IMMENSITY

An Exploration of Emphasis in Kapiti Quarry

By

Michael Cook

A 120-point thesis
submitted to the Victoria University of Wellington
in fulfilment of the requirements for the
degree of Master of Landscape Architecture

Victoria University of Wellington
School of Architecture

2017

I M M E N S I T Y

An Exploration of Emphasis in Kapiti Quarry

A B S T R A C T

Quarries are powerful. They are full of energy. They are vast. However, what happens when they are exhausted? What happens when the excavations cease and they begin to decay? This thesis is an investigation into how Kapiti Quarry's post-industrial landscape can be redeveloped. Quarries are often repurposed, remediated and redeveloped in three ways. They are filled with water to become a lake. They are built upon to create housing developments. They are filled up with sculpted vegetation to become a garden.

This thesis is an investigation into how Kapiti Quarry's powerful landscape can be characterised, emphasised and designed. The thesis contains a series of design experiments that examine how the landscape scale interacts with the human scale, how small interventions can create moments of emphasis, how framing and viewports highlight the landscape, and how large interventions interact with their surroundings.

These experiments come together to develop the post-industrial quarry while emphasising the quarry's key characteristic of IMMENSITY.

C O N T E N T S

INTRODUCTION	1
THE QUARRY	9
SCALE	31
EMPHASIS	51
FRAMING	77
STRUCTURES	99
FINAL.DESIGN	127
CRITICAL REFLECTION	155
REFERENCES	163
FIGURES	167

Figure 1.01.- Kapiti Quarry excavation

Figure 1.02.- Kapiti Quarry view of Kapiti Island

Figure 1.03.- Kapiti Quarry view from adjacent road

P r o j e c t . S t a t m e n t

This thesis is an investigation into how Kapiti Quarry's powerful landscape can be characterised, emphasised, and designed.

R e s e a r c h . A i m s

This thesis aims to:

- Identify the key characteristics of Kapiti Quarry
- Develop the quarry in its post-industrial phase
- Capture and emphasise the key characteristics in a design exploration

R e s e a r c h . O b j e c t i v e s

This thesis will achieve these aims by critically examining how:

- post-industrial spaces are developed and explore how they interact with their context
- design interventions can emphasise space and character
- program in post-industrial spaces can be created/ neglected
- design can be used to emphasise the quarries key characteristics

Figure 1.04.- The Brickpit, Quarry Lake in Sydney

Figure 1.05.- Stonefields housing development, Auckland

Figure 1.06.- Butchart Gardens, British Columbia, Canada

C H A P T E R . 1 I N T R O D U C T I O N

Quarries are the epitome of an industrial landscape. They are powerful. They are full of energy. They are vast. However, what happens when they are exhausted? What happens when the activity ceases and they begin to decay? Post-industrial quarries are often repurposed, remediated and redeveloped in three ways. They are filled with water to become a lake (figure 1.04.). They are developed with housing (figure 1.05.). They are converted into a garden (figure 1.06.).

This thesis is an investigation into how Kapiti Quarry's powerful landscape can be characterised, emphasised and designed. The aim of this document is to create a successful design experiment that highlights the key characteristic of the quarry in a way that is not typically done. To achieve a unique design solution this thesis will critically examine examples of post-industrial designs and explore how they interact with their context. It will examine space and character within Kapiti Quarry using design interventions. It will explore how the key characteristics can be identified, experienced, harnessed and designed.

This research project will explore size, scale, and experience.

Figure 1.07.- Kapiti Quarry from the nearby suburbs

Figure 1.08.- Kapiti Quarry entrants

Figure 1.09.- Kapiti Quarry aerial view 2014

C H A P T E R . 0 1

M e t h o d

This thesis is design led. Design experiments are the primary method of exploration. There are four chapters dedicated to experimentation. Each experiment investigates a different part of the quarry's key characteristic. The explorations critically examine precedents and literature and reflect on their relevance and significance to each design experiment. Each chapter concentrates on a different idea and influences the following chapter to create an iterative exploration. The final design embodies the findings of the experiments.

Figure 1.10.- Kapiti Quarry excavations from entrants

Figure 1.11.- Kapiti Quarry view from entrants road

Figure 1.12.- Kapiti Quarry active faces

C H A P T E R . 0 1

S c o p e

This research project is focused on the redevelopment of Kapiti Quarry, a post-industrial landscape. The investigation will explore how one might interact with the key characteristics identified in later chapters. This investigation will not explore other issues prevalent in post-industrial design, especially quarry spaces, such as contamination remediation and land stabilisation.

This thesis acknowledges that it is based in a functional quarry (as of 2017). The design decisions and subsequently the imagery presented in this investigation are informed by GIS data from 2011 (the most recent, publicly available data).

C H A P T E R . 0 1

T h e s i s . S t r u c t u r e

This research is structured in four parts. Firstly, the quarry is introduced along with the main ideas (the key characteristics). This part contains site analysis, context and important information. This part introduces the sublime and establishes its connection to Kapiti Quarry.

The second segment contains the four design experiments. These experiments are titled Scale, Emphasis, Framing, and Structures and deal with these concepts respectively. Each experiment creates a unique design from which discussion and conclusions are made.

The third segment is the final design. This chapter brings together the findings of each design experiment and demonstrates them in a design solution in Kapiti Quarry.

The fourth and final section of this research contains the critical reflection and conclusions. The critical reflection identifies the key findings from all previous chapters and discusses how they contribute to the discipline of landscape architecture.

C H A P T E R . 2 T H E . Q U A R R Y

The Quarry and its Physical Form

This investigation aims to capture the essence of the quarries character and test ways of designing for it. The region has three main quarries (figure 2.01.), two of which are river based and collect river stone. The third, however, is the Kapiti Quarry operated by Higgins Aggregates. This quarry is cut into the foothills of the Tararua ranges. (figure 2.02.)

Figure 2.01.- Location of Kapiti's three active quarries

Figure 2.02.- LEFT- Kapiti Quarry context map

Figure 2.03.- Paraparaumu east suburb boundary

Figure 2.04.- Kapiti Coast District boundary

C H A P T E R . 0 2

Kapiti Quarry is located just to the east of Paraparaumu's town centre (Coastlands). The quarry's proximity to a large population base, approximately 2200 people in the immediate suburb (figure 2.03.) (.idcommunity) and 50,000 people in the Kapiti Coast District (figure 2.04.) (.idcommunity), makes it a perfect site for development. The quarry could become a key feature of Paraparaumu rather than being an eyesore on the fringes of the township.

Figure 2.05.- Looking down on excavation process

Figure 2.06.- Layering of Greywacke rock

Figure 2.07.- Excavation terraces

C H A P T E R . 0 2

The quarry extracts aggregate (Greywacke rock with high amounts of clay) which results in few contamination issues. The few potential issues in the quarry, surrounding contamination, include oil spills from trucks/ excavation equipment and minor groundwater contamination through the loosening of sediments. These issues are quickly remediated enabling immediate development of the post-industrial quarry.

Figure 2.08.- Trucks lining up to collect rock

Figure 2.09.- Excavators on Top Plateau

Figure 2.10. - Elevation diagram of Kapiti Quarry plateaus

C H A P T E R . 0 2

The quarry is visually divided into four distinct spaces that are joined by one main access road. These spaces are plateaus (figure 2.10.), large flat spaces on which the large trucks can turn around when hauling the aggregate. These spaces also act as platforms and level ground from where the excavator operators can carve away at the greywacke. Each plateau has slightly different characteristics that will inform program and design decisions.

Figure 2.11.- Top Plateau

Figure 2.12.- Intersection Plateau

Figure 2.13.- Middle Plateau

Figure 2.14.- Bottom Plateau

C H A P T E R . 0 2

The Top Plateau (figure 2.11.) has several points of access, some of which lead over the ridge of the foot hill into the valleys and ranges beyond. This little feature makes it not only the end of the quarry journey but potentially the start of a walk deeper into the foothills. This plateau has remarkable views out toward Kapiti Island. One can see much of Paraparaumu, Kapiti Island and out into the Tasman Sea.

The Intersection space (figure 2.12.) is long and thin and has three different access ways. This space was a platform for digging up into the left-hand faces of the quarry and served as a loop where the trucks in the upper levels of the quarry could turn around. The paths that come from this space lead to the highest point in the quarry, a vegetated switchback, and back towards the entry on the main road.

The Middle plateau (figure 2.13.) has two shelves. The first is very flat and is adjacent to the road, an extension used as a passing space for traffic coming in both directions. This space has several interesting cuttings that might enable one to reach the upper plateaus in an unconventional way.

The Bottom space (figure 2.14.) is a basin. It is largely flat and is surrounded by very tall excavated cliffs. It is framed by the access ways making it isolated. It has one access way making it only accessible from near the entry turn. It provides an opportunity for a segregated area that is remarkably different from the other plateaus.

Figure 2.15.- 19th-century painting Amount the Sierra Nevada

The Quarry and The Sublime

The sublime, in 18th and 19th-century art, often depicts the landscape in its most extreme states.

The Sublime is a humbling reminder that humanity is not all-powerful. (Rabb)

The sublime landscape is powerful, showing how significant it is when compared to humans. Edmund Burke's *A Philosophical Enquiry into the Sublime and Beautiful* says that the sublime can be caused by immensity, infinity, magnitude, grandeur and elegance; also by deprivation, darkness, solitude, silence and vacuity. (Scott)

Burke's definition of the sublime focuses on such terms as darkness, obscurity, privation, vastness, magnificence, loudness and suddenness, and that our reaction is defined by a kind of pleasurable terror. During the eighteenth and nineteenth centuries, the sublime was associated in particular with the immensity or turbulence of Nature and human responses to it. Consequently, in Western art, 'sublime' landscapes and seascapes, especially those from the Romantic period, often represent towering mountain ranges, deep chasms, violent storms and seas, volcanic eruptions or avalanches which, if actually experienced, would be life threatening. (Riding)

Figure 2.16.- 19th-century painting An Avalanche in the Alps

C H A P T E R . 0 2

The sublime is often awe inspiring and leaves one with a sense of reverence. It can be harnessed by Landscape Architecture to give interventions significance. The quarry has many opportunities where architectural interventions can enhance moments of the sublime.

This thesis will focus on the sublime feeling of Immensity. The design experiments undertaken in this investigation will identify areas in the quarry that are immense and create interventions that emphasise and enhance the sensation of immensity.

What is the difference between immensity and other sublime feelings? Each description mentioned previously has a different effect on a person's experience. The key behind the sublime is the pleasurable terror. Darkness results in not being able to see. In turn, not being able to see enables imaginary dangers which encourage fear to manifest. Silence establishes suspense and anticipation. Solitude can become panic. Immensity in the landscape is representative of vastness and size resulting in the sensation of being made small and insignificant.

Figure 2.17.- An example of Immense space

Figure 2.18.- An example of Immense space

Figure 2.19.- An example of Immense space

The Quarry and Immensity

Immensity is defined as:

1. the state or quality of being immense; vastness; enormity
2. enormous expanse, distance, or volume: the immensity of space (British Dictionary)

The word's Latin origin, *immensitatem*, means immeasurableness which is fitting due to its immediate relation to the sublime.

This thesis aims to capture immensity through design. To further this investigation imagery and design experiments will be chosen and created to suit the authors perception of immensity. Therefore, it is important to identify what factors make the quarry feel immense.

The quarry is visible from the middle of Paraparaumu's mall area. It rises above the town into the foothills cutting its way through the pine plantations. It leaves a large scar in the profile of the hill. It changes the ridge line. From a distance, it is hard to grasp the scale of such a large cut. The sheer size, the immensity, of the quarry is best grasped right at the entrance. Looking at the quarry from the street hides the quarry's details. However, the perimeter of the quarry, the upper edges, are all easily seen from the road which gives a sense of the scale. Sensations

Figure 2.20. - Diagram showing plateaus and access road sections

C H A P T E R . 0 2

felt while standing at the bottom of a valley or the bottom of a mountain are similar, the difference being that this landscape is man-made.

The quarry has a journey. The access road can take an occupant from the street to the upper level of the quarry (figure 2.20.). In this journey the factors that create the experience of immensity change: vastness, enormity, volume.

The uphill progression of the journey encounters the four plateau spaces. Each plateau interacts with immensity differently. The bottom basin, encountered first, is a large volume. The volume stimulates feelings of isolation and insignificance. As this space is so low in the valley like quarry the upper sections look down over the basin making the quarry seem taller, larger and more terrifying. The second plateau gets lost within the quarry. In some spaces, this area provides refuge from the immense nature of the quarry. The plateau is on the uphill side of the access road restricting its view down. The view up is not as dramatic as the basin due to the space being past the large quarried faces. This space can, however, look out, out to Paraparaumu and Kapiti Island creating a sublime spectacle. This space does not have many opportunities for enhancing the immensity of the quarry but provides an outer focus, a regional focus, which

Figure 2.21.- Bottom Plateau, view out vs. view up

Figure 2.22.- Middle Plateau, view out vs. view up

C H A P T E R . O 2

could become an interesting design feature. The intersection plateau, number three, has a large face on one side and a large drop on the other. These extreme slopes create a narrow space that establishes a feeling of immensity. While this space is not the highest part of the quarry, it uses its proximity to the edge to create fear, fear of falling to the plateau below. The views down to the lower spaces show the immense volume of the quarry and provide an opportunity for intervention and emphasis. The final plateau stands in the highest part of the quarry. The edge of the space is a large cliff. When in this area, it is very difficult to straight down to the plateau below. Rather the vastness and enormity of the quarry is apparent again. Looking from the top down is like looking up into the space from the street. The quarry is shown in its entirety again and has a sense of immensity due to its massive volume.

The plateaus provide views of the quarry; some spaces have views out into Kapiti. These views show some of the immensity of the quarry. There are some spaces on the quarry journey that demonstrate properties of immensity that are not the plateaus. These spaces are mainly in the interim spaces between plateaus. They are sloped, sometimes steep, and provide few areas to stop (flat ground) but have some of the most interesting, dwarfing points of interest. The quarry hides much of the interior from the street. This shielding is because the entry is

Figure 2.23.- Intersection Plateau, view out vs. view up

Figure 2.24.- Top Plateau, view out vs. view up

C H A P T E R . O 2

relatively narrow. The narrow space merges directly to the remaining foothill making towering quarried faces that look like large gates. The entrance road begins on the southern edge face and curls around so that it travels up the base of the northern face. This northern face is an interesting point that demonstrates immensity. One can walk directly next to the base of this face which, when looking up, prevents one from seeing the top of the ridge. The face can seem impossibly tall giving it an immeasurability, an immensity that would be an opportunity for emphasis and intervention. Several other faces have a similar effect but are not tall enough to give the feeling of being dwarfed by the immense rocky landscape. The shorter faces do leave room for imaginative thought. The top edge of the faces are clearly visible when close to the face itself creating a sense of unknowing. What is over the lip? What is beyond the face? Not knowing allows an opportunity for the manifestation of Burke's sublime notion of pleasurable terror.

C H A P T E R . 0 3 - E X P E R I M E N T . 0 1

S C A L E

This chapter examines immensity in other spaces. The experiment uses ink and abstract representation to identify existing immense space and questions what makes these spaces seem immeasurable. This segment also considers land art and how it creates space without human occupation in mind. Lastly, this chapter will discuss the importance of scale and how scale can affect the perception of immensity.

C H A P T E R . 0 3 - E X P E R I M E N T . 0 1

This experiment was titled The Immensity Study (figure 3.01.). It is a collection of spaces from various precedents that have a sense of immensity. The set of drawings is made up of three segments. The first segment displays drawings that are abstractions of space. The solids and voids suggest rooms and alleys. The drawings indicate simple form. The first image in this segment represents a space that opens to the sky. This opening might be a skylight, a crack in a cave or a partition inside a building. The sloping walls create a space that is more difficult to reach when standing on the flat making the space seem bigger and more immense. The second image captures a sense of being dwarfed by two vertical faces. Walking down an alley between two small buildings creates a similar experience. The third space is an altered form of the first. This space has an additional wall that closes the large aperture. This addition removes viewports and introduces a sense of unknowing capturing a sublime moment, and by association, immensity. The last represents a space that is indeterminate in length. The curvature of the space results in one never seeing the end generating a sense of unknowing.

The second segment uses photography and ink to emphasise the immensity of spaces in real-life. This segment contains eight heavily inked images. The ink covers detail that does not influence the immense nature of the imagery. Removing this extra detail enables the imagery to emphasise what causes the feeling of immensity in each space. This series of images begins with the most exposed space and finishes with a space that is completely enclosed. A range

C H A P T E R . 0 3 - E X P E R I M E N T . 0 1

of different spatial arrangements gives breath to the idea that immensity is not confined to a single typology. The first highly exposed image shows a platform in the open air. It is solid in the void. Vegetation or construction do not bind the space. Its unrestricted nature characterises the space's immensity. The space feels as though it could be a single point in a vast open space. The second image shows a building in a crevasse or gully. The landscape dwarfs the building. The landscape surrounds it and encloses the building on its sides. This space is like the second abstract space where the tall sides create a sense of being dwarfed. The third image does not successfully convey the concept of immense space. The space is covered by a shelter and looks out into a field. The vertical supports could emphasise height to show the progression of increased size through forced perspective. The fourth image requires much imagination. Suspense has become a trend for the sublime and for immensity. This space is like a journey to an unknown threshold. The result is an unclear space with an unknown view like the last abstract space. This space could create the sublime moment of fear and awe. The fifth space does not show immensity at all. The darkness and indeterminate size of the stones create a moment of emphasis, but this image did not engage with immensity. The sixth space is fully enclosed. The indoor space gets its immense character from its contrast. The battle between light and dark makes the space's depth vague and immeasurable. The seventh space captures the essence of light and dark. The light source in this space comes from beyond the walls bringing into question where it is and what is there. The last space is a tunnel. Inking out key

C H A P T E R . 0 3 - E X P E R I M E N T . 0 1

features such as stairs and rails removes references that can explain how tall and how long it is. These drawings suggest that immeasurability might be one of the origins of immensity. This space also has the same quality as the last abstract image as it is unknown what is beyond the aperture until one passes through it.

The last segment is another abstraction of space. These drawings are based on the four most immense feeling spaces in the second segment whereas, the abstractions in the first segment were fictional. Abstracting the form of these spaces enabled the removal of details that might distract from the photographs. Showing the basic form of the spaces should emphasise the spaces immense characteristics. The removal of reference to size and depth has made these drawings immeasurable and indeterminate, the key qualities that make immensity possible. However, there is one factor that can change whether a space is immense or whether it is small and insignificant.

Scale is the defining quality absent from the imagery. Without scale, there is no reference to height, width, or depth. Without scale, these spaces could be vast, or they could be nothing. There is not better reference to scale than the human body (figure 3.02.). In fact, scale is the relation of space to the body. These abstract spaces can be made concrete with the insertion of a person (figure 3.03.).

This ambiguity of scale is also present in some Land Art.

Figure 3.03.- LEFT- Testing human scale within abstract drawings

Figure 3.04.- Next page LEFT- Testing human scale within abstract drawings

Figure 3.05.- Next Page RIGHT- Testing human scale within abstract drawings

Figure 3.06.- Asphalt Rundown

Figure 3.07.- Asphalt Rundown concept sketch

Figure 3.08.- Asphalt Rundown being poured

C H A P T E R . 0 3 - E X P E R I M E N T . 0 1

Land Art was prevalent in the 1960's and the 1970's and focused on the creation of works using the landscape as a canvas/ material. It was based on movements such as minimal art, conceptual art, cubism, and minimalism. The movement began with the rejection of traditional gallery and museum spaces. By creating their works outside of these institutions, Land artists rebuffed the commodity status these venues conferred on art, challenging traditional definitions of art as something to be bought and sold for profit (The Art Story). The movement created many ephemeral pieces. Once constructed, many works were left to erode and crumble returning to the landscape. Robert Smithson and Michael Heizer were two big names in the movement that created works that were so colossal in size that reference of scale using the human body is almost irrelevant.

Robert Smithson, considered the figurehead of the movement, has many works around the world.

Smithson created Asphalt Rundown - the first monumental Earthwork that he made outside, to be seen outside - in a quarry on the outskirts of Rome. He loaded a dump truck with hot asphalt, and then had the truck discharge the contents down the sides of a quarry, so that the mixture cooled and hardened as it fell, ultimately seeming to fuse with the sides of the quarry. (The Art Story)

The impact of this work is best experienced at a distance. As this work is not about the manipulation of space, it is difficult to determine how it emphasises immensity. The most powerful images of this work are of its construction (figure 3.08.). Imagery of the asphalt pouring out of a truck onto the slope gives a sense of scale and demonstrates how large this work is. The work is not of the human scale. The human body is a poor reference.

Figure 3.09.- Double Negative inside the intervention

Figure 3.10.- Double Negative aerial view

Figure 3.11.- Double Negative with human scale

C H A P T E R . 0 3 - E X P E R I M E N T . 0 1

Michael Heizer's Double Negative is the creation of space so vast that without human reference the space is unfathomable (figure 3.09.).

The enormous sense of scale and infinite views echoes the 19th-century Romantic concept of the sublime, where viewers' contemplation of their relationship to the land may result in feelings of transcendence. Ironically, however, the scale of the work is so expansive, that the enormity of the gesture can only be fully viewed from the air. (The Art Story)

This work is of three scales. It is born out of the landscape scale (figure 3.10.). The work engages with the human scale but is so immense that it falls short. The sublime experience that The Art Story mentions suggests ties to immensity. Burke suggests that immensity and infinity are of similar origins. In conjunction with this idea, it is, in fact, the interaction of the work with a person that makes them similar. A person will feel small and insignificant when faced with immensity and infinity. Trying to grasp the size of this work from inside is impossible. Immensity is created, not just emphasised, by this work. Its construction engages with a scale that is far larger than the human scale, the reference scale.

Figure 3.12.- Altering the scale of Double Negative with people

Figure 3.13.- Altering the scale of Double Negative with people

Figure 3.15.- Diagram showing Kapiti Quarry (Top left) compared to eight other quarries in New Zealand

Figure 3.16.- Chapter reflection diagram

C H A P T E R . 0 3 - E X P E R I M E N T . 0 1

This experiment examines immense space through abstract drawing and manipulation of photographs with mixed media. It found that much of the imagery felt immense due to a lack of reference and scale. Without scale, these spaces could be large and immense or small and underwhelming. Land Art characterises different types of scale. It engages with the landscape and creates works within it, from it. Double negative does not engage with the human scale but disassembles the landscape scale in a way that encourages contemplation.

This experiment suggests several new ideas. Scale is of the utmost importance when creating space for people. Without reference to the human body, one cannot design space for people, especially not space that feels immense. Immensity engages with two scales, the landscape scale and the human scale. The sublime refers to the landscape scale overwhelming the human scale. This connection creates an opportunity for design experiment number two.

C H A P T E R . 0 4 - E X P E R I M E N T . 0 2

E M P H A S I S

This chapter explores the result of designing by not designing. Marti Franch's (EMF) Girona Landscapes use the manipulation of existing vegetation and minor intervention to create what Marti refers to as confetti moments. A journal article, Intentions of the Unintentional by Norbert Kühn, explores the benefits of spontaneous vegetation in urban spaces. This chapter will discuss the possibilities of minor intervention and spontaneous vegetation and how combined, they might emphasise the quarry's immensity. The design experiment tests these ideas and will contribute to the discussion.

Figure 4.01.- Girona Landscapes project mowing strips

Figure 4.02.- Created viewports

Figure 4.03.- Multiple mowing strip pathways

C H A P T E R . 0 4 - E X P E R I M E N T . 0 2

Marti Franch's Girona Landscapes project is a restoration of green infrastructure. It connects the city to the landscape and highlights the fringes that were previously stigmatised and used as an informal dumping ground of house waste and garbage. In an interview with Tim Waterman, Marti said that his goal is to reveal the Girona landscape's beauty. He wants to open strategic view and provide access to the rivers. He wants to install paths and resting places to encourage the populace to value the surroundings more. To achieve his goals, Marti has created a master plan of sorts. The plan indicates areas for design and emphasises linkages to the cities interesting features. In conjunction with the city council and the city's maintenance brigades, Marti's vision was only constrained by cost.

The project created spaces using subtraction. The design created pathways by moving strips in prairies and overgrown areas (figure 4.01.). It created views by cutting specific branches of trees (figure 4.02.). It placed benches in locations that might provide shade or rest. All the components came together to provide a resting place that had a view of, for example, the cities cathedral. The project is continually evolving. New pathways emerge as old paths grow out.

This project demonstrates the power of appearing to design nothing. A carefully designed space does not need to cost a lot, in fact, it does not need to be a lot. To the public, the Girona

Figure 4.04.- An annual diagram of maintenance including mowing and planting, growth of vegetation, sunlight hours, and other variables. Festivals, when maintenance brigades are busy, are shown as red sunspots (Waterman)

C H A P T E R . 0 4 - E X P E R I M E N T . 0 2

landscapes may only appear as overzealous maintenance when every cut branch and every mown strip of grass has been carefully considered to achieve a reaction or give and experience. Marti designs to create what he calls a 'Confetti Moment', a moment where one is inspired can celebrate, and is entranced by the experience. The confetti moment is almost a reference to the sublime. This investigation is essentially creating confetti moments that show the quarry's immensity.

Marti's project provides an example for other cities and towns with unwanted landscapes on their fringes. Kapiti Quarry is one such place. The space should be carefully considered, choreographed even, to show its strategic views and emphasise the immense qualities that this thesis is trying to capture.

C H A P T E R . 0 4 - E X P E R I M E N T . 0 2

Intentions of the Unintentional, by Norbert Kühn, examines the benefits of spontaneous vegetation, plants that grow out of chance, in urban environments. He proposes that naturally occurring vegetation is environmentally friendly and is very cost effective. He argues that spontaneous vegetation is considered ugly and that it has an authentic aesthetic that should be considered beautiful. “It [spontaneous vegetation] is generally considered to be ‘weeds’ and is seen by many people as the indicator of a site that has been left to fall into decay or is poorly cared for.” (Kühn)

These ideas revolve around the urban environment, an environment that does not offer many spaces for things to grow. How can these ideas be translated into Kapiti Quarry? Do these ideas have any relevance to a rural/ industrial environment? A common idea for the redevelopment of large landscapes is to return it to nature (figure 4.05.). Letting trees grow and shrubs spread out gives the site a sense of nature, a natural environment. Trees that are native to that environment can flourish, and ecosystems can develop.

What vegetation is endemic to the Kapiti Quarry and its surrounding area?

Figure 4.06.- Kapiti Quarry is located within the Nikau belt

150m

C H A P T E R . 0 4 - E X P E R I M E N T . 0 2

Kapiti Quarry lies within Kapiti's "Nikau Belt" (figure 4.06.). This vegetation zone has a dense fresh green appearance. This zone is the bridge between the foothills and the dune land/lowlands.

Forestry blocks currently surround the quarry. The blocks contain *Pinus radiata*, New Zealand's most accessible and widely used building material. The vegetation inside the quarry is constantly changing. Faces become vegetated naturally, and new excavations must remove large areas of temporarily established plants. The plants that grown in these turbulent spaces are fast growing hardy plants like gorse. These plants do not naturally occur in the Nikau belt, they were introduced and have quickly become invasive and disruptive to the successional order. The Growing Native Plants in Kapiti guide contains lists of species that would occur in the Kapiti Region.

The guide separates the vegetation into five categories: big trees, small trees, small plants and ground cover, climbers, and ferns. (Kapiti Coast Distric Council)

The big trees could become markers or icons in the designed landscape as most of the other vegetation types are dense and low-lying. Trees like *Dysoxylum spectabile* (Kohekohe) can create spectacular canopied areas that are more fitting in the basin type areas of the quarry, where the *Cordyline banksii* (Cabbage tree) and the *Knightia excelsa* (Rewarewa) stand out as tall iconic symbols.

Cordyline australis

Dysoxylum spectabile

Knightia excelsa

Leptospermum scoparium

Macropiper excelsum

Melicytus ramiflorus

Pittosporum eugenioides

Rhopalostylis sapida

Coprosma robusta

Dianella nigra

Libertia ixioides

Dicksonia squarrosa

C H A P T E R . 0 4 - E X P E R I M E N T . 0 2

The small trees provide the body of the vegetation in the quarry. Natural succession will enable these species to fill in the gaps where the quarrying process has torn away at the hillside. Smaller trees like the *Macropiper excelsum* (Kawakawa) and *Rhopalostylis sapida* (Nikau) could aid in pathfinding as their iconic character enables them to stand out from the other denser bush. The small dense trees, *Coprosma robusta* (Karamu), *Leptospermum scoparium* (Manuka), *Melicytus ramiflorus* (Mahoe), and *Pittosporum eugenioides* (Lemonwood) would be ideal for creating visual barriers and blocking one from moving into the more treacherous areas of the quarry.

The climbers require an established canopy to grow which may exclude their development in a young area like the quarry.

The small plants make up the ground cover in a successional scheme. Plants like the *Dianella nigra* (Turutu) and *Libertia ixiodes* (Mikoikoi) the can be used as edge planting and can indicate the trail through the quarry.

The ferns are perfect plants for areas that are more sheltered like the basin. The *Dicksonia squarrosa* (Wheki) has an iconic look that indicates that one is in an established area.

In a design experiment based on spontaneous vegetation and maintenance, a planting plan will not be necessary. Rather, it will be important to understand the collection of plants that may occur around the areas of minor intervention. A planting profile and sections demonstrate the layers of the vegetation and how they relate to the human scale will show design opportunity and help to create an effective intervention.

Figure 4.07.- LEFT- Images of plants mentioned in the body text

C H A P T E R . 0 4 - E X P E R I M E N T . 0 2

This experiment tests three spaces in the quarry. The basin, or the bottom plateau, the intersection plateau and the highest point in the quarry.

The basin space tests the effect of minor interventions such as benches and structures in a large open space that is immense. The space is immense because of the surrounding vertical faces. The basin is enclosed and dwarfed by the upper quarry. Being in this space makes one feel small, isolated and insignificant. Without a point to reference or a program to interact with being in the basin creates a feeling of being unwelcome. Standing in the middle of an abandoned car-parking building or when standing in the middle of a mall waiting create the same feelings. The sense that one is not supposed to be in the space makes one unsettled and nervous. This small intervention can change that sensation just through the addition of a bench (figure 4.08.). Adding a human scale object, one with a distinct purpose, creates a point of attraction, a point that one will automatically move towards because the sense of nervous unwelcome can be relieved. Does the power of this space come from the dread of feeling out of place? Will the sensation of immensity be diminished by the placement of an intervention?

Figure 4.09. - Panorama of quarry from basin showing the surrounding quarry faces

bottom plateau

east

southern quarry face

south

quarry entry

C H A P T E R . 0 4 - E X P E R I M E N T . 0 2

The second space that this experiment explores is the intersection plateau. This space is already a crossroads that can define the path one takes to the top. In the Girona Landscapes project, Marti's team uses mowing strips through a grassy field to create temporary pathways. This method of subtraction could be used to define how one reaches the top of the quarry. The narrow shelf has a tall drop on the downhill side and a cliff on the uphill side creating a sense of immensity. Assuming this space has been spontaneously vegetated and has enough vegetation cover to create distinct pathways maintenance could manipulate the experience of the intersection. The removal of certain trees and branches makes distinct pathways across the plateau (figure 4.10.). Some paths venture close to the edge of the drop and some tuck in close to the foot of the cliff. Each path provides a different experience and interacts with a different portion of what makes the space feel immense. The two key paths, when walking uphill, lead to the top of the quarry in two different ways. These routes can be closed off over time with vegetation growth dictating the experience of an occupant. Maintaining different paths at different times can force one to take different routes. Simply clearing away the tall grass in one path can manipulate one to take the cleared path and avoid the obstructed path.

Figure 4.10.- LEFT- Maintaining mowing strips on Intersection Plateau creates different paths

Figure 4.11.- basin profile, canopy + enclosing vegetation

Figure 4.12.- pathway profile, enclosed but not encased

Figure 4.13.- intersection profiles, changing paths

Figure 4.14.- initial paths cut into vegetation

Figure 4.15.- paths become more prominent or over grown depending on use

Figure 4.16.- new paths are made due to consistent use

C H A P T E R . 0 4 - E X P E R I M E N T . 0 2

The last space is the highest point in the quarry. This space has unparalleled views down through the quarry space and out into Paraparaumu and beyond. Unfortunately, the embankments left over from the quarrying process obstruct the view. This intervention uses subtraction to create space. Rather than subtracting from the vegetation in the space, this intervention will excavate a small part of the embankment (figure 4.17.). Removing a narrow portion, approximately 1.5 metres, of the embankment creates a noticeable rift that catches the eye of anyone walking past. The cutting enables one to move to the edge of the pathway and experience the immensity of the quarry. Cutting is a method of creating strategic views and creates the main confetti moment making the journey from the entrants of the quarry to the highest point worth it.

Figure 4.17.- LEFT- Cutting the embankment opens up viewports

Figure 4.18.- Approach to the intervention

Figure 4.19.- At the intervention

Figure 4.20.- Leaving the intervention

Figure 4.21.- Aerial view of intervention

Figure 4.23.- Chapter reflection diagram

C H A P T E R . 0 4 - E X P E R I M E N T . 0 2

This chapter explores Marti Franch's Girona Landscapes project, the possibilities of spontaneous vegetation and how they can be emulated in Kapiti Quarry to emphasise Immensity. The three design ideas that are explored in this design experiment are the use of small, minor interventions, the use of maintenance to create pathways in unkempt spaces, and the use of subtraction to open strategic views. These three ideas all aim to make confetti moments, moments of awe, surprise, and wonder.

Small interventions offer a human scale reference inside the landscape scale. The safety that this intervention allows may detract from the overall sublime nature of the quarry. However, removal of feelings of fear and nervousness do not take away from the impact of immensity in the quarry.

The maintained tracks through spontaneous vegetation prove to be the least successful method of emphasising immensity. The manipulation of pathways takes one near the edge to experience the quarry's immensity, but there are many spaces along the newly created pathways that do not share the same experience. Does the quarry need to feel immense at all time? Can emerging into an immense space create a greater impact?

The last intervention, the strategic views, is the most effective method of displaying the immense character of the quarry. This method does not create emphasis but reveals the character in a moment, a confetti moment. This creation of this moment relies on the suddenness of the viewpoints reveal. Creating a journey that has many opposing characteristics, small to big, open to closed, can make the impact of revealing the view more substantial. Being in an enclosed space before becoming exposed emphasises that threshold. Being in a small confined space before looking through a strategic viewport that shows immensity can emphasise the experience.

C H A P T E R . 0 5 - E X P E R I M E N T . 0 3

F R A M I N G

In previous chapters, scale is the difference between immensity and insignificance. This chapter explores a design based on program. Art Galleries, more specifically outdoor art galleries, provide a series of design rules that facilitate a way of developing space. This experiment will explore how program can emphasise immensity in the quarry. This chapter will also examine how the Tudela Culip Restoration Project uses methods of framing to emphasise parts of Cap De Creus's cultural landscape and how Sun Tunnels, a Land Art piece, choreographs its relationship with the landscape. Lastly, this chapter will discuss how program alters the experience of immensity in the quarry.

North arrow pointing up

POV for Gate 01:
HINT OF FINAL
EXHIBITION SPACE

Section 04

Stairs

Gate to enclosed space 2.0?

G2

Section 03

Intermediate Gate

Gate 01: Change from
Entry to next scale change

Section 02

Section 01

Entry Tunnel

Space for the final
exhibition space

150m

C H A P T E R . 0 5 - E X P E R I M E N T . 0 3

In an art gallery, the design must have several key factors. View ports and signage hint at the content exhibited in each space and exhibition spaces display art. This design experiments with the creation of viewports and how apertures can create a focus on areas in the upper quarry. The plateau in the quarry can become exhibition spaces, places to hold artworks of varying size and scale. The main access path that runs from the entry to the top plateau can be divided up into four sections. The first section is between the entry and the beginning of the first plateau. The second section runs from the bottom plateau to the middle plateau. The third section is between the middle plateau and the intersection plateau. The final section runs from the intersection to the top plateau via the highest point in the quarry.

The challenge with creating an art gallery in Kapiti Quarry is creating viewports that indicate, from the road, that there is much more in the quarry to see (figure 5.01.). The entry way (access road section one) has a line of sight that looks toward the middle plateau (Exhibition space two) while providing direct access to the bottom plateau (Exhibition space one). Access road section two has a line of sight that looks to the highest point the quarry and suggests that there is something in the top plateau (Exhibition space four) while providing access to the middle plateau. Access road section three has a line of sight that is abruptly interrupted by the large cliffs on the hillside of the intersection plateau. The last section does not need to suggest that there is anything else in the quarry as it is the destination.

Figure 5.01.- LEFT- Plan diagram of Art Gallery viewport layout

C H A P T E R . 0 5 - E X P E R I M E N T . 0 3

The first design area is section one. This space is the welcome to the quarry. It needs to invite one in and suggest that there is more to the quarry than rock and excavation. This iteration shows the entry as a tunnel to create a dramatic threshold that will remove one from the street environment and emphasise the change into the quarry space (figure 5.02.). This threshold also creates a focused viewport that slowly gets broader and broader until one is inside the quarry and the directed viewport is left behind. As the occupant progresses past the entry tunnel, the path suddenly takes a left-hand turn and changes the focus from the view, toward the path.

Figure 5.02.- LEFT- Entrants tunnel viewport

Figure 5.03.- Next page LEFT- Plan showing intervention and focus of viewport

Figure 5.04.- Next page RIGHT- Section Aa- showing intervention and focus of viewport

vegetation to block close up views into quarry

line of vege to disrupt view into quarry??

N

50m

no physical connection - only visual
find your own way

cutting in vege highlights target?

look toward 2nd exhibition space

HINT NEXT LEVEL.

3-4m

cutting in vege highlights target?

enclosed entry begins journey to top?

Section Aa
50m

C H A P T E R . 0 5 - E X P E R I M E N T . 0 3

The second design area is section two. This connection between plateaus is steep, long, and sits at the base of the northern large quarried face. The length of this space automatically points the view up toward the quarry. The downhill side of the path falls away into the bottom plateau leaving unobstructed views of the whole quarry. The design intervention combines structure and vegetation to create a visual barrier. The tall gate structure obscures the view of the upper quarry in line with the path but leaves a thin sliver open that looks up toward the highest point in the quarry (figure 5.05.). Vegetation is used on the downhill side of the gate to create a visual screen that hides the views into the quarry. This screen channels the view towards the gate intervention and removes distraction making the threshold of the gate dramatic. Passing through the gate reveals the expanse of the quarry (figure 5.07.), again creating a moment of surprise, a confetti moment. The gate is highly vegetated on the downhill side and not vegetated at all on the uphill side creating an extreme contrast in special qualities.

Figure 5.05.- LEFT- Gate viewport into upper quarry

Figure 5.06.- Next page LEFT- Plan showing intervention and focus of viewport

Figure 5.07.- Next page RIGHT- Section Bb- showing intervention and focus of viewport

final exhibition space

gap in the vegetation

pass through?

single access

150m

DAMP

22 62

Section Bb
50m

C H A P T E R . 0 5 - E X P E R I M E N T . 0 3

The third design area is section three. This design intervention adds a third option to reach the top plateau and reaffirms the title of intersection plateau. As one approaches the flat plateau space, a gateway against the cliff grabs one's focus (figure 5.08.). Vegetation is used to mitigate distraction. The intervention comes after the intersection making it one of three possible choices in the journey from bottom to top. Through the cliff gate, one reaches a slim tunnel with stairs that ascend to the top plateau. This intervention, like the second, uses threshold to create a confetti moment. The moment is built up by the sequence of special qualities. The space starts as a partially enclosed pathway. It then transitions into the intersection plateau, which is an open exhibition space. Moving from the plateau one passes through the gate transitioning from exposure to extreme enclosure. Emerging from the tunnel at the top one moves from extreme enclosure to extreme exposure, and reveals the whole quarry (figure 5.10.).

Each intervention uses threshold to emphasise the quarry and create viewports that show off parts of the quarry. The spaces are not necessarily an art gallery, yet they could easily become one with consideration of the exhibition spaces. However, that is unimportant. What this design experiment showed was that each intervention framed the landscape in some way. It attempted to take the immensity of the landscape scale and frame it in a human scale encouraging interaction.

Figure 5.08.- LEFT- Entrants to final stairs

Figure 5.09.- Next page LEFT- Plan showing intervention and focus of viewport

Figure 5.10.- Next page RIGHT- Section showing intervention and focus of viewport

lead to final exhibition space

upper lookout

prelude 3rd exhibition space

cross roads

enclosure to exposure to super enclosed again

150m

Section Cc
150m

Figure 5.11.- Weathered steel cubes

Figure 5.12.- Hollow cubes indicate a view

Figure 5.13.- View through right-hand cube

C H A P T E R . 0 5 - E X P E R I M E N T . 0 3

Framing is a useful tool in design to emphasise, direct focus, and to show one where to go and what to do. The Tudela Culip Restoration Project has an example of an intervention that frames the landscape. Located on Cap De Creus, a powerful, windswept area of Catalonia adjacent to the Mediterranean the project site previously contained a Club Med resort. The resort occupied the site from 1961 to 2003 when it ceased operation. Between then and 2008 the buildings and infrastructure were abandoned and became dilapidated in the cape's extreme climate. EMF implemented the deconstruction of the buildings and constructed a series of walkways and interventions on the site, completing construction in 2010.

The framing intervention consists of two large weathered steel cubes (figure 5.11.). These cubes, references to past human occupation, are set on top of a hill and look out into the landscape to direct one's attention to the spectacular landscape. The interventions capture moments in the landscape and bring them into the human scale (figure 5.13.).

Figure 5.14.- Four Sun Tunnels

Figure 5.15.- Sun Tunnels capturing sun rise/ sun set

Figure 5.16.- Constellations visible on inside of tunnels

C H A P T E R . 0 5 - E X P E R I M E N T . 0 3

The Sun Tunnels is a piece of Land Art created by Nancy Holt in the Great Basin Desert, Utah. Four large concrete cylinders, placed in a linear layout (figure 5.14.), create viewports of the surrounding features. The viewports align with the sunrise and sunset of the summer and winter solstices (figure 5.15.). The tunnels also have smaller holes in them that, when light passes through, show four constellations (figure 5.16.). When it is not a solstice, sunrise, or sunset the tunnels capture amazing views of the surrounding mountains. The viewports show the magnificence of the landscape scale. Nancy Holt says that the tunnels “bring the vast space of the desert back to human scale” (UMFA). This installation does not remove the sensation of immensity from the desert but enhances it and emphasises it by creating a frame, a reference of the human scale within it.

Figure 5.17.- Chapter reflection diagram

C H A P T E R . 0 5 - E X P E R I M E N T . 0 3

This chapter began as an exploration of how program could influence the perception of immensity and evolved to examine the effect of framing the landscape and the landscape scale.

The design experiment showed how three areas in the quarry create three very different viewports and subsequently show three different styles of framing the landscape. The first intervention framed the quarry through the creation of a tunnel. The tunnel created an experience that completely removed the occupant from their surroundings. It connects one to the quarry visually and creates a threshold between enclosure and exposure. The second intervention uses a gate structure to frame a vertical strip of the quarry. The gate is not closed over the top making the top edge of the frame the horizon. This method of creating a frame emphasises the height of the quarry and the faces that make the quarry immense. The last intervention uses sequence to create a moment of emphasis. It frames a small opening in the cliff face. This frame is the least successful regarding creating emphasis on its own. The frame does not show the landscape scale; it shows the human scale intervention which is the opposite of the first two interventions. The success of the Sun Tunnels installation and the Tudela Culip viewing cubes comes from their ability to capture the landscape scale. The views that are highlighted are referenced by the human scale of the interventions. The interaction between the two scales enables one to experience the immense landscape scale in an instant.

Framing is a tool that can bring portions of the quarry into the human scale. It emphasises the relationship between human scale and the landscape scale by taking snippets, viewports, of the later. Breaking down the expanse of the landscape enables it to be understood and experienced more effectively.

C H A P T E R . 0 6 - E X P E R I M E N T . 0 4

S T R U C T U R E S

This chapter explores the use of design interventions to bring emphasis to points of interest in the quarry. These points of interest are all selected due to their relationship with immensity. Some include the tallest quarried face, the highest point in the quarry and the plateaux that look out toward Kapiti Island. This exploration will look at the Tudela Culip Restoration project and examine how the space uses many different interventions and different programs to highlight the Catalan landscape. This exploration will also look at the Former BP Site Park in Sydney and show how it uses intervention to create awe-inspiring moments. Lastly, this section will discuss the effect of the intervention's materiality and propose design decisions for the final design.

N

150m

C H A P T E R . 0 6 - E X P E R I M E N T . 0 4

This design experiment uses seven interventions to create viewports, lookouts, paths and markers that all emphasise place and form in the quarry (figure 6.01.). Each intervention fits along the access road at points that are of interest and have a relationship to the immensity of the quarry. The structures in this design experiment have a clichéd post-industrial feel due to the use of weathered materials. Each space is constructed using concrete and weathered steel to give an aged and exposed character that suits the quarry's colour palette. This experiment examines how each intervention interacts with the quarry's immense feeling and tests the effect that the interventions have as a holistic design and as individual creations.

Figure 6.01.- LEFT- Plan showing location of the seven interventions

i4

i2

cutting to reveal quarry
through gate

UP.

steps create
threshold into
quarry

two flats

cutting

LARGE BUILDING
STAY OR CO?

man made hill

threshold
big gate

to street

C H A P T E R . 0 6 - E X P E R I M E N T . 0 4

The entry to the quarry symbolises the transition from the suburbs of Paraparaumu into Kapiti's most powerful landscape (figure 6.02.). The design for this space involves creating a smaller artificial hill. The hill creates a visual barrier from the road, hiding the quarry and enhancing the effect of the frame/ gate. The design has two spaces. The first is a cutting in the artificial hill. This space is a threshold. The small change from steep rocky walking track to concrete stairs creates an edge and a change in materiality, and therefore, in movement. As an occupant moves through the threshold, they pass over two sets of stairs, interrupted by a four-metre-deep flat area, creating an opportunity to stop or to change speeds and visual focus. The second segment of the entry space is a cutting in the gate's line of site into the upper quarry. The purpose of this cutting is to remove the small bank that blocks the viewport through the gate. The cutting also acts as a focal point that directs the occupant's view through the gate and up into the quarry. This gate is a frame that captures the landscape scale of the quarry and brings it briefly into the human scale. The shift in scales emphasises the sense of immensity and creates a visual queue for what will be experienced further into the quarry.

UP.

DENSE
VEGE TO
CREATE
CHANNEL

INTO ISOLATION.

gate + marker
for journey

2.2m RISE.

spot in middle of
basin isolation

unvegetated zone to
enhance isolation

channel of vegetation to
keep people on track

TO ENTRY.

cutting enables low altitude look out

C H A P T E R . 0 6 - E X P E R I M E N T . 0 4

This second intervention is also made up of two segments (figure 6.03.). The first area is set on the path and acts as a marker for the second segment inside the bottom plateau. The strategic views from the Girona Landscapes project in Chapter 04 inspire the design intervention. The small cutting in the bank creates an open, unobstructed view out from the platform. The weathered steel panels indicate the cutting on the edge of the path platform. The platform indicates that there is a point of interest and an intervention at this point on the journey. This platform intervention creates a crossroads where one can follow the main path or can branch off into the bottom plateau and experience the daunting height of the quarry. In the basin, a small space has been set aside to create a sanctuary-like moment where the occupant can be completely isolated and can appreciate the views and the power of the quarry. This space is made isolated through vegetation. The curved nature of the path enables line of site to be obstructed creating a sense of unknowing as mentioned in the abstract immensity study in chapter 03.

Figure 6.03.- LEFT- Intervention 02 the basin creates isolation

view from inside show
high point of quarry face

outer window
shows basin

step in and out threshold

FROM
ENTRY.

C H A P T E R . 0 6 - E X P E R I M E N T . 0 4

The third intervention on the journey is a structure designed to highlight the largest quarried face in the quarry (figure 6.04.). The structure is placed directly under the highest point to show the whole face. The structure's roof is the key to creating the viewport. The roof is made up of three rows of slanted panels. The two outer rows have only a slight slope, but the inner row has an angle that matches the slope of the quarry face. These opening create the viewports. The viewports create a frame that shows the quarried face. This frame fails to create the visual shift from landscape scale to human scale as one must look up through the roof to see the face. The height of the space is still apparent and dwarfs the structure. This space shows the immensity but does not emphasise it.

i5

sanctuary

plateau stage

dense vegetation
to isolate

MAIN PATH.

markers + gates

sunk into ground to
enhance isolation

From Entry

C H A P T E R . 0 6 - E X P E R I M E N T . 0 4

The fourth design uses the crossroad indicating platforms, found in intervention two, to take the occupant on a brief loop track up onto the plateau's 'stage area' (figure 6.05.). The vegetation in the space creates a sense of isolation like the basin. However, without the steep sides that the basin has, and the all surrounding quarry faces, the space has a less dramatic experience.

Figure 6.05.- LEFT- Intervention 04 on the Middle Plateau creates isolation

into bush + i7

3 structures = 3 paths?

panels break up
vegetation

into flat garden space

vegetation filled gaps

i4

i7

path from bottom

up to intervention 06 + 07

C H A P T E R . 0 6 - E X P E R I M E N T . 0 4

The fifth intervention is made of three plinths with roofs to create shelter (figure 6.06.). The spaces between the structures contain vegetation making them seem like islands on the plateau. The space is a stopping point in the journey where one can choose which path to take to progress. This large flat area has the potential for many programs including a garden, stage, and display space.

KAPITI ISLAND

i1

i2

i3

i4

i5

looks out over whole quarry and more

cutting through path edge

sheets for visual effect

HILLSIDE

C H A P T E R . 0 6 - E X P E R I M E N T . 0 4

The highest part of the quarry is not the final plateau but is in the crook of the last path to the plateau. The sixth intervention provides a view of the whole quarry, Paraparaumu, and out to Kapiti Island (figure 6.07.). To move the occupant's focus from the ascending path to the view (almost 90-degree change in the line of sight) the structure acts as a resting point and a large marker. Along with the structure, there is a cutting in the bank like the strategic views in chapter 04. The subtle cutting in the bank might be enough to indicate that there is something to see but the view is so spectacular that the design can be large and substantial.

Figure 6.07.- LEFT- Intervention 06 clearly marks the highest point in the quarry an its views

lookout to
quarry and
kapiti island

vegetation

drop

3m

Intervention 06

from bottom

INTERVENTION ACTS AS STAGE LOOKOUT.

ACCESS TO INTERVENTION 05.

[BUSH WALK/SECONDARY PATH
FUTURE INTERVENTION SPACE?]

C H A P T E R . 0 6 - E X P E R I M E N T . 0 4

The last intervention on this journey indicates the final plateau and acts as a turning point, an indicator, and a frame (figure 6.08.). The structure creates an opportunity for a different journey back down the quarry. This space can also frame the quarry from the top. Although not as effective as the highest point, this space provides a different angle to look down into the quarry.

Figure 6.09.- Park designed with 'palette' approach uses materials found locally

Figure 6.10.- Park designed with 'relationship' approach uses contemporary materials

C H A P T E R . 0 6 - E X P E R I M E N T . 0 4

Julian Raxworthy's journal article titled Sandstone and Rust: Designing the Qualities of Sydney Harbour considers the appropriateness of a universal palette, proposed in the 1970's, for Sydney Harbours public spaces. The article examines one design from this era and three recent designs that "demonstrate that these projects transcend the 'palette' approach by engaging with specific relationships on their sites"(Raxworthy) The palette approach (figure 6.09.) was proposed by Bruce Mackenzie, a landscape architect. He believed that "a unique opportunity exists for achieving a cohesive and powerful theme for landscape design throughout this country (Australia) by realising and promoting the potential of the indigenous environment" ((Mackenzie) in (Raxworthy)), the indigenous environment being plants, materials and landforms found around the location of a design. The article also examines 'A Relationship Approach' where design considers more than just the indigenous environment (figure 6.10.). The approach includes history, development, human influences as well as geography and how the land is viewed from the water. This approach allows designs to use materials that are not of the landscape, yet are significant to the design. The article examines the Former BP Site Park for this use of materials that effectively highlight the new and the old.

Figure 6.11.- Aerial view of Former BP Site Park

Figure 6.12.- One entry to the park showing signage

Figure 6.13.- Largest circular lawn below sandstone cliff

C H A P T E R . 0 6 - E X P E R I M E N T . 0 4

The Former BP Site Park on the north shore of Sydney's middle harbour is a space filled with history (figure 6.11.). The park shows remnants of the BP site including old signage and structures (figure 6.12.). Fields reference some of the 31 oil silos that formerly dominated the waterfront site. The remnants of sandstone cliffs border the water's edge. The cliffs were excavated to fit around the former silos. The removal of the silos left behind a series of circular spaces (figure 6.13.). The park contains several walkways that connect one to the lookouts and spaces on the cliffs. The lookouts enable access to views of Sydney Harbour (figure 6.14.). The design combines the addition of large steel, floating, pathways with the subtraction of the sandstone cliffs. The design is intervention-oriented and displays how carefully the site was choreographed. The main walkway/ intervention is created to show off views of Sydney Harbour. It sits high above the largest circular lawn space referencing the removed silo (figure 6.15.). The walkway perches on the edge of the cliff making it seem precarious. It offers potentially sublime moments that by being so far above the space below.

As a consequence of remediation to remove contamination, many industrial structures were demolished leaving behind dislocated historic fragments. The design reconnects these resilient fragments, then contrasts them against simple contemporary structures to retain their visual and cultural prominence. [...] Viewing decks and walking platforms float over the dramatic sandstone cliff cuttings whilst concrete and steel stairs wrap over and around the topography. (McGregor Coxall)

Figure 6.14.- View from park of Sydney Harbour

Figure 6.15.- Pathway sits above old silo cutting

Figure 6.16.- Contrast between sandstone and steel

C H A P T E R . 0 6 - E X P E R I M E N T . 0 4

The contrast in materials and colour emphasise the key historical characteristics of this site (figure 6.16). Placing new materials against the yellow, orange and brown weathered sandstone landscape emphasises the difference between the design interventions and the remaining fragments. The quarry does not have the same historical context. Contemporary structures in the quarry might detract from the landscape, removing emphasis from immensity and creating emphasis on the interventions. The quarry should have a material palette that responds to the characteristics of the quarry. The final design needs to consider colour, materiality, and vegetation to create a project with the same effect as the Tudela Culip Restoration Project.

Figure 6.18.- Main pathway made of asphalt

Figure 6.19.- Secondary pathway to points of interest

Figure 6.20.- Tertiary pathway fades into landscape

C H A P T E R . 0 6 - E X P E R I M E N T . 0 4

The Tudela Culip Restoration Project has numerous design interventions ranging from paths to viewing platforms (figure 6.17.). The widespread design remains homogenous due to its material palette. The pathways have a hierarchy, which flows into the material palette. The main road is asphalt (figure 6.18.). It reaches the length of the cape and provides access to many areas of interest. The secondary paths are constructed using concrete (figure 6.19.). These paths branch off the main asphalt road to reach the main areas of interest and main viewpoints. The tertiary paths are not defined by their paving material but are indicated by low weathered steel railings (figure 6.20.). These paths lead to secondary viewpoints. The structures are all made from weathered steel and concrete. The choice of material reflects the colour found in the cape's landscape including oranges, greys, and sandy yellows. The materials look as though they are of the landscape and create a succinct design.

Figure 6.17.- Map of pathways

Chapter 06- Experiment 04

Figure 6.21.- Chapter reflection diagram

C H A P T E R . 0 6 - E X P E R I M E N T . 0 4

This chapter shows how interventions can emphasise immensity in the quarry. The exploration encountered several problems including site specificity, diminishing emphasis and unnecessary design. The design interventions on the plateau spaces feel irrelevant. The middle plateau does not emphasise immensity effectively. The intersection plateau suffers from over design and lacks reference to its context. The top plateau is an intermediate design, a marker or signpost could achieve the same function. Other interventions were more successful. The entry way created a dramatic frame that highlights the whole quarry. The intermediate space that looks up at the face emphasises the immensity effectively, but the complexity of the structure detracts from the experience. The highest point includes a cutting and a structure. The structure is irrelevant if the build up to the space is choreographed. Use of vegetation to guide view rather than structure could make a less intrusive, yet more effective, experience.

The precedents examined in this chapter showed that the materiality of the interventions could influence the experience of the design. The Former BP Site Park uses contrasting materials to emphasise the difference between the designed spaces and the areas of historical significance. The Tudela Culip Restoration Project uses a material palette that blends into the landscape. The materials have the same colourations and texture that the rocky landscape has. The use of material blends the design into the landform enabling the experience of the landscape in its unadulterated form. The contrasting materiality in the BP Park poses a risk of redirecting one's focus from the immensity to the intervention. Therefore, the final design for the quarry should use a material palette that blends into the landscape, like the restoration project.

The final design needs to have:

- A suitable material palette that does not interfere with the emphasis of immensity
- A suitably scaled design that does not attract too much attention

C H A P T E R . 0 7 F I N A L . D E S I G N

The final design of this research combines the key ideas from each design experiment to create a design that emphasises Kapiti Quarry's key characteristic of immensity.

The design contains four interventions. The first is at the quarry's entry. The second is in the bottom plateau. The third is underneath the largest quarried face. Lastly, the fourth is at the highest point in the quarry.

The interventions are all primarily constructed using weathered steel. The orange rust covered steel contrasts against the greens of the vegetation while harmonising with the dull yellow and the grey of the quarried greywacke rock faces.

The final design has not addressed vegetation as the post-industrial space will go through the processes of spontaneous vegetation mentioned in chapter 04. The vegetation that occurs naturally via secession will enable the interventions to blur into the quarry.

Figure 7.01.- Diagram plan of final design

N

150m

C H A P T E R . 0 7

I n t e r v e n t i o n . 0 1

Intervention 01, the entry, is the same as the entry intervention in chapter 06. The intervention embodies two concepts. Firstly the intervention acts as a viewport. The viewport creates a frame. Establishing the artificial hill creates a visual barrier that forces one's focus towards the viewport. The viewport frames the whole quarry creating opportunities for one to experience the vast landscape scale through a human-scaled aperture. The contrast in scales creates the moment of emphasis resulting in a momentary experience of the quarries immensity. Secondly, the intervention uses materiality to create contrast. The structure is constructed using weathered steel, steel poles, and concrete. The change in material on the ground plane emphasises the change of threshold between Paraparaumu and the quarry. The materials above the ground plane, weathered steel, contrasts against the vegetation creating a clear marker from the road.

Figure 7.02.- LEFT- The entry creates a linear viewport, the path veers left to reach the upper quarry

Figure 7.03.- Next page LEFT- The artificial hill hides the inner quarry as one approaches

Figure 7.04.- Next page RIGHT- The entry intervention plan

Figure 7.05.- The inner quarry is framed by the entry intervention

Figure 7.06. - The path into the quarry veers left and changes materials

C H A P T E R . 0 7

I n t e r v e n t i o n . 0 2

Intervention 02, the basin, is the same as the first design in chapter 04. The design is a bench in the large basin. The minimalism of the intervention enhances the enormity of the quarry. The path approaching the bench uses medium height vegetation to create enclosure that enables views up but not views out. The enclosure creates a tunnel vision effect that is contrasted by exposure as one reaches the bench clearing. The impact of the intervention comes from its isolation. One can appreciate how large the quarry is when one is sitting right in the middle of it. The simplicity of this design contrasts the complexity of the quarry. The human scale of the bench contrasts the landscape scale of the quarry. These moments of contrast create moments of emphasis. These moments of emphasis show the quarries immensity.

Figure 7.07.- LEFT- The basin is uses the surrounding quarry to create a panoramic view

Figure 7.08.- Next page LEFT- The path is narrow and long creating moments isolation

Figure 7.09.- Next page RIGHT- The basin intervention plan

Figure 7.10. - Cutting for intervention 03 is visible from the basin indicating an up hill progression

Figure 7.11. - Section of basin intervention demonstrates the dramatic surrounding faces

C H A P T E R . 0 7

I n t e r v e n t i o n . 0 3

Intervention 03 is in the same location as the gate design in chapter 05 and intervention 03 in chapter 06. The purpose of this intervention is the same as chapter 06's intervention, to point one's focus up toward the largest quarried face. This design differs from its precursor due to its simplicity. Rather than create a large structure or monument this design uses a marker and a gap in the faces vegetation to alter one's focus. The marker is made of weathered steel to create the visual contrast between it and the vegetation. A cutting in the ground plane compliments the marker. The design extends the slope of the face into the path cutting away a metre-wide segment of the path. The void in the ground plane is capped by a steel mesh enabling one to see down into the cutting as one walks over it. This cutting changes the materiality and the texture of the ground plane clearly marking the intervention. The aim of this intervention is to make one look up towards the quarried faces apex. The intervention is at the base of the face which emphasises the feeling of being dwarfed by the landscape. The intervention captures a moment of immensity by pointing one's focus towards an immense landform and leaving one to contemplate it.

Figure 7.12.- LEFT- The path is intersected by the intervention which looks up onto the quarry face
Figure 7.13.- Next page LEFT- Pathway is narrow but opens at intervention to emphasise the view
Figure 7.14.- Next page RIGHT- The cutting intervention plan

N

50m

Figure 7.15.- The marker points to the top of the quarried face

Figure 7.16.- The relationship between intervention 02 and 03 is apparent in an aerial view

C H A P T E R . 0 7

I n t e r v e n t i o n . 0 4

Intervention 04 is like the third design in chapter 04. The intervention is indicated by a change in the ground plane. A simple, weathered steel sheet embedded into the dirt/ rock pathway indicates an intervention. This intervention also cuts a small segment out of the embankment next to the path to get through to the steeper, more dramatic edge. Medium height spontaneous vegetation restricts the views of the quarry. As one approaches the intervention, the vegetation clears revealing the weathered steel plate and the cutting and ultimately the whole quarry. The sudden reveal of the view creates a moment of emphasis. The intervention enables one to see the entirety of the immense space.

Figure 7.17.- LEFT- The top creates a narrow cutting that enables wide views of the quarry

Figure 7.18.- Next page LEFT- The view is not visible while on the path

Figure 7.19.- Next page RIGHT- The top intervention plan

N

E

e

50m

Figure 7.20. - The view from the top intervention shows the whole of the quarry out to Kapiti Island

view out looks into the
depths of the quarry

cutting through embankment

16m

weathered steel plate

dirt path

path can spill over steel

to slowly hide plate

concrete footing for drainage

Figure 7.21.- The subtle design hides at the top of the quarry

Section Ee

Figure 8.01.- Research reflection diagram

C H A P T E R . 0 8 C R I T I C A L . R E F L E C T I O N

This research project set out to explore ways of redeveloping Kapiti Quarry's post-industrial landscape. The project avoided creating a lake, a housing development, or a garden. Rather the final design for Kapiti Quarry creates a series of small interventions that emphasise the quarry's key characteristic of immensity.

The first intervention in the final design uses framing to capture the immense landscape scale and reduce it into the human scale. The intervention enables a moment of understanding and encourages one to engage with the quarry. This intervention is successful in that it attracts attention from the road. It becomes the threshold to the quarry. It frames the quarry showing one how large and interesting the space is.

The second intervention uses small intervention to contrast against the enormity of the quarry. The design creates a moment of contemplation where one is forced into feeling small and insignificant within the enormous basin. This feeling of insignificance is emphasised by the interventions isolation. The contrasting sizes, the bench and the quarry, engage with the appropriateness of scale. The design emphasises immensity in the space by placing a small, human-scaled, object in the vast, landscape-scaled, quarry. This intervention is surprisingly successful because of its simplicity. Interventions in chapter 06 were over complicated and attracted too much focus.

C H A P T E R . 0 8

The third intervention uses a subtle marker to direct one's focus towards an immense landform. Like intervention 02 this design uses scale to create a feeling of insignificance, a feeling of being dwarfed by the landscape. This intervention, however, does not give one a human scale reference leaving one to be bombarded by the verticality of the steep quarried face. This intervention risks being unsuccessful as one may look up toward the quarried face and feel nothing. It relies too heavily on emotional reaction whereas the first two interventions are easily understood without explanation.

The fourth intervention uses subtraction to create a moment of clarity at the top of the quarry. The gap in the landform enables one to look out into the quarry and see it from the top down for the first time. Not only does this intervention capture the vastness of the quarry it also looks out over Paraparaumu, Kapiti Island, and into the Tasman Sea demonstrating boundlessness. This intervention is successful because of its simplicity. A large structure would still facilitate access to the views of the quarry but would lack the impact of the sudden reveal.

Each intervention uses a material palette that harmonises with the rock, and the clay faces of the quarry like the asphalt and concrete paths do in the Tudela Culip Restoration Project. The materials contrast against the vegetation making them noticeable but not overpowering.

The investigation found that immensity, while a subcategory of the sublime, is a very broad

topic. Each intervention deals with immensity in a different way. Vastness, enormity, verticality, boundlessness. These words are all part of immensity's definition yet each means something different. Immense space creates feelings of insignificance when standing below a quarry face or when sitting in the middle of the basin but creates feelings of wonder and awe when looking out over the quarry. Therefore, designing to emphasise immensity has created spaces that enable one to engage the landscape scale. Without intervention, the quarry is a large, daunting, hole in the ground. With a design solution, the quarry becomes understandable and experiential.

R E F E R E N C E S

.idcommunity. Kapiti Coast District Community Profile - Kapiti Coast District. 2013. <<http://profile.idnz.co.nz/kapiti/about?WebID=10>>.

—. Kapiti Coast District Community Profile - Paraparaumu East. 2013. <<http://profile.idnz.co.nz/kapiti/about/?WebID=180>>.

British Dictionary. immensity. n.d. <<http://www.dictionary.com/browse/immensity>>.

Estudi Martí Franch. PROJECT OF PUBLIC PLACE TUDELA-CULIP (CLUB MED) NATURAL PARK OF CAP CREUS. 2010. <<http://www.emf.cat/ca/portafoli/l/253-projecte-dus-public-del-paratge-de-tudela-cul.html>>.

Kapiti Coast District Council. "A Guide to Growing Native Plants in Kapiti." n.d. 2,9. <<http://www.kapiticoast.govt.nz/contentassets/e85039e0057c4c3da845fcb8468e6b75/guide-to-growing-native-plants-in-kapiti.pdf>>.

Kühn, Norbert. "Intentions for the Unintentional - Spontaneous Vegetation as the Basis for Innovative Planting Design in Urban Areas." *Journal of Landscape Architecture* 1.2 (2006): 46-53. <<http://isites.harvard.edu/fs/docs/icb.topic941093.files/Week%2011.%20Kuehn%20Intentions%20for%20the%20Unintentional.pdf>>.

Kullmann, Karl. "Thin parks / thick edges: towards a linear park typology for (post)infrastructural sites." *Journal of Landscape Architecture* 6.2 (2011): 70-81. <<http://www.tandfonline.com/helicon.vuw.ac.nz/doi/pdf/10.1080/18626033.2011.9723456?needAccess=true>>.

Mackenzie, Bruce. "Artistry, Relevance and the Landscape Architect." *Landscape Australia*. 4. 1985. 311-314.

McGregor Coxall. Former BP Site Park. n.d. <<https://mcgregorcoxall.com/mcgregorcoxall.com/helpdesk/SuperContainer/Files/ProjectSheets/0077SL/FORMER%20BP%20SITE%20PARK.pdf>>.

Rabb, Lauren. 19th Century Landscape - The Pastoral, The Picturesque and The Sublime. The University of Arizona - Museum of Art. <<http://artmuseum.arizona.edu/events/event/19th-century-landscape-the-pastoral-the-picturesque-and-the-sublime>>.

Raxworthy, Julian. "Sandstone and Rust: Designing the Qualities of Sydney Harbour." *Journal of Landscape Architecture* 3.2 (2008): 68-83. <<http://www.tandfonline.com/helicon.vuw.ac.nz/doi/pdf/10.1080/18626033.2008.9723405?needAccess=true>>.

Riding, Christine. Art and the Sublime. 2010. <<http://www.tate.org.uk/whats-on/tate-britain/display/art-and-sublime>>.

Scott, Alex. Edmund Burke's A Philosophical Enquiry into the Sublime and Beautiful. 2002. <<http://www.angelfire.com/md2/timewarp/burke.html>>.

The Art Story. "Earth Art Movement Overview and Analysis." n.d. <<http://www.theartstory.org/movement-earth-art.htm>>.

—. Michael Heizer. n.d. <http://www.theartstory.org/artist-heizer-michael-artworks.htm#pnt_3>.

—. Robert Smithson. n.d. <http://www.theartstory.org/artist-smithson-robert-artworks.htm#pnt_1>.

UMFA. Nancy Holt. n.d. <http://umfa.utah.edu/land_art_suntunnels>.

Waterman, Tim. It's About Time. 2017. <<https://landscapearchitecturemagazine.org/2017/01/23/its-about-time/>>.

F I G U R E S

NB: All figures not attributed are author's own.

Figure 1.04. - Durback Block Architects. "The Brickpit Ring." Sydney, 2005. <http://durbachblockjaggers.com/file/01-gwp-brickpitring-1_4e0d9707accb9-projectImage.jpg>.

Figure 1.05. - Wall, David. "Stonefields Housing Development." Auckland, n.d. <http://www.davidwallphoto.com/detail/59424-Maungarei-Springs-Wetland,-Stonefields-housing-development,-Mount-Wellington,-Auckland,-North-Island,-New-Zealand-_aerial.html>.

Figure 1.06. - Kenmore Air. "Buchart Gardens." Brentwood Bay, n.d. <<http://www.kenmoreair.com/experiences/buchart-gardens-tour/>>.

Figure 1.09. - Higgins Aggregates Ltd. "Kapiti Quarry". <https://assets.yellow.co.nz/file/v1-w8oC0lhofnMr3j2eS_E2XxEr4RfvQSrpgdFXMg_ebz0P0dPyGLIyt00iYtf0CagN3W61RpLJLgGg1vxv5tZr9M4RkUnLLeHzAssp5HfEpjSi-oijTLjeRHVPIDg9zBHR/Supplying_aggregates_to_M2PP.jpg>.

Figure 2.03. - .idcommunity. Kapiti Coast District Community Profile- Paraparaumu East. 2013. <<http://profile.idnz.co.nz/kapiti/about/?WebID=180>>.

Figure 2.04. - .idcommunity. Kapiti Coast District Community Profile - Kapiti Coast District. 2013. <<http://profile.idnz.co.nz/kapiti/about?WebID=10>>.

Figure 2.05. - New Zealand Transport Agency. "Rocky Road". 2014. < <https://www.youtube.com/watch?v=76XdobAynmo>>.

Figure 2.08. - New Zealand Transport Agency. "Rocky Road". 2014. < <https://www.youtube.com/watch?v=76XdobAynmo>>.

Figure 2.09. - New Zealand Transport Agency. "Rocky Road". 2014. < <https://www.youtube.com/watch?v=76XdobAynmo>>.

Figure 2.15. - Bierstadt, Albert. "Among the Sierra Nevada, California." 1868. <http://americanart.si.edu/images/1977/1977.107.1_2a.jpg>.

Figure 2.16.- Loutherbouurg, Philip James De. "An Avalanch in the Alps." 1803. <<http://www.tate.org.uk/art/artworks/de-loutherbouurg-an-avalanche-in-the-alps-t00772>>.

Figure 2.17.- Jacquet-Lagrece, Roamin. "Virtical Horizon." Hong Kong, 2015. <<http://www.romainjl.com/vertical-horizon#1>>.

Figure 2.18.- Stoll, Christian. "Epic." n.d. <<http://thefoxisblack.com/2012/05/01/chrisitan-stoll-and-photographing-the-immense/>>.

Figure 2.19.- Fernandez, Manu. "Sagrada Familia Basilica." Barcelona, n.d. <<http://naplesherald.com/2015/10/21/barcelonas-sagrada-familia-begins-work-on-immense-towers/>>.

Figure 3.06.- Smithson, Robert. "Asphalt Rundwon 02." Rome, 1969. <<http://fernsandmoss.tumblr.com/image/80858947248>>.

Figure 3.07.- Smithson, Robert. "Concept Sketch". Rome, 1969. <https://freeassociationdesign.files.wordpress.com/2010/04/asphalt_on_eroded_cliff_8001.jpg>.

Figure 3.08. - Smithson, Robert. "Asphalt Rundown." Rome, 1969. <<https://johnculbert.wordpress.com/tag/robert-smithson-asphalt-rundown/>>.

Figure 3.09. - Michael Heizer, Sam Wagstaff. "Double Negative." 1970. <<http://www.ampersandla.com/soil-of-creation-michael-heizers-double-negative/>>.

Figure 3.10.- Heizer, Michael. "Double Negative." 1969. <<http://www.ampersandla.com/soil-of-creation-michael-heizers-double-negative/>>.

Figure 3.11.- Landarts of the American West. "Double Negative." 2010. <http://landarts.org/index-exp.php/site/comments/double_negative_20101/>.

Figure 3.14. - Kullmann, Karl. "Thin parks / thick edges: towards a linear park typology for (post)infrastructural sites." *Journal of Landscape Architecture* 6.2 (2011): 70-81. <<http://www.tandfonline.com/helicon.vuw.ac.nz/doi/pdf/10.1080/18626033.2011.9723456?needAccess=true>>.

Figure 4.01. - Estudi Marti Franch. "Girona Landscapes." Girona, n.d. <<https://landscapearchitecturemagazine.org/2017/01/23/its-about-time/>>.

Figure 4.02. - Estudi Martí Franch. "Girona Landscapes." Girona, n.d. <<https://landscapearchitecturemagazine.org/2017/01/23/its-about-time/>>.

Figure 4.03. - Estudi Martí Franch. "Girona Landscapes." Girona, n.d. <<https://landscapearchitecturemagazine.org/2017/01/23/its-about-time/>>.

Figure 4.04. - Estudi Martí Franch. "Girona Landscapes." Girona, n.d. <<https://landscapearchitecturemagazine.org/2017/01/23/its-about-time/>>.

Figure 4.06. - Kapiti Coast District Council. "A Guide to Growing Native Plants in Kapiti." n.d. 2,9. <<http://www.kapiticoast.govt.nz/contentassets/e85039e0057c4c3da845fcb8468e6b75/guide-to-growing-native-plants-in-kapiti.pdf>>.

Figure 5.11. - Ardevol, Pau. "Cubes." n.d. <<https://divisare.com/projects/207005-emf-landscape-architects-j-t-ardevol-pau-ardevol-tudela-culip-club-med-restoration-project-in-the-natural-parc-cap-de-creus>>.

Figure 5.12. - Estudi Martí Franch. "Cubes." n.d. <<http://www.archdaily.com/375876/tudela-culip-restoration-project-emf>>.

Figure 5.13. - Mateu, Domenec Ribes. "Cubes." n.d. <<http://architetturatakeaway.blogspot.co.nz/2015/03/affacciamoci.html>>.

Figure 5.14.- The Centre for Land Use Interpretation. "Sun Tunnels." n.d. <<http://clui.org/ludb/site/sun-tunnels>>.

Figure 5.15.- Daniels, Lindsay. "Sun Tunnels." 2013. <<http://www.lindsaydanielsphotography.com/blog/2013/6/summer-solstice-at-nancy-holts-sun-tunnels>>.

Figure 5.16.- Williams, Kat. "Sun Tunnels." 2011. <<https://lemons2williams.wordpress.com/tag/nancy-holt/>>.

Figure 6.09. - Raxworthy, Julian. "Sandstone and Rust: Designing the Qualities of Sydney Harbour." *Journal of Landscape Architecture* 3.2 (2008): 68-83. <<http://www.tandfonline.com/helicon.vuw.ac.nz/doi/pdf/10.1080/18626033.2008.9723405?needAccess=true>>.

Figure 6.10. - Raxworthy, Julian. "Sandstone and Rust: Designing the Qualities of Sydney Harbour." *Journal of Landscape Architecture* 3.2 (2008): 68-83. <<http://www.tandfonline.com/helicon.vuw.ac.nz/doi/pdf/10.1080/18626033.2008.9723405?needAccess=true>>.

Figure 6.11. - McGregor Coxall. "Former BP Site Park." 2005. <<https://mcgregorcoxall.com/project-detail/77>>.

Figure 6.12. - McGregor Coxall. "Former BP Site Park." 2005. <<https://mcgregorcoxall.com/project-detail/77>>.

Figure 6.13. - McGregor Coxall. "Former BP Site Park." 2005. <<https://mcgregorcoxall.com/project-detail/77>>.

Figure 6.14. - McGregor Coxall. "Former BP Site Park." 2005. <<https://mcgregorcoxall.com/project-detail/77>>.

Figure 6.15. - McGregor Coxall. "Former BP Site Park." 2005. <<https://mcgregorcoxall.com/project-detail/77>>.

Figure 6.16. - McGregor Coxall. "Former BP Site Park." 2005. <<https://mcgregorcoxall.com/project-detail/77>>.

Figure 6.18. - Estudi Mart Franch. "Asphalt Paths." n.d. <<http://www.landezine.com/index.php/2011/03/tudela-club-med-restoration-in-cap-de-creus-by-emf-landscape-architecture/09-emf-landscape-architecture-vial-ppal/>>.

Figure 6.19. - Estudi Mart Franch. "Concrete Paths." n.d. <<http://www.landezine.com/index.php/2011/03/tudela-club-med-restoration-in-cap-de-creus-by-emf-landscape-architecture/07-emf-landscape-architecture-vial-secundari/>>.

Figure 6.20. - Estudi Mart Franch. "Low Rails." n.d. <<http://www.landezine.com/index.php/2011/03/tudela-club-med-restoration-in-cap-de-creus-by-emf-landscape-architecture/03-emf-landscape-architecture-vallbarana/>>.

Figure 6.17. - Estudi Mart Franch. "Plan." n.d. <<http://www.archdaily.com/375876/tudela-culip-restoration-project-emf>>.