Graduation Plan for aE Studio Students

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Studio

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Argumentations of choice of the studio

When cross disciplinary design is no longer an option, but a condition to deal with the complicated challenges we have today, the focus of Architectural Engineering studio of Architecture as an all- around design discipline seems to be an appropriate approach to practise. The theme of Second Life studio is on the adaptive reuse of underused buildings in our built environment. It is interesting to explore possibilities of these transformation projects and the form of new identity relevant to a specific case study. The studio has a solid ground with reality while providing opportunities for students to envision, develop their own ideas which potentially contribute to a better built environment.

Title

Re-naturalize: De Knip as a biodiversity instrument in Amsterdam Sloterdijk

Graduation Project

Problem Statement

Urbanism is an inevitable trend and cities are expected to grow when more people prefer living an urban life. The negative impacts of human to nature is beyond question and will only perpetuate if not accelerate. While habitat fragmentation reduces quantity and quality of natural habitat, urban intensification and disturbance from human activities also challenge the livelihood of many non- human species. In Netherlands, with 16% of total land area as urban area, more than 50% of the wild bee species are under threat and 13 out of 20 of urban bird species are recorded with a declined population. In fact, the struggles of various species indicated a larger threat to our biodiversity.

Biodiversity is well recognized as the basis of ecosystem that underlines all ecological processes. It can lead to collapses of food system and energy cycle which are crucial to human well- being and sustainable development. Noticing the significance of biodiversity conservation, biodiversity design is becoming the new norm in building standard and

urban planning. Despite a clear ambition, there seems to be a mismatch in our built reality as demonstrated in the phenomenon of ecological dips. Ecological designs in an anthropogenic environment often downplay the complexity of nature as human interest remains the primary drives in most occasions. As a result, green design is by default perceived as biodiversity design and strategies such as green roof and nest box application are universal design protocols used in the building industries.

A human driven mindset can be a cause as well as a result, it is in fact driving a vicious cycle of disconnection with nature. It is shown in primitive culture that human and animals had a close relationship in the past, it changed however as people linked animals to diseases and various threats to human life. The stacked-up misconception is another obstacle that hinder human- animal interaction.

Perhaps cities are not built for wildlife, but cities are a form of habitat and we unknowingly become the host. wildlife can be seen everywhere, animals are found under the bridge, in building cracks and greens overgrown in vacant buildings. how can we be a better host by shaping our built environment? Our strategies with animals in buildings remain "on the surface", but the role of building in the whole biodiversity discussion and their potential as a conservation tool is yet to be explored.

In Europe, more than 70% of the 2030 building stock is already built, as shapers of the built environment, we will need to work with the existing building stock which very often involves transformation of vacant or underused buildings. "Adaptive reuse" is a term widely used to describe these kind of transformation projects. Transformation entails new opportunities and new responsibilities in the built environment, such as promoting wildlife. Amsterdam Sloterdijk is a district under transformation with a goal of becoming a livable neighborhood for both human and animal occupants. How can a transformation project contribute to the urban goal? Moving forward, can it set a radical precedence in this rising design genre, as an urban wildlife reserve maybe?

Objective

The vision of the project is to design a building as a biodiversity instrument that simultaneously enhancing the biodiversity on site and re-connecting human to nature. By exploring the potential of De Knip as a biodiversity conservation tool in Amsterdam Sloterdijk. we can reconceptualize urban ecosystem, the place of human, wildlife and buildings and our relationships.

As biodiversity is a complicated topic in a vast subject, the project aims to explore the meaning of design for biodiversity in two levels. Firstly, is to understand the limitations and opportunities of buildings in conservation performance which help to anticipate alternative strategies to achieve such conservation goal. Another goal is to understand the meaning of biodiversity design to human and the implication to human- nature relationship. Human aspect is important since ultimately cities is still human- dominated while human can be co- conspirator that facilitate radical changes. Both directions look into adding extra dimensions, either spatial or programmatic to animal conservation in building as a way to strengthen the power of architecture.

Overall design question

How can the transformation of De Knip bring positive impacts to biodiversity and human-nature relationship in Amsterdam Sloterdijk?

Thematic Research Question

Main question:

What are the strategies to improve the role of building in promoting local biodiversity?

Sub questions

1. What principle/ theories concerning biodiversity and ecosystem can be developed?
2. What are the current strategies used in biodiversity or conservation design?
3. How can these principles be employed in building/ urban design?
4. What are the relevance and application to my site?

Methodologies

Research is carried out in multiple tracks that inform one another during the process. Knowledge is the backbone of the thesis, a selection of literature on urban ecology, ecological design and conservation principles is studied. Science knowledge on animals and ecosystem is also covered. Data collection of reference across disciplines would compile a material passport for my thesis. Examples of green design, animal habitat and conservation are collected and analyzed. Reference can be of different types, scales and design stage ranging from building to product, prototypes to initial concepts. Since ecological design is by nature experimental, part of the research also involves speculations as from data processing. Research by design search serve as a point of departure, it is a "thinking out loud" process based on findings from research and inspirations from daily life. The pool of information and ideas will be the guidelines, evidence and tools for further study and design. The limited source of validated reference would be the limitation for the research, the translation of broad ecological knowledge may not be appropriate applicable in architecture context as well.

Planning

The graduation project will be divided into two semesters in a 42- week timeframe. In semester 1, the focus is on thematic research set out based on problem statement and personal interest. Half way through the semester in P1, a design question is formulated based on initial findings. The research continues as a self- guided process of constant reflection. Through the process, research questions are addressed and the design question will be refined with more defined objectives and programs. By the end of the 21 weeks, the research should be concluded in P2 presentation. The presentation should address each research questions and offer a point of departure, a design guideline for biodiversity design in building into semester 2 with preliminary design proposals. In Semester 2, the research result will be translated into a design vision to be further investigated and developed. Half way through semester 2 in P3, a proposal that spatially address the design question will be presented based on the generated design method. Working towards P4 by the end of semester 2, design proposal will be refined and further developed to cover building technology aspect.

Relevance

The value of the graduation project is on two levels. First of all, the project can serve as a reference for the redevelopment plan of De Knip which will happen in the near future. It can be a feasibility report for potential new program for the site. Although it is a project with specific context, the site can be seen as a set of rules to guide through the design process as site specificity is crucial for a sensible ecological design. The ambition of the project however lies in rethinking the way we design for biodiversity in building and research is covered the theme in a broader sense. Hence, the project also expands the knowledge for building practice on biodiversity design and provide insights for similar design in the future.

Literature

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