

Importance of nature in architecture



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Architecture can be seen as an ever-changing concept that is always transforming itself in accordance with societies values. Modern architecture is a prime example of how architecture has transformed from using nature as a tool to incorporating nature into its design for ecofriendly and aesthetic purposes. Ecofriendly practices have become popular in all industries, however its role in architecture more recently is much more defined than it is in other trades. Hopkins states that “ architects and designers have control over our built environment; by changing the way we design cities and buildings to connect to rather than disconnect from nature, we can change our proximity to nature and shift our physical relationship to the environment”.^[1] Throughout this paper we will focus on why nature is so important to architecture and how its incorporation has changed over time. We will then analyze several pieces of architecture that reflect the different uses of nature in its design.

Nature plays several roles in architecture. One role that nature plays in architecture is that it aids in the aesthetic view of buildings. When people choose where they want to build a home, they often look for scenery that appeals to them such as a view that is over looking mountains or a house that is located on the beach. The thought of a home on the beach sounds much more appealing than the thought of that same home in a crowded city neighborhood. While this seems like a normal idea, it actually roots itself much deeper in our subconscious. According to Hase and Heerwagen, “ the pleasure we feel from being in beautiful places is part of the neural makeup of the human brain”.^[2] Due to our genetic make up we are drawn to want nature in our architecture, which helps explain why nature has always played

such a vital role in architecture. For instance, the use of gardens in many different architectural feats goes to support this idea. A prime example is the Taj Mahal, which incorporates an extensive garden, and waterfall into its design that enhances what could be seen as a traditional building for that region. On the official website for the Taj Mahal it is even stated that “ The garden that starts from the end of the main gateway and ends near the squared base of the mausoleum is an integral part of the Taj Mahal structure and is, undeniably, one of the major highlights of the visit for many”.

[3]Another excellent example is the Gardens of Versailles at the Place of Versailles. This garden was created for the king and most importantly it was created to hold festivities. This specific piece can help understand how we are predisposed to want to be among nature. The Garden of Versailles was created in order to hold activities and entertainment, which could have been held inside, but our underlying need to be in tune with nature helps us understand why this garden was built for entertainment. The Garden of Versailles is also an amazing demonstration of how architecture and nature can go hand in hand. The bright green strategically placed trees and plants contrast from the almost white gravel floors, and the entrance to the garden is symmetrical which aids in its aesthetic appeal. So while the Taj Mahal and the Gardens of Versailles show us how nature can take customary buildings and turn them into breath taking views, nature can also do so much more.

Aside from the aesthetic purpose of nature in architecture, nature is also a way to connect people through architecture and affect peoples overall attitudes. Jeanne Gang drew inspiration from nature, more specifically ecology. She stated in her TED Talk “ the field of ecology has provided

important insight, because ecologists don't just look at individual species on their own, they look at the relationships between living things and their environment. They look at how all the diverse parts of the ecosystem are interconnected, and it's actually this balance, this web of life, that sustains life.”[4]As a result of this inspiration, she designed a building that incorporated trees into the walls, many windows, a fireplace, and a kitchen. These elements allowed her to create an open workspace, which enhanced people's opportunity and likeliness to partake in conversation and conduct activities together rather than alone. In addition to the positive workspace, the usage of the trees in the walls aided in the sustainability of the structure and thus helped the earth. According to Gang, “ the trees absorbed carbon when they were growing up, and they gave off oxygen, and now that carbon is trapped inside the walls and it's not being released into the atmosphere. So making the walls is equivalent to taking cars right off the road”.

[5]Additionally, Hopkins states, “ the advantages of interacting with and seeing nature are numerous. Beyond technical benefits, feeling the presence of the living world around us elevates the spirit”.[6]Hase and Heerwagen go further and state that using nature in our architecture can enhance different aspect of our livee. For instance, “ Window views of natural landscapes reduce stress in office workers. Trees and outdoor gathering places are associated with increased social interactions and sense of community in poor urban neighborhoods. Passive viewing of tropical fish in a fish tank reduces blood pressure and increases relaxation. Recovery from surgery is aided by daylight and nature views. A brief walk outdoors, a window view of nature, and indoor plants aid cognitive processing.”[7]Hase and Heerwagen go further into defining why our relationship with nature is substantial. “

Humans are psychologically adapted to certain key landscape features that characterized our ancestral habitat, the African savannah. Although humans now live in many kinds of environments, Orians argues that our species long history as hunting and gathering bands on the African savannah should have left its mark on our psyche". Considering that Orians' hypothesis is true, nature definitely affects our moods. Hase and Heerwagen continue to define what exactly different biophilic design schemes are used in order to satisfy our primal needs for comfort. They state that open design schemes such as windows may help us feel comfortable because we can see and feel protected. The incorporation of partitions and separation mechanisms aid in our feeling safe because they provide us with refuge. Having waterfalls or anything that incorporates water aids in our sense of comfort. Biodiversity such as different vegetation or animals are important in creating a biophilic building. Another important design factor is sensory variability, which allows us change the temperature etc. Biomimicry are designs that come from nature and ease us with similarity. A sense of playfulness is said to be needed to apply delight and amusement with the building. Finally, enticement, an environment that draws us due to information and diversity.

The incorporation of nature into our architecture has changed over time. In the Süleymaniye mosque (1550-57), the architect Konan utilized the sun to aid in lighting and ventilation. In order to do this he created the windows so that they would light the mosque, but he also strategically placed them so that the light would flood through. According to Naser, Prijotomo, and Faqih, "one hundred and fifteen windows different in shape and measurements to provide the prayer hall with the enormous amounts of daylight".[8] Similarly,

Konan also utilized nature in another part of the design of this building. Konan created a soot chamber system, where “ the airflow passes over the candle units, sweeping the soot and heading toward the chimney chamber in the center of the back wall of the prayer hall, exactly over the central main door”.^[9]While the Süleymaniye mosque of the 1500’s utilized nature almost because it had to, there are also modern buildings, which are made to incorporate nature. Similar to the Süleymaniye mosques use of air, the Aqua tower by Jeanne Gang is located in Chicago and the building is made so that it avoids wind. Gang states that in order to do so they “ studied the wind with digital simulations, so the effect of the balcony shapes breaks up the wind and confuses the wind and makes the balconies more comfortable and less windy”.^[10]

In the past, gardens were created outside of buildings, however a few modern buildings have now been built to incorporate them into their design. For instance, a Daycare Center in Holbæk, Denmark “ designed by Henning Larsen, includes large south-facing windows, a green roof, and gardens to allow children to play outside throughout the entire year”.^[11]

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