

BIOPHILIC DESIGN PARADIGMS USED IN THE CONTEXT OF HOTEL DESIGNING

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Biophilic design is a term coined for depicting methods which inherently connect built environments to nature. Buildings planned with the biophilic architecture primarily take into account features such as natural illumination, air circulation and aeration, natural landscape features etc. for developing more conducive, livable and healthy livable built spaces for people.

Biophilic designing of homes, offices and commercial buildings has become a necessity in today's hectic life styles as it not only improves air quality of built environments but also aids in reducing stress, increasing creativity clarity and spontaneity of thought as well as improve health and hygiene conditions thereby expediting healing. Researchers, scientists, academicians, architects and designers have been working in collaboration; since ages to understand and define different elements of nature that profusely impacts our contentment with buildings. "14 Patterns of Biophilic Design" enunciates the chemistry between nature, human biology and the design of the built environment so that one can understand, feel and experience the human benefits of biophilia in our design strategies.

Design Considerations investigate numerous factors such as climate, scale, demography etc. that may play a vital role in making biophilic design decisions such as bringing greater clarity in determining why some interventions are replicable while others may not be. This paper outlines research history on biophilic responses; as well as describes design application as a medium to effectively enhance and improve well-being of people and society at large.

This article further investigates the biophilic design paradigms used in the context of hotel designing used by the hospitality industry across the globe so as to understand the level of everlasting impact on their guest experiences. This paper also provides an investigation and analysis of pricing difference for rooms having a natural view, in comparison to the ones which are deprived of such views and further discussion of the biophilic assets of different hotels using various space typologies. This research also throws light on the comparative study of hotel lobbies which work more than transitory space with and without biophilic design features that may draw more guests leading to the success of a hotel.

1. INTRODUCTION

Biophilic designs have developed a strong bond with the hospitality industry as the tourists normally travel across the globe with the intention of having a luxurious stay close to the nature at the hotel itself. Latest research articles throw an insight into the positive impact the natural environments have on human health physically, psychologically and emotionally. Therefore the role of urban planners and architects becomes crucial as they act as a liaison in establishing a relationship between the built environment and the nature around.

This paper aims to analyze how the built spaces aid in providing physiological experience to the people living in them when developed using the concepts of nature.

2. Literature study of hotels with biophilic designs

2.1 Biophilic Design improving the Hospitality experience – Hobo Hotel Stockholm, Case Study

The human spaces report “Biophilic Design in Hospitality” demonstrates the financial benefits of incorporating biophilic design into hotel spaces. They suggest that both urban and resort hotels around the world charge a premium for rooms with a water view by comparison to rooms with other views (18.28% more for a resort hotel and 11.17% more for an urban hotel). Furthermore, they suggest that biophilic design interventions within hotels change the behavior of occupants and increase the potential uses for some hotel spaces. This is important as hospitality spaces are looking for new ways to bring in revenue, (without the need for delivering a room for the night) whilst strengthening local connections to create a greater sense of place and identity.

Hotel lobbies with a high presence of biophilic design, it was found, had a far higher rate of occupation and use. Such spaces especially promoted higher levels of social activity (11% higher than in a biophilia free space!) Several hotels appear to be picking up on trends regarding sociability and community within biophilic spaces and developing their lobbies to further

encourage their use – not just by clients but members of the wider community.

Hobo, designed by Studio Aisslinger, contains several floors of social space incorporating a restaurant, bar, event space, pop-up areas for use by local emerging artists and designers.

The hotel design features several biophilic elements which help to encourage community growth.

Firstly, a diverse range of spaces within each area of the hotel ensures that there are environments available for different needs, preferences and activities. Within nature an ecosystem with great diversity is more resilient with each element fulfilling a different role. Similarly, a variety of spaces encourages people to comfortably accommodate their role. It allows them to gather whilst also allowing for individuals needs to step away in small groups or to be by themselves to recharge.

This works alongside a clear sense of zoning within the hotel. Whilst there is flexibility in the design, the use of materials, furnishing and colours make clear which areas are associated with specific activity.

Soft boundaries between each of these zones is a further, nature inspired trick to encourage communication between hotel occupants. Lots of the spaces in Hobo are open plan and use rugs, textures, materiality and colour to imply boundaries. By ensuring that an interior environment isn't closed in, it's possible to increase the permeability of different zones and allow occupants to comfortably move from one space to another. Some boundaries are helpful in creating emotional safety and allowing people to communicate in comfort, however, softer boundaries really help to reduce feelings of separation encouraging groups to gather and interact.

2.2 Biophilic Design in Urban Architecture: The Oasia Hotel in Singapore

The Oasia Hotel Downtown, the most famous skyscraper of Asia developed by Woha uses the concept of planted façades where the green-to-red ratio changes over time.

It is not only a biophilic building but also an ecological one providing a habitat for biodiversity in an urban scenario.

Blossoming façade

The hotel has a crimson steel façade of around 25490 sq. metres which promotes a biodiversity over a concrete backdrop. The façade is covered with around 1793 planters with a variety of bright flowers. Around 21 different types of creepers have been used (both flowering and non flowering) which are home to a large variety of birds and insects during different seasons. The plant species have been placed very meticulously keeping in mind the right growing condition like the sunlight or amount of air or wind resilience required by the plant. Many animals such as squirrels have made this façade as their habitat thus adding a new dimension to the concept of “living building”. In addition to the 21 varieties of creepers, there are around 33 different types of trees, thereby making a record of having 54 species of plants within the tower to develop an ecosystem.

3. Methodology and Outcomes

A series of tests were conducted to evaluate the significance of biophilic design elements in the field of hospitality. For the purpose the room prices of rooms with biophilic and non biophilic views were considered. Further survey was done to evaluate how the hospitality industry is imbibing such biophilic designs for capturing the tourists. Studies were done to understand how lobbies with biophilic influence the guests.

For the study purpose, the behavior of guests were observed over a period of time. The observations from these studies very well support that biophilic designs have a positive influence on the guest experience and also have the capability to justify total revenue per available room for the customers.

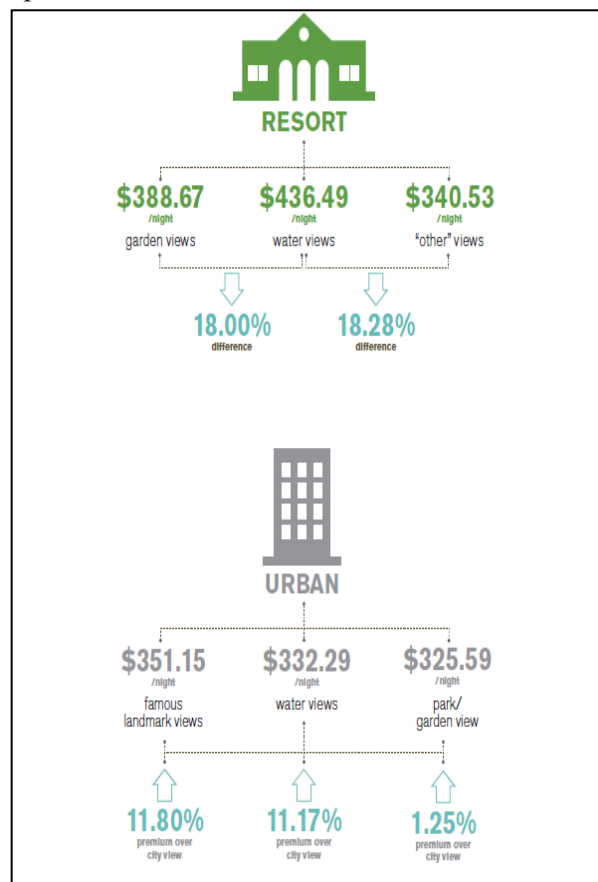
3.1 Resort

50 resort hotels of the American region were considered for the study purpose, it was observed that rooms with water views were rated higher in value than hotels with different views, averaging \$ 437 per night during peak season.

The average price difference between rooms with a water body view and rooms with garden view (\$388.67 per night) was approximately 18% , and that between rooms within the “other view” category such as jungle view or courtyard , mountain or a pool view etc. was approximately (\$341 per night) was 18.28%.

3.2 Urban

The urban sample consisted of around 50 hotels selected across the globe. It was observed that a view to water bodies like ocean, river lake etc. had a premium of around 11.17% , prominent sites had a premium of around 11.80%, and the “other view” category could gather only a premium of around 1.25%.



3.3 Onsite & Global Snapshot Surveys

Further a survey report was prepared by taking 39 hotels into consideration. 20 of these hotels were taken from America, 9 from Middle East, Europe and Asia and the remaining were taken from Africa.

3.4 Online Survey Method

The survey was in tune with the thought to determine how biophilic design was not only restricted to hotel rooms but to other hotel amenities as well. For the purpose a survey model based on “14 Patterns of Biophilic Design: Improving Health and Well-being in the Built Environment” (Browning, Ryan, Clancy, 2014) was considered wherein 15 online surveys were done to assess “absent,” “partial presence,” or “strong presence.” of each of the amenities. The 9 of the hotels considered in the survey were urban hotels (in the heart of the city) and the remaining were resorts (near the mountains or beach or lake).

From the findings of the survey it was very pertinent that biophilic designs were being used for many of the amenities. The survey further revealed that direct establishment of visual links to various views of Nature was although one of the most accepted patterns, but for spaces where such direct visual connection could not be established, hotels were still successful in developing a biophilic flavor.

3.5 Analysis:

The findings of the survey were evaluated on amenity bases. It was observed that the central lobby of citizen Times Square had blurring boundaries between the indoor and outdoor spaces providing comfort and delight to its guests. The Park royal hotel in Singapore imbibes the biophilic designs by combining various biomorphic forms for creating biophilic lobby-bar and pool-bar experiences.

The Faena in Miami, Florida, creates a unique and beautiful pattern by bringing the ocean right into the guest rooms which compliments the colour coordination of upholstery and ceramic tiles. Portland, Oregon, to the jungle retreat of Malihom Estate in Malaysia, and Uma Paro in

mountainous Bhutan creates a balanced environment of refuge for its guests.

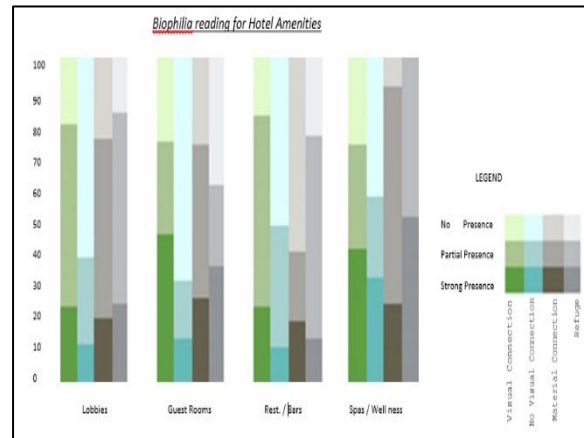


Figure 1 illustrates the survey respondent's perception of the connection with nature.

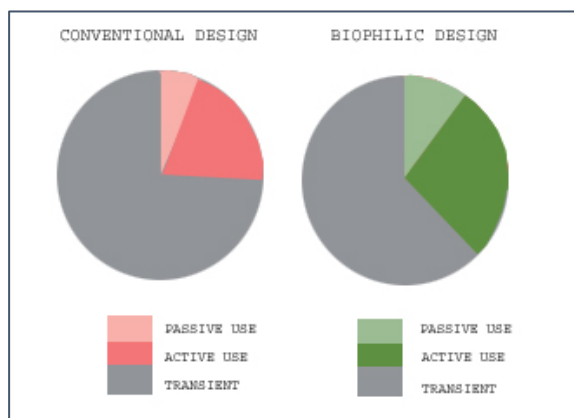
From the figure it can be established that majorly all good hotels are designed with visual connection with nature. The visual connection with the nature ranked at the top developing the impact of these biophilic designs. Further, the benefit of having these connections to nature was much greater when created for guest rooms or spas than for lobbies or restaurants.

User Trend Analysis

For analyzing the user trend the online survey of 6 hotel lobbies was done thrice during different hours of the day i.e. morning, afternoon and evening. The duration of each survey was around 45 mins. During this period the guests who entered the hotel space were counted and its status was recorded as as a passive user (the one engaged with mobile/laptop or eating alone), an active user (the one establishing a social connection), or transient user (The ones involved in checking in or out or using the elevators etc).

3.6 Observed User Trends

It was observed through the survey that guests in the lobbies of the biophilic hotels were effectively engaging in using lobby than guests in the lobbies of the conventional hotels. 36% of occupants effectively utilized the space of biophilic lobbies in comparison to the 25% of occupants of the conventional hotel lobbies.

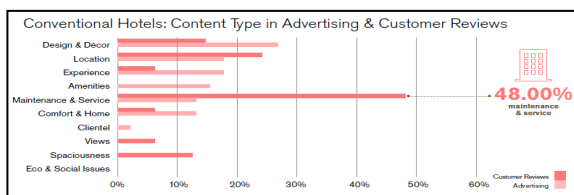


It was observed that both in conventional and biophilic hotel lobbies the trend of users engaging in activities with active use was high during the evening time.

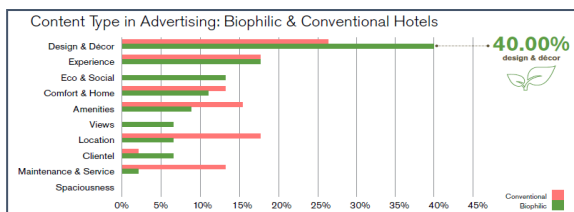
4. Online Marketing and Guest Review Comparison

Methodology

Further survey was done to evaluate how each hotel participates in the process of advertising to make its presence feel among its customers and further how each hotel is evaluated by customers in reviews. For the purpose the information was gathered and extracted from home pages of these hotels. In addition to this top most reviews of the hotel on Trip Advisors page were also considered and examined.



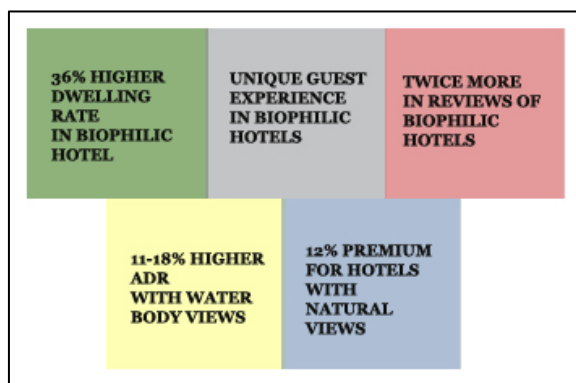
Reviews and advertisements were evaluated on the bases of the below mentioned parameters: facilities, customers, plan and furnishings, Ecological or societal Ideals, Experience, place/position, preservation and examination,



largeness, and Views. Along with this the references to biophilic design patterns were recorded and calculations were made to determine the percentage of phrases that match with each content type. For the purpose only positive phrases from customer reviews were included in this analysis.

Conclusion

- 1) The dwell rate of biophilic hotel lobbies is 36% higher than in conventional lobbies (i.e. there is a 36% difference between biophilic and conventional dwell rates).
- 2) Biophilic hotel design and décor play a crucial role in establishing an exclusive and enchanting guest experience.
- 3) The survey of biophilic hotels with conventional hotels reveal that reviewers of biophilic hotels mention “experience” twice as often as reviews of conventional hotels.
- 4) Survey further suggests that rooms with the view of lake/sea/any water body are on an average 11 to 18% priced higher than the others.



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