

Our inquiry will be adequately pursued, if it is as clear as the subject matter allows it to be. Precision is not to be sought equally in all discussions any more than in all crafts. We must be content in a study dealing with such subjects and based on such premises to point out the truth approximately and in outline, and in dealing with things which are only for the most part true to reach conclusions of the same kind. In this spirit also should everything that we will have occasion to say be received. For it is the mark of an educated man to look for exactness in each class of things only so far as the nature of the subject permits. It is quite manifestly equally foolish to accept probable arguments from a mathematician and to demand of a rhetorician scientific proofs.

— Aristotle, Nicomachean Ethics

A CHAPEL FOR HOLLINS COLLEGE, VIRGINIA  
AS EVOLVED FROM  
OUR HERITAGE OF RELIGIOUS ARCHITECTURE

by

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## INTRODUCTION

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To date, it seems neither architects nor engineers, clergy nor church laity have more than begun to apply the advancements of modern technology to religious architecture. We have produced many revolutionary building materials: steel and various alloys; laminated wood; prestressed concrete; acrylic plastics and resins; not to mention the many advances in engineering and building techniques. Our civilization has produced efficient mechanical means for controlling light, heat, and noise.

The architect of today is faced with no greater challenge than in the field of ecclesiastical building. In becoming aware of our rich heritage of religious architecture we may find the problem even perplexing for from the days of the earliest recorded efforts of man, to the Mid-Victorian Age, the building of temples and churches was the highest form of architectural expression. Looking back we find the great buildings of Greece and Rome were temples. The great buildings of the Middle Ages were cathedrals and monasteries.

But we must realize that the traditional religious forms as such were developed from cultures and circumstances which do not exist today. Labor was abundant and inexpensive. Tremendous amounts of time and resources were expended on churches and few secular buildings existed which could rival them in expanse, in height, or in richness. Evidently the temptation has been too great and the imagination too weak in the majority of contemporary church buildings.

In the development of this design for a non-sectarian chapel at Hollins College, Virginia, the somewhat popular trend of complete

INTRODUCTION

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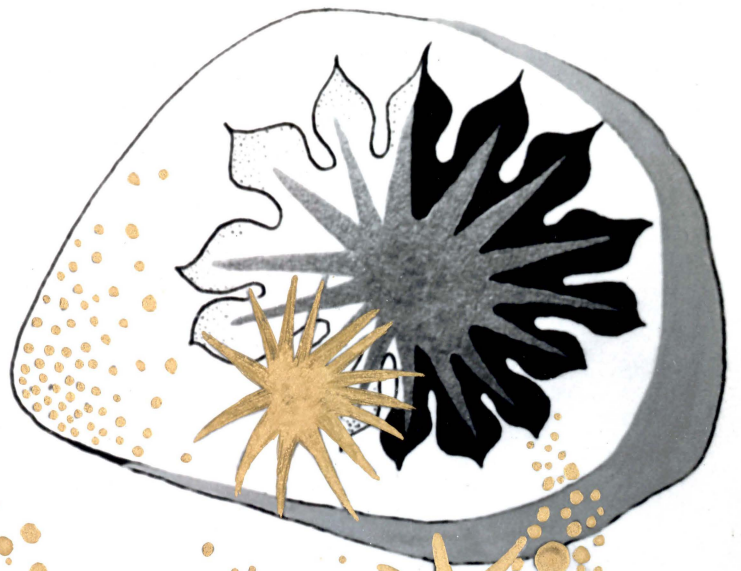
austerity or "functionalism at all costs" has been avoided, and the importance of an integration between art and architecture is considered.

The thesis is divided into Part One, research; Part Two, design, and Part Three, presentation. Some of the most significant examples in religious architecture of the past are analyzed, and symbolism is traced through its development. In Part Two there is an investigation of the physical and cultural needs of Hollins College in relation to the proposed chapel. There are Sections dealing with the functional, aesthetic, and technical aspects of the design evolved; general recommendations for materials and construction; also general recommendations for structural system and mechanical equipment. Part Three is a presentation of the building in the form of photostats of plans, elevations, sections, etc.; photographs of the site, of colored renderings, and of a scale model.

In conclusion it is hoped that this work will contribute in some small way a truly great contemporary idiom.

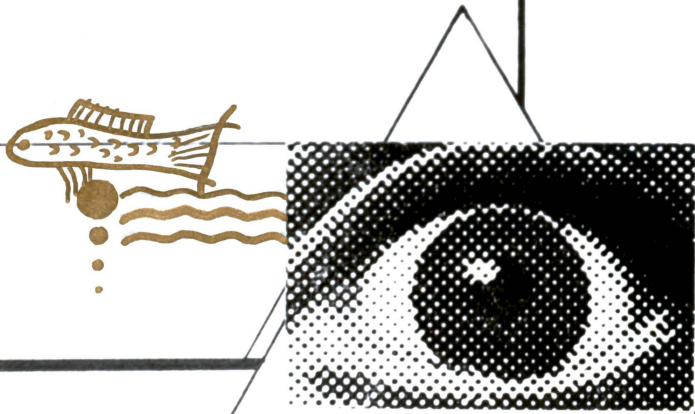
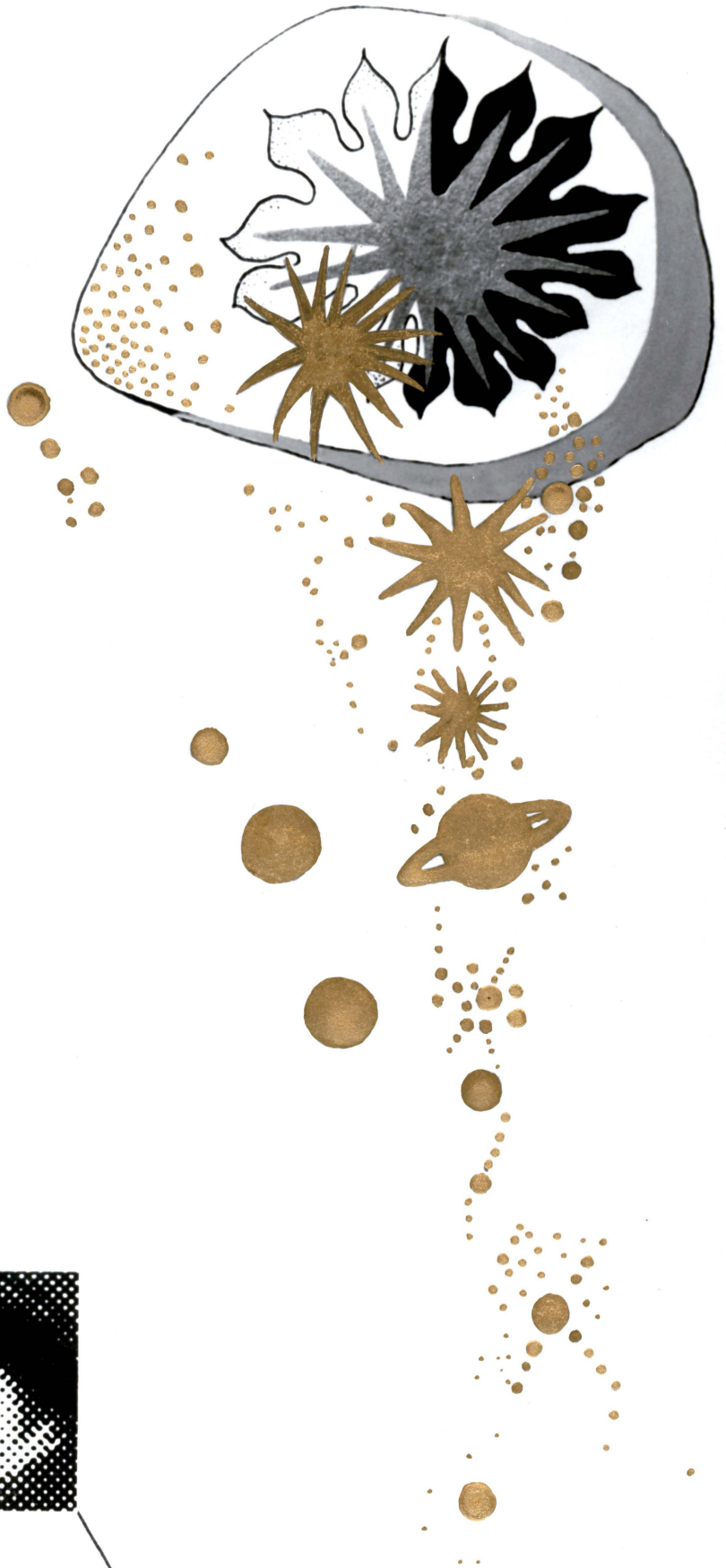
part one

a chapel for  
hollins college



part one

a chapel for  
hollins college



SECTION I

TIME IN RELIGION AND ART

TIME IN RELIGION AND ART

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Art has its roots so deep in human nature that we are obligated to characterize it as a basic instinctive activity and mode of expression. Whatever specific forms the art impulse may take, its essence is to impose upon experience certain categories; to rearrange the data of life into pattern, to regulate, reject, emphasize, systematize, so that the recreated experience may yield to a fuller satisfaction than did the original one. This is the premise from which Albert Bailey in the Introduction of his book The Arts and Religion,<sup>1)</sup> develops his discussion of the antiquity and universality of the arts.

An interesting example which he uses to illustrate his point, and one which most of us have experienced, is as follows: "When as a country boy on my way to school I passed a picket fence, the temptation was irresistible to hold a stick against the pickets in order to enforce through my ear the rhythm my eye had already discovered; and then to further enhance the joy by complicating the rhythm - by swinging my arm in long swoops that made the stick say 'rat-a-tat-tat, rat-a-tat-tat.' Such an act did the fence no good but it did me good; and later it helped me understand what Dr. William E. Hocking meant by his phrase, 'necessary desires' - the desire to impose rhythm and other patterns upon experience."

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1) Albert Edward Bailey, The Arts and Religion. (New York: The Macmillan Co., 1944), p. 3.

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These desires have appeared in all ages and in all races. Religion is also an instinctive phenomenon, if by religion is meant the urge of the soul to make helpful contact with unseen sources of power. Religion likewise has been proven universal and aboriginal. The Neolithic-age graves in the caves of Mt. Carmel, 100,000 years old, reveal burials in the so-called "embryonic" position, which has been interpreted by archaeologists as an expectation that, through the generative powers of mother earth, man will be born again into another life. Excavators of the oldest mounds of Mesopotamia, Crete, Egypt, India, and China, have found gods, cult objects, and the foundations of temples; in the jungles of Yucatan they have explored the wonders of Mayan pyramid-temples.

The relation between religion and the prehistoric arts of drawing, painting, and sculpture came through magic. Cave paintings were not made primarily to be exhibited to an admiring crowd as works of art, but were more often to be used ritualistically in the darkest recesses of the grotto, sometimes half a mile from the entrance. The utterances chanted in their presence by the hunters or the medicine-men were calculated to draw the animals represented in the paintings within reach of spear or arrow. Men are frequently shown performing ritual ceremonies, notably those that produce rain through the agency of the morning star, symbolized by a female figure which has survived into

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historic times as Venus. From such widely scattered bits of evidence we must conclude that art and religion were partners from the start. They remained partners until late historic times when men found that art might serve interests other than religion.

When men emerged from primitivism they brought their human characteristics with them: they continued to be both religious and artistic. Having learned the lessons taught by social experience, they humanized their gods, elevated them into the sky, gave them a conscience and socialized them. They imposed upon them the same types of organization they had evolved for themselves. Their gods became warriors, kings, fathers of the people, guarantors of justice, emperors with international sovereignty. The Egyptian pre-dynastic Set and Horus fought their personal feuds; but Amon of Thebes outgrew his provincial demesne as did his earthly counterpart the Pharaoh, who became the chief of a national pantheon, and finally lord of every land the Pharaonic arms conquered. The Israelite Jahweh ceased in time to be a god of storms; he made covenants that bound both himself and his people to certain loyalties; the people made him the defender of justice and an exponent of pity and redeeming grace. As Mr. Bailey rather blithely puts it, "The Greek Zeus who began as god of the clouds, the rain and the thunder, developed in the direction of a Greek 'tyrant,' and finally, in a pinch, descended from his autocracy to get suggestions from his

### TIME IN RELIGION AND ART

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council of the gods, much as at Athens the archon basileus was obliged periodically to get a vote of confidence from the Athenian assembly."<sup>2)</sup>

That is the noticeable thing about the gods: they persist in growing up. As Voltaire said, "God made man in his own image, and man returned the compliment."

Neither can art remain static. To consider otherwise would be most presumptuous. After the magic-impregnated bison of Altamira came the devotion-impregnated deposition of Fra Angelico. From the "standing stones" of the Semites, and the phallic symbols of the Baals of fertility, grew the Temple of Solomon; and finally arrived the great cathedral which was an instrument whereby man might effect a union of his finite self with the infinite source of power.

### RELIGION IN PAINTING AND SCULPTURE

It probably needs no emphasis that, from the decline of the Roman Empire to the Renaissance, patronage of the arts was almost exclusively confined to the church. Because man can never imagine God as other than the perfection of his own aspirations, the art which is chosen to express and serve Him does not differ as completely as might be supposed from that commissioned to celebrate

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2) Ibid., p. 6.

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the pride of individual man. The general furniture of a church is similar to that of a throne room. The materials are chosen to express the height of dignity, power, and wisdom: gems and glass, stone, wood, metal and tempera. With these came the choir and later the organ.

During the Renaissance, the church, retaining its supremacy as patron of the arts, assimilated both the single picture and the orchestral ensembles as additions to its aesthetic expression. Venice with painters like Tintoretto and composers like the two Gabriels was the leader in this movement. Deterioration began to develop with the seventeenth century. The break between the church and the aristocracy, started by the Renaissance discovery and all that it implied, was widened by the wars of religion. For the first time the church, as patron, was considered by all artists of secondary importance. The church gave way to the palace; the result was instead of religious painting, portraits of the aristocracy.

Under these conditions it is not surprising that the church began to lower its standards, often to the extent of imitating where once it had set the example.

In countries where Puritanism triumphed, the church ceased to patronize visual art for the good reason that the Reforming spirit of Calvinism disapproved. "Beauty, once wedded to Truth as the visible form of Goodness, was now divorced from both, to the

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impoverishment of all three." Painting and sculpture disappeared; windows were filled with plain glass; and religious music was reduced to what could be managed by the untrained voices of the congregation. "Thus the Protestant Church was gradually invaded by the secular spirit, not of wordly luxury, but of hard-heartedness and avarice disguised as austerity."<sup>3)</sup> By the eighteenth century, the churches of Protestant Europe had come to resemble, not ballrooms, but courts of justice.

The revolt against this barbarism started with the Oxford Movement in 1833, when John Keble preached his famous sermon on "National Apostasy." In general, the men concerned with this matter adopted High-Church views as opposed to the Low-Church attitudes of the eighteenth century. The spirit of this movement can still be seen at work, notably in the church of St. Matthew at Northampton, England. For this unpretentious edifice, three works of art have been created: Henry Moore's "Virgin and Child," Benjamin Britten's cantata, "Rejoice in the Lamb," and Graham Sutherland's "The Crucifixion."

Mr. Sackville-West points out that in undertaking to furnish a Christian Church with expressive images (in stone, sound, and paint), three important contemporary artists have shown that modern

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3) Edward Sackville-West, Church Art, (Vogue, March 1948). p. 203.

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artistic methods are far from incapable of expressing traditional religious emotion.

However, these examples are only signs of a new era which may or may not develop. In the past century the patronage of art has, for the most part, been in the hands of ignorance and philistinism. In England, the state has only begun to take over from the individual, and it is too early to foretell whether this movement will prove favorable to individual genius or will merely be devoted to perpetuating the methods of nineteenth-century academism.

Since the power of supernatural sanction has been enormously weakened in the Christian churches, Christian leaders must now rely on various forms of persuasion, of which art is not the least effective. As Mr. Sackville-West discusses, there is nothing derogatory in such an approach, for until the Reformation no one thought of looking upon religious art as a sign of spiritual weakness. Surely one of the foremost tasks of the church today is to revitalize the Christian symbols by inspiring in contemporary artists a belief in their spiritual and aesthetic efficacy. To do this means throwing away the accumulated rubbish of the past and seeking out the underlying fundamentals.<sup>4)</sup>

From the beginning of time religion has found a medium of expression in painting and sculpture. These arts have been able

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4) Ibid., pp. 202-204.

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to serve man's deepest needs by making visually concrete, though often abstractly, the powers of persons, beliefs, and values associated with religious experience.

Today, religious art can challenge us. It can make the affirmation that religion is worth our attention and that art is an authentic expression of it. In these days it is smart to deny the claims of religion. "A materialistic philosophy endeavoring to interpret a material universe has by-passed some of the most essential goods of humanity and has led this generation into cynicism and atheism."<sup>5)</sup> Santayana straddles the gulf between his philosophy and his Catholic inheritance by saying "There is no God, and Mary is His mother". This jokester may be remembered for this if for nothing more significant.

RELIGION AND ARCHITECTURE

Architecture being several millenniums younger than painting and sculpture, was possible of realization not only after men ceased to live in caves but after they had acquired enough leisure and surplus wealth to build enduringly. However, their structures were not considered architecture until an expression of symmetry, balance, proportion and rhythm had modified their crude earlier attempts. The first emergency of these aesthetic

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5) Bailey, op. cit., p. 8.

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satisfactions cannot be determined. Sir C. Leonard Woolley has reported temple structures dating from the early fourth millenium B. C. which exhibit the basic principles of architectural design and decoration at Uruk, Kish, and Erech in Mesopotamia. Monumental architecture in Egypt began with the terraced pyramid at Sakkara (III Dynasty, 28th century B. C.), but these buildings were stone translations of earlier reed-and-mud, or mud-brick, structures. All the early survivals were either temples or mortuary shrines.

One of the earliest purposes in these structures was remembrance. Also since religion is not merely an individual matter but belongs to the family, the tribe, and the community, the shrine must be adapted to communal worship. We might say, then, that religious architecture is the expression of certain fundamental human needs: the need to commemorate both gods and holy men, holy places and doctrines; the need to provide a dwelling place, actual or symbolic, that should be worthy of deity.

At one time the temple was regarded literally as the god's house. Then the architecture served as a palace to facilitate the god's living in state. For example, in the temple of Horus Edfu, Egypt, the god dwelt in the darkness of his chamber toward the rear of the inner structure. His bedchamber was a room cut from a single stone and fitted with bronze doors, behind which he had absolute privacy. This chamber was in the center of a larger room where the

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functions of eating, being washed and dressed, consulted and entertained were performed. Around this living room were cubicles used as storage rooms for the god's clothes, regalia and treasure. In front of these personal rooms were two antechambers where the god's servants stood guard; beyond there was the hypostyle hall which served as a Hall of Audience. Before the tall facade of the house was a court open to the sky and enclosed by a cloister. On feast days the processions of the priests, priestesses and sacrificial animals gathered there after marching through the town. (See illustrations at the end of this section.)

Through many centuries these general arrangements persisted relatively unchanged. Later, the palace idea became more and more a metaphor, and preaching was added as a technique for propaganda and inspiration. The palace became a church to create the moods of worship, or inspiration, of self-dedication. This change in point of view, and consequently in structure, went forward through many centuries and culminated in the European cathedrals of the thirteenth century. "Since that date religious architecture has remained stationary in its ideals though declining in its accomplishment because religion has lost its position of primacy."<sup>6)</sup>

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6) Ibid., p. 18.

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FOUR GREAT PERIODS

In the following section of this thesis case histories of certain churches which reflect the ideals of four successive periods will be studied in their relationship to the religious demands of their age. These churches are Old St. Peter's in Rome, built in the fourth century by Constantine; the church of Divine Wisdom or St. Sophia, built in Constantinople by Justinian in the sixth century; the North-European churches of the ninth to eleventh centuries typified by the imperial monastery of Centula in north France, St. Benigne at Dijon in eastern France, and Santiago de Compostela in Spain; and the twelfth-century monastery church of Cluny in eastern France. The changing influences of time, race, ritual, and social organization will be followed through this great era of building.

Writers at present, with their much more extensive data, have been able to show that the Gothic miracle came as the crowning development in a long and ordered process. We are able to see the Gothic achievement not as a momentary incandescence of spirit, but as the embodiment of architectural thought and ideas worked out over a period of nine centuries.

Dr. John Conant, in his lecture under The Ayres Lectureship of Colgate, has followed this development by studying four critical episodes in the history of church building before the

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Gothic period. For the purposes of this analysis, Christian architecture only will be considered. This is not to ignore the tremendous influence of other religions, but is in the interest of clarity and brevity.

The earliest Christian architecture did not have a style as such. The new religion used buildings of ordinary character, houses of various types, more or less transformed for worship, or halls of various sorts, including some resembling mystery temples, and basilican synagogues, and funerary meeting places at, or below, the surface of the ground. By the year 300, the Christian population of the Roman Empire numbered from five to six million with perhaps half of the population in Asia Minor.

If any type of church building was dominant in that area, it was one which resembled the basilican synagogues of Palestine or the hellenistic basilicas of later times.

In 303-404 A. D. Diocletian's decree brought about the destruction of this earliest Christian architecture, but good came out of the catastrophe, for an immense and consistent building program was undertaken under imperial auspices soon after the Peace of the Church. The buildings no longer expressed merely the space needs of the local congregations. They had to express something of imperial majesty because the Church had become a recognized organ of imperial society.

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Several conspicuous early Christian churches were clearly designed to accommodate congregational worship by the entire Christian contingent of populous cities; this posed a problem on the scale of the grandest civic architecture of Roman times. It is perhaps fair to say that Christianity was the only living and growing thing in the late Empire; consequently its architecture was the only living architecture - the problems of civic and domestic building had already received their solutions.

"Thus it was that in Constantine's reign church architecture became not merely monumental and imperial; it became the premier architecture of the whole Mediterranean basin and vast regions beyond. It retained its preeminence thereafter almost without interruption until the seventeenth century. New problems were oftenest broached in church building, and the solutions achieved there were applied in other structures."<sup>7)</sup>

OLD ST. PETER'S IN ROME, 326 A. D.

The key monument of Early Christian architecture was the old basilica of St. Peter in the Vatican, built by Constantine and dedicated in 326 A. D. It was built on the site of the Circus of Nero in which the saint for whom it was named met his death and near which he was buried. The Constantinian basilica was demolished in the early 16th century to make way for the Renaissance basilica of the same

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7) Bailey, op. cit., pp. 71-89.

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name, but its form is well known from drawings and descriptions. (See illustrations at the end of this section.)

The structure consisted in general of two parts, the atrium and the church proper. The atrium that stands before the church building was an open court surrounded by columnar porticoes with a fountain in the center. Its general architectural character resembles that of the similarly named part of the Roman house from which it was probably derived since the form doubtless provided for certain features of the rites celebrated in the church which had been developed earlier, when such celebrations were held in the homes.

"The church of St. Peter's was divided internally into five aisles extending almost its entire length and separated from each other by rows of columns; the central and largest of these is called the nave, the others being the side aisles. At the opposite end of the nave and side aisles from the entrance is another aisle or space of which the longitudinal axis is at right angles to that of the main body of the church. This is called the transept and is a feature found as a rule only in the largest of the Latin basilicas where it usually projected beyond the side-aisle walls, giving the entire plan the shape of a capital letter T. Opposite the end of the nave on the other side of the transept, a semicircular space called the apse is located. In it, or directly in front, stood the

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altar with the throne of the bishop placed at the end and flanked by the seats of the lesser clergy forming a semicircle."<sup>8)</sup>

Some of the Roman basilicas were vaulted, but most of them appear to have had wooden roofs resting on clearstoried walls which were supported by columns; the division of the interior into spaces corresponding to nave and side aisles with apses at the ends is also well substantiated.

Old St. Peter's has always been one of the world's largest churches, for the church proper would accommodate a standing congregation of about forty thousand people. The whole solution at St. Peter's was so masterly that it has been repeated with variations in every subsequent age down to the present. Where Christian architecture was first declared to the world, Old St. Peter's was the most influential church design ever composed.

ST. SOPHIA, ISTANBUL (CONSTANTINOPLE) 532-537 A. D.

Permanence was first achieved for church architecture in eastern Christendom by the Byzantine style, created in Byzantium. The Byzantines considered themselves Romans, but the creative episode in their architecture began when they gave up heavy Roman vaulting methods and introduced the thin shell brick vault of ancient Mesopotamia. A curious fact is that this half-oriental style

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<sup>8)</sup> D. M. Robb and J. J. Garrison, Art in the Western World (New York: Harpers, 1942), pp. 110-111.

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exhibits unmistakable theoretical similarities to Gothic. The resemblances are technical not superficial.

"Byzantine and Gothic both plan for fireproof interiors with a minimum of heavy pier construction, both sustain the upper and middle portions of a building on stilt-like supports, passing the vault-thrusts on to outer positions; both use a repeating unit-element of structure with corner supports and curtain walls, usually non-supporting window screens; both use thin web vaulting of double curvature; both employ ribbed structures, and functional curves are used in both, instead of the semicircular classic arch."<sup>9)</sup>

With Byzantine, as with Early Christian architecture, the key monument is an imperial church. Hagia Sophia or Divine Wisdom was built in Constantinople in 532 A. D. by Justinian I. (See illustration at the end of this section.) It is the most impressive and the most creative Byzantine building because here the domed cross unit was first used in repetition to form the complex of a great design. This building presents one of the finest examples of the use of light in architecture. "The Byzantine architect understood light and used it as one of his materials," observed Thomas Whittemore.

"The building is oriented on a northwest-southeast axis with the apse pointing in the latter direction and is almost a square in plan measuring about 240 feet in length and 107 feet in width. This is

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9) Bailey, op. cit., pp. 77-78.

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covered, with the exception of the spaces immediately inside the portal and in front of the apse, by a dome on pendentives, whose diameter is equal to the width of the nave, and by two half-domes flanking it on the principal axis of the structure. These half-domes are also buttresses for they oppose their masses against the thrusts exerted by the principal dome along the main axis of the building. In this function they are aided by smaller half-domes of which those at the east end may be seen in a view of the interior. The side thrusts of the central dome are not so effectively handled for they are opposed only by the heavy arches connecting the piers."<sup>10</sup>)

The pattern of space volumes in the Byzantine church is more complex and subtle than that of the Roman temple, and the definition of the forms enclosing them is softened by the gleam and color of the patterned marble and mosaic covering them, as if it had been the architect's intention to emphasize the emptiness of the space, as the significant element of the interior.

However, the Byzantine architect could never forget the significance of the tangible and concrete as his western co-believers had done. "If the marvelous unity of the Byzantine structure seems infinitely more impressive than the incoherent and fragmentary patterns of the western churches, it is none the less the final statement of an attitude that long persisted but never surpassed its first comprehensive statement. Whereas the humble Latin basilica was but the first step toward the realization of the most expressive

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<sup>10</sup>) Robb and Garrison, op. cit., p. 119.

TIME IN RELIGION AND ART

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religious architectural form the occidental world has seen - the Gothic Cathedral."<sup>11)</sup>

ROMANESQUE

When the barbarians were Christianized, the bold imaginative powers of paganism were put to the service of church architecture. The fact that the barbarians transformed church architecture is a true sign that they made Christianity their own with their special contribution of dramatic composition.

The development of dramatic composition in occidental architecture cannot be understood from existing churches. We are dependent on the investigating medievalist, the architectural detective, for our knowledge of its long process. The development went forward largely in the monasteries, where learning and the arts took refuge from the decline of ancient civilization. The first developments took place in the area now called France.

The creative step was taken in combining the basilican church with the staged tower or spire. However, staged towers were already known in classic architecture; the Pharos at Alexandria was built many centuries before the first north-European tower forms of which we have report.

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11) Ibid., p. 121.

TIME IN RELIGION AND ART

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These emphatic vertical elements were not entirely exterior, for lantern towers were common, sometimes with telescopic effects in the upper stages. The belfries and stair turret were functional, as were the chapels occasionally housed in the tower-tops.

During Charlemagne's time, the tower and spire motif occurred in much more highly organized compositions. The imperial monastery of Centula or St. Requier had, for instance, an atrium with a small tower-chapel over the entrance on each of the three outer sides. Thus was formed one of the most imposing west fronts yet built in church architecture.

Steep roofing in the northern tradition also contributed to the dramatic composition of these early medieval buildings. All of the elements used in plan and superstructure to produce dramatic composition made the actual construction of a church more difficult than before, especially as the monks and their engineers looked to Roman models. Roman engineering was created and developed with very different problems in view, and it was incapable of satisfying the legitimate aspirations of imaginative medieval church builders. Engineers in the West learned by using Roman forms, and when they had pushed them to the limit, technical skill was such that a radically new structural unit element was invented, specifically applicable to the most highly involved church designs.

TIME IN RELIGION AND ART

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The late eleventh and twelfth centuries demanded great width of span, brilliance of illumination, slenderness of supports, and dynamic composition of church interiors. The early medieval monks, for whom Romanesque architecture was invented, had not been so exigent, for most of the monasteries were in rustic situations or small towns, and much of the monastic liturgy was performed at night. The great pilgrimage churches stretched Romanesque architecture to its utmost, and a special circumstance posed even greater requirements at the monastery church of Cluny. Romanesque was never intended to supply such floods of light or such open spaces as were needed in the ensuing cathedral age, when the greatest religious buildings were built to receive cities-full of people at festival time.

The great church at Cluny was very elaborate and complex in plan. Greatly improved technique permitted the architect to undertake a span of 32 feet. The eastern part of the building, with many apsidal, stepped, intersecting, and tower forms proved stable. But not the imposing five-aisled nave which was built in part for extra altar space, but more especially as a dramatic setting for the Cluniac processional liturgies. The 250 foot length of the basilican nave could not safely be built without lateral support. After a partial collapse in 1125, it was repaired and provided with archaic flying buttresses.

TIME IN RELIGION AND ART

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GOthic CATHEDRALS

In the great Romanesque building at Cluny, as in earlier Byzantine structures, we find premonitions of the Gothic solution of the problem just discussed. Pointed arches, approximate catenaries, ribs, thin-web vaulting, and the corner-supported bay with screen window-wall all occurred, but were dispersed here and there in the building not creatively combined as they were to be in Gothic.

In the narthex at Cluny the designers were groping toward this type of structure. At St. Denis, royal abbe and pantheon, Gothic architecture was really invented, and it was built on a limited scheme with understanding, (at the same time being provided with embellishments in sculpture and stained glass which were forerunners of the greatest Gothic achievements.) Perhaps at Laon we find the first assured design which shows a new esthetic expression fully consonant with the new engineering.

"The nave of Notre Dame in Paris (c.1180-1205) was the first to have assured lateral support by flying buttresses planned integrally from the beginning, and here the height (107 feet to the crown) exceeded that of Cluny for the first time. More logical and complete, though still with lingering traces of archaism, is Chartres (1194). Here a Gothic nave first reached the height of the vaulted Basilica of Constantine in Rome (120 feet), but the 83-foot span there remained out of reach; the usual wide spans in

TIME IN RELIGION AND ART

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Gothic are about 40 feet. It should be said, however, that the majesty of these medieval buildings goes utterly beyond dimension. They offer effects of light, perspective, and color which were hardly surpassed. This breath-taking development was possible because the available stone was admirable for the purpose, and because the masons and carvers had an understanding and skill which is almost past belief."<sup>12)</sup> (See illustrations at the end of this section.)

When the technical stage marked by Chartres had been reached, and the beauty of its interior design had been given to the world, there ensued such a surge of church building as the world had never seen. Monumentality, permanence, and dramatic composition belonged to the new cathedral buildings by inheritance. The new structural element gave them an unequalled unity. In its perfection this element had not only new freedom, but a new aesthetic potentiality which answered one of the most constant desires of the medieval architects. Since the fifth century, these men had sought the vertical by repeated emphasis on aspiring forms. Those features were at first exterior, and only in special cases effective from within as vertical elements. Later the interior proportions and membering developed an unmistakable trend toward verticality.

Infinite variety is probably the keynote of Gothic style, whether it be a matter of the details of a single structure or the

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12) Bailey, op. cit., pp. 71-88.

TIME IN RELIGION AND ART

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different types of building in which it is found. In this characteristic is found a clue to the fundamental purpose of all creative thinking of the era - to construct a system in which the multiplicity of nature should be resolved into order as a symbol of the pervading unity that was God. It was because of the Gothic architect's success in creating such a symbol that in the cathedral of that time it is possible to realize, to an extent not approached before or since, the validity of religious experience.

REPRESENTATIVE RELIGIOUS BUILDINGS  
OF THE PAST

ROSE WINDOW  
NOTRE DAME

NOTRE DAME  
PARIS

CHARTRES CATHEDRAL

HAGIA SOPHIA  
CONSTANTINOPLE

PLAN OF  
HAGIA SOPHIA

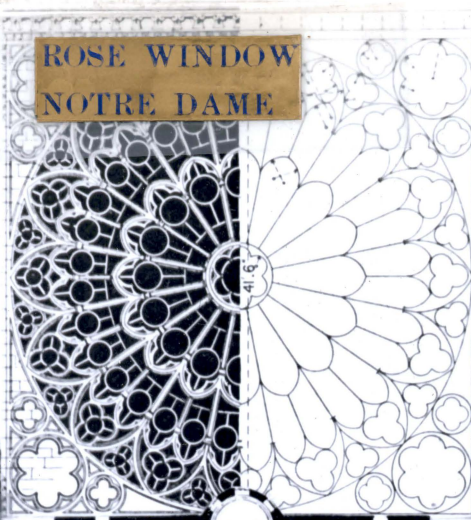
TEMPLE OF HORUS  
EDEU

OLD ST. PETER'S  
SECTION (RESTORED)

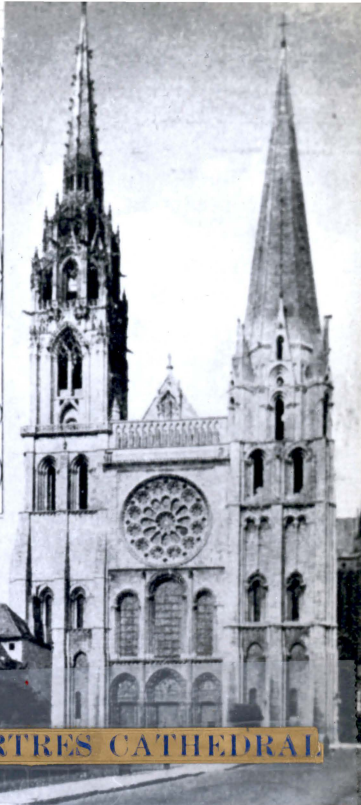
OLD ST. PETER'S  
EXTERIOR (RESTORED)



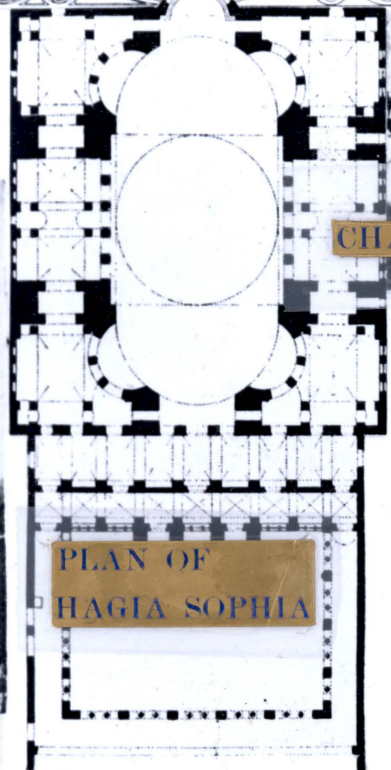
NOTRE DAME  
PARIS



ROSE WINDOW  
NOTRE DAME



CHARTRES CATHEDRAL



PLAN OF  
HAGIA SOPHIA

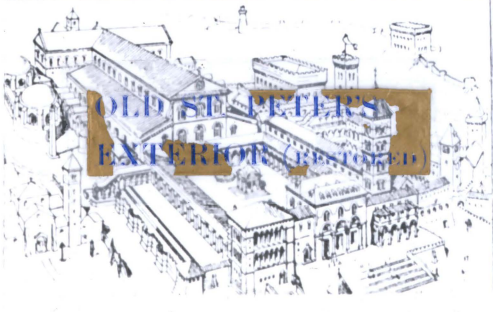
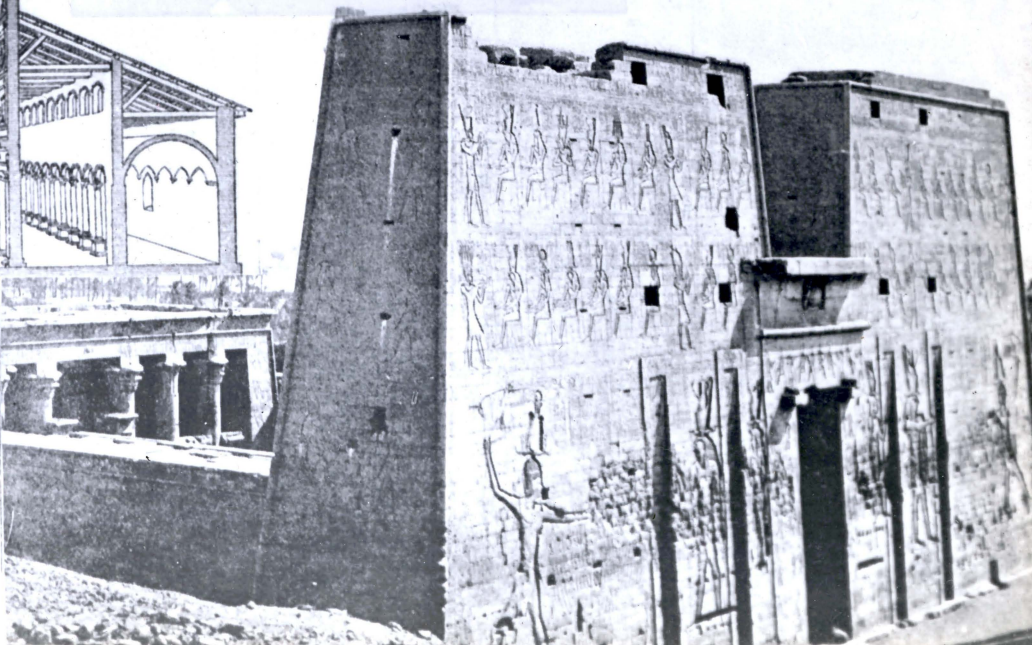


HAGIA SOPHIA  
CONSTANTINOPLE

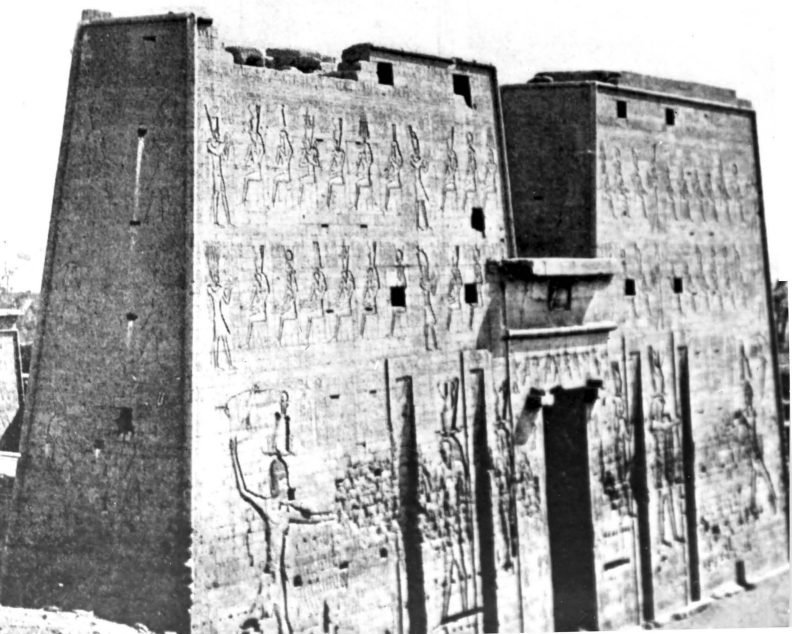
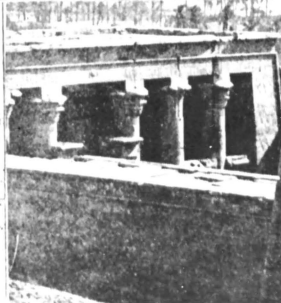
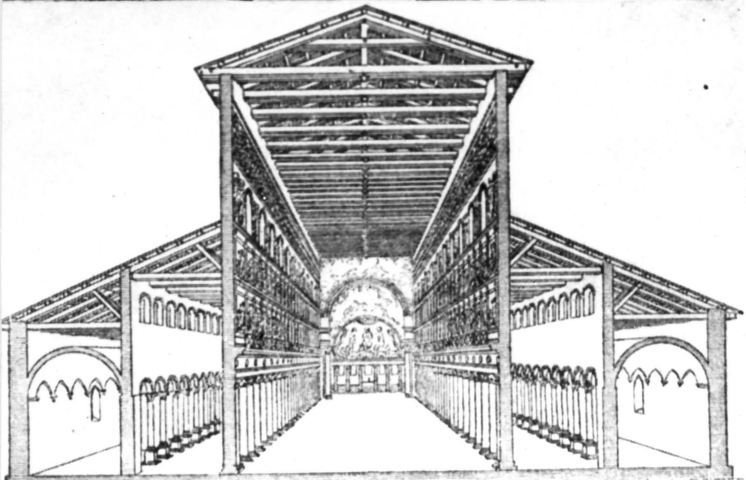
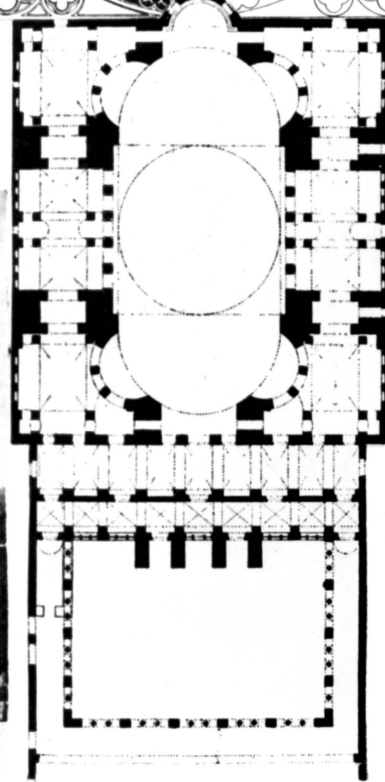
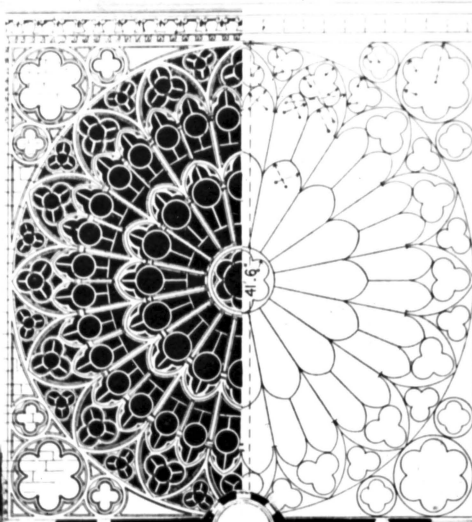


OLD ST. PETER'S  
SECTION (RESTORED)

TEMPLE OF HORUS  
EDEFU

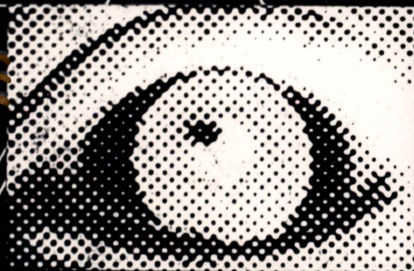
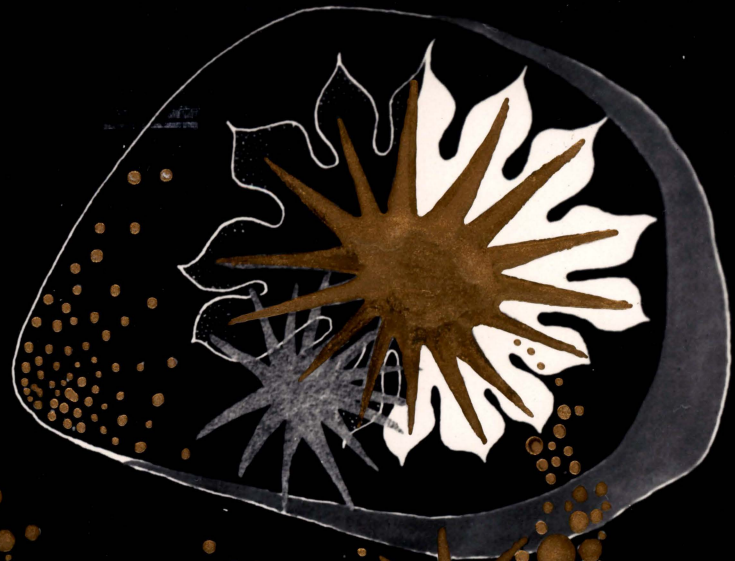


OLD ST. PETER'S  
EXTERIOR (RESTORED)



# part two

a chapel for  
hollins college



SECTION II

RELIGIOUS SYMBOLISM

RELIGIOUS SYMBOLISM

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"All sensuous things to which a higher meaning, aside from the natural significance, is attributed are symbols. All religions are measurably symbolic in character. The expression of spiritual truths and abstract notions by analogous phenomena in the physical world has been common to all peoples and religions. To communicate these conceptions to others, and to fix them by the laws of association, it is necessary to give them formal expression. Hence, the successful teaching of the doctrines of a religion must in some way involve symbolism."<sup>13)</sup>

Most assuredly one can worship God in a barn or a hall or any kind of structure, completely devoid of symbolism or religious character, but under such conditions the need for discipline of mind is great. However, today there is general consent that "as an offset to the secular and paganizing influences which press upon us relentlessly in our daily lives, the church structure and its appointments should speak to us overtly of the higher life and of communion with that which is divinely uplifting and enobling."<sup>14)</sup>

This was further discussed by Thomas Stafford in his treatise on symbolism: "Christian teaching deals, in part, with supernatural elements which can be vividly suggested to the human mind only by symbolic words and signs. Religion like life, escapes formulas."<sup>15)</sup>

An even more conclusive attitude is taken by another author who writes: "Symbolism in religion is of the nature and of the

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13) Charles W. Bennett, Christian Archeology. (Eaton and Mains 1898), p. 72.

14) Thomas A. Stafford, Christian Symbolism. (New York Abingdon-Cokesbury Press, 1942), p. 71.

15) Ibid., pp. 17-21.

RELIGIOUS SYMBOLISM

perennial need of the classic method in art. The person who claims to have no interest in symbolism talks nonsense. He cannot read the morning paper--for every word is symbol. He could not sing 'The Star Spangled Banner'. Some sort of symbolism is necessary to communication of any kind."<sup>16)</sup>

The subject of Christian Symbolism is of wide scope and cannot be treated exhaustively in limited space. In this section of the thesis only the more common symbols which evangelical churches can consistently use will be discussed. Many symbols have lost their significance during the years.

The term "evangelical churches" means the denominational bodies which cling closely to the doctrines derived more or less directly from the New Testament, and which accept two sacraments: Holy Communion and Baptism.

DEFINITION

The word symbol is derived from two Greek words, syn, meaning together, and balacia, meaning to throw. Hence, symbolism, a sign or token, implying the throwing together of an abstract idea and a visible sign; the sign serving to recall it, not by picture.

SYMBOLS OF GODHEADThe Father

The hand is the most ancient symbol of the father in the Godhead. This symbol represents the creative power of God. It is

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16) Von Ogden Vogt, Art and Religion. (New Haven: Yale University Press, 1929), pp. 90-99.

RELIGIOUS SYMBOLISM

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often referred to by its Latin name, Manus Dei. (See illustration on page 47.)

God is often represented in Christian art by the Hebrew letter Yod enclosed in an equilateral triangle. Yod is the first letter of the word Yahweh. The triangle with three equal sides is used to represent the Holy Trinity. (See illustration on page 47.)

A very impressive symbol of God the Father is the All-seeing Eye, ecclesiastical use of which originated in the sixteenth century. It was frequently used in Great Britain, and was usually placed on the wall directly behind the pulpit, to express the omniscience of God. As a symbol of the power, majesty and omnipresence of God, it is considered by most authorities as appropriate for use in a church window above an altar. (See illustration on page 47.)

The fish is one of the earliest and most complex symbols used by Christians to represent the Savior. Clement of Alexandria 150-220 A.D. mentions and recommends the use of this symbol, but does not explain its significance, a fact which indicates its wide usage at that time.

The fish was probably used by the persecuted Christians as a means of avoiding the attention of the Roman police. Most authorities agree that when displayed outside a pagan home, it indicated that a funeral banquet was to be held for the dead, but when it appeared outside a Christian home, it was a sign that the Lord's Supper would be celebrated there secretly at night. The pagan Greeks often carved the

## RELIGIOUS SYMBOLISM

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figure of a fish on tombs because they believed that a fish or dolphia carried the soul of the deceased to the isles of the blest. The early Christians ate roasted fish in commemoration of Christ's Passion, and the present-day Roman Catholic custom of eating fish on Good Friday is a survival of this ceremony.

The sun is a Messianic symbol of Christ. It is very important in Christian Symbolism. The monogram as illustrated in the figure represents the first three letters of the word "Jesus" in Greek. The form of the letters, however, is Gothic. The circle surrounding the monogram, represents eternity. The rays, which are alternately straight and wavy, indicate glory. (See illustration on page 49 .)

### The Holy Spirit

The most used and most authentic symbol of the Holy Spirit is the descending dove with the tri-radiant nimbus. This is one of the earliest forms used to represent the Holy Spirit and is one of the most beautiful symbols used in Christian art. It is the preferred symbol for baptismal founts. (See illustration on page 49 .)

The Holy Spirit is sometimes represented indirectly as a cloven flame or fire, or as seven flames. The seven lamps have also been used as symbolic of the Holy Spirit.

## SYMBOLS OF THE HOLY TRINITY

The belief in the Threeness of God is a basic element of Christian faith. Early in the life of the Christian Church, the doctrine of the Trinity became a point of prolonged, and sometimes bitter,

RELIGIOUS SYMBOLISM

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controversy.

In our own day, a theologian, with a flair for employing science in the explanation of this doctrine, has written a book in which he seeks to prove Threeness and Oneness as attributes of the Space-Time-Matter structure of the universe, as well as of its Creator. He points out that Space is composed of three essential and mutually dependent dimensions: (arguing that "the fourth dimension", so-called, is functional rather than dimensional).<sup>17)</sup>

Matter has three phases; namely, energy, motion and phenomena resulting from latent energy set in motion. Within Space, Time and Matter, respectively, the three essential constituent elements of each are mutually dependent. Likewise, Space, Time and Matter are interdependent, and they must be conjoined in order to produce the universe. Hence, he finds support for the reasonableness of belief in the character of the Divine Trinity as expressed in the Christian Creeds. If one is not content to let this complex doctrine rest entirely in the realm of mystery, he may find help in this view of the nature of the universe as a reflection of the nature of its Creator.

Perhaps the most commonly used symbol of the Trinity is an equilateral triangle. An ambivalent symbol, used for the Trinity, is the double triangle. In Christian usage, it is merely an elaboration of the first symbol. In Jewish usage, this symbol is nearly always found in the decoration of modern temples, and is variously called the Star

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17) Edwyn R. Bevan, Symbolism and Belief. (New York: The Macmillan Co., 1934), Chap. 4.

### RELIGIOUS SYMBOLISM

of David, the Shield of David, or Solomon's Seal. (See illustration on page 48.)

The Fleur-de-Lys (French: Flower of the lily) is the iris, which is used to represent the purity of the Virgin Mary, as well as to symbolize the Trinity. In heraldry, it was the emblem of the former royal family of France, a use probably derived from ecclesiastical art. (See illustration on page 48.)

### SYMBOLS OF DOCTRINE & IDEAS

The rose is the symbol of Messianic promise. "The prophet Isaiah foretells that the desert shall rejoice, and blossom as a rose."<sup>18)</sup> The form of the rose in this symbol is conventional and it is said to have first been used about the thirteenth century. (See illustration on page 49.)

One of the characteristic features of Gothic architecture is the pointed arch which signifies aspiration and striving for growth in the spiritual life.

The palm leaves, like the crown, are used to signify the regard of the "faithful in the life that lies beyond the death of the body."

The lamp is a symbol of the word of God.

The lyre is a symbol of music, and in Christian art, it signifies sacred music.

Grapes signify the sacrament of Holy Communion or the Eucharist. Twelve bunches of grapes signify the Twelve Apostles.

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18) Stafford, op. cit., p. 86.

## RELIGIOUS SYMBOLISM

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### SYMBOLIC STARS

Both in the Old and New Testament stars figure prominently in the symbolic language of the Scriptures. The five-pointed star, with rays emanating from it, is known as the Star of Jacob, or the Star of Jesse. The five-pointed star is sometimes grouped with symbols of the Virgin Mary. This is uniquely appropriate, for the Hebrew word for Mary is Miriam, which means a star.

The six-pointed star has been discussed previously as a compound Trinitarian symbol. "It is sometimes employed as an emblem of God the father, the six points referring to his attributes: power, wisdom, majesty, love, mercy, and Justice."

The seven-pointed star known as the "Mystic Star" is a symbol of the "seven gifts of the Holy Spirit."

The eight-pointed star is the "Star of Baptism" or the "Star of Regeneration", for the number eight is symbolic of rebirth. (See illustrations on page 50.)

### SYMBOLISM OF COLOR

In those churches which observe the Chronology of the Christian Year closely, it is customary to change the color of the ornamental hangings upon the altar, pulpit and lectern in accordance with the church season. Color is used as a sign of the mood of a church festival.

The use of color in this way could add immeasurably to the variety and the emotional content of services throughout the year.

The accepted ecclesiastical interpretation of color is as

RELIGIOUS SYMBOLISM

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follows:

Green, being the most evident color in nature, regarded as the universal color. It is symbolical of hope.

Red, "symbolizes blood, fire, Christian zeal, the work and ministry of the church."

White, (or White and Gold) signifies purity, light, rejoicing, the Godhead.

Black, signifies mourning.

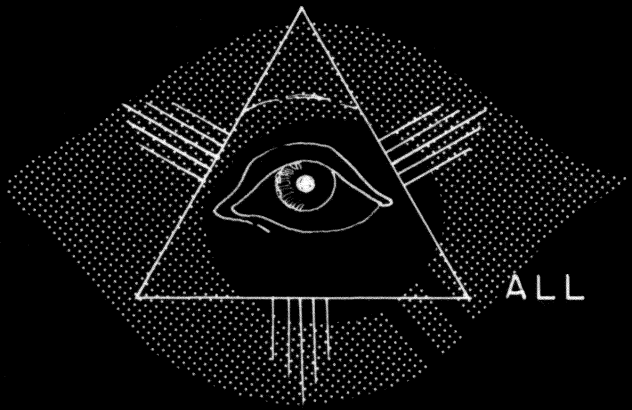
Purple, or Violet signifies penitence, watching, fasting.

19)

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19) ibid., p. 137.

SYMBOLS OF GODHEAD



ALL SEEING EYE

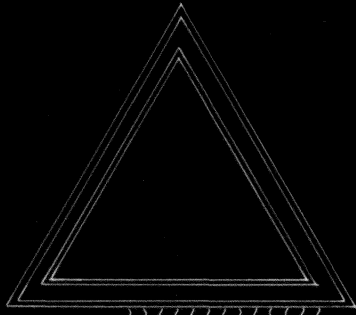


HAND OF GOD

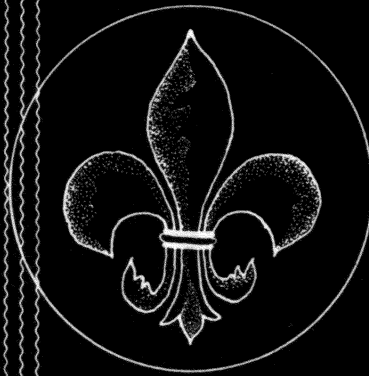


YOD IN  
TRIANGLE

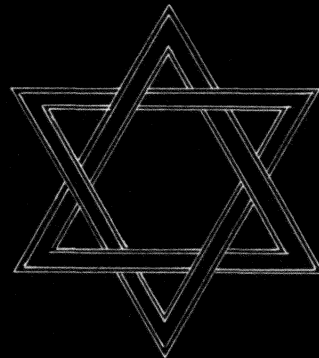
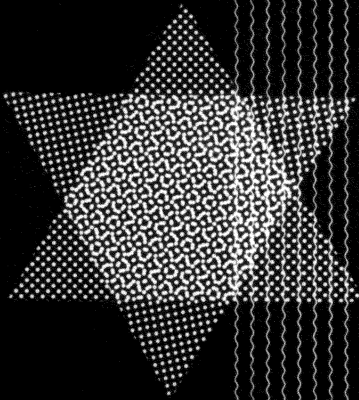
SYMBOLS OF THE TRINITY



EQUILATERAL TRIANGLE

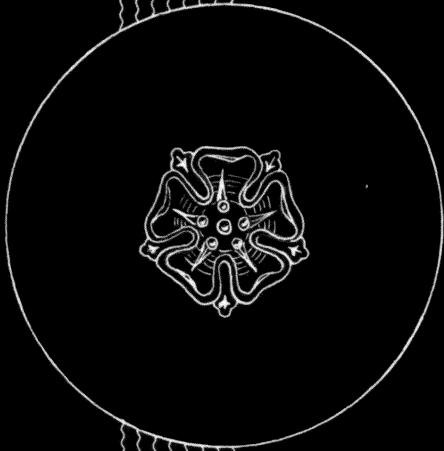


FLEUR-DE-LYS



TWO TRIANGLES

SYMBOLS OF DOCTRINE AND IDEAS



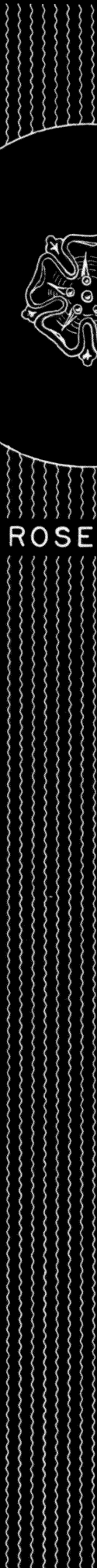
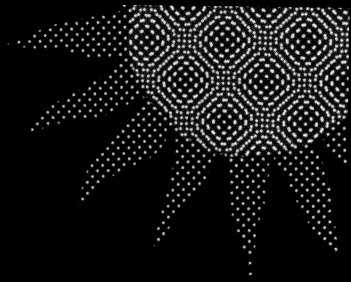
ROSE



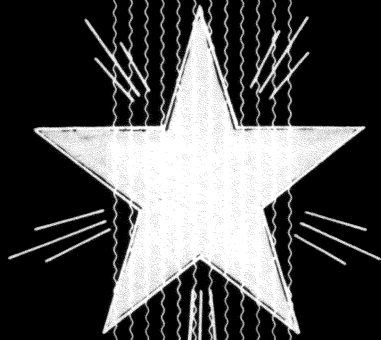
DESCENDING DOVE



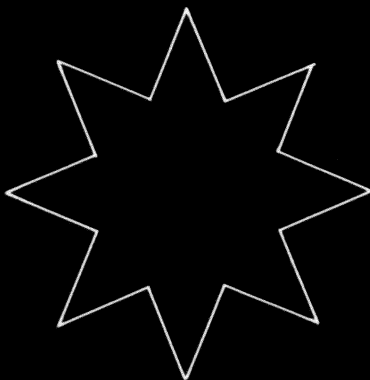
SUN OF RIGHTEOUSNESS



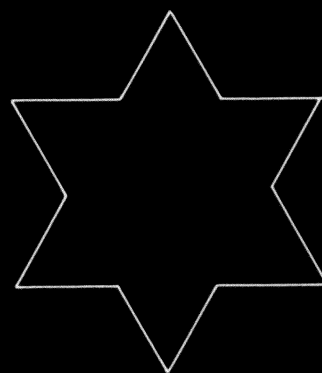
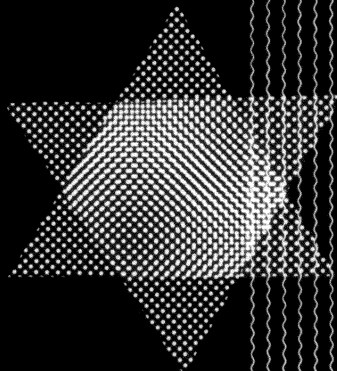
SYMBOLIC STARS



FIVE - POINTED



EIGHT - POINTED



SIX - POINTED



SECTION III

CONTEMPORARY CHURCH DESIGN

CONTEMPORARY CHURCH DESIGNREALISTIC PLANNING AND THE INTEDENOMINATIONAL BUREAU OF ARCHITECTURE

The Intedenominational Bureau of Architecture, maintained cooperatively by the major Protestant denominations, has tried to spread comprehension of church planning as a distinctly two-fold operation. It states that before the architect ever comes into the picture, the church, through its building committee, should make a complete program analysis and a statement in its own language, of practices, objectives, and requirements. The architect, in turn, should study this document and should have thorough knowledge of it before he commits himself to the job in any way. His possible suggestions as to additions, modifications or omissions in the program will be received with much greater understanding after his clients have thoroughly aired and drawn up their views among themselves. He should expect, and insist upon receiving a committee--prepared statement of the program, just as he does a survey of the plot.

Further lack of understanding is brought out in an article by E. M. Conover, Director of the Intedenominational Bureau of Architecture. "At the very worst, in a few cases there is an attitude still to overcome, against even simple comfort and efficiency in churches as somehow inconsistent with the true essence of religion. These minds must be persuaded that early Christianity flourished not because of the catacombs, but in spite of them. In other cases, there may be a disposition to regard provisions for good lighting, hearing,

## CONTEMPORARY CHURCH DESIGN

heating, and air-conditioning not as concessions to Mammon, but as desirable and even provocative religious adjuncts. However, committee members who favor them in the abstracts, when it appears that their adoption in the program will necessitate modification or elimination of sentimentally cherished forms, cling tenaciously to the latter."<sup>20</sup> Enlightenment here may come along the lines of showing that powerful religious expression in past architectures came not as a result of miracle or revelation, but through the progressive and innovative use, by men, of the best materials, skills, and methods available to them in their times. This view does not deny that they were inspired by great faith and a sense of supreme purpose, a spirit that we must have in our own times for like expression. But, also, it does not imply that their forms are sacrosanct, nor that our persisting imitation or tokens of them show us to be similarly inspired. On the contrary, we show in this a poverty, if not a superficiality and dishonesty in our own spirit.

The men and inspiration behind Chartres Cathedral, if they were building today, would not be nearly so constrained as we tend to be by the example of their own splendid past achievement.

### THE PLAN

Most contemporary churches have retained the rectangular plan, although in some instances the semi-circular plan has been used. Both

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<sup>20</sup> E. M. Conover, Realistic Planning for Religious Inspiration, Architectural Record, Vol. 102, September, 1947, p. 91.

### CONTEMPORARY CHURCH DESIGN

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make for more intimate atmosphere of group participation than does the cruciform. Contrary to common belief, the practice of bringing the altar forward to the center of the church is no innovation. As a matter of fact it was the arrangement of some of the earliest Christian churches. Nor is the location of the choir in front of, or flanking, the altar a liturgical requirement. In most traditional churches it blocks the vision of the altar and adds only one more distracting element. Side or rear choir seating, either at ground level or in balconies seems a logical answer. The former also has the advantage of retaining the facilities for the processional.<sup>21)</sup>

### AN EXPENDABLE BUILDING

When the church was a divinely mandated institution, claiming power in heaven and holding both economic and political dominion on earth, the wealth of the community and the bounty of the nobility poured into its coffer. This made possible the concept of the great Gothic cathedrals--eternal monuments to the glory of God and perpetual tribute to the artisans of the age. The church of the future, however, will have to be regarded as expendable.

"Wildly fluctuating values and the nomadic urge inherent in twentieth century living dictate that the life expectancy of the modern church should not greatly exceed that of other architecture. With so many denominations competing for survival and expansion within the

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21) Charles Reed Zahniser, Churches, Architectural Forum, Vol. 91, December, 1949, p. 71.

CONTEMPORARY CHURCH DESIGN

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United States, it follows that the future of church construction will produce a quantity of small neighborhood churches rather than a few costly and imposing edifices."<sup>22)</sup>

Despite the apparent reluctance of the church to accept contemporary architectural forms, its cognizance of today's trends and values is demonstrated by the new emphasis being put on ambitious parish programs requiring expensive, up-to-date recreational and educational facilities. This is the obvious but intelligent bid of the church to recapture some of its dynamic influence in community life.

The church of the future can no longer be an austere and aloof monument. In conjunction with its parish buildings, it must seek to be regarded more and more as an active, integral part of the community center.

HUMAN IN SCALE

As in all other buildings, the church plan must be functional. However, unlike many other buildings, its function is primarily one affecting the spiritual and the emotional life of man. But the church service is in itself a manifestation as well as an expression of faith and, to date, it is in the complex interrelation of ritual and surroundings that the contemporary interpretation has fallen short.

Since the church is acquiring more and more a human scale, landscape architecture is becoming more and more essential to the overall design. The object is no longer to construct an edifice that will

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22) ibid., p. 65.

CONTEMPORARY CHURCH DESIGN

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dominate the entire town, but to design a building that will be harmoniously related to the community.<sup>23)</sup>

THE VESTIBULE

The vestibule of the church should be large enough to permit the usual after-service conversational groups. It should be planned to prevent drafts of air from entering the nave, and should be arranged to keep the noise of conversation and footsteps from the nave or balcony. The division between the church and the vestibule may take the form of a glazed or a partially open screen. Attempts have been made to have this division removable so that, on Christmas and at Easter, people can sit in the vestibule, but such arrangements have never proved to be very satisfactory. Since a gallery is used only when it is necessary to bring the maximum number of people within range of the speaker's voice, the rear of the church is the best place for it. Such a gallery is often used for the organ and the choir.<sup>24)</sup>

THE NAVE

The nave usually gains in the reflection of religious feeling when its height is accented. This may be done by the use of intermediate columns, which will have the added advantage of reducing the length of the roof span.

The width of a nave is generally established by the aggregate width of the seats and the width of the aisles. The length of the nave

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23) *Ibid.*, p. 67.

24) Otto F. Langman, A Study of Church Design. *Architectural Record* Vol. 93, March, 1943, p. 71

### CONTEMPORARY CHURCH DESIGN

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has, in the past, been determined by the carrying power of a speaker's voice, but today amplifying systems allow greater latitude. The height of the nave in the larger Gothic churches of the past was often two or three times its width. In Colonial examples, the interior height is frequently about one and one-fourth times the width. The proportion of any auditorium of course, depends upon architectural style and upon the size of the church. It is usually desirable to have a center aisle even where the pulpit is on center. Otherwise, in addition to the non-ecclesiastical effect, the church will be awkward for weddings and funerals or ritualistic processions. Churches may have either one, three or five aisles, these should be of uniform width throughout their length. The minimum width necessary for funeral services is five feet. Side aisles vary from two feet six inches in the small church, to six feet in the large one. The space between the front row of pews and the chancel, in which communion, wedding, and funeral services take place, may vary from five feet to nine feet. Small churches sometimes omit rear aisles altogether, but larger ones usually allow from three feet to nine feet as a crossover for ushers and latecomers.

Windows should be designed so that the attention of the congregation will not be distracted by what goes on outside. This is usually achieved by placing the windows high, and by using either stained or translucent glass.<sup>25)</sup>

### THE SACRISTY AND CLERGY ROOMS

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25) Ibid., pp. 71-72.

CONTEMPORARY CHURCH DESIGN

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The sacristy and clergy rooms are naturally placed adjacent to the chancel. Requirements for such rooms vary widely, and depend upon the size of the choir, the number of the clergy, and the personal needs of those who will use the rooms. Provision should be made for storing vestments and altar linen, for the arrangement of flowers, and for preparing the communion service. The dressing rooms for the choir should have sufficient wardrobe space and adequate provision for the storage of choral music.<sup>26)</sup>

THE ORGAN

The organ is sometimes not chosen until the construction of a church is well under way, yet the space for it must be provided in advance. An electric organ offers no problem, but for a pipe organ it is well to allow an organ loft at least ten feet deep, sixteen feet wide, and sixteen feet high. This space should be heated, and should have a finished floor, hard plaster walls, lighting outlets, conduits leading to the console and to the blower room. A minimum-sized console will be five feet wide, four feet two inches deep, and four feet two inches high. The blower should be located where its vibration and noise will not interfere with the church service. Access to the blower, for servicing and maintenance, should be provided on three sides.<sup>27)</sup>

ACOUSTICS

Good acoustics are essential in a church. Unless the designer

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26) Ibid., p. 75.

27) Ibid., p. 76.

CONTEMPORARY CHURCH DESIGN

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is reasonably certain that factors which make for good sound reception are present, he should have an acoustical analysis made. There must be proper synchronization of direct and reflected sound, and limited reverberation. When direct and reflected sounds meet the ear at different times, one-twentieth of a second or more apart, they create what is known as a dead spot. Because of the reflection of the sound from the rear wall of a nave, dead spots sometimes occur two-thirds of the way to the back rows of pews.

Rectangular rooms which are not exceptionally long and narrow, and octagonal rooms, all other things being equal, have good acoustic properties. Broken surfaces such as pilasters, coffers, exposed roof trusses, and sound-absorbent surfaces make for good reception of sound. Glazed surfaces, hard plaster, large window openings, and carved surfaces, extremely arched ceilings in which the center of the arc is near the earline, are not conducive to good results.<sup>26)</sup>

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<sup>26)</sup> *Ibid.*, p. 77.

CONTEMPORARY CHURCH DESIGN

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WINDOWS AND LIGHTING

"The creators of the great Gothic cathedrals were well aware of the psychological impact on the congregation when they introduced color into churches." Even by present day standards, luminous color can be an extremely moving design element and therefore leads many to question the obsolescence of stained glass. But even though our contemporaries have never been able to duplicate certain medieval colors in stained glass, the blue of Chartres, the red of LaSainte Chapelle, some very fine examples of stained glass are being produced today. They are, of course, costly amenities.

White light, so popular with many of our contemporaries and widely used for many years in Protestant churches, is the most ticklish of all to handle as it has little or no emotional or symbolic content. It is generally agreed that when white light is used, it is best directed from the rear or sides of the church toward the altar.<sup>30)</sup>

Since most services are conducted in the morning, the lighting of a church auditorium often is supplementary to daylight. If the walls are not unusually dark, two watts per square foot usually suffice. In no case should a church be lighted as highly as a theater or a music hall. The only part of the nave where general lighting is a positive necessity is the general eye-level area.

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30) Zahniser, *op. cit.*, p. 71.

CONTEMPORARY CHURCH DESIGN

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All fixtures must be reached for maintenance. Indirect light from a concealed source may be used for over-all illumination of some important reflecting surface. The altar may be bright-lighted by spotlight. Trough lighting behind the chancel arch may be directed toward the altar and reredos. Choir stalls are usually lighted by overhead lights similar to those in the nave while pulpits and lecterns need desk lights. Pin-point lighting from small holes in the ceiling, which sends small overlapping cones of light downward, has given dramatic results. The future may well bring forth more changes in lighting than in any other utility connected with church work.<sup>31)</sup>

HEATING AND AIR CONDITIONING

The heating of churches presents an unusual problem to the heating engineer, because the church itself may require heat only one day a week; whereas, the offices and other rooms may need to be warm all week. Church heating systems should have maximum flexibility and control. The large rooms of the church and the plant will need boosters to supplement the regular sources during times of peak load. These considerations indicate that the choice of the type of heating plant will vary to such an extent with local conditions, as well as being dependent upon the size and plant of the church, that no definite rules can be determined.<sup>32)</sup>

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31) Langmann, *op. cit.*, p. 76

32) *Ibid.*, p. 77

SOME CONTEMPORARY THOUGHTS ON RELIGIOUS ARCHITECTURE

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RECENT QUOTATIONS ON CONTEMPORARY CHURCH ARCHITECTURE

"Whether we like it or not, the cost of labor and materials is forcing modern design, but we seem to be in the middle today and are groping for something different."

Franklin X. McCormick,  
Editor & Publisher  
Church Property Administration

"There is something about the Gothic style which enables one to use the arch of the church as a tool, if for nothing more than to achieve spiritual atmosphere."

Merritt Farren, Secretary  
Joint Commission on Church  
Architecture and the Allied Arts  
of the Protestant Episcopal Church

"A building functioning as a church should look like a church without having to stamp it with a cross."

Clarence W. Hall, Managing Editor  
Christian Herald

"The attitude of the Catholic Church toward contemporary architecture is one of benevolent indifference. It is still under the influence of the romantic past. Church people say they are being prudent when what they mean is 'timid'. Ordination has not bestowed architectural knowledge on the clergy."

Maurice Lavanoux, Secretary  
Liturgical Arts Society, Inc.

SOME CONTEMPORARY THOUGHTS ON RELIGIOUS ARCHITECTURE

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**"Has contemporary architecture lost the power to create churches that will satisfy the spirit as well as the mind?"**

**Pietro Belluschi**

**"In our generation the church is contributing little, if anything, to architectural progress, and contemporary architecture is contributing very little to the church."**

**Editors of Architectural Forum**

Patron,  
Page 64 was omitted  
from numbering

SECTION 1

HOLLINS COLLEGE, VIRGINIA

HOLLINS COLLEGE, VIRGINIA

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HISTORY

In 1842, the Valley Union Educational Society, organized by the Reverend Joshua Bradley of New York and a group of local citizens, purchased the property of the Roanoke Female Seminary and opened Valley Union Seminary, which was to become a pioneer enterprise in the education of women.

Charles Lewis Cocke, in 1846, professor of mathematics and assistant to the president at Richmond College, was invited by the trustees to take charge of the new school.

In honor of Mr. and Mrs. John Hollins, of Lynchburg, who made generous gifts for buildings, the Seminary was incorporated in 1855 and the name changed to Hollins Institute. In 1911, the charter was further amended and the name changed to Hollins College.

In 1911, Miss Matty L. Cocke succeeded her father as third head of Hollins, the institution having passed, the preceding year, into the private ownership of the Cocke family.

In 1925, the owners offered to deed the college property, valued at about \$1,250,000.00, to a new board of trustees. The offer was accepted in 1926 by the new board and chartered Hollins College Corporation.

In 1933, Dr. Bessie Carter Randolph was elected president succeeding Miss Matty L. Cocke.

Dr. John Rutherford Everett assumed the presidency upon

HOLLINS COLLEGE, VIRGINIA

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the retirement of Miss Randolph.<sup>33)</sup>

RELIGIOUS LIFE OF SERVICES

The college is non-sectarian. Chapel services are held in the College Chapel at seven on Monday, Wednesday, and Friday evenings. These services are usually conducted by the Reverend George Gordh, Chaplain of the College. On Sunday evenings, at seven-thirty, services are conducted by visiting ministers from the different denominations. Attendance is required of all resident students at these services.

Under the auspices of the Young Women's Christian Association, prominent ministers are brought to the College for a series of lectures twice each year.

LOCATION

Hollins College, in northern Roanoke County, is situated in the southwestern section of the Valley of Virginia. Its outer gates open to the Lee Highway, U. S. Route 11, seven miles north of the City of Roanoke and thirty-two miles south of Natural Bridge.

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33) Hollins College Catalog. Virginia; 1950-1951, pp. 19-20.

SECTION II

RELIGIOUS LIFE AND SERVICES

## RELIGIOUS LIFE AND SERVICES

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The following comments are based on several interviews with the Reverend George Gordh, Chaplain of Hollins College. They represent his personal observations and views which, of course, have been invaluable in the determination of a realistic program for the design of the proposed chapel.

Reverend Gordh's remarks will, for convenience, be presented under appropriate headings, and where applicable, will be accompanied by interpretations based on the conversation, which may not be evident from the quotations.

### SERVICES

"The daily services, that is the non-Sunday services, are held three evenings a week, at seven, and last about twenty minutes. There is always an organ prelude, almost always reading of the Scriptures and prayers. It is traditional for the students to march out during the singing of the final hymn. The following are the major types of services as of now and as projected:

1. Services centering in a talk, with very brief prayers, etc.
2. Services in which there is considerable music, e.g. by the choir, by the organist, by vocal or piano soloists.
3. Services in which the entire service is given to reading and prayers.
4. Traditional evensong services, or vespers, with prayers and responses by choir and by congregation.

The services are thought of as predominantly family services, only rarely addressed by visitors. They major on worship in its narrower sense, that is they aim at a spirit of contemplation and devotion."

RELIGIOUS LIFE AND SERVICES

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VISITING MINISTERS

"Visiting ministers are usually present on Sunday evenings. The plan has been to have a simple service led by the visiting minister, though some attempt may be made to enrich the liturgical aspects of these services. About once a month this service follows the Episcopal order of evening prayer."

COMMUNION SERVICES

"Occasionally communion services are held. The attempt is made to have these in various traditions, e.g. Episcopal, Congregational. Thus there is some problem in having an arrangement that can serve alternatively as a communion table and as an altar, and so arranging the chancel as to make room for these alternative arrangements."

WEDDINGS

"To date I know of no wedding which has been celebrated in the chapel, and I know of none projected. I should be inclined to discourage such a practice; it is my personal feeling that weddings would be more naturally held at the home churches of students and alumnae. It is not our intention to seek to displace the home churches in the affections of the students."

Obviously the Reverend Gerdh is not very enthusiastic about the prospects of college weddings. He related the instance of a very beautiful chapel for a large mid-western college with which he had been associated. It seems that for the greater part of the day this chapel was used for weddings and was not available for other services or meditation. This point was well taken; however, it might be pointed out that this condition is not likely to arise at Hollins

RELIGIOUS LIFE AND SERVICES

because of the rather limited student body. It is felt that provisions for this function should be made in the design of the new chapel and the decision left to the discretion of the individual student.

COUNSELING BY CHAPLAIN, SMALL MEDITATION CHAPEL

"It would be well to have a room for counseling, though it is my feeling just now that it were better for the chaplain's counseling room to be near the center of the campus, as it now is. I have had a feeling that it would be good to have a room where the religious organization of the campus might feel that it had its headquarters. There should be current religious journals there, and students should be encouraged to come there to browse. In the event that the school should wish to have a director of religious activities, such a room should adjoin his office, I suppose. Also several students have talked with me about having the chapel open at times for prayer and meditation. It might be that some small meditation room should be projected. The possibility of a small chapel adjoining the large one has been suggested. This seems to me to be worthy of consideration. Such a chapel might serve for occasional weddings (though see above). It would provide a place for meetings of smaller groups than the entire student body, and might well be used for communion services. It might serve as the meditation room."

CHOIR

"Attention should be given also to adequate rehearsal room for the choir. A robing room or two might well adjoin it, or facilities for hanging gowns, etc., fixed within it. It should be so placed that the choir could move from it in processional into the chapel. The question arises concerning the placing of the choir in the chapel. If the choir is to be in the rear, there must be passageway so that the choir could process to the front of the chapel and then make their way to the choir left."

A vesting room for the clergy easily accessible to place where the processional forms should be provided.

RELIGIOUS LIFE AND SERVICES

The choir facilities should be sufficient to seat one hundred. It would be well if there were space provided for some instrumentalists in the choir loft. The choir should preferably be invisible from the congregation, at least, the choir should not face the congregation.

SEATING CAPACITY OF NAVE IN TERMS OF:

(1) "The present chapel makes it necessary to have chapel services for parts of the student body--some coming at one time, some another. This is obviously unsatisfactory."

FUTURE ENROLLMENT

(2) "An enrollment of five or six hundred should be taken into account in any projected plans. There should be, then, room for some visitors."

SPECIAL SERVICES

(3) "Baccalaureate services should be held in the chapel, but lecturers should be heard in the theater. The chapel should be reserved for religious functions."

RELIGIOUS LIFE AND SERVICESDENOMINATIONS REPRESENTED IN PRESENT STUDENT BODY

The following denominational distribution would, of course, vary from year to year; however, these figures show the diversity of the denominations represented and will serve as a guide in the evolution of the program for a non-sectarian chapel, particularly in providing for the flexibility of the chancel.

Episcopalians .....	150
Presbyterians .....	100
Methodists .....	50
Lutherans .....	25
Baptists .....	24
Roman Catholics .....	22

Others represented, one or two each, are predominantly Protestant.

SECTION III

ANALYSIS OF DESIGN EVOLVED

ANALYSIS OF DESIGN EVOLVED

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Functional, Aesthetic, and Technical Aspects

There are three logical aspects of any architectural design which must be consciously or unconsciously evaluated before a successful solution can be reached. These aspects are functional, aesthetic, and technical. These considerations are often interdependent; unless one predetermines the others, and usually this is a financial or economic problem. For the sake of a dream it has been assumed that Hollins has been blessed with a generous donor for a new memorial chapel. In this section, rather than try to make an arbitrary categorization, a general discussion of elements not evident from the drawings seems to be more justified, since Part One deals with contemporary church design in a general way.

The hillside site was selected for a functional as well as important aesthetic considerations. This location of the chapel on ground higher than the other college buildings will give a desired pre-dominance or reinforcement to the students' life. This location on the North West slope of the ridge will provide a natural sound barrier between the proposed chapel and noisy U.S. Highway 11. The location will also afford easy access to the chapel facilities by college visitors as well as residents of the neighboring community on occasions. This will of course create good will as well as promote interest and support of Hollins Activities.

The chapel might not be as easily accessible to the student on this site as it would be, if more centrally located; however, this disad-

ANALYSIS OF DESIGN EVOLVED

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vantage is overshadowed by the many advantages of this site both physically and psychologically. The short walk from the dormitory through the beautiful plantings of the Beale Memorial Garden with the form of the chapel in the distance might be desirable, and an inspiring experience. Most of the interconnecting walks on the Hollins Campus are now sheltered as well as the proposed elevated walk from the South East Dormitory across Beale Memorial Garden to the chapel site. The present chapel though centrally located, has grown inadequate and nondescript with the expansion of the college. Undoubtedly the religious services have lost some of their significance in the college expansion and the construction of more pleasant and appealing buildings on the campus.

From a purely financial or economic viewpoint the added excavation required on this location in comparison with that on a level site could be questioned. In view of long time planning the site and its imposing nature could hardly be justified for any type of building other than for a religious structure or faculty residences. The same excavation problems, however, would exist in faculty residences as well as, to a lesser extent, the question of accessibility to existing college dormitories.

An early aesthetic consideration was the creation of a structure offering access and attractiveness from all angles, since there is no "front" and "rear" in the usual sense. The building has a three-fold function - main chapel, religious activities, and meditation chapel. Each of the three functions is defined by a change of level in plan, or

ANALYSIS OF DESIGN EVOLVED

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height and mass in elevation. All elements are accessible from several entrances or approaches.

The predominant material of the new chapel will be a red brick similar to that used in the existing college buildings which express the naive charm of early Colonial Virginia. The nave of the main chapel is planned to accommodate 600 persons in the congregation and 100 persons in the choir. Extensive use of exposed brick on walls flanking the nave and chancel sets the warm natural tone. Cork floors, the rich wood of the pews and paneling, and the abundant planting behind the chancel all contribute to that warmth. The clearstory and the plastic dome will bath the interior cylindrical form of the chancel in natural light. At night the chancel remains the focal point of the room for it is then lighted by incandescent lights.

The choir loft in the rear of the nave has been designed with two flights of access stairs to accommodate a double processional. By way of reinforcement to the decision that the choir-organ placement should be in a rear balcony of the nave - Mr. Ray Barry, member of the Committee on Architecture and Acoustics of the American Guild of Organists, discusses in a recent letter to the editors of Architectural Forum, March, 1954:

"Stress placed upon latitude in design-choice for sanctuaries, chancel, bemata is well-taken; also stress laid upon the trend toward organ-choir placement in the rear gallery -- without question the finest location for these musical components. It is usually easy to group together efficiently these three components of organ, organist and choir, both for their intimate functional interrelationships, and permission for the ideal in

ANALYSIS OF DESIGN EVOLVED

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freestanding, open, within-the-building-walls organ space. No organ can be efficient tonally unless so placed." 34)

The various functions within the office-utility wing have easy access to all elements of the design. It should be pointed out that the wall between the rehearsal and robing room will be movable in sections or folding in order that the areas can be utilized as one on occasion.

It is anticipated that at the end of a service the students, possibly with guests or parents, will congregate on the circular terraces and walks enjoying the view of the campus and of the distant mountains. This should be a place for friendly conversations both before and after the services. The terraced garden overlooking the long reflecting pool should be beautiful if developed and maintained properly.

The meditation chapel, seating approximately 50 persons, completes the composition of architectural relationships. The form of the meditation chapel repeats and compliments that of the main chapel's chancel. They are connected by the corridor through the office-utility wing and by the covered walk. Aesthetic aspects of this element were considered most important. As this chapel is to serve as a retreat -- a complete enclosure, quiet, dim and remote seemed appropriate. The structure is a simple oblong brick cylinder with a concave wall of brick on the end facing the campus. The single source of natural light will be a shaft transmitted by a plastic dome directly over the altar.

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34) Ray Barry, Letters, Architectural Forum, March, 1954, pp. 90-91.

ANALYSIS OF DESIGN EVOLVED

This light from the sun will be reflected from the surface of a pool, and wash the interior walls in a mysterious and dim play of light. The tall stained glass window will be designed so as to transmit light at a relatively low intensity. These elements will also be lighted artificially at night.

GENERAL RECOMMENDATIONS FOR MATERIALS AND CONSTRUCTIONWALLSMain Chapel

12" brick cavity walls and 9½" brick cavity walls with 2" air space; brick piers on 12' centers; exposed brick on interior.

Meditation Chapel

12" brick cavity walls with 2" air space; exposed brick on interior.

Office Areas

9½" brick cavity walls with plaster and plywood interior surfaces; interior partitions, concrete block.

ROOF STRUCTURENave of Main Chapel

Wood purlins spanning between laminated wood arches; wood decking, tongue and groove spanning purlins; copper roofing, (standing seam running parallel with wood bents) and copper flashing; ceiling.

ANALYSIS OF DESIGN EVOLVED

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exposed purlins and decking.

Chancel and Narthex of Main Chapel

Steel trusses or beams with light weight concrete; built up roof with white marble chips, ceiling of acoustical plaster on wire lath.

Office and Utility Wing

Open web steel joists with light-weight concrete slab; 1" rigid insulation on slab; built-up roof with white marble chips; acoustical tile ceiling.

Meditation Chapel

Steel trusses or beams with light-weight concrete slab; built-up roof with white marble chips; acoustical tile ceiling.

FLOOR SYSTEMMain Chapel

Reinforced concrete slab and insulation course on grade; cork tile and terrazzo surfaces.

Meditation Chapel

Concrete slab and insulation course on grade; terrazzo and cork tile surfaces.

Office and Utility Wing

Open web steel joints with light weight concrete floor slab (over

ANALYSIS OF DESIGN EVOLVED

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basement area); concrete slab and insulation course on grade with asphalt tile, ceramic tile, and flagstone surfaces.

GENERAL RECOMMENDATIONS FOR STRUCTURAL SYSTEM AND MECHANICAL EQUIPMENT

The ten laminated wood arches form a three-hinged rigid frame structure which supports the entire roof load. The brick side walls of the nave serve merely as screens. This separation of the wall and column loads is dramatized by bringing the arches down on the exterior free of the walls. Laminated purlins will span between the arches and two inch decking, parallel with the arches, will span the purlins.

The structural system of the entire architectural conception seems to be conventional enough, except possibly, the exposed laminated arches. According to several manufacturers of laminated wood products, there seems to be no particular problem in the prefabrication, erection or permanence. The laminations will be glued with phenol, resorcinol or melamine type resin glue; high temperature setting; Joint Military Specification JAN-A-397.

As discussed by Leonard Michaels in Contemporary Structure in Architecture, fire hazards can now be much reduced by the use of special surface paints or impregnation with fire retardant chemicals, and these treatments have not been found to cause any reduction in the strength of the material. Similarly, wood-preserved are now available to protect the timber from moisture and vermin.<sup>35)</sup>

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35) Leonard Michaels, Contemporary Structures in Architecture (New York: Reinhold Publishing Corp., 1950). p. 217.

ANALYSIS OF DESIGN EVOLVED

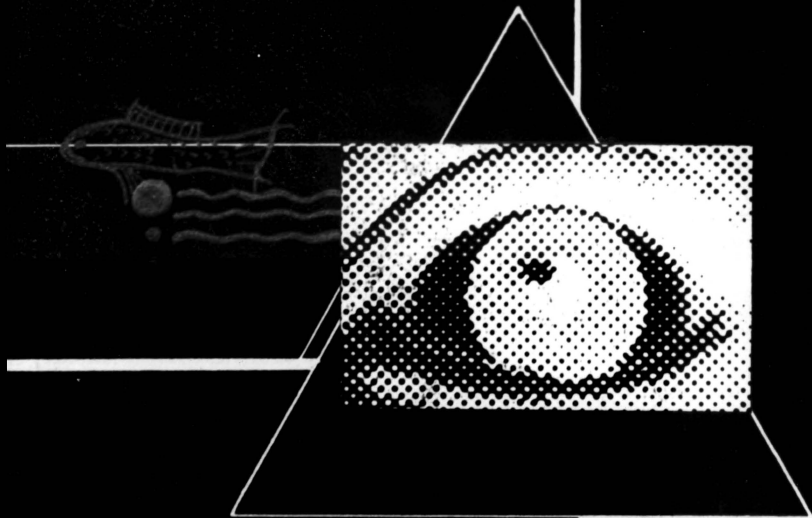
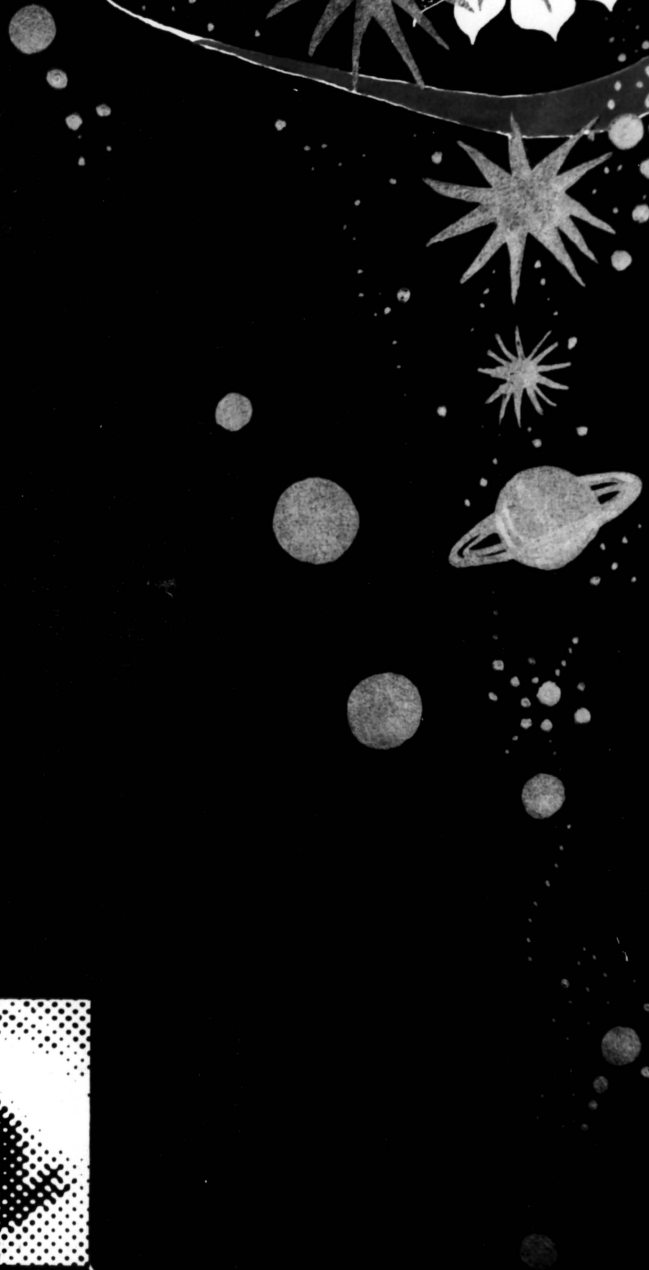
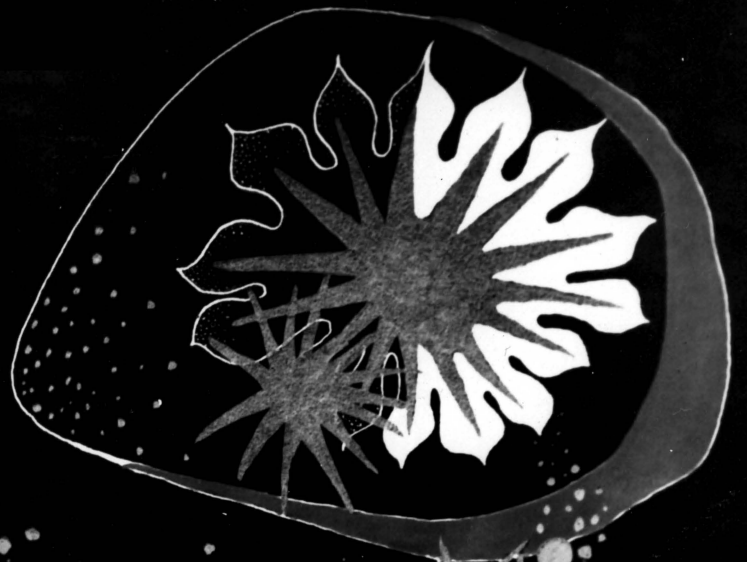
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The present Hollins central heat supply should probably be utilized for the proposed chapel. The steam supply would be converted by a heat exchanger to hot water system in the mechanical equipment area. The system would probably be designed for three zones -- main chapel, office-utility wing, and meditation chapel. This type of system should prove to be both flexible and efficient. The main chapel will be heated with a forced air system and baseboard ducts capable of air conditioning in the summer. The office-utility wing will be heated by forced hot water and recessed radiator-convectors. The meditation chapel would probably be heated by the same type system that is used in the main chapel, although on a separate zone.

The pipe organ is located in the rear of the nave on the choir loft balcony. This seems to be an ideal location both functionally and acoustically. As a rough guide, there would be 30 manual stops and 3 manuals. The architect would naturally confer with organists and organ manufacturers before final decisions regarding the specifications are made. The organ is discussed more generally, as are other elements of the contemporary church, in Section III, Part One of this thesis.

# part three

a chapel for  
hollins college







EXISTING BUILDINGS   
 PROPOSED CHAPEL  EXISTING CONTOURS ARE SHOWN

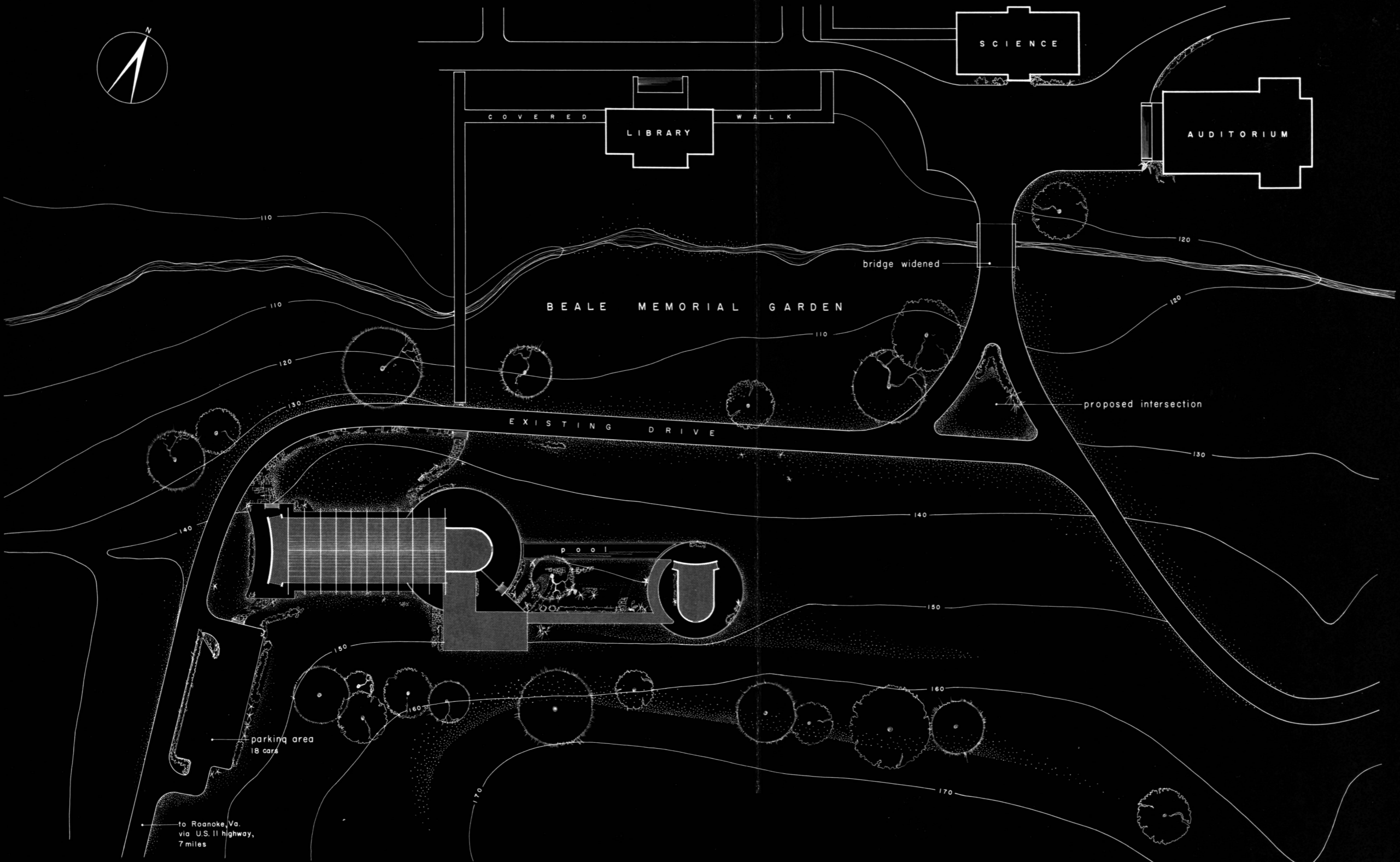
a chapel for  
 hollins college hollins, va.

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VIEWS OF CHAPEL SITE  
FROM ENTRANCE ROAD







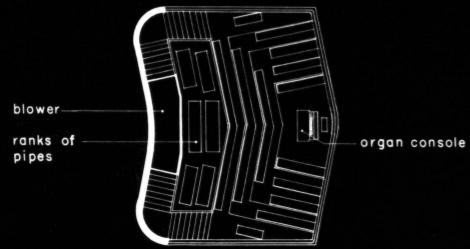
S I T E P L A N  
scale: 10 20 30 40 80 120 140

a chapel for  
hollins college

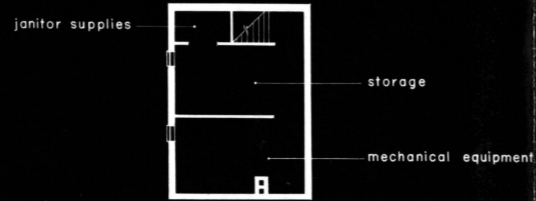
designed by  
date: june 1922  
*Charles C. Bolton*

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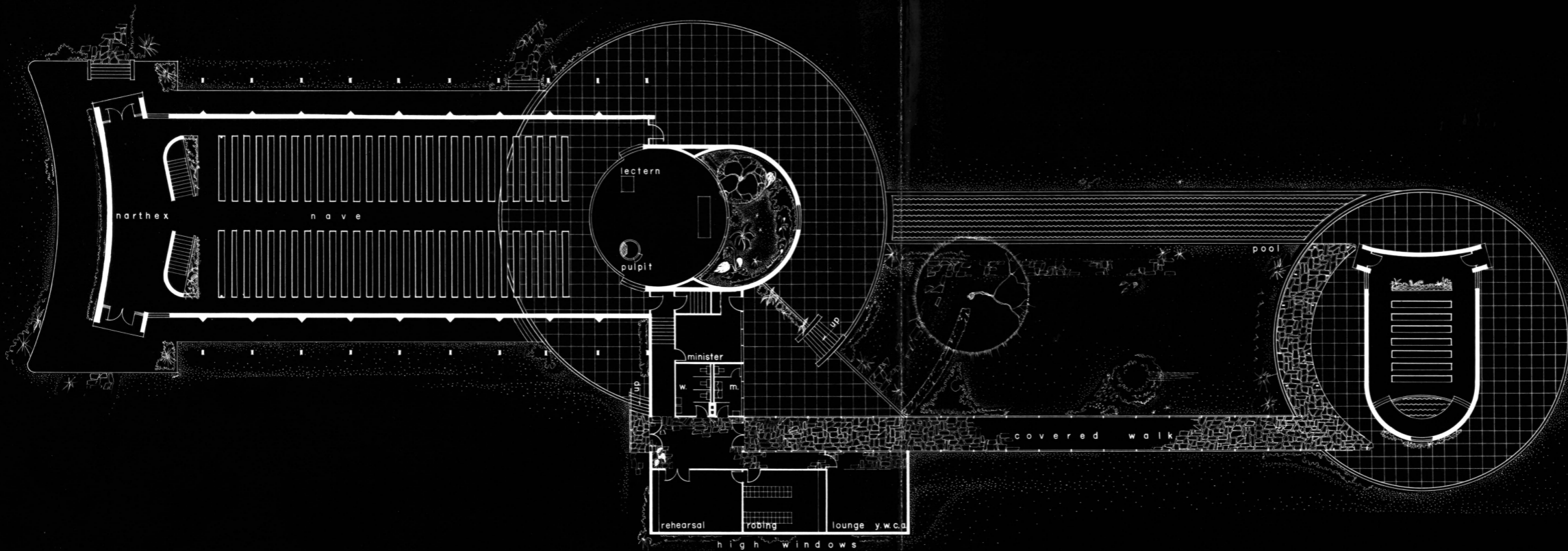
MAIN LEVEL PLAN  
BASEMENT AND BALCONY PLANS



choir loft



basement



main chapel

meditation chapel

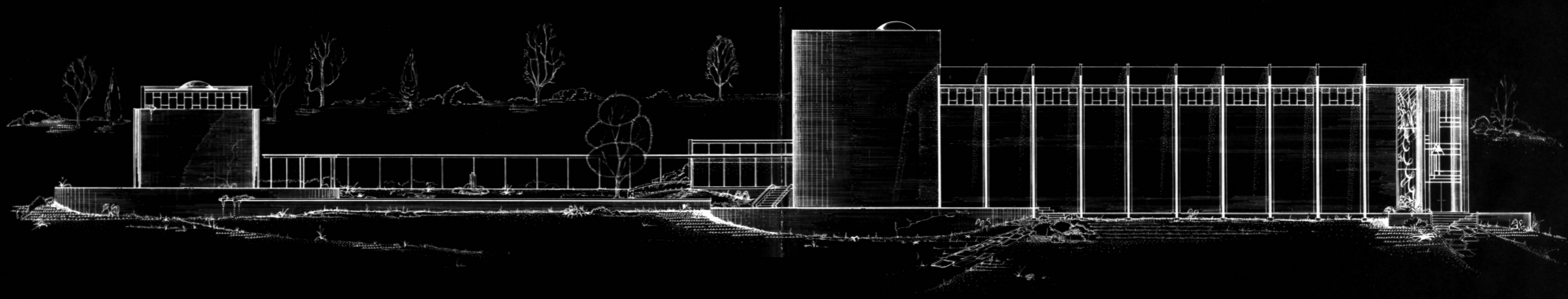
FLOOR PLANS, ALL LEVELS  
SCALE 1/4" = 1'-0"

a chapel for  
hollins college

designed by *Charles B. Butler*

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NORTH WEST ELEVATION

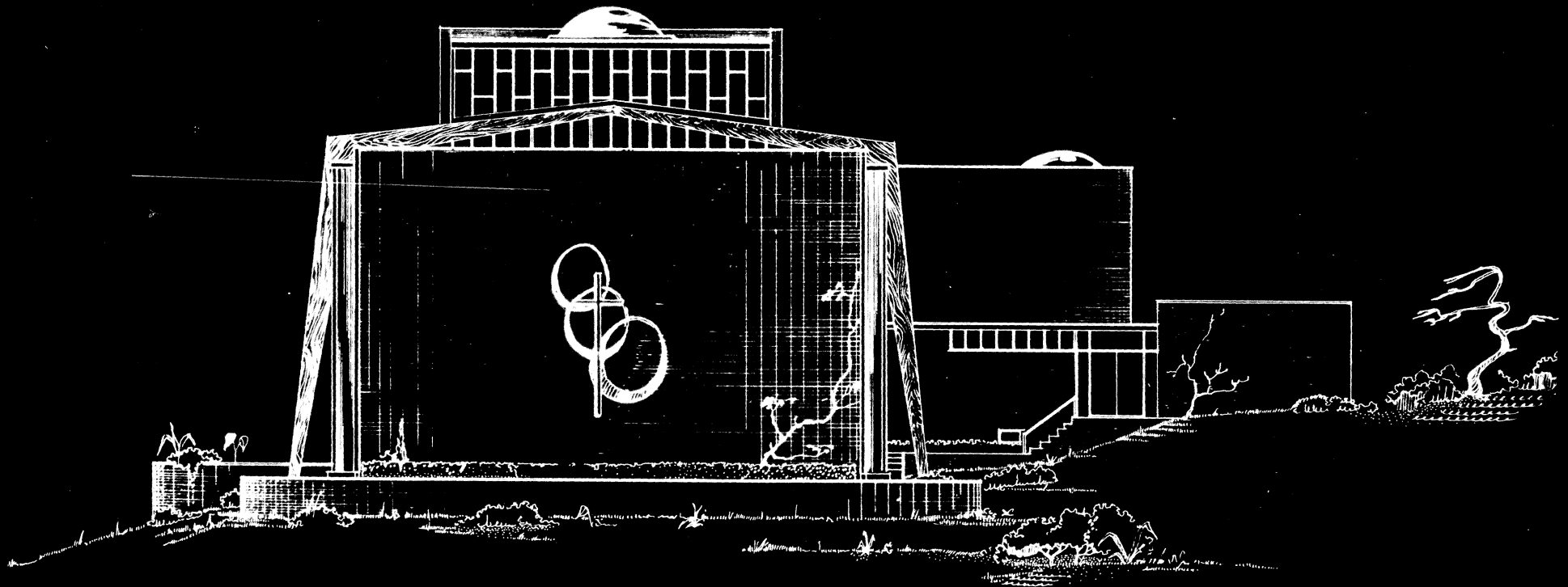


n o r t h   w e s t   e l e v a t i o n

SCALE 2 4 6 10 20 30 40 50

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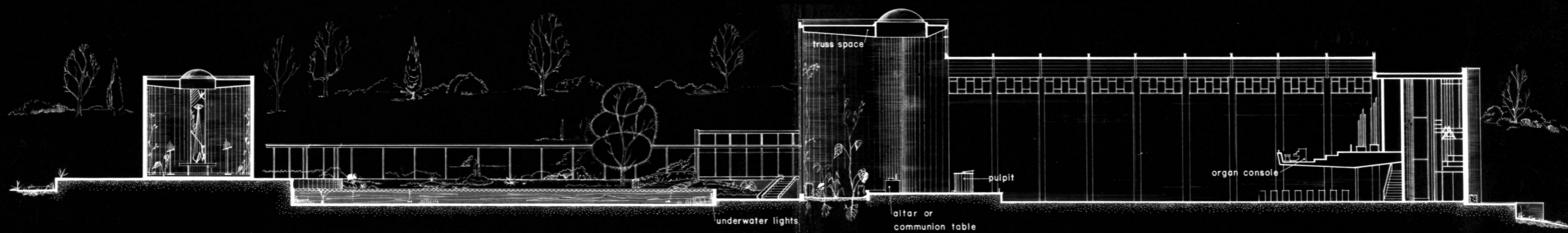
SOUTH WEST ELEVATION



s o u t h w e s t e l e v a t i o n



LONGITUDINAL SECTION



l o n g i t u d i n a l   s e c t i o n

SCALE 2 4 6 10 20 30 40 50

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TRANSVERSE SECTION



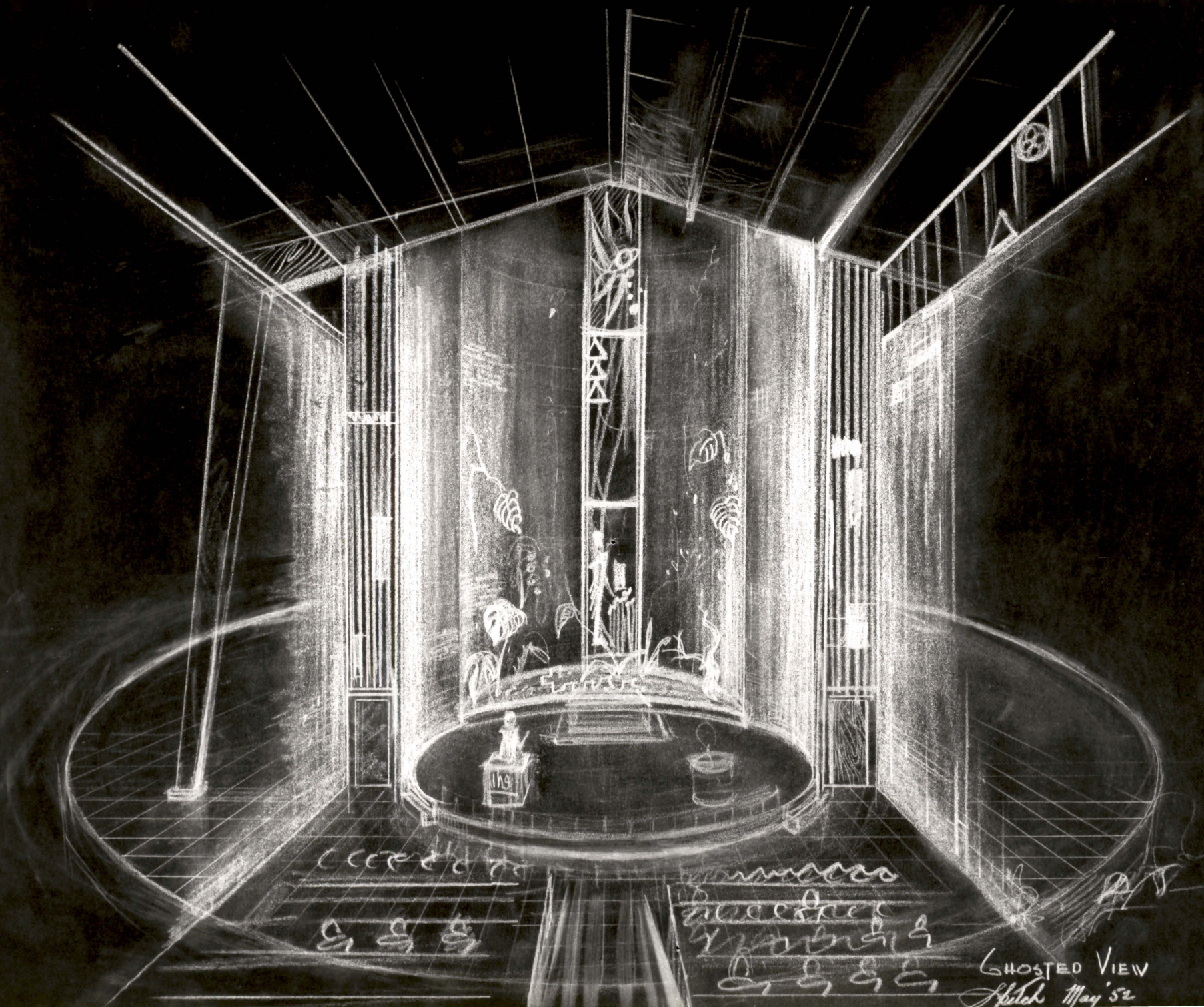
t r a n s v e r s e   s e c t i o n







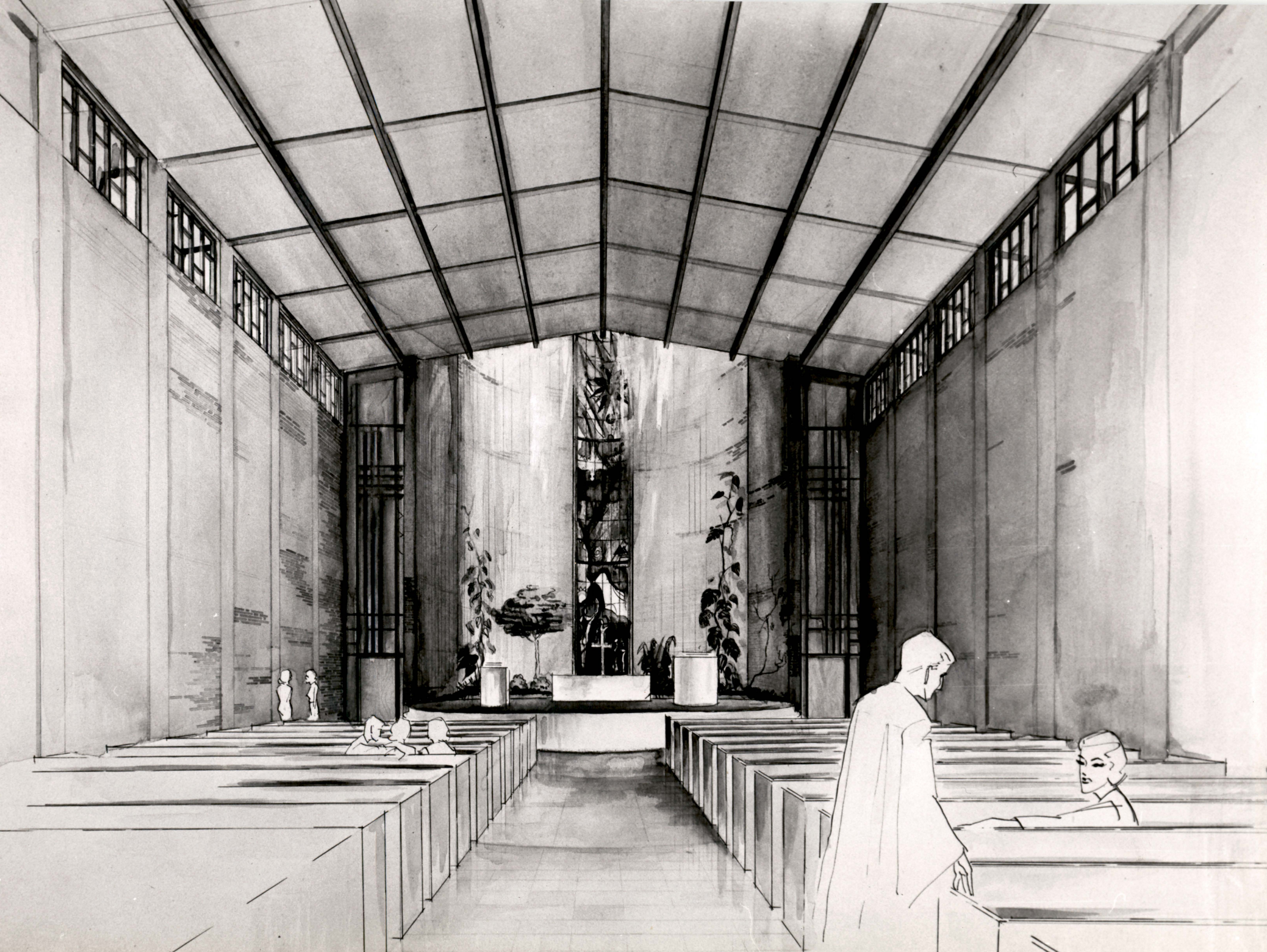
THE GHOSTED INTERIOR VIEW



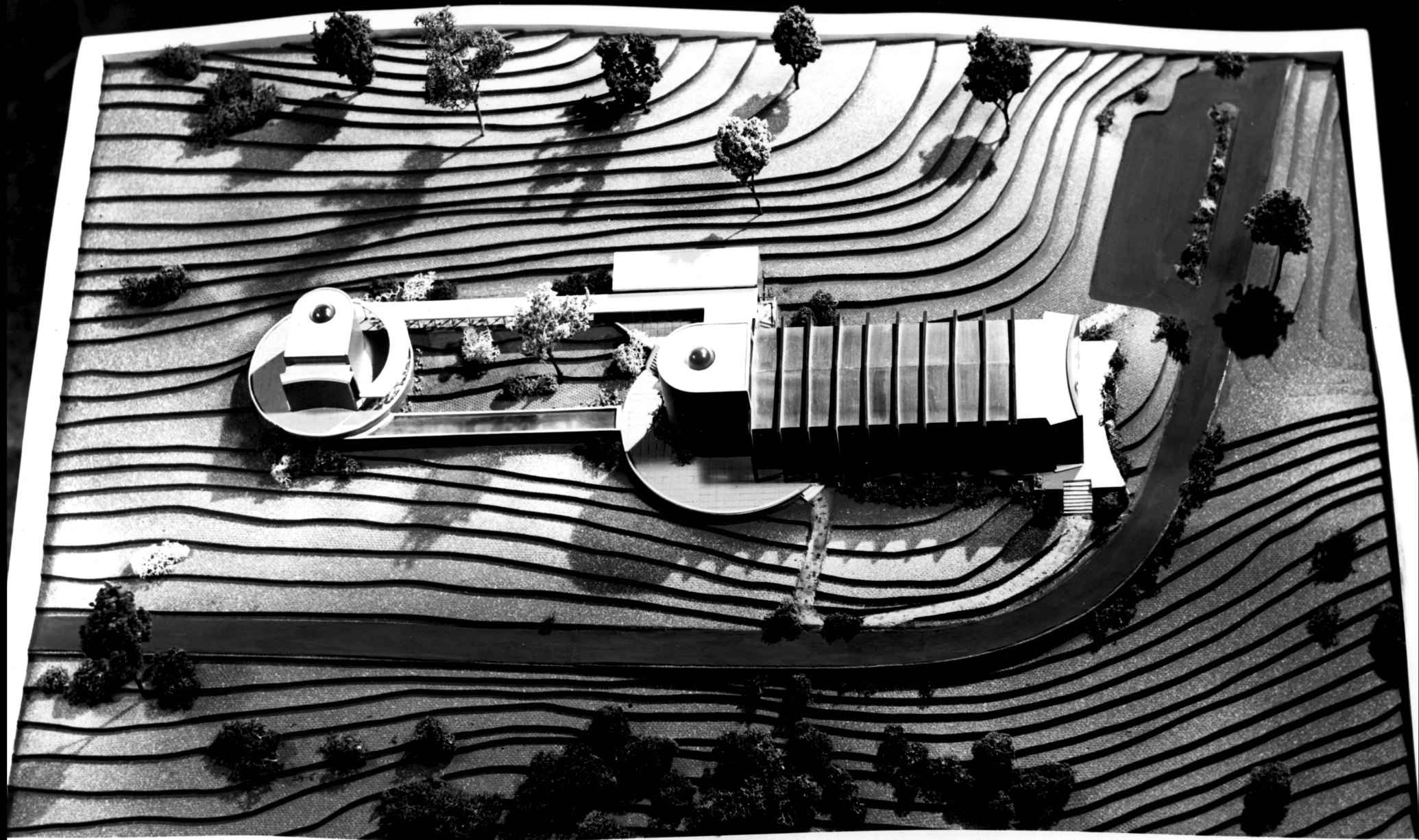
GHOSTED VIEW  
Sketch May '52

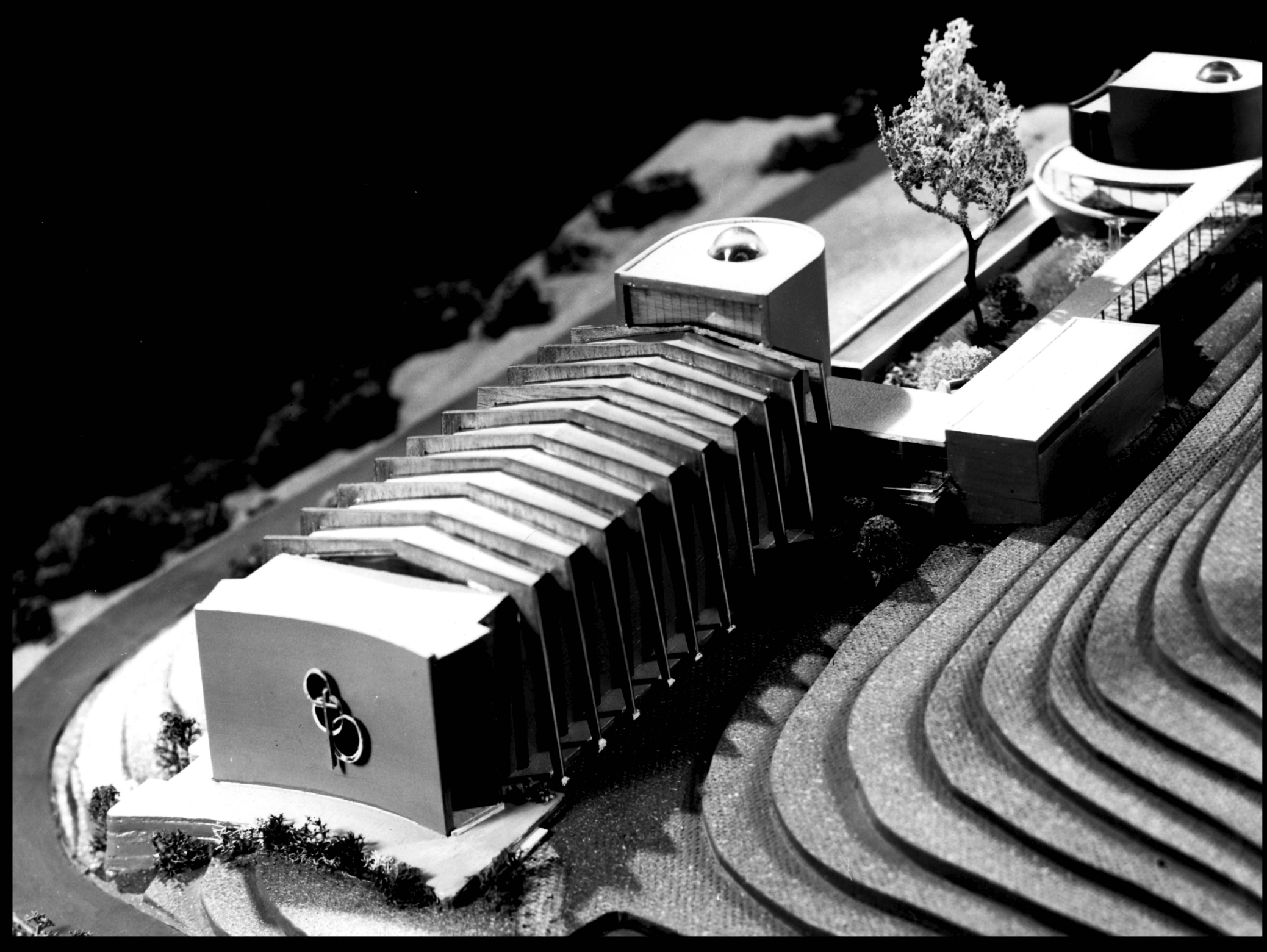
EXTERIOR PERSPECTIVE  
(PHOTOGRAPH OF WATER COLOR RENDERING)

INTERIOR PERSPECTIVE  
(PHOTOGRAPH OF WATER COLOR RENDERING)



PHOTOGRAPHS OF MODEL









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GLOSSARY

## GLOSSARY

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- ambulatory.....**passageway around the apse of a church.
- apse.....**semicircular or polygonal recess, covered with a half-dome or other vault; more particularly, the semicircular termination of the choir of a church.
- architrave.....**the horizontal beam or lintel that is the lowest member of the entablature in the classic orders; more generally, a horizontal member spanning the distance between two vertical ones: a lintel.
- atrium.....**The open court of a Roman house, usually surrounded by a roofed gallery, the open court before the narthex of a Christian basilica or church.
- barrel vault.....**a vault that is semicircular in section.
- clearstory.....**the part of the elevation of a church that rises above the aisle and ambulatory roofs and is pierced with windows to illuminate the interior.
- colonnade.....**a series of columns connected by lintels, as contrasted with an arcade.
- crossing.....**the space formed by the intersection of nave and transepts in a church of cruciform plan.
- flying buttress.....**a bar of masonry, supported by an arch or arches,

## GLOSSARY

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at right angles to the longitudinal axes of the interior spaces of a Gothic church whose vaults it supports by carrying their lateral thrusts over the side-aisle or ambulatory roofs to vertical piers rising from the outer walls.

groined vault.....a vault formed by the intersection of two barrel vaults of equal span, either semicircular or pointed, the diagonal lines of the intersecting under surface being the groins.

narthex.....the entrance porch of a Christian basilica or church, usually colonnaded and originally opening directly into the atrium.

nave.....the chief interior division of a church in Latin cross form, corresponding to the long arm but separated from the side aisles.

nimbus.....sometimes called a halo. The disk of light behind the head of Christ, the Virgin, saints, etc.

pendentive.....term applied to the triangular curved overhanging surface by means of which a circular dome is supported over a square polygonal

pier.....a vertical support of masonry, built up of courses, distinguished from a column by greater massiveness and by a

GLOSSARY

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shape other than circular.

ribbed vault.....a masonry vault with a relatively thin web supported by ribs.

vault.....a roof of masonry, constructed on the arch principle.

vault web.....the relatively thin fabric of stone or masonry that constitutes the expanse of a ribbed vault, supported by the ribs.

The vita has been removed  
from this piece