THE STRANGER

Volume One

THE STRANGER

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VOLUME ONE

Developed Design

Look round the world: contemplate the whole and every part of it: you will find it to be nothing but one great machine, subdivided into an infinite number of lesser machines, which again admit of subdivisions to a degree beyond what human senses and faculties can trace and explain. All these various machines, and even their most minute parts, are adjusted to each other with an accuracy which ravishes into admiration all men who have ever contemplated them.

-DAVID HUME – DIALOGUES CONCERNING
NATURAL RELIGION (1779)

ABSTRACT

How can humanity possibly become sustainable in the future if we cannot think or plan sustainably in the present? This project aims to challenge people's current thinking, raising awareness that the issue of sustainability will not be resolved without a significant cultural shift in our relationship with our world's environmental systems.

The thesis addresses this through an architectural narrative conceived to enhance the viewer's awareness of how our interdependent relationship with machines and industry has led to this dire situation. Prior to the Industrial Revolution the environment could regenerate and recover faster than humanity could destroy it. With the advent of the Industrial Revolution this changed and environmental degradation has rapidly increased out of control. The result is that today we need to evolve and change our thinking rather than be limited by our tools if we are to be sustainable. It is this at present unsustainable relationship between mechanical industry and human behaviour that this thesis exposes through speculative architecture. The investigation explores how architectural allegory can be an effective way of conveying a message with multiple layers of interpretation and meaning - a message capable of addressing important environmental, political, economic and social issues.

The title of the thesis is taken from Albert Camus's novel *l'Étranger* (*The Stranger*) as well as Georg Simmel's essay "The Stranger", which was written

as an excursus to a chapter dealing with sociology of space in his book *Soziologie*. In this thesis, as an architectural allegory, the Stranger's architectural habitat is composed of a myriad of integrated machines that symbolise our time and place identity: a Theodolite that surveys the land; a Clock that keeps the time; a Loom that reflects the folklore of fate; a Compass that represents direction, and a Camera Obscura through which the Stranger views his/her surroundings. The Stranger lives in the Camera Obscura, a compartment with a periscopic lens focused across the Cook Strait to South Island. When (s)he activates the Loom, it pulls the living compartment along tracks toward the core, where (s)he descends into the central volume of the Theodolite. A Compass on the top of the structure points towards landmarks across the Cook Strait while the mechanical workings are inspired by the internals of a mechanical Clock.

The overall programme for the thesis investigation is an Aquaponics Lab, a self-contained environment that grows marine life in an aquaculture system, using their waste to fertilise plant life in a hydroponic system, and using their nutrients in turn to feed the marine life. The flora and fauna continually sustain one another in an eternal cycle - the machines replicating a perfect natural system. The thesis takes the form of a day in the life of the Stranger. The reader witnesses the sequential daily rituals of the Stranger as (s)he moves through the machines from sunrise to sunset.

PREFACE

The thesis is called "The Stranger". The aim of this thesis is to provoke questions about our views of environmental heritage. It does not judge whether the 'loss' or 'retention' of environmental heritage is good or bad, but instead it demands that the reader consider what is valuable to him or her. Encouraging the reader to assess where she or he is, in time and place, is a principal objective of the thesis – as well as a key theme framing the thesis's internal narrative story about its lone mythological inhabitant, the 'stranger'.

In 1908, German sociologist, philosopher and critic Georg Simmel wrote the essay "The Stranger" as an excursus to a chapter dealing with sociology of space in his book *Soziologie*:

The stranger is ... the person who comes today and stays tomorrow. ... [H]e, who is close by, is far, and strangeness means that he, who also is far, is actually near. ... His position as a full-fledged member [of society] involves both being outside [society] and confronting it. ... Another expression of this constellation lies in the objectivity of the stranger. But objectivity does not simply involve passivity and detachment; it is a particular structure composed of distance and nearness, indifference and involvement. ... Objectivity is by no means non-participation ... but a positive and specific kind of participation ... [T]he objective individual is bound by no commitments which could prejudice his perception, understanding, and evaluation of the given. The freedom, however, ... contains many dangerous possibilities.

— Georg Simmel, "The Stranger" 1908

In 1942, Albert Camus published his novel *The Stranger* (*L'Étranger*). It was divided into two parts, where the single main character narrates the events from his own point of view before he commits a murder (part 1) and after he has committed a murder (part 2). The turning point towards the end of part 1 was his mother's funeral, at

which he did not show any sadness and has no wish to see her body. After this, he apathetically murders someone. At the end of the novel he awaits his own execution. Camus summarised the theme of the novel as: "In our society any man who does not weep at his mother's funeral runs the risk of being sentenced to death".

I am always wondering if there have been cases of condemned prisoners escaping from the implacable machinery of justice at the last moment, breaking through the police cordon, vanishing in the nick of time before the guillotine falls. ... So it came to this, that – against the grain, no doubt – the condemned man had to hope the apparatus was in good working order! ... But, as it was, the machine dominated everything. ... From the dark horizon of my future a sort of slow, persistent breeze had been blowing toward me, all my life long, from the years that were to come. And on its way that breeze had levelled out all the ideas that people tried to foist on me in the equally unreal years I then was living through. ... [A]nd, gazing up at the dark sky spangled with its signs and stars, for the first time, the first, I laid my heart open to the benign indifference of the universe.

— Albert Camus, *The Stranger*, 1942

Simmel and Camus's tales can be interpreted as allegories. The thesis is also structured as an allegory, retelling this story of the stranger from the point of view of environmentalism. The 'stranger' in the thesis condemns the environment without realising he is doing so. As such, he commits the same atrocity again and again, without realising that his efforts to repair the environment are misguided and in fact also the cause of its demise.

ACKNOWLEDGEMENTS

I would like to thank my supervisor Daniel Brown for his inspiration, advice and knowledge. This thesis has changed the way I see the world; his input was integral to this.

My friends and fellow architecture students who have encouraged and supported me.

Finally to my parents who have always believed in me and helped me to achieve my ambitions over the past 5 years of study.

Thank you.

Fig. 1. Owhiro Bay quarry today. Author's Photograph.

INTRODUCTION

The site for the thesis investigation is the Owhiro Bay Quarry, located on the southern tip of North Island near the entry to Red Rocks – the location where according to ancient Māori legend, Te Ika-a-Māui was pulled out of the sea and became the environment we now know as North Island. Here the abandoned Owhiro Bay Quarry appears as monumental-scale roughly hewn ‘terraces’ – enormous environmental scars created by the hand of mankind. The Stranger is there to repair the devastating scars in the mythological landscape where the North Island was born.

The Stranger’s architectural habitat is composed of a myriad of integrated ancient devices: a Theodolite that surveys the land and establishes ‘place’; a Mechanical Clock that keeps the time; an ancient Loom that reflects the folklore of fate; a Solar compass that represents direction and a Camera Obscura through which the Stranger views his/her surroundings. High above the Theodolite, the Stranger lives in a compartment with a circular aperture focused across the Cook Strait to South Island. When the tides that power the structure change twice a day, it pulls the living compartment along tracks toward the core, where (s)he can descend into the central volume of the Theodolite.

The programme for the thesis investigation is an Aquaponics Lab, a self-contained environment that grows fish in an aquaculture system, using their waste to fertilise plants in a hydroponic system, in turn using their nutrients to feed the fish. The plants and the fish continually sustain one another in an eternal cycle. Inside the Aquaponics Lab the Stranger tends and grows the flora and fauna needed for the seemingly endless environmental repairs; outside (s)he uses the building to fill in the scars on the landscape of the quarry, grading the stone into soil again, so that the flora can eventually be transplanted and return the environment to its former perfection.

The thesis takes the form of a journey, witnessing the sequential daily rituals of the Stranger as (s)he moves through the Theodolite from sunrise to sunset. The perpetual movement of the Theodolite is stretched over millennia, so slowly that it appears static to each new generation, as if we are but witnessing it paused in a moment in time.

At the end of the journey, the outer form of the building is finally revealed. We discover that all the while “The Stranger” has been using the machine to repair the landscape, it is in fact the machine that has also been making the scars upon the landscape – a perpetual cycle of environmental awareness and environmental destruction. A parable for humanity.

PROBLEM STATEMENT

As humanity approaches eight billion in number our detrimental effects upon the planet are becoming greater. Once humanity could barely defend against nature; today nature can barely defend against humanity. The implications of our industrialised society are immense. If we continue to destroy and scar the planet our machines will be the cause of the next great extinction event. Not only will we cause it but we may well be included.

RESEARCH AIMS

- To use speculative architecture to enhance people's awareness of the impact of industrialisation.
- To bring about awareness that our current society is not sustainable.
- To encourage the eventual repair and restoration of environmentally scarred sites such as the Owhiro Bay Quarry site.

RESEARCH OBJECTIVES

- To design an aquaponics laboratory that can provide flora and fauna to regenerate the site.
- To use architecture to demonstrate the negative impacts of machines upon the natural environment.
- To explore how industrial age machines can be used to repair and repopulate the environment, rather than simply contributing to its destruction.

TIMELINE

6am

9am

12

NIGHT

DAWN

MORNING

MORNING

REMEMBERING

GENERATING

MACHINE:

A. Camera Obscura

A. Loom

PIACE IDENTITY:

B. Memory

B. Fate

PROGRAM:

C. The Viewing Room

C. Generator Room

THEORIST:

D. Douglas Darden

D. Lebbeus Woods

CASE STUDY:

E. The Temple Forgetful

E. Injection Parasite

pm

3pm

6pm

NOON	NOON	AFTERNOON	AFTERNOON	NIGHT
SURVEYING		DISCOVERING		PROGRESSING
A. Theodolite		A. Compass		A. Clock
B. Place		B. Direction		B. Time
C. Aquaponics Laboratory		C. Lower Laboratories		C. Mechanical Plant Room
D. Raimund Abraham		D. CJ Lim		D. Michael Webb
E. House with Two Horizons		E. London in two-and-a-half dimensions		E. Temple Island

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CHAPTER ONE

Remembering

THE CAMERA OBSCURA | MEMORY

To be curious is to feel anxiety and the need to dissolve that anxiety with further inquisitiveness. If temporary surprise and anxiety can be pleasant as long as we have [REDACTED]. The infant, from the safety of its crib, enjoys surprise and takes pleasure in games of peek-a-boo. The toddler seeks the thrill of exploration, using the mother as a point of departure. Children delight in disorientation—tumbling, swinging, or hanging upside down from the limbs of trees. Adults, well fed and secure in their workworld, seek pleasurable stress—"eustress"—the happiness that comes from overcoming fear in risky sports such as mountain climbing. Risk

**"Both in my memory and upon an islet
in the Thames at Henley reposes a temple:
i.e the incorporeal and the real (one), and
though the site of each remains intact, the
incorporeal temple is fading."**

-MICHAEL WEBB, TEMPLE ISLAND. 1987.

supportive stage is narrow and fragile indeed. A survey of the landscapes of fear will seem incomplete without a brief tour of the confined circles of the mentally ill, for whom security is an insistent concern and the urge toward adventure seldom—if ever—arises.

Light floods into the dark chamber of the habitat. Another day starts. Inverted images of the outside world appear on the viewing table. The scene appears as usual.

Fig. 2. The Camera Obscura's image projected upon the viewing table Image. Author's Photograph.

I awaken...

Fig. 3. The Stranger's Camera Obscura.
Author's Work. Rendered CAD Model. 2016.

Fig. 4. The Viewing Room with projection and viewing table. Author's Work. 2016.

"All incidents which we experience are warily interpreted and translated in the dark chamber of our mind. They inspire us how to behave, how to think, how to act and prompt our predilections and our way of visualizing the world. The mind opens itself then to welcome the enchantments of life or to tear up destructive thinking patterns."

I remember when the images were a mystery, before the Camera Obscura was studied and pulled apart. The way the device projected an inverted image of the world was an enigma. Yet we had to find out why the image was inverted. At first the Camera Obscura was used for this noble purpose of understanding the world around us. The full potential of the flat and inverted images remained untapped for centuries.

The first signs of the Camera Obscura being dragged into the public eye were dismissed. Why did we need these perfect images that brought no artist's interpretation into their likeness? However slowly the device crept into the public's imagination. The images were drawn over and archived, the past no longer disappeared like it had. The machine erased all the imperfections of the human touch; the images showed a moment in time perfectly.

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The rising paradigm – that we can optimise components of a system in isolation of the rest of the system – is proving inadequate to deal with the dynamic complexity of the real world. Sustainable solutions to our growing resource problems need to look beyond a business as usual approach.

As failures mount, and as more and more people become aware of them, there is a growing dissatisfaction with the ways in which natural resources are managed. What are the important qualities of a system that need to be maintained or enhanced for a system to be sustainable?"

(Upper Behind) Erik Pevernagie. 1997.

(Lower Behind) Walker, B. H., David Salt. Pg 8.

Fig. 5. The Viewing Room with projected image from the Camera Obscura Plan.
Author's Work. 2016.

The Viewing Room

Isometric

I prepare to exit the habitat to check the controls of the loom above are in the correct alignment.

Fig. 7. Exit of the Habitat. Author's Work.
Rendered CAD Image. 2016.

"The clumsy system of public gatherings had been long since abandoned; neither Vashti nor her audience stirred from their rooms. Seated in her armchair she spoke, while they in their armchairs heard her, fairly well, and saw her, fairly well. She opened with a humorous account of music in the pre Mongolian epoch, and went on to

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Over the next two centuries the image would continue to become an increasing fixture of daily life. Images linked to other images until we saw nothing but images. Our lives were being lived through the lens of the Camera Obscura. The device we had first used to understand the world in which we lived now created a world of images around us. We immersed ourselves into this fictional realm even as it consumed the environment around us.

"Maybe the only thing each of us can see is our own shadow. Carl Jung called this his shadow work. He said we never see others. Instead we see only aspects of ourselves that fall over them. Shadows. Projections. Our associations. The same way old painters would sit in a tiny dark room and trace the image of what stood outside a tiny window, in the bright sunlight. The camera obscura. Not the exact image, but everything reversed or upside down."

(Upper Behind) E.M. Forster. Pg 3.

(Lower Behind) Chuck Palahniuk.

CHAPTER TWO

Generating

LOOM | FATE

"The second ~~development~~ development was the re-establishment of religion. This, too, had been voiced in the celebrated lecture. No one could mistake the reverent tone in which the peroration had concluded, and it awakened a responsive echo in the heart of each. Those who had long worshipped silently, now began to talk. They described the strange feeling of peace that came over them when they handled the Book of the Machine, the pleasure that it was to repeat certain numerals out of it, however little meaning those numerals conveyed to the outward ear, the ecstasy of touching a button, however unimportant, or of ringing an electric bell, however superfluously.

Belief

The Machine
speak to one
Machine is
omnipotent,
printed on
a complicated
avoided, and
But in practice

**"A generation seraphically free
From taint of personality"**

E.M Foster - The Machine Stops. 1909.

divine. Nor was it worshipped in unity. One believer would be chiefly impressed by the blue optic plates, through which he saw other believers; another by the mending apparatus, which sinful Kuno had compared to worms; another by the lifts, another by the Book. And each would pray to this or to that, and ask it to intercede for him with the Machine as a whole. Persecution - that also was present. It did not break out, for reasons that will be set forward shortly. But it was latent, and all who did not accept the

Fig. 8. The Loom which controls the structure. Author's Work. 2016.

I have read about how the loom represented fate in ancient Greek mythology. Perhaps it was humanity's fate to be bound and controlled by the machines it had once created to serve it. Everyday before proceeding to the Aquaponics Laboratory I made sure that the loom that controlled the functions of the structure was correctly calibrated. The strains and pulleys extended out from it across the structure controlling its movement and workings. Without calibration it would slowly fall out of alignment and the structure would cease to function.

The loom was powered by the great motive forces that were drawn from the tides of the surrounding bay. The loom would dictate when the habitat moved from the viewing room to the aquaponics lab, when the giantt planting device operated and the structure's rotation in order to get the best sunlight for the aquaponics labs. The system had run for many generations on this combination of limitless energy from the tides and highly efficient control systems. It was thought to be perfect.

we could manage individual components of an ecological system independently, find an optimal balance between supply and demand for each component, and that other attributes of the system would stay largely constant through time. But, as we learn more about ecological and human systems, these assumptions are being shattered."

The cables of the loom extend upwards and across. A giant web that controlled the structure around it.

Fig. 9. The Loom's threads extending out across the structure.
Author's Work. 2016.

"Man, the flower of all flesh, the noblest of all creatures visible, man who had once made god in his image, and had mirrored his strength on the constellations, beautiful naked man was dying, strangled in the garments that he had woven. Century after century had he toiled, and here was his reward. Truly the garment had seemed heavenly at first, shot with colours of culture, sewn with the threads of self-denial."

The beauty of the structure was its ability to repair the outside environment. The years of humanity's environmental destruction were long gone but the legacy of their repair remained. Though the environment around the structure had long since been returned to its natural state the endless workings of the structure and I ensured that it would never fade away. The structure's job was now to reinforce and maintain the environment around rather than exploit and change it like the growth based societies of history. Humanity no longer was a parasitic consumer but the complete opposite, a rigorous protector and curator of the environment.

"He replied: 'I have seen them, spoken to them, loved them. They are hiding in the midst and the ferns until our civilization stops. Today they are the Homeless - tomorrow-----'

'Oh, tomorrow - some fool will start the Machine again, tomorrow.'

'Never,' said Kuno, 'never. Humanity has learnt its lesson.'

As he spoke, the whole city was broken like a honeycomb. An air-ship had sailed in through the vomitory into a ruined wharf. It crashed downwards, exploding as it went, rending gallery after gallery with its wings of steel. For a moment they saw the nations of the dead, and, before they joined them, scraps of the untainted sky."

As the morning tides start to recede the habitat begins its journey across the frame connecting it to the aquaponics lab. The vast structure is powered by the tides which dictate the timing of all the structure's movements. Once the habitat crosses the frame I can leave it and enter the aquaponics laboratory below. There I begin my work tending and preparing the plants of the laboratory.

9:00AM

Fig. 11. The Viewing Room containing the Loom and Camera Obscura with structural framing to connect to the Theodolite. Author's Work, 2017

CHAPTER THREE

Surveying

THEODOLITE | PLACE

**“In both London’s imaginings
and reality, landmarks and events
assume shifting magnitude
and significance, constructing
distorted maps of desire and
experience.”**

-CJ Lim, London in two-and-a-half dimensions

Once the habitat has completed its journey I cross the roof of the structure, past the giant instruments and descend into the laboratory below.

Fig. 12. The Theodolite's Telescope.
Author's Work. 2016.

The world had been divided up into lines and numbers long ago. The same lenses that had first produced the images of the Camera Obscura had been put to use in taming the vast spaces of the globe. The Theodolite was a long forgotten instrument whose work had been completed decades ago. Surveying the world around us was no longer required; we had measured all that was needed, explored all that was to be explored.

It had been many years since the feeling of discovery had been present within me. Today I remembered it. I began to explore and survey. I thought that I knew my place in the world; I thought I knew what my role was. But perhaps my beliefs were misplaced.

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Diversity is also declining through the direct loss of species, along with the loss of the genes they contain and ecosystems they make up. They are being unwittingly sacrificed as habitat is lost to production and urbanisation, and inadvertently lost through the multiple onslaughts of pest invasion, disease and over harvesting."

The circular laboratories housed a massive aquaponics system. Around the edges of each laboratory were the capsules of plants needed for seed production, nutrients and food. In the centre were the pools of fish which provided food and nutrients. The system was self-sustaining and needed minimal maintenance.

Fig. 13. The Aquaponics Laboratory within the Theodolite. Section. Author's Work. 2016.

"In many cases, however, resource degradation is simply the result of humankind's insatiable desire to produce and consume, leading to wilful short-term greed and corruption with no heed for the future. Some suggest this is just the way humans evolved – in a world without limits where success was based on maximizing your return. Human behaviour is shaped strongly by drives from our evolutionary past (competition, territory, and power) without which we would not be here as a species or as the cultures we now have. Such evolutionary antecedents made sense when the human population was small and the world was seemingly endless but this is no longer the case. In today's world such behaviour has begun to turn on

US

For many years, I had tended to the Aquaponics Laboratory and operated the systems around it. All of it to undo the work of previous generations who had scarred the landscape around the Laboratory. Today I began to explore the structure more than I ever had before. Was I truly repairing the environment or was I simply chaining it to a bygone view of what the natural world was like? I began to explore the structure just as Theodolites surveyed the world long ago.

"For life mir in the and seventeenth centuries, with the advent of ever-more complex and sophisticated machines, whether real or imagined, two conflicting attitudes towards the machine emerged to jostle, uneasily, against one another. This conflict arose from that original Aristotelian distinction between the natural world and the artificial world of Techne. Is Techne an expression of a utopian spirit, a drive to make the world in some measure better, or at least more comfortable or more secure? Or might it, instead, be thought of as gloomily dystopic: a vain attempt to shape the natural and human worlds whose end result is usually frustration and perhaps even disaster?"

(Upper Behind) Walker, B. H., David Salt.
Pg 5.

(Lower Behind) Sawday, Jonathan. Pg 3.

Fig. 14. The Aquaponics Laboratory with the Camera Obscura, Loom and Theodolite coming together.
Author's Work. 2016.

Fig. 16. The Lower Aquaponics Laboratory.
Author's Work, Rendered CAD Image.

The image depicts a dark, futuristic interior. A curved staircase with a glass railing is visible in the lower left. In the center, a large, glowing, abstract structure resembling a stylized 'E' or a futuristic building is illuminated. The overall atmosphere is mysterious and high-tech.

12:00PM

*Today I begin to question
this environment of humanity.
Was it really repairing the
environment? How could a
machine so like the ones
that had destroyed the
environment repair it?*

CHAPTER FOUR

Progressing

COMPASS | DIRECTION

“In 1945, George Orwell wrote *Animal Farm*, a story about barnyard animals who overthrow their tyrannical human master but end up creating an equally oppressive hierarchy. “All animals are equal”, reads the seminal line in the book, “but some animals are more equal than others”. *Animal Farm* was an allegory about the Soviet Union under Stalin, although Orwell intended it to have wider application also. “It is” wrote Orwell in the blurb for the first edition, “the history of a revolution that went wrong – and of the excellent excuses that were forthcoming at every step for the perversion of the original doctrine”. In “*Animal Farm Revisited*” Orwell’s template has been applied to the environmental question. In a multitude of countries, including New Zealand, and in the international sphere, environmental law suffers from a plethora of good intentions and a paucity of concrete principles. Indeed, the history of environmental protection could be described as the story of an intention gone astray – and of the excellent explanations that have been forthcoming for the qualification of its purpose. “*Animal Farm Revisited*” is a kind of environmental Rorschach test: at what moment do actions become environmentally inappropriate? Many answers are possible. The story is not specifically about the Resource Management Act 1991, but its themes are relevant to the Act and its interpretation.”

Bruce Pardy. *Animal Farm Revisited: An Environmental Allegory*.

“in spite of everything — in spite of their terror of the dogs, and of the habit, developed through long years, of never complaining, never criticising, no matter what happened —

“The allegorical architectural project, an alternative critical practice that employs architectural drawing, the language of describing buildings, to articulate something ‘other’, allos: a critical idiom combining design with text to contemplate on architecture, art, science and politics.”

PENELOPE HARALAMBIDOU – THE FALL

For once Benjamin consented to break his rule, and he read out to her what was written on the wall. There was nothing there now except a single Commandment. It ran: ~~ALL ANIMALS ARE EQUAL BUT SOME ANIMALS ARE MORE EQUAL THAN OTHERS.~~

“All animals depend on ecology. Some depend more than others.”

Fig. 17. The Solar Compass above the
Theodolite. Author's Work. 2016.

Time passed, and they resented the defects no longer. The defects had not been remedied, but the human tissues in that latter day had become so subservient, that they readily adapted themselves to every caprice of the Machine. The sigh at the crises of the Brisbane symphony no longer irritated Vashti; she accepted it as part of the melody.

The machine was in the head, as in the wall, was a lamented by her friend. And so with the world.

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I climbed up above the Aquaponics Laboratories. Looking across I could see the faint mountains of the South Island across the strait. I turned and saw the giant planting device behind me. Above me the lengths of cable that ran back to the loom spanned. I looked down at the ground around the structure and discovered that while the machine was repairing the landscape from one orientation, it was destroying it from another.

It had been an illusion; to mind came the compasses of long ago. A device that told humanity a direction that could not be sensed. The machine had done the same for me; I had thought that my contributions were doing their part to restore the environment yet I was powering the very thing that was holding it back. I began to descend through the machine

Under the seas, beneath the roots of the mountains, ran the wires through which they saw and heard, the enormous eyes and ears that were their heritage, and the hum of many workings clothed their thoughts in one garment of subservency.

I began to explore the structure and piece the puzzle together; I saw the vast wheel that turned the soil each year in preparation for replanting the terraces in a different light than before...

Fig. 18. The Planting Device Correctly
Aligned by the Theodolite and Compass
above.. Author's Work. Rendered CAD Image.

Humanity has been spectacularly successful in modifying the planet to meet the demands of a rapidly growing population. Between 1960 and 2000, the human population doubled and economic activity increased six-fold, yet we were able to increase food production by two and-a-half times, resulting in declining food prices and reduced hunger. The changes made to the environment to meet our growing demands have been so sweeping that cultivated ecosystems now cover more than a quarter of Earth's terrestrial surface and as

I thought about the world that had created the destruction around me and realised that my actions were no different. Humanity still sought to control nature as a resource. I looked down upon the machine now aware of how it stood out like an excavator of long ago. Humanity had no place controlling the environment. I gathered my thoughts and descended down into the machine to the ground below. The hills around now appeared false despite my machine's best efforts at repairing them.

The many elements of the structure all acting together like the components of a machine.

Fig. 19. The Lower Superstructure; supported by the legs of the Theodolite and orientated by the direction Compass. Author's Work. Rendered CAD Image.

Fig. 20. Plan of the Solar Compass determining the orientation of the structure with the telescope of the Theodolite below. Author's Work. Rendered CAD Model.

3:00PM

*I explore beneath the aquaponics laboratory to
see the gut of the structure and above to see the
giant workings.*

Fig. 22. Isometric of Lower Superstructure. The base of the Theodolite can be seen housing the structures mechanical plant based upon the Clock. Author's Work. Rendered CAD Model.

Fig. 23. Lower Superstructure Exploded View. The central core which the structure rotates around depending upon the Compass can be seen. Author's Work. 2016.

CHAPTER FIVE

Discovering

CLOCK | TIME

“For us to better understand what might be, we have to better understand what is, and odd as it sounds, our understanding of the what is of humanity has, until recently, been something of a disaster. But without an adequate map of the present, our maps of tomorrow simply amplify and exaggerate the gaps in today’s understanding (as the briefest examination of past predictions will quickly demonstrate). The point is that to better forecast tomorrow, we must better understand today.”

-RICHARD SLAUGHTER, FUTURES BEYOND DYSTOPIA. 2004.

Fig. 24. The Mechanical Plant Level. Using the mechanical workings of the Clock it transfers the varying energy produced by the tides into a constant output speed to mechanically power the structure. Author's Work. Rendered CAD Model.

"In the pre-industrial period it was probably true to say that humanity was, at the time, surrounded by, and largely felt itself to be surrounded by, the 'vast and inexhaustible' world of nature. Over the last three centuries that pivotal reality has been inverted. Nature itself is now surrounded and, in many places, overwhelmed by humanity."

I remember how once humanity celebrated its control over the natural world. One of the great human victories over nature was the conquest of time. Starting with humanity's banishment of the terrible darkness of night with fire the passing of time became less and less dominated by nature. Eventually humanity no longer needed nature at all to measure the passing of time. The mechanical watches of long ago signalled the end of the environment being the master of humanity's actions. The day as a period of light and dark had been replaced by numbers and movements.

The endless cycles of the Aquaponics Lab intrigued me as I descend through it. I knew that the structure eschewed the long abandoned principles of capitalist growth and kept the landscape around it in a perpetual state. The constant growing and then replanting to repair the outside environment confused me. I knew that the structure kept the outside environment as it had been and removed all traces of human intervention but the principle seemed wrong. Human intervention was still controlling the environment.

"In Common responses to the global prospect are more generally unthinking and unreflexive. As noted above the most common is simple avoidance – a sense that it is all too hard, and that someone else (either now or later) can or will take care of things. This is not unrelated to a widespread sense of fatalism arising, perhaps, from a deep sense of powerlessness felt particularly keenly by the young. Beyond these basic responses a surprising number of otherwise well informed and well educated people appear to 'get by' with one variety or another of distancing strategies or false optimism."

Fig. 25. The structure meets the ground below the Clock. Author's Work. Rendered CAD Image.

"It is fascinating to observe how various speech communities handle the notion of growth. Three can be mentioned here. Most, if not all, the world's political players still hold fast to the view that 'growth is good'. They are supported in this view by the vast majority of conventional mainstream economists. But if one looks across a deep cultural divide to the speech communities involved in studying and tracking global

I descend through the structure, below the Aquaponics Laboratory. Here I could see the workings of the structure slowly turning. Unlike the fossil fuel creations of long ago the huge device could potentially keep running for thousands of years off the energy of the tides. The nutrients for the Aquaponics were harvested from turning the soil of the landscape outside once a year and the job of replanting was perpetually created. The outside environment was kept in untouched stasis; any diseases or human interference were wiped out every year and the landscape returned to its natural state. I continued down to the base of the structure below.

natural outgrowth of human nature. By the end of the early modern period the smoke of London seemed an inevitable result of the city's economic and political greatness, its status as the seat of liberty, trade, and modernity. It offered the world a model in which development, power, and environmental degradation would progress together, at least until some future technological innovation finally allows a style of growth that would not entail such tremendous costs."

*I reached the
last steps of the
structure that lead
to the ground
below, I felt a sense
of trepidation at
the thought of
questioning the vast
structure behind me.
Still I continued...*

Fig. 26. Blood Splatter
from Red Rocks. Author's
Photograph. 2016.

Fig. 27. The foundations of the structure meet the
ground. Author's Work. 2017.

Fig. 28. Looking back up towards the Aquaponics Laboratory. The legs of the Theodolite support the Aquaponics Laboratory with the Loom and Compass controlling it. Author's Work, 2016.

*I realised that the machines that I had
tended and maintained were in fact one of
the very machines whose destruction I had
been trying to repair. Against the landscape
around it the machine stood out at me,
foreign to the land around it.*

Fig. 29. Overall Plan View of the Machine.
Author's Work. Rendered CAD Model.

6:00PM

As I walked away from the machine I realised that I did not know how to survive without it. Just as the machine needed me I needed it. I stopped and wondered if I should return to the machine or attempt to stay alive in the world outside....

Fig. 30. The Machine Exposed at the Owhiro Bay quarry. Author's Work. Rendered CAD Model. 2016.

CODA

This narrative is an allegory for the motions of humanity as it wrestles with the concept of sustainability. Humans are not sustainable and their machines only serve to amplify the ability. The narrative is an allegory about the interaction of humanity and the environment in the machine age. The totally efficient, restoring habitat of the stranger is still flawed even though by today's standards it appears totally sustainable. Though it does not pollute and scar the environment like today's machines it still works upon the same philosophy; that if we can achieve a high enough consumption efficiency we can sustainably consume the planet's resources.

The outcome of the narrative shows the flaws in this method; humanity still remains in an imbalance within the ecosystem of nature and still dominates environmental control as it does today. The final elements of the narrative present the alternate and strange thought process of not being in control of the environment. The use of the stranger's habitat is a play on the potential role of technology as a golden cage for humanity, protecting the outside environment by containing. The built environment serves as a major character within this narrative and will continue to do so within the real events that are required for humanity to achieve sustainability.

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THE STRANGER

Volume Two

THE STRANGER

BY CHRIS YOUNG

A 120 point thesis submitted to the Victoria
University of Wellington in partial fulfilment of
the requirements for the degree of Master of
Architecture (Professional)

Victoria University of Wellington
School of Architecture

2017

VOLUME TWO

Project and Literature Review
Preliminary Design Experiments
Critical Reflection and Conclusions

TIMELINE

6am

9am

12

NIGHT

DAWN

MORNING

MORNING

REMEMBERING

GENERATING

MACHINE:

A. Camera Obscura

A. Loom

PIACE IDENTITY:

B. Memory

B. Fate

PROGRAM:

C. The Viewing Room

C. Generator Room

THEORIST:

D. Douglas Darden

D. Lebbeus Woods

CASE STUDY:

E. The Temple Forgetful

E. Injection Parasite

pm

3pm

6pm

NOON	NOON	AFTERNOON	AFTERNOON	NIGHT
SURVEYING		DISCOVERING		PROGRESSING
A. Theodolite		A. Compass		A. Clock
B. Place		B. Direction		B. Time
C. Aquaponics Laboratory		C. Lower Laboratories		C. Mechanical Plant Room
D. Raimund Abraham		D. CJ Lim		D. Michael Webb
E. House with Two Horizons		E. London in two-and-a-half dimensions		E. Temple Island

Brief summary of the scope of the design research as articulated through a proposition, question, problem statement, or defined area of interest:

The thesis is called "The Stranger". The aim of this thesis is to provoke questions about our views of environmental heritage. It does not judge whether the 'loss' or 'retention' of environmental heritage is good or bad, but instead it demands that the reader consider what is valuable to him or her. Encouraging the reader to assess where she or he is, in time and place, is a principal objective of the thesis.

This project aims to challenge people's current thinking, raising awareness that the issue of sustainability will not be resolved without a significant cultural shift in our relationship with our world's environmental systems.

The thesis addresses this through an architectural narrative conceived to enhance the viewer's awareness of how our interdependent relationship with machines and industry has led to this dire situation. It is this at present unsustainable relationship between mechanical industry and human behaviour that this thesis exposes through speculative architecture.

The design research explored this through speculative architecture. The design development, theorists and case studies were all explored as the basis for an unbuilt design. The investigation explores how architectural allegory can be an effective way of conveying a message with multiple layers of interpretation and meaning. The aim of the design research was to integrate the ideas and perspectives of the selected case studies in parallel with the influence of the selected machines to achieve this. The investigation explores the physical, environment and political elements of the design research to expose the unsustainable relationship between humanity and its machines.

Brief summary of the design methods and process in relation to the scope of the research:

In 1908, German sociologist, philosopher and critic Georg Simmel wrote the essay "The Stranger" as an excursus to a chapter dealing with sociology of space in his book *Soziologie*. In 1942, Albert Camus published his novel *The Stranger* (*L'Étranger*). It was divided into two parts, where the single main character narrates the events from his own point of view before he commits a murder (part 1) and after he has committed a murder (part 2). The turning point towards the end of part 1 was his mother's funeral, at which he did not show any sadness and has no wish to see her body. After this, he apathetically murders someone. At the end of the novel he awaits his own execution. Camus summarised the theme of the novel as: "In our society any man who does not weep at his mother's funeral runs the risk of being sentenced to death".

Simmel and Camus's tales can be interpreted as allegories. The stranger is an allegory for the other within society – someone who takes the outsider's view and gains a perspective from it. Neither Simmel nor Camus state the position as right or wrong but instead emphasis the differences an outsider can perceive.

The theorists and case studies chosen all return to Simmel and Camus's allegories about the view of the outsider. Douglas Darden's *Temple Forgetful* deals with the forgotten half of events past while Michael Webb's 1987 project *Temple Island* explores the potential other sites contained within photographs. Theorists such as Raimund Abraham were foreigners to mainstream architecture, questioning the fundamental basis of modernism's overwhelming popularity. Lebbeus Woods goes a step further and questions architecture's other uses outside a built project. Woods's projects such as 1993's *Injection Parasite* look at architecture's other use as a political device in the war torn city of Sarajevo. CJ Lim continues Woods's exploration of speculative architecture but moves in narrative with his 2011 book *London in two-and-a-half dimensions*. Lim explores the other aspects of place that are not shown in architectural drawings but are experienced in time. Each of these theorists and case studies influenced the design development with each contributing a differing perspective on how the allegories of Simmel and Camus can be interpreted.

Chapter One

Remembering / Camera Obscura

What we remember is only one side of events past. The forgotten is the shadow of events remembered. From Douglas Darden's exploration of this through the Temple Forgetful project to the Camera Obscura's ability to see the unseen, there is an inverted and reflected world around us that we are rarely able to access. What Darden and the pioneers of the Camera Obscura recognised is what it has to offer. Georg Simmel's theory of the Stranger talks about seeing from 'the outside' and how it can provide a more objective perspective on reality. The ways in which Darden explores this issue through speculative architecture and the Camera Obscura quite literally saw the unseen offer precedents to this position.

Fig. 1. Douglas Darden

Theory: Douglas Darden

Douglas Darden was one of the most important speculative architects of the late 20th century (Marche 162). Born in 1951 in Denver, Colorado Darden would go on to study English and Psychology, Industrial Design and finally a Master's in Architecture from Harvard University; graduating in 1983 (Dey). Best known for his 1993 book *Condemned Building* focusing on speculative architecture Darden would never produce any built work (Marche 162). Along with Lebbeus Woods Darden is probably one of the most influential speculative architects of the early 1990s.

Darden's prior education in English and Psychology shows through in his architectural design with his projects often focusing on human action and emotion translated into architecture (Dey). Darden cites literature as particularly influential to his work with text and sub-text playing a key role in many of his projects (Marche 163). As with Raimund Abraham 30 years earlier Darden felt that there was something missing from contemporary architecture that could be explored through speculative design and theory; Darden referred to this as the 'underbelly' of architecture

(Marche 162). Darden's concept of the 'underbelly' as the unconventional and unknown underside of architecture was never fully explored due to his premature death due to leukaemia in 1996 (MOMA).

Darden is an example of a theorist within speculative architecture who focused on architecture as an extension of literature. More so than most other speculative architects Darden attempts to reach and explore the fundamental human condition through architecture. Darden's main methods of exploration were drawing and literature. With a drawn aesthetic influenced heavily by classical speculative architects such as Giovanni Piranesi and Jean-Jacques Lequeu Darden's imagery has a timeless aesthetic that stands up well in today's CAD dominated world. Combined with Darden's focus upon human rather than contemporary architectural or political issues, much of Darden's work retains significant relevance today. Darden's approach towards the 'underbelly' was influential in this investigation along with his integration of literature into his work.

List of Figures (Clockwise from top right):

Fig. 2. Temple Forgetful Section

Fig. 3. Temple Forgetful Plan

Fig. 4. Temple Forgetful Section

Fig. 5. Temple Forgetful Section

Fig. 6. Temple Forgetful Elevation

Case Study: The Temple Forgetful

The Temple Forgetful is one of ten speculative projects that make up Douglas Darden's 1993 publication *Condemned Building* (Darden 28). The project deals with remembering and forgetting and draws from several sources to weave an allegorical narrative together (Marche 163). A combination of drawing, text and modelling are used to convey the narrative. Darden introduces the setting of the project with an opening statement that places it within a mythical Roman context:

The Temple forgetful straddles the recent excavations in the Roman Forum where archaeologists claim to have found the boundary line where the mythical twins, Romulus and Remus, built the original wall of Rome. The temple is dedicated to Remus, the great nay-sayer of Rome, who maliciously forgot the sacred meaning of building the wall, crossed it, and was murdered by his twin.

The project is primarily two theatres which turn their backs on each other across the alleged original wall. Akin to the acts of remembering and forgetting, each theatre plays out its respective mechanisms of support and peril; one theatre is jammed with columns under a sagging roof, the other theatre is a gorge flooded with continuously rushing water and threaded by a double bridge.

Douglas Darden. *Condemned Building*. Pg 29.

Like much of Darden's work there are several layers that exist below the surface for interpretation (Marche 162). Though the project appears to be based around the Roman myth of Romulus and Remus it becomes clear as the project progresses that Shakespeare's *Hamlet* is also mirrored in the narrative (Dey). This can be seen as a personal allegory for Darden reinforced further when his Dis/continuous Genealogy is broken down. The Genealogy progresses through a Roman coin of Janus, the temple of Roma/Amor, the Vitruvian theatre, the Globe Theatre to the resulting design (Darden 36). Breaking down this can reveal an allegory about Darden, particularly his academic studies.

The first element is a depiction of Janus: the two faced Roman god of deception and transitions. This can be interpreted as a metaphor for Darden, who turned his back on his literature education in favour of architecture; yet the memory (and influence) of it remains. The second is Hadrian's Temple of Roma and Venus which serves as both an architectural reference but contains an irony as an architectural template. The temple was designed by the Emperor Hadrian but ridiculed by his greatest architect who was subsequently executed. This element both ties the myth of Romulus and Remus to it but also links to *Hamlet*. It also serves as the basis for the back to back design. The overlaying of the Roman and Globe theatres is the final intersection of the two allegories (Darden 36). Two quotes that appear in the project reference *Hamlet* and are both in relation to remembering. The initial quote is taken from Hamlet's conversation with the ghost of King Hamlet about how he will forget all but what the ghost has told him. The

second quote is a reference to Hamlet remembering again but this time drawing parallels to his father's murderer and a beast - a link Darden makes to the upbringing of Romulus and Remus by a wolf. The final element of the project is the engraved Latin '*Ceci tuera cela*' taken from the novel *Notre Dame de Paris* by Victor Hugo meaning 'the printed book will destroy the building'. However the meaning of this is at play within the project as the quote is slightly obscured by architecture; somewhat inverting its message.

The Temple Forgetful is Darden's exploration of memory and architecture (Marche 163). The project can be read to be an allegory of Darden's memories but also plays with the more general idea that memories are the remaining half to events forgotten. The project is part of a wider exploration by Darden about the 'underbelly' of architecture and can be seen as a metaphor for this. The Temple Forgetful influenced this investigation as a piece of architecture that explored memory. This attribute was combined with the Camera Obscura and the concepts of remembering through images.

Fig. 7. (Left) Helioscope Camera Obscura

Fig. 8. (Right) Camera Obscura Drawing Devices

History: The Camera Obscura

The ancestor of the modern camera is the Camera Obscura. The name derives from the Latin words 'Camera' meaning 'Vault' or 'Chamber' and 'Obscurus' meaning 'Dark' or 'Obscure' (Britannica). The Camera Obscura was the first step in capturing images mechanically and consisted of a darkened room with a small lens in one side; light would pass through the lens and be projected as an inverted image onto a piece of paper on the opposite wall which the artist would trace on (Britannica). The device was also used for viewing solar eclipses that could not be viewed with the naked eye. The Camera Obscura represents one of the earliest examples of a device that allowed humans to observe and document what was previously unable to be captured.

The inversion of the image is one of the most important aspects of the Camera Obscura. The Greek philosopher Aristotle noted the way in which light inverted and changed when it passed through a small aperture (Hammond 2). Aristotle never reached a conclusion as to why it happened and the phenomenon was a mystery for the next millennium (Hammond 19). Following developments of the theory behind the device took place in the Arabic world where

much of the Greek texts lost during the European Dark Ages still existed (Hammond 21).

The Camera Obscura as a drawing tool first came into existence in the 16th century (Hammond 333). The ability of artists to reproduce totally accurate images of the world around them was at first overlooked. By the late 17th century the device had been miniaturized and made portable in several configurations (Hammond 302). By the turn of the 19th century it had gained popularity with tourists and travellers to record and remember places they had been (Hammond 306). With this surge into popularity the Camera Obscura attained the necessary attention to be developed into the Photographic Camera with the addition of a light sensitive plate in 1827 by J.N. Niepce (Britannica). The Camera Obscura influenced the design development both with its ability to capture the unseen but also the ability of the images it produced to capture events long gone. The relevance of these images for reflection upon past actions and events is explored in the final narrative in relation to today's unsustainable society.

Critical Reflection: The Camera Obscura and Sustainability

The Camera Obscura can be used as a metaphor for humanity's view on sustainability. Once sustainability has passed through the lenses of culture and civilisation the simple idea becomes distorted and warped - much like an image gets inverted and flattened within by the Camera Obscura. The initial images projected by the Camera Obscura were historically ridiculed as cheap and without artistic interpretation. The idea of capturing an image and viewing it without the help of the artist was foreign. Within 100 years the images produced by the development of the Camera Obscura – the photographic camera – had changed the way people remembered and thought about past events. In the present day photography has revolutionised the way people communicate and remember; the reading of images is ingrained into society. Much like the Camera Obscura before the Photographic Camera sustainability today is only a shadow of what it needs to be. Sustainability is a belief; it does require interpretation and understanding, just like the flat and inverted images of the Camera Obscura initially did.

However in the modern world it is not embedded within society; interpretation is not a given. Sustainability needs to reach the level of unquestionable understanding that modern imagery has; people do not question if images on a smartphone are the correct way to portray the content; it simple is a given.

Sustainability as a concept needs to be rethought; people view sustainability as strange and unnatural, even threatening. The reality is that this is true; humanity is not fundamentally sustainability as its evolutionary background has shown. So it is that humanity needs to embrace the strange; there is no time to evolve into sustainable beings. Pioneers such as Douglas Darden recognised this and embraced the strange and familiar on equal grounds. The images and communication the Camera Obscura enable are strange and foreign in evolutionary terms yet they are not foreign to modern humanity. Sustainability needs to be the same.

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Preliminary Design Studies: Camera Obscura

Fig. 9. (Left) Revision 1
Plan.

Fig. 10. (Lower) Revision 1
Section.

Fig. 11. (Middle) Revision 1
Elevation.

Fig. 12. (Right) Revision 1.5
Elevation.

Critical Reflection: The development of Part 1 was driven by the Camera Obscura. Within the overall narrative Part 1 was conceived as being at a much smaller scale than the later parts. The setting for the narrative is the main character's 'viewing room' where they observe the outside world.

The Camera Obscura is also used to show differing perspectives. The development of the viewing room as a space where the main character receives and analyses the strange inverted image of the world the camera obscura produces is another metaphor for taking the uncommon view of the world and discovering new meaning from it.

Fig. 13. (Left) Revision 1 Section.
 Fig. 14. (Middle) Revision 1 Plan.
 Fig. 15. (Upper Left) Revision 1 Camera Obscura Render.
 Fig. 16. (Upper Right) Aperture Adjustment Mechanism.
 Fig. 17. (Right) Revision 1 Elevation.
 Fig. 18. (Lower) Revision 1 Isometric.

Preliminary Design Studies: Camera Obscura

Fig. 19. (Left) Revision 3 Plan.

Fig. 20. (Middle) Revision 3
Section.

Fig. 21. (Right) Revision 3
Elevation.

Fig. 22. (Left) Camera Lense Adjustor

Fig. 23. (Middle) Jet Engine Test Station

Fig. 24. (Right) Lense Connection

Chapter Two

Generating / Loom

Humanity is unsustainable. Since the Industrial Revolution and the mechanization of the globe it has been the fate of humanity to reach the breaking point of what the planet can sustain. The capacity to think and subsequently act sustainably is within humanity's grasp; however to do so will not be easy. The changes required will take a very conscious and fundamentally incomprehensible effort to become a reality. Speculative architecture can be used to raise awareness of these issues.

Fig. 25. Lebbeus Woods. High Houses.

Theory: Lebbeus Woods

Lebbeus Woods was perhaps one of the most successful speculative architects of the 20th century (Wainwright). Born in Lansing, Michigan in 1940 Woods would go on to study both Architecture and Engineering (Johnels). Woods began to deal with speculative architecture in the late 1970s both producing visual work and written theory (Wainwright). The focus of Woods's work was the power at play within a system; Woods's work was often politically aligned and often depicted provocative decline of current systems in transition to the new (Woods "The Reality of Theory"). Woods used speculative architecture to address issues totally unrelated to architecture as a discipline but in doing so furthered architecture as a method of communication (Woods "War and Architecture: The Sarajevo Window").

Woods furthered the view of architecture as a concept showing it did not have to be built to serve a purpose (Johnels). Woods's work such as his 1993 speculative project Injection Parasite sited upon the ruined Electrical Management Building in Sarajevo is a political narrative that questions the role of architecture today and in the future (Woods "The Reality of Theory"). It is a manifesto

against architecture as an icon. Lebbeus Woods is one of the most influential figures to campaign for architecture as architecture, not just a building. His work did not only look at architecture as a solver of problems but also as the cause of them, seeing past the blind faith that many of his predecessors had possessed. Lebbeus Woods engaged architecture in issues that allowed it to participate as a language or medium for issues to be raised (Johnels). Though he only had one project actually built, this is something of an accolade showing that architecture does not have to be about physical structures but can be purely conceptual (Wainwright). Woods's unexpected death in 2012 received tributes from around the world acknowledging his contribution to the world of architecture (Wainwright). Lebbeus Woods's exploration of speculative architecture as a tool to raise awareness influenced the design development of this thesis. The ability of architecture to comment upon environmental and political issues was pioneered by Woods and is a key concept utilised in this investigation.

Fig. 26. (Left) Injection Parasite.
 Fig. 27. (Upper Middle) Electrical Management Building,
 Sarajevo.
 Fig. 28. (Upper Right) Injection Parasite.
 Fig. 29. (Lower Middle) Injection Parasite.
 Fig. 30. (Lower Right) Injection Parasite.

Case Study: Injection Parasite

Lebbeus Woods's 1993 'Injection Parasite' is one of his most famous and influential speculative architectural projects. It is an example of political narrative (Johnels). Its narrative questions the role of architecture today and in the future. It is a manifesto against architecture as icon.

I am at war with my time, with history, with all authority that resides in fixed and frightened forms. I am one of millions who do not fit in, who have no home, no family, no doctrine, no firm place to call my own, no known beginning or end, no "sacred and primordial site." I declare war on all icons and finalities, on all histories that would chain me with my own falseness, my own pitiful fears. I know only moments, and lifetimes that are as moments, and forms that appear with infinite strength, then "melt into air." I am an architect, a constructor of worlds, a sensualist who worships the flesh, the melody, a silhouette against the darkening sky. I cannot know your name. Nor you can know mine. Tomorrow, we begin together the construction of a city.

Lebbeus Woods

Set in the war city of Sarajevo, Bosnia the project appears like a parasite series of bandages that 'heal' the destroyed Electrical Management Building in the heart of the city (Woods "The Reality of Theory"). The project positioned architecture as a political intervention. Woods theorised that 90% of the city would return to its former uses but 10% would not (Woods "The Reality of Theory"). Acutely aware of the significance that surrounded the fall of Socialism and the influx of privatization Woods suggested that this last 10% become 'free space' where the debates of political reform and new ways of thinking would occur within the shadow of the old (Woods "The Reality of Theory"). The project put forward a clear position that was opposed to an entirely new architecture that erased the past. Though 'Injection Parasite' is a project situated in the depths of war its message is optimistic and forward thinking. Woods uses the subject of war to look at how architecture can participate in the radical changes in both thinking and living that occur in such situations (Woods "September 11, 2001-2011 (Complete)"). Injection Parasite influenced this investigation as a precedent for architecture addressing issues outside the built environment through speculative architecture.

Fig. 31. Sächsische Maschinenfabrik in Chemnitz, Germany. 1868.

History: The Loom

The earliest textiles were woven some 5000 years ago (E. Britannica "Textile"). Since then the Loom has passed through mythology and mechanization to play its part in the history of humanity. Weaving as known today has strong roots in ancient Egypt and later Greece (Britannica). The tradition of weaving being a female duty first appears in Greece and is exhibited in mythology - the three Moirai: Clotho who spins the thread, Lachesis who draws the lots and Atropos who cuts them. These three goddesses were said to determine the fate of life and death (Britannica).

The Loom was significant in the classical world and would return to significance in the Industrial Revolution (Britannica). One of the first mechanized industries, the textile industry would become synonymous with the lack of human rights and environmental pollution that the Industrial Revolution became (Britannica). The Loom played a part in several of the greatest social rights movements of the last 200 years. The Textile Industry in 19th century Britain was one of the first steps in what was to become the feminist movements of the 20th century (Britannica). The industrial looms gave freedom and independence to women, even if the working conditions and inequality were arguably greater than before. That freedom and independence was also what the black population of the United States lacked under the slave trade driven in substantial part by the cotton plantations of the south that fed the looms in the north (Britannica).

The Loom has been tied to human endeavour and industry for thousands of years, quite literally putting the clothes on the backs of the people that wove. The last two thousand years have seen the loom used to spin the elaborate tapestries of medieval Europe and the fine silk of the East. The loom is a cornerstone of modern culture and modern industry. The symbolism of the loom as both an icon of fate and the Industrial Revolution influenced the design development of the thesis. The physical machine is integrated into the design, symbolically representing these attributes.

Critical Reflection: The Loom and Sustainability

The environment around us is an ecosystem of strands woven together. In ancient Greek mythology the world was woven together by three gods: the 'Moirae'. These three gods quite literally wove together the world and determined the fate of all. Today this myth can be translated to the environment. The key difference is that it is humanity unravelling the threads of the environment rather than gods weaving them together. As of 2016 this is quite literally the case as scientists determine the planet to have entered the anthropocene epoch, a planetary era where humanity is the dominant driver of environmental change.

Humanity is in a position experienced by no other species. The ability to interfere and tamper with the global environment is unique to humanity. Humanity has become the foreigner in many ecosystems; it does not fit in. The past centuries have seen the extinction of thousands of species of flora and fauna at humanity's hand both consciously and accidentally. Either method has the same source. Extinctions are mourned but in reality the planet will survive; however with its current outlook humanity cannot.

The solution is humanity needs to recognise what it is; an overwhelming imbalance to most local and global ecosystems. The metaphor of the loom can perhaps be expanded here; a fabric can still hold together if threads are removed; however after a point it will begin to fall apart. Humanity needs to be able to stop destroying the environment around it for its own sake - not reducing its consumption but isolating it and doing away with the idea of an endless environment to consume from. To this end Architecture needs to continue to incorporate sustainable design that reduces interference with the environment around it both in consumption and pollution. The current efficiency based approach of sustainable architecture can only work to a certain point; after that the creation of the built environment must be consciously driven towards self-sustained isolation.

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Preliminary Design Studies: Loom

Critical Reflection: The loom was one of the key elements of the design that was integrated early as a symbolic element. Over time the loom would come to be part of the integral workings of the structure.

Fig. 32. (Left) Original Loom Design Section.
Fig. 33. (Middle) Original Loom Design Plan.
Fig. 34. (Right) Revision 2 Loom Elevation.

Fig. 35. (Left) Revision 3 Plan.
 Fig. 36. (Middle) Revision 3 Front Elevation.
 Fig. 37. (Right) Revision 3 Side Elevation.

Preliminary Design Studies: Loom

Fig. 38. (Left) Revision 3 in Habitat Elevation.
Fig. 39. (Right) Revision 3 in Habitat Section.

Fig. 40. (Left) Industrial Loom
Fig. 41. (Middle) Industrial Looms
Fig. 42. (Right) Industrial Loom

Chapter Three

Surveying / Theodolite

Sustainable civilisation is a path that humanity has never explored. Exploration traditionally was a physical exercise; however an exercise in exploring sustainability is as much theoretical as physical. Theorists such as Raimund Abraham show how a speculative approach to architecture can explore where physical construction cannot. The Theodolite shows how humanity surveyed the natural environment to construct it in human dimensions; today we need to survey our own society and environment to allow for the natural environment to remain. Exploration will be a key step towards a sustainable humanity and speculative architecture can play a role in it.

Fig. 43. Raimund Abraham

Theory: Raimund Abraham

Raimund Johann Abraham is an Austrian born architect influential in both his home country and later New York (E. Britannica "Raimund Johann Abraham"). Born in the town of Lienz in 1933 Abraham studied at the Technical University of Graz and established a studio in Vienna in 1959 (E. Britannica "Raimund Johann Abraham"). Abraham explored the speculative built environment through drawing and text (Ryan). In 1964 Abraham moved to the United States and became part of the avant garde movement of the 1960s and 1970s (E. Britannica "Raimund Johann Abraham"). At the time, architecture in the heights of the modernist movement, Abraham went against the mainstream modernists arguing that it lacked the depth and meaning that architecture should provide rather than being about aesthetics and style (Ryan).

Abraham is famous both for his speculative and built work (E. Britannica "Raimund Johann Abraham"). His speculative work was primarily explored through drawing and is famous for being as much artwork as architectural media (Ryan). Abraham's speculative projects were visually compelling and often displayed as artwork (E. Britannica "Raimund Johann Abraham"). Abraham's speculative work explores how architecture can attain the depth and

meaning that Abraham felt to be lacking from the stylised modernism that dominated the 1950s and 1960s (Ryan). Abraham's speculative projects often broke down a building type or function into minute humanised detail. His project explorations of the early 1960s dealt with the notion of the city as an organic being. The imagery of a fictional city's roads as veins or the constriction of another to a linear growth were the beginnings of Abraham's explorations into place identity.

The conclusion of Abraham's work is similar to what is reached in CJ Lim's later projects but at a greater scale. Lim typically works within the context of a city while Abraham looked at how the city fitted into the world around (Abraham et al.). If Lim looks at place identity Abraham looks at the threads and strands that tie places together. Projects such as Abraham's 1970-1976 'Houses' series visualise and break down both the elements and the links between them through drawing. Raimund Abraham died in 2010 but the legacy of his work remains (Amelar). Abraham's rebellion against the machine driven modernist architecture of the period and his exploration of human values through architecture influenced the structure and development of the thesis.

Fig. 44. (Left) 9 Houses Triptych.
 Fig. 45. (Middle) House with two Horizons.
 Fig. 46. (Right) House with Curtains.

Case Study: The House with Two Horizons

The speculative work *The House with Two Horizons* is a 1973 project by Raimund Abraham. The work is part of the 10 Houses series that Abraham worked on from 1970 to 1973 (Abraham et al.). Published in the text *(Un)Built* the work is an allegorical exploration of the house. Abraham examines the nature of the house as an architectural container for human emotion and activity but then proceeds to open the context of the house out into the wider world. The 'house' consists of several levels and stairs connecting the levels to each other and the outside world both physically and symbolically. Contained within the ground the house sits underneath a lowered pit that houses a lone staircase ascending to the actual horizon level. The horizon of the house is lowered beneath the ground level symbolically reducing the interaction with the outside. It is an allegorical exploration of the insular being aware of the outside. It creates interior horizontal lines in counterpoint to exterior horizontal lines.

Abraham's intentions are made clear in the text that accompanies the 10 Houses project in which his intentions are to show the house as a junction (Ryan). The exploration of junction is an example of speculative architecture exploring the links between elements (E. Britannica "Raimund Johann Abraham"). Abraham shows us this junction as part of a wider environment in his 1975 work 9 Houses Triptych where the House with Two Horizons is part of a wider environment of other insular junctions. The links that join them are also the elements that create all of them. Abraham enables the reader to understand that there are issues outside our own insular environment. Abraham's project was conceived at a domestic or small urban scale yet the messages of it can be applied to the wider predicaments that the world faces today. The House with Two Horizons influenced the design development of the thesis with its exploration of place. This is an allegory very similar to Georg Siegel's, understanding that we only see what our personal 'horizon line' allows us to see. But if we change our viewpoint to gain a wider scope, we can understand our own context within the wider environment.

THE THEODOLITE

Fig. 47. The Theodolite. Author's Work. Hand Drawing.

History: The Theodolite

The profession of surveying has been around for over two millennia. One of the most important surveying instruments prior to the digital age was the theodolite. Theodolite is derived from the Latin 'theodolitus' instrument which was first recorded by English surveyor Thomas Diggs in 1570 (Wolf 82). The origin of the instrument dates back much further however. The ancestor of the theodolite is the Greek 'dioptra' dating from the classical Greek period in the 3rd century BCE though there is speculation it may have existed from as early as the 6th century BCE (Lewis). The dioptra was a simple instrument that could measure angles in the horizontal and vertical plane. The theodolite was capable of far greater accuracy and range due to several advances in the 17th century being incorporated into it. Galileo's 1609 invention of the telescope facilitated far greater distances to be measured while Pierre Venier's vernier scale allowed for readings to be reduced to a fraction of a degree by 1631 (Wolf 82). An additional improvement of the 17th century was Melchisedech Thevenot's invention of the level vial, replacing the Roman era plumb bob system for more precise levelling (Wolf 82).

Two events in the 18th and 19th centuries were to significantly increase the usage and application of the theodolite as a precise surveying instrument. The first came

in the late 18th century in Britain with the construction of the vast canal network (Wolf 83). Never before had transport been required to have such precise construction and engineering - even outdoing the classical efforts of the Roman aqueducts. The 19th century saw the construction of Britain's rail network whose high speed trains needed precise surveying; later the United States would build its own even greater rail network followed by the rest of the industrial world powers (Wolf 84).

The theodolite allowed the creation of the greatest logistical networks in the world. It connected the network of industrial hubs together and defined place within it. The canals of Great Britain were the first waterways in the world not limited by the path of existing rivers but free to take the most direct route across the land. The later rail networks would allow for even greater connections to be made. The profession of surveying with the theodolite at its centre became one of the most respected jobs of the industrial revolution (Wolf 80). The theodolite influenced the development of the thesis with its relation to place and exploration. The design focuses upon exploration and place in regards to sustainability with the theodolite symbolising this.

Critical Reflection: The Theodolite and Sustainability

The Theodolite and Speculative Architecture are both tools of exploration. The Theodolite is used to map out nature for human intervention; Speculative architecture today can map out the built environment to achieve sustainable design. Throughout history humanity has excelled at surveying and planning - both physically and mentally. The actions of the Theodolite are symbolic for sustainability. The surveyors of the past two centuries preceded human development upon almost a third of the planet's land.

Sustainable Architecture today needs to survey the task before it like the Theodolite. Architecture needs to embrace sustainability in more and more fundamental aspects. Speculative Architecture can explore this. Much like the Theodolite allows measurements to be placed upon

previously unmeasured landscapes Speculative Architecture can convey concepts that cannot be conveyed today. Without the constraints of reality Speculative Architecture can allow ideas to be explored in a manner that allows for untainted vision.

The role of Speculative Architecture within sustainability is clear. Like the Theodolite Speculative Architecture must map out and find interpretation within the unclear. Speculative Architecture must deal with the foreign and strange concepts that reality cannot. If Architecture can become familiar with the unfamiliar perhaps it can continue to change until the strange speculation of today becomes a reality.

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Preliminary Design Studies: Theodolite

Fig. 48. (Left) Revision 1 Front Elevation.
Fig. 49. (Middle) Revision 1 Side Elevation.
Fig. 50. (Right) Revision 1 Plan.

Critical Reflection: The Theodolite was the first machine that was used to inform the design and influenced the overall form of the design. The symbolism of the theodolite as a machine for both discovering place but also taming nature and imposing humanity's measurements and guidelines was the reason for it being chosen.

Feedback upon the use of the theodolite focused upon the form and elegance of the original instrument and the importance of preserving that - in particular the connection to site. As a result the base of the theodolite remains a key recognisable element throughout the design process.

Fig. 51. (Left) Revision 2 Elevation.
Fig. 52. (Middle) Revision 2 Elevation.
Fig. 53. (Right) Revision 3 Elevation.

Preliminary Design Studies: Theodolite

Fig. 54. (Left) Revision 4 Plan.
Fig. 55. (Middle) Revision 4 Elevation.
Fig. 56. (Right) Revision 4 Section.

Fig. 57. (Left) Mechanical Actuators.
 Fig. 58. (Middle) Surveyor's Theodolite.
 Fig. 59. (Right) Surveyor's Theodolite.

Chapter Four

Discovering / Compass

Raising awareness about environmental destruction can be achieved by speculative architecture. Projects such as CJ Lim's reinforce how important place is but also reflect how the problems faced by cities today are the same across the globe. The compass is in many ways responsible for the globalization that has occurred in the past 500 years. The compass is the single greatest advancement in nautical navigation. The solar compass in particular was what allowed early explorers to navigate the seas but also participated in the surveying and development of these newly explored lands.

Fig. 60. CJ Lim. The London Eight.

Theory: CJ LIM

CJ Lim was born in 1964 in Malaysia and later studied at the Architectural Association School of Architecture (Tonbridge). Currently Lim teaches at the Bartlett Faculty of the Built Environment at University College in London (Tonbridge). Lim and Bernd Felsing lead the Unit 10 segment of the Master's Course at the Bartlett (Bartlett). Lim's relevance to this thesis is his work with place identity. Lim's work deals with urban theory and has a particular focus on sustainability (Lim). Lim's urban planning work is part of the idea of the 'Smartcity' - a theoretical approach to urban planning that incorporates sustainable design into an urban environment and looks at the spatial and phenomenological implications (Lim).

The work that Lim does with urban planning is often theoretical and is explored in a variety of ways. Lim's recent publications look at the social interactions of modern cities but also the historical traits that led to them in publications such as 2011's *Short Stories: London in two-and-a-half dimensions* (Lim). Lim is considered to be one of the leading theorists in the field of architectural education having won the Royal Institute of British Architect's President's Medal International Teaching Award for contribution to architectural education four times in 1997, 1998, 1998

and 1999 (Lim). The AJ/Bovis Lend Lease Architecture Prize was also awarded to him in 2006 by the Royal Academy of Arts.

Lim's approach to the analysis of the built environment is an example of the way that literature and theory can influence the built environment (Lim). Lim's work often revolves around historical analysis of social patterns such as in 2014's 'Food City' and looks at how historical methods can solve modern problems. Often this takes the form of an allegorical narrative which shows the success of historical examples as a reflection upon current problems. Lim's work uses drawings, models and text to explore urban issues - primarily food production and is designed to inform and stimulate the minds of professionals in the fields of urban design and architecture (Lim and Liu). The emphasis of Lim's work always returns to the concept of place and how important it is to human life. Lim uses international and historical examples to establish why they were successful and how modern environments can implement that success in a sustainable context. The way in which CJ Lim uses narrative to explore architecture was an influential precedent in the development and structure of the thesis.

Fig. 61. (Upper Left)
London in two-and-a-half
dimensions.

Fig. 62. (Upper Right)
London in two-and-a-half
dimensions.

Fig. 63. (Lower Left)
London in two-and-a-half
dimensions.

Fig. 64. (Lower Right)
London in two-and-a-half
dimensions.

Case Study: Short Stories: London in two-and-a-half dimensions

Short Stories: London in two-and-a-half dimensions is a 2011 publication written by CJ Lim and Ed Liu. Consisting of a series of short stories all set in the city of London the book explores the city through a series of characters who interact and explore the city (Lim and Liu). The book uses text, drawing and modelling to convey the interactions that occur and allows the story to be read from the alternating views of the characters but also the architecture and urban environment itself. The ten short stories are all set at differing times and places across London but combined paint a picture of the city as a whole. The allegorical exploration of place allows the reader to see the city as animated and engaging with human activity rather than a backdrop and stage for it (Lim and Liu).

The short stories that make up the book are all meant to inform and stimulate the minds of professional architects to recognise the importance of place and how the memories of previous iterations of the built environment remain. The context of the book's publication perhaps explains the choice of London and the messages that are conveyed. Still emerging from the 2008 recession London faced the prospect of the Olympic Games in 2012 and the world's attention along with them. The book can be seen as an encouragement for architects to dream and become story tellers with reference to the environment around them rather than simply suppliers of construction documents. An example in the book of the speculative interaction with

place is the fictional '215th bridge' across the Thames River that was designed in collaboration with Maxwell Mutanda and Tomasz Marchewka (Lim and Liu). The temporary bridge every year appears between the months of June and September in addition to London's 214 existing bridges and provides a metropolis where the two halves of the city are joined (Lim and Liu). The models and imagery are highly reminiscent of the medieval London Bridge which housed the city's marketplace and was a mixing pot for the inhabitants of the city. The imagery is placed on top of the replacement for that bridge which in turn was removed from London in the 20th century. The imagery conjures up the ideas that the memory of these bridges remains and that their legacy is still present in the city of London. Indeed the original London Bridge is speculated to be the origin of the United Kingdom's practice of driving on the left hand side of the road; a practice that today is spread throughout the modern city of London.

The allegorical stories of London in two-and-a-half dimensions show how place is an important element within the built environment and consists of layers upon layers of events and structures that may not remain but occasionally appear to inform current designs and bring character to otherwise bland architecture and urban environments. This layering of information influenced the design development of the thesis.

B. P. WILME, Del. et Sculp.
15, Featherstone Buildings, Holborn, London.

Fig. 65. Burt's Solar Compass.

History: The Compass

Unlike all the other instruments covered in this thesis the compass did not appear in the classical world but instead was first developed in China. The magnetic properties of lodestone were first recognised in China between 300 and 200 BCE (Lowrie 281). However the first meaningful use of the compass appeared in the 12th century AD when Chinese seafarers are recorded using it as a navigation device (Augustyn). Within a few hundred years European explorers had refined the compass and subsequently used it to perfect the navigation of the seas in combination with accurate timekeeping (Augustyn).

The magnetic compass was not the only method of knowing north and south. Older still is the use of the Sun to tell direction. The gigantic astronomical instruments of Northern India are perhaps some of the most impressive examples of architecture itself being a solar compass. Constructed in the 18th century these complexes of astronomical instruments were initiated by Maharaja Jai Singh II of Jaipur (UNESCO). Overlooked as pieces of eclectic architecture due to their lack of ornament these structures defy classification by typical architectural standards (Volwahren). Within them the solar compass can be found, its immense scale contributing to an accuracy greater than a magnetic compass as well as pointing to the planet's true rather than magnetic north pole.

The solar compass would continue to be used to this day due to its accuracy and simplicity. The solar compass became a key surveyor's tool by the time of the Industrial Revolution due to its ability to show true north (Wolf). Increasingly accurate solar compasses appeared that were used in combination with the theodolite to measure angles and directions in a horizontal plane (Wolf). The solar compass would be a part of the same movement of the theodolite spanning countries with rail and canal networks while the magnetic compass would allow for seafaring trade and exploration. The compass created the global network that still exists today. The significance of the compass influenced the development of the design with its symbolic representation of direction and exploration.

Critical Reflection: The Compass and Sustainability

For thousands of years direction has possessed symbolism in mythology throughout the world. The rising of the sun in the East and setting in the West is the centre of many of these tales. As an instrument of direction the compass contains this symbolism. Allegorical Architecture is a direction that Speculative Architecture is beginning to explore. Like the compass symbolising direction allegory can be symbolic for Sustainable Architecture.

The concept of place is an important feature within sustainability. Historically humanity has had a rather warped perception of its place. Specifically humanity has been under an illusion of the finite nature of the planet which its place is on. Place is about both the system and where in it something is; humanity may be better positioned to be sustainable if it realises both aspects. Speculative architecture can raise awareness about the effects of humanity as an entity within a finite system.

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Preliminary Design Studies: Compass

Critical Reflection: Along with the theodolite the compass was one of the first machines to be chosen to be used to inform the design. The compass was used in conjunction with the initial site analysis to establish focal points within the site's surrounding environment.

Key points in the surrounding environment were identified as the northern and southern tips of the South Island and North Island respectively. Initial designs were permanently oriented towards these points symbolising the national scale of the problem and the importance of environmental protection in New Zealand's national identity.

Later designs developed this connection with the surrounding environment and displayed it through the orientation of the wider elements of the design. The rotation of the structure throughout the day passed through these points and symbolically linked North Island and South Island.

Fig. 66. (Left) Initial Orientation Experimentation.
Fig. 67. (Middle) Compass Exploration.
Fig. 68. (Right) Foundation Design based upon Jaipur Instruments Plan.

Fig. 69. (Left) Foundation Design Elevation.

Fig. 70. (Middle) Revision 1 Solar Compass Elevation.

Fig. 71. (Right) Revision 2 Solar Compass Elevation.

Preliminary Design Studies: Compass

Fig. 72. (Left) Revision 3 Solar Compass Isometric.

Fig. 73. (Right) Revision 3 Solar Compass Plan.

Fig. 74. (Left) Initial Heliotrope Gauss Precedent.
 Fig. 75. (Middle) Later Solar Compass Precedent.
 Fig. 76. (Right) Jaipur Instruments Solar Compass.

Chapter Five

Progressing / Clock

How people understand and act upon the past, present and future is important to sustainability's success. The mistakes of the past must pass through the understanding of the present to influence the actions of the future. To achieve a sustainable future people must thus focus and reflect upon present understanding. Architecture must play its part in exploring how it understands and acts upon past experience to deal with future problems. Exploring how architecture as a discipline understands time with relation to sustainability can be approached from many angles. Historically metaphor and narrative have often been used to explore and test concepts that are not fully comprehensible or understood.

Fig. 77. Furniture Manufactures Association Headquarters. Michael Webb. 1958.

Theory: Michael Webb

Born in Henley on Thames in 1937 Michael Webb is one of the most important figures of the post-war British architectural scene as a member of the speculative group Archigram (Webb Temple Island, a Study 2). Archigram experimented with fantastical and ground breaking projects that pushed speculative architecture's limits throughout the 1960s and continued to have significant influence into the 1970s. Projects such as the Pompidou Centre in Paris were influenced by the earlier work of Archigram (Cook and Archigram).

Despite not having any built architecture Webb's work post-Archigram would continue to have an impact in the world of speculative architecture (Webb "Interview: Michael Webb"). Webb found his calling in drawing and experimented with it, continuing with Archigram's pioneering imagery (Webb "Interview: Michael Webb"). Webb's methods of conveying speculative architecture would later lead into heavily allegorical projects such as Temple Island (Webb Temple Island, a Study 46). Along with other early pioneering allegorical architecture works such as Rem Koolhaas's *Delirious New York* Webb became one of the first explorers of the genre (Haralambidou 226). Webb explored allegorical architecture primarily through drawing as opposed to projects such as CJ Lim's *London in two-and-a-half dimensions* which balanced text, drawing and modelling. The focus on drawing meant that Webb's work is often much harder to engage with but provides an experience that is more architecturally driven (Webb Temple Island, a Study 48). Though Webb's use of analogue drawing is no longer a primary medium with the advent of CAD modelling and digital imagery the methods and processes of his experiments with allegory are still very much relevant and influenced the development of this thesis.

Fig. 78. (Lower Right) Submarine Hydrodynamics. Michael Webb. 1987.

Fig. 79. (Upper Right) Displacement. Michael Webb.

Fig. 80. (Lower Left) Temple Island. Michael Webb.

Fig. 81. (Left) Temple Island. Michael Webb.

Case Study: Temple Island

Temple Island is a milestone work of allegorical architecture by Michael Webb. After working with Archigram Webb was occupied for over a decade with a series of drawing explorations that eventually came together in a narrative project sited at Henley upon Thames (Webb Temple Island, a Study 2). These drawings in turn would become an integral part of the allegorical Temple Island exhibition of 1987 (Webb Temple Island, a Study 2). The accompanying publication has become one of the cornerstones of modern allegorical architecture. The project cannot be grasped in its entirety as a static work but rather has to be read through as a narrative to achieve its desired effect (Webb 2). The way in which Temple Island requires a much more dynamic interaction than traditional speculative projects gives it far greater impact (Haralambidou 225).

Temple Island is an example of an allegorical narrative being created almost entirely through architectural media. The project deals with the passes of time between when Webb grew up and exploring it in retrospect (Caroline Rabourdin). Webb used the photographs from his youth, not the actual location, as his site and manipulated them through drawing to test the relationships of time (Caroline Rabourdin). Allegorically Webb tests this by playing with perspectives and distances within the drawings that challenge the conventions of traditional architectural perspectives (Caroline Rabourdin). The project is an example of how elements such as time and place can be explored through allegorical architecture. Temple Island was one of the key precedents for allegorical architecture as narrative in the creation of the narrative of the thesis.

Fig. 82. Verge Escapement.

History: The Mechanical Clock

The history of the mechanical escapement begins in the classical world. By the 3rd century BCE the timekeeping devices designed by the Greeks had begun to employ an escapement (Hosch). An escapement regulated the expenditure of energy to a certain amount over a certain duration. The Greeks typically used water as an energy source and never developed a fully mechanical clock (Hosch).

The development of fully mechanical clocks would occur in Western Europe during the medieval period (Hosch). Initially large and confined to public buildings early mechanical clocks also suffered from large inaccuracies of as much as half an hour per day. The oldest surviving examples date from the 14th century in England and France and are powered by falling weights regulated by a basic escapement (Hosch). Over the next century the development of the mechanical clock would include the use of a spring loaded mechanism and improved escapements with greater accuracy (Hosch).

The importance of the mechanical clock came with its down sizing, allowing for use in domestic houses and later on the wrist as a watch. This brought the ability of timekeeping to the masses. The day was no longer regulated by the movement of the sun overhead but by the mechanical creations of humanity. The clock as an example of humanity's control over nature was used symbolically in the design development of the thesis.

Critical Reflection: The clock and sustainability

Sustainability is a foreign concept for humanity. For the last 50,000 years humanity has actively consumed and utilised the seemingly unlimited natural environment around it. Because of this humanity survived; indeed if humanity had not been so aggressive and destructive it would have almost certainly died out. Humanity's ability to adapt and consume its surrounding environment is what likely ensured its survival. Yet today humanity's survival depends upon it turning its back on these instincts.

Allegorical projects such as Michael Webb's Temple Island may provide a way for the strange and unnatural concept of sustainability to be translated into understandable narratives. Humanity is able to change seemingly natural givens into a language of its own; the rise of the mechanical clock and subsequent reliance on humanity's artificial timekeeping scale rather than the clear natural signs of the seasons and day/night cycle are an example of this. The mechanical watch is an example of how humanity

can forgo the given natural way; perhaps humanity can do the same with its in built evolutionary desire to consume and destroy the environment. Sustainability may be unfamiliar but humanity can adapt to the unfamiliar.

The concept of the unfamiliar within Architecture is not new. However at present sustainable architecture is being treated as an evolution of the familiar - the idea being that if society can be made efficient enough humanity can still carry on its consumption of the environment at a slow enough rate for the environment to regenerate. This approach will likely not work; the assumption of the vast and unlimited environment is still present. Using allegory architecture can begin to explore sustainability from outside the confines of such assumptions whilst still allowing it to raise awareness and have an impact.

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Preliminary Design Studies: Clock

Fig. 83. (Left) Figuring out Escapements by disassembling a grasshopper escapement.

Fig. 84. (Middle) Escapement Experimentation.

Fig. 85. (Right) Modelling Escapement to learn workings.

Critical Reflection: The decision in this thesis was to take the workings of the mechanical watch and use them to inspire the development of two infinite architectural systems - the first being the tidal power generator for the garden which, powered by the tides, provides endless cyclic energy. The second is the Aquaponics systems that feed the Stranger and provide the flora for repairing the surrounding environment. As a closed loop system Aquaponics are complete self-sustaining and again, cyclic.

The use of cyclic systems rather than growth based ones is a critique of society's current view of both life and consumption. In our individualist society life is very much about beginning and ending rather than part of the greater cycle. Consumption is growth based with devastating environmental consequences. The symbolism of the mechanical watch at a deeper level represents this.

Fig. 86. (Left) Revision 1 Plan.
 Fig. 87. (Middle) Revision 1 Front Elevation.
 Fig. 88. (Right) Revision 1 Side Elevation.

Preliminary Design Studies: Clock

Fig. 89. (Left) Revision 2 Plan.

Fig. 90. (Right) Revision 2 Isometric.

Fig. 91. (Left) Exploded Watch Components.

Fig. 92. (Middle) Mechanical Watch.

Fig. 93. (Right) Tourbillon Escapements.

DEVELOPED DESIGN
EXPERIMENTS TO
INTEGRATE THE FIVE
MACHINES

DESIGN EXPERIMENTATION

Critical Reflection: Initial experiments of the thesis explored the idea of an environmental court that inhabited the site before the project progressed to become a more allegorically driven design.

Prior to the initial review the main design methodology was trying to visually convey environmental destruction. After feedback from the first review the focus was changed to become metaphorically driven by the five machines chosen to develop the design around.

Fig. 94. (Opposite Page Left) Initial sketch plan of environmental court.

Fig. 95. (Opposite Page Upper Right) Overall concept of the loom, integrated with other machines in following iterations

Fig. 96. (Opposite Page Middle) Nail concept, not continued as lacked depth.

Fig. 97. (Opposite Page Lower) Overall concept of the compass, integrated with other machines in following iterations.

Fig. 98. (Above) Overall excavator concept. Continued through but with less emphasis as five machines drive the design.

Fig. 99. (Below) Planting Device Concept Plan.

Fig. 100. (Below Left)
Concept elevation for the
Aquaponics lab.

Fig. 101. (Right) Plan of
initial concept

Fig. 102. (Far Right) Section
through initial concept

Fig. 103. (Opposite Page)
Perspective of initial concept

DESIGN DEVELOPMENT

Critical Reflection: After the decision had been made to use the theodolite as a basis for critiquing the quarrying of Owhiro Bay the preliminary design forms were developed. Prior to the initial review the concept of the Stranger as the sole inhabitant of this structure was proposed.

After positive feedback from the reviews about the direction taken the concept continued to be developed with a focus on increasing the detail and function of the structure.

DEVELOPED DESIGN ONE

Critical Reflection: After positive feedback about the direction of the thesis the design was continually developed with an increased focus on the functionality and workings of the structure. The aim was to get the workings of the structure totally realised so that the narrative could be accurately played out within.

Quickly the overall design began to lose the focus and symbolic weight that the earlier proposition had carried. The developed design did however provide a good basis for the aesthetic that was required to sell the machine element of the product.

Prior to the second review reflection by myself and my supervisor provided the means for a second development of the original concept that would correct the shortcomings of the initial development. The increased focus on the symbolic elements of the design and better defined aesthetic hierarchy would be the key focus in the next development.

Fig. 104. (Far Left) Interior Perspective of Aquaponics laboratory.

Fig. 105. (Left) Components of the design:

Fig. 106. (Below) Exploded views of components

Fig. 107. (Opposite Page) Perspective of Developed Design One.

DEVELOPED DESIGN TWO

After the initial developed design a new design approach was tried. This design took the design language established in the preliminary and initial developed design and further developed and refined the design concept.

The second developed design simplified the overall form whilst increasing detail and design upon elements of the design that would be critical to the end narrative. The main focus was the central structure housing the Aquaponics and structural core. To better define and justify the design the remaining machines of the mechanical watch (chronometer), compass and camera obscura were much more integrated into the design.

The design was presented at the August reviews. The feedback received was positive for the overall design and concept; however the reviewers emphasised the need for the machines to show through more in both the presentation and design. This would be the driver for the final design development.

Fig. 108. (Below) Iterations till this point. Presentation Image.

Fig. 109. (Right) Front Elevation. Presentation Image.

Fig. 110. (Opposite Upper Left) Aquaponics Lab development

Fig. 111. (Opposite Lower Left) Growing Pod development

Fig. 112. (Opposite Upper Right) Planting Device development

Fig. 113. (Opposite Lower Right) Developed Design Two Perspective

BY CHRIS YOUNG
THE STRANGER

A 120-PAGE THESIS SUBMITTED TO THE VICTORIA UNIVERSITY OF WELLINGTON IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARCHITECTURE (PROFESSIONAL)

VICTORIA UNIVERSITY OF WELLINGTON
SCHOOL OF ARCHITECTURE
2016

FINAL DEVELOPED DESIGN

Critical Reflection: The final developed design incorporated changes based upon the feedback from both the first and second reviews and was presented at the final reviews. The design primarily addressed the lack of symbolism of previous design iterations. The integration of the machines into the design was done so that they were not immediately noticeable but would be able to be picked out on closer inspection as elements.

The feedback from the final review resulted in the allegorical theory aspect of the thesis including a much broader scope than previously, spanning from Michael Webb's *Temple Island* through to contemporary allegorical projects such as Penelope Haralambidou's *The Fall*.

Fig. 114. (Above) Interior Perspective of Aquaponics Lab

Fig. 115. (Right) Exterior Perspective

Fig. 116. (Opposite Page) Exterior Elevations.

RIGHT VIEW

FRONT VIEW

Fig. 117. Presentation Renders for August Review. Author's Work. 2016.

Fig. 118. Presentation Renders
for August Review. Author's Work.
2016.

Critical Reflection: Developed Design

The final design used the research gathered from the case studies and machines to create a speculative design housing the allegorical narrative of the Stranger. The design incorporated many of the five machines literally into its design while also retaining the symbolism behind them. The narrative of Volume One uses allegory to draw parallels between the Stranger's realisation and humanity's current predicament as an unsustainable species. The influence and environmental impact of the Industrial Revolution is also reflected in the final design. In each section of the narrative Remembering, Generating, Surveying, Discovering, and Progressing are all used as elements of place identity, crucial to humanity being able to recognise its unsustainable practices. All represent qualities of the machines of the narrative, and all are essential components in the allegory relating to our need to become the Stranger. The Stranger represents an objective view of how we have been damaging our environment and how we need to move forward in the future.

CONCLUSIONS AND REFLECTION

As humanity approaches eight billion in number our detrimental effects upon the planet are becoming greater. Once humanity could barely defend against nature; today nature can barely defend against humanity. The implications of our industrialised society are immense. Speculative architecture can play a role in raising awareness about the implications and issues of humanity's unsustainable practices.

Sustainability is a foreign concept to humanity. Humanity has probably survived due to it being highly adept at consuming anything around it to survive. The past two centuries have seen the creation of machines that require us to reverse and alter these evolutionary traits within a generation. A sustainable humanity is not natural.

The original scope of this thesis was limited to humanity's relationship with machines and its environmental consequences. The allegory of the Stranger and inclusion of place identity bring additional layers to the thesis that explore the larger issues of sustainability. The conclusions reached are speculative but they do represent an exploration of sustainability through speculative architecture.

Allegory is open to interpretation and the ending of the narrative in volume one is left open for the reader. The messages conveyed by this thesis are not set but its aim of raising awareness is still achieved even if the reader's interpretation is different than the author's. The next steps for raising awareness would be to explore how different media could be used to further raise awareness.

The writings of Georg Simmel and Albert Camus inspired the idea that there is an outside view. This thesis encourages the reader to consider their place in time and space from an environmental perspective with the objective view of the Stranger. The allegory of the thesis can also be seen as a wider reflection upon the state of humanity as a whole.

The discovery at the end of volume one is the focal point of the thesis. The fact that all the while "The Stranger" has been using the machine to repair the landscape, it is in fact the machine that has also been making the scars upon the landscape – a perpetual cycle of environmental awareness and environmental destruction. A parable for humanity.

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