CHAPTER FOUR

CASE STUDIES

4.1 THE BASILICA OF THE NATIONAL SHRINE OF THE ASSUMPTION OF THE BLESSED VIRGIN MARY, BALTIMORE

The Basilica of the National Shrine of the Assumption of the Blessed Virgin Mary, also called the Baltimore Basilica, was the first Roman Catholic cathedral built in the United States, and was the first major religious building constructed in the nation after the adoption of the U.S. Constitution. As a co-cathedral, it is one of the seats of the Roman Catholic Archdiocese of Baltimore in Baltimore, Maryland. It is considered the masterpiece of Benjamin Henry Latrobe, the "Father of American Architecture".

4.1.1 Location Map

Plate 4.1: Location map of Baltimore

Source: WikiArquitectura.com

Location: Baltimore, Maryland
Coordinates: 39°17’39.81"N 76°36'58.18"
Built: 1806-1821
Architect: Benjamin H. Latrobe
4.1.2 Brief History

The Basilica was constructed (1806–1821) to a design of Benjamin Henry Latrobe — America’s first professionally trained architect and Thomas Jefferson’s Architect of the U.S. Capitol; under the guidance of America’s first Bishop, John Carroll. The Basilica was later consecrated on May 31, 1821, by the third Archbishop of Baltimore, Ambrose Maréchal.

Pope Pius XI raised the Cathedral to the rank of a Minor Basilica in 1937. In 1969, it was listed on the National Register of Historic Places, and further, in 1971, it was declared a National Historic Landmark. It is also the namesake of the Cathedral Hill Historic District. In 1993, the United States Conference of Catholic Bishops designated the Basilica a National Shrine.

4.1.3 Architecture

The Cathedral is a monumental neoclassical-style building designed in conformity to a Latin cross basilica plan - a departure on Latrobe’s part from previous American church architecture, but in keeping with longstanding European traditions of cathedral design. The plan unites two distinct elements: a longitudinal axis and a domed space.

Exterior

Plate 4.2: An exterior shot of the Basilica shortly after the restoration

Source: WikiArquitectura.com
The main facade is a classical Greek portico with Ionic columns arranged in double hexastyle pattern, immediately behind which rise a pair of cylindrical towers. Architectural historian Henry-Russell Hitchcock believed that the onion-shaped domes atop the two towers were “not of Latrobe's design,” but now it is believed that they "were entirely the architect's own." The exterior walls are constructed of silver-gray gneiss quarried near Ellicott City, Maryland.

**Dome**

Latrobe originally planned a masonry dome with a lantern on top, but his friend Thomas Jefferson suggested a wooden double-shell dome (of a type pioneered by French master builder Philibert Delorme) with 24 half-visible skylights. For the inner dome Latrobe created a solid, classically detailed masonry hemisphere. Grids of plaster rosettes adorn its coffered ceiling.

*Plate 4.3(a): The exterior of the dome. (b): Interior of the dome*

*Source: WikiArquitectura.com*

**The Columns**

The basilica is a good example of neoclassical architecture. It has ten ionic columns with detailed capital at the portico as shown in the picture.

*Plate 4.4: One of the ten ionic columns at the entrance portico*
Interior

The interior is occupied by a massive dome at the crossing of the Latin cross plan, creating a centralizing effect which contrasts the exterior impression of a linear or oblong building. Surrounding the main dome is a sophisticated system of barrel vaults and shallow, saucer-like secondary domes. The light-filled interior designed by Latrobe was striking in contrast to the dark, cavernous recesses of traditional Gothic cathedrals.

4.1.4 OTHER FACILITIES OF THE CATHEDRAL

Museum & Special Exhibits

The Basilica Museum houses hundreds of artifacts and antiques, dating back to the 17th Century. Items include the tabernacle once kept by the family of John Carroll in their chapel, Cardinal Gibbons' vestments, letters between various Presidents and Archbishops, and altar vessels used during the Basilica’s earliest days. The Basilica's Temporary Exhibit space, located in the undercroft, also displays special exhibits.
Gift Shop

Next to the Basilica you will find the Basilica Gift Shop, located in the historic Sexton’s Lodge, which has a unique assortment of items suitable for everyone.

Plate 4.6: the Basilica Gift Shop which also houses a bookstore

Source: WikiArquitectura.com

Pope John Paul II Prayer Garden

Pope John Paul II and his two visits to the Basilica inspired a commemorative prayer garden adjacent to the Basilica complex, which opened to the public on October 24, 2008. This beautiful space is located at the corner of Franklin and North Charles Streets, adjacent to the Basilica. One of a few green spaces in downtown Baltimore, the garden provides pilgrims and visitors with an outdoor spiritual retreat within the city, while paying homage to Pope John Paul II, one of the 20th century’s true visionaries. The centerpiece of the garden is a statue of the Holy Father with two children, sculpted by Joseph Sheppard. This statue is based on a photograph taken during his 1995 Papal Visit to Baltimore.

Plate 4.7: Statue of the Holy father with two children

Source: WikiArquitectura.com
Other notable features include:

- An overhead view reveals the garden’s fish shape, reflecting the image often associated with Jesus throughout the Bible.
- An oval lawn takes the shape of the “fish’s head” and a brick pathway forms the perimeter of the entire fish shape.
- The bricks used in the garden match those used in the streetscape on Charles and Franklin Streets, while the iron fence is a modern interpretation of the one that surrounds the adjacent Basilica.
- A granite wall, forming the southern border of the garden, will be inscribed with a quote from the Pope about religious freedom and will be lit at night. The Pope’s words come from his visit to the Cathedral of Mary Our Queen in 1995.
- Stainless steel bands are also embedded in the wall and bear the symbols of the three monotheistic religions: Christianity, Islam and Judaism.
- The concrete pillars holding up the inscription wall bear the seal of the Archdiocese and the coat of arms of Pope John Paul II.

*Plate 4.8: Aerial view of the garden showing the distinctive fish-shaped walkway.*

*Plate 4.9: View from the quotation wall.*

*Source: WikiArquitectura.com*
4.1.5 Restoration

Since the Basilica of the Assumption is a landmark of international significance because of its architectural design and role in the history of American religion, its restoration is one of the most extensive and significant carried out on a religious building in the country, befitting the importance of America's first Cathedral.

The first step in the restoration of the Baltimore Basilica began in 1998 when John G. Waite Associates, Architects was engaged by the Basilica of the Assumption Historic Trust to prepare a historic structure report for the building and its grounds.

![Plate 4.10: The basilica under renovation](Source: WikiArquitectura.com)

The first major campaign of construction started with the laying of the cornerstone in July 1806 and continued through 1812. In 1817 construction resumed, and after delays in the initial construction efforts, the main dome was completed in 1821.

![Plate 4.11: Renovation of the portico](Plate 4.11: Renovation of the portico)
The project included the complete restoration of the exterior and interior of the building back to Latrobe's and Carroll's original design and intent. Portions of the original roof were encapsulated and the original, low-profile, appearance was replicated. Some of the most dramatic restoration elements are the reintroduction of the historic, translucent glass windows in the nave and the twenty-four skylights in the main dome. The spectacular original lighting effects are completed with the replication of the original lighting fixtures and the reintroduction of Latrobe's original paint scheme.

4.2 SAINT MARY'S CATHEDRAL OF TOKYO

Plate 4.13: Perspective view of the Cathedral

Source: WikiArquitectura.com
Architect: Kenzo Tange

Construction: Tsuboi Construction Company

Year(s) of construction: 1961-1964

Area of Site: 15,098m²

Floor Area: 3,649.9 m²

Length/Width: 55.5m/40.7m

Height: 61.68 m

Roof Height: 39.42 m

Capacity of Cathedral: 600 seating, 2,000 standing

Basement Chapel: 200 seating, 100 standing

Context: Urban

Construction system: Concrete, Stainless Steel and Aluminium Frames

Architectural Style: Modern

Location: 3-15-16 Sekiguchi, Bunkyo-ku 112-0014, Tokyo, Japan

Coordinates: 35.714217835956305°N, 139.7266960144043° E

4.2.1 Introduction

"Architecture is the creation of a special form of understanding of reality. It works and transforms reality through the construction of an important object of use. The object of this art form, on the other hand, has the dual quality to serve as a mirror and enhance it. This understanding of reality that takes place through the creation of the architecture requires that the anatomy of it, as its substantial and spiritual structure, be understood as a whole.”

- Kenzo Tange.
4.2.2  Brief History

Until 1945, when it was destroyed by an air raid during World War II, St Mary’s Cathedral Tokyo was the cathedral of Gothic style and wood. Initially founded in 1899 as a chapel for French students of the Seminary of Missionaries, in 1900, it became the parish church of Sekiguchi.

In 1960 the architect Kenzo Tange won the tender for reconstruction work which began in 1961 within the 15,098 square feet comprising the entire area of the Episcopal Diocese of Tokyo and ending in 1964.

4.2.3  Restoration

Due to the infiltration of rainwater through the years, the bolts fixing the outer steel sheets have been rusting, allowing strong winds or typhoons, so common in this zone were dropping, some carrying and in other cases causing high risk of causing serious accidents.

Taisei Construction Co. along with and support of Tange Associates in 2007 began the restoration of all parties, mainly the roof that offered a further deterioration. With a scaffolding around the cathedral and a giant crane was dismissed the original stainless steel cladding to be replaced by others assembled with a special technique that does not allow any seepage after waterproofing the walls that were placed on the armor shielding Zinc 25mm impermeable cement.

The skylight of the roof was also replaced by an aluminum frame and tempered glass, creating a more affordable so that engineers can perform the necessary inspections.

4.2.4  Concept

Following his term "metabolism", Renzo Tange designed the cathedral as a living entity that should transcend beyond the borders of Japan to become an architecture used for all peoples, combining technology and humanity, rising above the mundane and inspiration for getting construction in many of the Gothic churches that he visited on that occasion.
4.2.5 Spaces

4.2.5.1 Basement

In the basement of 1005.5 square meters, there is a small chapel that can accommodate 200 seated and 100 standing, in addition to numerous services relating to the activities of the temple.

4.2.5.2 Ground floor

In this plant, from 2541.4 meters square, the Cathedral has a capacity for 600 people seated and 2000 standing.

Figure 4.1: Floor plan of the Cathedral

Source: WikiArquitectura.com
• **Access**

Two high concrete walls that frame the four large windows indicate where the main entrance is located which has a large wooden door.

*Plate 4.14: The wooden entrance door*

*Source: WikiArquitectura.com*

• **Altar**

At the high sanctuary is the altar itself, the music and the venue for the priest, this area is accessed by some stairs. On the back it features a cross, The Holly Cross, which stands behind a marble plaque of 17 meters and illuminated by soft light that enters the cathedral.

*Plate 4.15: The altar*

*Source: WikiArquitectura.com*
• **Baptistry**

Located in the crypt of the church, to the right of the entrance. The baptism itself is the form of an open hand that receives the light from above. The sculptor of this stack was Seiji Shimizu.

![Plate 4.16: The baptismal font.](Source: WikiArquitectura.com)

**4.2.5.3 2nd Floor and 3rd Floor**

The second and third of 71 square meters respectively and 32 are devoted almost entirely to tasks related to the body, its operation and maintenance.

**4.2.5.4 The Bell Tower**

Like many European cathedrals, the bell tower of the cathedral of Santa Maria is not in the same temple, but a few meters away. It stands majestically showing its 60 meters high and its walls of concrete also apparent and aesthetically integrated with the whole complex, housing four bells were brought from West Germany.

At first glance the four sides of the bell seemed flat, but in reality are hyperbolic and its four corners amount as a single straight line.

![Plate 4.17: The bell tower](Source: WikiArquitectura.com)
4.2.5.5  Grotto of Lourdes

About 150 years from now (1858), at Lourdes, a small village in France, the Virgin Mary appeared to the young girl Bernadette, and many miracles followed this apparition. From the faith to the Virgin Mary, a grotto similar in size to that of Lourdes was built in the precincts of the Cathedral by the French Missionaries. Also today a great number of pilgrims visit Lourdes in France every year.

Plate 4.18: The grotto of Our Lady of Lourdes
Source: WikiArquitectura.com

4.2.6  The Site

Figure 4.2(a): The Site Layout of the cathedral
Source: Greatbuildings.com
4.2.7 Structure

The plan of the building is in the form of a cross, from which the walls, eight hyperbolic parabolas, rise up at an angle. These open upwards to form a cross of light which continues vertically the length of the four facades. To this rhomboid volume other secondary constructions are added, their rectangular volumes contrasting with the symbolic character of the cathedral with which they communicate by way of pathways and platforms. The baptistery and the baptismal font are among these secondary buildings. The bell tower is 60 m in height and stands at a little distance from the cathedral proper, whose interior is finished in exposed concrete. The exterior surfaces are clad in stainless steel, which gives them a special radiance in keeping with the religious character of the building.
Plate 4.19: An aerial view of the Cathedral

Source: WikiArquitectura.com

Plate 4.20: A perspective view of the Cathedral

Source: WikiArquitectura.com
4.2.8 Materials

The exterior surfaces of the cathedral are lined with sheets of galvanized aluminum and stainless steel frames and supported by iron bolts, while the back wall of reinforced concrete to be in sight, feature the works of the architect.

The skylight where the only natural light received by the temple are covered with glass and above the main door are two wooden walls that frame four windows of amber or ocher tone.

Both the stairs and the altar which is 17 meters high that serves as background to The Holy Cross are of Italian marble.
4.3 METROPOLITAN CATHEDRAL OF CHRIST THE KING, LIVERPOOL

Plate 4.21: The approach to the Cathedral

Source: WikiArquitectura.com

Location: Liverpool, Merseyside, England

Construction time: September 1962 – May 1967

Coordinates: 53°24′17″N 2°58′08″W

Architects: Sir Edwin Lutyens, Frederick Gibberd

Contractor: Taylor Woodrow Construction Ltd

Height: 84.86m

Area Covered by Cathedral: 4028m$^2$

Area of Site: 36,000m$^2$
4.3.1 Introduction

The Metropolitan Cathedral Church of Christ the King (usually known as Liverpool Metropolitan Cathedral) is a Roman Catholic Cathedral in Liverpool, Merseyside, England. The cathedral is the seat of the Archbishop of Liverpool and the Roman Catholic Archdiocese of Liverpool. The cathedral's architect was Englishman Frederick Gibberd, the winner of a worldwide design competition. Construction began in 1962, and took five years. Earlier designs for a Catholic cathedral in Liverpool had been proposed in 1853, 1933, and 1953, but none were completed.

4.3.2 History

4.3.2.1 Edward Welby Pugin’s Design

During the Great Irish Famine (1845–1852) the Catholic population of Liverpool increased dramatically. About half a million Irish, who were predominantly Catholic, fled to England to escape the famine; many embarked from Liverpool to travel to North America while others remained in city. Because of the increase in
the Catholic population, the co-adjutor Bishop of Liverpool, Alexander Goss (1814–1872), saw the need for a cathedral. The location he chose was the grounds of St. Edward's College on St. Domingo Road, Everton.

In 1853 Goss, then bishop, awarded the commission for the building of the new cathedral to Edward Welby Pugin (1833–1875). By 1856 the Lady Chapel of the new cathedral had been completed. Due to financial resources being diverted to the education of Catholic children, work on the building ceased at this point and the Lady Chapel – now named Our Lady Immaculate – served as parish church to the local Catholic population until its demolition in the 1980s.

4.3.2.2 Lutyens' design

Plate 4.23: Edwin Lutyens' design for the cathedral

Source: Wikipedia.org

Following the purchase of the present 9-acre (36,000 m²) site at Brownlow Hill in 1930, Sir Edwin Lutyens (1869–1944) was commissioned to provide a design which would be an appropriate response to the Giles Gilbert Scott-designed Neo-gothic Anglican cathedral then being built further along Hope Street.

Lutyens' design was intended to create a massive structure that would have become the second-largest church in the world. It would have had the world's largest dome, with a diameter of 168 feet (51m) compared to the 137.7 feet (42.0m) diameter on St. Peter's Basilica in Vatican City. Building work based on Lutyens’ design began on Whit Monday, 5 June 1933, being paid for mostly by the contributions of working class Catholics of the burgeoning industrial port. In 1941, the restrictions of World War II wartime and a rising cost from £3 million
to £27 million (£991 million as of 2012), forced construction to stop. In 1956, work recommenced on the crypt, which was finished in 1958. Thereafter, Lutyens’ design for the Cathedral was considered too costly and was abandoned with only the crypt complete.

4.3.2.3 Scott’s reduced design

After the ambitious design by Lutyens fell through, Adrian Gilbert Scott, brother of Giles Gilbert Scott (architect of the Anglican Cathedral), was commissioned in 1953 to work on a smaller cathedral design with a £4 million budget (£83 million as of 2012). He proposed a scaled-down version of Lutyens' building, retaining the massive dome. Scott's plans were criticised and the building did not go ahead.

4.3.2.4 Frederick Gibberd's design

The competition to design the Cathedral was held in 1959. The requirement was first, for a congregation of 3,000 (which was later reduced to 2,000) to be able to see the altar, in order that they could be more involved in the celebration of the Mass, and second, for the Lutyens crypt to be incorporated in the structure. Gibberd achieved these requirements by designing a circular building with the altar at its centre, and by transforming the roof of the crypt into an elevated platform, with the cathedral standing at one end.

4.3.3 Facilities Provided

(i) Cathedral: includes among others the sanctuary, nave, aisles, baptistery, two big and eight small chapels, choir and organ, entrance porch, confessionals, lectern, tower (above the sanctuary), bell tower.

(ii) Crypt: comprises the sacristy, tea room, lavatories, storage, parking lots for 80 cars, service road and plant room.

(iii) Ancillary Facilities: contains a Piazza for open air service (roof of Lutyens crypt), presbytery, convent, University Chaplaincy, existing office block, including steps and ramps to street level.
4.3.4  Space Configuration and Organization

4.3.4.1  Exterior

The Cathedral is built in concrete with a Portland stone cladding and a lead covering to the roof. Its plan is circular, having a diameter of 195 feet (59 m), with 13 chapels around its perimeter. The shape of the Cathedral is conical, and it is surmounted by a tower in the shape of a truncated cone. The building is supported by 16 boomerang-shaped concrete trusses which are held together by two ring beams, one at the bends of the trusses and the other at their tops. Flying buttresses are attached to the trusses, giving the cathedral its tent-like appearance. Rising from the upper ring beam is a lantern tower, containing windows of stained glass, and at its peak is a crown of pinnacles.

The entrance is at the top of a wide flight of steps leading up from Hope Street. Above the entrance is a large wedge-shaped structure. This acts as a bell tower, the four bells being mounted in rectangular orifices towards the top of the tower. Below these is a geometric relief sculpture, designed by William Mitchell, which includes three crosses. To the sides of the entrance doors are more reliefs in fibreglass by Mitchell, which represent the symbols of the Evangelists. The steps which lead up to the cathedral were only completed in 2003, when a building which obstructed the stairway path was acquired and demolished by developers.

4.3.4.2  Interior

The focus of the interior is the altar which faces the main entrance. It is made of white marble from Skopje, Macedonia, and is 10 feet (3m) long. The floor is also of marble in grey and white. Above is the tower with large areas of stained glass in three colours, yellow, blue and red, representing the Trinity. Around the perimeter is a series of chapels. Opposite the entrance is the Blessed Sacrament Chapel, above which is the organ. To the right of the entrance is the Baptistery.
On the altar, the candlesticks are by R. Y. Goodden and the bronze crucifix is by Elisabeth Frink. Above the altar is a baldachino designed by Gibberd as a crown-like structure composed of aluminium rods, which incorporates loudspeakers and lights. Around the interior are metal Stations of the Cross, designed by Sean Rice. Rice also designed the lectern, which includes two entwined eagles. In the Chapel of Reconciliation (formerly the Chapel of Saint Paul of the Cross), the stained glass was designed by Margaret Traherne. Stephen Foster designed, carved and painted the panelling in the Chapel of St. Joseph. The Lady Chapel contains a statue of the Virgin and Child by Robert Brumby and stained glass by Margaret Traherne. In the Blessed Sacrament Chapel is a reredos and stained glass by Ceri Richards and a small statue of the Risen Christ by Arthur Dooley.

4.3.5 Site planning

Approach to the site is from Hope street at the southern side of the complex. There is the unfinished Lutyen’s crypt at the northern side, which comprises an extensive network of vaulted chapels, sacristies and meeting rooms.
Architect Gibberd extended the crypt southward, placed the compact new cathedral at the southern end and was faced down Hope street. All these actions were very big attempt to unify the cathedral with the entire site. The roof of the crypt has a piazza for open-air services with its external altar raised up against the end wall of the Blessed Sacrament. The presbytery, convent, chaplaincy and an existing office block, are all at the northern part of the site.

Plate 4.25: Aerial view of the Cathedral and its environs

Source: Larry Neild (Liverpoolconfidential.co.uk)

4.3.6 Structure and Material

The main structural element of the Cathedral consists of sixteen enormous reinforced concrete members of boomerang shapes. The frame made up of the main walls, the conical roof and the tapering lectern (or tower), are all designed to be mainly in compression. Horizontal and diagonal thrusts are restrained by two concrete ring beams at the top and bottom of the main roof cone. The roof cone is formed by precast concrete purlin’s supporting precast slabs, on which aluminium sheeting is secured by an insulating layer of foamed polyurethane.
The floor of the church is made of grey and white marble in geometrical pattern aimed at unifying the sixteen radiating arms. The inner wall surfaces are treated with acoustic plaster or buff rendering. The outside wall surfaces are, on the other hand, treated with white mosaics or silver-grey portland stone. The windows are simply made of stained glass.

The podium is faced with large precast slabs and supported by concrete columns or load bearing walls. Most of the ancillary buildings – the presbytery, the convent and the university chaplaincy – are all built in heavy portland stone.

4.3.7 Mechanical Services

(i) **Heating**: Heating is mainly by under floor coils, complemented by warm air grilles beneath the nave windows and within the chapels and porches. These actions ensure the maintenance of ambient temperature of 18.3°C.

(ii) **Mechanical Ventilation**: Mechanical ventilation system is installed in the car park and sacristies beneath the nave to give six air changes per hour.

(iii) **Fire Protection**: There is an automatic sprinkler system installed also in the car park and adjacent storage areas. Five water hoses are provided at different locations.

(iv) **Cold Water Supply**: Cold water storage tanks are at the top of the structures of the main entrance porch. This provision ensures constant supply of cold water to all the buildings on the site.

(v) **Hot Water Supply**: Constant supply of hot water is ensured by a calorifier in the boiler house.

4.3.8 Electrical Services

Artificial lighting design is conceived as a complement to the natural lighting. Adequate light is needed more in the nave at all times to enable the worshippers read their prayer books. The aisle on the perimeter of the nave space needs sufficient light for the people to see their way around, while the sanctuary being the focus of the design is considered specially, in terms of lighting.
The main space is lighted by suspended fittings in each bay of the cone roof consisting of three tungsten iodine lamps. The sanctuary and altar are lighted by spotlights fixed on the canopy.

4.3.9 Critical Appraisal

In terms of concept and form, the designer adopted the centralized layout. The altar is located centrally and the seats for the worshippers are arranged in more than 180°. This type of arrangement results to a sense of physical proximity to the altar and also to a relationship of person to person which emphasizes the communal aspect of worship.

Round churches with centrally located altars have one major problem associated to them. According to liturgical rules, the Eucharist is an action of both the clergy and the congregation who are in many cases engage in a dialogue, and therefore, both the clergy and the congregation should face each other. This particular requirement is lacking in the Metropolitan Cathedral.

The sequential transition of outside space to the interior space is not properly handled. The sequence starts promisingly from the soaring main porch, into a low level link from which the entire space suddenly opens out.

The varied articulation of the fourteen subsidiary volumes externally, is very skillful. Each side chapel is clearly identified as in an entity from nearby but from a distance; they tend to merge into the whole body of the structure. However, there is a kind of disorder at the approach side of the Cathedral. This is caused partly by the high entrance porch and partly by the untidy jumble of the Nuclear physics laboratory which lies at its base.

Finally, Metropolitan Cathedral can be said to be a ‘trade mark’ for Catholic activities in Liverpool. The Cathedral when viewed from a distance, appears neat and business-like and its profile is easily drawn.
4.4 MARIA ASSUMPTA CATHEDRAL, OWERRI

Plate 4.26: The front of the cathedral showing the parking lot

Source: www.catholicarchdioceseowerri.org

4.4.1 Preliminary Information

Location: Owerri

Architect: -

Area of Site: 80,000m$^2$

Area Covered by the Cathedral: 3,600m$^2$

Completion Date: 1980

Capacity: 3000

4.4.2 Facilities provided

(i) Cathedral: Nave, sanctuary, choir, confessionals, baptismal font, sacristy, external vestry, Blessed Sacrament tabernacle, chapel, side porches, detached bell tower.

(ii) Bishop’s House: Sitting room, library, chapel, refectory, conference hall, bishop’s living room, and Reverend Fathers’ living rooms.

(iii) Ancillary Facilities: Diocesan Secretariat, parish hall, parish administrative offices, diocesan press, bookshop, administrator’s residence, diocesan secretary’s residence, boys’ quarters.
4.4.3 Brief History

The construction of the Cathedral which started before the Nigerian Civil War, was finally completed and consecrated in 1980. From the information obtained, the final finishing touches were done at a later year and renovation of the dome was carried out recently due to leakages and structural malfunction.

The Catholic Archdiocese of Owerri spreads through eight local government areas of Imo State, the heartland of Igbo land in Eastern Nigeria. It has a population of about 600,000 Catholics and covers an expanse of 2996.27 sq km. It has more than 89 parishes administered by 259 diocesan priests over some religious priests and about 300 catechists.

4.4.4 Site Location and Planning

Maria Assumpta Cathedral, Owerri is located near the Onitsha-Port Harcourt Road-Douglas Road intersection and besides the Girls’ Secondary School, Owerri. The main entrance to the Cathedral opens directly into the intersection roundabout, with the main parking space at the fore-ground. Also, the subsidiary parking space is beside the Cathedral and is accessible from behind.

Plate 4.27: The Location Map of Maria Assumpta Cathedral

Source: Google Map Data
The facilities in the compound include:

1. Cathedral
2. Bishop’s House
3. Belfry
4. Car park
5. Parish hall
6. Secretariat
7. Administrator’s Residence
8. Parish Office
9. Secretary’s Office
10. Boys’ Quarters
11. Diocesan Bookshop
12. Diocesan Press
13. Mini-Stadium
14. Public Conveniences
15. Gate House
16. Statue
4.4.5 Architectural Composition

The architectural concept and composition of the cathedral is derived from the Renaissance ecclesiastical architecture. In terms of form, it has the Greek cross form with four main and four minor arms. The centrally located altar is externally emphasized by a very large and prominent dome. Near the Cathedral is a detached bell tower. A covered walkway forms a connecting link between the bishop’s house and the Cathedral.

4.4.6 Space Organization

The cathedral has a capacity of about 3,000 and serves a parish of about 14,000 Catholics and a diocese of about 750,000. It has a centralized plan with a circular sanctuary at the crossing of the arms. Naturally, the altar then is placed at the geometric centre of the sanctuary and besides the altar is the bishop’s throne. The seating arrangements are at the main arms of the church.

From the main entrance of the church, the choir stall is to the left in a small radiating arm; the sacristy is to the right; and the Blessed Sacrament chapel, which houses the tabernacle, is further down to the right. Behind the choir stall is the baptismal font and at the corners of the two stalls are the confessionals.

By the side of the porch is an outside vestry where the celebrants get dressed before normal procession to the altar.
The cathedral Floor plan includes:

1. Altar
2. Sanctuary
3. Bishop’s Throne
4. Ambo
5. Presbyterium
6. Congregational Seating
7. Blessed Sacrament Chapel
8. Shrine of Virgin Mary
9. Choir
10. Baptismal Font
11. Confessionals
12. Sacristy
13. Steps to Galleries
14. Outside Vestry
15. Porches
16. Covered Walkway to Bishop’s House
Plate 4.28: Approach elevation of the Cathedral showing the dominating dome, the short arm housing the sacristy and the walkway to the bishop’s house.

Source: www.catholicarchdioceseowerri.org

4.4.7 Structure and Building Materials

The main structural material is reinforced concrete. The roofs of the four major arms are made of reinforced concrete portal frame while that of the central dome over the sanctuary is built of reinforced concrete dome. The walls, beams and columns are all made of concrete; the floor of the altar and circulation spaces are covered with marble tiles; the altar proper is built of marble; the doors are of aluminium, and the windows are of stained glass with patterns and drawings on them. The internal wall surfaces are plastered while external surfaces are purposefully roughened. The bishop’s house and other buildings of the complex are built with cement blocks and covered with gable roofs.
4.4.8 Critical Appraisals

- The Site

Because the complex is located at the intersection of three busy roads, vehicular access to the complex poses a great problem. This problem usually generates traffic hold-up along the intersecting roads especially during the peak periods of the Cathedral activities. The size of the site is however, relatively large and therefore, accommodates the required facilities – bishop’s house, diocesan secretariat, parish hall, parish offices, Reverend Fathers’ houses and parking lots.

- The Cathedral

The Maria Assumpta Cathedral is very outstanding and spectacular when compared with other recent cathedrals in Nigeria. But in terms of liturgical functions, it has some problems. The centralized altar is not ideal during the celebration of mass because view of the altar is limited and the celebrant backs a
part of the congregation thereby limiting their participant with the liturgical celebration.

- The Bishop’s house

The bishop’s house gives the impression of two-storey block of flats connected to the Cathedral by a covered walkway. This is due to the flatness of the elevation and its architectural verticality in terms of character.

The bishop’s house has a busy road very close to it and does not provide a good relaxing and quiet atmosphere for the bishop. Also the location of the bishop’s house almost at the centre in relation to most facilities is very disturbing. No movement can take place between the Cathedral or parish hall and the parts of the complex without passing through the bishop’s house.

Despite all these problems, the connecting walkway makes it possible for the bishop to attend most functions in the Cathedral, either during sunshine or rain.

4.5 CATHEDRAL BASILICA OF THE MOST HOLY TRINITY

Plate 4.30: Approach of the Basilica
Source: www.onitshaarchidiocese.org
4.5.1 Preliminary Information

Location: Onitsha
Architect: -
Seating capacity: 2,500 worshippers
Geographical area: 2,968 sq. km
Building completed: 1935
Cathedral consecrated: December 5, 1960
Basilica decreed: May 28, 2007
Basilica erected: March 8, 2008

4.5.2 Brief History

The Cathedral Basilica of the Most Holy Trinity is a Roman Catholic cathedral and minor basilica dedicated to the trinity located in Onitsha, Nigeria. The basilica is seat of the Archdiocese of Onitsha. The Basilica of the Most Holy Trinity is located in the southern part of the city and is the first Catholic cathedral east of the Niger. It is constructed on a part of the 20 acres of land donated to the first Catholic missionaries to the country by local authorities on January 6, 1886.

The Basilica holds the relics of the Nigerian saint, Blessed Cyprian Iwene Tansi, and the remains of the late bishops Joseph Shanahan, Charles Heerey and Stephen Ezeanya.

In 1920, Bishop Shanahan initiated construction of the modern-day Basilica, which was completed in 1935 by his successor, Archbishop Heerey. The cathedral was dedicated on December 5, 1960, and later declared a Minor Basilica on May 28, 2007.

The canonical title of “basilica” is bestowed on those churches that correspond to certain requirements and are granted liturgical privileges accordingly. A Basilica can also become a pilgrimage site.
4.5.3 Site Location and Planning

The Cathedral Basilica of the Most Holy Trinity is at a premise bounded by four roads - Enugu Road, New Nkisi Road, Ridge Road and Mission Road, Onitsha. The Basilica premises have four entrances, two from the Mission Road, one from the New Nkisi Road and another from Ridge Road. The main entrance to the Cathedral is from the Mission road, with the main parking space at the foreground. Also, the subsidiary parking space is beside the Cathedral and is accessible from behind.

Plate 4.31: Location Map of the Basilica

Source: my.opera.com

4.5.4 Facilities provided in the Basilica

1. The Cathedral Basilica  
2. Parish Office  
3. Parish Hall  
4. Parish House  
5. Priests’ residence  
6. Holy Trinity Primary School  
7. Bookshop  
8. St. Stephen’s House  
9. St. Stephen’s Workshop  
10. Seminarian’s House  
11. Staff Quarters  
12. Sancta Maria Pri. Sch.
7. Archdiocesan Secretariat
8. Archbishop’s House
9. Immaculate Heart Sister’s Convent
10. Chapel of Adoration

Other Structures in the Basilica premises include:

- A Cemetery
- Knight of St. Mulumba’s House
- Knight of St. John’s House
- Our Lady’s Grotto
- Trinity Nur, Pri. and Sec. School
- Immaculata Nur. & Pri. School

4.5.5 Architectural Composition

The architectural concept and composition of the Basilica is derived from the Roman ecclesiastical architecture. In terms of form, it has the Latin cross form with one long arm with a semi-circular head and two small arms. The altar is located at the semi-circular head.

4.5.6 Space Organization

The cathedral has a capacity of about 2,500 and serves a parish of about 50,000 Catholics and a diocese of about 1,513,142 Catholics. It has a rectangular plan with the sanctuary at the head of the rectangle. Naturally, the altar then is placed at the geometric centre of the sanctuary and besides the altar is the bishop’s throne. The seating arrangement flows down from the altar and at the two small arms of the church.

From the main entrance of the church, two staircases, one from the left, the other from the right leads to the gallery which houses the choir stall; the bell tower which was incorporated into the church building is also accessed from the gallery. The baptismal font is to the right, just beside a bug statue of Our Lord. To the left is another statue of the Nativity. The sacristy is right behind the altar area. To the left of the altar is the tabernacle which houses the Blessed Sacrament and to the
right is a small grotto of St. Rita which also houses the relics of Blessed Cyprain Iwene Tansi.

Plate 4.32: Inside view of the Basilica from the altar

Source:  www.donbosconigeria.org

4.5.7  Structure and Building Materials

The main structural material is reinforced concrete. The roofs are made of reinforced concrete portal frame with aluminium roof covering. The walls, beams and columns are all made of concrete; the floor of the altar is finished with marble tiles and covered all through with red carpet; the altar proper is built of marble; the doors are wooden and the windows are of stained glass with patterns and drawings on them. The internal wall surfaces are plastered while external surfaces are purposefully roughened. The bishop’s house and other buildings of the complex are built with cement blocks and covered with gable and hip roofs.

Plate 4.33: Inside view of the Basilica from the altar.

Source:  www.donbosconigeria.org
4.5.8 Critical Appraisals

- The Site

Because of the large number of people who congregate at the Cathedral on Sundays for masses, the different spaces allotted for vehicular parking is inadequate which poses a great problem during major activities. This problem usually generates traffic hold-up especially during the peak periods of the Cathedral activities. The size of the site is relatively large and therefore, accommodates the required facilities – bishop’s house, archdiocesan secretariat, parish hall, parish offices, Reverend Fathers’ houses, schools, quarters, convents, Reverend Brothers’ house and parking lots. The Cathedral Basilica is like a small
community of its own and has a few commercial activities which generate some income for the running of the facilities.

- **The Cathedral:**

The Cathedral Basilica of the Most Holy trinity is one of the most spectacular cathedrals in Nigeria. It has so many facilities that befit a Basilica. In terms of liturgical functions, it is ideal. The serenity of the Cathedral and the surroundings provides an environment good for prayers and meditations. The big Chapel of Adoration also satisfies the peoples need for soul sanctification.

The only limitation to the Cathedral is that the seating capacity is not adequate for the numerous worshippers especially during Sunday Masses regardless of the many number of masses conducted every Sunday in the Basilica and other places within the compound. This poses a great problem which led to the expansion of the Cathedral Basilica in order to increase the seating capacity of the church. As such, the expansion went a long way in solving the problem but could not totally eradicate it especially since the making of the Cathedral into a minor Basilica.

4.6 **HOLY GHOST CATHEDRAL, ENUGU**

*Plate 4.36: Location map of the cathedral*

*Source: [www.maps.google.com.ng](http://www.maps.google.com.ng)*
4.6.1 Preliminary Information

Location: Enugu
Architect: Rev. Fr. Séan Lenon
Seating capacity: 1,700 worshippers
Area of the Site: 27,500m$^2$ (2.75 hectares)
Area Covered by Cathedral: 1,190m$^2$
Construction time: 1958 – 1963

4.6.2 Brief History

Holy Ghost Cathedral emerged as a result of great desire by the early Catholic Christians in Enugu to have a central church. This great desire was put into reality in 1937 when the Catholics started collecting money to enable them embark on the church. Reverend Father Séan Lenon, an architect, designed the Cathedra; and supervised the construction. It was completed in 1963 and consecrated by Bishop Anyogu, the first Bishop of the Diocese.

4.6.3 Facilities Provided

(i) Cathedral: Nave, transept, sanctuary, confessionals, sacristy, and organ, bell tower, storage, entrance porch, side porches.

(ii) Ancillary Facilities: The Arena, Diocesan secretariat, Reverend Fathers’ residence, Knights’ hall, bookshop, gift shop, primary school, workers’ residence, shrines, graveyard, multi-purpose halls and Legion of Mary’s hall.

4.6.4 Site

The Cathedral is situated along the Market Road, adjacent to the Ogbete Main Market in the busiest part of the Capital City of Enugu. The main approach to the Cathedral church is directly from the Market Road. It is surrounded by the Main Market, St. Monica Domestic Science School, Mother of Christ Hospital and a
valley. There is another entrance at the left side of the Cathedral and this entrance connects other parts of the complex. Parking lots are located at the front of the Cathedral and behind the arena which was constructed for Masses celebration and other Cathedral activities.

The Bishop’s house is not located within the premises and the main diocesan secretariat is also outside the complex. The major reason for these scattered facilities is the smallness of the site.

Figure 4.6: Layout plan of current Holy Ghost cathedral

Source: Author’s field work
The Site layout of the Cathedral is thus;

1. The Cathedral
2. The Arena
3. Parish House
4. The Cemetry
5. Parish/PMS Office
6. Primary Schools
7. Parking Lot
8. St Paul’s Bookshop
9. Knight of St. John Building
10. Old Secretariat
11. Holy Ghost Fountain
12. Multi-purpose hall
13. Marian grotto
14. Press Centre
15. Orphanage
16. Convent
17. Mother of Christ Hosp.
18. Main Ogbete Mkt.
19. Market Road

4.6.5 Architectural Composition

The exterior of this Cathedral continues to remind us of the 19th century revivalism. The Cathedral has a Latin cross plan with a long nave and short transepts. There are low roofed porches at the outside of the nave. These roofed porches have seats for the worshippers who could not be accommodated inside the church. Even with these, accommodation was not enough thus the need for the arena. At the main entrance end are a low-roofed porch and two towers with the higher one being used as the bell tower.

4.6.6 Space Organization

The Holy Ghost Cathedral has a capacity of seating 1,700 at both the nave and the transepts. Naturally, the sanctuary and altar are positioned at the crossing and the altar is barricaded by wooden handrails on the three sides. The confessionals are at the corners of the transepts and near each confessional is a gravestone and also a shrine of Our Virgin Mary. The choir and organ are in a gallery behind the nave. The sacristy and toilet facilities occupy the head of the cross plan.
4.6.7 Structure and Building Materials

The main materials used for the walls, columns and beams are cement block and reinforced concrete. Roof structure is steel trusses covered with corrugated asbestos cement sheeting. The floor of the sanctuary and circulation spaces are covered with marble tiles, while the rest are cement screed; the windows are of clear louvered glass interrupted by coloured ones in a metal frames; the doors are of patterned and polished wood; and the altar, which is movable, is made of marble. The external wall surfaces are textured and painted in either blue or white colours.
4.6.8 The Bishop’s House

The Bishop’s house is located at Independence Layout which is some kilometres away from the Cathedral premises. The bishop was initially living in the building which is now currently the diocesan secretariat, before the construction of the bishop’s house at Independence Layout. The facilities provided in the house include: lounge, chapel, dining room and resident priests’ bedrooms, conference hall, Bishop’s bedroom and kitchen.

Plate 4.37: Approach view of the cathedral also showing the parking lot at the front.

Source: Author’s Field work

Plate 4.37: Interior of the cathedral showing the nave and the altar.

Source: Author’s Field work

Plate 4.39: Rear view showing the sacristy and the north transept

Source: Author’s Field work
Plate 4.40: A view of the arena
Source: Author’s Field work

Plate 4.41: The Holy Ghost Fountain
Source: Author’s Field work

Plate 4.42: The Parish Office and Office of the PMS
Source: Author’s Field work

Plate 4.43: View of the market road from which the cathedral is accessed
Source: Author’s Field work
4.6.9 Critical Appraisals

- The Cathedral

The geographical location of the Cathedral within a busy environment does not provide the quiet atmosphere required of a religious building. This busy environment includes: Enugu main market, major and busy market road and a nearby railway line. Again, the area of the site is not adequate to accommodate the major requirements of modern cathedral. For instance, the bishop’s house and the diocesan secretariat are not located within the premises. Also, the parking spaces are grossly inadequate.

The entire site layout seems unplanned and there is no real functional relationship between the buildings. The buildings are haphazardly scattered without good connecting link. The Cathedral looks like the 18th and 19th century neoclassicism. It does not portray cathedral of this age and has not responded to the general townscape of the immediate environment.

The seating arrangements in the Latin-cross form of the church makes preaching uncomfortable. There is an illusion of three separate congregations instead of one body gathered round the altar table. Placing some of the congregations in the side porches and the long nave has all tended to break the sense of congregational unity.

The choir is at the rear gallery and therefore invisible to the congregation. This poses some difficulties in the choir performing the function of leading the faithful in song prayers. There is no baptistery, and therefore baptism is conferred at the front of the altar. This action, of course, negates the essence of baptism as a sacrament of initiation.

- The Bishop’s House

Again, the size of site is small to accommodate the necessary requirements. The site is located within the residential area and therefore, the immediate vicinity does not have any relationship with the bishop’s lifestyle; since the environment does not speak religion.
The bishop’s house being far from the diocesan compound creates some communication problems. For instance, there is some delay in attending to matters that require some urgency in the diocesan premises.

**Conclusion**

Holy Ghost Cathedral Enugu cannot be said to be so efficient in serving the liturgical needs of the faithful. Also, the entire architectural composition and faced does not neglect the contemporary age.

### 4.7 SUMMARY OF IDEAS EXAMINED IN THE CASE STUDIES

From the case studies, one will get a general overview and understanding concerning the design of a cathedral. Like any other architectural design, each of the case studies has its own peculiar achievements and defects. Therefore, it becomes difficult to give a combined summary of the major issues arising from the different analysis. However, some of the major points which have been gleaned from the case studies are listed below. These points would, of course, be adequately considered during the development stage of the proposal.

**FOREIGN EXAMPLES:**

- Departure from the traditional church architecture
- Form as a visual landmark or point of spiritual or psychological orientation.
- Monumentality and largeness of scale.
- Developed interior space, no ornamentation.
- Good lighting effect
- Very compact, but well organized layout.
- Use of advanced building techniques and materials
- Inadequate parking spaces
(II) LOCAL EXAMPLES:

- Traditional East-West orientation not adhered to.
- More elaborate site than in foreign examples.
- Contemporary church architecture not reflected in the cathedral building.
- Simplicity of architecture, achieved by use of common building materials.
- Use of stained glass to achieve mystical interior
- Inadequacy of the facilities needed in the cathedral complex.
- Layout not properly planned and zoned.
- Bishop’s house not well related or easily accessible to the main cathedral.
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