INSIDE / OUTSIDE and the [inbetween]

Thesis: Submitted in partial fulfillment of the Master of Architecture (Professional)
Degree. Victoria University of Wellington, School of Architecture (2012)

Author: Toni-Rose Brookes

Supervisor: Tobias Danielmeier

CONTENTS

Abstract

1.0 – Introduction

2.0 – Fundamentals

3.0 – Spaces

4.0 – Techniques

5.0 – Design

6.0 – Discussion

7.0 – Conclusion

Bibliography

Abstract

How can architecture overcome the traditional differentiation of inside and outside?

Architects tend to associate our inhabitation and movement within two spatial realms, those being inside and outside. The connection between the two plays a fundamental role in our relationship and understanding of the environment in which we live in. The details of these connections are often neglected and standardised ideals and components are regularly implemented without much consideration in regards to the context in which they are being established.

The fundamental act of architecture is to define one space from another. Primarily this means differentiating the inside from the outside (interactivearchitecture.org). Perceptually and practically the worlds of interior and exterior are mutually exclusive one cannot be in both at the same time, and yet traditionally they border directly on each other. (Lo, 1986)

Through the exploration of the relationship between interior and exterior space a focus will be given to the boundary condition. Looking into the details and material expression which enable these connections and their ability and potential to blur the boundary. Along with material properties and capabilities aspects such as kinetic, interactive and dynamic architecture will be investigated and subsequently implemented as a response to the interior, exterior relationship established.

Aim to achieve architecture, where one is able to interact with the structure and help to adapt the space surrounding in order to accommodate the activities and behaviour of the occupants whilst enabling a comfortable space in regards to the

climatic conditions. With an objective to live with nature and the surrounding environment achieved through blurring the spatial boundaries, forcing one to acknowledge and establish a simultaneous relationship where one can interact and co-exist between the two realms. This will be enhanced through the integration of the building into the landscape enabling the opportunity for the building to work with the environment.

CHAPTER 1.0 – Introduction

1.0 - Introduction

Boredom, restlessness, or irritability that results from a lack of environmental stimulation, as from a prolonged stay in a remote, sparsely populated region or a confined indoor area, also known as “Cabin Fever”. (Ammer)

The concept of “Cabin Fever” leads one to question the spaces in which they occupy, from this one often will be lead to question not only the spaces but also the connections and differentiation between the spaces, and ultimately bring one to question how can this space, connection and or differentiation be changed or similarly overcome?

The fundamental act of architecture is to define one space from another. Primarily this means differentiating the inside from the outside (Interactivearchitecture.org). Perceptually and practically the worlds of interior and exterior are mutually exclusive, one cannot be in both at the same time, and yet traditionally they border directly on each other. (Lo, 1986)

Architects tend to associate our inhabitation and movement within two spatial realms, those being inside and outside. The details of the connections between inside and outside space, for example, walls, doors and windows are often neglected and standardised ideals and components are regularly implemented without much consideration in regards to the context in which they are being established.

How can architecture overcome the traditional differentiation of inside and outside?

We base architecture highly on history, with the increasing development of technology our environments, society and our inhabitation of the two is also changing, one cannot predict the future, assumptions can be made, but a need for flexibility and adaptability is vital.

The connection between inside and outside plays a fundamental role in our relationship and understanding of the environment in which we live in. There is so much to learn from the both the inside and outside, that there is an opportunity to shift the focus toward combining the benefits of which both inside and outside obtain, leading to the idea of blurring the boundaries.

Therefore this thesis aims to undertake an exploration of the boundaries functionality and adaptability to provide a connection between the inside and outside both on an emotional and physical level, creating spaces which enable one to co-exist between the two spatial realms of inside and outside simultaneously as well as relating to the performance of the building overall, looking to the environment in which you are situated and using the resources on offer on the other side of the wall.

The following chapter investigates the history of the relationship that is space and how this is related to the spatial realms of inside and outside, in order to form a greater informed understanding of the concept. From here we will look to the dynamics between inside and outside space, with a focus on the boundary which exists between the two. This will be followed by an investigation into different methods, techniques and ways of approaching the relationship between inside and outside and the connection of which defines it.

Through design the ideas explored will subsequently be implemented as a response to the inside, outside relationship established, with the ambition to produce a design which models one answer to the question “how can architecture overcome the traditional differentiation of inside and outside?”

This will lead to a discussion regarding both the results and ideas raised as a result of the theory and design phases, to be followed by a conclusion.

The following diagram shows the initial brainstorm that was undertaken in order to aid the structuring and strategy for this thesis, looking into potential areas of which could be explored in order to work towards a potential solution to the question:
How can architecture overcome the traditional differentiation of inside and outside?

CHAPTER 2.0 – Fundamentals

2.1 – The Relationship of Space

2.1 The Relationship of Space

With the underlying question being “How can architecture overcome the traditional differentiation between inside and outside?” one must first ask the question what is the traditional differentiation?

To have a differentiation means that there must be two parts, which means that there is the presence of a “relationship” in the equation of this question.

So therefore we must first understand the relationship between inside and outside, as well as where this relationship originates from, in order to be able to comprehend the traditional differentiation between the two.

In this chapter we will aim to establish an understanding of the fundamentals of space and the relationship of inside and outside. This will in turn present us with a foundation and basis of knowledge needed in order to be able to comprehend the traditional differentiation between the two.

First we will look into the fundamentals of space, which will lead us to the origin and formation of the relationship which creates and defines inside, outside and the inbetween.

Space is defined as an interval of distance or time between two points, objects or events. (Collins, 2003) It is also known as a relation between objects. (Arnheim, 1977, p. 9)

The concept of space results from humans need of orientation, outlook and perspective. We as humans inhabit the ‘environment’ which is large and very exposed, often referred to as the ‘outside’, which to some poses the threat of

danger and exposure, which in turn leads us ‘humans’ to a need for protection, shelter and privacy, this space can be known as the ‘inside’.

In order to make sense of our environment we continuously try to form mental connections between everything around us and everything else.

Space has the property of setting frontiers or limits to bodies within it and of preventing these bodies from becoming indefinitely large or small. Space is not some pure extension, lacking all qualities of force, but is rather a kind of primordial atmosphere, endowed with pressure and tension and bounded by the infinite void.

This point was also made by Theodor Lipps: “To every activity effective in any shape there is a corresponding countertendency or, if you prefer, counter activity. Shape which in turn defines space, exist and can only exist by virtue of the equilibrium between the two.” (Arnheim, 1977, p. 71)

Space is a continuous quantity: for the parts of a solid occupy a certain space, and these have a common boundary. Often boundaries cannot be shared comfortably as they fulfil different functions in the two adjacent areas. The boundary shapes will often create unequal conditions in the continuous surface or volumes and as a result different dynamics are created. (Arnheim R, 1977, p. 74)

Architects and designers alike have found it necessary to interpret the combination of closed and open spaces as a dynamic interplay of barriers and passages. Quite in general, architectural space must be viewed as an activity of forces, not as a static arrangement of objects and interstices.

“The geometrician sees solids, hollowed and surrounded by empty space. Space, however, is not empty. It is an invitation to transit, traversed by actual and potential

trajectories and beset by barriers representing obstacles, promises and protection etc. Space is created and made dynamic by obstacles, specifically by the dynamics of objects". (Arnheim, Zucker & Watterson, 1966, p. 6)

Void provides opportunity for activity. This point was made very clear by Lao Tse –

"We put thirty spokes together and call it a wheel; But it is on the space where there is nothing that the usefulness of the wheel depends.

We turn clay to make a vessel; But it is on the space where there is nothing that the usefulness of the vessel depends.

We pierce doors and windows to make a house; And it is on these spaces where there is nothing that the usefulness house depends.

Therefore just as we take advantage of what is, we should recognise the usefulness of what is not." (Lo, 1986)

"The primeval act of architecture is the separation of an inside from an outside. The architect is, by the meaning of the Greek word, the primeval cutter, he cuts and thereby creates Space." (Arnheim et al. 1966, pp. 7,8)

The fundamental act of architecture is to define one space from another. Primarily this means differentiating the 'Inside' from the 'Outside'. These two worlds exist side by side and are some times separated by the thinnest, most transparent of borders. Yet, as Rudolph Arnheim says, inevitably we are either in one world or the other.

"Perceptually and practically the worlds of outside and inside are mutually exclusive. One cannot be in both at the same time. And yet they border directly on each other." (Arnheim, 1977, p. 12)

In order to perceive and understand space, we must look to the relationship of the objects, context and inhabitants which inform it.

The desire to form relationships is fundamental to the human mind and appears to be a principle motive in behind our process of perception.

Understanding the nature of inside and outside space, and how the differentiation between the two affects their relationship, is very important if we are to appreciate how a building satisfies the innate human need for shelter. (Lo, 1986, p. 3)

A relationship is defined as a connection between two things, it is the relationship of inside and outside that ultimately lead us to the idea of "space".(Collins, 2003, p. 654)

A relationship must have:

1. A number of **PARTS** which are to be connected.
2. A **CONNECTION** which must be logical, placing the elements into a single image.
3. An image which forms a **WHOLE**, having greater meaning than the original elements.

Space can be seen as the overall image, space is the "Whole": which is a result of the relationship between inside and outside.

Inside and Outside supply the “parts”, while openings make the “connections”. The “whole”, is an appreciation of the duality of their complementary characters. (Lo, 1986)

We need a point of reference in order to orientate ourselves within our environment. This need for orientation comes from a need for security, identity and more importantly understanding.

As human beings we are not only a part of the environment but we are dependent on the environment. We rely on the elements in order to survive.

“No man is an island, entire of itself; every man is a piece of the continent, a part of the main...” (Lo, 1986, p. 25)

In traditional Chinese philosophy, the Five Elements theory, which consist of wood, fire, earth, metal and water encompass all the myriad phenomena of both nature and humans, this theory can be applied to everything, and can be used to describe interactions and relationships between the spaces that are known as inside and outside. (China Daily, 2007)

It is a fact of life that we are apart of our environment. Our existence depends on it and equally, our presence and activities make a reciprocal impact. However we are also a separate element within the environment and as individuals we must find our own space. (Lo, 1986, p. 25)

In order for one to understand and live within an environment, they must first be able to establish a sense of place and position. From here one is able to establish a mental if not physical boundary, which highlights the space in which they need to

occupy in order to cater for their behaviour and movement as they undertake their daily routine and activities.

From here one is able to establish and claim a sense of place, this in turn helps them to achieve shelter, enclosure and privacy – “inside”. It provides them with a manageable section of the environment in with they are able to comfortably comprehend, understand and inhabit.

The differentiation between this ‘outside’ and ‘inside’ is defined by humans behaviour and perception. A physical boundary is often implemented but is not essential. This space becomes the ‘inbetween’ it could be known as a connection, a line of tension, a boundary, a transitory space.

A relationship can be defined as:

“Whole” = “Part” + “Connection” + “Part”

The relationship of Inside and Outside is a result of Humans inhabitation of the Environment. In the environment one is exposed to the elements, which leads humans to the need for protection and shelter in order to survive.

“Space” = “Environment” + “Human” + “Need”

(Space = Exposure + Human + Shelter)

Overall:

SPACE = INSIDE + OUTSIDE

SPACE = INSIDE + OUTSIDE = SPACE

With an understanding of the fundamentals of space and the relationship between inside and outside which helps to define this, we are able to now look into the separate parts of both inside and outside and the connection or differentiation in more depth, this will be the focus of the following chapter.

The relationship of inside and outside is demonstrated in the diagram below:

CHAPTER 3.0 – Spaces

3.1 – Outside

3.2 – Inside

3.3 – Inbetween

3.4 – Spaces Conclusion

3.0 Spaces

With an understanding of the fundamentals of the relationship of space, as discussed in the previous chapter, this chapter will look to the individual parts of this relationship in more depth, starting with the outside, followed by the inside and then the inbetween.

With an aim of providing an indepth insight into each of these three parts which create the whole that is space, this will enable one to comprehend, understand and appreciate the role of which each part plays in the overall relationship which creates space.

We will look into the various aspects of the each of the parts that are known as outside, inside and the connection that is the space known as the inbetween, and look at not only why they exist but what they each achieve and contribute as well as how each is formed.

3.1 Outside

Outside can be defined as “being outside a specified thing or place; out of doors or similarly the external side or surface of something.” (Collins, 2003, p. 545)

The outside can not exist without an inside, because one cannot exist without the other. Both inside and outside are self contained spaces, just as we are individual elements within the environment.

The open world is changeable and un-responsive to our demands. It is characterised by wind, rain, heat, cold, and sometimes hostile animals. These are the things that define this space as uniquely outside. Outside we feel exposed and defenceless. (Lo, 1986, p. 26)

The outside is generally associated with the environment, the great outdoors. The environment can be defined as “ the external conditons or surroundings in which people live” as well as “the natural world of land, sea, air, plants, and animals.” (Collins, 2003, p. 249)

As humans we are dependent on the environment. The outdoors environment provides and exposes us to the elements. We depend on these in order to survive, we can sometimes immulate conditions in order to survive in isolated areas and situations, whether this be in a submarine at the depths of the ocean or a space shuttle in outer space, or simply in the confines of ones apartment in the city in the newly developing urban life, however, one way or another we are unable to survive without some kind of connection to the external environment, that we oftern refer to as the outside.

The environment also presents to us natural rhythms and cycles of which more often than not we decide to work with and adapt our body clocks to run with as well as when we perform and undertake certain activities. Natural patterns and rhythms such as the four seasons, and night and day, often influence us to adapt our lifestyles in order to work with nature and take advantage of the benefits of which it can provide and produce, this not only makes life easier for us but it helps one to live a more harmonious lifestyle with the environment in which it is situated.

We rely on the sun for light, and the air for life. We live on the ground and must eat, drink, breath and sleep as the other animals do. It is necessary for us to work and live with our fellow humans. (Lo, 1986, p. 25)

Architecture as we know it combines two not easily reconciled tasks. In regards to the space that is outside, it must create an exterior physically adapted to its functions and visually impressive, inviting or deterring and informative. (Arnheim, 1977, p. 92)

From the outside, architecture is never alone, it is constantly surrounded by the elements – wood, fire, earth, metal and water as discussed in the previous chapter. Surrounded by other buildings, by landscape, or by unoccupied space, a work of architecture depends on all its visual dimensions – size, shape, texture, colour, spatial orientation, etc. – upon it's environment. The surroundings decide whether a building appears as a pinnacle or an inconspicuous attendant, whether it is large or small, harmonious or out of step. At the same time, however, a building or complex of buildings seen from the outside has the all-round completeness of solids. (Arnheim, 1977, p. 93)

3.2 Inside

Inside being the opposite to outside can be defined as “being in or to the interior of something, the inner side, surface, or part of something.” (Collins, 2003, p. 390)

The human mind has memory, which enables one to relate to the presently perceived sight of the images of things seen before, this allows a spatial context to

be established between inside and outside or between different interiors. At best this context remains indirect.

“Even in the horizontal plane, which allows for easy passage, the autonomy of interiors is compelling. It takes a special mental effort to realise that a wall is a boundary shared with a neighbouring space.” (Arnheim, 1977, p. 100)

Though we have a certain measure of dependence on the environment and outside, we are not inextricably linked to its rhythms. We don't have to rigidly follow the seasons, or the cycle of day and night. We possess the means to live, work and relax practically when and where we choose.

Because of this individual nature, we are continuously attempting to locate ourselves in space. To do this we must carve out a natural space, an area which we can dominate with our presence. According to Charles Moore, if we are to provide ourselves with a sense of identity, this is very important...

“... to give people the chance to know where they are – in space, in time and the order of things.”(Moore, 1974, p. 32)

This domain: that we carve out is a protective cocoon we call inside. Automatically, of course, we must also have an outside, because one can not exist without the other. Both this inside and outside are self contained spaces, just as we are individual elements in the environment. Reinstating the idea of how both inside and outside are mutually exclusive. (Lo, 1986, p. 26)

Our enclosed internal world predominantly aims to be secure, warm and dry. Here we can eat, drink, and sleep in comfort and safety, these are the things which make it the Inside. Inside we feel safe and secure.

People have a tendency when occupying one space to remove themselves completely from the spaces opposition. For example, an inside to some can be perceived as a closed world of its own, even when an opening in the roof reveals a bit of sky, one often does not really acknowledge another space but perceives it as a recessed portion of the room's boundary. Similarly, a landscape you see through a window is essentially a backdrop, parallel to the wall, unless we step close to the window and thus leave the room visually to enter the outside space. An inside permits comparison with other places, but only through the visitor's memory or anticipation. (Arnheim, 1977, p. 93)

Instead of leaving the occupant in a boundless world, an inside encloses him like a womb – an experience that can be reassuring or oppressive. The world of the inside can be totally encompassed; it is surveyable, more nearly relatable than the outside to the size and power of a human being, and is therefore susceptible to his domination. (Arnheim, 1977, p. 94)

Architecture must provide in regards to the space which is inside, a shelter that protects its inhabitants against unwelcome outside forces and offers them a congenial internal environment. (Arnheim, 1977, p. 92)

3.3 Inbetween

The between can be defined as an intermediate point to two other points in time and space or indicating a linking relation or comparison. The inbetween can be defined as “being in a space that is between one specified thing and another.” (Collins, 2003, p. 65)

Inbetween can also be known as a connection, transition, border, differentiation, threshold or line of tension.

The design of space which is neither internal nor external – may best be described as a third type of space: inside-outside space. (Skinner, 2003, p. 2)

The words inside and outside reflect a dichotomy in direct experience. Inside and outside cannot be seen at the same time. This leads us to the space that is the inbetween. (Arnheim et al. 1966, p. 3)

If we are to fully comprehend the meanings of Inside and Outside, with their connotations of exposure, enclosure, protection or security, then a link between both worlds is vital. It is this link which alters the relationship between inside and outside. (Lo, 1986, p. 31)

The benign sub-tropical climate encourages this spatially ambiguous approach to architecture. In summer, buildings need to provide only deep shade and penetration for cooling breezes, while in winter; protection from cool winds and deep access of winter sunlight is desired. For the remaining half of the year the ambient conditions comprise “a climate so mild that almost any shelter will suffice.” (Skinner, 2003, p. 2)

Beyond a simple preference for inside-outside spaces based on lifestyle patterns or climatic comfort, there is a growing argument for an aesthetic affinity for these ambiguous spaces that transcend the conventional dualistic architectural amalgam of internal space and external form. (Skinner, 2003, p. 2)

Outside and inside can be seen as separate realms however, this dichotomy is bridged by the mobility of man, who, more or less passes freely from one realm to the other.

In early styles of architecture this crossing of the threshold or traditional differentiation was a practical matter of piercing the walls with standardised components such as doors, but it is not acknowledged by a continuity of outside and inside in the form of the building.

The impregnability of buildings spatially reflects an early conception of human existence: of man surrounded by barriers and faced by closed entities, which must be cracked if they are to be penetrated.

At the other end of our philosophy of space we note the modern conception of the universe as a void, scantily populated by particles, which do not block continuous passage. (Arnheim et al. 1966, p. 6)

The various functions of a building, like the part of any other whole, are related to one another by a more or less intricate pattern of connections and separations, to which the architect may do justice by providing different ratios of unity and diversity at different levels of the design. (Arnheim, 1977, p. 201)

The operation of threshold explicitly rejects the reduction of passage to an abrupt crossing of a thin edge, or the gratuitous continuity between two entities. Rather,

threshold is understood as a place of becoming, from which identity as well as relationships can emerge. By implementing a threshold into a design, the opportunity to draw ones attention to particular characteristics of a place is created.

This proposition links a challenge to the autonomy of architecture and landscape with a challenge to autonomy as a necessary precondition of identity in general. It enables a conscious privileging of the spatial and material condition of “between”. It is less about the actual physical permeability of this in-between realm, and more about its role in the formation of identity. (Berrizbeita & Pollak, 1999, p. 12)

The aesthetics of horticulture, or architecture, and of city planning begins only where man deliberately has created a distinction between inside and outside. This distinction enables the parts of the relationship to be defined and in turn the completeness of the relationship, the whole that is space to be recognised. (Arnheim et al. 1966, p. 8)

The words inside and outside reflect a dichotomy in direct experience. This connection that highlights the inbetween should not be taken lightly as after all it often is asked to play the role of being one of the most complex of architectural elements, having to often satisfy two types of human needs:

1. Physiological Demands for – light, air, sun, the filtering out of climatic extremes, and generally protection from the hazards of the outside: to ensure both the short and long term survival of the individual.
2. Psychological Demands for – privacy, contact with others, contact with the environment, a sense of security, identity, and orientation: to

add meaning to the life of an individual. Here it is the presence of our emotions which separates a “building” from “architecture”.

(Lo, 1986, p. 12)

The special value given to openings which represent the connection or differentiation between two parts is due to their intermediate position, being the link between inside and outside. Robert Venturi points out that...

“... since inside is different from the outside, the wall – point of change – becomes an architectural event. Architecture occurs at the meeting of interior and exterior forces...” (Venturi, 2002, p. 86)

It is this connection between which is vital in establishing a relationship between inside and outside, essentially the inbetween is what makes the relationship possible, it enables one to design from both the inside out and the outside in.

3.4 Spaces Conclusion

By understanding the nature of inside and outside space, and how the connection being the inbetween affects their relationship, we are able to appreciate how a building satisfies the innate human need for shelter. This need is what leads us to the space which is known as the inside, the outside is what causes the need for this space, and it is the connection – the inbetween, which allows one to establish a relationship between the two. It is through the implementation of a boundary, a connection, that ultimately has the ability to turn a space into a place. (Lo, 1986, p. 3)

By looking into each space or part and connection between these that make up the relationship that is space separately, these being outside, inside and the inbetween, one is able to understand the background and purpose of each part more clearly as well as the role of which it plays in the overall whole picture that is space.

With an understanding of the parts involved in the relationship that is space, the following chapter will focus on looking into different techniques of which could be implemented in order to establish and question the connection between inside and outside and overall the relationship of space.

CHAPTER 4.0 – Techniques

- 4.1 – Here and There
- 4.2 – Visual Movement
- 4.3 – Line of Tension - Threshold
- 4.4 – Jay Appletons Concept
- 4.5 – Reciprocity
- 4.6 – The Haptic Sense
- 4.7 – Orientation - Negotiation
- 4.8 – Openness & Closedness
- 4.9 Context
- 4.10 Techniques Conclusion

4.0 Techniques

Having looked at the fundamentals, including the parts and the connection, of which make up the relationship that is space, an understanding of the importance of each part and the role it plays in the overall relationship has been established. This forms the basis for this chapter to look into different techniques, as well as factors worth considering which can be implemented and factored into this equation.

With an aim of presenting an insight and ultimately a potential palette of techniques and factors of which one should consider and could potentially use a selection or combination of in order to overcome the use of standardised componentry which is traditionally implemented as the differentiation of inside and outside.

This chapter will look into a number of varying techniques and factors, providing a background of their formation and looking to what each aspires to achieve, and in some cases how they are implemented.

4.1 Here-and-There

The quality of 'Here-and-There' is the sense of position we feel when we relate ourselves to our environment. Instinctively we define our bodies and immediate surroundings as being "Here", while it, being that wall or other person is "There". This awareness of our own position is always accompanied by a sense of separation from some other part of our environment. According to Cullen a feeling

of "here" must also produce one of "there", as we cannot have one without the other.

"Having established the fact of Hereness, the feeling of identity, with a place it is clear that this cannot exist of itself but must automatically create a sense of Thereeness... the view beyond becomes an extra dimension, it is There." (Lo, 1986, p. 39)

By providing a point of reference, focal points help to heighten our feeling of position and therefore the sense of separation. An example of this is if you take say a desert traveller, where in the distance is a small pool of water and a few palm trees, in an otherwise barren landscape, this oasis provides a vivid point of focus and strengthens one's sense of Here-and-There.

In a room the sense of "hereness" can be increased by an internal focus such as the objects, or activities in a space. The space itself, or parts of it may even generate a focus by its particular spatial proportion or dimensions.

Alternatively an external focus will produce a sense of "thereeness", or awareness of something outside the space. These focal points literally attract attention from inside by some eye-catching element of display outside. A beautiful view, for instance, is common of this type. This could also be achieved by focal points such as the movement of people. (Lo, 1986, p. 40)

By creating an inside and outside, "Here-and-There" reveals the division of the environment into two worlds. This identifies the "The Parts", which as we know from chapter two, is the first element needed for a relationship.

The effect of this quality, is to place inside and outside together in a dramatic juxtaposition of elements. Our environment clearly is separated into two identifiable areas. Most of this area is on the outside – it is “there”. The inside, though physically smaller, becomes filled with our presence and activity – it is “here”.

By articulating the degree of enclosure provided, Here-and-There defines a sense of shelter and “insideness”. By placing enclosure next to openness the drama of juxtaposition is increased, due to both areas being seen together and being so different, yet so close.

Elements which create contrasts or focal points generate a sense of separation, however, only elements which are between us and the outside can also generate the sense of “insideness”. The more elements which surround a person, the greater their sense of enclosure becomes.

No matter how strong or weak the quality of Here and There, a person will perceive some sense of space, which will be somewhere between complete openness and complete enclosure. (Lo, 1986, p. 43)

To summarise this idea that is the concept of “Here and There” we can look to the following diagram.

Figure 1: Here-and-There Diagram. (Arnheim, 1977)

The red circle being the targeted view and the others being the different observers. If we restrict our analysis to the cultural and individual conditions prevailing in the observers, we proceed without any knowledge of the perceptual object they are receiving; and we are left with the absurd and distressing conclusion that since they all see different things, there can be no shared experience and no communication.

If, on the other hand, we restrict our analysis to the targeted view, we ignore the substantial modifications introduced by the point of view of any individual or collective observer.

In this equally one-sided way we can get at the common core, but we cannot tell what happens to it in a particular instance. “We can hope, however, to isolate – in vitro, as it were some of the objects qualities most likely to survive the changing tastes of the ages, the timeless values of an Egyptian temple for example, long after the particular connotations of its style cease to be an integral part of the experience. We perceive a unique configuration of readable qualities which serve

to enrich our notion of the many ways in which man can translate his view of life and world into stone or wood.“ (Arnheim, 1977, p. 5)

4.2 Movement

The quality of visual movement defines the strength of the links between inside and outside, the amount of “involvement” each has with the other. By providing in-and-out motion, through channels of access, or openings, both the man made and natural realms of our world are re-connected. It is from this that we see the importance of the consideration one must take when implementing an opening, as essentially each opening establishes a connection, and the quality of this connection will in turn be reflected in the result of the relationship established. (Lo, 1986, p. 61)

Christian Norberg-Schulz has written that “the horizontal directions represent man’s concrete world of action. In a certain sense, all horizontal directions are equal and form a plane of infinite extension. The simplest model of mans existential space is, therefore, a horizontal plane pierced by a vertical axis.” (Arnheim, 1977, p. 35)

The horizontal style of living promotes interaction, free mobility from place to place, and ease of progression. Whereas, vertically oriented living stresses heirarchy, isolation, ambition, and competition. (Arnheim, 1977, pp. 38,39)

Exisiting within the external boundary, openings act as zones of transition between inside and outside. They allow the admission of the qualities which are characteristic of the “Outside”. It is contact with these qualities that literally puts us in touch with the external environment.

Accessss channels or openings possess a Janus-like quality which, Arnheim says, lets them relate to both worlds.

“Openings mediate between the worlds seperated by architecture barriers.” (Arnheim, 1977, p. 226)

On one hand openings have the ability to capture particular aspects of the outside environment, on the other hand they limit and control the transmission of those aspects to the inside.

Openings which can be seen as elements in themselves not only allow physical movement between inside and outside but also visually express the sense of movement. These “visual channels” attract attention to themselves and then direct our interest futher on, making them not simply passive elements, content to remain aloof and part of the background, but actually create visual movement. (Lo, 1986, p. 60)

Cullen believes that this simple act of a visual channel which literally points to something else, is a powerful tool in the design of the environment.

“Even the most ordinary means can be harnessed to the task of arousing in us the sense of otherness... It is not the thing point out, but the evocative act of point that arouses the emotions.” (Cullen, 1961, p. 37)

To call attention to itself a “visual channel” must be a positive element and have its own identity. To state the obvious Arnheim says...

“To be a positively defining opening, a window must look like a window.” (Arnheim, 1977, p. 227)

Our ability to look through an opening must be confirmed by this visual form. Not only must a window penetrate the external boundary, but it must also be seen to do so.

If it does not, the effect is that the view appears not as 3-dimensional reality, but as a static image...

“... essentially a backdrop parallel to the wall ...” (Arnheim, 1977, p. 93)

The “visual channel” then...

“... serves to link the near with the remote [...] the device of framing brings the distant scene forward into the ambience of our own environment by particularising, by making us see in detail...” (Cullen, 1961, p. 39)

As a connection or opening gets larger, it begins to appear more as a negative element until finally the view becomes part of the background. At this stage the positive linking effect of the connection or opening is neutralised and it takes on a passive role. (Lo, 1986, p. 62)

In regards to the connection to the outdoors, a long horizontal opening removes the sense of bright figures on a darker background that a tighter framed opening produces. Similarly, a connection such as a window wall, its frame is placed outside our field of vision by the size of the opening. There is nothing to obstruct our view, but also nothing to hold the view. This large opening reveals all but, as Kenneth Brown suggests,

“... total exposure allows no alternatives, like total nudity, it leaves nothing to the imagination.” (Brown, 1980, p. 156)

The location of “visual channels” influence the direction of orientation in space. “If a channel is positioned at a corner, the space will be oriented along a diagonal axis, whereas if it is located in the middle of a wall the space will have a more central orientation.” (Lo, 1986, p. 63)

We can summarise the different types of “visual channels” by looking at a series of opening types which represent the different connections which are able to be achieved in regards to this technique. We will look at these different “visual channels” from the weakest to the strongest connection.

The first two types of openings both produce a sense of “Here-and-There”, the technique discussed previously in this chapter.

1. The “Cut-Out” Opening

The simplest form of a “visual channel” is the “cut-out”. It is located entirely within the wall plane and draws our attention simply by being different from the surrounding wall. Referred to by Arnheim as a figure on ground shape.

“Surrounded by a large wall space, which serves as ‘ground’ the opening stands out as ‘figure’, even though physically it is a hole.” (Arnheim, 1977, p. 226)

2. The “Framed” Opening

Arnheim also says that thickening the edges of a hole with an architectural frame will strengthen its positive role as an opening. Elements such as jambs, columns, and pilasters etc. produce the architectural equivalent of what Alexander says occurs on our faces.

“Any homogenous membrane which has holes in it will tend to rupture at the holes, unless the edges... are reinforced by thickening. The most familiar example of this principle at work is in the human face itself. Both eyes and mouth are surrounded by extra bone and flesh. It is this thickening... which gives them their character and helps to make them such an important part of human physiognomy.” (Alexander, 1977, p. 1060)

3. The “Screened” Opening

In the same way that a frame around an opening draws our attention to a view, a screen of frames across the opening will attract our attention to the details of the view. Mullions for example break up a large view into many smaller pictures. As the separated pictures can be related and joined to each other in a number of vertical and horizontal combinations, the mind comes alive with a variety of fragmented views.

Cullen calls this “the act of netting”, as the distant view is caught by the “net” of frames and drawn into our eyes, while Alexander believes that it is the greater awareness of the view that is so important. (Cullen, 1961, p. 39)

“... it is the extent to which the window frames the view, that increased its intensity ... even increases the number of views we seem to see – and puts us so intimately in touch with what is on the other side.” (Alexander, 1977, p. 1109)

4. The “Splayed” Opening

A simple but the most effective method of producing a “visual channel” is to expose the depth of the external wall. The opening then has more definition as a positive element, with very thick walls and the deeper the reveals, the stronger the sense of orientation. (Lo, 1986, p. 70)

4.3 Line of Tension - Thresholds

A “line of tension” essentially is an imaginary line which runs from one space to another. It is this line which links the inside to the outside. The two parts produced by Here-and-There being the inside and the outside, are the end of the lines. While visual movement provides the “corridor”, generating the line itself. A “visual channel” has the ability to carry us across this line of tension, this differentiation between inside and outside.

According to Smith,

“Tension is generated between the elements defining the space and between the space itself and places beyond.” (Smith, 2007, p. 96)

This “line of tension” gives direction to a room and the stronger it appears the stronger the feeling of visual movement. Because of our dependence on our eyes

for information about our surroundings, this line is vital for an impression of the interdependence of inside and outside. (Lo, 1986, p. 85)

Similar to the “line of tension” is the “threshold”, a threshold can be referenced to a fixed and static conception of boundary, the threshold could be perceived as the space between the lines of tension which define the differentiation between the two spatial realms of inside and outside. (Berrizbeita & Pollak, 1999, p. 11)

In regards to the idea that is “threshold”. There are two concepts that are particularly relevant. The first, from psychology, defines a threshold as the point at which a stimulus is of sufficient intensity to begin to produce an effect, as in “threshold of pain” or “threshold of consciousness”. The second, from ecology, values the edge between two eco-systems, as the zone of highest exchange and diversity. This edge which ultimately defines a relationship is often regarded as more important than the two subjects of which it is differentiating.

Thresholds are where transformations begin, where exchanges between unlikely things occur, and where identities are declared, thresholds are where relationships are officially established. It is at a threshold where both a connection and differentiation is simultaneously created, establishing the relationship of inside and outside space. Thresholds can be seen as the result of dynamic relations between aspects such as; architecture and landscape, public and private, work and recreation, they resist closure in terms of meaning and space.

Thresholds hold the potential of an inclusive realm, where the introduction and maintenance of difference is possible. Unlike the idea of inclusion, where identities are blurred to create a compromised whole, threshold as an operation enables the

preservation of difference, as well as the creation of something new from their co-existence. (Berrizbeita & Pollak, 1999, p. 82)

4.4 Jay Appletons Concept

From Hilderbrand’s ideas based on Jay Appleton’s concept we are presented with three techniques of which Hilderbrand believes that when thought of together help to establish a well rounded and successful design, which allows a good connection between inside and outside to be established.

They are as follows:

1. Hazard and Mystery – The innate desire to explore unknown territory, whilst being alert to its dangers.
2. Complexity and Order – The survival benefits of quickly recognising familiar patterns, whilst discerning subtle points of variance.
3. Prospect and Refuge - By prospect meaning a condition in which one can see over a considerable distance, and by refuge meaning a place where one can hide; in combination they reinforce one another, creating the ability to see without being seen.

Hildebrand also argues that evolutionary psychology favours spaces allowing both retreat and surveillance and proposes choreography within this dimension of

spatial experience as a key technique in the architectural construction of aesthetic pleasure. (Skinner, 2003, p. 3)

4.5 Reciprocity

Reciprocity achieves a stand against hierarchy, an ordering principle through which architecture has historically subjugated landscape. (Berrizbeita & Pollak, 1999, p. 11)

Reciprocity often depends upon what architecture is made up of, or broken down into, it is dependant on multiple elements. This combination of fragmentation and multiplicity serves to open the architectural work in such a way as to be able to engage the landscape, not as being opposite, but as elements of connection and use, similar in kind of elements of architecture. (Berrizbeita & Pollak, 1999, p. 15)

This idea of reciprocity in a sense aids the formation of the psychological aspect of the line of tension.

Ambiguity can also support reciprocity, by assigning an equivalent status to things, through a strategy that renders their identity uncertain, there by opening up possibilities for the users' individual interpretation.

There are a number of strategies that unveil ambiguities between inside and outside. These strategies are the inversion of the figure ground relationship, the use of movement as a device to initiate spatial and visual relations between architecture and landscape, and shifts in the relationship of the subject to the view. (Berrizbeita & Pollak, 1999, p. 36)

4.6 The "Haptic" Sense

The haptic sense being a sensory system which goes one step beyond the classical notion of the five senses of sight, smell, hearing, taste and touch, can be said to be the key to fully experiencing our three-dimensional world.

Though the eyes in many situations may provide the clearest link, they may not provide the strongest or deepest form of contact. A full appreciation of the environment requires the involvement of not only your eyes, but also other senses in a "haptic" experience.

"The haptic sense is the sense of touch re-considered to include the entire body rather than merely the instruments of touch, such as the hands. To sense haptically is to experience objects in the environment by touching them (by climbing a mountain rather than staring at it)." (Bloomer, 1978, p. 34)

An example of using a haptic sense in relation to one experiencing and in a way blurring the boundary and differentiation between inside and outside is the "visual channel" which can be represented by the "bay window".

The space of which a bay window defines is partly outside the room they serve. The bay clearly penetrates the external wall of which represents the line of tension between inside and outside space, effectively allowing a person to leave the interior and occupy a space which is neither wholly inside or outside.

This ability to move into the window gives the space another dimension, which is neither inside or outside, this essentially means to project a person outside without them actually having to go outside. The window literally "mediates" between the two worlds or spatial realms that are inside and outside. (Lo, 1986, p. 74)

As much as we can experience the world directly through our own sensory organs, we can “sense” the outside by controlling openings and connections that establish this differentiation between inside and outside.

In regards specifically to the window, it is a connection which enables us to see, smell and feel the outside. Jorg-Dietram Ostrowski suggests that “it is exactly these small details which gives us a deep enjoyment and understanding of inside and outside.” (Lo, 1986, p. 75)

4.7 Orientation - Negotiation

The orientation of a space to the outside may be provided in two ways:

1. By coupling a simple opening with an external focus or,
2. By “pointing” to the outside with a “visual channel”

The first type of orientation depends almost entirely on the quality of the surroundings, although it may be combined with the second type to make the link even more powerful.

The second type of orientation is more subtle, though not necessarily any less powerful. However this provokes interest, as it is by the manipulation of architectural elements that a “visual channel” is created. (Lo, 1986, p. 61)

“The ratio between rising and reposing, lightness and weight, independence and dependence, is at the very core of the human sense of what life is and ought to be, and as such it is a principal variable of style.” (Arnheim, 1977, p. 45)

In regards to orientation and negotiation a sense of order is a vital tool in order to establish and help to identify the way in which a building should perform functionally, both by itself and how one should negotiate and interact with and within it. Order must be understood as indispensable to the functioning of any organised system.

“Order has come to mean a reduction to simple geometrical shapes and the standardisation of everything for everybody, the favouring of basic physical function over expression and of rationality at the expense of spontaneous invention.” (Arnheim, 1977, p. 162)

“A work of architecture cannot fulfil its function and transmit its message unless it presents an ordered pattern.” (Arnheim, 1977, p. 162)

4.8 Openness and Closedness

An important dynamic architectural factor is that of the openness and closedness of buildings. Openness makes surroundings accessible to inhabitants of a building and exposes them to intrusion from the outside. Openness explicitly overcomes the dichotomy between outside and inside. The opening of boundaries reveals the architectural volume as three-dimensional by leading the eyes, and indeed the viewer, into the interior space. (Arnheim, 1977, p. 232)

Every inside reflects by its structure, to a larger or smaller degree, the specific outside from which it intends to distinguish itself.

“The interplay between inside and outside is the fundamental aesthetic theme of all architecture. It is the dialectical tension between the attempt of concealing the inside from the outside and yet revealing it, between barring the intrusion of the outside, while simultaneously taking account of it.” (Arnheim et al. 1966, p. 12)

4.9 Context

“A buildings meaning must be seen in the context of its setting, as a building is conceived, for the most part, as a stable refuge amidst the hub of human activity.” (Arnheim, 1977, p. 217)

When a building is completed it becomes one with the plot of land on which it sits. The context of a building, including the landscape and setting of which it is placed in, is fundamental to the overall perceived outcome and visual expression produced by the architectural shapes which are constructed.

“Dynamically, a building is not simply a solid object sitting on a plot of land. It actively displaces space. The most common base of architecture is of course the level of terrain on which the building stands.” (Arnheim, 1977, p. 233)

It is important to consider the climate in regards to the how the building will best be suited to sit and perform in its chosen site and context. Aspects such as its altitude and location should be considered as well as seasonal temperatures, annual rainfall, average wind speeds and directions. All of these factors will have an influence on the boundary condition established between inside and outside.

4.10 Techniques Conclusion

With a greater understanding and insight in to a number of different techniques and architecture specific design considerations, including that of, visual movement, lines of tension – thresholds, Jay Appletons concept, reciprocity, the haptic sense, orientation and negotiation, openesses and closedness as well as context. We can now move onto implementing and testing a selected combination of the techniques discussed in this chapter in a design, with an aim of producing an exemplar of one way in which the question at hand – “How can architecture overcome the traditional differentiation between inside and outside?” can potentially be answered. This will be the focus of the next chapter.

CHAPTER 5.0 – Design

- 5.1 – Programme
- 5.2 – Site
- 5.3 – Precedents
- 5.4 – Concept – Design Development
- 5.5 – Final Design
- 5.6 – Techniques
- 5.7 – Results
- 5.8 – Design Conclusion

5.0 Design

Having now looked into the fundamentals of the relationship of space, establishing a greater understanding of the separate elements which make up this relationship, being that of inside, outside and the inbetween. As well as a look into a number of techniques and design considerations that relate to the relationship of space. This now leads us to looking at a design project where this knowledge and techniques could potentially be implemented into the design in order to try and overcome the traditional differentiation of inside and outside, which is ultimately the underlying question and theme of this thesis.

The aim of this chapter is to introduce a design project which will work as a case study to test the theory and techniques established in the previous chapters of this thesis, with an aim to try and find a conclusion to the question that is the underlying objective of this thesis which is that of “How can architecture overcome the traditional differentiation of inside and outside?”

In this chapter we will test this knowledge and techniques as discussed in the previous chapters of this thesis on a design project. Firstly by establishing and introducing a realistic programme and site, followed by an insight in to some design precedents, followed by concepts and design development. This will then lead to the presentation of the final design, followed by an identification and explanation of the theory and techniques incorporated into the design and what they aspire to achieve, overall presenting us with one potential design solution to the question at hand.

5.1 Programme

Boredom, restlessness, or irritability that results from a lack of environmental stimulation, as from a prolonged stay in a remote, sparsely populated region or a confined indoor area, also known as “Cabin Fever”.

The idea of “cabin fever” initially triggering the aspiration to explore the boundary condition between inside and outside, ultimately leading to the question:

- How can architecture overcome the traditional differentiation between inside and outside?

The need to find a realistic design opportunity of which, would present both a challenge, but at the same time incorporate factors, which would enable this question and similarly techniques to be explored through a design project, lead to appointing the organisation HeliPark New Zealand, as the client.

HeliPark NZ is an operation, which is newly founded and is forever increasing in popularity from year to year, creating a very successful business.

HeliPark currently has a relationship with Mt Potts lodge, which they work with to use as a lodging facility for guests who wish to stay out close to the helicopter pad. There is the potential opportunity to develop a new accommodation facility, which would accommodate staff, pilots, guides, managers, chef, guests and day visitors.

The HeliPark operation, currently accommodate up to 20 guests per day, this is made up of a combination of day visitors and overnight guests. With this in mind the complex will aim to accommodate overall six staff and up to a maximum of twenty overnight guests.

This will include:

Staff:

2 x Managers – Couple, 1 x Chef, 1 x Helicopter Pilot, 2 x Guides

Guests:

A range of rooms will be offered to accommodate a number of different guests, in order to make the complex affordable and appealing to a wider range of clients.

There will be low end, medium and high-end accommodation, available for guests to choose from.

The complex will have a focus on the HeliPark operation, which takes place in winter, but will also aspire to create a complex, which is functional also in the summer season to make the complex a year round functioning destination retreat.

HeliPark operations: Mt Potts Lodge – Heli-pad pick up – Transport – Heli-skiing

Heli Ski Lodges Abroad:

Image 1 - Source: (Smoky Mountain Lodge)

Heli-ski lodges abroad tend to have a heavy focus on inside living at a luxury level, incorporating après ski activities, a guest would tend to spend the day outdoors yet retreat indoors for the rest of the experience.

One should ask, what happens if you are visiting for a week and are unable to venture outdoors due to the weather will your whole experience be focused on internal activities and minimal attention paid to the outdoors?

Are we not able to bring the outdoors in so that we are able to have a complete indoor and outdoor experience either way?

New Zealand Huts:

Image 2 - Source: (Gardiner Hut)

New Zealand huts aim to predominantly provide access to the outdoors. They are in most cases very basic, providing you with the essential tools for shelter.

NZ DOC has a range of huts including: Back-country camp sites, Basic Huts, Standard Huts, Club Huts, Serviced Huts and Great Walk Huts

Are we able to take this foundation approach and increase the comfort, whilst maintaining the simplicity and in turn creating an ultimate outdoors experience where one is able to interact between both spatial realms of inside and outside simultaneously?

New Zealand: Luxury pure and simple

From looking at both heli ski lodges abroad as well as New Zealand Department of Conservation huts, it is something in between, of which this design project will aspire to achieve, in order to introduce a new means of lodging facility and experience.

The quote below sets a guideline to what the final design outcome will aim to speak of:

Image 3: Whare Kea Lodge, Mt Aspiring, New Zealand.

Source: (Whare Kea Lodge & Chalet, 2007)

“Space. Great, glorious, soul-rinsing miles of empty open space, with views that stretch forever. That, plus a unique take on the five star experiences, is how New Zealand wows its visitors.

New Zealanders are the **masters** of the **understatement**. They’re dry. **Quietly confident**. **Down to earth**, **capable** and **can-do**. And despite their **no-nonsense attitude** to life, they really understand **luxury – of the underplayed type**. The kind of luxury that makes you grin from ear to ear because it’s so **simple**, so **refreshingly unpretentious**.

In the southernmost isles of the Earth, we soon learnt, luxury means something very different to the gilt and baroque with which it is synonymous in Europe. Its about **celebrating nature and earthly riches**: vast spaces, Lord of the Rings scenery, clear blue seas and mountain air, as well as just-picked food and fresh young wines.”

Lisa Grainger – Telegraph, UK. (Nov. 2009)

The Aim:

To undertake an exploration of the boundaries functionality and adaptability, in order to provide a connection that subsequently will establish the boundary that differentiates the spaces inside and outside. This in turn creating the relationship that is space, both on an emotional and physical level in order to not only question ones perception of their surroundings, but to involve and enable one to overall increasing their experience and understanding of space. This potentially creating spaces, which enable one to co-exist between the two spatial realms of inside and outside simultaneously, as well as relating to the performance of the building overall.

Mt Potts Base – 43 35'59.60"S 171 05"15.01"E Elevation: 929m

Hakatere Potts Road
Erewhon Station
Mt Somers
Canterbury 7746
New Zealand (South Island)

SITE REGION MAP:

Image 4 - NZ Topo 50 – BX18 (Lake Clearwater)

Image Source: <http://www.linz.govt.nz/topography>

Climate Details:

Strongly seasonal: Difference in monthly average temperatures over the year: $> 7K$
 Low temperatures: Average outdoor temperature over year: $< 10^{\circ}C$
 Medium temperatures: Average outdoor temperature over year: $10-18^{\circ}C$
 High temperatures: Average outdoor temperature over year: $> 18^{\circ}C$
 Low global solar radiation: Average annual global solar radiation: $< 120 \text{ W/m}^2$
 Medium global solar radiation: Average annual global solar radiation: $120-180 \text{ W/m}^2$
 High global solar radiation: Average annual global solar radiation: $> 180 \text{ W/m}^2$
 Dry: Annual total rainfall: $< 200 \text{ mm}$
 Wet: Annual total rainfall: $200-1000 \text{ mm}$
 Extremely Wet: Annual total rainfall: $> 1000 \text{ mm}$
 Low wind speeds: Average annual wind speed: $< 2.5 \text{ m/s}$
 Medium wind speeds: Average annual wind speed: $2.5-3.5 \text{ m/s}$
 High wind speeds: Average annual wind speed: $> 3.5 \text{ m/s}$

Source: (Hausladen, de Saldanha, & Liedl, 2008)

Image 4: Site Region Map

The maps below show the proposed site for the development -

Image 5: New Zealand – Hakatere Potts Rd, Ashburton Lakes, NZ – Proposed Site

Maps sourced from Google Earth: Images not to scale.

The proposed site, located just below the current operation -

Image 6: Close up of proposed site, including existing complex/operation

Source: Google Earth

Above: Sketch of site analysis

Site analysis and model -

Through analysing the site one is able to see an entire picture of all the influencing external factors needed to be considered, providing a good starting point to begin conceptual design and initial planning and design development.

The proposed site offers:

Access – River (Water source) – Hydro Power – Large area for heli operations

Panoramic view – outlook from proposed site

5.3 Precedents

The following two precedents both explore the boundary condition of the spaces of inside and outside in different but interesting ways, however they are both very site specific, with the site driving the overall concepts of each.

CHEN HOUSE

Architect: Suo Fujimoto, Marco Casagrande

Location: Taiwan, Residential

Description:

Notable for its attention to site and its materiality, an adaptive responsive entity that allows wind to move through the house.

Images Source: <http://chenhouse01.blogspot.com/>

Another influential precedent is Suo Fujimoto.

Image 7: Chen House

5.3 Precedents Cont.

PACHACAMAC HOUSE

Architect: Longhi Architects

Location: 40 km South of Lima, near Peru coast

Description:

The response to the sites conditions was to bury the house, trying to create a balanced dialogue between architecture and landscape, where inside/outside becomes a constant interpretation of materiality with a strong sense of protection of the dark and light.

Images Source: <http://www.longhiarchitect.com/>

Image 8: Pachacamac House

5.4 Design Development

The following section will show the development of the design, with an aim of showing the progression and changes that the design went through as well as the design process that was undertaken in order to achieve the final outcome and design.

The following will show:

- The initial site analysis, this taking into consideration the activities that will be performed during a typical day within the complex, and their best position in regards to orientation within the site, in relation to the climatic conditions that the site offers
- Initial planning options to be considered, along with conceptual ideas of the initial aesthetic and outlook of the design
- Basic plotting of spaces in relation to function, with proposed layout
- Initial planning of overall complex
- Planning of reception – office area, with conceptual sketches
- Planning of public areas including lounge – dining – bar – kitchen
- Planning of guest accommodation
- Planning of staff accommodation

At this point the planning needed to be re-evaluated in regards to whether it achieves the intended aim of overcoming the traditional differentiation between inside and outside.

In conclusion it did achieve many of the desired objectives, however the design achieves this in individualised sections. It was therefore decided to try and maintain these qualities but in a more condensed plan which would make the design both more cost effective, functional and work as one, rather than individual sections. This saw the introduction of the “wall” into the plan.

This is then followed by:

- Development of spaces in new condensed plan
- Conceptual consideration of environmental performance opportunities with a look at thresholds
- Discussion of chosen design decisions with justification of the “wall”

Site planning orientation -

outlook - orientating the occupants perspective + outlook, as this will effect their relationship with both how the inside is occupied and how it relates to the outside and vice versa.

Also to think about the orientation of the building/complex on the site in relation to maximising the resources that the environment has to offer

- SUN - thermal
- WIND - natural ventilation

WINTER FOCUS.

A View of MT Potts - Potential access way - enable people to look at the prospect of their day - also to reflect upon their day. Her pad?

B. Morning View - Breakfast - Sunrise.

Bedroom orientation? Do people prefer to wake up to sun or not?

C Mid Morning + Evening?

D. Afternoon/Evening view: Sunset

Prevailing winds - to utilise natural ventilation but will also need to provide shelter, not leave spaces too exposed.

E - Afternoon - Evening/Night view.

F - Entrance? Evening/Night View

G - Services - Access - no views + southern side so little sun.

Although sheltered from winds.

H General orientation of complex. Facing toward the NW.

I Access Road Habatere Potts Rd.

Site planning orientation -

SITE COMPASS $\rightarrow$ To justify orientation & levels.

Perception in relation to degree of permanence.

CATEGORIES

- STAFF. —————→ Accommodation
- GUESTS —————→ Accommodation
- PUBLIC. —————→
- COMPLEX. —————→ Services
 - Entrance - Arrival - Access.
 - Breakfast — Dining
 - Afternoon / Evening

- Each level needs to be 2 slots to accommodate $\frac{1}{2}$ levels?

Space plotting and proposed layout -

Initial proposed layout of spaces -

STAFF ACCOMMODATION? OVERALL LAYOUT.

Problems: Staff accommodation placement - in regards to both privacy + views.
+ daylighting.

Day visitors entry + parking situation.

↓
Generally are going to walk through with their gear

— Possibility to open up the power station to visitors —
show them where the power is how it is being generated.

— Need to dimension staff accommodation + guest accommodation.

→ what is driving the exterior form + envelope. How can the boundary be questioned?
— How to address roof structure + Overall exterior.

— Need to draw up basic plans + show how the plan transforms—

— How does the exterior envelope adapt + transform.
— Think about the different layers + skins.

TO DO

— Need to try + show the design so floor plans — dimensioned!

— what is it that needs resolving/input?

— External envelope / boundary — how can this be pushed?

— Staff accommodation aspect.

Need to reiterate what it is that im trying to achieve to make sure that the design works to explore + resolve this—

Initial planning of the complex -

Planning of reception/office area & conceptual sketches -

2 PUBLIC AREAS, LOUNGE/DINING/BAR KITCHEN

- Kitchen needs outdoor access from staff accommodation
- Aim to try & keep services in a particular area.

- Needs a screen to show dogs activities, potentially safety briefing
- Generally wouldn't want this to be the focus of the room so probably better to have a projector.

Tomorrow
Today - finish all planning aspects draft
Tomorrow - put sizes to all the spaces.

Disabled access?

- Combination of wood & couches.
wood can be cut on but also used as places for people to put their drinks, play games etc

- need to figure out how the wall system works to shift & alter perceptions and in turn focus.

Need to figure out what spaces relevance to make the most of it -
- ultimately want to get ready if bad weather can be completely opened up in summer & closed in winter?

Outdoor seating
Big veranda

fire place

- Not hard to have the ability to shut off each room which would give you 4 lounges.

By introducing the different depths in relation to the levels, will create another dimension in regards to both perception & experience.

Rooms being able to be shut off in order to be able to retain warmth.

Projector screen 2m wide at this stage.

So in the lounge where one is submerged into the ground the height of ceiling is at its greatest to enhance & emphasize the relationships.

As you are deeper into the building the more enclosed different layers & hints which slowly open up and become more transparent as you go out.

Providing a range of relationships & varying degrees of connection & perception of the outdoors.

what does the traditional roof speak of?

Has a lot of history as does an open fire → speaks of quality, practicality?

→ DIMENSIONS - ROUGHLY.

PUBLIC SPACES - KITCHEN-DINING-LOUNGES.

GUESTS → 20

STAFF → 5 or 5

TOTAL MAX 26.

→ If done to accommodate 30 people in public areas.

Realistically at night lounge would have

25 people max
8 people.

comp. & OPTIONS - sits - some sit.

* 10x8 - 17	8 - 6x4 - 25 - 17
9x9 - 16	5x5 - 25 - 19
12x8 - 23	8x4 - 31 - 21

Planning – Guest Accommodation

- Not going to work angled as cannot maximise morning sun in all rooms, plus potentially will block view in the afternoon from public section

Planning – Guest Accommodation

Planning – Staff Accommodation

Potentially should it be two stories with a deck?
Generally if it's poor weather they would prefer to
sleep in a be indoors. — So deck orientation justified.

Edu.

Interactive boundaries -

- Need to think about projecting the outdoors indoors and vice versa.
- Defining the boundaries, this needs to go beyond the walls.
- It relates to the activities the occupants, the seasons, the weather, the memories.
- Each influences the boundaries and they way we interact with them.
- How can the use of shadow & light be utilized.
- Should it be passive interaction or also active

→ Adaptive facade.

The Interactive Architectural Facade

- Interactive facade; a facade which is influenced by its outside + its inside with the goal to offer the ~~outside~~ the best conditions.

STAFF ACCOMMODATION:

- Management
- Chef
- Pilot

150	160	150	+
190	160	160	
260	520	160	= 480
	9		= 260

Ideally bathroom would go against the perimeter of the building - Natural ventilation.

Generally speaking the staff are able to hang out in the public areas so perhaps should not worry much about their accommodation.

Priority → Each room to have

ing of plan and introduction of the "wall" -

STAFF:

- 1x Management (2).
- 1x chef
- 1x Pilot
- 2x guides.

10 - 25

WEST Rooms.

- 2x5 = 10 - Large bunk room - (backpackerstyle).
- 1x4 = 14
- 3x2 = 20

Reception

Pool

Laundry Drying Storage

Bathroom

Light shaft

4 + 2 + 3 + 5

3 + 3 + 6 + 3 + 5 = 20m

10 - 25

1.8 Km 1800,000

1800m

1.2 Km 1200 600

1200m

\$80 - 800,000

Bryan Black.

Bryan Black CO. CO. NZ

Development of guest accomodation in revised condensed plan -

Development of guest accommodation continued -

BED DIMENSIONS -

Mattress Sizes	Framing
Single - 90 x 190 cm	130 x 230
Double - 137 x 191 cm	177 x 231
Queen - 152 x 203 cm	
King - 193 x 203 cm	

GUEST ACC - Large Room
Need to accommodate 10 people
2 rooms of 5 people - pref

Aim: For bed to have a unique outlook

2600 x 1600
260 x 160
1200
- 2200 = 2500

198 x 3
85.6
35.6 / 2
213.60 / 2 =
106.80

LOW END GUEST

Development of staff accomodation in revised plan -

STAFF:

- 1x Management x2.
- 1x chef
- 1x Pilot
- 2x Guides.

- one bird
||
Bella
tugue
Nigrita.
Colum
Shea?
Book

- Laundry
- Bathroom
- Drying Room
- Bedrooms
- Everything

STAFF Accom.

Exploration of techniques -

Connections + Thresholds incorporated and used between different spaces to force one to go outdoors and then retreat back in will reinforce & enhance the boundaries which distinguish this creation / separation of spaces.

We put up walls in our environment which create boundaries and in turn establish an inside + outside.

LOW WIDE HALLWAYS.

Hydropower .
- energy source .

Concrete - thermal mass .

OUTSIDE .
NOTHING .
GLASS .
WOODEN .
NOTHING .
INSIDE .

Lead to bedrooms .

Different levels of bedrooms depending on occupants

Staff accom .

Guest

SUSTAINABILITY / ENVIRONMENTAL FACTORS -

Transition Space

Need to treat the whole building as a transition space.

→ Could look to the victorian period or the modern period.

The idea of a verandah

Could think of it perhaps in a theory/concept way as creating order amongst the landscape, taking precedent from european farming.

The idea of fences → The wall being a fence which then ~~sq~~ divides up the land where the occupants are then maintained -

If you think in terms of a fence & paddock - it becomes a boundary

- Drawings - → Darken walls - in plans - show the hierarchy of the boundaries -
- Important

- Need to extricate the boundaries -

- Possibly make the wall bigger i.e. /m or more.

The wall is an ordering principle

- Potentially could be higher and wider

- Can the wall relate back to the theoretical concept of the design? → I believe it can but need to present it coherently this way

Discussion of chosen design decisions with justification of the "wall" -

Both inside & outside exist → it is the transition between the two which is the focus.

Project could be looked at as a continual transition of spaces between inside & outside.

- Need to show a series of thresholds & details at points where the boundary is addressed - needs to be emphasised - as by emphasising the details you establish a greater connection and understanding of the transition between boundaries.

Also → What will you call the design - Lodge - Facility - Complex?

TRANSITION

total materials

Transitional space

→ Whole building could be outdoors

Allow

(Triangulation)

TECHNIQUES - THE WALL.

What purpose does it serve?

→ It is the backbone of the design.

It eventuated from an analysis of the site & conditions - which based in relation to the activities to be undertaken, determined the overall best orientation of the complex.

- This wall then predominantly act as a new axis through the site.

- It acts as an ordering tool to help in the planning to pull the design together as well as when the other wall is introduced it helps to break up the complex into different

Backpacker style categories

Access

Interms of rates

- Creates a boundary - which one must cross over

The ability to shut off the different sections

Conceptual Framework
Post rationalisation

5.5 Final Design

The following section will show the final proposed design for the complex, this includes:

An overview of the presentation drawings:

- Plan
- Section
- Perspective

A breakdown and closer look at the three main types of spaces:

- Staff accommodation

This is designed to ideally accommodate six people, but has a maximum capacity of ten people, it includes the following:

Downstairs –

- 4 x Double bedrooms
- 1 x Bathroom / Laundry
- 1 x Drying room / Storage
- 1 x Lounge

Upstairs –

- 2 x Outdoor living areas (decks)
- 1 x Lounge
- 1 x Kitchen
- 1 x Toilet
- 1 x Managers suite with ensuite and private access

- Public spaces

These spaces are designed to accommodate all of the inhabitants including: staff, overnight guests and day visitors, these spaces include the following:

- 3 x Lounges
- 1 x Dining room (seats 20 people)
- 1 x Large kitchen
- 1 x Large outdoor deck area
- 1 x Bar
- 1 x Spa
- 1 x Outdoor Pool
- 1 x Office reception area
- 2 x Toilets
- 1 x Parking area

- Guest accommodation

There are three different types of guest accommodation offered, in order to provide a suitable option to attract a wide range of cliental, all rooms offer private external access with this in mind the following is offered:

Low end accommodation:

- 1 x Large bunker style room, includes ten king single beds, this room can be either opened up to one large room, or shut down to create two rooms, one of which sleeps four, the other six.
- 2 x Shared bathrooms, one for each gender

Middle budget accommodation:

- 1 x Disabled room, of which contains one double bed and a single bed and disabled bathroom
- 2 x Double rooms with ensuites

High end accomodation:

- 1 x Secluded double room, with ensuite including spa bath and a private deck

Other facilities also offered in the guest accomodation section are:

- 1 x Large external roof deck
- 1 x Sauna
- 1 x Laundry
- 1 x Drying room
- 2 x Storage rooms

This is followed with singular perspectives showing the following:

- West perspective
- North East perspective
- North West perspective
- South West perspective

SECTION

PERSPECTIVE

VIEW D - REFERENCE TO PLAN
LOOKING TOWARD COMPLEX FROM WEST POINT

VIEW E - REFERENCE TO PLAN
LOOKING FROM NORTHWEST CORNER
TOWARD COMPLEX

STAFF
PUBLIC
GUEST

THAT BRUSH OPEN ELEMENT
OF BUILDING - CAN BE SEEN FROM

VIEW F - REFERENCE TO PLAN
LOOKING TOWARD NORTH CORNER OF
COMPLEX FROM NORTHWESTERN SIDE

NOTE: NO PERSPECTIVES TO SCALE

VIEW C - REFERENCE TO PLAN
FREEDOM HALLWAY RE. VIEW

FREEDOM HALLWAY
PUBLIC

STAFF ACCOMMODATION -

PUBLIC SPACES -

GUEST ACCOMMODATION

WING - LARGE ROOM
SLEEP 10 PEOPLE

WEST PERSPECTIVE

NORTH-EAST PERSPECTIVE

NORTH-WEST PERSPECTIVE

SOUTH-WEST PERSPECTIVE

5.6 Techniques

The overall design incorporates within it all of the techniques discussed in chapter four. Throughout the planning of the design, many design decisions have been directed in order to ensure the design speaks of a number of different techniques at a time, by creating spaces and elements within the design that speak of a combination of the techniques helps to enrich their overall success and outcome.

The introduction of the “Wall” into the plan helps to explore many of these techniques and link them together, in order to produce a coherent and functional design.

We will now go through how these techniques, as introduced and discussed in chapter four, have been incorporated into the design.

Here-and-There:

This technique speaks of establishing a sense of position. The wall, which is a dominant feature within the design works as a memory tool, it is always present throughout the design, so depending on your inhabitation and activity of which you are undertaking will determine your position in regards to the wall. The wall enables one to establish this position as it provides you with a memory of rest of the building and how it has been negotiated.

Visual Movement:

(West Perspective: refer to p. 74)

The building takes on a very horizontal orientation, as a result from the strong horizontal planning implemented, (*refer to plan p. 68*). This encourages interaction, mobility and an ease of progression throughout the building, which, in turn provides ample opportunities to establish visual movement throughout the design.

Visual movement can be seen throughout the design, as a result of the implementation of numerous visual channels incorporated within the design.

These visual channels speak of many of the other techniques discussed, increasing the overall effectiveness and the experience of which they provide to the occupant.

Through the wall a number of different types of openings have been implemented, all of which create slightly different visual channels.

These openings include the following:

The cut-out opening –

(Kitchen – plan view)

(Dining area – section view)

The screened opening –

(Public access space)

The framed opening –

(Guest accommodation – Level 3 – refer to plan, p.68)

The openings are framed by timber.

This also frames the walls and context, reinforcing ones position.

(Staff accommodation & Guest accommodation)

Line of Tension – Threshold:

The wall establishes many opportunities for the line of tension technique to be explored, as a result creating numerous thresholds of which one must pass through on a regular basis whilst in transition, as well as situations where one is able to sit within in a room, for example, either the public lounge, or dining area, where the room is simultaneously occupied by the wall, which runs through the centre of the space. Where the wall in these spaces is not physically obtrusive, it's line is exposed and visually present.

(Public spaces – refer to p. 72)

This provides the opportunity for individuals to play on the experience of being able to determine their sense of position in regards to both the inside and outside,

depending on their perspective this experience will be different for each individual occupying the space.

Openings through the wall establish not only visual channels, but also a line of tension, one must look through and similarly walk over this crossover, although in this case as shown in the diagram below; whether one physically or visually crosses this threshold, line of tension, either way they remain in the same room.

(Public space – Lounge – refer to plan, p.72 & section, p. 69)

Due to the introduction of the line of tension, in this case represented through a wall. One is forced to acknowledge their sense of position within the space and make a link and connection to the other side.

Jay Appletons Concept:

Throughout the design the three aspects which make up Jay Appletons concept are explored and implemented.

The three aspects, being that of “Hazard & Mystery”, “Complexity & Order” and “Prospect & Refuge”.

By working the building in with the landscape, both this and the horizontal planning, not only complement each other but also enable the three aspects to be explored and introduced into the design.

(West perspective: refer to p. 74)

The idea of “hazard and mystery”, and how it looks toward creating the innate desire to explore unknown territory, whilst being alert to danger, relates very well to the heli-ski operation, which is the dominant operating function of the complex.

(Section: refer to p. 69)

With this in mind, being able to take the underlying ambition of the activity that the guests and occupants of the complex are there to experience, and being able to introduce this into the design of the building, results with both the heli skiing – outdoor activity as well as the inhabitation of the building to create experiences which ultimately create the sense of “hazard and mystery”.

In turn this establishes an overall integrated and enhanced experience. This experience achieved both at day and night, as well as both inside and outside, helps to reinforce not only the differentiation, but helps one to compare both the differences and similarities between the two spatial realms.

Reciprocity:

Reciprocity, ultimately eluding to the idea of ambiguity is defined and achieved throughout the design through the “wall”. The wall becomes somewhat ambiguous, it forces one to question it, it does in one sense act as an ordering tool, but then at the same time it enables one to break through the boundary and becomes somewhat irrelevant and relevant all at the same time.

This ambiguity, via forcing one to question an aspect of the building, leads them to having to learn about the space in which they are in, this helps one to form an understanding of both the space of which they are in and its relation to the rest of the building and surroundings.

Therefore this reciprocity, introduced via the implementation of the “wall” in the design helps to educate the occupants about both the building of which they are in as well as the environment and context in which the building sits.

The Haptic Sense:

Senses form a very important part of our experience of both a space and overall place. By taking the idea of senses a step further and moving toward creating an experience of a building through the use of ones “haptic sense”, helps the occupant to not only experience the building but leads to a greater understanding of the building.

A haptic experience of a building, ultimately means a physical interaction involving ones senses of a space or building, is present within the design. By involving one physically in the functioning of a building, will heighten their experience and force one to understand their position, and the effects of which the elements of the external environment have on both them as well as the space in which they are occupying.

As you can see in the following diagram, instances such as one of being able to sit and occupy the space that ultimately differentiates the inside from the outside,

which in this case is the wall, is one example of how this idea of creating a “haptic sense” experience of a space has been implemented into the design.

(View from Level 1: refer to section, p. 69)

Orientation – Negotiation:

The dominant horizontal planning, is complemented by the introduction of the “wall” (*refer to p. 65*), which in a sense works as an ordering tool, to explore the implementation of the different techniques. This also helps to establish a sense of hierarchy throughout the building and a functional division of spaces, which makes the negotiation of the spaces and overall the building easy to understand.

In regards to the orientation of the building through a combination of looking toward the site and its attributes, in regards to aspects such as the prevailing winds, daylight, sunshine, views and access helps to orientate the building into a position which enables it to take full advantage of the environment and what it has to offer. (*Refer to site planning – p. 46 & 47*)

Openness and closedness:

The complex has been designed in such a way in which the spaces are sectioned into three main categories, that of, public space, guest accommodation and staff accommodation. All of the spaces are able to be closed off or opened up depending on how one intends to use the complex. This is important in regards to the seasons and the variability of weather of which it will be subjected to, with both the coldness of winter and the heat of summer taken into consideration.

Context:

It is vital for one to understand the environment of which they are building amongst, in order to create a design which utilises both the landscape and the elements on offer.

By doing this a building is more likely to be able to both stand up for itself, whilst also considering the impact of which its presence has on its environment. By working with these considerations enables the building to potentially manipulate one's interpretation of both the site, complex and environment. (*Refer to site analysis and context – p. 40 & 41*)

Materials:

The building is made up of a material palette consisting of – concrete, stone, timber and glass.

These materials aim to provide a series of comfortable spaces within the complex, both in regards to their response to the climatic conditions as well as their overall impact on the site aesthetically. The use of reinforced insulated concrete has been implemented as the main structural system, in response to the demands of the climate, strength, durability and its thermal mass properties.

The chosen materials compliment the aesthetics of their surrounding environment and aim to work in with their surroundings.

It is important to decide what statement you wish to make with your building in regards to its context. Whether you want the building to oppose its environment or if you wish to work in with the landscape and surroundings.

In this case, the building aspires to achieve a bit of both, it works in with the environment and the landscape, with the building levels partially going underground. However it also wishes to make a statement, a claim on the land of which it is situated which is expressed through the implementation of the “wall”.

(Panoramic view: Outlook from proposed site – refer to p. 42)

5.7 Results

Overall the design achieves through the implementation of a combination of techniques as discussed previously in this chapter, a complex which works with its surroundings and environment and which has the ability to have its spaces both opened up or shut down, it creates a functional building which outlines a foundation and provides space for inhabitation to occur. Through the implementation of the “wall”, one is encouraged to incur a haptic sensory experience of the building and interact with the structure. This leading an inhabitant of the building, whether they be a member of staff and therefore more permanent

resident, an overnight guest or simply a day visitor, to question the boundary of which defines the spaces they are in. The building provides them with opportunities to look further past the space they are in and make connections between the inside and outside, overall encouraging them to understand the environment of which they and the building are occupying.

In summary, this potentially creates a successful building, which through the use of the implementation of multiple techniques creates a multiple perspective, of which overcomes the traditional differentiation between inside and outside through the architecture itself.

5.8 Design Conclusion

From this chapter we have seen how the theory and techniques discussed in chapters two to four can be transferred into a design project, in order to produce a design which through its architecture overcomes the traditional differentiation between inside and outside by questioning the space that is inbetween.

With this in mind we are now able to question what different approaches could be taken, what lead to certain design decisions and what else could be looked into in order to take the design and research question to the next level. This discussion will be the focus of the next chapter.

CHAPTER 6.0 – Results

6.0 Results

Questioning architecture's possibility of overcoming the traditional differentiation between inside and outside space, led to initial research, followed by the testing of this research through a design project. This process has enabled one potential approach to be both explored and demonstrated, enabling one to achieve a greater understanding of not only the concept, but the parts of which play a role in the relationship of space.

In reflection the concept of the relationship between inside and outside, and the differentiation between the two, which has become known as not only the inbetween, but also a transitory space, connection, boundary, differentiation. This concept could be compared to a book and similarly implemented into a design.

Firstly in regards to a book:

The outside being the cover, where aesthetics are important in order to draw one's attention and establish an initial impression. The materiality is important in regards to its context, whether it is hard wearing and able to endure a lot of use or alternatively soft and fragile, in which case it would suggest that it should be cared for and treated with respect.

The inside is where the guidelines for the experience are established, this is where the structure of which produces the story or similarly format is implemented, which guides and navigates one through the book.

The inbetween could be compared to the reader's imagination, it is what brings the whole story and book together, it is where the guidelines are laid out inside the book, of which are open to one's personal interpretation, enabling one to establish a unique position and relationship in regards to the book, ultimately producing a slightly different experience for every reader.

In relation to the design:

The outside represents not only the exterior envelope, but the immediate surroundings and all of which extend beyond that, ultimately encompassing the environment in which it is situated. Similar to the book, an analysis of both the aesthetics, materiality and external conditions are important in regards to the building's endurance and relationship of which it establishes with the environment of which it is situated.

The inside provides the fundamental layout of the building, it is the plan of which guides one's experience and navigates one through the building, outlining spaces for where activities are intended to occur as well as presenting the openings for transitions and connections to the outside to be established.

The inbetween is the occupants' interpretation of the inside, it is their behaviour of which directs their movement and the way in which they occupy the spaces and participate within and with the building. It opens up the building to be occupied by one's imagination, enabling the same building to be experienced differently by each individual occupant.

The success of a book and similarly a building comes down to a combination of these three aspects being the spaces which are outside, inside and inbetween. It

comes down to the overall relationships created through the connections established between inside and outside, as well as the overall functionality of the planning and finally the participation and involvement of the occupant.

If a building is not inviting, and its spaces not interesting or suggestive of activity, the occupant will not be confident or encouraged to participate with the building and will not make the most of the experience.

Whereas if a building is capable of capturing ones interest and inviting them in to its world, and then providing opportunities for activities and outlooks of which would otherwise be dismissed, as well as having the ability to get one to question its boundaries, ones imagination and use of the spaces within the building will be encouraged, hopefully resulting with ones overall experience of the building being heightened. Not only this, but it will enable individuals to experience a building differently, this essentially is what creates interest and discussion.

I feel that the design presented in chapter five incorporates these qualities and essentially would enable an occupant to have a successful experience within the building.

Through this process I have realised that “site” becomes the underlying and most important factor. The environment is what gives us the grounds to begin a design, it both inspires and directs our movements and challenges us to try and provide solutions to live harmoniously together, testing us constantly through its elements.

By designing architecture which is first of all site specific, the strength of the relationship established with the site is increased and in turn enables a building the

ability to become both connected with its environment as well as unique. Although some sites may obtain similarities, no one site can be identical.

Whether considering an urban site, or a country site, either way, the importance of looking to the occupants is vital, in order to establish what they wish to achieve and from this, how the site and its conditions can be used in order to form relationships, of which, compliment and create efficient spaces.

By considering this negotiation and connection between the two spatial realms that are inside and outside, we open a whole new perspective to both spaces and the inhabitants occupying them.

After establishing who the client is, what they require, what they aim to achieve, relating this to the chosen site and looking to how the site can aid this aim, enables one to not only create a functional design, but one that considers the connection and celebrates the relationship between the two.

We have become so used to implementing standardised components, such as windows and doors, at standard widths and heights, this does obtain a positive aspect, making manufacturing more efficient, achievable and affordable, as well as often being a product that over time has proven itself.

However, I feel we must ask ourselves, do these components establish the best relationship with the outside for the immediate situation being considered, or is there a better solution? Should the door be taller? Should the window be wider? What would the effect be if the wall was made thicker?

In design one will often begin with a conceptual idea, sometimes based on a theme and generally always aiming towards a goal and product outcome set. However,

we must not forget to continue the scrutiny right through down to the walls, their thickness, materiality and orientation, along with the window sills and door knobs, as it is these finishes, these connections which play the largest role of all and that is the creation of the relationship that is space. Without them design would not work, as inside and outside are not only dependant on each other but they are one in the same, they are “space”. By considering these connections, a whole design can be transformed into potentially a design which invites its occupants and not only accomodates them, but questions their orientation and position, that bring different aspects of the site to their attention, teaches them about their surroundings, helps them to be able to make the most of the spaces and understand a little bit more about the environment in which they are situated. Overall creating a more interactive and adaptive relationship and hopefully succesful inhabitation.

We can always be sure of one thing, that is that there will always be chance for improvement, just as the seasons change, the weather changes, over time the site for which one has initially designed for will also change. With this in mind, we must begin to see the need for the flexibility and adaptability of spaces and how their borders connect. If we are able to continually analyse this, and adapt our buildings to changes, not only will a building continue to perform, but if documented, it has the potential to become an evolution which progresses with time, of which we can learn and progress from.

Through careful consideration of spaces and their relationship to each other, as well as the relationship established with the occupant, one is able to define, distinguish and establish new relationships, as well as be inspired to manipulate the spaces as well as create and implement new connections, boundaries and

differentiations, of which, in turn bring us one step closer to being able to overcome the traditional differentiation between inside and outside.

CHAPTER 7.0 – Discussion

- 7.1 – Chosen approach
- 7.2 – Site – Country vs. Urban
- 7.3 – The Wall
- 7.4 – Orthogonality
- 7.5 – Entrance
- 7.6 – The Next Step

7.0 Discussion

Having looked into the relationship that creates the overall whole that is space, consisting of the spatial realms of inside and outside and the differentiation between the two, we have gained an understanding of the importance each part plays in design and by looking at different techniques and examples of ways in which this differentiation and connection between inside and outside can be pushed and explored has lead to the implementation and testing of this theory, knowledge and techniques into a design as shown in the chapter five.

The aim of this chapter is to discuss not only what has been learnt from the design and the process of development, but the reasoning behind decisions that were made in regards to the design, as well reflecting upon the design and the success of techniques implemented. This will provide the opportunity to formulate a greater understanding in regards to both the design and possibilities one is able to achieve in regards to the underlying question that is, *“How can architecture overcome the traditional differentiation between inside and outside?”*. With an understanding of what we have come from and what we have been able to achieve, we will then look to the future possibilities and how this question can be further investigated in order to push that boundary and differentiation even further.

We will start by looking at the reasoning behind particular design decisions that were made, in regards to the approach, the choice of site, the implementation of the wall as a tool within the design, the orthogonality of the plan and the designs entrance. This will be followed by a reflection and a further discussion of what

could potentially be the next step in this investigation of the differentiation between the spatial realms that are inside and outside.

7.1 Chosen Approach

In regards to the structuring and presentation of literature in this thesis, this approach enables one to first gain an understanding of the fundamental relationship which ultimately creates “space”. This being the relationship which consists of the two spatial realms, that of inside and outside. Through understanding the parts which make up this relationship, as discussed in chapters two and three, we are able to pinpoint which areas to target in order to try and begin to comprehend the question at hand, which asks how architecture can overcome the traditional differentiation between inside and outside space. The word “differentiation” in the initial question being a key give away, it was decided to investigate and undertake an exploration of the space inbetween, the connection and boundary which creates both this relationship and differentiation.

From here we looked into the different techniques in chapter four, that could be implemented in order to explore this connection and inbetween space, in order to look past the “traditional” theories, such as the wall, window and door. Not necessarily ruling them out as options, but seeing how they could be approached differently or utilised in conjunction with other techniques in order to both emphasise and increase their performance in the role as the connector or differentiator of the relationship that is space.

By taking this theory and translating that into a design, shown in chapter five, provided the opportunity to explore and test this knowledge, giving a chance to create a design which will set out with the objective to design and show a solution or answer to the question, through a physical built form.

7.2 Site – Country vs. Urban

It was chosen to explore this question in a country setting as opposed to an urban context, this decision was made due to a number of influencing factors and considerations.

Although it would have been interesting to explore this question in an urban context, where you are faced with problems such as ever increasing demand for space and housing and ever decreasing outdoor green space. The decision was made to move to a country site where the exploration of the relationship between architecture and landscape could become a main focus.

By choosing a country site, in particular that of Mt Potts, New Zealand (*refer to p. 37*), you are faced with many challenges, one being that you are surrounded by such magnificent landscape and setting, that one is forced to ask are you able to produce architecture that will stand on its own? How do you add to the site through your design? and how can the site be used in order to enhance the result of the outcome design produced?

Another influencing factor in the decision to explore the question in a country setting, was the programme and client – HeliPark NZ (*refer to p. 32*), which presented a realistic programme and challenge. This along with a desire to design a building that was able to achieve this relationship between inside and outside and question its traditional differentiation, in a site where there is a varied climatic change between seasons, giving the opportunity to explore the question in both the cold of winter and warmth of summer and produce a solution which is successful and adaptive to both was a key driver.

Other influencing factors were the interest of the idea of cabin fever, as well as a passion for the mountains and its environment of which it presents.

7.3 The Wall

The wall being a very dominant feature of the design both in plan, elevation, section and perspective, becomes the back bone of the design. (*Refer to chapter five, section 5.5 – p. 66*)

In the initial planning of the design (*refer to p. 48*), the wall did not exist. However as shown in chapter five in the design development phase, the need to condense the planning into a compacted design became evident. The design needed an intervention in order to achieve a plan which read as one complex, as opposed to a group of smaller individual spaces that were interconnected, this naturally lead to the introduction of the “wall”. (*Refer to p. 59*)

It comes down to not necessarily needing something to distinguish inside or outside space, but to simply enable one to establish a sense of orientation and visual connection. Where from this they are able to distinguish, and perceive whether or not they are in fact occupying an inside or outside space.

The orientation of the wall eventuated from an analysis of the site and what it potentially had to offer, in regards to aspects such as the prevailing winds, views, outlook, surrounding environment and sun light and day lighting. The site and orientation of the wall was also considered in relation to the activities to be undertaken, determined the overall best orientation of the complex. *(Refer to p. 47)*

The wall predominantly acts as a new axis through the site, in relation to the existing north/south orientation. From here it becomes an ordering tool in aid of the sites sense of orientation and planning, not only pulling the design together, but with the introduction of the secondary wall, in conjunction they help to break up the complex into different categories and define the different spaces, for example the staff accommodation, guest accommodation and public spaces. *(Refer to p. 65)*

In summary this act of the placement of the wall, in this case provides a tool in aiding the development of the design, however it does not necessarily need to be a "wall". The point to be made is one must first establish a boundary, a feature, one must then make a stand. In the design presented in chapter five, this boundary which is exemplified through the creation and implementation of a "wall" essentially provides a reference marker, of which has the ability to help both the complex and the occupants to establish their sense orientation and position in regards to the spaces of inside and outside.

7.4 Orthogonality

Why such an orthoganal plan? Why not curves? When looking at the plan, *(refer to p. 68)*, you are immediately drawn to its orthogonality and both intrigued as well as forced to question it.

It was decided from the very beginning that the design would be explored from an orthoganal perspective as opposed to looking at the curve. Although the curve would have provided many new and interesting challenges in regards to both orientation, heirarchy and planning of spaces, the decision to explore an orthoganal plan came down to the desire to try and overcome this differentiation between inside and outside space within a design of which many can relate to, in order to make an example that radical changes in planning are not needed in order to achieve the desired outcome, just a greater understanding of both the site and the techniques which could be implemented.

Other benefits of exploring the question through an orthoganal as opposed to a curved design, is that it provides opportunity for strong planning and direction to be implemented as well the creation of a very ordered design with functional spaces to be established, also allowing one to see how even through a very ordered and structured design you are still able to create ambiguity.

Other parallels that can be drawn in regards to the decision to take an orthoganal approach to both the design and planning is for one the influence of the surrounding environment and context, following the same orientation and ordering of the farming and landscape as well as that of the ridgelines of the mountains.

7.5 Entrance

In regards to the entrance it was decided to leave this somewhat ambiguous, for one this is not a location and complex one will stumble upon, people that arrive at this destination are there for a pre planned reason. With this in mind as well as the vast open landscape encompassed by mountain ranges, it was decided to let the landscape and surrounding views take dominance over the design.

So as one approaches the complex from behind they are predominantly drawn to the view outwards and the mountain ranges of which they have come out to explore at HeliPark. This helps to establish in the visitor both interest and suspicion, it heightens their excitement and forces them to acknowledge their surroundings and determine their orientation and search for access.

From here the complex and building is then able to explore and direct ones experience, visitors are first drawn in and then led through thresholds and forced to transition through spaces and across lines of tension questioning whether they are inside or outside in regards to the space of which they are occupying. They are then opened up to views of the surrounding landscape and given the opportunity to take in its beauty and dominance.

This helps to achieve one of the initial ambitions as discussed in chapter five, to create architecture and space which is both modest and refreshingly unpretentious. (*Refer to p. 35*)

7.6 The Next Step

I feel that from undertaking this exploration, by taking what has been learnt and the theory explored, along with additional research and analysis of the chosen site, that this knowledge could be transferred and similarly tested in an urban environment. This would be a very interesting challenge and being able to compare the two studies would provide a great compilation of information, design strategies and theory as well as solutions in order to improve and establish successful outcomes in both urban and country contexts, in regards to overcoming this traditional differentiation of pre conceived ideals between inside and outside space.

CHAPTER 8.0 – Conclusion

8.0 Conclusion

The intrigue of the concept of cabin fever, lead to the question - "How can architecture overcome the traditional differentiation between inside and outside?"

With the main aim being to undertake an exploration of the boundaries functionality and adaptability, to provide a connection between the spaces of inside and outside, both on an emotional and physical level. Potentially creating spaces which enable one to co-exist between the two spatial realms of inside and outside simultaneously.

Having first to ask the question what is the "traditional" differentiation?, lead to looking to the overall concept that is space, and the relationship of which this results from. We were then able to identify and investigate each individual part that makes up the relationship, including inside space, outside space and the space inbetween, of which creates the connection, boundary and similarly the differentiation between the two.

From this investigation of the relationship that is space, it became evident that in order to have a relationship you must have the following three components:

Firstly, a number of "parts" of which are to be connected.

Secondly, a "connection" which must be logical, placing the elements into a single image.

Thirdly, an image which forms a "whole", having greater meaning than the original elements.

In regards to the relationship that is space, space can be seen as the overall image, space is the "Whole": which is a result of the relationship between inside and outside. Inside and Outside supply the "parts", whilst openings make the "connections". The "whole", is an appreciation of the duality of their complementary characters. (Lo, 1986)

Secondly we must consider the relevance and importance of the relationship of inside and outside space.

We as humans need a point of reference in order to orientate ourselves within our environment. This need for orientation comes from a need for security, identity and more importantly understanding.

The desire to form relationships is fundamental to the human mind and appears to be a principle motive behind our process of perception, this along with an understanding of the nature of inside and outside space, and how the differentiation between the two affects their relationship, is very important if we are to appreciate how a building satisfies the innate human need for shelter. (Lo, 1986)

Understanding the role in which each part plays in the relationship that is "space", confirmed that the space inbetween; the connection, the differentiation was the area that needed to be explored and became the focus of the investigation.

This focus and understanding enabled the progression to investigate a number of techniques which could potentially form a design palette of methods, to be used both singularly and in combination with one another, in order to carry out the

exploration of the boundary in conjunction with a site specific approach, this potentially enabling architecture to overcome the traditional differentiation between the spaces that are inside and outside.

Through the implementation of the researched theory and techniques into a design, we were able to both test and form conclusions on the overall success of the aim which this thesis initially set out to achieve, this being, to undertake an exploration of the boundary in order to see how architecture can overcome the traditional differentiation between inside and outside space.

As a result of the design phase of the thesis, it became obvious that the success of the relationship between inside and outside space, comes down to the relationship between the site and its occupants and how they interact, inform and use each other in order to live alongside, and harmoniously with each other.

We must look to both the site and the building, as well as their relationship to each other, in order to gain our bearings and orientation. It is through the site, that we are able to establish how a building can use nature's resources in order to create spaces, of which are both comfortable and provide the occupants with the relevant spaces needed in order to accommodate their behaviour.

By using a range of techniques which force one to not only acknowledge, but encourage the occupants to interact with the boundaries that create and define the spaces of which they occupy and differentiate the two spatial realms of inside and outside, enable one to gain a greater understanding for both the immediate space of which they are in, as well as its surroundings. With this understanding, one is able to interact and adapt their environment in order to increase the building's performance in regards to its overall functionality.

No one site is the same. Throughout this process, it has become evident that no one person will perceive a space in the same way, every individual will obtain a different perception of a space, so by leading one to explore the boundary of the space in which they occupy, helps to open and broaden one's perception of the environment in which they stand.

With this in mind, we do not necessarily need to change our techniques and methods used to create the boundary which defines inside and outside space, in order to overcome this traditional differentiation. But by looking to the site and what it has to offer, looking to the needs of the occupants, we are then able to explore through the implementation of a combination of design techniques, how a boundary is able to be created that enables the occupant to interact with and inform the spaces of which they occupy, in relation to the site and the conditions it provides. This enabling one to overcome the traditional differentiation of inside and outside space and establish a differentiation which is overall unique to both the site and the occupant.

It is the connection and differentiation between the spaces of inside and outside in the relationship of space which overall produces architecture, and it is the consideration of the relationship between the site and the occupant that will overall enable successful spaces to be produced. This in turn creates not only a unique design, but one that forces its occupants to acknowledge their connection to the environment, and to both challenge and re-think the relationship between the spatial realms of inside and outside.

Bibliography

- Alexander, C. (1977). *A Pattern Language*. London, United Kingdom: Oxford University Press.
- Ammer, C. (n.d.). *The American Heritage Dictionary of Idioms by Christine Ammer*. Retrieved May 20th, 2010, from Dictionary.com: [http://dictionary.reference.com/browse/Cabin Fever](http://dictionary.reference.com/browse/Cabin+Fever)
- Arnheim, R., Zucker, W., & Watterson, J. (1966). Inside and Outside in Architecture: A Symposium. *The Journal of Aesthetics and Art Criticism* , 25 (1).
- Arnheim, R. (1956). *Art and Visual Perception*. London, United Kingdom: Farber and Faber Limited.
- Arnheim, R. (1977). *The Dynamics of Architectural Form*. Berkley, United States of America: University of California.
- Berrizbeita, A., & Pollak, L. (1999). *Inside Outside: Between Architecture and Landscape*. Gloucester, Massachusetts, United States of America: Rockport Publishers Inc.
- Bloomer, K., Moore, C., & Yudell, R. (1978). *Body Memory and Architecture*. London: Yale University Press.
- Boesiger, W., & Girsberger, H. (1967). *Le Corbusier 1910-1965*. London, United Kingdom: Thames and Hudson.
- Brown, K. (1980, March). Outlook. *The Architectural Review* , 155-160.
- Burns, T. (1986). *The Essence of Entrance. Report as part of B.Arch*. Wellington, New Zealand: University of Wellington.
- China Daily*. (2007, May). Retrieved January 31st, 2011, from http://www.chinadaily.com.cn/ezine/2007-05/11content_870697.htm
- Ching, F. (1979). *Architecture: Form, Space and Order*. New York, United States of America: Van nostrand Reinhold and Co.
- Clark, K. (1969). *Civilisation*. London: B.B.C.
- Collins. (2003). *Collins English Dictionary*. Great Britain: HaperCollins Publishers.
- Cooper, F. A. (1996). *The Temple of Apollo Bassitas: The Architecture*. United States of America: American School of Classical Studies at Athens.
- Corbusier, L. (1960). *Towards a New Architecture*. London: Holt, Rhinshart and Winston.
- Cullen, G. (1961). *The Concise Townscape*. Architectural Press.
- Curtis, W. (1982). *Modern Architecture since 1900*. Oxford: Phaidon Press Ltd.
- Evans, B. (1981). *Daylight in Architecture*. New York: McGraw-Hill Inc.
- Gear, J. (1989). *Perception and the evolution of style: a new model of mind*. London: Routledge.
- Hausladen, G., de Saldanha, M., & Liedl, P. (2008). *ClimateSkin: Building-skin Concepts that Can Do More with Less Energy*. Basel, Boston, Berlin: Birkhauser Architecture.
- Hoffman, D. (1978). *Frank Lloyd Wrights Fallingwater*. New York: Dover Publications.
- interactivearchitecture.org. (n.d.). *Some thoughts on Responsive Kinetic Architecture*. Retrieved March 19, 2010, from <http://interactivearchitecture.org>
- Johnson, P. (1967). *Architecture 1945-1965*. New York: Rhinehart and Winston.
- Lam, W. (1977). *Perception and lighting as formgivers for architecture*. New York: McGraw-Hill.

Lo, R. (1986). *Between Two Worlds: The window and the relationship of inside to outside*. Wellington, New Zealand.

Moore, C. &. (1974). *The Place of Houses*. New York: Holt Rhinehart and Winston.

Norwich, J. (1975). *Great Architecture of the World*. London: Mitchel Beazely Publishers Ltd.

Skinner, P. (2003). Reflections on Inside-Outside Space. *Design + Research; Project based research in architecture, 2nd International Conference of the Australasian Association of Schools of Architecture*. Melbourne: University of Queensland.

Smith, P. (2007). *Dynamics of Urbanism*. Routledge.

The Yellow Emperor's Classic of Internal Medicine. (2nd Century BC).

Tse, L. (6th Century B.C.). Chapter 11 - On the usefulness of "nothing" . In L. Tse, *Tao-te-ching*.

Venturi, R. (2002). Complexity and Contradiction in Architecture. New York: "The Museum of Modern Art, New York"; 2nd edition.

Wang, W., Herzog, & Meuron, d. (1998). *The Perception of Dynamic Architectural Boundaries on Notions of Identity*. Basel: Birkhauser Verlag.

Images:

Image 1: *Smoky Mountain Lodge*. (n.d.). Retrieved from [www.epicquest.com: http://www.epicquest.com/accommodation/smoky-mountain-lodge/activity/snow/region/rockies/destination/sun-valley/](http://www.epicquest.com/accommodation/smoky-mountain-lodge/activity/snow/region/rockies/destination/sun-valley/)

Image 2: *Gardiner Hut*. (n.d.). Retrieved November 21, 2011, from Department of Conservation: <http://www.doc.govt.nz/parks-and-recreation/places-to-stay/backcountry-huts-by-region/canterbury/aoraki-mount-cook/gardiner-hut/>

Image 3: *Whare Kea Lodge & Chalet*. (2007). (R. Sand, & I. McGill, Producers) Retrieved May 20, 2010, from <http://www.wharekealodge.com/en/media-gallery/item/35/asInline>

Image 4: *NZ Topo 50 – BX18 (Lake Clearwater)*. (n.d.). Retrieved May 18, 2010, from Land Information New Zealand: <http://www.linz.govt.nz/topography>

Image 5: *Hakatere Potts Rd, Ashburton Lakes, New Zealand*. (n.d.). Retrieved May 19, 2010, from Google Earth.

Image 6: *Hakatere Potts Rd, Ashburton Lakes, New Zealand*. (n.d.). Retrieved May 19, 2010, from Google Earth.

Image 7: *Chen House*. (n.d.). Retrieved April 28, 2010, from Chen House: <http://chenhouse01.blogspot.com/>

Image 8: *Pachacamac House*. (n.d.). Retrieved April 24, 2010, from Longhi Architects: [http:// www.longhiarchitect.com/](http://www.longhiarchitect.com/)