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SOLITUDE FOR URBAN DWELLERS THROUGH "URBAN BLUE SPACES" IN COLOMBO

FONSEKA. W. D. K.[1]* & COOREY. S. B. A.[2]
[1, 2]Department of Architecture, University of Moratuwa, Moratuwa, Sri Lanka
[1]*dulmi.fonseka@gmail.com*; [2]*scoorey@uom.lk*

Abstract: Many urban dwellers are suffering from various psychological issues due to the lack of solitude. Previous research has found that Blue Spaces have more potential to promote solitude among people when compared to other natural settings. This is because of the attraction that humans have towards water and the ability of water to trigger restful involuntary attention, which in turn helps to promote solitude. Therefore, the main objective of this study is to identify the characteristics/attributes of Urban Blue Space (UBS) that promotes solitude, in the context of Colombo, Sri Lanka. Three cases namely Mt. Lavinia beach, Diyawanna lake and South West Beira lake are selected and analysed using a mixed method of research such as observations, on-site photographs, questionnaires and unstructured interviews. Findings indicated that physical attributes of water such as fluidity, sound, lighting and accessibility, the physical attributes of space such as being away, extent, soft fascination and compatibility are the factors that mainly contribute to an enhanced experience of solitude among urban dwellers. Site conditions also have an impact to a certain extent, as they help to create favourable settings in which people can seek solitude. These findings will contribute towards better design and management of UBS in the future.

Keywords: *Solitude, Urban Blue Space, Urban Dwellers, Colombo, Water*

1. Introduction

Solitude means the state of being alone, especially when you find this pleasant (Hornby et al., 2020). In more simple terms, it is known as being alone with your thoughts. Recent research has found that spending time in solitude can promote calmness and clarity, increase our productivity and concentration which will in turn help in problem solving, mental replenishment and most importantly self-discovery (Panday, n.d.). In today's modern world where people are always stressed, sleep deprived, digitally connected 24/7 trying to be on top of their games, solitude is the last thing on their minds. But as a result, people are suffering from many physical and psychological issues such as hypertension, sleep disorders, depression and lead miserable lives. Especially a lot of people residing in urban and highly urbanized areas of Colombo are suffering from higher levels of chronic stress (Senanayake, 2016). Hence it can be seen that there's a critical need for solitude among urban dwellers.

But urban lifestyles and urban environments are not designed in a way to promote solitude. According to a study by Long (2000) it has been found that blue spaces have more potential to promote solitude among people when compared to other natural settings. Blue spaces are the outdoor environments – either natural or manmade – that prominently feature water and are accessible to humans either proximally or distally/virtually (Grellier et al., 2017). When found in an urban setting or an urban area they can be referred to as Urban Blue Spaces (UBS). These UBS stand out as very important public spaces when it comes to recreational, social, commercial, environmental, and climatic factors. They further contribute to health and well-being by encouraging physical activity, supporting positive social relations, building place/nature connectedness, cognitive restoration and stress reduction (Bell et al., 2022). When considering the Sri Lankan context, a lot of easily accessible UBS can be found in Colombo such as the Beira lake, Diyawanna lake, Bolgoda lake, Mt. Lavinia beach, Wellawatta beach, Galle face beach and Kelani river among many other. But they are not properly designed or utilized in a way to promote solitude or other psychological needs, hence a lost opportunity - which is the main focus of this study.

Existing literature explores the perception and evaluation of water in landscape (Zube et al., 1975; Litton, 1977; Yamashita, 2002), potential benefits of blue space for human health and well-being also known as 'BlueHealth' (Wheeler et al., 2012; Grellier et al., 2017; White et al., 2020), water and it's restorative potential (White et al., 2010), planning and designing for urban blue spaces (Bell et al., 2022) and blue biophilic cities (Beatley, 2018). But all these researches mainly focus on blue spaces found in rich, developed European and American countries; only a very few mentions about blue spaces in developing Southeast Asian countries. Therefore, a research gap can be identified especially when considering the Sri Lankan context, its blue spaces and their psychological effects.

*Corresponding author: Tel: +94 762254740 Email Address: dulmi.fonseka@gmail.com
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Hence, this study is carried out to explore how urban blue spaces can be utilized to promote solitude in urban dwellers based on the research question, **"How Urban Blue Spaces Help to Promote Solitude in Urban Dwellers?"** When considering UBS, water itself plays a prominent role in promoting solitude because of the various characteristics and qualities of water. But the space when considered as a whole (i.e. the water body and the surrounding landscape) can also assist this process if designed to do so. Therefore, the research objective that this study aims to achieve is to, **identify the characteristics/attributes of blue spaces that people prefer when seeking solitude in urban blue spaces, for an enhanced experience of solitude.**

2. Literature Review

2.1. BENEFITS OF URBAN BLUE SPACES (UBS)

Nowadays, leisure, relaxation, and tourism are more inclined to be connected with UBS that were once closely associated with work and industry. Well-designed UBS can promote health benefits such as increased physical activity, stress reduction (Ulrich, 1981), attention restoration (Kaplan & Kaplan, 1989), disease prevention and other benefits such as mitigation of urban heat island effect and flood prevention.

According to Bell et al. (2021) UBS may become more crucial pockets of outdoor space that promote health and well-being in otherwise "grey" urban environments for addressing the main public health concerns of the twenty-first century as a result of increasing development pressure on many urban green spaces.

Throughout history blue spaces have been intertwined with the lives of the people in Colombo, some of whom depended on these blue spaces for their livelihood. They have also acted as means of transportation, for trading and economic purposes, for fishing, for protection from invasions and sometimes even as a means of imprisoning slaves (Kaffir slaves in Slave Island). Even today a dominant physical aspect of the city is its harbour and the extensive network of watercourses. Out of a total land area of 102.3 km^2, 17% of Colombo is covered by natural elements which include 4.7 km^2 of water bodies (Urban Development Authority, 2019). The relationship between Colombo's blue spaces, its inhabitants and the city still remain pretty much the same even today, but with more emphasis on recreational, commercial and environmental purposes. The creation and revitalization of open water bodies has recently gained popularity in Sri Lanka. Open water body spaces that are well-designed and managed can promote interaction with the community and environment (Ratnayake et al., 2017). Some design interventions of UBS include urban parks, linear parks, walk-ways, esplanades, jogging tracks, goods markets and dining areas. These interventions have re-established and enhanced the cultural and emotional relationships that urban dwellers had with their blue spaces. But they have neglected the potential that UBS have to promote more psychological benefits such as stress reduction, attention restoration, relaxation and contemplation.

2.1.1 Key elements of a successful blue space

In order for blue spaces to be an overall success that not only provides recreational, commercial or environmental benefits but also health and well-being benefits, there are certain elements that must be present in them. According to Bell et al. (2021) the key elements of a successful blue space, are described as follows under six categories, with five to seven aspects within each category.

- **Accessibility** (site visibility, pedestrian, bicycle or car access, car parking and inclusive access)
- **Design quality** (design quality, on-site circulation, views and landmarks, inclusion of cultural heritage values, site furniture fitting the context and cost-effective maintenance)
- **Facilities** (range of facilities, accessibility of facilities, amount of seating, quality of nature, degree of shelter or shade and lighting)
- **Health and well-being** (genius loci, sense of being away, contact with nature, sensory stimulation, contemplation, safety and security)
- **Water connections** (land-water connectivity, water visibility, access from and to water, water safety equipment)
- **Physical activities** (formal sport activities, informal sports, water sports, children's play and activity zoning)

All these key elements when integrated into urban blue spaces will create favourable settings, which can be utilized to achieve its maximum potential thereby providing a wide range of benefits for urban dwellers.

2.2. SETTINGS FOR SOLITUDE

According to a study by Long (2000), the most frequent settings for solitude were grouped in three main categories: "at home (or dorm or apartment)," "in a public place (coffee shop, library, museum, mall, etc.)," and "in nature (woods, park, beach, mountains, etc.)". Out of them the most favourable physical setting that promotes solitude is one's own home or room (39% of the participants). The second most frequently mentioned setting for positive solitude was outdoors in a natural environment (27% of the participants). The aesthetic and awe-inspiring qualities of the natural environment undoubtedly also play a role in contributing to positive experiences (e.g., Hammitt & Madden, 1989, as cited in Long et al., 2003). Going to the beach was preferred by 26% of participants, a mountainside by 18%, a river or lake by 17%, and a forest or woods by 6% when asked to describe the ideal setting for seeking solitude (Long &

Averill, 2003). It is evident that a majority are blue spaces and hence the need to explore the relationship between solitude and blue spaces.

2.3. SOLITUDE AND URBAN BLUE SPACES

"Water in the landscape tends to be dominant because of its visibility, its movement, reflections, and colour, its consequent contrasts to adjacent earth surfaces" (Litton, 1977). According to Beatley (2015), out of many urban landscapes, urban blue spaces can be extremely therapeutic and health-enhancing. Paley Park designed by landscape architect Robert Zion, which is remarkably small in size and located in midtown Manhattan, is a great example which demonstrates this. As Nichols (2014) says, "There's something about water that draws and fascinates us" (p.17). Most of the world's population lives very close to the coastline of an ocean, lake, or river. People get inspired by water as they hear it, smell it in the air, play in it, walk next to it, paint it, surf, swim, or go fishing in it, write about it, take photographs of it, and make everlasting memories with it (Nichols, 2014). What is this connection that humans have with water? Why are they attracted and fascinated by water? What is this ability of water to make humans feel happier, healthier, satisfied with life, helps to reduce stress and brings peace? According to Nichols (2014), this human-water connection is known as 'Blue Mind': "a mildly meditative state characterized by calm, peacefulness, unity, and a sense of general happiness and satisfaction with life in the moment. It is inspired by water and elements associated with water, from the colour blue to the words we use to describe the sensations associated with immersion" (p.15).

In today's modern world a lot of people are living in urban settings which constantly trigger their red minds and gray minds. Modern-day humans are drowning in a sea of overstimulation that exhausts them physically, mentally, and emotionally (Nichols, 2014). In the 1980s Stephen and Rachel Kaplan, named this exhaustion "directed-attention fatigue." According to their theory there are two kinds of attention: directed, which requires a great deal of energy and focus; and involuntary, which requires little to no mental effort. When involuntary attention is highly engaged, direct attention can rest; and a natural setting was best for helping the brain to switch from directed to involuntary attention (Kaplan & Kaplan, 1989). What better way than water to help this switch.

> When we are on or by the water, there is a high degree of statistical predictability because it is so much the same from moment to moment. Water is changing all the time, but it's also fundamentally familiar. It seems to entertain our brains nicely with novelty plus a soothing, regular background; the sounds, the sights, the smells, all changing moment to moment yet essentially staying the same. It's regularity without monotony—the perfect recipe to trigger restful involuntary attention. (Nichols, 2014, p. 115-117)

Because of this attraction that humans have towards water and the ability of water to trigger restful involuntary attention, urban blue spaces become the most suitable, highly desired and sought-after settings for seeking positive solitude.

2.3.1 Presence of water

There are certain features of water that helps to create regularity without monotony, which in turn triggers restful involuntary attention. As described in the Presence of Water pattern that comes under the 14 Biophilic Design Patterns (Browning et al., 2014), these features are,

- **Fluidity**: Prioritize naturally fluctuating water movement over predictable movement or stagnancy. Motion provides a sense of animism and life.
- **Sound**: Water in motion creates a variety of musical sounds in natural environments, with variations in volume, pitch, timbre, texture, and rhythm.
- **Lighting**: Sunlight and water interact, changing colour and mood. Without a source of bright light, water becomes gloomy and refuses to interact. When exposed to direct sunshine, water takes on a lively appearance as reflected sparkles dance over its surface.
- **Proximity**: Water features with large volume and high turbulence can make people uncomfortable, affect humidity levels, or impact acoustics.
- **Accessibility**: Accessible bodies of water and fountains that provide direct physical contact with the water increase the biophilic attraction.

2.3.2 Attention restoration theory

Since water has the ability to trigger restful involuntary attention, thereby creating a restorative setting in which urban dwellers can seek solitude, it's important to look at the properties that these restorative settings have. According to the Attention restoration theory (ART) by Kaplan & Kaplan (1989) the four properties these restorative settings have are,

- **Being Away**: Being away involves dissociating oneself from regular activities that lead to directed attention fatigue. People usually associate the terms "get away" and "escape" with these kinds of settings. (Kaplan & Kaplan, 1989).

- **Extent**: The simplest prerequisite for a sense of extent is that the aspects of the situation that are immediately visible are related to one another and form a part of a larger whole (Kaplan & Kaplan, 1989).
- **Soft Fascination**: Many of the attractions provided by nature could be categorized as soft fascination. Clouds, sunsets, scenery, and the movement of leaves in a breeze are examples of patterns that are able to capture our attention yet frequently do so in an unobtrusive way (Kaplan & Kaplan, 1989).
- **Compatibility**: When a setting supports an individual's goals, intentions or preferences there is compatibility. Natural settings stand out for the variety of activities they provide that match the interests of those who visit them (Herzog et al., 2003).

These properties when integrated in to urban blue space settings can improve peoples directed-attention capacity, thereby creating an environment that promotes solitude among urban dwellers.

A theoretical framework (Figure 1) was created to find the preferred aspects of UBS according to the factors derived from the literature review, in order to achieve the research objectives of this study.

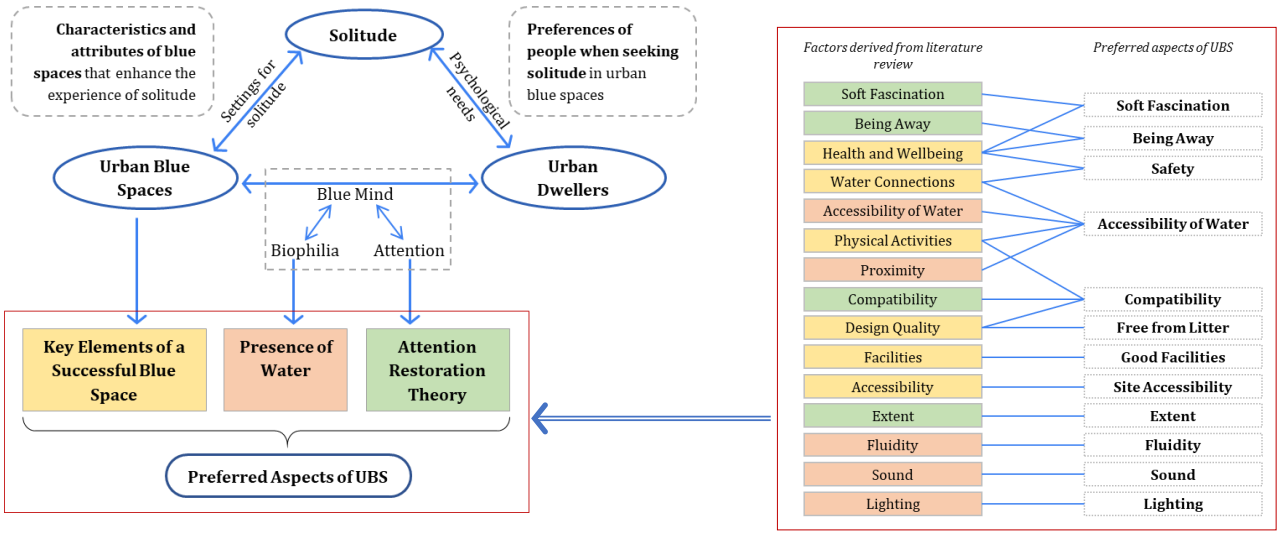


Figure 1. Theoretical Framework (*Source: Compiled by author*)

3. Method

In order to carry out this study, three case studies belonging to two different types of urban blue spaces as per the blue space typology described by Bell et al. (2021) were selected with different characteristics of water in each of them (*Table 1*). All selected case studies are located in Colombo. A mixed method integrating both qualitative and quantitative approaches such as observations, on-site photographs, questionnaires and unstructured interviews were used. The questionnaire adopted the Preference for Solitude Scale (Burger, 1995), which is a scale that has been developed to measure individual differences in the extent to which people prefer solitude over social interaction, as well as inspired from the BlueHealth Community-Level Survey (BCLS) as adopted by Bell et al. (2021), in order to find out the best possible times, settings and preferences of people when seeking solitude. Both open ended and close ended questions were included. The data was collected at the chosen case study sites physically during late August on three working days and three days in a weekend, to capture the different usage and activity patterns during weekdays and weekends. A time period of 1-2 hours was spent during mornings and evenings to capture the necessary data. A total of 80 responses (40 responses per each site) were collected in two sites namely Mt. Lavinia Beach and Diyawanna Lake, while site Beira Lake did not have any respondents; because users of Beira Lake spent very little time there and were not willing to respond to the questionnaire. In the case of this site data gathered from observations, on-site photographs and unstructured interviews were utilised.

Table 1. Case study selection criteria applied to the three case studies (*Source: Compiled by author*)

Criteria	***Case Study 01: Mt. Lavinia Beach***	***Case Study 02: Diyawanna Lake***	***Case Study 03: South West Beira Lake***
Blue space typology	Natural coastal space	Lake	Lake
Sub-type of blue space	Sandy beach	Artificial lake	Artificial lake
Location/context	Urban periphery	Suburban area	Urban core
Size	Large site	Medium site	Small site
Form	Linear	Multiple interventions	Concentrated site
Design function	Natural site	Urban park	Walking paths

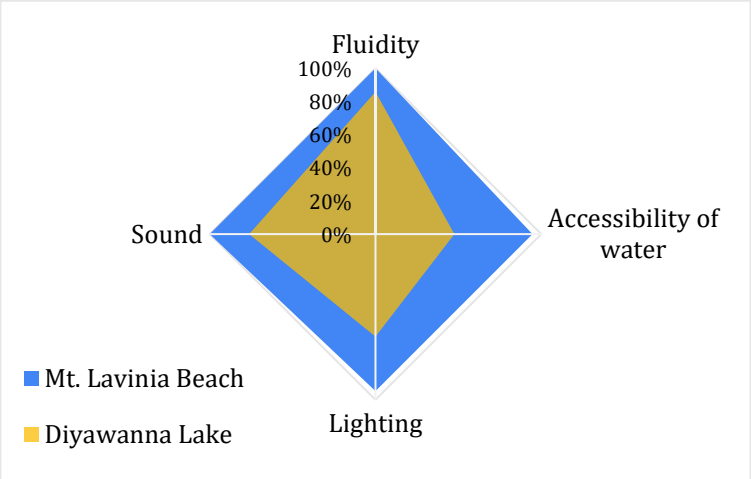
Relationship with the city and urban dwellers	Multi-functional	Multi-functional	Multi-functional
Physical and visual access	Has both physical and visual access	Has limited physical access but good visual access	Has limited physical access but good visual access

4. Findings and Discussion

A total of 80 responses (40 responses per each site) were collected through the questionnaire applied physically on the case study sites. 73.8% of respondents were from Colombo (who permanently and temporarily resided in Colombo) and 26.3% of respondents were out of Colombo.

As per the questionnaire results a total of 79% of respondents were able to seek solitude at Mt. Lavinia beach and a total of 71% of respondents were able to seek solitude at Diyawanna lake.

4.1. PHYSICAL ATTRIBUTES OF WATER



According to Figure 2, the preferences for physical attributes of water vary across the two cases. In case of Mt Lavinia Beach, attributes such as fluidity, sound, lighting and accessibility of water were preferred and in the case of Diyawanna Lake a majority of people who experienced solitude preferred fluidity and sound of water but interaction of light with water and accessibility of water needed improvement. The observations and findings are shown in the following Table 2.

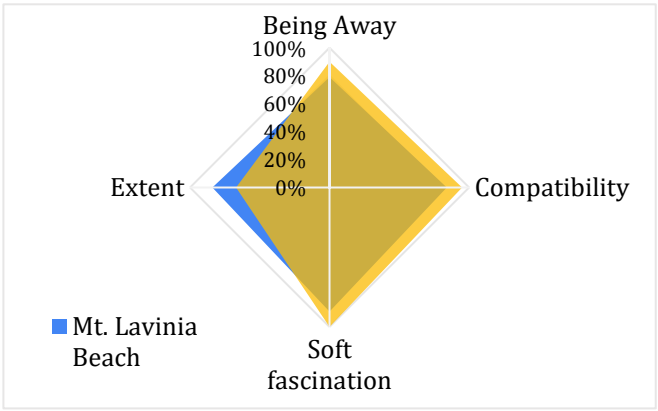
Figure 2. Physical attributes of water preferred by respondents when experiencing solitude at Mt. Lavinia Beach and Diyawanna Lake (*Source: Compiled by author*)

Table 2. Observations and findings of physical attributes of water (*Source: Compiled by author*)

Aspects	Mt. Lavinia Beach		Diyawanna Lake	
Fluidity		**Observations**: Naturally fluctuating water movement, with waves crashing against the shore.		**Observations**: Naturally fluctuating water movement, with water bobbing up and down.
		Findings: All respondents (100%) preferred the motion of the sea. They found it calming and peaceful.		**Findings**: 86% of respondents preferred the motion of the lake. They found the motion to be calm and quiet.
Sound		**Observations**: Waves made pleasant sounds, varying in volume, pitch, timbre, and rhythm. Drains out all other noise.		**Observations**: The lake made pleasant sounds varying in rhythm. Gentle sounds of water bobbing up and down mingled with bird song.
		Findings: All respondents (100%) preferred the sound of the sea. They found it very soothing.		**Findings**: 76% of respondents preferred the sound of the lake. Many were focused on their own conversations.
Lighting		**Observations**: Varies hue and mood with the amount of light, from bright blue in the morning to pitch black at night. Creates mesmerizing sceneries at sunset.		**Observations**: Varies hue and mood with the amount of light, creating interesting shadow patterns. But at times the reflected light caused glare.
		**Findings**: 95% of respondents preferred the interaction of light with water especially at sunset. For some it caused glare.		**Findings**: Only 62% of respondents preferred the interaction of light with water. Many stated that the reflected light caused glare.

Accessibility of water	 	**Observations**: Users physically interacted with water via bathing, swimming and water play. **Findings**: 95% of respondents preferred the amount of accessibility of water.	 	**Observations**: Less accessibility to the lake water with a fence around the lake which acts as a physical barrier. **Findings**: Only 48% of respondents preferred the amo-unt of accessibility of water.

4.2. PHYSICAL ATTRIBUTES OF SPACE



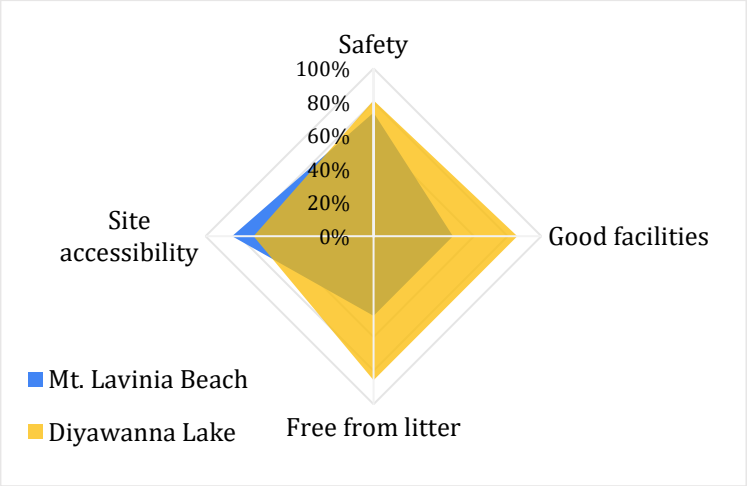
According to Figure 3, the preferences for physical attributes of space vary across the two cases. In case of Mt Lavinia Beach, attributes such as being away, extent, soft fascination and compatibility were preferred and in the case of Diyawanna Lake a majority of people who experienced solitude preferred being away, soft fascination and compatibility but extent could be improved. The observations and findings are shown in the following Table 3.

Figure 3. Physical attributes of space preferred by respondents when experiencing solitude at Mt. Lavinia Beach and Diyawanna Lake
(*Source: Compiled by author*)

Table 3. Observations and findings of physical attributes of space (*Source: Compiled by author*)

Aspects	Mt. Lavinia Beach		Diyawanna Lake	
Being Away	 	**Observations**: Sense of being away is a little less as it's backed by an urban setting and a railway line. **Findings**: 79% of respondents felt as if they were being away and could escape from their normal surroundings.	 	**Observations**: Sense of being away is high with the park like setting along the edge of the lake. **Findings**: 90% of respondents felt as if they were being away and could escape from their normal surroundings.
Extent	 	**Observations**: The horizon at the distance offers numerous possibilities and imaginations that make the space appear big and complex **Findings**: 84% of respondents preferred the extent of the sea and beach. They liked the complexity of the space.	 	**Observations**: The lake was not that big as one could see the surrounding edges of the lake, hence less possibilities for imaginations. **Findings**: Only 67% of respondents preferred the extent of the lake. Many didn't find it big or complex enough.
Soft Fascination	 	**Observations**: Soft fascination was provided by clouds, sunset and sceneries that readily hold the attention of a person creating a more reflective mood. **Findings**: Soft fascination was experienced by 89% of respondents. Most of them were enjoying and photographing the sunset.	 	**Observations**: Soft fascination was provided by clouds, rustling leaves, bird songs and breeze that readily hold the attention of a person creating a more reflective mood. **Findings**: Soft fascination was experienced by all respondents (100%). People engaged in conversations while experiencing nature.
Compatibility	 	**Observations**: Supports a wide range of activities such as relaxing, playing, dining, swimming, that coincide with the inclinations of visitors. **Findings**: 84% of the respondents felt that everything goes well together.	 	**Observations**: Supports a wide range of activities such as relaxing, dining, boat riding, walking, that coincides with visitors' inclinations. **Findings**: 95% of the respondents felt that everything goes well together.

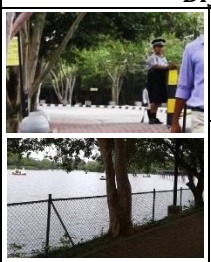
4.3. SITE CONDITIONS



According to Figure 4, the preferred site conditions vary across the two cases. In case of Mt Lavinia Beach, the site accessibility was quite good, but other site conditions such as safety, free from litter and good facilities needed improvement and in the case of Diyawanna Lake people were quite satisfied with the site conditions such as safety, site accessibility, free from litter and good facilities which needed to be maintained and further improved. The observations and findings are shown in the following Table 4.

Figure 4. Site conditions preferred by respondents when experiencing solitude at Mt. Lavinia Beach and Diyawanna Lake (*Source: Compiled by author*)

Table 4. Observations and findings of preferred site conditions (*Source: Compiled by author*)

Aspects	Mt. Lavinia Beach		Diyawanna Lake	
Safety		**Observations**: Life-rings and lifeguards are available with high tide spots marked with red flags.		**Observations**: Security guards were seen. A fence along the lake prevented accessibility to the water.
		Findings: 74% of respondents felt safe and protected from danger as they were with other people or near a crowd.		**Findings**: 81% of respondents felt safe and protected from danger. No visible threats or danger or any signs of crime or vandalism.
Site Accessibility		**Observations**: Accessible by public transport, car and by foot. Located very close to the main road and Mt. Lavinia railway station.		**Observations**: Accessible by public transport, car and by foot. Located very close to the main road with multiple bus routes.
		**Findings**: 84% of respondents could easily reach Mt. Lavinia beach by foot or vehicle.		**Findings**: 71% of respondents could easily reach Diyawanna lake by foot or vehicle.
Free from Litter		**Observations**: The beach was strewn with litter that had been washed ashore due to the tides. There were some litter receptacles to be seen here and there.		**Observations**: Free from litter, swept and maintained. Polythene bags and food items not allowed inside the park. Litter receptacles could be seen.
		**Findings**: Only 47% of respondents felt Mt. Lavinia beach was free from litter. Many commented that it should be cleaned up.		**Findings**: 86% of respondents felt Diyawanna lake was free from litter. They hoped it would continue to remain that way.
Good Facilities		**Observations**: Car parks, sunbeds, washrooms and shaded dinning spaces were available. Showering facilities, shade and night time lighting was low		**Observations**: Car parks, public washrooms, dining area, drinking water, seating under shady trees, paved walkways, turfed areas and timber decks were available.
		**Findings**: Only 47% of respondents experienced good facilities. More facilities to be provided and existing facilities to be improved.		**Findings**: 86% of respondents experienced good facilities; that needed to be maintained and more facilities should be provided.

4.4. USER OBSERVATIONS AT BEIRA LAKE

In the case of Beira Lake there was a lack in respondence, as users spent very little time there and were not willing to respond to the questionnaire. Hence the questionnaire could not be applied to this site as a result of which the user's preference for solitude couldn't be analysed. In the case of this site data gathered from observations, on-site

photographs and unstructured interviews were utilised. During both the days Beira Lake was visited less than 100 people were observed within a duration of two hours. Only the maintenance crew, some policemen, photographers, the swan boats operator, the Seemamalakaya temple guards, snack shop owners, couples on swan boats, men coming for a smoke and the random awkward guy were seen. A lot of people were just passing by. Even the people who came to visit Seemamalakaya would leave it quickly after clicking a few photographs. A very few people were seen sitting here and there and most of them looked unapproachable and some even outright refused to answer the questionnaire. In the interview with the boat shop owner he mentioned that in the past around 100 people would usually come to ride swan boats per day. Whereas now only 20 – 30 people would come on weekdays and around 60 – 75 people would come on weekends. Also, a policeman in the Slave Island police station said that the lake is not being used anymore or even cleaned and managed properly. One of the guards at Seemamalakaya temple also commented about the number of people coming to visit Seemamalakaya being less than 50 per day. According to these observations, it's evident that the South West Beira Lake is in a highly polluted and degraded state, which continues to be deteriorated and neglected and has faced the threat of being isolated and abandoned in the near future, if no steps are taken for its revival. Hence, physical attributes of water, physical attributes of space and site conditions in the case of Beira Lake needed major improvement.

4.5. OVERALL FINDINGS OF THE STUDY

It could be seen that in the case of Mt. Lavinia beach most people experiencing solitude (more than 80% respondents) preferred aspects such as fluidity, sound, lighting, accessibility of water, extent, soft fascination, compatibility and site accessibility. Therefore, these aspects have played a more significant role in the impact of user experience of solitude at Mt. Lavinia beach. And in the case of Diyawanna Lake most people who experienced solitude (more than 80% respondents) preferred aspects such as fluidity, being away, soft fascination, compatibility, safety, free from litter and good facilities. Therefore, these aspects have played a more significant role in the impact of user experience of solitude at Diyawanna Lake.

Accordingly, the findings of this study indicate that physical attributes of water and the physical attributes of space are the factors that mainly contribute to enhance the experience of solitude among urban dwellers. This is because of the attraction that humans have towards water and the ability of water to trigger restful involuntary attention, which in turn helps to promote solitude. Site conditions also have an impact to a certain extent, as they help to create favourable settings in which people can seek solitude. Therefore, these attributes and preferences should be carefully considered when designing and utilizing urban blue spaces so that they will bring about not only social, economic and environmental benefits but also much needed psychological benefits to urban dwellers.

Future research could include the comparison of more than one case study site per selected type of UBS in order to identify the most significant attributes that impact user experience of solitude for the different types of UBS.

5. Conclusion

Solitude can be experienced anytime, anywhere no matter what the circumstances are. But according to previous research the most favourable physical setting that promotes solitude is one's own home or room because for people of all ages, a majority of time spent alone occurs in the home. When considering natural outdoor settings that can promote solitude, blue spaces stand out as more favourable and ideal settings. And according to this study it can be seen that urban blue spaces found in Sri Lanka have the potential of promoting solitude in urban dwellers.

Preferred aspects of urban blue spaces help to enhance the experience of solitude among urban dwellers. Out of these aspects, people's preferences mostly depend upon the physical attributes of water such as natural fluidity of water, calming sounds of water, interaction of lighting with water without causing glare and good physical accessibility of water that provides opportunities for people to engage in passive activities near water. And their experiences of solitude are further enhanced by physical attributes of space such as the feeling of being away, extent of the blue space, opportunities for soft fascination and compatibility of the space. Other aspects like provision of safety, good site accessibility, free from litter and good facilities provide the necessary site conditions for a setting to promote solitude while providing people with comfort in order to seek solitude. Peoples' preferences for these attributes vary across the two selected types of UBS in this study, namely natural coastal spaces and lakes. The extent to which people prefer these attributes depend on how well these are integrated into the UBS.

1. **Commonly preferred aspects in both types:** the aspects namely fluidity, sound, being away, soft fascination, compatibility and site accessibility were preferred by people irrespective of whether it was a natural coastal space or a lake.
2. **Aspects more preferred only in one type:** the aspects namely lighting, accessibility of water and extent were more preferred in a natural coastal space as opposed to a lake; as these aspects were better integrated in a natural coastal space than in a lake.
3. **Aspects that needs to be improved:** aspects namely safety, free from litter and good facilities needs to be improved to better sustain the UBS and to enhance the experience of solitude.

Identifying these preferences helps landscape architects, urban planners, and designers to better design and manage UBS that provides not only social, economic and environmental benefits but also psychological benefits to urban dwellers. Hence, we should recognize the value of UBS as important spaces in rapidly urbanizing cities and need to sustain and regenerate them for future generations.

6. References

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