TOPOPHILIA

noun. The affective bond between people and place.

TOPOPHILIA

A CISTERCIAN MONASTERY IN AUSTRALIA'S LAND OF FIRE

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DEDICATED TO ANNETTE MIRIAM SEEAR

My mother who inspired my love for the exploration of landscapes, interest in distant cultures and search for creative endeavours.

You are remembered every single day.

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▲ *Figure 1: Aerial photograph of Black Saturday's Destruction in Victoria*

ABSTRACT

On a portion of sacred Aboriginal land, formerly the resting place of Coranderrk Station, lies Tarrawarra Abbey, Australia's solitary Cistercian monastery. Established in 1954, Tarrawarra Abbey represented an opportunity for a community to emerge that encouraged the interaction and collaboration between European and Aboriginal peoples. Instead, the historical discourse and relationship between Tarrawarra's monks and Victoria's Aboriginal people reflects a broader narrative of Australia's past. Aboriginal histories, their perceptions of the natural world, strategies for managing and caring for the land as well as dispossession are treated as marginal and often invisible elements within a European history, architecture and life. Additionally, with the eradication of Aboriginal people from their position as protectors and guardians of their environment, combined with a changing climate, areas of Victoria's landscape are now under serious threat as fire-storms continue to plague its most valuable forests.

On February 7, 2009, the most destructive fire-storm in Australia's history ripped through Victoria. With no Aboriginal influence on the landscape to control fuel, 'Black Saturday' as it became known, executed centuries old mountain ash trees, forcing them into a compromised state, a landscape trap. Consequently, the surviving stands of mountain ash and vulnerable stands of recent re-growth need protecting.

This thesis addresses how site and sensory-based Aboriginal perspectives on the relationship between people, architecture and landscape can drive the manifestation of a 'new' and reinterpreted Cistercian monastery. Through this process the monastery will become an architectural scar. As a scar, the reinterpreted monastery and its community of monks and Aboriginals will not only contribute to the protection of Kinglake National Park's injured mountain ash forest and heritage stone water structures, but also assist in the mending of a torn relationship between two cultures.

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^ Figure 2: Aerial photograph of Black Saturday's Destruction in Victoria

INTRODUCTION

THE PROBLEMS

In 1954, Tarrawarra Abbey, Australia's solitary Cistercian monastery, was established on a portion of land within Victoria, formerly known as Coranderrk Station. It is argued that the monastery represented an opportunity for the manifestation of a collaborative community and architecture that acknowledged not only its European traditions, but also its Australian Aboriginal history, context and site. However, Tarrawarra Abbey's architecture and monastic community instead reflects a broader narrative of Australia's past. Aboriginal conceptions on the relationship between people, architecture and landscape as well as their fire-based land management strategies were treated as marginal elements within a European history, architecture and life.

The consequences of these tensile relationships are two-fold. Firstly, as exemplified by Tarrawarra, Australian monastic architecture exists in an isolated state from its 'Australian' context (history, site, people). Secondly, without Aboriginal people using fire to maintain their environment, combined with a changing climate, areas of Victoria's landscape are now under serious threat as uncontrollable fire-storms continue to plague its most valuable forests. On February 7, 2009, the most destructive fire-storm in Australia's history ripped through Victoria. With no Aboriginal influence on the landscape, 'Black Saturday' as it became known, executed centuries old mountain ash trees, forcing them into a compromised state, a landscape trap. A radical shift in thinking is required for two reasons. Firstly, reinterpret the traditional Cistercian monastery for its Australian landscape and context. Secondly, establish an architecture that facilitates and stimulates the resurrection of the Aboriginals' fire-based land management strategies and their presence in the landscape.

< *Figure 3: Author's photograph of Wallaby Channel from the plateau within Kinglake National Park.*

THE SCOPE

As a New Zealander of European descent, it is not possible to share the same view of the world, knowledge and beliefs as Australia's Aboriginals. As simply stated the Aboriginal architect Kevin O'Brien, one cannot become Aboriginal. However, through research and practice, O'Brien ensures that one can become close with Aboriginal experiences and their ways of perceiving the relationship between architecture and the landscape. By understanding the limitations outlined by O'Brien, it is important to note that the following research is but one contribution to an extremely complex and large body of knowledge. For the purposes of simplification, the collective term 'Aboriginal' (or derivatives of) is used to describe a combination of Aboriginal and Torres Strait Islander cultures within Australia.

However, due to the limitations of this thesis, it is not possible nor necessarily appropriate to focus the research on the many aspects of anthropological, archaeological, behavioural and environmental theories that underpin Aboriginal culture.¹ Nevertheless, the lack of research and literature on the Taungurung people (traditional owners of the site) limits group specific investigations. Consequently, in response to limited research material it is not appropriate for one to simply draw semiotic, architectural or cultural references from Aboriginal cultures outside the local. Therefore, the investigations and findings presented should be read as more general observations about Aboriginal perspectives on the relationship between people, architecture and the landscape.

¹ Such as; economic theories of hunter-gatherers seasonality, scheduling, exchange and intensification, environmental theories of ethno science, territoriality, kinship, social organisation and land tenure.

THE APPROACH: METHOD + STRATEGY

In exploring the possibilities for a novel approach to Cistercian monastic architecture two theoretical design imperatives will be examined.

1. ‘The Elemental’

Fire as an element of paradox, origins, contemplation and control.

2. ‘The Boundary’

*Horizontal boundary: architecture – earth – sky.
Vertical boundary: physical walls, space between, spatial walls and operable boundary.*

Operating as design-led research this thesis employs analogue-based design practices as the primary mode of investigation. Through ‘The Boundary and Elemental’ theoretical discussions and subsequent design investigations employ design-based research in the form of large hand-drawn drawings,² sketches, photography, and the occasional physical or computer-formed model. With a focus on Gottfried Semper’s four elements of architecture; the hearth, wall, roof, and to a lesser extent, the mound this design-based research will examine European (Cistercian) and Aboriginal perspectives on the relationship between people, architecture and the landscape.

These theoretical discussions and design investigations will then lead to a series of architectural operations, to be developed and tested throughout various parts of the monastery. The final set of architectural operations, derived from Cistercian and Aboriginal perspectives, will be utilised alongside the specific site conditions and analysis to reinterpret the architecture of the traditional Cistercian monastery.

The primary aim is to develop and reinterpret the monastery as an architectural scar. As a scar, the reinterpreted monastery and its community of monks and guests (Aboriginal or not) will not only contribute to the protection of the site’s at-risk mountain ash forest but also re-purpose the increasingly ‘redundant’ water canal system.

² The slow, thoughtful and often very contemplative nature of constructing large A1+ drawings reflected the basic qualities of monastic life. Like a monk reading a single page in a book over and over again, the slow process of drawing day after day enabled one to contemplate and fully realise each important move.

THESIS STRUCTURE

To frame the investigations into the problems and design-based solutions this thesis is structured around three parts;

‘Part I: The Trauma’

*An emotional or physical wound,
(Thesis problems + context)*

‘Part II: The Healing’

*A restorative process to physical, spiritual or mental wholeness,
(Enquiry into the rectification of problems)*

‘Part III: The Scar’

*A lingering mark depicting the fusion of new and old, a sign of
healing and contextual form of unity.
(Design-based investigations and solutions)*

Part I: The Trauma

Separated into six chapters (stories) ‘Part I: The Trauma’ forms an essential prelude to ‘Part II: The Healing’ by providing critical discussions that frame the thesis context.

Chapter One ‘A Story of the Forgotten’

The first chapter of the thesis investigates the historical relationship between Victoria’s Cistercian monks and Aboriginal people through the destruction of Coranderrk Station and subsequent formation of Tarrawarra Abbey.

Chapter Two ‘A Story of Life and Death’

The second chapter outlines the role of fire within the Victorian state and the effects too frequent fire-storms are having on its mountain ash population (site-based context).

Chapter Three ‘A Story of Site’

Leading on from chapter two chapter three formally introduces the site while outlining its three physical conditions; the mountain ash, the Yan Yean water system, and the ruins.

Chapter Four ‘A Story of Evolution’

With the historical context, site based context and problems introduced chapter four shifts the discussion into a questioning of the role Cistercian monasteries possess within the 21st century (program-based context).

Chapter Five ‘A Story of Program’

Chapter five then outlines the program in more detail, covering the monks’ rituals, the occupations expected on-site and the spaces to be included in the design.

Chapter Six ‘A Story of a Brief’

The final chapter of part one outlines the design brief that acts as a concluding element of the past five chapters.

Part II: The Healing

As ‘Part I: The Trauma’ provides a deeper understanding of the thesis context (history, site, landscape, program) ‘Part II: The Healing’ outlines and investigates the two theoretical design imperatives, ‘The Elemental and The Boundary.’ Through these two design imperatives part two explores Aboriginal and European (Cistercian) perspectives on the relationship between people, architecture and landscape .

Design-based research, case study analysis and formal architectural explorations into each design imperative frames the investigation and rectification of the traumas (problems), discussed in part one. Using a phenomenological lens and Gottfried Semper’s four elements of architecture, part two will focus on two strands of investigation. Firstly, the role of fire (design imperative one: the elemental). Secondly, the use of horizontal and vertical boundaries in connecting or disconnecting one from place, landscape and its natural elements (design imperative two: the boundary).

Chapter Seven ‘A Story of Fire’

The first chapter of part two discusses fire as an element of paradox, as well as its relationship to the origins of Aboriginal and Cistercian architecture. This chapter also investigates fire’s power of inducing reverie and contemplation as well as its relationship to the Aboriginals as an element to control wildfire within the landscape.

Chapter Eight ‘A Story of the Boundary’

The second chapter of part two opens with a discussion into the relationship between Aboriginal and Cistercian positions in the landscape. Through this introductory discussion, the text outlines the tensions that exist between an architecture that takes refuge from or engages with the landscape. The following sections will discuss how Aboriginal and Cistercian architecture navigates horizontal boundaries between architecture, earth and sky, and vertical boundaries between architecture and landscape. Through the text, case-study analysis and design-based experiments within ‘Part II: The Healing’ various architectural operations will be formed to be further explored in ‘Part III: The Scar.’

Part III: The Scar

The third part of the thesis presents the specific architectural outcome and design-based investigations for a reinterpreted Cistercian monastery sited in Victoria's Kinglake National Park. The reinterpreted monastery will embody the notion of the scar. As a scar the monastery will be a sign of healing, a symbol of unification and architectural manifestation of the following words by Lebbeus Woods;

*“The scar is a deeper level of reconstruction that fuses the new and the old, reconciling, coalescing them, without compromising either one in the name of some contextual form of unity. The scar is a mark of pride and of honour, both for what has been lost and what has been gained...To accept the scar is to accept existence. Healing is not an illusory, cosmetic process, but something that-by articulating differences both deeply divides and joins together.”*³

In part three the specific issues and theoretical arguments that have been discussed in parts one and two are further explored, reflected and translated into the formalisation of space and architecture.

3 Lebbeus Woods, Radical Reconstruction (Princeton Architectural Press, 2001).

Chapter Nine ‘A Story of the Spine’

Chapter nine outlines the basic master planning on site and the use of the spine as a key planning device to connect the mountain ash and ruins.

The following three chapters are structured around three key qualities of monastic life; contemplation, community and solitude, and explain the design of the critical monastic spaces.

Chapter Ten ‘A Story of Contemplation’

*The church,
The Scriptorium
The Cloister / Liminal Space*

Chapter Eleven ‘A Story of Community’

*The Refectory
The ‘Camp’*

Chapter Twelve ‘A Story of Solitude’

*The ‘Huts in the Forest’
The ‘Reading Huts’*

Chapter Thirteen ‘A Story of Reflection and Conclusion’

The final chapter provides a holistic thesis reflection and conclusion of the trauma, healing and scar. This discussion will focus on the methods employed, design outcomes and avenues for further studies and investigations.

^ Figure 4: Aerial photograph of Black Saturday's Destruction in Victoria

Part I

THE TRAUMA

AN EMOTIONAL OR PHYSICAL WOUND

^ Figure 5: Australian Aboriginal woman

Chapter One

A STORY OF THE FORGOTTEN

THE HISTORICAL CONTEXT

^ Figure 6: Coranderrk Station

1.0 CHAPTER OUTLINE

This chapter is the first of five in providing the relevant contextual information and evidence to frame the overall thesis argument and context. In particular this chapter focuses on the investigation into the historical relationship between the Cistercian Monks and Aboriginal people of Victoria through the destruction of Coranderrk Station and formation of Tarrawarra Abbey. The investigation argues that Tarrawarra Abbey represented an opportunity for, yet failed to achieve, the formation of a community and architecture that facilitates an interaction and collaboration between European and Aboriginal peoples. The chapter begins with a brief historical account of the Aboriginal and European presence in Australia. Following this historical overview, the chapter proceeds into an outline of Coranderrk Station; its people, place and destruction, before discussing Tarrawarra Abbey, the Cistercian monks and their relationship with the indigenous people of the land. The final section of the chapter begins to investigate the Aboriginals' use of fire and the effects that their removal from the land is having on the Victorian landscape. This final section leads into a more in-depth inquiry into the relationship between the Victorian landscape and fire in chapter two.

60 000 + years

400 Years

EUROPEANS
ABORIGINALS

1.1
HISTORICAL OVERVIEW

For tens of thousands of years, stories have marked the landscape. Stories have also marked the minds and souls of the first Australians, the Aboriginals. These stories explain the genesis of the Aboriginal people in all parts of the country, as well as the great ancestral beings that shaped and breathed life into the land making it rich for the people that have always resided on and within it.^{4 5} These stories are distributed across the continent, through the 500 or more distinct languages and cultural regions that make up the mosaic-like map of Aboriginal Australia.^{6 7}

Nevertheless, Aboriginal stories are not the only way of gazing into the past. Those practising science, another pronounced tradition, listen to the stories told by the rocks, human remains and other archaeological sites. The remains within the Australian land have been telling an ever-changing story for millennia.⁸ The first Australians, according to science, reached Australia between 40,000 and 60,000 years ago at a time when humans had barely colonised much of Europe.⁹

4 Richard Broome, *Aboriginal Australians: A History Since 1788* (Allen & Unwin, 2010), 5.

5 In some traditions, these ancestors plunged out of the earth's crust, bringing forth the process of life through the sun, wind and rain. Other ancestors, like Bunjil, molded the landscape by rushing or writhing through it, breathing life into the land and shaping it from bark.

6 Broome, *Aboriginal Australians*, 5.

7 Each cultural region has its own systems of government, cultural rituals, religion and language. Part of the city of Melbourne, as well as the Yarra area and land extending into central Victoria are all within the traditional lands of the Kulin nation. The Wurundjeri-william family group, part of the Wurundjeri-balluk clan or the larger Wurundjeri tribe, were the guardians of the City of Yarra area. The Wurundjeri-william people mainly spoke the Woi wurrung language but also spoke the other languages of their nation. City of Yarra, "Pre-Contact Wurundjeri," *The Aboriginal History of Yarra*, 2013, <http://aboriginalhistoryofyarra.com.au/2-pre-contact-wurundjeri/>.

8 These science-oriented stories contribute towards a global jigsaw puzzle illustrating that about four million years ago early forms of hominids evolved in Africa. Subsequently modern humans, homo sapiens, emerged around 150,000 years ago and with their developmental advances migrated across the earth's landscapes in the last 100,000 years.

9 Broome, *Aboriginal Australians*, 5.

< Figure 7: Diagram illustrating time spent in Australia, Aboriginal versus European.

However, from a European perspective Australia is only just surpassing four hundred years old. The first records of European mariners entering Australian waters occurred around 1606 despite the first fleet led by Captain Arthur Phillip only arriving in Bontany Bay during January of 1788.¹⁰ Nonetheless, more important than a debate around the true age of Australia is the way in which Australia's Aboriginal culture, histories, perceptions of the natural world and strategies for managing and utilising the land were neglected, disregarded and forgotten by the first English settlers.¹¹

In the eyes of the British, Australia was Terra Australis Incognita, an unfamiliar and strange place in the south, the unknown land. Due to their ignorance in not seeing the Aboriginals' highly functional and complex ways of living in and with the land, the British also claimed Australia was terra nullius, a land uninhabited by human beings.¹² As a consequence of their single dimensioned way of observing a new place, there was a continued appropriation of the land and territories of well-established Aboriginal people.¹³

10 Department of the Prime Minister and Cabinet, "European Discovery and Te Colonisation of Australia," Australian Government, January 11, 2008, <http://australia.gov.au/about-australia/australian-story/european-discovery-and-colonisation>.

11 Continuing to an extent into the 21st century.

12 Definition of 'humanity' during this time was to include notions of ownership, territory and space, qualities the Europeans did not see in the Aboriginals.

13 Bob Hodge, "White Australia and the Aboriginal Invention of Space," in *Imagining Australian Space: Cultural Studies and Spatial Inquiry* (Western Australia: University of Western Australia Press, 1999), 59.

1.2
THE BRIEF HISTORY CORANDERRK STATION

One particular story that reflects the broader Australian narrative of Aboriginal suppression and dispossession is the formation and destruction of Victoria's Coranderrk Station. During the 1800s, many Aboriginals across Australia were perishing due to starvation, introduced diseases and confrontations with settlers as European farming abolished traditional food sources and shelter. In response, Aboriginal leaders within Victoria began petitioning and protesting the local authorities to reinstate land for the Kulin Nation.¹⁴ In 1863 the Aboriginal leaders were somewhat successful as the Europeans allocated a site, in Victoria's Upper Yarra Valley, on which Aboriginal people, who had been dispossessed by the arrival of Europeans, could live and function as a community of carers and workers of the land. Coranderrk Station was born.^{15 16}

As Coranderrk expanded during the 1870s the community's involvement and dedication to the land had transformed the station into a highly productive farm and valuable site. Subsequently, the Aboriginal Protection Board saw the value of the land and argued that it was in the community's best interest to be relocated. The community of Coranderrk, led by William Barak, protested to retain their home and land over the following decade. However, as the Board refused to provide any resources to Coranderrk over this time living conditions deteriorated with illness plaguing many within the community. In 1886, the young people of Coranderrk were forced to abandon the station under the Aborigines Act (or 'Half-caste Act').^{17 18} As a result, half the population of Coranderrk was exiled, leaving the operation of the Station to its aging community. In 1924, with the younger members forced to leave and the elderly slowly dying, the government had a legitimate argument for moving the community off the station, and the people once again off their land.¹⁹

14 The Kulin nation was an alliance of five Indigenous nations within Central Victoria; Woiwurrung (The Wurundjeri people), Boonerwung (The Bunurong or Boonerwung People), Wathaurong (The Wathaurong People), Daungwurrung (The Taungurong People), and Dja Dja Wrung (The Dja Dja Wurrung or Jaara People).

15 State Library of Victoria, "Coranderrk Mission," Ergo: Research Resources Results, 2013, <http://ergo.slv.vic.gov.au/explore-history/fight-rights/indigenous-rights/coranderrk-mission>.

16 John Green worked closely with the Aboriginals in building houses, based on European notions of dwelling, as well planting crops of vegetables, wheat and hops. Ibid.

17 Ibid.,

18 Under the Act anyone of mixed descent (half-caste) younger than 34 was no longer entitled to remain on Aboriginal reserves.

19 State Library of Victoria, "Coranderrk Mission."

PRE- INVASION

Aboriginals across over 500 different cultural groups inhabited Australia for at least 60,000 years.

1788

The first Europeans, led by Captain Arthur Phillip reach Australia and begin to claim ownership over land.

1834-1835

The first Europeans colonise Victoria.

1836-1838

The Original Protectorate of the Port Phillip Region was formed as the Europeans were concerned about the effects of colonisation on the Indigenous peoples.

1863

Coranderrk Station is established.

1863-1873

Coranderrk Station maintain healthy profits through successful farming and land management.

1873-1886

The Aboriginal Protection Board attempts to reclaim Coranderrk's valuable land.

1875

Measles kills 35 of 150 residents at Coranderrk Station.

1886

The Victorian Government passes an Act stating that 'half-caste' Aboriginal people under the age of 35 are not entitled government assistance on land. Many people of Coranderrk are forced off the land. The people of Coranderrk, led by William Barak, protested the Act.

1944

The last remaining residents of Coranderrk die.

1954

Tarrawarra Abbey is founded on a portion of land formerly part of Coranderrk Station

^ Figure 8: Coranderrk Station time-line illustrating development into Tarrawarra Abbey.

^ Figure 9: Map illustrating the five Aboriginal groups of the Kulin Nation (Bold).

Site: Kinglake National Park

Coranderrk Station / Tarrawarra Abbey

1.3
THE FORMATION OF TARRAWARRA ABBEY

An opportunity of resurrection, healing and collaboration arose on the land in 1954, ten years after the last of Coranderrk's residents died. Tarrawarra Abbey, Australia's solitary Cistercian Monastery was established from the motherhouse of Mount St. Joseph in Roscrea, Ireland. The Abbey represented an opportunity for the collaboration between European and Aboriginal peoples who both share a topophilic interest in caring for, guarding and maintaining the landscape. Unfortunately, this was to be. Instead, the Abbey was formed through a progressivist history of white colonisation. The historical discourse and relationship between Tarrawarra's monks and Aboriginal people reflects a broader narrative whereby Aboriginal history, conceptions of landscape, space and fire are treated as vague, marginal and even invisible elements in a European history, architecture and life.^{20 21}

The historical identity of the Abbey fails to acknowledge the specific historical events of Coranderrk Station that play such a vital role in the area's story.^{22 23} "Instead the community's self-representation privileges its medieval [European] past and its recent [European] past, using a cultural vocabulary that talks of colonisation as part of the triumph of pastoralisation."²⁴

^ Figure 10: Badger Creek Fishing, Coranderrk Station, 1877.

^ Figure 11: Aboriginal Men in canoe, Coranderrk Station, 1883.

20 Megan Cassidy-Welch, "'A Place of Horror and Vast Solitude': Medieval Monasticism and the Australian Landscape," in *Medievalism and the Gothic in Australian Culture*, ed. Stephanie Trigg, Brepols, and Turnhout (Belgium: Brepols Publishers, 2005), 200.

21 Cassidy-Welch refers to the historian Henry Reynold's text *Why Weren't we Told?* which traces and exposes the manifestation of a particular form of Australian historical discourse whereby violence, resistant and conflict were often replaced in narrative and syllabus by a single, neat and palatable tale of white fortitude, national development and individual heroism. Henry Reynolds, *Why Weren't We Told?: A Personal Search for the Truth About Our History* (Penguin Books, 2000); Cassidy-Welch, "'A Place of Horror and Vast Solitude': Medieval Monasticism and the Australian Landscape," 200.

22 Megan Cassidy-Welch further notes that the story of Tarrawarra also fails to acknowledge other crucial elements to its history such as, Aboriginal dispossession, regional complicity in the forced removal of Aboriginal children from their families as well as the history of forceful Aboriginal resistance.

23 Cassidy-Welch, "'A Place of Horror and Vast Solitude': Medieval Monasticism and the Australian Landscape," 202.

24 Cassidy-Welch, "'A Place of Horror and Vast Solitude': Medieval Monasticism and the Australian Landscape," 202.

The lack of discourse, engagement, and complicity between the monks and Aboriginal people of the area enforces the potential for a proposed monastery. Through Aboriginal conceptions of landscape, architecture, space and fire, the 'new' monastery can reinterpret the traditional architecture and typology of Cistercian monasticism. Ultimately the reinterpreted monastery will manifest a community of collaboration and interaction where the monks and Aboriginal people of Victoria work together, both as carers and guardians over the landscape surrounding the monastery.

^ Figure 12: Aerial view of Tarrawarna Abbey. 1997.

Physical Work

Reading

Writing

Washing

Prayer + Worship

Walking

^ Figure 13: The Cistercian monks (also referred to as Trappists) are a Roman Catholic Religious Order who follow the Rule of St Benedict and therefore part of the Benedictine family. The life of a Cistercian monk is one dedicated to seeking union with God through contemplation, silence, prayer, physical labour, reading, writing and walking within an intimate community.

^ Figure 14+ 15: Cistercian monks.

1.4 THE ABOLISHMENT OF THE ABORIGINAL FIRESTICK

As the Europeans eradicated the Aboriginal people from their land and from their positions as guardians of its delicate structure they also abolished their most powerful tool, fire.²⁵ A landscape sculpted by the Aboriginal flame vanished along with its quotidian use. Only in certain places, through historical documents and oral storytelling can visitors to these lands learn how the Aboriginal fire-stick worked and formed the landscape prior to European settlement.²⁶ For Australia's Indigenous people, fire became as elemental as the sun and rain. According to Stephen Pyne, an international fire historian, the rational behind the burning was extensive. The Aboriginals used burning to clear and clean the landscape, to promote growth, to attract large animals for food, to hunt, to signal, and to claim ownership. Evidentially, fire contributed towards virtually every activity, from the sacred and secular to the formation of a cultural and domesticated landscape. As noted by Sylvia Hallam, the land the Europeans found was not "as God made it, but as the Aborigines had made it over tens of millennia."²⁷ However, despite early European misconceptions of Aboriginals being 'stupid' and indolent people, their fire-based land management strategies were sophisticated, complex and effective.²⁸ A mosaic-like landscape of burnt and un-burnt areas appeared.²⁹ "Tame fire confined feral fire. Fires of choice replaced fires of chance."³⁰ And 'fire-stick farming' coined by Rhys Jones, was born.^{31 32}

²⁵ The Aboriginal people were inseparable from fire, it was always with them in the form of a smoking and fire laden stick. For the Aboriginal people the flame became an essential part of their life in and with the Australian landscape. Stephen J. Pyne, *The Still-Burning Bush* (Scribe Publications, 2006), 21–22.

²⁶ *Ibid.*, 16–17.

²⁷ Sylvia J. Hallam, *Aborigines of the York Area* (York Society Incorporated, 1998); Pyne, *The Still-Burning Bush*, 24.

²⁸ Aboriginal burning occurred on a calendar basis, a fire songline paired with an annual round of farming, harvesting, fishing and foraging. The burning season would typically begin in the winter months as small, smouldering fires grasped for fuel within the still-green vegetation. As the climate warmed and the landscape dried the burning would spread and become more frequent. As the rains and lightening season approached the areas the Aboriginals wanted burnt had already been done so, as had the areas they wanted to protect from lightening or accidental fires.

²⁹ Pyne, *The Still-Burning Bush*, 24–25.

³⁰ *Ibid.*, 25.

³¹ *Ibid.*

³² It must be noted that there were limits to the Aboriginal burning methods. There were places and times to burn and not to burn dictated by the specific landscape, climatic conditions, ebb and flow of wet and dry, wildfire and lighting threats etc. This is important to note as the site chosen for this thesis is located within and near a mountain ash forest (explained in following section).

While Europeans settled within Australia, Aboriginal burnings reduced as the Aboriginal flame and fire-stick techniques were extinguished from the landscape.³³ A plague of fire occurred as areas were transformed from fire-flushed landscapes, to those where fire was starved and vanished.^{34 35} What had been maintained through fire now existed as overgrown sites. The abolishment of the Aboriginal flame had not necessarily extinguished fire completely but, as demonstrated in Victoria, metamorphosed it into other more destructive forms.³⁶ Instead of routine and controlled fires suppressing fire fuel, an undomesticated landscape with areas of fire-infection intensified catastrophic blazes that devastated entire forests.³⁷ As long as the Aboriginal fire-stick lay dormant and the areas of infection remained, then the fire-storms would ravage the Australian, and in particular Victorian, landscape while charring the history books and lives of its inhabitants.

33 Pyne, *The Still-Burning Bush*, 34.

34 *Ibid.*, 37.

35 It should be noted that despite the Aboriginal firestick vanishing Australians began to reconsider the role of fire in the landscape. However despite their efforts the story ends in tragedy. As Australia became more urban and suburban, shunning its rural heritage the industrial transition intensified separating the flame from the daily lives and consciousness of the people (mistake one). Fire returned to the landscape in the form of hazard reduction burning performed by forestry workers. These high intensity burns on logging slash reflected mindless land-clearing, irrigating, and poisoning a form of vandalism disconnected from wilderness biodiversity, climatic awareness and ecological integrity. Furthermore, environmentalists denounced the aerial ignition celebrated by foresters as a dark symbol that unlike Aboriginal firestick farming, reflected American firebombing in Vietnam. *Ibid.*, 60–63.

36 *Ibid.*, 71.

37 *Ibid.*

^ Figure 16: *Aboriginal Firestick farming.*

1.5
CHAPTER CONCLUSION

According to Aboriginal and science based stories, Australia’s indigenous peoples have been intimately connected to this immense continent for at least 60,000 years. For the vast majority of their history, Australia’s Aboriginals existed in an undisturbed state alongside nature’s systems and processes. Upon arrival, and to an extent for the following 400 years, the Europeans failed to understand and recognise the value of Aboriginal history, landscape, and life.

In 1954, Tarrawarra Abbey was established on a portion of land within Victoria, formerly known as Coranderrk Station. The failure of Tarrawarra Abbey in creating an architecture and community that responds to both its European and Australian contexts provides an opportunity for an architectural and design-based enquiry. An enquiry that, unlike Tarrawarra Abbey, addresses how Aboriginal conceptions pertaining to the relationship between people, architecture and landscape can stimulate the design of a ‘new’ and reinterpreted Cistercian monastery within Victoria.³⁸

Additionally, it has been briefly highlighted that the extinguishment of the Aboriginal fire-stick strategy, a vital tool in maintaining the landscape, contributed towards the transformation of the Victorian landscape, and subsequent increase in fire-storms. The following chapter will discuss further the way in which the Victorian landscape has become dominated by ferocious and uncontrollable fire-storms, and how such blazes are affecting its famous mountain ash trees.

38 A monastery that is in no way associated with Tarrawarra Abbey. The monastery is proposed as a completely separate complex and community of monks.

Chapter Two

A STORY OF LIFE AND DEATH

THE SITE-BASED CONTEXT

2.0
CHAPTER OUTLINE

It has been argued by Sara E. Jensen and Guy R. McPherson that we live in a transitional era. An era characterised by rapid and overwhelming change, where the earth’s climate, landscapes and ecosystems shift in unimaginable ways.³⁹ The result of such changes in the earth’s foundations is one of chaos as humans collapse under the pressure of insoluble problems, failing to focus on the basic steps toward mitigation.⁴⁰

With the knowledge that Aboriginal people used fire as a fundamental tool in managing the Australian landscape, this chapter delves further into the historic, yet ever-changing, role that fire plays within the state of Victoria. The primary focus of this chapter is to specifically discuss the effects that recent fire-storms within Victoria have had on the life-cycle of the mountain ash forests. Throughout this chapter it will become evident that the risks that frequent fire-storms have on the mountain ash population not only provide relevant contextual information but also help redefine the role of the monastery within the 21st century.

The opening part of the chapter will set the scene by briefly outlining Australia’s development into a country so closely related to fire. The second section will discuss the recent fire-storms and the devastating effects that the 2009 blaze had on Victoria’s mountain ash trees. The relationship between fire and the mountain ash form the third section, with a focus on the pivotal role that fire plays in the life-cycle of these giant trees. In the fourth section, the disturbance that too frequent fire-storms are having on the mountain ash life-cycle is investigated through David Lindenmayer’s notion of the ‘landscape trap.’ The fifth and final part of the chapter will provide a conclusion that focuses on the future and how architecture and design-based research, in the form of a monastery, can contribute towards the protection of Victoria’s endangered mountain ash.

39 Sara E. Jensen and Guy R. McPherson, *Living with Fire: Fire Ecology and Policy for the Twenty-First Century* (University of California Press, 2008), 1.

40 Ibid., 2.

< *Figure 17: Author’s photograph of mountain ash on site near Wallaby Channel.*

< *Figure 18: Authors’ photograph on the plateau within Kinglake National Park*

2.1
THE LAND OF FIRE

At several critical junctions in the history of Australia, the island continent, formed from an offcut of Gondwana, opted for fire. Through various environmental events, Australia was transformed from a cool-temperate landscape, covered in ancestral rainforests, into the ‘land of fire,’ a continent of destruction with the Victorian state as its centre. Fire became a rhythmic and signatory power; it interacted with the bush, sculpting it into a landscape like no other on Earth. Then Homosapians arrived and the story begins.⁴¹

In the Tasman Sea, a high-pressure system stalls as hot winds gush down from central Australia towards the continent’s lush and densely vegetated southeast. The mountainous topography of the southeast channels the hot air while temperatures rise and humidity evaporates to the extent that the air crackles. A fiery ‘flume’ is brewing a deadly concoction of air and fuel.⁴² The scene is set, the dragon awakens and the fire-storm commences.

Stephen Pyne notes that Victorians live within the ‘fire flume’, one of the most distinctive and dangerous fire regions on the planet.⁴³ In Australia, fire has existed in a crucial and irreplaceable role within natural ecosystems and the lives of man for millennia. Within Victoria fire subsists as an inevitable and ubiquitous element in a paradox-like state. Fire is both intimate and universal, it embodies both good and evil, it even “shines in paradise” and “burns in hell.”⁴⁴ Even man’s, ineffable and complex, relationship with fire is full with tensions, vacillating between function, fascination, temptation and trepidation. In part two this thesis addresses the tensions and contradictions that latently exist in fire and man’s enigmatic, yet intimate, connection with it.

Fire as a destructive and fearful element

Fire as a warming and contemplative element

EXPLORE FIRE CONDITIONS
THROUGH DESIGN

^ Figure 19: Fire as both a destructive and comforting element. Its paradox-like nature will provide some interesting design opportunities.

⁴¹ Stephen J. Pyne, Burning Bush: A Fire History of Australia (University of Washington Press, 1998), xi.

⁴² Tom Griffiths, “We Have Still Not Lived Long Enough” (Inside Story Current affairs and culture from Australia and beyond, February 16, 2009), <http://inside.org.au/we-have-still-not-lived-long-enough/>.

⁴³ Ibid.

⁴⁴ Gaston Bachelard, The Psychoanalysis of Fire (Beacon Press, 1964), 7.

▲ Figure 20: Five most destructive firestorms in Victoria. Statistic comparison.

2.2
THE FIRE-STORMS: AUSTRALIA'S FIRE HISTORY

Since its separation from Gondwana, Australia has become a continent of mediation – on the edge of ‘paradise’ and ‘hell’ – as it balances between the tensions and contradictions embedded within fire. Fire has been transformed into the lifeblood for many of Australia’s ecosystems, as well as an incomprehensibly destructive force. Since the beginning of records, the fire-breathing beast has filled Australia’s history books with charcoal, and the minds of many Australians with smoke, ash and despair.

In Victoria, the ‘land of fire’, five fire-storms stand out. Named after five days in the week, these fire-storms represent the frequency, pattern and normality of destruction.⁴⁵ On February 7, 2009 ‘Black Saturday’ was named after the day Mother Nature turned the sky red and the earth black.⁴⁶ The ‘Black Saturday’ fire-storm was the most destructive in Australian history.⁴⁷ Amongst decades of tragedy it is difficult to look past the destroyed buildings, charred possessions and violently taken human lives. Yet beyond the human destruction, ‘Black Saturday’ also demolished centuries old *Eucaplytus regnans*, the world’s legendary forest giants known as ‘mountain ash’.⁴⁸

45 February 6th, 1851, the ‘Black Thursday’ fires covered 5 million hectares across Victoria, with 1 million sheep, thousands of cattle and 12 human lives lost. February 1st, 1898, ‘Red Tuesday’ resulted in 260,000 hectares burned in South Gippsland, along with 2000 buildings and 12 human lives lost. January, 13th 1939, the legendary ‘Black Friday’ firestorm consumed 1.5 to 2 million hectares of land across nearly every section of Victoria, including 800,000 hectares of protected forests and 600,000 hectares of reserves. ‘Black Friday’ also took 71 human lives and destroyed over 650 buildings. February 16th, 1983, ‘Ash Wednesday’, over 100 fires burned across 210,000 hectares throughout Victoria. 47 people were killed and more than 2000 buildings destroyed.

46 “Someone, or something had woken the dragon. The stench of its smoky breath hung heavy on the morning air and, as the temperature climbed towards 40 degrees, its dark mood became even fouler. By early afternoon we knew this ancient, powerful tyrant was coming our way...With a thunderous snort, it charged into the valley, sending eucalypts exploding in fireballs before it, then raced up the hill, to tower menacingly over us, as high as a three-story building, bellowing ferocious heat and tongues of fire that spat across the roof, setting the garden ablaze in every direction. Like an impotent knight...” Ken Eastwood, “Living with Bushfires,” Australian Geographic, June 4, 2009, <http://www.australiangeographic.com.au/journal/fire-alarm.htm>.

47 On this day the fire ravaged 430,000 hectares of land while crushing entire towns, affecting 70 national parks and 78 communities. The fire tore through more than 2000 properties including schools, kindergartens, churches, police stations, emergency facilities and community halls. However the beast did not stop there, sadly on its warpath, with its furnace like heat and missile like range it murdered 173 people. “Bushfire History - Major Bushfires in Victoria,” July 25, 2012, <http://www.dse.vic.gov.au/fire-and-other-emergencies/major-bushfires-in-victoria>.

48 Victoria’s central highlands house some 121,000 hectares of the world’s most spectacular mountain ash forests with many old-growth stands reaching 90 metres in height. The mountain ash are among the world’s tallest trees and officially the tallest flowering plant on the planet. “Survivors of the Firestorm: Mountain Ash Fact Sheet” (Educational Broadcasting Corporation), accessed March 24, 2013, <http://www.pbs.org/wnet/nature/episodes/survivors-of-the-firestorm/mountain-ash-fact-sheet/6513/>.

^ Figure 21: *Bush-fire landscape in Victoria.*

^ Figure 22: *Aerial photographs of Black Saturday devastation.*

^ Figure 23: Map illustrating the five Aboriginal groups of the Kulin Nation (Bold).

- Site: Kinglake National Park
- Coranderrk Station / Tarrawarna Abbey
- Melbourne Central
- Areas affected by 2009 Black Saturday Firestorm

^ Figure 24: (From top) Black Mountain after Black Saturday firestorm, Bald Spur Road after Black Saturday firestorm. Flowerdale after Black Saturday firestorm.

2.3
THE LIFE-DEATH PROCESS OF THE MOUNTAIN ASH

Through Australia's transformation into 'the fire continent' proliferating blazes pushed the landscape across a biotic threshold. Fire-storms became a reality that almost every landscape of Australia had to compete with. Stephen Pyne notes that "since the Pleistocene it has generally been the case that, where biotas have changed, they have moved toward a state of more fire, not less."⁴⁹ The ecological reactions to the introduction of fire varied. Some species were dominated by the flames and some accommodated and learnt to tolerate them. Interestingly some species, like the *Eucalyptus regnans*, embraced and thrived with the flames. The eucalyptus trees are a symbol of survival. Not only did they survive the voyage from Gondwana but they endured and adapted to Australia's transformation into the 'land of fire'. Without fire, the 'hearts' of these giants' cools and their biotic subtleties decay.⁵⁰ Unlike other eucalypts the mountain ash rarely coppice and they do not develop lignotubers under the ground. Instead these forest giants have evolved to grow and die together through large fires every few hundred years, resulting in even aged stands.⁵¹

The life-cycle of the *Eucalyptus regnans* depends on fires for rapid seed release and growth. Once the trees have sexually matured hard-shelled seeds form high in their crowns. The severe fire, powered by the trees' flammable gas, initiates the dispersal of seeds as the heat releases them through small valves in their hard casings. Once on the forest floor these seeds begin the germination process. The mountain ash grow quickly as there is a lack of competition from other species and⁵² the seeds are exposed to an abundance of sunlight.⁵³ The new mountain ash, like a mythological phoenix, rises from the ashes.

49 Burning Bush, 26.

50 Ibid, 27.

51 Griffiths, "We Have Still Not Lived Long Enough."

52 Dr Peter Attiwill, "Australian Forest Profiles: The Ash Forsts of South Eastern Australia" (National Forest Inventory, 2002), http://adl.brs.gov.au/brsShop/data/12907_profile_ash_forest.pdf.

53 "Survivors of the Firestorm: Mountain Ash Fact Sheet."

> Figure 25: Mountain Ash forest on the Black Spur Road, majestic in their height and linear ascent to the heavens.

2.4
THE LANDSCAPE TRAP

Despite relying on a fire for regeneration, premature or too frequent fires can be detrimental to the mountain ash population. The fires of ‘Black Friday’ in 1939 devastated much of the forests that existed before European settlement. The giants that did survive ‘Black Friday’ and subsequent logging were still standing tall until ‘Black Saturday.’ ‘Black Saturday’ destroyed the most impressive stands of mountain ash trees in the Southern hemisphere, many of which pre-dated European settlement. On this dark day, in the Wallaby Creek and O’ Shannassy water catchment areas north of Melbourne, Victoria lost five of its largest giants, measuring over 90 metres in 2001. Among these iconic trees was ‘Big Ash One’ at 92.5 metres it was the tallest tree in mainland Australia. In addition, more than 35 trees, standing over 85 metres were also lost. Consequently, the Wallaby Creek and O’ Shannassy areas have become a sea of even aged two to four metre tall trees. This re-growth sits under dead giants, that stand in solitude as silent and eerie ghosts. These dead trees can be read as scars that represent the past. Bret Mifsud states that while ‘Black Saturday’ destroyed Victoria’s tallest trees, it did not kill its most promised re-growth that within a generation should stand at 90 metres or over. However, it is becoming apparent that Australia’s fire history is a reflection of the future.⁵⁴ The frightening question is not ‘will the fires come?’ but ‘when?’

⁵⁴ According to a keystone report released in 2008 by the Bushfire CRC and the Australian Bureau of Meteorology the number of ‘extreme’ fire danger days in the southeast may rise by 65 per cent by 2020. The report also states that the bushfire seasons will begin earlier while the period of calm between major fires will shorten Eastwood, “Living with Bushfires.”

A group of Australian scientists, headed by David Lindenmayer, discuss the future of the mountain ash in more detail noting that Victoria’s mountain ash forests exist in a high-risk and compromised state, a ‘landscape trap.’ Through their research, Lindenmayer and his team explain the notion of the landscape trap:

“...whereby entire landscapes are shifted into, and then maintained (trapped) in a highly compromised structural and functional state as a result of multiple temporal and spatial feedbacks between human and natural disturbance regimes.”^{55 56}

Lindenmayer refers to the mountain ash forests in Victoria’s central highlands as a primary example of a landscape subjected to the ‘landscape trap.’ It has become apparent that the mountain ash forests are experiencing a regime shift as the old-growth stands (200 to 450 years of age) are becoming dominated by young fire-prone re-growth that will not survive to become old-growth.^{57 58}

⁵⁵ Lindenmayer and his team note that regime shifts refer to the notion that in many environments there are key drivers that promote changes within the ecosystem. As the key drivers interact and reinforce one another they trigger a series of ecosystem modifications that in turn are difficult or impossible to rectify. The series of ecosystem modifications are referred to as regime shifts David B. Lindenmayer et al., “Newly Discovered Landscape Traps Produce Regime Shifts in Wet Forests,” Proceedings of the National Academy of Sciences of the United States of America 108, no. 38 (September 20, 2011).

⁵⁶ Ibid.

⁵⁷ The evidence that Lindenmayer and his team used to come to these conclusions is based from new spatial information following the 2009 ‘Black Saturday’ fires coupled with 28 years of extensive field information and data analysis.

⁵⁸ Lindenmayer et al., “Newly Discovered Landscape Traps Produce Regime Shifts in Wet Forests.”

^ Figure 26: Conceptual model of a landscape trap. The trap results from the reinforcing feedback loop shown by the circle.

At the core of the ‘landscape trap’ process within Victoria’s mountain ash is a feedback loop between fire frequency/severity and a reduction in forest age. The fire regime of the mountain ash 150 years ago, before European settlement, was infrequent and fire-storms typically occurred late in summer.⁵⁹ However, as time progresses, the mountain ash fire regime transforms. As indicated by Victoria’s fire history, the fire-storms are becoming much more frequent. As the interval between stand replacing fire-storms, becomes less than 20-30 years, the mountain ash will be replaced by other species. The mountain ash will be replaced because the new growth will not have reached sexual maturity and therefore begun to produce seeds.⁶⁰ ⁶¹ Consequently, as the fire-storm risk accelerates, the drier and warmer conditions associated with climate change diminish the probability that the forest can return to the mature state it was in prior to European settlement.⁶² ⁶³

Nonetheless, as discussed in part two the Aboriginal fire-stick farming strategy of prescribed burning could be resurrected and implemented to reduce the detrimental effects of the ‘landscape trap’ in Victoria’s mountain ash forests. Through appropriate management and protection Victoria may once again have trees like those recorded by early explorers in the 1850s.

59 Brendan Mackey et al., *Wildlife, Fire and Future Climate: A Forest Ecosystem Analysis* (Csiro Publishing, 2002), 126.

60 Lindenmayer et al., “Newly Discovered Landscape Traps Produce Regime Shifts in Wet Forests.”

61 Following more than a century of logging and fire holocausts in 1926, 1932, 1939, 1983 and 2009, about 1% of the entire mountain ash population is old-growth. And just 1.2% of the pre-European settlement mountain ash are still alive. “Forests In Landscape Trap,” *Forensics, Fossils and Fruitbats*, accessed April 6, 2013, <http://forensicsfossilsfruitbats.wordpress.com/2011/12/07/forests-in-landscape-trap/>.

62 Lindenmayer et al., “Newly Discovered Landscape Traps Produce Regime Shifts in Wet Forests.”

63 Through extensive historical research and stand reconstruction analysis, Lindenmayer and his team suggest that 100-150 years ago the old-growth stands dominated as much as 60-80% of the total mountain ash population Ibid.

< Figure 27: Diagram illustrating the life-cycle of the mountain ash as well as a height comparison with a human and five-metre church wall. It is critical to note that with current fire regimes (firestorms every 20-30 years) the mountain ash are being killed before they can produce seeds.

2.5
CONCLUSION: LOOKING TOWARDS THE FUTURE

As a result of a dramatically changing climate and the extinguishment of the Aboriginals' fire-stick as well as their presence as managers of the land, the southern state of Victoria has truly become Australia's land of fire. Over 150 years, five devastating fire-storms remain at the forefront of Victoria's history, not only causing catastrophic human damage but also long term ecological destruction. Through Lindenmayer's research it has been stressed that Victoria's remaining stands of mountain ash trees exist within a compromised and at-risk state. The residual stands of old and new growth need protecting as the current fire regimes are not giving the trees enough time to reach sexual maturity and produce seeds. Without any action towards protection and mitigation, once the future fire beasts raise their heads and spread their wings, Victoria's legendary forest giants may not reappear.

Fire-storms within the southeast Australian landscape are a problem that must be addressed with a focus on mitigation and protection. As stated by Jense and McPherson, "...we cannot extinguish fire permanently, so we must find a way to cope with it."⁶⁴ When managed properly, the fire brings life. Its infrequent breath is welcomed as it renews and regenerates the mountain ash landscape.⁶⁵

⁶⁴ Jense and McPherson, Living with Fire, 2–3.

⁶⁵ Ken Eastwood further notes that fire embodies other well-known characteristics, from lighting the shadows, to warming the hands, to comforting the mind. Fire boils the water in the swagmen's billy, it warms the high country stockmen as they shelter from the cold, and it creates gathering and community while encouraging the sharing of words and the telling of tales (Eastwood, "Living with Bushfires.") Throughout millennia the fire beast has provided the human race with comfort, warmth, light, security and hot food. Fire is both a pragmatic element of life and one of fiction and mystery as it mesmerizes the mind, transporting it through time and space. Eastwood stresses that our relationship with fire has only been able to prosper through our ability to learn from it, use it and control it. It is this learning, use and control that distinguishes us from other species. There is no way to kill the beast, one must simply tame it.

Consequently, the past two chapters have provided three main aims / opportunities for the design investigation of a 'new' and reinterpreted Cistercian monastery:

- 1. Establish a collaborative community through architecture manifested from both Aboriginal and European (Cistercian) conceptions on the relationship between people, architecture and landscape.*
- 2. Establish a community and architecture that stimulates and enables the use of fire-stick farming as a land management strategy to protect Wallaby Creek's mountain ash forest (located in Kinglake National Park).*
- 3. Establish an architecture that can become a post-fire 'refuge,' place of emergency housing, and support centre for the greater community.*

WATER SUPPLY OF MELBOURNE—WORKS AT THE WALLABY CREEK.

Chapter Three

A STORY OF SITE

KINGLAKE NATIONAL PARK, VICTORIA, AUSTRALIA

3.0 SITE ANALYSIS

*Kinglake National Park
Victoria, Australia*

Through the analysis of site this chapter will highlight the pragmatic elements and the more sensory, experiential and spiritual opportunities. The site spans across three conditions, the mountain ash forest, the Yan Yean granite water systems and the fireplace ruins. This chapter will also begin to discuss the potential architectural interventions and engagements to both occupy and engage with each condition. Please refer to appendix 1.0 for an account of the process in finding a suitable site as well as 2.0 for additional site analysis material.

< Figure 28: Image illustrating the construction of the Yan Yean water system.

< Figure 29: Author's photograph of Kinglake National Park's mountain ash and granite Wallaby Channel.

01

VICTORIAN STATE

N.T.S

2009 Black Saturday Fire

Water Sources

Site

02

GREATER MELBOURNE AREA

N.T.S

Kinglake National Park: Wallaby Creek Area

2009 Black Saturday Fire

Main Transport Route

Site

03

KINGLAKE NATIONAL PARK WALLABY CREEK AREA

1:100 000

- Kinglake National Park: Wallaby Creek Area
- Water Sources
- Main Roads
- Uncategorized Public Land
- Only areas of prescribed burning in recent decades
- Site
- 1. Wallaby Weir
- 2. Wallaby Creek
- 3. The Cascades Top
- 4. Jacks Creek. The Cascades Bottom
- 5. Silver Creek Weir
- 6. Toorourrong Reservoir

KINGLAKE NATIONAL PARK WALLABY CREEK CHOSEN SITE

1: 6500

- Transept of Focus
- Wallaby Channel
- Main Roads
- Secondary Roads
- 10m Contours
- Site One
- Chosen Site

KINGLAKE NATIONAL PARK WALLABY CREEK CHOSEN SITE

1: 2000

- Wallaby Channel
- Main Roads
- Secondary Roads
- 1m Contours
- Parking Opportunities
- Fireplace Ruins
- Foundation Ruin
- Vegetation (not mountain ash)

3.1
THE THREE PHYSICAL CONDITIONS OF SITE

The Mountain Ash:
Eucalyptus Regnans

Size and Growth Rate:
Capable of reaching 150 metres (world’s tallest flowering plant).

Average height: 75-80 metres.

Average Life Span: 400 years

Reproduction:
Primary form of reproduction through the dispersal of seeds initiated during severe fires. The heat of the fire releases the seeds from their hard casings, called gumnuts. The seeds germinate on the forest floor with the ashes left from the fire and sunlight through absent canopy providing extra nutrients.

Appearance:
Rough base, but as the tree grows the rough bark is shed. This leaves the highest part of the tree with a smooth and lighter toned exterior. The lowest branches typically start 30 metres from the base, sprouting with leaves and white flowers in the summer and autumn months (January to March).

Habitat:
As the mountain ash thrive in cool mountainous conditions, their population mostly exists in Victoria and Tasmania. Both regions are located at an approximate altitude of 1000 metres, with an average annual rainfall of 1200 millimetres.⁶⁶

⁶⁶ “Survivors of the Firestorm: Mountain Ash Fact Sheet.”

< *Figure 30: Author’s photograph of Kinglake National Park’s mountain ash and granite Wallaby Channel.*

The Granite Yan Yean Water Supply System *Wallaby Creek Aquaduct*

The ‘Yan Yean Water Supply System’ was constructed in 1853 out of locally quarried granite. It was the first large scale engineered water supply system in Victoria.⁶⁷ It consisted of a series of catchment weirs and reservoirs connected by aqueducts and pipe tracks. The water system extends from the Silver Creek and Wallaby Creek catchments, north of the Great Dividing Ranges, to the Merri Creek, 5 kilometres north of Melbourne’s central business district.⁶⁸

The gravity-fed water system designed by James Blackburn was selected to address Melbourne’s mounting water quality problems due to population increases after its establishment in 1835. In the latter decades of the 19th century, refinements were made to address water quality issues plaguing the system.⁶⁹

⁶⁷ “The Wallaby Creek Aqueduct,” *The Argus*, August 17, 1883.

⁶⁸ From north to south the various components and sections of the system are as follows, Silver Creek and Wallaby Creek weirs and aqueducts, The Cascades, Jacks Creek and Jacks Creek Deviation Channel, Toorourrong Reservoir, Clearwater Channel aqueduct, Yan Yean Reservoir, pipe reserve from Yan Yean to Morang, Pipehead Reservoir, pipe reserve track from South Morang to Preston Reservoir, Preston Reservoir complex, and pipe reserve from Preston Reservoir to Merri Creek. “Assessment of Cultural Heritage Significance and Executive Director Recommendation to the Heritage Council” (Department of Planning and Community Development, September 20, 2013), http://www.dpcd.vic.gov.au/__data/assets/pdf_file/0016/207403/Yan_Yean_Water_Supply_System_pdf.pdf.

⁶⁹ The modifications included (1) the 1864 construction of a holding reservoir at Preseton to regulate pressure and prevent stagnation, and (2) the 1886 construction of Toorourrong Reservoir that enabled sediment from Wallaby Creek, Jacks Creek and Silver Creek to settle before water flowed to Yan Yean Reservoir along the new ‘Clearwater Channel.’

> *Figure 31: Map of the Yan Yean water system.*

Despite serving the people of Melbourne since its construction, the Yan Yean Water Supply System now only supplies 3% of Melbourne's water due to the addition of new systems in the 20th century.⁷⁰ Furthermore, Victoria's recent fire-storms, such as Black Saturday, are also proving to threaten the water system's longevity and purpose. A study by CSIRO Forest Biosciences in 2008 has helped to shed light on the effects of these fire-storms on Melbourne's water systems. It was observed after the 2003 fires that the initial loss of vegetation meant that the forests consumed less water, and therefore more water entered the streams and along the aqueducts. However, as the forest regrows, as is currently happening post 2009, the younger trees consume more water, causing substantial reductions in water yields from the catchments.⁷¹

70 "Assessment of Cultural Heritage Significance and Executive Director Recommendation to the Heritage Council."

71 CSIRO, "Bushfire Impact on Water Yields," accessed August 12, 2013, <http://www.csiro.au/Organisation-Structure/Divisions/Ecosystem-Sciences/BushfireImpact.aspx>.

^ Figure 32: Wallaby Creek Channel with Channel Cleaner.

^ Figure 33: From top left: Wallaby Creek Channel, The Cascades, Toorourrong Reservoir.

Fireplace Ruins:

A series of brick and stone fireplace ruins exist on the site to the north of the mountain ash forest. The ruins, supposedly an old rehabilitation centre, were discovered during a site visit to Kinglake National Park in June of 2013. However, due to an absence of information, the function, original appearance and story of this damaged place remains a mystery. All that the ruins do is exist as a constant reminder of the past. They speak of the destruction, trauma and loss of life that 'Black Saturday' brought to the area.

< Figures 34 + 35: Post Black Saturday ruins found on the site.

> Figure 36 : Post Black Saturday ruins found on the site.

3.2
CHAPTER CONCLUSION

On a portion of land traditionally owned by the Taungurung people at the edge of Kinglake National Park, the final site mediates between a forest of natural giants and cluster of fire-charred man-made ruins. The ‘hidden’ and historically valuable Wallaby Creek aqueduct carries water between the ruins and trees, forming an edge. This edge defines the point of transition between the vertical and horizontal landscape, the untouched and touched landscape and the places of exultation and of remembrance.

The hearth ruins on the site act as markers in the landscape. These markers depict the trauma, destruction and loss of life brought by Victoria’s fire-storms. However, on the other side of the aqueduct, the mountain ash landscape portrays a different kind of ruin. A landscape-based ruin. Like the hearth ruins the mountain ash forest tells a tale of the past. Through their various stages of re-growth and old-growth, the forest illustrates the power and ecological destruction of Victoria’s most recent fire-storms. Like many of Victoria’s mountain ash forests, the mountain ash of Kinglake National Park are in need of protection and care.

The site mediates between water-based stone structures, fire-charred ruins and at-risk, yet fire dependent forest giants. The varied, complex and incredibly spiritual nature of the site lends itself perfectly to the architecture of a Cistercian monastery. In a landscape such as this, the architecture does not need to be dominant. In subtle ways the architecture of the monastery, like the traditional architecture of the Aboriginals, should form an intimate relationship with the natural elements of the landscape.

Consequently, this chapter has provided two main aims / opportunities for the design investigation of a ‘new’ and reinterpreted Cistercian monastery:

- 1. Establish an architecture that re-purposes the increasingly redundant Wallaby Creek aqueduct..*
- 2. Establish an architecture that, through subtle and simple interventions, retains the landscape as a dominant element while forming an intimate relationship with the site’s natural elements.*

^ Figure 37: Photograph of monk in a state of contemplation within the church.

Chapter Four

A STORY OF EVOLUTION

WHERE DOES MONASTICISM GO FROM HERE?

^ Figure 38: Geographical distribution of Cistercian Monasteries illustrating the isolated nature of Tarrawarra Abbey and the proposed monastery.

Existing Monasteries

Proposed Monastery + Tarrawarra Abbey

^ Figure 39: Monks gather in the chapter house

4.0
CHAPTER OUTLINE

Traditionally monastic communities engage with the landscape through farming, viticulture, gardening et cetera. Proposing that the monks and monastic guests (Aboriginal or not) actively take part in the protection of the mountain ash raises the question of the role of Cistercian monasteries within a 21st century context. This chapter will briefly discuss the role of Cistercian monasteries in a modern age and the need for their reinterpretation and evolution.

4.1
WHERE DOES MONASTICISM GO FROM HERE?

“Institutions with a long history and a tradition built over the centuries usually look more at the past than at the future.”⁷² Dom Olivera continues to note that monasticism in the 21st century will be the same, but different. It will embody the same motivations, but through new historical forms, responsive to the specific circumstances.⁷³ Olivera also highlights that one’s search for an encounter with God is the most important element in a seekers life. Therefore, monastic life loses all meaning if one’s mystical and /or contemplative coalition with God is removed.⁷⁴

In explicitly responding to the question ‘where does monasticism go from here?’ Bonnie Thurston notes that, like any other species, if monasticism does not evolve it will die.⁷⁵ However, Thurston also believes that despite its developments, the fundamentals of monastic spirituality will not change. The fundamentals that Thurston refers to are outlined by Thomas Merton as; solitude, poverty, obedience, silence, humility, manual labour, prayer and contemplation.⁷⁶ Nevertheless, Thurston’s evolution is through the re-articulation of a few key monastic roots, open-heartedness, detachment and solitude, as well as the notion of the hermitage.⁷⁷

⁷² Dom Olivera, “Introduction,” in *Monastic Vision for the 21st Century: Where Do We Go from Here?* (Cistercian Publications, 1931), xiii.

⁷³ Ibid.

⁷⁴ Ibid., xiv–xv.

⁷⁵ Bonnie Thurston, “Soli Deo Placere Desiderans,” in *Monastic Vision for the 21st Century: Where Do We Go from Here?* (Cistercian Publications, 1931), 7.

⁷⁶ Thomas Merton, *Basic Principles of Monastic Spirituality* (Templegate Publishers, 1996), 36; Thurston, “Soli Deo Placere Desiderans,” 3.

⁷⁷ Thurston, “Soli Deo Placere Desiderans,” 8.

^ Figure 40: The fundamental aspects of a monastic life.

> Figure 41: Preparing a meal in the monastery.

> Figure 42: Feeding the animals in the monastery.

4.2
HOSPITALITY + OPEN HEARTEDNESS

Within a monastic environment the notions of hospitality and open-heartedness are simply achieved through the gracious reception of any guest. To accommodate a guest is a response to Christ's statement, 'I was hungry and you gave me food, I was thirsty and you gave me drink, I was a stranger and you welcomed me' (Matthew 25:35).⁷⁸ It is the way of the monks and the way of God to accept whoever appears on the monastery grounds without judgment. This means that a diverse community can be formed; a community that shares in prayer, food, drink and light. As proposed in this thesis, a community may be unified through the caring, protection and management of the landscape. However, despite their graciousness in receiving guests, a visitor to a Cistercian monastery is typically entering a very traditional, European and Western architecture. As discussed in chapter one through Tarrawarra Abbey, the context of the monastery, whether it be site, history, people, place or landscape, often goes un-remarked. Therefore, it is critical that the design investigations of this thesis focus on the use of Aboriginal conceptions of landscape, people, and architecture to shift and reinterpret the traditional monastic architecture.

78 Ibid., 9.

4.3
SOLITUDE + THE HERMITAGE

One's connection to the physical and spiritual elements of the monastery and landscape (topophilia) must also be considered as a private and individualistic experience. Within the 21st century 'chaos', the ability to experience one's environment, with or without God, in solitude is fading. When discussing the evolution of monasticism for the 21st century, Bonnie Thurston refers to a quote by Jacques Winandy; "To reform a monastery is to restore its rest."^{79 80} Thurston suggests to separate one's self from everyday life; to exist as an individual in isolation and solitude while resisting the conformity and 'mass-production' of society. However, Thurston also notes that one's removal from the world is not always bound in isolation, but part of an alternative community with all who choose to withdraw to a 'desert' place.^{81 82} In order to restore and heighten one's experience of architecture, landscape and God through solitude and rest, the architectural investigations of the thesis must react accordingly.

79 Ibid., 1–2.

80 Jacques Winandy was former Abbot of Clervaux in Luxembourg.

81 Thurston, "Soli Deo Placere Desiderans," 1–2.

82 The notion of a 'desert', may conjure up images of geographical remoteness that can be traditionally linked to Cistercian monasteries. However, 'desert' can also be conceived as a contrast to 'city'. An invitation to 'desert' can therefore, be read as an invitation to leave society, to venture beyond the cultural norms in search of a holier life.

Λ Figure 43: Diagram illustrating the balance between designing space for communal and individual experience.

Λ Figure 44: A state of solitude and contemplation within an architectural space of rest, shadow and light.

4.4 CONCLUSION

Cistercian monasteries have existed since the 11th century. Nearly 1000 years on in the 21st century, monasteries are still occupying landscapes all over the world. Despite the context in which they reside changing dramatically, their functions, traditions, practices and roles have remained relatively consistent. However, with landscapes, such as the mountain ash in Victoria, shifting into unstable states, this thesis questions the role of Cistercian monasteries in the 21st century. Through Bonnie Thurston and Dom Olivera, the future role of monasteries has been discussed in relation to its fundamental principles.

Consequently, this chapter provides one aim / opportunity for the design investigation of a ‘new’ and reinterpreted Cistercian monastery:

1. Establish an architecture that embodies the following four monastic principles; hospitality, open-heartedness, solitude (collective and self) and the hermitage.

All four principles reflect the program and community proposed through this thesis. It is critical that the architectural manifestations encourage communal gathering as well as individual retreat and reflection. Monasteries typically follow traditional Cistercian, European and western strategies for conceiving space, architecture and landscape. It is therefore essential that the proposed monastery takes a step forward and not only reacts to its landscape-based context, but also to the Aboriginal people and their perspectives.

^ Figure 45: Abbey of Le Thoronet, France.

Chapter Five

A STORY OF PROGRAM

CISTERCIAN MONASTERY WITHIN THE FOREST

5.0
CHAPTER OUTLINE

The architecture of Cistercian monasteries follow a specific template / typology derived from ancient traditions. This chapter will therefore provide insight into this architectural typology and how it relates to the ritualistic, introverted, silent and contemplative lives of the monks. Consequently, this chapter is important in framing not only the argument of the thesis but also the process of design whereby the monastic typology is tested and reinterpreted in response to its Australian context, site and Aboriginal-based perspectives on the dialogue between people, architecture and landscape.

5.1
AN ARCHITECTURE OF SOLITUDE

Situated within the earth's valleys, the Cistercian monastery is often regarded as the meeting point between the celestial (heaven and sky) and terrestrial (land and earth). Like the valley landscape, the architecture of the monastery manifests a place of introversion where one's spirit is led inwards and upwards.

*"The Monastic Church is one who flees to a special place prepared for him by God in the wilderness, and hides his face in the Mystery of the divine silence, and prays while the great battle is being fought between earth and heaven."*⁸³

Monks in a medieval monastery exist in a state of spiritual simplicity, where all material distractions are removed to create a space that stimulates and enriches one's spiritual life. The subdued and austere galleries – oriented around the cloister and garth – are an abode not for the man but for the communion of his soul with God. Within the monastery the monks are encouraged to reflect, meditate and contemplate.⁸⁴ The refined, yet complex, rituals focused around sacred objects, the enactment of mysteries, chanting and the intimacy of prayer, assert the dominion of the spiritual over the temporal and the coexistence of the collective and self.⁸⁵

⁸³ Thomas Merton, *The Silent Life*, 1st edition, 4th printing (Farrar, Straus and Giroux, 1999), 12.

⁸⁴ Sean McConville, "The Architectural Realization of Penal Ideas," in *Prison Architecture: Policy, Design and Experience* (Taylor & Francis, 2000), 9.

⁸⁵ Ibid.

5.2
THE TRADITIONAL MONASTIC PLAN

^ Figure 46: Basic diagram illustrating basic composition of cloister.

< Figure 47: Diagram illustrating four galleries of the cloister and basic water system.

^ Figure 48: Diagram illustrating basic program layout. **Bold** illustrates the spaces to include during the design component.

The Traditional Monastic Plan

1. The Sanctuary
2. The Lych-gate, bodies from the funeral service to graveyard
3. The Monks Choir
4. The Benches for the Sick
5. The Rood-screen, separating monks' choir from (lay brothers).
6. The choir of the conversi (lay brothers).
7. The Narthex
8. The Night Stairs, from church to the dormitory.
9. The Sacristy, a place for sacred objects
10. The Armarium, a place to store books
11. The Benches for reading in the cloister and for foot washing.
12. The Monks Entry into the church
13. The Lay Brothers Entry into the church
14. The Chapter-room, a place for meeting, reading, discussion
15. The Stairs to the monks' dormitory (Day Stairs).
16. The Parlour
17. The Scriptorium, a place for writing.
18. The Room for novices
19. The Latrines, a place for bodily functions
20. The Calefactorium, a warming room, the fire.
21. The Fountain House, a place for water and washing.
22. The Refectory, a place to eat.
23. The Pulpit, a place for reading during a meal.
24. The Kitchen
25. The Cellarer's Parlour, person responsible for food and drink
26. The Lane / Alley for lay brothers
27. The Cellar / Store room
28. The Lay Brothers Refectory
29. The Lay Brothers Dormitory
30. The Latrines for the lay brothers.
31. The Monks' Dormitory

Cloister

Space on second level

PROGRAMMATIC REQUIREMENTS

Diagrams outlining the key spaces to be designed and the qualities they should embody.

The Northern Cloister
THE CHURCH
A Place of Prayer and Contemplation

Essential Space		Shadow
Prayer		Visual
Contemplation		Auditory
Collective
Self
Landscape
Water
Fire
Sitting
Standing
Revealed
Light		

The Northern Cloister
THE READING HUTS
A Place for Reading

- Contemplation
- Writing
- Self
- Landscape
- Reading
- Sitting
- Revealed
- Light
- Visual
- Auditory
- Touch

The Southern Cloister
THE REFECTORY
A Place for Dining and Gathering

- Essential Space
- Collective
- Sitting
- Landscape
- Water
- Fire
- Eating
- Light
- Visual
- Auditory
- Touch
- Smell

The Southern Cloister
THE CALEFACTORIUM
A Place for Fire

The Eastern Cloister
THE CAMP
A Place for Gathering + Community

Beyond the Cloister
THE HUTS IN THE FOREST
A Place for Sleeping and Rest

- Essential Space
- Self
- Landscape
- Water
- Fire
- Light
- Shadow
- Visual
- Auditory
- Touch

The Northern Cloister
THE READING HUTS
A Place for Reading

- Essential Space
- Reading
- Contemplation
- Self
- Landscape
- Water
- Sitting
- Concealed
- Light
- Visual
- Auditory
- Touch

5.3
A DAY IN THE LIFE OF A CISTERCIAN MONK

Summer

1.45 – 3.00am
Night office of Vigils

3.00am
The Monks take a ten-minute break in the cloister between the night office of Vigils and the office of Lauds at daybreak.⁸⁶

3.15am
The monks return to the cloister to read.⁸⁷

4.00am (sunrise)
The bell for Prime sounds signifying the first of the monastic hours of the day. The monks congregate in the church.

4.15 – 4.45am
The monks gather in the chapter-house every morning for a daily meeting.⁸⁸

5.00 – 7.30am
Monks perform their tasks and manual labour.

⁸⁶ The office of Lauds is held in the church to celebrate the break of a new day.

⁸⁷ During this time, those that are priests have the option to celebrate private mass.

⁸⁸ Everyone sits on benches around the perimeter walls of the room facing the abbot, who presides over the meeting (like a chairman). Chapter begins with a prayer and reading from the Rule of St. Benedict. The abbot then makes some announcements before chapter finishes with Psalm 129. Once chapter has finished the tabula (a wooden clapper) is sounded by the prior calling the brothers to the parlour for the allocation of the days and weeks tasks and duties. The parlour is the one place where a little necessary conversation is allowed. The prior waits for the brothers in the parlour with his list of tasks. Tasks can include; greasing shoes, tending to the herb garden, or being in the kitchen.

7.30 – 8.00am
The monks read in the north walk of the cloister.

8.00 – 9.00am
Third Office of the day, Terce.⁸⁹

9.00 – 11.00am
Those who are priests return to the church for private masses, joined by two assistants – a cleric to minister and a laymen to serve the water and light the candle at the consecration. The rest of the monks return to the cloister to read.⁹⁰

11.00 – 11.15am
The monks return to the church for Sext.

11.30 – 12.00noon
The monks leave the church and head to the refectory for dinner, but before they can enter they must wash their hands at the water basins.⁹¹

12.00 – 2.00pm
Once dinner is over the monks must join in a procession for thanksgiving in the church before being allowed to have a nap back at their dormitory.⁹²

2.00 – 2.30pm
The bell rings for None, the fourth office of the day.⁹³

⁸⁹ During this office the mass is said and once a week the monks receive Holy Sacrament, which is the body and blood of Christ (bread and wine).

⁹⁰ During this time a bell sounds to call the novices and those serving in the refectory to go for a light snack.

⁹¹ Once in the refectory, all must stand for the blessing before sitting down. Eating cannot begin until the monk in charge of the refectory has uncovered his bread.

⁹² For those that do not wish to sleep they can read as long as they are quiet. Once 'nap time' is over the monks often quickly sit in the cloister before the bell rings for None.

⁹³ When None is complete, the monks walk in pairs back to the refectory for a light refreshment.

2.30 – 6.00pm
Once the monks are refreshed they commence their afternoon of work.⁹⁴

6.00 – 7.15pm
The monks are served a light supper in the refectory.⁹⁵

7.15 – 7.30pm
It is time for the collation reading so the monks return to the north cloister walk.⁹⁶

7.30 – 8.00pm
It is time for Compline, the last office of the day and the final duty.⁹⁷

8.00pm
The monks return to the dormitory for bed.

⁹⁴ However, on Sundays and feast days work is not permitted so reading takes place instead. Upon the strike of six, the bell for Vespers rings. Vespers is celebrated at dusk and named after Hesperus, the evening star.

⁹⁵ After supper, the monks return to the cloister for a short read. However, on Saturdays there is no time for reading as everybody's feet are washed by the abbot, a symbolic ritual in memory of Christ who washed the disciples feet. This ritual is called Maundy.

⁹⁶ The reader of the week stands at the lectern in front of the monks. No one must sit until the abbot has taken his seat.

⁹⁷ The monks all take their place in the choir (section of church) for the final time today. At the end of this service the abbot sprinkles Holy water onto each of the monks. After the service, the monks use the latrines if needed before heading to the dormitory.

Winter
1.20am
Rise from Bed.

1.30 – 2.30am
The Monks celebrate the night office of Vigils.

2.30 – 7.00am
The Monks meditate in the cloister.⁹⁸

7.00am
The Monks return to the choir for Lauds.⁹⁹

8.00am (sunrise)
The bell for Prime sounds signifying the first of the monastic hours of the day.¹⁰⁰

8.40 – 9.00am
The monks head back into the north walk of the cloister for their short morning read before the third office of Terce.

9.00 – 9.20am
The monks head back into the church for Terce.

9.20 – 10.00am
The monks gather in the chapter-house every morning for a daily meeting.

⁹⁸ During these winter months the cloister is often dark, gloomy and cold. However, during harvest time there is so much work to be done that the monks leave the cloister after Vigils and help the lay brothers in the fields. They often take their dinner with them and recite the Offices in the fields.

⁹⁹ Once Lauds has finished, the monks return to the cloister for a short period of time to read. During this time those that are priests have the option to celebrate private mass.

¹⁰⁰ The monks congregate in the church. During this office the mass is said and once a week the monks receive Holy Sacrament, which is the body and blood of Christ (bread and wine).

10.00 – 11.30am
The monks leave the parlour for the various places in the cloister to begin their allocated tasks.

11.30 – 11.45am
The monks return to the church for Sext.

11.45 – 1.20pm
The monks return to their second work shift.¹⁰¹

1.30 – 2.00pm
The monks leave the church and head to the refectory for dinner, but before they can enter they must wash their hands at the water basins. After dinner, the monks must join in a procession for thanksgiving in the church.

2.00 – 3.30pm
There is no afternoon nap in winter because the monks go to bed early. During this time the monks read quietly in the cloister. There will also be no more food as there is no supper in winter except for on Sundays.

3.30 – 4.00pm
The bell for Vespers sounds.¹⁰²

4.00 – 4.15pm
It is time for the collation reading so the monks return to the north cloister walk.

4.15 – 4.30pm
Compline, the last office of the day and the final duty. After the service, the monks use the latrines if needed before heading to the dormitory.

¹⁰¹ During this time the bell sounds calling the novices and those serving in the refectory for a light snack, called the mixt. As the time reaches 1.20pm, the bell sounds, calling the monks back into the church for None, the fourth office of the day.

¹⁰² Vespers is celebrated at dusk and named after Hesperus, the evening star. After Vespers, the monks receive a cup of ale to keep them going until bedtime.

^ Figure 49: Diagram tracing monastic rituals (monk paths through monastery) based on traditions, found on page 96.

- Monks
- Lay Brothers: With no lay brothers in the proposed monastery, one can interpret this track as the guests.
- ||||| Boundary: Point of investigation leading into 'The Spine'.

< Figure 50: Author's photograph of Wallaby Channel.

^ Figure 51: Light pouring into the darkness of a church within a monastery.

Chapter Six

A STORY OF A MONASTERY

THE BRIEF

6.0
CHAPTER OUTLINE

With the problems outlined, context discussed, site introduced and program explained, this chapter will provide a review of the past five chapters, while outlining the design brief and strategy. This chapter is critical in establishing the important connections between the previous chapters and the architectural proposition. As a result the brief will concisely explain how design-based research, in the form of a Cistercian monastery, can be used to test, investigate and explore both the primary and secondary problems. In addition, the brief will cover the existing and proposed types of site occupation.

6.1
REVIEW PRIMARY + SECONDARY PROBLEMS

Primary Problems:

1. Formed in 1954, on a fragment of Coranderrk Station, Tarrawarra Abbey exhibited an opportunity for the healing, interaction and collaboration between European and Aboriginal peoples. However, instead the monastery marginalised Aboriginal conceptions on the relationship between people, landscape and architecture in favour of its European traditions, architecture and life.
2. As the Aboriginal people were removed from the Australian landscape, the Aboriginal fire-stick also vanished. Moreover, with a changing climate and the elimination of the Aboriginal people as guardians of the land, specific areas of the Australian landscape have shifted into a compromised state, a landscape trap.

Secondary Problems:

1. What is the role of the monastery within the 21st century?¹⁰³
2. As the Yean Yean water system fails to produce enough water for Melbourne what is the fate of the historical Wallaby Creek stone aqueducts and canals that occupy the site?

¹⁰³ Cistercian monasteries, like all species, must evolve to survive. Bonnie Thurston believes such evolution comes from the fundamental elements of monasticism, such as communal gathering and individual contemplation. How can the architecture of a Cistercian monastery be articulated to strengthen both collective and individual experience of space and landscape?

6.2
THE BRIEF

The brief is the creation of a ‘new’ and reinterpreted Cistercian monastery, sited in Kinglake National Park. The Cistercian monastery is employed as design-led research to examine how site and Aboriginal / Cistercian perspectives on the relationship between people, architecture and landscape can manifest the reinterpretation process of the traditional monastic plan and architecture. In order to structure and limit the scope of this enquiry, two theoretical design imperatives are to be examined;

1. ‘The Elemental’

Fire as an element of paradox, origins, contemplation and control.

2. ‘The Boundary’

*Horizontal boundary: architecture – earth – sky.
Vertical boundary: physical walls, space between, spatial wall, and operable boundary.*

Through text and case-study based analysis, each design imperative (boundary and elemental) will be investigated in relation to Gottfried Semper’s four elements of architecture; principally the wall, hearth, roof and, to a lesser extent, the mound. A series of architectural operations will spawn from these investigations. These architectural operations will then be further explored through an analogue-based design process consisting of hand-drawn sketches, drawing and photography. In addition to those listed below, the overarching aim is to develop and reinterpret the monastery as an architectural scar. As a scar, the reinterpreted monastery and its community of monks and guests (Aboriginal or not) will not only contribute to the protection of Kinglake National Park’s injured mountain ash forest and ‘redundant’ stone water systems, but also assist in mending a torn relationship between two cultures.

> Figure 52: Overall thesis diagram

PART I: THE TRAUMA

An Emotional or physical wound depicting mental or physical trauma

Outlining the thesis problems, historical and site based Context.

PART II: THE HEALING

A restorative process

Theoretical discussions and design based investigations into how architecture can contribute towards the rectification of the problem.

PART III: THE SCAR

A lingering mark depicting both the trauma and process of healing. The joining of two forces to create a whole.

Architectural manifestations of design-based research from Part I and Part II.

6.3 DESIGN AIMS

1. Establish a collaborative community through architecture manifested from both Aboriginal and European (Cistercian) conceptions on the relationship between people, architecture and landscape.
2. Establish a community and architecture that stimulates and enables the use of fire-stick farming as a land management strategy to protect Wallaby Creek's mountain ash forest (located in Kinglake National Park).
3. Establish an architecture that can become a post-fire 'refuge,' a place of emergency housing and support center for the greater community.
4. Establish an architecture that re-purposes the increasingly redundant Wallaby Creek aqueduct.
5. Establish an architecture that through subtle and simple interventions, retains the landscape as the dominant element while forming an intimate relationship with the natural element of the site.
6. Establish an architecture that embodies the following four monastic principles; hospitality, open-heartedness, solitude (collective and self) and the hermitage.

6.4 SITE OCCUPANTS

Existing:
Parks Victoria Rangers¹⁰⁴

Melbourne Water Personnel

Members from Melbourne water will often need to work within the park to maintain their systems.

¹⁰⁴ Despite being a varied role, Victoria Park ranger duties are split into two areas (1) conservation and (2) recreation. Conservation: A fundamental aspect to the role of a park ranger is to ensure that the natural and cultural assets of the park are properly protected and maintained. This part of their role is closely aligned to the purpose of this thesis and therefore their relationship with the monks and guests is paramount. Specific tasks performed by the park ranger in protecting and maintaining the park are outlined below;

1. Protection, enhancement and management of natural and cultural assets.
2. Identify and eradicate weeds and pests.
3. Organise and conduct prescribed burning operations (fire-stick farming).
4. Assist with fire suppression.
5. Promote and maintain historic assets (such as granite water structures in Kinglake National Park).
6. Develop co-operative relationships with local indigenous groups.
7. Work with volunteers on maintenance and protection projects (the monks and guests).
8. Issue permits and oversee researchers studying within the park.

Recreation: In addition to their conservation role, park rangers are also expected to help visitors enjoy and understand the park.

Proposed:
The Cistercian Monks:

The Cistercian monks (also referred to as Trappists) are a Roman Catholic Religious Order who follow the Rule of St. Benedict and are therefore part of the Benedictine family. The life of a Cistercian monk is dedicated to seeking union with God through contemplation, silence, prayer, physical labour, reading, writing and walking within an intimate community. However, despite being an intimate and introverted group, part of a monk's life involves engaging with the outside community. Often the monks will grow and sell vegetables, wine, cheese et cetera to neighbouring communities. Additionally, through their work in the landscape the monastic community is often self-sufficient with the monks performing daily duties to maintain the monastery grounds and daily lives of its inhabitants.

The Guests (including Aboriginal guests)

Hospitality is a fundamental principle of monastic life and Cistercian monasteries often host a small group of guests. The guests are able to take part in numerous spiritual practices, as well as work with the monks in the landscape, preparing food, reading and experiencing a life of contemplation.

Post fire-storm evacuees

With fire-storms becoming an inevitable part of Victoria's future, the role of the monastery will need to adapt to post-fire circumstances. It is predicted that many residents in neighbouring communities will be left homeless after future fire-storms. The proposed monastery will be designed to become a 'refuge' and community support center. Various spaces within the monastery will be transformed into places to house individuals and families, while the cooking and eating facilities will be designed to accommodate large groups of people. Furthermore, the simple, sensitive and sensory-based architecture of the monastery will contribute towards the comforting and healing of people affected by the trauma.

▲ Figure 53: Photograph of healthy mountain ash trees.

Part Two

THE HEALING

A RESTORATIVE PROCESS TO PHYSICAL, SPIRITUAL, OR MENTAL WHOLENESS

< Figure 54: Fires within an Aboriginal camp.

^ Figure 55: The discovery of fire in Casariano's Vitruvius, 1521.

Chapter Seven

A STORY OF FIRE

THEORETICAL DESIGN IMPERATIVE ONE: THE ELEMENTAL

7.0
CHAPTER OUTLINE

‘Part I: The Trauma’ formed an essential prelude to ‘Part II: The Healing’ by discussing (1) the historical relationship between Victoria’s Cistercian monks and Aboriginal people, (2) the effect frequent fire-storms have on the mountain ash and (3) the role of Cistercian monasteries within the 21st century.

‘Part II’ will discuss and outline the two key theoretical design imperatives, ‘The Elemental’ and ‘The Boundary’ across two chapters. These two chapters will outline and discuss each design imperative from a phenomenological perspective while employing Gottfried Semper’s four elements of architecture.

Chapter seven will investigate the connection to fire and the role it plays within both Cistercian and Aboriginal architecture. On the other hand, chapter eight will explore the way in which various architectural boundaries (horizontal, vertical, material, immaterial, static and operable) connect or disconnect one from the landscape. Through the text and case study-based research, the resulting findings in ‘Part II: The Healing’ will manifest various architectural operations to be further explored and tested through design.

Split into three parts this chapter (seven) firstly discusses fire as an element with a range of meanings, uses and purposes, often opposing each other to create fruitful tensions. The second section of the chapter then explores fire’s role in the origins of Aboriginal and Cistercian architecture through Semper, Vitruvius and Alberti. The third part of the chapter investigates fire as a stimulator of reverie and contemplation. This is relevant because contemplation and reflection are a critical part of Cistercian life. Concluding the chapter is a discussion that delves deeper into the Aboriginals’ connection to fire through fire-stick farming. This discussion provides a land management response to Victoria’s at-risk mountain ash forests.

7.1
FIRE AS AN ELEMENT OF PARADOX

Gaston Bachelard’s anthropological study *‘The Psychoanalysis of Fire’* focuses on the concept of fire and its relationship with the human body and mind, rather than focusing on the fire itself. Like this chapter, Bachelard’s work is centred around the conceptualisation of fire and one’s subjective responses to it.

For Bachelard, fire is the ultra-living element and one of paradox. Fire is both intimate and universal. It exists both in our hearts and in the sky.¹⁰⁵ As mentioned in the opening chapter of this thesis, fire is really the only phenomena clearly attributed towards the opposing values of good and evil. The primitive hut, like that of the Aboriginals, was built around fire yet can easily be engulfed by it.

*“It shines in Paradise. It burns in Hell. It is gentleness and torture. It is cookery and it is apocalypse. It is a pleasure for the good child sitting prudently by the hearth; yet it punishes any disobedience when the child wishes to play too close to its flames. It is well-being and it is respect. It is a tutelary and a terrible divinity, both good and bad.”*¹⁰⁶

However, despite its paradox-like state, the human species is captivated by fire. The attraction to fire leads to one’s desire to own and restrain it. Such desire is full of trepidations.¹⁰⁷ The Aboriginals of Australia and European Cistercian monks, like most of us, acknowledge fire’s presence as a threat and immensely destructive power. However, they also invite fire into the centre of their camps, huts and monasteries. Accordingly, fire becomes an essential element in the origins and fundamental experience of a Cistercian and Aboriginal relationship with architecture and landscape.

105 Bachelard, *The Psychoanalysis of Fire*, 7.

106 Ibid.

107 Timea Jakob, “Stories of House and Fire” (University of Waterloo, 2011), v.

The Primitive Flame

The 18th century can be illustrated in part by firstly the rising obsession with origins, pursued in every discipline.¹⁰⁸ Scholars of the Enlightenment period were passionately engaged in a pursuit for the origin of any phenomenon. During this time the world’s foundation was to be reconsidered, including its architectural beginnings. According to Gottfried Semper (1803-79), architect, art critic and professor, the beginnings and fundamentals of architecture exist in the story of the primitive man.

*“The first sign of human settlement and rest after the hunt, the battle, and wandering in the desert is today, as when the first men lost paradise, the setting up the fireplace and lighting of the reviving warming, and food-preparing flame. Around the hearth the first groups assembled; around it the first alliances formed; around it the first crude religious concepts were put into the customs of a cult. Throughout all phases of society the hearth formed that sacred focus around which the whole [world] took order and shape.”*¹⁰⁹

Semper’s conception of the hearth is that of the holy centre, the focus of settlements, domestic life and religious practices, a symbol of civilisation and religion.¹¹⁰ “The original fire burns warmly and, like its first onlookers, rest Semper’s other three elements of architecture: the roof (carpentry), the wall (weaving) and the mound (stone-masonry).¹¹¹ Semper’s reflection on the origin of architecture through his four elements links him to a long tradition of architectural thinking and discourse.

108 At a time when traditional beliefs and values were being questioned and religious and political powers were transforming, the ‘quest for certainty’ became critical. Philosophers and scientists embarked on a quest, a search for the secure foundations on which to base judgment and action while regaining the epistemological legitimacy of their discipline in face of an uncertain tradition. Fernández-Galiano outlines that while Francis Hutcheson (1694-1746) inquired into the origin of our ideas of beauty and virtue, David Hume (1711-76) focused on the origins of religious faith, and Etienne Bonnot de Condillac (1715-1780) the origins of sensation. Jean-Jacques Rousseau (1712-1778) on the other hand strived for the identification of Homme nature, Johann Gottfried Herder (1744-1803) pursued the origin of language, and Johann Wolfgang Goethe (1749-1832) the original plant. Ibid., 30–31

109 Gottfried Semper, *The Four Elements of Architecture and Other Writings* (Cambridge University Press, 2011), 102.

110 Richard A. Ertlin, *Symbolic Space: French Enlightenment Architecture and Its Legacy* (University of Chicago Press, 1996), 27.

111 Semper, *The Four Elements of Architecture and Other Writings*, 102.

Not only does Semper’s enquiry place him amongst the likes of Hutcheson, Rousseau, Goethe et cetera but also in alignment with Vitruvius and Alberti. Semper’s tale of man’s origins with fire, quoted above, relates unmistakably to Vitruvius’ description of the first gathering of men.¹¹² In contrast to Vitruvius, Leon Battista Alberti thought that instead of fire, or even water, the roof and wall designated the beginning of the congregation of men.¹¹³

However, despite his affinity with Vitruvius, Semper rejected his traditions. Semper criticised Vitruvius’ conception of the primitive hut as a model for the Greek temple. Instead, Semper perceived the primitive dwelling as a mystical poetic and artistic motif rather than the material model and formal driver of the temple. Through his rejection of the Vitruvian hut, as well as its 18th century interpretations, Semper presented a very different origin theory and analysis.¹¹⁴ Semper’s investigations into the primitive hut transcended formal translations and mimicry in favour of the experiential and phenomenological qualities such architecture manifested. In a similar manner to Semper, Aboriginal architect Kevin O’Brien notes that contemporary Aboriginal architecture focuses too much on form, symbolism and metaphor. Instead, O’Brien declares that a more erroneous oversight is the experiential and sensory-based relationship between Aboriginal people, their architecture and the landscape.^{115 116}

112 “The men of old were born like the wild beasts, in woods, caves, and groves, and lived on savage fire. As time went on, the thickly crowded trees in a certain place...caught fire...and the inhabitants of the place were out to fight...After it subsided, they drew near and...brought up other people to it, showing them by signs how much comfort they got from it. In that gathering of men, at a time when utterance of sound was purely individual, from daily habits they fixed upon articulate words just as these had happen to come; then, from indicating by name things in common use, the result was that...they began to talk, and thus originate conversation with one another.” Vitruvius Pollio and M. H Morgan, *Vitruvius: The Ten Books on Architecture* (New York: Dover Publications, 1960).

113 “In the beginning, men sought a place of rest in some region safe from danger; having found a place both suitable and agreeable, they settled down and took possession of the site. Not wishing to have all their household and private affairs conducted in the same place, they set aside one space for sleeping, another for the hearth, and allocated other spaces to different uses. After this men began to consider how to build a roof, as a shelter from the sun and the rain. For this purpose they built walls on which a roof could be laid.” Leon Battista Alberti, *On the Art of Building in Ten Books* (MIT Press, 1988), 3; Quoted in, Fernández-Galiano, *Fire and Memory*, 11.

114 Hvattum, *Gottfried Semper and the Problem of Historicism*, 30.

115 Kevin O’Brien, “Aboriginality and Architecture : Built Projects by Merrima and Unbuilt Projects on Mer” (June 26, 2006): 1, <http://espace.library.uq.edu.au/view/UQ:194135>.

116 This thesis follows Dr. Paul Memmott’s note that Aboriginal vernacular architecture and ways of being exist as expressions of highly complex and diverse relationships between the physical, social and cosmological environment. Additionally, like Dell Upton’s 1993 text ‘The Traditions of Change’, this chapter is not intended to reunify the vernacular as an architectural concept. Instead, this chapter will focus on a discussion from a phenomenological perspective into the relationship between people (Aboriginal and Cistercian), architecture (dwelling) and landscape.

Throughout the remainder of this section (7.2) four case studies are employed to further examine an Aboriginal and Cistercian / Western relationship with fire. The four case studies are categorised and outlined as follows;

The Primitive Flame

1. Fire within an Aboriginal camp

The Developed Flame

2. R.M Schindler's Kings Road House
3. Longpont Abbey
4.Senanque Abbey

Fire within an Aboriginal Camp

Within an Aboriginal camp, the fire itself often appears more important than the physical architecture of the huts. Constantly burning, no matter what the climate, the fires in these camps not only warmed the hands and cooked the food, they also stimulated gathering and storytelling while keeping the spirits away.¹¹⁷ Amos Rapoport notes that wherever an Aboriginal squats, a fire would be constructed. An individual fire is created even if the main fire is near and sun's heat beats down. Instead of building a large fire and sitting far from it, an Aboriginal person will build a small fire and stay close to it, forming a direct and intimate relationship with the flame.¹¹⁸ Consequently, the primitive camp-fire of the Aboriginals acts as a case study for the following architectural operations:

117 Richard A. Gould, *Yiwara: Foragers of the Australian Desert* (Scribner, 1969), 26.

118 Rapoport, *Australian Aborigines and the Definition of Place*, 3,6.

[^] Figure 56: Photograph of an Aboriginal woman tending her fire and diagrams illustrating this relationship. Note the ability to relocate the fire, use of materials on site and the intimacy between the body and the flame.

Manifest a relationship between man and fire through:

1. The constantly burning flame.
2. Small, private fires that can be relocated (or fixed), extinguished and lit at the will of any individual.
3. A large communal fire that remains in one place, forming a symbolic centre to the monastery.
4. Fires that enable one to sit as close to the flame as they wish.
5. Fires that enable access from all sides, allowing a group to gather in a circle with the flame at its centre.
6. Fires that are constructed directly on the earth, out of material gathered on site.

> *Figure 57: Fireplace ruin found on site.*

The Developed Flame

The Aboriginal shelter materialises Semper's four elements through simple, honest and primitive forms where the focus is on function, practicality and one's experience with landscape. These minimal architectural interventions result in direct and intimate relationships with not only the landscape but also the fire. European / Western architecture on the other hand embodies a range of responses to Semper's elements. For instance, R.M Schindler's Kings Road House celebrates Semper's elements through the architecture, focusing heavily on fire. Cistercian Monasteries however, appear to have exchanged fire for water, and separate elements (roof, wall, mound) for unified cave like structures, where the roof merges with the wall, and the wall with the ground.

^ Figure 58: Sketch of fireplaces from on-site. Fixed orientation, catering for a particular portion of earth. One cannot experience the flame from its rear.

^ Figure 59: Photograph of Novy Dvur interior illustrating the way in which the roof, walls and floor often become one within Cistercian monasteries.

^ Figures 60: Photograph of the Kings Road House illustrating the walls of refuge and operable face of engagement with landscape. The images also show the hearth sitting on the floor and use of Semper's four elements.

Kings Road House

Upon returning from a camping trip in Yosemite National Park, R.M Schindler decided to form his own practice and build a studio-residence in response to his experience of life within nature.¹¹⁹ Schindler described the house as ‘a cooperative dwelling for two young couples’.¹²⁰ The basic concept was to provide each person with their own room – a tent like space – and do most of the cooking on the central table – creating a social ‘camp-fire affair’.¹²¹ Each room in the house embodies the basic requirements for a ‘campers’ shelter, which can be translated back to Semper’s four elements: a protected back (wall), an open front, a fireplace and a roof. The rectilinear ‘U’ shape of the rooms, with their concrete floors and walls, were to embody a tent like feel as the sliding panels could open the space to nature.¹²² Within these individual ‘tents’ one could choose to take refuge from the landscape by inhabiting the space near the back wall, or engage with the landscape directly by sitting closer to the opening.

119 Kathryn Smith, Schindler House (Hennessey & Ingalls, Incorporated, 2010), 21.
120 Elizabeth A. T. Smith, “R.M Schindler: An Architecture of Invention and Intuition,” in The Architecture of R.M. Schindler (Los Angeles: Museum of Contemporary Art, 2001), 28.
121 Smith, Schindler House, 20.
122 Smith, “R.M Schindler: An Architecture of Invention and Intuition,” 29.

^ Figure 61: Plan diagram illustrating Schindler's use of the 'U' formation in creating a space where one can take refuge from the landscape amongst the thick walls and fire or navigate the sliding panels to engage with the landscape. This concept is very similar to an Aboriginal cave or rock overhang (see next figure).

^ Figure 62: Plan of the Kings Road House illustrating the importance placed on the hearths and the 'U' shaped camp-like spaces.

^ Figure 63: Plan of an Aboriginal stone fish trap. Its form is scar-like and very linear compared to the other Aboriginal stone structures. However, like the Kings Road House and stone structures (right) this scar still resembles a place of engagement and refuge. If treated as a wall the slight curve creates a sheltered space, contrasting the more exposed spaces at the two ends.

^ Figure 64: Photograph of an Aboriginal stone shelter in Victoria. The 'U' form of shelter relates to the Kings Road House and notion of refuge within a mass. However, unlike the Kings Road House, these shelters have no operable boundary. The opening generates a direct engagement with the landscape.

^ Figure 65: Sketch illustrating an Aboriginal habitation of a cliff overhang or cave. The 'U' shape relates to the Kings Road House with mass forming a refuge from the landscape while the open face allows for direct engagement.

^ Figure 66: Exploring the use of mass, back wall, 'U' formation and boundary of engagement through a conceptual sketch for the 'Huts in the Forest' (dwellings).

^ Figure 70: Placing the model into the mountain ash environment with the addition of water.

The infiltration of landscape into the architecture was another key component of Schindler's plan that aligns the design more towards the likes of Glenn Murcutt than a traditional Cistercian monastery.

Furthermore, Schindler's decision to anchor each room with a fireplace shifts the house towards an Aboriginal camp where smaller fires were constructed for individual and private use.

Schindler's fires, unlike Frank Lloyd Wright's fireplace in Fallingwater, were built directly upon the concrete ground slab of the home, emphasising the elimination of boundaries.¹²³ Despite some boundaries being eliminated, Schindler's fires still cease to engage with the earth in the same manner as the Aboriginal fire. While Schindler's floor slab acts as a barrier between fire and soil, the Aboriginal fire is constructed directly on the earth with materials found nearby. Like Wright's, Schindler's fireplaces also fail to embody the intimacy of the primitive camp-fire. Within these two houses the architecture, like the hearth ruins on the site, designate where one can view the flame while suggesting the distance to view it from. Whereas within an Aboriginal camp the fire can be accessed from all sides, and the flame beacons one closer to the point they almost touch.

123 Judith Sheine, R M Schindler (Phaidon Press, 2001), 111.

^ Figure 71: Plan diagram illustrating the difference between Wright's use of a single central fireplace where many gather and Schindler's use of individual fireplaces for more self-directed use.

^ Figure 72: Plan diagram illustrating how the architecture of the fireplace designates the orientation of the fire. Like the 'U' form adopted by Schindler, the fireplace has one face of engagement.

Figure 73: Section diagrams illustrating the differences between Schindler's Kings' Road House, Wright's Fallingwater and the Aboriginals with regards to fire's relationship to earth, viewing distance, and the way in which architecture (fireplaces) create various restrictions.

Figure 74: Sketch experimenting with man's ability to contain fire through architecture.

Schindler’s Kings Road House acts as a case study for the following architectural operations:

- *Manifest a relationship between man and fire through:*

 1. Small (fixed) private fires that can be extinguished and lit at the will of any individual.
 2. Fireplaces that sit directly on the floor slab, shifting this architectural element towards an Aboriginal’s campfire on the earth.

Forming a physical manifestation, and celebration, of Semper’s four elements through:

 1. Individual – tent and shelter like – sleeping spaces that provide privacy and a space of self-reflection and contemplation.¹²⁴
 2. The solid back wall, space of refuge from landscape, within the individual ‘tents’.
 3. The open front, operable boundary and space to engage with landscape, within the individual ‘tents’.
 4. ‘Floating’ roof planes visually separated from the heavy walls.

¹²⁴ Such spaces contrast the spatial conditions and experiences of the dormitories found in traditional monasteries.

Fire in Cistercian Monasteries

In the earliest communities of man the symbolic role of fire was more important than its functional presence.¹²⁵ For instance, in a traditional Aboriginal camp, as noted above, a fire could continue to burn even if its warmth was not required for heating or cooking. The flame was kept alive as a symbolic element, fighting away the evil spirits, enforcing a sense of community and initiating reverie (discussed in following section). While Cistercian monasteries from the 12th century began to adopt a more functional attitude towards fire the origins of fire within a monastery embody a symbolic presence.

The earliest Cistercian monasteries may not have followed any prescribed plan but their rapid growth demanded the need for a model and more organised approach. As the Cistercians adopted and interpreted the Rule of Saint Benedict, they also implemented the Benedictine plan.¹²⁶ Drawn at the opening of the 9th century, the plan of the Benedictine abbey of St. Gall is perceived as the most eloquent architectural document of that era.¹²⁷ One of the enigmas that challenged the scholars proves to be an essential part of the Cistercian story and relationship with fire. In the centre of each service building was a square symbol subtly labelled *testu*. The answer to the meaning of this square was discovered when another square was labelled *locus foci*, an omnipresent central fire. The symbolic importance of this fire is proven in an abbreviated and abstracted illustration of the plan that clearly marks the fire, yet excluded all stairs and windows.¹²⁸

Within the plan of St. Gall the fireplace is realised for the first time in a monastery, and with it the notion of individual and communal gatherings. For instance, the large central hearth was created for the pilgrims, the poor, the servants and laymen performing the *opus manuum*, manual labour. While the private hearth installed into the walls of the abbot’s quarters offers warmth and intimacy for those engaged in *opus dei*, intellectual or ecclesiastical labour.¹²⁹

¹²⁵ Fernández-Galiano, Fire and Memory, 214.

¹²⁶ Terryl N. Kinder, Cistercian Europe: Architecture of Contemplation (Eerdmans Pub Co, 2002), 107.

¹²⁷ The graphic representation St. Gall’s plan, a physical and social microcosm and utopian scheme has fascinated scholars since 1844 when its first critical edition was published.

¹²⁸ Fernández-Galiano, Fire and Memory, 214–215.

¹²⁹ Ibid., 215.

As the fireplace spread through Europe during the 12th, 13th, and 14th centuries, the role of fire within the monasteries shifted. As a result, its symbolic value diminished in favour of a more functional approach. From the 12th century customary, there were only three places within the abbey that fire was permitted: the kitchen, the infirmary, and as the focus of discussion, the calefactorium (the warming room).¹³⁰ When fully operational, the fires within the calefactorium were used in a very functional manner with only three activities permissible: warming oneself, greasing one's shoes, and undergoing bloodletting.¹³¹ ¹³² The following case studies outline two ways in which fire was implemented into the calefactorium and the different experiences and relationships one might have with the fire.

¹³⁰ Due to technological advances in heating, and changing attitudes towards living, privacy and warmth, few calefactoriums remain intact.

¹³¹ Bloodletting (phlebotomy) was a regular activity that took place both inside and outside monasteries, as it was a common remedy for both physiological and psychological illnesses. Within the monasteries all monks, albeit those that were sick, travelling, or working, were bled at regular intervals up to four times a year in February, April, June and September. Ibid., 277–278.

¹³² Ibid.

¹³³ Laugier was a contemporary of Rousseau and Condillac with the same obsession for foundational causes. He began as a Jesuit priest before becoming the Benedictine Abbot Marc-Antoine Laugier (1713-69). Since Longpont existed well before Laugier, the connection made can only be considered a coincidence, albeit a very interesting one.

Longpont Abbey,
Longpont, Aisne, France

Established in the early 13th century, Longpont's calefactorium, situated on the ground floor, possesses an 'open hearth'-type fireplace. Framed by four solid pillars supporting a roof-type structure (chimney), this fireplace is architecturally reminiscent of Laugier's¹³³ depiction of the primitive hut.

Conversely, the fireplace of Longpont can also be investigated with regards to a more primitive man-fire relationship. Like the fireplaces within the Kings Road House, the fire at Longpont sits directly on the stone floor slabs. However, the fire at Longpont, unlike Wright's or Schindler's, embodies the circular and collective nature of a primitive campfire. With no obstructions on either side, unlike a typical single orientation fireplace, the primitive campfire and that at Longpont induces gathering and communal engagement. The four columns provide a small amount of obstruction while the raised rings encompassing the fire restrict one from getting close and forming an intimate relationship with the flame.

Longpont Abbey acts as a case study for the following architectural operations:

Manifest a relationship between man and fire through:

1. A fire that sits directly on the floor slab, shifting this architectural element towards an Aboriginal's campfire on the earth.
2. A fire that enables access from all sides, allowing a group to gather in a circle with the flame at its centre.

¹³³ Laugier was a contemporary of Rousseau and Condillac with the same obsession for foundational causes. He began as a Jesuit priest before becoming the Benedictine Abbot Marc-Antoine Laugier (1713-69). Since Longpont existed well before Laugier, the connection made can only be considered a coincidence, albeit a very interesting one.

^ Figure 76: Laugier's depiction of the primitive hut.

^ Figure 77: The hearth within the Calefactorium of Longpont Abbey. Like an Aboriginal campfire this hearth is accessible from all sides, thus encouraging gathering and an intimacy with the flame. However, the raised stone ring prevents one from getting too close to the fire.

^ Figure 78: Plan diagram of the hearth at Longpont abbey illustrating its 360 degree access and ability to gather a community together.

^ Figure 79: Section diagram of the hearth at Longpont illustrating the fire's relationship to the floor slab and the wall in which the raised stone ring permits one from getting closer to the flames.

Senanque Abbey Vaucluse, Provence, France

Constructed in the second half of the 12th century, Senanque abbey reflects a Wright and Schindler articulation of fire rather than that of the Aborigines or Longpont. Like Wright and Schindler's fireplaces, the one in Senanque's calefactorium is built against and slightly into the wall. Unlike a primitive campfire or the open nature of Longpont, this fireplace has a single orientation with a shallow and narrow hearth. Not only does the single orientation and placement in the wall prevent one forming a close relationship with the flames, the low concrete barrier also signifies one's limits.

The reason for the disappearance of the calefactorium in many monasteries was due to changes in customs. As customs within the monasteries changed, individual chambers with individual fireplaces, like St. Gall, were created. Consequently, the calefactorium become redundant and was either transformed into a communal space, neglected, or destroyed.¹³⁴ The abolishment of the calefactorium can be thought of as a loss for the monastery. Despite their focus on the functional aspects of fire it would have, like an Aboriginal camp or the Kings Road House, stimulated gathering camaraderie and community.

¹³⁴ Kinder, Cistercian Europe, 280.

^ Figure 80: Plan diagram of the fireplace in Senanque abbey illustrating the single orientation and face of engagement.

^ Figure 81: Section diagram of the fireplace in Senanque abbey illustrating the fire's relationship to the floor slab and the raised stone element restricting one's connection to the flames.

7.3
FIRE AS AN ELEMENT OF CONTEMPLATION

As stressed above, the paradox-like nature of fire reveals its presence as both a functional and symbolic element. Yet, its purpose transcends notions of warmth, cooking of food, encouraging gathering or manifesting a community. Even in its most primitive state fire has the power to induce reverie and stimulate contemplation. For Gaston Bachelard fire is an object of reverie, the most naturally centred reverie, a symbol and invitation for repose. Fire is less monotonous and abstract than flowing water. Fire is quicker and more adaptive than a young bird. Fire suggests change, it speeds up time and brings life to a conclusion. In these circumstances Bachelard notes that the reverie becomes dramatic yet fascinating, it magnifies human destiny while linking the small and great, hearth and volcano, and the life of the log to the life of the world.¹³⁵ “One can hardly conceive of a philosophy of repose that would not include a reverie before a flaming log fire.”¹³⁶

Semper and Vitruvius perceive fire’s use as the initiator of community, communication and architecture. On the other hand, Bachelard perceives reverie as the first and truly human use of fire. Fire may provide one with warmth and comfort. But to be fully aware of the comforting sensation, one must first spend time contemplating the flames. “One only receives comfort from the fire when one leans his elbows on his knees and holds his head with his hands.”¹³⁷ According to Bachelard, when near the fire one must be seated, one must rest without sleeping and one must use the fire to engage in reverie on a specific object.¹³⁸

^ Figure 82: The hearth within the calefactorium of Senanque Abbey. Like the hearth ruins on the site, this hearth has a fixed orientation. The architecture contains the flame, almost holding it away from the hands of the inhabitants. Unlike the Aboriginal campfire, or the hearth at Longpont, this hearth is to be viewed from a distance. It does not stimulate gathering or a sense of community.

135 Bachelard, *The Psychoanalysis of Fire*, 16.

136 Ibid., 14–15.

137 Ibid.

138 Ibid.

Fire has been discussed as an element of paradox, origins and contemplation. However, its presence as a critical land management tool, arguably its most important trait for the Aboriginals, is yet to be covered.

Upon initial assumptions, the life of an Aboriginal and that of a Cistercian monk seem worlds apart. But when it comes to environmental management and participation in the landscape they are much the same. Both Cistercian monks and Aboriginal people are aware of their responsibilities towards the landscape. However, while an Aboriginal's responsibilities stem from totemic-based relationships, a Cistercian perception of land management and protection revolves around sustainability and harmony. Wayne Teasdale, monk, author and teacher, speaks of this relationship as a responsibility to restore and preserve the land, a duty to work towards a sustainable future in which communities exist in a harmonious state with nature.

*“We have a sacred duty to the earth itself, to one another, and to all other species that inhabit our planet; to live in a state of friendship with the natural world, enhancing its life by simplifying our needs and desires.”*¹³⁹

Nevertheless, one must question how Aboriginal people and Cistercian monks can practically care for and protect their landscapes. For the Aboriginal people of Australia, their most vital tool is also one of the most destructive forces of nature, fire. Fire's violent and untamed state seems so far from its presence at the centre of the camp, all the while losing its mythical, functional and symbolic qualities. Heralded by haze, smoke and red lines in the scrub, that fire is implacable; it roars, leaps, kills and devours. That fire is alive.¹⁴⁰

For tens of thousands of years the Aboriginal people of Australia have had to confront wildfires. In order to survive, a shift in thought and rationale had to occur. While fire could kill, fire or no fire could also distribute plant species with precision. The Aboriginals had to fight fire with fire. Fire became their closest ally, and their most effective tool in caring for country.¹⁴¹

¹³⁹ Wayne Teasdale, *A Monk in the World: Cultivating a Spiritual Life* (New World Library, 2003), 8.

¹⁴⁰ Bill Gammage, *The Biggest Estate on Earth: How Aborigines Made Australia* (Allen & Unwin, 2011), 157.

¹⁴¹ Ibid.

However, as highlighted by William Stanner, the rules embodied in the Aboriginal use of fire are varied, complex and intimately dependent on one's knowledge of the physical and spiritual nature of the land.^{142 143}

The first and arguably most important reason for caring for country through fire was fuel control. Rather than eliminating fuel, it was controlled and managed through varying degrees of heat. Some fires were cool, some were hot, and some were in between.¹⁴⁴ Bill Gammage notes that in 1788 there was no remote bush in Australia. Eventually the Aboriginal fire-stick touched the most remote areas of the continent. If fuel accumulated within country it was burnt, thus sparking a learning curve in fire management. The following points outline ten teachings:¹⁴⁵

1. *Fire is more controllable and useful as fuel is reduced.*
2. *Cooler fires leave larger un-burnt patches than hot fires.*
3. *A mosaic-like landscape of burnt and un-burnt areas benefits the animals as burnt (feed) balances with un-burnt (shelter) country.*
4. *Varying fire intensities enable the manipulation of burning size.*
5. *Fire intensity can be regulated though fire frequency and timing.*
6. *The frequency and timing of fires are dependent on local flora and fauna as well as local moderations such as rain, wind and temperature.*
7. *The more knowledge one possesses on these variables, the more purpose can be applied to burning. Therefore fire can shape country rather than simply limit fuel.*
8. *In shaping country one can situate and manipulate burning mosaics to compose a landscape of fire-tolerant and fire-sensitive species.*
9. *Through a mosaic of burning Australia becomes a single estate and entity.*
10. *The maintenance of the estate is enforced by universal law.*

¹⁴² The physical understanding of the land encompasses everything from climate, temperature, rainfall, wind and humidity to the flora and fauna and topography.

¹⁴³ W. E. H. Stanner, *After the Dreaming: Black and White Australians - An Anthropologist's View* (Australian Broadcasting Commission, 1969), 44–45; Gammage, *The Biggest Estate on Earth*, 161.

¹⁴⁴ Gammage, *The Biggest Estate on Earth*, 161.

¹⁴⁵ Ibid., 162.

With these teachings in mind how would one control fire within a fire-prone state such as Victoria? Gammage notes that the frequency at which a landscape should be burnt is relative to the speed and growth of its most dominant plant species. For fire-prone areas ‘a fire a day kept bushfires away.’ On the other hand, fire sensitive areas have to be shielded by protective burns.¹⁴⁶ Within landscapes dominated by mountain ash trees a high intensity fire is sought every 200-400 years to begin the reproductive cycle of the forest.¹⁴⁷

Due to the severity of the fires required to replenish the forest it is almost certain that people managed the mountain ash during winter. Gammage suspects that for generations winter burning was conducted when the forest was young to keep the edges back and clearings open. However, when the time came for the forest to kill and resurrect itself, fires had to be lit during summer to ensure the heat was enough to spread the seeds.¹⁴⁸

As discussed in chapter two, the existing fire regime of Victoria’s mountain ash is not operating naturally.¹⁴⁹ David Lindenmayer refers to two important strategies that he believes must be implemented to rectify the problems generated by the landscape trap within Victoria’s mountain ash forests.¹⁵⁰ Firstly the large (>1000 ha) areas of mountain ash that are currently un-burnt need to be protected and retained.¹⁵¹ The second strategy he calls upon is a reaction to the scale of devastation as a result from Victoria’s most recent fire-storms.¹⁵²

146 Ibid., 165.

147 Attiwill, “Australian Forest Profiles: The Ash Forests of South Eastern Australia.”

148 Gammage, The Biggest Estate on Earth, 166.

149 To briefly recap, the severe fires needed to replenish the forest are occurring too frequently. These too-frequent firestorms are forcing the mountain ash into a compromised state, a landscape trap, as the new growth is unable to mature and therefore produce seeds before the next uncontrolled bushfire hits.

150 Lindenmayer et al., “Newly Discovered Landscape Traps Produce Regime Shifts in Wet Forests,” 4.

151 As the 2009 fires reduced the mountain ash population greatly, the relative biodiversity, carbon storage and water production values of those remaining stands has increased. Lindenmayer also highlights that due to their value, these remaining stands are increasingly being sought after for timber and pulpwood harvesting. Ibid.

152 Consequently, this strategy will form a more conservative management of natural resources as well as a higher level of recognition of the uncertainty created by major natural disturbances. Ibid.

Like Gammage, Lindenmayer stresses the need to suppress future fires that like ‘Black Saturday’ rampage uncontrollably through the landscape. Despite their dependence on fire for regeneration, fires within Victoria’s mountain ash have become extensive in the last 25-100 years. Lindenmayer highlights that if another fire-storm in the next 20 years were to hit the current stands of mountain ash regrowth a major regime shift is likely to occur; thus severely hindering the mountain ash population.

In response, both Lindenmayer and Gammage call upon a resurrection of an Aboriginal fire-based management strategy, fire-stick farming commonly known as prescribed burning. However, broad areas of prescribed burning is not a viable management option as high levels of moisture and biomass in the mountain ash landscape make controlling large fires extremely difficult and dangerous. Nevertheless, Aboriginal-like prescribed burning is an appropriate management option in the drier forests that exist adjacent to the mountain ash. Lindemayer notes that precisely applied burns in these drier environments may aid in the reduction of spatial contagion in wildfire that occur in these parts; therefore reducing the risk of destruction for the adjacent stands of mountain ash giants.¹⁵³ ¹⁵⁴

The result of using fire to regulate fuel, create mosaics, control animals and clean country gives the land a certain appearance.

*“Smoke from country that is burning tells the observer that everything is good. The people on that land are well and doing what is required of them. Country that is not burning, especially where it is known that people are present, is not good.”*¹⁵⁵

153 DellaSala, Temperate and Boreal Rainforests of the World, 195–212.

154 David Lindenmayer, Forest Pattern and Ecological Process: A Synthesis of 25 Years of Research (Csiro Publishing, 2009).

155 McKaige BJ et al, “Bushfire ’99,” in Proceedings Australia Bushfire Conference (Albury, 1999), 79.

As declared by Deborah Rose, a shift in European thinking towards the notion of caring for the landscape must occur if a truly living world is to exist. 'Caring for the landscape' has the potential to become a European ethos. An ethos that initiates a partnership and collaboration between the Aboriginal people and Cistercian monks (Europeans).¹⁵⁶ The regeneration and protection of the mountain ash landscape must involve both Aboriginal and European parties, forming a unified community.

However, due to the limitations of this research and the scope of enquiry for a masters thesis, the specific fire-stick farming process for Kinglake National Park cannot be designed. Instead, the architectural manifestations of the research must focus on establishing the community, situation and scenario where a burning system could be implemented. In order to implement this burning system people must be placed within the landscape with the architecture acting as a mediator between the two.

¹⁵⁶ Deborah Bird Rose, *Nourishing Terrains: Australian Aboriginal Views of Landscape and Wilderness* (Australian Heritage Commission, 1996), 84.

Manifest a relationship between man and fire through:

1. The constantly burning flame.

2. Small, private fires that can be relocated (or fixed), extinguished and lit at the will of any individual.

3. A large communal fire that remains in one place forming a symbolic centre to the monastery.

4. Fires that enable one to sit as close to the flame as they wish.

5. Fires that enable access from all sides, allowing a group to gather in a circle with the flame at its centre.

6. Fires that are constructed directly on the earth, and/or on the floor slab, out of material gathered on-site.

Forming a physical manifestation, and celebration, of Semper's four elements through:

1. Individual – tent and shelter like – sleeping spaces that provide privacy and a space of self reflection and contemplation. Such spaces contrast the spatial conditions and experiences of the dormitories found in traditional monasteries.

2. The solid back wall, a space of refuge from landscape within the individual 'tents'.

3. The open front, an operable boundary and space to engage with landscape within the individual 'tents'.

4. The physical separation of the elements. E.g. The roof from the walls and the roof from the floor.

5. The use of a large wing-like roof that, like an Aboriginal shelter, exists as a simple angled plane visually separated from the heavy walls.

Establish the setting and scenario for fire-stick farming through:

1. Architecture that inhabits a site within or near stands of 'at-risk' mountain ash.

2. Architecture that can be easily be accessed by members of the community, Melbourne Water, Parks Victoria et cetera.

3. Architecture that can host a number of guests.

4. Architecture that stimulates a sense of community, collaboration and interaction between the guests and monks.

5. Architecture that enables one to form a relationship with the mountain ash, getting to know its character, environment and responses to climate.

^ Figure 83: Author's photograph of a courtyard entry at the Heide II where thick stone walls are used to delineate space.

Chapter Eight

A STORY OF BOUNDARIES

THEORETICAL DESIGN IMPERATIVE TWO: THE BOUNDARY

8.0 CHAPTER OUTLINE

The establishment of place for contemporary architects, like many cultures and civilisations throughout history, is accomplished through the manifestation of structures and boundaries.¹⁵⁷ The manipulation of boundaries between architectural elements, spaces or the landscape provides a greater sense of place and identity.

Chapter eight will open with a discussion, through David Seamon, John Ruskin and Gottfried Semper, on the relationship between Aboriginal and Cistercian positions in the landscape. Through this introductory discussion the text will outline the tensions that exist between an architecture of refuge and one of engagement. Spawning from these tensions, this chapter will focus on the use of horizontal and vertical boundaries that either form a refuge from or engagement with the outside world.

Beginning with the horizontal boundary, the second part of the chapter (8.2) investigates the relationship between earth and architecture through two Australian case studies, Glenn Murcutt's Ball-Eastaway House and Denton Corker Marshall's Phillip Island House. These two case studies provide physical examples for two different strategies that articulate how the architecture could engage with the earth.

¹⁵⁷ Rapoport, Australian Aborigines and the Definition of Place, 1.

^ Figure 84: Sketch illustrating the vertical and horizontal boundary.

Continuing the discussion around the horizontal boundary, the third part of the chapter (8.3) investigates the relationship between earth and sky. Focusing on the roof and open air courtyard, this section employs the Cistercian abbey of Le Thoronet as its case study.

The final section to examine the horizontal boundary (8.4) shifts the thesis discussions into the questioning of water as an element to mediate between earth and sky. Using Mary Miss's Jyvaskyla University installation and Tadao Ando's 'Church on the Water' as case studies this section examines water as a key component in inducing reverie and contemplation as well as a master-planning compositional device.

The next part of this chapter (8.5) initiates the discussion of the vertical boundary. It discusses the relationship between wall and aperture to create an interplay of shadow and light. Both shadow and light are key components in creating a spiritual architecture. Because of this, the section refers to two case-studies, Ando's 'Church of light' and Le Thoronet. Throughout this section the treatment of light and shadow employed by these case studies is discussed in relation to contemporary treatments exemplified by John Pawson's Novy Dvur.

Rather than examining the wall (vertical boundary) itself, the next section (8.6) shifts the discussion into the notion of liminal space, the space between walls. Through three case studies, the Endémico Resguardo Silvestre Hotel, Novy Dvur and the Heide II, this section outlines a key component of Aboriginal planning and therefore a critical part in the reinterpretation process of the traditional monastic plan.

The final section of this chapter (8.7) shifts the discussions back onto the physical vertical boundary. However, rather than presenting these boundaries (walls) as static elements, this section examines their flexible, operable and even invisible qualities within Aboriginal architecture. Thus, the tension between fixed European boundaries and operable Aboriginal boundaries stems an exploration into the mediation of a refuge from or engagement with the landscape.

The aim of the text, case study and design-based investigations contained within this chapter is to create an architecture that sensitively embodies both Cistercian and Aboriginal treatments of boundaries. Moreover, the investigations into these strategies will drive further design-based explorations into architecture's presence and relationship with people and the natural realm.

Instead of arguing the definition of an ‘Aboriginal architecture,’ this section investigates the tensions and disparities that occur between Aboriginal and Cistercian architecture with regards to the degree of engagement with or refuge from the landscape. As an initial hypothesis traditional Aboriginal architecture, in comparison to the Cistercians, enables the occupants to become more intimately connected to their place and landscape.

The notion of the dwelling as a means for separating the inside from the outside, landscape from the people, and the public from the private has existed since antiquity. For Heidegger, the dwelling can be understood “...as the most primitive drawing of a line that produces an inside as opposed to an outside.”¹⁵⁸

For Amos Rapoport, dwellings at a fundamental level, whether they be Aboriginal shelters or Cistercian monasteries, have two key functions; (1) physical shelter and; (2) the provision of symbolic space and definition of place. Compared to a Cistercian monastery, that can be perceived as focusing more on the latter, Aboriginal built-form seems to be more entwined with the function of shelter.¹⁵⁹ However, this does not mean that the Aboriginals intended their architecture to dominate the landscape. Their lives were to stress the partnership between man and nature. Through their structures, unlike a western urban dwelling or Cistercian monastery, the Aboriginals did not believe there should be strong boundaries between man and the landscape.^{160 161}

¹⁵⁸ Mark Wigley, *The Architecture of Deconstruction: Derrida’s Haunt* (MIT Press, 1995), 104.

¹⁵⁹ Rapoport, *Australian Aborigines and the Definition of Place*, 2.

¹⁶⁰ *Ibid.*, 6.

¹⁶¹ Rapoport highlights that the lack of conceptual boundaries between the Aboriginals and nature was reinforced by their lack of physical barriers, such as clothing, walls or houses.

Cistercian monks, on the other hand, like the western man, are aligned more towards John Ruskin’s conception of the dwelling in which two essential qualities revolve around the edifice’s capacity to exclude:

1. Social processes and social relations, as well as,
2. Natural processes and natural elements.¹⁶²

The monk, and western man, take refuge behind his physical barriers (Semper’s wall, roof and mound) in order to establish an enclosure, protect the hearth,¹⁶³ exclude nature and reduce the climatic differences between seasons. Incidentally, an Aboriginal defines their place through their intimate connection to nature’s processes, cycles and distinctions.¹⁶⁴ As declared by David Seamon, the intimate and direct relationships established between people of vernacular lifeworlds, in particular Aboriginals, can be rationalised for two reasons;

1. Limited resources and time.
2. The treatment and manipulation of boundaries between the ‘architecture’, body and landscape, or in other words, inside and outside.^{165 166}

¹⁶² Maria Kaika, “Interrogating the Geographies of the Familiar: Domesticating Nature and Constructing the Autonomy of the Modern Home,” *International Journal of Urban and Regional Research* 28, no. 2 (2004): 266, doi:10.1111/j.0309-1317.2004.00519.x.

¹⁶³ Semper, *The Four Elements of Architecture and Other Writings*, 102.

¹⁶⁴ Rapoport, *Australian Aborigines and the Definition of Place*, 6.

¹⁶⁵ David Seamon, “Phenomenology and Vernacular Lifeworlds,” *Trumpeter* 8, no. 4 (1991): 201.

¹⁶⁶ Consequently, due to the greater existential simplicity of the vernacular lifeworlds, one’s experience of life, unlike those within a western urban setting, is often less obscured by existential ‘inessentials’, such as the latest technology, fashions, global news et cetera.

The differences in this treatment of boundaries and one's relationship with nature are well described in Mike Austin's description of Pacific architecture;

*“An architecture of space open to the sky rather than closed rooms [Cistercian], or sticks and grass as against mud and bricks, poles against walls [Cistercian], of single cell pavilions [liminal space] rather than labyrinth complexes [Cistercian], of buildings raised in the air on stilts rather than sunk in the ground [Cistercian], of temporariness against permanence [Cistercian]...”*¹⁶⁷ ¹⁶⁸

For Ruskin and Semper, like the Cistercian monks, architecture is about refuge and protection. On the other hand, for the Australian Aboriginals, architecture and its most basic elements becomes a vehicle for the mediation between engagement and refuge. In response to this tension, the following sections will discuss the relationship between a refuge from and engagement with the landscape. Focused around the vertical and horizontal boundary (wall and roof), these investigations will also examine their rigidity and potential kinetic operations.

167 Mike Austin, “Pacific Island Architecture,” *Fabrications: The Journal of the Society of Architectural Historians*, Australia and New Zealand 11, no. 2 (2001): 17.

168 Despite the tensions outlined by Austin being in the most part true, in an Aboriginal – Cistercian (European) dialogue the differences are not as clear-cut. For instance, one does not necessarily associate a monastery with a labyrinth as the cloister acts as a tool in structuring the program in a simple and legible manner. Further monasteries are not as permanently oriented as one might think. The locations and functions of spaces, in addition to the size and role in the monastery, often changed over time. The reason being is, like the Aboriginals, their architecture had to directly reflect their changing lifestyle and needs. The following chapters, “The Elemental” and “The Ruin”, will explore these notions in further detail.

To provide a general description of the relationship between architecture and landscape the Aboriginal architect and author Kevin O’Brien employs the term ‘camping.’ According to O’Brien the notion of the ‘camp’ refers to both a noun and verb-based meaning. As a noun a ‘camp’ protects and temporarily captures a central ground. Its temporary nature reminds us that nothing is permanent and that everything eventually must die. As a verb a ‘camp’ cooks to the open sky, sleeps within a closed tent, rests under the shade, focuses around a fire and feels ground underfoot. As a collective experience a ‘camp’ positions one in conversation with the earth.¹⁶⁹

169 Kevin O’Brien, “Sanctuary Place: Sep Yama / Finding Country 5 Ways,” *Architectural Review* no. 103 (November 2007).

^ Figure 85: Elements that make up Kevin O’Brien’s description of camping. (1) protects and captures ground while feeling ground underfoot, (2) cooks to the open sky, (3) sleeps within a tent, (4) rests under the shade, (5) focuses around fire, (6) collective experience.

Through two case studies, Glenn Murcutt’s Ball-Eastaway House and Denton Corker Marshall’s House on Phillip Island, this section specifically examines two strategies for articulating the horizontal boundary between earth and architecture.

Strategy One: ‘Touching the Earth Lightly’

The architecture of Glenn Murcutt initiates a discussion on two eminent notions (1) ‘harmony through contrast’ and (2) ‘touching the earth lightly.’ Like other Australian architects such as Gabriel Poole, Richard Leplastrier, Peter Stutchbury and Sean Godsell, Murcutt’s ‘floating’ architecture for the most part leaves the landscape as an untouched canvas and undisturbed natural system. The notion of making a minimal, if any, impact on the landscape can be referenced back to Aboriginal strategies and approaches to the building-landscape dialogue.

^ Figure 86: Top left to bottom right: Gabriel Poole, Richard Leplastrier, Peter Stutchbury, Sean Godsell.

The form and function of Murcutt’s architecture appears to extend in opposite directions. Murcutt’s houses, often by ‘touching the earth lightly,’ stand in opposition and contrast to the landscape. Thus proclaiming humanity’s separateness and refuge from nature.

According to Murcutt, harmony is formed through disparateness whereby disparate sounds unify to create a pleasing whole. Murcutt’s strategy is not one of monotony or sameness but one that harmonises through confrontation.¹⁷⁰ His buildings appear as moored ships. Yet behind the contrasting skin lies a complex architecture innately born through the site and place. For Murcutt;

“To hide like an ant in the landscape tells me nothing about the other...I think that difference is very important. Not for difference’s sake; difference must come out of an understanding of scale, or material, or structure, of light, of shade, of wind, of smells, of sun, of the verandah, the change from outside to inside, the structure of the landscape...”^{171 172}

170 Ibid.

171 Ibid.

172 David Leatherbarrow shares similar views to Murcutt stating that landscape and building can only be unified if each is distinct, interlocked only if separate. For only when they are different can each perform its role. Only then can the energy of the landscape animate the architecture, filling it to capacity. David Leatherbarrow, *Uncommon Ground: Architecture, Technology, and Topography* (MIT Press, 2002), 183.

^ Figure 87: Maquette illustrating Murcutt's notion of touching the earth lightly.

^ Figure 88: Glenn Murcutt's Ball-Eastaway House, North Sydney, Australia, 1983. Photograph illustrating the building's position on the landscape and the way in which it allows for water to run underneath.

The Ball-Eastaway House:

Murcutt's 1983 Ball-Eastaway House is situated in North Sydney, Australia. It acts as a case study for the following architectural operations.

1. *Subtly take refuge and engage with landscape by touching the earth lightly.*

2. *Establish an engagement with landscape through structures that formally embody Glenn Murcutt's notion of 'harmonising through contrast' yet functionally responding to critical site conditions.*

Delicately perched, like a foreign vessel, upon a steel frame the Ball-Eastaway House contrasts with the embedded nature and solid appearance of the rocks below. Through Murcutt's decision to raise the house above the rocks, one is presented with a dialogue between architecture and landscape. To build on the rock would raise the water table and rot the roots of the yellow bloodwoods above the house. This move would also create a water shadow that would in turn destroy up to 40m of bush. Consequently, Murcutt's decision enables the landscape to function as it has for thousands of years as the water flows over the rocks and into the bush.^{173 174}

173 Farrelly, Three Houses, 21.

174 In his book 'New Directions in Australian Architecture' Philip Goad suggests an opposite strategy to standing delicately apart from the landscape. For Goad, architecture that employs formal mimicry oscillates between topography and architecture. Therefore constantly questioning the reciprocity between object and landscape. However, instead of achieving such reciprocity between object and landscape through an Aboriginal strategy of using the landscape itself (materials, climate et cetera), formal mimicry visually imitates the aesthetic appearance of the land in search of an 'invisible' architecture. For example, the Brambuk Living Cultural Centre at Halls Gap in Victoria (1990) not only appears to reconstruct the mountainous landscape through its undulating roof forms but, according to Philip Goad, recreates the camouflage mimicry of a giant moth. However, through imitation it can be argued that the architecture fails to form a dialogue with the landscape where each is made more spectacular by the other. Ibid.

^ Figure 89: Sketch exploring the notion of touching the earth lightly while having selected areas that are submerged slightly into the earth, providing an element of contrast. Another point of contrast is explored through the space which is hidden within the hillside, a place of refuge and concealment. The sketch also further explores the separation of the roof from the floor, as illustrated by the Kings Road House and Ball-Eastaway House.

^ Figure 90 + 91: Maquette and sketches photographed and placed into a mountain
 > ash environment. These floating structures take the notion of refuge through raised
 structures to an extreme, inhabiting the space above the first canopy of the mountain
 ash (8-10m above the ground). The first canopy becomes a new ground plane.
 However, the practicality of such an intervention in the landscape is questionable.

Strategy Two: 'Cutting, Slicing and Burying'

Another strategy with respect to the dialogue and relationship between architecture and landscape involves the formation of a new landscape. In an opposite manner to vernacular Aboriginal structures and Glenn Murcutt's work, this strategy uses architecture as a device in reshaping, manipulating and overall enhancing existing landscapes. Interventions on the landscape through 'cutting', 'slicing', and 'burying' formally engage with the ground in the exact opposite to Murcutt's work.

^ Figure 92: Sketch exploring the notion of creating a 'new' landscape through 'cutting' and extracting the earth. However, the sketch also suggests that because the earth is so important within Aboriginal culture, the material extracted should be used in construction. Perhaps the material could be transformed into rammed earth walls.

Denton Corker Marshall's Phillip Island House

Located on a coastal strip on Phillip Island, Denton Corker Marshall's house, like Mary Miss's sculpture 'Perimeters Pavilions Decoys 1978' acts as a case study for the following architectural operation:

1. *Engaging with landscape through forming an intimate relationship with the earth, 'cutting', 'slicing', and 'burying'.*

As noted by Philip Goad, the strategy of physically inhabiting the earth defies the notion of 'touching the earth lightly'. Such a strategy employed by Denton Corker Marshall also forms a tension with Aboriginal approaches, as the Indigenous people did not move or shift the landscape. However, Denton Corker Marshall's house does embody the notion that Aboriginal people did inhabit and form an intimate relationship with the earth through clefts and caves. Goad enforces that remaking, cutting and inserting into the landscape is not invalidated by Aboriginal traditions. Instead, the appropriateness is measured by the final synthesis, as marking the landscape, in some scenarios, may be more respectful or sensuously stimulating than 'touching the earth lightly.'¹⁷⁵

¹⁷⁵ Philip Goad and Patrick Bingham-Hall, *New Directions in Australian Architecture* (Periplus, 2005), 27.

^ Figure 93 + 94: Mary Miss's sculpture 'Perimeters Pavilions Decoys 1978' and Denton Corker Marshall house at Cowes, Phillip Island illustrating a formal strategy of sinking into the earth.

^ Figure 95: Sketch exploring the notion of mediating between architecture that inhabits the earth and architecture that touches the surface of the earth. The drawing can also be read as mediating heaven and earth where the point of transition is given significance through space, a critical element of Aboriginal architecture and life.

Λ Figure 96 + 97: Corker Marshall house at Cowes, Phillip Island illustrating a formal strategy of sinking into the earth.

- ^ Figure 98 + 99: Translating the previous sketch into a model that further explores the notion of architecture that is submerged into the earth. The relationship between the earth and roof reflects the low lying nature of an Aboriginal roof structure which can be as low as 1 metre above the ground.
- > Figure 100: Three sections of an initial concept design on site one. The sections take the notions of touching earth lightly, taking refuge through raised structures, architecture inhabiting the earth, and the mediation between heaven and earth, floating and subduction into a scheme that includes program and site.

*“Much of the wonder of a great building comes from the form of its roof. From the domes and vaults of monumental architecture to the timber frames of barns and peasant huts, there is something about the experience of roof forms – both inside and out – that goes to the heart of people’s deepest feelings of place and shelter.”*¹⁷⁶

David Seamon and Gottfried Semper agree that one’s intimate connection to a place is because the roof became the most predominant, primitive and defensive element of architecture. The roof acts as a guardian element, protecting the hearth and inhabitant from the rain. Like many traditional Aboriginal sun or wind shelters, Semper believed the most primitive roof form existed as a moveable tent-like structure, or as a structure standing over a hollow in the ground and barely raised from the soil.^{177 178} Nevertheless, despite being focused on the notion of shelter, as conditions changed in summer, Aboriginal structures became more receptive to the exterior context and were opened up to the sky.¹⁷⁹

¹⁷⁶ David Seamon, *Dwelling, Seeing, and Designing: Toward a Phenomenological Ecology* (State University of New York Press, 1993), 77.

¹⁷⁷ Semper, *The Four Elements of Architecture and Other Writings*, 110–111.

¹⁷⁸ Two structural forms that were used universally by all Aboriginal groups were the sunshade and windbreak. The most common form of shade structures consisted of (1) a flat roof plane supported on four corner posts, (2) a lean-to construction with single ridgepole, and (3) the open-sided dome of the Western and Central deserts, made of light-weight bushes. However in southern parts of the continent, such as Victoria, more enclosed, permanent and substantial structures were required to stay dry and warm during the wet and cold winter months. Consequently many of the structures in Victoria employed stone, rock and clay to form a low wall of shelter, while hardwood beams supported a watertight roof. As outlined by Memmott, Aboriginal stone architecture can be considered a sub category of ‘stone structures’, the other being ‘stone engineering works’. Stone structures, other than buildings, consisted of walled fish traps, wiers, canals, ovens, protective coverings for sacred objects, path liners, and ritual based arrangements on the ground. Paul Memmott, *Gunyah, Goondie and Wurley: The Aboriginal Architecture of Australia* (University of Queensland Press, 2007), 184–186.

¹⁷⁹ *Ibid.*, 186.

▲ Figures 101: Sketch exploring the notion of a roof as a simple shelter. The space between the floating roof and ground is one of shadow and concealment whereas the space outside is revealed and light.

Λ Figure 102: Typical Aboriginal camp and shelter

The simple space sheltered by a primitive roof was shaped to make the inhabitants feel as though they occupied or gathered around the centre of their world.¹⁸⁰ Further, not only does the most primitive roof plane create shelter, it also establishes a formal distinction between inside and outside, the self and world, and the physical and the ideal.¹⁸¹ However, through its purpose as a vessel and function of containment, the roof also splits the world in two. Not only does it simultaneously create an inside, space of containment and refuge, and an outside, space of exclusion and engagement, the roof also segregates the terrestrial from the celestial. Seamon declares that the power of the roof exists in its duality. At any moment, one is either contained by the roof, taking refuge from the world through architecture, or engaging with the world outside, through their exclusion from architecture. Once inside and under the shelter we become the contained object. Our architecture surrounds us, and we experience it as a hollow space. The compression of space within this shelter stimulates an experience of closeness and intensity. To gaze upwards is to see the structure of the roof-plane separating us from the outside world. To peer down is to see the earth we claim as our own. “Out of the disorder to the world the roof helps us fashion a safe place, set apart and sheltered from everything outside.”¹⁸² Through its expression of both the inside and outside, the simple, primitive roof reflects a fundamental contrast of human experience. It is at once a place of refuge from the landscape and an expansive place of engagement with the landscape.¹⁸³

180 Seamon, *Dwelling, Seeing, and Designing*, 79.

181 *Ibid.*, 82–83.

182 *Ibid.*, 84.

183 *Ibid.*

Λ Figure 103: Sketch exploring a simple roof form and heavy wall. The roof appears to float above the wall and ground while marking an area of the earth and separating the terrestrial from the celestial.

^ Figure 104: Sketch exploring the experience of a roofed structure from the outside. Instead of being contained, the viewer perceives the roofed structure from a point of exclusion. The drawing is also beginning to explore wall as an object guiding one through space and landscape.

^ Figure 105: Roof plane studies for the church amongst the mountain ash.

▲ Figure 106: Sketch exploring the roof as a solid mass instead of the light plane-like form of the Aboriginal shelter. The mass creates a sense of weight, further disconnecting the earth from the sky.

▲ Figure 107: Translating the sketch above into a three-dimensional form while testing it against a really thick wall and one of medium thickness. Again, the separation between the roof and wall is important in highlighting that they are different elements. The gaps also provide interesting natural lighting opportunities.

▲ Figure 108: Interior of the model. As a wire frame image, the roof appears as two separate planes rather than a solid mass. The floating effect, and angular form of the internal layer is the most interesting part of the image. It should be noted that honest structure and form is important. Disguising the roof as a flat surface from the exterior creates a tension with typical Aboriginal structures.

Conversely, let us consider the courtyard or the cloister of a monastery, a space absent of a roof yet with a defined perimeter boundary. The cloister, the heart of the monastery, and its garth, void in the centre, like a courtyard, still occupies an area of earth yet is totally exposed to the sky. The cloister, like Hassan Fathy's Egyptian Courtyard, melds the earth with the sky / heaven, the terrestrial with the celestial, bringing the sacred down and infusing it with the everyday world. Like a traditional monastery, Fathy's courtyard house turns its blind windowless walls to the outside. The focus of the architecture is on its interior courtyard from which only the sky can be seen. As the roof suggests one's ownership over a patch of earth, the courtyard creates the owner's private piece of sky. "The sky is, as it were, pulled down into intimate contact with the house, so that the spirituality of the home is constantly replenished from heaven."¹⁸⁴

184 Hassan Fathy, *Architecture for the Poor: An Experiment in Rural Egypt* (University of Chicago Press, 2010), 56.

▲ Figure 109: Sketch illustrating how a courtyard or cloister connects to the sky yet forms an introverted space.

▲ Figure 110: Photograph within the courtyard of Hassan Fathy's Resthouse.

Abbey of Le Thoronet:

Le Thoronet Abbey is an early 13th century abbey located in Provence, France. Designed in the traditional manner around a cloister, Le Thoronet acts as a case study for the following architectural operation:

1. Engagement with earth and sky, through an open cloister, a space of isolation from the exterior landscape.

Λ Figures 111 + 112: Photographs of Le Thoronet illustrating the open cloister and how it creates a space of mediation between the earth and sky.

A horizontal and still plane of water

Water exists in a paradox-like state, resembling its warm and allusive counterpart, fire. As a symbol and source of life, water can also manifest itself into a dark, cold indicator of death. The life-giving element of water appears throughout literature, art and religious practices, including those of the Cistercians. Its presence as a relentless, eroding and drowning substance never fails to remind the human race of its power. However, despite its dialectical nature, the key to understanding the water of architecture is to understand the architecture of water.¹⁸⁵

The presence of water within the monastery comes under three categories: liturgical, domestic and industrial. The liturgical uses include ablutions (ritual washing), holy water and the weekly mandatum (foot washing).¹⁸⁶ The supply of water to the monastery for these types of needs is generally through two types of systems. The first can be referred to as an ‘external system’ whereby water is harnessed directly from nearby rivers and streams through a series of dams, aqueducts and canals. The second system, an ‘internal system’ consists of pure water piped inside the abbey under pressure from an uphill stream. As existing canals already flow through the site, this text will concentrate solely on the first water system. The focus of this section is to briefly investigate how the liquid, as a horizontal flat body (including canals), reacts with one’s senses, engages with the landscape (mediating earth and sky) and relates to human beings within a religious architectural realm.¹⁸⁷

¹⁸⁵ Ibid., 15.

¹⁸⁶ The domestic uses included cooking and cleaning water, water for mixing ink, washing the body and clothes, shaving and for the bathrooms. For both liturgical and domestic use, water would be extracted from the fountain house, typically located in the centre of the cloister garth. Industrial water uses were typically for the running of mills and forges. Furthermore, due the importance of agriculture, irrigation and water for animals was essential. Kinder, Cistercian Europe, 85–86.

¹⁸⁷ Related to its role as a symbol of chastity and its live giving power, water also speaks of physical purification, spiritual rejuvenation and source of contemplation within the Cistercian tradition.

^ Figure 113: Ansel Adams photograph of Mt. McKinley Wonder Lake.

^ Figure 114: Sketch exploring the notion of water passing through the cloister. Testing water as a compositional device in the form of a channel that engages with the existing water systems on site.

^ Figure 115: Water body within the grounds of Clairvaux. Fontaine Saint Bernard.

^ Figure 116: Fontfroide. The Cloister during a rainstorm.

^ Figure 117: Igny. The Water system west of the abbey.

As Cistercian monasteries are often sited near a river (flowing body of water) the spiritual nature of the lake (still horizontal body) provides an interesting tension and area of enquiry. Essential for the life of a Cistercian monk, the lake embodies notions of collection, reflection and contemplation. The calm nature of a lake contrasts with the more animated presence of fountains and rivers while, like fire, initiating reverie. While the river is synthetically manifested through the canal, the waterfall through the fountain the lake is recreated through the reflection pool.¹⁸⁸

Unlike fountains, rivers or canals, the still water of the pool is a place of collection rather than connection. The pools can collect water from canals and rivers and sometimes even water from the heavens, rain. The allegorical liquid that was pumped from the fountain’s heart-source and distributed by the arterial rivers and canals rests in these basins. In his poem ‘On the Lake,’ Johann Wolfgang von Goethe describes the nuances of water at rest:

*And I suck fresh nourishment and new blood
From the wide world;
How gracious and kindly is Nature
Who hold me to her breast!*

*The waves rock our boat up and down
To the rhythm of the oars,
And soaring, cloud capped mountains
Meet us in our course.*

*My eyes, why are you cast down?
Golden dreams, will you return?
Begone, dream, golden as you are;
There is lover here, and life too.*

*On the waves float twinkling
A thousand twinkling stars;
Soft mists drink up
The looming distances;*

*The morning breeze wings around
The shaded bay
And in the lake
The ripening fruit is mirrored.⁵³*

188 Moore and Lidz, Water and Architecture, 21–22.

Through his poem, Goethe extracts three important qualities associated with still waters. Firstly, they are receptacles or reservoirs contained under a horizontal surface. Secondly, they possess contemplative qualities that fuel one’s imagination. And thirdly, water exists as a horizontal plane that through reflection, abstracts both sky and earth-based elements such as trees and hills.¹⁸⁹ The pensive stillness and silent collection of still water traditionally represents the contemplative and ‘indwelling spirit’ of nature that resides in the forest (site). However, this stillness also manifests their reflective presence as horizontal mirrors. Like the concrete walls of Tadao Ando’s architecture, a still body of water absorbs, refracts and reflects its surroundings. The mirror lake, photographed by Ansel Adams in the Sierra, perfectly embodies this reflective quality.¹⁹⁰

However, in order to abstract a pool into an architectural setting, the edge treatment is often rectilinear rather than organically curved, forming abrupt transitions between ground and water. Nevertheless, the linear formation of such pools enable the architect to use the water as a compositional device to form an important axis or spine.¹⁹¹ Additionally, these linear pools can be used to represent the infinite qualities of mammoth landscapes, like that of Australia. “The vanishment of distant points, reflect and configure sublime visions of the landscape.”¹⁹²

189 Ibid., 121–122.

190 Ibid., 124.

191 Channels of water can also be used as devices to unify complicated architectural arrangements. Waterways can link a series of elements while providing continuity. Ibid., 201.

192 Ibid., 127.

^ Figure 118: Ansel Adams 'Mirror Lake.'

As an element of contemplation and wonder, a flat body of water within a landscape and architecture enables one to hear, touch and see the water in a myriad of ways. The reflective qualities of water add an element of fantasy to architecture by filling the space with shadows and reflected light. Like Ando's treatment of natural light, these reflections and refractions can transform the solidity of stone or concrete into shifting surfaces, painting them with colour and shimmering entities.¹⁹³ Take the cloister of John Pawson's Novy Dvur for instance. The pool running around the internal edge of the cloister reflects light into the barrel vault, resulting in ephemeral, yet highly spiritual moments coinciding with the monks' daily rituals.

The following two projects, Marry Miss's 1994 intervention at Jyväskylä University in Finland, and Tadao Ando's 1988 Church on the Water, act as case studies for a series of architectural operations.

193 Moore and Lidz, Water and Architecture.

^ Figure 119: Sketch of the cloister in John Pawson's Novy Dvur illustrating the reflections off the channel of water.

Vertical vs Horizontal

Using the Earth

Mary Miss
Jyvaskyla University
Jyvaskyla, Finland
1994

Located in Jyvaskyla, Finland, both the town and university campus are surrounded by a blanket of tall pine trees. Behind the school's Alvar Aalto-designed auditorium rests a floor of pine needles with mature pines towering overhead.

Upon approaching these trees, like the site within the mountain ash, the visitor's focus shifts upwards as the sheer size and verticality of these forest giants is considered and contrasted with the horizontal nature of the forest floor and wider landscape. Between the giants, Mary Miss positioned a series of long timber-framed troughs embedded in earth berms. Like the canals running through the mountain ash forest, each trough is filled with water, reflecting the trees above.^{194 195} However, these troughs also induce an element of psychological reflection and contemplation. One can gaze heavily into the reflections as they abstract the trees and sky, transporting one from their physical place. Alternatively, one could contemplate the very purpose of the full installation and its relationship to the individual trees and/or the wider forest. Despite one's individual response, the viewer, like the proposed monastery, constantly exists within an inseparable state amongst the threshold between the built and natural environment.

Mary Miss's installation acts as a case study for the following architectural operations:

- 1. Establish an abstract and in-direct engagement with the natural elements of landscape, earth and sky through a horizontal plane of water.*
- 2. Use a horizontal plane of water as an architectural device to either contrast or echo the landscape.*
- 3. Manifest an architecture of contemplation and reverie through a horizontal plane of water.*

¹⁹⁴ The interior of each trough is lined with a shiny galvanized metal holding the imprint of each tree it is attached to.

¹⁹⁵ Mary Miss, *Mary Miss* (Princeton Architectural Press, 2004), 131.

< *Figure 120: Water installation by Mary Miss at Jyvaskyla University, Finland. Photograph illustrates the abstract reflections of the trees and sky in the water. The diagrams illustrate the horizontal nature of channels vs vertical trees. Diagrams also show use of earth in construction.*

^ Figure 121: Sketch exploring Mary Miss's installation at Jyväskylä University in terms of water as a compositional device in the form of linear channels that pass between trees, placing order within disorder.

> Figure 122: Experimental render testing a linear channel of water within a burnt forest environment.

Church on the Water

Tadao Ando's 1988 'Church on the Water' is situated on a plain within a mountainous area of Hokaido, north of Japan. It consists of a series of walls, enclosed concrete spaces, and a 90x45 metre man-made pond. The depth of the pond was considered by Ando so that its surface, unlike Mary Miss's or Adam's photo, could be subtly affected by the wind, with even light breezes causing ripples and disrupting its reflective state. The main area of the church, a concrete 'U' shape space like Schindler's 'tents', frames the pond while creating a direct engagement with the natural elements of the landscape.

*"The glazed side of the chapel facing the pond can be entirely opened, and one can come into direct contact with nature. Rustling leaves, the sound of water, and the songs of birds can be heard. These natural sounds emphasise the general silence. Becoming integrated with nature, one confronts oneself."*¹⁹⁶

From within this space, the pond forms a single horizon line that, like the artworks by Miya Ando, divide heaven and earth, earth and sky, and the sacred and profane. The cross in the middle of the pond acts as an element that mediates between these tensions.

Ando's 'Church on the Water' acts as a case study for the following architectural operations:

- 1. Establish an abstract and in-direct engagement with the natural elements of landscape, earth and sky, through a horizontal plane of water.*
- 2. Use a horizontal plane of water as an architectural device. To either contrast or echo the landscape.*
- 3. Use a horizontal plane of water as an architectural composition device.*
- 4. Manifest an architecture of contemplation and reverie through a horizontal plane of water.*

¹⁹⁶ Tadao Ando, "From the Chapel on the Water to the Chapel of the Light," in Tadao Ando: Complete Works, ed. Francesco Dal Co (Phaidon Press, 1997), 455.

▲ Figure 123: Interior of Tadao Ando's Church on the Water. Pool of water bisects heaven and earth with the cross mediating the two.

^ Figure 124: Abstracted images of Miya Ando's work illustrating the use of the horizon line.

^ Figure 125: Further process of abstraction leading to diagram being explored through design-based drawing.

- A. Abstracting the changing horizon.
- B. Abstracting the black mass in each image
- C. Shifting the images to create a continuous horizon, then abstracting the shifts.
- D. Overlaying each experiment (a,b,c) into an abstraction that can be tested through architectural drawing (plan or section).

Proposition

Water systems and canals form a major part of traditional European monasteries, yet the Yan Yean water system and Wallaby Creek aqueduct are becoming 'obsolete'. This thesis proposes that the designed monastery becomes a critical part of the park's water system. Like the monasteries in Europe, the proposed pools within the monastery will not only collect rainwater, feeding it into the greater system, but the water will become an integral part of monks' and guests' lives. The water will be used in both secular and sacred rituals from dish washing, drinking and bathing to foot washing, church services and stimulators of contemplation. Furthermore, still bodies of water, as well as channels, will be used as compositional devices and vehicles to drive the master planning while creating a dialogue between the architecture and its landscape.

^ Figure 128: Reigny Water System.

^ Figure 129: Sketch exploring water as a compositional device in the form of channels extending out into the landscape.

^ Figure 130: Sketch exploring water as a compositional device in the form of channels extending out into the landscape. Sketch also illustrates the use of water as both channels and deeper pools.

^ Figure 131: Testing a channel of water within the mountain ash environment and how a light breeze can cause ripples, adding to the refraction of light.

Cistercian architecture in the 12th and 13th century used thick stone walls to form the partition between internal and external space, similar to the architecture of Tadao Ando. This was done in the spirit of taking refuge from the landscape and excluding the social and natural elements of life. The apertures punched through these walls were small and severely constructed, thus heightening one's sense of exclusion from the outside world. Rather than establishing direct contact, like the open faces of Schindler's rooms, these slit-like windows were installed to welcome light into the internal dark and cave-like spaces. Shining with intense brilliance, these patches of light expressed what Tadao Ando refers to as the fundamental desire of man, inhabiting darkness, for light.¹⁹⁷ "The brilliance of a shaft of light, penetrating the profound silence of that darkness, amounted to an evocation of the sublime."¹⁹⁸ In these circumstances windows were constructed for the un-mediated penetration of light rather than for visual entertainment. Space was carved like a sculpture, by a line of light piercing through the darkness. Its appearance transforming with each successive movement of the sun.¹⁹⁹

As the antithesis to a Cistercian monastery and Ando's treatment of light, advances in architectural technology in modern times has liberated windows from their structural limitations. Glass, in any size, can now frame a view and entirely replace all 'solid matter' within a wall. Instead of resulting in the liberation of light in architecture, these glass facades allow the energy of light to scatter ineffectually and be lost. According to Ando, modern architecture like John Pawson's Abbey of Novy Dvur has produced a world that exceeds transparency. A world that mirrors the abundant nature of light outside architecture. A world of homogenous light. A world devoid of darkness.²⁰⁰

^ Figure 132: Various light and shadow tests throughout church design development.

197 Tadao Ando, "Light," in Tadao Ando: Complete Works, ed. Francesco Dal Co (Phaidon Press, 1997), 470.

198 Ibid.

199 Ibid.

200 Ibid.

^ Figure 133: Le Thoronet: Interaction of light and shadow. Compartmentalised light.

^ Figure 134: Novy Dvur: Homogeneous light.

At its core, the migration of light in the sky affects every aspect of life, literally making life on Earth possible. Light allows us to see, enabling us to visually inspect our surroundings, its opportunities and dangers.

At a more detailed level, daylight is the ultimate source of energy, stimulating growth, sustaining life through the deterrence of diseases and maintaining biological rhythms and cycles.²⁰¹ These practical virtues have compelled the most primitive and ancient buildings, such as the Aboriginals', to open or, in some cases, close their shelters, caves and huts to the warming and illuminating powers of natural light.

However, Henry Plummer notes that humans require more from their architecture than just physical contentment and comfort.²⁰² Our architecture should appear alive rather than dead, initiate an emotional response, capture our affections and empower us to occupy space in our own manner. Additionally, and most importantly for this thesis, architecture should induce a sense of spirituality and sacredness while keeping us in touch with the elements of nature and landscape.²⁰³

"I believe that a sacred space must be related in some way to nature. Of course this has nothing to do with Japanese animism or pantheism. I also believe that my idea of nature is different from that of nature-as-is. For me, the nature that a sacred space must relate to is a man-made nature, or rather an architecturalised nature. I believe that when greenery, water, light or wind is abstracted from nature-as-is according to man's will, it approaches the sacred."^{204 205}

201 Henry Plummer, The Architecture of Natural Light (Monacelli Press, 2009), 6.

202 Evidently, from the beginnings of architecture, man's connection to light has transcended necessity. For the ancient men, like the Aboriginals, one can assume that light was perceived as a measure of time. As the sun's powerful rays of light were projected onto the surface of the land – the direction of light and its intensity, depending on one's position, season and time – provided fundamental form to man's sense of space. "This light, drawn through openings into the interior of his built structures, enabled man, who dwelt inside to understand his own being, relative to his surroundings." Ando, "Light," 471.

203 Plummer, The Architecture of Natural Light, 6.

204 Ando, "From the Chapel on the Water to the Chapel of the Light," 455.

205 In Christianity, the light at a metaphoric level become a symbol of God, a divine light that 'shines in the darkness' and was incarnate in Christ, who proclaimed 'I am the light of the world.' Plummer, The Architecture of Natural Light, 7.

For Tadao Ando, like Plummer, “light is the origins of all being”.²⁰⁶
²⁰⁷ However, Ando’s declaration doesn’t necessarily point towards a metaphysical transcendence of light that fills the cosmos with spiritual life. Nor does it suggest one’s journey of ascent towards a higher spiritual world. Rather Ando speaks of the phenomenal role of light within the context of daily life. In this context, Ando as the architect can articulate the relationship among beings within certain spaces at specific times.

The challenge for architects and the role of architecture is revealed as one realises the powerful, life-dependant and abundant nature of light. Light is everywhere and for the most part is taken for granted. How can architects manage this sea of light, which cannot be grasped, nor worked with the hands? In response, Ando declares that light alone does not form light. For darkness must exist for light to become light. Darkness kindles the brilliance of light, revealing its power. Yet for Ando, through a focus on transparency and the ‘glass’ facade, the richness and depth of darkness has vanished from our architecture and consciousness. The spatial resonances of light and the subtle nuances it provokes within darkness are almost forgotten.²⁰⁸ Following in the footsteps of the Cistercians, Ando’s response to the homogeneous nature of ‘modern light’ is in the perusal of the interrelationship between light and darkness. “Light, whose beauty within is as jewels that one might cup in one’s hands; light that, hollowing out darkness and piercing our bodies, blows life into ‘place.’”²⁰⁹

Cistercian architecture from the 12th and 13th centuries, like Ando’s, frames light and in extension the invisible workings of nature itself. Consequently, one’s everyday unattended perception of light is transformed into a tangible encounter with its corporeal manifestation.²¹⁰

206 ‘Light is the origin of all being. Striking the surface of things, light grants them an outline; gathering shadows behind things, it gives them depth. Things are articulated along borders of light and darkness, and obtain their individual form discovering interrelationships, and become infinitely linked. Light grants autonomy to things and at the same time, prescribes their relationships. We might even say that light elevates the individual to distinction in the context of its relationships. Light: the creator of relationships that constitute the world; yet although the origin of all being, it is by no means an immobile source. Light is, rather, tremulous motion – out of its ceaseless transformation, light continually reinvents the world.” Ando, “Light,” 470.

207 Ibid.

208 Ibid., 471.

209 Ibid.

210 Jin Baek, Nothingness: Tadao Ando’s Christian Sacred Space (Routledge, 2009), 108.

As noted by Ando, the process of rendering the invisible light into a palpable, touchable and visible element manifests not only sacred but also emotionally stimulating spaces.²¹¹ Like Le Corbusier, a great amount of Ando’s inspiration is drawn from his personal experiences of Cistercian abbeys. The Abbey of Senanque in Southern France in particular sparked Ando’s conception of sacred space. The spaces in Senanque, like Le Thoronet (Le Corbusier’s inspiration), were unobtrusive as openings punched through the thick walls, allowing light to penetrate the dark and empty interior spaces. Light and dark would dance together, transforming these cave-like interiors into spiritual spaces charged with ‘a feeling of great power’. In reference to the power of emptiness created through a play, between light and shadow, within masonry spaces void of ornament, Ando wrote:

*“My interpretation of all relations as determined by the interaction of light and dark is based on my own spatial experiences. One very important experience was a visit I once made to a medieval monastery. The building was of rough stone masonry, and the treatment of openings was totally devoid of ornament. But the interior was imbued with a feeling of great power. In the deep silence of the place I was aware of something penetrating, something transcending the severity of religious precepts. And, in spite of differences between East and West, I sensed a connection between that something and the mood pervading a Japanese tea ceremony.”*²¹²

In the following section, two case studies; Ando’s ‘Church of the Light’ and ‘Le Thoronet’ are employed to further realise the role of the vertical boundary (wall and aperture) in manifesting a spiritual architecture and interplay between light and shadow.

211 Ibid., 107–108.

212 Tadao Ando, “Light, Shadow, and Form: The Koshino House,” in Tadao Ando: Complete Works, ed. Francesco Dal Co (Phaidon Press, 1997), 458; Quoted in, Baek, Nothingness, 108.

^ Figure 135: Photograph illustrating the interaction of light and shadow of Senanque Abbey that interested Tadao Ando so much.

Church of Light

The sense of emptiness outlined by Ando in the quote above is precisely the quality of space that the Cistercian monks and Ando sought to embody within their architecture.

In his 1989 ‘Church of the Light’, Ando uses the cross (aperture) to carve light through the dark emptiness, manifesting his conception of sacred space emerging from the dialectical conversation between light and darkness. Noted by Paul Tillich;

*“When one uses the words beauty of holiness, one can call this kind of expressing the hold: ‘beauty of emptiness’. This emptiness is not an emptiness by privation, but it is an emptiness by inspiration. It’s not an emptiness where we feel empty, but it is an emptiness where we feel that empty space is filled with the presence of that which cannot be expressed in any finite form.”*²¹³

Ando began his church with a box, like a Cistercian monastery, enclosed by thick walls of concrete, an introverted space of darkness. Then a slot is cut within one wall, allowing the first penetration of light to sharply fracture the darkness. Once within the space, the walls, floor and ceiling each intercept the light, revealing their existence. As they reflect the light back and forth, space is born.

While the building may be physically static, it posses an ability to receive and map the movements of light throughout the course of the day. The once deadened, dark and empty volumes begin to come alive, displaying signs of life, as shafts of light flow into rooms and glide over walls. The climatic conditions of the world outside are displayed in an abstract manner as shadows fade or deepen, soften or sharpen as they are cast onto walls and floors. Space brightens and dims, falls asleep or wakens in relation to the sun and cloud positions in the sky. “More than anything else, it is these quiet perturbations that allow architecture to rise above its physical limitations and mirror the rhythms of our innermost life.”²¹⁴ Here, space never matures, instead it is constantly reborn.

213 Paul Tillich, “Honesty and Consecration in Art and Architecture,” in On Art and Architecture, ed. John Dillenberger (Crossroad, 1987), 227.

214 Plummer, The Architecture of Natural Light, 18.

^ Figure 136: Plan of Tadao Ando's Church of the Light. Ando's drawing illustrates the use of light and shadow and varying lighting conditions within a small space.

Figure 137: Interior photograph of Ando's Church of the Light looking towards the cross sliced out of the wall.

Le Thoronet

At Le Thoronet, certain rooms possess unique atmospheres. The church, like Ando's, seems dominated by the darkness except for a concentration of luminosity towards the altar. In the morning scattered flights of sun dapple the altar and splash softly onto the blackened vault overhead. The monks' dormitory adjoining the church is also a space of shadow lit through narrow embrasures. Here light seeps quietly into the space like an exceptionally diluted vapour, floating over the rough textured floor and vault. In stark contrast to John Pawson's Novy Dvur, yet of great inspiration to Pawson, the cloister galleries of Le Thoronet possess a more compartmentalised luminosity. The thick arcades transform the abundant daylight into a series of spatial cells in the wall, and after diffusing its intensity and direction, recast soft rays into the gallery vaults and well-trodden floor.²¹⁵

In both Ando's 'Church of the Light' and Le Thoronet, light is abstracted through solid masses, physical walls and emptiness - the 'space between.' However, the reductive process of the Cistercian and Ando's architecture is neither that for the sake of presenting the wall in a minimised state, nor the spatial emptiness itself.²¹⁶ Rather Ando and the Cistercians combine the wall and emptiness to accommodate and abstract natural elements. While, as discussed in the following section, Aboriginal architecture and the Heide II use the space between to form a direct engagement with landscape and nature. The architecture of Ando and the Cistercians' however reflects the natural elements, as the emptiness / space between comes alive and forms an abstract engagement.

²¹⁵ Henry Plummer, Poetics of Light (A + U Pub. Co., 1987), 33.

²¹⁶ Ando's reductionist attitude should not be interpreted as forming an aesthetic image of style partnered with minimalism where no mark or trace of life can manifest itself onto the white wall. Instead, Ando's adoption of a minimalistic strategy sets aside the practical matters of life in an endless process of reduction until a void is created to absorb the subject itself as the source of meaning. Baek, Nothingness, 160.

^ Figure 138: Interaction between light and shadow within church of Le Thoronet.

^ Figure 139: Interaction between light and shadow throughout Le Thoronet.

While the apertures in the wall inject light into the ‘Church of the Light’ and Le Thoronet, the solid wall operates as a receptor of light and sound while reflecting the invisible workings of nature and landscape in the most palpable and tactile fashion.^{217 218}

Ando’s walls, unlike that of Le Thoronet and Senanque, are rendered smooth through a two-fold procedure of reduction: reduction of sign quality and material sensuousness. Ando’s smooth walls reflect light back into the spatial emptiness. The light requires a smooth surface in order to be effectively refracted and reflected as to replenish its corporeal manifestation in the heart of darkness. Through this encounter and relationship between wall and light, the light becomes dispersed into void, and the taut surface of the wall transcends its factual stature as a grey concrete mass.²¹⁹

*“My intent is not to express the nature of the material itself but to employ it to establish the single intent of the space. When light is drawn into it, cool, tranquil space surrounded by a clearly finished architectural element is liberated to become a soft, transparent area transcending materials.”*²²⁰

217 Ibid., 111–112.

218 In his 1978 text ‘Geometry at the Service of Prayer’ Robert Lawlor further investigates the reflection of sound within the empty dark space that is Le Thoronet. Lawlor outlines that the dimensions of Le Thoronet are derived from specific proportions that directly relate to fundamental musical ratios, such as the octave (1:2), the fifth (2:3) and the major third (4:5). Consequently, the abbey’s interior spaces, especially the nave, manifests a unique acoustic experience. According to Lawlor, within the nave of the church each and every sound is received and captured by the thick walls of the architecture, thus generating a full range of harmonic overtones in an auditory experience reminiscent of a heavenly choir. One can even hear a pin drop from one end of the nave to the other, some 40 metres away. However, more appropriate to the discussion of this chapter is Lawlor’s point that one’s visual perception extracts images from the external world while the mind filters these impressions through association, habit, memory and reason. Sound on the other hand, the audible light within the darkness, produces an instantaneous awareness of tone without the minds involvement. Consequently Lawlor declares that this auditory experience may affect and engage with regions of higher emotion. Subsequently Lawlor argues that the emptiness and minimalistic presence of Le Thoronet, like Ando’s Church, may have been an architectural device to awaken the ear, thus overcoming the domination of the externally oriented eye. Lawlor, “Geometry at the Service of Prayer: Cistercian Mystic Architecture,” 12; Cited in, Seamon, “Phenomenology and Vernacular Lifeworlds,” 204–205.

219 Baek, Nothingness, 109.

220 Ando, “Light, Shadow, and Form,” 458.

^ Figure 140: Light falling onto a concrete wall in Ando’s Koshino House to extract the texture of the surface while reflecting light to create a spatial emptiness.

Conversely the walls of Le Thoronet can also be argued to possess a transcendental nature. Instead of reflecting light the rough stonewalls of Le Thoronet grip light, absorbing its particles into minute pockets and fretwork mortar joints. Within the abbey, the walls appear to recede back into the shadows and become invisible barriers as one is engulfed in darkness. However, like an Aboriginal camp, both Ando's church and Le Thoronet, abstract the walls to the point of non-existence, placing much more emphasis on the space between. Consequently, the body of the beholder, despite being contained by these physical elements, is only aware of the surrounding space.²²¹

Tadao Ando's 'Church of the Light' and the Cistercian Abbey of Le Thoronet act as case studies for the following architectural operations:

1. *Refuge from landscape through thick mass.*
2. *Respond to the homogeneous and abundant nature of 'modern architecture' and landscape, through the perusal of the interrelationship of light and darkness.*
3. *Manifest a sacred architecture through narrow embrasures within thick masses that carve light through the dark emptiness of internal space.*
4. *Engage with time, and cycles of the day, within an introverted and enclosed space through light penetrations that shift as time passes.*
5. *Engage with the natural elements of landscape, in an in-direct and abstract manner, through the interaction of light and shadow within space and upon solid elements (wall, floor, roof).*
6. *Reflect light through a smooth treatment of wall surface (Church of the Light).*
7. *Absorb light through rough wall treatments (Le Thoronet).*
8. *Emphasis the space between by abstracting wall surfaces through reflections on surface (Church of the Light).*
9. *Emphasis the space between by receding walls into the depths of shadow (Le Thoronet).*

²²¹ Ibid.

< Figure 141: Abstractions of the light and shadow within Le Thoronet. These layered photographs encapsulate the sensory experience of Le Thoronet where shadow is as important as light.

^ Figure 142: Sketch exploring the use of light and shadow and its interaction with a rough wall surface and flowing water.

> Figure 143: Render created from previous sketch to explore the interaction between light, shadow, water and texture within a three-dimensional and experiential realm.

8.6
THE VERTICAL BOUNDARY: LIMINAL SPACE

As an Aboriginal camp is typically organised into various clusters and individual dwellings, the space between the physical architecture and masses can be referred to as liminal space. Through his account of James Russell's 'Sanctuary Place House', Kevin O'Brien discusses the way in which the house recalibrates liminal space as the central setting for life, marrying life's rituals with landscape.²²² Instead of the rooms or individual dwellings (physical architecture) becoming the focus the space between becomes the heart within both Sanctuary Place and an Aboriginal camp. In Sanctuary Place, much like the Reed House (Heide II), the ambiguous space meanders around the rigid masonry elements, forming a setting for the unexpected and ephemeral. For O'Brien this is where the richness of architecture lies.²²³

222 O'Brien, "Sanctuary Place: Sep Yama / Finding Country 5 Ways."

223 Ibid.

^ Figure 144: Sketch highlighting the liminal space within James Russell's Sanctuary Place House.

Within a monastic setting, the cloister can be interpreted as liminal space as it serves as the space between the four wings of the monastery. However, while the Heide II and typical Aboriginal camp adopt a strategy of formal dilution to an extent, the traditional monastery exists as a single and solid mass. However, despite spending much time within the large mass that is the main monastery, the monks, like the Aboriginals, are exposed to the raw elements of their environment on a daily basis. For an Aboriginal person, such an engagement with the landscape occurs by simply walking through the landscape or the space between dwellings. A monk on the other hand finds himself within a setting of the unexpected and ephemeral while rambling between buildings outside the cloister, such as the barns, farm buildings, workshops et cetera.

As a result, an opportunity exists to inject more liminal space into the main monastery while retaining the cloister. With more liminal space, the monastery, like an Aboriginal camp, will reflect the notion of formal dilution, as enclosed rooms become pavilions spread across the land.²²⁴ Through this formal dilution the monastery's physical impact on the environment will be reduced. Additionally, the monks will form a more intimate relationship with their natural environment as their daily rituals take them between places of refuge in the pavilions and areas of direct engagement in the landscape.

224 The overarching composition of Aboriginal camps, whereby separate shelters are scattered across the land and organized according to various behavioral and kinship codes. These include diurnal and nocturnal activities, gender and more, each reflecting the notion of formal dilution. In more contemporary architecture such a strategy is used to mitigate the aesthetic impact of what could be a large and intrusive structure on the landscape. One could argue that, through disintegration, the architecture fails to enhance the landscape as it is now occupied by small objects and thus depleted of its scale and emptiness. However, one must also realise that through the 'disintegration', the separate architectural volumes are now surrounded by space. It is this liminal space, the 'space between', that holds much value in Aboriginal culture.

^ Figure 145: Site plan of John Pawson's Abbey of Novy Dvur illustrating that despite the main monastery being contained within one large building, the monks still engage with the landscape in a direct fashion as they walk between the out-buildings. The cluster-like arrangement is not dissimilar to the Aboriginal camp (below).

^ Figure 146: Hypothetical diagram of a large Aboriginal camp illustrating (a) camp unit (b) four sub-camps (c) further sub-camp clusters. The 'C' shapes are individual shelters.

Endémico Resguardo Silvestre Hotel by Gracia Studio

Gracia Studio's Endémico Resguardo Silvestre Hotel comprises of 20 separate cabins dotted across the Mexican landscape in the Valle de Guadalupe. The hotel acts as a case study for the following architectural operations:

1. *Engagement with landscape through the use of liminal space and employment of the formal dilution strategy.*

^ Figure 147: Hypothetical diagram of an Aboriginal camp illustrating the use of formal dilution through separate shelters.

^ Figure 148: Gracia Studio's Encuentro Guadalupe Ensenada, México, 2011. Plan illustrating formal dilution where rooms are separated into individual pavilions.

The visual impact on the earth of a large and intrusive architecture has been mitigated through formal dilution. Like a traditional Aboriginal camp, each cabin comprises of a separate structure. The untouched landscape acting as a spatial barrier between them. To navigate between the structures, one is fully immersed in the landscape and its sensory qualities. Stepping outside from the cabin, one actively touches and engages with the ground and sky.

2. *Refuge from the landscape through raised structures that 'touch the earth lightly'.*

Elevated off the ground by steel frames, the single story huts and their inhabitants are physically separated from the earth. This separation not only allows the architecture to navigate the steep topography but also impacts the earth as little as possible.

^ Figure 149 + 150: Photographs of Guadalupe Ensenada, illustrating the use of liminal space and raising of the structures above the ground.

Abbey of Our Lady of Novy Dvur by John Pawson

John Pawson's monastery of Novy Dvur is situated on 100 hectares of farmland in a remote part of Bohemia, Czech Republic. It acts as a case study for the following architectural operations:

1. Refuge from landscape through introverted space.

Through its quadrangular shaped plan, John Pawson's Novy Dvur reflects the introverted nature of its monastic traditions as the four wings frame and enclose the cloister.

^ Figure 151: Exterior photograph of Novy Dvur showing the solid and impenetrable nature of the exterior walls.

^ Figure 152: Abbey of Our Lady of Novy Dvur in the Czech Republic. Plan illustrates the introverted nature of a traditional monastery. The monastery exists as an object in the landscape, disengaged from the context like an 'alien' being.

^ Figure 153: Exterior photograph of Nový Dvůr showing the solid and impenetrable nature of the exterior walls.

2. Refuge from landscape through thick mass.

Pawson's treatment of the perimeter edge not only heightens the sense of introversion, but enhances one's feeling of refuge, security and isolation. Pawson's perimeter edge consists of thick concrete walls with thin, regularly spaced openings. The wall treatment around many of the openings reinforces the internal view of the world as the walls are angled in such a way to bring more light into the space while retaining the small nature of the actual opening.

^ Figure 154: Drawing of the Refectory in Nový Dvůr, illustrating the thickness of the walls and treatment of the walls around the windows. The angle of the walls brings more light into the interior spaces while creating a smaller opening to the exterior.

^ Figure 155: Early concept sketch of the 'Huts in the Forest' (dwellings) testing the notion of taking refuge within a mass. The mass is a rammed earth wall in which the occupant sleeps. The rammed earth acts as an extension of the ground while providing natural warmth during the cold nights.

^ Figure 156: Sketch testing the notion of taking refuge within a mass. Instead of taking rest within the mass, like the previous image, this drawing suggests using the wall itself in the circulation of the monastery. Within the wall the inhabitant is concealed and separated from the landscape. Provides a point of contrast with the liminal space.

3. *Refuge from landscape through an enclosed cloister / courtyard.*

Despite being a space disconnected from the landscape on all four sides, the cloister traditionally provides an opportunity for one to engage with the wind, sounds and smells of the landscape and, most importantly, inhabit the space between earth and sky. However, the cloister of Pawson’s Novy Dvur is enclosed by glass, making one’s interaction with the earth and sky purely visual and retaining an element of refuge.

^ Figure 157: Photography of Novy Dvur illustrating the enclosed nature of the cloister and how the glass restricts one’s experience of the landscape and the intimate connection to the earth and sky.

The Reed House (Hiede II)

The 1967 Reed House, or the Hiede II as it has become known, is located 13 kilometres north-east of Melbourne’s central business district in the suburb of Bulleen. It is an architecture of walls in the landscape designed by David McGlashan (1927-1997) and Niel Everist (1929-). Like many of their projects, the designed landscape of the Hiede II represents a key moment in post-war architecture’s dialogue with the Australian landscape. Consequently, the Hiede II acts as a case study for the following architectural operations:

1. *Mediating refuge from the landscape and engagement with the landscape through fragmented walls (space between walls, between mass).*

Through rigid, static and solid limestone block walls, McGlashan and Everist’s Hiede II, unlike Pawson’s Novy Dvur, forms an architectural environment of interrelated interior and exterior spaces that embody the notion of living in and engaging with the landscape.²²⁵ The fragmented nature of the walls creates labyrinth-like spaces whereby exterior rooms open and/or gaze out into exterior courtyards. Instead of forming spaces of refuge, like Novy Dvur, through the inhabitation of the mass the experience of refuge in Heide II is one between walls and masses. Like an Aboriginal camp, this network of walls / masses also creates a layering of intersecting visual connections into and out of the interior.

“Engagement with the landscape is intrinsic to the experience and the conception of these houses, for they are not just elegant backdrops to everyday life but constitute frames and enclosures for viewing and living in landscape”²²⁶

225 Philip Goad, “Living in Landscape,” in Living in the Landscape: Heide and House by McGlashan and Everist (Bulleen, Victoria: Heide Museum of Modern Art, 2006), 15.

226 Ibid., 20.

> Figure 158: Exterior photograph of Heide II illustrating the notion that it exists as a ruin in the landscape.

^ Figure 159: Floor Plan of the Heide II illustrating the fragmented and labyrinth-like nature of the walls. The plan also suggests the way in which the interior and exterior spaces merge into one entity, forming interesting spaces of both refuge and engagement.

^ Figure 160 + 161: Sketches exploring the notion of taking refuge between masses instead of within them. Like Heide II, these sketches portray an experience where one inhabits liminal space between thick solid walls. It is an experience, that like the cloister, is directly engaged with both the sky and the earth.

^ Figure 162: Early concept sketch of the 'Huts in the Forest' (dwellings) masterplan. The drawing investigates the notion of using the shelters as solid masses, thus creating a network of liminal spaces that one not only occupies but also looks out upon from each shelter.

^ Figures 163 + 164: Early conceptual sketches (plan and section) of the Church. The drawings, like the previous sketches, explore the notion of taking refuge between masses.

^ Figure 165: Conceptual sketch of the church interior exploring a space between mass-

^ Figure 166: Conceptual image of the church interior exploring a space between mass-

2. Mediating refuge from the landscape and engagement with the landscape through fragmented and intersecting courtyards.

Rather than a single courtyard (cloister), the Heide II illustrates an architecture whereby the fragmented nature of the walls creates a series of smaller, interlocking courtyards. These multiple courtyards, more aligned to the space between Aboriginal shelters than Pawson's Novy Dvur cloister, enable one to become fully immersed in the space between earth and sky within a more intimate space of self reflection.

^ Figure 167: Sketch of a courtyard within Heide II illustrating how the architecture of fragmented walls and courtyards creates an experience that is constantly transitioning from one of refuge to one of engagement with the landscape.

^ Figure 168: Photograph of the entrance walking into the Heide II.

^ Figure 169: Drawing of the plan of Heide II illustrating the layered and intersecting nature of the fragmented walls, courtyards and view shafts. When compared to the same drawing of Novy Dvur, the interconnectedness of Heide II becomes apparent as does the architecture's direct engagement with the landscape; aligning it towards an Aboriginal camp rather than Cistercian monastery.

^ Figure 170 + 171: Photographs of Heide II illustrating the spaces of refuge and engagement created by the fragmented walls.

^ Figure 172: Sketch of early concept design on site one where liminal space has been injected into the monastic program. Refer to opposite page for more information.

^ Figure 173: Plan of early concept design on site one where liminal space has been injected into the monastic program. The liminal space has separated the four wings of the cloister into three main ones with dormitory spaces being transformed into individual shelters.

Figure 174: Series of diagrams testing various compositions on site one.

Despite traditional Aboriginal culture not having an exact equivalent to the European ‘house’, traditional Aboriginal shelters do embody a couple of common functions. They both provide shelter, control the external environment and they both aid in the structuring of people-based relationships within society.²²⁷ However, as social relationships in traditional Aboriginal society are far more complex than European, and even Cistercian, problems continue to plague semiotic and material arrangements of space. For instance, the age, gender and kinship-based relationships between individuals can be interpreted as being composed of positive and negative elements, contained by various systems of boundary. At any one time and at different boundaries the balance between positive and negative could be different, but at no boundary was the relationship clearly one or the other.²²⁸ To provide a clearer and material understanding of this matter, Bob Hodge introduces the example of flexible boundaries in the form of a building with physical walls. Within this scenario, each boundary should exist as a wall of protection, as well as a permeable membrane to allow for varying degrees of engagement with the group. Consequently, it becomes clear how difficult it would be to not only design such a system, but state the exact degree of opacity and permeability for each wall.²²⁹ ²³⁰ With the interaction of all these principles and classifications proving impossible to communicate in a single diagram, it means that they cannot be adequately organised through a single design. The walls of that design would need to remain fixed while allowing for the manipulation of their position and permeability.²³¹ How then did Aboriginal people organise their spaces within traditional settlements?

²²⁷ Hodge, “White Australia and the Aboriginal Invention of Space,” 64.

²²⁸ Ibid.

²²⁹ Ibid.

²³⁰ The situation is made even more complex with traditional Aboriginal life as Aborigines are grouped in terms of age, sex, moieties, ‘skins’, divisions and categories of people for various purposes. Each of these groupings determines the kinds of relationships that are either prescribed or forbidden, involving mutuality, or avoidance. However, it should be noted that due to the program (Cistercian monastery) being designed for the complex relationships that exist between Aboriginal people, it is outside the scope of this thesis.

²³¹ Hodge, “White Australia and the Aboriginal Invention of Space,” 64–65.

< *Figure 175: View from within the cloister from an early concept on site one. The image illustrates a cloister that, despite its rectangular plan, is much more interconnected. It also illustrates the notion of inhabiting a space between masses.*

James O’Connell made a series of important and widely applicable points about camp structure and arrangement through his observations and studies of settlement camps at Bendaijerum in 1974. Firstly, O’Connell noted a division of three types of households; family, male and female. Secondly, he noted that camps were loosely organised into a number of clusters. And thirdly, most relevant to this discussion, O’Connell noted there was a great fluidity of camp organisation. Evidently, as noted in the previous section, within Aboriginal culture, distance and space becomes a critical building material and tool. In response to varying relationships and degrees of interaction, the separate dwellings could be shifted by a range of distances.²³² For instance, a young couple recently married would initially camp close to the parent of either the male or female, at a distance between five and ten metres. As the couple became more independent, they would shift their dwelling further and further from the parents’ creating a spatial wall between them.

Compared to fixed and rigid physical walls, which through their nature communicate a message of absolute and unchanging relationships, spatial walls are more flexible and ambiguous. As the distance (space between dwellings) increases, they are less visually and audibly connected. Therefore, distance acts like a glass wall of varying degrees of opacity. With space as the boundary the shelters furthest apart on the site signify a lack of closeness despite being visually connected. This visual connection between shelters reminds the occupants that they are still part of one community.

In European architecture, including the Cistercian monastery, walls are semi-permeable through doors and windows, but with the number of apertures fixed, the only flexibility is whether they are open or closed. With spatial walls however, the walls and the aperture are indistinguishable. As two subjects come closer together, the spatial wall between them grows transparent and opens. As the sun sets and darkness enters, visibility is reduced and the spatial walls rise up.²³³ Eyes can navigate the space that physical bodies are prohibited to traverse. Refer to appendix 3.0 for a case study that materialises the spatial wall through rolling and kinetic structures.

232 Ibid., 65.
 233 The spatial wall is both material, as it exists in definite relationships in the material world, and immaterial, the space between solid bodies.

^ Figure 176: Diagram illustrating the use of the spatial wall within an Aboriginal camp. The top section of the diagram displays the change in independence and increase in spatial wall as the couple move away from the parents. The bottom section of the diagram shows various sizes of spatial walls between A, B and C.

^ Figure 177: These three images illustrate an investigation whereby a spatial wall was manifested within architecture through a changing body of water. As the water drains, the pass between two structures is revealed and access between the two is created. The spatial walls is reduced. As the water increases, the access between the two structures is reduced and the spatial wall rises up. Through each scenario, the boundary allows for visual and audible connection. However, within these images, unlike the Aboriginal camp, no structure is physically shifting location.

Spatial walls are incredibly difficult to effectively reconstruct through architecture. Instead, the notion of flexibility through an operable boundary will be discussed as a more conventional and physical vertical boundary,

The operable boundary provides an interesting avenue of design exploration. Not only does the operable boundary provide a formal strategy for mediating the tension between refuge and engagement, but it also responds to the varying degrees of control an Aboriginal person has over their environment. As demonstrated by traditional Cistercian monasteries, like a typical European house, the inhabitant has little control over the shaping of their environment. Transformations to one's space are often limited to the pulling of curtains or opening of windows and doors. For the proposed monastery being able to control the degrees of refuge and engagement of one's architectural environment is pivotal due to the site's spiritual qualities and immanent risk of fire-storms. It is intended that the operable boundary becomes a formal strategy in mediating the tension between an Aboriginal conception of the boundary, as a driver of engagement and the Cistercian (European) conception of it as a vehicle of refuge. Refer to appendix 4.0 for a discussion on the use of the camera obscura as an operable boundary and mediation device between a refuge from and engagement with the landscape.

Delta Shelter by Tom Kundig

Delta Shelter was designed by Olson Kundig Architects in Mazama, Washington, USA. It is essentially a steel clad box with external shutters planted on stilts to raise the habitable spaces above the floodplain. Delta Shelter acts as a case study for two possible architectural operations:

1. Refuge from landscape by raising the dwelling and 'touching the earth lightly'.

Like much of Glenn Murcutt's work (as discussed previously), Kundig's decision to raise the dwelling on stilts above the floodplain forms an architecture of refuge, yet one intimately linked to the site. Like a treehouse, the inhabitant ascends a staircase to a place of escape, perched among the tree branches.

2. Mediating refuge and engagement through operable boundaries.

Delta Shelter exhibits 3.0 x 5.5m external steel shutters which can be completely opened or closed. The flexible nature of these boundaries enables the occupant to control the varying degrees between a refuge from or engagement with the natural processes and conditions of the landscape. The panels are controlled through a wheel and gear mechanism operated from within the dwelling. In relation to the proposed monastery the use of steel shutters to close the building down is an important part of fire protection.

^ Figure 178 + 179: Photographs of Tom Kundig's Delta Shelter showing the steel panels that slide across the windows and the elevated nature of the structure.

^ Figure 180: Early concept sketch of the 'Huts in the Forest' (dwellings). The drawing investigates the notion of mediating between refuge from and engagement with the landscape. Taking refuge occurs within a mass (inhabiting the rammed earth wall) while engaging with the landscape occurs through operable boundaries.

Engage with the natural elements of landscape, including earth and sky through;

#1. Harmonising through contrast.

#2. Forming an intimate relationship with the earth through 'cutting', 'slicing', and 'burying'.

#3. Using the earth in construction.

#4. An open cloister.

#5. An abstract and in-direct engagement with nature. The architecture should respond to the homogeneous and abundant nature of light in 'modern architecture' and landscape. This response should focus on the interrelationship of light and darkness. In particular, the architecture should manifest a sacred space through narrow embrasures within thick masses. Light should carve through the dark emptiness, indicating time and presence of the sacred.

#6. Establishing an abstract and in-direct engagement with the natural elements of landscape, earth and sky, through a horizontal plane of water. Using the horizontal plane of water as an architectural and compositional device, to either contrast or echo the landscape while stimulating reverie and contemplation.

Take refuge the natural elements of landscape, including earth and sky through;

#7. Inhabiting a thick mass.

#8. Raising the dwelling and 'touching the earth lightly'.

Mediate between refuge from the landscape and engagement with landscape through;

#9. Fragmented and intersecting walls (space between walls) and courtyards.

#10. Operable boundaries that enable introverted and extroverted spaces.

#11. The abstraction of wall surfaces to emphasise the space between. This can be achieved through the reflection (or absorption) of light upon smooth (or rough) wall treatments and/or by receding walls into the depths of shadow.

ARCHITECTURAL OPERATIONS

RECAPPING ARCHITECTURAL OPERATIONS DERIVED FROM PART II: THE HEALING

F#1: = Architectural operations from design imperative one: The Elemental
B#1 = Architectural operations from design imperative two: The Boundary

C = Architectural operation derived from Cistercian perspectives
A = Architectural operation derived from Aboriginal perspectives
C + A = Mediation of Cistercian and Aboriginal Perspectives

Manifest a relationship between man and fire through;

F#1. The constantly burning flame.

F#2. Small, private fires that can be relocated (or fixed), extinguished and lit at the will of any individual.

F#3. A large communal fire that remains in one place, forming a symbolic centre to the monastery.

F#4. Fires that enable one to sit as close to the flame as they wish.

F#5. Fires that enable access from all sides, allowing a group to gather in a circle with the flame at its centre.

F#6. Fires that are constructed directly on the earth, and/or on the floor slab, out of material gathered on site.

Form a physical manifestation and celebration of Semper's four elements through;

F#7. Individual – tent and shelter-like sleeping spaces that provide privacy and a space of self-reflection and contemplation. Such spaces contrast the spatial conditions and experiences of the dormitories found in traditional monasteries.

F#8. The solid back wall – a space of refuge from landscape within the individual 'tents'.

F#9. The open front, operable boundary and space to engage with landscape within the individual 'tents'.

F#10. The physical separation of the elements. E.g. the roof from the walls and the roof from the floor.

F#11. The use of a large wing-like roof that, like an Aboriginal shelter or Murcutt's architecture, exists as a simple angled plane visually separated from the heavy walls.

Establish the setting and scenario for fire-stick farming through:

F#12. Architecture that inhabits a site within or near stands of 'at-risk' mountain ash.

F#13. Architecture that can be easily be accessed by members of the community, Melbourne Water, Parks Victoria et cetera.

F#14. Architecture that can host a number of guests.

F#15. Architecture that stimulates a sense of community, collaboration and interaction between the guests and monks.

F#16. Architecture that enables one to form a relationship with the mountain ash, getting to know its character, environment and responses to climate.

Note: Architectural operations F#12-16 are general operations to be implemented across the design. Consequently, these particular operations are not specifically referenced within part three.

Engage with the natural elements of landscape, including earth and sky through;

B#1. Harmonising through contrast.

B#2. Forming an intimate relationship with the earth through 'cutting', 'slicing', and 'burying'.

B#3. Using the earth in construction.

B#4. An open cloister.

B#5. An abstract and in-direct engagement with nature. The architecture should respond to the homogeneous and abundant nature of light in 'modern architecture' and landscape. This response should focus on the interrelationship of light and darkness. In particular, the architecture should manifest a sacred space through narrow embrasures within thick masses. Light should carve through the dark emptiness, indicating time and presence of the sacred.

B#6. Establish an abstract and in-direct engagement with the natural elements of landscape, earth and sky, through a horizontal plane of water. Use the horizontal plane of water as an architectural and compositional device, to either contrast or echo the landscape while stimulating reverie and contemplation.

Take refuge the natural elements of landscape, including earth and sky through;

B#7. Inhabiting a thick mass.

B#8. Raising the dwelling and 'touching the earth lightly.'

Mediate between refuge from the landscape and engagement with landscape through;

B#9. Fragmented and intersecting walls (space between walls) and courtyards.

B#10. Operable boundaries that enable introverted and extroverted spaces.

B#11. The abstraction of wall surfaces to emphasise the space between. This can be achieved through the reflection (or absorption) of light upon smooth (or rough) wall treatments and / or by receding walls into the depths of shadow.

^ Figure 181: Aerial photograph of Black Saturday's Destruction in Victoria.
The vertical line can be interpreted as a scar, a lingering mark on the landscape.

Part Three

THE SCAR

A LINGERING MARK SIGNIFYING THE TRAUMA AND PROCESS OF HEALING

Chapter Nine

A STORY OF THE SPINE

MASTER PLANNING

9.0 THE SPINE DISCUSSION AND PROCESS

In the beginning stages of the thesis, in order to initiate the design process, the notion of the scar was investigated in terms of a physical mark or cut upon the landscape. Instead of interpreting the scar as a sign of healing, these early experiments spoke of the scar as a trauma, a physical slicing of the land. However, as research progressed the meaning of the scar changed into a symbol of healing. Nevertheless, the scar's quality as a physical slice on the landscape continued to be explored.

When placed upon the site, the slice became a strong formal architectural move to connect the mountain ash to the existing fireplace ruins. Embedded into the earth the spine acts as a linear procession, enabling the occupants of the monastery to wander between the spaces within the mountain ash and those amongst the ruins. From this single path the occupants will form a direct engagement with the various landscapes on site and all of their nuances.

Before meeting the existing Wallaby aqueduct, the spine is flanked by a thick granite spinal wall and water channel. The use of granite contributes to the monastery's connection to the existing granite structures on site (Wallaby Channel), forming a well integrated and sensitive design intervention. Furthermore, the water channel acts as a compositional as well as an important experiential element manifesting an architecture of contemplation and reverie. When passing through the mountain ash, the water reflects and abstracts the trees towering above while subtly responding to passing winds, rain and lighting conditions. However, once amongst the ruins, the water shifts its reflections to the sky and passing clouds. Holistically, the slice, spinal wall and water channel form elements of transition. Together these elements transition between the mountain ash and ruins, the vertical and horizontal, and the intimate and expansive. The spine itself is a strong horizontal element, directing the rest of the architecture into similar forms. The horizontality contrasts with the vertical nature of the mountain ash forest while providing a nod to the vastness and infinite vanishing point of the greater Australian landscape.

< Figure 182: Initial sketch of traditional monastic plan.

< Figure 183: Initial sketch where the scar contrasts with the topography lines of the landscape.

< Figure 184: Photograph of maquette where the scar is filled with ash. Maquette explores the notion of the scar as a formal device and symbol of healing.

Λ Figure 185: Initial maquette exploring the scar as a strong formal move on the landscape.

Λ Figure 186: Maquette exploring water within the scar as a composition device.

^ Figure 187: Drawings exploring the spine (scar) as a single line and then the implications of adding another line and examining the space between. A channel is formed, a channel that encourages movement and a linear procession.

^ Figure 188: Drawings exploring the repetition of line as a surface and initial conception of architecture flanking the spine.

> Figure 189 + 190: Drawings exploring the monastery as a linear arrangement of space along the spine (scar).

Architectural Operations the Spine Embodies

Forming a physical manifestation, and celebration, of Semper's four elements through;

F#11. The use of a large wing-like roof that like an Aboriginal shelter, or Murcutt's architecture

Engage with the natural elements of landscape, including earth and sky through;

B#1. Harmonizing through contrast.

B#2. Forming an intimate relationship with the earth through 'cutting', 'slicing', and 'burying'.

B#6. Establishing an abstract and in-direct engagement with the natural elements of landscape, earth and sky, through a horizontal plane of water. Using the horizontal plane of water as an architectural and compositional device, to either contrast or echo the landscape while stimulating reverie and contemplation.

< Figure 191: Diagram illustrating the use of the spine as a compositional device to connect the ruins to the mountain ash with the existing Wallaby Channel acting as a critical threshold.

< Figure 192: Diagram of the spine illustrating the physical manifestation of the selected architectural operations.

- 1 Cast in-situ Concrete Foundation
- 2 Steel Walkway Platform
- 3 Reflection Pool
- 4 Granite Spinal Wall
- 5 Steel Roof Structure (Wing)
- 6 Water Drain

THE SPINE

Figure 193:
A Place for Walking
Cross Section
1 20 @ A1

< Figure 194: Render from within the spine (with no roof) testing the relationship between the wall, water, path and trees.

^ Figure 195: Render from within the spine (with roof), testing one's experiences of the trees where the view of their trunks is limited.

With the spine established as the first strong planning move and central element of composition, the process of reinterpreting the traditional layout of the monastic plan commenced. A series of initial concept plans were derived from site-specific factors such as; vegetation, experiential intentions, ruin placement, climate and topography. Consequently, the experiential intentions became the driving factor in the initial planning stages. For instance, from experiencing the site first-hand, it was decided that the church and dwelling spaces must inhabit the mountain ash forest while the communal and more pragmatic monastic spaces were better suited to intertwine the fireplace ruins. With a series of early conceptual plans complete, the decision was made to shift the design process so that the plan would be derived directly from a reinterpretation of a traditional monastic layout.

Using the traditional template for a monastery's layout (four wings around a cloister), as well as the monastic 'rules' for planning, an initial plan was drawn centred around the existing ruins. For this process the spine was ignored, as were the site-specific factors noted above. Subsequently, the areas of the plan colliding with existing vegetation were removed, leaving a series of walls scattered across the landscape. These walls were interpreted as a 'new' layer of ruins applied onto the site. Like the existing ruins on-site, these 'new' ruins provided a structure to work with. As a result, the plan developed as the site-specific factors (noted above) dictated a series of major planning shifts. For instance, the church was shifted from the northern wing, and the domestic spaces from the eastern wing, south into the mountain ash forest. Through these main shifts, the reinterpretation of the traditional plan began. A more organic design process followed as the critical monastic spaces were shifted slightly and arranged in and around the existing ruins and newly added walls. It was important to retain a cloister and the basic layout of spaces according to their traditional north, south, east and west placements. However, working with the layers of walls, ruins and vegetation, drove the physical separation of spaces and therefore an injection of liminal space into what was originally a single monolithic complex. The added liminal space was then transformed into intersecting courtyards, view shafts and access points into the greater landscape. In a similar manner to the Heide II, the master plan was conceived as a series of ruins and walls within the landscape. To navigate through the monastery is to negotiate interior and exterior space between walls. Therefore, while undertaking daily rituals amongst the liminal space, one will engage directly with all the elements of the landscape where one's view of the sky and ground is neither restricted or concealed.

^ Figure 196: Early sketch of the separation of the refectory and scriptorium with courtyards / liminal space between.

Λ Figure 197 + 198: Drawings exploring the master plan.
>

^ Figure 199: Drawings exploring the master plan.

^ Figure 200: Drawings exploring the master plan while exploring the spine at an angle to contrast initial structures on-site.

SHIFTING SITE

Monasteries would often shift site two or three times before the right one was found.

RESPONSE

Initial master plan completed on Site One.

THE VALLEY

Monasteries would often be sited within a valley to initiate an inward and upward glance of the spirit and world.

RESPONSE

Despite not being sited in a valley the portion of the monastery in the mountain ash embodies an inward and upward view of the world and spirit.

WATER SOURCE

Monasteries would often be sited near a water source e.g. a river. Canals were also constructed.

RESPONSE

Monastery sited near a canal network with new canals and pools forming a major part of the master plan.

THE CHURCH

The church should be sited on the highest ground with altar facing east.

RESPONSE

Church located to the south rather than the north but still on high ground with the altar facing east.

ESSENTIAL SPACES

Rule of St. Benedict states the essential spaces needed to live a monastic life are; the church, the refectory, dormitory spaces, and the guest-house.

RESPONSE

These essential spaces have been designed with fire protection in mind. They are designed to withstand future fires enabling the monastery to continue its operations.

CLOISTER

Each of the three sides of the cloister address the three basic human needs, the body (corpus), the mind (animus) and the spirit (spiritus).

RESPONSE

Despite not embodying the strict cloister galleries the monastery retains the spirit, mind and body groupings with some shifts i.e. spirit now to south, body to north.

CLOISTER WALK

The actual walkways of the cloister are restricted to monks only and should enable them to walk continuously around without interruption.

RESPONSE

Cloister walk has been retained as have the foot washing facilities and reflection pools.

TRANSFORMATION

Monastic buildings often acquired new functions with subsequent modifications. The monastery like any house is a living entity of transformation and layers (a palimpsest).

RESPONSE

Design process of the master plan embodies the notion of palimpsest as the existing ruins were added to by a layer of wall 'ruins' and then the physical spaces.

^ Figure 201: Diagrams illustrating key 'rules' outlined by the Rule of St. Benedict for the master planning process of a monastery.

▲ Figure 203: Original plan designed around the rules of St. Benedict and the Cistercian master planning template. Note that the orientation has been changed by 180 degrees (church now to the south rather than north).

Wallaby Channel

Ruins
 Mountain Ash
 Walls

Figure 204: Diagram illustrating stage one of the process to reinterpret the traditional plan. A monastery is designed on-site using the traditional template outlined in the program chapter in Part I.

Wallaby Channel

Ruins
 Mountain Ash
 Walls

Figure 205: The traditional plan has been rotated 180 degrees in order to place the refectory to the north (sun exposure) and church to the south (to be moved into mountain ash forest).

VEGETATION REMOVING WALLS

Wallaby Channel

□ Ruins
 ● Mountain Ash
 — Walls

^ Figure 206: The sections of wall that intersect with vegetation on-site are removed, injecting liminal space into the plan, creating separation and placing a focus on the landscape.

KEY SPATIAL SHIFTS DERIVED FROM SITE EXPERIENCE

Wallaby Channel

□ Ruins
 ● Mountain Ash
 — Walls

^ Figure 207: Various spaces are shifted based on experiences on-site and relationships to the ruins. For instance, from the site visit it was decided to design the church and dwelling spaces within the mountain ash due to the shear height, spirituality and sense of isolation.

^ Figure 209: The walls are reduced further to create a more simple composition while heightening the notion of ruins in the landscape. Another layer of secondary walls are then added along with the spine.

^ Figure 210: Diagram of final master plan identifying the overall spatial layout and composition.

FINAL MASTER PLAN

Figure 211:
An Overview of Design
Full Plan
1:200 @ 2x A0

Note: The drawings on the following two spreads are
larger scales of this same drawing. Refer to this key for
space identification.

- 1 Refectory
- 2 Kitchen
- 3 Barn
- 4 Bathrooms
- 5 Scriptorium
- 6 Chapter Room
- 7 Bathrooms
- 8 Cloister
- 9 Camp
- Road
- 10 Entrance
- Wallaby Channel
- Assorted Trees
- 11 Reading Huts
- 12 Church
- 13 Monks' Dormitory (Elongated Hut in the Forest)
- 14 Landscape Church
- 15 Community Performance Space
- 16 Huts in the Forest
- Mountain Ash Trees

^ Figure 213: Longitudinal section parallel to the spine illustrating the change in topography and transition into the mountain ash forest.

- 1 Huts in the Forest
- 2 Cloister
- 3 Courtyard
- 4 Kitchen
- 5 Refectory

▲ Figure 214: Monastery Isometric highlighting the key spaces, roads and water channel.

- 1 Huts in the Forest
- 2 Performance Space
- 3 Spine
- 4 Monks' Dormitory
- 5 Church
- 6 Reading Huts
- 7 The Camp
- 8 Scriptorium
- 9 Cloister
- 10 Barn
- 11 Refectory

^ Figure 215: Contemplation in the landscape.

Chapter Ten

A STORY OF CONTEMPLATION

SPACES OF PRAYER, REFLECTION AND CONTEMPLATION AMONG THE RUINS AND MOUNTAIN ASH

The Church of the Forest – A Space of Landscape

To visit the mountain ash is to visit a cathedral designed and built by nature. On a misty morning, the tops of these giants tower above, yet are concealed from view. This misty, cool world is silent as its visitors tread delicately through the sea of towering trunks. The spiritual experience is immensely powerful, as if simulating that of a European gothic cathedral. As the light and mist levels change, the space is severely altered. When the morning matures, the mist lifts, dissipating into the air to finally reveal the tips of these majestic timber statues. The forest draws one's focus inwards before accelerating it upwards towards the heavens. After experiencing this landscape, a decision was made to utilise the forest as a church. Through minimal architectural intervention, the monks could practice their offices in a spiritual space like no other. The monks' stalls are simply inserted into this landscape with a reflective pool of water to one side. Guests perch on benches to the west of the monks to observe the opus dei (holy mass). However, despite forming the most direct, sensuous and palpable relationship with the landscape, this church would always have its weaknesses.

A lack of enclosure and refuge from the landscape means;

1. There is no shelter from the rain or wind (experiments with a roof simply dissected the church from the mountain ash, diluting the spiritual experience).
2. There is no warmth.
3. There is no reverberation of sound. However, the fading chants into the forest could be as equally moving.
4. The light is homogenous and therefore lacks the deep shadows exemplified by Le Thoronet.

Consequently, the tension between an enclosed box of refuge and the church of the forest has lead to extensive design tests and development. A separate church has been designed, one within, not of, the forest.

< Figure 216: Render of the landscape church. Minimal architectural intervention allowing for the landscape itself to form the spiritual experience.

The Church within the Forest – A Granite Ruin

The main church forms a place of prayer and contemplation within the mountain ash. The approach is a procession from the fireplace ruins into a vertical world where the giant mountain ash manifest a natural and spiritual space. Upon first sight, the church appears as a modest granite box. Like an extension of the already present granite water systems, the church could be mistaken for a ruin. From this external position, the church, like its traditional predecessors, appears as an introverted entity disengaged from its context. However, unlike a traditional Cistercian church, it appears to have some relationship with the earth it occupies. Embedded within the earth and hillside, the church's external intrusion on the landscape is mitigated, adding to its ruin-like presence.

For the guests, their entry into the heart of the church, like a traditional monastic church, requires an element of transition. The guests proceed along the south wall towards the narthex, a courtyard and transition space from the secular to the sacred.

Inserted into the hillside and enclosed on all four sides, the narthex, like an open-air cloister, directs one's gaze towards the heavens as the sacred is pulled down into the space. A pool of water against the western rammed earth wall of the church reflects the forest while dripping light onto the soft texture of the soil. Once the guests pass through the narthex, they proceed into a narrow passage between the northern granite wall and a much thinner steel wall. Consumed by darkness and the sounds of footsteps echoing around the space, the passage provides a contrasting experience to the narthex, one of compression and shadow.²³⁴ Upon nearing the end of the passage, the guests are given a slice of light and view into the main church before their final release. Once inside the church, the guests find themselves inhabiting the space between the two thick granite walls. Organised in the traditional manner,²³⁵ the guests are to sit at the rear of the church (west) upon benches, while a spatial wall physically separates, yet visually connects them with the monks.

²³⁴ This passage builds tension before one is released into the heart the church.

²³⁵ The interior planning of the church is completely reflective of the monks' traditions. The Cistercians state explicitly how the church should be arranged even down to the placement of steps (designating each zone), and the location of candles and bells.

The monk's entry into the church is much more direct, and less of a progression. As they reach the church from the main spine, the monks walk alongside the northern wall. A small opening near the centre of the wall beacons the monks inside. While the guests enter between two walls, the monks pass through the northern granite wall, momentarily inhabiting the mass and directly experiencing its thickness and density. Once inside the church, the monks take their place within their stalls. These stalls occupy a central position, facing inwards to the centre of the church.²³⁶ Again, the monks' engagement with the architecture contrasts the guests. While the guests occupy benches positioned between the granite walls, the monks inhabit the walls themselves. Unlike their exterior appearance, the sections of wall the monks occupy are not granite. Instead, these sections along with the eastern and western wall are constructed from rammed earth. The monks' perform their rituals, readings and chants from within spaces carved out of the very earth the church inhabits. Like the surrounding trees, these earth masses appear to have grown straight from the ground, an extension of the landscape itself.²³⁷ The remaining sections of the two main walls (north and south) are granite, as is the floor. In contrast to the heavy and solid nature of the walls and floor, the roof, like an Aboriginal wind or sun shelter, sits delicately above. Visually separated from the walls, the steel plane roof, like the hard granite surfaces, reflects light while reverberating the monks' chants.

²³⁶ Half the monks are on one side of the church with half on the other.

²³⁷ These rammed earth sections are constructed from the earth excavated to place the church within the hillside, as well as the earth removed from the spine.

The church within the forest possesses operable boundaries, similar to the flexible nature of an Aboriginal shelter, Schindler's Kings Road house or Kundig's Delta Shelter. These operable boundaries enable the interior of the church to mediate between a refuge from, or engagement with the landscape. Firstly, the church can manifest an interior space, like that of Le Thoronet, where the thick walls disconnect one from the landscape while forming an introverted and enclosed architecture. Through its degrees of enclosure, the interior space is filled with emptiness and shadow. Like Ando's architecture, the interior comes alive as light pierces the darkness through carefully placed slits in the wall and roof. The spiritual atmosphere generated by this space of light and shadow is amplified as the sound of the monks' chanting reverberates around this hard surfaced 'box'. This treatment of light and sound adds to the spiritual experience while connecting the architecture to its predecessor, Le Thoronet.

Secondly, through its operable boundaries, the church can be transformed into an interior space that engages directly with natural elements, processes and cycles of the landscape. What appear to be impenetrable granite walls (north and south) are revealed to embody sections constructed from a series of rotating panels that spill light, air and scents into the interior. The natural cycles and elements of the forest now consume this once isolated and disengaged space. In addition, the rammed earth wall to the east is revealed as two large doors within steel frames. As these doors open, they transform one's view towards the altar from a single vertical slit of light into a large aperture framing the forest beyond.

Architectural Operations the Church Embodies

Forming a physical manifestation, and celebration, of Semper's four elements through:

F#11. The use of a large wing-like roof that, like an Aboriginal shelter or Murcutt's architecture, exists as a simple angled plane visually separated from the heavy walls.

Engage with the natural elements of landscape, including earth and sky through;

B#1. Harmonising through contrast.

B#2. Forming an intimate relationship with the earth through 'cutting', 'slicing', and 'burying'.

B#3. Using the earth in construction.

B#5. An abstract and in-direct engagement with nature. The architecture should respond to the homogeneous and abundant nature of light in 'modern architecture' and landscape. This response should focus on the interrelationship of light and darkness. In particular, the architecture should manifest a sacred space through narrow embrasures within thick masses. Light should carve through the dark emptiness, indicating time and presence of the sacred.

B#6. Establish an abstract and in-direct engagement with the natural elements of landscape, earth and sky, through a horizontal plane of water. Use the horizontal plane of water as an architectural and compositional device, to either contrast or echo the landscape while stimulating reverie and contemplation.

Take refuge the natural elements of landscape, including earth and sky through;

B#7. Inhabiting a thick mass.

Mediate between refuge from the landscape and engagement with landscape through;

B#10. Operable boundaries that enable introverted and extroverted spaces.

B#11. The abstraction of wall surfaces to emphasise the space between. This can be achieved through the reflection (or absorption) of light upon smooth (or rough) wall treatments and / or by receding walls into the depths of shadow.

< Figure 217: Diagram of the church illustrating the physical manifestation of the selected architectural operations.

^ Figure 218: Series of screen shots illustrating some of the church developments and testing.

THE CHURCH

Figure 219:
A Place for Worship
Developmental Plan
1 100 @ A1

THE CHURCH

Figure 220:
A Place for Worship
Developmental Plan
1 100 @ A1

THE CHURCH

Figure 221:
A Place for Worship
Developmental Plan
1 100 @ A1

THE CHURCH

Figure 222:
A Place for Worship
Developmental Plan
1 100 @ A1

THE CHURCH

Figure 225:
A Place for Worship
Developmental Section
1 20 @ A1

THE CHURCH

Figure 226:
A Place for Worship
Developmental Section
120 @ A1

- 1 Monk Procession
- 2 Water Channel
- 3 Rammed Earth Wall
- 4 The Space Between
- 5 The Lectern
- 6 Guest Procession

THE CHURCH

Figure 227:
A Place for Worship
Section A - A'
1/50 @ A1

- 1 Monk Procession
- 2 Water Channel
- 3 Granite Wall
- 4 Opening Granite Wall Panels
- 5 Guest Choir
- 6 Guest Procession

THE CHURCH

Figure 228:
A Place for Worship
Section B - B'
1/100 @ A1

THE CHURCH

Figure 229:
A Place for Worship
Developmental Detail Section A
1/20 @ A1

THE CHURCH

Figure 230:
A Place for Worship
Detail Section A
1/20 @ A1

THE CHURCH

Figure 231:
A Place for Worship
Detail Section A
1/20 @ A1

^ Figure 232: Guest Procession into the Narthex.

> Figure 233: Render from within the Narthex.

^ Figure 234: Monks near the Altar with end doors open.

^ Figure 235: Guests observe the monks' service near the rear of the church.

> *Figure 236: Render of church exterior*

The scriptorium is a space of writing, reflection and contemplation sited amongst the fireplace ruins and 'horizontal landscape'. Deemed by St. Benedict as a non-essential space, it has been designed in a much more temporary fashion than the church. Like an object, or piece of furniture placed within the landscape, the timber-constructed scriptorium sits delicately above the earth's surface. A thick granite wall runs behind the scriptorium forming an anchor connecting it to the rest of the monastery. The interior space is both focussed inwards and outwards. The northern elevation has been designed with a series of operable boundaries from sunshades to large opening doors. These operable boundaries allow the interior space to mediate between a refuge from and engagement with the landscape while controlling the relationship between light and shadow. As a way to further engage with the landscape, a long walkway adjacent to the granite wall cascading with water and light protrudes into the fields and allows a monk to take his writing outdoors and into solitude.

< Figure 237: Render of the scriptorium. Monk approaches the entrance.

Architectural Operations the Scriptorium Embodies

Engage with the natural elements of landscape, including earth and sky through;

B#5. An abstract and in-direct engagement with nature. The architecture responds to the homogeneous and abundant nature of light in 'modern architecture' and landscape, through the perusal of the interrelationship of light and darkness.

Take refuge the natural elements of landscape, including earth and sky through;

B#8. Raising the dwelling and 'touching the earth lightly'.

Mediate between refuge from the landscape and engagement with landscape through;

B#10. Operable boundaries that enable introverted and extroverted spaces.

B#11. The abstraction of wall surfaces to emphasise the space between. This can be achieved through the reflection (or absorption) of light upon smooth (or rough) wall treatments and/or by receding walls into the depths of shadow.

< Figure 238: Diagram of the scriptorium illustrating the physical manifestation of the selected architectural operations.

- 1 Entrance
- 2 Reflection Pool
- 3 Liminal Space
- 4 Granite Wall
- 5 Reading Desks
- 6 Books
- 7 Outdoor Water Channel + Walkway
- 8 Operable Boundary - Glass Doors + Rotating Sun Shades

THE SCRIPTORIUM

Figure 239:
A Place for Writing
Floor Plan
1 100 @ A1
< North

- 1 Operable Boundary - Timber Sun Shades + Glass Doors
- 2 Reading Desks
- 3 Operable Boundary - Timber Sliding Doors
- 4 Outdoor Water Channel + Walkway
- 5 Granite Stone Wall

THE SCRIPTORIUM

Figure 240:
A Place for Writing
Section A - A'
1 50 @ A1

^ Figure 241: Desks within the elements of the landscape.

^ Figure 242: Walkway where water meets stone and light.

10.2
WALKING – THE CLOISTER AND LIMINAL SPACE

Through the reinterpretation of the traditional monastic plan, a great amount of liminal space was injected into the architecture. While performing their daily tasks, the monks and guests are in a constant flux between interior spaces and the landscape. The fragmented walls and courtyards of these ‘in-between’ spaces provide one with two opportunities; (1) to directly engage with the natural elements, processes and cycles of their environment or (2) take refuge among the walls while engaging directly with the sky.

However, despite the increase in liminal space, the cloister had to remain as it forms a central element of the monastery. Nevertheless, rather than being flanked on all sides by architectural wings, the cloister is now mostly surrounded by the landscape. The monks can either direct their focus towards the interior of the cloister or outwards towards the distant landscapes. Inside the cloister, reflective pools built amongst ruins reflect the sky while shimmering with light and ripples. The pools are not only a stimulator of contemplation but also the water source for the monks’ ‘foot washing ritual’.

< *Figure 243: Render of the monastery from the road. Two walls mark the first threshold, the gate.*

Architectural Operations: The Cloister Embodies

Manifest a relationship between man and fire through;

F#1. The constantly burning flame.

F#3. Large communal fires that remain in one place, forming a symbolic centre to the monastery.

F#4. Fires that enable one to sit as close to the flame as they wish.

Forming a physical manifestation, and celebration, of Semper's four elements through:

F#8. The solid back wall – a space of refuge from landscape within the individual 'tents'.

F#9. The open front – operable boundary and space to engage with landscape within the individual 'tents'.

F#11. The use of a large wing-like roof that, like an Aboriginal shelter or Murcutt's architecture, exists as a simple angled plane visually separated from the heavy walls.

Engage with the natural elements of landscape, including earth and sky through;

B#2. Forming an intimate relationship with the earth through 'cutting', 'slicing', and 'burying'.

B#4. An open cloister.

B#6. Establish an abstract and in-direct engagement with the natural elements of landscape, earth and sky, through a horizontal plane of water. Use the horizontal plane of water as an architectural and compositional device, to either contrast or echo the landscape while stimulating reverie and contemplation.

Take refuge from the natural elements of landscape, including earth and sky through;

B#9. Fragmented and intersecting walls (space between walls) and courtyards.

> Figure 244: Diagram of the cloister illustrating the physical manifestation of the selected architectural operations.

THE CLOISTER

Figure 245:
A Place for Walking
Section A - A'
1:20 @ A1

THE CLOISTER

Figure 246:
A Place for Walking
Section B - B'
1:20 @ A1

Λ Figure 247: Developmental Cloister render.

Λ Figure 248: Cloister render from south east corner.

^ Figure 249: Diagram illustrating transformation of existing ruin.

> Figure 250: Diagram of the existing fireplace ruin illustrating the physical manifestation of the selected architectural operations.

- 1 Reflection Pool
- 2 Drain
- 3 Seat: Folds out from floor.

THE CLOISTER

Figure 251:
Fireplace
Cross Section
1/20 @ A1

^ Figure 252: Photograph of a group of Aboriginal men.

Chapter Eleven

A STORY OF COMMUNITY

SPACES OF GATHERING, INTERACTION AND COMMUNITY

^ Figure 253: Refectory Exterior.

11.0

DINING – THE REFECTORY AMONGST THE RUINS

The refectory, like the camp, is a critical space of communal gathering located at the monastery's northern-most point. Focused around the activity of dining, the refectory and its kitchen were designed around the notion of interaction. The interaction between monks and guests is a pivotal concern as is the interaction between the occupants and the elements of the landscape. Entering the refectory first involves the negotiation of liminal space and intersecting courtyards. With two entries into the courtyards, one for the monks off the cloister walk and one for the guests, the liminal space becomes the place of first contact. While passing through the courtyards and a few fireplace ruins, the monks and guests enter the refectory together as one community.

Entering the refectory is a procession in itself as an angled steel wall guides one to a small gap between steel and granite walls. Once through this tight threshold a corridor is revealed, flanked by a channel of water running alongside the spinal wall and open to the sky. Halfway along the corridor a break in the right hand wall appears, providing a glimpse into the kitchen. During the winter evenings this small slice will emit a warming glow into the corridor. The journey through the corridor is completed with a sudden release into the dining hall. Designed for 200 people, the refectory can be halved in size with sliding panels bisecting the space. Like the scriptorium, sun shades and opening glass doors provide varying degrees of direct engagement with the landscape. However, if in need of full refuge from the landscape, i.e. during a fire, the steel components of these doors can close fully, separating the interior from the exterior.

Architectural Operations the Refectory Embodies

Forming a physical manifestation, and celebration, of Semper's four elements through:

F#8. The solid back wall – a space of refuge from the landscape.

F#9. The open front, operable boundary and space to engage with landscape within the individual 'tents'.

F#11. The use of a large wing-like roof that, like an Aboriginal shelter or Murcutt's architecture, exists as a simple angled plane visually separated from the heavy walls.

Engage with the natural elements of landscape, including earth and sky through;

B#2. Forming an intimate relationship with the earth 'cutting', 'slicing', and 'burying'.

B#5. An abstract and in-direct engagement with nature. The architecture should respond to the homogeneous and abundant nature of light in 'modern architecture' and landscape. This response should focus on the interrelationship of light and darkness. In particular, the architecture should manifest a sacred space through narrow embrasures within thick masses. Light should carve through the dark emptiness, indicating time and presence of the sacred..

B#6. Establish an abstract and in-direct engagement with the natural elements of landscape, earth and sky, through a horizontal plane of water. Use the horizontal plane of water as an architectural and compositional device, to either contrast or echo the landscape while stimulating reverie and contemplation.

Mediate between refuge from the landscape and engagement with landscape through;

B#10. Operable boundaries that enable introverted and extroverted spaces.

B#11. The abstraction of wall surfaces to emphasise the space between. This can be achieved through the reflection (or absorption) of light upon smooth (or rough) wall treatments and/or by receding walls into the depths of shadow.

> Figure 254: Diagram of the refectory illustrating the physical manifestation of the selected architectural operations.

1	Opening Northern Wall	10	Kitchen Entry
2	Dinning Tables	11	Steel Fire Shutters
3	Sliding Room Divider	12	Glass Doors
4	Dinning Tables	13	Rotating Sun Shades
5	Kitchen		
6	Outdoor Courtyard / Congregational Space		
7	Access from Cloister		
8	Fireplace Ruin		
9	Refectory Entrance - Pass Between Walls		

THE REFECTORY

Figure 255:
A Place for Dining
Floor Plan
1:100 @ A1
^ North

- 1 Stone Spinal Wall
- 2 Water Channel
- 3 Hallway
- 4 Dining Space
- 5 Operable Boundary

THE REFECTORY

Figure 256:
A Place for Dining
Section A - A'
1/100 @ A1

Figure 257: Refectory Interior.

11.1
REFUGE – THE ‘CAMP’ AMONGST THE RUINS

Situated within three of the existing fireplace ruins, the camp is a reinterpretation of the traditional calefactorium (warming room). Not only does it act as the primary place of warming, the camp is also used as a space to receive guests and host community gatherings. Structured like one of Schindler’s ‘tents’ at the Kings Road House, the camp enables one to take refuge from the landscape while large sliding doors (operable boundaries) foster a direct engagement. However, to take ultimate refuge during future bushfires, a concrete bunker is located below the camp with stair access in the northeast corner.

< *Figure 258: Author’s photograph of ruins on-site.*

Architectural Operations the Camp Embodies

Manifest a relationship between man and fire through;

F#1. The constantly burning flame.

F#3. Large communal fires that remain in one place, forming a symbolic centre to the monastery.

F#4. Fires that enable one to sit as close to the flame as they wish.

Forming a physical manifestation, and celebration, of Semper's four elements through:

F#8. The solid back wall – a space of refuge from landscape within the individual 'tents'.

F#9. The open front, operable boundary and space to engage with landscape within the individual 'tents'.

F#11. The use of a large wing-like roof that, like an Aboriginal shelter or Murcutt's architecture, exists as a simple angled plane visually separated from the heavy walls.

Engage with the natural elements of landscape, including earth and sky through;

B#2. Forming an intimate relationship with the earth 'cutting', 'slicing', and 'burying'.

B#5. An abstract and in-direct engagement with nature. The architecture should respond to the homogeneous and abundant nature of light in 'modern architecture' and landscape. This response should focus on the interrelationship of light and darkness. In particular, the architecture should manifest a sacred space through narrow embrasures within thick masses. Light should carve through the dark emptiness, indicating time and presence of the sacred.

Take refuge from the natural elements of landscape, including earth and sky through;

B#7. Inhabiting a thick mass.

Mediate between refuge from the landscape and engagement with landscape through;

B#10. Operable boundaries that enable introverted and extroverted spaces.

B#11. The abstraction of wall surfaces to emphasise the space between. This can be achieved through the reflection (or absorption) of light upon smooth (or rough) wall treatments and / or by receding walls into the depths of shadow.

> Figure 259: Diagram of the camp illustrating the physical manifestation of the selected architectural operations.

- 1 Guest Entrance
- 2 Monk Entrance into Cloister
- 3 Fireplace Ruin
- 4 Monk Entrance
- 5 Storage
- 6 Sliding Glass Doors
- 7 Stairs into Fire Bunker
- 8 Rotating Panels

THE CAMP

Figure 260:
A Place for Gathering
Floor Plan
1 100 @ A1
^ North

- 1 Fire Bunker
- 2 Fireplace Ruin
- 3 Opening Face

THE CAMP

Figure 261:
A Place for Gathering
Section A - A'
1 50 @ A1

^ Figure 263: The Camp interior: Guests being greeted.

Chapter Twelve

A STORY OF SOLITUDE

SPACES OF REST AND CONTEMPLATION WITHIN SOLITUDE

12.0
REST – THE HUTS IN THE FOREST

Sitting quietly within the forest of giants, these huts are a reinterpretation of the guests' dormitory. Instead of providing 'communal' living spaces, these individual huts were designed as places of rest, retreat and solitude for the guests. Anchored by a large rammed earth wall, each hut embodies a sense of permanence and resilience within this ever-changing landscape. While establishing an exterior sense of solidarity, this main wall also contains one's sleeping area, a shower and bathroom. Enveloped and held within the wall, an extension of the earth itself, one retreats from the landscape to sleep. A timber shutter allows for the blocking or receiving of light, the first of many operable boundaries.

A steel structure sits adjacent to the earth wall which, through its fineness and placement above the ground, acts as an element of lightness, contrasting with the heavy nature of the main wall. Through various operable boundaries, this steel structure forms a space of mediation between a retreat into the wall and a direct engagement with the landscape. From inside to outside, the operable boundaries are as follows; rotating steel sun shades, large glass door, and a sliding steel panel to be used for fire protection and when the hut is unoccupied.

< Figure 264: Photograph of site shrouded in mist.

< Figure 265: Exterior render of huts in the forest with glass door closed and steel shutter open.

Architectural Operations the Huts Embody

Manifest a relationship between man and fire through;

F#2. Small, private fires that can be relocated (or fixed), extinguished and lit at the will of any individual.

F#4. Fires that enable one to sit as close to the flame as they wish.

F#5. Fires that enable access from all sides, allowing a group to gather in a circle with the flame at its centre.

F#6. Fires that are constructed directly on the earth, and / or on the floor slab out of material gathered on site.

Forming a physical manifestation, and celebration, of Semper's four elements through:

F#7. Individual – tent and shelter-like sleeping spaces that provide privacy and a space of self reflection and contemplation. Such spaces contrast the spatial conditions and experiences of the dormitories found in traditional monasteries.

F#8. The solid back wall and space of refuge from landscape within the individual 'tents'.

F#9. The open front, operable boundary and space to engage with landscape within the individual 'tents'.

F#10. The physical separation of the elements. E.g. the roof from the walls and the roof from the floor.

F#11. The use of a large wing-like roof that, like an Aboriginal shelter or Murcutt's architecture, exists as a simple angled plane visually separated from the heavy walls.

Engage with the natural elements of landscape, including earth and sky through;

B#1. Harmonizing through contrast.

B#2. Forming an intimate relationship with the earth through 'cutting', 'slicing', and 'burying'.

B#3. Using the earth in construction.

B#5. An abstract and in-direct engagement with nature. The architecture should respond to the homogeneous and abundant nature of light in 'modern architecture' and landscape. This response should focus on the interrelationship of light and darkness. In particular, the architecture should manifest a sacred space through narrow embrasures within thick masses. Light should carve through the dark emptiness, indicating time and presence of the sacred.

Take refuge from the natural elements of landscape, including earth and sky through;

B#7. Inhabiting a thick mass.

B#8. Raising the dwelling and 'touching the earth lightly.'

Mediate between refuge from the landscape and engagement with landscape through;

B#10. Operable boundaries that enable introverted and extroverted spaces.

< Figure 266: Diagram of the camp illustrating the physical manifestation of the selected architectural operations.

THE HUTS IN THE FOREST

Figure 268:
A Place for Solitude and Rest
Developmental Plan
1:50 @ A1

THE HUTS IN THE FOREST

Figure 269:
A Place for Solitude and Rest
Developmental Section
1:20 @ A1

- 1 Bathroom
- 2 Shower
- 3 Sleeping - Inhabiting the Wall
- 4 Entrance
- 5 Rotating Sun Shades
- 6 Steel Fire Shutter
- 7 Opening Glass Door
- 8 Exterior Platform
- + Mountain Ash Trees

THE HUTS IN THE FOREST
 Figure 272:
 A Place for Solitude and Rest
 Floor Plan
 1:100 @ A1
 > North

- 1 Sleeping Within the Rammed Earth Wall
- 2 Liminal Space - Touch Earth Lightly
- 3 Rotating Sun Shades
- 4 Opening Glass Door
- 5 Steel Fire Shutter
- 6 Shade Panel

THE HUTS IN THE FOREST
 Figure 273:
 A Place for Solitude and Rest
 Section A - A'
 1:20 @ A1

- 1 Floor Panel Attachment Point
- 2 Sleeping Platform - Timber, insulated and separated from rammed earth.
- 3 Shelf
- 4 Timber Shutter to Darken Space
- 5 Shutter Latch
- 6 Skylight

THE HUTS IN THE FOREST

Figure 274:
A Place for Solitude and Rest
Detailed Section A
1 10 @ A1

Figure 275: Hut Interior.

< Figure 276: Diagram of an individual fire illustrating the physical manifestation of the selected architectural operations.

> Figure 277: Hut Exterior with Steel Panel and Glass Door open with occupants enjoying the heat and light of the fire.

< Figure 278: Diagram of a communal fire illustrating the physical manifestation of the selected architectural operations. The opening and closing seat allows one to sit close to the fire in a comfortable position (open) or lie next to the fire (closed position).

- 1 Seat: Folds out from ground.
- 2 Drain.
- 3 Lip to support seat when folded down.
- 4 Drain out of section plane. Flows into first drain.

Λ Figure 280: Communal fire between the huts in the forest.

12.1

LECTIO DIVINA – THE READING HUTS WITHIN THE FOREST

Situated to the north of the church, the individual ‘reading huts’ exist as ruins scattered throughout the forest waiting to be stumbled upon. Simply constructed from a single granite wall, rammed earth plinth (seat), and reflective pool, these structures allow the monks to read amongst the mountain ash in silence and solitude. One side of the rammed earth plinth allows the monks to take refuge within the wall, while the other side exposes one to the natural elements of their environment.

< *Figure 281: Developmental render of the reading huts.*

Architectural operations the Reading Huts embody

Forming a physical manifestation, and celebration, of Semper's four elements through:

F#7. Individual – tent and shelter-like sleeping spaces that provide privacy and a space of self-reflection and contemplation.

Engage with the natural elements of landscape, including earth and sky through;

B#2. Forming an intimate relationship with the earth 'cutting', 'slicing', and 'burying'.

B#3. Using the earth in construction.

B#6. Establishing an abstract and in-direct engagement with the natural elements of landscape, earth and sky, through a horizontal plane of water. Using the horizontal plane of water as an architectural and compositional device, to either contrast or echo the landscape while stimulating reverie and contemplation.

Take refuge the natural elements of landscape, including earth and sky through;

B#7. Inhabiting a thick mass.

> Figure 282: Diagram of the cloister illustrating the physical manifestation of the selected architectural operations.

- 1 Entrance
- 2 Granite Wall (Mass)
- 3 Enclosed Seat
- 4 Exposed Seat
- 5 Reflection Pool

THE READING HUTS

Figure 283:
A Place for Reading in Solitude
Developmental Plan
1/20 @ A1
> North

- 1 Entrance
- 2 Granite Wall (Mass)
- 3 Enclosed Seat
- 4 Exposed Seat
- 5 Reflection Pool

THE READING HUTS

Figure 284:
A Place for Reading in Solitude
Floor Plan
1/20 @ A1
> North

- 1 Entrance
- 2 Granite Wall (Mass)
- 3 Enclosed Seat
- 4 Exposed Seat
- 5 Reflection Pool

THE READING HUTS

Figure 285:
A Place for Reading in Solitude
Developmental Section A-A'
1/20 @ A1

- 1 Entrance
- 2 Granite Wall (Mass)
- 3 Enclosed Seat (Rammed Earth)
- 4 Exposed Seat (Rammed Earth)
- 5 Reflection Pool
- 6 Water Drain

THE READING HUTS

Figure 286:
A Place for Reading in Solitude
Section A-A'
1/20 @ A1

THE READING HUTS

Figure 287:
A Place for Reading in Solitude
Detail A
1/5 @ A1

^ Figure 288: Hut Interior: Looking out onto the trees reflected in the water.

^ Figure 289: Hut Exterior: Looking towards the front.

Chapter Thirteen

A STORY OF REFLECTION AND CONCLUSION

CRITICAL REVIEW OF PROCESS AND OUTCOME AS WELL AS FINAL CONCLUDING STATEMENTS

< Figure 290: Exterior render of reading huts, view from the back.

^ Figure 291: Monastic landscape.

Cistercian monasteries have occupied vast landscapes since the 11th century. However, despite the context on which they reside changing dramatically, their architecture and roles within the community have remained relatively consistent. As such, this design-led research proposes a novel approach to Cistercian architecture in response to the story of Victoria's Tarrawarra Abbey.

Australia's sole Cistercian monastery, Tarrawarra Abbey, was formed in 1954. It represented an opportunity for a community to emerge conceived through the interaction and collaboration of its monks and the traditional occupiers of the land, the Aboriginal people. However, instead of forming a collaboration, Tarrawarra Abbey neglected its Aboriginal history, people and their perceptions.

Further, as a result of the mass removal of Aboriginal people from their positions as protectors and guardians of their environment, combined with a changing climate, areas of Victoria's landscapes are now under serious threat as fire-storms continue to plague its mountain ash forests. Research resulting from the Black Saturday blaze on February 7th 2009 identified that Victoria's legendary mountain ash were being forced into a compromised state and are in need of protection.

The thesis proposition raised a number of questions – translated into aims – that have been examined and explored through design-based research in the preceding pages. These questions can be summarised as;

1. *How can the site and Aboriginal / Cistercian perspectives on the relationship between people, architecture and landscape manifest the reinterpretation process of a Cistercian monastery?*
2. *How can a bi-cultural architecture and community initiate and enable the resurrection of the Aboriginal fire-stick farming strategy to protect the site's mountain ash forest?*
3. *What is the role of the Cistercian monastery within the 21st century?*
4. *How can an architectural intervention within Kinglake National Park re-purpose and utilise its increasingly redundant Yan Yean water system?*

In response, the research addresses how site and sensory-based Aboriginal perspectives on the relationships between people architecture and landscape can drive the manifestation of a ‘new’ and reinterpreted Cistercian monastery.

As a strategy for design, European and Aboriginal perspectives on the relationship between people, architecture and landscape are explored through spatial investigations into Semper’s historical notions of threshold – the wall, roof, the hearth and, to a lesser extent, the mound. Through a series of two-dimensional hand drawings, these threshold devices, in particular the wall and operable boundary, were heavily explored as catalysts for one’s refuge from or engagement with the landscape. The focus on the wall provided an avenue for detailed design explorations and reinterpretations of the way in which it provides security, concealment and refuge. Furthermore, the intimate and highly realised qualities of the hand drawing medium, compared to that of the computer, were translated into the architecture. Consequently, instead of being a purely solid and uninhabitable object, visually separated from the ground, this research examined the wall as an extension of the earth as well as a place to inhabit.

At a master planning scale, the walls of a traditional monastery were treated as abstract lines bisecting landscape and one’s connection to it. The reinterpretation process of the tradition plan through a series of double A0 drawings is a critical component of this research. The drawings examined the implications of a traditional plan on-site before proceeding to dissect and eliminate various walls. This process of reduction, driven by an Aboriginal focus on liminal space, created another layer of disjointed ruins on-site while injecting liminal space and landscape into the plan. By examining the research propositions through an entire monastic complex, the master planning exercises provided unprecedented design outcomes and avenues for more detailed design exploration. Moreover, the master planning methodology resulted in a multi-layered and palimpsest-like architecture, providing a nod to the existing site conditions and constant modification of historical abbeys. Additionally, the multi-layered architecture manifested interesting spatial relationships while connecting the monastic plan with the complex and layered qualities of an aboriginal perception of the land.

As the architectural proposition was developed from a focus on large scale interventions and planning, the architectural operations were highly considered at scales ranging from 1:500 to 1:10. An alternative strategy could have been to reduce the scale of the work by solely focusing on the design of one church and a few huts in the forest. This alternative method could then frame the architecture and design-based research as a satellite community of Tarrawarra Abbey situated within the mountain ash. By shifting the focus of the research from a large scale enquiry to a smaller scale study of a few interventions the architectural operations could be tested at a more detailed scales, such as 1:5, 1:2 and 1:1.

This present research uses Aboriginal perceptions of architecture and landscape to influence monastic traditions. The assessment of its outcomes could be further tested through research into monastic perspectives conversely influencing Aboriginal traditions. Rather than beginning with a traditional plan, this second strategy could be implemented through detailed research into specific Aboriginal thresholds. The overall research could then be tested through detailed drawings and section models before being implemented into a programmatic scenario.

Subsequently, the research presented allows for the speculation on three avenues of further investigation. Firstly, the use of the camera obscura as an architectural device to fully mediate between a refuge from and engagement with the landscape. Within a spiritual program, fully enclosed and dimly lit spaces provide avenues for contemplation, rest and solitude. However, having this space completely consumed by an upside down, yet real time, projection of the exterior landscape is immensely powerful. Such an architecture provides unconventional and detailed design possibilities especially if one considers the spaces to be relocatable. The relocatable possibility of the architecture also provides further design research opportunities into the spatial wall. Kinetic and shifting architecture provides an avenue to create a physical manifestation of the spatial wall, whereby occupants can manipulate the space between each other and therefore their levels of interaction and solitude.

The second avenue of further investigation consists of a more detailed enquiry into the role of the monastery as a post-firestorm recovery centre and place for emergency accommodation. This research path could investigate the monastery as a more ‘flexible’ and adaptable program. The huts in the forest could be re-articulated to enable the housing of more than one person per hut as well as the potential to shift huts closer together and further apart (spatial wall discussed above).

^ Figure 292: Author's photograph of office transformed into a camera obscura. The full enclosed space is infiltrated by an abstracted projection of the world outside.

The third avenue for further investigation focuses on direct architectural responses to the Aboriginals' fires-tick farming strategy. Firstly, the fire-based practices to maintain and protect the mountain ash lend themselves to almost pilgrimage type walks through the landscape where one becomes lost in thought and reflection but within a small group of fellow roamers. Therefore, additional design-based investigations could examine the design and construction of temporary, tent-like, structures that are built and dismantled as one travels through the landscape performing the burnings.

In conclusion, the design outcome, situated at the feet of some of the world's most spectacular trees, acts as an architectural scar and symbolic model for the healing of the relationship between Australia's Aboriginals and Cistercian monks as well as the rehabilitation and future protection of the landscape. As an architectural scar, the monastery exemplifies a bi-cultural and innately site-specific approach to architecture based on two different views / understandings of space and landscape. Furthermore, the monastery provides an opportunity to reinstate the Aboriginal's fire management practices (fire-stick) in order to protect a stand of mountain ash. Through an architecture that fosters an interaction, collaboration and community, the platform is set for monks and Aboriginals to actively participate in the protection of these at-risk trees. Additionally, by focusing the master-planning around the spine and use of water channels, the proposed monastery re-purposes the Yan-Yean water system and Wallaby channel. Instead of the water being sent to Melbourne, the Wallaby channel and additional canals direct water throughout the monastery complex. Not only does this water embody a practical purpose, it also acts as a compositional and way-finding device, as well as an element to stimulate contemplation, reverie and reflection.

The result of this design-based research enquiry is a novel and creative approach to monastic architecture, shifting the monastery into the 21st century as it responds to critical issues within its geographic and cultural context.

As a full stop and conclusion to the process and outcomes of this spiritual and inherently landscape-based research enquiry, a word from Wayne Teasdale:

*"... The human community lives in harmony with nature. We have a sacred duty to the earth itself, to one another, and to all other species that inhabit our planet, to live in a state of friendship with the natural world, enhancing its life by simplifying our needs and desires."*²³⁸

²³⁸ Wayne Teasdale, A Monk in the World: Cultivating a Spiritual Life (New World Library, 2003), 8.

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APPENDICES

1.0
THE SEARCH FOR SITE

The search for site was a process and investigation in itself. When the process began, the program of the thesis was for a monastic prison rather than a sole monastery.¹ The project was originally based at the Port Arthur Penal Colony in the south of Tasmania. However, as the thesis developed, this site became unsuitable for two main reasons;

1. The influx of hundreds of tourists each day proved to be not only disruptive for the proposed program but difficult to manage.
2. With the site listed as a UNESCO World Heritage site any development to it would be complicated and fundamentally questionable.

With the Port Arthur Penal Colony no longer suitable, the quest for another site began. Through general research, the Eucalyptus forests of Tasmania were discovered and placed the thesis within a whole new light of possibilities. What was particularly intriguing was that these trees not only grew out of the ashes, but they depend on fire to live. The natural healing and resurrection of these forests related so well to the rehabilitation of the prisoners that they become a critical element of the site. However, in order to narrow down the scope of the thesis, a group of prisoners had to be focused upon. It was decided that the proposed monastic prison should not accommodate all types of prisoners. After some investigation into the issues revolving around the incarceration of Aboriginal people in Australia, it became obvious that the site had to be on the mainland. While searching for a Eucalyptus-based site on the mainland, articles were discovered on the Black Saturday bushfires of 2009 in Victoria. Captured by the rich fire history of the Victorian state, various maps were produced to find interesting relationships between existing prisons and fire-ravaged areas. As a result from this research it was discovered that Tarrawarra Abbey, Australia's only Cistercian monastery, was situated just outside of Melbourne. The revealing of Tarrawarra Abbey cemented the decision to continue investigating the site possibilities in and around Melbourne. Through further research, and the discovery of an article and short video, the mountain ash of Kinglake National Park became a possible point of inquiry. The article and video outlined how the trees were severely affected by the Black Saturday fires and should have been completely destroyed. Remarkably they not only survived, but many are growing back. It was this natural healing of

1 The development from the monastic prison to the final program (cistercian monastery) was gradual and based on a number of factors including, scope of research, ethics and design-based factors.

the landscape that stimulated the thesis earlier on. More extensive research began to uncover the Aboriginal relationships with fire and the way in which they used fire to not only feed off the land but also mitigate the risks of large firestorms like Black Saturday. Through the research of David Lindenmayer, the proposition was made to site the monastic prison within Kinglake National Park so that the Aboriginal detainees could return to the landscape as carers and protectors. The intention was that the monks and Aboriginal people would use fire-stick farming to protect the re-growth and old-growth mountain ash from future firestorms. Discovering the granite Yan Yean water system cemented the decision to site the project within Kinglake National Park.

Kinglake National Park Site One:

In order to locate a specific site within Kinglake National Park, the strategy used by Cistercians when finding their sites was adopted. To locate the most optimum place to site their monasteries, Cistercian monks would search for an area within a valley and near a water source.² However, additional conditions had to be established which included mountain ash trees and suitable site access. Finally a site that, on paper, met the requirements was found in the north-eastern part of the park near Wallaby weir and Wallaby channel.

Kinglake National Park Site Visit + Site Two:

Six months into the thesis a site visit was organised. While visiting the park and the proposed site it became obvious that the initial site of the monastery was inaccessible. Nevertheless, the beauty and silence of the place with the granite canals, flowing water and towering forest giants confirmed that a new site had to be located in the area. Coincidentally, post Black Saturday brick and stone ruins were discovered near site one. The ruins, in the form of chimneys and hearths, were all that remained. Like the granite canals, these fireplace ruins seemed to stand silently. This area became the perfect place to site the monastery with the ruins on one side of Wallaby channel and the mountain ash on the other. The open landscape around the ruins also lent itself to more plausible development.

2 Terryl N. Kinder, *Cistercian Europe: Architecture of Contemplation* (Eerdman's Pub Co, 2002), 82–85.

2.0
ADDITIONAL SITE ANALYSIS

Elevation of Wallaby Creek
Approx. 720m

Mean Max Temperature
24.8° Jan.
9.8° July

Mean Min. Temperature
12.2o Jan.
4.8o July

Mean Rainfall (above Melbourne statistics)
51.1mm Jan.
63.8mm July
77.7mm Nov. Peak

Average Annual Rainfall
1209mm

Soils
Krasnoemic soils, fragile, red/brown, with high levels of organic matter in upper 20-30cm. Clay contents increase with depth until at least 200cm where rock fragments begin after transition soils.

Dominant Mountain Ash
Average Canopy Height of 75mm.

Understorey Vegetation
Below dominant canopy lies temperate rainforest’s understorey consisting of Pompaderris aspera and Oleriaria agrophylla species which are 10-18m tall. The lower layers of vegetation are dominated by tree ferns (Cyathera australis and Dicksonia antartica) with extensive amounts of rosette and rhizonic ferns (Polystichum proliferum and Blechnum wattsii) in addition to Acacia trees.

Wallaby Creek Area Water Table Depth
> 50m3

3 “Monitoring Sites - Wallaby Creek,” *Oz Flux Australian and New Zealand FLux Research and Monitoring*, June 11, 2013, http://www.ozflux.org.au/monitoringsites/wallabycreek/wallabyck_description.html.

^ Figure 293: Environmental processes on site.

KINGLAKE NATIONAL PARK WIDER CONTEXT

N.T.S

Kinglake National Park: Wallaby Creek Area

2009 Black Saturday Fire

Central Access Spine

Highways / Freeways

Sealed Roads

Unsealed Roads

Yarra River

KINGLAKE NATIONAL PARK ECOLOGICAL + VEGETATION CLASSES

KINGLAKE NATIONAL PARK 'BLACK SATURDAY' FIRE INTENSITY

1:200 000

- Fire Severity 1 - Crown Burns
- Fire Severity 2 - Crown Scorch
- Fire Severity 3 - Moderate Crown Scorch
- Fire Severity 4/ 5a - Just understorey burn
- Fire Severity 5b - Nothing Burnt
- Kinglake National Park Boundary (approx)
- Electrical EMT
- Roads

KINGLAKE NATIONAL PARK TOPOGRAPHY AND LANDSCAPE

1:200 000

Information derived from Parks Victoria Kinglake National Park Master Plan 2011

3.0
SPATIAL WALL MANIFESTATION

Mobile Train Track Houses by Jägnefält Milton

In Norway's small town of Åndalsnes Jägnefält, Milton responded to a local competition by proposing a purely creative scheme whereby around 40 rolling homes utilise an unused railway during the tourist season. The Mobile Train Track Houses acts as a case study for the following architectural operation:

1. *Using the notion of spatial walls in the form of rolling structures to manifest varying degrees of engagement and refuge between inhabitants.*

- ^ Figure 294: Model illustrating the use of train track technology to create an architectural manifestation of the spatial wall. As the two dwellings roll away from each other the spatial walls expand and their connection reduces.
- > Figure 295: Rendered image of the train track huts illustrating the sense of community despite being individual dwellings.

4.0
THE CAMERA OBSCURA

During the 5th century BC, the Chinese philosopher Mo-Ti formally recorded the creation of an inverted image formed through light rays passing into a dark room through a pinhole. Mo-Ti called this space a 'collecting place' or the 'locked treasure room'. From Mo-Ti's discovery, the camera obscura was manifested in a variety of different forms. According to Leonardo Da Vinci, many of the first camera obscuras were large rooms that, like Reinerus Gemma-Frisius's (1544), were used to observe the solar eclipse. However, with the addition of a convex lens into the aperture during the 16th century, and the later addition of a mirror to reflect the image down onto a viewing surface, the camera obscura took upon another purpose. In his 1558 book, *Magiae Naturalis* declared this device as a perfect drawing aid for artists.¹

Despite the camera obscura's influential status within the realms of photography, its formation through a room / internal space connects it directly to architecture.

Firstly one's experience within the camera obscura, while the aperture is closed, is one of refuge. The fully enclosed, introverted and dark box fully disengages the occupant from the landscape, including the sky and earth. However, as soon as the aperture is opened and the light rays pass through, the space becomes a direct reflection and extension of the exterior landscape. Within this space, the occupant is engaged with the landscape as the walls, floor and ceiling of the room fill with moving projections of the outside world. Despite this engagement being purely visual, the experience of sitting within an enclosed box, surrounded by the colours and movements of the world beyond is very contemplative. The contemplative experience is enhanced by the absence of sound as any movements in the trees, bushes, or even flying birds, take on an abstract quality much like a silent film. For a monk, being able to remove oneself both physically and spiritually into a space of silence and contemplation is of up most importance. The camera obscura enables this disconnection while retaining a directly, albeit only visual, relationship with the landscape.

¹ Jack & Beverly Wilgus, "What Is a Camera Obscura?," *The Magic Mirror of Life: An Appreciation of the Camera Obscura*, August 2004, <http://brightbytes.com/cosite/what.html>.

^ Figure 296: Artist using the camera obscura to paint the landscape. Image illustrates how the aperture flips the image upside down.

^ Figure 297: Plan sketch of the camera obscura.

^ Figure 298 Section sketch of the camera obscura.

> Figure 299: Testing how the camera obscura can be used to generate shadows and project images onto the human body.

> Figure 300: Photograph of the ceiling (same room), the birds were seen to by flying around the trees while the bushes moved with the wind. Without sound the movements seem abstract and calming.