

**THE LUTHERAN CHURCH OF THE CROSS:
AN ARCHITECTURAL DESIGN**

**Timothy J. Kopperud
Master's Degree Project
Faculty of Environmental Design
The University of Calgary
March, 1989**

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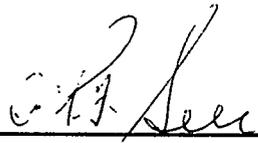
The undersigned certify that they have read, and recommend to the Faculty of Environmental Design for acceptance, a Master's Degree Project entitled

The Lutheran Church of the Cross: An Architectural Design

submitted by **Timothy J. Kopperud** in partial fulfillment of the requirements for the degree of Master of Environmental Design (Architecture).



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ABSTRACT

The Lutheran Church of the Cross: An Architectural Design
Timothy J. Kopperud
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This master's degree project is the design of a new church building (to replace the existing building) for the congregation of the Lutheran Church of the Cross. The site for this project is located in a residential neighbourhood in Southwest Calgary.

Representatives of this congregation helped the author to establish the programmatic needs for the new facility. The new church requires 1665 square metres and will accommodate the needs of the congregation of 500 members under the following categories: worship, fellowship, administration, education and recreation. The new facility will also support community activities under these categories.

Individual functional spaces are distinct pieces assembled to create a whole. Congregational and community involvement in the Church is promoted through a variety of activities. The main focus for design is to provide functional and beautiful spaces for the various activities of the Christian assembly.

Special care was taken in the design process in order that the new space for worship would enhance the liturgical functions of this group of believers. Theological themes, that have been accepted as being part of the Lutheran heritage, are recalled and emphasized by the physical and visual nature of the space. These themes include: a strong and welcoming sense of entry, emphasis on the processional march for liturgical events, the importance of the gathering of the Christian community "around" the Word of God, and the significance of recalling Christ's spiritual nature through controlled natural lighting. Many of the architectural qualities of this design find precedent in other North American Lutheran churches.

This design acknowledges and responds to the constraints of the site and the surrounding neighbourhood. The materials, massing and placement of the new building is sympathetic to the neighbouring buildings. The visually important features of the bell and the cross shine out as beacons, on the open corner of the site, for the community to appreciate. The new site design provides more useable outdoor courtyard space for both lively fellowship and for more secluded meditation.

The new design strategy allows for construction to be undertaken in phases in order to maximize economy and make best use of existing on-site structures. Natural lighting and the use of solar radiation as a secondary source of heating allow the congregation to reduce energy consumption and operating costs.

The congregation of the Lutheran Church of the Cross would be able to better accommodate various services for the community in the improved facilities. This architectural design helps to promote the growth of this Christian community.

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I very much appreciated being given the opportunity to be involved with a "real life" design. I especially thank the following members of the Lutheran Church of the Cross: Rev. Corliss Holmes, Mr. Wally Reimar, Mrs. Debra Odegard and Mr. John Rickards. These people provided information that was essential to the design.

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I appreciated the financial assistance given to me by the Faculty of Environmental Design for my research visit to Lutheran churches in Minneapolis, Minnesota.

Finally, I thank my wife Joan for acting as editor for my document and the source of emotional support throughout my architectural education. I dedicate this document to her and to the life of the Christian Church.

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1: INTRODUCTION

The Lutheran Church of the Cross is located on the corner of Elbow Drive S.W. and Sylvester Crescent S.W. in Calgary, Alberta (Figure 1). The present facility serves a congregation of approximately 250 active members. This congregation is growing each year and wishes to construct a new facility to provide for a much larger membership. The long-range planning committee of the congregation wants to develop an architectural design for a new church building (complete with drawings and a model) in order to promote the idea of the new church facility.

It is the overall aspiration of the congregation that the new church be a building which is designed to better accommodate larger numbers of people involved in a great variety of activities. The new facility must provide space with qualities that enhance the atmosphere for Christian worship. It must also provide spaces that are designed for Christian fellowship and other extracurricular activities. The building, as a whole, should represent to the community a place of welcome and celebration. It is a symbol of the growth and development of this congregation and of the Christian Church.

1.1: A Brief History of the Congregation

The Lutheran Church of the Cross began as a Southwest Calgary Mission congregation in 1959. The first place of assembly was a house chapel, built in 1960, located at Elbow Drive and 87 Avenue Southwest. Today this building operates as a nursery school. In December of 1964, the existing sanctuary was dedicated for the congregation under the leadership of Pastor Odean Peterson. In 1965 the Southwood United Church congregation shared the facility. This was also the year that the parsonage (house) was built on the site. In 1967, the first Blood Donor Clinic outside of Red Cross House in Calgary was held in the sanctuary of the Lutheran Church of the Cross. This

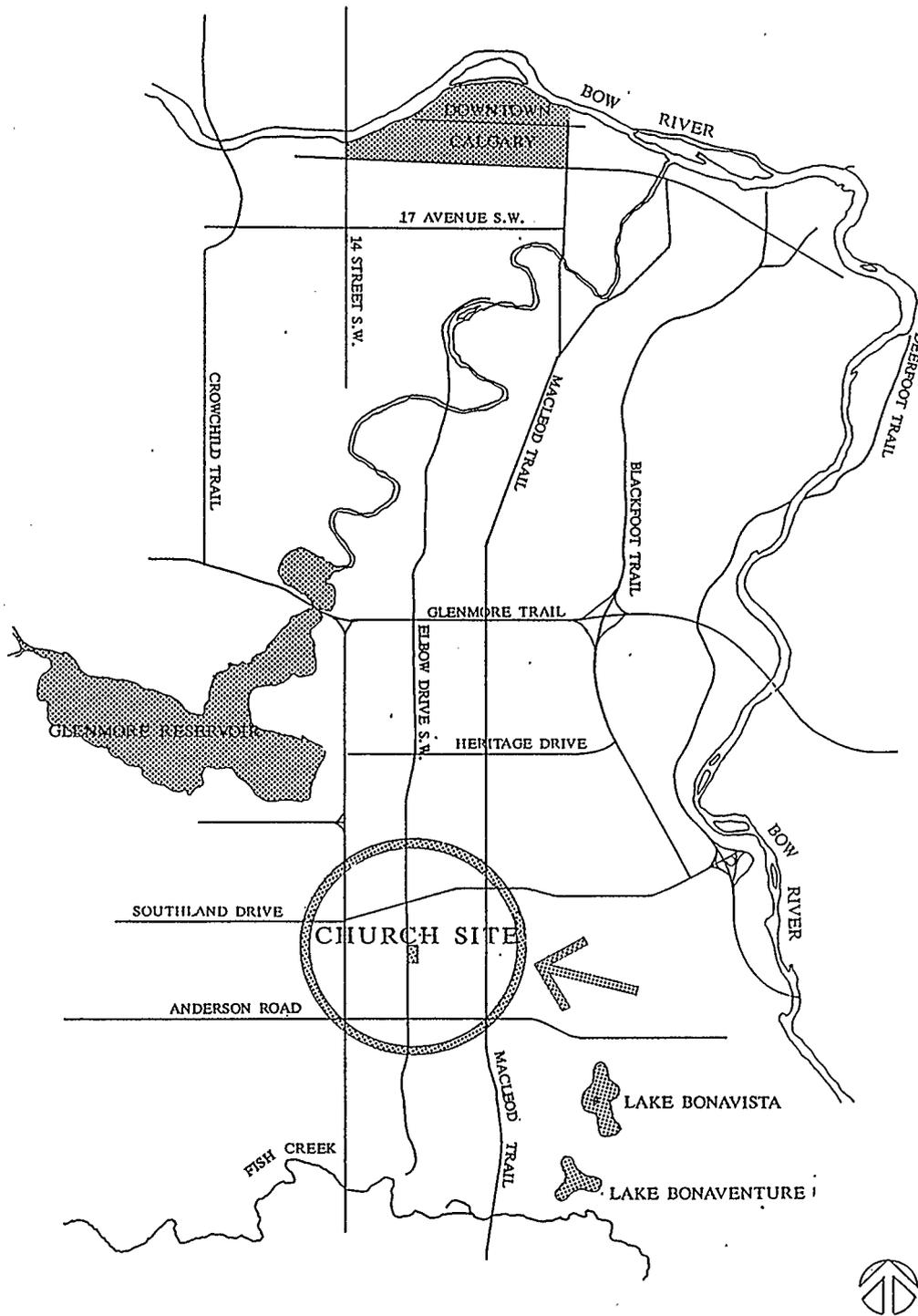


Figure 1: MAP OF SOUTHWEST CALGARY WITH SITE

N.T.S.

was also the year that Pastor Corliss Holmes (the residing pastor) began his ministry in this congregation. The south portion of the block owned by the Lutheran Church of the Cross was sold to Southwood United Church in 1968. In 1975, Pastor Joe Rostad became the assistant pastor for the congregation. By 1978, the partnership of the Lutheran Church of the Cross and Southwood United was officially terminated. In 1979, the congregation sold the northeast corner of the site to Public Works. This portion of the site now contains the Letter Carriers Depot for Canada Post. This was also the year that the congregation became debt free. The existing addition to the church was built in 1981. The congregation celebrated their 25th anniversary in 1986. In 1988, Pastor Paul Quist was installed as assistant pastor for the congregation.

A hallmark of this congregation is that their facility was one of the first community centres in Southwest Calgary. To this very day, the congregation has hosted a variety of community events and has enriched the quality of life for this neighbourhood.

This document will be divided into three parts. The first part will focus on design issues. These issues include architectural and functional program issues, an analysis of the site and issues relating to the Christian Lutheran Church.

The second part will deal with the architectural concept that evolved as a response to the issues. The concept is a stage in the design process which precedes the more detailed architectural design. The third part of this thesis includes the more detailed architectural design and how it addresses the programmatic, site and church-related issues. A conclusion will reiterate the objectives and the key issues in this design.

2: ARCHITECTURAL DESIGN ISSUES

Before developing an architectural design for the Lutheran Church of the Cross, it is necessary to investigate the various design issues. A design issue is any factor which would influence how the new church should be designed. These include: programmatic, site, and church-related issues.

According to representatives of the congregation, it is understood that the present facility for the Lutheran Church of the Cross is too small to provide for the increasing number of members and congregational needs. It is intended that the entire site be redeveloped in order to provide for a new facility.

These representatives recommended that the design of the new facility be suitable to meet the anticipated needs of the congregation for the next ten years. Given a membership growth rate of 10% per year, the congregation will double in ten years. This means that the worshipping congregation would grow from 250 members to 500 members. The first programmatic issue for the new facility is, therefore, the doubled membership.

The needs of the congregation have changed over the years. The original sanctuary provided a space for worship. The building addition (built in 1981) allowed the congregation to be involved in more educational and recreational activities. Today, however, they want a facility that will allow a greater number of people to enjoy a greater variety of these functions. The major needs of the congregation can be categorized as: worship, fellowship, administration, education and recreation (Figure 2).

Worship is the primary and most important function of the church facility. Fellowship means that the worshippers can mingle on an informal level. The new facility must provide suitable space for this. Space must be provided that will allow the church

staff to comfortably carry out daily administrative tasks. Space for Education will allow the congregation to teach themselves and the community about the various aspects of the life of the Christian. Education includes Sunday School, youth confirmation classes, adult education, music education and other outreach programs. Finally, space is needed to accommodate a variety of recreational activities that have become important, for various age groups, in the congregation. These recreational activities help a great variety of people in the congregation and community to become involved in the life of the church.

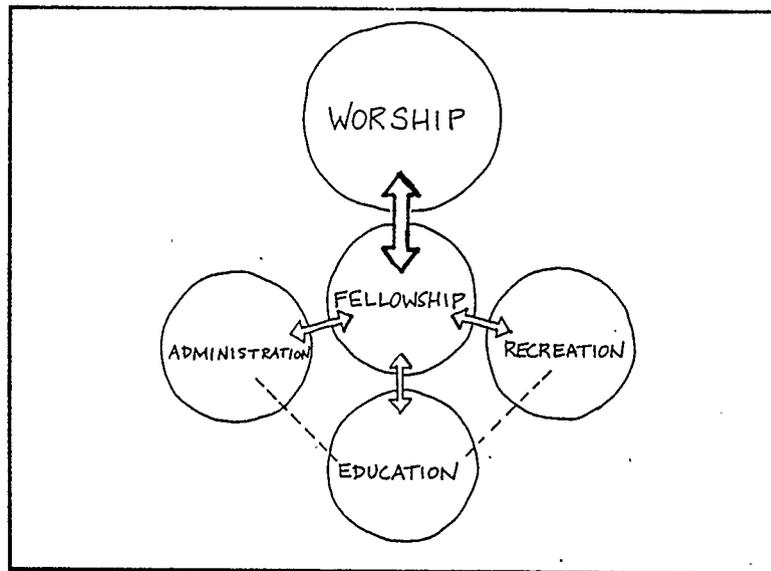


Figure 2: Functional Bubble Diagram

2.1: Space for Worship

✓ The congregation's representatives indicated that the space for worship should facilitate a variety of functional factors.

2.1.1: The Word

The preaching of the Word is one of the major liturgical events of the Lutheran Church service. The Word of God is spoken from behind the pulpit. This includes scripture lessons (sometimes read by lay persons) and the gospel (usually read by the minister). The pulpit is situated in a location where the speaker is seen and heard by the entire congregation. It is not necessary to provide a lecturn (a separate piece of furniture) in addition to the pulpit. The pulpit is the element that brings significance to the Word of God spoken by either clergy or laity.

2.1.2: Holy Communion

The celebration of Holy Communion is really the distribution of a symbolic meal to confirmed members of the congregation which recalls the “last supper of Christ” before His crucifixion. Typically every other Sunday morning, the minister and his assistants distribute bread and wine to members who assemble at the front of the sanctuary. It is common practice in this congregation to kneel at a railing which extends around the altar (table) and to receive the bread and wine, along with the spoken words: “. . . this is my (Christ’s) body and blood given for you for the forgiveness of sins. . .”.

2.1.3: Holy Baptism

The sacrament of Holy Baptism is a less frequent but equally important liturgical event in the Lutheran Church. The congregation witnesses the introduction of a new member into the Church family. The baptismal “font” contains water which the minister uses to spiritually “wash” (by sprinkling the water on the forehead) the candidate for

baptism. This candidate is usually an infant brought up by his or her parents. The baptismal font, like the pulpit and the altar (table), should be located at the front of the sanctuary where the ritual can be seen and heard by the entire congregation. The font should remain firmly in place on the platform in order to act as a reminder to the worshippers of their birth into the Christian family.

2.1.4: Processional and Recessional Marches

Processional and recessional marches are important to a variety of worship services. In the celebration of a Christian wedding, for example, a visually significant and comfortably wide aisle is necessary for the procession and recession of the bridal party (Figure 3). Processional and recessional marches are also used for Christmas, Easter, funerals and other church occasions.



Figure 3: Wedding Procession

2.1.5: Music

Music is a significant component of the Lutheran Church service. The Lutheran tradition of music in worship originates from the time when Johann Sebastian Bach composed musical settings to the scriptures during the Baroque period of the eighteenth century. Lutherans also emphasized the use of the vernacular (i.e. for the common folk) in hymns. The singing of hymns and songs, accompanied by organ and/or piano, means that the space for worship must provide excellent acoustics. The congregation's representatives indicated that the church choir and other musical performers need to be able to perform from an area at the front of the sanctuary where they can be seen and heard during worship or other special concerts.

2.1.6: Pipe Organ

A pipe organ is expected to be built after the completion of the building and located in the space for worship. The congregation's representatives indicated that this large and beautiful piece of furniture should be located where it can be both functionally and visually significant.

2.1.7: Cry Room

A cry room (i.e. an acoustically separate room for noisy children) should be located adjacent to the space for worship. A window and electronic speakers should allow the parents of these children to see and hear the worship service from this room. This room should also be equipped with a table for changing diapers and a small sink.

2.1.8: Sacristy

A sacristy is needed to provide space for the storage of worship elements (communion elements, banners, candles, etc.). This small “backstage” space should be located behind the main worship area of the pulpit, table and font in order that it is easily accessed by the minister, his assistants and the ushers. Symbolically, it would be physically connected to the main space for worship but visually concealed from the view of the congregation. This space could also become a “backstage” for groomsmen before weddings and for musical or dramatic performers.

2.1.9: Storage

Additional storage space is necessary for extra chairs. These extra chairs are needed to provide seating for people on those occasions when the rest of the seats in the space for worship are already filled (Christmas Day, Easter Sunday, large weddings etc.).

2.1.10: Chapel

A chapel is to be provided to allow a smaller group of members to worship in a more intimate space. A single altar (table) and some chairs would be necessary for this function. Such occasions would include: youth worship services, family healing services, etc.

2.2: Space for Fellowship

The main space for fellowship should be a large gathering area which would double as a foyer between the space for worship and the outside entrance. This is to be the place of welcome which the visitor first encounters when visiting the church. The entrances to the church (particularly the main entrance) should be designed to be very inviting and welcoming to the visitor.

In its foyer location, the main space for fellowship would provide a socializing area for people on their way to or from the main worship service. It should be situated in close proximity to a more intimate space for fellowship such as a lounge or “fireside room” (Figure 4). It should also be located in close proximity to the administration education and recreation areas to serve large numbers of people visiting the new church for events other than worship.



Figure 4: Typical Fireside Room

The foyer would, then, function primarily as a space for large numbers of occupants (up to 500) to gather temporarily for socializing before or after worship services and other educational or recreational events. The fireside room and other smaller spaces for fellowship are needed to allow socializing for fewer numbers of people.

This function is important because it allows members of the congregation and community to become acquainted with one another. This helps to promote a friendly atmosphere for this congregation as it attempts to reach out to the community.

2.3: Space for Administration/Education

This area would include offices for the administrative functions of the church and classrooms and conference rooms for educational activities.

2.3.1: Administration

Offices are required for the church secretary, the assistant pastor and the senior pastor. The secretary would generally provide reception and administration services. A small room for copying machine(s) and other administrative supplies must be located near the secretary office. The pastors' offices are their own private havens. They are, however, open for scheduled counselling sessions throughout the week.

2.3.2: Education

Classrooms and/or conference rooms should be able to facilitate functions concerned with promoting spiritual education for the congregation and the community.

Such functions would include:

- Sunday school and confirmation classes for children and youth
- babysitting of children during church services
- evening adult education classes
- outreach programs (e.g. alcoholics anonymous)
- various committee meetings
- music storage (e.g. a music library)

The classrooms should be designed so that the larger space can be subdivided into two smaller spaces. This would allow flexibility for varying class sizes. Each classroom should contain a cupboard and chalkboard. Storage should be provided for books, audio-visual equipment, and other educational supplies. The atmosphere should be bright and sunny without being distracting.

2.4: Space for Recreation

The space for recreation is to be a large multi-use space. This space should accommodate functions of a larger scale (i.e. where classrooms and conference rooms are too small). These functions would occur on a frequent basis. The space would be scheduled for use by specific groups on weekdays and evenings. Other community and Church groups could reserve the space for special events (e.g. weddings, anniversaries, conferences etc.). The congregation's representatives indicated a number of functions that would occur in this space for recreation:

2.4.1: Nursery School

A nursery school for up to 20 children would operate during the week and would require large space for children's activities and games. The floor and walls would need to be constructed to resist damage and to be easily cleaned.

2.4.2: Meetings

Church groups would require space for large meetings (e.g. the annual congregational meeting, and other major conferences). The lighting would need to be flexible and adjustable in order to alter the space for the presentation of slides or movies. A slide/movie screen should be able to be electronically lowered from the ceiling and any glass windows or doors to the outside would need to be shaded by blinds for these occasions.

2.4.3: Fitness Classes

Fitness classes require a large space for exercising (Figure 5). For this function, the space needs bright lighting and floor mats and a stereo system must be stored within close proximity.

2.4.4: Sports and Games

Youth groups (up to 20 youth) require space for games (e.g. volleyball). Sport and game equipment would, again, need to be stored within close proximity. The floor would need to be resilient enough to withstand impact and be easily cleaned. Abundant lighting is necessary for these functions. The lighting hardware would, however, need to be

located away from areas where it could be damaged or obstruct any activity. The walls would need to be of sturdy construction to avoid damage. The walls would also need to provide soundproofing between this space and other spaces.

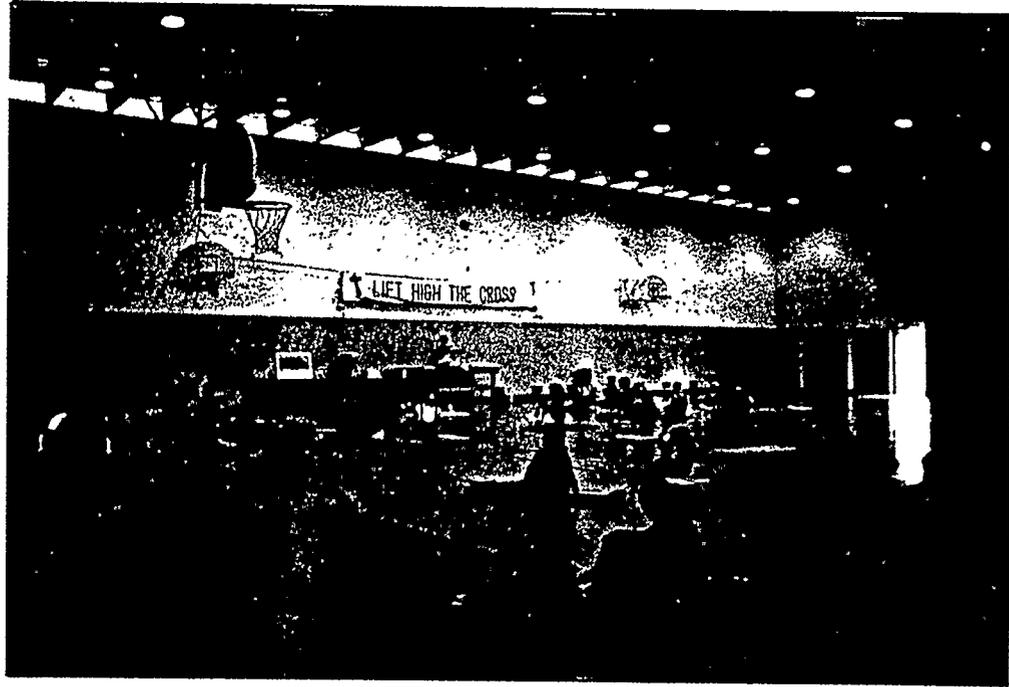


Figure 5: Typical Fitness Class

2.4.5: Music Programs

Musical or dramatic groups would require space for practices and occasional performances (e.g. the choir, handbell ringers and drama groups). Special lighting equipment would need to be contained in the ceiling where it could be adjusted for a variety of performances. A stage platform and extra chairs would need to be stored within close proximity. Hard wall surfaces would be needed in order to provide adequate reverberation time for pleasant acoustics.

2.4.6: Banquets

Wedding receptions and other banquets require large space (up to 200 people) for dining and dancing. Collapsible tables and chairs would need to be stored near this space. A stage platform would be used by speakers and musical performers for these occasions. An adjacent and connected kitchen space is needed to provide food services for these large receptions. Lighting should be adjusted and background music provided in order to create an appropriate atmosphere for these receptions.

This multi-use space should be located near the fireside room (lounge) and the larger foyer in order that people who have finished their recreational activity have a place to sit and talk. It should also be adjacent to a kitchen facility in order that the users can prepare food and beverages for consumption before, during or after some recreational event.

The kitchen should be equipped to provide food preparation and clean-up services (i.e. stove, microwave oven, refrigerator, freezer, dishwasher, cupboards etc). The kitchen space itself should also contain a table and chairs for meals for smaller groups of people (e.g. the “mens’ breakfasts”).

The multi-use space should open up to the outside, where large groups of people can step out onto a courtyard for a breath of fresh air. This courtyard would be used as an outdoor extension for the space for recreation. While this courtyard should be open to the sky, it should be defined and separated from neighbouring sites (e.g. with landscaping). This courtyard should be a space that allows the children in the nursery school program to play outside. It should be a space where groups could host barbeques or where wedding guests could gather for photographs. The courtyard should be flexible

enough to allow for these and other recreational activities.

The congregation should be able to collect revenues by renting out the entire multi-use space during the week to various public organizations. Other spaces not in use at the time should be able to be locked up during these community activities in the space for recreation. This space should, moreover, have its own distinct entrance so that people could, when necessary, access it directly from the outside.

2.5: Parking

The new sanctuary will seat a maximum of 500 people (more than twice the number accommodated by the present facility). There is a requirement for this congregation to provide parking for 100 cars. Some of this requirement can be satisfied with on-site parking. The congregation's representatives have indicated that only during the busiest times (Sunday mornings for example) would additional (off-site) parking space be necessary. The solution to these requirements would arise as the result of negotiations between the congregation and the City of Calgary. Options for Sunday off-site parking include: parking along Elbow Drive Southwest; parking along Sylvester Crescent Southwest; parking in a portion of the Senior Citizens' Residential Parking lot; and parking in the lot of the Southwood Elementary School.

The programmatic requirements for the new church facility are outlined in Table 1. The total required area of 1627 square metres (17,513 square feet) makes it essential that the site be cleared of all existing buildings. The congregation's representatives indicated that this should be undertaken in a manner that will allow the existing buildings to be used by the congregation before and during the construction of the new facility.

2.6: Phasing

The congregation's representatives have requested that construction of the new facility be done in phases. This would allow the congregation to fund new construction for smaller independent portions rather than for the entire facility. It is important to assume, at this programming stage, that some of the old existing facilities would remain in place during the construction phase of the new facilities and would temporarily accommodate some of the program's functional needs. The existing sanctuary, for example, could remain in place and be used for various functions while the congregation awaits the construction of the new facility. This would allow the congregation to carry on with their church activities without disturbing construction operations. This issue will be discussed in greater detail in Section 8.3.

2.7: User Groups

It can be assumed that the new facility will be used by many groups. The Lutheran Church of the Cross is, moreover, located in an area of the city populated by a variety of age groups.

One issue raised by the congregation's representatives was that it would be desirable to keep more youth (aged 14 to 20) involved in the Church. Presently, this age group is not as involved in the life of the Church as it potentially could be. It is hoped that the new facilities would provide a greater variety of activities attractive to this group.

The space for worship could be used as a performance space for major dramatic and/or musical productions of the youth groups. The space for recreation would provide the youth with a space for sports. The adjacent kitchen facility and fireside room would allow the youth (and other groups, for that matter) to meet for meals, games, discussions

and Bible studies. These activities help to attract youth into the Church. The community would begin to see that the Lutheran Church of the Cross provides a place for many aspects of Church life. The spaces in the new facility would accommodate and enhance these activities.

3: SITE ANALYSIS

Once the architectural programming requirements have been established, it is necessary to bring attention to some of the issues concerning the site.

3.1: Location

The site of the Lutheran Church of the Cross is located on the corner of Elbow Drive Southwest and Sylvester Crescent Southwest in Calgary, Alberta (Figure 1). It's address is 10620 Elbow Drive Southwest. The area of the site owned by the Lutheran Church of the Cross is approximately 4370 square metres (47, 040 square feet).

3.2: Surroundings

The surrounding characteristics of this church site are indicated in Figure 6. To the north of the site are houses built mostly in the 1950's and 1960's. The northeast corner of the site was sold to Canada Post and now contains the Letter Carrier Depot (built in 1980). The Southwood Elementary School (built in 1963) sits across from the northeast corner of the site and its playground field extends along to the east of the site. The immediate neighbour to the south of the site is a three-storey senior citizens' residence which was built in 1978 (Figure 7). This residence has its own courtyard which extends to the southwest boundary of the site. Southwood United Church (built in 1983) sits on the southern end of the block. Elbow Drive Southwest runs along to the west of the site. This is usually a very busy and sometimes noisy street. The northwest corner is the most visually "open" end of the site. This corner is the most visible to traffic along Elbow Drive Southwest in both directions.

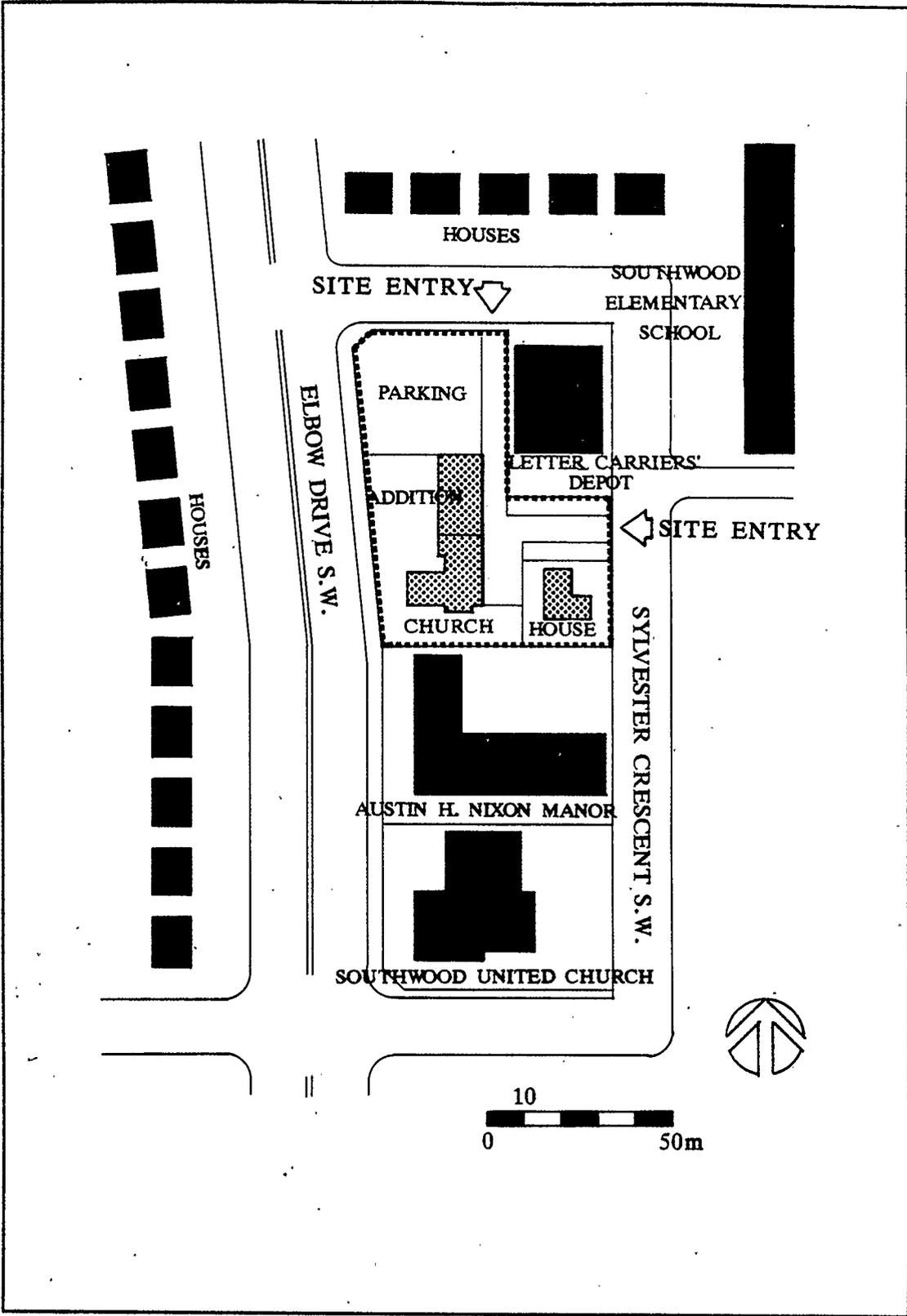


Figure 6: Existing Site Footprint

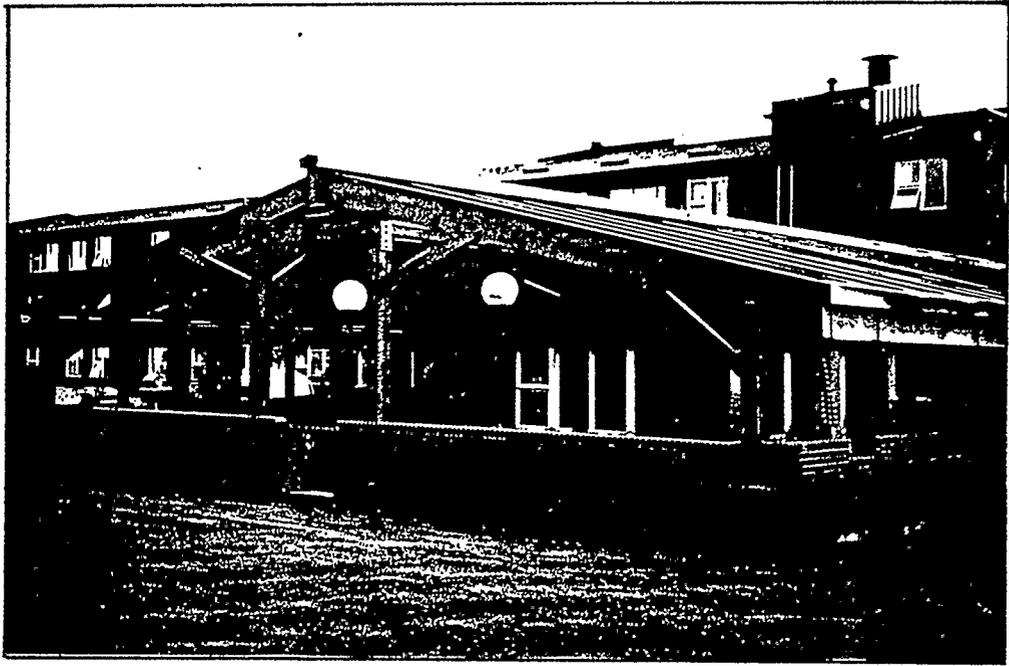


Figure 7: Austin II. Nixon Manor Courtyard

3.3: Existing On-Site Structures

The site is owned by the Lutheran Church of the Cross (Figure 8) and contains the existing sanctuary (built in 1964), its addition (built in 1981), and a detached house (built in 1965) and occupied by the assistant pastor. It is the intention of the congregation's representatives that all of these structures be removed according to a phasing strategy (to be discussed in Section 8.3).



Figure 8: Existing Church from the South

3.4: Access to the Site

Vehicular access into the site occurs from either the north (into the present parking area) or from the east. Both of these access points occur along Sylvester Crescent. Access from directly off of Elbow Drive is not desirable because large gatherings may create traffic jams and the site is located too close to a street corner. Members and visitors to the church generally drive to the site in their own vehicles. A “handi-bus” brings any disabled visitors to the site.

One major issue concerning site access is that the trucks owned by Canada Post are parked behind the chainlink fence along the present entry roads and are visible from the church site (Figure 9). It is hoped that, since this is regarded by the congregation as an unpleasant distraction, a screen of some sort would be created to visually separate the Canada Post trucks from the church site.

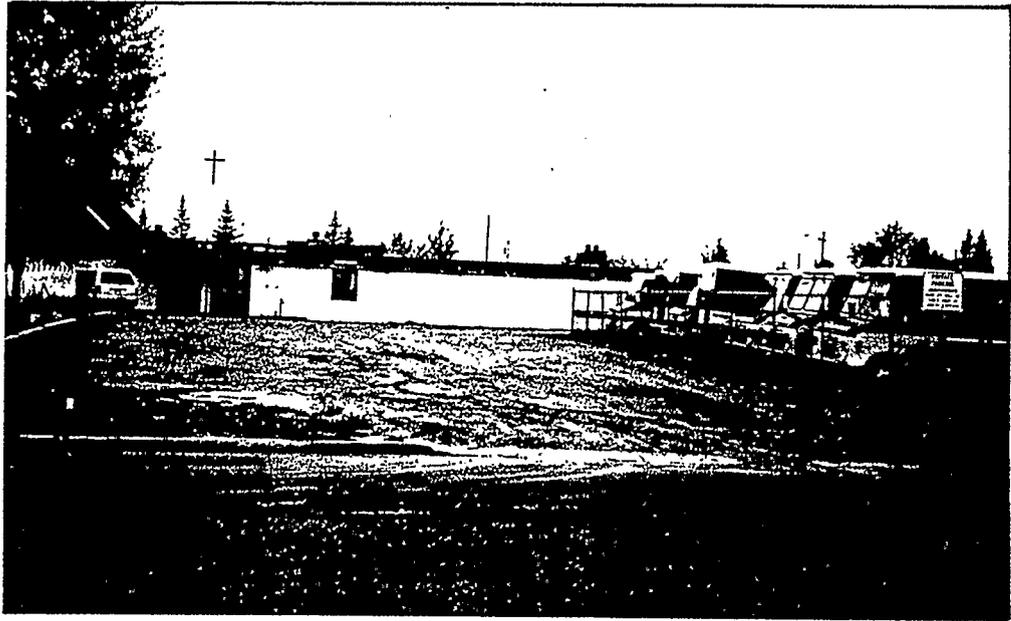


Figure 9: Letter Carriers' Trucks

4: CHURCH-RELATED ISSUES

When designing this facility, it is important to understand the Christian tradition and how it relates to architecture. The Lutheran church, moreover, has characteristics that distinguish it from other denominations. These characteristics should be addressed in both the preparatory and design stages.

The theology of Martin Luther has been significant in determining how the Lutheran Church liturgy is used in the worship service. This specific congregation has its own attitude toward the role of their facility as a place for worship, fellowship, administration, education and recreation for the neighbourhood community. The attitude of the specific congregation will be discussed later.

It is necessary, at this point, to have a basic understanding of the origins of the Christian Lutheran Church and how these relate to architectural design.

4.1: Origins of Christian Church Architecture

The symbolism and spatial organization of the space for worship evolved according to the theology and social conditions of the time. The role of the Christian liturgy also changed and was dealt with architecturally.

During the persecutions of Christians in the 3rd Century A.D., the Church found its support among the poor. Church buildings, though useful, were not all that significant to these early believers (VanLoon, 1982). The event of the Eucharist (Holy Communion) was more important than the place. This event could happen in places of relative security—along the seashore, on a hillside, in catacombs (underground cemeteries) or in private homes.

The house at Dura Europos (ca. 200 A.D.) was one of the earliest spaces for Christian worship. Here the early Christians met secretly to celebrate Communion in the dining room, the service of the Word in the living room and Baptism in the bathroom (Figure 10).

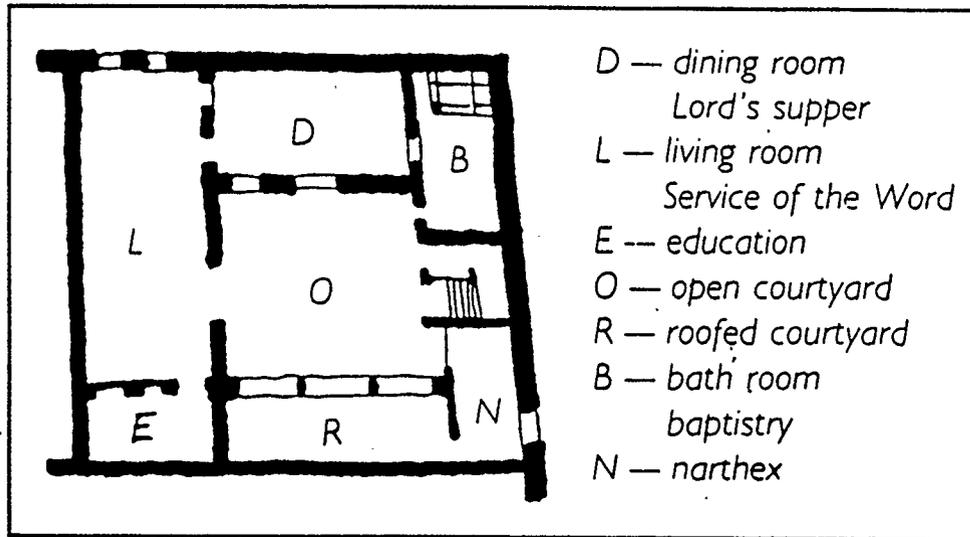


Figure 10: Church House at Dura Europos (ca. 200 A.D.)

The persecutions produced martyrs, whose burial places came to be regarded as “holy places” by the surviving Christians (Jorgensen, 1983). The tombs of the martyrs became altars, where Holy Communion could take place. The table, previously used for the Communion meal, began to disappear as these large stone altars came into more common use.

In 313 A.D., Emperor Constantine halted all anti-Christian efforts and identified Christianity as the favored religion of the Roman Empire. Constantine ordered the restoration of churches that had been destroyed and the construction of new churches throughout the empire. The Church took advantage of its new freedom and the generosity of the emperor through aggressive evangelism. The need for new places of worship was

apparent. E.A. Sovik (1973) identifies three significant developments from this time in history: gatherings became public, homes were no longer adequate for worship and places of martyrs were given special honor. In Byzantine religion worship became a “public”, rather than a “family”, event.

The basilica was adopted as the model for Christian architecture. This long and narrow columned hall with a domed apse at one end was inspired by the Greek temple and was seen as a suitable space for large public gatherings (Figure 11).

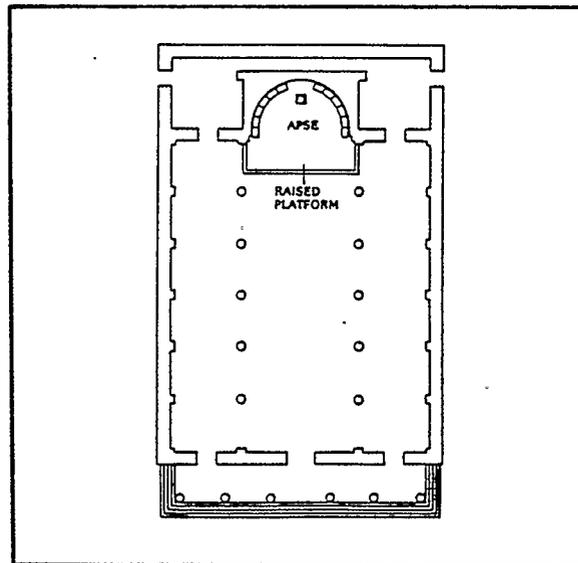


Figure 11: Basilica Floor Plan (ca. 4th Century A.D.)

For most Christians in the western world, the basilica became the standard design for church architecture. Many welcomed this architectural design because it promoted the trend of clericalism in the liturgy. The judge’s throne in the apse became the bishop’s throne. The remaining space on the platform, which was once reserved for law clerks, was now reserved for the clergy. The congregation gathered in the public space and took on the role of spectators. The basilica provided the stage for many ceremonial actions. The intimacy of the liturgy of the early house was disappearing. A significant shift in the nature and character of Christian worship was marked by the increasing size of the

congregations, the emphasis on hierarchism and the role of laity as spectators. The image of the humble shepherd had become an image of an enthroned monarch (Kostof, 1985). This new attitude was distasteful to some, who left the cities to join the monastic movements in the desert.

Byzantine Architecture--for example Hagia Sophia (ca. 537 A.D.)--attempted to combine the directionality of a long hall, for the liturgical march that led to the apse, with the vertical accent on the dome of heaven (Figure 12). The emphasis for the worship space was less on a human scale and more on imperial pageantry. Even the mosaics on the walls reflect images of earthly emperors alongside the heavenly hosts and saints. Hagia Sophia is, architecturally, the marriage of a basilica with a vaulted superstructure where neither is allowed to dominate. The huge scale makes people feel insignificant.



Figure 12: Hagia Sophia (ca. 537 A.D.)

During the centuries leading up to the period of Gothic cathedrals, the people watched the altar being moved further and further from them (Figure 13). The laity had less to do during the celebration of the liturgy while the clergy had more to do.

In the medieval centuries, the basilican concept had been stretched and modified to accommodate a liturgy that had become a clergy specialty. In the Gothic cathedral, for example, the “house for worship” had become a “house for God to stand up in” (Sovik, 1973). This building was also to be a place for the miracle of the transubstantiation of the bread and wine in Communion (Davies, 1952). The overwhelming height and volume, along with the abundance of light through stained glass imagery, made the worshipper feel that he or she was in a spiritual space-- a space “out of this world”. The upward flow of arches created a visual tunnel that led the eye upward, toward heaven, and forward, toward the altar in the chancel (Figure 14).

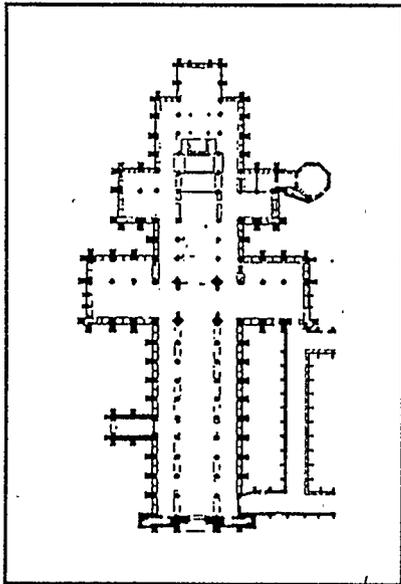


Figure 13: Gothic Floor Plan



Figure 14: Gothic Arches

Baptism now took place in the same building, but it happened in an alcove, aisle or in the nave during a separate service. The Communion table was now a heavy stone altar set deep within the chancel and screened from the view of the laity. Communion was rarely eaten and barely seen (Jorgensen, 1985). Elements of the spatial organization of the Gothic cathedrals have endured even in some modern North American churches.

The efforts of the sixteenth century reformers stressed the importance of congregational participation in worship. This emphasis on liturgical renewal continues even today. Martin Luther urged that the altar be brought forward from the wall of the chancel in order to permit the pastor to face the congregation. His recommendations for architectural changes were mostly ignored at that time. Today, however, some modern "Gothic" churches have made some of Luther's suggested modifications (Figure 15). Zwingli's reform efforts led to the partial destruction of some Gothic churches in order that they respond more appropriately to the new liturgy. Other radical reformers returned to the house as the place for worship (e.g. Puritan meeting houses). The Presbyterians of Scotland used bricks and mortar to close off the chancel in order to return to the one-room worship space. Anglicans replaced the stone altars with wooden tables. Some Lutheran reformers introduced the "prinzipalstuck" which was one piece of furniture which included table, font and pulpit (Jorgensen, 1985). This emphasized that the Word and the sacraments were unified in the service.

Changes in form, symbolism and spatial organization, in architecture for the Church, have often responded to the social, liturgical and theological factors of the time. Charles Davis (Hammond, 1962) stresses that church architecture should accommodate communal celebration. The space for worship, moreover, should be designed from the altar outwards and function as a shelter for a celebration.

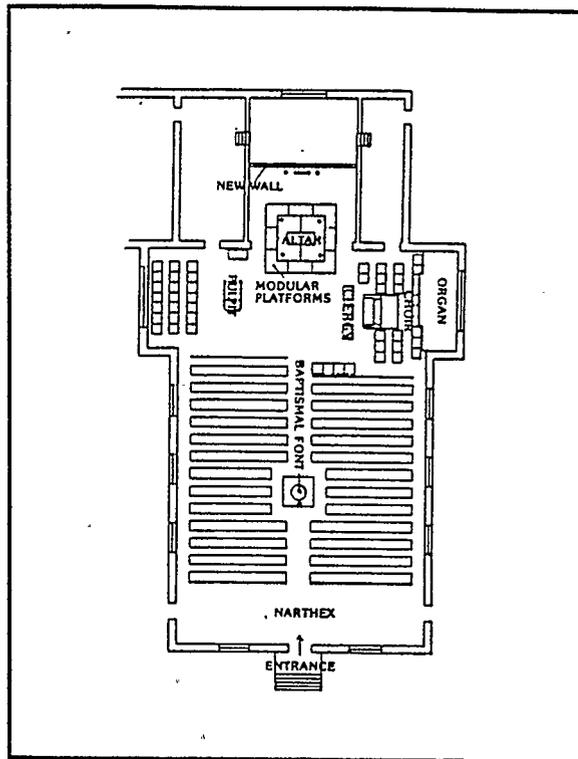


Figure 15: Modifications to Gothic Plan

4.2: Lutheran Theology

It is imperative that the design of this new Lutheran Church facility be an attempt to better accommodate the Lutheran theological position.

Luther's efforts aimed at bridging the gap between God and the common man. The good news of the Gospel became more available to the people with the invention of the printing press. Luther emphasized that Christ--rather than a priest or bishop-- is the bridge between man and God and that God's forgiveness through Christ's suffering was not to be denied of anyone. It was, therefore, important that there be nothing acting as a barrier between man and this gracious gift of God. Among other contributions, Luther emphasized the importance of the preached Word, the celebration of the sacraments of

Holy Communion and Baptism and the importance of music in the worship service. Luther stressed that the congregation should take on the role of participators, rather than spectators, in the worship service.

Luther's efforts did not bring about the direct development of a new architecture for the church. Most Lutherans throughout Europe and even in North America adopted the existing Gothic plan for their space for worship. The architectural design of a space for worship today, however, allows the opportunity for the designer to reflect an understanding of both the origins of Church architecture and the importance of Luther's theology.

4.3: Lutheran Liturgy

In the Lutheran worship service, the emphasis has been placed on the congregation confessing their beliefs through word and song, hearing the scripture readings and the Gospel and participating in the sacrament of Holy Communion. It is important that the congregation feel a sense of community. It is also important that they all share a common focus in the act of worship.

Lutherans confess belief in the "communion of saints" and the "priesthood of all believers". There is to exist no hierarchy where one man has spiritual superiority over others. While the minister is clearly seen as the leader, the entire congregation is still to be understood as the "body of Christ".

The worship service for the Lutheran Church of the Cross congregation typically includes:

- the processional march of the pastor and/or assistant
- the singing of hymns
- the reading or singing of Psalms and other canticles
- the reading aloud of the confession of sins
- the reading aloud of the Apostle's or the Nicene Creed
- the occasional celebration of a baptism
- the scripture and Gospel readings
- the presentation of the sermon by the pastor
- the collection of the offering from the congregation by the ushers
- the presentation of special music by the choir or other individuals
- the distribution of Holy Communion by the pastor to the congregation
- the praying of general and specific Church prayers
- the giving of the Blessing (Benediction) by the pastor to all
- the recessional march of the pastor, assistant, and others

4.4: The Church in the Community

Another church-related issue pertaining to the design of The Lutheran Church of the Cross has to do with what the Church stands for in its community. The programmatic requirements already discussed indicated that the church has great functional potential for the surrounding community. While the church does not replace the neighbourhood

community centre, it can still provide a variety of avenues for members of the surrounding community to become involved in church life. The new facility should, therefore, accommodate the needs of the immediate congregation and allow the larger community to participate on a variety of levels in order that the Church family might grow.

More than the specific uses of the facility, however, it is important to realize that the church should act as a symbol, to the community, of the unconditional love of God. People should be able to view the building as a place of refuge as well as a place of celebration. It should function on a daily, rather than weekly, basis as a place of community activity on a variety of levels. If the Christian attitude is that the congregation open its arms to the community, then this should include extracurricular events as well as the Sunday morning worship service.

While it is certainly the responsibility of the congregation to convey this message to the community, it is also essential that the message be enhanced by the architectural planning and expression of the building.

5: CONCEPT

The architectural concept for the Lutheran Church of the Cross, in this project, is an attempt to respond to the programming, site and church-related issues previously discussed. It is the initial and most general architectural response to these issues. The more specific architectural design will be discussed in Chapter 4.

5.1: Parti

The parti (simplest diagrammatic analysis) for the new facility (Figure 18) shows that, in plan, the building would consist of four distinct geometric parts (circle, triangle, rectangle and square) which fuse to create a whole. This approach was chosen in order that the four basic functions of the church be accentuated. The four pieces would be distinct but not separate. Just as the “Body of Christ” is made up of many parts which function together for the good of the whole, so should the functions of the church be seen as parts which contribute to the greater whole. This architectural approach would be an attempt to express this philosophical concept in a physical way. It would also be an attempt to make the composition of the various spaces simple and clear. An explanation for choosing certain geometric shapes for particular functional spaces will be discussed in the next section.

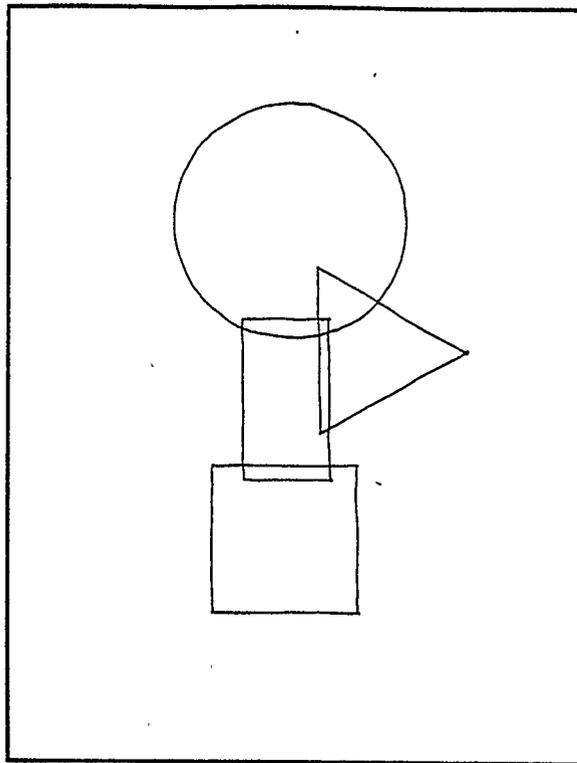


Figure 16: Parti

5.2: Spatial Analysis

Each distinct piece, as discussed above, represents a major function of the program for the church: the circle would define the space for worship, the triangle would be the space for fellowship, the rectangle would be designated as space for administration/education and the square would be the space for recreation (Figure 17). These four major functional spaces (pieces) would combine to create a whole, which is the life of the Church. The spatial analysis would be, therefore, a direct response to the parti.

The triangular space for fellowship would be the piece which connects itself to all other spaces. Fellowship would be seen as an activity which is central to all other activities (worship, administration/education and recreation). The triangular shape

marries itself well to the geometry of the other spaces (circles and rectangles). The triangular shape was also chosen because the apex of the triangle would lead to the space for worship--primary to the life of the Church.

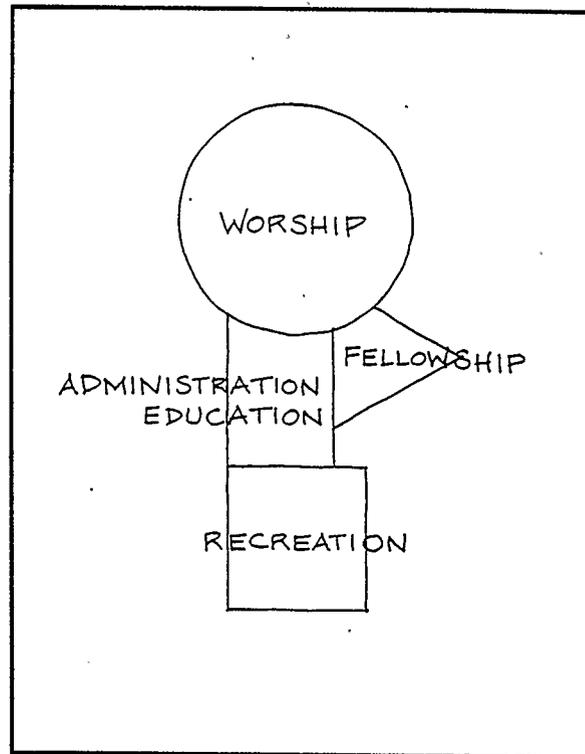


Figure 17: Spatial Analysis

The space for worship would be the circle. The centre of the circle would be the focus of worship. This would be the most visually and acoustically significant space for the celebration of the Word and sacraments. Just as people naturally gather “around” a storyteller, the congregation gathers around the focus of worship. In the circle, the worshiper is, moreover, aware of his or her fellow brothers and sisters in the congregation. The centre of the space for worship also contains the highest part of the space. Here, the transcendental aspect of Christian worship (where one looks up to God in Heaven) would be emphasized.

5.3: Circulation

The congregation's representatives indicated the desire for an architectural concept for the new Lutheran Church of the Cross that provides a clear sense of entry and procession. Primary and secondary paths are indicated in the diagram (Figure 18) for both outside and inside circulation.

5.3.1: Outside Circulation

Access to the site by vehicle (primary circulation) would occur along a new lane from the east. People could be dropped off at the southeast entrance of the space for fellowship and drivers could proceed to a new parking area in the southeast corner of the site. The facility could be reached by pedestrians (secondary circulation) from the sidewalk on the west. This scheme was created because it allows clear and simple circulation for both vehicles and pedestrians into the new facility. It is also a scheme that utilizes access routes, to the points of entry, that are already familiar to the congregation.

5.3.2: Inside Circulation

The circulation paths were created to respond to the various functions of the new facility. The primary circulation route corresponds to the major function of the church (the act of worship). Other secondary circulation routes would be used for the other functions of the new church facility (administration/education and recreation). Space for fellowship (major and minor) would occur at the junctions of these circulation routes.

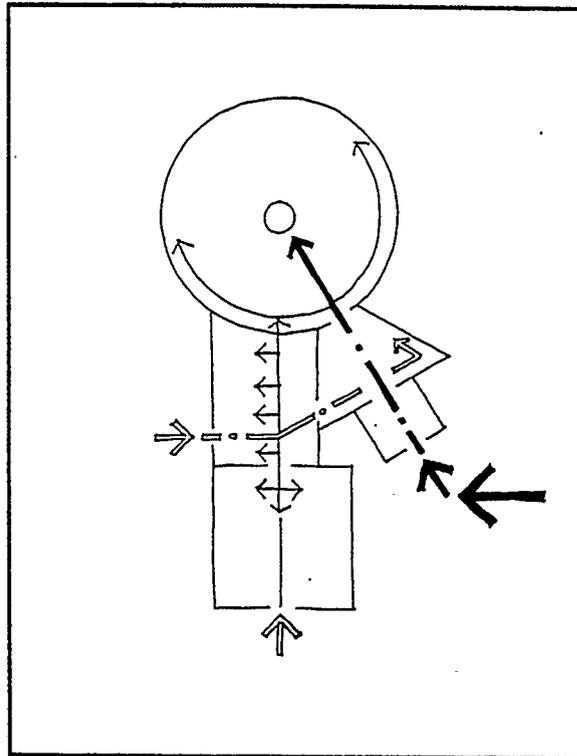


Figure 18: Circulation Analysis

5.3.2.1: Circulation for Worship

Inside circulation for various worship service events would follow the major route from the space for fellowship into the space for worship. Both entrances into the new facility would bring people into the large space for fellowship. From there, people circulate straight down the central aisle or out to the sides along the curved inner walls of the space for worship.

The minister would enter the space for worship from his office and then march up the aisle to begin the service. The central aisle would also be used for the processions and recessions of special choirs, bridal or funeral parties.

The fellowship foyer would contain a staircase that would allow circulation to an upper level for worship and educational functions.

5.3.2.2: Circulation for Administration and Education

Minor circulation routes are indicated for people who may be carrying out administrative or educational tasks. A distinct area would be set aside for administrative offices on one level and educational classrooms on another level.

The administrative zone could be reached from the space for fellowship, the space for recreation or directly from the west entrance. This way, visitors to the church could easily contact the church secretary or either of the pastors. There would be a connection between the space for worship and the senior pastor's office. This allows the pastor to prepare for his processional (as discussed above). A stairwell would vertically connect the administrative area on the main level and the educational area on the second level. The educational zone (and thus each classroom) on the second level could also be accessed from an upper fellowship area off the balcony of the space for worship.

5.3.2.3: Circulation for Recreation

People wishing to use the space for recreation can reach this space either indirectly from the fellowship foyer or directly from an outside courtyard to the south. This scheme allows members of the congregation to circulate from the space for worship into the space for recreation via the space for fellowship. Members of the community could use the space for recreation by reaching it from the west entrance or directly from the outside south entrance. This would allow one group to be using the spaces for worship and fellowship while the community group uses the space for recreation at the same time without creating a disturbance. On the second level, it would be possible for a person to observe the space for recreation from an upper balcony without disturbing the activity.

The architectural concept at this initial and simple stage will be the major influencing factor in developing the more detailed design.

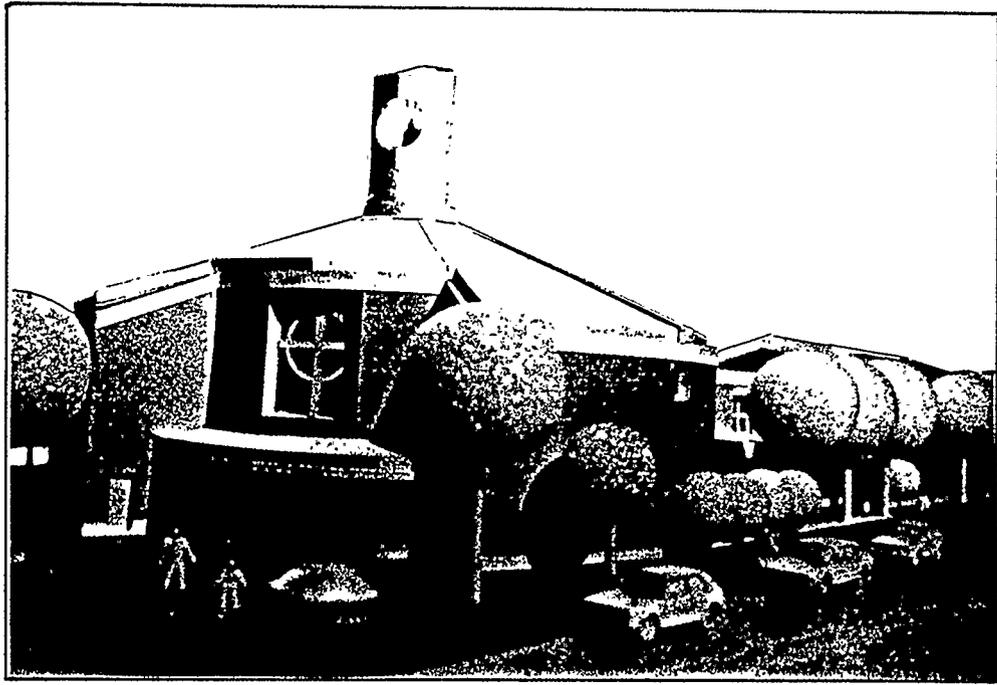


Figure 19: New Church from the Northwest

6: ARCHITECTURAL DESIGN RESPONSE

Architectural design issues, site analysis and Church-related issues for this particular project have been established. This chapter will discuss the architectural design response to the both the specific program requirements and to the broader issues of architecture for the Lutheran Church.

The floor plans (Figures 20 and 21) show all the necessary spaces for the new church facility arranged in response to the architectural concept. Table 2 indicates the floor area for each space in the design for the new church facility.

The design for the new facility can be seen as a composition of the four functional parts: worship, fellowship, administration/education and recreation. Each of these functional pieces was designed to respond to the spirit of the concept and to enhance the appropriate activities.

The architectural design response, particularly for the space for worship, attempts to emphasize some of the important theological and liturgical themes of the Lutheran Church in a visually symbolic way.

6.1: Space for Worship

The new space for worship would seat 500 members. This would be the maximum number of worshippers assumed after ten years of growth in the congregation. Each of the functional program requirements for the space for worship have been addressed in this design and will be discussed individually.

The architectural response to the concept was, for this space, intended to create an overall atmosphere that would enhance the functions of worship for this Christian community.

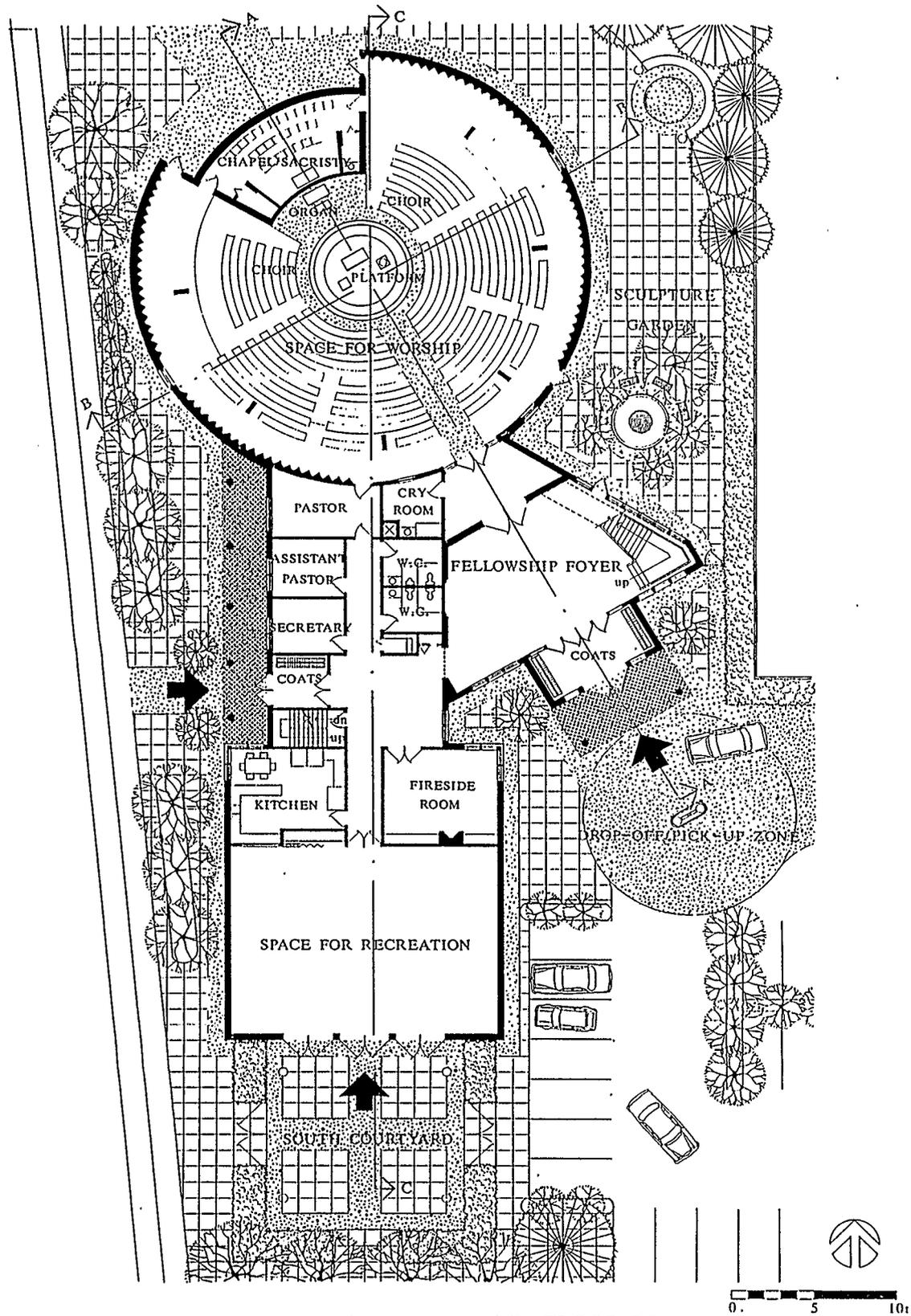


Figure 20: MAIN FLOOR PLAN

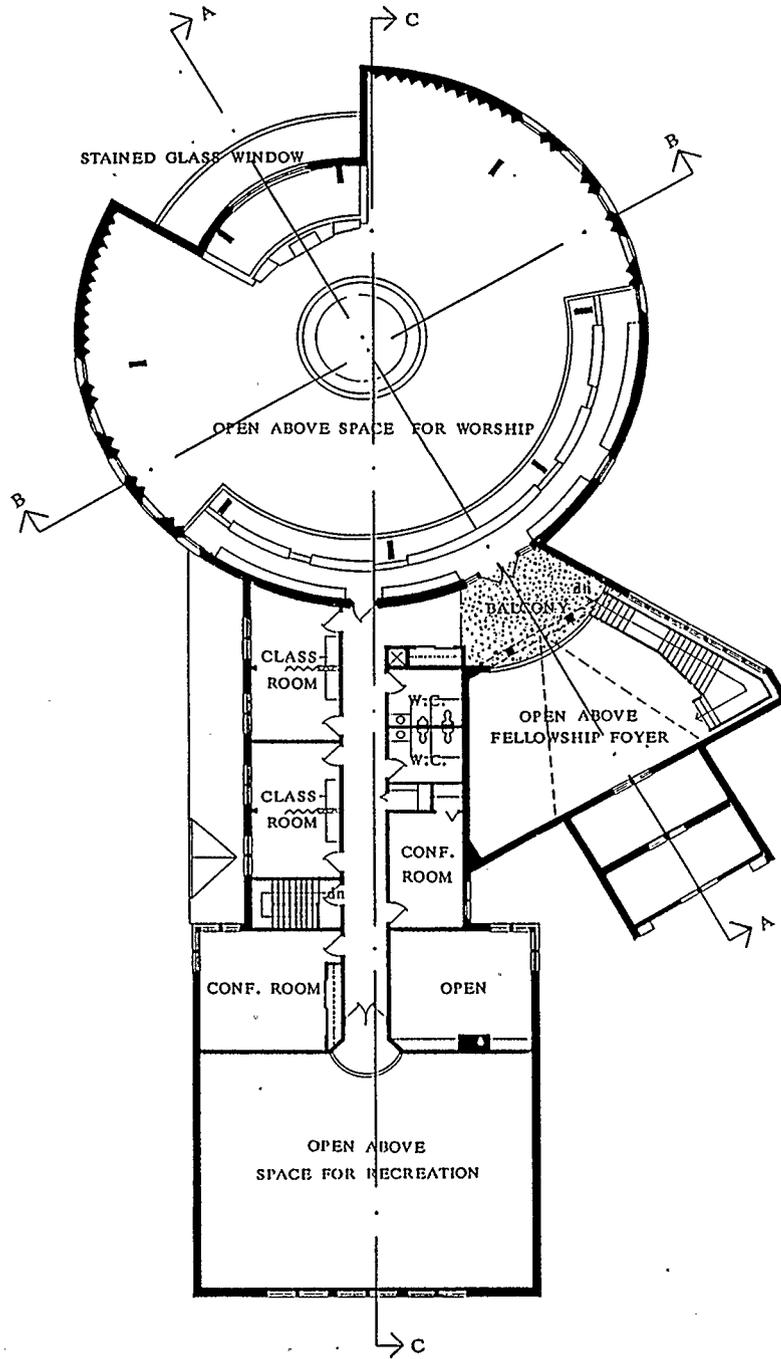
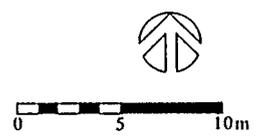


Figure 21: SECOND FLOOR PLAN



6.1.1: The Word

The preaching of the Word would be accommodated by the pulpit located, along with the Communion table and the Baptismal font, on the platform at the centre of the space for worship. From this point, the speaker (whether clergy or laity) could be best seen and heard by the congregation surrounding him or her.

The congregation would be seated in chairs and pews arranged in a semi-circle around this central platform. The floor of the space for worship would be sloped downward towards the central platform. In this arrangement, worshippers in the congregation would not be very far removed from seeing this area of worship.

The pulpit would be characterized by sturdy and beautiful wooden construction in order to emphasize both the power and beauty of the Word of God. Worshipping “in the round” provides an atmosphere where worshippers have both a visual focus and an awareness of their fellow brothers and sisters in Christ. This arrangement also enhances the idea of the people gathered around the Word.

6.1.2: Holy Communion

The celebration of Holy Communion would be accommodated around a portable railing installed around half the circumference of the circular platform (Figures 22 and 23). The congregation would kneel around this half-circle railing and receive the bread and wine from the pastor and his assistants. The bread and wine would be placed on the table, during this celebration, where they could be seen by the entire congregation. It is common for ushers to direct the congregation to receive Holy Communion in turn by forming two lines at the foot of the platform. The people in the two lines proceed to the communion railing, as directed, and fill one half of the circle. After this first group has

received the bread and wine along with the spoken words of the minister, they rise and return, in a line, to their seats. The ushers then direct the next group to proceed to the communion rail.

6.1.2.1: The Communion of Saints

The significant measure taken in designing for the function of Holy Communion, was that the space would have a quality of “community”. One half of the circle would contain the living communion celebrants. The other half of the circle implies that the “communion of saints” (those Christians who have died) are also celebrating the meal. Some of the early Lutheran churches of the North American prairies had a half-circle communion rail at the front of the church. The “invisible” other half of the circle would extend out into the church cemetery. In this case, the deceased relatives of the congregation were also considered to be taking part in the spiritual celebration of communion. The Lutheran belief in the “communion of saints” is found in the Lutheran Book of Worship in the Apostle’s Creed (page 85).

By recalling this theme, the new space for worship would be bringing attention to both theological and historical aspects of their Christian heritage.

6.1.3: Holy Baptism

The celebration of the Sacrament of Holy Baptism would take place around the baptismal font on the platform. The important aspect of this piece of furniture is that the most visually significant element would be the water in the bowl. The minister, the parents, godparents and the child for baptism are the participants in the celebration. They would stand around the font for this sacrament.

The wooden font would match both the pulpit and the table. The bowl in the top of the font would be uncovered during worship services and the ushers would ensure that it was filled with water. This water could be collected from a sink in the sacristy. The nature of the sacrament of baptism in the Lutheran Church is that water is scooped up from the bowl and used to spiritually wash the candidate for baptism. The minister makes the sign of the cross on the forehead of the candidate with water. This differs from some other Christian denominations (e.g. the Baptists) which practise whole body immersion into a pool of water. For this reason, the font does not require any plumbing or drainage attachments. This also means that the font could be portable.

It is important that the congregation be witnesses to the sacrament of baptism. When the font is not being used for baptism, it would still remain in place on the platform and serve as a reminder to the congregation of their birth into the Christian Church.

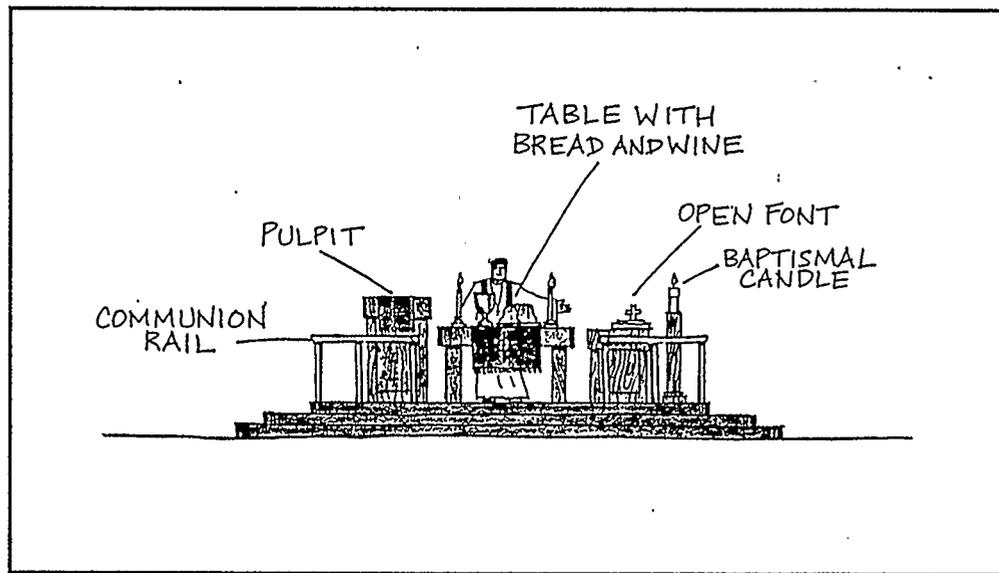


Figure 22: Elevation of Central Platform

The pulpit, table, font, railings and other worship elements can be moved off the platform should the platform be needed for a major dramatic stage set. They would be stored in the sacristy for these occasions. Although this does not happen often, this arrangement at least allows for the possibility of such events (e.g. Christmas and Easter programs etc.).

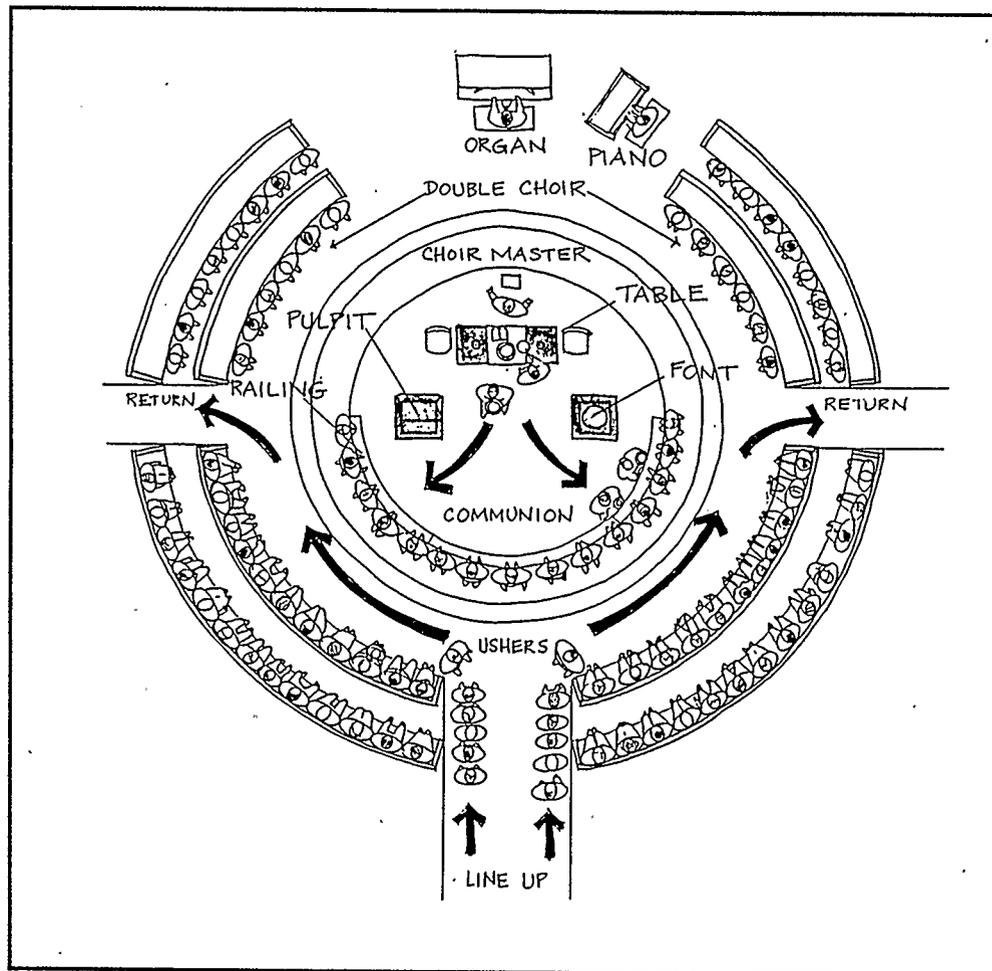


Figure 23: Plan of Central Platform

6.1.4: The Light of the World

Daylighting from the skylight above the worship platform would bring visual significance to the pulpit, table and the font. Skylighting has been effectively used in other North American Lutheran churches (Figure 24). The indirect lighting would also help to remind the worshippers of the spiritual nature of Jesus Christ as the “light of the world”.

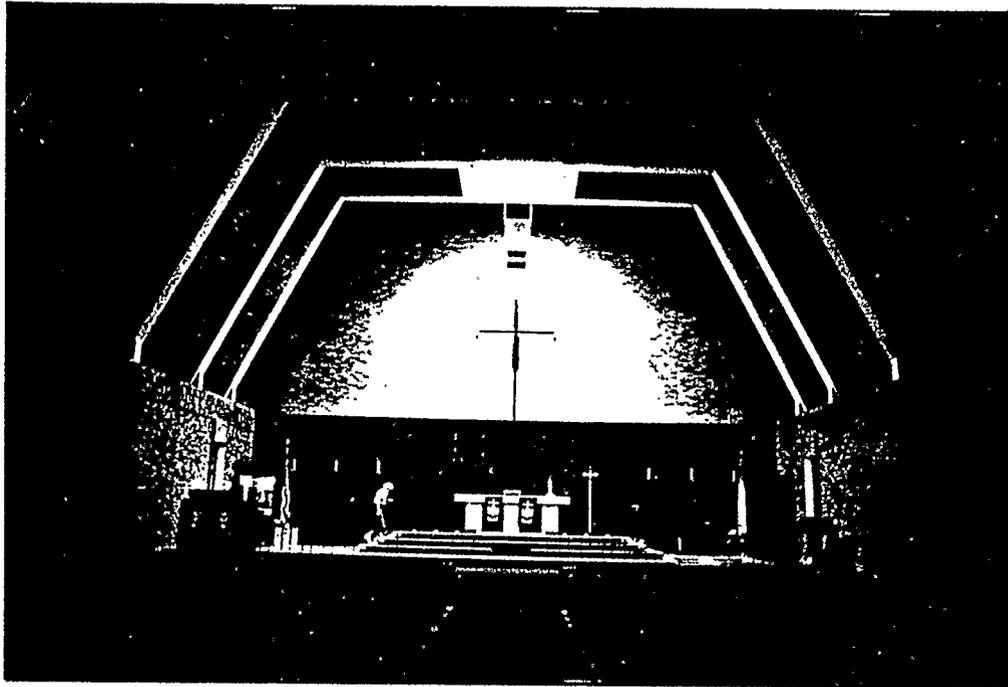


Figure 24: Church with Skylight

The source of this light would be from the southeast late morning sun (Figure 25). The light would be white. Background lighting from windows would be filtered through coloured glass in warm tones. This means that the light above the worship platform would be perceived as the purest and brightest.

The theme of light as a spiritual symbol is recalled in the Lutheran Book of Worship in the Nicene Creed: “. . . God from God, Light from Light. . .” (page 84).

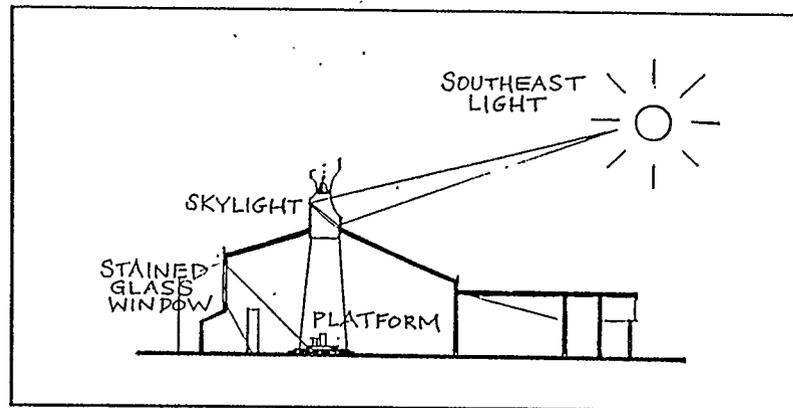


Figure 25: Daylighting Diagram

6.1.5: Stained-Glass Imagery

The visual focus of the congregation would be towards the centre of the circular assembly. A large stained-glass window would serve as a backdrop above the worship platform. The use of stained-glass imagery as a major visual element has been used effectively, again, in other North American Lutheran churches (Figure 26).



Figure 26: Church with Stained-Glass Imagery

The coloured glass imagery on this window (Figure 27) would recall the following basic Christian themes for the congregation:

- the significance of the cross of Christ's sacrifice for the redemption of our sins is central to the doctrine of the Christian Church and remembered in Holy Communion: "... for our sake he was crucified under Pontius Pilate. . ."

(Lutheran Book of Worship: The Nicene Creed, page 84)

- the fire, water and the dove are symbols of God's Holy Spirit which comes to mankind through Baptism; the spiritual nature of fire and water are recalled in the Lutheran Book of Worship on page 122:

"... You led Israel by the pillar of cloud and fire through the sea, out of slavery into the freedom of the promised land. . ."

"... He made water a sign of the kingdom and of cleansing and rebirth. . ."

- the stalks of wheat are symbols of our spiritual "daily bread" which comes to mankind through the Word of God; Hymn 222 in the Lutheran Book of Worship contains words dealing with this theme:

O Bread of Life from Heaven,

O Food to pilgrims given,

O Manna from above:

Feed with the blessed sweetness

Of your divine completeness

The souls that want and need your love.

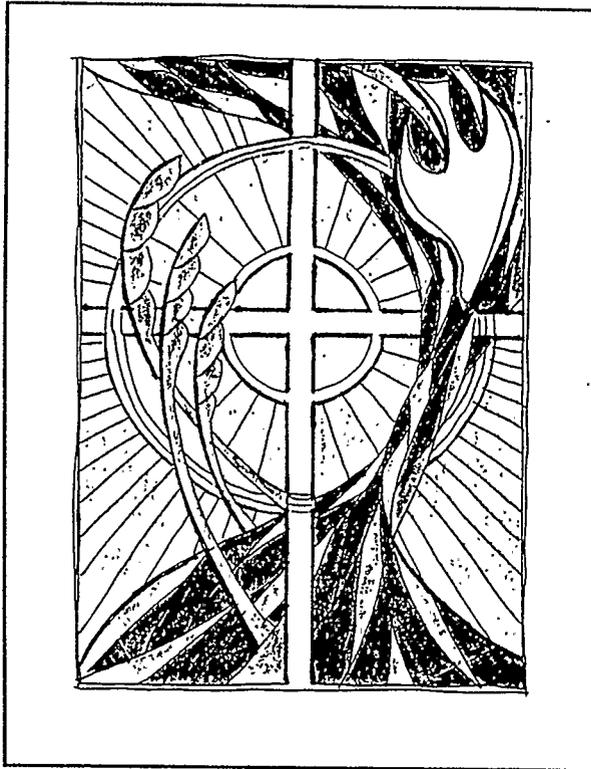


Figure 27: Stained-Glass Imagery

These images would positively enhance the beauty of the space for worship and reinforce the spiritual beliefs of the worshippers. The imagery (particularly the cross) would shine out at night for the neighbourhood community to appreciate (Figure 28).

6.1.6: Processional and Recessional Marches

Processional and recessional marches would be accommodated by the central aisle, which leads to and from the worship platform. Recessional marches up this aisle would lead the people into the space for fellowship (Figure 29). From this foyer space the party could proceed outside to the sculpture garden area or to the limousines at the drop-off/pick-up zone (Figure 30). Prior to the processional march at the beginning of a Christian wedding, the groomsmen could meet in the sacristy behind the worship

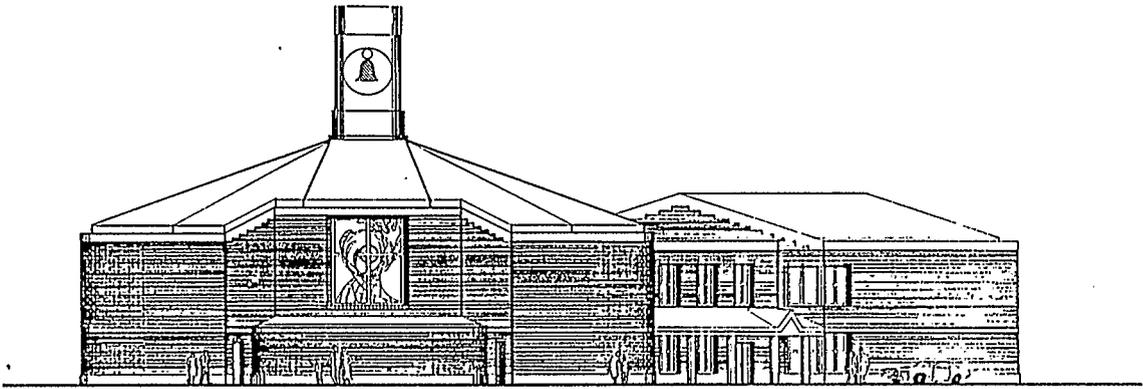


Figure 28: NORTHWEST ELEVATION

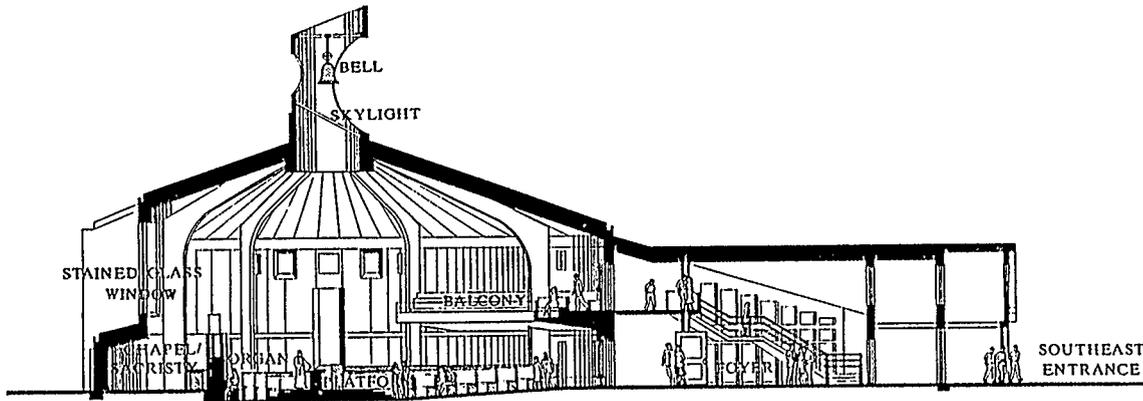
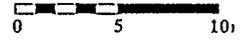
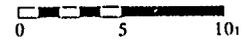


Figure 29: SECTION AA



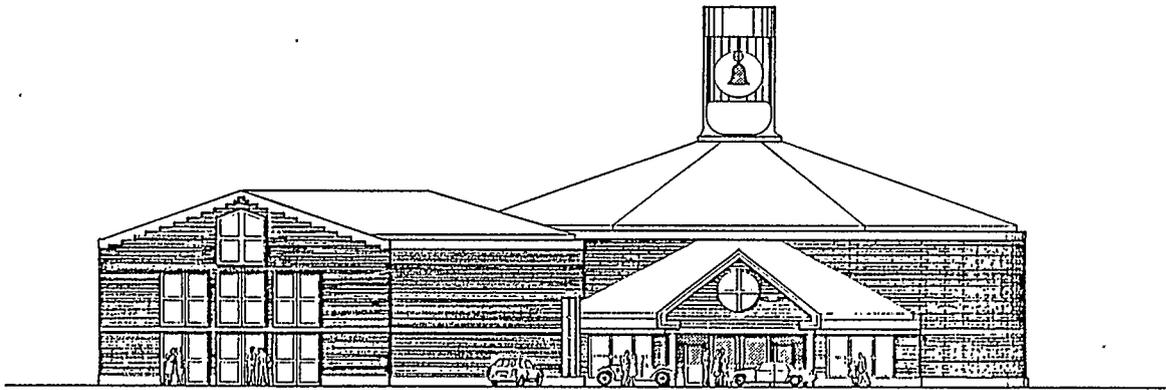


Figure 30: SOUTHEAST ELEVATION

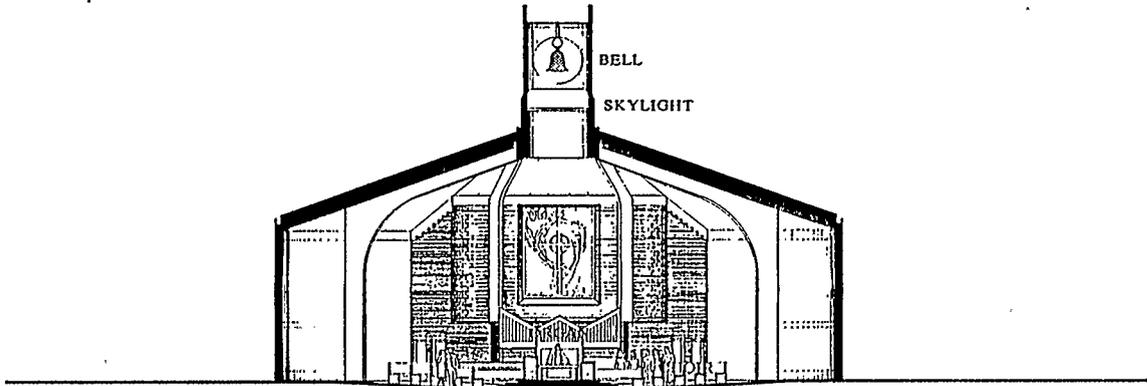
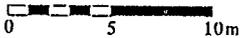
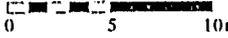


Figure 31: SECTION BB



platform. The bridesmaids and bride would gather in either the space for fellowship or in the pastor's office at the rear of the church. The specific nature of wedding marches (and other processions) may vary with each group.

The processional aisle would be central in the space for worship. It would lead clearly and directly to the worship platform. The space would have a quality of grandeur, emphasized by the formality of the processional axis and its bright terminus.

6.1.7: Music

The importance of music in the Lutheran service of worship would be accommodated by comfortable acoustics and lighting. It is assumed that speakers would make use of electronic microphones. Music from the organ, piano and other instruments and voices would be enhanced by appropriate acoustical measures. In order to avoid focused sound in this circular space, the wall and floor surfaces would be finished in a variety of both reflective (hard) and absorptive (soft) materials. The curved wall would have an interior finish of brick veneer where the brick patterns create an irregular (i.e. not smooth) surface. This would allow sound waves to be scattered, not focused, into the congregation. The hard (brick and wood) surfaces would allow extended reverberation time for musical performances. The pews and chairs would be padded with upholstery which would help absorb some of the sound. The rear third of the circumference of the interior wall would be finished in an absorptive (cork board) material. The space below the balcony would be sloped (Figure 29) in order to avoid a sound trap.

The location for one or two choirs would be on each side of the worship platform, on the northwest wall. From these points, the members of the choir can both see and be seen. A conductor would position himself or herself on the worship platform between these two choirs (Figure 22). The curved wall separating the large sanctuary from the

sacristy/chapel would act as a sound shell for the organ and the choirs. The slope of the floor provides the same effect of risers for the choir.

6.1.8: Pipe Organ

The large pipe organ would be located in the centre at the front of the space for worship. This would be a very large and visually significant piece of furniture. Its beautiful pipes would be symmetrically arranged and provide a visually attractive backdrop for, rather than a detraction from, the worship platform (Figure 31). The organist would be able to see the pastor or the choir director through mirrors on the organ console.

If there is a period of time when the large pipe organ is not in place, the congregation's singing would be accompanied by a portable electronic organ or a piano. In the absence of the large pipe organ, the worship platform would still be visually accentuated by the skylight and by the stained-glass window.

When the pipe organ was installed, the congregation would see that it helps to frame the stained-glass window on the upper portion of the northwest wall. The organ would help to enhance the use of music in the Lutheran worship service. It would also add to the beautiful setting of the worship platform. Its beauty and significance would help to evoke a sense of magnificence in the center of the space for worship.

6.1.9: Cry Room

The cry room would be acoustically separated from and located at the rear of the space for worship. Parents could take their noisy children into this room while still being able to see the service through a window and hear the service through speakers. This

room would include a sink and a change table for parents with infants. By providing this space, it becomes possible for parents to share the worship experience with their children while being assured that they are not disturbing the rest of the congregation.

6.1.10: Sacristy/Chapel

The sacristy/chapel would be located in the space behind the pipe organ. As a sacristy, this space would contain storage for communion elements, banners etc. The sacristy would also be a place of preparation for people before a ceremony, service or performance. Groomsmen would wait in this space before the wedding ceremony. The main church choir would arrive in place in a procession down the central aisle. Dramatic groups, however, may use this sacristy as a “backstage space”. The pastor, his assistants or the ushers would retrieve the communion elements, water for the baptismal bowl and other worship artifacts from this space when necessary. These elements would be concealed in the sacristy/chapel space in cupboards along the south interior wall.

As a chapel, this space would be used for the worship of a smaller group of people. The chairs set up for chapel services in this space would be the same chairs brought into the larger space for worship when necessary. Chapel services could, for example, accommodate youth groups. Families could use this chapel space to conduct a service of healing for a member who is seriously ill. The coloured light pouring into the major space for worship from the stained-glass window would also be perceived (indirectly) within the chapel space (Figure 25). When this space is not used as a chapel, it would continue to function as a sacristy and space for storage of worship elements and chairs. Additional storage in this new facility is provided in the basement below the space for administration/education.

The design objective was to provide a smaller and more intimate worship space directly connected to the major space for worship.

6.2: Space for Fellowship

Space for fellowship is accommodated by the large double-volume foyer space between the southeast entrance and the space for worship. This foyer would be the space the visitor encounters before proceeding into the space for worship. This foyer is centrally located and accessible from all other areas. Large doors would lead the people into the space for worship. A grand staircase would lead people to the second level of the facility. Here, the balcony of the space for worship is located along with classrooms and conference rooms. From the second level, people could look down into the foyer (Figure 29). The large-scale doors and grand staircase would help to communicate that this space leads to another significant space (the space for worship). This would evoke a quality of grandeur for the upcoming worship event.

Windows along the staircase would allow views to an outside sculpture garden area. This site feature will be discussed in Section 7.5.

The lighting in the space for worship is controlled in order to distinguish particularly significant worship elements. The fellowship foyer would have abundant natural and artificial lighting to evoke an atmosphere of free movement and conversation. The triangular shape (discussed in the concept section) directs the large and boisterous masses from the outside entrance into a vestibule that acts as a transition space between the bright and noisy space fellowship foyer and the more controlled and meditative space for worship.

Vestibules, containing coat and boot racks, are located at the southeast and west entrances. Besides providing draft control, these become places to mingle between the outside and the larger foyer.

The west wall of the space for fellowship could provide space for information (i.e. bulletin board) or a large mural. This west wall would also contain an opening leading into the junction of the administration and recreation spaces and the west exit to the outside.

The most important function of the space for fellowship is that it would be available as a "transition" space between the outside and the spaces for more specified activities. The most important quality of the space for fellowship would be that it would evoke a sense of brightness and freedom for the people who use it.

6.3: Space for Administration/Education

The space for administration/education would be divided into office spaces on the main floor and classroom spaces on the second floor.

Office spaces would be accessible to visitors (for information or counselling) during office hours on week days. These would, however, be the private domain of the occupants and would be locked up when necessary.

Classrooms would be used by a variety of small groups concerned with Christian education.

6.3.1: Administration

Offices for the secretary, assistant pastor and senior pastor would be located along the west wall of the main floor.

The senior pastor's office would open into both the corridor and the space for worship. This would allow the pastor direct access into the space for worship when necessary. The pastor's office would contain his office furniture and his library. It would be large enough to accommodate visitors who seek counselling.

The office of the assistant (pastor) would be located next to the senior pastor's office. The assistant's office would contain his office furniture, his library and space for visitors.

The secretary's office would be located across the hall from a small room for administrative and photocopying supplies. It would also be the office most accessible to the visitor.

All offices would have large windows allowing views to the west (Figure 32). All office doors and windows would be locked up when the office was not in use.

6.3.2: Education

Classrooms would be located along the west wall of the second floor. This area would be accessible from the balcony area of the spaces for worship and fellowship. This way, the whole upper west portion of the new facility could be seen as the learning centre.

This area would also be accessible from a staircase at the south end of the corridor. This staircase could be equipped with a Garaventa wheelchair stair platform lift in order to provide handicap access to this second level (Figure 34). The platform is folded or unfolded electronically at the touch of a switch. The platform stops for loading and unloading at the upper and lower landings, and intermediate stops as required. The platform may be folded for storage at any landing where the lift stops. This staircase would also lead to the basement (storage and mechanical equipment area).

There would be two large classrooms which could be subdivided in half (making

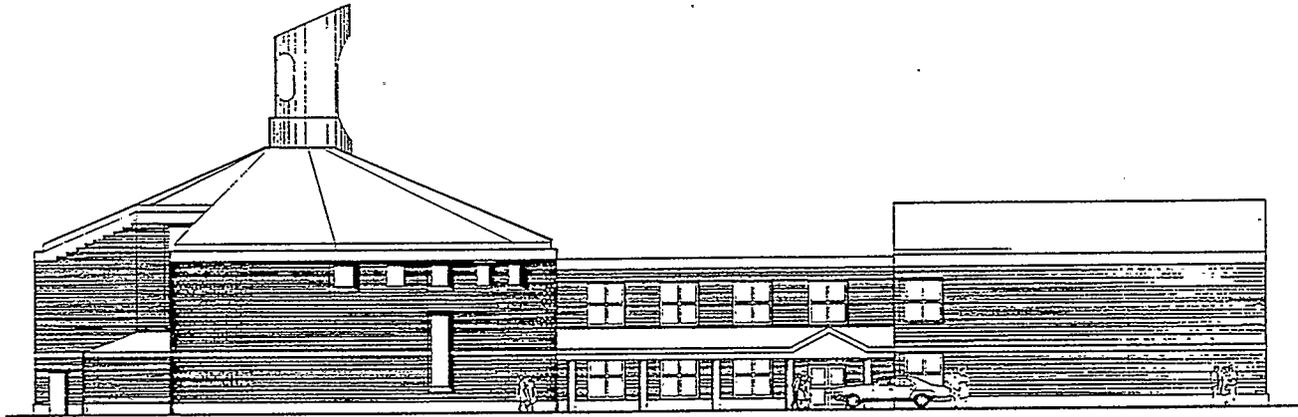
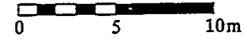


Figure 32: WEST ELEVATION



classrooms to be flexible so as to accommodate a variety of numbers of occupants. Two separate classrooms could become one for special occasions. All classrooms would have storage/chalkboard cupboards.

A small conference room would be located along the east wall of the space for education. This conference room would have the facilities to function as a projection room. A small room for general storage would be located off the corridor of this space for education.

A larger conference room would be located on the west wall in the zone which has been labelled space for recreation. This space could accommodate both educational and recreational functions. It could be used as a space for meetings, games, Bible studies, large Sunday School or confirmation groups. It could also be used as a music library and storage area. This could be the space where sheet music, choir robes, handbells and other instruments would be stored. The specific function for this space would be determined by the congregation.

6.4: Space for Recreation

The space for recreation would accommodate all of the functional requirements listed in sections 2.4. This large double volume space would be accessible from other spaces to the north and from the outside (courtyard) to the south (Figure 20).

The space would function as a daycare centre play area, meeting hall, sport or games room, music hall or banquet hall. Large numbers of people would be able to congregate to the sunny outside courtyard when the large glass doors along the south wall are opened. The "windows" located above these doors would actually be solar-collecting

panels. This will be discussed in Section 7.3 .

The kitchen facility, complete with all the necessary appliances, would be immediately adjacent (along the north wall) to this space in order to provide food preparation and clean-up. An opening in the wall would allow a connection between kitchen personnel and banquet guests.

A storage space for various games equipment and extra chairs would also be located along the north wall.

On the second floor, a small balcony overlooks this space for recreation. This would allow visitors to have a look at the various activities happening in the space without disturbing the activity (Figure 33).

The space for recreation is to be the place that facilitates a variety of activities. It would be a large and bright space that could, when desired, extend to the outside. This outdoor extension would be accommodated by a courtyard to the south.

The courtyard to the south would provide outdoor space for recreation. Both the congregation and the community would gain from the provision of these outdoor spaces. This courtyard, the sculpture garden and other outdoor site features answer the request of the congregation's representatives for better and more usable outdoor space. The specific nature of these new site features will be discussed in greater detail in Section 8.5.

6.5: Parking

The requirements for greater parking facilities were discussed in Section 2.5. The designed on-site parking would provide for 44 cars. In order to meet code, the rest of the Saturday and Sunday parking will be facilitated along Elbow Drive Southwest and in the parking lot of the Southwood Elementary School.

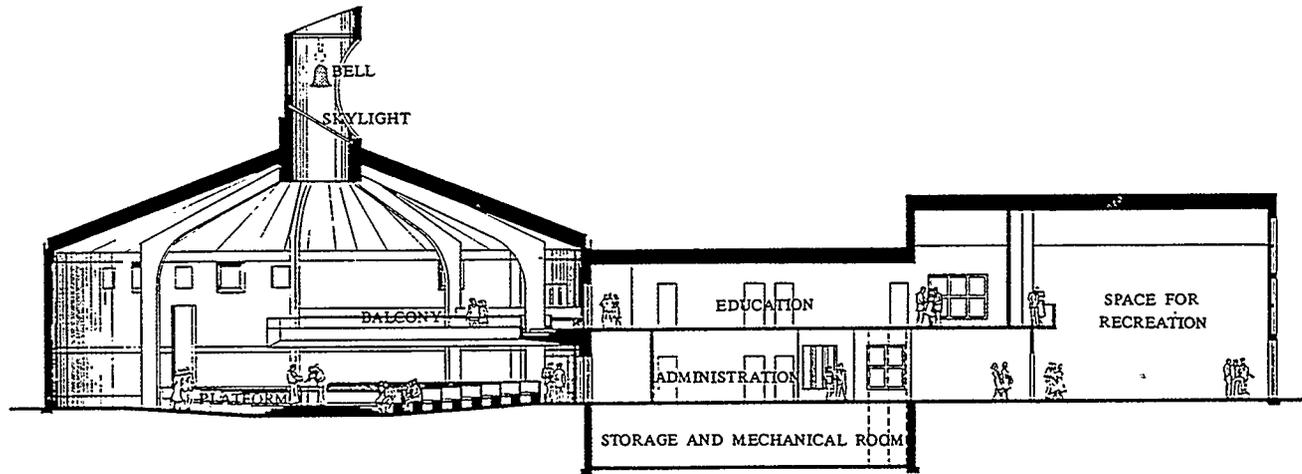
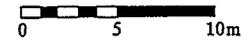


Figure 33: SECTION CC



The perimeter of the lot would be landscaped with shrubs. This shrubbery would help to define the edge of the site and the parking area. It would also help to screen the site from the street and the visually unattractive post office trucks. It would also add a sense of visual security. Street lamps would help to define the entrance to the site and light up the parking lot.

The east entrance into the site would lead the motorist to a drop-off/pick-up zone in front of the southeast entrance to the facility, signified by a small island (curb) containing the illuminated church sign and cross. This zone would be distinguished from the rest of the parking area by a unique paving pattern of cobblestones similar to that used in the central aisle of the space for worship (Figure 20). In this way, the importance of the processional circulation both inside and outside the building is emphasized.

6.6: Phasing

The northern portion of the site, presently occupied by church parking and the old church's addition, would become the area for construction of the new spaces for worship, fellowship and administration/education. The old church sanctuary could accommodate recreational functions until funds are made available for the completion of the new space for recreation. The staging for these operations will be discussed in greater detail in Section 8.3.

6.7: User Groups

The new Lutheran Church of the Cross would facilitate worship, fellowship, administration/education and recreation needs for a great variety of user groups.

The spaces for worship and fellowship are open to the surrounding public for scheduled worship services and gatherings.

The improved music facilities would allow a better music program to grow in the congregation. Various musical and dramatic concerts and performances would attract many of the members of the community.

Christian education classes and special group meetings can be programmed into the church week.

Various user groups could book the use of the space for recreation. By providing a space large enough and flexible enough for many functions, the Lutheran Church of the Cross makes itself more open and accessible to the community. The youth program, for example, could be enhanced by providing games and sports, in the space for recreation, followed by snacks and a Bible study in the fireside room.

Activities occurring in the outdoor spaces (e.g. the courtyard) would be visible to the community and would help to indicate that the Lutheran Church of the Cross is an active and attractive establishment.

Various members of the community may be drawn into the congregation by either observing or participating in these activities. This type of approach to evangelism has worked well for other North American congregations.

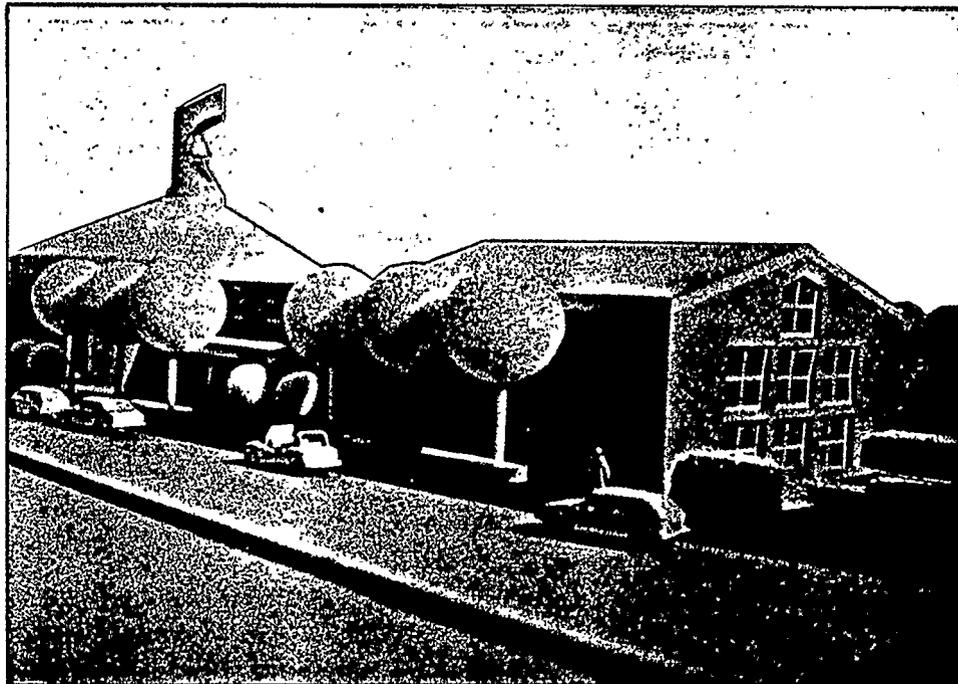


Figure 34: New Church from the Southwest

7: ARCHITECTURAL DESIGN DETAILS

7.1: Structural

Large, open areas for large gatherings of people would be required for the spaces for worship, fellowship and recreation. It would be undesirable for these spaces to be interrupted with too many structural supports (columns). Limiting the number of vertical supports to carry the roof load over large spans is an appropriate strategy. The exterior walls of the new facility would be constructed of load-bearing concrete blocks in order to provide additional support.

The largest open space for the new facility would be the space for worship. Exposed glulam beams would act as the supports for the roof load of this space because of their strength and beauty. These supports would radiate evenly away from the worship platform. They would be placed so that they disrupt neither the circulation paths nor the views of the congregation within the space. These glulam beams would extend upward to a steel compression ring beam directly above the worship platform (Figure 35). The space within the ring beam would allow natural daylight to shine, through a skylight, down on to the worship platform. This ring beam would support both the roof load and the load of the shell for the bell. The circular nature of this main support, moreover, would respond to the character of the space for worship.

In the main space for fellowship (foyer), the roof load would be supported by an exposed wooden column/beam system. The main beam would be supported at a point directly above the large doors of the entrance into the space for worship. The columns that would support this beam would extend up through the balcony. These columns would be located equidistant on either side of the large doorway on the main floor and the centre of the balcony area on the second floor. People in this space on the second floor

could look over the ledge of the balcony, between the columns, and see the people in the large fellowship foyer below. The open staircase, set in from the mostly glazed east wall of the large foyer, would connect the upper and the lower floors of this space for fellowship: This arrangement would allow a direct visual and social connection between the upper and the lower areas of the space for fellowship. It would help to create a sense of awareness and unity among the entire congregation.

The space for recreation would contain concrete block walls supporting structural steel trusses in the ceiling. Concrete blocks respond to both load-bearing and fireproofing needs. These blocks contain cavities which store heat in a solar-energy heating system (to be discussed in Section 7.3). The benefits of concrete block walls for the interior of the space for recreation will be discussed in Section 7.4.2.3.

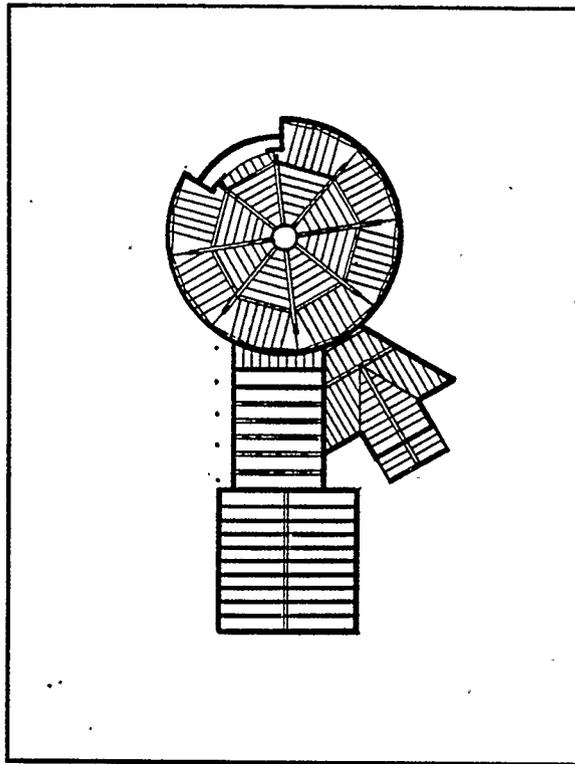


Figure 35: Structural Diagram

Steel trusses, exposed on the inside of the space for recreation, would support the pitched roof for this section of the building. The trusses would also support the air-handling duct work, lighting and other electronic hardware that would extend across the ceiling. The benefits of exposed steel trusses for the interior of the space for recreation will be discussed in Section 7.4.2.3.

7.2: Mechanical

The air-handling system for the major spaces would originate from the mechanical room in the basement of the space for education. This space would be approximately 130 square metres in size. It would contain the boiler, chiller, water heater, fuse box and chimney stack. Supply air ducts would branch out from this room (underground) and provide conditioned air from the floors of the various spaces (Figure 36).

Thermal control for major areas would be controlled by thermostats. The air-handling ducts are located below the floor surfaces. This arrangement would allow the ceiling spaces of the spaces for worship, fellowship and education to be free from mechanical ducts.

A solar-heating system would be designed for and included in the space for recreation. This system (to be described in the next section) would provide heat for this multi-function recreation space, thus reducing the costs of fuel consumption. The steel trusses would be able to support the ducting hardware of this solar-heating system.

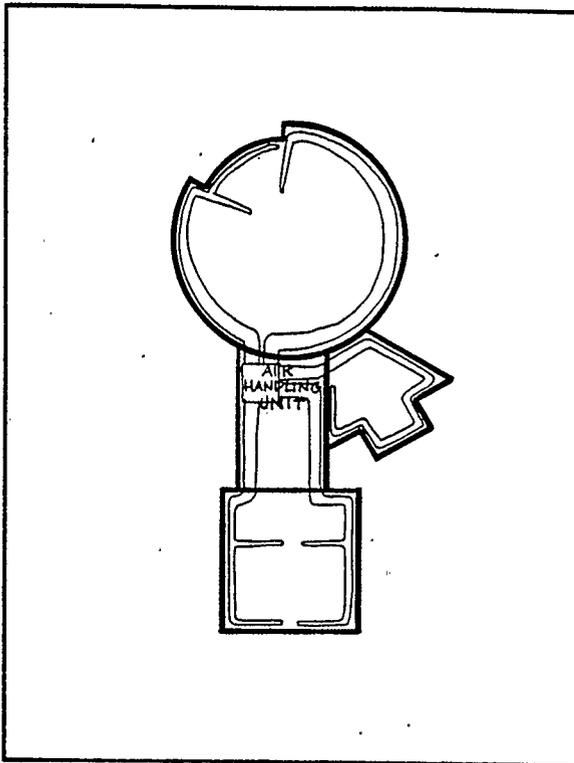


Figure 36: Mechanical Diagram

7.3: Energy Conservation Measures

Solar-collecting panels would be installed in the window openings on the upper portion of the south wall of the space for recreation. These panels would be heated by both direct sunlight and light from ground reflection (Lee, 1987). This would reduce the heating needs (for this space) thus reducing fuel costs over the years.

Air, heated by solar radiation, would be ducted to and stored within the concrete block wall cavity and would then be ducted via a blower to the top of the east concrete block wall of the space for recreation (Figure 38). Whenever the temperature in the air stream reaches 35 C, the blower would be activated. Heat would be transferred to the inside of the concrete blocks as the hot air is ducted down the holes of the blocks (Lee, 1984). When the air exits out of the bottom of the block wall, it would have lost enough

heat to be near room temperature. The blower would be deactivated when there is inadequate solar radiation for heating the solar collectors. Otherwise, the blowers would continue to operate and heat would be stored in the walls. This heat would continue to radiate into the space for recreation from the evening into the next morning. The well insulated block walls (RSI values of 3.87 W/m .K) would only lose approximately 10% of heat to the exterior. Core-filled concrete block walls would, moreover, store over 82% of the heat collected (Byrne, 1987 and Lee, 1985).

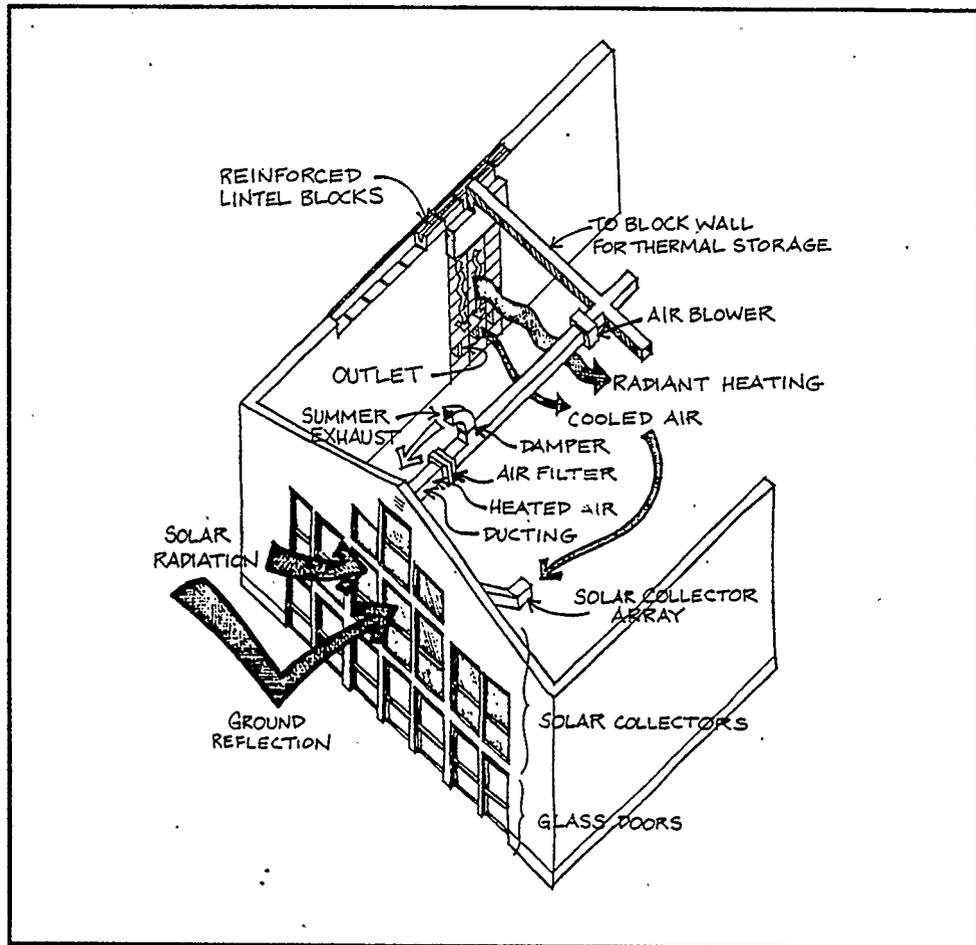


Figure 37: Solar Energy Diagram

The solar-heated block wall in the space for recreation would maintain a room temperature above 15 C. Cooler temperatures (below 15 C) would occur only after midnight, when the space is not being used. During the hot summer months, a manually-operated damper would be opened to exhaust the solar-heated air. As the air temperature increases, the air velocity increases. A natural cooling effect would be experienced due to induced cross ventilation in the space for recreation. This system also permits summer cooling by cooling the block wall during the evening.

7.4: Finishes

7.4.1: Exterior

The exterior of the walls of the new facility would be finished in brick veneer. Brick veneer would be a finish sympathetic to the surrounding neighbourhood. Brick is also a material which can be placed so that the skin of the building follows a variety of shapes (e.g. the curved walls of the space for worship). Courses of bricks can be recessed in places along the outside wall surface in order to play with the visual effects of light and shadow. Calgary's abundance of sunlight, moreover, makes this even more attractive. Most important, however, brick veneer as an exterior finish is attractive because it is characterized by a colour and texture that is earthy, attractive and that evokes a sense of permanence for this building.

All pitched roofs would be finished in slate tiles. Functionally, these tiles would serve well in shedding rain and snow. Visually, they allow a finish which appears smooth and natural. These tiles have an "earthy" appearance which fits well with both the brick veneer and the surrounding neighbourhood. Concrete roof tiles would provide a roof

surface system that is also earthy and attractive. These tiles, unlike the slate tiles, create a non-smooth surface. The congregation would decide which system to use according to their own aesthetic and economic concerns at that time of construction.

Exterior columns and the shell which would house the bell would be finished in stucco. A brick veneer finish for the bell frame would, according to the building code, require a structural steel support system. Acrylic stucco can be applied to a wire mesh around the wood-framed shell for the bell. The stucco finish would allow the bell's shell to appear as a unique element on the building. It would be distinguished from the brick and tile surfaces of the rest of the building. Stucco can be applied in a colour which works well with the other finishing materials. Stucco would, moreover, emphasize the sculptural nature of the shell surrounding the bell.

7.4.2: Interior

7.4.2.1: Space for Worship

The interior of the space for worship was designed so that the congregation would better appreciate the most significant elements of the worship service. It was designed to respond to a variety of worship needs (functionally, visually and acoustically). The atmosphere is intended to evoke a sense of community while maintaining a definite and beautiful visual focus.

Most of the interior walls of the space for worship would be finished in exposed brick veneer in an irregular (rough) pattern in order to produce appropriate acoustics. The focusing of sound from the curved inner walls of the space for worship is avoided because the rough surface diffuses much of the sound. The hard surface does, however, allow for some reverberation, necessary for good musical acoustics. This rough interior surface

also plays with light and shadow and thus creates a more visually stimulating texture. A variety of hard and soft surfaces would respond to acoustical needs. Hard brick wall surfaces at the front of the sanctuary would provide for sound reflection while cork board wall surfaces at the rear of the sanctuary and upholstered chairs and pews would provide necessary sound absorption.

The lighting of the space for worship is provided naturally by the skylight, the stained-glass imagery window and other coloured-glass windows during the day. Artificial lighting would provide a similar visual effect from these points at night. The skylight above the ring beam, for example, would conceal flood lights that shine down on the worship platform. Lights concealed on the backdrop wall behind the worship platform would shine up at the stained-glass imagery window to illuminate the symbolic images. These images would shine out for people passing by to see at night. Additional background lighting is provided by a valance spread out along the curved jagged wall at a height of 3 metres from the floor. This horizontal wooden valance would conceal a series of artificial lights set within the indentations along the inner wall. These lights would illuminate various points along the curved wall.

Artificial lighting would be adjustable so that a variety of moods could be evoked for particular worship services or performances. For example, the lighting could set a sombre mood for a Good Friday worship service and a bright and jubilant mood for an Easter Sunday worship service.

The ceiling of the space for worship would be finished in wood panelling (between structural beams). The lower part of the structural beams would be exposed. The space in the ceiling cavity would contain electrical wiring for sound and light equipment, insulation and moisture/vapour barriers. The surface of the ceiling would appear to be very smooth and free from too many visually distracting objects.

The floor of the space for worship would be a cobblestone finish on the central aisle and carpet tiles on the remainder. The stone finish would help to emphasize the importance of the processional march. This same finish would be used on outside surfaces of the site in order to bring significance to special features or to prominent paths of circulation. Carpet tiles would give a smooth appearance in an appropriate colour. If this surface were stained, the individual tile (rather than the entire carpet) would need to be replaced. The soft carpet surface would also be warmer, more comfortable for children and better able to reduce noise.

7.4.2.2: Space for Fellowship

The design intent for the interior finishes of the larger space for fellowship (foyer) was that the atmosphere be visually light and airy. This is to be a space for the social interaction of many people. The activities are not to be controlled as they are in the space for worship.

The walls of the space for fellowship would be finished in drywall painted in light shades in order to create this airy atmosphere. The painted drywall surface could be cleaned regularly and repainted when necessary. The open ceiling would be finished in the smooth wood panelling. Lighting for this main fellowship foyer would be supplied naturally through the windowed walls and the circular window under the peak of the southeast entrance roof. Artificial globe lights would be suspended from the open ceiling over the double-volume space of the large foyer. These lights help to evoke a sparkling lobby-like atmosphere.

The floor would have a carpet-tile finish which is both attractive and durable. It is intended that the floor surface for this space would be able to handle the wear and tear of daily use while maintaining a light, friendly and warm atmosphere.

7.4.2.3: Fireside Room

The atmosphere of this smaller space for fellowship is to be more intimate than the larger foyer. The visual focus is to be the natural glow from the fireplace. The fireside room would function as the church's "family room".

The walls and exposed ceiling in the fireside room would be finished in smooth wood panelling. Lighting for this intimate space is provided naturally from the corner window. Major artificial lighting is provided by globe lights suspended from the ceiling. Background lighting would include wall-mounted lamps (concealed behind valances) and table-top lamps. Concealed spotlights highlight the fireplace. The floor would be finished in carpet tile.

7.4.2.4: Space for Recreation

Interior finishes in the space for recreation were designed to respond to the visual, acoustical and functional requirements discussed in Section 2.4.

In the space for recreation, the interior walls are concrete block. This interior finish withstands the impacts associated with sports and games. These walls would be easy to clean or repaint. Finally, concrete block walls provide the necessary acoustical separation between this space and other spaces.

The lighting for this space could be adjusted for a variety of functions. The lighting hardware, along with other mechanical and electronic hardware, is contained in the exposed trusses of the ceiling. These artificial lights would adjust for the variety of functional needs for this space. Natural light from the glass doors could be shaded if the space is to be used for the presentation of slides or movies. An electronically-controlled screen could be lowered from the ceiling for such occasions. The open ceiling would also better accommodate recreational activities (e.g. volleyball).

The floor is finished in resilient hardwood which is able to withstand the heavy impact of its users (e.g. sports, games, dances etc.). Openings in the floor would be provided in order to support a volleyball net. The floor could have lines painted on it in order to define the boundaries for a small volleyball court. This floor would be simple to clean and would accommodate a great variety of functions of the space for recreation. On special occasions (e.g. holidays, conferences, etc.), decorations and banners could be suspended from these steel trusses. The trusses would also hold an electronically-controlled slide/movie screen which could be lowered when necessary. These trusses would need to be painted in a fireproofing layer and could be finished in a bright colour, according to the interior colour scheme of this space.

The finishes chosen for both the exterior and interior are intended to enhance both the beauty and function for the new Lutheran Church of the Cross.

8: SITE DESIGN RESPONSE

Section 2.2 (Site Issues) discussed the opportunities and constraints of the site for the Lutheran Church of the Cross. The treatment of the site in the design of the new facility is an attempt to respond effectively to site location, site surroundings, on-site structures and site access.

8.1: Location

The site is located along Elbow Drive Southwest where it is very visible to passing traffic. It is also located in a modest low-key residential neighbourhood. The new facility is designed to be visually significant while maintaining a scale sympathetic to the surrounding community.

The highest point on the new facility would be approximately at the same height as the top of the neighbouring senior citizens' residence. The highest vertical piece on the building would contain the bell (Figure 28). The large stained-glass window is located on the upper northwest wall of the new church and shines out to this visually open corner of the site. The images on this window shine out to passers by. The bell and the cross serve as symbols which indicate that this location is a place of Christian community. The height of the new building is sympathetic to the surrounding buildings and the bell and the imagery convey a symbolic message from this location.

The new church would be finished in red brick veneer. Since many of the institutional buildings surrounding the site are finished in brick veneer, this material would make the colour and texture of the new church responsive to its surroundings (as discussed in Section 7.4.1).

8.2: Surroundings

The new facility would mark the northwest corner of the block (Figure 38). The same block is marked on the southwest corner by Southwood United Church.

The northeast corner of the block contains the Letter Carriers' Depot. This rather unattractive building would be visually screened by tall and thick shrubbery planted along the chainlink fence on the site's border.

The road into the site would be, once again, from the east. In the new facility, however, the post office truck parking area would be visually screened by thick shrubbery planted along the chainlink fence. This row of shrubbery would also help to define the entrance road and drop-off/pick-up zone. The shrubbery would extend along the east and south borders of the site.

The southwest edge of the site is presently open to the Austin H. Nixon Manor (senior citizens') courtyard. In the new facility, the courtyard off of the space for recreation would be defined by vegetation, iron gates and a unique cobblestone paving pattern. It would remain visually open to the seniors' courtyard. This would mean, for example, that the seniors could sit and observe children in the nursery school program playing in the courtyard outside of the space for recreation. These new site features and new landscaping will be discussed in greater detail in Section 8.5.

The west entrance to the new church facility would be defined by a colonnaded arcade. This, along with deciduous trees, would provide a sense of shelter for people waiting for rides from the church along Elbow Drive Southwest.

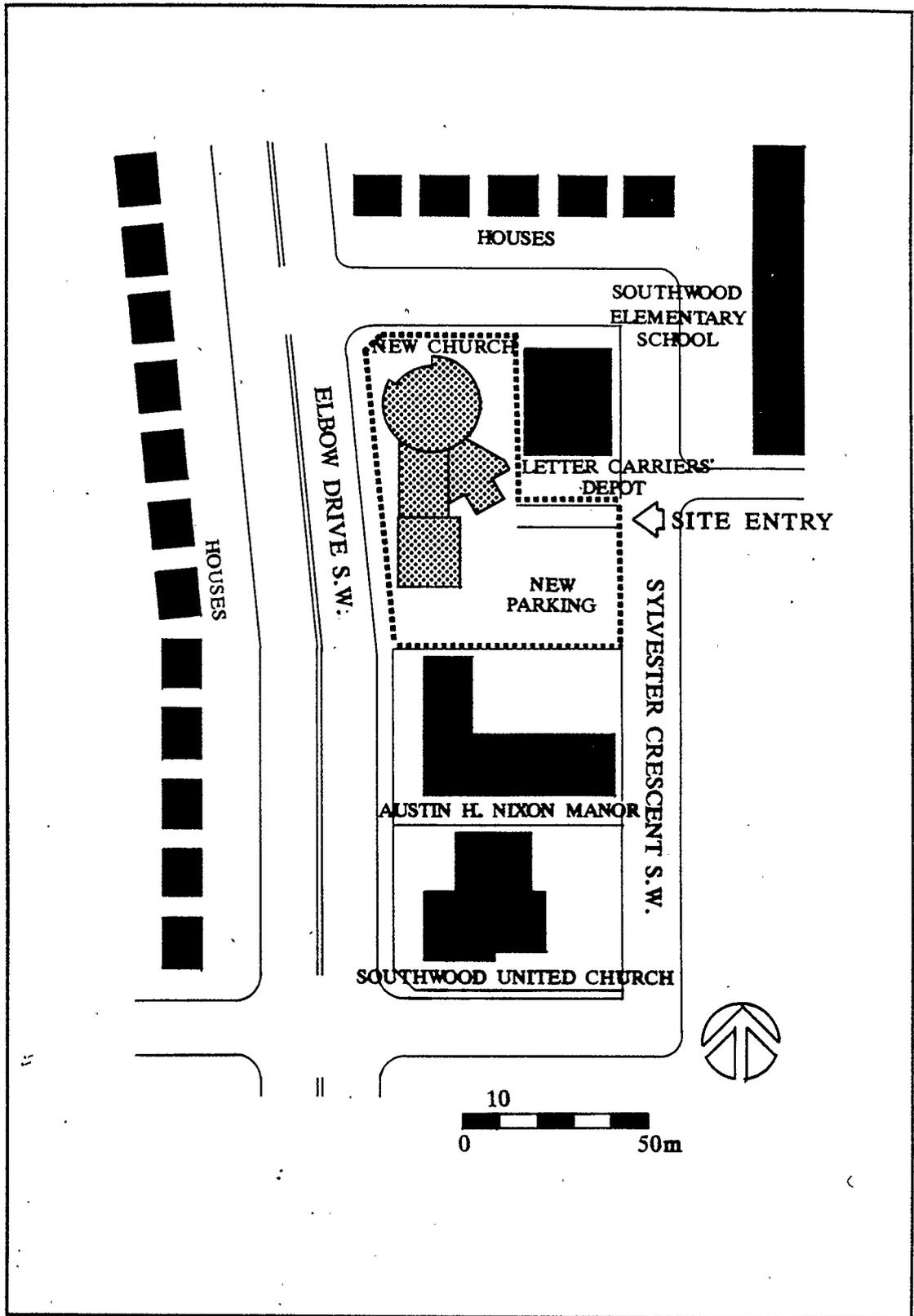


Figure 38: Site Footprint with New Church

8.3: Existing On-site Structures

The congregation's representatives indicated that the new Lutheran Church of the Cross should be built in phases. This would be beneficial to the congregation because it would allow them to pay for smaller parts of the new facility rather than for the entire facility all at once. This strategy requires that the existing facilities would be used while the congregation waits for the completed construction of the new facilities. This design response assumes that the presently existing on-site structures would be removed in a sequence that would maximize efficiency and economy during construction. The costing for this phasing strategy is outlined in Table 3. The phasing sequence for on-site construction would be as follows:

8.3.1: Phase One

The existing house and the existing addition on the old church would be removed in order to provide space for the new parking area and new construction. The existing parking area would be the area for the construction of the new spaces for worship, fellowship and administration/education. During construction, the old sanctuary would be used as a space for all functions (Figure 39).

8.3.2: Phase Two

Upon completion of the new spaces for worship, fellowship and administration/education, the old sanctuary could continue to be used as a space for recreation until funds were made available for construction of the new space for recreation. A temporary connecting walkway would be used in the meanwhile (Figure 40).

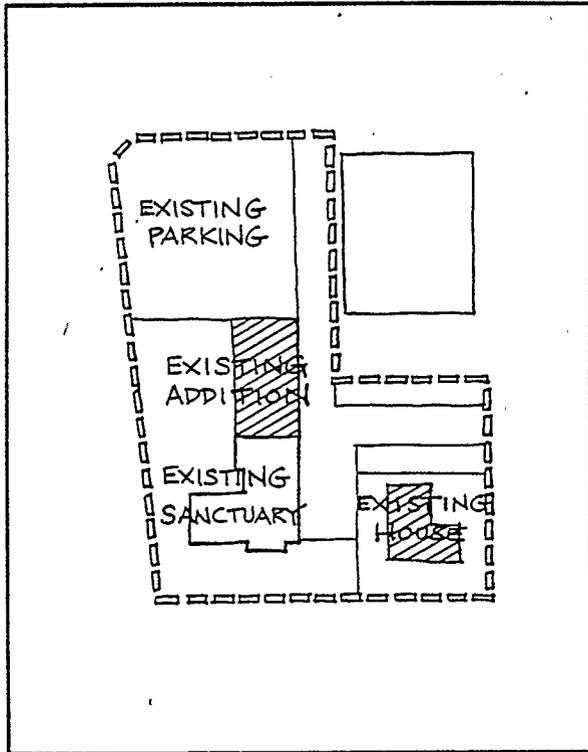


Figure 39: Construction Phase 1

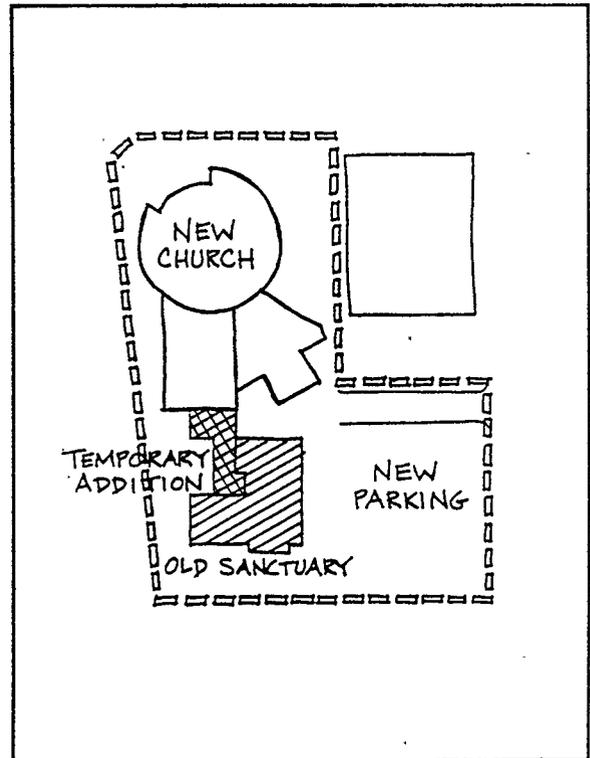


Figure 40: Construction Phase 2

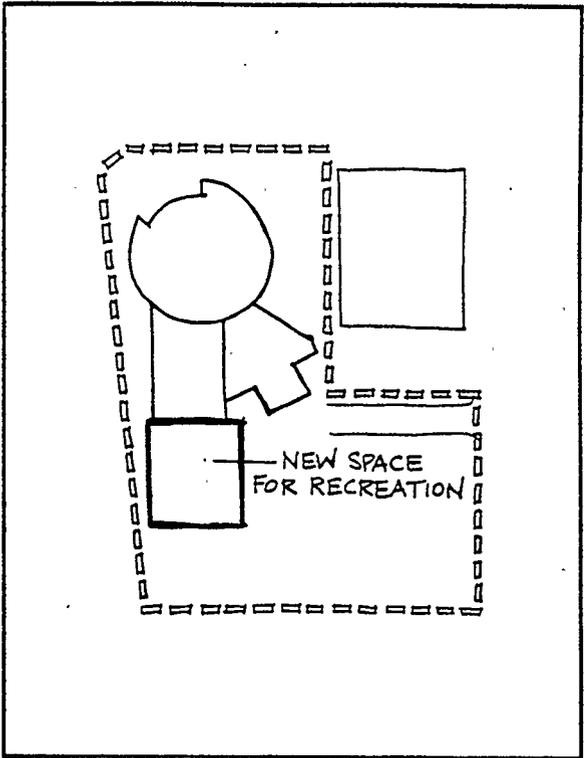


Figure 41: Construction Phase 3

8.3.3: Phase Three

The old sanctuary and temporary connecting walkway would be removed so that the new space for recreation could be constructed. Upon completion of the construction of the new space for recreation, the site work and landscaping would be completed (Figure 41).

8.4: Access to the Site

Access into the site of the new facility begins on an entrance road off of Sylvester Crescent Southwest (Figure 43). This would allow visitors to enter from the same area

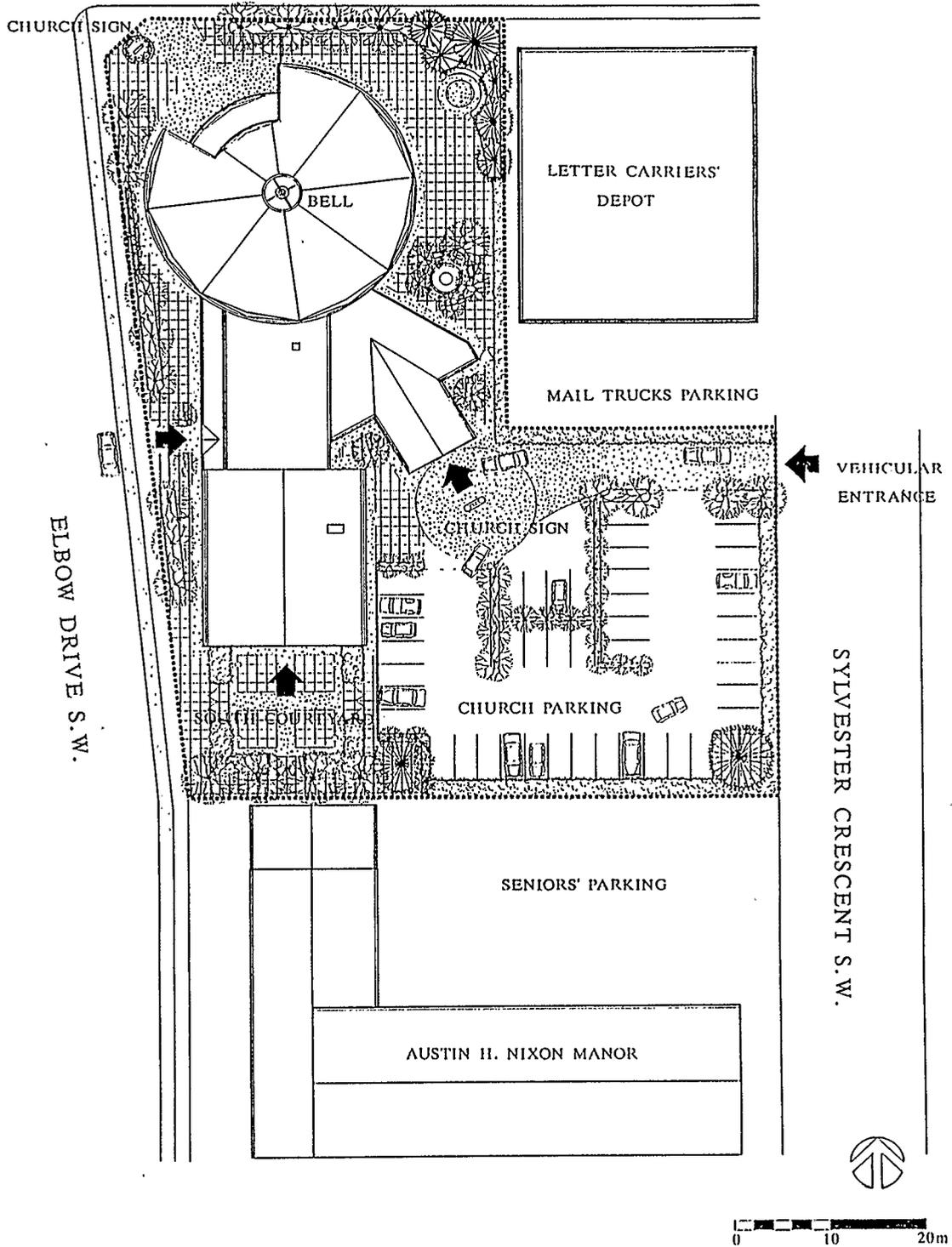


Figure 42: SITE PLAN

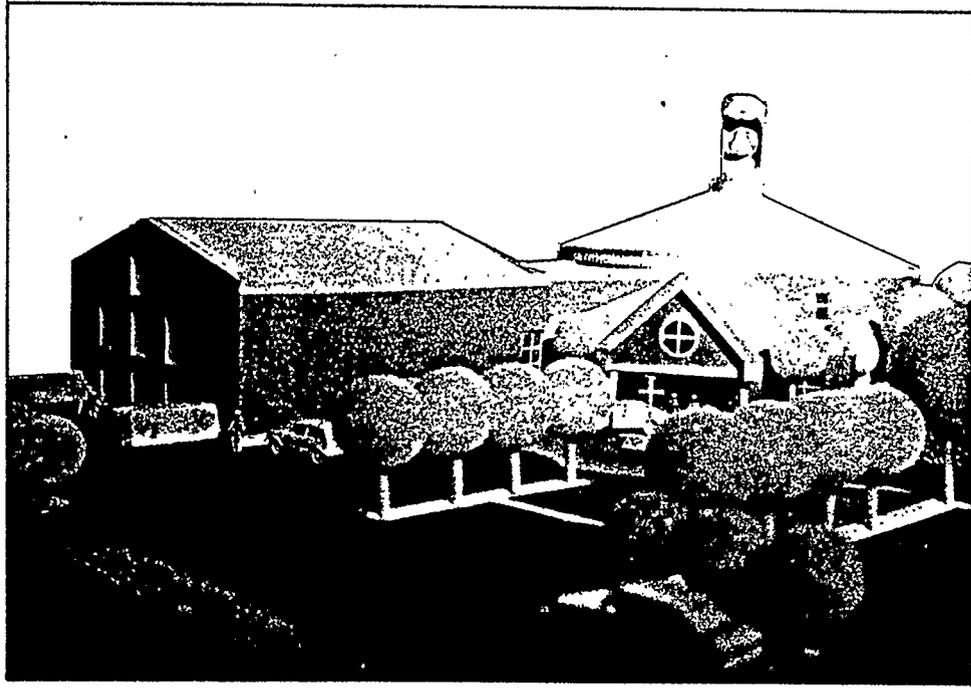


Figure 43: New Church from the Southeast

that they are accustomed to. Signage on the northwest corner of the site would inform motorists along Elbow Drive Southwest as to the location of the entrance to the new church. The east access road would lead to the drop-off/pick-up zone in front of the southeast entrance. This would also be indicated with the illuminated sign and cross. This entrance road and drop-off/pick-up zone is distinguished by a unique cobblestone paving surface similar to the processional aisle of the space for worship. This is a consistent system, therefore, that indicates the primary circulation path. Shrubbery planted along the chain-link fence, separating this site from the site of the Letter Carriers' Depot, would provide a visual barrier.

From the parking area, it is possible for visitors to enter directly into the space for fellowship, through the southeast entrance, or directly into the space for recreation through the south courtyard entrance.

Pedestrian access would also be provided off of Elbow Drive Southwest. The cobblestone paving surface would continue around the perimeter of the new church to encourage visitors to wander freely around the site. This pattern also distinguishes new site features that the visitor would encounter along his or her walk around the site.

8.5: New Site Features

The congregation's representatives were eager to make better use of outdoor areas on the site. By providing seating and other new features, the congregation and community would be encouraged to enjoy these outdoor areas (Figure 44).

In the design for the new Lutheran Church of the Cross, a square tile paving pattern would cover most of the site. This surface pattern would be interrupted by the unique cobblestone paving surface in order to bring visual significance to special features. Other special site features include the south courtyard and the northeast sculpture garden.

The south courtyard is an extension for the space for recreation. It would be defined by vegetation and iron gates along its borders and with the cobblestone paving on its surface. This space would be visually open to the courtyard of the Austin H. Nixon Manor (senior citizens' residence). Large deciduous trees along the south border would provide shade for part of the courtyard in the heat of summer. These trees would, however, allow views into the courtyard. As discussed in previous chapters, this space is open for community viewing. This would be the space, for example, where people celebrating a banquet or reception in the space for recreation could step outside for fresh air. This could also be the space where the youth groups have their barbeques.

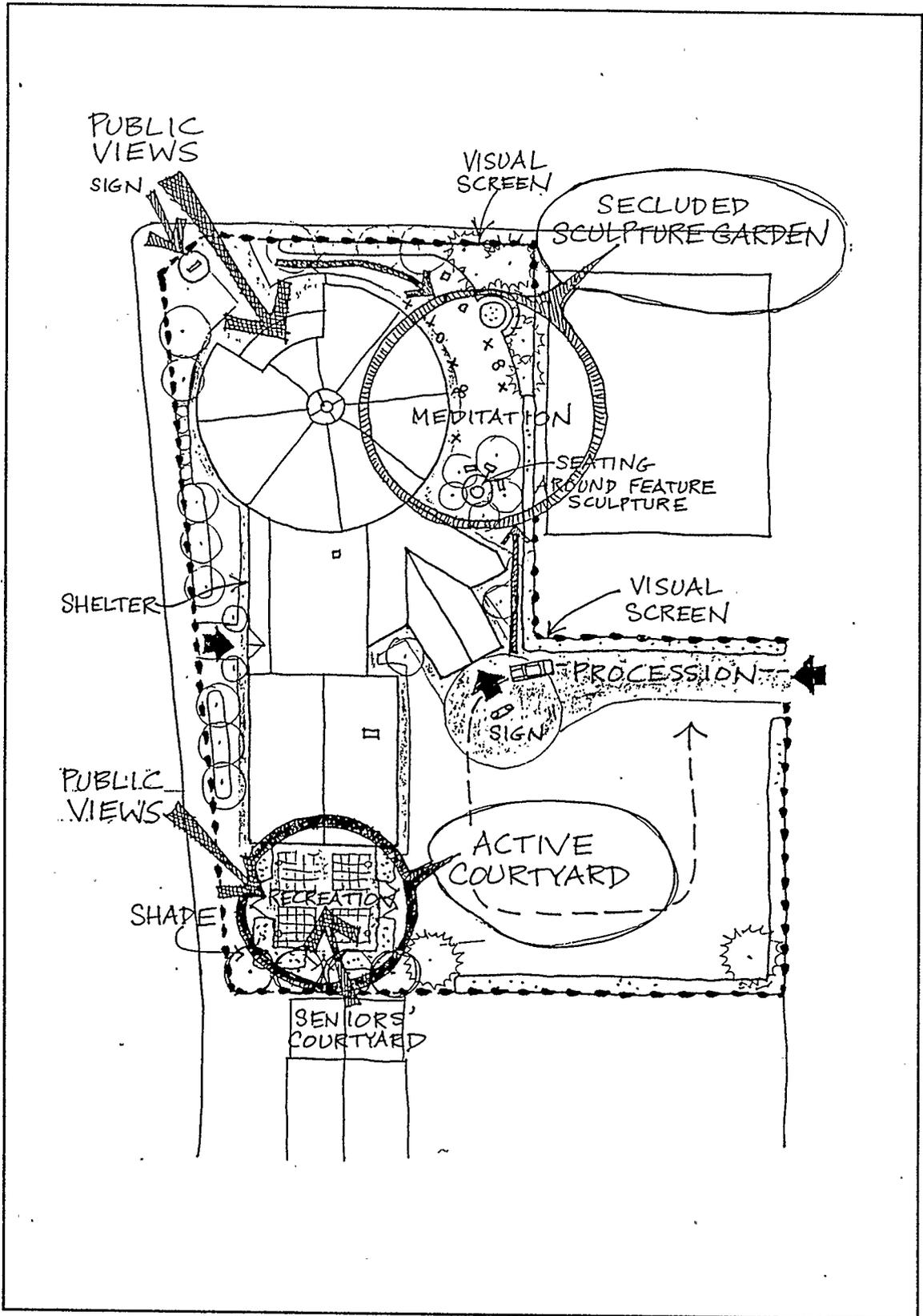


Figure 44: New Site Features Diagram

The quality of this space is that it would be an area for outdoor recreation. It would be the place that the congregation could call their front yard. Here, the community would catch a glimpse of some of the activities of the congregation.

The western stretch of the site along Elbow Drive Southwest would contain planters holding deciduous trees. The trees and the cobblestone paving surface would help to define the west entrance into the new building. This is the most public face of the new church and would be illuminated at night by spotlights concealed beneath the trees and shrubs in the planters. This would promote public appreciation of the visual qualities of the new church.

The northwest (open) corner of the new site would have the cobblestone surface designed to emphasize the radiating pattern of the circular space for worship. At night, this corner of the site would be featured by spotlights on both the corner sign and the building, and by the glow of the bright and colourful stained-glass imagery. The outdoor area below the large stained glass window might be where church visitors take photographs for special occasions.

From the north, visitors could wander through a gate into the northeast portion of the site. The planter along the north border of the site provides a subtle separation between the inside and outside of the site. This planter contains deciduous trees which would allow views into the northeast sculpture garden area. At the northeast corner of the site, the planter extends to follow the arc of the circular space for worship. This large portion of the planter contains coniferous trees which would provide a solid visual screen at this corner of the site. A semi-circular sitting ledge is carved into this planter. This sitting area surrounds a flower mound which is directly across from the transept window of the space for worship. From this point, the visitor could continue to the east portion of the site. This would be the area where the congregation could erect several sculptures. These could be donated by the families of loved ones who have passed away (Figure 45).



Figure 45: Memorial Sculpture

A major sculpture is to be located directly outside of the space for fellowship and surrounded by benches on three sides. It would be erected in the center of a circular pool and surrounded by deciduous trees. The sculpture would depict Christ carrying His cross to His crucifixion (Figure 46). This sculpture garden is also be accessible from the space for worship. Another gate would be located to the south of this area, at the outside corner of the space for fellowship.

The quality of this sculpture garden area along the northeast edge of the site would be that of an outdoor sanctuary. This would be a place to sit in the shade and listen to the birds. It could be a place for the meditation of one or for the fellowship of many. It provides a more sheltered and secluded outdoor space than the more open and public outdoor space of the south courtyard. The sculptural focal point for this area serves to emphasize the importance of the cross of Christ for the Lutheran Church of the Cross.

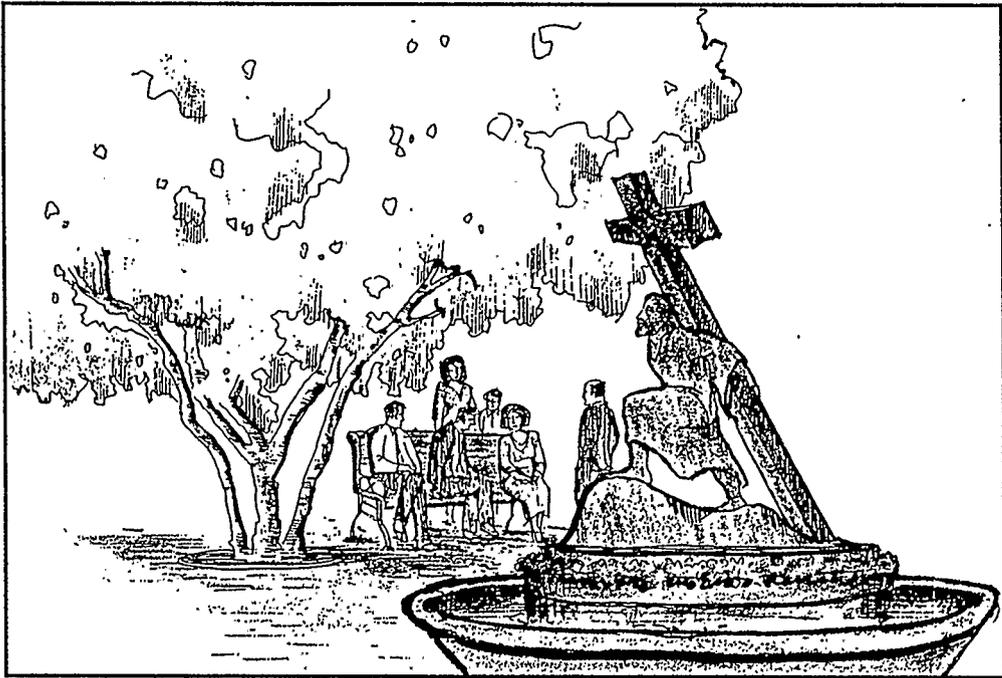


Figure 46: Sculpture Garden for New Church

9: SUMMARY AND CONCLUSION

The design for the new Lutheran Church of the Cross is intended to promote worship, social, administrative, educational and recreational functions for this growing congregation. The design emphasizes Lutheran theological and liturgical attitudes. These include the importance of the Word and the sacraments. The new facility also allows for congregational and community activity and involvement on a variety of levels. These include social, educational and recreational events for the many potential users. The provision of improved facilities for these functions is a positive step in the ongoing growth of this congregation.

The architectural design for the new Lutheran Church of the Cross is a response to the needs of the congregation, the constraints of the site and the issues of architecture for the Church.

9.1: Summary

- **General Architectural Design:**

- clear definition of the major functional spaces: Worship, Fellowship, Administration/ Education and Recreation
- clear sense of entry and processional circulation from the outside through the foyer and into the space for worship
- scale and materials sympathetic to the surrounding community

•Space for Worship

- worship space has a circular assembly with a significant central platform; congregation gathers around the platform and focuses on the visual and functional importance of the pulpit, table and font while maintaining an awareness of the assembled family of God

- daylighting brings emphasis to the worship platform and recalls the spiritual significance of Christ as the "light of the world"

- the half circle formation of members receiving Holy Communion recalls the significance of the invisible half of the circle being the "communion of saints"

- stained-glass imagery recalls theological themes: the cross of Christ's sacrifice for our salvation; the fire, water and dove of the Holy Spirit in Baptism; and the stalks of wheat as symbols of our spiritual "daily bread"(the Word of God)

- the pipe organ enhances both the beauty of the space and the function of music in the worship service

• Space for Fellowship

- the large and bright fellowship foyer and the more intimate fireside room accommodate social interaction among the congregation and the community

- the triangular foyer space opens at its corners into the other major spaces

- **Space for Administration/Education**

- offices on the main level support the day to day administration of the church
- classrooms on the second level support the day to day spiritual education of the congregation and various outreach programs for the community

- **Space for Recreation**

- large space for recreation allows for a variety of activities for various age groups in the congregation and community, which promotes Church growth
- kitchen facility is located in close proximity to the recreation space in order to provide food services for various activity groups
- solar collectors on the south elevation provide a means of heating the space for recreation and reducing fuel costs
- south courtyard allows space for recreation to extend to the outdoors

- **Site Design**

- visually open northwest corner of site contains the church sign, the stained-glass image of the cross and the bell which serve as beacons to the community

- east entrance off Sylvester Crescent Southwest is well defined and leads to drop-off/pick-up zone for limousines at main doors

- vegetation defines site boundaries, provides visual screens where necessary and enhances the outdoor useable spaces

- new site features include a visually open courtyard to the south and a more secluded sculpture garden to the northeast

9.2: Conclusion

The purpose of this project was to develop an architectural design for a new church facility that would be both functional and beautiful. Spaces for this congregation would not be completely successful if they did not accommodate and enhance the activities that they were designed for.

This congregation communicated a series of functional needs to the designer. The design was intended to meet these needs. The design was, however, also an attempt to answer other needs of the congregation and community which go beyond mere function.

The congregation communicated the need for the church to be a place of beauty and quality. It may be necessary to justify why a congregation ought to be concerned with taking expensive measures to make the church a place of beauty and quality.

The space for worship is to be a "sanctuary" that the congregation can claim as its own. Beauty inspires both a sense of introspection and the sense of an awareness of the Creator. Both of these senses are useful in the place of worship. When these feelings are shared among members of the congregation, the worshipper gains a sense of communion. Beauty is also a quality that makes the space a place that gives Glory to God. The Church is to be a place of love. Efforts to make it beautiful are justified when we remember that nothing is too good for love. The Church can become the gift that beauty brings to everyone.

Another need of the people of God is that their place of worship be a place of quality. Quality makes people feel good. Feeling proud about your place of worship would be an asset to both the worship experience and the morale of the congregation. Certain communities in South America live in great poverty. They take great pride, however, in making their churches places of extravagant beauty. The space for worship becomes, for them, a jewel. It is the one place where these people feel a sense of beauty and quality. North American Christians should also strive to make churches places of beauty and quality.

The designer should be, for the congregation, a servant who both creates and educates. The architectural characteristics of the church facility should work together to accommodate the great variety of activities of the congregation and the community. The qualities of the space for worship should enhance the use of the Lutheran liturgy and bring significance to Christian themes. The new Lutheran Church of the Cross is an example of these themes being expressed in the form of architectural design.

APPENDICES

Appendix One: Architectural Program Requirements

<u>SPACE</u>	<u>REQUIRED AREA (sq. m)</u>
Space for Worship	500
Overflow (balcony)	50
Sacristy	12
Chapel	30
Storage	10
Cry Room	12
Space for Fellowship	175
Fireside Room	40
Pastor's Office	25
Assistant's Office	12
Secretary's Office	12
Administration Storage	5
Classrooms (four x 15 sq. m)	60
Conference Rooms (two x 30 sq. m)	60
Classroom Storage	2
Kitchen	40
Space for Recreation	180
Recreation Storage	4
Washrooms (four x 12 sq. m)	48
Circulation	160
Mechanical Room	130
Additional Storage	70
TOTAL REQUIRED FLOOR AREA:	1627 square metres (17513 square feet)

Appendix Two: New Church Floor Areas

<u>SPACE</u>	<u>AREA (sq. m)</u>
Space for Worship (Main Floor)	488
Space for Worship (Second Floor)	80
Chapel/Sacristy	50
Cry Room	12
TOTAL SPACE FOR WORSHIP (sq. m)	<u>630</u>
Space for Fellowship (Main Floor)	153
Space for Fellowship (Second Floor)	28
TOTAL SPACE FOR FELLOWSHIP (sq. m)	<u>181</u>
Pastor's Office	26
Assistant's Office	15
Secretary's Office	15
Administrative Storage	3
Washrooms (Main Floor)	22
Large Classroom #1	34
Large Classroom #2	32
East Conference Room	22
Storage	3
Washrooms (Second floor)	22
Circulation (Main and Second Floor)	148
Basement (Mechanical Room and Storage)	170
TOTAL SPACE FOR ADMIN./ EDUCATION (sq. m)	<u>512</u>
Fireside Room	42
Kitchen	38
Storage	4
West Conference Room	42
Major Space for Recreation	192
Circulation (Main and Second Floors)	24
TOTAL SPACE FOR RECREATION (sq. m)	<u>342</u>
TOTAL NEW CHURCH FLOOR AREA (sq. m)	<u>1665 sq. metres</u> (17922 sq. feet)

Appendix Three: Construction Costing

<u>PHASE</u>	<u>DESCRIPTION</u>	<u>ESTIMATED COST</u>
1	- remove existing house - remove existing church addition - develop new parking area _____	\$ 15,000.00
	- construct new spaces for worship, fellowship and administration/education _____	\$ 854,500.00
	- use old sanctuary as a space for all all functions while awaiting new construction	
2	- build temporary walkway/addition between the new building and the old sanctuary _____	\$ 5000.00
	- use old sanctuary as a temporary space for recreation	
3	- remove temporary walkway _____	\$ 1000.00
	- construct new space for recreation _____	\$ 220,880.00
	- complete site-work and landscaping _____	\$ 30,000.00
TOTAL ESTIMATED CONSTRUCTION COST:		\$1,126,380.00

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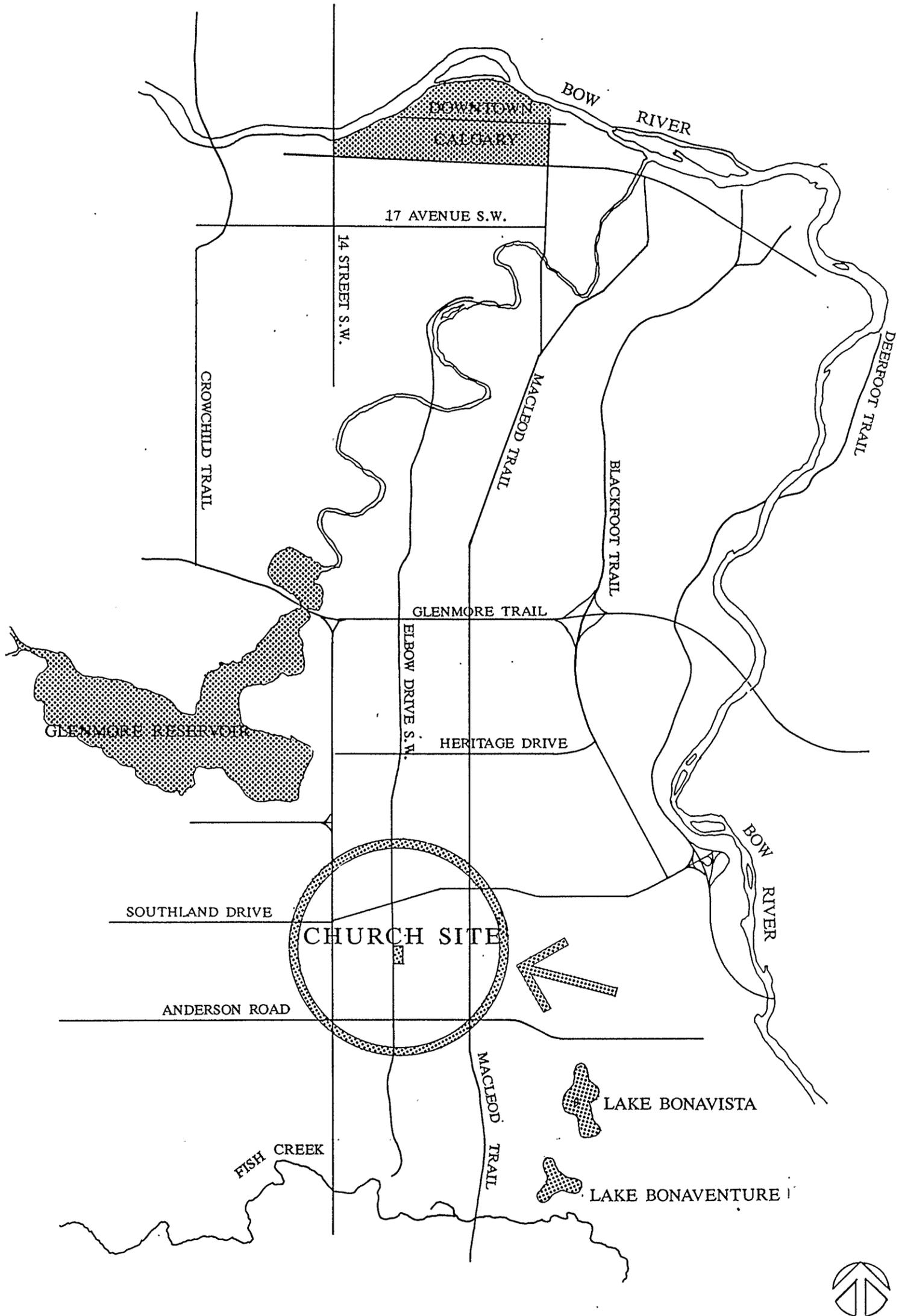


Figure 1: MAP OF SOUTHWEST CALGARY WITH SITE

N.T.S.

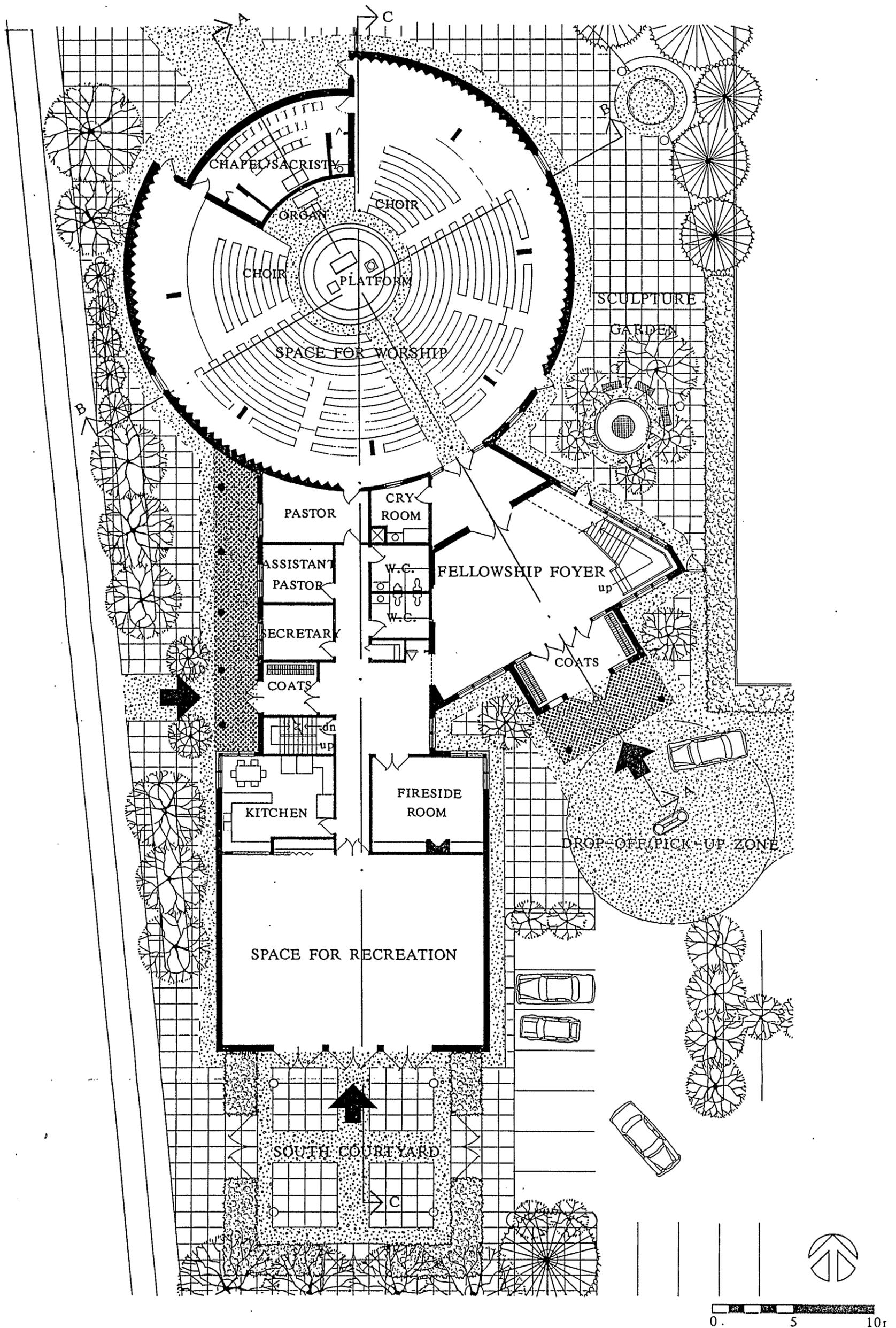


Figure 20: MAIN FLOOR PLAN

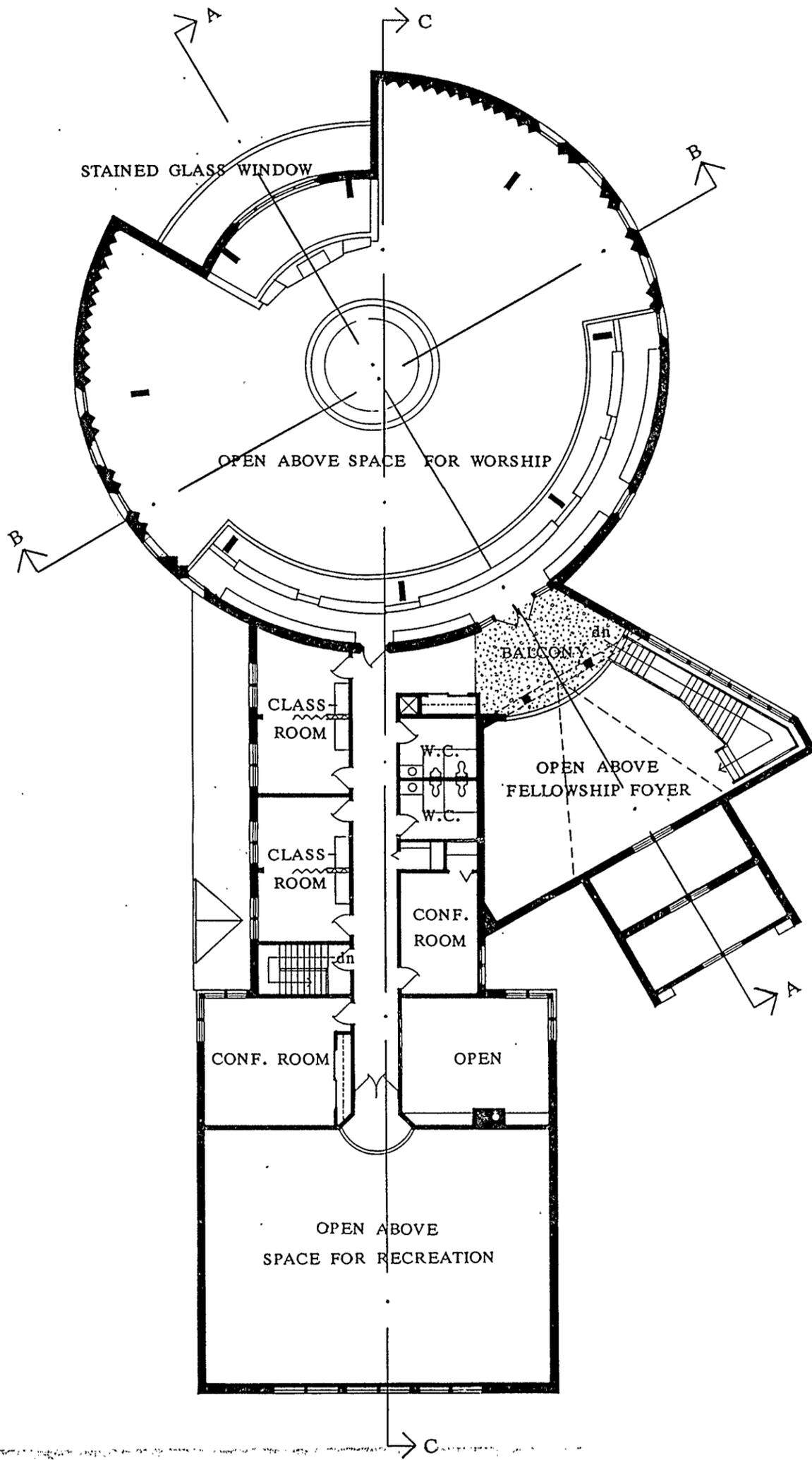
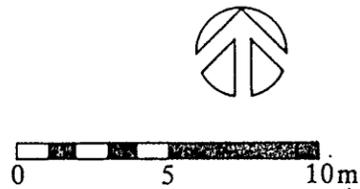


Figure 21: SECOND FLOOR PLAN



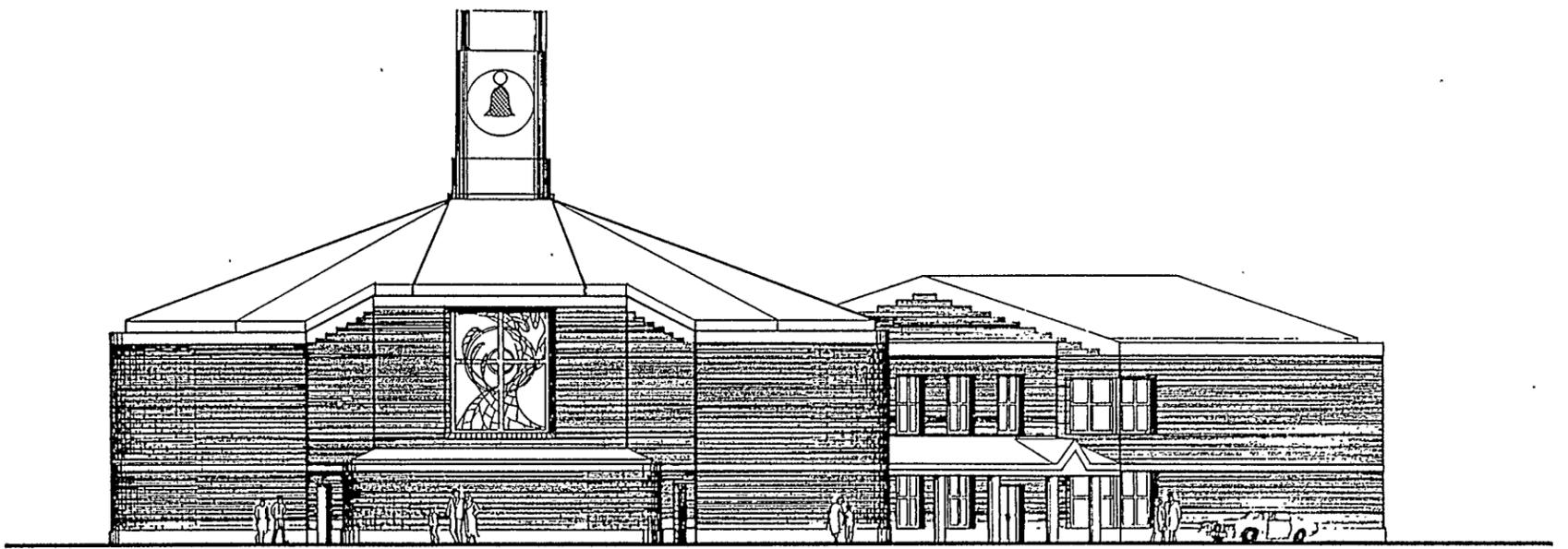


Figure 28: NORTHWEST ELEVATION

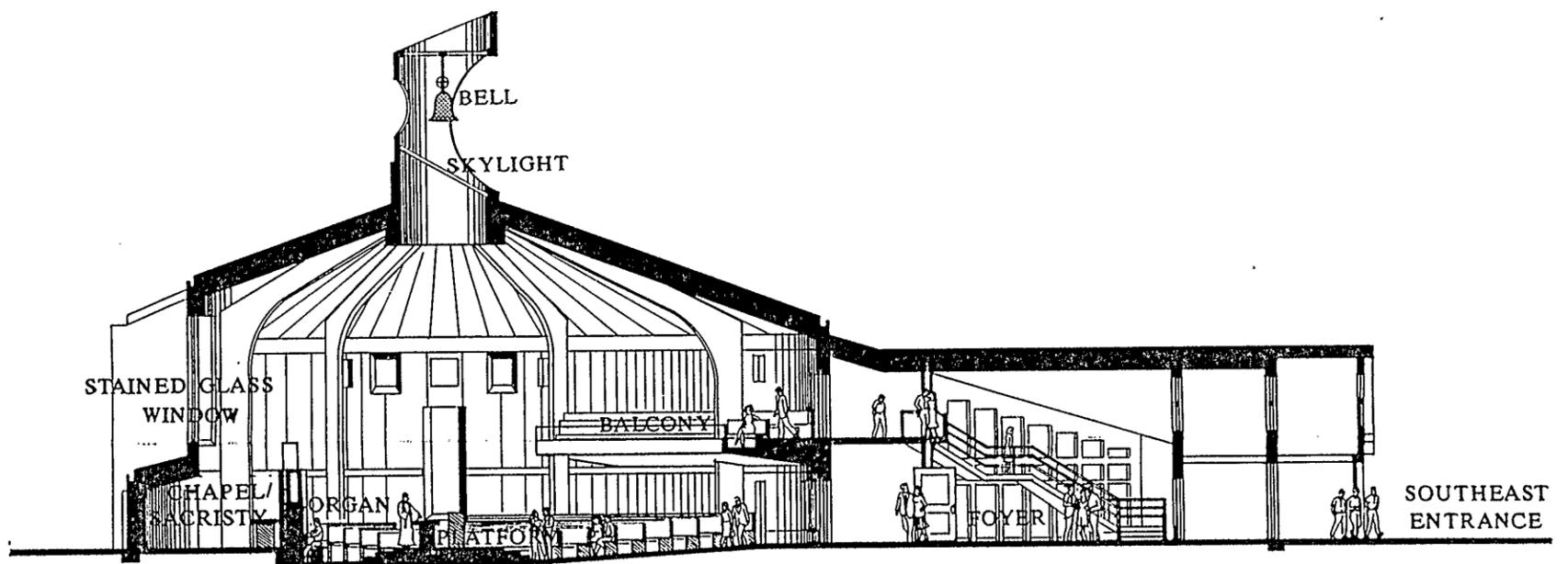


Figure 29: SECTION AA



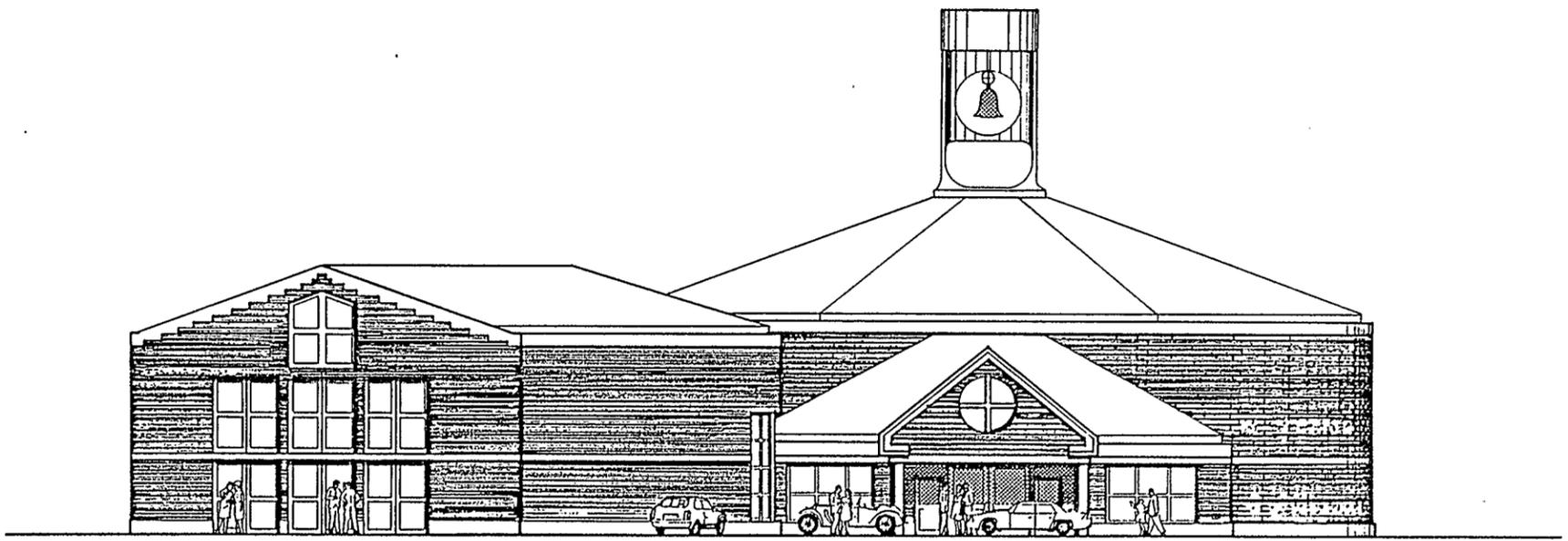


Figure 30: SOUTHEAST ELEVATION

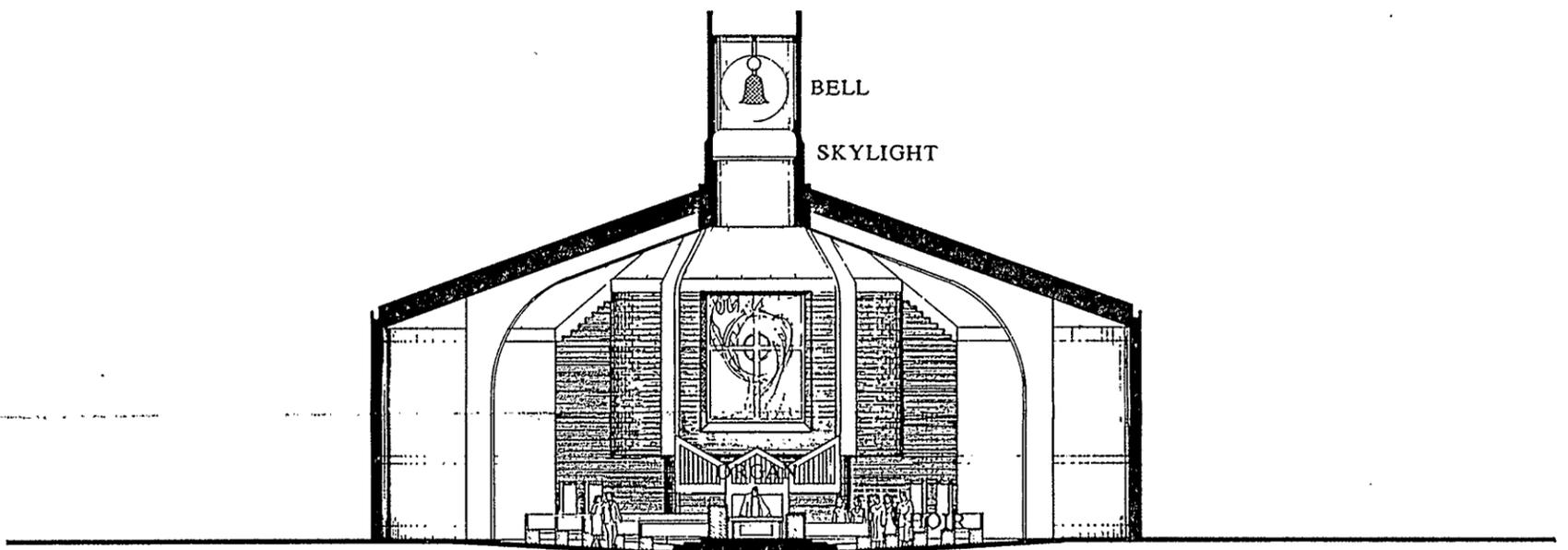
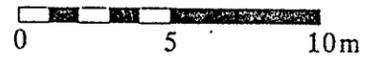
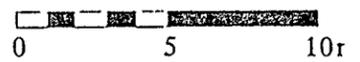


Figure 31: SECTION BB



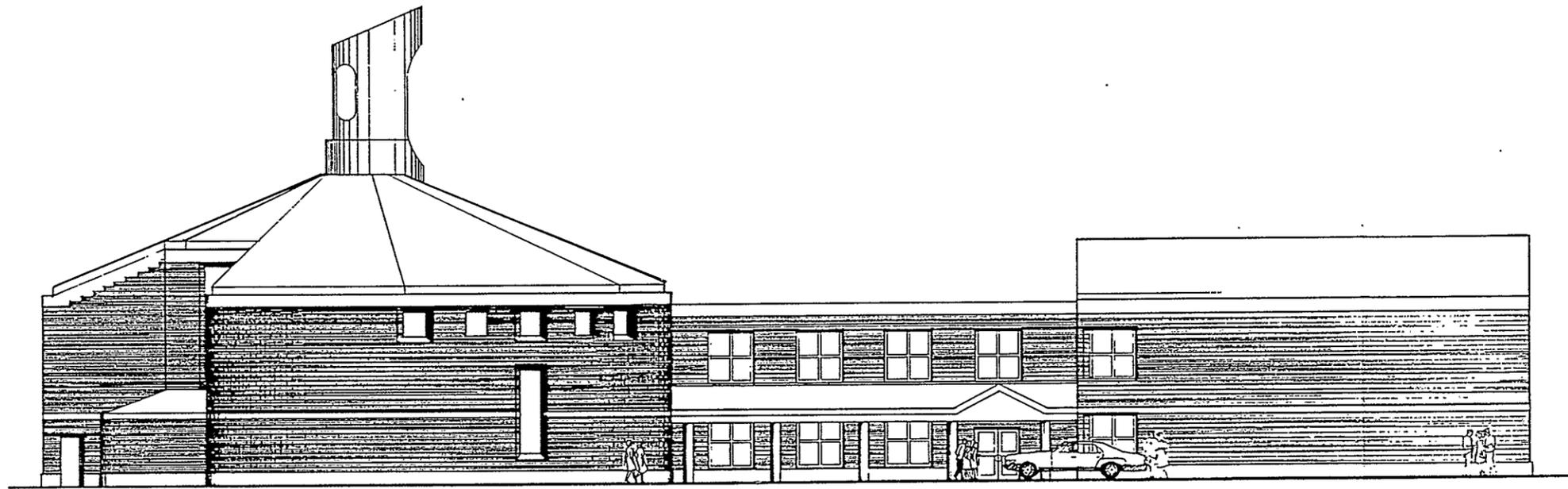


Figure 32: WEST ELEVATION



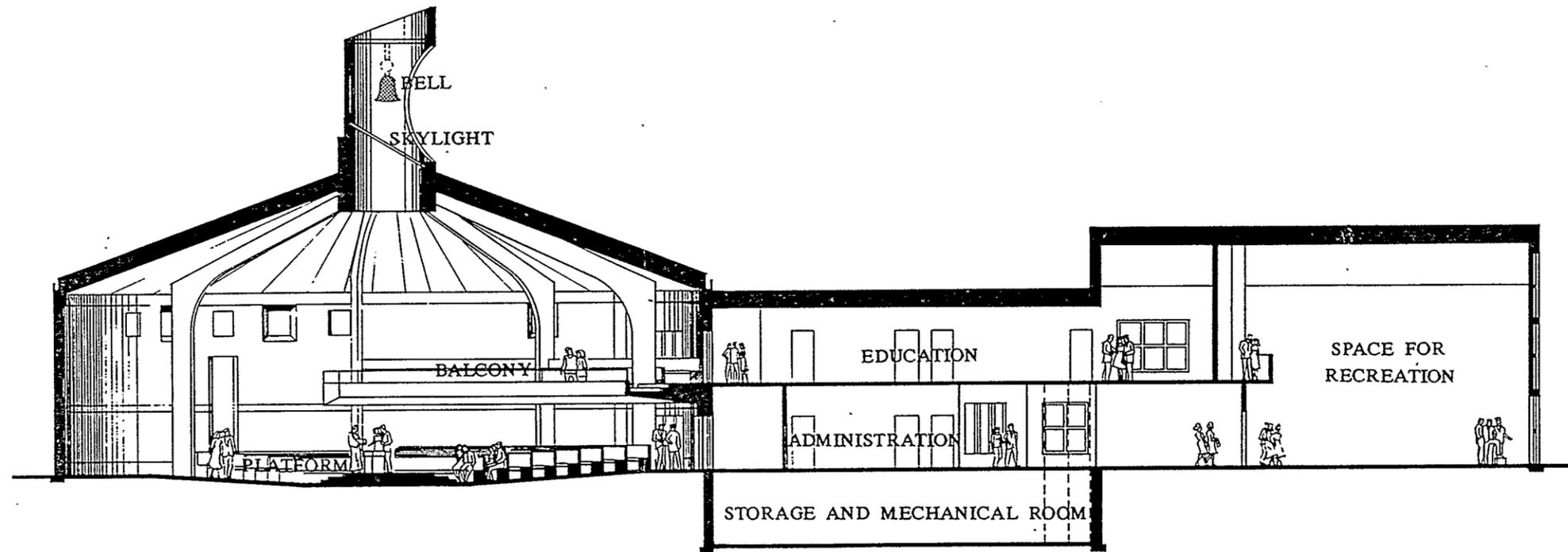
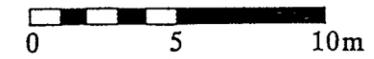


Figure 33: SECTION CC



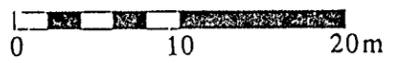
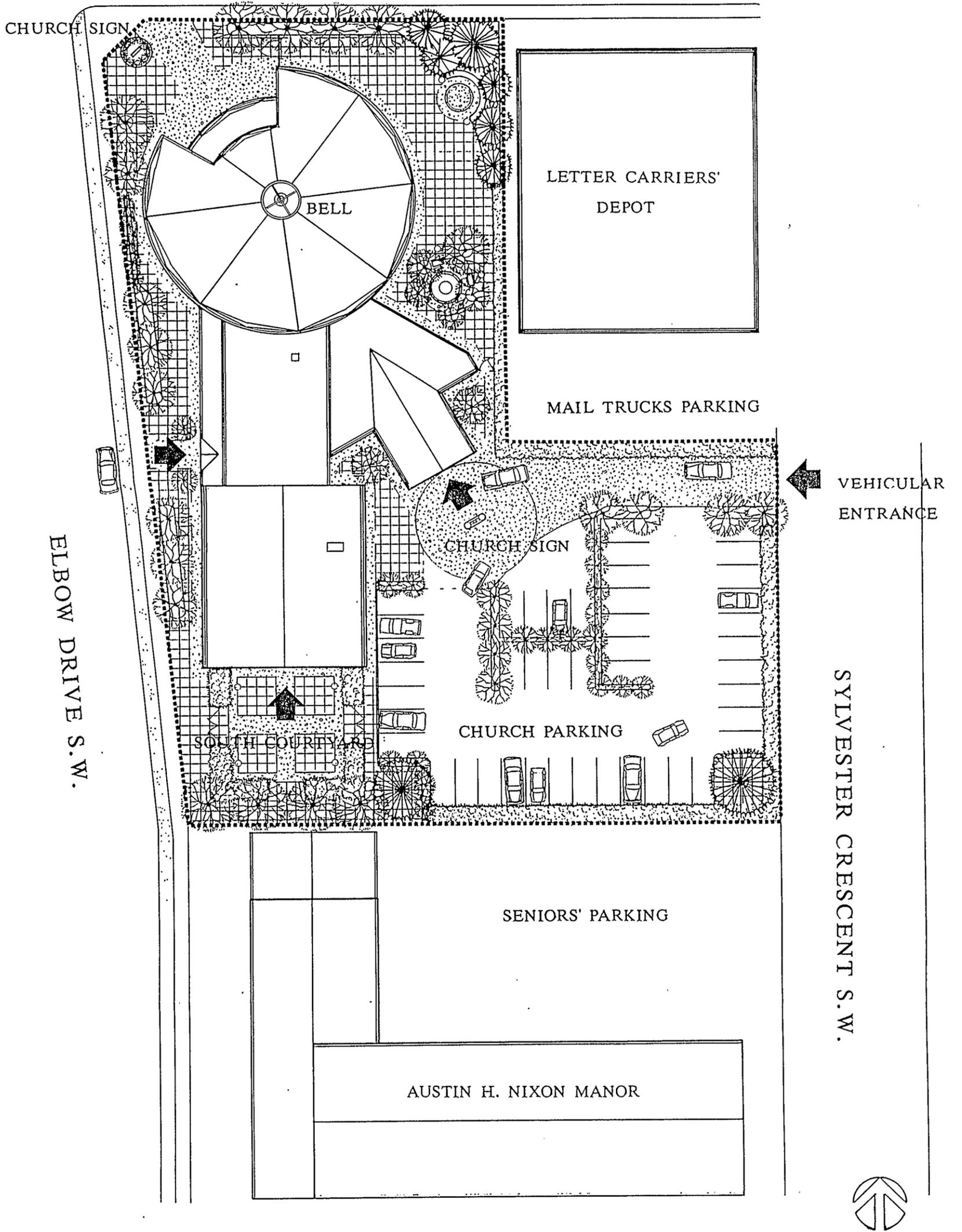


Figure 42: SITE PLAN