



Biophilic Design: Harmonizing Nature and Architecture

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Abstract

Biophilic design, initiated from human inherent connection to nature, aims to cultivate environments that foster well-being, productivity, and maintain ecological balance. It is conventionally linked with decorative plants and greenery, by incorporating crops introduces a fresh and transformative approach to biophilic design. Integrating crops not only enhances visual charm but also champions sustainability and self-reliance. The inclusion of crops plays a significant role in enhancing indoor air quality by absorbing pollutants and emitting oxygen, thus creating healthier and more comfortable indoor spaces. Effective collaboration among architects, interior designers, agricultural experts, and community stakeholders is indispensable to seamlessly integrate crop cultivation into built environments.

Key words: Air quality, Biophilic design, Ecological balance, Indoor plants.

Introduction

Biophilic design is an innovative approach to architecture and interior design that seeks to connect people with nature and natural elements within the built environment (McGeet *al*, 2019). The concept of biophilic design was popularized by biologist Edward O. Wilson in the 1980s, emphasizing the importance of incorporating nature into the design of human habitats (Dalay, and Aytac, 2022).

Biophilic design related to floriculture encompasses the integration of floral elements and plant life into the built environment to enhance human well-being, productivity, and overall quality of life (Hall and Knuth, 2019). It extends the principles of biophilic design to specifically emphasize the use of flowers and plants as key elements in creating spaces that evoke a deep connection to nature. Floriculture, the cultivation of flowers and ornamental plants, plays a central role in biophilic design by providing opportunities to incorporate diverse floral species, colors, textures, and fragrances into interior and exterior spaces. (Moslehian *et al*, 2023)

Dimensions of biophilic design

1. **Environmental Features:** This dimension emphasizes direct encounters with nature, such as incorporating natural light, water elements, and views of vegetation or landscapes. By engaging with natural elements, environments are enriched, promoting well-being and a sense of environmental connectivity.
2. **Biophilic Atmospheres and Experience:** Engaging all the senses like sight, sound, touch, smell, and taste this dimension seeks to replicate the multisensory experience of natural environments. By evoking emotional responses, it creates immersive spaces that enhance cognitive function, mood, and overall well-being.

3. **Natural Light and Views of Gardens:** Integrating natural light and providing views of floral gardens and greenery from interior spaces enhance occupants' connection to nature. This dimension emphasizes maximizing access to daylight and framing views of outdoor floral landscapes to create a transition between indoor and outdoor environments.

Indoor plants used for biophilic design

The following indoor plants can be utilized for biophilic design. Snake Plant (*Sansevieria*), Pothos (*Epipremnum aureum*), Fiddle Leaf Fig (*Ficus lyrata*), Peace Lily (*Spathiphyllum*), Spider Plant (*Chlorophytum comosum*), Rubber Plant (*Ficus elastica*), ZZ Plant (*Zamioculcas zamiifolia*), Monstera (*Monstera deliciosa*), Bird's Nest Fern (*Asplenium nidus*), Philodendron (*Philodendron* spp.).



Biophilic design (Source: <https://designwanted.com>)

Benefits of Biophilic design

Biophilic design related to floriculture offers a multitude of benefits that positively impact both human well-being and the environment. Following are some of the benefits:

1. **Physical Health Benefits:** Beyond mental well-being, biophilic design exerts positive impacts on physical health. Access to green spaces and exposure to natural light correlate with reduced blood pressure, enhanced immune function, and expedited recovery from illness or surgical procedures.
2. **Environmental Sustainability:** The incorporation of floriculture into biophilic design advocates for environmental sustainability by amplifying green spaces, fostering biodiversity, and mitigating the urban heat island effect. Plants and flowers play pivotal roles in carbon sequestration, stormwater management, and provision of habitats for pollinators and wildlife.
3. **Aesthetic Enhancement:** Flowers and plants introduce beauty, vibrancy, and texture to both indoor and outdoor spaces, elevating the visual allure of architectural compositions. Floral arrangements, living walls, and landscaped gardens craft visually captivating environments that uplift mood and engender memorable experiences for occupants and visitors.
4. **Improved Air Quality:** Incorporating plants and flowers into indoor spaces enhances air quality by absorbing pollutants and releasing oxygen through photosynthesis. This helps to reduce indoor air pollution and create a healthier indoor environment for occupants.
5. **Stress Reduction and Mental Well-being:** Exposure to plants and flowers has been shown to reduce stress, anxiety, and fatigue while promoting relaxation and overall mental well-being. Biophilic design elements related to floriculture, such as indoor gardens or floral arrangements, provide opportunities for stress relief and rejuvenation in both residential and commercial settings.
6. **Enhanced Productivity and Creativity:** Research suggests that biophilic design can boost productivity and creativity by creating environments that stimulate the senses and foster cognitive engagement. Incorporating flowers and plants into workspaces and learning environments can inspire creativity, improve concentration, and enhance problem-solving skills.
7. **Connection to Nature:** Biophilic design related to floriculture fosters a deeper connection to nature by bringing elements of the natural world into the built environment.

This connection to nature has been associated with various positive outcomes, including improved mood, greater sense of well-being.

8. **Educational Opportunities:** Incorporating floriculture into biophilic design creates opportunities for education and learning about plant life, horticulture, and environmental stewardship. Botanical gardens, arboretums, and green roofs serve as living laboratories where people can explore and appreciate the diversity of plant species and ecosystems.



Indoor plants used in biophilic design
(Source: <https://housing.com>)

Conclusion

Biophilic design related to floriculture offers a holistic approach to creating environments that celebrate the beauty, diversity, and resilience of plant life while nurturing human health, happiness, and connection to nature. By integrating flowers and plants into the built environment, biophilic design enhances the quality of life for occupants and promotes sustainable relationships between people and the natural world.

References

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