

abstract

summary

a research and educational centre :
exploring the connection between the natural environment and architecture

learning from the mysteries of nature

There has always been a relationship between the natural world and the built environment. From the start, shelter was about creating enclosure, an inside that separated space from the outside. Therefore, a distinction was made between the two. Materials, light, texture, volume, and many others all originate in nature and they are the elements of design. The link to nature exists whether it is intended or not. There is an interplay between the environment and the building in most design, whether it is a traditional porch pushing out into the landscape, or a planted atrium space in the middle of a building. The point of this research is to explore an increasingly blurred line between the two. If space was more arbitrary, and the natural world integrated seamlessly into buildings so that the architecture behaved like an organism in context, perhaps we could better benefit from the environment.

Genius loci or spirit of place has a soothing and mythic quality to it, and it comes from a connection to location (context). Context begins as nature, so finding a re-connection to nature may be the key to creating genius loci in buildings. Some architecture manages to capture this spirit as well, fitting into the character of its context so that it exudes this quality. In order to connect better to ourselves, others and the environment, we should improve this connection. It is often lost as a result of a fast and cheap driven economy which began in the modern era with the industrial revolution. We can avoid the repetition of homogeneous architecture if we pursue designs that are well-suited to their landscape, becoming harmoniously one with the surroundings. When a design is responsive to the environment and the potential users, it becomes an experience of place.

Various movements in the past focused on the natural world in pursuit of better design and genius loci. In particular, phenomenology, organic architecture and critical regionalism all acknowledged the importance of connecting to the environment. They borrow ideas from nature to connect better to their given environment. In studying these movements and their case studies, this research will attempt to find an approach to architecture that maximizes this link.

Biophilia, an innate love of nature, is what possibly drives us towards this connection. By studying the effects nature has on people, we can prove that a closer design to nature is necessary. Physical, emotional and spiritual well-being can be improved through a better connection to nature, shown by many scientific studies in this research. People spend a great deal of time in the built environment. However, when people seek an escape or vacation, they find nature to be their retreat rather than the urban city. The atmosphere of the building has the ability to transform those within, making people tense and depressed or comfortable and happy. If our buildings were more tranquil and inspiring like the natural world, people's daily wellbeing and experiences would also improve.

There is no reason that our architecture cannot be an extension of the natural world. This research explores techniques and design tools to maximize the natural experience. Nature has many elements to evoke emotion and character of place, and we can manipulate these in the same way in our architecture. In this way, a variety of toolboxes will be compiled for the final design approach. They come from studying movements and case-studies that reiterate over and over again what the

successful approaches can be.

The connection to nature is important on many levels. It improves wellbeing and mood. It supports sustainability by being contextually responsive and naturally intelligent. It improves aesthetic, bringing distinct genius loci to the space. It encourages people to gather and connect with each other and the environment. In this way, the benefits are scientific and romantic. Efficiency is increased, cost and pollution decreased through passive built responses. People flourish in space and enjoy an emotive experience of place. Nature can lead to an architecture that satisfies people's needs on all levels and the needs of the environment.

The latest technology in Biomimicry seeks to emulate nature in order to create better, more sustainable solutions. It looks to nature as a teacher on architectural and engineering levels. Nature works in perfect harmony, using cyclic processes that do no damage. If we connect to nature on all scales, our buildings can function like living organisms. Biomimicry is the last level of the research, using it as an architectural design approach for the best natural connection.

There is so much that can be learned from nature, and that is why a Research and Educational Centre will teach people about the benefits of nature. The program will combine a botanical gardens with educational and recreational facilities. The design will explore the edge between city and nature, pushing the boundaries of how nature and building meet and connect. In this way, in ambiguous space, people will question the nature of 'inside' and learn more about what the environment can do for us.