

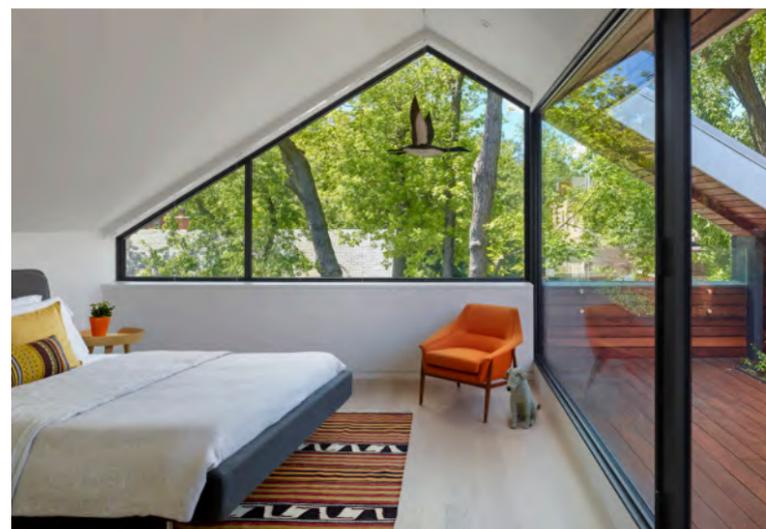
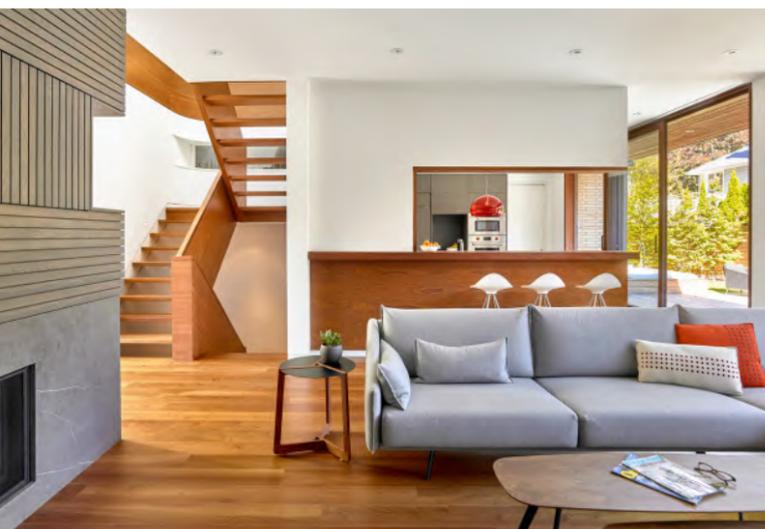


OUTSIDE IN

biophilic design
in architecture

BY HEATHER DUBBELDAM, OAA, LEED AP

Garden Circle House



Although biophilia is a relatively recent term, what it describes transcends time, geography and cultures. In short, we all have an innate, if not primordial, tendency to find connections with nature and other living things. It explains why we love going to parks, hikes in the woods or spending time at the cottage. As humans, connecting to nature or other living things delivers a sense of wellness critical to our being. From that small plant on your desk to a lake at the cottage, we seek it out wherever we are.

So what does this have to do with architecture? Sustainable design is much more than minimizing our impact on the environment... it is also about connecting with it. There is a correlation between a person's connectivity with nature and their quality of life. Research shows that regular exposure to green space and natural elements is

associated with a multitude of health benefits, from a reduction in blood pressure, diabetes, cholesterol, to improved quality of sleep, and numerous other restorative neurological outcomes. With this in mind, Biophilic design seeks to integrate principles aimed at supporting the physiological well-being of a building's occupants. The basis of Biophilic design in architecture and interiors incorporates natural materials, natural light, fresh air, vegetation, views of nature and a sensory experience of the natural world into the modern built environment. Our firm, Dubbeldam Architecture + Design, has been employing such practices over the past 17 years by exploring ways of connecting a built environment to its natural surroundings and integrating subtle natural elements into our projects. The means by which this is achieved in our work varies from spatial strategies to visual cues to forms and materials used in the design.

One of our residential projects, *Garden Circle House*, is an elegant example of Biophilic design on many levels. In response to the client's wish for a home that would "bring nature in," moments of connectivity to the outdoors or to natural elements are incorporated in every part of the home. Upon entry, a direct view to the backyard is provided through a tall, narrow window on axis, while the whole of the kitchen and living area opens out onto the landscaped backyard through floor-to-ceiling sliding doors. A strategically located window in the dining room frames an original pear tree, its foliage casting animated plays of light and shadow, while the scent of the pear blossoms in spring and the ripe fruit in autumn filter through the window when open. Multiple green roofs can be seen from all bedrooms, providing sensory delight with lush grasses, sweet plant smells and the soothing sounds of buzzing bees collecting pollen. The character and texture of natural materials

is emphasized throughout, including warm wood flooring and finely-crafted wood cabinetry, natural stone countertops, fireplace and tiles, and clay brick. On the exterior, the use of locally-sourced brick in buff and warm grey shades, natural stone, mahogany windows and cedar cladding reflect the natural surroundings.

A focal point of the home's interior is a curved central wood staircase with open risers and a solid mahogany balustrade that emulates natural organic forms and invites the hand to run along its sculptural contours. Light pours down from a large overhead operable skylight, washing over the natural white walls and providing illumination deep into the core of the home. In conjunction with the open riser stairs, the operable skylight functions as a highly effective means for passive ventilation, drawing the cooler air up and venting the warmer air out. Biomorphic forms and

Skygarden House



front and rear facades were opened up with large windows, creating a physical and visual connection to the home's surroundings. These openings flood the interior with natural light and allow the inhabitants to experience the changing seasons. The home's interior spaces extend to a series of highly useable outdoor spaces that enrich the domestic experience, each with its own unique character and level of privacy. The ground floor steps out to a generous thermally-treated ash wood deck at the same level as the interior floor, creating a feeling of an extension of the living space. The deck descends to a patio defined by granite pavers and a row of honey locust trees that offer dappled light and shade in summer.

At the front of the house, an existing porch has been remade into a private outdoor dining room, enclosed by a five-foot-high wood screen, extending the private realm of the indoor dining space into the public arena. On the third floor, two unique outdoor spaces provide green respite. An exposed roof deck at the back of the house offers plentiful views over the neighbourhood and into the extensive tree canopy surrounding the house. At the front of the house, half of the master bedroom is given over to an intimate exterior space clad in warm ash planks, with a recessed planter and an opening carved into the roof for natural light, access to rainwater and ample views of green. Intimately connected to the master suite, this "skygarden" functions as a unique outdoor room, open to the sky, sun, wind and stars.



patterns were incorporated in the stairs, light fixtures and wall coverings, which include natural imagery and symbols including billowing clouds, mountain peaks and the trunks of birch trees. In addition, the pool and water features work together to create a relaxing effect, both audibly and visually, while helping to support natural cooling from breezes when the backyard doors are open.

One of Biophilic design's distinguishing features is how easily it can be applied to projects of all scales and typologies; where *Garden Circle House* was a new build with a generous footprint, our *Skygarden House* project was a renovation with a compact square footage on a narrow urban lot. Here, our client desired a city home that provided the same serene and bucolic feeling they get from their home in the countryside... in short, they were seeking that connection with nature. To achieve this effect, the

Biophilic design is so much more than adding plants to an interior, it is about giving occupants and opportunity to have meaningful exposure to the natural world, whether through green spaces or architectural details that reference natural elements. Once thought of as an extravagance, designers, health experts and workplace gurus now recognize the valuable wellness benefits that our connection with nature delivers to our overall quality of life, productivity and mental state. By introducing the sights, sounds, and materials of the natural world into our spaces we can truly bring the outside in, along with all the wellness benefits it brings.

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Heather Dubbeldam is the Principal of Dubbeldam Architecture + Design. She promotes a long-term vision toward environmental sustainability and a commitment to incorporating sustainable design and systems into her firm's projects.