Environmental passion through play

Designing positive experiences for children to gain a biocentric perspective

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If we nature have an essence,

how far do we need to reach,

in order to recognize our presence,

we have to follow our feelings, its something
none of us can teach.

Content

01
Introduction

Figure 1 : A Tree of Tallinn
Authors own drawing

“Nature” and “natural world”

The natural world is difficult to define; as architecture historian, theorist, and curator Beatriz Colomina and architect and writer Mark Wigley suggest, “there is hardly any dimension of the natural world that has not been affected by human activity” (2016, p.12). Edward Wilson is a biologist who was also a founder of sociobiology and a prominent advocate of nature conservation, who introduced and popularized the biophilia hypothesis, defines the natural world as a place where we can seek comfort and connect with our inner selves; an environment that surpasses our wildest imaginations (Wilson, 1984). However, he also acknowledges the destructive nature of our dependence on machines and how we often harm the things we cherish. Since we, as humans, have always existed in a world of artefacts, we are therefore not purely natural beings. Our relationship with nature is very complex, shaped by thousands of generations of cultural evolution, and a constant quest for balance between nature and the machine, forest and the city, the natural and the artefactual (Wilson, 1984).

The natural world with its species diversity predates humanity, and humans evolved within it. As a result, we can never truly grasp its limits. This is why the natural world is so fascinating to us humans, it fuels our sense of wonder. This sense of wonder grows enormously; as we uncover more, we are drawn deeper into the mystery, fuelling our thirst for knowledge and discovery. This innate human trait drives us to explore new places and discover new forms of life. While we seek to understand and control nature, we also acknowledge the importance of preserving its mystery. As much as we want to master nature, we hope we never completely will. Our passion for progress is fuelled by our desire for exploration, but it should never be at the cost of the natural world.

1.1 Problem statement

Human imprint

For ages, humans have fought against the natural world to gain food and fight off dangerous predators across a known world of a few square miles. Life was short, fate terrifying, and reproduction an urgent priority: children, if freely conceived, just about replaced the family members who seemed to be dying all the time. Maintaining equilibrium in the population was challenging, and when it failed, entire bloodlines would vanish. Nature was something to keep outside, unknown and boundaryless, a force to beat against, manipulate, and exploit (Wilson, 1984).

During my research, the following analogy by Morton (2007, p.195) caught my attention: "If a poisoned rainforest could speak, it would sound like Frankenstein's creature." This metaphor suggests that the poisoned rainforest is a product of human actions, just like Frankenstein's creature was created by Dr. Frankenstein. The polluted rainforest is a result of human activities such as deforestation, pollution, and other forms of environmental degradation. This analogy also implies a sense of suffering and torment. Frankenstein's creature was often misunderstood and tormented, rejected by society despite its innocence. Similarly, the poisoned rainforest would suffer from pollution and environmental destruction, yet unable to communicate its pain in a way that humans can easily understand.

It's no secret that human activity has harmed the natural world. Unfortunately, the devastating effects of our actions are becoming increasingly visible. Loss of species is occurring at an alarming rate due to degradation of natural habitats, coupled with overfishing and overhunting, industrial pollution, and other forms of environmental contamination, poses significant threats to biodiversity. Additionally, the intentional development of new plant and animal species through selective breeding and genetic engineering further complicates ecological balance and climate change caused by burning fuels. (Colomina & Wigley, 2017). Human existence has caused various impacts on the planet. It goes beyond cultural and technical artifacts and includes the movement of refugees, the destruction of biodiversity, the global exchange of information and resources, the depletion of the ozone layer, the spread of microplastics in our oceans, and the presence of radioactive isotopes from atomic testing and black carbon in the atmosphere and soil (Colomina & Wigley, 2017).

Childhood experiences for ethical framework

According to Kahn (1999), "environmental generational amnesia" is a phenomenon in which successive generations accept an increasingly damaged natural environment as "normal" due to a lack of awareness of prior generations' pristine natural environment. This is provoked by the fact that the degradation occurs over long periods and is not necessarily noticeable in an individual's lifetime (Kahn, 1999). As a result, people are more prone to accept a degraded natural environment as the norm and may underestimate the magnitude of the deterioration that has happened. This emphasizes the necessity of raising awareness and educating people about the natural environment and how to protect it for future generations (Kahn, 1999).

Adults who are active in nature protection have been studied to determine the causes of individual nature-friendliness (Kahn, 1999). The findings reveal that a significant number of respondents attribute their environmentally conscious behaviour to direct experiences outdoors, followed by the influence of family and school (Kahn, 1999). This indicates that early enjoyable experiences with nature can have a strong impact on the nature-friendliness of humans as they mature. Furthermore, education plays a vital role in shaping an individual's environmental attitudes, with parenting and school being key factors in influencing their worldview. These results suggest that interventions aimed at promoting nature-friendly behaviour should focus on providing opportunities for direct experiences with nature and emphasizing the importance of environmental education in early childhood.

Kahn's (1999) research study on children's moral development in Houston provides valuable insights into the emergence of biocentric and anthropocentric reasoning in late childhood. Biocentric reasoning is a moral perspective that extends beyond humans and includes all living beings. In contrast, anthropocentric reasoning is a perspective that places humans at the centre of moral consideration, prioritizing their interests, welfare, and rights over those of other species and the environment (Kahn, 1999).

As children grow up, their appreciation for both biocentric and anthropocentric values tends to increase. Initially, it was believed that only biocentric values would become more prominent, as noted by Kahn (1999). However, children must recognize the importance of both perspectives in developing a well-rounded ethical framework. Only when both are valued a balanced approach can be achieved (Van Den Born et al., 2001).

The well-being of Estonian children

The negative impact of human activity on nature is leaving deeper and deeper traces, and the loss of biodiversity is compelling us to reconsider our relationship with the world. Embracing a biocentric worldview, in which we prioritize not only ourselves but also other living things, can help us care more about each other. In Estonia, for example, children's mental and physical health is deteriorating, with complicated issues that are not unrelated to their surroundings. Here are some examples from the news I gathered from the last few years.

The mental and physical well-being of Estonian children is getting worse at an alarming rate, with various interconnected elements contributing to this problem. Estonia ranks fourth in Europe in terms of the percentage of 15-year-old girls who report feeling lonely "most of the time" or "always." Depressive episodes among teenage females increase dramatically with age, particularly in Western Estonia, where the prevalence rises from 21.6% at age 11 to 62% by age 15. Furthermore, nearly 33% of 15-year-old girls and 16.1% of males have considered suicide in the previous year (Kersa, 2023).

The absence of suitable public spaces for children contributes to the current issue. In Estonian cities, playgrounds are mainly meant for preschoolers, which makes older children (ages 7–10) feel left out or uncomfortable in areas like skate parks or sports fields. As a result, there are no designated places for primary school-aged children, leading them to feel neglected and invisible in their surroundings, which increases their sense of isolation (Järv et al., 2020).

Physical health is getting worse over the past few years, especially among children from low-income homes. Poor eating habits and restricted access to physical activity are leading to increased obesity rates, with the number of overweight children increasing three times over the last 20 years (Tervise Arengu Instituut, 2023).

Experts suggest that creating more supportive environments, such as adventure playgrounds that enable children to take reasonable risks, could help combat "learned helplessness" in those who lack opportunities to build resilience and independence. Without these vital experiences, children may grow up fearful of taking risks and unprepared to navigate life's uncertainties (Harrik, 2023).

Use of words

As I have used the term nature and natural world quite a lot and I started to notice that in every text I have read so far it is defined differently. It began to confuse me, as much as I want to take over the definition of Wilson, I can't but notice that by using this definition of nature we don't see ourselves as part of nature. This can be very problematic.

Timothy Morton is a professor at Rice University and a proponent of object-oriented ontology. Morton primarily explores the connections between OOO and ecology. Morton draws a comparison that deeply resonates with me as a woman, and the realization that I similarly treat nature makes me feel uneasy (2007). Morton (2007) explains that admiring nature has the same impact on the environment as the patriarch who admires the female figure which is a paradoxical act of sadistic admiration.

Morton further clarifies that the term nature is inherently problematic, and the same applies to the word environment. These words emerged when the problem developed. Because if a community cared for its entire ecology, there would be no need to coin a new term for it outside of our state. The phrase environmentalism is already indicative of wishful thinking. If we as a community had taken care of it, it would no longer be a 'thing' that surrounds and differentiates from us.

So from now on I will try to navigate through this research with an open understanding of how words can affect our actions and how I need to use or not use certain words to set a good example. I will therefore try to use things by their direct name.

1.2 Hypothesis

When children and adults interact with plants, animals, and other organisms through play, they will have a positive experience. This enjoyable interaction will lead to lasting positive memories, helping them recognize the importance of not only humans but also animals, plants, and all living organisms. Through thoughtful architectural design, this sense of unity can foster a broader understanding within the community, encouraging everyone to care for each other humans, plants, animals, and other organisms alike.

1.3 Research question

The aim is to create architecture for children to have positive experiences with plants and animals that will help them develop a biocentric perspective.

The main research question guiding this project is:

How can architecture create positive ***experiences*** with ***plants, animals and other organisms*** among ***children*** growing up in the ***city of Tallinn***?

This overarching question will be answered using several sub-questions:

How can architecture provide experiences that foster positive interactions between children and plants, animals and other organisms?

What are the characteristics and uses of parks in Tallinn's urban landscape?

02
The approach

Figure 2 : Plants and trees coexisting with human artefacts
Authors own drawing

2.1 Theoretical framework

Literature research is essential for developing a thorough understanding of the major themes in my work. It allows me to develop design principles, which I can then use to evaluate both existing precedents and my work. My main topic explores several key themes, including the meaning of experiences and perception, ecology and play. These topics serve as the foundation for my theoretical framework.

Experiences and perception

According to Simon Schama (1995), landscapes such as forests, rivers, and mountains have significant cultural and psychological value, intertwining with human memories, stories, and symbols and transforming into more than just physical places (Schama, 1995). Yi-Fu Tuan (1977) investigates how experiences and memories turn abstract "spaces" into meaningful "places," particularly in children who change their environment through play and exploration, developing memory and orienting abilities in the process (Tuan, 1977). Louis Kahn's Between Silence and Light (L. I. Kahn & Lobell, 2008). He emphasizes how silence represents the potential of a space, a state of serenity in which everything is possible, whereas light realizes these potentials and gives the space meaning (L. I. Kahn & Lobell, 2008).

Ecology

In Histories of Ecological Design: An Unfinished Cyclopedia, Lydia Kallipoliti (2023) describes ecology as a multidimensional concept rather than a single entity. Much like water exists in multiple material states ecology is a complex "cloud of stories" that comprises both human and non-human agency, showing how our interactions with the Earth and its elements nourish or are fostered by its components. Kallipoliti defines ecological design as "any form of design that minimizes environmentally destructive impacts by integrating itself with living processes," emphasizing that ecology is more than just preservation; it is about an active, adaptive relationship between design and the world (Kallipoliti, 2023). Similarly, Vink, Vollaard, and De Zwarte's (2017) Making Urban Nature explores ecology in urban settings, focusing on how cities could be structured to create ecological connections between humans and non-human species. They present ecology as a form for building spaces in which urban development and the environment coexist, thereby fostering biodiversity and resilience in cities (Vink et al., 2017). In Architectuur en Landschap, Steenbergen and Reh (2009) look into ecology through the historical integration of architectural and landscape design, particularly in classical European gardens, where ecology manifests as a deliberate harmony between constructed forms and the natural environment, influencing each other's form and function (Steenbergen & Reh, 2009).

Play

In The Ludic City: Exploring the Potential of Public Spaces (2007), Quentin Stevens, an urban design researcher who focuses on urban open spaces, remembrance landscapes, and urban waterfronts, delves into the concept of play in public places. Stevens sees play as a transforming force in urban areas, encouraging exploration, creativity, and interaction with others. Play in public spaces promotes dynamic, unstructured activities, that encourage individuals to interact more openly with their surroundings, transforming urban spaces into places of interaction and discovery (Stevens, 2007).

Johan Huizinga, a Dutch historian known for pioneering cultural and mental history, built the groundwork for understanding play as a cultural phenomenon in Homo Ludens (1949). Huizinga saw play as a fundamental and formative component of human civilization, viewing it as a choice activity outside the realm of regular life, with its own set of laws and freedoms. He believed that play promotes cultural development because it allows people to explore, communicate, and build shared identities, all of which shape society (Huizinga, 1949).

2.2 Methodology

The goal of the project is to develop a design that facilitates connections with other living species. It is important to engage in research that transcends conventional architectural methodologies. Site analysis traditionally involves evaluating surrounding environments, existing structures, infrastructure, green spaces, sightlines, and the historical significance of the site. However, when architects reference “green spaces,” they often limit their focus to parks, lawns, trees, and plants within the immediate site context. This approach may result in a constrained perspective, emphasizing only the urban level and representing data in a two-dimensional format on a map. By adopting a more nuanced examination of these areas, one can uncover the complexity of ecosystems that thrive within them. These ecosystems operate in harmony with various living things and may be overlooked if not adequately accounted for. Consequently, designers need to create spaces that are inclusive for not only human occupants but also the creatures that inhabit those environments. This broader consideration can lead to more holistic and ecological design outcomes. To achieve a comprehensive understanding of the target group for my design, utilizing participatory research methods, such as interviews and workshops, is essential. It is also important to recognize that this target group is situated in Tallinn. Children’s perceptions are influenced by the culture and country in which they are raised. Therefore, as an architect, personally visiting the site to immerse yourself in the culture and daily life of its inhabitants is critical. In my case, my visit to Tallinn lasted for two weeks, a relatively brief time to grasp the complexities of the local culture and lifestyle. To enhance my understanding, I conducted further research by reviewing news articles that discuss how children in Estonia, particularly in Tallinn, perceive their mental and physical health. I also investigated how they view their place within the city and whether they feel there is a space for them in the urban landscape. One significant advantage of this research is its quantitative nature, which provides a comprehensive understanding of how many individuals share specific feelings. Additionally, it is important to recognize that many species cannot communicate using human language. Therefore, conducting preliminary research on their habitats and understanding their survival needs is essential for their growth and development. Alongside this exploration, fostering empathy for others is a crucial skill that we must cultivate in the field of architecture. Our architectural creations should not only serve our interests but especially meet the needs of others. Since we architects make architecture for others. To effectively address my main question, I plan to employ the following methods to achieve this goal.

1. Dialogue with the Voiceless
One of the main methods I will use is Dialogue with the Voiceless, conceptualized by Saskia de Wit (De Wit, 2023). This approach is essential for including the interests of non-human entities in the design process, such as plants, trees, animals, and other living organisms that cannot directly express their needs. Through this method, I aim to understand and integrate the ecological needs of the site, bringing attention to elements that typically go unnoticed in conventional human-centred designs. This method will document in text and drawings the interests of non-speaking species, which will become a guiding principle for the design.

2. Personal Reflection through Writing
Reflecting on my own experiences in various landscapes, especially as a child, will add a subjective yet valuable dimension to the research. This method involves writing about personal memories and sensory experiences tied to being in outdoor environments and examining what made these experiences meaningful and enjoyable. By connecting these personal insights with the theoretical framework, I aim to ground my design in an experiential understanding of the environment’s impact on children’s memories.

3. Site Analysis and Seasonal Spatial Use
A thorough understanding of the site is crucial for an informed design. I will conduct an in-depth analysis of the location, focusing on its historical development, ecological composition, and present-day usage by both humans and animals. This will include mapping the spatial layout, vegetation, circulation routes, heights and points where people and other species interact. Additionally, I will examine the seasonal variations in both plant life and human activities, observing how vegetation changes across seasons and how these shifts influence the ways people engage with the space. To document these insights, I will create floorplans and collages that illustrate seasonal usage patterns and compare the perspectives of adults and children.

4. Case Study Analysis
To develop design principles for my project, I will analyze various types of spaces that I have categorized as inside, outside, semi-outside, and hybrid spaces. This analysis will use the theoretical framework to examine how these spaces facilitate or hinder positive interactions with other species, particularly in environments where children can explore, play, and learn. I will investigate key architectural elements such as floor plans, sections, and usage patterns, focusing on how these elements create specific opportunities for interaction, play, and learning.

Outside (traditionally)
- Squares (Van Hee Architecten, 2022)
- Plazas
- Open air theatre (Liverpool Biennial, 2023)
- Courtyards
- Parks (Steenbergen & Reh, 2009)
- Gardens (The Garden of Intersections — Studio Ossidiana, 2019) (De Wit, n.d.)
- Schoolgarden
- Playgrounds
- Playing fields (Salto architects, 2011)

Semi inside
- Horticulture
- Botanical Garden

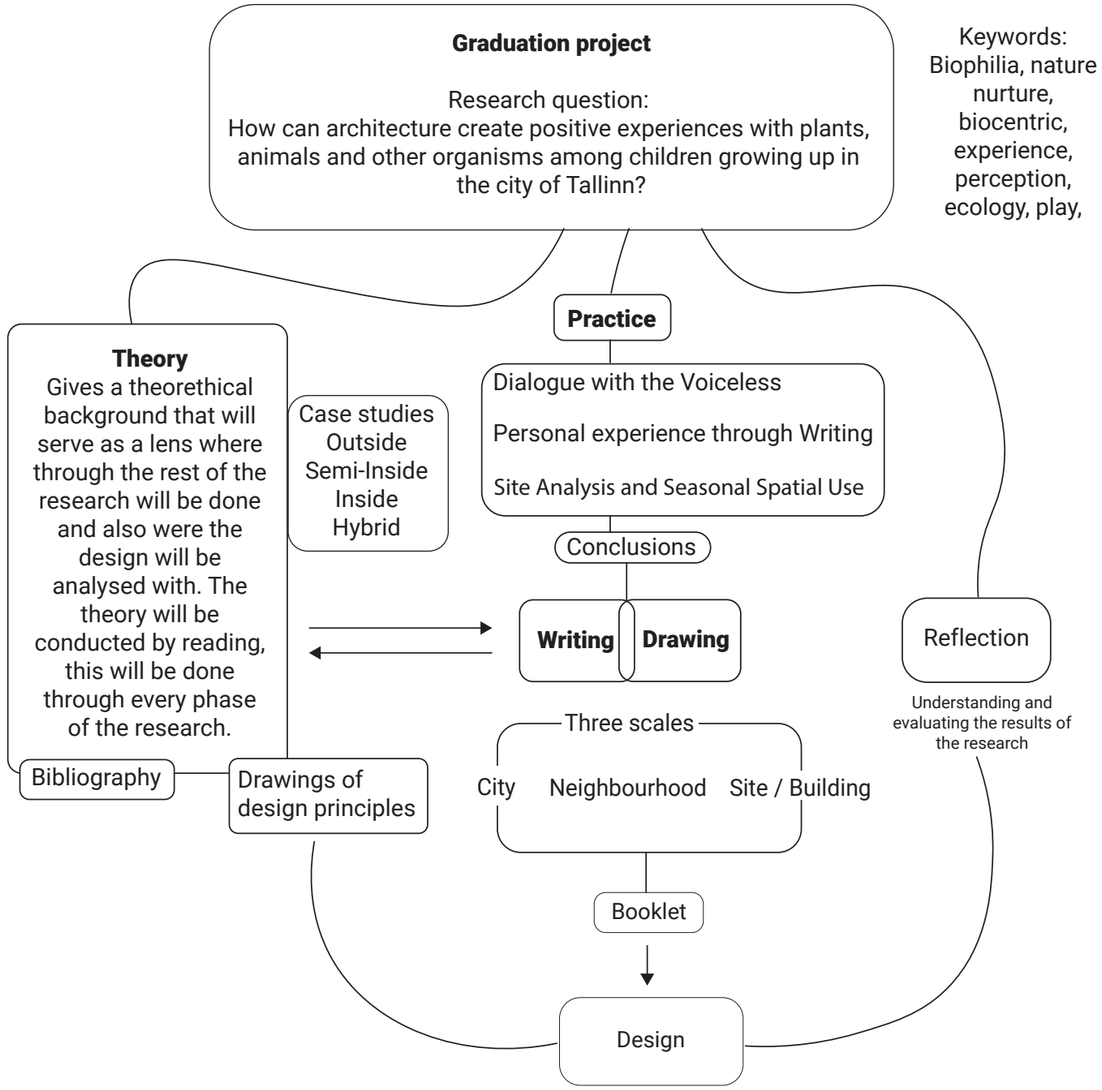
Inside
- Community centre
- youth centre
- Education centre
- Malls
- Libraries

Both inside or outside
- Promenade

But beyond the traditional line of thought of which places take place inside or outside, there are examples such as The MFO Park 'Park House' Burckhardt and Raderschall Landschaftsarchitekten designed this unique park in Zurich, which gives an idea of inside because of its overarching construction which almost looks like a kind of greenhouse (MFO-Park, Zürich - Burckhardt, 2024).

5. Comparative analysis with precedent
As a final part, using the design principles found, I wanted to do a comparative analysis with my precedent the National Library to find out whether elements of my themes can also be traced in this building or not.

2.3 Research diagram



2.4 Research report content plan

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The approach

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Precedent

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- Conclusion

Design

Final Assessment

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- Reflection
- Personal Reflection

04 References

4.1 Figures list

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