



SENSIBLE NATURE

To “See” As We Once Did

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Yuhan Su

Master of Landscape Architecture,
Rhode Island School of Design, 2023

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By Yuhan Su

Date

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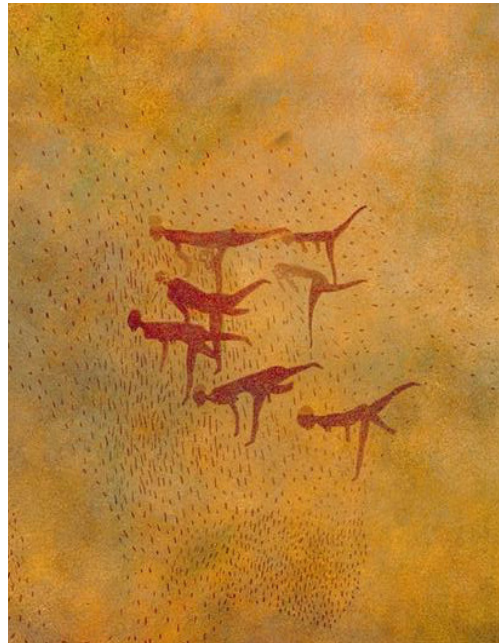


Fig 1

01 INTRODUCTION

INTRODUCTION

Our brains have evolved to store and process certain types of information that were crucial for survival in our evolutionary past. Ancient hunter-gatherers had to remember the shapes, qualities, and behavior patterns of thousands of plant and animal species to thrive.¹

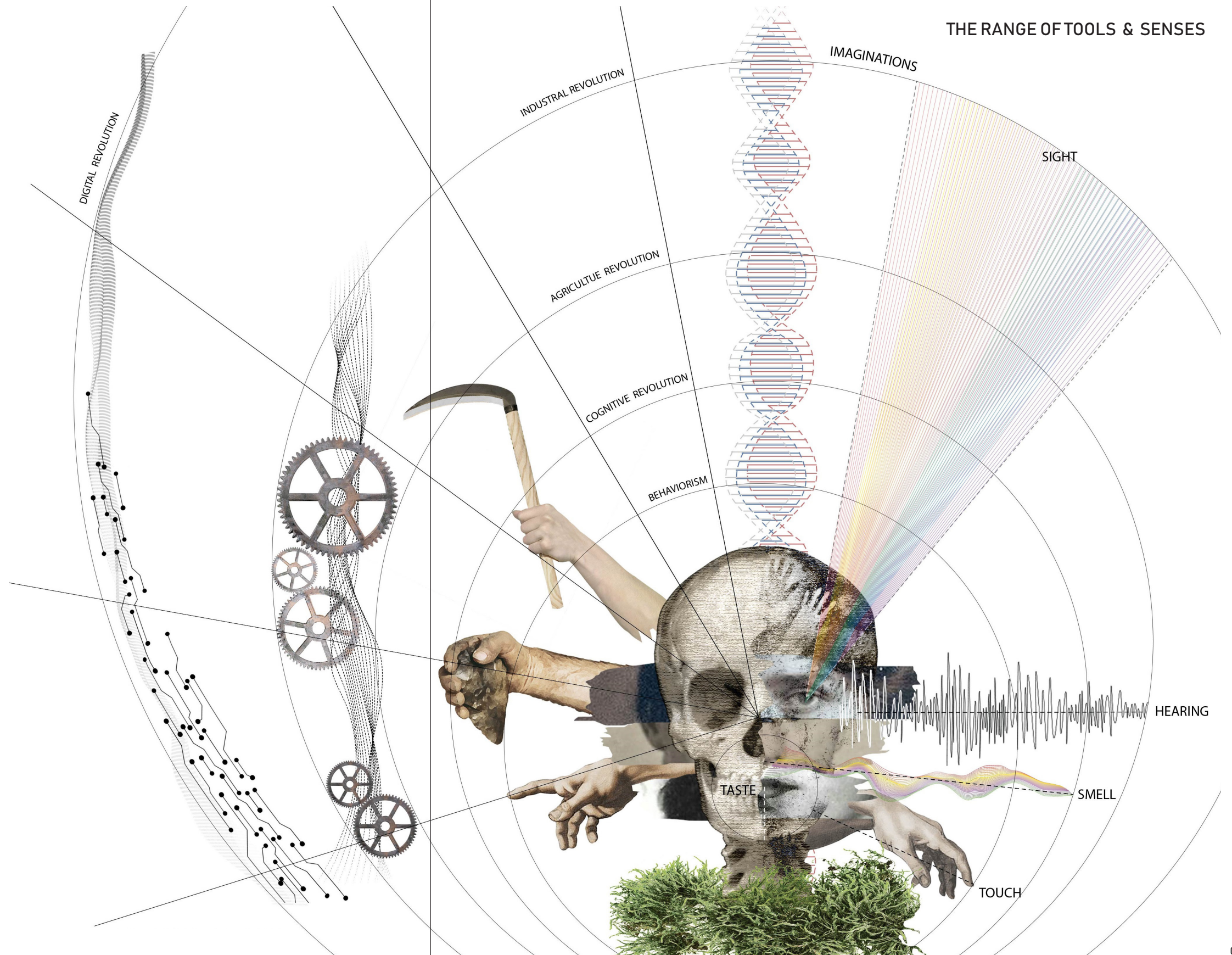
However, today, the term "Plant Blindness" has been coined to describe the phenomenon of people being unable to notice plants or appreciate their significance.² Many individuals today tend to overlook plants in their environment, and this goes beyond a simple biological visual processing preference. It is a sign that people have greater difficulty building intimate bonds with non-human species and the land they inhabit.

The impact of modern tools and digital technologies on our relationship with nature has led to dulled senses and a reduced ability to recognize and engage with the non-human species, causing a disconnection between us and from the natural world.

The evolution of tools represents how humans treat the land on which they live. We build connections with the world in between our ways of knowing, from our own senses to manipulating fire, metal, electric, molecules. Interacting with reality is like gazing through a looking glass, close yet still separated. What can we do to sense the presence of the world more directly and sincerely?

[1]: Yuval Noah Harari, *Memory Overload*, in *Sapiens: A Brief History of Humankind*, (New York: Harper Perennial, 2015), 107. ISBN 978-0-7710-3850-1 (bound). ISBN 978-0-7710-3852-5 (html)

[2]: James H. Wandersee, Elisabeth E. Schussler; *Preventing Plant Blindness*. (The American Biology Teacher, 1999), 82-83. doi: <https://doi.org/10.2307/4450624>





GOALS

To reignite our connection with nature, to help people understand what the individualities of plants are and what they do, this thesis proposes the use of plant-based sensorial designs that engage our emotions and instincts to help us recognize and appreciate the relevance of the non-human species, creating a deeper and more empathetic connection with the natural world.

QUESTIONS

- What are people not noticing about plants?
- What behaviors or characteristics about plants that can be pulled out, making them more noticeable, therefore, instead of only noticing them, people see them in a different context and in other places?
- How can I make people notice?
- What is it that I can manipulate about plants that make people notice?
- What are the things plants do in the city that could be observed, characteristics of plants can be revealed and turned into active design tools to address this issue for people who live in the cities?

NECESSITY

Plants make up the landscape and the environment, if people are able to care more about the individuality of the plants in the environment, they will have a deeper connection and care to the environment and the natural world.

I hope through my work I can help people see what the individual plants are and what they do, to renote, to see plants like we once did, to reconnect our survival with the survival of the natural world.

"Sense of place is the sixth sense, an internal compass and map made by memory and spatial perception together.." — Rebecca Solnit

ABSTRACT

This thesis starts with the premise that our growing dependence on tools and digital technologies has led to a gradual decline in our sensory acuity, causing a disconnect between people and nature.

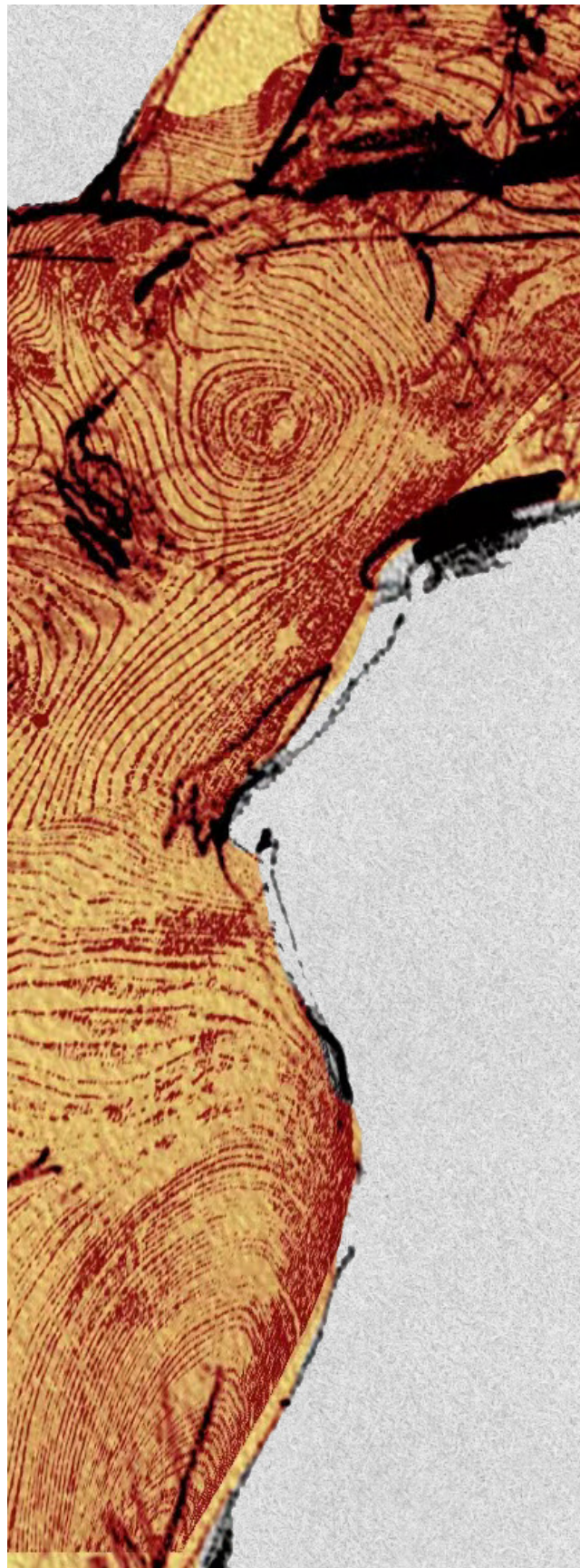
To address this issue, the thesis aims to re-establish lost connections by utilizing plant-based sensorial designs that evoke emotions and instincts, reigniting empathy and intimacy with the natural world.

By utilizing these strategies, this thesis seeks to enhance our ability to perceive, connect with, and appreciate the world around us, thereby creating a stronger, more intimate relationship between humanity and the environment.

Fig2: How People Got Their Name, Jivya Soma Mashe, 1999



Fig2



LEXICON

Sensible

“Perceptible to the senses” - the ability that objects possess, to be seen or perceived by a sense or by the mind.¹ It is the projection of the outside world into the inside of human bodies, they create disturbance to the senses and to be detected and reflected. By exploring how these processes are established, maybe I can find a perspective that helps me to reconnect people and the things they neglect yet are important to them.

Naming

Giving names represents the process of knowing. Igniting interests, learning things, building connections and forming acknowledgement. It is a proof of understanding.

Intimacy

Intimacy forms the foundation of a resilient and enduring relationship, encompassing the profound sense of connection and closeness shared between individuals or even with inanimate objects.

Tools

Tools are crafted handheld devices designed to assist us in accomplishing various tasks. Initially, our bodies serve as the sole tool through which we perceive and interact with the world—our eyes, nose, ears, tongue, and skin. However, the advent of artificial tools raises the question of whether their usage truly amplifies our senses, or if they are to blame for distancing us from our environment and dulling our innate sensory abilities.

[1]: Dragoi, Valentin. “Visual Processing: Cortical Pathways (Section 2, Chapter 15) Neuroscience Online: An Electronic Textbook for the Neurosciences: Department of Neurobiology and Anatomy - the University of Texas Medical School at Houston.” Visual Processing: Cortical Pathways (Section 2, Chapter 15) Neuroscience Online: An Electronic Textbook for the Neurosciences | Department of Neurobiology and Anatomy - The University of Texas Medical School at Houston, October 7, 2020. <https://hba.uth.tmc.edu/neuroscience/m/s2/chapter15.html>.

Animism

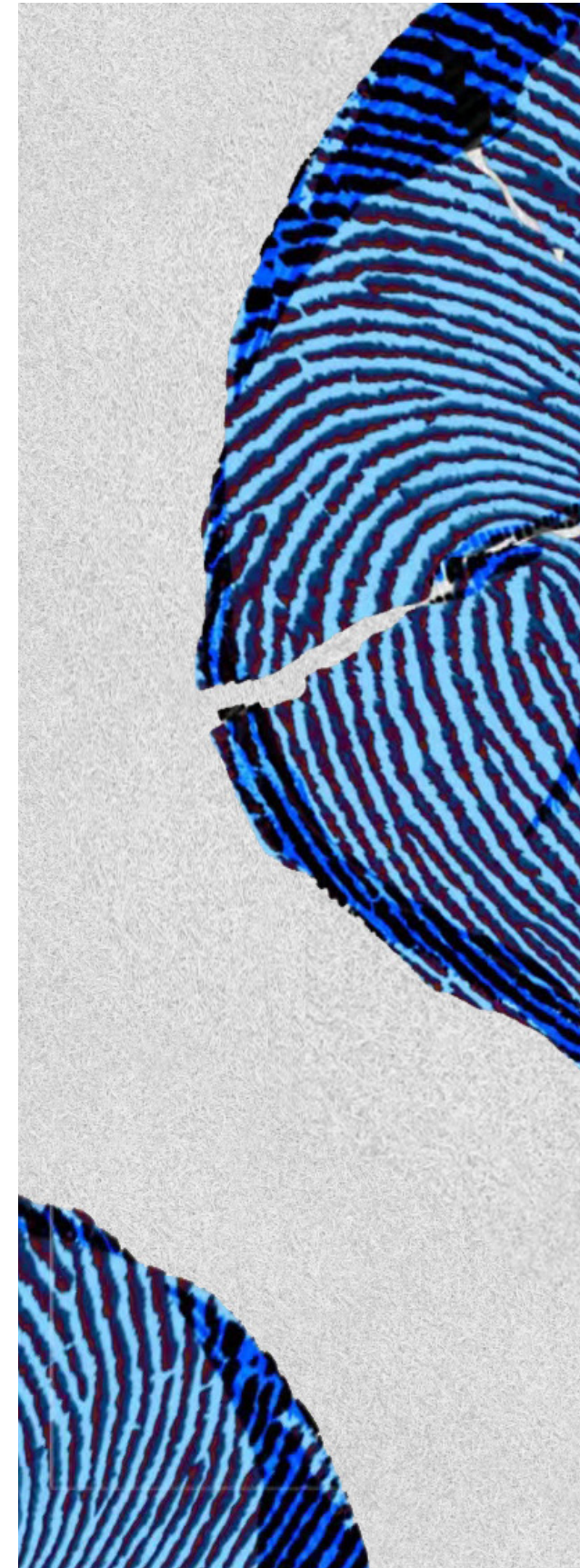
Animism is the belief in the existence of a soul within plants, inanimate objects, and natural phenomena. It represents a unique sensibility and approach to interacting with diverse entities in the world. Unlike many contemporary notions that emphasize the separation of humans from nature, animism reflects a profound empathy towards the environment and advocates for the equality of all things in the world.²

Place attachment and meaning

Place attachments are the bonds that develop through emotional connections, meaning, and understandings of a particular place or its features. These attachments can foster environmentally responsible behavior by appealing to individuals’ self-identity and reliance on the place.¹

Visceralization

Visceralization encompasses the process of transforming something into a visceral experience, igniting a profound sensibility that surpasses the limitations of a single tool. It is a remarkable endeavor that seeks to stimulate all our senses, fostering a rich and immersive encounter with the subject matter at hand.



More-than-human Geography

Developed as a response to the dichotomy between culture and nature, the notion of “more-than-human” characterizes the interconnected existence of diverse beings inhabiting the Earth, transcending human societies.³ More-than-human geographies (MTHG) delve into the intricate web of interactions and interdependencies between humans and nonhuman entities. They seek to comprehend and communicate the inherent “more-than-human” nature of humans, which entails being intricately intertwined with other beings, elements, forces, and objects within constantly evolving networks.⁴

[1]: TAYLOR, RALPH B., SALLY ANN SHUMAKER, and STEPHEN D. COTTFREDSON. “NEIGHBORHOOD-LEVEL LINKS BETWEEN PHYSICAL FEATURES AND LOCAL SENTIMENTS: DETERIORATION, FEAR OF CRIME, AND CONFIDENCE.” *Journal of Architectural and Planning Research* 2, no. 4 (1985): 261–75. <http://www.jstor.org/stable/43028775>.

[2]: Halverson, Joanne Dorpat. “Walking in Two Worlds: Living an Animistic Spiritual Worldview in the Western United States.” (2011).

[3]: Souza Júnior, Carlos Roberto. “MORE-THAN-HUMAN CULTURAL GEOGRAPHIES TOWARDS CO-DWELLING ON EARTH.” *Mercator [Online]*, 20 (2021): n. pag. Web. 15 May. 2023. <http://www.mercator.ufc.br/mercator/article/view/e20005>

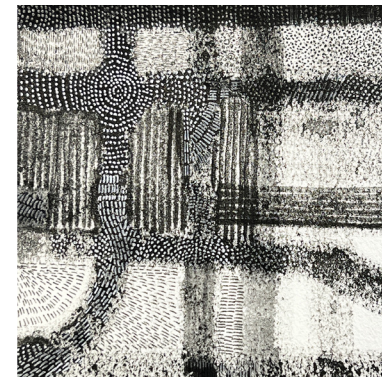
[4]: Isaacs, Jenny. (2020). “More-than-human geographies.” 1-5. 10.1002/9781118786352.wbieg2041.

CONCEPT MODELS

Throughout this semester, I've cultivated my own vocabulary and now seek to clarify certain concepts that require definition. These include sensible, naming, visceralization, tools, intimacy, animism, more-than-human geography, and place attachment and meaning. By highlighting these concepts, I am gradually honing my focus on specific areas for exploration. I have attempted to convey some of these ideas through the creation of physical models. As an illustration, I experimented with overlaying transfers of my fingerprints and leaf prints to symbolize the process of naming and our mutual understanding.



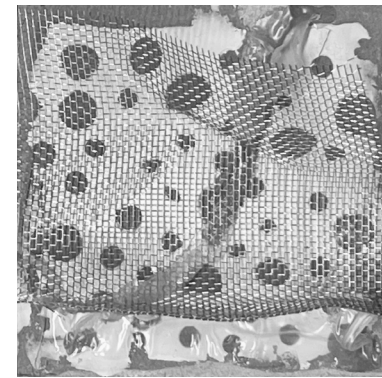
The process of **Naming**, understanding, and building acknowledgement



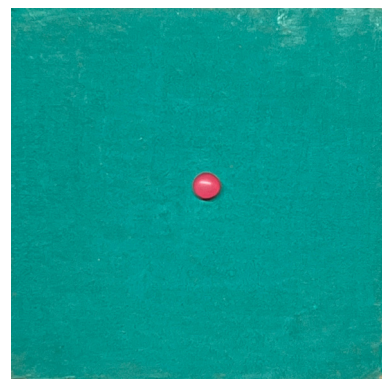
The **layering** of time, space, substance, and memory



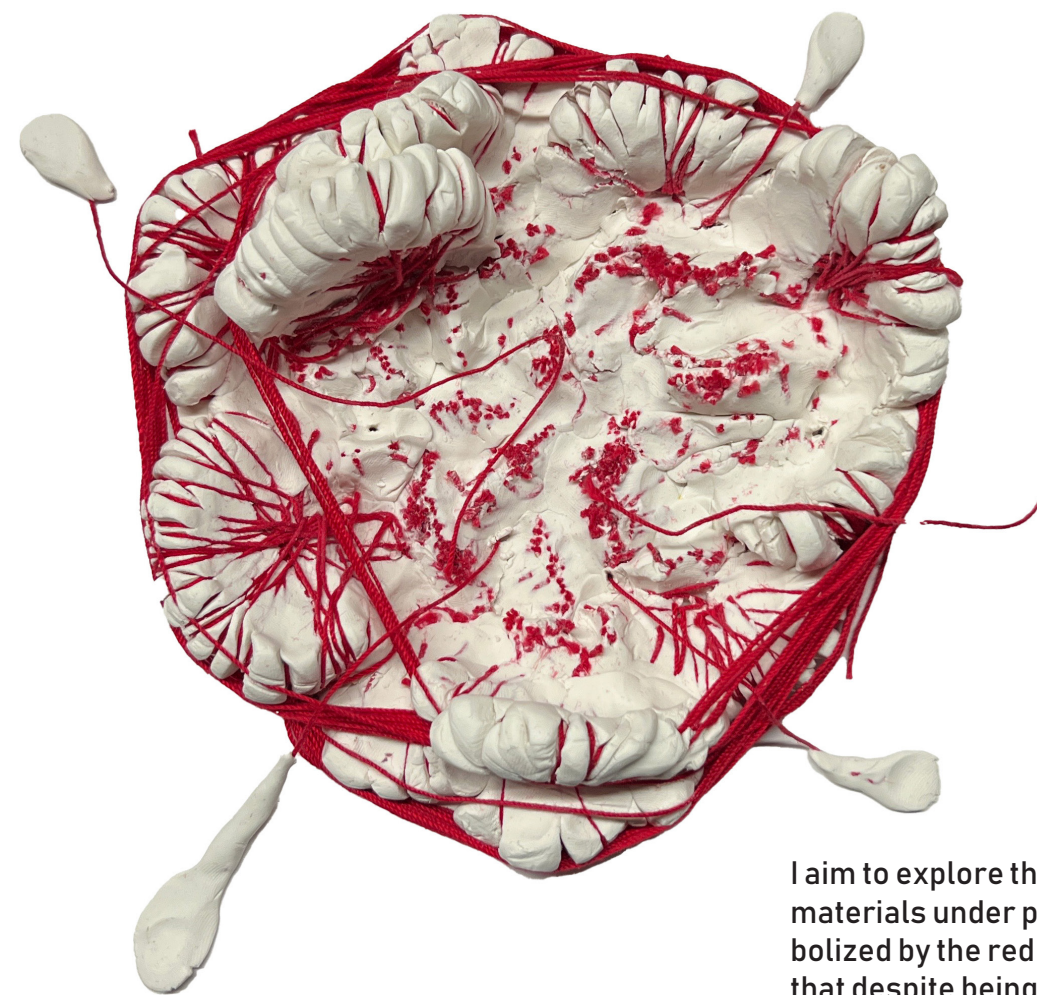
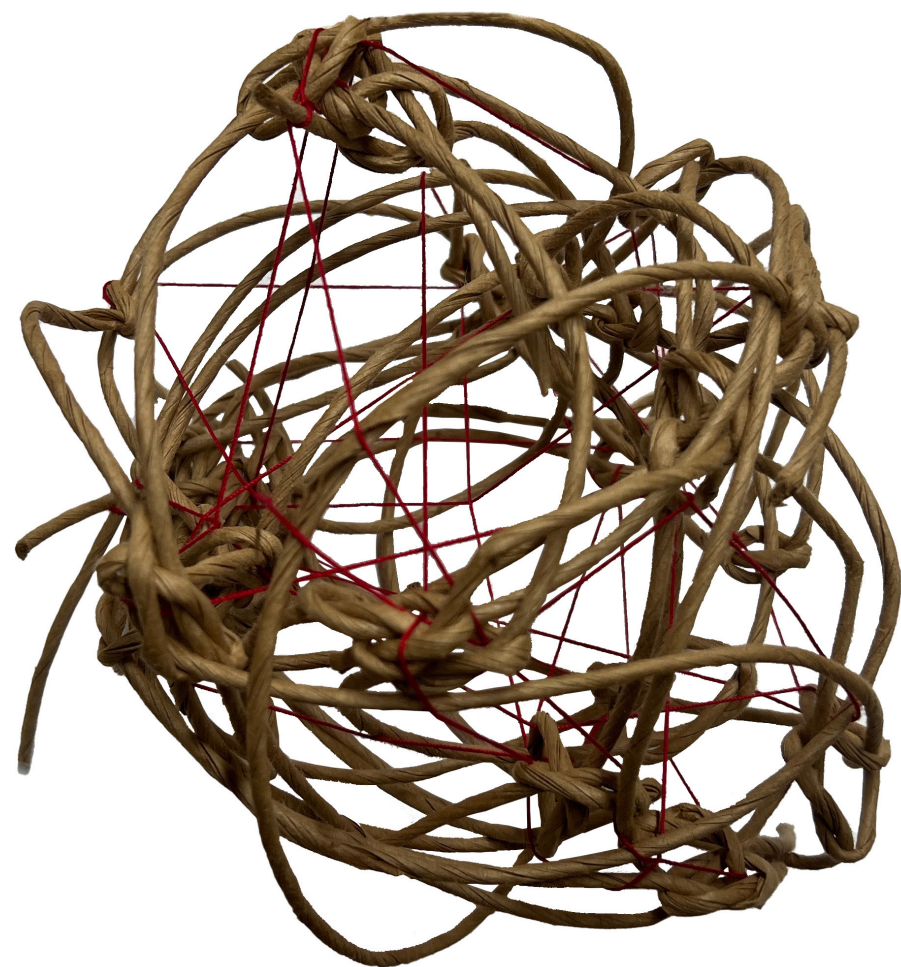
Intertwined networks build stronger connections at intersections



Creating disturbance can make things more noticeable visually



The **lost of individuality** in great mass and the **invisible & visible**, foreground and background



I aim to explore the reactions of different materials under physical constraints, symbolized by the red strings. I've discovered that despite being restricted, the innate characteristics of the materials cause them to exert pressure and attempt to escape their confines. Even within confinement, connections persist.



Fig 3

02 ADDRESSING THE ISSUE: PLANT BLINDNESS

CONTEXT OF PLANT BLINDNESS

The image prominently features a bison as the focal point. However, upon closer examination, it is apparent that the bison occupies only a small fraction of the total image area (4%). The remainder of the picture is dominated by vegetation, with some steam from hot springs and cliffs in the background. Despite this, the image is still perceived as a bison photo rather than a plant photo, possibly due to a phenomenon known as plant blindness.

When we view the world around us, our brains process a vast amount of visual information. However, due to the limitations of neural processing, our brains tend to prioritize certain objects over others. Specifically, humans are evolutionarily wired to respond strongly to the emotion of fear. As a result, animals like bison are more likely to capture our attention and evoke fear than stationary plants or other objects. Even non-threatening animals like squirrels tend to stand out to us because of their movement, which our brains are naturally attuned to notice.

Another factor that affects our perception is our tendency to prefer objects that resemble humans in some way.¹ This means that we are more likely to notice animals with eyes, limbs, and other human-like features, as opposed to plants which lack these characteristics. Additionally, our brains tend to ignore objects that blend together or lack contrast, which makes plants less likely to capture our attention.² Although a flowering plant with bright petals might stand out, the presence of an animal is likely to draw our attention away.

These biases towards animals and against plants are deeply ingrained in our biology and have been shaped by evolution over time. While they have remained relatively constant throughout human history, they help to explain the concept of plant blindness and why we often fail to notice the rich and diverse plant life that surrounds us.³

[1]: James H. Wandersee, *Plants or animals—which do junior high school students prefer to study?*. (JRST, 1986). doi: <https://doi.org/10.1002/tea.3660230504>

[2]: Alison Gopnik, Andrew N. Meltzoff, Patricia K. Kuhl; *The Scientist in the Crib: Minds, Brains and How Children Learn*. (The Journal of nervous and mental disease, 2001), 65. doi:10.1097/00005053-200103000-00011

[3]: Eric Ralls, *What Is Plant Blindness? How Is it Related to Climate Change?* <https://www.earth.com/earthpedia-articles/what-is-plant-blindness/>

Fig 4: <https://www.earth.com/earthpedia-articles/what-is-plant-blindness/>



Fig 4

WHAT IS PLANT BLINDNESS?

The inability to see or notice the plants in one’s own environment.¹

The inability to appreciate the aesthetic and unique biological features of the life forms belonging to the Plant Kingdom.

The failure to recognize the importance of plants in the biosphere and human affairs.

The misguided, anthropocentric ranking of plants as inferior to animals, leading to the erroneous conclusion that they are unworthy of human consideration.²



[1]: Sundberg, Marsh, ed. 2001. “Toward a Theory of Plant Blindness.” *Plant Science Bulletin*. Botanical Society of America. 2001. <https://cms.botany.org/psbarchive/issue/2001-v47-no-1.html#Toward%20a%20Theory%20of%20Plant>.

[2]: Wandersee, James H., and Elisabeth E. Schussler. “Preventing Plant Blindness.” *The American Biology Teacher* 61, no. 2 (1999): 82–86. <https://doi.org/10.2307/4450624>.

POSSIBLE “SYMPTOMS” OF PLANT BLINDNESS

Failing to see, take notice of, or focus attention on the plants in one’s daily life.¹

Overlooking the importance of plants to one’s daily affairs.²

Failing to distinguish between the differing time scales of plant and animal activity.³

Thinking that plants are merely the backdrop for animal life.

Misunderstanding what kinds of matter and energy plants require to stay alive.

Lacking awareness that plants are central to a key biogeochemical cycle the carbon cycle.

Being insensitive to the aesthetic qualities of plants and their structures especially with respect to their adaptations, coevolution, colors, dispersal, diversity, growth habits, scents, sizes, sounds, spacing, strength, symmetry, tactility, tastes, and textures.⁴

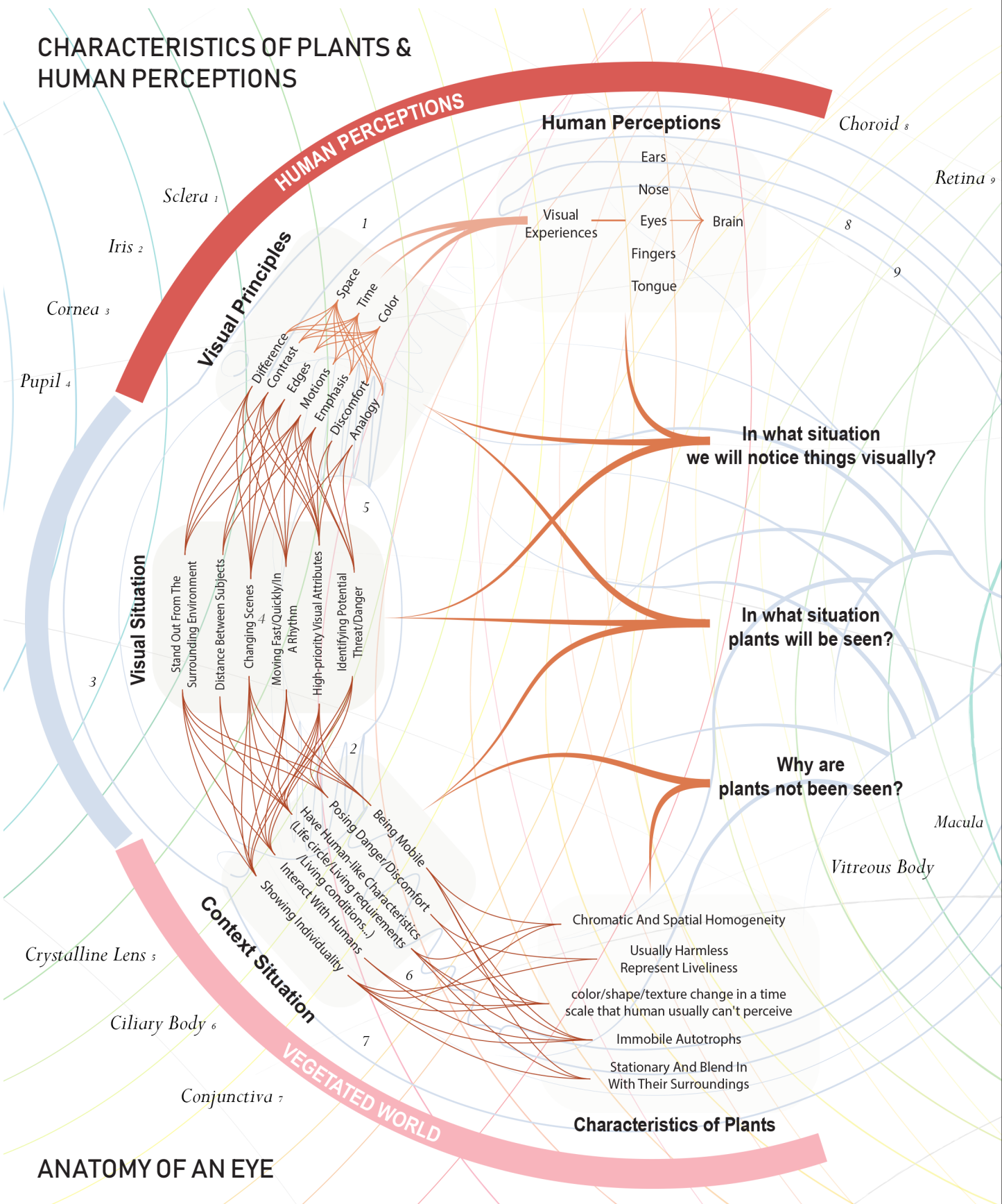
[1]: Sundberg, Marsh, ed. 2001. “Toward a Theory of Plant Blindness.” *Plant Science Bulletin*. Botanical Society of America. 2001. <https://cms.botany.org/psbarchive/issue/2001-v47-no-1.html#Toward%20a%20Theory%20of%20Plant>.

[2]: Balick, M.J. and Cox, P.A. “*People, Plants, and Culture*.” 1996. Scientific American Library, New York, 1-24.

[3]: Attenborough, David. 1995. Review of “*The Private Life of Plants*”. BBC Nature Documentary.

[4]: Wandersee, James H., and Elisabeth E. Schussler. “Preventing Plant Blindness.” *The American Biology Teacher* 61, no. 2 (1999): 82–86. <https://doi.org/10.2307/4450624>.

CHARACTERISTICS OF PLANTS & HUMAN PERCEPTIONS



ANATOMY OF AN EYE

“OUR BRAINS USE PATTERN OF SPACE, TIME, AND COLOR TO STRUCTURE VISUAL EXPERIENCES.”
— ZAKIA. 1999

EMPHASIS

OUTLINE

MOTION

DISCOMFORT

ANALOGY

VISUAL PRINCIPLES
MORE LIKELY TO NOTICE THINGS WHEN THERE'S:

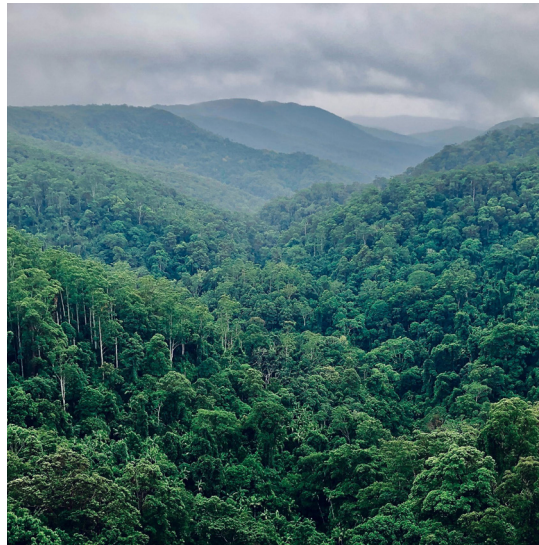


Fig 5



Trees As Background

PLANT BLINDNESS SCENARIO STUDY

In the Plant Blindness Scenario Study, I embarked on a visual exploration that aimed to challenge our perception of trees and their visual prominence in different scenarios. To conduct this study, I carefully selected a captivating image as the foundation of my analysis. This image provided the perfect canvas for me to delve into the effects of altering various elements and observing the subsequent changes.

Context

Difference / In Motion



Fig 6



One of the primary modifications I made involved manipulating the background color of the sky, transforming it into a solid, single-colored backdrop. This alteration allowed me to investigate the impact of this visual adjustment on the perception of trees within the image. Surprisingly, the outcome yielded remarkable results.

As I scrutinized the modified image, a noticeable transformation became apparent. The alteration in the sky's color influenced our perception of depth and distance, causing a captivating shift in the visual hierarchy of the trees. The trees that were originally in the background seemed to shift closer to the viewer, blurring the distinction between the middle ground and the foreground. Suddenly, the trees that were once distant appeared to occupy a more prominent space within the image, capturing our attention in a new and intriguing manner.



Fig 7



Solid Color Background

Contrast / Edges
Background • Foreground

Fig 5: Scientists investigate present and future of land carbon sinks. <https://www.woodwellclimate.org/scientists-investigate-present-and-future-of-land-carbon-sinks/>

Fig 6: Wind blowing birch trees stock photo. <https://www.istockphoto.com/photo/wind-blowing-birch-trees-gm591835964-101633725>

Fig 7: Subtropical-Forest. <https://www.environmentbuddy.com/plants-and-trees/types-of-forests/attachment/subtropical-forest/>



Fig 8



Difference / Contrast / Emphasis
Color Changes

PLANT BLINDNESS SCENARIO STUDY

Through these diverse scenarios, my study aimed to unravel the intricate interplay between visual perception and the varying conditions in which trees can be found. By scrutinizing the responses elicited by trees in motion, altered colors, discomfoting contexts, and isolation from their surroundings, I strived to challenge the phenomenon of plant blindness and awaken a deeper appreciation for the visual significance of trees in our natural and constructed environments.

Context

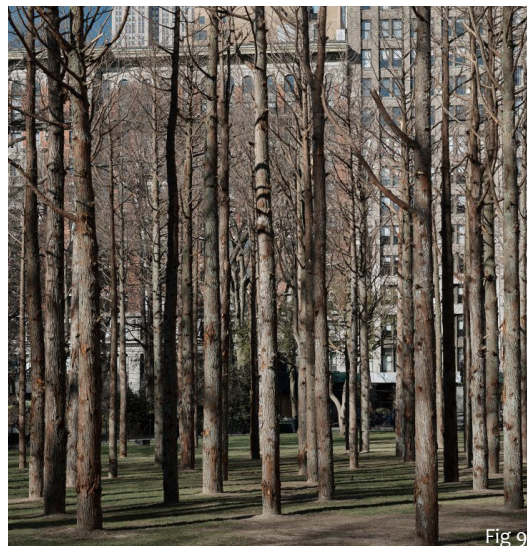


Fig 9

Difference / Discomfort



In essence, my Plant Blindness Scenario Study delved into the multilayered aspects of our visual perception, pushing boundaries and encouraging a fresh examination of the trees that surround us. By immersing ourselves in these visual experiments, we gain a greater understanding of the dynamic nature of our perception and the importance of nurturing our connection with nature's remarkable beauty.



Fig 10



Individual Stands Out
Emphasis / Edges

Fig 8: A beautiful small yellow tree stands out from the crowd of green trees on a sunny day. <https://stock.adobe.com/images/a-beautiful-small-yellow-tree-stands-out-from-the-crowd-of-green-trees-on-a-sunny-day-autumn-time-of-the-year>

Fig 9: Maya Lin Ghost Forest. <https://www.nytimes.com/2021/07/01/arts/design/maya-lin-ghost-forest.html>

Fig 10: Lone Tree in Meadow, Tuscany, Italy. <https://www.discoverimages.com/lone-tree-meadow-tuscany-italy-19409991.html>



CASE STUDY

Plaza and Fountain of the Trough Luis Barragán

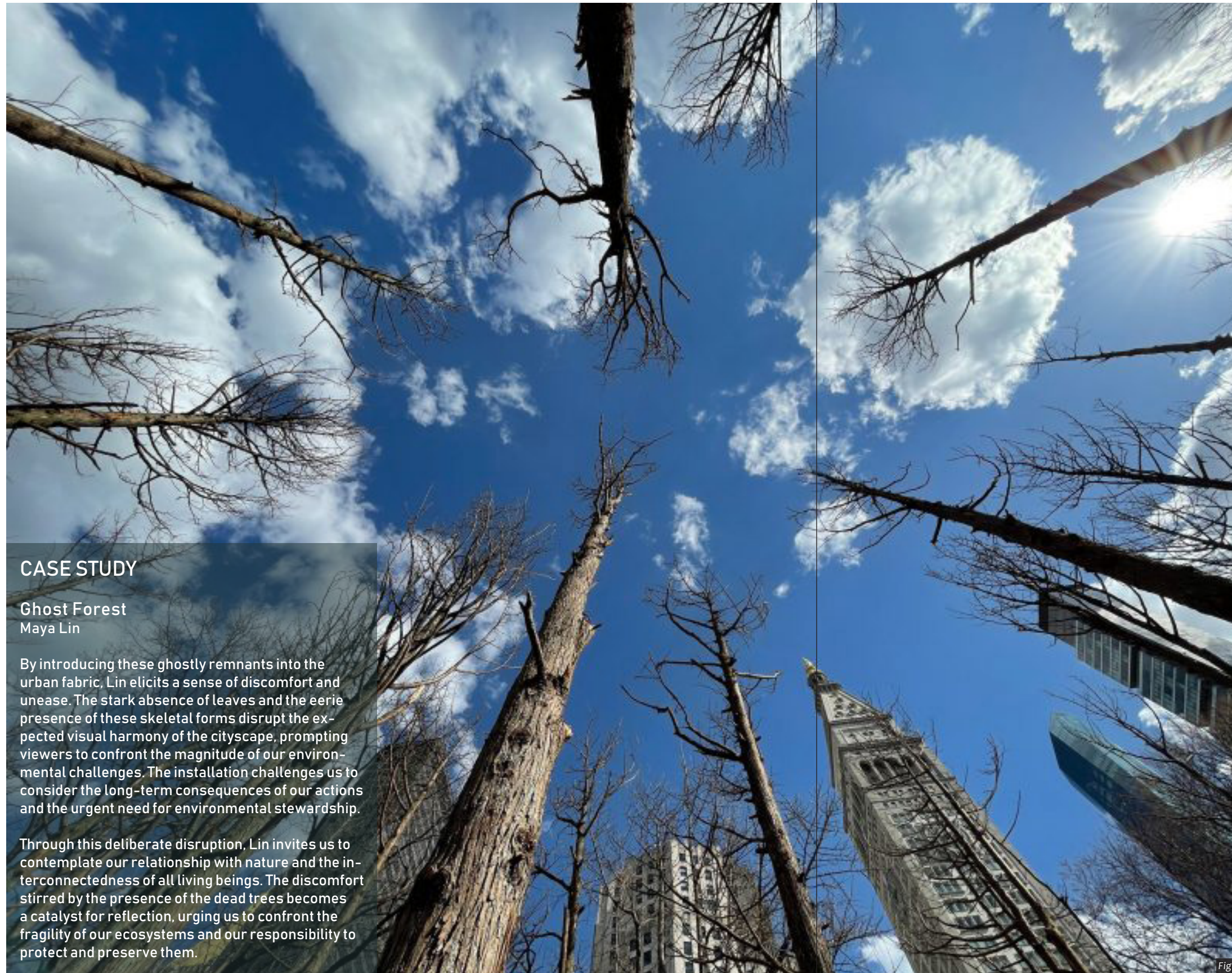
Through the deliberate juxtaposition of the reflective water surface and the receptive white wall, Barragán orchestrates a symphony of light, shadow, and nature. The interplay between these elements creates a captivating visual experience, one that invites us to immerse ourselves in the subtle nuances of our surroundings. With his artistic vision, Barragán not only showcases his mastery of design but also invites us to contemplate the ephemeral beauty of the natural world, reminding us of the profound impact that light, shadow, and reflection can have on our perception of space.



Fig12

Fig 11: https://oa.upm.es/40743/19/ENRIQUE_DELGADO_CAMARA_04.pdf

Fig 12: https://www.herearchitecture.com/herearchitecture.php?id_pag=15&men=5



CASE STUDY

Ghost Forest
Maya Lin

By introducing these ghostly remnants into the urban fabric, Lin elicits a sense of discomfort and unease. The stark absence of leaves and the eerie presence of these skeletal forms disrupt the expected visual harmony of the cityscape, prompting viewers to confront the magnitude of our environmental challenges. The installation challenges us to consider the long-term consequences of our actions and the urgent need for environmental stewardship.

Through this deliberate disruption, Lin invites us to contemplate our relationship with nature and the interconnectedness of all living beings. The discomfort stirred by the presence of the dead trees becomes a catalyst for reflection, urging us to confront the fragility of our ecosystems and our responsibility to protect and preserve them.

Fig13

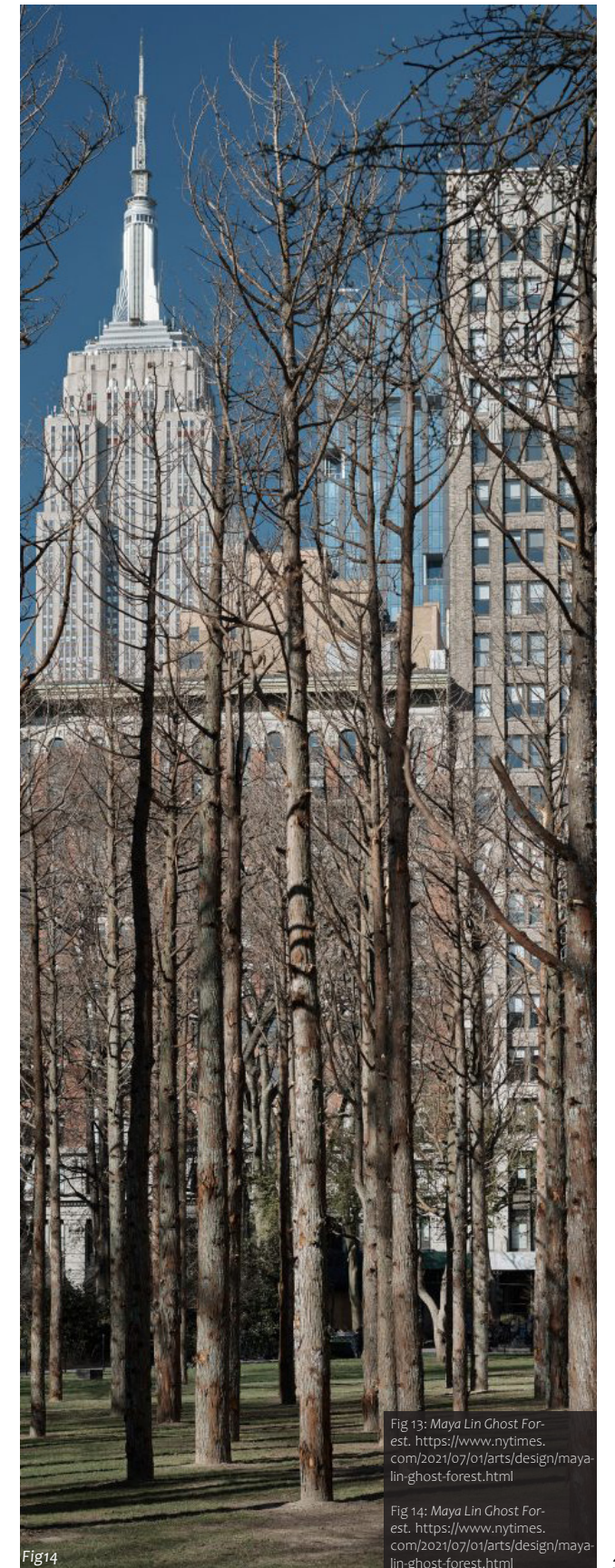


Fig 13: Maya Lin Ghost Forest. <https://www.nytimes.com/2021/07/01/arts/design/maya-lin-ghost-forest.html>

Fig 14: Maya Lin Ghost Forest. <https://www.nytimes.com/2021/07/01/arts/design/maya-lin-ghost-forest.html>

Fig14



Fig15



Fig16

CASE STUDY

Residue & Subtle Intimacy

Rui Sasaki

The choice of glass as a medium beautifully aligns with the concept of transparency, both physical and conceptual. Glass serves as a metaphorical conduit, revealing the inherent transparency of plants that bear witness to her surroundings. Through her artistic process, the artist skillfully merges the natural and the man-made, allowing them to merge into something greater than the sum of their parts. This transformative alchemy unfolds under her expert hands, resulting in an artistic expression that transcends boundaries and encapsulates a profound essence.



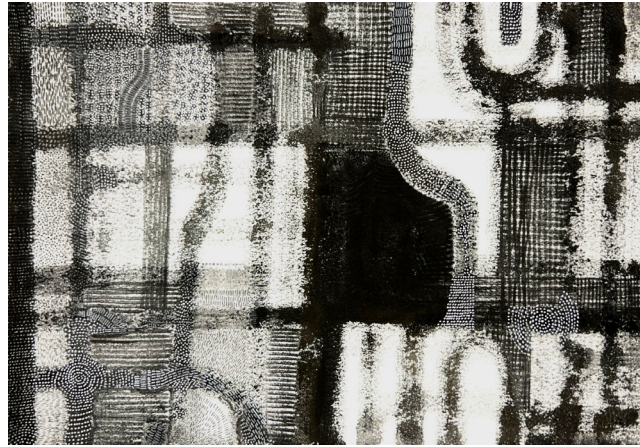
Fig17

Fig 15: <https://rui-sasaki.com/section/456470-Residue-Houen-Temple-Kanazawa.html>

Fig 16: <https://rui-sasaki.com/section/445511-Subtle-Intimacy.html>

Fig 17: <https://rui-sasaki.com/section/445511-Subtle-Intimacy.html>

LITERATURE REVIEW



Plants, People, and Places Nancy J. Turner

"From Plants, People, and Places, the Syilx indigenous ways of understanding and treating the land/world and their connection with its people were presented to us, revealing a profound and intricate relationship rooted in respect and reciprocity.

For the Syilx people, the land is not merely a backdrop or a resource to be exploited; it is an integral part of their identity and sustenance. The Syilx approach confirms that deep respect for plants and plant communities serves as a foundational element in their gathering practices. Their wisdom recognizes that a profound knowledge of the living nature around them is vital, for it is within the cycles of regeneration that the practices of respect and sustainability find their true foundation.

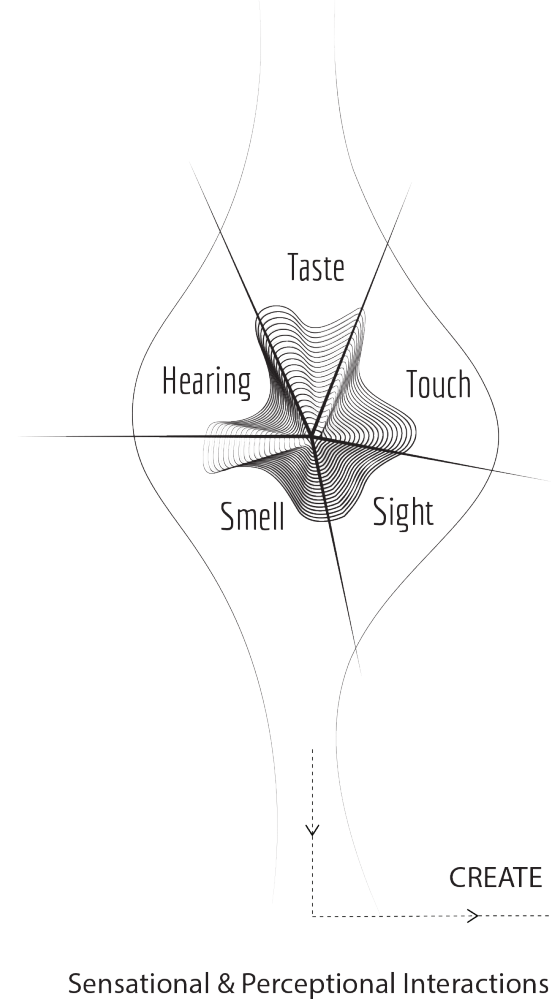
The teachings and perspectives of the Syilx people offer us valuable insights into an alternative paradigm, one that upholds the interconnectedness of all life and the reciprocal responsibilities humans have towards the natural world. By embracing their wisdom and learning from their profound respect for the land, we can begin to shift our own perspectives and foster a harmonious coexistence with the environment. The Syilx serve as a reminder that our relationship with the land extends far beyond exploitation, and it is through deep understanding and reverence that we can forge a sustainable future for generations to come."

The World without Us Alan Weisman

In the chapter "The World Without Farms," I find myself deeply affected, as it raises poignant questions about the hidden elements concealed within our modern soil. The imagery presented leaves lasting scars on my consciousness, compelling me to ponder the complex composition of the land beneath our feet.

The land, once revered for its fertile abundance, now harbors a multitude of substances that elude our perception. It collects materials of substantial size, visible to the naked eye, reminding us of the tangible remnants scattered throughout the soil. Additionally, it accommodates minerals, remnants of ancient geology interwoven with the fabric of the earth itself.

RESEARCH SUMMARY



In its vastness and quiet resilience, the land bears witness to our actions and indiscretions. It serves as an embodiment of acceptance, accommodating the multitudes of substances and experiences that intersect with its being. It does not discriminate; it absorbs and endures, silently reminding us of the consequences of our choices and the interconnectedness of all things.

The poignant portrayal of the land's capacity to encompass both tangible and intangible elements within its embrace urges us to reflect upon our relationship with the soil. It compels us to consider the far-reaching implications of our actions and choices, inspiring us to nurture and protect the land that sustains us. By recognizing the land's profound role as a repository for both physical and emotional remnants, we can cultivate a deeper sense of responsibility and strive towards a more harmonious coexistence with our environment.

Urban Foraging and the Relational Ecologies of Belonging

Melissa R. Poe, Joyce LeCompte, Rebecca McLain, Patrick Hurley

By exploring the relational ecologies of belonging, researchers delve into the rich tapestry of human-nature relationships, unearthing the multifaceted ways in which humans and more-than-human others shape and influence each other. It invites us to consider the co-creative forces that shape our existence, urging us to recognize and honor the interconnectedness that binds us to the places we inhabit. Through these insights, we can foster a deeper appreciation for the intricate web of life and cultivate more meaningful and sustainable relationships with the natural world.

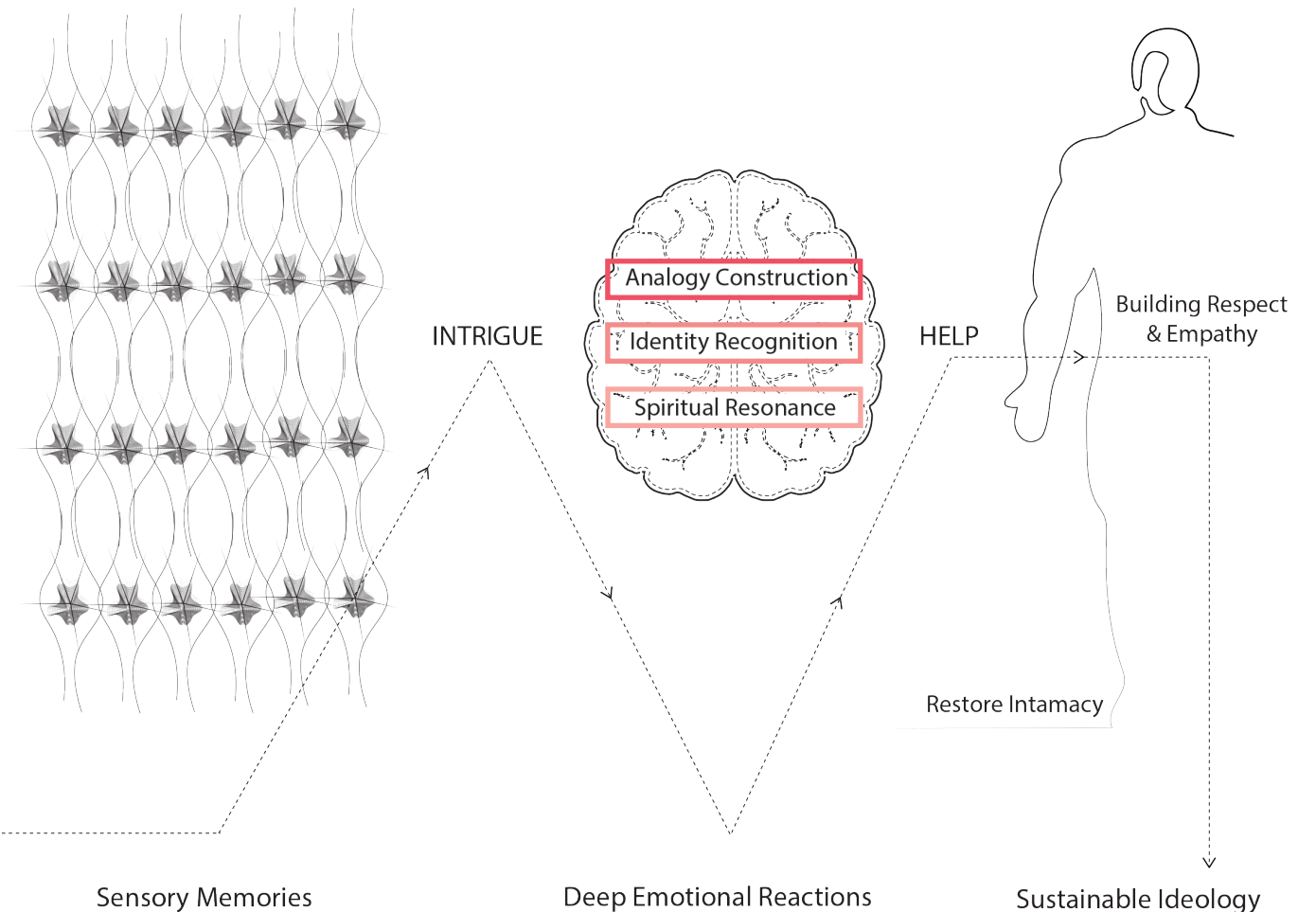




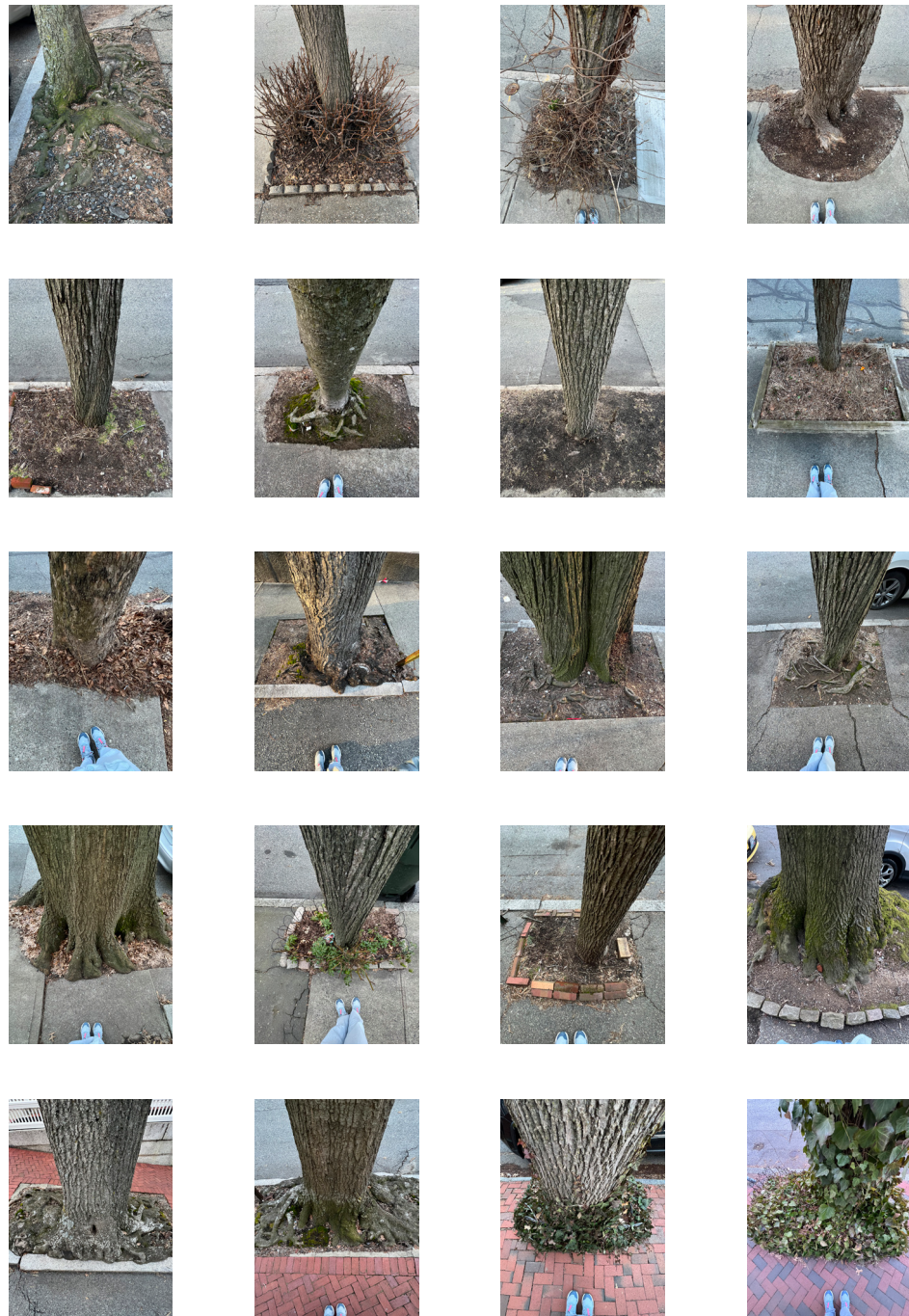
Fig 18

Fig 18: <https://www.pinterest.com/pin/509469776596781931/>

03 DISCOVERING UNNOTICED ASPECTS OF PLANTS

FIELD OBSERVATION DOCUMENTATION

During my field observation documentation was about the tree roots and tree pit. While taking photos of the trees, I accidentally took a selfie mode photo that captured the canopy shape of the tree from the bottom up. Then I started to collect these photos in pairs to see the comparison of the tree canopy and the tree roots condition.



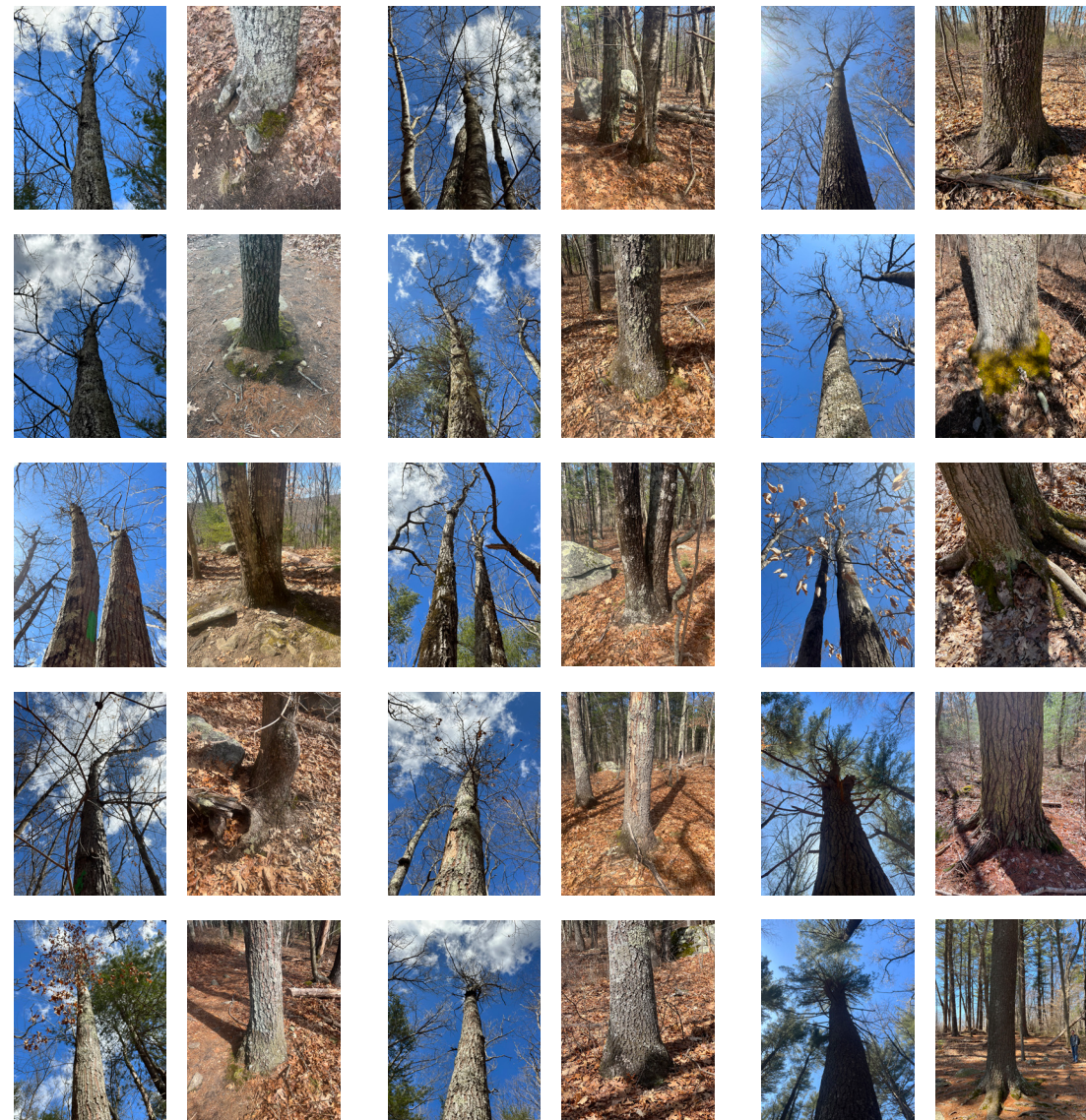
Tree Canopy vs Tree Root Conditions (Urban)



Tree Canopy vs Tree Root Conditions (Natural)

As I documented urban trees, a curiosity sprouted within me about their living conditions in natural settings. I embarked on a journey to explore their native habitats, capturing their canopies and hidden root systems with my camera.

In these pristine natural environments, where urbanization had not encroached, I marveled at the resilience and adaptability of these trees. Their roots, once confined and constrained by the limitations of urban infrastructure, now spread freely, interwoven with the rich soil of the land. They formed a complex network, nurturing not only the individual trees but also fostering connections with the surrounding ecosystem.



Beneath the surface, true marvels emerged. Unburdened by urban life, tree roots sought nourishment and stability, intertwining with soil in a symbiotic bond with fungi and microorganisms. They exchanged vital resources, enriching the surrounding ecosystem.

Documenting these environments, a stark contrast arose between urban and natural conditions. Urban trees, resilient yet constrained, adapted to limited spaces. In their native habitats, they thrived, embodying their true essence.



NATURAL TREE VS URBAN TREE

Solar radiation

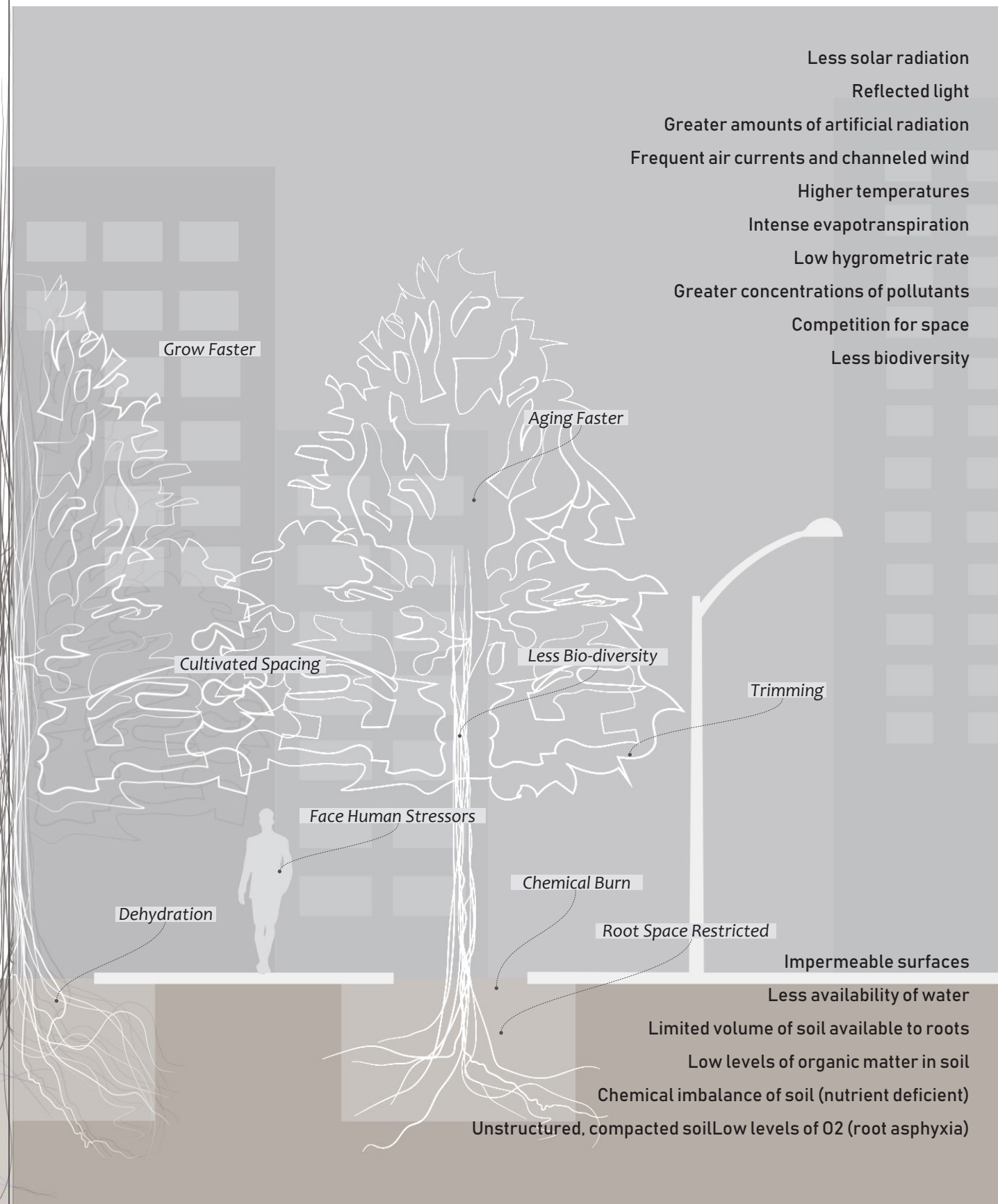
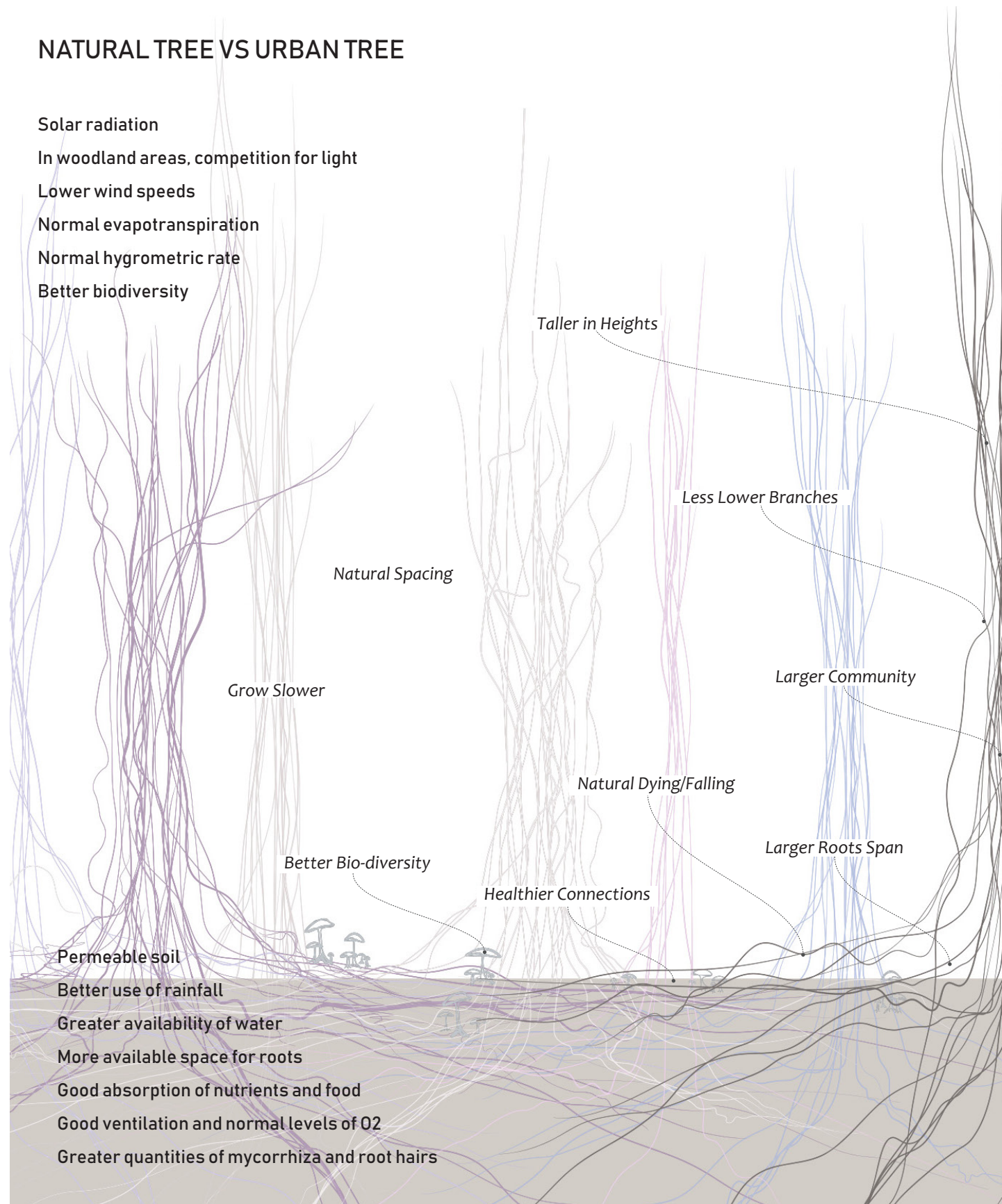
In woodland areas, competition for light

Lower wind speeds

Normal evapotranspiration

Normal hygrometric rate

Better biodiversity



Less solar radiation

Reflected light

Greater amounts of artificial radiation

Frequent air currents and channeled wind

Higher temperatures

Intense evapotranspiration

Low hygrometric rate

Greater concentrations of pollutants

Competition for space

Less biodiversity

Permeable soil

Better use of rainfall

Greater availability of water

More available space for roots

Good absorption of nutrients and food

Good ventilation and normal levels of O2

Greater quantities of mycorrhiza and root hairs

Impermeable surfaces

Less availability of water

Limited volume of soil available to roots

Low levels of organic matter in soil

Chemical imbalance of soil (nutrient deficient)

Unstructured, compacted soil Low levels of O2 (root asphyxia)

TREE & HUMAN ANALOGY

Trees and humans both have complex systems that are integral to their survival. Trees have roots that absorb nutrients and water from the soil, and humans have an intricate network of organs and cells that work together to keep our bodies functioning properly. The analogy between trees and humans serves as a powerful reminder of our shared responsibility to protect and preserve the natural world.

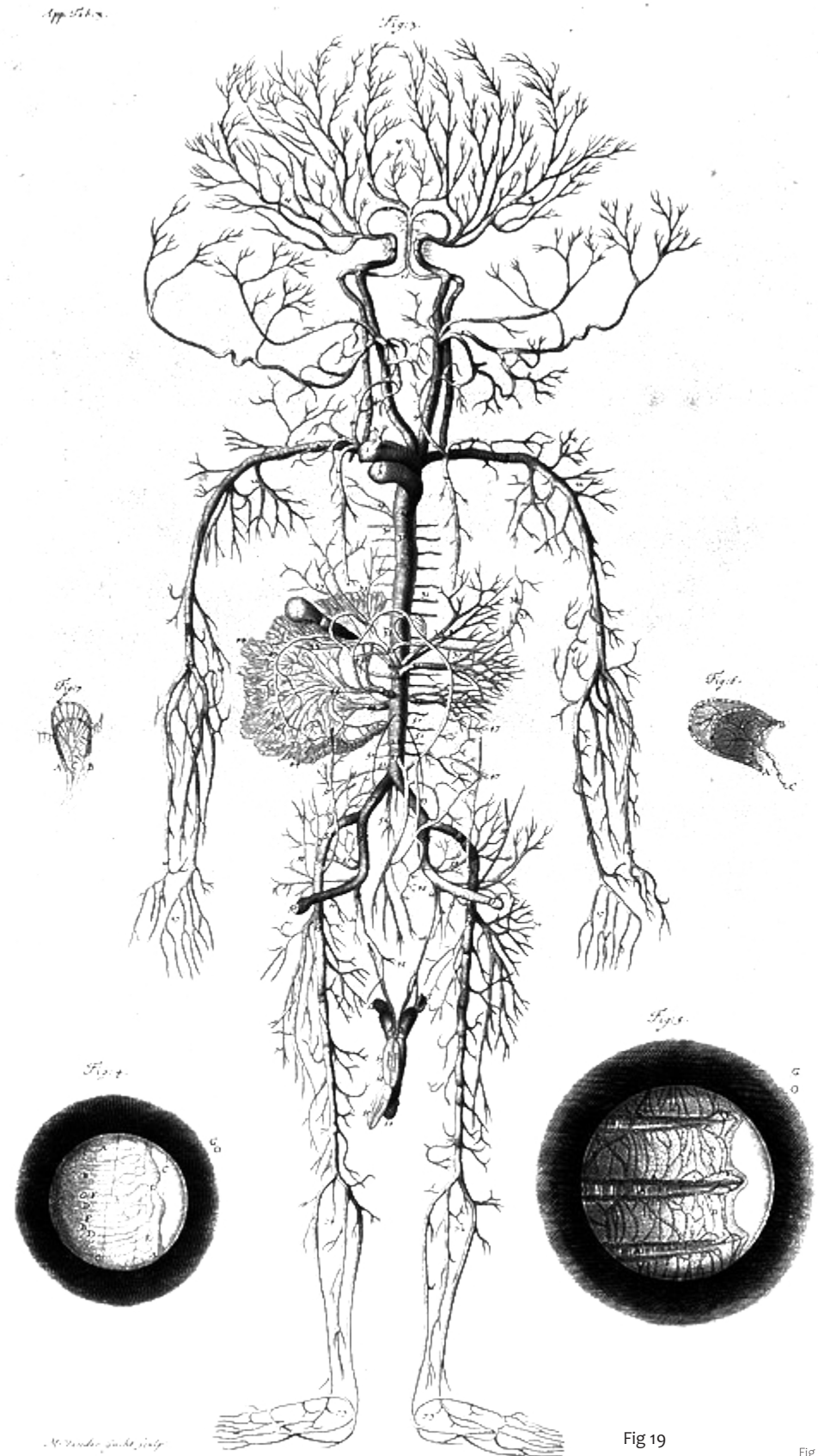


Fig 19

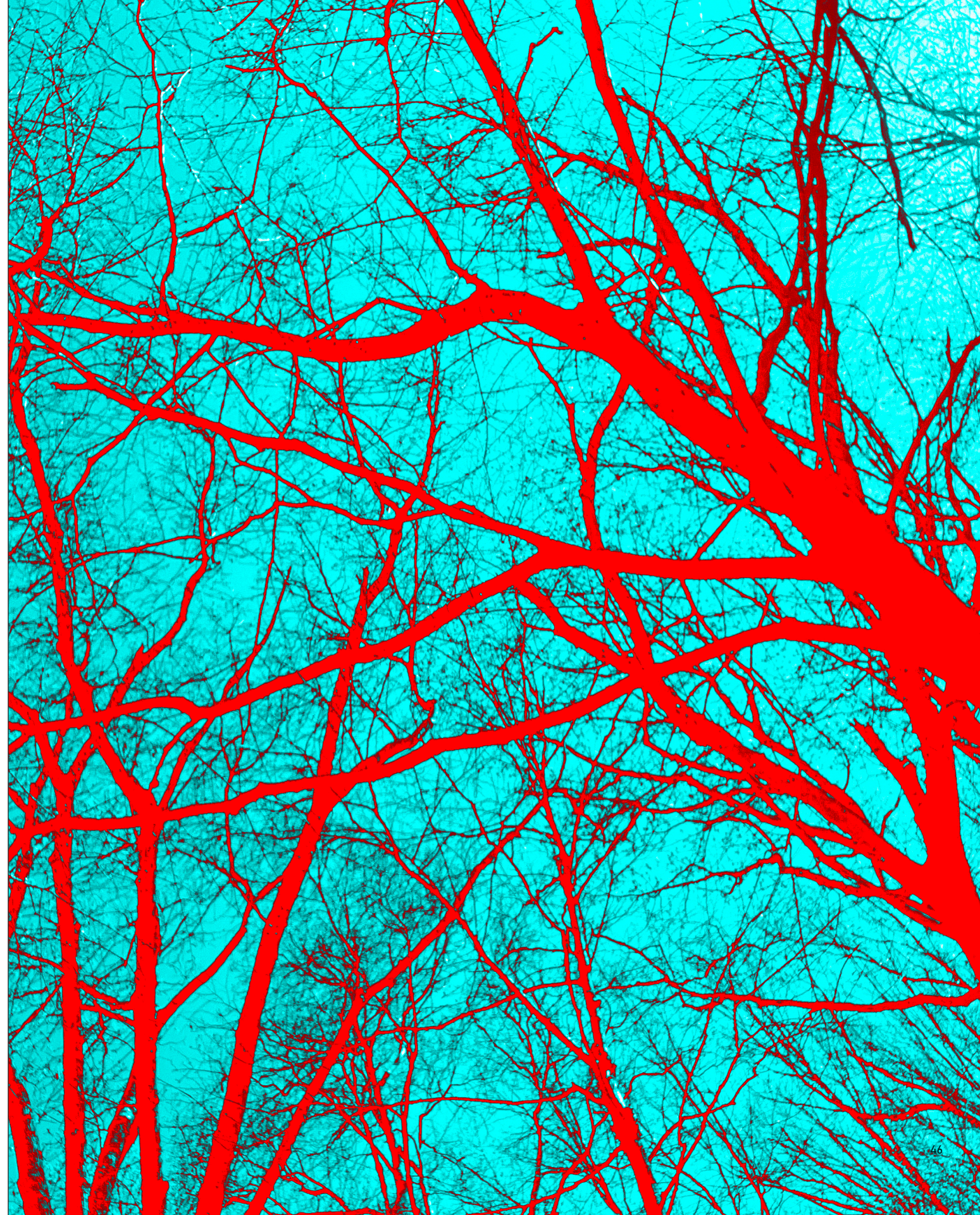


Fig 20

“The affinities of all the beings of the same class have sometimes been represented by a great tree. ... the great Tree of Life, which fills with its dead and broken branches the crust of the earth, and covers the surface with its ever-branching and beautiful ramifications.”

—
On the Origin of Species, 6th ed. 1872

Fig 20: <https://www.pinterest.com/pin/212935888617228020/>



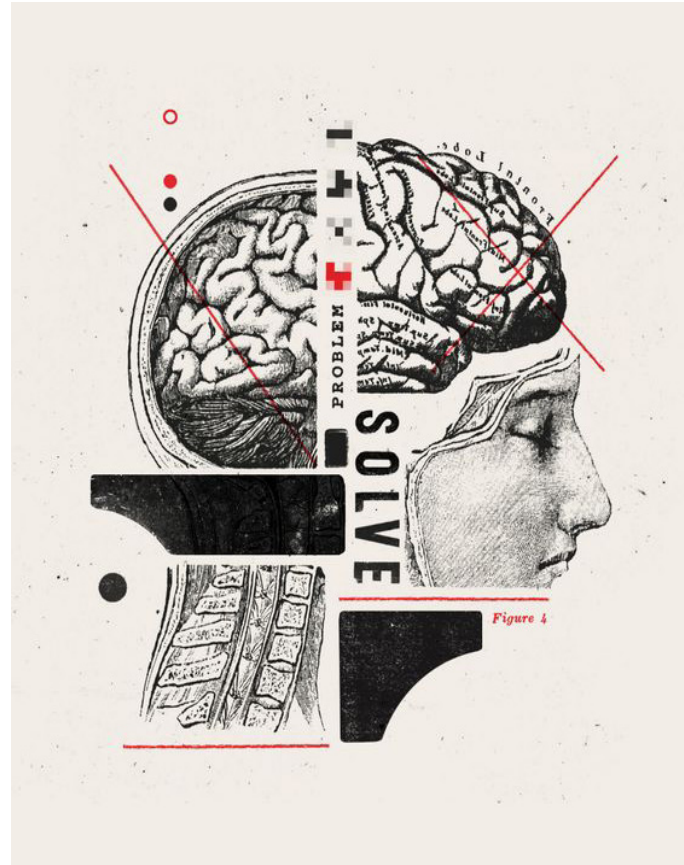


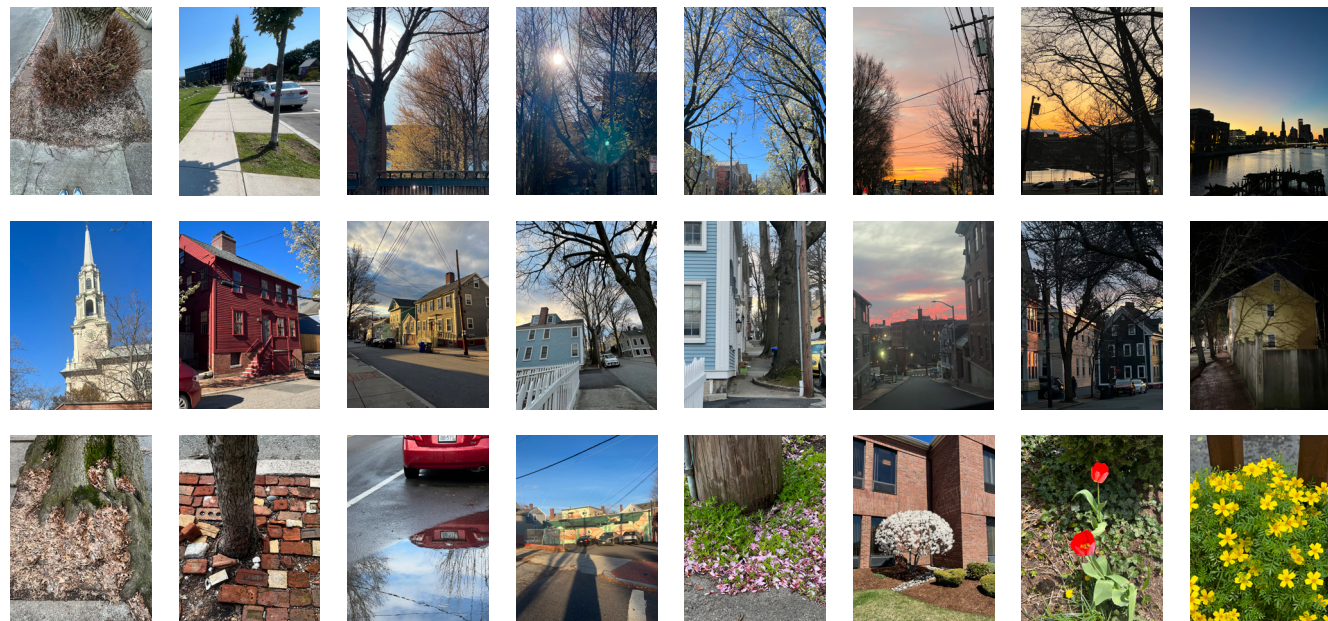
Fig 21

04 UNCOVERING OUR OWN BEHAVIORAL AWARENESS

BEHAVIORAL AWARENESS INVESTIGATIONS

I investigated the intricate dynamics between human behavior and the environment by exploring both an urban neighborhood and a natural state park. Immersed in these contrasting landscapes, I aimed to capture the essence of human interactions, environmental cues, and the subtle nuances that shape our behavior.

Awareness Observation In Urban Landscape

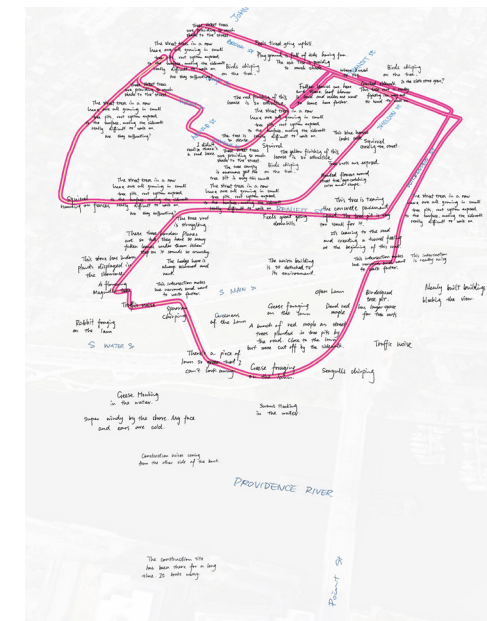
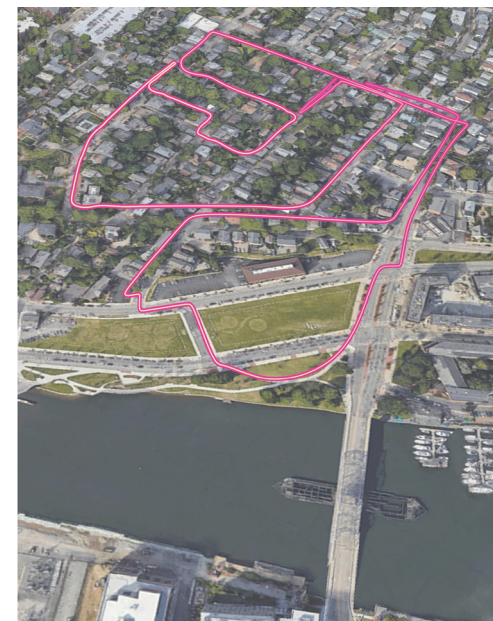


Awareness Observation In Natural Landscape

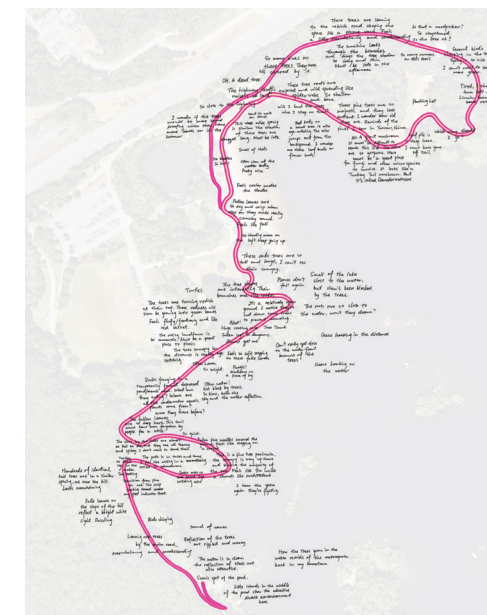


With a camera and notepad in hand, I set out to explore both an urban neighborhood and a natural state park. My goal was to keenly observe and document noteworthy elements, capturing the profound and subtle interactions that unfolded. Mapping each observation to designated locations allowed me to visually depict the interconnectedness between behavior and environment.

Awareness Documentation In Urban Landscape

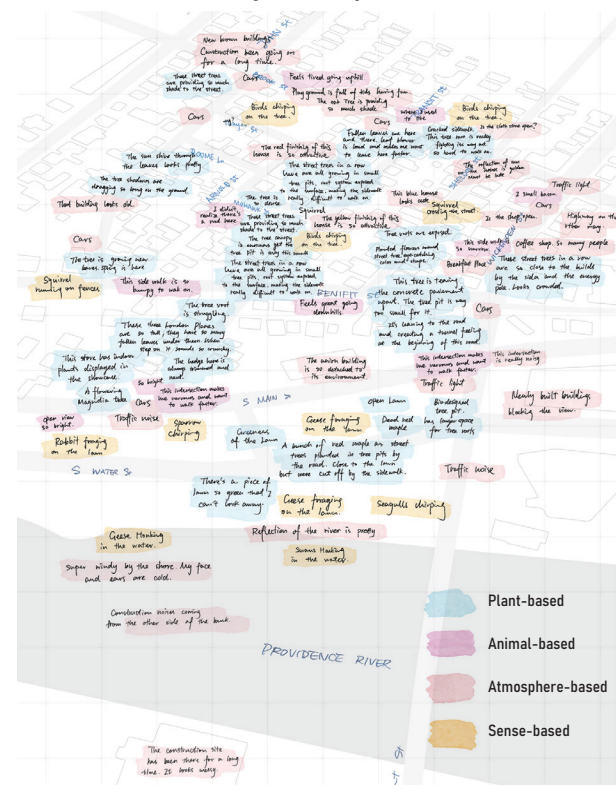


Awareness Documentation In Natural Landscape



BEHAVIORAL AWARENESS INVESTIGATIONS

Color-coded Subject Map (Fox Point)



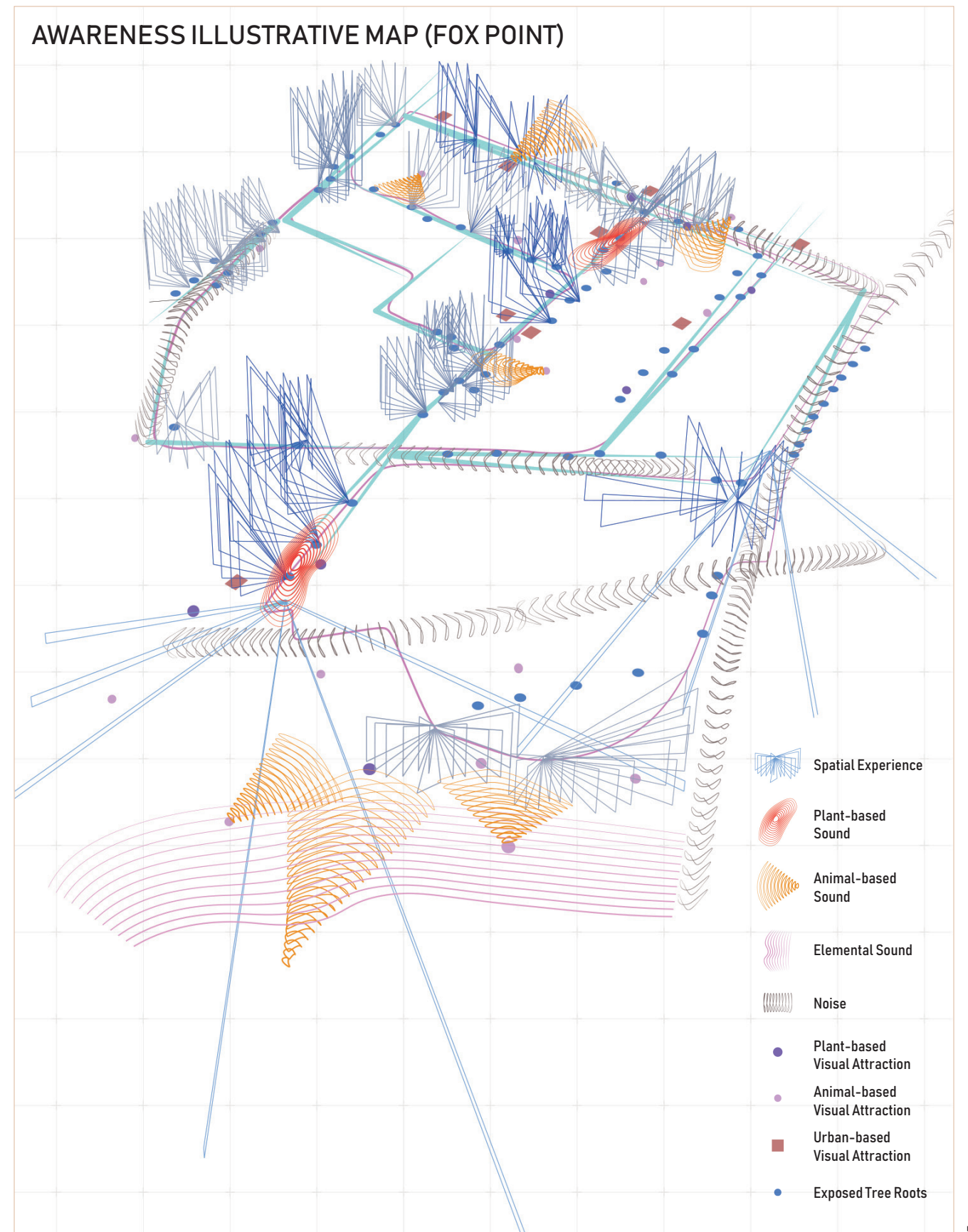
Awareness Hierarchy Map (Fox Point)



The urban neighborhood served as a microcosm of human activity, with its bustling streets, architectural diversity, and vibrant social dynamics. Here, I focused on capturing the interactions between individuals, their engagement with public spaces, and the impact of urban design on human behavior. From the intriguing patterns of pedestrian movement to the ways in which people interacted with street art, parks, or community spaces, each observation aimed to reveal the underlying behavioral nuances within an urban context.

In stark contrast, the natural state park provided a serene and unspoiled backdrop for my investigation. Immersed in nature's embrace, I aimed to document the diverse human responses to the wilderness. From the subtle gestures of individuals engaged in outdoor activities to the calming effects of nature on the human psyche, my goal was to capture the symbiotic relationship between humans and the natural environment.

AWARENESS ILLUSTRATIVE MAP (FOX POINT)



BEHAVIORAL AWARENESS INVESTIGATIONS

Color-coded Subject Map (Lincoln Woods)



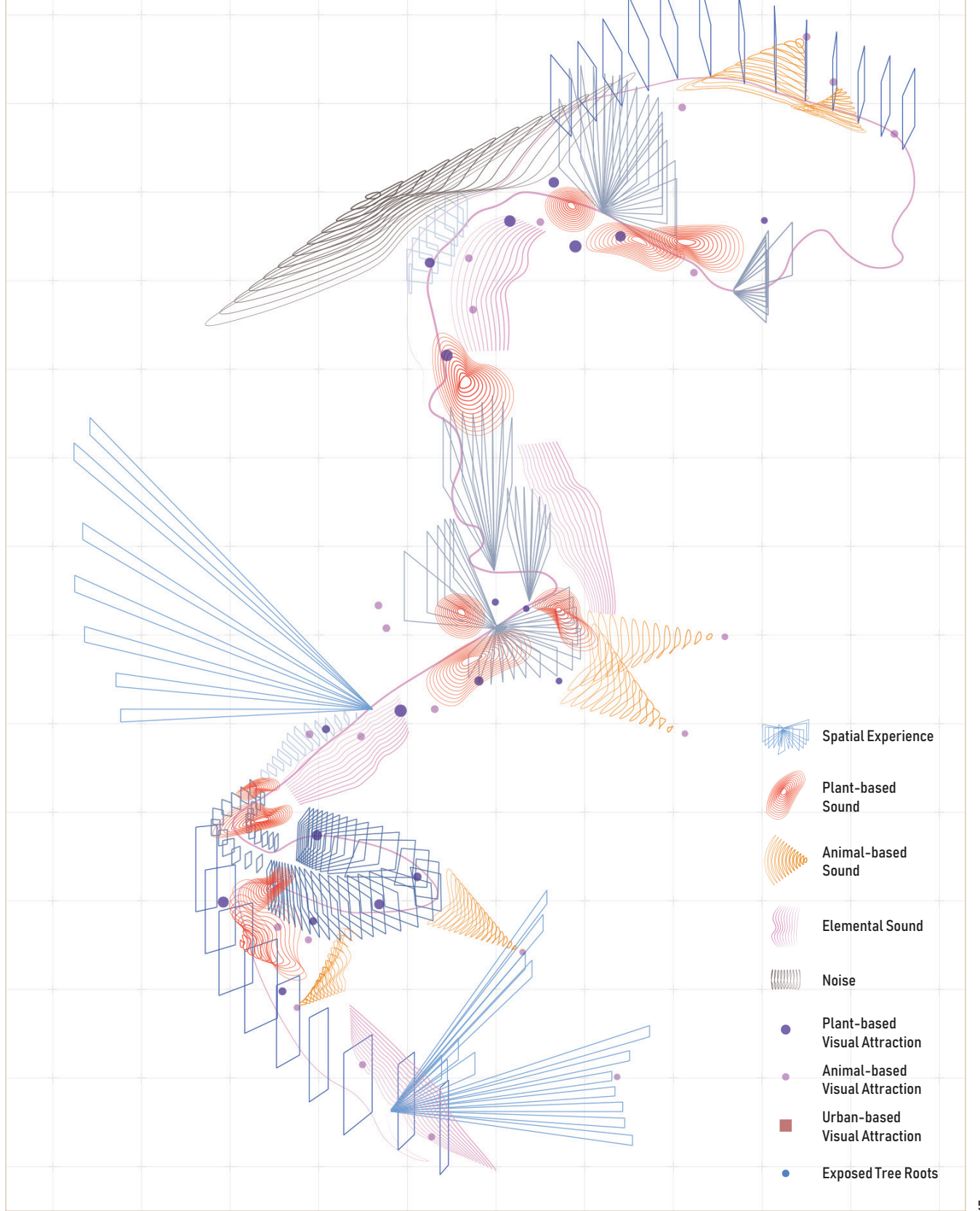
Awareness Hierarchy Map (Lincoln Woods)



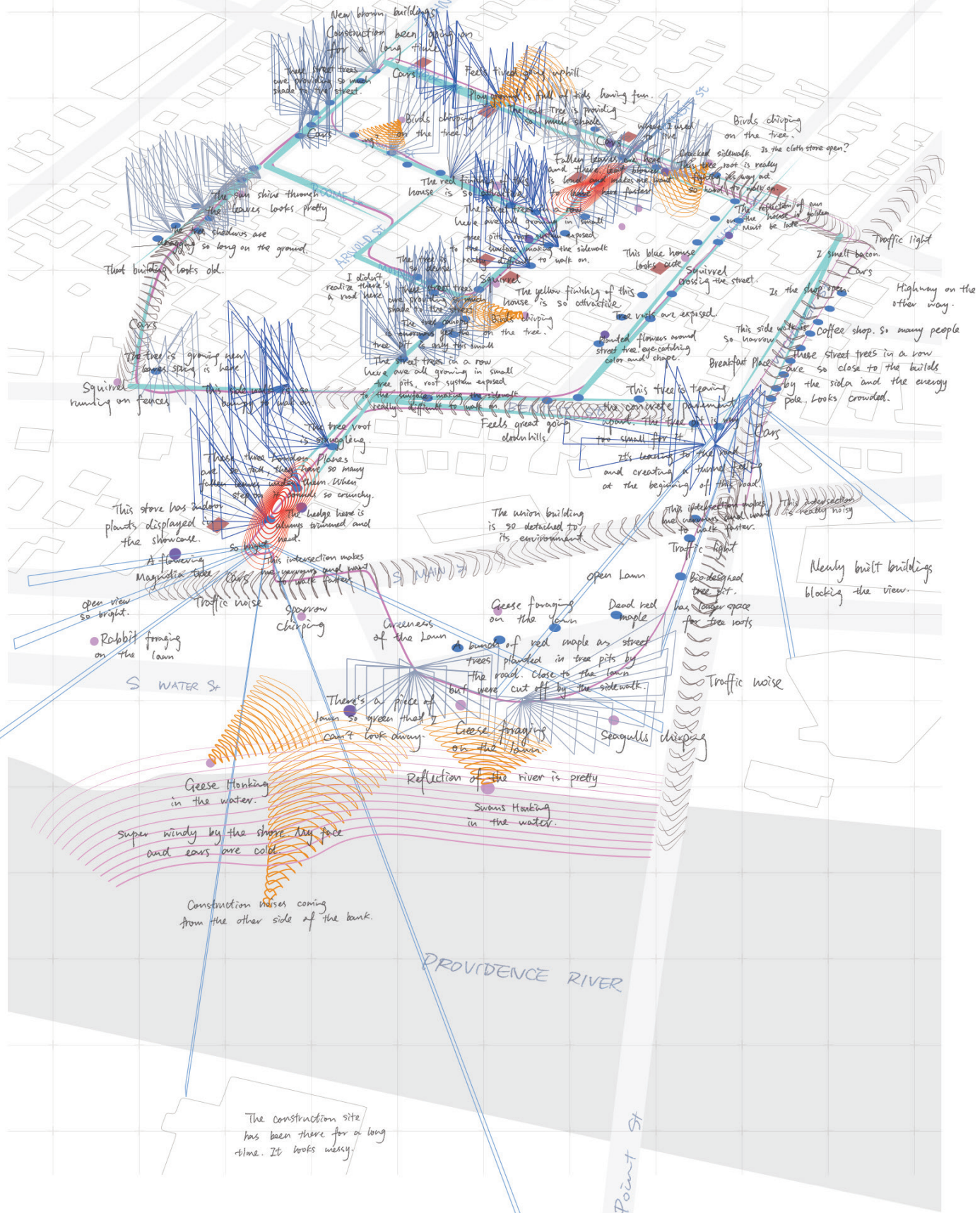
By mapping my documented observations onto designated maps, I sought to visually represent the interconnectedness between human behavior and the physical surroundings. This approach enables a holistic understanding of the impact that environmental factors, such as architecture, natural landscapes, and public spaces, have on our behavioral responses.

Through this investigation, I aspire to shed light on the intricate relationship between human behavior and our surroundings. By critically observing and documenting the various elements that caught my attention, I aim to unveil the hidden patterns, influences, and interdependencies that shape our actions and experiences in different environments. Ultimately, this exploration offers a unique perspective into the complex and dynamic interplay between human behavior and the urban and natural landscapes we inhabit.

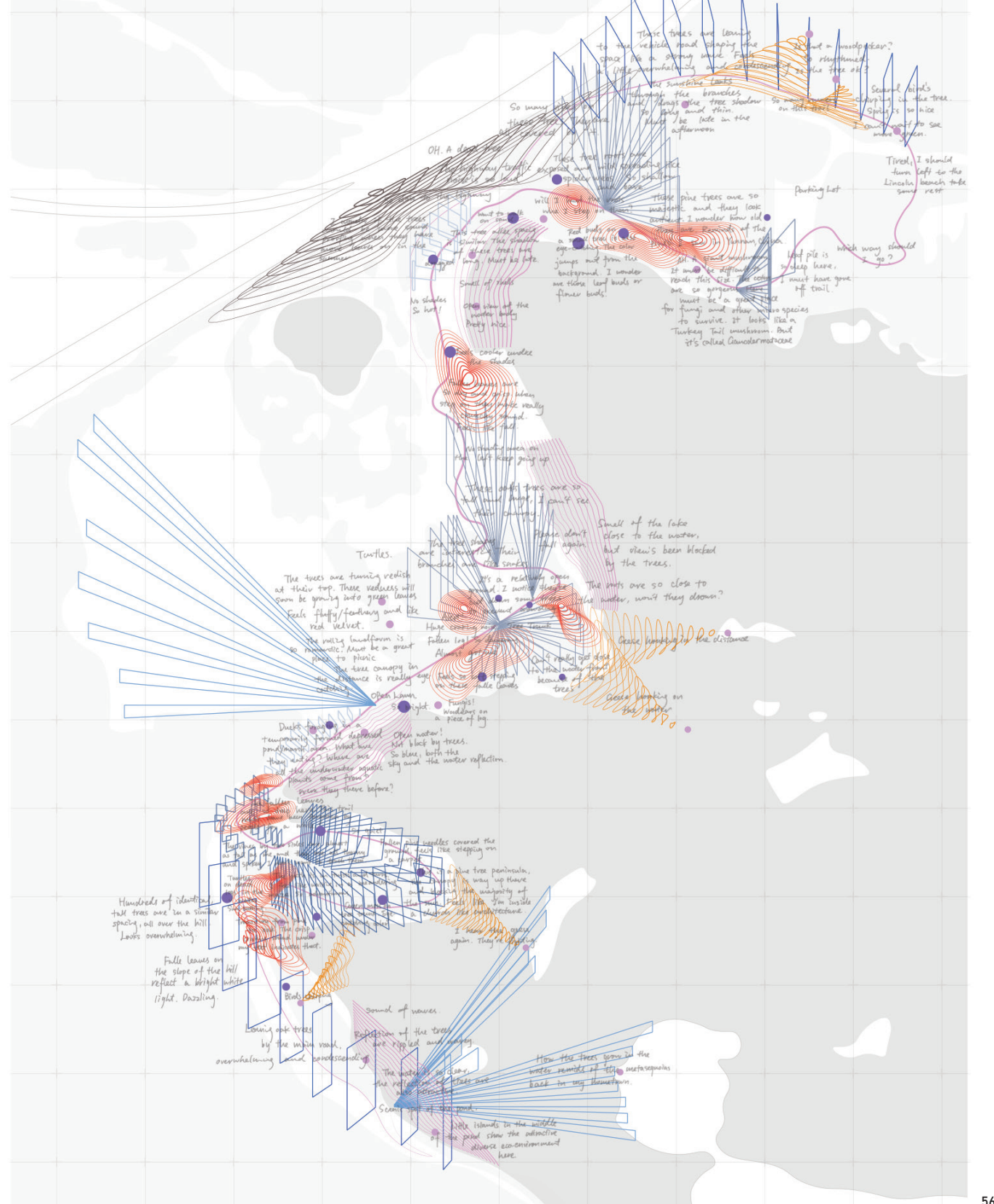
AWARENESS ILLUSTRATIVE MAP (LINCOLN WOODS)



AWARENESS INVESTIGATION MAP (URBAN LANDSCAPE)



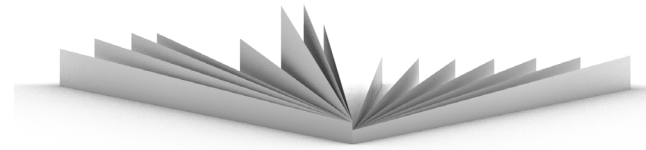
AWARENESS INVESTIGATION MAP (NATURAL LANDSCAPE)



DESIGN INSPIRATION: HOW PLANTS SHAPE SPACE

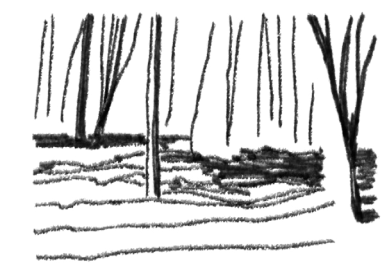
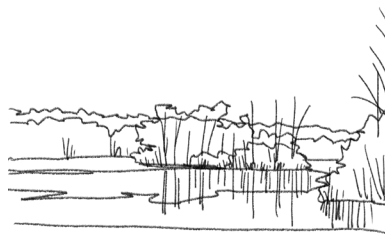
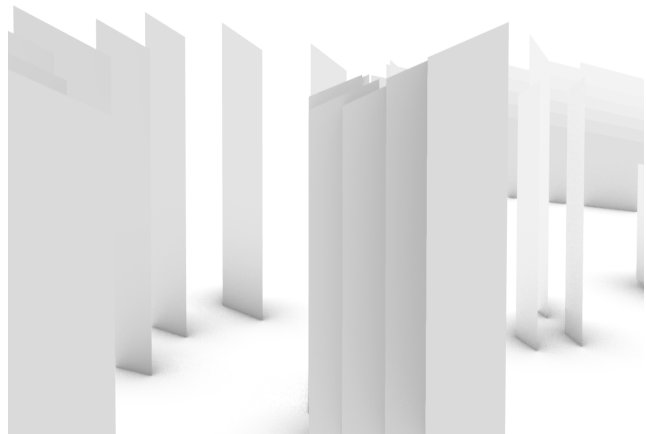
Reflection: Expansion of Space

Plants possess a unique quality to expand and transform their surroundings, much like a calm lake reflects its lush surroundings. This reflection-inspired design approach captures the expansive nature of plants, utilizing mirrors or water features to create an amplified sense of space and openness. The interplay between vegetation and its environment transcends physical boundaries, generating a visual illusion of depth and vastness.



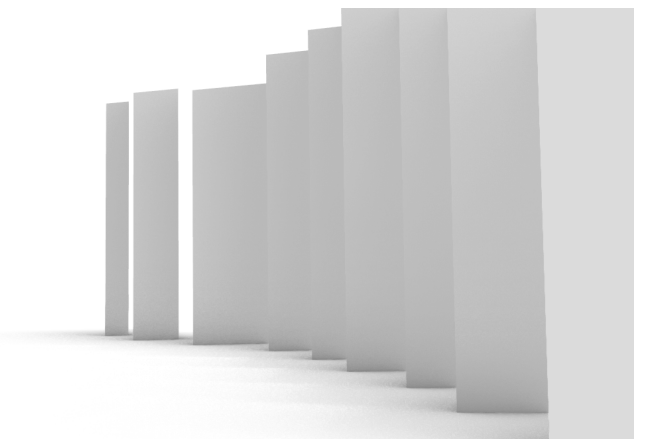
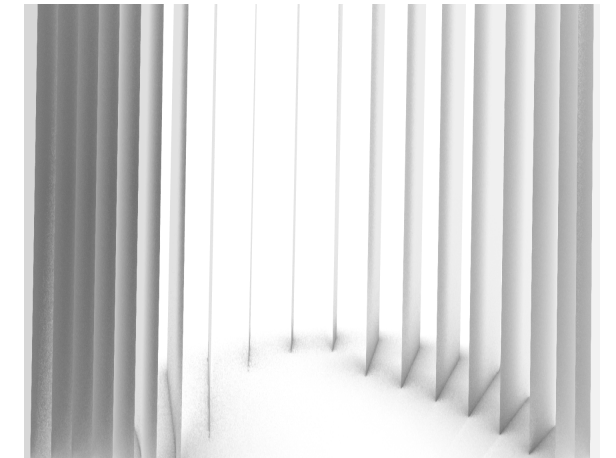
Shadow+Projection: Extrusion of Space

Shadows and projections have a transformative effect on the environment in plant-inspired design. As sunlight filters through leaves, casting intricate patterns on the ground, plants shape their surroundings. Embracing this phenomenon, the design approach utilizes shadows and projections as key elements to extend and elongate physical boundaries. Strategic placement of light sources and innovative techniques harness the interplay of light and shadow, creating a dynamic atmosphere that sparks intrigue and exploration.



Immersive Structure: Extension of Space

Plants possess an innate ability to create captivating living architecture that extends space. From sprawling canopies to intricate vine networks, vegetation weaves together to form immersive structures. Inspired by this organic union, the design approach integrates living elements like climbing plants or green walls to seamlessly blend human-made structures with the natural world. This extension of space not only enhances the visual aesthetic but also fosters a harmonious connection between humans and the surrounding botanical environment.

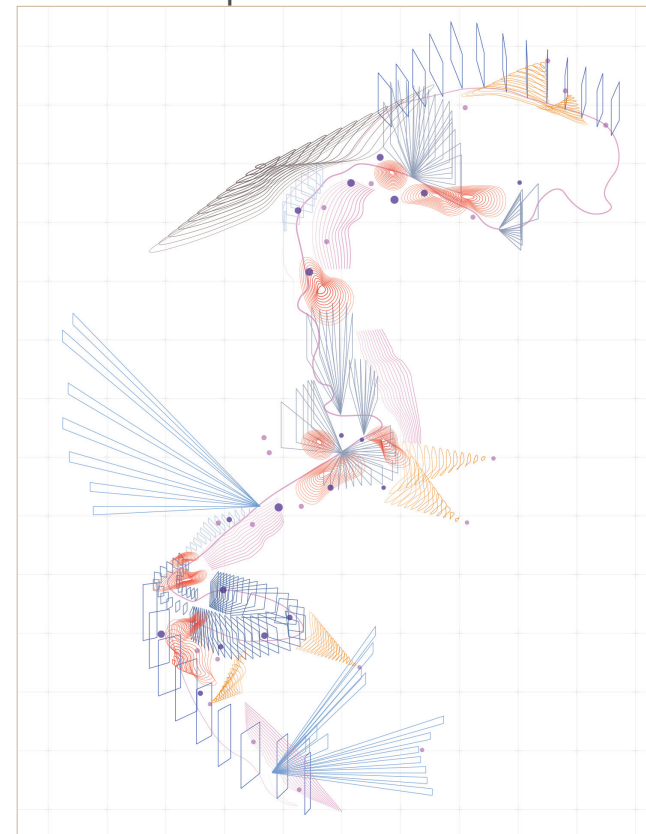


DESIGN INSPIRATION: SCALE OF AWARENESS

My design inspiration arises from the transformative impact of shifting levels of awareness on perception, particularly regarding the plants within my environment. Through evolving awareness, I have developed a newfound clarity and heightened sensitivity towards botanical elements, largely influenced by the method of Multiscale Juxtaposition.

As my awareness fluctuates, the method of Multiscale Juxtaposition has unveiled a previously unnoticed world of plants, making them more pronounced and perceptible. Through this design approach, the plants around me have become more than mere background elements but rather intricate components that contribute to the overall tapestry of my surroundings.

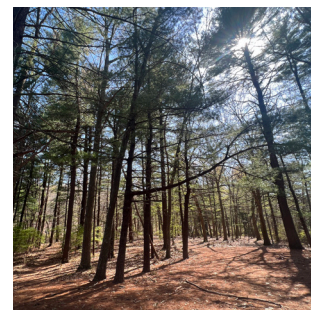
Awareness Map in Lincoln Woods



Awareness Level Map



Level 2: Individual, Single subject



Level 3: Overlaid Individuals



Level 1: Details, Textures, Patterns



Level 4: Blurred Individuals, Merged Entirety





05 DESIGN METHODOLOGY: RAISING PLANT AWARENESS

DESIGN METHODS

My design method combines Multiscale Juxtaposition and Methods of Amplification, integrating visual effects and perspective. Blending upward and downward reflections, overlaying techniques, and dynamic zoom perspectives, and harmonizing structure with both internal and external perspectives.

Methods of Amplification



REFLECTION

Multiscale Juxtaposition



UP

+



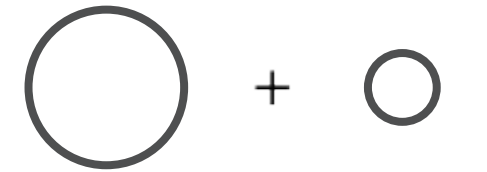
DOWN

Methods of Amplification



OVERLAY

Multiscale Juxtaposition

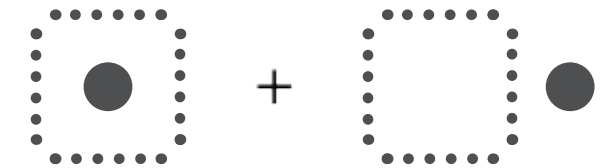


ZOOM IN

ZOOM OUT



STRUCTURE



WITHIN

WITHOUT

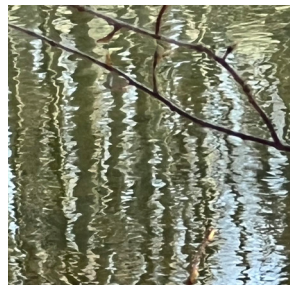


REFLECTION & ROOTS/CANOPY

Strategically incorporating reflective surfaces, such as glass or polished materials, designers can introduce an additional layer of depth and complexity. The interplay between the physical environment and its reflection not only expands the perceived space but also adds a sense of fluidity and dynamism. This fusion of reality and its mirrored counterpart elevates the visual impact, captivating viewers and creating a truly immersive and memorable design experience.

SITE INVESTIGATION

Reflections in water play a vital role in expanding the visual spatial experience, offering a captivating dimension to our surroundings. The shimmering reflections create a parallel world that extends the visual boundaries, enhancing the overall aesthetic appeal. In design, harnessing the potential of water reflections can create truly remarkable and visually striking experiences.



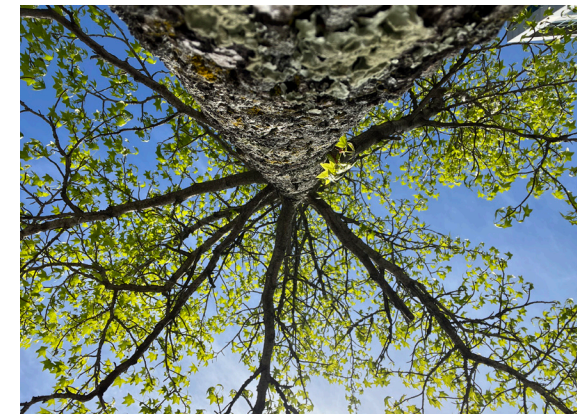
DESIGN INSPIRATION

My design inspiration came from the unique perspective of looking at the canopy shape of the tree from the bottom up. I was able to appreciate the intricate patterns and shapes created by the tree's branches and leaves from this angle. Additionally, after it rained, I noticed the reflection of the water puddle on the ground, which added another layer of beauty and complexity to the scene.



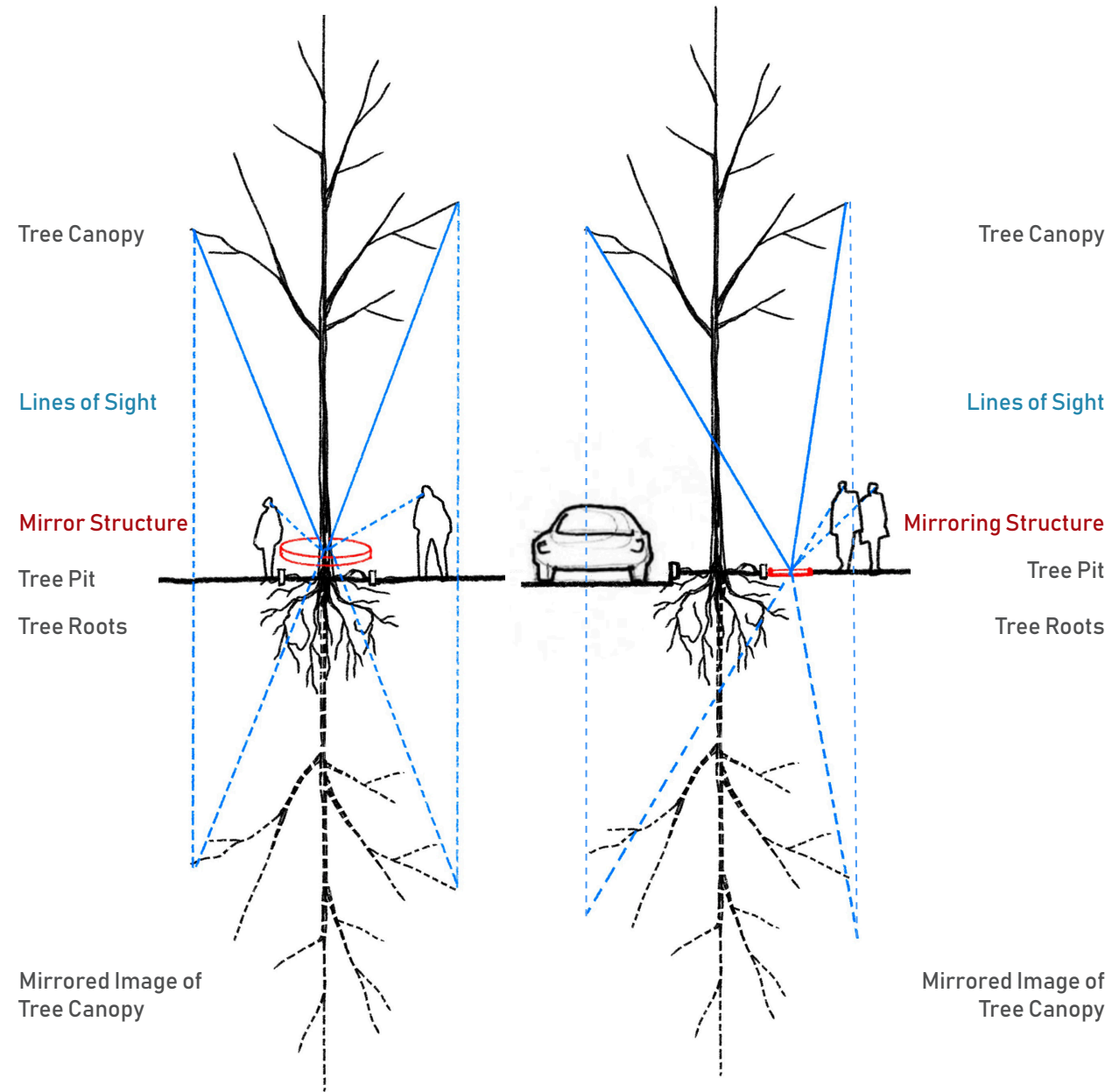
DESIGN IDEAS

These two perspectives inspired me to bring together two normally hard-to-notice perspectives on the same surface. I realized that by combining these perspectives, I could create a unique and visually compelling design. My design method combines the concepts of multiscale juxtaposition and plant amplification to create installations that facilitate a deeper appreciation and awareness of the plants surrounding us.



DESIGN NOTES

I intend to bring the high canopy and the hidden roots to the same eye level. By doing so, I aim to create a visual equilibrium that highlights the interconnectedness of the aboveground and underground elements. This approach allows for a holistic appreciation of the entire ecosystem, emphasizing the importance of both the visible beauty and the hidden foundations.

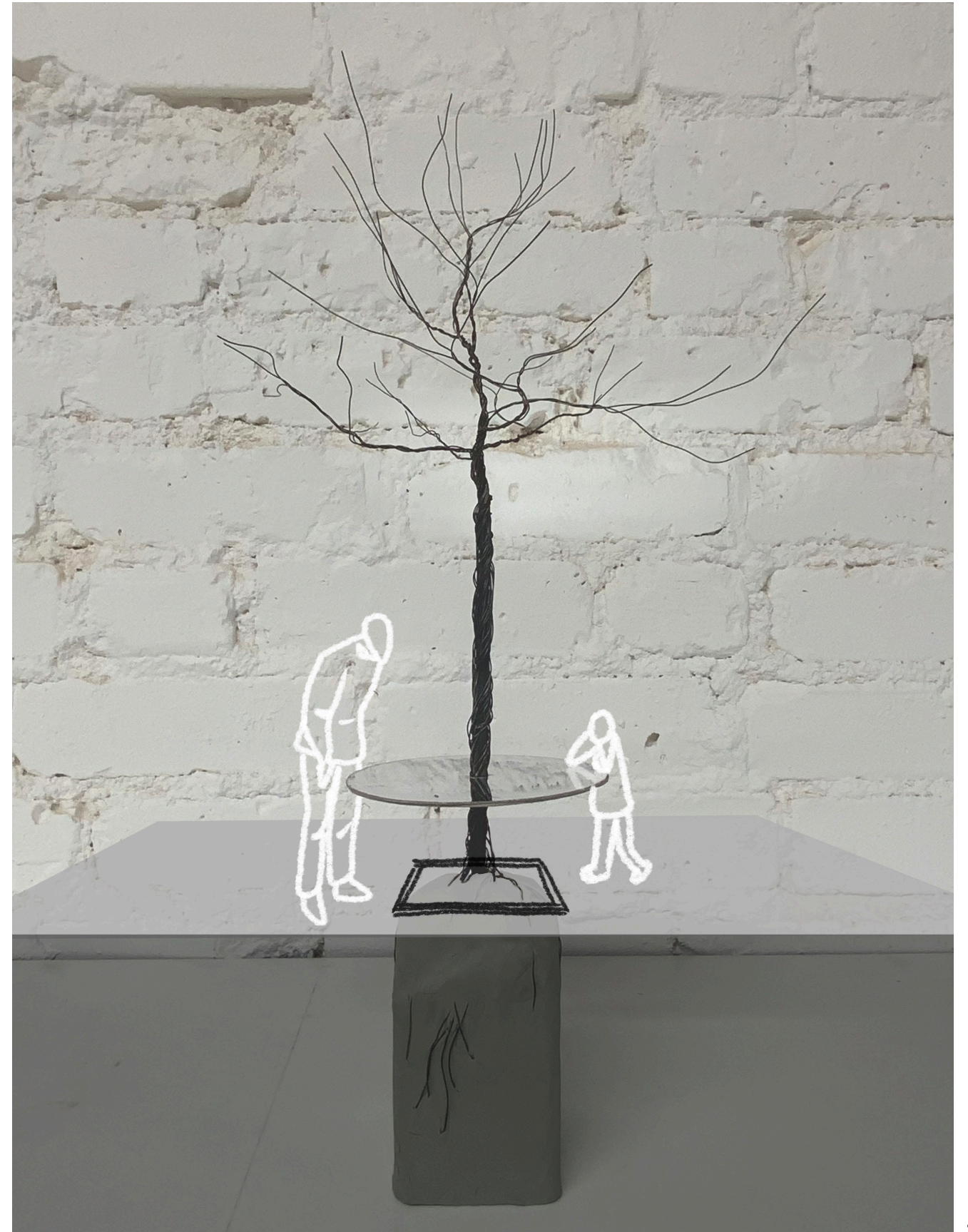


STREET TREE MIRRORING STRUCTURE
RENDERING

STREET TREE MIRROR RENDERING



CONCEPT MODELS





OVERLAYING & TREE BARK

My design intention is to magnify the image of "one tree" by both zooming out to multiply its numbers and zooming in to showcase its textures. By employing these techniques, I aim to emphasize the significance of individual trees within the larger ecosystem. Zooming out allows for the recognition of the collective impact of multiple trees, highlighting their collective strength and contribution. Conversely, zooming in enables a close examination of the unique textures and details of each tree, celebrating their individuality and inherent beauty. This approach aims to foster a deeper appreciation for the intricate interplay between the unity and diversity found within the realm of trees.

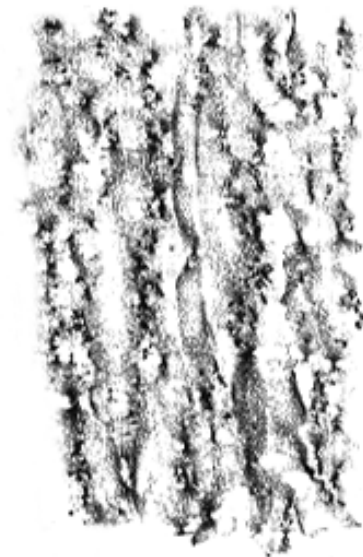
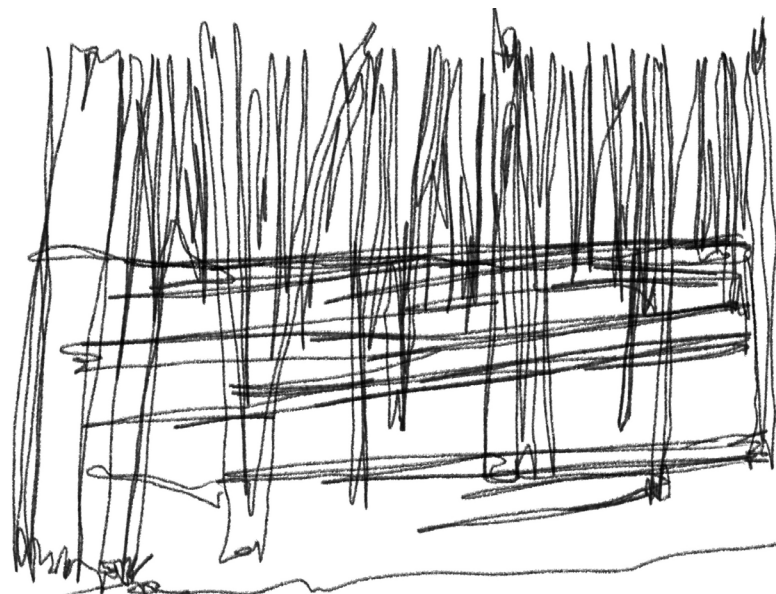


SITE INVESTIGATION

While traversing this landscape, my sight effortlessly transitions between various perspectives, ascending to the top of the branches and descending to the fallen leaves on the ground. It then extends further to encompass the majestic Allée of trees before drawing closer to appreciate the intricate textures of the barks. This fluidity of vision allows me to fully immerse myself in the diverse elements of the environment, experiencing the grandeur of the surroundings while also reveling in the minute details that contribute to its overall beauty.

SITE INVESTIGATION

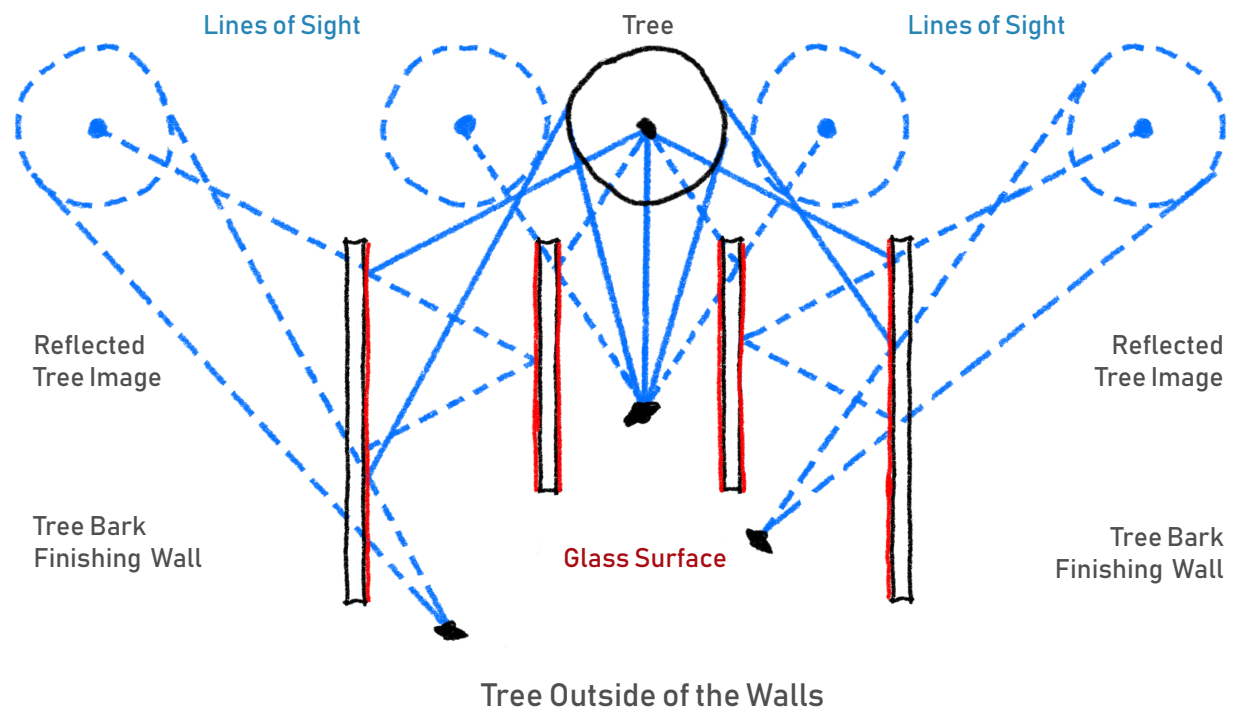
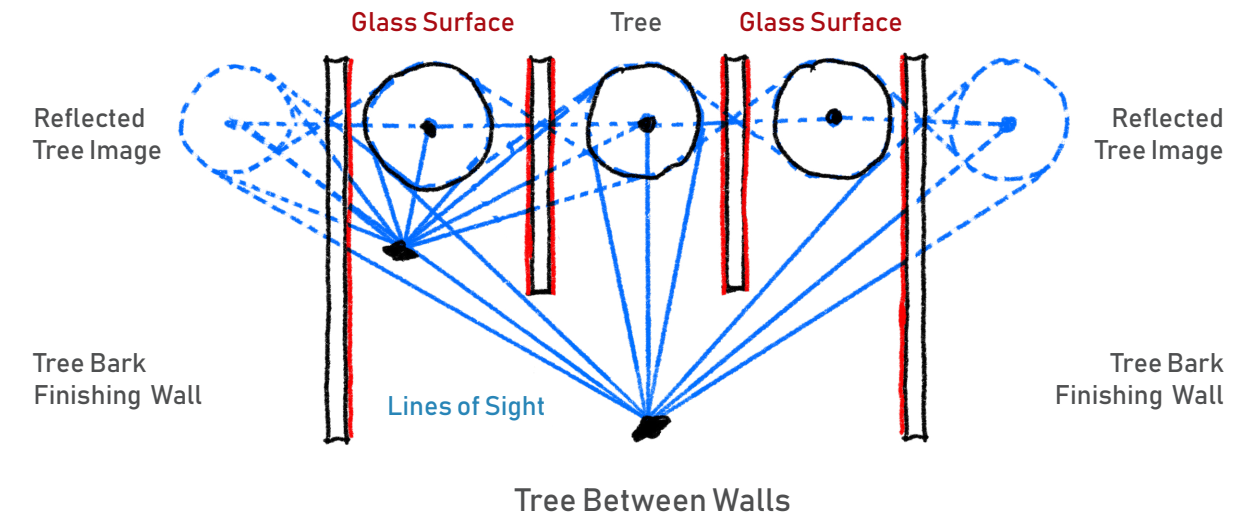
Sketching enables me to extract visually captivating elements such as shapes and colors from the landscape. It helps me identify which elements can be manipulated to amplify the presence of plants. By observing and capturing these details through sketches, I gain a deeper understanding of how to enhance and emphasize the natural beauty of plant life.



Tree bark rubbing heightened my attention to the intricate details and textures of trees. This practice allowed me to zoom in and focus on the minute characteristics of plants. By engaging in this tactile exploration, my awareness expanded to appreciate the richness and diversity found within the bark's patterns and textures.

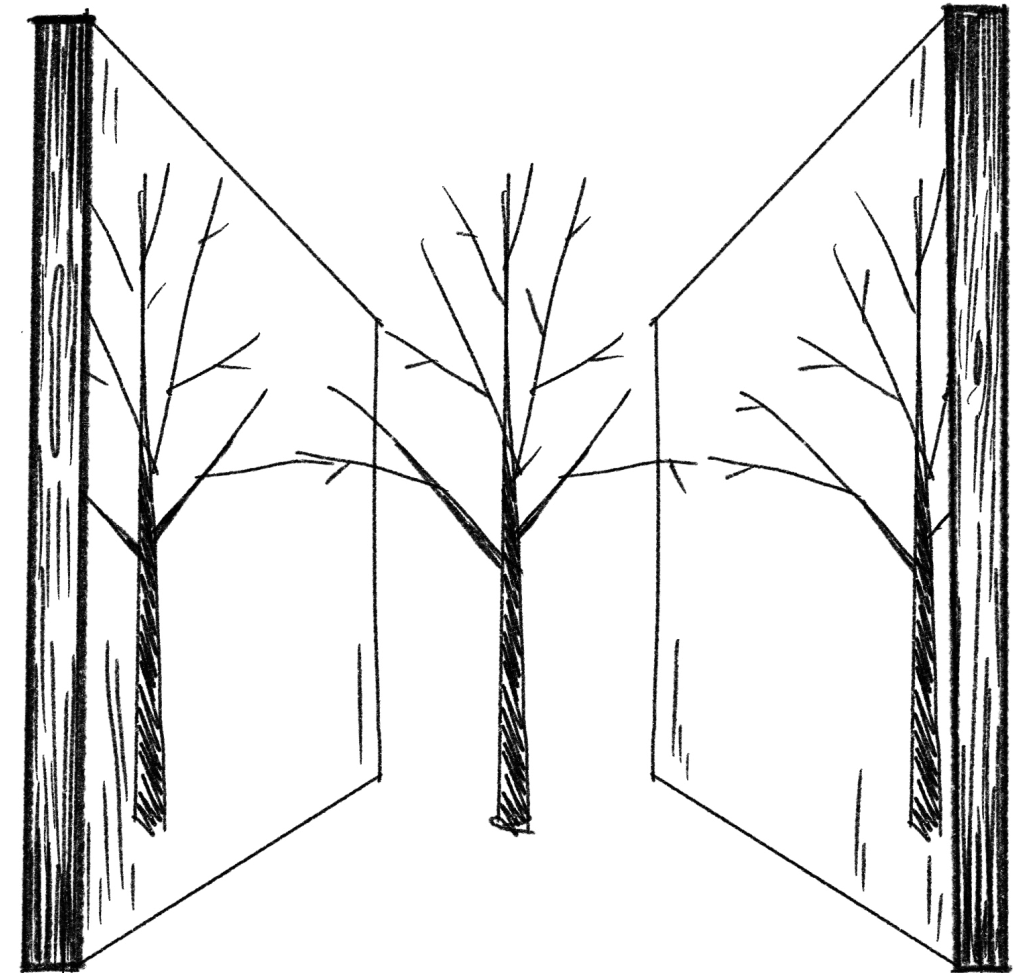
DESIGN NOTES

My intention is to utilize the unique properties of glass, specifically its reflective yet transparent nature, to enhance and amplify the characteristics of a single tree. Through the innovative use of glass, I aim to create an overlay that seamlessly integrates the zoomed-out image of the entire tree with the zoomed-in texture of its bark. This approach not only showcases the tree's grandeur and overall form but also emphasizes the intricate details and patterns found within its bark.



"ONE TREE A FOREST"

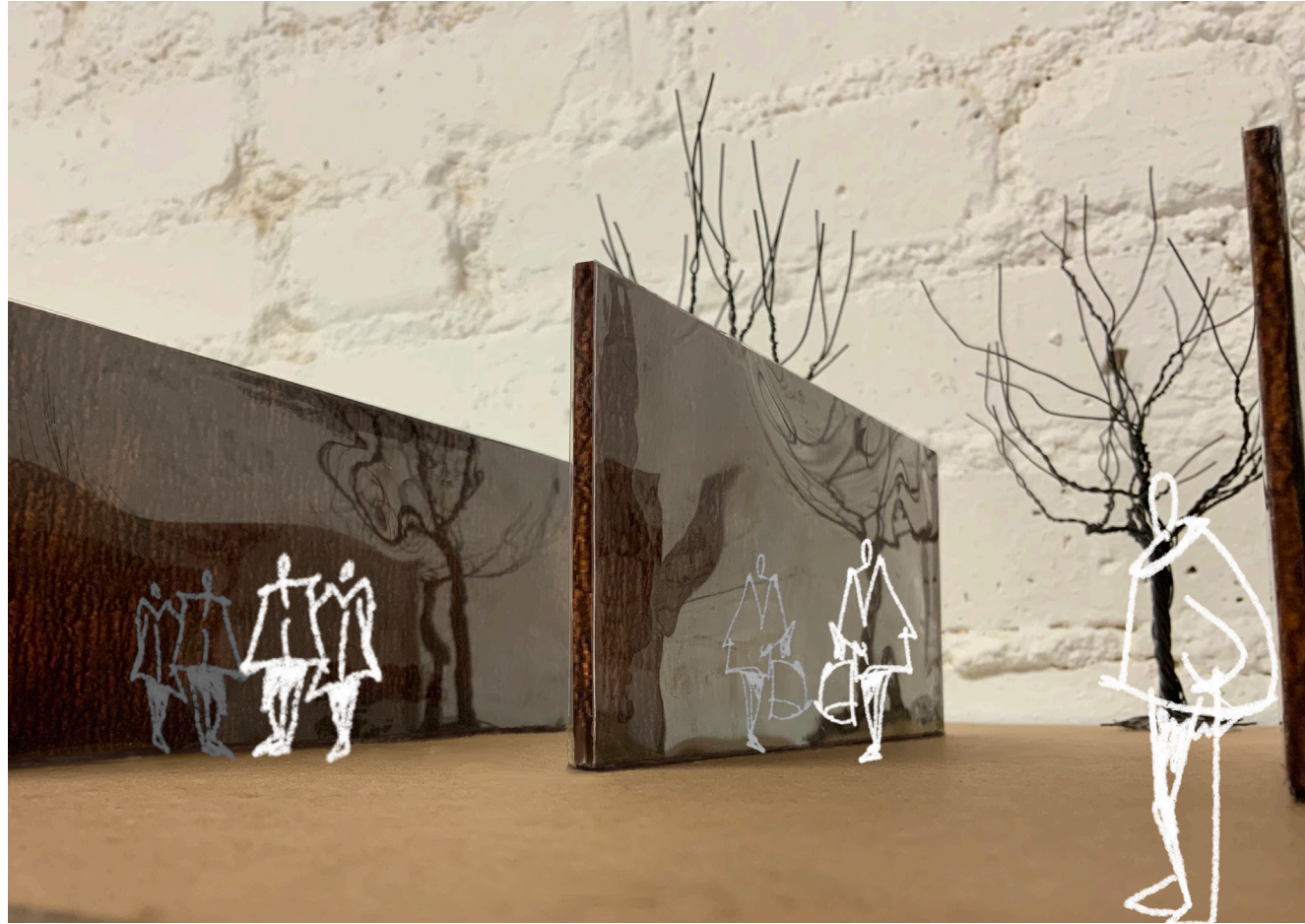
By combining these two perspectives, I intend to create a visually captivating representation that allows viewers to simultaneously appreciate the tree as a whole and delve into the captivating intricacies of its bark.



"ONE TREE A FOREST" RENDERING

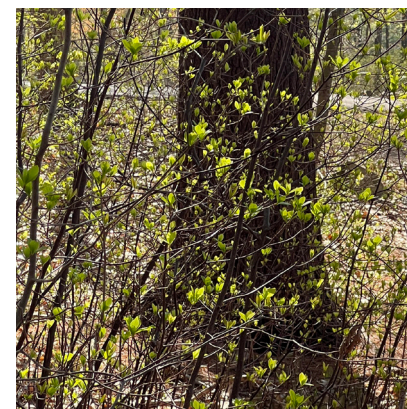
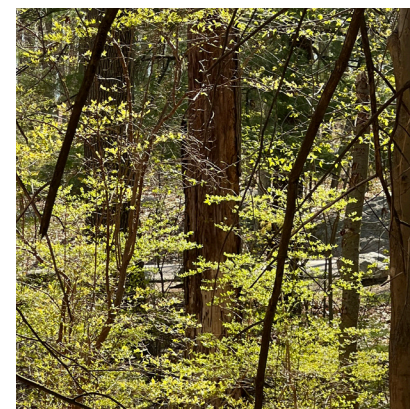


CONCEPT MODELS



STRUCTURE & SHADOW

Strategically incorporating reflective surfaces, such as glass or polished materials, designers can introduce an additional layer of depth and complexity. The interplay between the physical environment and its reflection not only expands the perceived space but also adds a sense of fluidity and dynamism. This fusion of reality and its mirrored counterpart elevates the visual impact, captivating viewers and creating a truly immersive and memorable design experience.



SHADOW PROJECTION

Through this method, the tree becomes more than just an isolated entity; it becomes an active participant in its environment. The interplay between the form and the projected form adds depth and dimensionality, creating an engaging visual dialogue that invites viewers to contemplate the relationship between objects and their shadows.



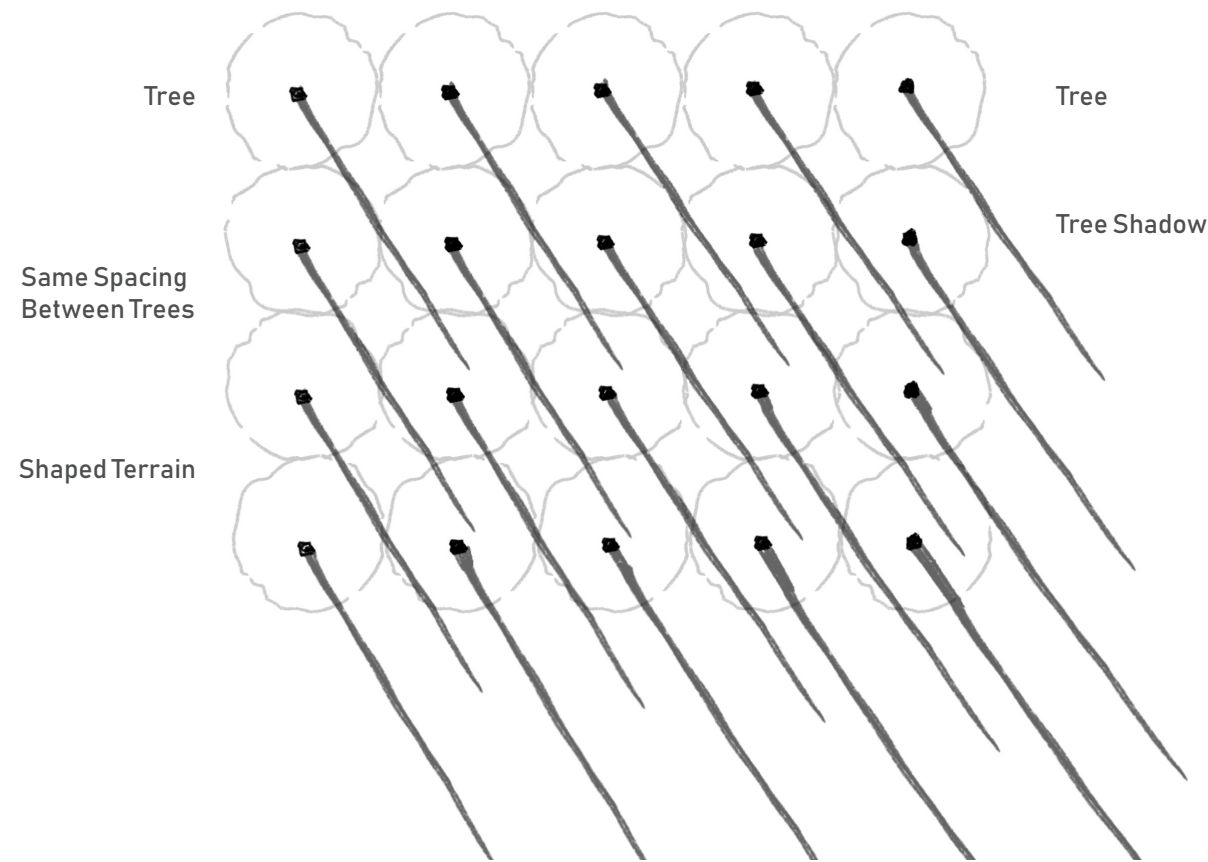
STRUCTURE SHAPING SPACE

This design method offers an opportunity to explore the transformative nature of light and shadow. The projected form not only enhances the tree's presence but also adds an element of intrigue and mystery, as the shadow can alter the perception of the tree's shape and create intriguing visual effects. By embracing the interaction between form and its projected form, my design method seeks to evoke a sense of wonder and encourage viewers to appreciate the intricate relationship between the natural world and the spaces we inhabit.



DESIGN NOTES

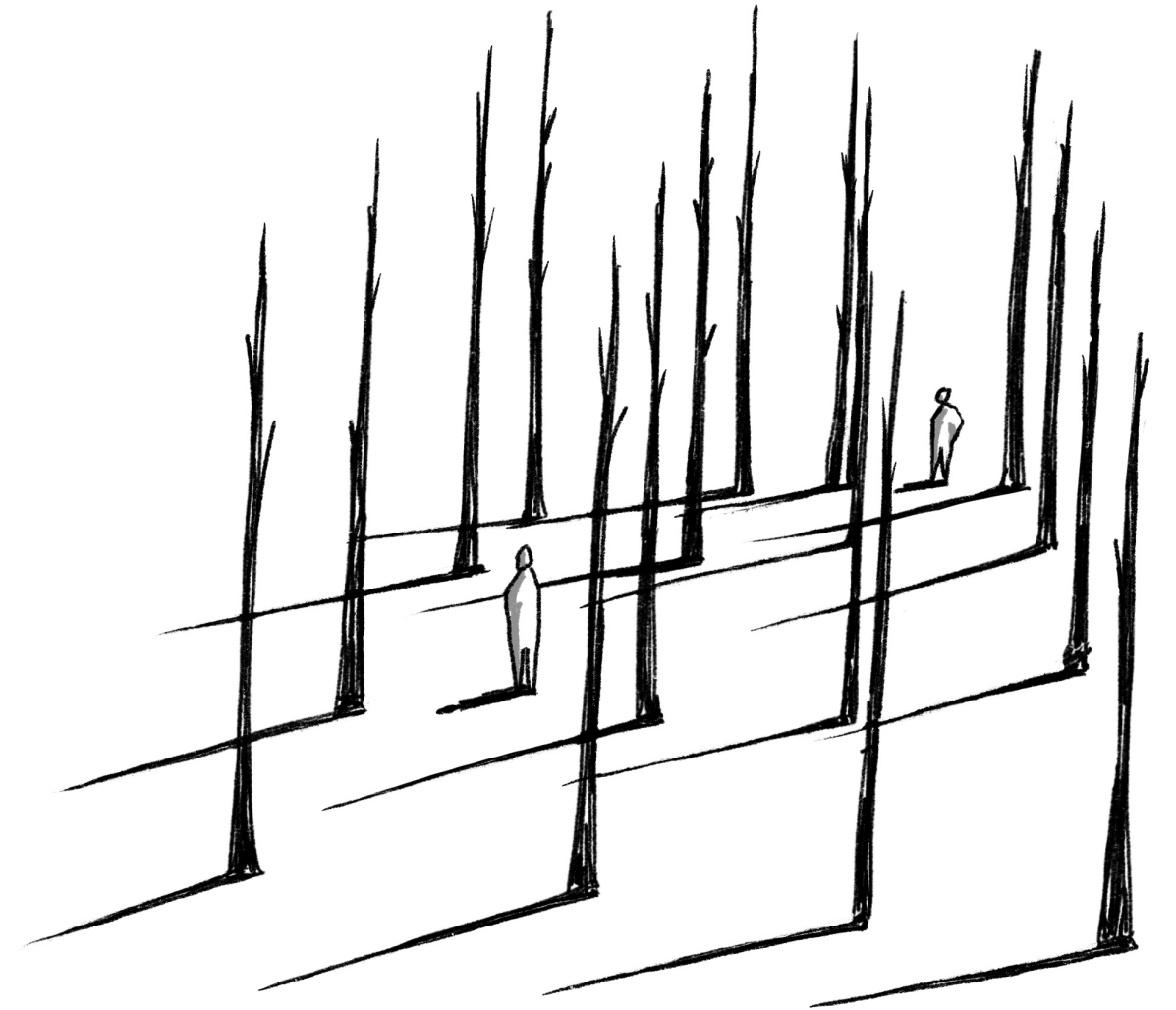
I employ a deliberate approach in my design by implementing consistent spacings between grid-planted trees. This technique serves to magnify the visual impact of the tree shadows and their transformative effect on the surrounding environment. By maintaining uniform distances between the trees, I create a structured grid pattern that establishes a sense of order and rhythm within the landscape.



Trees Planted in Grids

GRID SHADOW GROVE

The deliberate spacings between the trees also allow for a more pronounced visual contrast, enhancing the visibility and definition of the shadows. This amplifies their impact on the surrounding space, drawing attention to their dynamic shapes and highlighting the ever-changing relationship between light, shadow, and the built environment.

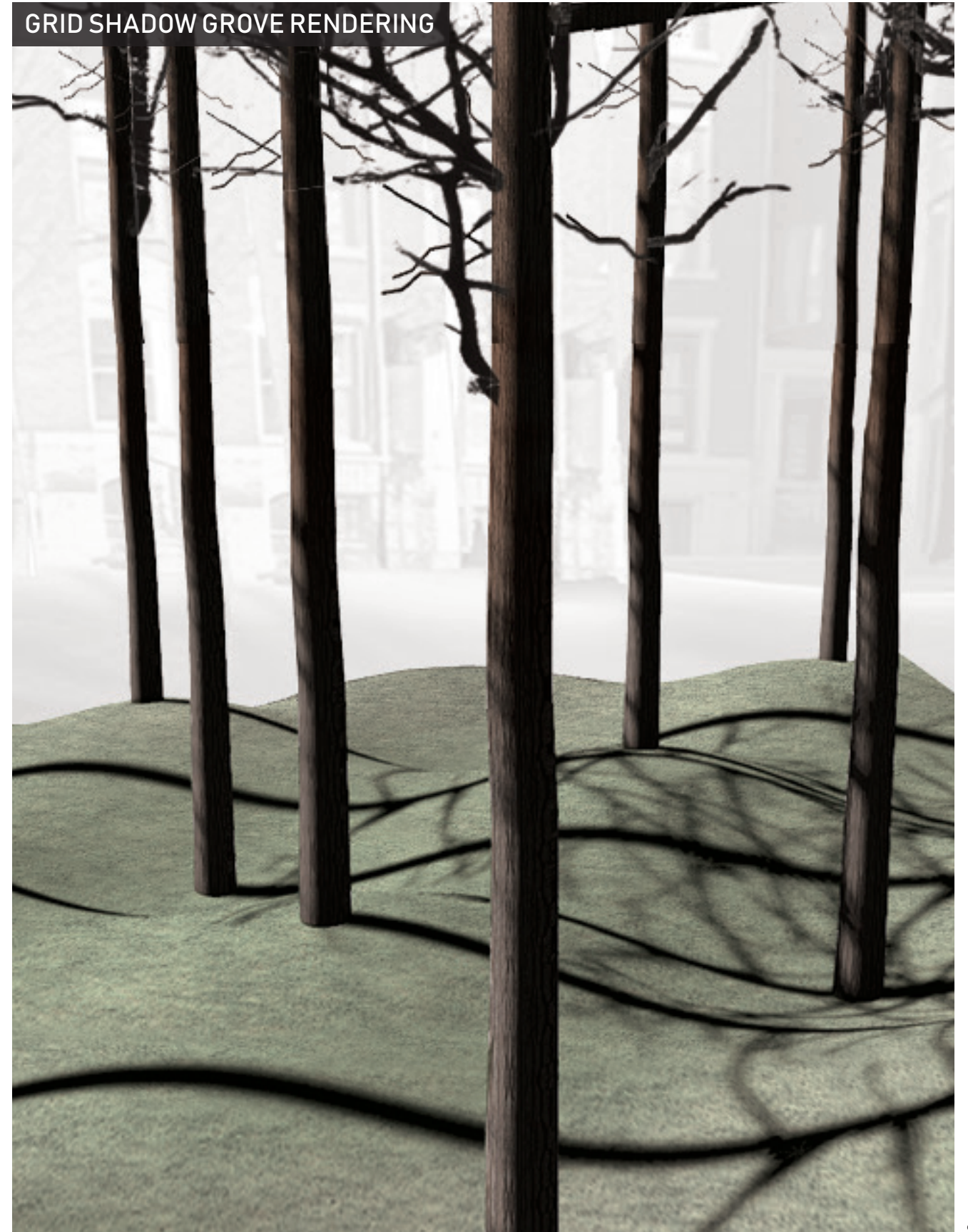


Shadows Map Out the Environment

GRID SHADOW GROVE RENDERING



GRID SHADOW GROVE RENDERING



CONCEPT MODELS





CONCLUSIONS

This thesis highlights the pressing need to address the growing disconnect between people and nature, which has arisen due to our increasing reliance on digital technologies. Through the utilization of plant-based sensorial designs, the study proposes an innovative solution to reignite our connection with the natural world. By engaging our emotions and instincts, these designs enable us to perceive and appreciate the unique characteristics of plants, fostering a deeper and more empathetic connection.

The research journey undertaken in this thesis encompassed the exploration of plant blindness, the development of observation methods, and the researcher’s personal investigations using their own senses. This comprehensive approach revealed the often unnoticed aspects of plants and allowed for the discovery of our own behavioral awareness. By integrating techniques such as multiscale juxtaposition, amplification methods, visual effects, and dynamic perspectives in the design process, our ability to perceive and connect with the environment was significantly enhanced.

The implications of this research extend far beyond the confines of the thesis, as it cultivates a deeper understanding and appreciation of the individuality and significance of plants. By delving into the phenomenon of plant blindness, we uncovered the barriers that prevent us from fully perceiving and appreciating the botanical world. Through the design of observation methods, we discovered the often overlooked aspects of plants, establishing an analogy between human experiences and the unique characteristics of plants. This facilitated a deeper connection and understand

ing. Also, the investigations conducted in this study utilized the researcher’s own body as a measuring tool to explore how our senses respond to the environment. In doing so, we not only uncovered previously unacknowledged aspects of our own behavioral awareness but also highlighted the intricate relationship between our bodies, the natural world, and the perception of plants.

Central to this research is the development of a design method that combines multiscale juxtaposition and methods of amplification. By integrating visual effects and perspectives, such as blending upward and downward reflections, overlaying techniques, and dynamic zoom perspectives, the design method created a harmonious framework encompassing both internal and external perspectives. This approach significantly enhanced our ability to perceive and connect with the environment, offering valuable insights into the interplay between design, perception, and our relationship with plants.

Looking forward, there are numerous avenues for expanding this research. Further exploration could involve the investigation of different plant species, the examination of diverse environmental contexts, and the incorporation of new methodologies and technologies. By broadening the scope to encompass all seasons, exploring additional locations, and conducting experiments with various materials, the study can continue to deepen our understanding and yield fresh insights into the complex relationship between plants and their environment.

In conclusion, this thesis offers a tangible pathway to reignite our connection with nature through the implementation of plant-based sensorial designs. By fostering an appreciation for the individuality of plants and cultivating a deeper understanding of their significance, we can establish a more intimate and harmonious relationship with the natural world. It is my sincere hope that this work contributes to a profound shift in perception and engenders a renewed commitment to the well-being of the environment and the survival of all species.



06 APPENDIX

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Reflections

The design method employed in this study, combining multiscale juxtaposition and methods of amplification, offered valuable insights into perception and connection with the environment. However, the effectiveness and applicability of this method to different design contexts and individuals should be further explored and validated through additional studies.

While using the researcher’s own body as a measuring tool provided unique insights, it is essential to acknowledge that individual experiences and perceptions may vary. Different researchers or participants might yield different results, emphasizing the need for multiple perspectives and diverse research approaches to gain a comprehensive understanding.

This research was conducted within a specific cultural and environmental context, which may limit the transferability of the findings to other cultural settings. Cultural and contextual factors, such as beliefs, values, and environmental conditions, can significantly influence the perception and connection with plants. Therefore, future research should consider cross-cultural studies to understand the nuances and variations in the relationship between humans and nature.

While this thesis aimed to foster a transformative shift in perspective, it is essential to consider the long-term impact of the proposed interventions. Further research is needed to assess the sustained effects of plant-based sensorial designs on individuals’ attitudes, behaviors, and their continued connection with the natural world.

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