

# BIOPHILIA DESIGN IMPACTS Research Brief

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Figure 1: "A wide oak staircase in the New York headquarters of Delos encourages workers to walk up and down rather than take the elevator. Delos has developed the Well Building Standard to make offices healthy workplaces."

Source: <https://www.nytimes.com/2018/07/31/business/healthy-office-real-estate.html>

#### Keywords:

Ecological design,  
Sustainable design,  
Biophilic design,  
Regenerative design

## CONTENT OVERVIEW

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- II. Non-Rhythmic Stimuli
- III. Non-Visual Connection
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## BIOPHILIA + DESIGN IMPACTS SUMMARY

In the design world, biophilia can influence aesthetic choices, but administrative operations, systems design, development, and firm culture.

Taking design cues from nature means practicing in a style that is regenerative and sustainable, intentional yet spontaneous.

# BIOPHILIA

## DESIGN IMPACTS

### Research Brief



## I. Regenerative Design

Regenerative design is a process-focused approach to design. 'Regenerative' describes systems that restore, renew or revitalize their own sources of energy and materials, creating sustainable systems that integrate needs with nature. The fundamental principles of regenerative design, that couples adaptive ability with generative patterns in nature; considers the regenerative capacities of both natural and human systems (Roös, 2017)

Regenerative Pattern Name:	Short Description:
Adaptive Built Environments	Adaptive potential of buildings and infrastructure
Protect Nature's Adaptive Capacity	Adaptive capacity of local natural systems
Nature's Work as a Continuous Interaction	Allows life support functions to be processed through conversion, distribution, filtration, assimilation and storage with interaction throughputs systems to optimise resilience
Aggregate not Isolate, Integrate not Segregate	Integrate all parts to assist the inclusion of symbiotic relationships to promote regeneration
Self-Regulation and Feedback Loops	Include self-regulation of feedback loop systems in processes
Produce no Waste, Recycle and Assimilate	Make use of all inputs/outputs for a closed loop or net positive system
Conversion of the Solar Income	Include passive solar systems for energy, heating and cooling, thermal storage and conversion
Scale Linking to Facilitate Flow	Shaping the medium to facilitate flow, scale linking for support of maximum function at smallest scale
Storage as a Key Resource	For Energy, Water and Materials - maintaining adequate storage with balancing the replenish rate with the rate of use
Valued Renewable Resources and Services	Use and value existing natural, renewable resources for energy and biological services
Human - Nature Connections for Healthy and Prosperous Environments	The application of Biophilia strategies and designs to create healthy environments for both humans and nature

## II. Non-Rhythmic Stimuli

Overly groomed gardens and interior vegetation lack the dynamism needed to support non-rhythmic sensory stimuli that makes nature so fascinating. Non-Rhythmic Sensory Stimuli create experiences that are new, exciting, captivating, and special. (Ryan 2014)

- Naturally Occurring: Cloud movement; Breezes; Plants rustling; Water babbling; Insect and animal movement; Bird song; Fragrant plants
- Constructed: partition materials that play with light or air; Shadows or dappled light that change with movement or time; Nature sounds played at unpredictable intervals; aromatherapy

## III. Non-visual connection

A space that emphasizes Non-Visual Connection with Nature (connection through sound, touch, smell, and taste) feels vibrant and complex, but also familiar and comfortable. (Ryan 2014)

- Naturally Occurring: Fragrant herbs and flowers; Songbirds; Flowing water; Weather; Natural ventilation; Textured materials; Crackling fire/fireplace; Sun patches; radiant surfaces
- Simulated or Constructed: Digital simulations of nature sounds, Mechanically released natural plant oils, Highly textured fabrics/textiles, Audible and/or physically accessible water feature, Music with fractal qualities, Horticulture/gardening, including edible plants, Domesticated animals/pets, Honeybee apiary

## IV. Economic Benefits of Biophilia

The economic benefits of reconnecting people to nature are often miss consider because of the difficulty of quantifying the variables associated with the positive outcomes. By assigning value to a variety of indicators influenced by biophilic design, the business case for biophilia proves that disregarding humans' inclination towards nature is simultaneously disclaiming the potential for positive financial growth. (Dias 2015)

- Work place: well-designed spaces can encourage productivity while decreasing absenteeism, loss of focus, negative mood, and poor health
- Hospitals: utilizing biophilic elements or ecotherapy into the healthcare can reduce the cost of both patient care and staffing while improving medical outcomes
- Retail Spaces: stores can draw shoppers in with biophilic features that are captivating, soothing and calming, resulting in better sales than those without
- Education: classrooms can be strategically designed with biophilic elements to foster better test scores, health, and increased learning rates for students, as well as greater satisfaction and retention from teachers. Schoolyards with natural elements can trigger mental restoration, better behavior and enhanced focus in students

## VIII. KEY REFERENCES

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