



RE-DISCOVERING BIOPHILIA

Landscape Architect, Joseph Clancy shares his knowledge and recent research on the most important subject in contemporary horticulture

THE PROBLEM

Today, as a species, we are urban dwellers, despite having spent 95% of our evolutionary history in natural environments. With the migration to cities only occurring within the last 200 years, and with the majority of the global population becoming urban only as recent as 2007, our bodies and minds have been unable to adapt to such a drastic change in environments.

Urbanisation has brought with it higher levels of stress, crime, absenteeism, depression and lower levels of productivity and learning, due in part to reduced access to green space and the displacement of natural environments. But we're not going to be able to turn back the rural exodus, whether we like it or not.

It is clear. We need greater access to nature to restore and enhance our mental health and well-being.

THE SOLUTION?

A new design ethic, still in its infancy, biophilic design aims to restore natural stimuli in the built environment to maintain, restore, and enhance our physiological, cognitive and

psychological connections to the natural world.

Biophilia literally means "love of life or living systems". *"Biophilia is the innately emotional affiliation of human beings to other living organisms. Innate means hereditary and hence part of ultimate human nature."* - E.O Wilson

This method of design is not just simply about bringing nature into the built environment, but the incorporation of specific natural content within the space, its configuration and associated semantic content. This design ethic is based on evidence gathered over the last 40 to 50 years.

THE BENEFITS

Spaces designed 'biophilically' can trigger restorative responses in the human body. These responses can be sorted into three categories; cognitive, physiological and psychological. Numerous benefits, depending on the content and spatial configuration of the space, include:

- Enhanced mental stamina and creative task performance following exposure to natural stimuli (Joye, 2007)
- Improved restoration rates from stress when individuals are exposed to visual and auditory natural stimuli

become the number one disease burden by 2030 (Juniper, 2013) and that the cost of work-related stress illnesses in Ireland in 2012 alone was €200 million. While increasing green spaces in urban environments can bring these benefits, the removal of existing natural stimuli has been shown to actually increase stress, depression and cardiovascular disease in the local population.

Biophilic experiences are also beneficial to society as well, with interactions with nature before the age of 14 fostering social bonds and buffering children to environmental stressors (Louv, 2012). Access to and equitable distribution of green space has been shown to lower levels of crime and violence, with a study in Chicago recording 52% fewer felonies (Kuo & Sullivan, 2001).

Then there are the economic benefits of biophilia, with customers willing to pay up to 25% more for an item in retail settings with connections to nature (Wolf, 2005). Higher visit frequencies, increased visit duration and higher expenditure of money has also been shown in retail areas with high levels of vegetation (Wolf, 2005). Such retail

than patients without a view to nature (Terrapin Bright Green, 2009). The average length of a hospital stay in Ireland in 2012 was 5.7 days (Redmond, 2013). The inclusion of views to nature could reduce hospital stays, freeing up approximately 300,000 bed days and a further 110,000 in-patients being treated annually. A 10% increase in capacity!

THE HOW

So how do we create more liveable environments through biophilic design in Ireland?

(RE-)EDUCATING THE DESIGN PROFESSIONS

As it stands, there is no formal education on biophilic design as a module on any third level architecture/design course in the world, let alone Ireland. We need to change this, as design has become narrowly focused on the material aspects of a design with regard to sustainability. This has been to the detriment of the human aesthetic experience. We need to educate our designers on the impacts their decisions have on people. If we wish to create

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(Alvarsson et al, 2010)

- Lower blood pressure and decreased heart rates following interactions with natural stimuli (Hartig et al, 1991)
- Improved affect and cognition for individuals with depression after interaction with natural stimuli (Berman et al, 2012)
- Symptoms of ADHD in children are reduced after a 20 minute walk in a natural setting (Taylor & Kuo, 2001)
- Exposure to natural stimuli lowers levels of stress hormones (Park, 2009)

These benefits have implications for the creative, educational and healthcare sectors when you consider that these responses to natural environments can occur in as little as five minutes (Hartig et al, 2003). The importance of these benefits is underlined by the fact that stress related illnesses are set to

areas yield 12% higher profit margins in comparison to retail areas without connections to nature.

Biophilic design can not only increase economic gain, but can also reduce financial losses. Studies at the University of Oregon have shown that 10% of employee absences can be attributed to not having a visual connection to nature (Terrapin Bright Green, 2009). An employee's view was concluded to be a primary predictor of absenteeism. Absenteeism cost Irish employers €1.5 billion in 2009 (Kelpie, 2011). Introducing views to nature within the work environment could produce savings of €150 million for Irish employers collectively.

Regarding the struggling HSE, patients with views to nature have hospital stays that are 8.5% shorter

biophilic environments, we need to arm our designers of the future with the tools and know how.

JOINING THE BIOPHILIC CITIES PROJECT

The Biophilic Cities Project was founded by Professor Tim Beatley at the University of Virginia. Its principal aim is to advance the theory and practice of planning for biophilic cities. Participant cities across the world will serve as case studies for other cities, laying the groundwork for methods of best practice among communities, governance, researchers, and developers on becoming a biophilic city. Joining the biophilic cities project would help guide the adoption of biophilic design in Ireland as the project fosters engagement between stakeholders and governance at all levels.

PLAYING THE NUMBERS GAME

The financial gains and savings listed in this article are only a small portion of the economic benefits of biophilic design. For more information please read *The Economics of Biophilia* by Terrapin Bright Green, available for free download. While personally I'm reluctant to place a monetary value on nature, I believe in this instance it could support arguments for increasing investment in public realm landscapes. The same argument would support the conservation of our parks and safeguard funding for the maintenance and operation of these vital spaces, which have been hit severely by the recession. One only has to look to Singapore, where a dedicated policy on public greening has led to an increase in vegetative cover (despite population growth), an increase in biodiversity and increased investment from companies directly linked to Singapore's greening incentives.

CONCLUSION

Adoption of biophilic design would

give a much needed boost to the Irish horticultural industry, with new build projects for landscape contractors, increased investment in existing urban landscapes and the protection of funding for our parks and public spaces.

The negative impacts of urbanisation on human health and wellbeing is only going to get worse. The solution doesn't lie in abandoning our urban environments, but in making our cities and towns more liveable. The current percentage of Ireland's population that dwell in urban areas is 60%, set to rise to 80% by 2050. ***The time for action is now.***

Biophilic design will not solve all of our problems or indeed, produce results overnight, but it is another prong in the argument for incorporating more nature into our built environments. *



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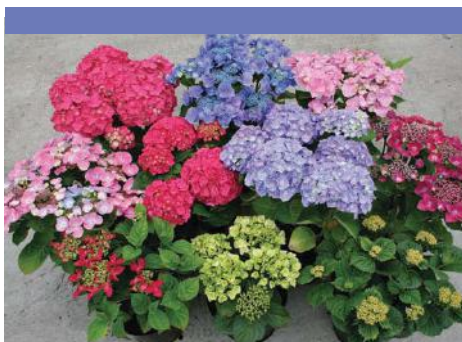
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FURTHER READING ONLINE

Biophilic Cities Project:
www.biophiliccities.org

Terrapin Bright Green: www.terrapinbrightgreen.com

References is available from the author



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www.rentes.ie



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