

ARCHITECTURAL ENGINEERING GRADUATION STUDIO
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REFLECTION PAPER

Faculty of Architecture & the Built Environment
Delft University of Technology

Exploring Opportunities for Rewilding the Built Environment through Nature-Inclusive Design

Case study Boerhaavewijk, post-war residential neighbourhood in Haarlem, the Netherlands

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Relationship between graduation topic, the Architecture master track and the aE studio

Nature is a fundamental part of our world, or at least it should be. To rebalance the world, we need to give nature more space and it is essential to incorporate it into the built environment. This is where the field of architecture can play a fundamental role by integrating nature into the built environment, thereby strengthening the reciprocal relationship between the two. Specifically, this entails introducing the concept of 'rewilding' into the built environment, my graduation topic. The relevance of rewilding in the built environment to the Architecture master track lies in the responsibility of architects, designers, and urban planners to design with and, above all, for nature. By creating more green spaces in urban areas, we can enhance resilience and biodiversity and increase human health. Consequently, architects must be equipped with the necessary information regarding nature-inclusive designs, enabling them to design with and for nature. So, for my graduation project, I wanted to bridge the gap between ecologists and architects. In response to this need, I have developed a toolbox for designing nature-inclusive spaces in urban areas, which emphasises the importance of designing regarding the specific species that populate the area. This approach enables architects to tailor their designs to the unique environment characteristics of the locality. This, in turn, can lead to the creation of more sustainable and resilient cities. The Architecture Engineering graduation studio has a broad scope that seeks innovative and inspiring architectural solutions to environmental and societal challenges. This studio provided me with an excellent opportunity to explore the potential of rewilding in the built environment through nature-inclusive design. By incorporating the concept of rewilding into the design process, we can create more green spaces in the built environment and this approach aligns with the idea of designing and engineering for and with ecology, which is vital for creating a sustainable future.

Relationship between research and design

My research played a crucial role in my graduation project, given that it deals with a relatively new topic. Initially, I had to gain a comprehensive understanding of the term 'rewilding' and explore its application in the built environment. Despite being a contemporary issue, there are fortunately numerous global examples of green and sustainable projects. However, it is essential to exercise caution and discern between 'green washing' projects and genuine rewilding projects. This research significantly influenced my design, as I approached it through an ecological lens.

One of the key conclusions drawn from my research is that a thorough understanding of the local ecology and the needs of local species is critical to rewilding a specific area. As such, my design for Boerhaavewijk was shaped by my research on the area's specific species, allowing me to design for nature. While designing, I applied the toolbox that emerged from my literature research to Boerhaavewijk and my chosen building, but I also realised that ongoing local-level research was necessary. As a result, blindly adopting the example projects from my toolbox was not advisable, but instead, they served as examples that could be fine-tuned based on the local facilities, needs, necessities, and ecosystem requirements.

In addition, I undertook research on the neighbourhood, engaged with various stakeholders, and identified the problems and opportunities. This research prompted me to design on a social and societal scale, considering the needs and desires of future residents. This, in turn, influenced my design, which included the creation of a gallery to provide comfortable housing. Nature was given its space within this 'human' construction, enabling it to thrive symbiotically. This interplay is symbolic of my subject.

All together, my research was instrumental in shaping my graduation project, as it enabled me to design for nature while taking into account the needs of the local ecology and future residents. However, design also influenced research as I went down certain roads and had to conduct deeper or more specific research due to design. This made for a pleasant and interesting interplay between design and research, with one of the two prevailing each time.

Value assessment of my approach, methods, and methodology

Upon reflection of my research plan and with the knowledge I have now, I can assert that my methodology for my project was highly successful. Taking a broad and generic approach to researching rewilding, and subsequently elevating it to Boerhaavewijk, and eventually my building specifically, proved to be a valuable approach. This approach mirrors the methodology used in ecology, where one can observe different scales from a larger system to the habitat of specific species.

The aE graduation studio focuses on seeking innovative solutions, and while the design of my gallery and balcony constructions may not be state-of-the-art or innovative inventions, its application is certainly innovative, as it involves nature. The challenge I faced was in creating the conditions that enable my design to offer possibilities for increasing biodiversity. Nature takes on a whole new meaning in my building, as I design not only for the residents, but also for nature, which is given its own place in our human world. This valuable enrichment is what has come out of my approach and I believe this to be incredibly innovative and of great importance.

Assessment of academic and societal value, scope and implication of my project

Through the implementation of greenery in buildings or areas, a more resilient environment can be created along with opportunities for increase biodiversity. Additionally, it has been well established that nature has a positive impact on human health and well-being. In my project, both human and environment considerations are of equal importance. This balance serves as a prime example for the neighbourhood where the two coexist symbiotically, thereby demonstrating how rewilding can be applied to the built environment. The project also holds significant social and cultural value, having created sixty new houses in the neighbourhood where nature can be experienced in a unique manner on a daily basis. Furthermore, the building serves the community by providing catering establishments and local shops, spaces for creative activities and businesses for rent, as well as a library, a theatre auditorium, and communal spaces for gatherings, which are much needed in this residential area. These societal and cultural implications, along with the ethical considerations, have been given careful consideration throughout the project.

Moreover, the results of my research are significant, not just for my graduation project, but also because the toolbox can be utilised by anyone, anywhere in the world. This is particularly valuable to me, as it means that my research has led to something that everyone can use. The increasing global interest in rewilding is evident, as I am given the opportunity to present my research at the EcoCity World Summit 2023 in London, further indicating the innovation and relevance of my topic.

Value assessment of the transferability of my project results

The primary objective of my project was to demonstrate the applicability of the rewilding concept in the built environment. To achieve this, I conducted research at various scales, ranging from ecological sculptures to private gardens and from green façades to urban parks. Drawing upon more than fifty case studies, I developed a classification system that architects can use during the design process. These instances, which are drawn from various parts of the world, are scalable and can be adapted to different settings. In my project, I illustrate the possibilities at the level of a single building in a residential area, which serves as a model for the remainder of the Netherlands. I hope that my project has established a preliminary connection between ecologists and architects and will inspire others worldwide to develop conditions for nature and rewilding in the built environment, particularly during the EcoCity World Summit.

