

HAMILTON'S **KIRIKIROA GULLY**

*ENGAGING WITH WATERWAY SOCIAL LIFE
FROM THE GROUND UP*



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Hamilton's Kirikiriroa Gully
Engaging with waterway social life from the ground up

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ABSTRACT

The social value of waterways and gullies in new suburban development is something that is often overlooked and given limited resources to be developed. They have the potential to be intense centres of neighbourhoods and provide much needed social relief in the age of rapid urban expansion. This thesis explores the social potential of Kirikiriroa gully in Hamilton where suburban development has occurred at an alarming rate. The research extends the traditional top down masterplan design methodology used for large project sites by investigating the reverse of this, a study of life on the ground to inform the design.

Using on-site analytical and design methods, the design attempts to reveal the workings of the landscape in a way that a masterplan cannot. Key to this was the identification of three important social experiential typologies within the gully system. The understanding and documentation of the relations and forces that produced these types facilitated adjustments to strategically identified sites, with the intention of intensifying the relevant social ecology of the gully at that site. This intensification is intended to influence the wider neighbourhoods and the gully system more broadly.

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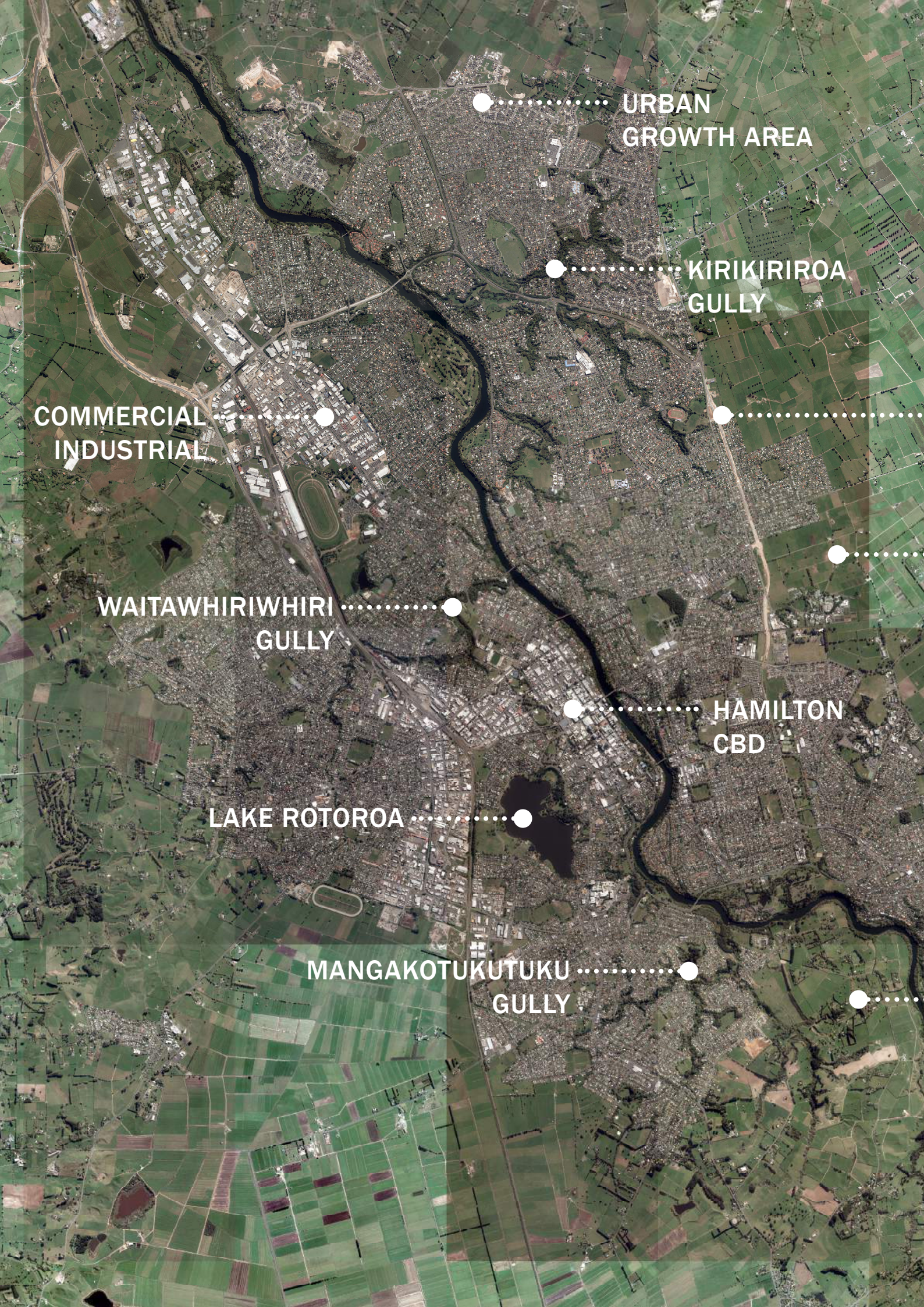
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INTRODUCTION



..... URBAN
GROWTH AREA

..... KIRIKIRIROA
GULLY

..... COMMERCIAL
INDUSTRIAL

..... WAITAWHIRIWHIRI
GULLY

..... HAMILTON
CBD

..... LAKE RÓTOROA

..... MANGAKOTUKUTUKU
GULLY



HAMILTON AS A RESEARCH SITE

The primary basis for this thesis was driven by the desire to conduct research in my home city and contribute to the place I grew up in. There were several possible design projects based on key interests around urban development methodology, iwi land development, and social life in suburbia.

The primary interest was in the way new urban development in Hamilton in the past decade had been churned out, often in a monotonous way and with an absent engagement with social life potential, resulting in lifeless neighbourhoods. The Hamilton I grew up in has evolved and grown to become the ultimate suburban dream (or should nightmare as some may call it) with wide winding streets and cul-de-sacs, houses that look the same, and minimal signs of any neighbourhood social life.

The research project that was undertaken needed to somehow engage with social life in this model of suburbia and provide alternate methods into how future development or design can be done differently to achieve more social oriented outcomes.

*Figure 1.
1:50000 aerial showing the wider extents of Hamilton, New Zealand.*

INITIAL HUNCH

While several sites were considered for this design project, they were primarily future development sites and contained a complex range of issues separate from the social. One of the sites considered was a 750ha area in Ruakura in eastern Hamilton. The development would be led by Tainui Holdings and involve residential, commercial, a transportation hub, and wetland regeneration work. While this project was highly interesting, it became apparent after doing the initial research into the development site that research into the social underpinnings of suburban life would be best studied in an existing situation. The project was steered towards the way urban growth has developed and evolved in Hamilton in recent years and focused on choosing a well-established site in the northern urban growth area where neighbourhood identity may still be lacking.

With several recent build sites to choose from, the significance of a particular landscape structure stood out. All throughout Hamilton, veins of deep gullies litter the landscape forming an integral network across the city with an elusiveness to this fact from the ground level. If not for a childhood of attending an enviroschool which adjoined onto one of these gullies and living in close proximity to one, it would have been difficult to guess that a large network like this could even exist in the city at all if driving past. The gullies presented an exploration opportunity into how they might provide potential central nodes for neighbourhood social life and connect residents by creating a shared regard for place.

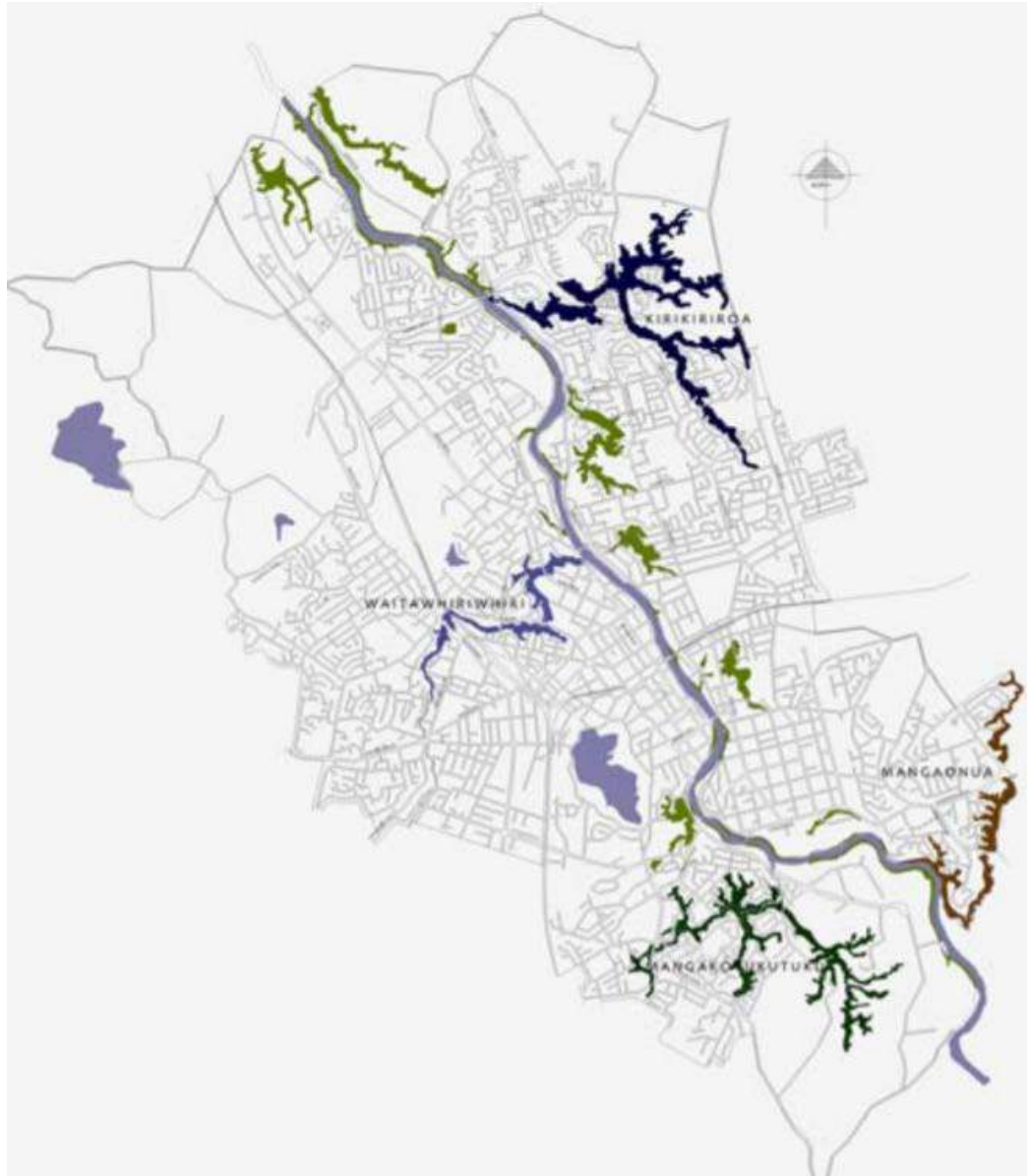
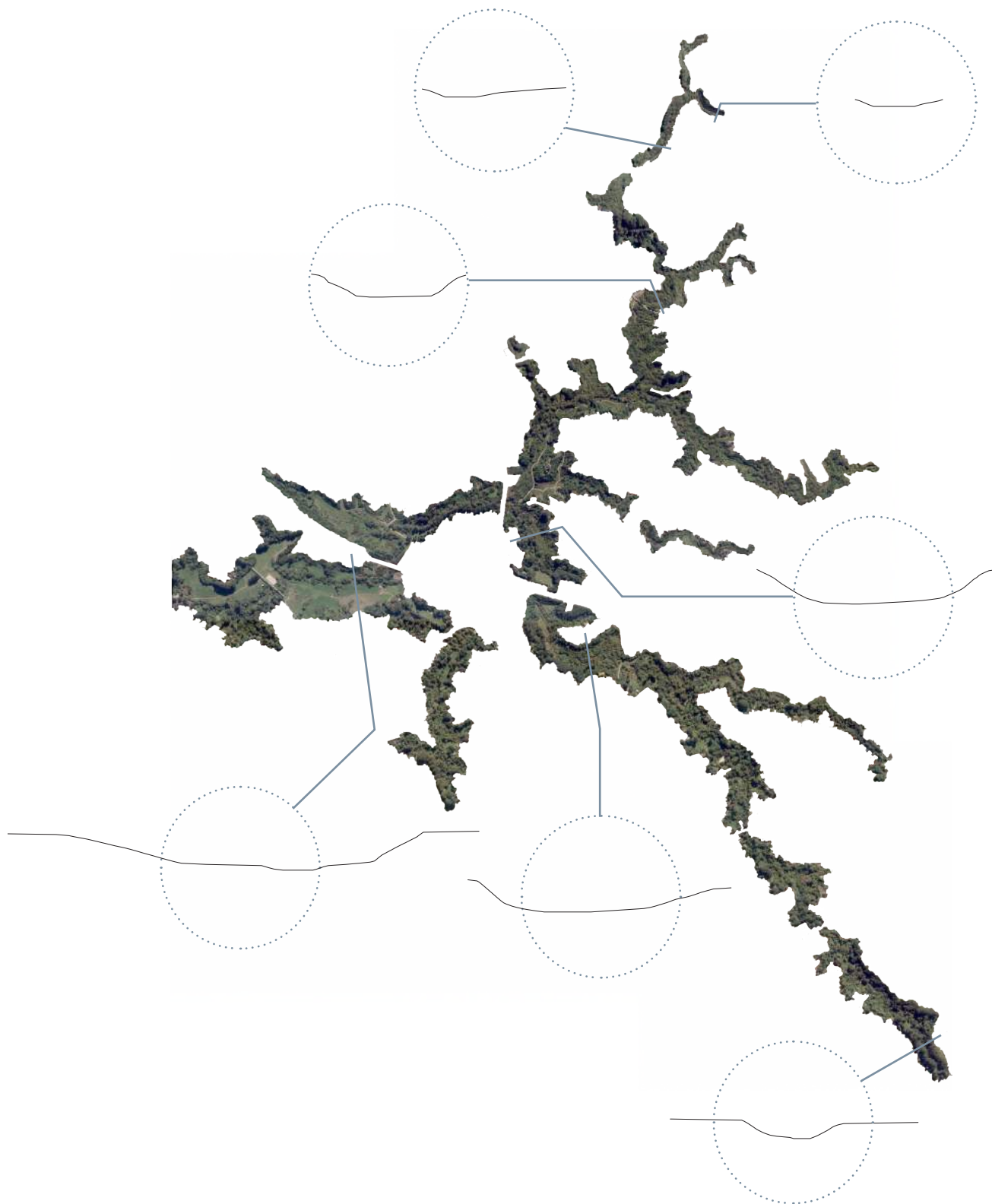


Figure 2.
*The four main gully systems in Hamilton (Clarkson & McQueen, Ecological Restoration
 in Hamilton City, North Island, New Zealand, 2004).*

THE TOPOGRAPHICAL PROBLEM

The network of gullies in Hamilton is characterized by steep valley walls forming 'voids' in the otherwise fairly flat landscape, giving rise to several fundamental problems. The first of these is the general lack of awareness about the existence of the gullies and their extents due to the sheer scale of the gullies. Part of what makes them difficult to fathom is that they are very deep and sunken as well as being very large in size. The way development has evolved around these gullies provide us with very little to no clues as to what lies behind, beneath and adjacent to residential homes.

The terrain of the gullies is also likely to make the management and design of them notoriously difficult as they are difficult to construct in and maintain because of the gradients, driving up cost through the required use of manual labour versus machines. The result is that there are a series of underutilized spaces that is mostly left to fend for itself, overgrowing and creating safety concerns where recreational value is seen as low or non-existent. This situation presents a unique open space network opportunity as well as a set of difficult problems related to topography to deal with as constraints.



*Figure 3.
Aerial imagery of the extent of Kirikiroa gully in Hamilton with cross-sections showing
the width and steepness typical of these gullies.*

RESEARCH OPPORTUNITY

Despite the problems outlined above, several guerrilla type community groups have banded together to improve the ecological value of the gullies by undertaking weed and pest management as well as re-planting with natives (eg. Mangaiti Gully Restoration Group). At the time of my attendance at Hukanui primary school, the Hamilton City Council had a Gully Restoration Programme in place which provided native plants for re-vegetation upon application provided you could supply the labour. It was during the running of this program that the students of Hukanui School were able to partake in tree planting on the school's gully, and was used as a teaching resource with lunchtime recreation access.

My memory of this gully was an open oasis full of watercress, sparse cabbage trees dotted here and there and plenty of sunshine. On a recent visit, it surprised me how different the current scene was to that of the one in my memory some 16 years ago. On reflection, this could have been partially due to a skewed view of the gully as a playscape through a child's eyes versus an adult. But the need to investigate whether this stark difference in experience was because of age or because of physical changes to vegetation led to the research contained in this thesis.

The ecologically diverse gully visited as an adult was dark and retained none of the friendly qualities I remembered as a child. It struck me that a more social oriented version of re-vegetation could be beneficial for facilitating that same sense of wonder and love I felt for the gully as a child in adults. Some may argue that nature should be unfriendly to humans to create a true safe haven for flora and fauna. However, it may be important to strike a balance between the two as a love for nature (and the want to care for it) would not be possible if one cannot experience it. Discovering how to design social re-vegetation is vital to exploring how these gullies can play a more central role in neighbourhood formation in the city of Hamilton.



*Figure 4.
Imagery showing suburban development adjacent to the Mangakotukutuku gully system
(Clarkson & McQueen, Ecological Restoration in Hamilton City, North Island, New Zealand, 2004).*

RESEARCH QUESTION

How can we intensify social relationships in and around suburban waterways?



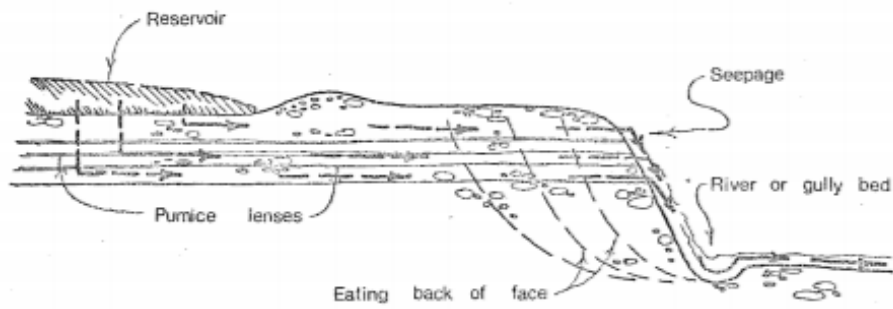
DEFINING THE SITE

DEFINED BY GEOLOGICAL PROCESS

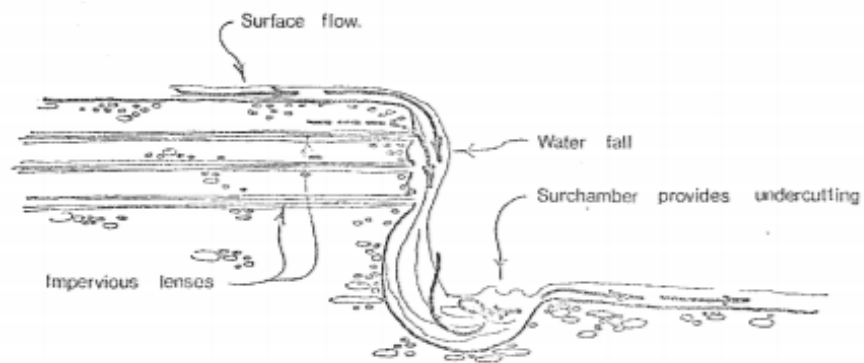
There are four main gully systems (Kirikiriroa, Mangakotukutuku, Mangaonua and Waitawhiriwhiri) with a number of minor systems that occupy approximately 750ha or 8% of the Hamilton city area (Figure 1) (Clarkson & McQueen, Ecological Restoration in Hamilton City, North Island, New Zealand, 2004).

Hamilton City Council (2006) states:

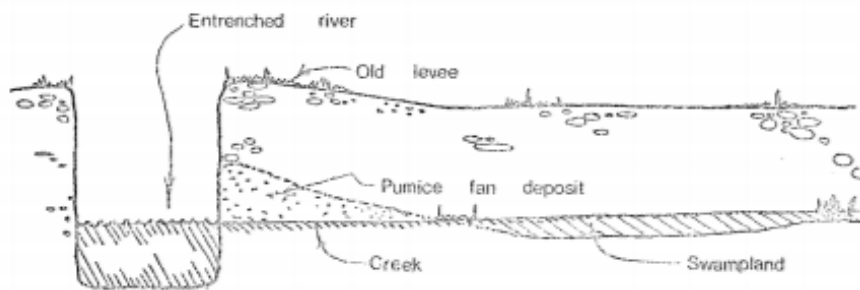
The gullies are the result of the undermining of a geological formation of sands, silt, peat and gravel known as the Hinuera formation (a deposit formed from the accumulation of volcanic material brought down by the Waikato River from the Taupo area). Around 15,000 years ago, the Waikato River started to cut down through this material to create its present channel and as it deepened, springs were exposed along the riverbanks. As water drained from the surrounding land, these springs undermined the banks causing slips and creating a network of streams draining into the Waikato River. This process was repeated again and again giving rise to erosion and the formation of the steep-sided and intricate network of gullies that adjoin the river today.



Underground flow from peatland reservoirs.



Surface flow, over an impervious layer.



Blocked gully mouth with swampland floor.

Figure 5.
Imagery showing the geological process of spring sapping.
(W. H. McLeary, 1972, *A study of the gully systems of the Waikato Basin with particular reference to those in and surrounding the City of Hamilton*)

BUILDING TO THE LIMIT

The way urban development has occurred has meant that large parts of the gullies are privatised and inaccessible by the public. The gully network forms a large part of Hamilton's drainage network. It performs an integral part of the water network according to Hamilton City Council (2007):

This land drainage function is a natural feature of the gullies. However, catchment modification through urbanisation has changed the flow regime and the quality of water entering the gullies. Although the effects of these changes on Hamilton's streams have not been fully assessed, it is highly likely that their biology has been substantially modified as a consequence. Furthermore, direct modification of the gullies has also created conditions that are unfavourable to many forms of aquatic life.

Although the effects of urban development on the gullies have not been fully assessed, the picture to the right illustrates just one example of development at the gully edge. It clearly shows a high degree of privatisation of the gully edge and is a common occurrence since the gullies back onto residential lots with a low frequency of users where the gully has been designated as





public space. This occupation of the edge could be viewed as a positive in some ways as it displays a sense of ownership of the adjoining gully and also provides passive surveillance to users of the walkways.

However, the question of whether gullies would benefit from more visible exposure from the roadside instead of being located at the back of lots exists. Parks and designated sports grounds could incorporate gullies as part of the recreation space on offer.

The development and maintenance of the gullies could be mandated into planning regulations on designated open space, the cost of which would fall onto the developers who would be challenged to be creative about their approach to development. As it currently stands for new builds occurring in Kirikiriroa gully, developments frequently build to the edge and use the gully as part of their stormwater management strategy, and designate a grass lot with a playground as recreation space (very typical of the north eastern suburbs of Hamilton where Kirikiriroa gully spans across 5 suburbs).



*Figure 6.
Image showing pathway in part of the Mangaiti system
within Kirikiriroa gully system.*

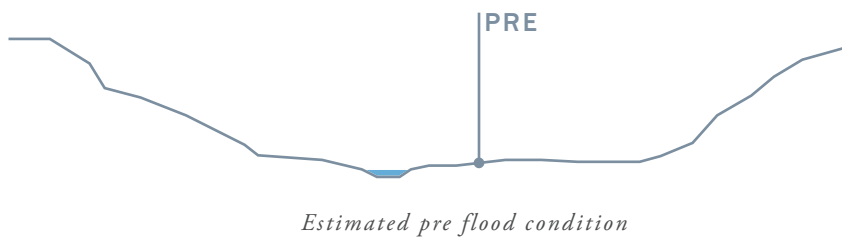




Figure 7.
Image showing part of the gully after a flood event.
(<http://gullyrestoration.blogspot.co.nz/p/flood-zone-in-gully.html>)

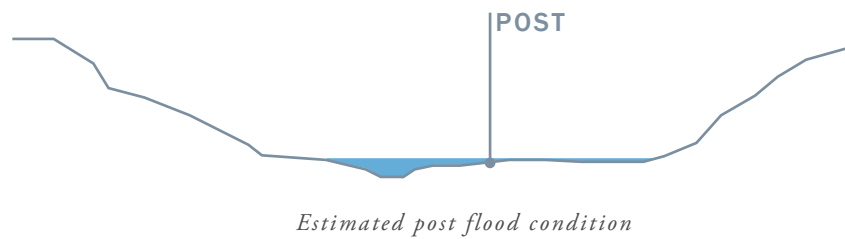




Figure 8.
 Historic imagery on Google earth showing Hamilton with
 relatively stagnant development growth pre-1998.
 The gully reserves management plan and the plants for gullies
 programme was started after 1998, perhaps in preparation for
 rapid expansion of the northern areas.



*Figure 9.
Historic imagery shows rapid change occurring from circa year
2000 with development ongoing today. The aeriels above
highlight just how fast development has occurred around
Kirikiriroa gully.*

ARRIVAL ON KIRIKIROA GULLY

Because of the large combined area of the gullies (750ha) and the short amount of time allocated to design research, the need to narrow down and focus on one particular gully was essential to allowing in-depth field studies to occur.

Kirikiroa gully adjoins onto several recently developed suburbs (1990s and after) and also encompasses examples of older development including areas of social housing (circa 1960s), creating a good range of suburban conditions to study.

It is also the gully on which Hukanui school adjoins, offering a familiarity and sense of previous experience that was deemed to be advantageous to allow a different perspective into the project.



*Figure 10.
Photograph overlooks part of Kirikiroa Gully and gives expression to the incredible sense of power this gully system has in removing you from the trappings of every day city life. Location of photograph indicated on page 07.*





POSITIONING

POSITION

The need for better urban development methodologies is vital to creating more diverse spaces which allow for a range of social ecologies to happen. The current practice of development tends to follow a strict process which produces monotonous rows of houses with their backs turned away from the waterway, instead being offered recreational reprieve in the form of a grassy passive open space or walkway next to a stormwater management water body. These water management areas are also designed with the same monotonous design hand with rows of planting dominated by the staple few: griselinia, phormium, and carex. It is easy to see how neighbourhood identity can be lost when your house looks the same as the owner five houses down and your street looks the same as the next suburb over.

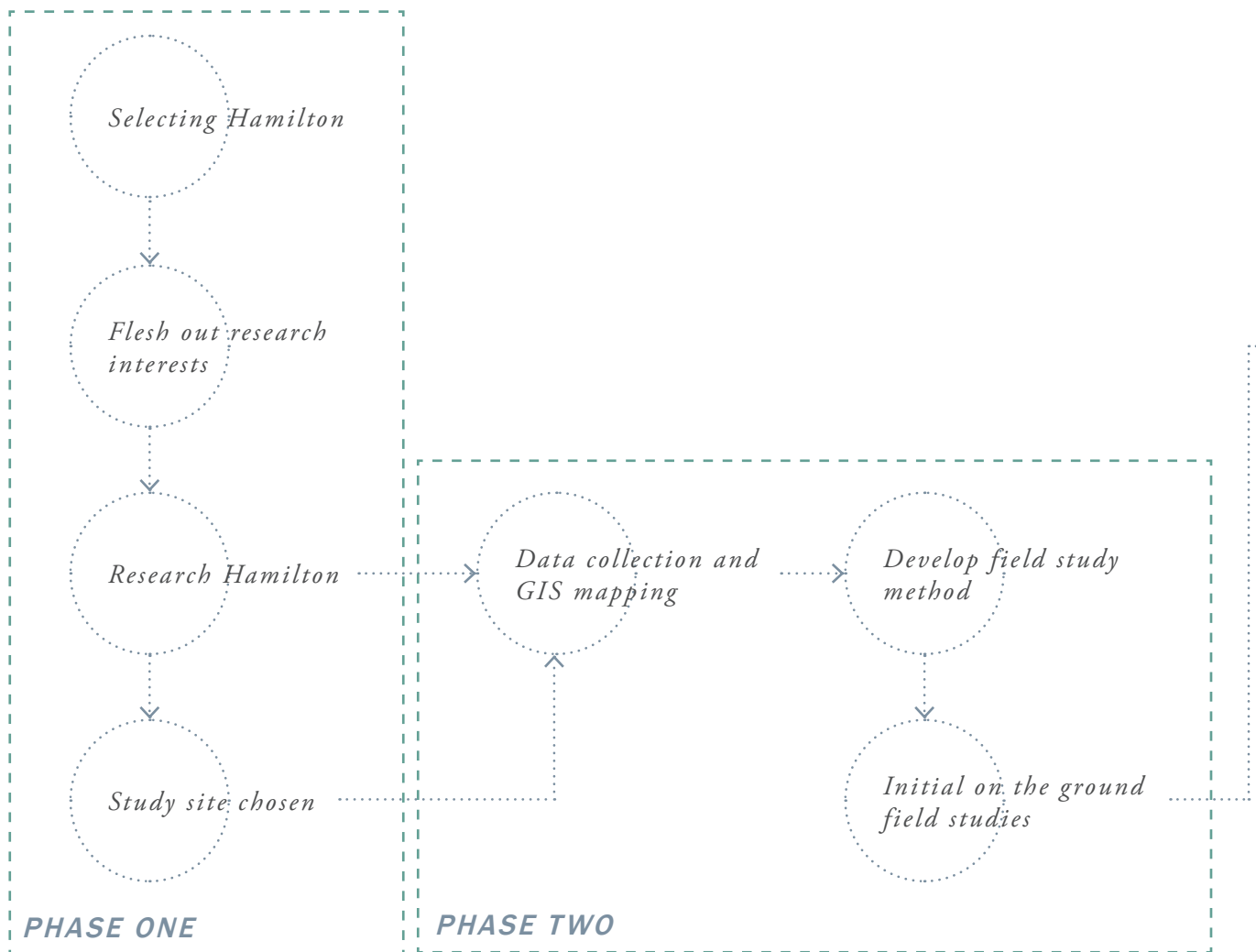
The blame of this mono-culture does not solely rest on the designer but also on the process in which development happens on a legislative level. The accepted process of consenting and design does not lend itself to rigour at project initiation phase. In the world of time-cost services, we are forced to produce plans, drawings, and findings with limited time to investigate and research. Often a vague masterplan is produced before designing the specific on the ground elements at a later stage. This can lead to mismatches in designed outcome and site conditions which produces bad design which offers little to no social potential.

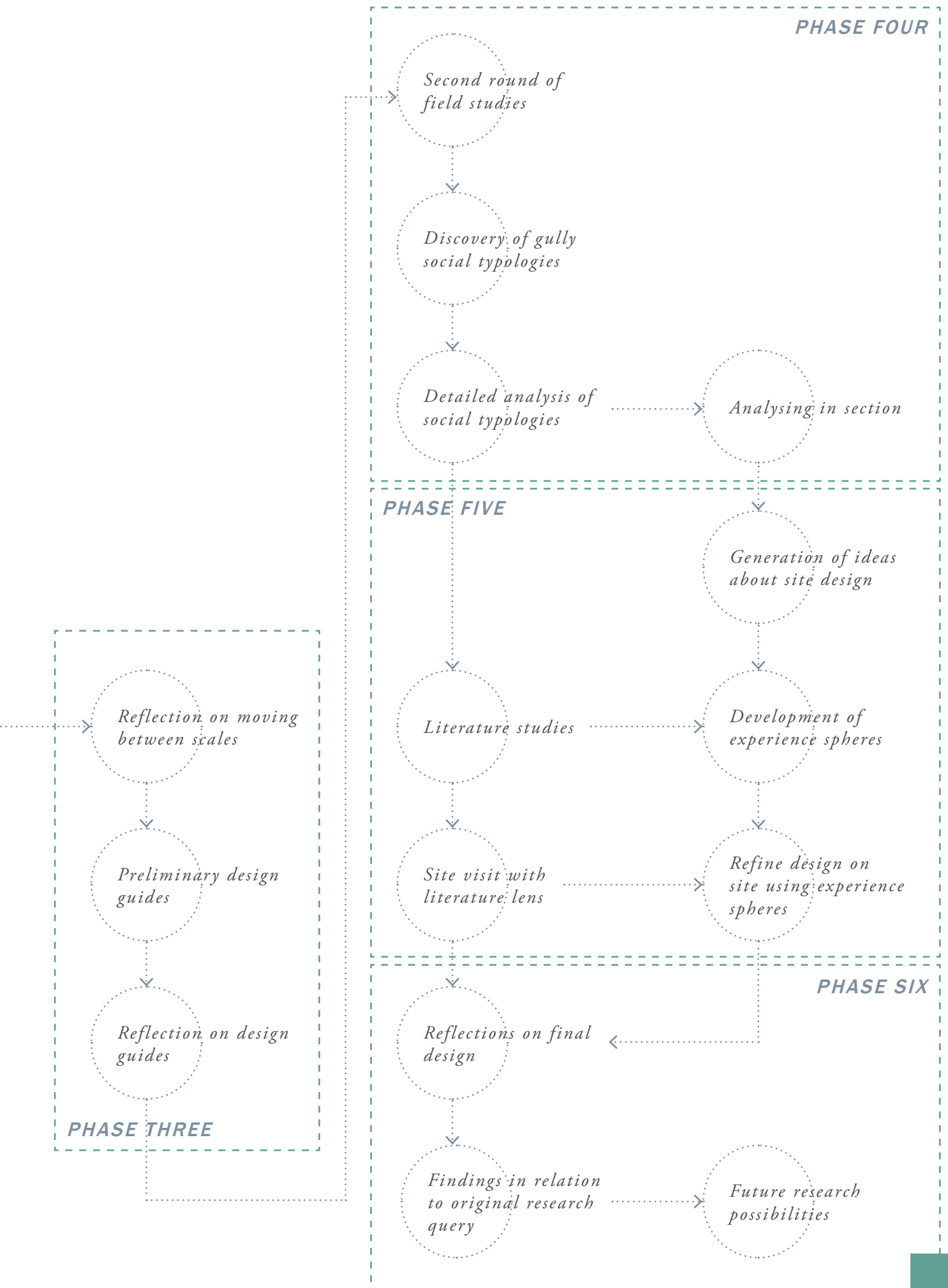
There needs to be a fundamental shift in the way we design to create more site-specific designs every time. The proposition of this research is to explore an alternative to the traditional top-down approach and challenge how designers can document sites to better inform design. The potential in understanding and building the skill of assemblage documentation to paint a more accurate picture of life on the ground, and thus showing designers more precisely how their design is going to affect space and social ecologies, could prove highly beneficial to the discipline.

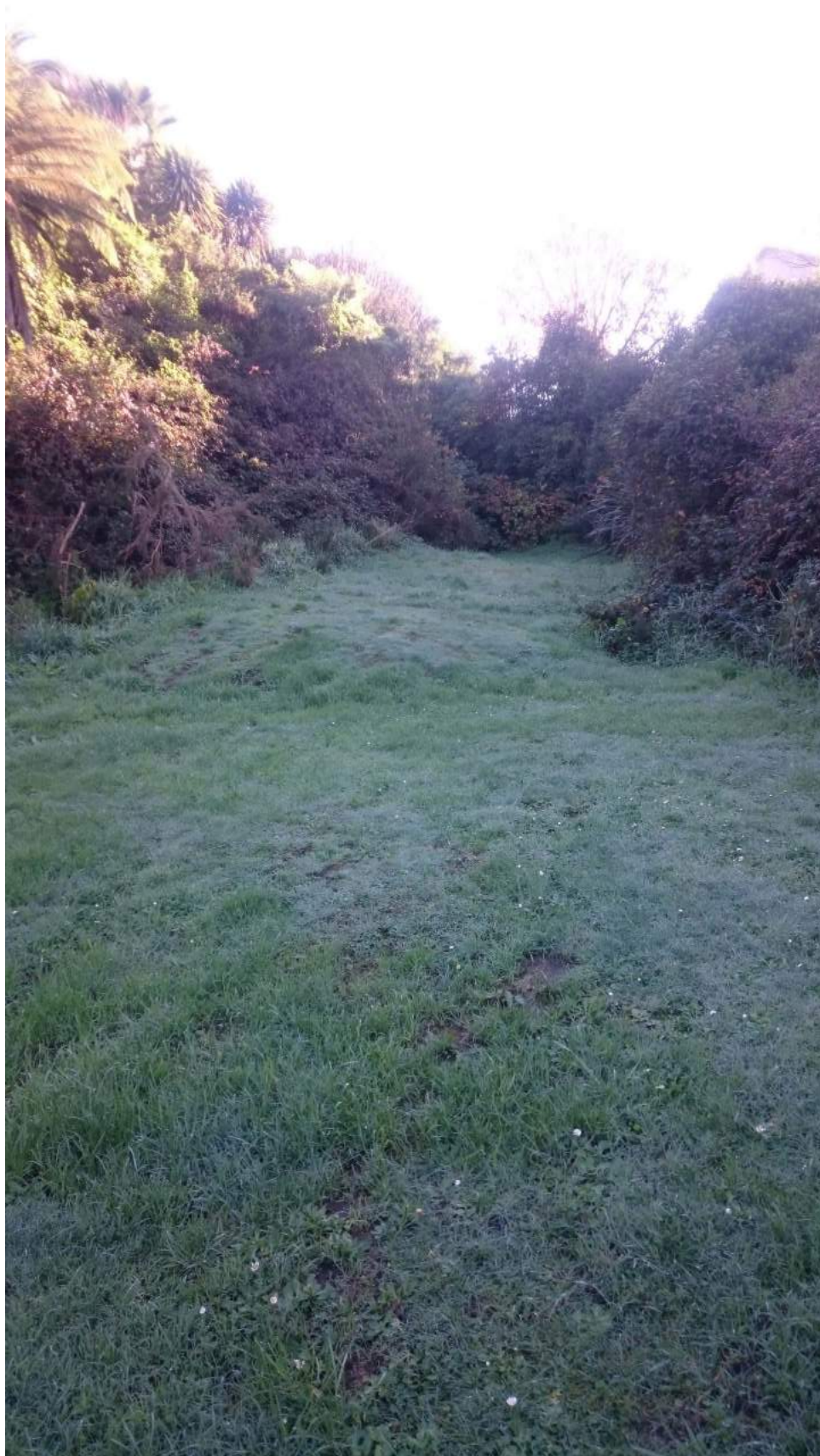


Figure 11.
 Google imagery showing the rapid expansion in the northern urban growth area of Hamilton. How much attention does planning regulation pay to the formation of neighbourhood social life when development happens so fast?

PROCESS OF THIS THESIS







METHODOLOGY

SHAPING THE ENVIRONMENT

The Gully Reserves Management Plan plays a large role in determining the character of the gullies, promoting certain experiential paradigms. High emphasis on ecological restoration work means many of the projects which have been undertaken in and around the gullies can be considered successful ecologically. However, the social potential of these same spaces can be somewhat lacking. There exists an opportunity to re-introduce humans to the regenerated gully areas, creating intensification of social potential in this vast network across neighbourhoods.

One policy in section 7 (Conservation and Enhancement of Gully Vegetation) states “emphasis will be placed on creating a dominance of evergreen species that will promote suppression of weed growth” which is essentially promoting a shaded valley floor with minimal light and limited human access (Hamilton City Council, 2007). Some thought has been given to recreation through the objective “to enhance and promote recreational use of gullies for passive recreation in a way that maintains the special ambience and aesthetic qualities of the gully experience” (Hamilton City Council, 2007). However, when comparing the two objectives, the first is clear and can be easily interpreted while the second is much more ambiguous and deals with more subjective goals. This ambiguity has led to pathways which have

been haphazardly laid, with minimal regard to establishing social human relationships but places high emphasis on flora and fauna ecologies. An example of this is the Hukanui School gully which is currently ecologically diverse but lacks in friendliness towards humans.

The Gully Restoration Guide provides a tremendously useful resource for the non-ecologist to undertake restoration work. It contains details about soil types, what to plant, and how to plant and maintain new growth. While this guide is extremely useful as a starting resource, it looks at early successional stages only and lacks somewhat in the ability to take into account the various stages of growth and changes in social dynamics as vegetation matures. The results of the plantings from when the guide was first released (2001) and when the gully restoration programme was first being developed (after the 1987 Environmental Protection Overlay) can be seen today. While the programme raised awareness about the gullies' importance and improved ecological value (Clarkson, Clarkson, & Bryan, Evaluation of the Hamilton City Council Plants for Gullies Programme, 2012), the gullies would now benefit from a more design based approach to facilitate a long-term social relationship.

MAPPING SOCIAL ECOLOGIES

This thesis explores a series of key concepts: sense, actor-networks, dramatization, and territory. To enable an engagement with these concepts, first discussion must be undertaken into what these concepts mean and how they have contributed to the fundamental thinking that has gone into this thesis.

The first discussion should begin with the notion of sense. Sense is significance. Sensations is how the body evaluates what works and what does not in the whole process of day to day life. It is the body's way of communicating whether that encounter is significant or not. Sensations are all around us, they cause intuitive reactions that cause the formation of an opinion about place. It is important to note that this opinion is not formed on one particular sensation, but rather is an accumulation of evaluation outcomes from several different sensations experienced.

Each moment of sensation can be described and mapped through understanding and using an adapted implementation of Bruno Latour's actor-network theory (Latour, 1996). These actor-networks map various scenes, and one can start with the moments of significance one experiences in the world. Each of these scenes contains various actors, evaluating each other and adjusting themselves to compensate for the changes in the environment and other actors around them.

This constant evaluation and shifting is perhaps why it can be difficult to trace these networks as a designer; trying to describe what actors are at play and also what they are doing while they are simultaneously undergoing change is not an easy task.

Dramatization as a critical method is discussed by Iain MacKenzie and Robert Porter where they “[state] that critical methods are those that see an intrinsic link between knowledge and change such that one comes to know the (political) world through the act of changing it” (2011). Their interpretation of dramatization is about what gives concepts their force or their quality rather than their essence. The application of dramatization as a critical method in this thesis is interpreted as the ability to recognize significance in the landscape as dealing with essence, the description of the relationships which breath life into this significance is about force or quality. Imagine a play with a cast, a set of actors, and the dialog between them and their interactions with each other is what creates the story and atmosphere. The same actors can be cast over and over, and have a different play every time due to the variations in dialog and in interactions. In the physical environment, the same objects (actors) can be used (cast) over and over but perform differently during different times in the day, or even the same objects in a different site, which will produce entirely different experiences, even though on paper, it could have the same objects and attributes as the first site.

So how can one start to trace and dissect actor-networks through understanding dramatization? How can one understand the dialog between actors when the actors are plants, rocks, birds, and other objects landscape architects must deal with? One could begin by thinking about the actors in the network as an assembly of objects which have their own metaphysical territory. These actors are arranged in space based on each individual's ability to extend or contract their territory, allowing others territories into their own or choosing to exclude them. These territorial boundaries are sometimes physical, but more often than not, this evaluation of what to let in and what to keep out happens invisibly to the human eye. Take for instance the scenario of walking towards someone. The body and mind evaluates the approacher's invisible boundary and makes calculations based on their own territory, and then the body shifts slightly left or right to avoid encroaching on the approacher's space or letting them enter the experiencer's. This invisible territory that surrounds the experiencer determines the distances between the experiencer and the objects they interact with.

A sensation or sense of place is the body's evaluation of what objects the subconscious lets into the body's territory and what it wants to engage with. These lead to decisions about whether the body veers left or right, which direction the head looks towards, places which the body chooses to pause at;

they are all informed by a negotiation of territorial boundaries pushing and pulling, and by a permeability factor determined by each actor. During field studies, it is important to record each sensation and scenario encountered with rigorous documentation of the space as this will be vital to successful analysis of cause and effect, which will potentially lead to an interpretation of the dialog that may be occurring.

The ability to adjust territorial boundary is a condition which exists for organic life only. While non-organic life can partake in dialog between things, its territory does not fluctuate. Non-organic life usually has a fixed set of actions such as a rock's ability to cool down or heat up, it does not have the ability to sense, it instead has the ability to be absorbed into the territory of nearby flora or fauna. The rock becomes a prop or stage for the actor to communicate or expand its presence, creating a world with the actor as the centre. All organic life partakes in world making to some extent through the continual evaluation of the objects around them and by simply living life with purpose. A world is really an assemblage, a collection of objects and relationships, of things in dialog with each other and coming together to create one or more effects, or perhaps an action or actions. In the context of this thesis, the notion of a world is synonymous with a social ecology.

TE AO MĀORI

“In Te Ao Māori, mauri – the regenerative life-principle - connects people and spirit to all within the natural physical world.” - (B. Livesey, n.d.)

Mauri as defined by Moorfield (n.d.):

1. (Noun) life principle, life force, vital essence, special nature, a material symbol of a life principle, source of emotions - the essential quality and vitality of a being or entity. Also used for a physical object, individual, ecosystem or social group in which this essence is located.

The concept of mauri is describing the power a landscape has to evoke emotion, connection, and sense of belonging. It is a fundamental concept in making sense of the cultural connections Māori form with the physical and spiritual world and provides insight into the way they read the environment through tōhu (markers in the landscape) and draw understanding about the condition and significance of the land. Understanding this way of thinking about physical and spiritual fluidity generates a deeper understanding of the formation of hapū (kinship group).

The formation of sub tribes or hapū is not solely a genealogical affair in the way western genealogy works. While western genealogy is limited to human family trees, Māori ancestry includes mountains, lakes, and other landforms which behave as entities from which current hapū descend from. Straying away once again from western thinking where clear demarcations of ownership boundaries must be defined, Māori lay 'claim' to the land through knowledge of their ancestry (ancestors can be the land).

There is a strong spiritual dimension to how territories between different hapū are defined and those territories are by no means fixed. They shift and change as the new generation tell their new stories and establish relationships to the surrounding landscape. This active redefinition of the world that is theirs illustrates the notion of involution (Pearson, 1999). The constant reconfiguration of territory illustrates a historic example of assemblage evolution where it shapes a peoples' connection with place and constructs this metaphysical territory in which individuals can feel connected to.

Jeffrey Sissons (2013) discusses the formation and evolution of hapū around intense centres. These centres may shift with each leader and with each generation of the hapū. While in more recent times the centres were places like churches, meeting houses, or other physical structures, centres pre-1840 show non-structural centres also exist (such as a spring). Centres are often highly spiritual places and hold in them some power or ability to exude a sense of significance. This recognition of places of power in the landscape, and the consequent assignment of sacredness shows the effects of some of the concepts discussed previously. Understanding hapū territory formation and the parallels between the formation of social ecologies in the gully will be key to the developed methodology of mapping and consequent design outcomes.

SUMMARY OF METHODOLOGY

Multiple repeat site visits were required to allow accurate assessment and mapping of the gully. To effectively engage with the concepts discussed, a systematic methodology was developed to assess and map space accurately. Existing mapping methods rely heavily on plans and top down drawings when these drawing tools are less accurate at showing life on the ground than sections. Both are important drawing tools however, this thesis is going to explore designing primarily through section and photographs.

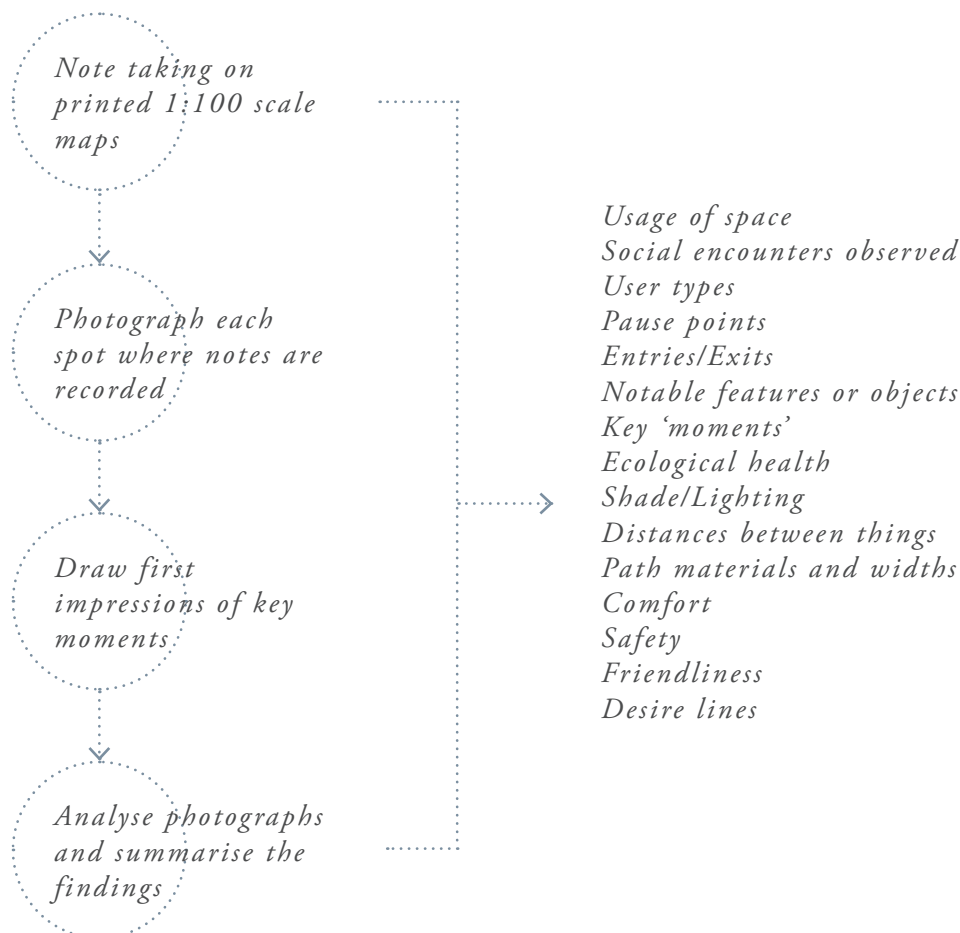
In a reversal of the traditional vague concept plan first with detailed design coming second, this thesis will explore how a designer can start by designing on the ground. Detailed design of key moments on the ground will inform the larger site context and consequent masterplan. It is envisioned that by designing in section at a human scale, the depth of analysis afforded allows this to be a critical method leading to better understanding of the site.



DESIGN EXPLORATIONS

INITIAL FIELD STUDIES

The first site visit was about impressions and photographic evidence. The image to the right shows some diagrams which were key moments from the visit to the gully system. This site visit was conducted with 1:100 scale maps of the entire gully system which allowed rigorous note taking to occur, with exact locations of interesting events and other important information. The thorough first impression stage generated some preliminary design guides based on common experiences recorded during the visit. Below is the method undertaken on this site visit.



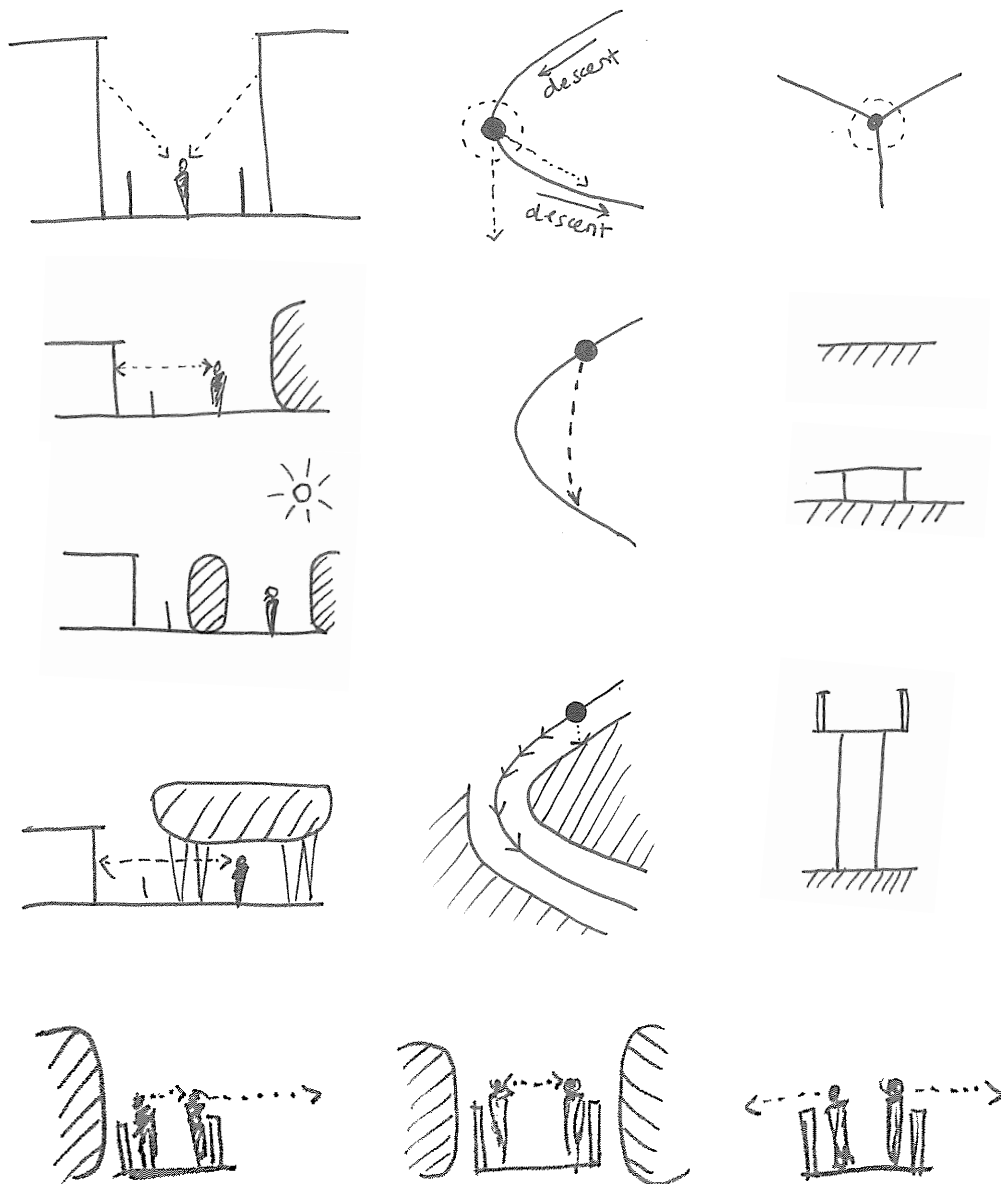
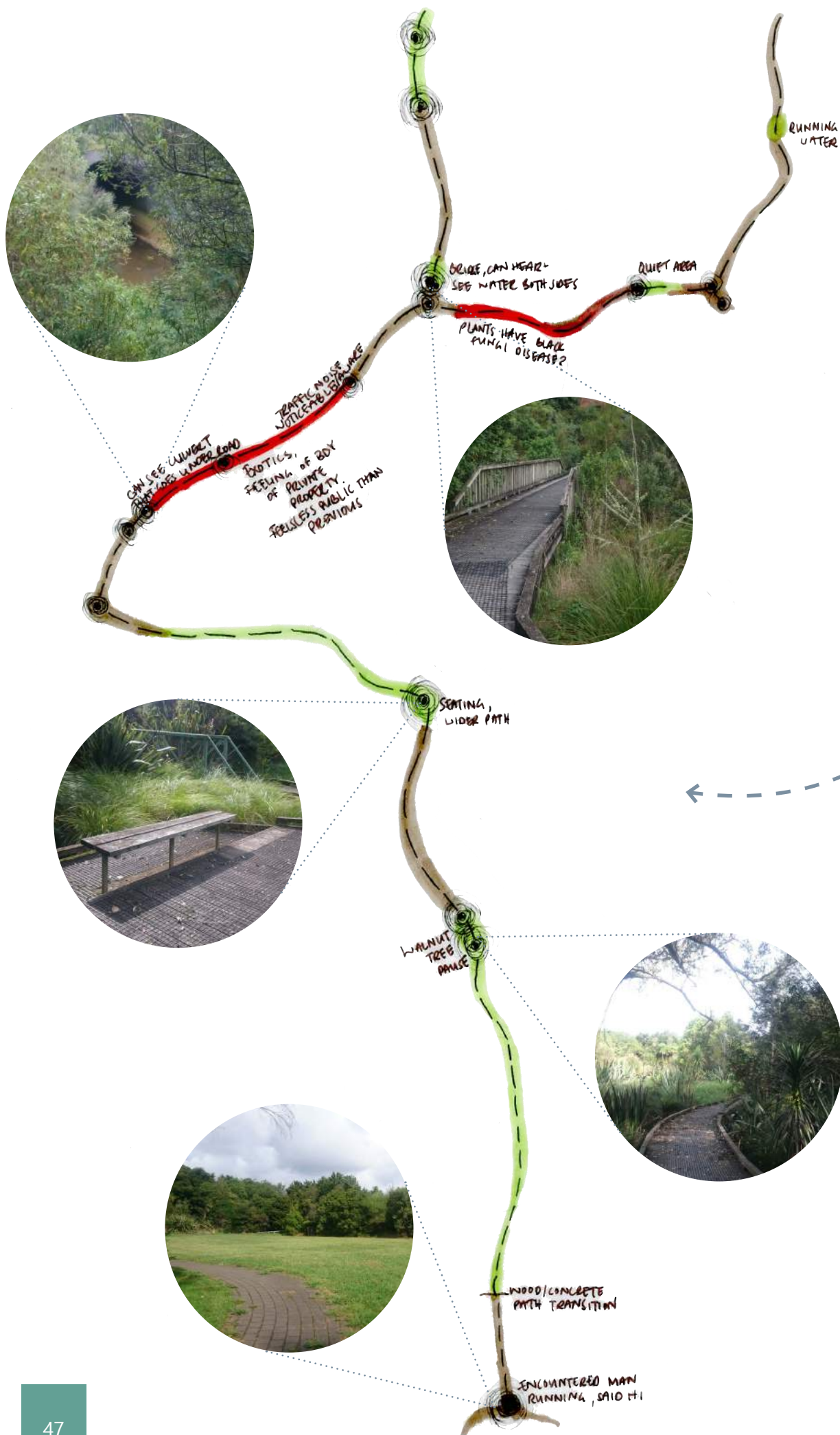
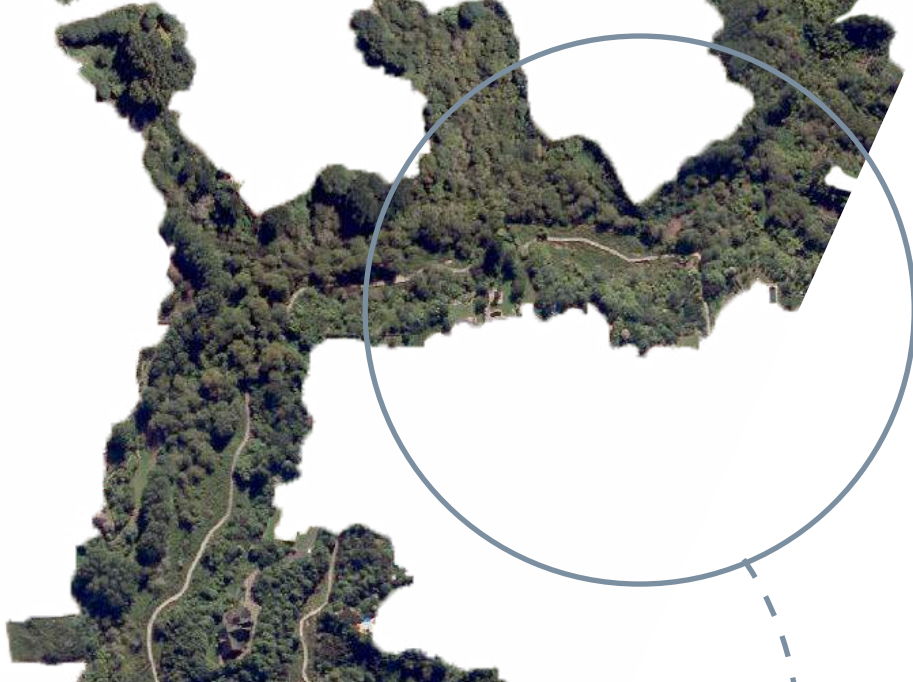
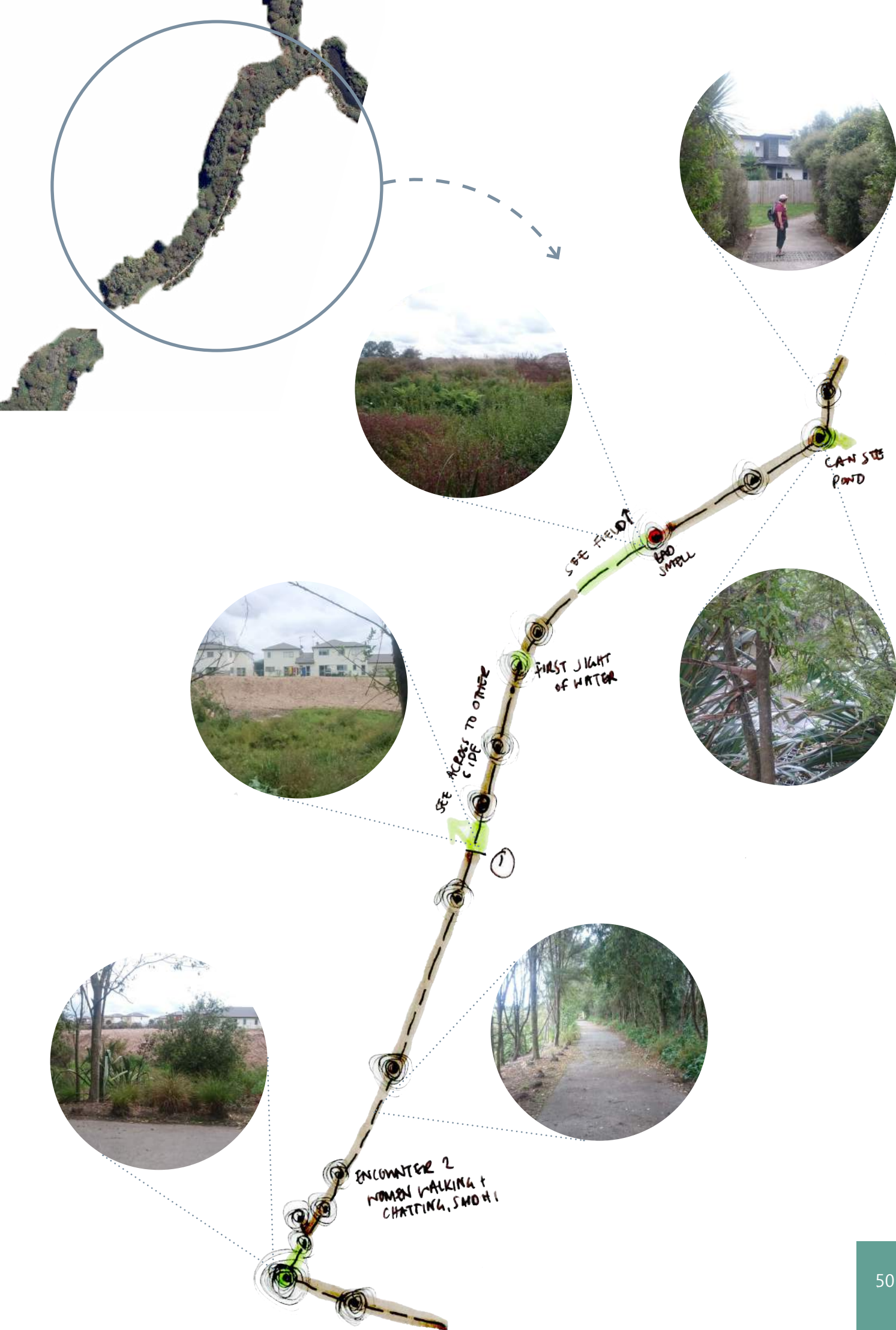
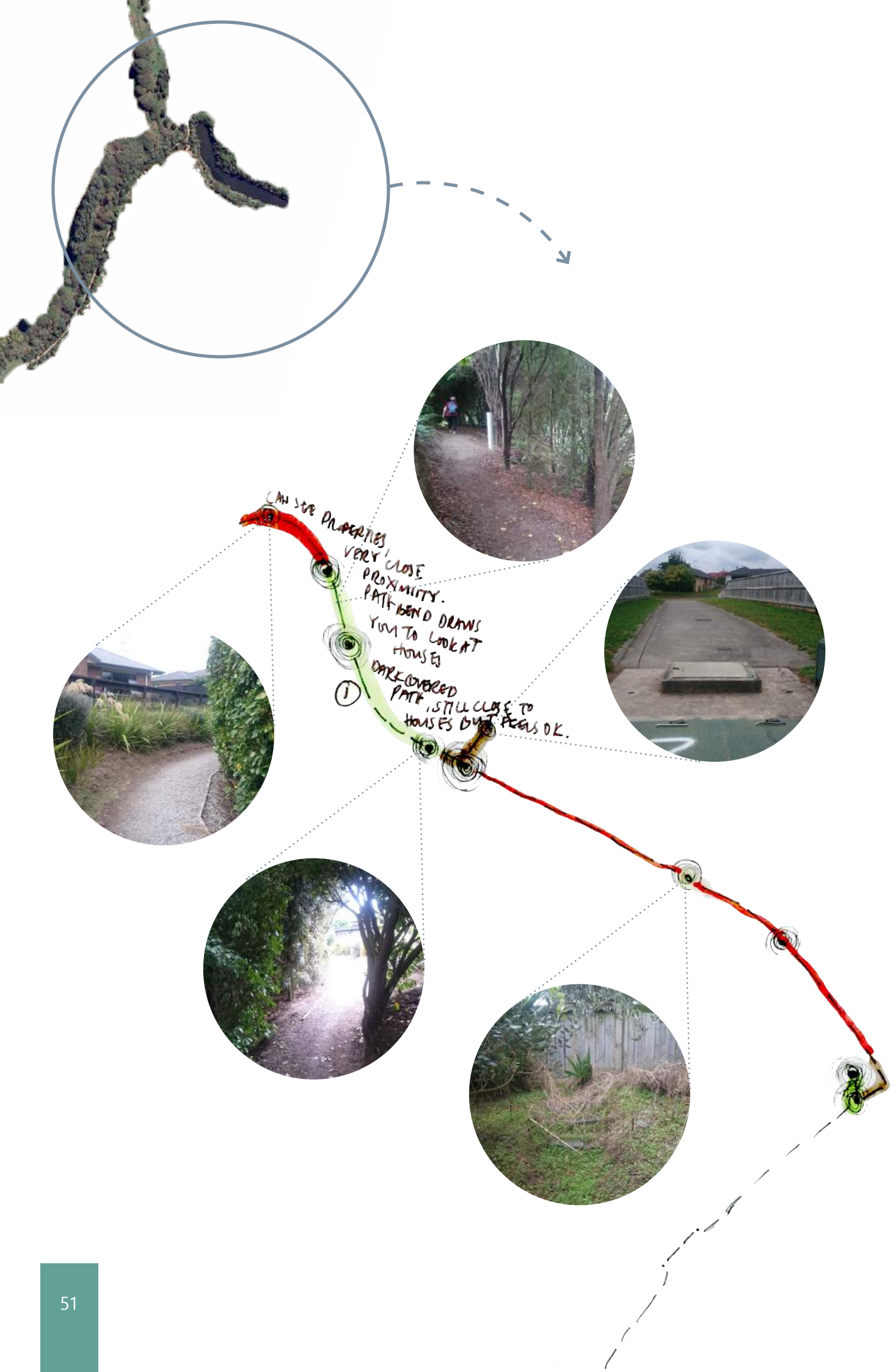


Figure 12.
Initial actions observed during first site visit across the gully.











2 TWO LADIES 4 DOG
+ PRAMA, SAID HI
KID SEATING
(SKATEBOARD)
DONT SAY HI



OFF TRACK
- STRANGE NOISE

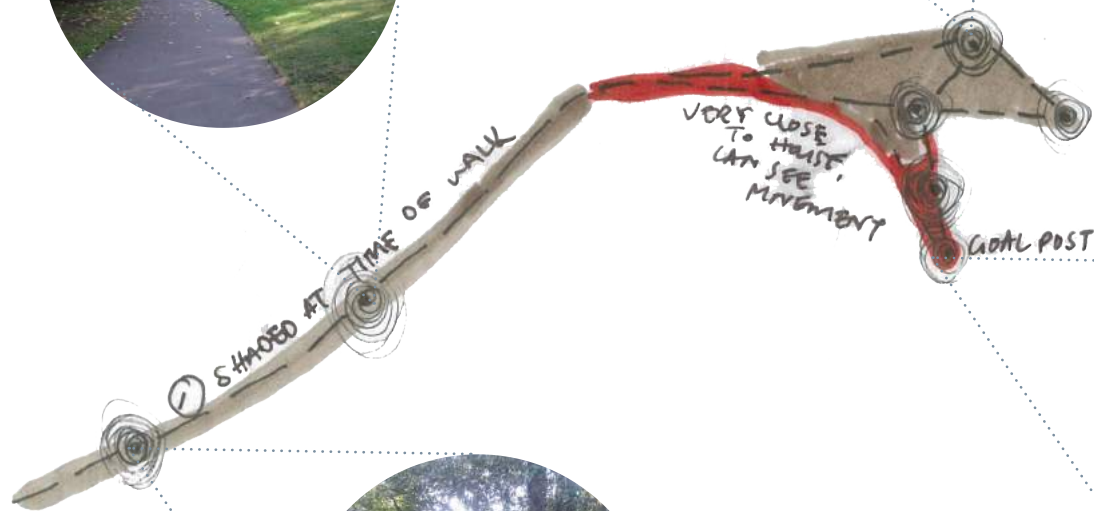
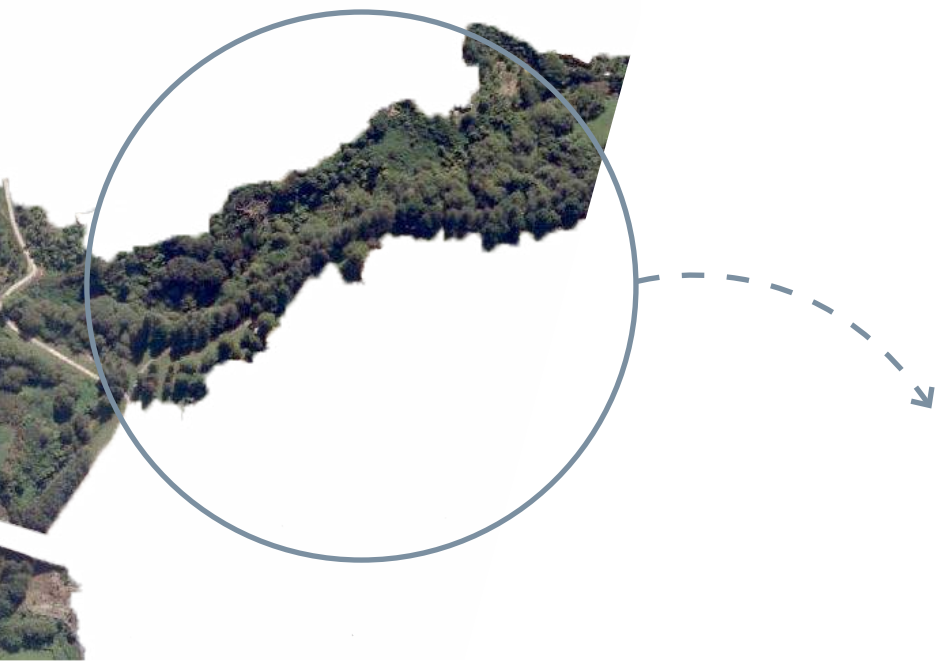


20s woman
w dog
SATO HI.

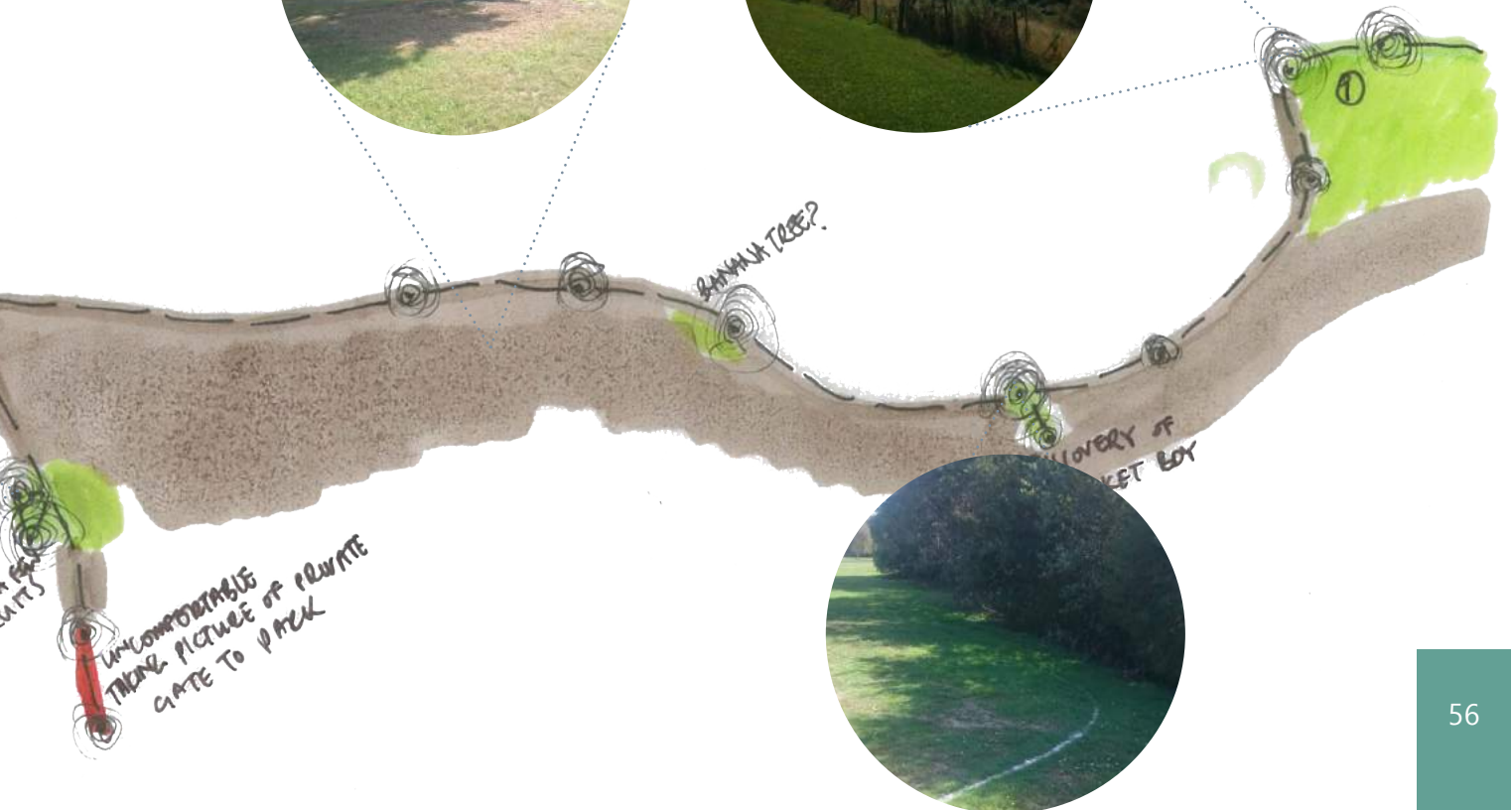
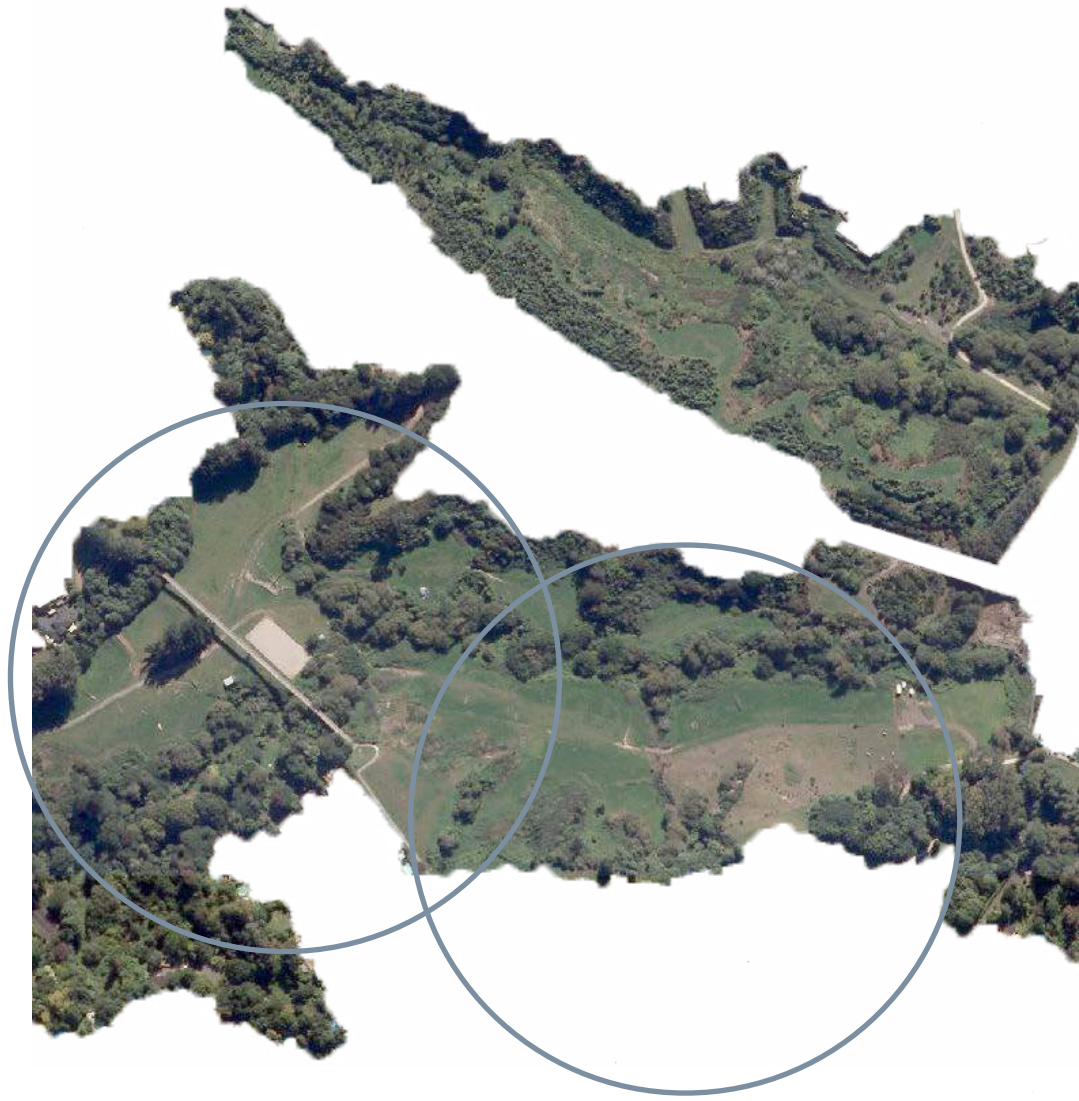
MAN u dog,
SAIO HI.

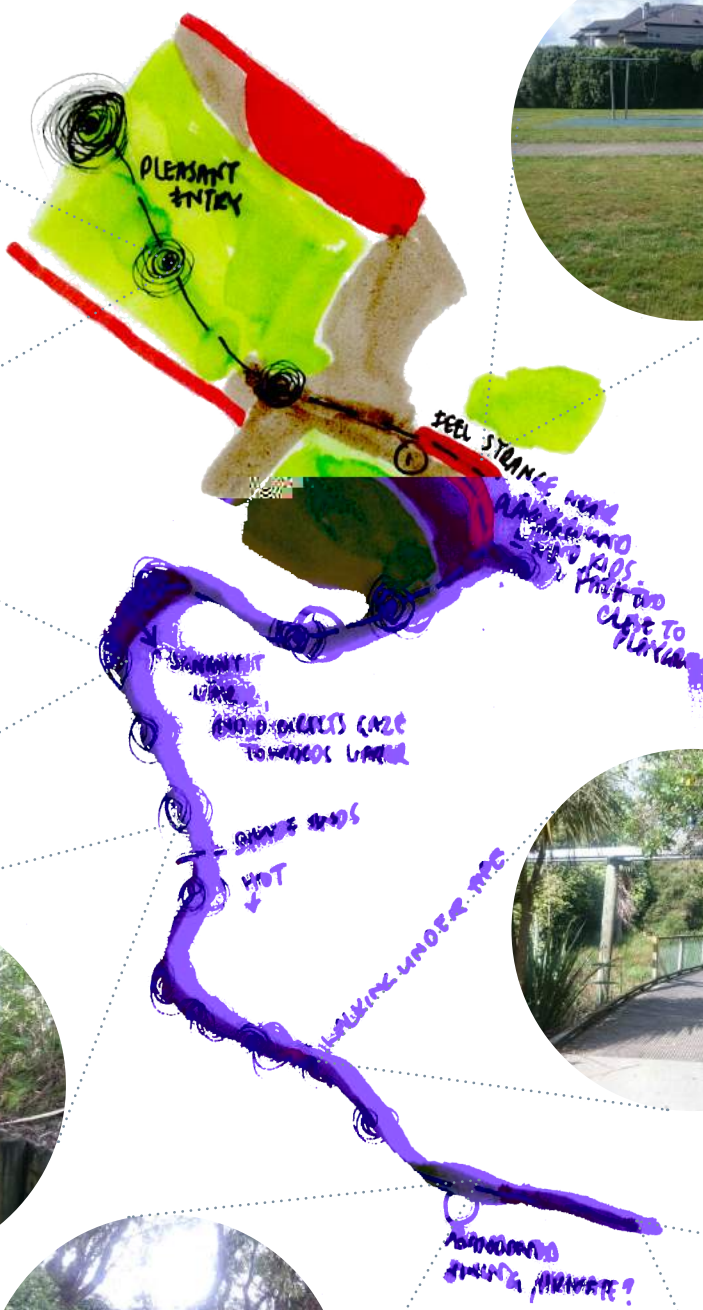
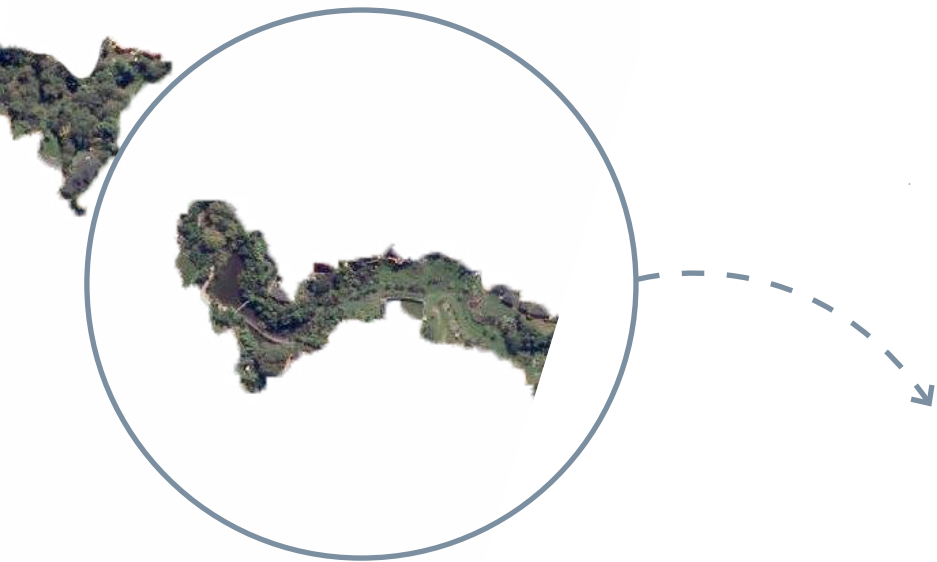


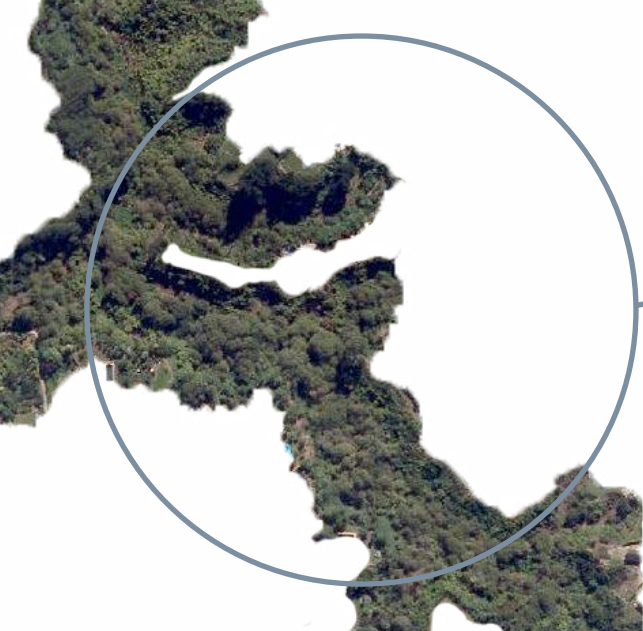


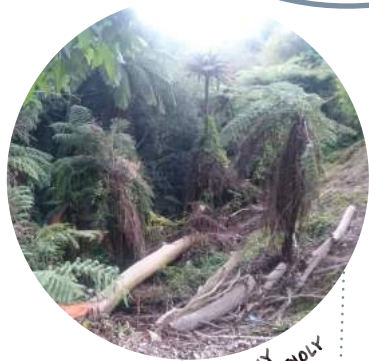












AREA FEELS HEAVILY
SHADED, UNFRIENDLY



RELIEF FROM SUN/HEAT

ANTICIPATION OF
CREEK
VERY DISTINGUISHING
THICK HOLD (VEGE)



STOPPING
TOUBLY
IN CREEK

NICE FEELS
NICE
RE-PLANTING
EFFORTS

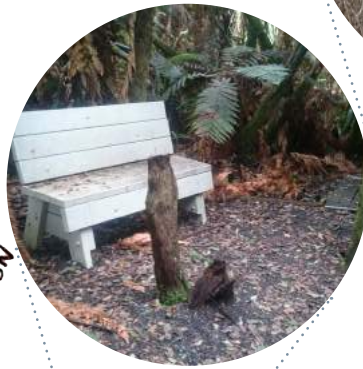
MAKING MOVEMENT
SCOTTIE ZIMMERMAN
PAST JARDIN



NOT 3000 RE-PLANTING
CREEK

STIMULANT WATER
VIEWABLE

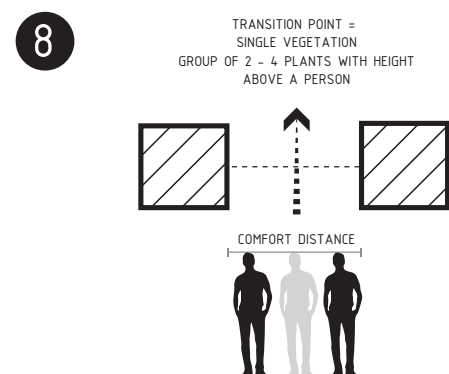
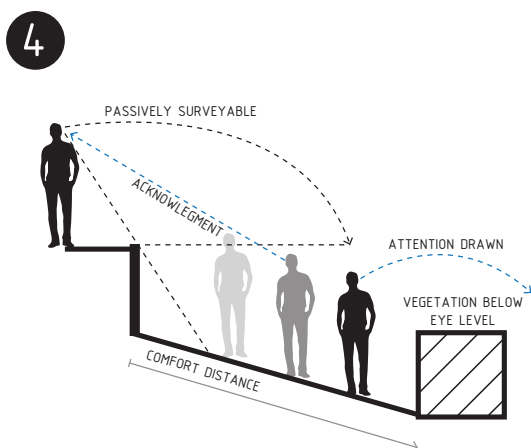
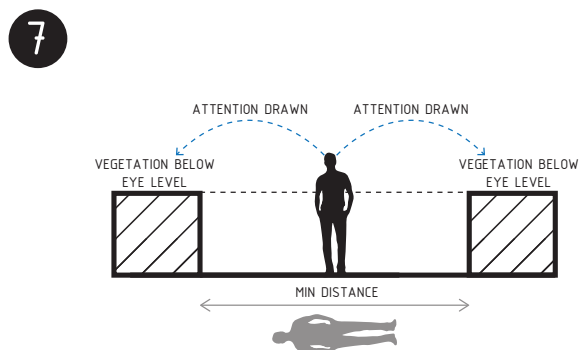
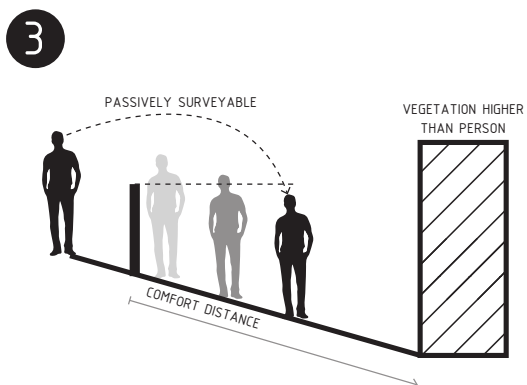
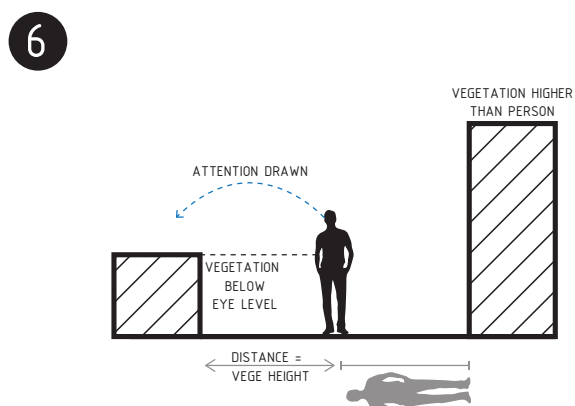
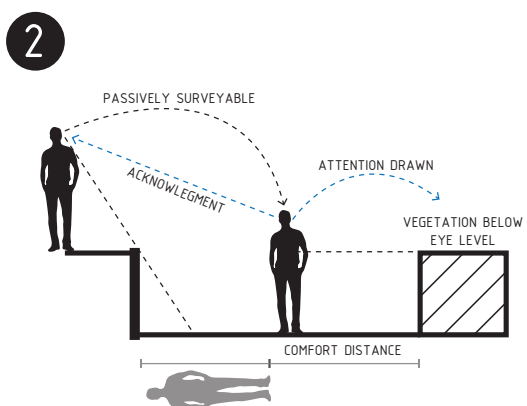
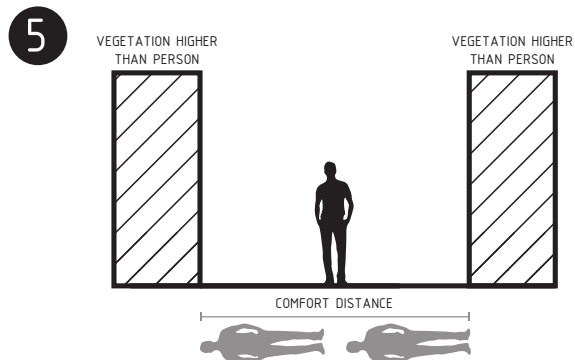
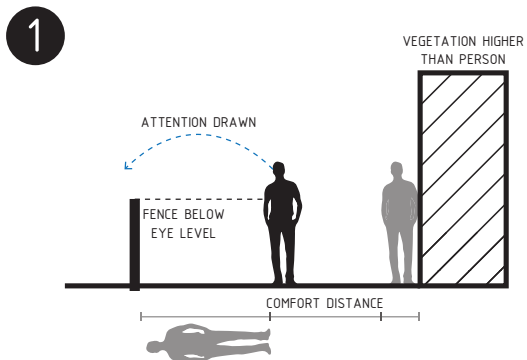




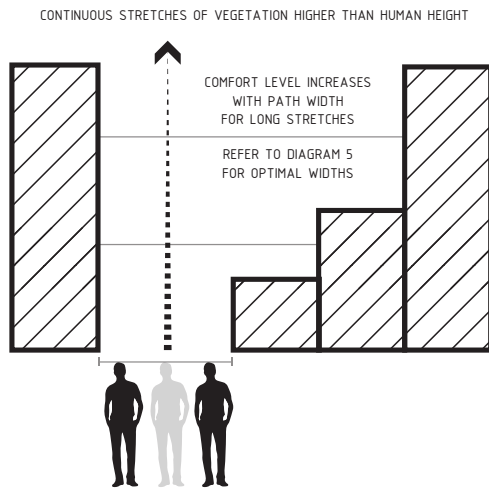
PRELIMINARY DESIGN GUIDES

Development of some basic rules about the structure of the physical environment that governs the way people act. Through analysis of photographic evidence and notes about the site conditions, preliminary guides act as the first iteration of broad level human behavior derived from various points in the site. The 16 guides highlight conditions commonly found on site and their recommended physical structure to improve on the existing condition.

This is an attempt at application of design rules over a large extent.

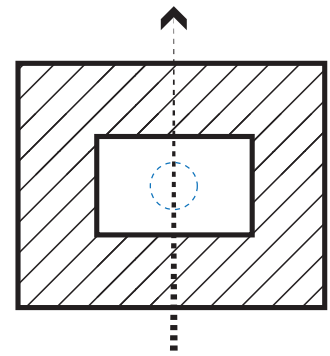


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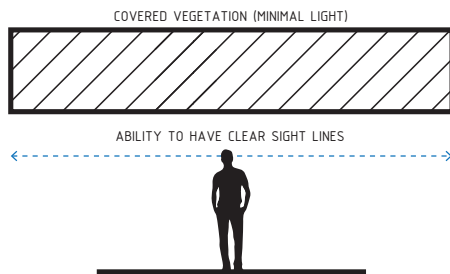


13

SMALL CLEARING (3 PACES OR LESS) = LOOK UP
MEDIUM CLEARING (4 PACES - 6 PACES) = SLOW, LOOK AROUND
LARGER CLEARINGS = LINGERING

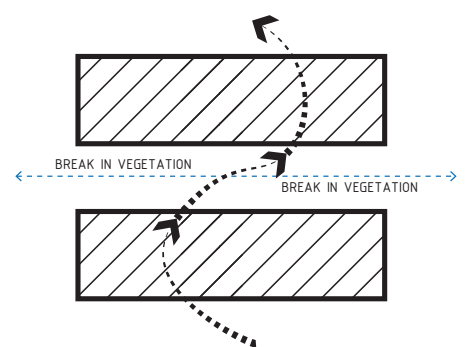


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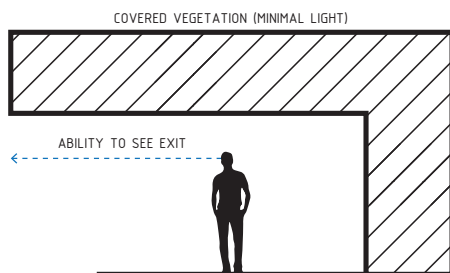


14

COVERED VEGETATION (MINIMAL LIGHT)

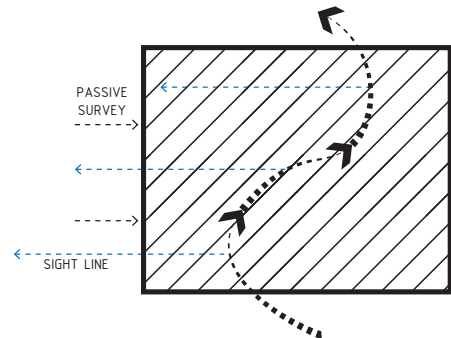


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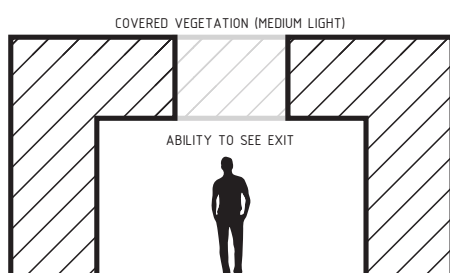


15

COVERED VEGETATION (MINIMAL LIGHT)

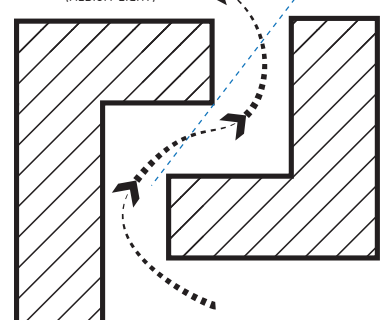


12



16

COVERED VEGETATION (MEDIUM LIGHT)



REFLECTION ON INITIAL GUIDES

The guides are too broad and do not provide enough information about the on-site conditions to enact any effective and guaranteed positive social change. They fail to show the complex network that creates a site condition, therefore fall short of providing a good tool to be able to manipulate and recreate experience using assemblages.

They do provide an initial order to the research, a way of trying to piece together an overview of the small scale. It was after this stage that a more broader view on the system was needed and a pattern of experience on a large scale was developed.

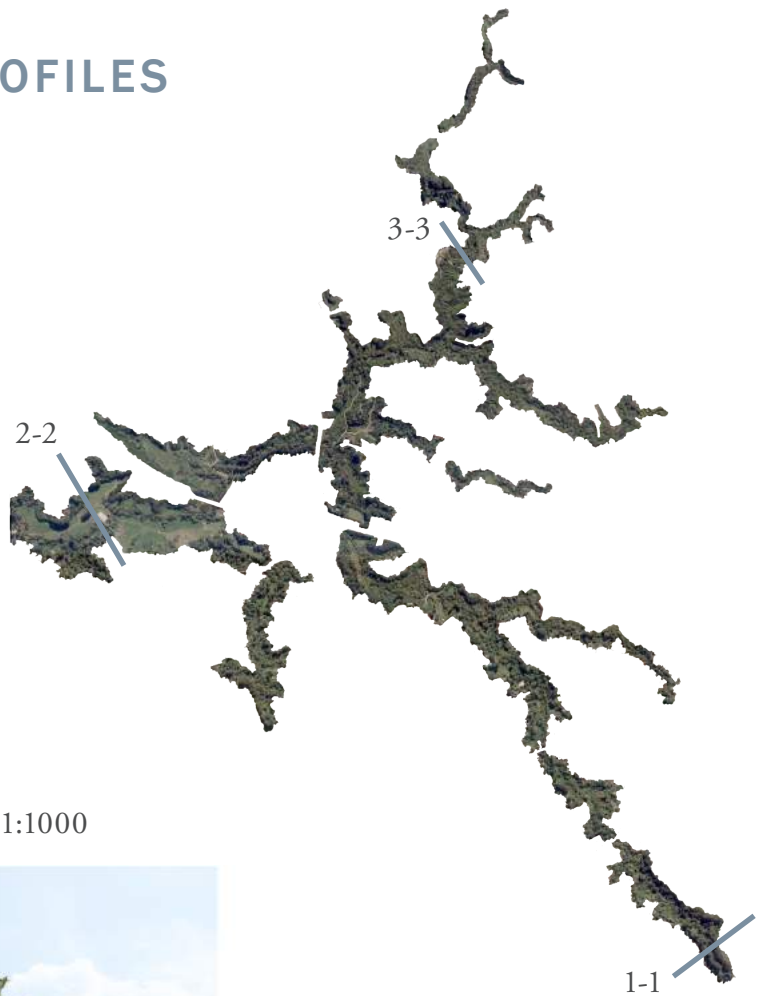
DISCOVERY OF SOCIAL TYPOLOGIES

During this phase of the project, several barriers presented themselves. The ability to traverse the very large scale and the very micro scale is often a time-consuming task for such a large site. A second site visit was needed to provide a new window to look at this project. Armed with the knowledge of the first visit and the preliminary design guides, several site visits were undertaken to re-visit several key spots and undertake a deeper analysis of site conditions. On the second site visit, it was revealed that certain places within the gully system had similar actors with similar social tendencies. This new categorizing of these social tendencies led to the development of three main social typologies: water management, access and recreation, and ecology.

Using this knowledge, a detail map showing the various areas which can be categorized into the three social typologies shows the types of experience available and narrows down potential design sites to designate as intense centers.

OVERVIEW OF GULLY PROFILES

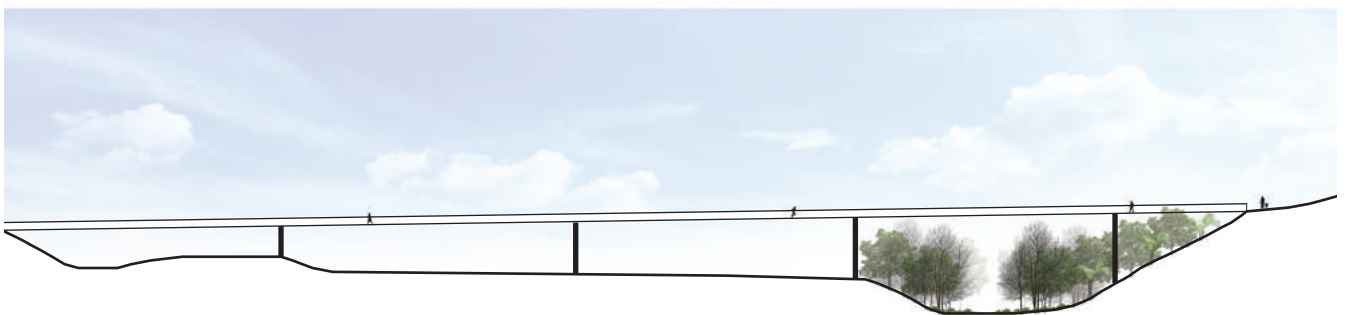
Each of the three typologies have distinctive physical profiles in terms of vegetation, gully width and the resulting experience from the site type.



Section 1-1 | WATER MANAGEMENT | 1:1000



Section 2-2 | RECREATION | 1:1000










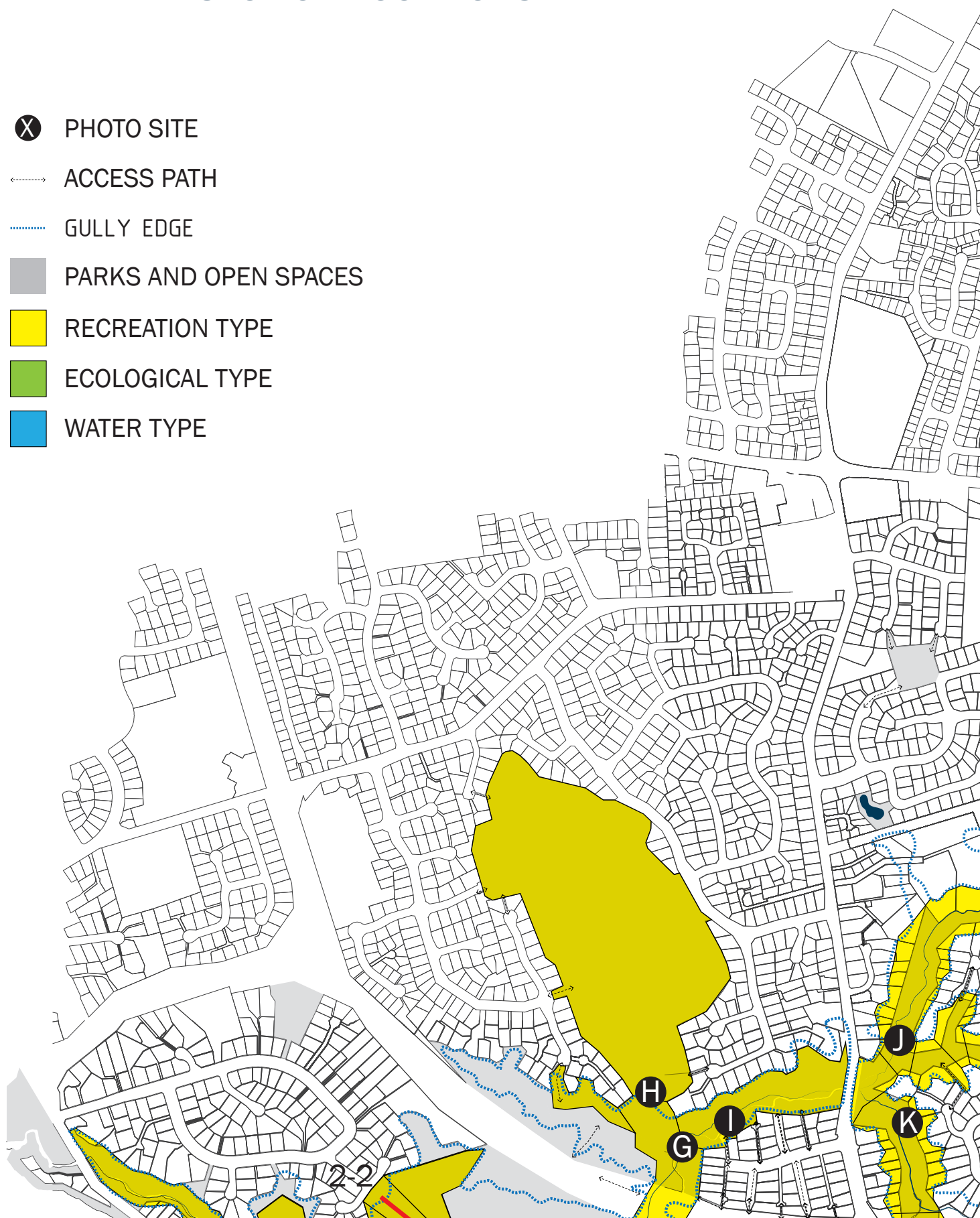
Section 3-3 | ECOLOGICAL | 1:1000

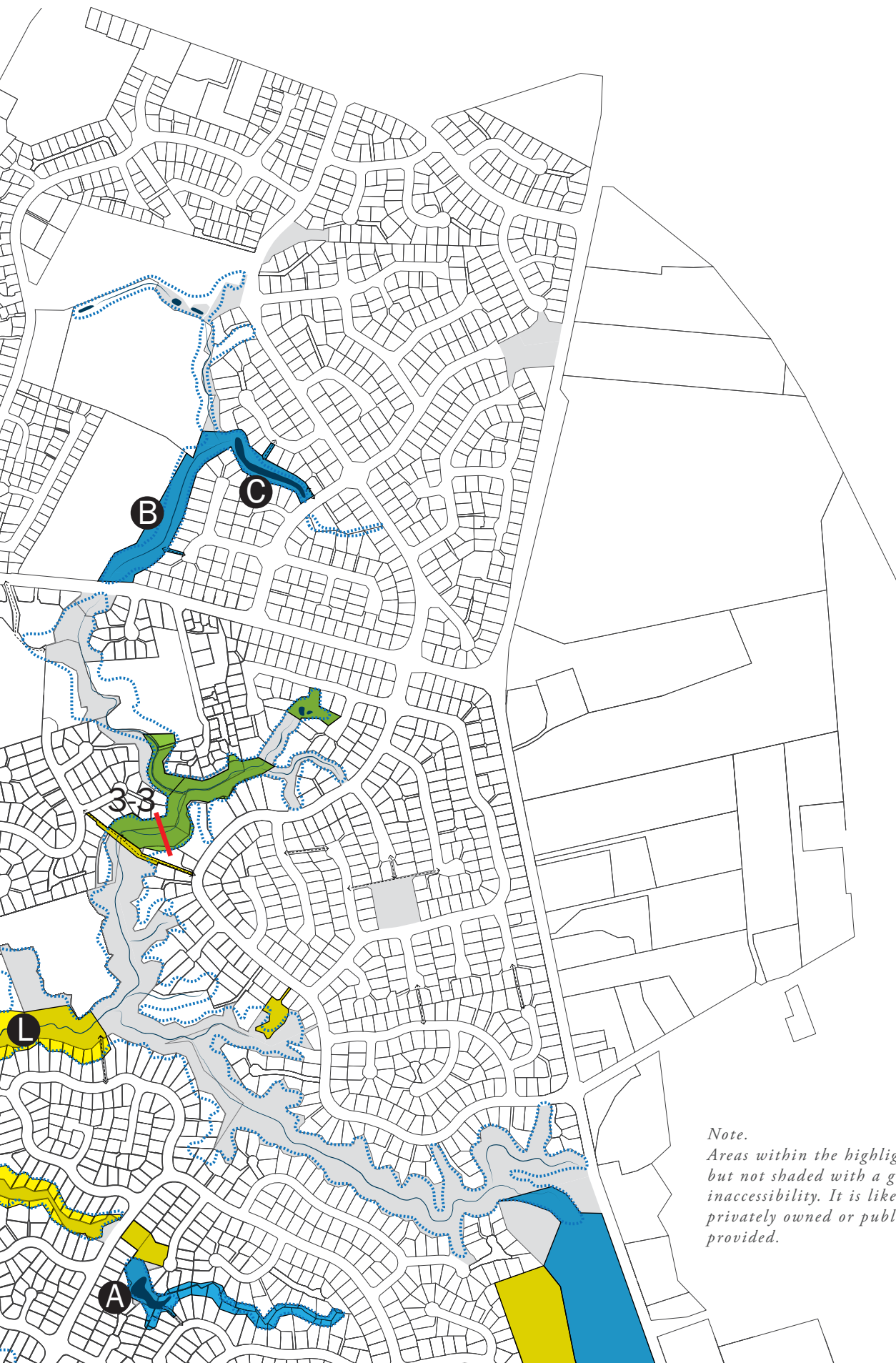


*Note.
These sections give an indication of each gully
typological profile.
Section locations are shown on page 32.*

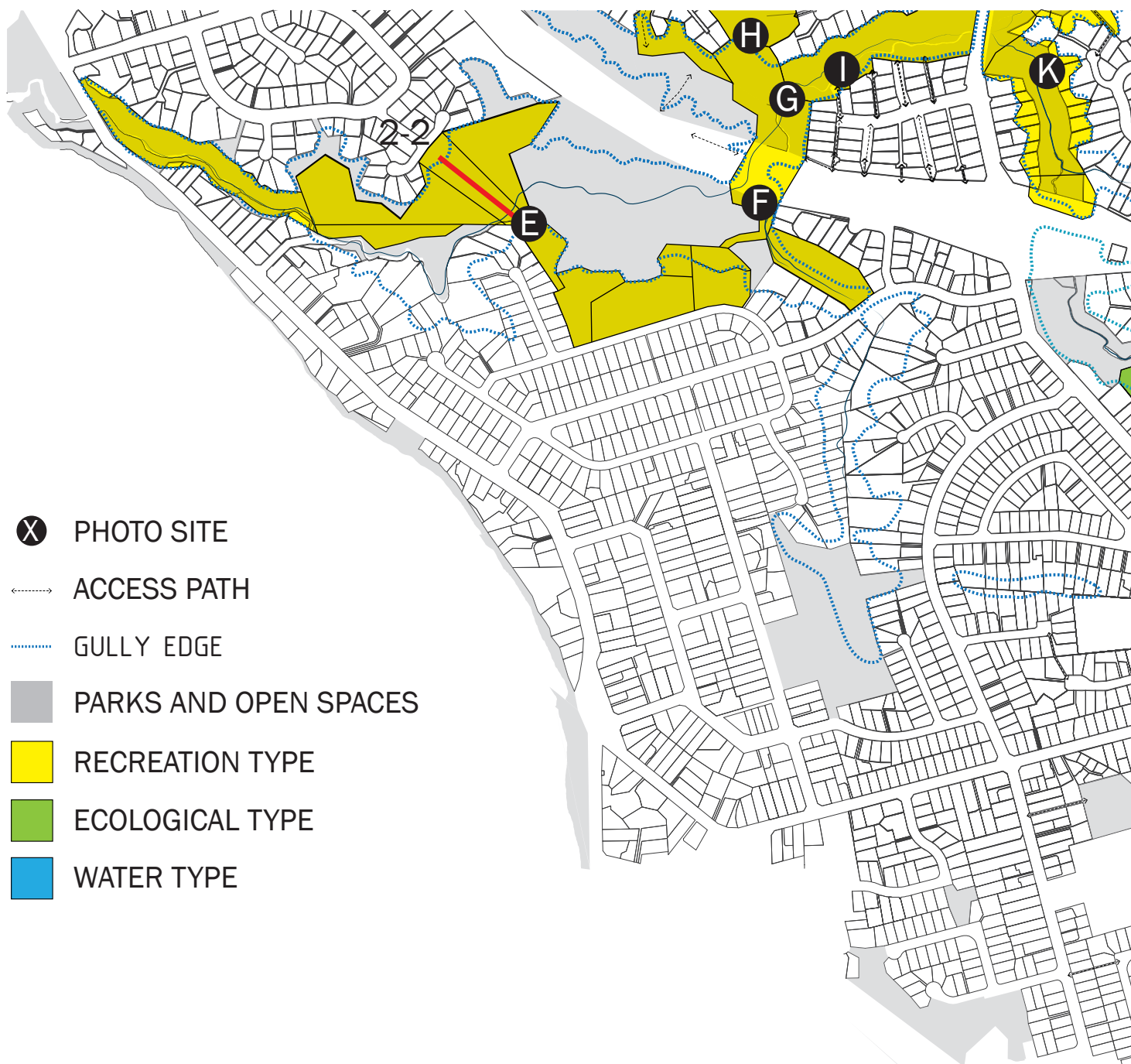
1:20000 MAP SHOWING THE GULLY TYPOLOGIES AND THEIR SECTION LOCATIONS

-  PHOTO SITE
-  ACCESS PATH
-  GULLY EDGE
-  PARKS AND OPEN SPACES
-  RECREATION TYPE
-  ECOLOGICAL TYPE
-  WATER TYPE

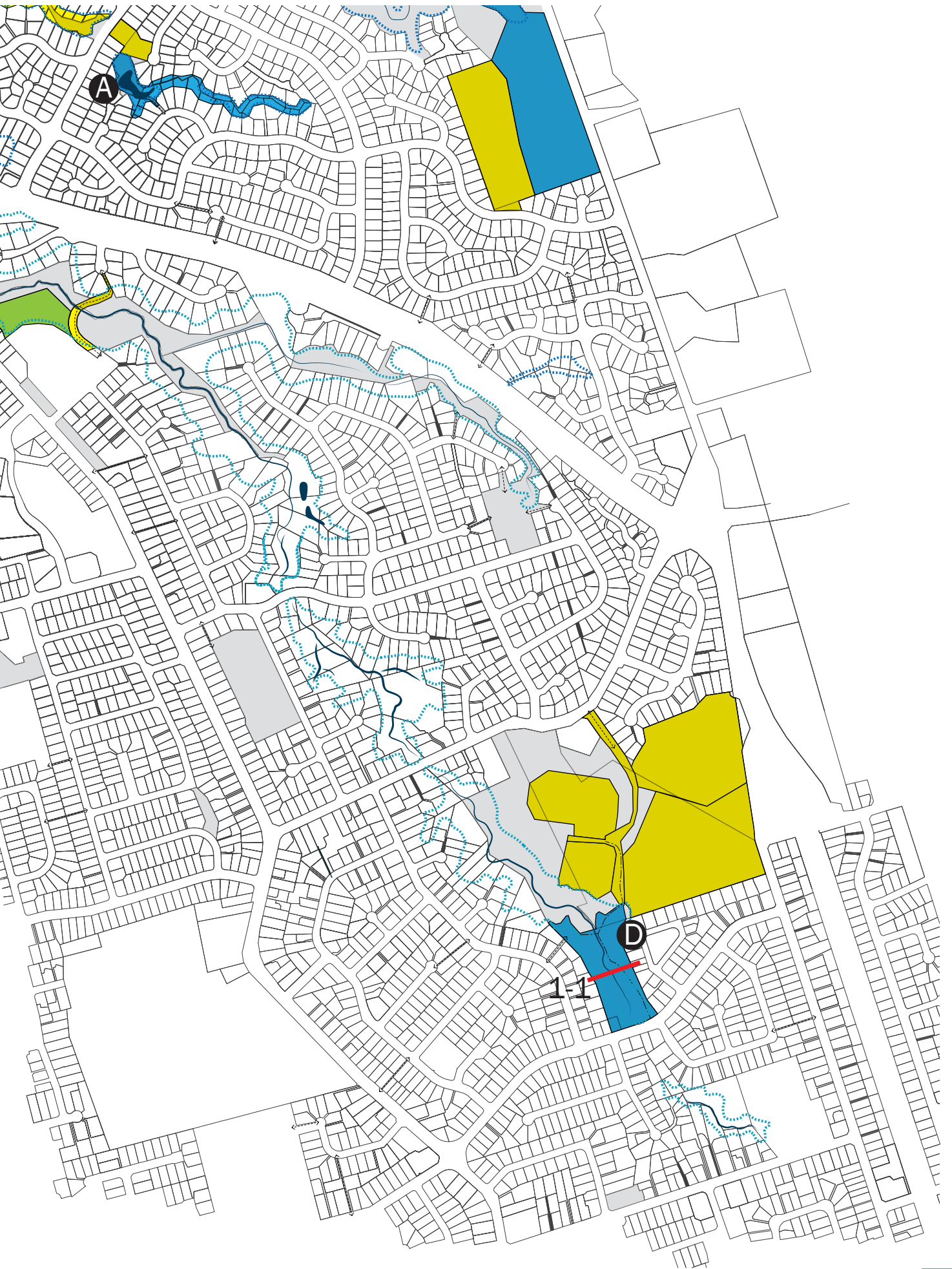




Note.
Areas within the highlighted extents of gully but not shaded with a gully type indicates inaccessibility. It is likely this area is either privately owned or public access is not provided.



Note.
 Areas within the highlighted extents of gully
 but not shaded with a gully type indicates
 inaccessibility. It is likely this area is either
 privately owned or public access is not provided.



SOCIAL LIFE - WATER MANAGEMENT

These water management sites were largely chosen due to their highly-modified nature and evidence of some kind of water management structure (e.g. ponds, weirs, culverts). While there are some overlaps with the recreation typology, these areas have their own distinctive experiential paradigm.

Not all areas of the gully were accessible and with the knowledge previously highlighted about the system being a primary stormwater management tool, it is likely that the experiences documented for this typology exist elsewhere in the gully where there is currently no access.



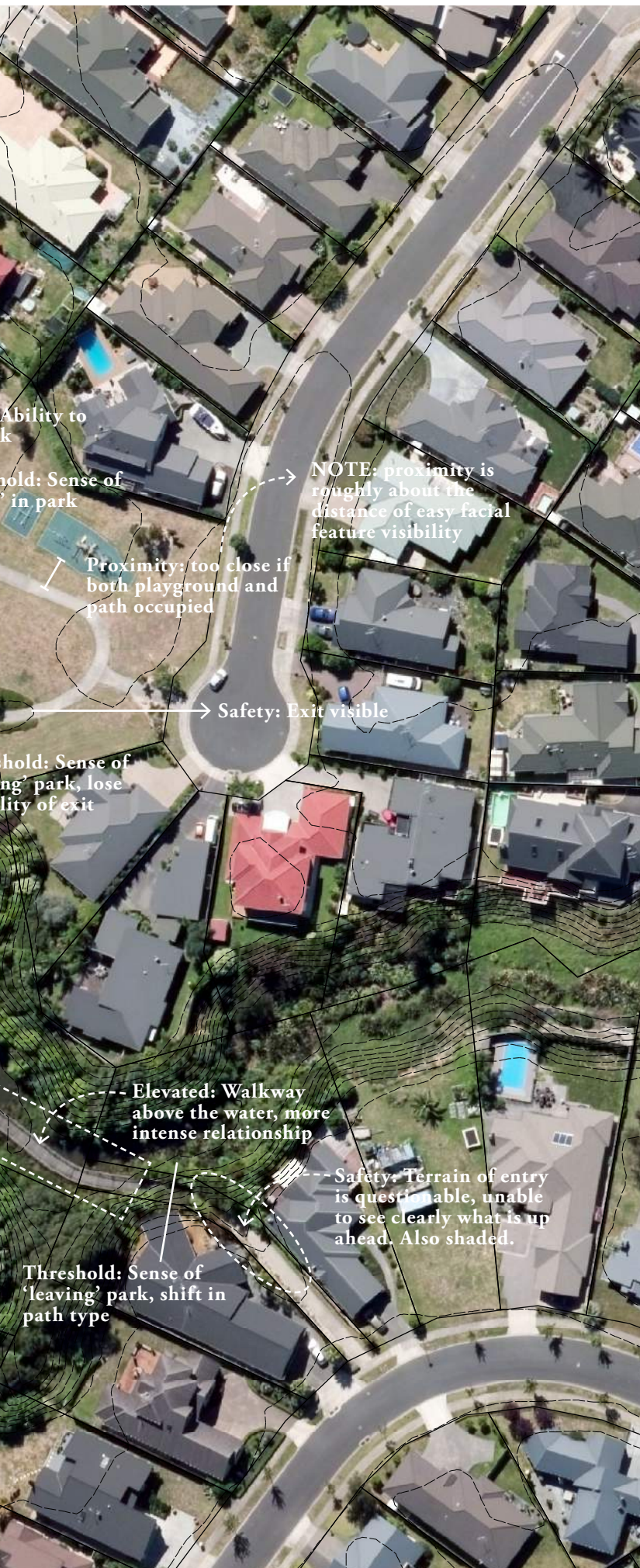
SITE B

SITE A

SITE D

SITE A



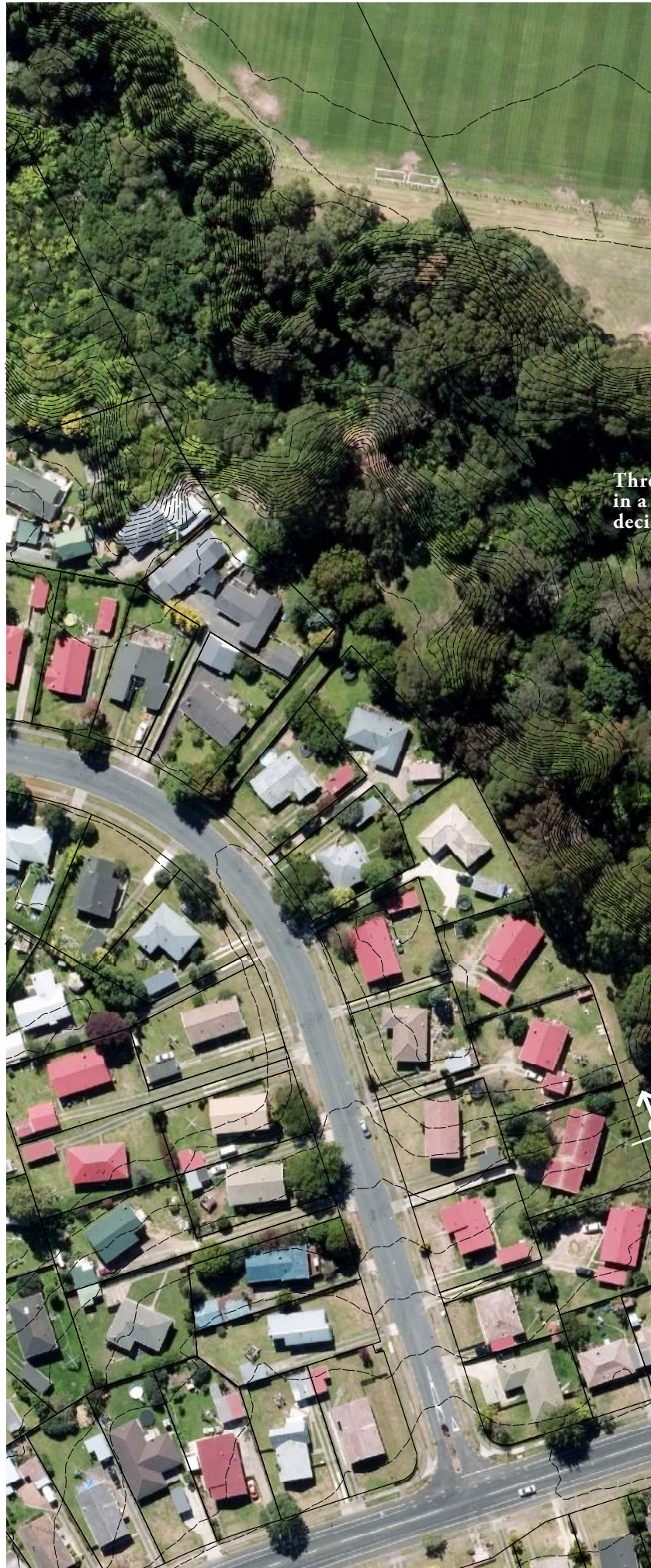


SITE B + C





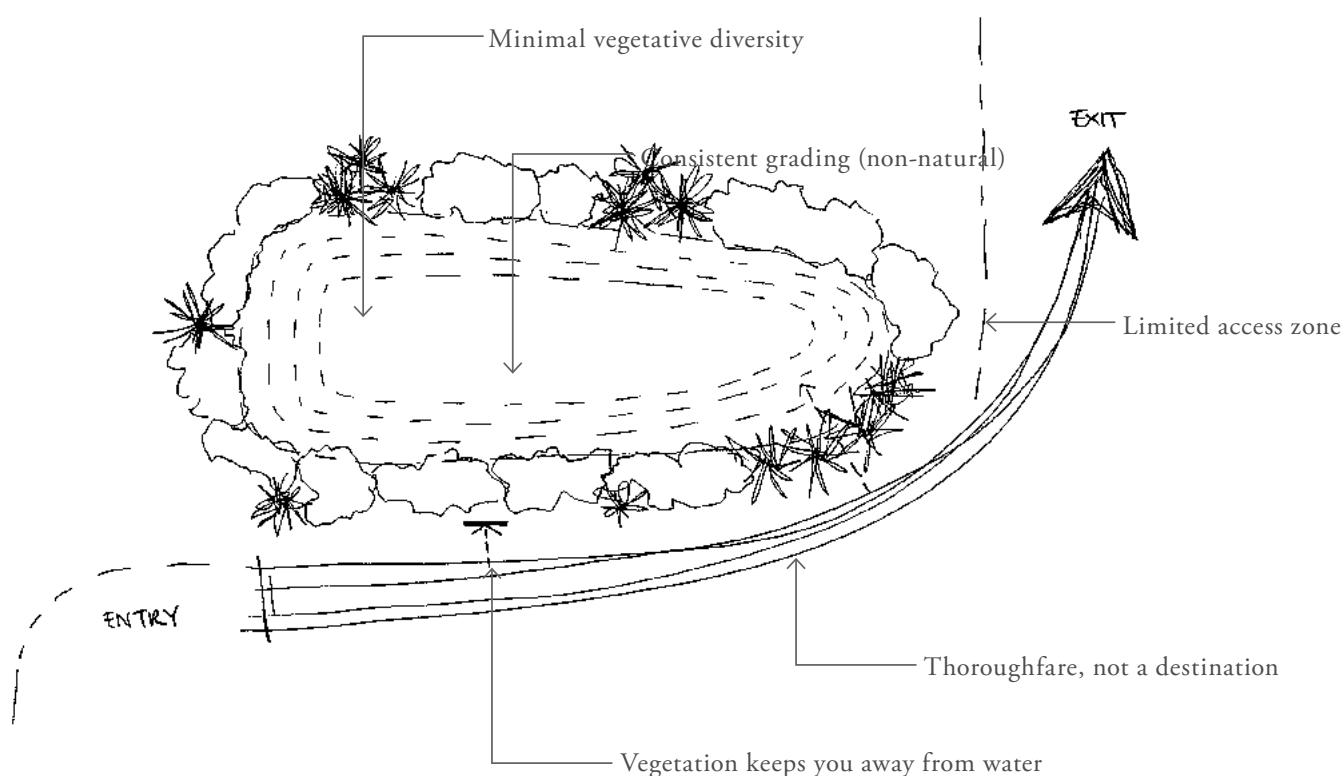
SITE D

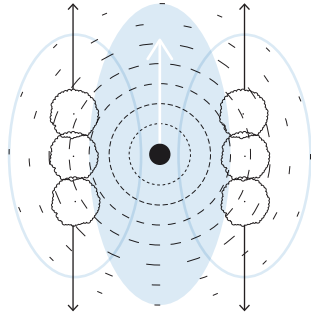




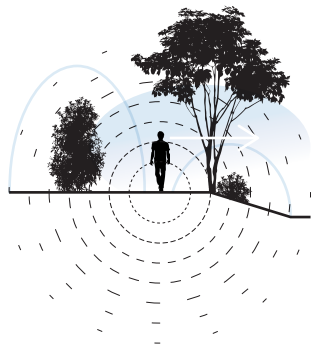
WATER MANAGEMENT TENDENCIES

<i>Physical attribute</i>	<i>Qualities and tendencies</i>
Attenuation pond/water body	Slow moving, habitat for ducks, murky, grading unnatural and consistently sloped (uniformity limits surprises/delight opportunities)
Dam/weir (rock)	Creates sound and movement, draws attention
Vegetation	Limited plant palettes (minimal eco diversity), dense planting keeps users away from water, can act as a barrier
Pathways	Concrete and usually grounded (not raised), paths tend to be somewhat arbitrary and short in nature, thoughtless in ability to reveal the surrounding focal points, social ability limited due to placement/width
Summary	Limited ability for social opportunities largely due to the way the designs move you quickly through the site. Pathways appear to be an afterthought, placed after the engineers have reached their desired size, slope, and location.

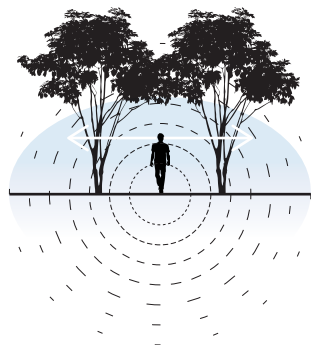




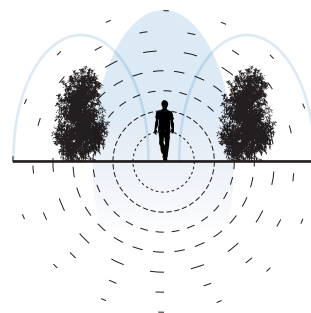
High edges both sides means that attention is directed forward, allowing only one kind of movement. Experience of space is limited to the immediate extents, limited wider sense of the rest of the place.



Water side is sometimes left clear for visibility however vegetation still pushes people away from getting closer to the water's edge. This can be a positive to draw attention to a focal point where the water is good to look at it but not suitable to touch.



Canopy with clear sight lines either side allowing some light to filter through. Helps with safety but creates a non-interactive environment. This directs movement forwards and not necessarily to the sides.

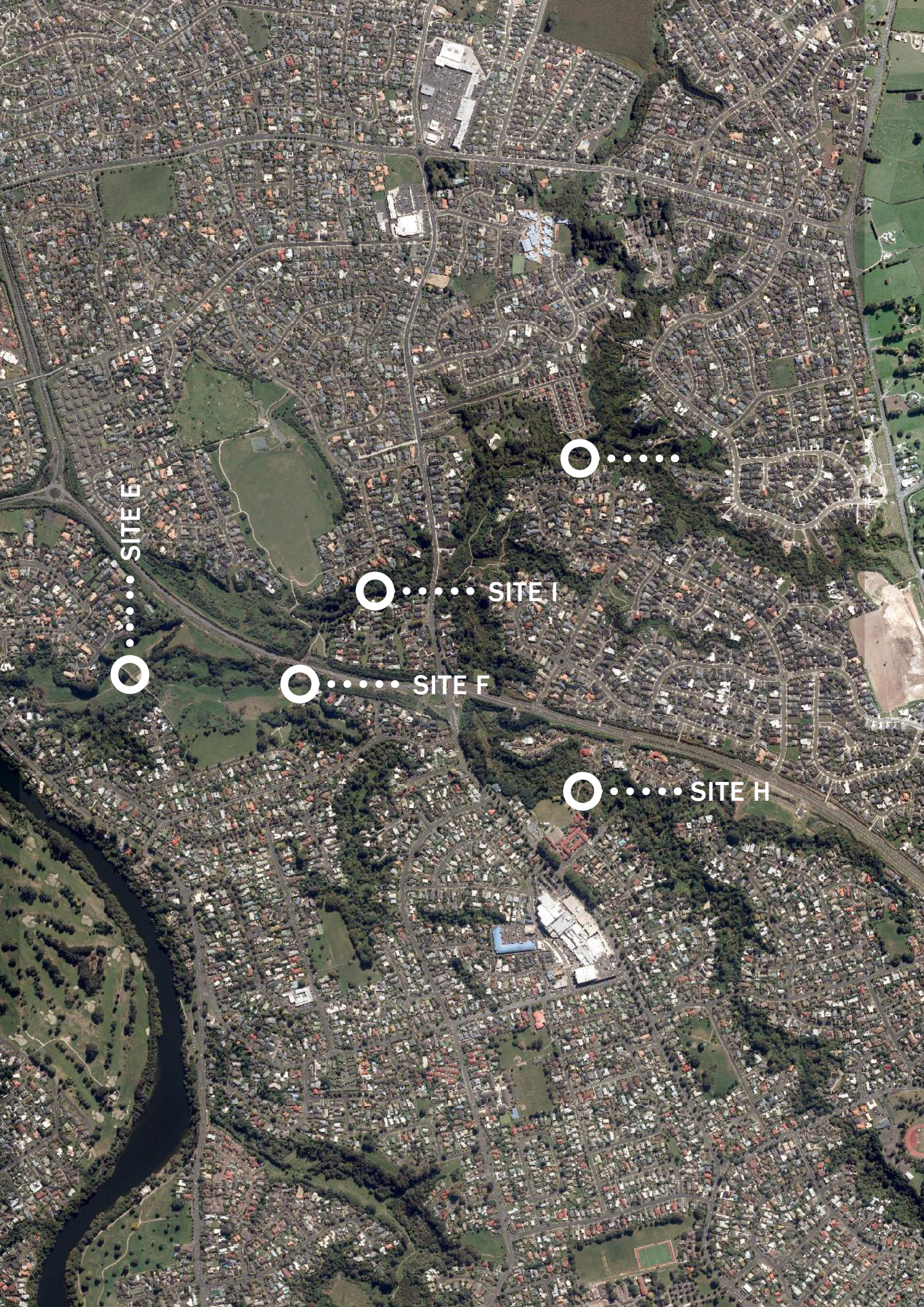


Placement of vegetated sides creates boundaries which can overlap. When this happens, the effect is a strong sensation of intrusion and results in a 'no go' zone or a hastening of pace.

SOCIAL LIFE - ACCESS + RECREATION

This typology is by the far the most commonly encountered throughout the gully. While it is the most commonly encountered, it may not be the most widespread as the ecological restoration projects undertaken during the 'Plants for Gullies Programme' was aimed at private owners and places where the council did not have some form of authority established already.

All of the recreation sites appear to be centered around the central part of the gully. Recreation is most limited in the older suburbs (to the south) and has some low connectivity the eastern and northern most parts of the system.



..... SITE E

..... SITE I

..... SITE F

..... SITE H

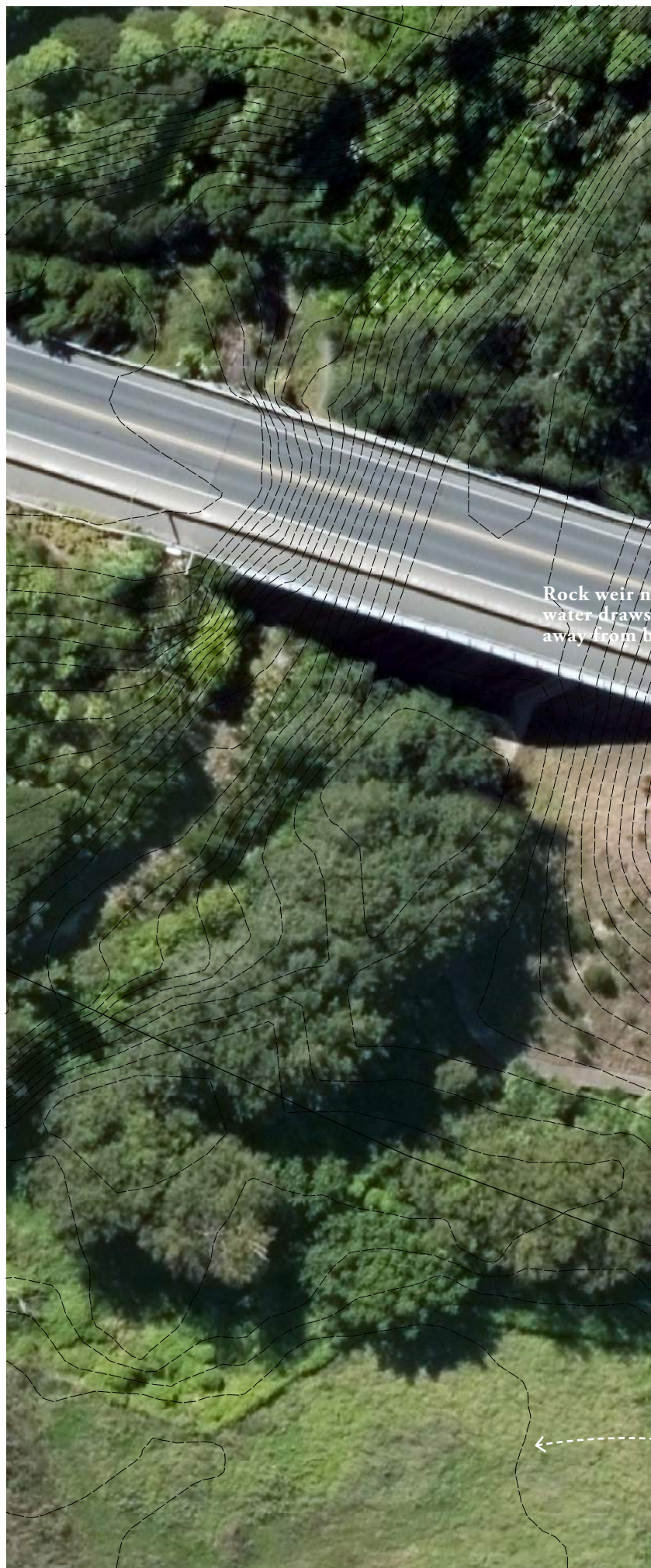
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SITE E



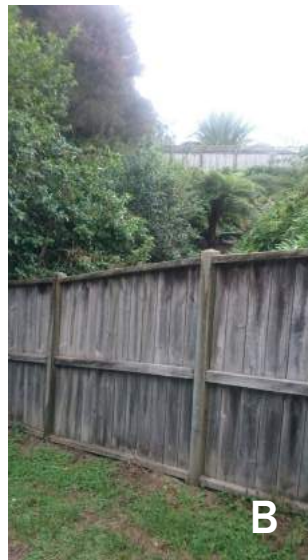


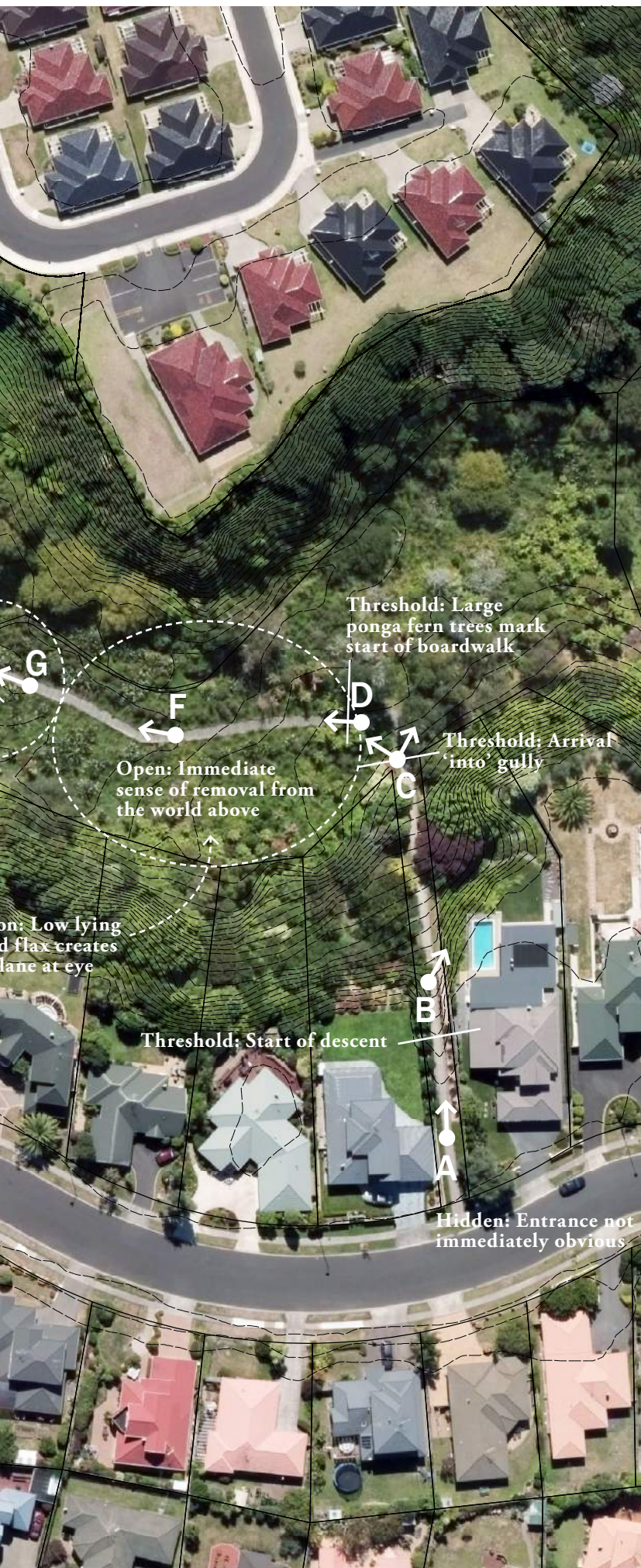
SITE F



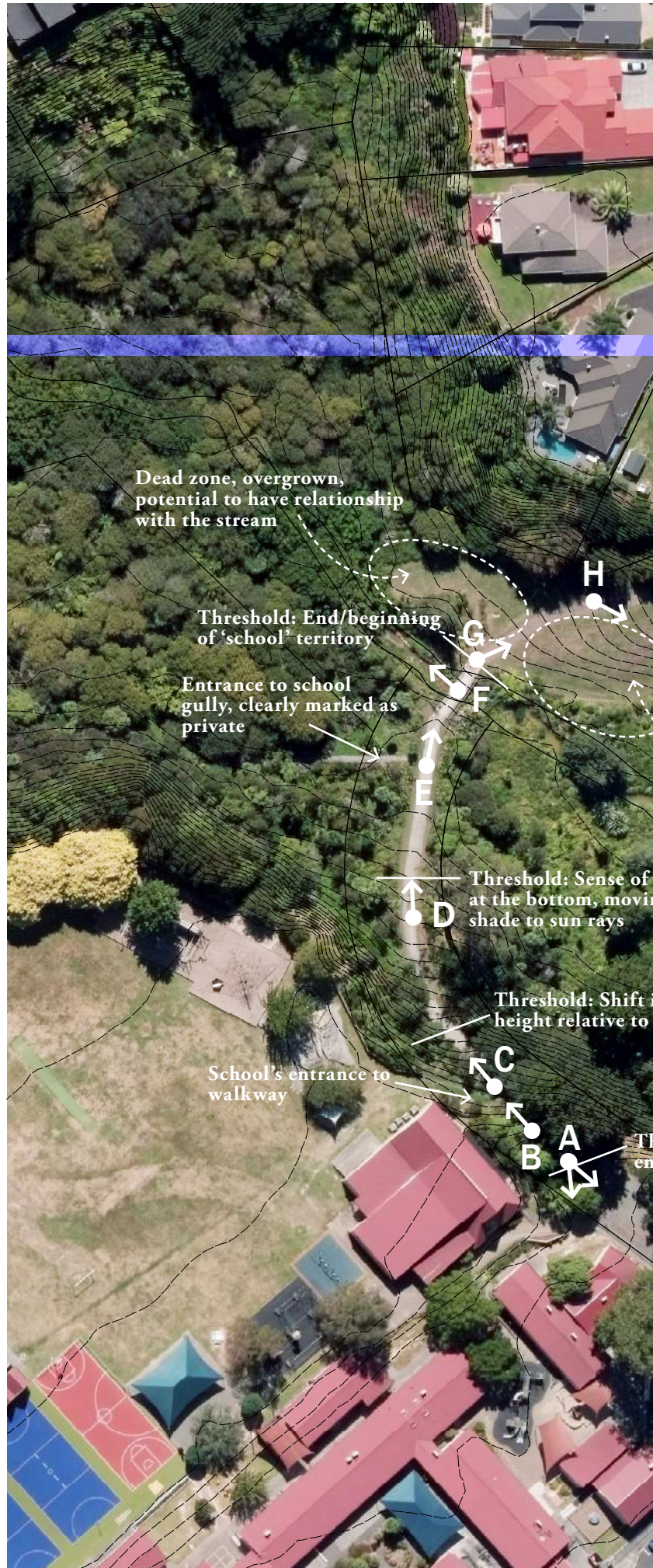


SITE G





SITE H





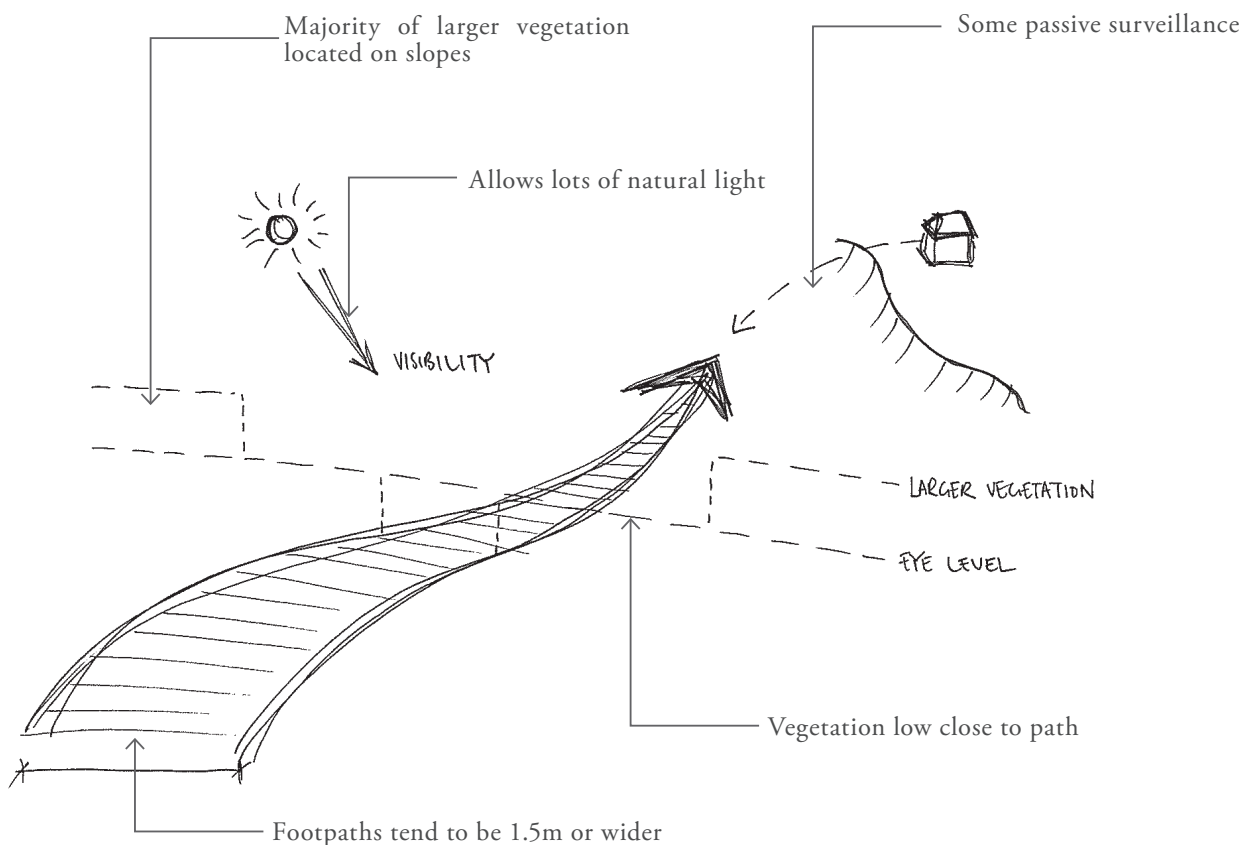
SITE I

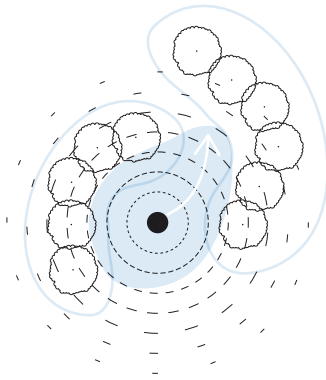




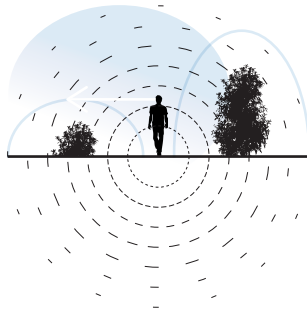
RECREATION SPACE TENDENCIES

<i>Physical attribute</i>	<i>Qualities and tendencies</i>
Low growing plants along path edge	Limited planting palette to meet regulations means less diversity leading to repetitive movement, people tend to walk at consistent pace
Open and light	Creates a wider sense of the gully, ability to see the edges, creates a feeling of safety by ability to see proximity to residential houses
Close housing to edge of gully	Creates privatization effect near edges, balanced by increased safety at bottom of valley
Wide paths	Wider path encourages a slower pace and ability to stop and greet or let others pass, greater range of social ability
Summary	Recreation oriented spaces tend to be much more light filled and allow a wider range of activities to occur other than just walking. Likely adherence to CPTED principles means that recreation spaces share a lot of physical qualities, looking quite similar to each other.

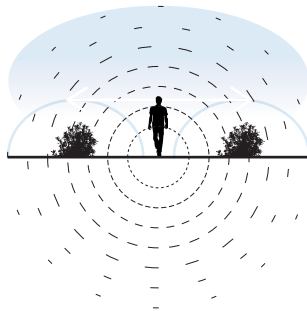




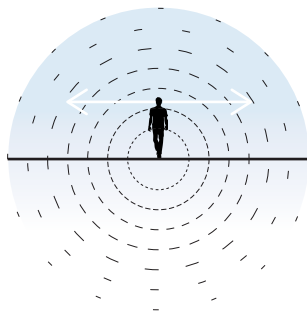
Corners create a surprise element where the vegetation is tall enough to obscure sight lines. Paths are generally wide/light enough to allow these sorts of occurrences without impeding on safety. Corners invite a slowing down of movement, and your experience of place is narrowed for a small moment to accentuate a big reveal which can often be a transition from small experience sphere to large open experience sphere.



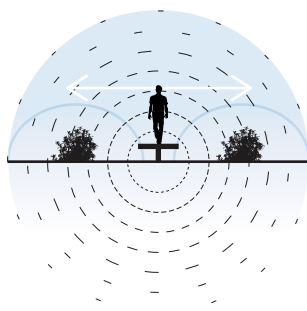
Open on one side directs attention to the open side. If focusing on something interesting in the distance, often will be a pause point. Allows a sense to wash over the side that is open, as shown by the experience sphere.



Both sides open creates an awareness of the plane generated which floats above the vegetation. Encourages a wider view of space and directs attention outwards and sometimes upwards as well.



Completely open grassed areas often lead to a slow pace with lots of head movement to make judgements about where to go, how close to walk, other users' proximity, and other factors which affect pace and direction.



An elevation of users creates an awareness of the platform on which you walk. This awareness means the experience is usually more encompassing of lower shrubs, adding to the wider context.

SOCIAL LIFE - ECOLOGICAL

These sites tend to be isolated and are more ‘pockets’ of regeneration efforts. This typology is the most interesting due to the proximity of nature and ability to see diversity and interact with non-human life. It provides an interesting platform for thinking about how human ecologies can fit into the evolving successional vegetation.



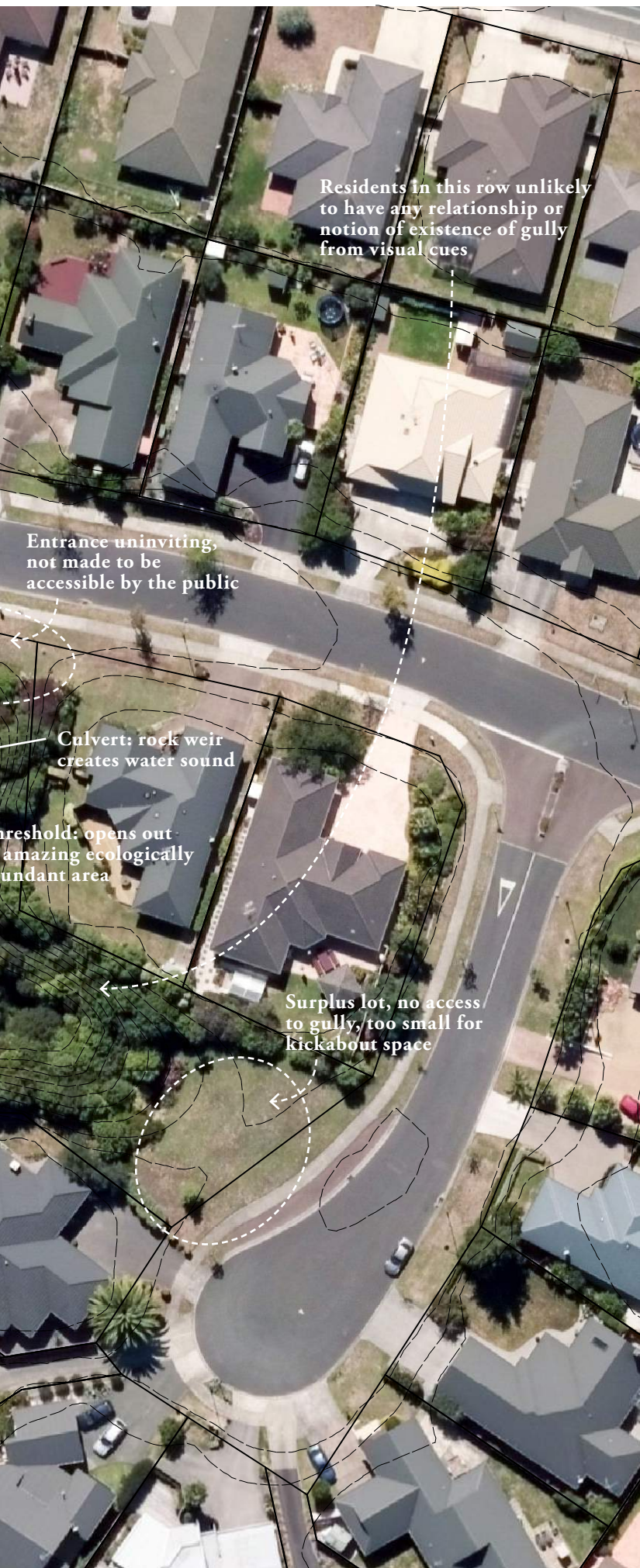
.....

..... SITE L
..... SITE K

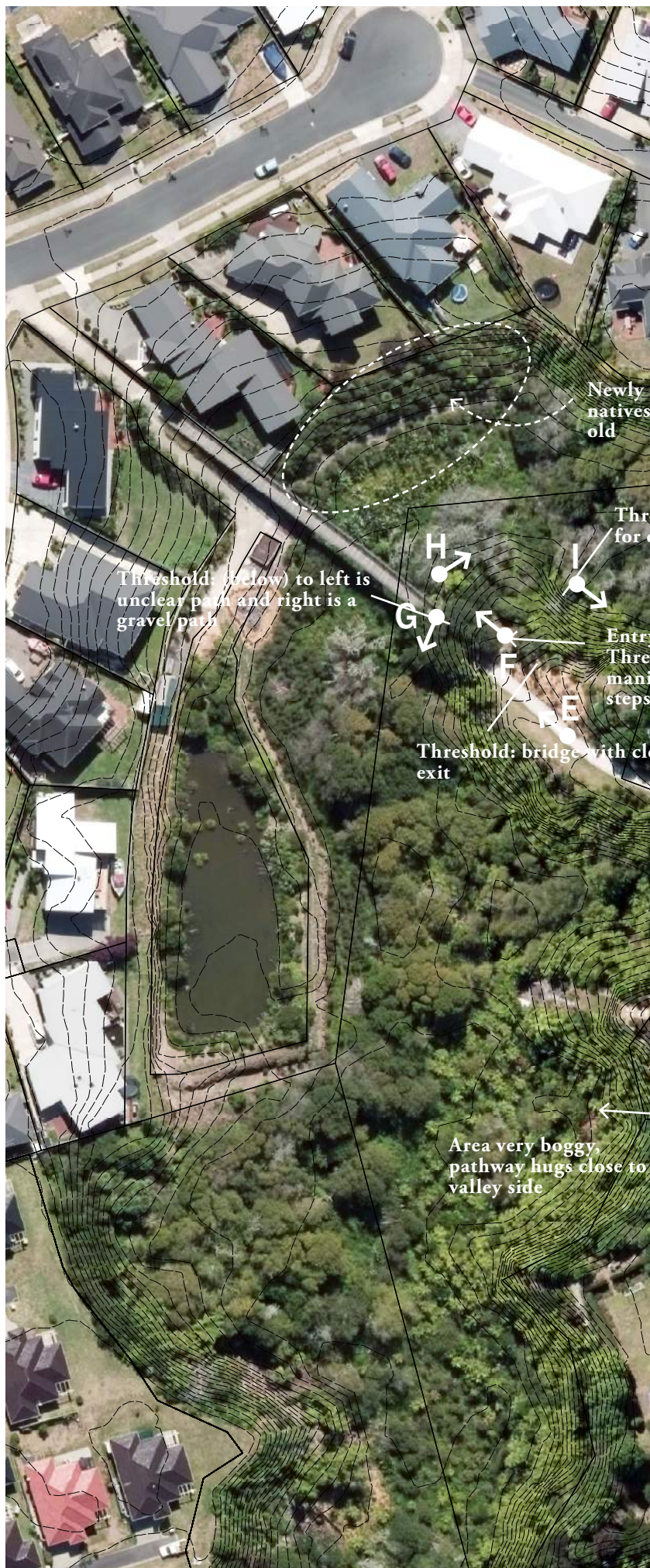
..... SITE M

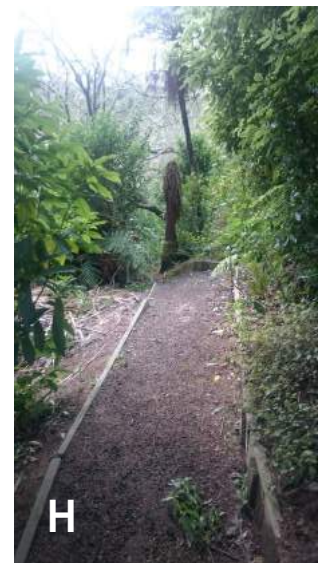
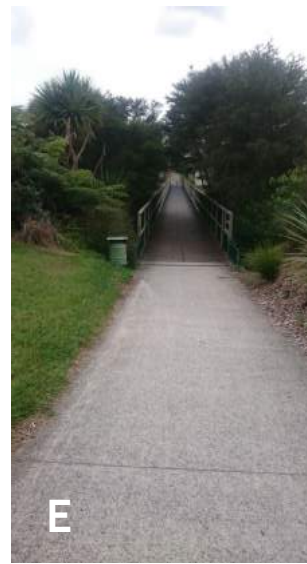
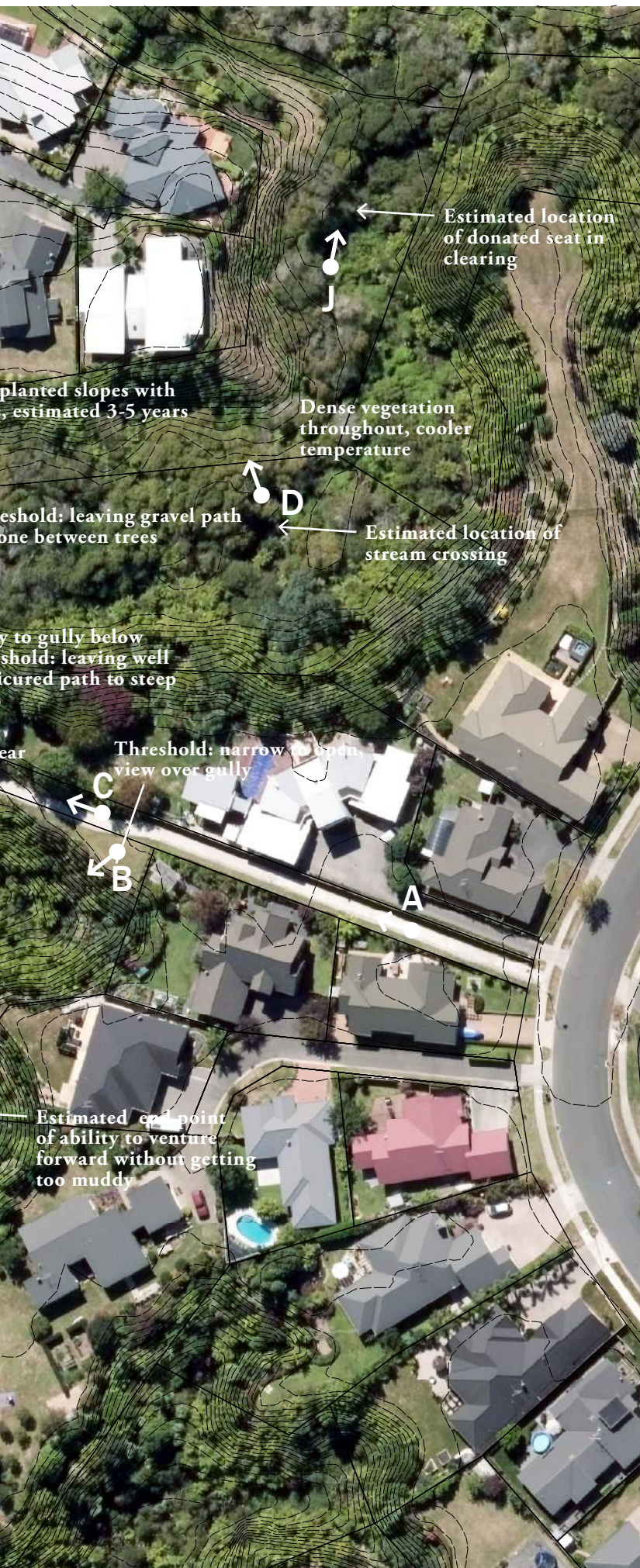
SITE J



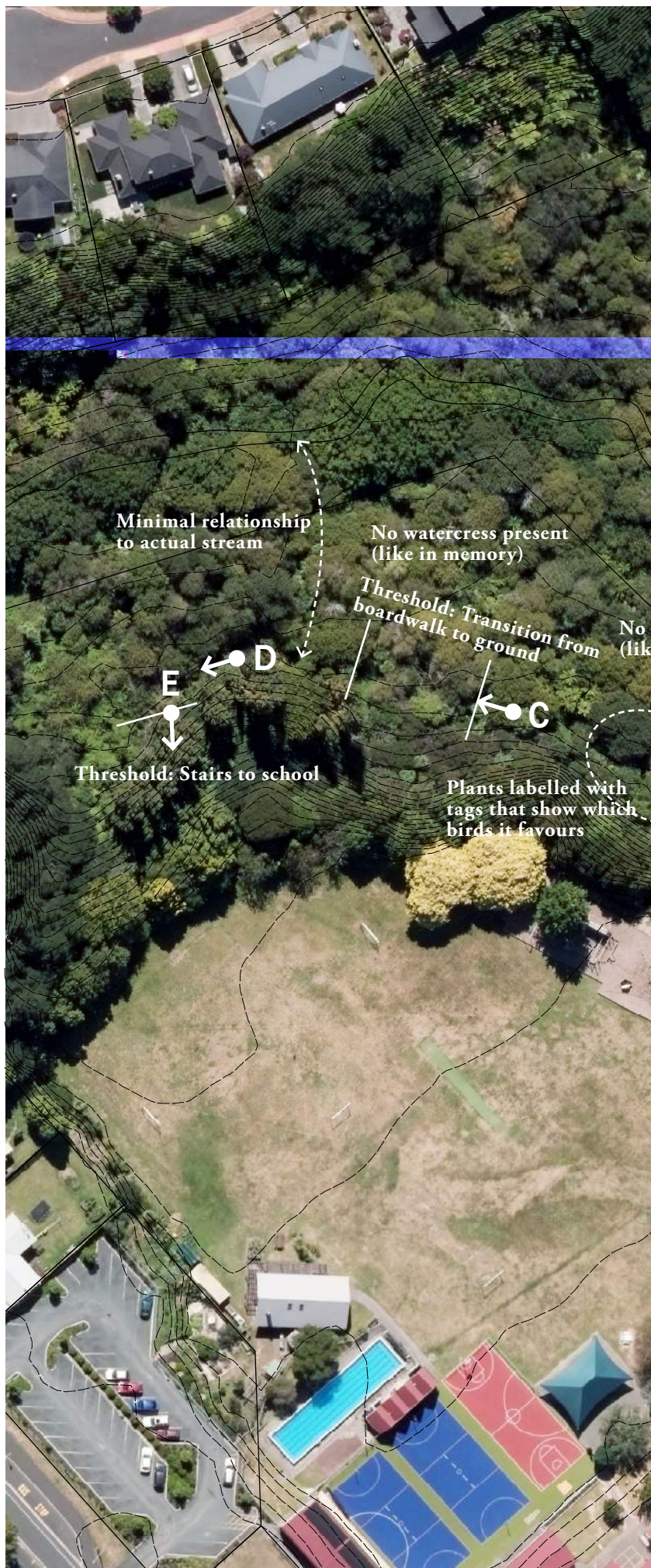


SITE K + L





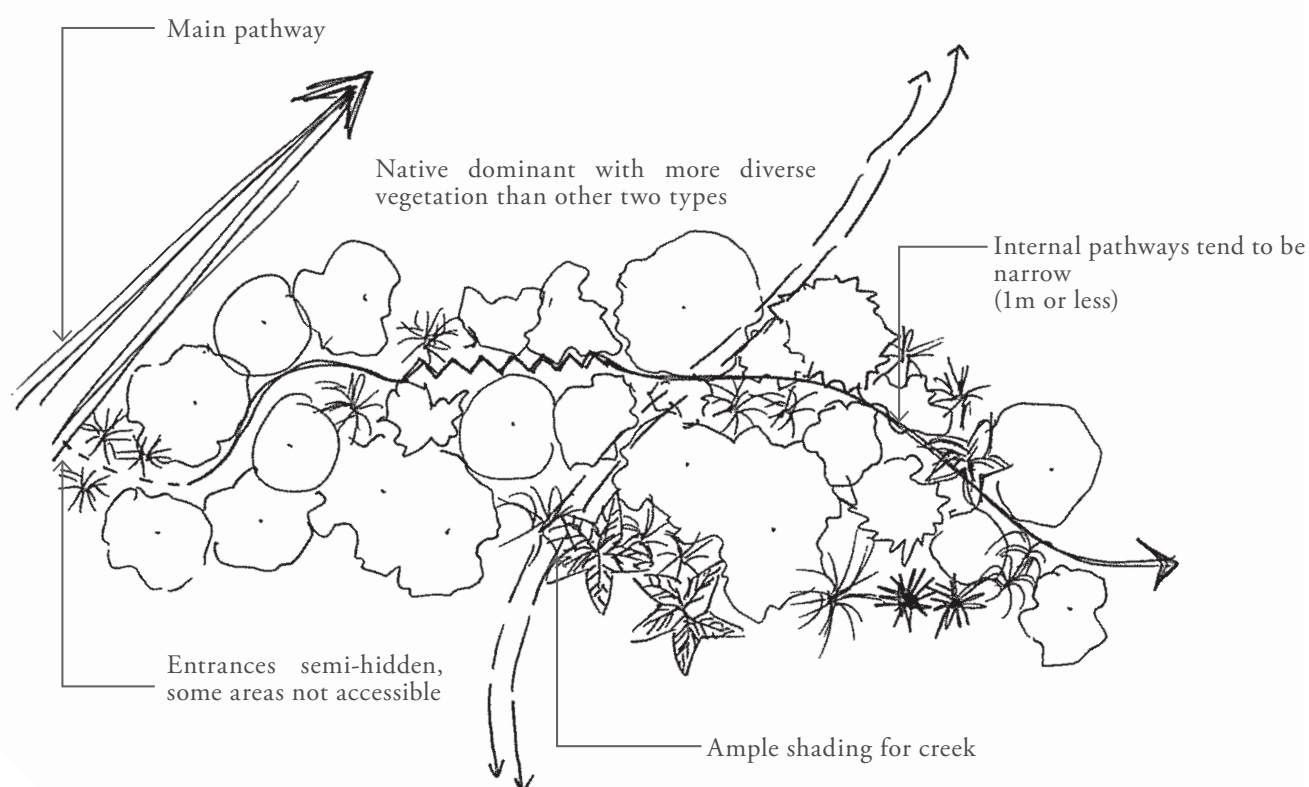
SITE M

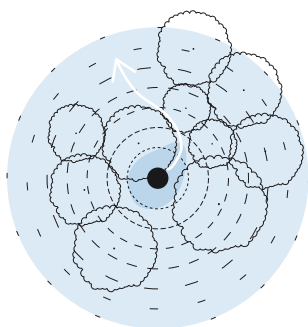




ECOLOGICAL TENDENCIES

<i>Physical attribute</i>	<i>Qualities and tendencies</i>
Narrow paths	Single file usage only, narrowness contributes to a faster pace (exacerbated by lack of light and feeling of safety)
Non-linear paths	Unease as exits are unclear due to dense vegetation, delightful opportunities around each corner as well as apprehension
Diverse vegetation	Multiple layers of vegetation (ground cover to canopy) creates a rich environment which enables a stronger sense of the wider gully
Proximity to bird life	Ability to see and hear birds flying nearby creates interest and promotes a slowing down of movement or lingering
Summary	Gully condition contributes to a more 'natural' experience even though it's likely the parts visited have only recently been regenerated. The close proximity to flora and fauna facilitates a strong connection to a system, giving way to the wider sense of something bigger. The ability to enjoy these kinds of experiences is limited by the confidence of users in terms of safety.





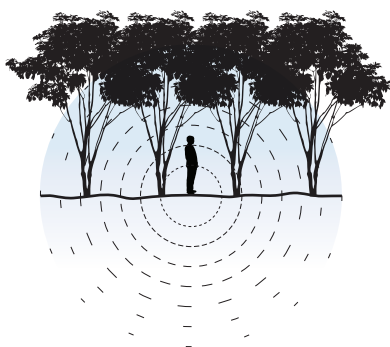
Pathways are not always straight which narrows down your immediate experience sphere to the objects you can see and feel around you. Much more haptic experience than other types.



Dense vegetation with multiple layers means there is an immediate tactile experience. Also directs attention to larger system, connecting to the sense of being in a forest or a part of this wider ecological world. The restrictive pushing of vegetation into interior boundary zone encourages faster a walking pace.



Opportunities to view and feel a part of the water system. Water is often flowing well and clear, with boggy areas abundant with vegetation and not viewed as 'muddy'.

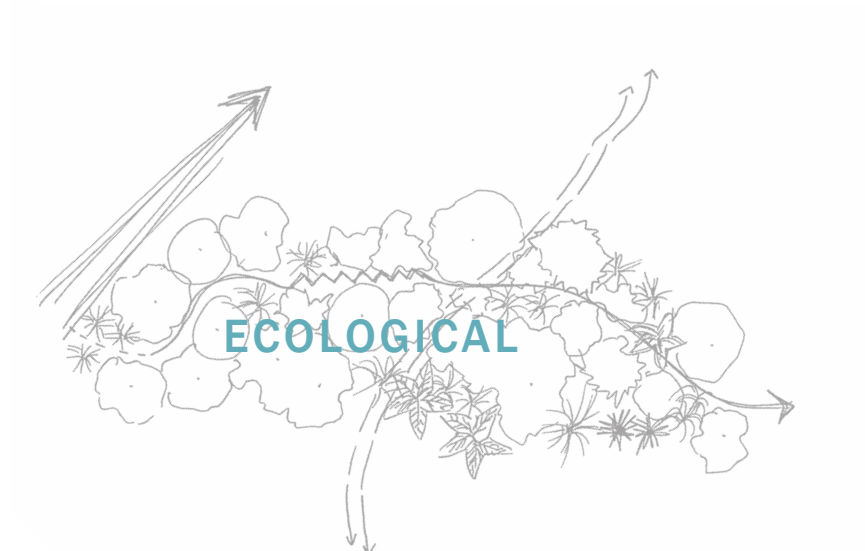
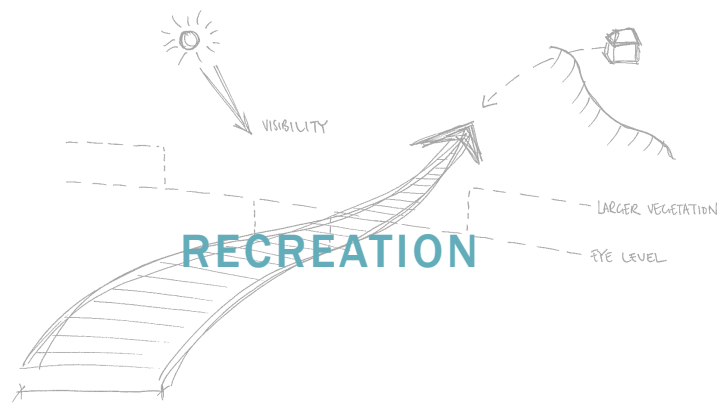
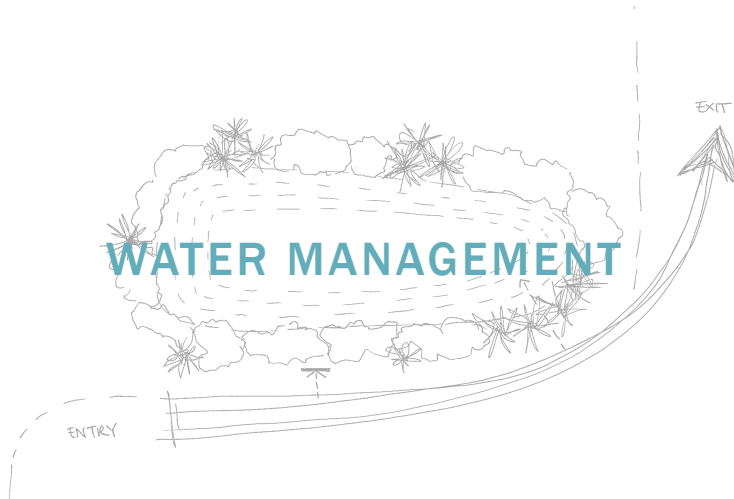


Uneven path types as well as different materials means more concentration but also more delight and interest. At the shifts, there is often a slowing of movement allowing users to swivel and observe their surroundings. This switch can also sometimes cause hesitation as pathways are not always clearly marked.

REFLECTION ON SOCIAL TYPOLOGIES

After categorizing the gully into these three distinctive types, the research focused on thinking about what kind of design would have the most impact. The analysis of the sites invariably led to generation of ideas about how to alter the current situation. This led to designing in section for key sites in each of the typologies. Each of the sites were chosen based on their ability to impact on the surrounding neighbourhood and also the amount of social improvement that could occur.

Designing in section was the method of design applied to all three of the design sites and the actual changes made would be accurate to the real-life situation. The design moves generated for each of the three sites could then later be used to summarise the kinds of changes that could be employed in other areas which exhibit the same tendencies as the design sites. The same method of adjusting the site at a human scale should be employed.



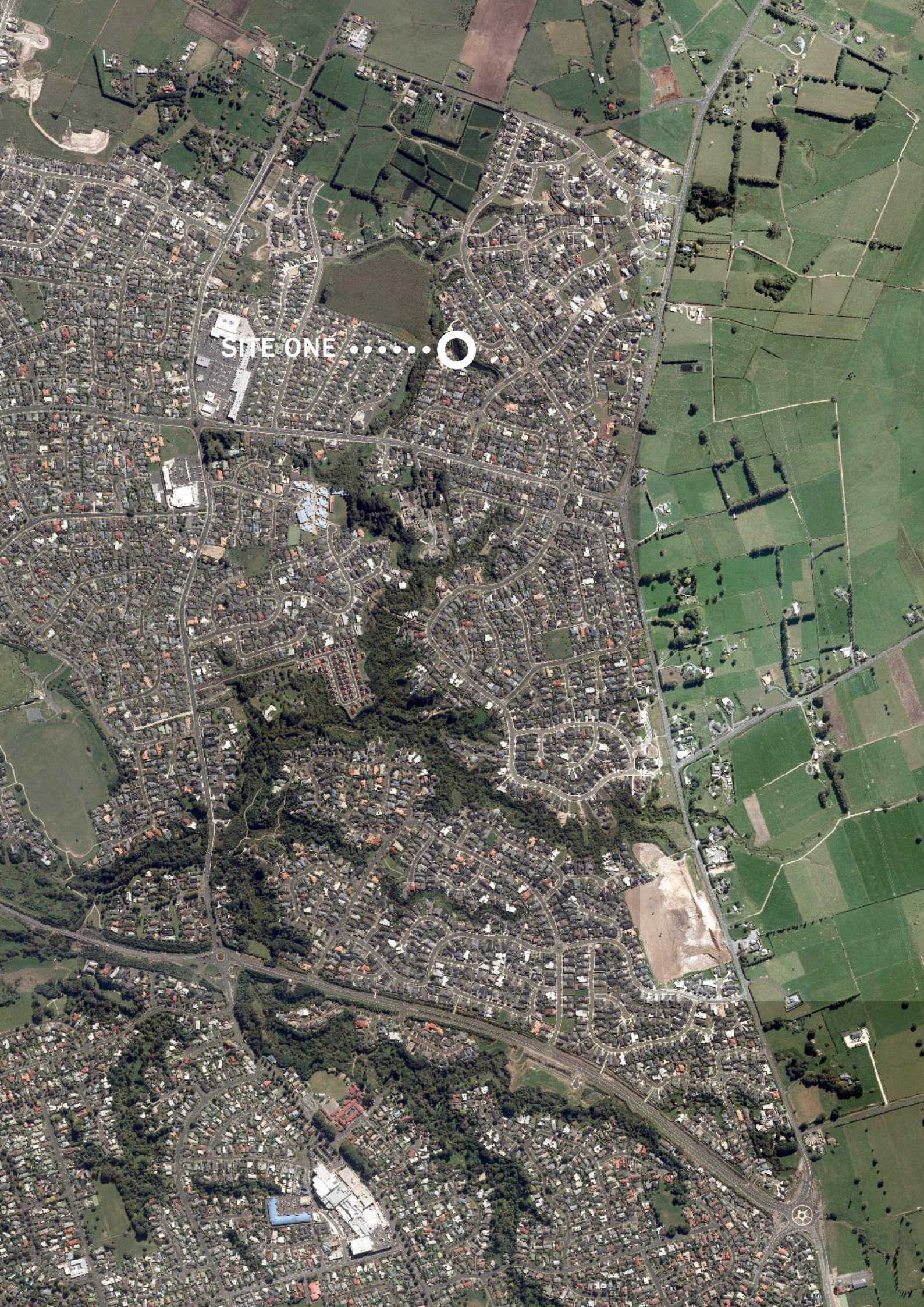


DESIGN

SITE ONE: WATER MANAGEMENT

This site was chosen as it has the potential to be much more than what it is currently because of the initial site studies. It is also on the most northern extents of the gully, in an area which is likely to be developed into further suburbia. Further development would put more strain on recreation demand, making this area an opportunity to improve on existing infrastructure.



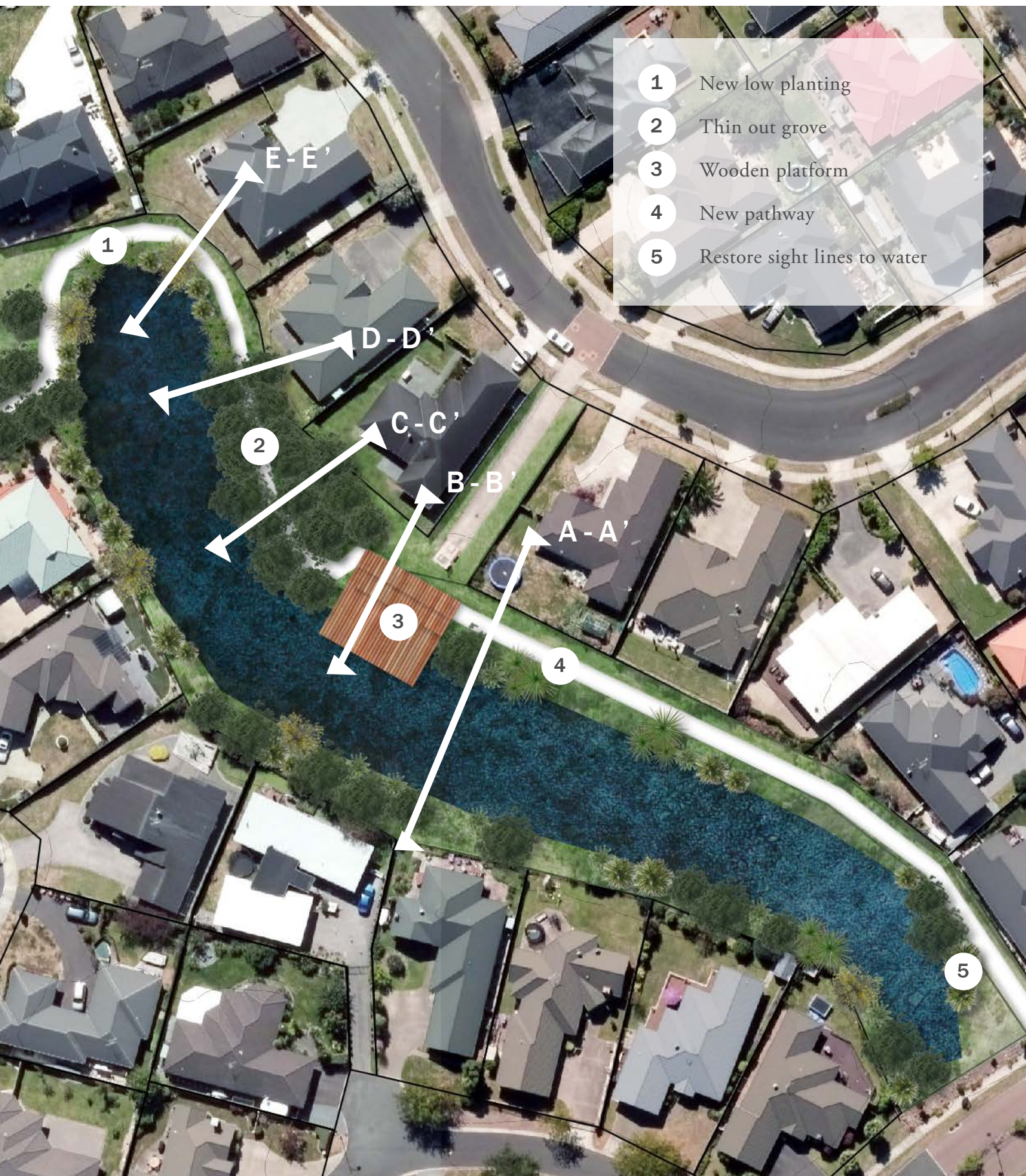


SITE ONE ○

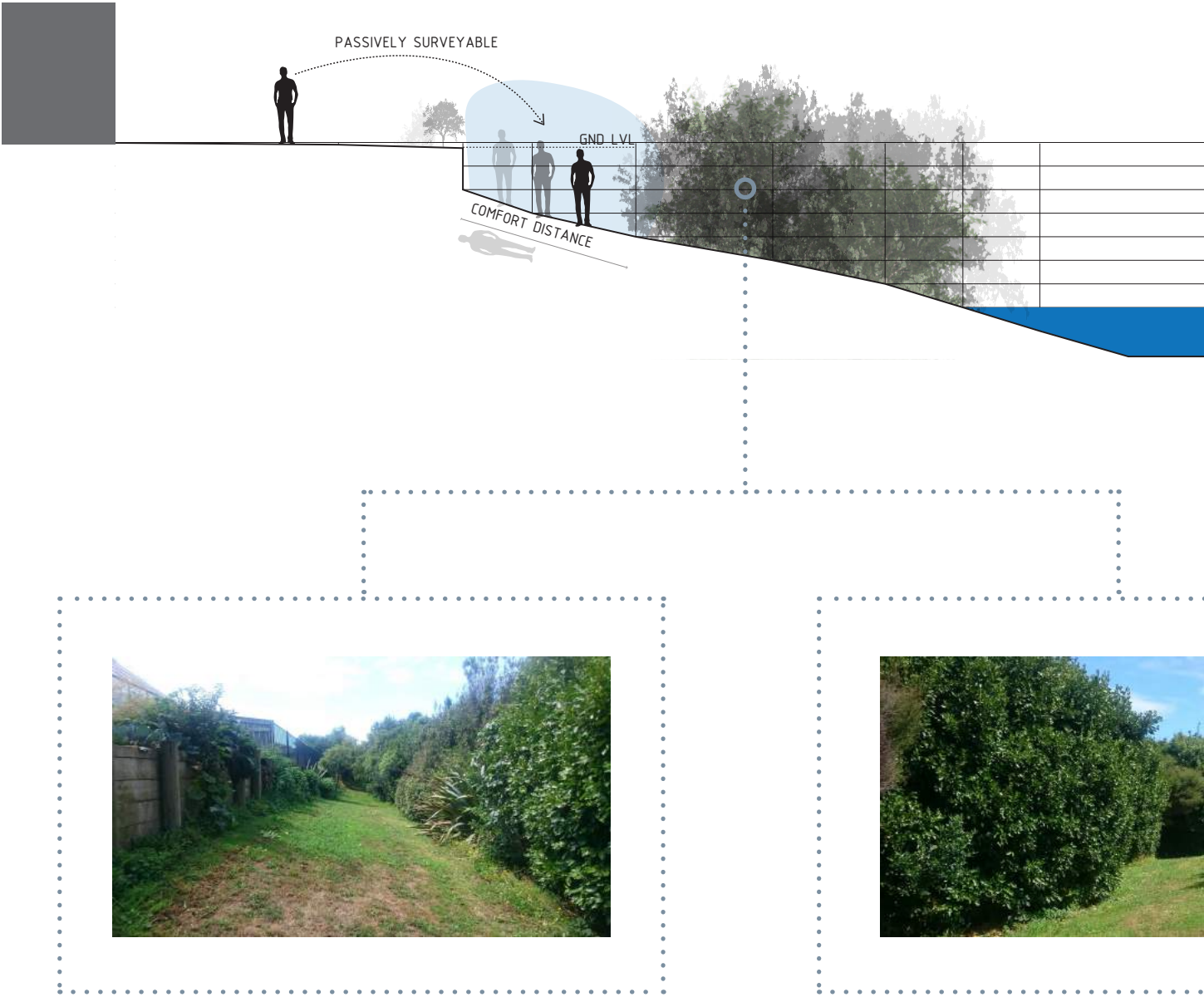
EXISTING

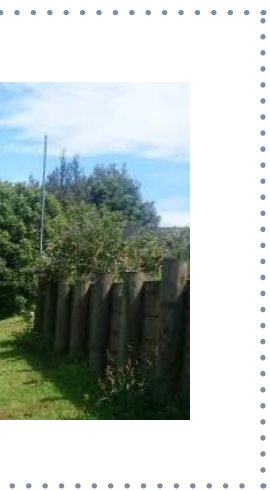
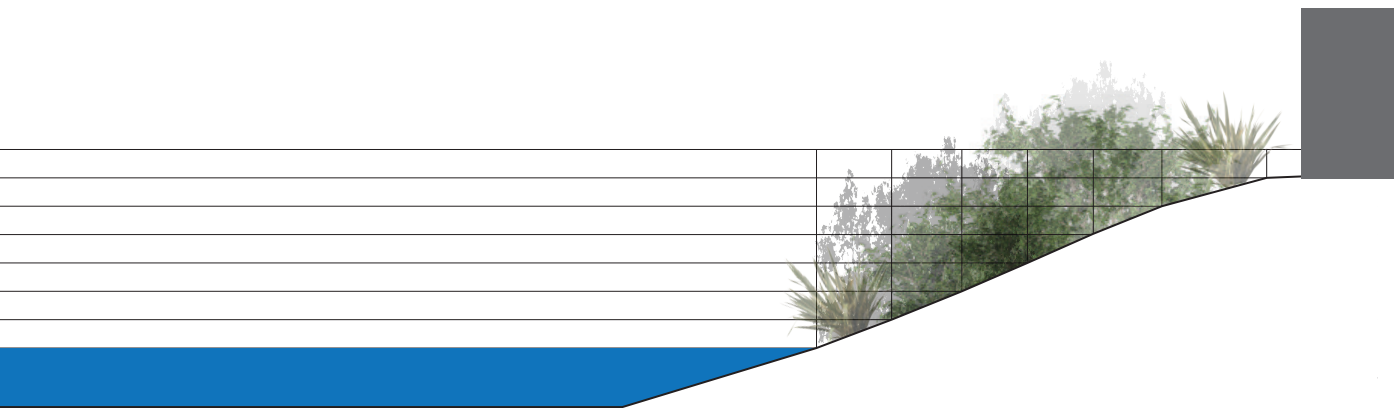


RE-DESIGNED



SECTION A-A' | EXISTING

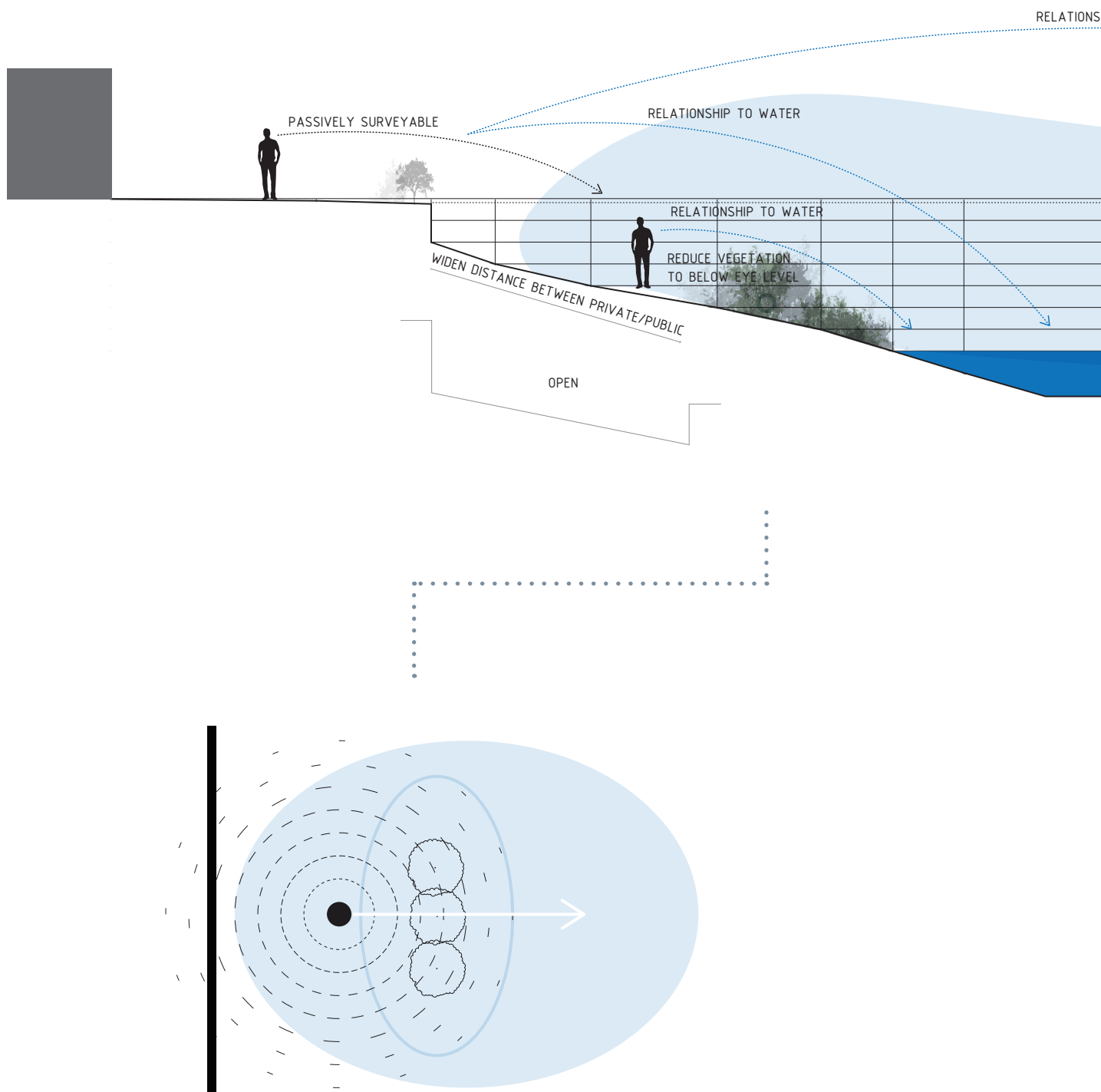


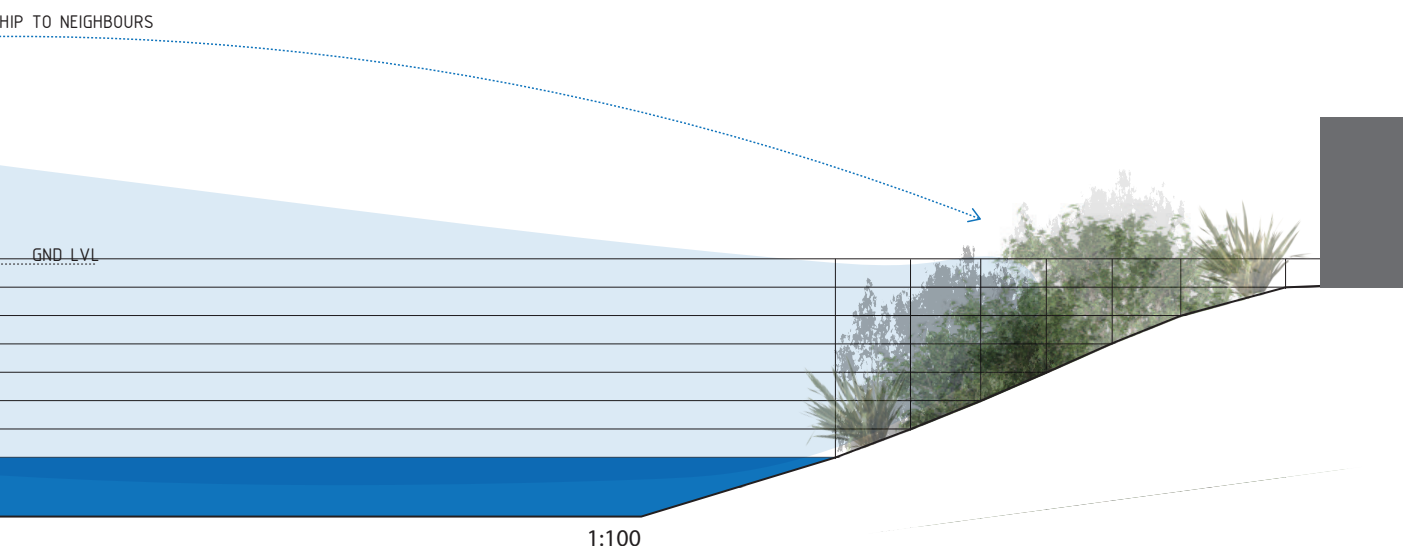


Summary - Existing

1. Narrow and unwelcoming.
2. No water view which means attention is focused on residential homes.
3. Lack of interesting actions means movement is limited to a rapid walk forward.
4. The strip is in close proximity to private homes which promotes a privatization effect, deterring people from entering this part altogether.

SECTION A-A' | RE-DESIGNED

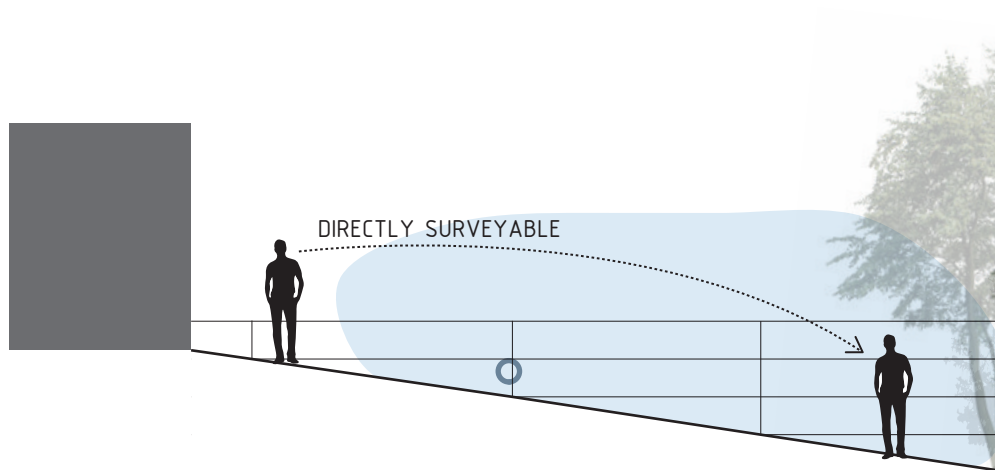


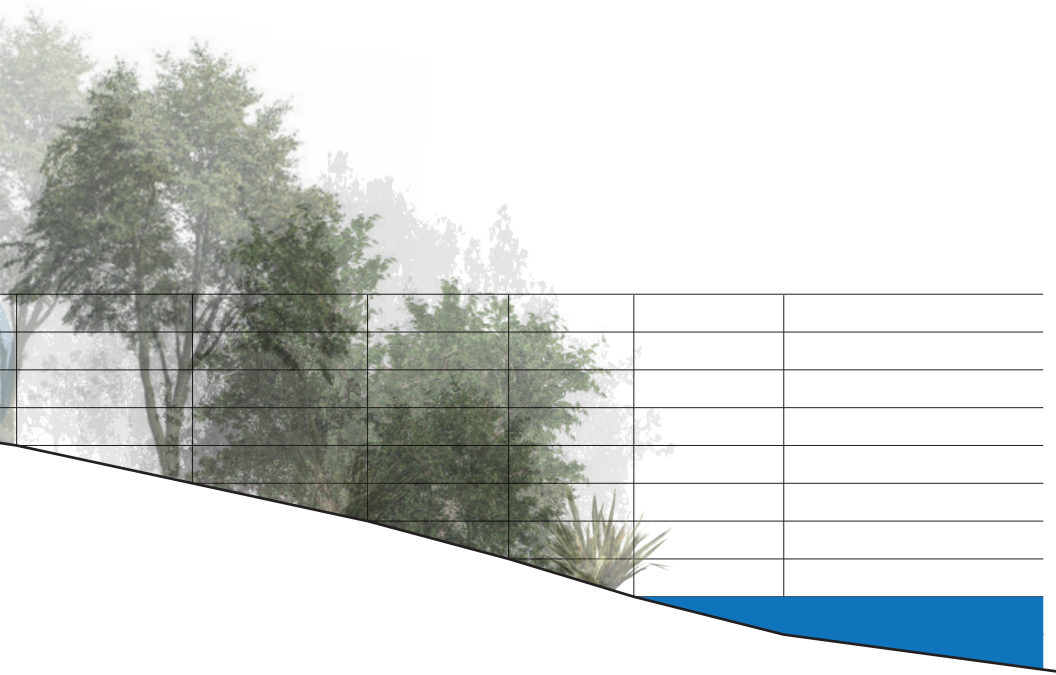


Summary - Re-designed

1. Remove barrier to water, replacing with grass and low vegetated edge instead.
2. Wider sense of place created.
3. Facilitate neighbourly interactions by opening up the ability to share the water space between the two sides.
4. Vegetation being lower means users feel more comfortable walking closer to the water and feel less intrusive on a previous privatised zone.
5. Simple wooden planks in grass indicates that this area is public whereas before it was unclear.
6. Ability to create a social dynamic where residents can acknowledge other residents and also users. The location of pathway would put users at a level where observation of private life is noted but not easily viewed, maintaining privacy.

SECTION B-B' | EXISTING

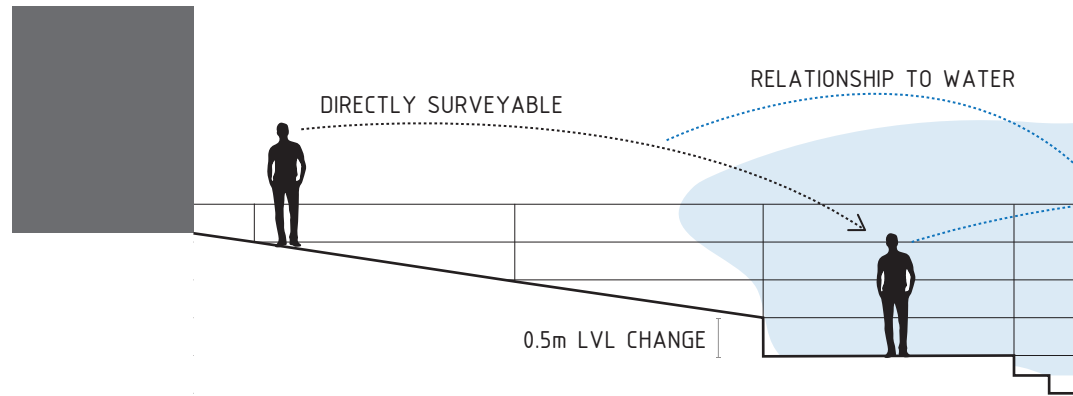




Summary - Existing

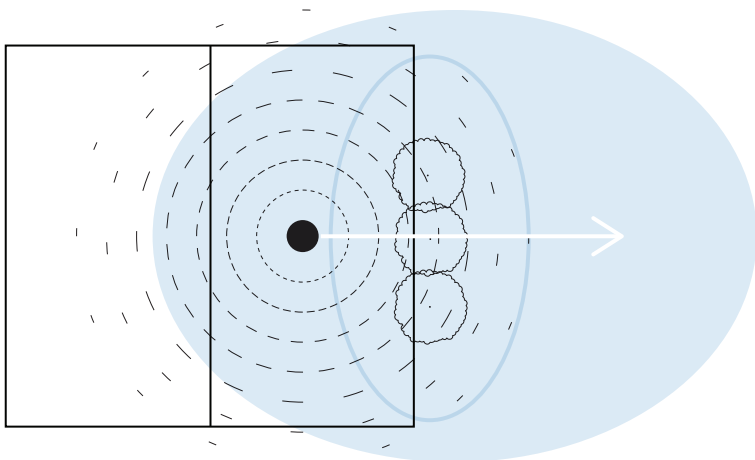
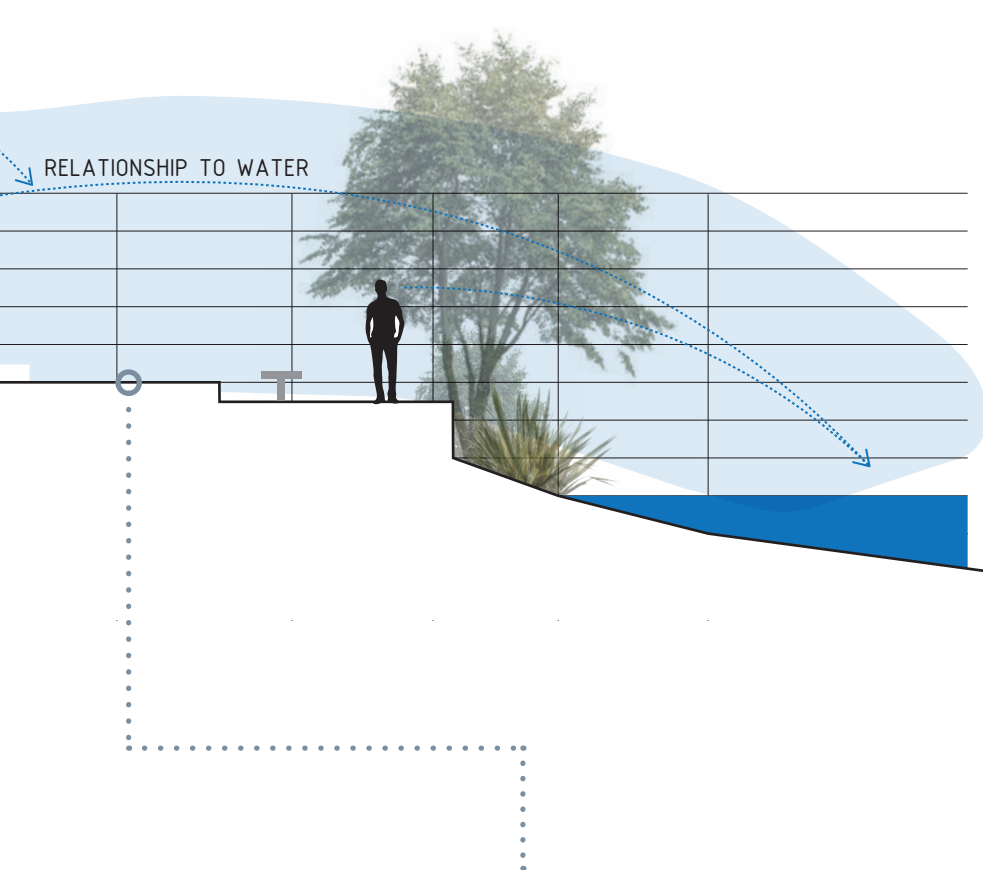
1. Entrance looks dark and uninviting.
2. Once you get past the fence, a private residential property is immediately to your right which stops you in your step further.
3. No real sense of water if entering from this access way.
4. Vegetation is tall and dense.
5. No real defined pathway.

SECTION B-B' | RE-DESIGNED

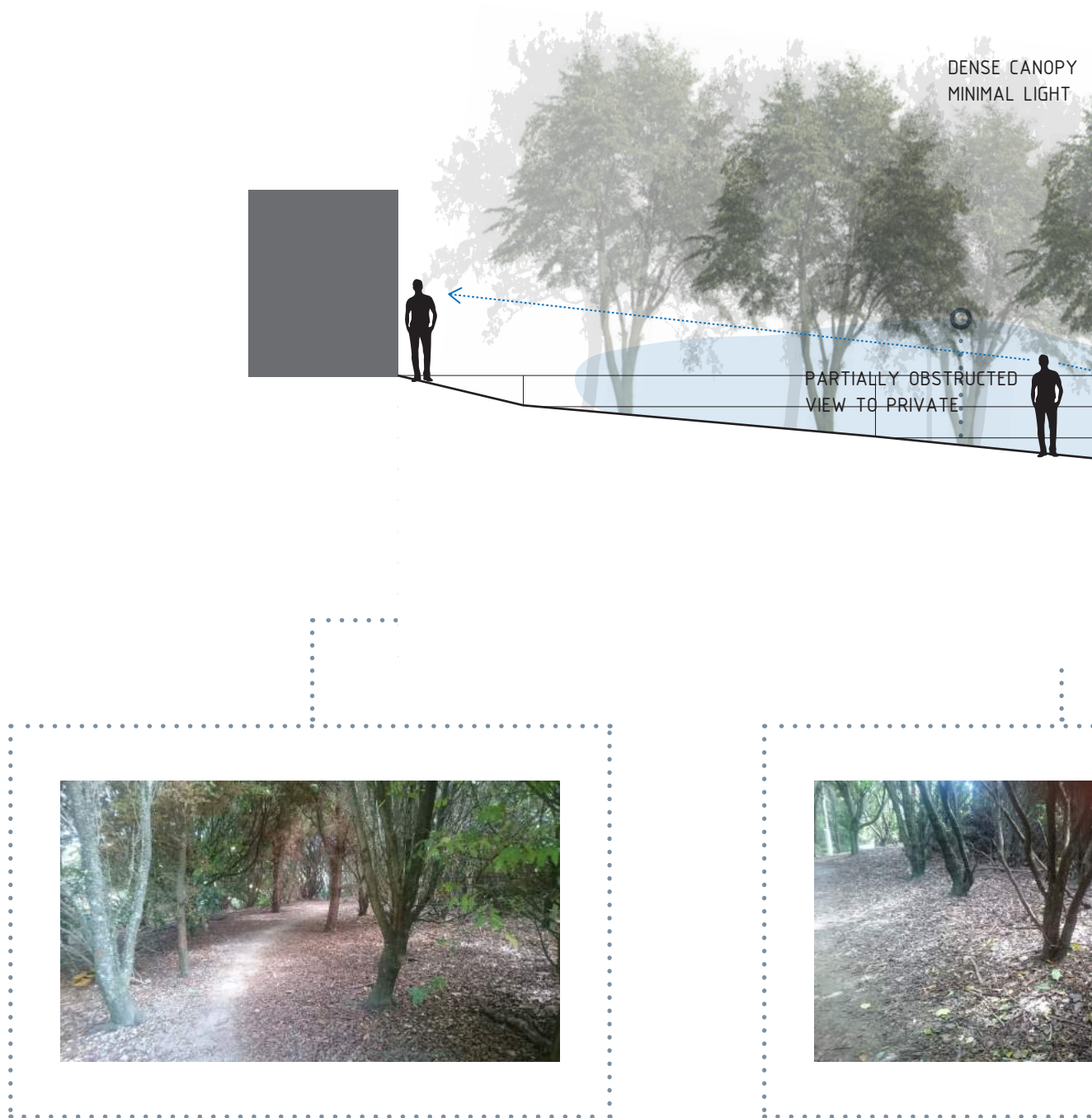


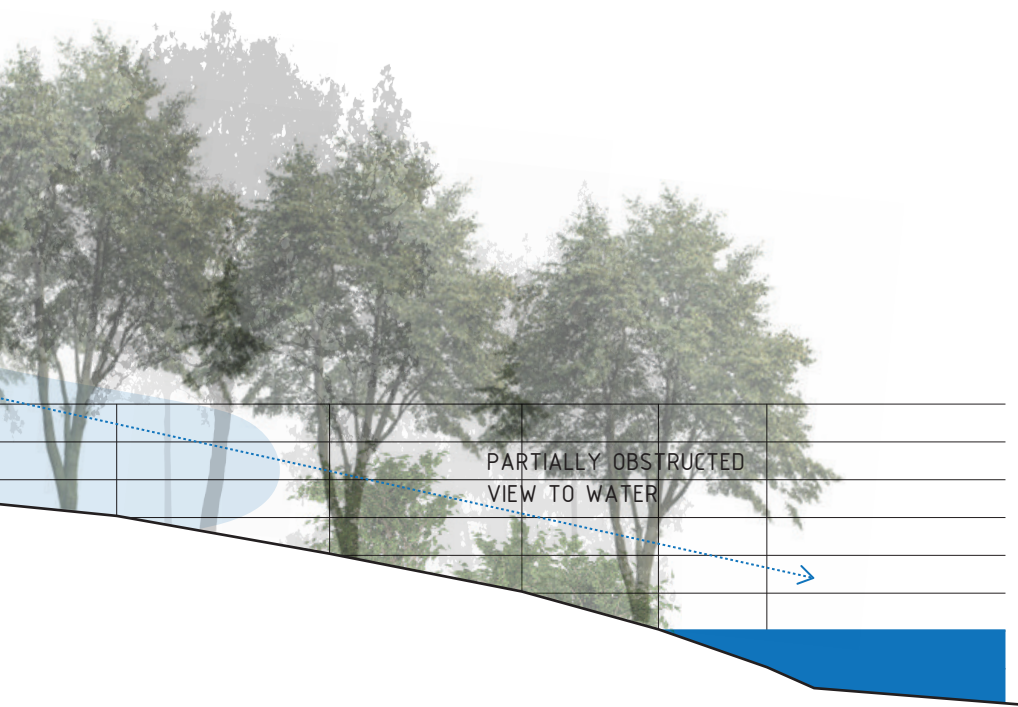
Summary - Re-designed

1. Remove vegetated barrier to allow sight lines onto water.
2. Establish a wooden platform which allows people to engage with the place and draws people away from the close proximity to residential homes.
3. Clearer pathway established.
4. Platform separated out into several levels to encourage degrees of separation from residents and other users.
5. Platform is of a scale which would be beneficial to local residents who appear to want to privatise the space currently.
6. Platform and clearance of vegetation means there is a better relationship established between residents and the water body, connecting them to the wider community.



SECTION C-C' | EXISTING

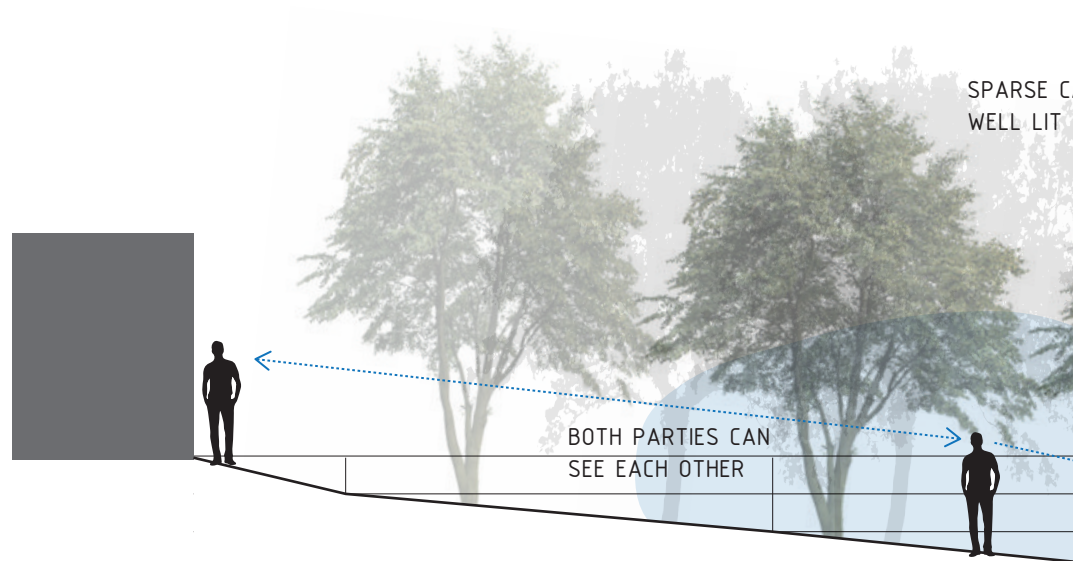




Summary - Existing

1. Grove of vegetation forms canopy above users letting in minimal light.
2. Separates users from private homeowners but also obscures view towards water.
3. More light and visibility of water would help make this part of the journey much more pleasant.
4. Movement currently is a steady pace with no reason to pause (width of this part is quite wide and helps with a slowing of pace).
5. Grove length extends far enough to have to adjust to light again from being under the canopy.
6. There is a feeling of relief and a faster pace towards the end of journey (indicates that groves extends a little too long).

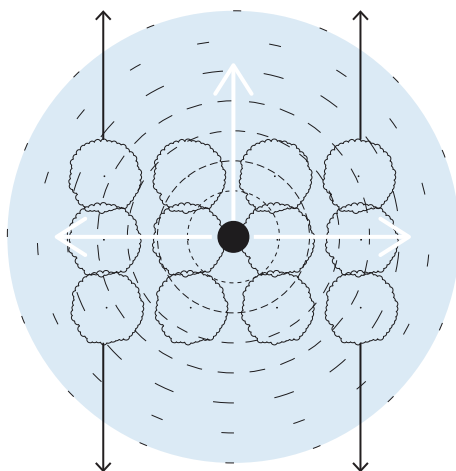
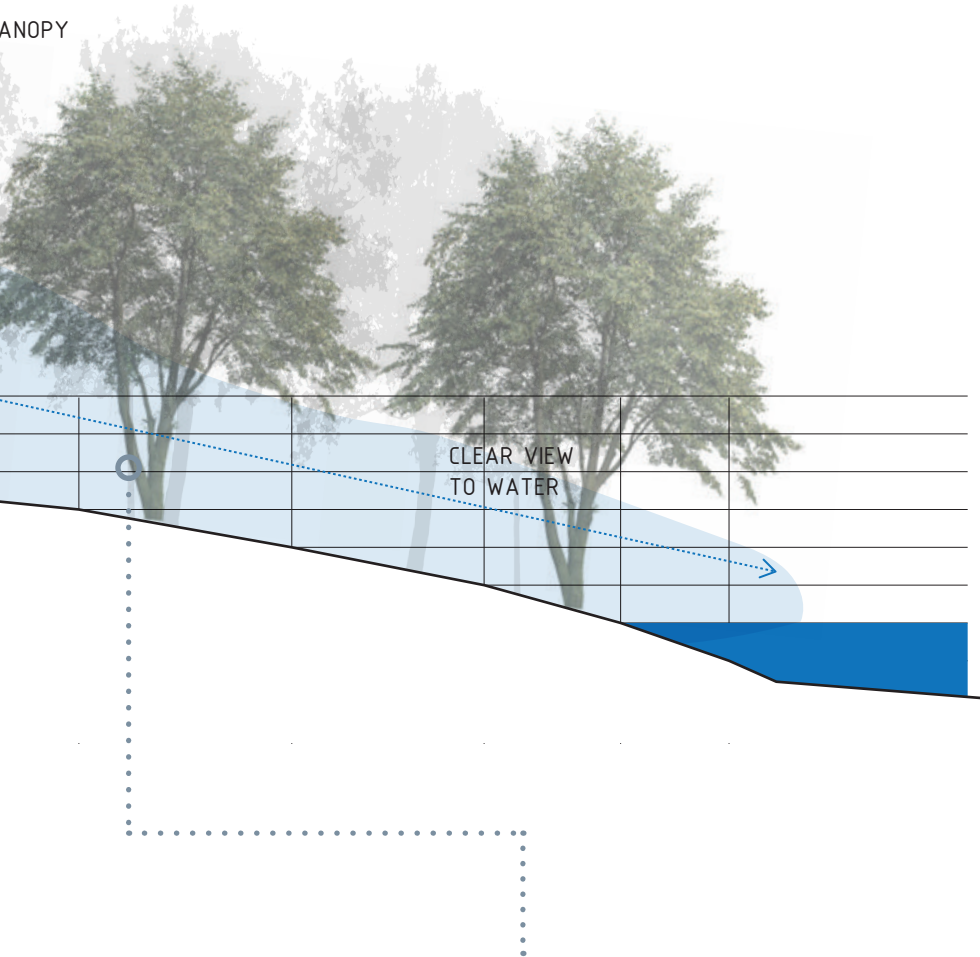
SECTION C-C' | RE-DESIGNED



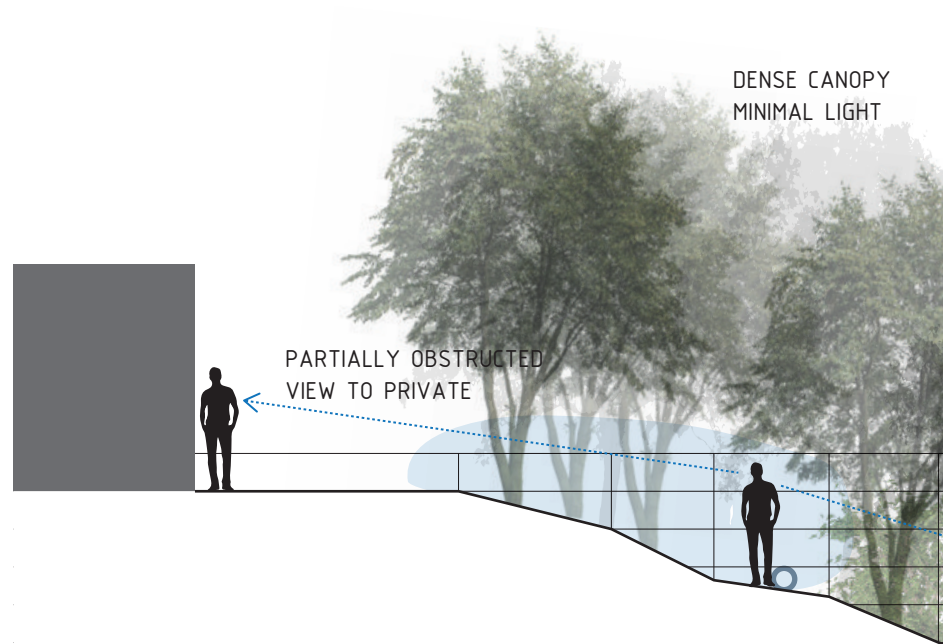
Summary - Re-designed

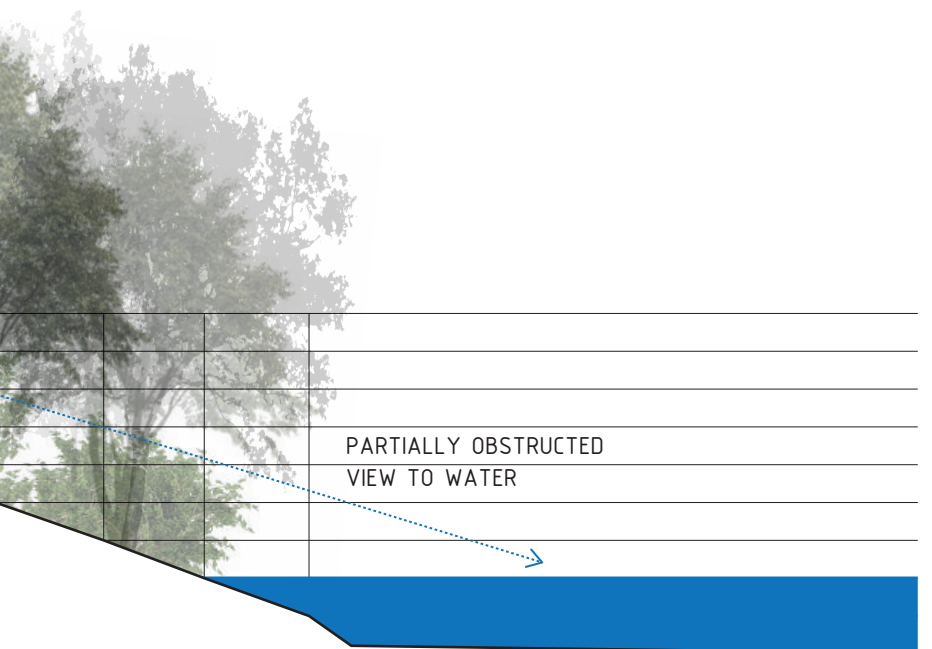
1. A sparser canopy removes the inwards, projects upwards and gives greater sense of wider place.
2. Removing vegetation barriers to water's edge will give interest along the journey.
3. Thinner canopy maintains privacy of residents but allows them to have more interaction with users.
4. Easier engagement with water body, wider sense of the neighbourhood.

ANOPY

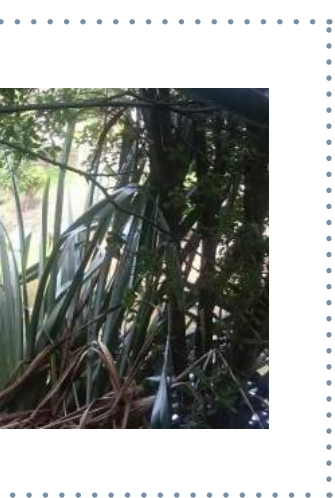


SECTION D-D' | EXISTING



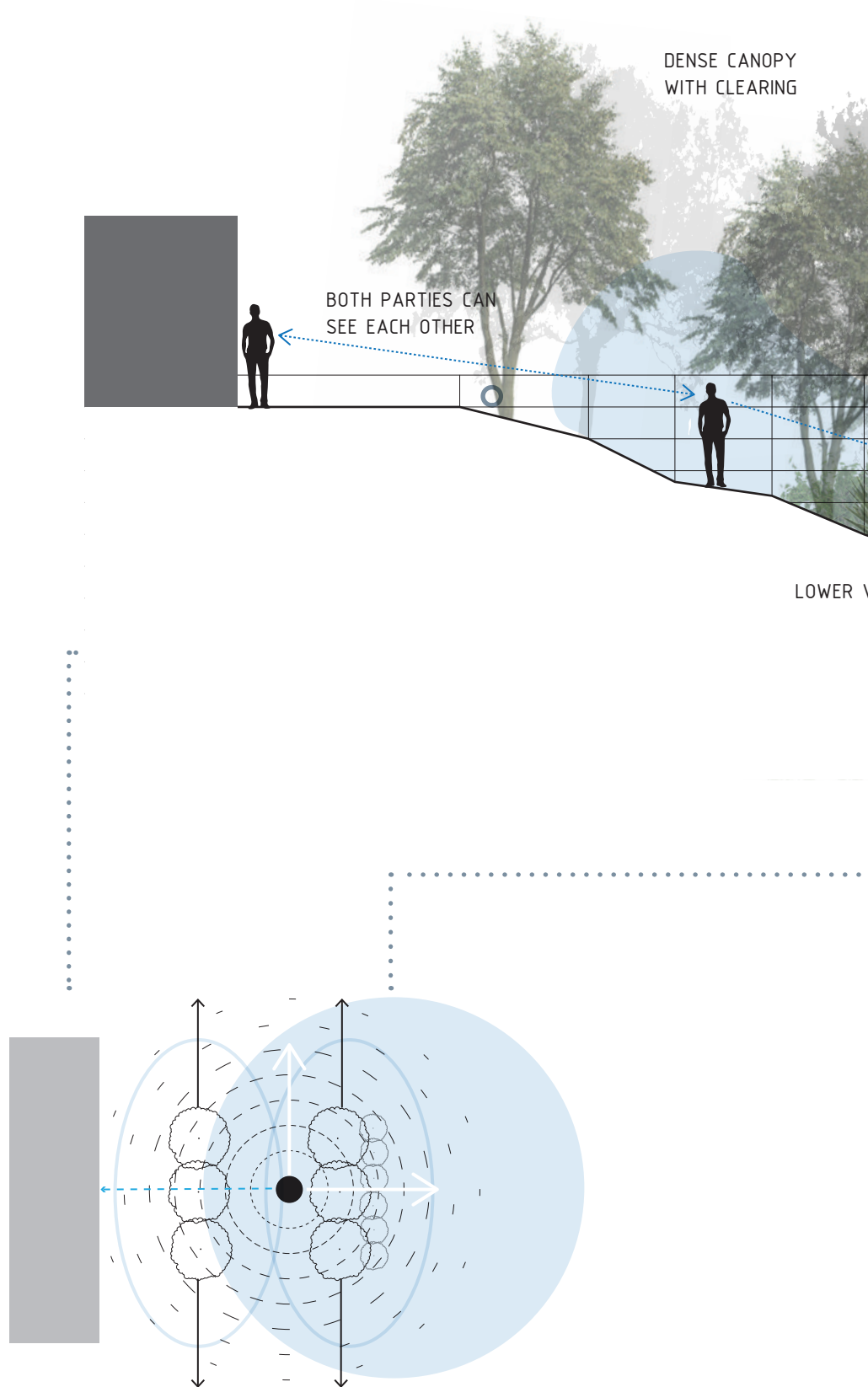


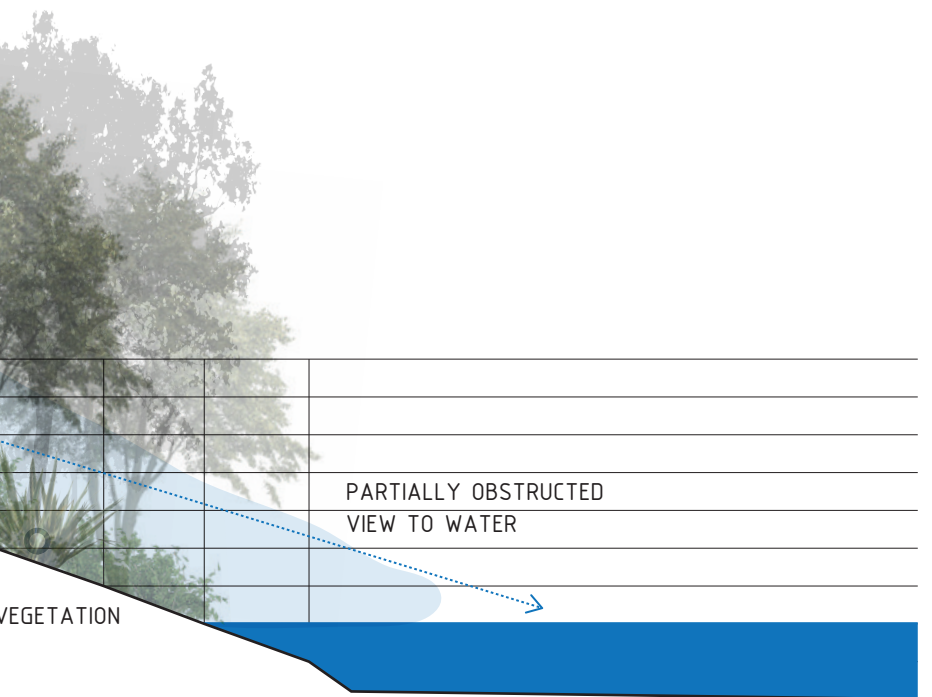
Summary - Existing



1. This part of the grove is where users feel rushed, with a faster pace.
2. Gradient here is more extreme and narrow.
3. Catch glimpses of water here although very difficult, have to be looking for it.
4. The steeper gradient and narrowing of territorial boundaries of surrounding objects means users walk faster, escaping the discomfort of the situation.

SECTION D-D' | RE-DESIGNED



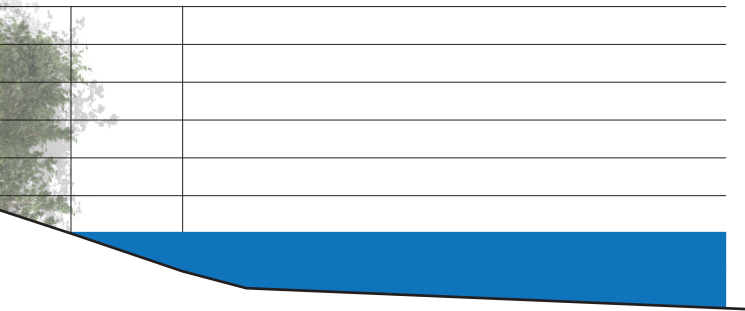


Summary - Re-designed

1. Once again the thinning of vegetation helps open out the area to feel more inclusive.
2. Lower vegetation towards edge of water also helps bring the water body in this sense of the wider world.
3. View of water and thinner canopy will contribute to a slowing down of the previous movement type.

SECTION E-E' | EXISTING

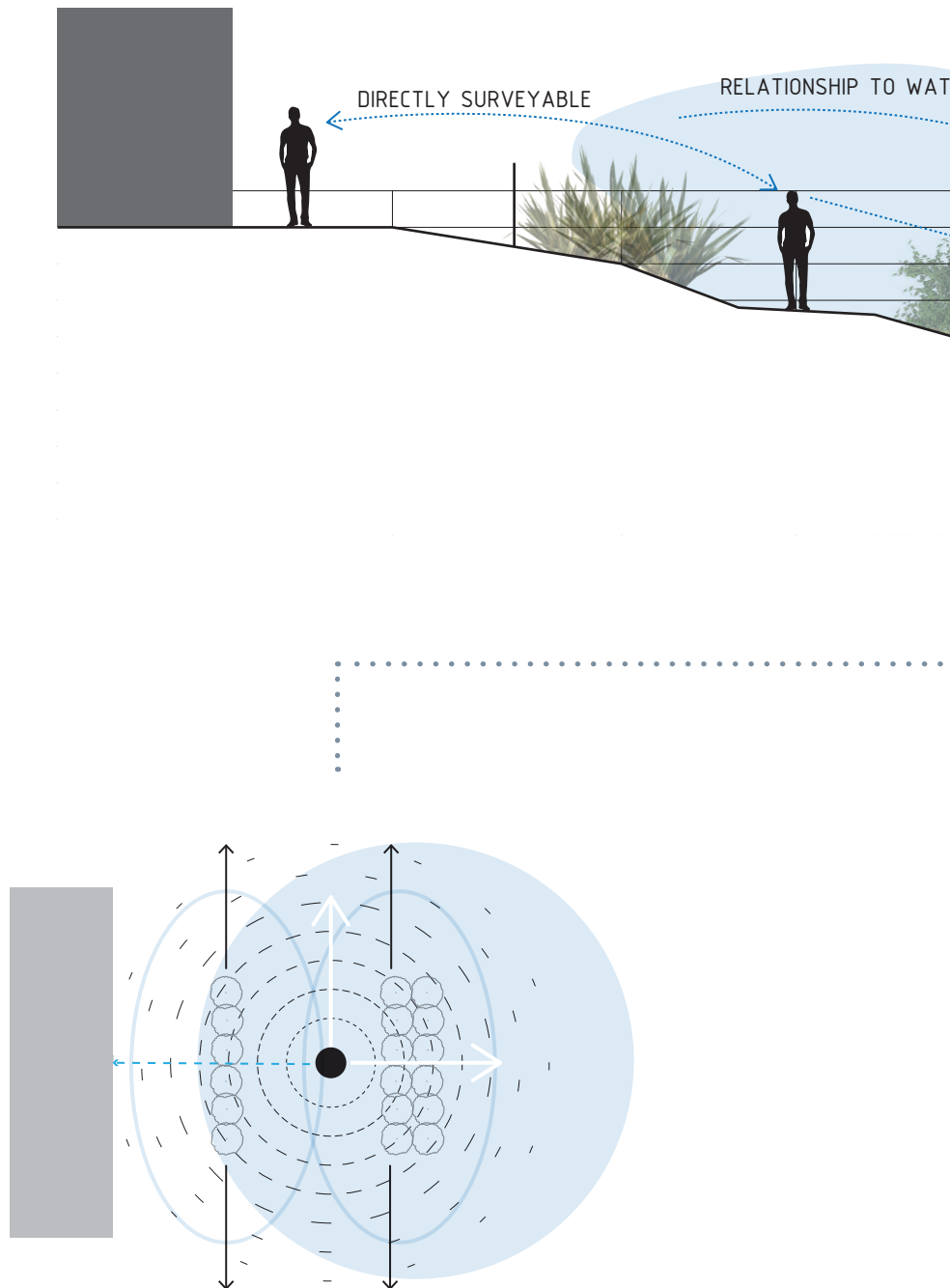


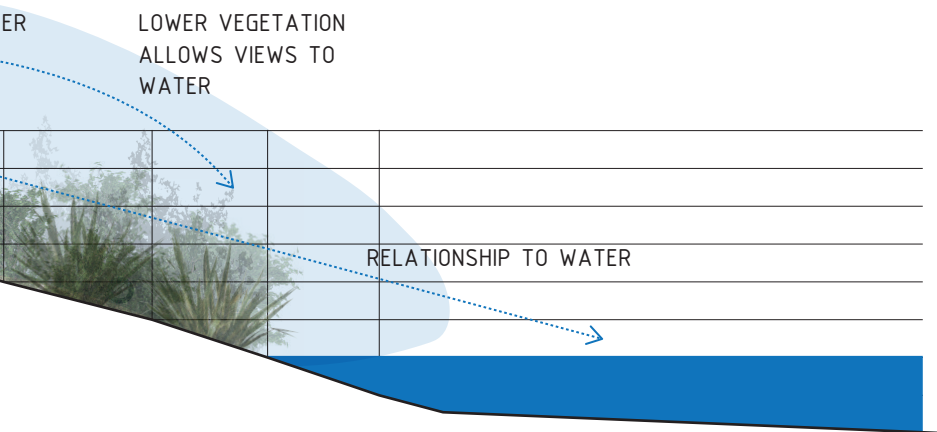


Summary - Existing

1. Narrow path with high sides mean fast movement here.
2. Slowing down slightly at the corner where a glimpse into private life can be seen.
3. Once proximity to private housing is immediate, pace quickens again to escape the intrusion into private boundaries.
4. This feeling of pushing users is exacerbated by the dense and tall vegetation to the right, forcing focus forward and to the left.

SECTION E-E' | RE-DESIGNED

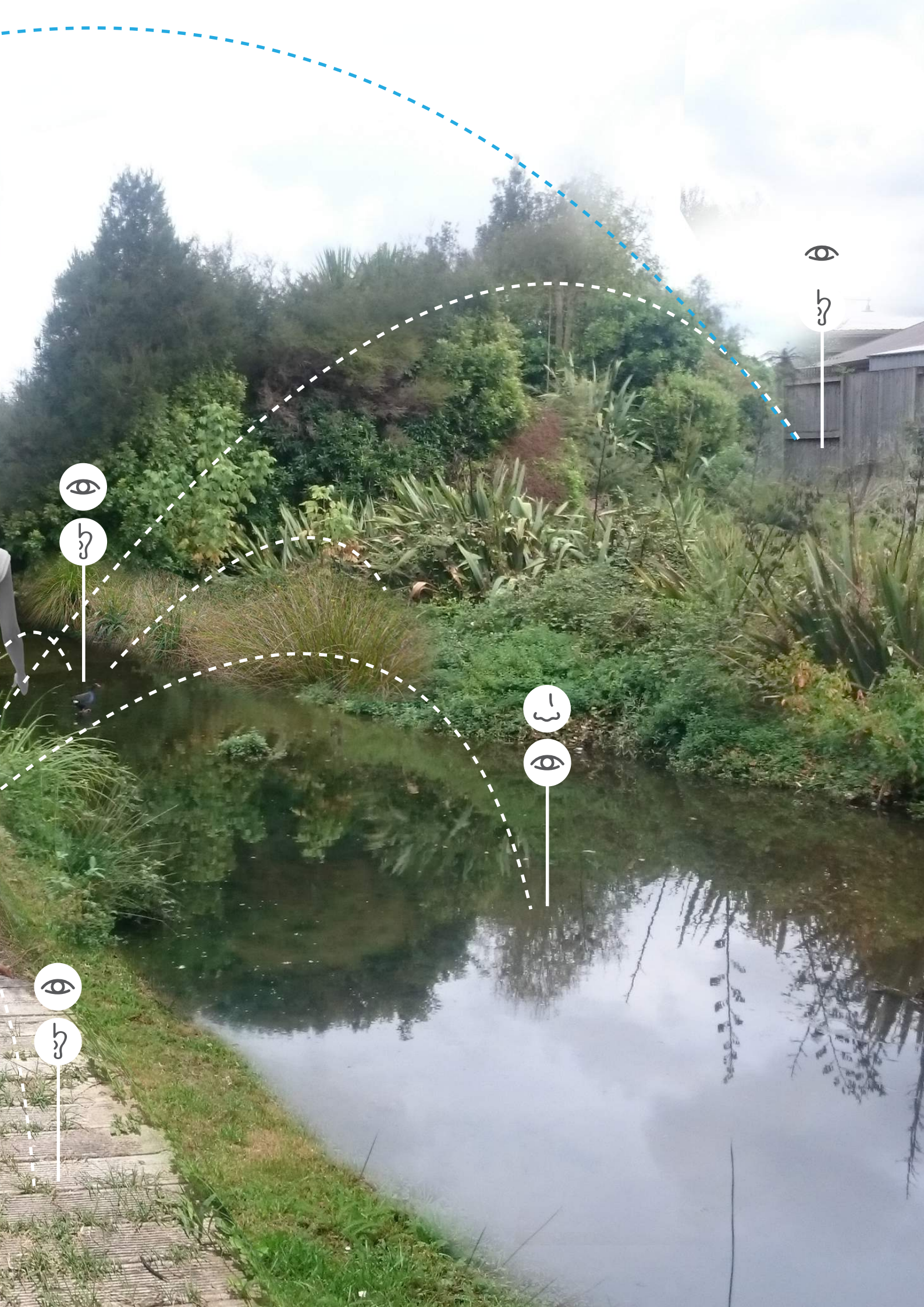




Summary - Re-designed

1. Lowering the vegetation on the right side opens up the water body which draws attention away from intrusion into private realm.
2. Residents have an opportunity to establish relationship with water and connect to surrounding neighbours.





SITE TWO: ACCESS + RECREATION

The site is adjacent to Hukanui School and is already a well-used short cut from the subdivision to the north and the school/mall to the south. This presents an opportunity to develop this publicly owned area as a recreation destination as the gully areas to the south is primarily privately owned.

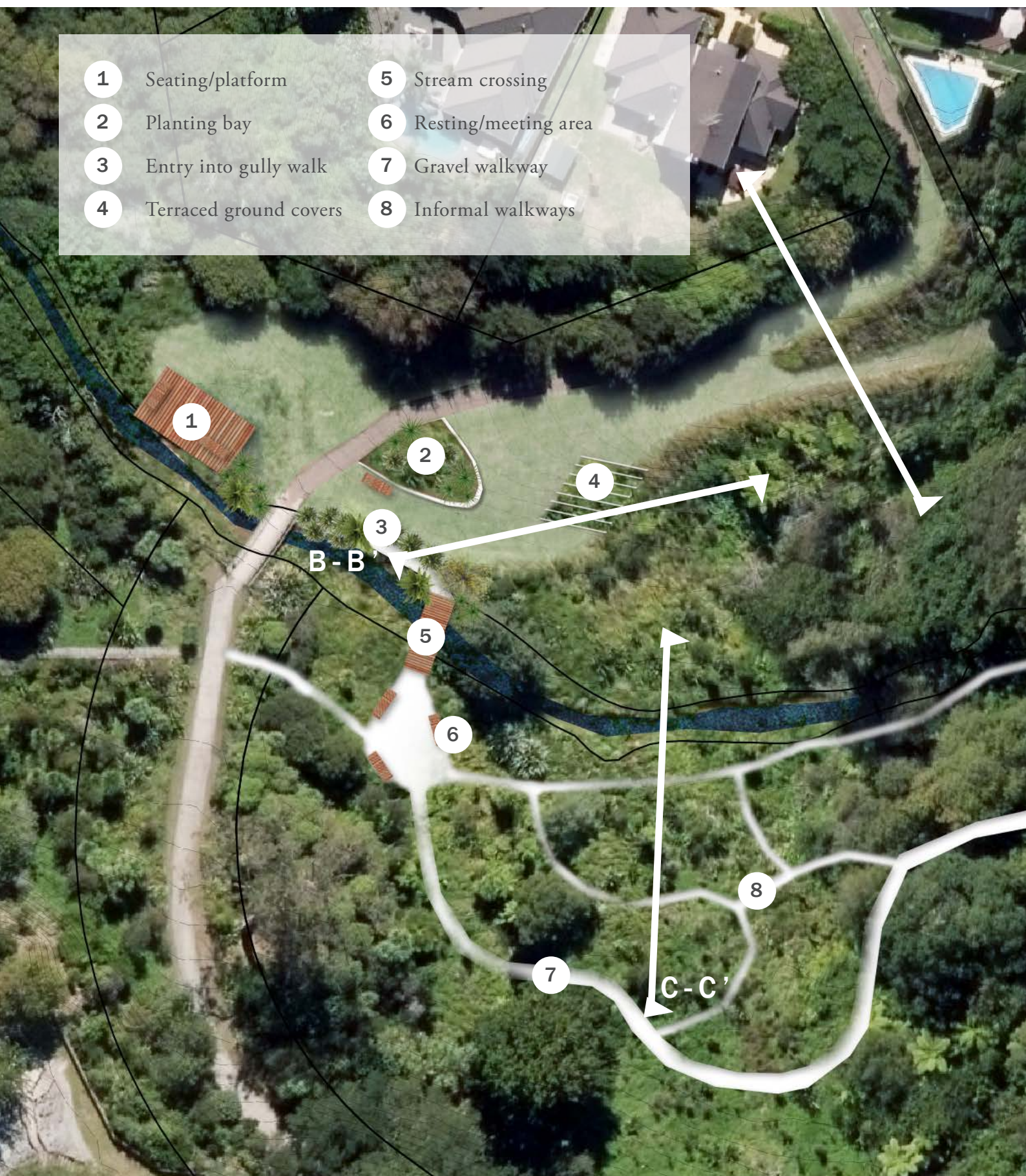




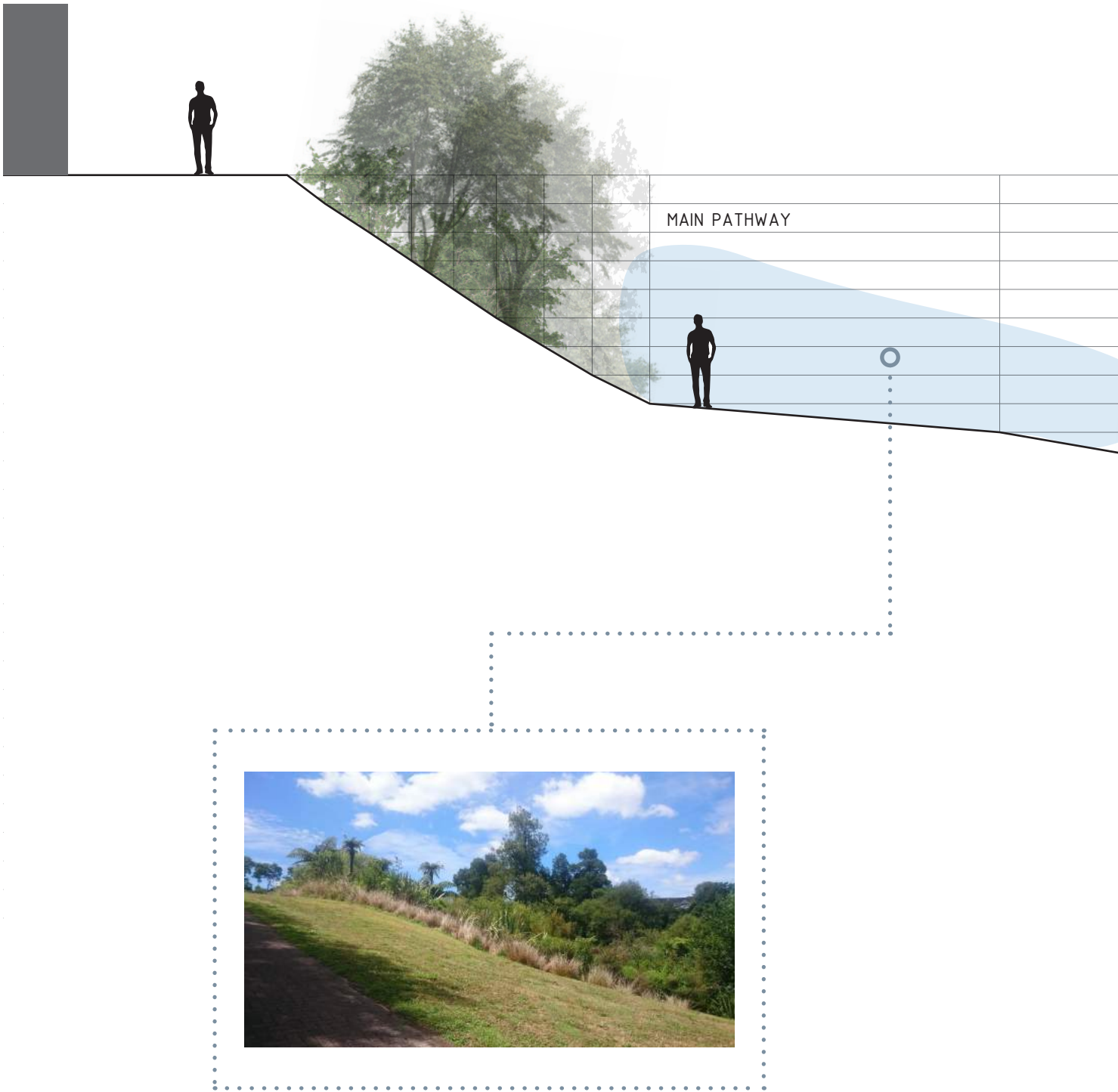
EXISTING

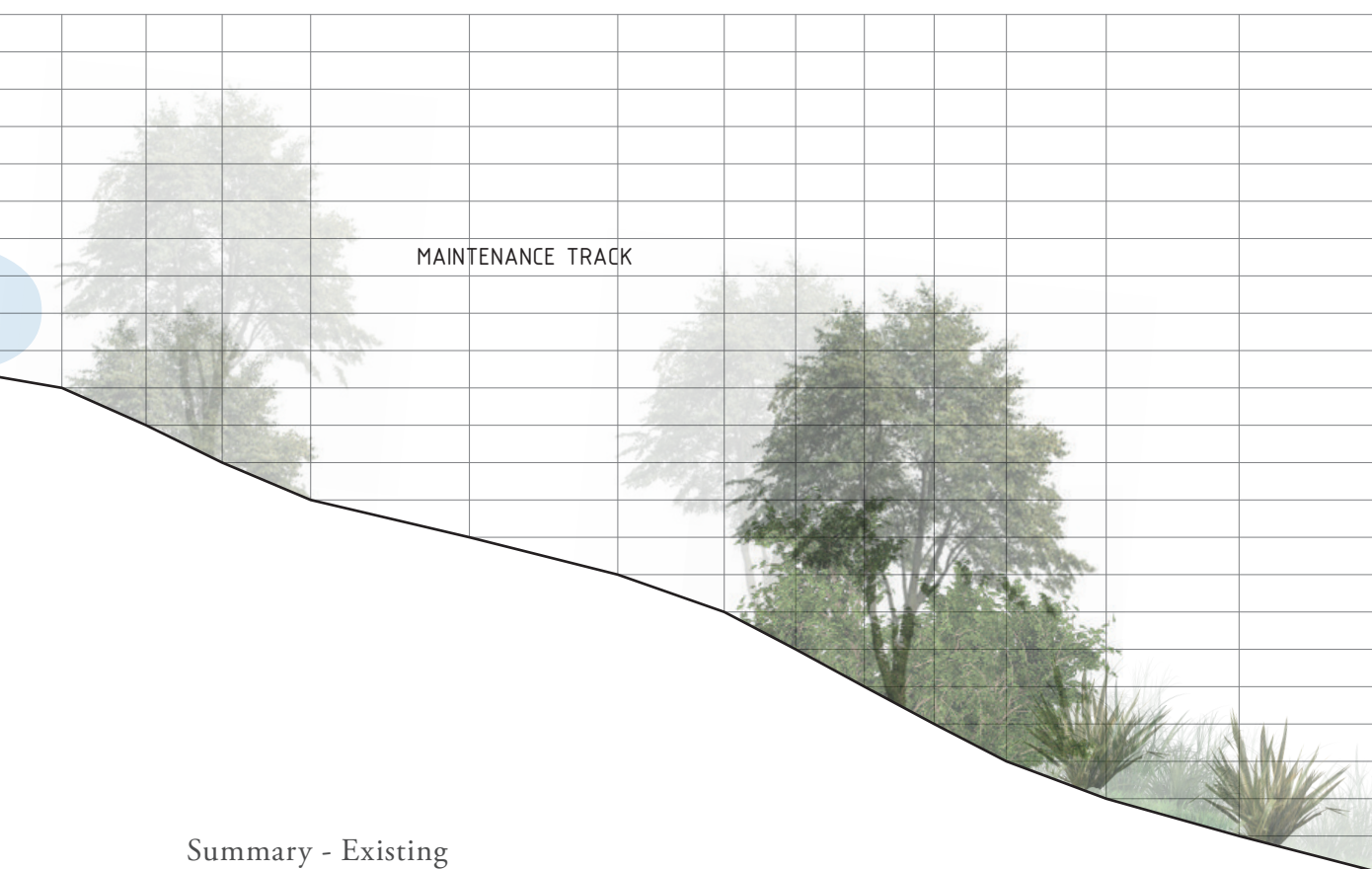


RE-DESIGNED



SECTION A-A' | EXISTING

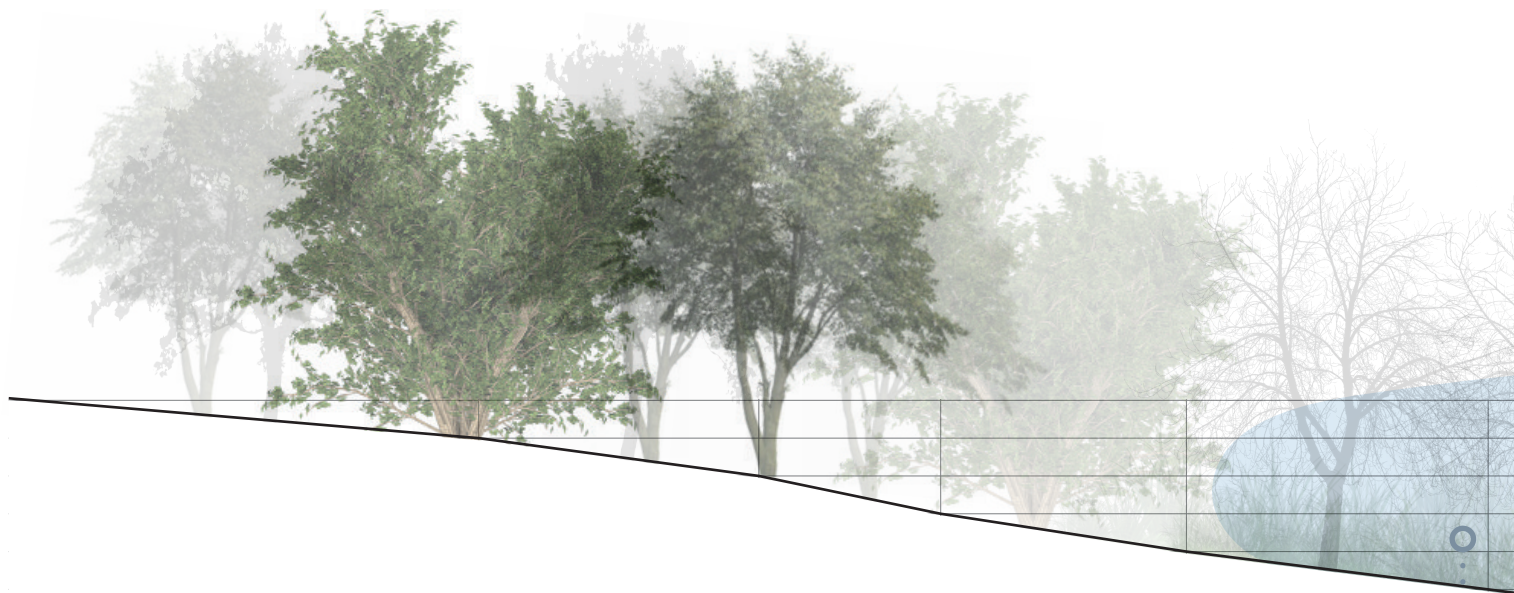




Summary - Existing

1. Current pathway is well used by students of Hukanui school.
2. Popular access from Chartwell shopping centre and residents on other side.
3. High usage patterns present an opportunity to develop picnic areas or pathways along the wide, flat gully floor to engage users more.
4. Current pathway is part shaded and hugs close to residential side, does not focus towards the gully.
5. Grass area that exists currently does not have any real purpose, effectively a dead zone/underutilised.

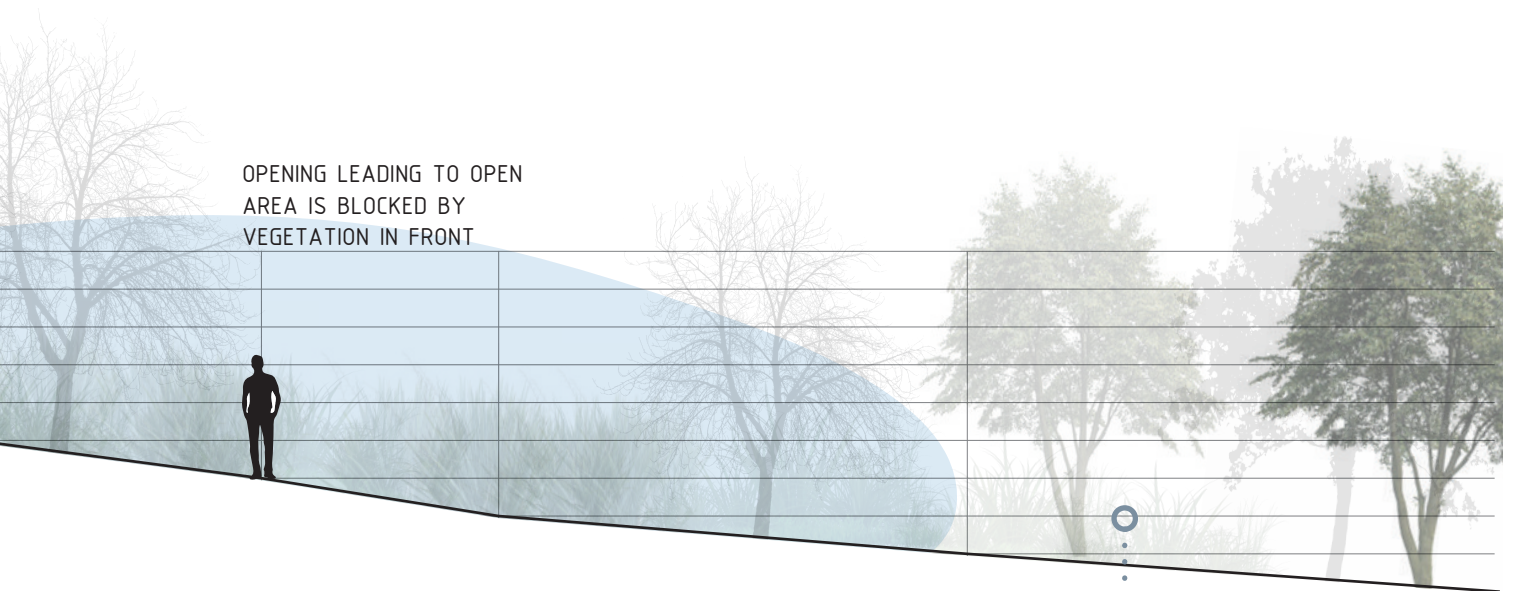
SECTION B-B' | EXISTING



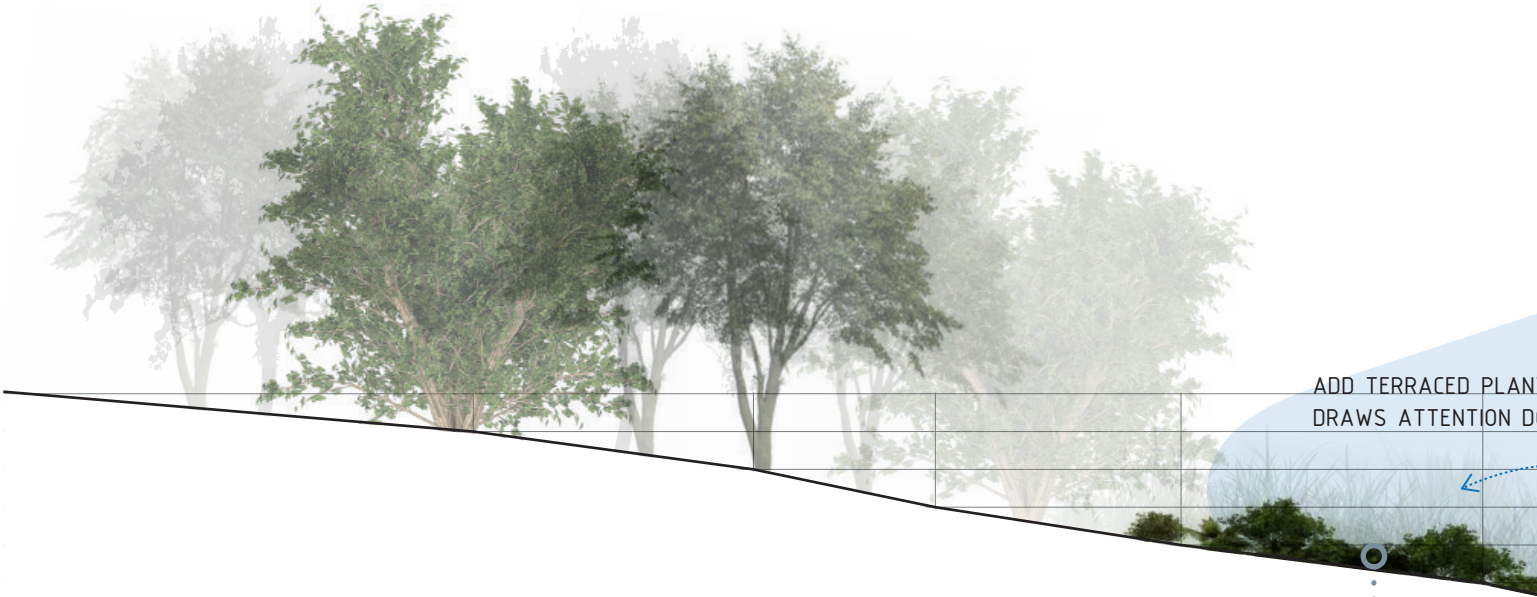
Summary - Existing

1. No access available to gully floor in this location
2. Gully floor appears to be wide and also invaded by weed species, could benefit from regeneration work.
3. Stream has good flow, water clarity, and bank stabilisation in this location.
4. No reason exists to walk to the vegetation edge currently, this has the potential to change and the images show potential entry points to allow users to engage with the gully.

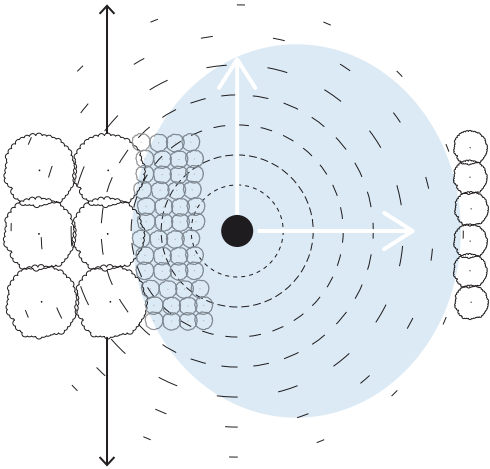
OPENING LEADING TO OPEN
AREA IS BLOCKED BY
VEGETATION IN FRONT

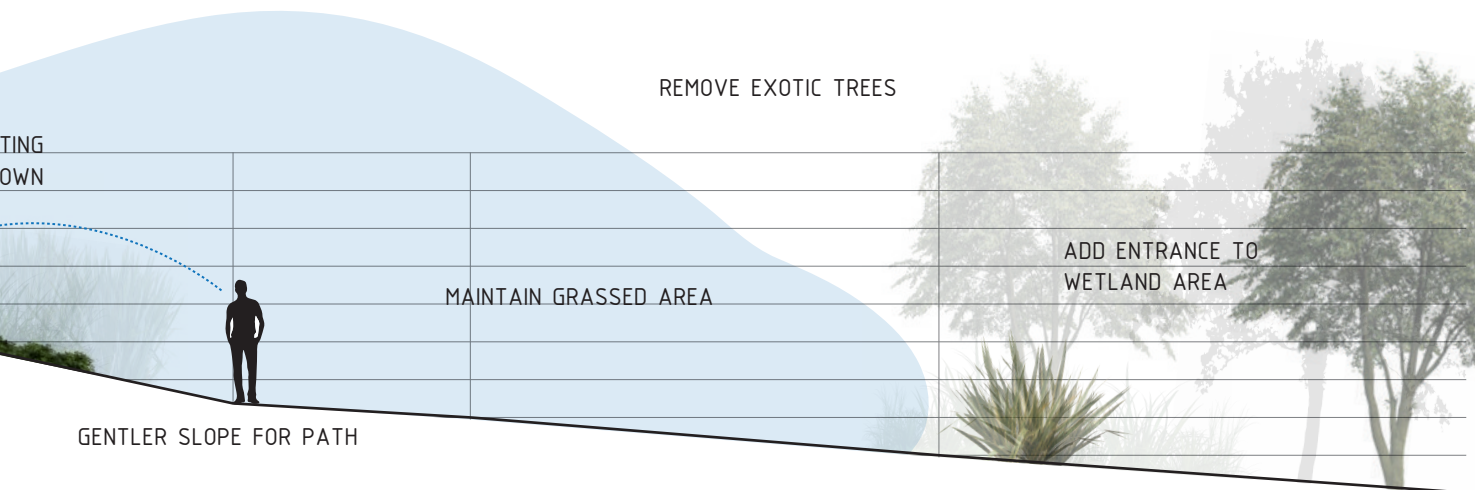


SECTION B-B' | RE-DESIGNED



ADD TERRACED PLAN
DRAWS ATTENTION D

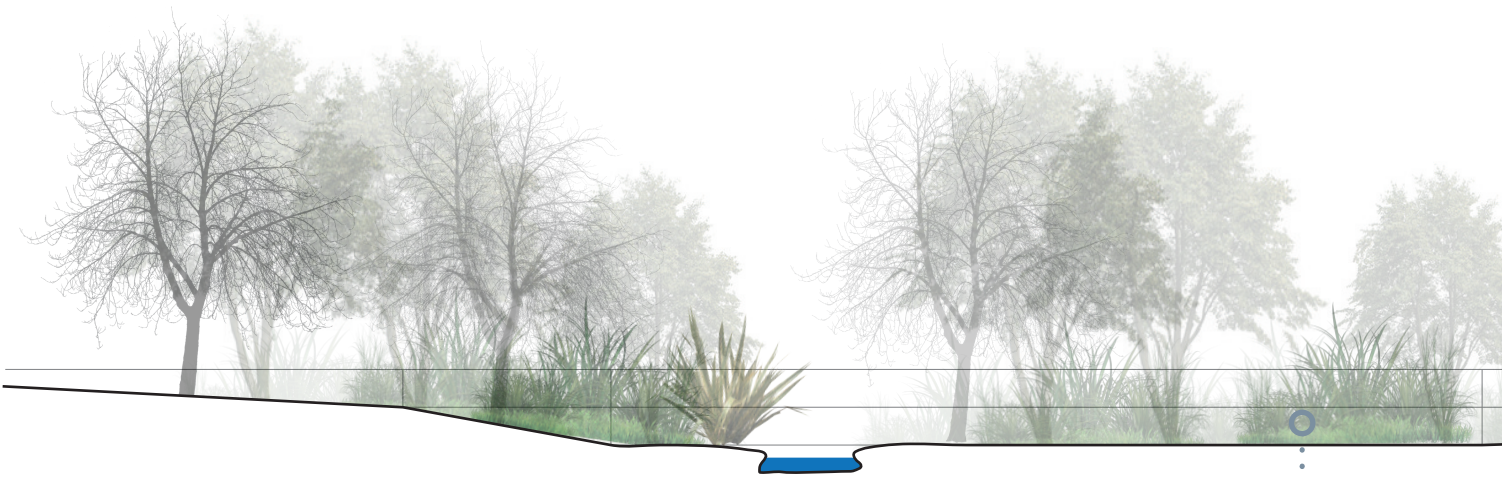


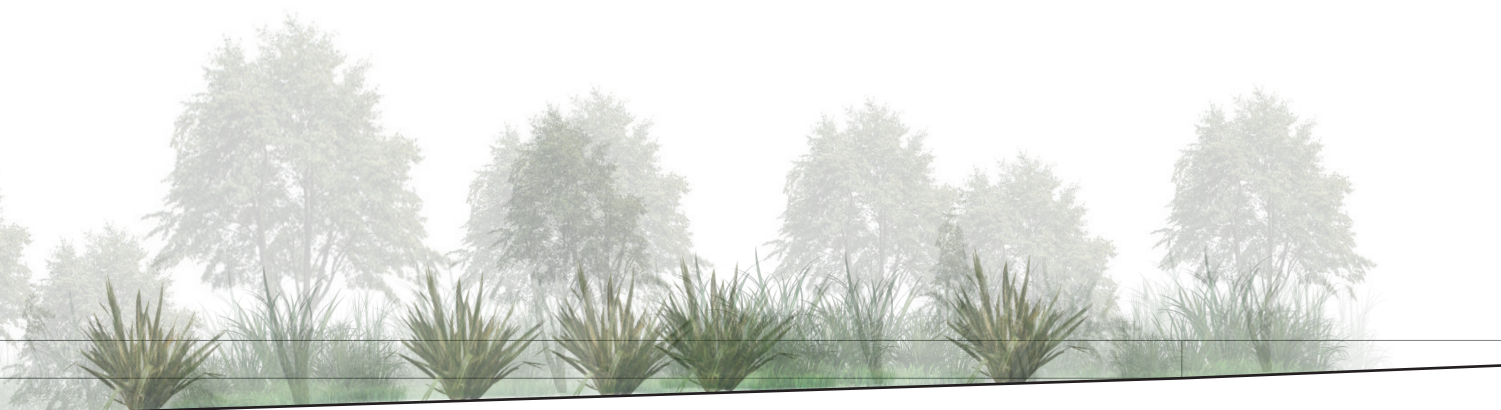


Summary - Re-designed

1. Terraced planting added along edge of existing vegetation to help lead people down to the entrance.
2. Area would be more inviting to the public and give them a reason to wander over and therefore see an entry to the wetland/gully floor.
3. Remove some of the larger invasive species such as willow and allow better sight lines throughout this area.

SECTION C-C' | EXISTING



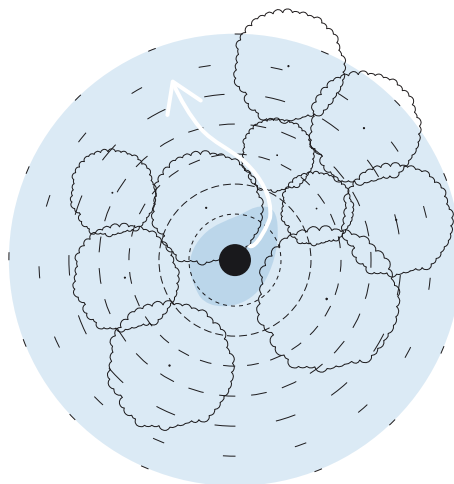
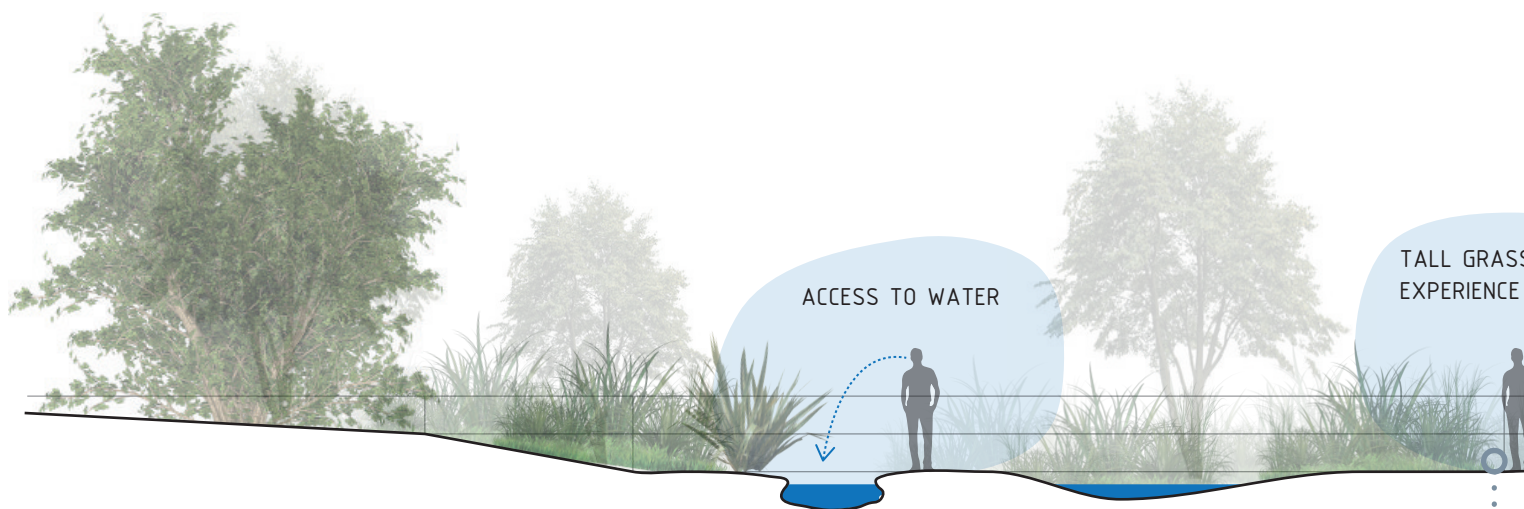


Summary - Existing

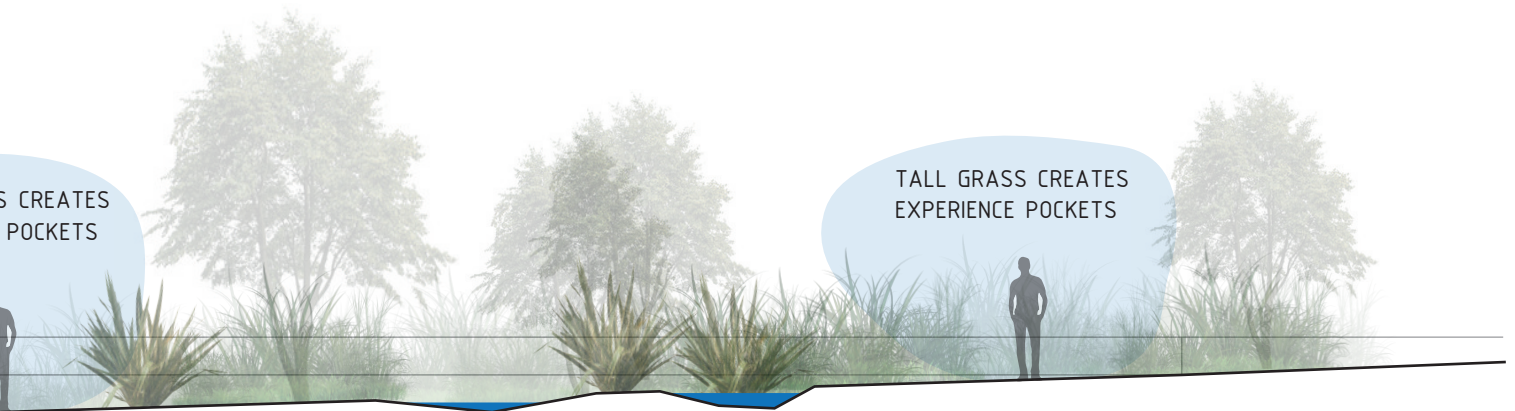
1. This area is abundant in young growth vegetation and shows good establishment.
2. Some weeds like gorse was noted in some areas here.
3. No current access to this area but has potential to be opened up as the area is well used.
4. Wide gully floor provides unique opportunity for a leisurely pace and keying people into the wider world of the gully and surrounding neighbourhoods.

SECTION C-C' | RE-DESIGNED

REPLACE EXOTICS



SOCIAL WETLAND OPPORTUNITY



Summary - Re-designed

1. Create pockets of experience spheres, increasing intensity in the immediate vicinity promotes a more tactile response and awareness.
2. This is done in a similar fashion to the Mangaiti gully stretch where the ecological diversity and proximity to vegetation highlights the immediate and keys people into the wider system.
3. The difference here would be that the vegetation would be sparser with the ability to let light in to create the safety which allows people to linger and meander.
4. Pathways would be graded so that they allow a shift in pathway material and height to accentuate awareness of the ground, providing a way into connecting with the gully.





SITE THREE: ECOLOGICAL

This site has the potential to be the perfect mix of all three typologies. While it is strongest in ecological tendencies currently, it has a culvert and weir which provides clear indication of stormwater management tendencies as well. With a pathway introduced which could link onto the existing pathways to the south (Mangaiti gully), it has the potential to provide recreation opportunities alongside the ecological diversity it already displays.





B - B'

SITE THREE ○

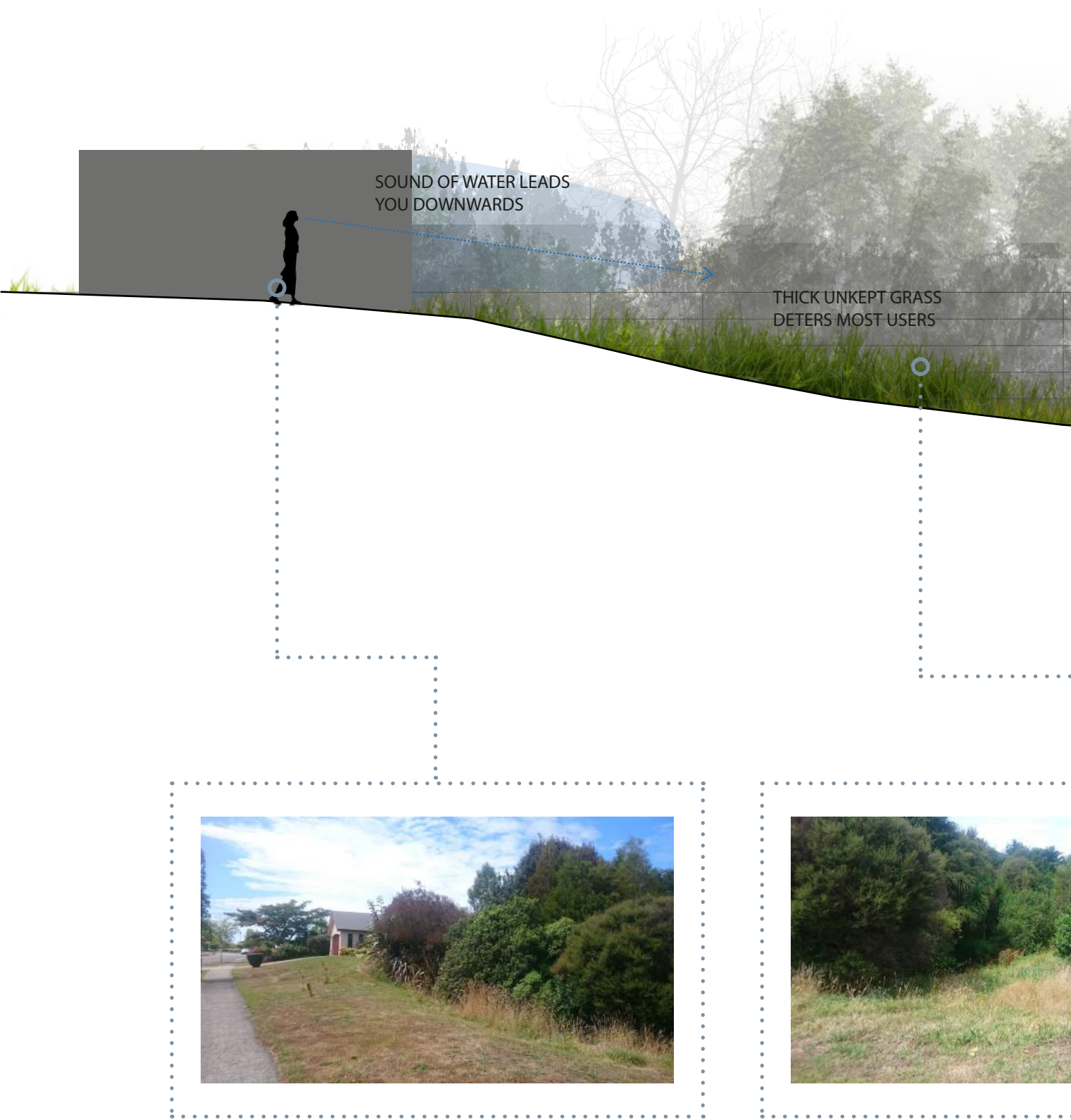
EXISTING

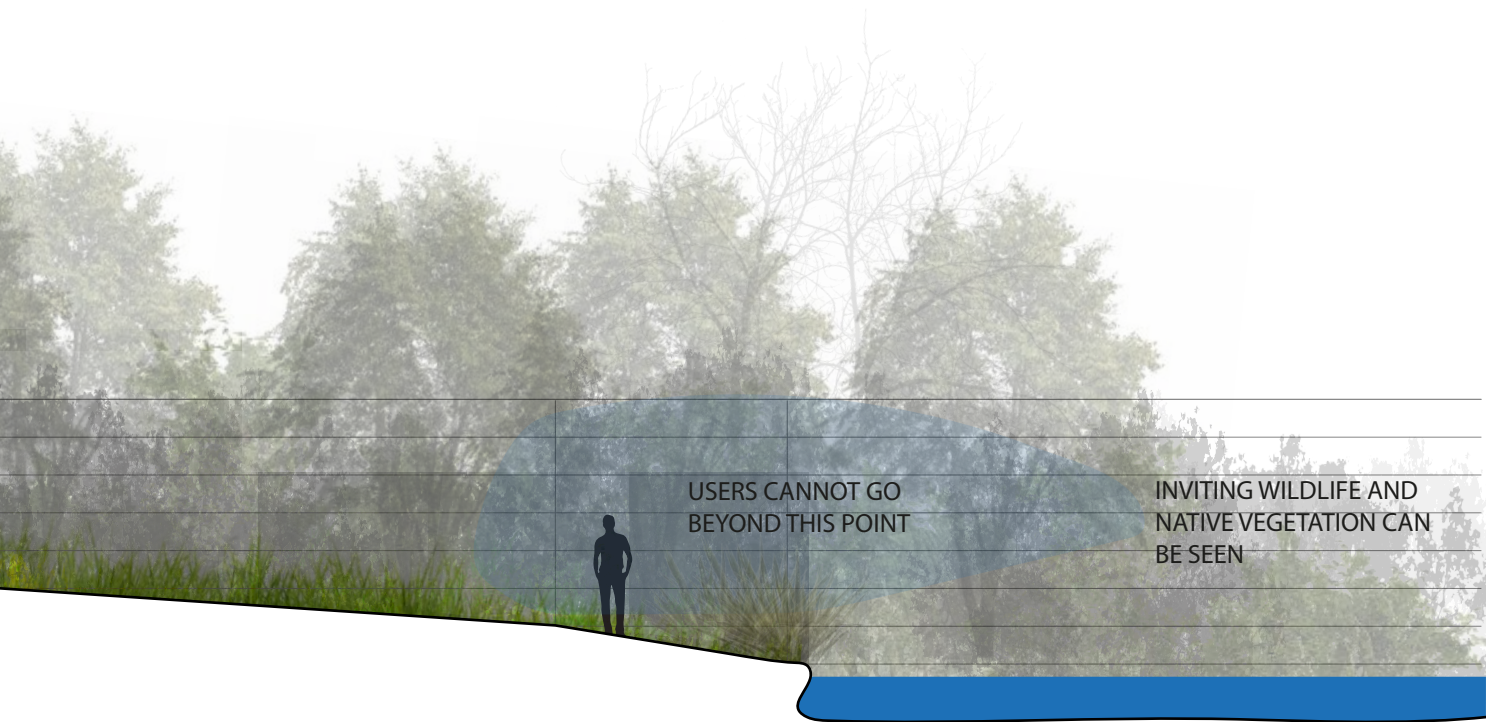


RE-DESIGNED



SECTION A-A' | EXISTING

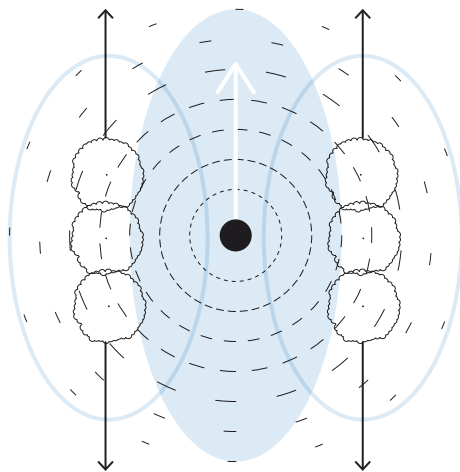
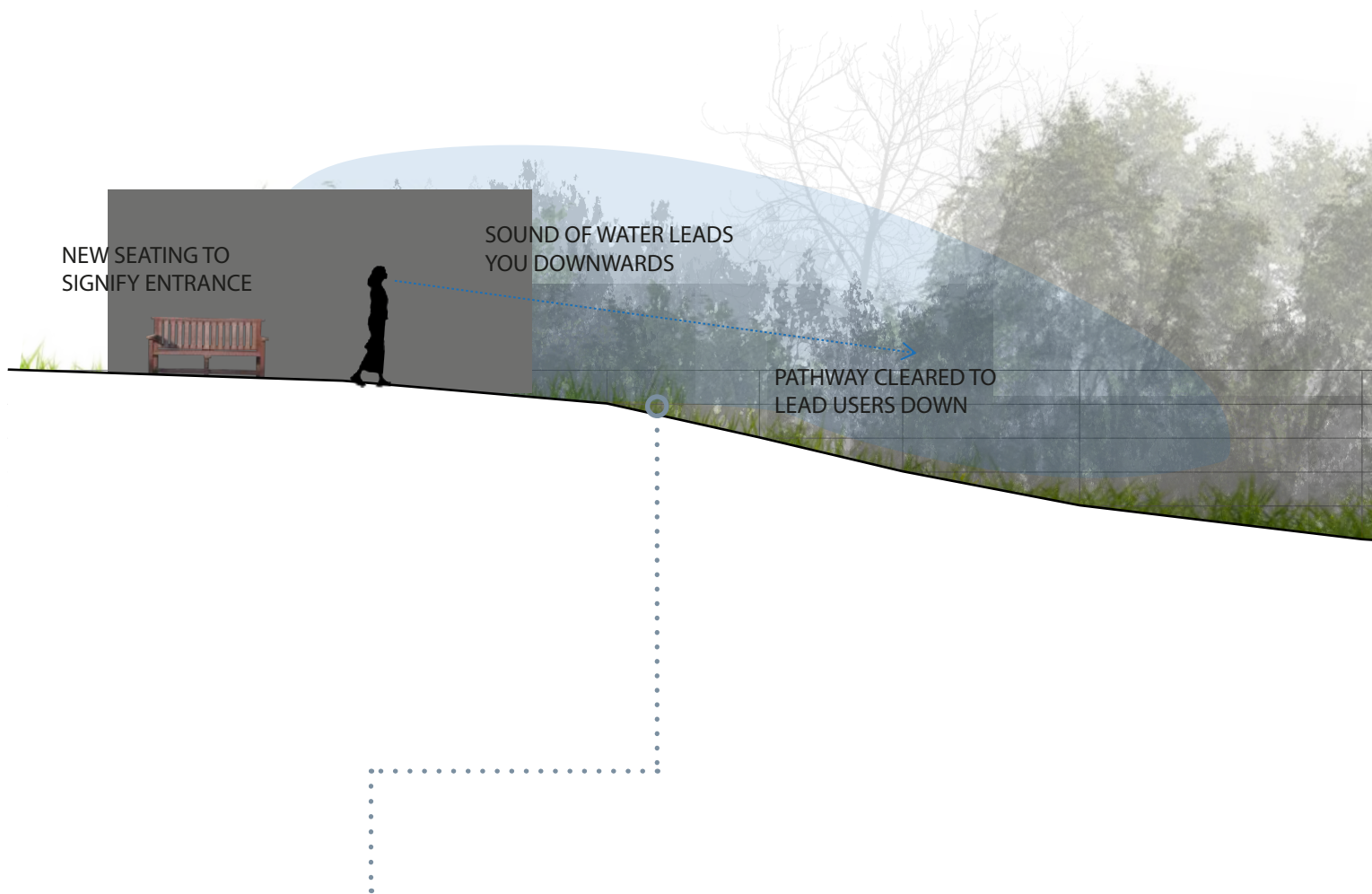




Summary - Existing

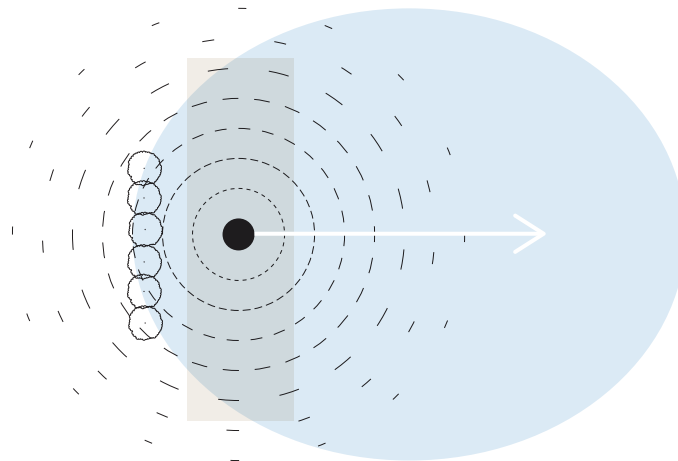
1. Gradient down to the water is pleasant and inviting.
2. No established pathway means users may not notice this area.
3. Vegetation and/or high retaining either side means this area is not privatised by the residents adjacent.
4. Opportunity to create access and connect to existing pathways.

SECTION A-A' | RE-DESIGNED

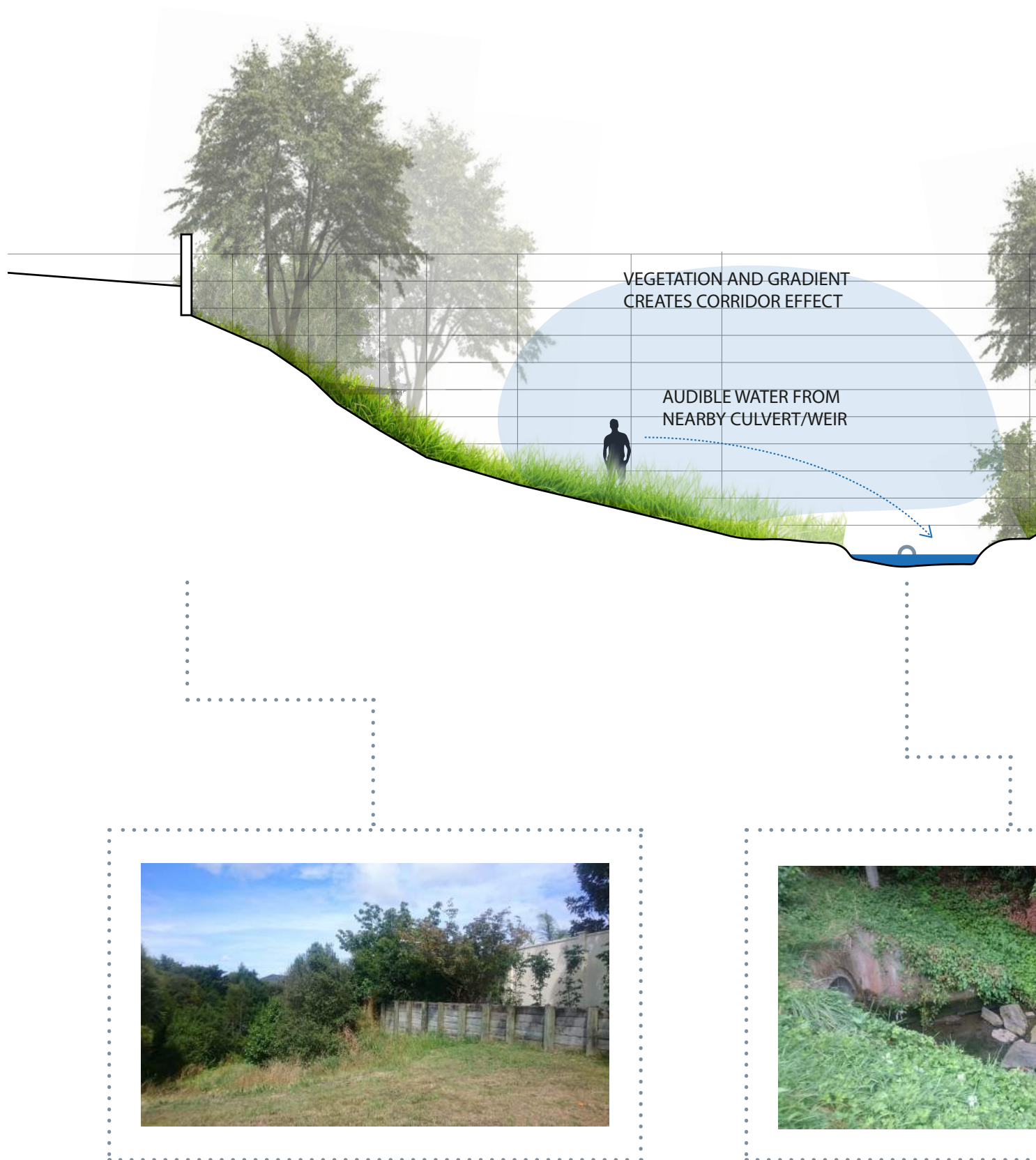


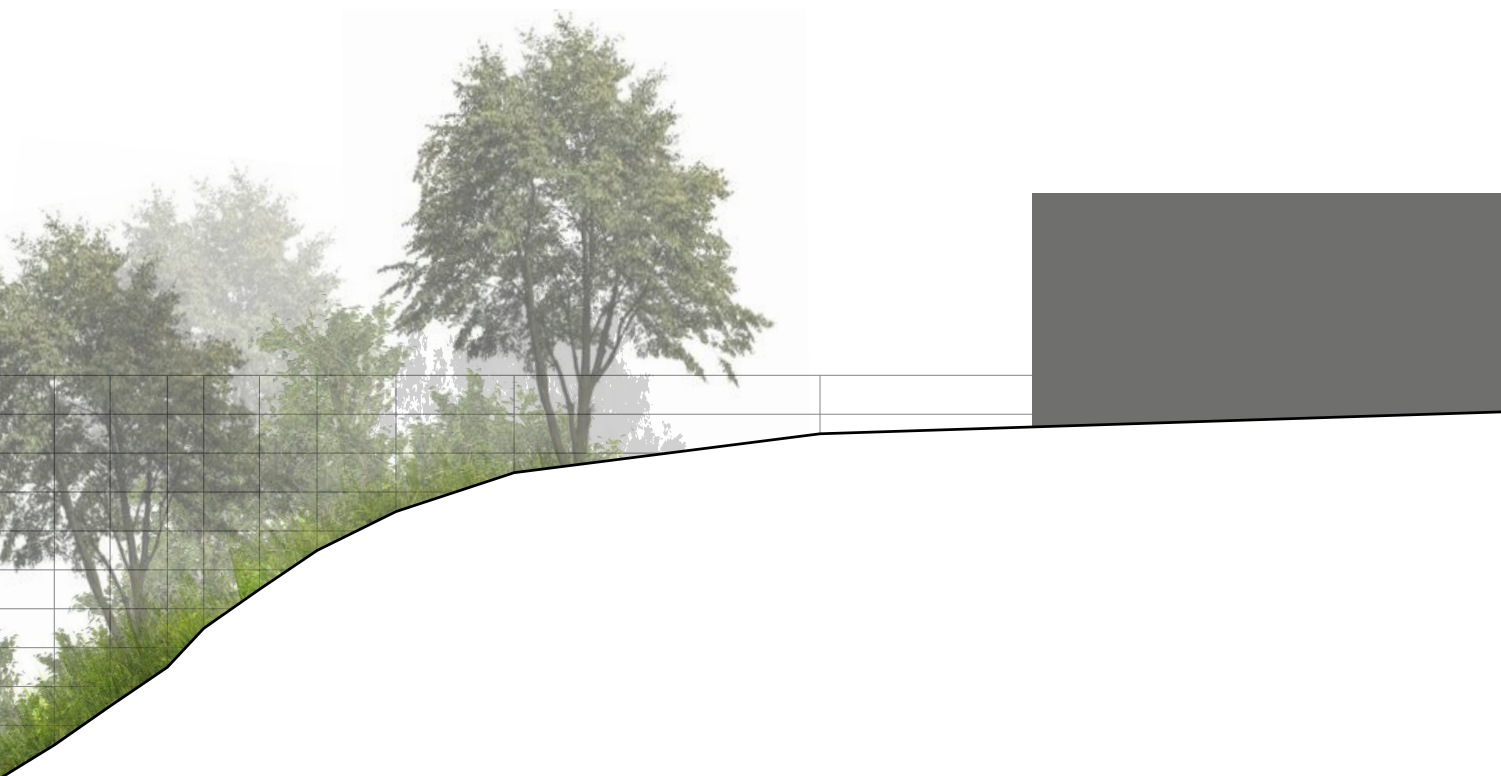
Summary - Re-designed

1. Introduce clearer entry by inserting seating on gravel area which then leads down into the gully entrance.
2. Addition of a boardwalk which allows users to move forward, providing purpose and joins onto existing paths.
3. Path located close to vegetation to intensify experience of immediate and connect to wider system.
4. Raised boardwalk allows users to have a relationship with the water.
5. Closer vegetation on one side means that the other side is open, once again drawing attention towards the water.



SECTION B-B' | EXISTING



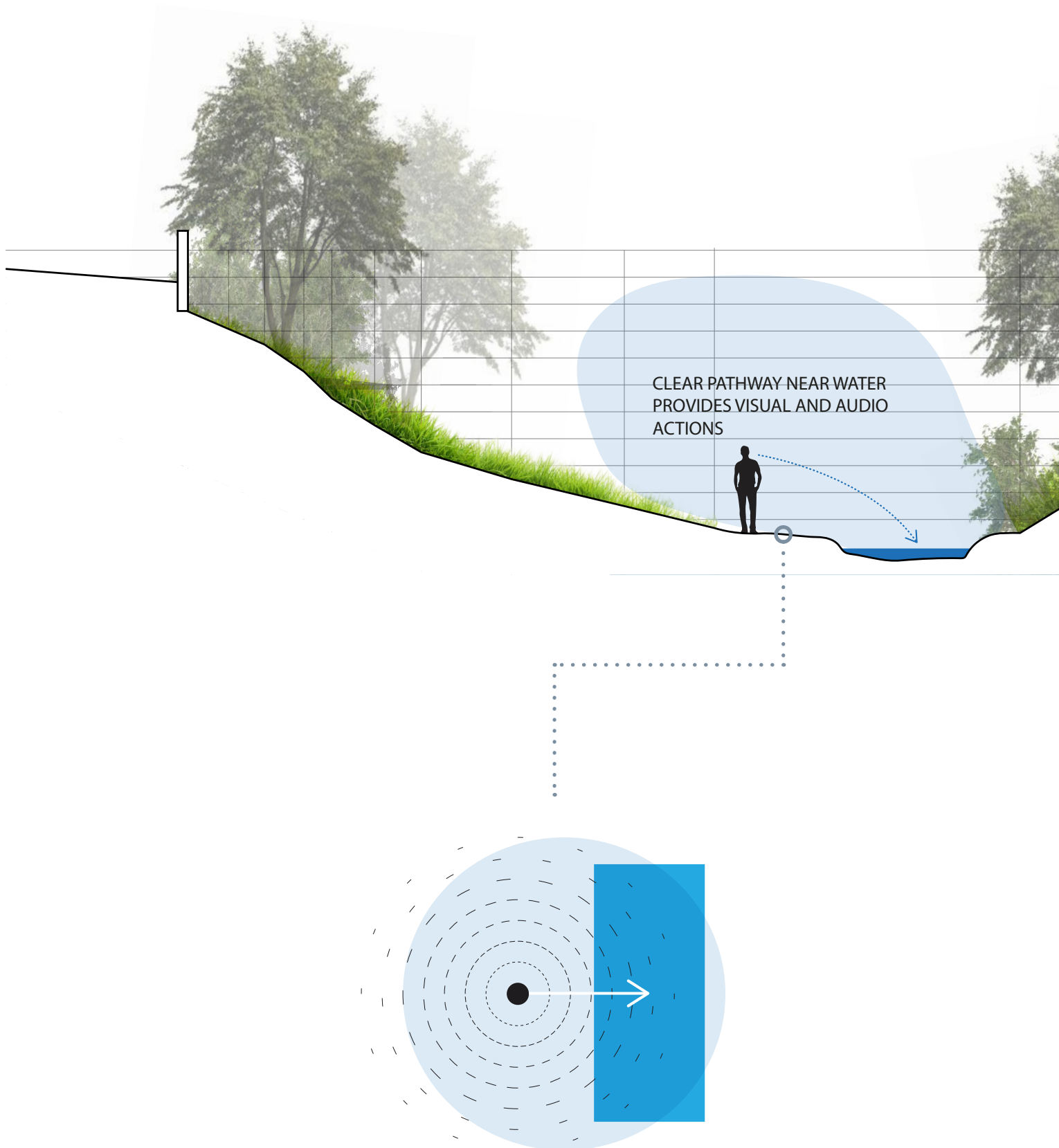


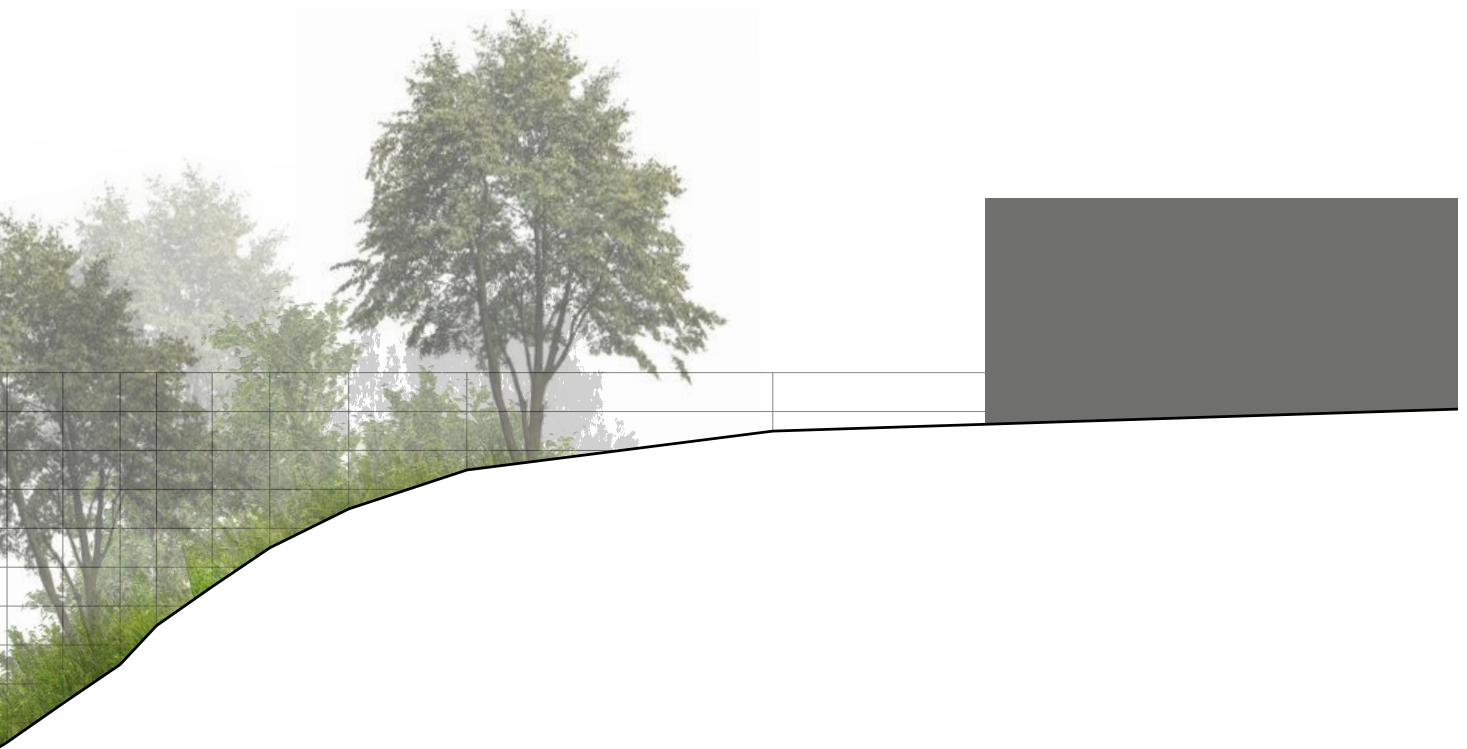
Summary - Existing

1. Culvert generates water sound and creates a pulling effect on users, drawing you down to the sound.
2. The steep sides quickly remove you from street level down to gully level, fast change.
3. Good diversity in this area with young native totara noted.
4. Good water clarity.



SECTION B-B' | RE-DESIGNED

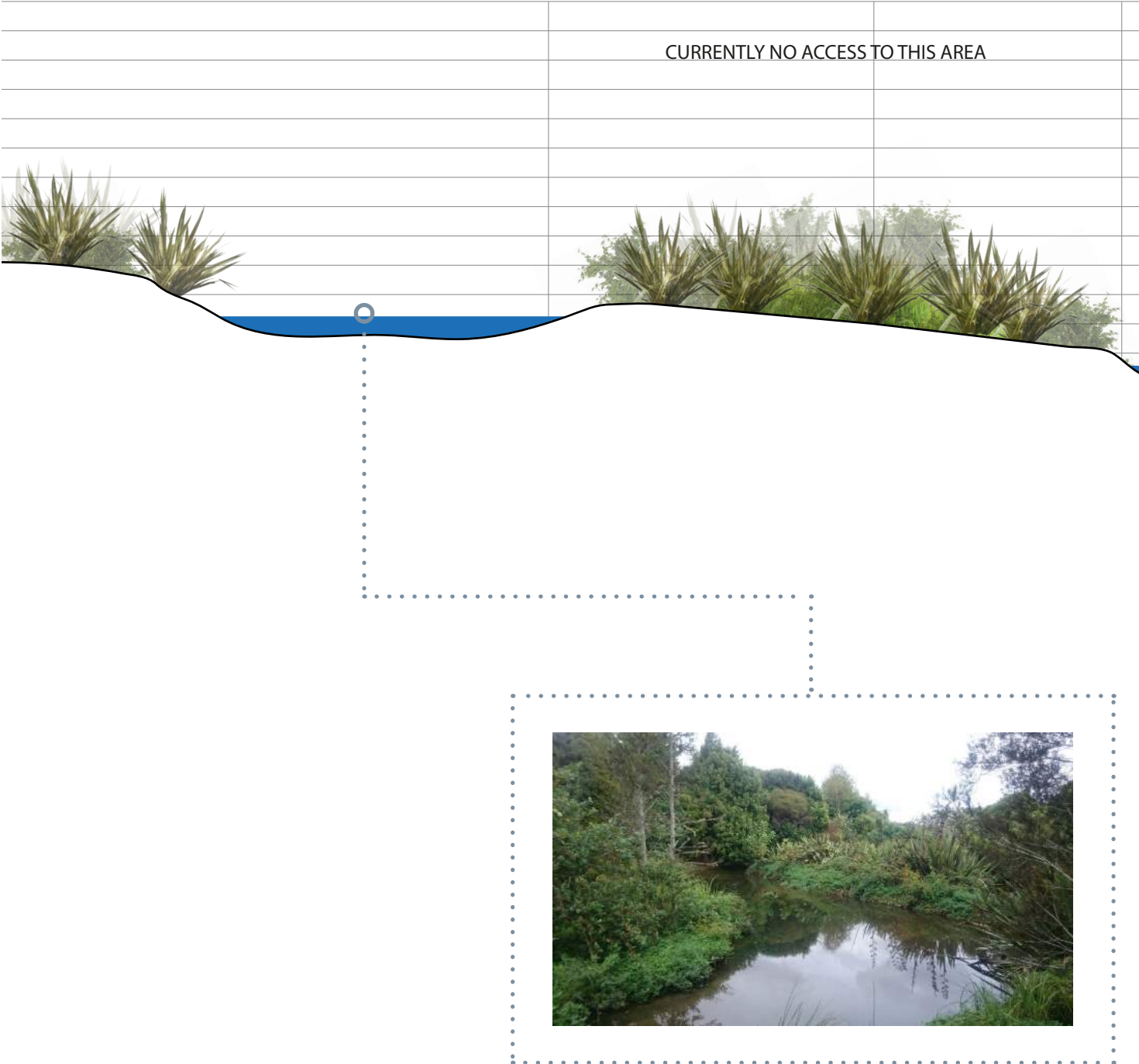


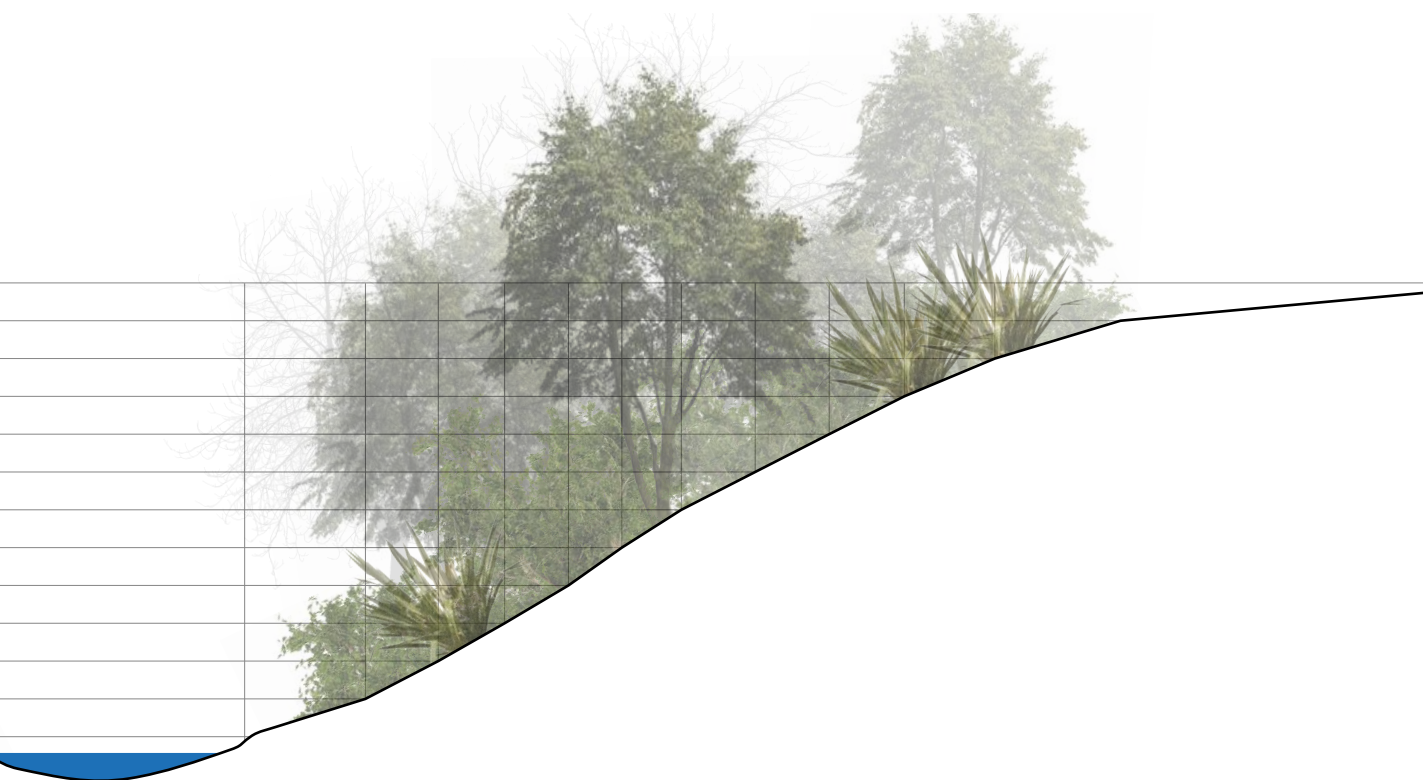


Summary - Re-designed

1. Clearance of grass and establishment of pathway to bring users closer to culvert entry where rock weir is located.
2. This draws users downwards and provides a contrast from man made culvert and ecological diverse wetland ponds further on.
3. This contrast makes the reveal at the bottom more intense.

SECTION C-C' | EXISTING

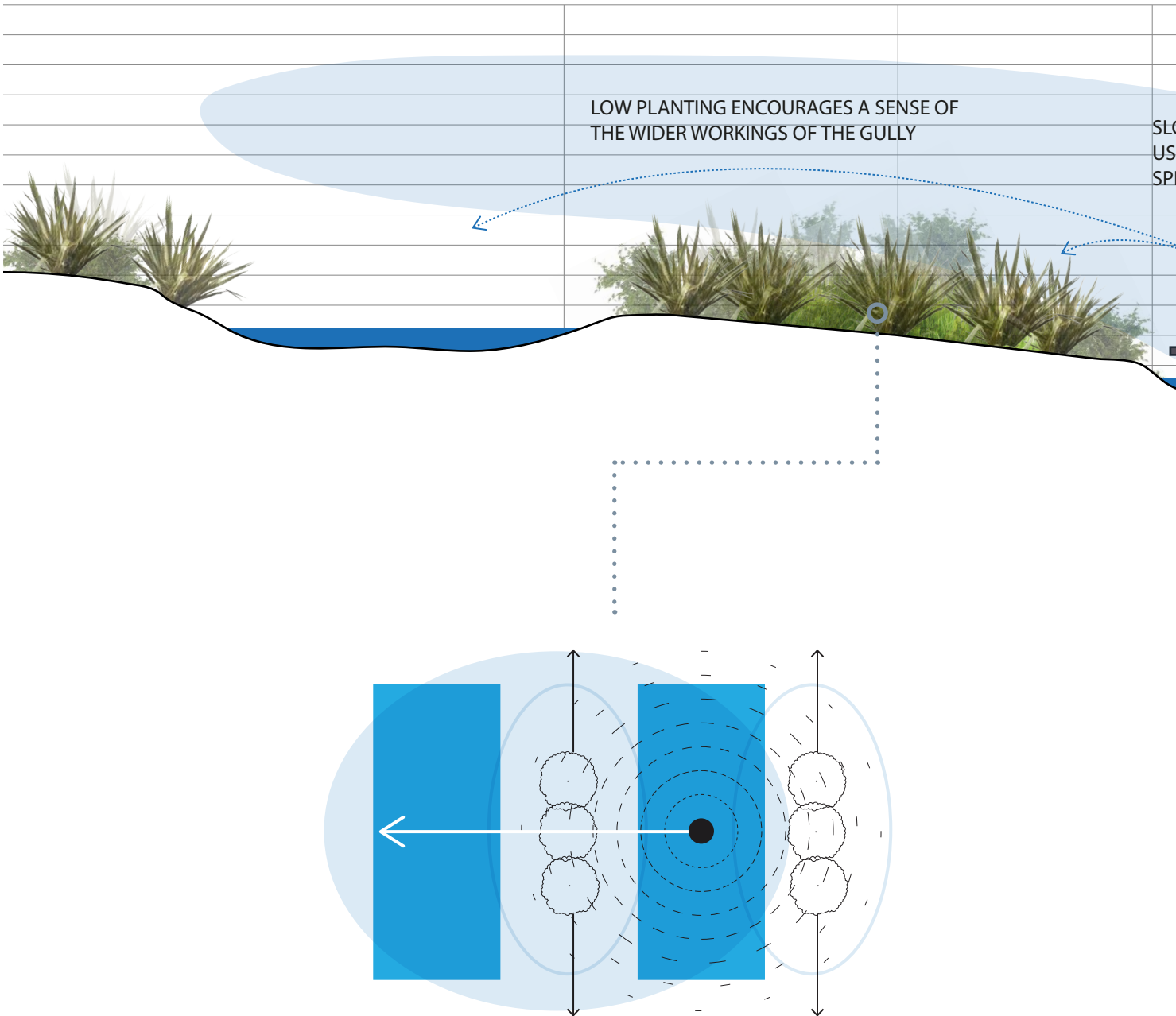


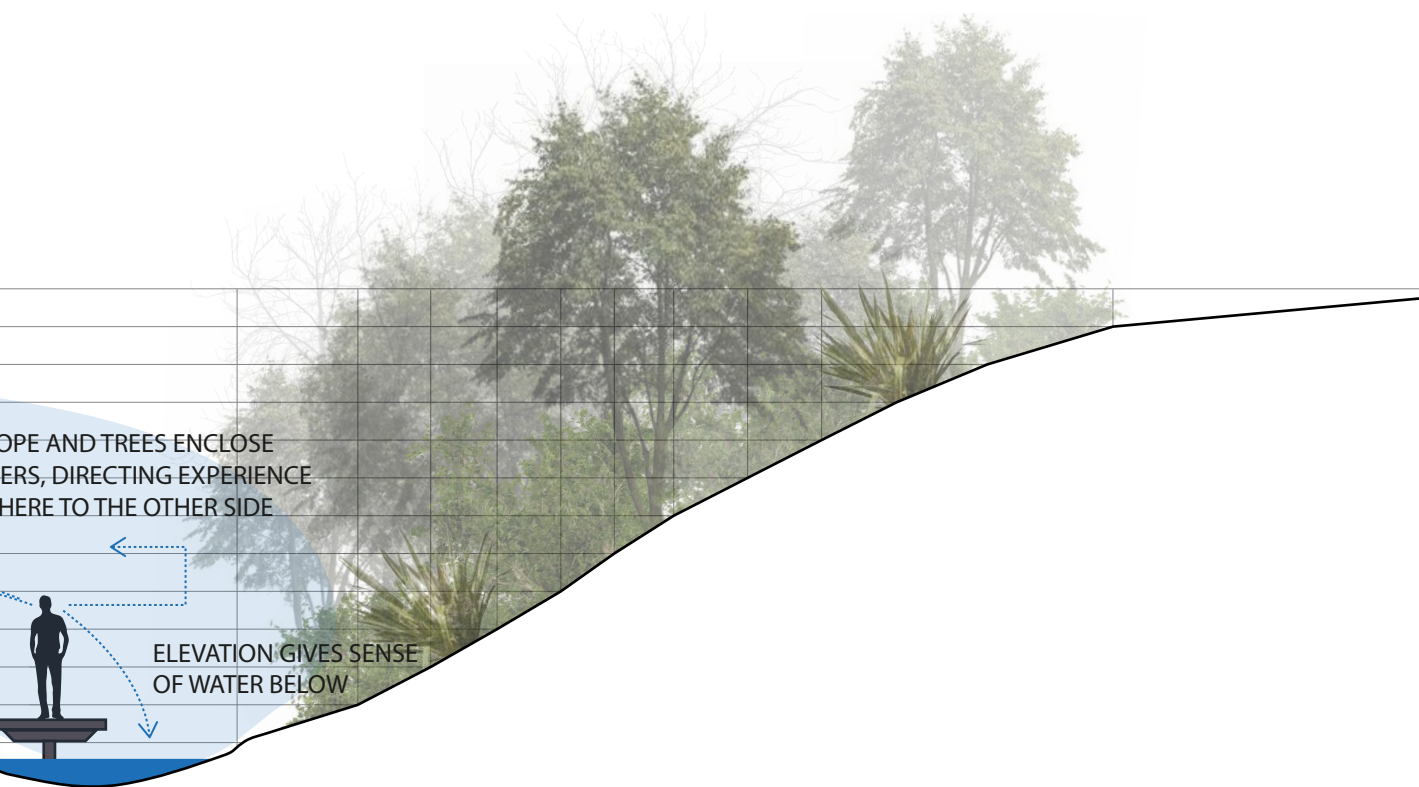


Summary - Existing

1. Good plant diversity with natives noted.
2. Two pukeko noted on first site visit.
3. Other bird life observed although unclear which species.
4. Good water clarity.
5. Very slow flow in the pond shown in image, also shallow.

SECTION C-C' | RE-DESIGNED





Summary - Re-designed

1. Addition of boardwalk allows access to this area.
2. Provides recreation opportunity.
3. Location of boardwalk is close to gully wall to direct attention to the pleasant ponds.
4. Walkway has small variances so that it is not perfectly straight to accentuate each part of the gully.
5. The diversity in this area and close proximity to vegetation means that it is likely that a connection with bird life would occur frequently.





DESIGN EXPLORATION SUMMARY

The existing Kirikiriroa gully seems to have great social potential and that past attempts to develop the gully often seem to work against such potential. This investigation suggests that only small adjustments are needed to tap into this potential. Analysis of the existing social life in the gully provides an invaluable resource to understanding how we may approach new initiatives in the neglected and inaccessible parts of the gully.

During the investigation, three key social-experiential typologies of gully were identified. Through design of each key site in each of the typologies, the research explored how one might make adjustments using knowledge gained from analysing the site and other parts of the gully to intensify and facilitate the social-experiential functioning of the gully.

Designing on-site and in section as a primary method has benefits but also comes with a range of challenges. One of these benefits includes the great challenge of building accurate knowledge of the workings of the gully in both a detailed and neighbourhood sense. Spending so much time at the detailed scale and thinking critically about mapping out the actors which contribute to the formation of social life opened up the ability to see social

patterns in the landscape which may not otherwise have been discovered. This way of documentation and site analysis allows designers to make very accurate assessments about how a space is working and where the ability to adjust spatial relations exist, based on observations elsewhere in the same gully. The development of this project focused around learning from the gully itself and was less reliant on outside precedents as outside precedents do not tend to reveal the specific social functioning of this landscape.

The biggest challenge with starting out small and scaling up is that the initial period of familiarizing yourself with site becomes much more difficult. Discovery of a large number of social hotspots or places of potential can be overwhelming when the relevance of these places is not immediately clear. The intuitive response is to use the human and non-human actors involved in the different scenarios to draw similarities between two places, but it is more relevant to identify not just the actors, but the dialog that occurs between them which contribute to the social effect observed. It is easy to see how traditional systems-oriented process of mapping, which allows an easy way to summarise and make quick spatial judgements based on patterns from afar, is the preferred primary method of design.

The trade-off of using a systems-oriented mapping process is that you lose the connection to relevant relationships involved in the production of the social effects, and could even jeopardize the existing social life. Access to these relationships exists on the ground and is often unable to be seen or understood from a masterplan level.

The knowledge gained through engaging with site at a scale where territories can be investigated thoroughly has led to a better understanding of how to approach site analysis. The full success of this process as a critical method would be determined by the ability to assess the outcome of a realized design, and whether the predictions about the dialog between objects and visualization of territories has indeed been accurate. The application of the design methodology can be used as an effective way to understand smaller sites but other methods may need to be employed to achieve a unified large scale design outcome.

The in-depth understanding of key sites within larger systems is fundamental to generating an effective solution which pays attention to how social ecologies may be created or changed. The role of whether the design sites can act as catalysts for the formation of stronger socially-oriented neighbourhoods requires more exploration. The relevance of structures and landscape features as intense centres outside of a Māori context and their ability to create the same connection or dialogs between things needs some more investigation into the similarities with neighbourhood formation. This includes researching the range of power the catalyst sites may have over a neighbourhood and the relationships those neighbourhoods can hold.



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