

A Church in Billings



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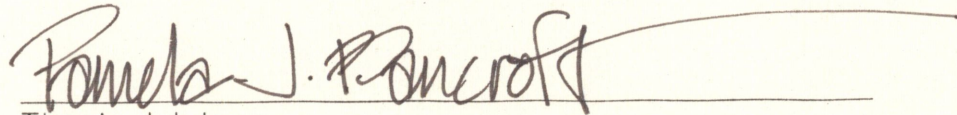
A CHURCH IN BILLINGS

by
Doug Boggess

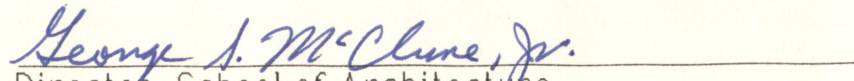
A thesis document submitted in partial fulfillment
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Thesis Advisor

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INTRODUCTION

The project that I have selected for my thesis is the design of a Roman Catholic Church on a ten and one-half acre site south of Billings, Montana. The site, which is owned by the Catholic Diocese of Great Falls-Billings, is adjacent to the Brairwood Golf Course Development. Presently there are no plans to develop the site due to the stagnant growth and poor economic conditions. However, I will assume that the area is growing at a steady rate and will achieve the density necessary to support the construction of this project.

During the two quarters of thesis it will be my goal to understand the day-to day operations of a Catholic church, the history of church structures, and the changes that have occurred in the church that effect the structure of the church. I will then apply what I have learned to the design of the worship, social, business, and living spaces of which the church, rectory and convent are composed.

Site planning will also be a major concern. The placement of the church, rectory, convent, public and private spaces, parking and the viability of an outdoor garden chapel for seasonal use will be considered.

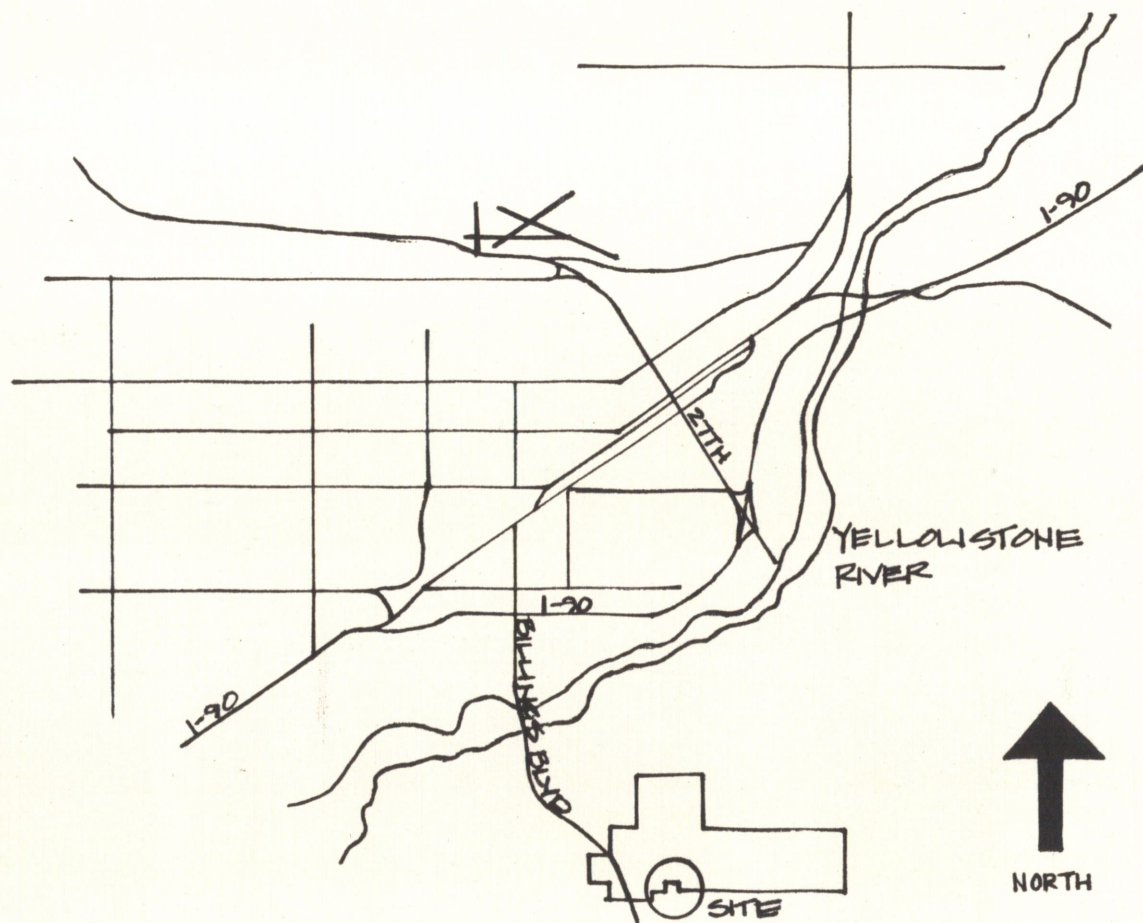
PERSONAL GOALS

1. Better my presentation skills
2. Design some of the details of the project
3. Decide early on a solution and carry it through
4. Explore and use the computer to compile my thesis text
5. Broaden my understanding of landscape materials

PROJECT GOALS

1. The church should make visitors feel welcome
2. Integrate the church complex into the site
3. Use daylight to enrich the space
4. Make a clear statement of catholic church
5. Utilize exterior spaces
6. Use passive solar heating to augment the high utility costs of heating a large, high space.
7. Take advantage of the views when possible

SITE LOCATION



HISTORY OF BILLINGS

Billings, Montana, was established as a trade and distribution center for the railroad in south-central Montana. In March 1882, Herman Clark, a promoter and speculator, and Fredrick Billings, a former president of the Northern Pacific Railroad, had two sections of land set aside for a town that would be met by the coming railroad.¹

With the news that a town was planned by the railroad, a series of tents and small cabins appeared on the townsite, and Billings was dubbed the, "Magic City" because of its overnight growth.²

Today Billings is the largest city in Montana with a metropolitan population of nearly 100,000. It is the trade and transportation center of eastern Montana with food processing, petroleum refining, and regional medical facilities the leading industries. Currently Billings is suffering from the effects of the statewide recession and migration of the

population to other states, but the area has rebounded from other stagnant economic eras and in time will recover from this present recession.³

BACKGROUND MATERIAL



THE CHURCH STRUCTURE

The building and the orientation of the congregation within the structure has had a number of changes throughout its history. The first spaces used by Christians for worship were the dining rooms of private homes. Using the dining table for an altar, the priest would celebrate the mass with the assembly standing around the other three sides of the altar. (fig. 1).⁴

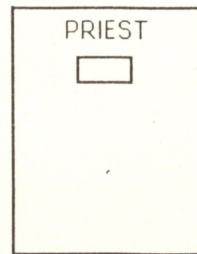


Figure 1

When the Christian Religion became an acceptable part of society, Christian worshipers no longer had to hide in private homes and services were moved to Roman Basilicas. The assembly still gathered around the altar in the same manner as in the private home. (fig. 2).⁵

Soon after the move to the Basilican plan

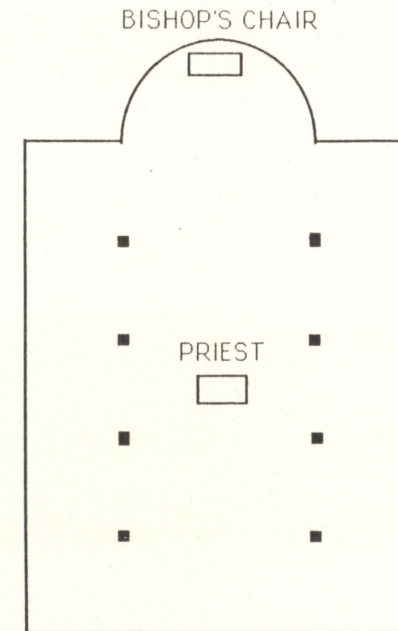


Figure 2

there was a change in the orientation of the assembly and the priest. The assembly now faces east with a distinct space between them and the altar. The priest also faces east and for the first time has his back to the people. (fig. 3).⁶

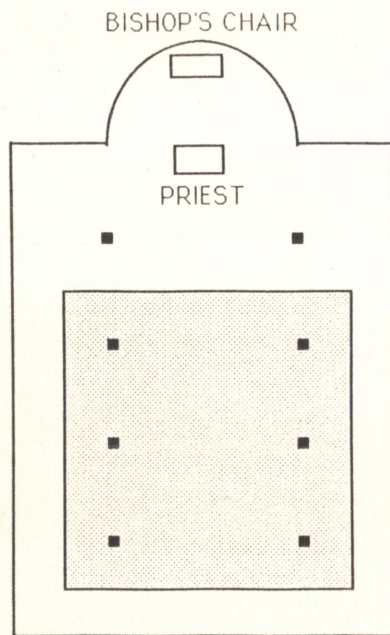


Figure 3

Next, the medieval church plan places another barrier between the clergy and the assembly. The altar was moved to the east wall and clergy stalls were inserted between the

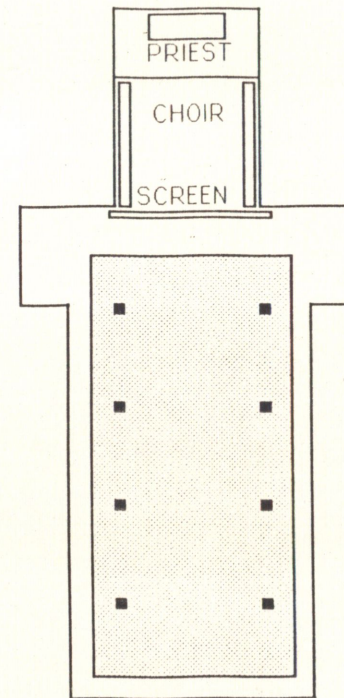


Figure 4

altar and the assembly. (fig. 4).⁷

Since the medieval church other changes

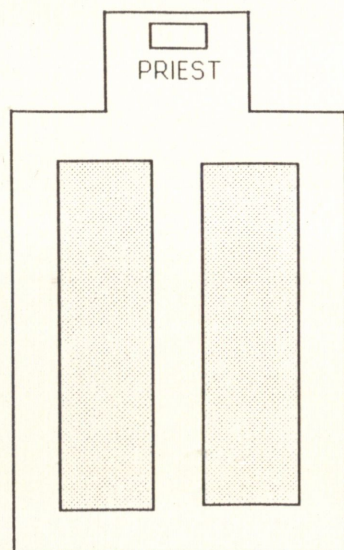


Figure 5

that have occurred include the addition of seating and the omission of the clergy stalls. (fig. 5).

Finally, in the contemporary churches of today there is a return to some of the ideas of

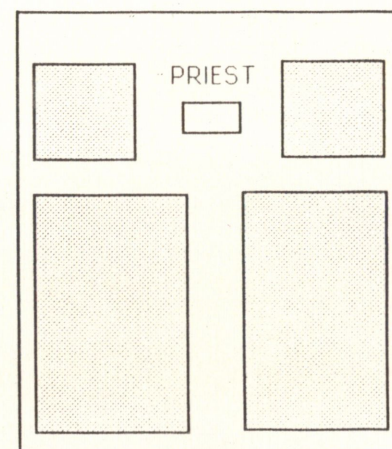


FIGURE 6

the past. The altar has been moved away from the wall and the priest once again faces the assembly. The assembly, although seated instead of standing, generally is arranged around the other three sides of the altar. (fig. 6).

The reason for the return to the basic circular layout of the past is the realization that the congregation should have a part in the services. In the beginning the priest faced the congregation and the mass was a celebration of all those gathered to God. After the mass was moved to the public Basilica the priest no longer faced the assembly. Instead he put his back to the people and the celebration of the mass became one between the priest and God with the congregation becoming little more than spectators.

In the 1960's, the Catholic Church started to make some changes and one of the desires of the Church was that the congregation become part of the mass again. The result, in the architecture, was a return to the priest facing the congregation and the congregation gathering around the altar. The priest now celebrates the mass with the congregation rather than for the congregation.

USERS

The church users in this area will come from four distinct groups ranging from the low income mobile-home dwellers to the upper middle class residents of the areas surrounding the golf course:

1. Blaine Trailer Court consists of about 250 lots which sit on the Yellowstone River flood plane. The lots and the homes are in various stages of disrepair.

2. South Hills Home Development consists of around 200 lots in the foot hills around the area. The homes are of middle income value.

3. There are over 250 ten-and twenty-acre tracts that have middle to upper middle income houses on them. These tracts are located south of the other developments in the area among tree covered hills.

4. Briarwood golf club has lots for over 1000 units. Some are condominium units, but

most are single family units with all of them being upper middle income homes.

Most residents in the area are younger couples with children, but some residents in Briarwood and the acreage tracts are middle aged couples.

DESIGN CONSIDERATIONS

The design of a church is like designing a space for a series of celebrations and these celebrations are a series of processions. The procession for Sunday worship starts in the parking lot where groups of families walk together to the entrance of the church. The location of the parking lot as well as the path to the entrance should encourage the use of the main entrance. Also the walk to the entrance should be short, comfortable and relaxing.⁸

Once inside, the entry hall should allow for people to visit other members and visitors of the church. This area should be large enough so that anyone who wishes may stop and visit without impeding the movement of others. This space should give people a feeling of comfort, especially the first time visitor.⁹

The main church must accommodate different functions and furnishings, the mass, baptism, and the altar are the most important. In today's church a certain amount of the

comfortable home-like atmosphere of the entry spills over into the worship space, but a degree of piety must be maintained.

Other design considerations are the seating layout, the sharing of spaces to minimize seldom used spaces, and site planning for the church, rectory, convent, church hall and parking.

CLIMATE ANALYSIS

Montana has a reputation for having a harsh inhospitable climate, especially in the winter months. The climate in the Billings area is representative of the climate along the east side of the Rocky Mountains, and though harsh at times, mild periods mixed with cold snaps are generally the rule in the winter. The temperature, wind, humidity, and precipitation are the dominant factors in shaping the climate of the area.

Temperatures in Billings can vary greatly from season to season. Normal lows in the winter are between 10 and 20 degrees fahrenheit (F), but the extreme lows may reach almost -40 degrees F. Summer's normal highs are around 85 degrees F, but temperatures near or above 100 are not uncommon.

The wind in Billings can cause great discomfort in the winter making the temperature seem 50 degrees colder than it is. A Chinook wind, however, can make a winter's day quite

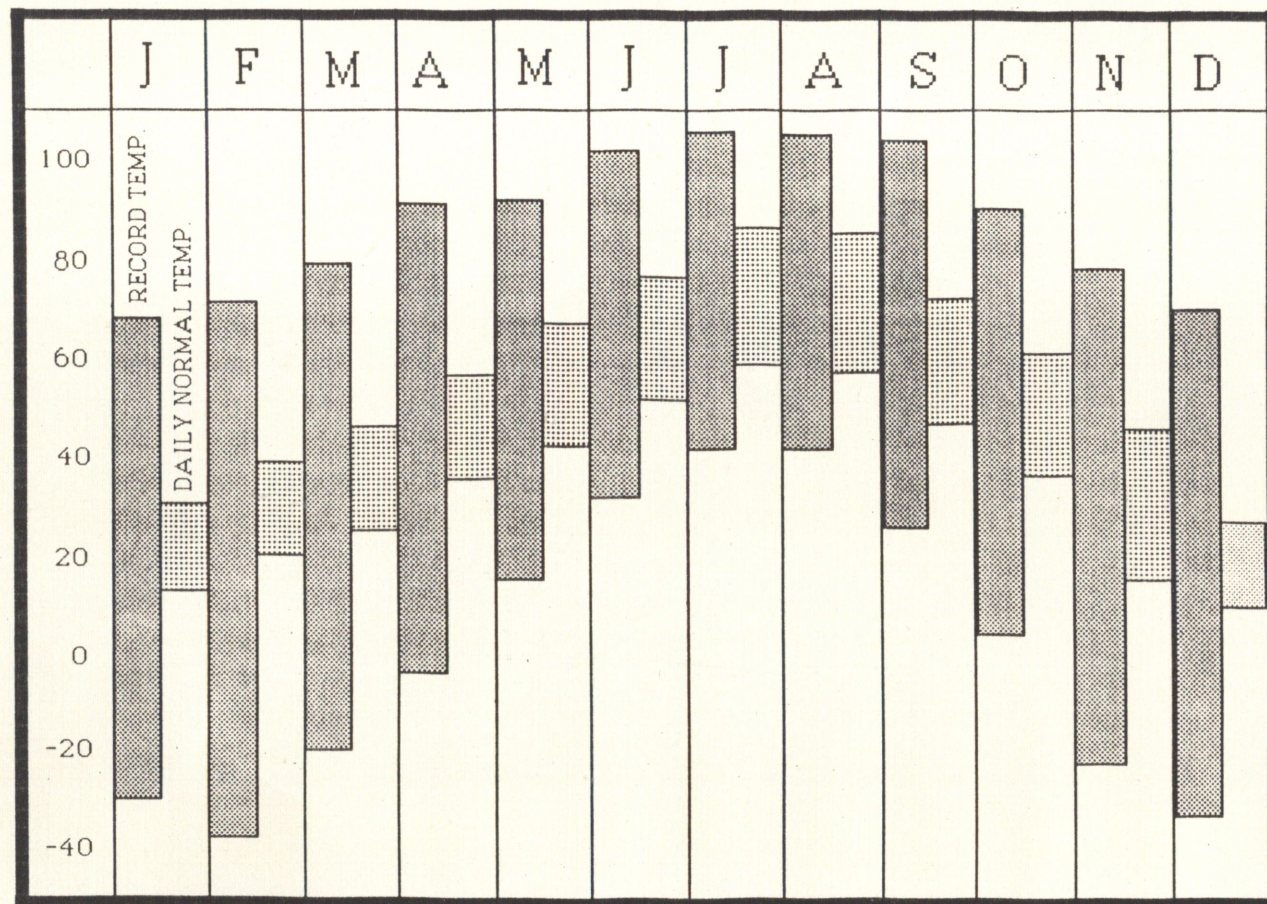
warm with temperatures rising into the sixties. During the summer, the wind's cooling effects are welcome most of the time but some summer winds can be strong and a nuisance.¹⁰

Heavy demands on HVAC systems coupled with rising utility costs make traditional high church spaces an extravagance especially when you consider that the space may only be used a few hours a day, one or two days a week.

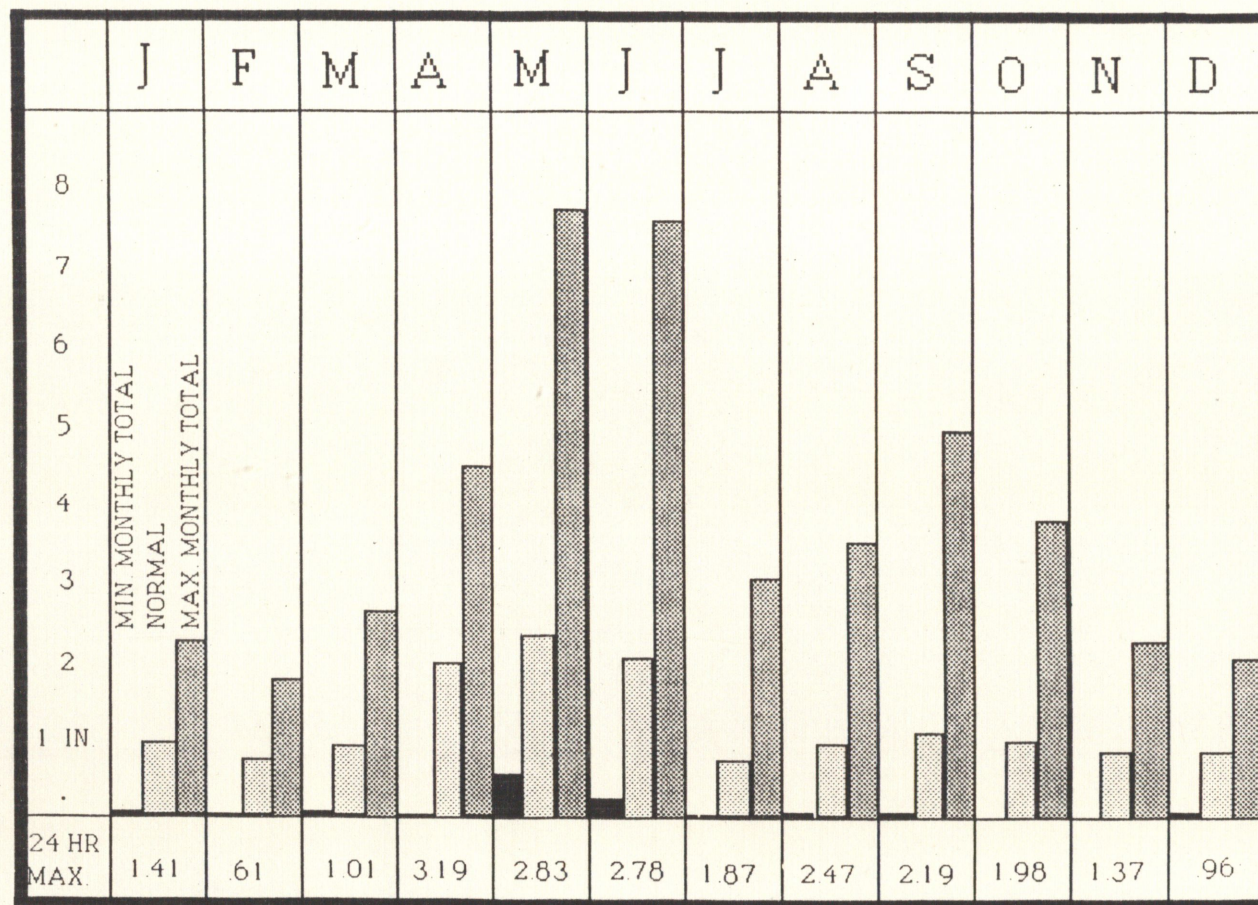
Passive solar heating is an option that must be explored, along with radiant systems and systems that warm the floor.

Site planning will also be important, because the placement of the structures will either minimize or magnify the wind conditions.

TEMPERATURE



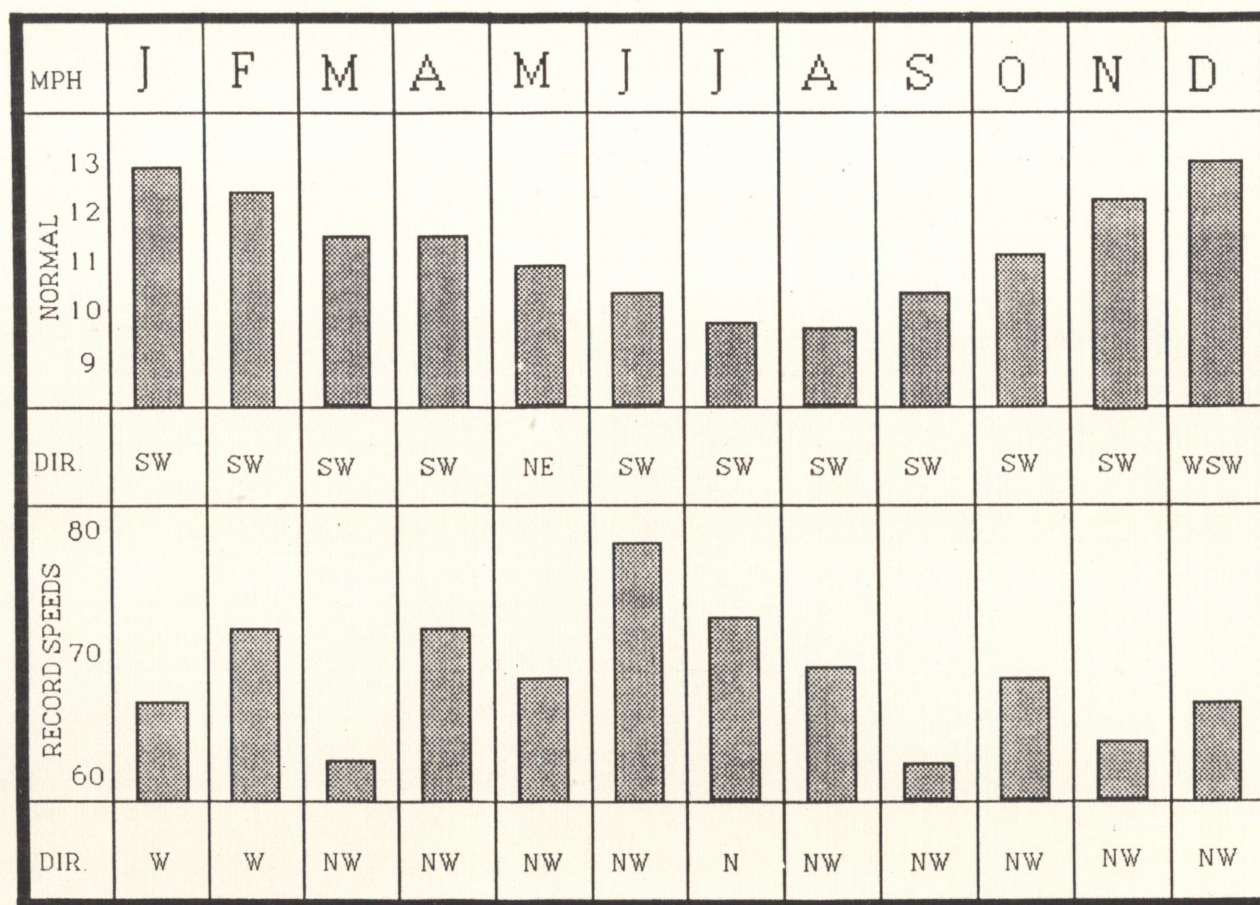
PRECIPITATION



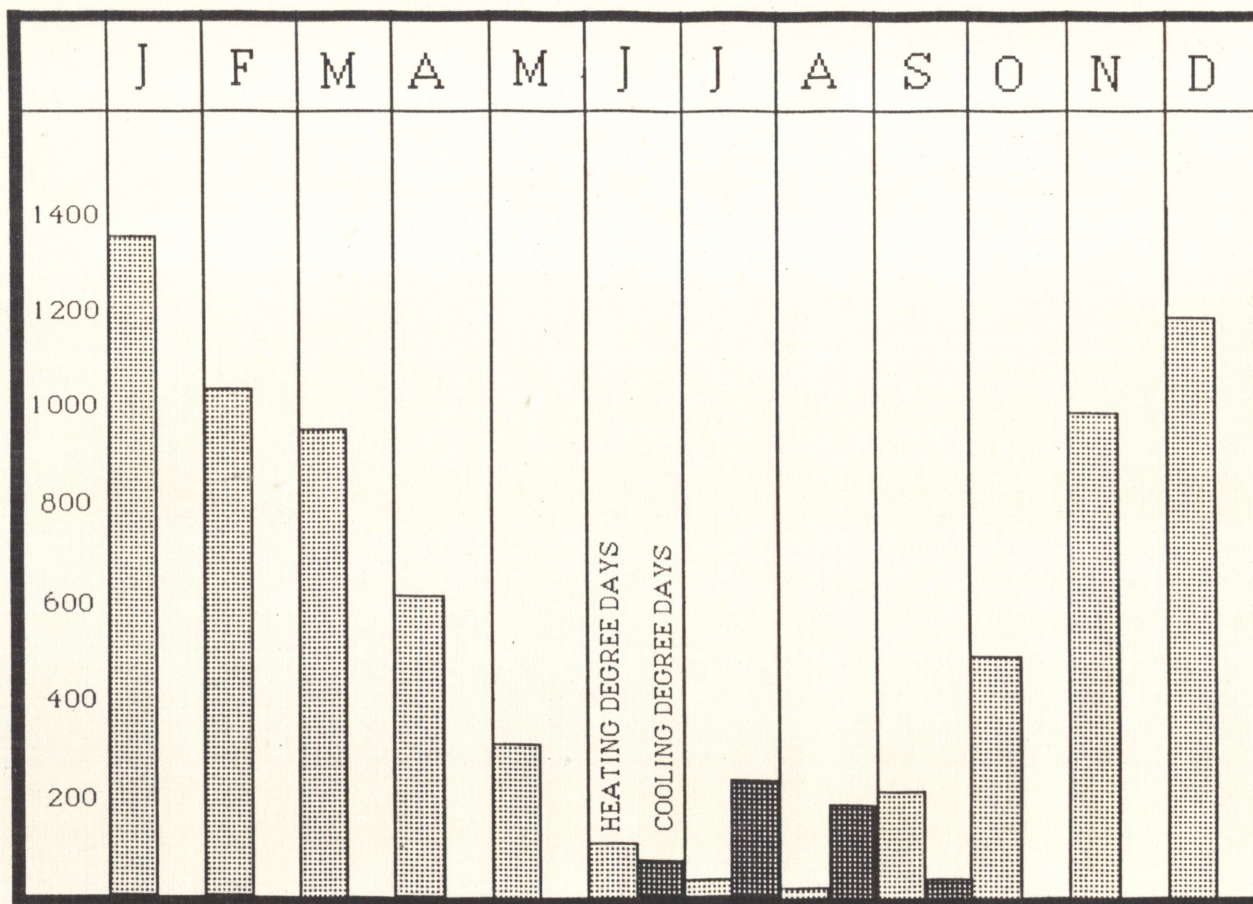
HUMIDITY

%	J	F	M	A	M	J	J	A	S	O	N	D
5 AM	64	65	67	68	69	71	63	60	65	63	66	65
11 AM	61	58	54	49	49	47	39	39	48	49	58	61
11 PM	57	52	46	41	43	41	31	30	37	42	53	57
5 PM	63	62	62	58	60	59	49	46	54	56	62	63

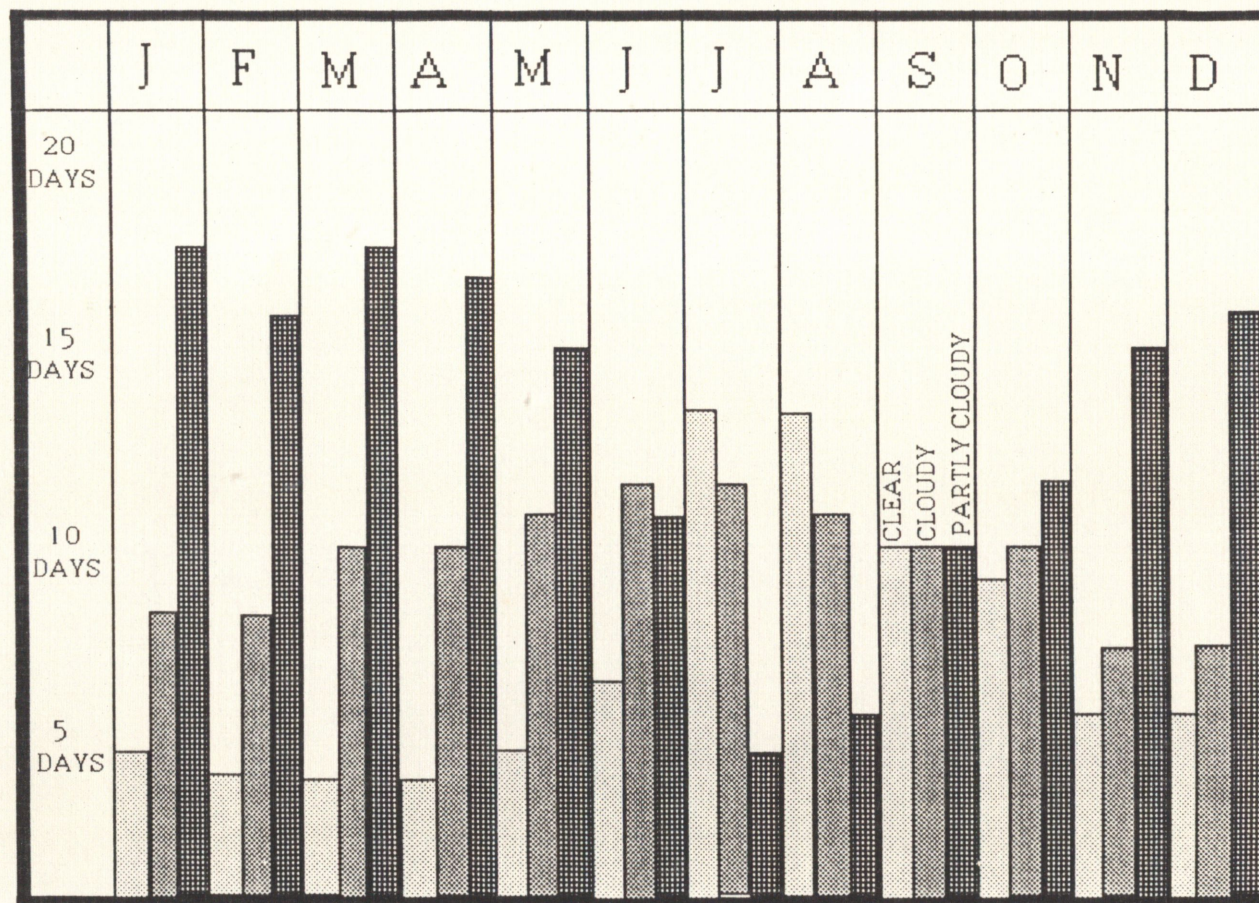
WIND



DEGREE DAYS



SKY COVER



PROGRAMMING



P ROGRAMMING P ROCESS

The programming process I am using stems from research of guides to church design, case studies of church designs that have been published, and the churches in the area.

I will take the information from these sources and determine trends, select aspects of some of the projects that appeal to me, and define and prioritize goals for my project.

Then, using that number divided by the number of Catholic families in Billings, it can be estimated that one in four families in Billings is Catholic.

$$22,337 / 9823 = 2.9$$

Then, using the projection of the number of families in the area when fully developed and dividing by four a number of Catholic families is obtained to determine the size of church needed.

$$17,000 / 4 = 425 \text{ Catholic families}$$

SPATIAL ANALYSIS

To determine the size of the church needed to serve this area an estimation of the number of families that would use the church must be derived. The formula used to obtain this number was to divide the population of Billings by the average family to obtain the number of families in Billings.

$$80,000 / 3.5 = 22,857 \text{ families}$$

Then, using that number divided by the number of Catholic families in Billings it can be estimated that one in four families in Billings is Catholic.

$$22,857 / 5825 = 3.9$$

Then, using the projection of the number of families in the area when fully developed and dividing by four a number of Catholic families is obtained to determine the size of church needed.

$$1700 / 4 = 425 \text{ Catholic families}$$

The seating required for a church community of this size would normally be 350. To accommodate further expansion, however, a church that would seat 525 could provide services in two masses instead of three and an extra mass could be added if the church community expands.

The areas of the spaces were determined by using case studies, a design competition document, and observations of the area churches. Using the case study on St. Cecilia, percentages of the total area were extracted from the floor plans. The main worship space was 30% of the total floor area, the chapel was 5%, the entrance hall 5%, and the sacristy and work sacristy were 1% each. Using these percentages and the projected population of the area, sizes for the space were determined.

The rectory and convent spaces were determined using the program for the 1989/1990 ASCA Precast Concrete Student Competition, with modifications to fit this project.

Parking was determined by planning for one space for an average size family. The parking lot for St. Bernard seems to have been planned this way.

WORSHIP SPACES

Main assembly	4000 SF
Weekday chapel	650 SF
Baptistry	300 SF
Reconciliation/	
Bridesroom	150 SF
Entry	650 SF
Choir	200 SF
Sacristy	100 SF
Work sacristy	100 SF

SOCIAL AND BUSINESS SPACES

Church hall	4000 SF
Kitchen	500 SF
Pastor's office	200 SF
Secertary's office	150 SF
Restrooms	2@ 150 SF
Coat room	100 SF
Storage	150 SF
Janitor's closet	50 SF
Caretaker's shed	100 SF
Mechanical	100 SF
Circulation @ 10%	1180 SF

Total	12,980 SF
RECTORY	
Entry hall	80 SF
Parlor	200 SF
Toilet	50 SF
Dining room	150 SF
Kitchen	150 SF
Pantry	30 SF
Laundry	40 SF
Pastor's suite	
Entry	30 SF
Bedroom	200 SF
Sitting room	150 SF
Bathroom	75 SF
Guest suite	
Entry	30 SF
Bedroom	150 SF
Sitting room	150 SF
Bathroom	60 SF
Mechanical	50 SF
Circulation @ 15%	240 SF
Garage	450 SF

Total	1,830 SF
CONVENT	
Entry hall	50 SF
Parlor	200 SF
Toilet	50 SF
Dining room	150 SF
Kitchen	150 SF
Pantry	30 SF
Laundry	40 SF
Nun's suites	
Bedroom	3@ 200 SF
Bathroom	3@ 60 SF
Office	200 SF
Mechanical	50 SF
Circulation @ 15%	255 SF
Total	1,955 SF
Parking	150 cars

SPATIAL CHARACTERISTICS

ENTRY

Function:

The entry is a place of gathering, both before and after church services. It must also provide access to the main church, chapel and church hall.

Requirements:

The entry should project a feeling of welcomeness, it should use daylighting, and consist of durable materials.

Spatial

Adjacencies:

The areas that need close proximity to the entry are coat room, restrooms, and parking.

MAIN CHURCH

Function:

The main church is used for Sunday worship, weddings, funerals and any other

religious services that require a large amount of seating.

Requirements:

The main church must have circulation areas wide enough to allow three adults to walk side by side down an aisle. Funeral also require an area between the altar and the pews for the coffin to rest. The baptistry has been moved into the main church, since baptism has become a public rather than a private ceremony.11

Spatial

Adjacencies:

The main church must be close to the sacristy, the bridesroom and the chapel.

CHURCH HALL

Function:

The church hall is used for all social functions such as dinners, dances, fund raising, and meetings. It may also be used as educational space, for religion classes, for children and adults.

Requirements:

The church hall must be a large open space that can be sectioned off to accommodate small groups.

Spatial

Adjacencies:

The areas that must be near the church hall are the kitchen, restrooms, storage room and the coat room.

RECTORY

Function:

The rectory is used as a residence for the pastor, and a place where he can counsel individuals and couples.

Requirements:

The rectory must have both public and private spaces so the pastor can perform his duties and enjoy time of his own.

Spatial

Adjacencies:

The rectory should be within easy walking distance of the church.

CONVENT

Function:

The convent is the residence for the nuns who work in the church.

Requirements:	The convent should provide the nuns with a place for private activities, and an office for their work pertaining to the church.		given time, know and feel comfortable with each other.
Spatial Adjacencies:	The convent should be within easy walking distance to the church.	Spatial Adjacencies:	The chapel should have easy access to the entry and the main worship space because they must share the tabernacle. ¹²
CHAPEL Function:	The chapel serves as a smaller worship space used primarily for weekday services.	SACRISTY Function:	The sacristy is used by the priest as a dressing room. It also serves as a storage room for the vestments, linen, and altar coverings, and as a preparation room for the water and wine. ¹³
Requirements:	The chapel should have a more intimate feeling than the main worship space. Generally those people who are using the chapel, at any	Requirements:	The sacristy requires ample counter space, storage, and a sink. ¹⁴

Spatial

Adjacencies:

The sacristy is generally located near the altar area where most of its functions occur but since the priest now enters walking through the congregation a small changing room near the entry would be useful.

water. A shelf or stand to set the candle, oil, and new garment is also needed.¹⁵

Spatial

Adjacencies:

Currently, the location for the baptistry is to one side of the altar, however, some are located in the chapel or entry space.

BAPTISTRY

Function:

The baptistry is the area that contains the baptismal font used to baptize infants into the Catholic Religion.

RECONCILIATION/

BRIDESROOM

Function:

This room is used for confession and as the space in which the bride prepares for her wedding.

Requirements:

The baptismal font generally consists of two chambers, one to hold the holy water and one to catch the used

Requirements:

This room should be warm and comfortable with seating, a dressing

table and a portable screen
for the hearing of confes
sion. 16

Spatial
Adjacencies:

This room requires some
privacy but still should be
near the entry.

KITCHEN
Function:

The kitchen is used for the
preparation of complicated,
large dinners and for simple
tasks such as making coffee
for an after worship
gathering.

Requirements:

The kitchen should have
ample preparation space,
commercial ovens, stoves,
refrigerator, dishwasher,
sinks and storage.

Spatial

Adjacencies:

The kitchen should be next
to the church hall and have
an exterior access for
deliveries.

Some preliminary thoughts about some of the
spaces are:

The entry hall could be used as a passive
solar collector, because of the need to use
durable materials in the space a mass wall or
floor could be easily incorporated into the
space and it is not a space that requires an
inward focus.

The main worship space should use a
circular seating plan, and use light to create a
divine atmosphere, such as the plan of St.
Cecilia and the way that light is used at the
Parochial Church of Riola, Italy.

If possible the church hall should exploit the views to the south of the site and be adaptable for many uses.

The chapel should be built at a human scale as is the chapel in St. Cecilia.

HANDICAPPED CONSIDERATIONS

The movement of the handicapped has frequently been overlooked in church design. The handicapped should have covered entrances, and handrails that extend past landings, eighteen inches is recommended, on stairs and ramps. Stairs and ramps should be located inside the church to prevent the accumulation of snow and ice on them.¹⁷

Inside the worship space there is a need for some pews to be shorter in length so a wheelchair may be positioned there. Handicapped accessible toilets are also needed for these individuals.

CODE STUDY

	CHURCH	RECTORY/COVENT
REQUIRED CODES		
BUILDING	1988 UBC	1988 UBC
FIRE	1988 UFC	1988 UFC
MECHANICAL	1988 UMC	1988 UMC
PLUMBING	1988 UPC	1988 UPC
ELECTRICAL	1988 NEC	1988 NEC
OCCUPANCY GROUP(S)	A-2.1	R-3
FIRE RESISTANCE OF EXTERIOR WALLS	2 hours if less than 10 feet, 1 hour if less than 40 feet	
OPENINGS IN EXTERIOR WALLS	Not premitted if less than 5 feet, protected if less than 10 feet	
OCCUPANCY SEPARATION(S)	1 hour	1 hour
CONSTRUCTION TYPE	Type III one hour	Type V non rated
ALLOWABLE FLOOR AREA	13,500 SF	Unlimited

MAXIMUM BUILDING HEIGHT	2 Stories, 65 feet	3 Stories, 40 feet
FIRE RESISTIVE REQUIREMENTS		
EXTERIOR WALLS	4 hours	No requirements
INTERIOR WALLS	1 hour	No requirements
PARTITIONS	1 hour	No requirements
STRUCTURAL FRAME	1 hour	No requirements
SHAFTS	1 hour	1 hour
FLOORS	1 hour	No requirements
ROOFS	1 hour	No requirements
ROOF CONSTRUCTION AND COVERING	Fire-retardant	
EXITS		
USE	Church & Chapel	Dwellings
OCCUPANT LOAD FACTOR	7	300
SQUARE FOOTAGE	13,500	2,400 Each
OCCUPANT LOAD	1929	8
NUMBER OF EXITS REQUIRED	4	2
NUMBER OF EXITS REQUIRED FROM SECOND FLOOR	2	1
DEAD END CORRIDOR LENGTH	20 feet	
TOTAL WIDTH OF EXITS REQUIRED	39 feet	3 feet

DISTANCE BETWEEN EXITS	One-half diagonal dimension of building	
DISTANCE TO EXITS	150 feet, 200 with sprinklers	
DOORS		
SWING OUT REQUIRED	Yes	No
SPECIAL HARDWARE REQ'D	No	No
CORRIDORS		
WIDTH	44 in. or greater	36 in. or greater
HEIGHT	7 feet or greater	7 feet or greater
CONSTRUCTION	1 hr. fire resistant	
STAIRS		
WIDTH	50 occupants or more 44 in., 49 or less 36 in.	
RISE AND RUN	Rise 4-7 inches	Rise up to 8 inches
	Run 11 in. or more	Run 9 in. or more
HANDRAILS	Each side, every	One side
	88 in. of width	
ROOF STAIR	Req'd at 4 stories	
SPECIAL EXIT REQUIREMENTS	Panic hardware	
SPRINKLERS REQUIRED	Basement over 1500 SF, enclosed stairs	

FLAME SPREAD CLASS REQUIREMENT

STAIRS

I

III

CORRIDORS

II

III

ROOMS

II

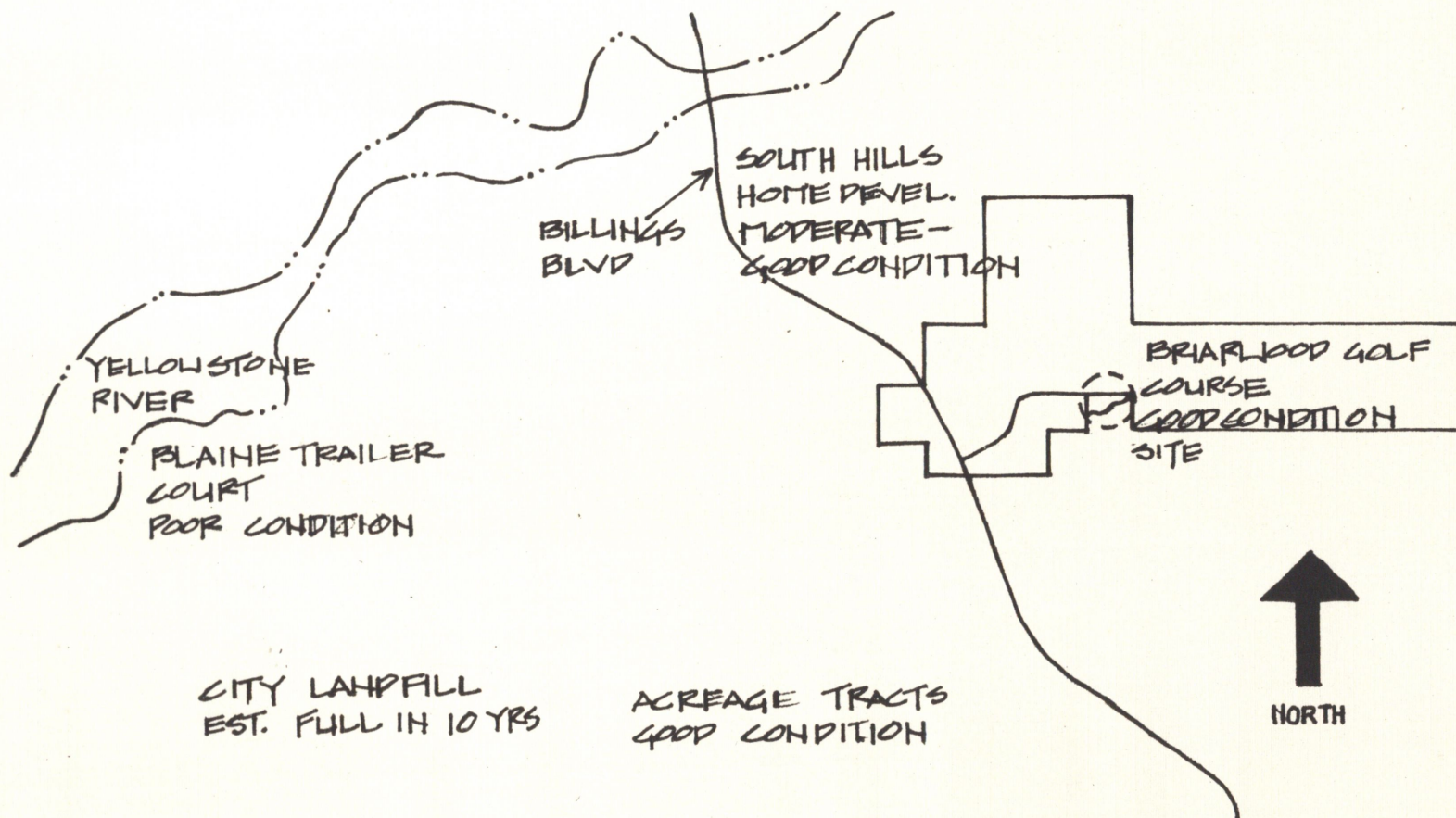
III

AREA CONDITIONS

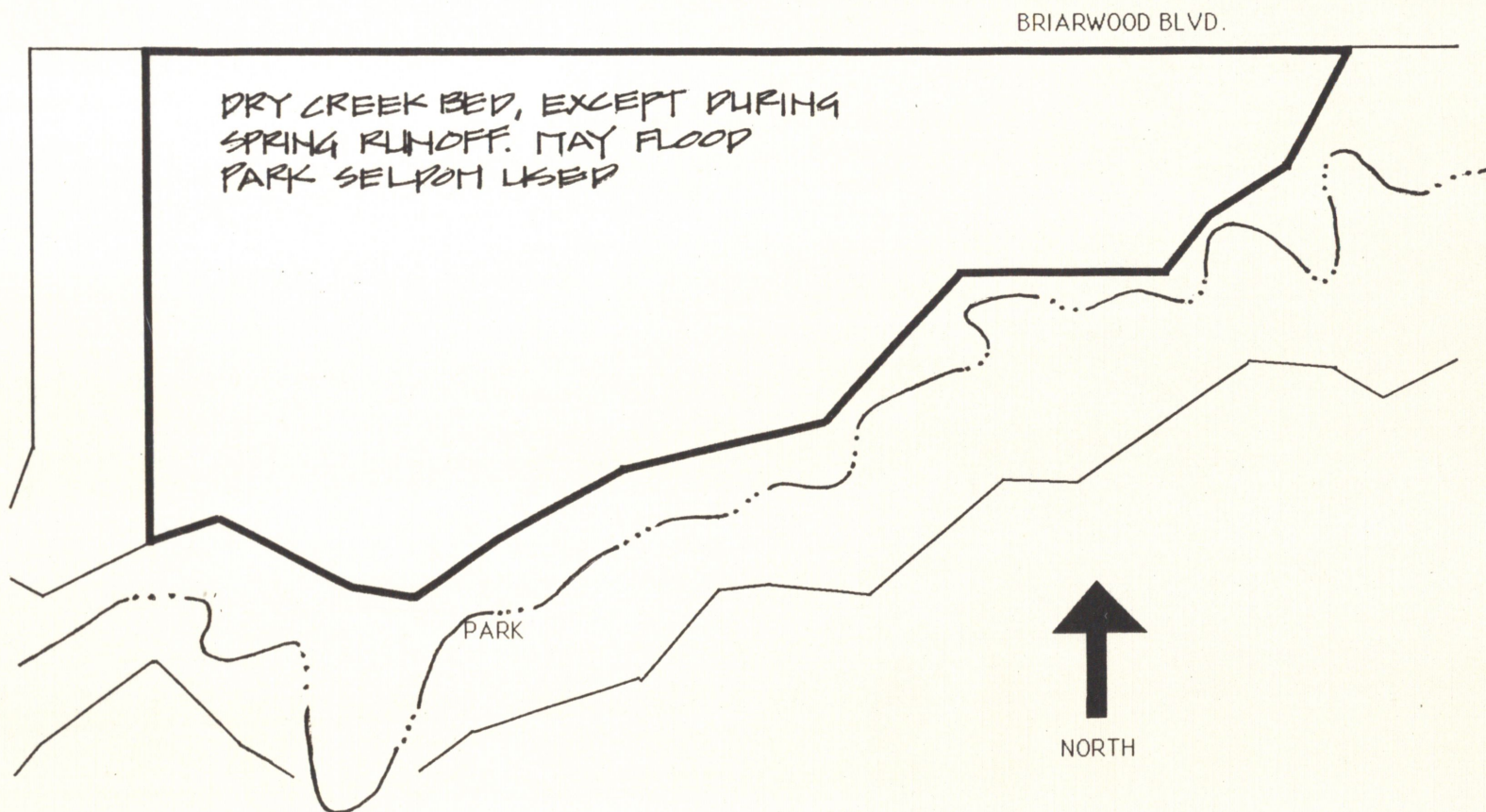


SITE ANALYSIS

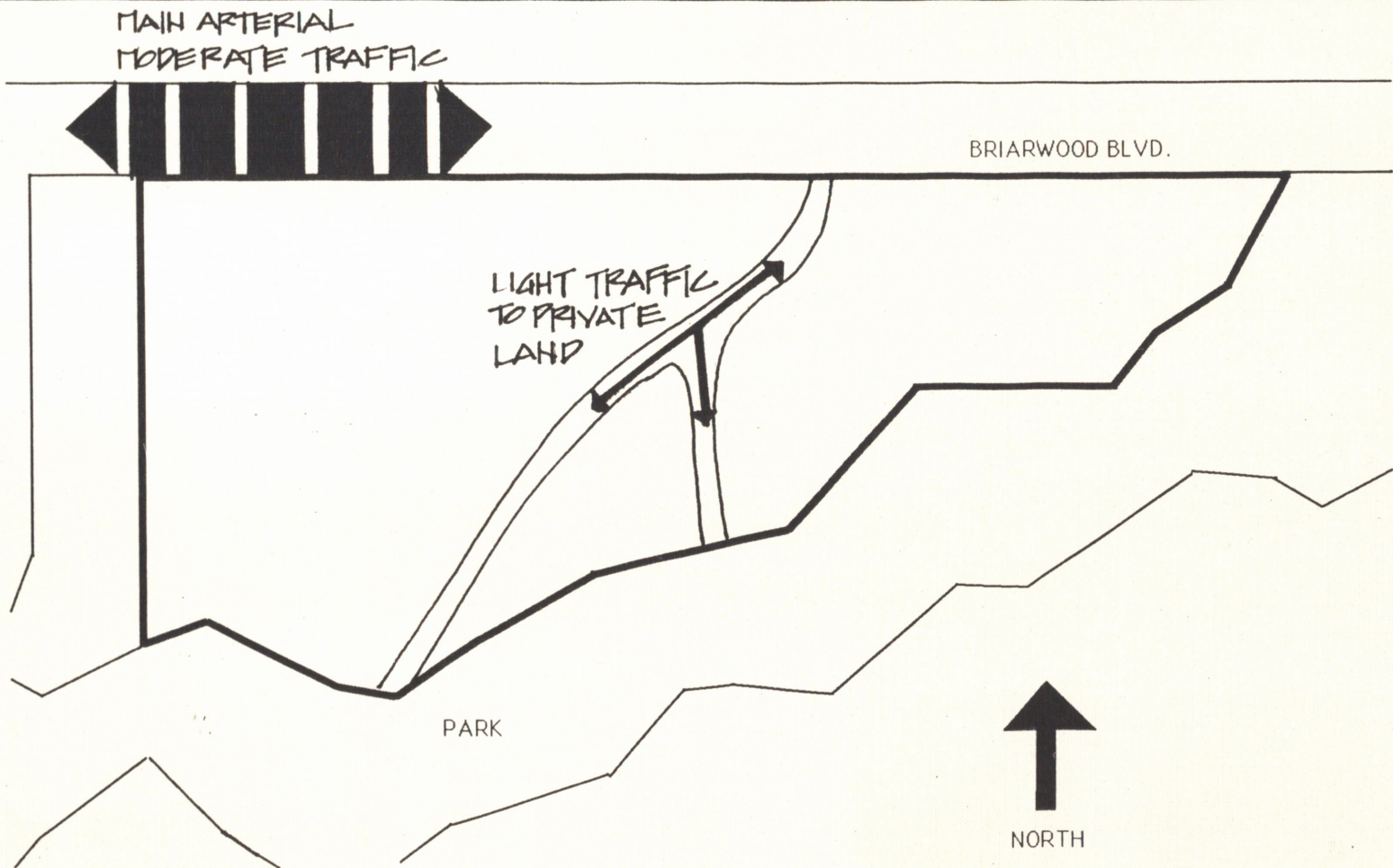
AREA LAND USES & CONDITIONS



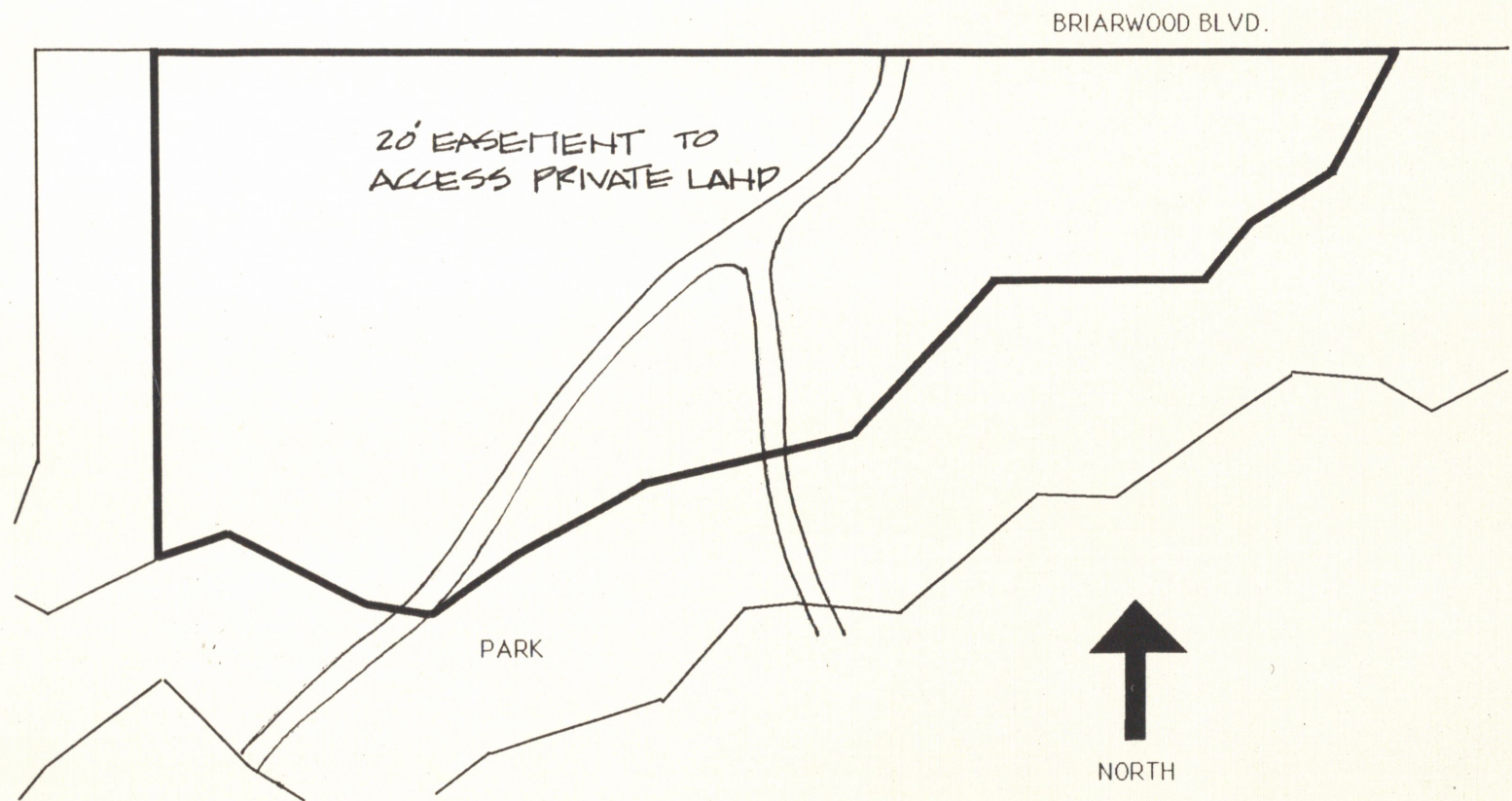
PARK



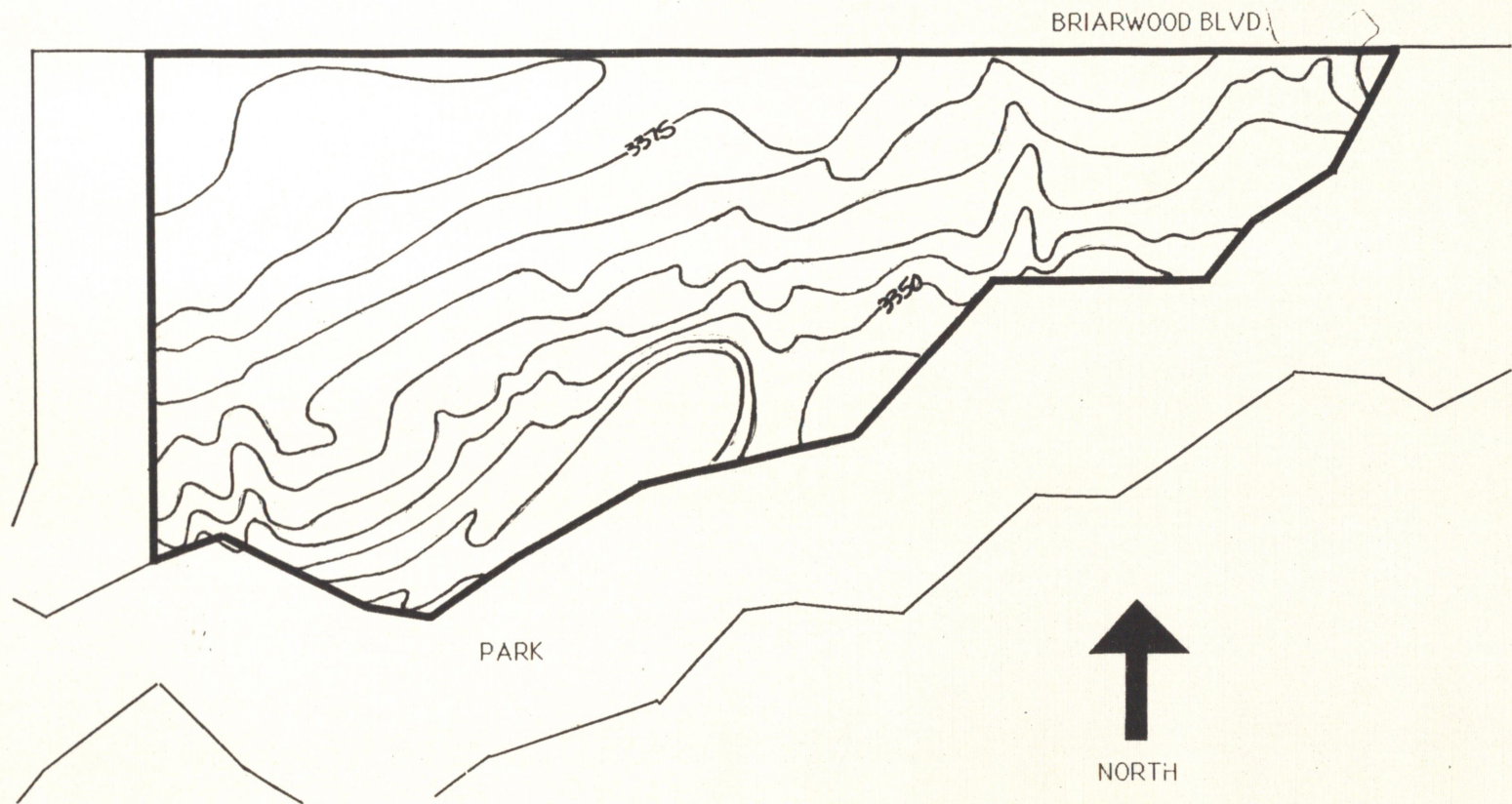
TRAFFIC



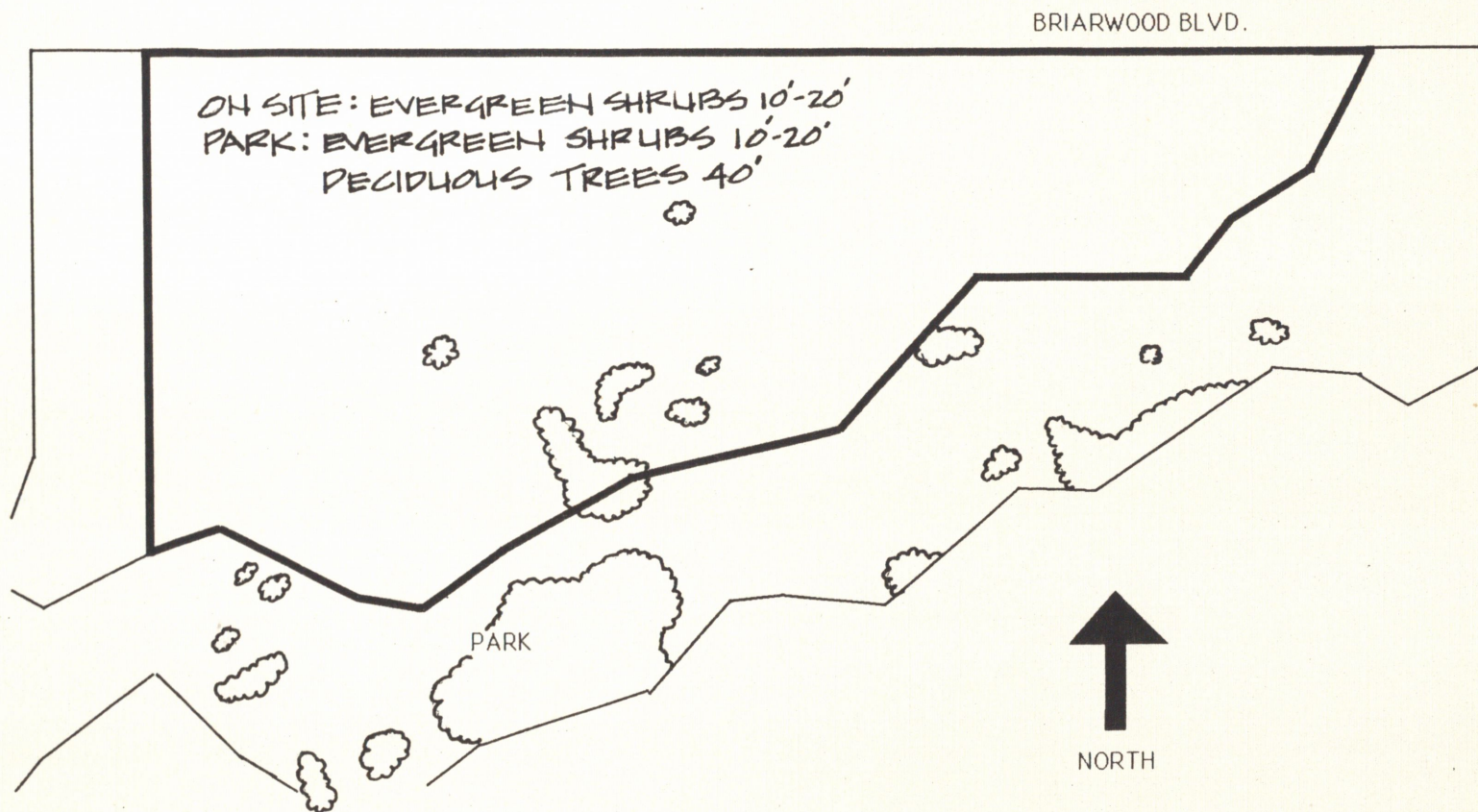
EASEMENTS



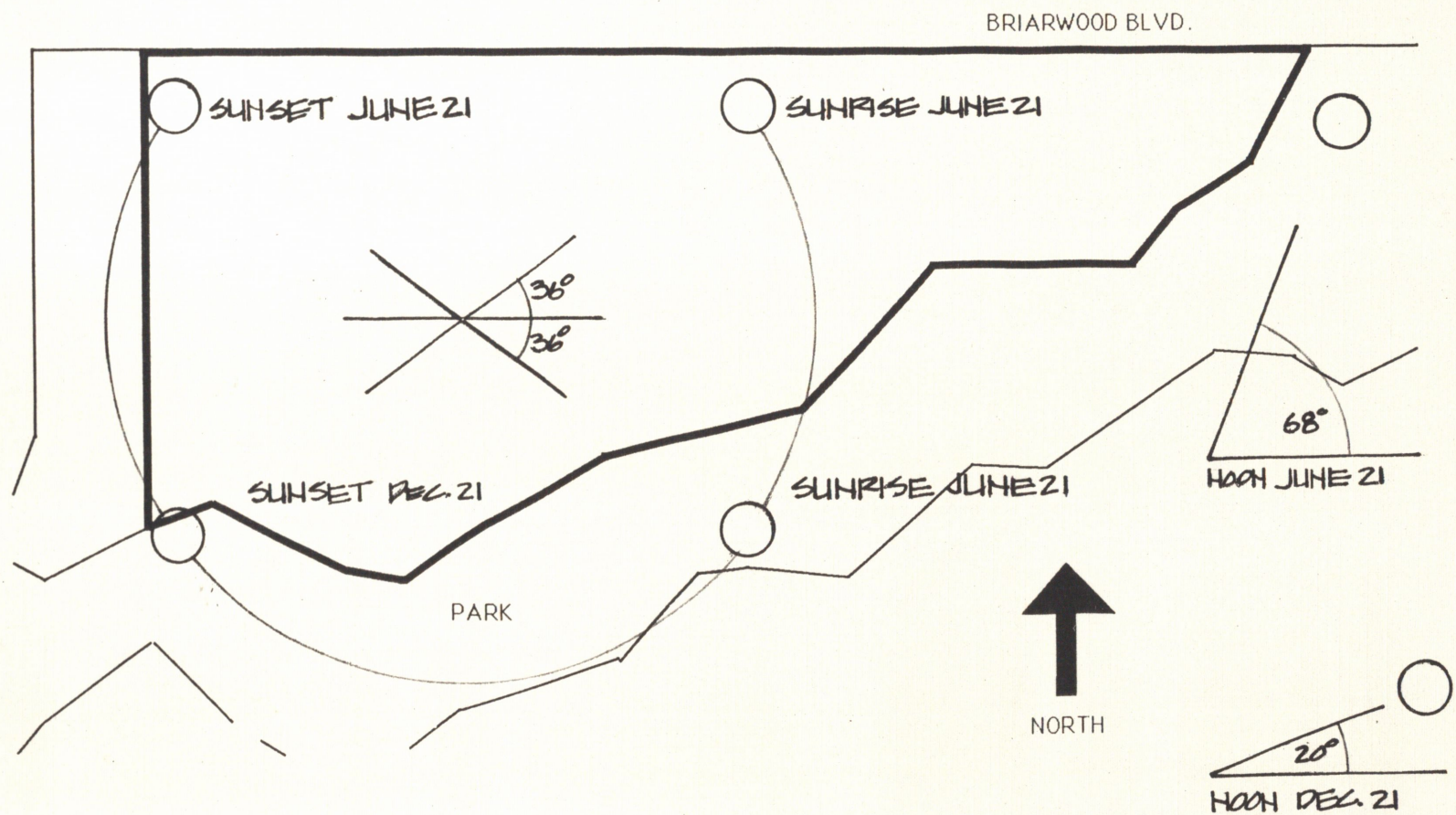
CONTOURS



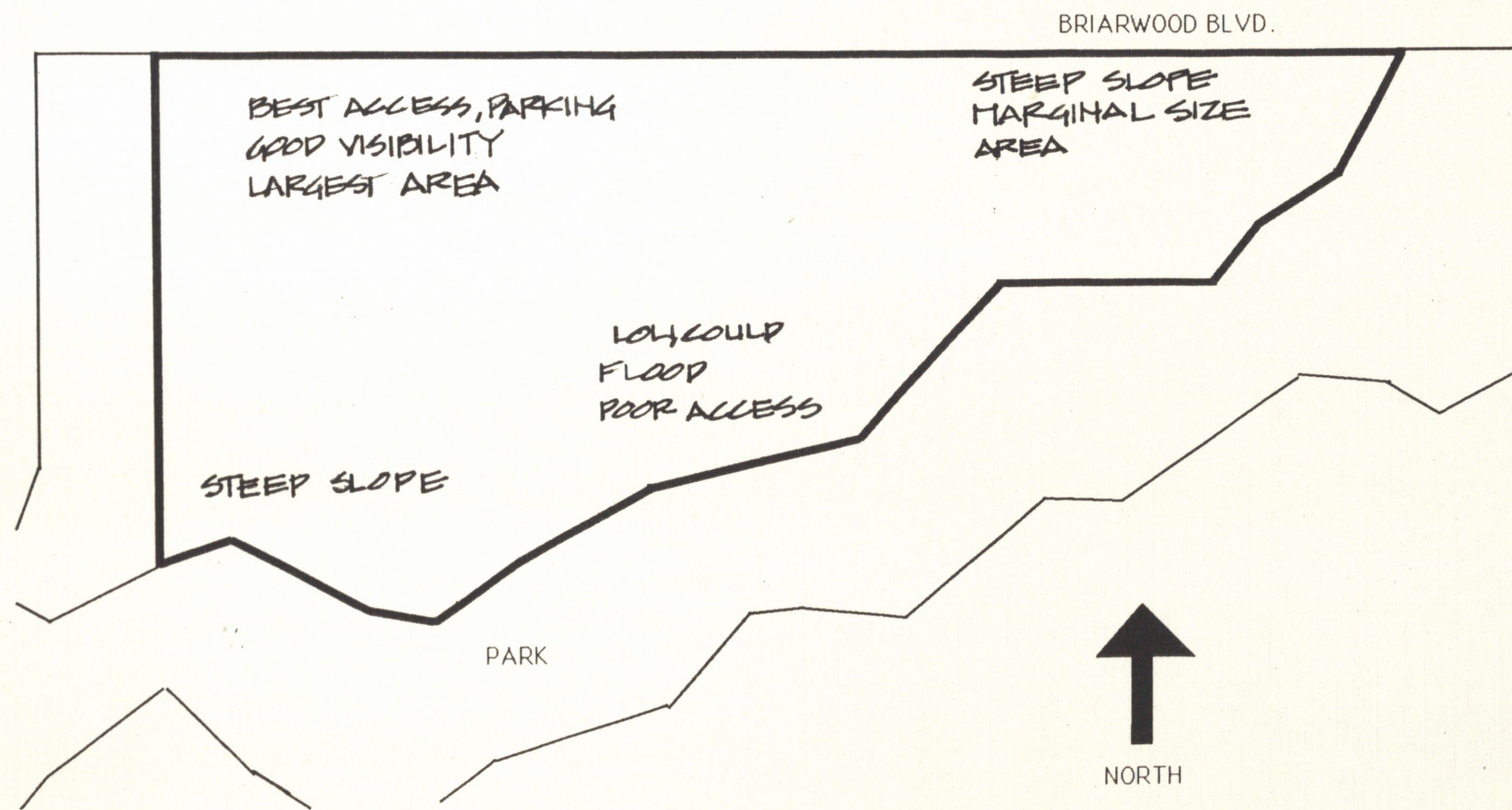
VEGETATION



SUN ANGLES



BUILDABLE AREAS



CASE STUDIES

There are two parts to the case studies. The first part consists of the Catholic churches in the Billings area and the second part looks at churches that have been published.

First, the Billings churches give an overall flavor of the styles of churches in the area and show a movement toward larger churches. They also show the tendency of modern churches to have a warmer, more comfortable interior, and the return to gathering around the altar by the people, rather than being separated from it.

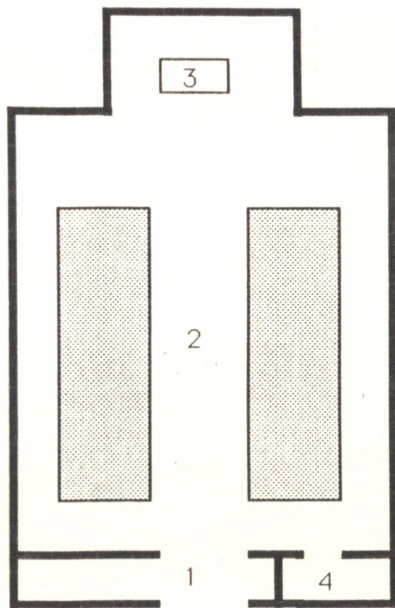
The styles in the area vary from the classic style of St. Patrick, to the mission style of Our Lady of Guadalupe and the contemporary style of St. Bernard.

The sizing of churches has changed over the years. When a church such as St. Patrick was built the availability of priests allowed for more priests to be stationed at each parish. This meant more masses throughout the day, so

churches could be smaller in size than today. Now, with only one priest at most parishes the size of churches today has grown due to the limit on the number of masses a priest may say in a day.

The atmosphere within churches today has become warmer and more home-like. Wood is used more now, as in the Holy Trinity Church, and ceilings are often lower as in St. Bernard, giving the space a more human scale.

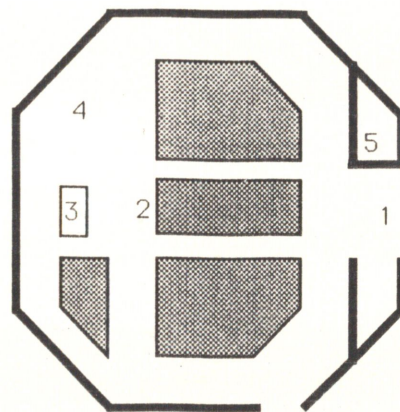
Finally, the seating has returned to encircling the altar as it once did in the first worship rooms. This can be seen in the Catholic Church in Poland, St. Bernard and others.



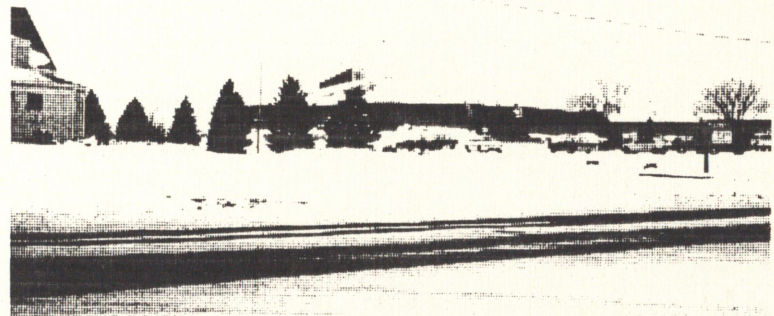
1 ENTRANCE
2 NAVE
3 ALTAR
4 BAPTISTRY



St. Patrick Co-Cathedral 1906
* Traditional longitudinal plan
* Traditional religious feeling
* Church hall in basement

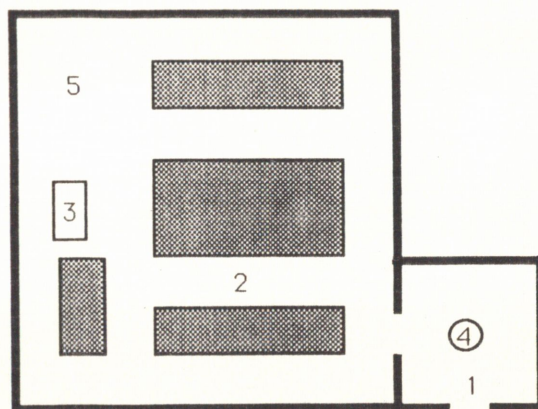


1 ENTRANCE
 2 NAVE
 3 ALTAR
 4 BAPTISTRY
 5 PASTOR'S OFFICE

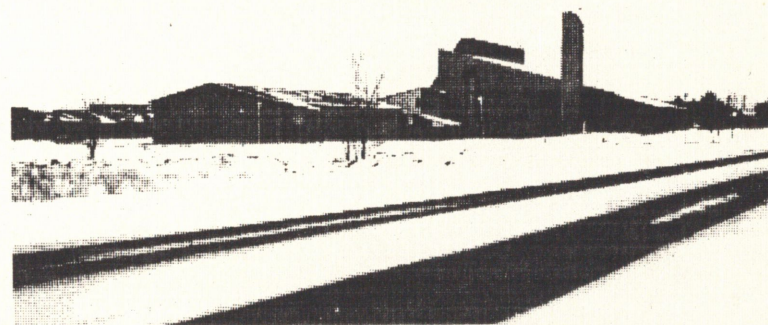


St. Bernard Church 1983

- * Good use of light on altar
- * Seating surrounds altar
- * Baptistry in full view of main assembly
- * Office within church/rectory becomes more private

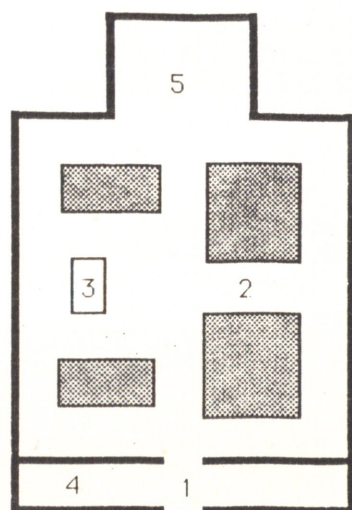


1 ENTRANCE
2 NAVE
3 ALTAR
4 BAPTISTRY
5 CHOIR

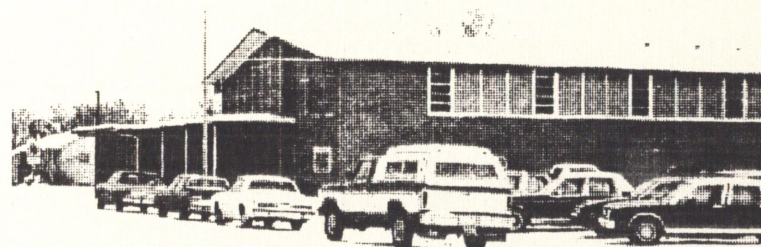


St. Thomas 1967

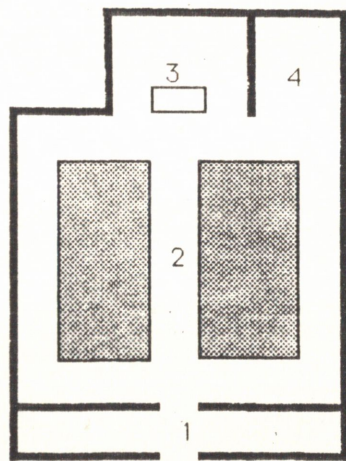
- * Return to assembly surrounding altar
- * Use of daylight to emphasis altar
- * Non-traditional placement of stained-glass
- * Baptistry in entry



1 ENTRANCE
2 NAVE
3 ALTAR
4 BAPTISTRY
5 CHOIR



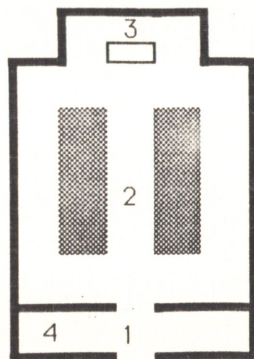
St. Pius X 1958
* Converted from longitudinal plan
* Church Hall at street level



1 ENTRANCE
2 NAVE
3 ALTAR
4 BAPTISTRY



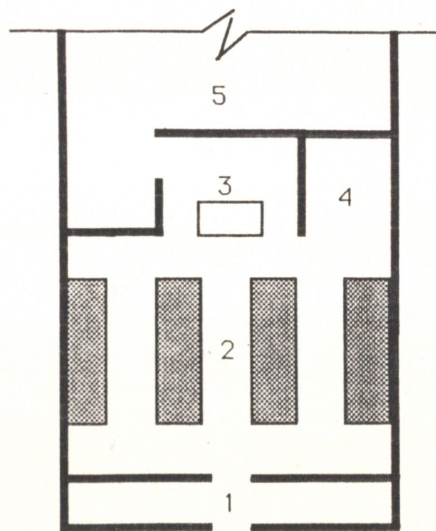
Holy Rosary Church 1950
* Traditional longitudinal plan
* Church Hall in basement
* Baptistry moved to the front
of the church



1 ENTRANCE
2 NAVE
3 ALTAR
4 BAPTISTRY



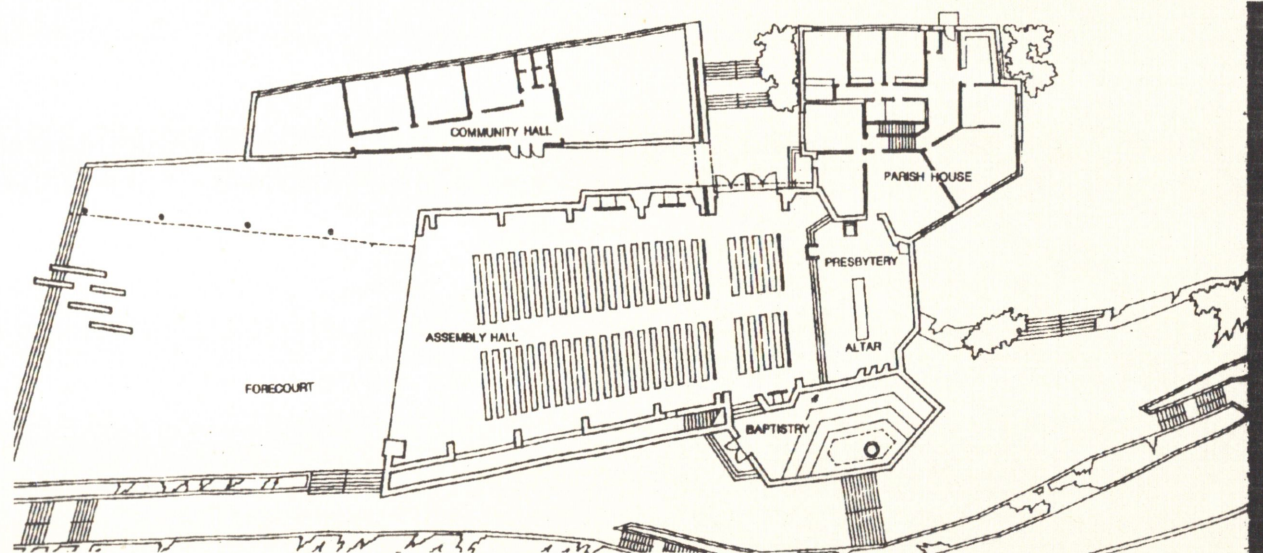
Little Flower Church 1931
* Traditional longitudinal plan
* Church Hall in basement
* Rectory off rear entrance
* Convent nearby



- 1 ENTRANCE
- 2 NAVE
- 3 ALTAR
- 4 BAPTISTRY
- 5 CHURCH HALL



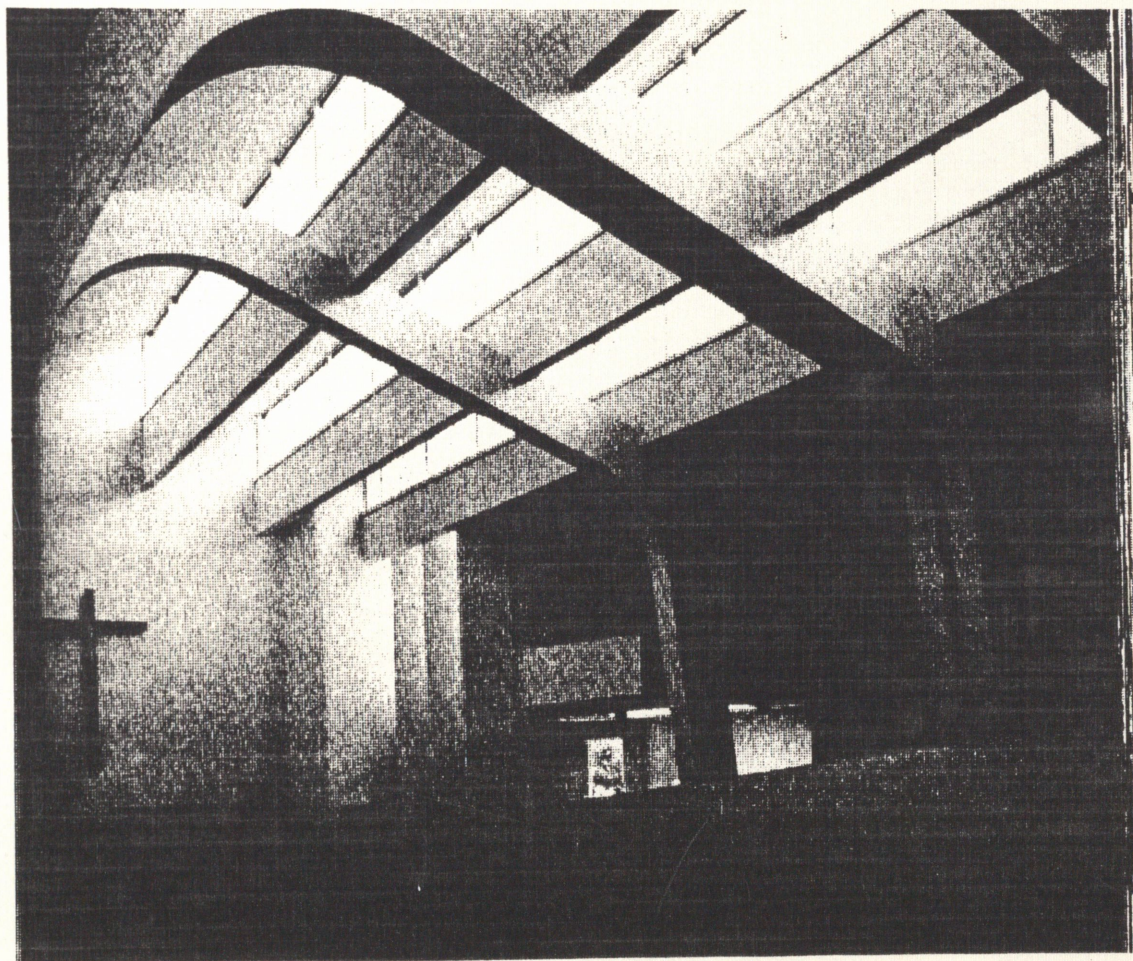
- Our Lady of Guadalupe 1953
- * Remodded from a roller skating rink
 - * Church Hall on street level
 - * Ethnic qualities from Mexican-American congregation

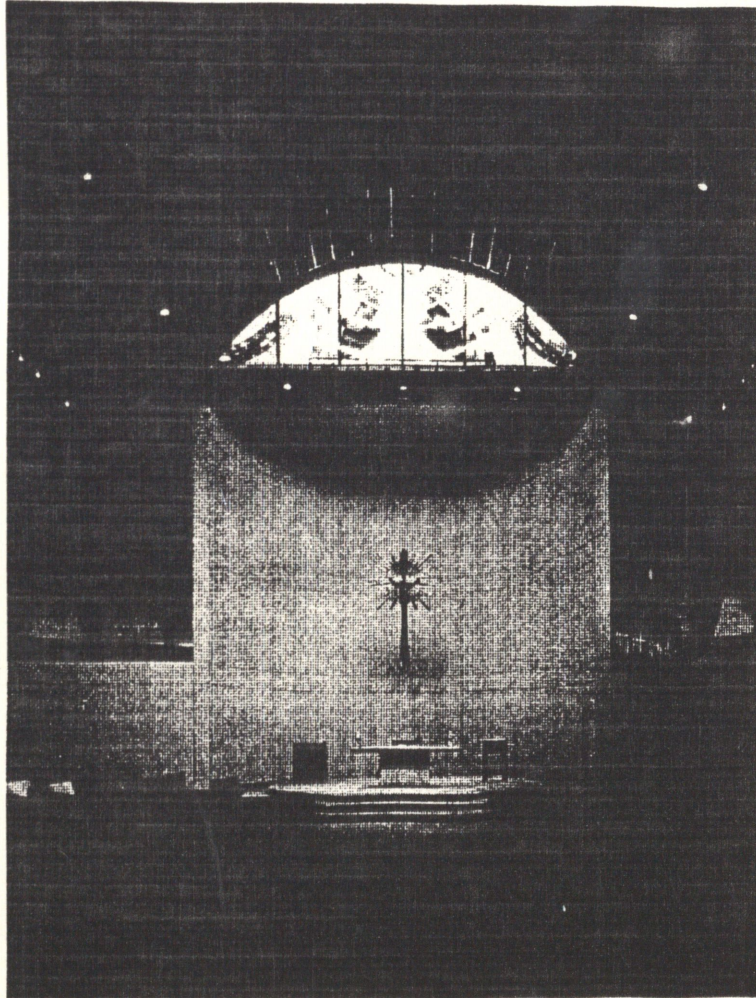


Parochial Church of Riola, Italy

- * The use of light gives the church both a warm and uplifting feeling
- * Simple, flowing forms enrich the experience and embrace rather than compete with the ceremonies inside

Progressive Architecture
March 1979 pp.57-63.

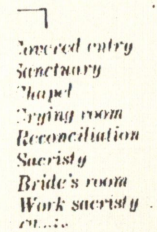


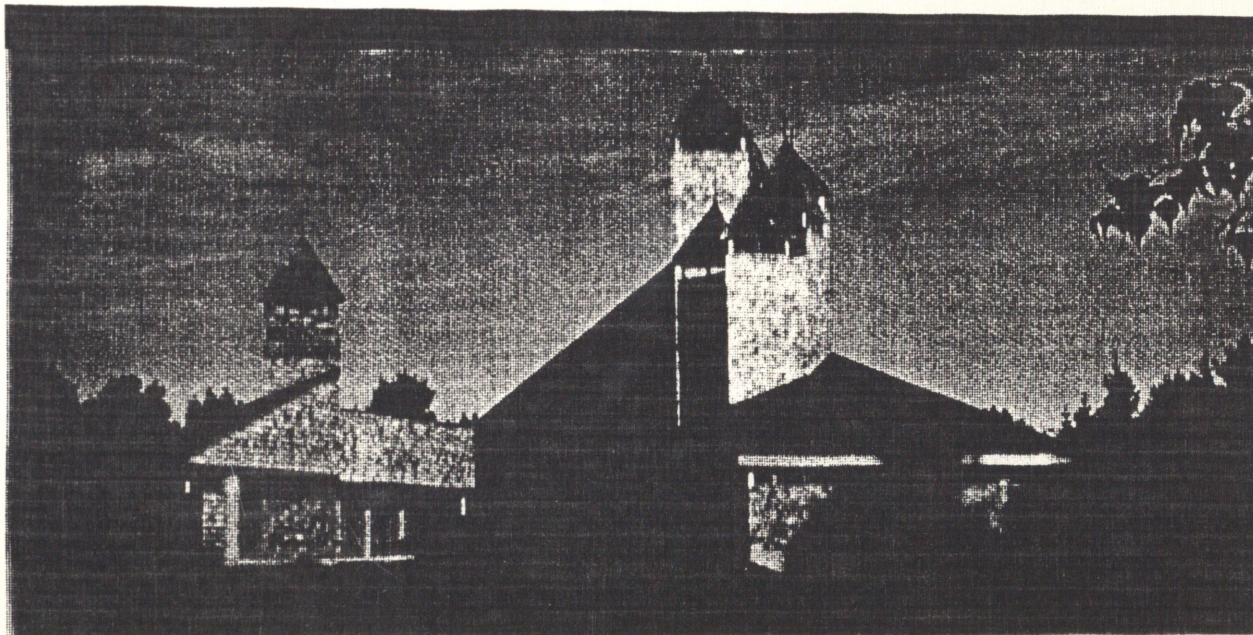


St. Cecilia Catholic Church
Houston, Texas

- * The chapel on axis with the main church creates a counter-balance for the altar
- * Stained glass in ends of barrel vault gives the space a divine feeling
- * Approach to entrance is covered and

Architectural Record
Nov. 1982 pp.76-79



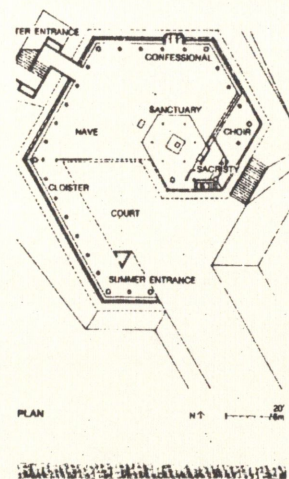
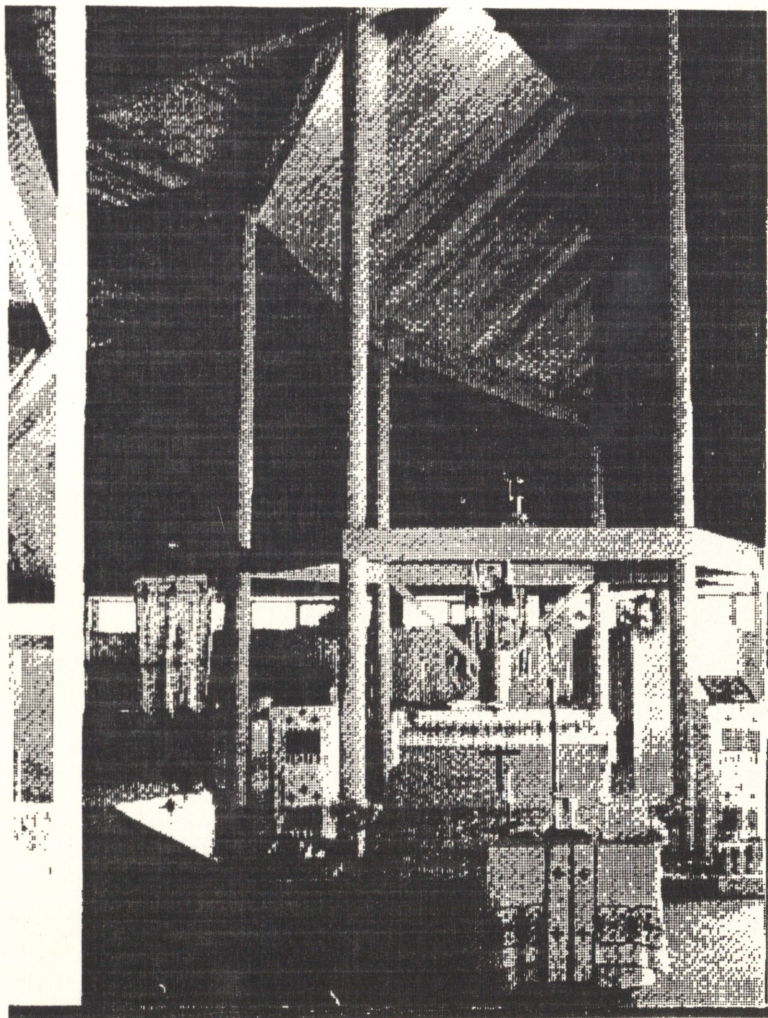


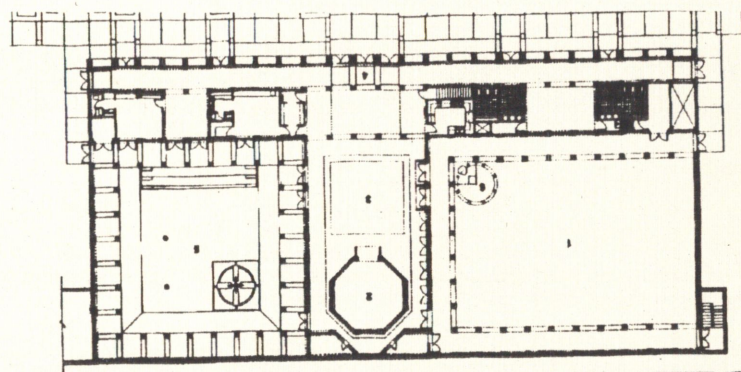
Holy Trinity Ukrainian Catholic Church
Kerhonkson, New York

- * The use of three or five towers is an exterior expression that must be used

- * The use of wood creates a warm interior
- * Light from towers enlivens interior
- * Nave expands for larger summer congregation
- * Shingled exterior works well with site

Progressive Architecture
Oct. 1978 pp.64-67

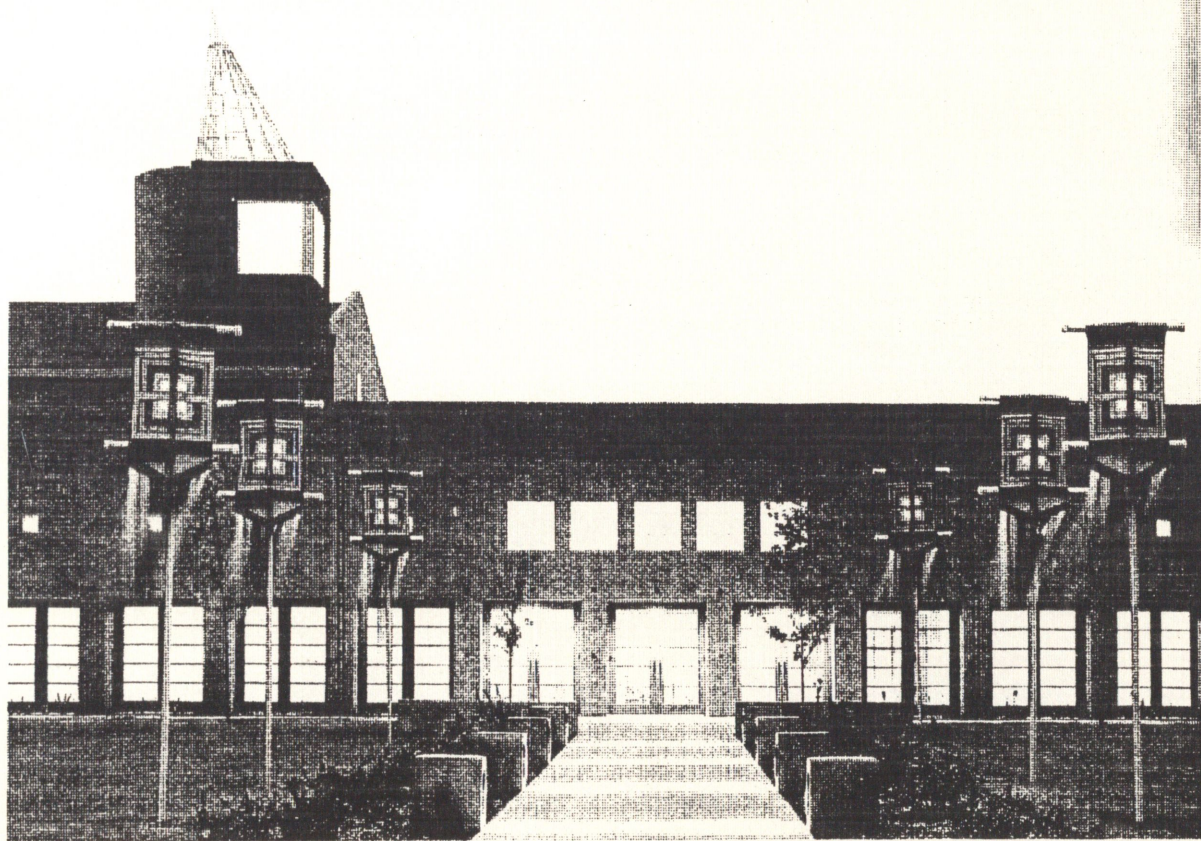


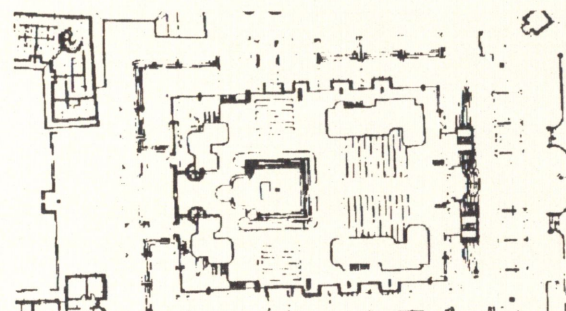


Light of the World Catholic Church
Littleton, Colorado

- * Location of Baptistry in main worship space
- * Seperate chapel for smaller amounts of people
- * Courtyard space

Progressive Architecture
Feb. 1986 pp.81-88





A Catholic Church in Poland
Tychy-Zwakow, Poland

- * Modern exterior, interior hand-crafted wood
- * Altar is elevated, easily seen from entire sanctuary
- * Handmade decorations give the church warmth

Architecture
Sept. 1986 pp.56-57

APPENDIX

ARTICLE VII

PLANNED DEVELOPMENT

Sec. 1	Intent
Sec. 2	Objectives
Sec. 3	Definitions
Sec. 4	Application Procedure
Sec. 5	Submittal Requirements
Sec. 6	Planned Development Standards
Sec. 7	Planned Development Review Criteria
Sec. 8	Planned Development Modifications

Sec. 1	Intent
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The intent of this district is to provide flexible land use and design regulations through the use of performance criteria, and unlike traditional zoning to allow the developer to establish a mix of land uses, densities, setbacks and building heights for an area of land. It is further the intent to allow land to be designed and developed in the most efficient and logical manner, to utilize technological advancements, and to encourage the preservation and enhancement of the physical characteristics of the site.

Sec. 2

Objectives

The Planned Development (PD) district is intended to provide the means to:

- A. Encourage development of a variety of housing types and densities by allowing for a mixture of types ranging from single-family homes to multi-family apartments;
- B. Foster and retain the natural variety inherent in the landscape by reason of topographic variation, views, water areas, and native vegetation;
- C. Create and preserve usable open space for recreational and aesthetic enjoyment;
- D. Preserve and enhance unique qualities of the total environment;
- E. Avoid construction in hazardous areas;
- F. Encourage creativity and variation in the design of PD areas and their related facilities;
- G. Provide for harmonious land design and site planning of a quality that will produce a more desirable environment;
- H. Permit flexibility of design, placement of buildings, use of required open spaces, circulation

and utility systems, off-street parking areas, and better utilization of the potential of sites characterized by special features of geography, topography, size or shape;

I. Preserve trees, outstanding natural topography, and geologic features, while preserving soil erosion and uncontrolled surface water drainage;

J. Use land efficiently, resulting in smaller networks of utilities and streets and thereby lowering housing costs;

K. Promote development patterns in harmony with the goals and objectives of the Yellowstone County Comprehensive Plan.

Sec. 3 Definitions

For the purpose of this article the following definitions shall apply:

A. Common Open Space: Means a parcel or parcels of land, or an area of water, or a combination of land and water within a planned development designated and intended for the use or enjoyment of residents of the development. Common Open Spaces may contain complimentary structures and improvements as necessary and appropriate for the benefit and enjoyment of the occupants of the development.

B. Home Owner's Association: Means an incorporated, non-profit organization operating under

recorded land agreements through which (a) each lot owner in the planned development is automatically a member, and (b) each lot is automatically subject to a charge for a proportionate share of the expenses for the organization's activities, and (c) common open space and facilities are maintained.

C. Planned Development: Means a land development project consisting of residential, commercial, industrial and office uses, or any combination thereof, which comprises a planned mixture of land uses built in a pre-arranged relationship to each other and which provides for the development of usable and desirable open space, central sewer and and water facilities, and community facilities, while providing for the preservation of significant historical and natural features of the land.

Sec. 4 Application Procedure

A. Preapplication Meeting. A minimum of thirty (30) days prior to the date of formal application submittal, the applicant shall meet with the Zoning Coordinator, Subdivision coordinator, and other appropriate department heads, to review the procedures, standards, documentation and any other requirements necessary for the complete processing of the proposal.

B. The legal owner(s) or authorized agent(s) shall submit an application for development plan approval on or before 4:00 P.M. on the first day of any given month. When the date of submittal falls on a weekend or a holiday, the submittal shall be on the following working day.

C. The development plan shall be reviewed as a zone change. The legal owner(s) shall submit an application for a change of zone from the existing zone classification to the PD classification

pursuant to Article V, Section 2.

D. The application for development plan approval will be reviewed by the Yellowstone County Board of Planning as specified in Article V, Section 2 of this Resolution.

E. After holding a public hearing and reviewing the documents concerning the proposed planned development, the Board of Planning shall submit written findings of fact and recommendations to the Board of County Commissioners.

F. The County Commissioners shall approve, conditionally approve or deny the development plan within sixty (60) days of the application filing deadline.

G. The approval or conditional approval shall be in force for not more than five (5) years. At the end of the period, the Board of County Commissioners may, after review and recommendation of the Board of Planning, approve, conditionally approve or deny extension of approval or conditional approval for no more than five (5) years for any portion or phase not recorded as a final plat. Once any portion or phase is recorded as a final plat, that portion or phase becomes vested with the designation of PUD as approved by the County Commissioners.

H. Nothing in this Section shall prohibit concurrent application for zone change and preliminary plat approval.

Sec. 5 Submittal Requirements

All development plan submittals shall contain twenty 9200 copies of the following:

- A. Completed and signed zone change application form.
- B. All applicable fees.
- C. The names and addresses of all owners and legal discriptions of all property within three-hundred (300) feet of the proposed site for the planned development.
- D. Proposed development schedule, and phasing if applicable.
- E. A traffic accessibility study if the proposed development will generate Five-hundred (500) or more vehicular trips per day.
- F. A planned development agreement, to include the following:
 - 1. A general statement of planning objectives to be achieved by the planned development;
 - 2. Proposed agrements, conveyances, restrictions, covenants or articles of incorporation.
 - 3. Proposed means for maintaining common facilities;
 - 4. Planning Areas (Underlying Zones)
 - a. Gross and net areas;
 - b. Number and type of dwelling units;

-
-
- c. Land-use designations, eg., Single-Family, etc.;
 - d. Residential density (Dwelling Units/Acre); and
 - e. Land-Use Table which shall indicate total land use data.
- 5. Standards for principal and accessory uses;
 - a. Minimum lot areas;
 - b. Minimum lot width, if any;
 - c. Minimum yard setbacks;
 - d. Maximum building heights; and
 - e. Maximum lot coverage.
 - 6. For proposed developments of more than one-hundred (100) acres or fifty (50) dwelling units, statistical data on population, markets, economic impact on municipal services, and environmental assessment.
- H. Master Plan to include, but not be limited to, the following:
- 1. Proposed site development, to include:
 - a. Planning areas (underlying zones);
 - b. General landscape and open space plan;
 - c. Proposed phases and property lines;
 - d. Proposed location and size in acres or square feet, of all areas to be conveyed, dedicated or reserved for common open space, public park, school sites, etc.;
 - e. Proposed general circulation system of streets;
-
-

-
-
- f. Proposed general location of all major points of vehicular ingress and egress to major and minor arterials;
 - g. Proposed general pedestrian circulation system;
 - h. Proposed treatment of perimeter boundary of the planned development; and
 - i. Any additional information required by the County Planning Department.

Additional reports or studies shall be included as supplemental information for the review of the proposed PD as deemed necessary and relevant by the Planning Director, County Zoning Commission, or Board of County Commissioners.

Sec. 6 Planned Development Standards

A. Planned developments may be composed of a single use or a mixture of uses, when compatible with the overall development plan of the area and the Comprehensive Plan adopted by the Board of County Commissioners pursuant to Title 76, Chapter 1, Part 6, MCA.

B. Individual uses and structures in a PD district need not comply with the specific building location, height, building size, and open space requirements of the original zoning district, provided that the spirit and intent of such requirements are complied with in the overall development plan and are consistent with the other criteria established in this section.

C. Areas exceeding twenty-five percent (25%) slope shall not be used to provide the total common open space requirement.

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-
- D. The PD plan shall specify the means of developing and maintaining the common open space.
- E. If private open space is provided for each dwelling unit, the plan shall specify the means of developing and maintaining the open space.
- F. The PD shall comply with the applicable standards of Articles VIII and IX of this Resolution.
- G. The PD design shall consider the relationship of the site to the surrounding area. The site perimeter shall be designed to minimize undesirable impacts between it and surrounding land uses.
- H. All public utilities shall be placed underground.
- I. Space and bulk requirements may be modified to promote innovative approaches to housing and environmental design.
- serve it, including particularly interior and exterior roadways, drainage, and sewer and water services. Consideration should be given to such public facilities as schools, police, fire, recreation, parks and transit.
- L. The planned development shall not create an adverse impact on any existing irrigation facility, nor interfere with any adjacent property's water use. The planned development shall comply with all federal, state and local regulations pertaining to water use.
-
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M. The planned development shall not adversely affect the natural environment through excessive removal of trees, increase in water runoff or soil erosion, removal of notable existing features, or excessive changing of the existing topography.

O. Slightly screening shall be provided at the project perimeter where the planned development uses might impose on the privacy of adjacent uses.

P. Slightly screening shall be provided between the planned development uses that might impose on the privacy of each other.

Q. Open space and buffering areas shall be attractively and fully landscaped. A minimum of four (4) trees and six (6) shrubs per dwelling unit shall be required for all single-family uses.

R. Lighting shall be planned so as not to shine (cause visible shadows or observable glare) on adjacent properties or rights-of-way.

S. Suggested minimum lot areas are as follows:

- | | |
|---------------------------|----------|
| 1. Townhouses | 2,000 SF |
| 2. Duplexes | 4,500 SF |
| 3. Detached Single-Family | 6,500 SF |
| 4. Zero Lot Line | 4,000 SF |

T. Area of planned development: No minimum requirement.

Sec. 7

Planned Development Review Criteria

The Board of County Commisioners, upon recommendation of the County Board of Planning, must find that the development plan for a planned development has met each of the following criteria, or can demonstrate that the intent and purpose of the planned development standards have been met and that the planned development serves the public interest. Review criteria are as follows:

- A. There is an appropriate relationship to the surrounding area. The buffer zone must be landscaped, screened or protected by natural features, so that adverse impacts on surrounding areas are minimized.
- B. Usable open space should be maximized in terms of preservation of natural features including trees, drainage areas, recreation, views, density, relief, convenience and function.
- C. Variety should be maximized in terms of housing types, densities, facilities and open space.
- D. Pedestrian traffic shall be considered in terms of safety, separation, convenience, access to points of destination and attractiveness.
- E. Bicycle traffic shall be considered.
- F. Proposed circulation in parking areas shall consider safety, convenience, separation and screening.

The general planning principles outlined below are provided for further guidance in review of proposed planned developments:

1. Emphasis on curvilinear versus gridiron roadway pattern;
2. Respect for natural topography and other attributes of the land;
3. Mix of housing types, densities and textures versus homogeneous pattern of sameness;
4. Clear neighborhood/housing cluster pattern with meaningful green space separation between;
5. Housing units located on cul-de-sacs where possible;
6. Pedestrian/open space system interconnected throughout the project as a whole with minimal conflict with roadways and with variable "spatial" sizes for different uses;
7. Housing units connected directly to pedestrian/open space system by walkways and bikeways where possible;
8. Buffering/ landscaping attractively located throughout the project with sight screening where project uses immediately abut perimeter uses;
9. Recreational and other support facilities related to project uses by pedestrian/open space system as well as roadways.

Sec. 8 Planned Development Modifications

A. General Provisions. The Planning Director shall determine whether an amendment request will be considered minor or major. The Planning Director shall have the authority to approve or deny a

minor amendment; all other modifications shall be processed as outlined in this Section. The applicant may appeal any administrative decision to the Board of Adjustment, as provided in Article V, Section 6 C..

B. Minor and Major Amendment Classification. Minor amendments are considered insubstantial changes and Major amendments as substantial changes to an approved Planned Development

1. Minimum Setbacks. Decreases in the minimum setbacks established for an underlying zone shall be processed as a Minor amendment so long as such decreases total less than or equal to 15% of the originally approved minimum setback of 25 1/2 feet.

Requests to decrease setbacks which total more than 15% of the originally approved minimum setback of any underlying zone shall be processed as a Major amendment.

Requests for decreases in the setback of a single lot shall be processed as a Variance according to Article V, Section & of this Resolution.

2. Minimum Lot Sizes. Decreases in the minimum lot size established for an underlying zone shall be processed as a Minor amendment so long as such decreases total less than or equal to 15% of the originally approved minimum lot size.

Requests to decrease lot sizes which total more than 15% of the originally approved lot size of any underlying zone shall be processed as a Major amendment.

Requests for decreases in the minimum lot size of a single lot shall be processed as a Variance according to Article V, Section 7 of this Resolution.

3. Maximum Building Height. Increases in the maximum building height established for an underlying zone shall be processed as a Minor amendment so long as such increases total less than or equal to 15% of the originally approved maximum building height.

Requests to increase the maximum building height which totals more than 15% of the originally approved maximum building height of any underlying zone shall be processed as a Major amendment.

Requests for increases in the maximum building height of a single structure shall be processed as a Variance according to Article V, Section 7 of this Resolution.

4. Acreage. Decreases or increases in the originally approved acreage of an underlying zone up to a total of 15% shall be processed as a Minor amendment.

Requests to amend the acreage of an underlying zone which totals more than 15% of the originally approved acreage shall be processed as a Major amendment.

C. Major Amendments Procedure. Any amend to an existing Pd that is classified as a major amendment shall be processed as follows:

1. Unless the underlying zone classification is to be changed, the major amendment will be

reviewed as a special review pursuant to Article V, Section 3 of this Resolution.

2. If the underlying zone is to be changed, the major amendment will be reviewed as a zone change pursuant to Article V, Section 2 of this Resolution.

3. All major amendments shall be subject to the provisions of the Yellowstone County Subdivision Regulations, where applicable.

D. Amendment Records. This section shall apply to all amendments to an approved planned development, whether major or minor.

1. Upon receiving approval of an amendment to a planned development the applicant shall have sixty (60) days to submit the amended planned development agreement and/or plan for filing. Failure to submit said amendment within this time period shall automatically invalidate the approval of the amendment.

2. In the case of an amended planned development agreement, the amended agreement shall be retitled as follows: e. g., 3rd Amendment to the (Name) Development Plan. The actual amendment in the text of the agreement shall be noted, either by underscoring or italicized lettering.

3. In the case of an amended master plan, the amended plan shall be retitled as follows: e. g., 3rd Amendment to the (Name) Development Plan. The actual amendment to the plan shall be noted by underscoring, italicized lettering, dashed lines or some other method approved by the Planning

Department.

4. The Planning Department shall review all amendments to ensure that all conditions of approval have been met.

END NOTES

1Myrtle E. Cooper, From Tent Town to City, (Billings, Montana: Myrtle E. Cooper, 1982), p.19.

2Kathryn Wright, Billings the Magic City and How It Grew, (Billings, Montana: K. H. Wright, 1978), p. 1.

3Encyclopaedia Britannica, 15th ed., s. v. "Billings."

4The Architects' Journal, ed., Church Buildings, (London: The Architectural Press, 1967), p. 371.

5Journal, p. 371.

6Journal, p. 372.

7Journal, p. 372.

8James F. White and Susan J. White, Church Architecture, (Nashville: Abingdon Press, 1988), p. 24.

9White, p. 25.

10James A. Ruffner and Frank E. Bair, ed., Weather of U. S. Cities, 2 vols., (Detroit: Gale Research Company, 1985), pp. 634-635.

11Journal, p. 516.

12White, p. 72.

13White, p. 60.

14White, p. 136.

15White, p. 83.

16White, p. 135.

17White, p. 152-154.

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Cooper, Myrtle E. From Tent Town to City. Billings, Montana: By the Author, 1982.

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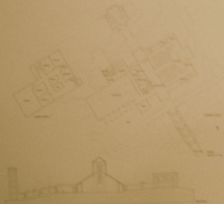
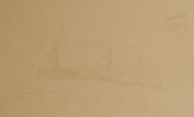








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