

Script - Biophilia Boston

Let's talk a bit about nature. How many here have a dog, or a cat? I think nature is like a cat...now for my husband, that means you pet them and they are cute and when you least expect it, out come the claws. For me, it means that when I sit in my cozy chair and pet my cat, I hear Playful purr (yes, his name is Playful...) and I feel content myself. I am benefitting him who is benefitting me...there's no sacrifice, there.

And this is not only biophilia, but good, informed, successful, co-created work of all kinds.

"ONE OF THE FIRST CONDITIONS OF HAPPINESS IS THAT THE LINK BETWEEN MAN AND NATURE SHALL NOT BE BROKEN."

—LEO TOLSTOY

Try to keep this relationship in your mind as we talk about biophilia and the buildings/projects we create.

I mined my phone to prep for this session, to see what photos I had taken over the last 6 months or more that illustrated some aspect of biophilic patterning. Some photos are artwork created by my son, some have an interplay between natural things and built environments, some are water, some are land, some are shadows and light. Some reflect culture of a place.

I was struck by how many photos are of nature, then realized one inherent fault in my perception is still, after all this time, a deep-seated bias that humankind is somehow separate from nature.

"WHEN ONE TUGS AT A SINGLE THING IN NATURE, HE FINDS IT ATTACHED TO THE REST OF THE WORLD."

- JOHN MUIR

This means also that humans are a thing in nature, attached to the rest of the world. If your phone is full of selfies and food shots, there is an inherent one-ness with nature, and that one-ness can be amplified and clarified in our work to reach deeper and stronger support of those who engage in our buildings and projects.

We are nature - This is what we must understand in order to earn our continued presence in the world. Meaning we are from nature, we are a piece of the world, in fact universe, we are one particular essence of the pace of natural movements, and we are absolutely affected by other essential aspects of nature's complexity.

"LOOK DEEP INTO NATURE, AND THEN YOU WILL UNDERSTAND EVERYTHING BETTER."

- ALBERT EINSTEIN

"STUDY NATURE, LOVE NATURE, STAY CLOSE TO NATURE. IT WILL NEVER FAIL YOU."

- FRANK LLOYD WRIGHT

Let's ground this discussion in you and your experiences. Put down what you might have in your hands, plant your feet on the floor and imagine the soles of your feet can feel the pulse of mother earth, the ebb and flow of water, the winding of wind, even the shift of tectonic plates resonating from the eons of the planet. Shut your eyes, and think about you and your own life.

I'm sure there are times, in your past, when you have felt whole, peaceful, and healthy, when you were relaxed and yet engaged/aware. These could be times when you were still or times when you were in motion, but in this case focus on times when you were not engaging directly with other people...where were you? What surrounded you? Think about each sense for a moment - what do you see, is there an

impression on your skin or feeling of warmth or chill, or of texture? Is it total silence and if not, what are your ears picking up? How about taste and smell? And finally, how do you, personally, feel in that place?

Open your eyes - does anyone want to share what that place was or how it made you feel?

Revelation - lots of nature-based places, yes?

Can you remember a place/moment in which you had a similar feeling of wholeness, peace, and health that was fully indoors with no natural materials, access to views, or other analogues of nature? I suggest that that short exercise underscores the importance of nature to our wellbeing. So let's start there to create a deeper understanding of what biophilia is, and ways it can be woven irrevocably into our work.

**"NATURE DOES NOT HURRY, YET EVERYTHING IS ACCOMPLISHED."
-LAO TZU (FATHER OF TAOISM)**

Let's visit this little office that has brought in a few biophilic elements, a view to outside, wooden furniture and floors, plants n pots,...the owner of this office loves a few Boston Buildings and has them depicted on their wall...The statehouse, Trinity church, Fenway, Harvard Art Museum, Boston Library, and Quincy Market to name a few. All places that are striking, engaging, cherished, and purposeful...and each is interdependent with nature...

I am basing most of this presentation on a few key resources. The 14 Patterns of Biophilia and the Economics of Biophilia, with by Terrapin Bright Green and available for free from their publications website. I highly recommend accessing these resources. Additionally "Biophilic Design" by Kellert, Heerwagon, and Mador. I have also mined the internet for quotes and for images to assist in the depictions, used a few images from my son (erik_smits_ if you're on instagram) and drawn some images as well.

I am fascinated by what I call the holy trinity of body mind and spirit, and this is the overlay to the patterns of biophilia that helps me to understand the significant depth of interdependence that exists, and how we can build on that rather than ignore it....aggressively.

Gut check - think for a moment - are people part of nature, tied to it, informed by it?

Why do we build buildings?

If we do indeed build buildings for people, and people are nature, then we build buildings for nature. And we need to do this better, all around.

**"NATURE IS NOT A PLACE TO VISIT. IT IS HOME."
- ANONYMOUS**

The 14 Patterns -

The 14 Patterns are a sort of shorthand to understand what is possible, but it takes real reflection on purpose in order to employ these ideas well.

There is a significant amount of overlap between the patterns. For one example, the presence of water is one pattern, and water has a smell and a sound that can tie into non-visual connection goals, as well as a pattern using the movement of water to provide dynamic and diffuse light or even non-rhythmic sensory stimuli. Water can also be a key element in creating risk/peril responses.

Most fundamentally, connections to nature are not applied elements that make everything all better when plastered on top of poor design. We need to be engaged in the project goals, physical context, and cultural ties. But to begin, what are the 14 Patterns?

Nature in the Space, which again calls to me the image of our human BODY, and the celebration of the space through our physical reaction to it.

- Visual connection - can we see nature in all her glory?
- Presence of Water - the presence of water can be calming and energizing
- Non-Rhythmic Sensory Stimuli - we are nature, and patterns that are unpredictable improve attention and exploration
- Non-Visual Connection - we have at least 5 senses...sight is only one.
- Thermal and Airflow Variability - our largest organ is our skin...and it is full of sensitive receptors. A variety of inputs improved comfort and concentration
- Connection to Nature's Systems - we are of the world, and seeing the patterns of seasonal process and day/night reinforces our sense of connection and place
- Dynamic and Diffused Light - circadian rhythm support

I remember when I had my son, in a birthing center in Troy, NY. It was a fine place, full of needed machines, a scant view across local rooftops, good daylight, and overall very beige in color. So much so that when I returned home with my son a mere 30 hours later, I was in absolute shock at the richness of color at home. It was late spring, and everything was GREEN and brown and rich and layered. My home had reds and purples. Someone sent flowers with orange tulip blooms, in a bright green vase. It was a riot of color that was so amazingly welcome to me. Would I have been more focused in a less beige room?

Take a minute and ground yourself again. Think of being sick, in a hospital, in a room with no access to views of nature, maybe a wall of another wing of the building. A room with little variation of lighting, the sound only of the air systems and ancillary machinery, or of piped in music. How do you feel?

Now rebuild that patient room - give yourself a view. Provide adjustable lighting that perhaps automatically shifts color and color temperature throughout the day. Is there art on the wall that represents a local outdoor scene? Is there a pattern reminiscent of nature in the trim or the flooring or the layout as a whole?

How do you feel in this space?

In fact, research indicates that people in the nature-informed healing room use less pain medication and leave on average 8.5% sooner than in the dis-engaged room. Do we have real info on these improvements? Yes. Here are a few.

Natural Analogues are interpretations of nature that our MIND engages in to our benefit.

- Biomorphic Forms and Patterns - think ionic and corinthian columns, pacing of columns, patterns in carpets and textiles
- Material Connections - real materials from nature...
- Complexity and Order - as a tree has simple trunk and then the riot of leaves, can we create this complexity in a way that is not chaotic?

My husband and I were in a mall the other day (this is my once a year going anywhere near a mall) and there was a local furniture maker showcasing some dining tables and desks, made of reclaimed wood. We could not NOT run our hands over rather items. And we wanted to know the story. Who cares about the story of plastic?

Does anyone have a particular place or moment that illustrates this connection to to mind?

Nature of the Space is about how we feel in the the space, so this is the method of supporting our SPIRIT. I think of this also as the re-engagement with the child within.

- Prospect - comes from our deep history of being plains dwellers, able to see far, and understand our ability to protect ourselves when danger is on the horizon. I remember building my first treehouse with my best friend...and watching for her annoying little sister.
- Refuge - shelter, cozy - what about blanket tents?
- Mystery - this ties into our curious nature, and increases our connection to the building itself.
Building mazes
- Risk/Peril - strong pleasure response. This of rock-hopping, and swing sets, and roller coasters.

What's amazing about the Nature of Space is that the benefits from these biophilic patterns are the most difficult to gather as bankable data, but likely the most profound in terms of societal improvements. Is it because of the dopamine response? Is it because of the connection to child-like responses that allow our emotions to engage?

Any thoughts as to why?

In working on this presentation, I have identified something in these 14 patterns that is missing. It comes from the moment of recognizing my own bias that I mentioned earlier - we must recognize that we are a part of nature, not apart from nature. And nature benefits from us as we benefit from her. Think of the purring cat that, in turn, slows your heart rate and reduces your blood pressure. Or the energetic dog whose antics make you smile while you give her joy in throwing the ball for a game of fetch. These things happen with complex reciprocity.

Although TBG mentions cultural and place-based awareness as key to success, they have not identified patterns related to these influences. I suggest adding the following to our "biophilic awareness" toolkit. Adding these will underscore the needed comprehension that humans are nature and that the human experience is part of nature's richness of time.

The Nature of Context:

- **Cultural Connectivity** - just as light quality creates different emotive responses in Asia than in the USA, we need to be aware of other cultural signals to incorporate or respect or change with purpose
- **Grounding in History of Place** - representing sole and fish imagery in the middle of a desert locale is not the same as depicting cod in the washbasin in a Boston Brew Pub that is located in a reclaimed fish market on the docks.
- **Indigenous Materiality** - Materials, colors, patterns. Just as I try to drink local beers to inform my travel, maybe we should be able to identify place by the material use in the buildings we inhabit. This likely will also help us to tap into the construction vernacular that makes the most sense with the weather of the region.

"LIKE MUSIC AND ART, LOVE OF NATURE IS A COMMON LANGUAGE THAT CAN TRANSCEND POLITICAL OR SOCIAL BOUNDARIES."

—JIMMY CARTER

"THE PROPER USE OF SCIENCE IS NOT TO CONQUER NATURE BUT TO LIVE IN IT."

—BARRY COMMONER

Now let's delve into a little bit of work. Individual work and small discussion groups. Each of you grab a piece of paper and pen.

We're going to tackle this in two ways - first, to understand what is already in your design, and second to use the purpose statement for your project to identify useful biophilic inclusions.

Choose a project you are working on. Put the name of that project and owner on the paper. List the Three pattern categories - and the Fourth as well.

- Nature in the Space
- Natural Analogues
- Nature of the Space
- Nature of Context

Write down anything that occurs to you that you are already employing in the design that may be related to each pattern category. Then take a few minutes to think about how you feel in that space, and if there is a way to heighten the impact of that biophilic response.

Share your ideas around the table. Ask and discuss these questions for a report-out.

- Is there a common approach? Why?
- Is there a pattern that is rarely used? Why?

Sharing this - general inputs as to the why parts

Take that same project and write down what the purpose statement for that work is. We're jumping a whole lot of process, here, in developing a purpose statements, but, as an example, maybe starting with the mission statement of your owner would get you going. The basic "why" for designing/building/renovating that place.

Now what in that purpose statement calls us to connect more thoroughly with nature? Any discoveries of note?

Summary -

I think the biggest issue we face in design and construction is the faulty notion that we are separate from nature. This attitude absolves us of caring for nature, and makes it very difficult for us to accept that we can benefit directly from engagement with her. A double whammy of disengagement.

"IN EVERY WALK WITH NATURE, ONE RECEIVES FAR MORE THAN HE SEEKS."

-JOHN MUIR

We have seen today is the interdependence and the reciprocity of benefit. While we benefit nature it benefits us. To make this even more clear, and fully engage in the notion that the Nature of Context must also be considered, here is a photo of the Highline in NYC. If you haven't been to see this you should go. In this photo we see that not only is the built environment, the experiences of the people, improved by inclusion of nature, but nature itself is celebrated, framed, and made even more magnificent by the built form that is reflecting it. This is reciprocity. This is biophilic design awareness.