

THE ROLE OF BIOPHILIC DESIGN IN HOTEL ARCHITECTURE

A Case Study of Heritance Kandalama, Sri Lanka

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Abstract: Humans have a natural affiliation with nature which can even be genetically traced back into history. Biophilia is the inherent human inclination to affiliate with nature, that even in the modern world, continues to be critical to people's physical and mental health, and well-being. The Hospitality Industry is a sector that can get the maximum benefit from this affiliation. Guests' opinions and feedback are highly valid, as they are the real users of hotel spaces. The primary aim of the research is to correlate the user experience to the role of biophilic designs in hotel spaces. This qualitative study is based on the twenty-five-point biophilic design framework by Kellert and utilises user surveys to collect and collate relationships. Heritance Kandalama, Sri Lanka is analysed as a case study. Results show that users associate biophilic design elements as essential generators of their spatial experience and that the guest experience of study-identified hotel spaces varies according to different biophilic triggers. Further, spaces created within a conceptually cohesive whole can hold a varied experience. In conclusion, the application of the biophilic framework as a guide for architectural meaning and spatial variance of experience is deemed effective.

Keywords: *Biophilic Design; Hotel Architecture*

1. Introduction

Biophilia is an innate and genetically determined affinity of human beings with the natural world (Wilson, 1984). The Biophilia hypothesis communicates the fact that humans are craving connections with nature for aesthetic, intellectual, and cognitive experiences as well as for spiritual connections, in seeking the true meaning of life. The word biophilia originates from the Greek, 'philia' meaning 'love of' and 'bio' meaning 'life.' It means love for life or living things. Humans being a part of nature have a deeply embedded love for nature which is naturally imprinted into their genomes. (Colman, 2009)

Biophilic Architecture is a branch of architecture that seeks to connect building occupants more closely to nature. This field of architecture is so remarkable, as it shows how, that buildings as lifeless components can be converted into a place, with a love for living things. (Kellert, 2012) It has the potential of serving the whole world in a sensible manner. It's not just something to look at from exterior aesthetics, get excited and comment on, but something which has a deeper meaning and serves a more meaningful purpose from all aspects. (Wilson, 1984)

This study is based on the twenty-five-point biophilic framework by Dr Stephen R Kellert (2018). Having understood the importance of user experience and feedback in the design process, the primary aim of the research is to correlate the user experience to the role of biophilic design. Thereby, understanding and discussing lessons for architectural space creation in hotel designs.

The study uses three steps to draw correlations between biophilia and spatial experience. The first adopts a survey of user reviews to ascertain the quantum of influence. This is also used to focus the study on key concepts within the biophilic framework.

In the second step, a detailed questionnaire survey is used to understand the role of biophilic design elements specific to key spaces in the hotel. Lastly, the findings of the first two steps are analysed together with the spatial characteristics of the spaces to ascertain what drives them and the patterns of utilisation.

The scope of the study is limited to Geoffrey Bawa designed Heritance Kandalama, Sri Lanka as a case study. The

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hotel is well accepted as an architectural intervention that is truly in sync with the environment, therefore ideal for research that encompasses biophilic principles.

2. Background

2.1 DEVELOPMENT OF A BIOPHILIC DESIGN FRAMEWORK

To create an in-depth understanding and an effective scope to study biophilic architecture, numerous scientists, ecologists, and architects have contributed towards the formation of concepts, theories and principles related to biophilic architecture and design. Biophilic architecture is a field of architecture in rapid growth, where studies create a framework or a list of components that would be capable of producing a biophilic design. All of these studies collectively focus more or less on a similar scope, which finally focuses on the ultimate goal of reconnecting humans to the natural environment. As a product of a literature review encompassing these various studies on biophilic design, this study adopts the twenty-five-point Biophilic Design Framework introduced by Dr Stephen R Kellert (2018). It is a culmination of Kellert's work since 2008 and is considered a focus of scope to explore the relationship between biophilic design in hotel architecture.

2.2 KELLERT'S TWENTY-FIVE-POINT BIOPHILIC DESIGN FRAMEWORK

This section details the three main components - Direct experience of nature, Indirect experience of nature, and Experience of space and place - of the Design framework and to augment the discussion, draws on literature to relate its application to hotel design.

2.2.1 *Direct experience of nature*

2.2.1.1 Light

Light in biophilic design primarily focuses on natural light. Light has the spectacular ability to create interesting patterns and shadows falling on the surfaces of a building, especially this could be the guest circulation pathways in a hotel. (Tregenza & Wilson, 2013)

2.2.1.2 Air

In a biophilic design, air could be considered under many forms such as humidity, ventilation, air temperature and air conditions. Fenestration found in the exterior envelope of a building is the conclusive element, of the amount to which natural air could be incorporated into a building. The state of air is a critical aspect when it comes to the feeling of relaxation for a hotel guest in a space. (Short, 2017)

2.2.1.3 Water

Water is naturally blessed with its unique nature of reflectiveness and tranquillity. Water has the potential to create a sense of calmness in the mindset of space occupants, which is of significant importance in a hotel.

2.2.1.4 Plants

Adjoining a building with greenery has benefits such as reducing the heat gain of a building. Shading a building through the addition of plants to the immediate context will have a better impact on the microclimate surrounding the building. When incorporated properly these greenery features have the ability to get the attraction of hotel guests from the moment, they step into the hotel premises. (Wohlleben, 2016)

2.2.1.5 Animals

Humans being a part of nature has an important connection with animals in their surroundings. It is possible to attract animals into built spaces through correct strategies. When it comes to hotel designs, they could concentrate on attracting animals, birds and other species which represent the locality of immediate surroundings, giving the hotel occupants a unique experience. (Wilson, 1984)

2.2.1.6 Weather

A good biophilic design has an obvious understanding of the weather conditions of the context. Since ancient vernacular buildings, this responsiveness to weather can be identified (Short, 2017). Hotel designs should be capable of reflecting the changes in seasons and weather patterns, enabling the hotel guests to have different experiences during different times of the year.

2.2.1.7 Natural landscapes

Starting from a simple front garden this can even be a very well-landscaped garden with a large number of trees. People who are restricted in urban areas, some of whom might even be having only a rooftop hanging plant at home, would adore having a well-landscaped garden in the hotel, where they choose to spend their holidays.

2.2.1.8 Fire

Fire can bring warmth, colour, and movement easily into a building. This could even be a bonfire night organized within the hotel premises, to give a unique experience for guests. (Kellert et al., 2011)

2.2.2 *Indirect experience of nature*

2.2.2.1 Images of Nature

Images of nature could be either framed distant views of nature or when there is no proper way to get a framed view of real nature, this could be done even through abstract paintings, nature photos, sculptures and murals depicting nature. In a hotel, these applications may even take a specific theme, so that when the guest experiences different spaces of the hotel, different images of the same theme can be experienced. (Kellert et al., 2011)

2.2.2.2 Natural Materials

The use of natural materials such as wood, and stone in a building would be an effective manner to give the building users the feeling of nature, of impermanence and extinction. (Varghese, 2015)

2.2.2.3 Natural Colours

A colour palette that includes colours like brown, green and blue, in shades that are closer to the colours that can be seen in nature itself. (Lluch, 2019) The use of such colours especially in the interiors of the hotel will be helpful to reflect the spatial quality that hotel guests experienced in the outdoors, even within interior spaces.

2.2.2.4 Simulations of Natural Light

There could be instances where artificial lighting systems inspired by natural light sources are incorporated into a design. Installation of a fibre optic light system in a hotel pool, which resembles a reflected starry night is one such example.

2.2.2.5 Simulations of Natural Air

There could be instances where mechanical ventilation systems inspired by natural air sources are incorporated into a design. In a hotel, the natural airflow can be replicated through slight adjustments in temperature, humidity, and air movement, which will ensure guest comfortability.

2.2.2.6 Naturalistic Shapes and Forms

Natural shapes and forms can be achieved in the exterior appearance of a design. Sometimes this may be a direct application of a natural form or even could be an abstract adaptation of a form found in nature. (Wilson, 1984) These exterior characteristics in a hotel could be based on a natural feature of the surrounding, which will be able to reflect the locality as well as the climatic context of the hotel's surroundings.

2.2.2.7 Evoking Nature

In a design, there could be qualities which are influenced by nature. These may not be things which cannot be seen directly in nature but represents nature. (Jorgensen, 2016) For instance, a hotel design may represent a certain hierarchy found in the ecosystem, of which the hotel itself is an abiotic component.

2.2.2.8 Information richness

Whether it is a biotic or abiotic space, humans have an affiliation with diversity in building designs also. (Jorgensen, 2016) In nature, every ecosystem is made of two main components as living and non-living components. Incorporating life into the non-living built hotel environment will create a diversity which resembles that, what can be found in a natural ecosystem, which will create a unique experience for the hotel guests.

2.2.2.9 Change and the patina of time

Humans being a part of nature change with time. People grow old, get sick and eventually die. People would be excited to witness this change in a man-made environment. In a hotel, this could be a building or a boulder getting covered in moss, which would reflect changes in the hotel spaces with time. This could create excitement for guests who visit the hotel after a long time to see how much the hotel has evolved.

2.2.2.10 Natural Geometries

Prominent natural geometries include hierarchically ordered scales such as the "Golden Ratio", "Fibonacci Sequence" and "Fractals," where a geometric sequence or a patterned repetition can be observed. (Dunlap, 1997) Such geometries can be applied when designing the form, proportions, or exterior facades of a hotel design for it to be attractive to guests.

2.2.2.11 Biomimicry

Biomimicry is the imitation of the models, systems, and elements found in nature for the usage of resolving problems innovatively, that humans face in their daily life. Humans have looked to nature for answers to difficulties throughout their existence. Nature has answered most of the engineering difficulties that humans have to face. (Benyus, 2009)

2.2.3 *Experience of space and place*

2.2.3.1 Prospect and Refuge

Prospect refers to long undisturbed views of surrounding environment settings that allow occupants to enjoy the vistas. In a hotel, this can include viewpoints, balconies, alcoves, and lighting changes in spaces. Refuge refers to places connected to the environment that at the same time provide a sense of safety to the occupants such as a cosy bed in

a hotel room or a cafe sofa by the window with a good view. A place with a good vista of the surroundings but without a sense of safety is a waste because the occupants cannot fully experience the space due to the doubt of safety in the place. (Wilson, 1984)

2.2.3.2 Organized Complexity

The spaces in nature have organised levels of complexity that gradually reach a climax. Excessive complexity can be confusing and questionable to occupants of space. (Ching, 2014) Therefore it is needed to maintain the proper complexity of space by being inspired by nature. The exterior forms, proportions, and placement of building components within hotel premises could be done considering this element.

2.2.3.3 Integration of Parts

There could be a sequential and successional linking of spaces, which are connected with different parts of the surrounding environment that result in diverse opportunities for people to experience throughout the journey to a final climax. (Ching, 2014)

2.2.3.4 Transitional Spaces

Transitional spaces create a valuable opportunity of connecting people to their surroundings. (Wilson, 1984) In hotels these are the spaces where guest circulation takes place, thus making them spaces with the highest potential to connect to nature.

2.2.3.5 Mobility

People's comfort and well-being often depend on the ability to move freely between diverse and often complicated spaces which are connected with their surroundings. There should be clearly understood pathways and wayfinding opportunities within a design. In hotels, there should be this freedom for guests to wander through a particular area reserved for them, which can even be a special event in their holiday itinerary. (Kellert, 2012b)

2.2.3.6 Cultural and Ecological Attachment to Place

Culturally relevant designs promote a connection to place and the sense that a setting has a distinct human identity unique to a region. Ecological connections to a place can similarly foster an emotional attachment to an area. Cultural and ecological attachments to place often motivate people to conserve and sustain both natural and human-built environments. (Hansen, 2011)

3. Method

The research method explores the correlation of the user experience of spaces created in the hotel design to the Biophilic Framework presented in the earlier section. This qualitative research process encompasses three steps. The first two steps utilise user surveys to collect and collate user perceptions of the role biophilic elements play in the overall experience of the spaces. In the third step, the spaces identified in the first two steps are graphically mapped to demonstrate the role the biophilic elements play in the overall architectural ambience of the spaces created. Thus, discuss lessons learnt for future design initiatives that are driven by biophilic design principles.

3.1 STEP 01 - DATA MINING PROCESS THROUGH HOTEL GUEST REVIEWS

Guests are the main users of any hotel. Therefore, the guest experience, feedback, and comments are given significant weightage in the hospitality industry. Google Reviews are a key tool used by many entities. An article on podium.com states, "Having Google reviews helps with rankings and revenue. Online reviews on your Google Maps listing help your business stand out from the crowd. That's how you make an impact. More importantly, it means your business is highlighting the fact that you offer great service or product, and that customers love you." Further, it is found that a vast majority of 18-34-year-olds (91% to be exact) trust online reviews as much as recommendations from family and friends. (podium.com).

In this first step, the study samples one hundred random responses, in chronological sequence, on the Heritage Kandalama web platform. The data was extracted in October 2021 and the reviews spanned a period of 2 years before this date.

The responses are analysed and then categorised under the Biophilic Framework with an emphasis on the three main criteria, the direct experience of nature, the indirect experience of nature, and the experience of space and place. Attention is also placed on instances where the spaces of the hotel are mentioned to inform the detailed questionnaire in the next two steps. It has to be noted that careful consideration was placed in the analysis of these responses since these reviews are general and do not directly adhere to the framework envisioned.

The responses don't fall into all categories of the framework. Thus, the data analysis further identifies and thereby limits particular elements of the biophilic design framework.

The outcome of the review survey is envisioned as one that will demonstrate the level of awareness of users - either consciously or unconsciously- towards biophilic elements. Further, it identifies key spaces of the Hotel and the level of emphasis on particular framework elements.

3.2 STEP 02 – QUESTIONNAIRE SURVEY

The objective of this step is to correlate the spaces identified in the first step to the biophilic design framework elements. The questionnaire survey conducted collates responses of twenty-five respondents, that have a design background. These respondents were architects and students of architecture of various ages and exposure, who have physically experienced the spaces and environs of Heritance Kandalama.

The questionnaire survey limits the data collection under the limited scope generated in the first step. (see results under section 4). The spaces are limited to the Kachchan infinity pool, Café Kachchan, Kanchana Restaurant, Kanchana Terrace, and a Hotel room with a lake view. The biophilic framework elements are limited to Images of Nature, Prospect and Refuge, Plants, Animals, and Water, as identified from the results of Step 01. (see results under section 4).

The Questionnaire is formulated as follows;

Table 1 - Questionnaire for a study related to The Role of Biophilic Design in Hotel Architecture

Respondents are requested to recall the experience they had at Heritance Kandalama.

General questions: -

1. When is the last time you visited Heritance Kandalama?
 - Last 6 months
 - Last year
 - More than one year ago
2. How many times have you visited the hotel?
 - Once
 - Twice
 - More than twice

Specific questions: -
 Please select the best aspect of nature you observed the most, in each of the following spaces.
 (please use the diagram provided to identify the space locations)

Biophilic framework element		Hotel space				
Primary criteria	Secondary criteria	Kachchan infinity pool	Café Kachchan	Kanchana Restaurant	Kanchana Terrace	A hotel room with a 'lake view'
Indirect experience of nature	Images of Nature					
Experience of space and place	Undisturbed vista view (Prospect and Refuge)					
Direct experience of nature	Plants					
Direct experience of nature	Animals					
Direct experience of nature	Water					

3.3 STEP 03 – CORRELATION OF BIOPHILIC DESIGN FRAMEWORK ELEMENTS IN HOTEL SPACES

In this step, we explore the relationship of biophilic design elements identified in the previous steps as seen in the selected spaces of the hotel. For analysis, we use 'base' architectural drawings that include plans, sections, and elevations, together with annotated perspectives and images of and from the spaces.

To discuss the implications for biophilic architectural design, this relationship between the biophilic design framework and user-identified spaces is discussed within the following questions;

- How have biophilic framework elements been applied in those spaces?
- What are the biophilic elements that take prominence in each space?

The objective is to generate insight into user preference characteristics and the level of impact biophilic architecture can have on the architecture of hotel spaces.

4. Results and Discussion

4.1. STEP 01 - DATA MINING PROCESS THROUGH HOTEL GUEST REVIEWS

4.1.1 Overall applicability of biophilia among review responses.

The data collected from a random sample of 100 Google Reviews on the experience at Heritance Kandalama, revealed that 90% of the reviews had connections to the envisioned biophilic design framework, albeit at varying degrees of applicability. The responses were sorted as direct and indirectly relevant for clarity. It was found that 50% of the total responses were directly relevant, while 40% were indirectly relevant to the research emphasis on biophilia as a key criterion.

Thus, the data collection through user reviews is deemed to be a plausible means to ascertain responses to the primary question of the impact of biophilic elements on the overall experience.

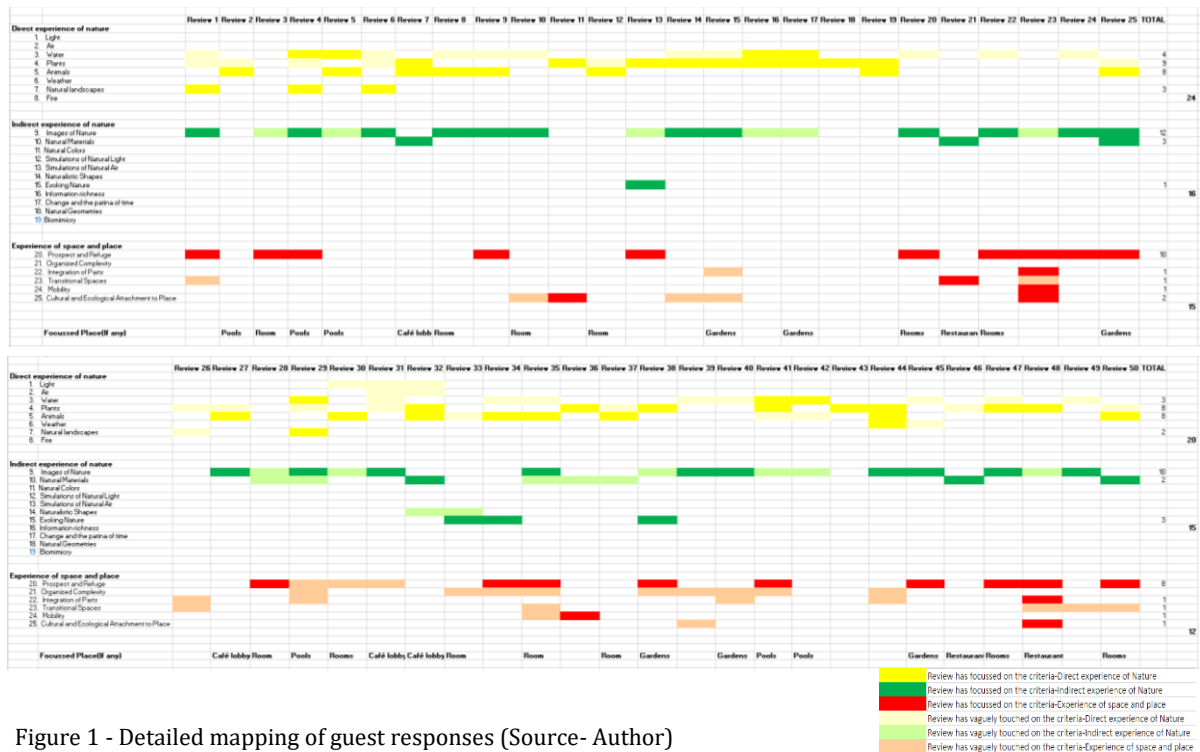


Figure 1 - Detailed mapping of guest responses (Source- Author)

4.1.2 Degree of connection to the three main criteria of the biophilic framework

The fifty reviews that had a direct connection with the framework were carefully studied and the connections were analysed as to the degree of relationship the responses had to the three main criteria of direct experience of nature, the indirect experience of nature and the experience of space and place. The detailed mapping responses were further expanded to the detailed elements within the three main criteria. Further, in mapping responses, the analysis ascertained the degree of applicability of the reviews to biophilia. Figure 1 details these responses for each user. The mapping also highlights the key space of the hotel the review addresses.

Each user review can be categorised under more than one criterion. Further, if the response was vague it was omitted from the analysis. This was done due to the fact that this first step is to limit and focus the scope of the study to establish a strong correlation between biophilic elements and spatial experience.

An analysis of the user experience shows that;

- Direct experience of nature - 44/50 (As a percentage of 88%)
- Indirect experience of nature - 31/50 (As a percentage of 62%)
- Experience of Space and place - 27/50 (As a percentage of 54%)

This demonstrates that the users are more sensitive to the direct experiences that nature provides. The experience of space and place is less communicated in comparison.

In the reviews, users specifically mention a place where they had the best experience in the hotel, thus the most memorable. The responses also map the mention of the overall hotel as well.

These locations are identified as;

- Kachchan infinity pool – 30% of user mentions
- Café Kachchan – 5% of user mentions
- Kanchana Restaurant – 5% of user mentions
- Kanchana Terrace – 5% of user mentions
- A hotel room with a lake view – 15% of user mentions

These identified spaces inform the next level of investigation. (as detailed in section 3.2 above) Further, when analysing the reviews five mostly mentioned biophilic elements were identified, and it is intended to give more attention to these elements in detail for the selected main spaces.

- Images of Nature (Indirect experience of nature)
- Prospect and Refuge (Undisturbed vista view) (Experience of space and place)
- Plants (Direct experience of nature)
- Animals (Direct experience of nature)
- Water (Direct experience of nature)

4.2. STEP 02 - QUESTIONNAIRE SURVEY

To ascertain a detailed relationship between the selected spaces and elements, a questionnaire filled by people with design and architectural background knowledge was analysed.

The emphasis was to establish a hierarchy of biophilic element triggers that enhance a space. It is understood that a space can be influenced by many elements, but in understanding the overriding sensorial experience and its correlation to biophilia, the research can generate implications for future design.

The results show that different spaces of the hotel are influenced by a different emphasis on biophilic framework elements. This is interesting, because it demonstrates, that although an overall design can be conceptualised as adhering to the biophilic design domain, it need not be repetitive. Solutions to space-making can be generated with a clear hierarchy of biophilic influence.

The results also show that the relationship that each space has a distinct connection with the space. For example, the correlation of the emphasis on the concept of ‘prospect and refuge’ as an extension of the space the user occupies, as a part of the dining experience. The availability of an undisturbed view impacts the user experience.

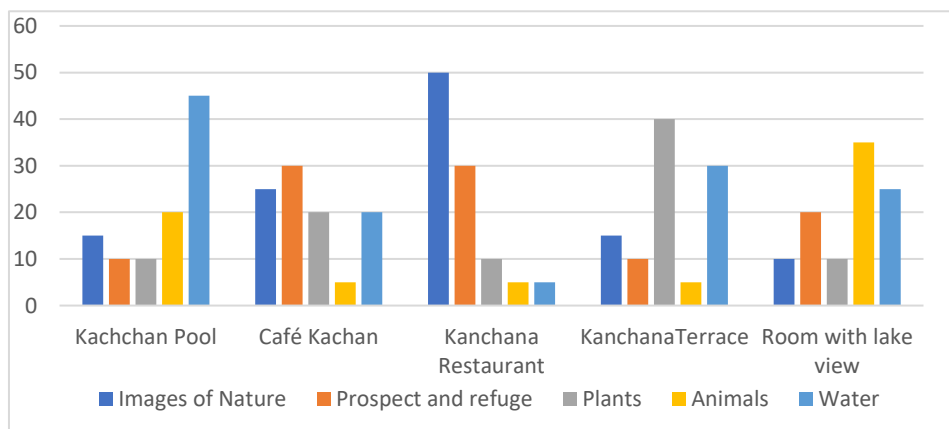


Figure 2 - Analysis of the detailed relationship between the selected spaces and biophilic elements [as a percentage of user preference (Y-axis)]

4.3. STEP 03 - CORRELATION OF BIOPHILIC DESIGN FRAMEWORK ELEMENTS IN HOTEL SPACES AND IMPLICATIONS FOR ARCHITECTURE

Based on the findings of the questionnaire survey, each of the spaces and the elements that influence them is discussed in detail and then correlated to the architecture that has been created to achieve it.

4.3.1. Water as a direct experience of nature - Kachchan infinity pool

Kachchan pool, commonly known as the infinity pool of Heritance Kandalama is situated in the Sigiriya Wing of the hotel. An infinity pool can also be addressed as an infinity edge pool or a zero-edge pool. Such pools are often designed so that the edge appears to merge with a larger body of water such as the ocean, a lake or with the sky, and may overlook a vista such as natural landscapes or cityscapes. Here, the experience for someone in the pool or overlooking it is to feel like they are actually within the Kandalama Tank.

It is not essential to always have physical access to a space to enjoy it. From a distance, a water body could look its best when it is still untouched by humans. A key decision in the composition seems to be that the lake is to be experienced from afar, thus giving it the respect it deserves. The infinity pool has been built in a place that has the maximum view of the Kandalama Tank and the surrounding, and even though it has been consciously separated from the main hotel structure, the spatial flow easily connects. (Figure 3).



Figure 3 - Water as a direct experience of nature - Kachchan infinity pool. (Image source – Geoffrey Bawa Trust)

The lesson for architecture is that spaces can be designed such that the user is drawn outward from the built spaces, and connect to the outside spaces and nature, by the utilisation of elements that mimic and bridge the experiential sequence. It is the direct experience of nature that facilitates this.

4.3.2. Prospect and refuge as an experience of space and place - Café Kachchan

Café Kachchan is situated in the Sigiriya Wing of the hotel, and it is the place where guests are properly welcomed. Prospect and refuge mean that the person will be able to enjoy a vista while at the same time feeling safe and relaxed (Kellert et al., 2011). The outdoor area of the Café provides a sense of prospect and refuge to someone occupying the space.

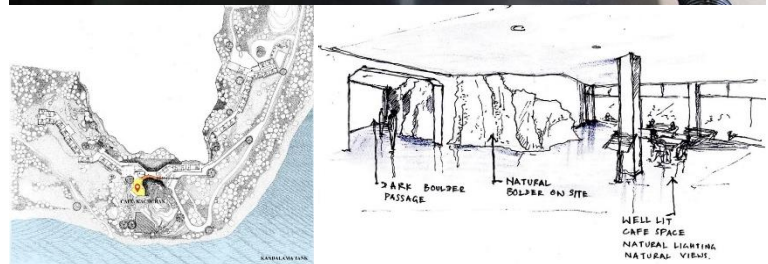


Figure 4 - Prospect and refuge as an experience of space and place - Café Kachchan. (Image source – Geoffrey Bawa Trust)

The space is the culmination of the entrance transition sequence that is carefully orchestrated by the architect. With the distinctive approach along the boulder wall and the conscious control of the vertical space. The café space is in contrast a release from this compressed space, encouraging the view of the user to be guided onward and outward, a process clearly in sync with the concept of prospect and refuge under the biophilic design framework.

The design implication relates to the use of nature to create the notion of prospect - a clear undisturbed view - while the built elements create the refuge that drives and heightens the experience.

4.3.3. Images of nature as an experience of space and place - Kanchana Restaurant

Kanchana Restaurant is located in the Sigiriya Wing of the hotel, and it is the main dining space of the hotel. The Architect has been capable of capturing distant views of the surrounding. This allows the hotel guests to create an overall image of the whole surrounding context while enjoying their meals.



Figure 5 - Images of nature as an experience of space and place - Kanchana Restaurant (Image source – Geoffrey Bawa Trust)

The furniture layout further emphasises the approach. It is an important decision, where the spaces and furniture facilitate

maximum view opportunities for a larger group of guests when designing the main public spaces of the hotel like its main restaurant.

Throughout the restaurant, there is a strong connection with the immediate green terrace, and this connection enhances the connection of the restaurant space with the more distant views of the lake, creating a connection between green and blue.

The lesson for design embraces the fact that although the space occupied serves a functional purpose, with a greater emphasis on the experience and ambience the space creates, biophilic approaches that encompass images of nature are crucial in its incorporation.

4.3.4. Plants and greenery as a direct experience of nature - Kanchana Terrace

Kanchana Terrace is located in the Sigiriya Wing of the hotel and is located outside the Kanchana Restaurant. The terrace leads to the Spa located at the corner end of the terrace. This walk through the terrace, into the spa, gives the hotel guests relaxation through the feeling of walking through lush greenery and finally a physical relaxation in the spa. The placement of plants and greenery follow a hierarchical pattern, which resembles that of a green forest which gradually merges with the surrounding.

The greenery of the terrace space and beyond communicate several layers, albeit in close proximity to the users and those of the borrowed landscape. This works to create depth in the spatial configuration. The temporal nature of the vegetation and seasonal variations create interest, together with the shadows the plants and greenery paint.

4.3.5. Animals as a direct experience of nature - lake view room

The rooms of the Heritance Kandalama provide an opportunity to enjoy nature at its best in the comfort of the guest's room. The private balcony acts as a viewpoint. There are views over the lake and the Dambulla rock. The views allow the distinct opportunity to experience animals, albeit at a distance. The lake serves as the main source of water. The approach to the structure that is almost completely enveloped in vegetation, which includes plants that flower and those that bear fruit encourage animals close to the living spaces. The rooms are unique in this manner where birds and monkeys outside windows are common.

As a design decision, the careful orientation of spaces that have views that ensure guests get a glimpse of nature in general and animals, in particular, is important in a biophilic approach to design. The conscious choice to incorporate plants on the building skin, and the selection of species that attract, animals, birds, butterflies, and dragonflies enhance the opportunities.

5. Conclusion

The research method explores the correlation of the user experience of spaces created in the hotel design to the Biophilic Design Framework. Heritance Kandalama was chosen as a case study to explore the application and the success of adopting a biophilic approach to design.

Key findings of a process that adopted the analysis of user responses on Google Reviews of Heritance Kandalama, and a detailed survey encompassing users with a design background revealed;

- The correlation between biophilic design and the communication of experience is strong at Heritance Kandalama. A significant portion of the guests cites biophilic elements that contribute to their experience.



Figure 6 - Animals as a direct experience of nature - lake view room (Image source – Geoffrey Bawa Trust)

- Guests are more sensitive to a direct experience of nature over an indirect experience of nature or an experience of space and place.
- Spaces and experiences could be designed to focus on more than one biophilic framework element.
- The hierarchy of utilisation of biophilic design elements in the design of a space is important in the creation of a memorable experience.
- A single element could rarely be observed alone. Throughout the hotel premises, experiences of nature can be given at diverse levels and in various ways.
- Spaces created within a conceptually cohesive whole can hold a varied experience. Thus, a pleasant and successful variation throughout. The application of the biophilic framework as a guide for architectural meaning and spatial variance of experience is effective.

When it comes to Hotel designs, it should be always kept in mind that the opinion and feedback of guests are of high value. Post-occupancy evaluation is a key step in the life cycle of an architectural project and a key indicator of its success. This aspect needs more emphasis in this typology of buildings, where the guest experience and therefore the continued revisiting of users to the hotel is crucial for its overall sustainability.

The biophilic design framework establishes a clear protocol for design decision-making at all stages of the life cycle of the project. It works as a generator and modifier of design at an early stage, an indication of the scope of influence of the site, its environs, and internal spaces, it is a checklist for evaluation and communication of success.

Heritage Kandalama is an important success story in architectural excellence by the renowned Architect Geoffrey Bawa. Though the biophilic inclinations of the hotel design are implicit in the overall experience, the opportunity to learn from its users and then correlate it to architectural space is deemed invaluable.

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