Flood-Responsive Structure : CON-FORT

For my final term project, I designed a structure aimed at providing protection against urban flooding—something that's becoming more urgent with climate change and increasingly dense cities. The idea wasn't just to build a barrier, but to create something that could respond to floods in real-time, offering safety and resilience while still being functional and adaptable in everyday life.

I started by looking into traditional flood prevention systems like levees and floodwalls. While they do offer protection, they're often rigid and don't adapt well to changing conditions. I wanted to design something more flexible, something that could work *with* water instead of just trying to block it out.

The result was a modular, elevated structure that lets floodwater pass underneath it instead of trying to stop it completely. I used a lightweight, durable framework that raises the main platform off the ground, allowing water to flow through during heavy rains. I also included features like flood vents, permeable surfaces, and built-in drainage systems to manage excess water efficiently.

One of the most important aspects of the design is that it isn't static. Parts of the structure, like floating elements and retractable barriers, activate during floods to help adapt to the rising water. The roof collects rainwater, and there's greenery around the base to soak up runoff and prevent erosion. I also made sure to use sustainable materials and energy-efficient elements to keep the design environmentally responsible.

But this project wasn't just about technical solutions—it was about people too. I imagined the structure being used not only during emergencies but also as a space for the community in everyday life. It could function as a home, a shelter, or even a public pavilion depending on the setting.

In the end, this project was my way of rethinking how we deal with natural disasters—not just by defending against them, but by designing with flexibility, care, and a deeper connection to the environment and the people living in it.