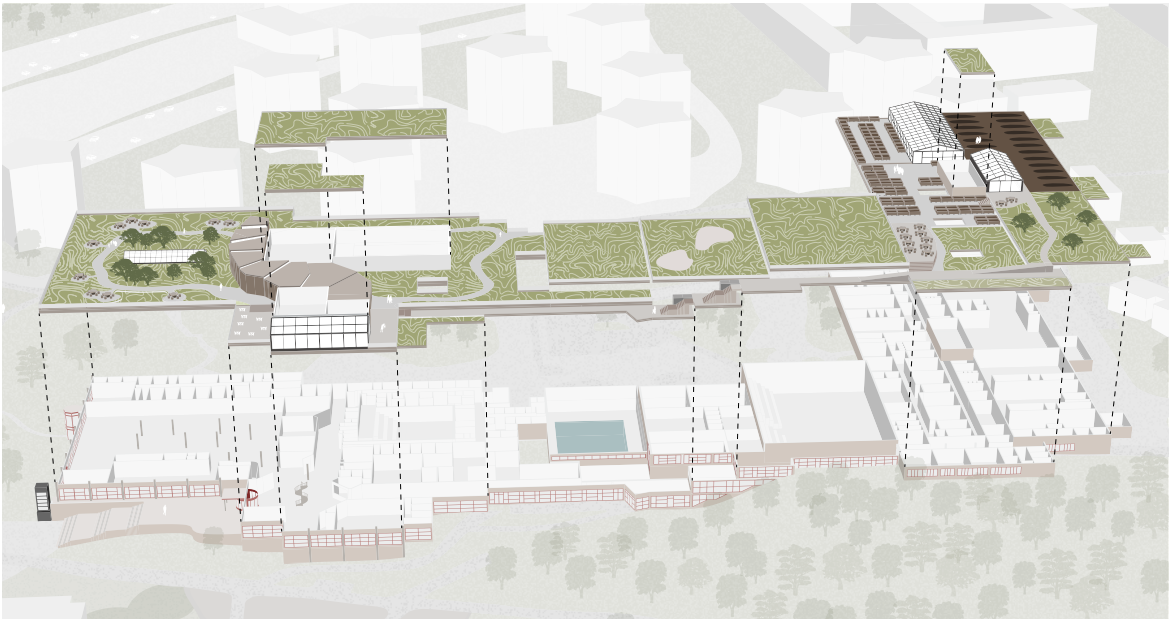
DANIELA SONEHAG

LOST POTENTIAL

- Exploration of how a green rooftop can be retrofitted with focus on biodiversity in the urban environment



URBAN CHALLANGES

Supervisor: Emilio Da Cruz Brandao

Examiner: Joaquim Tarraso

MT´21

The rapid urbanization of the cities in the world is causing a severe loss in biodiversity. Areas which are rich in animal and plant species are being replaced by concrete, buildings and grassy lawns with little to provide for animal wildlife. The animals are being trapped in small patches in the city, and are in some cases completely isolated from other patches and colonies. We are depending on the ecosystem services that nature provides, and nature is depending on how we humans plan for a more sustainable future.

In many cities the roofs are covering 40 - 50 % of the total area of the city and therefore lies a great, lost potential in what value they could contribute with in terms of sustainable urbanization. Since 87 % of the buildings in 2050 are predicted to have already been built, one of the challenges is how to retrofit existing rooftops.

Green roofs can have a large impact on ecosystem services such as biodiversity in the city. When taking a step away from the more common, thin substrate sedum roof it is possible to mimic biotopes in the area onto the roof, and thereby provide shelter and food for a number of invertebrates. The roof also holds a great potential of creating meeting spots for people and letting the activities inside of a building extend to the roof.

The project site is the rooftop of Frölunda Kulturhus which is located in Västra Frölunda in Gothenburg. The building contains many activities that are divided into different blocks, such as the library block, gathering block, sport block and a school block that used to be a high school. The project proposal focuses on increasing the biodiversity in butterflies and wild bees, where the landscape prefered by seven different species have been constructed. The other focus is how to promote social encounters and increase learning about nature and farming for people. The roof has been divided into three different areas with butterfly meadows, a workshop classroom and a butterfly pavilion in the south, dry meadows for wild bees in the middle of the building and public urban farming with different farming methods and a greenhouse classroom in the north of the building.

Keywords : Biodiversity, Green roof, retrofitting, urbanization, Insects