

landing
body, site, material

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A thesis presented in partial fulfillment of the requirements for the degree Master of Landscape Architecture Degree in the Department of Landscape Architecture of the Rhode Island School of Design, Providence, Rhode Island

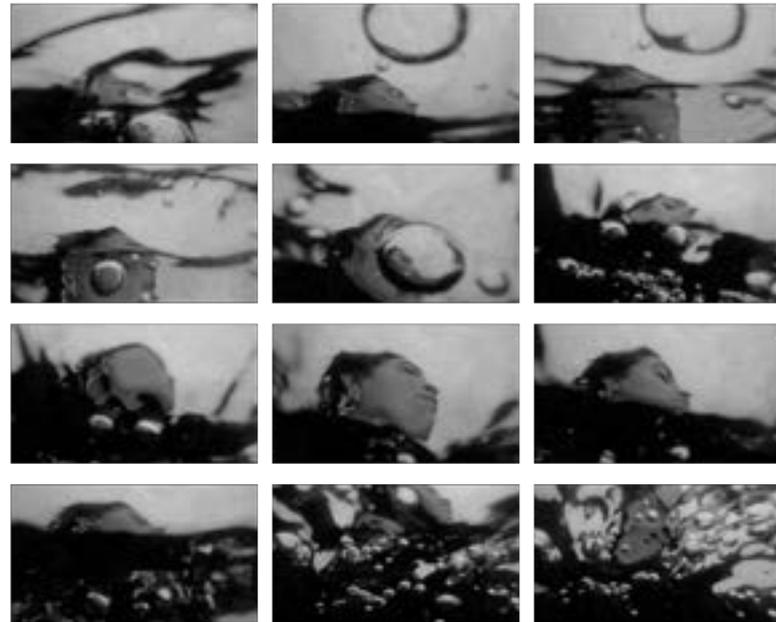
**by
Renata Berta
2024**

Approved by Master's Examination Committee:

Johanna Barthmaier-Payne, Department Head, Landscape Architecture

Tiago Torres-Campos, Associate Professor, Department of Landscape Architecture, Thesis Advisor

Shona Kitchen, Department Head, Professor, Department of Digital + Media, Thesis Advisor



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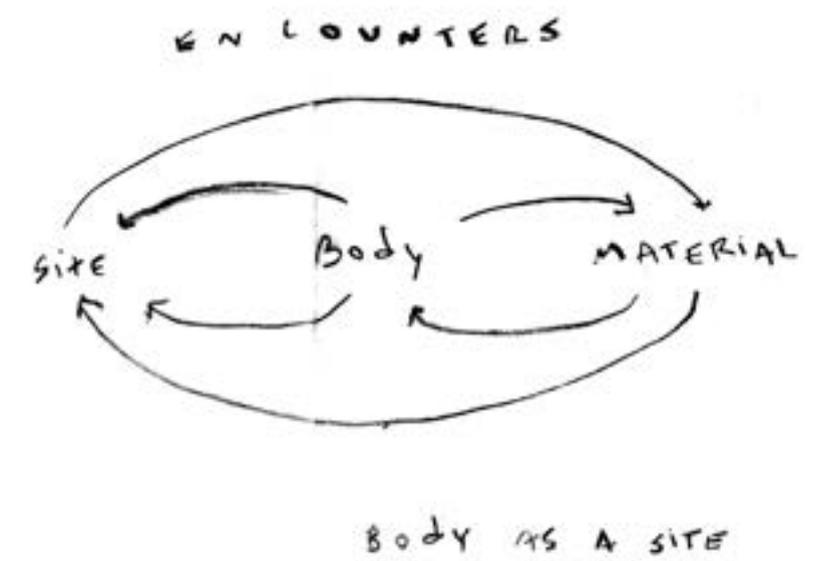


01_Thesis abstract

I believe that in order to build on the land, I must establish a profound relationship with it. As an outsider to New England territories, I actively seek this connection through immersive activities such as swimming, surfing, climbing, and extensive walks, immersing myself in the land to better understand it and synchronize with its rhythms. In my artistic and architectural practice, I explore dissolving traditional boundaries, emphasizing the vital return to the land to create a more responsive and embodied architecture that symbiotically engages with the landscape

Within this ongoing project, “Landing: Body, Site, Material,” I conceptualize my body not merely as an instrument but also as site and material that resonates and vibrates with the forces and processes of the landscape. My approach to achieving this dissolution involves translating and transforming insights gained at various stages of the project. Starting with immersing my body in the landscape, I seek to synchronize my rhythms with those of the land before translating these experiences into material explorations involving clay, glass, textiles, plaster, and experiential drawings that abstract certain encounters.

My body of work aspires to align with architectural practices that acknowledge the inherent interconnectedness between humans, non-human entities, materials, and the land. I aim to challenge prevalent design approaches that view sustainability as the exclusion of human presence from landscapes. I argue that such perspectives undermine the crucial dialogue between humans and nature necessary to achieve true sustainability.





02_Introduction

My intellectual and academic interests regarding landscape architecture and socio-environmental equilibrium in high-risk territories have their origin in my individual and collective search displayed from two lines of work: the co-construction of community facilities built with Matéricos Periféricos collective; and my role as Associate Professor at the National University of Argentina.

Since 2010, I have been an active member of Matéricos Periféricos, whose actions include the co-production of infrastructure that seeks to generate better socio-environmental conditions in the most vulnerable territories of my natal city Rosario. Because of the unequal land distribution these communities are forced to inhabit territories with environmentally hazardous conditions. Therefore, we design and build architecture that interact with the constant change condition of the landscapes. Through Matéricos Periféricos' work, I have witnessed the transformative power of responsive architecture in fostering socio-environmental equilibrium within these vulnerable territories.

In the academic field, as an Associate Professor in Taller Valderrama studio at the National University of Rosario led by the Architect and Landscape Architect Ana Valderrama, we address architectural projects in dynamic landscapes, involving different methodologies such as 1:1 scale constructions and empirical studies of natural processes.

My thesis encapsulates the knowledge accumulated over more than a decade of collaborative work alongside the Valderrama Studio faculty, reinterpreting the new knowledge acquired during my studies of Landscape Architecture and my participation in various programs at RISD. I employ a methodology I call “Landing” which distills the sequential and transformative essence of my teaching experiences in Argentina, emphasizing the territory and the body as primary variables to understand the sites we are studying. I contend that these approaches serve as guiding principles for the development of a situated, responsive, and embodied architecture.

“Bodies are also viewed as landscapes, “land that walks” in the words of Atahualpa Yupanqui, emanating from a dominated, colonized geopolitical space which constitutes us and can be read in our corporality. Hence, while we may be perceived as white here, on this side of the world, we are non-white when navigating the Northern space. No one from the South is regarded as white over there because our existence is saturated with the colonial landscape to which we belong.”

—RITA SEGATO

I deem it imperative for our bodies to reconnect and return to the land, and for us to study territories as an ongoing and evolving process that requires our presence in it on successive occasions. Moreover, I advocate for understanding bodies as “walking lands,” that our corporealities laden with meanings and signifiers carry a time that reverberates with the time of the territory we inhabit.

As part of the Sustainability Design Lab, focusing on the study of clay as a material, my initial inquiry was connected to the notion of sustainability in contemporary architecture. While many perspectives suggest that our human interventions in territories invariably undermine sustainability, I maintain that such beliefs impede our progress towards achieving genuine sustainability. Instead, I propose a holistic approach that acknowledges human beings, non-human entities, materials, and the site’s natural and social processes as interwoven variables that dynamically interact over time.

“Decolonial, southern, indigenous, and feminist methodologies have made and are making a great contribution to resisting dispossession processes by deploying in-situ in-live experiences that reconnect the body with the land. These methodologies also break modern dichotomies and propose integral, collective, and dialogical situated practices capable of articulating diverse and inter, trans or infra-agencies.”

—TALLER VALDERRAMA, UNR

The primary aim of my thesis is to explore how the boundaries between bodies, materials, and sites transform into inhabitable thresholds, envisioning landscape architectures that constantly adapt to the ever-changing conditions of the sites we are studying.

RISD, alongside its faculty, has not only provided me with a platform to rediscover my identity as an artist and architect but has also underscored the urgent need to infuse architectural institutions with a diverse array of artistic practices. I firmly believe that fostering such interdisciplinary exchanges is essential in addressing the challenges posed by social and environmental crises.



03_Landing Method

a.Methodological Precedents

Among the diverse research projects I have been involved in as part of Taller Valderrama, UNR, there are four that stand out. These projects not only influenced my decision to study Landscape Architecture at RISD but also significantly contributed to my understanding of architectural project development: “Chains and Translations: An Interdisciplinary Approach to Teaching and Learning Architectural Design in the First Year of the Architecture Program”, “1:1 Scale: Experimental Paths in Architectural Project Determination. An Interdisciplinary Approach for the First Three Years of the Architecture Program”, “Processes, Resilience, Adaptability: Integrating Environmental Dynamics into the Architectural Design Process”, and “Bodies, Materials, Artifacts, Territories: Interconnected Continuities.”

These researches delve into the collective endeavor of rethinking architectural pedagogy. Our studio focuses on three key themes: the relationship between architecture and landscape, encompassing both tangible and intangible elements; materials and craftsmanship; and the empirical verification of our work at a 1:1 scale.

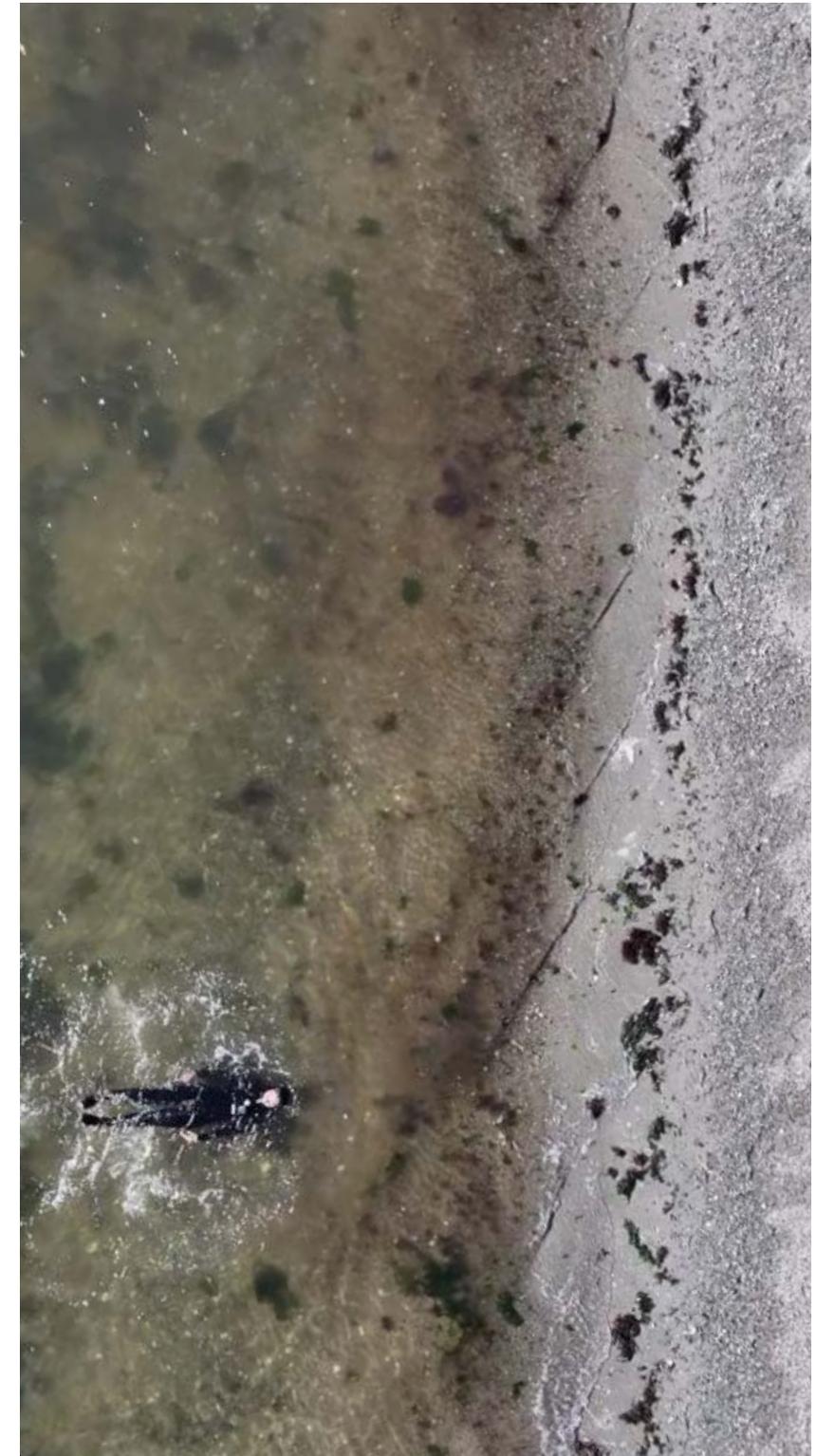
The first two research projects mentioned earlier elaborate and solidify a didactic framework for the architectural design process, viewing it as a series of transformative steps. We conceive and teach architecture as a progression of translations, beginning with the body in the territory, drawing inspiration from what we term “Poetic Acts” stemming from the practices of Ciudad Abierta, in the architecture school of Valparaiso. Through this initial engagement with the project, we seek to understand our physical presence in relation to the landscape, while also comprehending the territory in constant dialogue with our bodies. The design process, as proposed by these studies, is one of determination; we believe that the architectural project evolves as we advance through the various stages we design, accumulating data, variables, and decisions. Methodologically, we integrate these variables throughout the academic year, which can be conceptually divided into three main phases: contextualization, decontextualization, and recontextualization. The first phase involves students in an empirical study of the site, considering the landscape as the primary material.

In the decontextualization stage, the studio transforms itself as some kind of laboratory setting, where information gathered from the landscape begins to be decoded and abstracted through collections, photomontages, artifacts, case studies, and project speculations. Finally, in the recontextualization phase, we return to the site to collaboratively build infrastructure alongside the community inhabiting it.

In the work “Processes, Resilience, Adaptability: Integrating Environmental Dynamics into the Architectural Design Process,” we employ the same sequential and transformative methodology, combining experimental and speculative phases that inform one another, with a particular emphasis on the dynamic variables of the landscape. The central question here is whether it’s possible to conceive artifacts capable of catalyzing, coagulating, condensing, and revealing the latent natural and social processes within a given territory.

The last research project, “Bodies, Materials, Artifacts, Territories: Interconnected Continuities,” seeks to implement a methodology that recognizes the urgent need to dissolve boundaries between human and non-human entities by understanding their inter-agencies. We believe that an ontological and epistemological shift is imperative to reconnect bodies, materials, artifacts, and territories, thereby deepening the situated and collective dimension of architectural projects.

In the course of my work at RISD, I have implemented this sequential and transformative thinking into my Landscape Architecture practice. The methodology I employ for this thesis “Landing” draws connections to various moments and contexts of my previous work, as emphasized in this chapter. Like any research endeavor, it is an evolving and transformative entity in itself. Over the past two years, I’ve enriched this body of knowledge with understanding of ecology, geology, technology, and other disciplines, strengthening my exploration from various perspectives.



“Landing”, RENATA BERTA, 2023



03_Landing Method

b.Insights on “landing”

HOW DO THE BOUNDARIES BETWEEN BODY, SITE, AND MATERIAL
INTERTWINE TO BECOME A THRESHOLD?

“Becoming Threshold: With each new venture to a new location comes a new map. Through rituals of entry, Caldwell opens herself to reading the language of place. As she adjusts to a new geography, she notes first impressions. One drawing from her travel journals records her landing at Pangnirtung, Baffin Island. A current of lines becomes animated on the page as she tracks the path of the plane’s descent. The drawing, a stratum of tremulous parallel lines, signals the moment of the body becoming threshold to place. It is both invitation and record, at once welcoming and registering what is felt on the corporeal plane as a phenomenological dialogue.”

—ANNE WEST on the artist DOROTHY CALDWELL

Among the practices that deeply move me, there is a common element: the boundaries between bodies, materials, and places are difficult to distinguish. They are not lines; they are spaces, inhabited places. These borders are interwoven in a complex network where it is nearly impossible to discern where one begins and the other ends. This network, a living web, is composed of variables, relationships, energies, gestures, and symbols that complicate any attempt—whether naive or deliberate—to separate them for understanding. To study some of these elements in particular, it is necessary to consider their surroundings. For me, studying clay as a material capable of promoting “sustainability” is only possible if I understand what affects clay within its context, where it originates, what it carries along its path, its composition, accumulation points, related practices, the conditions of the territories where it accumulates, the inhabitants of those territories, and the conditions of the site after the material is extracted for consumption. It’s an extensive network of questions, where elucidating the answer to one question requires formulating another.

“Filling”, RENATA BERTA, 2023

My position is interdisciplinary; it draws from various worlds physical and symbolic, virtual and real, present and past using different languages. My thesis is an ongoing investigation that resides in the interstices of two lands, of two languages understood as spaces. It is a thesis conceived simultaneously in Spanish and English, presented to the world in both languages because perhaps, I believe, it is necessary to read it in both languages to truly grasp my intentions.

“And you know, many came.
But few...few landed.
Not everyone has the privilege of landing”
—KENT CHAN

“Landing” is a challenging concept to translate into Spanish; ‘aterrizar’ (to land) or ‘enraizar’ (to root) do not fully capture its meaning. In my attempt to explain it in Spanish, I recall Alejandra Pizarnik, an Argentine poet, when she writes:

“Waiting for a world to be unearthed by language, someone sings the place where silence is formed. Later, they’ll realize that just because the sea appears furious, it doesn’t exist, nor does the world. That’s why each word says what it says and more, and something else.”

For me, “landing” is more than a verb, more than the precise action of arriving or touching down in a place; “landing” is the connection but also the connection, it is the process of understanding what something is about while simultaneously becoming part of it. “Landing” is that moment, the realization that we belong to this intricate network of relationships and gestures. Landing is understanding that we, our bodies, are part of the threshold in between body, site and material.

Landscape architect Christophe Girot elaborates on a similar concept of “Landing” in his text “Four Trace Concepts in Landscape Architecture”

“I have unraveled four operating concepts that serve as tools for landscape investigation and design... They also underline the fact that a designer seldom belongs to the place in which he or she is asked to intervene. How can outsider designers acquire the understanding of a place that will enable them to act wisely and knowledgeably? This is a question my four trace concepts address: landing, grounding, finding, and founding, each focus on particular gradients of discovery, inquiry, and resolution.”

“Landing usually invokes displacement and change of speed (as in arrival), but it also conveys the idea of touching ground and reaching for the confines of an unknown world. Landing thus requires a particular state of mind, one where intuitions and impressions prevail, where one feels before one thinks, where one moves across and stalks around before seeking full disclosure and understanding.”

While Girot’s concept of “Landing” closely aligns with the definition I seek to convey, his idea of “landing” serves as the initial step within a sequence of “trace concepts” that inform the project, including “Grounding,” “Finding,” and “Founding.” In my research, “landing” encompasses a series of stages where discovery and project development are inseparable. For me, “landing” represents the threshold we become. This concept of a habitable threshold, as I propose it, is what enables us to transform land into place.

“The land is important to me, but even more important is the idea that it becomes a place because someone has been there.”

—MARLENE CREATES

However, there is an intersection where the two intents of defining “Landing” touch; a certain distance is necessary for “landing.” This notion is deeply intertwined with displacement, a prevalent aspect of our contemporary experiences, as described by Girot when he notes that “a designer seldom belongs to the place in which he or she is asked to intervene.” Our movements are said to have deprived us of bonds to place and community. As a migrant myself, navigating diverse lands and cultures, I challenge the notion of romanticized rootedness and embrace a rhizomatic approach in this project. Can one truly connect and become a threshold with a land that is not their own?

03_Landing Method

c. Embodied Actions



WHERE DOES MY BODY ENDS AND THE SITE BEGINS ?

Embodied Actions marks the initial phase of Landing, positioning the body of the seeker not only within the present moment but also striving to reconstruct a past time and approach to the material memory of the territory. By situating the body in relation to the natural processes that shape the place, this phase seeks not only to understand these processes corporeally but also to grasp how these forces impact us within our own human bodies. Simultaneously, it hints at the forces exerted by our bodies on the site.

A fundamental aspect of this phase of the design process is documenting the actions taken to understand time and space within each of these processes.

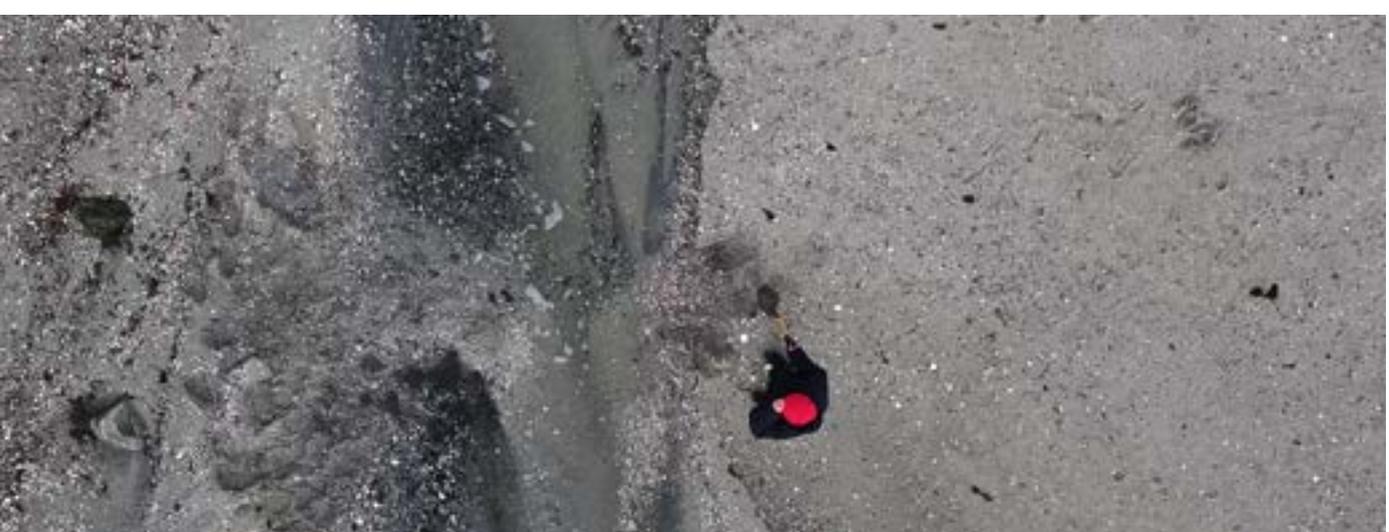
Unveiling time and space through videos—similar to how a microscope dissects scale to reveal hidden patterns—my tool, in the form of video, enables a detailed exploration of time. I intricately dissect its dimensions, delving into the intricacies of how and when my body became intertwined with the site and its material conditions. The significance lies in the embodied memory, a vital element for recalling those precise moments, allowing for a nuanced understanding of the temporal and spatial dynamics at play

“I’ve never been able to theorize about the way I treat time. But I’m very interested in complexity and layers... I only work with time in that I deal with it as a material that I manipulate, and divide, and rearrange.”

—JOAN JONAS in conversation with JAMIE STEVENS, WATTS INSTITUTE, 2014

**Tools present in this stage:
TIME as a material
VIDEO as a tool:**

Time-lapse photography is integral to my research, serving as a key tool for focus, refinement, observation, and connection following the execution of embodied actions. By reviewing these recordings, I can revisit and analyze my activities at specific moments, gaining insights into what was occurring on various levels and scales.



Drone footage: I utilize drone footage as a tool to examine my body’s relationship with the landscape—its textures, complexities, and movements. This technology offers a unique vantage point and perspective, providing a valuable distance that helps me understand the scale of my body within the landscape. By studying drone imagery, I can draw conclusions and insights into how the landscape responds and changes as I navigate through it. This visual approach deepens my understanding of spatial dynamics and illuminates the impact of human presence on the environment.

Gopro Footage: For each performance I undertake, I attach several GoPros to different parts of my body—such as legs, ankles, back, chest, and head—depending on the action. This approach allows me to discern how various parts of my body experience these actions: how my feet touch the ground or how my back interacts with water. Beyond visual observation, this setup enables me to listen to my body within the landscape, capturing both the sights and sounds of my embodied experiences.

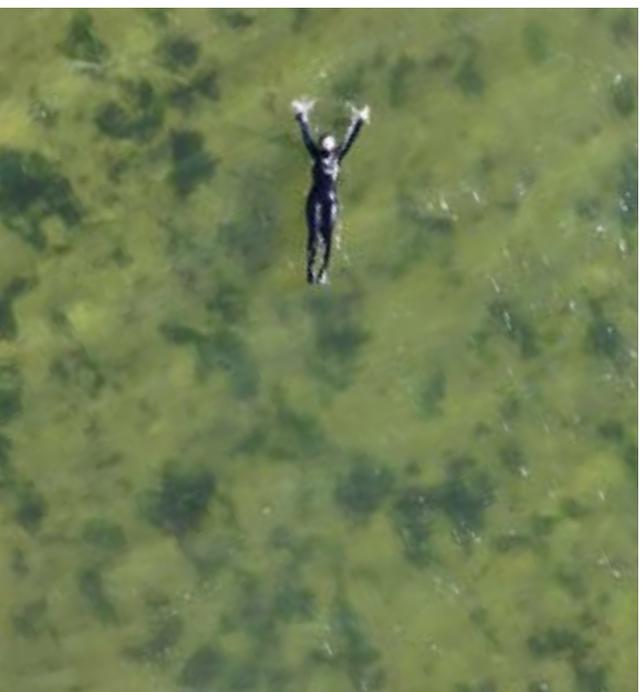
The actions described below were undertaken to gain a more profound understanding of the processes and phases inherent in the natural cycle of clay as a material. I immersed my body in each of these phases on a territory where, over many centuries, these processes have unfolded.

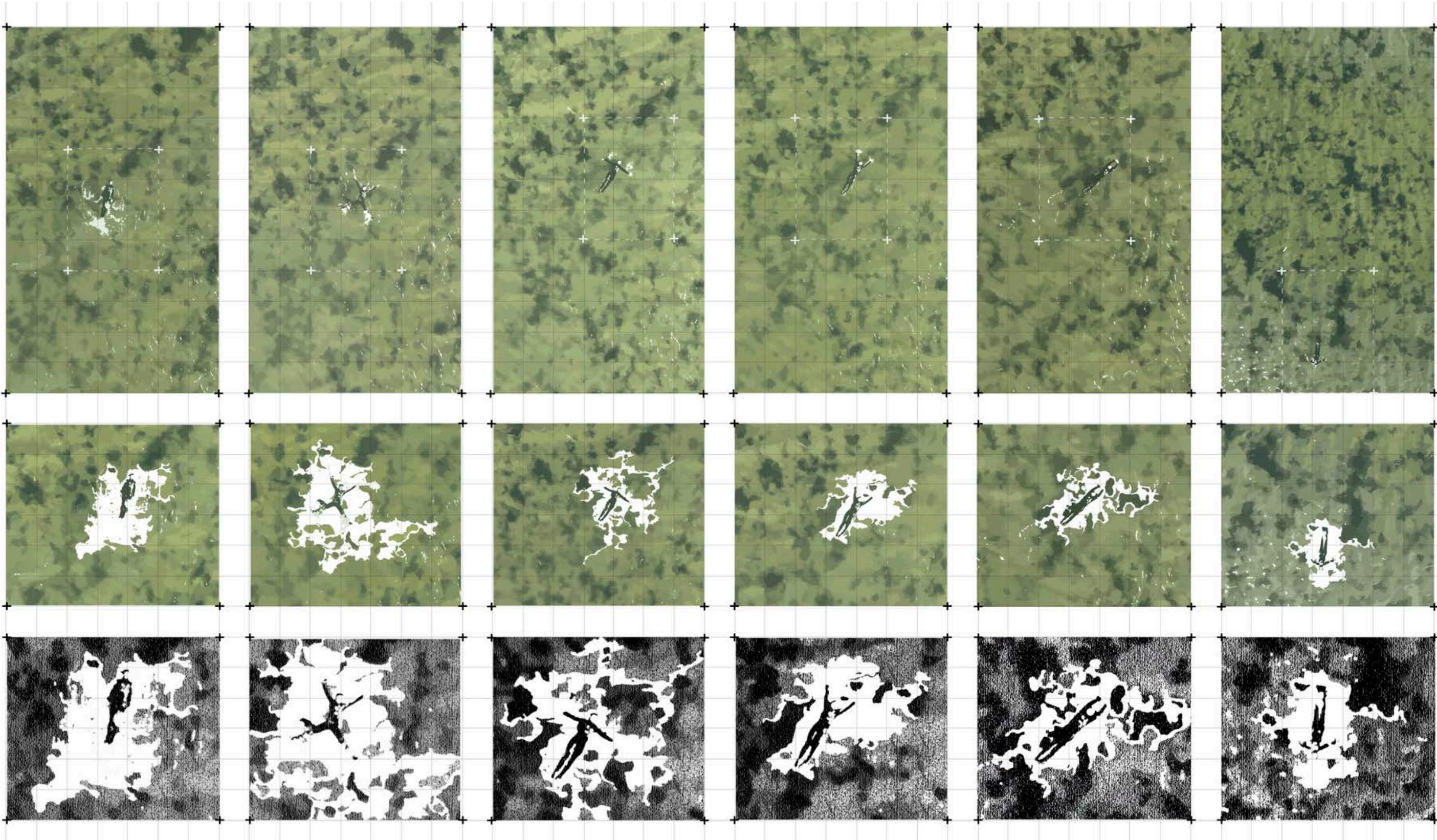


“Embodied Actions”, RENATA BERKA, RISP BEACH, 2023
*All of these actions were developed in collaboration with the class I had the opportunity to take with SHONA KITCHEN (DIGITAL MEDIA DEPARTMENT, RISP, TECHLANDS)

Floating at RISD beach

It alludes to the natural dispersion of clay particles. My body, akin to clay, surrenders to the influence of the tides, resisting no more than the weight it inherently carries.

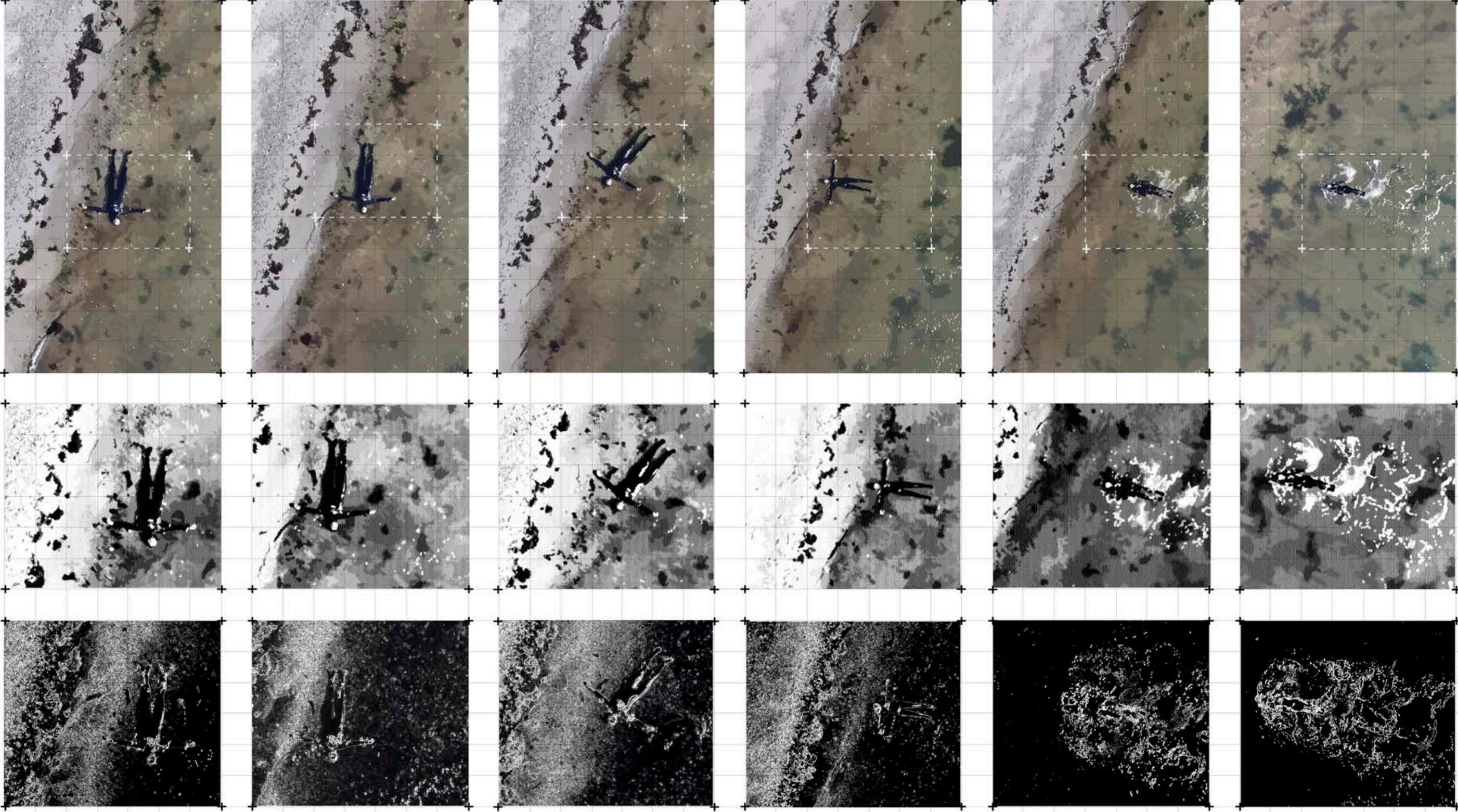




Landing at RISD beach

Natural accumulation of clay particles.
The body, swept by the tides, reaches the shore.
A distinct boundary becomes essential for the
accumulation process to unfold.

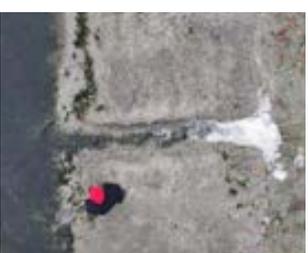
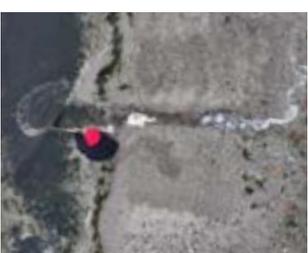
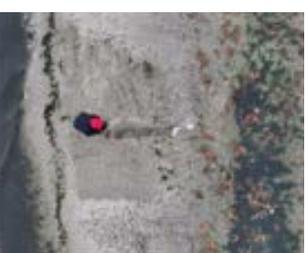
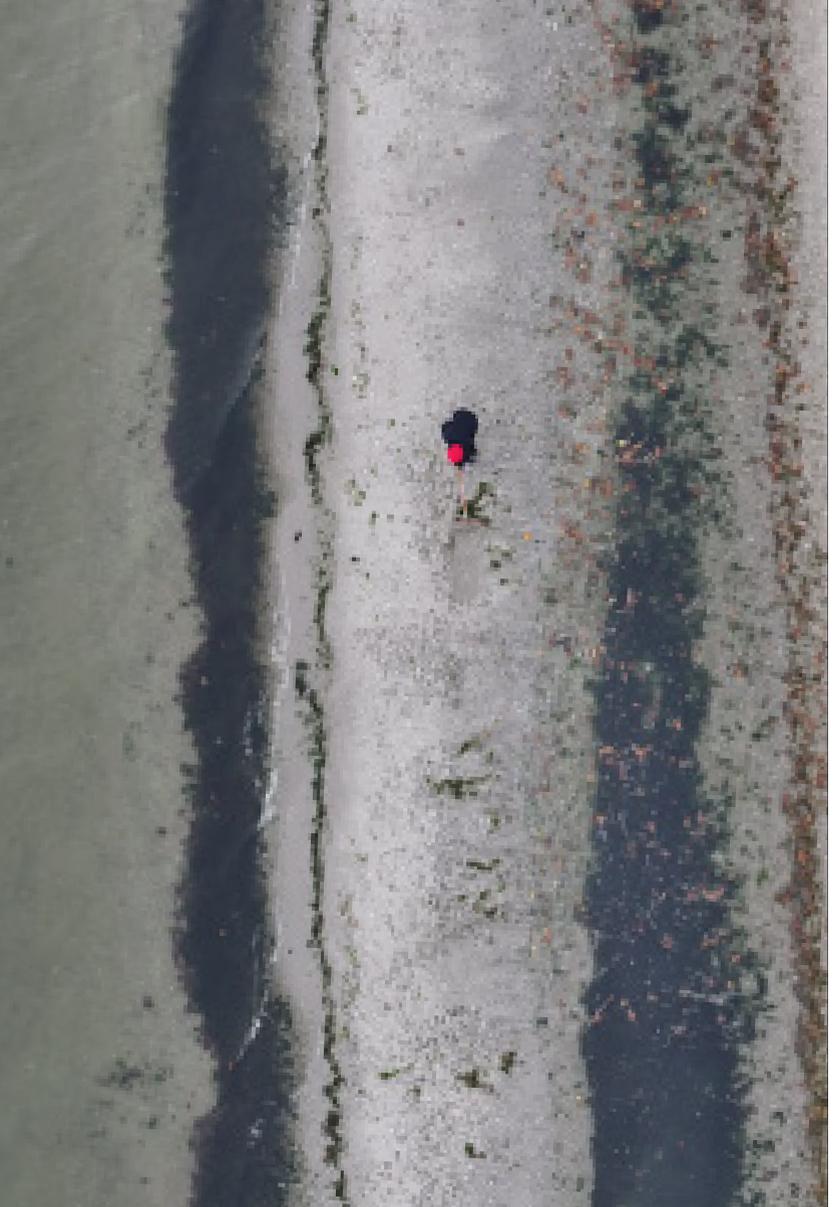




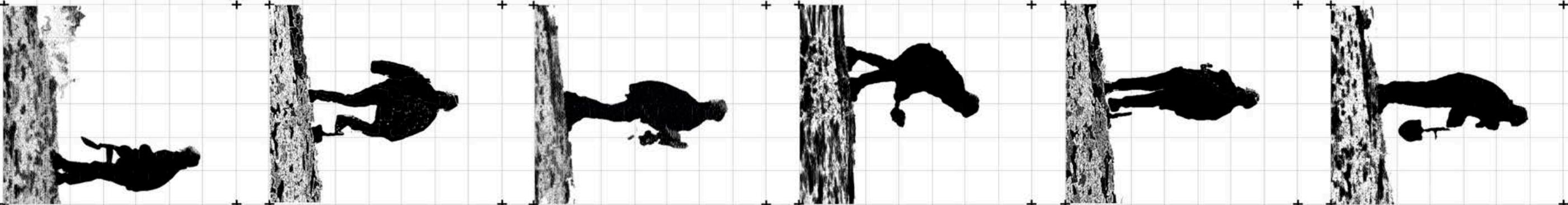
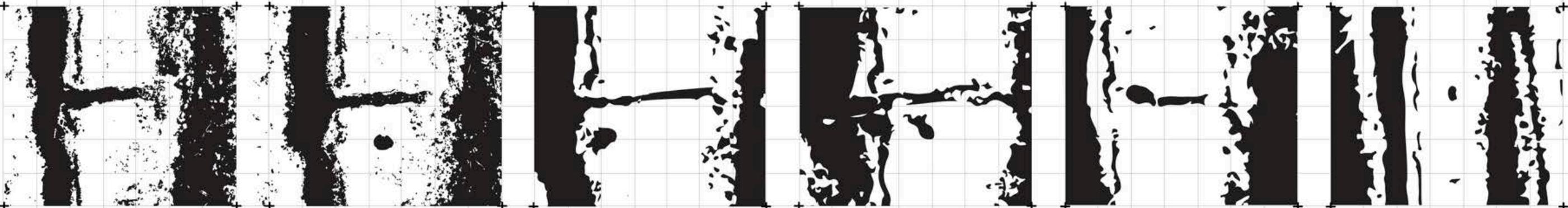
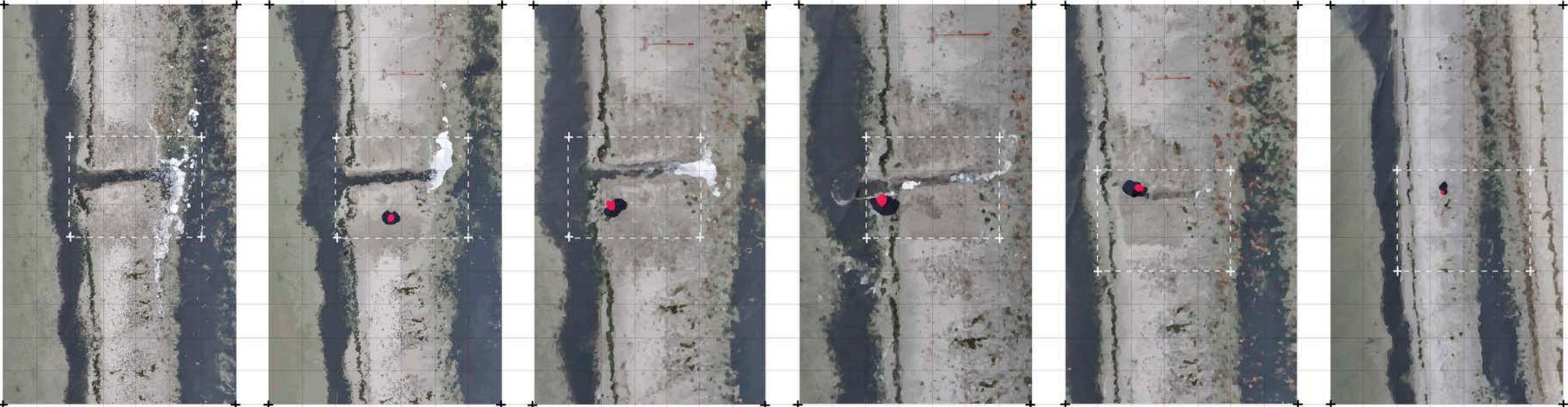
Digging at RISD beach

Human extraction of clay.

Upon identifying the chosen site, the process entails excavating the material and transferring it to another location. This act of digging holds the transformative power to substantially reshape the terrain. It requires the consideration of the energy investment required for the meticulous movement of this material, a testament to the human impact on the landscape.



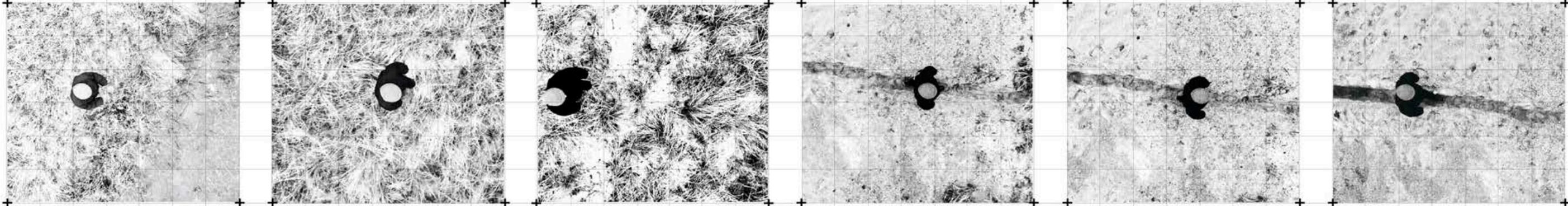
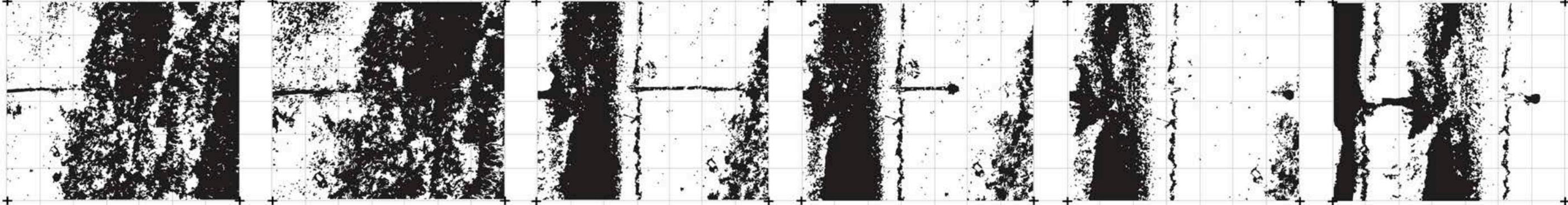
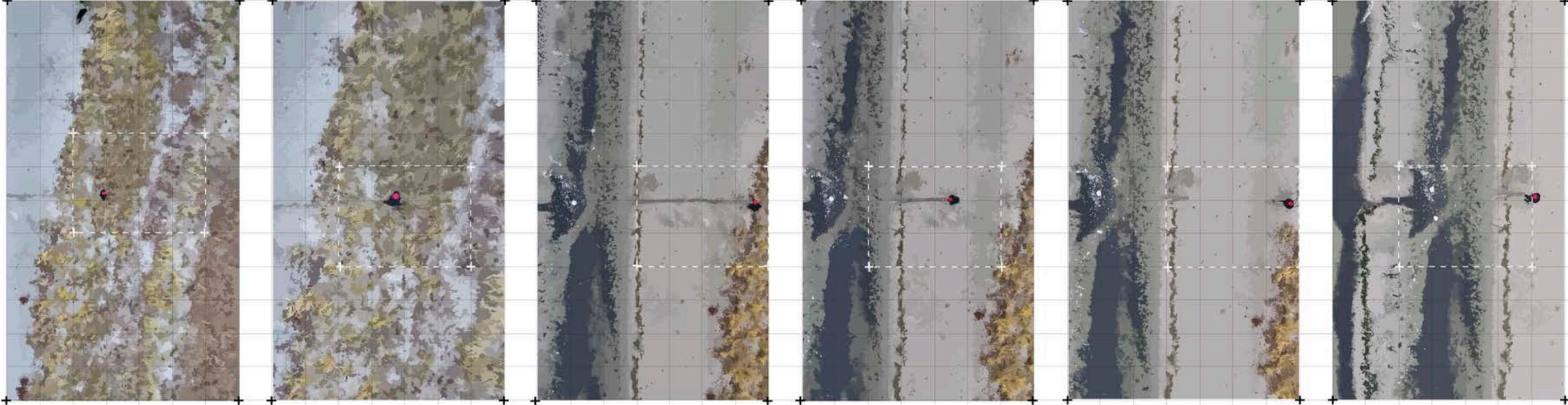
Images by TANNIPE MORE



Walking at RISD beach

Shaping clay. I traversed the same path repeatedly, imprinting upon the landscape. While digging may abruptly reshape the form, the act of walking, with the consistent pressure of our bodies, can subtly and continually influence the terrain. This physical engagement serves as a reminder that the weight and movement of a single entity possess the potential to gradually transform

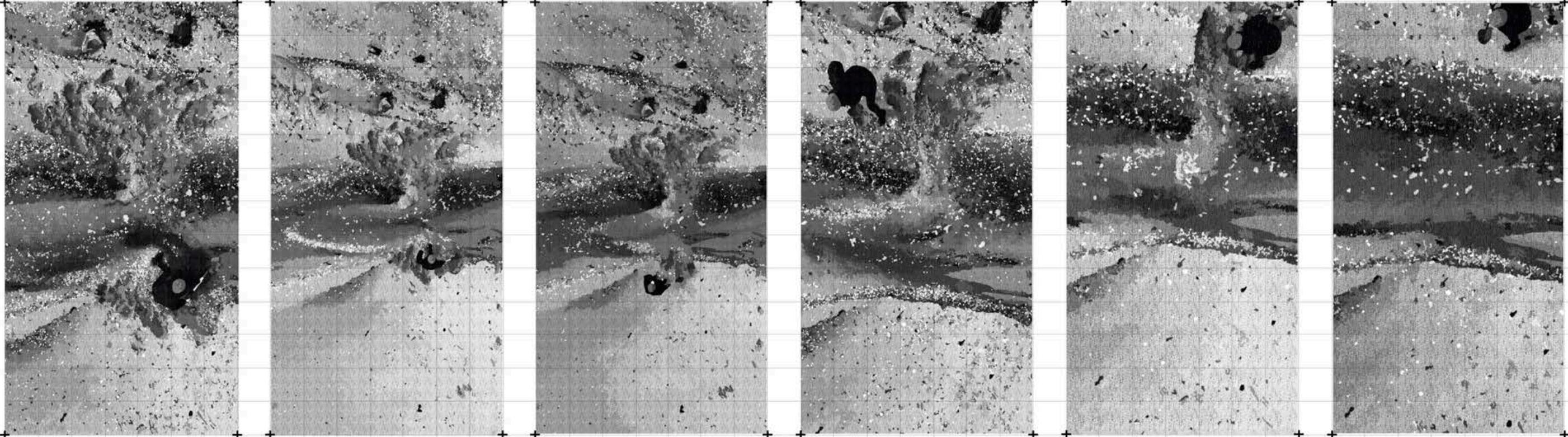
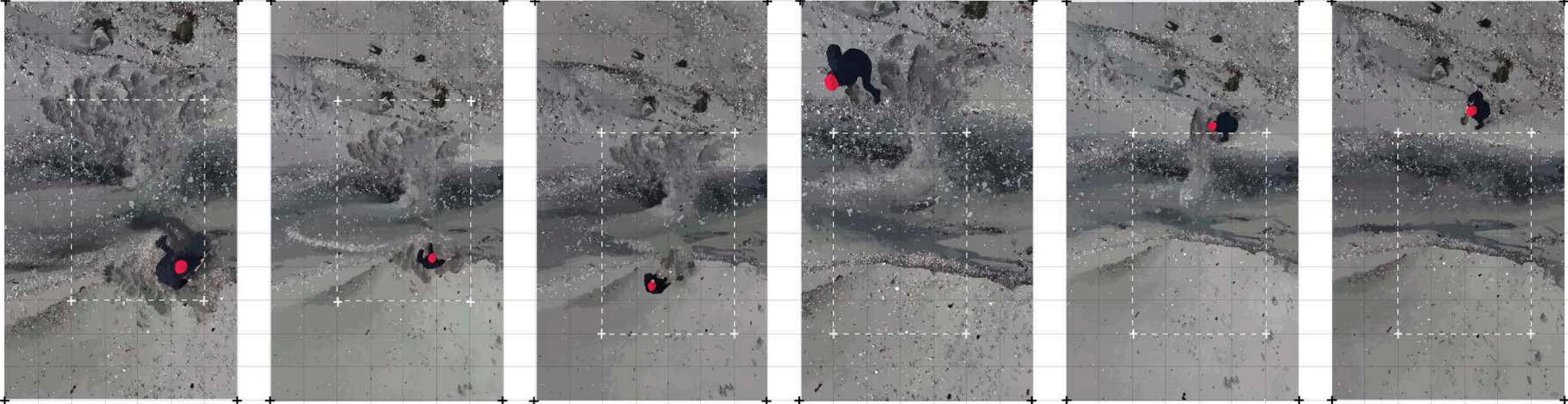




Filling at RISD beach

The transformation of clay extraction sites. Reversing the impact of excavations by refilling a water channel with soil appears deceptively simple. However, the task becomes a nuanced dance with the force of water. As we act, the water responds by heightening its potency and speed, eroding almost every effort to counter it. This contemplation delves into the dynamics of forces, the scale of our actions, and the perpetual cycle of humans constantly constructing and deconstructing our interventions in the natural landscape.

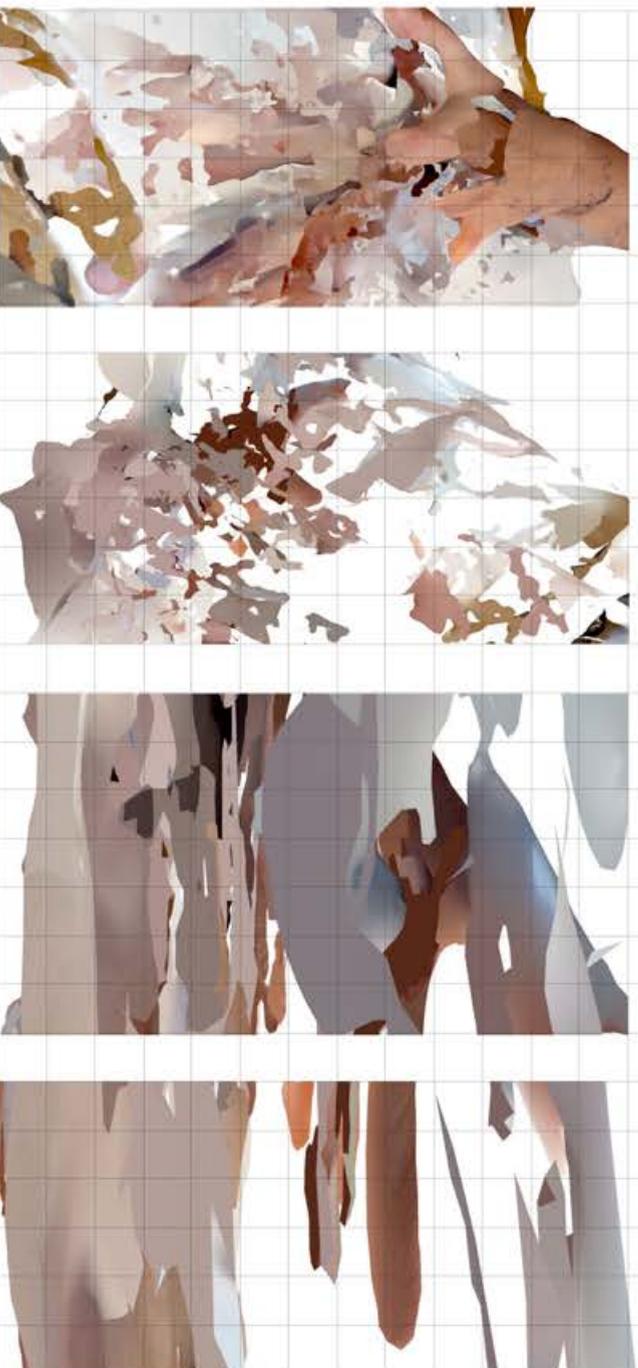
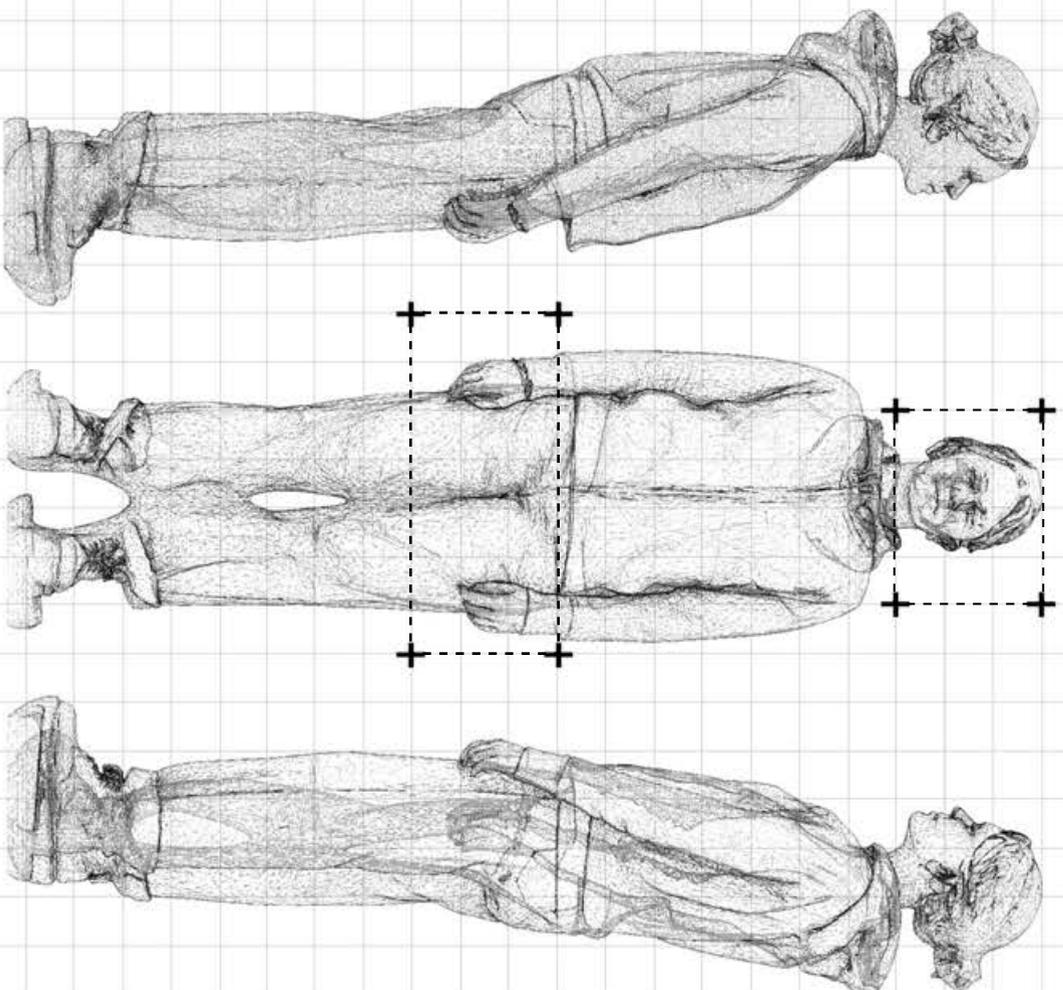
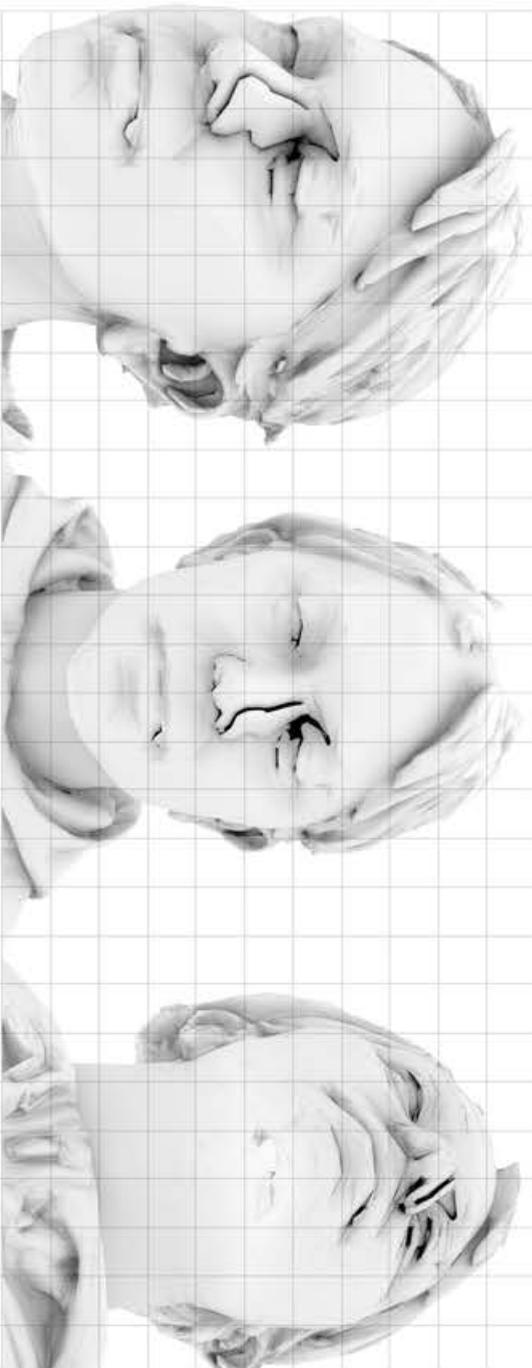




my body, my site, my material

_Breathing shapes spaces

“Breathing shapes spaces.” 3D scanning my body, much like one scans a material or a site for meticulous examination, measurement, and study. It involves comprehending that even the subtlest movement caused by breathing, aimed at infusing oxygen into the body, has a transformative effect. It reshapes, creating spaces for activities to unfold and forming voids that invite fulfillment. The rhythm of breath marks my body, just as my body leaves its imprint on the territory, and my hands shape the clay.



03_Landing Method

d.Verbs to nouns, nouns to verbs



MATERIAL EXPLORATIONS: _TRANSLATING EMBODIED ACTIONS
INTO MATERIAL INTERACTIONS

I decoded the information from the videos and translated it into drawings and non-representational models, facilitating a deeper understanding of the relationship between my body, the site, and the materials present at that moment of the performance. I translate these actions—expressed as verbs—into material explorations by analyzing the elements involved and their agencies in each case. I then translate each of these agents into materials, considering how they interact collectively in a subsequent action, often derived from the initial verb.

Time, viewed as a material, also plays a critical role in the interaction of these elements. By translating one action into another, I explore the necessary time for actions to unfold differently. Time remains a material I manipulate, now embodied in other elements. This approach helps me comprehend the dynamics of these instances and how thresholds emerge within the landscape.

I am interested in creating models that go beyond representation or mimicry. Rather, I aim to develop models that, as Jane Blocker describes in her analysis of Ana Mendieta's work:

“put into effect the
relation they name:
they produce
the condition”

Materializing without direct representation is an ongoing concern that shapes my artistic journey. Acknowledging that representing thoughts inherently involves abstraction, I am deeply intrigued by the idea of engaging with processes—unfolding narratives and meaningful encounters. These aspects not only pose open-ended questions but also serve as the driving force behind the development of my ideas.

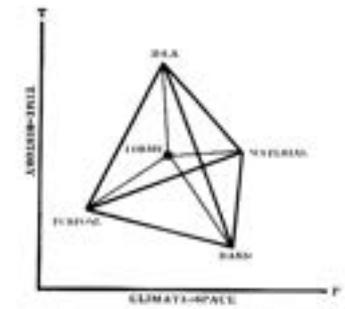
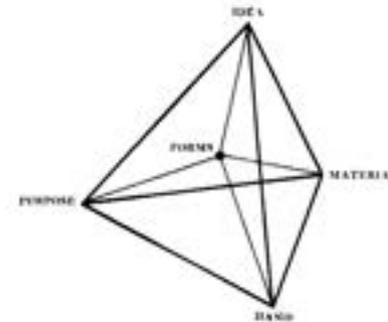
Throughout several years of material investigations, I have always used Richard Serra's list of verbs as a foundational tool to understand how to interact with materials. As Serra explains, this list represents more than just a catalog of ways materials can interact—it encompasses our own presence and actions. It's important for me to acknowledge that my hand, as it performs on-site, is the means through which materials are manipulated and brought into contact. I strive to understand the intricacies of these interactions.

In an in-progress paper titled "KNOWLEDGE IS A SHIFTING FORM: FORMS IN JAPAN AND RICHARD SERRA'S 'VERBLIST'," Namita Gupta Wiggers suggests that Serra's list may have been inspired or appropriated from the book "Forms in Japan" by Yuichiro Kojiro. However, this assertion is part of an article titled which is still in progress. Provisional as this assertion may be for the moment, the author nevertheless mentions: "The paper is in process and explores appropriation, Orientalism, action and contemporary art and craft, Japanese design, the impact of Asian Americans on US culture and contemporary thinking, and poses a question for further study: what does it mean that contemporary conceptual art in the US is based on craft, Asian, and Asian American ideas?"

While I can't delve deeply into this topic as the article isn't yet published, I find certain ideas from the book "Forms in Japan" intriguing for my research. The book suggests that actions leading to form are part of a coordinated system that considers time, climate, and history. It discusses a network of relationships, where human manipulation of materials, as implied by Serra's list, is just one aspect. Other agents, such as time and place, also influence the shaping of final forms.

In this context, both time and site are crucial factors in understanding how processes unfold and result in specific forms. This chapter presents material explorations I conducted to delve deeper into the actions I wanted to investigate, like floating, landing, and digging. In each experiment, the time required for the process to unfold and the situational conditions play a vital role in determining the final form. My actions on the materials are just one part of a complex network of factors influencing the outcome.

to roll	to curve	to scatter	to modulate
to crane	to lift	to arrange	to distill
to fold	to unlay	to repair	of waves
to store	to impress	to discard	of electromagnetic
to bend	to force	to pair	of inertia
to shorten	to flood	to distribute	of convection
to twist	to corner	to surfact	of polarization
to dapple	to rotate	to complement	of refraction
to crumple	to swirl	to enclose	of simultaneity
to shair	to support	to surround	of edges
to bar	to hook	to encircle	of reflection
to chip	to suspend	to hide	of equilibrium
to split	to hang	to cover	of symmetry
to cut	to collect	to wrap	of fluctuation
to sever	of tension	to die	to stretch
to remove	of gravity	to tilt	to bounce
to simplify	of entropy	to bind	to erase
to differ	of nature	to unave	to spray
to disarrange	of grouping	to pour	to systematize
to open	of layering	to match	to refer
to mix	of jettison	to laminate	to force
to splash	to grasp	to bond	of mapping
to smot	to lighten	to hinge	of location
to spill	to bundle	to mark	of context
to droop	to heap	to expand	of time
to float	to gather	to dilute	of carbonization
		to light	to continue



TOP_ "Verblast" RICHARD SERRA, 1967 (image via MOMA)
 BOTTOM_ "Forms in Japan", YUICHIRO KOJIRO

**_Diverse Mediums, Techniques, and Materials
A Methodical Selection**

As I return to my process, the selection of materials that will carry out the action becomes crucial. These materials are defined by their interactions with each other, as well as with factors such as heat and humidity.

In the realm of my continuous research as part of the Sustainability Design Lab focused on clay, this material emerges as an undeniable element to explore. However, I am drawn to the idea of juxtaposing it with another material, creating a dynamic interplay where both react and exchange energies, delving into different yet interconnected worlds.

Additionally, while taking the Alchemy class in the Glass department (RISD), which emphasizes material interactions and behaviors, I became fascinated by exposing clay to high temperatures to observe its transformation with heat and moisture loss. As a result, I've chosen to explore the combination of clay and molten glass through various techniques.

Elements and tools present in this stage:

CLAY: One of the standout characteristics of this material is its capacity to absorb and release water, undergoing transformation in the process. After conducting a sensory study of the diverse soils in the territory, alongside industrial clay, I started to grasp how clay interacts with and influences other materials, extracting water or heat even from simple contact with my hand.

To truly comprehend this material, I've always felt the necessity of connecting it with others. I believe it's through these interactions with different dimensions that I gain the most profound insights and learning experiences.



HEAT-TIME

“Fire has no precise consistency, but its presence can actively transform matter into different states. ... Out of a river of fire, all manner of shapes later materialize and solidify.”

—JOSEP LLUIS MATEO

**Extracted from the “Material Gestures Workshop”
about HEAT led by the Architect Anne Holtrop
at the ETH school:**

“Time does not exist, according to British physicist Julian Barbour. He argues that we have no evidence of the past other than our memory of it, and no evidence of the future other than our belief in it. “Difference merely creates an illusion of time, with each individual moment existing in its own right, complete and whole.”

“What we notice as variations in shape, or changes in the position of objects in our surroundings gives us an illusion of time, but according to Barbour’s theory, they are simply differences between states of matter.”

In this context, I can understand that heat and time embody the essence of the site as discussed earlier—the site in relation to my body and the material. Heat introduces specific conditions that impact the materials. While exposing clay to heat would inherently alter its composition, structure, and proportions, I was intrigued by the idea of exerting more control over this process—deciding when to apply heat, where to focus it, and how to introduce it abruptly.

Thanks to the Glass Department at RISD, I’ve had the opportunity to take two classes that have significantly deepened my understanding of heat as a material. These classes have allowed me to explore its properties and experiment with glass in conjunction with clay.



GLASS

Among the various characteristics of glass, I am particularly interested in highlighting its contrasting behavior compared to clay. Glass becomes viscous and manipulable when heated, whereas clay rigidifies as water is extracted during heating—similar to how glass behaves upon cooling.

Exploring the contrasting heat behaviors of glass and clay intrigued me, as it provided an opportunity to investigate their relationship further. This exploration allowed me to gain more control over their interaction through the various techniques detailed below.

GLASS BLOWING_ Before starting the glass blowing process, the glass is placed in a furnace that heats it to a temperature of 1400 – 1600°C (depending on the type of glass used), making it soft and malleable. Next, the glass is gathered by inserting one end of the blowpipe into the furnace and rolling it over the molten glass until a “gob” of glass attaches to it. The next step is to roll the molten glass on a flat metal slab called a marver. The marver acts as a way of controlling the shape and temperature of the glass. The glass is taken back and forth from the marver to the glory hole, a hot chamber used to reheat the glass, in order to make it malleable again. To give the glass colour and design, the “gob” can be dipped in crushed coloured glass. After colouring, it is taken back to the marver where it is rolled again. To give the glass its final shape and size, it is blown into with a blowpipe, creating a sort of bubble of glass, and manipulated using a range of tools, such as a cast iron cupping tool, folded wet newspapers and wooden boards. To carry out this process, the blowpipe holding the glass must be placed on a steel stand. Then, the glass artist has to blow into the blowpipe while rotating it at the same time.

Throughout this process, the glass needs to be continuously taken to the glory hole to be reheated because blowing it cools it very quickly. The final step is to remove the glass from the glass pipe. To do this, steel tweezers called jacks are used to separate the bottom part of the blown glass while rotating the blowpipe. Thanks to the separation with the jacks, the glass can be removed from the blowpipe with one solid tap. The last step is to take the blown glass to an annealing oven, which allows the glass to cool slowly over several hours, as it is highly perceptive to cracking when exposed to rapid temperature changes.

BLOW MOULDING_ A gob of molten glass is gathered onto the opposite end of the blowpipe and a little air is blown into it through the tube. This preliminary shape is then lowered into a mould and inflated by blowing until it has assumed the desired shape and pattern of the mould. The mould may be constructed from one disposable piece, in which case it is broken off the glass piece, or it may be made from two pieces and able to open, which allows the mould to be removed and reused.

SAND CASTING_ When sand casting, a design is placed or carved into treated serpentine sand to create a mould. Then, using a ladle of molten hot glass, the glass is poured into the sand mould and given time to cool. Once the glass is cool to touch, the sand can be pulled away to reveal a solidified casting with a rough textural finish, which can then be polished.

POURED GLASS_ It is possible to pour glass in a range of decorative ways. One such technique is called Trailing, where the worker pours glass threads, often in a contrasting colour, around a free-blown glass shape as it spins.

Extracted from the Material Gestures Workshop about GLASS led by the Architect Anne Holtrop at the ETH school

The upcoming series of experiments, titled “Vessel from a Breaking Vessel,” derives its name from the concept of a vessel that disappears—a structure that humans ingeniously use to impose limits or boundaries on a natural element. In this intricate interplay, humans construct vessels not only to control but also to harness the forces of nature for various purposes.

Each of the actions mentioned in the previous chapter corresponds to a different material experiment, where various techniques are employed, sometimes combining two or more to achieve the desired action. The purpose of this phase is to further understand what occurs in each encounter.

The creation of the following models was made possible through the collaborative efforts of RACHEL BERWICK, SARA AHLI, and the entire class of ALCHEMY in the Glass Department at RISD.

01_Dissipate

floating

In the union of two materials, a process unfolds guided by their contrasting temperatures. Glass gracefully yields to an almost liquid state as it melts, while clay, in stark contrast, undergoes a metamorphosis upon sudden contact and solidifies.

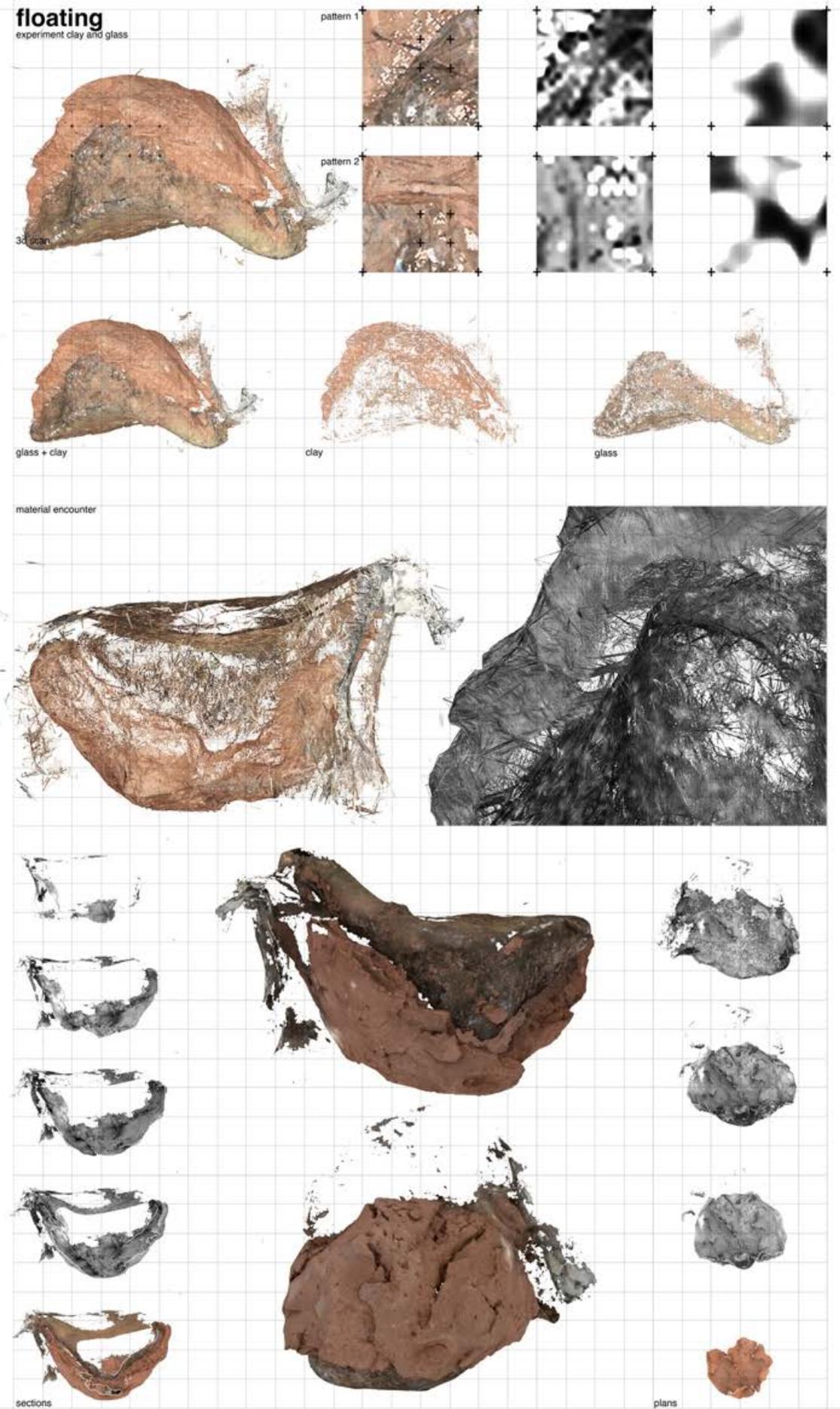
This inaugural experiment serves as an exploration of the interplay between wet clay and molten glass, aiming to measure the extent to which the clay dissipates upon its unexpected encounter with the liquid glass. Numerous experiments were meticulously carried out using diverse techniques, all with the shared objective of dissolving the clay vessel.

This encounter draws a parallel with the natural erosion required for clay particles to disperse in the ocean. The dissolution of the clay vessel becomes a metaphor illustrating the essential erosion necessary for the dispersion of clay particles.





floating experiment clay and glass



02_Accumulate

landing

This series of experiments delves into the intriguing realm of clay accumulation on a hot, mouth-blown glass piece. Stemming from a performance centered around accumulation, the contemplation shifted towards the necessity of a boundary for this material gathering to occur.

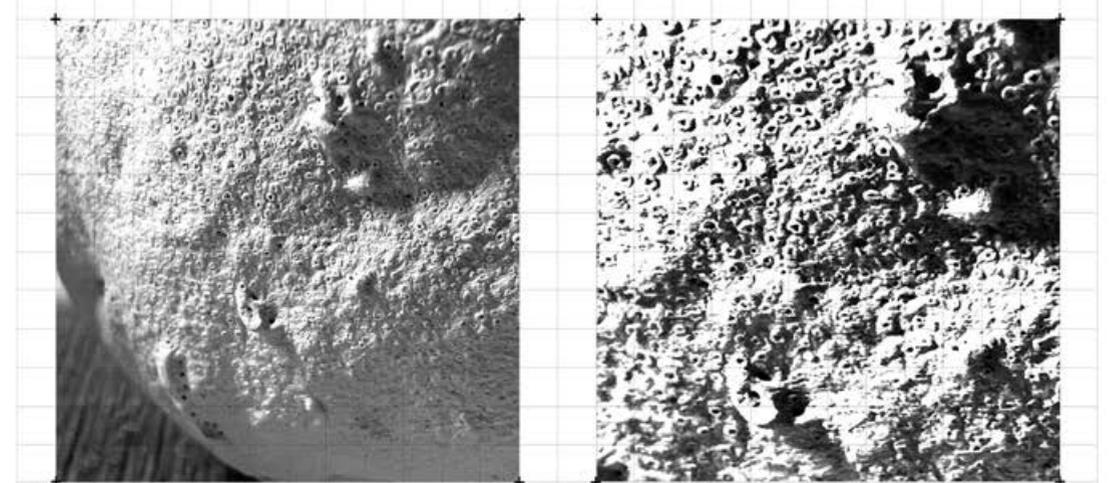
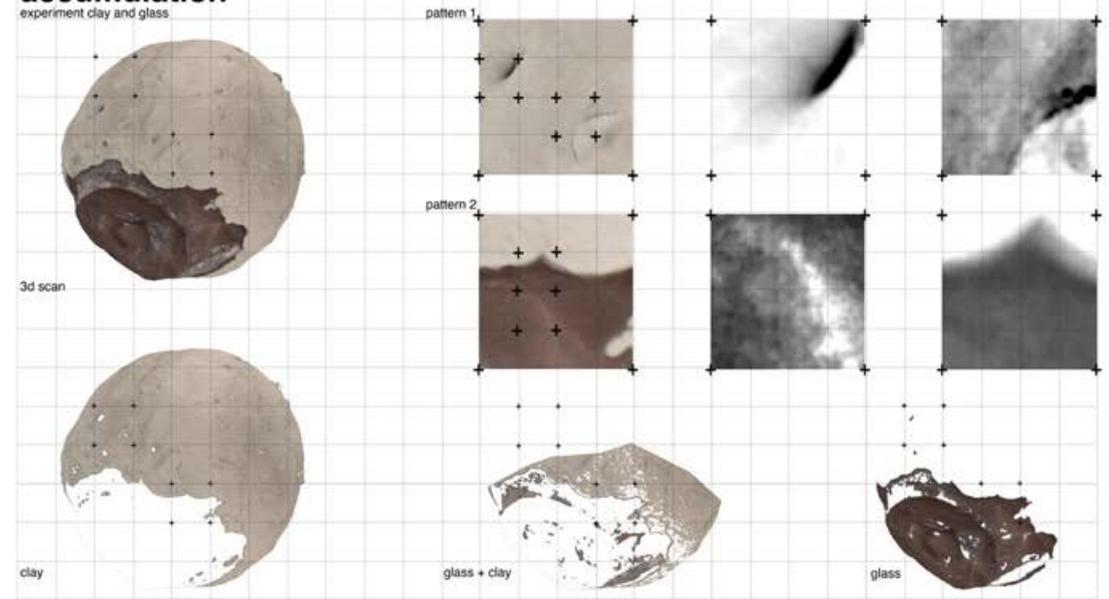
Through numerous experiments exploring the dynamics of accumulating clay onto a glass surface, a crucial conclusion was reached: the clay must be heavily diluted with water. This specific consistency allows the clay to withstand and acquire high temperatures, achieved through successive dippings of the glass piece into the clay bucket.



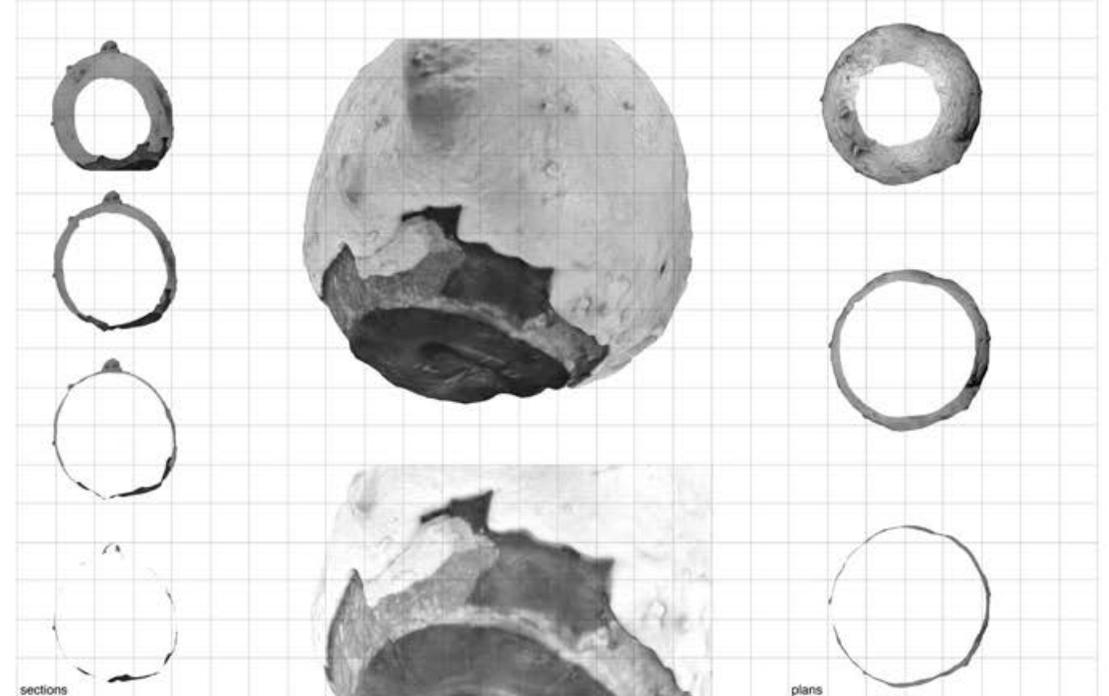


accumulation

experiment clay and glass



material encounter



03_Excavate

digging

From the embodied action of digging a canal between two bodies of water, a profound contemplation unfolded—an exploration of how a seemingly modest channel in the terrain could not only reshape its form but also orchestrate shifts in the processes and forces within both bodies of water.

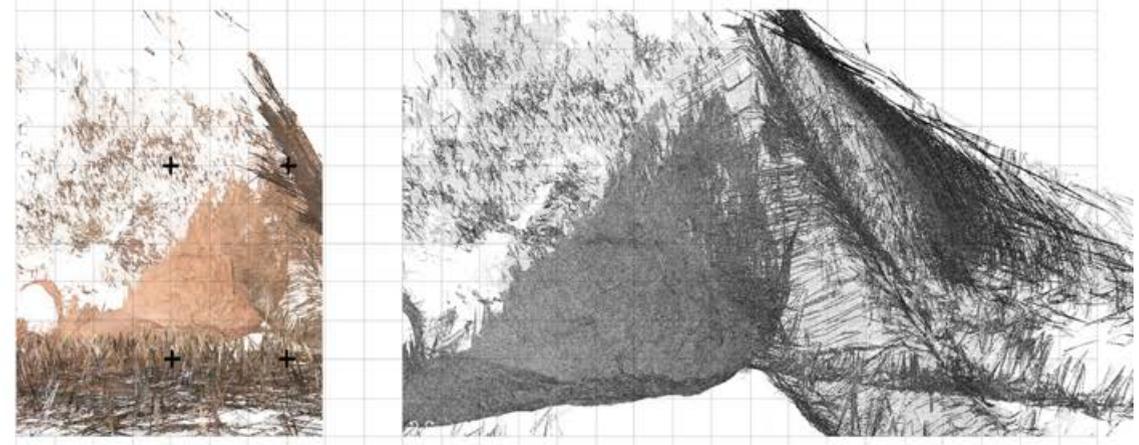
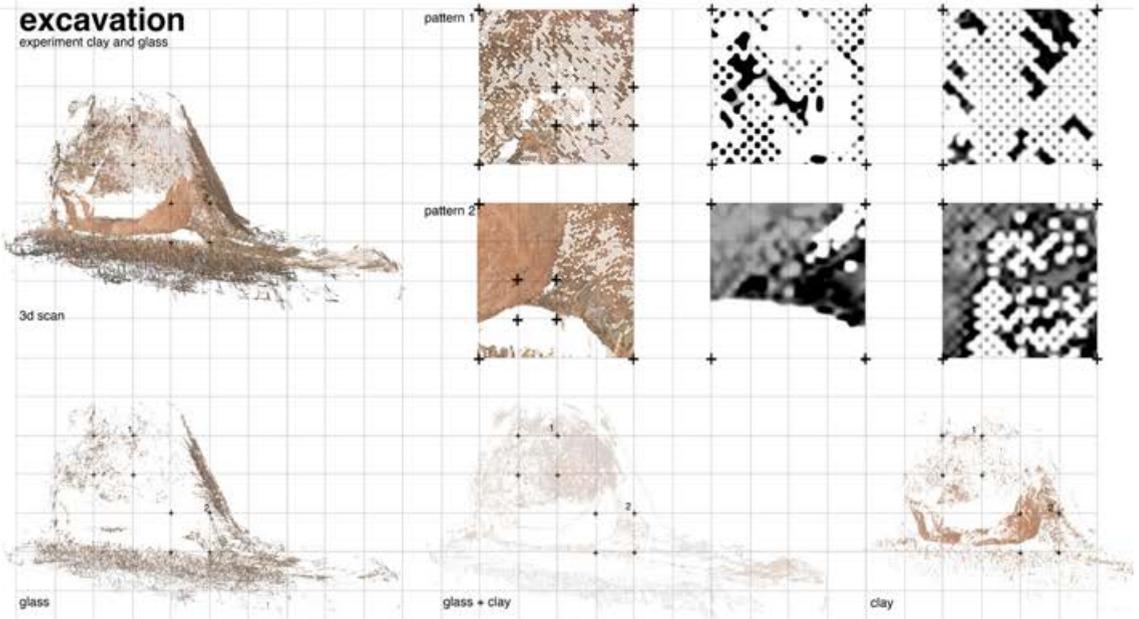
To bring this concept to life, I drew inspiration from the clay extraction at Brickyard Pond in Barrington, Rhode Island and the intriguing concept of material absence. The creative process involved crafting a clay vessel, infusing it with glass, sealing it with a clay lid, and encasing the entire piece once more with glass. The inherent weight of the glass encapsulated the material without embedding it, allowing for the near-complete demolding of the clay and revealing the negative impression of the initial vessel.



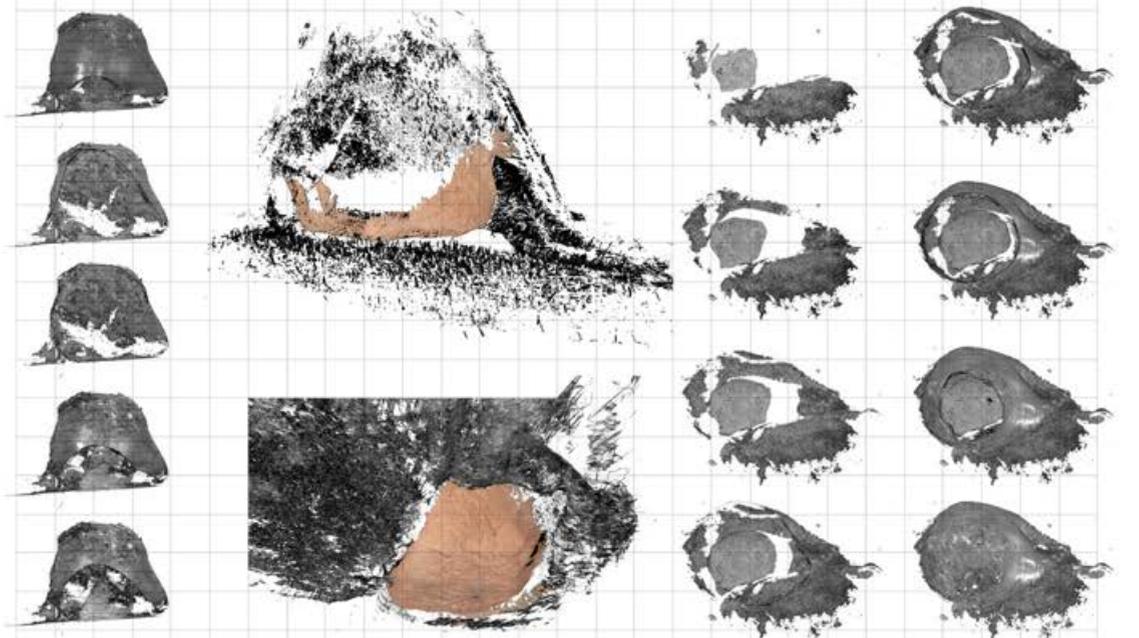


excavation

experiment clay and glass



material encounter



sections

plans

04_Shaping

walking

The simple act of walking has the power to leave an enduring mark on the landscape, especially when the terrain is responsive and malleable. Clay, in its moist state, possesses the remarkable ability to absorb even the most delicate impressions of the hands that shape it. In these experiments, I sought to bring my body's imprint as close as possible to the glass, aiming to leave a mark as it transitioned into a solid state.

To facilitate these explorations, I envisioned soft boundaries. A fabric covered with a layer of clay was rolled to form a vessel, inside of which a piece of blown glass was delicately shaped. As this process unfolded, my hands pressed against the fabric, compressing the clay and molding the hot glass. The result: blown glass pieces molded by my hands, accompanied by traces of dry clay on fabric, sometimes singed. This raises the question: Who leaves a mark on whom?



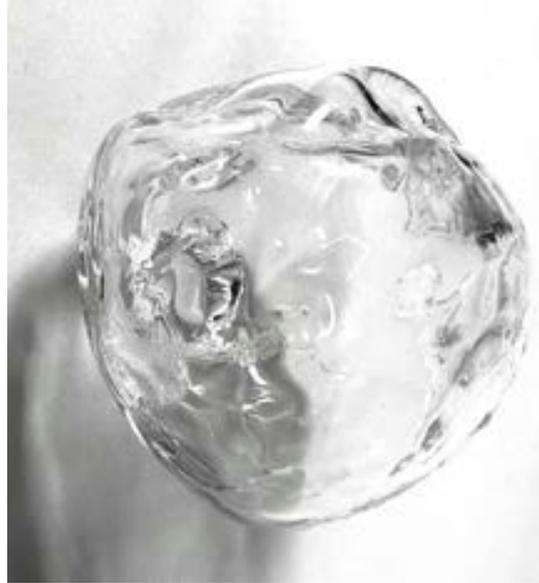


05_Cycle filling

From the unsuccessful attempt to fill the canal, I found inspiration in the human inclination to continuously create and dismantle. The experiment began with a glass vessel shaped by my hands, encased within another clay vessel also molded by my hands. Once the glass solidified, I submerged it again in liquid clay and fired it in a clay kiln at maximum temperature to melt the glass vessel, leaving only the now upright and solidified second clay vessel.

During this process, traces of molten glass escaped through the cracks in the clay walls. This experiment highlights that actions we perceive as definitive, both on a material and territorial level, may not be as conclusive as we think. The last vessel could be filled with glass again, and the cycle could continue. The question remains: what is gained and lost at each of these stages?





filling

experiment clay and glass

3d scan

clay

pattern 1

pattern 2

glass + clay

glass

material encounter

sections

plans



03_Landing Method

d.Verbs to nouns, nouns to verbs

EXPERIENTIAL DRAWINGS

These drawings serve as a reaction to the processes involved in creating the previously explained material explorations or an abstraction of the findings, utilizing the same materials or introducing new ones.

When critic Roland Barthes wrote about the work of artist Cy Twombly, he defined 'gesture' as a surplus of an action.

These drawings are a deliberate effort to capture the aftermath of the action, crystallizing the ongoing interaction between clay and glass. Canvas was chosen as the medium for its unique ability to respond to both elements, enabling a nuanced exploration of the spatial dynamics each material occupies.

They serve as a visual narrative of the event, distinct from the static nature of photographs. By incorporating another material into the discourse, they transcend mere documentation and become a tangible



Canvas played a crucial role in the entire process of creating 'Vessel from a Breaking Vessel.' For this particular experiment, several layers of fabric covered the clay vessel holding the molten glass, aiming to decelerate the process and capture the clay particles emanating from the vessel. Unfortunately, as the fabrics were dry, the latter objective was not achieved, leading to a shift in focus towards the glass and resulting in subsequent burns on the fabric





In this instance, the fabric was immersed in water and employed for manipulating the clay in the vessel production. Thus, before exposing it to the elevated temperatures of the molten glass, the fabric retained a thin layer of clay and remained moist. This imparted a certain resistance to the process, enabling it to capture some of the particles released during the extinguishing of the vessel. The moisture in the fabric also notably decelerated the explosion process.





These manifestations are the result of using this fabric with clay as an instrument to shape the blown glass bubble with my hands. It's evident not only where the heat was more intense, even breaking the clay, but also in some parts, the pressure of my hands on the fabric is visible, serving as a record of the process. A gesture is what remains after the action, as here, the presence of the action doesn't matter; through the gesture, I can intuit it.





As I worked with various types of clay in different states, I noticed that each left a distinct trace on the fabric, almost as if embracing it in unique ways. By making cuts in different areas, I aimed to identify which type of clay or state offered the most resistance to the incision. My conclusion was that the areas where the clay was in a liquid state, gradually absorbed by the fabric, exhibited the greatest resistance to tearing. Superficial traces lacked the strength to harden the fibers sufficiently, making them easy to break. On the other hand, when the clay layer was excessively thick, the cut passed underneath, as the fabric hadn't absorbed it. This reflection prompts consideration of these manifestations as a metaphor for the weight, forcefulness, or lightness our interventions in the landscape should possess to foster a resilient, cohesive system.









03_Landing Method

e.Responsive situated architectures

To achieve responsive architecture, I believe it's essential to shift our focus from outcomes to an immersive, embodied, and action-oriented process. Equally important is recognizing that our spaces are integral components of a natural system with their own inherent logics. Every action we take on the landscape has the potential to activate, nullify, or block other processes specific to that time and place. A process that prioritizes the spaces between bodies, materials, and site processes over the final form understands time as a crucial element of the equation. Responsive architecture adapts, mutates, changes, and submits to the uncertainty of the future. By positioning ourselves at the threshold between site and architecture, we acknowledge that we are part of a complex system we're striving to understand. Every architectural concept is a step towards comprehending how to engage with the landscape.

While the method described above can be applied to any territory, its emphasis on extreme contextual sensitivity underscores the importance of site selection. All performances were carried out at Tillinghast Place, in Barrington, Rhode Island, in the Fall,

Winter and Spring of 2024, and the subsequent experiments and conclusions are intricately tied to the unique context of this space and time. Each stage described above brought us closer to understanding, reading, and experiencing the territory.

This approach involves interpreting the territory without preconceived notions of what needs to be built or solved, placing us in a delicate design moment.

As an interdisciplinary practitioner, I transition from one discipline's reference scales to another, informing them with collected information from verbs, actions, interdependencies between materials, and processes. At the architectural scale, which inherently engages with site, material, and body, I strive to re-examine the territory through the lens of exploration. This exploration is informed by all the information gathered in previous steps.

I return to the verbs and materials, aiming to understand the processes at play. Is there something within reach that allows me to create a visible threshold at the scale of landscape architecture?







Ecological implications
Reading the salt marsh

“Ditches helped colonial-era farmers drain marshes. With a dry marsh, cattle could graze and farmers could cut marsh hay. In New England, early colonists drained, ditched and diked marshes to enhance the production of this hay. As a result, plant diversity declined significantly. The highways of ditches shown here can turn a healthy marsh into a dense monoculture of turf grasses. Yet more ditching for insect control in the 19th and 20th centuries reduced plant diversity even more.”

— MARK BERTNESS, BRIAN REED SILLIMAN AND ROBERT JEFFERIES
“Agricultural practices, land development and overharvesting of the seas explain complex ecological cascades that threaten our shorelines”

“A pair of paradoxes:
Salt marshes need salinity and sediments from tidal flooding - BUT increased flooding from SLR may be drowning them. Salt marshes need to drain so their roots maintain energy balance - BUT draining of the underlying peat results in oxidation & subsidence, increasing susceptibility to drowning as sea level rises.”

— DAVID BURDICK, Research Associate Professor, Jackson Estuarine Laboratory, School of Marine Science and Ocean Engineering.



“Treatment consisted of mowing a sufficient area of salt marsh grasses on one or both sides of the treatment ditch to supply the entire length with a uniform 15–20 cm hay layer prior to compaction. Mowing was completed with a self-propelled brush cutter with a 66 cm wide deck. After mowing, hay was allowed to air dry for 24 h prior to loosely braiding and placement into the treatment ditch. The loosely braided hay was lightly compacted by foot and secured to the ditch bottom with 59 kg tensile strength sisal baler twine pretreated with vegetable oil and softwood grade stakes.”

— DAVID BURDICK, Research Associate Professor, Jackson Estuarine Laboratory, School of Marine Science and Ocean Engineering.



Images from: Mitigating the Legacy Effects of Ditching in a New England Salt Marsh by DAVID BURDICK, Research Associate Professor, Jackson Estuarine Laboratory, School of Marine Science and Ocean Engineering.

Building on recent research by David Burdick, this approach advocates for sedimentation and revegetation without compromising the marsh's hydrology. Various actions, including mowing, digging, filling, and weaving, should be scheduled at different times for the restoration of the salt marsh at RISD Beach.

These actions resonate with the central focus of my creative approach: harvesting, excavating, and replenishing. In conversation about my project, landscape architect Ann Kearsley proposed that my interventions in the ditches could potentially bridge the physical effects of centuries of human land use, offering marsh species a chance to actively contribute to the restoration of the landscape.

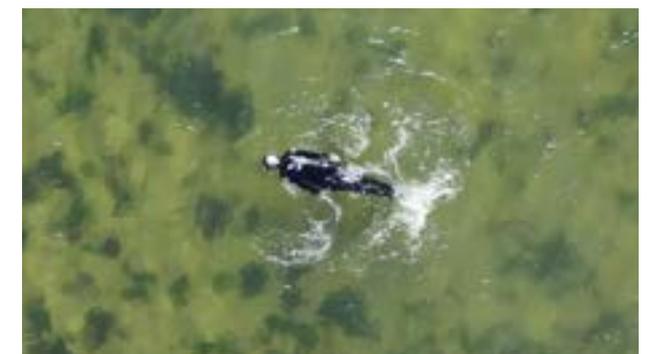
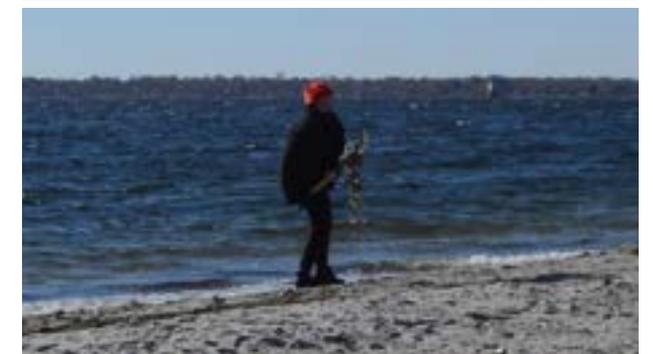


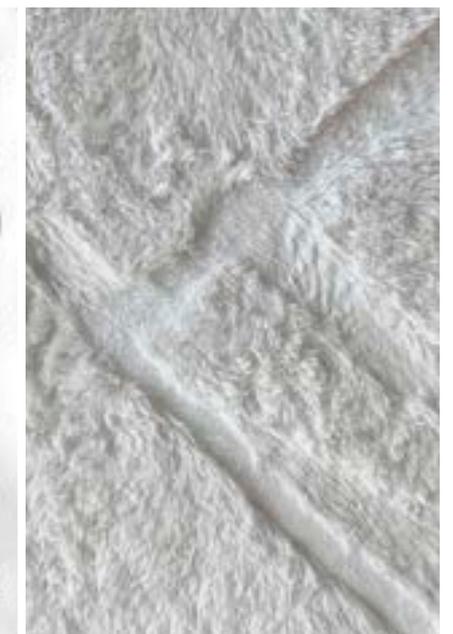
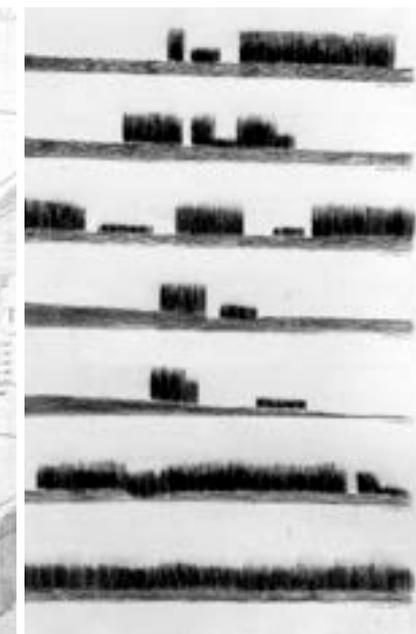
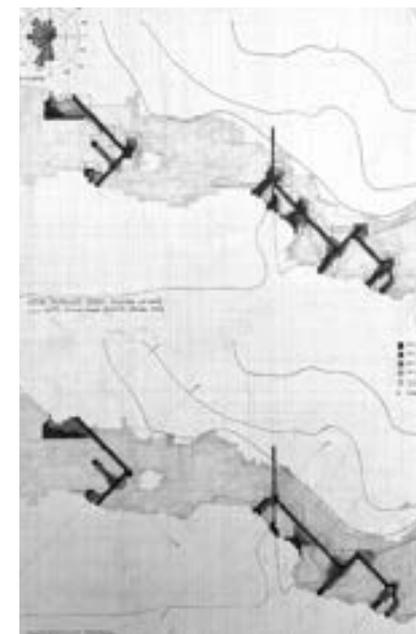
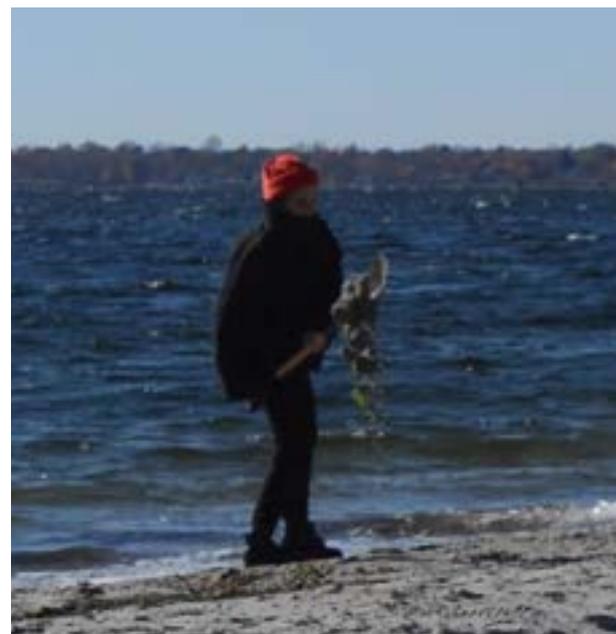
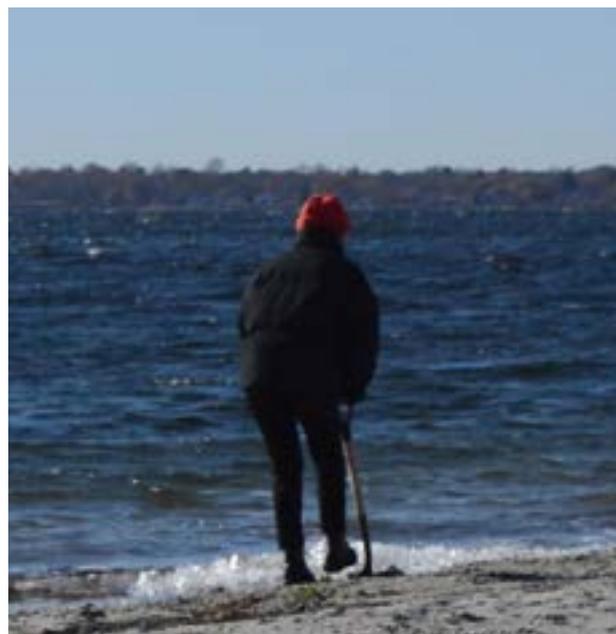
Top: RISD Beach 1995
Bottom: RISD Beach 2015

Project timeline: Harvesting, Digging. Filling, Weaving



Performances, RISD Beach 2023





Digging old channels perpendicular to the ocean

Directed Harvest, RISD Beach, Renata Berta, Studio Fall 2022





Renata assisting Olivia Newroz on her Techland work. Photos capture from Gopro attached to Olivias's head.



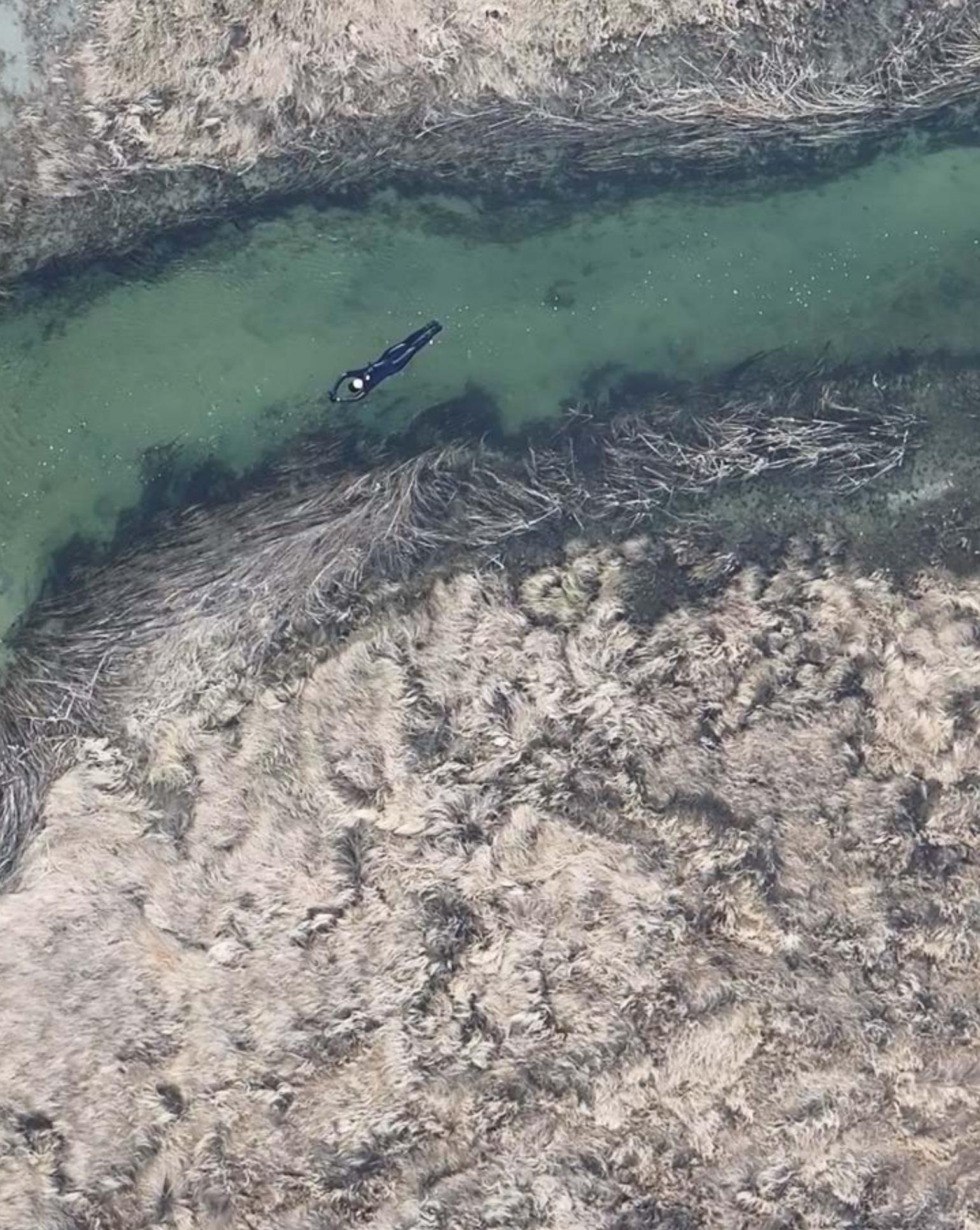


Weaving channels, RISD Beach, 2023

At this stage, we concluded that working on site restoration, particularly regarding the dredged channels for mosquito control, leads us to a type of performative, embodied architecture closely related to the site's materials. Through this process, I aim to demonstrate how we can design habitable spaces for ourselves and other species in the salt marsh while actively contributing to the site's restoration.

Up to this point, we have come to understand how the three elements -body, site, material- interact to form a threshold, where architecture emerges as a necessity in the relationship among them. At this stage, architecture itself does not yet exist; instead, there is the concept of how to relate the three bodies, the three materials, and the three sites.





04_Breathing

Case Study Salt Marsh Tillinghast Place, RI

My intervention will be situated within the salt marsh, a landscape constantly shaped by the tides and the fresh water draining through it. To better understand how to deepen the complexity of my intervention in the channels, I restarted the Landing process from the beginning. There is an aspect of the intricate nature of this land, which appears and disappears with the tides, that I believe I have not fully comprehended in my previous endeavors. Initially, all actions were conceived and executed in isolation. The unique conditions of the salt marsh require a connected continuity between my body, the tides, and the landscape.

"Breathing", RENATA BERTA, RISD BEACH, 2024





04_Breathing

a.Embodied Actions

BREATHING_TO FLOAT AND LAND_TO TIME_TO TIDE

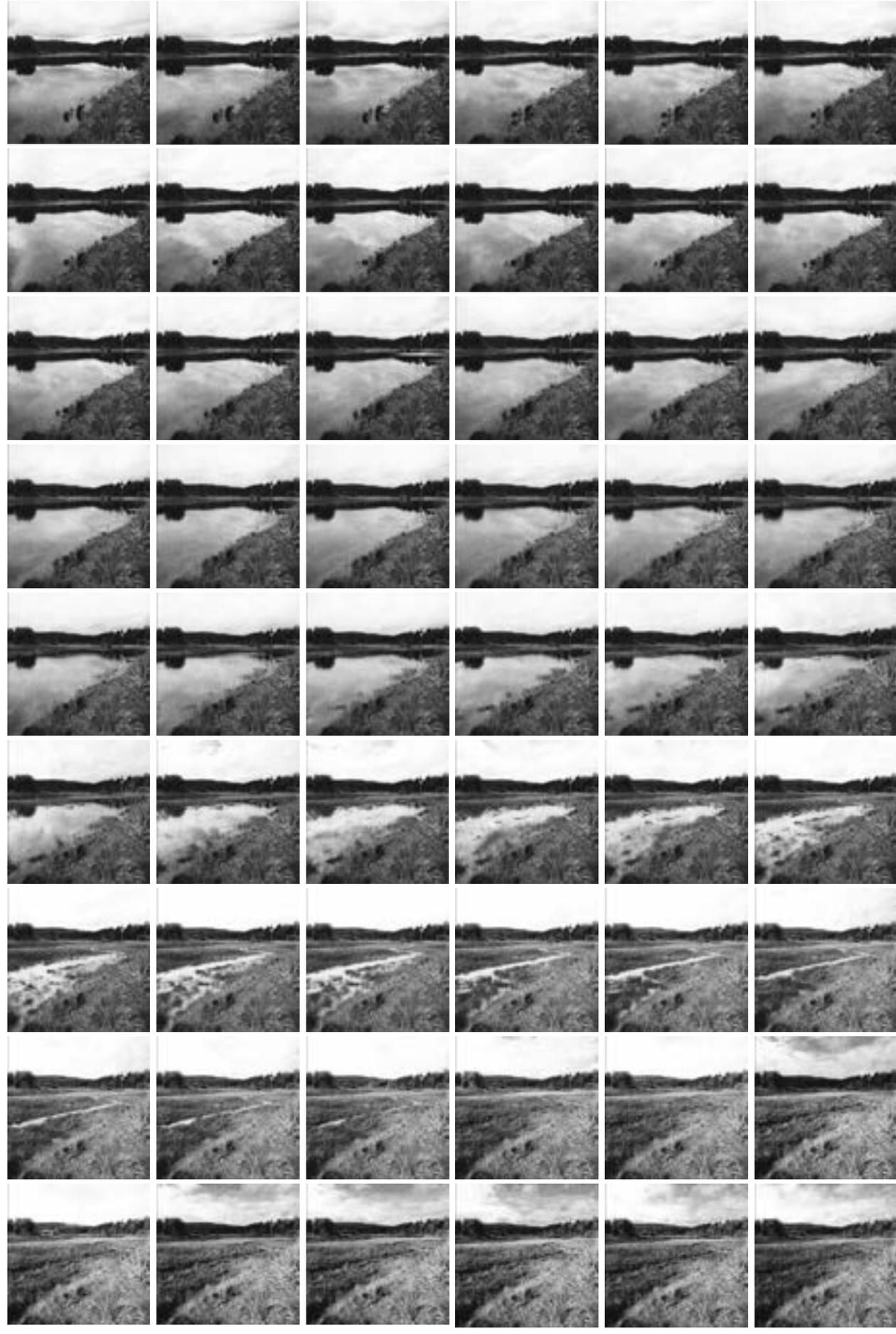
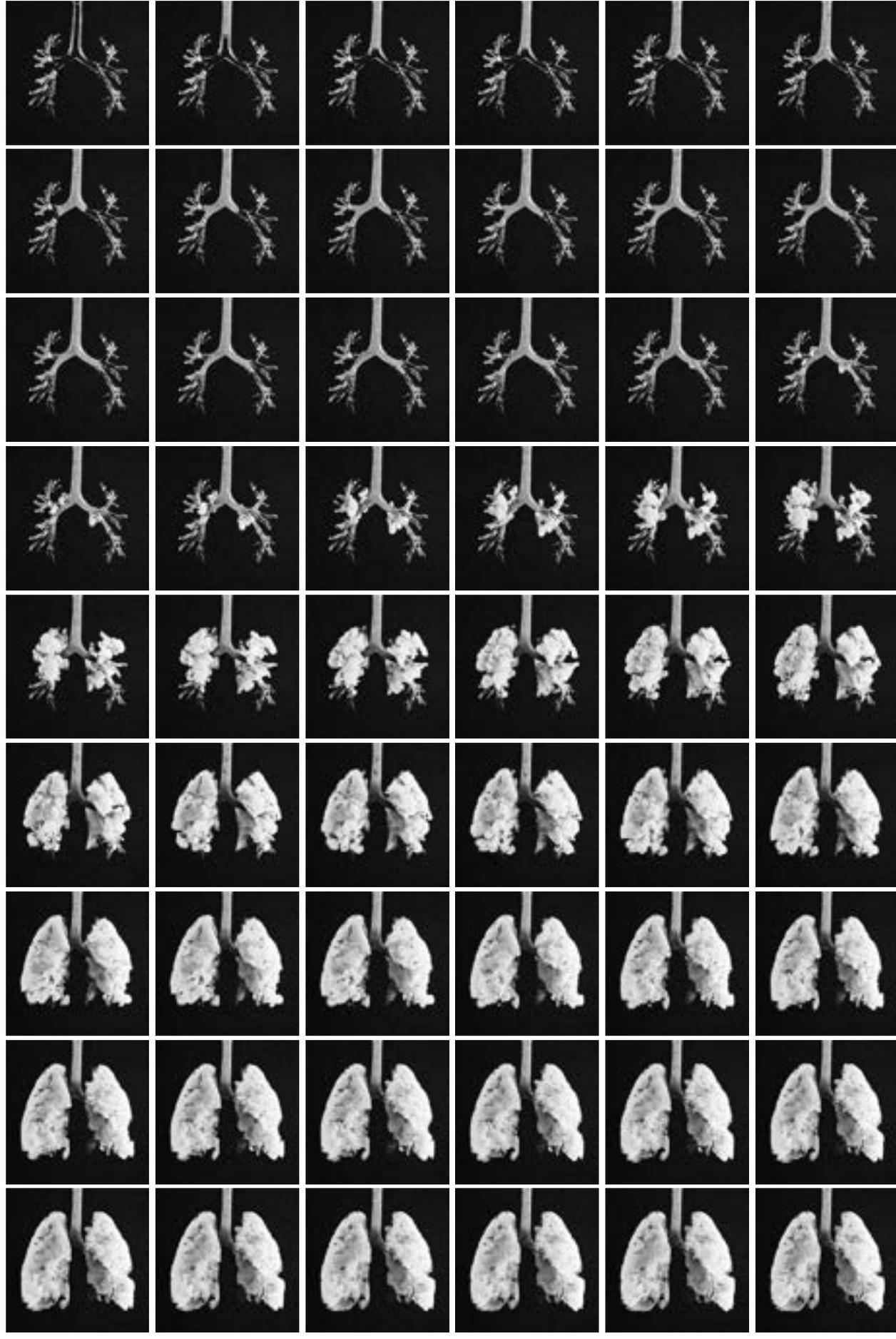
At this stage, one aspect I wanted to incorporate was a series of responsive skins designed to gather physical data in relation to my body during the performances. However, I've come to realize that what's more intriguing than the garment or the data I can collect is the concept of viewing our bodies as a site. By analyzing its surfaces, volumes, dimensions, and processes, we gain insight into the vital relationship unfolding in action.

When our bodies float in water, various aspects of our physiological system come into play, with breathing being particularly critical. When we breathe, we fill our bodies with air, making us lighter than the water, which allows us to float.

Similarly, I see the salt marsh as functioning in a comparable way—it “breathes” to maintain buoyancy. This respiration process keeps its mass lighter than the surrounding water, preventing it from sinking, keeping its levels and gradients structurally.

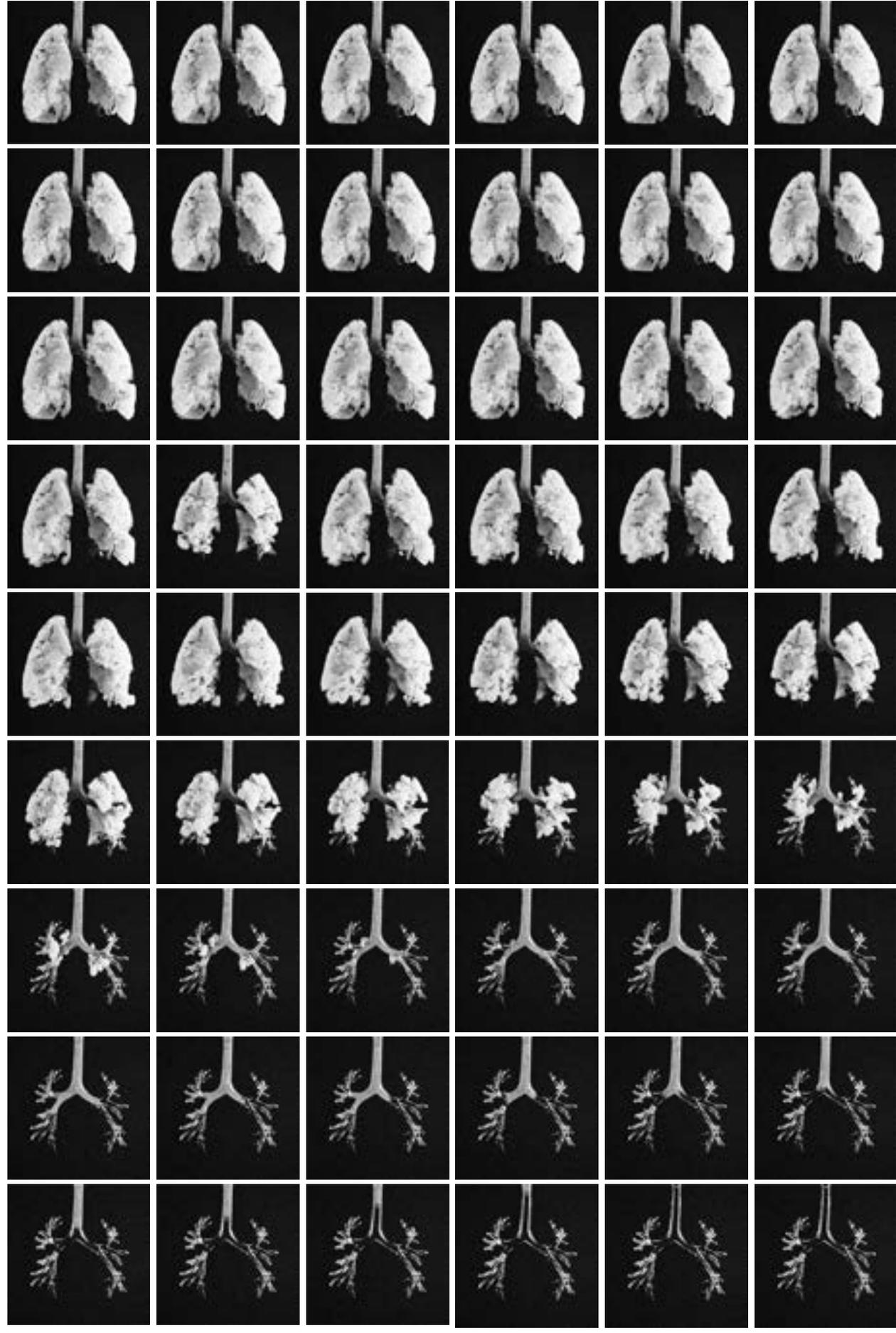
“To time”, RENATA BERTA, RISD BEACH, 2023

Breathing cycle_Images extracted from gif by ELMO (EL MONTION LAB, Paris)



Tides cycle_Images extracted from gif by MCGILL UNIVERSITY

Tides cycle_Images extracted from gif by MCCILL UNIVERSITY



Breathing cycle_Images extracted from gif by ELMO (EL MONTON LAB, Paris)



Tides cycle Salt Marsh Channel_Extracted from video by NATURE PICTURE LIBRARY

Breathing

Embodied Actions



WHERE DOES MY BODY ENDS AND THE SITE BEGINS ?

In this second phase of Embodied Actions, I chose to converge actions to grasp the cyclical nature of the site. I conducted two actions: one during the low tide of the full moon (1ft) and another during the high tide of the new moon (5.5ft).

Tides represent a rhythmic cycle, much like the inhalation and exhalation of our bodies. Each phase is necessary for the other to occur. The tides embody the material, the site, and the essence of the salt marsh.



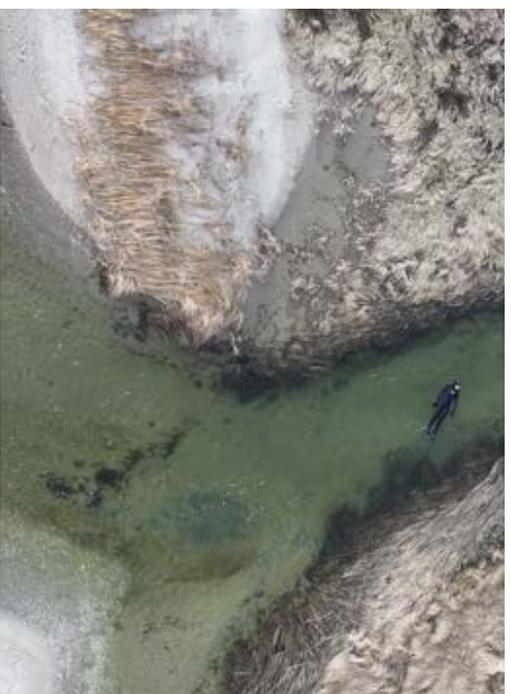
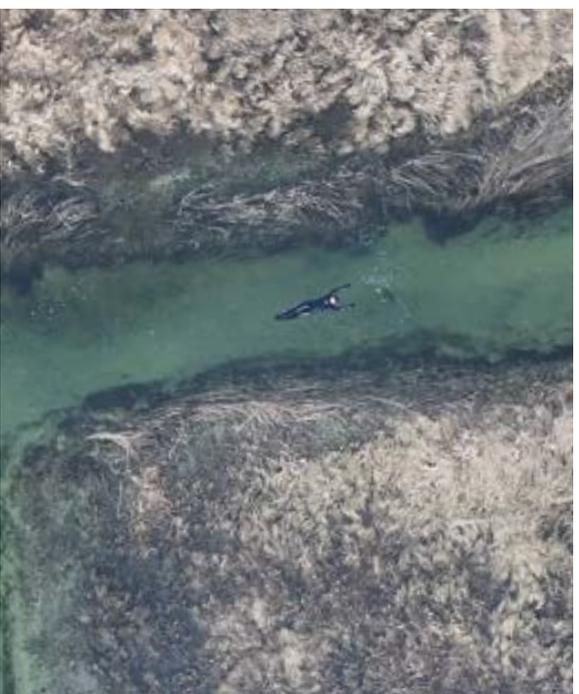
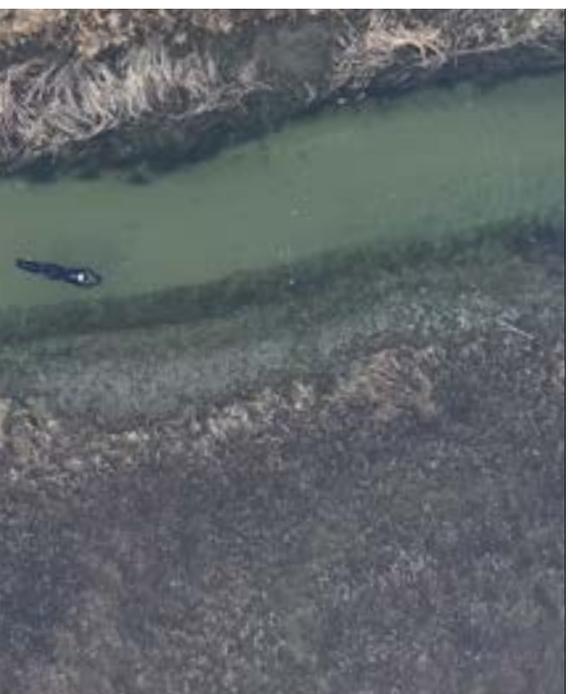


Breathing in

at RISD beach

It's a series of performances conducted during high tide at RISD Beach during the new moon. In these performances, I choose to float, allowing myself to be carried by the tide until I reach the landing area near where the phragmites are located. My intention with these performances is to let my body be carried by the current, observing how it becomes stranded in different parts of the channel. I aim to understand that the speed at which my body moves is influenced by various factors, both physical, such as the position of my body and limbs, the rigidity of my abdomen while floating, and perhaps psychological, such as how willing I am to let myself be carried without knowing where I'm headed or what the ground beneath me is like.

I repeated this journey several times throughout the day. The speed at which the water entered the channel varied as we approached the peak of high tide. The canal widens by almost 70% with the incoming water.

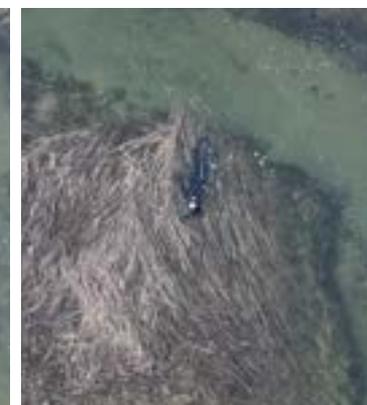




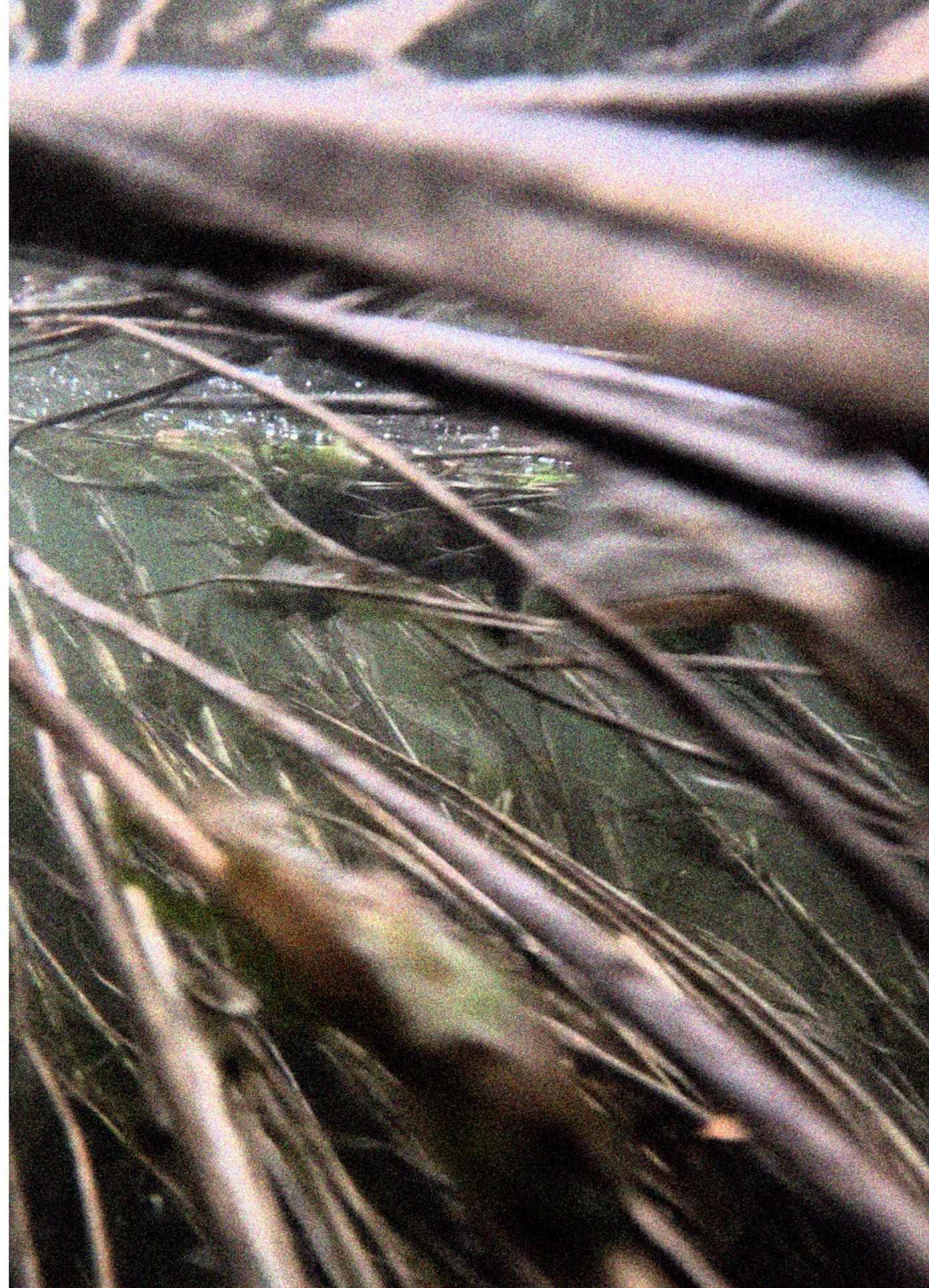
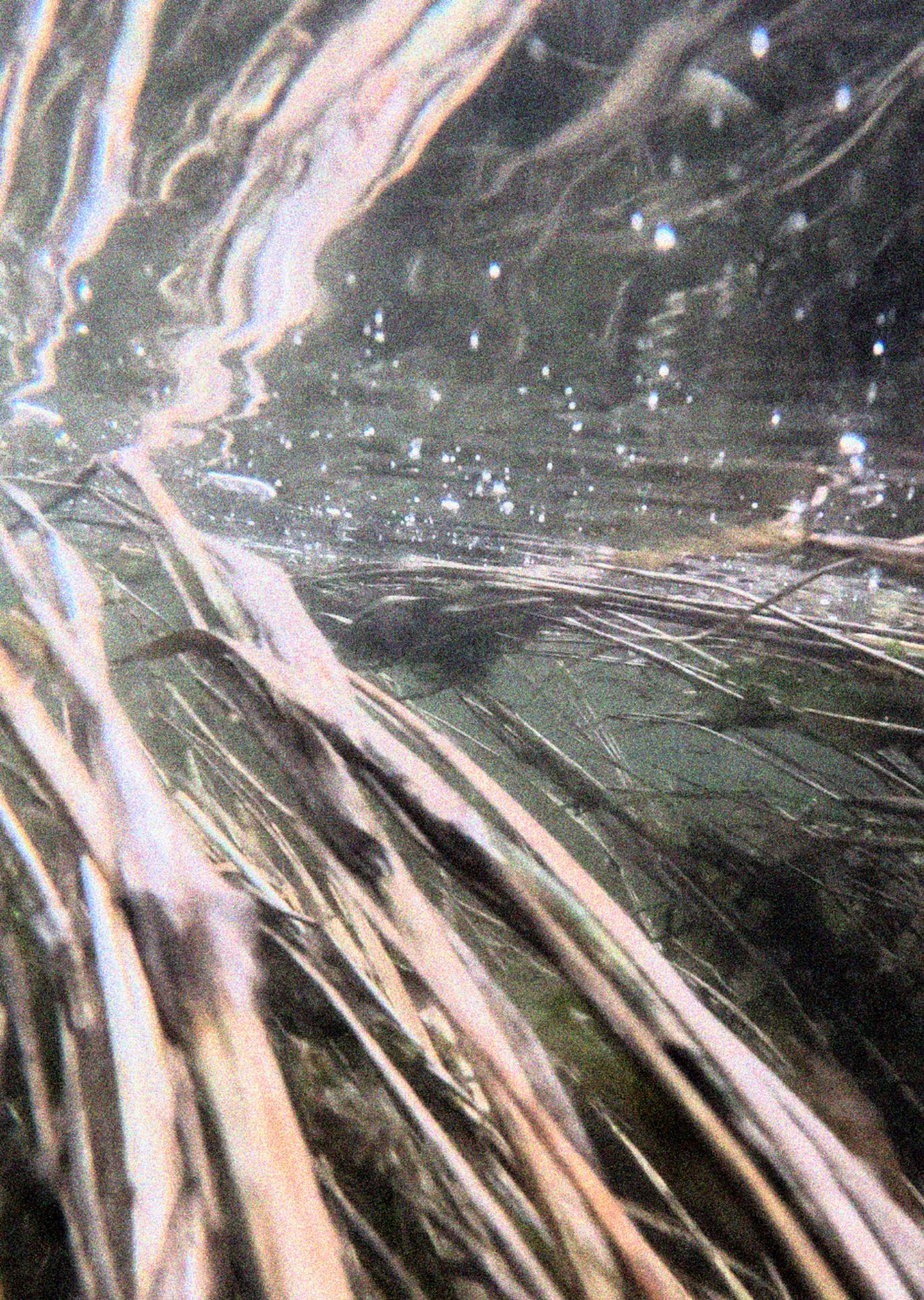




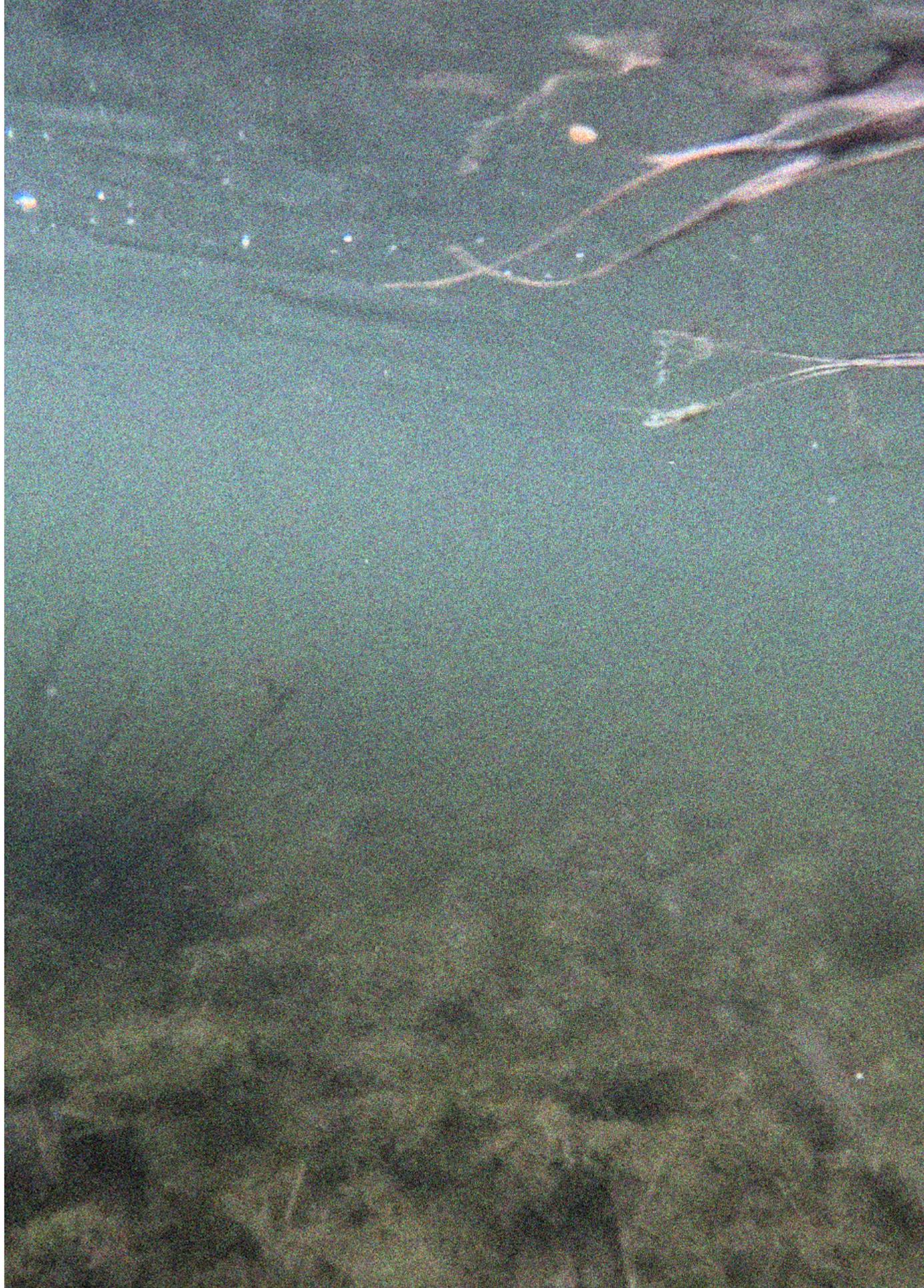












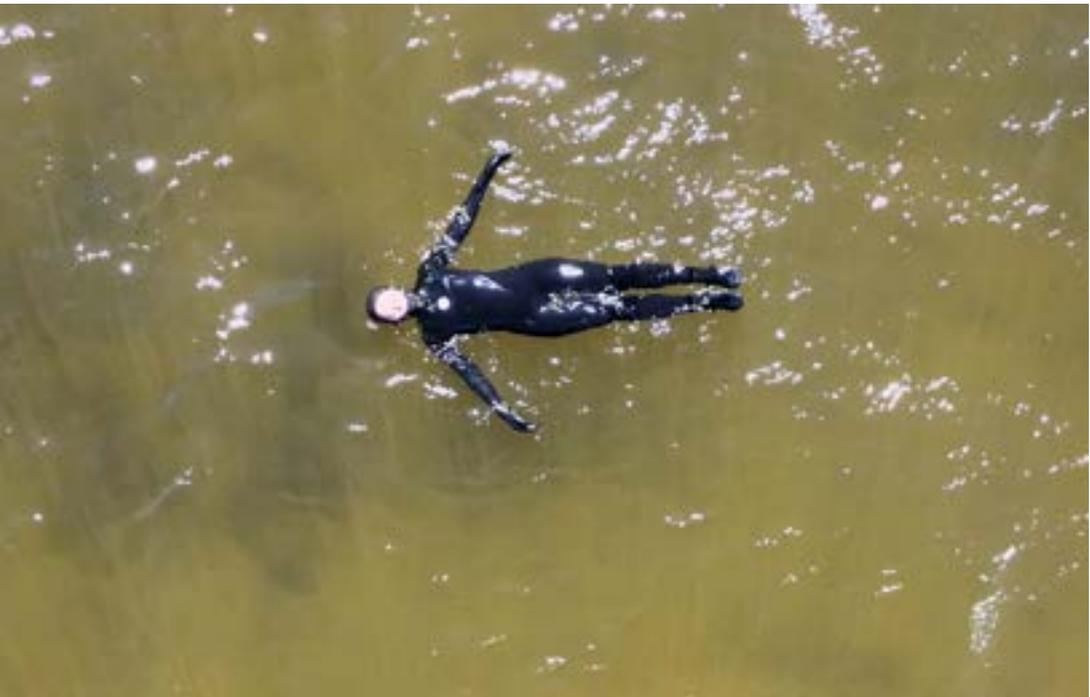
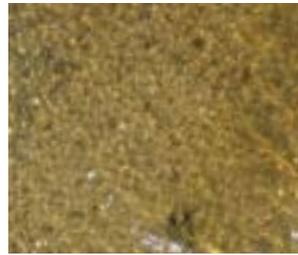
Breathing out

at RISD beach

In sync with the lunar and tidal cycle, I ventured to walk along the same channel during the lowest tide of the full moon. My aim with this performance was to feel the pushback of the water as it flowed out of the channel. Opting for the lowest tide allowed me to gauge how much water remained in the salt marsh's floor and the effort required for it to drain away. Walking through this terrain offered a tangible experience of its density, with moments where my body sank nearly 40% into the peat. I discerned the spots where the soil was densely packed, firm, and resistant, as well as the softer areas where my weight caused me to sink deeper.







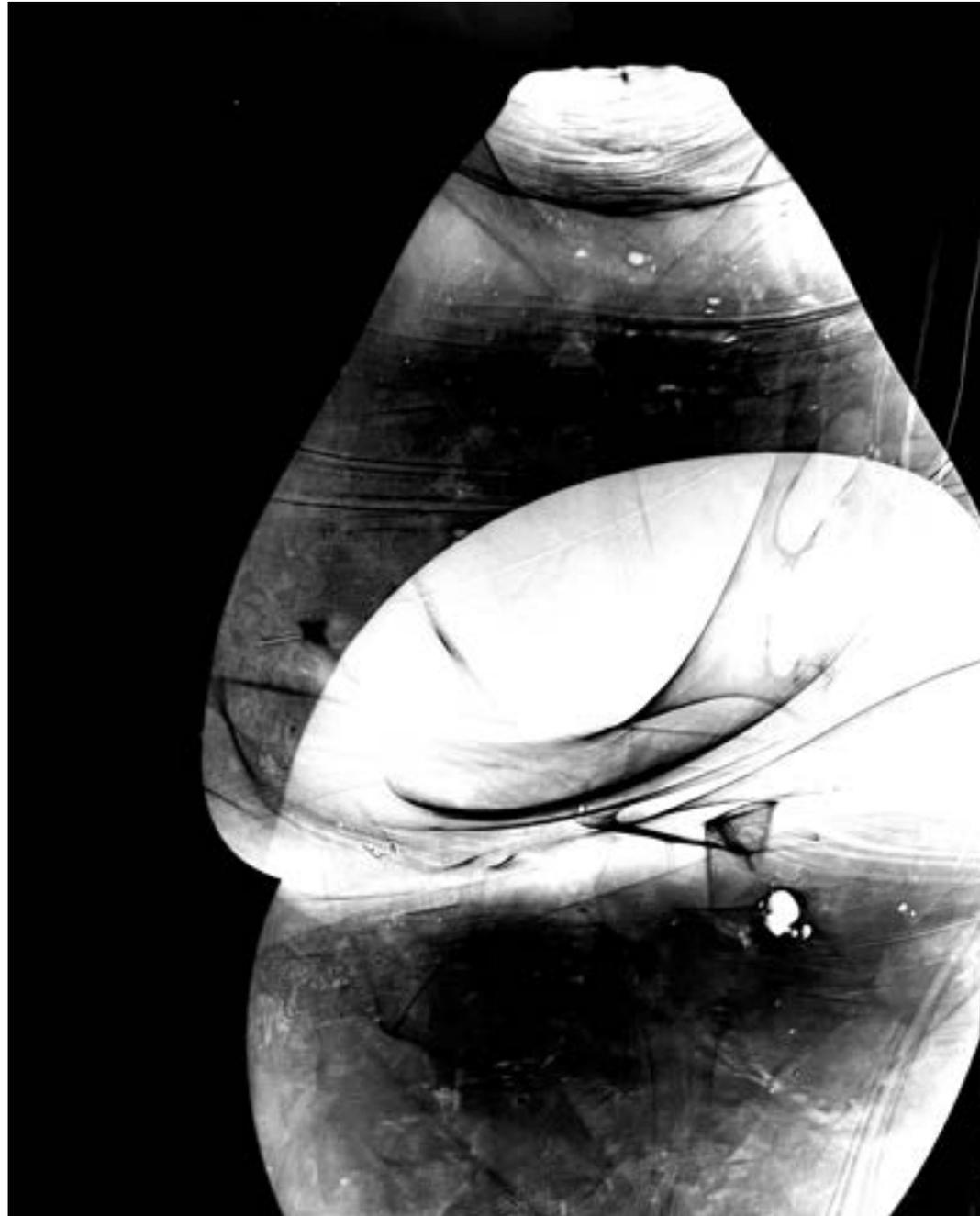






04_Breathing

b.Verbs to nouns, nouns to verbs



“Shared Breath” RENATA BERTA, ZHU GAOCANYUE, KAELA KENNEDY, 2024

TRANSLATING EMBODIED ACTIONS
INTO EMBODIED PROCESSES DEVICES

In this phase, I am not conducting further material experiments related to the performances but rather reflecting on breathing and its connection with the material I have been working with.

A glass bubble serves as an abstract and conceptual representation of breathing onto or into a material, similar to how my body interacts with water or how the marsh responds to the tides.

Currently, I’m exploring two types of experiments involving my breath and glass: Firstly, I’m using devices to visually depict the breathing process. Secondly, I’m experimenting with different breathing techniques or blowing methods to understand how the material reacts to the air introduced into it.

All these experiments took place in the “Experiment in Optics” class at the Glass Department of RISD during Spring 2024. They were either conducted by or in collaboration with all the students present during the different sessions, particularly by Jocelyne Prince and Zhiyun Zhang, Nova.

“BreathTaken: Air and breathing, elemental and active: to give form to the formless.”

“Transparent depth: Water is the transitional element between air and earth. Piggott’s preoccupation with fluidity and the organic finds form in painting of water, usually combined with depictions of glass vessels, the apparatus for the exchange of fluids between one body and another.”

—JASON SMITH on the artist ROSSLYND PIGGOTT,

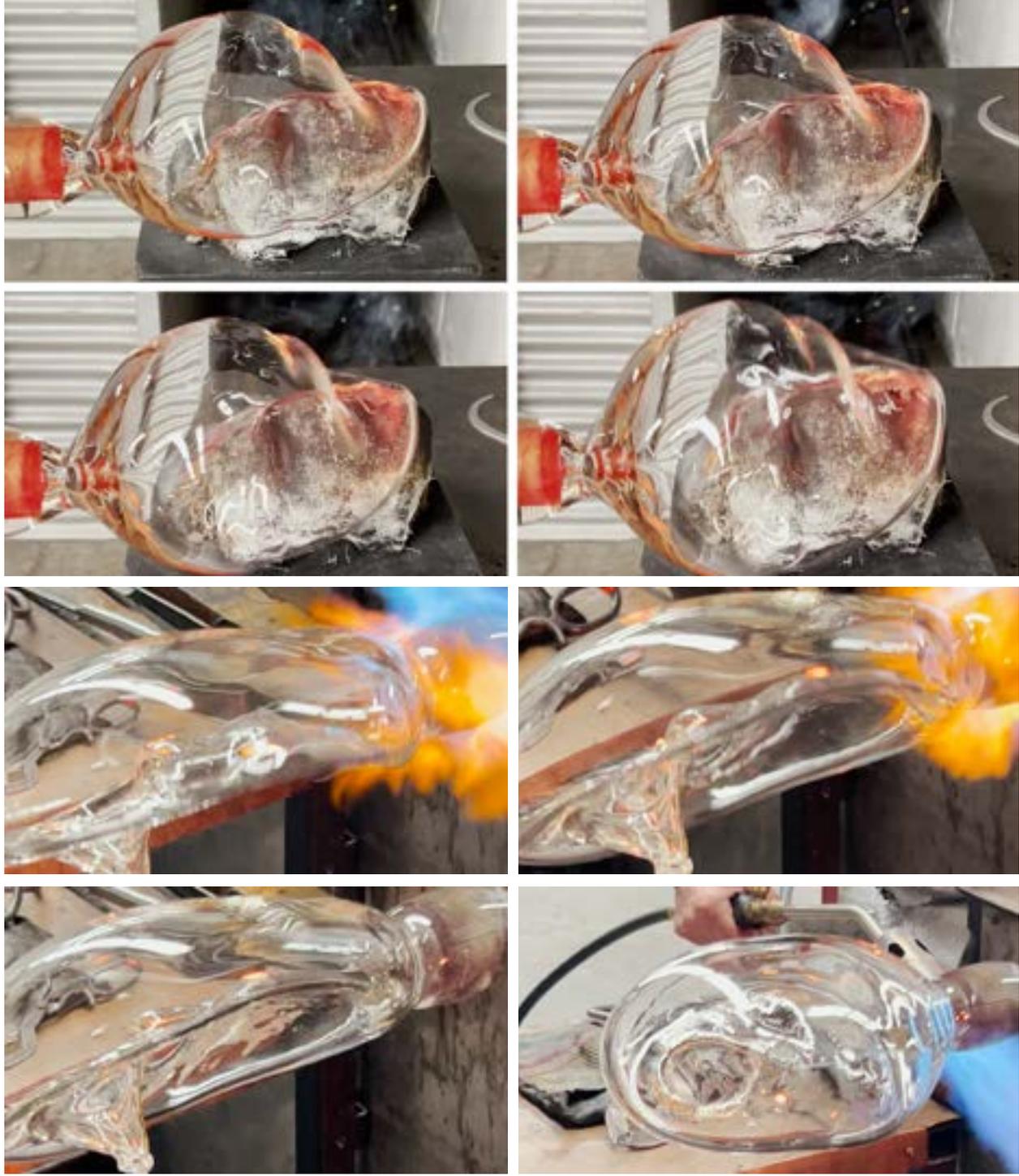
01_Performative devices



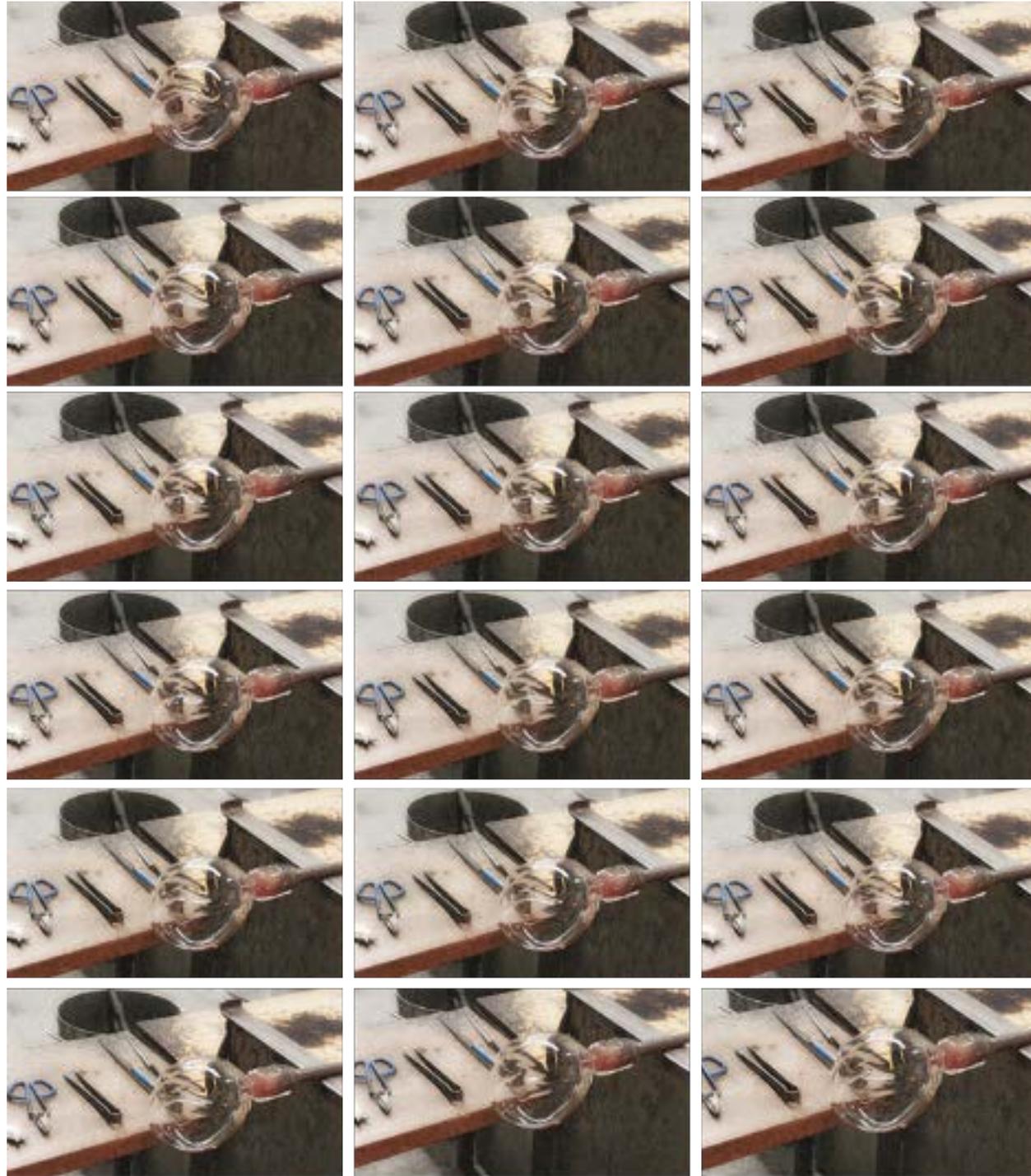
“Shared space” RENATA BERTA, 2024



These devices involve breathing into the material to create a form that mirrors the mold of my face. The goal is to craft a structure that allows for internal breathing, thus illustrating the respiratory process I've been exploring. This encompasses both the conceptual breathing in relation to the performances inspired by the respiration of the salt marsh, as well as the breath required to shape the device itself.



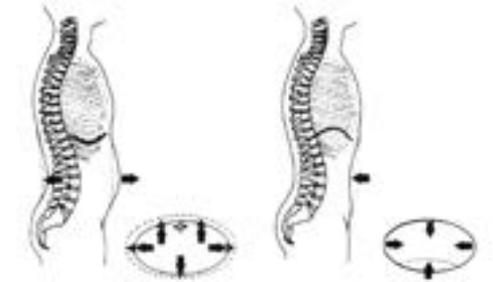
02_Performed devices



“Constructive breath” RENATA BERTA, 2024

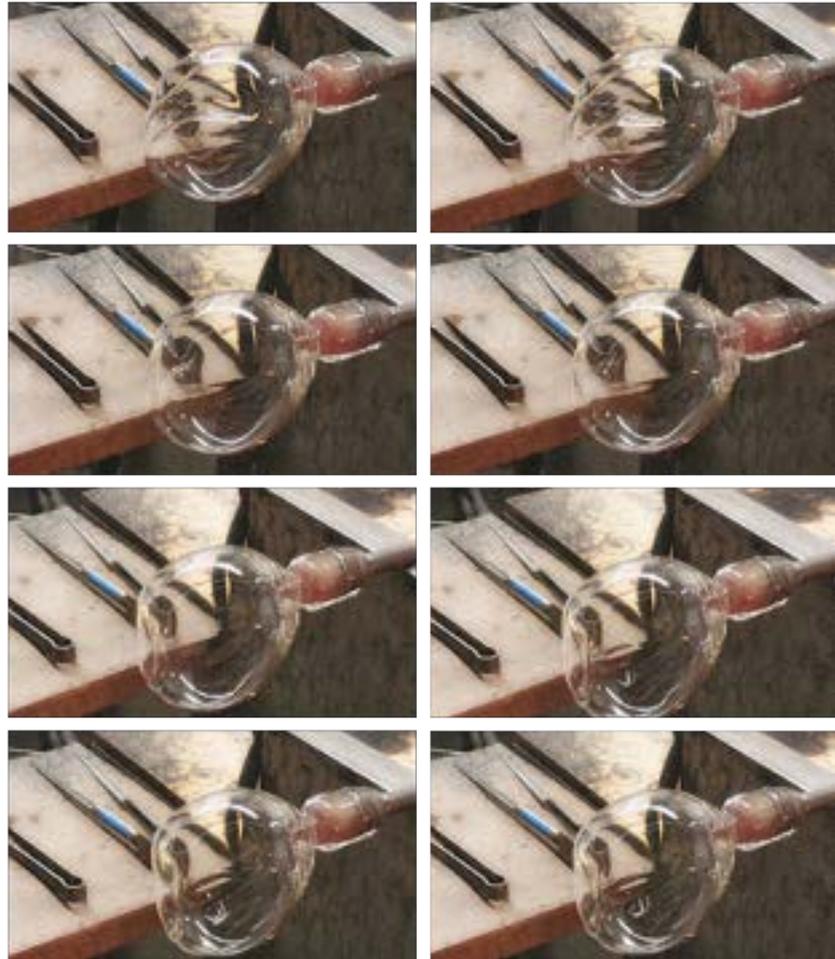
“Aria: The starting point of the glass-blower’s art is the parison, a globular, partially inflated mass of molten glass on the end of the blow-pipe that is then manipulated with various tools as it is rolled back and forth on the glass maker’s chair. The parison is intermittently returned to the furnace as the final form evolves. It is from the parison that the glass vessel is formed. In the nineteenth and early twentieth century glasshouses the blowing of a bubble equivalent to the maker’s capacity for breath was an impressive spectacle. In this sense the bubble became an abstract and conceptual representation of the bodily performance and breath. Suspended breath similarly represents the limit to which glassblower Richard Morell could expand the parison.”

—JASON SMITH on the artist ROSSLYND PIGGOTT,

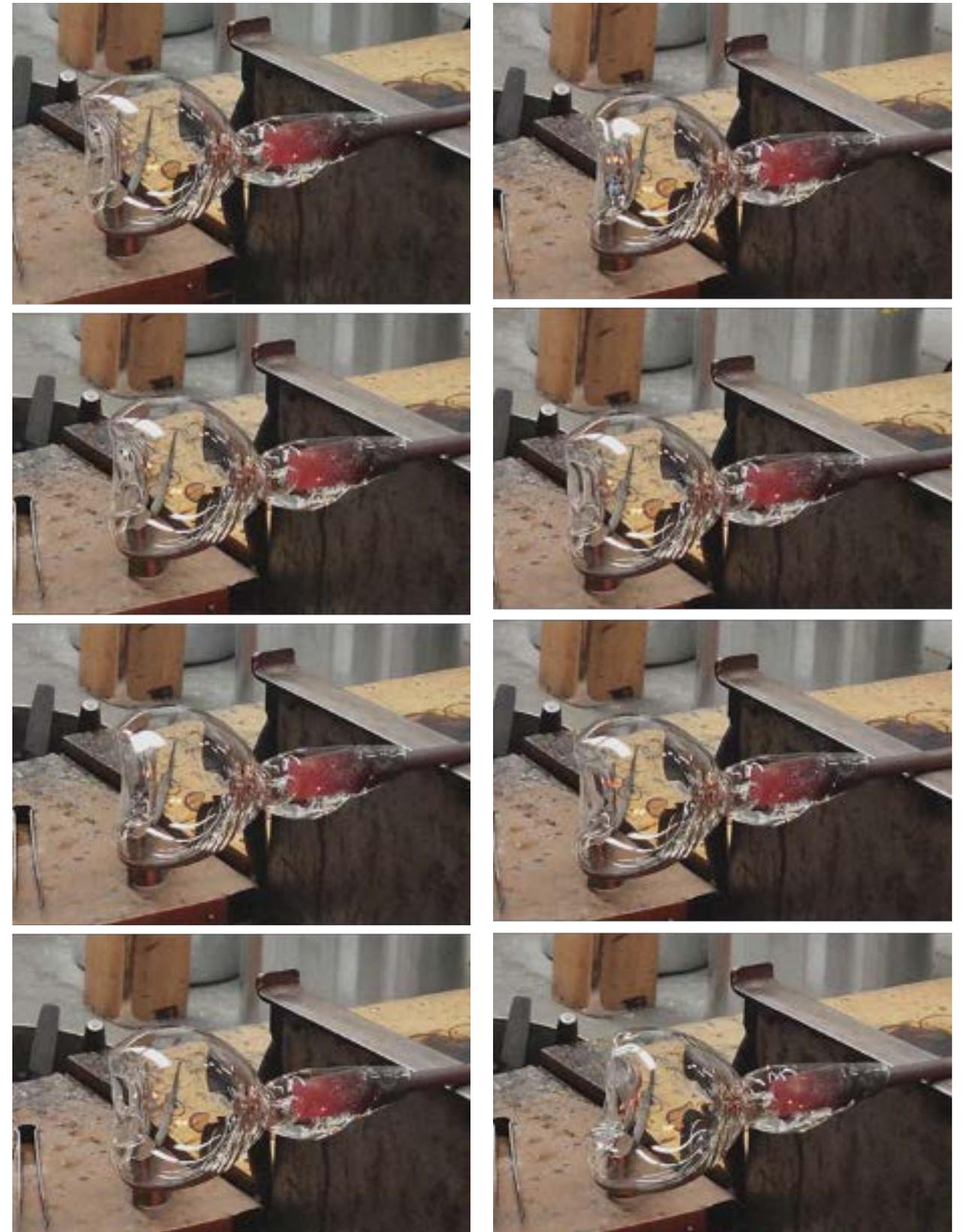


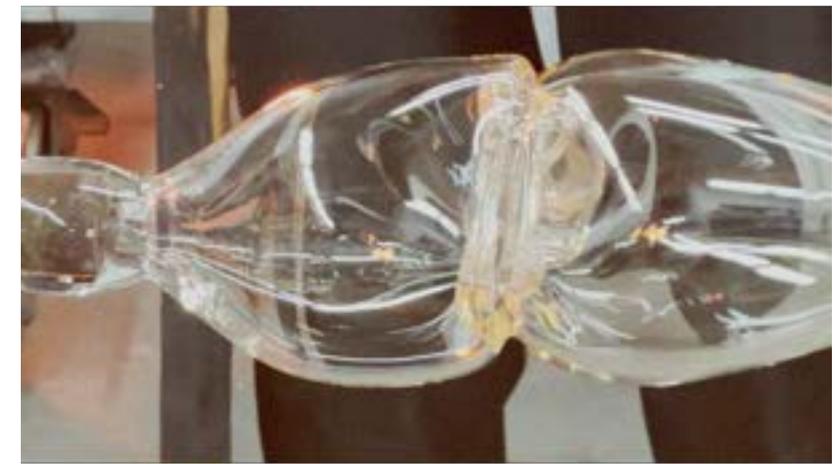
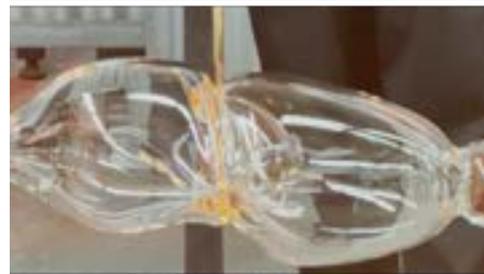
These subsequent artifacts delve further into the act of breathing directly into the material, particularly as glass is highly receptive to such interaction. Firstly, “Constructive breath” glass bodies were formed by continuously inhaling and exhaling into them until the glass solidified, aiming to visually capture the breath cycle within the material’s memory.

Additionally, the “Shared breath” experiments involved creating two bubbles and placing them in contact. One bubble was then inhaled into while the other was exhaled from, visualizing the respiratory cycle as a shared action between two bodies and examining how this exchange of air affects the walls of both bubbles.



“Constructive breath” RENATA BERTA, 2024





"Shared breath" RENATA BERTA, 2024





"Shared Breath" RENATA BERTA, ZHU GAOCANYUE, KAELA KENNEDY, 2024







04_Breathing

c.Responsive prototypes

My project involves collaborating directly with the salt marsh to promote its regeneration. Specifically, I aim to encourage sediment accumulation in the channels excavated for mosquito control.

Why? These channels inadvertently lead to prolonged water retention after high tide, disrupting the marsh's natural equilibrium and causing gradual degradation. This water stagnation impedes vegetation growth and undermines the overall health of the marsh ecosystem.

How? Through a systematic exploration of various technologies and iterative experimentation, I've identified the most promising approach. By constructing prototypes designed to facilitate sediment accumulation, we can start the process of peat regeneration.

Where? The intervention will be focused within the dredged channels, spanning from elevated to lower regions. It's crucial to commence stake placement from higher elevations to prevent rapid water ingress from undermining our efforts in the territory.

Additionally, a comprehensive monitoring plan is in place to track the progress of the infrastructure. This will allow us to assess the effectiveness of our interventions over time and make necessary adjustments to optimize the restoration process.

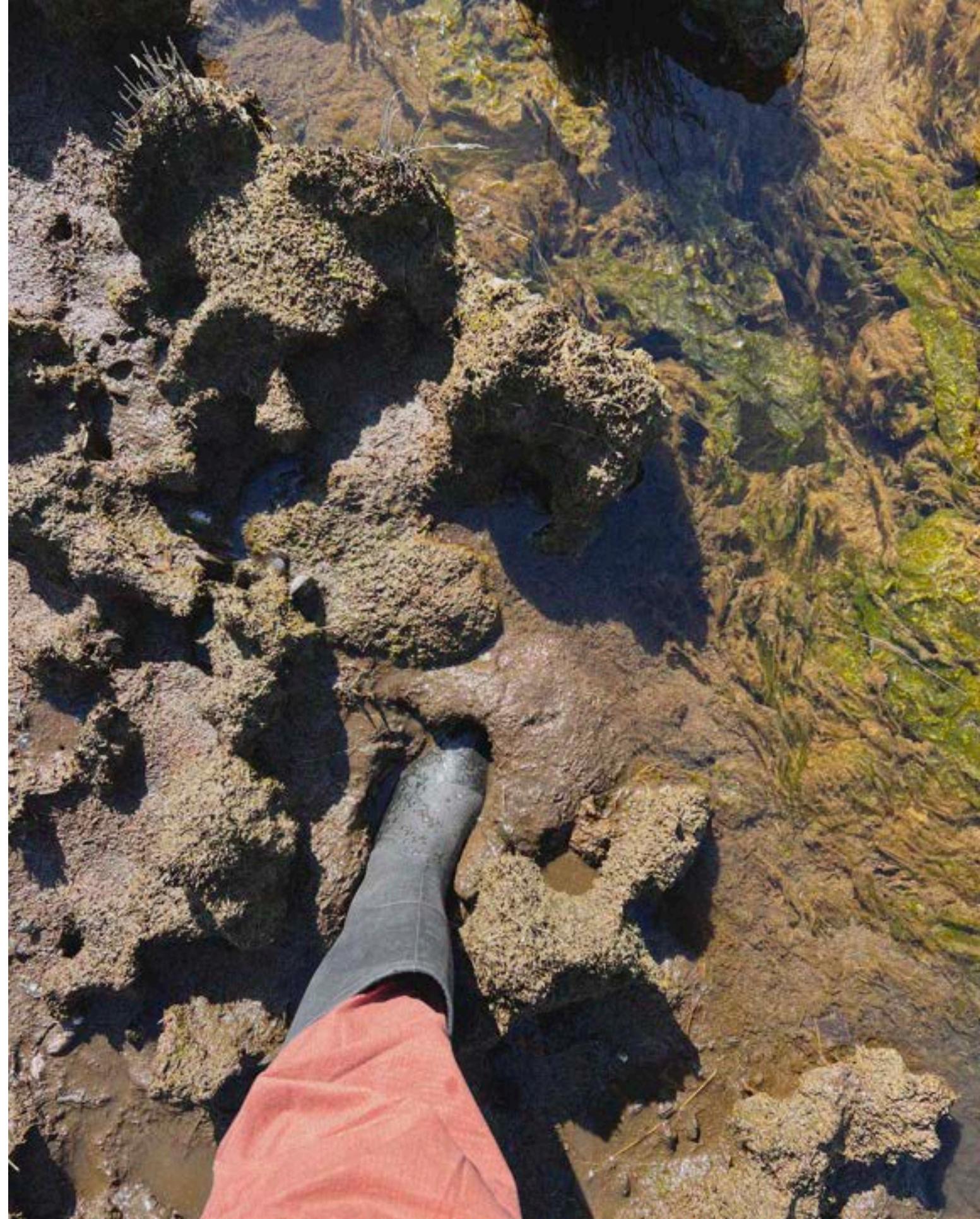
The project aims to restore the natural breathing of the salt marsh. While the inflow of water is essential for its ecosystem, allowing for its natural outflow is equally crucial. Nowadays, due to the presence of numerous dredged channels, the salt marsh lacks the ability to produce the necessary peat to keep itself afloat.

Understanding the ground through its performativity: examining the ground as a site of transformations.

How does it float? Examining soil's buoyancy.

What is peat composed of? Delving into its material composition.

What kind of architecture is required? Is architecture even necessary?



March 1995, GOOGLE EARTH



April 2003, GOOGLE EARTH



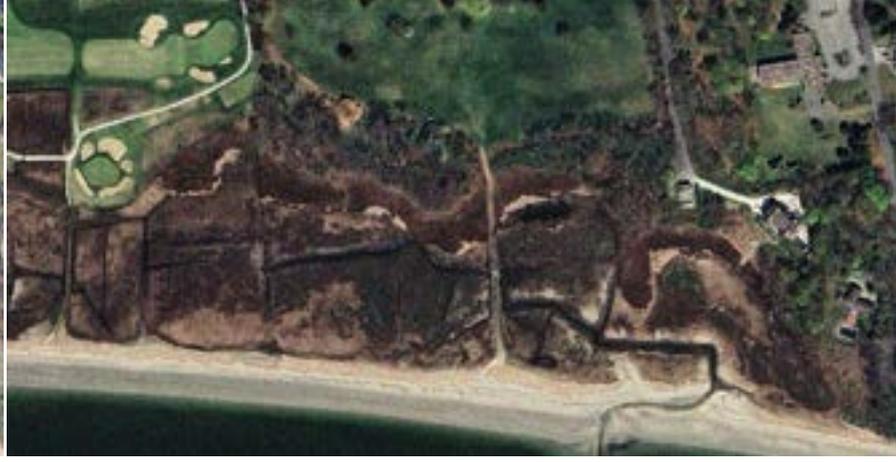
April 2009, GOOGLE EARTH



June 2018, GOOGLE EARTH

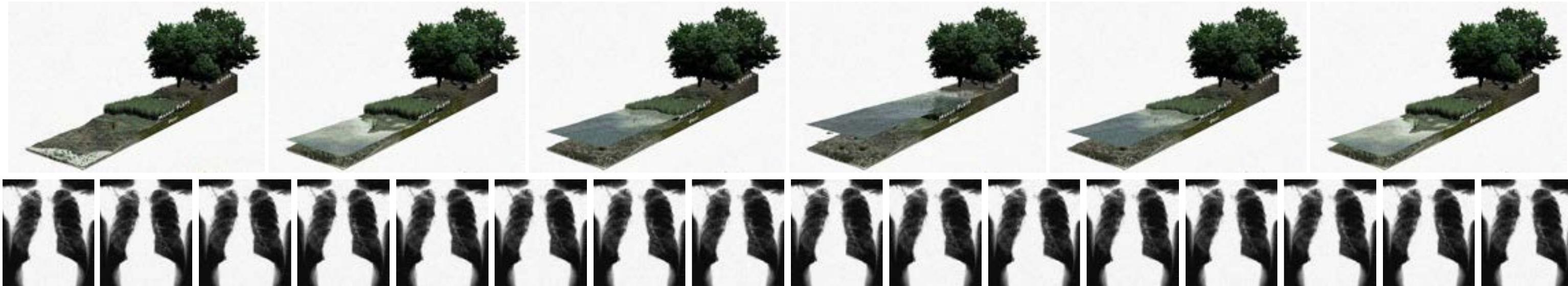


November 2020, GOOGLE



April 2023, GOOGLE EARTH

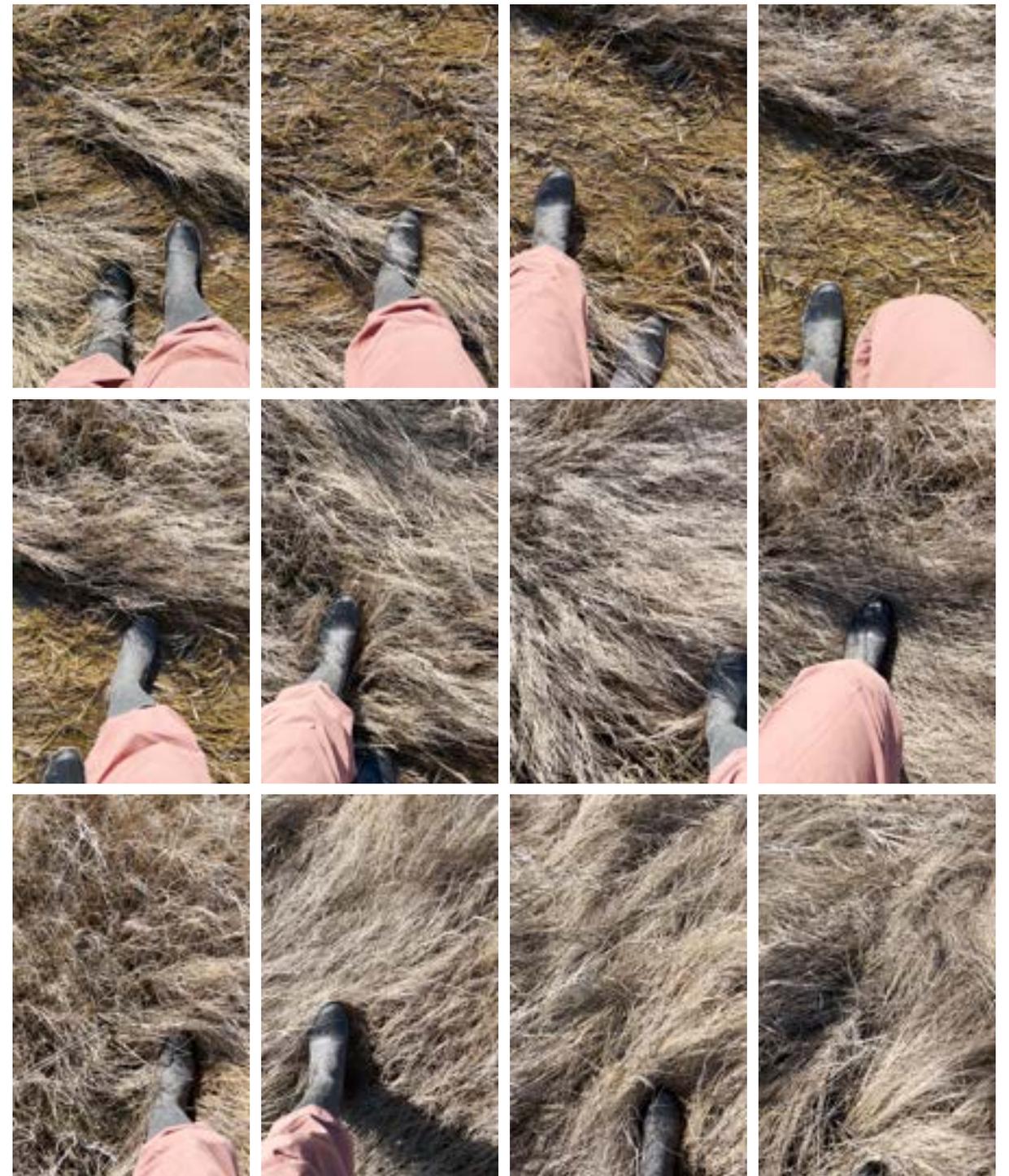
How does the ground change over time?
How are the channels modified?



Tides cycle_Images extracted from gif by NOAA – OCEAN SERVICE EDUCATION
Breathing cycle_Images extracted from gif by IAMPUCKER (IMGUR.COM)

Studying tide cycles: How does the ground change during those stages?

What allows this soil to endure the influx and outflow of water, or to float?





“Aerenchyma is a soft plant tissue containing air spaces, found especially in aquatic plants, that supports island buoyancy. New layers of reeds are added atop the island as bottom layers decompose, supporting the long-term cycle of the island. Oxygen bubbles trapped in the chill root tissue make the root block less dense than water. Anaerobic decomposition occurs when bacteria cause root tissues to decompose, producing biogas and supporting island buoyancy.”

— JULIA WATSON on Uros floating islands. LO-TEK: DESIGN BY RADICAL INDIGENISM

In the investigation of Peru’s floating islands crafted by the Uros community, a key revelation surfaces: their ability to float is not just a result of construction, but also intertwined with nature’s processes. As layers of reeds are added to peat blocks, a symbiotic relationship with the marsh’s composition becomes evident. The core of their buoyancy lies in the organic decay within the peat, which releases gases, preventing the islands from sinking.





In my intervention, I'm revisiting the idea of addressing the dredged channels used for mosquito control, which are affecting the buoyancy of the marsh. These channels impede proper water drainage, resulting in soil erosion without sedimentation. This could potentially accelerate the sinking of the marsh beyond the rate of sea level rise. To investigate this further, I've selected two study sites to develop on-site prototypes. These prototypes will help evaluate which artifacts are most effective in promoting sedimentation and peat production.

It's crucial for me to recognize that constructing the prototypes must occur at a 1:1 scale in the territory, as this is where we grasp how our ideas interact with real variables. I view the prototypes as experiments that continue to offer insights into the nature of the salt marsh and potential ways to engage with the landscape.

The territory has consistently served as the source of answers in this research journey. Rather than pursuing speculative or representational architecture, I aim to embrace a methodology of trial and error, one that remains grounded in the scale of the human body. It is within this dynamic interplay of body, materials, and site where I believe we can chart a course toward sustainability. Scale and time remain critical considerations.



Mosquito ditches in the Parker River National Wildlife Refuge. (Jesse Costa/WBUR)

The two sites chosen for constructing prototypes were carefully selected based on a detailed examination of their temporal evolution. The objective was to understand how dredged channels had influenced the buoyancy of the marsh in that area and their broader implications for surrounding zones. Accessibility for construction was also taken into account.

SITE 01_FALL 2020



SITE 01_SPRING 2020



All images from: GOOGLE EARTH



SITE 02_FALL 2020



SITE 02_SPRING 2020



As depicted in the accompanying photos, both sites exhibited lower elevations in their surroundings, a consequence of inadequate water drainage and a lack of sedimentation and peat production.

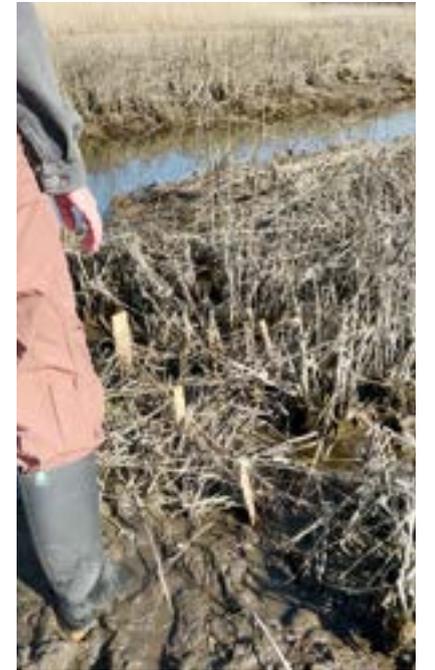
All images from: GOOGLE EARTH



At site 1, three prototypes were developed. The first, positioned at the intersection of the dredged mosquito control channel and the main canal, comprised wooden stakes with a slim cross-section (1 inch by 1 inch). Regrettably, no photographs were captured as this prototype was erected during the rising tide, resulting in excessively wet peat that caused the stakes to be swept away. This instance underscored the pivotal role of timing in construction; comprehending the optimal moment for architectural interventions in such a dynamic setting is paramount.

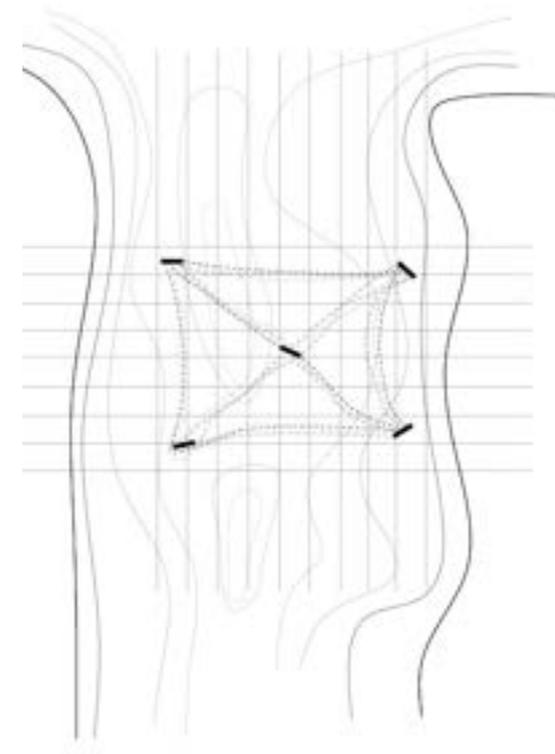
The second prototype, outlined below, was assembled at the same location but during the lowest tide, while the third was situated at the tip of the same channel. In both instances, a distinct technique was employed, which will be elucidated further.



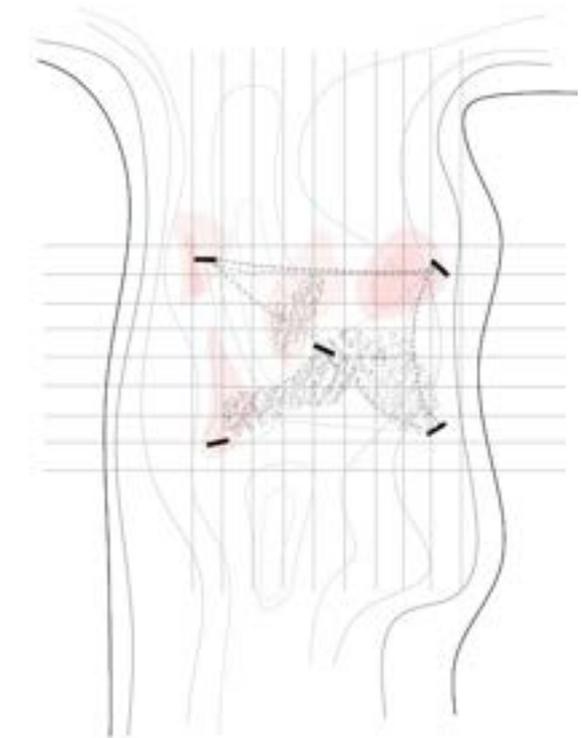




PROTOTYPE 1_ FIRST DAY



PROTOTYPE 1_ 30TH DAY



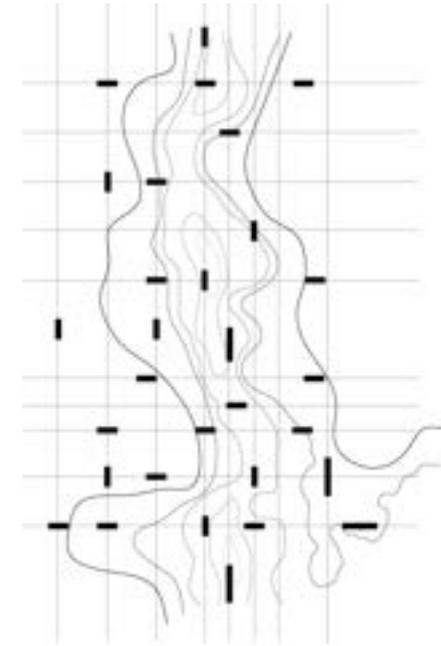
The second prototype was crafted using rectangular wooden stakes intertwined with natural fibers, forming a sturdy net structure. Additionally, fallen marsh grasses were integrated into the weave to bolster its resilience and act as a barrier against incoming tides, facilitating sediment accumulation.

Upon inspection after 30 days, the prototype stood firm, ensnaring sediments and

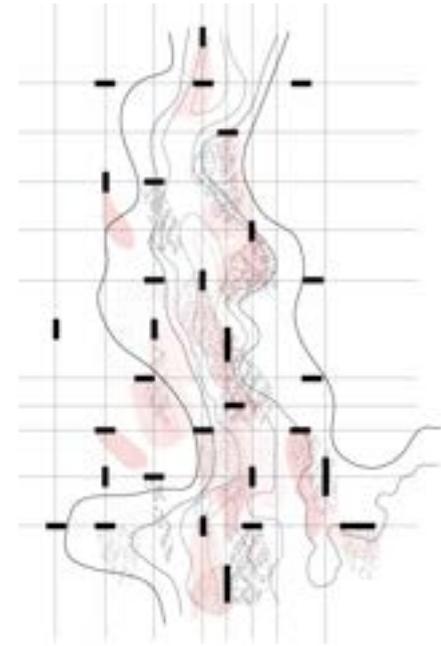
even encircled by peat. However, its strategic placement at the intersection with the main canal resulted in swifter water flow, washing away the majority of trapped sediments. This realization was validated through the experiential understanding gained from “breathing in and breathing out,” where the fluctuating water velocities across different tide cycles were observed firsthand.



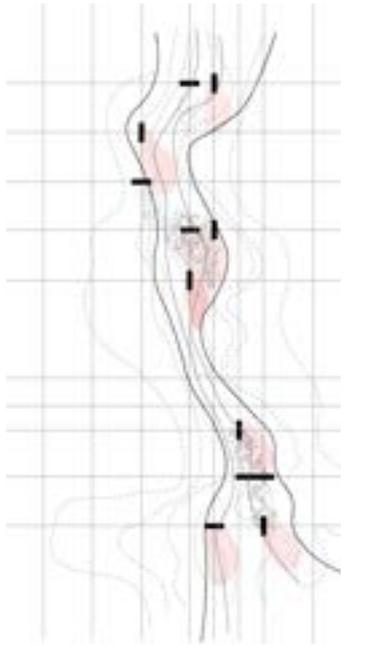
PROTOTYPE 2_ FIRST DAY

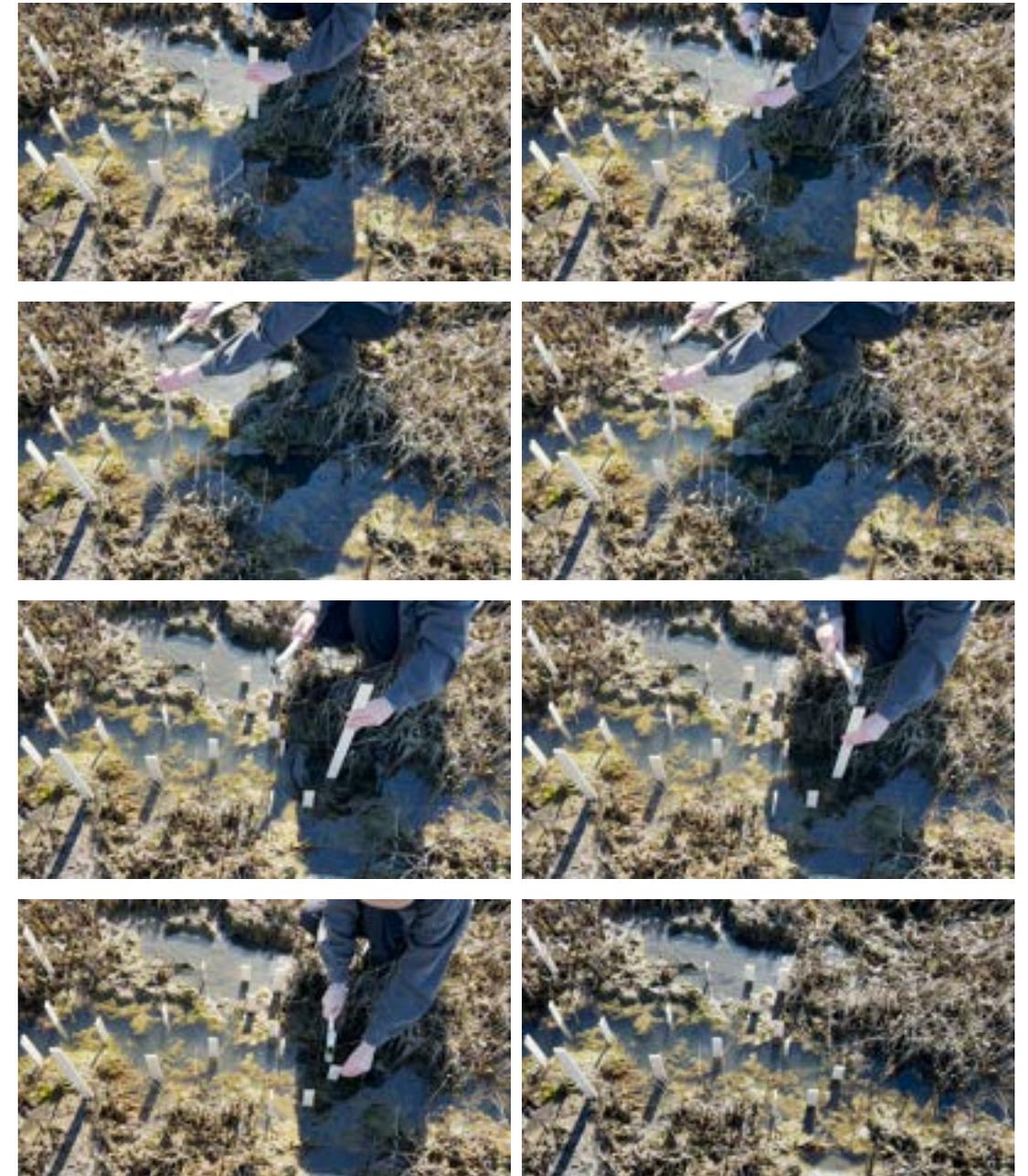


PROTOTYPE 2_ 30TH DAY



PROTOTYPE 2_ 60TH DAY







The third prototype was erected along the same canal but positioned farther away from the main channel, where water flow is notably gentler. It was constructed using rectangular wooden stakes arranged to create a three-dimensional grid structure, strategically designed to trap sediments gradually. Notably, this prototype drew upon insights gleaned from the prior iterations, particularly regarding the timing of construction (during the lowest tide) and site selection.

A noteworthy observation was that instead of tethering the stakes together with thread, the spacing and placement of the stakes themselves dictated the sediment capture. These interventions target areas with reduced water velocity, allowing for incremental land reclamation and peat formation, extending towards the primary channel.

The stake placement was initially conceived in a grid formation, but adjustments were made on-site based on soil density. Careful consideration was given to avoid anchoring stakes in excessively soft soil, which could be easily dislodged by minimal water flow.



05_Diffraction

A responsive embodiment of landscape

When addressing sustainability in relation to clay, I realized the importance of acknowledging that clay itself isn't inherently sustainable; rather, its sustainability lies in our relationship with it and the practices surrounding it. Therefore, architectural practice is sustainable when it embodies the interconnectedness between material, body, and site. From the outset of my research, I focused on these relationships, understanding that true sustainability requires responsiveness, adapting to the time and processes that permeate it, and integrating into a logic where it can simultaneously be material, body, and territory.

My approach to exploring these connections was chaotic, disordered, and intuitive. At times, clay appeared to me as a material, while at others, it became a body or a site. Likewise, I realized that both body and site could transcend their defined roles, allowing for a fluid interchange between the three "elements." This permeability of boundaries led me to adopt various approaches to understand and comprehend them, from conducting performances to exploring materials and creating prototypes of responsive architecture. These methodologies constitute a rhizomatic creative process, where each phase informs and enriches the findings of the others.

As I near the end of my thesis, I perceive this phase more as one of diffraction rather than a definitive conclusion.

"Diffraction effects limit the ability of a lens (or a system of lenses) to resolve an image. The greater the diffraction effects, the less determinate are the boundaries of an image."

—KAREN BARAD, *Invertebrate visions: diffractions of the brittlestar.*

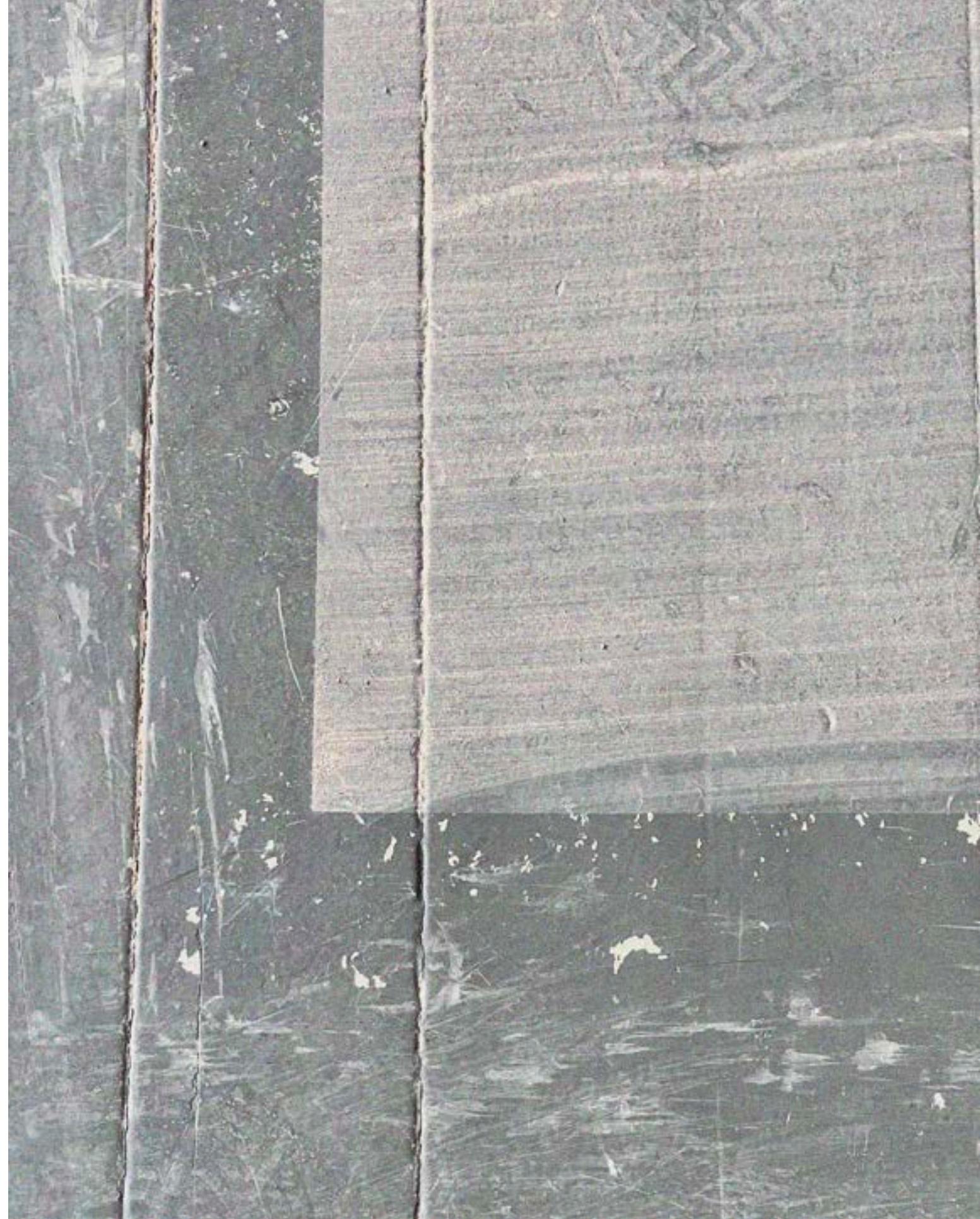
This analogy resonates deeply with my current position, as I navigate the complexities of my research. The boundaries of understanding become less distinct, allowing for a more multifaceted perspective to emerge. In my attempt to elucidate this evolving image, I share some thoughts.

I feel that my move to North America was essential for me to delve into the intertwining concepts of body, site, and material. Being a foreigner in these lands adds layers of complexity to the process of connecting with the territory. The ground doesn't sound the same, doesn't smell the same, doesn't feel the same. Embracing my foreignness becomes a ritualistic practice of constantly and consciously engaging with the land. This awareness stems from the attentiveness born out of this displacement.

“Bodies are not situated in the world. They are of the world.” “Embodiment is a matter not of being specifically situated in the world but, rather, of being of the world in its dynamic specificity.”

—KAREN BARAD, *Invertebrate visions: diffractions of the brittlestar.*

In this context, and considering that my approach to projects is deeply intertwined with my way of being in a place, my thesis explores the possibility of finding oneself ‘of the world’ in a foreign land. My research delves into various methods of understanding and connecting with a territory. Through diverse on-site performances and material experiences, I endeavor to explore this concept—of being ‘of the world,’ ‘of the marsh,’ ‘of the clay.’ I maintain that this approach to getting to know and connecting with a site, its materials and its body, brings us closer to a sustainable architecture. Such architecture not only sustains a past and a future but also acknowledges its role in the world, its material and poetic significance, and its uncertain becoming.







My thesis culminates with an installation intended to immerse the visitor in the complexity of this entanglement—connecting with a body— their body, my body— a territory, and a material. This opportunity isn't just about showcasing one year of work; it's about dislocating what has been learned from this intra-raction and activating it once more within the context of an art gallery.

While I won't delve deeply into the installation, still in progress, I want to emphasize that it's a space where the visitor's body is as crucial as any of the pieces comprising it. Their bodies activate, sense, cast shadows, and breathe into the installation. I aim for visitors to truly experience what it means to become of the site, to embody a body of the salt marsh in a direct and intertwined relationship with its material. My installation is a continuous interplay between these elements.

“Intra-Action marks the relational nature of the world in its intra- active becoming. There are no independently existing things that precede their intra- action. Rather, differences are materialized through a dynamics of iterative intra-activity. It is through specific intra- actions that the boundaries and properties of agents become determined.”

—KAREN BARAD, *Invertebrate visions: diffractions of the brittlestar.*

Through this research, I've come to understand that the relationship between body, site, and material has evolved in intra-action. My body has evolved in intra-action with the salt marsh, becoming of the salt marsh.





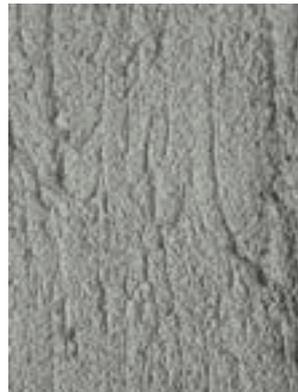


As part of the final installation, there's also a material map of the channel where I've performed the last 2 pieces. This map was created during the Sustainability Design Lab Seminar, using wood and various soil mixtures—clay, sand, and water from the salt marsh. I conducted several tests to gain better control over the final cracking in the material structure. In essence, the more water and thickness in the medium I use, the more cracks I obtain; conversely, the more sand and the thinner the layer, the fewer cracks. The overarching concept behind the map is to correlate the areas with more cracks in the drawing to the zones of lesser drainage in the salt marsh. I employed pure wood to establish an interface zone, serving as a material region between the wood and the mixture, facilitating interaction—a meeting space where both elements are active.

“These simple behaviours show that the interface is truly a space of encounter in which two different bodies come together to form a completely new state of matter.”

“This idea of the interface as a material region in which two substances can mix together to produce a completely new hybrid body, can serve as the starting point for rethinking more generally our relationship to the matter around us.”

—LAURA TRIPALDI, *Parallel Minds*

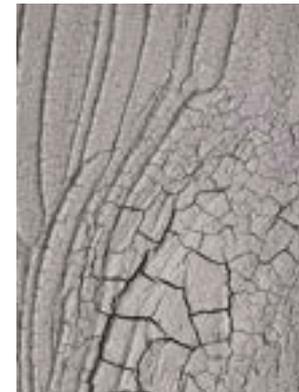
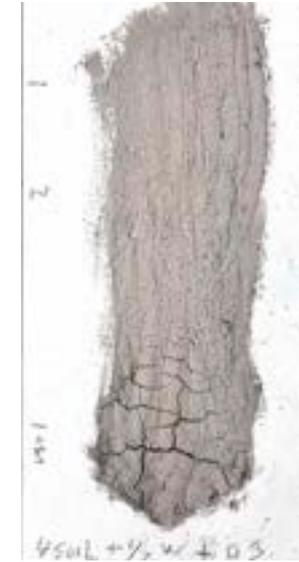


1 soil + 3 sand + 1/2 water
NO CRACKS

1 soil + 2 sand + 1 water
SOME CRACKS > THICKNESS 3MM

2 soil + 1 sand + 2 water
CRACKS > THICKNESS 2MM

1/2 soil + 2 sand + 1 water
CRACKS > THICKNESS 5MM



3 soil + 0 sand + 2 water
CRACKS

1 soil + 1 sand + 1 water
CRACKS > THICKNESS 5MM

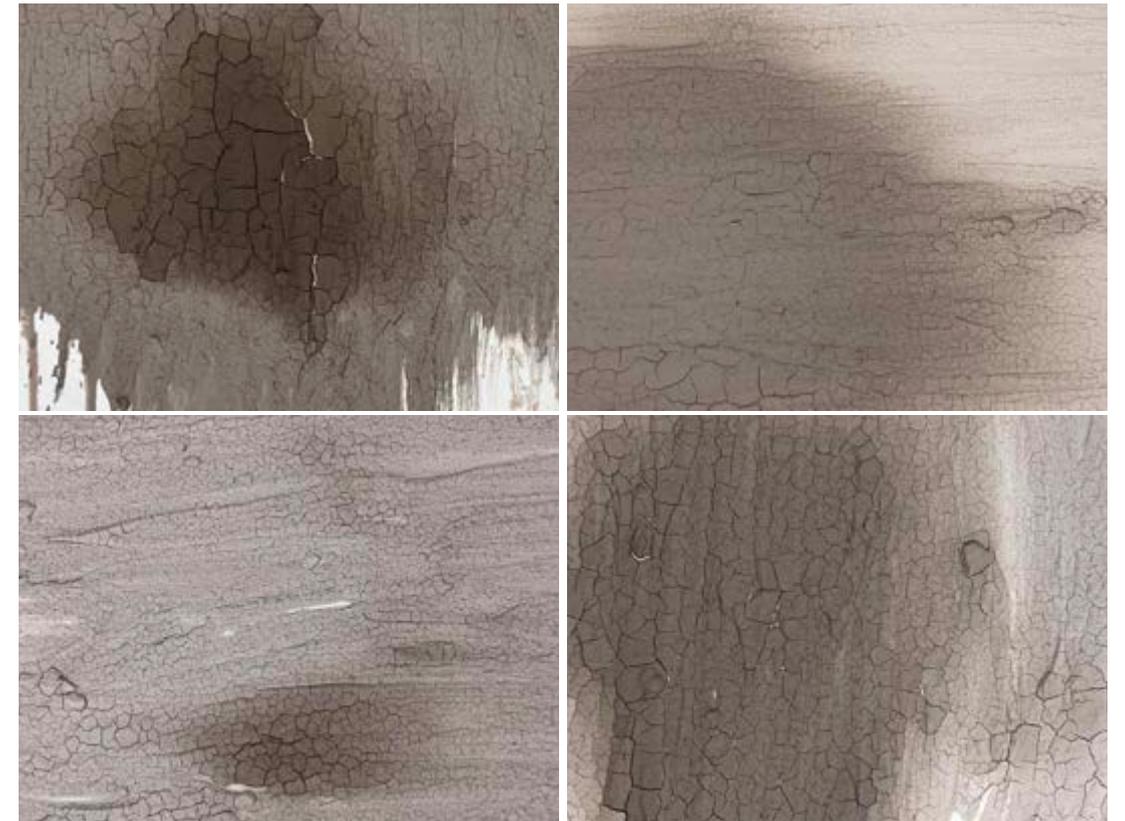
4 soil + 0 sand + 1/2 water
CRACKS > THICKNESS 2MM

2 soil + 1 sand + 1 water
CRACKS > THICKNESS 4MM

Material tests



Material map



06_Acknowledgement



I understand my practice much like I understood this research, from the peripheries of places, bodies, and materials. I am part of a powerful network that transcends borders, oceans, languages, and cultures.

I am grateful to my family, to my dad, who, since I was young, showed me that through drawing I could find myself. He taught me to love what nobody pays attention to, that common, vibrant essence that nobody sees but we both know, for Spinetta, for the art, books, and music I grew up with, and for teaching me that architecture is more than just architecture. To my mom, who taught me freedom—the freedom to change, to choose—for felting in front of me every night. Today, I finish this journey with an installation made from her fabrics, because freedom is knowing that at home, in you, is where true freedom lies. To my brother, for teaching me that water is the best healer, and for showing me a tenderness I didn't know existed, Junio. To Flori, for her indispensable love and presence. To my nono, for loving me so deeply. And to Juana and CharlyGarcia, for being silent masters.

To the National University of Rosario, particularly Taller Valderrama and Matéricos Periféricos, for providing the platform that allowed me to expand, showing me the strength of collective work and the greatness of thinking with others. To my students, for helping me realize the power of teaching in a public and free university. To Ana Valderrama, not only for all she has taught me and continues to teach me but also for recognizing in me someone worth listening to, for entrusting me with amazing spaces. This book is the culmination of our years of collective thought and effort.

I cannot talk about myself without acknowledging the work of my friends. I am grateful to have a wonderful network of friends in Argentina who inspire me, support me, love me, understand me, and build me up. To Sofi, for missing me and saying so, and to her family, who feels like my own. To Sol, for being my Doric column every time, and for Helena. To my dearest friends Cesar, Lauti, Pedro, and Eze, for our shared

moments of pessimism and our endless wine and chat sessions. To Lucia, for all these years of fighting for and with me, and to Matilde, for becoming besties in a few hours, my grandmother for your care. To my surfer friends for those late afternoons that bring me incredible happiness. To Joaco, for all we've learned together, and to all those friends who make me feel like I have a home in another body.

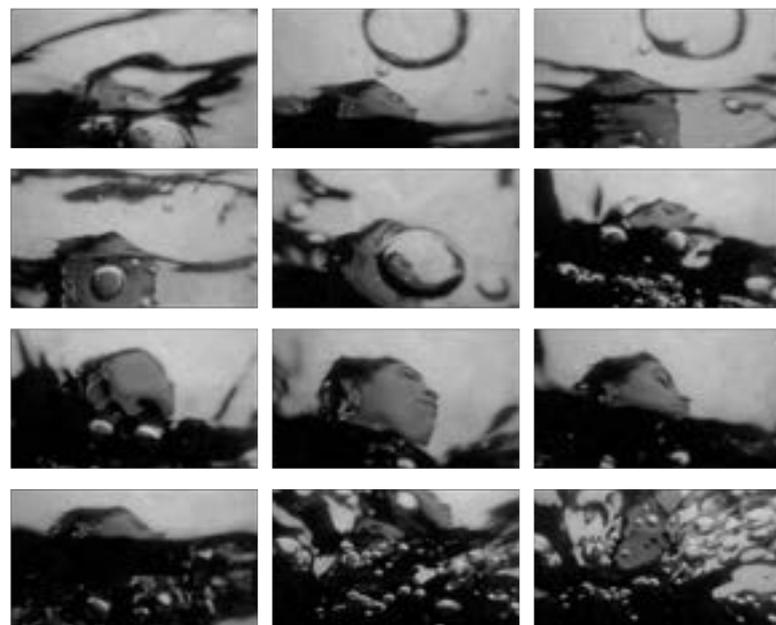
To Fulbright, for making all of this possible; I hope I've lived up to the opportunity. To RISD, and with RISD comes a multitude of people: Tiago Torres-Campos, who read between the lines of what wasn't written, for being an amazing advisor who challenged my thinking and gave me the freedom to be truly happy in making this work; to Johanna Barthmaier-Payne, for offering unwavering support and numerous opportunities. To Shona Kitchen, for helping me discover landscapes with new eyes, but above all, for helping me discover myself. To Felipe Shibuya, Anne West, Ann Kearsley, Ernesto Aparicio, and to the Sustainability Design Lab (Eduardo Duarte, Lara Davis, Tamara Kaplan), the Landscape Architecture, Glass, and Digital Media department at RISD, fulfilling a long-held dream.

To my roommates and friends, Ananya, whose meals and wise words hug me; to Tee, for understanding me when I speak neither Spanish nor English, for listening to Cerati and sharing mate from the heart, for "Wood" instead of "Good," and for believing in me every single day since we met. Thank you both for making our house feel like home. To all my RISD friends, especially Maureen, for always putting things into perspective.

Working with a body is a collaborative effort, and I am truly grateful to all who help in recording and capturing its essence, investing their time, love, and energy into this shared endeavor.

To Blackstone Park for its trees, for that tree, and of course, to RISD Beach.

And to myself, for staying true, for believing in gestures, and for surviving.



Entiendo mi práctica de la misma manera que entendí esta investigación, desde las periferias de los lugares, los cuerpos y los materiales. Soy parte de una red increíble de personas y espacios, que trasciende fronteras, océanos, idiomas y culturas.

Gracias a mi familia, a mi papá, quien, desde que era chica, me mostró que a través del dibujo podía encontrarme. Me enseñó a mirar lo que nadie presta atención, eso común y vibrante que nadie ve pero que ambos conocemos, por Spinetta, por el arte, los libros y la música con los que crecí, y por enseñarme que la arquitectura es más que solo arquitectura. A mi mamá, que me enseñó la libertad, la libertad para cambiar, para elegir, por crear frente a mí cada noche. Hoy, termino esta etapa con una instalación hecha con sus telas, porque la libertad es saber que en casa, en vos, es donde realmente está la libertad. A mi hermano, por enseñarme que el agua lo cura todo, y por mostrarme una ternura que no sabía que existía, Junio. A Flori, por su amor y presencia indispensable, ¿qué haríamos sin vos, Flori? Al nono, por amarme profundamente. Y a Juana y CharlyGarcía, por ser los mejores maestros.

A la Universidad Nacional de Rosario, en particular al Taller Valderrama y Matéricos Periféricos, por ser la plataforma que me permitió expandirme, mostrándome la fuerza del trabajo colectivo y la grandeza de pensar con otros. A mis estudiantes. A Ana Valderrama, no solo por todo lo que me ha enseñado y sigue enseñándome, sino también por ver en mí a alguien que valía la pena escuchar, y por crear espacios increíbles y confiármelos. Este libro es la culminación de años de pensamiento y esfuerzo colectivo.

No puedo hablar de mí misma sin hablar del trabajo de mis amigos. Estoy agradecida de tener amigos en Argentina que me inspiran, me apoyan, me quieren -casi siempre-, me comprenden y me construyen todos los días. A Sofí, por extrañarme y decirlo, y a su familia, que es como la mía. A Sol, por ser mi columna dórica cada vez, y por Helena. A mis mejores amigos Cesar, Lautí, Pedro y Eze, por nuestros momen-

tos de pesimismo y nuestras interminables charlas de vino y balcón. A Lucía, por todos estos años de pelear por y conmigo, a Matilde, por ser mi opuesta complementaria, y a mi 'abuela' por sus cuidados. A Joaco, por todo lo que aprendimos juntos, y a todos esos amigos que me hacen sentir que tengo un casa en otro cuerpo.

A Fulbright, por hacer todo esto posible; espero haber estado a la altura de la oportunidad. A RISD, y con RISD vienen una multitud de personas: Tiago Torres-Campos, quien leyó entre líneas lo que no estaba escrito, por ser un asesor increíble que desafió mi pensamiento y me dio la libertad de ser realmente feliz al hacer este trabajo; a Johanna Barthmaier-Payne, por ofrecer un apoyo inquebrantable y numerosas oportunidades. A Shona Kitchen, por ayudarme a ver paisajes con otros ojos, pero sobre todo, por ayudarme a verme a mí. A Felipe Shibuya, Anne West, Ann Kearsley, Ernesto Aparicio, al Sustainability Lab (Eduardo Duarte, Lara Davis, Tamara Kaplan), al departamento de Landscape Architecture, Glass, y Digital Media de RISD, por cumplirme un sueño.

A mis roomates y amigas, Ananya, cuyas comidas y palabras me abrazan cada día; a Tee, por entenderme cuando no hablo ni español ni inglés, por escuchar a Cerati y compartir mates desde el corazón, por "Wood" en lugar de "Good", y por creer en mí cada día desde que nos conocimos. Gracias a ambas por hacer que nuestra casa se sienta como una casa. A todos mis amigos de RISD, especialmente a Maureen, por siempre poner las cosas en perspectiva.

Trabajar con mi cuerpo fue un trabajo colaborativo enorme, y estoy realmente agradecida con todos los que me ayudaron a grabar y capturar la esencia de este trabajo, invirtiendo su tiempo, amor y energía en este esfuerzo compartido.

A Blackstone Park por sus árboles, por ese árbol, y por supuesto, a RISD Beach. Y a mí, por serme fiel, por seguir creyendo en el poder gestos y por sobrevivir. Y a vos, somos nosotros.

ENCOUNTERS



Body as a site

