FABRICADEMY
textile and technology academy

waag
textilelab amsterdam

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Carolina, my sounding board and hand to hold throughout this process. I'm so proud of us.

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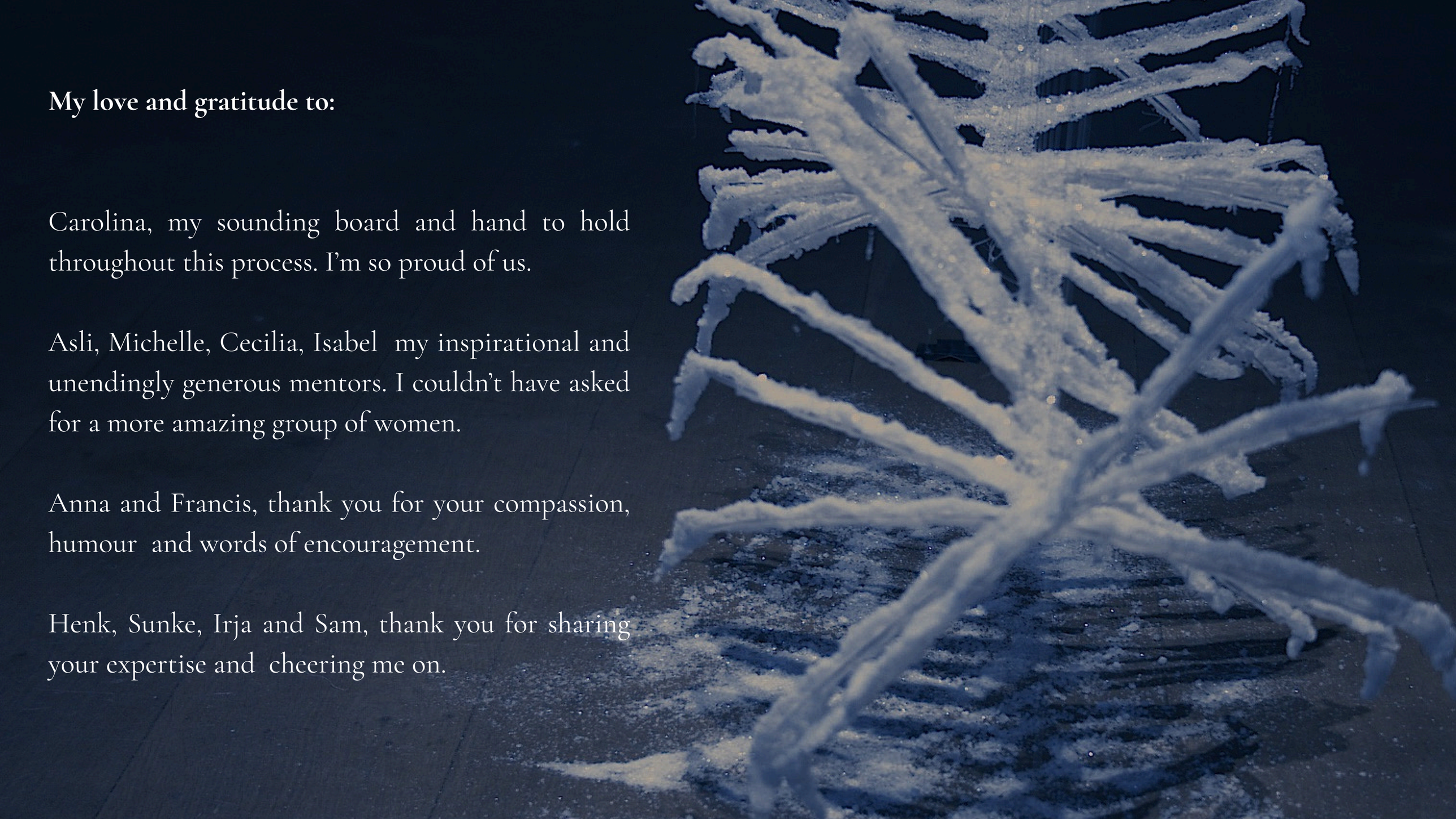
Anna and Francis, thank you for your compassion, humour and words of encouragement.

Henk, Sunke, Irja and Sam, thank you for sharing your expertise and cheering me on.



Keeping Time is a speculative, artistic project that reimagines our **interaction with more than human temporalities.** It questions how our attunement to the paces, rhythms and cycles of other beings might affect our perception of climate change and our collective response to it.

The installation centers on three interactive, kinetic sculptures which bring the movement of different natural cycles into our space. This invites audiences to shift focus from the standardized, social and economic paces of human activity to the varied rhythms of other beings. As participants explore the installation, they will notice that the movement of each sculpture is altered by human presence. Through this experience I hope to make tangible disruption that is occurring along timescales that are difficult to perceive and instead allowing us to **directly experience our impact and entanglement with more than human time.**


daphne.

My first sculpture Daphne is inspired by blooming cycles of flowering plants. This is one of the 3 natural cycles I was interested in depicting.

Spring used to be a promise — a slow, unfolding harmony between plants and the creatures that depend on them. Flowers would bloom just as bees stirred from their winter sleep. Butterflies would emerge when nectar was abundant. Each arrival was timed by ancient cues — hours of daylight, the retreat of frost, the steady warming of soil.

But climate change is shifting that balance. And flowers are blooming too soon.

As global temperatures rise, many plants respond by waking early. Buds burst open before the last frosts are gone, and blossoms unfurl weeks ahead of schedule. When flowers bloom early, nectar and pollen can peak and fade before pollinators are even active. To the insects and animals that depend on those flowers, this can mean hunger, confusion — and collapse. For a flower, blooming without pollinators can mean no seeds, no fruit, and no future.

For this piece, I wanted to mimic the disruption created for interconnected species by creating a sculpture that would bloom progressively faster and more unpredictably when human presence is detected.

My second sculpture is Philomel, she is inspired by the rhythms of bird migration.

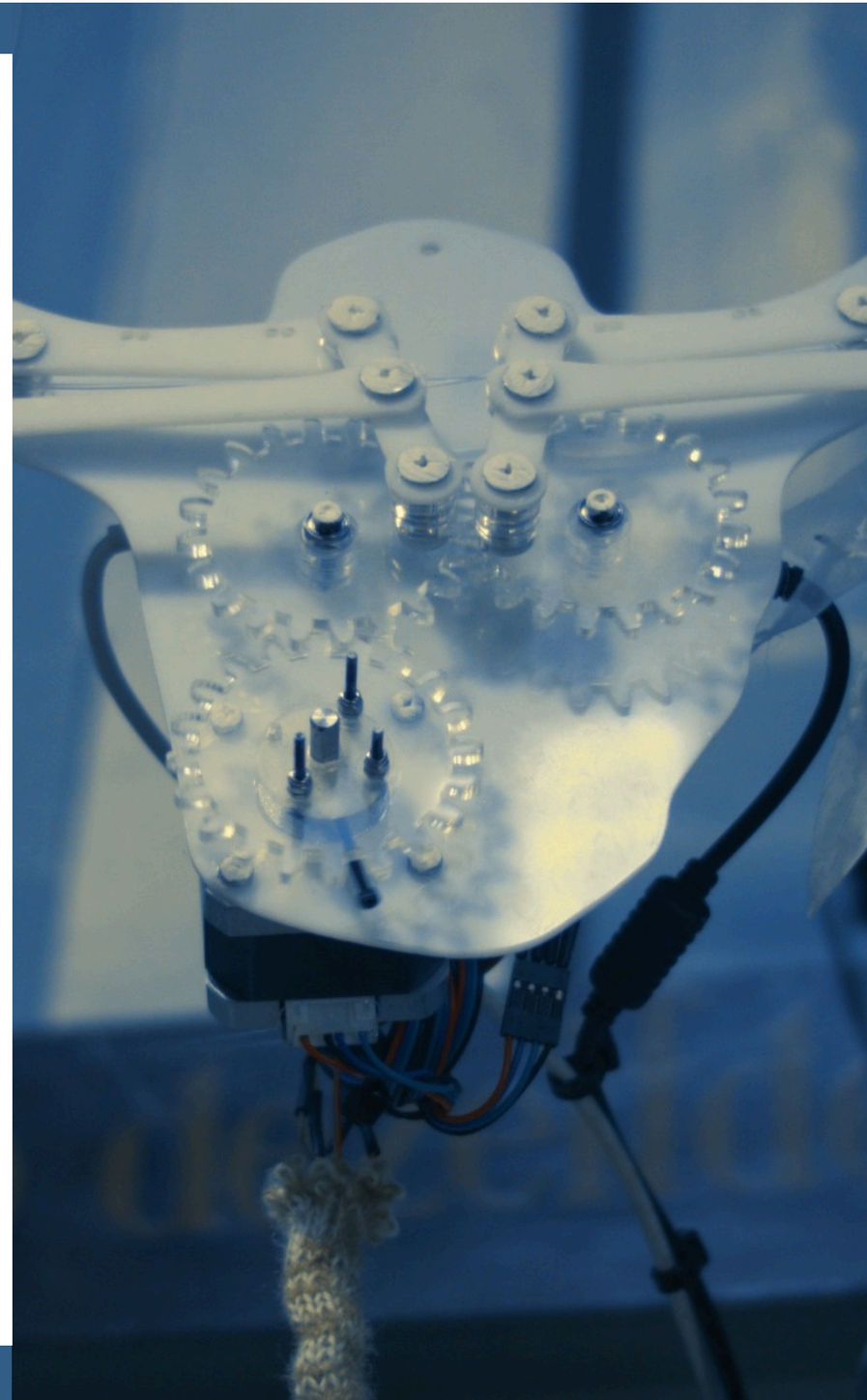
For millions of years, birds have followed invisible highways in the sky — ancient routes etched not by maps, but by instinct, guided by the tilt of the Earth, the length of days, and ancestral memory.

But the skies are changing.

As the planet warms, the timing of spring shifts unevenly across the globe. Many migratory birds, cued by daylight rather than temperature, arrive to find that the seasonal abundance they rely on has already peaked — or never fully arrived.

And so the migrations continue — precise, determined, beautiful — **but increasingly out of sync with a world no longer waiting.**

For this sculpture I wanted to create an elegant flapping wing that **would move quicker and more chaotically when human prescence is detected to make tangible the disruption to this cycle caused by the climate crisis.**

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misdadigers te sterven

My third sculpture is Amphitrite, whose movement is based on the blossoming ecosystem created by whalefall in the deep sea.

When a whale dies, it doesn't just vanish — it descends. Slowly, heavily, it falls through the ocean's layers. **This descent marks the beginning of a rare and powerful ecological event called a whalefall — where the end of one life becomes the spark of thousands more.**

For decades, this one fallen body can sustain entire ecosystems.It offers shelter, food, and a place for reproduction in the vast, nutrient-poor deep. The cycle of decay becomes a cycle of creation.

But this cycle is being quietly disrupted.

As climate change warms the oceans, it alters whale migration patterns, reduces populations, and accelerates the loss of oxygen in deep waters, fewer whales living long enough to die naturally in the open sea. Without them, **an entire web of life and activity, built around this cycle disintegrates.**

This sculpture is formed of a crystallised skeleton, moving in an undulatory wave motion. When human presence is detected, the motion speeds up causing the crystals to disintegrate faster and accelerate the vanishing of the sculpture to dust.

process.

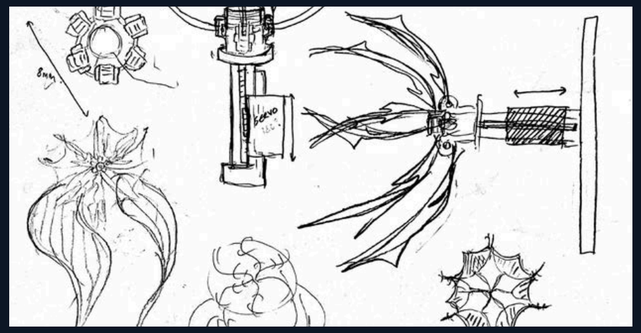
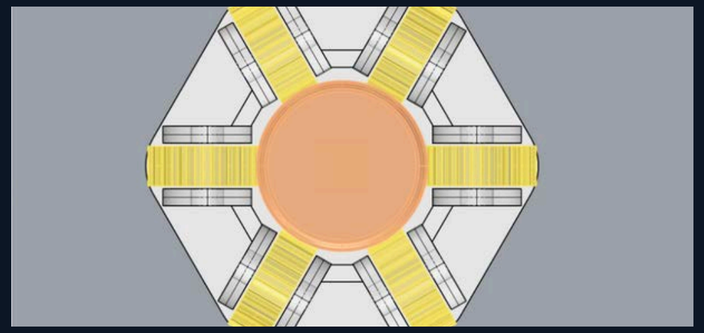
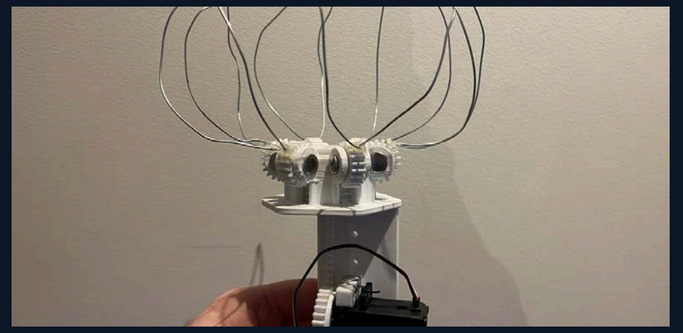
phase one

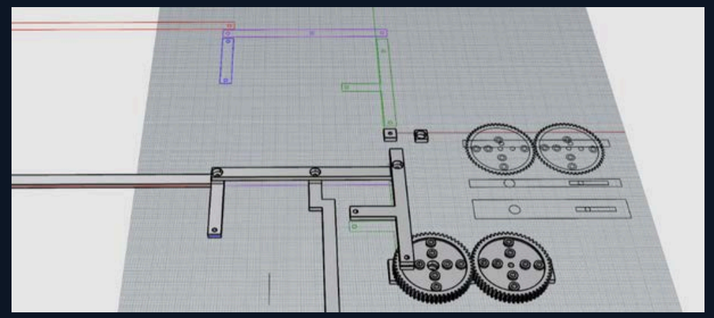
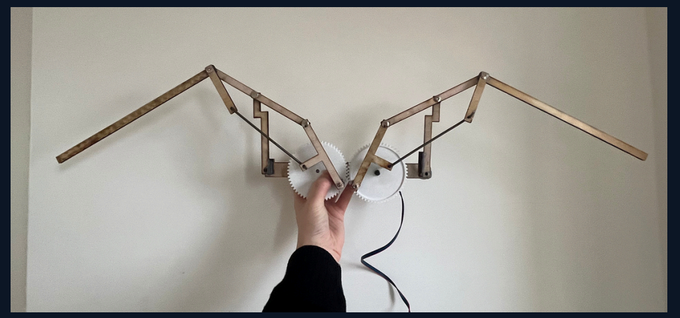
research

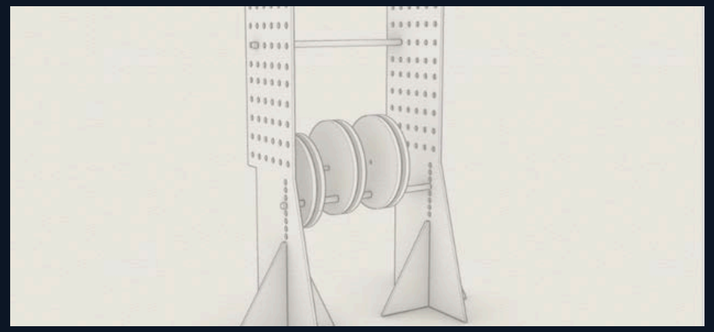
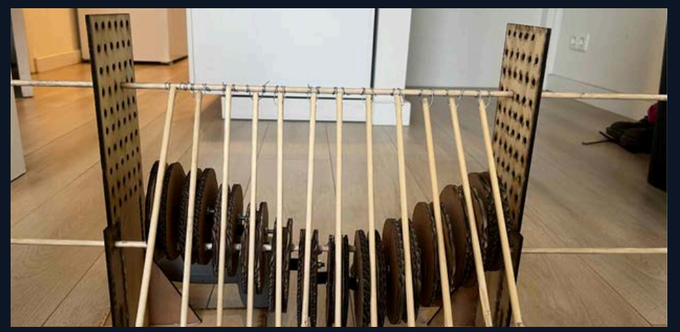
ideation

design

prototype motion

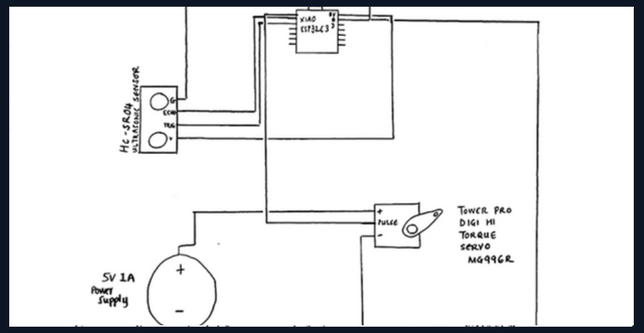



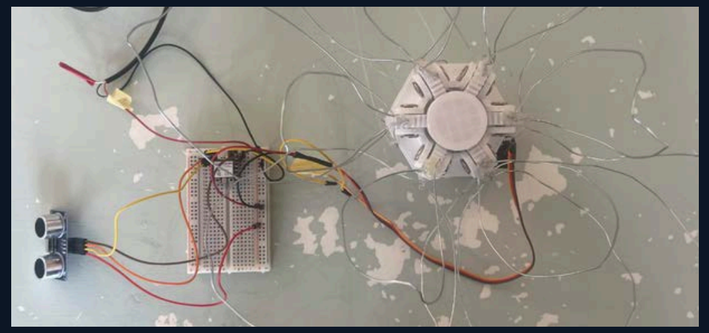



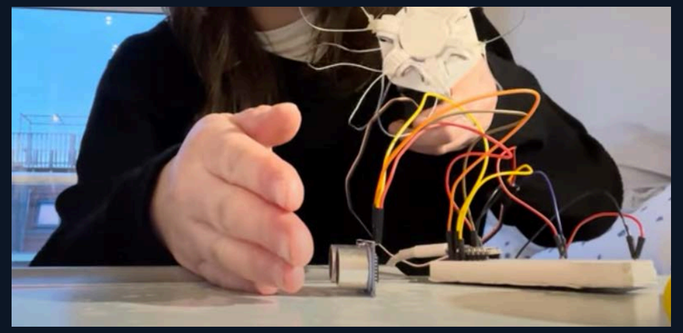
In the first phase of my project I researched and sketched out mechanisms that would produce my desired motions. I modelled and digitally fabricated quick prototype systems. The systems were designed to be as adaptable as possible so that I could test different variables and refine the motion.

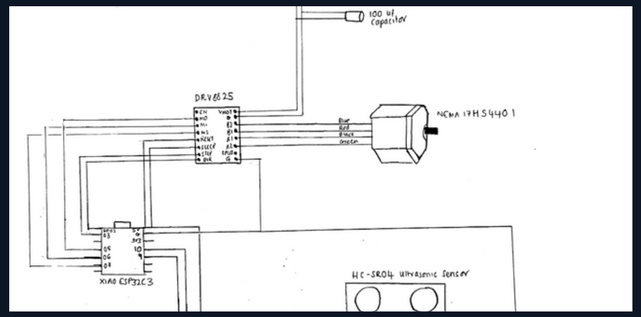
process.

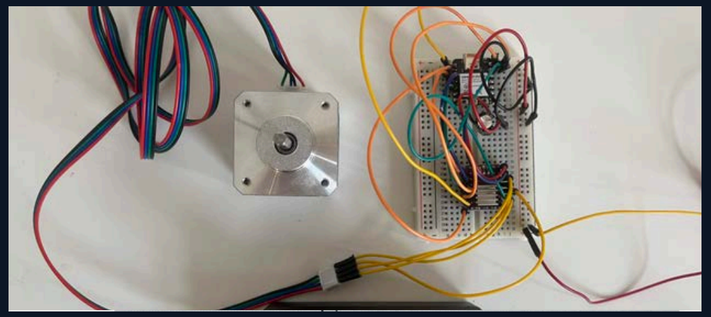
phase two : electronic interaction

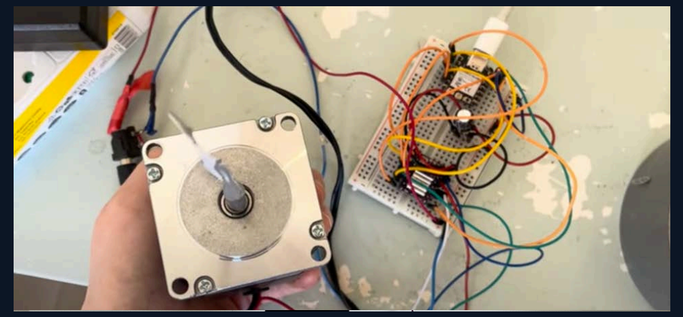


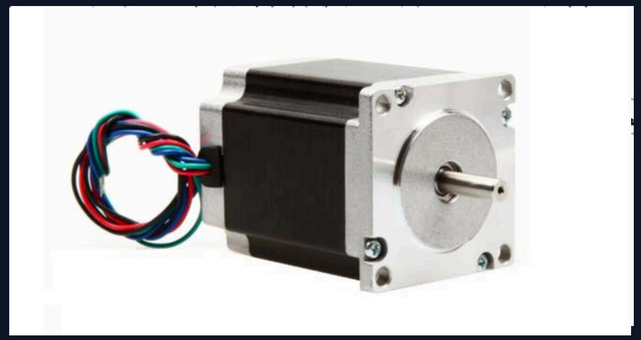










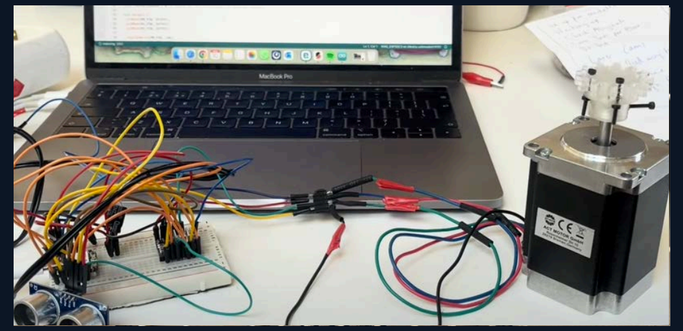


```
#include <AccelStepper.h>

 // Define stepper pins
#define STEP_PIN 3      // Step pin
#define DIR_PIN 2       // Direction pin

// Microstepping control pins
#define M0_PIN 5
#define M1_PIN 6
#define M2_PIN 7

// Define ultrasonic sensor pins
const int trigPin = 10;     // GPIO 10
const int echoPin = 9;      // GPIO 9
```



In the second phase of my project I focused on integrating the electronics into the mechanism seamlessly and finding the appropriate motor for the motion. I experimented with Servo motor and Stepper motors understanding how to code for them and design their relationship with the proximity sensors I used to control the interactions with each sculpture.

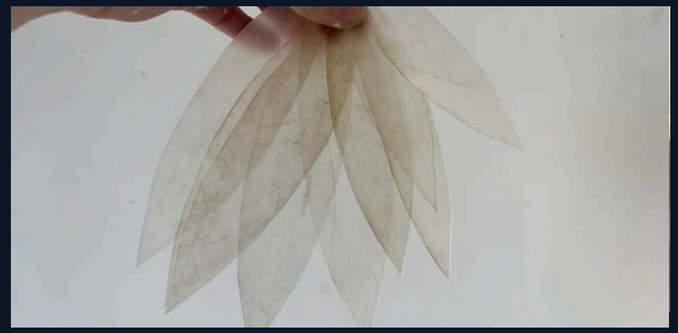
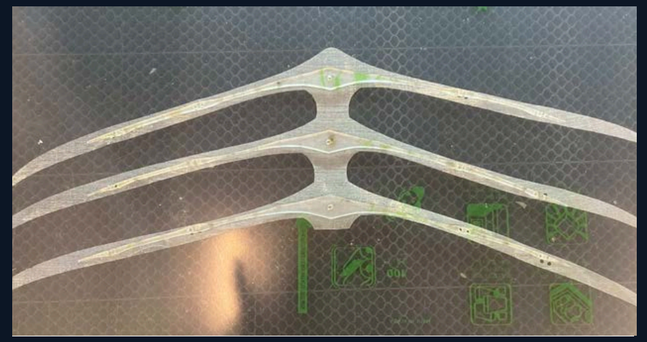
process.

phase three:

material upgrades and aesthetics



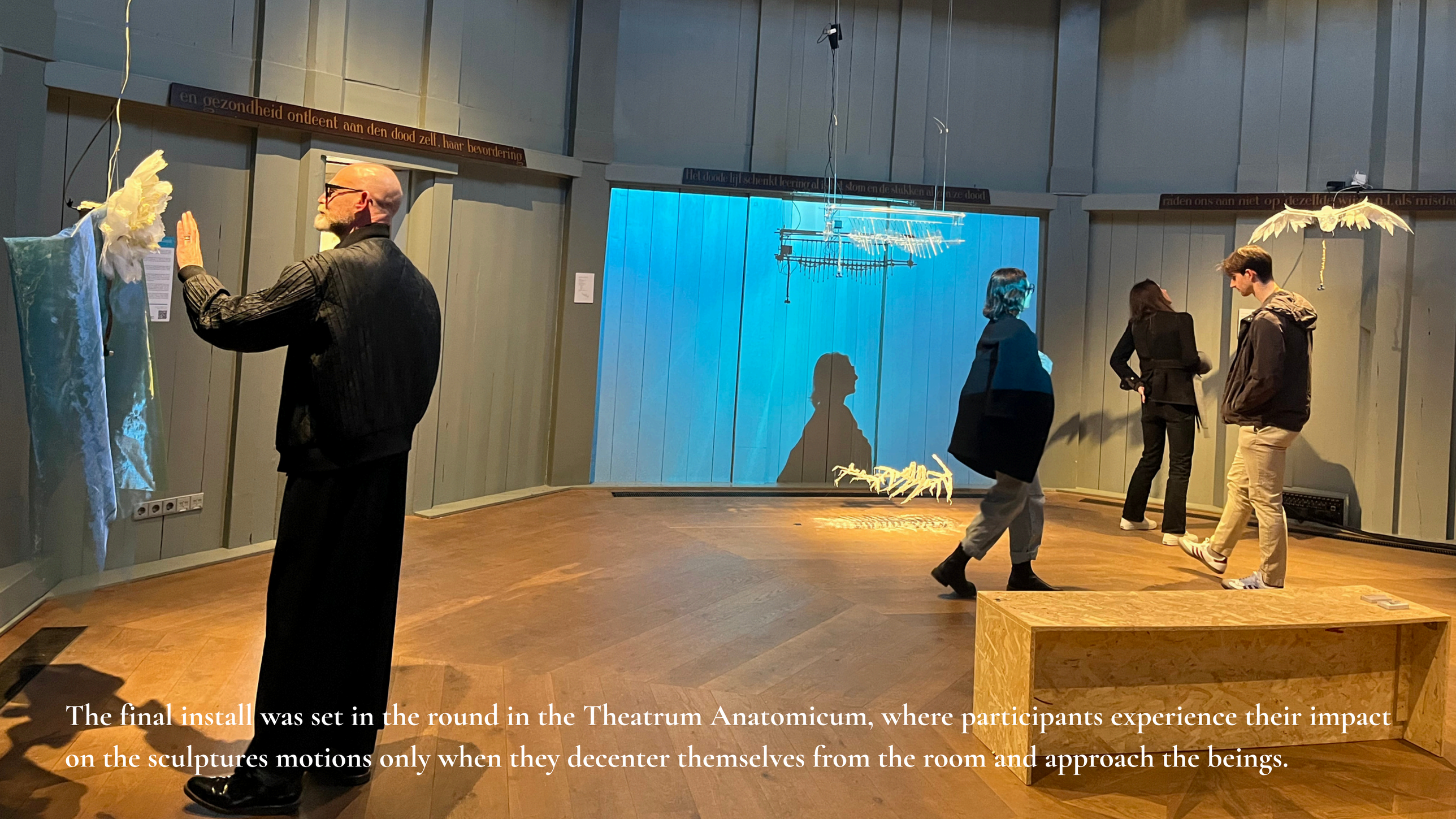


The final phase of my project was biofabrication. I wanted to have materials with different temporalities in the work. The mechanical parts being made of materials that will take a long time to degrade, whilst the organic parts of the sculpture petals, feathers, bones are made of materials that change and translate throughout the life of the sculpture. I explored the natural dying, alginate bioplastic and crystalisation.

phase four :

interaction narrative



The final install was set in the round in the Theatrum Anatomicum, where participants experience their impact on the sculptures motions only when they decenter themselves from the room and approach the beings.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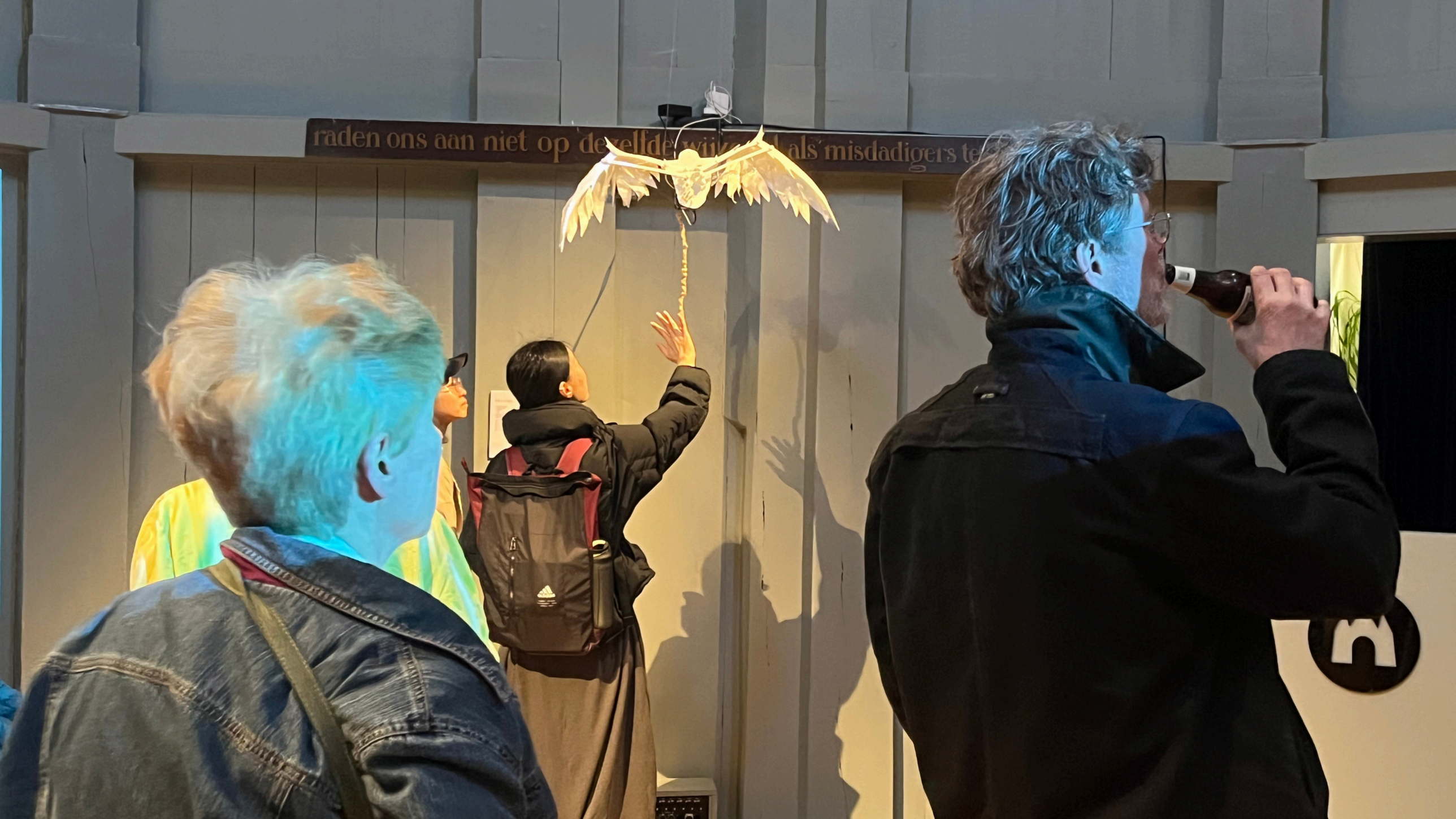
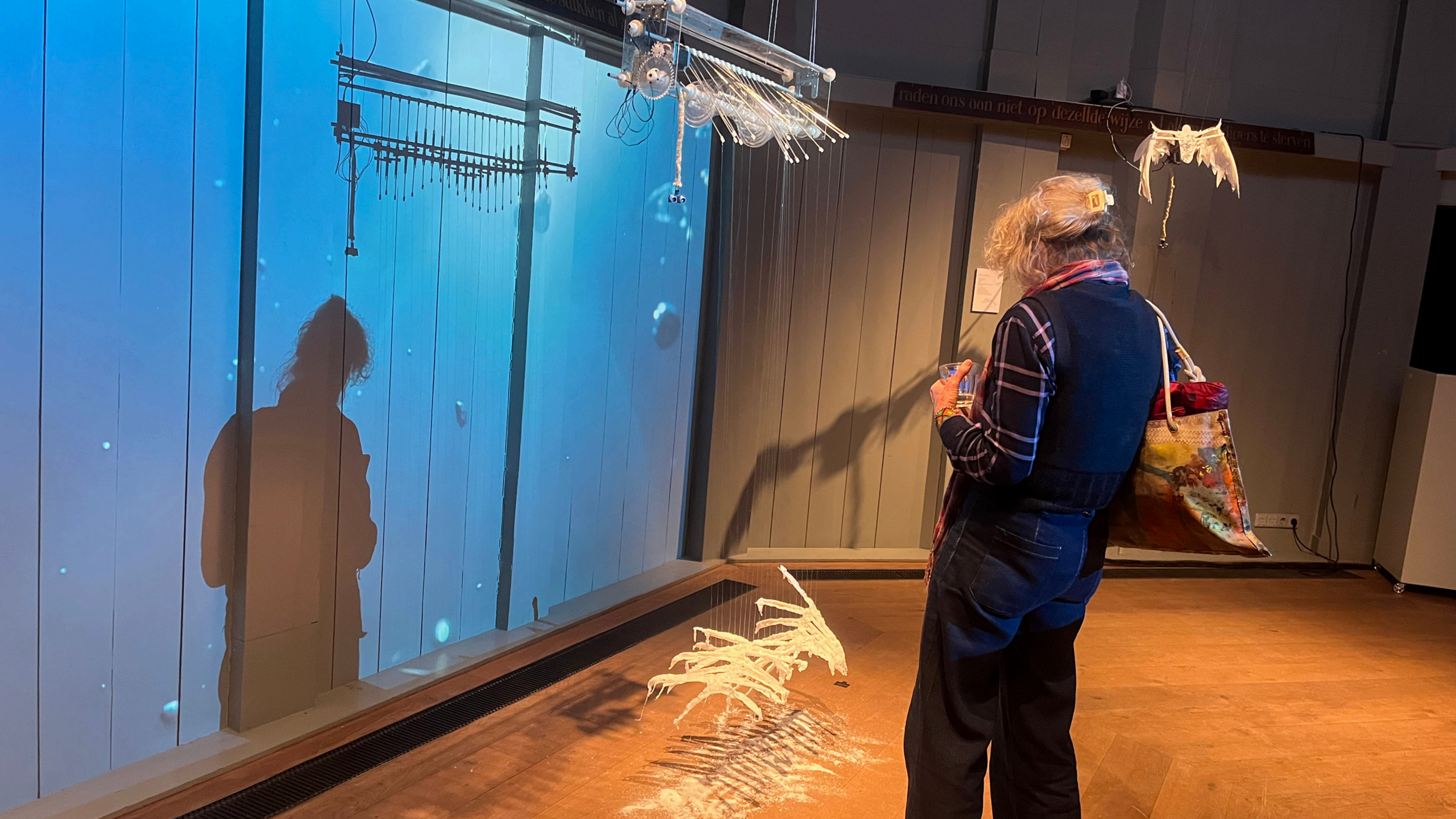

raden ons aan niet op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A soft, immersive soundscape was played in the space and use of projection and lighting helped create a sense of suspended reality and worldbuilding. The interactions are subtle and were often noticed as people engaged with the wonder of the sculptures movement, followed by an understanding that something else was happening.

DAPHNE

"looking for the Indications of an Early Spring
I am almost a month before I was,
losing April to May and anticipating
declining visits from neighbours and once-partners.
The shop closing too early and, wilting,
a customer arriving too late.

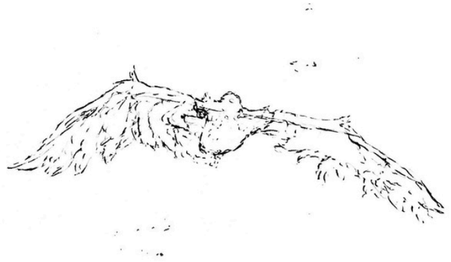
Come summer, I predict a spectacle
of alarm:
flowers where snow once was,
North going South under hedgerows,
a heat island and every place losing:
agriculture, economy,
and life in response."

Poem and drawing by Daniel Turner.

PHILOMEL

"To the moon and back:
is that where you go
out of season?
In autumn
in winter
in spring,
raised in abundance and ranging out, off-springing
earlier and earlier,
jumping the gun?

I am not the same as I was,
now in summer needing
a stronger grip on the earth and
on this thin air, my biology is shifting:
larger beaks growing, fingers swollen,
no time for keeping close eyes on.
But I am weaving you a message maybe
late in the day: predator and prey are out of line;
Here and There are journeys broken and misplaced."



Poem and drawing by Daniel Turner.

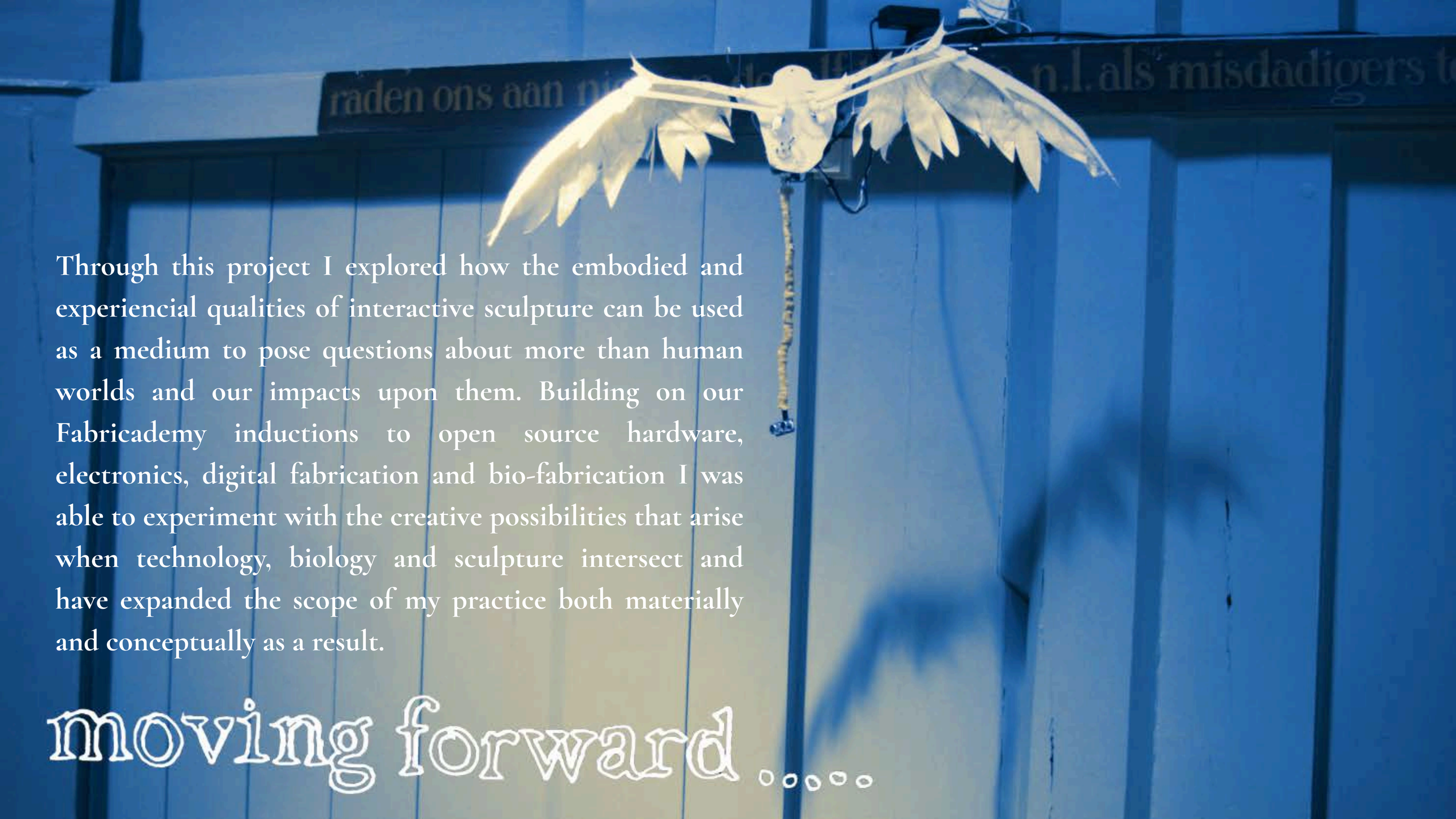
AMPHITRITE

"One whale
three kilometres down
lately bloomed on the sea surface.
Now rich pickings, fallen,
a rotting golden egg.

sifting through islands,
and ruts and deep furrows,
year upon year you would have only
the smallest chance
of finding me: a carnival of
hagfishers
shrimpings
lobbers
sleep sharks
worm tube and bristle
Osedax
mollusc
in 'numbers past all counting',
a flowering bone, sudden and immense and
waiting."

Poem and drawing by Daniel Turner.

Accompanying exhibition texts and drawings by Daniel Turner to introduce the natural cycles each sculpture represents.



Through this project I explored how the embodied and experiencial qualities of interactive sculpture can be used as a medium to pose questions about more than human worlds and our impacts upon them. Building on our Fabricademy inductions to open source hardware, electronics, digital fabrication and bio-fabrication I was able to experiment with the creative possibilities that arise when technology, biology and sculpture intersect and have expanded the scope of my practice both materially and conceptually as a result.

moving forward .....