

Infrastructure that Walks the Walk

A Transitional Experience

*Experience design for the Te Paki trail, Northland, NZ.
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2019

Attestation of Authorship

I hereby declare that the submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma of a university or institution of higher learning, except where due acknowledgement is made in the acknowledgments.

Acknowledgements

I would like to thank everyone who had an impact on my decisions and helped or somehow contributed to my project. A special thanks to Carl Douglas, my supervisor that contributed to my project with great enthusiasm, amazing ideas and supportive guidance, can't thank you enough! I would also like to thank Sue Hedges, Sue Gallagher and the rest of the Spatial Design department for their constructive feedback.

A special thanks also to my family and friends for the support and love.

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Abstract

This dissertation is a design proposal for a series of transitional infrastructures that articulate the experiential journey of the Te Paki Coastal Walk, Northland, Aotearoa New Zealand. It draws on perceptual aesthetics, modular systems, ideas of vernacular architecture, theories of fittingness, and different ways land is constructed as significant through stories and memories. It has unfolded through a methodology of experimental production at layered scales, and exploits an alternative approach to designing infrastructures that seeks to be suitable for a walking journey through a changing environment. These transitions mark the present as the moment when future becomes past. The project presents irregular landscape forms that accommodates the journey with surfaces that function as walking infrastructure, laid out to exploit particular views of transitions that captivate the journey.

Setting Off

And Settling In

I am passionate about the outdoors. Walking creates a restorative and reflective environment for me. During the last three years, I have walked the Edmund Hillary Trail, the Tongariro Crossing, the Taranaki Circuit and the Te Pahi Coastal Track in Northland. I was drawn to these places for the challenge, the scenic views, and the stories in which landscape is revealed through conversations and memories.

I am particularly interested in tramping huts and the unique experiences and feelings that occur in these spaces. I have come to enjoy the satisfying moments of approaching the hut that marks the day's end. I like sitting under the porch sheltered from the weather, slowly removing damp clothes and stretching out aching muscles, swinging the door open to investigate the facilities. I enjoy preparing my bed, unpacking my bag, starting the fire and organizing food and equipment for cooking. While clothes are drying, I lazily lounge around the fire, rambling with friends until dark. In general terms, I am fascinated with the basic essentials, the sensory experience, rituals, and the relationship between structure and landscape that occur on adventure walks.

However, I have felt that the closure of the hut has in some instances torn me away from acknowledging the environment around me. The hut or campsite could be better understood as an extension to a day trip of walking, carrying on the pathway leading to and past this particular point. Accordingly, in this thesis, I have focused on the journey of walking, and the infrastructure of the pathway that supports the rituals and experiences of the walk.



Gossamer Gear, Light Feet Light Mind, 2015
Fig :1

How can a series of transitional infrastructures better articulate the experiential journey of the Te Paki Coastal Walk?

The Te Paki Coastal Track runs around the northern tip of the North Island, Te Ika-a-Māui. Beginning from Kapowairua / Spirits Bay, it follows the coast past the sacred site of Te Rerenga Wairua, to finish at Ninety Mile Beach.

The question takes the perspective of unfolding spatial experience rather than emphasizing fixed architectural forms. Analysing my experience of the track, I noticed that the landscape was full of moments of transition where something new was revealed. Turning points in the winding path continued to return to the coast, going back and forth from inland to coastal areas. Transitions also occurred because of the many different biomes: stretched beaches, high cliffs with gravel pocket beaches, rocky headlands, low and high lying vegetation, swamp lands and sand dunes. At these points movement changed the field of view, or its depth.

The scenery of the Te Paki Coastal Track is spectacular, the terrain is easy to navigate, the area is unique with high levels of endemism, spiritual and historical significance. It is typically walked over 2-3 days. However, there is the potential for the track to be better recognised and appreciated. The Department of Conservation have designated and provided facilities for ten 'Great Walks' but none of these are north of Waikaremoana near Gisborne ¹(Department of Conservation, 2019). While honouring the isolation of the place, and without washing over its cultural significance, I believe it would be possible to upgrade the infrastructure of this walk.





Lawrence Blair, Twilight Beach, October 10, 2018
Fig:1

Therefore, I propose a series of minimalistic topographic interventions at key transitional moments along the path. Similar to the way Māori pou mark significant thresholds and memories², my interventions become places of story, memory, and shared experience. They are moments where people speak about the land, for the land, and with the land. They mark significant landforms while accommodating walkers, providing spaces to recover, revitalise, wonder and to look from but not away from the landscape.

The infrastructure furnishes stopping-points through subtle organic shapes that are made from rammed earth compressed into prefabricated modular frameworks on site. They slow you down when there is something to see, and are designed based on the time you stay, respond to where you have just come from. They mark the present as the moment when future becomes past.



Te Paki Coastal Walk, Spirits Bay



Te Paki Coastal Walk, Spirits Bay



Te Paki Coastal Walk, Spirits Bay



Te Paki Coastal Walk, Spirits Bay



Te Paki Coastal Walk, Tapotupotu Bay



Te Paki Coastal Walk, Spirits Bay



Te Paki Coastal Walk, Tapotupotu Bay



Te Paki Coastal Walk, Pandoras Campsite



Te Paki Coastal Walk, Tapotupotu Bay



Te Pahi Coastal Walk, Sandy Bay



Te Pahi Coastal Walk, Te Werahi Beach



Te Pahi Coastal Walk, Te Werahi Beach



Te Pahi Coastal Walk, Cape Maria Van Diemen



Te Pahi Coastal Walk, Te Werahi Beach



Te Pahi Coastal Walk, Cape Maria Van Diemen



Te Pahi Coastal Walk, Twilight Beach



Te Pahi Coastal Walk, Ninety Mile Beach



Te Pahi Coastal Walk, Twilight Beach



Te Pahi Coastal Walk, Ninety Mile Beach



Te Pahi Coastal Walk, Twilight Beach



Te Pahi Coastal Walk, Te Pahi Sand Dunes

Grounding the Journey

By Covering Ground

“Tramping: an immersion in the performance of ‘getting away from it all’ that involves both the movement of walking and the stillness of arrival at a hut that ‘speaks’ to a simpler past” (J. Fagans and R. Kearns, 2014, p117.)

Fagan and Kearns, geographers at the University of Auckland describe tension between the dual values placed on tramping huts as sites of heritage and opportunities for aesthetic recreational accommodation. They also point to the idea of ‘getting away... to a simpler past’. While the Department of Conservation’s Great Walks have large, glamorous ‘front country’ huts, the ideals of simplicity and escape suggest the importance of raw materials, and a minimalist appearance.

The Ideal Stay

Mt Brown Hut

As an example, Mt Brown hut, in Hokitika was moved in 2010 from a hidden valley to a vantage point on top of a hill. The walk became renowned for this structure and its position in the landscape. From outside the structure is hardly noticeable (Fig. 5). From the inside, it resembles a traditional backcountry hut: one room with shared amenities. As a place to watch the sun go down or the stars and the sun rise it is spectacular. When I visited, chopping the wood and starting and preserving the fire was a satisfying challenge, as was cooking a well-deserved dinner. The table and fireplace (fig. 4) are the hub of the hut, bringing people together through interacting and communicating. Here people resort to old methods of passing time, telling stories, talking about conspiracies and reading. Carvings and log books have also interested me: reading other people’s experiences, dates and names that have been collected over the years. These make the journey more personal by allowing people to leave mementos and acknowledge connections.



GJ Coop, Mt Brown Hut, 2013
Fig:4

Fagan, J., & Kearns, R. (2014) *Sleeping with the Past? Heritage, Recreation and Transition in New Zealand Tramping Hut*, *New Zealand Geographer*, pp.116-130.



Depth,

2. Focal,Depth,
Restorative

Fittingness and the Vernacular

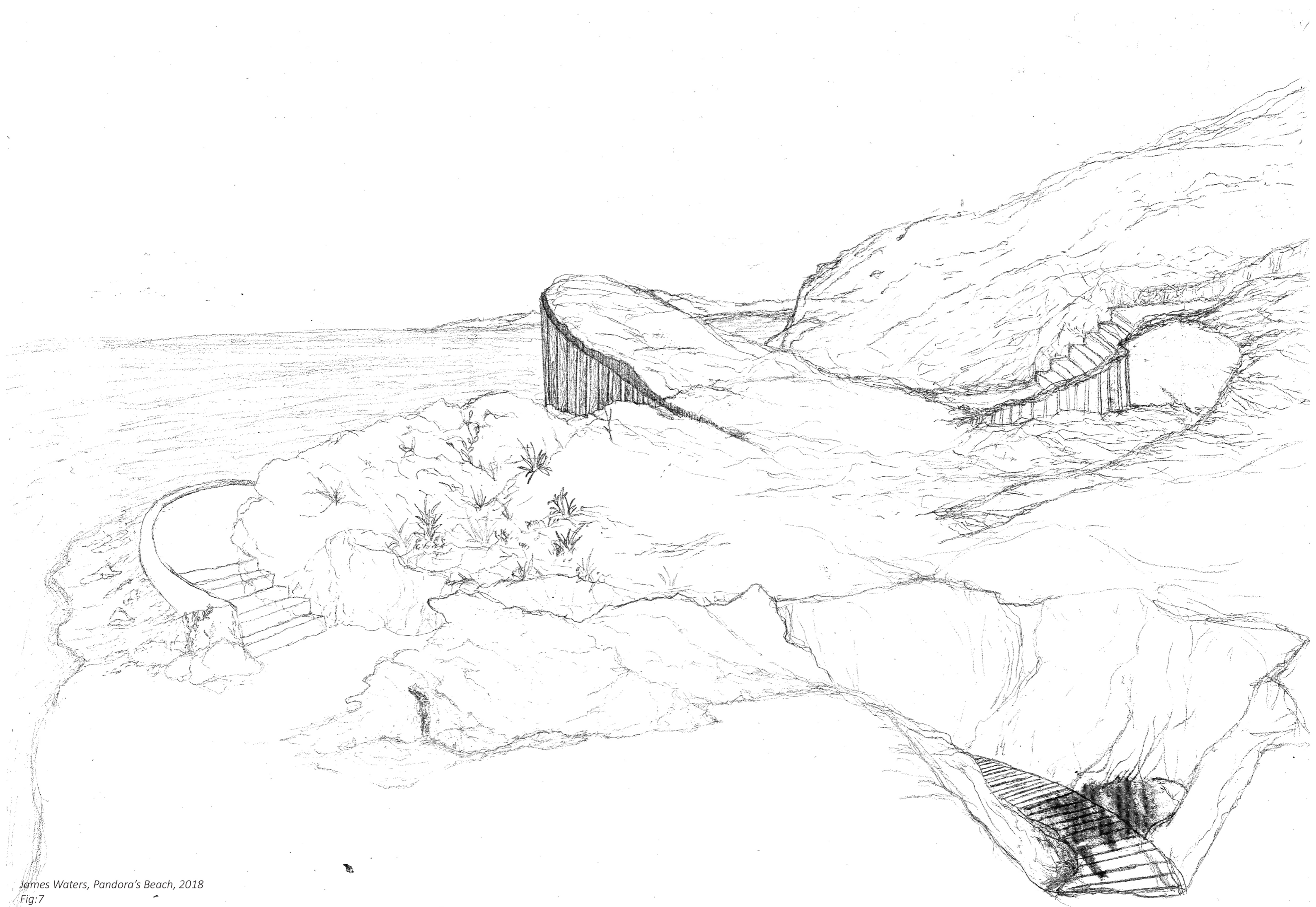
In "Aesthetic and Affective Response to Natural Environment" Roger Ulrich discusses J.F Wohlwill's writing about the variables that influence perceptions of fittingness or congruity between manmade elements in natural scenes (R. Ulrich, 1983 ; Wohlwill & Harris, 1980). According to Ulrich, Wohlwill,

defines fittingness as the sense of harmony or clashing between a man-made feature and its natural background. Several properties appear to influence whether a feature is evaluated as fitting. Low fittingness (obtrusiveness) correlates highly with high colour contrast between the feature and its surroundings, high textural contrast, size of the feature, and low congruity of shape. (R. Ulrich, 1983, p 112-113) Exploiting these ideas (Fig:7)

These ideas of fitting into the landscape, being efficient in cost and labour, and respecting the scenery and environment suggest connections to vernacular architecture and modular systems. Ibrahim Maarouf's online article "Defining Vernacular Architecture in Third Millennium" defines vernacular architecture in general terms: "*Vernacular architecture is the term that is used in the area of architectural theory to classify methods of construction which use local resources and traditions to address local needs and conditions*" (I. Maarouf, 2010, p.7). Oliver writes:

"All forms of vernacular architecture are built to meet specific needs, accommodating the values, economies and ways of life of the cultures that produce them" (O. Paul , 1997, p.2) Vernacular architecture comes out of a relationship between structure and land, a relationship that allows the structure to fit into the landscape.

- Ulrich, R. & Wohlwill, J. (1983) *Aesthetic and Affective Response to Natural Environment*
- Maarouf, I. (2010) *Re- defining Vernacular Architecture in Third Millennium*, Egypt, Alexandria University, pp.1-17.
- Paul, O. (1997) *Encyclopaedia of Vernacular Architecture of the World*, England, Cambridge University, pp.1-30.



James Waters, Pandora's Beach, 2018
Fig:7



Cultural Significance

The Te Pahi Coastal Track and its region is renowned for its spiritual significance to Māori:



*James Waters, Pohutukawa, 2019
Fig:8*

It is the most spiritually significant part of New Zealand for it is here that after death, all Māori spirits travel up the coast and over the wind-swept vista to the pohutukawa tree on the headland of Te Rerenga Wairua. They descend into the underworld (reinga) by sliding down a root to fall into the sea below. The spirits then travel underwater to the Three Kings Islands where they climb out onto Ohaua, the highest point of the islands and bid their last farewell before returning to the land of their ancestors, Hawaiiki-A-Nui.
(C. Rudge, 2006, p.1)

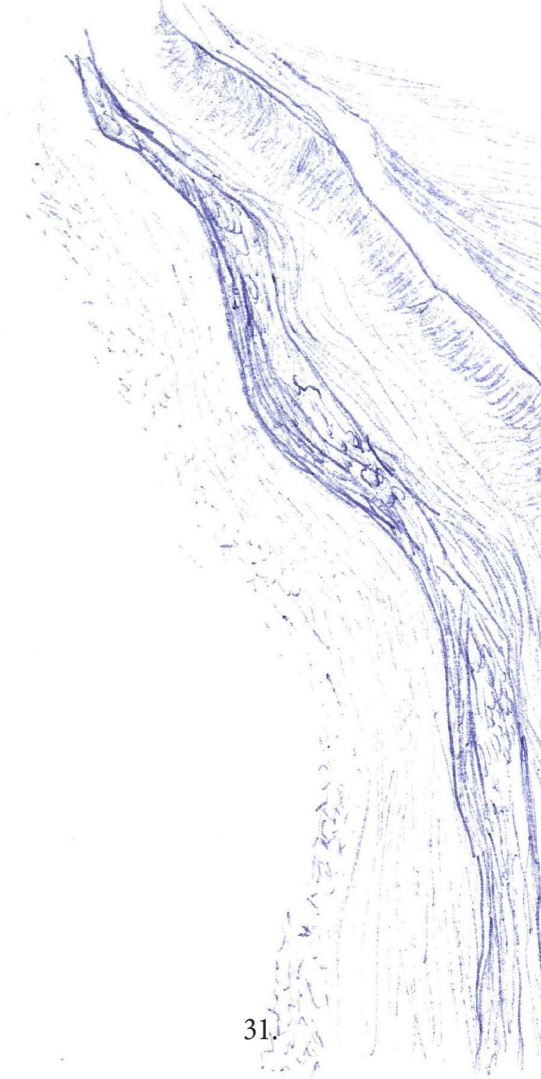
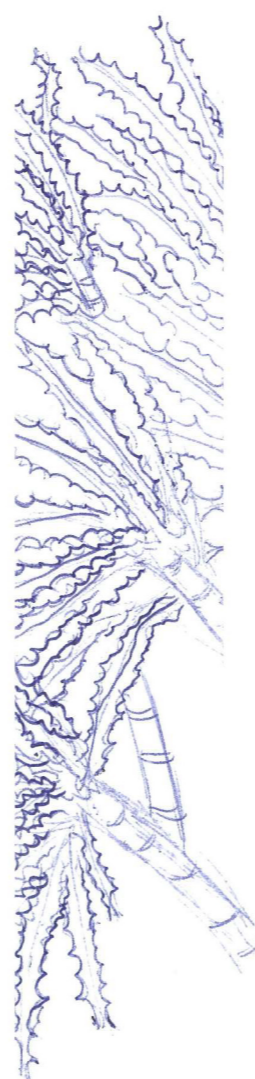
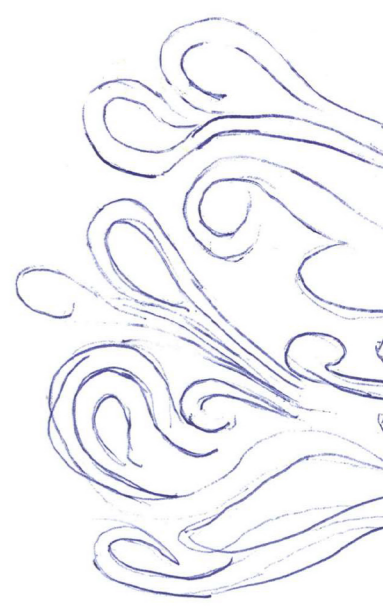
Therefore, the Te Paki Coastal Walk is effectively a sacred journey where the spirits of the living and dead travel harmoniously up the East and West Coasts. Living and dead spirits reunite through their farewells at the tip of Cape Reinga. It is a place to express emotions and remember shared moments, to feel and hear the whispers of the wind as the earth harbours sorrowful thoughts. The lighthouse is like a pou marking a spiritual journey.

Māori attitudes to land differ strongly from Pākehā attitudes. It is vital to acknowledge and understand the place of land in the spectrum of the Maori and Pakeha values. In "A Comparison of Maori and Pakeha Attitudes to Land", Challenger writes

In this world of light Tane now made the first woman Hineahuone out of clay, and he took her as his wife. They had a child Hinetitama and Tane took her as his wife also. Thus, begun the human kind. From this beginning Maoris see themselves as having a direct link with the earth. They are its descendants and the gods are their ancestors. All creatures are from this same beginning. Life is seen as a complex web where everything interacts and at some point, unites. Each is dependent on the other for the continuity of land, nature and man, and each contributes Mauri (the life force) to the other elements of life. (N. Challenger, 1985, p.10-11)

This was an insight into understanding my responsibilities as a designer. We must look after the land for the land to look after us. My project aims to resonate with the ideas behind Maori spiritual beliefs by being environmentally friendly, respecting the land and using mainly local resources.

Māori believe that there is a strong connection between whenua and identity. Challenger describes how identity is understood: where you have come from? where you are? and where are you going? He argues that this is answered with the land housing the past, providing with the present and allowing for the future. I believe that the journey of the walk (that my infrastructure will become part of) provides this source of identity by linking experience to the land and giving a sense of belonging. The infrastructure and the journey collectively provide space to think clearly. Space engages reflecting, contemplating and clarifying thoughts; past, present and future. The journey can also be a source of identity by exploring old roots and reconnecting to nature. Exploring old roots often gives a sense of belonging, where being self-reliant and physically contributing to society gives purpose and reason. Therefore, simple things like coming equipped, starting the fire and preparing a meal are so satisfying when tramping. The land is a social communal space that brings people together around a common resource and a common base.



Rudge, C. (2006) *Cape Reinga*, Christchurch, Department of Conservation, pp.1-2.

Challenger, N. (1985) *A Comparison of Maori and Pakeha Attitudes to Land*, Christchurch, Lincoln University, pp.1-94.

The Te Pahi region is saturated in cultural significance and historical moments from the Muriwhenua which translates to “this is the end of the land”. The Muriwhenua is a group of northern Māori iwi based in Te Hiku o te Ika Northland who occupies the land. It consists of six iwi, Ngāti Kurī, Ngāi Takoto, Te Pātū, Ngāti Kahu, Te Aupōuri and Te Rarawa. The Muriwhenua have certain sites of significance along the Te Pahi coastal walk, Māori place names have been given to certain transition points along the walk to commemorate the past. The place names give an insight to walkers about the location, culture and history that has occurred over the land as time has passed by.

My proposal gives room for cultural alterations to the infrastructure and would be in communication with local iwi to consider changes that makes the infrastructure more culturally appropriate to the area.

Transition place names:

1. Tōhē: The Journeys Beginnings. Named after a historical story about Tōhē, a chief and early ancestor of the Kurahaupō people who announced that he would walk a long and treacherous path through enemy territory. Tōhē travelled from his pa on Maunga piko (Spirits Bay) to the Kaipara, where he wanted to visit his daughter. Along his travels he named over a hundred locations including Te Pahi itself which stands for the place where the weather turned fine.
2. Piwhane: Catch the Spirit (Spirits Bay)
3. Whangakea Stream (Pandora’s Beach)
4. Farewell Pandora Lookout
5. Coastal Outlook (Tapotupotu Bay)
6. Otangawhiti: The Whale Scratching Rock- links the local iwi Ngāti Kurī to whale culture. Tohora or whales are seen often at Sandy Bay and are seen as descendants of Tangaroa, the god of the oceans. Tohora were thought of in awe and often deemed tapu, or sacred.
7. Te Werahi Beach
8. Twilight Beach
9. Te Wharo Oneroa-a-Tōhē: The Long Sands Travelled by Tohe” (Ninety Mile Beach).
10. The Great Sand Dunes, Pukenui



Modular Systems

Modular design is “designing products by organizing sub-assemblies and components as distinct building blocks (i.e., modules) that can be integrated through configuration... The main advantages of modular design include design flexibility, augmentation, and cost reduction”. (T. Seng, 2018, p 1.) Working in remote natural environments like the Te Pahi Track, these are important considerations.

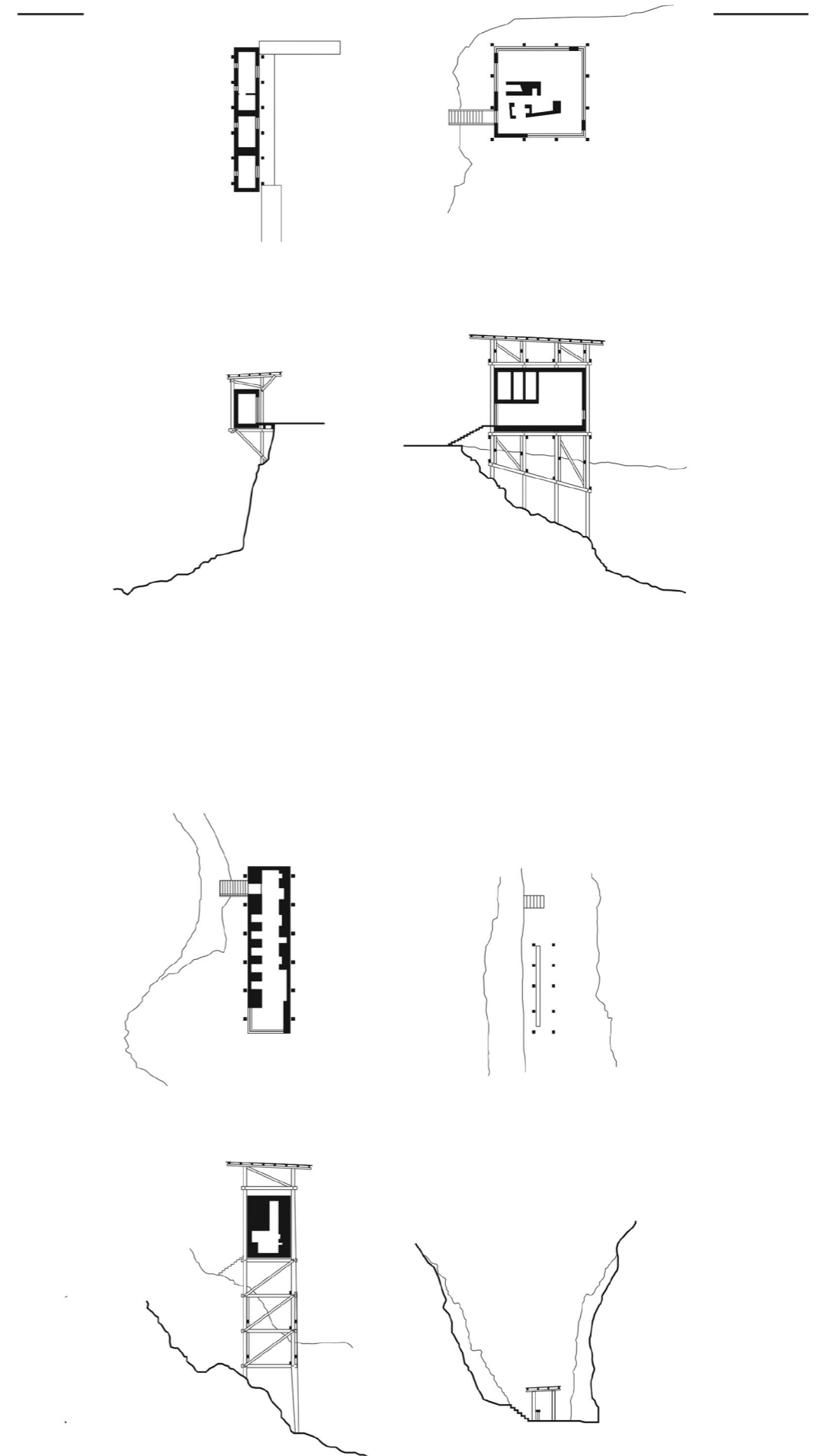
Flexibility in this project might mean that the structure can be moved and re-positioned without too much hassle; and that the flexibility of the process would allow the construction to be pre-fabricated on site. This considers the experience of the walk and the environment by building with and around nature. Flexibility might also mean that the infrastructure could be interchangeable. It would build variants that would distinguish transitions through the selection of infrastructure, the placement and the rotation of these structures. This meaning the modular system will rearrange the structure but will consist of the same parts.

Augmentation was important to my project as it meant that I could mass produce the infrastructure for all the transitions along the site. Therefore, the modular system also works as a method that would bring transitions together through the similarity of components and parts. Augmentation also meant that they could be constructed for other purposes, maybe other walks.

Finally, cost reduction is also important as it means that my project is feasible. I was interested and influenced by the modular construction methods of Peter Zumthor’s Zinc Mine Museum (Fig: 9). Zumthor’s elemental buildings are inspired by the mining operation. The prefabricated structures consist of a modular wooden support system that resembles the trusses and beams of a mine shaft. The beams are bolted together in a repetitive manner to make the framework. This frame is then used to support the building on top while being secured to the rocky terrain beneath. The building on top consists of plywood sheets connected as a rectangle that lies on top of some flooring supports, above this is a corrugated roof connecting to the framing. There are three of these buildings that are constructed using the same methods and tools but has slight differences in forms and shapes. These differences are designed for the different purposes the buildings serve, an exhibition room, cafe or toilets. Modularity tells a story as well as being practical. By working with modular elements and standard, cheap materials, Zumthor refers to the strenuous everyday lives of the workers.



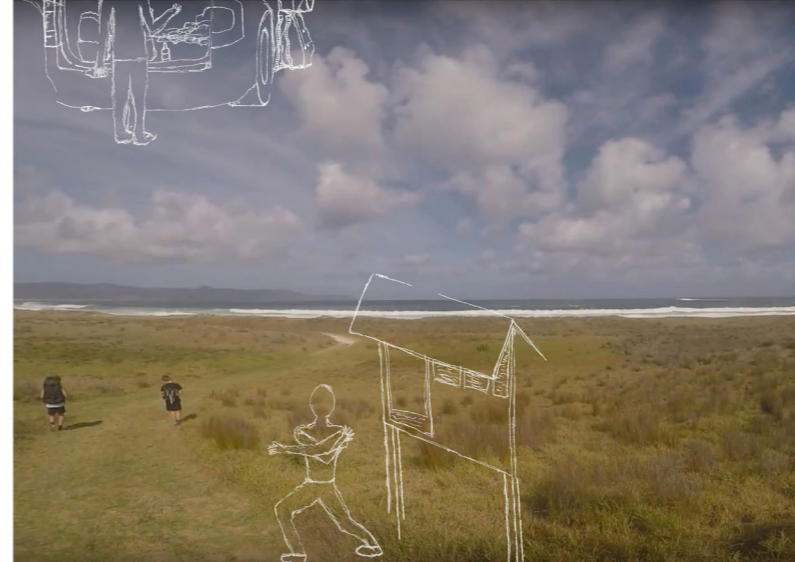
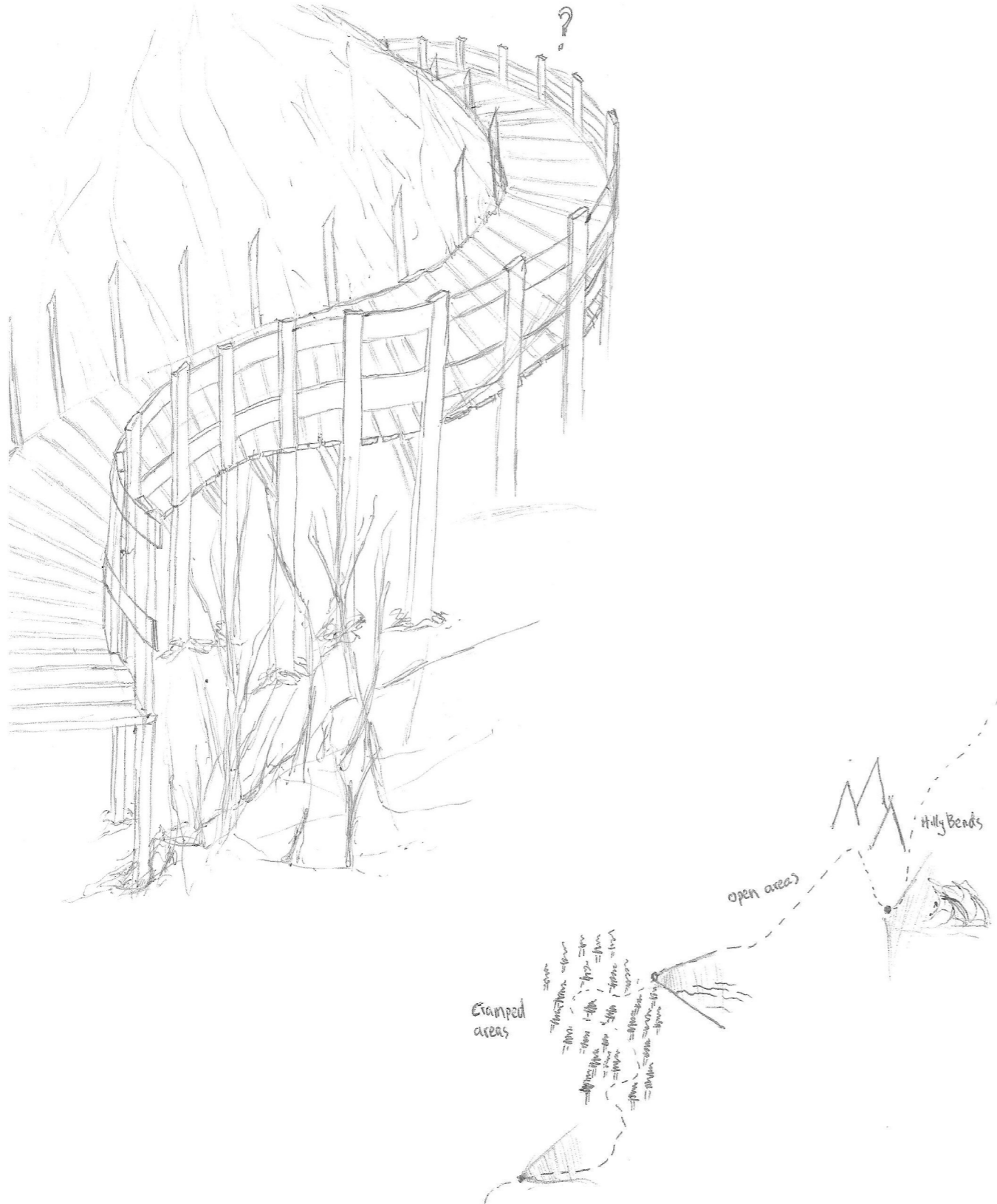
Per Berntsen, Allmannajuvet Zinc Mine Museum, 2016
Fig:9

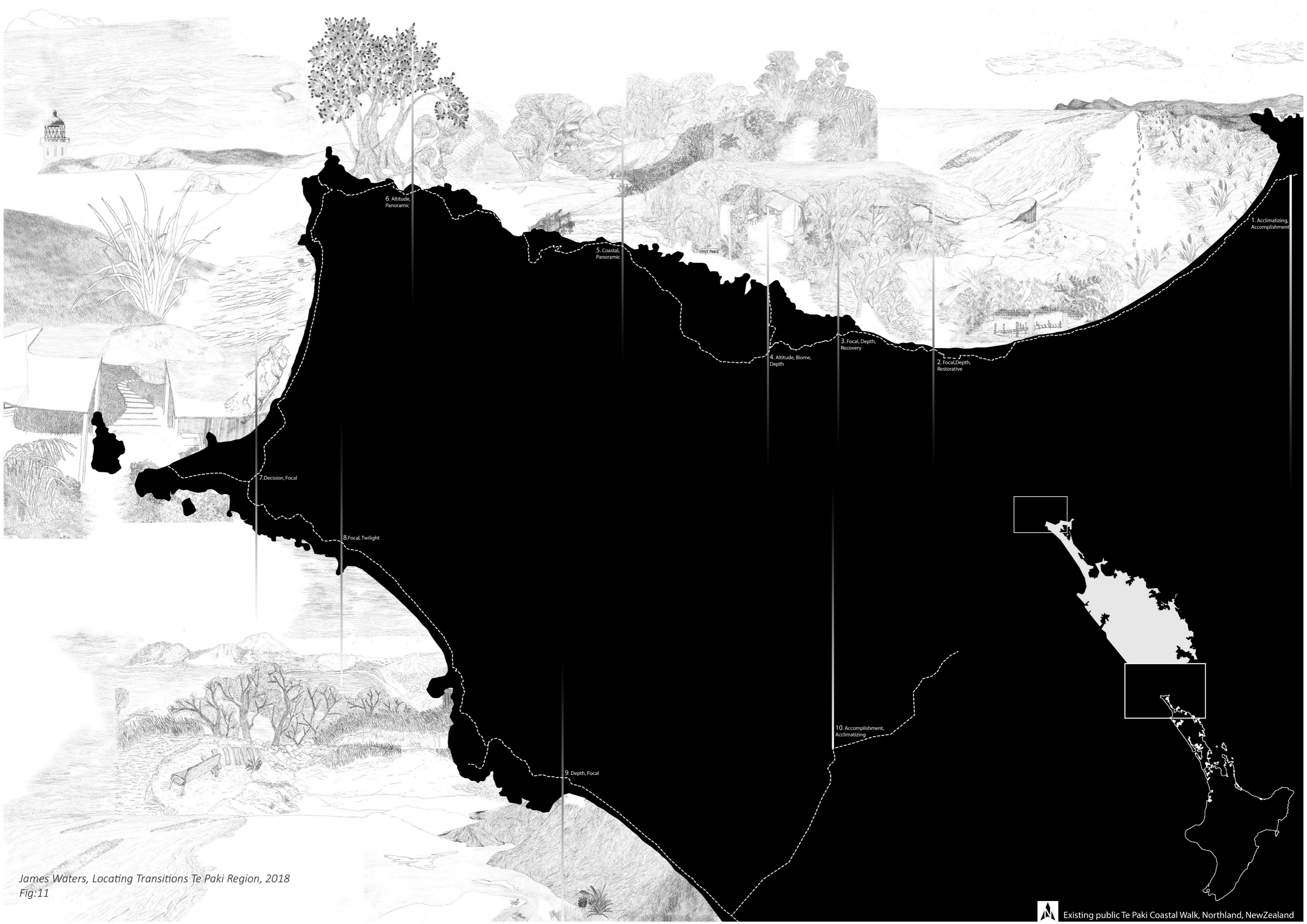


Peter Zumthor, Allmannajuvet Zinc Mine Museum, 2016
Fig:9

Perceptual Aesthetics

Roger S. Ulrich discusses visual properties influencing aesthetic preference and interest, introducing three key terms: deflected vistas, focality and depth. These all relate to processes where an observer notices change, often from his/her movement. These transitional changes informed areas of interest along the journey.





James Waters, Locating Transitions Te Paki Region, 2018
Fig:11

Deflected Vista

Deflected vistas are where “the line of sight in a natural or urban setting is deflected or curved, signalling that new landscape information is just beyond the visual bounds defined by the observer’s position” (R. Ulrich, 1983, p.103). Deflected vistas effectively reflect the way the observer approaches and sees the track unfold (Fig: 12). This control of the journey can be read as a script for a novel or a film that the pathway leads you on, or potentially a back story that builds suspense. Because of this revealing of new landscape, the observer is inclined to move to see more, curious to see what is behind the bend. This curiosity rewards observers that seek to explore which explains the importance of deflected vistas; it is the journey not the destination.



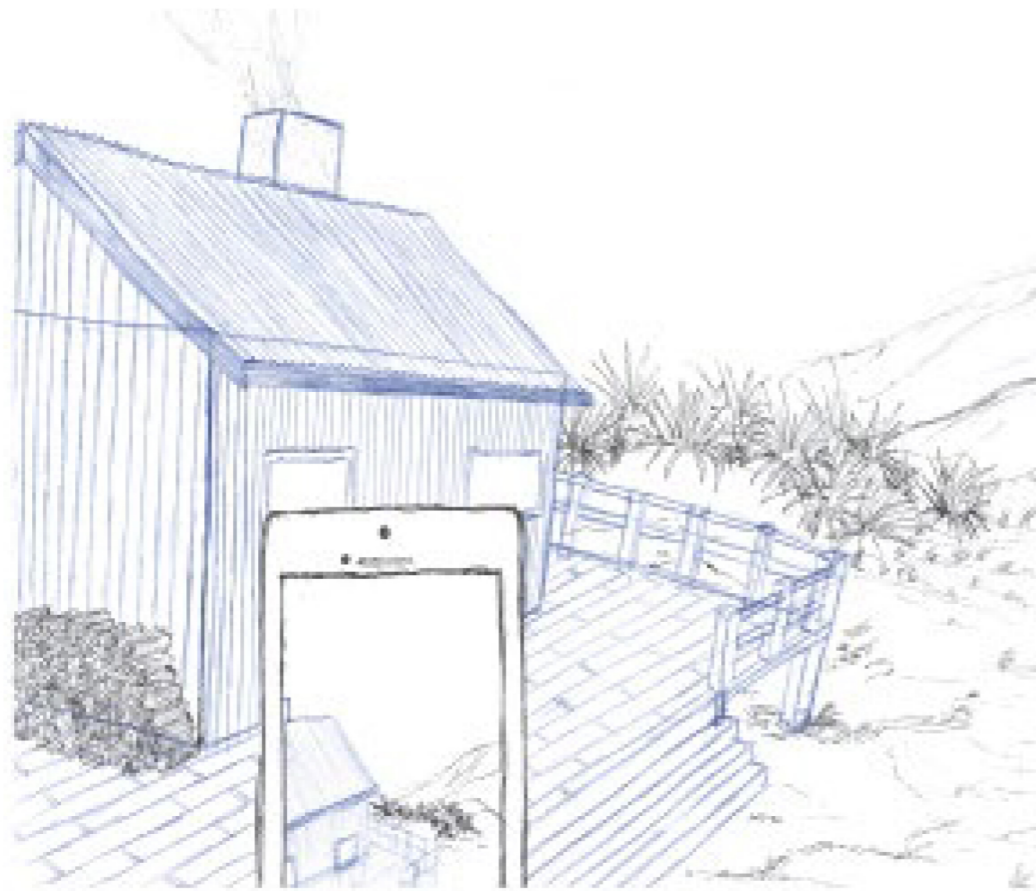
Ulrich, R. & Wohlwill, J. (1983) *Aesthetic and Affective Response to Natural Environment*



Quiet Earp, *Stairs above Ninety Mile Beach*, 2016
Fig:12

Focality

"Focality refers to the degree to which a scene contains a focal point, or an area that attracts the observer's attention. It is present when textures, landform contours, and other patterns direct the observer's attention to a part of the scene." (R. Ulrich, 1983, p.99). The Te Paki Coastal Track has a very diverse landscape with unusual textures, landform contours and other patterns (Fig:13). This diversity creates lots of opportunity to focus or redirect the observer's attention: there are many beaches, ocean views, water features, mountain tops and steep cliff faces.



Ulrich, R. & Wohlwill, J. (1983) *Aesthetic and Affective Response to Natural Environment*

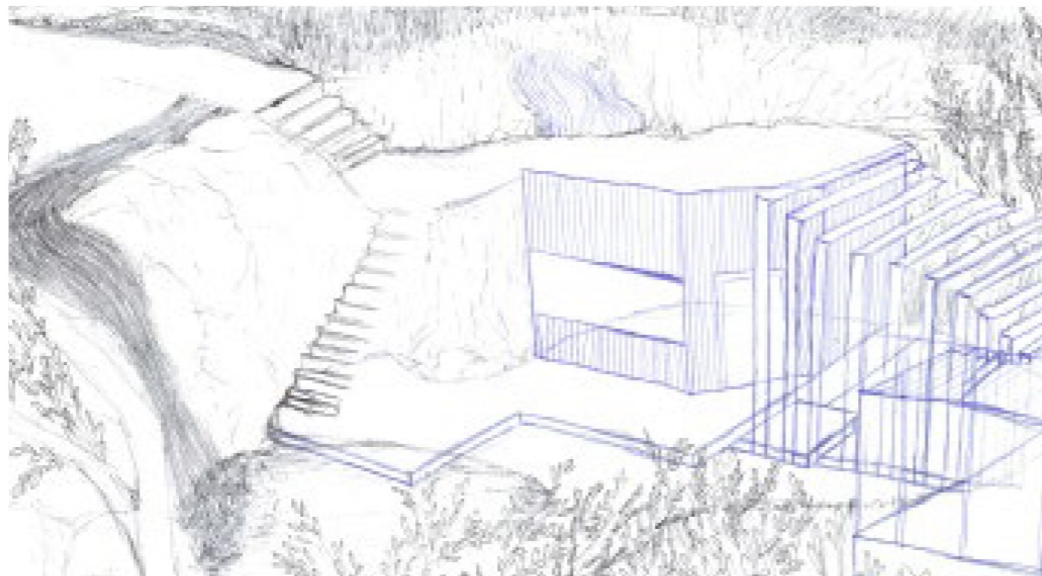


Katie & Katrina, *The beginning of Te Araroa*, 2018
Fig:13

Depth of Field

Depth relates to how far sight can reach, in particular the pleasing effect of seeing far off:

“Several investigations have identified significant positive relationships between depth and aesthetic preference for natural or rural scenes”^{3 4 5 6} (Wohlwill, 1983, p100). Similarly, studies of forest landscape aesthetics have consistently found that preference levels are higher for tree stands having some visual depth or openness, as opposed to those with restricted depth^{7 8}. These writers propose that depth is spaciousness, but also that changes of depth can be perceived as positive. Depth of field can therefore be related to the changing from shallow to deep or vice versa (Fig: 14). For example, think of walking through an enclosed forest, observing nature at a closer scale, fascinated with the intricate detail of texture and colour. Perhaps suddenly light filters through the trees as the forest opens to a large field. It is at this moment that I am suddenly drawn to the contours far off in the distance, scanning a vast open landscape, taking in and processing a huge environment.



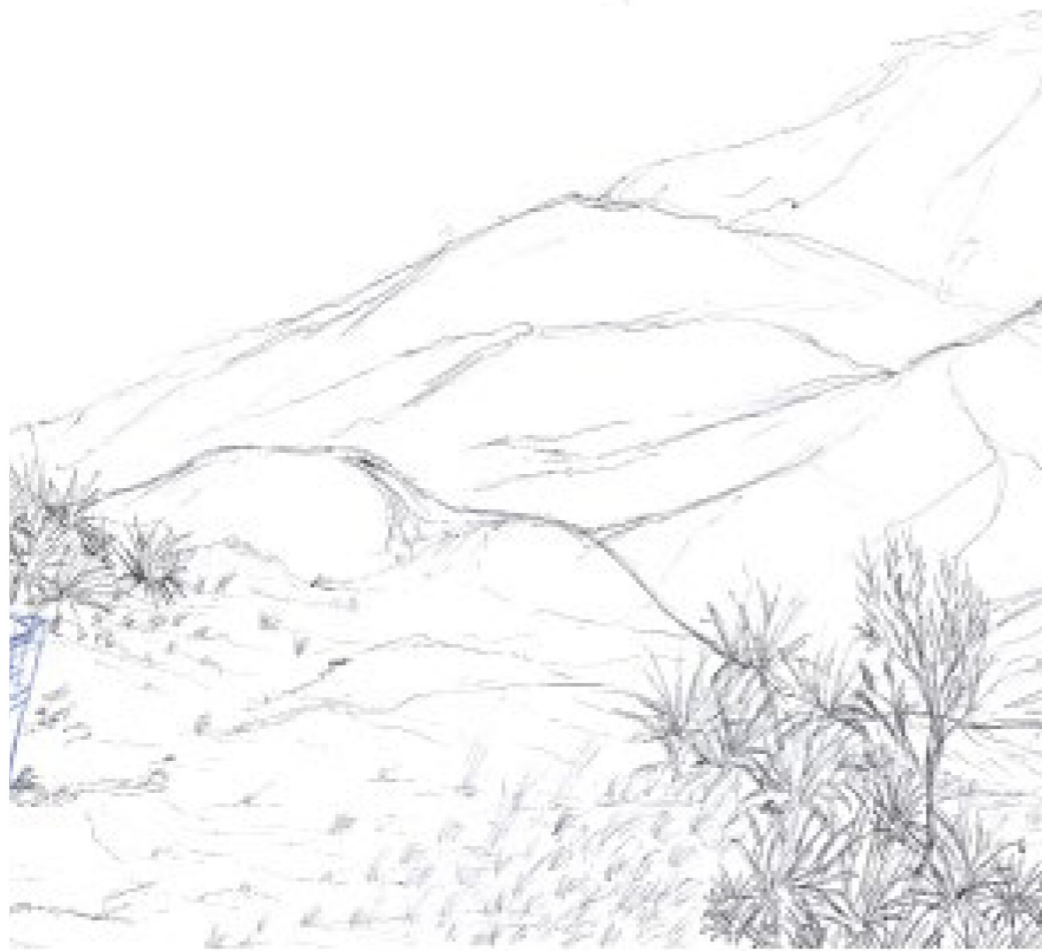
Ulrich, R. S. and Wohlwill, J. (1983) *Aesthetic and Affective Response to Natural Environment*, pp.1-345.



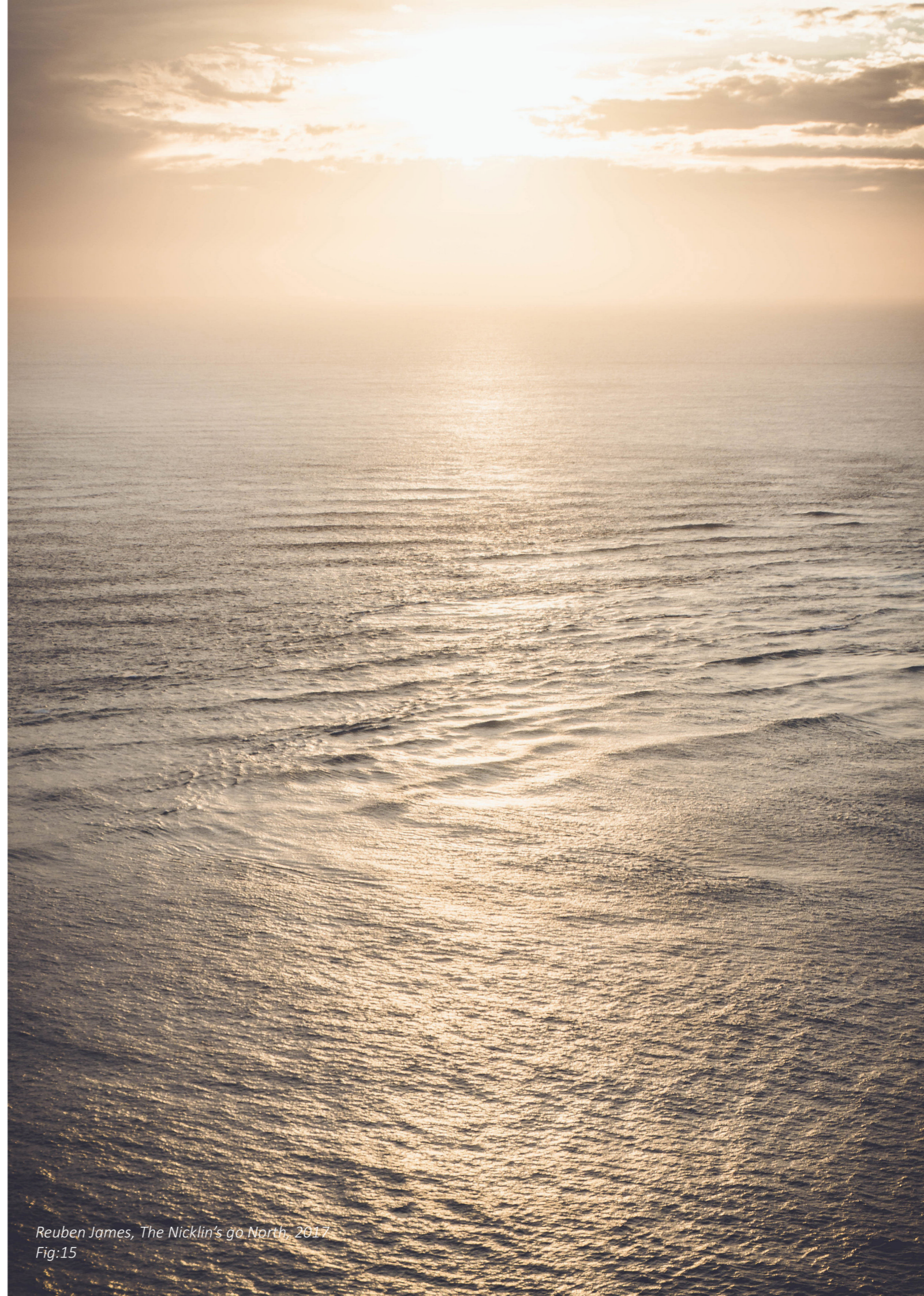
Quiet Earp, Trail Corridor on Pukekareia, 2016
Fig.14

Ground Surfaces and Textures

Related to these terms are ground textures and surfaces. Ulrich points to the importance of textures in nature regarding visual aesthetic preference. *"Textures characterizing ground surfaces in the natural environment are very important in defining depth, and they may strongly influence cognitive appraisal following the initial affective reaction"*. (R. Ulrich, 1983, p.101)

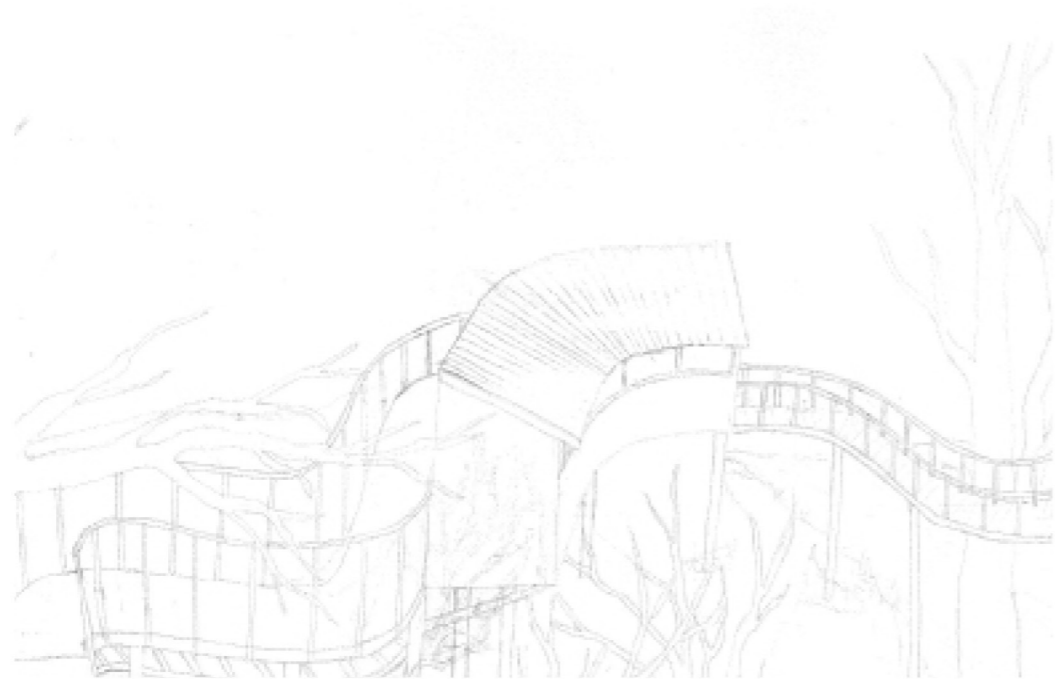


Ulrich, R. S. and Wohlwill, J. (1983) *Aesthetic and Affective Response to Natural Environment*, pp.1-345.



To Look but not Take Away

These insights lead me to imagine infrastructures that articulate the texture, the land forms and the materiality of the environment and therefore the experience of the journey. The visual aesthetic preferences that orientate the layout of the infrastructure reveal new landscape, focal features and ground surfaces from different perspectives. Importantly the infrastructure frames the surrounding context.



Posted byu/[deleted], Giant Sand Dunes at Te Pahi, 2018
Fig:16

A Step in the Right Field

Opening the Project

My design methodology consisted of practice-based experimentation using a mixed variety of analogue and digital methods, along with periods of reflective analysis and conversation. This methodology constantly cycled between these modes and mediums that synthesised the project as an answer to a problem and a solution. The project wasn't understood as a brief specified in advance, instead I have been understanding and identifying problems or potentials of the site and activity at the same time as coming up with a proposal. This aligns with Nigel Cross's well renowned book "Designerly Ways of Knowing", which he mentions the idea of "design as a co-evolution of solution and problem spaces" (N. Cross, 2006, p.80). This produced a cycle in my work circling between exploring the problem spaces than exploring the solution spaces. This was ongoing through the cycling design stages of research, ideas, making and developing.

Writing, particularly about auto-ethnographic experiences related to adventure walks informed the early stages of the work. The process was also informed from contextual research (both literature and physical design works). These helped me understand the context of where my project would stand among other designs, helping me construct my question and acknowledge my field of focus. As I honed into my project producing physical models, drawings and digital simulations my project began to be informed by the physical making aspects of my practice. Writing remained important but became mixed between informing my work and documenting it.

Drawing was also central to the early stages of my practice. I began by drawing memorable moments oriented around visually appealing views. Here the drawings explored movement and changes along the Te Paki Trail. Textures revealed changes in terrain (the physical features) whereas the different captured moments that move along the track revealed changes in the landscape. Time was often brought up through fascination with material weathering and the impacts of time in the past, specially the impacts it has towards the landscape. Time was also linked in the present and future as an understanding to unravelling the journey.

All my methods, writing, contextual research, drawing, modelling and digital simulations where always focused on first person experience, particularly themes of change, perspective, movement and time. These were recurring themes that broadly linked my methods together.

• Cross, N. (2006) *Designerly Ways of Knowing*, London, The Open University, pp.1-227.



Teina Smith, AD18 Plug and Play, 2018
Fig:17

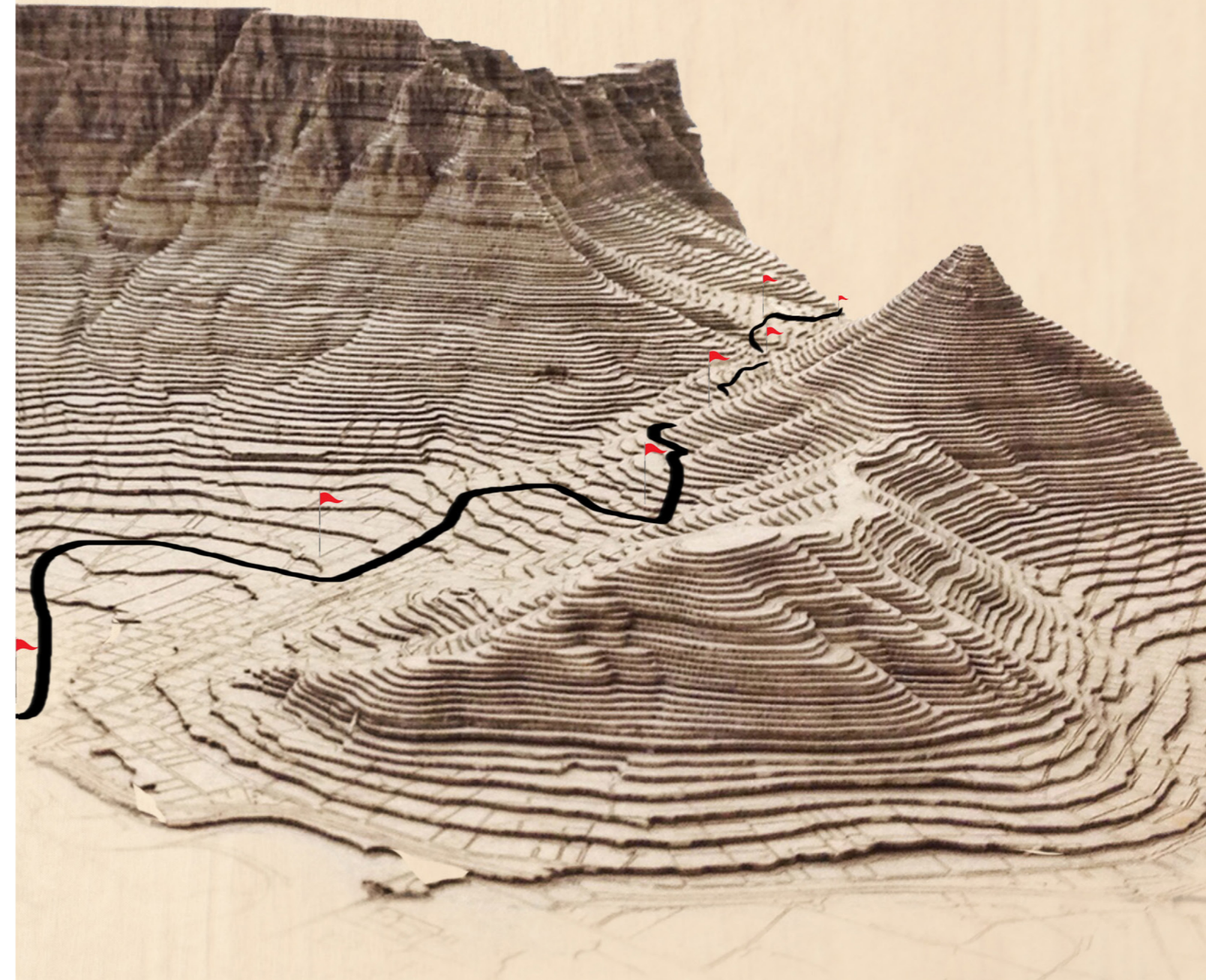
The Journey not the Destination

Springgay and Truman, in "Walking Methodologies in a More-than-human World: WalkingLab", propose that walking itself can be a method and methodology in qualitative research explored human experience and knowledge of the natural environment. These walking methodologies influenced particularly how I worked with four aspects: place, rhythm, movement, and sensory inquiry ⁹(S. Springgay, S.E. Truman, 2017, p.4-6). Place, as a general idea, made me ask what each location's position in relation to the wider overall track experience was. Rhythm is "the pace and tempo of walking... described through embodied accounts of moving and sensory expressions of feet, limbs, and breath." (S. Springgay, S.E. Truman, 2017, p.5) Rhythm became an important theme in my project when it came to the positioning of sites, considering areas to rest based on increased breath and heart rate. A focus on movement was used to understand the idea of unravelling the path or revealing the journey. Finally, sensory inquiry: Springgay and Truman "consider the ways that the walking body is immersed in a sensory experience of place, such as the texture of feet touching the ground, air brushing against cheeks, or the smells of city streets" (S. Springgay, S.E. Truman, 2017, p.4). Sensory inquiry was extremely important as it is about how we experience the world. I felt that huts were so separate from the walk because the hut muffled these senses and in doing so the hut felt out of place in context of the journey, they became destinations.

The walking methodology and its themes guided my methods of making by keeping me in touch with the experience of walking. This methodology also helped me divide my methods into three levels that I have been designing concurrently. The macro being the regional overview, influencing my design based on the wider context of the walk. The meso, focusing on a small area, thus arranging the layout based on landscape and visual preference. The meso also focuses on the relationship between body and landscape. Lastly, the micro focuses on the finer details of the design such as the materiality, the fabrication and textures. Just as walking integrates the experience of these three scales, I worked fluidly between them as I designed.

· Springgay, S. & Truman, S. E. (2017) Walking Methodologies in a More-than-human World, London, pp.1-178.

· Springgay, S. & Truman, S. E. (2017) Walking Methodologies in a More-than-human World, London, pp.1-178.



James Waters, Table Top Contour, 2018
Fig:18

Phenomenology and the Senses

I'm off to the cabin— and am looking forward a lot to the strong mountain air— this soft light stuff down here ruins one in the long run. Eight days lumbering— then again writing. . . It's late night already— the storm is sweeping over the hill, the beams are creaking in the cabin, life lies pure, simple and great before the soul. . . Sometimes I no longer understand that down there one can play such strange roles. (Heidegger, "Why Do I Stay in the Provinces?" Biography, pp. 27–28.)

Heidegger was famously attached to his mountain hut, and the experiences of walking in the landscape around it. What did it mean for him to be there? How did he occupy the space? What did he think about when he was in it? Adam Sharr asked these questions, he wrote *"the physical size of the hut necessarily intensified the interaction of individuals' "dwelling" with "places" of in habitation, and its lack of building services demanded more active participation in obtaining the basic necessities."* (A. Sharr, 2006, p.103). Heidegger's experience was relevant to my project as I was fascinated with the rituals and the small actions that people carried out inside huts. These step by step actions of removing equipment, starting the fire, preparing a meal and getting comfortable come together in a single, integrated and meaningful experience of the world.

Similar Heideggerian moments occur at still points along a track, in my experience. These moments are where you take your heavy bags off your back and feel the relief of the straps no longer digging into your skin. Seeing any object that resembles a seat at the top of a steep hill, becomes an object to rest on and catch your breath and provides a moment where the landscape becomes meaningful to us.

. Sharr A, (2006) *Heidegger's Hut*, New Castle, New Castle University, pp.1-168.

. Sharr A, (2006) *Heidegger's Hut*, New Castle, New Castle University, pp.1-168.



Digne Meller-Marcovicz, *Heidegger by the Well*. 1970
Fig:19

Informing my project through experience design brought sensory qualities to the project. To me human senses are an effective way of sharing and understanding the importance of these experiences. We respond to the world through our sensors. Walking through nature is our first mnemonic in learning how the world works. Adventure walks are a journey full of these sensory qualities in which they allow us to reconnect to nature and a simpler time. This notion leads my study towards human senses and the types of senses that are triggered when walking through nature. My research into deflected vistas (see Chapter 2, above) and experimentation with wooden carvings (see Chapter 4 below) influenced and honed my interests towards sight, touch and how someone might feel in that space. Here, my project intersected with a more practical human centred design approach such as that described by Don Norman. *“Why do we need to know about the human mind? Because things are designed to be used by people, and without a deep understanding of people, the designs are apt to be faulty, difficult to use, difficult to understand.”* (D. Norman, 2006, p.44) My designs became aware of the need for comfort at the top of a steep hill, an area to watch the sun fall over the ocean’s horizon, small water breaks and recovery periods. In this way, they became infrastructure along the walk that was made based on the journey, experience and the sensory qualities that the walk provides.

Norman, D. (2006) *The Design of Everyday Things*, New York, Basic Books, pp.1-347.



One Step After the Other

Deflected Vistas

Digital Rhino models and drawings of infrastructure following a curved pathway was used to explore deflected vistas. I chose to explore this visual aesthetic preference as it was a recurring topic that was related to my key theme of experiencing nature. I also explored deflected vistas as it was a visual way to reveal the outdoors from the enclosed hut. From the research I became aware of deflected vistas and their role in curating curiosity, their role in revealing landscape, their common occurrence and how they are formed.

I found that the curiosity derived from the occluded edge, this is where the two X and Y axis meet at the Z axis. The eye is drawn to the Z axis because this gives the first sight of new terrain (Fig: 21). As the pathway continues to curve the observer is inclined to view this point, anticipating what is to come. This highly mental effect stimulates the want to explore.

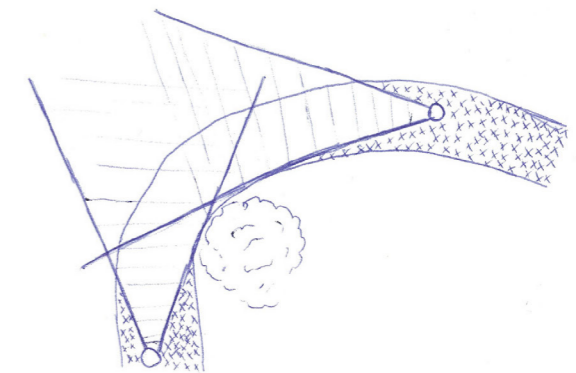
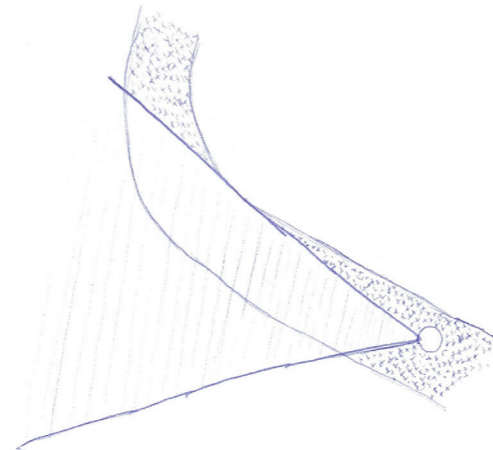
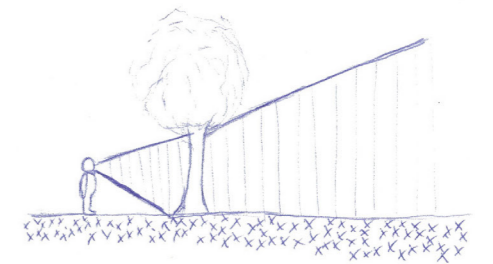
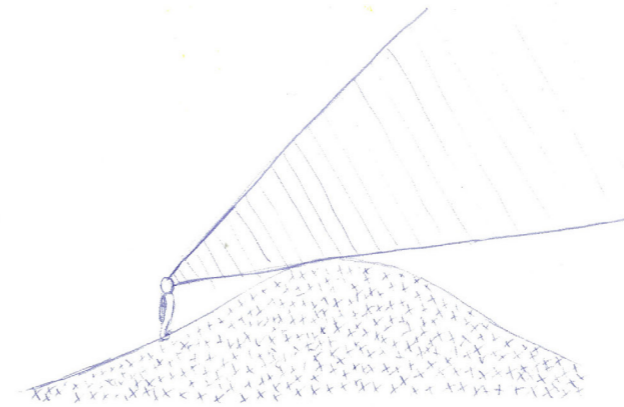
Exploring deflected vistas, I found that the revealing of the pathway off in the distance winding to and away from sight is an exploring habit that draws attention to the observer (Fig: 23). I was also interested in how the revealing of a pathway or a space where the observer had come from gave a rewarding sense of achievement, knowing that they had walked that far.

Discovering the different affects of manmade and natural deflected vistas. The nature pathway with curves are more appealing to the eye and has a more mysterious effect. The nature pathway is more convincing to lead my imagination whereas the urban scene appears more predictable and stronger.

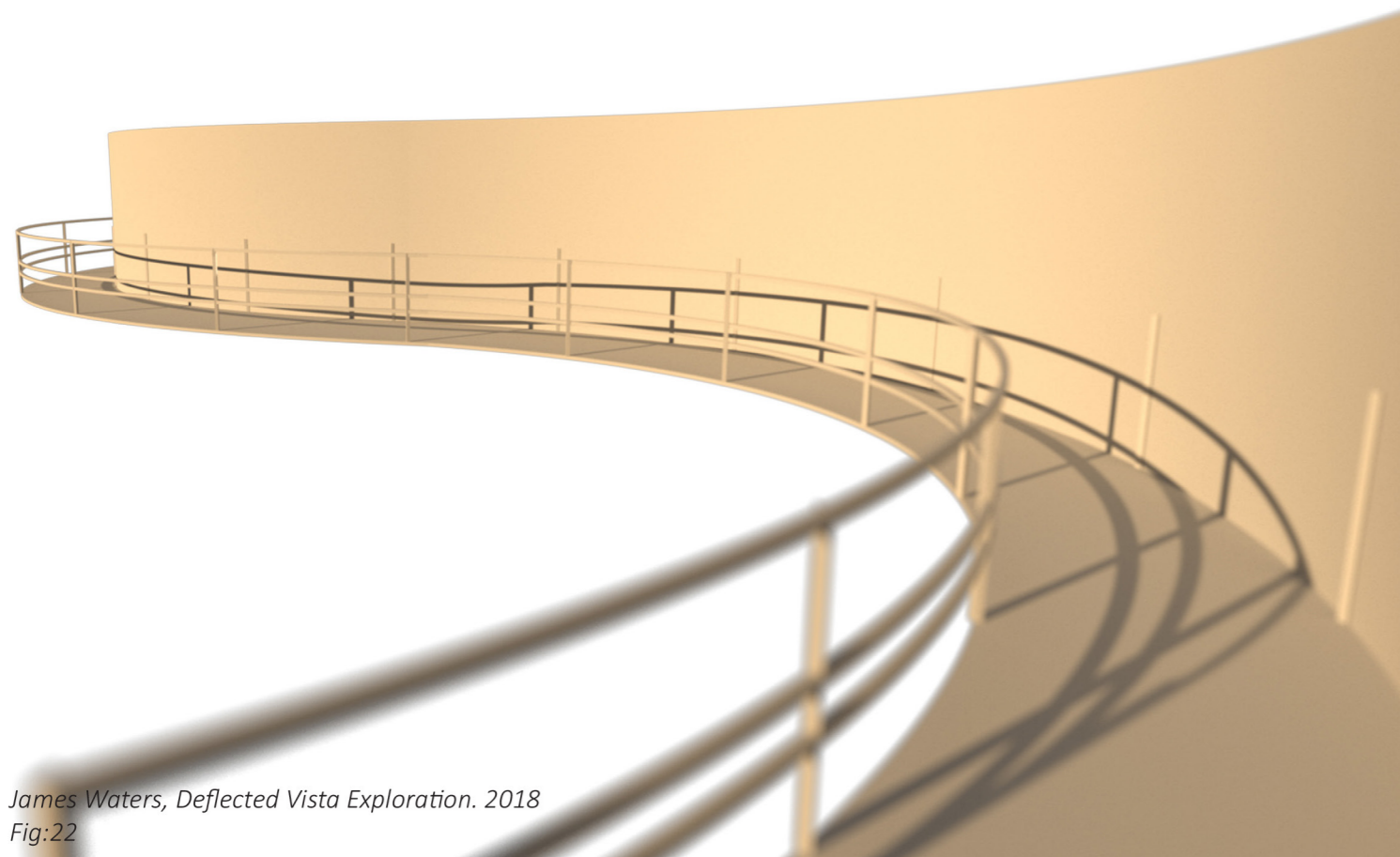
I explored their common occurrence by understanding how they occurred, the different variation of deflected vistas. This was an insight to revealing the journey, revealing the different way one can experience the walk, such as walking in the opposite direction.

Panoramic was a visual aesthetic preference that I made up that was specifically for the scenery of the Te Pahi coastal walk. The idea derived from the method in which I captured certain moments of the track through gopro footage. I noticed that some areas had more than one focus point, or that it was stretched further than your peripheral vision so that movement was required in order to see it all. These were often beach's or the ocean which are the two main features that I think of when hearing coastal walk. Therefore, I found Panoramic as an important visual interest that catered for the theme of the walk. Panoramic bought a new approach of layouts to my infrastructure as I had to consider the field of view and how observers could move around these infrastructures. I also added modifications to the infrastructure itself such as curved or rounded chairs that could be pivoted on.

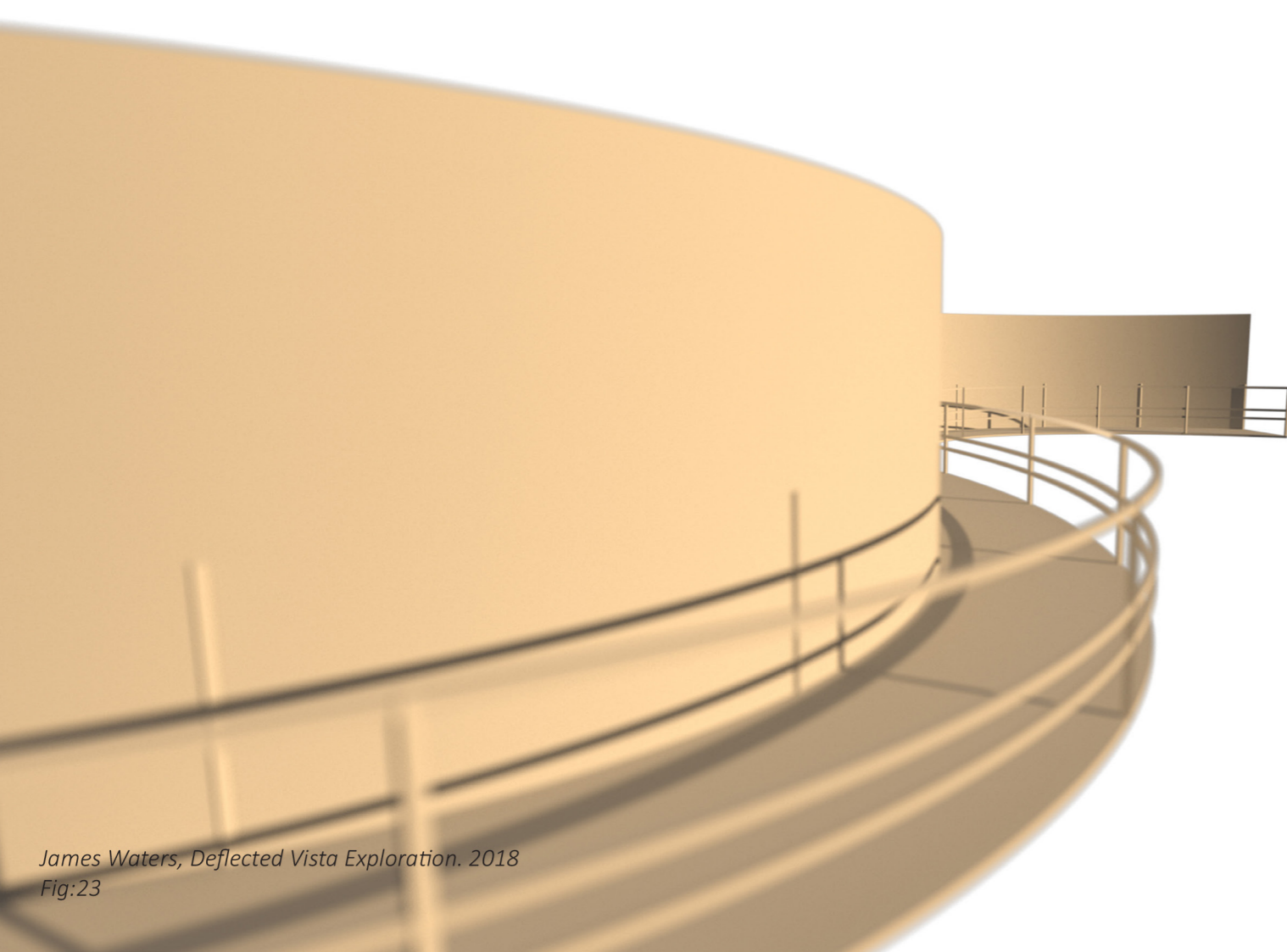
The exploration of deflected vistas arose questions concerning what they reveal, how they reveal it and where they are revealing. This questioned the location of my sites the importance and the role that deflected vistas have in my project.



James Waters, Deflected Vista Exploration. 2018
Fig:21



James Waters, *Deflected Vista Exploration*. 2018
Fig:22



James Waters, *Deflected Vista Exploration*. 2018
Fig:23

Carved Textures

Carved textural patterns onto two pieces of large driftwood, the textural patterns resembled the notion of wind and water (Fig: 28, 31,33). The pattern was created on the software blender to simulate the motion of these elements which was then captured still. My initial steps were looking for something that occurred on the track that had a large impact on walkers and their experience. With my interest to sensory experience of the walk the biggest effect that I strongly relate to is weather, particularly wind and water. A slushy muddy pathway with rain drops sweeping hard against my face, dripping down my nose. The thrill and the adrenaline buzz all caused by the weather that would be a totally different memory if it was sunny and clear. They may have not been the most pleasant at the time, but I think they have more of a story behind them.

Deflected vistas and the wood carving created an interesting connection of revealing new surfaces (Fig: 26). It was from this that I started looking at the pathway as a carving of landscape that revealed new surfaces. It also bought a connection to vernacular architecture reusing the carved materials of the landscape to create infrastructure. The wood was also particularly good at getting people to move around and view the curves that it had to offer from different angles. This movement affected the perception of the observers, it enticed people to move just like deflected vistas.

The texture of wind and water elements coincidentally fitted the theme of the walk, the Te Paki Coastal walk. Even the process of CNC cutting seemed to respond to this theme, the grooves from the router appear as small waves. The walk responds to this theme as the pathway reveals these elemental patterns along the sand and ocean all the time (Fig: 26, 27, 29, 32, 33). Stefan Seitzer discusses in "Dunes: The Waterless Sea" about the Te Paki Sand Dunes. He writes " *The flat morning light casts soft shadows from the wave patterns in the sand. A sea without water, formed by the wind*" (S. Seitzer, 2000, p.3). These subtle and smooth textures were also related to Wohlwill's understanding of "fittingness". After acknowledging the connection of the textures and the walk itself I was able to reuse the texture as a surface on the infrastructure. The wood was then cut to create framework and used to experiment the output of material. The combination of sand and dirt compressed to create a new sediment seemed fitting. As Seitzer later mentions " *Sand is a very young product of very old rocks. It is part of a recycling process that has been going on for as long as the planet has existed*" (S. Seitzer, 2000, p.4). The carved textures resulted in questioning the texture and material of my project and how this can create character based on the environment.

. Seitzer, S. (2000) *Dunes: The Waterless Sea*, New Zealand Geographic, Online

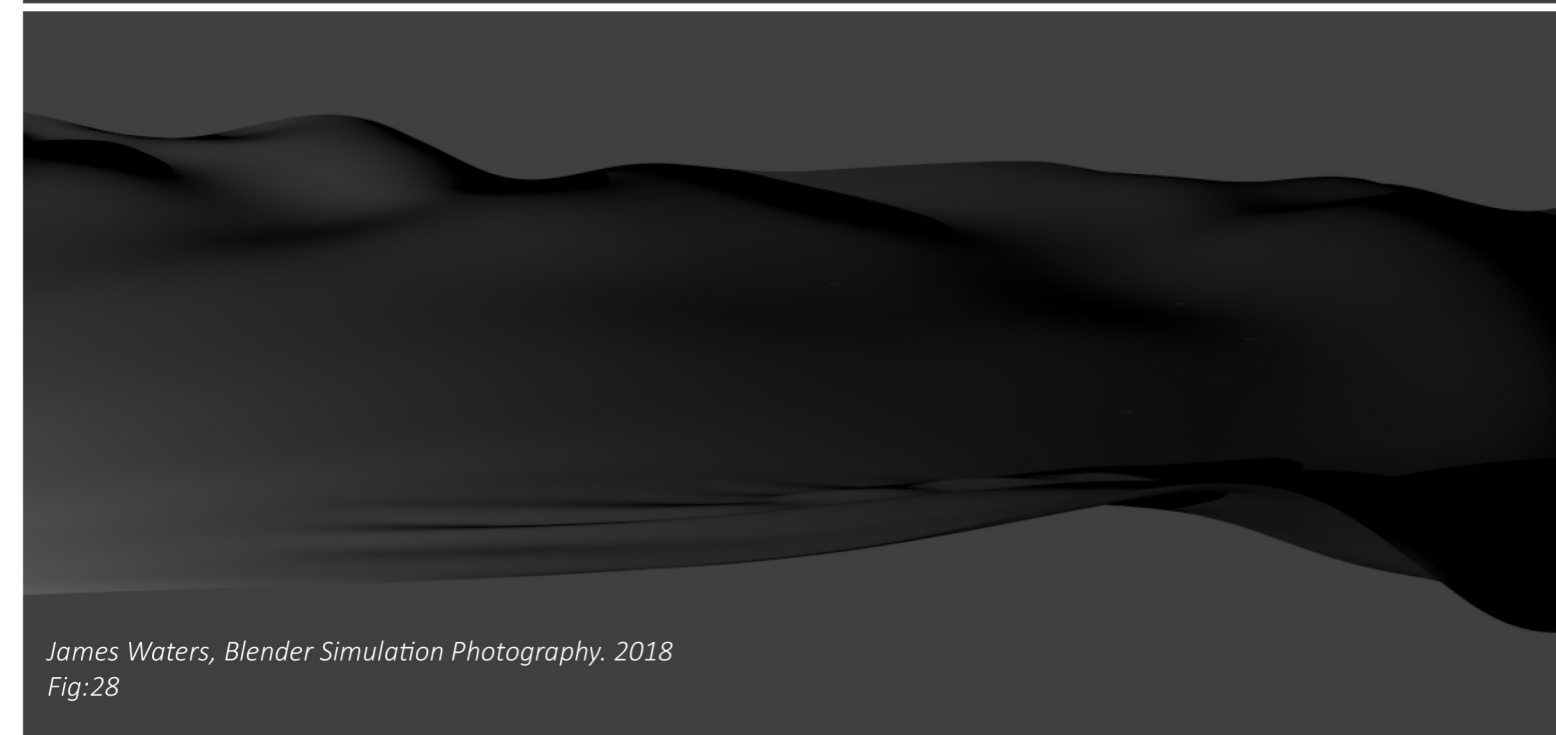
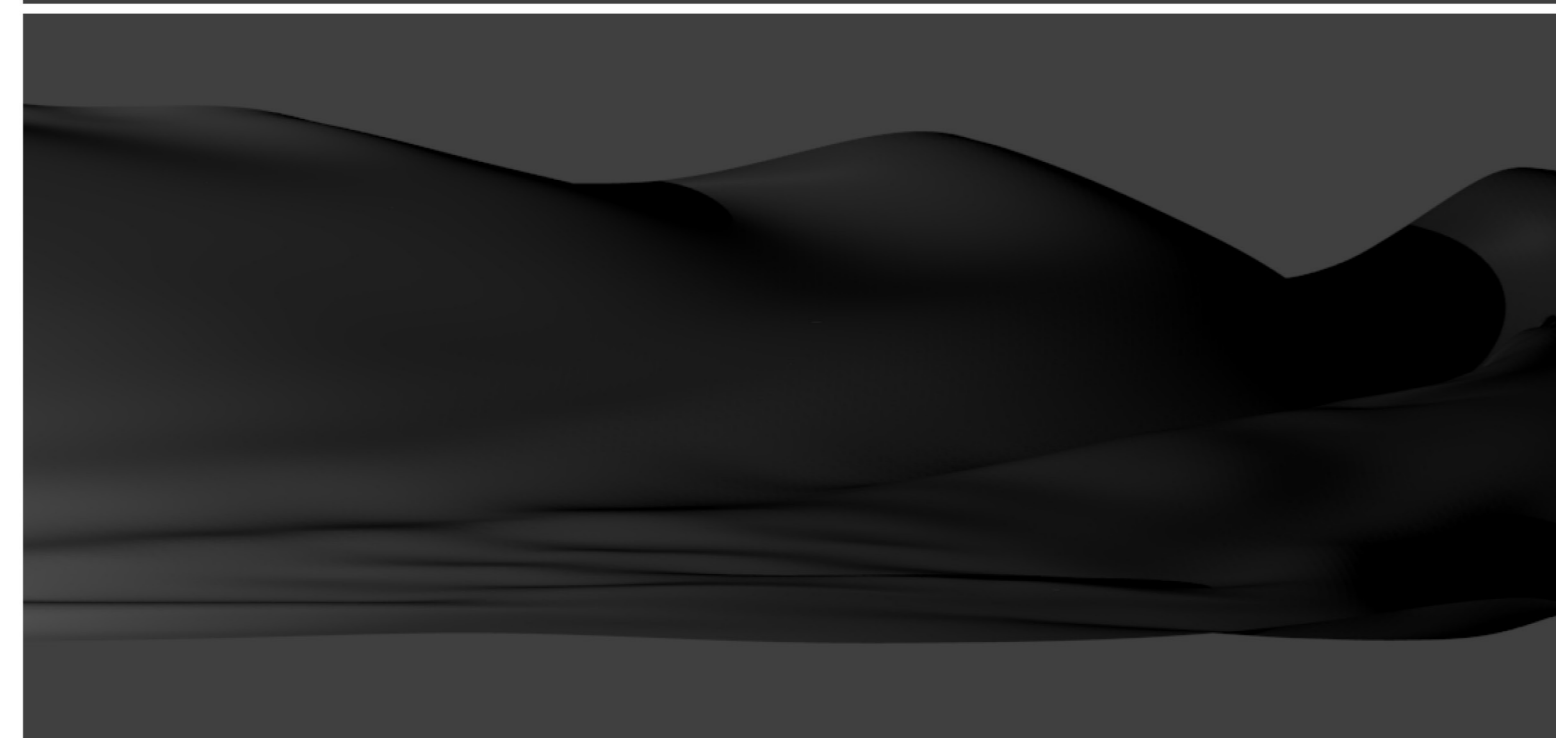
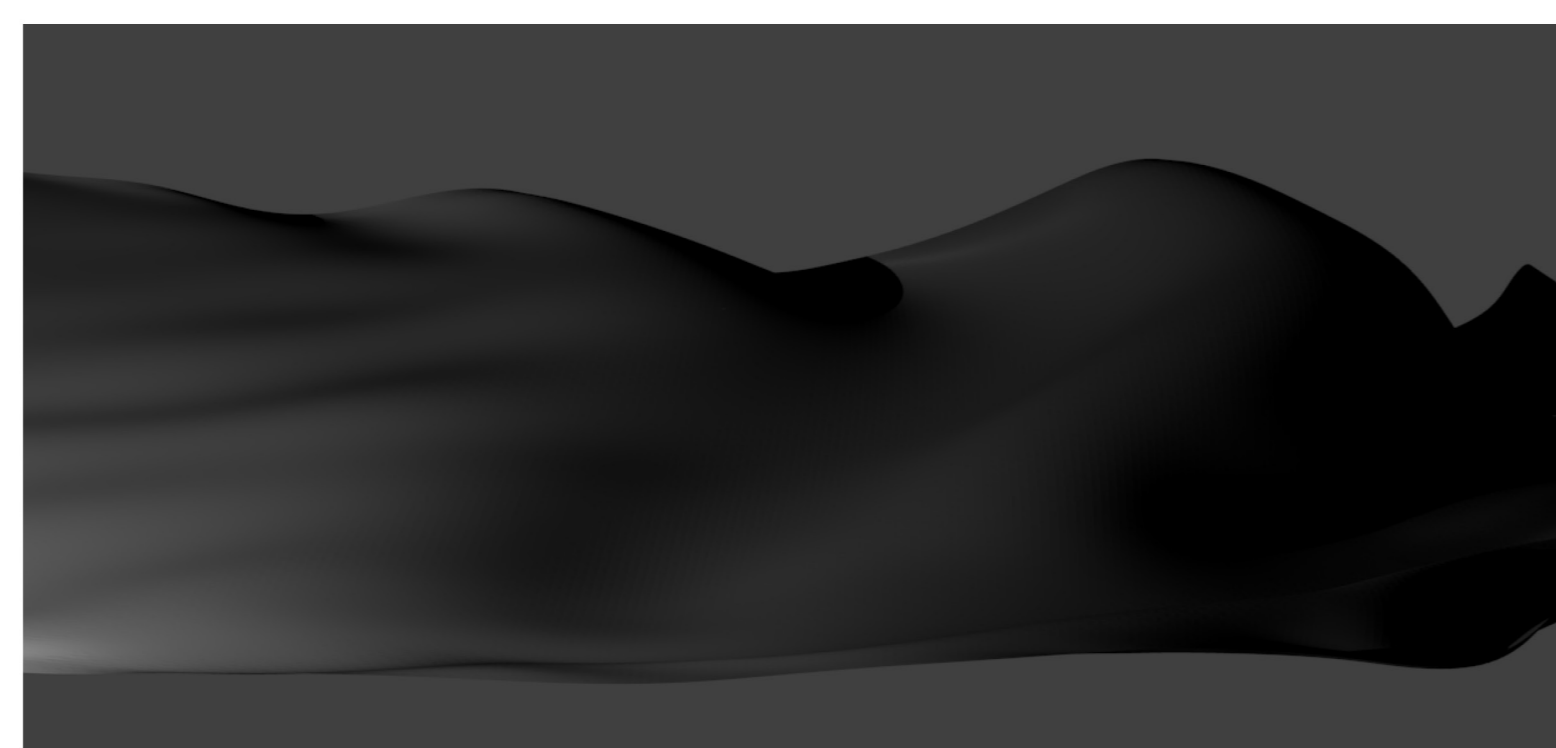
. Seitzer, S. (2000) *Dunes: The Waterless Sea*, New Zealand Geographic, Online



James Waters, Driftwood Carving Photography. 2018
Fig:26



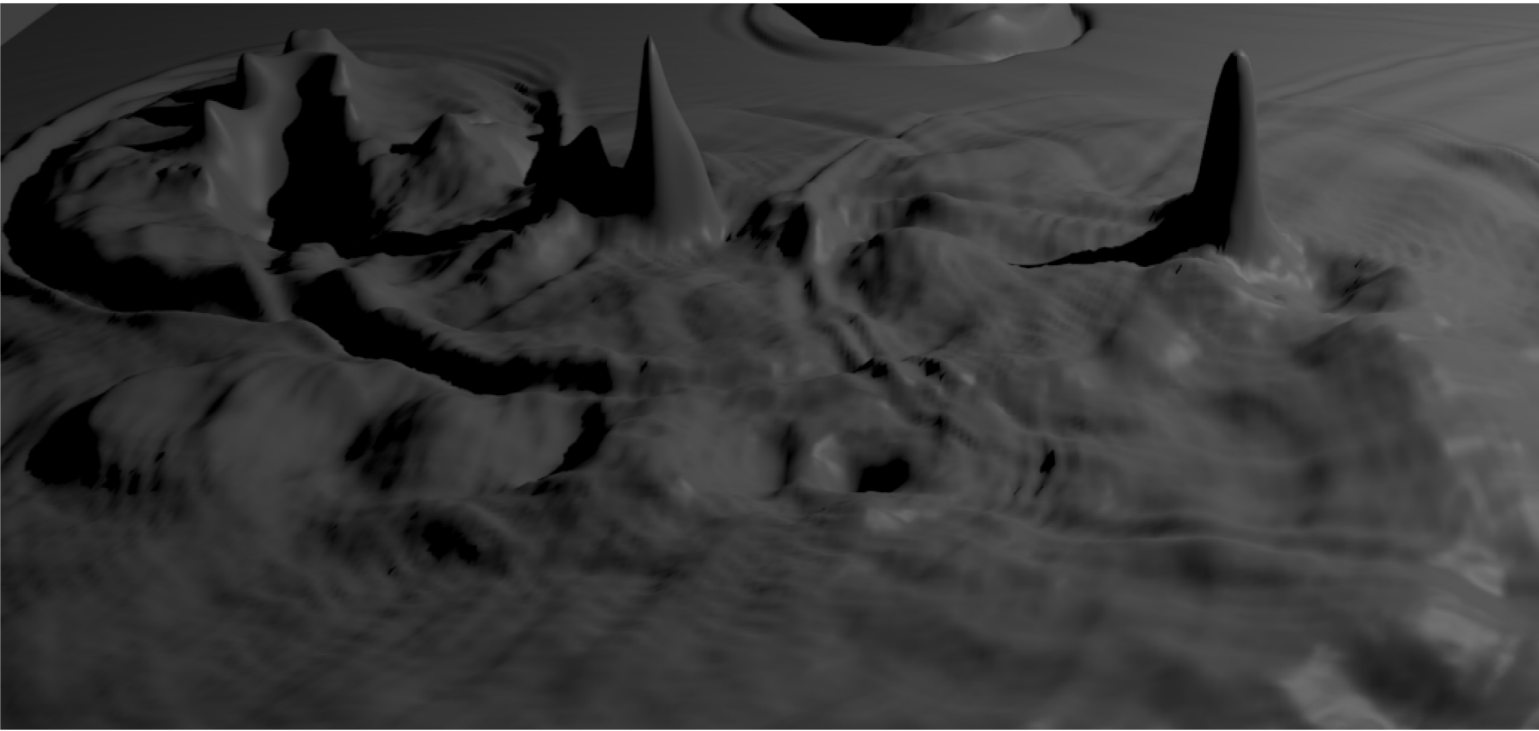
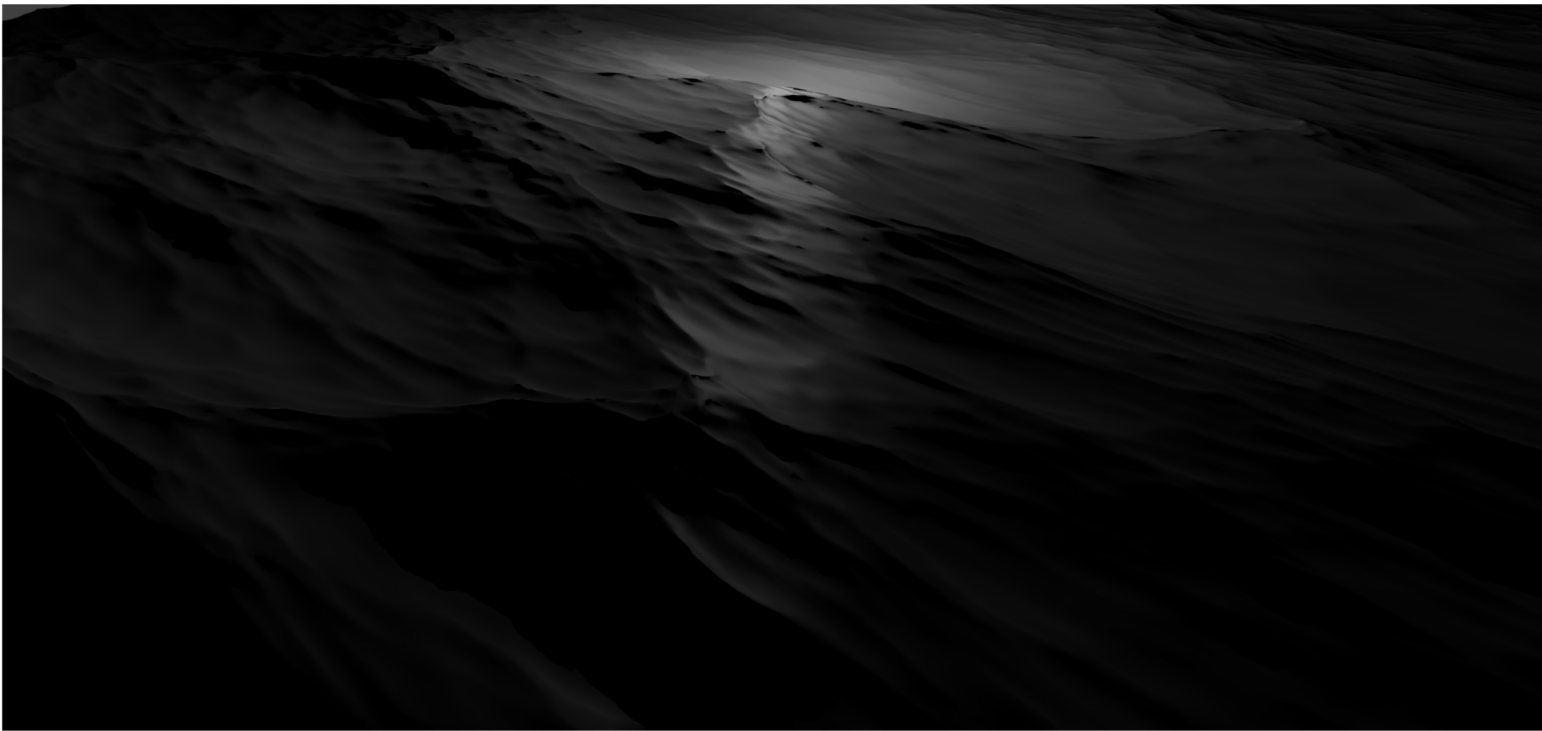
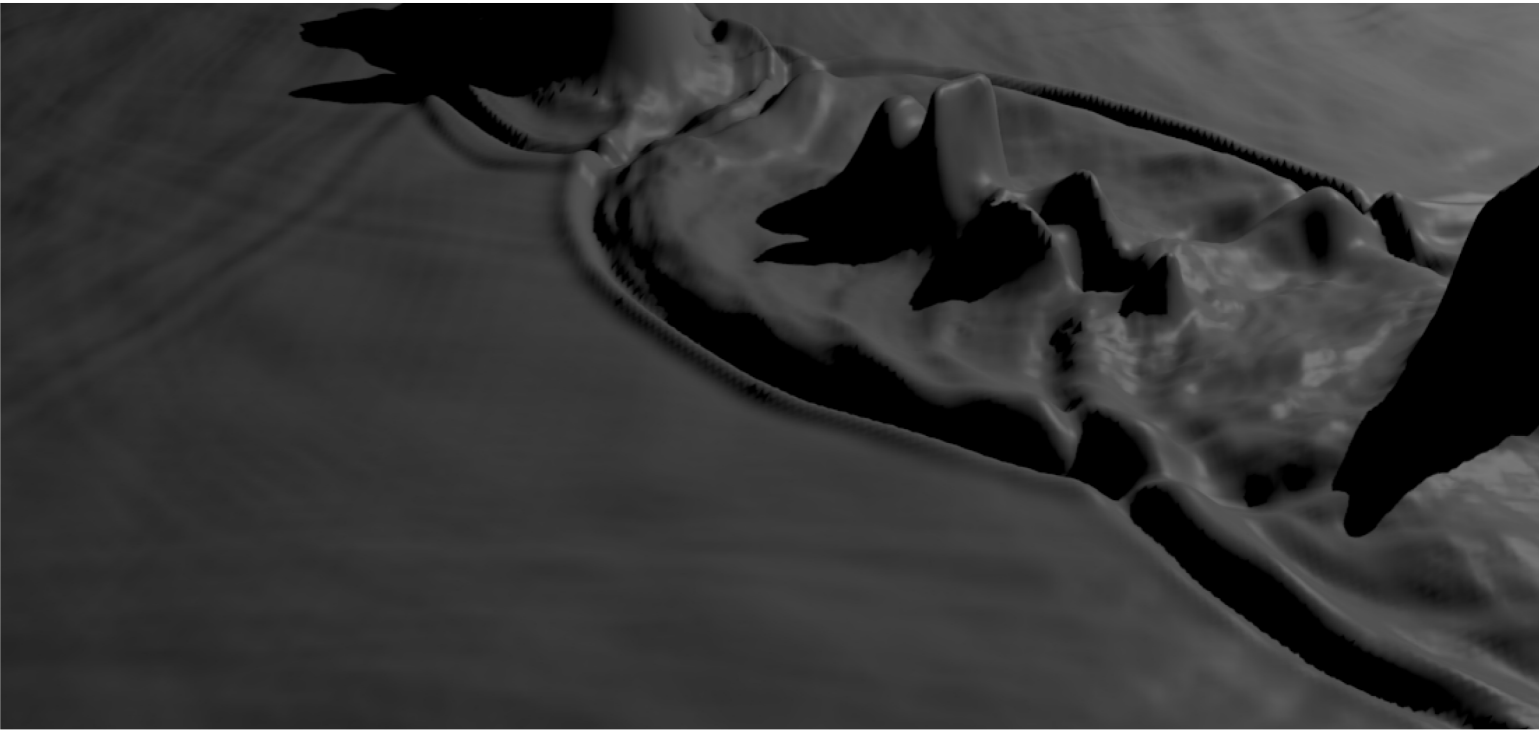
James Waters, Driftwood Carving Photography. 2018
Fig:27



James Waters, Blender Simulation Photography. 2018
Fig:28



James Waters, Driftwood Carving Photography. 2018
Fig:29



James Waters, Blender Simulation Photography. 2018
Fig:30

James Waters, Blender Simulation Photography. 2018
Fig:31



James Waters, Driftwood Carving Photography, 2018
Fig:32



James Waters, Driftwood Carving Photography, 2018
Fig:33



James Waters, Driftwood Carving Photography. 2018
Fig:34

Simulated Movement

Visual representations of moving through nature focusing on movement and perspective of the observer. The project was created on blender, the cinematic setting and the ability of re positioning helped me understand the pivotal movements of the head and body. This tested how one might approach a natural scene.

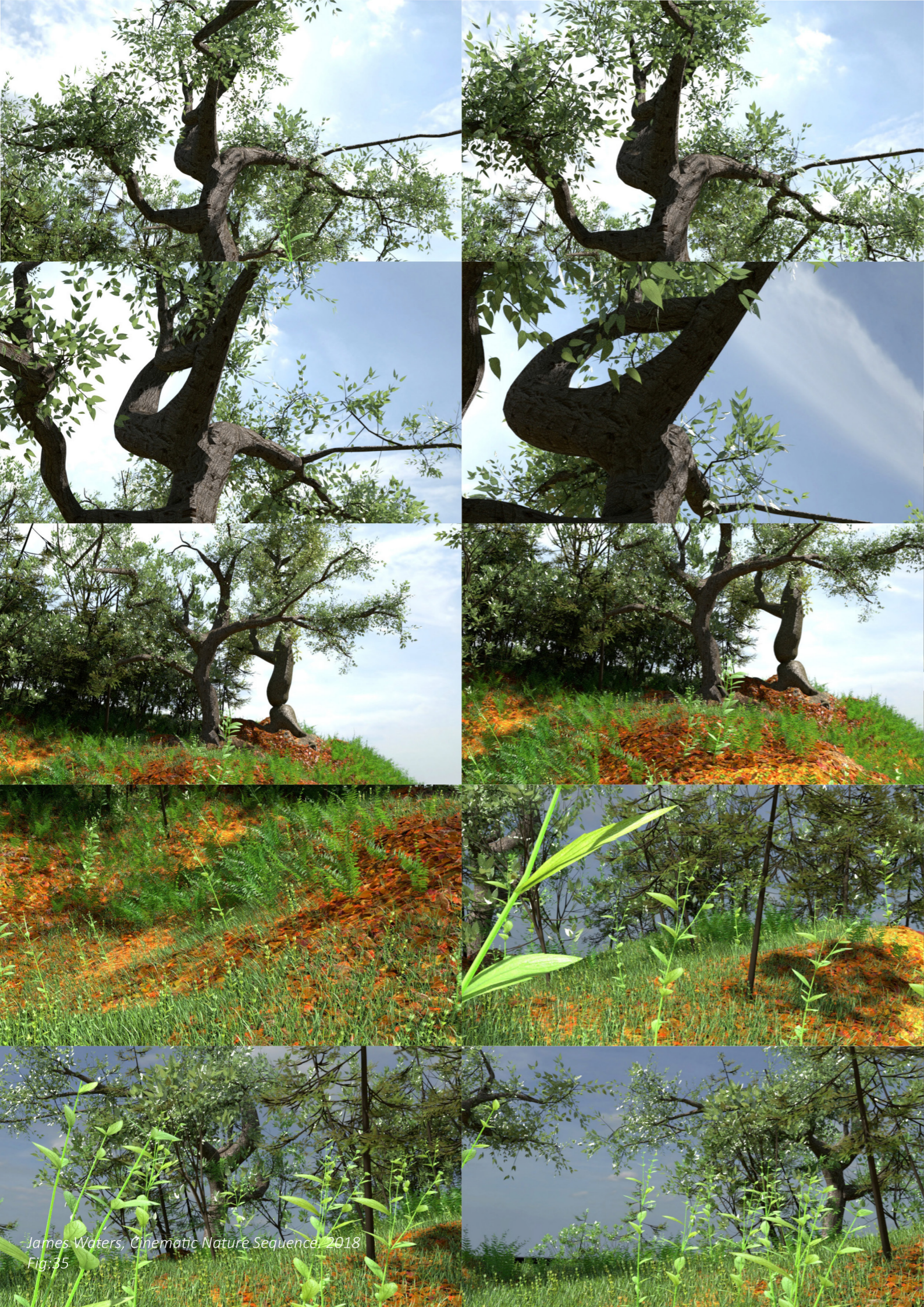
From this I created a relationship between the path and cinematography, in which the walker experiences a script, some well nurtured while others being rather rough and overgrown (Fig:35). These scripts like film techniques have effects on the walker's that can either make or break the trip. Film techniques such as foreshadowing, focus, build up etc can be all experienced along the journey of an adventure walk. For an example deflected vistas work as an effective build up to a scene. Thinking about framing visual cinematic scenes was key in introducing more visual aesthetic preferences to the project, such as focality and depth of field.

The processes of creating relationships between a walk and watching a film made me think about categorizing certain scenes or in general the whole walk. Films and film scenes can be categorized based off a sequence of events. I felt that these categories could relate to nature scenes. The thrill and action-packed atmosphere of waterfalls crashing waves or heavy rainfall while some can be more soothing such as calm lake, fields of grass and open skies. Depth of field I believe can also add to the role off a scene. To me walking along a path with a close depth of field (such as a forest) is the build-up for something big, the slow, character building that sets the scene for the narrative. The long depth of fields I often see as the thrilling, peak or climax of the narrative, where something dramatic happens.

I also explored an alternative proposal which would improve or add on to an existing adventure hut. My project shaped to a smaller scale focusing on windowsills that could engage or interact with the outside world (Fig: 37). These would be seen through different stages of the journey, from hut to hut. I liked the visual threshold between an interior and exterior space as it ties the idea of connecting and acknowledging your whereabouts. I found that from the windowsills you could envision an interior space from the outside. The windowsills mostly reacted best with movement or changes in perspective, capturing the exterior views.

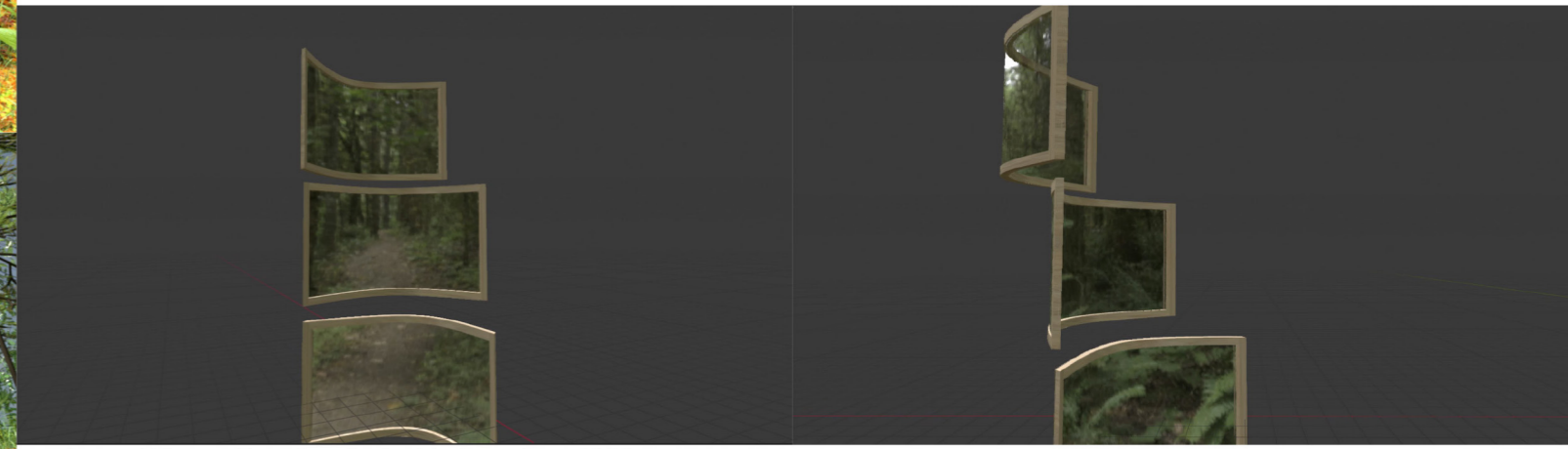
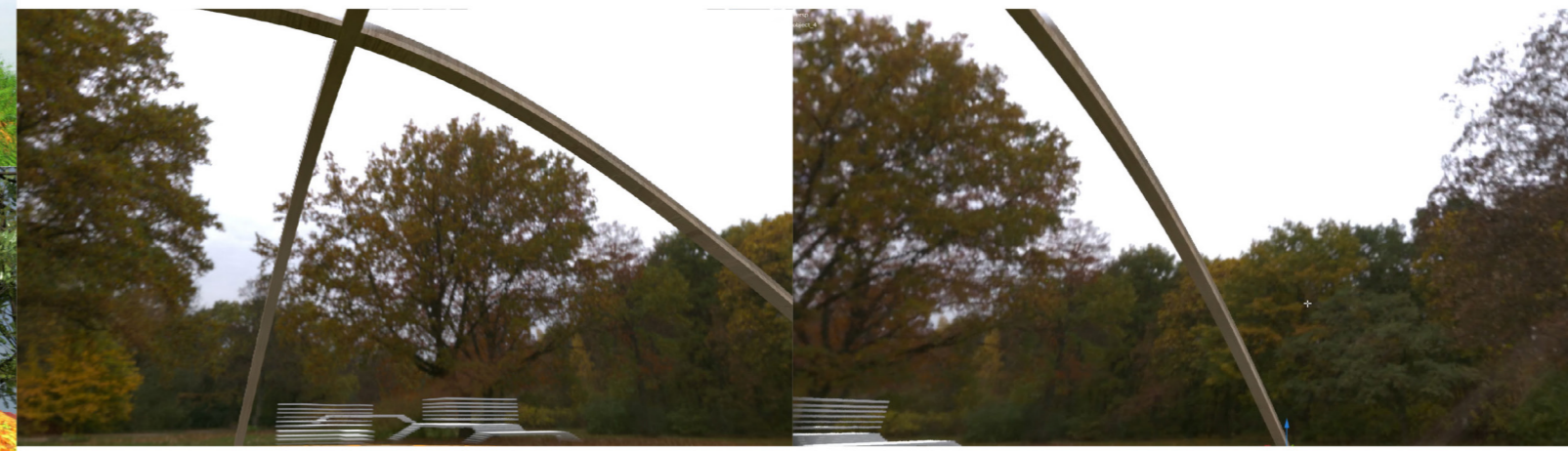
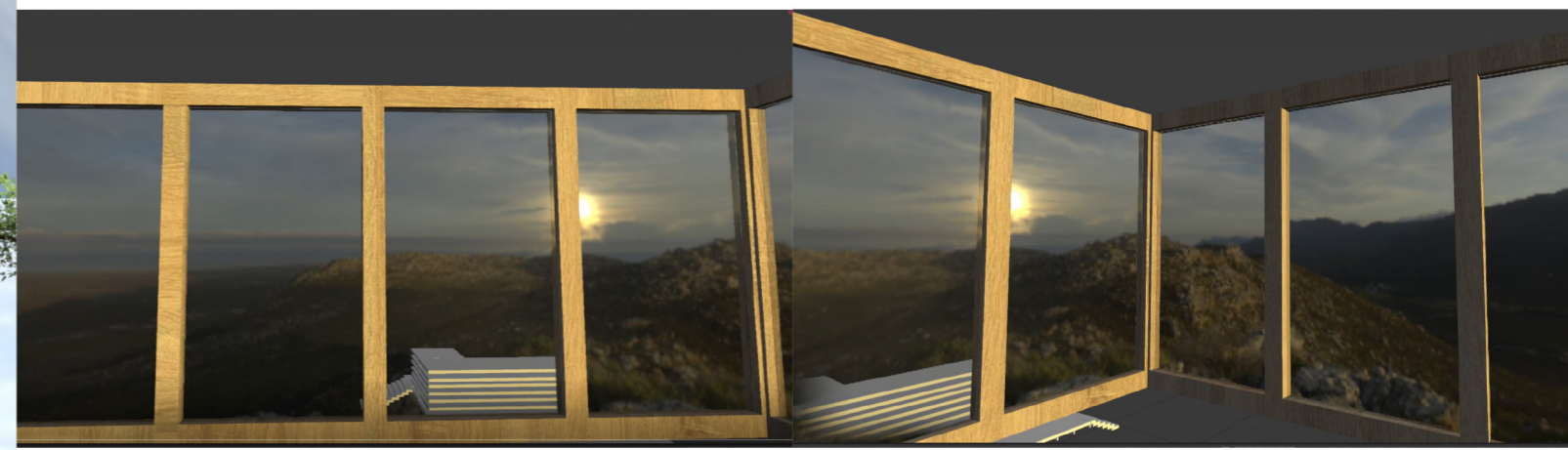


James Waters, Hut Modelling, 2018
Fig.36



James Waters, *Cinematic Nature Sequence*, 2018
Fig:35

A series of image sequences that simulates movement around nature's perceptual aesthetics.

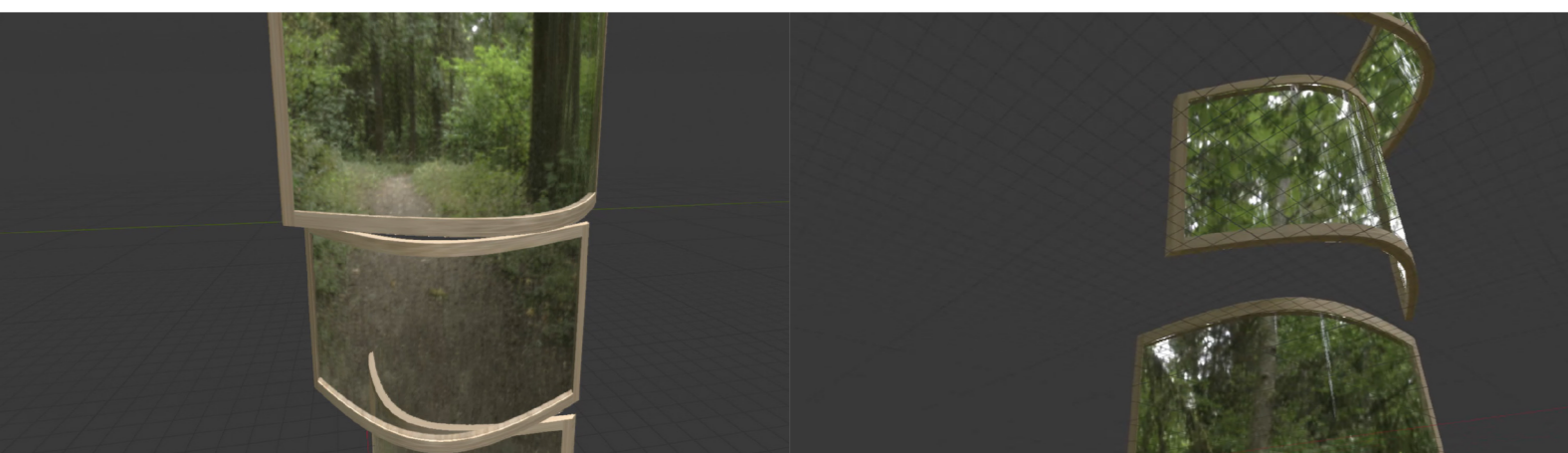


James Waters, *Framing the Inside from Out*, 2018
Fig:37

Plug and Play

A plug and play modular set of prefabricated building structures for assembling on a CNC contour map. The prefabricated structures resembled basic building components with small details to guide users of their purpose (Fig: 39, 42). The plug and play worked as an interactive test space exhibiting the extend of prefabricated structures and their connection to their surrounding contexts. In order to reflect on our methods of constructing New Zealand adventure huts. The co-design methodology gave me an insight of what people value when staying at a hut. The process also offered multiple conceptual hut proposals that consider space, positioning and movement which have been key factors throughout my design process.

From the test space I learned about the modular system and how creating prefabricated structures to be assembled on site would consider the relationship between structure, environment and the walk (Fig:43). I became aware of the advantages of flexibility, augmentation and cost reduction. Reflecting the produced models, I was interested in the positioning of certain structures and the considerations of movement through space. I was also fascinated with the small simplistic models, ranging from huts, to follies, seats and other infrastructure (Fig: 40, 41, 43). This was the deciding point where my project changed from designing a hut to designing infrastructures along the track. The plug and play questioned how I could introduce modular systems into my design. It questioned the details of construction and how the repetitive nature of the method would allow a consistent theme of form.





Teina Smith, Plug and Play. 2018
Fig:38



James Waters, Plug and Play. 2018
Fig:39



James Waters, Plug and Play. 2018
Fig:40



James Waters, Plug and Play. 2018
Fig:41



James Waters, Plug and Play. 2018
Fig:42



James Waters, Plug and Play. 2018
Fig:43

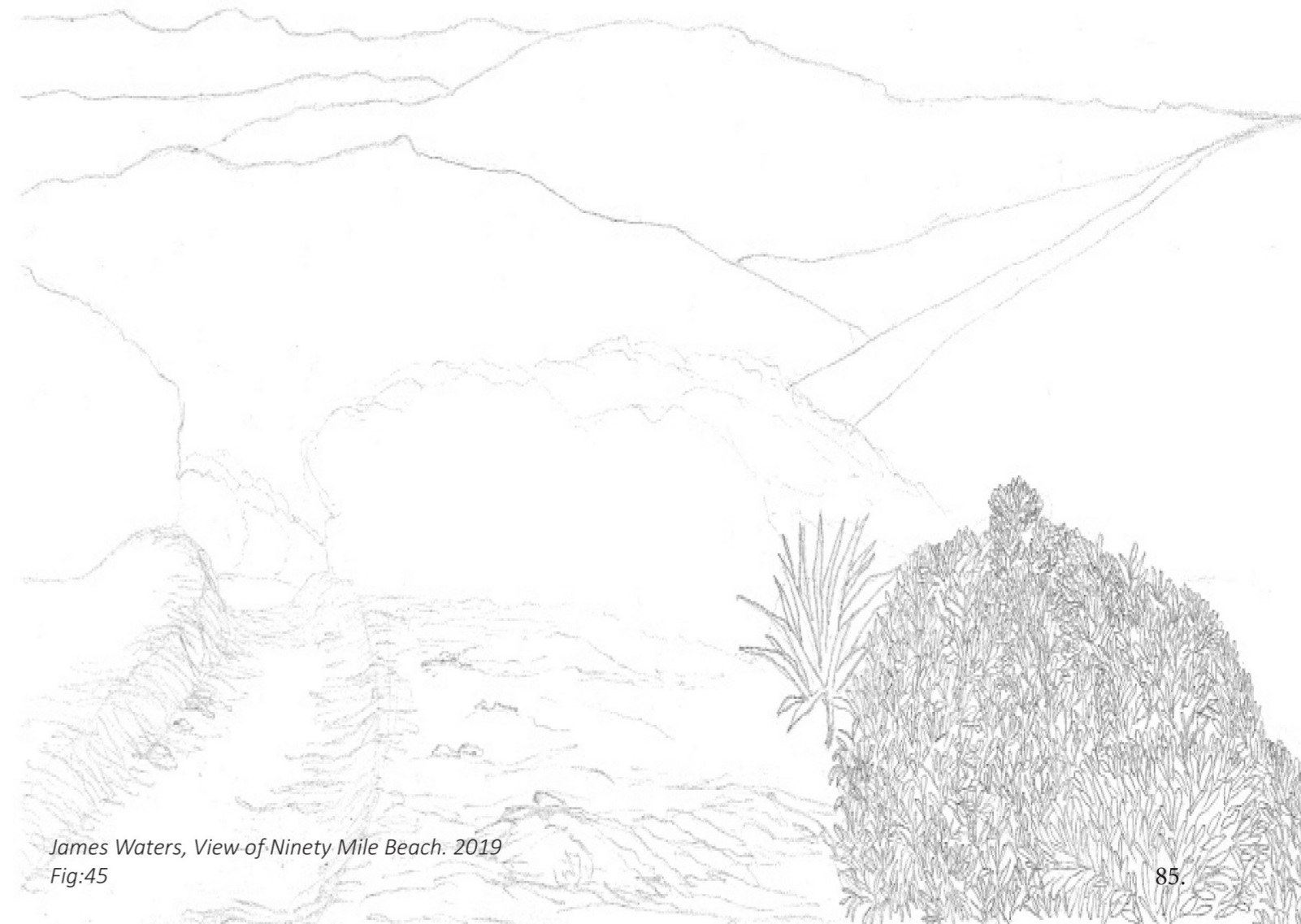


James Waters, *Plug and Play*. 2018
Fig:44

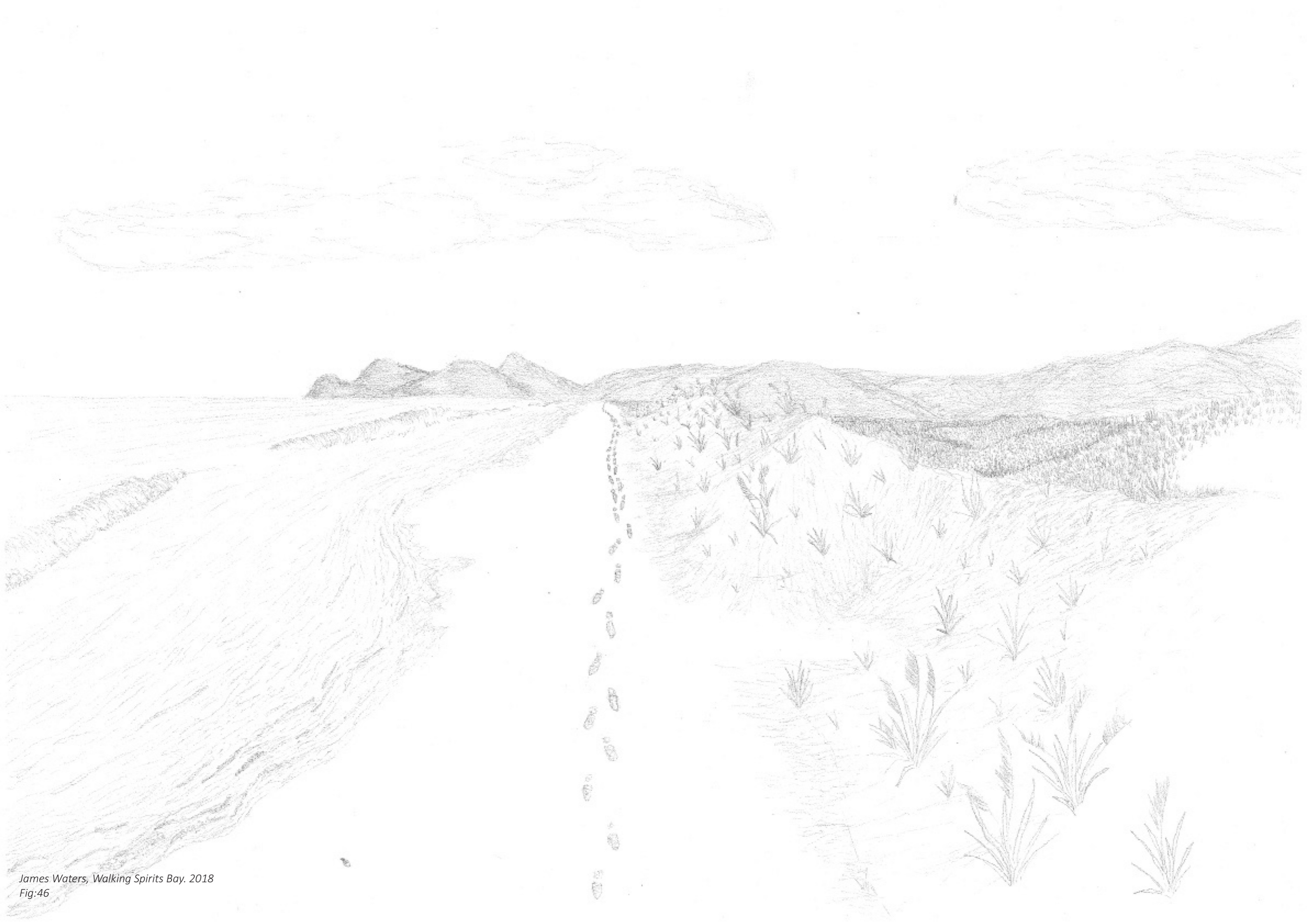
Transition Mapping

Drawings of memorial moments of visually appealing scenes that I experienced on the Te Paki Coastal Walk (Fig: 45-55). These were all drawings that signalled a visually aesthetic preference that occurred along the walk. This was significantly important to my project as it was a way of mapping locations that would accommodate my infrastructures. As more drawings were made, I began to map the Te Paki Coastal Walk with perspective drawings, signalling certain elements and scenes and their positions on the map. The drawings created character to the scenes that expressed my experience. They also showed a variety of different textures which built up my texture research, they were considered as possible patterns to be engraved on the surfaces of infrastructure. The drawings questioned the location of transitions and also proposed elements of structural content, providing conceptual designs that explored their relationship to the environment.

The drawings identified already existing structural elements along the walk and the common types of vegetations and sediments that are seen on the walk. It gave a sense of the different biomes over the track and reveals the significance of the ocean and beaches which are almost seen in every drawing. This questioned the transitional changes of the journey and revealed new points of interest on the walk.



James Waters, *View of Ninety Mile Beach*. 2019
Fig:45



James Waters, *Walking Spirits Bay*. 2018
Fig:46



James Waters, Spirits Bay Forest. 2018
Fig:47



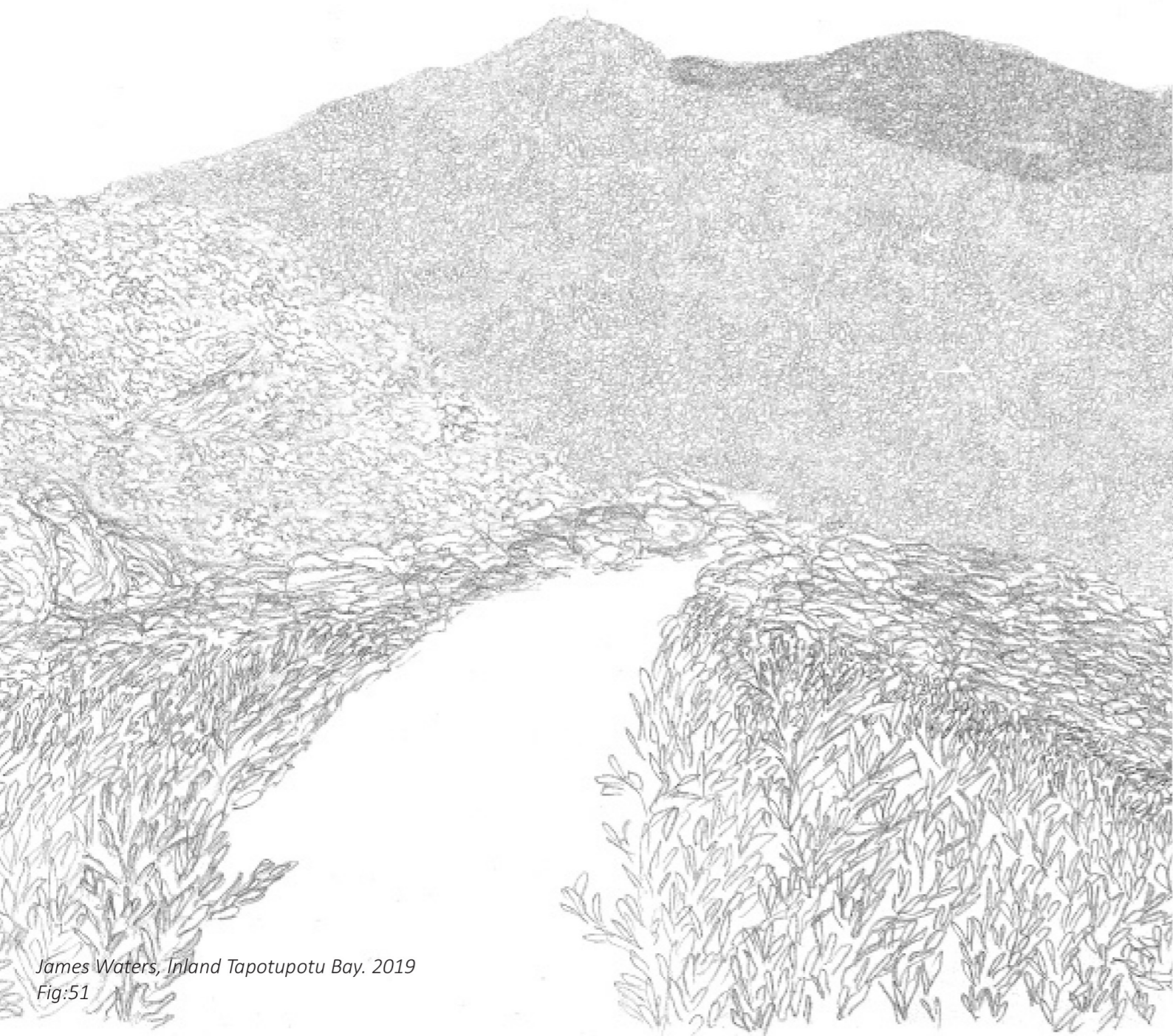
James Waters, *View of Spirits Bay*, 2019
Fig:48



James Waters, Pandora's Rock Pools. 2018
Fig:49



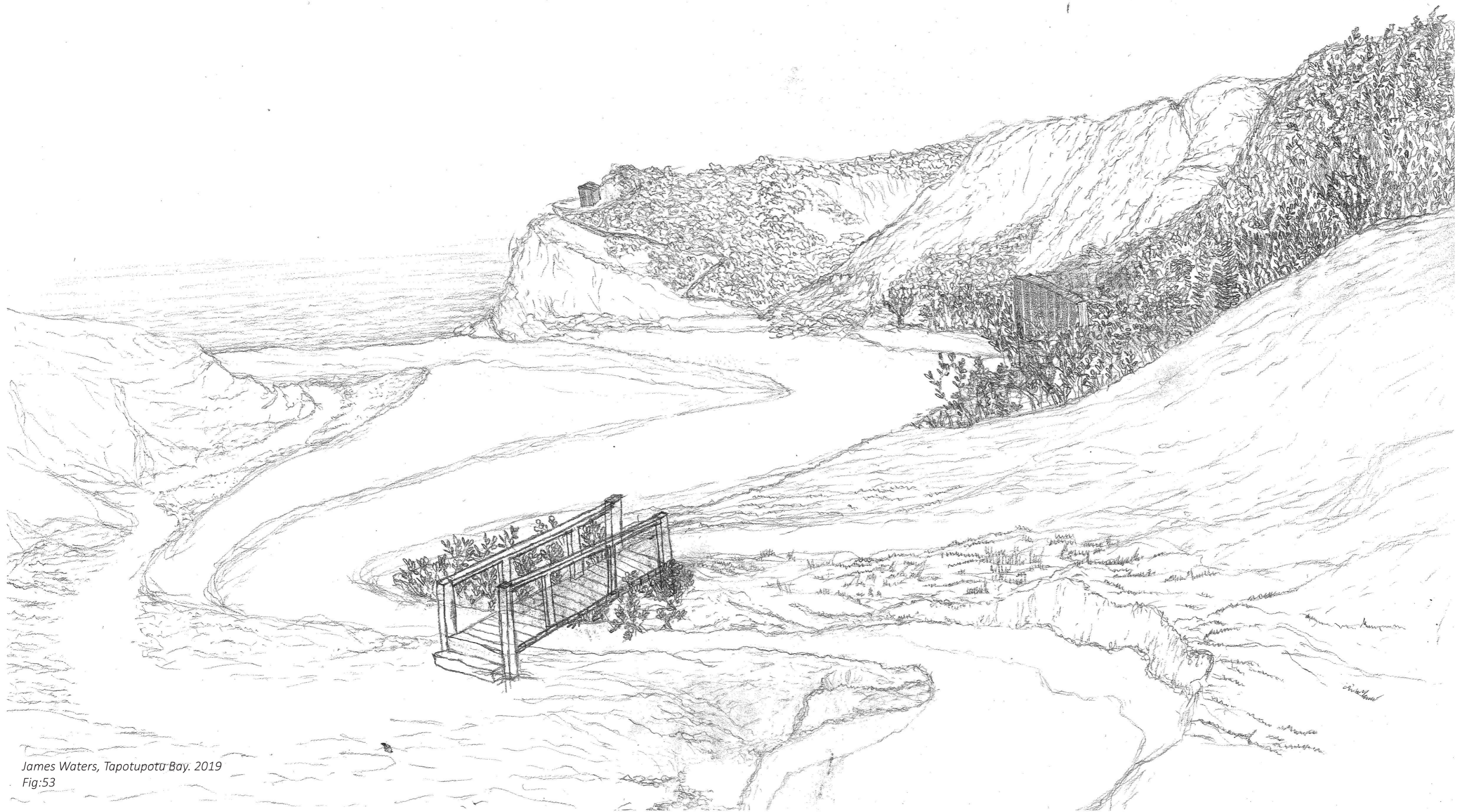
James Waters, *View of Spirits Bay from Pandora*. 2019
Fig:50



James Waters, *Inland Tapotupotu Bay*. 2019
Fig:51



James Waters, *Coastal Tapotupotu Bay*. 2019
Fig:52



James Waters, Tapotupu Bay. 2019
Fig:53



James Waters, Twilight Beach, 2019
Fig:54



James Waters, *Te Paki Sand Dunes*. 2019
Fig:55

Scale Models of Infrastructures

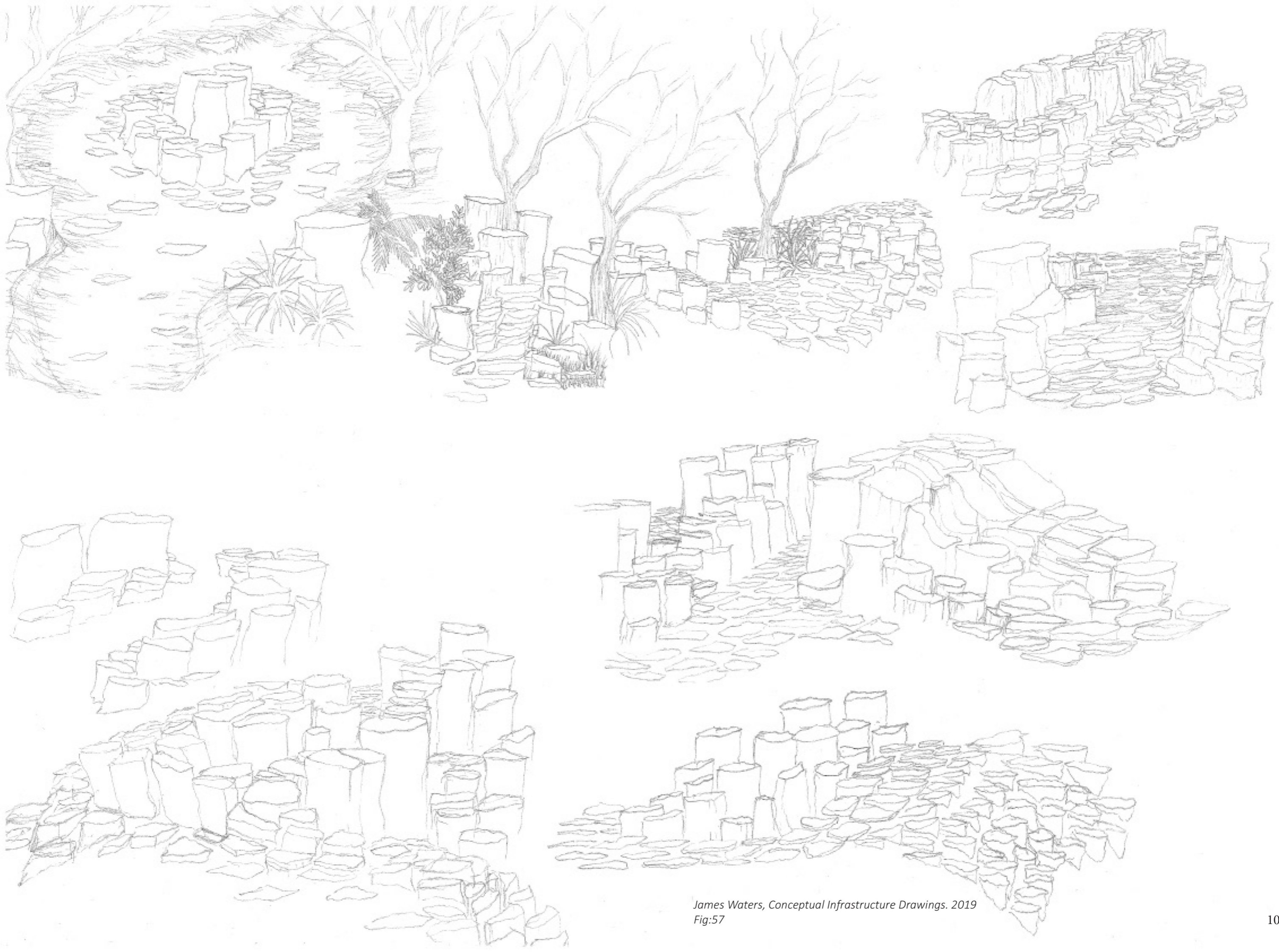
Small scale infrastructure modelling. I decided to further explore my proposals by recreating the design of one of my drawings that I was very much interested in (Fig: 57). I wanted to work with it in a three-dimensional form so I could better yet understand how everything would work and what it would look like from a more accurate representation. I created a series of these organic simplistic forms through clay and then bisc fired them in a kiln to solidify the shape once I was happy with it (Fig: 56). They were then re positioned to host certain environments and certain visual aesthetic preferences.

Most importantly I found that to distinguish certain objects usability was through the forms, the height that they are levelled at and the texture of the object (Fig:58, 59). For example, a seat is notably a seat because of the smooth levelled surface on top, its form in which it is facing and its height off the ground. Secondly the project helped identify the certain furniture like properties that I will need to create for my infrastructure. A test to know what sort of forms worked well and what didn't. Lastly, I was able to experiment with different formations purposes and was able to see some effective ways to layout the pieces of clay in response to each other and the land (Fig: 60, 61). I noticed that the changes in size and spread was impacted by the purpose, thin outliers were often seen as temporary spaces or a deflected vista. Whereas spaces that widened up were often areas where people would stay and congregate around a view. I noticed that majority of my formations consisted of clumps of clay models. These draw the eye as some pieces appear to be perfectly moulded for each other, hugging the models that surround them.

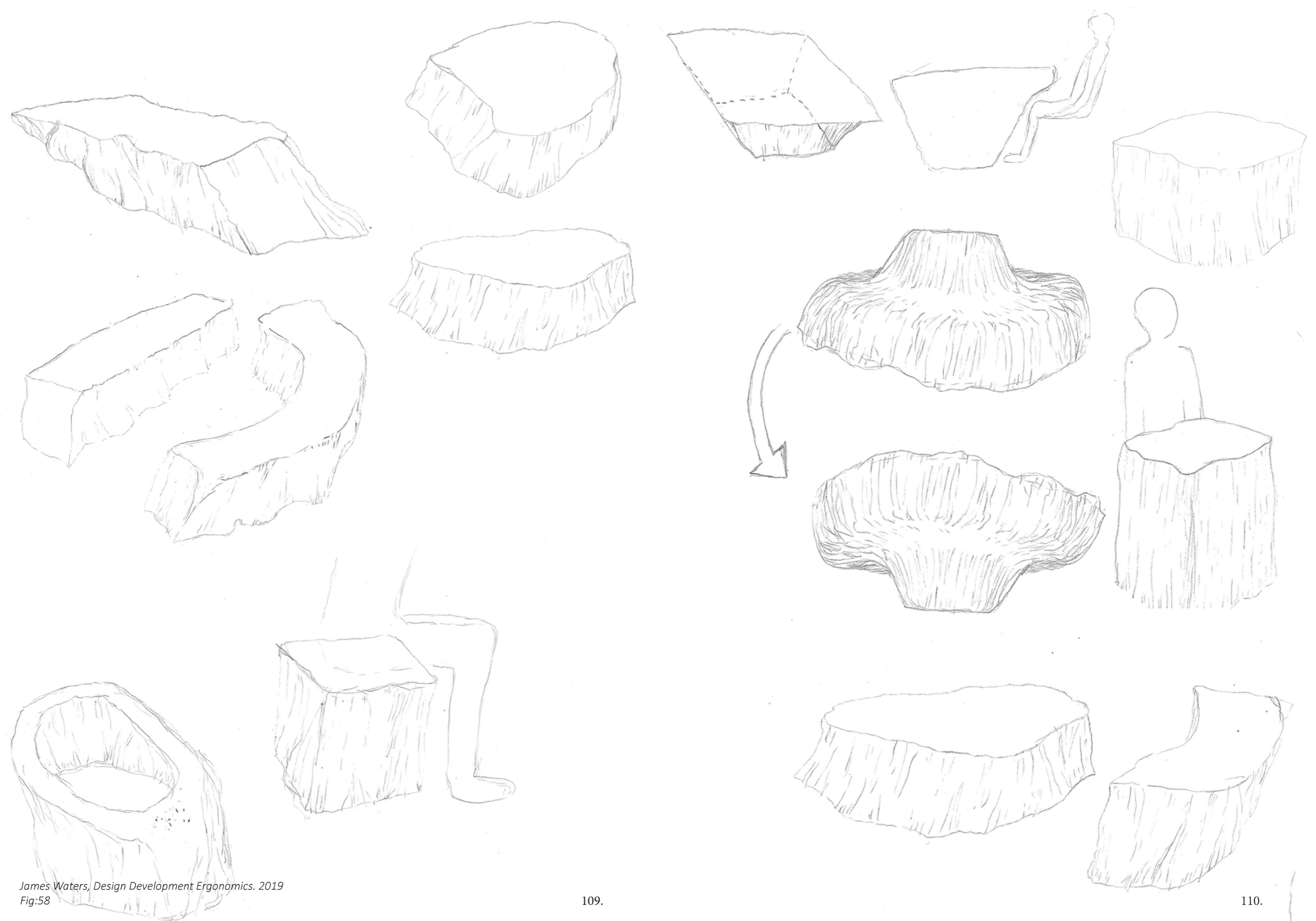
This resulted in producing roughly eight chosen models that I believe are necessary to carry out my design project. These eight pieces will be recreated multiple times through moulds. The eight pieces cover seats, tables, screen dividers and other less important objects. I didn't want to create too much as I was thinking about the difficulty of installing, in which all these pieces would need to be carried on site. I focused on getting a good variety of pieces but also not too much so that people could familiarize themselves with the infrastructure.

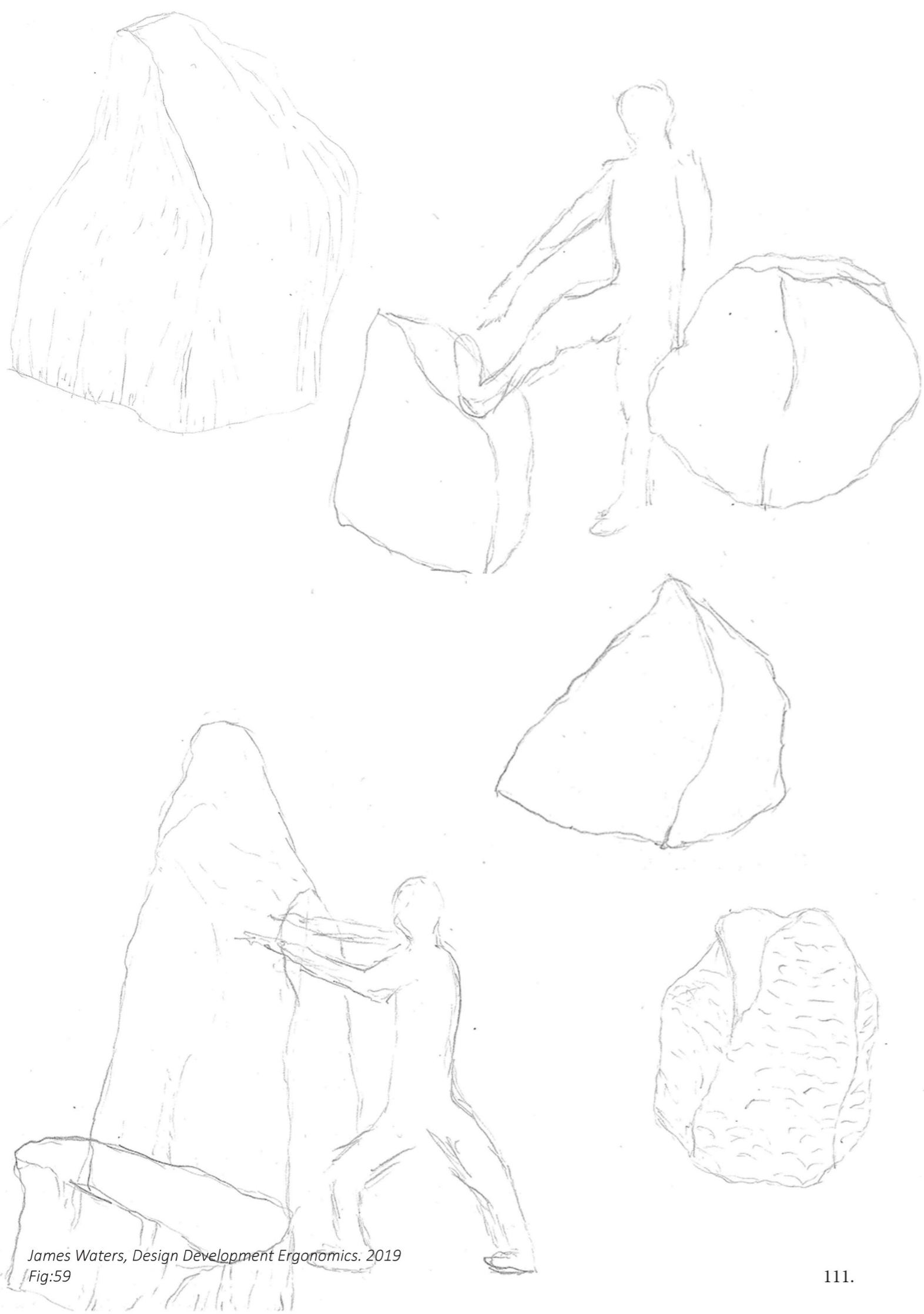


James Waters, Clay Model Orientation. 2019
Fig:56



James Waters, *Conceptual Infrastructure Drawings*. 2019
Fig:57





James Waters, Design Development Ergonomics. 2019
Fig:59

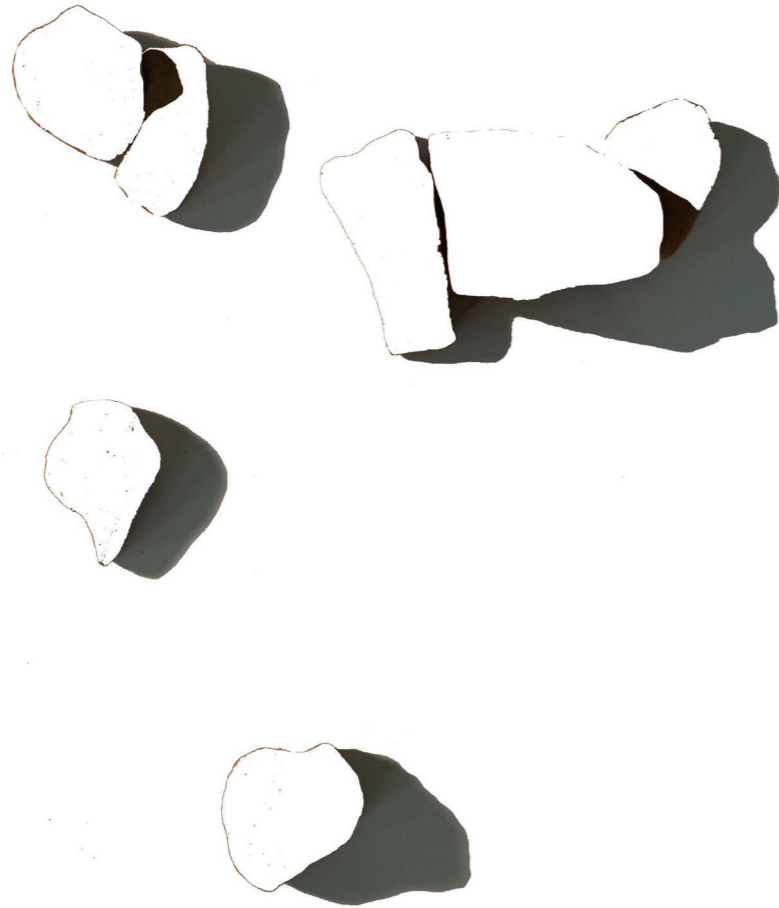


James Waters, Plan View of Transition One Infrastructure. 2019
Fig:60

Fabrication Prototyping

Material exploration with compressing rammed earth inside texture faced frameworks. This process made three different samples. The material samples explored the texture, the properties and the colour of the rammed earth. Texture was explored by playing around with the different grain sizes of dirt (Fig: 63). The properties were experimented with the same material but different quantity contents, this provided different textures and colour outcomes (Fig: 62). This also allowed me to play with the solidness of the rammed earth. More concrete mixture meant that the rammed earth is stronger and less likely to erode, less meant that it was weaker but more friendly for the environment. The last sample is a variety of different dirt's taken from different origin points. This was to get a better idea of the selection of colours that the Te Paki region could offer.

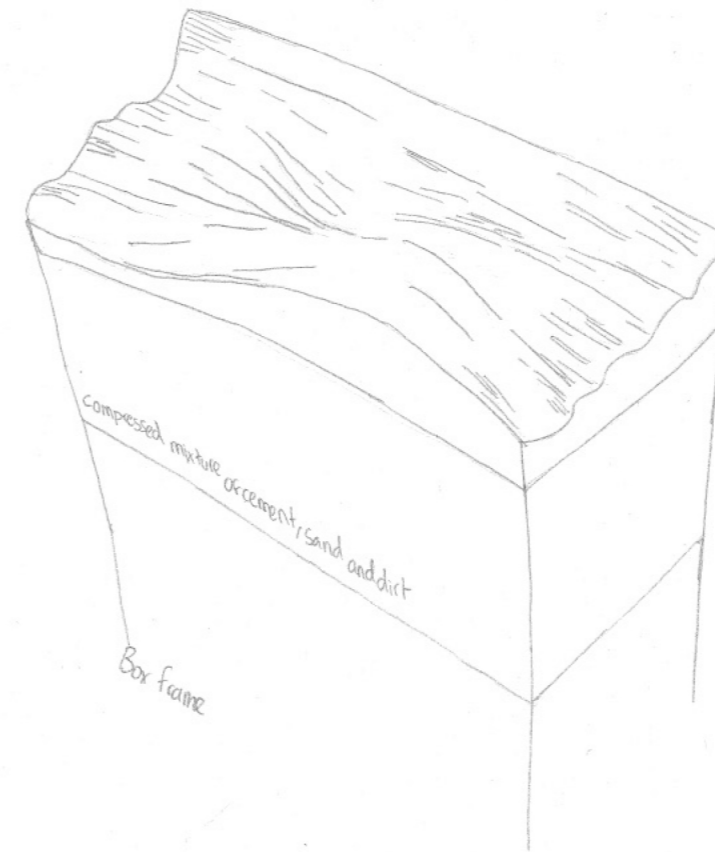
From this exploration I found that I was creating miniature topographies that was structured by the earth and the framework (Fig: 65, 69, 71). Thus, questioned how the materiality could respond to fitting into the landscape by seeing the structures as part of the contours, part of the landscape. The exploration also gave me an understanding of the material and the extent at which to make it. This questioned the impacts of weathering, growth and usability that would impact the structure over time. I also found that the top soils are often weaker due to less clay contents. Therefore, the sites would be flattened, removing the top soil than using the soil underneath as the material. The top soil would then be placed around the structures to keep them in place.



Fabrication Prototyping

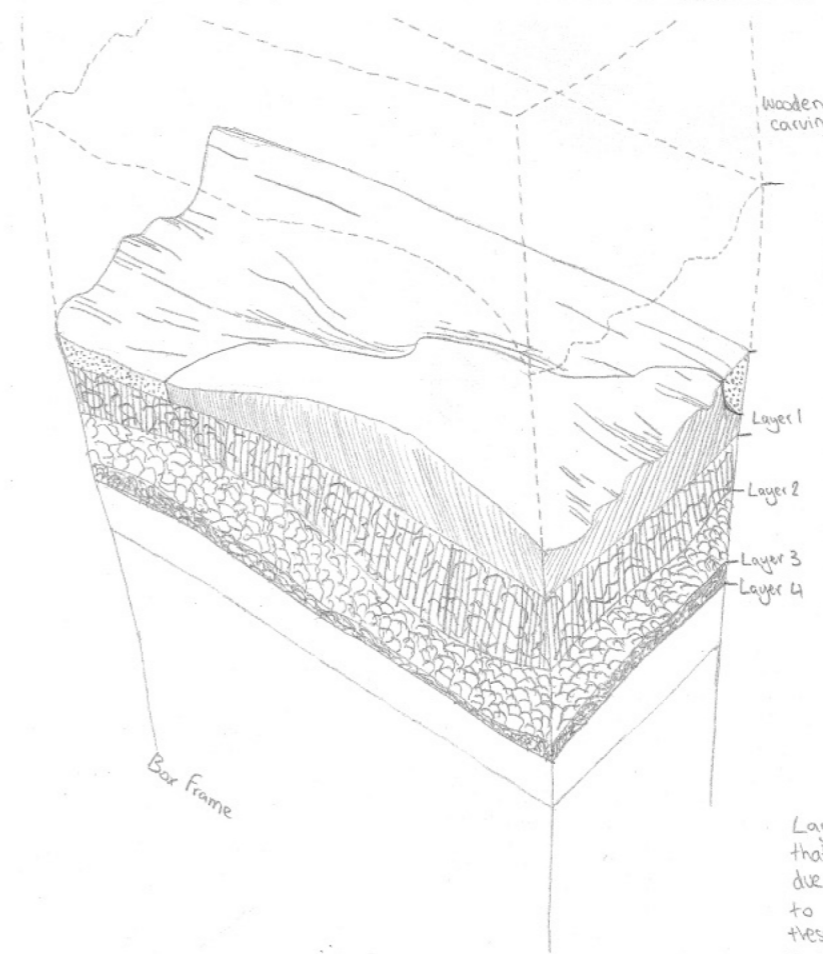
Material exploration with compressing rammed earth inside texture faced frameworks. This process made three different samples. The material samples explored the texture, the properties and the colour of the rammed earth. Texture was explored by playing around with the different grain sizes of dirt (Fig: 63). The properties were experimented with the same material but different quantity contents, this provided different textures and colour outcomes (Fig: 62). This also allowed me to play with the solidness of the rammed earth. More concrete mixture meant that the rammed earth is stronger and less likely to erode, less meant that it was weaker but more friendly for the environment. The last sample is a variety of different dirt's taken from different origin points. This was to get a better idea of the selection of colours that the Te Pahi region could offer.

From this exploration I found that I was creating miniature topographies that was structured by the earth and the framework (Fig: 65, 69, 71). Thus, questioned how the materiality could respond to fitting into the landscape by seeing the structures as part of the contours, part of the landscape. The exploration also gave me an understanding of the material and the extent at which to make it. This questioned the impacts of weathering, growth and usability that would impact the structure over time. I also found that the top soils are often weaker due to less clay contents. Therefore, the sites would be flattened, removing the top soil than using the soil underneath as the material. The top soil would then be placed around the structures to keep them in place.



Multiple layers that are identical
 Fine grain Smooth Roughly = 1 cement, 2 sand, 7 dirt light shade brown

Experiment 1



texture	Contents in Parts	Colour
Fine grain Smooth	Roughly = 1 cement, 4 sand, 5 dirt	light shade brown
Fine grain Smooth	Roughly = 3 cement, 2 sand, 5 dirt	very dark brown
1/2 Fine grain 1/2 Rough grain Smooth	Roughly = 1 cement, 2 sand, 7 dirt	Brown
Rough grain earthy	Roughly = 1/2 cement, 1 sand, 8 1/2 dirt	dark brown
1/2 Rough grain 1/2 Fine grain earthy	Roughly = 1/2 cement, 2 sand, 7 1/2 dirt	light brown

Layer 4 and some parts in Layer 3 has areas that are soft and easy to crumble - most likely due to the lack of concrete mixture in comparison to the rest of the contents. Also the fact that these layers are the top part, the exposed surface receives most of the interactions.



James Waters, Rammed Earth Process Photos. 2019
Fig:63

James Waters, Rammed Earth Texture Photos. 2019
Fig:64



James Waters, Rammed Earth Miniature Topographies. 2019
Fig:65



James Waters, Rammed Earth Playing with Light. 2019
Fig:66



James Waters, *Rammed Earth Playing with Light*. 2019
Fig:67

James Waters, *Rammed Earth Raw Material*. 2019
Fig:68



James Waters, *Rammed Earth Raw Material*. 2019
Fig:69



James Waters, *Rammed Earth Comparison to Framework*. 2019
Fig:70

Tracing steps

A Walk to Remember

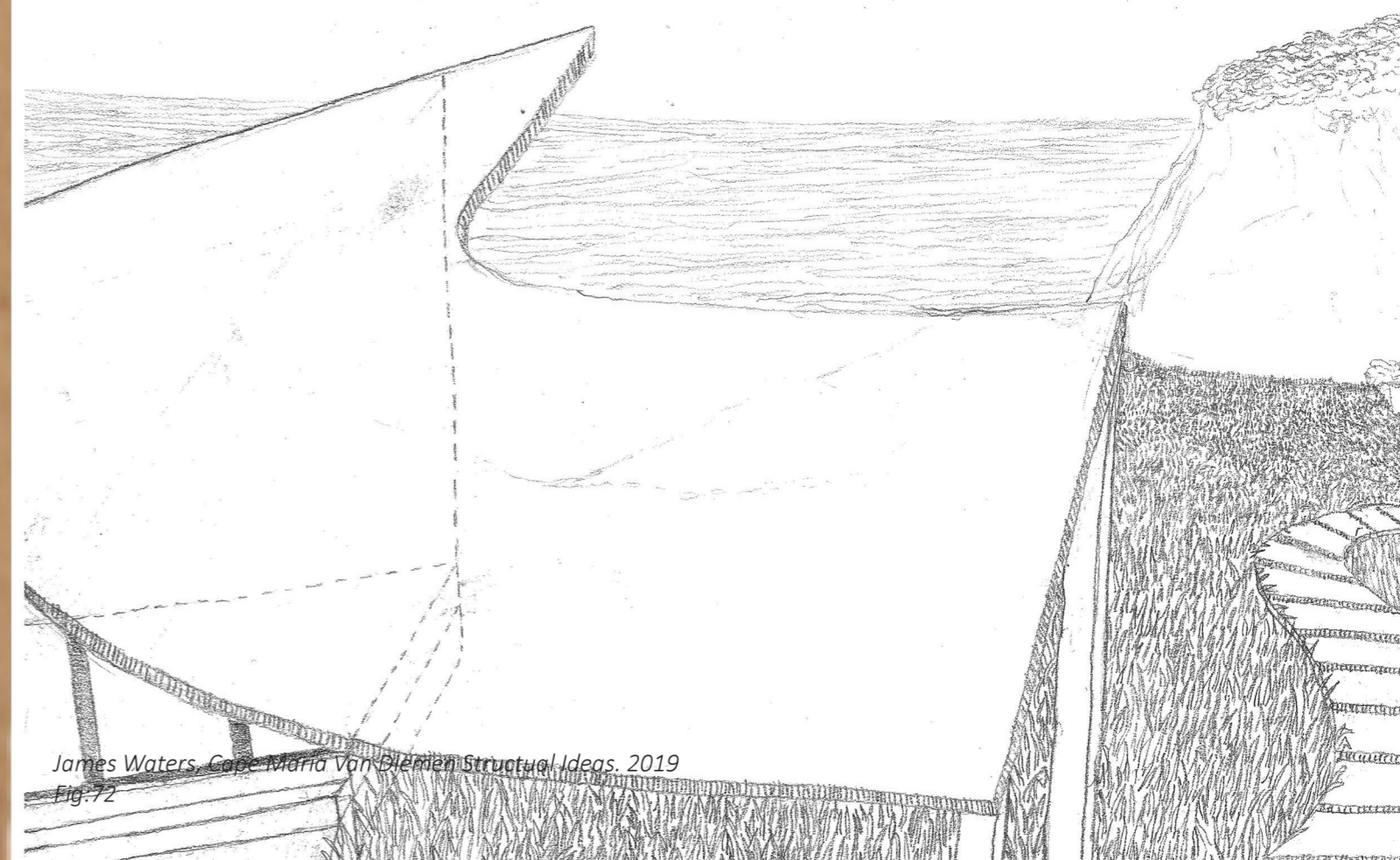
The transitional infrastructures I propose would establish connections between the land, its cultures, and the walking journey itself. The basis behind the project derives from the experience of walking, celebrating the moments along the journey. My research here was greatly understood through first- and second-person experiences of the track and also other walks around New Zealand. It was also understood through Roger Ulrich's text "Visual Properties Influencing Aesthetic Preference and Interest". Concepts such as focality, depth and deflected vistas generated significant initial insights into the unfolding experience of walking.

As exhibited, the scheme is resolved at three key scales. At the macro scale, the scale of the walk's progress through the landscape, it consists of ten transitions distributed along the walk according to moments of visual aesthetic perception and preference. At the meso scale, these transitions are constructed as irregular landscapes that invite informal and improved uses, platforms to use as tables, surfaces for sitting or lying on, objects that frame specific views, etc. And at the micro scale, they are fabricated using rammed earth, and are embossed with textures drawn from the landscape. As earth, they will also erode as they are carved, used, and weathered.

Certain site-specific details and effects could only be resolved on-site during construction. For example certain landforms and land features may restrict the positioning of certain structures. The earthy material on site has not been tested, therefore the properties might be unreliable and unconditioned for the the walk. The complexity of the framework would also have to be thoroughly checked over, use will alter the framework with wear and tear that will provide inconsistent results.



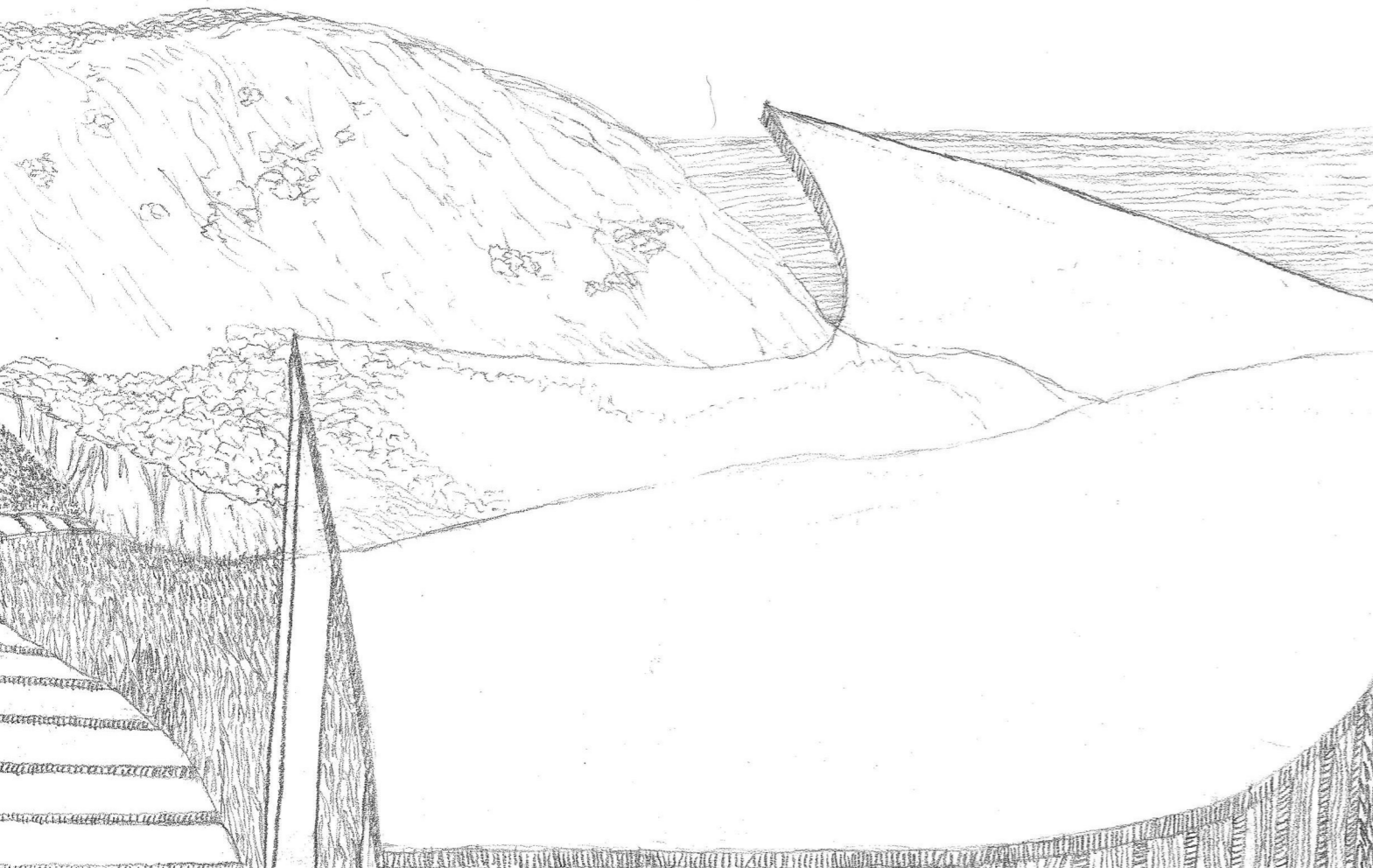
James Waters, *Rammed Earth Miniature Topographies*. 2019
Fig:71

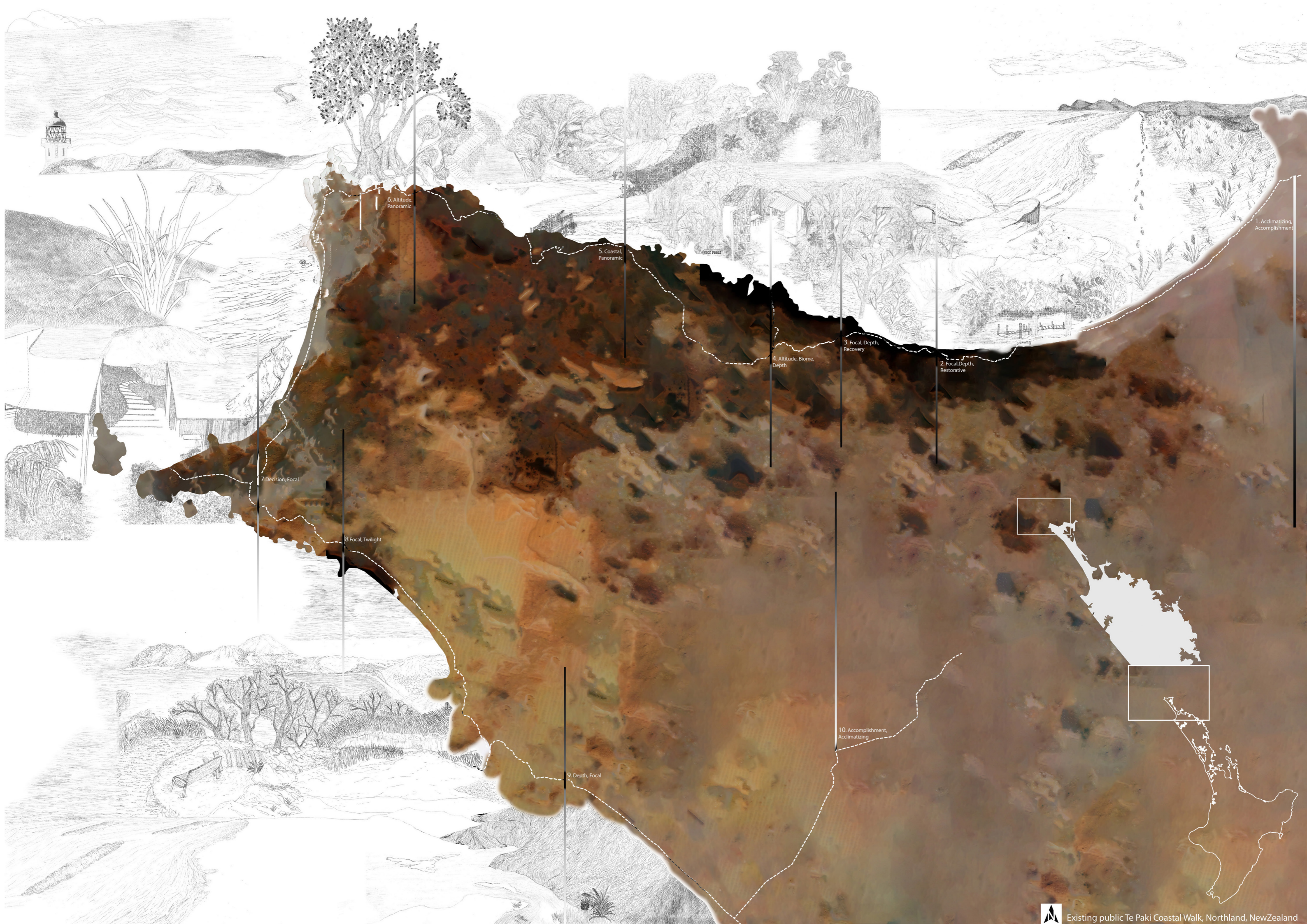


James Waters, *Cape Maria Van Diemen Structural Ideas*. 2019
Fig:72

While this design has specifically attended to the Te Pahi Coastal walk, the idea behind the design and its site-specific construction method makes it a framework that could be reused or adapted for other walks.

I believe that not only for the Te Pahi Coastal walk, but in general all walks should take note in how we construct infrastructure. Infrastructure on a walk is forefront to understanding the importance of the walk. They play a major role in the journey of the walk that is used by locals and tourists that wish to experience the culture, land and the walking journey. I have felt that existing infrastructures lack character, fittingness, cultural relevance and environmental care. The research identifies the importance of these recurring themes, and concludes with a design that would benefit and respect the environment, culture and the journey of the walk.





6. Altitude, Panoramic

5. Coastal, Panoramic

4. Altitude, Biome, Depth

3. Focal, Depth, Recovery

2. Focal, Depth, Restorative

7. Decision, Focal

8. Focal, Twilight

9. Depth, Focal

10. Accomplishment, Acclimatizing

1. Acclimatizing, Accomplishment



Spirits Bay Road, Te Hapua,
New Zealand



Transition 1
Setting Off

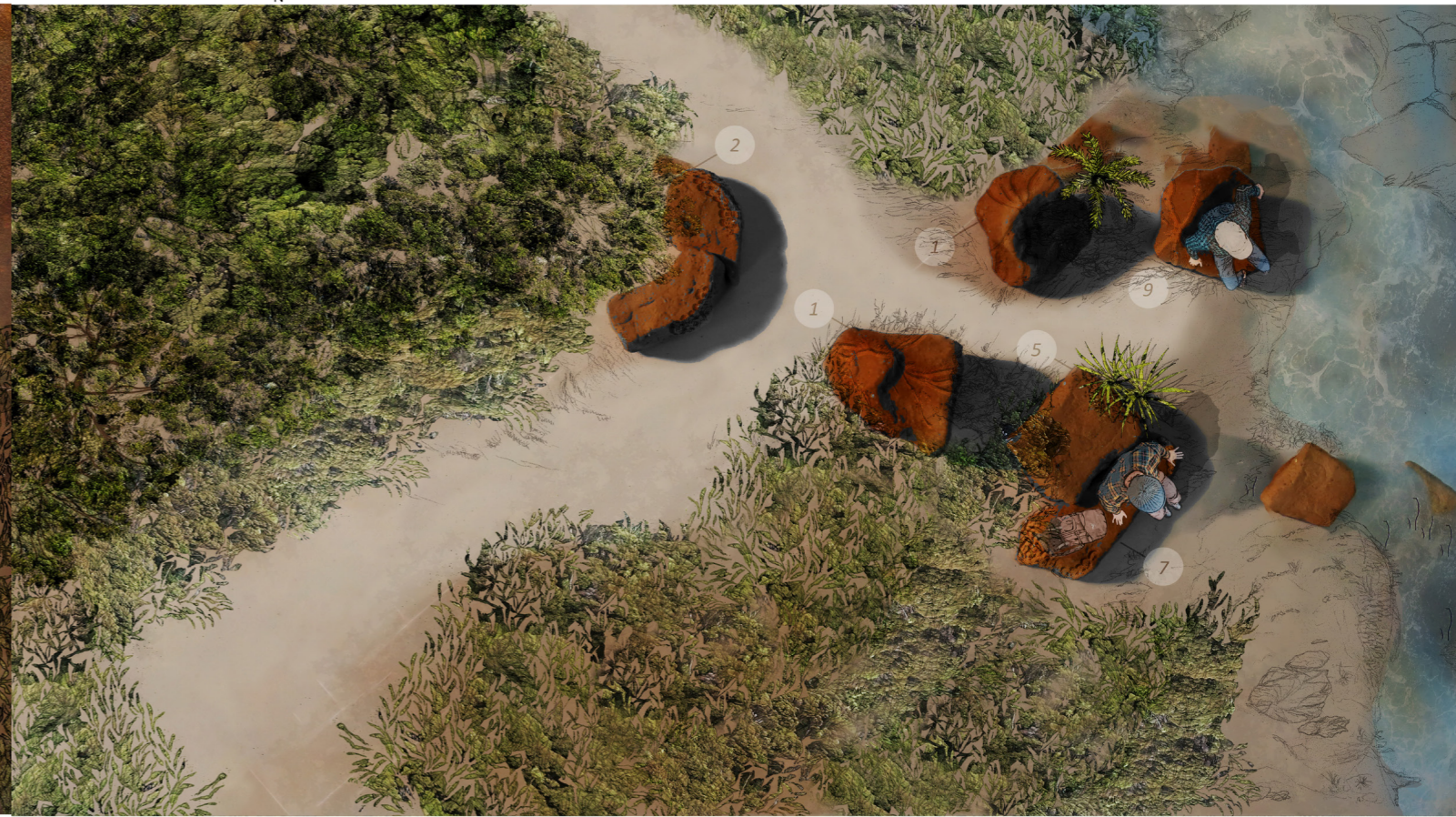
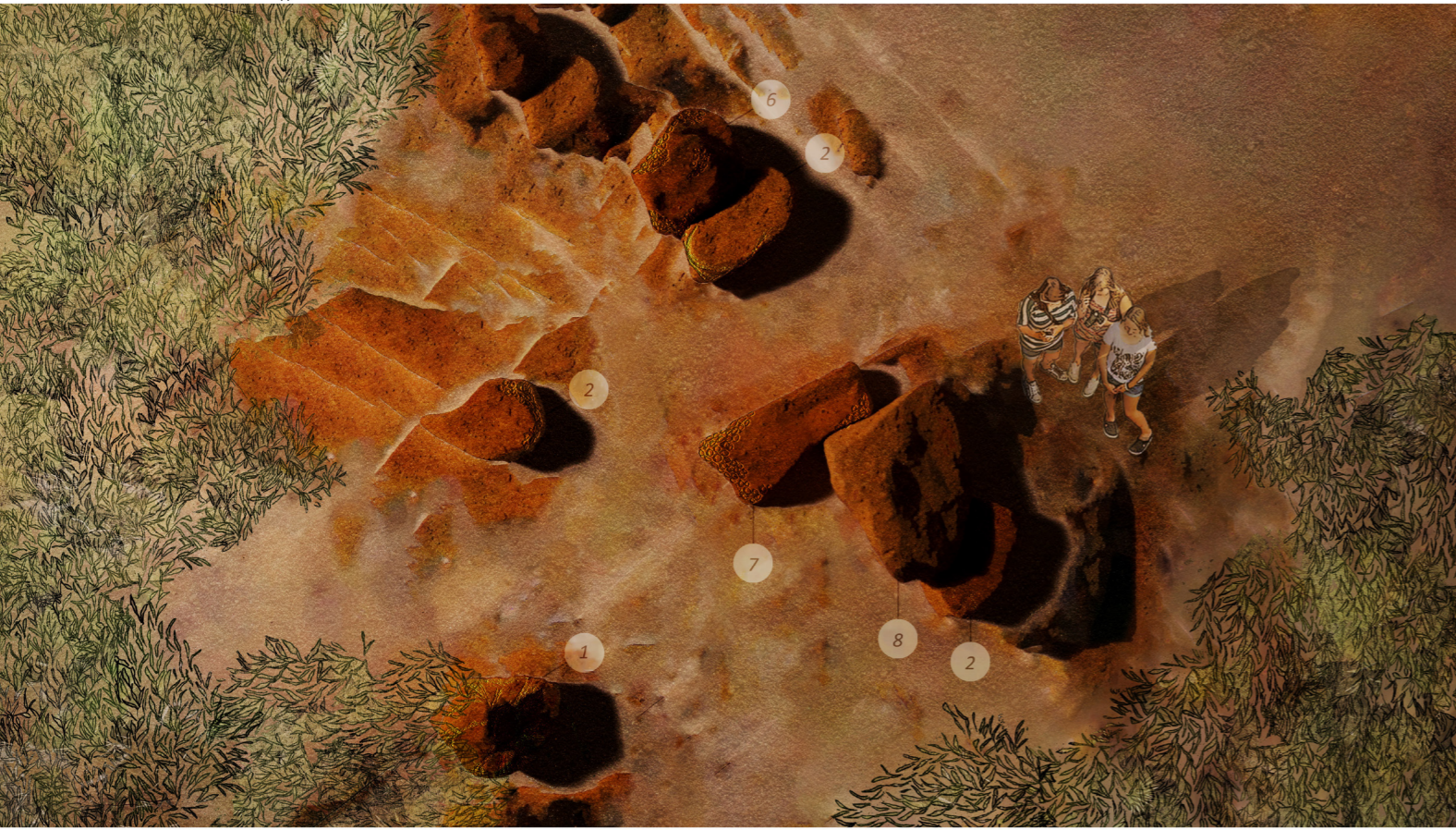
S 34° 25' 37.502
E 172° 51' 43.321

Whangākea Beach, New
Zealand



Transition 3
Rock Pools

S 34° 27' 13.476
E 172° 46' 47.903



Cape Reinga Coastal Walkway,
New Zealand



Transition 2
Settling In

S 34° 27' 13.577
E 172° 47' 26.793

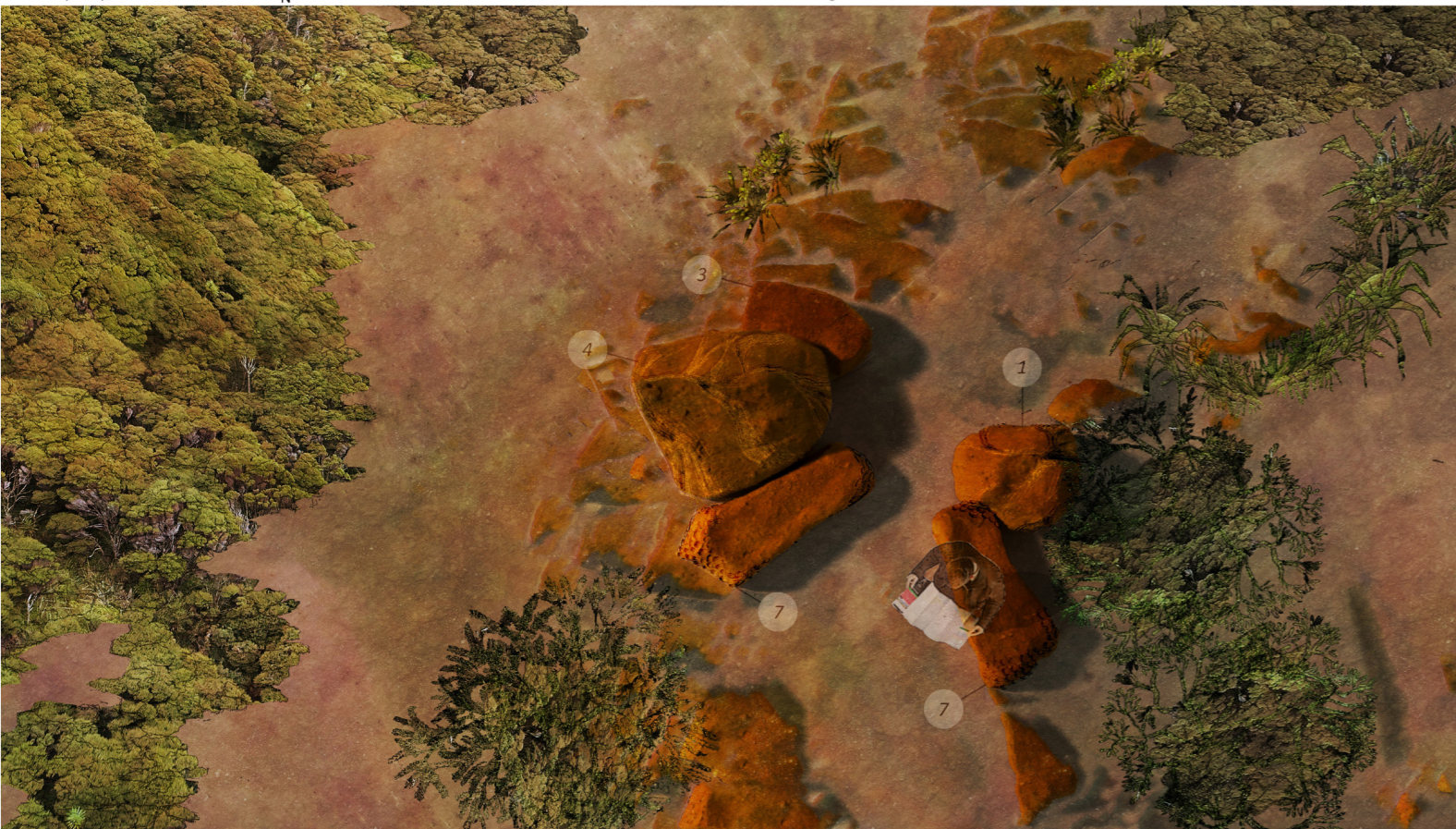
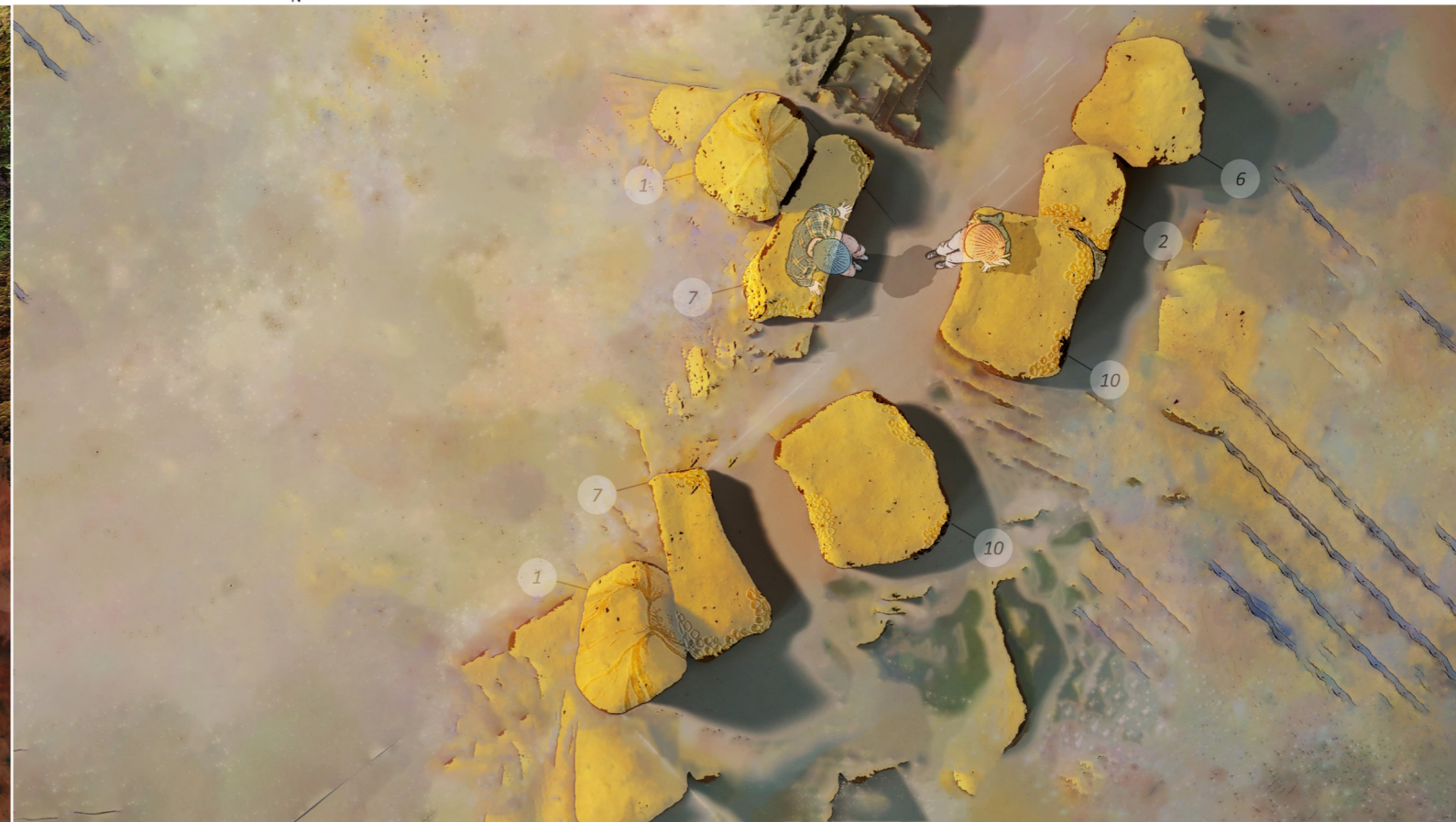
Cape Reinga Coastal Walkway,
New Zealand

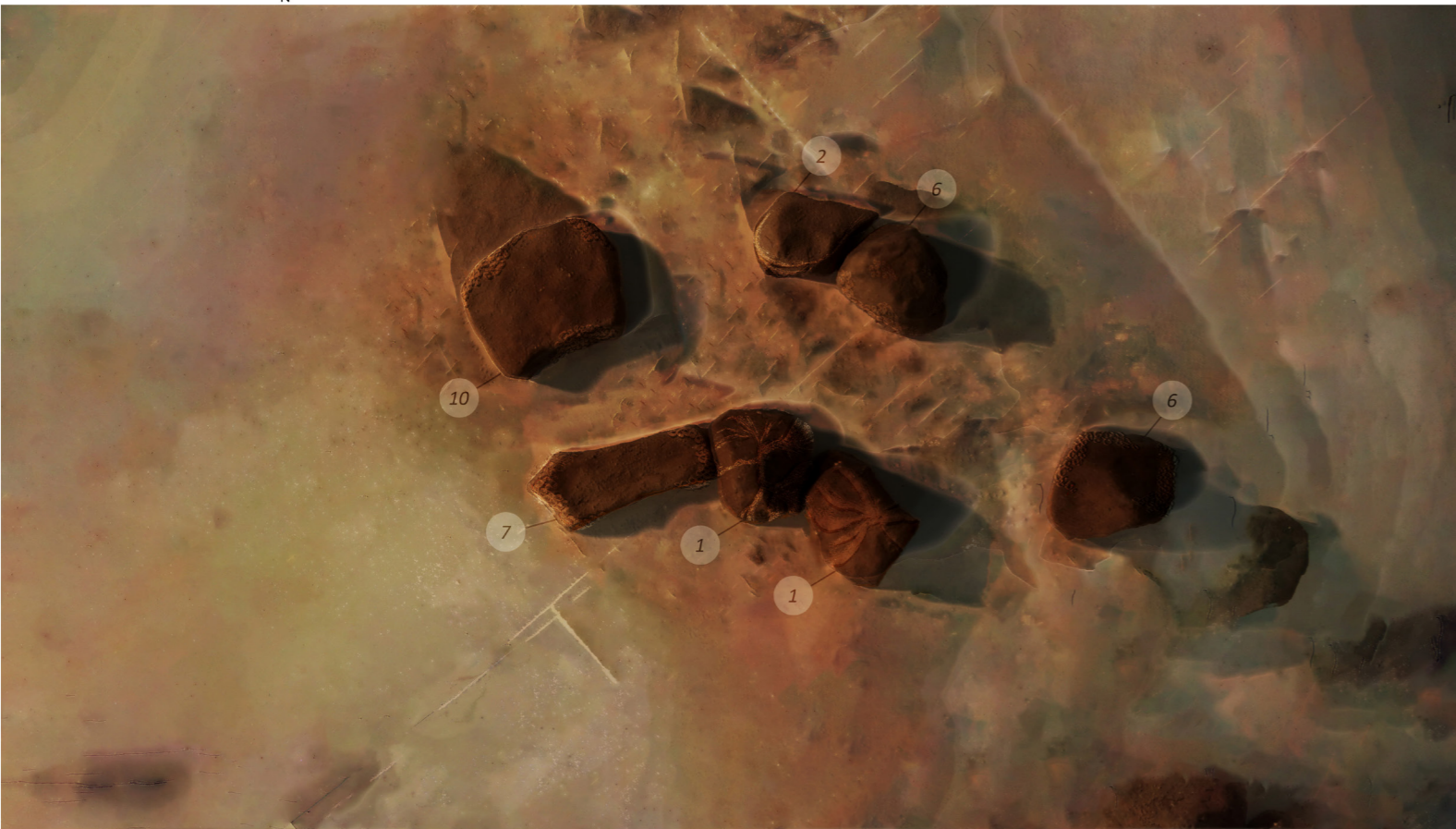


Transition 4
Inland Retreat

S 34° 27' 34.113
E 172° 46' 1.786











Journey's end.



James Waters, *Rammed Earth Miniature Topographies*. 2019
Fig:73

Footnotes

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