of Islamic garden design principles. Furthermore, the depiction of human figures on the walls of the main stage building reduces the value of the park's alignment with Islamic design aesthetics (Figure 2).



Figure 2: Bustanussalatin Park – the dominant main stage and the human figures on the walls conflict with Islamic design principles; path connectivity is not yet comprehensive.

Source: Researcher Documentation, 2023.

In terms of the architectural principles of *habluminallah*, *habluminnas*, and *habluminal'alam*, the Proclamation Monument serves as a symbolic reminder of mortality, aligning with Islamic teachings. However, the use of artificial and luxurious elements is inconsistent with Islamic garden design values. The principle of *habluminnas* (human relationships with others) is also insufficiently addressed, due to the absence of designated communal areas such as meeting rooms, canteens, and fully connected exercise facilities including sports fields and jogging tracks. Additionally, the architecture lacks local or traditional Islamic elements, instead adopting a predominantly modern and generic style.

Some Islamic design elements, such as curved domes, arabesques, and calligraphy, are present at the gate and the exhibition building located on the northern side of the park. Nevertheless, these features are inconsistently applied throughout the park. Several key Islamic garden parameters remain unfulfilled, particularly in relation to garden elements. The park lacks both soft elements (flowering plants, fruit trees, and water features) and hard elements (animal motifs, rugs, cots, glasses, vessels, goblets, or plates), which are typically associated with classical Islamic garden aesthetics.

To improve Bustanussalatin Park's adherence to Islamic garden principles, a comprehensive redesign is recommended. This should focus on integrating Islamic architectural forms and patterns into hardscape elements, such as *chahar bagh* layouts, domes, horseshoe arches, and arabesques. The inclusion of artificial shelters and a greater diversity of ornamental and fruit-bearing plants would also enhance the park's alignment with Islamic aesthetics. Crucially, the existing human imagery on the main stage building's walls should be replaced

with botanical motifs or Islamic calligraphy to align with the "form" indicator. Furthermore, worship facilities should be made more prominent and designed as distinct structures. Currently, Bustanussalatin Park ranks fourth, fulfilling 23 out of 42 parameters with a compliance rate of 54.76% (Table 1).

3. Trembesi Urban Forest

Trembesi Urban Forest is a shaded and inviting park that functions effectively both as a public green space and as one of the city's ecological "lungs". The park, with an area of 23,334 m², contains 26 tree species, a children's play area, parking facilities, an information building, a mushalla (prayer room), ablution facilities, signage, toilets, pedestrian paths, park lighting, a nursery area, an open grass field, and a sundial (Figure 3). However, it lacks dedicated sports facilities and a central plaza or amphitheatre for large public gatherings.

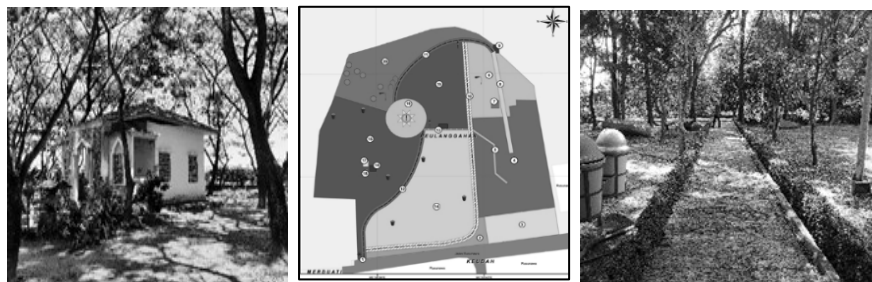


Figure 3: Trembesi Urban Forest – the presence of a prayer room supports the *Habluminallah* principle, yet the absence of a plaza or amphitheatre limits large communal gatherings, reflecting partial fulfilment of the "user" and *Habluminannas* indicators.

Source: Researcher Documentation, 2023

From the perspective of Islamic garden design, Trembesi Urban Forest performs moderately well. The availability of worship facilities supports the *Habluminallah* principle, while tree cover contributes to thermal comfort under the "light" indicator. Nonetheless, universal Islamic geometric forms and decorative patterns—such as *chahar bagh* layouts, domes, horseshoe arches, arabesques, and calligraphy are largely absent, limiting the park's expression of the "form" and "pattern" indicators. Communal spaces are present but not yet articulated as strong focal points for social integration under *Habluminannas*. To strengthen alignment with Islamic garden principles, several design interventions are recommended. These include incorporating traditional Islamic spatial formations and ornamental patterns into key hardscape elements, and enhancing softscape diversity through flowering and fruit-bearing plants that support both aesthetics and symbolic values. Additional shade structures or

shelters would further improve comfort, particularly in open grassy areas. Similar to Tibang Urban Forest, Trembesi Urban Forest was originally conceived to promote environmental sustainability, maintain a balance between green and non-green open spaces, and enhance the city's ecological health. In terms of Islamic garden design parameters, Trembesi Urban Forest fulfils 26 out of 42 criteria, resulting in a compliance rate of 61.90% (Table 1), placing it in the middle of the five evaluated parks.

4. Krueng Neng Park

Krueng Neng Park is the most recently developed urban park and green open space in Banda Aceh. Located in Lamjamee Village, Jaya Baru District, the park covers an area of 15,202 m² and includes several tree species, a children's play area, parking facilities, an information building, a mushalla, signage, toilets, pedestrian paths, park lighting, a plaza amphitheatre, a park sign, a basketball court, and an educational building for children (Figure 4).

The park's spatial configuration is asymmetrical, with a centrally positioned meunasah (prayer pavilion) connected by pedestrian paths, although the pathway network remains partially disconnected. Overall, the facilities accommodate a wide range of visitor activities. The children's play area is particularly well equipped and heavily used. In terms of Islamic architectural principles—Habluminallah, Habluminannas, and Hablumin'alalam—the park shows mixed performance. The Habluminallah principle is relatively well fulfilled through the spacious and centrally located meunasah, which acts as the visual and spiritual focal point of the park. The Habluminannas dimension is supported by plazas, stages, open spaces, and an educational centre that facilitate social interaction.



Figure 4: Krueng Neng Park – the centrally located meunasah reinforces Habluminallah, but universal Islamic geometric patterns and limited shading indicate weak performance in the “form” and “light” indicators.

Source: Researcher Documentation, 2023.

Despite these strengths, the park lacks key design characteristics typically associated with Islamic gardens. Form-related elements such as *chahar bagh* layouts, curved domes, arabesques, and calligraphy—which are hallmarks of traditional Islamic aesthetics—are not yet integrated into the wider spatial or architectural composition. There is also no clear application of Islamic or Middle Eastern stylistic patterns in flooring, façades, or site furniture. In addition, shading remains insufficient, reducing comfort for daytime use and affecting performance under the “light” indicator.

To improve Krueng Neng Park’s alignment with Islamic garden principles, a more deliberate and comprehensive design concept is required. This should include the incorporation of *chahar bagh* formations, domes, horseshoe arches, arabesques, calligraphy, *mashrabiya*, and pillars in key architectural and landscape elements. The use of vibrant decorative tiles on buildings, pavements, and seating featuring Islamic, Arabic, or Middle Eastern motifs would help reinforce the park’s cultural identity. The installation of additional shade structures or gazebos is also strongly recommended to enhance user comfort and overall spatial quality. Among the five parks evaluated, Krueng Neng Park ranks lowest in terms of compliance with Islamic garden parameters, fulfilling 16 out of 42 parameters, or 38.09% (Table 1).

5. Putroe Phang Park

Putroe Phang Park is a historically significant urban park with an area of 24,461 m². Located in Peuniti Village, Baiturrahman District, it contains 29 tree species, a children’s play area, parking facilities, park signage, an information building, gazebos, a plaza amphitheatre, a suspension bridge, a *mushalla*, the historic Pintoe Khop monument, toilets, pedestrian paths, park lighting, pergolas, a bird enclosure, access to the Krueng Daroy River, and a main gate.

The park’s landscape arrangement features an asymmetrical layout, with spatial emphasis placed on the central element, Pintoe Khop (Figure 5). The architectural principles of *Habluminallah*, *Habluminannas*, and *Habluminal‘alam* are strongly expressed. Worship facilities, contemplative historical structures, and well-maintained natural elements together reinforce the relationship between humans, God, and the environment. The *Habluminannas* principle is particularly well represented through the amphitheatre-style plaza and a well-equipped children’s play area, both of which support social interaction and community activities.

The design draws from a distinct Acehnese architectural concept, integrating Pintoe Khop forms and floral motifs such as *bungong seulanga* and *bungong jeumpa*. These motifs are consistently applied across hardscape elements, including garden fences, barriers, gazebos, gates, pergolas, and the

suspension bridge, thereby strengthening local identity and aligning with the “pattern” and “garden elements” indicators.



Figure 5: Putroe Phang Park – *Acehnese motifs (Pintoe Khop, seulangaja/jeumpa flowers) strongly reinforce local identity, while opportunities remain to integrate broader Islamic geometric forms, supporting high compliance with “pattern”, “garden elements”, and Islamic architecture principles.*
Source: Researcher Documentation, 2023.

Nonetheless, several interventions could further enhance the park’s Islamic architectural character. These include the introduction of more universally recognisable Islamic design elements, such as chahar bagh patterns, domes, horseshoe arches, arabesques, calligraphy, mashrabiya, and colourful tiled flooring inspired by Islamic or Arabic/Middle Eastern aesthetics, particularly in areas undergoing refurbishment or new development. While existing Acehnese forms and patterns already provide a strong sense of place, broadening the design vocabulary to include these additional Islamic references would enrich both the park’s cultural resonance and its educational role in conveying Islamic garden concepts.

Overall, Putroe Phang Park demonstrates excellent compliance with Islamic garden design principles. Its strong performance is closely linked to its heritage status, where preserved historical structures continue to inform new interventions grounded in traditional Islamic architectural values. Among all the parks studied, Putroe Phang Park ranks highest, fulfilling 35 out of 42 parameters, with a compliance rate of 83.33% (Table 1).

The complete results of the tabulated observations conducted across five urban forest and parks in Banda Aceh are presented as follows:

Table 1: Table of observation of Urban Parks in Banda Aceh based on Islamic Garden Design Concepts

Variables & Parameters of Islamic Gardens	Urban Parks				
	Tibang Urban Forest	Busta-nussa-latin	Trembesi Park	Krueng Neng Park	Putroe Phang Park
1. Order					
1) The garden site plan exhibits geometric forms with specific patterns.	√	√	√	√	√
2) Landscape design is typically symmetrical and centralised.	-	√	-	-	√
3) Circulation routes within the park are well-structured, enhancing both orientation and functionality.	√	-	√	-	√
2. Space					
4) The garden accommodates a large number of visitors simultaneously.	√	√	-	-	-
5) Clearly defined zoning separates different activity areas.	√	-	√	-	√
6) A proportional balance between green and non-green areas creates a harmonious spatial composition.	√	-	-	-	√
3. Form					
7) The garden excludes sculptures depicting living beings, such as humans or animals.	√	√	√	√	√
8) Repetitive elements like fountains, rocks, or trees symbolise eternity and timelessness.	√	√	√	√	√
9) Islamic architectural motifs include repeated arches (domes, horseshoe arches, <i>mashrabiya</i>) and colourful tiles.	-	√	-	√	√
4. Texture					
10) The texture of paving materials are natural and comfortable underfoot.	√	-	√	-	√
11) Building materials possess natural finishes that enhance aesthetic comfort.	√	-	√	-	√
12) Vegetation and water features contribute natural textures, enriching sensory experiences.	√	-	√	-	√
5. Pattern					
13) Abstract geometric patterns, such as arabesques and continuous circles or rectangles, are present.	-	√	-	-	√

Variables & Parameters of Islamic Gardens	Urban Parks				
	Tibang Urban Forest	Busta-nussa-latin	Trembesi Park	Krueng Neng Park	Putroe Phang Park
14) Plant- or floral-inspired abstract patterns, including calligraphy, are included.	-	√	-	-	√
15) Patterns avoid depiction of humans, animals, or objects associated with worship or idolatry.	√	-	√	√	√
6. Light					
16) Shade is provided through natural (trees) or artificial (gazebos, shelters) means to ensure thermal comfort.	√	√	√	-	√
17) Artificial lighting is aesthetically integrated to complement the park's ambiance.	-	√	-	√	-
18) Natural lighting from the sun, moon, or stars is harmoniously utilised.	√	√	√	-	√
7. Movement					
19) The park is easily accessible via adjacent, well-maintained road networks.	√	√	-	√	√
20) Pedestrian pathways are interconnected, facilitating smooth circulation and a dynamic experience.	√	-	√	-	√
21) Flowing water or tree-lined avenues (streams, rivers, canals, lakes, or aligned trees) enhance spatial rhythm.	√	-	-	-	√
8. Islamic Garden Elements					
8.1 Softscape Elements;					
22) Islamic softscape elements include lakes, canals, ponds, or fountains.	√	√	-	-	√
23) Landscapes incorporate vegetation, mounds, or hills planted with flowers and fruit-bearing flora.	√	-	√	-	X
24) Birds and fish represent symbolic soft elements in line with Islamic aesthetics.	√	-	√	-	√
8.2 Hardscape Elements;					
25) Pathways and flooring utilise coloured natural stone or marble.	√	√	√	√	√
26) Doors, gates, pillars, gazebos, and pergolas are employed as architectural hardscape features.	√	√	-	-	√
27) Traditional accessories such as rugs, cots, cups, vessels, goblets, plates, or jars reflect cultural identity.	-	√	-	-	√
8.3 Design Elements;					

Variables & Parameters of Islamic Gardens	Urban Parks				
	Tibang Urban Forest	Busta-nussa-latin	Trembesi Park	Krueng Neng Park	Putroe Phang Park
28) Dominant colours such as green, gold, silver, white, and red, are used either individually or in combination.	√	√	√	√	√
29) Fragrance is introduced through the scent of musk, floral blooms, or fruits.	√	-	√	-	-
30) Auditory design prioritises tranquillity, with an emphasis on peaceful, noise-free environments.	√	-	√	-	-
9. User					
31) Visitors are expected to dress modestly, aligning with Islamic values.	√	√	√	√	√
32) Recreational activities avoid acts prohibited in Islam, such as immoral behaviour.	-	-	-	√	√
33) Facilities like toilets, prayer rooms, and seating areas are gender-segregated (non-mahram) and supervised.	√	-	√	-	√
10. Islamic Architecture Principles through <i>Habluminallah</i> (Human-Allah Relationship)					
34) Worship facilities like mosques, <i>mushalla</i> , prayer rooms, or suraus, are available within the park.	√	√	√	√	√
35) Memorial features, such as tombs or graves, serve as contemplative reminders of mortality.	√	√	√	√	√
36) Natural elements (trees, water, rocks, soil, mountains) symbolise the divine creation of nature.	√	-	√	-	√
11. Islamic Architecture Principles through <i>Habluminannas</i> (Human-Human Relationship)					
37) Open communal spaces, such as plazas, amphitheatres, performance stages, or recreation areas, are provided.	√	√	√	√	√
38) Facilities for social engagement, such as meeting rooms, halls, canteens or libraries, encourage community interaction.	-	√	-	√	-
39) The park and its amenities function as public assets, reflecting the value of <i>waqf</i> and social welfare.	√	√	-	-	√
12. Islamic Architecture Principles through <i>Habluminal'alam</i> (Human-Nature Relationship)					
40) Structures prioritise the use of environmentally friendly materials that minimise ecological harm.	√	-	√	-	√

Variables & Parameters of Islamic Gardens	Urban Parks				
	Tibang Urban Forest	Busta-nussa-latin	Trembesi Park	Krueng Neng Park	Putroe Phang Park
41) Facilities promote a clean, waste-free, and pollution-free environment.	√	-	√	-	√
42) The design adopts sustainable and energy-efficient approaches, such as LED lighting or solar panels.	-	-	-	√	-
Total	33/42	23/42	26/42	16/42	35/42
Percentage	78,57%	54,76%	61,90%	38,09%	83,33%

Source: Researcher observation and analysis, 2024

Description:

√: Met

-: Not Met

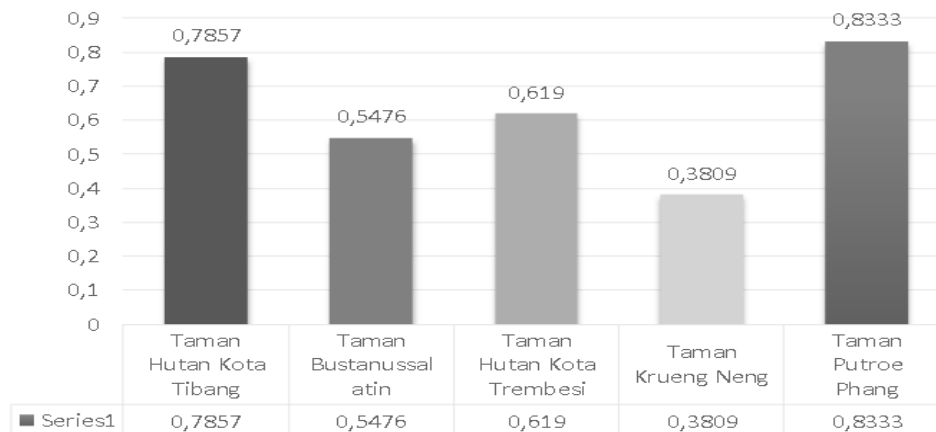


Figure 6: Level of Compliance with Islamic Garden Design Principles across Urban Parks

Source: Researcher analysis, 2024

Based on compliance percentages, the park rankings are: Putroe Phang (83.33%) > Tibang (78.57%) > Trembesi (61.90%) > Bustanussalatin (54.76%) > Krueng Neng (38.09%). There is a clear performance gap between the upper

cluster ($\geq 78\%$) and the lower cluster ($\leq 55\%$). Qualitatively, parks with strong historical heritage or Islamic architectural elements tend to achieve higher scores. With more detailed numerical data at the sub-indicator level, future research could apply simple comparative statistics such as rank-order consistency tests or correlations between indicator groups (e.g. form, movement, user) and overall compliance scores, thereby adding further robustness to the findings.

A number of governance and contextual factors contribute to lower performance: (i) maintenance and funding constraints that reduce the quality of hard/vegetation elements; (ii) the absence of standardized guidelines for the application of Islamic patterns/components in green spaces; (iii) space allocation that emphasizes stage/commercial structures, thereby reducing communal space and circulation continuity; (iv) inadequate thermal comfort and pedestrian accessibility; and (v) tension between local Acehese motifs and universal Islamic forms, causing symbolic inconsistency. These governance and contextual issues provide an important backdrop for interpreting the park scores and form the basis for the more analytical discussion that follows.

DISCUSSION

The evaluation of five urban parks in Banda Aceh reveals a broad range of compliance with Islamic garden design principles, with scores ranging from 83.33% (Putroe Phang Park) to 38.09% (Krueng Neng Park). This significant variation indicates a clear opportunity for improving the application of Islamic garden concepts across the city's urban parks. Putroe Phang Park, which achieved 35 out of 42 points, exemplifies a successful integration of Islamic garden elements within a contemporary urban context. This finding is consistent with research by Mohammad Sabri and Ponrahono (2024), who emphasise the importance of small urban parks in enhancing urban resilience while simultaneously providing cultural and social benefits.

The results align with recent literature demonstrating that strengthening heritage elements and green infrastructure contributes to resilience, socio-cultural functions, and well-being in urban spaces. The Islamic Green City approach, for example, highlights the role of green spaces in fostering social cohesion and public health in Muslim-majority cities (Hatta et al., 2024). Similarly, studies on Urban Green Infrastructure (UGI) underscore the importance of designs that harmonise ecological performance and user well-being (Santos et al., 2021). Within the discourse of Islamic urbanism, the integration of Islamic values into public spaces is viewed as essential for reinforcing identity, everyday practice, and spatial governance (Maneval, 2019). In this regard, the parks that score higher in this study tend to be those where Islamic architectural and cultural narratives are more coherently expressed through space, form, and programme.

The assessment also shows that parks with stronger historical connections and better maintenance, such as Putroe Phang Park and Tibang Urban Forest (78.57%), tend to perform better in terms of Islamic garden design. This correlation suggests that preserving historical features while deliberately incorporating Islamic design principles can foster more meaningful and culturally resonant urban spaces. This observation echoes the work of Riechers et al. (2019), who highlight the cultural ecosystem services provided by urban green spaces in enhancing community well-being and urban liveability. Furthermore, integrating Islamic garden design in these parks contributes to the broader goal of creating multifunctional urban spaces that accommodate environmental, social, and spiritual functions, as advocated in contemporary planning frameworks (Zuraidi et al., 2020).

In contrast, the relatively lower scores of Bustanussalatin Park (54.76%) and Krueng Neng Park (38.09%) highlight the need for targeted improvements in the implementation of Islamic garden design principles. In both cases, governance and design decisions have prioritised large built structures—such as stages, commercial or institutional buildings, and visually dominant architectural volumes—over coherent spatial patterns, communal circulation, and shade provision. This emphasis weakens the expression of Islamic garden values related to order, space, movement, and thermal comfort. Limited and fragmented maintenance budgets further affect the quality and continuity of softscape and hardscape elements, particularly vegetation, water features, and decorative components that are central to Islamic aesthetics.

The absence of clear municipal guidelines on how Islamic patterns, forms, and principles should be translated into public green space design also contributes to inconsistent outcomes. Bustanussalatin Park, for instance, still incorporates human figurative imagery on prominent structures, which conflicts with key Islamic garden parameters regarding representation and form. Krueng Neng Park, meanwhile, places strong emphasis on a large meunasah that anchors the habluminallah (human–God) relationship but does not incorporate broader Islamic geometric spatial concepts such as the chahar bagh. These choices reflect a partial translation of Islamic values—focusing primarily on worship facilities or symbolic monuments—rather than a holistic application that also attends to movement, shade, ecological integration, user comfort, and everyday behaviour. This finding underscores the need for planning instruments and design guidelines that explicitly link Islamic urbanism, green infrastructure standards, and detailed design decisions at the park scale.

Recent planning literature on green infrastructure and climate resilience further supports this argument. Policy and design analyses in Kuala Lumpur and Shah Alam show that retrofitting green infrastructure and formalising it within planning instruments can strengthen both climate resilience and urban liveability

(Nizarudin & Zakariya, 2025; Abd Razak, Ponrahono, & Mohammad Sabri, 2025). Likewise, simulation studies in tropical coastal environments demonstrate that tree cover, shading structures, and surface material choices significantly influence microclimate performance and thermal comfort in public open spaces (Widyasamratri et al., 2025). These insights directly relate to the “light” and “movement” indicators used in this study and suggest that Islamic garden design criteria can be aligned with contemporary sustainability and comfort considerations in urban planning.

From a methodological perspective, the ranking of parks presented in this study is based on descriptive scoring of 12 indicators and 42 sub-indicators. The clear separation between a higher-performing cluster (Putroe Phang and Tibang) and a lower-performing cluster (Bustanussalatin and Krueng Neng) suggests underlying structural and governance differences that merit further investigation. With more granular numerical data at the sub-indicator level, future research could apply simple comparative statistics—such as rank-order consistency tests or correlations between indicator groups (e.g. form, movement, user) and overall compliance scores—to add robustness to these findings. Such analyses would complement the qualitative insights presented here and enable a more precise understanding of which aspects of Islamic garden design most strongly influence overall park performance.

Overall, the findings indicate that Islamic garden principles can serve as more than a symbolic or historical reference; they can provide an operational framework for contemporary urban park planning and design in Banda Aceh. By aligning spatial structure, vegetation, shading, circulation, and user facilities with Islamic architectural and ethical values, planners and designers can create urban green spaces that support cultural identity, social cohesion, ecological performance, and spiritual well-being. This perspective is consistent with emerging debates on Islamic urbanism, sustainability, and green infrastructure, and offers a context-specific yet transferable model for other Muslim-majority cities seeking to integrate religious and cultural values into their urban planning practice.

CONCLUSION

The findings of this study reveal varying levels of compliance with Islamic garden design principles across the urban parks in Banda Aceh. Putroe Phang Park stands out as a prime example of successfully integrating historical and Islamic architectural elements, serving as a model for future developments. In contrast, other parks, such as Bustanussalatin and Krueng Neng, require significant improvements to better align with these principles. By adopting the recommendations outlined in this study, the Banda Aceh Urban Government can enhance the quality and cultural significance of its urban parks. This approach

will not only ensure that these spaces reflect Islamic values but also foster social interaction and spiritual well-being, enriching the urban landscape for all users.

Beyond the empirical ranking of parks, this study's main contribution lies in operationalising Islamic garden principles into a replicable evaluation tool for planners and designers. The 12-indicator and 42-sub-indicator framework can be adapted to other Sharia-based or Muslim-majority cities seeking to align urban green space design with Islamic values, thus bridging the gap between heritage discourse and contemporary planning practice in Banda Aceh and beyond.

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