

SPIRITUAL CENTER
(for Christian Community)

A THESIS

Submitted in partial fulfillment of the requirements for the award of
Bachelor of Architecture degree

By

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DEPARTMENT OF ARCHITECTURE
SCHOOL OF BUILDING AND ENVIRONMENT

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY) Accredited

With Grade “A” by NAAC

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Ijin Jose I J



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BONAFIDE CERTIFICATE

This is to certify that Thesis Report is the bonafide work of **IJIN JOSE I J (39210024)** who carried out the Thesis entitled "**Spiritual Center (for Christian Community)**" under our supervision from December 2023 to May 2024.

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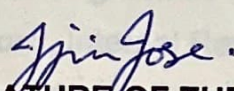
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DECLARATION

I am pleased to acknowledge my sincere thanks to Board of Management of Sathyabama Institute of Science and Technology for their kind encouragement in doing this Thesis and for completing it successfully. I am
I, Ijin Jose I J hereby declare that the Thesis Report entitled "Spiritual Center (For Christian Community)" done by me under the guidance of **Ar. Esther Kiruba Jebakumar Clifford** (Internal Guide), **Ar. Selvendiran** (Internal Review Member) and **Ar. Kurian George** (External Guide) Sathyabama Institute of Science and Technology is submitted in partial fulfillment of the requirements for the award of Bachelor of Architecture Degree.

DATE: 24.5.2024.

PLACE: Chennai


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THESIS SYNOPSIS

Religious architecture has long been a significant medium through which spirituality and community are expressed and experienced. However, in contemporary designs, there is often a disconnect between the physical space and the depth of spiritual engagement it facilitates. Many modern churches, while architecturally impressive, fall short in providing worshipers with an immersive, multi-sensory experience that can profoundly enhance their spiritual journey. This gap highlights a critical need for innovation in how sacred spaces are conceived and constructed.

The project aims to design a religious space offering visitors a transformative journey through carefully curated sensory experiences. The path, weaving through the sacred grounds, will be strategically designed to engage individuals with a variety of elements such as textures, sounds, and lighting. The religious space will offer different sensory experiences at each stage, creating a calm and reflective atmosphere.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Religious architecture has long been a significant medium through which spirituality and community are expressed and experienced. However, in contemporary designs, there is often a disconnect between the physical space and the depth of spiritual engagement it facilitates. Many modern churches, while architecturally impressive, fall short in providing worshipers with an immersive, multi-sensory experience that can profoundly enhance their spiritual journey. This gap highlights a critical need for innovation in how sacred spaces are conceived and constructed.

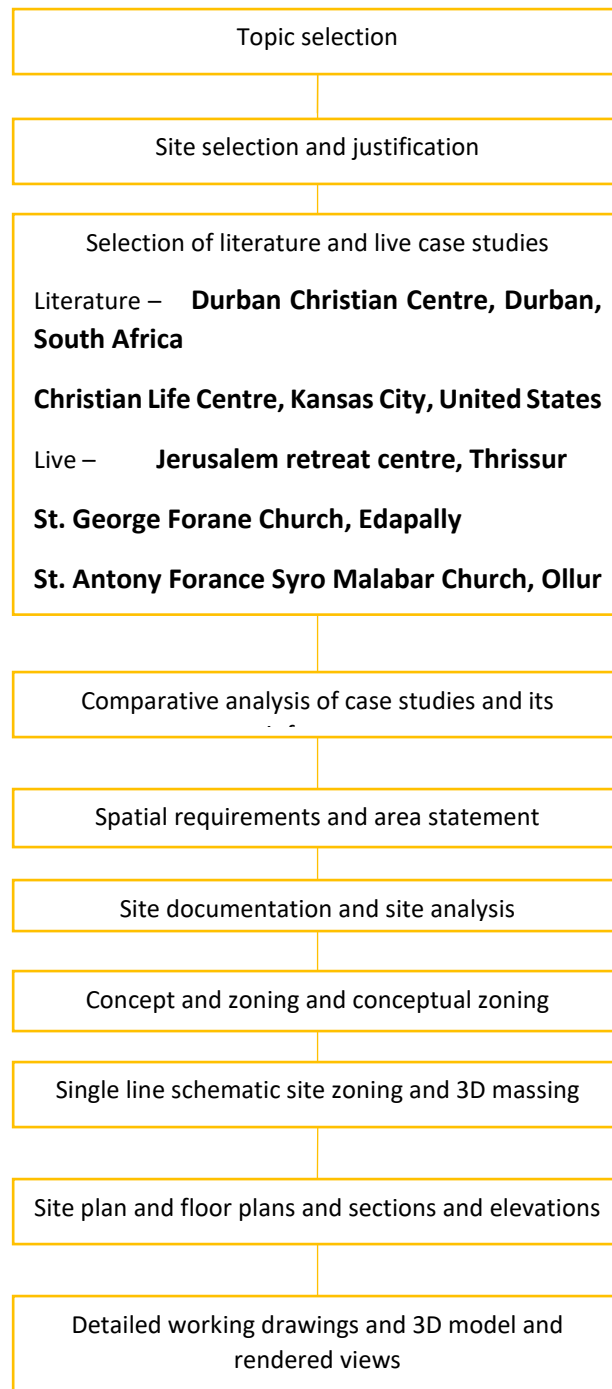
1.2 Need Of the Project

In contemporary religious architecture, there is a need to create spaces that go beyond conventional design, offering a more immersive and meaningful connection with spirituality. Many churches lack intentional sensory engagement, potentially limiting the depth of the worshiper's experience. This project addresses this gap by proposing a church with a sensory path, aiming to enhance the transformative potential of the sacred space.

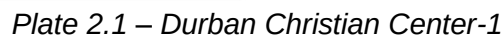
1.3 Aim and Objective

The project aims to design a religious space offering visitors a transformative journey through carefully curated sensory experiences. The path, weaving through the sacred grounds, will be strategically designed to engage individuals with a variety of elements such as textures, sounds, and lighting. The religious space will offer different sensory experiences at each stage, creating a calm and reflective atmosphere.

1.4 Methodology



2.1 Durban Christian Centre, Durban, South Africa



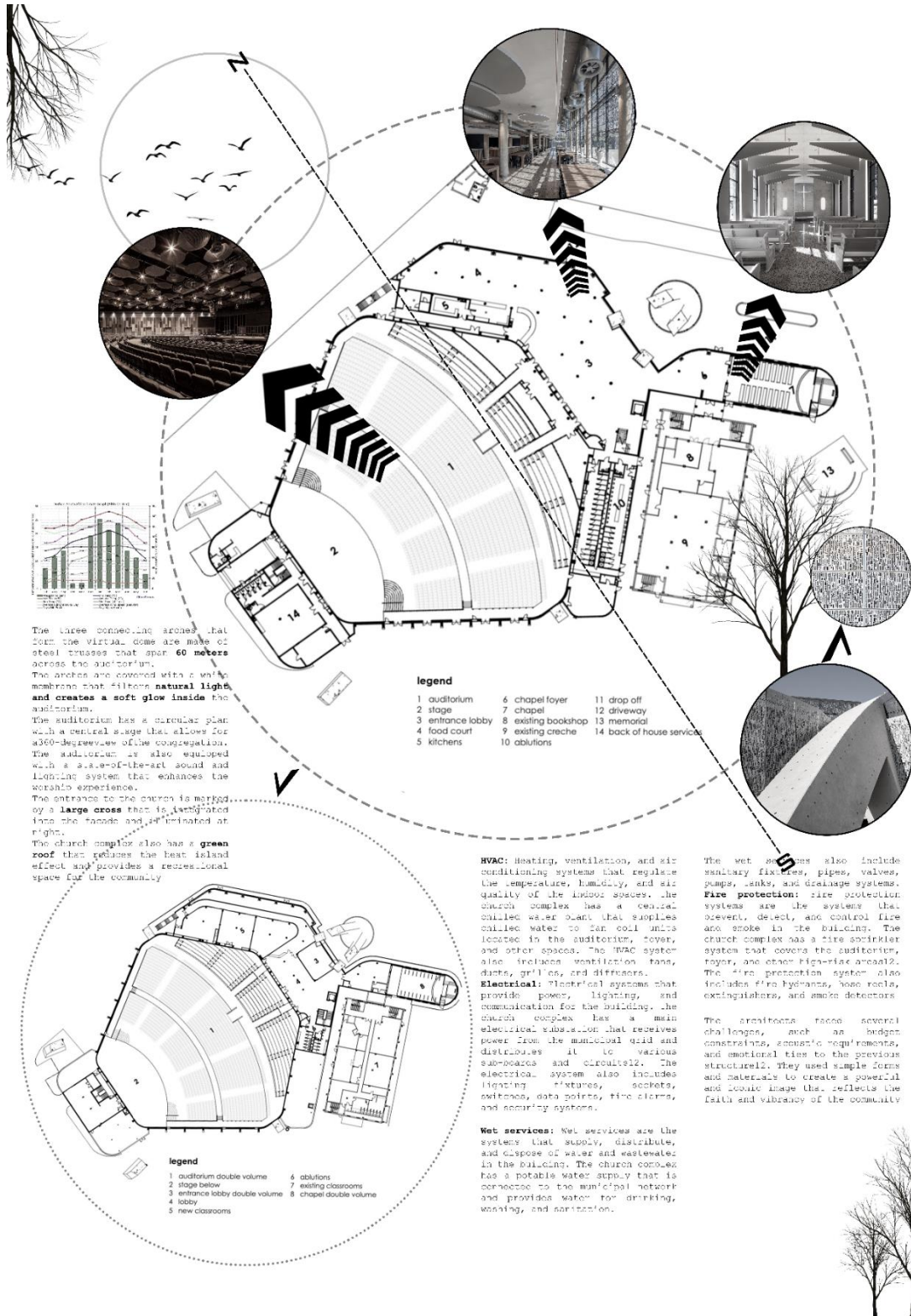


Plate 2.2 – Durban Christian Center-2

2.2 Christian Life Centre, Kansas City, United States

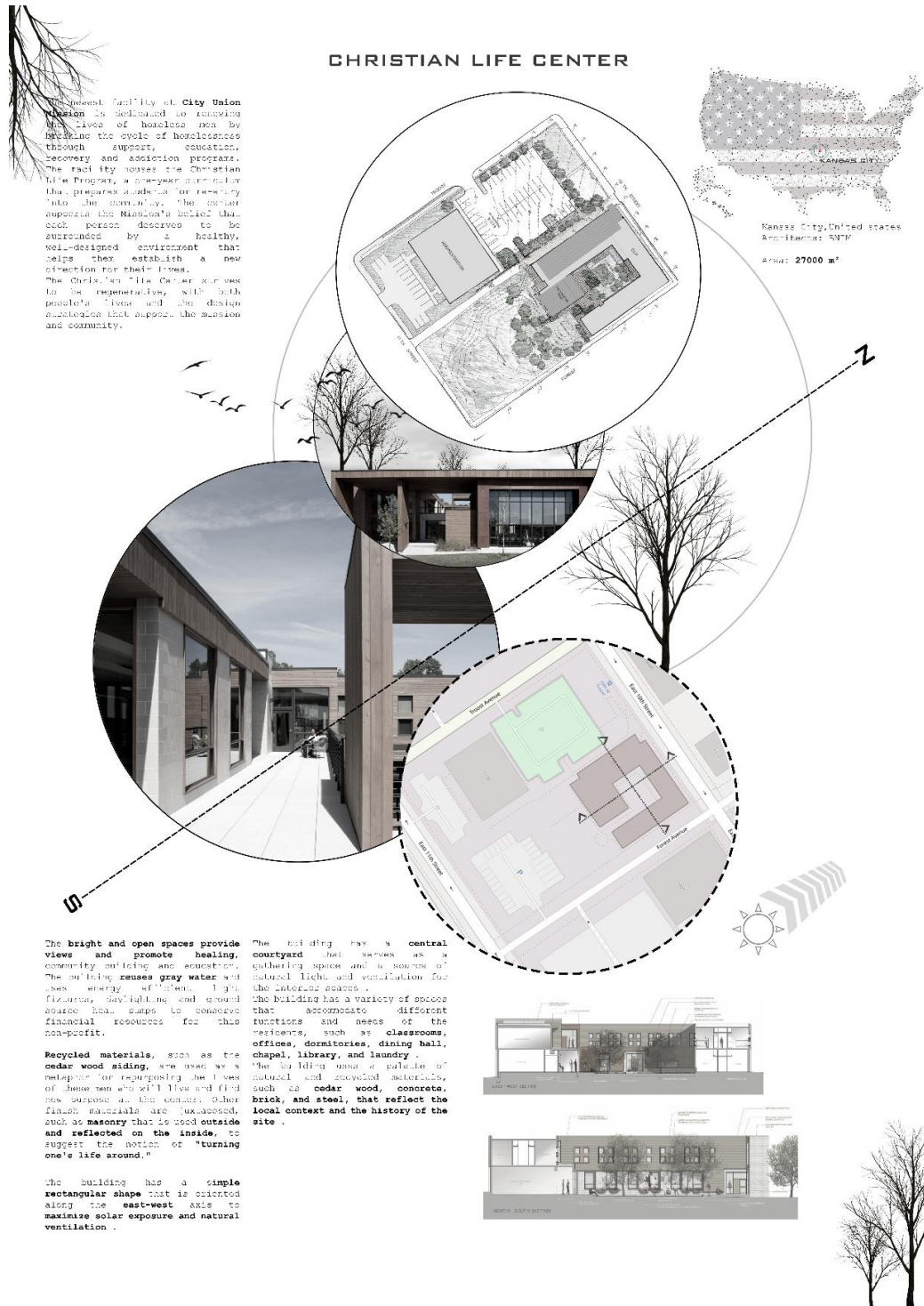


Plate 2.3 – Christian Life Center-1

2.3 Jerusalem retreat centre, Thrissur

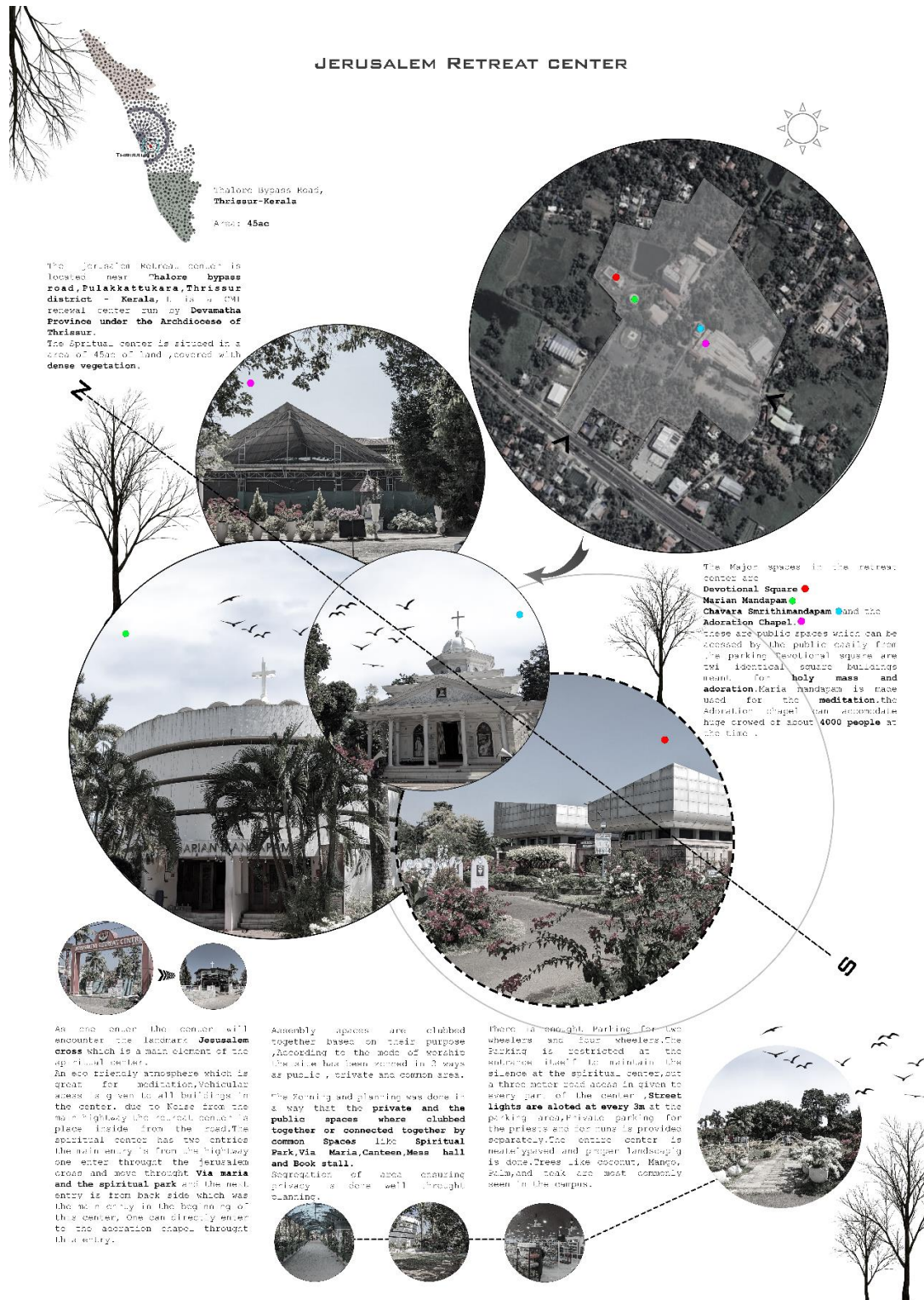


Plate 2.5 – Jerusalem Retreat Center -1



The theme of this structure is "a hymn of gratitude to our blessed mother". A building with a small structural foundation which is slowly widens when it goes to top. 75 feet height without windows and staircase.

The ramp takes you up slowly and take you down slowly. Many of mother Mary and major incidents in her life is engraved on the walls and covered with glass. Five recorded musical liturgy in different language can be heard in aerophobic sound system. On the top Mother Mary's picture venerated in different parts of the world are etched in belgian glass.

Holy Relics of 116 Saints are kept with utmost care. The relics are kept safe inside in glass globe that are mounted on walls along the ramp. While people climb the structure through the ramp they can encounter those holy relics.

The roof of this structure are small arches that meets at the center. The ceiling of the building has a glass element with wood works in it, which has the faces of the apostles. st. peter, st. paul, st. Thomas, st. jude etc..

One can enter to the master garden through the jersusalem cross and enter through a common gathering space with a statue of holy mary in the center with some seating spaces.

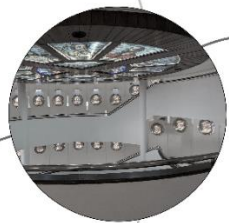


Plate 2.6 – Jerusalem Retreat Center -2

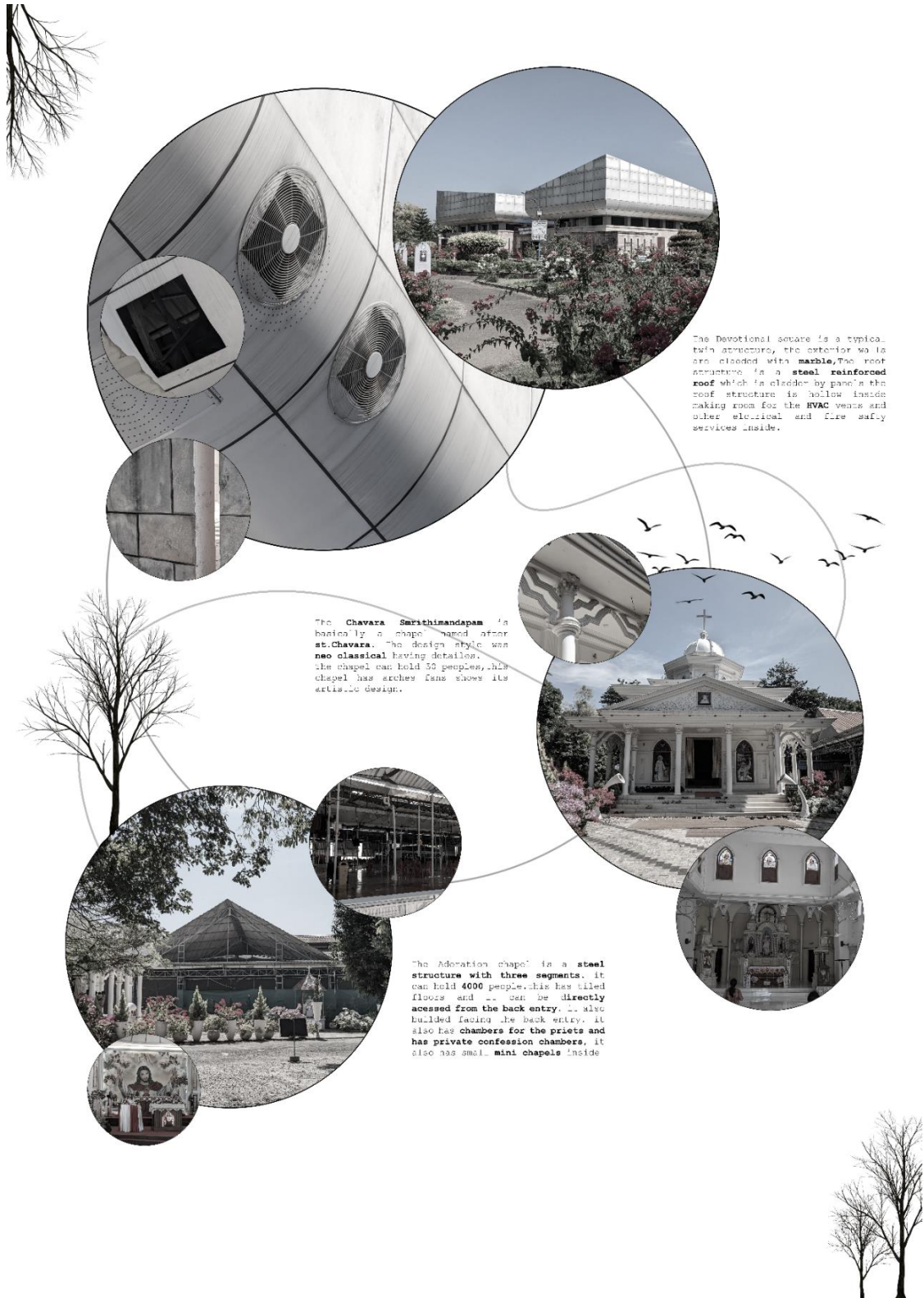


Plate 2.7 – Jerusalem Retreat Center -3

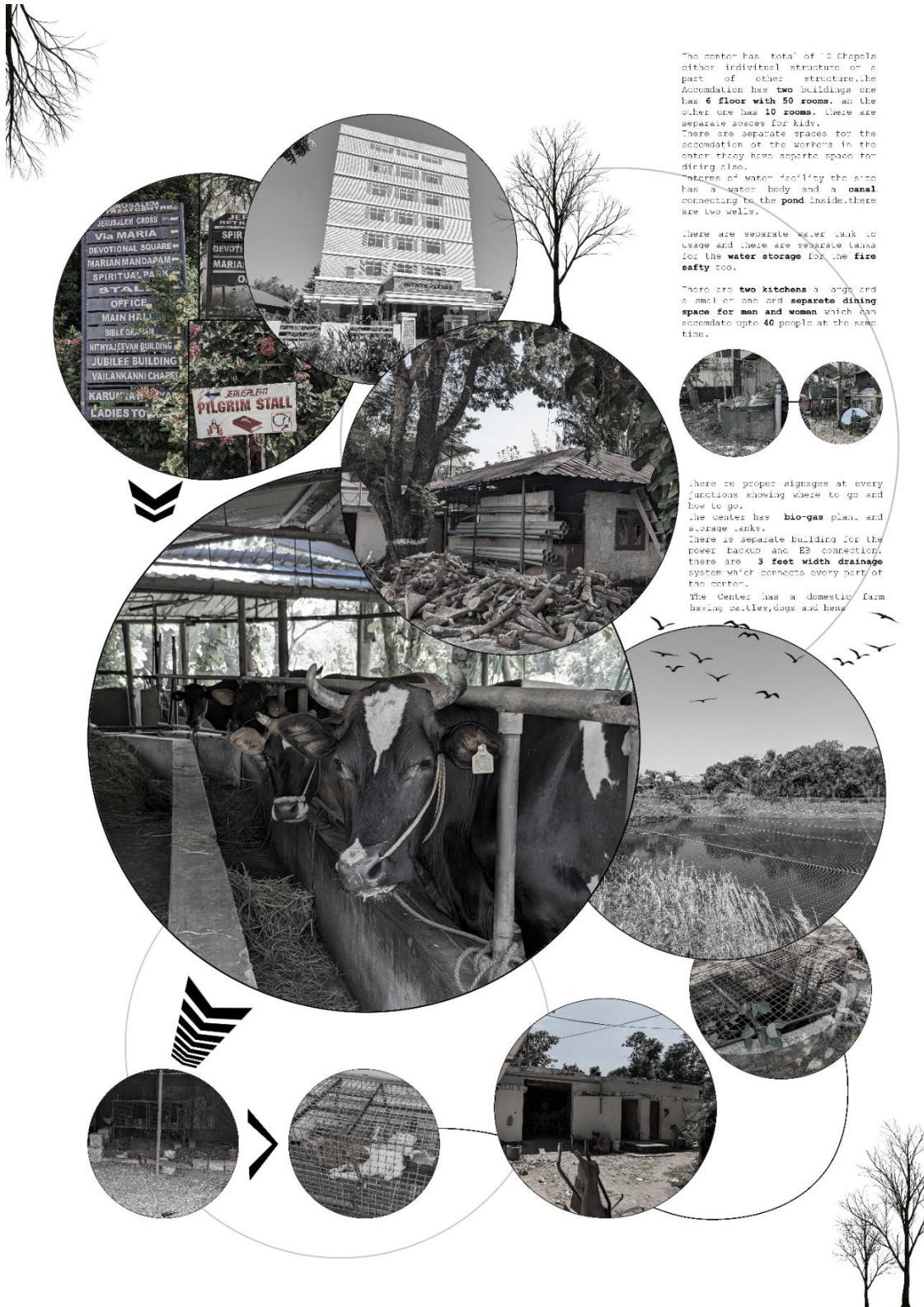


Plate 2.8 – Jerusalem Retreat Center -4

2.4 St. George Forane Church, Edapally

St. George Forane Church in Edapally, Kerala is one of the oldest and largest churches in Asia, dedicated to Saint George. It has a long and rich history, dating back to the 6th century AD. The church has three main structures, each built in different periods and styles.

The first church was built in 593 AD on a land donated by the Hindu Raja of Edapally. It was originally dedicated to Virgin Mary, but later came to be known by Saint George's name. The church has a simple and elegant architecture, reflecting the influence of traditional Kerala temple architecture, with its gabled roofs and intricately carved wooden elements. The altar of the first church still stands in the second church.

The second church was built in 1080 AD adjacent to the old church. It is now used as a museum, displaying the relics and artifacts of the church's history. The church has a Romanesque style of architecture, with refined arches and large pillars. The church also has stunning artwork, sculptures, and paintings on the walls, depicting scenes from the Old and New Testament.

The third church was built in 2015 AD to accommodate the increasing number of pilgrims and devotees. It is the largest and most modern structure of the church, with a capacity of 5000 people. The church has a Gothic style of architecture, with a sloping red roof, two bell towers, and a large rose window. The altar of the third church is made of teak covered with gold foil imported from Italy. The church also has a water well adjacent to it, which is believed to have miraculous powers. The church also has a water well adjacent to it, which is believed to have miraculous powers. Many people who drink the water from the well claim to have been cured of various diseases and ailments. The well is also known as the 'Pool of Bethesda', after the biblical story of Jesus healing a paralyzed man at a pool in Jerusalem. The foundation stone of the third church was laid by Pope John Paul II on January 1, 2001. The construction took about 14 years to complete, and the church was consecrated in April 2015.

The church has a Gothic style of architecture, with a sloping red roof, two bell towers, and a large rose window. The church also has a cross-shaped plan, with a length of 230 feet and a width of 106 feet. The church can accommodate 5000 people at a time.

The altar of the third church is made of teak wood covered with gold foil imported from Italy. The altar also has a tabernacle made of silver and a crucifix made of bronze. The altar is surrounded by 12 pillars, representing the 12 apostles of Jesus Christ.

2.5 St. Antony Forance Syro Malabar Church, Ollur

St. Antony Forance Syro Malabar Church in Kerala is a blend of Western and Indian styles, with rich and intricate decorations. The church is built on a hilltop and surrounded by a large wall called the Elephant Wall. The church has a facade with three arches and two bell towers. The interior of the church is adorned with paintings, sculptures, wood carvings, gold foil, and precious stones. The church has a high altar made of teak wood and covered with gold foil imported from Italy. The church also has scenes from the Old and New Testament depicted as sculptures on the walls and pillars

the church is considered to be one of the most beautiful and artistic churches in Kerala, and is compared to the Sistine Chapel in the Vatican City. The church is also a place of historical and religious significance, as it has been visited by many saints, martyrs, and political leaders. The church celebrates many festivals throughout the year, especially the feast of Saint Raphael, the Archangel, in October

The church has an area of thousands of square feet covered by paintings, which are among the most beautiful ones in Kerala. The paintings depict scenes from the Bible, the lives of saints, and the history of the church.

The church has a unique feature of having more than five thousand images of angels in various forms and materials, such as fresco, mural, wood, plaster, stone, metal, and ivory. The angels symbolize the heavenly glory and protection of the church

The church has a cruciform structure covered by a three-tier gabled indigenous roof structure, which showcases the skill and craftsmanship of the carpenters who built it.

The church has a seven-storey-high belfry or bell tower, which rises to a height of 125 feet and was the tallest structure in South India at the time of construction. The belfry has three huge bells imported from France in the 19th century, which are the biggest bells in Kerala.

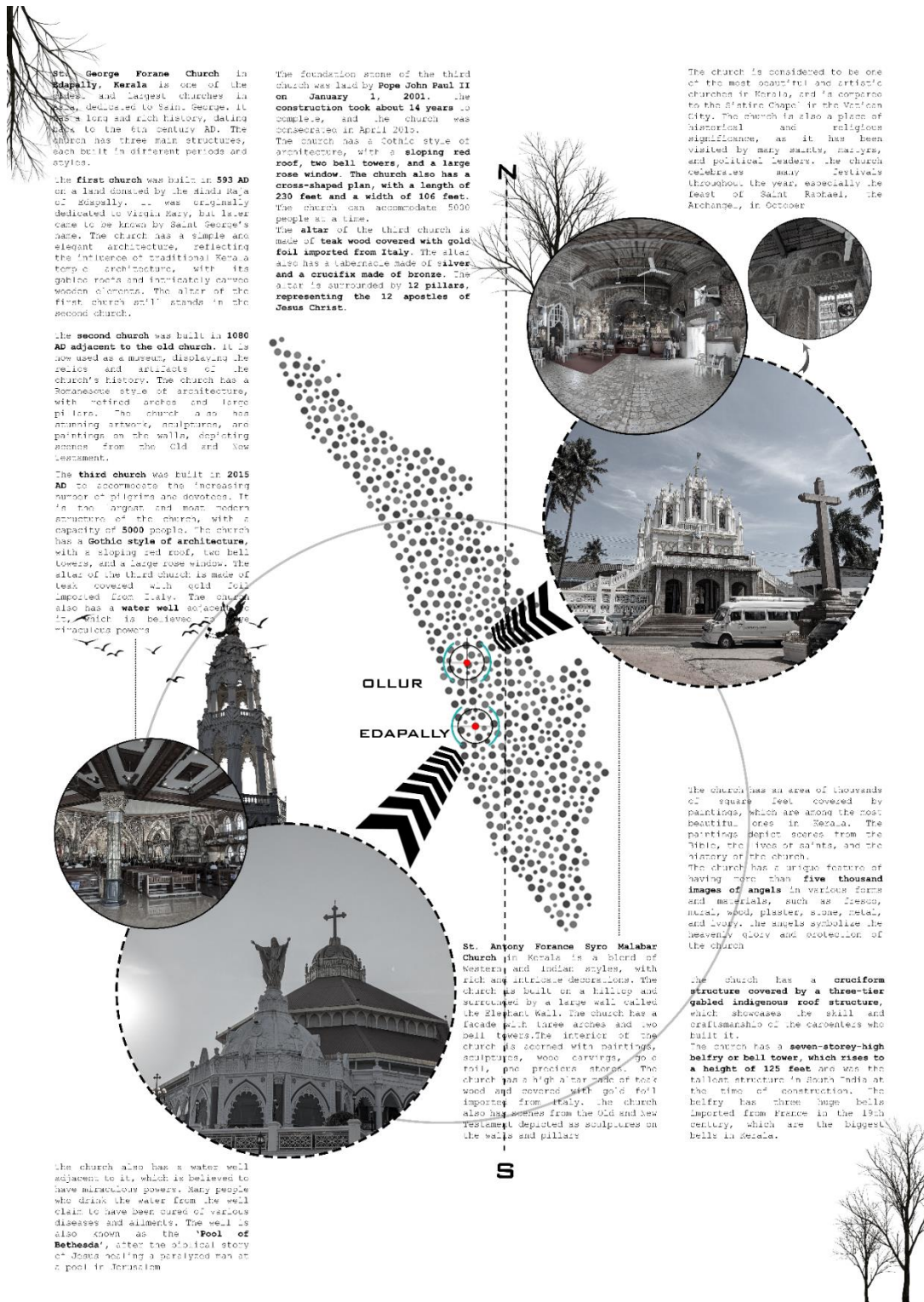


Plate 2.9 – St. George Forane Church & Antony Forane Syro Malabar Church -1

2.6 Comparative Analysis

Aspect	Jerusalem Retreat Center	Christian Life Center	Durban Spiritual center	St. George Parsonage Church	St. Anthony Parsonage Syro Malabar Church
Location	Thalavay, Thiruvananthapuram, Kerala	Groves City, USA	Durban, South Africa	Edappally, Kerala	Chennai, Kerala
Area	15 acre	2700 Sqm	6300 Sqm	19500 Sqm	92000 Sqm
Functionality and Purpose	Spiritual retreat, with varied areas for different purposes	Homeless rehabilitation and education, regeneration design	Worship space with advanced sound and lighting	Historical and religious significance	Historical and religious significance
Materials	Traditional materials with a focus on spiritual elements	Recycled steel, wood, concrete, brick, stone	Steel trusses, rubber membrane for roof	Adobe bricks, stone, gold leaf, teak wood	Gold leaf, teak wood, precious stones
Sustainability and Environmental Considerations	Integration with nature, low toxicity materials	Use of recycled materials, greenwater reuse, energy efficient features			
Cultural and Spiritual Elements	Salt marsh, forest, open spaces, religious symbols	Multipurpose of repurposing local or regional materials	Large cross, warning entrance, basic design, reflecting light	Historical and religious significance	Blend of Western and Indian styles with rich spiritual significance
					

Plate 2.10 – Case Study comparative analysis

CHAPTER 3

DATA COLLECTION AND STANDARDS

3.1 Christian Retreat

“The Christian Life Involves Worshiping God and experiencing relationship with God through the risen Christ and the holy Spirit” said by Peter Jenkins, The Word Retreat has applications with respect to Withdrawal in some ways.

Retreat may refer to a time away from the normal or common aspects of life. It can also refer to a place at which to be away from a working or everyday environment.

According to Townroe "To make a retreat, in the Christian sense, is to seek God and to rest in his presence in a time set apart for prayer and reflection. Solitude, silence and stillness, in varying degrees are normally regarded as necessary conditions."

It is a period spent in silence and occupied by meditation and spiritual exercises, under a conductor who leads the worship, gives the addresses and makes appointments with any retreatants who desire confession, counsel or discussion.

According to Griffin Spiritual retreat is simply a matter of going into a separate place to seek Christian growth in a disciplined way. Retreat offers us the grace to be ourselves in God's presence without self-consciousness, without masquerade. Retreat provides the chance to be both physically and spiritually refreshed.

It is the blessed opportunity to spend time generously in the presence of God. In such a time, God helps us to empty ourselves of cares and anxieties, to be filled up with wisdom and restores us.

Retreats provide us with the much-needed time and space to make prayer a priority. It also frees us to open up parts of our personality which close automatically when we hurry or when we are bombarded with noise and other stimuli.

Three essentials or requirements come through in the varied description of Christian retreats. In other words, without them there has been no real experience of Christian retreat. They are withdrawal, encounter and prayer.

Without an attitude of withdrawal from aspects of daily life, there is no retreat, relationship with God is central to the very idea of retreat and the basis for retreating. God is the initiator; we are the responders said by Hudson.

Apart from the three essentials or requirements mentioned above, other elements are frequently associated with retreats. These include silence, solitude, Scripture, personal reflection, communal reflection, confession, resolution (or decision-making), meditation, worship and spiritual battle.

According to Herein Goodacre in Retreats The desire is to meet with God rather than talking about God.

The Old Testament Scriptures contain accounts of people who were encountered by God, in their experience, through various retreat happenings. Some of these individuals: Abraham, Isaac, Jacob, Joseph, Moses and Elijah, in the Old Testament that at critical moments for a number of crucial people in the life of the Hebrews, retreat was vital in experiencing and in expressing God's call on their lives. It is an Experience of Revelation.

Creating an Environment for Retreat through Architecture

To Create an Environment for Retreat, in the Christian sense, is to seek God and to rest in his presence in a time set apart for prayer and reflection, To Achieve such Environment **Solitude**, **Silence** and **Stillness** are the Necessary conditions, in the modern world where we are constantly bombarded by **noise, distractions and information**. Architecture can play a vital role in creating spaces that foster these

qualities, by using design elements such as **light, colour, texture, proportion, geometry, materials and acoustics.**

“Feeling a balance between the self and the world though consciously withdrawing into oneself. This mode of being alone is **Solitude”** said by Juhani Pallasmaa.

“As I enter a space, the space enters me. This fusion is immediate and almost solely unconscious, and, in fact, the world and the mind constitute a continuum. I enter a building, see a room, and in the fraction of a second – have this feeling about it” Said by Peter Zumthor

Chapels

Church of the Light

Tadao Ando, a Japanese architect who is known for his minimalist and concrete structures that blend with the natural environment. His **Church of the Light** in Osaka, Japan, is a simple rectangular box with a cross-shaped opening that allows sunlight to enter and illuminate the interior. The church is a place of silence and stillness, where the visitors can experience the contrast between **light and shadow, solid and void, and material and spiritual.**

In the small town of Ibaraki, 25km outside of Osaka, Japan, stands one of Tadao Ando's signature architectural works, the Church of the Light. The Church of the Light embraces Ando's philosophical framework between nature and architecture through the way in which light can define and create new spatial perceptions equally, if not more so, as that of his concrete structures.

Concept

For Ando, the Church of Light is an architecture of **duality** - the dual nature of [co]existence - **solid/void, light/dark, stark/serene.** The coexisting differences leave the church void of any, and all, ornament creating a pure, unadorned space. **The**

intersection of **light and solid** raises the occupant's awareness of the **spiritual and secular** within themselves.

The employment of **simplistic materials** reinforces the duality of the space; the concrete structure removes any distinction of traditional Christian motifs and aesthetic. Besides an extruded cross from the east facing facade, the church is composed of a concrete shell; **the concrete adds to the darkness of the church by creating a more humble, meditative place of worship**. As a testament to minimalist architecture, the crosses void in the **east facing wall is the only prominent religious symbol** present in the church.

Design

Formally, Ando's Church of the Light is minimalist and **reductive of religious paraphernalia** to a simple cruciform extrusion, which is often criticized as disturbingly empty, void, and undefined. Although it has been stated to be nothing more than six walls and a roof, there is a whole level of design aesthetic implemented by Ando and his contractors that is misread and unrecognized by the occupants. As a modern, minimalist structure the Church of the Light emits an architectural purity that is found in the details. The reinforced concrete volume is void of any and all ornament that is not part of the construction process. The seams and joints of the concrete are built with precision and care by master Japanese carpenters, along with Ando, that have worked to create an immaculately smooth surface and accurately aligned joints. So much so, that the seams of the concrete formwork align perfectly with the crosses extrusion on the east side of the church.

The **concrete construction** is a reinforcement of Ando's principal focus on **simplicity and minimalist aesthetic**; however, the way in which the concrete is poured and formed gives the concrete a luminous quality when exposed to natural light. Ando's decision to place **the cross on the east facade allows for light to pour into the space throughout the early morning and into the day, which has a dematerializing effect on the**

interior concrete walls transforming the dark volume into an illuminated box. Ando's approach to light and concrete in the Church of the Light, as well as his other projects, has a surreal effect that perceptually changes material into immaterial, dark into light, light into space.

Construction and Structure

The church has an area of roughly 113 m² about the same size as a small house. The church was planned as an add-on to the wooden chapel and minister's house that already existed at the site. The Church of the Light consists of three 5.9m concrete cubes (5.9m wide x 17.7m long x 5.9m high) penetrated by a wall angled at 15°, dividing the cube into the chapel and the entrance area. One indirectly enters the church by slipping between the two volumes, one that contains the Sunday school and the other that contains the worship hall. The benches, along with the floor boards, are made of **re-purposed scaffolding** used in the construction.

It took more than two years to complete. The delay in completing the work was due to problems in raising the necessary funds. Initially it was feared that it would cost more than the budget and Ando even considered building it without a roof, but the construction firm donated the roof and this became unnecessary.

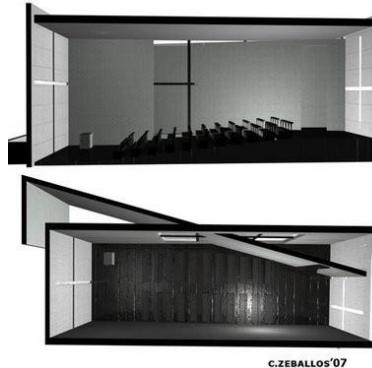
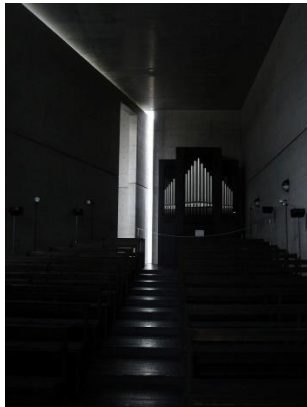


Fig 3.1 – Church of the Light

North Christian Church

“...they should feel they are all in unity and harmony in a special and appropriate spiritual atmosphere”

– Eero Saarinen

An important contribution to postwar liturgical church architecture, Eero Saarinen's North Christian Church serves a northern residential suburb of Columbus, Indiana. Designed between 1959 and 1961 and completed in 1964, the central plan church accommodates **greater participation and more intimate and democratic congregational involvement**. Saarinen desired a simple structure that would support the liturgical needs of its members and "clearly and logically express the form and character of the church" (on North Christian Church (1960) [Saarinen 1962: 88]). Its open structure, facilitated by new advances in **steel construction**, dissolves the traditional distinction between officiate and congregant, while recognizing **communion** and **baptism** as important liturgical sacraments.

"The whole thing, all the planes, would grow up organically into the spire on North Christian Church"

– Eero Saarinen

The main level of the **two-story structure** rests on a **massive concrete base**. The lower level nestles into a landscaped berm held back to expose a moat-like light well. The building is **hexagonal in plan**, elongated on the east-west axis. **Six steel legs** clad in **lead coated copper** secure a **pyramidal slate roof**, then converge at an apex, **rise to a tapered 192-foot central spire and terminate at a five-foot gold-leaf cross**. Only the main sanctuary and a small baptismal chapel, both surrounded by an ambulatory, remain above ground. Support facilities consolidate within a single unit hollowed out in the basement below. **The surrounding six-foot high berm conceals from view everything but the roof and entrance**. The result is a simple and distinctly singular structure that appears to **hover lightly above the ground, an illusion** enhanced by recessed exterior **glass walls** set back some twelve feet from the roof's edge

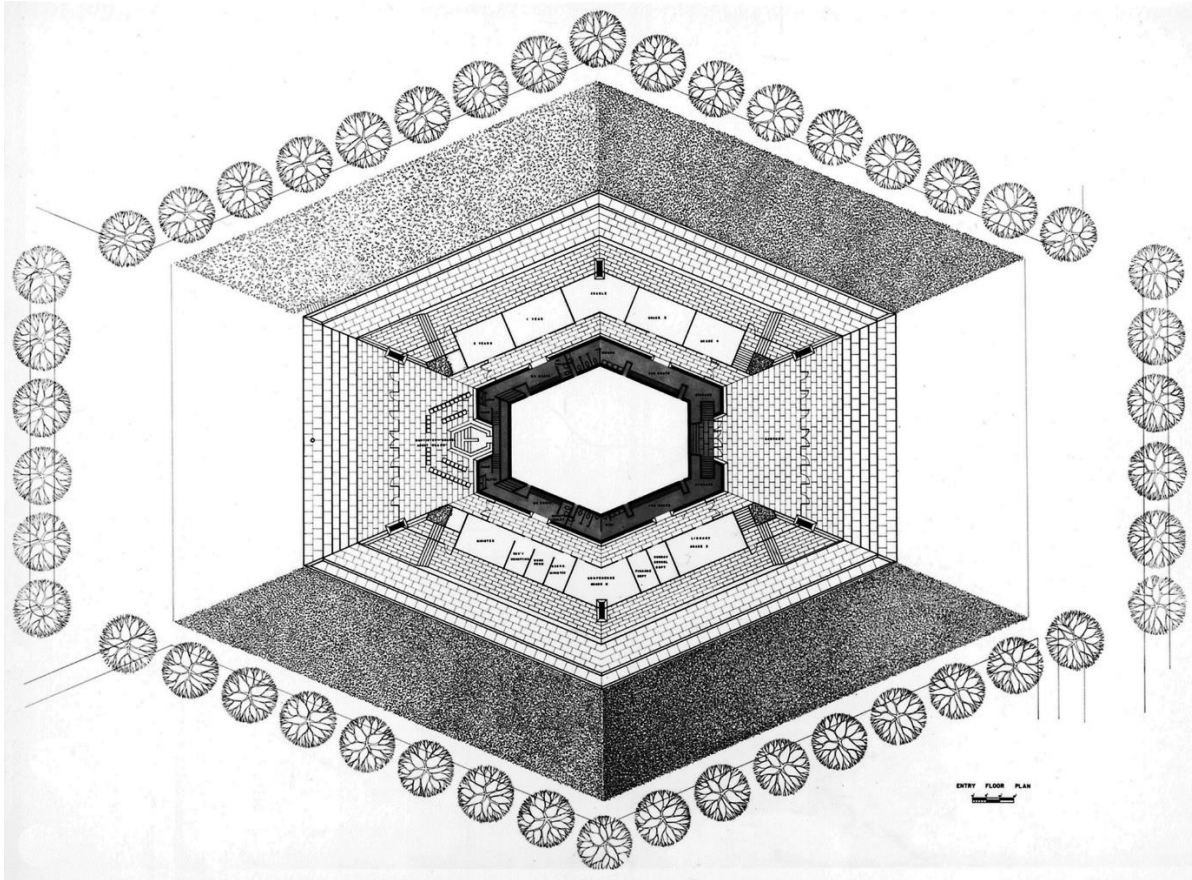
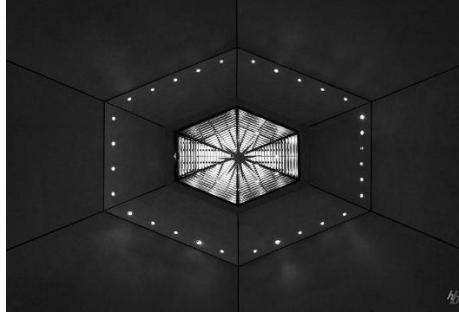
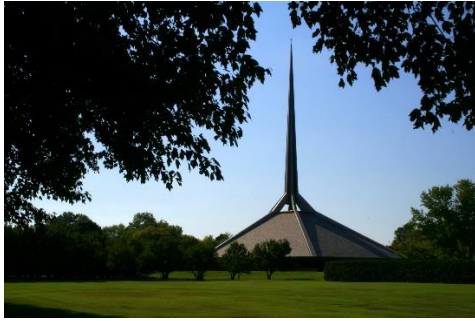


Fig 3.2 – North Christian Church

Interior

Acts of entry and **passage simulate a spiritual journey to another world.** From the parking area, one ascends, and then descends before reaching the building at ground level. Once inside, steeper steps lead to the sanctuary.

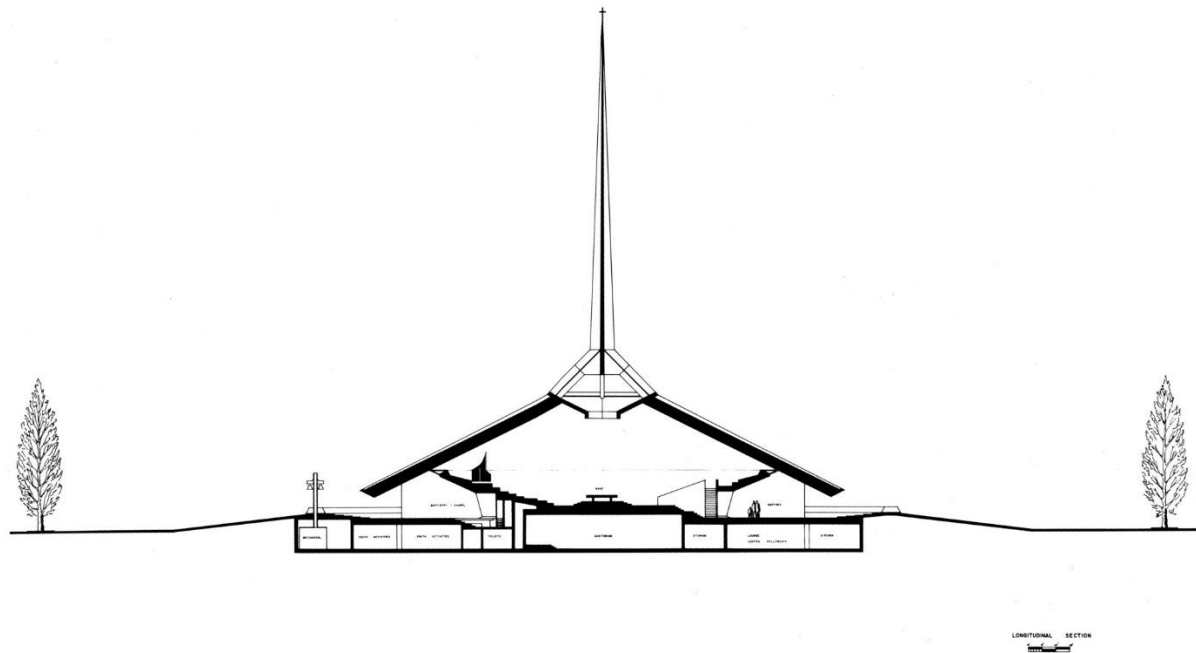


Fig 3.3 – North Christian Church-Section-1

Each building level follows the same hexagonal plan. Above, the main east entrance leads through a spacious vestibule to a large **bowl-shaped sanctuary placed at the centre** and elevated to emphasize its **liturgical importance**. At the very centre, beneath an oculus and raised on a dais, **a communion table**, containing twelve places arranged in two rows with a taller place at one end, represents Christ and His twelve disciples. **The dais can be rotated and repositioned on other occasions**. Underground perimeter classrooms, offices and other support facilities face the berm, lit by ambulatory windows at the base of the church. In the centre, an auditorium is placed directly below the sanctuary.

“...put all that activity downstairs. Maybe underground, hidden away...”

– Eero Saarinen

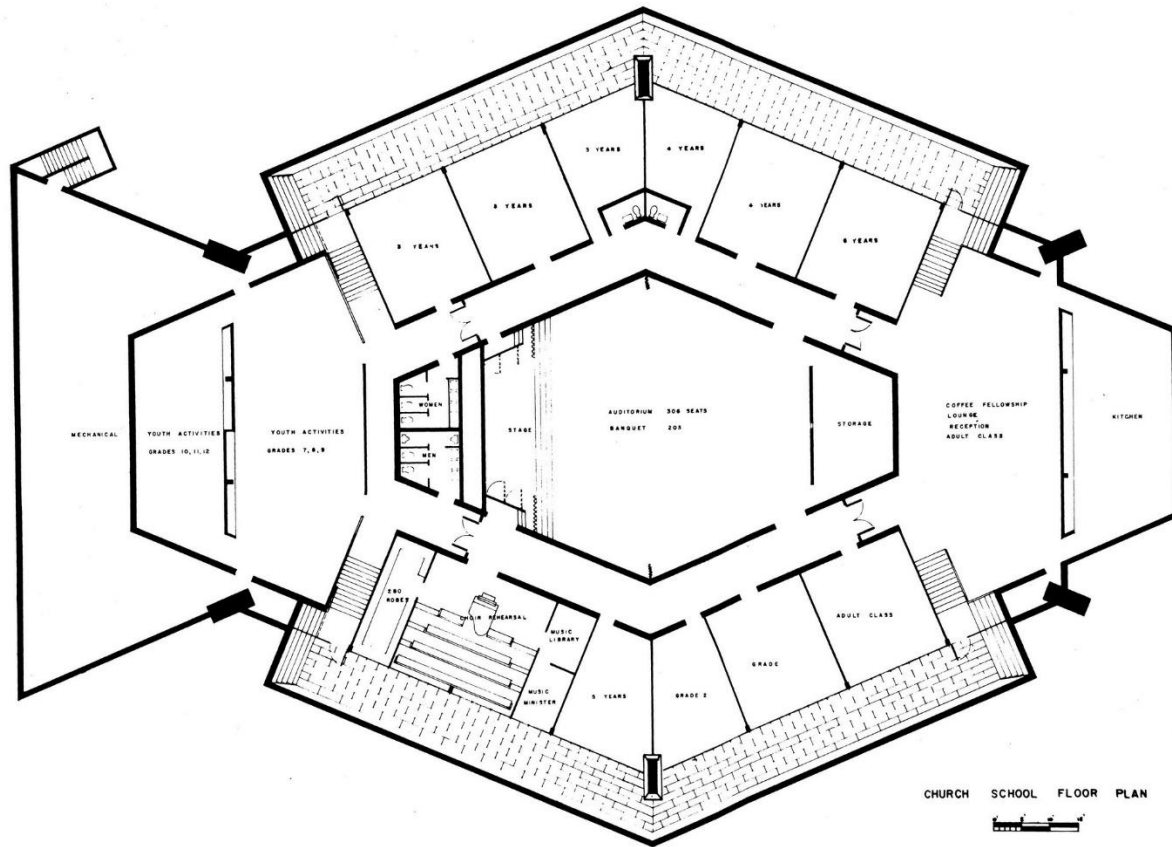


Fig 3.4 – North Christian Church- Plan

Theatrical light sources lend **mystery** to the sanctuary experience. A **hexagonal skylight** at the base of the spire focuses natural light on the communion table, an effect augmented by recessed can lights in the ceiling nearby. Along the sanctuary's perimeter, **indirect natural light** from ambulatory windows reflects angled ceiling surfaces, causing the **roof to appear to float**.

“The primary element to create the right spiritual atmosphere would, of course, be light.”

– Eero Saarinen

Geometric symbolism

More than decoration or ornament, **abstract geometric symbols convey spiritual experience and meaning.** Hexagonal figures represent the Star of David, or Magen David, recognized universally as the **symbol of Judaism**, the **spire** represents for the architect “**a Marvelous symbol of reaching upward to God**” commanding the landscape in its function as axis. The cross at its apex represents **Christianity’s emergence from Judaic origins through Christ’s sacrifice**

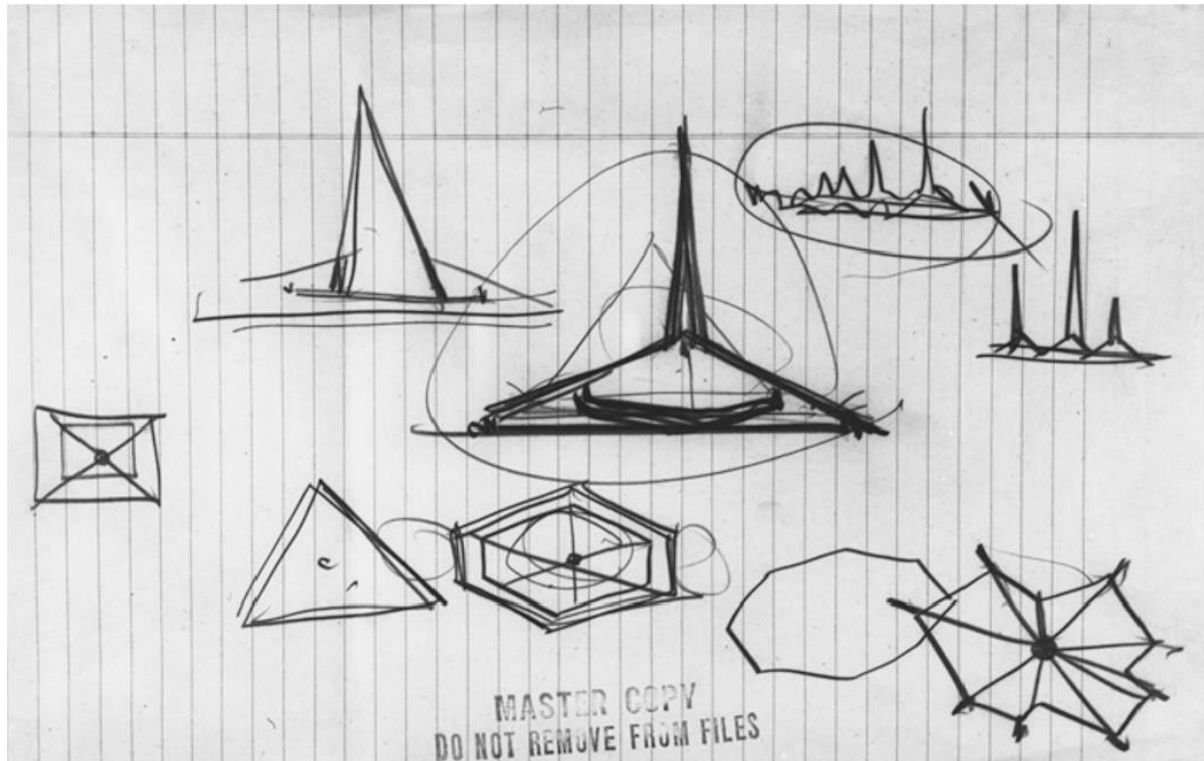


Fig 3.5 – North Christian Church- Concept

Geometric analysis

In section, the spire and roof converge along three equally spaced axes. A **regular hexagon, hexagram** (or Star of David), and **equilateral triangle** are drawn on these axes. Roof lines coincide with two equal sides of a **120° isosceles triangle**.

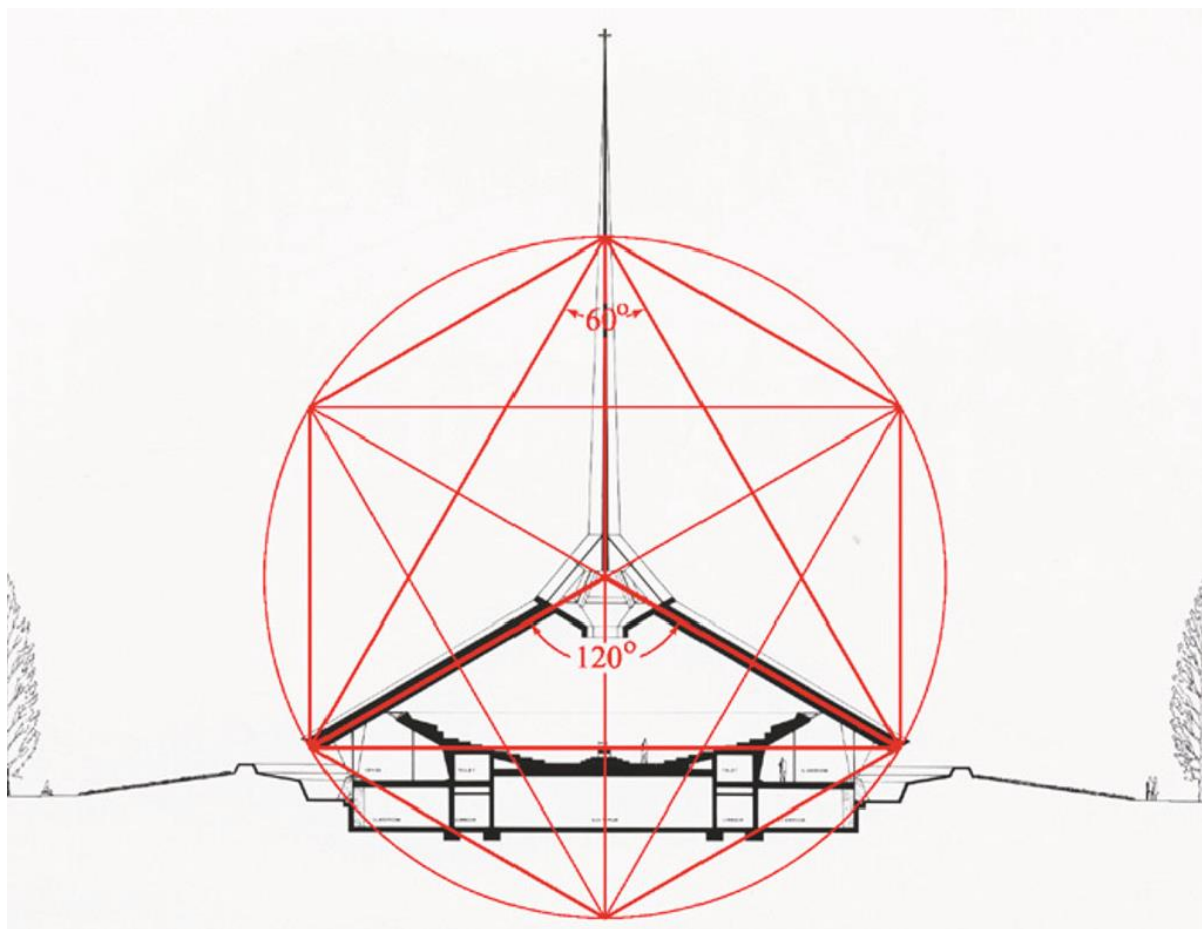


Fig 3.6 – North Christian Church Geomentry-1

a **45° isosceles triangle** is drawn on the same base as the **120° isosceles triangle**. Its apex coincides with the gold-leaf cross at the top of the spire. From the apex is drawn a

circle, that **encloses a regular octagon and an eight-faceted figure composed of two squares**. The **two squares intersect along the plane of the oculus**.

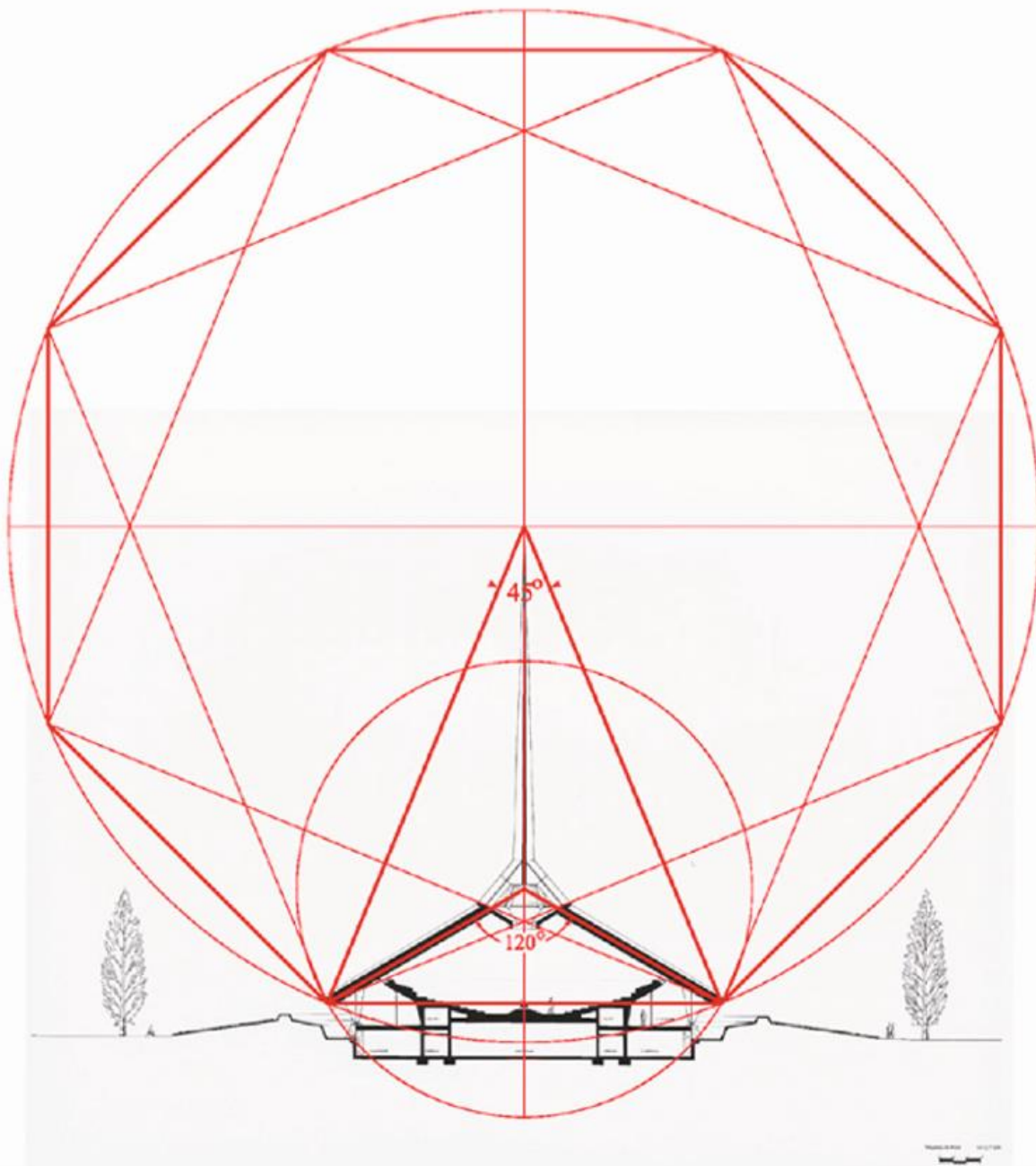


Fig 3.7 – North Christian Church Geomentry-2

Plan

The main level of the church features an **elongated hexagon** that encompasses berm framed moats on the long sides, north and south, and stepped concrete approaches on the short sides, east and west. Just beyond, parallel diagonal lines delineate landscape features and trees. Inside, concentric hexagons locate the building proper and sanctuary floor, **forty-five-degree isosceles triangles** locate the short sides of the hexagon on the east and west.

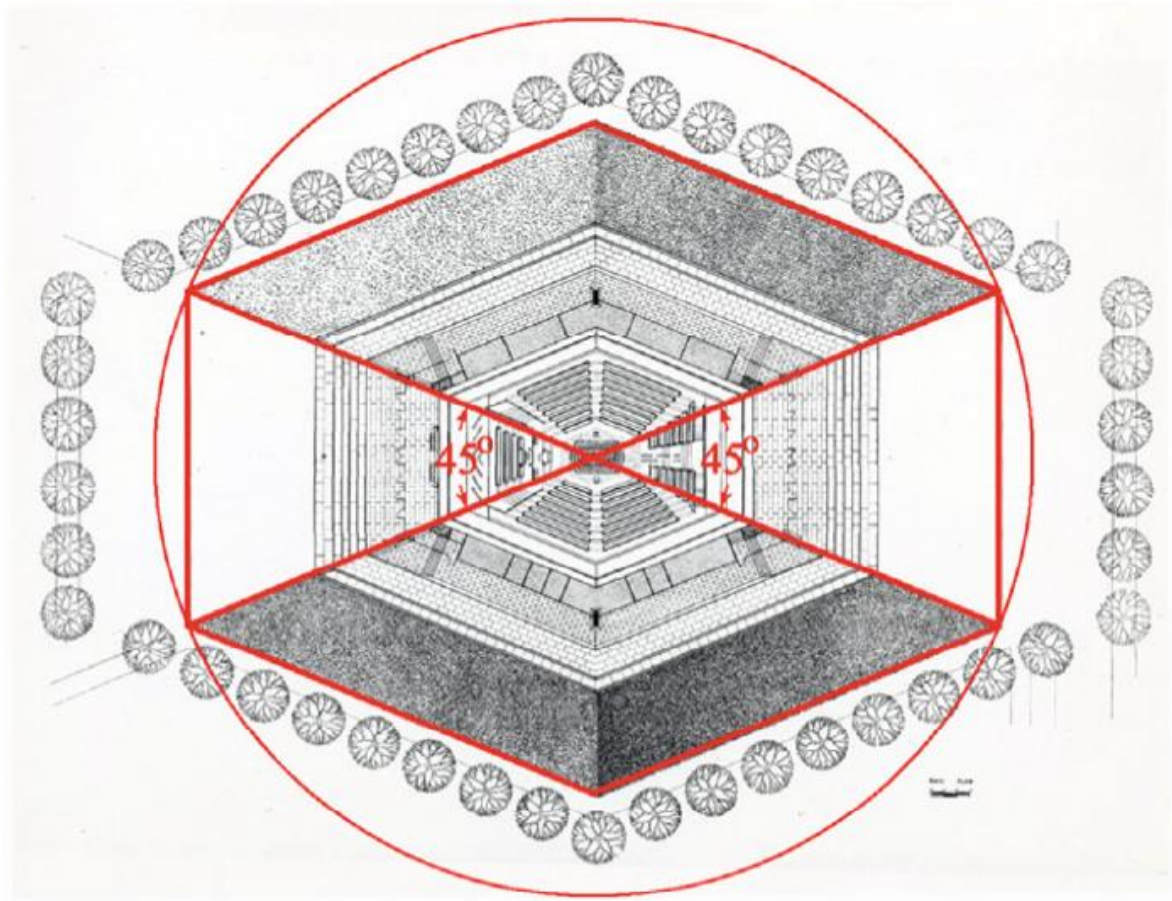


Fig 3.8 – North Christian Church Geometry-3

Three axes, as shown, situate the extent of the hexagon and suggest the **three-dimensional frame of the cube**.

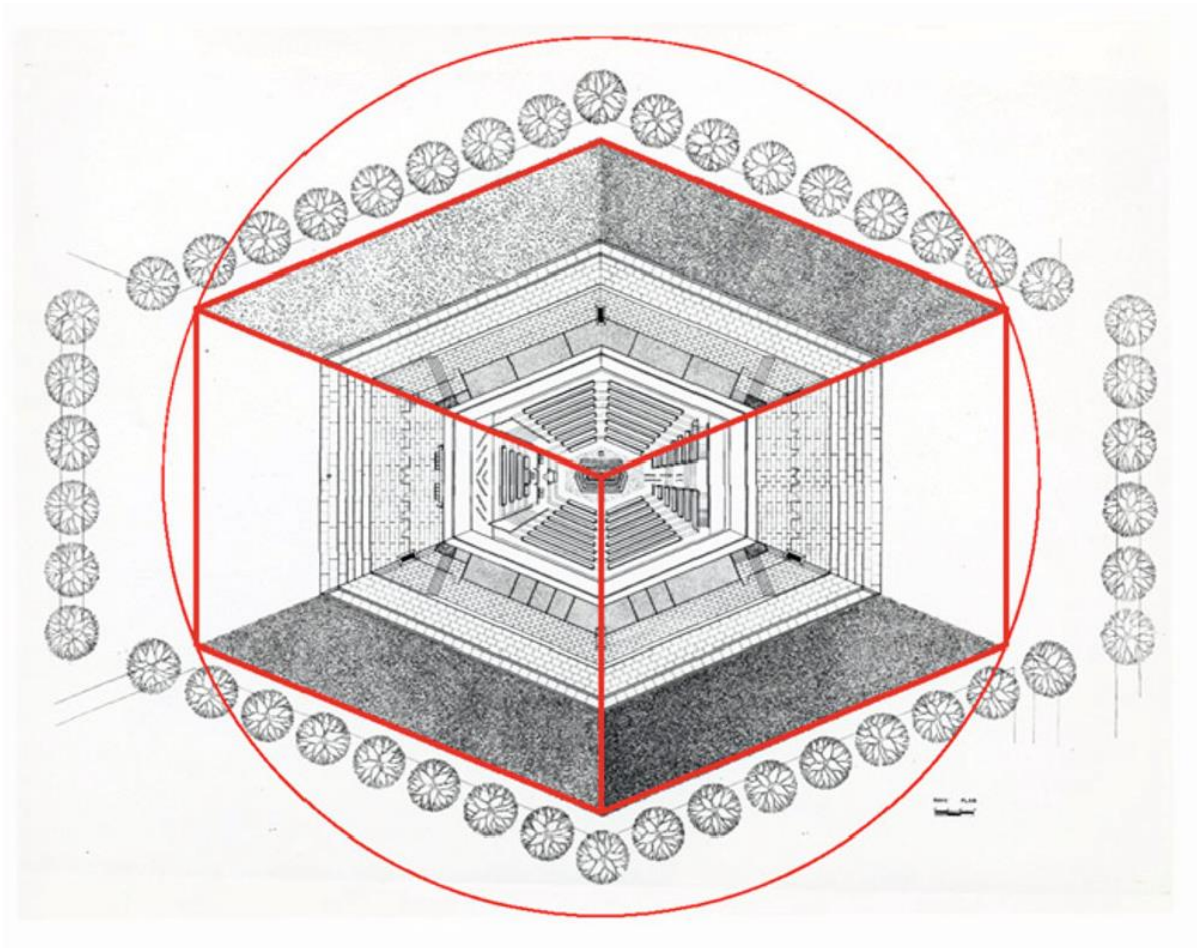


Fig 3.9 – North Christian Church Geomentry-4

The outer hexagonal footprint derives from the root-two proportions of a regular octagon and an inscribed eight-faceted figure composed of two squares. The hexagon's short east-west sides coincide with two edges of the octagon. Its long north-south sides are equal in length to the radius of the octagon's circumscribing circle and follow the edges of the squares

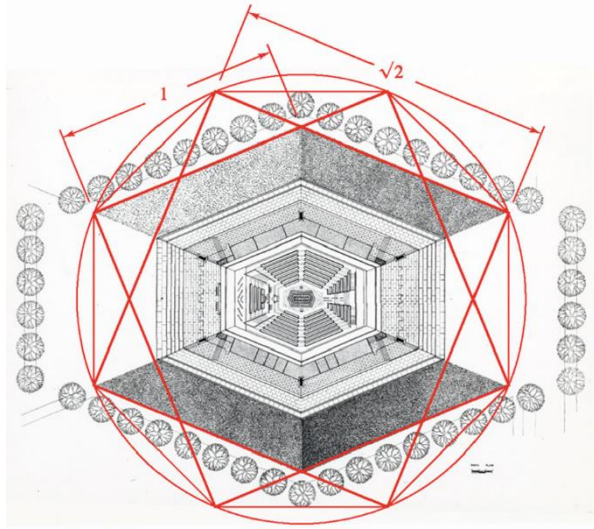


Fig 3.10– North Christian Church Geometry-5

Within the plan, the **outline of the building** proper **repeats and relates proportionally to the outer hexagonal footprint**. Its shape follows a smaller, eight-faceted figure whose circumscribing circle inscribes the original **eight-faceted figure**.

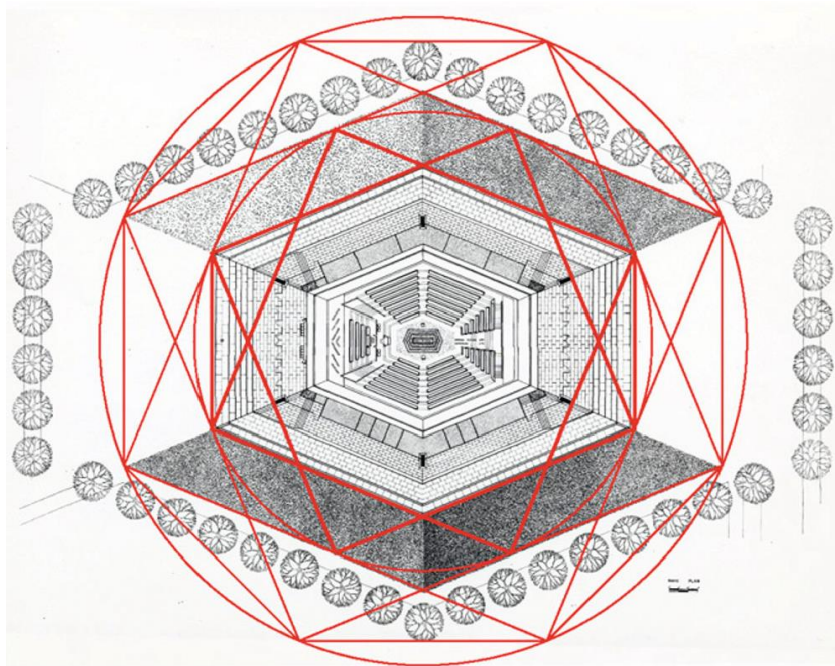


Fig 3.11 – North Christian Church Geometry-6

Landscape

The landscape plan for North Christian Church developed over several years and never materialized fully. But thickets of magnolia trees were planted along the north and south, and dwarf crab-apple trees at the east and west entrances. In the finished plan, **geometric lines** that delineate landscape features on the north and south parallel the long sides of the hexagonal footprint and are tangent to the circle that passes through the points of **intersection of the two major squares**.

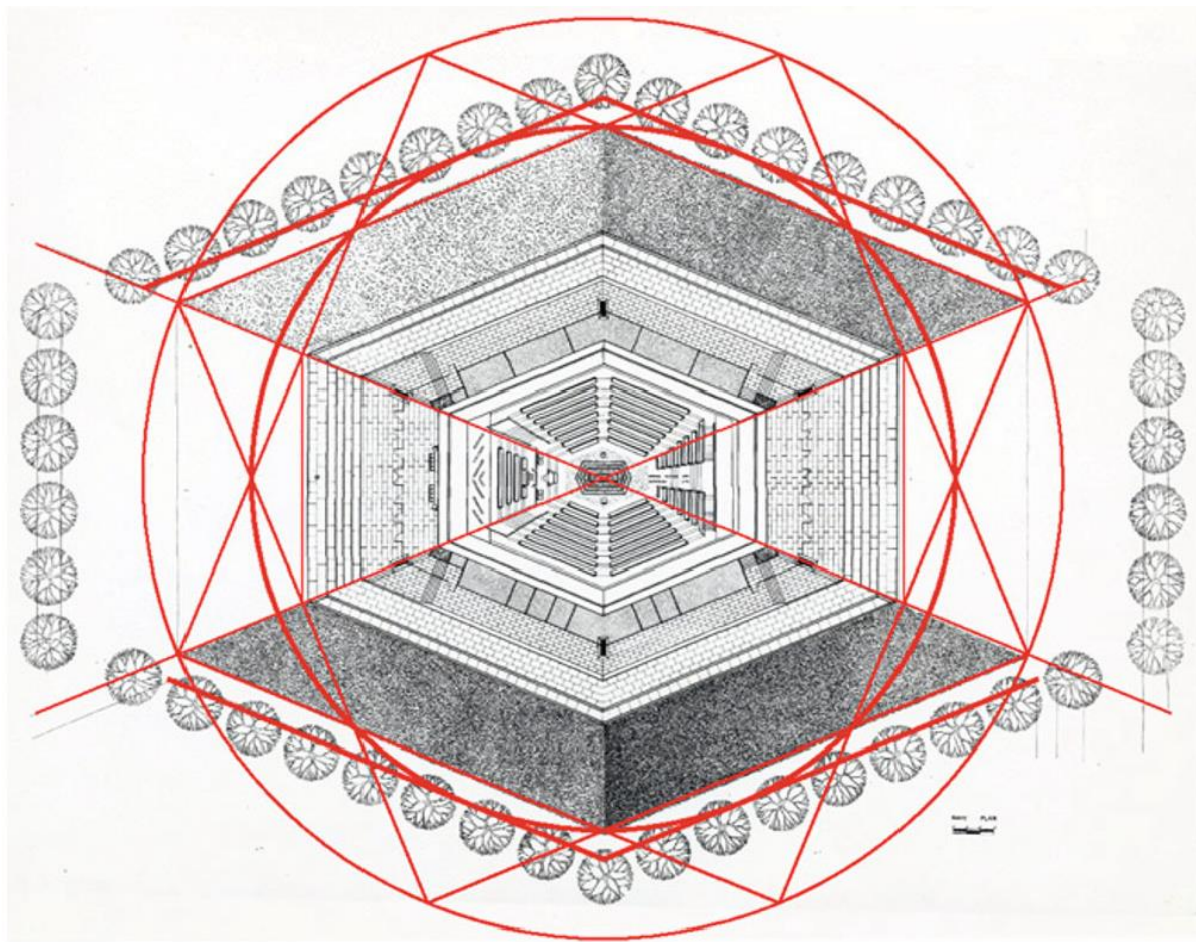


Fig 3.12 – North Christian Church Geomentry-7

It is not certain that Saarinen composed the spaces of North Christian Church by adopting these proportions and techniques. Nor do we know if he merged **hexagon and square to symbolize the Star of David united with the Cross**. Saarinen recognized the merits of geometric proportion, but in unpublished notes warned against adopting a single canon or allowing one's sense of proportion to **"to be frozen by rules and regulations"** or confined to **"divine and indisputable laws."** Good design, he maintained, is an **"integrated package"** that incorporates **"space, use, structure, material, texture, proportions,** and last but not least, **the spirit of our time"**.

Thorncrown Chapel

Hidden in the middle of the forests surrounding Arkansas' Ozark Mountains, Thorncrown Chapel rests amongst the oaks, pines and maples. In the late 1970's retired schoolteacher Jim Reed purchased the property where Thorncrown chapel would be located - originally as a space for his retirement cabin. But, after seeing tourists stop along the highway to view the beauty of the area, his vision changed. He imagined a **non-denominational chapel**, a spiritual place -- one that Jones would later describe as a **"place to think your best thoughts."** Perhaps its **simplicity** is what draws over **2000 daily visitors** –it is architecture that everyone, not just architects, can understand and appreciate.

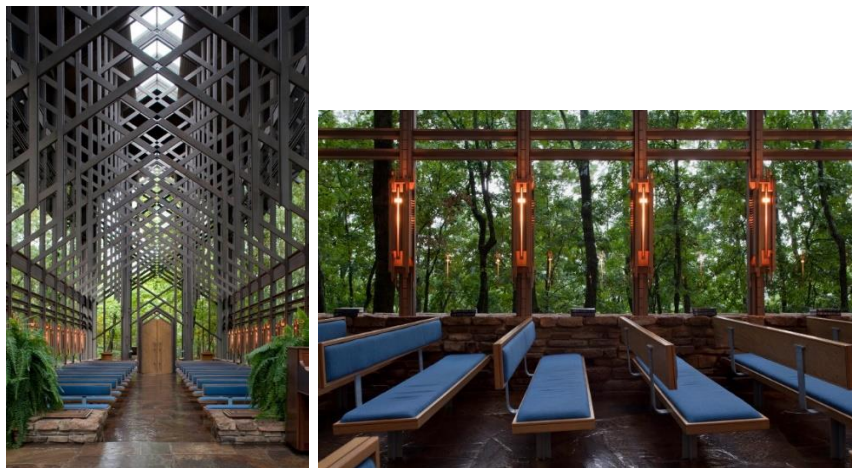


Fig 3.13 – Thorncrown Chapel



Fig 3.14 – Thorncrown Chapel

It is a remarkable **glass** and **wooden** structure, with over **425 glass windows** and a **repeated column and truss structure**, the vertical chapel is like a **"forest within a forest,"** reaching **48 feet high, 60 feet long and a mere 24 feet wide**. A **central skylight** allows **generous portions of light** to spill through onto those below. Custom **lanterns** adorn each column and **at night reflect off the glass – as if they were lit somewhere off in the forest**. Every truss was made of local pine – “no larger than what two men could carry through the woods.” 2x4’s, 2x6’s and 2x12’s were assembled on site and subsequently erected, leaving **minimal site impact**. In fact, the only visible **steel** in the project is the diamond-shaped patterns cantered in each truss.



Fig 3.15 – Thorncrown Chapel-Reinforcement

Chapel in Sierra La Villa

Nestled in the heart of Valleaceron, Almaden, Spain, the Chapel in Valleaceron is a marvel of modern religious architecture. Designed by the Madrid-based firm Sancho-Madrirdejos Architecture Office (SMAO), this masterpiece is more than just a building, a **symphony of light, space, and spirituality**. The Chapel in Valleacerón is a space where people can find peace and connect with their **inner spiritual being**. Inspired by the

undulating **terrain of the hills**, the concept of **‘folding the landscape’** is brought to life, where the Chapel appears to **rise from the ground and fold into a protective shell**.

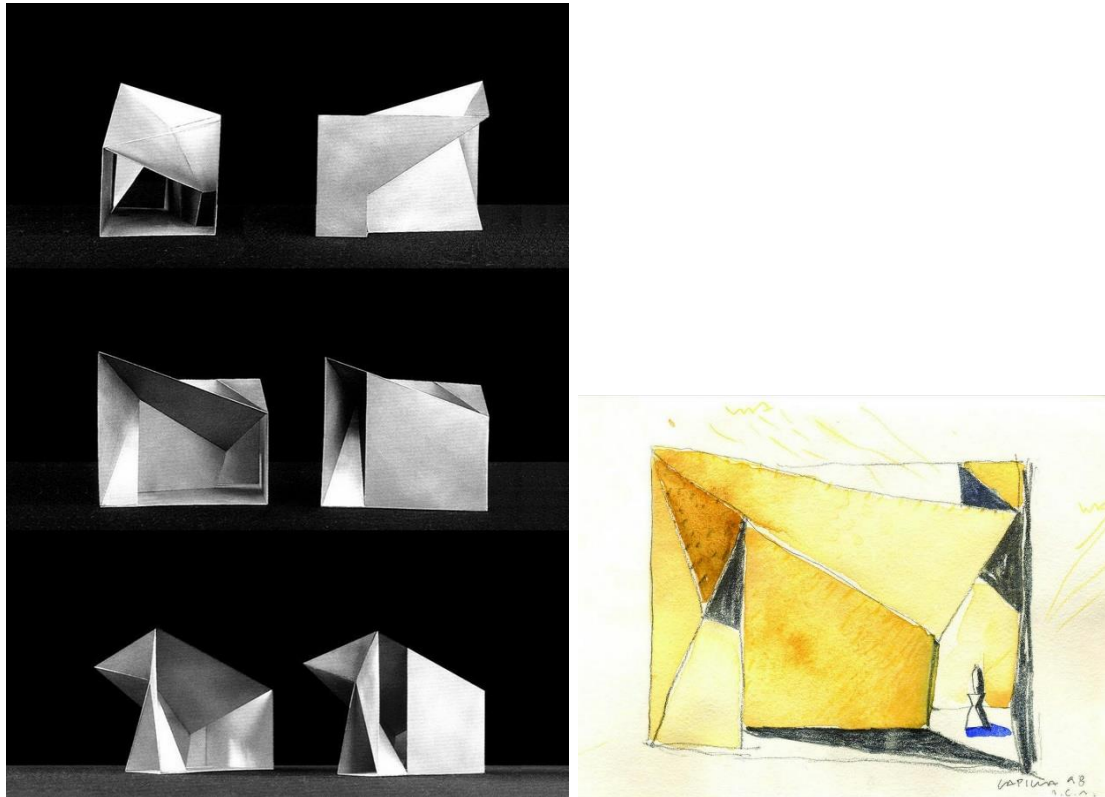


Fig 3.16 – Chapel in Sierra La Villa

Sancho Madridejos developed The Chapel design using a focally tensed **“box-fold”** concept. Consider taking a cube made of paper and manipulating it to create geometric shapes to translate into buildings.

Sancho Madridejos is famous for shaping geometries to create interesting structures. The Chapel is an example of **folded concrete architecture**, where **concrete panels** are folded or curved to create **dynamic and visually striking shapes**. The focally tensed “box-fold” concept features a curved fold in response to various external forces acting on the structure. The curved and folded structure is carefully planned and designed to **withstand external stresses**.



Fig 3.17 – Chapel in Sierra La Villa -Location

The Chapel is situated in a **5000-hectare** rural estate with ancient holm oak trees and truffle cultivation located in the Sierra La Villa mountains of Cuenca, Spain.

The project involves placing and connecting a series of buildings in the landscape, including a **Dwelling, Chapel, Hunting pavilion, and Guard's residence**. Though each building serves a different purpose they share a common design concept, the **“fold”**.

The Chapel is designed in a way that it **seamlessly blends** with the **landscape** being one with it. The chapel is built on a relatively big site, and the building and site ratios were chosen to maximize the Chapel's presence in the landscape. Sitting on a small hill overlooking a valley, the Chapel offers stunning views of cherry trees and crop fields.



Fig 3.18 – Chapel in Sierra La Villa -Plan

The building is oriented to **face east, surrounded by trees and vegetation**. The orientation of the building is slightly of an **east-west axis**, allowing it to capture the **changing light** throughout the day.

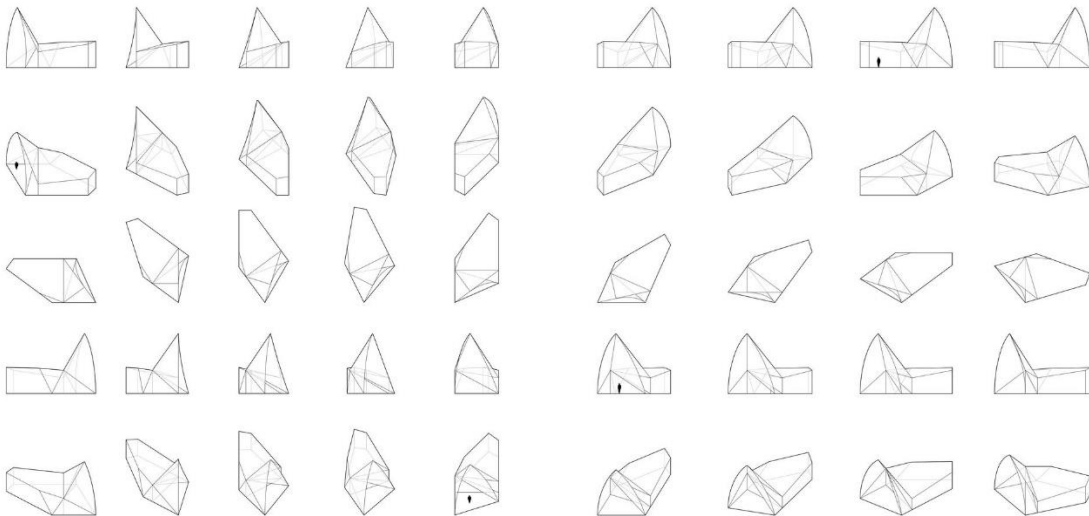


Fig 3.19 – Chapel in Sierra La Villa -Geometry

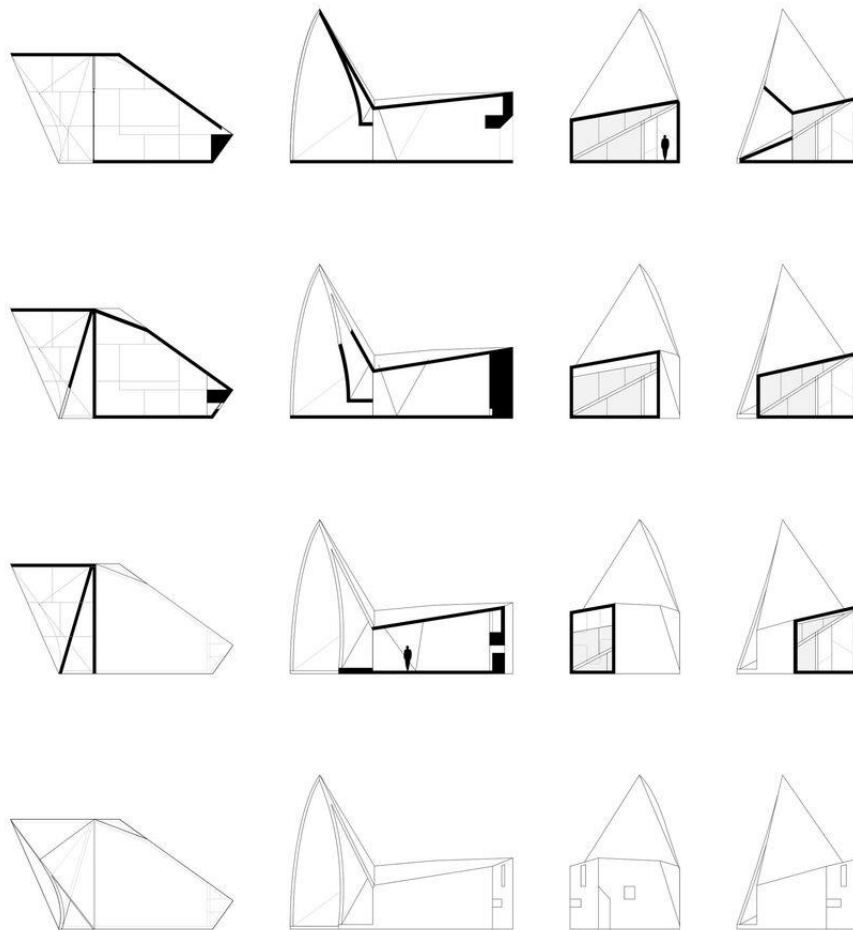


Fig 3.20 – Chapel in Sierra La Villa – Geometry-Section

The Chapel interior features **a single, open space, with a high ceiling**. The interior space of the chapel can be into two:

The Nave which is a long and narrow space that is divided into two aisles by a central walkway.

The Apse is a smaller, more **intimate space** located at the **back** of the chapel.

As you approach the chapel, the entrance can be found on the building's west facade, while the exit is on the east. Inside, the central walkway connects the Nave and the Apse,

creating a harmonious flow through the space. The Western entrance leads the people toward the other end of the structure, which is more **compressed in volume, creating a sense of progression** or **direction** as if **guiding** people through the building.

The **interiors** of the Chapel display **simplicity** and **purity**. The **walls are crafted from concrete while the floor features concrete tiles**. The combination of **white concrete walls** and **floors gives the space a peaceful feel**, and a large window at the end of the chapel beautifully frames the surrounding landscape. The design of the Chapel incorporates a **fold** as a stylistic architectural element. This fold **creates hidden spaces within the building**, adding an **element of surprise** and **discovery** for those exploring the church. The **contrast between the static man-made concrete and the dynamic natural light** is quite striking. The **concrete structure remains unchanged**, while the **interplay of light creates a sense of movement and change**, acting like a **second material**.

On entering the Chapel in Valleacerón, you won't find many religious symbols. Visitors approach the Chapel from the western entrance and the **focal point** is **asymmetric**. The central portion of the church, houses a few symbolic elements of a religious place: **an onyx lamp, a cross, and a picture**. **Except for the lamp, there are no other artificial light sources in the chapel, relying solely on natural light**.

The cross creates openings in the wall that allow light to come through. These openings are strategically placed to allow sunlight into the building. As the sun moves, the **light patterns inside the building change gradually, meaning that the lighting conditions inside the building will not be static**; instead, they will be in a **constant state of transformation**, making the space **visually engaging** and unique at different times.



Fig 3.21– Chapel in Sierra La Villa

The facade is inspired by the surrounding landscape, with the folded concrete panels resembling the folds of the mountains.

The Chapel facade features **folded Golden concrete**, which creates a series of **interlocking triangles** making large glass windows. These windows allow sunlight to enter the chapel, and the **light gets scattered or diffracted**, creating various illuminations at all times of the day. As a result, the **spatial effect** inside the church constantly changes, making it a **visually dynamic** and ever-evolving place.

The materials used in the chapel construction are concrete, steel, and glass.

- Golden Concrete is used for the exterior and interior walls.
- Steel is used for the beams.
- Glass is used for the skylights.

The **golden concrete** used can capture and reflect **different shades of light**, creating **a beautiful effect on the building**.

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Some of the sustainable design strategies implemented in The Chapel include:

- **The concrete structure provides thermal mass**, helping to regulate the interior temperature and reduce energy consumption.
- The building **orientation and the strategic placement of windows allows for natural light** to fill the interior space, reducing the need for artificial lighting.
- Being **located in a naturally ventilated** area reduces the load on artificial air conditioning.
- The use of **locally sourced materials** minimizes transportation costs

Prayer Chambers

San Peregrino Oratory

The project is located in a very consolidated urban sector, on a busy street south of the city of **Parana**. Initially, the place was an undeveloped and depopulated area in which a small temple was erected, with a gabled roof and side tower. Then, as the years progressed, the city grew and so did its immediate surroundings. The initial temple became too small for the demand it had to satisfy, and therefore a larger building is built next to it for that purpose. In a third stage, a hall, classrooms and other facilities were built. Faced with such growth, the small initial temple started to house toilets for the whole complex, degrading its symbolism and history.

the implantation and shape of the San Peregrino Oratory seeks to vindicate and revalue the symbolism and original meaning. That is why it is positioned in the atrium of the first temple. The form of the oratory is an extension towards the front of the form of the original temple with a **roof of two slopes, which seeks to symbolize the growth and presence of the religious community in the neighbourhood.**



Fig 3.23 – San Peregrino Oratory

The roof with two slopes is transformed into one, in order to increase the scale, prioritize the new access and give it a more contemporary image. The original tower is recovered (the sector where the disabled toilet recently worked) and its height is raised, which seeks to allude to the spiritual growth of the community. Inside the oratory, this tower opens onto it by means of **diagonal lintels**, to increase the space for use and integrate the two spatial volumes.



Fig 3.24 – San Peregrino Oratory-Interior-1

The interior space seeks to be a **pause** within the **convulsed rhythm of movements of the environment** and of daily life, for which it was sought to recreate an atmosphere of **calm and peace**. A stripped-down area, where **light** is the **main**

protagonist and those present find seclusion. It is resolved with a shell that completely envelops this space and leaves only a zenith slit for the **entry of natural light, strategically positioned** on the **cross** and **symbolizing spiritual illumination**. The **sunlight** was studied, ensuring that the entry of natural light was given the greatest amount of time, both in hours of the day and in months of the year. In addition to the light, the **rain** also **enters through this opening**, thought of as **inclement weather**, which is always present on the **pilgrim's path** and in front of what the spiritual space of the oratory provides containment. The **materiality** tries to accompany that **symbolism of protection** that the oratory provides, through a **rustic concrete** envelope and a **stone floor** in the space of use, which try to **symbolize a place of refuge** for the pilgrim. The **tower** is materialized in plain white, contrasting with the above.

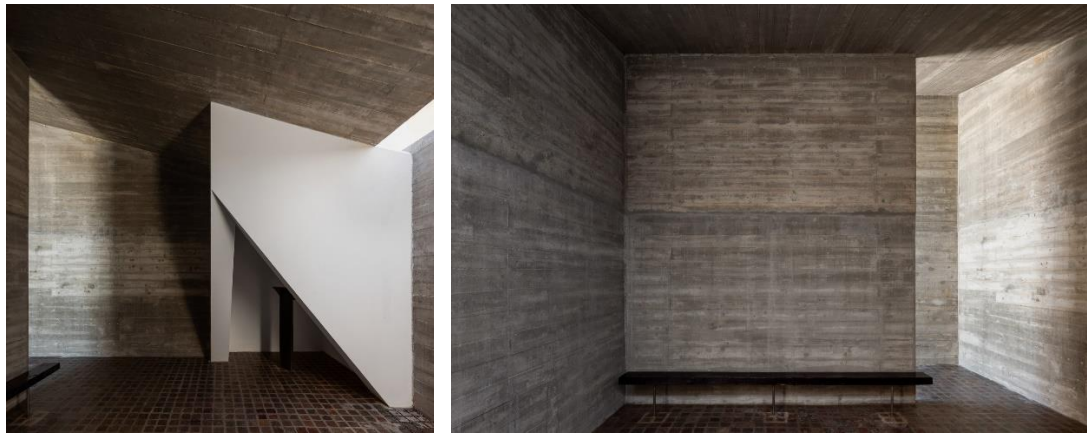


Fig 3.25 – San Peregrino Oratory-Interior-2

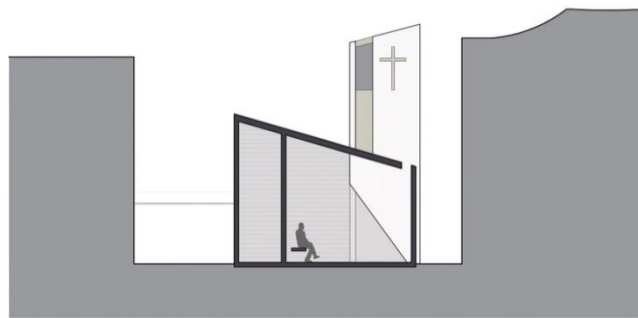
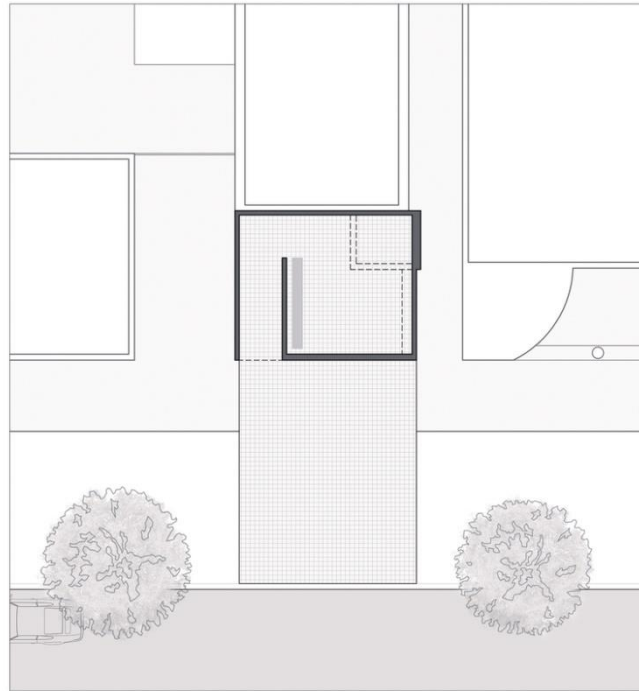


Fig 3.26 – San Peregrino Oratory-Plan&Section

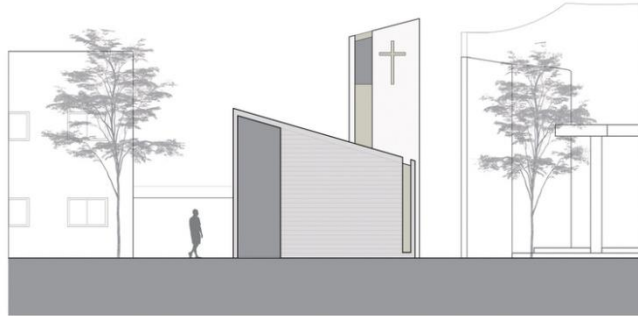


Fig 3.27 – San Peregrino Oratory- Elevation

Providencia Chapel, Mexico

The project is as a space to meditate and pray. Separated a few meters from the existing main chapel, this small oratory seeks to create a place for isolation and reflection.



Fig 3.28 – Providencia Chapel

A concrete structure confines the space on 3 of its sides, floor and roof. One of these sides is barely perforated so that **light, air and rain can enter the interior**. The remaining side, accommodates the **timber doors** that repeat the outline of the interior space indicating access. Thus, if the concrete shell protects, the wooden skin receives and hugs the visitor. Inside, a **second wooden structure finds its place in this space, seeking to make contrast**. This structure is bent to form a bench and the roof, and the altar.



Fig 3.29 – Providencia Chapel- Interior



Fig 3.30 – Providencia Chapel- Wooden Clad

Summary:

The expression of Christian spirituality through architecture is evident in various modern structures designed to create environments for retreat and prayer. **Solitude, silence, and stillness** are essential conditions for such spaces, **offering a contrast to the noise and distractions of the modern world**. Architecture plays a vital role in fostering these qualities, utilizing design elements like **light, colour, texture, proportion, geometry, materials, and acoustics**. Three notable examples - the Church of the Light by Tadao Ando, North Christian Church by Eero Saarinen, and the Chapels in Thorncrown, Sierra La Villa, San Peregrino, and Providencia - showcase diverse approaches in merging architectural design with spiritual contemplation.

CONCLUSION

These architectural marvels demonstrate how thoughtful design can elevate spiritual experiences. Tadao Ando's Church of the Light embrace's **simplicity** and **duality**, creating a space where **light and concrete intersect to evoke a spiritual awareness**. Eero Saarinen's North Christian Church embodies democratic participation in worship through its open structure and **symbolic geometry**. The chapels in

Thorncrown, Sierra La Villa, San Peregrino, and Providencia showcase diverse approaches, **employing light, space, and materials to create sanctuaries for prayer, reflection, and meditation.** In a world filled with **noise and distractions**, these architectural expressions offer havens for individuals to connect with their **inner spiritual selves**, emphasizing the profound relationship between **Christian spirituality** and the spaces designed to nurture it.

3.2 Standards

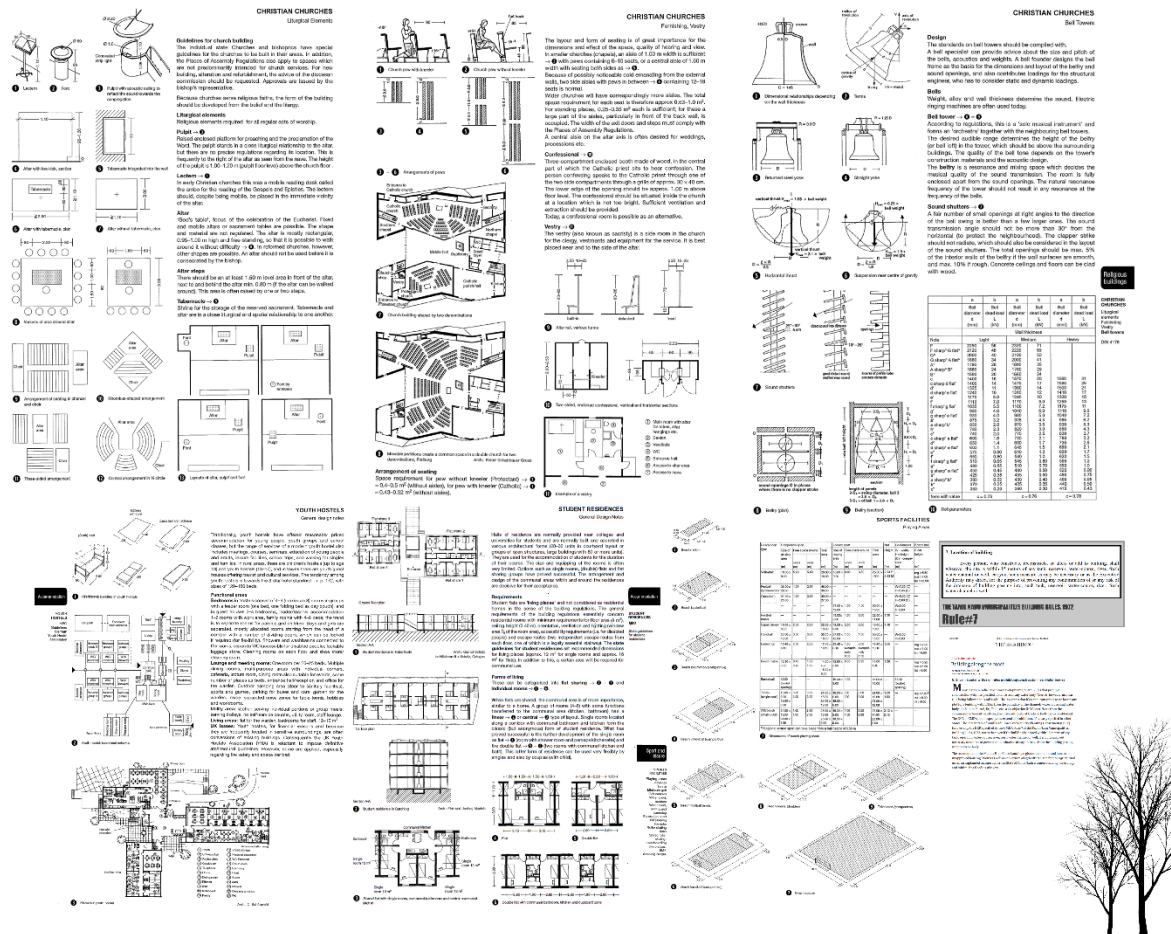


Plate 3.31 – Standards

CHAPTER 4

SITE SELECTION AND ANALYSIS

4.1 Site Selection

The site is selected in **Kanyakumari** district in Tamil Nadu, Because Tamil Nadu is the second Largest State in Christian Population (4,418,331), in Tamil Nadu Kanyakumari District has the Highest Christian population (876,421).

Six Sites where selected and a survey is conducted.

Site #1- Melmidalam - Area: 20.1 ac - 8°12'43"N 77°12'09"E (Beach Front)

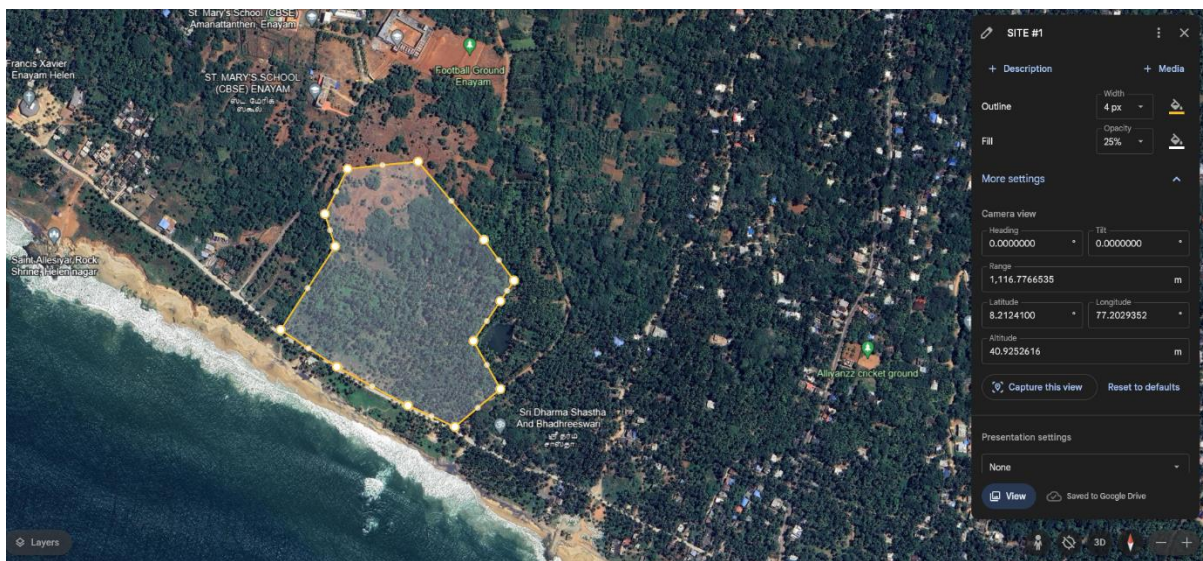


Fig 4.1 – Site Selection | Site #1- Melmidalam

SWOT Analysis

Strength- **Natural Beauty:**

- Presence of natural elements like water bodies, greenery, or scenic views.
- Opportunities for incorporating nature into the architectural design.

Weakness- **The site is closer to educational institutions**

Opportunities- **Public Spaces and Recreation:**

- Creating public spaces that enhance community interaction.
- Opportunities for recreational facilities or green spaces.

Treats- **Natural Disasters:**

- Vulnerability to natural disasters such as heavy Rain
- During heavy rain the natural flow of water towards the sea may cause damage to the roads due to that the accessibility to the site is affected

Site #2- Muhilankudyuppu - Area: 31.3 ac - 8°05'07"N 77°30'31"E (Beach Front)



Fig 4.2 – Site Selection | Site #2- Muhilankudyuppu

SWOT Analysis

Strength- **Natural Beauty:**

- Presence of natural elements like, greenery, or scenic views.
- Opportunities for incorporating nature into the architectural design.
- Site has pine trees

Weakness- **The site is closer to Agricultural lands and the access roads are Smaller**

Opportunities- **Public Spaces and Recreation:**

- Creating public spaces that enhance community interaction.
- Opportunities for recreational facilities or green spaces.

Treats- **Natural Disasters:**

- Vulnerability to natural disasters such as heavy Rain
- During heavy rain the natural flow of water towards the sea may cause damage to the roads due to that the accessibility to the site is affected

Site #3- Periyakadu - Area: 28.9 ac - 8°06'40"N 77°23'41"E (Beach Front)

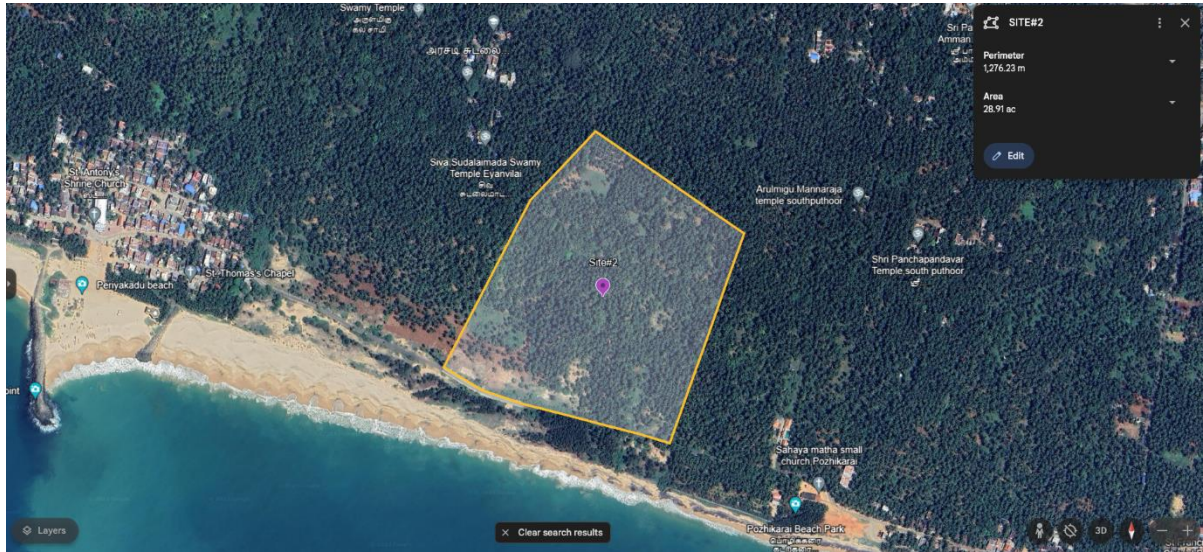


Fig 4.3 – Site Selection | Site #3- Periyakadu

SWOT Analysis

Strength- **Natural Beauty:**

- Presence of natural elements like, greenery, or scenic views.
- Opportunities for incorporating nature into the architectural design.
- Closer to the site has pine trees

Weakness- The site has 6 feet road, and has no street lights and electricity connectivity

Opportunities- **Public Spaces and Recreation:**

- Creating public spaces that enhance community interaction.
- Opportunities for recreational facilities or green spaces.

Closer to the Cristian Fishing Community people

Treats- **Natural Disasters:**

- Vulnerability to natural disasters such as heavy Rain

- During heavy rain the natural flow of water towards the sea may cause damage to the roads due to that the accessibility to the site is affected

Site #4- Netta, Near Chittar Lake Nedumangad Hwy - Area: 44.4 ac - 8°26'41"N 77°13'57"E (Lake Front)

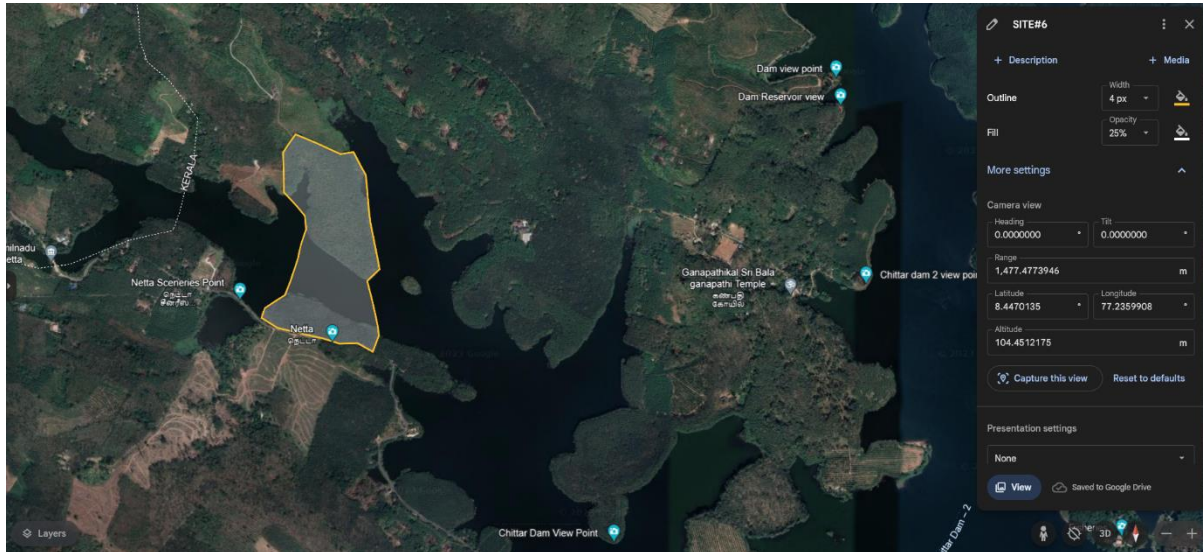


Fig 4.4 – Site Selection | Site #4- Netta

SWOT Analysis

Strength- **Natural Beauty:**

- Presence of natural elements like water bodies, greenery, or scenic views.
- Opportunities for incorporating nature into the architectural design.
- Has a possibility to have an engaging water activity or space expressing Christianity
- Site has rubber tree plantations

Weakness- The distance between the two pieces of lands divided by the lake is 145m approx.

Opportunities- **Public Spaces and Recreation:**

- Creating public spaces that enhance community interaction.
- Opportunities for recreational facilities or green spaces.

Closer to Kerala

- Creates opportunities for the Kerala people to get benefited

Treats- **Natural Disasters:**

- Vulnerability to natural disasters such as heavy Rain
- During heavy rain the natural flow of water towards the lake cause damage to the roads due to that the accessibility to the site is affected

Site #5- Alancholai - Area: 22.2 ac - 8°25'34"N 77°14'35"E (Lake Front)



Fig 4.5 – Site Selection | Site #5- Alancholai

SWOT Analysis

Strength- **Natural Beauty:**

- Presence of natural elements like greenery, or scenic views.
- Opportunities for incorporating nature into the architectural design.
- Site has rubber tree plantations

Weakness- **The Site has a contour landscape**

Opportunities- **Public Spaces and Recreation:**

- Creating public spaces that enhance community interaction.
- Opportunities for recreational facilities or green spaces.

Closer to Kerala

- Creates opportunities for the Kerala people to get benefited

Treats- **Natural Disasters:**

- Vulnerability to natural disasters such as heavy Rain and land slide.
- During heavy rain the natural flow of water towards the lake cause damage to the roads due to that the accessibility to the site is affected and also cause landslides due to the contour in the site.

Site #6- Mancode - Area: 19.1 ac - 8°25'12"N 77°13'08"E



Fig 4.6 – Site Selection | Site #6- Mancode

SWOT Analysis

Strength- **Natural Beauty:**

- Presence of natural elements like, greenery, or scenic views.
- Opportunities for incorporating nature into the architectural design.
- Site has rubber tree plantations

Weakness- **The access roads are smaller and has no direct connectivity to major roads and The Site has a contour landscape.**

Opportunities- **Public Spaces and Recreation:**

- Creating public spaces that enhance community interaction.
- Opportunities for recreational facilities or green spaces.

Treats- Natural Disasters:

- Vulnerability to natural disasters such as heavy Rain and land slide.
- During heavy rain the accessibility to the site is affected and also cause landslides due to the contour in the site.

4.2 Site Justification:

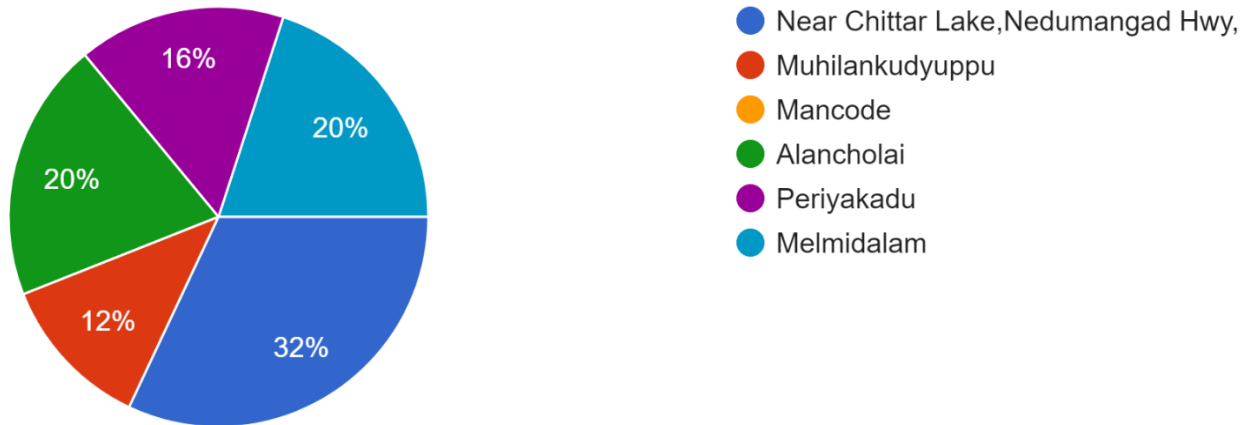


Fig 4.7 – Site Selection | Survey

The survey resulted in 32% of local Christian people in Kanyakumari selected the **Site #4- Near Chittar Lake Nedumangad Hwy, Alancholai - Area: 44.4 ac - 8°26'41"N 77°13'57"E (Lake Front)**

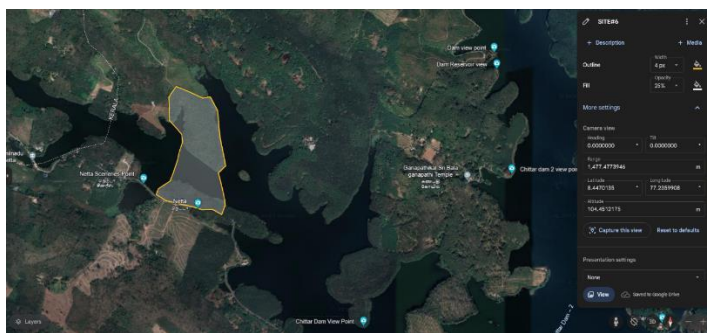


Fig 4.8 – Site #4- Netta

4.3 Site Analysis:

SITE ANALYSIS

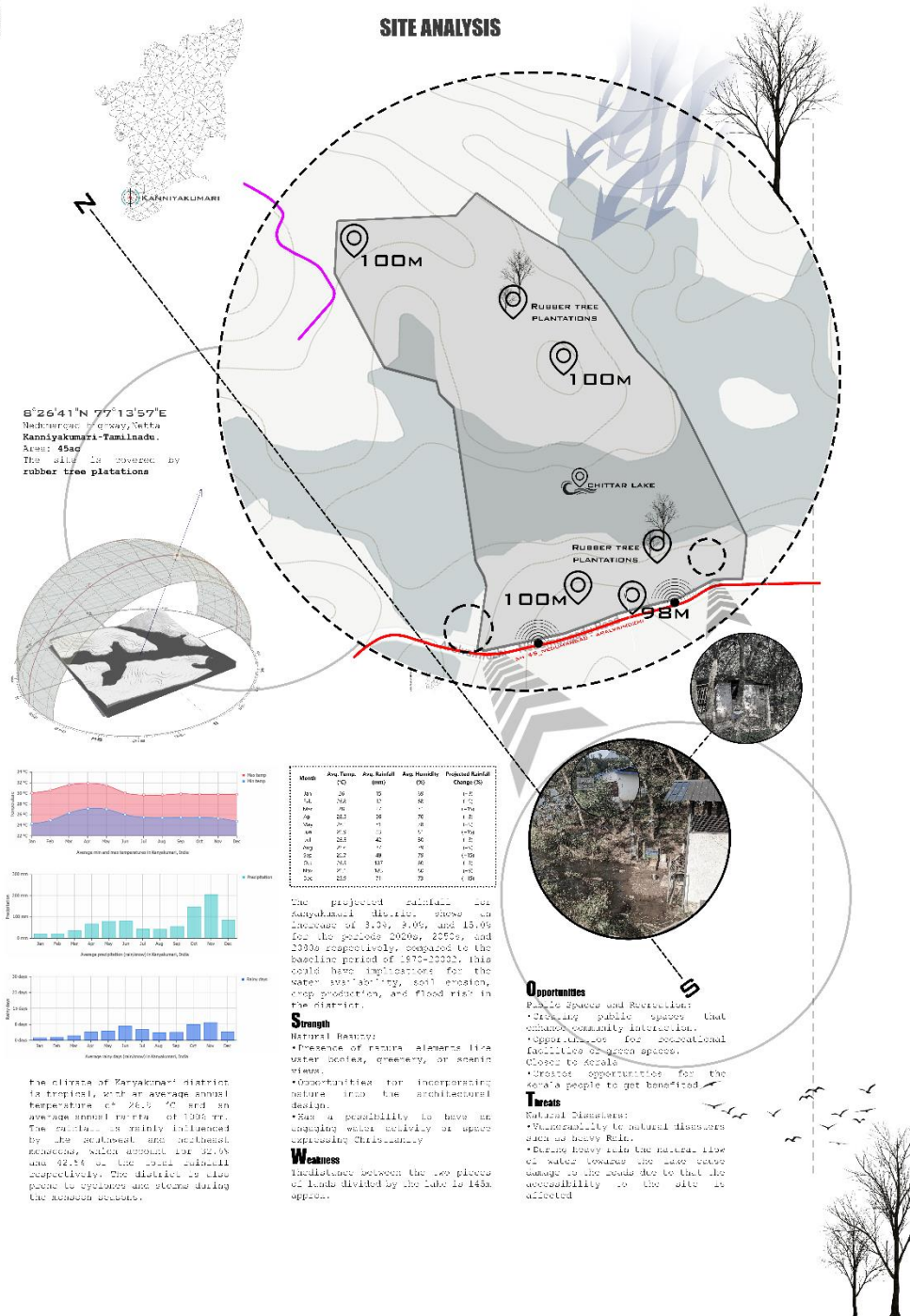


Plate 4.1 – Site Analysis -1

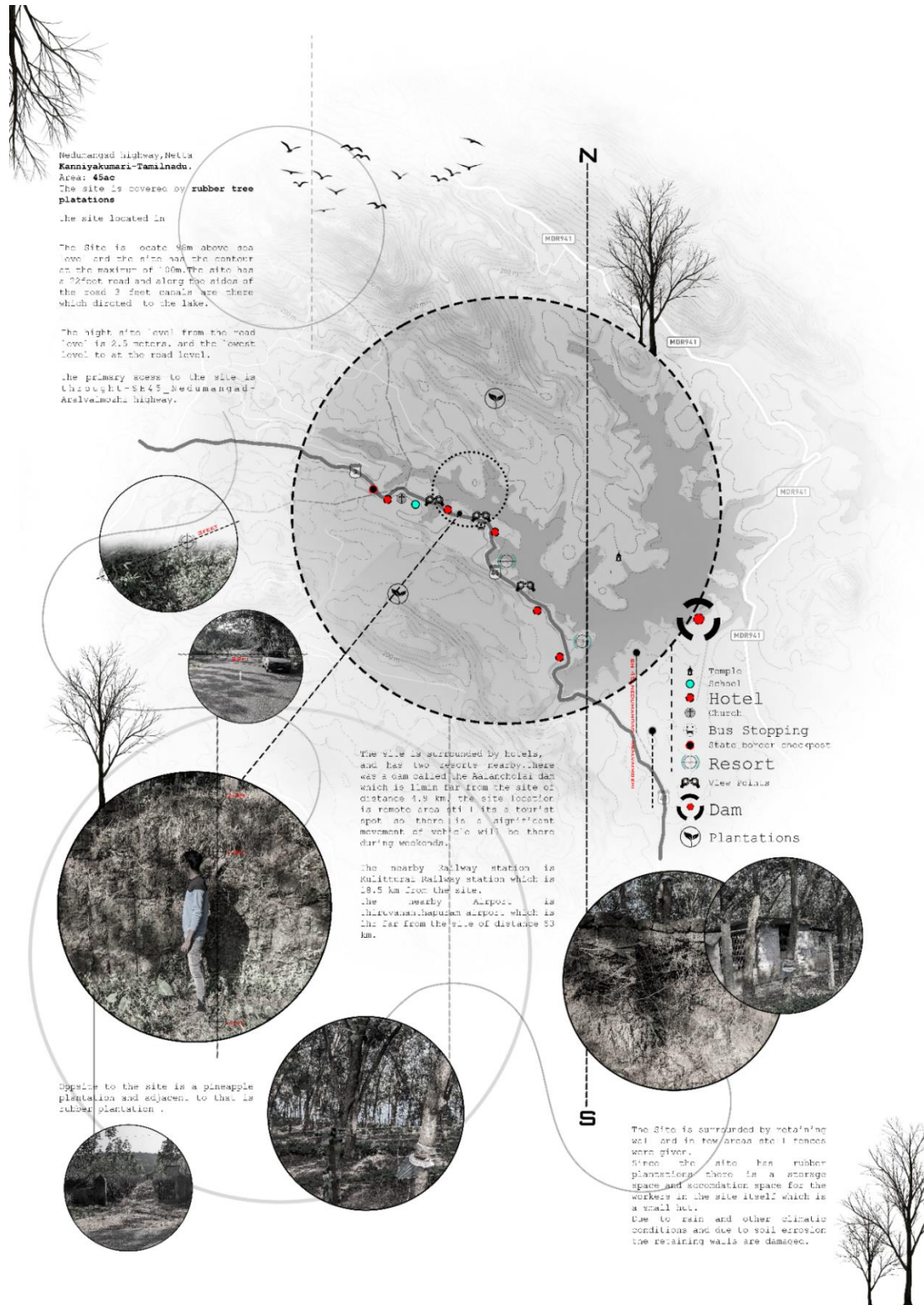


Plate 4.2 – Site Analysis -2

CHAPTER 5

ARCHITECTURAL DESIGN

5.1 Design Program and Spatial requirements

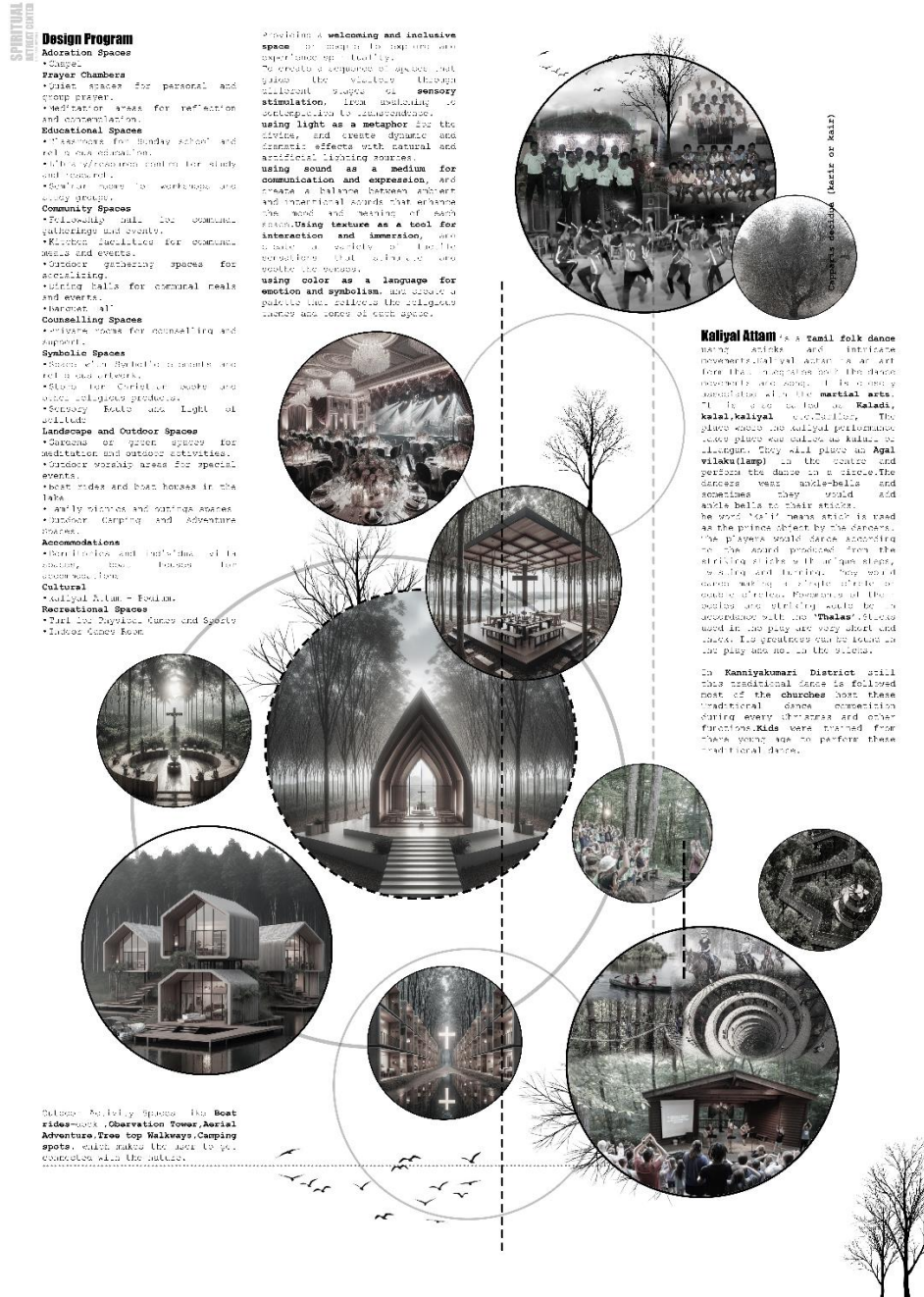


Plate 5.1 – Design Program

ZONE	PROGRAM	SPACES	PEOPLE QUANTITY	PER PERSON AREA(sq.m)	NO.UNITS	TOTAL AREA(sq.m)	
PUBLIC	ADORATION	Adoration Chapel	1350	2	1	2700	
		Fellowship Hall	1000	3	1	3000	
		Restroom	40	1.5	2	120	
		Storage	20	1	2	40	
		Room	10	2	2	40	
	COMMUNITY KITCHEN	Preparation Area	50	2	1	100	
		Storage	20	1	1	20	
	DINING	Dining Hall	100	1.5	1	150	
		Restroom	10	1.5	2	30	
		Outdoor Tensile.stc	100	1.5	1	150	
		Washroom	20	1.5	1	30	
	SYMBOLIC	Sensory Route			1	1500	
		Retreat Dome	1000	2.4	1	2400	
	EDUCATION	Class room	60	2	5	600	
		Workshop	60	3	2	360	
Library		100	2	1	200		
Restroom		15	1.5	2	45		
PRIVATE	SPIRITUAL	Prayer Chambers	2	3	10	60	
	ACCOMDATION	Dormitory	300	3	2	1800	
		Restroom	20	1.5	4	120	
		Laundry	10	1	2	20	
		Kitchen	20	2	2	80	
		Dining	20	1.5	2	60	
OUTDOOR - LANDSCAPE							
		Restroom	20	1.5	6	180	
		Boat Dock			2	200	
	EDUCATION	OAT	50	1	1	50	
	CULTURE	Kaliyal Podium	20	2.5	2	100	
		Kiosk	2	2	5	20	
ADMIN		Office	10	2.5	1	25	
		Restroom	4	1.5	2	12	
		Waiting Lounge	30	1	1	30	
		Private Rooms	4	2.5	4	40	
GALLERY			1300	2.5	1	3250	
RECREATIONAL	Turf				1	462	
		Storage	20	1	1	20	
		Restroom	5	1.5	2	15	
		Reception			1	20	
					TOTAL(Sq.m)	21049	

Plate 5.2 – Area Statement

5.2 Design Ideas

Site

Topography

The selected site has contours with the maximum height of 100m from sea level, which is 2.5m from the road level.

And the site is covered by Rubber trees, since the site has natural contours, it can be utilized in different way in design.

The contour as a wind barrier as a visual screen as a sound barrier as a functional space.

The existing contours can be made to act as a natural barrier to highly providing wind and help return a calmer environment on the other end of the contour.

Contours can prove to be especially useful as privacy screens due to the level differences. Due to the richness of the contour, there are excellent sound barriers. They help screen the audio from one side of the contour so it doesn't travel through to the other side.

There are some contour accentuation techniques that can be used in contours to enhance the contours.

Cut and Fill

This involves the process of cutting the ground to level it and use the excavated soil to fill it more.

Excavation and Grading

Grading is basically the method of sculpting the land to fit the needs of the current requirements. This is done for the following reasons:

To ensure proper drainage system can be put into place.

To make sure that the zoning and circulation requirements and needs are taken care of.

To protect from stormwater runoff or soil erosion.

To create a base for planting vegetation or even improving the aesthetic qualities of the site.

Retaining Structures

These structures, often made of wood, stone or pre-cast steel or sometimes even vegetation, are used to retain the earth. These are situated at areas where there is a abrupt change in ground level.

Providing bridges and decks

We can do about accentuating the landscape. Bridges and decks have both function and aesthetic purposes. They are often situated overlooking a fantastic view from the contoured landscape height. Bridges help connect the ground plane to another from a height.

Working with slopes:

Use of slope for protection

Imposed structures can be used to hug the slope.

Plant the structures on a platform. Build structures to stand completely free.

Site Zoning

Based on the site analysis the site has been divided into two zones: Private Zone and Public Zone based on the site orientation and design program.

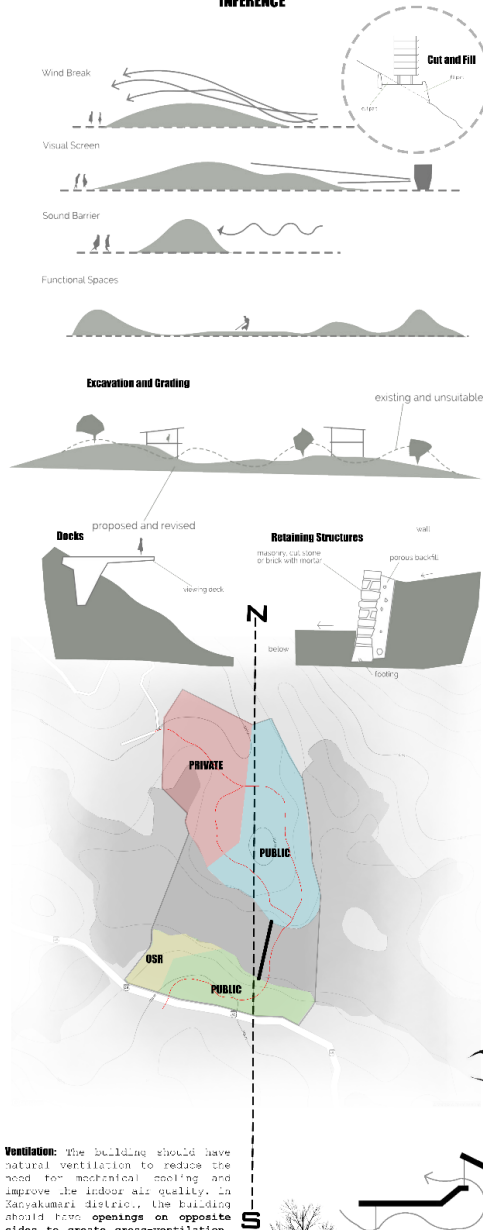
Climate

Based on the bio-climate analysis.

Orientation: The building should be oriented to optimize the exposure to the sun, the wind, and the views. In Kanyakumari, the building should face the south or the east to receive maximum daylight and ventilation.

Shading: The building should have adequate shading devices to prevent overheating glare in Kanyakumari district, the building should have overhangs, louvers, or vegetation to block the direct solar radiation.

INFERENCE



Ventilation: The building should have natural ventilation to reduce the need for mechanical cooling and improve the indoor air quality. In Kanyakumari district, the building should have openings on opposite sides to create cross-ventilation, or use stack effect to draw air from the lower levels to the upper levels.

Insulation: The building should have appropriate insulation to reduce the heat transfer and maintain a comfortable indoor temperature. In Kanyakumari district, the building should have a high thermal mass to store heat during the day and release it at night, or use lightweight materials to reflect heat and avoid thermal bridges.

Design ideas from case study

Based on the comparative Analysis of case studies, there are few ideas that can be used in the design.

Architectural Design:

Circular plan inspired by Jambh Christian Center, symbolizing unity and inclusivity.

Central courtyard reminiscent of Christian Life Center, providing natural light and ventilation.

Zoning inspired by Jerusalem Retreat Center, creating dedicated spaces for worship, reflection, and communal activities.

Architectural evolution reminiscent of St. George Forane Church, incorporating elements of various styles to represent the richness of history and spirituality.

Blend of Western and Indian architectural styles inspired by St. Antony Forane Syro Malabar Church, creating a unique and culturally diverse aesthetic.

Materials:

Combination of indigenous materials, recycled cedar wood, and teak wood to reflect sustainability and cultural richness.

Gold foil and precious stones incorporated for symbolic and spiritual significance.

Steel trusses used for structural integrity, connecting with the circular plan.

Functionality and Purpose:

Multi-functional spaces catering to worship, spiritual retreats, education, and historical exhibitions.

Emphasis on regenerative design, similar to the Christian Life Center, with programs addressing community needs and environmental sustainability.

Cultural and Spiritual Elements:

Inclusion of iconic symbols, such as a large cross at the entrance, similar to Jambh Christian Center. Incorporation of spiritual themes, devotional spaces, and religious symbols inspired by Jerusalem Retreat Center and St. Antony Forane Syro Malabar Church. Historical significance integrated into the design, paying homage to the St. George Forane Church.

Sustainability and Environmental Considerations:

Green roof implementation for energy efficiency and aesthetic appeal, inspired by Jambh Christian Center.

Use of recycled materials and energy-efficient fixtures in line with the Christian Life Center's sustainable approach.

Integration with the natural surroundings, drawing inspiration from the eco-friendly atmosphere of Jerusalem Retreat Center.

Plate 5.3 – Design Ideas

5.3 Detailed Drawings

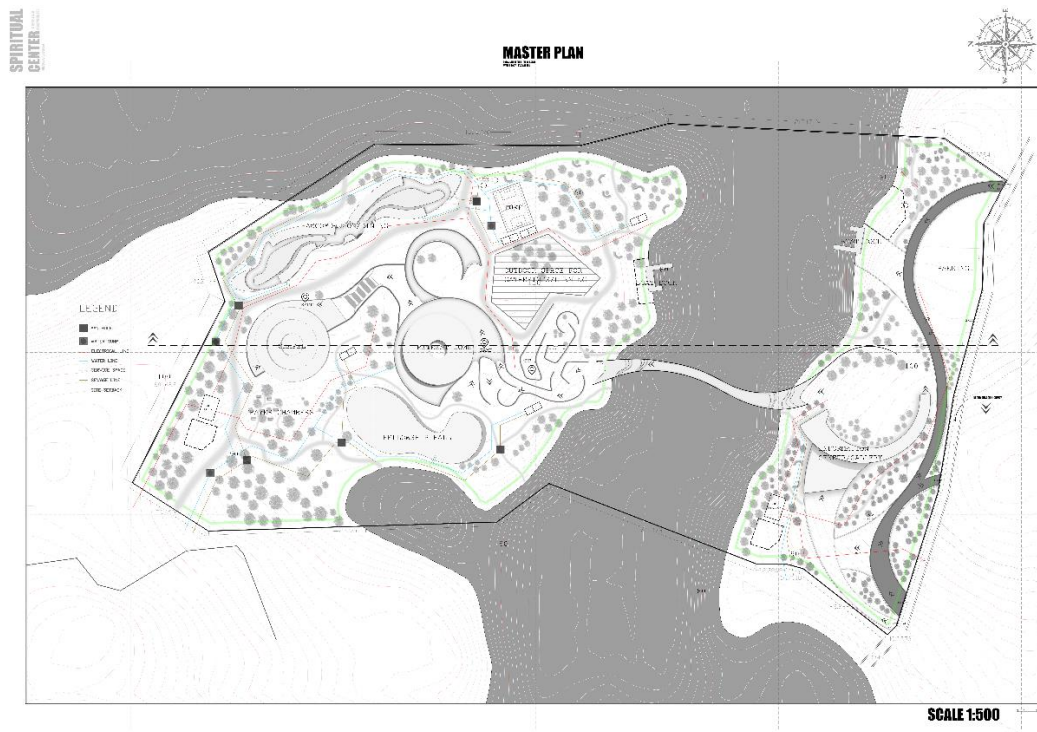


Plate 5.4 – Master Plan

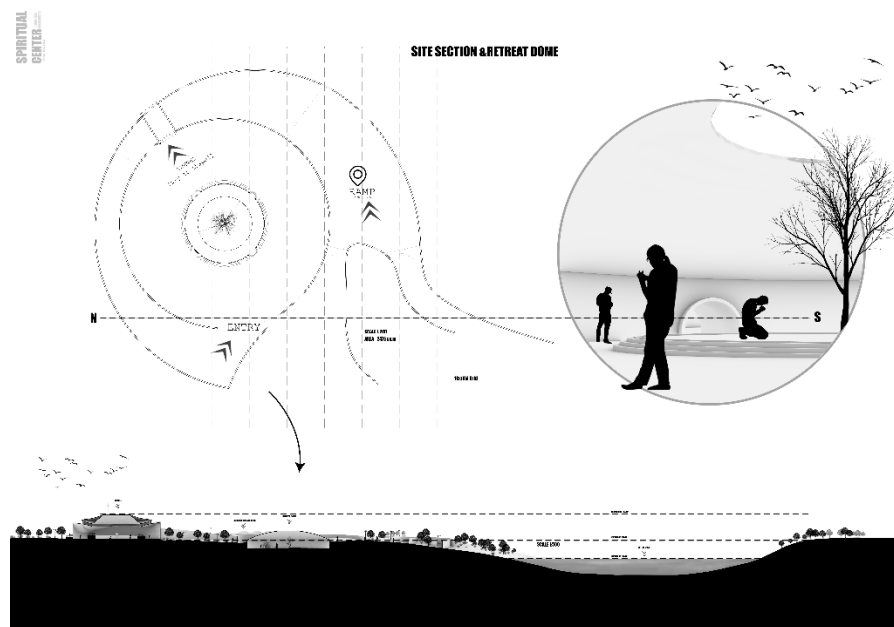


Plate 5.5 – Retreat Dome , Site Section

The Information center is the first
 block in the spiritual center where
 the visitors enters first, since its
 a spiritual center dedicated for the
 CSI kanniyakumari diocese, churches
 the spiritual center has a huge
 gallery showing the history and the
 deeds of CSI churches and the CSI
 kanniyakumari diocese

When some one enters the center to
 show a calm and gentle atmosphere.
 the gallery leads to a passage with
 the ramp merges with the land with
 lighting from one direction showing
 the contrast of light and darkness
 the way leads to the plaza.

INFORMATION CENTER
 SCALE 1:200

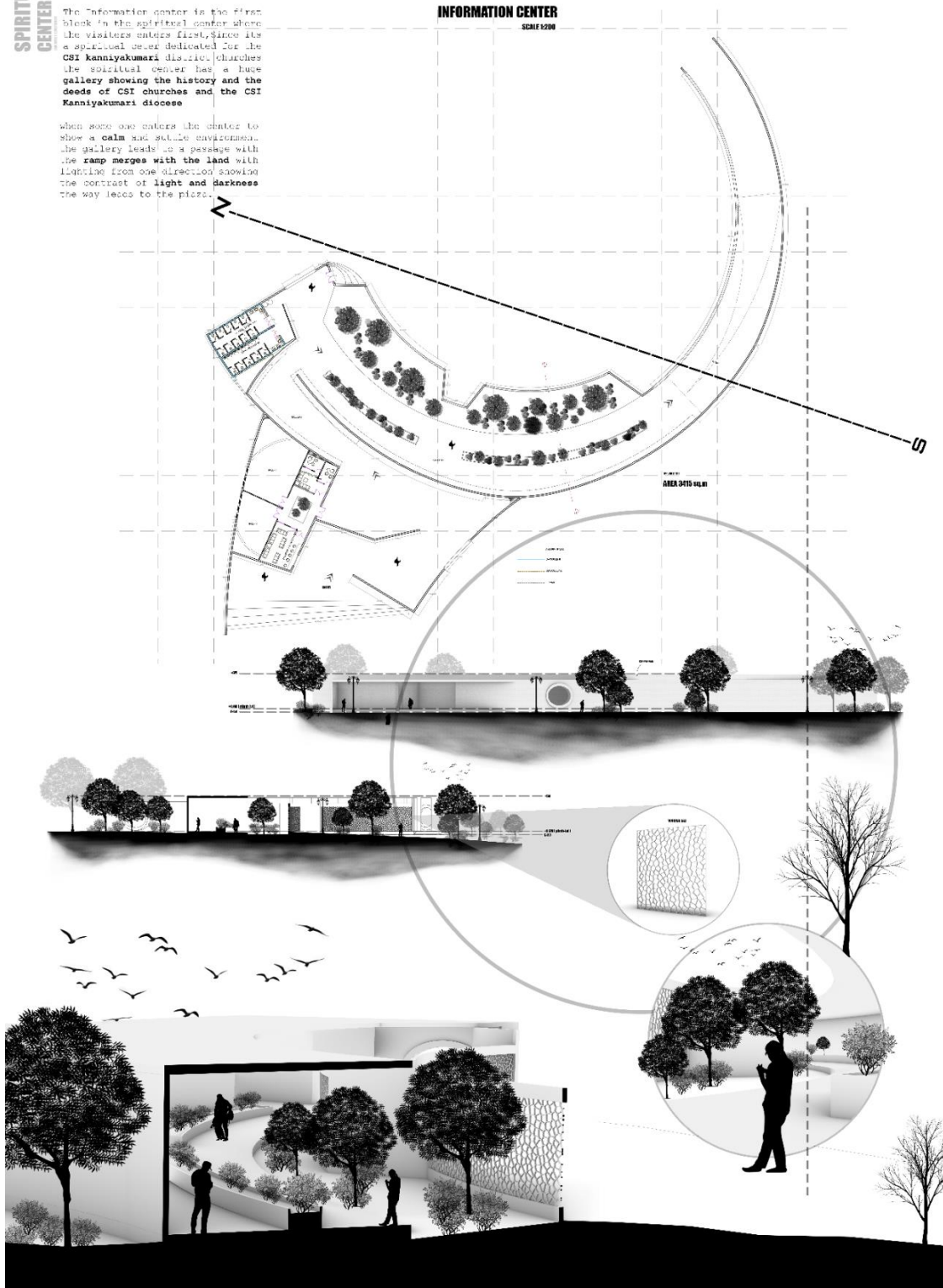


Plate 5.6 – Information Center

FELLOWSHIP HALL

A fellowship hall is a place where every spiritual fellowship event takes place. It's the place where every people connects with each other and also experience a spiritual presence in there.

The design of this space mainly includes a shell structure that gives a organic flow in it.

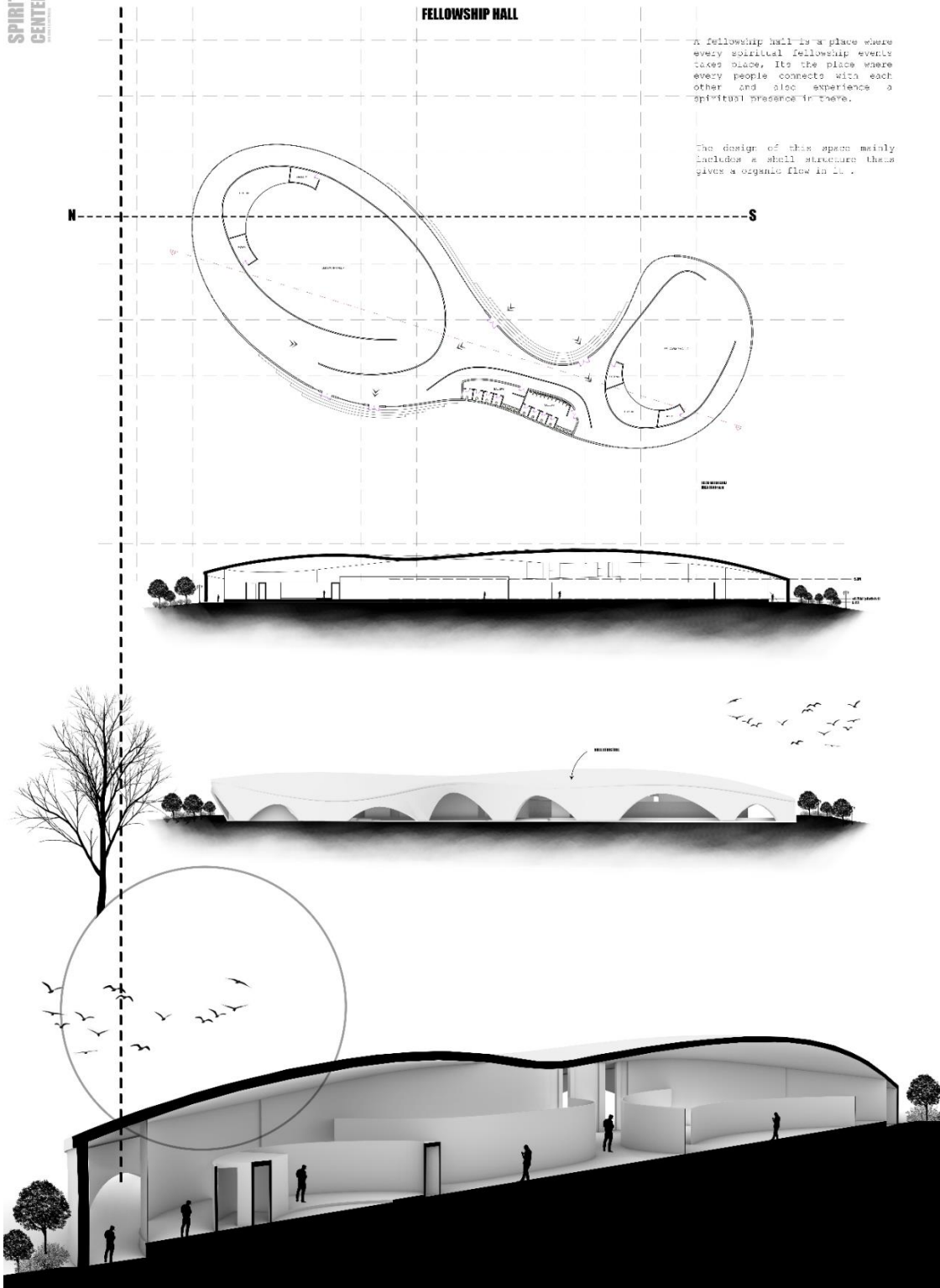


Plate 5.7 – Fellowship Hall

ACCOMMODATION/DINING
SCALE 1:250

The accommodation space with dining where dining is a semi open area where the roof over the dining space is a waffle structure covered by panels above and a piece of glass through which light passes through the column of the waffle structure.

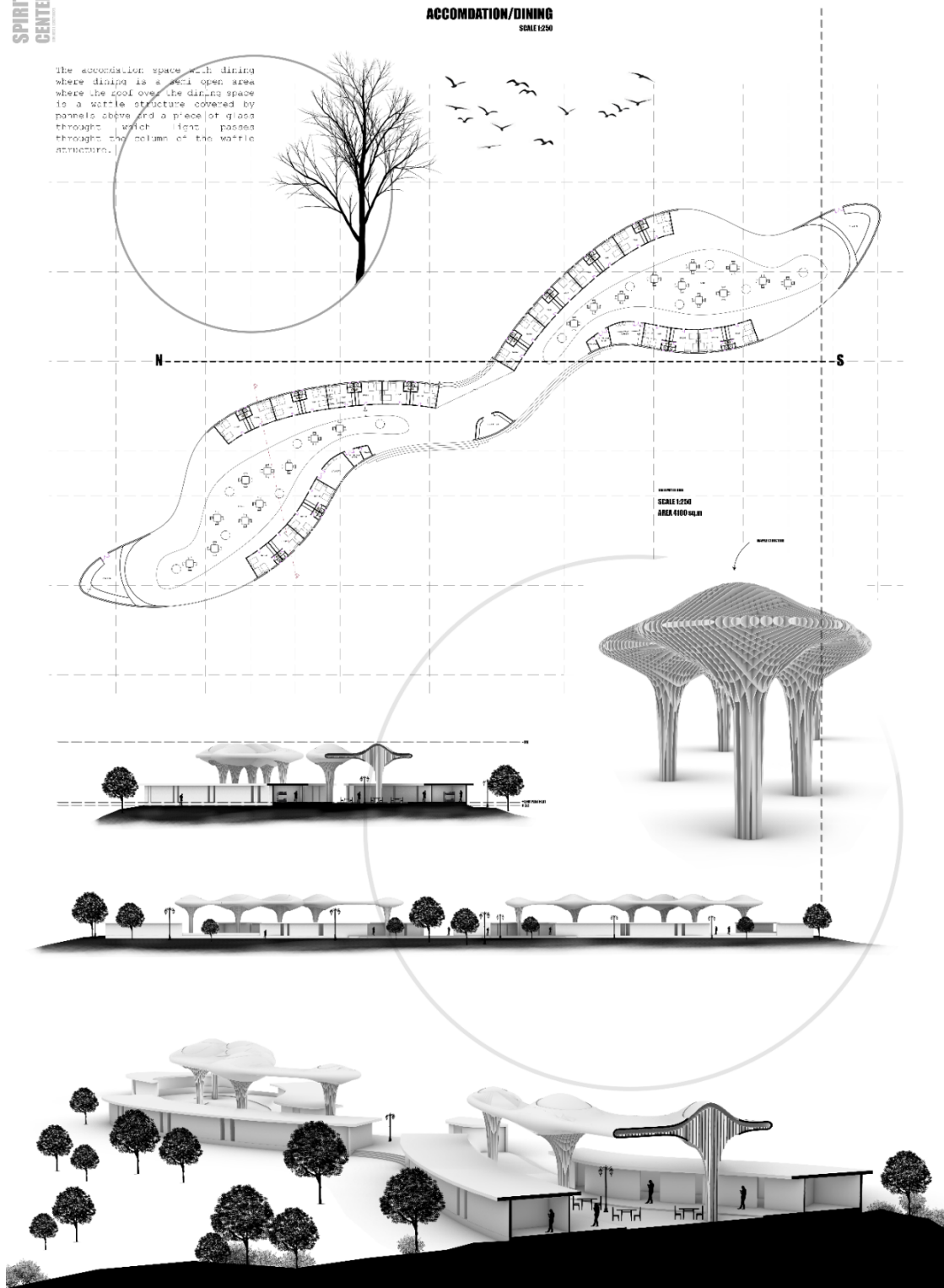
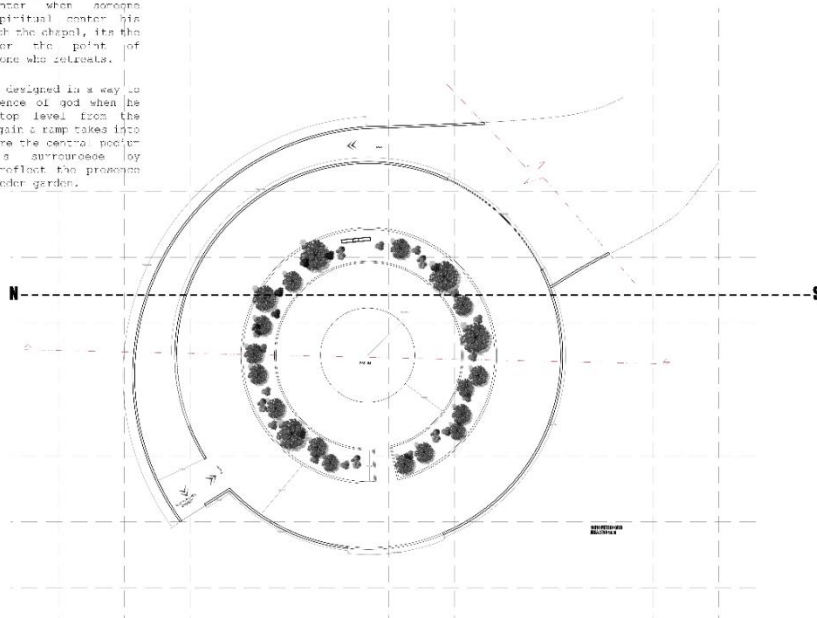


Plate 5.8 – Accommodation

CHAPEL / PRAYER CHAMBER

The chapel is the major space in the spiritual center. When someone enters the spiritual center his goal is to reach the chapel, its end point or the point of arrival, after one who retreats.

The chapel was designed in a way to show the presence of god when he reaches the top level from the retreat dome again a ramp takes into the chapel where the central pool or altar is surrounded by groves to reflect the presence of god in the elder garden.



The prayer chamber is a private space where someone can have their prayer time alone. The chambers are placed in solitude where someone seeks forgiveness or have a close conversation with god.

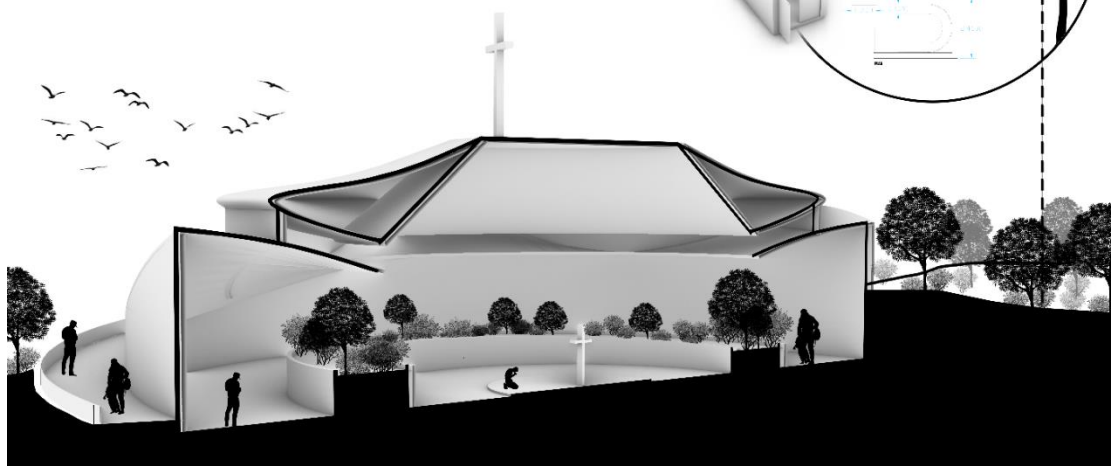
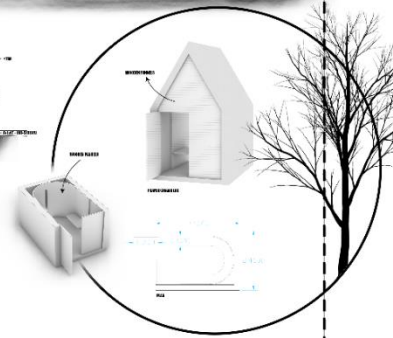
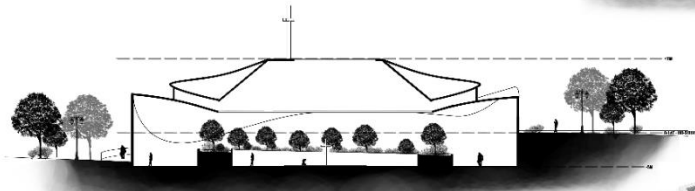


Plate 5.9 – Chapel

CHAPTER 6

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