

"(S)ink: Using the potential of emergent 3d printing in dynamic architecture".

In our thesis project we combine a digital structural analysis method with a defined architectural context, with an emphasis on the spatial experiences and aesthetics.

We address the issue of climate change focusing on the rising sea levels, increased rain fall and high water level situations as an ever changing phenomena.

The program of our building is a bathhouse in Nyhamnen (Smörkajen), Malmö, in line with a bath house which the city themselves wish for in the area. The aim was to create a public space that would have a strong connection with water and that would bring people from other parts of the city to the neighborhood.

We worked in parallel with architectural and computational design, allowing one to drive another. We used and re-articulated a digital optimization tool to develop a novel truss-like structural system which is responsive to loads and stresses. It is questioning standardized architecture by exploring custom material composition and results in intricate and complex geometry not achievable with traditional intuitive design. The tools are mostly within Grasshopper, some earlier parts of the process scripted in Python.

Seen from the "poetic" angle, our project explores the idea of *a memory* and *adaptation*. It is an ever changing spatial situation where the water is embraced and allowed to flow in and out. We program the building for a time span of 200 years when it will become flooded, the spaces will change and grow, and underwater life will take over its parts remaining a story of the past.

A third aspect of our project is a discussion about new fabrication techniques with a focus on robotic assembly by means of 3d printing in metal and bio-resins.