FUTURE CITIES: HALF CULTURE – HALF NATURE

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Which SDG does your project relate to?

Sustainable Development Goal 11
- Make cities and human settlements inclusive, safe, resilient and sustainable.

Trees can act as infrastructure and make our cities more sustainable; they lessen climate change effects, produce food, regulate temperature and reduce noise.

Sustainable Development Goal 13
- Take urgent action to combat climate change and its impacts.

The complex forests that could be planted on the plots store 30 times more carbon than green lawns.

Sustainable Development Goal 15
- Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

The project addresses nearly all the subgoals of goal 15, particularly in biodiversity and genetic conservation.

What is the concrete problem you have worked with?

What is the ideal living environment for humans? Of course, there is no universal answer, but surely we must be missing something since we're facing so many problems in cities - those creations of culture that never seem to slow down their growth and increasing population. From the lack of recreation, clean air and healthy food, a myriad of health problems arise in the urban population. Furthermore, the general design of a modern city often escapes the idea of the 'human scale', resulting in an intimidating concrete-and-glass monolith that, as the famous architect Jan Gehl put it humorously, "looks nice from a helicopter's view, but the planners forgot to buy everyone a helicopter so to experience it". Additionally, infrastructural problems are even more apparent in cities during the climate crisis. Storm surges easily flood the concrete landscape, heat waves get absorbed by the hard material, and the expanding cities ask for more forests cut and resources extracted, resulting in environmental degradation and rapid loss of biodiversity.

So, if this is not our ideal environment, what is? The answer could once again come from nature. The evidence of beneficial effects of trees in cities is piling up at this point. Trees cool the cities, soak up excess water, clean the air, grant food, provide recreation and soothes a troubled mind. Our biological wiring is inexplicably connected to trees. For thousands of years, they nurtured us, healed us and guided us. At some point, we have started building a civilization that sets us apart from trees, from our biological needs. Our cultural undertakings have shielded us from the malevolent effects of nature, but also isolated us from our destined healthy living conditions. Therefore, the project assumes true the theory that an ideal environment we should strive to build is half culture and half nature. But first, I needed to find out the current state of this dichotomy in Copenhagen, the city of interest.

What is your solution to the problem?

In order to notice the state of this culture-nature struggle in Copenhagen, I have altered the drifting methodology to have a more structured approach in the sense of movement and data collection. The results have revealed patterns in the urban morphology where plots are intentionally kept simplified (grass lawns) and where the natural succession of forests cannot progress. When left undisturbed, forests are naturally spreading and becoming more complex and therefore beneficial the ecosystem (stores 30 times more carbon, soaks 30 times more water). These simplified patches have been named 'patches of ecological simplification' and categorised based on their shape and location - islands, corners and level-change patches.

The significance of the research is that it reveals parts of the cityscape that are trivial but can host complex forest communities of unmaintained nature. These are forgotten elements of the city, often used only to fill the void between transport lanes. During urban design, planners can predict the appearance of these patches and prepare them for growing complex forests by investing minimally in soil preparation. Furthermore, the railway system that cuts through Copenhagen has large potential for complex communities, since much of it is green space without any purpose.

If we want to rethink how we design cities, we must study urban morphology from a very raw viewpoint. The nature/culture perspective enables exactly that, it could bring us closer to understanding the ideal living environment of people.