

Name: Dulani Don Tennakoon

Student number: 1906136

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Tutor's name: Julia Lockheart

The idea of a biophilic working environment and the possibility that it can have a positive impact on the human mind will be explored within my proposal for my dissertation. It can be said that there is a direct link to 'people's health and well-being [that is impacted] by their environment' (Terrapin Bright Green, 2014) which is an area that I will be looking into further within my essay. I intend to look at a range of different artist, designers and any other relevant aspects to fully understand if one's environment does have an impact on their mental well-being. Additionally, other ways in which one's environment can influence one's thoughts and behaviours will also be examined, for example the use of colour within your environment.

To help me do this, I will be looking at three key words in relation to my chosen topic. The three keywords being, environment, biophilia and sustainability.

Environment.

In this context, the word environment is understood as 'the surroundings or conditions in which a person, animal, or plant lives or operates' (Oxford Dictionary, 2010). It can be argued that everything within your environment can affect you, even if you don't particularly think it would. Your surrounding environment has the ability to 'increase or discourage productivity, intimacy, efficiency, and even happiness' (Heritage Design Interiors). There are many things that can determine the responsiveness to one's environment and their 'emotional response' (Heritage Design Interiors) to it, such as layout, colour, material and textures, as well as patterns. Recently, with the interest of interior design on the rise, there have been more studies being undertaken on the subject of the impact on mental health due to one's environment and 'research is supporting the fact that people can give their mental well-being a boost by implementing some simple interior design techniques' (Mountain Forest Products).

In a world full of colour and pattern, it is shocking to see that our work environment, our health centres and schools are so dull and grey. It inspires no creativity, nor does it spark any joy. It is no secret that humans are affected visually by colour, in studies done in four different countries, it suggests that people working in bright and colourful spaces seem to be 'more alert, confident and friendly' (Lee, I.F. (2018). More and more designers and artists are trying to tackle this issue of colourless living environments, one of them being Danish painter, Poul Gernes. He uses strong and vivid colours with simple clear shapes and geometric patterns, to create a 'positive emotional influence' (Hansen et al. Herit Sci, 2018) within the Herlev Hospital.

It is clear that the influence of colour is a very big part of our everyday life and by looking at simple colour theory, it suggests that certain colours make us feel a certain way. For instance, 'green, which is nature's colour, is restful, soothing, cheerful, and health-giving' (<https://paulbrunton.org/notebooks/para/17347>). In respects to interior design, colour is fundamentally key to making a space look and feel a particular type of way. It is clear that by

understanding the importance of colour and its impact we can effectively 'apply these concepts to the home, workplace and health care environments', (Mountain Forest Products). An excellent example of this is Bridget Riley's work on the eighth, ninth and tenth floor of St Mary's Hospital, her work is running right across 56-metres of walls and Riley says that it was in the hope to 'lift spirits of the patient in the hospital to remind them what life outside the hospital is like'.



Figure 1

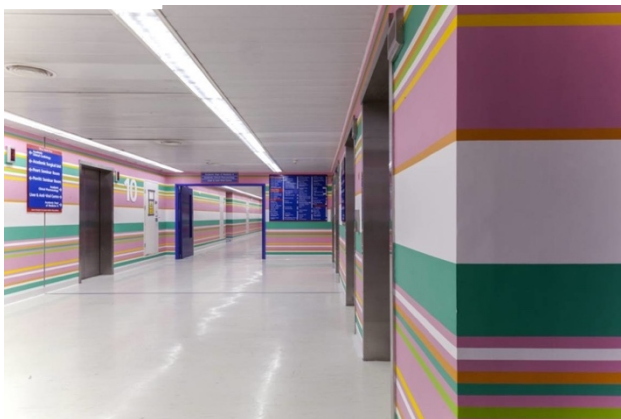


Figure 2



Figure 3

Consistently in all of the three designs, Riley has chosen to use the colour green, this maybe because 'green is thought to relieve stress and help heal' (Cherry, K. 2021) as seen in figure one, two and three. It suggests hints of the natural world, considering the colour green is largely associated with nature and often people instantly think of the outdoors. When being stuck in the confinements of a hospital, it is not unlikely that patients crave, 'the beauty and calming effects of nature' (Heritage Design Interiors).

Biophilia.

Urban 'areas are very developed, meaning there is a density of human structures such as houses, commercial buildings, roads, bridges, and railways'. (Rutledge, K, (2011).

Urbanisation is fast growing in many countries, it 'involves the shift in population from rural to urban settlements' (Gordon, M and Satterthwaite, D. 2014). Due to inflated amounts of migration, there has been rapid and large-scale urbanisation, with 'more than 4 billion people [living] in urban areas' (Ritchie, H. and Roser, M. 2018). In relation to this new urban environment, whilst there are both positive and negative outcomes that can be seen, it is clear that 'mental health has been impacted negatively' (Lederbogen, F. 2011). It is expressed by Sophie Corlett, Director of External Relations, Mind, in an interview with the World Health Organization (WHO), that 'living in cities is associated with a higher risk of some mental health problems – such as mood disorders, anxiety and schizophrenia' (W.H.O. 2021). This perhaps can be explained by the impact of the expansion of urban construction, which has subsequently caused '1.2 million square kilometres of other landscapes' (Vince, G. 2013) rich in biodiversity to be lost. Cities are in dire need to come up with some innovative and sustainable ways to incorporate the natural world. It is apparent from this research that without some kind of connection to nature humans suffer greatly.

The term biophilia is the 'idea that humans possess an innate tendency to seek connections with nature' (Rogers, K. 2019) and this term was made popular by biologist, Edward O. Wilson in his 1984 book Biophilia. It has come to light in recent years that there has been a change in human mental welfare and the reason for this change appears to be linked with the surge of urban development as 'meta-analyses show[s] that current city dwellers have a substantially increased risk for anxiety disorders by 21% and mood disorders by 39%' (Lederbogen, F. 2011). With the use of Biophilic design within our interior settings, it is believed that the level of mental illness can be reduced, this is illustrated in the results of ten U.K. studies that suggests that 'every green environment improved both self-esteem and mood' (Barton, J. 2010). The Natural Resources Defense Council (NRDC) was founded in 1970, it is an organization that works to safeguard the environment, and they are one of the growing number of companies that are incorporating biophilic designs into their offices because they recognise that the 'natural environments have a greater impact on psychological health' (Gladwell, V.F., Brown, D.K., Wood, C. *et al.* 2013).

The '14 Patterns of Biophilic Design', describes the three categories of Biophilic design. First, nature in the space, a direct presence of nature in a space, in the form of plants, animals, water and other natural elements. Natural analogous, representational presence of natural materials, patterns, colour and shapes. Then finally, nature of the space which incorporates the spatial elements commonly found in nature such as places of sensory refuge. It explains ways in which to incorporate each category into a space as it is important that you understand the 'needs of the structure and the personal preference of occupants' (Vidovich, E. 2020).

With our lifestyle centred around spending '90 percent of [our] time indoors' (EPA. 2018) the notion of biophilic designs in our built environment is crucial. With regards to the current global pandemic, it can be said that the need for biophilic designs within one's living environment is essential now more than ever, as many of us have to isolate ourselves within

our homes with no option but to stay inside. In a study looking at the importance of nearby nature for mental health during the COVID-19 pandemic, it points out that even viewing nature through a window in one's home, allows people to obtain an 'improved mental health outcomes' (Ecol Appl. (2020) which only further highlights that humans need to connect with nature.

However, Biophilic design is much more than simply adding plants to a space, it is a whole new way of designing and it requires architects and engineers as well as interior designers to fully create better living and working environments. Biophilia design aims to bring nature inside, and this includes not only living plants, but 'water, daylight, natural materials, fractal patterns, and spaces that support prospect views or provide a refuge condition' (Browning, B. 2018).

The Spheres, Amazon's headquarters located in Seattle and integrates 'Biophilic design at its core' (Pardo, M. 2020) through the shape and design of the building and the countless other details created inside. The sphere shapes were selected due to the direct link to nature, the feel of it is more organic and raw. The Sphere is considered to be a completely different work environment in relation to other mundane office spaces (figure 4), and aims to connect what is "typically missing from urban offices— a direct link to nature' (<https://www.seattlespheres.com/>). The Spheres is home to an extremely large living wall (figure 5), with more than 25,000 plants woven into 4,000 square feet, this vertical visual masterpiece 'innovative demonstration of biodiversity.' (Amazon. 2017) Within every inch of the build, from the stairs to the set out of the seating areas , it is all designed to 'provide an immersive and interesting experience' (Amazon. 2017)



Figure 4



Figure 5

Sustainability.

Research suggests that 'Society's disconnection from nature has been proposed as a root cause of unsustainability' (Ives, C. 2018). The definition of sustainability in the Cambridge dictionary is, 'causing little or no damage to the environment and therefore able to continue for a long time'. It is important to recognise that there is a significant amount of 'responsibility in creating sustainable environments' (Economy and Technology University 2017) within the interior context. Responsibility falls on interior designers to choose the appropriate materials and products that will be used on creating a sustainable environment for the client.

Tech giant Apple have designed a huge Apple headquarters in California, also known as 'Apple Park', with a ring-shaped building that effortlessly embodies the idea of sustainability and technology of the future. The 175 acre site is '80% green space, [and it] fits seamlessly into nature' (Man of Many 2021) the Apple Park is more of a nature refuge than a office park. Not only does the campus run on '100 per cent renewable energy' (Foster + Partners 2018) it is the largest 'LEED platinum-certified office building' (Foster + Partners 2018) in North America. The ring building is extremely eco-friendly having 'one of the largest on-site solar energy installations in the world' (Apple, 2017) which generates up to 17 megawatts of power. The Apple Park was designed with the hopes it would 'inspire our team as well as benefit the environment' (Moore, A. 2018). The design of the site includes wellness centres and running tracks to help improve the mental and physical health of their employees. It can be argued that in most respects it is living up to all its intended purpose.



Figure 6



Figure 7

Much like the way in which biophilic designs within your living environment can affect your health and well-being, the same can be said when looking at sustainability, with studies that show a, 'link between certain air pollutants and mental illnesses' (UNEP, 2019) In such densely packed urban cities that have more buildings than green space, it forces us to think outside the box as to how to incorporate nature into our environment once again, attempting to 'incorporat[e] the natural world in new and innovative ways.' (Vince, G. 2013).

One way in which divergent thinking comes into play is with the idea of rooftop gardens, in which there is a garden grown 'on the flat roof of a building' (Oxford Dictionary. 2020). There has been an increased popularity in green roofs, in some respects it can be said it is because new problems require new solutions. Seeing as land space is limited, this is a way to not only add beauty to dull and lifeless concrete building structures, but it also has many other sustainable and more practical benefits too. It creates a trickledown effect, where when one thing is improved it causes other side-effects of improvements. So, for example, having a roof top garden instead of a black tar roof, the green roof absorbs heat, 'providing natural insulation for buildings' (Davis, C. 2015) which then means that there will be less energy used on air conditioning leading to a decrease in the emission of air pollution and greenhouse gas. Whereby Green roofs, 'substantially reduce the impact of urban air pollution, thus enhancing city life' it seem to be a sensible choice to improve wellbeing by adopting green roofs into city builds. (DG ENV, 2008)

An innovative design that saw the potential of an old abandoned railway line, is The High Line in the West Side of Manhattan (figure 6). The non-profit conversion of the unassuming structure, was a successful "advocate for its preservation and reuse as a public space" (High-Line, 2020) and is now a '1.45-mile-long greenway featuring 500+ species of plants and trees' (High-Line, 2020) the project is not only a public green space park, but environmental sustainability is its core value.



Figure 8



Figure 9

Concluding my dissertational proposal, I have explained and deliberated over the notion that one's interior environment is a leading factor and contributor to one's mental well-being. From the exploration of colour and its visual effects on an individual's emotions to the positive impact of the use of biophilic designs within the workplace.

Following on to the importance of sustainability within one's environment and the positive impact it can have for the environment.

I have looked at artists such as Bridget Reilly and Poul Gernes, observing how their work on colour and its use within an interior setting has significantly changed the space to improve mental wellbeing. I have noted how the large scale and highly extensive designs created by company giants such as Amazon and Apple, have invested not only in innovative and

sustainable buildings but also how they have taken a keen interest in their working environment and the impact on their employee's well-being. In addition, I have looked The High Line, a less expensive project that was inventive and successful in creating a more sustainable and environmentally friendly way of living. Everything considered, this leads me onto the dissertation question, *'How does external and internal design positively impact the mental and physical welfare of people?'*.

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Figures

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Fig 4 and 5. <https://www.seattlespheres.com>

Fig 6 and 7. <https://www.apple.com/newsroom/2017/02/apple-park-opens-to-employees-in-april.html>

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