Engineering for Biodiversity: Rethinking Design

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Aim of the Project

The aim of this project is to explore how engineering practices impact biodiversity. The project promotes design approaches that prioritise biodiversity protection and improvement.

Background

Biodiversity is essential for maintaining ecological balance. Biodiversity is essential for promoting ecosystem functions. These functions include food security, water purification and climate management. Engineers have historically overlooked biodiversity in favour of cost-effectiveness, durability and functionality. Sometimes, they completely disregard how their work affects biodiversity. With the increased rate of urbanisation, industrialisation and resource extraction. The threat to biodiversity also increases.

The engineering profession is undergoing a paradigm shift as environmental degradation becomes increasingly recognised. Design that is sustainable and mindful of biodiversity is gaining increasing importance. Engineers are beginning to link infrastructure development with ecological preservation by utilizing frameworks such as Biodiversity-Inclusive Design (BID), Engineering with Nature (EWN), and Nature-Based Solutions (NBS). This shifting perspective fosters interdisciplinary collaboration and innovative problem-solving to integrate natural systems into engineering solutions, aiming to develop infrastructure that enhances biodiversity rather than displaces it.

Wildlife Corridors

Wildlife Corridors are structures designed to allow wildlife to pass over roads and other structures without the danger of being hit by vehicles.

Urban Green Roofs

Urban Green Roofs are the growth of plants on a roof. This adds greenery to an urban setting. It also increases the air quality in an urban area and reduces carbon.

Mycelium Materials: Insulation

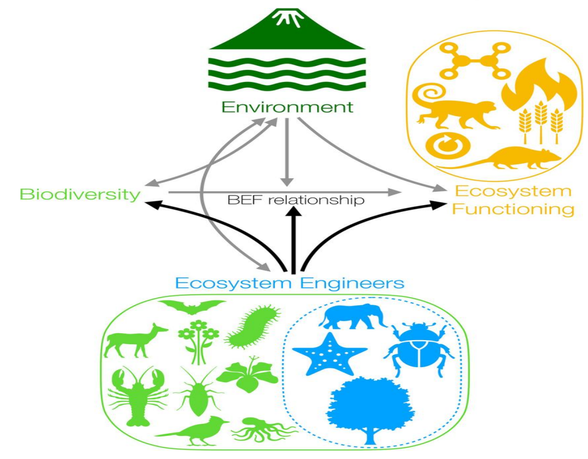
Mycelium Materials are materials that are mainly made out of mycelium. The use of mycelium reduces carbon, and it is also renewable as more mycelium will grow.

Hempcrete

Hempcrete is a mixture of hemp, lime and water. It is then compressed and dried. This material could potentially serve as a future replacement for concrete. It has a lot of favourable properties for construction, such as fire resistance, energy efficient and is naturally nontoxic.

Conclusion

Engineering has the power to protect or harm biodiversity. The future of engineering is not about building. It should be about building a more sustainable and biodiversity-conscious future. With the use of biodiversity-conscious approaches such as green infrastructure, nature-based solutions, and sustainable materials, engineers can create projects that support both human development and ecological development. The project highlights that with innovation, collaboration, and awareness, infrastructure and nature can thrive together.



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