

# *THE RIPPLE EFFECT*

*Re-igniting peoples connection to their natural environment*

*Bachelor of Architecture 2023*  
*Andrew Meagher*

### **ACKNOWLEDGEMENTS**

I wish to thank Sima Rouholamin and Kieran O'Brien for helping me assemble my thoughts into a thesis project. Also to my family for suffering alongside me and keeping my spirits high in order to complete it

## TABLE OF CONTENTS

01 ABSTRACT	6
02 INTRODUCTION	7
03 VISIBLE & INVISIBLE LINKS	9
04 PRINCIPLES OF DESIGN IN SITE	19
05 DESIGN SYNTHESIS	32
06 REFLECTION	55
07 APPENDICES	57
08 REFERENCE	60



*Happiness is achieved only by living in nature.  
Once humans find their happiness,  
their inner peace through a connection to the earth,  
then their soul will once more be fulfilled*

---

*Bruno Taut (1919)*

## 01 ABSTRACT

In this thesis, I set out to understand if our natural habits are neglected in contemporary urban design and if, by re-establishing these instincts with our natural environment, we can create a sense of stewardship for the places where we live. Researching our relationships to the natural setting through text, articles and interviews, I looked at the influence nature, specifically water, continually has on the assembly of our cultures, urban patterns and psychology. I concluded that bringing people closer to the Tolka River through a methodology of principles applicable universally and site specifically should help with many forms of disconnection prevalent in the area through an appropriate architectural solution.

## 02 INTRODUCTION

“Urgency” is the title given to the year brief. The urgency to change, an urgency to adapt and an urgency to improve the way we live. Regardless of the growth we’ve made to combat climate change, our good intent is failing to miss the mark and the planet continues to suffer. This is fundamentally a human error. Goals set by climate reform standards won’t ever be globally achieved until the climate issue is internalised. The issue is that harmony between humans and their surroundings remains too large of a separation in the mind of the general public.

The Thesis aspires to clarify if the human element has become a subsidiary detail of the Irish contemporary design process and what effect it has on the community of the Tolka Valley and the Tolka River. Human instinct in character and built design regarding its relationship to its natural surrounding has to be considered more rigorously. It should be understood that more meaningful participation in the natural environment, specifically water, can evoke a sense of stewardship and inspire radical reform for more general climate-conscious actions in our lives, hence the name *The Ripple Effect*.

*“Does architecture that ignores our habits  
ultimately disappoint us?”*

---

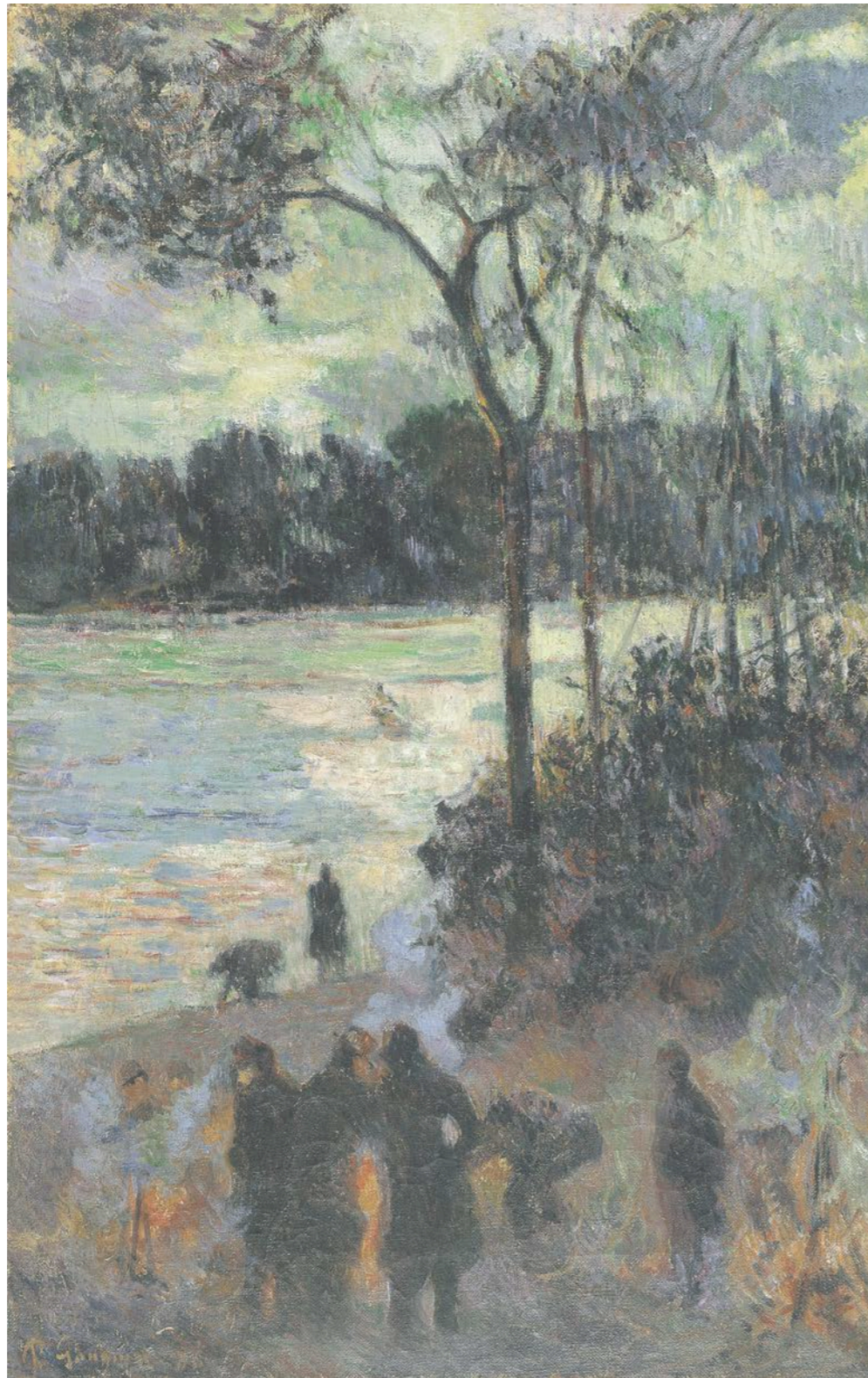
*Allan de Botten (2006)*

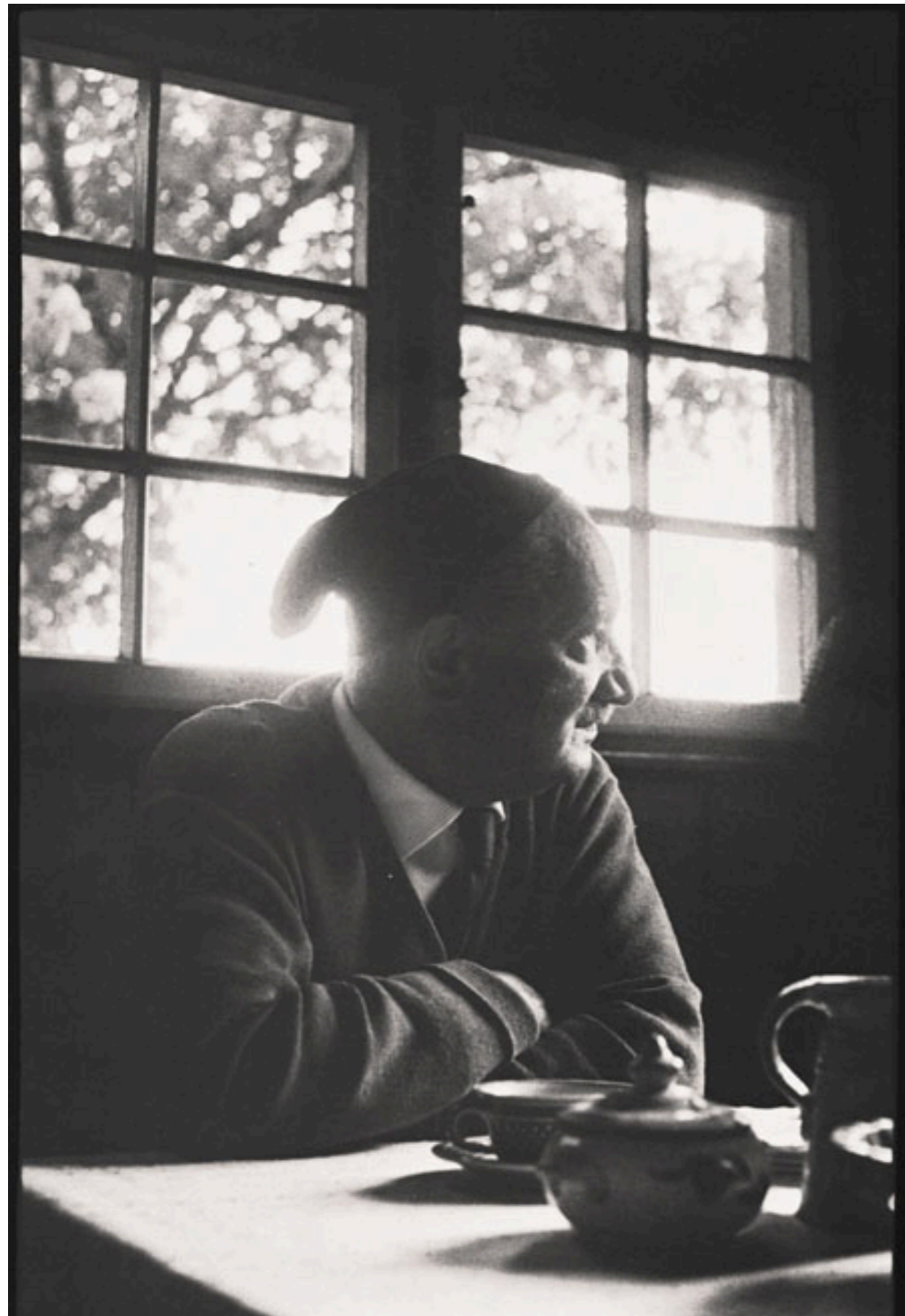


### 03 THE VISIBLE AND INVISIBLE LINK

Our current perception of water, regarding its architectural relevance, is only connected to its functions or ornamental beauty. The impact water has on our attitudes and choices for both physiological necessity and psychological well-being should be considered more often in the design process. In Semester 1, the research process began by understanding the role water has in shaping our settlement placement. For eons, it has remained a symbol of human interaction for people to converse, gather and cleanse. “The allure of water has long drawn people to be near it, inviting congregations around it to enjoy its splendour”(Knechtly. S, 2022). Its necessity as a means for survival has influenced design from the very roots of society with Neuroscientists claiming that water has a huge part in shaping our physiological evolution (see Appendix 1).

This long-lasting cultural and religious association of water as a symbol for purity connects to the spirituality of the nearby rivers (see Appendix 2). It could be observed as an evolutionary stimulant for neurological development to grow proficient with tools to find unique methods to control its flow (see Appendix 3). Technology advanced far enough to utilise its properties for bathing, irrigation, exercise and transportation with “the average person in the UK using 150 gallons of water a day, 45 litres used just in a 5 mins shower” (Baldwin. J, n.d.). The earliest known permanent settlement, which can be classified as urban is the city of Jericho from 8000-7000 B.C, which was constructed inland from the Dead Sea and shows evidence that the city located itself near springs and transported water from the Jordan River (Angelakis, A 2012). These advancements have allowed us to explore different terrain types and cover more land as seen in numerous Belgian cities like Brussels, Bruges and Lier (see Appendix 4) which carved out large settlements from a series of rivers and canals. This positional instinct to develop settlements near the water source has resulted in “80% of the world’s population living close to it” (Baldwin. J, n.d.).

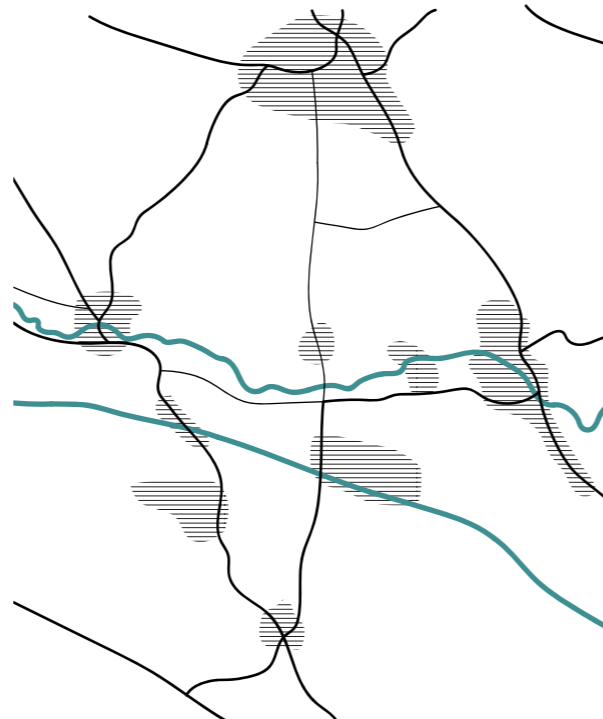




The research indicates that water has always remained the main element of consideration for societies to develop off and around. The Blueprint for urban expansion is the attempt to spread organically from a point along the water's edge (fig 4). However, it doesn't inform how and why we select the places that we choose to expand from. In Martin Heidegger's "Building Dwelling, Thinking", he describes through the analogy of a bridge along the river our instinctive process of settlement positioning:

*"Before the bridge there are many spots along the stream that can be occupied by something. One of them proves to be a locale and does so because of the bridge. Thus, the bridge does not first come to a locale to stand in it, rather a locale comes into existence only by virtue of the bridge"* (Heidegger. M, 1954).

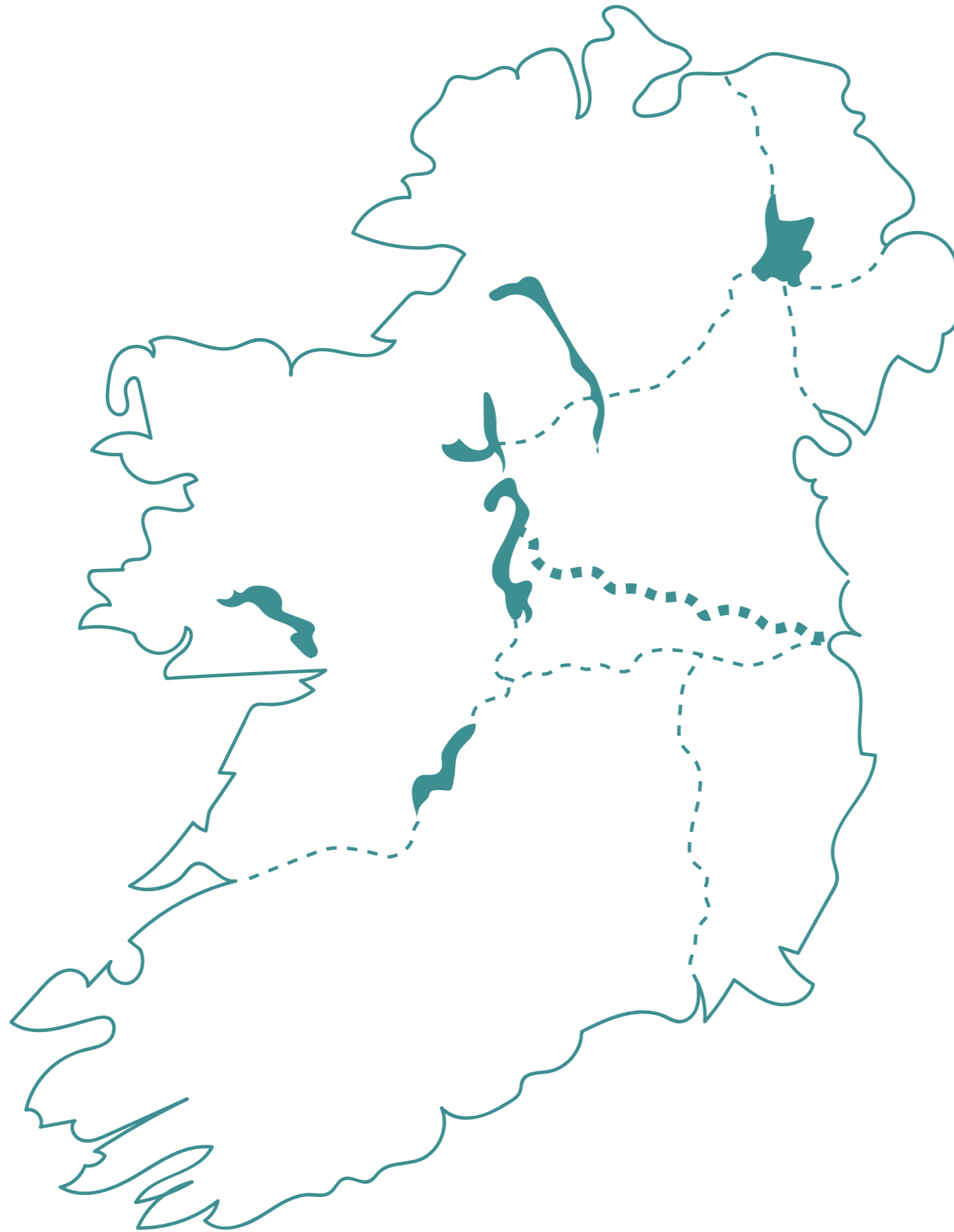
The locale is crafted from the intersection we establish our settlements. The symbiotic fusion between people and their landscape has been a historical repetition emulated by all cultures and has become a node on which urban development expands over time organically. The locale is created from a rational human impulse, a generational intuition, a space in the landscape is not defined as a locale until we bestow upon it its significance. The instinct of which has been crafted from an evolution of effort through experience with our natural environment that informs us of appropriate settlement positioning, most often connected to a body of water.



The analysis of human evolutionary behaviour initiated my exploration of the Tolka Valley Area. A Dublin suburb built adjacent to the Tolka River and positioned as a middle ground between Finglas and Cabra. In its infancy, like most settlements, the area could be perceived under similar parameters of organic locales sprouting from numerous points along and around the river. As described in Diagram 1, a simplified analysis of maps from the 1700s indicate blotches of housing, infrastructure, and road layouts as a direct response to the stone bridges which connected farmlands on either side of the bank. At this stage, The Tolka Valley had begun to establish itself organically as a river city.

However, by the 1930s, it was clear that the expansion of the city limits and suburbia stretched as far as the Tolka Valley and by the 1990s almost entirely consumed the land. The original roads and boundaries that governed the area helped outline the positional implementation of large clusters of development that squeezed in between and around the river. The aftermath resulted in a fragmentation of the area into industrial and residential zones so tightly compacted that connection throughout the site still to this day remains highly restrictive.

Due to this, The Tolka Valley area didn't develop from its expansion from their river locales. Relationships between the built fabric and the environs were never considered, thus could explain why there seems to be a disconnect between the river and the community today. While the impulse to expand and improve is equally as important as a human instinct to be considered, the Tolka Valley is a demonstration of temporary thinking urban expansion that fosters unhealthy social disconnect from its surroundings and is systematic of the degradation seen through many Irish rivers and water bodies.

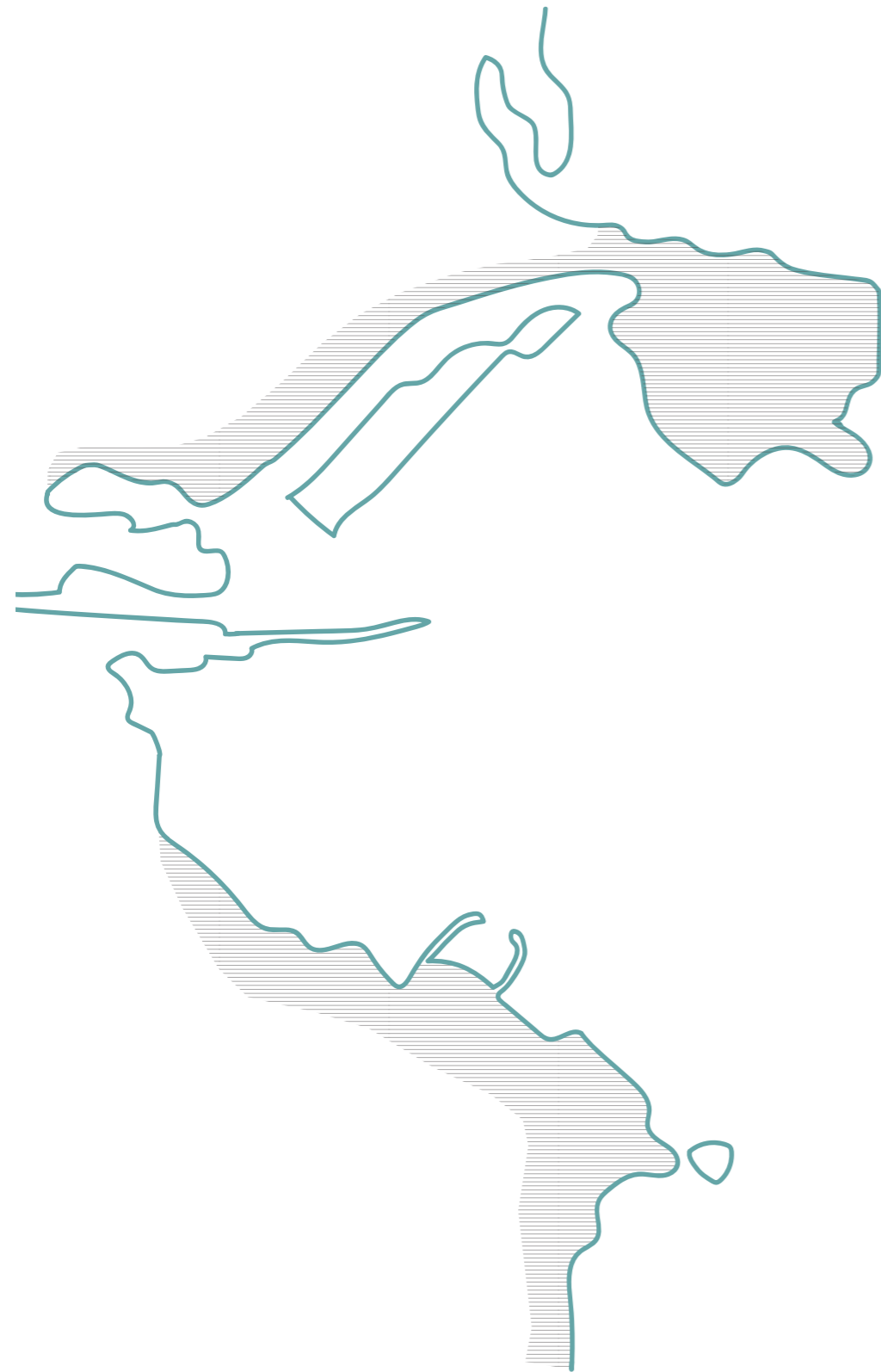


Ireland has a rich history of wild and unique natural landscapes. The island is home to globally recognisable coastlines with over 1000km of lakes, rivers and canals (Diagram 3). Unfortunately, they feel neglected, isolated and underutilised compared to the human interaction one would expect

The European Union's Waterwork Framework Directive aimed for all member states to have appropriate water quality by 2015. Unfortunately, Ireland did not meet that promise, and the EPA in an examination of over 2,700 surface water bodies concluded that only 46% of the country's water bodies are in a satisfactory condition and that from "2016-2021 there was 1% decline in satisfactory rivers, 2.7% fall for lakes, 15.7% decline in healthy estuaries, 9.5% drop when it comes to coastal waters and 0.8% for groundwater compared to the 2013-2018 assessment" (Corr, S. 2022). The report from the EPA claimed that from the 1980s to 2015 the number of pristine water bodies dropped from 500 to 20 (Malekmian, S. 2019).

Dublin, like many capitals, has a parasitic relationship with its waters. It benefits while also harming it simultaneously. The lack of a symbiotic mutuality is at the expense of the health of the water as pollution from urbanisation and farming have significantly harmed much of our water bodies. The Liffey is a major carrier of pollutants with scientists suggesting that untreated sewage disposal from household runoff has been a factor for high concentrations of chemical contamination found in Dublin Bay often resulting in the numerous bathing spots suspending water activity from water contamination (River Liffey a major carrier of pollutants, 2016).

*"As a swimmer, the cleanliness of the water is hugely important to me. To be honest, it was a main reason stopping me swimming for years"*  
(Catherine, 15/11/22)

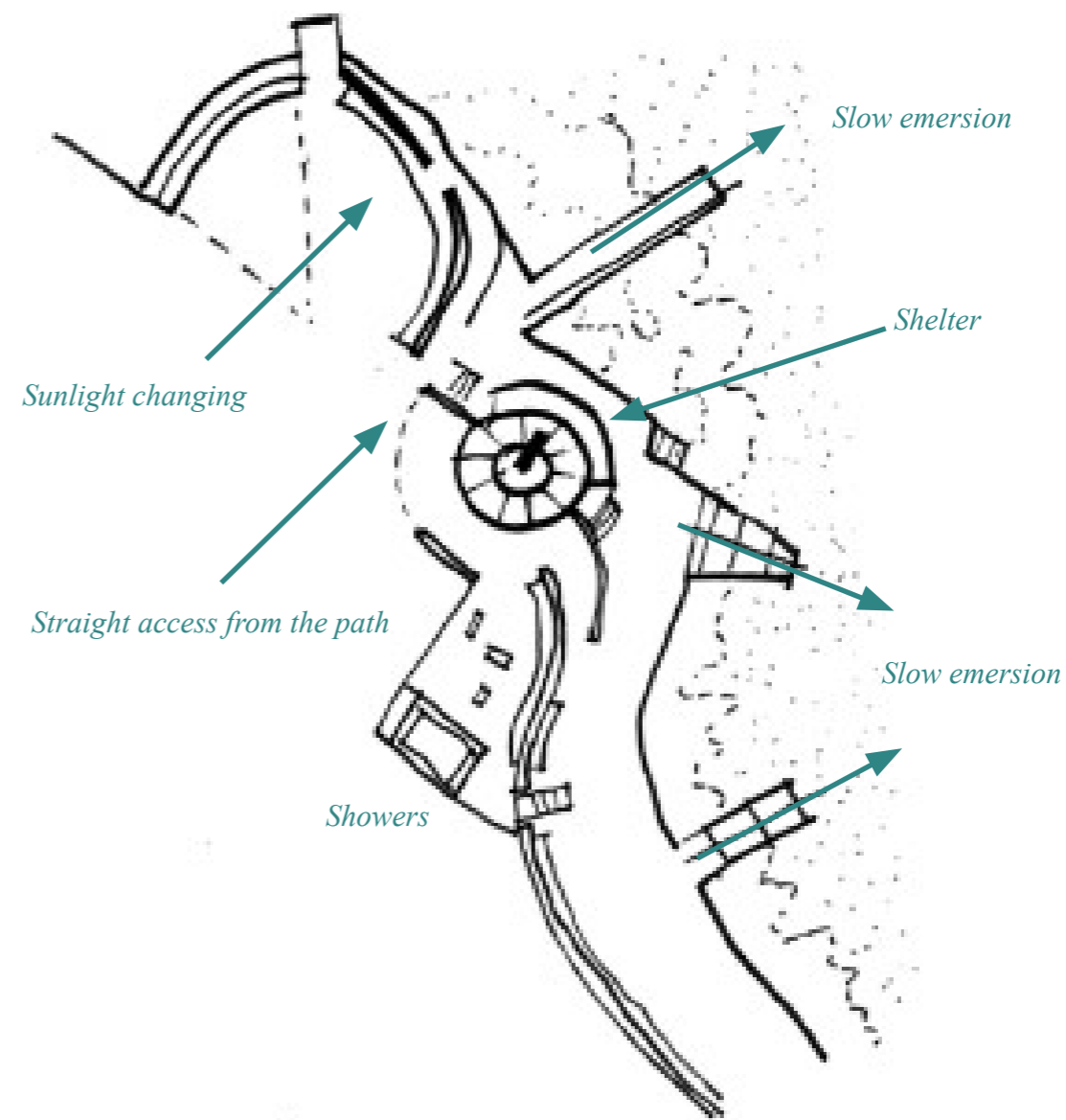
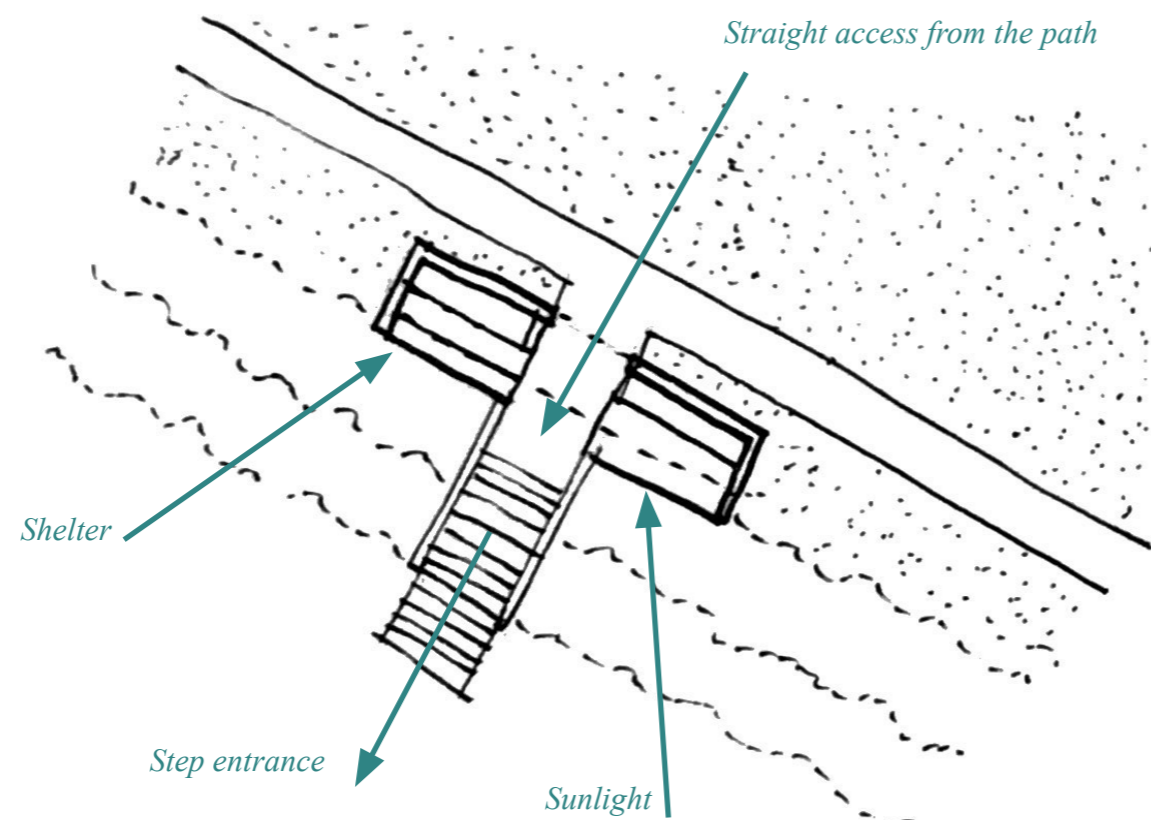


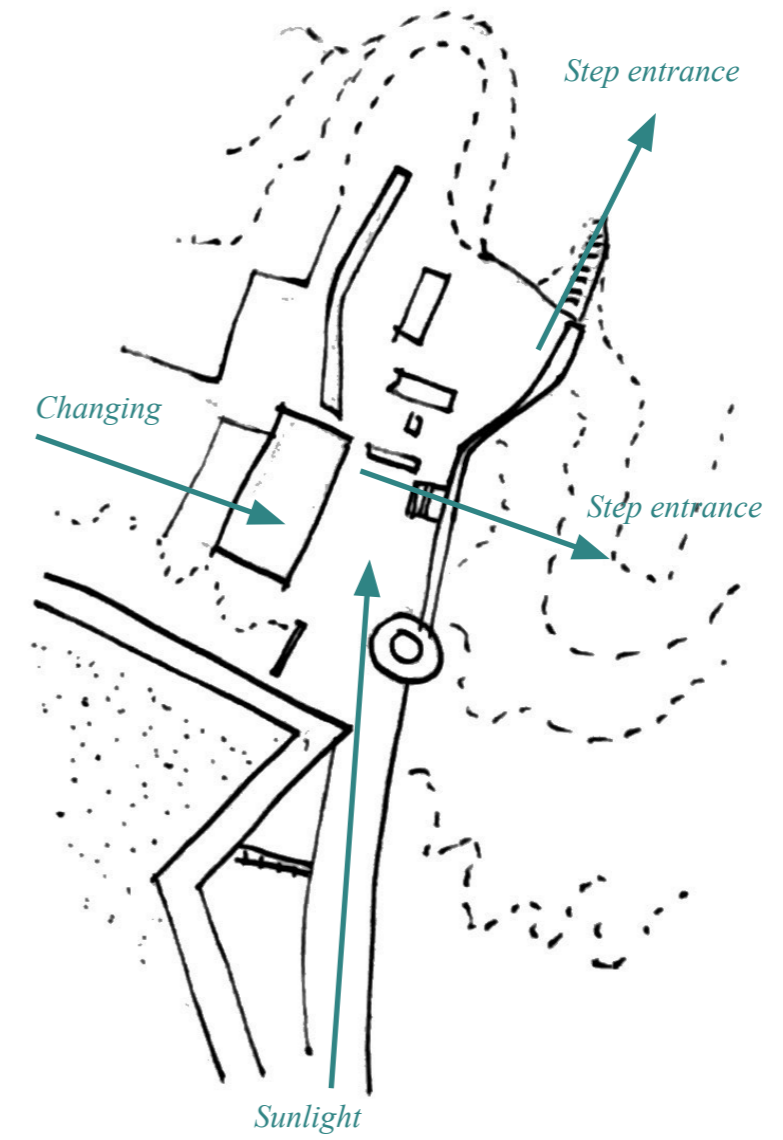
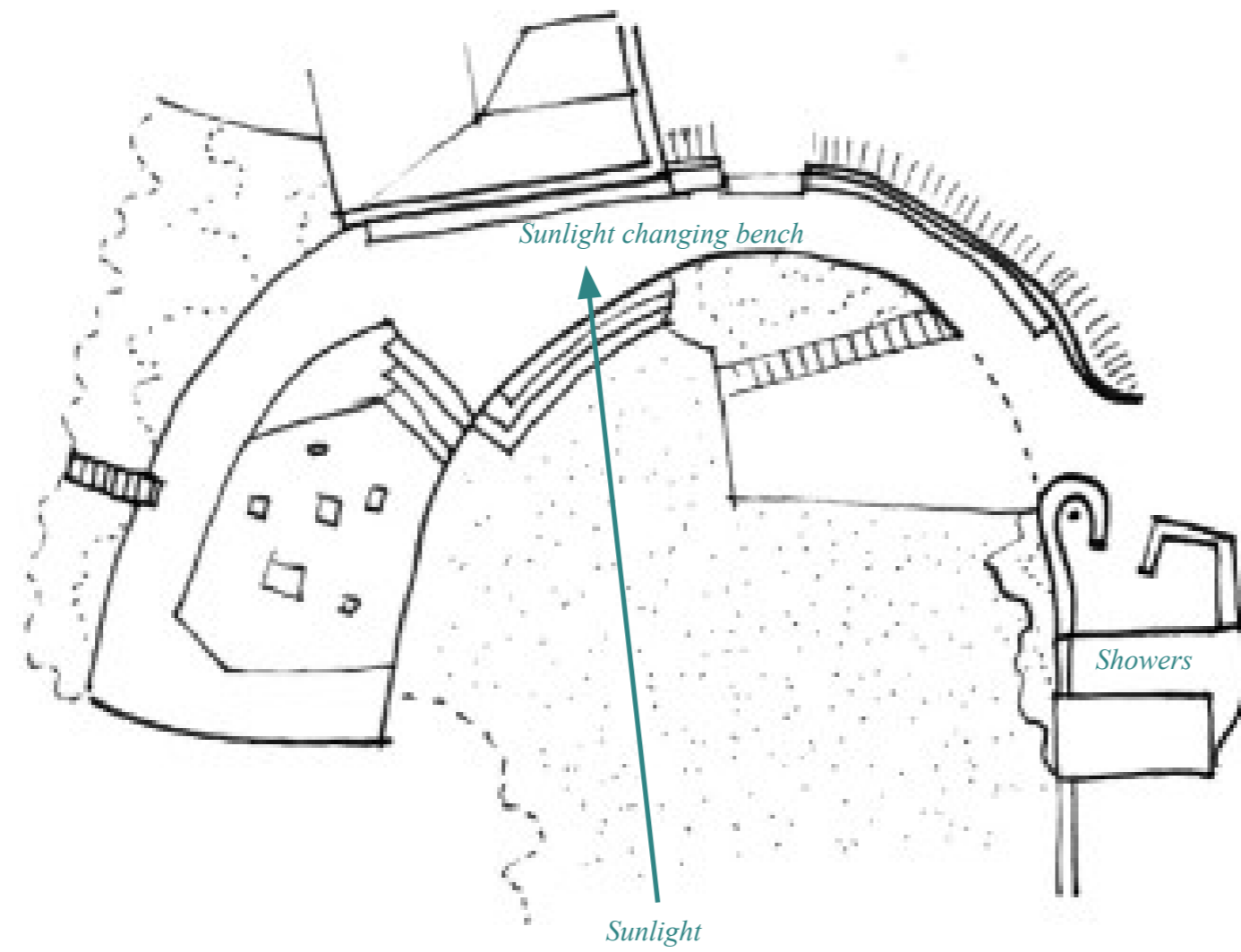
In contrast to my interpretation of the Tolka Valley area, I began to study places which I felt had a positive relationship with their surroundings, specifically the Dublin coastline. Regardless of the pollution problems the County faces, Dublin is synonymous with its numerous historical bathing spots sprinkled along its coastal edge which still to this day facilitates a strong bathing culture amongst locals and tourists.

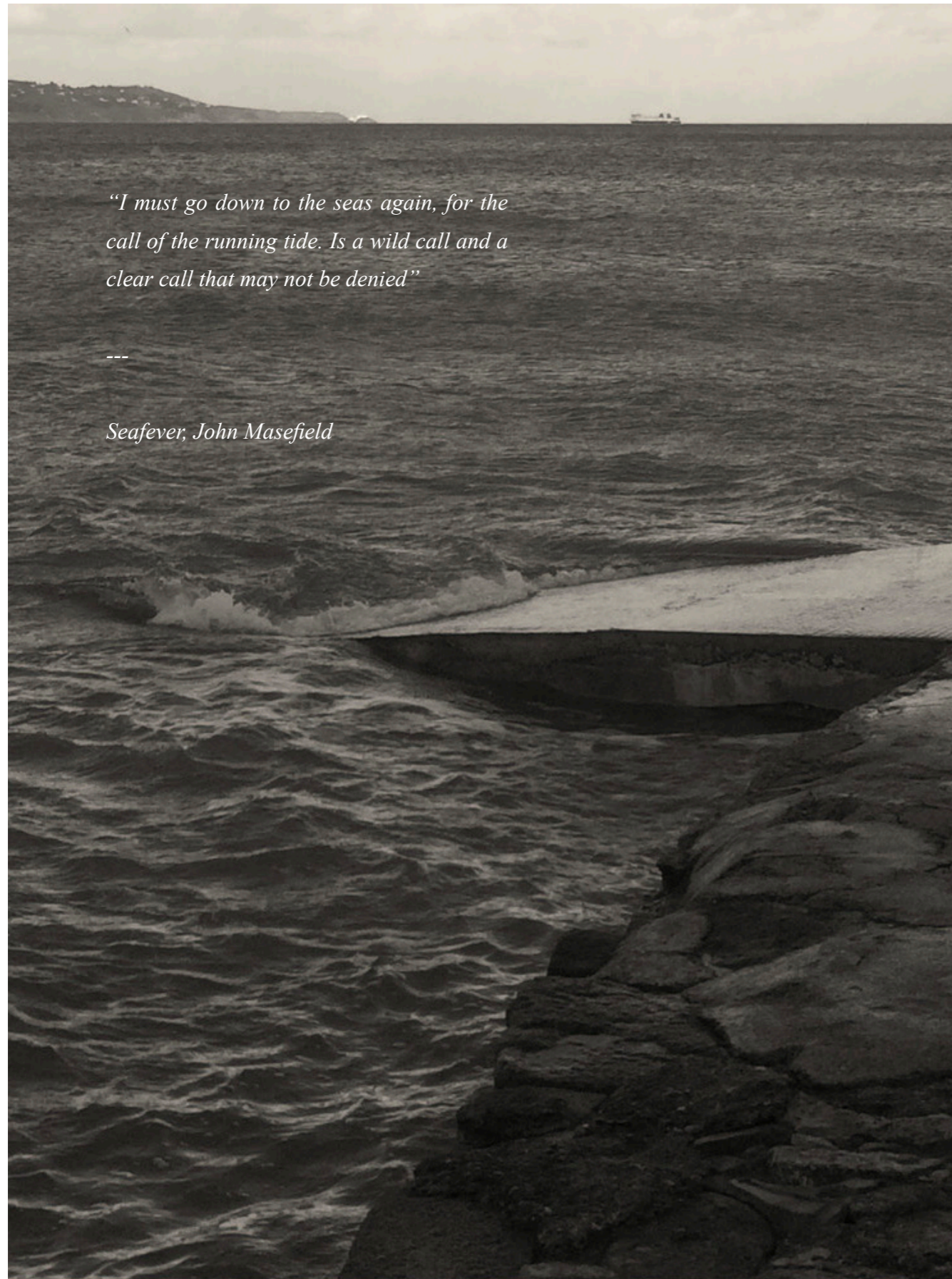
The towns associated with these coastal nodes benefited from being able to expand their affiliation from their natural setting. Their relationship to the natural environment enables them to organically develop into well-defined suburban towns which still retain strong identities centred around their connection to the water. These areas are characteristic examples of settlements crafted naturally by humans' instinctive development process.

From my site visits to these bathing spots, I tried to understand the architectural language that facilitated the ongoing activity. The spaces felt crafted from human intuition over generations instead of predetermined functions. Groups and individual decisions were the only tools used to design the occupation and functionality of these spaces. The position of many of the seating and coverage spots were a part of the pre-existing fabric dating back before the bathing culture, however, the most popular spaces have been kept because of the views they offer, the sunlight that hits them or the comfort of safety it provides the user.

All of this makes these bathing points feel appropriate to their surroundings because human ingenuity was the determining factor for all architectural decisions. It was crafted by people for people and in turn, has allowed users to appreciate these coastal nodes much more effectively.







*"I must go down to the seas again, for the  
call of the running tide. Is a wild call and a  
clear call that may not be denied"*

---

*Seafever, John Masefield*

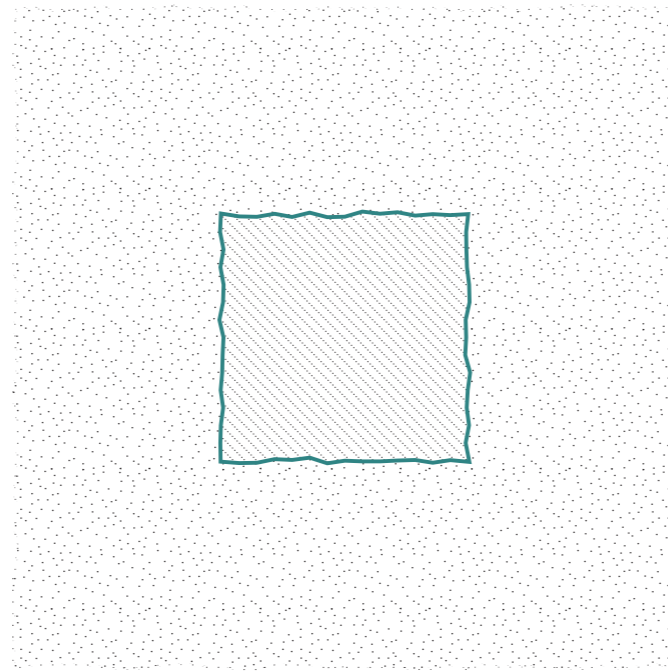
While my research had examined the visible evolutionary explanation for our instinct to build by water, my analysis of the coastal condition made me acknowledge the effects emersion into the natural world has over the psychosis of person themselves, the invisible link.

In 1984, the term "Biophilia" was used to encompass this sensation describing the physical, cognitive and emotional link between all natural things and "our urge to affiliate with other forms of life". (Roy Rioux, J. 2021). These natural biophilic responses are found most physiologically prevalent when interacting with the water's edge. Marine biologist Wallace J. Nichols gives the name "The Blue Mind" about this neurological and emotional change that naturally happens in the brain when our senses interact with water and "we are beginning to learn that our brains are hardwired to react positively to water and that being near it can calm and connect us". (Roy Rioux, J. 2021)

A multitude of factors could cause this natural impulse to happen. Our settlement habits, our evolutionary transformation into mammals from the oceans, and even our first nine months are spent in the water environment of the womb and "when we are born, our bodies are approximately 78% water" (Baldwin, J, n.d.). Our rapport with colours and the association of ranging emotions could be reflective of our instinctive connection to the landscape. Wassily Kandinsky in his theory of colours claims that the presence of blue and green, which are closely associated with nature, evokes the human soul to reverberate (see Appendix 5).

Architecture often attempts to use biophilic principles to heighten the sensory experience by enclosing a natural space or being surrounded by it. Living and designing with nature seems to bring a euphoric calmness to a person and successful architecture tends to stimulate our soul when they evoke the spirituality of the environment they occupy.

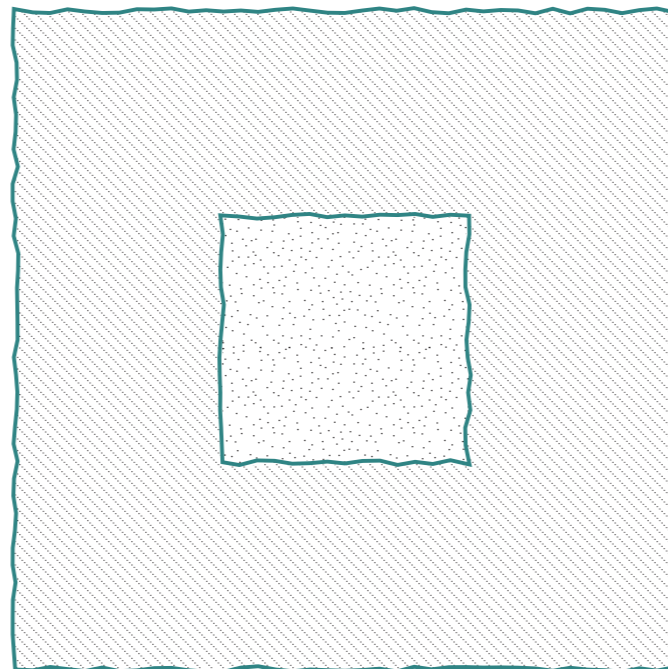
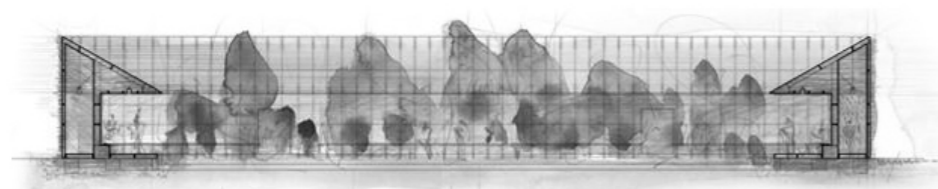




*“Instead of adding a new building inside the village center the site is in the natural world. In doing so it can provide a setting of clear thoughts when one consciously makes the effort to head to the mountains to relax and learn”*

---

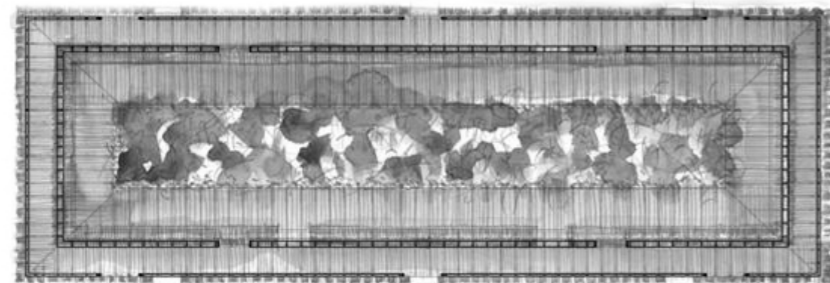
*Atelier Li Xiaodong, Architects of library surrounded by the landscape*



*“it aims to help its audience take the time to relax, to observe and then perhaps to start and talk again”*

---

*Piet Oudolf on Zumthors architecture surrounding his garden*



*There was a growing disconnect between riverscapes and the social consciousness, despite their increasing economic relevance. Waterfront locations were turned into a hard and apparently predictable and controllable infrastructure with diminishing appeal. The cities shut themselves off, turning their backs on the river. This rendered riverscapes of no interest for other uses or actually made them inaccessible over an extended period.*

---

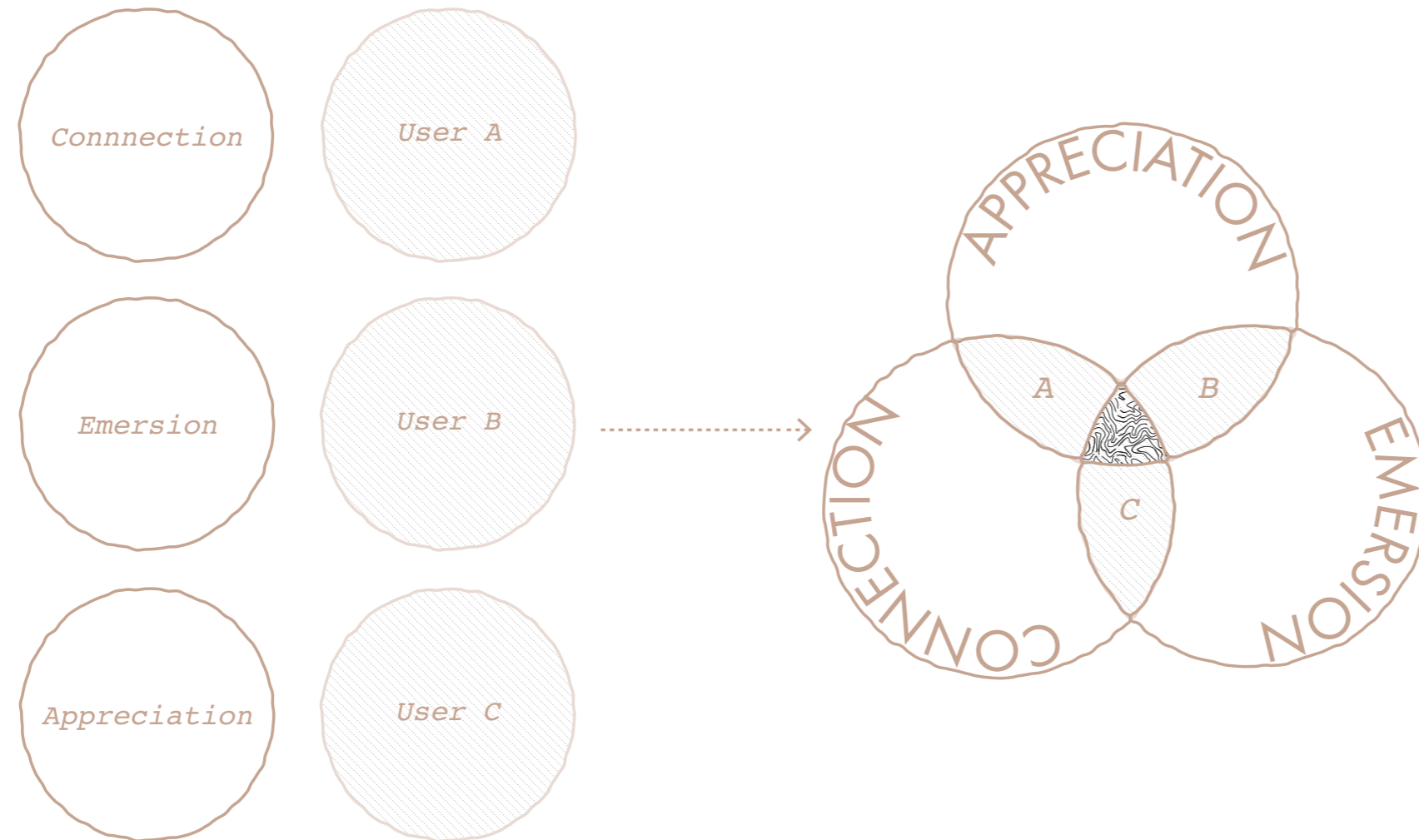
*Riverscapes: Designing Urban Embankments (Holzer, C. 2008)*

## 04 PRINCIPLES OF DESIGN ON SITE

The statement of intent for an appropriate design objective for the Tolka Valley should be...

**To try and re-establish the connection between the people and the river**

Due to the project's unique identity, the priority objective should be achieved by the layering of general and site-specific principles which could be applied to similar locations dealing with the same issue. Principles such as...



**Connection**

**Emersion**

**Appreciation**

**User Variants (site specific)**

The decision to use these set principles for the thesis design were pulled from the issues and my own subjective interpretation of the research that had been gathered. The principles are not separate, they all act as sub-sets of the same whole. Each principle is used as the guideline for site analysis and the testing of different iterations for the architectural scheme. Each one informs the subsequent principle and the combination of all of them together. This process can hopefully create *The Ripple Effect*.



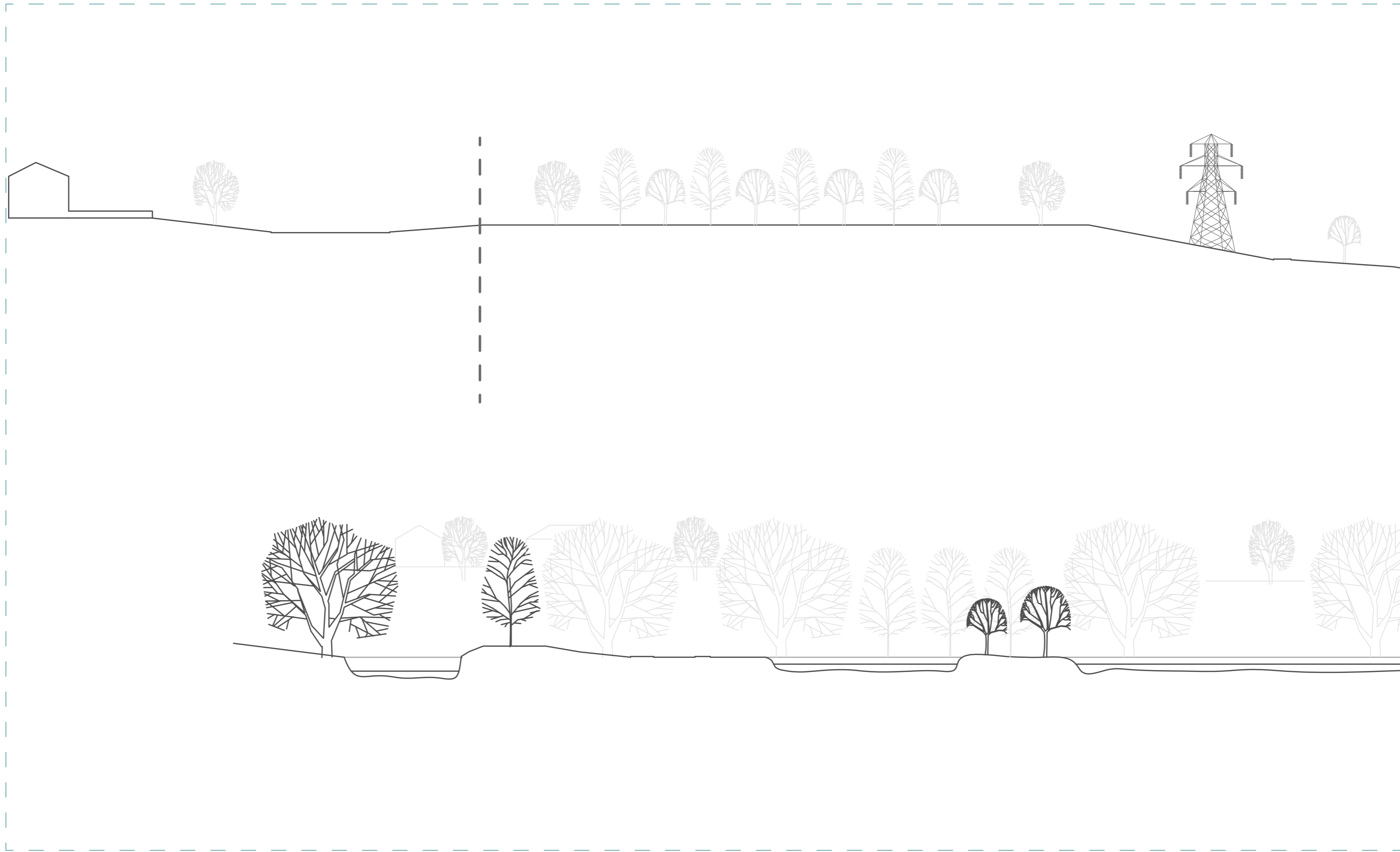


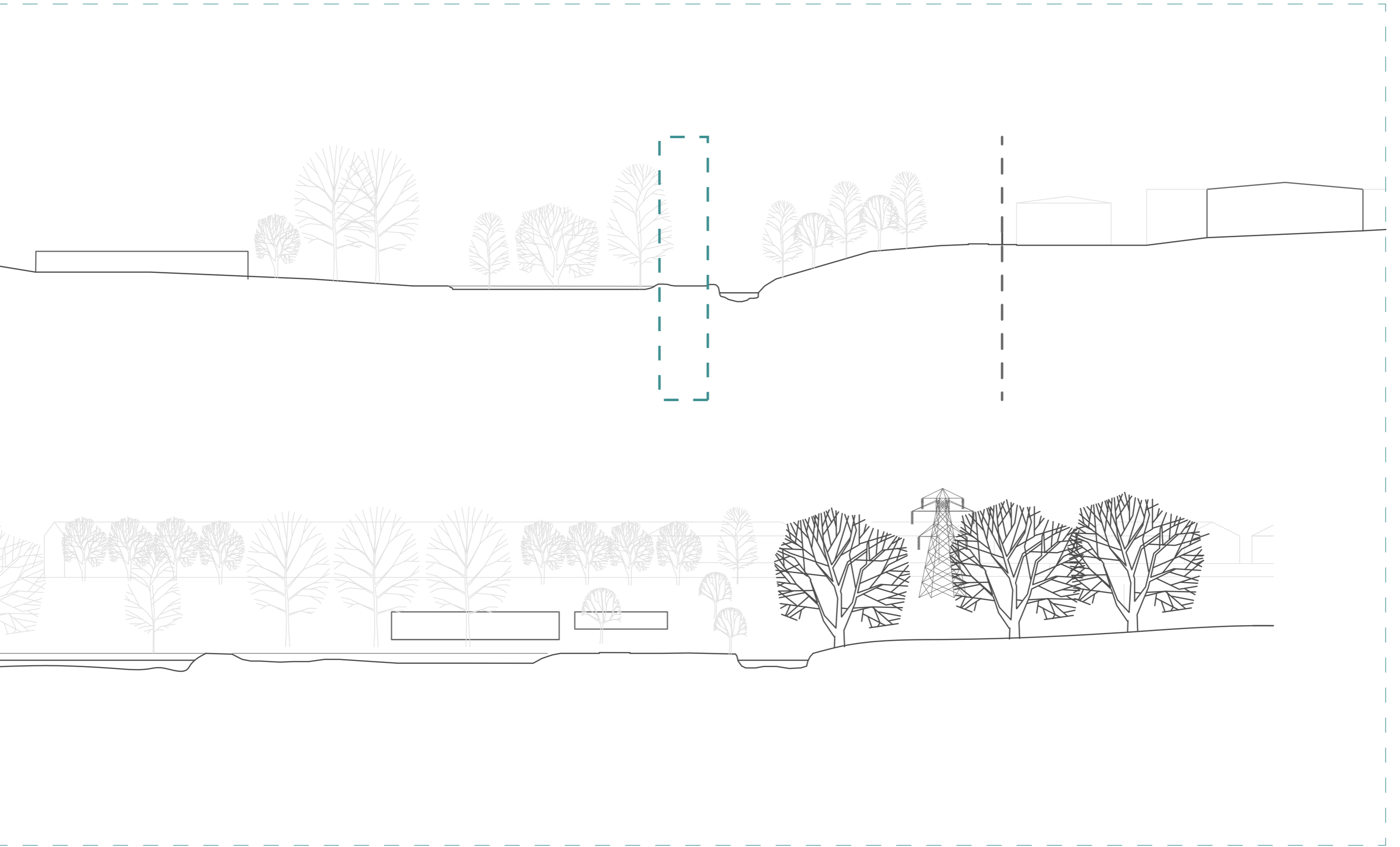
The chosen site is positioned at the heart of Tolka Valley Park. It is defined as an off-road track in a pocket of space between a series of ponds and the Tolka River (Green line) Springboarding from Heideggers analogy, there were many places along the stream to choose from to apply my design principles. This site was chosen because of its unique aesthetic qualities. Its varying degrees of sensory experiences and geographic logistics make the persuasion of participation for people and the application of the design principles far more achievable.

From visiting the site, the river's presence creates an inviting aesthetic distinction between the park and the urban fabric. Unlike the dominating roads heavily populated by the ongoing rush of traffic and the social division created between the multitude of residential zones, the presence of the river, even with the lack of activity around it, is still able to retain its instinctive approachability as a hard edge.

However, the river feels lost and hidden amongst the blocks of development surrounding it. The densification of the site has prevented freedom of movement to casually flow around the area and is most noticeable at the threshold of the park. Antisocial behaviour around the area has forced the Council to erect fencing and obstructive gates, making the entrance into the park less than simple.

The chosen site highlights both the social and environmental issues of the area. A physical and psychological distance has been created between the people and prevented accessibility to the river which could be a cause for the pollution that is ongoing at multiple points along its stream. The lack of connection and emersion has made people oblivious to the build up of waste which we dispose into our rivers, lakes and seas.







*Pond Looking back at industrial zone*

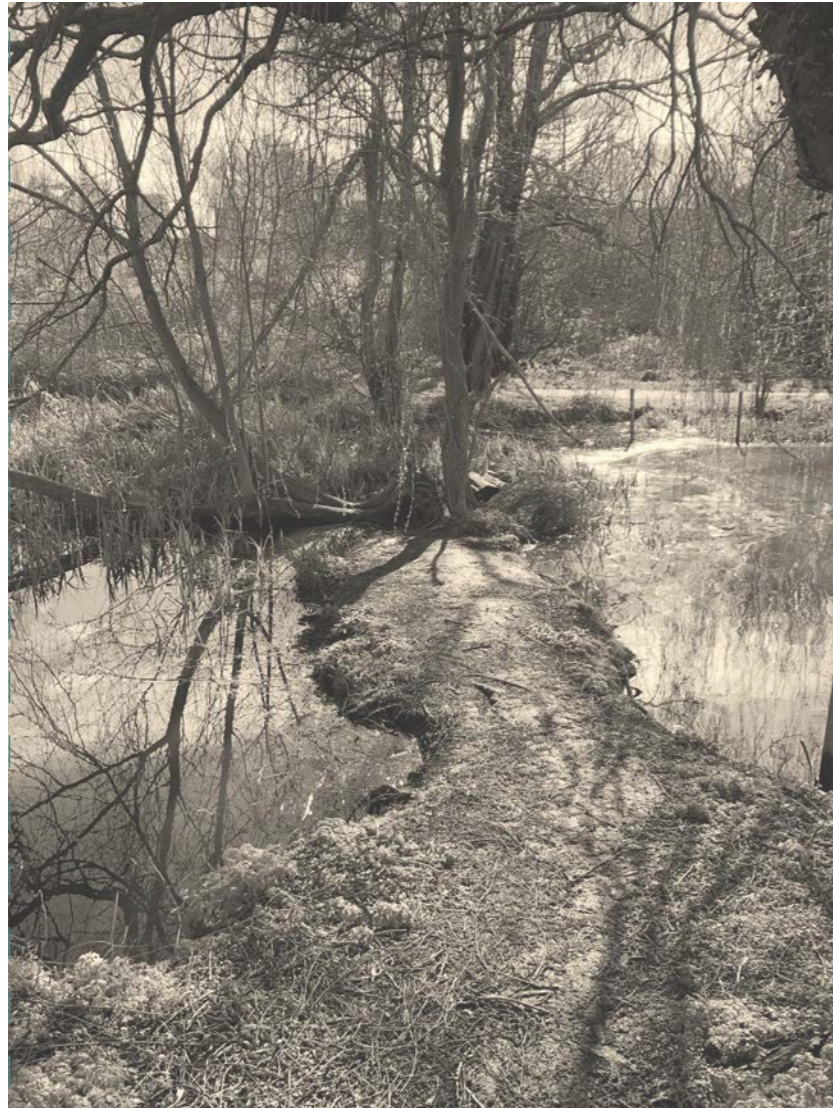


*Pond Looking towards Park warehouse*



*Slimmer section of pond*





*Buffer zone between both ponds*



*River coming out of covered area*

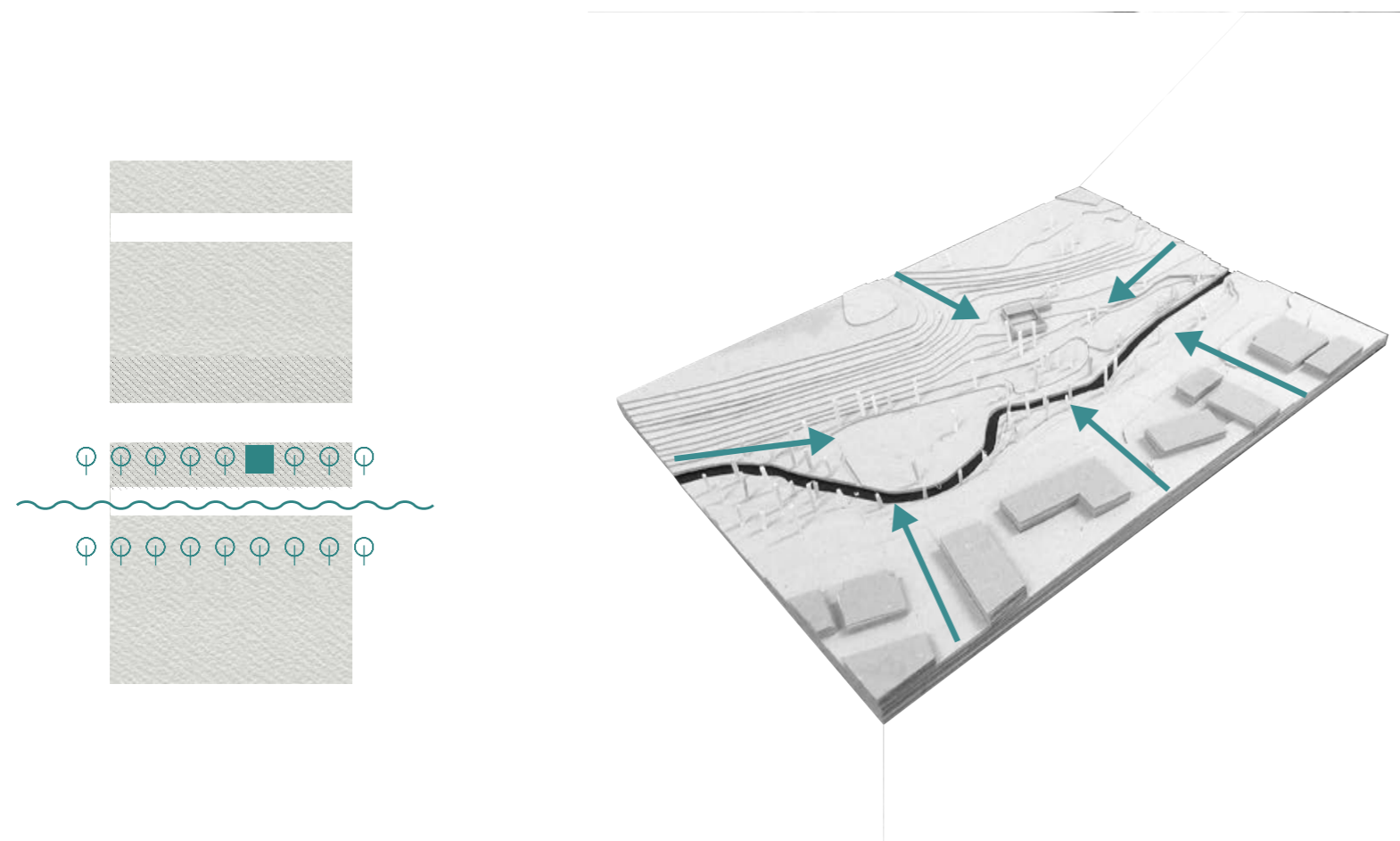


*River leaving site*



For much of the urban portion of the Tolka River there are broad parklands alongside its banks, However, over the years impounded concrete walls, weirs and the urban layout has created a disconnect between the river and the people resulting in the neglect and contamination of the water ( Drawing 2). As a result, the Tolka River is undervalued as an important entity of the site’s character, a similar issue faced by many polluted Irish rivers. The Tolka Valley must contend with sewage overflows and urban waste runoff downstream from Blanchardstown and upstream from agriculture runoff, “including misconnections whereby wastewater from houses is going into the pipe going to the river instead of the treatment plant in Ringsend” (Malekmian 2021).

“I have only ever known it in its polluted state “said a multigenerational local of the area for the river has long been polluted due to poor stewardship and wider acceptance of pollution (IWT.ie, March 19). In 2014, after being repopulated with trout and salmon, hundreds of fish were killed in the Tolka River after the waterway had become choked with a white foam over a 2km stretch from the Finglas Road Bridge near Glasnevin Cemetery (Kelly, O 2014). On the 15th of November 2021, contamination from an oil spill was found entering the river downstream of St. Mobhi Road Bridge with the source believed to be an accidental spillage from a private home heating oil tank which for a once-off offence isn’t too harmful but only exacerbates problems because of the Tolka remaining as one of the countries most polluted rivers. (Malekmian 2021). Continued residue remained in the water alongside piles of rubbish which can be fatal to species that live along its banks with the slow breakdown of the substance. Even still, the resilience of the site is shown to be “one of the most amazing rewilding areas that are full of life, even with the pollution” according to Padraic Fogarty, campaign officer at the Irish wildlife trust and local resident. Nevertheless, this continuing problem for the city is not only affecting the ecosystem of Tolka but also Dublin Bay.

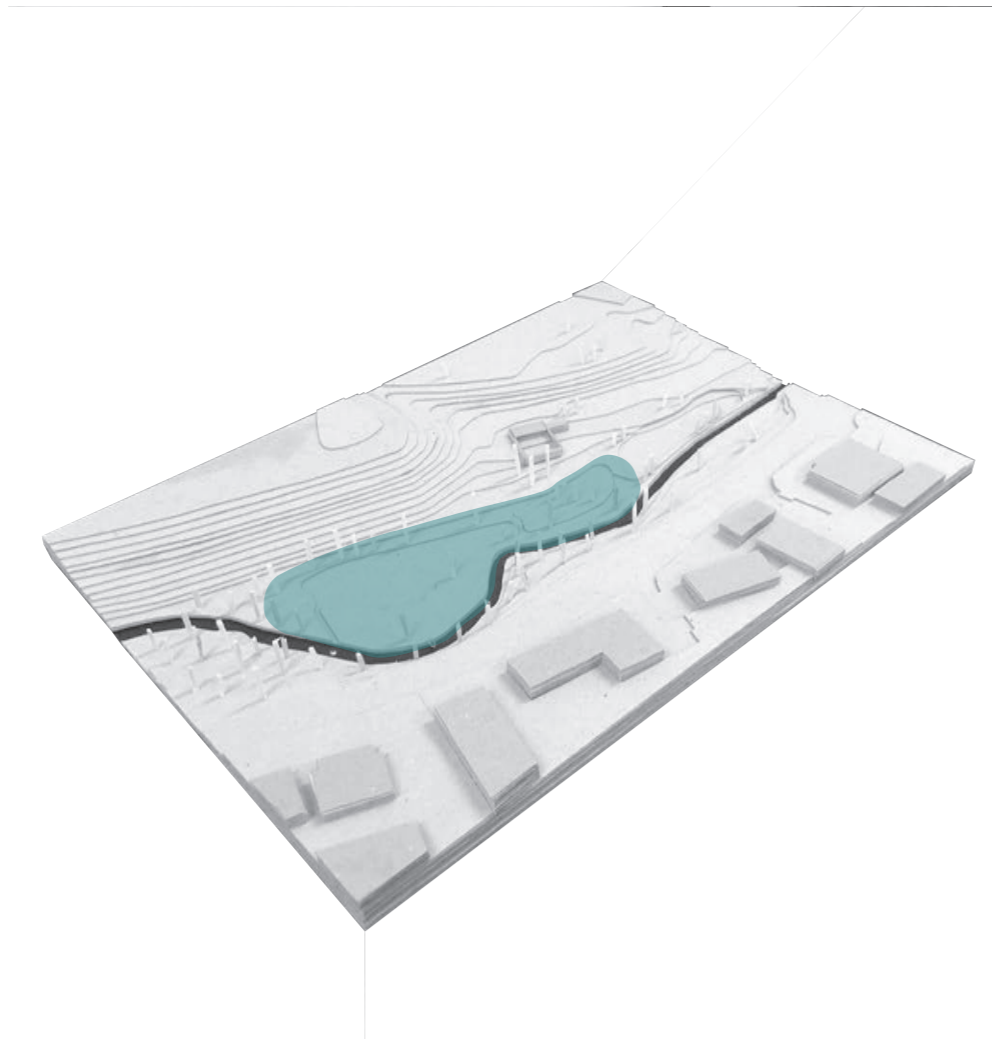
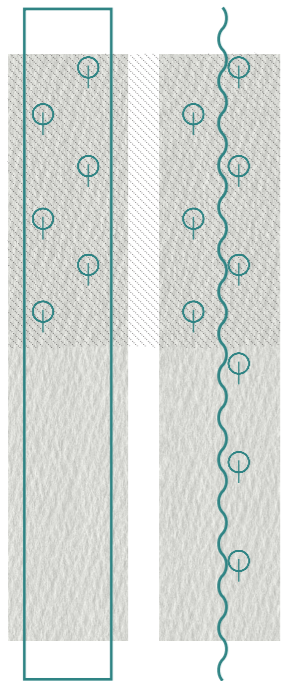


## Principle 1: Connection

With the predicted rise of city living the social trends show an increase in indoor activity with “ 54% of the world’s population living in an urban environment; and by 2050, it’s estimated that this percentage will have increased to 66%” (BDCN Network). The need for accommodation can only accelerate the issue of people’s inability to accessibly interact with the natural elements within an urban setting. This ultimately will increase the likelihood of future psychological and physiological harm to those cut off from the natural surroundings. Contemporary Irish construction habits should always attempt to strengthen the residents’ invisible connection to their natural settings through physical ones.

For the Tolka Valley, the connection principle is about creating physical and social connections. The configuration and layout of the site restrict any freedom of movement or any potential serendipitous discovery that different community cohorts can share together. Natural connections with the site’s river can hopefully be the catalyst to instil an otherwise forgotten pride of place. Humans who act out their biophilic tendencies through a connection to their surroundings generally perceive themselves as being more content. When we are with nature, we are humble and accepting of our positions in the grander scheme of time and place.

So appropriate architectural interventions should consider physical connection in order to balance the fusion between both worlds. By acknowledging and accommodating human nature we can hope for “ the sensible emerging in which one inhabits a place becomes a mindful delightful participation in the landscape” (Rudofsky. B 1964).



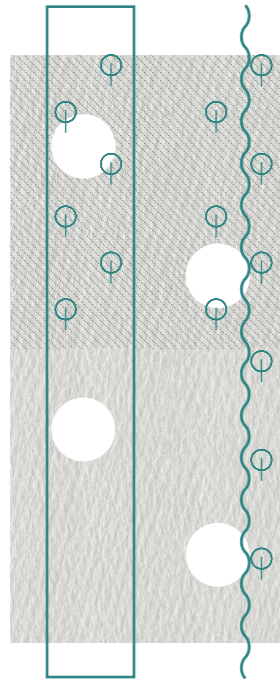
## Principle 2: Emersion

Biophilic beliefs can encourage communal philosophies built around the concepts of ambition and stewardship which could help the river heal over time. However, to be tangible as a sustainable design, people need to be emersed in the natural environment to stimulate their invisible connection.

Whatever the activity or type of architecture that is been promoted, the user must not watch from outside but be surrounded by that which they want to be persuaded by. Examples currently operating on sites like the popular Green View Community Garden and The Royal Canals Kayak Club, both in proximity to the river, promote this healthy interaction and participation with people and the natural elements of the site.

The forgotten Cabra Baths were built by Dublin Corporation in the 1950s as an outdoor public swimming pool along the south bank of the Tolka River that was filled by its waters. It was a leisure infrastructure which encouraged residents to interact with their environment. Purposeful interventions like these can only be achieved if future design comprehends the rich and diverse idiosyncrasies of people and the places in which they share these experiences.

My discussion with people highlighted the benefits that immersive participation should reinforce a sense of ownership with the community and hopefully result in a more governed and rigorous protection of the health of the water as “the success of an architectural design is measured by how much value they add to their users’ daily lives” (Voegeli, A, 2020)



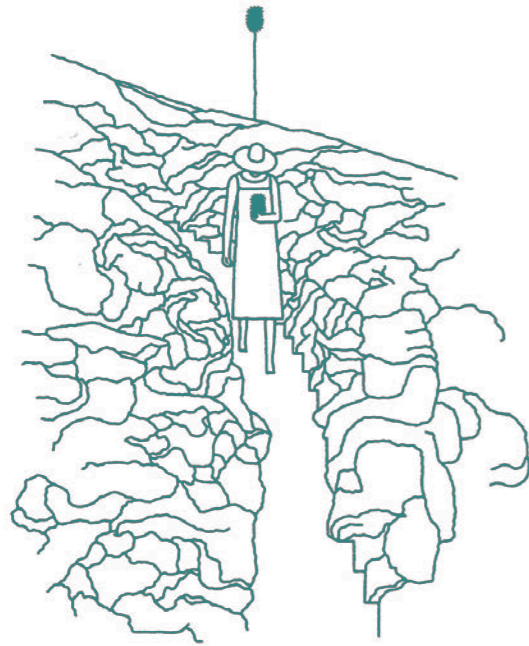
### Principle 3: Appreciation

While appreciation is ultimately an end goal it is also a consideration regarding feelings of admiration experienced on and off the site. What my research thought me was that feelings generated from experiential moments can trigger a sense of admiration which incentivise future visits to the same location.

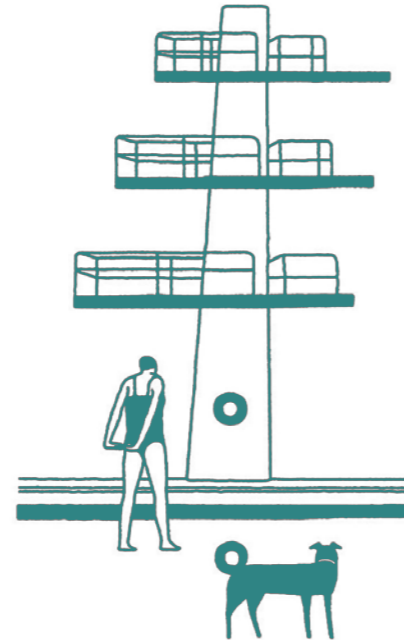
Architecture should explore and seek these opportunistic moments where the design and the landscape are linked to make experiences memorable for the user. Depending on the objective, in this instance the river and its environs, these moments can be related to a variety of sensory details but ultimately arrive the person at some form of appreciation for the place they are experiencing.

The site was chosen for its aesthetic quality, therefore, should have more positions to highlight at different points in and around the water

## WANDERER



## BATHER



## CUSTODIAN



## Principle 4: User Variants

Everyone is different so any intervention shouldn't just accommodate for a single user type but try to cover as much as necessary. Each site will have different issues to solve that different user types would slot in depending on the main objective. For The Tolka Valley three types of people are considered for

### THE WANDERER:

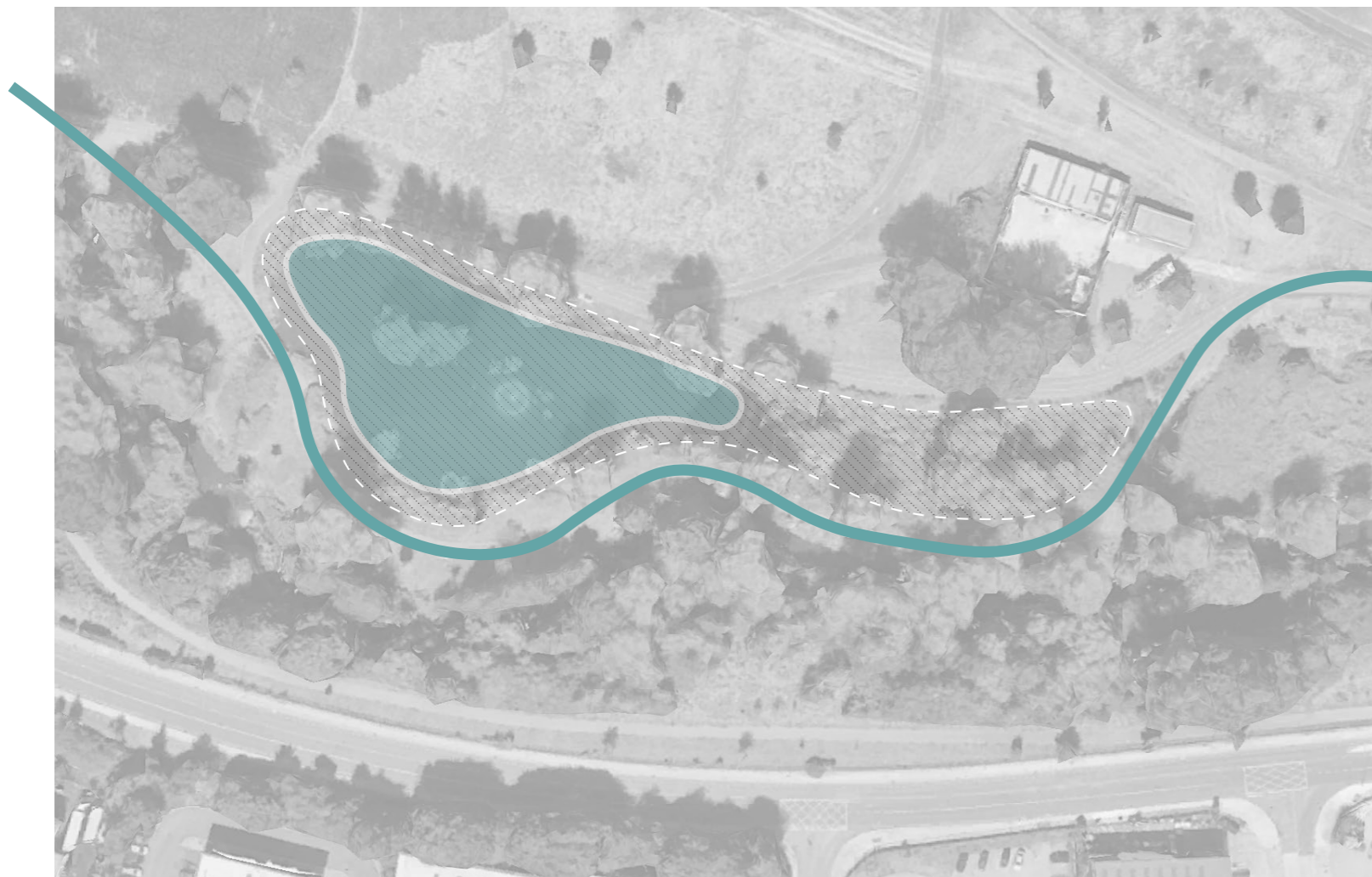
Someone with no objective to participate in activities on the site but benefits from floating through and hopefully can be enticed to stay and enjoy.

### THE BATHER:

Someone who comes down to the river to emerge in the water. Whether it is to sit and belong in the space for quiet contemplation or to swim in the ponds, the bather enjoys the space leisurely

### THE CUSTODIAN:

It is already shown that many of the locals have an interest in planting and working with nature with the abundance of community gardens. The custodian takes on the responsibility of maintenance for the health of the river as well as the filtering ponds for the purification of water for the bathers.



*Like veins and arteries*

*Rivers and canals are waters of connection and communication*

*The flow of sentences or rivers establishes a continuum, so that in communication they link ideas and expressions and in connection they link place or time*

---

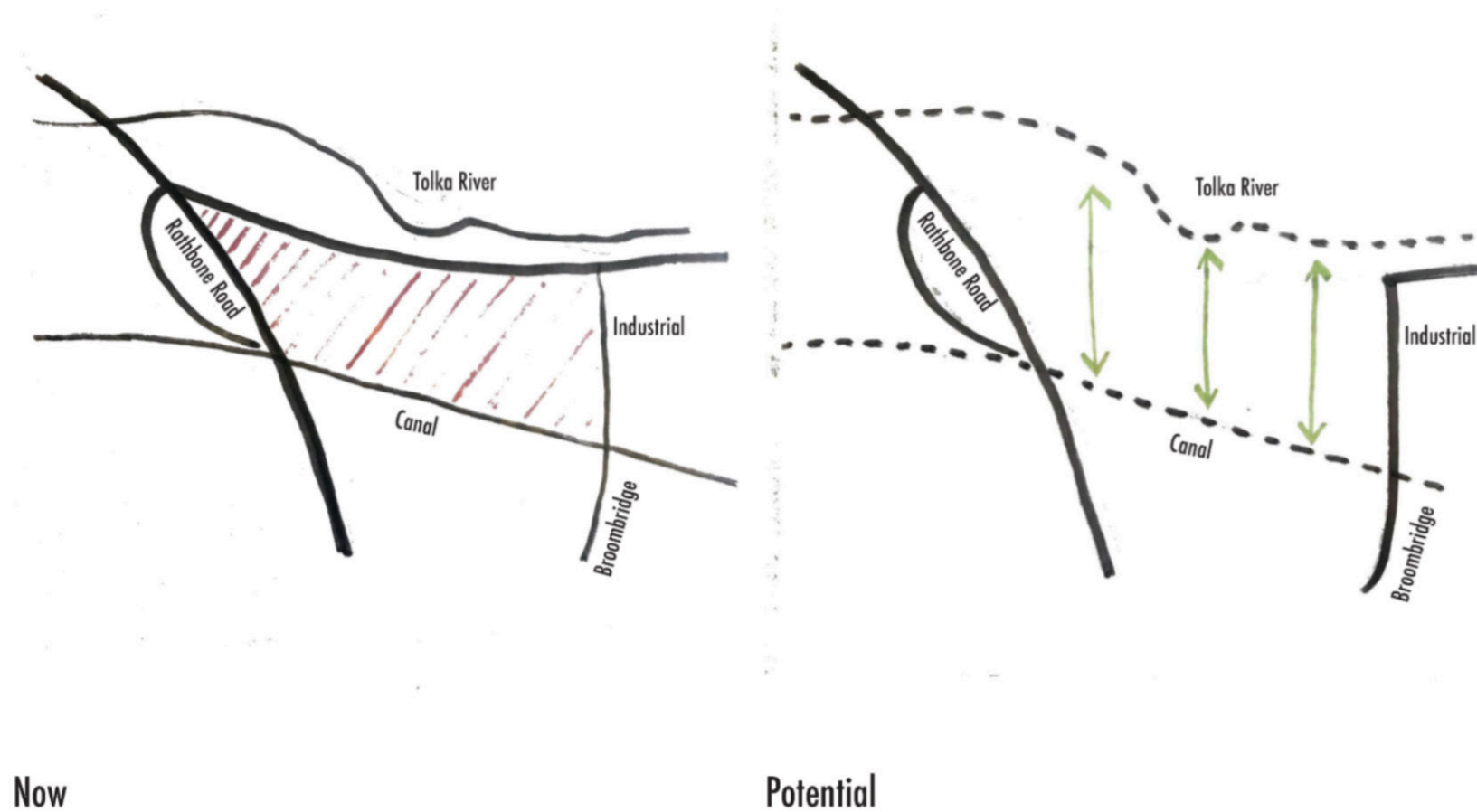
*Water and Architecture (W. Moore, C 1994)*

## 06 DESIGN SYNTHESIS

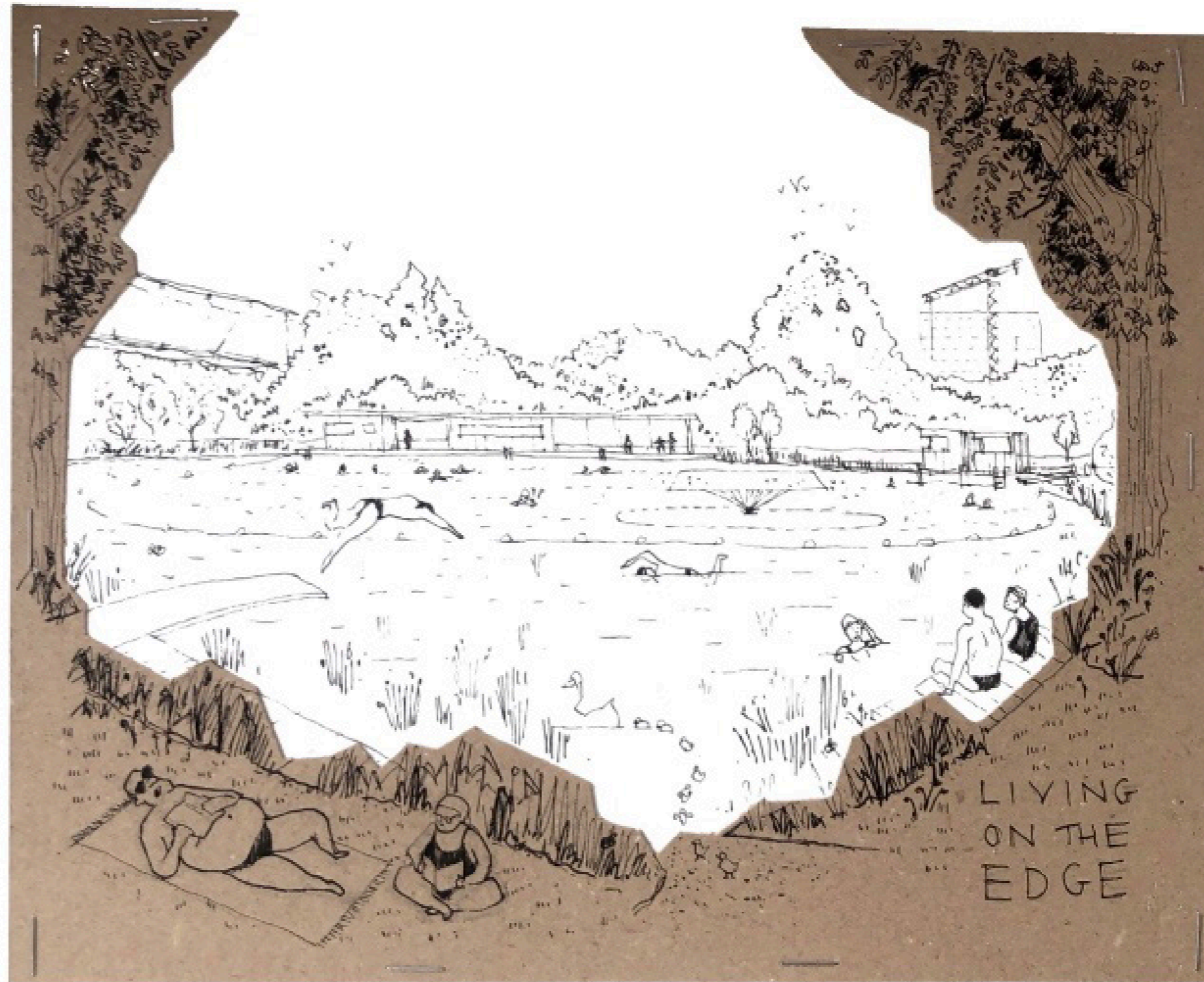
An appropriate intervention that establishes the experiential design principles on the site must come from reinforcing the forgotten relationship that the people of the area once had with the water through the defined principles.

Architecture exists in the interaction between interior and exterior. Its story originates from the differentiation between the two and can never be separated or designed in absolutes. “We can’t survive in the middle of emptiness like a desert but neither in high-density zones which feels oppressive and discomforting” (Fujimoto. S 2008). Space is about relationships and architecture can generate various distances of interaction between people and space. Buildings that capture the appropriate level of space between the inside and outside can create solutions for problems and opportunities because it accommodates the needs, behaviours, and emotions of the people that inhabit the space.

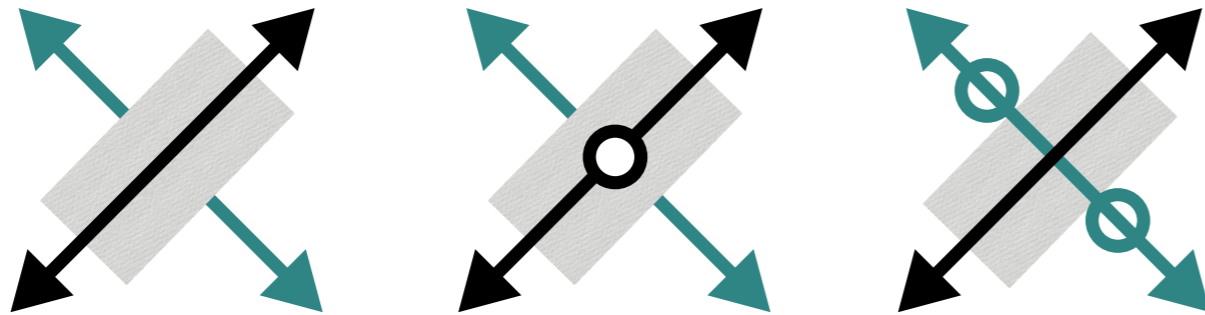
Donal Daly head of EPA places people at the centre of connection claiming that water quality should be improved through consultation and involvement of the public”. A starting point for the engagement is meeting at the river. “We found we could hardly get the children away from the river once they had been introduced to its diversity of life”- Rivers are crucial to our relationship with the environment because water is the vital link between all the ecological and human communities within it







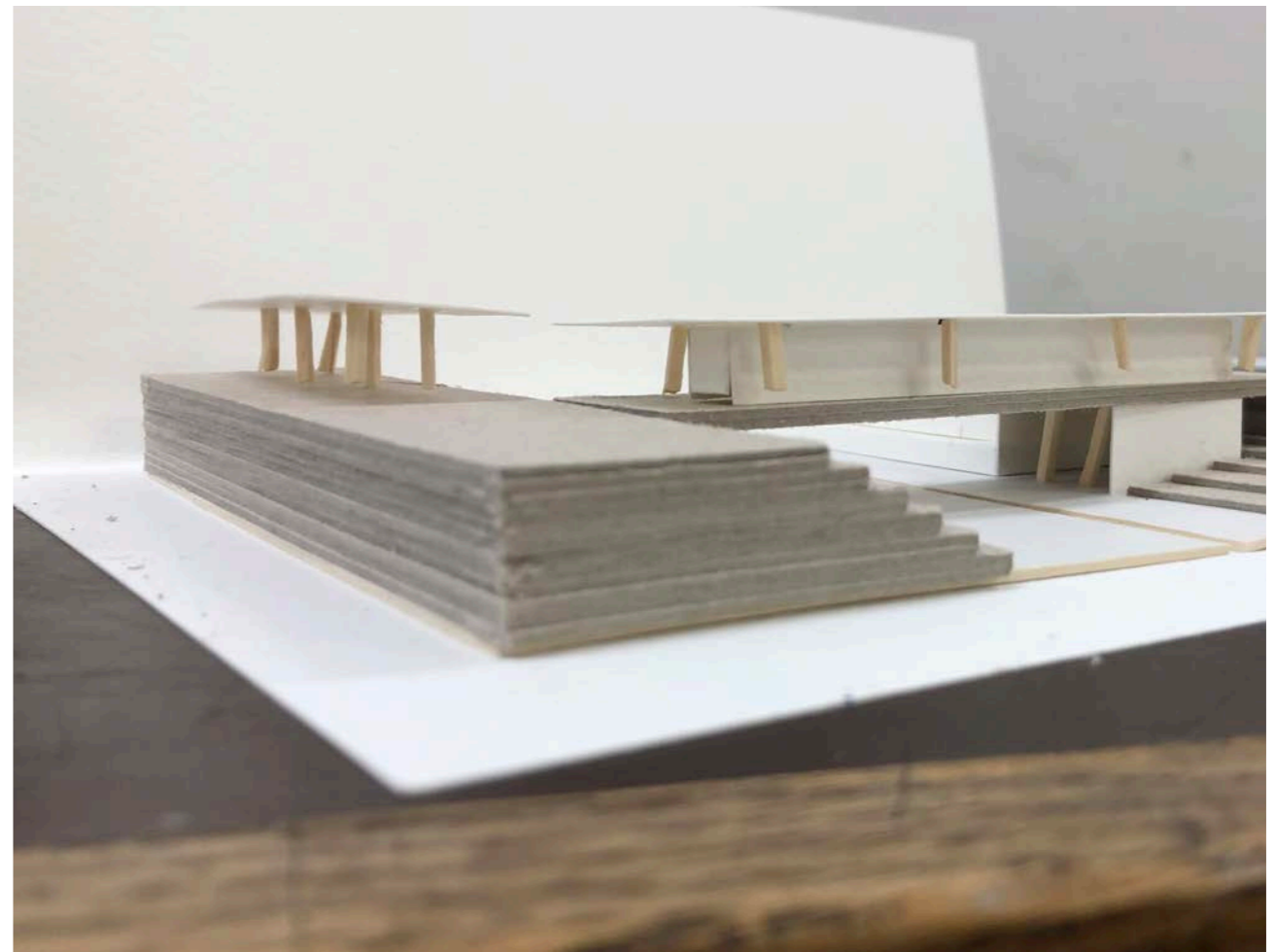
The Crossing

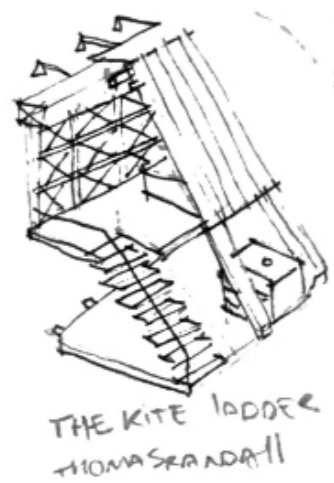
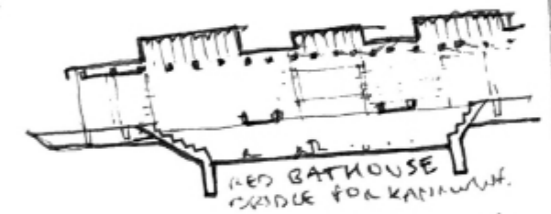


The Underpass

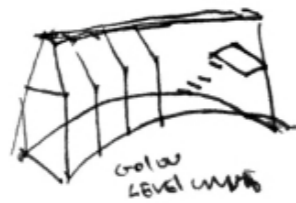
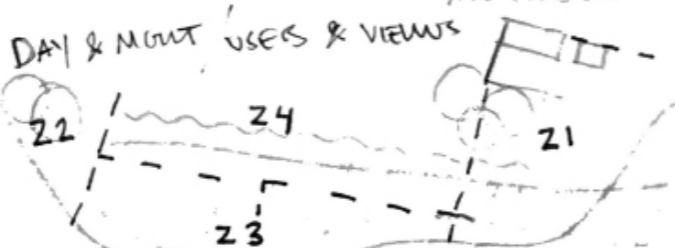
Enforcing the historical ideology of the Tolka Valley felt appropriate to improving the connectivity of the space. The bridge not only creates connections across the water but also establishes a locale and sensible place where both man and nature exist symbiotically. The symbolism of the bridge acts as a point of crossing but also as a locale to meet. A bridge construction supports movement on two axis. Human movement above is separated from nature's movement below.

This relationship, which includes both water and architecture, mutually benefits the inter-relationship of the people who live in its proximity. European cities like Utrecht and London (see Appendix 5) faced similar problems through the actions of twentieth-century design and only now are attempting to redevelop and make good the people's connection to their multiple water routes making them the integral elements of the identity of the place once more, encouraging communal growth to occur at its banks.

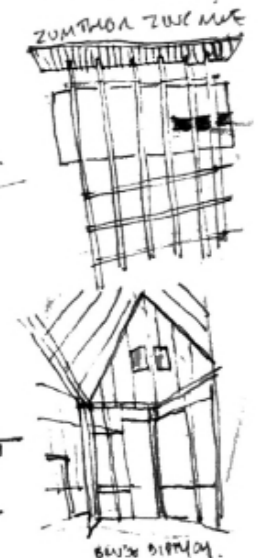
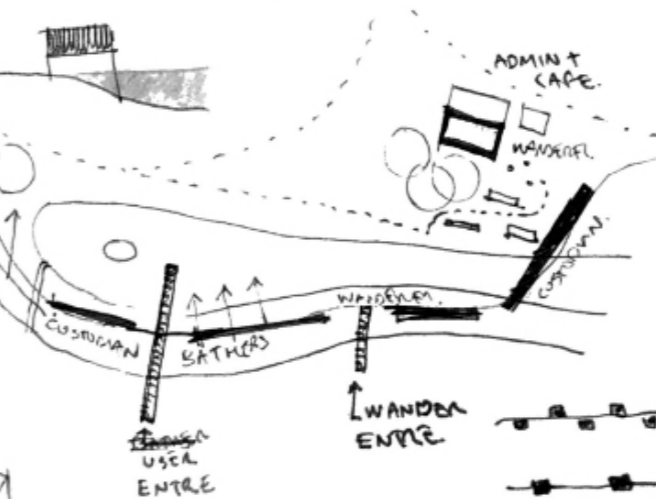
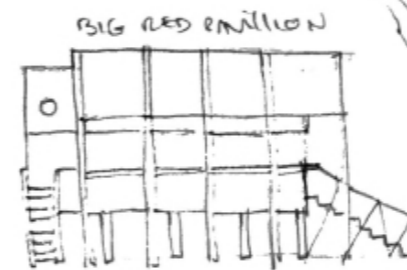
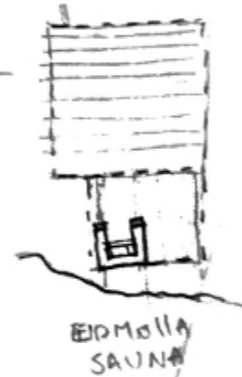


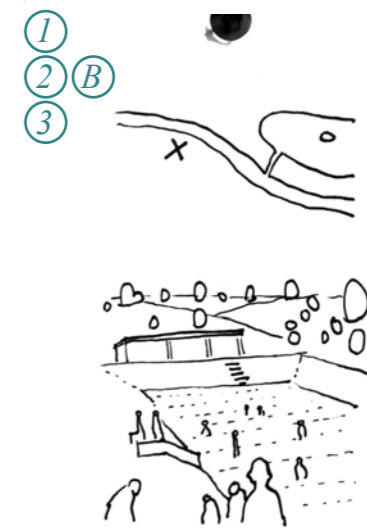
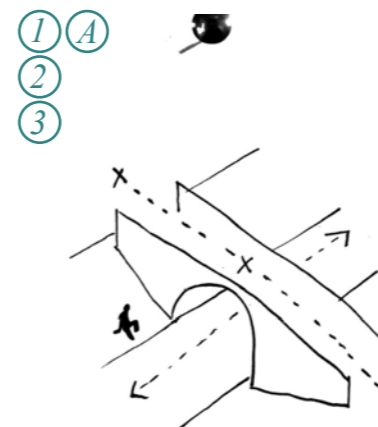
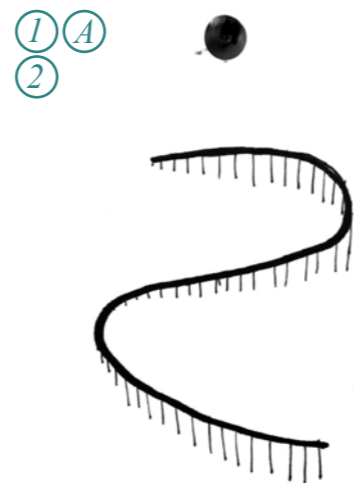
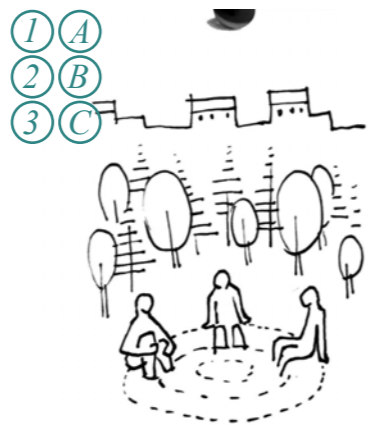
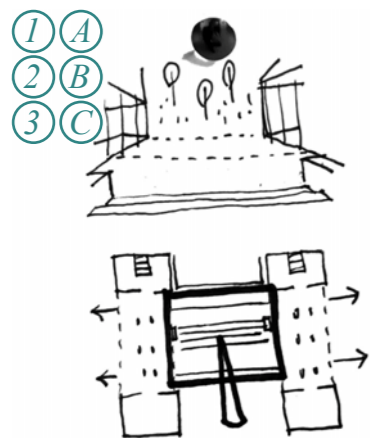
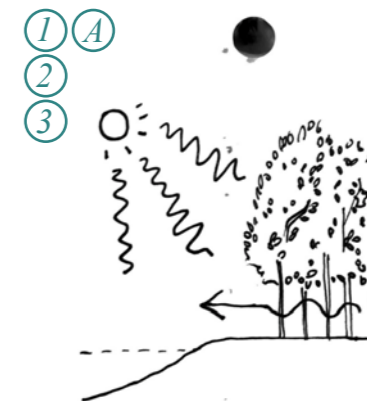
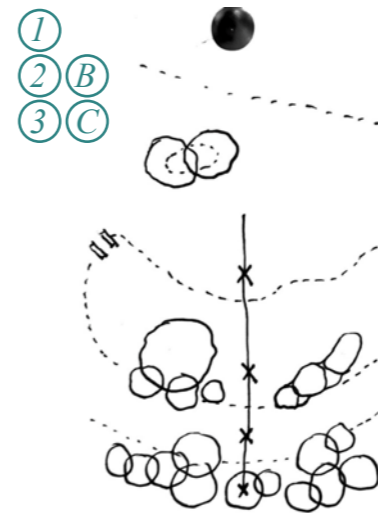
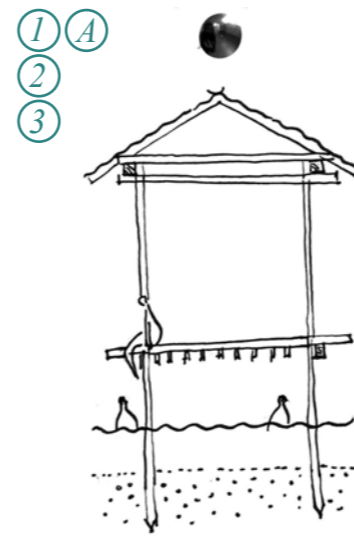
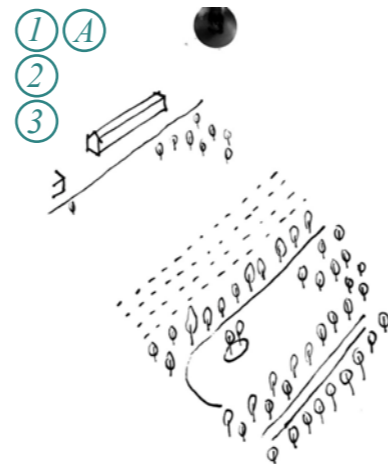
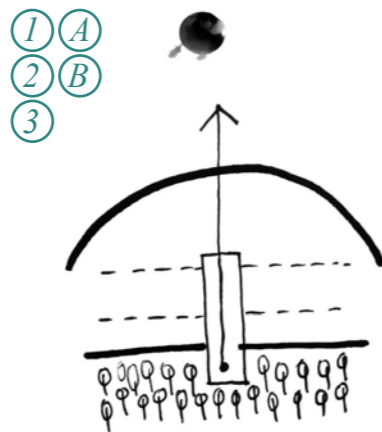
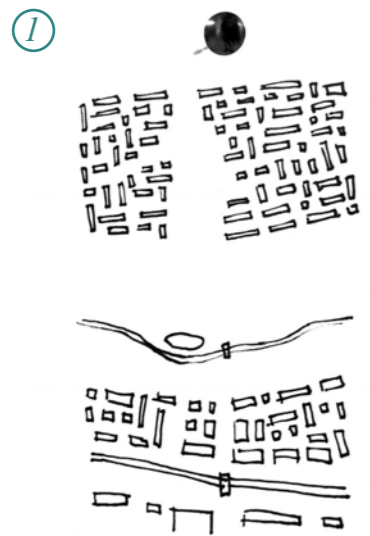
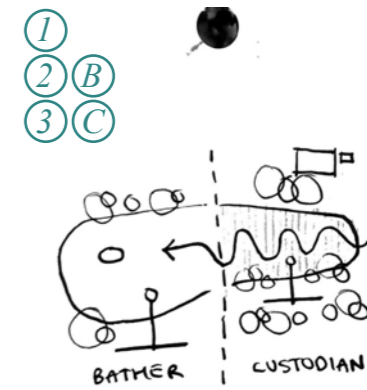
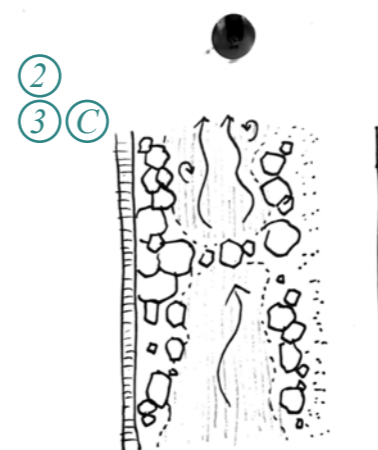
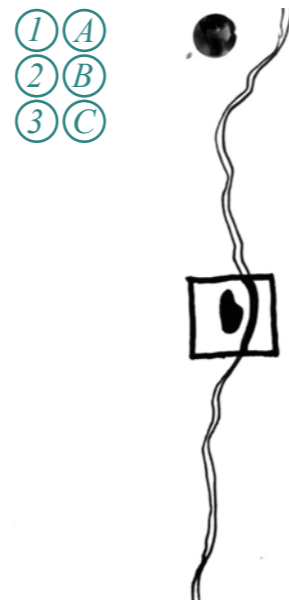
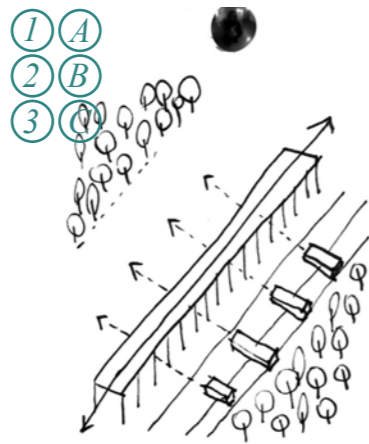
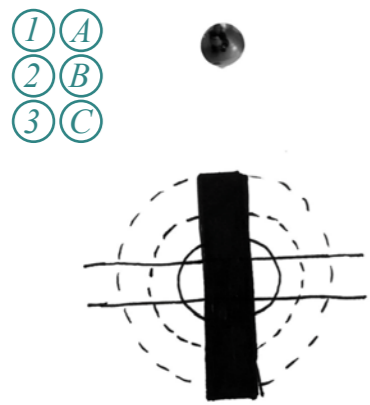


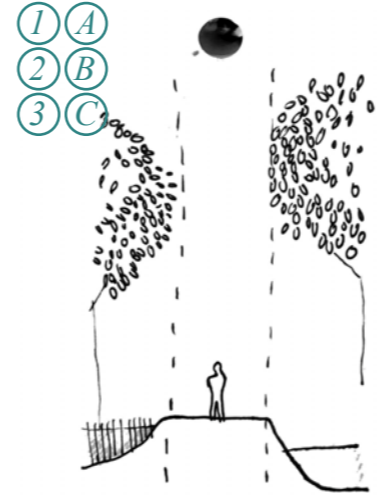
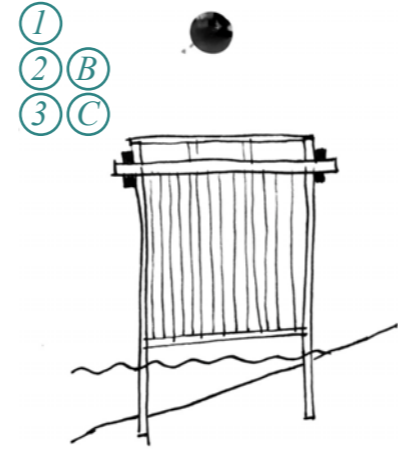
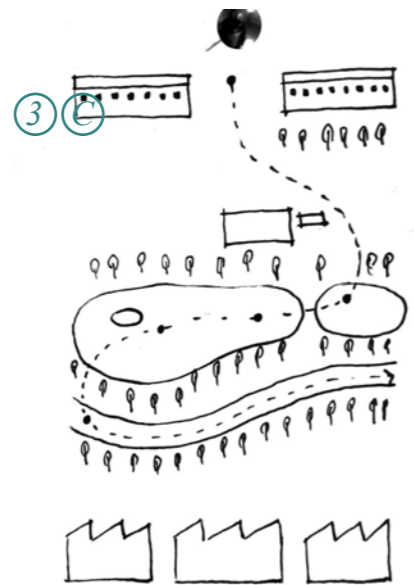
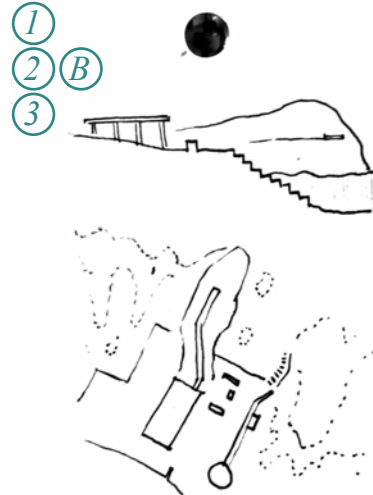
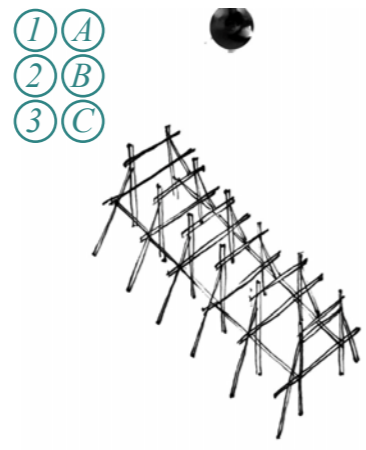
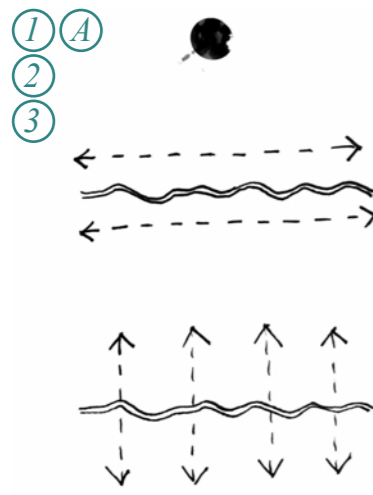
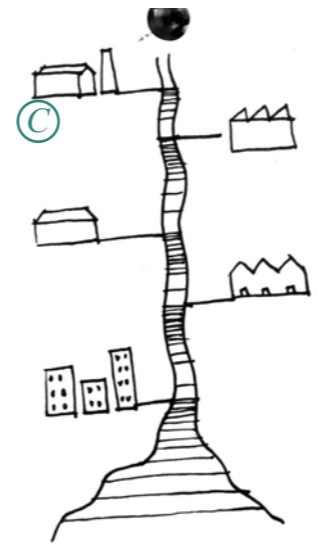
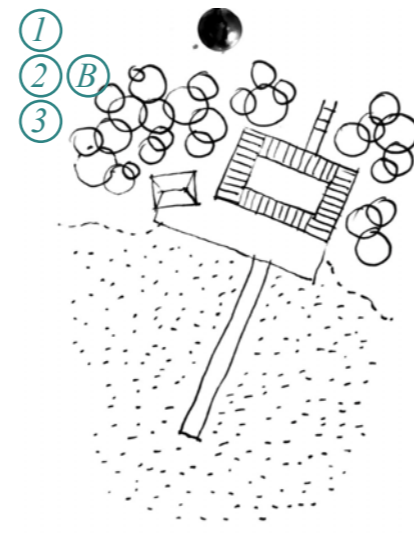
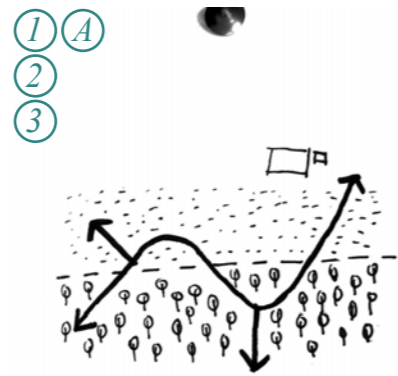
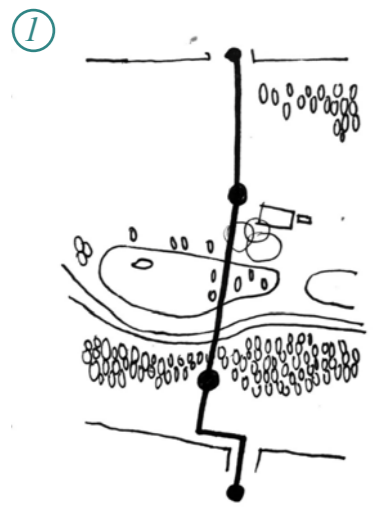
DAY & NIGHT USES & VIEWS



- 21 - BASE STAIR
- 22 - B/C TESTING
- 23 - B/W INTERACT
- 24 - W VIEWS







The collection of sketches was a process of reflective research. The multitude of ideas and beliefs only became relevant and understood in the relevance to design when laid out as one thought. Like the principles of design, each idea is a subset of a whole and only makes sense when the different observations fuse

*1 Connection*

*2 Emersion*

*3 Appreciation*

---

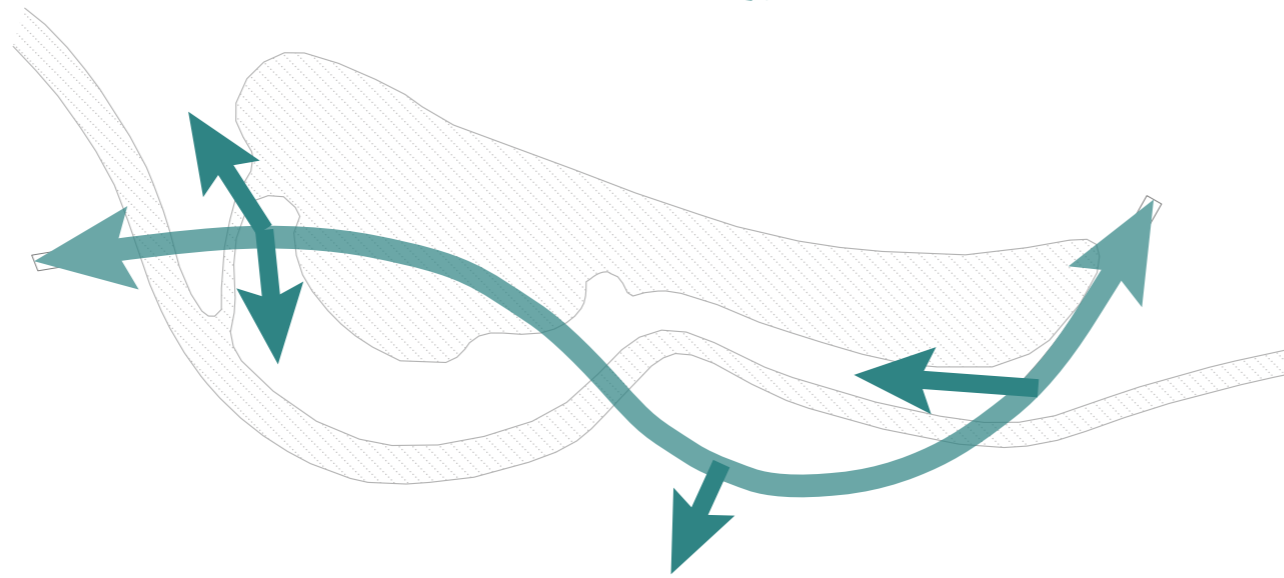
*A Wanderer*

*B Bather*

*C Custodian*

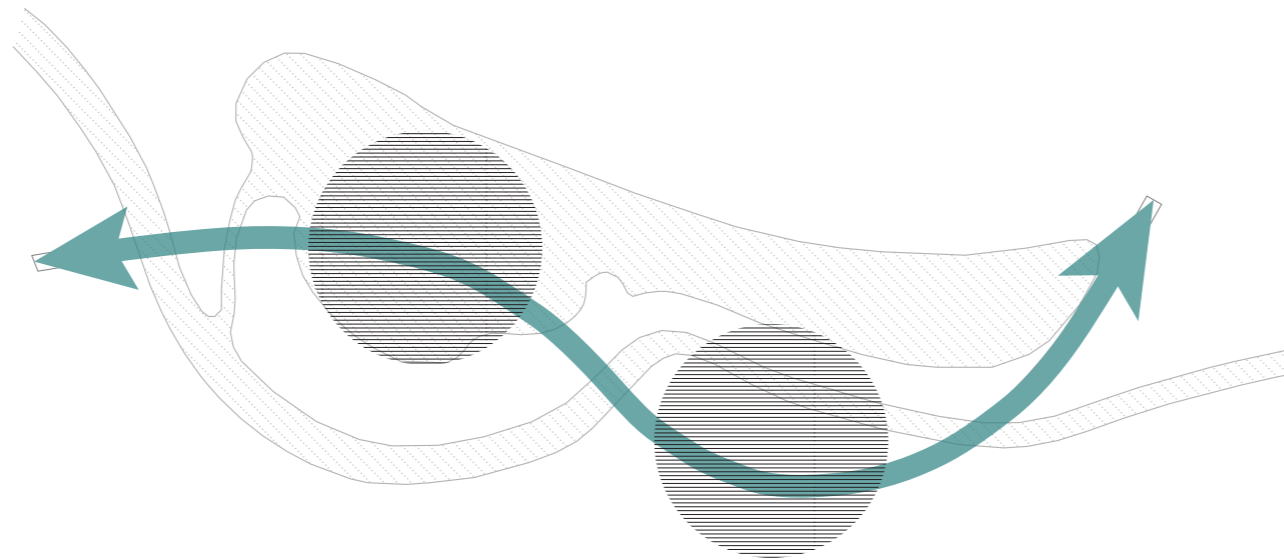
### CONNECTION

- The meandering route allows a balance of connections working along both axis
- Freedom of choice is created by the varying exits
- It makes the route feel more safe



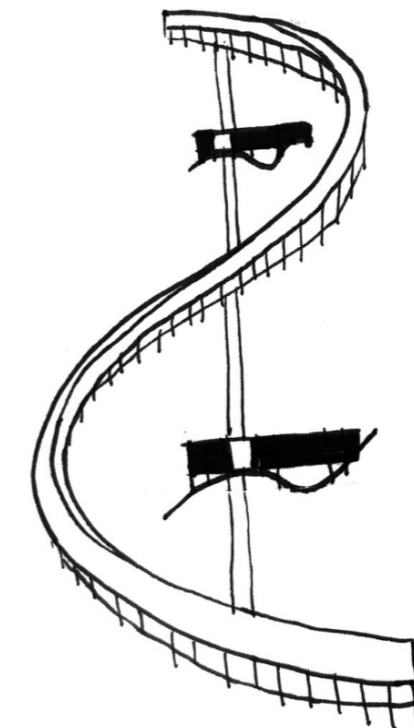
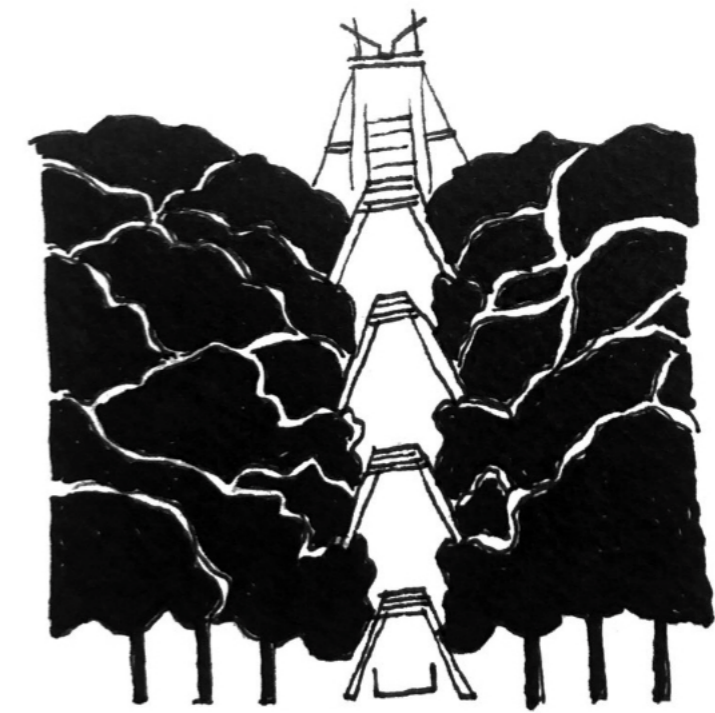
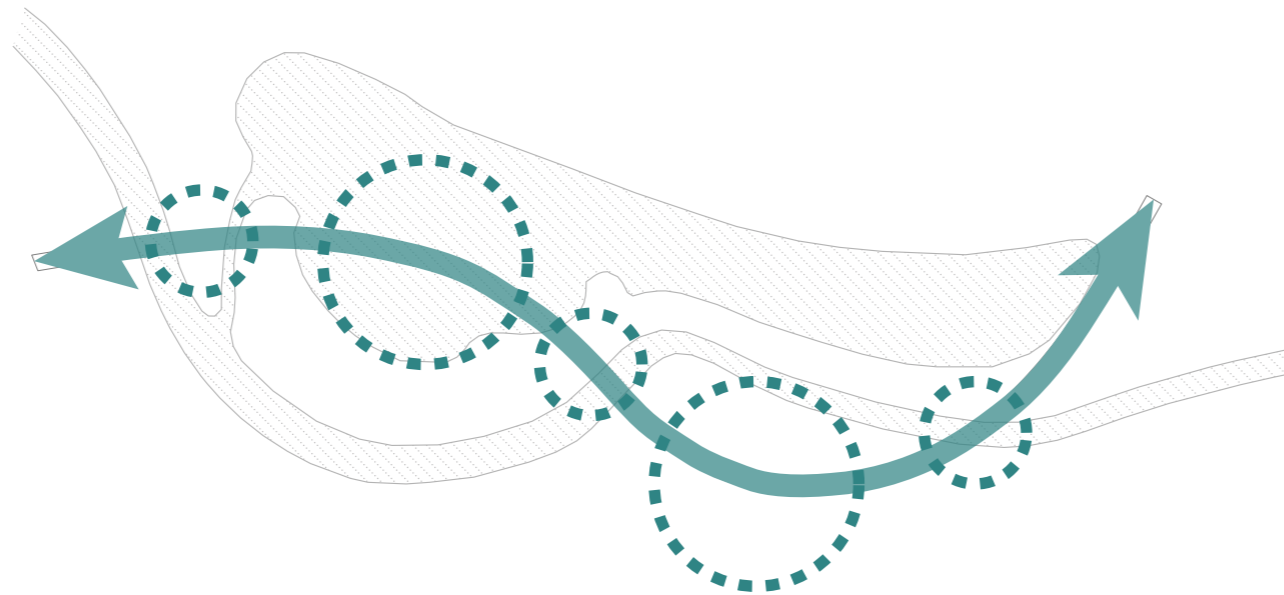
### EMERSION

- The meandering shape allows more movement and exploration of the site
- The bridge emerges the wanderer in water and wooded environments
- The bridge creates isolated pockets for complete immersive experience



### APPRECIATION

- Sensory variety along the route created by moments
- The unique moments offer the wanderer a chance to observe the site in a different ways
- The nodes tend to appear at a point of transition between land and water



### CONNECTION

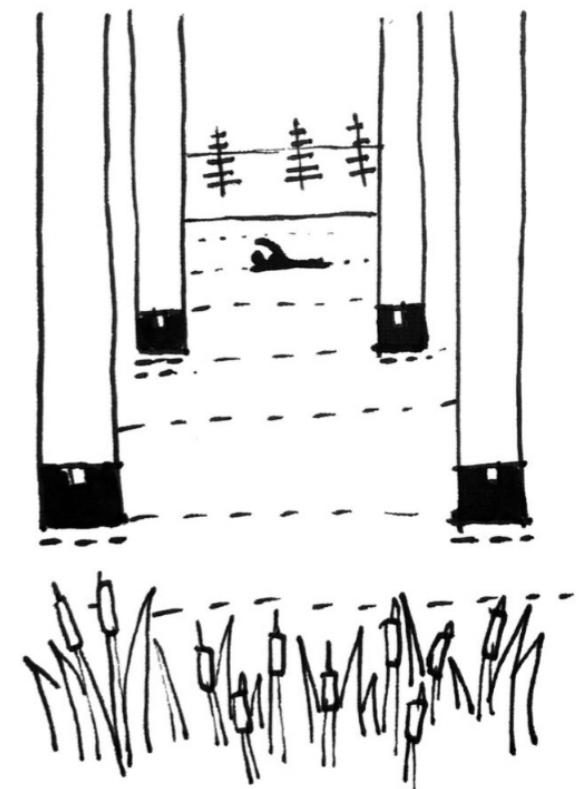
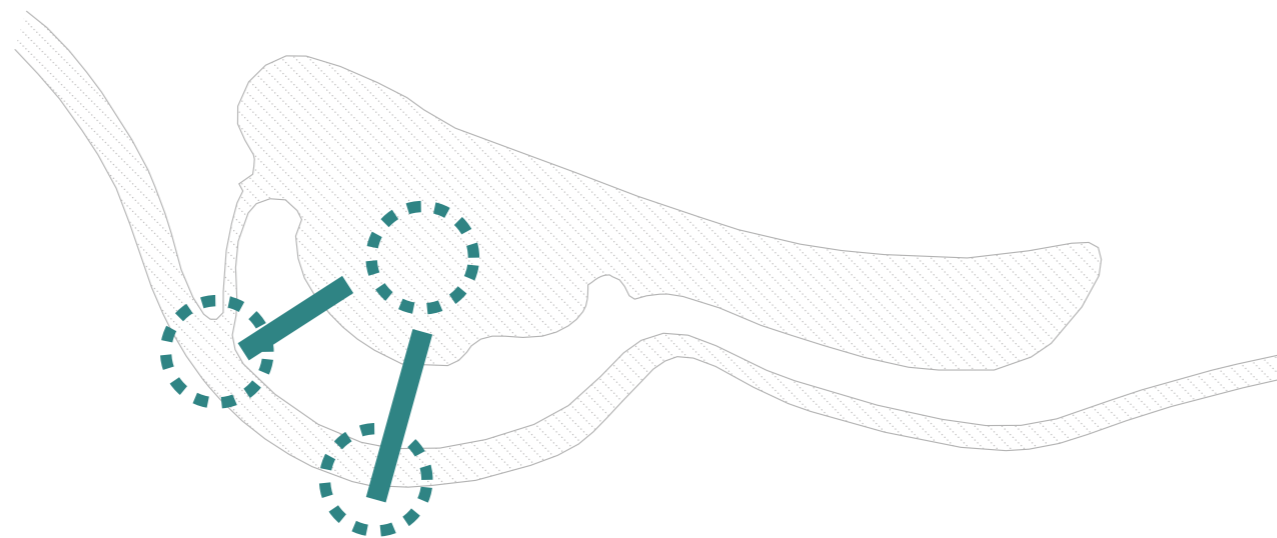
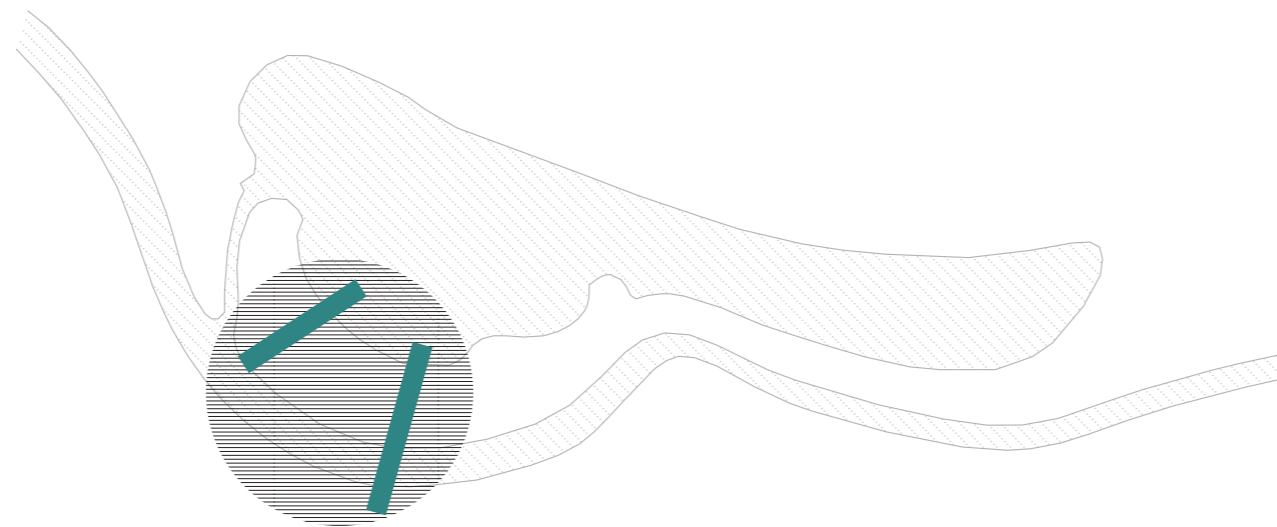
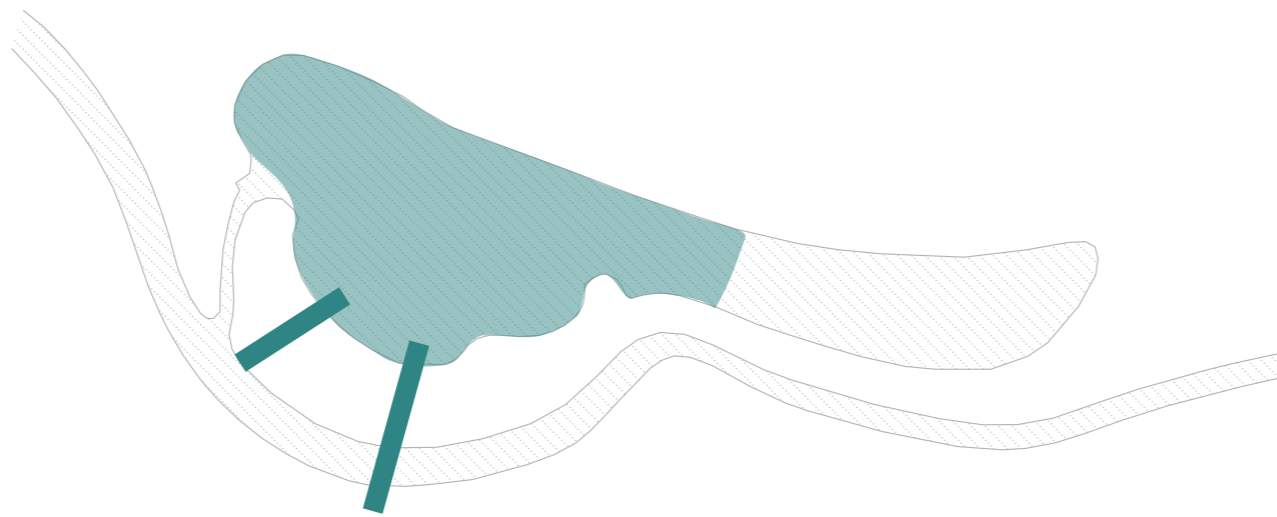
- The structure has a direct connection from changing to swimming
- It connects the user across multiple terrains
- The buildings aren't just connections to the pools but as connection points for people to meet

### EMERSION

- Brightest part of the site allows sunlight for changing
- The architecture acts more as covered shelters than rooms to allow nature to surround the user
- The wanderers bridge creates a protected space guarded by the bridge and river either side

### APPRECIATION

- Seating over and by the water offers views of the river
- The ability to be able to outdoor swim in nature is unique
- By leaving a lot of land around untouched, the bather doesn't have to use the facilities offered and can swim from any point





### CONNECTION

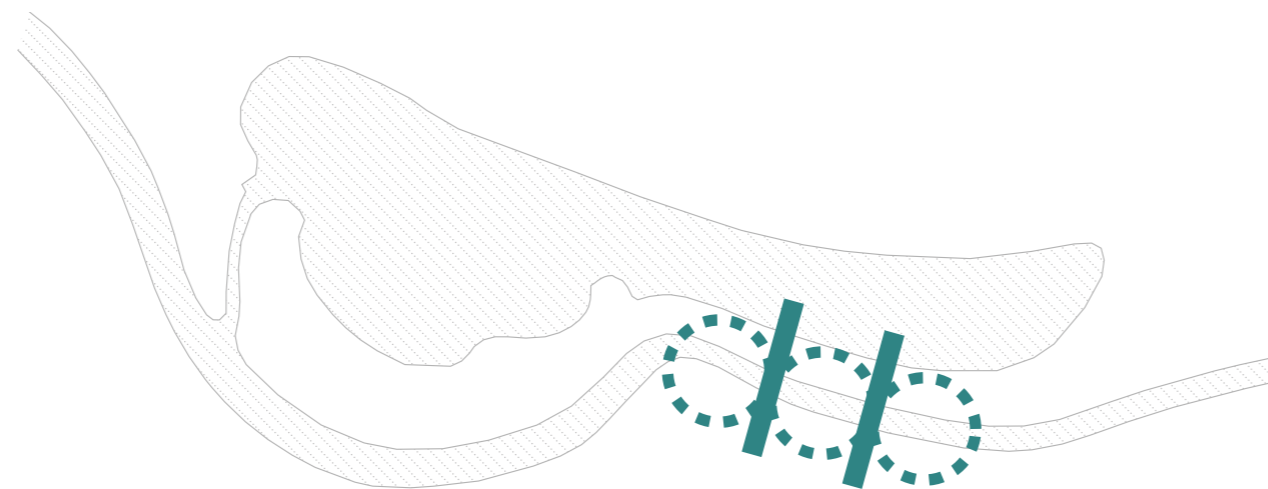
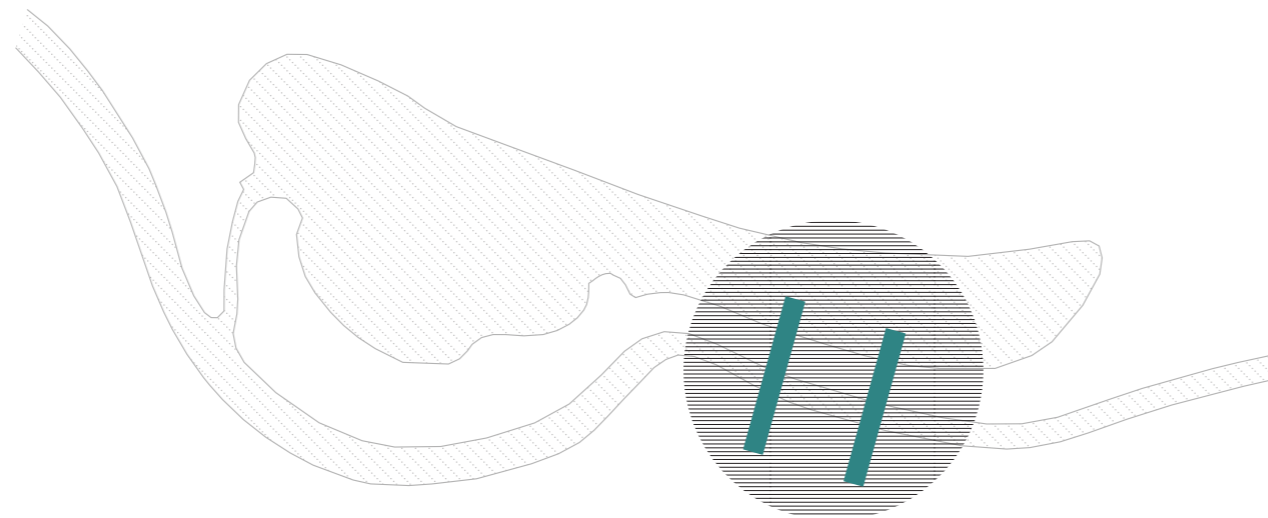
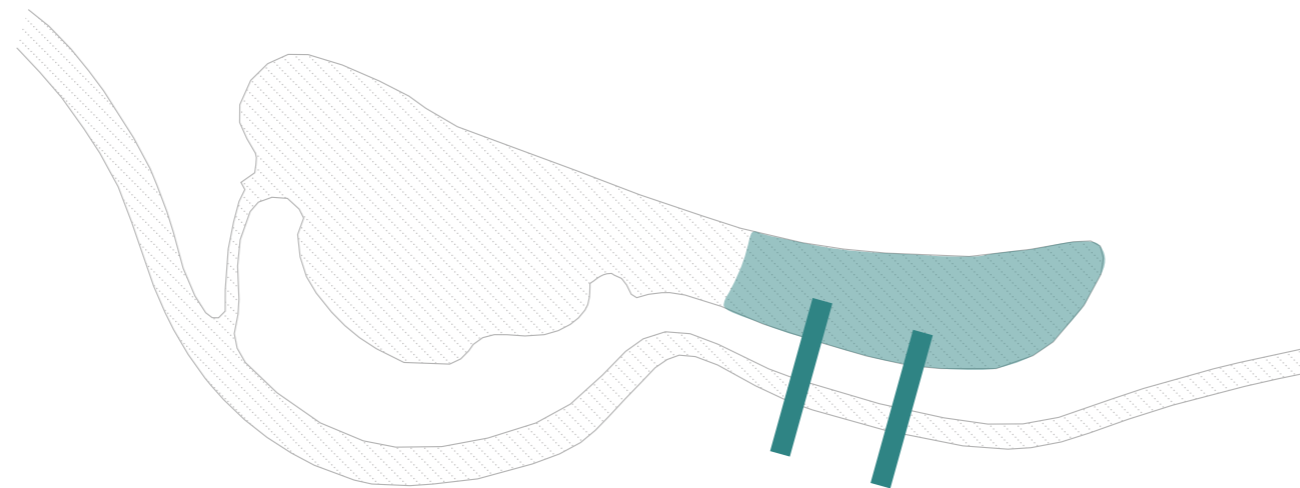
- The structure has a direct connection from changing to planting
- It connects the user across multiple terrains
- The buildings aren't just connections to the pools but as connection points for people to meet

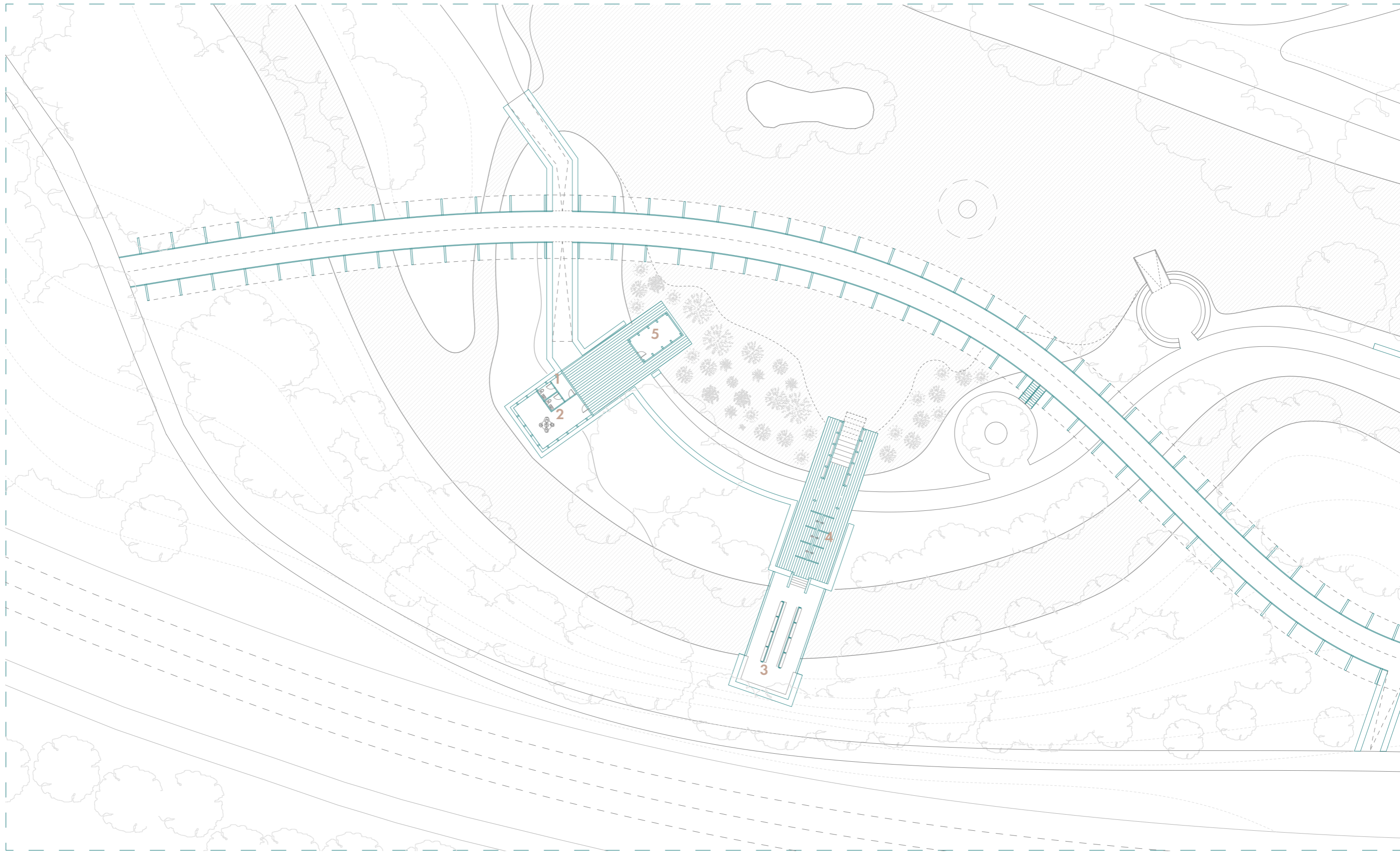
### EMERSION

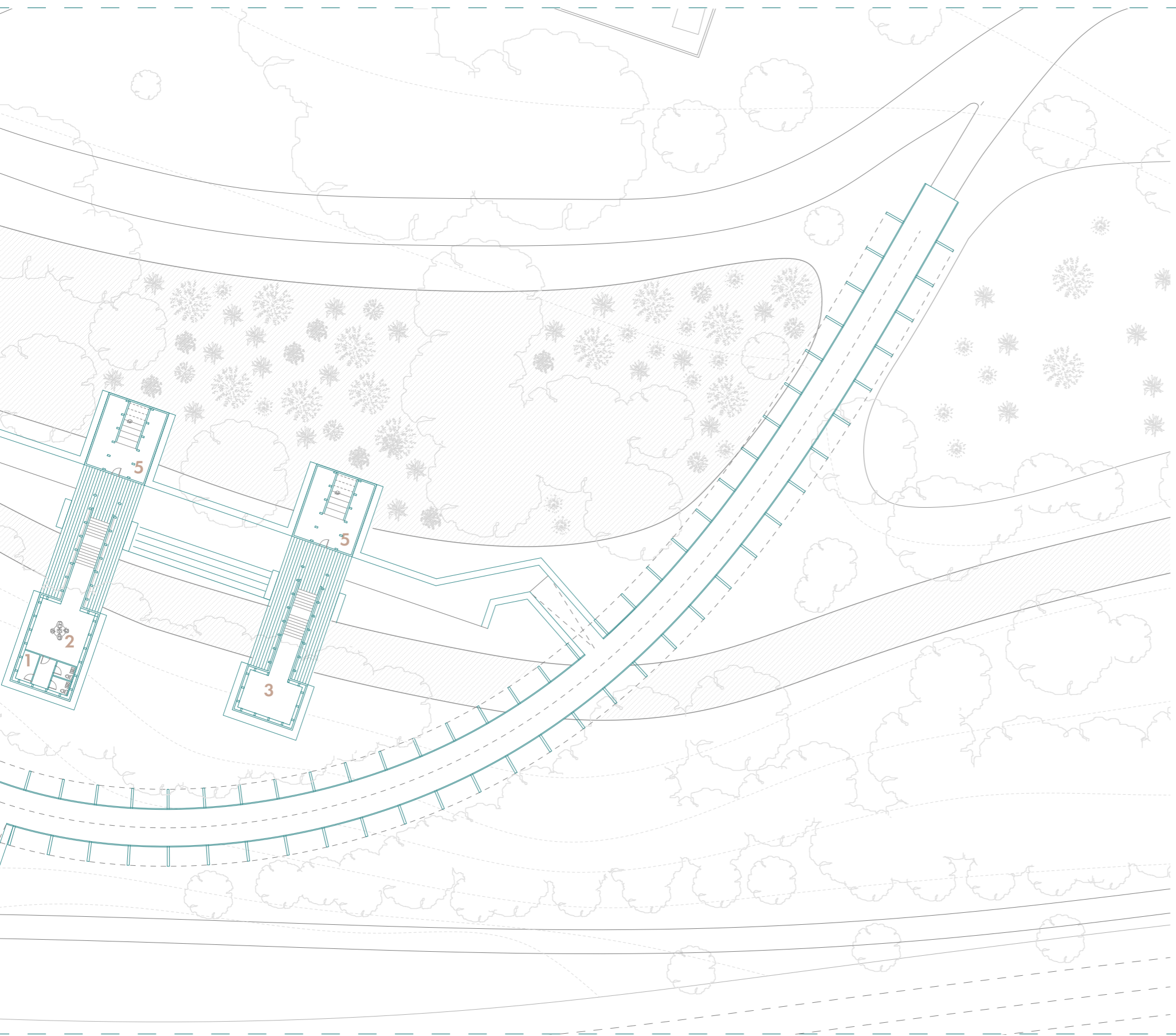
- Compacted and hidden by covering trees offers a differentiation between the Bathing and Custodian facilities

### APPRECIATION

- The slimness of the existing path pinches the bodies of water tightly so the user is close at all times
- The space in between both bridges offers a framed view of the river going past





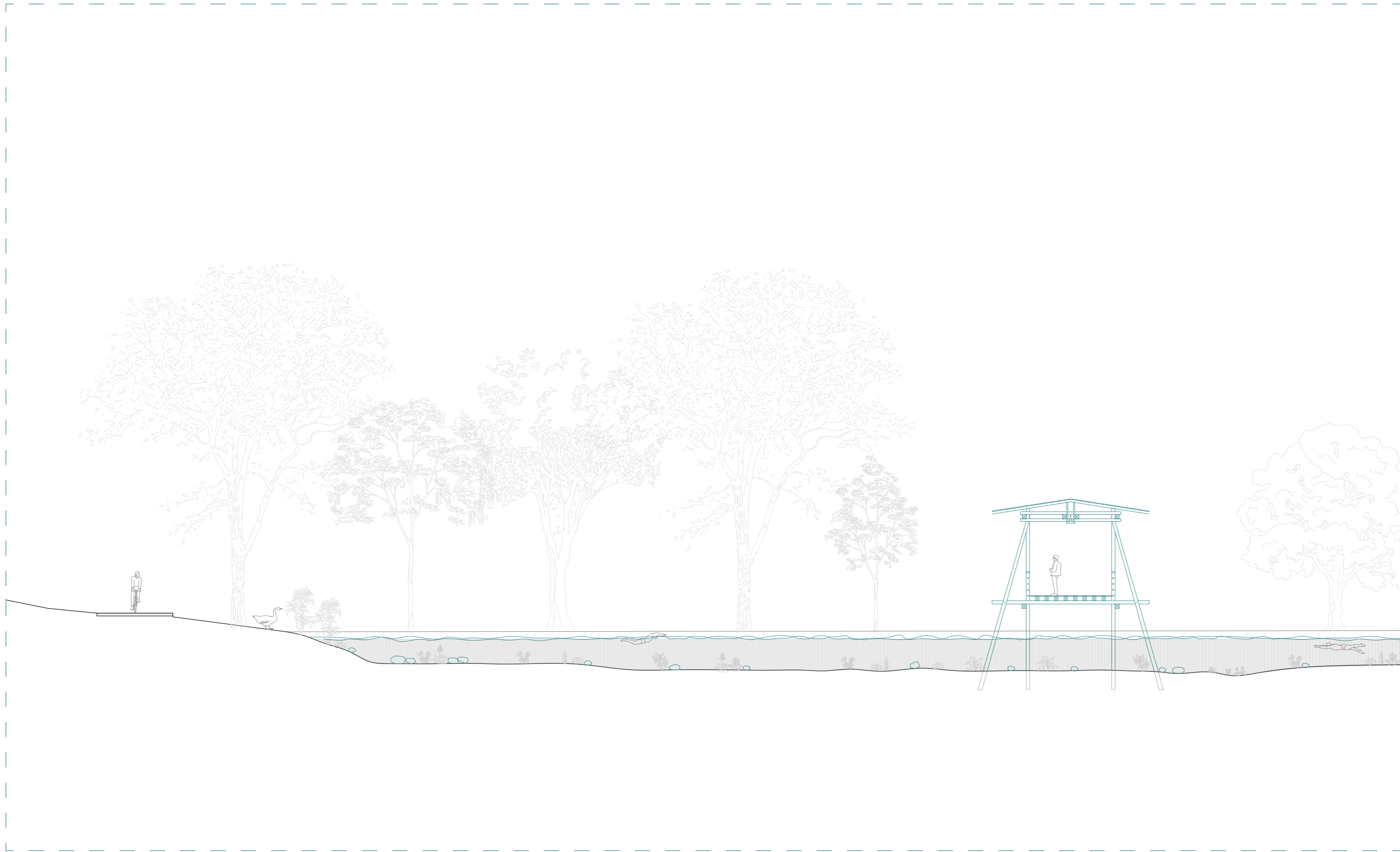


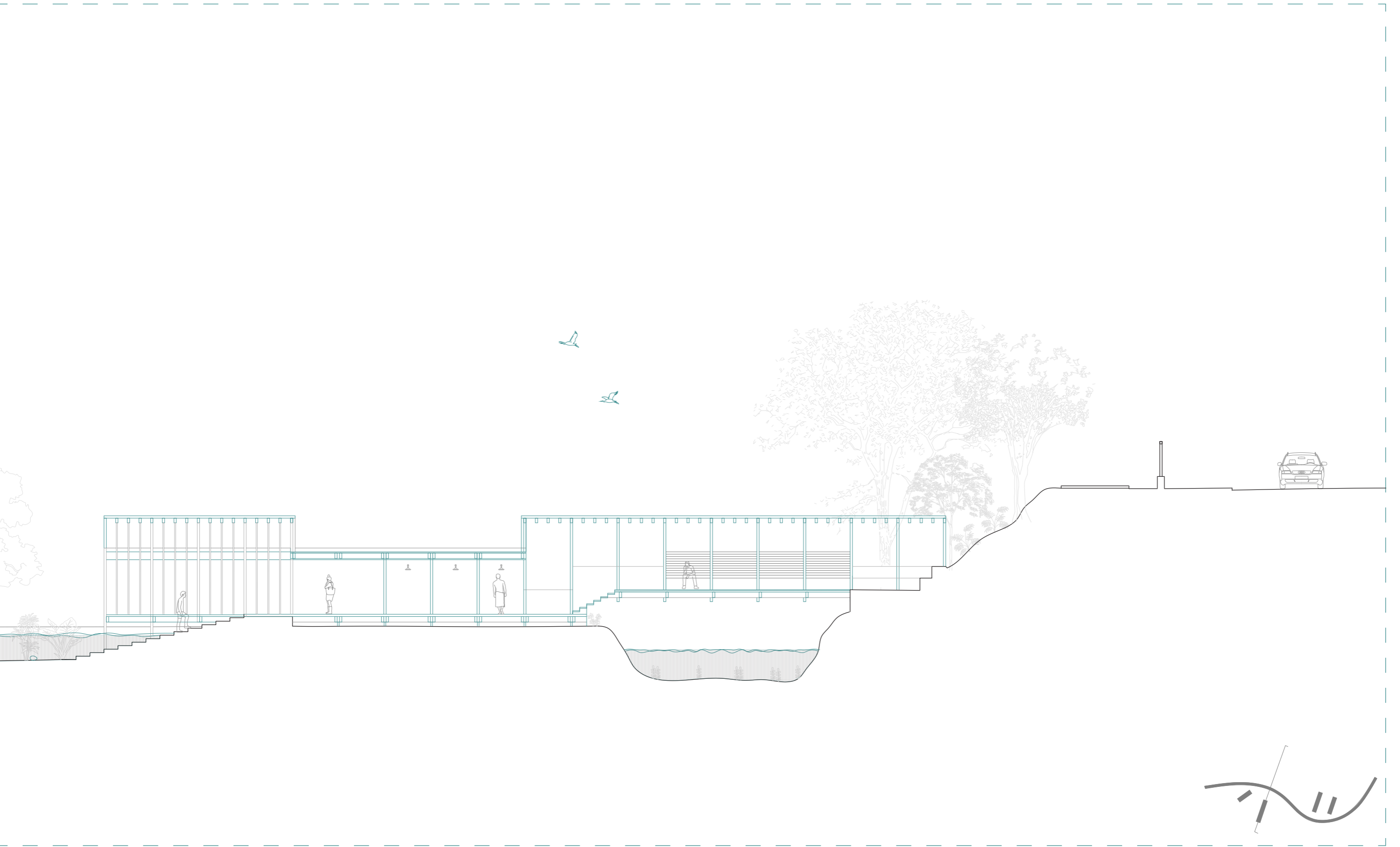
A meandering footbridge creates a passage for the wanderer to cross the river. Hopefully, the visual intrigue leads them further through the site rewarding them with different unique sensory experiences along the way.

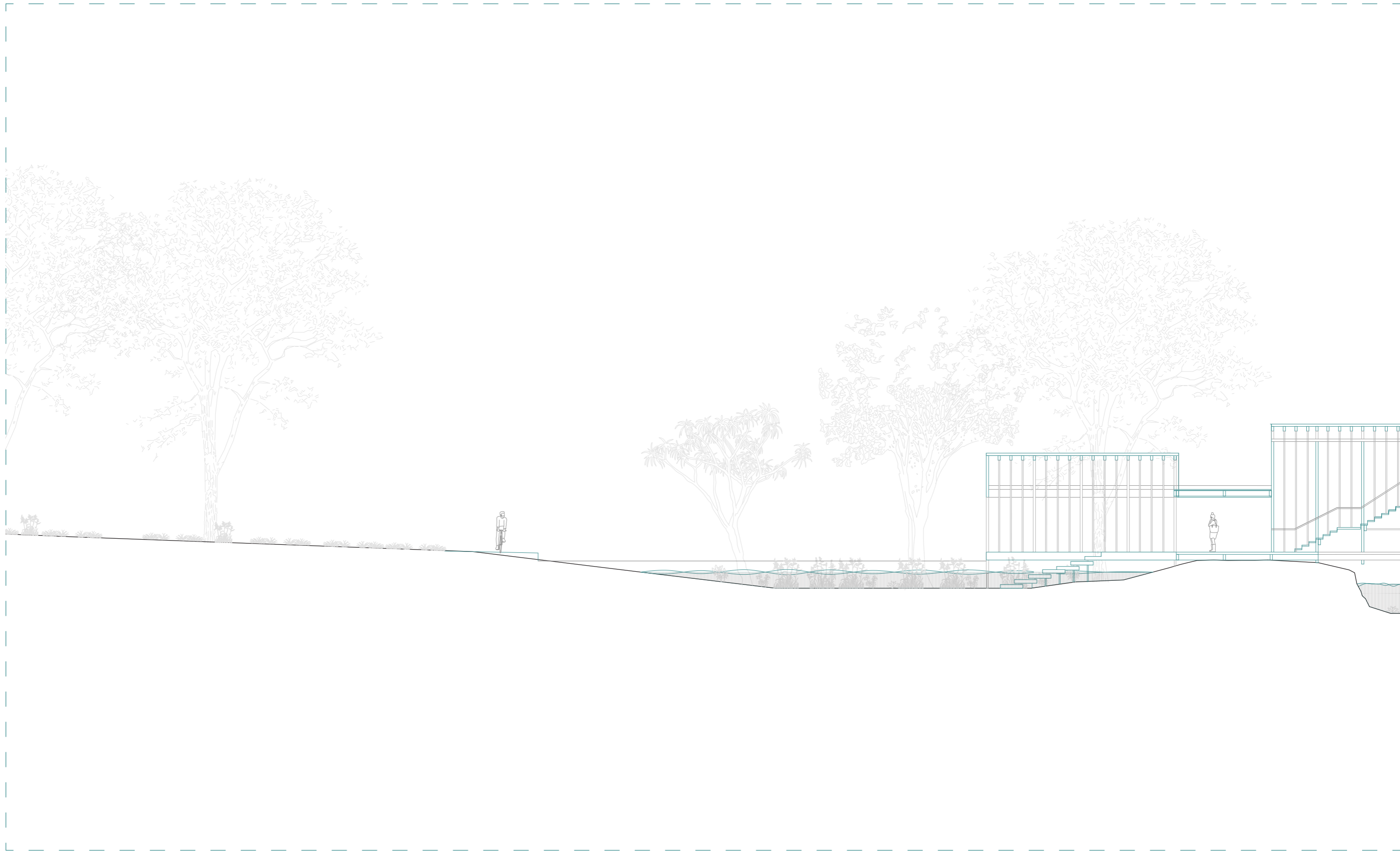
The footbridge rises and falls, gliding over the contours of the valley. Below this timber bridge, small pavilions accommodate the different supported activities which are situated between the river and the ponds. Designed to shelter and store, the role of the architecture is to encourage communal participation so all the different user types to find their rapport with the river and its surroundings.

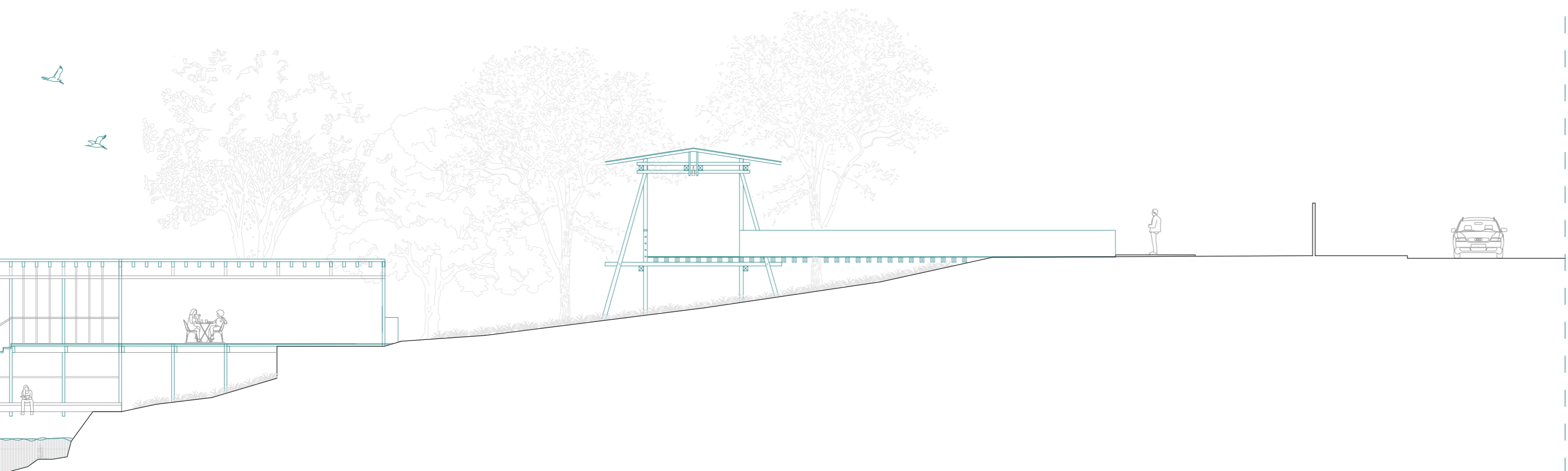
*PROGRAMME*

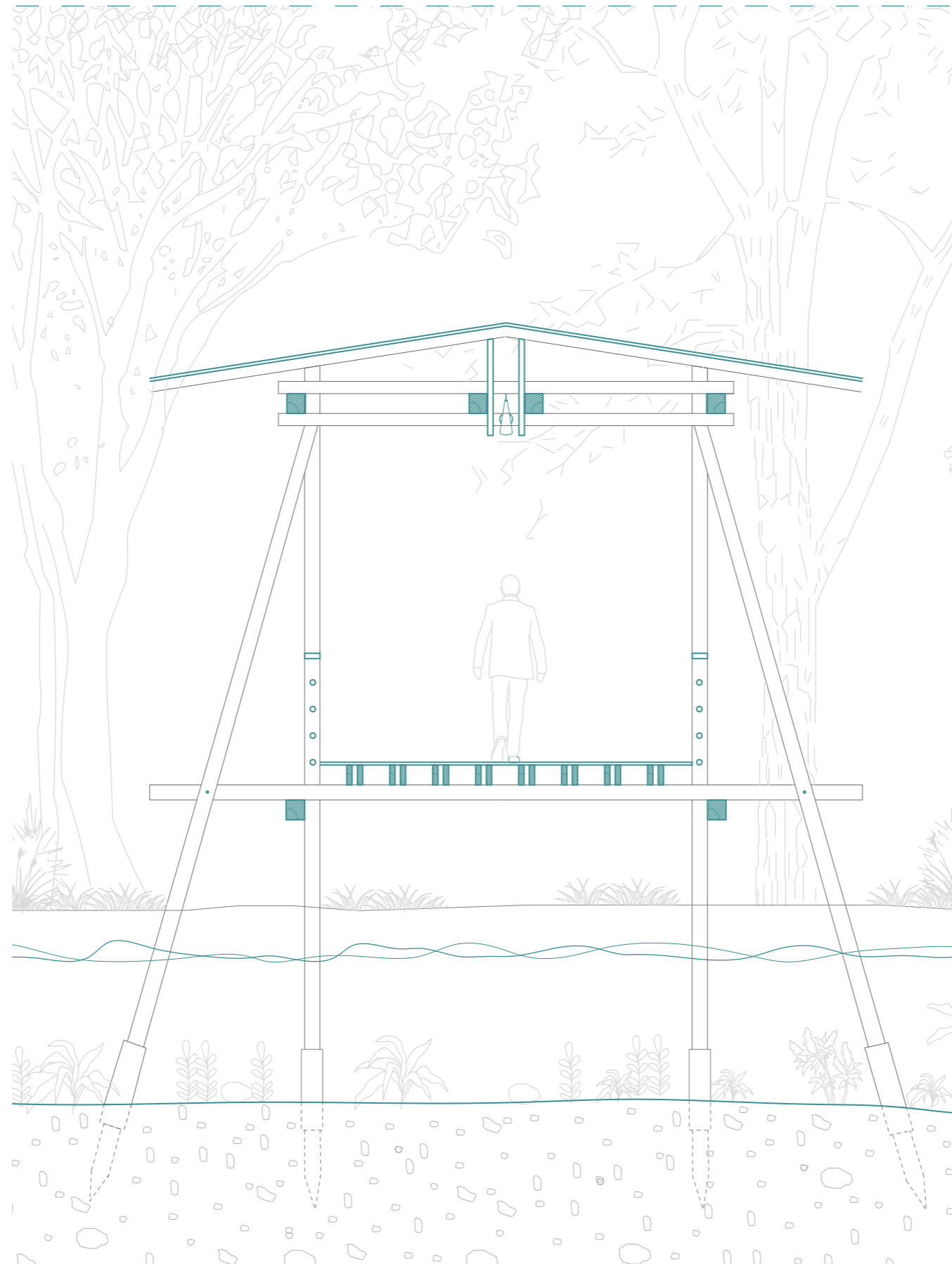
- 1 WC
- 2 Meeting room
- 3 Changing
- 4 Shower
- 5 Storage



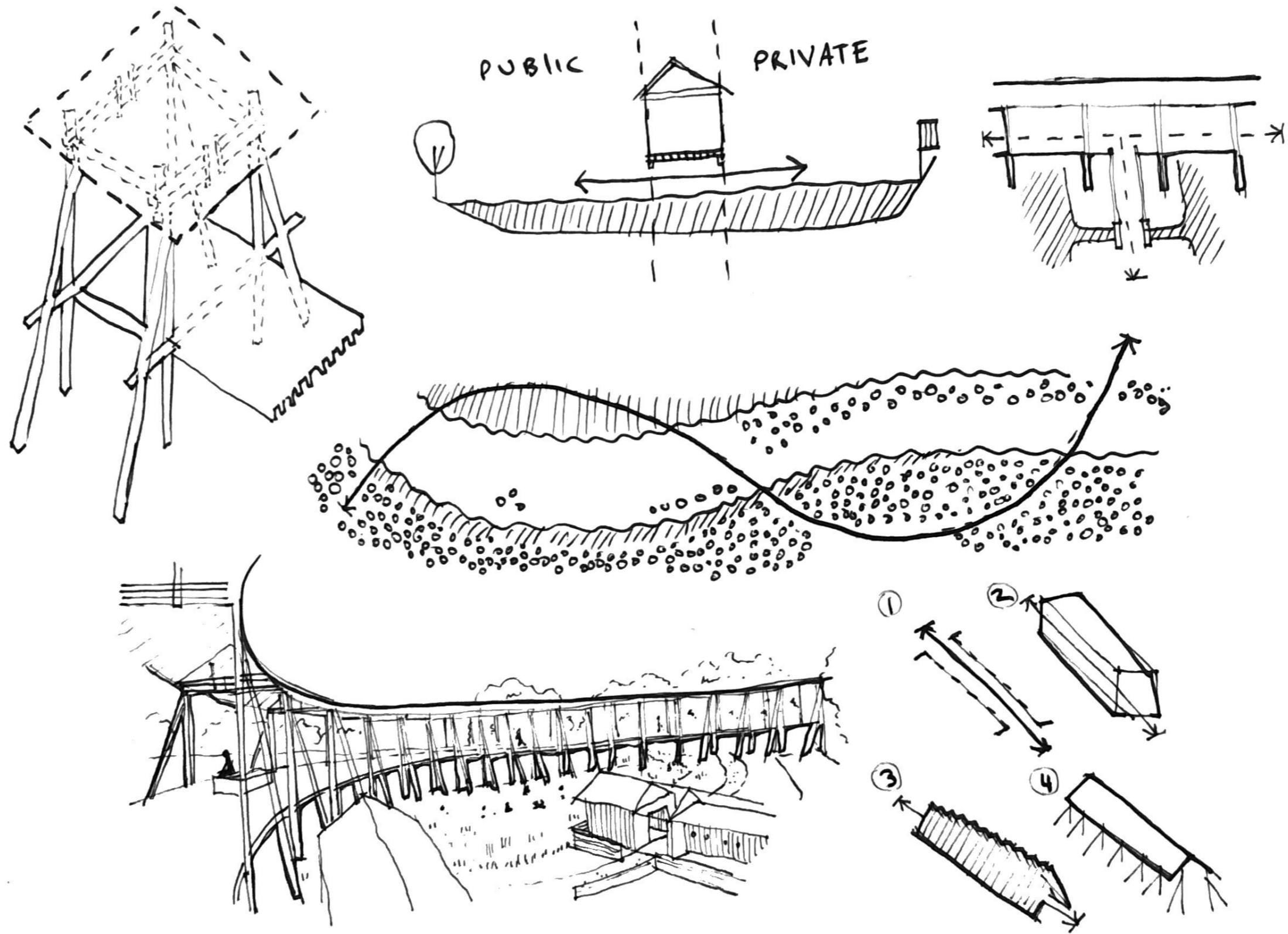


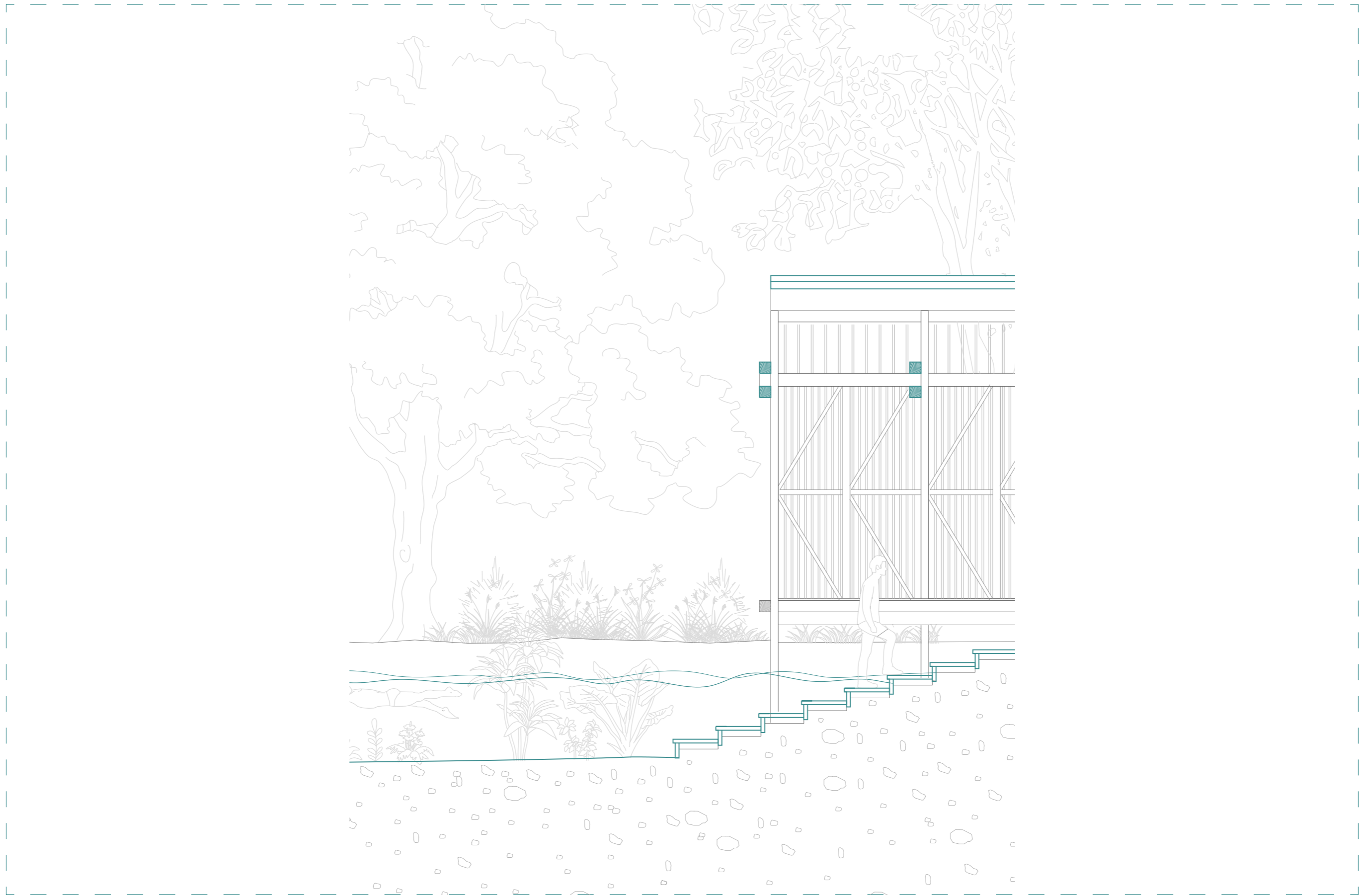


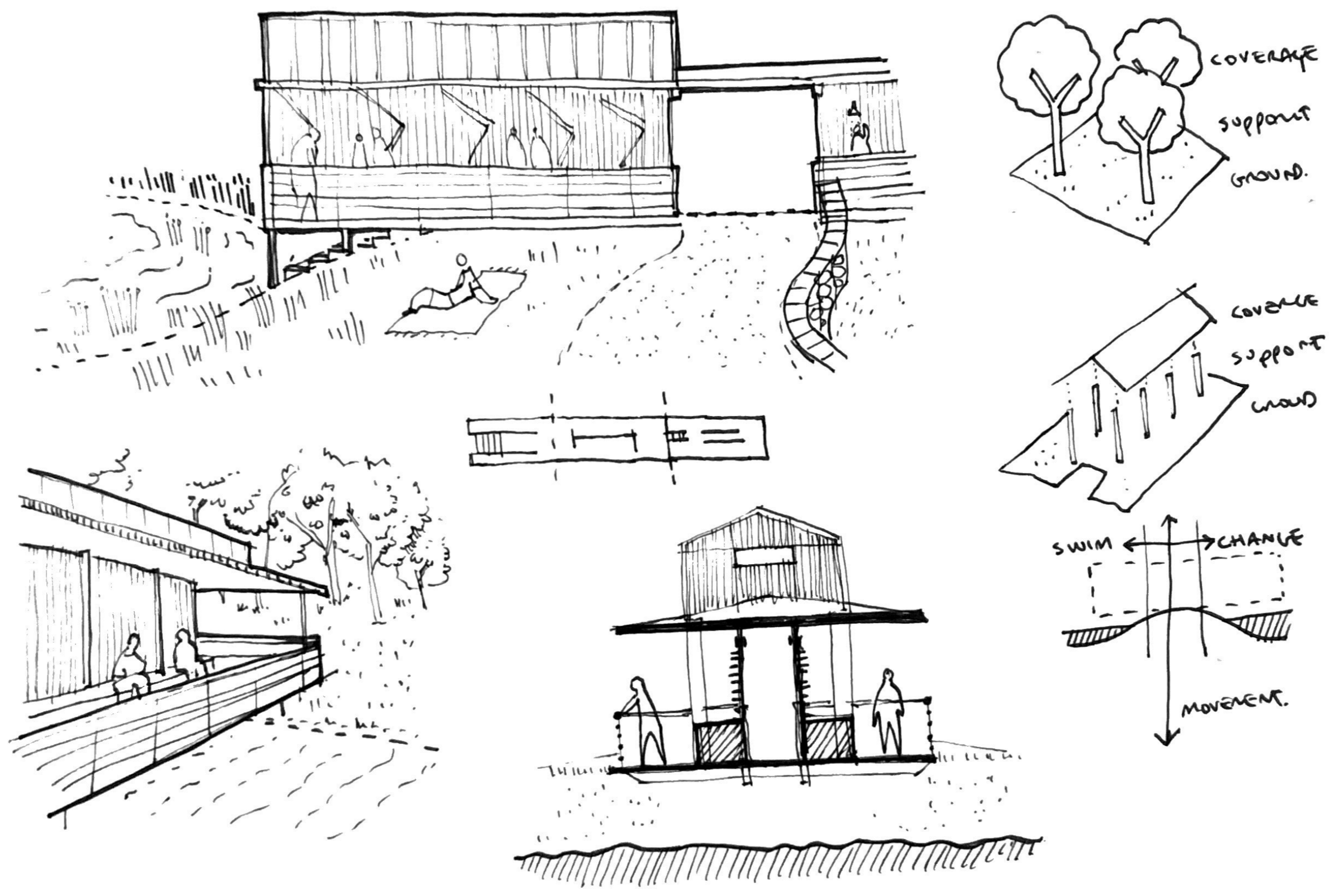


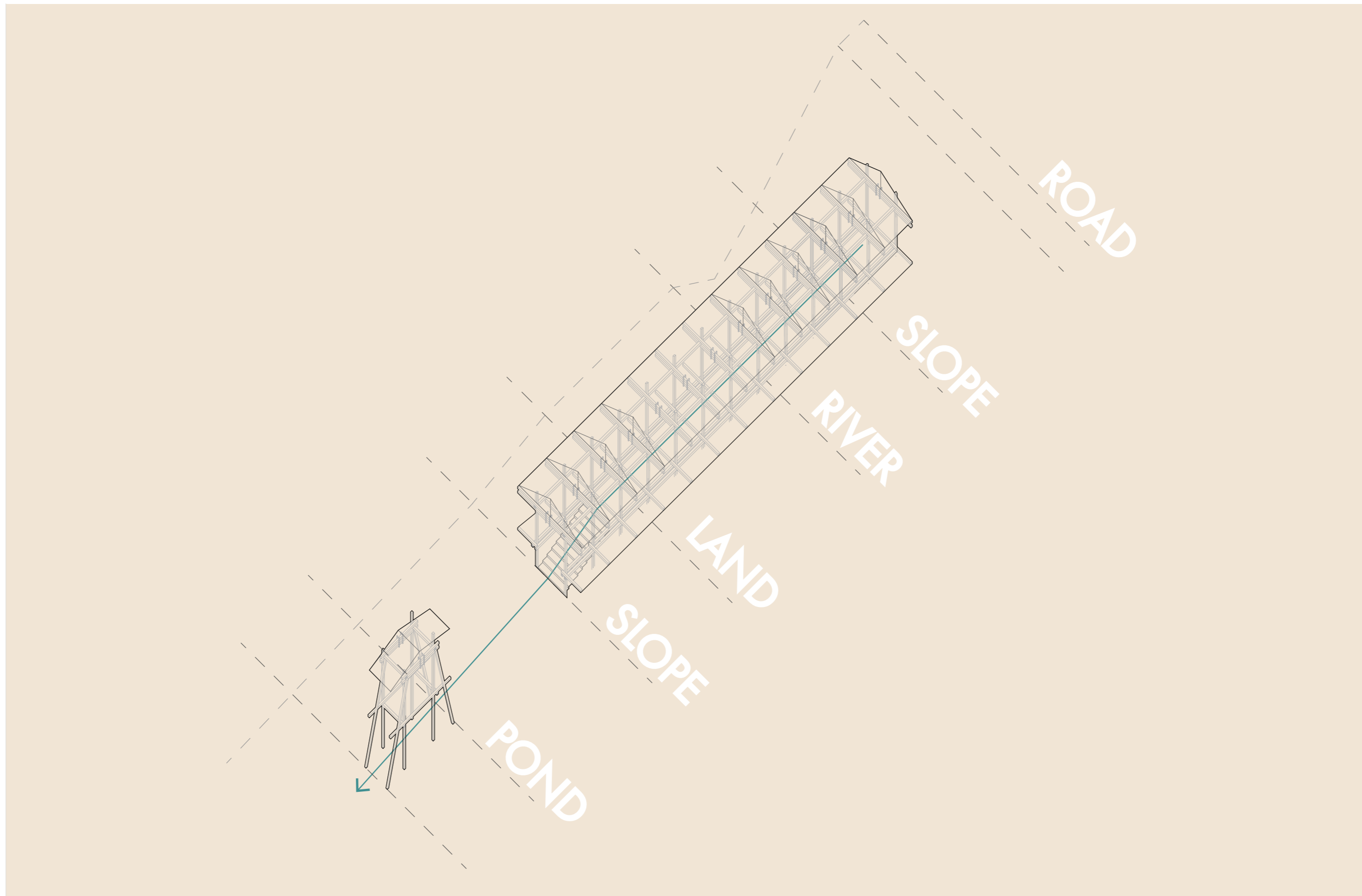














*Final drawing of the desired spacial feeling which encapsulated the thesis objective*

*Our bodies and spirits need the fresh breezes that blow from the water.*

*We need both its calm and its stimulus*

*We need the sense of community,*

---

*Waterfronts: Cities reclaim their edge (1994)*



*The Ripple Effect*

*Stage 5 pinup board*

## 07 REFLECTION

On reflection, the objective of the thesis work was not centred around the final design output but the methodology undertaken. The architecture was a canvas of many different ideas testing the information extracted from the analysis of people and places. It was a design that tested my own comprehension and consideration for the research that I had assembled from places I visited and the people I talked to. The prerogative was to establish a piece of architecture which was less about the whole but of its subsets. A methodology which should underpin all architecture if we are to have any chance of finding a sustainable design for the planet. It can only blossom from the comprehensive understanding of both people and their place.

A Place that is designed in a rational manner with clearly defined residential, commercial and industrial districts connected and separated by hard edges and long roads deprives us of our humanity. We prefer surroundings that remain sensitive to our nature in a way that a purely rational plan cannot. We are instinctually drawn to our natural environment and desire a point in the landscape that allows us to expand an organic living space that coexists with our natural surroundings. The most stable communities are the ones that support this relationship between the built fabric and the natural environment. The place is the identity of an area and equally “As much a part of your home as the roof that’s over your head. Cities have developed an erratic extension of a domestic space as if the house and city have become one.” (Fujimoto, S 2008).

This is how we improve the Tolka Valley and places like it by restoring people’s pride of place and connecting them to their natural surroundings once more. Only when we understand our own nature, can we dream to exist with nature.

*People ignore design that ignores people*

---

*Frank Chimero*



## 08 APPENDICIES

1)When our species evolved from the oceans and separated from apes two to three million years ago, they stayed close to rivers and water-fronts which contributed to the promoted brain growth and intelligence from the omega 3 they took from eating seafood which could explain our draw to live close to water. In our evolutionary transition, our body proportions which reduced our ancestor's exposure to solar radiation while allowing for greater exposure to wind increased our ability to dissipate heat, making us more water efficient comparison to other mammals (Rosinger, A 2021). Body hair reduction saw the development of more sweat glands which allowed the unloading excess heat which maintained safe body temperature while moving. The ability to sweat cools blood vessels and the body core, "In fact, some researchers think that persistence hunting—running an animal down until it overheats—may have been an important foraging strategy for our ancestors, one they could not have pursued if they did not have a means to avoid overheating" (Rosinger, A. 2021). However, our ability to over sweat raises the risk of dehydration, this vulnerability forces us to be reliant on external sources of water compared to other primates and animals who can afford to lose 20-40% of their body water before risking death compared to our 10% threshold, humans cannot store their bodies water unlike so many other creatures so we must find means of which to access it from external sources.

2)All views are related to its basic functions and significance to life and growth. The Egyptians honoured the Nile for its fertile soil produced by floods. Hindus praise the Ganges for its purifying features that release a person from their sins and the souls of the deceased. The Mississippi was recognized as "the father of waters" for its sacred relationship to the people who lived near it believing it was the home of the spirits of nature. "Culture and religion are often associated, and as a result, cultural views on water are generally based on the predominant religious views of the area." (Rana, D)

3) Like Jericho, Roman society devised aqueducts for large distance transportation of water. In Mesopotamia, records of stone water channels have been discovered and from the early Bronze Age the city of Mohenjo Daro, in present day Pakistan, archeologists have discovered architecture that looks to be oriented by numerous water lines and wells (Angelakis, A).

In Ancient Egypt, The Niles water rises and overflows the banks in the summer, but its irregular flood occurrence could be disastrous to the agriculture cycle and the infrastructure. "The Pharaohs, in an assurance of their temples, tombs and monuments withstanding generations, would construct them a distance away from the Nile to avoid any potential severe flooding from the river, Temples close to the valley were built in parallel to the bank and elevated on a Mastaba to lower the risk of being damaged by floods." (Stouhi, D). However, if it failed to flood it would cause drought and famine. The flood also played a political role since the annual harvest quality determined the amount of tax needed to be paid therefore, they used measuring devices to predict the harvest. Evolved from marks made on the riverbanks, Nilometers where crafted on stairs, pillars, wells and other structures along its banks to predict its overflow which was monitored by the royal priest in places In Elephantine and Rhoda Island (Patowary, K)

Due to the disproportioned water accessibility for countries, some civilizations used unique water harvesting and transport methodologies. Built as ecosystems to access subterranean water or to harvest rainwater which were integral to communities, "Indian stepwells, like the Chand Baori, were architectural forms excavated several stories to reach soil saturated with water". They were made in drought prone areas of the country to provide water all year round for storage and irrigation and worked as communal meeting places and later places of religious events (Maganga, M).

5) To Kandinsky, blue feels like a “typical heavenlingly colour” that can inhabit any form and work very intensely on the human mind, the lighter it is, the more calming it is. This he believes comes from the theory which he calls the “inner sound”, that when religion, science and morals are rocked, man turns his gaze from the external to the deeper essence within him. “The deeper the blue the more it beckons man into the infinite, arousing a longing for purity and the super sensuous.” (AW 2021).



4) Bruge 17th century map



6)

*Thank you for the opportunity to respond to the Draft Dublin City Development Plan (DDCDP) 2022- 2028 specifically Chapter 10: Green Infrastructure and Recreation. This declaration doesn't attempt to refute the intent of the GI objectives (10.5.5 Rivers and Canals) but challenges the apparent lack of substance the strategic approach has for the human element needed for the sustainable fusion between the built fabric and natural ecosystem. Considering this, and with reference to my analysis of the Tolka Valley, my submission relates to my examination of the areas urban form neglecting the human instinct to fully coexist with its natural environment as the repercussions continuously deteriorate the communal bond needed in order to safeguard the health and wellbeing of the Tolka River.*

*The DDCDP states the problem of continuous pollution, sewer overflows and urban runoff jeopardises the positive ecological standards set by the Water Framework Directive. While indicating numerous urban development issues and historic landscape alterations to rivers natural banks and valleys enhancing many rivers deterioration, the solutions proposed are based off river regeneration programmes around the protection, creation, maintenance and development of the different river zones (G129-134). The restoration interventions while appropriate feels hollow in substance. It fails to allude to human carelessness as the dominant predicament for river contamination, something exacerbated by environmental disconnection brought on by 20th century urbanisation which notably occurs in the Tolka Valley. Due to geographic circumstance, the area was caught in the wake of the expanding city limits in its settlement infancy which halted any organic urban growth to spawn from the riverbanks. The numerous visible and invisible barriers formed across the sites has psychologically cut residents off from the importance of the rivers character for the area and as result has allowed communities unknowingly justify polluting into the stream from numerous points and turn a blind eye their custodian duties.*

*I advocate an architectural proposition that incentives continuous community interaction with the water as the preliminary step forward for the protection and eventual healing of our rivers. The central ethos aims to resurface a sense of stewardship to the community through the promotion of more substantial participation and appreciation of the Tolka Rivers water which appeals to our instinctive draw to connect with its properties. Through evolution we've been physiologically crafted from water and historically we have built cultures and settlements from its banks and as a result the most prosperous towns and cities tend to retain and foster a strong relationship to its neighbouring water bodies like Dublin. Replicating these coastal towns, an opportunity for water and bathing activities to happen inland is possible alongside GI objectives involving riparian and hyporheic zone maintenance diverting a portion of the river into a series of natural filtered ponds. A blend of both environmental and humanistic design principles has the potential to create a locale in the area for people to protect and immerse in the water again*

---

*Letter to Dublin city Development Plan as reflection assignment*

## 09 REFERENCE - Bibliography

- Angelakis, A, (2012) Evolution of Water Supply Through the Millennia, accessed from <https://www.iwapublishing.com/news/brief-history-water-and-health-ancient-civilizations-modern-times>
- Baldwin, J. (n.d.) Why humans are so drawn to water, Jessamy Baldwin Creative content portfolio, accessed from <https://jessamybaldwin.co.uk/2017/07/03/whyhumansaresodrawntowater/>
- Breen, A & Rigby, d. (1994) Waterfronts: Cities Reclaim Their Edge, McGraw-Hill
- Corr, S. (2022) Human activity threatening water, Irish mirror, accessed from <https://www.irishmirror.ie/news/irish-news/human-activity-threatening-water-sources-28240559>
- De Botten. A (2006), The architecture of happiness, Pantheon books
- Heidegger. M, (1954) Building, Dwelling, Thinking
- Frearson, A. (2011) Serpentine Gallery Pavilion, Dezeen, accessed from <https://www.dezeen.com/2011/06/27/serpentine-gallery-pavilion-2011-by-peter-zumthor-2/>
- Fujimoto, S. (2008) Primitive Futures, INAX-Shuppan
- Holzer, C. (2008): Riverscapes: Designing Urban Embankments, Birkhäuser
- Kelly, O. (2014) Pollution kills hundreds of fish in Tolka River in Dublin, Irish times <https://www.irishtimes.com/news/environment/pollution-kills-hundreds-of-fish-in-tolka-river-in-dublin-1.1874736>
- Knechtly, S. (2022) Rivers and connection, Issu, accessed from [https://issuu.com/m-archsaid/docs/knechtly\\_stephanie\\_rivers\\_of\\_connection](https://issuu.com/m-archsaid/docs/knechtly_stephanie_rivers_of_connection)
- Malekmian, S. (2019), Irish water quality deteriorating across the board, Green news.ie Accessed from <https://greennews.ie/water-quality-epa-bad/>
- Malekmian (2021) The Culprit Behind an Oil Spill on the River Tolka in Glasnevin May Never Be Found, Dublin Inquirer <https://www.dublininquirer.com/2021/12/01/the-culprit-behind-an-oil-spill-on-the-river-tolka-in-glasnevin-may-never-be-found-council-says>
- Menezes, F. (2022) Biophilic Design, accessed from <https://www.brightvibes.com/biophilic-design-what-it-is-and-why-you-should-know-about-it/>
- Moore, C. (1994) Water and Architecture, Harry N. Abrams, Inc.
- River Liffey ‘a major carrier of pollutants’, 2016, Irish independent, accessed from <https://www.irishexaminer.com/news/arid-30749396.html>
- Roy Rioux, J. (2021) Humanity and water, accessed from <https://www.stromspa.com/en/magazine/holistic-health/humanity-and-water-mirror-of-a-multi-dimensional-relationship/>
- Rudofsky, B. (1964) Architecture without architects, University of New Mexico Press
- Taut. B (1919), The Earth is a Good Dwelling, University of California press 1994 pp. 456-459
- Voegeli. A (2020) Human centred architecture, Dormakaba, accessed from <https://blog.dormakaba.com/human-centered-architecture-what-is-it-and-how-it-makes-a-difference/>
- Water- what’s it to you (March 9th), Irish Wildlife Trust.IE, accessed from <https://iwt.ie/water-whats-it-to-you/#:~:text=At%20the%20Tolka%20Estuary%2C%20the,compliant%20with%20emission%20limit%20standards>

## 09 REFERENCE - Image references

- Fig 1; Uematsu. K, (1976) *Wave Motion I*. Available at <https://www.artsy.net/artwork/keiji-uematsu-wave-motion-i>

- Fig 2; Gauguin. P, (1866) *The fire at the riverbank*. Available at <https://www.museothyssen.org/en/collection/artists/gauguin-paul>

- Fig 3; Meller Marcovicz. D, (1966) *Martin Heidegger for Der Spiegel Magazine* <https://www.frieze.com/article/picture-piece-martin-heidegger>

- Fig 4; Lynch. K (1960) Generic illustration of city development in close relationship with a river based on drawings from the *Image of the city*. MIT Press; *Illustrated edition*

- Fig 5; Kavanagh. E, (n.d.) *Photo of Bull island Bathing shelter*. Accessed from <https://www.endacavanagh.com/product/bull-island-bathing-shelter/>

- Fig 6; O'Shea. D, (1971) *Photo of swimmers at The Forty Foot*. accessed from <https://www.irishtimes.com/culture/heritage/christmas-day-swim-at-the-forty-foot-a-longstanding-dublin-tradition-1.4110954>

- Fig 7; O'Brien. E, (2017) *Seapoint, sea sky and spires*. Accessed from <https://libraries.dlrco.ie/sites/default/files/Seapoint%20-%20Sea%2C%20Sky%20and%20Spires.pdf>

- Fig 8; Denham. I, (2020) *Magnificent Irish Cold Water Swim Spots: we checked out 9 of them*. Accessed from <https://www.noodlebagz.com/blog/2020/9/18/irishcoldswimming>

- Fig 9; Chong. M, (n.d) Accessed from <https://www.behance.net/monica9507a5>

- Fig 10; Zumthor. P, (2011) *Serpentine pavillion sections*. Accessed from <https://artsandculture.google.com/asset/presentation-drawing-for-the-serpentine-gallery-pavilion-hyde-park-london-architect-peter-zumthor-1943/pAHAkS4xZ728cA>

- Fig 11; (1812) *Sketch of Tolka River*

- Fig 12; Hubert. R, (1775) *The Ponte Solario*. Accessed from <https://www.nga.gov/collection/art-object-page.41665.html>