-DUALITY-

A project combining physical and digital experiences to create a unique interactive outcome.

-DUALITY- is a project that aims to create a connection between nature and technology. -DUALITY- plays on the idea that while nature and technology are often regarded as polar opposites, they can come together to create something compelling and dynamic. The physical aspect of the installation is created with naturally occurring materials and synthetic products, which when combined create a two-tier interactive object. The objects design was inspired by ivy, and the way it integrates itself into man made structures. This inspired the idea of connecting natural and man-made materials into a single object. -DUALITY- also features a virtual component. 3D rendered animations are projected within the space, transforming the physical component and the surrounding space, creating an engaging immersive experience.

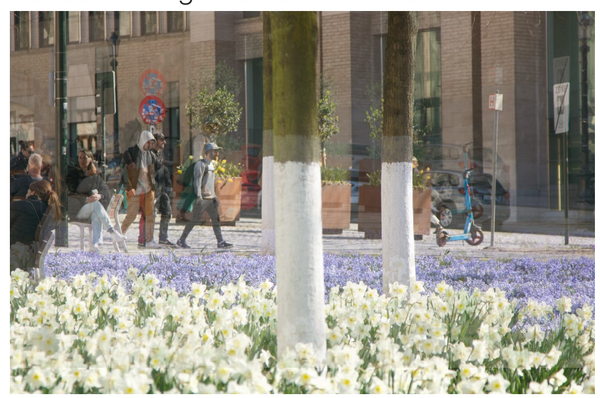
Initial Research -
A look into nature

One of the goals of this project is to create a unique physical object that combines both natural and synthetic materials. The object also aims to be directly linked to nature, and its relationship with man-made structures.

The most common way we may think of the natural world transforming man-made structures is the gradual erosion caused by weather, through subtle events like rain, wind, and cold and warm weather. We often overlook organic and natural life, and the way it grows. The process of nature we are less likely to predict is the visual outcome of plant life permeating our structures. Nature first establishes itself by seeding in external (and sometimes internal) crevices, over time, rooting and infiltrating walls, roofs and even foundations. Jeopardizing structural integrity yet nurturing the inevitable link between natural and built environments. Making for some subjectively beautiful and unique visual architectural accesories.

Hedges sculpted and placed in the shape of a maze in a botanical garden in Brussels.
A great example of nature being used in an architectural way to create an engaging space.

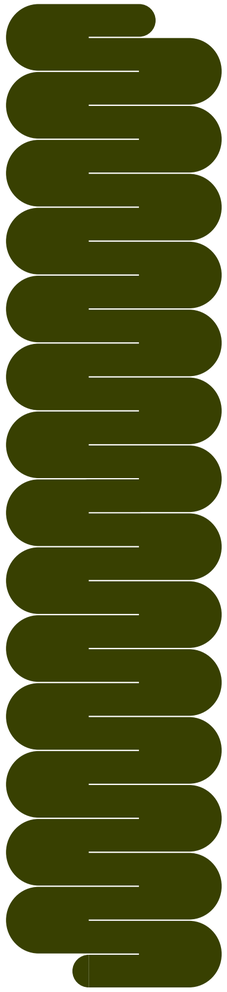
Nature can be used in collaboration with spaces, rather than overrunning it. Here you can see flowers being used to enhance a seating space in Brussels city centre, this makes it a more enjoyable space for the locals and tourists, as well as creating a home for wildlife.

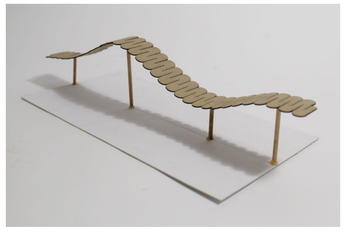


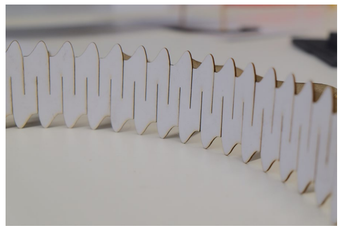
Able to withstand the difficult conditions of the coastline and nourished by sea spray, coastal vegetation and flora thrive on the rocky formations of million-year-old cliff edges. Fringing the Atlantic, Mediterranean, Baltic, and North seas Maritime plant life makes for subtle but extensive growth patterns. Creating a visual labyrinth of vibrant life.

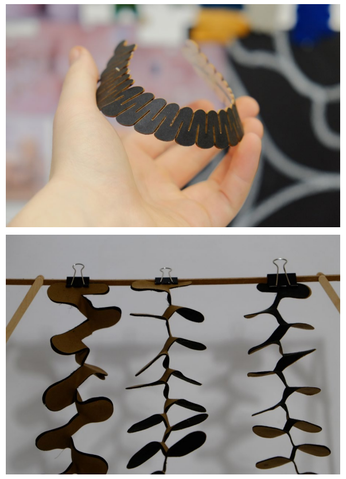
Development.

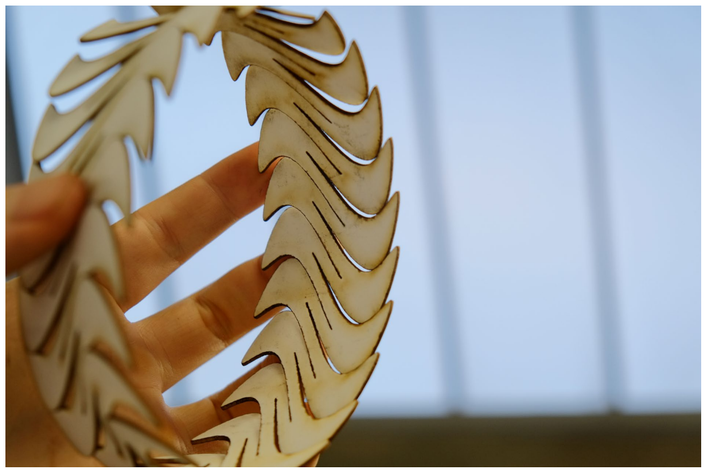
After my research I decided that ivy was going to be my main source of ispiration. I took the design of the plant and translated it into a simplified 2d patter. From here I transfered the pattern to a variety of materials and models in order to explore its form further.

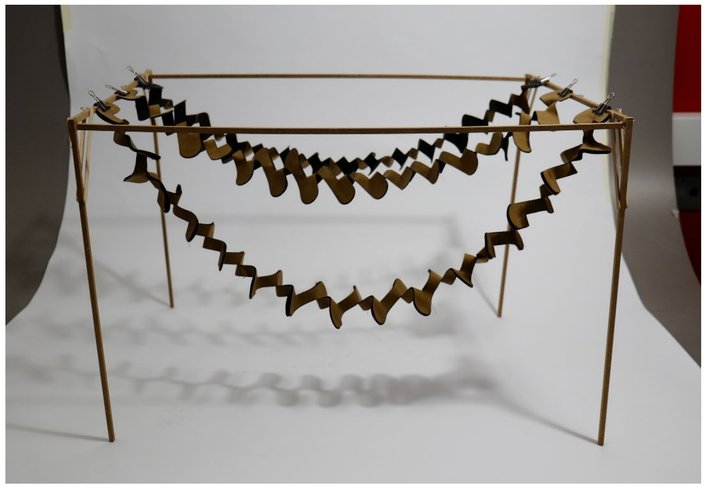












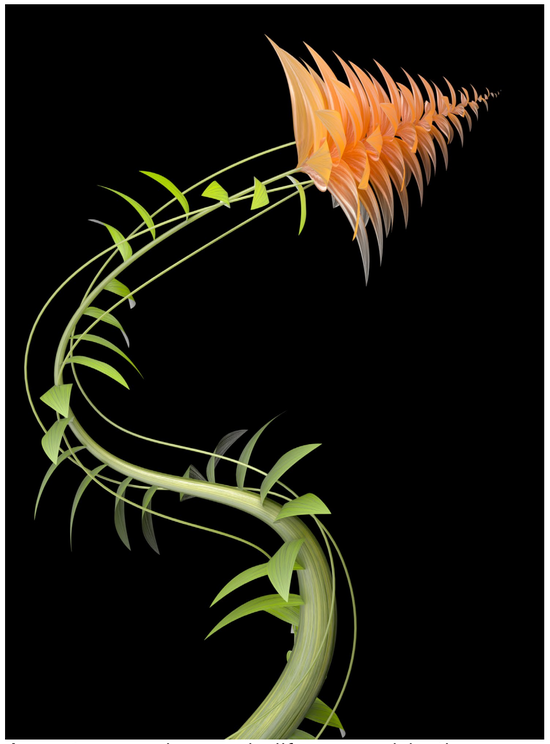
My final objects design was heavily inspired by my experiments with fabric. By transfering the pattern I created onto different thicknesses of fabric, I could study how it either held its structure or transformed into something new. This is where i discoverd the naturally occuring multi-storey seating object in the pattern.

Please check out the film I made for my project, which goes into more detail about the research, development, and final design of the project.

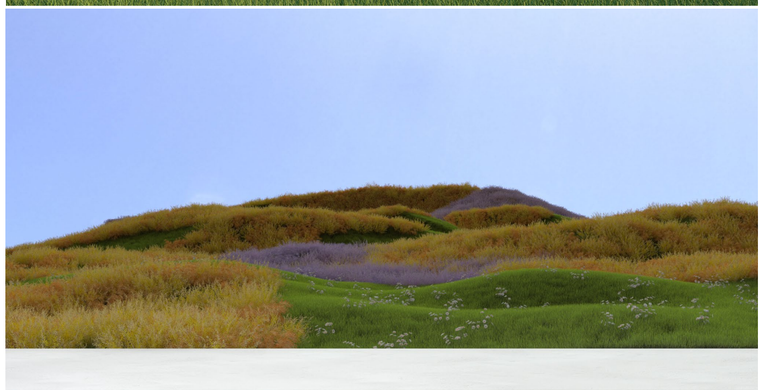
https://youtu.be/tKF26D70A2A

3D Spaces/Projection

The other part of my project involves an immersive experience through projections and animations. These involve simulations of patterns and models as well as 3d digital environments to act as a virtual gateway into a new space.

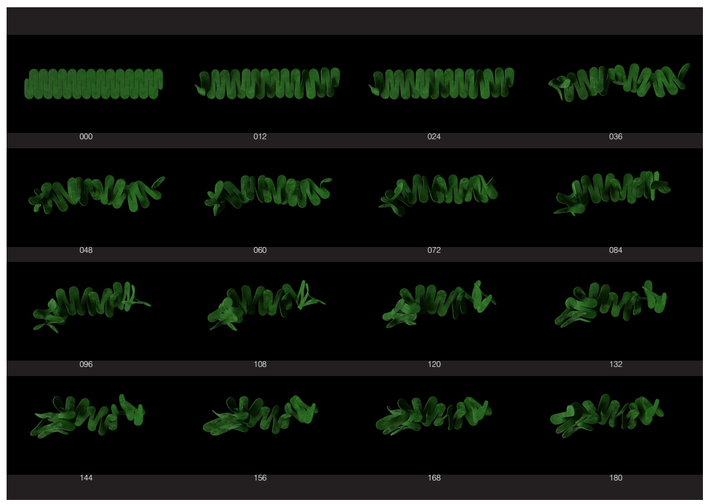
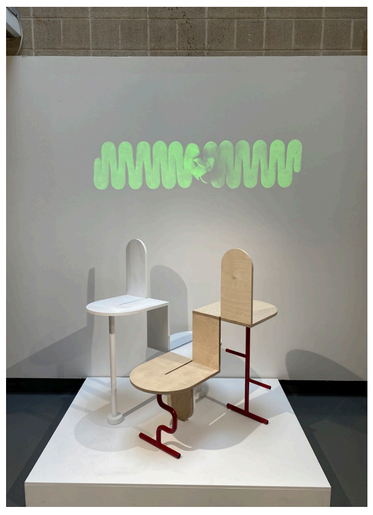
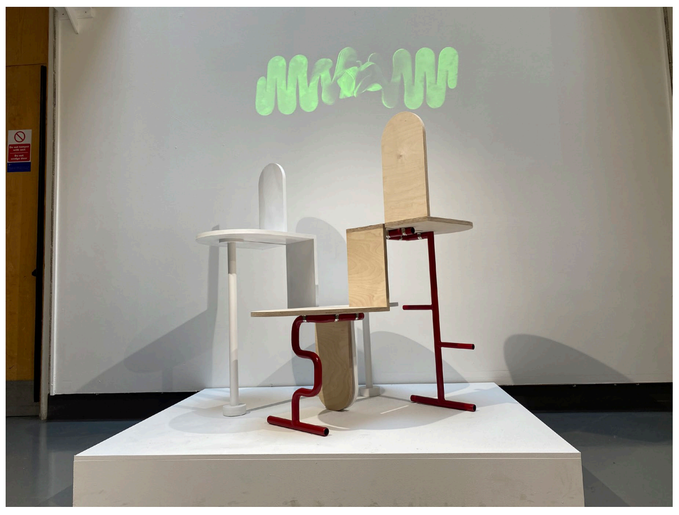


As nature and organic life was a big theme within my project, I took it upon myself to explore plants and their growth. This lead to me designing, 3D modelling, and animating my own plants.
Studying and animating plant growth on man made objects.



A collection of 3d environments I created to go alongside my project, all of which have the ability to dramatically change the atmosphere of the exhibited object.

Here is a collection of digital animation content from the project.

https://youtu.be/5ckUnamr2iA

As well as 3D environments I created a looping animation with the pattern I origionally created after ivy. I simulated the pattern in a varity of ways, as if it was a piece of cloth being pulled and blow in the wind. The full loop is created with a total of 7 individual simulations combined together, creating an engaging video with lots of variation.
Check out the full video here.
https://youtu.be/TmY2C4UdiaM