

融 Fusion

Church Design for a New Christian Group in Auckland

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A Christian church is the house of God; the church building symbolizes “heaven” on earth. Church designers normally aim to create a unique and harmonious space for prayers and worship. This project will explore how a sacred space can affect spiritual emotions in both Christians and non-Christians. A strong Eastern cultural (particular in Chinese) background will be depicted through this design.

Central to this design is an attempted fusion of eastern and western culture. Because most people of this Christian community are first generation Chinese. The focus of this project is to investigate the formal language of the church typology and how it will fit into a contemporary context with Eastern characteristics and local landscape.

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1.1 Research Question

To achieve the objectives of impressive religious architecture through a new Church design for a new Christian group, few questions have been proposed:

How the typological architectural expression for Eastern and Western cultures differ?
How can a fusion of eastern and western culture be expressed through religious architecture?

How to locate a suitable site for religious architecture and how the design can comply with the local landscape, whether the church needs to be an iconic building in Auckland's suburban context, or whether do churches need to be symbolic buildings.

Can the integration of Eastern cultures (specifically Chinese because the church's end users are primarily Chinese.) into the design occur without becoming a cliché? What are the materials that will be appropriate to create a peaceful and sacred environme?

1.2 Background

8

The history of Christian ministry among the Chinese community in New Zealand began in the 1860s when the first wave of Chinese immigrants arrived at the Otago gold fields. By the year of 2010, arrivals from China dominated many visa categories and the total Chinese population, which includes those from Mainland China, Hong Kong, Taiwan and other continents as well as New Zealand-born, grew from 68,130 in 2001 to 97,425 in 2006, accounted for approximately 8 percent of Auckland's population.¹

Following the vicissitudes of history, as of the year 2011, there are nearly 60 Chinese Community Christian Churches in the Auckland region these include Presbyterian churches, Anglican churches, Baptist churches, Pentecostal churches, and Nondenominational churches, excluding Catholic churches.² The client church organisation is called Christian Youth Church (CYC); it is a Nondenominational church, with an emphasis on discipleship and evangelism. It serves the North Shore Chinese Christian community, having been there for about 7 years to propagate the Christian culture of Gospel message. At present, the church community congregation is made up of approximately 120 members. The Chinese Ministry serves Mandarin-speaking people from the long-time local population and also recent immigrants from South East Asia, and New Zealand-born Chinese. They currently rent North Shore Citizens Hall for Sunday services, and the space can only be classified as a makeshift space for services. The architectural contribution towards this community is minimal and their space can only house roughly 130 people. CYC plans to build a new church for itself within 5 years, which provides an excellent opportunity to explore the questions for this thesis.

1 *"Cosmopolitan Civil Societies Journal"*, Vol.3, No.1, 2011 ISSN: 1837-5391, <http://ut-scholarship.lib.uts.edu.au/eprint/journals/index.php/mcs> CCS Journal is published under the auspices of UTSePress, Sydney, Australia. (accessed April 10, 2011).

2 *Chinese Christian news paper.*



Fig 1.1: Image to show there are nearly 60 Chinese Community Christian Churches in the Auckland region. And the client's current church location at North Shore.



- The Client's Church location
- Other 60 Chinese Christian Churches in Auckland region
- Congregations Houses

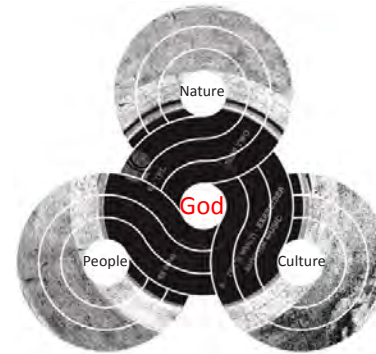


Fig 1.2: Image to show the relationship between people, nature, culture and God.



1.3 Aim / Objectives

Developing a successful religious architecture is a great challenge for any designer. The complex cultural background would add another layer of questions to the design. This thesis is searching for an architectural approach combining the Eastern and the local culture. Of course the most important part is also to respect the Client's requirements. This design would present a sacred place for people who wish to worship, pray and hearken to Christ. This is a place to offer people a deeper sense of mind and spiritual purification, and thus brings them peace and serenity. The building will utilize attractive forms and stunning views to affect the individuals' emotions, to attract new comers, to accommodate people of different ages and needs (children, adult, nursing mum) and to bring peace and serenity to the weary soul.³

3 Judy Lin, interview with author, March 20, 2011.

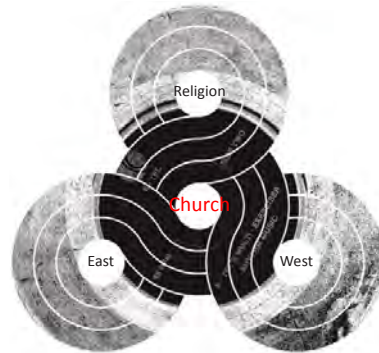


Fig 1.2: Image to show the relationship between Religion, East, West culture and Church in this design.

1.4 Outline of Project

This “fusion” Church represents two contrary worlds and cultures, the material world of earth and the immaterial world of heaven (the secular and the sacred); and the East - West cultural differences. These two worlds (material and spiritual) and cultures sometimes repel each other; while at the same time attract each other, as if they are crossing each other’s boundaries. The design of the church will express the spirit of both the conflict and the intimacy between these two worlds. The purpose is to create a religious space which inspires worship and contemplation. People respond to a spiritual setting, joining together in congregation that can have both participatory and performance characteristics, depending on liturgical requirements.



Fig 2.1 Photograph a Peter Zumthor's design, Brother Claus Field Chapel is located in Mechernich near Cologne, Germany.

2.0 CURRENT STATE OF KNOWLEDGE



Through a precedent study, this project attempts to form an understanding of typical Classical and Modern Church design, which can be applied to the contemporary New Zealand context. The Christian church originated from the western culture, and the majority of Chinese churches are merely replicas of the western ones, so this precedent study would focus more on Western Church development.



2.1 Eastern Conception of Space and Beauty

New Zealand is currently developing a pluralistic, multicultural society. This project tries to create a beautiful multicultural space by combining Eastern cultural themes within a Western context, expressed through architectural design. The research would focus on two concepts between East-West values, these are space and beauty.⁴

There are many differences between Western and Eastern concept of space and beauty. Take painting as an example, Western artists excel in anatomy and perspective, consequently their paintings distinguish the masculine and feminine elements and their distances; their portraits, elements, trees, all have accurate shadow casting. Their use of colour and brush techniques is certainly different from Chinese painting. The combined effect of these techniques results in works of art with a high level of realism. Historically, Chinese artists believed that any artist may learn from such techniques but they do not have any merit in stroke techniques. Even though drawing has artisan value, nevertheless, it is not painting. Chinese landscape paintings are about expression through characteristics of nature to represent Chinese cultural traits. Landscape painting is one of the earliest representations of the perception of nature and hence space, was primarily concerned with the intangible form. In a traditional way, Chinese consider concepts holistically, and then distilling the essence of it to serve the purpose of representation. The greatest example is ink painting of landscape and calligraphy, each entity being portrayed is either an abstraction or gestural representation.⁵



Fig 2.2: Typical Chinese landscape painting.

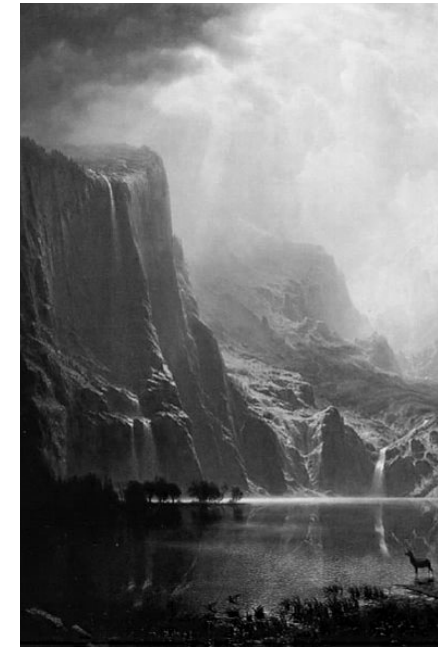


Fig 2.3: Typical Western landscape painting.

4 Xiaodong Li and Kang Shua Yeo, *Chinese Conception of Space* (Beijing: Chinese Architectural Industry, 2007) p. 51.

5 *Ibid.*, 65.

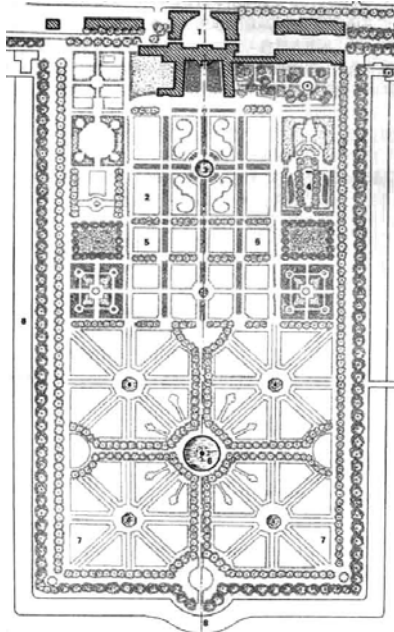


Fig 2.4: The Royal Herrenhausen Gardens in Germany.

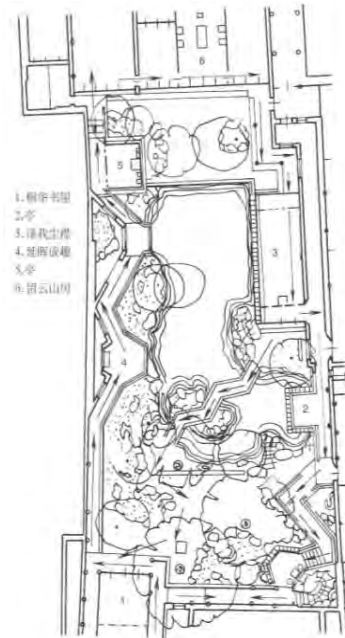


Fig 2.5: The Chang Yuan Garden



Fig 2.6: Western Ballet dancer.



Fig 2.7: Peking Opera performer.



Another area where there are obvious differences between Chinese and Western approaches to design is in landscape gardening. The western approach concentrates on formal composition through combinations of flowers, trees and other elements. The Royal Herrenhausen Gardens in Germany is great example for Western garden. It comprises of the Great Garden, Berggarten, Georgengarten and Welfengarten. Each garden is a splendid example of a particular garden art. These Baroque gardens use criss crossing paths and alleys to represent accurate geometrical plans. The Eastern garden approach is more concerned with compositional effects. This process seeks to translate two-dimensional compositions into tree-dimensional landscapes. The Chinese gardens emphasizes a different way of design, which is most evident in Gardens of Zhejiang Province, the design is treated as a journey where a new scene is framed at each turning point and hence a transition is made at each new scene. The garden in the inner and outer boundaries becomes ambiguous spatial form when people walk into it. The Chang Yuan Garden is designed as a framed landscape with water, like a poem and a picture, all the pillars on water, pleasure-boats, winding bridges, and water fall, setting off each other, making people understand the rich traditional culture and the beauty of Suzhou gardening art. Chinese gardens design tries to develop harmonious relationships between the architecture and nature.⁶ It is very difficult to express the experience of Chinese gardens through 2 dimensional drawings as it is designed to have a sequential experience, and one can seldom see the whole garden at any particular point. A courtyard besides the hill side river was most like the pure natural secluded life in Chinese tradition. It represented the spiritual life of those who have learnt academician poetry. The aesthetics of the East-West differences also appeared in other artistic fields. Such as Chinese Peking Opera Art and Western Ballet. The most prominent difference is that clothes from outward appearance, less and more. Actually every action of the opera performers are to complete a designated circle, to represent the values of Chinese. Ballet performances every movement is an upward, indicated a wish to break free of gravity closer to the sky.

⁶ Xiaofeng Fang, *The Great Gardens of China: history, concepts, techniques*, (New York, Monacelli Press, 2010) pp. 12-36.



The aesthetics of the East-West differences also appeared in other artistic fields. Such as Chinese Peking Opera and Western Ballet. Every action of the opera performers is to complete a designated circular motion, while Ballet dancers' movement is an upward motion, indicating a desire to break free from gravity.

In terms of their religious architecture, there are also differences and similarities.. Take for example the Forbidden City.(the forbidden city is used because it is both a governmental complex and a religious complex, as the emperor is considered a deity), the buildings are all single level and are on different sized pedestals, the larger the building the more importance it has. The sheer size of the hall of supreme harmony (where the emperor receives his subjects) instils awe and fear of imperial power.⁷ This complex is of a formal nature and therefore utilised a formal compositional in design. From its layout to the smallest detail, they was meticulously planned to reflect philosophical and religious principles, and above all to symbolize the majesty of Imperial power.

On the other hand we look at Western Churches, especially Gothic churches, which are characterized by sky-reaching volumes and an upward gesture through its slender colonnettes. The worshippers are placed into a vertical space, its proportional dwarves the beholder and in turn induces awe and fear of God.⁸ The architect uses this knowledge of space to reinstates the power of deity and the puniness of man. Although the western and eastern architecture differs in appearance, they utilized axis to differentiate space and generate circulation routes for its different user groups. In the Forbidden City, no one is allowed to walk through the centre of the hall; they must form two lines on either side. In churches, the priest would walk the centre aisle at beginnings of services, emphasizing the importance of God.

⁷ Spiro Kostof, *A History of Architecture - Settings and Rituals* (New York: Oxford University Press, 1995) p, 231.

⁸ *Ibid.*, 341-344.



Fig 2.8: Beijing's Forbidden City,

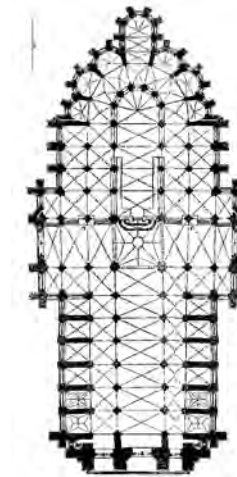


Fig 2.9: Amiens (France), Cathedral of Notre-Dame, Begun 1220; floor plan.

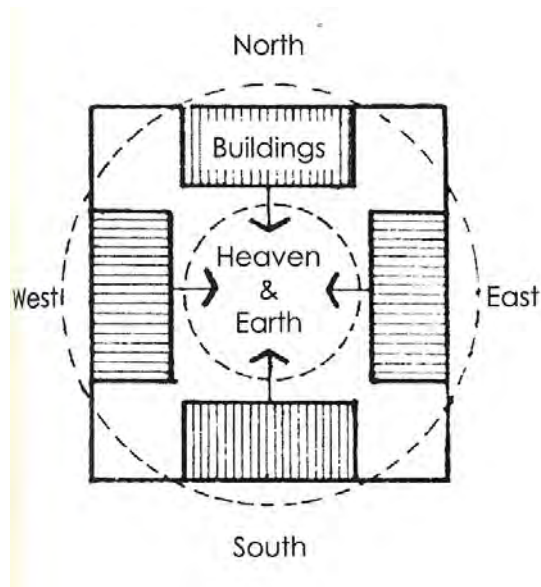


Fig 2.10: The Chinese perception of space, position in Cosmos represent in Chinese Courtyard house plan.

Generally, the Chinese perception of space emphasizes the intangible idea over the tangible form. These tangible and intangible forms can also translate to architectural elements and spaces. This concept of “Presence and Absence” in Chinese perception of space is hugely influence by Lao-Tzu.

“Thirty spokes join together in the hub. It is because of what is not there that the cart is useful. Clay is formed into a vessel. It is because of its emptiness that the vessel is useful. Cut doors and windows to make a room. It is because of its emptiness that the room is useful. Therefore, what is present is used for profit. But it is in absence that there is usefulness.”⁹

Lao-Tzu

Lao-Tzu, one of the earliest oriental philosophers, his philosophical theory widely influence Western philosophers and architects; Such as Immanuel Kant, Martin Heidegger and Frank Lloyd Wright. His “Presence and Absence Theory” suggested that emptiness is the space creates by physical form, and the function of form or shape because of the space. Without this empty space, they will lose their values as wheel, cup and room. Lao Tzu perfectly explained the fundamental way of designing space.

The empty spaces in the architectural composition are also similar to the figure and ground quality in Chinese ink (landscape) Painting, it leaves room for imagination without expressing every detail of the thing being drawn, it stimulates the mind to wonder and each beholder would have his own interpretation of the drawing. The “Presence and Absence Theory” is similar to the “figure and ground” idea in western design, which shows a fundamental connection in architectural design.

9 Lao Tzu, *Tao Te Ching (The Book of the Way)*, 600BC-531BC.



Western and Eastern designers have other similar Cartesian conceptions of planar space. In both cultures, when the two linear concepts were incorporated together – ‘east-west’ and ‘north-south’, a planar conception of space results. Most Chinese characters are related to ancient rituals. The royal tomb of Shang dynasty and the pedestal of Tai He Dian in The Forbidden City is all shaped by character 卍 ‘Ya’. It can be seen, in ancient times, 卍shaped buildings are of noble status. Grid patterns of windows and doors are also formed by the 卍character. It is a symbol used to represent a higher social ranking of the owner. This pattern originated in the ancestor worship of the sun, and is considered to be a noble symbol.¹⁰ In Western culture, people think of the cross form as a Christian symbol. The cruciform therefore has religious meaning in cultures, the cruciform or the shape of the Chinese character 卍. This has been written on extensively by Sarah Allan in her work on the significance of the cruciform based on archaeological findings.¹¹ Allan argues that 卍 was historically used to symbolize centrality. Although much Western church architecture utilizes cruciform planning, many Byzantine Churches use Centralized Planning.

“Fluid echoes dance ripples of sun and water hold dreams in the eaves.”

This was written by a New Zealand poet on the Japanese garden of Contemplation at Hamilton Garden.¹² Japanese gardens were hugely influenced by Chinese gardens from the Song dynasty. The traditional Japanese art, all forms of spiritual exercise are transitionally carried out within the context of the human interrelationship with nature. At the same time to simplify the traditional pattern, the modern way of thinking extracts from the traditional culture for a contemporary wisdom.¹³ Tadao Ando’s

10 Sarah Allan, *The shape of the turtle: myth, art, and cosmos in early China* (Albany, NY: State University of New York Press, 1991) pp. 42-68.

11 Ibid., 56.

12 Alan Riach and Kenneth G Henshall, *The Poetry of the Japanese garden at Hamilton Gardens: an anthology of poems submitted to the Japanese Garden Trust (Hamilton Gardens) Japanese Poetry Competition* (Hamilton, Waikato Times, 1998) p. 3.

13 Francesco Dal Co, *Tadao Ando Complete Works* (New York: Phaidon Press Limited, 1995) pp. 7-30.

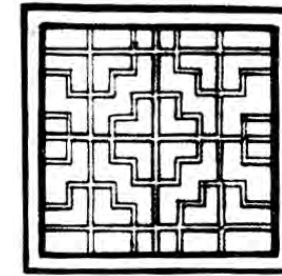


Fig 2.11: Grid patterns of window formed by the 卍 character.



Fig 2.12: Chinese character 卍, The royal tomb of Shang dynasty, Latin cross and Greek cross.



Fig 2.13: The expansive view and contrast of the raked gravel and the naturalistic plantings can be viewed from the long compressed space of the covered veranda-like engawa.



Fig 2.14: In Chinese garden, a stone bridge connects the path.



Fig 2.15: Stone support lift the wooden bridge above a pond.



Fig 2.16: Church on the Water (1985-88). Church exterior view, view into the landscape and the cross stands along in the lake.

architecture makes people feel “quiet, empty, ethereal,” the Zen state.¹⁴ This enclosure, place, space become the origin of architecture. Also is this Church design should consider about relation between God, people, and nature.

“Creating Architecture is to express representational aspects of the real world, such as nature, history, tradition and society, in a spatial structure, which is an abstract concept, composed by clear, transparent logic.”¹⁵ - Tadao Ando.

In Tadao Ando’s Church on the Water, the building is designed around three natural elements – wind, water, and light. In Ando’s view, using the idea of Zen to design the church and also allowed people to feel the natural realm around the building while they are inside. This idea reflects the respect of man for nature. Sitting in the church, watching the outside view, is a memorable experience. The design utilised water and stone, light and shadow, to feel the static and the dynamic at the same time.¹⁶

“I seek to instil the presence of nature with in an architecture austere constructed by means of transparent logic. The elements of nature – water, wind, light, and sky bring architecture derived from ideological thought down to the ground level of reality

and awaken manmade life within it.”¹⁷ - Tadao Ando

14 Masao Furuyama, *Tadao Ando 1941 – The Geometry of Human Space* (New York: Taschen GmbH, 2006) pp. 7-15.

15 Ibid.,

16 Stuart Wrede, *Tadao Ando*, (New York: The Museum of Modern Art, 1991) pp. 38-47.

17 Ibid., P. 1.



2.2 Christian Church in Western Culture

In the Christian religion, a church building is a building or structure whose primary purpose is to facilitate the meeting of a congregation.¹⁸ Nowadays, in a world which appears given over to economic concerns and to entertainment, churches and chapels are often the only 'other' places: houses of stillness, of meditation, of freedom and not least, of refuge. The church is, therefore, a sanctuary. These churches sometimes act as spaces of ritual, sometimes as spaces for meditation, refuge or prayer; buildings designed for worship retain a high level of significance, these all helps mould architectural thoughts. Ritual and Divine Liturgy is not the main focus for this design, because the client's church is a Nondenominational Church. There are so many different churches and chapels around the world; therefore it is hard for this research to decide which key constituent might really assist in this Chinese Christian church design. The main purpose of this precedent study is to find the common factors and ideas between these religious buildings, which may then be applied to the proposed design. Furthermore, research through precedent survey can inform the fundamental nature of church design, and the strategy for selection of a suitable site.

18 Ruth Peltason and Grace Ong-Yan, *Architect: the work of the Pritzker Prize laureates in their own words* (New York: Workman Publishing Co, 2010) p. 63.



Fig 2.17: Traditional worship way.



Fig 2.18: Worship in contemporary church.

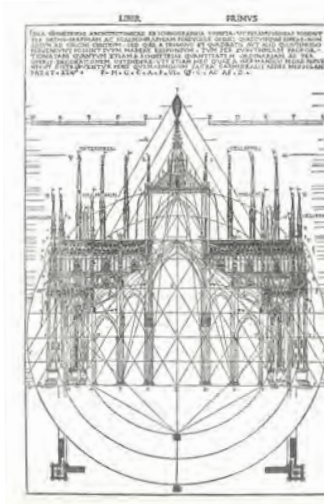
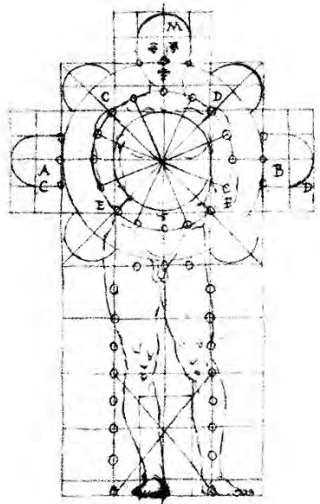


Fig 2.19: The church design on the basis of human body by Francesco di Giorgio Martini's book *Trattati sull' architettura civile e militare*, 1474-1482. And this church elevation from Casare Cesalio's book *Di Iulio Vitruvio Pollione de Architectura Libri Decem*, 1521.

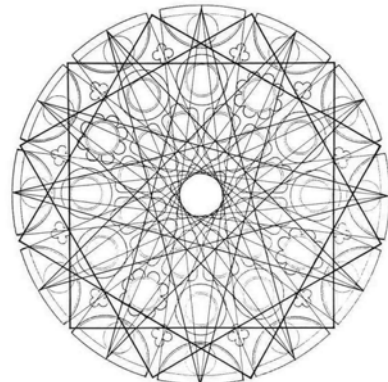


Fig 2.20: Chartres Cathedral, South Rose window and its geometry design (c.1227). The changing colour spectrum and rotating geometry gives this window great vitality and spirituality simultaneously.

2.3 Church Form and layout Study

An analysis of ancient church buildings identifies the aspects of their geometry which may be useful in contemporary church design. The early church design attention to religious forms is reflected in the design of the human body. Most of architectural plans of churches all represent the "body" cross and religious reason. The 'perfect' proportion plays an important role in the church design, the plan of the cross and elevation has triangular form are all pursuit of 'perfect' proportion.

In Early Christian and Byzantine styles that of "church" is a building or place consecrated for Christian worship and teaching.¹⁹ The significant new buildings erected in Constantinople and other towns of the Eastern Roman Empire were churches, first in the Early Christian style, however, after 400 AD, in the Byzantine style. "Centralised" plan, principal vertical axis and colourful window are the key architectural elements for Byzantine churches. It uses dome as a symbol of heaven, over square or polygonal plan shapes.²⁰

In recent times, the geometries of Catholic and Protestant church buildings have become increasingly similar. Therefore, examples of both church types have been studied during the course of this research. Traditional church buildings are often in the shape of a cross, and frequently have a tower or dome. Much debate occurred in relation to the appropriate plan-form of churches. Typical gothic church plans adopted a layout based on the unequal lengths of the two parts of the "body" of the Latin cross, while typical Byzantine churches adopted a centralised layout based on the Greek cross, with "arms" and "body" of equal length. Ultimately, the figure of Latin cross triumphed over that of the Greek

¹⁹ Richard Kieckhefer, *Theology in Stone – Church Architecture from Byzantium to Berkeley* (New York: Oxford University Press, 2004) pp. 26-33.

²⁰ Ibid.

cross.²¹ A Great example is the transformation of St Peter's cathedral from Donato Bramante to Gianlorenzo Bernini.

Some architectural theorists during the Renaissance sought to symbolise the perfection of God through idealized buildings, and thus returned to the centralized plan-form. However, this plan form produced churches that were difficult to use, due to the challenge of reconciling the centralized plan's vertical (spatial) axis with the horizontal (functional) axes utilized by the attendant congregation. While the architecture of contemporary churches may typically be more humble, these issues continue to be relevant.²²

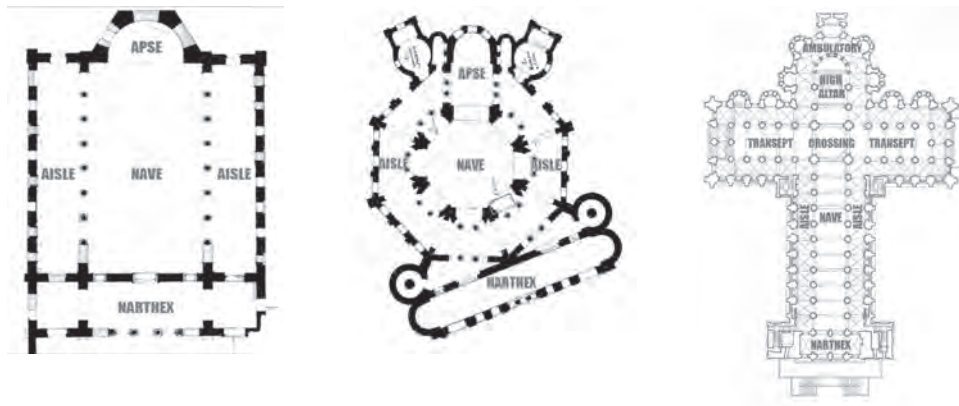


Fig 2.22: Plan studies, Basilica Plan, Centralized plan, and Gothic church plan.

21 Rudolf Stegers, *A Design manual-Sacred Buildings* (AG: Birkhauser Verlag, 2008) p. 16.

22 Martin Purdy, *Churches and Chapels – A Design and Development Guide* (Oxford: Butterworth - Heinemann Ltd, 1991) pp.12-33.

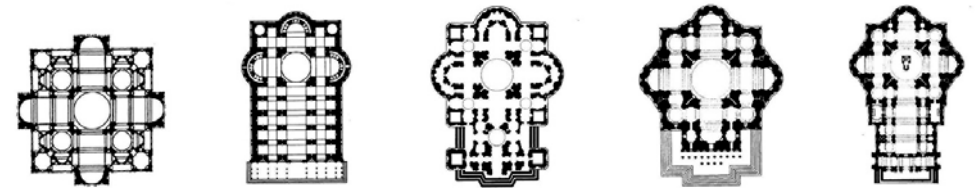


Fig 2.21: The transformation of St Peter's cathedral from Donato Bramante to Gianlorenzo Bernini.

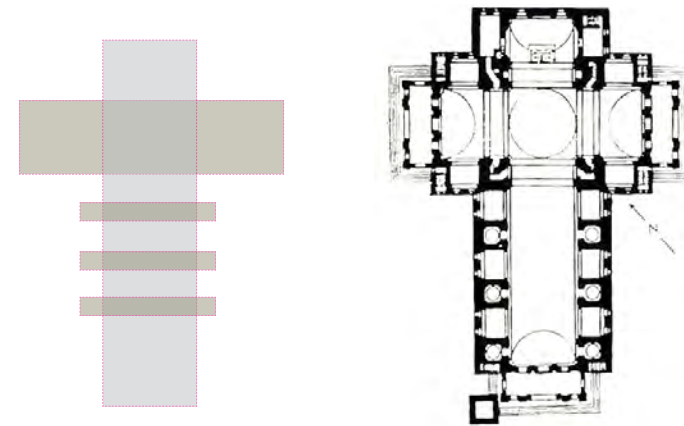


Fig 2.23: Layers of space are successively interfused, the longitudinal axis is vs. the opposite direction of the crossing layers of space.

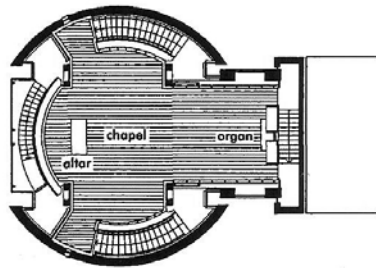


Fig 2.24: Fitzwilliam College Chapel, Cambridge.

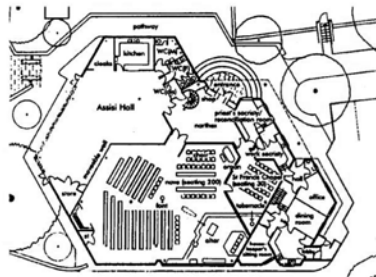


Fig 2.25: St Francis of Assisi, Crosspool, Sheffield.

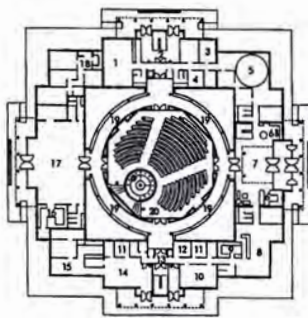


Fig 2.26: Church of Christ the Cornerstone, Milton Keynes.

2.3.1 Church Form and layout Study - Overseas Examples

Modern church buildings have a variety of architectural styles and layouts; in some cases buildings that were designed for other purposes have now been converted for church use and, similarly, many original church buildings have been put to other uses. The typical layout of today's liturgical spaces has changed, because the nature of today's church architecture has changed.²³ This research has found many examples of new patterns of worship space and experiments in the architecture of the sacred.

One feature of modern Christian worship has, above all others, helped to dictate the plan of churches: the emphasis on community. Only within Orthodoxy has the purity of the liturgy, as unfolding the timeless truths of the faith, continued to supply the essential design of a church structure. Set amidst increasingly articulate and educated societies whose citizens, in varying degrees of effectiveness according to their political cultures, are able to select their own values, the catholic and Protestant churches have tried to reinterpret their existence around shared religious experience rather than around dogma or the performance of rites in which the priest or ecclesiastical official, and not the lay believers, have a dominant role.²⁴

This new sense of 'community' within Christianity is, by an accident of building design and the use of modern materials by recent architects, capable of expression in very demonstrable ways in accrual church structures. The popularity of 'collegial' understandings of ecclesiastical authority, in which the laity as well as the clergy are conceived as equal in the ability to discern truth, is also more obviously expressed in open-plan

23 M Martin Purdy, *Churches and Chapels – A Design and Development Guide* (Oxford: Butterworth - Heinemann Ltd, 1991) pp. 12-33.

24 *Churches and Cathedrals 1700 Years of Sacred Architecture* (UK: Parragon Books Ltd, 2009) P. 250.



churches than in the traditional Greek or Latin cross arrangement where the clergy in the sanctuary were physically and symbolically separated.²⁵

2.3.2 Local (New Zealanders') Examples

Most of New Zealand's significant church buildings were the work of architects engaged by Bishop Selwyn when the early period of tentative and often unsuccessful missionary activity had given way to something more securely established.²⁶ However, there remains at Otaki a unique church which was the first to blend Maori and European building traditions. Sadly, the original church was burned down in 1995. At the time, Rangiatea was 146 years old and the oldest Maori church in New Zealand. Today, the church has been restored almost exactly as it was before it was burned. Its two cultures European and Maori are converging into one church. Rangiatea's architecture represented a unique blend of native Maori and English church design. When Europeans first began colonizing the country, they also began converting the island's native inhabitants to Christianity. But the churches in Maori communities have retained some of their cultural roots. On the outside, Rangiatea Church looks like any other white-washed wooden church in the world. But on the inside, Maori design and tradition comes alive. Raupo, Timber and Stone all become the primary choice for New Zealand church buildings. The New Zealand church has huge influence from Gothic. First Presbyterian Church, complete by 1873, is one of the New Zealand's finest churches, its Decorated Gothic manner seemed extravagant to many members of Presbyterian congregation for whom it was built.

25 *Churches and Cathedrals 1700 Years of Sacred Architecture* (UK: Parragon Books Ltd, 2009) P. 250

26 Peter Shaw, *A History of New Zealand Architecture* (Auckland: Hodder Moa Beckett, 1991) p. 22.

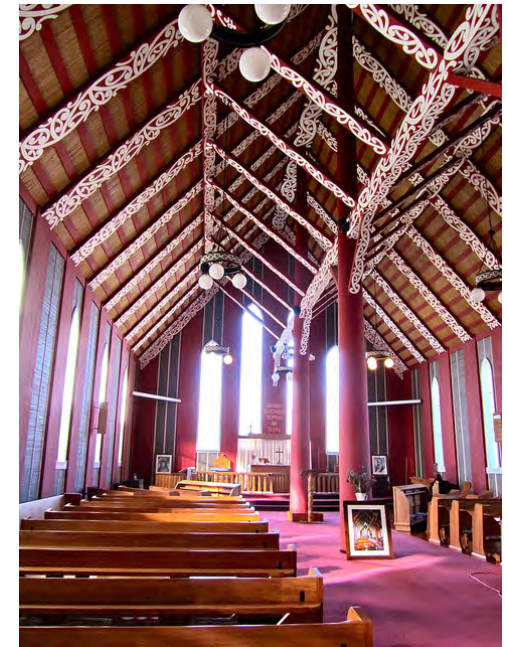
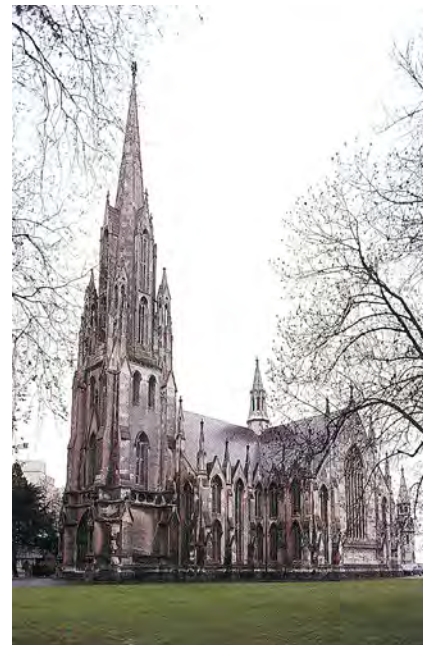


Fig 2.27: Interior of Otaki [Ōtaki] Church, New Zealand 1852

Fig 2.28: First Presbyterian Church, complete by 1873, is soaring Decorated Gothic edifice constructed in brick and faced with Oamaru limestone, its surface richly carved by Louis Godfrey, who worked at Larnach Castle.



Fig 2.29: Interior of view of sacred space play with light.



2.4 Church Space and light Study

Light plays an important role revealing the forms. “Light is the key element for architecture”, Le Corbusier wrote,²⁷ for light creates form in first place. The play with light and transparency has a special place in this research for church design. Natural sun light will be the most powerful element to affect the congregation’s senses and to help create a peaceful and sacred environment. Light also plays a very important role in spiritual experience, as demonstrated by Le Corbusier’s Ronchamp Chapel and Tadao Ando’s Church of Light. The intricate use of both natural and artificial light is an interesting and also difficult challenge. As Steven Holl said, “How can I use various interior lights and darkness to achieve the inner freedom that will allow the people to make authentic and just decisions?”²⁸ The usage of light would invite the worshiper into an even-deeper engagement with the sacred. “The natural light of the sun creates a play of shadows”.²⁹ If there is light, there will also be shade, the utilisation of shadow is equally important as using light in this architectural design. The conclusions for the precedent study are clear, from Le Corbusier to Peter Zumthor; they put their trust in the ‘original material’ of architecture: space and light.³⁰

27 Wolfgang Jean Stock, *1950-2000 European Church Architecture* (New York: Prestel 2001) p. 9.

28 Steven Holl, *The Chapel of St. Ignatius* (New York: Princeton Architectural Press, 1999), P. 9.

29 Ibid., P. 82.

30 Wolfgang Jean Stock, *1950-2000 European Church Architecture* (New York: Prestel 2001) p. 13.

2.4.1 Church Space and light Study - Overseas Examples

In Philip Johnson's own words, great church 'contains, cuddles, exalts or stimulates the person in that space'. Sometimes, then these highly contemporary designs disclose Christian symbolism in a modern interpretation; sometimes they are attempts to match the timeless truths with local or national culture. Thus a structure like Tokyo Cathedral (St Mary's Cathedral), by Kenzo Tange, or the Anglican Church of Resurrection at Hiroshima, also in Japan, achieve striking appearance at the same time as religious meaning. It was a fearful irony that nuclear bombs released on Hiroshima and Nagasaki by a Christian nation destroyed the largest concentrations of Christians in Japan. At Hiroshima the Resurrection Church has a tower whose rounded glass cupola, like a cylinder lying on its side, suggest both strength and shelter, transcendence and final hope for the suffering creation.³¹

Notre -Dame - du Haut in Ronchamp, France, is a milestone of modern sacred architecture and a masterpiece of the twentieth century. Le Corbusier created a powerful pilgrimage church that is both a site for meditation and a walk - through sculpture in itself. Organically integrated into the hilly landscape of southwest France, the church's curving concrete roof is its dominant visual element, dramatically set off by its white fieldstone walls. The interior is also white. Coloured shafts of light entering through slit windows enhance the contemplative atmosphere of the space.³² Despite its size, it holds only fifty worshippers, and an external pulpit allows oration to those outside. Set on grass, with trees in the background, the church is like an unexpected fungus on a garden lawn, a cumbersome fantasy whose attraction is immediate and visual rather than intellectual or spiritual.

31 Churches and Cathedrals 1700 Years of Sacred Architecture (UK, Parragon Books Ltd, 2009) P. 250.

32 Ibid., p. 251.

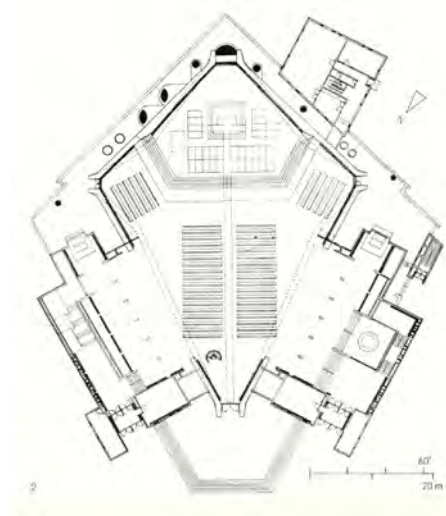


Fig 2.30: Plan and Interior view of Kenzo Tange's St Mary's Cathedral, Tokyo, Japan 1967-69

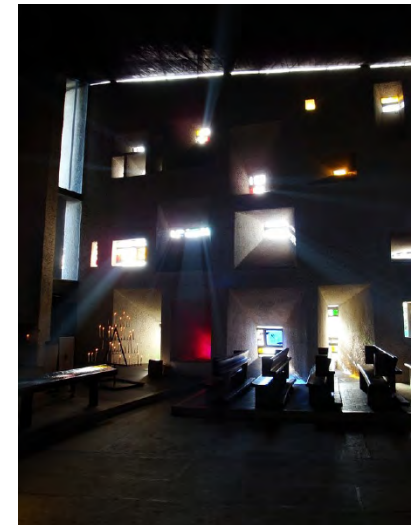
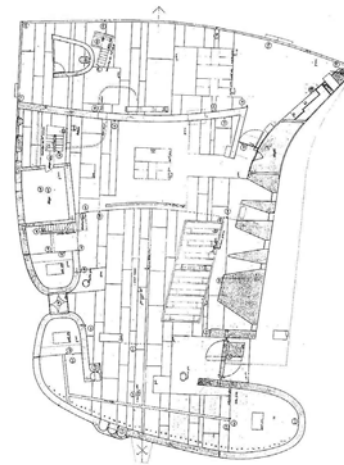


Fig 2.31: Plan and Interior of Notre -Dame - du Haut at Ronchamp (1950-55), Le Corbusier

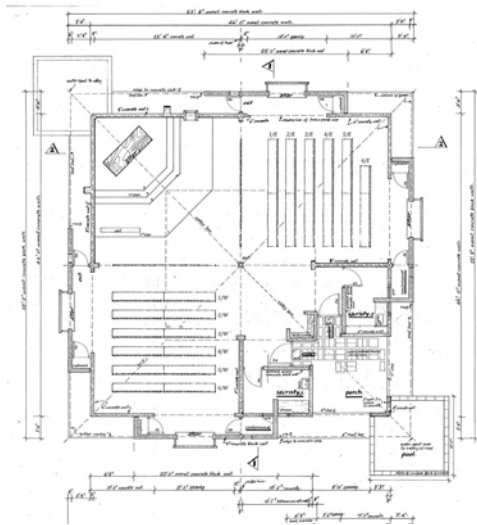


Fig 2.32: Plan and exterior view of Chaple. The Chapel of Futuna is arguably the most significant New Zealand building of the 20th Century.



2.4.2 Church Space and light Study - Local Examples

Churches which are aesthetically pleasing would normally be universally accepted. Successful aesthetic elements could be incorporated into the church design to bring about a spiritual experience in the New Zealand context. An example of successful church design in New Zealand is Futuna Chapel in the Wellington suburb of Karori, by architect John Scott.³³ Within the chapel the movement of sun throughout the day created a play of light, which is filtered through coloured glass panes. The combination of Scott's Maori heritage and European church design principles are noted influences on the chapel's form. The movement of sun throughout the day, the play of light through coloured glass and references to New Zealand's European and Pacific roots were noted influences on the final form.

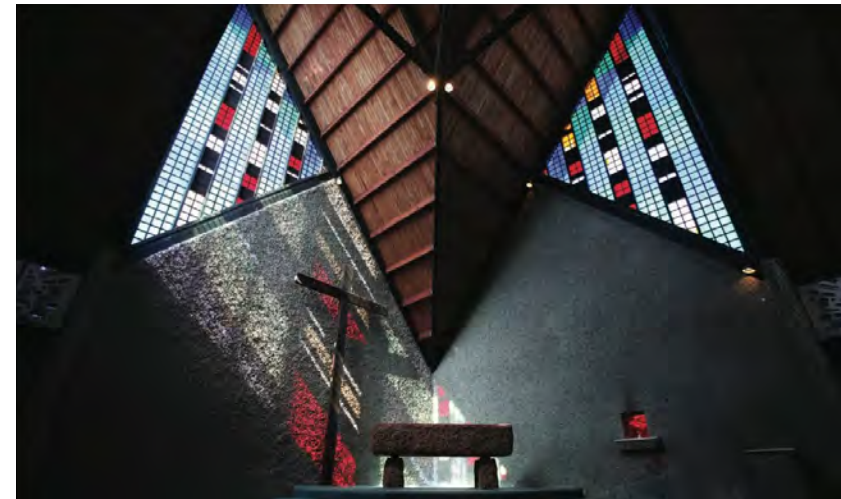


Fig 2.33: Interior view of Chaple to look the altar.

33 Russell Walden, *Voices of Silence: New Zealand's Chapel of Futuna* (Wellington: Victoria University Press, 1987) p. 45.



2.5 Summary of the Precedent Study

Study of Eastern and Western tradition is not a simple imitation of superficial elements, but to consider some of the deeper things such as cultural influence and essence.

- Generally, most of the memorable religious buildings have a very tall building form, which soared up into the sky to represent closeness to God.
- Interior spatial design of churches plays with light to heighten people's senses and evoke one's inner emotions.
- Cruciform design can apply to both Eastern and Western culture.
- Materials such as stained glass and stone almost automatically suggest a house of worship.³⁴ An assemblage of materials and space that draws people eyes upward, away from earthly pursuits, is often found.

³⁴ Michael J. Crosbie, *Architecture for the Gods* (New York: The Images Publishing Group Pty Ltd,2000) p. 4.



Theoretically speaking, a church's primary function is a spiritual shelter, and secondly a physical shelter. Furthermore, a church is a building of faith; the architectural design tries to deliver the 'sacred' space to the congregation. To approach that goal, the methodology can be broken into several distinct parts:

- The site context,
- Client's needs,
- Building space and form.

The solution to the architectural question is basically an agreement between need, context and form.³⁵ In a sense, all three sets of variables are flexible until a fit is achieved. The interior and exterior architectonic constituents of a building, in other words its form and content, are always experienced as a whole

³⁵ Paul Laseau, *Graphic Thinking For Architects & Designers* (New York: John Wiley & Sons, INC, Third Edition 2001) pp. 81-100.



3.1 Site Context

The identification of site context helps to set boundaries and places constraints on the number of design options available. Site context includes site selection, site analysis and site criteria.

3.2 Client's Needs

The brief usually contains most of the information about the client's needs. The first step is to get a good grasp of the quantifiable aspects of the program. Using diagrams to show the spatial requirements for different functions, the relationships of size are quickly apparent.



3.3 Building Form

Building form is under the control of the designer, but should acknowledge accepted church design principles. Cultural influences would be another important driver in the design process, and this is not limited to superficial copying.



Fig 4.1: Site photo from main land to see The Tor and Rangitoto Island.

4.0 SITE INVESTIGATION



It is said that a church is the house of God and a place for worship. The CYC are currently renting Northcote Citizens Hall for Sunday service assembly space, this is located close to the Northcote shopping centre. The Client's original strategic location in the Northcote shopping centre was trying to serve the large population of Asian students, both local and from as far away as Mainland China. Itinerant as they are, they nevertheless have important roles as both receivers and evangelists of the Gospel message. After seven years' service, the Church has developed a regular congregation. Therefore, the proposed site cannot be too far away from Auckland downtown city centre/ the proposed site needs to be within Auckland region. The Church design will be approached internally as well as externally focused so the site will be a first major design driver.

4.1.1 Site Criteria

From the research, several concluding points regarding site selection can be made. In general, three types of sites are addressed here.

- **Type 1**, in the city, close society. Being located in the city can assist the Church to serve a larger population in the urban area, and help spread Gospel message. However, based on the client's situation, locating the church in the city will have parking, land rates, and building height issues. Adaptive reuse would be a valid option for them. Also, the site should address the connections between the two cultures.
- **Type 2**, Church positioned in middle of residential area. This is close to the community, and is convenient for members of the church. Access to parking and large outdoor spaces are part of the advantage of suburban area. For instance, in American there are numerous churches built in suburban areas, such as Rafael Moneo's new cathedral for Los Angeles.
- **Types 3**, Coastal sites, those places often have sublime landscapes with stunning views, such as cliff sites. There are places that can let people help feeling closer to the spiritual world. For example, a beautiful landscape or natural environment could calm the mind of the. A church building should be able to achieve the same effect. Being near the sea would be desirable for its contemplative quality. In New Zealand, there are many great buildings located on the coast. These works of architecture offer a careful response to climate and an exquisite/ beautiful setting for the most cherished rituals in life.

The ideal site would be the combination of Type2 and 3: A suburban site which has stunning views, the worshippers would be immersed in the beauty of nature. Because the beauty of nature inspires people and creates a more sacred feeling atmosphere. Natural beauty view can conquer the heart of any person.



Fig 4.2: Auckland night photo view taken from the Northshore.



Fig 4.3: Photo to show Auckland residential area.

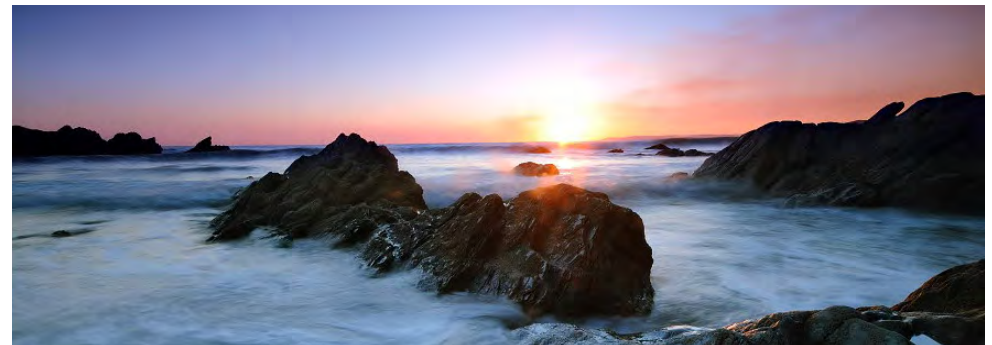


Fig 4.4: Photo take from Long Bay when sunrising.

4.2 Site Selection

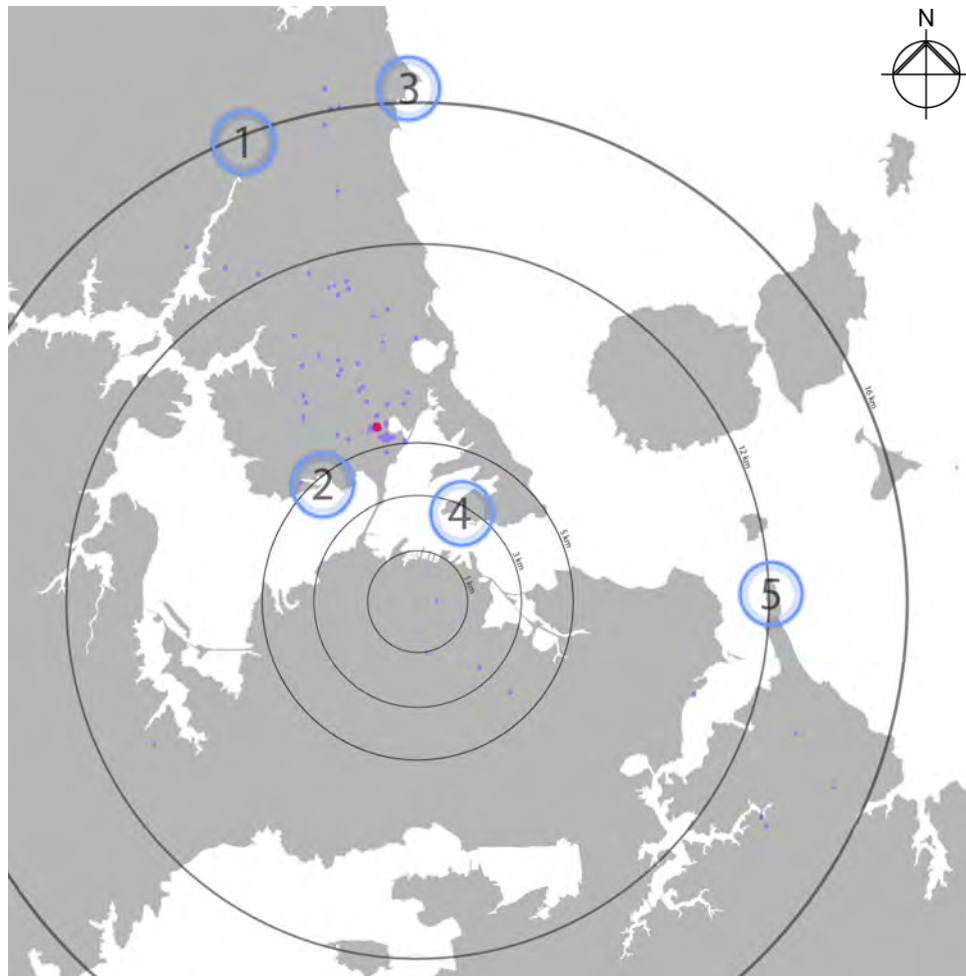


Fig 4.5: Map to show the distance range from auckland downtown to 5 different sites.

These site criteria suggest several sites to analyse and compare. There are five potential sites that have been selected and are listed as follows:

- **Site Choice 1:** 30 Beacon Road, Riverhead, Albany This is a flat landscape in high altitude, and has nice view to the surrounding landscape.
- **Site Choice 2:** 95 Colonial Road, Chelsea Bay, Birkenhead. This site has stunning views of the Auckland Harbour Bridge and Downtown of Auckland.
- **Site Choice 3:** 50 Rock Isle Road, Torbay, Isolated peninsula environment in suburban context, have 270 angle sea-views. And also have public attention and privacy space at same time.
- **Site Choice 4:** 70 Stanley Point Road, Devonport. The site has beautiful view of the Auckland CBD and Harbour Bridge.
- **Site Choice 5:** 20 Musick Point Road, Bucklands Beach. The site is peninsula environment and next Golf Club has epic view.

The analysis table shows some requirements for the site selection. The selection is made based on the following reasons:

- The client preferred a site close to the North Shore; Site 5 is located in eastern of Auckland.
- Site 4 does not offer enough parking spaces for the congregations. Also there are several churches near the site.
- Sites 1 and 2 both have land area all over 3 hectares; is too big for the client's purpose. Whereas the land area of site 3 is smaller but it can fit a 300 person building on the site.
- Site 3 is the most suitable for the client.

» The proposed location of the site will therefore be in the North Shore of the Auckland region. This is at the request of the client when they had seen the five sites information. The client has suggested no specific site, but the church should be placed near or within the suburban context, to make it convenient for people to attend. In order to achieve the spiritual experience, it is appropriate to have views of the dramatic landscape to compliment the church architecture. As Rudolf Schwarz said, “It is only out of sacred reality that sacred buildings can grow... that sacred substance out of which churches can be built must be alive and real to us.”³⁶ The site giving the full access to its beautiful natural surroundings, the church borrows the power of nature to exert spiritual influence on the worship indoors.

SITE	1	2	3	4	5
ASPECTS OF NATURE	●	●	●	●	●
PROXIMITY TO SEA		●	●	●	●
EASY ACCESS & PARKING	●	●	●		●
NEIGHBOURING CHURCHES IN 2km	2	4	3	8	4
WITHIN NORTH SHORE	●	●	●	●	
DISTANCE FROM AKL CBD	23.2	10.2	23.1	15.8	23.5
	km				
DRIVING TIME TO AKL CBD	28	16	28	26	26
	min				
LAND AREA	1153 H	4704 H	8890 m ²	93802 H	3924 H
	H=Hectares m=meter				
EXISTING BUILDING ON SITE	●	●	●	●	
FINAL RESULT			✓		

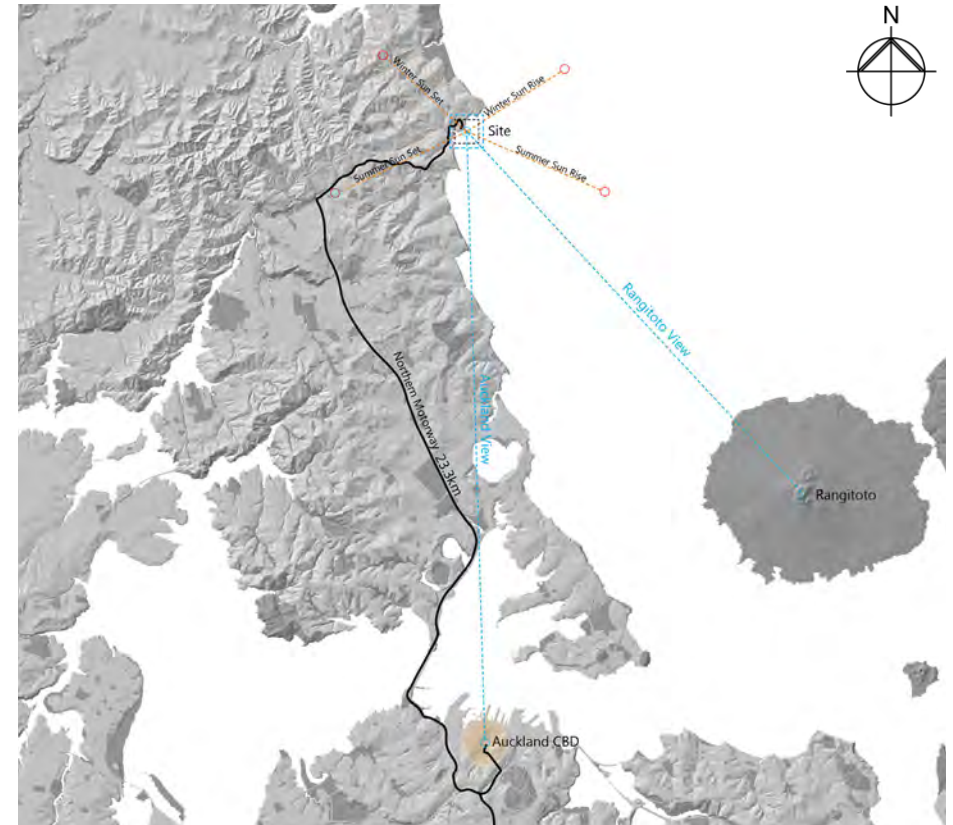


Fig 4.7: Drive from Auckland CBD to the site at Northern Highway need 23.3KM.

Fig 4.6: 5 Sites analysis table.

³⁶ Richard Kieckhefer, *Theology in Stone*, (New York: Oxford University press, 2004), p. 230.

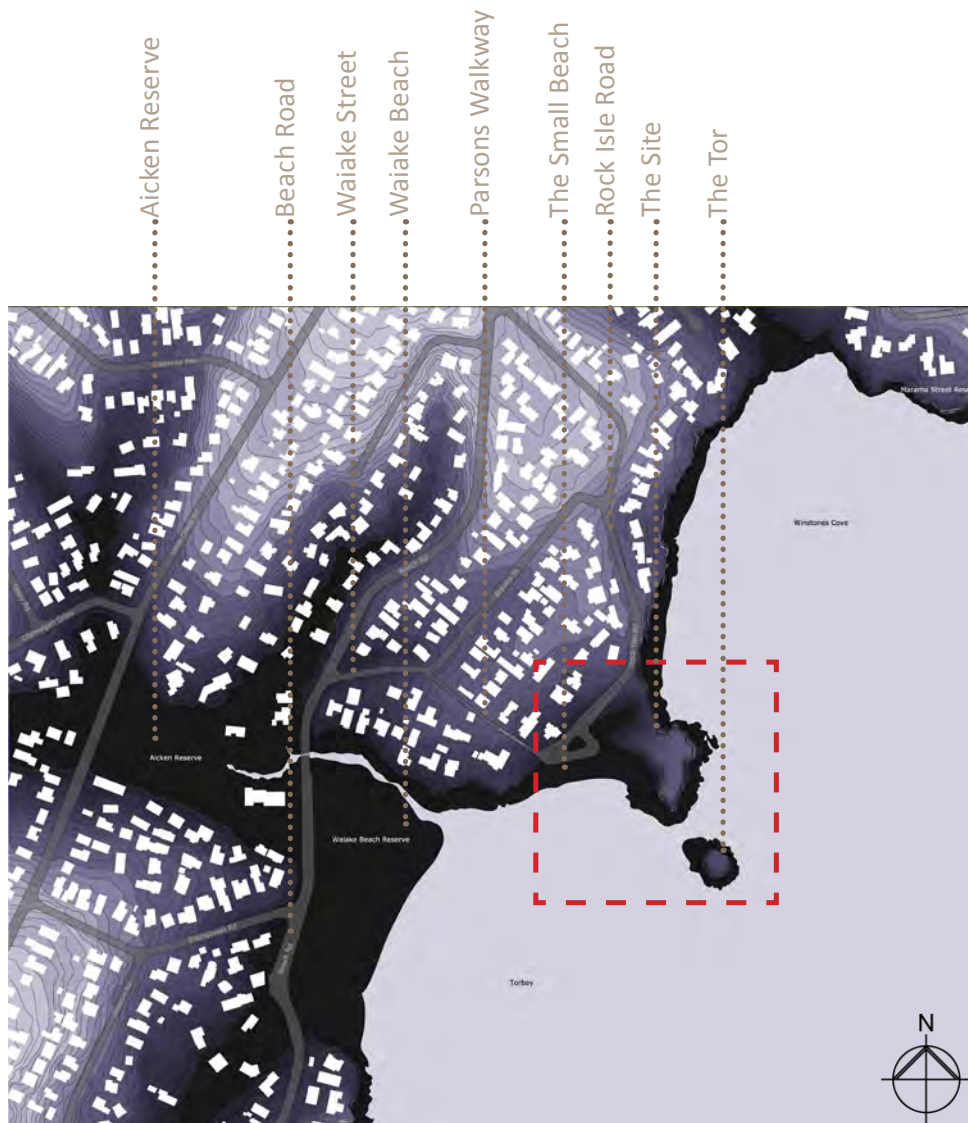


Fig 4.8: Site: 50 Rock Isle Road, in Torbay on Auckland's North Shore.

4.3 Site Context

The selected site is 50 Rock Isle Road, in Torbay on Auckland's North Shore. Site analysis will show the corresponding relevant data relating to the site.

The reason for the site to engage the public audience is when people walking Waiake Beach can see the site cover by groves. If the church has enough high of roof can let people knew have church in there. Torbay resident have lots of outdoors events at beautiful Waiake Beach, such as sailing, boating, windsurfing, canoeing. The site is covered by groves of trees and is visible by visitors to Waiake Beach. By placing the church here, the passers-by would notice the church from the outline of its roof. Local residents frequently partake in sailing and surfing here which ensures its exposure to people. The site is very close to Torbay village centre and there are many events held near the site, the most popular being the Sir Peter Blake Memorial Regatta in Waiake Beach every year.

The site is 28 meters above the sea level and has superb views to the Beaches and Rangitoto. There is an existing timber framing house around 250 square meters on the site. The unique place here is the 26 meter high Tor. Every year around summer season the sea level is low, people can walk to The Tor climb to the top of it. The site, Tor and Rangitoto Island are on the same axis. If the propose design a small praying place just allow 1 or 2 people to go there would be just perfect. A small pray room or chapel in the middle of the sea, linked back to the main church would create a very special space. So including the Tor into the design would be a challenge. Because the new structure cannot break the original ecological environment and urban context.

The main site land property has near 9000 square meters and two areas can be used for building, one is at the top of the main site around 600 square meters, and the other is the lowest place around 400 square.



Fig 4.9: Site image



Fig 4.10: Site photo taken from Waiake Beach to see The site and Tor.



4.4 Circulation and Topography

The Beach Road is the main traffic line linking the Milford to Long Bay, it is also the main road of the Torbay Area. When people drive through Waiake Beach, they can see the site. Waiake Street and Rock Isle Road are branches of the Beach Road which can access the site. Also there is a pedestrian walkway from Waiake St to access the site. Many pedestrians use that walkway to the small port area, which people can drive to as well. The end of Rock Isle Road has a boat ramp. But when people drive on Rock Isle Road they can only see the winding path and landscape, which would provide privacy to the church. The main site has an existing driveway to the existing house, and a privacy path to the cottage can access the beach. Access to the site is easy by drive and walk from Beach Road. The new church will keep the existing driveway and turn that private path into a public path.



Fig 4.11: The site circulation.

4.5 Sun Study and Orientation

The Sun path diagram can help set up the main orientation for design. The area have enough sun cover range and most flat area in this site (consent to whole site), which is the best place to locate the main church. The B spot is the lowest point area on site and cover by trees, which is not good for an accommodation area, but excellent for parking lot.



Fig 4.12: Sunrising photo taken from Waiake Beach.

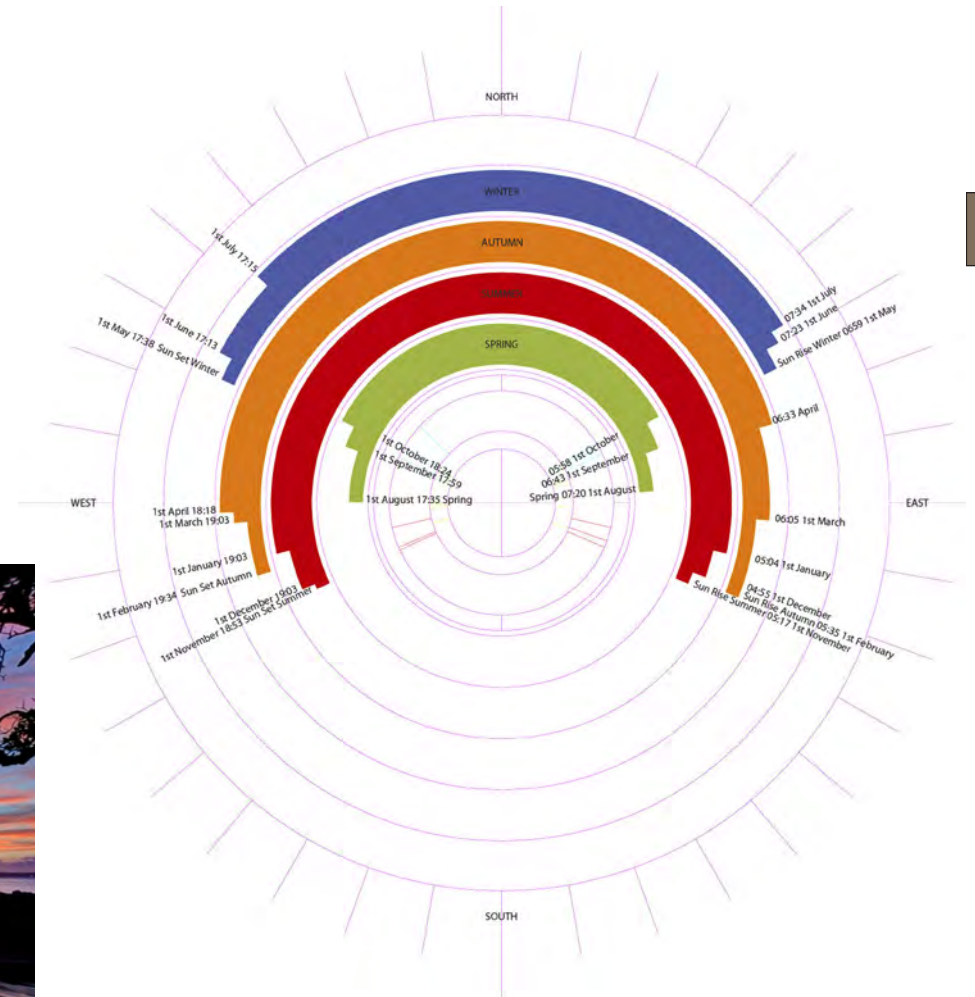


Fig 4.13: Sun path diagram.

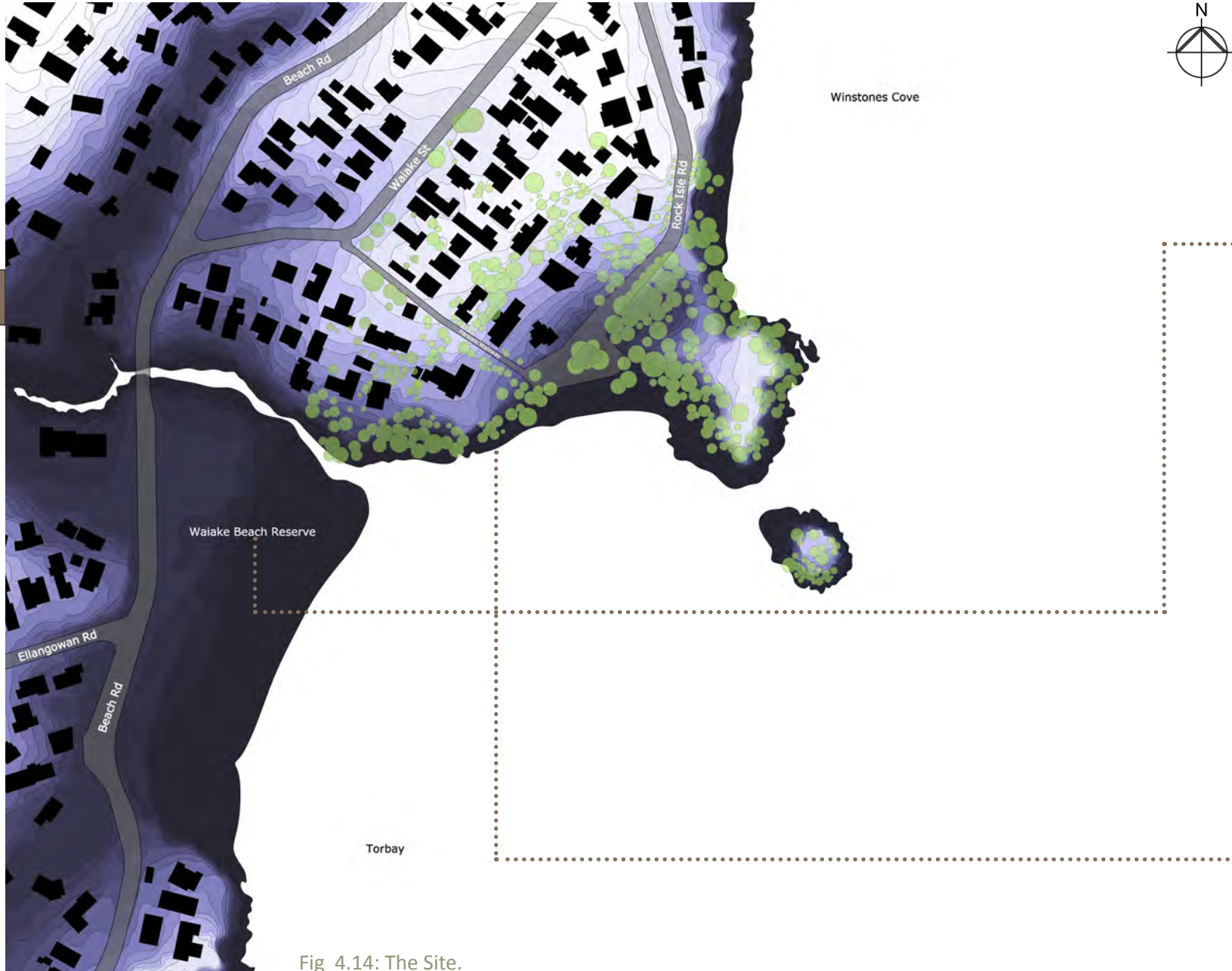


Fig 4.14: The Site.



Fig 4.15: Sir Peter Blake Memorial Regatta in Waiake Beach every year.

Fig 4.16: Site photo from Beach to see the site, Tor and Rangitoto Island.





Fig 4.17: Site photo taken from the Tor.

Fig 4.18: Site photo taken from the Tor to see the main site.



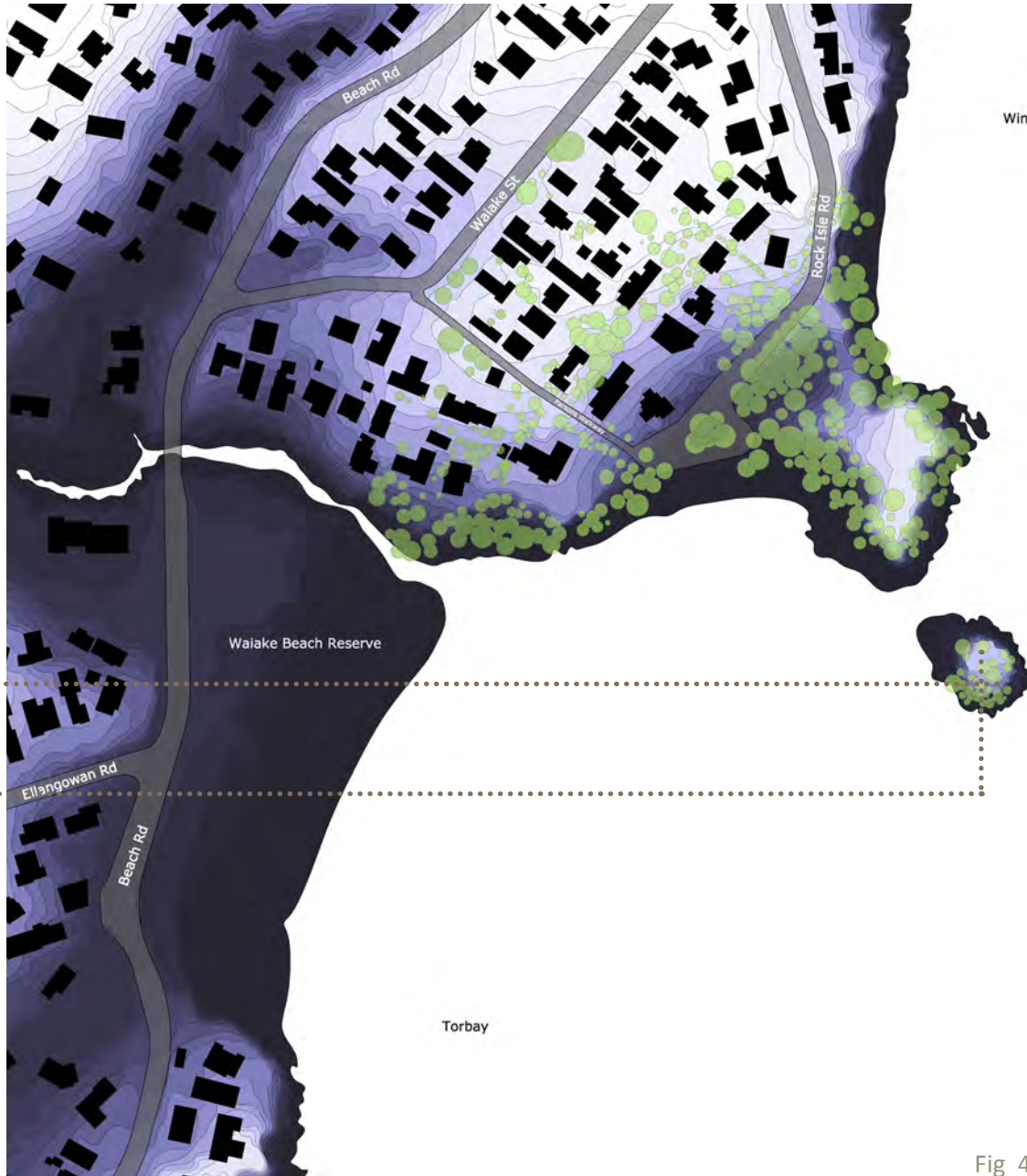


Fig 4.19: The Site

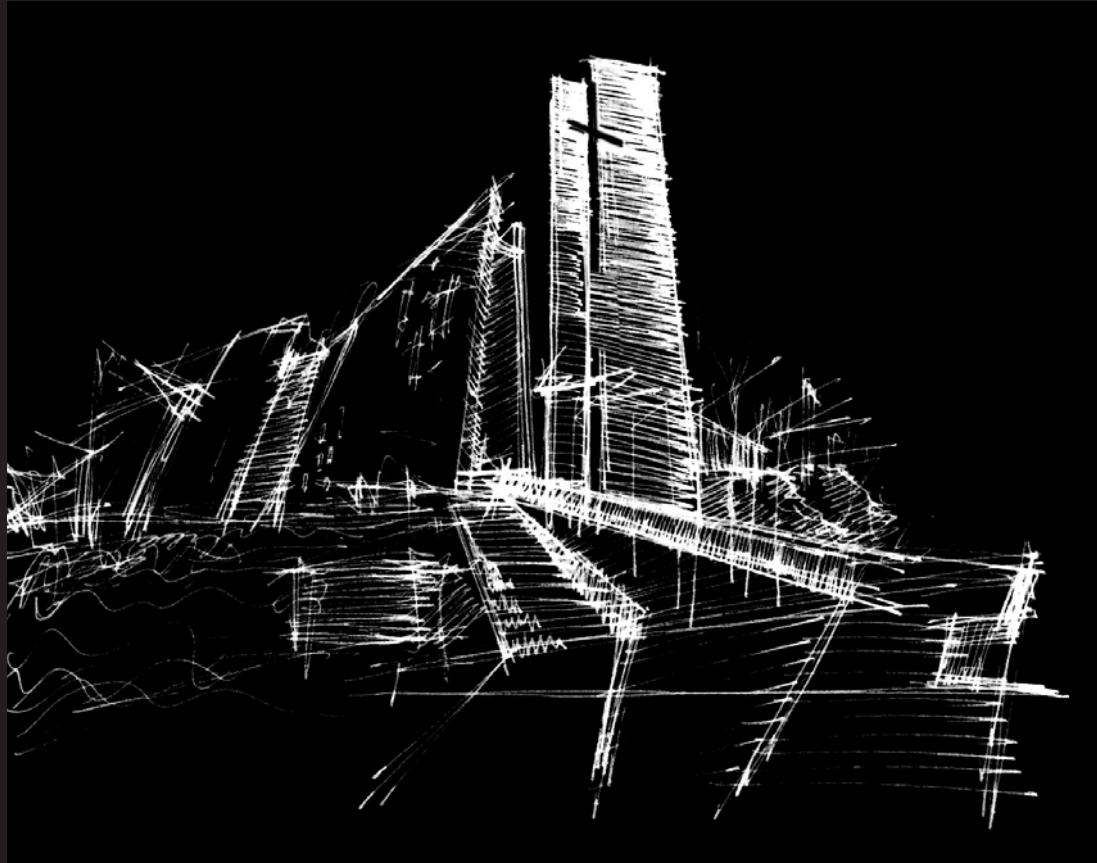


Fig 5.1: One of the many sketches to show the steps to lead into the church's main entry.



The following content of a design process tries to expose the major concepts, which leads from one decision to another through experimentation. Designing a building's internal spatial arrangement needs to correspond to liturgical and functional requirements. From a contextual perspective of site analysis the entrance and parking space of this church will be determined as well, both its max height and orientation. These design explorations will determine the eventual building form."³⁷

The other main purpose of the design process is to test different ideas and guide the project's response to the brief. A designer must be an explorer not a "tourist guide". The architect doesn't know how his design will conclude in. He must travel with a backpack of useful tools knowledge, experience, courage and intuition – everything to enable him to get to an interesting new place. The "tourist guide" never goes to a new place.

³⁷ Paul Laseau, *Graphic Thinking For Architects & Designers* (New York: John Wiley & Sons, INC, Third Edition 2001) p. 86.

5.1 Brief

This section will deal with the design more holistically, taking into account the contexts, site, church services function and idea of fusing two cultures. When fusion is embodied in a church, that church has, in a sense, neither independent nor inflected but interdependent parts; it is one great single unit in itself. In other words it is not possible to decompose such an edifice back into several element. Unlike inflected parts which are still recognizable, the component of a design that aims at fusion cannot be so distinguished, except occasionally in analytic thought. One method of achieving fusion is pulsating juxtaposition, take a square that expands into its corners while its sides are contracting inwards; and then place circles on either side: the effect is that the circles seem to spread into the central figure while it contracts under the impact of juxtaposition - the whole pulsates.³⁸

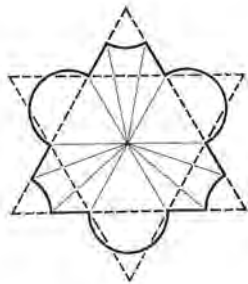


Fig 5.2: Fusion, Francesco Borromini, Sant's Ivo alla Sapienza, Rome, 1660, Schematic plan.

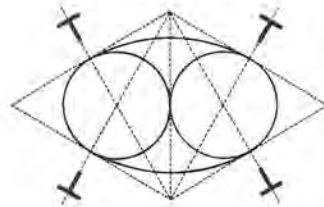


Fig 5.3: Pulsating juxtaposition, San Carlo alle Quattro Fontane, 1667, Rome schematic plan by Borromini.

38 J.G Davies. *Temples, Churches and Mosques - A guide to the appreciation of Religious Architecture* (New York, Oxford, 2008) pp. 243-244.

Christian Youth Church (CYC), Congregation Roll:

Age Group	Number of members
Children	20
Teenagers	15
20~35 Adults	21
36~55 Adults	49
Senior Congregations	10
Totally	115

Although the CYC is currently located near the Northcote shopping centre, church members are not limited to people from the North Shore region. In fact, many of them come from the wider region of Auckland. The CYC holds Sunday Service to accommodate the needs of the congregation. The client's brief states a need to house approximately 300 people in the main hall for worship.

Whis church emphasizes/encourages active participation in worship. This church has strong community focus; their planning is often relates to week-day uses, and the key consideration is flexibility. To create buildings that appeal to users for multiple reasons: functionally and emotionally.

CYC's Sunday Services following the schedule below:

- 9CYC's Sunday Services are described in the schedule below:
- 9:00 am - Worship band practice at 9am comprising worship leaders, musicians and singers. About 30 to 40 minutes.



- 9:30 am - Teams of church leaders are rostered to conduct the Services. For example, there are team members who assist with welcoming people, who lead the Bible reading, and who collect the offerings. Service teams are rostered to serve lunch or clean the kitchen. The congregation starts arriving and is welcomed by team members in the foyer and there is free morning tea provided by the Church. People converse with each other before the Service starts.

- 9:40 am - After worship band practice, people are allowed to enter the main chapel space, and at the same time the prayer start 9:40am, which lasts about 10minute.

- 10:00 am - Worship band lead congregation into contemporary worship.

- 10:30 am - Mandarin Services are held in the Chapel at 10:30am, the general structure of Mandarin Service: Contemporary worship incorporating traditional aspect of worship.

- 10:30 am - Meanwhile Children’s Sunday school starts, which finishes at 11:30am, Children’s Sunday school consists of nursery group, 3- 5 years old group, and over 5 years old group.

- 12:00 am - There is lunch following the Mandarin Service.

Church functions include: Sunday service, wedding ceremony, funeral, baptism and Lord’s supper.

The other important parts of CYC is Fellowship Groups, Bible Class and Prayer Meeting, they are all usually held once a week, Church members are encouraged to be parts of a home group for bible study, prayer and pastoral care. This usually occurs once a week and some of these groups need to use the church as gathering space. The main chapel and fellowship hall within is open to the public during the day.

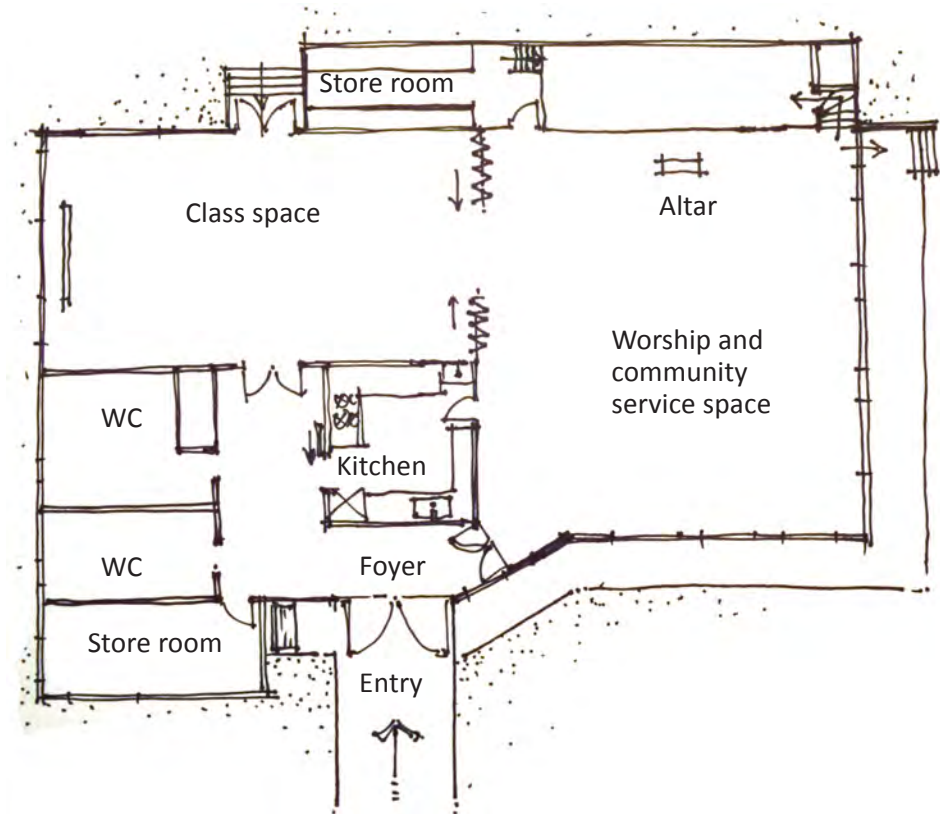


Fig 5.4: The current place church use it to do Sunday Service.



The client expects the lifespan for the church to be at least one hundred years. The main structure will certainly last that long and the natural materials used will age with dignity. A lifespan simulation was used as an aide for the design. An important factor in choosing the materials was locality in addition to longevity; on-site building and an emphasis on craft were distinct features of the whole project. This design would need to be identifiable, attractive and welcoming.

To achieve this design it should have:

- 1, strong edges;
- 2, directionality;
- 3, recognizable landmarks;
- 4, concentrated in form with pronounced borders;
- 5, a readily comprehensible shape;
- 6, a focus for gathering;
- 7, capable of being experienced as an inside in contrast to a surrounding exterior.

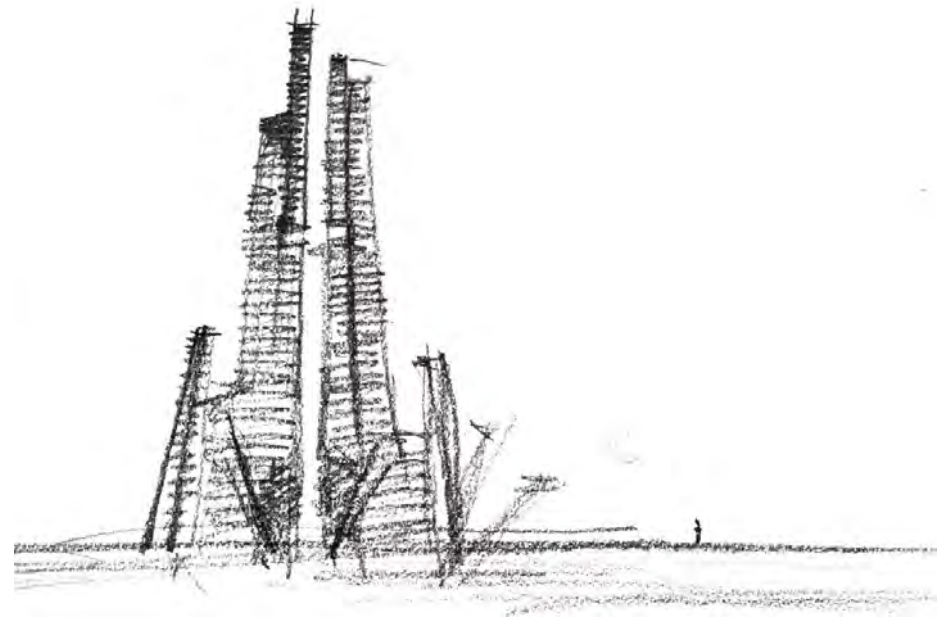


Fig 5.5: The first sketch for church design, blurry concept for design.

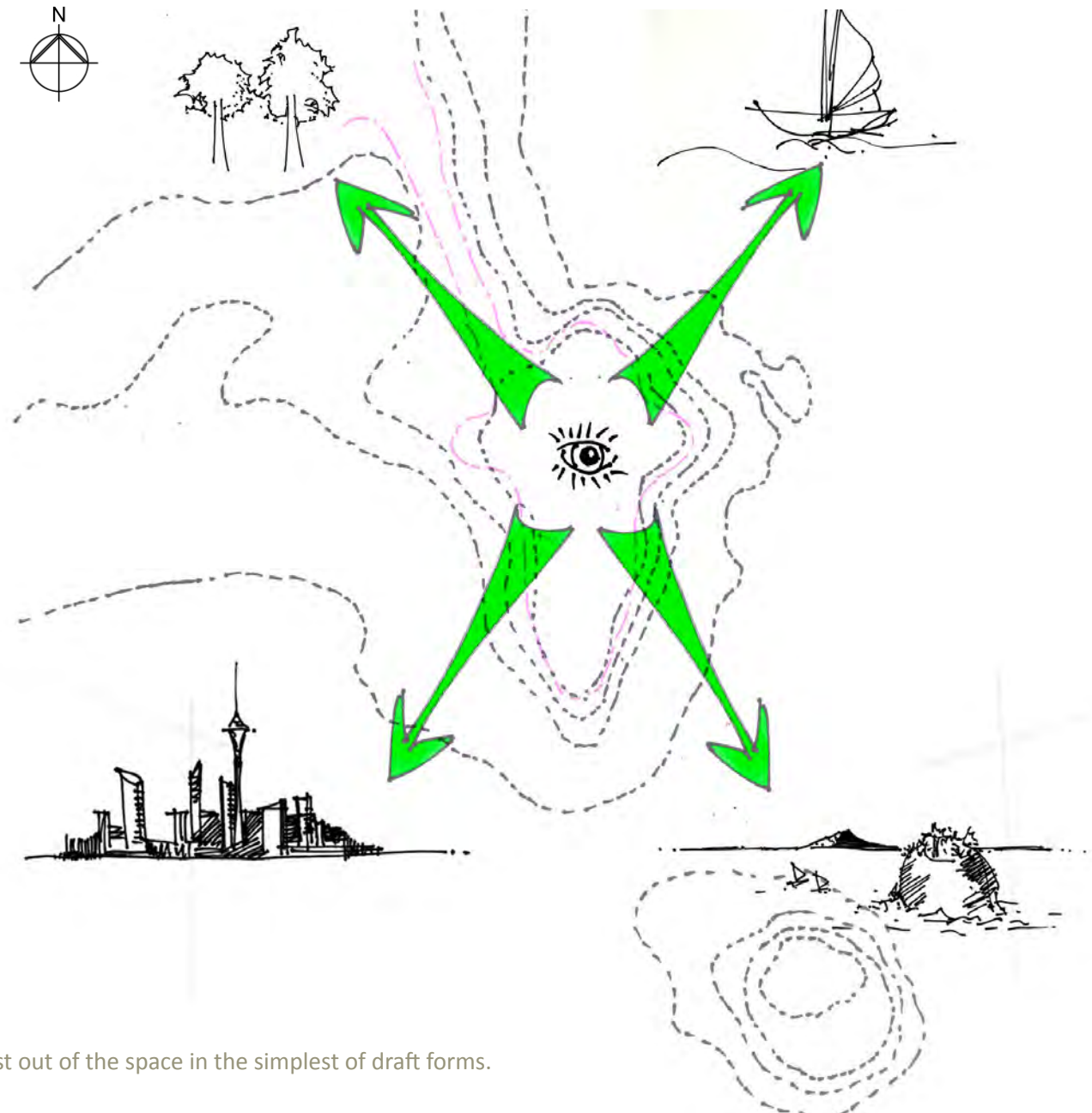


Fig 5.6: The sketch to show views and circulation exist out of the space in the simplest of draft forms.

5.2 Functional Requirements

This investigation uses the guiding principles and architectural strategies that would manifest into a physical form on the site. Below is a list of important functions that have been organised into three separate categories:

- **Public viewable and access Zone:** For everyone that comes to church

Worship and community service space with seating; Choir and altar will be placed this main space.

Foyer and lobby area for fathering and socialising;

Dinning space and coffee bar, maybe separate space; dinning space also can be a social functional space.

Courtyard space for people to enjoy the views;

Library for people to read and borrow Christian books;

Class rooms and playground for children.

WC / Lavatories and Nurse

Car Park

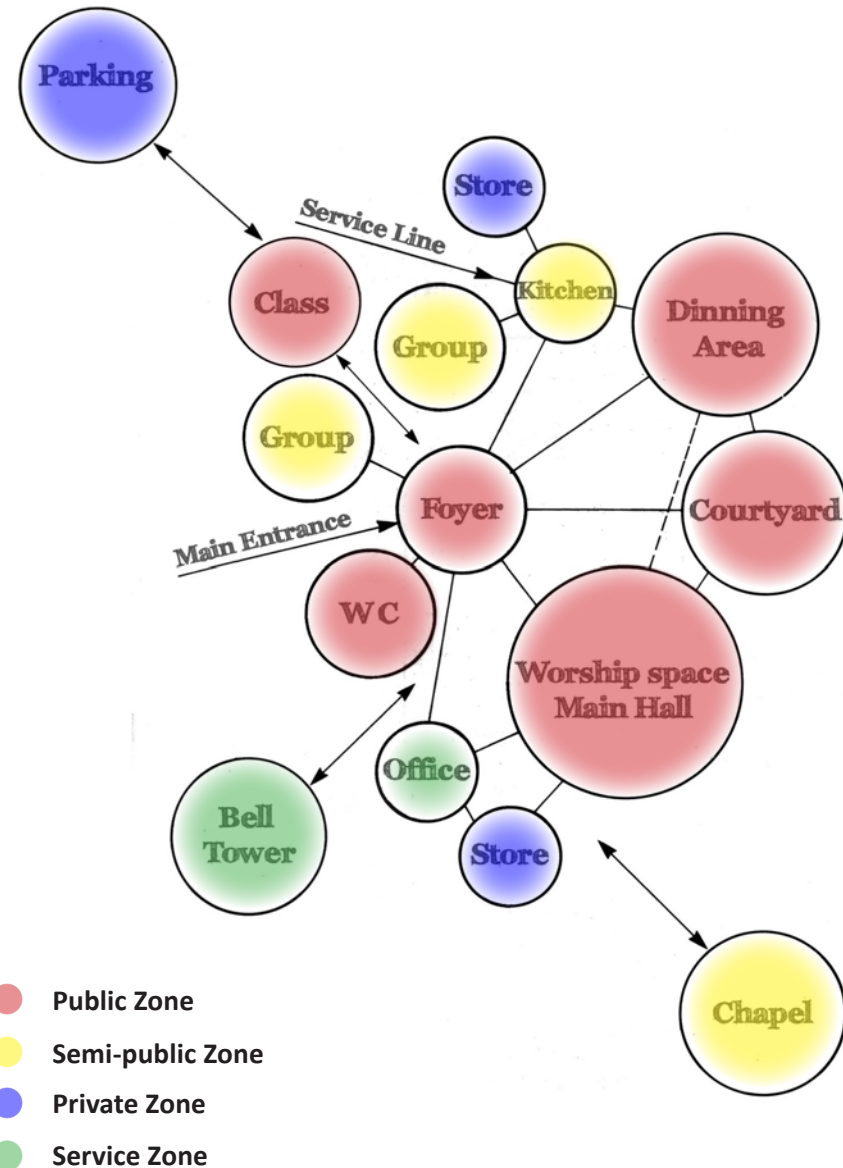


Fig 5.7: The function area diagram to show the idealized relationships.

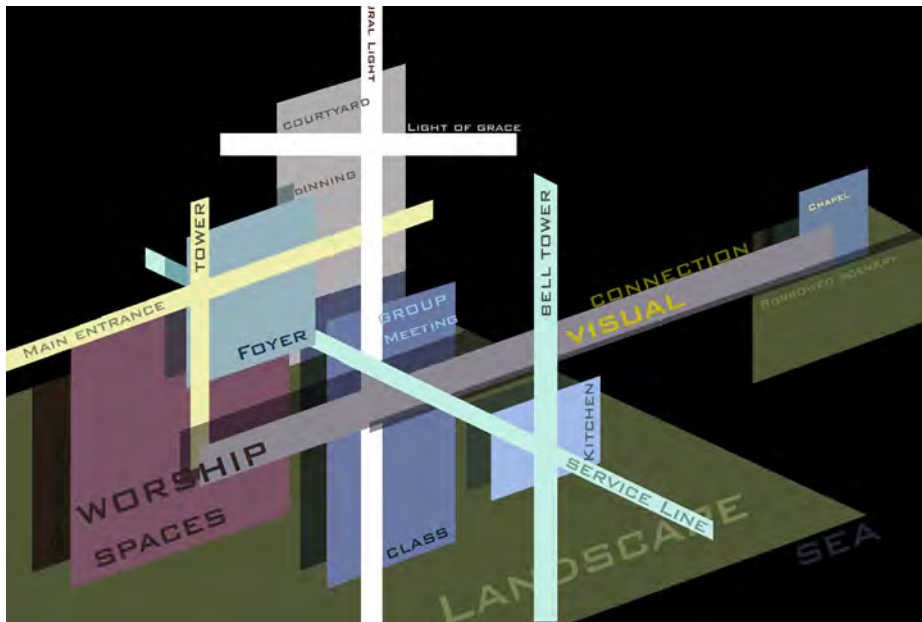


Fig 5.8: The sketch to show views and circulation exist out of the space in the simplest of '3D' forms.



• **Semi-public Zone:** For congregations

Kitchen

Group Rooms

Store rooms

Chapel

- **Private Zone:** For church leader - minister and Group leaders;

Office,

Accommodation or Vicarage / clergy housing

- **Service Zone:** For congregations who have duty to service

Class room and play teaching children.

Reception office

Bell tower

DJ and sound control room

Kitchen loading zone

5.3 Design Explorations

5.3.1 Exploration 1, the gut feeling of the site and church, architectural Mock-ups to seek for a concept.

As established by the literature review, the church requires different functional areas for worshipers, prayers, believers and non-believers respectively. These areas can overlap in plans and sections. It is reasonable to suggest that one part of the church addresses worldly matter, and the other addresses spiritual matter. These two kinds of spaces will form an explicit contrast in spatial composition.

The early guiding principles are the approaching method and entry points into the church, horizontal and vertical movement lines. The axis and its implication have many religious meanings, which most religious architectural designs are based on. The concept of spatial schema as well as religious cosmos schema are evolved and established from man's effort to order the 'chaotic' cosmos. Once a particular spatial schema has been established, and consequently adopted as the religious cosmos scheme, the schema will then assumed to be the prototypical spatial scheme. In an abstract spatial scheme, the axis is most significant and practical expression of spatial orientation.

The careful combination and incorporation of biblical symbols, as well as Western culture and Eastern culture into the architecture is the key element of this design. People think of Christian symbol as a cross, this project uses this powerful symbol to design something different. Effort has been made to break up the cross with radial lines, and then connections are formed using transparent space. In this case: not only to keep it as a cross-shape, but also to increase connectivity in the plan. Using this approach, the first physical mock-up was created.



Fig 5.9: The Mock-up model.

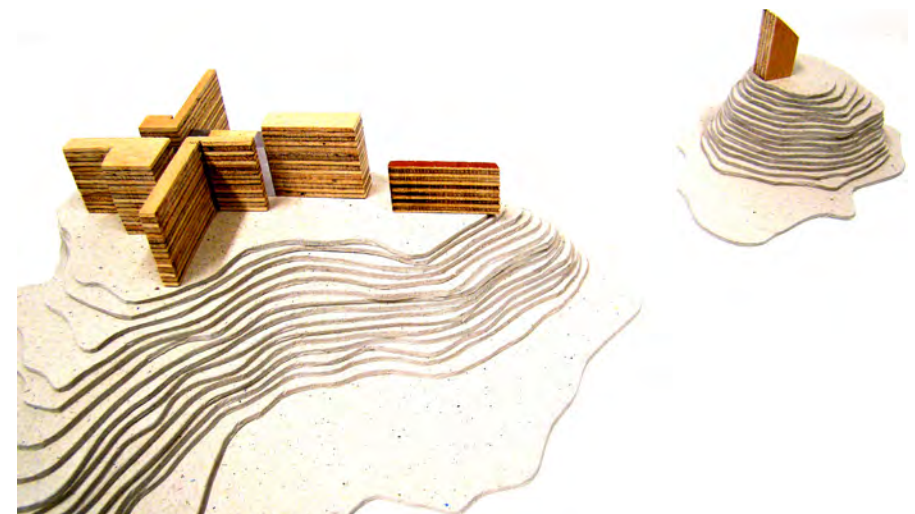


Fig 5.10: The Mock-up model.



Fig 5.11: The Mock-up model.

Outcome of mock-up model one:

Advantages of this model:

- It breaks the cross pattern, but retains the potential of the form.
- Physical and virtual material combination makes sure the plan is not boring/ monotonous.
- This design divides the form into four zones, public, semi-public, private, and service space.

Disadvantages:

- The four spaces are vertically non-hierarchical; from the floor layout it is hard to know where the primary space or secondary space is. Because each zone is similar in proportion.
- From the elevation views, the model looks flat and it is hard to identify the building type.
- Ignores the site context and landscape. The model builds up on flat surface rather than the actual site conditions.



This exploration gives enough architectural design problems to develop the next move. The first model's cross pattern concept is not strong enough. In Christianity Christ is referred to symbolically by many things, for example, "light". Light as God is a very common symbol in religious architecture. The view of the sun rising can affect the feeling of spiritual experience whether you are religious or not, as spiritual feeling does not equate to religious belief. This cliff-top site has stunning views of both sunrise and sunset. These views have been used to generate the plan-form of the model. The central space has been used to capture the beauty of the sunrise. The effects of this have been explored through drawing, which reflects the qualities attached to this design. The towering form creates spaces which evoke feelings of sacredness and dignity. This drawing also captures the impact of traditional Western church symbolism. This drawing was then used as the basis for further physical modelling. For instance, employing the model's plan by erecting it vertically and shone the light through the middle to create a void cross elicits the beauty of the sunrise. Drawing is the visual language used to reflect all of the qualities attached to this design. This towering church form creates the feeling of sacredness and dignity. At the same time you can feel the drawings potential to have an impact on traditional Western church symbolism.

This drawing has the instinctive feeling about churches. This was used to develop the floor plan, and then build the mock-up model based on it. This model combines the last model on the potential cross shaped composition, and adjusts the levels between the buildings. This model comprises three chapels of varying size and a bell tower. The smallest chapel is on the island. By establishing a direct visual connection between the Tor and Rangitoto Island, the exit allows people visual glimpse of the final destination.



Fig 5.12: The drawing to show the instinctive feeling about church.

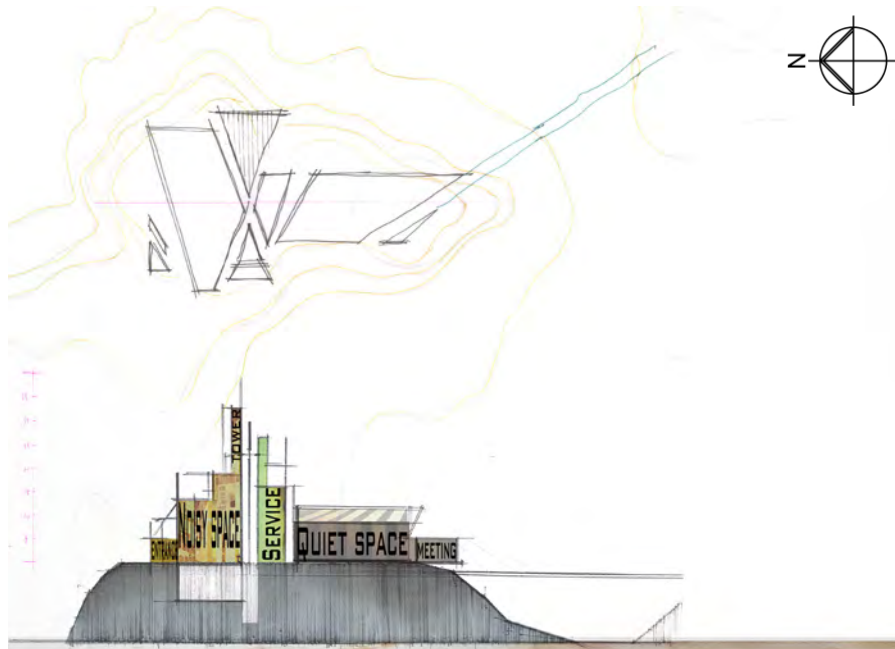


Fig 5.13: The plan and section to show the functional diagram of church.

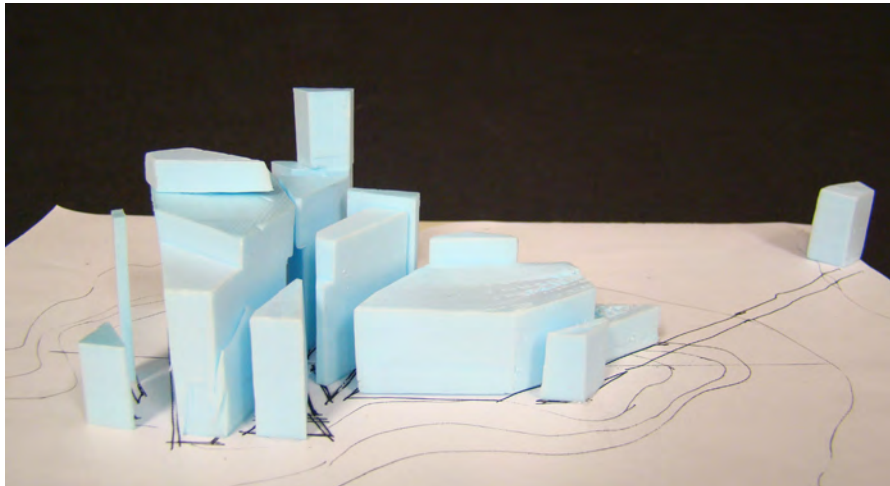


Fig 5.14: The mass model two.



Outcome of mass model two, and analyze the advantages and disadvantages of this model.

Advantages of this model:

- Spaces between the buildings are very compact and layered.
- The highest place is the bell tower; the biggest volume is the worship space.

Disadvantages:

- This building form carries the imagery of medieval churches. the aim is to merge two cultures into one building, however the final design should not have explicit Eastern / Western references as it is likely to become a cliché.
- The model treats the site as flat, preventing churchgoers from experiencing the nature of the site's contours.
- The model does not address the design of the roof.
- In this model, the bell-tower and the meditation chapel do not clearly relate to the site or the rest of the design.

The small island's chapel is place to meditate and pray to God. This chapel only allows one or two people in the internal space. Therefore, providing a solitude experience. The design will focus on how to use the natural light to affect indoor space.

5.3.2 Exploration 2,

The second exploration was an investigation using the guiding principles and architectural strategies that would manifest into a physical form on the site.

Developing from the explorations of the first model, this version will give preference to the existing site context. Standing on the site, one can see connections between the main landforms, the Tor and Rangitoto Island. This connection can be translated into axes of visual connection when designing the plan form. The existing driveway will be used as the main access to the church. Because of level changes on the site, the main entrance to the church is a stairway, which provides visual connections to the Tor and to Rangitoto Island. Visitors to the church are physically unable to cross to these places, but are still visually connected. The church interior itself is not only a place of mysticism and quietude – as an antithesis of our rather fast and media-dominated times – but also an open space for the community. The Church is a depiction of the journey of a Purification Christian soul from here to the hereafter. The interior alternates between light and dark to give people a visual impact. The light spaces represent public function zone such as foyer, reception; the dark spaces represent worship and prayer spaces. The entrance path leads through a light space (foyer) with a small interior pond to the dark space of the main chapel, afterward people are led into the light space again (courtyard). This alternating in light and dark attempts to deliver a memorable experience of the sacred space.

This version also uses cruciform axes to guide the design. To respect the natural environment, existing trees have been used as reference points, with the implied spatial links between each being observed. This is in keeping with the Chinese esteem for nature, which views the human connection with nature as an opportunity to avoid becoming enmeshed in worldly affairs. (This needs a reference) These sentiments, evoked by



Fig 5.15: The functional space study model.

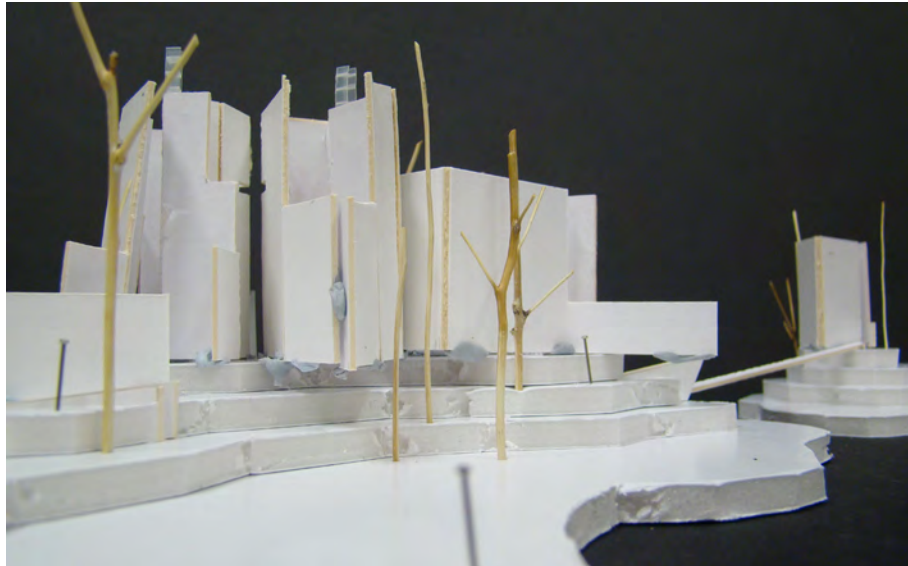


Fig 5.16: The functional space study model show the main entry view.

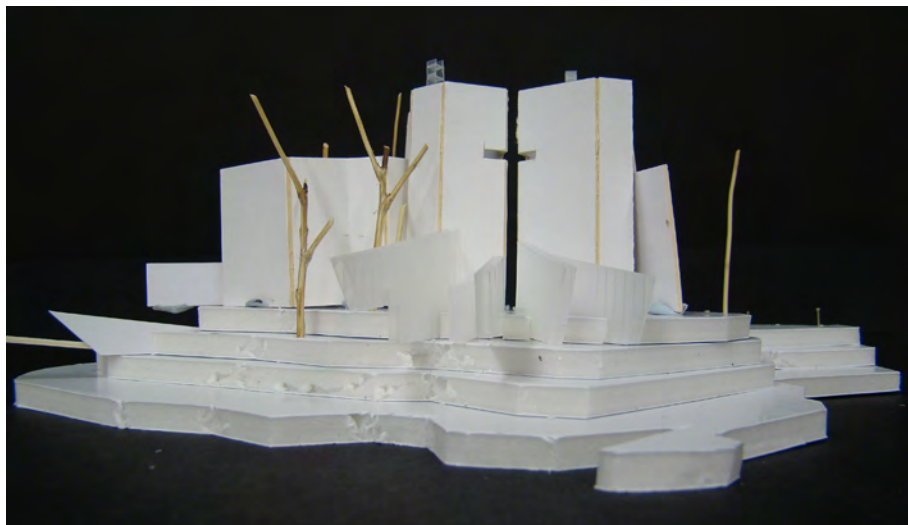


Fig 5.17: The functional space study model to face the East side view.

nature, are the focus of Chinese landscape painting.³⁹ This design integrates these natural contextual factors (sunrise and sunset, sea-views, and existing trees) to create a building which is in harmony with nature.

Based on this new plan and combining the result of the last two models, a new working model was built with foam board and cardboard. The church is adjacent to an existing driveway and has a wide granite or concrete stairway to lead visitors into the main entrance. A very high bell-tower soars up into the sky in front of the building's entrance. The main floor consists of the main hall, cafe and offices, overlooking a nursery, classrooms and vestry. The clients' brief was a simple church form within which all of the church's different functions could be contained. This design used cruciform axes as a guide line to divide the four main function zones mentioned above.

Generally, the sacred experience of the journey was the basis for the design process. The east of the site is the most beautiful location on the site, which has 280o ocean views and sunrise view. People can enjoy the incredible scenery and the change in sun path through each month is shown through the architectural elements. These architectural elements have a big cantilever over the cliff. Walking on these elements will create a feeling of sky walking.

These four zones also have other functions for the church design. The cruciform central space provides a place for Christians who wish to kneel down and worship. The outer layer of space provides a place for people to take in fresh air, and also for people who are uncertain about entering the main entry hall. Outside this is a coffee lounge and courtyard area, providing a space for people to feel the presence of the church. The outermost spaces provide opportunities to admire the exterior of the church.

39 Sarah Allan, *The shape of the turtle: myth, art, and cosmos in early China*, State University of New York Press, Albany, NY, 1991. pp, 42-68.

Functional diagram analysis

- A - Accommodation or Vicarage
- AS - Activity space gym
- B - Breathing space
- C - Coffee Bar
- D - DJ or Sound control room
- E - Entrance
- F - Foyer / Lobby
- G –Gardens
- L - Link, connect Small Island and site
- M - Group Meeting space, The Bible encourages Christians to meet together often.
- ME - Main Entrance,
- NN - Nursery / Care centre / Class room
- NS - Noisy space
- O - Office room
- P - Car Parking
- Q - Quiet space
- SE - Service entrance
- S - Store
- T - Bell Tower
- V - Vestry / Chapel
- WC - Lavatories / Toilet
- Y - Youth centre

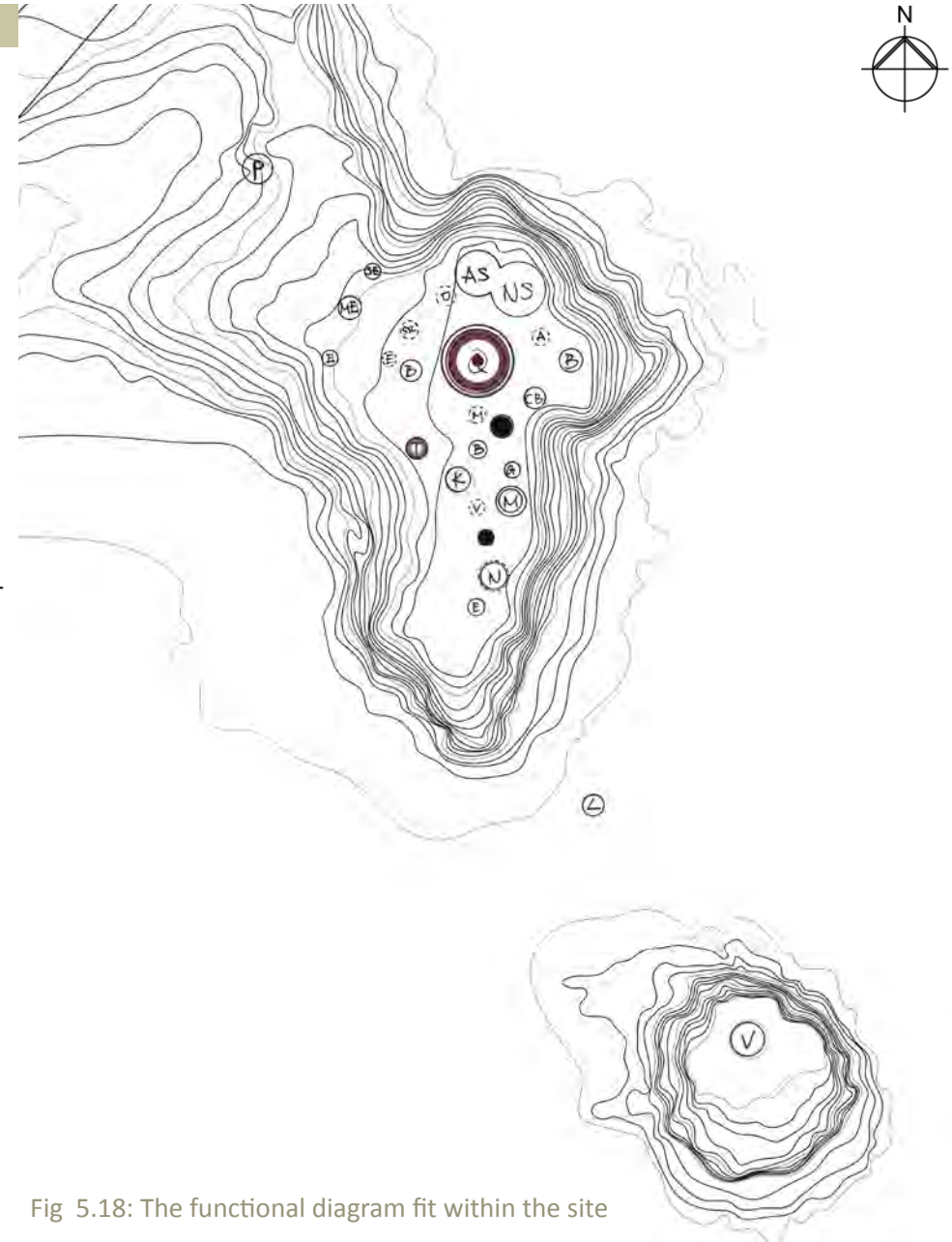


Fig 5.18: The functional diagram fit within the site

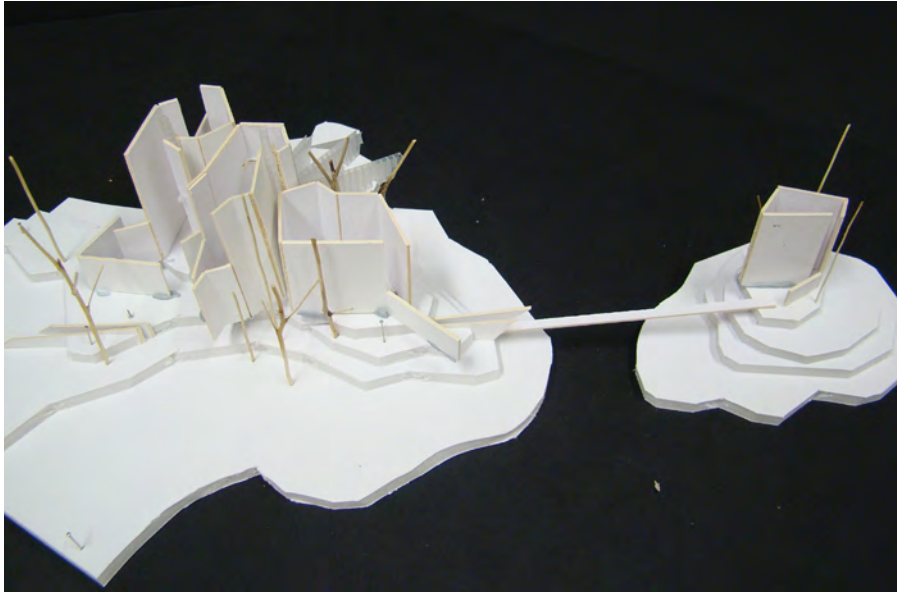


Fig 5.19: The functional space study model connection with Tor.

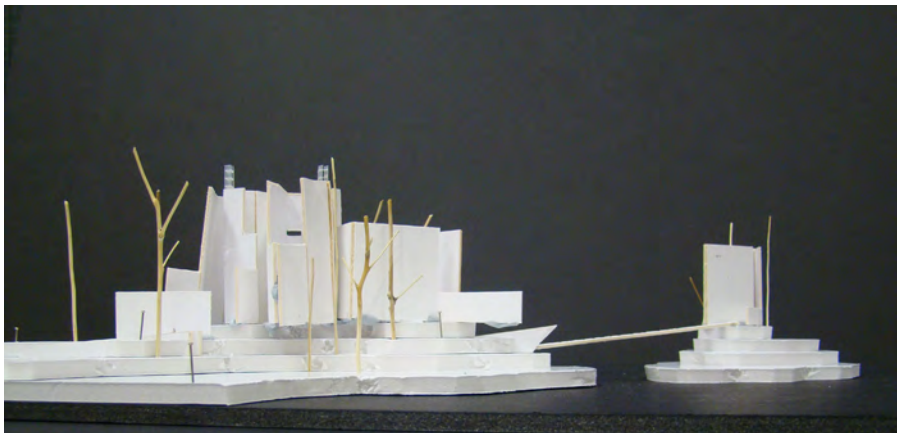


Fig 5.20: The functional space study model connection with Tor.



Outcome of functional analysis;

Advantages of this model:

- The layout of this plan fits well with the existing site context, and offers a clear spatial progression for visitors to the church.
- This version develops from the conclusions drawn from version two. In order to strengthen the model's visual contrast of light/dark spaces, this model uses two materials which contrast in texture and colour.

Disadvantages:

- The building's volume seems too large. Building height needs to change.
- Narrow cantilever elements seem to be structurally challenging.
- The allocation of space for each of the four zones is too equal: the main hall must be the largest of the four spaces.



5.3.3 Exploration 3,

This new plan and model is in order to strengthen the model's visual contrast, which use two contrast colours materials. The site is made from black foam board to represent the chaotic world, and the building used white cardboard to symbolise the sacred purity of the church. This model reduces the building's overall height, where the highest point before was 40 meters, it is now 25 meters. The entry stairs have been designed so that as a person climbs the stairs they can just see the small chapel and, while they are visually connected to it, they are unable to get there physically. Plan designs 3 & 4 used visual connections to replace physical links from the main site to small Tor. A bell tower is placed at the end of the entry stairs of the church, leading the eye skyward and ushering visitors towards the main entrance. Increasing the volume of the main chapel hall which makes it more prominent. Retaining trees on the site and its terrain changes helps to shape the building form. The church form has been divided into six different parts to integrate with the surroundings.

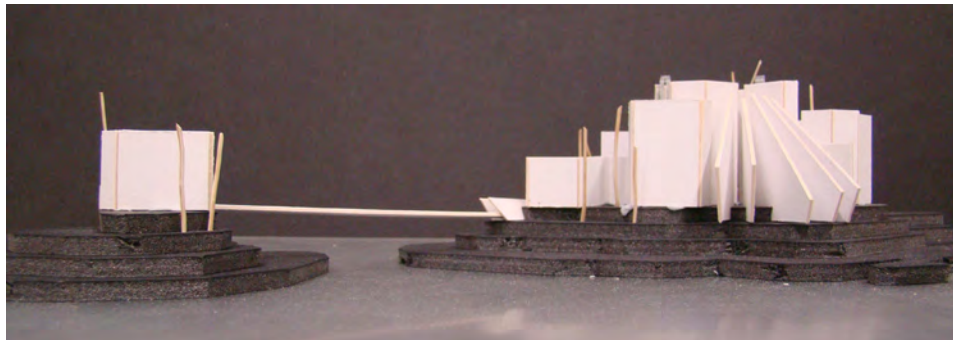


Fig 5.21: The develop model East elevation.

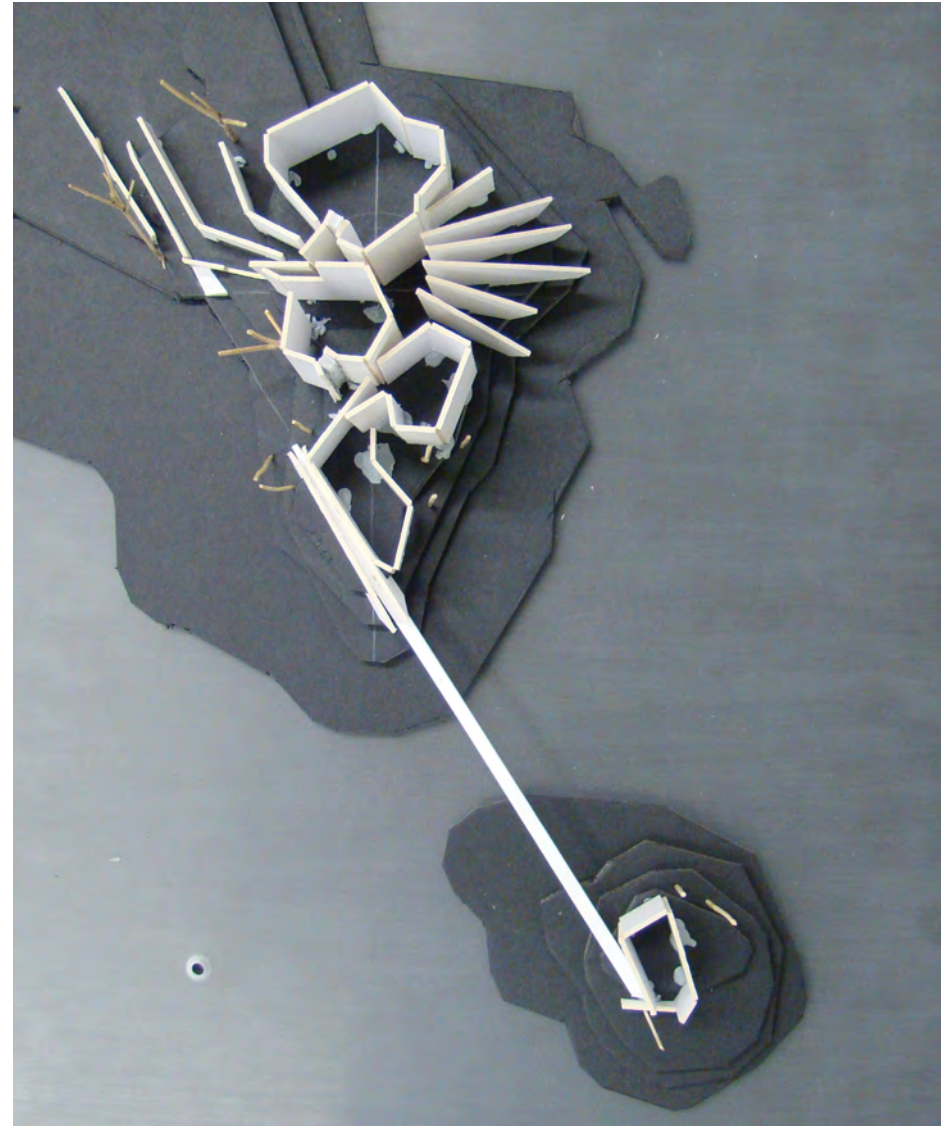


Fig 5.22: The developing model.

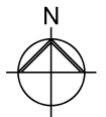




Fig 5.23: The new developing model.



5.3.4 Exploration 4,

This exploration is a new approach to discovering the design solution. It combines the advantages of the previous explorations. First, the adjustments to the building section, which changes from one layer of planning to three layers. The main reason is that the one layer layout does not satisfy the functional requirements. The ground floor includes public and semi-public spaces. The underground is private space for congregation. On the upper level will be semi-public and service space.

A church symbolises permanence. In the contemporary context the issue of sustainability needs to be addressed, especially if the building is going to be used by future generations. The materials can represent a sacred space and be imbued with symbolic meanings. For instance stone and concrete expresses a feeling of permanence, which could be suitable to represent the Christian history.

According to these requirements another version was designed. This model contains six different functional elements. Firstly, the entrance staircase has increased in size, and now permits entry into the underground spaces. Secondly, the main hall is now positioned to the North of the site. This new form can accommodate more than 200 people. As the floor levels change, the circulation line should be changed to make the appropriate adjustments. The third element is the foyer space with cantilevered walls; its design language has been developed from the shape of the waves. Previous models' cantilevers tried to express the building reaching out to the sea, and is sloping downwards. The present walls convey an open relationship to the sky, and are sloping upwards. Each wall points to each month's sunrise. Also, the roof is open to the sky and night stars. This controls the weather of the chapel, as rain and sunlight both penetrate the opening and create an ambient experience very specific to the time of day and year.



The sculptural bell tower at the forecourt constitutes the fourth element of the building ensemble. The reception lobby space and the bell tower together on the top of staircase, usher visitors towards the main entrance. This lobby space is the fifth element, which include coffee and kitchen space. A nursery and crèche is located on the south-east of the site, providing childcare facilities for children of the congregation. This space is positioned so that the other elements of the building ensemble “cradle” the childcare space.

The bridge linking the main site to the small island has been removed in this version. This is to emphasise on a visual relationship and reduce the visual impact of the existing landscape. In its place, there is now a dock and boat-loading zone. The use of boats to “ferry” people between the two locations which also has a mystical quality, referring to the nature of the relationship between the earthly and heavenly realms.

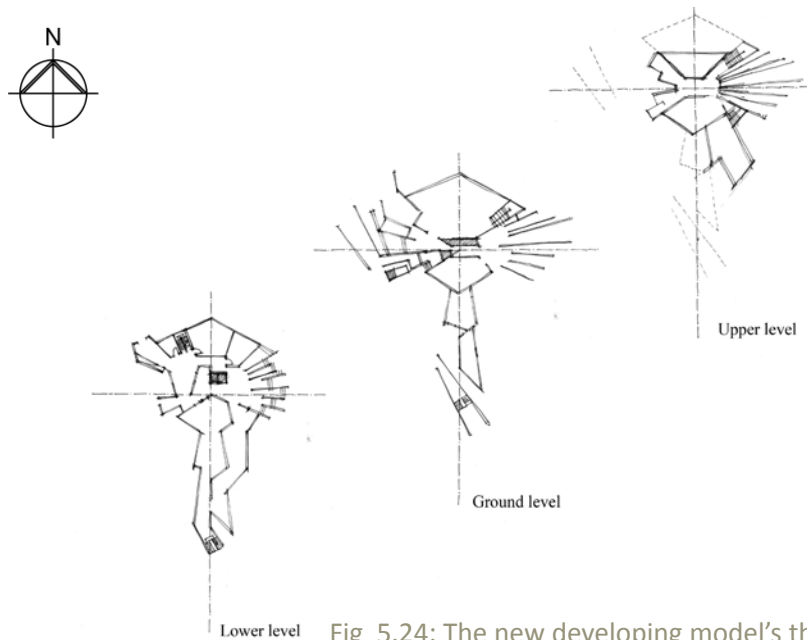


Fig 5.24: The new developing model's three level plans.

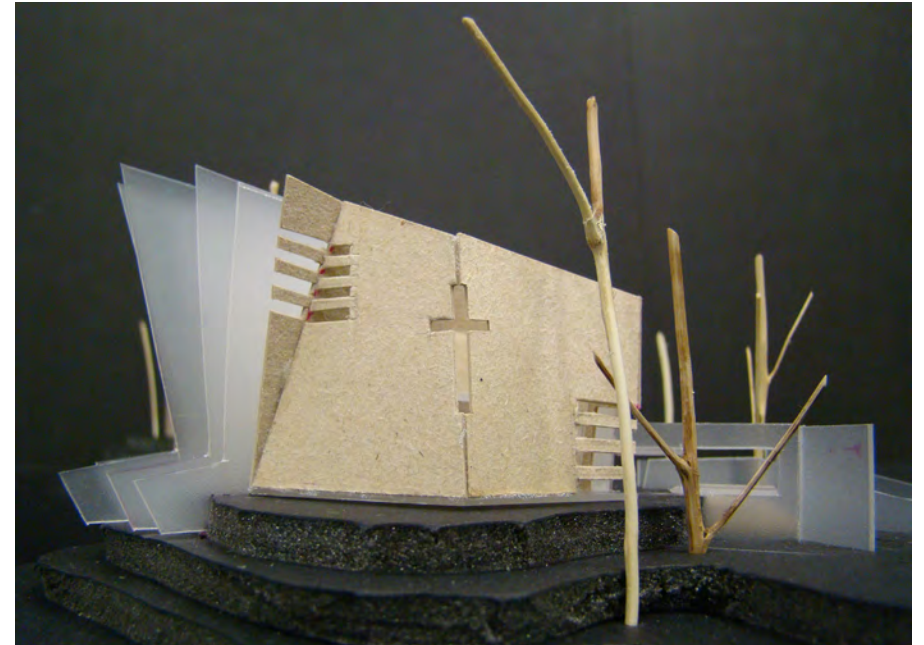


Fig 5.25: The new developing model's Main Hall space.

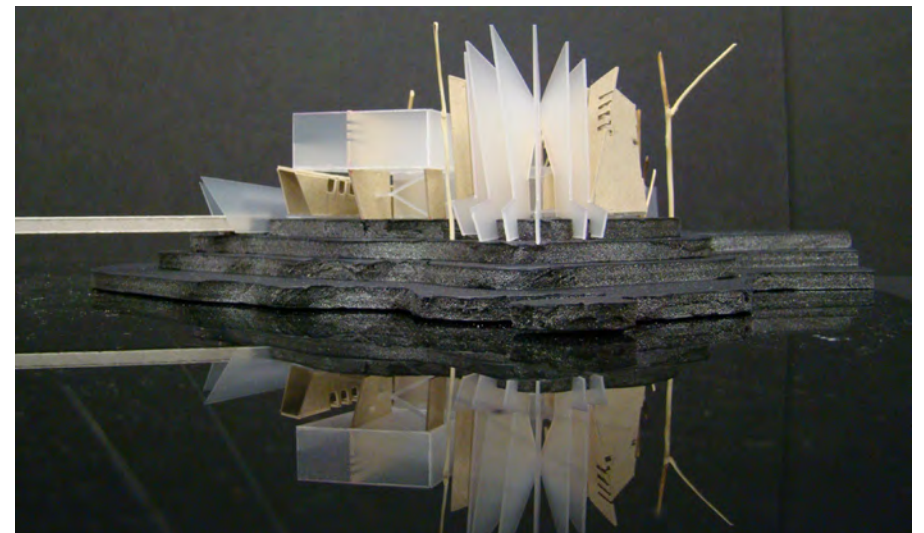


Fig 5.26: The new developing model's East side view.



Fig 5.27: Perspective 1 to show Exploration 5 main entry view.



5.3.5 Exploration 5,

This exploration is put in a more Chinese traditional way of thinking. This church's liturgical vision has a dual focus – fellowship and spirituality, first of which the church characterises as horizontal relationships between people, and the latter is seen as a vertical relationship between people and God. Simultaneously, Eastern culture as horizontal relationships between people, and Western culture as a vertical relationship between people and God. The perspective drawings and physical model should reflect those visions. Therefore, those perspectives drawing design become the first step of this exploration. Perspectives are following the people's circulation line.

- Perspective 1, this church consists of two chapels. The main chapel faces towards the sea and Rangitoto Island. This exterior view is when people follow the driveway walking to the West side entranceway. The entire church form will be present to your view. Bell tower is a point of reference as one move through the public circulation spaces of the church. The three ways to lead people into the building. The right side staircase leads people to the main entry. The end of the staircase displays a wide view of the Rangitoto Island in the far distance. Middle entry is for congregation, directly going to the ground floor. This narrow entry is protected by walls. The narrow pond is close to the wall. The left side is parking for service vehicles. The elevator next to the garage in the building. Wedding cars and funeral hearses need to be accommodated.

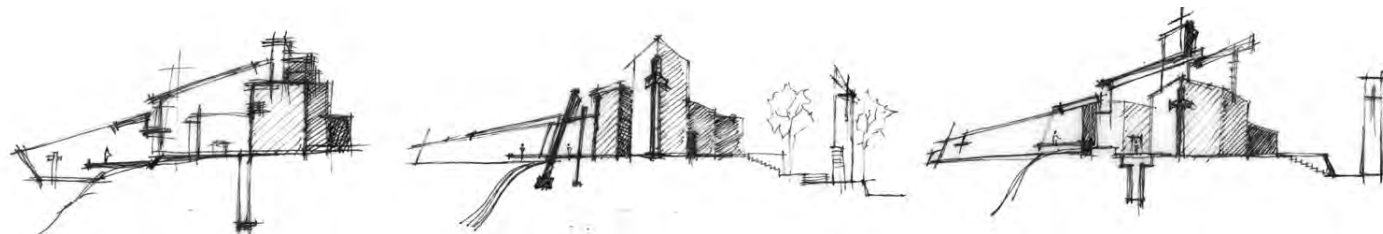


Fig 5.28: Perspective 1 section options sketches.

- Perspective 2, when people climb to the staircase into the lobby – reception space, cafe and link to the courtyard. The main hall is on the left side, and behind the door, the staircase with flowing water points to the lobby space which have incredible sea and sunrise views. This is a light space that presents a welcoming feeling, it gives people pause before entering the main hall, for those who are not Christian and also want to feel the church.

- Perspective 3 is the dark main hall space.
- Perspective 4, this view presents the second chapel atop the Tor.

This version makes use of the five human senses visual (sight), auditory (hearing), olfactory (smell), gustatory (taste), haptic (touch). People can see the beautiful view, hearing the sea and pond water's and natural sound, smell the flower from the courtyard, taste the cafe provide by church and touch the stone of church's' wall. The lightness of the foyer space is also expressed through a hanging bench which characterizes the long corridor that serves the chapels. This mediation space receives and distributes all natural light that enters in the building. The windows are located near the ceiling, dividing the large wall. These openings capture the special moments of church. Daylight penetrates the central aisle, as if the space is made of lightness.



Fig 5.31: Perspective 4.



Fig 5.29: Perspective 2.

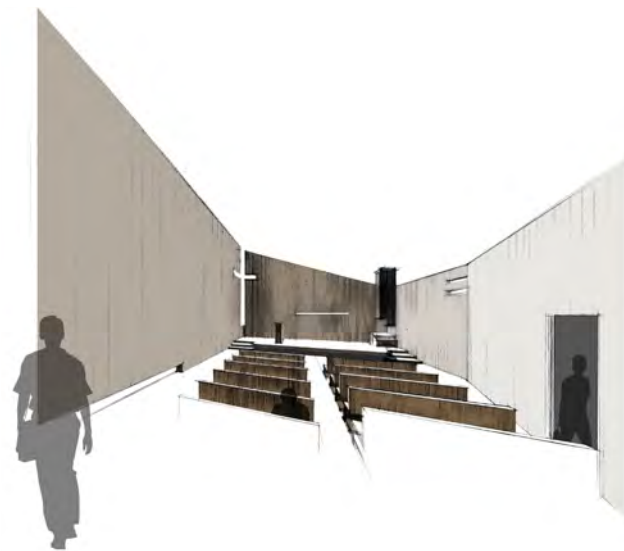


Fig 5.30: Perspective 3.



Fig 5.32: Exploration 6 model.



5.3.6 Exploration 6,

Continuing from the previous explorations and the literature studied, natural light is treated as the primary material in this version of the project. This light passes through each of the spaces and embodies all the intentions. The play with light and transparency has a special place in this project. Three large openings in the roof guide natural light into the interior. The correlation of the number three to the concept of Trinity in Christian theology can be interpreted as a “deliberate coincidence”. This light illuminates the architectural elements which enclose the space, creating a quiet contemplative atmosphere. This series of models studies a number of different opening types, and introduces the device of folding. Through these folding models a new form of structure has been introduced, with the folded exterior creating a sculptural form for the architecture. With the combination of design elements like ramp, staircase, sloped roof and suspended ceiling, a diverse interior space is formed

The design of this new model also takes references from the European architectural language and at the same time reflects the understanding of Chinese philosophy in relationship between human spirits and nature. The design of this church started with the plan and its perimeter walls. The presence of natural light is emphasized in the interior spaces. The design incorporates a folded roof form to channel soft natural light into the foyer and other internal spaces, allowing the sense of tranquillity that is sought after in spiritual spaces. The building form developed in the previous versions has been retained in this version. This design utilises one form to connect all the functional zones. This form makes this design more like a “church”.

A sky-window gives the congregation a sensational view of the vast sky. A terrace outside the coffee bar provides the space for outdoor activities. This space provides the connection between the public life of the street and

private life of the church. The small chapel design uses the spatial elements of the architecture perform a luminous, filtering function, providing a quiet and contemplative atmosphere for the interior spaces. The conception is an internally focussed, sacred space in which light is focused to suggest the presence of God.

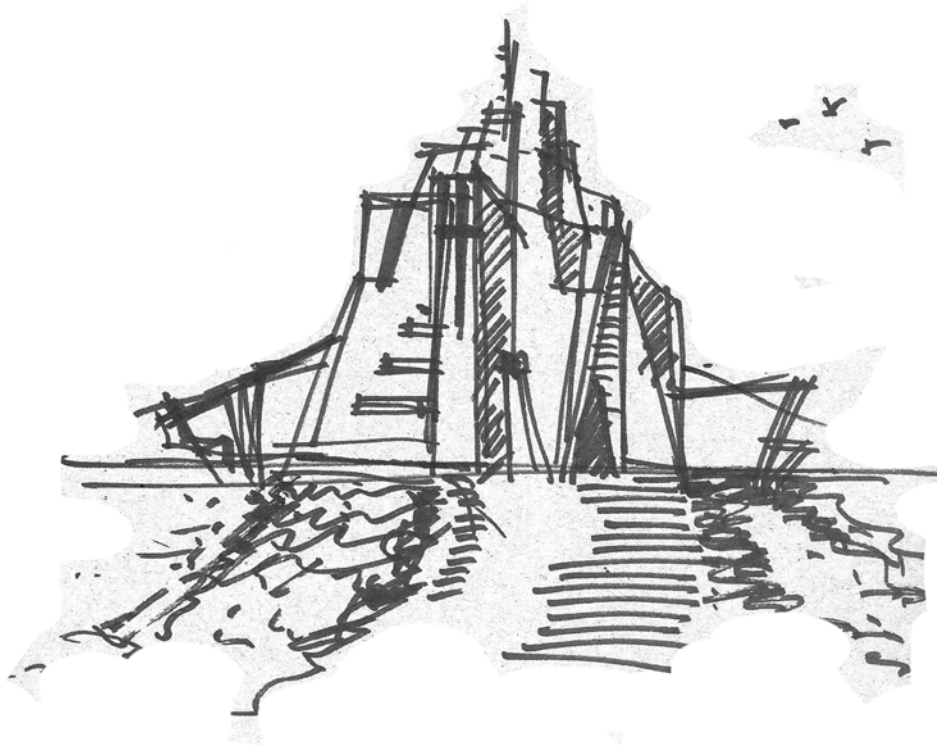


Fig 5.33: Exploration 6 model follow the early sketch.

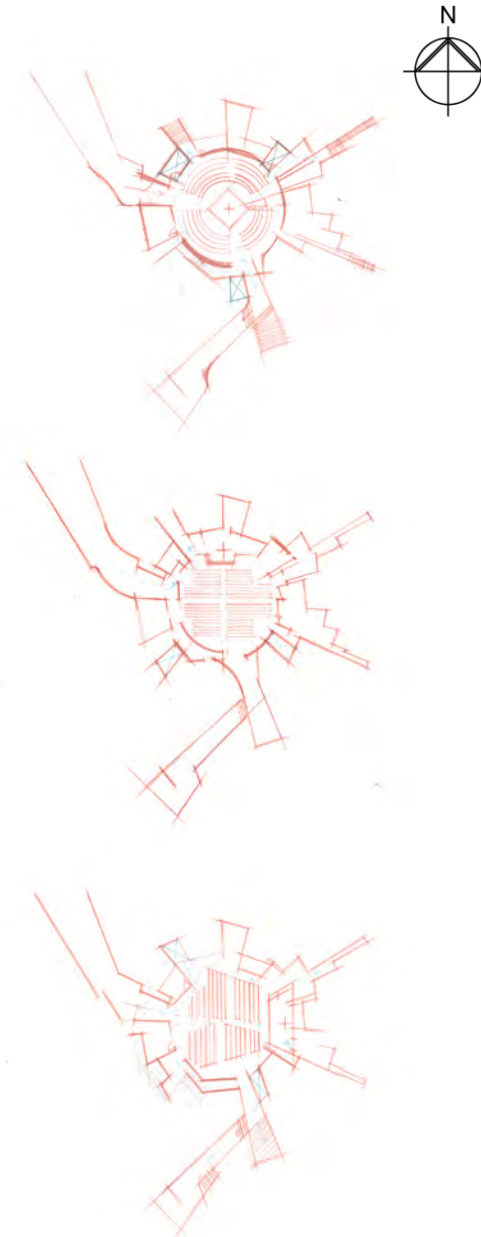


Fig 5.34: Layout of worship seating space study sketches.

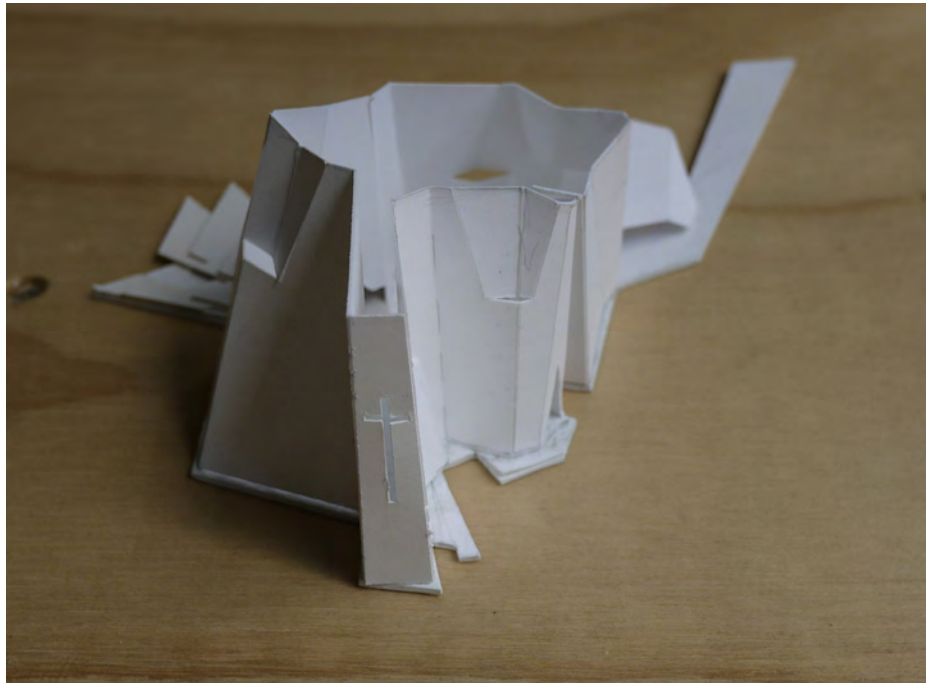


Fig 5.35: Exploration 6 form and space study model.



Fig 5.36: Exploration 6 form and space study model.

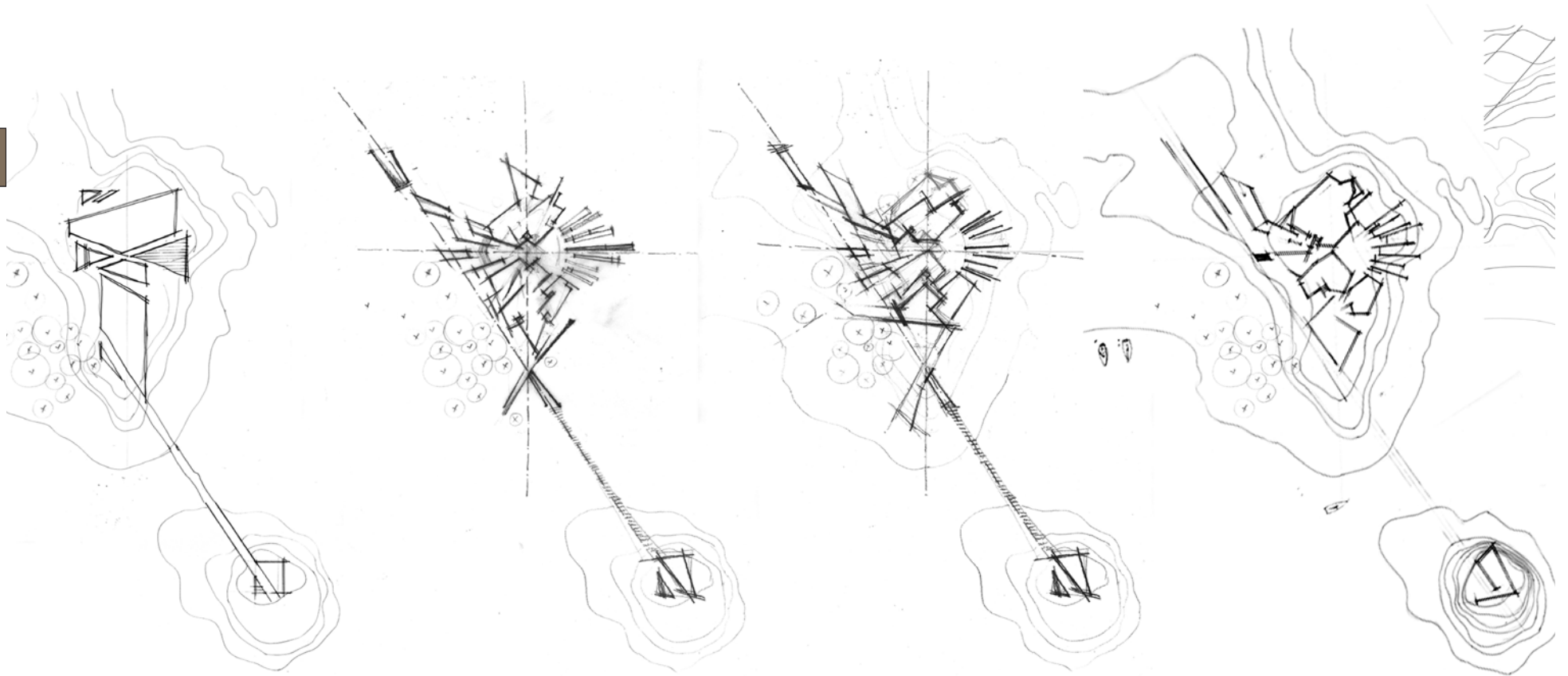
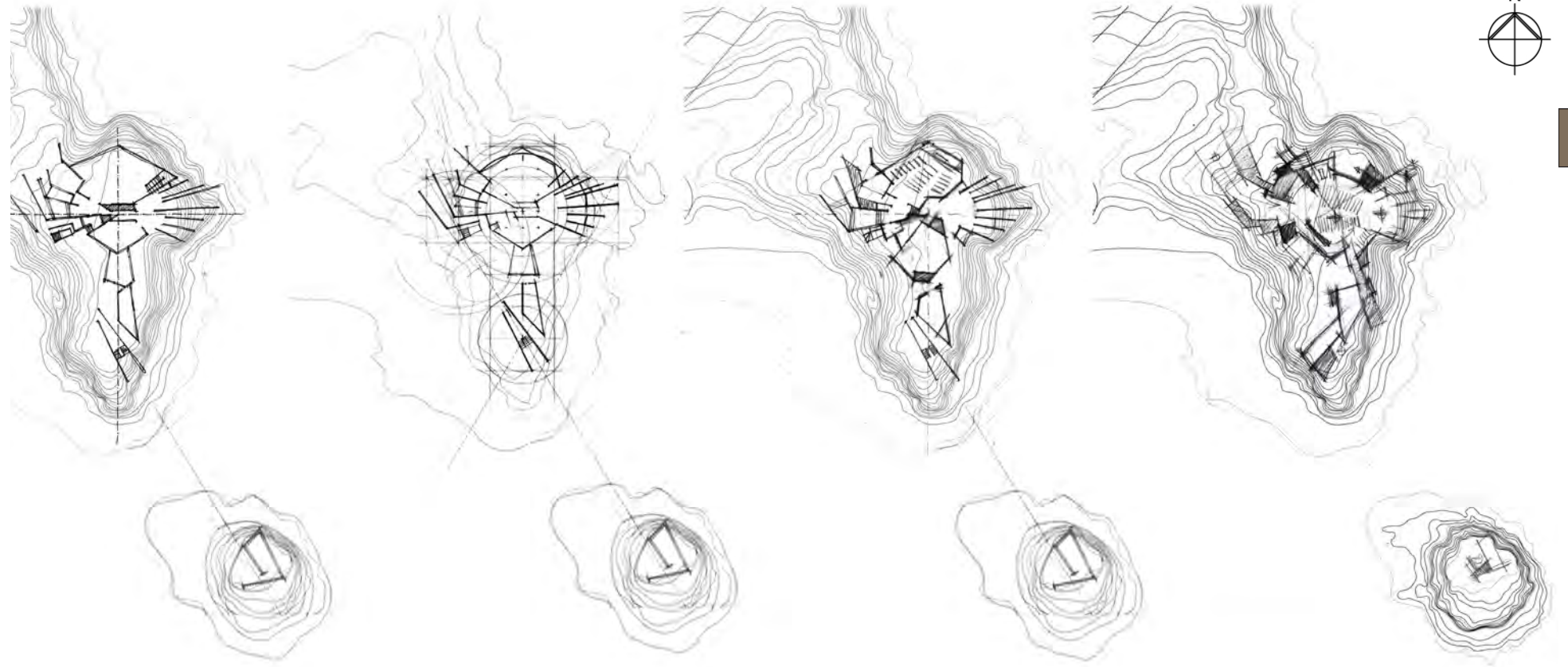


Fig 5.37: The sketches from start project to finish it.





The final exploration demonstrates a gigantic step towards the final design. This project focus on the act of procession and the relationship between the space and a human body which is crucial to create a sacred and all-encompassing experience.

The challenge of this design is merging two cultures into one building. However, this design does not want obvious references by particular styles. The purpose of this design is to bind occidental culture and oriental culture and sensibility, resolving the complexity of the project in a religious architecture.

The final outcome is developed through explorations of underlying principles in western and eastern culture, their method of organisation and their respective concept of aesthetics. Although the design does not show explicit references to western or eastern architecture such as arches or pagoda roofs, its underlying principles, organisational axis are fused from those two cultures.



The form is rather organic, it is very different to either cultures, this is because in order to generate a new form, it needs to avoid copying the obvious. Rather it was generated based on the landform and context that it occupies. This has created a landmark object which will stand as a gateway between heaven and earth, and a coming together of cultures.



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Topographical map - Auckland City Council GIS Data, <http://creativecommons.org/licenses/by/3.0/nz/>

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Figure 4.11: Site photo taken from Waiake Beach to see The site and Tor.

Figure 4.12: Sunrising photo taken from Waiake Beach.

Figure 4.13: Sun path diagram.

Figure 4.14: The Site.

Figure 4.15: Sir Peter Blake Memorial Regatta in Waiake Beach every year.

Figure 4.16: Site photo from Beach to see the site, Tor and Rangitoto Island.

Figure 4.17: Site photo taken from the Tor.

Figure 4.18: Site photo taken from the Tor to see the main site.

Figure 4.19: The site.

Figure 5.1: One sketch to show the steps to lead into the church's main entry.

Figure 5.2: Fusion, Francesco Borromini, Sant's Ivo alla Sapienza, Rome, 1660, Schematic plan.

Figure 5.3: Pulsating juxtaposition, San Carlo alle Quattro Fontane, 1667, Rome schematic plan by Borromini.

Figure 5.4: The current place church use it to do Sunday Service.

Figure 5.5: The first sketch for church design, blurry concept for design a church.



Figure 5.6: The sketch to show views and circulation exist out of the space in the simplest of draft forms.

Figure 5.7: The function area diagram to show the idealized relationships.

Figure 5.8: The sketch to show views and circulation exist out of the space in the simplest of '3D' forms.

Figure 5.9: The Mock-up model one.

Figure 5.10: The Mock-up model one.

Figure 5.11: The Mock-up model one.

Figure 5.12: The drawing to show the instinctive feeling about church.

Figure 5.13: The plan and section to show the functional diagram of church.

Figure 5.14: The mass model two.

Figure 5.15: The functional space study model.

Figure 5.16: The functional space study model show the main entry view.

Figure 5.17: The functional space study model to face the East side view.

Figure 5.18: The functional diagram fit within the site.

Figure 5.19: The functional space study model connection with Tor.

Figure 5.10: The functional space study model connection with Tor.

Figure 5.21: The develop model East elevation.

Figure 5.22: The developing model.

Figure 5.23: The new developing model.

Figure 5.24: The new developing model's three level plans.

Figure 5.25: The new developing model's Main Hall space.

Figure 5.26: The new developing model's East side view.

Figure 5.27: Perspective 1 to show Exploration 5 main entry view.

Figure 5.28: Perspective 1 section options sketches.

Figure 5.29: Perspective 2.

Figure 5.30: Perspective 3.



Figure 5.31: Perspective 4.

Figure 5.32: Exploration 6 model.

Figure 5.33: Exploration 6 model follow the early sketch.

Figure 5.34: Layout of worship seating space study sketches.

Figure 5.35: Exploration 6 form and space study model.

Figure 5.36: Exploration 6 form and space study model.

Figure 5.37: The sketches from start project to finish it.

10.0 APPENDIX



Fig 10.1: Site Plan



Fig 10.2: Church Floor Plans

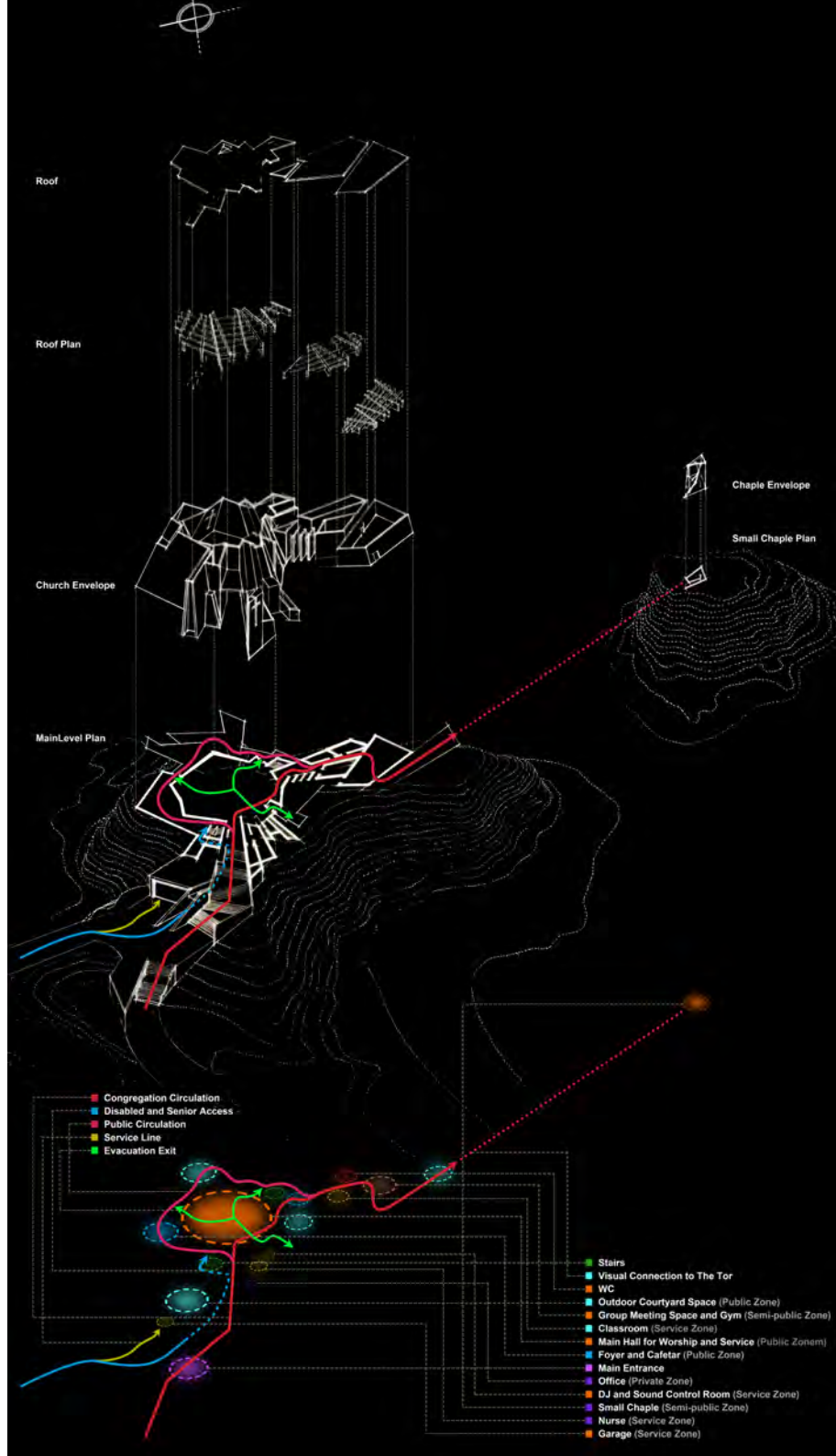


Fig 10.3: Axonometric and Circulation Diagram

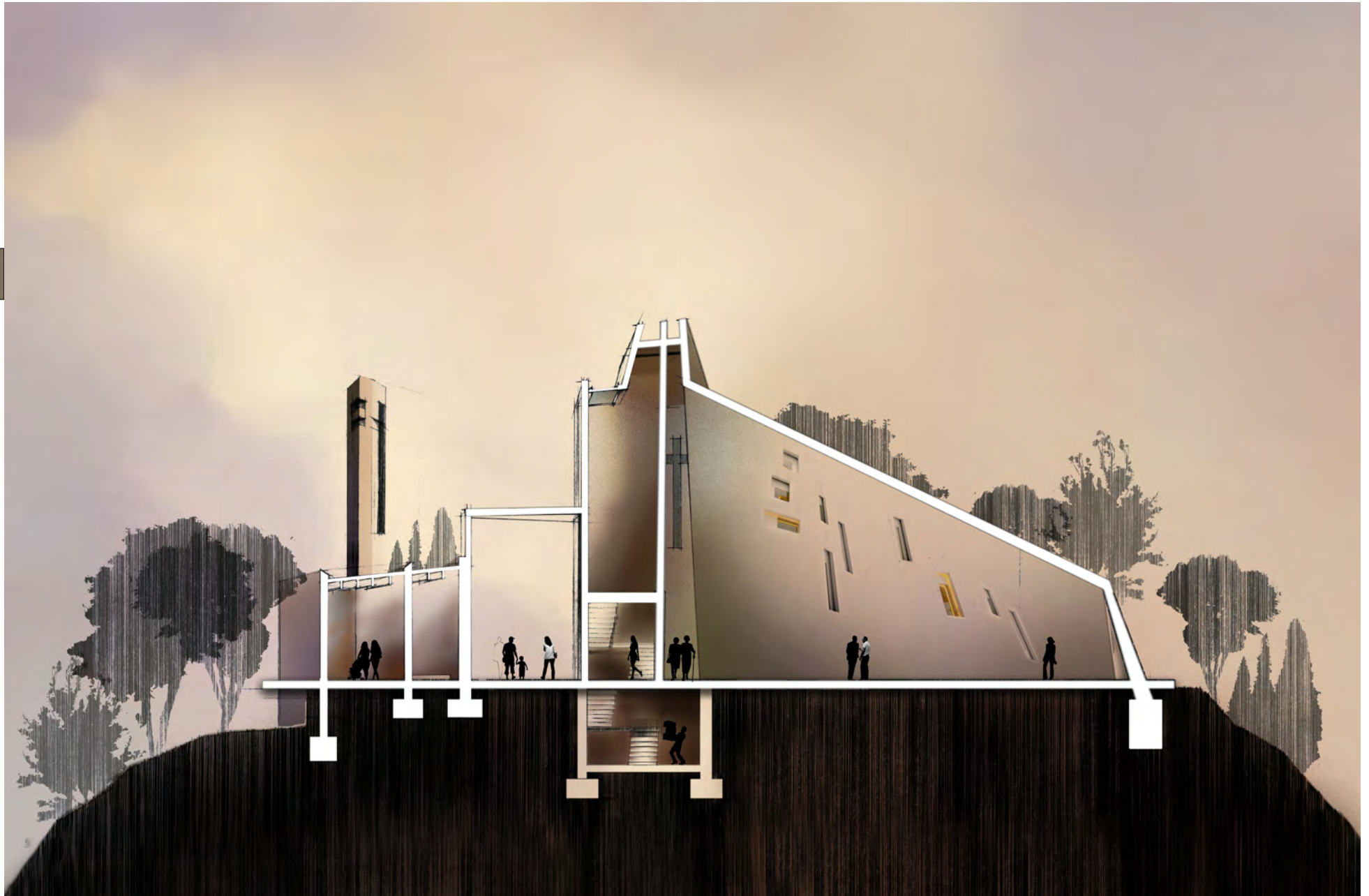


Fig 10.4: Section



Fig 10.5: Church South Elevation



Fig 10.6: Church Entry View



Fig 10.7: East Elevation

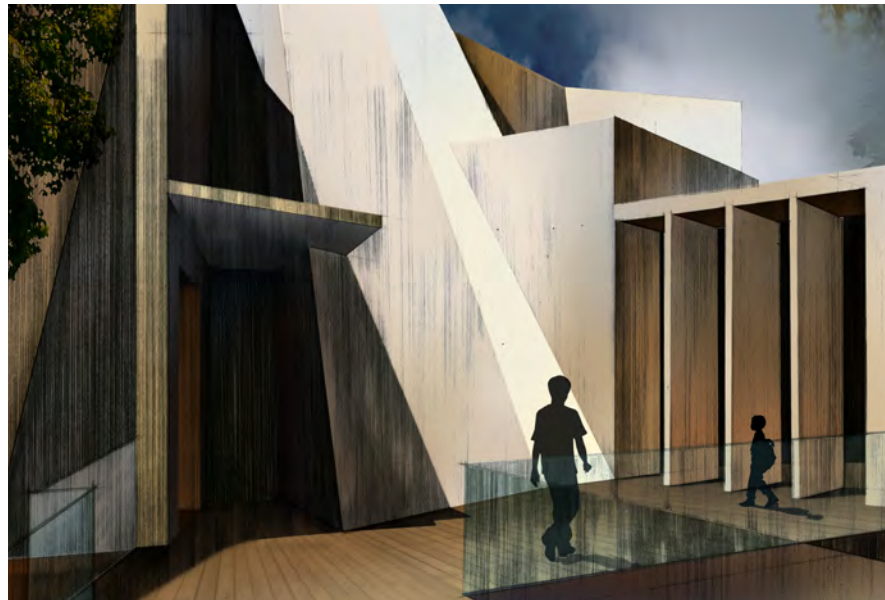


Fig: 10.8 Courtyard view



Fig 10.9: Church Main Hall Interior view



Fig 10.10: North Elevation

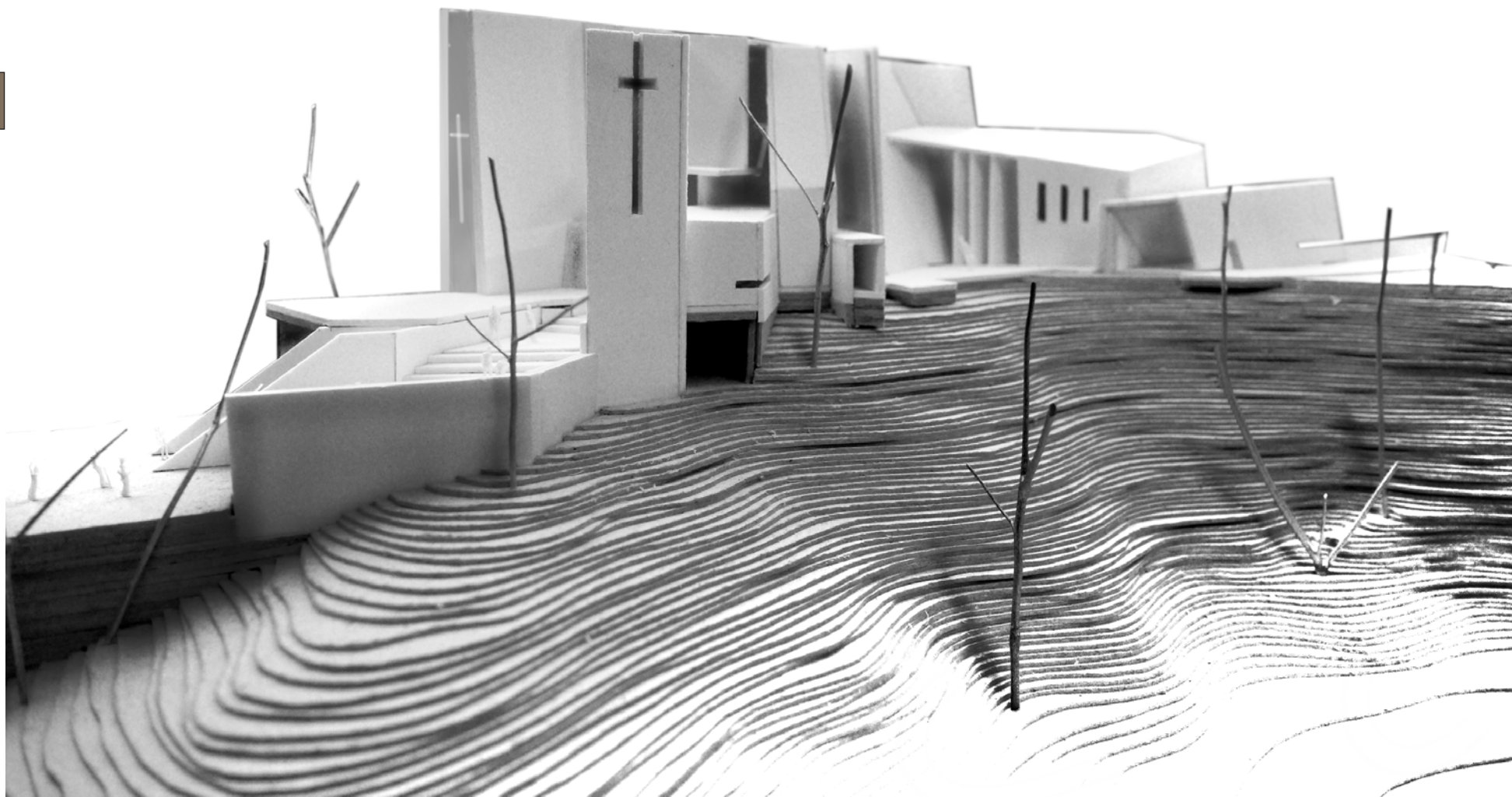


Fig 10.11: Model Photo

