“Zen - Christianity: A Useful Dialogue?”

“A modest stream of light penetrating a very small space may possess simplicity, but it is not simplicity, and here the aim as not merely to pay homage to the purity of nature over the manmade, it was to achieve a spiritual world that transcends its physical dimensions.”

Tadao Ando

“Heaven is My throne, and the earth is a footstool for My feet. What kind of house will you build for Me, says the Lord, or what is the place of My rest? Has not My hand made all things?”

Acts 7:49-50

pax er ora – peace and prayer

Michael Timothy Smith – 1367103

A Research Project submitted in partial fulfilment of the requirements for the degree Master of Architecture Professional.
Unitec Institute of Technology, 2011
Abstract

This is an investigation into the possibility of learning from different architectural cultures. Specifically, this project investigates selected Japanese architectural principles. Relevant principles are obtained and applied to a New Zealand context. The project develops a design for a Cistercian monastery to be built within the Christchurch central business district (C.B.D.) area.

Japanese architectural principles include benefits of power and appeal with respect to aesthetics and as solutions to architectural problems. This project focuses on appropriate Japanese architectural principles such as ma/oku/miegakure (space, time and glimpse), light and shadow, connection with nature, layering, refinement and the design of a city site. Additionally it analyses the aspects of the work of Tadao Ando because of his specific architectural position. The aim is to create an unfamiliar piece of architecture in which new/lost ways of designing can be portrayed and exemplified.

The (Christian) Cistercian monastic order has been selected because of its closeness to Japanese Buddhist architectural principles in their minimalist refined approaches and meditative spirit. The monastic typology acts as a precedent in which the aforementioned Japanese architectural principles could be used within a typology with which New Zealand is unfamiliar. The project involves the design of a Cistercian monastery based upon traditional functions and requirements. The monastic ideal of seclusion is used in the design of a trauma centre to be established in Christchurch to facilitate the mental healing of victims traumatised by the recent Christchurch earthquakes. This function adheres to past requirements of Cistercian monastic orders to help create a revenue stream.

Christchurch City has been selected due to the current lack of integration between the Avon River and surrounding buildings; this project presents ideas on ways to change this. Because the selected site is located in Christchurch, the building’s resilience must be looked at to ensure an outcome that is suited to the significant and particular environmental factors of that city.

The process of design exploration uses different methods in order to create a cumulative synthesis of research by, for and into design. This provides an architectural resonance with all required encompassing ideas. The explanatory document describes the formal and theoretical processes taken in response to the research question.
Thank you to my supervisors, Dr. Christoph Schnoor and Kerry Francis for your dedicated encouragement, guidance and patience. On many occasions you both went well above and beyond what I could reasonably have expected.

I would like to thank Yvetti for her patience and encouragement while putting up with my intolerable ramblings. I also sincerely thank my friends and family for their support.
**Contents**

1.0 Introduction ........................................ 1
    1.1 Research Question ................................ 1
    1.2 Aims and Objectives ............................. 1
    1.3 Outline of Project ............................... 1
    1.4 Scope and Limitations ........................... 2

2.0 Methodology ........................................ 7
    2.1 Methodological approach to the project ........ 7
    2.2 Content ......................................... 7
    2.3 Context ......................................... 7
    2.4 Exploration ...................................... 9

3.0 Literature Review / Precedent Study ............... 11
    3.1 Japanese Influence .............................. 11
    3.2 Tadao Ando ...................................... 16
    3.3 Definition and History of Monasteries .......... 17
    3.4 Definition and History of Cistercian Monastic Order 19
    3.5 'Recent' Western Monastic Examples ............. 23

4.0 Lodging the Foundation of the Design ............. 33

5.0 Project Development ................................ 53
    5.1 Site Analysis .................................... 53
    5.1.1 Criteria ...................................... 53
    5.1.2 Location ...................................... 53
    5.1.3 Analysis ...................................... 62
    5.2 Program ......................................... 63
    5.3 Layout of the Complex ........................... 63
    5.4 Environment and Vistas .......................... 66

6.0 Design Process and Design ........................ 71
    6.1 Guiding Principles / Form Driving Factors ...... 71
    6.2 Process of Design ................................ 82
    6.2.1 Exploration One .............................. 83
    6.2.1.1 Principles Experience of Exploration One 88
    6.2.1.2 Outcome of Exploration One ............... 90
    6.2.2 Exploration Two .............................. 91
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.4 Other Monastic / Cistercian Research</td>
<td>174</td>
</tr>
<tr>
<td>11.5 Maki Fumihiko Account of the Single Storied Dwelling in Japan</td>
<td>174</td>
</tr>
<tr>
<td>11.6 Tadao Ando’s Komyoji temple</td>
<td>175</td>
</tr>
<tr>
<td>11.7 Japanese Temples</td>
<td>175</td>
</tr>
<tr>
<td>11.8 South Star Abbey’s Monks Initiation Steps</td>
<td>175</td>
</tr>
<tr>
<td>11.9 Timber Construction</td>
<td>176</td>
</tr>
<tr>
<td>11.10 Layering</td>
<td>176</td>
</tr>
</tbody>
</table>
1.0 Introduction

1.1 Research Question

The title of this research project is “Zen-Christianity: A Useful Dialogue?” The question put forward by this project is: can architectural principles from one culture be transplanted for the betterment of another? Specifically, a selection of Japanese architectural principles applied to a Cistercian monastic order within the New Zealand context.

1.2 Aims and Objectives

The purpose of this project is to use principles from one architectural culture within a built form which could become a precedent; in this case, for the rebirth and revitalizing of the “national distinctiveness” of Christchurch. The aspiration is to present a built form which connects built form and the Avon River. The reason for selecting the aforementioned Japanese principles is to create an unfamiliar piece of architecture in which new/lost ways of designing can be portrayed and exemplified. This will be achieved through demonstration and exemplification within the project’s design.

“...and the complex through nurturing, reassurance, support and periodic respite specific to the trauma complex.

The project aims at demonstrating ideas of piety, contemplation, meditation and rehabilitation. These ideas will be incorporated into the complex through nurturing, reassurance, support and periodic respite specific to the trauma complex.

“Healing is a process that can only take place from within ourselves, but this process can be triggered and supported by things and actions outside us. We can, therefore, talk about healing environments and healing qualities of environment.”

1.3 Outline of Project

The purpose of a monastic complex is to provide an environment to assist the occupants to come closer to God. The aforementioned principles will be used to help create and experience this connection. The monastery will provide support to the people of Christchurch, but it also needs to create its own source of revenue to help daily running costs. For reasons pertaining to traditional Cistercian monastery layout (section 3.3) the building will have a distinct functional organization in which sections are interconnected via a cloister. Monks will be kept separate from companions and trauma patients unless within circulation of the cloister or the church; although even in the church they are in separate areas. This is to create desired communities and is an outcome of conducted research.

---


1.4 Scope and Limitations

The project that develops the organisation (monks’/trauma/companions’ quarters, church, linking walkways and other needed functions), focuses primarily on experiences and the journey within, using selected principles. Research into selected Japanese principles attempts to discover possibilities of creating a more cohesive sensual and spiritual resolution.

The traditional role of a monastery will first need to be addressed; the facilities that are necessary for daily monastic life. However, the inclusion of a spiritual journey will be the driving factor in the design outcome with a sub focus on the public component within the building and a means of creating revenue. The development of the project is based upon figure 1.1.

“The success of monastic architecture rests as much in the way it accommodates the everyday rituals of the body as it does the rituals of religion: a monastery is both a house of God and house for men.”

The complex will allow for the patients’ time to be calm and peaceful by providing for all aspects of their stay. Views, spaces, timetable, activities, food and cleaning will all be designed and catered for. The design will aim at fostering a calm, solitary state. The complex will incorporate healing through a meditative and spiritual process which entails nurturing activities like reassurance, prayer and support. The meditative process is to reduce stress and anxiety while allowing for a focus on a calm mental, physical and emotional state.

Japanese Architectural Culture:

The Japanese architectural culture expresses important concepts for New Zealand to learn from, such as “standardisation, variety in unity, conformity to a mode of living, connection with nature, simplicity, and of course, usefulness to purpose.”4 Japan is similar to New Zealand in its geography, seismicity and environmental conditions, thereby facilitating the adoption of ideas. Refer to section 11.1 for ideas relating to Zen.

Selected Principles:

The aforementioned Japanese principles “cannot simply be transferred to other cultures and climates” specifically, the New Zealand context.5 This is due to the development and difference of technologies, resources, population density issues and economic situations. There is a large range of diverse and complex Japanese principles, but a selection has been made based on transferability and significance. Appropriate principles are to be used in the New Zealand context and have been selected in order to heighten sensual experiences within the complex.

New Zealand Context (Christchurch):

Following a number of recent, devastating earthquakes many Christchurch citizens have become traumatised due to loss of loved ones, homes, buildings and businesses. They are seeking a direction in which to move forward. This project is an attempt at creating a stepping stone to what could possibly be achieved by studying and developing from another successful architectural culture, such as that of Japan.

Monastery:

As in traditional monasteries the need to become as self-sufficient as possible is important (this was often due to their isolated nature). This project looks at creating a self-sufficient source of revenue for the monastery. “Monks of the Charterhouses inherited the Benedictine obligation to work, but the location of this was only in their individual cell and garden. It was therefore necessary to compose a group of ‘lay-brothers’ to which their job was to supply the needs of the monastery” and in this case to help run it.6 The way in which the designed monastery will create its revenue not only relates to their personal beliefs (service to others) but also helps in the recovery of Christchurch City.

---


Cistercian Order:

The reduction of sculpture and colour in Cistercian architecture meant the handling of stone reached new heights, resulting in simplicity and geometric clarity becoming key ideas.

“Everything superfluous was forbidden, and what was built was to be plain, chaste and lasting. Attention was consequently paid to the stone, to its careful dressing and fitting, and to the proportions of the rooms that it defined. Everything was built from the same pale, smooth-hewn stones…Stone is always more suggestive of permanence than wood or plaster, more rigid and solid.”

Materiality and overall architectural style will be minimalist and reductive in nature. The project will align itself with John Pawson’s design of Novy Dvur Monastery (refer to section 3.5).

Pawson describes his design as following the blueprint drawn up in the twelfth century by St Bernard of Clairvaux which states aesthetic requirements as “placing emphasis on the quality of light and proportion, on simple, pared down elevations, restrained detailing and spatial clarity.” The Cistercian order was chosen due to its closeness with Japanese Buddhist ideals.

Revenue:

After the recent earthquakes there is a need by some residents for mental rehabilitation from trauma brought about by the earthquakes and continuing aftershocks. This project looks at incorporating a trauma centre within the complex to create a sustainable source of income. The idea of helping others adheres to the Cistercian principles of devotion to God through service to others.

A suitable site to construct a Cistercian monastery has been selected within the Christchurch C.B.D. area. It is located in Armagh Street, near the Christchurch Law Courts and is adjacent to the Avon River. Because it is currently located within the Christchurch “No Go” Red Zone limitations arose when trying to acquire site information and photographs due to the ‘lockdown’ currently on the site and problems with the Christchurch City Council not being able to access their files.

---


8 John Pawson, Monastery of Novy Dvur.
2.0 Methodology

2.1 Methodological approach to the project

A trip to Japan was undertaken to further the understanding of Japanese culture, ways of life and how these affect their architecture. Visits of notable works of Japanese architecture such as Tadao Ando’s Church of Light, Church on Water and the Ise Shrines were undertaken to gain greater insight into Japanese architectural principles (refer to section 4.0). The aim was to gain a grounding firsthand knowledge of Japanese architecture, knowledge of function, materials used and differing topological locations.

A trip to Southern Star Abbey (in Hawkes Bay, New Zealand) was also undertaken to help understand the life of a Cistercian Monk and the architecture of the monastery (refer to section 4.0). This provided an insight into the life of Cistercian monks and their companions; in which their strict daily schedules became clear. South Star Abbey is an example of the current state of knowledge in regard to transferring traditional Cistercian architectural principles into a New Zealand context.

These trips helped to understand how architecture can be associated with a specific culture. Questions became apparent such as ‘is there such a thing as representational architecture?’ and ‘is there a link between a certain group of people and the shapes, volumes and materials that they use?’ (Refer to section 4.0 for expanded ideas).

2.2 Content

As established by literature and precedents, the success of a Cistercian monastic order is aimed at fostering an atmosphere for contemplation, prayer and, in this case, also healing. The project developed into an appropriate Cistercian monastic complex through the following processes:

- Identification of a list of appropriate spaces/functional requirements (including identification of the appropriate number of trauma rooms, lay brothers and monks cells).
- Provision for selected Japanese principles to be exemplified within the complex.
- Site selection to best display selected principles and ideas at the heart of the project (integration with the Avon River, view shafts and building within existing voids).
- Theory to use as research into design, providing a basis to develop the project.

2.3 Context

To establish guiding principles a study of drawings and details regarding Japanese architecture, Cistercian monastic architecture, Tadao Ando, Southern Star Abbey, La Tourette and Novy Dvur, will be conducted. These have formed the design of requirements, occupant needs and the criteria for an appropriate site selection.
2.4 Exploration

Selected research into the topic and stated objectives incorporated a balance of research for design, research by design and research into design.

Research for design was the first step in the research process which incorporated ideas such as: site elevations, general analysis (size, shape, no judgment) and the programme / brief for the project. Research for design included answers to questions and issues relating back to the main problems of the selected topic.

Research by design included further site analysis alongside a synthesis of creative exploration (hand drawing, computer drawing, computer design, computer visuals, and hand modeling).

During that time the incorporation of research into design was also investigated. This looked at ideas such as creativity / imagination, technicalities of creative exploration and project development by graphic means. The three processes were carried out in a structured manner, (as seen in the various sections within the document) but were also incorporated throughout different stages of the project to ensure the best possible result.

Once a site had been sourced, exploration, planning and spatial organizations were conducted. This has been done by drawing plans and physical model making. Critically analysing the design explorations against the guiding principles will provide insight to functional placement of facilities and will determine the outcome of a building that encourages integration with the natural typology of Christchurch City.
3.1 Japanese Influence

**Giving way to the land:**

In Place, Time and Being in Japanese Architecture the Isozaki states “many of the responsive building strategies that these structures demonstrate appear equally applicable beyond Japan.”9 The idea of giving way to the land and creating a building in response to its surroundings was an idea that this project aligns itself with. “Until the tenth century, for example, most Buddhist temples in Japan had been built on flat sites in the midst of cities, and were generally based on bilaterally symmetrical Chinese models …. As part of their greater respect for the uniqueness of the individual, these new religious communities went to considerable lengths to adopt both the layout and structures of their buildings to the particular terrain.”10 The result was a “unique marriage of geometric and natural order, which in addition to revealing the character of the site also creates a sense that the buildings and by extension their occupants – somehow ‘belonged’ there.”11 By giving the land (refer to figure 3.1) first rights the “structure would literally be unable to stand in any other location, and what would often otherwise have been an unremarkable slope was dramatically revealed in the form of the building.”12

---

10 Ibid., 17.
11 Ibid.,
12 Ibid., 18.

---

*Figure 3.1: Giving way to the land.*
The bounded domain:

Maki Fumihiko describes the concept of a house to be a “bounded domain within which to create and sustain a place of serenity against the unremitting turmoil of the megalopolis.”¹³ In *The Architecture of Fumihiko Maki: space, city, order, and making*, (Boston, MA: Birkhauser-Publishers for Architecture, 2003), 26. In this work, it is emphasized that “spatial design must become a fountainhead of spontaneous, rich human events.”¹⁴ Maki wonders “how to change the city to readily accommodate the change brought by the technologies and the volatile social structures of the new age.”¹⁵ He puts forward the question of within “city growth, as density increases, what was exterior space becomes enveloped, resulting defining major exterior space with several ancillary spaces” and how one should design with this consideration.¹⁶

¹⁴ Ibid., 33.
¹⁵ Ibid., 37.
¹⁶ Ibid., 46.
**Ikidori, the captured view:**

The indigenous Japanese term for ‘captured alive’, *(ikidori)* refers to the “active procuring of a remote scene.”\(^{17}\) The idea of *ikidori*, is achieved “by a carefully designed frame located some distance from the viewer.”\(^{18}\) In being visually connected to the landscape “the viewer not only knows unmistakably where they are, but through the apparent merging of the tectonic and the natural, is almost made to feel that, like the garden, they too in a sense belong there.”\(^{19}\) This is part of the process of honoring the spirit thought to inhabit distinctive natural places. Therefore the building “effectively marks the place, but at the same time mirrors its unique topography in its own form.”\(^{20}\) The project looks at capturing and enhancing views that would normally be lost in the development of the site.

\(^{17}\) Ibid., 21.

\(^{18}\) Ibid., 21.

\(^{19}\) Ibid., 21.

\(^{20}\) Ibid., 18.
Figure 3.3: Sliding screens inside the Catley House.

Figure 3.4: The Lowe house using patterned curtains rather than shoji screens.

Figure 3.5: The Mallitte House showing a large sliding door.
Previous implementations/adaption:

*Group Architects* provided details of how past New Zealand architects have implemented such Japanese architectural principles as “standardisation, functional flexibility, simplicity and connection with the landscape.”  

The project aligns itself with the idea of Japanese traditions becoming accepted universally, allowing for a starting point when using the selected principles. The idea of adopting/adapting Japanese principles was developed as members of *Group Architects* attempted to successfully ‘kiwinise’ Japanese architectural principles within a number of the Group’s houses, for example the Catley House included Japanese style sliding doors but “instead of rice paper these were to be lined with translucent nylon sailcloth.”  

*Group Architects* gives a reference point from which to base initial translations between the two cultures, even though within the Group’s 1946 manifesto outside influences were explicitly rejected (“overseas solutions will not do”).

Japanese ideals:

*Japan-ness in Architecture* highlighted that “events, personalities, and cultural influences each building embodies” provide an approach to Japanese architectural analysis.  

Isozaki states that Japanese taste has “shifted from material objects to the concepts perceived to underlie their production simplicity, humility, purity, lightness, and *shibusa* (sophisticated austerity)” which relates back to the shifting architectural trends within Japan.  

The aforementioned Japanese ideas of taste will be incorporated within the projects development. The idea of *shibusa* aligns itself with the monks ideals of refinement.

Natural, phenomenal:

Sensitivity to natural, phenomenal change and relationship to natural surroundings in the early stages of Japanese culture were centered on distinctive features in the natural landscape where they believed that “*kami* (gods) would inhabit. The presence of *kami* within the structures is still an important idea within the Japanese culture, thus, showing the moment in which a *kami* would inhabit these spaces became important too. Therefore, the significance of these sacred object-places “was a large extent dependent on distinct events in time as

---

22 Ibid, 209.
23 Ibid, 211.
24 Ibid, 214.
26 Ibid., 4.
The arrival or departure of a *kami* was linked to natural phenomena, such as abrupt changes (a sudden gust of wind). This technique of displaying the arrival and departure of a *kami* is present in Tadao Ando's *Church on Water* in which he displays a large cross in the middle of a man made pond in order to portray movement and presence of a *kami*.

3.2 Tadao Ando

Tadao Ando was selected as the primary architect to study and learn from for this project. Ando himself looked at translations of Western and Eastern architectural ideas. Although Ando's work could be seen as a somewhat ‘watered down’ version of traditional Japanese architecture, Ando provides a starting point in which not only to examine Japanese architecture but also ideas of translations between two different and distinct cultures. The book *Tadao Ando 1972-1987* shows examples of Ando's work in which key aspects of his projects become apparent. A key aspect that the author talks about is how Ando combines an “intense interaction of structure, movement, space and light …. to become the entire substance of the fabric; that is to say, each element is brought to a level of autonomous intensity and yet, at the same time, combined into a whole.”

Another aspect of Ando's work is the idea of *wabi*, which implies “adherence to the virtues of poverty, refinement, and simplicity.” "Judging on Ando’s work alone, it would seem that the sensibility of *wabi* is inimical to institutional form as it is to commerce. This may well account for the sterile purity of Ando’s ecclesiastical work.” These ideas of Ando closely relate to those of the Cistercian order.

Further aspects of Tadao Ando regarding built precedents have been analysed and researched in sections 4.0 and 6.1.

---

29 Ibid., 28.
30 Ibid., 29.
3.3 Definition and History of Monasteries

“The monastery in its wider sense denotes a monk settlement which is a self-contained unit with its own ritual, ecclesiastical and residential buildings, standing within clearly defined boundaries.”

Monks’ daily life in the Middle Ages revolved around the cloister, dormitory, refectory and church. St Benedict believed that idleness is the enemy of the soul. Therefore the days of a monk were kept in activity, whether worship, contemplation, study, or manual labour. In the Carolingian Empire, by the end of the ninth century, there were over 1000 monasteries established. The architecture of these Carolingian monasteries is expressed in the plan of St Gall (figure 3.6).

The plan for St Gall (ca 830) became a prototype for future monasteries. The plan has a cloister at its heart which is surrounded by a single-aisle basilica, dormitory rooms, and service rooms (refer to section 11.4 for further monastery reading).

Figure 3.6: Plan of St Gall showing key ideas of layout - cloister adjacent to church and connects surrounding buildings (green - cloister, yellow - church, blue - monks).

3.4 Definition and History of Cistercian Monastic Order

At the time when Benedictines from the Order of Cluny worshipped God within sumptuously designed churches, a monk called Robert de Molesme suggested that they revert to the strict rule of St Benedict of Nursia (in prayer, seclusion and living by manual labour). The “New Monastery” in Citeaux became a model for the Cistercians monks and lay brothers.

The Cistercian monastic order believes in prayer while doing manual labor and service to others. Within the Cistercian order there are monks and lay brothers. Lay brothers are there as companions and take care of the daily running the monastery. The lay brothers and monks are kept separate in all parts of the monastery except for the circulation of the cloister, refectory and the church; although even in the church, they are in separate areas. Figure 3.7 shows the Cistercian Abbey according to Bernard

Monks within monasteries will not live an exclusively communal life as rules dictate that “Dominicans shall at certain hours be solitary. A man desiring to compose his mind, to meditate and study must have a closed room to himself. This the monk finds in his cell.” Designs of the Church were to rise up from the ground reaching for the heavens as “the Christian sees the altar as the high place where the earth arches up towards heaven. Christ in the sacrament descends on to the altar.” Traditionally the idea of the monk reaching a level of poverty was in order to get closer to God as “sovereign independence of possessions as well as of want, which raises poverty to a spiritual level.”

The Charterhouse is a monastic system that developed contemplative cells. Charterhouse architecture has a domesticated nature. Each monk is given a piece of land beside their cell. Walls surrounding the gardens help keep the monk in solitude while allowing views into the garden from their cell. Time is introduced, as seasonal changes can be experienced in these courtyards. The idea of time and seasonal changes relates to Japanese ideas of portraying the coming and going from spring to autumn.

The cloister within a monastery complex was a courtyard having garden within it. They were places of contemplation and purity. They had roofs surrounding the perimeter to give shelter from the elements allowing the monks to stroll, pray and contemplate.

Traditional monastic orders draw together several ideas; that of solitude, the reduction of a social agenda, prosaic architecture, and a sacred environment.

---

33 Ibid., 13.
34 Ibid., 15.
of Clairvaux. In the diagram note the separation between monks and lay brothers – the church with the cloister joining the surrounding functions becoming a clustered organization is clear to see.

The Cistercian Monastic order according to Bernard of Clairvaux reaffirmed the strict rule of St Benedict. Bernard was critical of the wealth and opulence that had crept into churches and monasteries. Devotion for him was not related to extravagant paintings, sculptures or buildings, but was according to an ascetic lifestyle.

Architecture of the Cistercian order “followed more traditional lines with a straightforward two-storey elevation.”35 In general the Cistercian identity was “conveyed not by specific architectural features, but by a tone of simplicity and restraint.”36 St Benedict himself saw much of the church decorations as a distraction from piety.

36 Ibid., 182.
Figure 3.7: The Cistercian Abbey according to Bernard of Clairvaux (green – cloister, yellow – church, blue – monks, red – lay brothers).
Figure 3.8: Plan of Sainte-Marie de la Thoronet (green – cloister, yellow – church, red – lay brothers).
Figure 3.9: Exterior view of La Tourette.

Figure 3.10: Comparison of La Tourette and La Thoronet.
3.5 ‘Recent’ Western Monastic Examples

Le Corbusier - La Tourette, Lyon, France, 1960:

Le Corbusier based his design of La Tourette upon Sainte-Marie de la Thoronet (refer to pictures 3.8 and 3.10). Le Corbusier thought that architecture of the monastery should be “simple and functionally conceived, though ample and beautiful in its pure relationships …. the relationship of the individual to the community, as represented by the monastery building, impressed him.”

The monks of La Tourette asked for a church, oratory, chapter-room refectory, cloister, library, lecture-rooms and cells but left the shape and form to Le Corbusier. For the planning of La Tourette Le Corbusier selected a ground-plan of the rectangle surrounding an inner courtyard, as traditionally done. The entrance floor is for study, while the upper stories are the Dominican’s cells. Between the Church and the monastic wings lies the cloister, a space which connects the two. Traditionally medieval monastery buildings were a direct influence of the needs of the life of the order; the cloister had to provide a covered path between monastery buildings, while also being a place for leisure and private prayer. Le Corbusier disregarded this idea of the cloister being open and, instead, he decided to enhance the “functional quality of the communicating way. His cloister had side walls made of undulatory glass and the monks can use it in all weathers.” By doing this Le Corbusier reduced the cloister passageways to thin passage ways across a space in which was to be unusable.

Within La Tourette Le Corbusier provides each cell with only enough space for a table, book-shelf, a cupboard and a bed.

Le Corbusier design of the monk’s cells allows for “man to create an image of himself and thus access to himself. Having thus liberated him, it leads him to the community in which he feels himself to be richer and of greater significance than as an isolated and solitary person. It interprets the world. Discloses its meaning and in the end reflects a reality higher than the earthly.” Although this statement is somewhat generous, it still gives ideas in which to portray the monks’ cell.

---

38 Ibid., 12.
39 Ibid., 19.
Le Corbusier allows little light to enter the church; the rear part has narrow horizontal windows and between the short wall and the roof there is a band of light. As described in the book La Tourette: The Le Corbusier Monastery the church has little lighting but it does not appear dark, instead the dim light increases the power of the un-surfaced concrete and the space broadens into the hall of the Lord where the monastery community meets for Mass (refer to picture 3.11). Le Corbusier kept the church free from ornaments and images allowing “the monks themselves in white and black garments fill the room with figures and images.” Le Corbusier used height differences to create different moods within the passageways.

40 Ibid., 14.
41 Ibid., 15.
Figure 3.12: La Tourette analysis, entrance floor plan (green – cloister, yellow – church, blue – monks, red – lay brothers).

Figure 3.13: La Tourette, entrance floor plan.
Figure 3.14: La Tourette, cell floor plan.

Figure 3.15: La Tourette, cross section.
The library changes from an intimate, low room to a liberating, high room. This has the effect of going from the inside to outside. “The overall aspect of La Tourette stands in contrast to nature, emphasising the frontiers which separate the sacred precincts from the world.” Le Corbusier created a building of the modest construction; within the building Le Corbusier was compelled to cut down to comply with the poverty of the project.

La Tourette by Le Corbusier has clear relationships to past monastic architectural principles and follows closely the rules of St. Benedict. Le Corbusier uses little or no treatment regarding material palette. The complex has been provided with typical functionalities based on the needs of the monks. The layout also follows a typical monastic complex in which a ground-plan of a rectangle surrounds an inner courtyard, while between the church and monastic grounds lay the cloister (refer to figure 3.12). Le Corbusier has taken ideas pertaining to light in religious architecture and uses it to create unique, awe inspiring interior spatial environments. He achieves this by allowing small amounts of controlled light, which thus increases the power of the un-surfaced material palette and refined interior environment.

“Light is the fundamental basis of architecture”
- Le Corbusier

42 Ibid., 17.
Figure 3.16: Novy Dvur, complex.

Figure 3.17: Novy Dvur, interior.

Figure 3.18: Novy Dvur, exterior.
In 1999 John Pawson took the commission to design a Cistercian monastic order for a site in Bohemia. The proposal had to incorporate existing baroque structures (a house, courtyard and three wings of agricultural buildings). The site functions include church, dormitory, refectory, infirmary and a manuscript. Pawson succeeded in creating a design which pays homage to St. Benedict’s rules for the order in which the architecture is portrayed. Pawson adhered to old rules in which he “first defined the functional and aesthetic values that St. Benedict’s rule defines and then tried to generate the best possible expression of these qualities.” In keeping with the architectural quality ideas above Pawson describes the materiality of the design as “characteristically restrained, with plaster, concrete, timber and glass predominating. In keeping with Cistercian aesthetic preoccupations, effects of light read as essential components of the fabric of the architecture, being used variously to add precision, drama and a sense of mystery to the experience of the spaces.”

The overall design has a monastic feel but seems somewhat ascetic in its appearance due to its minimal exterior representation and materiality pallet (refer to figure 3.18). Once again the monastic functionalities have been based upon the requirements of the monks. The way in which Pawson questioned what areas he could change while still trying to adhere to old rules created a ‘modern’ take on the traditional representation of a monastery. As did Le Corbusier, Pawson used light as an essential component of the overall architectural aesthetic as well as the clustered organisation of buildings around a cloister space.

43 John Pawson, Monastery of Novy Dvur.
44 Ibid.
Figure 3.19: Novy Dvur, movement plan.

Figure 3.20: Novy Dvur, lower plan.
Figure 3.21: Novy Dvur, ground floor plan.

Figure 3.22: Novy Dvur, upper floor plan.
4.0 Lodging the Foundation of the Design

Traditional

The Temples of Kyoto, specifically Tofuku-ji during the autumn season, impress the visitor by the view from the Tsuten-kyo Bridge which looks over the famous red and orange coloured maple leaves (refer to figure 4.1). The Japanese idea of celebrating the changing seasons is apparent with temples lined with sakura (cherry blossoms) in spring and the reddening of the maple trees in autumn. The temples exhibit traditional timber construction techniques, especially the use of post and beam wood construction, under typically large overflowing eaves. Due to the span of wood construction this “tends to deprive Japanese architecture of large-scale volumetric possibilities” in which spaces often end up small and in a uniform nature.45 Verandas have juxtaposition between open and closed, outside and in, indicating the need to bring the landscape inside by framing surrounding natural scenes (refer to figure 4.2).

This not only acknowledges a sense of place but also time. “Paper doors and split-bamboo curtains contribute to the Japanese interior a sense of the half-hidden and partially revealed. Deep eaves and surrounding verandas keep the interior in darkness and shadow analogous to that of the forest. The hidden richness and ubiquitous concern, with which the Japanese appreciate in nature, they emulate in architecture with the elaboration of carefully concealed joinery.”46 Temples use shoji screen doors which open to connect the outside. Shoji screens allow for natural cross ventilation and continuation of view shafts in which the built structures themselves become second to the natural landscape. The temple gardens are a reflection of nature, while at the same time showing a need for perfection that man desires (refer to section 11.7 for further information regarding Japanese temples).


46 Ibid.
While visiting Japan one notices the number of traditional timber constructed buildings. Wooden buildings are resilient in earthquakes and Japan is an area of high seismicity. “On average four earthquakes are registered in Tokyo every day and the danger of destruction by earthquake is ever present. Experience has shown that wooden buildings last when stone erections fail.”

At the Shrines of Ise one notices the architecture of Shinmei-zukuri which is characterized by simplicity and antiquity. The shrine buildings at Naikū and Gekū as well as the Uji Bridge, are rebuilt every 20 years on an adjoining site as part of the Shinto beliefs of death and renewal of nature. The Shrines of Ise are the Japanese version of the traditional European church (refer to section 11.2 for further reading regarding the Shrines of Ise).


Figure 4.2: Sketch of Tofuku-ji Temple – Veranda area, showing ideas of materiality and construction.
Figure 4.3: Le Corbusier's Modulor.

Figure 4.4: Japanese house showing the tatami mat.
Traditionally, accommodation was part of the experience of staying in Japan. “The city dwelling is, in fact, in many respects composite of its sacred and rural secular antecedents and may quite reasonably be considered to reflect the essential character of Japanese building.”

The Japanese house is often a “one-room house which has been partitioned into a series of compartments by the shoji.” A key feature in the Japanese home is the tatami mat, “long before Le Corbusier’s famous Modulor, the Japanese were working with a human proportioned unit that informed not only the dimension of homes and rooms, but also the way in which they were used. An essential item makes this multi-functionality possible. The tatami mat is long and wide enough to accommodate one person lying down or in the traditional saying “tatte hanjo, nete ichijo, which translates as half a mat to stand, one mat to sleep.”

Figure 4.3 shows Le Corbusier’s Modulor and figure 4.4 shows a Japanese housing based around modules of the tatami mat.

“Within each room the tatami are commonly laid in a spiral pattern which in itself contributes to the definition of separate spaces. The bindings of the tatami make a linear pattern which is not carried across the threshold of the room. Though the eye is, by virtue of the adjacent linear pattern, led outside of the room and though the space without is made to seem a part of that within, this is not done at the expense of definition and a sense of containment.”

---


50 Ibid.

Modern

“You cannot simply put something new into a place. You have to absorb what you see around you, what exists on the land, and then use that knowledge along with contemporary thinking to interpret what you see.”

- Tadao Ando

Tadao Ando is a Japanese architect who aims at the poetic and creative while questioning how architecture can improve human existence. *Church on the Water* (1988, Hokkaidō) is a precedent in which Ando successfully blends a church into its surroundings by connecting it with nature. It is located sloping down towards a river amongst a small clearing of beech trees (figure 4.5). The form is contemplative and meditative with a simple, yet refined, internal environment. As the name suggests the church itself is built on the edge of a body of water. The overall floor plan is simple, consisting of two squares overlapping in which views from the buildings look out upon a manmade lake on one side and a gentle grass covered slope on the other (figure 4.6). The larger cube holds the function of the church and the smaller cube the entrance. Once inside the church a cross appears as a reflection within the dark blue lake. “the interior of the chapel may not seem like a piece of borrowed landscape, but through its reflection in the pond, the sense is nonetheless effectively captured.”

Water itself becomes as much a part of his material vocabulary as his famed concrete.

*Church of Light* (1989, Osaka) by Tadao Ando was produced using his signature reinforced concrete which enables his contemporary structures to have a variety of forms. Ando used dense concrete which enabled less material to be used. In *Church of Light* Ando once again embraces his ideals of creating a framework between nature and architecture. Ando plays with the use of light to define new spatial perceptions (refer to figure 4.7). The Church itself becomes void of any surplus colour or any ornamentation in fact; leaving the inhabitation of the church itself the only means of colour and ornamentation within the Church (figure 4.8). The interior of the church has been left as raw concrete and timber pews giving an overall refined minimalist feeling. The only way in which one may define this building as a Christian typology is the cross symbol cast within the panels facing the street frontage. Ando’s architecture, especially his interiors, are known for their contemplative, meditative, retreat quality. His ability to attach to non-secular views and secular, but with the same power and conviction is mastered. While his Church of Light draws obvious attachments to Protestant organizations, his other buildings for contemplation have no religious attachments whatsoever. His often austere interiors, especially within spaces for contemplation and relaxation, churches, tea rooms, etc, transfer the occupier into the spiritual realm. The emptiness or ‘nothingness’ is there to allow the spiritual to fill the space.

Figure 4.5: Tadao Ando’s Church on the Water – Site plan.

Figure 4.6: Tadao Ando’s Church on the Water – Exterior photograph.

Figure 4.7: Tadao Ando’s Church of Light – Interior sketch of light penetration.

Figure 4.8: Tadao Ando’s Church of Light – Interior sketch crucifix.
Figure 4.9: Tadao Ando's Water Temple – Exterior.

Figure 4.10: Tadao Ando's Water Temple – Interior photograph showing vermilion colour.
Water Temple (1991, Awaji Island) by Tadao Ando is a new sensory take on traditional Japanese temple design. The location of the temple is of no great grandeur; instead it is built within the hilly landscape of Awajishima Island. The overall form of the Water Temple encloses traditional Buddhist religious aspects. From the entrance of the site the visitor is immersed in a sensory experience. Once past the cemetery one reaches the smooth surface of the concrete walls sheltering the lotus pool below. A long white gravel path leading to the entrance is to symbolize the beginning of the purification process which is traditional amongst Buddhist temples. To enter visitors must descend into and below the lotus pool which forms a boundary line reflecting surrounding mountains, rice paddies, bamboo groves and mountains. Although concrete is abundant in the outer portions of the form, inside is a more traditional Shingon temple structure constructed from timber. Within the heart of the temple Ando extenuates the sacredness of the room using colour and light. The light source is filtered through grat-
Figure 4.11: Tadao Ando’s Westin Awaji Island hotel – Church interior.

Figure 4.13: Tadao Ando’s Westin Awaji Island hotel.

Figure 4.12: Tadao Ando’s Awaji Island Hotel – Sketch of ramp system.
Westin Awaji Island hotel (2000) by Tadao Ando becomes part of the hillside of the Osaka Bay area, descending the hillside to the sea. The overall layout is a series of complex interior and exterior spaces which are all interconnected, (figure 4.12 shows interconnected circulation routes). The idea behind the interconnected spaces is to reconstruct the landscape that had originally been destroyed during the Kobe earthquake and at the same time serve as a memorial to the thousands who died. The complex has multiple functions such as a chapel, hotel, conference centre and a restaurant. The church may be entered via the hotel, from which one descends below ground to view an illuminated cruciform shaped void in the ceiling. Only the bell tower can be seen from the outside to signify the church’s existence. As with the concrete in Ando's previous works the silky smooth concrete is employed throughout the site, along with steel and glass.
Representation in Architecture

Walking around Japan one could easily stereotype Japanese architecture as that of post and lintel, supporting a generally curved roof, paper thin walls which are often moveable (implying non load bearing) and large overhanging eaves covering the veranda. From this deduction, one could say that this genre of architecture symbolizes, or represents, Japan. A certain shape, material and tectonic representation have been chosen and have the effect of representation. This project aligns itself with Geoffrey Scott when he states that a building should instead be judged by the architectural values of “Mass, Space, Line and Coherence.”

The materiality should not be associated with cultural identity either. For example, the Church of Light by Tadao Ando is constructed in concrete, steel and glass. How could it be a representation of Japan when it is built of universally used materials? Therefore, one must avoid stereotypes and preconceptions.

The stance is a Romantic Fallacy, (that is, conceiving styles as a stereotyped language). But then how can one ascribe ‘Japan-ness’ to Tadao Ando’s Church of Light? The architecture is the formal gesture of primary geometric shapes of a cylinder upon a square, but once the building was constructed it then became subsumed under the concept of ‘being’ Japanese. The building has not been fully evaluated on its own architectural formation, and is instead placed into the stereotype of Japan-ness.

Therefore, good architectural principles that have been employed for a specific building in a specific country can be examined, but this should not allow the architecture to be placed into a stereotype of a specific culture or set of people. The architecture instead is derived from a functional response to a set of guidelines realised from specific factors of that situation (function, topography and climate). Therefore, when expressing ‘Japan’ it is not about form or materials and will not be culturally specific.

The stance taken rejects the notion of representational architecture, instead concentrates solely on an apostate architectural response. It is Japanese due to the principles that create an overall atmosphere within and how it is used. But what is more important is the architecture will be judged by the aesthetics of Scott (Mass, Space, Line and Coherence).

Therefore, good architectural principles that have been employed for a specific building in a specific country can be examined, but this should not allow the architecture to be placed into a stereotype of a specific culture or set of people. The architecture instead is derived from a functional response to a set of guidelines realised from specific factors of that situation (function, topography and climate). Therefore, when expressing ‘Japan’ it is not about form or materials and will not be culturally specific.

The project will not create a building that appears to be Japanese within the New Zealand context, but rather taking the subtle Japanese notions of what really makes them Japanese into the philosophy of design. Therefore, it will be Japanese because of the incorporated selected aforementioned principles. This allows the building itself not to be seen as Japanese, but as a collaborative

approach between the ideas of two cultures, coherently placed within the monastic typology.

Southern Star Abbey

The Korua Abbey designed by Hugh Tennent was influenced by Cistercian abbeys in southern France. His intention was to create a space where, once inside, “you breathe differently and your mind slows down and you become more aware of your place in the universe.”

His influences led him to a design that is “quiet and full of warmth.” The design of the cloisters and courtyards used materials that “tread gently on the land” and the courtyards provided a “varying experience of seclusion, outlook procession and pause.”

Tennent is known for his spirituality and has designed everything from a Buddhist monastery to a Cistercian retreat. Tennent states that he is “most interested in the inquiry into life offered by meditation techniques, and how to integrate that into a modern urban context.”

In an interview with *Waikato Times* he stated, “I try to make things feel beautiful and make them uplift the human spirit. That’s about proportions and how things are composed and arranged. The use of light is really important … the use of light can create power in a space that makes one become self-reflective or self-aware.”

Tennent states, “The cloister isn’t very common in New Zealand, as we’re a culture of pavilions and we sit in the landscape and look out …. the cloister focuses the attention inward.”

The monastery itself is set in a very rural area. The first indication one sees of the Southern Star Abbey is of a small sign, hinting at its existence beyond. Leading up to the site a line of trees signals the start of a journey, inviting one in to share and feel the peace within. This signifies the life left behind you. The drive through the trees is a passage, a space that must be traversed in order to reach what one has traveled there for. At the end of the avenue there is a rise in the natural typography which leads to an open space, car parking, church, guesthouse, garden and monastery ground there are beautiful views of hills, mountains and pastures. A friendly welcome is given upon arrival and then one is lead to one’s room (refer to figures 4.20 and 4.21 for the current layout and circulation of Southern Star Abbey). The guest complex (recently designed by Hugh Tennent, 2008) is a symbol of the Cistercian Monastic order; refined and minimalist, all in alignment with the Rule of St Benedict (refer to figure 4.19). The guest house is “one of simplicity, space and serenity, providing comfort and privacy to those seeking a spiritual refuge from the cares of the outside world.”

Rooms consist of two single beds, a desk on which to work, an en-suite, storage, and a crucifix behind the bed, all of which are a direct imitation of the monk’s cell (refer to figure 4.17). The view from the room looks out to the hills beyond.


Ibid.

Ibid.
Monks live highly structured lives, with each day ordered around a repeating sequence of services and the rising and setting of the sun. The daily routine follows a strict order which can be seen in the structured timetable followed at South Star Abbey (refer to figure 4.15). Throughout the year different adjustments are made to the timetable to allow not only the rules of St Benedict to be followed, but also allowing for the monks to follow the changing seasons in the way they live and pray.

Guest rooms are linked to communal facilities, which include a kitchen and living area. This is the central area for the guest if one is not following the monastic timetable or exploring the natural surroundings. The living room accommodates a fireplace around which to gather and talk at night (reinforcing the communal idea of the Cistercians). Local materials from the nearby river have been used in the construction process, such as stone for the kitchen floor. The corridor of the guest rooms plays with light as it bounces between white washed walls and natural timber slats, juxta-
Figure 4.15: Southern Star Abbey time table.

Figure 4.16: Southern Star Abbey — Interior of guest complex.

Figure 4.17: Southern Star Abbey — Guest room.
Figure 4.18: Southern Star Abbey – Photograph of corridor.

Figure 4.19: Southern Star Abbey – Sketch of exterior guest complex.
Figure 4.20: Southern Star Abbey – Model of proposed site layout by Hugh Tennent.

Figure 4.21: Southern Star Abbey – Proposed site layout by Hugh Tennent (green – cloister, yel-
The exterior of the guest house is a direct reflection of its interior: white walls with glass and black frames. The outside form breaks away from becoming a simple geometrical form to allow for more contrasting shapes in which to reflect the ruggedness of the surrounding hills and mountains (refer to figure 4.19). Throughout the site view shafts are constantly becoming visible. The previous guest house accommodation is in the style of a typical West Coast house, although it is now inhabited by monks. The old buildings are in the common New Zealand wooden weatherboard style, painted in a lime green, which has bleached over the years. Surrounding the monk’s current complex is a veranda on which monks may escape from the solitude of their room to the openness of the courtyard area, similar to a cloister.

Surrounding the site are a series of intertwining nature trails on which one may become closer to natural world while experiencing solitude. The chapel, within the heart of the site, separates the guest, the companion, monks’ rooms and facilities from one another. The chapel is a typical Cistercian layout, separation between laymen and public from the monks, with a secluded area located at the rear for Mass. Hugh Tennent has designed an overall master plan for future developments within the monastery (refer to figures 4.20 and 4.21). Currently the guest house has been completed (first stage) and the new monks living quarters are under construction. The construction, layout and internal environment are very similar to the guest house accommodation and living quarters. The overall experience is one of relaxation, meditation, refinement, solitude, community and spirituality.

Figure 4.22 and 4.23 show the current layout of Southern Star Abbey. Figure 4.22 shows the different functions within the monastic complex. The church and the companion rooms act as a buffer between guests and the monks. The monks ‘cloister’ type area is protected from all other users, and thus this is where their inner community exists. Figure 2.23 shows the different movement paths in a daily routine within the complex. As seen in the figure the companions are free to move around the entire site helping with the monks daily chores and catering to guests. The monks’ movement paths are mainly restricted to the guest quarters and church areas. The guest’s movement path is allowed to freely roam the complex while giving adequate distance between the private areas of the monks ‘cloister’.

Figure 4.22 and 4.23 show the current layout of Southern Star Abbey. Figure 4.22 shows the different functions within the monastic complex. The church and the companion rooms act as a buffer between guests and the monks. The monks ‘cloister’ type area is protected from all other users, and thus this is where their inner community exists. Figure 2.23 shows the different movement paths in a daily routine within the complex. As seen in the figure the companions are free to move around the entire site helping with the monks daily chores and catering to guests. The monks’ movement paths are mainly restricted to the guest quarters and church areas. The guest’s movement path is allowed to freely roam the complex while giving adequate distance between the private areas of the monks ‘cloister’. 
Figure 4.22: Southern Star Abbey – Site functions (yellow – church, blue – monks, orange - companions).

Figure 4.23: Southern Star Abbey – Site movements (yellow – monks, blue – companions, red - guests).
5.0 Project Development

5.1 Site Analysis

From research conducted, several points can be made regarding the site. Monks traditionally choose sites that are considered ‘isolated’. The reason for isolation is to separate them from society and thus reduce ‘social noise’. These isolated places were often beautiful landscapes with stunning views. Water was a requirement for pragmatic reasons, but also for its contemplative quality, and so it was often incorporated within the complex.

5.1.1 Criteria

The proposed Cistercian monastery will be located in the Christchurch C.B.D. area (refer to figure 5.1). To select a site for the proposed monastery, specific criteria had to be established. The key attributes considered in the site selection were:

- A connection with the Avon River, views and greenery close at hand.
- An active area from which the project can be viewed and exemplified as a precedent.

As previously mentioned the recent earthquakes within Christchurch were also a deciding factor.

A connection with nature, surrounding views, adequate light were to be part of the site criteria in order to display the selected principles. The site needed to allow for an isolated aspect in which reduction of social noise and the separation from modern society could be achieved in alignment with the monk’s needs.

5.1.2 Location

The location has been selected based on the aforementioned criteria. It is situated in a (usually) busy urban environment located in the Christchurch C.B.D. area (refer to figure 5.1). Since September 2010 Christchurch has experienced numerous large earthquakes and aftershocks (currently totaling over 8,700). The earthquakes have seriously damaged a large number of buildings and it is likely that over 1,000 buildings within the CBD area will have to be demolished (refer to figures 5.4-5.8). Because of the large amount of remaining infrastructure (i.e. roads, water and sewer pipes, power and communications cables, etc.) investment within Christchurch C.B.D. it would be naive to suggest that the C.B.D. will shift as a result of the earthquakes. The rebuilding of the Christchurch C.B.D. will create the opportunity for a sovereign, architectural design to be implemented.

Figure 5.1: Site location – Christchurch.
Figure 5.2: Christchurch city structured grid/city blocks.
Figure 5.3: Photograph of Christchurch post-earthquake.
Figure 5.4: Photograph of Christchurch post-earthquake – Earthquake damage and spire of Christchurch Cathedral missing.

Figure 5.5: Photograph of Christchurch post-earthquake.

Figure 5.6: Photograph of Christchurch post-earthquake.

Figure 5.7: Photograph of Christchurch post-earthquake – Earthquake damage of heritage building.
An initial location of the proposed monastery was the site of the old Christchurch Municipal Chambers. The site offered proximity to public transport allowing a high level of visual awareness within the C.B.D. and greater Christchurch area. The connection to the Avon River would be an important element in demonstrating Japanese design ideas regarding landscape and nature. However, after further research and initial concept designs it soon became apparent, through critical analysis, that the site would neither be appropriate nor produce a successful result. This was ultimately due to the change in mind of the council to restore the building (any surviving buildings after the earthquake now play a significant role in Christchurch due to the now limited number) and also due to the lack of sufficient surrounding typologies in amongst which to build.

Figure 5.8: Plan view of initial site.
A new site then had to be selected. The selection was once again based on the key attributes stated earlier, as well as favorable qualities. The site chosen has a mixture of public and private activities happening throughout the year, creating a vibrant environment. This idea of a vibrant environment allowed the being not to become an isolated insertion within Christchurch and rather allowing the selected principles to be put on display. The site itself creates many problems arising from its public facing orientation, accessibility, size, existing buildings, surrounding activities and a connection with the Avon River. The site is situated near the Christchurch Law Courts and looks over the Avon River onto Victoria Square, where regular events occur, such as the Chinese lantern festival, providing exposure to the general public.
Figure 5.10: Photograph of site facing Armagh Street (post-earthquake).
Figure 5.11: Photograph of site facing Durham Street (post-earthquake).
5.1.3 Analysis

The site selected is currently an unused, grassed space beside the Avon River. The Avon River flows serpentine like through the Christchurch C.B.I.D. area and breaks the structured grid of Christchurch (refer to pictures 5.2 and 5.12).

Existing buildings around the site consist of multiple brick buildings on the south west axis that are used as storage, year round dance studios (former Magistrates Courts) and environmental courts. The north side of the site is an extension of the Christchurch Law Courts complex in which the facades are mixed curtain wall system and concrete tilt slab with windows (south and east facing). An existing unutilized car park exists within walking distance which the proposed complex will take advantage of.
5.2 Program

The programme for the trauma patients will span 10-14 days. The patients will check-in on the entrance level reception area, located on Armagh Street where they will be greeted by a companion. They will then be briefed on how their stay will proceed. Clients will be invited to breakfast in the companion’s facilities and similarly for lunch and supper. The three meals of the day will be in a communal environment, which is traditional in a Cistercian monastery. The monks within the complex will follow a daily timetable similar to that of Southern Star (refer to figure 4.15). There will be 8 rooms in which each will contain two single beds equating to 16 guests at one time within the trauma quarters, although not all will stay in the facility.

5.3 Layout of the Complex

The functions for the complex would not only need to meet the site requirements, but be relevant to the architectural principles and research conducted.

The selected functions of the monastic complex fitted into five categories as listed below:
The project will develop a series of ‘units’ beside the Avon River. The companion’s quarters will provide necessary support for the units; housing of staff, administration rooms, kitchens, counseling, common room, storage, etc. The trauma units will contain two single beds, a desk, storage space and an en-suite.

Three – Monks’ quarters (refectory, cells, common room, oratory and other required amenities):

“A new abbot should not be sent into a new place without at least twelve monks …. and without having first put up the following buildings; the oratory, the refectory, the dormitory, the guesthouse and the gatehouse.”

The refectory is to be the place in which monks will have communal meals. Although diet and eating habits changed by order this project followed Cistercian tradition of living in poverty. Even the ordinary life was described as a state of peace that is unthought-of in the ordinary world.

“The ideal of poverty, requiring not only each monk, but also the monastery and its church to be poor and make a show of their poverty, inspired severe condemnations of any form of architectural or artistic luxury. In every monastery the same simple rooms were to hold the monks… In this primitive age, when sculpture was being called upon everywhere to give graphic expression first to the fantastic visions of the Romanesque, and before long to the Gothic desire for stained-glass in glowing, often violent, colours, the Cistercians demanded bare, unadorned stone…”

The monks’ and companions’ cells will be based upon the ideal of poverty. The cells are a place to meditate and study as in traditional monastery’s (refer to section 3.3). Design to allow sunlight in will be looked at to ensure each cell receives adequate daylight, such as that of Le Corbusier’s La Tourette. The cells will be small to encourage interaction within the more open communal spaces of the exterior ensuring both the individual and communal aspects are experienced during a daily routine. The monks’ cells are designed in reflection of Patrick Leigh’s ‘A Time to Keep Silence’ in which he states “for, in the seclusion of a cell - an existence whose quietness is only varied by the silent meals, the solemnity of ritual and long solitary walks in the woods – the troubled waters of the mind grow still and clear, and much that is hidden away and all that clouds it floats to the surface and can be skimmed away; and after a time one reaches

Two: Trauma quarters (guest rooms):

“The project will develop a series of ‘units’ beside the Avon River. The companion’s quarters will provide necessary support for the units; housing of staff, administration rooms, kitchens, counseling, common room, storage, etc. The trauma units will contain two single beds, a desk, storage space and an en-suite.”

One: Companions (cells, kitchen/common room for both companions and trauma patients, and other required amenities):

Henri Gaul, Cistercian Abbeys: History and Architecture (h. f. ullmann; 1 edition, 2009), 49.
allows the rule of the Benedictine. The rule of St Benedict allows for two meals year round with supper served late spring to fall (4am breakfast, lunch at noon and supper at 6pm). Moderation of all meals is to be in the spirit of Benedict’s law. Meals will be eaten in silence and monks will use hand signals to communicate if needed. The monks will eat in a three aisle hall (as done traditionally). Before one enters the refectory one must wash one’s hands in the lavabo (hand basin). Within the refectory the idea of St. Augustine is to be appreciated “when you go to table, until you stand up again, listen to the regular reading without sound and without dispute; for you shall take in nourishment not only through your mouth, but your ears also shall be hungry for the word of God.”

The oratory as stated by the rule of St Augustine says: “no one shall do anything other than the purpose for which it is there, and from which also it takes its name, so that those who think they have to do something else there do not disturb those who wish also to pray outside the prescribed house, in their free time.”

Four – Church (lower and central):

The creation of the lower and central church was a direct influence from the requirements of a Cistercian monastery, although this project incorporates Japanese principles into the overall design. The lower church is a place for private prayer and is the only room to which the companion also has free access. A sacristy is needed in which priest’s sacraments, sacred vessels and parish records are kept and where the priest may prepare for ceremonies. The sacristy is located next to the altar, in keeping with traditional church layouts, while more recent churches have a separate building. The high altar located within the central area of the church is elevated to symbolize Christ. The central church is where monks, companions, trauma patients and, in this case, the general public can attend services and pray.

Five – Other functional requirements (study areas, chapter house, library, small scale lecture room, visitation area and cloister):

Within the monastery there is a need to study, therefore, a lecture room, library and study rooms will be provided.

The cloister traditionally provided covered ways between buildings within the monastery grounds as well as acting as an area for private prayer and leisure. The cloister frames the courtyard, which in some cases will be the only view for internal spaces. On one side, the church, typically lying east-west, occupied the high ground of the monastic site. On either side of the church, service buildings had to be built alongside the river (mill, lay brothers and monks’ quarters, etc). Although in this project the Church is located against the Avon River as it is to have a powerful connection

---

5.4 Environment and Vistas

Christchurch is known for its flat typography, meandering Avon River and the surrounding Port Hills. The site is situated in an area that is sheltered from the cold, southerly winds, but is open to the east (refer to figure 5.15). The nor’wester blows hot, dry wind which can result in temperatures above 30°C. In winter, southerlies occasionally bring snowfall, and cold air that causes hard frosts. The northerly aspect of the location is built up against existing buildings with the trauma complex getting the northern sun freely. Because of the reasonably low level surrounding buildings the site captures sun from east to west (some northern parts are blocked due to the Christchurch Law Courts), and in winter the site will continue to receive an abundance of natural light. The site enjoys natural outlooks to key vistas, including the Avon River, Victoria Square and Christchurch Town Hall. In contrast, Armagh Street vistas have been restricted and gradually lost to the community due to the built-up nature of the area (refer to figure 5.13 and 5.14). The lack of any connecting access or public views to the Avon River creates a disjointed relationship between the two. Figure 5.14 shows view shafts that are needed to be retained and strengthened, while figure 5.16 shows surrounding movement and massing (green – minor road, orange – public walk way red – site location and yellow – main, arterial roads).

The Avon River floods occasionally during heavy rainfalls. Although through the town area the Avon River is straightened allowing the water to flow freely helping to reduce the problem. To help further reduce the chance of flooding, the river bed will be lowered by removing gravel from the bed and clearing the river of vegetation. These methods are both common practices within Christchurch.

to the Avon and allow for Japanese ideas of place, time and nature to be demonstrated while exploring the Japanese idea of presence of kami. The higher point of the site is to be given to the general public, visitors and trauma patients through whom the Church and its users are symbolizing a humbling of one’s self (within traditional Japanese tea houses a lower entrance is found in which to symbolize reduction of all the participants to the same social level in Japanese society for the duration of the ceremony). The cloister is placed in the heart of the site, allowing for light and views to Victoria Park to penetrate the complex while creating a feeling of piety regarding existing buildings. The western cloister walk will be the most frequented of the cloisters as it leads to the church in which the monks will travel seven times during the day and also where the monks’ rooms are to be found and their daily lives will take place (as in traditional monasteries). Within the cloister the traditional rule of “love of silence” will be encouraged.
Figure 5.13: Site Cross Section – Showing Relationship with Avon River and Surrounding Buildings

Figure 5.14: Adjacent site views. View shafts lost due to build forms.
Figure 5.15: Site Conditions – Sun / wind diagram. The site is sheltered from the cold, southerly winds, but is open to the east (red denotes site location).

Figure 5.16: Surrounding roads (dark grey - subsidiary road, black - arterial road, red - site location).
6.0 Design Process and Development

6.1 Guiding Principles / Form Driving Factors

From research into selected Japanese architectural principles and the Cistercian monastery the following guiding principles have been determined and will form the foundation of the design proposal. These principles will drive the design.

- Ma/oku / migakure
- Light and shadow
- Connection with nature
- Refinement
- The City Site
- Tadao Ando
Ma was first used in traditional Japanese arts such as Kabuki, Noh, dance, storytelling, music, calligraphy and painting. Often ma was in reference to a “dramatic pause” within plays. Ma denotes ideas such as gaps, spaces or even the space between two structural parts (this can be in reference to architecture). If the definition of ma is taken as an interval (space and time), then with reference to architecture it is the experience of progressive intervals in which spatial design may be best portrayed. Therefore ma becomes not only about the physical but also the temporal. As an example of ma one can look at traditional Japanese tea houses in which the focus is not only on the structure (building’s form) but also the space in which it contains. The idea of focusing on form and space implies that the imperfections often seen in Japanese architecture (knots and bows in timber elements) are there to exemplify that perfection is not within this man made world.
Ma is best understood as relational space, or the space between things. The New York Times once reported that when researchers asked schoolchildren from America and Japan to describe the contents of a fish tank, American children described the individual fish, whereas the Japanese children described the relationships between them; this propensity is the basis of ma. Ma is to be considered “more an imaginary concept, rather than being physical and in fact, Japanese perception of the word Place is similar to the western understanding of space.” If one is to use the concept of ma within architecture it can be achieved through attempting a visual connection between vacant and median spaces of buildings.

There is no exact translation in English of the word oku. Oku denotes a mysterious depth or symbolic, unattainable centre. To help understand the term oku “Maki’s 1979 book Miegakure Suru Toshi referred to the paradigmatic Japanese village, located along a river valley at the base of a forested mountain. For the villagers, the mountain is imbued with a spiritual life, but it is not a place or a spirit that can be known. The mountain is a mysterious part of the collective unconscious, evoking a mystery that is neither sinister nor benign. It only lurks, and its presence constantly reminds the villagers that something unknowable lies beyond. This concept is also used in Japanese architecture as obscure and vague screens are used in the facade of the buildings. In this case the mysterious existence seen behind the screens is close to the spatial concept of oku.”

Miegakure has a close relationship to oku, it is to glimpse something that is hidden “such as the moon passing behind clouds, it is a concept that embodies both the ephemeral and ambiguous. It can be explained as the abstraction of an experience completed only in our minds. For instance, it is the white undergarment beneath the collar of a kimono that seduces the viewer into imagining what lies beneath.”

67 Jodat M, Japan’s Old and Contemporary Architecture, (Tehran: Aryan publishing co, 1996), 44.
68 Levitt, Brendon, Veiled Sustainability: The Screen in the Work of Fumihiko Maki, (College of Environmental Design, UC Berkeley, 2005), 1-5.
69 Ibid,
Light and Shadow

“Light’s touch changes everything. What lay shrouded in darkness is revealed, and hidden spaces suddenly open wide under light’s dance. In itself, unseen, we see by means of light’s selfless activity. In physics, the refinement of light’s touch is measured by its wavelength. The very smallness of visible light’s internal patterned movement guarantees that the tiniest detail, the most subtle texture, remains visible.”

Often light and shadows are used to architecturally portray ma and oku within Japanese architecture. Tanizaki states this as “whenever I see the alcove of a tastefully built Japanese room, I marvel at our comprehension of the secrets of shadows, our sensitive use of shadow and light. For the beauty of the alcove is not the work of some clever device. An empty space is marked off with plain wood and plain walls, so that the light drawn into it forms dim shadows within emptiness.”

Ando’s quote “Light is the origin of all being” helps to explain his devotion to light as an element within his buildings. Ando uses light to give identity and prescribes relationships. Ando writes, “Light, alone, does not make light. There must be darkness of light to become light.” Darkness is used within Ando’s creations to give emphasis to the minimal and to restrain light that is allowed to enter.

Traditionally, Japanese houses have windows on the south, where full sun is received in the winter. However, Ando avoids openings on southern facades due to the intense brightness of light. The idea of restraint and control relates to Le Corbusier’s La Tourette in which he restrains and limits light entry to the church and monks’ cells. Ando instead aims at reflecting light rather than allowing direct contact.

God is referred to as many things in the Bible, such as “the Light”. God as light is often symbolic in religious architecture. Traditionally, stained glass windows were used to depict a story. In early church architecture light was limited due to the restraints of technology. Large masonry walls only allowed for small openings. The Gothic style, as it was later called, utilized flying buttresses, allowing for large window openings and letting in more light.

Light will be let into the trauma rooms with control and precision. The light itself brings its own benefits of creating a healing environment in which to evoke a deeper sensual experience. By controlling the light source and reflecting light where possible and limiting direct sunlight into the

---

71 Jun’ichiro Tanizaki, In Praise of Shadows (New Haven, Conn: Leete’s Island Books, 1997), 32.
73 Ibid, 471.
“When our bodies are brushed by light, we warm and open ourselves like dark sanctuaries to the penetrating luminosity of sun and sky. No wonder cathedral builders knit geometry to light in service of theology; no wonder evolution has knit plants to the silent power of sunlight in the service of life. Light is the architect of the organic world, and conversely in architecture.”

75 Arthur Zajonc, Daylight & Architecture, 1.
Connection with nature

“The Cistercian abbeys continue to impart a lesson written in the landscape, woods, and stones … No ideal of technical innovations has had such far-reaching consequences … The lessons of the Cistercians on the mastering of nature, of techniques and of building are of inestimable value.” – Leon Pressouyre, Le rêve cistercien

Sensitivity to natural phenomenal change and relationship to natural surroundings was essential when trying to connect built form with its surroundings. Kami was the traditional reason for showing natural phenomena changes. Reasons behind creating a connection with nature are to help sustain both environmental and cultural identities against the effects of modernisation and globalisation, while heightening our awareness of the inherent uniqueness of where, when and what we are. A unique integration of geometric volumes and the natural order will help to create a stronger link between natural and manmade, this will not only help to portray the site’s character, but also give the occupants a sense of belonging.

“The Japanese have been concerned to make the architectural intrusion into the natural scene an easy and gracious one and this concern has done much to preclude the symmetrical organization of buildings. Symmetrical arrangement bears very much the stamp of a human and an intellectual order. It involves an interruption of the natural pattern and implies man’s intent to improve on nature in terms other than its own. It insists on man’s divine dispensation, his special place between nature and the gods.”

“Plaster, paper, metal hardware, and cloth are inert; wood and straw retain in their grain and texture the evidence of growth and, in that, a suggestion of life.”

“I do not believe architecture should speak too much. It should remain silent and let nature in the guise of sunlight and wind speak.”

---


77 Ibid. 47.

Figure 6.5: Koshino House.

Figure 6.6:
Refinement

Within Japanese Buddhist architectural principles and that of St. Benedict’s rules there are underlying principles of refinement. Ando’s Church of Light specifically looks at refinement in the cost of the architectural form as he once stated in an interview “I hoped this project would raise an issue against the current tendency. I tried to see to what extent an affluent space could be created with the minimum budget in an era flooded with goods and materials.” Within Church of Light, Ando aimed to create a space in which the Church itself becomes void of any surplus colour or ornamentation, in fact leaving the habitation of the church itself the only means of colour and ornamentation within the Church (a similar idea to Le Corbusier’s La Tourette). The interior of the church has been left as raw concrete and timber pews leaving an overall refined minimalist feeling. Even the overall feeling of a Christian typology has been reduced to a simple cross void in the concrete panel facing the street.

The idea of refinement aligns itself with Japanese Buddhist rules and St. Benedict’s rules (St Benedict himself saw much of the church’s decorations as a distraction from piety). Southern Star Abbey employed refinement in its creation of the guest house, creating one of “simplicity, space and serenity, providing comfort and privacy to those seeking a spiritual refuge from the cares of the outside world.”

Retreating to a place of considerable solitude, the building is to be stripped of all excess and will be located beside the Avon River. The refinement of noise was also a factor in the design as reduction of social noise and allowing for attention to the environment in which the complex is set, contributed to the overall idea of contemplation.


“Of all the healing forces in the God-given world around us, silence is perhaps the greatest.”
The City Site

Within the depths of the site which may not normally acquire views to Victoria Square the Japanese idea of *Ikidori* will be used by which to actively procure vistas. This helps to reinforce ideas pertaining to connection with nature by visually connecting the built form to surroundings – a merging of the tectonic and the natural. Maki Fumihiko’s view that the house should be “bounded domain within which to create and sustain a place of serenity against the unremitting turmoil of the megaropolis” will be adhered to when creating the idea of a modern day cell for the monks, companions, trauma patients and visitors. The site required exploration of pairing opposites, primarily, the concept of meditation and a life of quiet service with the hustle and bustle of a metropolitan city.

Principles of Tadao Ando

Principles of Tadao Ando’s architecture are the predominant design precedent used within this project. Ando’s juxtapositional use of light and shadows, restrained architecture, and connection to nature are aspects that shaped the design.

Ando often uses a single concrete wall with which to define the build form and connect it with its surroundings. Ando talks about how the construction of a wall allows for the shadows of surrounding trees on the wall to help blend it into the landscape. The construction of a wall also gives juxtaposition to that of a surrounding landscape. Within Ando’s Church on the Water he uses a single concrete wall which runs along the side of the complex. Not only does this wall give a sense of boundary, but it also emphasises the lines of the landscape.

“The expression of nature changes constantly.
Sunlight, wind and rain affect the senses and give variety to life. Architecture in this way becomes a medium by which man comes into contact with nature.”

Ando gives priority to nature over the man made in which he “may gently pervade space at one moment, and stab through it like a blade at the next.” Ando aims to create spaces that are active and that respond to the seasons and surrounding nature.

Within Ando’s architectural formations one can sense the minimalist approach in which the qualities of poverty, stillness and tranquillity can be observed. Ando uses emptiness to introduce us to the spiritual dimension. He states that by making a wall austere, to the point of being cold, “the more it speaks to us.” By reducing the interiors to a minimum allowing for only bare necessities, a space is created that is “true and convincing because it is appropriate and satisfying.”

If one is to look at Ando’s planning it appears simple; for example, Ando’s Church on the Water (as mentioned previously) is comprised of two geometrical squares. The squares contain different functions, one as the entrance and the other as a church. By intersecting the two squares Ando emphasizes the link between the two, one cannot exist or function without the other. John Morris states in Progressive Architecture that - “The geometry of Ando’s interior plans, typically involving rectangular systems cut through by curved or angled walls, can look at first glance rather arbitrary and abstract. What one finds in the actual buildings are spaces carefully adjusted to human occupancy.”

Ando often uses water as a key feature in his architectural experience. He writes about a stream that flows through the Ise Shrine compound - “I find the sight of its pure current very moving.

83 Ibid.
84 Ibid.
85 Ibid.
and beautiful. Revisiting the river brings back memories I had almost forgotten in the intervening years. Gazing at the long continuous wall that rises from the surface of the water to the level of the eye is strangely relaxing. Perhaps it is because that wall by the water endures even as nature undergoes change and time passes in a never-ending flow.86

Water is an element that can be read in an infinite amount of ways, it can be used to reflect or show the presence of a kami. Water, thus, has the power to stimulate the imagination, and, as Ando puts it, “make us aware of life’s possibilities.”87

“I have observed that water is a monochromatic material. Seemingly coloured yet colourless. In fact, in that monochromatic world there are infinite shades of colour. Then, too, water is a mirror. I believe there is a profound relationship between water and human spirit.”88

The affinity with water is shared within monastic and tea ceremony architecture. Water is used to cleanse the body, usually prior to entering the building. Traditionally monasteries would be built next to rivers in which to wash, cook etc. Therefore, within monastic architecture water acts as a key element by which to survive.

From looking at the architectural spaces of Tadao Ando, Buddhist traditions and traditional Cistercian monastic orders, it can be seen that the reduction of social noise, attention to environmental aspects and materiality used in construction are seen as factors in meditation (ideas of meditative spaces, materiality and constriction are discussed later).
6.2 Process of Design

A number of explorations have been made, developed and undertaken in response to critical analysis taken from investigations into architectural strategies, selected research material and appropriate functional layouts.

Explorations undertaken were not designed in isolation, but rather developed as a succession of ideas learnt from each subsequent design. It was a process of discovery within the set boundaries of the guiding principles and outcome of research. Research by, into and for design created many avenues of design exploration. Each exploration was dictated by the selected principles and elements which worked successfully in one design and were sometimes negated in the next development due to incompatibility with further exploration of principles. The project used a systematic approach achieved through the combination of floor plans, computer aided design (C.A.D.) modeling and handmade models. These approaches allowed the explorations to be critically examined in drawing plans, as well as the three dimensional formations, to see what was successful and what was not.

Within each exploration the principles and functional requirements had to be constantly evaluated in order to establish the aspects which had, or had not worked, and what needed further design consideration. Refer to appendix 10.8 for initial conceptual processes leading up to final design solutions.
6.2.1 Exploration One

The first exploration was an investigation using guiding principles and architectural strategies to create initial ideas.
Figure 6.7: Lower floor plan.
Figure 6.8: Basement floor plan.
Figure 6.9: Ground floor plan.
Figure 6.10: First floor plan.
6.2.1.1 Principles Experience of Exploration One

Figure 6.11: The entrance uses a concave wall to gently invite visitors and reflecting light into the complex. This allows one to be drawn naturally into the site and indicates the start of the journey. The entrance symbolises the layers of a Japanese house in which one transcends from public spaces through to private.

Figure 6.12: The person is drawn through the complex by light shafts penetrating the building’s envelope, acting as a path to follow (somewhat of a spiritual guide). Insertions of light give an ever changing internal environment in which place, time and a restrained theme of nature can be experienced (as seen in Ando’s works).

Figure 6.12: The person transcends through twin walls which denote a change of layers (functionality change, entrance through to the refectory, common rooms, study and library). The guest is then confronted with a large crucifix structure formation which acts as the main circulation space. Within the crucifix formation one can descend down to the church, enter the monks’ quarters or journey through the cloister to the trauma/companions’ quarters. One cannot pass from north to south or east to west without passing through the cloister and crucifix formation.

Figure 6.13: To enter the church one must descend down into the site which is fronted by the Avon River running alongside the exterior. The idea is to create a strong link between built form and the natural landscape, while breaking the visual link of Victoria Square. The church looks at first ideas of roof formations to allow for the spiritual use of light, and ways in which the users’ quarters are located in the voids between sensory experiences can be heightened. The incorporation of the Avon River, alongside the church allows for the Japanese idea of representing the arrival of kami to be portrayed. Reflection in the pool of sudden changing environmental factors is an exploration of Ando’s Church on the Water relating to ideas of kami.

Figure 6.14: The monks’ quarters are located in the voids between the Christchurch Law Courts complex and existing brick buildings. The space is both limited in light and in views, but due to low level surrounding buildings light can be gathered from vertical sources. A connection through to Durham Street has been created in order to create a strong axis from north to south and east to west. The entrance is created by using existing buildings to frame a corridor.

Figure 6.15: From the crucifix one is led outdoors to a small cloister circulation space. The cloister allows for uninterrupted views across to Victoria Square and is the central circulation space.

Figure 6.16: The companion’s and trauma areas are integrated into one complex. Combining the two functions creates a strong mental and physical link between patients and carers. The formation is a reflection of ideas incorporated into the church regarding light and sensorial experience.
Figure 6.11: Photograph showing entrance and connection with Avon River.

Figure 6.12: Layering of buildings to create separation between functions. Light is allowed to enter via openings.

Figure 6.13: Church connection with Avon River.

Figure 6.14: Monks area nested within voids of site.

Figure 6.15: Plan of site, cloister within the heart.

Figure 6.16: Companion's/trauma areas along the Avon River.
6.2.1.2 Outcome of Exploration One

The journey from beginning to end is a complex movement which allows light to aid in the journey. One acquires glimpses of the church and other functions throughout the complex. This allows one to experience the different functions and spatial arrangements within. The idea of the journey is in stages which provoke different feelings or senses. The design looks first at ideas of providing a view of the destination point to create a relationship between functions within.

The design lacks connection with existing buildings and gives little regard to the word “piety” which the monks value. The design lacks uniformity, instead becoming a series of clusters. This is due to the mismatched volumetric spaces and forms created for each distinct function. The location of the cloister works well in tying the site with its surroundings while allowing for views into the depths of the site.
6.2.2 Exploration Two

This exploration develops the complex’s internal spaces and overall relationship between the various functions. The design uses the same entrance as Exploration One to direct visitors inside.
Figure 6.17: Interior of church.
Figure 6.18: Interior of church.
Figure 6.19: Cross Sectional Model.

Figure 6.20: Cross Sectional Model.
Figure 6.21: Sketch of Cloister.

Figure 6.22: Shaded plan of lower floor.
6.2.2.1 Principles Experience of Exploration Two

Figure 2.23: A development of the cloister area. The cloister has been covered and looks out onto a pond of water with existing buildings adjacent. Small details such as a crucifix acting as the window joinery displayed.

Figure 6.24: The spaces located within the entrance are layered and become a maze to navigate through, suggesting a separation from the outside world. Therefore, walls located beyond the initial entrance have been dropped to allow light into the entrance area. The functional locations have taken priority within this design in which the external form is extruded.

Figure 6.25: A main vertical core has been placed within the heart of the site from which the church is accessed. As in previous designs the cloister is once again located within the centre of the site. Within this design the cloister is left to become an open circulation route. The cloister uses water to help create a sense of connection between the manmade forms of the site and the surrounding natural formations.

Figure 6.26: The church has been allowed more internal space. This is to create a more inhabitable and usable environment and give a sense of hierarchical importance to the church. Interest has been placed in the new concept of the roof design, which allows for an interaction between light and the internal environment. Spaces have been allocated for more detailed planning in which sacristy, altar and oratory are placed. Figures 6.17/18 show the internal environment of the church and how light would penetrate the roof structure. Figures 6.19/20 are cross sectional models in which to explore the laying of space and functionality.

Figure 6.27: The monk’s quarters have been reduced to only cells from which to escape the modern world. The cells have been reduced in width, but increased in height. This is to allow light to enter the monks’ cells while placing them in the recessed voids of the site (allowing for reduction of social sound and distractions).

Figure 6.28: The companions’/ trauma areas have been broken into two separate areas in which the companions’ area acts as the main hub of activity. This acts as a nurturing apparatus, focusing on getting the trauma patients to move around the site and not linger in their rooms. Between the two functions lies a path which the public accesses, this path is on an axis from north to south and is recessed below ground level. The idea allows for a separation which does not disturb or interfere with surrounding programs.
Figure 6.23: Plan view of model (cloister space selected).
Figure 6.24: Concave concrete entrance wall.
Figure 6.25: Layered complex / light penetration.
Figure 6.26: Location of church.
Figure 6.27: Monks area within voids.
Figure 6.28: Location of companion and trauma rooms.
6.2.2.2 Outcome of Exploration Two

Establishing a direct visual connection between the Avon River, church and various view shafts within the complex allows people to have a visual glimpse of their destination. This helps to create a known ‘there’ for the user, suggesting direction and movement.

Allowing the Church to extend along the Avon River creates a larger interior environment and helps to give the Church a sense of prominence of the surrounding clusters.

The outdoor cloister works well in linking all aspects of the site. Following Exploration One it is an open cloister, which is unprotected and incorporates the use of water to reflect the Avon River.

Monks’ rooms have become simple in form due to refinement regarding their rooms (ideas regarding poverty). The location of the monks’ quarters works well with regard to site placement. The height of the form allows for an abundance of light, although this is moving away from the originally desired controlled environment.

The trauma and companion’s quarters follow a geometrical development regarding the monks’ quarters, thus they are becoming extruded. They allow for separation between the functions and give a sense of privacy to the trauma patients. This idea works well and needs to be carried into the next exploration.
6.2.3 Exploration Three

Exploration Three is an extended investigation of Exploration Two. The functional organization is similar. Exploration Three develops the formal aesthetic of the building, including the facades and roofs. It also investigates the journey from oratory and sacristy into the church.
Figure 6.29: Lower basement floor plan.
Figure 6.30: Basement floor plan.
Figure 6.31: Ground floor plan.
Figure 6.32: First-third floor plan.
6.2.3.1 Principles Experience of Exploration Three

*Figure 6.33:* The entrance developed from previous ideas of a concave wall into a colonnade in which to reveal existing buildings. Spaces located within the entrance have been separated into different levels within the initial massing. Administration, offices and guest areas are located within the ground floor, while a study and library would be located on higher levels for views and light.

*Figure 6.34:* The monks’ quarters are located within the heart of the site; this idea was looking at minimizing the overall footprint of the complex. The monks’ rooms are placed on the east side to capture morning sunlight. This helps to symbolize the beginning of the new day.

*Figure 6.34:* The cloister has been removed as an external function and is instead inserted within the ground floor of the monks’ quarters. The cloister can now be used all year round and regardless of exterior environmental conditions. The placement has created dark internal spaces, specifically the cloister. The placement of the cloister within the mass allows the heart of the site to become denser, although losing relationships to surrounding buildings.

*Figure 6.35:* It has been reduced in scale from Exploration Two. The church has been divided into two, one space for the church and the other for the oratory, sacristy and welcoming space. As previously explored, the roof has been developed once more to play with ideas of light and symbolic representations. A crucifix has been cut into the concrete roof to cast a shadow into the church below. During different times of the day the crucifix would change and allow a sense of time to be experienced.

*Figure 6.36:* The cross section looks at developing relationship of spaces and formation vision. The relationship between the church and Avon River is exemplified while the monk’s rooms are modular and give a sense of even hierarchy within the order.
Figure 6.33: First-third floor plan.

Figure 6.34: First-third floor plan.

Figure 6.35: First-third floor plan.
Figure 6.36: Cross section development.
6.2.3.2 Outcome of Exploration Three

The formations of the buildings are still quite cubic (due to a focus on manmade geometric forms as being a stark contrast to nature) in form, but are beginning to feel more cohesive as they are relative in spatial layout and geometrical form. Ando’s work in particular has been a reference from which to examine how functions dictate relative geometrical forms.

The scale and overall feeling of the church has been reduced too much, the church is fading away and losing the sense of grandeur which is traditionally related with its typology. The monks’ quarters are too bulky and, while reducing its built footprint, it is creating more problems than it is solving.
6.2.4 Exploration Four

The emphasis for Exploration Four was purely experimental to develop formations and aspects relating to piety (regarding existing buildings). This looks at ideas pertaining to allowing light shafts and views being retained by existing buildings.
Figure 6.37: Cross section ideas.

Figure 6.38: Cross section ideas.

Figure 6.39: Cross section ideas.
6.2.4.1 Principles Experience of Exploration Four

*Figure 6.40/6.41:* Ideas of how to expose and allow light to enter existing buildings and how the structure might add to this feature.

*Figure 6.42:* The roof formations give a sense of hierarchy within the complex’s spatial layout. Roof formations rising upwards to the heavens suggest links with spirituality.

*Figure 6.43:* The trauma complex has been segregated into different level heights once again, as in previous designs. This creates a buffer from public reaching the trauma complex, allowing for a more private sense of recovery. Once again, the trauma rooms are located adjacent to the Avon River.
Figure 6.41: Ideas of light and structure giving priority to existing.

Figure 6.42: Model development.

Figure 6.43: Model development.
6.2.4.2 Outcome of Exploration Four

Exploration Four helped to reveal important aspects regarding existing buildings and how to allow not only for light but also for views to be kept when designing the complex. Although this was almost a complete change in overall massing and formation it was a necessary change, allowing geometry to be experimented with.
6.2.5 Exploration Five

Exploration Five continued the emphasis on experimentation regarding existing structures as well as developing the complex’s formational layout. The functional layouts indicated in previous explorations have been challenged creating a new form.
Figure 6.44: Cross section ideas.
6.2.5.1 Principles Experience of Exploration Five

*Figure 6.44:* The cross section looks at different internal environments for spaces and how to differentiate the spaces through the use of light and materiality. The church is stark with raw exposed concrete, while the main functional areas exhibit simple concrete construction and timber lining to soften the interior environment.

*Figure 6.46:* The entrance has been lifted up to the first floor. This is to emphasise the separation of the exterior world and the internal environment. This idea is also reflective of the journey into South Star Abbey where a rise of natural landscape suggested a separation of worlds, proposing the arrival at the destination.

*Figure 6.47:* The monks’ quarters have been pushed back into the recesses of the site as in Exploration Three. This allowed for best use of the site while allowing the main bulk of the central area to be distributed. The height of the monks’ quarters allows views to be maintained, while procuring the outdoor environment of the cloister.

*Figure 6.47:* The cloister has been transformed into a mass of its own. The cloister is in the shape of a double helix to create separate journey paths for the monks and companions/public/patients. Views can be seen from the entrance through to the cloister located at the rear; this is to help draw people through the site by the use of a destination point.

*Figure 6.48/49:* The church design has been stretched and given back its missing emphases. To enter the church one undergoes mimicry of the event process at Southern Star Abbey. From the first floor one is gently exposed to an angled opening which allows the user to slip inwards towards the Avon River. The entrance slowly expands as one moves along it (referencing ones separation from the outside world has a large opening to the Avon River. The church itself is bunkered into the landscape and furthermore anchored through the location of the bell tower. The tower acts as the vertical core to access the church from the first floor. The tower is on a slight angular placement to give emphasis to the entrance of the church below it and faces towards the user walking from the town square.

*Figure 6.50:* Within the trauma and companion complex the buildings have been developed alongside existing structures allowing key view shafts to be kept (towards the fountains and squares within Victoria Square).
Figure 6.45: Site model.

Figure 6.46: Entrance.

Figure 6.47: Cloister space located at back and cloister location.

Figure 6.48: 'Folded' circulation.

Figure 6.49: Church entrance.

Figure 6.50: Companion and trauma area allowing light and views to be kept.
6.2.5.2 Outcome of Exploration Five

Exploration Five allowed for the development of spatial qualities within the complex. The formations now have an angular shape which is a development of their previously simple cubic geometrical forms. The angles are founded from the extrusion of the corners from the previous geometrical forms and a means by which to enhance internal environments through connectivity. The trauma complex is too small as a result of maintaining existing building views and will need to be developed. The cloister takes up too much space and the vertical movement paths are unnecessary, although the double helix works well in creating a line of separation, but while allowing for a visual connection to the monks.
6.2.6 Exploration Six

Exploration Five was successful in the adaption of selected principles, overall layout and formation. Exploration Six looks at minor adjustments and refining the layout and planning while developing the new form.
Figure 6.51: Lower basement floor plan.
Figure 6.52: Ground floor plan.
Figure 6.53: First floor plan.
6.2.6.1 Principles Experience of Exploration Six

The entrance to the complex has been allowed to protrude so that it is flush with the pedestrian footpath. A small exterior atrium environment has been created between the existing west buildings to allow exposure of its external facades.

The church has been changed in its angular composition in order to either emphasize implied angles, or remove unutilized ones. The steps within the church have been changed to create more functional ones leading to the altar. The idea of entering at the first floor has been removed as it creates issues such as suggesting hierarchical importance of the complex over its surroundings. The bell tower has been shifted to allow for other functions to be inserted within the church area (such as sacristy, a small office and a place for the abbot to greet and welcome attendees of the church ceremonies). The roof of the church is to angle from a central high point to the road edge where the passerby may gather a glimpse of incisions in the roof formation.

The cloister has been reduced from Exploration Five to become solely located on the ground floor. The cloister is enclosed by glass and white washed walls; this allows the cloister to be used year round, and for light to enter existing buildings.

The monk’s quarters have been extended into the depths of the site, using up voids created by existing buildings. The placement of the oratory has been shifted from the church to beside the monk’s quarters. This will be a private place for prayer and is separate from other users of the complex. The oratory is located in the depths of the site, removed from all distractions, allowing for a focus on prayer.

The trauma and companion’s complex has developed from Exploration Five, although they have reverted back to original design ideas of separating the two with regard to their levels. The trauma complex will consist only of the patient’s rooms while all other amenities will be located within the companion’s quarters behind. The trauma rooms use the same concept as the church to build in and around existing contours in order to help strengthen the link between natural and man-made.

The use of materiality has also been explored. As one of the principles is of layering this idea can also be carried not only in the architectural internal environment but also in the layering of material to form a space.
6.2.6.2 Outcome of Exploration Six

Exploration Six has been successful in the line of evolution. Concerns have arisen when looking at the church's floor plan; the church is once again losing its main congregation space due to the insertion of other functions. The monk's quarter needs to be extended and some of the angular geometry needs to be refined, or reduced, to create more usable space. The exterior shapes are an extrusion of the interior geometrical conflict, creating a roof formation which allows the lines of the walls to penetrate the roof line.
6.2.7 Exploration Seven

Exploration seven aimed at solving problems from exploration six. Figure 6.54 shows the resolved functional layout.

Figure 6.54: Site layout.
Figure 6.55: Street elevation massing.

Figure 6.56: Victoria Square massing elevation.

Figure 6.57: Tower formation displaying crucifixes.
Figure 6.58: Victoria Square elevation.

Figure 6.59: Church formation.
Figure 6.60: Diagrammatic planning - ideas of final location.

Figure 6.61: Companion quarters form massing.
Figure 6.62: Armagh Street concept elevation.

Figure 6.63: Development of trauma room internal layout.
6.2.7.1 Principles Experience of Exploration Seven

Figure 6.55: The sketch shows ideas of massing and uniformity between the church and the main functional building. The diagram shows current issues of scale and formal relationships between the church and surrounding building. The diagram also shows lines of the façade. The street facing façade is aimed at emphasizing its verticality allowing it to become its own structure.

Figure 6.56: The elevation facing Victoria Square is to create a uniform massing. This is achieved through slanting adjacent walls in which to complement each other; by doing this a containing form is created through the building’s silhouettes. The darkness represents a more dominant structure in which to take priority over behind forms.

Figure 6.57: Ideas of how to incorporate the crucifix into the tower have been explored. The towers presented are of the final selected. The cross extruded from a corner of the tower creating a cohesive crucifix which anchors not only the tower but also the site.

Figure 6.58: A more developed sketch of the Victoria Square elevation. This shows ideas of façade treatment and openings.

Figure 6.59: The church has been developed and resolved to allow views from Armagh Street into the church while a concrete wall extends at the opposite end in which not only to frame the church but also to create a wall to reflect the change in functions.

Figure 6.60: This picture is a conceptual diagram of the internal planning of the scheme. Final placement of the monks’ quarters is once again in the recess of the site while the trauma complex and companion locations are spread out over the north end of the site.

Figure 6.61: The companion’s quarters are raised at each end indicating the entrances. The south entrance is for the companions and trauma guests while the north end is the access to the trauma rooms themselves. This allows for constant contact between the two.

Figure 6.62: The figure shows Armagh Street façade and its entrance into the site. The church is hidden from view although the walls can be seen leading down towards the church.

Figure 6.63: The plan shows ideas of floor plan layout for the trauma rooms. The ideas involved look at creating private deck areas allowing the patients may open their interior environment out upon the Avon River. The different functions of the room are separated allowing for transitions between rooms. The rooms will readily catch morning and afternoon sunlight, while relying on artificial lighting at night. The rooms are to be lighter timber walls in contrast to the concrete massing of
the church.

Figure 6.64: The internal view of the complex shows ideas of layering and juxtaposing of materiality. The Avon River can clearly be seen from within the church and links the church to Victoria Square. Gaps between the roof plane and internal walls allow light to penetrate selected areas.

Figure 6.65: The external view looks at massing and materiality represented. The connection with the river as it laps along the edge of the church. The tower can clearly be seen as the anchor of the site. Note: the buildings behind have been removed to allow for a focus on the individual building.

Figure 6.66: The elevated view of the complex looks at the cloister within the heart of the site allowing for views and light to freely penetrate the depths of the site.

Figure 6.67: The trauma rooms overflow out onto the Avon River in which the patients may extend their internal environment out to. The rooms are located in the natural contours of the site allowing for them to be protected and sheltered from surrounding elements and direct views from Victoria Square.
Figure 6.65/7: External view - preliminary render/ View of trauma/companion areas - conceptual preliminary render.

Figure 6.66: View of complex - conceptual preliminary render.
6.2.7.2 Material Palette

“By reducing buildings to simple or familiar forms, and covering them in a single material, the architectural interest could be focused almost entirely on surface qualities and the play of light.”

Figure 6.68: Materiality is to be arranged and focused around the ideals of the internal environment desired. The church and monk’s complex will use a lot of exposed raw concrete. The trauma complex and companion’s complex will use more timber than concrete to create a more warmly and inviting sensation. The timber will flow from companion’s complex to main fictional area via the cloister.

---

Figure 6.68: Plan view showing ideas of materiality.
6.2.7.3 Outcome of Exploration Seven

Exploration seven resulted in a form in which the distinct functions are able to co-exist. The church has reclaimed its status on the site by extending its roof line and becoming a more dominant massing form. The monks’ quarters have had angles reduced and the placement of the monks’ cells on the east axis to allow for morning light to enter. The companions’ area has been refined to create a form that takes as little away from existing buildings while reflecting light into spaces behind and allowing for the continuation of view shafts. The trauma patients have been given lay to the natural landscape (the Avon River) such as the church. This is to encapsulate the aforementioned qualities with water. Overall the complex is a more cohesive form and while allowing for separation between the distinct functions. It also allows for the journey between them to be experienced and thus creating a more personal internal environment.

Ideas Regarding Structure and Internal Environment:

The structure of the final form reflects ideals of Ando and the Cistercian order. Load bearing tilt panels, unispan flooring and insitu columns/beams will be used within the church, monks’ quarters and main functional area. The ‘simple’ construction will be cost effective and can be left exposed. The church itself will be a free standing form, relying on the mass of the concrete as its structure, with only the timber louvers as a contrast. The thickness of the church walls relates to the monks quarters in which both are solid masses. The concrete mass acts as passive solar gain through thermal storage. The main functional space located between the monks quarters and the church displays ideals of "miegakure," allowing the church to become the dominate structure. The trauma quarters is constructed from timber which is to tread lightly on the natural contours of the site. The timber creates a more homely environment which reflects the materials of the guest home (refer to section 11.9 for further information regarding the timber construction). The church and the trauma rooms are in direct contrast. The companions’ quarters are a integration of the two opposing structures.

The internal environment of the monks’ quarters and the church are in alignment. Both environments adhere to the already explored ideas of refinement. The spaces focus the users on attention to God and evoke a meditative state. Natural daylight is the only lighting factor within the church due its operating hours (4am-7pm). Heating within the church is left to the natural absorption of concrete. In summer windows will open out to the Avon River, while the timber louvers help to deflect direct sun. The idea of minimal heating in the cold seasons, but allowing for ventilation in the hot summer periods stems from ideas of the Japanese house (during the cold season the user puts on extra layers to adapt to the season and during summer periods the house may open to the external environments).

The main functional area, companions’ quarters and trauma quarters are more forgiving. This is achieved through a greater means of personalization of internal environment (such as heating and lighting).
7.0 Critical Appraisal of Final Design

The purpose of this project was to design a Cistercian monastic order building based on selected Japanese principles.

7.1 Selected Principles

Initially, Japanese principles were the dominant factor in the design development process. They incorporated ideas to help the design relate to its context and act as a precedent in a way forward for Christchurch. However, further in the design process it seemed that the monastic typology itself became the driving factor for the project. The monastic research and development produced spaces and functions in which the principles would then be applied and adapted. Therefore, to present the principles a form and function requirement had to be developed first. This subsequently produced monastic spaces with awe inspiring spiritual interior environments, comparable to the monastic designs of John Pawson and Hugh Tennent.

The church has been the main environment in which to portray the selected ideas and encompasses such ideas as fluidity of nature, light and journey. The cloister is an active space that is highly visible from Victoria Square encouraging people to enter and engage with the building and its ideals. This helps the public to make use of the movement line through the complex and experience what they are unfamiliar to.

7.2 Massing

The site massing allows the building to extend vertically, past the other surrounding buildings to capture light and reveal the entrance. The church was to be sunk against the Avon River, although this denoted a lower hierarchy status which was breaking with tradition. To help give the church a sense of prominence the roof was raised and the massing behind was to portray ideas of *miegakure* allowing the church to have priority. The cloister was to reveal existing surrounding buildings allowing light to be drawn in. The monks’ quarters isolates itself in the natural recesses of the site, the placement of the cloister allows for eastern morning sun to penetrate the monks’ rooms signaling the start of the new day. The lay brothers and trauma patients’ quarters have been juxtaposed against each other, the lay brothers on top protecting the trauma quarters below. The architectural strategy of the facade aesthetic is to emphasise the spaces within. This is done by allowing glimpses and initial views into the complex while drawing external light inwards. Overall massing and use of concrete/glass are in keeping with the nature of the buildings of the street.

7.3 Journey Through

The journey through the site reveals the encompassing functions within the complex. The journey allows for public to have access through the site while allowing for the necessary reclusion of the monks and trauma patients. The journey
through the site allows the principles to be experienced in which juxtapositions seen in Ando’s work of light/shadow and natural/man-made.

7.4 Visual Outlook

The visual outlook from the site is constantly changing with specific views becoming obscured. These views created an organised focus helping to create a cohesive bond between existing and proposed. This idea has also been demonstrated in which the occupants of Victoria Square can see back into the depths of the site via the cloister and also those occupying Armagh Street are allowed a glimpse into the church from street frontage.

7.5 Functional Monastic Elements

The proposed monastic complex within Christchurch City incorporates the required functions for a modern day monastery to run successfully. The placement of the cloister helped to reinforce ideals of piety in which to give lay to existing structures and improve what is currently there. The cloister allowed for Japanese principles such as misgakure and ikidori to be demonstrated and revealed to the public. The church has been the main generating function in which its location and cohesion with the Avon River allowed surrounding buildings to extend from. The journey to the church which sits against the river became the final destination of the journey. The separation of the monks and lay brothers has been kept as in traditional monasteries and has been used throughout the design process. The success of rehabilitating the trauma patients depended greatly on the integration and cohesion occurring between the companions’ quarters and trauma quarters. It is hard to say how well the patients would respond to the architecture of the complex, although they were designed to be calm and contemplative in their design. This was due to issues pertaining to contemplation, which is often a matter of personal issues that would need a holistic approach to an individual’s life. However, by taking key aspects from Monastic and selected Japanese architecture, the resulting complex becomes more appropriate as a place for contemplation, prayer and self-healing.

7.6 Future Directions

If more time where to be available, the project would look at greater a in-depth analysis of Tadao Ando’s works, including details at 1:1/1:2 to test materiality and construction. More time would also allow for further research and display of the selected Japanese principles as well as research into other various principles.
8.0 Conclusion

Throughout the exploration and design processes, research by, into and for design have been the major contributing tools in reaching a final outcome. The challenge of merging different functional organisations and their individual specific needs while portraying the desired sensorial explorations was a major role in the developmental process. This has provided the fundamental principles for a plausible solution. It promotes public interaction, a sensorial experience, connection with the Avon River and integration of the building entity with the surrounding urban context allowing for the monks’ idea of piety to be portrayed. The buildings within the complex, while not alluding traditional monastic architecture directly, have instead employed the qualities of austere appearance, socially devoid individual spaces, awe inspiring internal environments, and the Avon River in which to integrate and help tie it to Christchurch City.

The final exploration demonstrates a radical approach to traditional Cistercian monastic design with the use of Japanese principles within a New Zealand context. The final design is spacious, tranquil, holy, rational and an integrated scheme.


Conner, James, Taylor Jennifer, The Architecture of Fumihiko Maki: Space, City, Order, and Making. Bos-


Hughes, Francesca, *The Architect: Reconstructing her Practice.*


10.0 List of Figures

Contents

Figure 1.1: Development of Project.

Figure 3.1: Giving way to the land. *Place, Time and Being in Japanese Architecture*, 17.

Figure 3.2: Built space honouring the spirit of natural place. Ibid, 18.

Figure 3.3: Sliding screens inside the Catley House. *Group Architects*, 211.

Figure 3.4: The Lowe house using patterned curtains rather than shoji screens. Ibid, 213.

Figure 3.5: The Mallitte House showing a large sliding door. Ibid, 213.

Figure 3.6: Plan of St Gall showing key ideas of layout - cloister adjacent to church and connects surrounding buildings (green – cloister, yellow – church, blue – monks). http://www.gardenvisit.com/garden/st_gall-sankt_gallen

Figure 3.7: The Cistercian Abbey according to Bernard of Clairvaux (green – cloister, yellow – church, blue – monks, red – lay brothers). http://www.themedievalchronicle.com/2nd%20year%20(Sep-

Figure 3.8: Plan of Sainte-Marie de la Thoronet (green – cloister, yellow – church, red – lay brothers). http://archidialog.com/2010/09/11/

Figure 3.9: Exterior view of La Tourette. http://lovenordic.blogspot.com/2011/04/novy-dvur.html

Figure 3.10: Comparison of La Tourette and La Thoronet. http://archidialog.com/2010/09/11/

Figure 3.11: La Tourette, church interior. http://archidialog.com/tag/la-tourette/

Figure 3.12: La Tourette analysis, entrance floor plan (green – cloister, yellow – church, blue – monks, red – lay brothers). http://cobagonzo.blogspot.com/2011/03/convent-of-la-tourette-karya-le.html

Figure 3.13: La Tourette, entrance floor plan. Ibid.

Figure 3.14: La Tourette, cell floor plan. Ibid.

Figure 3.15: La Tourette, cross section. Ibid.

Figure 3.16: Novy Dvur, complex. http://www.johnpawson.com/architecture/monastery/scheme/fulltext
Figure 3.17: Novy Dvur, interior. http://thebesttimeoftheday.blogspot.com/2011/04/novy-dvur-monastery.html

Figure 3.18: Novy Dvur, exterior. http://lovenordic.blogspot.com/2011/04/novy-dvur.html

Figure 3.19: Novy Dvur, movement plan. http://www.johnpawson.com/architecture/monastery/scheme/plans

Figure 3.20: Novy Dvur, lower plan. Ibid.

Figure 3.21: Novy Dvur, ground floor plan. Ibid.

Figure 3.22: Novy Dvur, upper floor plan. Ibid.

Figure 4.1: Tofuku-ji Temple.

Figure 4.2: Sketch of Tofuku-ji Temple – Veranda area, showing ideas of materiality and construction.

Figure 4.3: Le Corbusier’s Modulor. http://www.paul-rand.com/site/thoughts_designAndThePlayInstinct/

Figure 4.4: Japanese house showing the tatami mat. Place, Time and Being in Japanese Architecture. 26.

Figure 4.5: Tadao Ando’s Church on the Water - Site plan. http://openbuildings.com/buildings/church-on-the-water-pro-

Figure 4.6: Tadao Ando’s Church on the Water – Exterior photograph. http://jilee23.wordpress.com/2009/10/01/ji-young-lee-church-on-the-water/

Figure 4.7: Tadao Ando’s Church of Light – Interior sketch of light penetration.

Figure 4.8: Tadao Ando’s Church of Light – Interior sketch crucifix.


Figure 4.10: Tadao Ando’s Water Temple – Interior photograph showing vermilion colour. http://flotsamandjetsamny.blogspot.com/2010/10/tadao-andos-temple-of-water-awaji.html

Figure 4.11: Tadao Ando’s Westin Awaji Island hotel – Church interior. http://tracygan.wordpress.com/2010/04/18/581/

Figure 4.12: Tadao Ando’s Awaji Island Hotel – Sketch of ramp system.

Figure 4.13: Tadao Ando’s Westin Awaji Island hotel. http://tracy-
Figure 4.14: Southern Star Abbey – Sketch of corridor.

Figure 4.15: Southern Star Abbey time table.

Figure 4.16: Southern Star Abbey – Interior of guest complex.

Figure 4.17: Southern Star Abbey – Guest room.

Figure 4.18: Southern Star Abbey – Photograph of corridor.

Figure 4.19: Southern Star Abbey – Sketch of exterior guest complex.

Figure 4.20: Southern Star Abbey – Model of proposed site layout by Hugh Tennent. http://www.tennentbrown.co.nz/

Figure 4.21: Southern Star Abbey – Proposed site layout by Hugh Tennent (green – cloister, yellow – church, blue – monks). Ibid.

Figure 4.22: Southern Star Abbey – Site functions (yellow – church, blue – monks, orange - companions).

Figure 4.23: Southern Star Abbey – Site movements (yellow – monks, blue – companions, red - guests).

Figure 5.1: Site location – Christchurch.

Figure 5.2: Christchurch city structured grid/city blocks.

Figure 5.3: Photograph of Christchurch post-earthquake.

Figure 5.4: Photograph of Christchurch post-earthquake – Earthquake damage and spire of Christchurch Cathedral missing.

Figure 5.5: Photograph of Christchurch post-earthquake. http://blog.yayateahouse.co.nz/2011/03/03/we-have-started-shipping-again-after-the-christchurch-earthquake/

Figure 5.6: Photograph of Christchurch post-earthquake.

Figure 5.7: Photograph of Christchurch post-earthquake – Earthquake damage of heritage building.

Figure 5.8: Plan view of initial site.

Figure 5.9: Plan view of selected site.

Figure 5.10: Photograph of site facing Armagh Street (post-earthquake).

Figure 5.11: Photograph of site facing Durham Street (post-earthquake).

Figure 5.12: Site Location – Christchurch.

Figure 5.13: Site Cross Section – Showing Relationship with Avon River and Surrounding Buildings
Figure 5.14: Adjacent site views. View shafts lost due to build forms.

Figure 5.15: Site Conditions – Sun /wind diagram. The site is sheltered from the cold, southerly winds, but is open to the east (red denotes site location).

Figure 5.16: Surrounding roads (dark grey - subsidiary road, black - arterial road, red - site location).

Figure 6.1: Salzburg Congress Hall. Veiled Sustainability: The Screen in the Work of Fumihiko Maki

Figure 6.2: TEPIA (a exhibition pavilion for new technology).

Ibid.

Figure 6.3: Tadao Ando Koshino House. http://www.flickr.com/photos/raimist/3875050857/

Figure 6.4: Tadao Ando Koshino House. http://www.arc-space.com/books/ando_works/ando_works_book.html

Figure 6.5: Koshino House. http://www.behance.net/gallery/Koshino-House-Tadao-Ando/1333427

Figure 6.6: Tadao Ando Church of Light. http://www.flickr.com/photos/antjeverena/2652372380/

Figure 6.7: Lower floor plan.

Figure 6.8: Basement floor plan.

Figure 6.9: Ground floor plan.

Figure 6.10: First floor plan.

Figure 6.11: Photograph showing entrance and connection with Avon River.

Figure 6.12: Layering of buildings to create separation between functions. Light is allowed to enter via openings.

Figure 6.13: Church connection with Avon River.

Figure 6.14: Monks area nested within voids of site.

Figure 6.15: Plan of site, cloister within the heart.

Figure 6.16: Companion's/trauma areas along the Avon River.

Figure 6.17: Interior of church.

Figure 6.18: Interior of church.

Figure 6.19: Cross Sectional Model.

Figure 6.20: Cross Sectional Model.

Figure 6.21: Sketch of Cloister.
Figure 6.22: Shaded plan of lower floor.

Figure 6.23: Plan view of model (cloister space selected).

Figure 6.24: Concave concrete entrance wall.

Figure 6.25 Layered complex / light penetration.

Figure 6.26: Location of church.

Figure 6.27: Monks area within voids.

Figure 6.28: Location of companion and trauma rooms.

Figure 6.29: Lower basement floor plan.

Figure 6.30: Basement floor plan.

Figure 6.31: Ground floor plan.

Figure 6.32: First-third floor plan.

Figure 6.33: First-third floor plan.

Figure 6.34: First-third floor plan.

Figure 6.35: First-third floor plan.

Figure 6.36: Cross section development.

Figure 6.37: Cross section ideas.

Figure 6.38: Cross section ideas.

Figure 6.39: Cross section ideas.

Figure 6.40: Ideas of light and structure giving priority to existing.

Figure 6.41: Ideas of light and structure giving priority to existing.

Figure 6.42: Model development.

Figure 6.43: Model development.

Figure 6.44: Cross section ideas.

Figure 6.45: Site model.

Figure 6.46: Entrance.

Figure 6.47: Cloister space located at back and cloister location.

Figure 6.48: ‘Folded’ circulation.

Figure 6.49: Church entrance.

Figure 6.50: Companion and trauma area allowing light and views to be kept.

Figure 6.51: Lower basement floor plan.

Figure 6.52: Ground floor plan.
Figure 6.53: First floor plan.
Figure 6.54: Site layout.
Figure 6.55: Street elevation massing.
Figure 6.56: Victoria Square massing elevation.
Figure 6.57: Tower formation displaying crucifix.
Figure 6.58: Victoria Square elevation.
Figure 6.59: Church formation.
Figure 6.60: Diagrammatic planning - ideas of final location.
Figure 6.61: Companion quarters form massing.
Figure 6.62: Armagh Street concept elevation.
Figure 6.63: Development of trauma room internal layout.
Figure 6.64: Internal church - preliminary render.
Figure 6.65: External view - preliminary render.
Figure 6.66: View of complex - conceptual preliminary render.
Figure 6.67: View of trauma/companion areas - conceptual preliminary render.

Figure 6.68: Plan view showing ideas of materiality.
Figure 11.1: Initial concepts.
Figure 11.2: Initial concepts.
Figure 11.3: Initial concept elevations.
Figure 11.4: Folding form.
Figure 11.5: Layering.
Figure 11.6: Layered scene.
Figure 11.7: Development of folded form.
Figure 11.8: Development series.
Figure 11.9: Development series.
Figure 11.10: Manipulation of formal geometry.
Figure 11.11: Lines of movement.
Figure 11.12: Dimensional planning.
11.0 Appendix

11.1 Brief definition of Zen

The word Zen somewhat translates to ‘meditation’ or ‘meditative state’ which ties itself to the aims of the project (regarding the process of mental healing). Zen aims at a focus of self-realization through meditation. Zen is developed in a way which emphasizes on direct experience rather than on the rational. The project itself aims at a sensual experiential environment in which unfamiliar architectural ideas can be invoked. The daily routines of Zen (meditation periods broken with short rest breaks, meals, and sometimes, short periods of work) relates closely to the routines of Southern Star Abbey and Cistercian monks. The idea of wabi (as mentioned in section 3.2) closely follows the ideas of Zen.

11.2 Traditional Japanese

“Bruno Taut proclaimed that the two high points of Japanese architecture are Ise Jingu and the Sukiya style detached palace, Katsura Rikyu”90. It is with Taut’s writings that Katsura and the Ise shrine have come to be regarded as honmono, authentic, in opposition to ikamono, kitsch or trash as Taut translated it and found represented by Tokugawa and Nikko Toshogu. On the basis of these buildings he claimed “simplicity almost to the point of poverty is the essential basis of Japanese aesthetics.”

Ise Jingu

Taut acclaimed the Ise temple for its Buddhist subordination of the aesthetic to structural necessity. In Ise he found “the art of omission” pushed to its extreme and declared “after a first visit to Ise one knows what Japan is”91. Taut granted Ise authentic status on the grounds of its rationale structural expression.

Katsura Rikyu

Taut thought Katsura achieved Japan-ness through its demonstration of a “freedom of intellect which does not subordinate any element of the structure or the garden to some rigid system”92. He felt sure that the unique quality of Katsura, ascribed to Kobori Enshu, was the doings of “a man who must have been an authority on taste and had a remarkable quality of invention, as well as liberty from convention and a vast artistic horizon.”93

The goal for a modern Japanese architecture was found in Katsura, but could only be accomplished where “the materials remain architectural; where the architect has

---

92 Ibid.
93 Ibid.
freedom to grapple with new problems and is allowed to develop and to gain recognition; and where the prospect still exists of becoming a modern daimyo in intellectual pursuits and in decisive influence on the problems facing the country." Consistent with his earlier disinterest in concepts of historic authenticity, Katsura is revered for its “eternal beauty forever inexplicable.” Taut declared beauty was achieved in the palace because its architect unified common utility with dignified representation and philosophical spirituality.

94 Ibid.
95 Ibid.
non-judgmental stage of the design process.

11.3 Preliminary Designs

The first concepts (figure 11.1) were derived purely from site research and experimentation with surrounding geometry. Concepts are aimed at creating a connection between the west side across to Victoria Square where the general public could circulate within the complex. Initial thoughts regarding the incorporation of the Avon River into the site could be done by means of either cantilevering part of the concept over the river, or bringing it into the heart of the site to create natural features. The models represent ideas of forms and geometry that could be used in future concepts.

The later concepts within this series (figure 11.2) were derived from developing ideas in relation to Japanese architectural principles. Picture * shows the idea of using traditional *tatami* mats (1800 x 800mm), but increasing their scale to create modules within the site.

The last concept within this series (11.3) looked at experimentations of ground floor to formulate and influence upper floors. Within this model a central space is created which can be viewed from the adjacent park right into the heart of the site. The central column was reminiscent of the traditional Japanese techniques of using a natural object with historic value to anchor the building. The column height is that of a twelve story building and was placed within the site model to get a sense of relation to the surrounding buildings.

Initial series aimed at trying to create axis through the site and placement of form. Later concepts within this series looked at Japanese principles. The monastic order had not been implanted or looked at during this stage, as stated in the methodology it was a purely non-judgmental stage of the design process.
Figure 11.1: Initial concepts.

Figure 11.2: Initial concepts.

Figure 11.3: Initial concept elevations.
The idea of layering seems to create a more monastic feel within these early development models (figures 11.5). Just by layering a box within a box and creating a recessed feel the idea of layering shifted to a focus on the idea of nesting within. This model sparked ideas showing how horizontality of traditional Japanese architecture and the more vertical layering of modern Japanese architecture could be intertwined.

The idea of layering was to be used so that an overall form may be created using individual layers (figures 11.6). For example, when looking from a certain perspective a view would be framed to create a picture. In this example the idea of layering walls to create the cross of the church, so that the crucifix may only be seen from inside the church while externally it appears as a series of walls.

The final idea to be looked at within this series was the idea of wrapping a building within its walls, nesting itself within its own façade (figures 11.7). Another option of this example was to cut away at its own façade where the building would eat away at itself allowing travel of, not only people, but also the external elements, bringing the outside in.

Design 2

This series was more an experimental stage to conceptualize how these principles might look if regarded separately from the site. Ideas pertaining to connection with nature and how to frame the views were the main focus of these preliminary designs. These ideas were explored through emphasizing directions and paths of movements. Although this experiment yielded interesting forms, it seemed to be losing the feel of the desired monastery.

The idea of folding a single piece of card created a form that grew from itself thus creating layers and an interconnecting space in which ma and oku would become purely reliant on the function of the space (figure 11.4). This method was trialed although it seemed to be creating random forms which had little or no meaning behind their creation.
Figure 11.4: Folding form.

Figure 11.5: Layering.

Figure 11.6: Layered scene.

Figure 11.7: Development of folded form.
Design 3

The first 1:200 model was created to start demonstrating the ideas described earlier. This design was to look at ideas pertaining to layering. The design focused on creating an overall geometry from which building forms would be created from. This was to give a relationship within the clusters of buildings. The model demonstrated view shafts that were first hinted at in the preliminary design stages. Although the overall form looks somewhat futuristic it became more of an experiment of form that actually demonstrated a ‘monastic’ feel. This concept did achieve overall layout needs and initial principle incorporation, but needed to become more ‘refined’.
Figure 11.8: Development series.
Design 4

The next step was to extrude the geometry to create an overall feel of massing in which to relate the proposed buildings to their surroundings which would give respect to the monastery’s ideas of piety (figure 11.9). The height of the church was to reach ground level. It was noted that, due to the height and placement, a buffer, or obstacle, would need to be placed to stop people from walking directly onto the church. The monks’ cells were to be raised up in the left over voids created by existing buildings. This would create problems when dealing with an internal environment due to the enclosed space and tight proximity.
Figure 11.9: Development series.
Form and massing were to be selected and manipulated in order to break down the overall simplicity in geometry, while still keeping uniformity (figure 11.10). The concepts looked at creating a central space in which the majority of functionality would occur and the surrounding areas acting as the more private uses such as monks’ quarters and lay brothers, etc. A curved wall was used to help the inculpation of public into the complex. Within these concepts it became noticeable that there was no connection or thought given to existing surrounding buildings.
Figure 11.10: Manipulation of formal geometry.
Design 7

After experimenting with cardboard it was logical to swap between design methods, in this case planning. A clean and logical process regarding movement through the site was needed to ensure a clean journey from end to end in which public and lay brothers can be kept separate from the monks. From the simple diagrammatic movement diagram a plan slowly evolved in which spaces could form around the ideas of movement lines (figures 11.11). The public and entrance areas would be located near the entrance, which would be located on vertical lines, to encourage movement through the site. The development from this plan looked at creating a journey from the road frontage into the heart of the site, this would mean one would not first enter a reception building, but instead enter the cloister and then be free to move onto the next desired area.
Figure 11.11: Lines of movement.
Design 8

As a development from planning three dimension modeling was started in order to start looking at circulation and the connection between building heights. With basic footprints marked and then extruded from the designed unusable voids were created which would receive little or no sunlight and become space wasting. The idea of protecting, or sheltering, the trauma complex by means of using the lay brother’s complex to surround the building acting as a buffer to protect it from the public moving through the site was adopted.
Figure 11.12: Dimensional planning.
Carthusian; each with their own distinctive ways of life.

The “New Monastery” in Citeaux

Citeaux Abbey was founded in 1098, seeking to follow more closely the Rule of St. Benedict, under the leadership of Saint Robert of Molesme. Cistercian monasteries were all arranged according to a set plan, unless the circumstances of the locality forbade it. Beyond the wall a moat, artificially diverted from tributaries which flow through the precincts, completely or partially encircled the wall. This water furnished the monastery with an abundant supply of water for irrigation, sanitation and for the use of the offices and workshops. The church consists of a vast nave of eleven bays, entered by a narthex, with a transept and short apsidal choir. To the east of each limb of the transept are two square chapels, divided according to Cistercian rule by solid walls. Nine radiating chapels, similarly divided, surround the apse. The stalls of the monks, forming the ritual choir, occupy the four eastern bays of the nave. There was a second range of stalls in the extreme western bays of the nave for the lay brothers. The cloister was located to the south of the church so that its inhabitants could benefit from ample sunshine.

11.5 Maki Fumihiko Account of the Single Storied Dwelling in Japan

Maki Fumihiko gives an account for single storied dwellings in traditional Japanese architecture in which “during the Edo Period, the Kura-shiki magistrate did not allow average citizens to build two story machiya. As a consequence, rich merchants constructed houses that appeared to have two stories. In reality, the front area of the house consisted of a high open space with slat-covered windows on the upper part of the walls to let in light.”

---

96 Roger Stalley, Early medieval architecture (Oxford: Oxford University Press, 1999), 167.

97 Ibid, 92.
11.6 Tadao Ando’s Komyoji temple

Tadao Ando’s Komyoji temple is a place for worship within the town of Saijo. On one side of the temple is the 250 year old Komyoji temple. Due to the temple being kept in use during construction Ando uses the existing bell tower and the entrance gate for the newly built Komyoji temple weaving the approach route to the new temple around them. The gate and the bell tower have now become a part of the journey into the temple and help to tie the newly built form to its history.

11.7 Japanese Temples

The Japanese temple exhibits “carved gateways, paved courts with their votive lanterns, stages for the mystic dance, shrines with their golden walls and coloured pillars, stairways, and cloisters with their gilded demons and dragons”. At every corner of the giant (typically geometrically shaped) structures lies an intricate construction detail which the visitor walking around the veranda looks up to.

The journey to the temple entrance is as complex as the temple itself in which the travelers experiences mu and oku. The journey begins from the street front, taking the visitor through tight narrow backstreets. White washed walls are broken with two large wooden doors and a timber beam running across the ground, which one must step over. The temples have landscaped areas, often with Zen stone gardens. The gardens within the temples are meant to be viewed, but not touched - the unreachable. Interiors of the temples consist of walls and sliding doors “made of wood, plaster on bamboo lath, and paper. Ceilings are of wood, and floors, when not of wood, are of straw mat, tatami, or bamboo.”

11.8 South Star Abbey’s Monks Initiation Steps

The complex will follow the same initiation steps as at South Star Abbey:

- **Postulant** - living with the community for a period of at least six months.
- **Novice** - two years as a member of the community ‘learning the ropes’.
- **Student** - three years (minimum) of continuing formation/education.
- **Monk** - solemn Monastic Consecration (permanent commitment).

---


11.9 Timber Construction

Within Japan timber is considered to be more than just a building material and is valued for its association with nature, colour and texture. But timber buildings are vulnerable to fires. For example on the 1st September 1923 when an earthquake struck Tokyo leaving many timber buildings still standing subsequent fires destroyed two thirds of those remaining buildings. Contemporary Japanese timber designers often seem to draw inspiration from traditional construction practices. In New Zealand a company called Structural Timber Innovation Company (S.T.I.C.) has been set up to look at the structural capabilities of timber constructed buildings (specifically radiata pine). The idea behind the S.T.I.C. system is that “laminated veneer lumber and pre-stressed steel cables – both of which are already widely used in the construction industry. Laminated veneer lumber is produced en masse by companies such as Carter Holt Harvey (a member of the S.T.I.C. consortium); radiata logs are peeled into thin strips, and glued back together into multiple layers to produce a product many times stronger than the original lumber.” 101

“Lengths of laminated veneer lumber are prefabricated into beams, walls and joists. Steel cables then tie the structure together by threading horizontally through ducts in the beams and holes in the columns, and vertically from the foundations to the top of the wall panels. The whole system is then clamped tightly together. Under the force of an earthquake, the structure rocks and flexes, and then re-centres with no damage to the joints.” 102

“This post-tensioned timber system offers architects and structural engineers the opportunity to design large open-plan multi-storey buildings with great flexibility for future changes of use. Long span post-tensioned timber beams require fewer internal columns and walls, resulting in versatile and attractive places to live or work. The major benefit of post-tensioned timber frame systems over cross-laminated timber (C.L.T.) panel systems is that there are very few structural walls to impede

101 Rebecca Macfie, "Outside the Square," The Listener, October 9, 2010.
102 Ibid.

11.10 Layering

Layering within traditional Japanese architecture can often be seen separating layers of function, or use/users. Within traditional temples verandas are used to distinguish between outside and inside, although the veranda can become an intermediate which transforms spaces from inside to outside. The layout of traditional Japanese houses uses the more public spaces, such as the living/entertainment room, as an outer layer which becomes more public than private, allowing for a freer access to the area and giving it a secondary function as a hallway. By layering the house, using rooms later rearrangement of internal spaces. Exterior cladding systems need to be independent of the structural elements, so that they can be inspected regularly and be changed when necessary.” 103

instead of access paths, it allows smaller sized lots of land to be fully utilized creating a more ‘open plan’ type situation.

Not only can layering be considered in a horizontal formal situation, but also as a layering of senses. As in Ando’s Water Temple, multiple layers are used to separate and prolong the entrance of the temple, creating a journey in which one is ‘purified’, as in traditional Buddhist temples. This idea helps to give a hierarchy of importance to the space, while also allowing for a deeper connection to occur within the architectural form. Within the Water Temple Ando also uses layers to symbolize greater importance with regards to the symbolic meaning of religious icon. At the centre of the Water Temple lies a Buddha. Ando has nested it within the heart of the site, not only in horizontal terms, but also burying it into the ground.

The principle of layering also includes that of light and materiality within the overall form. In South Star Abbey Tennent aimed at creating spaces that make “you breathe differently and your mind slows down and you become more aware of your place in the universe.” The juxtaposition of light and shadows is employed so as to create layers of a sensual experience, such as self-reflective or self-aware spaces. Therefore, layering, in this sense, is recognition of the delights of the hidden and the partially revealed.

With regards to layering Ando employs ideas of spatial enclosure. Ando creates enclosed space primarily through the use of thick concrete walls; he writes “the primary significance of enclosure is the creation of a place for oneself, an individual zone, within society.” Within small, spatially enclosed spaces, Ando states that the thoughts of the occupier can range into infinity.
