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GRACE BAPTIST CHURCH, BOZEMAN, MONTANA.

PART I OF AN UNDERGRADUATE THESIS IN ARCHITECTURE.

SUBMITTED TO THE SCHOOL OF ARCHITECTURE AT MONTANA STATE UNIVERSITY, BOZEMAN, MONTANA, AS PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARCHITECTURE.

MARCH 9, 1967 DURWARD K. SOBEK

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Appreciation for assistance leading to the completion of this architectural thesis must be given to two individuals.

Pastor Glenn E. Smouse, pastor of Grace Baptist Church, Bozeman, Montana unhesitatingly provided needed information and encouragement.

Janet, my wife, typed this architectural thesis and patiently offered advice and encouragement through its completion.

D.K.S.

The Family is like a book
God's children are the leaves,
The Creator is the cover
That protective beauty conceives.

At first the pages of the book
Are blank and purely fair,
But time soon writes its memories
And paints its pictures there.

Love is the golden clasp
That bindeth up this trust aside of cost.
Oh break it not, lest precious leaves
Shall fall and scatter and thus be lost.

Author Unknown

Arch.

TABLE OF CONTENTS

	Page
PROPOSAL	1
CONDITIONS CREATING A NEED	3
Present Church Site	4
Present Church Building	6
Present Church Parking	19
LOCAL CONDITIONS	22
Geography	23
Population	23
Climate	24
Economics	25
Communications	27
Social	28
History	32
SITE CONDITIONS	35
Orientation	36
Adjacent Environment	36
Topography	41
Vegetation and Other Natural Resources	42
Soil Analysis	42
Zoning Regulations	42
Availability of Utilities	42
Immediate and Adjacent Views	44
Traffic Patterns	49
FUNCTION	50
Congregation	52
Name	52
Purpose	52
Doctrine	53
Ordinances	55
Membership	55
Meetings	56
Bible School	58
Government	59
Officers	60
Pastor and Youth and Music Director	66
Church Finances	67

Page

Architecture. 68
Worship. 69
Education. 75
Social 78
Other Areas. 80
Outside Areas. 84

PROGRAM 86

ASTHETICS. 92

ECONOMICS. 97

Construction Costs. 98
Site Considerations 100
Operation and Maintenance Costs 100

BIBLIOGRAPHY 102

LIST OF ILLUSTRATIONS

		Page
1.	Figure 1 - View of Grace Baptist Church	5
2.	Figure 2 - View of South Tracy	5
3.	Figure 3 - View of East Olive	5
4.	Figure 4 - View of classroom, 4 yr. olds . . .	7
5.	Figure 5 - View of Classroom, 2nd & 3rd Grade .	7
6.	Figure 6 - Graph of Bible School Att. 1956-1966	8
7.	Figure 7 - Chart - Record of Bible School Attendance 1966	9
8.	Figure 8 - Chart - Existing VS. Desired Bible School Conditions	11
9.	Figure 9 - View of sanctuary	13
10.	Figure 10 - View of Fellowship Hall	13
11.	Figure 11 - Graph of Sunday Morning Worship Attendance	15
12.	Figure 12 - View of kitchen	13
13.	Figure 13 - View of the Front Entrance	13
14.	Figure 14 - Church storage area for Business Supplies	18
15.	Figure 15 - Church Duplicating Area.	18
16.	Figure 16 - Church Business Area	18
17.	Figure 17 - Map, Concentration of Church Buildings	21
18.	Figure 18 - Map, Bozeman, Montana.	37
19.	Figure 19 - View of Proposed Site	38
20.	Figure 20 - View of Proposed Site	38

Page

21. Figure 21 - View of W. Beall Street. 38

22. Figure 22 - Map, Present Area 39

23. Figure 23 - Map, Developed Area 40

24. Figure 24 - View from Proposed Site Northeast 45

25. Figure 24 - View from Proposed Site Northwest 46

26. Figure 26 - View from Proposed Site Southwest 47

27. Figure 27 - View from Proposed Site Southeast 48

28. Figure 28 - Chart - Projected Education Attendance and Area 91

proposal

During the last four and a half years I have attended services at Grace Baptist Church and have become well acquainted with the church building, with the services, and with most of the congregation. The present church facilities are becoming inadequate to handle the usual attendance. Unfortunately the present site is small and will not allow adequate expansion of the present facilities. As an answer to the over crowded conditions, I propose a new building to be constructed on a new site located in the Bozeman vicinity.

The developement of Grace Baptist Church as an architectural thesis has been divided into two main parts. The first part has been concerned with obtaining relevant information which is listed under the headings in the Table of Contents of this booklet.

The second part of the thesis will be spent in completing a preliminary design solution for the problem based on the research data obtained. A visual and verbal presentation will be made of the final architectural concept.

conditions

creatinig

a

need

The congregation of Grace Baptist Church has grown steadily from its conception in 1933 until about 1961. Since then attendance has held fairly constant. I feel this halt in growth is basically due to lack of space and adequate facilities for further growth. The following material discusses this deficiency.

Present Church Site

Location

The Grace Baptist Church is located on the corner of Olive and Tracy, Bozeman, Montana. (see Figs. 1 & 17) The property is bounded on the north by Olive Street, on the east by Tracy Avenue, on the south by residences, and on the west by an alley. (see Figs. 2 & 3) When choosing this property in 1933, the location was in an ideal residential district close to the central business district. (8) Due to continual economic growth of the city this location now lies within the central business district and is gradually losing its residential characteristics. Such commercial buildings as the Gallatin Valley Medical-Dental Center, the Sports Chalet, and the Federal Building have recently been built in the area of Grace Baptist Church.

Size

The property is approximately 90 feet by 144 feet

Figure 2. View of South Tracy and residential area south of Grace Baptist Church.

Figure 1. View of Grace Baptist Church looking southwest.

Figure 3. View of East Olive Street looking west.

in size. The church building covers approximately 70% of the area

Expansion Possibilities

The size of the church property could be increased by purchase of residences bounding the property on the south. (see Fig. 2) This purchase has been considered and found economically unwise because of the high cost of these residential properties. (13)

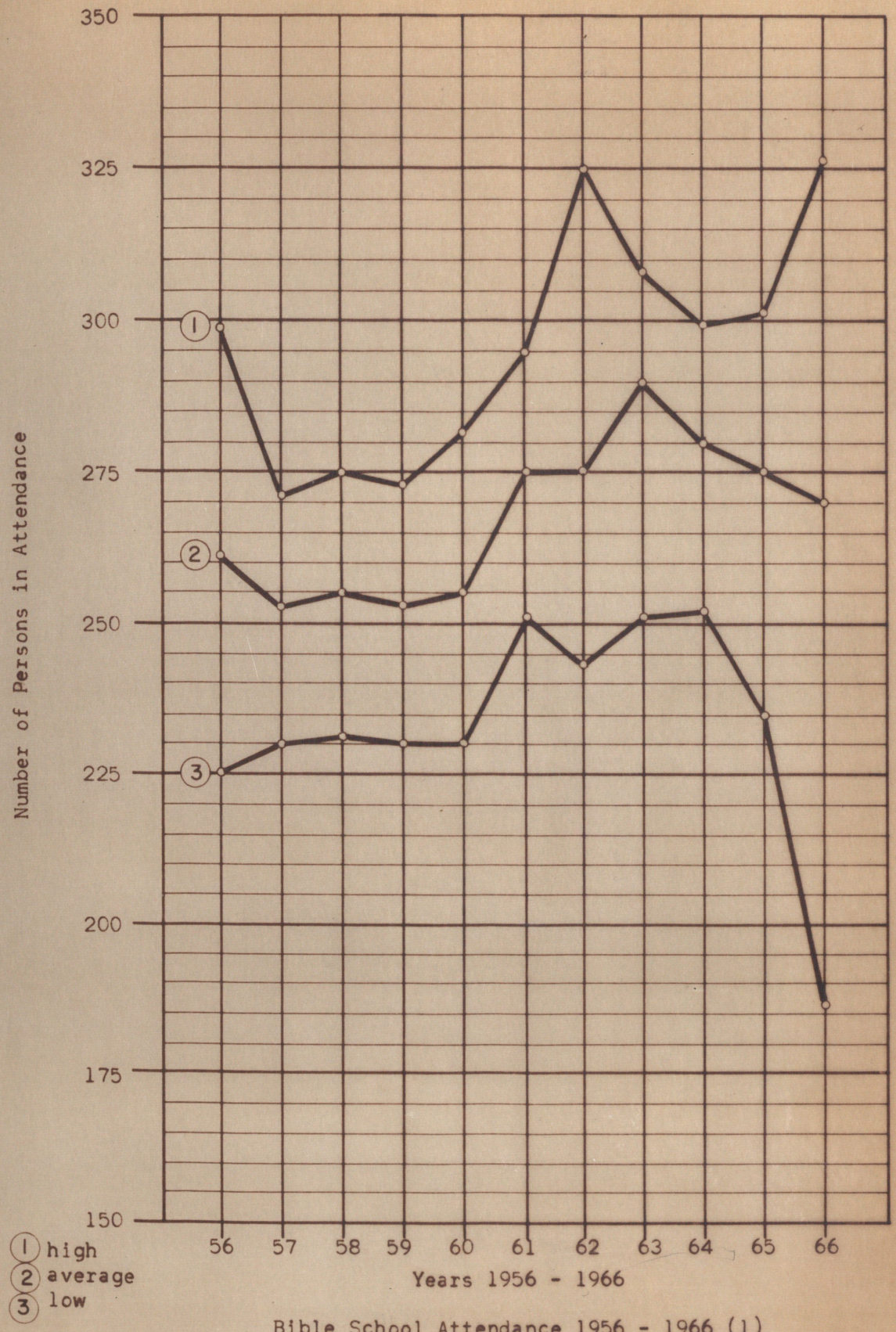
Present Church Building

Inadequate Facilities

Attendance figures for Sunday morning Bible School show a continual increase from the years 1956 through 1961. The attendance from 1961 through 1966 has held fairly consistent. (see Figs. 6 & 7) I feel this halt in Bible School growth is basically due to lack of educational space. The present conditions are very crowded. A typical Sunday morning will find around 200 students (college age and under) in an area of about 2600 square feet. (see Figs. 4 & 5) This leaves a figure of about 13 sq. ft/person which should be approximately 25 sq ft/ person or 5,000 sq. ft. (see Figs. 6, 7, & 8) The 5,000 sq. ft. figure would accommodate the present attendance but allow no space for growth. Adult education is conducted in the sanctuary and felloship hall. (see Figs. 9 & 10)

Figure 4. View of classroom, 4 year olds.

Figure 5. View of classrooms - second and third grade.



Bible School Attendance 1956 - 1966 (1)

Note: Usual attendance during half of the year lies between 1 & 2.

Figure 6.

Figure 7.

Record of Bible School Attendance 1966 (1)

Class/Room	1966 Attendance/Sunday					Desired	
	En-roll-ment	low	high	Av. yearly	*Av. high 26 Sun	**Max per/ room	No. of rooms
2 Year Olds	10	5	12	9.5	10.3	12	1
3 Year Olds	13	4	16	11.4	13.4	15	1
4 Year Olds	15	6	16	10.4	12.0	20	1
Kindergarten (5)	18	6	16	10.9	13.1	20	1
TOTAL Beginner Dept.	56	21	60	42.2	48.8	—	—
1st Grade	20	8	19	14.9	16.6	25	1
2nd Grade	19	8	17	11.8	13.6	25	1
3rd Grade	20	5	17	13.2	14.8	25	1
TOTAL Primary Dept.	59	21	53	39.9	45.0	—	—
4th Grade	20	7	17	11.1	13.3	25	1
5th & 6th Grade Girls	17	6	15	9.7	11.4	25	1
5th & 6th Grade Girls	10	3	10	5.4	6.8	25	1
TOTAL Junior Dept.	47	16	42	26.2	31.5	—	—

* The average attendance per Sunday for the highest 26 Sundays or one half of the year.

** (11:135-138)

Continued to next page

Class/Room	1966 Attendance/Sunday					Desired	
	Enrollment	low	high	Av. yearly	Av. high 26 Sun.	Max per/ room	No. of rooms
7th & 8th Grade Boys	7	4	14	8.7	11.0	20	1
7th & 8th Grade Girls	11	5	14	8.2	9.5	20	1
9th Grade	7	3	11	7.3	9.3	20	1
TOTAL Junior High Dept.	25	12	39	24.2	29.8	—	-
10th, 11th, & 12th Grades (Total)	26	16	21	12.7	15.7	25	1
College & Career (Total)	52	7	50	23.9	35.0	25	2
Home Builders	19	9	24	15.2	18.2	25	1
Young Marrieds	23	4	20	11.6	14.7	25	1
Adults	100	55	93	72.6	78.9	25	3
TOTAL Adult	142	68	137	99.4	111.8	—	-
GRAND TOTAL	407	161	402	268.5	317.6	—	-

Figure 8.

Existing VS. Desired Bible School Conditions

Class	1966 Conditions			Desired Condition		
	*Av. high 26 Sundays	sq. ft. per class	sq. ft. per person	**sq. ft. per person		sq. ft. per class
				range	av.	
2 year olds	10.3	210	20.3	25-35	30	309
3 year olds	13.4	218	16.3	25-35	30	402
4 year olds	12.0	100	8.3	25-35	30	360
Kindergarten (5)	13.1	220	16.8	25-35	30	393
TOTAL Beginner Dept.	48.8	748	—	—	—	1464
1st Grade	16.6	168	10.1	20-30	25	415
2nd Grade	13.6	168	12.3	20-30	25	340
3rd Grade	14.8	168	11.3	20-30	25	370
TOTAL Primary Dept.	45.0	504	—	—	—	1125
4th Grade	13.3	150	11.3	20-30	25	333
5th & 6th Grade Girls	11.4	150	13.1	20-30	25	285
5th & 6th Grade Boys	6.8	187	27.5	20-30	25	170
TOTAL Junior Dept.	31.5	487	—	—	—	788

* The average attendance per Sunday for the highest 26 Sundays or one half of the year.

** (11:135-138)

Continued to next page

Class	1966 Conditions			Desired Condition		
	Av. high 26 Sundays	sq. ft. per class	sq. ft. per person	sq. ft. per person		sq. ft. per class
				range	av.	
7th & 8th Grade Boys	11.0	152	13.8	15-18	16.5	182
7th & 8th Grade Girls	9.5	152	16.0	15-18	16.5	157
9th Grade	9.3	90	9.7	15-18	16.5	154
TOTAL Junior High Dept.	29.8	394	—	——	—	493
10th, 11th, & 12th Grades (TOTAL)	15.7	152	9.6	12-18	15	236
College & Career (TOTAL)	35.0	300	8.6	10-12	11	385
TOTAL Educational Wing	205.8	2585	—	—	—	4491
Home Builders	18.2	500	27.5	10-12	11	200
Young Marrieds	14.7	750	51.0	10-12	11	162
Adults	78.9	3500	44.3	10-12	11	868
TOTAL Adult Dept.	111.8	4750	—	—	—	1230
TOTAL Sanctuary Fellowship Hall	111.8	4750	—	—	—	1230
GRAND TOTAL	317.6	7335	—	—	—	5721

Figure 13. View of the front entrance of the church taken from the rear of the sanctuary.

Figure 9. View of sanctuary taken from the balcony in the rear.

Figure 10. View of Fellowship Hall.

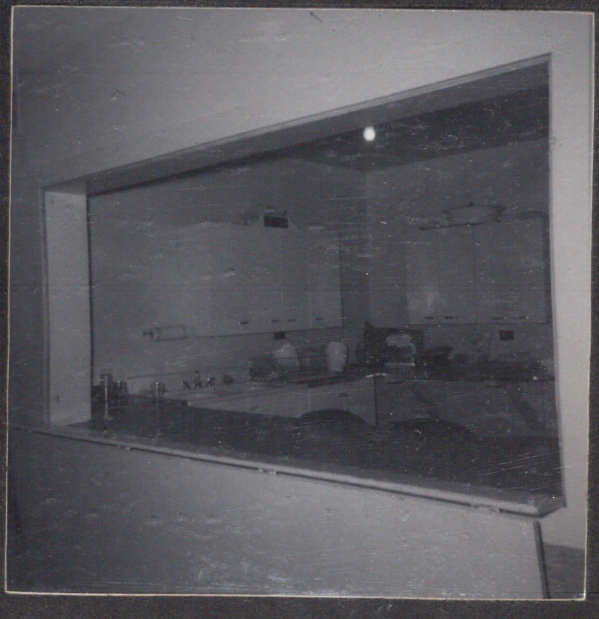
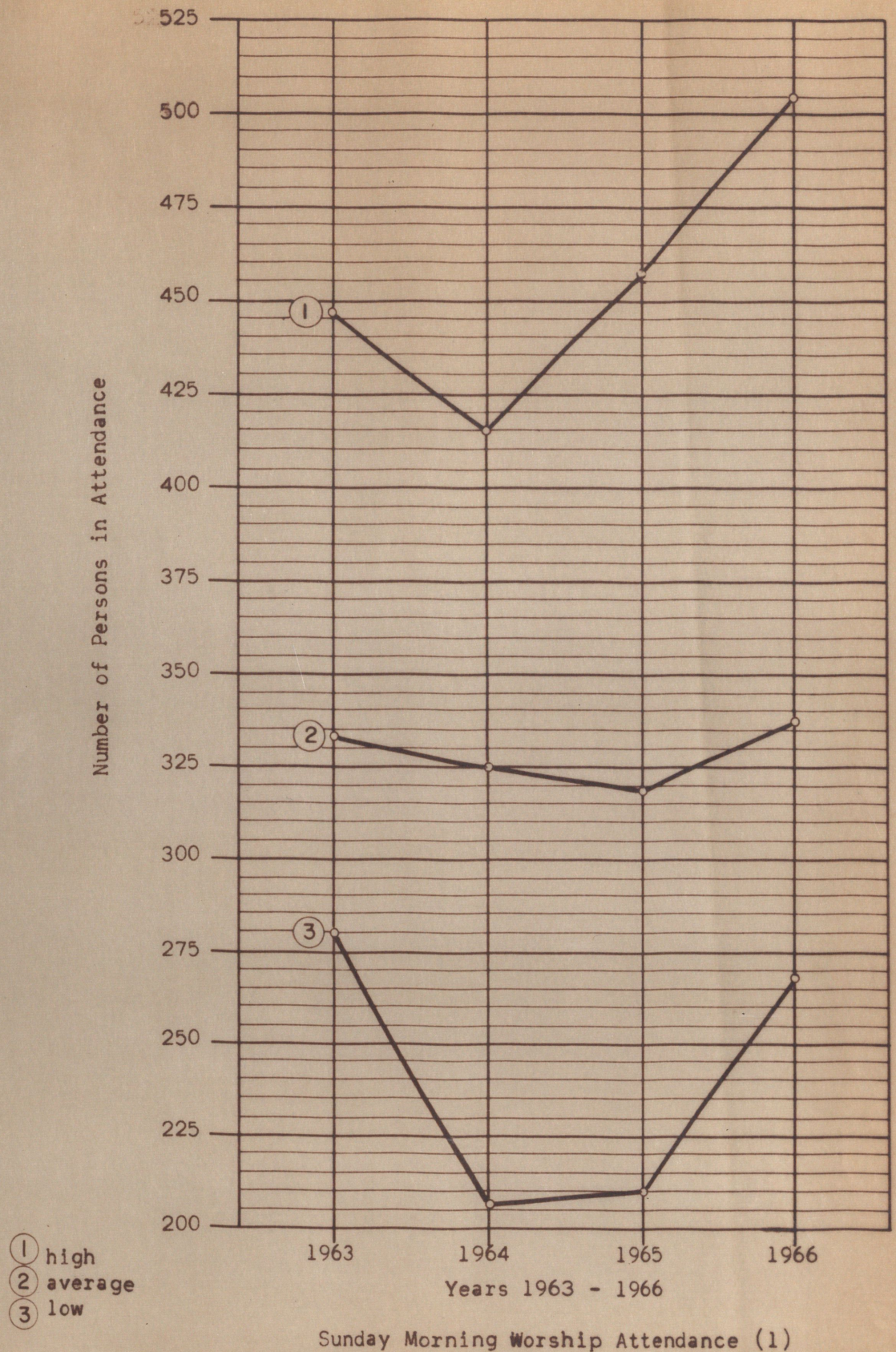


Figure 12. View of kitchen adjacent to the Fellowship Hall.

These areas obviously contain more than enough square feet but suitable division of the space for classes is difficult. Curtain partitions in the fellowship hall allow classes to hear each other easily. This makes it difficult to conduct a class properly. The sanctuary contains one class. With relatively few people in this large area, the acoustics are poor making it difficult for a speaker to be heard.

The church sanctuary will comfortably seat 400 persons. (see Fig. 9) Under extreme conditions, where every available space is used, approximately 450 persons can be seated. Attendance records of the Sunday morning Worship Service for the past 4 years show a very common attendance of 350 to 380 persons with figures as high as 500 on special occasions. (see Fig. 11) The 500 figure is met by adding folding chairs in the rear of the sanctuary (a fire hazard) and actually crowding the pews to an uncomfortable point. I believe added Bible School space and added Bible School attendance would increase Worship service attendance to the point of consistent over crowding of the sanctuary.

The cry-room in the rear of the sanctuary contains four cribs. This is completely inadequate for an attending congregation of 350-380 persons.



Sunday Morning Worship Attendance (1)

Figure 11.

Note: Usual attendance during half of the year lies between 1 & 2.

The fellowship hall has proven far too small for most social functions such as banquets and wedding receptions. (see Fig. 10) It covers an area of approximately 1500 square feet including table and chair storage. Past experience has shown that only about 100 persons can be seated and served at tables. There should be enough room to accomodate at least 200 persons, approximately 2500 square feet.

The kitchen, located adjacent to the fellowship hall, is small and not arranged for efficient use. The kitchen includes approximately 200 square feet and should be increased to approximately 600 square feet. (see Fig. 12)

The public cloak room is small and in a very poor location. Upon entering the church, at the main entrance, one must go down stairs to the cloak room and then return to the entrance area and then continue to the sanctuary. Thus circulation in this area is crowded and many times disturbing.

Desired Added Facilities

A foyer at the main entrance of the church, partially separated from the sanctuary, would be a very desirable feature. At the present, it is difficult for ushers to audibly greet late comers for fear of disturbing the service. (see Fig. 13)

The church has no actual church office. Business is done in a variety of places. (see Figs. 14, 15, & 16) A church office would consolidate and better organize business operations while also centralizing information dealing with all church functions.

Reading of Christian literature by young people and adults would vastly improve with the addition of a library. At the present, books are graciously lent by the pastor and youth director upon request. There is obviously a very limited circulation of Christian literature and research material.

A music room is much in need for efficient practicing of the choir, robing on Sunday mornings, and storage of music, robes, etc. The church choir, 25-30 in number, must practice in the sanctuary. Practice sessions cannot interfere with various services held in the sanctuary. Robing and practicing on Sunday mornings is very inefficient, taking place in a small classroom crowded with chairs.

An indoor recreational space is greatly in need. The church has enthusiastically supported various youth programs requiring extensive indoor recreation. (Boy Scouts, Awana Boys, Pioneer Girls, etc.) At the present the fellowship hall is used as recreation facilities for

Figure 14. Church storage area for business supplies.

Figure 15. Church duplicating area.

Figure 16. Church business area for secretarial and treasurer uses.

these groups. (see Fig. 10) With other functions also using the fellowship hall scheduling and arranging of furnishings is a problem. The need is so great for indoor recreational space, consideration of a small gymnasium would not be out of reason. (3)

Expansion Possibilities

In compliance with Bozeman City Zoning Laws it is not possible to add additional space to the church building without purchase of adjacent property with one exception being the addition of a third floor to the educational wing of the building. (13) This addition would provide another 1200 square feet for classroom space. An additional 1200 square feet of space added to the existing 2600 square feet would bring a total of 3800 square feet. 5,000 square feet is the desired amount of space required for the present attendance. (see Fig. 8)

Present Church Parking

There is no area for parking upon the site. (see Fig. 1) People attending church by car must rely upon street parking plus available spaces in the Federal Building parking lot (approx 20 spaces). (see Figs. 2&3)

In the vicinity of Grace Baptist Church there are eight other churches of which only one has off street

parking. (see Fig. 17) With all these churches usually holding their Sunday morning services at the same time, parking becomes a major problem.

The lack of space and adequate facilities at Grace Baptist Church is very apparent. I believe these conditions should be evaluated and a solution found. I have evaluated the conditions and feel that the most logical solution is construction of a new building upon a new site.

GALLATIN COUNTY
FAIR GROUNDS
COUNY SHOPS & YARD
MONTANA STATE HIGHWAY Dept. Shops
W. HEMLOCK ST.
W. JUNIPER ST.
W. TAMARACK ST.
W. ASPEN ST.
E. HEMLOCK ST.
E. JUNIPER
TAMARACK ST.
ASPEN ST.
COTTONWOOD ST.
PEACH ST.
SHORT ST.
VILLARD ST.
BEALL ST.
LAMME
MENDENHALL
MAIN STREET
BABCOCK ST.
OLIVE ST.
CURTISS ST.
KOCH ST.
STORY ST.
DICKERSON ST.
ALDERSON ST.
COLLEGE ST.
HARRISON ST.
CLEVELAND ST.
ARTHUR ST.
GARFIELD ST.
HAYES ST.
FRIDLEY
DAVIS
E. CURTISS
E. KOCH ST
STORY ST
N. 8th AVE
U. S. HIGHWAY NO 10
Whittier School
Hospital
Gallatin Co. Court House
Baxter Hotel
Armory
City Library
Bozeman Hotel & Greyhound Bus Depot
Hawthorne School
Willson Elementary School
Post Office
City Hall
Emerson School
Longfellow School
Irving Sch
COOPER PARK
SOUTH SIDE PARK
BEALL PARK
BOGERT PARK
GRACE BAPTIST CHURCH
C. M. St. P. & P. R. R.
MONTANA STATE COLLEGE
Barracks
Langford Hall
Lewis & Clark Hall
Hapner Hall
Quadrangle
Ag Building
Herrick Hall
Chapel
Lewis Hall
Montana Hall
Hamilton Hall
Hannon Hall
Bridger Hall
Chem Hall
Library
Student Union
Roberts Hall
Ryan
Physics
Gym
CONCENTRATION OF CHURCH BUILDINGS
CHURCH BUILDINGS
FIGURE 17

local

conditions

I believe successfully designed architecture should aesthetically and functionally accomodate its user, its site, and its general location. Thus as designer of Grace Baptist Church I must consider its congregation, its site, and its general location. The following material deals with Bozeman and its vicinity which is the general location of Grace Baptist Church.

Geography (4:2)

Bozeman is the county seat of Gallatin County situated in south central Montana. The city lies on the eastern edge of Gallatin Valley at the base of the Western slope of the Bridger Mountains. Bozeman has an elevation of 4,793 feet above sea level and encompasses 4,835 acres or 7.55 square miles of land.

Population (4:2)

According to the 1960 United States Census, Bozeman contains 15,361 people, ranking it the sixth largest in Montana. The population has increased an average of 25.6% over each ten year period since 1909. Current estimates show 15,700 people within the city limits and 18,000 in greater Bozeman. Median age of Bozeman residents is 24.3 years with 9.8% over 65 years of age. Only 0.5% of the total population is non-white.

Climate (14:28)

Bozeman's climate reflects its mountainous location in its average mean temperature of 43°F. The following seasonal data indicates the climatic conditions of the area.

Average Temperature

Spring	41.2 degrees F
Summer	63.0
Fall	44.4
Winter	23.1

Average Rainfall

Spring	5.50 inches
Summer	5.26
Fall	4.02
Winter	2.51

Average Snowfall

Spring	23.6 inches
Summer	1.0
Fall	12.1
Winter	37.2

Extreme low and high temperatures occassionally occur during the winter and summer months with radical changes in temperature occurring rapidly. High winds are not common but generally mild winds from the northwest are experienced.

The growing season is approximately 107 days with the last killing frost coming about May 28 and the first killing frost about September 12.

The angle of the sun varies from a high of approximately 68° in the summer to a low of approximately 19° in the winter.

Economics (4:4&5)

The economy of Bozeman is built primarily upon income from agricultural sources and from Montana State University. Tourism is also becoming an important source of revenue.

Montana State University; employing students, faculty, and other laborers; contributes an estimated $22,000,000 annually to the Bozeman community.

Agriculture in Gallatin County is composed of grains, livestock, and dairy production. The county contains 990,000 acres of farm land with 904 farms and ranches. 167,000 acres are harvested cropland, 394,000 acres are pasture, and 96,000 acres are irrigated. Cash receipts from marketing in 1963 were approximately $15,000,000. The following facts indicate the basic types and amounts of agricultural production in Gallatin County.

Crop	Yield/Year	
Wheat	1,810,000 bushels	50-60 bu/irrigated acre
Barley	1,278,000 bushels	7 bu/irrigated acre
Oats	376,000 tons	
Hay (tame)		6 tons/acre
Hay (wild)		2 tons/acre
Potatoes		350-400 lbs/acre

Livestock	Numbers
Cattle	70,200
Dairy Cattle	6,600
Sheep	21,500
Hogs	5,100
Poultry	36,000

Other major industries in the area include cement manufacturing, food processing, forest products, grain milling, and heavy construction.

Labor Force - Gallatin County (1966 estimate)

Major Industries	7,300
Agriculture (hired workers)	600
Construction	340
Logging	400
Manufacturing	360
Transportation and Utilities	300
Wholesale and Retail Trade	2,000
Service and Finance	2,700
Government	650

The three banks serving Bozeman have combined total assets of $45,855,718.07 and total deposits of $42,139,127.54. A branch office of the Empire Savings and Loan Association is located in Bozeman with assets of more than $15½ million. The period, January through December, 1965, saw bank debits rise 10.1% over those during a similar period in 1964.

Bozeman's retail area covers 24,465 sq miles, with a population of more than 65,000, making the city one of the State's major retail centers. In 1963 retail sales in Gallatin County totalled $42.3 million. In 1966 there were 196 retail and service outlets in Bozeman with the principle outlets including 6 department stores, 2 variety stores, 7 drug stores and 6 supermarkets. The major shopping centers comprise 8 blocks on Main Street (2 blocks north and south of Main St.), downtown Bozeman, 6 blocks on North 7th Avenue,

and shopping centers on College Street between 8th and 11th Avenues and on West Main Street.

Communications (4:3)

Bozeman is located on U.S. Highway No. 10, a major east-west highway soon to become Interstate 90, and U.S. Highway No. 191 south. These highways provide connections with Highways 89 and 287 north. With this location Bozeman welcomes many individual motorists as well as bus and truck transports.

Four bus lines serve Bozeman. Greyhound Lines have numerous daily local and express schedules east and west. The Belt Mountain Transportation Company, Inc. runs daily from Bozeman to Great Falls by way of Livingston and White Sulphur Springs. Karst Stages operates daily between Bozeman and West Yellowstone. The Bozeman City Bus Lines serves the city of Bozeman within the city limits.

Truck lines operating in and from Bozeman include, Northern Pacific Transport Co., Garrett Freight Lines Inc., Butte-Bozeman Delivery Service, and several local moving and hauling companies.

The Northern Pacific and Milwaukee Railroads serve Bozeman with efficient rail freight service. As an added service to businesses located on tracks within the city limits, car loads of freight can be switched from one

railroad to the other. East and west passenger service is offered daily by the Northern Pacific Railway.

Air service to Bozeman centers at Gallatin Field near Belgrade where daily east-west flights are provided by Northwest Orient Airlines forming connections north and south at Butte and Billings. Charter service, flight instruction, crop spraying and air ambulance are also available at Gallatin Air Field.

Citizens of Bozeman enjoy a community TV cable system carrying five channels. There is also good reception of the Butte station by antenna.

The Bozeman citizen also enjoys listening to one of three radio stations which operate in the area. KBMN (NBC), 1,000 watts daytime and 250 watts nighttime. KGVW (Independent) operates during the daytime on AM and FM frequencies. KXXL (ABC, Mutual and Intermountain), 1,000 watts daytime and 250 watts nighttime, also has unlimited broadcasting time.

A weekly and daily newspaper is distributed in the Bozeman area. The Bozeman Daily Chronicle, with a circulation of 5,500, is published daily with the exception of Saturday. The Gallatin Tribune is published weekly with a distribution of 2,000.

Social (4:2,3,&4)

The average Bozeman adult has attended school 12.4 years, the highest average of any city in Montana. The majority of

the population is of the upper-middle class, with few in what would be termed the low class. The cleanliness and basic atmosphere of the city depicts this status.

Bozeman contains an estimated 3200 homes. Three-bedroom homes in good condition and well located will sell for $22,000 to $25,000. Rental units will average from $85/month to $125/month depending upon size, condition, and location. Of course, there are also a few units in the $50 and $200/ month range.

The Bozeman City School system has excellent educational facilities and standards. Their system is based on a 5-2-3-3 plan which distributes kindergarten through fourth grade students in five elementary schools, places 5th and 6th graders in one city-wide school, places grades 7,8, and 9 in one city-wide Junior High School and places high school students in one city-wide Senior High School. Holy Rosary Grade and High Schools (Catholic) and Mount Ellis Academy Grade and High Schools(Seventh Day Adventist) are also located in the Bozeman area. Montana State University, largest unit of the Montana University System, makes its home in Bozeman. Estimated enrollment is 5,500 to 6,000 students. The city also has an adult educational council which sponsors evening classes for adults in a variety of subjects.

Bozeman is well equiped medically with approximately 30 doctors and 12 dentists. The Bozeman Deaconess Hospital,

administered by the Methodist Church, is fully approved by the Joint Commission of Accreditation. Established in 1911 the general hospital now has 102 beds, a medical staff of 38, and a paid staff of 150. Bozeman also is served by a private convalescent home, a county nursing home and a recently constructed retirement home.

Nearly every national civic group and organization is represented in Bozeman.

Civic Clubs

Bozeman Housekeeper's Club
Bozeman Woman's Club
Business and Professional Women's Club
Civitan
Exchange
Jayceens
Jaycees
Kiwanis
Lions
Optimist
Rotary
Soroptimist
Toastmasters
Toastmistresses

Fraternal Groups

American Legion
Demolay
Eagles
Elks
Knights of Columbus
Masons
Moose
Rainbow Girls
Shriners
Veterans of Foreign Wars

The citizens of Bozeman are welcone each Sunday morning at 26 different churches.

American Baptist
Independent Baptist
Southern Baptist
Christian
Christian Reformed
Church of Christ
Congregational
Episcopal
Jehovah's Witnesses
First Methodist
Faith Methodist
Presbyterian
Seventh Day Adventists
Unitarian
Unitarian Universalist Fellowship
Unity Truth Center
Roman Catholic
Church of God
Christian Science
Church of Jesus Christ of Latter Day Saints
Evangelical United Brethern
Nazarene
Re-organized Church of Jesus Christ of Latter Day Saints
Lutheran, ELC Synod
Lutheran, Missouri Synod
Lutheran, Christ the King

Recreation (4:2)

Bozeman inhabitants find recreation in many areas within the city limits. Six city parks (40 acres) provide picnic areas, playgrounds, softball and baseball parks, a heated swimming pool open during the summer, open air band concerts, tennis courts, and ice skating rinks for winter enjoyment. Other recreation within the city limits

includes indoor and outdoor movies, bowling, community concerts, various softball and basketball leagues, rodeos, fairground activities, and spectator sports such as high school and college football, basketball, wrestling, baseball, and track. Two nine-hole golf courses are located adjacent to the city.

Hunting and fishing are popular with local people as well as with visitors. In rivers and streams of the area fishermem catch Rainbow, Loch Leven, Cutthroat, and Golden Trout. Hunters seek game birds such as duck, geese, and pheasants as well as big game animals such as deer, moose, elk, bear, mountain sheep and mountain goat.

Within an hours drive of Bozeman are numerous man-made and natural lakes ideal for fishing, boating, and water skiing.

During the winter, snow skiing operates full capacity at Bear Canyon and Bridger Bowl. Bridger Bowl covers almost 2,000 acres providing T-bar lifts and one double chair lift to give skiers downhill runs of over two miles.

History (4:1)

The territorial legislature of 1865 established the county of Gallatin, naming it in the honor of Albert Gallatin, U.S. Secretary of the Treasury.

Gallatin Valley, "The Valley of Flowers," as called by Indians, was neutral hunting ground. Blackfoot and

Piegan from the north, Crow and Cheyenne from the east, and Shoshone Indians from the west shared hunting privileges in the valley.

Montana's first settlements were the Gold camps of Alder, Bannock, and Last Chance Gulch. The settlement of Gallatin Valley was of a different nature. Settlers brought their women to this valley seeking to build homes and farms. John Bozeman led a wagon train over Bozeman Pass and into this valley in 1864. Here his friends W. J. Beall and D. E. Rouse staked out the townsite for the city.

As the mining camps grew and demanded more farm products, The Gallatin Valley met the demands with increased production on rich soil irrigated by a number of streams crossing the valley. This productivity not only earned the valley the title "The Egypt of America" but also caused the city of Bozeman to grow and become a well established community.

The cattle industry also thrived as Nelson Story, brought the first trail herd to Montana from Texas in 1864. Later Harry Childs and Charles Anceney built the Flying D Ranch, Montana's largest single ranch, approximately 25 miles southwest of Bozeman.

With the establishment of an agricultural college in Bozeman in 1893, the community became more economically stable.

Today Bozeman is steadily growing as an agricultural trade center and as an education center. Montana State

University, with is approximately 6,000 students provide enthusiasm and gaiety in the culture of the community.

This material provides for me an adequate amount of factual information about Bozeman so that I may properly evaluate the character of Bozeman and its surrounding area. In doing this I will also have a basis on which to evaluate the character of Bozeman citizens including the congregation of Grace Baptist Church. This knowledge will help provide a basis for a successful design approach from which may evolve a church building aesthetically and functionally suitable for its congregation and its general location.

site conditions

The site chosen for Grace Baptist Church should be thoroughly evaluated. Consideration of the site is basic in formulating a sound design approach. Thus in forming my design approach I will evaluate and consider the following factual and visual information concerning the site for Grace Baptist Church.

Orientation

The proposed site of Grace Baptist Church is a 7-acre piece of land located on West Beall Street between Twenty-first and Twenty-third Avenues in the West Park Manor Addition. (see Figs. 18, 19, & 20)

West Park Manor is not fully developed with West Beall Street stopping approximately 200 feet west of Twentieth Avenue and with Twenty-first, Twenty-second and Twenty-third Avenues not yet constructed. Construction of Twenty-first, Twenty-second, and Twenty-third Avenues as well as westward extension of West Beall should take place within two years. (see Fig. 21) Thus, in discussion of the proposed church site I will consider the latter street as existing and also consider the immediate residential district as developed. (see Figs. 22 & 23)

Adjacent Environment

The 7-acre site is located within a rapidly developing

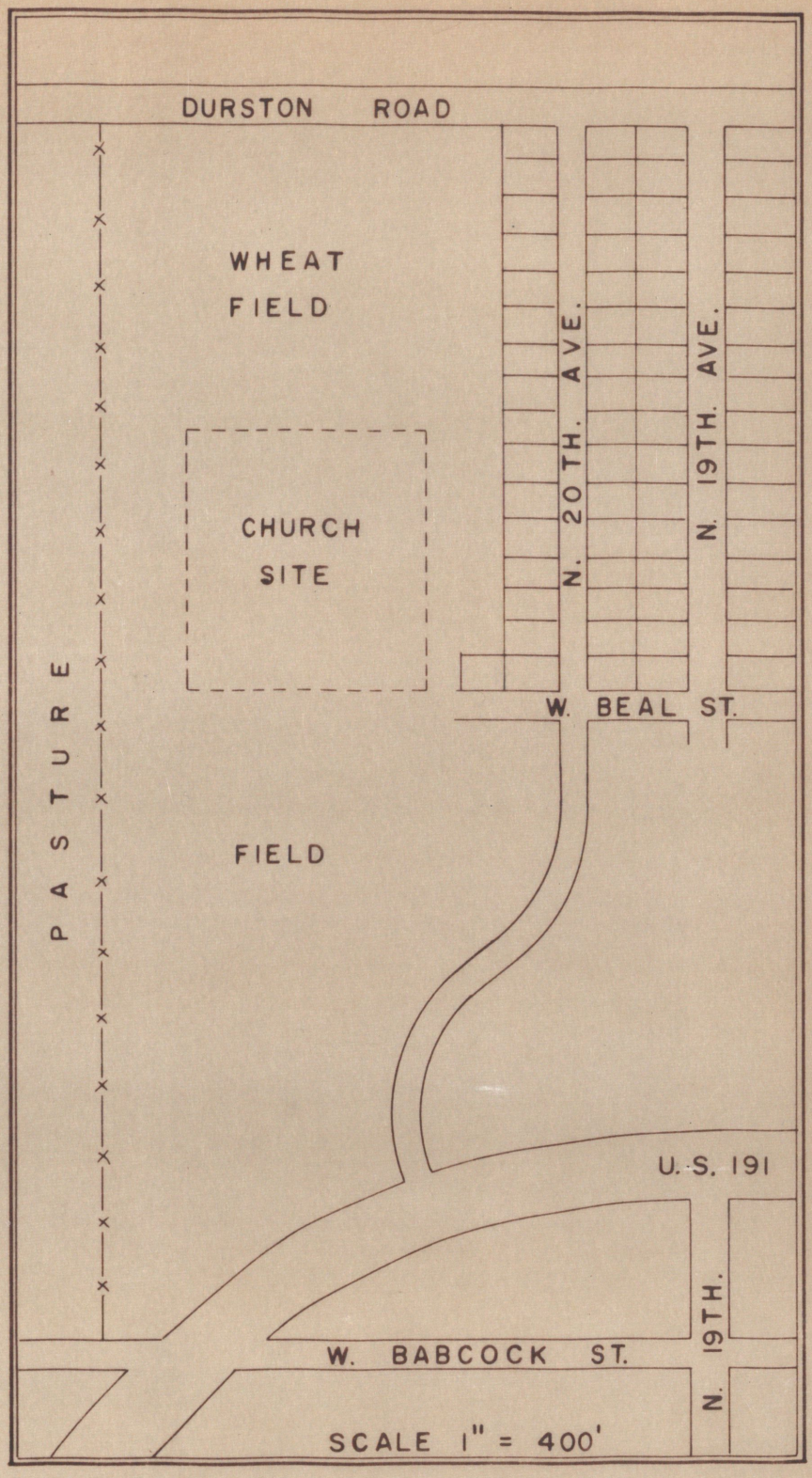
MAP OF BOZEMAN MONTANA

FIGURE 18 (4)

Figure 20. View of proposed site looking northeast.

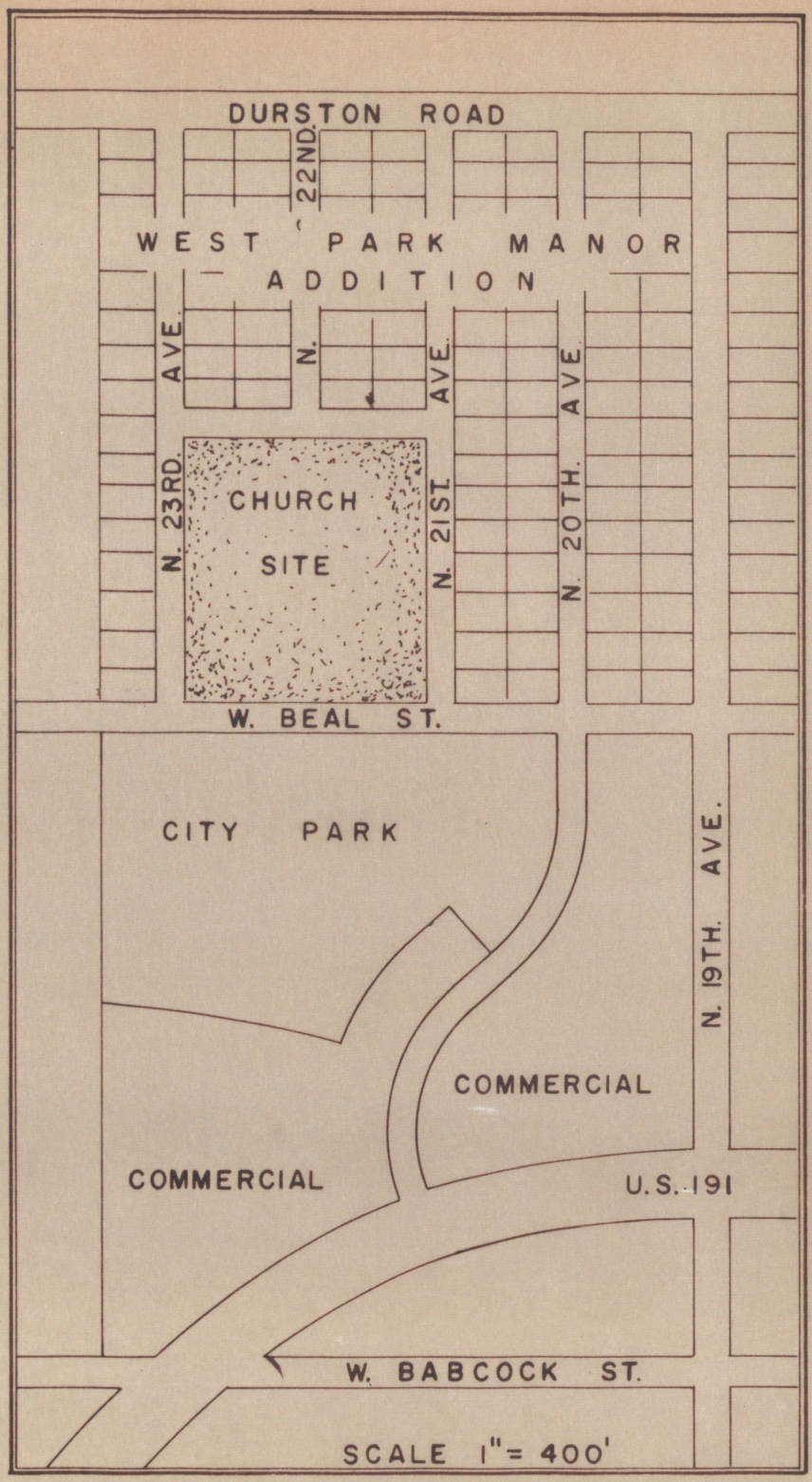
Figure 19. View of proposed site looking north. North 20th Ave. in the foreground.

Figure 21. View of West Beall Street looking west - street will be extended as the area developes.



PRESENT AREA

FIGURE 22 (10:295)



DEVELOPED AREA

FIGURE 23

residential area of Bozeman. (2) The site is bordered by streets with homes on the east, north and west. These homes are in a price range of $20,000 to $25,000 and offer a high-middle class residential district. (see Figs. 21, 23, & 24) South of the site, immediately across West Beall Street, lies a twelve-acre city park which will provide playground and picnic area. (see Figs. 23, 26, & 27) The park serves as a buffer between West Park Manor and proposed commercial property bordering U.S. Highway 191.

West Park Manor lies within walking distance of the Junior High School, Senior High School, Buttrey's Shopping Center, and future commercial developement on West Main Street. (see Fig. 18)

Topography

The land in the area where the site is located is slightly rolling in an east-west direction with high portions being about three feet above lower portions. A high point in the land lies 150 feet east of the site's west boundary. From this point the land drops slightly faster to the west than does the land to the east. The west boundary is about three feet lower than this high point as is also the east boundary. Thus the site lends itself to a variety of landscaping schemes. It could be easily leveled or varied in contour.

Vegetation and Other Natural Features

West Park Manor is a new development consequently it contains only young trees and limited vegetation. (see Figs. 19 & 20) There are no existing trees or other natural features on the site itself. The adjacent city park will provide a variety of trees and other greenery. The greenery of the park will offer a visual relief to the concentration of buildings in the area.

Soil Analysis

The building site contains rich black loam soil, typical of the Bozeman area. This top soil is supported by a substantial clay deposit. City engineers have not taken soil tests on the site deeper than would be needed for small structures; however, I feel it would be safe to assume the conditions adequate for construction of the church building.

Zoning Regulations

West Park Manor is designated as being in Zone A. Churches in zone A must follow the requirements which fall under class 2 of zone A on the Bozeman City Zone Requirements Chart.

The set back requirements are as follows:

Mimimum Property Frontage at Building Line	60 ft
Minimum Distance Between Main Buildings and/or Wings	33 ft
Minimum Front Yard	35 ft
Minimum Side Yard	25 ft
Minimum Rear Yard	30 ft
Minimum Street Side Yard, Corner Lot	25 ft
Required Yards for Accessory Buildings	10 ft

Other zoning requirements affecting this church building are:

Landscaped Areas:

All yards or portions thereof required to be in landscape shall contain a minimum of one (1) living deciduous tree for each 400 square feet or fraction thereof of yard required to be in landscape. Such trees must be continually maintained at a height of eight (8) feet or greater. All required landscape areas must be continually maintained in an attractive and clean condition.

Location of Off-Street Parking Areas:

No more than 25% of the parking spaces required may be located within any required side yard. No off-street parking areas are to be located in any required front yard and/or corner lot street side yard. Off-street parking spaces required by this ordinance shall be located on the same lot or premises as the use to be

served by such parking area, excepting those in the "MB" or "CB" zone, or those for apartment use which must be provided within 1,000 feet of the use to be served.

Off-Street Parking Spaces Required:

Churches are required to have one parking space per each four seats or one parking space per each 30 square feet of floor area, which ever is greater.

Availability of Utilities

West Park Manor is within the city limits; therefore, gas and sewer are available. Electricity and telephone are also readily accessible. The city will also provide adequate street lighting as the area developes.

Immediate and Adjacent Views

The immediate views are mentioned under the heading of "Adjacent Environment" and consist of residential houses and a city park. In the distance mountains dominate the view. The Bridger Range can be seen to the northeast, (see Fig. 24) the Horseshoe Hills to the northwest, (see Fig. 25) the Spanish Peaks to the southwest, (see Fig. 26) and the peaks of the Gallatin to the south. (see Fig. 27) Essentially, the city of Bozeman is in a beautiful location.

Figure 24. View from proposed site looking northeast. Bridger Mountain Range in the background.

Figure 25. View from proposed site looking northwest. Horseshoe Hills in the background.

Figure 26. View from proposed site looking southwest. Spanish Peaks in the background.

Figure 27. View from proposed site looking southeast. Peaks of the Gallatin in the background.

Traffic Patterns

U.S. Highway 191 links Bozeman with points south and is made accessible to West Park Manor by way of Twentieth and Ninteenth Avenues. U.S. 191 carries traffic east directly downtown. Ninteenth Avenue is a main city traffic carrier north and south. Durston Road links West Park Manor with North Seventh Avenue which provides access to Interstate 90. (see Fig. 18)

The streets about the church site, West Beall Street, Twenty-first and Twenty-third Avenues, are all minor streets carrying only residential traffic at minimum speeds. (see Fig. 23)

Grace Baptist Church is placed in a rapidly developing residential area of Bozeman. It is easily accessable from main traffic arteries and yet is not located directly on major traffic flow. It is within walking distance of Buttrey's Shopping Center and other future commercial development on West Main Street. The site is adjacent to a city park for convenient use of park recreation facilities. Altogether the site for Grace Baptist Church provides advantages which should result in a faithful and steadily increasing congregation. These advantages will thus be subject to extensive consideration when forming the design approach for Grace Baptist Church.

function

The English word, "church," is used to translate a Greek word meaning, "the called out." Originally (4th and 5th Century B.C.) this Greek term was used to refer to the people of a Greek city state who were called out, or gathered together by the proclamation of a herald to conduct the business of the city state. In translation of the Old Testament from Hebrew into Greek, the Greek form of the word, "church," was used as an equivalent for a Hebrew term meaning an assembly convocation or congregation. Writers of the New Testament used the same term to indicate the people or congregation gathered by Christ, called out to be His own. Thus the term "church" in the New Testament sense is not the building, but rather the people, the called-out, gathered people of God. The building derived its name of "church" from the people it housed. Thus the "Church" was housed in "churches". (6:283)

With the "church" being both people and architecture the function of Grace Baptist Church demands a two-fold definition, function of the church as a body of people in Christ, and function of the church as architecture. The following will define these two functions and show how one is dependent upon the other.

Congregation

The "church includes all who believe on Jesus Christ and have accepted His free gift of salvation. Thus Grace Baptist Church cannot be referred to as the "Church" meaning "all those called out by God." Instead Grace Baptist Church is a very small portion of the "church". It is a group of people gathered together in common agreement forming a small body of believers in Jesus Christ, a "congregation". The congregation of Grace Baptist Church has agreed upon the following regarding its organization: (the following is edited material taken from the Constitution of Grace Baptist Church, edited by D.K.S.)

Name

The name of this church is "Grace Baptist Church" (Independent). The organization took place on October 17, 1945, and the church incorporated in the State of Montana, November 3, 1945.

Purpose

The purpose or object of Grace Baptist Church is to carry on, conduct, and maintain a church and religious organization for public worship; to promote, inculcate, and practice the principles of Christianity; to promote the growth and expediency of the work of the

church through missions and education work; to edify and elevate the moral, spiritual, and religious conditions of its members and such others as may come under its influence by the dissemination of the Christian religion, the teachings of Jesus Christ, and the worship of Almighty God; to further and promote all religious, educational and charitable objects; to take and hold by purchase, gift, devise, or bequest, personal and real estate, and to use, mortgage, and dispose thereof for the purpose for which the corporation is organized; and to do and perform all other things authorized by law necessary or incidental to the purpose set forth.

Doctrine

The Doctrinal Statement of Grace Baptist Church is as follows:

1. We believe the total scriptures of the Old and New Testaments are verbally inspired of God and inerrant in the original writing, and that they are the only infallible rule for faith and life.
2. We believe in one God, eternally existing in three persons: Father, Son and Holy Spirit.
3. We believe that Jesus Christ was begotten by the Holy Spirit and born of the Virgin Mary, true man and true God.

4. We believe that man was created in the image of God, that he sinned, bringing upon himself and his race both physical death and spiritual death, which is separation from God.

5. We believe that the Lord Jesus Christ died for our sins according to the Scriptures as a substitutionary sacrifice; that all who believe in Him are justified on the ground of His shed Blood.

6. We believe in the resurrection of the crucified body of our Lord, in His ascension into Heaven, and His present life there for believers as a High Priest and Advocate.

7. We believe that any moment the rapture of the saved may occur, when the Lord Himself shall descend from heaven and catch away His people to meet Him in the air.

8. We believe in the personal, bodily and premillenial return of our Lord Jesus Christ to set up His kingdom upon the earth.

9. We believe that salvation is by grace through faith, and that all who receive by faith the Lord Jesus Christ are born again of the Holy Spirit and thereby become children of God.

10. We believe in the bodily resurrection of the just and the unjust, and the everlasting blessedness of the saved, and the everlasting conscious punishment of the lost.

Ordinances

Grace Baptist Church observes the ordinances of the Lord's Supper and Baptism.

The Lord's Supper is celebrated as frequently as the elders direct, but at least the first Sunday of each month for the whole congregation. All elders must be willing to assist the pastor in this ordinance and such deacons as are needed.

The mode of baptism accepted by this church is that of immersion, but membership is not withheld to anyone not immersed. However, the elders and pastor seek to instruct all members in the proper scriptural view of this ordinance in a kind and loving spirit. It is hoped that all members will yield obedience to the Lord's command. The service of baptism is carried out when and where the pastor and elders decide in co-operation with the candidates.

Membership

Admission of New Members

Any person professing faith in the Lord Jesus Christ, giving evidence of regeneration, and adopting the views of faith and practice held by Grace Baptist Church as set forth in the constitution, may be received into its membership.

Members from other churches holding the same faith may be received by letters of recommendation and dismission from their respective churches.

All canidiates for membership are first interviewed by the board of elders. This interview includes the testimony of the candidate with regard to his salvation and Christian experience and a consideration of the constitution of the church. The board commends the candidate to the church at any regular or special meeting. A positive vote by 75% majority of members present and voting will approve the canidate for membership.

Duties of Members

All members of the church are expected to be faithful to all the services of the church, including prayer meeting, unless providentially hindered by weather, distance, health, or adverse circumstances of life, so that they can live with a clear conscience before God. They are expected to back up the ministry of the church with their prayers and gifts as God has prospered them, and actively engage in the work of the church, exercising their spiritual gifts humbly, prayerfully, and faithfully, for the glory of Christ.

Meetings

Regular Meetings

The church meets regularly for public worship each

Lord's Day morning and evening throughout the year, unless changed by mutual agreement of the congregation.

The church meets for a regular midweek prayer and Bible study on a night designated by the elders and the pastor.

The annual business meeting is held on the night of the second midweek service of January.

The quarterly business meetings are held on the night of the second midweek service of April, July, and October.

The officers of the church are elected on the first Monday of December to take office on January 1.

Special Meeting

Such special devotional, missionary, or evangelistic meetings as determined by the pastor and elders with consideration of the Official Board are held throughout the year.

Special business meetings of the church are held at any time for the transaction of business of urgent nature. Such meetings are called by the Pastor, the Official Board, or any ten (10) members of the church, provided that the time and place of the same shall first be announced at a previous regular service or meeting of the church.

Meetings to take action on recommendations from the board of elders regarding the reception of new

members, are held in connection with the regular mid-week prayer meeting.

Bible School

Officers

Along with the election of a Bible School superintendent, who is a church officer and a member of the Official Board, the church elects an assistant superintendent, secretary, and treasurer for the Bible School. These officers work with the superintendent in the general oversight of the work of the Bible School, serving as a committee with him to select the department superintendents and teachers.

Duties of Officers

The superintendent is responsible for the general oversight of the Bible School.

The assistant superintendent assists the superintendent in supervising and promoting the growth and spirituality of the Bible School and shall, in the event of absence of the superintendent, preside in his place. He assists in preparing an annual report of the Bible School to the congregation. He also aids the secretary in keeping a proper account of attendance.

Correspondence of the Bible School, except that of individual classes and keeping of an accurate record of attendance, including visitors, of the Bible School is done by the secretary.

The treasure keeps an accurate record of all receipts, along with the purpose for which received and turns all monies received to the financial secretary of the church for proper banking and recording in the church funds.

Superintendents and Teachers

Departmental superintendents and assistants are appointed by a committee composed of the elected officers of the Bible School and are responsible for the oversight and promotion of their respective departments.

Teachers of the Bible School are appointed by this same committee.

Bible School officers and teachers meet at least quarterly.

Government

Standing

This church acknowledges the Lord Jesus Christ as its only Head and receives the Holy Scriptures as the only infallible guide in matters of faith, church order and discipline, and is anemable to no other ecclesiastical body. This church remains free and independent and will not join itself to any other denomination or synod. It remains its own highest authority and conducts its business through its business sessions.

Business Administration

The business administration of this church, under

the leadership of the Holy Spirit, is vested in the body of believers who compose it, whose majority vote is final unless otherwise stated in the constitution. The business administration of Grace Baptist Church is therefore vested in and exercised by the Official Board. It has power to conduct, manage, and control the business of the corporation, and to make rules and regulations not inconsistent with the laws of the State of Montana, and to do and perform any and all things necessary to carry out the purposes of the corporation.

Officers

General Considerations

The elective officers of the church includes elders, deacons, clerk, treasurer, missions treasurer, financial secretary, and Bible School superintendent.

The elections of officers takes place on the first Monday of December at a meeting held at the church for that purpose. Recommendations for possible candidates are made to the church by a nominating committee meeting at least two weeks in advance of the election and composed of the outgoing elders and Deacons. Their recommendations are approved by the Official Board. In addition to those nominations, nominations can be made from the floor by the congregation. In the event of no further nominations those suggested by the nominating committee automatically take office, subject to the vote of the church.

Official Board

The official board of the Church is composed of the elders, deacons, clerk, treasurer, missions treasurer, and Bible School superintendent. It elects from its number a president (acting as chairman), vice-president and secretary. The Official Board meets regularly on the second Monday of each month. The secretary of the board keeps an accurate account of all proceedings and at the direction of the board, present matters of business to the congregation at regular or special business meetings. The Official Board appoints a Head Usher, Building Superintendent, Attorney in Fact for the corporation, Missions Secretary, and Music Committee.

The Official Board considers all matters of policy of the church and works together to see that such policies are carried forth. It also works in an advisory capacity to the Pastor. Any board, officer, or organization may call upon the Official Board for advise or aid.

Special meetings of the Board are called by the Pastor in conjunction with the President of the Board.

Board of Elders

There are six (6) elders, whose term of office is for three years, elected on the rotation system. The Pastor is a member of this board and serves as chairman. The board elects a secretary who keeps an accurate record

of proceedings of meetings of the board and presents the names of those recommended for membership to the congregation for vote.

The elders have charge of the spiritual and moral activities and needs of the church. They cooperate with the pastor in making decisions with regard to all matters of pulpit supply, missionary and special services, and discipline. They act as counselors and personal workers to those who need spiritual guidance. They visit the church families, especially the sick and destitute. They are also alert to those needing help, whether spiritual or temporal, in the congregation. The Board of Elders meets with candidates for membership and recommends them to the church.

The Board of Elders constitutes the missionary committee of the church. It is the duty of this board to prepare the annual missionary budget for presentation to the church, and it is its duty to administer the missionary funds of the church in accordance with the budget requirements. It authorizes the disbursement of other missionary funds of the church in accordance with the will of the church or of individual donors.

Board of Deacons

There are six (6) deacons, whose term of office is for three years, elected on the rotation system. The

board elects a chairman and a secretary, who keeps an accurate record of proceedings at all meetings of the board as well as a record of actions taken by the board, when meeting separately from the Official Board.

The deacons supervise the economy of the church, keep the deeds and all valuable papers, and keep the church premises in good condition. They aid in visitation when needed and assist in the ordinances of the church. All employees, salaried or otherwise, other than the Pastor and the Youth and Music Director, are directly responsible to the deacons. They are responsible for recording all vital statistics of the church under their jurisdiction and giving annual reports.

The deacons assist the financial secretary in counting the monies received in the church offerings, setting up a rotation system best suited to all members of the board. They also keep a separate record of receipts.

The board of deacons does not purchase, sell, mortgage, or encumber any realestate belonging to the church, or use in any way money, real estate, or gift of any kind, devised to the church, without authority given by the church at a regular or special meeting.

Clerk

The duty of the church clerk is to keep an exact record of all business meetings of the church; read the

same for approval at the consecutive meetings and cause due notice of such meetings to be given from the pulpit. He keeps an accurate register of all members, prepares and mails letters of dismission, has charge of all the records or the church and performs all other duties pertaining to this office.

Treasurers in the corporation

The church treasurer keeps an accurate record of all receipts and disbursements, issues checks upon order of the deacons and performs such other duties as may be required by the Official Board. He also assist the board of deacons in preparation of the annual budget of the church.

The Missions Treasurer keeps an accurate record of all receipts and disbursements of Missionary funds. He also works closely with the missionary committee, disbursing funds as directed by them. He is responsible for the proper handling of funds designated for specific missionaries and mission projects. H also assists the missionary committee in the preparation of the annual mission budget.

Both treasurers prepare quarterly and annual reports of receipts and disbursements for presentation to the Official Board and the congregation. More frequent reports are prepared for the Official Board if desired.

The Official Board sees that both treasurers' books are audited yearly.

Financial Secretary

The financial secretary receives, records and deposits contributions in the name of the church. An accurate record is kept of all receipts for the various funds and regular reports given at the business meetings of the church.

The financial secretary also keeps records of individual contributions for those who desire such records for income tax purposes, issuing proper receipts for such contributions.

Committees and Appointees

The head usher has charge of ministering to the congregation of the church worship or general and special meetings. He sees that everyone is greeted in a friendly manner, is properly seated, and is made comfortable. He also sees to the distribution of bulletins, programs, or other materials. He appoints his assistants who serve with him for the year. He counts the attendance and sees that a proper record is kept.

The building superintendent oversees the condition, repair, and proper heating and ventilating of the auditorium and other rooms to be used for worship, study, or fellowship.

The legal matters of the church, advising and suggesting the proper legal procedures for the proper and efficient carrying forward of the purposes of the organization, are handled by the attorney-in-fact.

The duty of the missions secretary is to handle missionary correspondence as directed by the missionary committee.

The music committee works with the Pastor, Youth and Music Director, and Official Board in coordinating the music program of the church, including the review of talent and consideration of those qualified to fill various music positions in the church.

Pastor and Youth and Music Director

The Pastor is chairman of the Board of Elders and the minister in charge of the spiritual and religious affairs of the church. He presides at all meetings of the members of the church and of the Board of Elders. As moderator of the church he appoints all committees, boards, and necessary groups not otherwise provided for. He in cooperation with the elders decides all matters of pulpit supply, missionary and special services, and problems of conduct and discipline. He preaches, visits, teaches, counsels, and carries on all activities and duties proper to his office. He is also a member ex-officio of all boards and committees of the church.

The Youth and Music Director coordinates and directs all musical activities in cooperation with the Music Committee. He is chairman of this committee and works with the Pastor in coordinating the over-all activities of the church.

Church Finances

Grace Baptist Church is religious, charitable, and educational in character and pecuniary profit is not its purpose.

Its necessary expenses are met through voluntary gifts and contributions from individuals interested in the promotion of the purposes of the corporation. The church accepts the Bible as final authority in all matters of church finance. This includes systematic giving of tithes and offerings, with each one giving as he purposeth in his heart. No undue pressure is put upon members in the matter of giving. The church does not solicit money.

All earnings from the use of any of the corporate property is available for the religious, missionary, and benevolent purposes of the corporation. No part of any net earnings from the property of the corporation inures to the benefit of any private shareholder or individual, and no part of the activities carries on propaganda or otherwise attempts to influence legislation.

The members of the Official Board receive no compensation as such members in performance of their stated duties. Officers, ministers, and representatives, and such members as render services to it, receive such reasonable compensation as the Board determines.

The building and appurtenances are at all times subject to the Pastor and Official Board for services and meetings appertaining to the work of the Grace Baptist Church or for use of groups requesting them, as permission is granted for use by the Board.

These policies are set forth in the constitution of Grace Baptist Church and are followed by the church for proper and organized function of the church. Thus in designing Grace Baptist Church I must consider and provide proper accomodations for these functions.

Architecture

The common American use of the term "church" is in conjunction with architecture. The "church", as architecture, is a building housing the functions of its congregation. The functions of the congregation at Grace Baptist Church are basically worship, education, and social. The following discussion deals with the building in relation to these functions.

Worship

Worship of God is an act of love towards Him and is done to show the adoration, devotion, aspiration, homage and reverance of His people. Worship is done by supplication to God through prayer; thanksgiving to God through prayer; meditation to God through thought; praise to God through prayer, recitation, and song; offering to God through returning of a portion of His material blessing; and service to God through obedience to Him.

Although worship must come from within the individual, God is pleased when men gather together in common worship of Him. The congregation gathers in the sanctuary of the church building to worship God individually and as a group, brothers in Christ and of one another, members of the body of Christ, God's family. This gathering centers upon God's Holy Word, the truth revealed to man by God. Thus the worship service is conducted on a family basis centered upon human performance. This forms my basic functional concept for the sanctuary.

The congregation, seated in the sanctuary for common worship, offers supplication and thanksgiving to God through individual and group prayer. Meditation upon God is done individually during pauses in the worship service, and while hymns are sung by the choir. The congregation praises

God not only in prayer but in recitation from His Word (eg. Psalms) and in singing of hymns. During these portions of the service the congregation may stand or sit. Facilities should be adequate to provide seating which presents a brotherly atmosphere, a feeling of one big family. This I believe can best be done by seating the congregation in pews. Individual seats stress individuality while pews provide the family atmosphere desired in the worship service and thus expressing the equality of men before God.

Other considerations concerned with pews are visibility, comfort and appearance. The pew provides excellent visibility. Individual seats must be staggered to provide good vision while individuals seated in pews adjust themselves for good visibility. Comfortable pews should be designed to accommodate both taller and shorter people. A generous seat and back; absence of pew ends for easy entry; proper space between pews; and proper height of pews will provide maximum comfort. The appearance of the pews is very important. The material color, finish, and design of the pew will determine whether the church will express the family of God. For example the pew with ends gives a "boxed seat" impression while pews with no ends better express the entire congregation as one family. The pews should be arranged so as to focus the attention of the congregation upon God's Word thus God Himself. (6:670)

The entire congregation should have access to hymnals from which they sing praises unto God. Many times, a portion of the congregation, the choir, represents the entire congregation in songs of praise unto God. This representation is futile unless it is done unto God with the support of the entire congregation in meditation upon God. Thus I believe the choir should be placed behind the rest of the congregation. This placement allows the choir to give full support from behind when the entire congregation sings. When only the choir sings it allows the remainder of the congregation to meditate in praise upon God and His Word. Placement of the choir in view of the rest of the congregation would draw their attention from God and His Word, to the choir individuals. Thus the choir members would become performers and the seated congregation spectators, losing all aspects of brotherly worship of God.

Apart from and in combination with singing the congregation an organ and/or a piano also responds to God's grace in praise to Him. I can see no reason for a need of both a piano and an organ during a worship service. One accomplishes the same as both. Thus I will provide for only an organ in the sanctuary. The organ, much as the choir, should not be confused with the means of God's grace, His Word and Ordinances, and thus should not be placed with these elements. The organ should be placed with the congregation. Acoustically, the organ can best assist the congregation when it is

behind and slightly above. (6:678) This places the organ in the vicinity of the choir. In placement of the organ behind the congregation, an easy fault is to "hide" the organ by placing it in a chamber or behind a false facade. I believe the organ and its location should contain an honest expression. Its purpose is to reinforce the praise of the congregation and to me the only praise is honest praise.

I believe special music, such as vocal solos, duets, trios etc., as well as individual playing of instruments during the worship service should be treated in like manner. During the worship service the special music is not for the benefit of the congregation but rather for the benefit of God in representation of the congregation. Thus special music should also be placed behind the congregation.

As already mentioned true worship of God must come from within the individual. Thus the individual must be right with God before worship of God can take place. I believe this condition of the individual must be based on honesty and humility of the individual before God. In order to provide the best conditions for honesty and humility of individuals and because of the fact that returning to God a portion of His material blessing is a personal matter, I believe the offering should be a private transaction between the individual worshipper and God. Thus, I do not feel that passing of a plate during the worship service for individuals to publicly contribute to God, is giving in the most worship-

ful spirit. Thus I make no provision for public contribution. Arrangements will be made to provide an honest and humble, and thus private offering to God.

Doing service to God is basically being obedient to God. In regards to the worship service, I believe obedience involves proclaiming God's Word and observing His Ordinances.

With the proclaimation of God's Word being the God-Ordained means by which Christ's message comes to His people, I realize the tremendous importance of God's Word; it is indispensable. Thus, the pulpit, as the architectural manifestation of the Word, should make the Bible's indispensability architecturally clear. In doing this the pulpit becomes the focal point of the sanctuary, but only because of what it contains, the Bible. Thus the Bible should be visible to the entire congregation from the pulpit. (6:666) This will necessitate either the congregational seating to be sloped down to the Word, or the Word to be raised so that it is visible to the entire congregation. I believe the Word, being the most important item in the sanctuary, should be raised above the congregation to facilitate visibllity of it.

The congregation of Grace Baptist Church observes the Lord's Table and baptism as ordinances of Jesus Christ.

In observing the Lord's Table I believe the congregation should be seated around the table and partake of the bread and cup as a family, a family of God. In considering the

high number of participants in this observance, I feel the pew arrangement and placement of the table should be such that the congregation is given the feeling of being "gathered around" the Table. The Table should thus be visible and accessible. The Table should also be honest and look like a table with only those articles which are used in celebration of the Lord's Supper placed upon it.

The word baptism comes from the Greek word meaning "immersion". The congregation of Grace Baptist Church feels that baptism, as taught in the Bible, is properly done by immersion. Thus baptism is done by immersing an individual in water. The individual takes this step for three reasons. First it is the direct carrying out of Christ's teaching. Second, baptism testifies to the congregation of one's faith and life in Christ. Third, baptism meets the three generally considered requirements for an ordinance of the church; 1) it is instituted by Jesus Christ; 2) it was practised by the Apostles and the early church; 3) it is taught in the epistles. (12) Immersion of an individual takes place in a baptistry. With baptism being a public testimony of one's faith and life in Christ the baptistry should be located where the congregation may both see and hear the procedure. When not in use I do not believe it is an honest procedure to hide or disguise the baptistry. I believe it should make a bold statement before the congregation as a reminder to them of the new life each Christian has in Jesus Christ and that

his life should bear witness to the profession he has made.

The sanctuary is the space in which the congregation gathers as brothers in Christ and worships God as a family. The sanctuary should therefore be designed to accommodate worship. It should treat the congregation as a family and contain, in proper relationship, all elements necessary for the utmost worship of God.

Education

Education is training and development of an individual through instruction and study. The purpose of Christian education is to give one a knowledge of his need of a savior, to give one a knowledge of saving faith, and to give one an opportunity to learn from God's Word how to express his gratitude to God.

The instruction program of Grace Baptist Church utilizes the graded-school method. This method includes a series of classes graded from the very young to the senior adult. Periodically the student receives a new teacher and the lesson material becomes progressively more difficult and the content deeper. The general character of class instruction varies from class to class depending upon the instructor, yet, I feel the classes within each department are basically the same.

Children in the Beginners department (2 years to kindergarten)

meet in separate classes where they sing songs, listen to a Bible story and engage in handcraft. The necessary equipment for such classes includes children's table and chairs, a small sink, and adequate storage area for class materials. The classrooms should also have natural light and be located in such a manner as to allow parents easy access to their children after class.

The Primary department (1-3 grades) and Junior department (4-6 grades) are alike in function. The students all meet together for opening song service and then divide into classes. Each student is provided with a lesson book from which he does lessons at home in preparation for Bible class. The class then engages in discussion or listens to a lecture by the instructor. The main concern in these classes is flexibility in seating arrangement and adequate storage space for class materials.

The Junior High (7-9 grades) and Senior High (10-12 grades) meet together for an opening song service and then divide into classes. The Junior High students have the same type of instruction as the Junior students while the Senior High students listen to a lecture or discuss a given topic. These should also have flexibility in seating arrangement, adequate storage space, and sufficint blackboard area.

The College and Career group meets as one class for both opening song service and lecture. The main concern in this type of class with a large number of students is adequate space for seating, good ventilation, good acoustics, and sufficient blackboard area.

The adult department meets together for an opening song service and then divides into two basic groups, the young and senior adults. The young meet in two separate classes; one is a discussion class while the other is a lecture and discussion class. These classes require seating at tables to allow for proper discussion of topics. The senior adults are lectured to by an instructor and because of their number require a space such as the College and Career class; one that contains adequate seating, good ventilation, and good acoustics. I feel that the adults would enjoy having three or four smaller classes conducted by different instructors on different topics. From this selection each adult could attend the class of his choice. This would provide a variety of Bible teaching and learning for the adults.

I believe that the education department should be supported with a library. The library would contain books and various Christian periodicals for all ages. This would provide a wider source of knowledge for the Christian individual, making him more intelligent and thus a better Christian and citizen. The library should be located near the church business office for control purposes and should also be

located where it is easily accessible to insure its steady use.

The education department of the church is vital. If the Christian continues to believe in justification by faith, and if faith is part knowledge, then education must continue that men may have saving faith, and that they can be educated in the expression of the thankfulness they desire to show God. (6:657)

Social

The social activity of Grace Baptist Church is varied yet is basic in Christian fellowship and recreation.

I feel one flexible space can adequately handle the fellowship and recreation activities of the congregation. This space must accommodate many types of activity. Youth organizations, such as Pioneer Girls, Awana Boys, and Boy Scouts, will meet in this space for games and other recreational activities as well as for dinners and banquets. Young people groups including fourth grade through college and career age students will use the space for such activities as plays, skits, singspirations, talent shows, banquets, and parties involving food and indoor games. The church basketball team, college intramural team, and other groups within the congregation would use the space for basketball games and practice. The space would also be used for

church dinners, banquets, evangelistic meetings, and wedding and other receptions.

In order to properly accommodate this wide range of activity the fellowship and recreation space will require necessary size, quality and equipment.

The size will be determined by the activity requiring the largest amount of space and that is basketball. Thus the space will be a little larger than a basketball gymnasium.

The space should contain good acoustics. It must be well lighted and be wired for a public address system. The floor of the space will have to be able to withstand the rough use to which it will be subjected.

The space will also contain a variety of other accomodations. It must contain a stage, kitchen, basketball equipment, and storage.

The stage should be located so that seating for the congregation can be easily accommodated through placement of folding chairs. The stage should contain a movable podium and piano. Adjacent to the stage there should be storage and dressing rooms.

The fellowship and recreation space will also need kitchen facilities. Cooking will be done by members of the congregation, ordinary housewives. Thus the cooking will be just the same as at home except on a larger scale. There will be no need for restaurant equipment such as steam tables, baking ovens, soup kettles, and short-order cooking equipment

for these are atrangers to most housewives. The equipment the kitchen needs includes a range, sink, counters, serving carts, a refrigerator, coffee maker, drinking fountain and plenty of storage space. Providing equipment beyond this is unnecessary.

The fellowship and recreation space will need special equipment and storage space for equipment used for basketball and other indoor activities. A small locker and shower area is also desirable. This facility could be worked in with the required toilet facilities of the building and reduce its added cost.

General storage for the area is needed for folding tables, chairs, and bulk items used in the space.

The fellowship and recreation space will fulfill the congregation's need for fellowship and recreation and also provide a ready means for youth evangelism through indoor recreation. The space constitutes a definite contribution to the church and its program.

Other Areas

These areas include necessary portions of the church building which do not directly fall under the categories of worship, education, or social.

Music Room

The music room is a space accommodating the music activities of the congregation. The room will be used for choir practice and robing before the worship service

on Sunday morning. The room will also serve as a practice area for individuals. All music, hymnals, and special instruments will be stored in this room. Thus, the music room must be spacious enough to allow practice of the choir. It must contain a piano and storage space for robes, music, books, and instruments. The room should also be adequately sound proofed. The room must be located so as to allow easy movement of the choir to their position in the sanctuary.

Business and Administration

These functions will require several rooms. The pastor and youth and music director will each require a study-office area. There should be a centralized area where all church business and activities can be coordinated. This space should include a general information area; space for a ditto machine and storage for materials related to its use; a safe to contain church monies until they can be deposited in a bank; a finance and business area where various treasurers and secretaries can make use of typewriters, adding machines, and filing cabinets; and a space used for storage of various church records and needed supplies.

Crib Room

The crib room is to accommodate children under one year of age during the Bible School hour and Sunday

morning worship service. It should be adequately sound proofed and contain a sufficient number of cribs. It should also contain or have direct access to a lavatory and toilet facilities.

Nursery

This space is to accommodate small children who aren't old enough to attend a Bible class and aren't old enough to sit quiet during the morning worship service. The nursery should contain items to occupy the children as well as accomodations for attendants. It should also contain or have direct access to toilet facilities.

Both the crib room and nursery should be located near the adult Bible class area as well as the sanctuary for easy access of parents attending these services.

Radio Room

The Sunday morning worship service is broadcast over a local radio station. Thus a small room containing the adequate facilities for such an operation should be located in the sanctuary. The room should be located to give the operator an adequate view of the service.

Vestibule and Lobby

This area is the dispersion point in the building. From this area all parts of the building should be accessable. This area should be designed to allow different

functions to be carried on in the immediate vicinity at the same time without being interrupted. An added feature to this space would include a lounge area to be used as a general waiting area for the building.

Cloak Room

The cloak room is a necessary space located adjacent to the vestibule or lobby. It should contain sufficient hanging space for coats and hats of members of the congregation attending the Sunday morning worship service. This cloak room chould also be used during other functions of the church.

Rest Rooms

There should be adequate rest room facilities for the building complex. These may have to be located in more than one place. Their location would be advantageous near the vestibule of lobby and also near the fellowship and recreation space. The rooms should be easily found, but not obvious. The women's room will include a powder room in conjunction with the toilet area. Within each of the restrooms used in conjunction with recreation, showers will be located for use of recreative persons.

Storage, Mechanical, and Janitor

Sufficient storage space must be made available

throughout the building. Most areas will contain their own storage space. A room will be provided to house the heating, air conditioning and other mechanical units. The janitor's room will include space to store necessary cleaning equipment and materials for use in the building. This room should also contain a slop sink.

Outside Areas

The building site provides adequate space for the church building, the parking of cars, and the expansion of facilities.

Recreation Area

With completion of the building the site will be landscaped providing excellent space for limited outdoor recreation. Major outdoor recreation will take place in the city park situated across the street from the church. In future years, when facilities are expanded and the recreation area used up, all outdoor recreation will be in the city park.

Parking

Parking space on the site is a vital consideration as most of the congregation will bring their own cars to the church. Therefore sufficient space will be allocated for movement and parking of automobiles.

The church congregation is not a society that comes together of its own accord to satisfy its own ends. The church congregation is a group of people "called out" of this world to belong to Christ. Just as in the Greek city states where the herald of the state called forth the people from their homes to a public gathering, the heralds of God call forth His people unto Him. In I Timothy 2:7 Paul speaks of himself as such a herald and refers to God's message as the, "Truth". (6:285)

The church is built around the preaching of the "Truth". Thus this "Truth" must be expressed in the architecture of the church. It is Christ who through His message gathers the people of God. Thus our design should begin around Christ and His message. Beginning any other way is to deny the sacrifice He made for man. Any architecture worthy of scriptural expression must start with the Christ Who calls men unto Himself through His Word, Ordinances, and fellowship. (6:285)

The basic criteria for this expression lies in one fact; the congregation as the church is the called-out people of God, God's family, brothers in Christ and of one another, members of the body of Christ. Architecturally, the people of God must be treated as "God's Family."

program

	Description	Proposed area sq. ft.
WORSHIP		
	Sanctuary	8,000 sq. ft.
	Function: Provide an area for worship for the congregation.	
	Equipment: Seating, pulpit, baptistry, Lord's Table, radio booth, and public address system.	
	Finish: Good quality.	
EDUCATION		
	Classrooms	9,000 sq. ft. (see Fig. 28)
	Function: To provide areas for academic use and meetings as needed.	
	Equipment: Seating, tables, blackboards, and storage.	
	Finish: Good quality, durable.	
	Library	800 sq. ft.
	Function: To provide space for books, periodicals and other educational material; to provide reading areas.	
	Equipment: Shelves for books and periodicals, tables, and chairs.	
	Finish: Good quality.	

Discription	Proposed Area sq. ft.

SOCIAL

Fellowship and Recreation Space — 6,000 sq. ft.

Function: To provide space for social events, evangelistic meetings and indoor recreation such as basketball.

Equipment: Folding chairs, folding tables, stage, dressing rooms, and public address system.

Finish: Simple and durable.

Kitchen — 600 sq. ft.

Function: Provide cooking and food preparation when needed.

Equipment: Range, oven, refrigerator, sinks, cabinets, and counter space.

Finish: Washable and durable.

OTHER AREAS

Vestibule (lounge included) — 500 sq. ft.

Function: Dispersion area, visiting area, coat and wrap placement.

Equipment: Limited seating, desk, shelves, coat hangers.

Finish: good quality.

Administrative — 600 sq. ft.

Function: Provide office space for pastor and youth and music director; To provide a church office for general church business.

Equipment: Desks, shelves, chairs, file cabinets, tables, safe.

Finish: Good quality.

Description	Proposed area sq. ft.
Choir Room	800 sq. ft.
Function: choir practice, choir robing, storage of music, robes and instruments.	
Equipment: Shelves, folding chairs, closets.	
Finish: Good quality; durable.	
Crib Room	250 sq. ft.
Function: Provide space for children under 1 yr. of age.	
Equipment: Cribs, chairs, lavatory.	
Finish: Good quality.	
Rest Rooms	1,000 sq. ft.
Equipment: Lavatories, bowls, paper towels, mirrors, waste baskets, showers, and locker space.	
Finish: Washable and durable.	
Janitor	150 sq. ft.
Function: Provide space for janitor's cleaning supplies.	
Equipment: Shelves, slop sink.	
Finish: Durable and rough.	
Mechanical	400 sq. ft.
Function: Provide space for heating, ventilating units.	
Equipment: Heating and ventilating units.	
Finish: Durable and rough.	

Storage (In Each Area Needing Storage)

Function: Provide storage.

Equipment: None.

Finish: Durable and rough.

Corridors 2,000 sq. ft.

Function: Provide linkage between areas within the building.

Equipment: None.

Finish: Good quality.

BUILDING TOTAL 30,100 sq. ft.

Figure 28.

Projected Education Attendance And Area

Department	Present Per Cent	Projected Attend.	*Desired sq. ft/ person	Desired sq. ft/ dept.
Beginners	15.2	76	30	2280
Primary	14.0	70	25	1750
Junior	10.1	50	25	1250
Junior High	9.4	47	16.5	776
Senior High	5.3	27	15	405
College & Career	11.0	55	11	605
Adults	35.0	175	11	1925
Total	100.0	500	—	8991

* (11:135-138)

aesthetics

Language is the principal means of expression. Expression is the communication of a thought, opinion, or idea through manifestation of a feeling, condition, or quality. I feel a building that is to express itself must have a language. To me this language is aesthetics.

I believe that the language or aesthetics of a building is determined during the design of the building. Thus, I cannot discuss, at this time, the aesthetics of Grace Baptist Church. I do feel, however, that the expression which Grace Baptist Church ought to communicate warrants considerable discussion.

The existence of man is possible without architecture yet it is obvious that human architecture cannot exist without man. Thus I maintain that architecture is of man and should express man.

The proper human expression which a building should communicate depends upon how man uses the building. Grace Baptist Church is basically a building used as a meeting place for a portion of God's family. The principal function involved in the meetings include worship, education, and social activities. These various activities may suggest a variety of expression in the church building. I feel this should not be true. Much as the functions of the human body have been given a total expression by God in one

body, the various functions of the church building ought to be given a total expression by man in one building. Areas containing different functions may, however, use different terminology within the building's language to communicate the single expression.

The church building, the same as man, will also contain an inward expression and an outward expression. In God's sight the inward and outward expression of man ought to be one expression. I believe this should also be true of Grace Baptist Church. The building as a whole should communicate one expression.

Arriving at the proper expression which Grace Baptist Church ought to communicate involves the establishment of God's intention of man's relationship with Him. A thorough study of God's intent for man in relation to Himself requires a high degree of research, thought, and explanation which this paper does not warrant. Therefore I feel a simple concept will be adequate.

I believe the Bible is the inspired word of God. In studying it I have concluded that God made man that He might have fellowship with him. Man sinned and thus fell from this fellowship. God had compassion on man and provided a way for him to regain fellowship with God. This provision was God's son, Jesus Christ, who gave Himself as a perfect sacrifice for the sin of each man. The return of each man

into fellowship with God requires that he admit to God his sinfulness and place his belief in Jesus Christ as the only means of remitting his sin in God's sight.

This act is simply being honest with God. Thus I believe that God intends man to be honest with Him. God wants man to be the genuine being He intended in His original creation. This covers a tremendous range which I have condensed into two principles: being pure of heart and being humble of spirit.

Man's inner most essential part, his seat of emotion, his center of intellect and reason, should be clean, unvarying, absolute, free from mixture or pollution. His heart should be pure. Man's mind, his mood, his true intent from within should be submissive to God, respectful to God, modest, free from pride and vanity. His spirit should be humble.

Thus I feel Grace Baptist Church ought to communicate an expression of honesty. It should be a genuine expression of the family of God being pure in heart and humble in spirit. This requires that the building contain no false materials, camouflage of features, or copy of so called styles. It should contain no meaningless ornaments or decoration. The building should be clear, orderly and simple.

Achieving simplicity and clarity when the characteristics of our age are change, variety, and novelty, is not an easy task. Striving for honesty in the church building will require a high order of thought, creativity and courage which I hope to employ in designing Grace Baptist Church.

economics

In church building the desire for maximum space per dollar sometimes seems more important than the desire for maximum quality per dollar. I feel architecture that is considered good architecture contains good quality construction. I also believe the better quality building will prove to be most economical. The initial cost of a good quality building may be more than seems necessary at the time of conception; however, over a period of time the cost of maintenance, and repairs for a low quality building becomes considerable. I hope to provide Grace Baptist Church with an adequate amount of space which will receive maximum usage. This provision, in an enonomical building, will require building construction of good quality.

Construction Costs

An estimated cost of the building can not be calculated until the preliminary design is completed. I will,however, offer an estimated square-foot-cost range.

The Marshall Valuation Service Manual classifies buildings as A,B,C,orD. I feel Grace Baptist Church will fall in the range of class C or B.

Class C buildings are those which contain exterior walls of masonry or reinforced concrete, roofs of steel and wood, and floor structures of wood and steel or concrete slab on grade.

A class B building contains a frame of reinforced concrete and a floor structure of masonry or concrete.

Calculator Method:

Worship area:	Class B	Cost/sq ft
	Good	$ 23.80
	Average	18.74
	Class C	
	Excellent	$ 23.80
	Good	18.72
	Average	15.40
	Low Cost	12.11

These estimations include special lighting and stained glass consistent with the overall quality of construction. They do no include pews, organs, pianos, bells etc.

Education Area:	Class C	Cost/sq ft
	Good	$ 16.96
	Average	14.20
	Low Cost	11.21

These estimations include office areas as well as teaching units for academic use containing built-in book shelves and blackboards. They do not include moveable equipment and furnishings.

Fellowship and Recreation Area:	Cost /sq ft
Class C	
Average	$15. 47

This estimation includes a combination of gym, auditorium, cafeteria, and miscellaneous rooms. It does not include kitchen equipment or cafeteria seating.

The latter figures are cost estimations of above ground construction. Cost estimation of basement areas is as follows:

Basement Areas;	Class B	Cost/ sq ft
	Average.	$ 11.09
	Class C	
	Average.	$ 7.15

Site Considerations

The site will be partially landscaped, partially paved, and contain an adequate amount of concrete walk. An estimate cost of total site preparations is not yet possible to determine, though an estimate of the sq ft cost can be approximated.

Concrete sidewalk:	
3 inches thick	$ .40/sq ft
4 inches thick	$ .47/sq ft
Paving:	
4 inches thick	$ .27/sq ft
6 inches thick	$ .33/sq ft
Excavation.	$ .08/cu ft
Fill	$ .09/cu ft
Site Grading.	$ .07/cu ft

Operation and Maintenance Cost

I am not able to accurately estimate operation and maintenance costs until the preliminary design is completed. With

no knowledge of the shape or material of the building I can not assume the type or amount of heating, ventilating, and lighting facilities needed or the amount of maintenance and repair that will be required. I intend to design a building of reasonable quality which will keep operation and maintenance costs to a reasonable minimum.

In considering the figures taken from the Marshall Service Manual, I feel that the contractor cost of Grace Baptist Church will be approximately $15/sq ft. The building will enclose approximately 30,000 sq ft. Thus, at $15/sq ft, the contractor cost of Grace Baptist Church would be in the range of $450,000. This figure can be reduced considerably depending upon the amount of labor invested by the congregation during construction of the building.

The cost of landscaping the site will vary depending upon the amount of paved area versus planted area. Recreation provisions in landscaping the site will be minimum because of the convenient city park facilities.

A building of reasonable quality, which I intend to design, will require reasonably minimum maintenance and operation costs.

Grace Baptist Church will not be a "cheap" building; however I do intend it to be an economical one.

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CONCLUSION

The preliminary design concept forms the best conclusion for this thesis and thus there is little I can state in writing to improve this conclusion. I would like to clarify, however, some changes made in the program which occurred during the design stage.

I found that because of my simplification in organization of functional elements within the sanctuary I needed less area than stated in the program. I had previously estimated 8,000 square feet but used only 5600 square feet in the design concept.

In designing the sanctuary I felt the presence of a radio booth within the space would greatly violate my concept of the space thus the radio booth was omitted. I feel that if there was a desire to put services over the air they could be simply recorded and then placed on radio.

The open concept for class areas required that I include 2,000 more square feet than the program required.

Area alotted for circulation was increased from an estimated 2,000 square feet to 7,700 square feet. I believe this increase is obviously a necessity to properly initiate the proposed concept.

Thus through these changes and several minor ones the proposed design concept included 34,000 square feet, 4,000 square feet over the estimated figure. Considering the

total design concept I feel this added space is well justified.

With this brief statement concerning the program changes I feel the concluding design concept forms a clear and definite statement of the program set forth.

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