

The background features a complex abstract design. It includes a large, light gray triangular mesh on the left side, a series of thin, wavy vertical lines running down the center, and a series of thin, wavy horizontal lines on the right side. The text is centered over these elements.

DUST

[A Proxy for the Unheard]

Ranveer Singh Sandhu

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[A Proxy for the Unheard]

by

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Submitted in partial fulfillment of the requirements for the degree of

Master of Architecture

in

The Faculty of Graduate Studies,
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This is not about *me*,
Its about *us*.

For those whose voices go unheard.

“Lacking all sacredness, stripped of all spiritual significance, the air is today little more than a conveniently forgotten dump site for a host of gaseous effluents and industrial pollutants.”

- *David Abram*

A misconception of architecture is that it’s built by humans for humans, and once constructed, is static. Although buildings may primarily be designed within Euclidean space, their lives are not constrained to it; they interact with the ambient atmosphere and the beings within it. Architecture exists within the framework of the Actor Network Theory (ANT); it undergoes constant change through interactions with beings within its ambient environment.¹ ANT flattens hierarchy, considering the actions of all beings as equal.

Our buildings are exposed to dust and countless more-than-human entities that exist within the atmosphere, invisible to the naked eye. The more-than-human interacts with the built environment, forming rich internal narratives.

Sympathetic engagement with the physical registrations of such beings exposes another layer to ‘nature’ that is invisible to the naked eye. Exposure to additional beings and processes of the natural world breaks the boundary between built and natural and strengthens the bond between humans and the more-than-human.

¹ Actor Network Theory is an approach where everything human and nonhuman exist in a constantly shifting relationship. The theory has two fundamental premise: we act on things and things act upon us and the actions of human and nonhuman are equal.

This thesis seeks to spark a paradigm shift and explore the symbiotic relationship between humans and the atmosphere. It visualizes the dust in the air to re-establish ourselves with the more-than-human world.

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Much love, forever and always.

Words cannot express how grateful and privileged I am to have had the opportunity to learn from each and every person I met at on my journey, but here is a humble attempt.

Thank you, Joe for your unwavering support for my ambitious ideas and ventures.

Thank you, Blair and Sam, the dream team, for all the critiques, invaluable feedback, and encouraging commentary throughout.

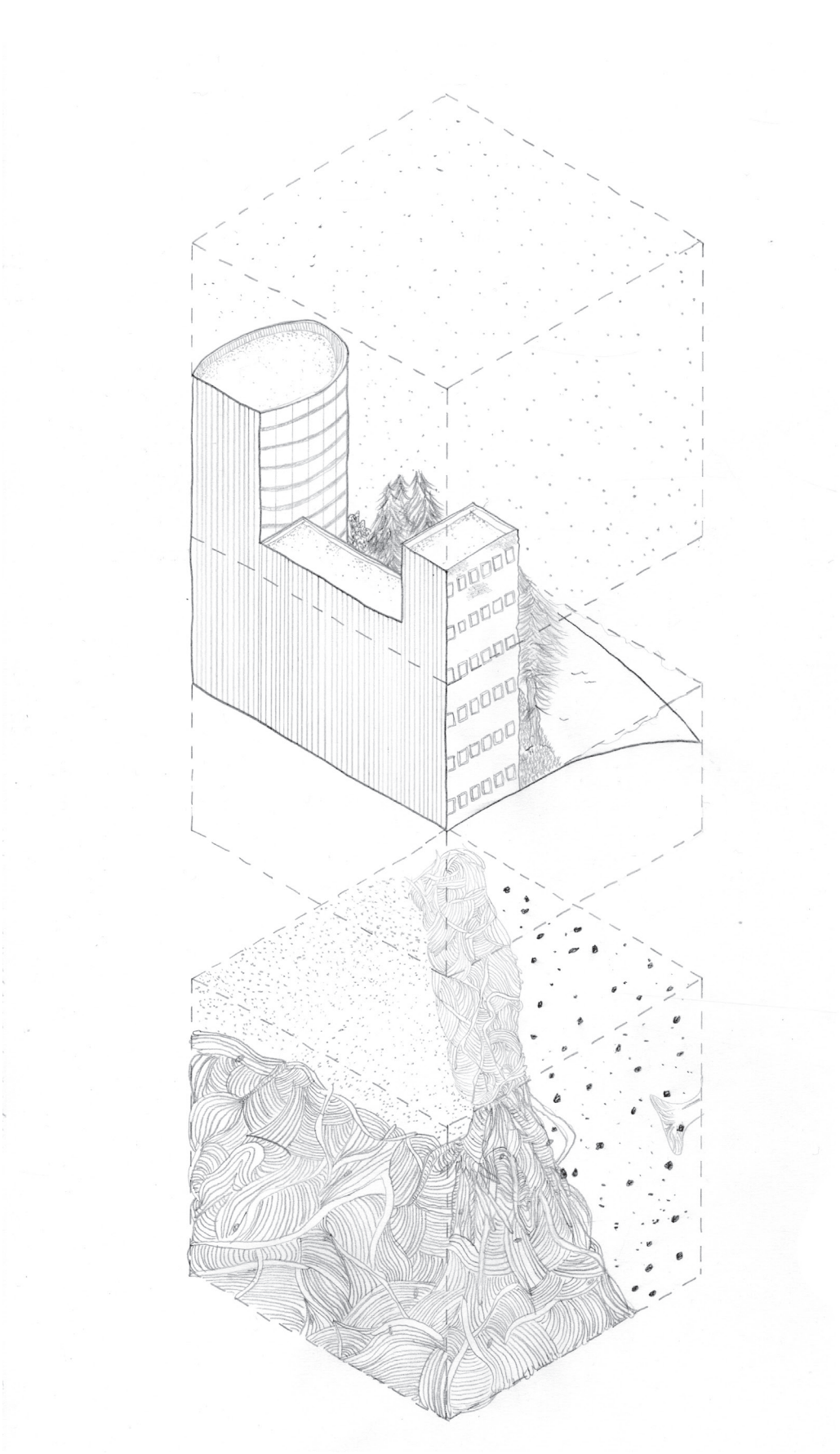
Thank you, Graham, Rob, and David for providing space in the shop and always lending a helping hand.
Thank you to my family for putting up with me and encouraging me to pursue my passion.

Thank you to my SALA family for always being there. A special thanks to Tyler, Parker, Emily, Jeremy, Emma, Yang, Nat, Connor, Bryn, Vinayak, and Emilia for all the walks to the coffee shop - full disclosure, I don't really like coffee.

A very special thank you to the brilliant, ingenious, breathtaking, awe-inspiring, and arguably the coolest person to ever exist E...

The contemporary focus and understanding of site are under-explored, concerned greatly with the visible components, giving little to no consideration to that which is visibly inaccessible – the atmosphere and underground. By visualizing dust, this work interrogates our understanding of site and its participants, exposing another layer which often goes unnoticed.²

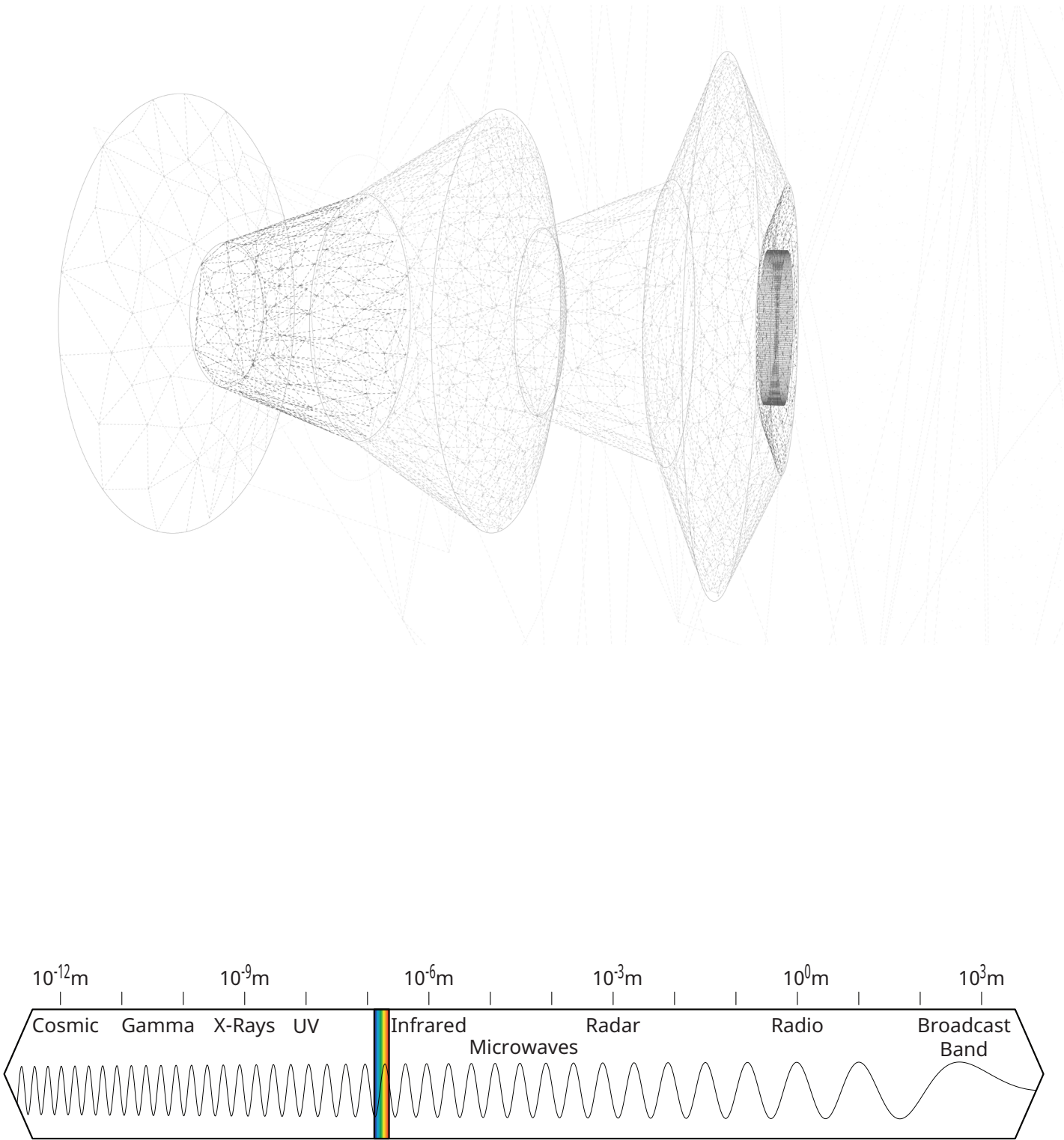
Fig. 1 - [Right] - Author, *Components of Site*, 2021.
2 Allen, *From Object to Field*, 24



The contemporary ocular-centric habit of mediating the relationships within our world ontologically negates the impact of the intangible.³ The eye is a wonderful thing, but with fundamental limits.

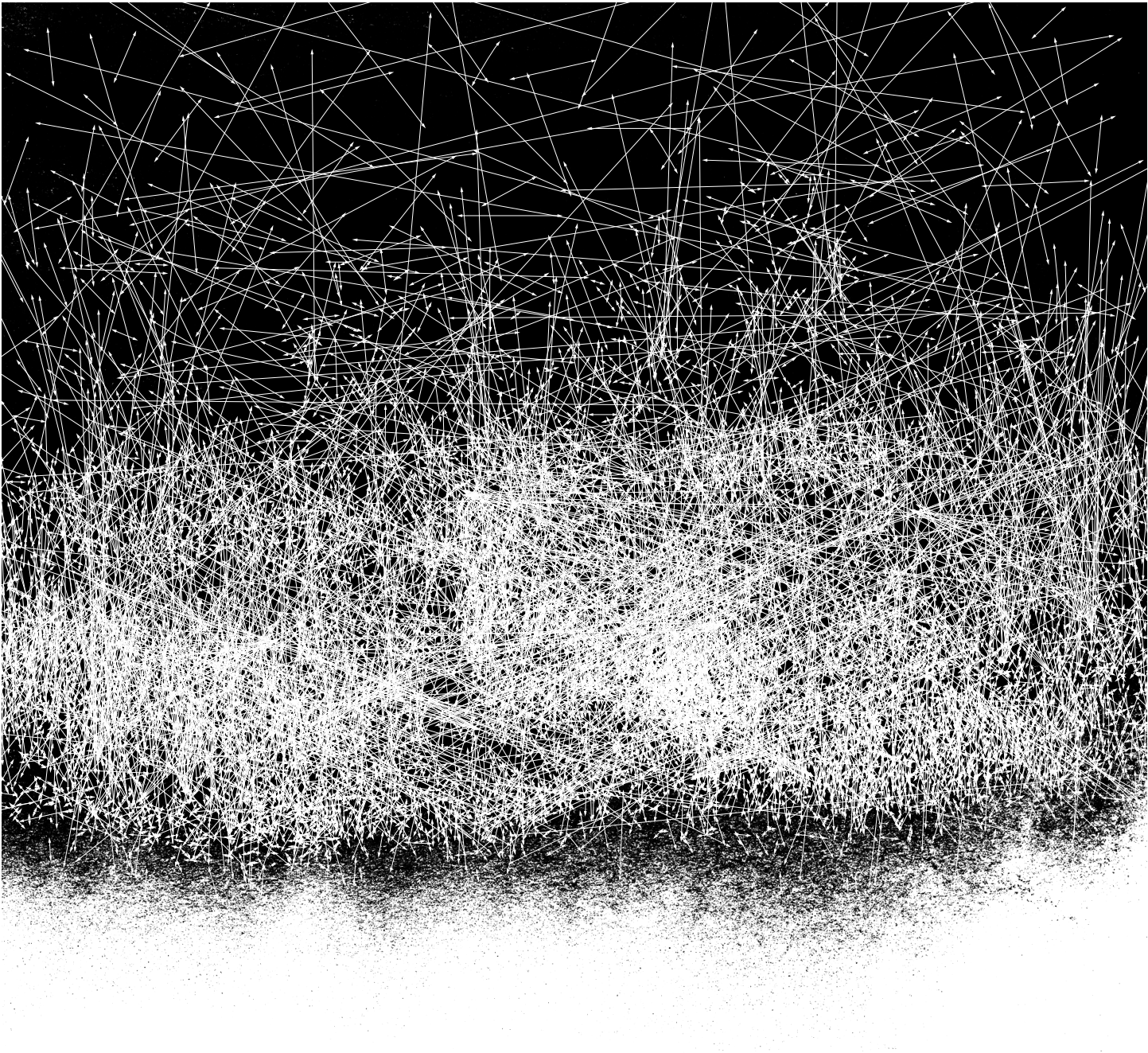
As wondrous as it is, the eye fails to register all the tiny particles present around us. Of the vast number of wavelengths present the human eye can perceive a small sliver, failing to visually register radio waves traveling through the air, or the small bacteria living under our nose, the gases being emitted by landfills, or the smoke exerted from the tailpipe of cars. Relying solely on vision, an entire world of tiny particles is overlooked. Humbling in a way, to know the existence of a world which is visually inaccessible. A world, which houses countless objects, particles, and things that is overshadowed by human perception.

Fig. 2 - [Right, Above] - Author, *Extrapolated Eye*, 2021.
Fig. 3 - [Right, Below] - Author, *Visible Spectrum*, 2021.
³ Benedito, *Atmosphere Anatomies*, 17



We are, at all times, submerged under air, consequently in dust, but the impact isn't considered until its rendered visible. Atmosphere's invisible nature results in an obliviousness to it and its beings, nonetheless, living with and within it, and exposed to its constant variability.⁴ The failure to recognize the air disregards its readability and thus, defying its visible qualities.⁵

Fig. 4 - [Right] - Author, *The invisible beings*, 2021.
4 Benedito, *Atmosphere Anatomies*, 18
5 Benedito, *Atmosphere Anatomies*, 19



“Whatever the spur, we need to take seriously
the materiality of air.”

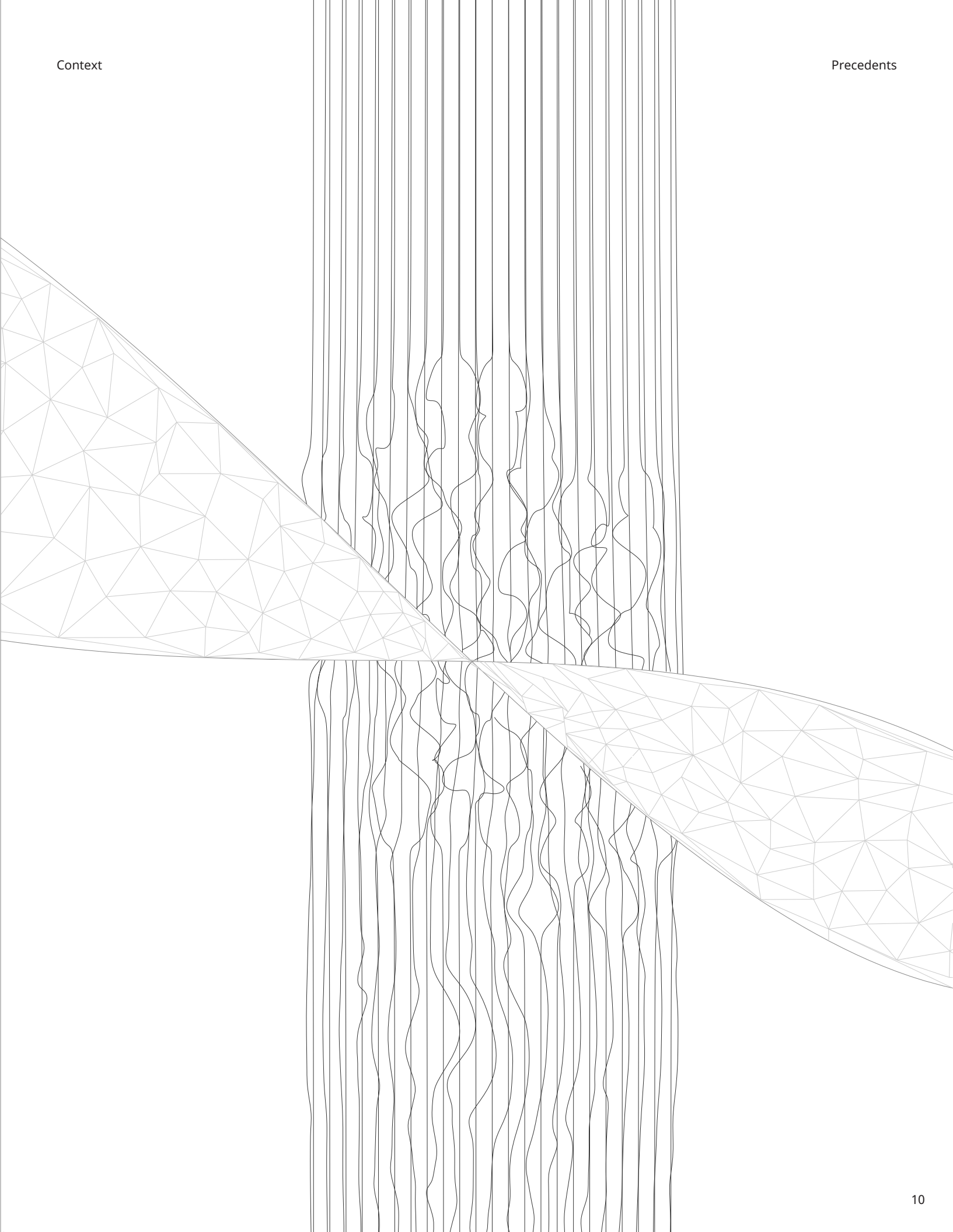
- *Javier Arbona*

Fig. 5 - [Right] - Author, *Dialogue Between the Worlds*, 2021.



Beginning from a macro scale, here are some extreme examples of our interaction with dust, these are some extreme examples of dust ranging from global to city scales, indicating the pivotal role of dust on our planet. Dust is also present in our everyday life, existing at a personal, architectural scale and plays a pivotal role in our lives.

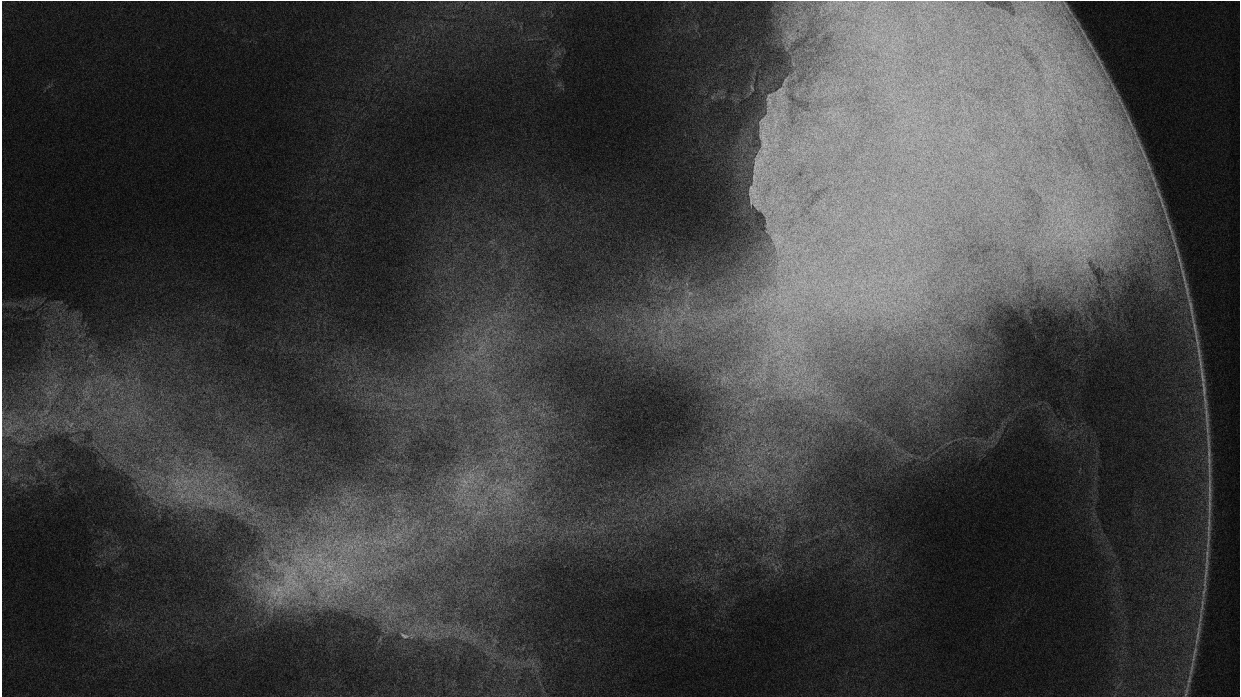
Fig. 6 - [Right] - Author, *Impacting One Another*, 2021.



Dust flow from the Saharan Desert

For over 7500 years dust has been flowing from the Saharan desert, across the Atlantic Ocean to the dense Amazonian forests. Annually, well over 130 million tons of phosphorous rich dust sets into the forest, enriching the soil, providing better growing conditions. Connecting two landscapes which would otherwise share no commonality.

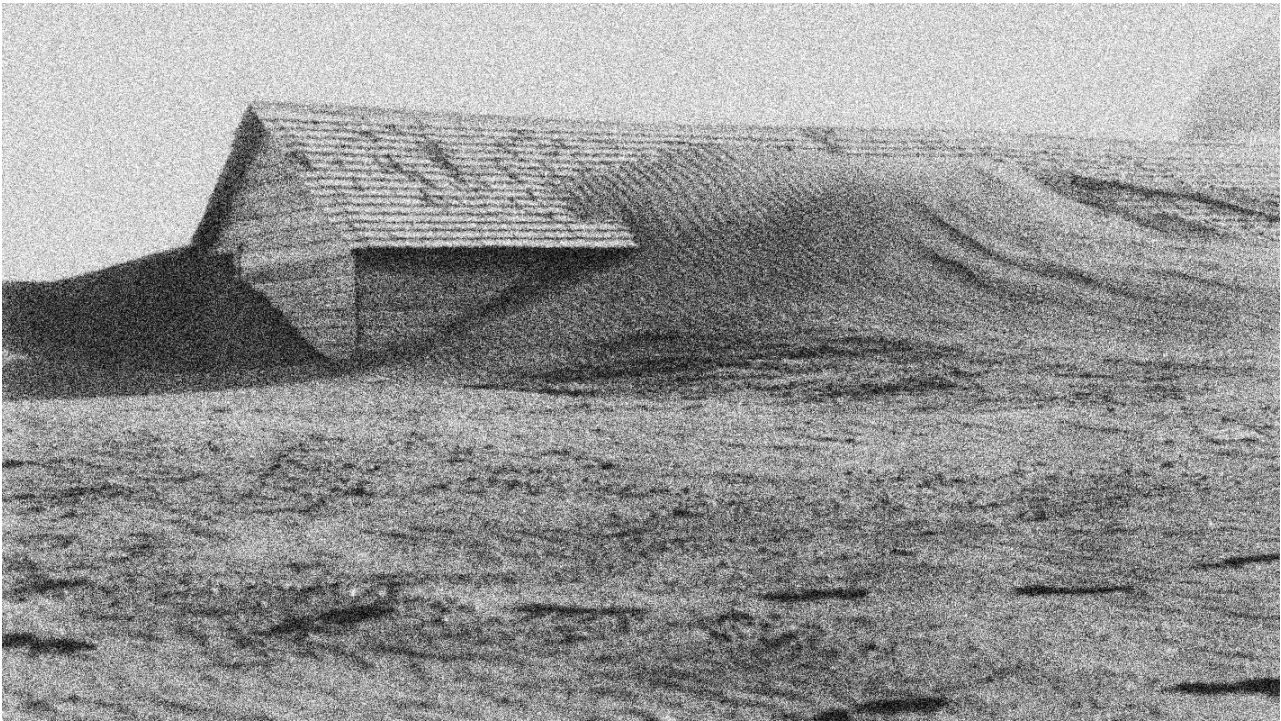
Fig. 7 - [Right] - Author, *Saharan Dust Flow*, 2021.



Dust Bowls of the 1930's

During the 1930's, the prairies of Southern United States experienced severe dust storms resulting in the destruction of homes, displacement of people, and accumulation of dust. Dust gathered to create large mounds some almost as tall as the residences.

Fig. 8 - [Right] - Author, *Dust Bowl*, 2021.



Aftermath of 9/11

Following the events of 9/11, a plume of dust enveloped Lower Manhattan, encompassing buildings and residents of the city. The dust in the air impacted the health and well-being of locals for many days following the crash, resulting in temporary and permanent health conditions.

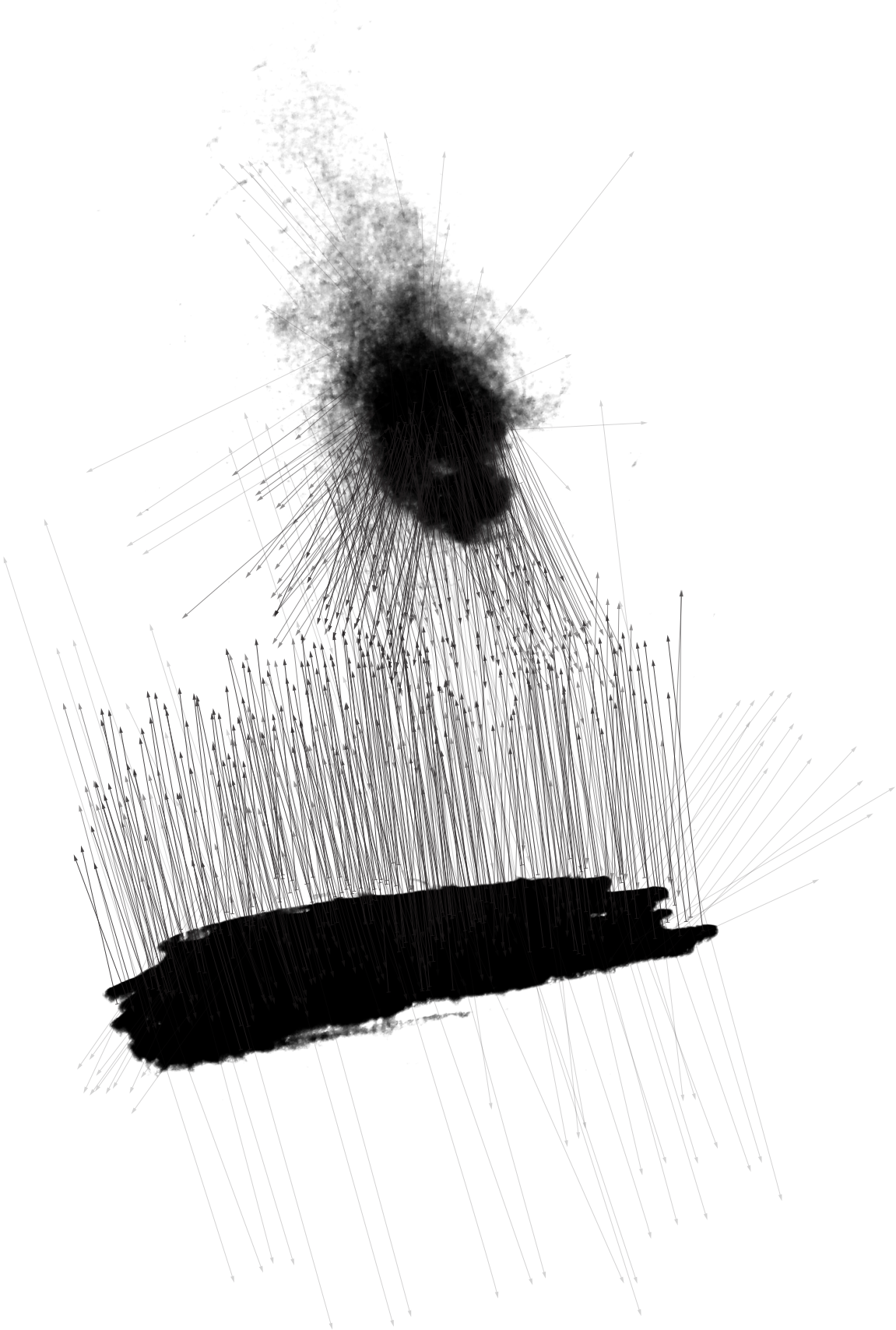
Fig. 9 - [Right] - Author, *9/11 Dust*, 2021.



This is a small world, and we’re all connected. The relationship between visible and invisible, human and dust is evident and inevitable. It’s ubiquitous, but due to its imperceptible nature, it is typically ignored.

Regardless of its visual presence, dust is both acting and impacting both the visible and invisible worlds. Based on the actor network theory, a theory developed in Paris in the 1980’s by Bruno Latour and company, everything and everyone acts upon one another, other beings, the built environment, and the natural environment.⁶ The visible and invisible exist in the same world, acting on and amongst each other. The action is equally distributed between both the human and the more-than-human beings, all hierarchies are dismantled. This is the actor network theory.

Fig. 10 - [Right] - Author, *Acting on One Another*, 2021.
6 Latour and Yaneva, *Give Me a Gun and I Will Make Buildings Move: An ANT's View of Architecture* , 107



Air is changing, its densifying. Its not what it once was, now housing thousands of beings from the natural and anthropogenic world. The “new air” is a collection of natural air and anthropogenic air, detached of all sacredness, air has now become an invisible dumpsite.⁷ A negative perception of air, and the beings within it, promotes an exclusive ideology. Forcing a divide between humans and the little beings of the atmosphere, deteriorating the relations of humans and nature.⁸ Nonetheless, air is still air. The state of air is not a problem to be solved, rather an inevitable happening to be acknowledged and made use of the uncertainties.⁹

⁷ Abram, *The Spell of the Sensuous*, 153
⁸ Guattari, *The Three Ecologies*, 41
⁹ Leatherbarrow and Mostafavi, *On Weathering*, 16

Naturally air consists of primarily oxygen and nitrogen, with small amounts of other gases – carbon dioxide, ammonia, methane, hydrogen, ozone, argon, neon, helium, krypton, xenon, and radon. Increases in human development has drastically altered this composition. Air now contains elements such as smoke, smog, dust, debris, exhaust, and other pollutants, becoming an invisible dumpsite for human life. There is natural air than the anthropogenic air, which I call anti-air. Anti-air is that part of air that is typically regarded as unwanted – consisting of dust, debris, smoke, gases, smog. Composed of those elements that we typically regard as pollution. It surrounds us, interacts with us, and shapes us, therefore, has become apart of the new climate.

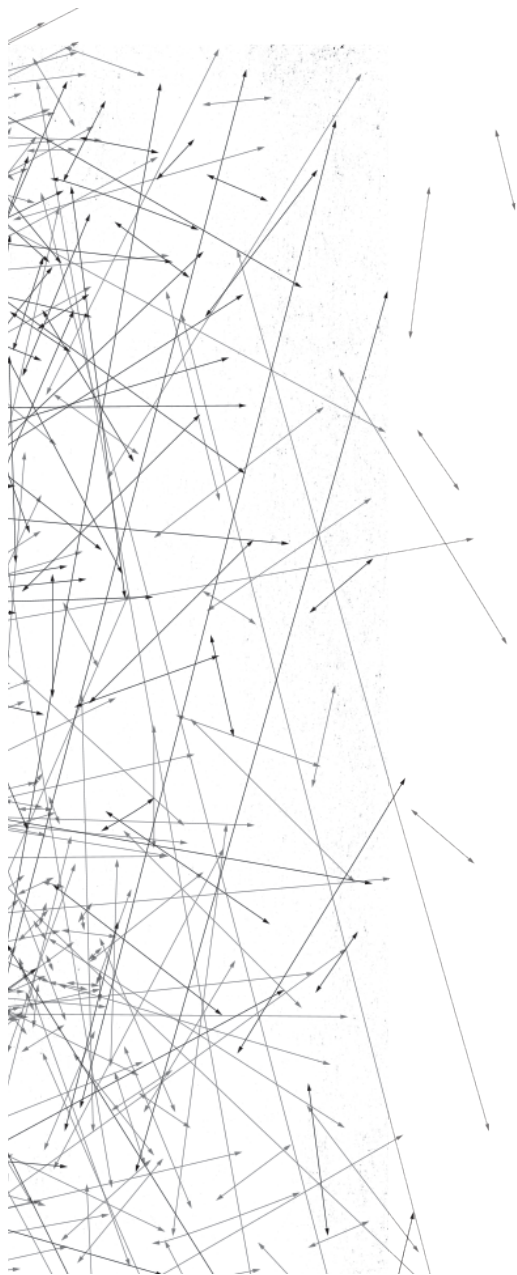
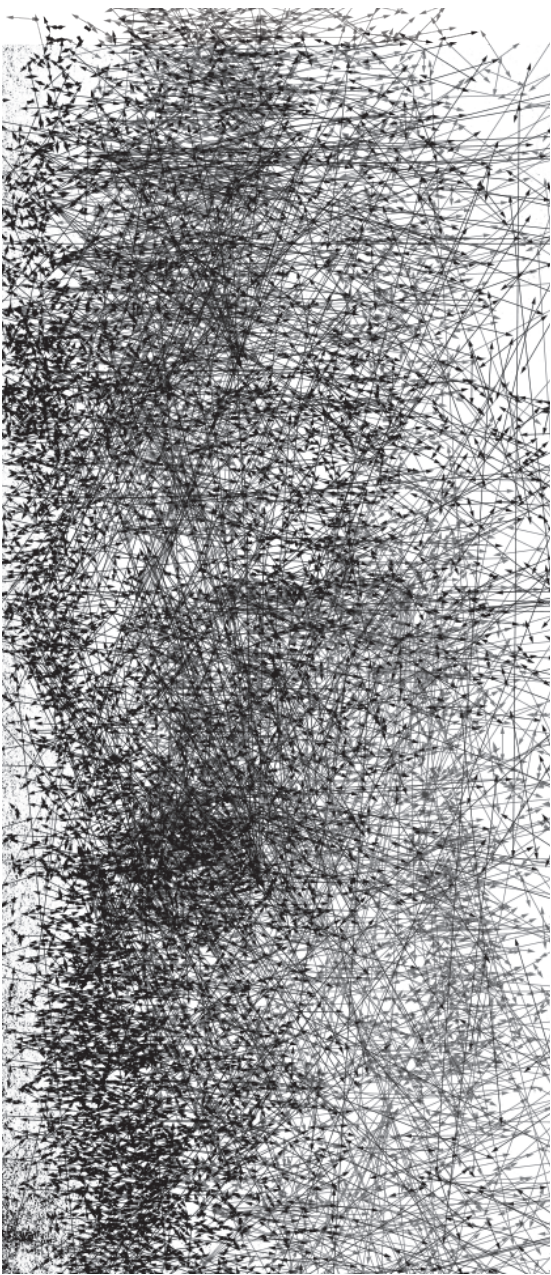


Fig. 11 - [Above] - Author, *Population of Air - Today*, 2021.
Fig. 12 - [Right] - Author, *Population of Air - Future*, 2021.



Architecture is no stranger to the invisible beings; it is contingent at the very heart.¹⁰ Hence, heightening the importance of interdependency in the ever-growing anthropogenic climates.¹¹ Although primarily under-explored, professionals within the discourse have studied the relationship between air and architecture through various lenses – political, environmental, and economic.

Fig. 13 - [Right] - Author, *Responding to the Masses*, 2021.
10 Till, *Architecture and Contingency*, 135
11 Benedito, *Atmosphere Anatomies*, 17



I am carving a space within this conversation by accessing the social through dust and understanding how the two beings, humans, and dust, collectively reside on this planet we humans have claimed as mother earth. The architectural profession itself revolves around space, we carve space using walls, doors, windows, and other enclosures, treating space as a void. I would like to argue that space has thickness, space is material not a void. Thus, by visualizing dust as a proxy, we can see space with a different lens, as an active participant in our architecture.

Fig. 14 - [Right] - Author, *Dust Moat - Emilia*, 2021.



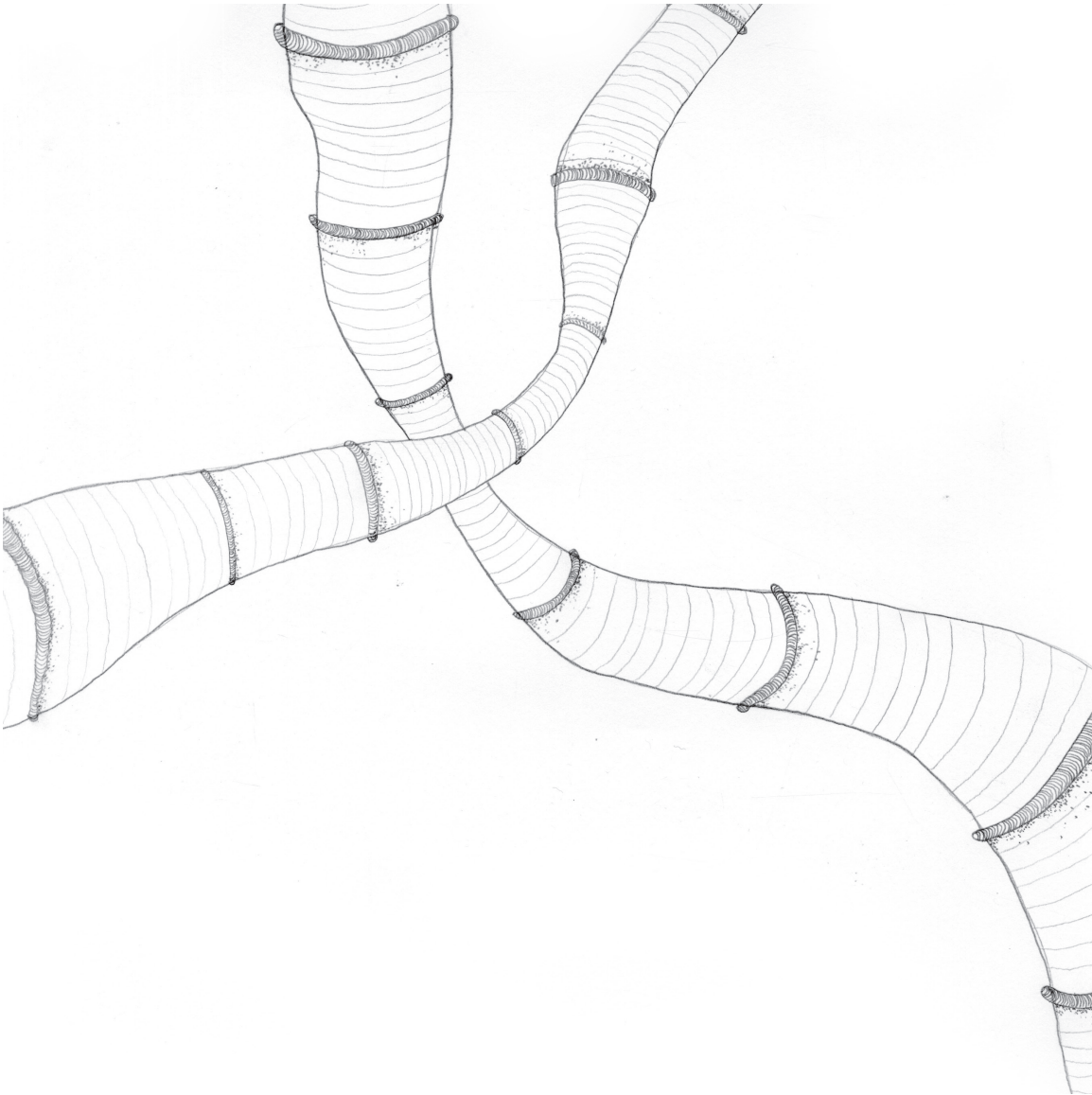
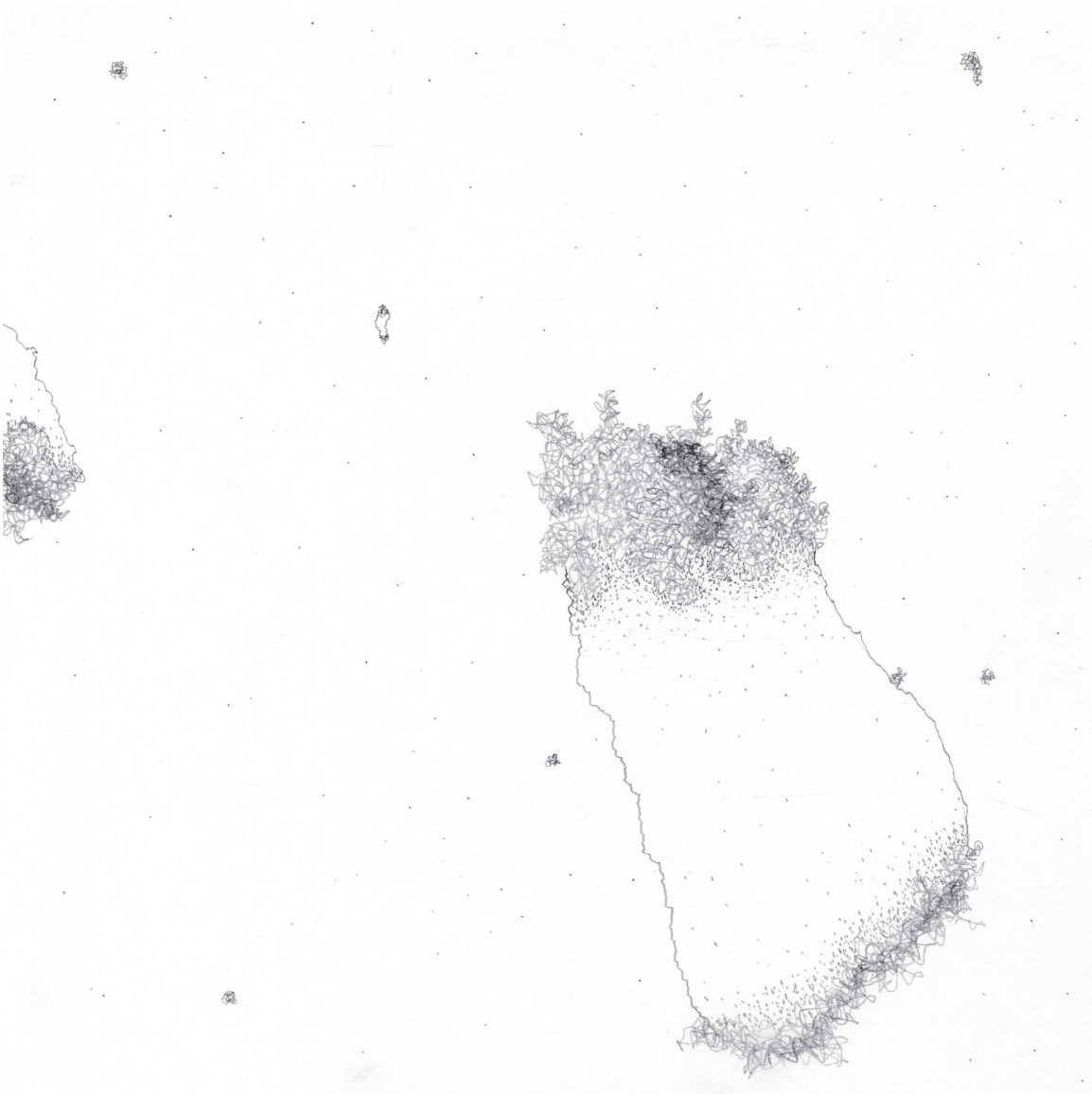


Fig. 15 - [Above] - Author, *Dust Moat* - Sursur, 2021.
Fig. 16 - [Right] - Author, *Dust Moat* - Lucy, 2021.



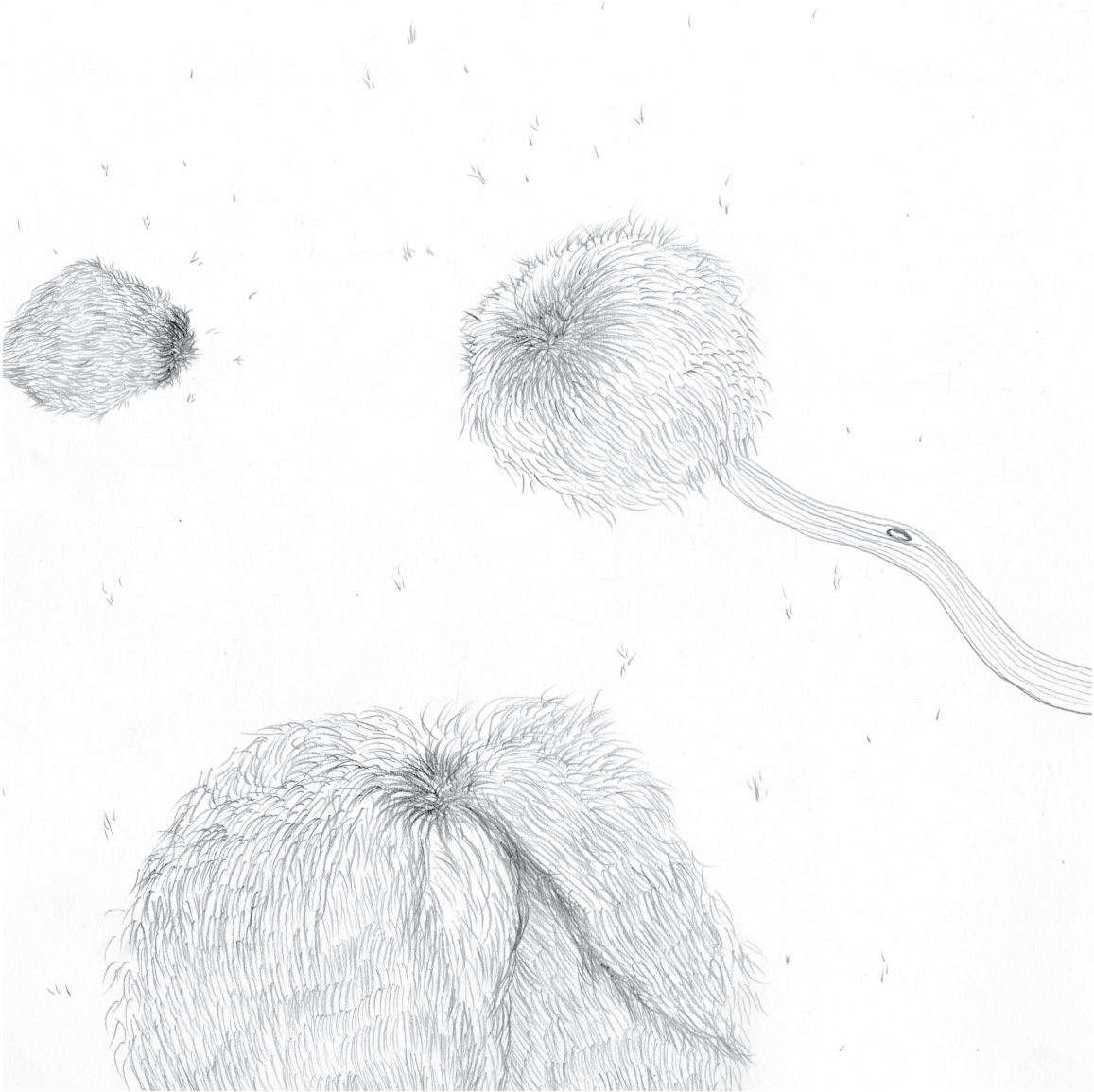
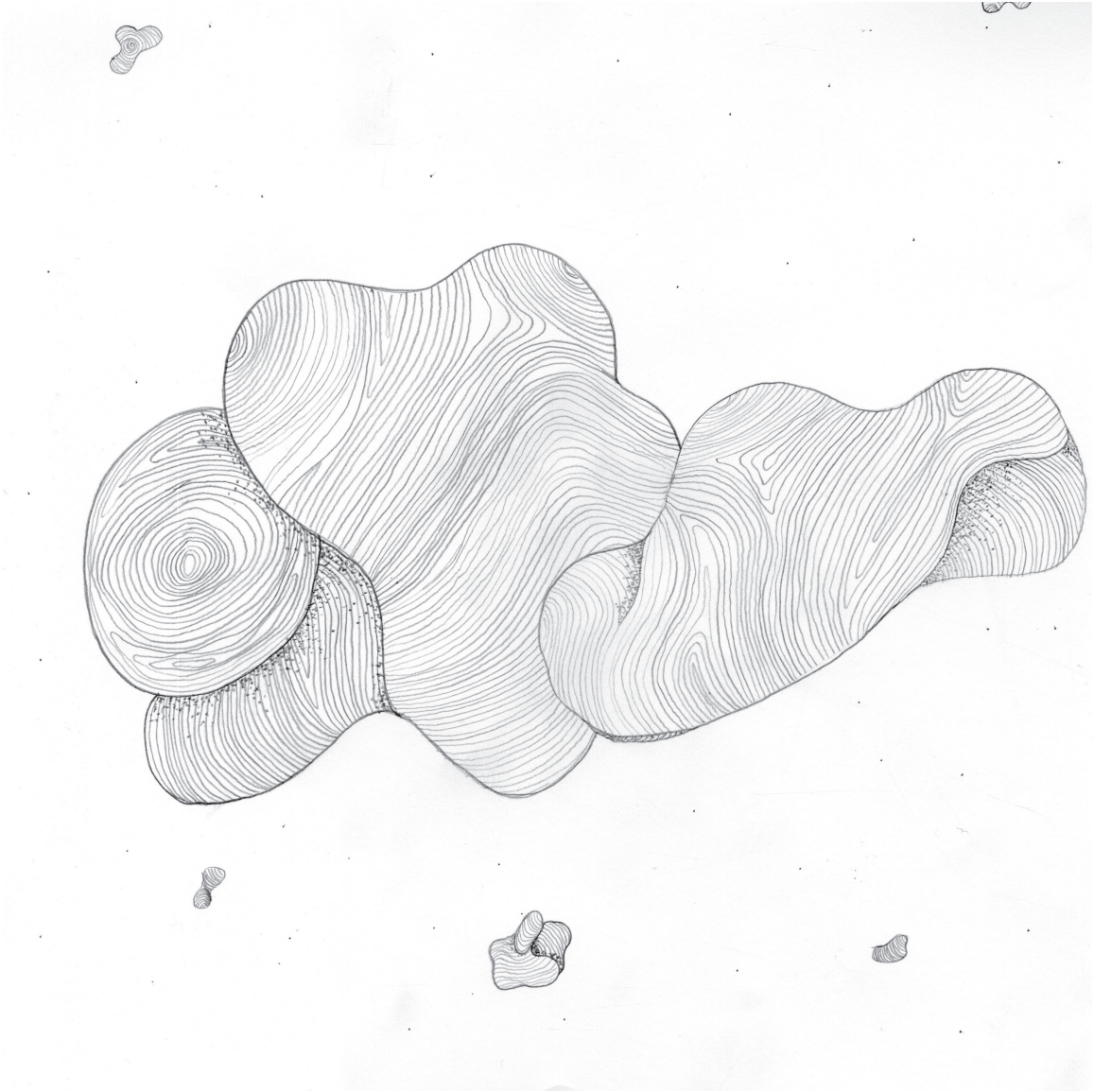


Fig. 17 - [Above] - Author, *Dust Moat - Ellen*, 2021.
Fig. 18 - [Right] - Author, *Dust Moat - Rob*, 2021.



I am proposing an architectural installation for the Arsenale at the Venice biennale. In line with the Biennale’s focus to project critical conversations in contemporary practice, my installation would be presented to critique the contemporary understanding and relationship to site. Creating an instrument that highlights the connectedness of the physical and atmospheric space. By experiencing dust as a proxy, this work is to challenge the politics of the everyday site, shedding light on the invisible beings behind site.

The Arsenale at the Venice Biennale is a long linear building with various exhibits from select artists. The site I am proposing is near the center in the long portion of the building.

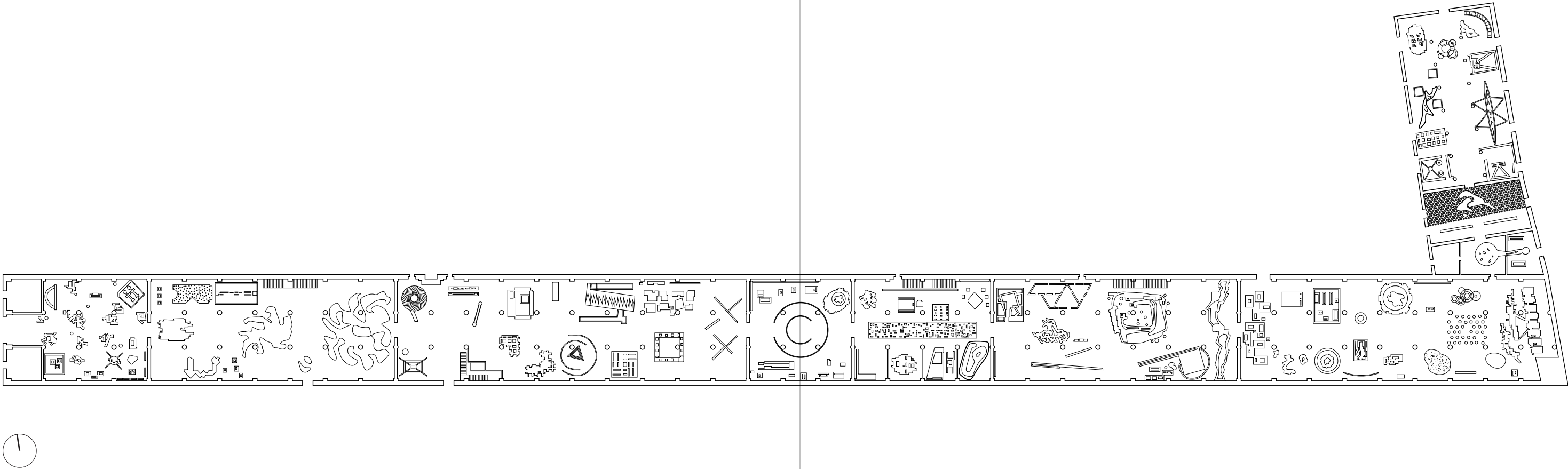
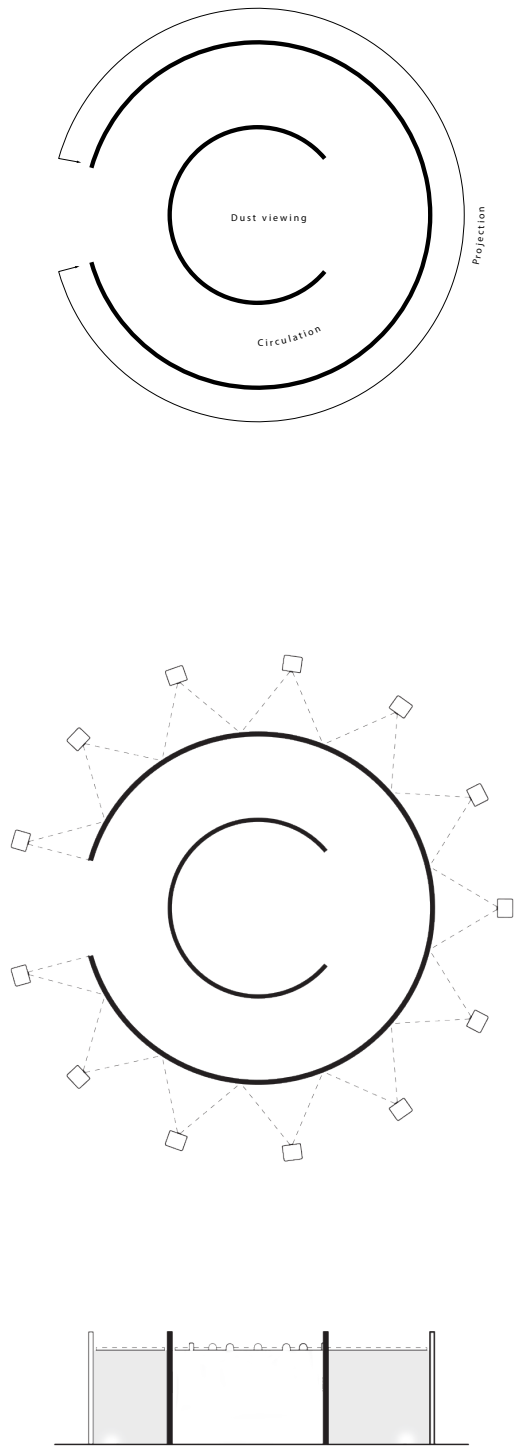


Fig. 19 - [Above] - Author, *Exhibition Overview*, 2021.

The installation has a two-part experience – the interior viewing of the dust and the exterior projection of the microscopic images.

The journey starts on the exterior where the projection of the dust particles visually engages the passerby. Upon entering the installation, the human and dust is guided through a dimly lit circulation path. The dimly lit circulation prepares the eye for the final destination. The high contrast between the dust viewing chamber and the circulation intensifies the viewing of the dust particles in the air and creates a surreal experience.

Fig. 20 - [Right, Above] - Author, *Circulation Diagram*, 2021.
Fig. 21 - [Right, Below] - Author, *Experience Diagram*, 2021.



The installation sits in the middle of the space, intersecting the main circulation path. Before entering one can see the outer skin of the installation and observe the video of dust particles. As one reaches the main event, they see a circular room covered in black felt fabric and brightly lit.

Fig. 22 - [Right] - Author, *Installation Plan*, 2021.

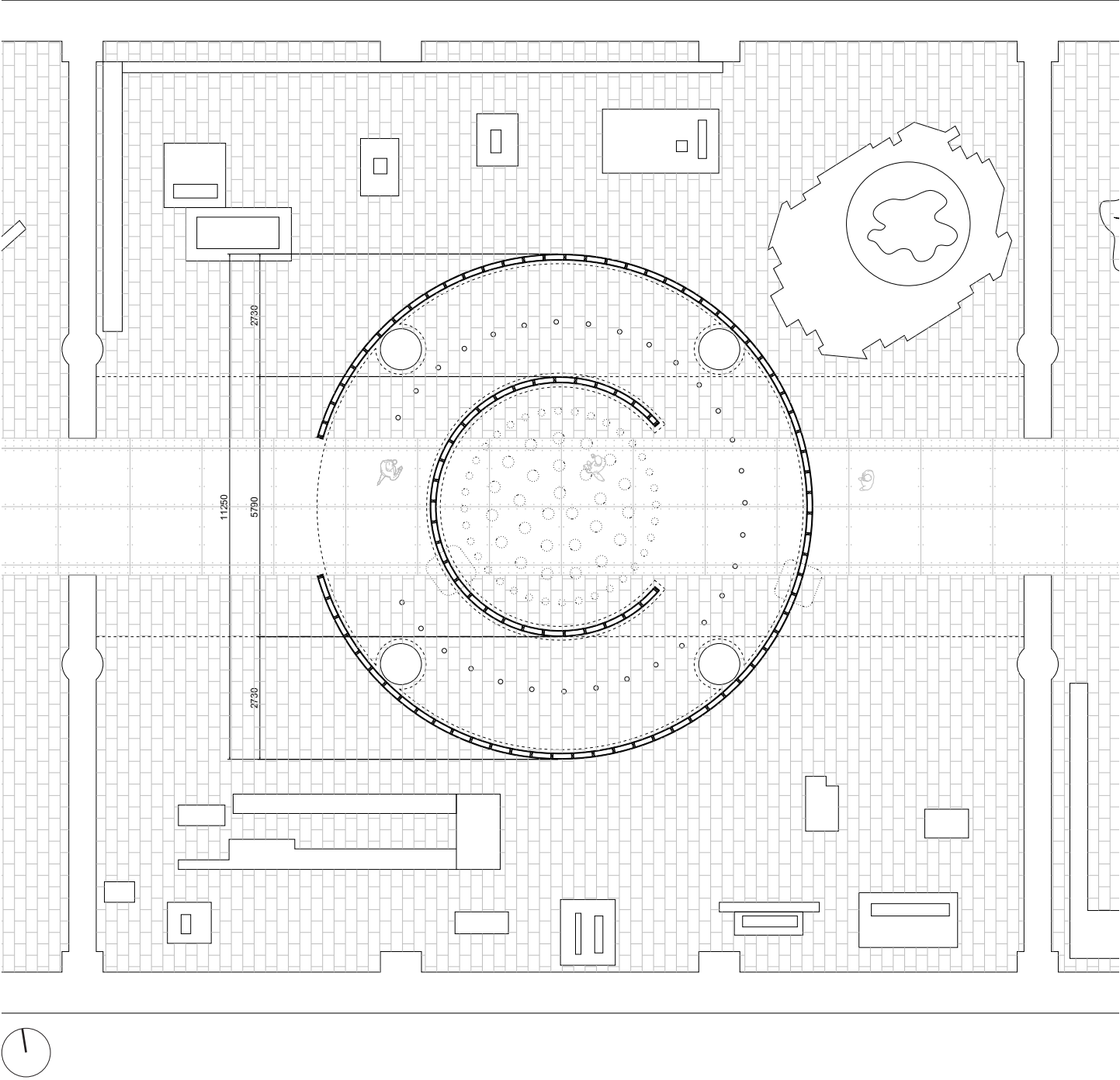


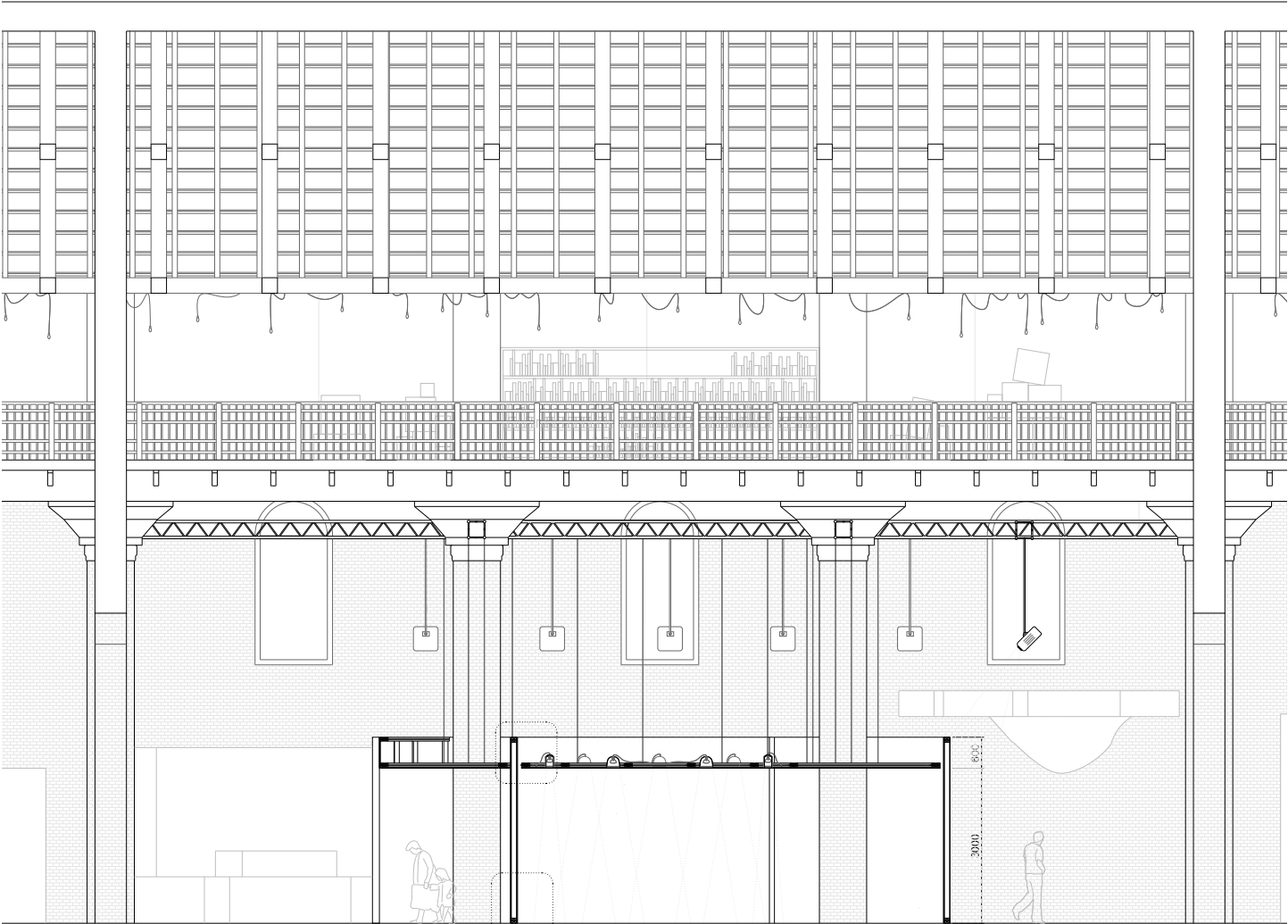


Fig. 23 - [Above] - Author, *Plan Detail - Outer Shell*, 2021.
Fig. 24 - [Right] - Author, *Plan Detail - Interior Shell*, 2021.



The lights are placed on top of installation along with a carefully curated opening. I designed the openings to control the light and contain it within the volume and placed them away from the wall surface to reduce the bouncing of light. A reveal along with a cover continues along the wall to allow the flow of air and dust but block any exterior light.

Fig. 25 - [Right] - Author, *Installation Section*, 2021.



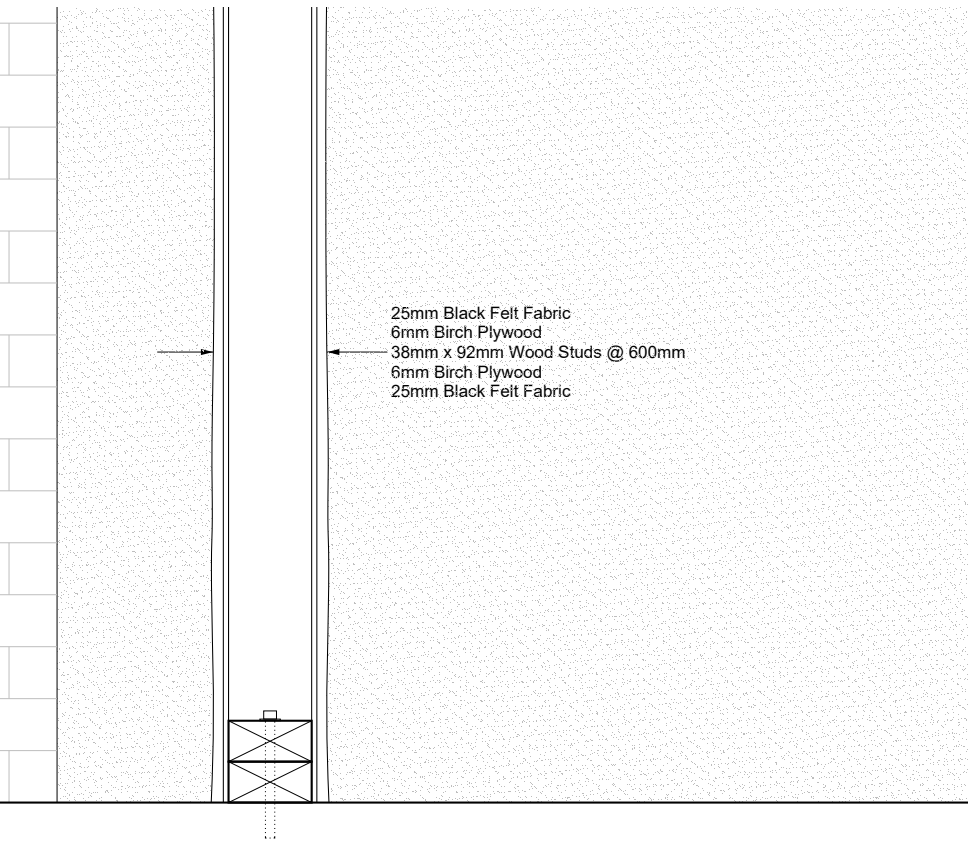
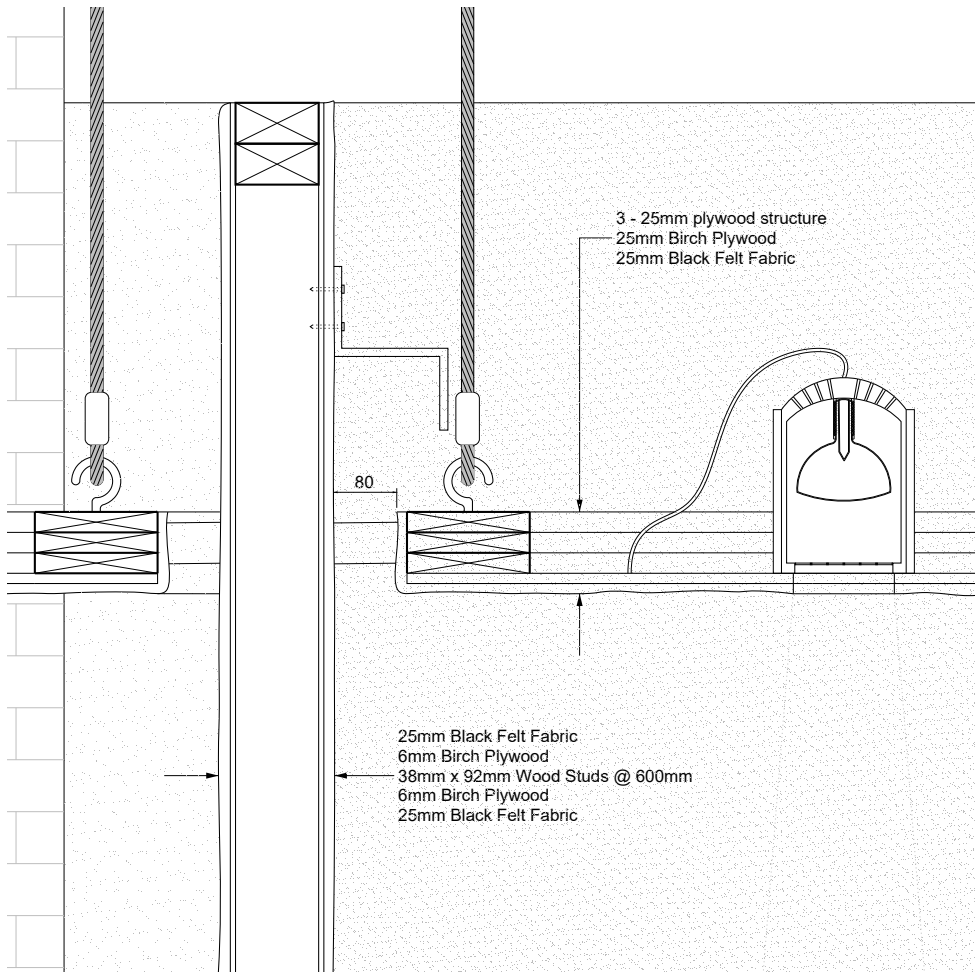
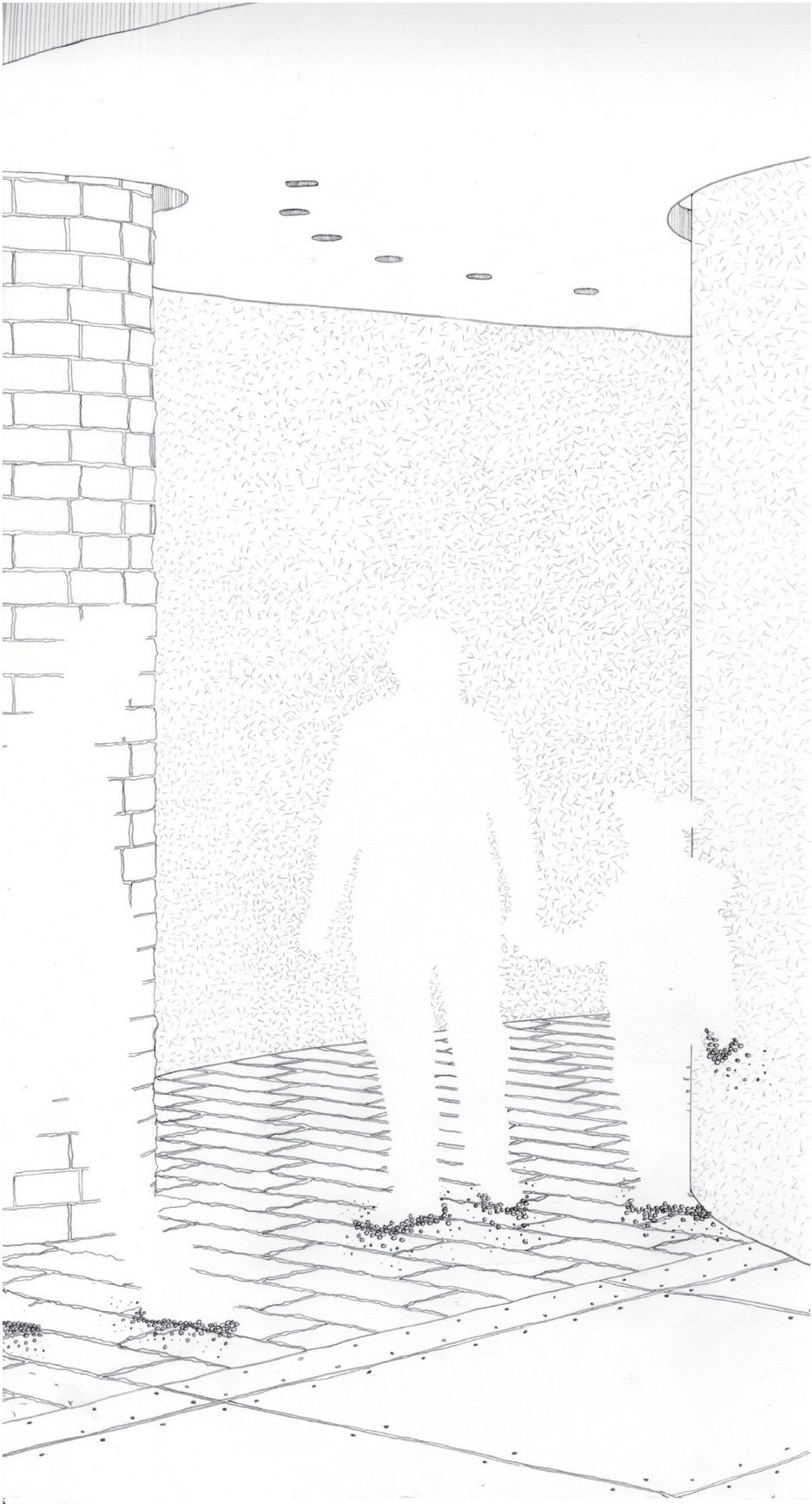


Fig. 26 - [Above] - Author, *Section Detail - Top of Wall*, 2021.
Fig. 27 - [Right] - Author, *Section Detail - Bottom of Wall*, 2021.

As one enters the installation they are guided by a row of dimly lit lights and surrounded by walls covered in black felt fabric. The passage creates a moment of darkness relative to the interior, creating a high contrast and optimal viewing conditions of dust.

Fig. 28 - [Right] - Author, *Heading into the Dust*, 2021.



The walls provide the perfect backdrop to view the dust. The felted walls also capture dust and release it as one engages with the material. Even as users interact with their clothing, they can see the trapped dust escaping and roaming free in the space. Upon exit, the human can see a microscopic view of the dust particles they just interacted with projected on the exterior shell of the installation.

Fig. 29 - [Right] - Author, *Dust and Dust*, 2021.

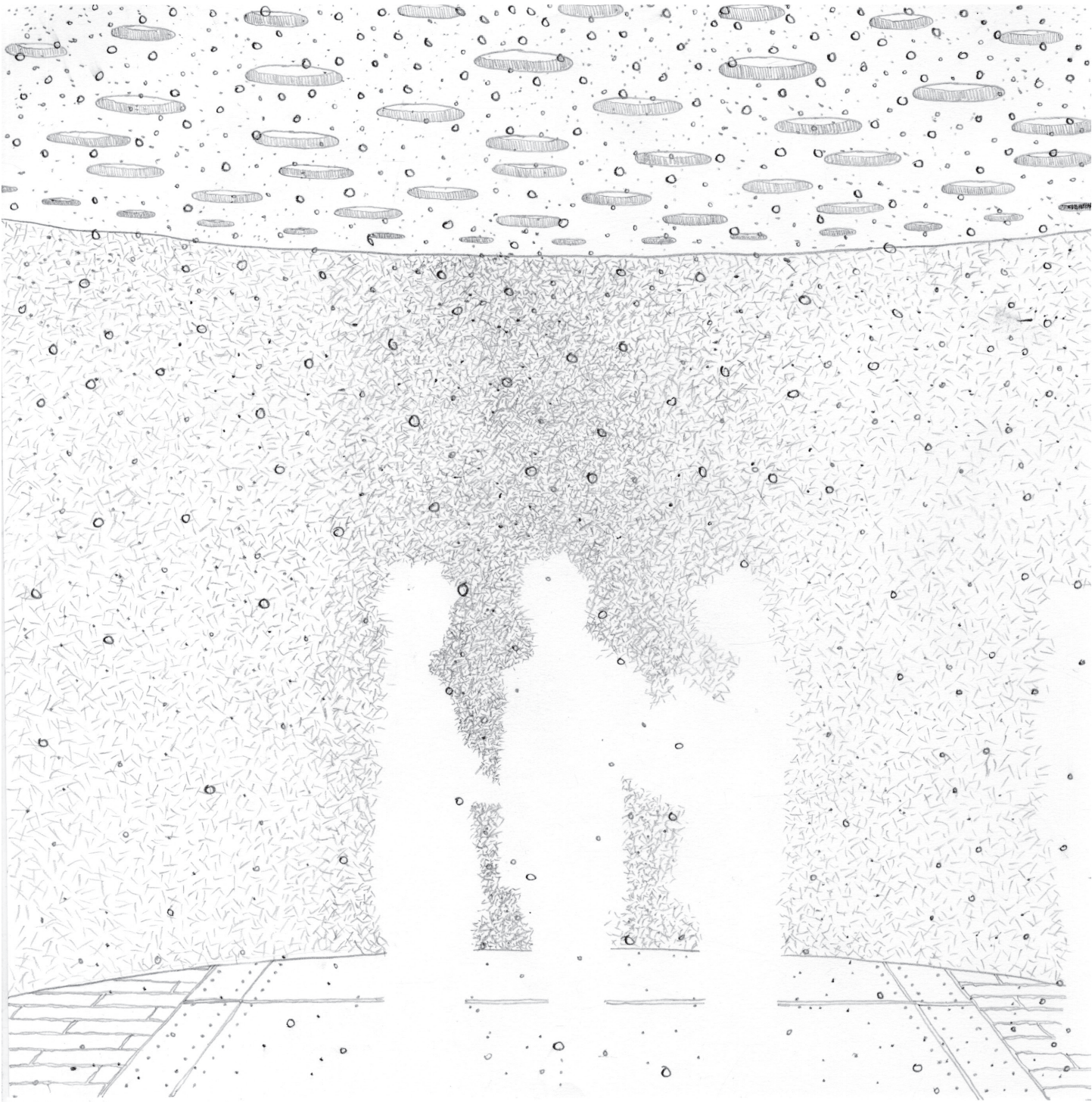
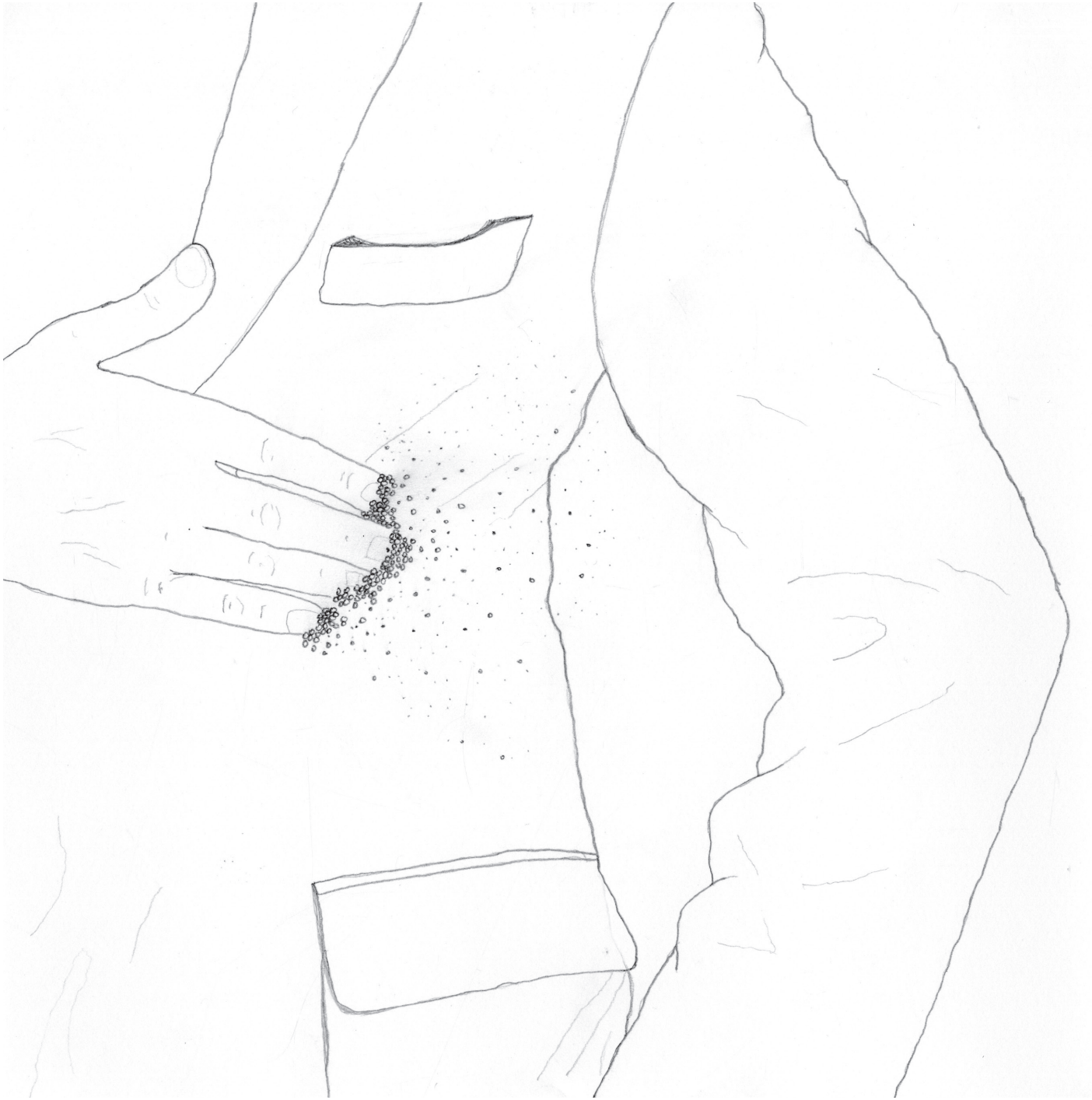




Fig. 30 - [Above] - Author, *Freeing the Dust on the Wall*, 2021.
Fig. 31 - [Right] - Author, *Freeing the Dust from Clothes*, 2021.
Fig. 32 - [Next Spread] - Author, *Dust in a New Lens*, 2021.



Dust as a Proxy

Installation

Dust as a Proxy

Installation



I built a proof of concept for the Venice Biennale installation. I created a circular shape structure with a 4ft radius and 8ft in height, equipped with lighting and materiality which is like that being proposed. I used a series of film lights to highlight the dust as it flows through the air. The installation was present for the critics, committee, and general public to experience.

Fig. 33 - [Right] - Author, *Proof of Concept - Diagram*, 2021.

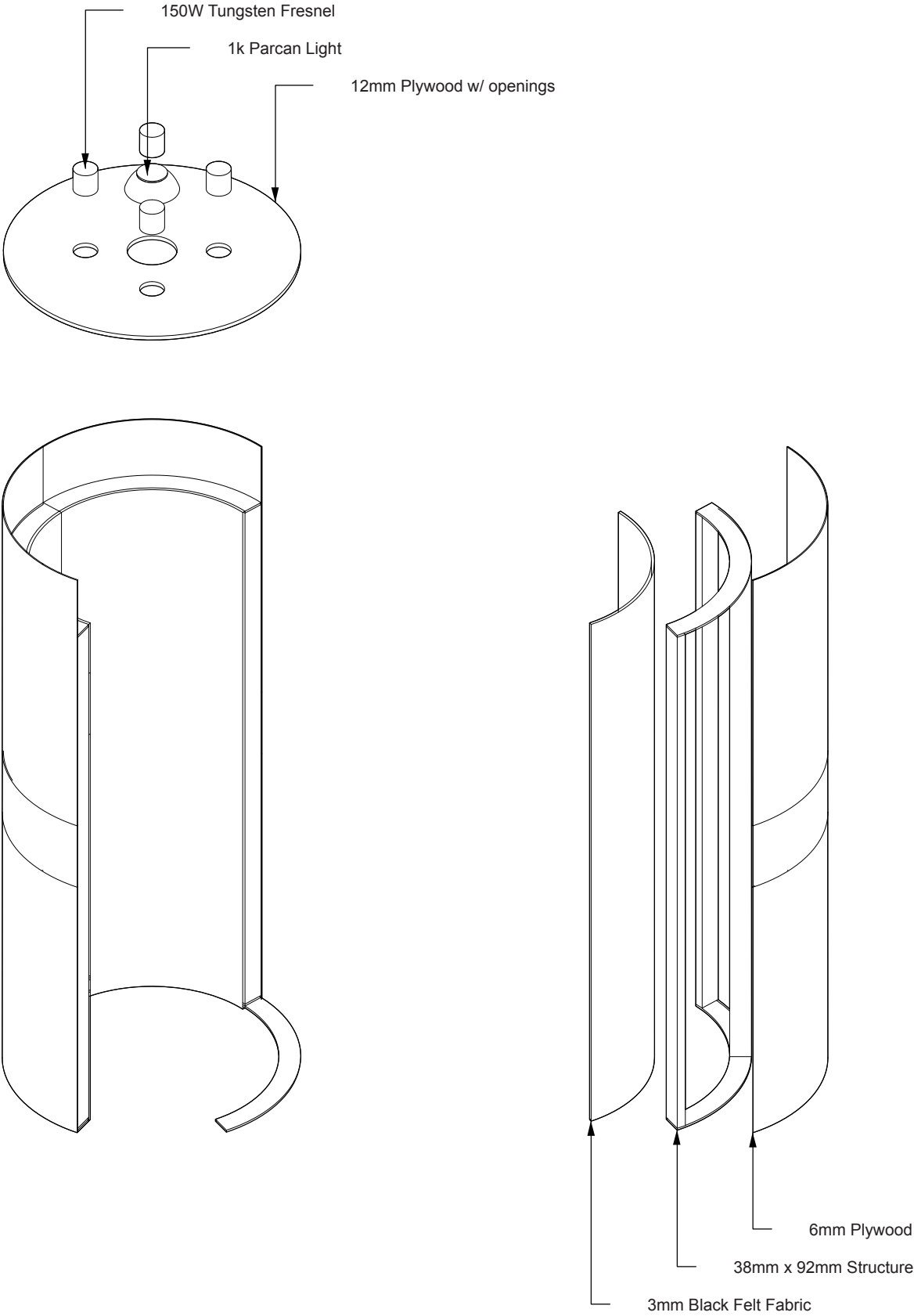




Fig. 34 - [Above] - Author, *Proof of Concept - Off*, 2021.
Fig. 35 - [Right] - Author, *Proof of Concept - On*, 2021.





Fig. 36 - [Above] - Author, *Proof of Concept - Dust View 1*, 2021.
Fig. 37 - [Right] - Author, *Proof of Concept - Dust View 2*, 2021.





Fig. 36 - [Above] - Author, *Proof of Concept - Dust View 3*, 2021.
Fig. 37 - [Right] - Author, *Proof of Concept - Dust View 4*, 2021.

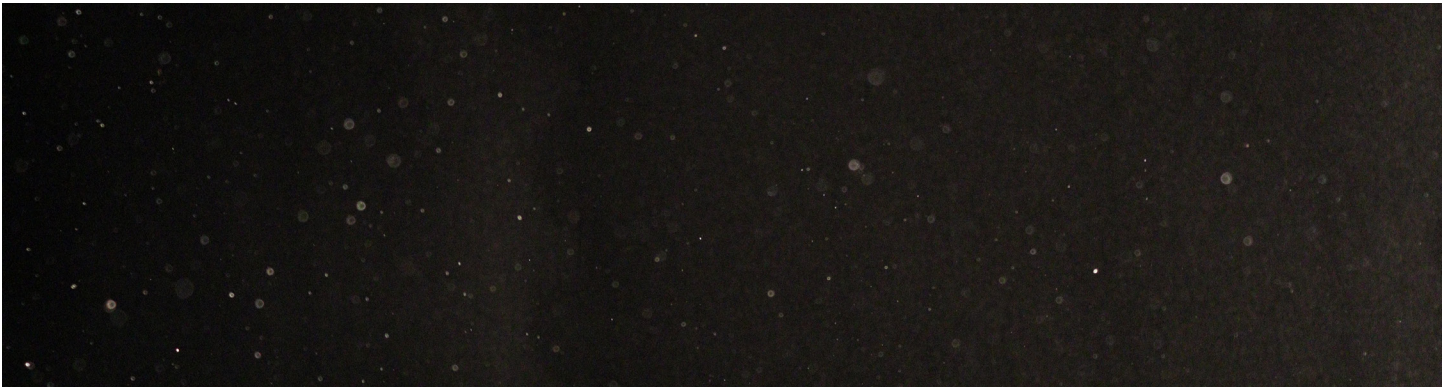


Fig. 39 - [Above] - Author, *Proof of Concept - Video 2*, 2021.

Fig. 40- [Above] - Author, *Proof of Concept - Video 3*, 2021.

Fig. 41 - [Above] - Author, *Proof of Concept - Video 4*, 2021.

Fig. 42- [Above] - Author, *Proof of Concept - Video 5*, 2021.

Dust as a Proxy

Proof of Concept

Dust as a Proxy

Proof of Concept

Fig. 43 - [Above] - Author, *Proof of Concept* - Video 6, 2021.

Fig. 44 - [Above] - Author, *Proof of Concept* - Video 7, 2021.

Dust as a Proxy

Proof of Concept

Dust as a Proxy

Proof of Concept

Fig. 45 - [Above] - Author, *Proof of Concept* - Video 8, 2021.

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Before designing for the pavilion in Venice, I experimented here in Lasserre. Four sites were chosen – the lobby, circulation stair, corridor, and the studio space.

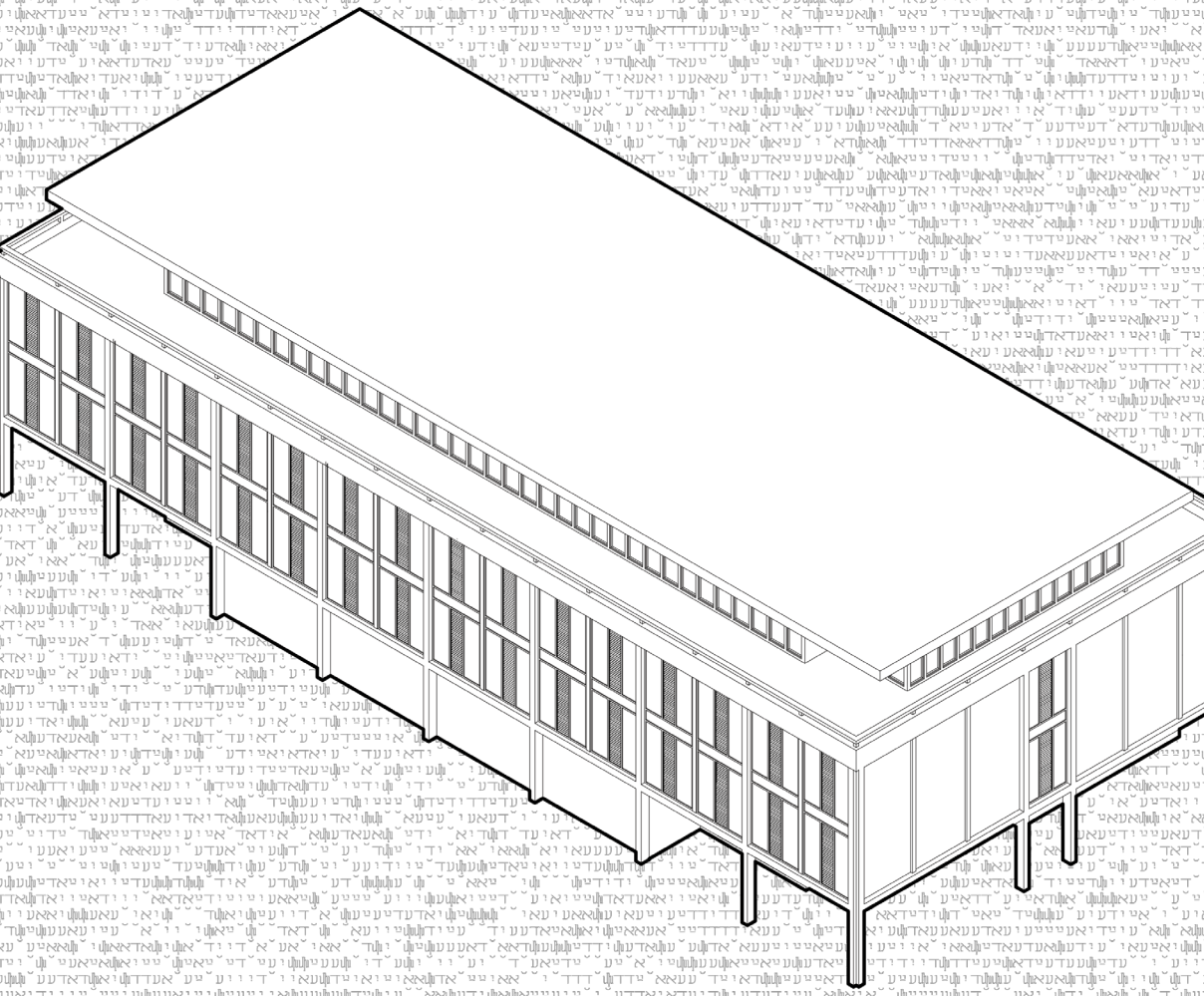
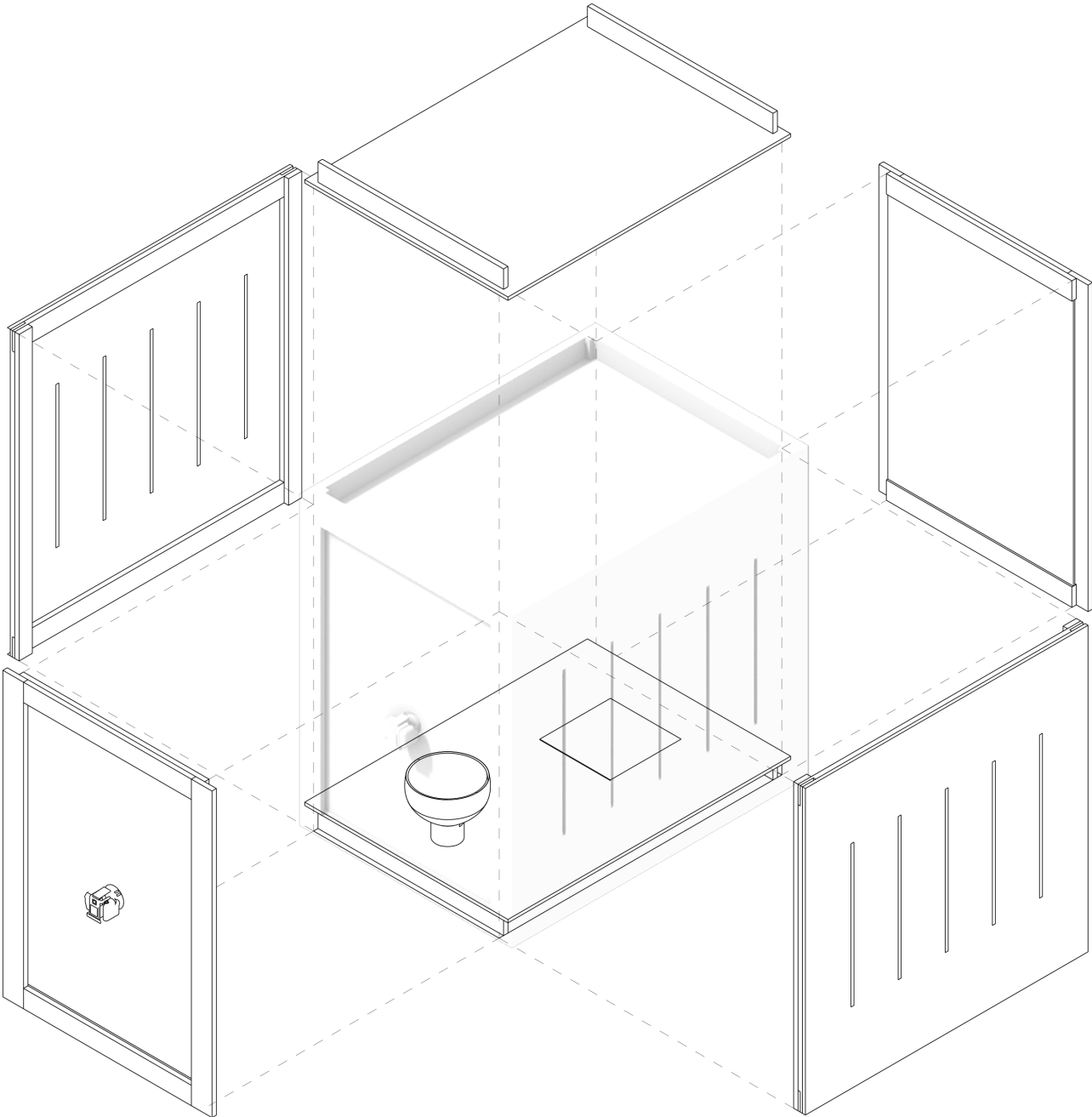


Fig. 46 - [Right] - Author, *Lasserre Engulfed in Unknown*, 2021.

I created a prototype to interact with the dust in the air. I made a wooden crate with lighting, a viewing hole, and vents for air circulation. Within the box I laid a sheet of vinyl with a corn syrup mixture coating to attract some of the beings that float through. I used a camera to record the dust floating through the air and the sheet of corn syrup to create zoomed drawings of the dust. I used a microscopic camera to view the registered particles on the sheet at 1000 to 1 before drawing.

Fig. 47 - [Right] - Author, *Prototype Diagram*, 2021.



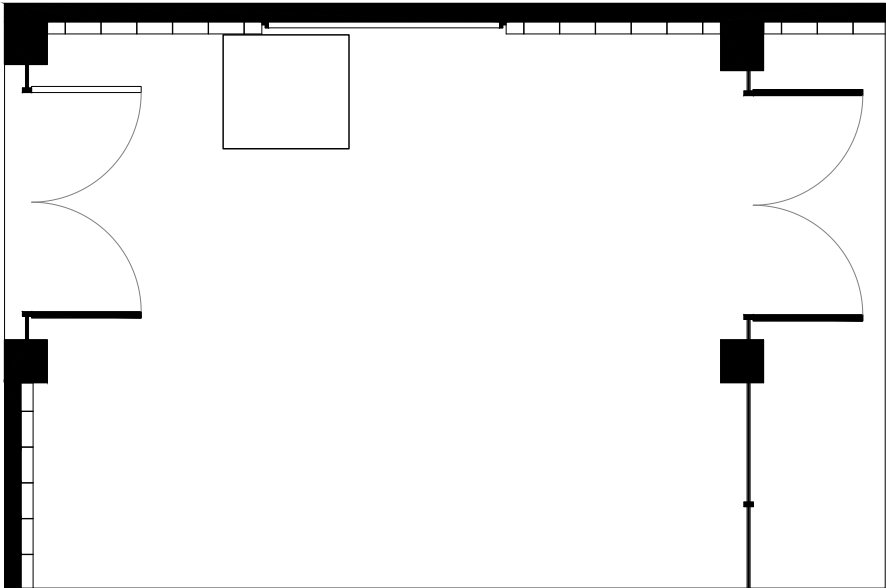
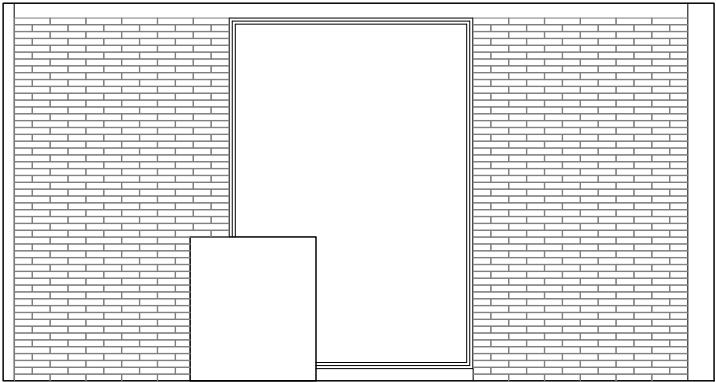


Fig. 48 - [Above] - Author, *The Lobby - Plan/Elevation*, 2021.
Fig. 49 - [Right] - Author, *The Lobby - Prototype Location*, 2021.



Fig. 50 - [Above] - Author, *The Lobby - Dust Collection*, 2021.

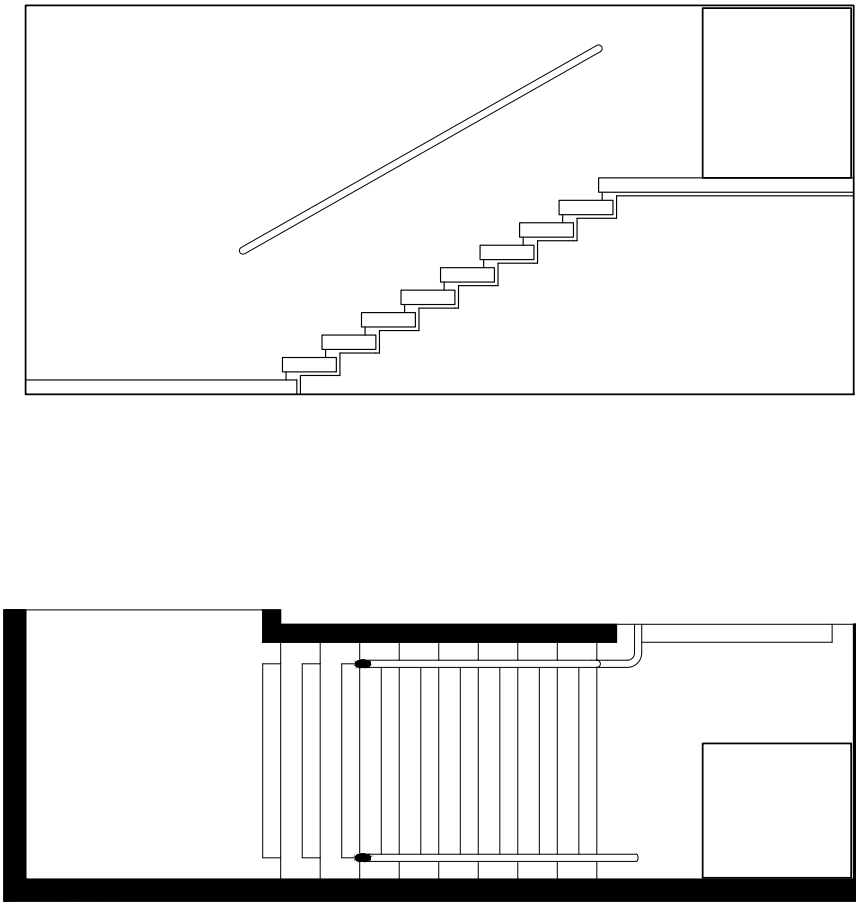


Fig. 51 - [Above] - Author, *The Stair* - Plan/Elevation, 2021.
Fig. 52 - [Right] - Author, *The Stair* - Prototype Location, 2021.



Fig. 53 - [Above] - Author, *The Stair - Dust Collection*, 2021.

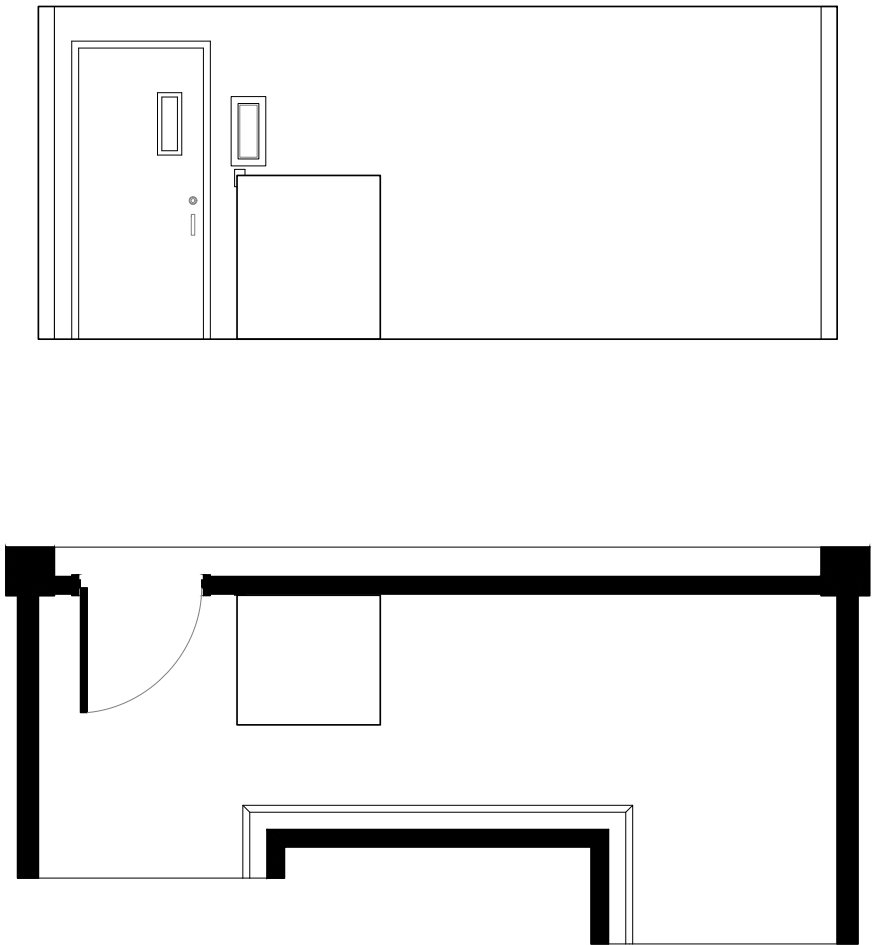


Fig. 54 - [Above] - Author, *The Corridor - Plan/Elevation*, 2021.
Fig. 55 - [Right] - Author, *The Corridor - Prototype Location*, 2021.



Fig. 56 - [Above] - Author, *The Corridor - Dust Collection*, 2021.

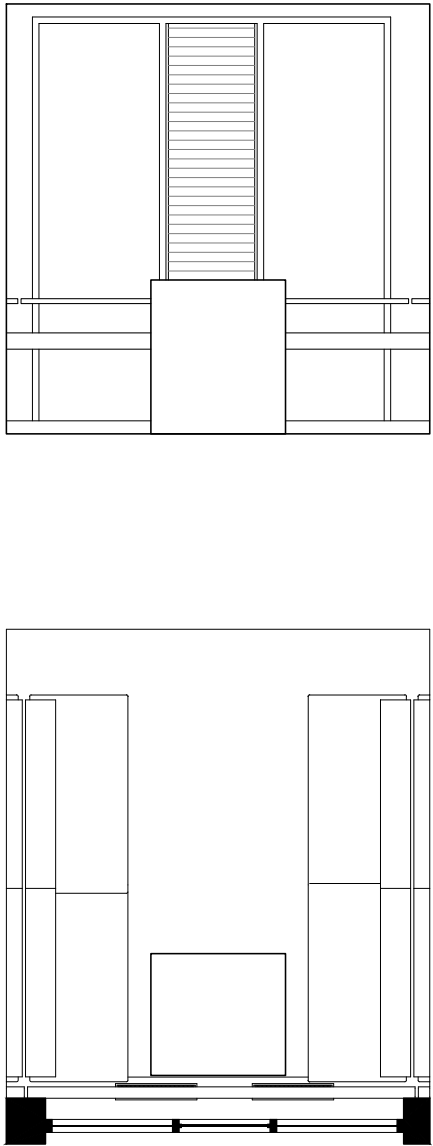


Fig. 57 - [Above] - Author, *The Studio* - Plan/Elevation, 2021.
Fig. 58 - [Right] - Author, *The Studio* - Prototype Location, 2021.



Fig. 59 - [Above] - Author, *The Studio -Dust Collection*, 2021.