

# De-Interpreting Widgeon Marsh: Designs for Transformative Learning in a Regional Park

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Submitted in partial fulfillment for the Master of Landscape Architecture,  
School of Architecture and Landscape Architecture,  
University of British Columbia

## **RELEASE FORM**

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# Acknowledgements

Writing a thesis on the meaning of a specific landscape cannot be accomplished alone. For this project I have relied on the research, guidance, and creativity of many others. Karin England arranged for me to undertake two important site visits and provided me with background information, consultation, and detailed surveys of my areas of interest, which greatly improved the practicality of my design proposals. MetroVancouver is fortunate to have her sensitivity and dedication to positive futures in managing the real-world project on which my research is based. Katya Yushmanova, another dedicated landscape architect working on this regional park, met with me at a crucial moment during my work and helped inspire me to translate all of my research into concrete design proposals. Her knowledge and design ability will make for thoughtful experiences for visitors to this landscape in the future. Dr. Kerrie Charnley's 2019 PhD dissertation provided me with frameworks for understanding Katzie pedagogy based on her primary research and her telling of her story growing up in a colonial school system, as well as her grandmother's story. I am grateful that Dr. Charnley responded to my emails and shared her thoughts on the role design has and I hope that she will have the opportunity to become involved in the project at Widgeon Marsh, which is being carried out on her traditional, ancestral territories. I hope to continue learning from her work on Indigenous ways of knowing the landscape for years to come.

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# Abstract

There are currently plans to allow public access to parts of a large wetland north of present-day Coquitlam. Widgeon Marsh Regional Park will have the highest conservation value in the entire regional parks system and this project seeks to create spaces that provide opportunities to convey its eco-cultural significance to settler visitors. I chose three sites that could potentiate transformative learning based on their history and context. Transformative learning occurs when a disorienting dilemma catalyzes a re-examination of belief systems, and precipitates changes in behaviour and worldview. My three designs and restorations each focus on the food, fibre, and fuel provided by the landscape in order to contrast colonial pasts with Indigenous futures. This project is interested in the customs and traditions of the Katzie First Nation, whose lifeways give lie to the idea that humans cannot hope to participate creatively and rationally in protected areas.

Typical interpretive signage is expensive, difficult to maintain, and most problematically tends to impose one dominant landscape narrative, and marginalize others. This project challenges conventional park interpretation with artistic, functional structures and proposes a handheld form of interpretation that can be remade, shared, and produced by any person with a relationship to the land.

I am grateful to have completed this work and learning on the traditional, ancestral, and unceded territories of the x̱m̱kw̱y̱m̱ (Musqueam), Skwxwú7mesh (Squamish), and S̱ílw̱ta̱ (Tsleil-Waututh) Nations, and to have studied a landscape that is the traditional, ancestral, and unceded territory of traditional territory of the sq̱c̱iy̱a̱ṯm̱x̱ (Katzie) and ḵiḵw̱w̱m̱ (Kwikwetlem) First Nations, which lies within the shared territories of the S̱ílw̱ta̱ (Tsleil-Waututh), x̱m̱kw̱y̱m̱ (Musqueam), qiqéyt (Qayqayt), S̱wx̱wú7mesh Úxwumixw (Squamish), and ʔsṯlo̱ (Sto:lo) First Nations.

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# Personal Biographical Statement

I was born in Hamilton, Ontario, at the McMaster Children's Hospital, spent the first 18 years of my life living in St. Catharines, Ontario, and returned to Hamilton to attend McMaster University from age 18 to age 23. These places are also the traditional territories of the Anishinaabe and Haudenosaunee Indigenous peoples, and within the lands protected by the "Dish with One Spoon" wampum agreement. At age 24, I moved to Vancouver, British Columbia to attend the University of British Columbia, on the traditional unceded territories of the Coast Salish peoples – Squamish, Stó:lō and Tsleil-Waututh, and Musqueam Nations.

My ancestors came to the North American continent (also known as Turtle Island) from various countries in Europe as early as the mid-19th century, and as late as the early 20th. The following summarizes their settlement process, based on census records and what I have been able to glean from my living family:

My paternal grandfather's ancestors emigrated from Scotland in the early to mid-19th century, settling around Pictou Nova Scotia in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People. This territory is covered by the "Treaties of Peace and Friendship" which Mi'kmaq and Wolastoqiyik (Maliseet) Peoples first signed with the British Crown in 1725. The treaties did not deal with surrender of lands and resources but in fact recognized Mi'kmaq and Wolastoqiyik (Maliseet) title and established the rules for what was to be an ongoing relationship between nations.

My paternal grandmother's ancestors were farmers who immigrated to Beaver Hills near Yorkton, Saskatchewan from Ukraine around the turn of the 20th century. They built their farm on Treaty 4 and Treaty 6 territory and the traditional territory of the Cree and Saulteaux, Assiniboine, and Métis.

My maternal grandfather's ancestors are from Alsace-Lorraine and came to Canada in the 1840s, settling ultimately in Perth, Ontario for many years, on the traditional unceded territory of the Algonquin Anishinaabe people.

My maternal grandmother's ancestors lived in a town called Balkanwede, north of Berlin in Germany, and moved first to Petitcodiac New Brunswick, Canada in 1934 when my grandmother was 6 years old, eventually settling in Southern Ontario also on the traditional territories of the Anishinaabe and Haudenosaunee Indigenous peoples.

This thesis is as much a journey of self-discovery and reflection on my own relationship to the land, as it is a commentary of the latent potentialities in the landscape and a design proposal.

# Introduction

*"Everything in the world is exactly the same."*

-- Kanye West (2014)<sup>1</sup>

There has been a flattening of representation, construction, and narratives in landscape architecture. This leads to a simplifying of the landscape that runs counter to healthy ecological, and other, complexities. We must re-animate representation, construction, and experience in three dimensional space and this thesis seeks to understand how human beings attribute meaning to our landscape through stories that are embedded in the unique features of a place and embodied in the people who know that place and its particularness.<sup>2</sup>

This thesis set out to explore landscape interpretation - how we communicate the meaning of a place to others through signs and stories. Because I have a limited first-hand understanding of my study site, I relied on Traditional Ecological Knowledge to study what changes over time. So, this thesis is also concerned with transformation, unfolding, and latent potentialities.

A major goal of this project was to start from a place of not-knowing, and adopt a willingness to be puzzled by things we take for granted. I try to approach my study of culture and landscape as an anthropologist and an anarchist -- to question everything and notice how everything in the world is wonderfully unique.

After an overview of MetroVancouver's plan for Widgeon Marsh, and a summary of my sources on Katzie pedagogies, in my critical essay, sections 1, 2, and 3 relate to sections 4, 5, and 6, respectively. Each pair represents a problem framed and then a proposal for an approach. A series of precedent studies precede an overview of my design in Part 2.

1. Kanye West, "On Creative Frustration." (<https://genius.com/Kanye-west-on-creative-frustration-annotated>)

2. Douglas Paterson, "Place, Body, Memory," in *Grounded: The Work of Phillips Farevaag Smallenberg*,



# Landscape Interpretation Today

## The Plan for Widgeon Marsh Regional Park

Widgeon Marsh is being developed for public access by MetroVancouver Parks, who have determined that it has the highest conservation value in the entire regional parks system. The future Widgeon Marsh Regional Park site comprises forests, streams, and over 1000 acres of wetlands, which were never dyked and converted to other uses. After the Fraser River Delta, the park reserve provides the second most important bird habitat in the Lower Mainland. It is directly adjacent to several protected areas, to the Pitt River, and to Pitt Lake -- the largest tidal freshwater lake in North America. It is also the largest tidal freshwater wetland on the continent.

"Who decides?" is an important question to ask in any act of design, but it is especially important when designing interpretive elements. Official signage tends to impose a single, dominant narrative and leaves little open to interpretation. The materials are chosen to withstand weather and vandalism and consequently signs are heavy, expensive, intended to be permanent, and limited in how much information they can include.

Landscape interpretation can and must be reimagined. We need ways of learning about and caring for our landscapes that go beyond this faded educational signage. We must demonstrate that people can intervene creatively and rationally (or ecologically) in the natural world through the stories we share and how we engage with the land. While detailed management strategies are beyond the scope of this thesis the plan for the Widgeon Marsh site has great potential for active engagement harvesting food, fuel, and fibre from this immensely productive and biodiverse place. MetroVancouver Parks has a great opportunity to incorporate active learning work-

Figure 1. MetroVancouver planned trail system (opposite).

shops and demonstrations of traditional activities in the disturbed areas they have selected for development and management.

There is also an opportunity to design site-specific interpretation that breaks with the official and standardized signage that is used at the entrance of most regional parks. These signs can communicate important information about how to enjoy the park, and be recognizable as official information without using a generic and placeless design language.

### Transformative, Experiential Learning

The goal of more didactic, sign-based interpretation may be to change someone's mind or leave them with an intended lesson, Transformative Learning (TL) depends on environments and experiences. The theory proposes a 10-step process that dramatically and irreversibly alters a person's outlook, and how they understand their place in the world.<sup>3</sup>

Pierre G. Walter (2013) combines Kolb's (1984) experiential learning cycle with a Transformative Learning framework in order to understand how our concrete experience of place can provoke the type of disorienting dilemma that begins the 10-step process of Transformative Learning. In his proposal, the ongoing cycle of experiences, reflection, abstract conceptualization, and active experimentation can catalyze Transformative Learning.<sup>4</sup>

Other authors apply Transformative Learning to outdoor education, volunteer tourism, and other experiences of nature in theorizing how to help participants recognize the magnitude of our biodiversity and ecological crises. Pisters, Vihinen, and Figueiredo (2019) argue that Transformative Learning that fosters ecological consciousness "is an inherently place-based phenomenon."<sup>5</sup>

I believe that this framework must first help us recognize our ongoing social crisis and until we learn to manage the domination and exploitation of one another, we cannot hope to change our attitudes toward nature. Truth and reconciliation with Indigenous people can begin through transformative learning designed into regional parks. However, regional and national parks sometimes actively erase Indigenous presence, perpetuating myths of unpeopled nature. Sometimes Indigenous interpretation is written in the past tense, which effectively relegates these vibrant cultures to the past.

There is some limit to the extent to which a landscape architect can design trusting relationships and dialogue into the landscape, but other elements such as active learning experiences and context can be potentiated with designs that begin conversations. For example, I had a transformative learning experience in the third year of my undergraduate degree when a friend with whom I was farming was shocked to realize that I had never been taught about the legacy of residential schools in Canada. The fact that we were in a comfortable place with time for dialogue allowed to re-examine my belief system and begin to plan new courses of action based on my new perspective.

3. Andrea Coghlan and Margaret Gooch, "Applying a transformative learning framework to volunteer tourism." *Journal of Sustainable Tourism*.

4. Pierre G. Walter, "Catalysts for transformative learning in community-based ecotourism," *Current Issues in Tourism*.

5. S.R. Pisters, H. Vihinen, and E. Figueiredo, "Place based transformative learning: a framework to explore consciousness in sustainability initiatives." *Emotion, Space and Society*.

Figure 2. Conditions for a Transformative Learning Environment.

Figure 3. Kolb's Experiential Learning Cycle and Mezirow's Transformative Learning.



# Katzie/Qicey Coast Salish Literacy Topographies

## The Spindle Whorl Model: A Holistic Education Process

This thesis would not have been possible without Dr. Kerrie Charnley's 2019 PhD dissertation on Katzie education and pedagogy. It asks "What is the relationship Katzie people have with the rivers and lands in their traditional territories?" "What stories, memories, oral history, and names exist related to meaningful places on the land/water? What traditional educational activities occur there?" and "How might these ways of engaging with river and land places inform a land- and water-based pedagogy and curriculum?" and draws on oral histories and interviews with members of the Katzie First Nation.<sup>6</sup>

Charnley offers four major themes and six key practices that arose from her research on Katzie education that informed my designs. The themes are Land/Water as Teacher, Family Experience, Sacred Spirit Ancestors, and Values of Caring. The practices are

Figure 4. Mapping Katzie place names and meanings (opposite).

Figure 5. Katzie spindle whorl (bottom left).

Figure 6. Coast Salish person using a spindle whorl (bottom right).

6. Kerrie Charnley, "Embodying Indigenous Coast Salish Education: Travelling with Xé:ls the Sister, Mapping Katzie/Qicey Stories and Pedagogies," PhD diss., (University of British Columbia, 2019).

Storytelling, Listening in a holistic way, Imagining, Doing (Active Involvement), Valuing Land and Waters, and Role Modeling.<sup>7</sup>

7. Ibid.

8. Ibid.

### Katzie Ethnographic Notes

There is an irreconcilable contradiction I see between conventional landscape architectural practice, and Indigenous worldviews. Whereas Indigenous cultures consistently have a commitment to specific places, landscape architects may practice all over the world. We invent methods for analyzing sites, but under Manulani Meyer's definition of Indigenous, "that which has endured,"<sup>8</sup> typical landscape architects who design a project and then leave once it is built can never know the land in the same way.

Every culture has a unique way of making and seeing the world. Ethnographers and anthropologists attempt to translate worldviews and understand culture. While my study site was traditionally used by the Kwikwetlem and Stolo Nations, for example, I chose to research Katzie lifeways because they typically identify with the Pitt Lake and Pitt River areas.

Two works of 20th century anthropology informed my study of the Katzie calendar, origin stories, and land management practices. *The Faith of A Coast Salish Indian* features knowledge from Peter Pierre, Dr. Charnleys great grandfather, and *Katzie Ethnographic Notes* interviews Simon Pierre, her grand uncle.<sup>9,10</sup> I read how certain families would identify with certain bog cranberry or wapato patches, and outside families would simply have to ask permission to harvest, which was almost always granted. I learned how they moved with the landscape and named their 10 numbered and 2 supernumerary months after the changes occurring in the landscape. I can never hope to have this same knowledge of my site as a settler designer, and this reading makes it so clear that landscape architects must give real power to Indigenous knowledge, rights, and title holders in planning and managing their traditional territories.

9. Diamond Jenness, *The Faith of a Coast Salish Indian*, (1936).

10. Wayne Suttles, *Katzie Ethnographic Notes*, (1955).

Figure 7. A visual interpretation of Katzie names for summer months.



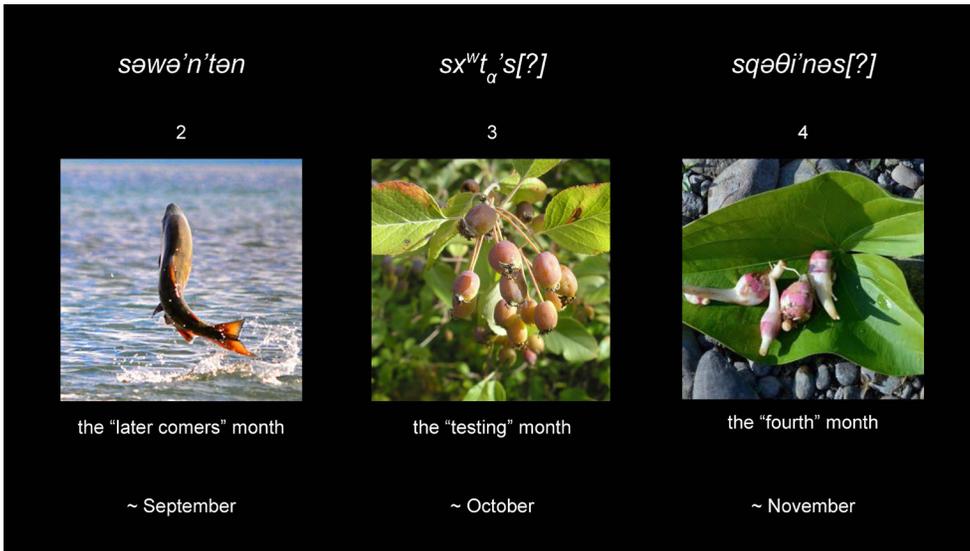


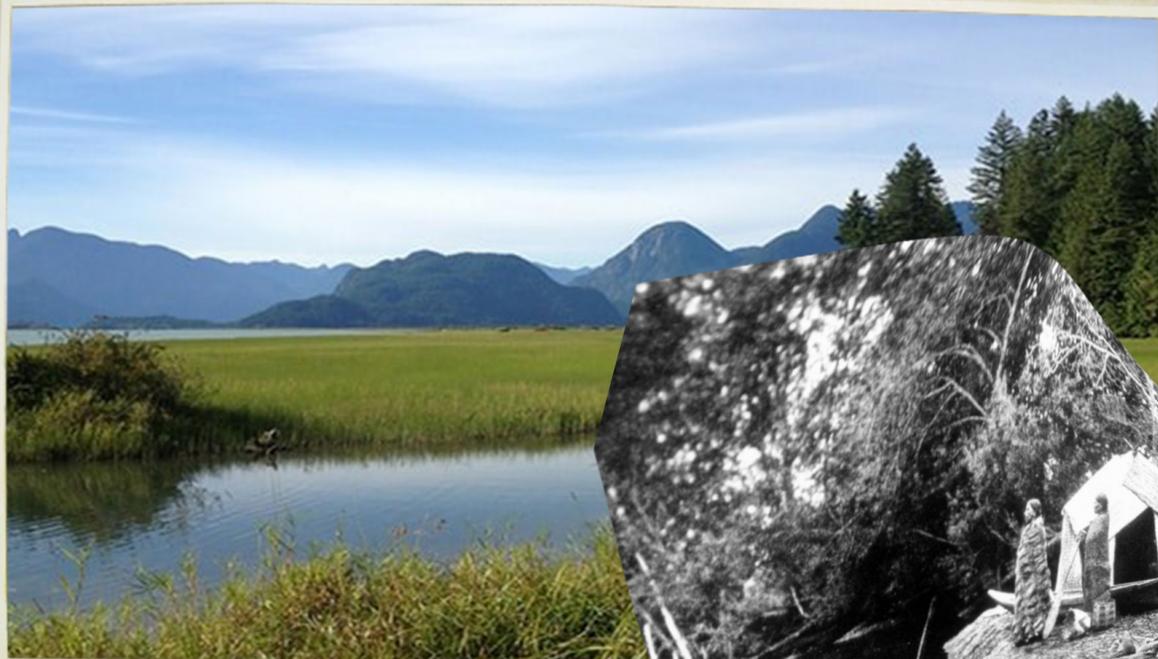
Figure 8. A visual interpretation of Katzie names for autumn months.



Figure 9. A visual interpretation of Katzie names for winter months.



Figure 10. A visual interpretation of Katzie names for spring months.



WIDGEON MARSH REGION

# 1. Landscape Architecture as Craft

*“Poets make poems, painters paintings, and musicians music. Architects, however, do not make architecture; they make drawings and models of it -- representations meant to direct the development of something conceived into something constructed.”<sup>11</sup>*

-- David Leatherbarrow (1998)

Landscape architecture flattens our world. It happens primarily on paper, on screens, and in books. It is composed of layers, pixels, lines, and vectors. The same characters inhabit our computer drawings, copy-pasted from *skalgubbar.se* and *pimpmydrawing.com*. As a result, many of our representational techniques and possibilities have been flattened, limiting what we are capable of imagining.

In an article from *Landscript 5* called “Matter Displaced, Organized, Flattened: Recording the Landscape,” Martin Hogue describes the site practices and fieldwork of practitioners including Günther Vogt, Christopher Girot, Gilles Clément and SCAPE, as well as artists like Robert Smithson and herman de vries. For them, the design process starts in the three dimensions of the field, but often ends as a 2D, flattened documentation and analysis before informing design and artwork.<sup>12</sup> These unique elements and particularities of the site may become consciously or unconsciously combined in the design process.

There are many historical examples of thinkers who arrived at their decisions through direct garden experience and experimenting in natural landscapes. Johann Wolfgang von Goethe, Charles Darwin, and even Frederick Law Olmsted would not have arrived at their innovations without direct, hands-on garden and farm experience. Rob Holmes in “The Problem with Solutions” suggests that

Figure 11. Repton’s Red Books and reverse pastoralization (opposite).

11. David Leatherbarrow, “Showing What Otherwise Hides Itself,” *Harvard Design Magazine*, no. 6 (1998): 51.

12. Martin Hogue, “Matter Displaced, Organized, Flattened: Recording the Landscape,” in *Landscript 5: Material Culture: Assembling and Disassembling Landscapes*, ed. Jane Hutton (Berlin: JOVIS, 2018), 174-193.

13. Rob Holmes, "The Problem with Solutions," *Places* (2020).

14. Susan Herrington and David Zielnicki, "Computational Pastoralism," *Journal of Landscape Architecture* 14, no. 3 (2019): 62-71.

15. Garrett Eckbo, Daniel U. Kiley, and James C. Rose, "Landscape Design in the Urban Environment," "Landscape Design in the Rural Environment," and "Landscape Design in the Primeval Environment," *Architectural Record* (1939-1940).

16. Garrett Eckbo, *Landscape for Living* (New York: F.W. Dodge Corporation, 1950).

17. Charles Waldheim, "Landscape as Architecture," *Harvard Design Magazine*, no. 36 (2013).

landscape architects tend to design, build, and then have little to no post-occupancy relationship with their projects and that "practice could instead be modeled after the ways that gardeners and restoration ecologists work."<sup>13</sup> Unfortunately, these techniques and skills are not taught in many schools of landscape architecture today.

Herrington and Zielnicki (2019) comment that the landscape architecture profession has become better at representing bird's eye views and curvilinear forms through 3D and parametric design, but have simultaneously neglected to consider the social and political environments that they are proposing.<sup>14</sup> Modernist landscape architects Garrett Eckbo, Dan Kiley, and James Rose wrote in their three foundation articles (1939-1940) in the *Architectural Record* that we must think of the three dimensional sequence of lived space in our designs and not simply design for views.<sup>15</sup> Our landscapes have as important a role to play now as then, in the urban, rural, and what the authors called "primeval" landscape. In 1950, in *Landscape for Living*, Eckbo challenged the formal and informal dichotomy between the Beaux-Arts geometries and the English garden aesthetic, calling for greater complexity in our landscape types.<sup>16</sup> Nevertheless this dichotomy still exists today. We must cease thinking about static views and begin to design for dynamic, lived experience. Many people build and design their world without ever drawing a plan or a section and perhaps landscape architecture should stop taking its cues from the field of building architecture.<sup>17</sup>

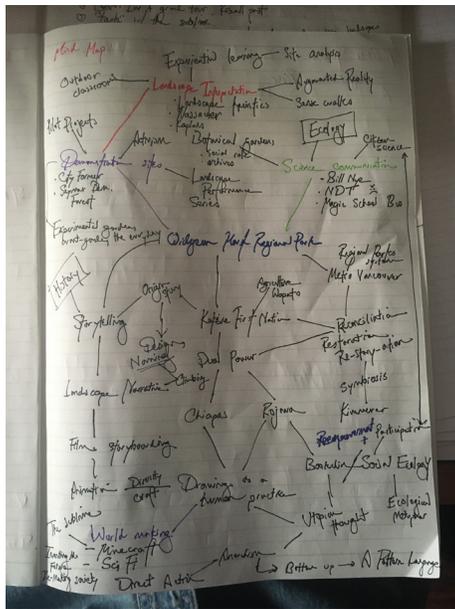


Figure 12. Hand drawn mind map early in my project (left).

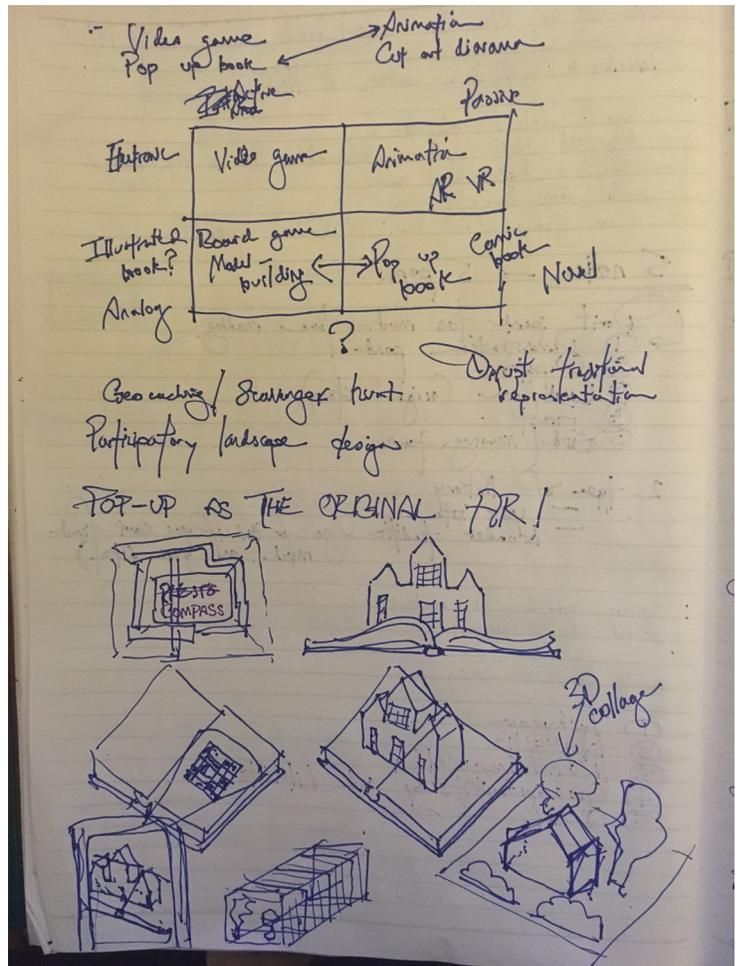


Figure 13. Sketch exploring the analog precursors to tools in the design process (right).

## 2. A Brief History of Seeing

*"The recovery of landscape will begin only when we are ready to reconcile our senses with our science."*<sup>17</sup>

-- Christophe Girot (1999)

Elder Albert Marshall of the Mi'kmaq Nation has coined the term "Two-Eyed Seeing" or *Etuaptmumk* in Mi'kmaq.<sup>18</sup> It is a metaphor that highlights the potential benefits that come into possibility when we combine two or more perspectives. Marshall says to "learn to see from your one eye with the best or the strengths in the Indigenous knowledges and ways of knowing...and learn to see from your other eye with the best or the strengths in the mainstream (Western or Eurocentric) knowledges and ways of knowing...but most importantly, learn to see with both these eyes together, for the benefit of all."<sup>19</sup> He advocates a process of indigenization, as opposed to a decolonization of society. I think Robin Wall Kimmerer shares a similar perspective when she suggests that "For all of us, becoming indigenous to a place means living as if your children's future mattered, to take care of the land as if our lives, both material and spiritual, depended on it."<sup>20</sup>

With reference to seeing as an experience or a metaphor, we can therefore design and interpret many virtual realities. Some traditions recognize many types of reality. Kerrie Charnley writes:

"Our stories, our identity as Katzie or Coast Salish people, and the land/water and life in nature are intimately, and intricately, connected for us; and the spirit world -- or you could call it a kind of alternate reality -- is as real to us as our physical existence. It is as real if not more so, than the virtual realities in which we all partake every day."<sup>21</sup>

17. Christophe Girot, "Four Traces in Landscape Architecture," in *Recovering Landscape: Essays in Contemporary Landscape Architecture*, ed. James Corner (New York: Princeton Architectural Press, 1999), 66.

18. Cheryl Bartlett, Murdena Marshall, and Albert Marshall, "Two-Eyed Seeing and other lessons learned within a co-learning journey of bringing together indigenous and mainstream knowledges and ways of knowing," *J Environ Stud Sci 2*, (2012): 335.

19. Ibid.

20. Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants* (Minneapolis: Milkweed Editions, 2013).

21. Charnley, "Embodying Indigenous Coast Salish Education".

22. Ibid.

Cosgrove, D. (2003). Landscape and the European sense of sight. In K.M. Anderson, M. Domosh, S. Pile, and N. Thrift (Eds), *Handbook of cultural geography* (pp. 249-67). London: Sage.

In other words, "the physical might be conceptualized and experienced as a sort of virtual reality of the metaphysical."<sup>22</sup>

As human beings, we see the world in a way that is particular to our species and its morphology. Most humans are born with two eyes on the front of their head, providing visual information, which the human brain interprets as one, 3-dimensional image. This is called stereoscopic vision -- each eye looks simultaneously at a given object from a slightly different angle (you can test this phenomenon by closing one eye at a time), and when these two images are combined we perceive one image with depth. Also called binocular vision, some animals that also have eyes on the front of their heads (owls, or bears, for example) have evolved similar ways of seeing by pointing their head or eyes at what's in front of them. Others, such as the rabbit, which has an eye on either side of its head has 360 degree vision without turning its head, with a blind spot right under its nose. Animals like deer or rabbits cannot move their eyes or necks as freely as owls, monkeys, bears, or humans, and must turn their bodies to see in their blind spots. In this sense, binocular vision helps interpret the two-eyed seeing metaphor. Each eye brings important information for the observer to combine.

Stereoscopy is the principle behind virtual reality simulations, which work by presenting each eye with the same image from a slightly different angle, which the brain registers in three dimensions. What seems like an exciting new technology has been exploited in art and leisure, including in garden design, and without electronic technologies for many years. Stereoscopes allow users to visualize 3D scenes printed on a card or view terrain in 3 dimensions from aerial photographs of the same landscape from two angles. These techniques work because of our unique evolutionary lineage and

Figures 14, 15. Vision range of different animals (below).

physiology as a species. Different species are able to detect wavelengths from different portions of the electromagnetic spectrum in accordance with their evolutionary history and selective pressures.

Other, non-human beings see, or navigate, the world in their own unique ways. Each is equally valid, and as human beings, we can invent mechanisms or produce images to help us “see” the world from these radically different perspectives.

Perhaps the most obvious example of an animal that “sees” the world differently is the bat -- through sound. At Widgeon Marsh, the little brown bat, *Myotis lucifugus*, and the big brown bat, *Eptesicus fuscus* navigate at night through echolocation -- bouncing vocalizations off of the forms that define the spaces they occupy in order to create a mental map of what exists in that space. When they detect a prey insect, they home in on it by vocalizing with increasing frequency, providing them more accurate information about its position.

Some animals with whiskers use touch to navigate their world, and others, like worms, feel the world through their skin. Salmon may use a type of taste in finding the streams to which they return year after year. Equally, salmon and some birds may migrate by orienting themselves to the Earth’s magnetic field. Snakes, famously smell the air by sticking out their tongue, and bears and other predators with a strong sense of smell have been found to rely on smelling their surroundings in a way that plays an even more significant role in their perception than visual cues.

Plants, while stationary, can also communicate through volatile compounds released into the air. When one plant experiences predation, chemicals it releases may be received by neighbouring plants, which use this information to mount defenses against predatory insects before they are even encountered. Clearly in the evolutionary history of the biotic world (or biosphere), there exist many ways of seeing and experiencing that same world. Human beings, although all genetically the same species (with the same set of ancestors from the African continent 60,000 years ago) have evolved a second (or human) nature out of this first nature and different cultures now have similarly complex ways of interpreting the world across what anthropologist Wade Davis calls the ethnosphere.<sup>23</sup>

Figure 16. Stereoscope (above left).

Figure 17. Diagram explaining stereoscopic vision (above right).

23. <https://mdp.berkeley.edu/exploring-the-ethnosphere/>.



### 3. Education Gamification and its Discontents

*"We cannot expect an app to fix our educational ills. Games are limited. They are maps, not places; tools, not teachers."*

-- Vincent Gabrielle (2019)<sup>24</sup>

It is a great impulse to cite the educational potential of games and video games in and outside of schools. Phone apps like Duolingo gamify language learning and fitbits gamify exercise routines, creating competitions and providing rewards as badges or coins.

As badly as we may want for our society to work as a game of winners and losers, incentivized by points systems, this is hardly a natural law. The zero-sum game is not inevitable. Artists and programmers Auriea Harvey and Michaël Samyn, founders of the Not-games movement ask:

*"Can we create a form of digital entertainment that explicitly rejects the structure of games? What is an interactive work of art that does not rely on competition, goals, rewards, winning or losing?"*<sup>25</sup>

Virtual worlds provide these artists a testing ground in which they can imagine different ways of being and interacting. I am interested in their question in terms of education and society writ large. Some scholars of ludology, or game studies, suggest that we are "*Homo ludens*," as if playing games is intrinsic to who we are as a species. However, winning and losing are human concepts -- they are found nowhere else in the natural world. The lion does not "win" when it catches a zebra, and the zebra does not "lose." That is, animals do not play games; it is a human innovation, which can be traced with historical and anthropological evidence.

Can we take all the best parts of games and as a source of

Figure 18. Using the iNaturalist app, which awards badges for identifying species with a smart phone (opposite).

24. Vincent Gabrielle, "Education Gamification," *Current Affairs*. October 2, 2019.

25. <http://notgames.org/blog/2010/03/19/not-a-manifesto/>

knowledge and design them into garden spaces? That is, can we create de-gamified spaces? Gardens have, historically and culturally, been viewed as educational landscapes. Apps like iNaturalist, inspired by very successful augmented reality games like Pokémon Go have introduced badge systems for photographing and contributing to the pool of biological observations. It is possible that this could be an effective strategy for science communication and motivating participation in self-directed experiential learning. The potential of these games lies in the fact that they allow flexibility in developing one's own narrative, or designing one's own virtual space, but they quickly become boring when levelling up begins to take so much effort without exciting and dynamic developments.

My project seeks to discover whether the same effects can be achieved without screens and without other distractions associated with an Internet connection, to provide the most immersive experience possible. Neil deGrasse Tyson, the morally clumsy successor to Carl Sagan, teaches a science communication "MasterClass" all through a screen in which he teaches you how to dominate your interlocutors with scientific "facts" and "logic" (incidentally, Jane Goodall teaches one on conservation in which she blames poverty, overpopulation, and waste as the three chief causes of the ecological crisis!). I am interested in how the landscape can be educational without an obvious system of rewards or badges. Coast Salish pedagogy, in which the land and water are teachers may shed light on possibilities in the lived experiential learning provided by the landscape. Kerrie Charnley of the Katzie First Nation writes that "our stories and knowledge are topographic."<sup>26</sup> In typical games, one must follow a procedural rhetoric that limits the realm of the possible. By following the steps of the game designer, you go through the motions and arrive at possible final scenarios. Real life is infinitely more complex than any game and the realm of the possible is infinitely larger. Outside of games and the gamified society, one can truly discover and explore one's own narrative and topography.

26. Charnley, "Embodying Indigenous Coast Salish Education," xviii.

Figure 19: Zoetrope of the phases of a bird in flight (left).

Figure 20: Large scale interactive Zoetrope (right).

## 4. Interactive and Movable Books

*"I don't write for children. I write -- and somebody says, 'That's for children!'"*

-- Maurice Sendak (2012)<sup>27</sup>

*"Fuck them is what I say! I hate those eBooks. They cannot be the future; they may well be. I will be dead, I won't give a shit!"*

-- Maurice Sendak on eBooks (2012)<sup>28</sup>

27. <https://www.brainpickings.org/2012/05/09/grim-colberly-tyales-maurice-sendak/>

28. <https://www.youtube.com/watch?v=0mPEZj21NmE>

Technically, any physical book or paper is both interactive and movable but model-making has always been the most important form of representation to me. Having a scale model, which is literally three-dimensional, captures the imagination in a way that no Rhinoceros 3D model ever could, although this is perhaps my second-favourite form of representation. Axonometric or isometric drawings come in next because they are measurable and convey simultaneously vertical and horizontal space. Plans, sections, eye-level perspectives, and bird's eye views are all useful, but if I have an opportunity to build a physical model, I always take it. I similarly prefer handmade collages to those assembled on photoshop, and any other approach that "breaks the frame." The realities of physical constructability places a useful design constraint on representational strategies.

For these reasons, I began to imagine ways of building a model that I could mail to my reviewers, and that they could assemble or display during my review. I thought of a scale model of a pin-up board with all of my drawings printed in miniature, but eventually I found that the pop-up book was capable of becoming a 3D paper model based on the energy input from the opening page.

Pop-up books embody potentiality. The model literally un-

folds and animates based on its design and the user's interaction with it. In this sense, it is the first version of augmented reality, in which an element of your experience comes to life. However, it is literally three-dimensional and not simply displayed on a screen. In this year, it was important to me to take any opportunity possible to explore non-screen-based representation techniques.

In interactive books, image and narrative work in concert to capture the imagination of the user. Historically, the most conspicuous connection to movable and interactive books can be found in Humphry Repton's Red Books. These documents were used to "sell" clients on the design by showing it before and after intervention. Movable books have also been used to describe principles in mathematics and science. Thomas Malton's 1775 treatise on drawing and geometry is considered by some the first pop-up book, which used a box-fold to demonstrate perspective. Other earlier books used volvelles -- spinning disks that could be aligned with one another -- to describe the motion and alignment of heavenly bodies and the solar system, or even human anatomy, including Matthew Paris's *Chronica Majora*, Apianus' *Astronomicum Caesareum* (ca. 1540), and Johann Remmelin's *Catoptrum microcosmicum* (1614). In the late 19th century, German paper engineer Lothar Meggendorfer began to create books for the entertainment of families and children, including one called *The City Park*, which allowed the user to arrange a vignette of different park users through accordion-style layers. Such books could communicate the off-site experience and stories of Widgeon Marsh quite effectively to any audience (C.S. Lewis, J.R.R. Tolkien, and Maurice Sendak were all of the mind that children's literature did not exist -- they wrote stories that would be interesting to any human audience and did not condescend to children).<sup>29</sup>

29. <https://www.brainpickings.org/2014/06/18/c-s-lewis-writing-for-children/>

Figure 21. Lothar Meggendorfer's *The City Park* (1890).

## 5. Pop-Up Landscape Architecture

*"Absolutely incredible to see people on this thread throwing little shit fits about urban gardening. 'OH GEEZ LOOK AT THIS PATHETIC GARDEN THAT WAS STARTED A WEEK AGO.' I live on a whole ass farm in Skagit and I send full solidarity to the folks doing this. Our cities should be using space to grow gardens, setting up small examples like this is inspiring!"*

-- SloughWitch, in Reddit discussion on the Capitol Hill Autonomous Zone garden (2020)

*"The ultimate, hidden truth of the world is that it is something we make, and could just as easily make differently."*

-- David Graeber (2013)<sup>30</sup>

The pop-up is not only a representational technique, but also a construction strategy. Pop-up art exhibitions, pop-up shops and markets, and even pop-up parks are temporary installations, often assembled overnight, with the general understanding that they will be ephemeral. At first consideration, it seems that such a strategy would not lend itself to garden construction -- plants take years to fully establish and landscape construction often looks best years after it is first installed. The garden built for Black and Indigenous people at the Capitol Hill Autonomous Zone in Seattle was roundly criticized on Twitter and Reddit for looking small and messy when it was first built.<sup>31</sup> People were incensed about the methods, but missed the point of the garden and the claims it was making about land.

This is an example of what I refer to as demonstration gardens, or, a garden which has something to prove. They represent political expression and unique perspectives, and our landscapes

30. David Graeber, *The Utopia of Rules*, 2015.

31. [https://www.reddit.com/r/stupidpol/comments/h17ak7/the\\_current\\_state\\_of\\_chaz\\_peoples\\_garden/](https://www.reddit.com/r/stupidpol/comments/h17ak7/the_current_state_of_chaz_peoples_garden/)

would benefit from more people exercising power through gardening, and arranging space to suit their needs. Their impermanence allows for many interventions over time, not a single unifying perspective imposed on the land. Landscapes should be flexible to suit changing needs, and temporary pop-up gardens and spaces represent a possibility for a truly dynamic landscape. At regional parks, a cycling of interpretative art pieces would address the issue of faded signage in engaging visitors to teach lessons about the landscape.

In the 1990s, VH1's pop-up video provided "info nuggets" and fun facts about the making of the video or song timed as pop-up "bubbles" to add new layers of information to the experience. This augmented the viewing experience and similar techniques were present in popular science communication at the time. Bill Nye the Science Guy was a colourful and fast-paced approach to demonstrating scientific principles mostly through scale models and object lessons, but also through parody songs and comedic skits. In another contemporary but animated show, the Magic School Bus, scientific concepts were framed within a narrative of an elementary school class and their school bus, which was capable of shrinking them to the size of a pollen grain, or which could convert into a submarine to enter the bloodstream. By altering the scale of these phenomena in relation to the human body, microscopic and intangible subjects were made visible through drawing. Similar strategies, such as a human-sized hibernacula (a snake or lizard's nest) could be explored by park visitors in one of the aforementioned pop-up gardens. Similarly, models of the surrounding landscape can be used to tell stories of the land and orient oneself by seeing from a different perspective. Optical devices could alter a human visitor's perspective and promote empathy with other beings on the landscape.

Off-site, pop-up exhibits could put materials from the landscape on display and help people imagine the special characteristics of the place. Even on-site in disturbed areas, pop-up exhibits could show a type of moss or soil quality from sensitive areas of the park in the accessible zones. In this sense these interpretive nodes could become gardens for cultivating knowledge of the landscape, without necessarily directly engaging with the species that inhabit it.

Figure 22. The "People's Garden" at the Captial Hill Autonomous Zone.

## 6. Landscape Heuristics

*"In my discipline, there is tremendous vested interest among architects that there is no such thing as truth, because everyone wants to do their own damn stupid thing, you know, and get away with it."*

-- Christopher Alexander, addressing the ACM Conference on OOPSLA (1996)<sup>32</sup>

*"If you want to do something nice for a child, give them an environment where they can touch things as much as they want."*

-- Buckminster Fuller (1972)

Landscape heuristics is a term I am proposing to describe a landscape that allows a person to make discoveries and learn through experience for themselves. The acquisition of truth and knowledge from the environment can be potentiated through spatial arrangement and landscape design strategies, without using signs and text that privilege one perspective over another. In this sense, the land, water, and all its inhabitants can be teachers in an immersive, designed sequence experienced non-linearly by visitors. The visitor's own experiences and perspectives enable the self-discovery of one's own narrative.

Escape rooms have become popular forms of entertainment in recent years. By following the logic and sequence of experiences laid out, participants engage in a cooperative experience without a need for winners and losers. There is only a race against a clock. A "landEscape room" could follow a similar logic to de-gamify landscape interpretation. It could be experienced as a type of wayfinding, incorporating clues and providing many possible outcomes. Games like frisbee golf follow this type of structure in the many ways and orders in which they can be experienced. Landscape architects

32. Christopher Alexander, "Christopher Alexander - Patterns in Architecture," [https://www.youtube.com/watch?v=98LdFA-\\_zfA](https://www.youtube.com/watch?v=98LdFA-_zfA).

33. Rachel Kaplan, Stephen Kaplan, and Robert Ryan, *With People in Mind: Design and Management of Everyday Nature*, Washington, D.C.: Island Press., 1998.

34. Matthew Potteiger and Jamie Purinton, *Landscape Narratives: Design Practices for Telling Stories*, New York: John Wiley & Sons, Inc., 1998.

35. Christopher Alexander, "Christopher Alexander - Patterns in Architecture," 1996.

Figure 23. Rewilding the American Meadow pop-up project (2020).

including Joan Nassauer and Stephen and Rachel Kaplan have written about wayfinding and landscape cues that signal implicitly to the viewer experiential meaning in the landscape.<sup>33</sup> Matthew Potteiger and Jamie Purinton have written about design practices for telling stories and embedding meaning in the landscape with interactive waypoints at which the viewer can share their own story, or for demonstrating different types of landscape narratives (e.g. restoration, declension etc.).<sup>34</sup>

Christopher Alexander, author of *The Timeless Way of Building*, *A Pattern Language*, and *The Nature of Order* notes that "we are living in a period where...perhaps the most noticeable and most problematic feature of our world is that feeling has been removed from it."<sup>35</sup> Alexander sees feeling and beauty as capable of description as objective truths, even if postmodern interpretation seeks to dissolve coherence into pluralism. My project will argue that landscape can have a coherent meaning, albeit viewed through different ways of being and knowing (ontologies and epistemologies).

Artistic landscape interventions could have interactive elements and flexibility built in. Kinetic sculptures could animate the landscape and describe mechanics related to the birds or animals of the land. Storytellers could use interpretive nodes to tell origin stories and thereby re-story the landscape in engaging and creative ways. In the three accessible areas of the park, artists could provide interpretive windows into the invisible aspects of the land through optical devices, mechanisms, and interactive spaces at the garden scale.

## Precedent Studies

All design and creativity depends on our experiences of other existing landscapes. The 60 acres of forest I spent every weekend in growing up, building forts with my cousins acts as a precedent for the current project, but the following six places or events are some I selected to convey my intentions for my study site. Some of them are places I have visited, and others I have learned about through presentations or my research. Two of them are demonstration gardens, two are museum spaces, and two are exhibitions.

### **City Farmer - The Vancouver Compost Demonstration Garden**

Location: Vancouver, BC. Established: 1978. Size: ~0.25 acre.

Access: Public when open, 6 days/week

Interpretation/Mediation: Tours, educational programmes

City Farmer has been educating Vancouverites about food growing, sustainable building practices, and compost methods for 42 years. They run an impressive web-based archive of all things related to urban agriculture from around the world. They have partnered with the City of Vancouver to distribute compost bins, and even run a compost hotline.

I am including this precedent as a perfect example of a demonstration garden -- a landscape that has something to prove. This garden demonstrates the possibilities for urban biodiversity through educational workshops, tours, public engagement, and simply through its presence just off the Arbutus Corridor at 6th Avenue and Maple Street. Its layout, signage, and scale can inform demonstration wetlands or forests at Widgeon Marsh Regional Park. Its overgrown and rusted-out informal appearance would also fit.

### **Xwicesem: Indigenous Health Research & Education Garden**

Location: UBC Farm, BC. Established: 2007. Size: ~0.25 acre.

Access: Public when open

Interpretation/Mediation: Tours, educational programmes

As another example of a demonstration garden, xwicesem is one of four Indigenous Peoples' gardens at UBC Farm. It is used for teaching, learning and research, and was gifted the name xwicesem by xwiyem (Musqueam) Elder Larry Grant at a 2016 pole-raising ceremony. It incorporates over 60 medicinal plant species including sacred tobacco, and a group of Indigenous Elders, the Medicine Collective, teach workshops through the garden plants and spaces.

This garden was mentioned by Katzie scholar Dr. Kerrie Charney as an example of a place in which the land and water themselves act as teachers. It is ethically grounded in "the 4 Rs: respect, relevance, reciprocity, and responsibility." Considering Widgeon Marsh's relationship with agricultural practices and traditions, similar demonstration elements will be important opportunities in designed wetland spaces.

### **The Ontario Science Centre**

Location: Toronto, ON. Established: 1966. Size: ~0.25 acre.

Access: Grounds public, museum by ticket

Interpretation/Mediation: Interactive science-based installations

I grew up visiting the Ontario Science Centre quite regularly, which I think inspired my fascination with physics, mystery, and the natural world. Its mission is "to inspire passion for the human adventure of discovery" and I think it accomplishes this by maximizing the interactivity of its exhibits. A new outdoor exhibit (previous slide) in the museum's public space is a hydraulophone -- a pipe organ operated by closing off water jets with one's fingers.

I chose the OSC as my precedent not only because of my personal experience. As compared with similar institutions such as the Boston Children's Museum or even Science World, it is clear that the imagery is mostly not designed solely for children. They also have deeply considered accessibility with their "Sensory-friendly Saturday" programme. This museum inspires wonder universally.

### **The African Ancestors Memorial Garden**

Location: Charleston, SC. Established: 2019 (unbuilt). Size: 0.75 acre.

Access: Public when open

Interpretation/Mediation: Sculpture, statues, landform

I was introduced to this garden plan in Walter Hood's recent SALA lecture. It will be the landscape built for the International African American Museum at Gadsden's Wharf, South Carolina, where

an ancestor of as many as half of African Americans arrived to America as slaves. The tradition of 'hush harbors' -- at which enslaved Africans would gather secretly to assemble and maintain traditions -- informs the landscape design, with the goal of recreating a place for sharing and learning stories.

Immediately this struck me as an exemplary landscape that embodies the past in its materiality and form-making. Though it has yet to be built, this is the kind of landscape that, through its beauty, can draw the viewer in and create a disorienting experience, allowing them to question their worldview and find new meaning in the spaces.

### **Jardins de Metis International Garden Festival**

Location: Metis, QC. Established: 2000. Size: ~1 acre.

Access: Public, ticketed

Interpretation/Mediation: Interactive art-based installations

The Jardins de Métis Garden Festival rotates around five yearly winning garden designs and is an example of a temporary exhibition space. The gardens are selected from hundreds of proposals submitted from designers around the world and often feature bright colours, interactive elements, and experimental ways of creating both new meaning and new spaces in the landscape. In this sense, these are also landscapes for learning -- pop-up interpretive spaces.

I can imagine a similar programme in a regional park. The three accessible areas of Widgeon Marsh should, however, feature work from local artists, specific to the haeccity of the landscape and its people. First Nations artwork or installations could showcase histories and origin stories in tradition forms selected by community members, and scientific mechanisms could display the landscape through new lenses. Ephemeral art pieces can alter perspective.

### **The Pop-Up Museum of Queer History**

Location: New York, NY. Established: 2011-15?. Size: Garden scale.

Access: Public

Interpretation/Mediation: Varied, public/participatory

Participatory and pop-up museums are ideas pioneered in the 1990s and are often credited to Nina Simon of the Santa Cruz Museum of Art & History. A goal of these temporary spaces is to make history accessible to all participants, and challenge the hegemonic, racist, sexist, colonial interpretive practices of meaning-making in which museums as institutions are traditionally and continue to be embedded.

The images here display a pop-up event showcasing home-made dioramas that celebrate important books in the artists' lives. Portland's City Repair Project, and pop-up arboreta also have to potential to play out in regional parks, and provide opportunities to

democratize interpretation. Interactive space should be designated for storytelling through objects and symbols brought by visitors. Practices such as geocaching or letterboxing could be involved.

### **Secwepemc Museum and Heritage Park**

Location: Kamloops, BC. Established: 1982. Size: 12 acres.

Access: Public, ticketed

Interpretation/Mediation: Tours, signage

### **Xat'sull Heritage Village**

Location: Soda Creek, BC. Established: 1990s?. Size: ~0.25 acre.

Access: Public

Interpretation/Mediation: Tours, pavillion

### **'Ksan Historical Village and Museum**

Location: Hazelton, BC. Established: 1990s?. Size: <1 acre.

Access: Public

Interpretation/Mediation: Tours, museum

Figure 24. Demonstration pitt house at Secwepemc Heritage Park.

First Nations heritage parks do an excellent job of showcasing traditional construction methods, and I think these same techniques and priorities can also be used to design structures while prioritizing Indigenous Futurity. These buildings used local, natural materials, could be easily repaired, and indeed were often temporary and flexible in moving with the changing seasons and landscape.

Figure 25. Temporary mat-covered lean-to shelter at a Fraser River fishing camp near Yale, BC. (A SUMMARY OF COAST SALISH SUBSISTENCE PRACTICES ON THE LOWER FRASER RIVER, Sylvia Albright [Chapter 2 of "The Pitt River Archaeological Site (DhRp 21): A Coast Salish Seasonal Camp on the Lower Fraser River" by Valerie Patenaude, 1985])

Figure 26. The structure of a Coast Salish long-house. (Ibid.)

Figure 27. Mat-covered, shed-roofed temporary shelter (c. 1913). <https://digitalcollections.lib.washington.edu/digital/collection/imlsmohai/id/6883>.



**WIDGEON MARSH REGIONAL PARK**



0 0.5 1 Kilometres

# Designs for Three Transformative Sites

## The Tree / The Stump

At The Tree in the spring, visitors can safely view active bears in the creek from a 3m high circular platform, scaled to the size of an old growth western red cedar tree (*Thuja plicata*). The scale can be used to help convey how big trees can get if they are harvested in a way that does not kill the tree. The provisioning service highlighted here is **fuel** -- and the space is surrounded by red alder (*Alnus rubra*) and western red cedar trees, which were also used for food and fibre.

## The Spit / The Leaf

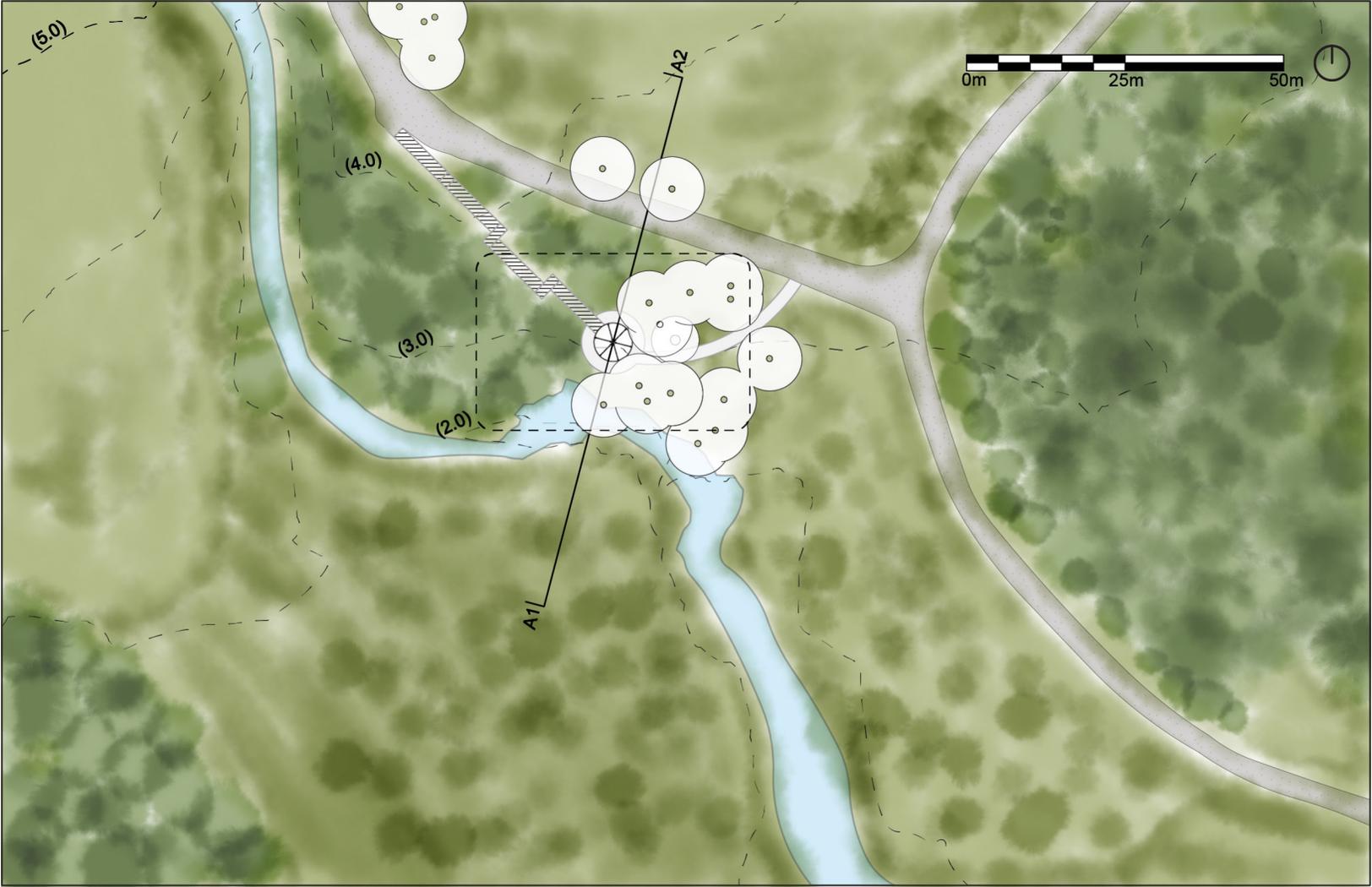
Around a former logging spit, nesting boxes will be added on piles for purple martins, and other swallows will be among birds that can be viewed from under a large wooden leaf frame. Broadleaf arrowhead (*Sagittaria latifolia*) is a **food** plant, patches of which are managed around this site. The piles and spit are repurposed as a place to view restored bird habitat. The leaf structure serves as a bird blind with traditional construction and temporary reed mat walls in winter.

## The Pond / The Whorl

The artificial pond will be transformed into a demonstration wetland and the boardwalk and interpretive loop I am proposing is modelled after the motif of the Coast Salish spindle whorl. I revolved the existing shape around a circle at the southern end to expand the wetland area, and create a cycle for experiential and transformative learning. The site is focused on **fibre** with hardstem bulrush (*Schoenoplectus acutus*), but wapato and an existing fire pit would also be present.







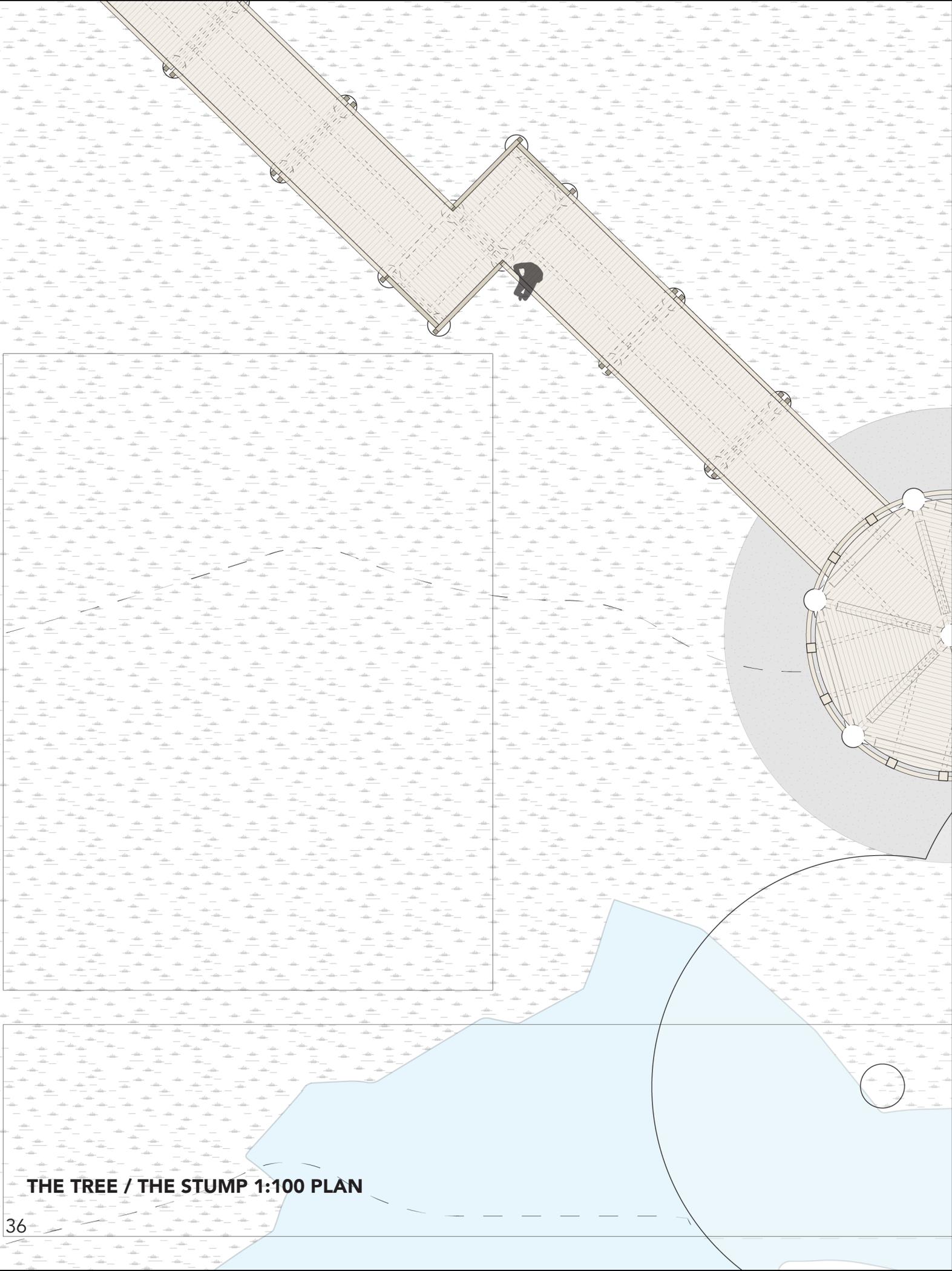
**THE TREE / THE STUMP 1:1000 PLAN**



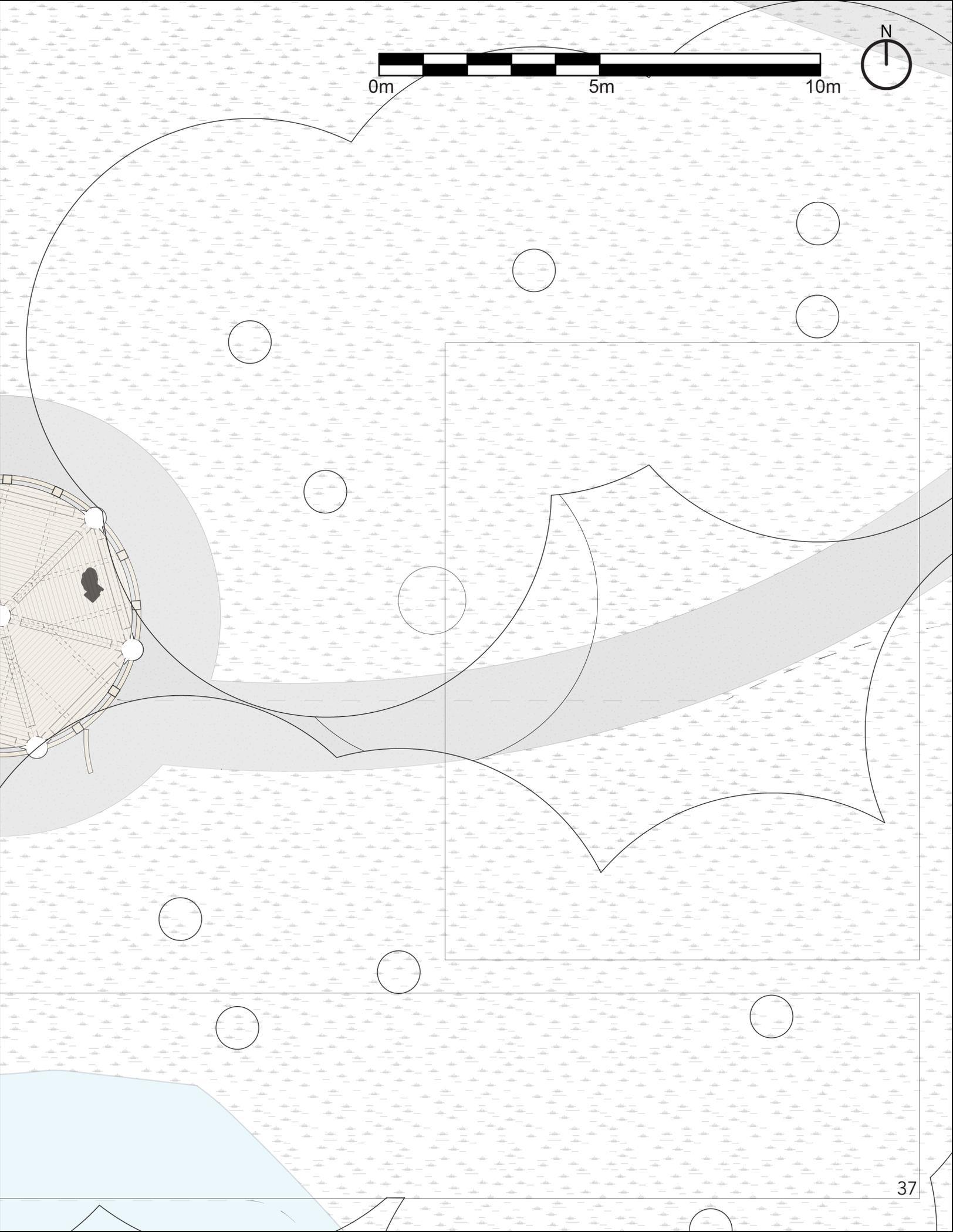
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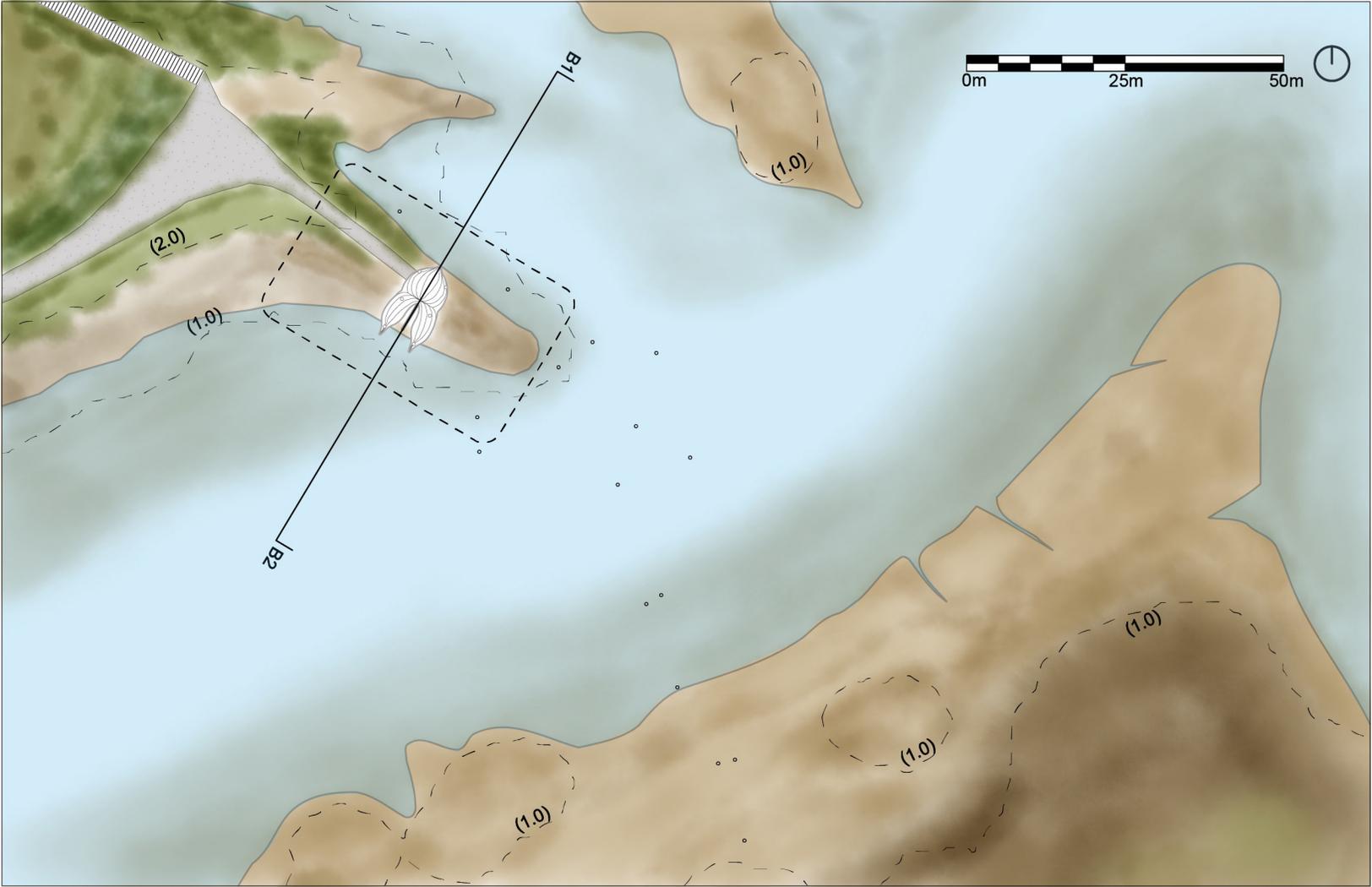
## THE TREE / THE STUMP PHOTOMONTAGE





**THE TREE / THE STUMP 1:100 PLAN**





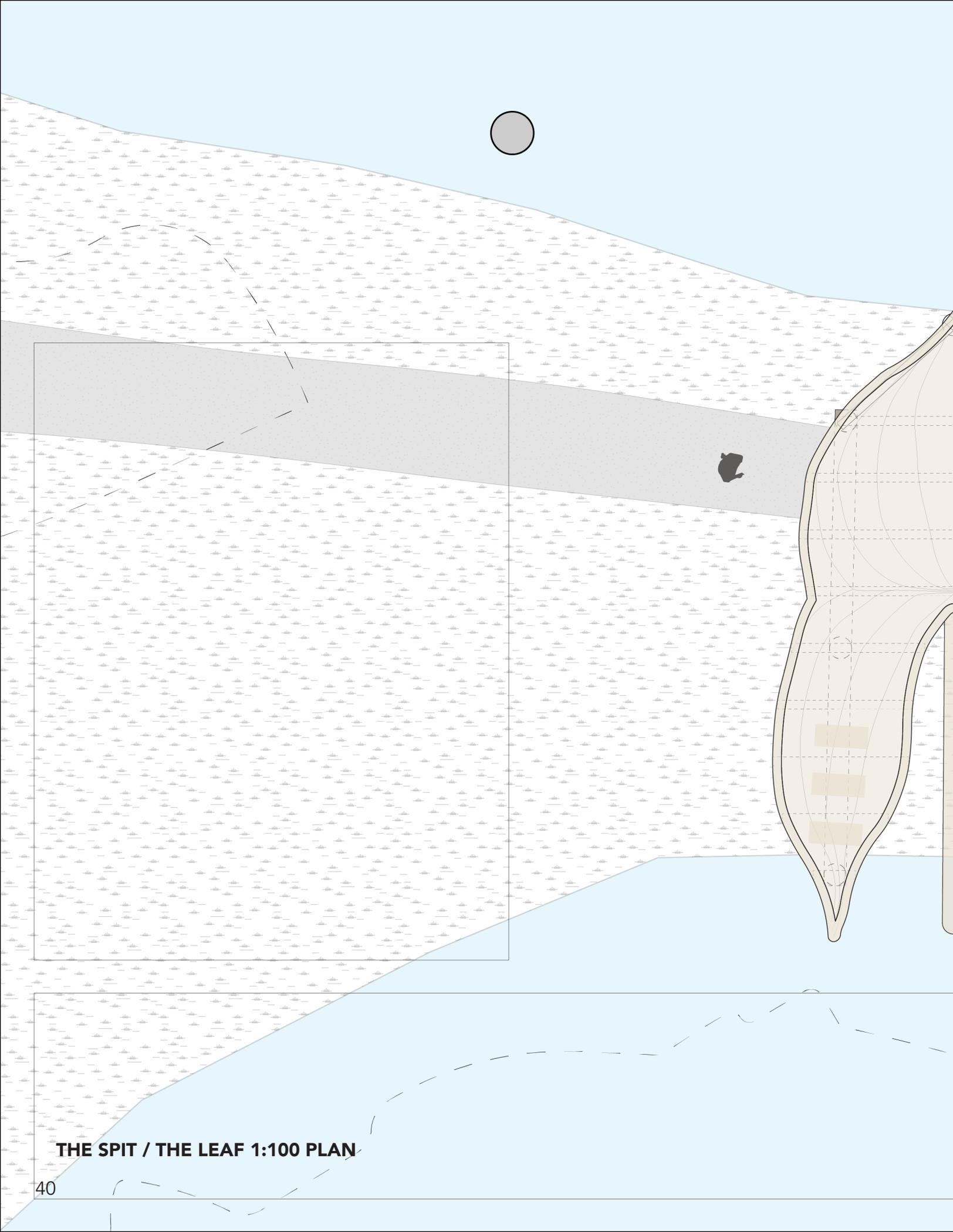
**THE SPIT / THE LEAF 1:1000 PLAN**



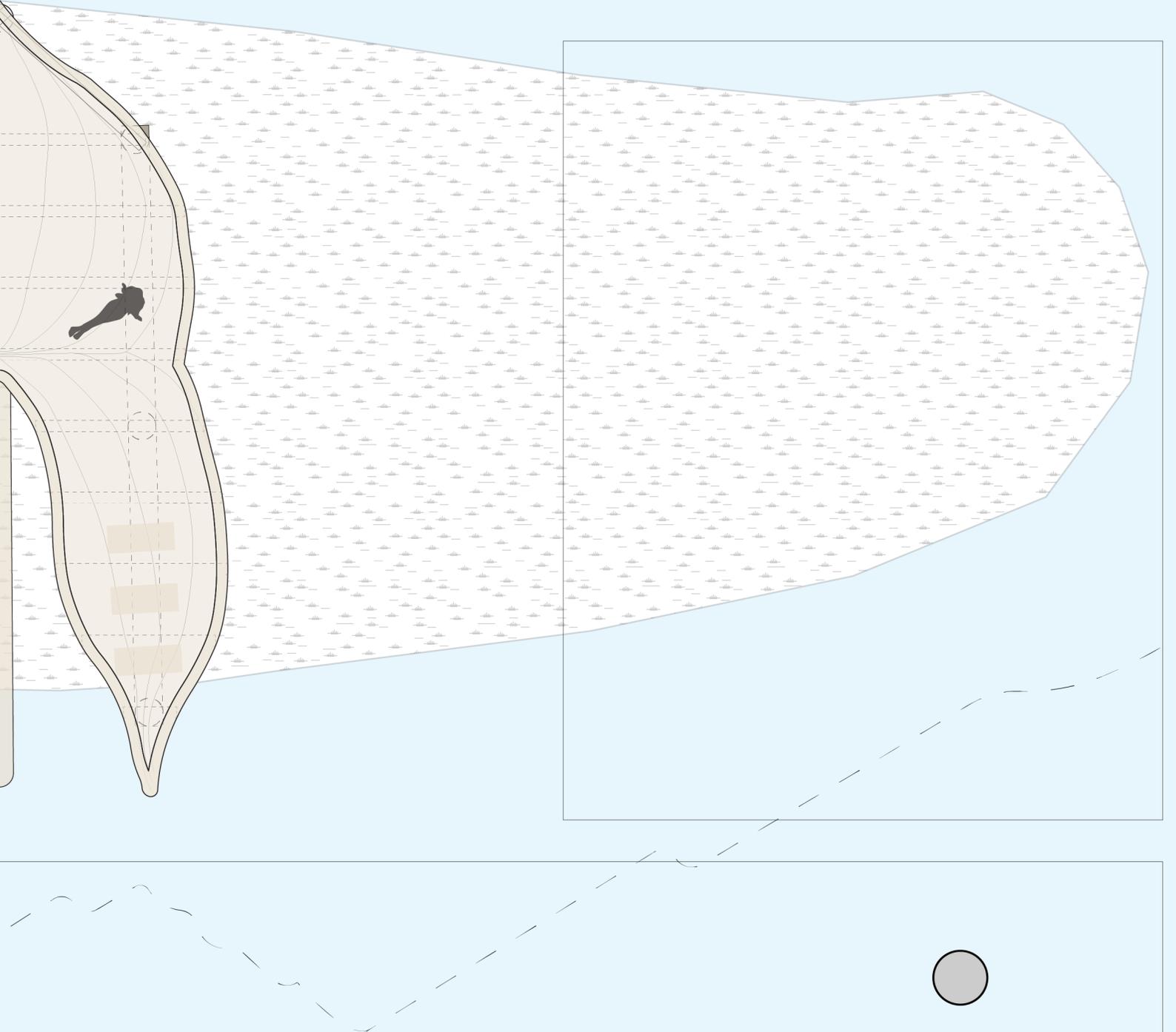
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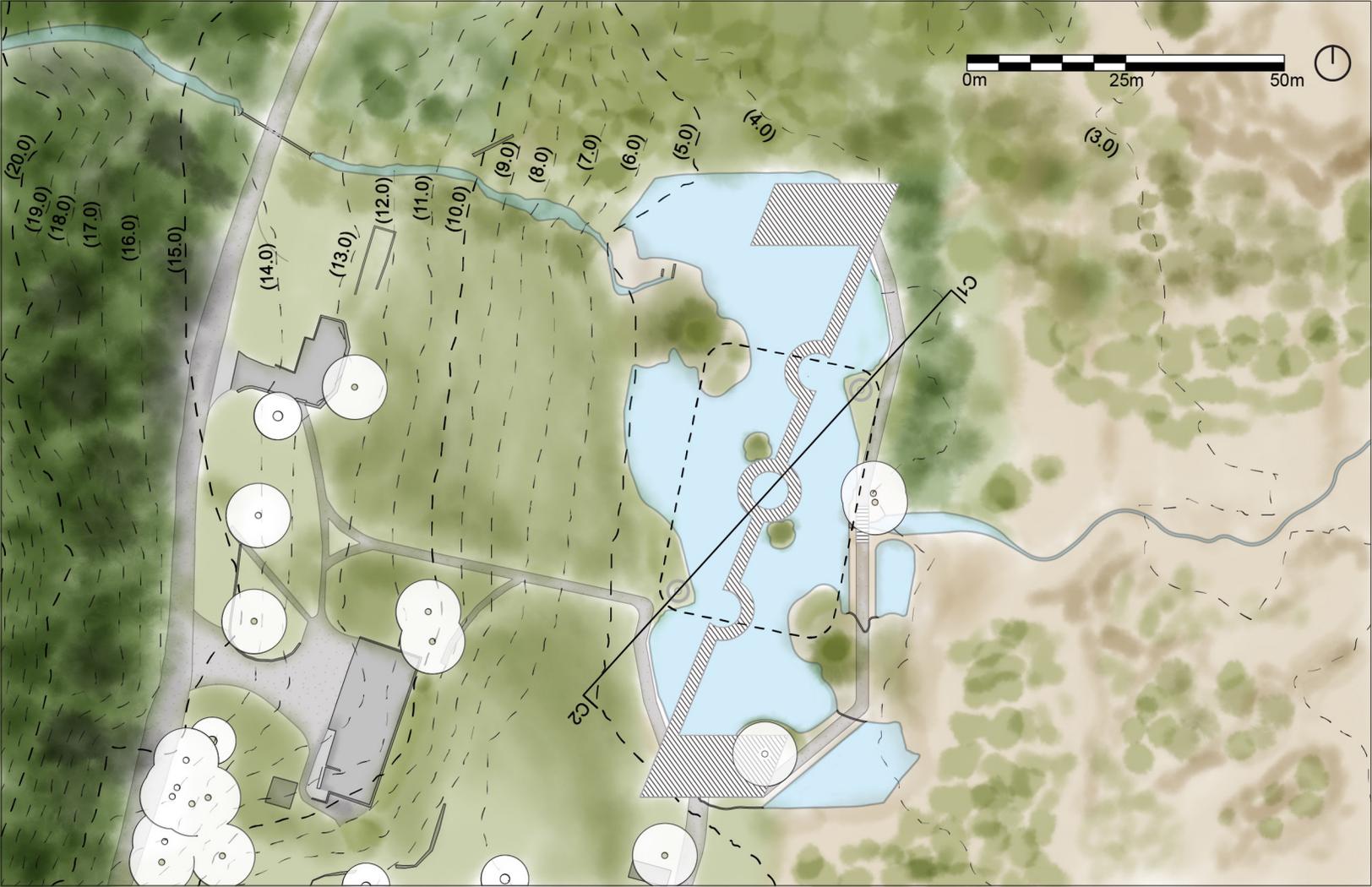
## THE SPIT / THE LEAF PHOTOMONTAGE



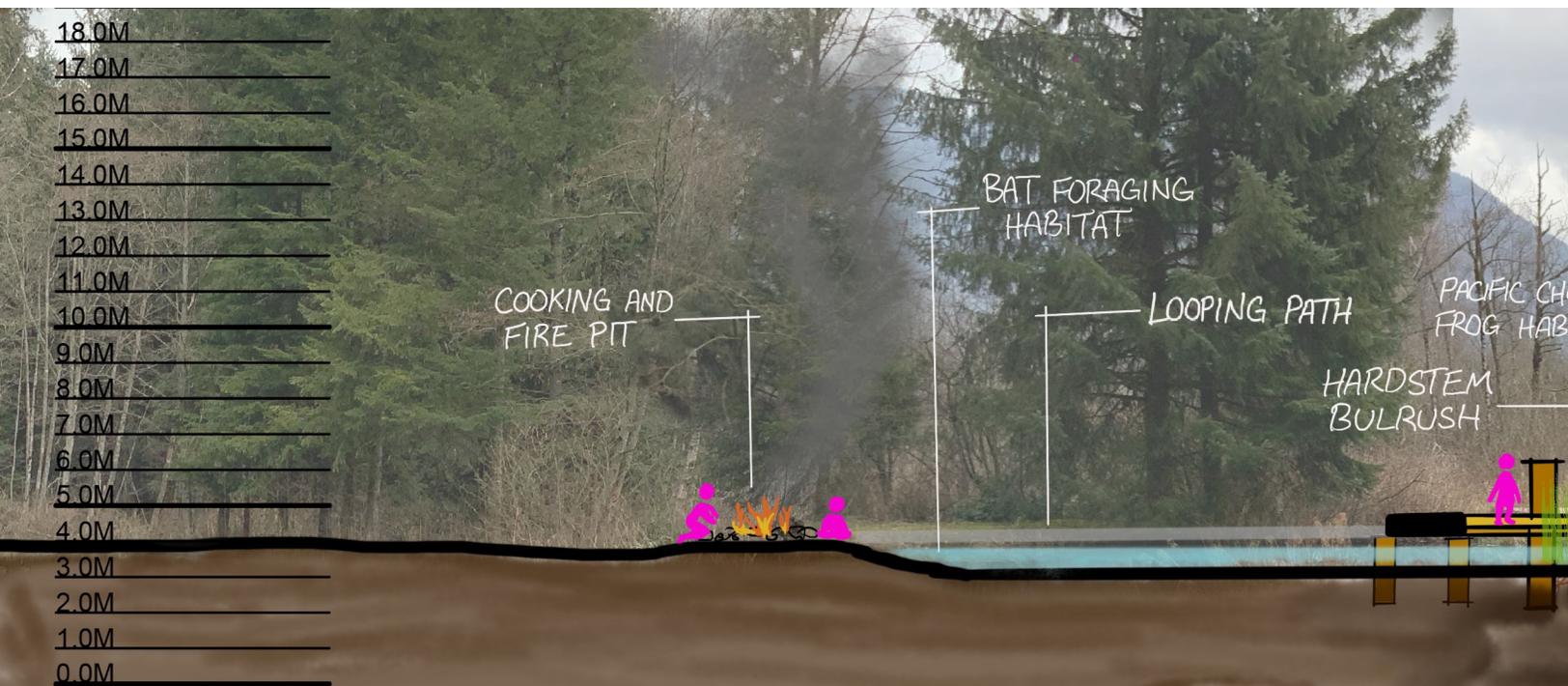


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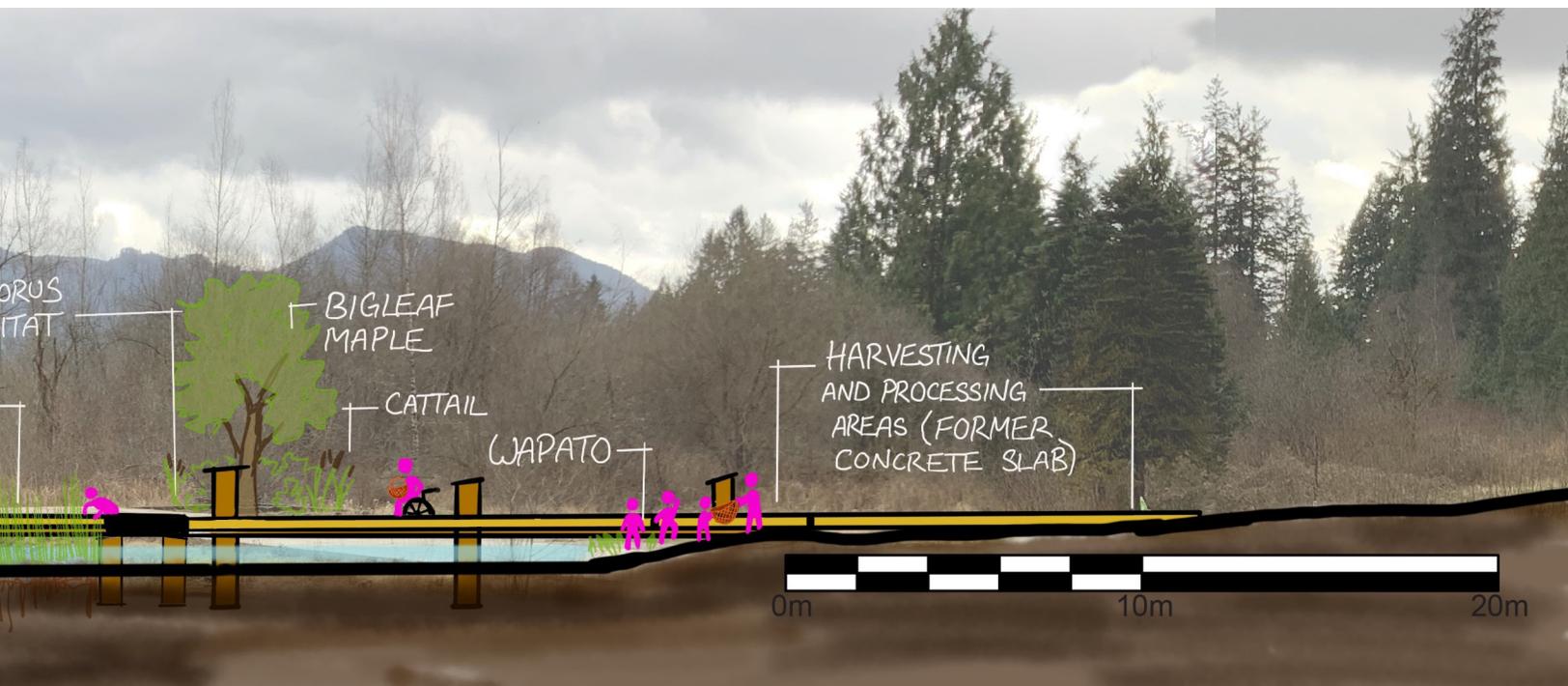


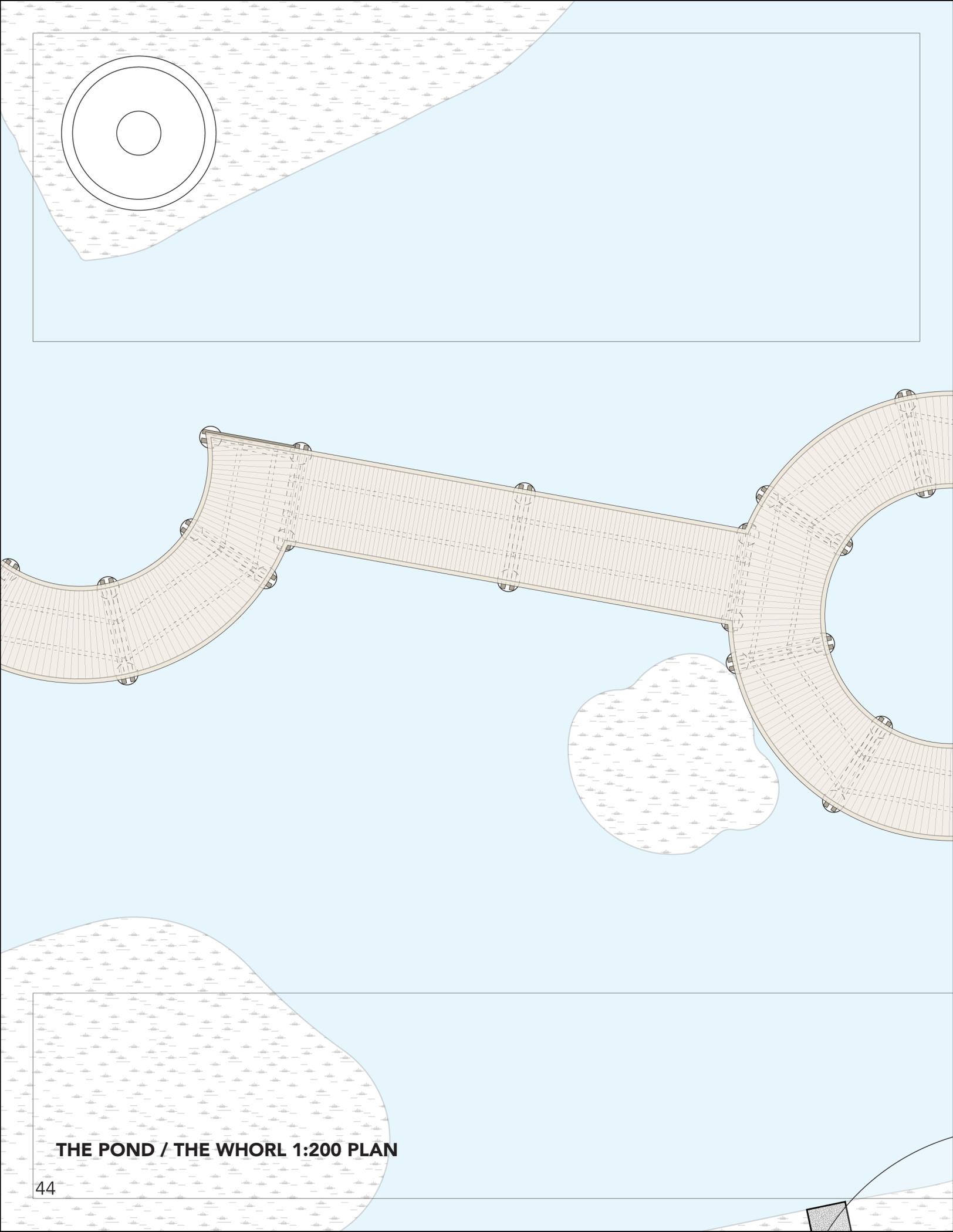
**THE POND / THE WHORL 1:1000 PLAN**



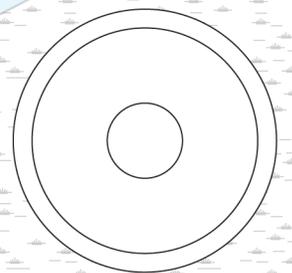
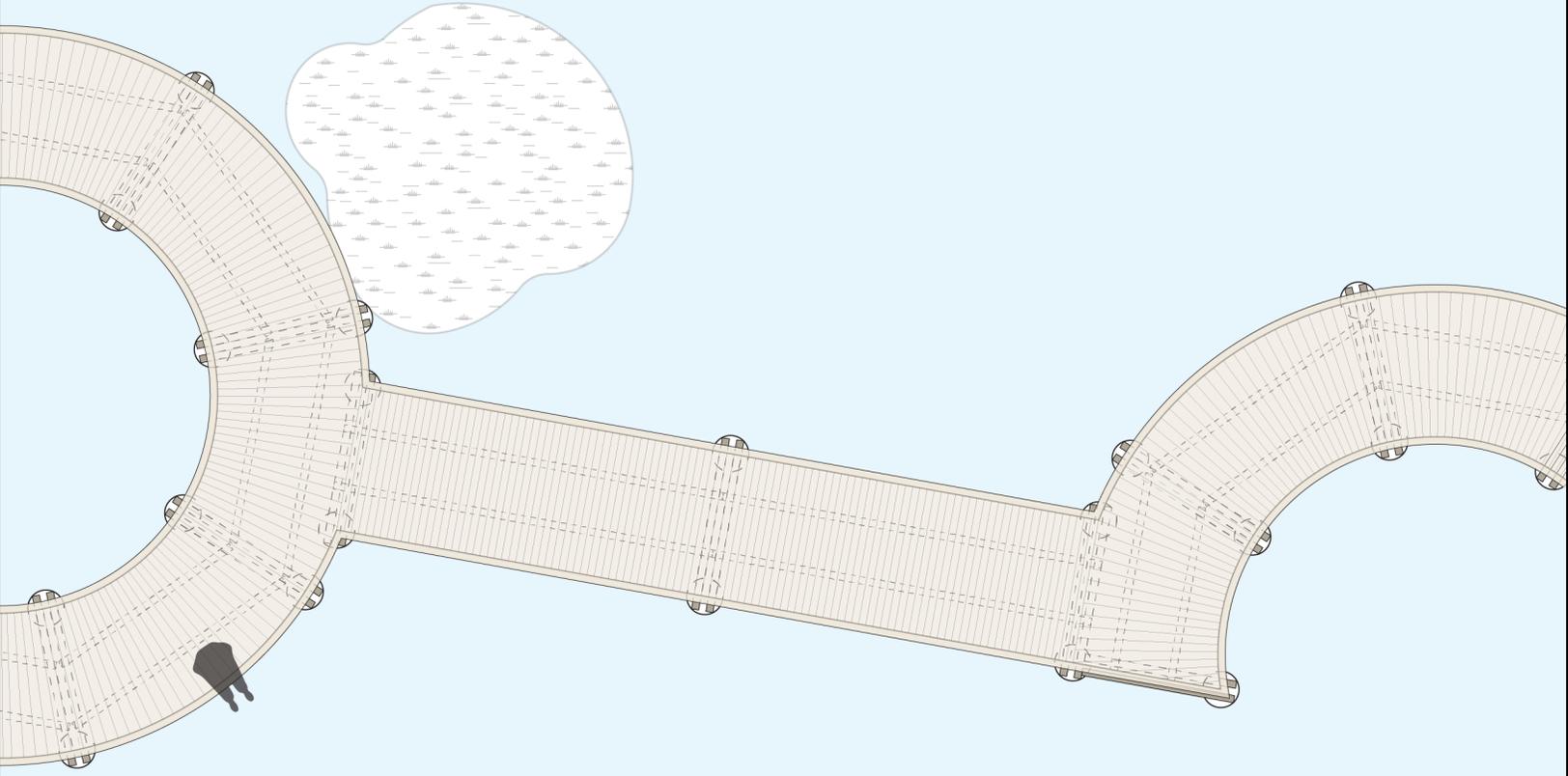
**C1 THE POND / THE WHORL 1:200 SECTION**

## THE POND / THE WHORL PHOTOMONTAGE





**THE POND / THE WHORL 1:200 PLAN**





# A Pop-Up Guide to Widgeon Marsh

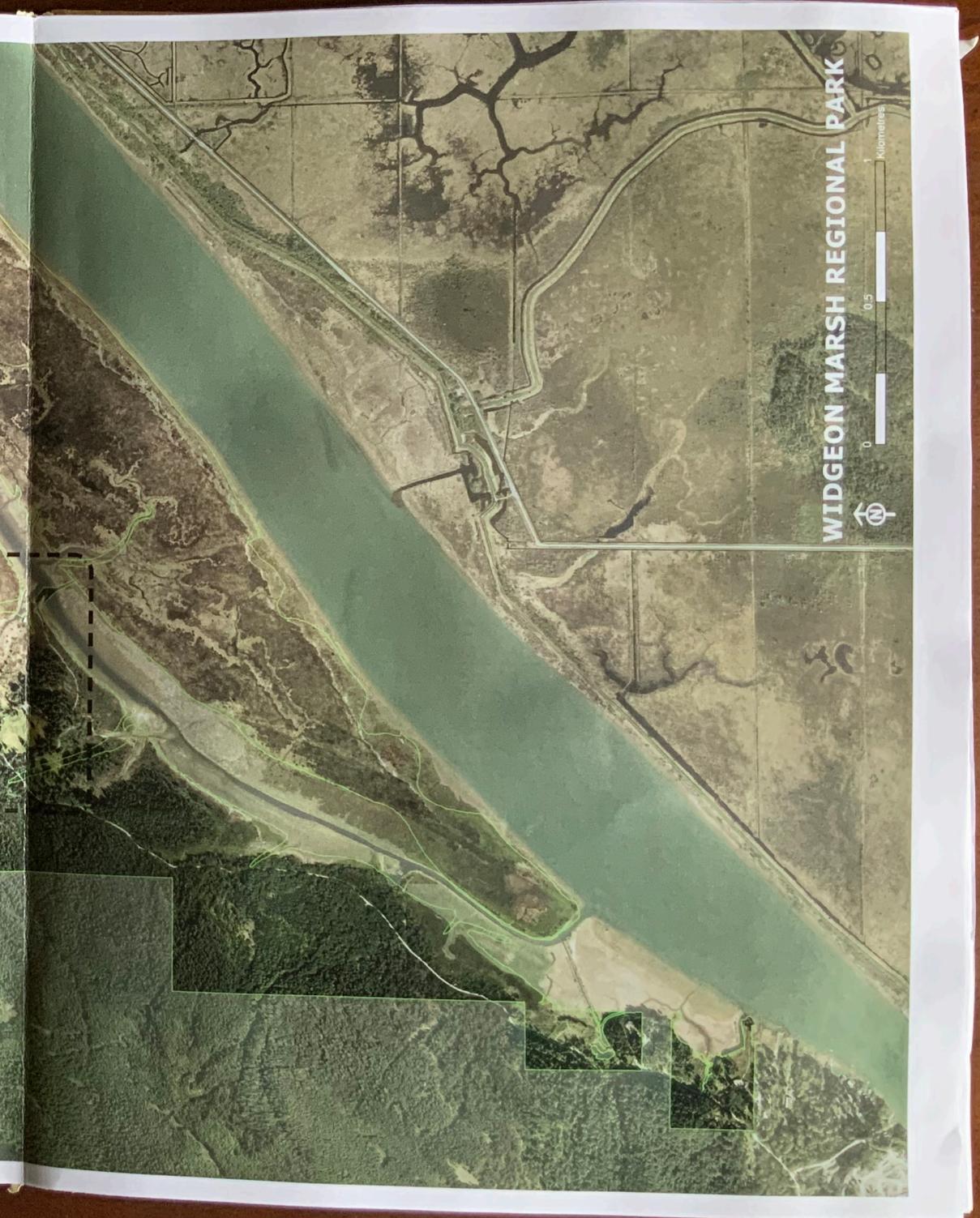
Initially, I was interested in the potential for augmented reality interventions for storytelling and communicating scientific facts about places and spaces. When I arrived on my site visit, I noticed my cell phone had no reception. As the project progressed, I found less and less need to find AR and VR interventions and began to search for their historical antecedents. I also wanted to create one possible guide instead of a fixed and official set of signs for the park.

My pop-up guide shows on three pages my three sites of interest in a 1:2000 context map, which is located in the Meadow Activity Area of the park. The main pages are coloured lightly so the user can make notes about their experiences as they visit the intervention. Through recording and reflecting, they may begin to undertake transformative learning, and solidify their change in worldview and behaviour based on their direct experience of the places. Flaps open up to reveal a 1:1000 map and section cut which shows where the 1:100 scale pop-up model is located, in addition to a section cut which locates the section cut on the long flap on the bottom. The right flap shows an ideational photomontage as an eye-level perspective view of the intended feeling of the space, and its design inspiration. Only the section is annotated with suggested activities and the meaning of the structures is hinted at, but left open to interpretation. My intention is that they would become conversation pieces to discuss settler histories of the land and settler colonialism writ large, while showcasing the food, fuel, and fibre that the land has provided to humans for over 5000 years. This is not the only possible guide to Widgeon Marsh, and others could create their own guidebooks to tell different stories. Importantly, conversations with interpreters and companions would create the conditions necessary for transformative learning to occur.

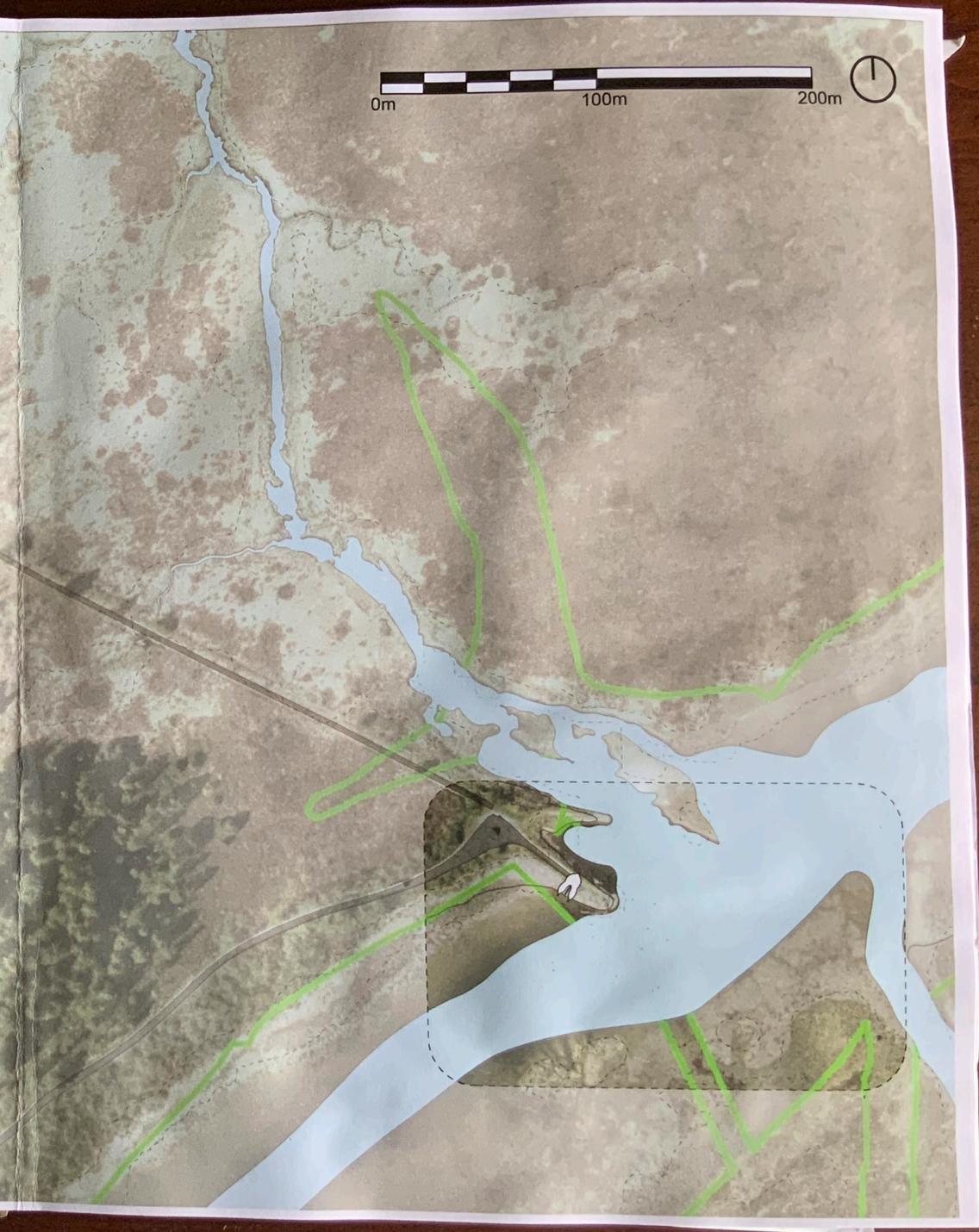




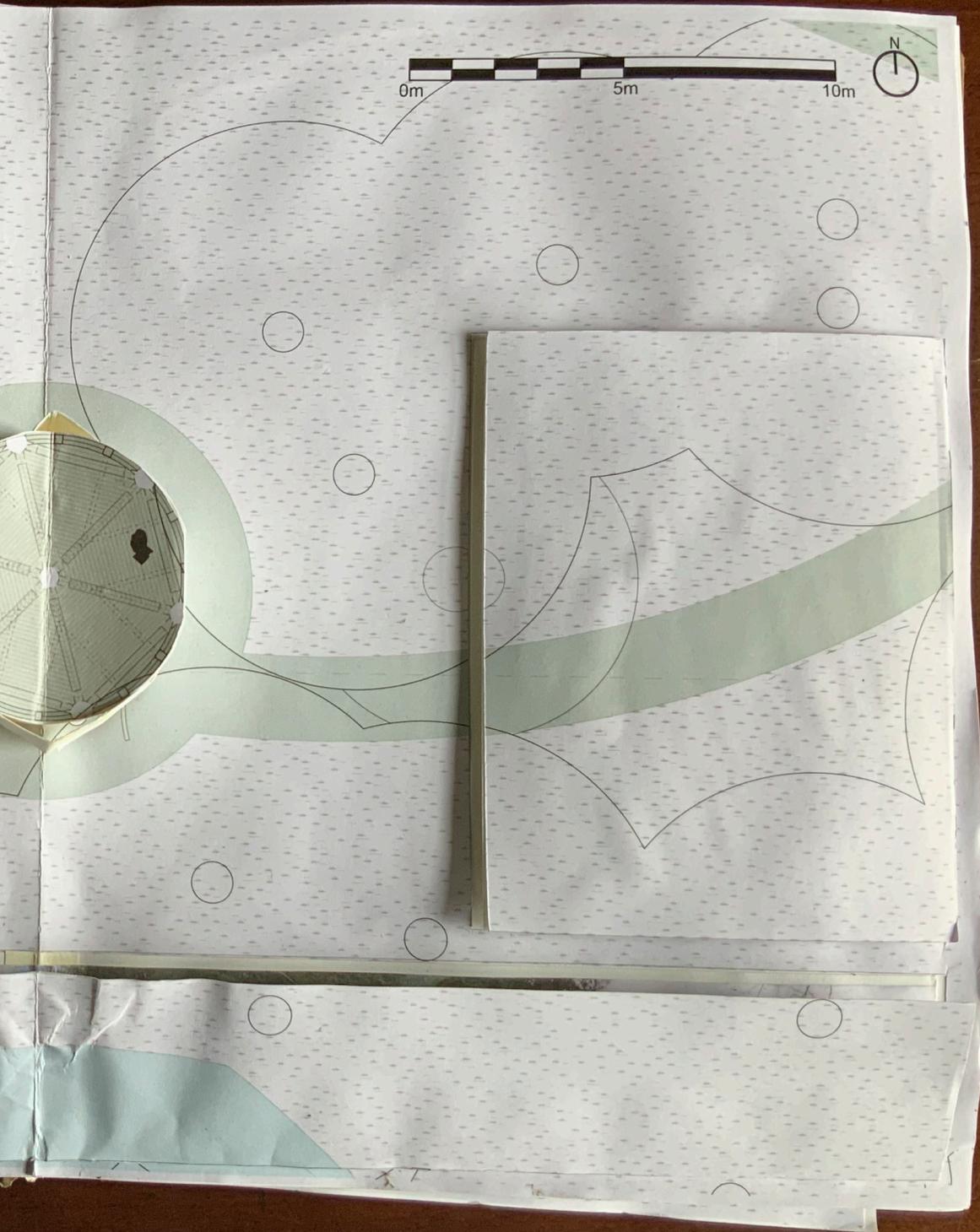


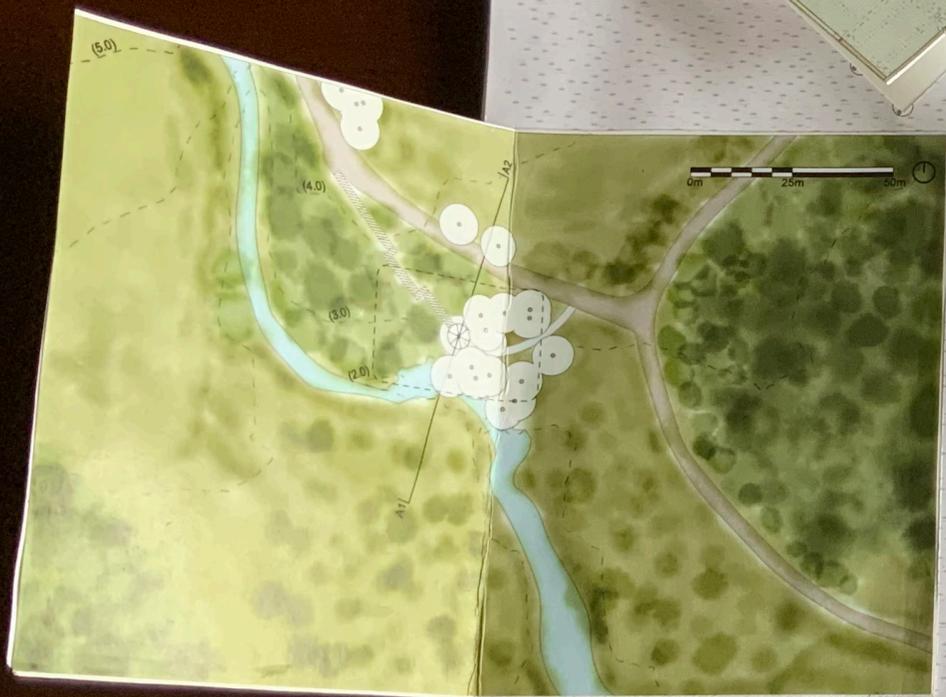






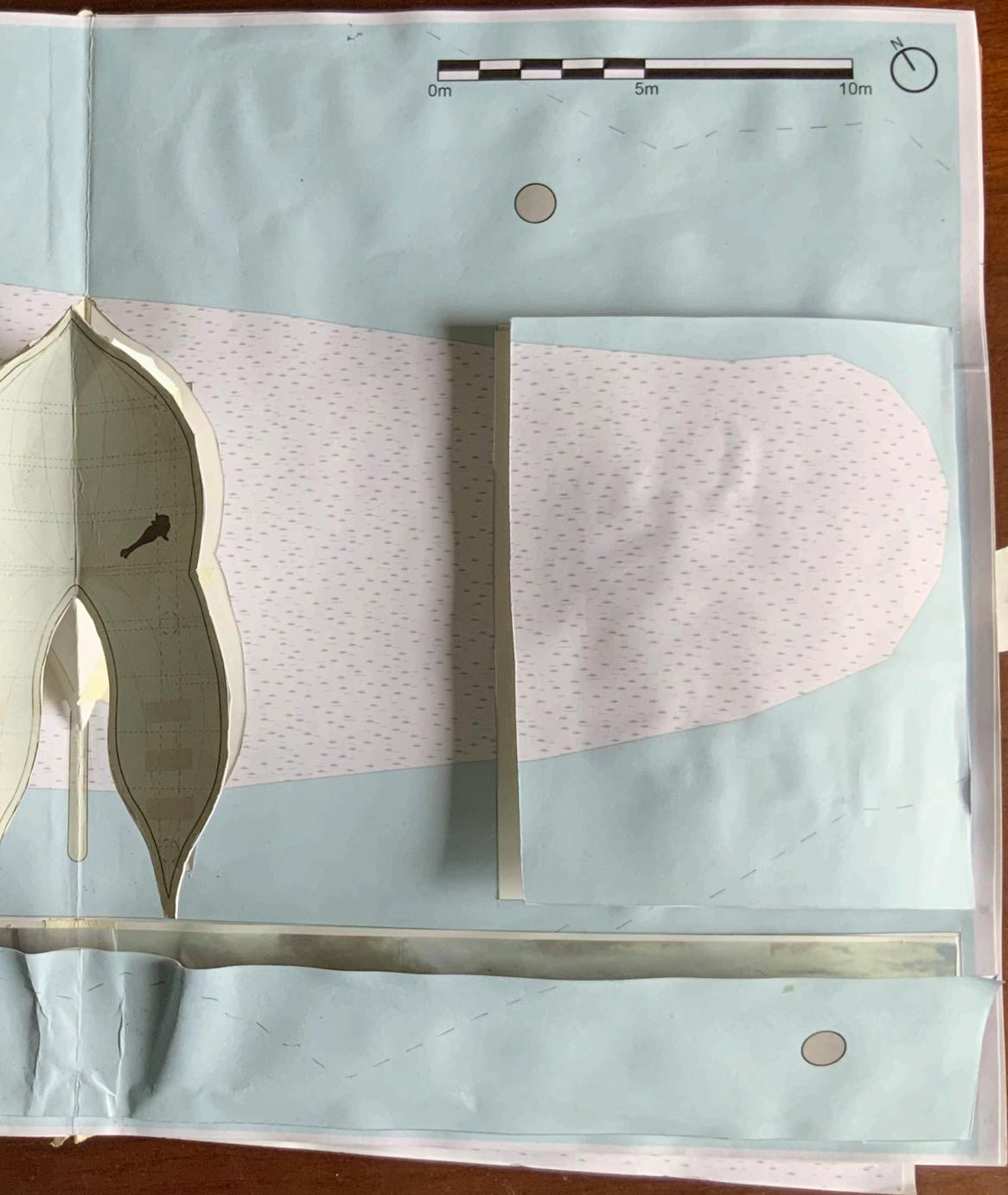


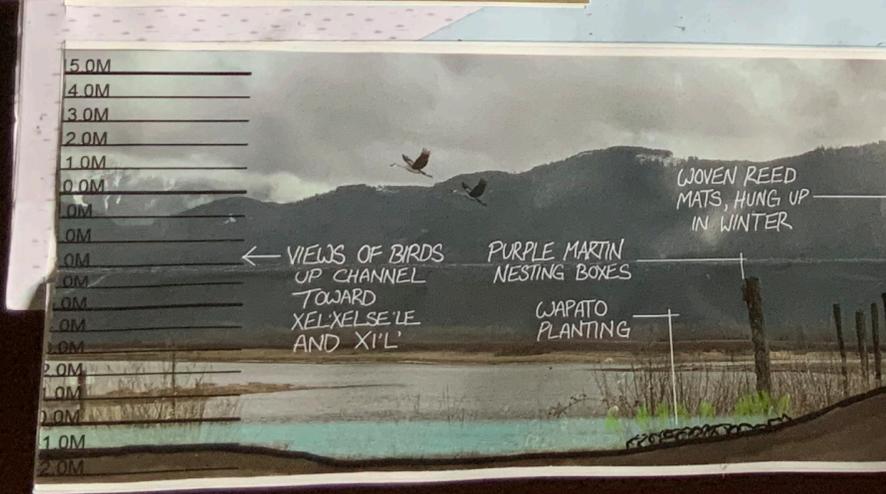
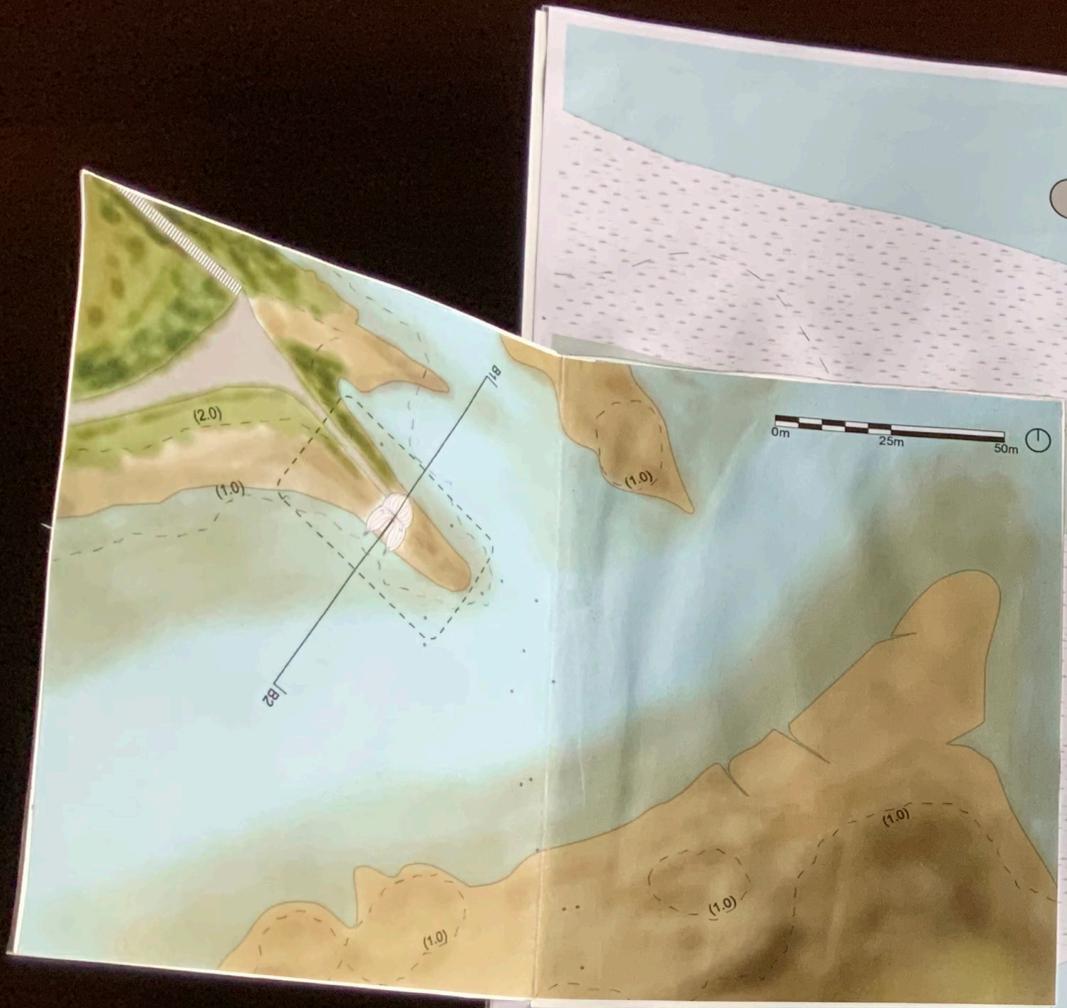


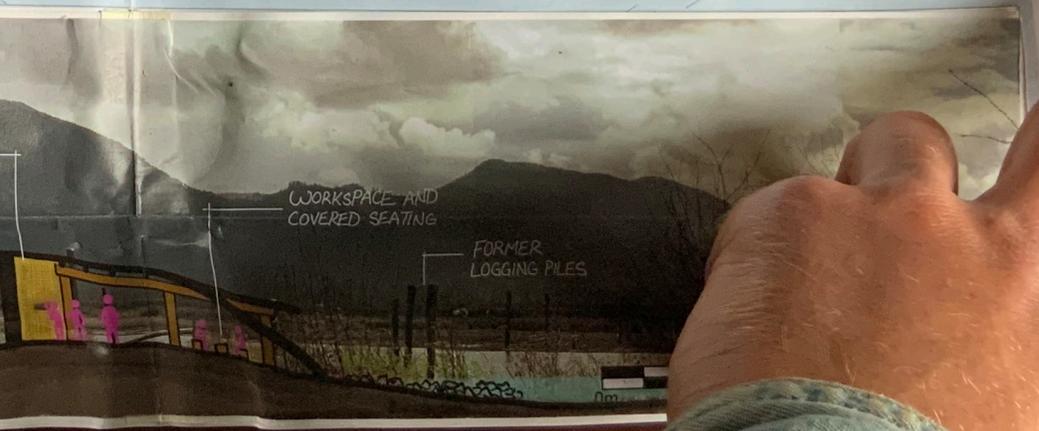
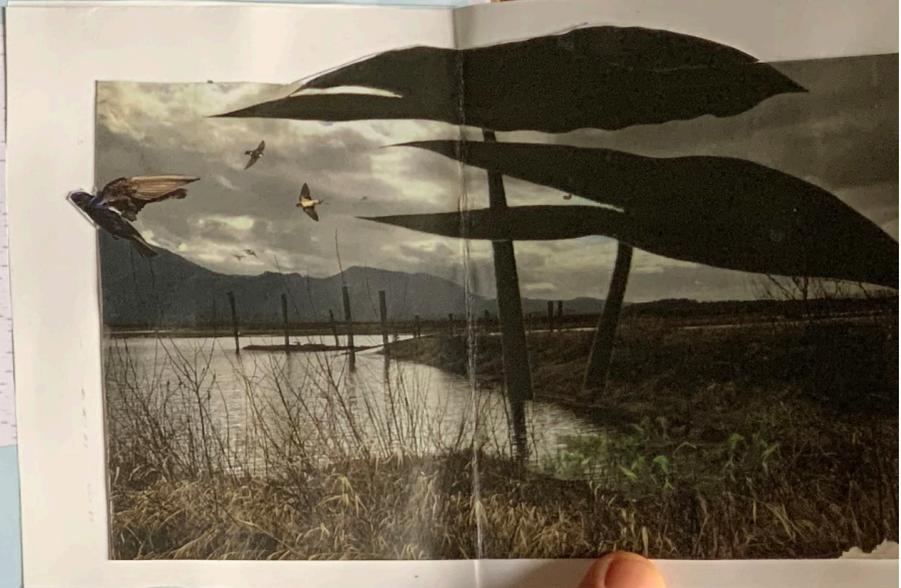
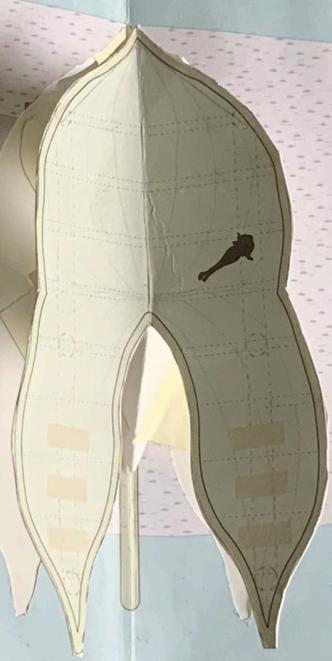








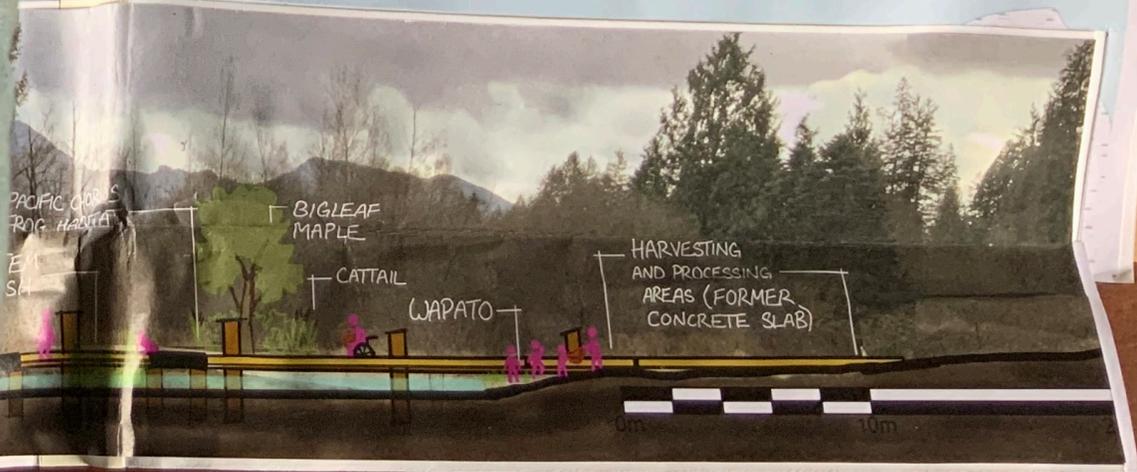
















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