

A CHAPEL FOR FOXCROFT SCHOOL

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"We believe man has a potential of growth beyond ourselves, which is not enjoyed by any other form of life. A simple proof of this belief lies in the fact that man possesses an imagination capable of foreseeing growth continue beyond this life, and we know that nature always gives capabilities possibilities."

Alden Dow

ACKNOWLEDGMENTS

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The author is especially indebted to Professor Charles S. Worley for his unvaried patience and invaluable advice.

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THESIS OBJECTIVES

This thesis has two objectives. The first objective has a broad fundamental concept: That of studying the age-old problem of harmoniously relating an established style of architecture with a contemporary idiom. This first objective will be particularized as the second objective: That of considering an existing community of buildings in the Georgian style and positively introducing a new building created in the spirit of a contemporary approach to new construction. This approach is an embodiment of the technical and esthetic expressions of the present age. Such an approach to design should be as acceptable to modern thinking as Gothic was to the medieval mind.

INTRODUCTION

The first part of this thesis is prepared as an introduction to essential considerations necessary for a logical approach to the design of a chapel for Foxcroft School. The discussion will include a fundamental view of creativity conditioned by the present age, and a brief background description of evolutionary influences on contemporary building design.

CONTEMPORARY ARCHITECTURE

The appearance of the majority of current buildings is improving. Compare recent work with that of a few years ago and this fact is evident, and the same fact may be true a few years hence. What must be recognized is that the good work, the architecture that expresses conviction in feeling and integrity of purpose, bespeaks of lasting significance. This has always been true, as each major culture has spontaneously evolved its own special order.

Potential creativeness is principally conditioned by evolution and ultimately activated by the spirit of a culture. As such the cultural awakening of the first half of the twentieth century has sadly embraced some degree of ignorance, prejudice and self-interest.¹ To attain a lasting cultural expression there must be creative minds to sense the fundamental characteristics

1. John S. Detlie. A Religious Architecture for Today (Architectural Record, Vol. 116, Dec. 1954) p. 133.

CONTEMPORARY ARCHITECTURE

of an age in order to interpret the ideals of its culture. If the age is one that will challenge the mind by requiring an abundance of progressive answers to man's inquisition then the age is one that will offer sincerity of purpose and mirror sincerity in its products. Architecture readily reflects the degree of creative sincerity: the period in time which has nothing more to display than the borrowed forms of another civilization offers evidence of immaturity.

The artist makes an important contribution to the search for historic interpretation, as the art of an age records creative supply and demand. Unfortunately, the supply, to the present demand is largely indiscriminately accepted, and creative art is barely sensed and too seldom encouraged. In the United States this may be largely due to the very broad field of demand incurred by our nearness to the mass uniformity of socialistic ideals. The consumer represents the entire population; the offering of good products will have to await a discriminating public.

ORGANIC FUNDAMENTALS

The idea that the work of man can be organic involves the premise that the creation adheres to the basic fundamentals of nature. Man's conception of organic does not actually assume the form of a tree, but does offer the Creator an insight into the fundamentals of expressing the function and beauty of structure. Something that is organic states a conviction clearly and coherently, and is strong in its embodiment of purpose, so that the outward expression of structure can be analyzed as a statement of internal coherence and balance. If applied to all phases of the architectural growth of a building the concept of organic architecture might lead to an excessively stark esthetic. Nature however, offers many examples of warmth and beauty in the cause of function. Nature must be interpreted both objectively and subjectively in order to fathom its total significance.

ORGANIC FUNDAMENTALS

When thinking about a particular building people tend to consider its characteristics according to their background. Two principle trends of reaction are evident. One segment of the population sees the building only as a member of a man-made world and are unconcerned as to whether or not it is technically or aesthetically satisfying. A second group of people who are sensitive to the organic order of the world of nature around them readily appreciate a good building's features of correlated order and truthful material and structural expression. The second group of people consciously or unconsciously have developed within themselves a fundamental understanding of their inherent relationship to nature. With this basic organic understanding they have the necessary insight to observe the sensitive phenomena of man's creative spirit growing from out of nature's laws.

ORGANIC FUNDAMENTALS

Today there is a strong creative force guiding the evolution of organic thought. To participate in such thought is fundamental to holding an optimistic view for the future, for out of the turmoil and complication of our present worldly commotion there must come some eventual order. The world has progressed too far to either relax or withdraw voluntarily from the search for a more complex society. Order, through an organic understanding of balance and harmony, must ultimately spur the people to an acceptance of their basic relationship with nature. New buildings will offer strong evidence of such intellectual growth. How far architecture has gone toward adapting the spirit of organic thought cannot be judged. It was once said that human beings are safe to have around only if they are as weak in their powers of execution as they are in their powers of understanding.²

2. An interpretation by H. A. Overstreet of Diderot's remarking that all children are essentially criminal. Harry A. Overstreet, The Mature Mind (New York, W. W. Norton and Co., Ind., 1949) p. 43.

ANGLICANISM

The chapel for Foxcroft will be designed for Christian worship. This fact predetermines many functional considerations for the building's development. A discussion of the liturgical factors influencing the chapel's design is prepared in a later section of the thesis on liturgical requirements. Pertinent characteristics of the Anglican belief are here briefly discussed.

Time and the pondering intellect of man have divided basic Christian ideals and beliefs into numerous organizational channels which dictate various procedures of worship. The fact that there will be students at Foxcroft belonging to any number of these Christian organizations requires of the chapel design strong appreciation for basic symbols of the Christian faith.

The Anglican Church in the United States is called the Protestant Episcopal Church. The manner in which services are conducted varies greatly from an informal service to a mass similar to that held

ANGLICANISM

in the Roman Catholic Church. Members of the church have freedom in religious interpretation and therefore differ somewhat in their beliefs. The basic statement of faith is established in both the Apostle's and the Nicene Creeds. The Episcopalian's Book of Common Prayer is used in all Anglican churches and uniformly dictates a similarity in service procedures. The Bible is the primary source of governing doctrine, though an interpretation of its contents is subject to frequent exploration. With such spiritual flexibility, the Episcopalians are readily incorporating many of the philosophical themes of our age.

HISTORIC NOTES

In the overall picture of the history of man, how will the form expression of the twentieth century be viewed? With what other civilization will it be compared? Is our position in time comparable to that of the Greek or to that of the Anglo-Saxon? Obviously, there is no time-worn criteria by which to judge this selection. By evaluating fundamental characteristics of the past, however, it is possible to speculate on our future cultural rating. In order to construct this perspective of past to present there is need for a framework of history on which to exhibit the great creative epoches of religious architecture.

From the beginning to the end of Egyptian form evolution, no great lack of sincerity can be discovered. The Egyptians' work expressed the fundamentals of their whole attitude toward life. As the leading expression of their religious beliefs, the Egyptians built their temple as a strong, massive,

HISTORIC NOTES

and substantial monument. Religion therefore, dictated the basic pattern of their most important building, the Temple. Today, looking back at Egyptian architecture, only the fundamental ingredients are apparent. A general pattern is expressed; there are no distinguished individual creators.

The Greek civilization, too, was strong in its form-evolution. The Greek Temple exists today as a profound testimony to the well balanced philosophy and advanced scientific spirit of that civilization.³

By far the most influential religion to follow that of the Greeks has been Christianity, and probably the most explicit cultural expression derived from the Christian period emerged from the Medieval Age. During the Medieval Age, Europe was a crucible of peoples and races who settled down and mixed with

3. Ernest H. Short, A History of Religious Architecture (The MacMillan Co., New York, 1936) p. 38.

HISTORIC NOTES

original populations. The ultimate building form to emerge from these circumstances was the Gothic Order. The significance of this expression should be understood today in terms of several important creative influences. Religious fervor permeated the spirit of their building expression. Their time was plentiful, and individual labor was sensitively poured out with great emphasis on craftsmanship.⁴

Since the Gothic Order there have been an increasing number of minor architectural expressions. Romanticism expresses the Renaissance desire to be freed from the weight of tradition. The great falacy of this period was in the fact that architectural tradition was only modified: the new conditions of living that should have resulted in a fresh architectural attitude merely resulted in

4. Lewis Mumford, The Culture of Cities (Secker and Warburn, Ltd., London, England, 1946) p. 31.

HISTORIC NOTES

an academic adaptation of borrowed ideas. The influence of the architectural hypocrisy of the Renaissance has insidiously plagued subsequent architectural development and remains a constraint on contemporary work today. Any present day tendency to imitate the past indicates a complete misunderstanding of evolution; and an ignorance of our present changing needs.

Part II - - Consideration

INTRODUCTION

The second section of this thesis discusses specific factors that support the development of a chapel design.

FOXCROFT SCHOOL

Foxcroft School was founded in 1914, by Miss Charlotte Hoxall Noland, who directed the school's growth until 1955, when Mr. Van S. Merle-Smith, Jr. assumed the school's leadership. Today, Foxcroft maintains a position of considerable prestige as a girl's preparatory school. The enrollment is limited to one hundred and twenty pupils.

The school's physical plant includes five hundred acres of farmland and woodland located between the Blue Ridge and the Bull Run Mountains in the Piedmont Valley of northern Virginia. The present building layout includes a main schoolhouse with an auditorium, a library, a studyhall and classrooms, a separate dormitory for each of the four classes, a music building, an infirmary, a gymnasium, an administration building, stables, utility buildings, and faculty houses.⁵

5. Foxcroft School (John B. Watkins Co., New York) p. 10

FOXCROFT SCHOOL

Though religion is basically a part of the school's daily program, there is no building designated as a place of worship. The subject of this thesis is to produce such a space for deep feeling and thinking.

GEORGIAN STYLE ARCHITECTURE

The Renaissance produced an assortment of architectural styles. To a large extent these styles appear today as little more than an academic realization of correct proportions and proper balance applied to classic idioms. Georgian was the last style to inherit the true Renaissance tradition. Georgian Architecture was first recognized in America during the latter part of the seventeenth century and most of the early work was planned by owners. The earliest Georgian buildings were sheathed in clapboard, but the great majority of Georgian work was built with brick which was commonly being manufactured in the colonies by the early eighteenth century.

The full scope of Georgian style architecture is divided into an early period and a late period. The early period, dating to approximately 1750, is the simpler of the two with compositional strength in overall form-coherence. The late period employed

GEORGIAN STYLE ARCHITECTURE

extensive superficial embellishment, and generally less tasteful overall design. Most of the early Southern plantation houses were symmetrical in composition; were two stories high with a hipped roof and with balanced chimneys. The limited number of well designed Georgian Mansions have theorized the idea that a few professional architects designed this minority of great homes.⁶ The sum total of Georgian design expressions is simple, warm, and bespeaks of human scale. Contemporary work in coordination with this style may well consider its sombre subtlety.

6. Hugh Braun, Historical Architecture (Faber and Faber, Ltd., London, England, 1953) p. 274.

THE ARCHITECTURE AT FOXCROFT

The architectural style of Foxcroft is Georgian, dating from 1728. The original farm house represents a very early example of Georgian influence, and possesses strength in its rural dignity. The recent additions to Foxcroft have revived in general form the simple directness of early Georgian work. The fact that this applied exterior pseudo-form does sacrifice a building's function for the decorative features of an imitation Georgian facade is apparent. If, however, intuitive complacency from an appreciation of design unity in overall building composition is the aim of this style adaptation, then there must be granted some justification for its existence. Such justification is intended, however, only to award good judgment in attaining strength in an overall expression of unity, coherence, and balance. This justification of Georgian style is not intended to relieve the public responsibility of embracing the

THE ARCHITECTURE AT FOXCROFT

ideals of a progressive culture. The old must be appreciated for its worth, and the new must be recognized as transcending the old. Good taste, exemplified by the acceptance of good contemporary architecture, is rewarded by the conveniences offered through the use of modern technology and by an intuitive appreciation of contemporary esthetics.

CAMPUS STYLES

Creating a modern building to fit in with a period campus style requires a very sensitive blending of both new and old construction techniques and design expressions. The campus which has always built contemporary structures may not enjoy overall design coherence, but it will exemplify complete honesty in every building form displayed. A harmony between old and new buildings may be aroused by creating new buildings that reflect the materials used on existing buildings, that recognize existing form conception, and that appreciate environmental influences.

The materials that will help achieve a feeling of harmony may be classified in two groups, referring first to a direct use of existing material and texture types, and then to an intuitive carry-over of material impressions. Representative of the first group would be the salmon colored brick used in the Georgian form at Foxcroft, and of the second group would be a

CAMPUS STYLES

practical substitution of copper roofing for the physical weight and drab visual implications of slate. Materials, therefore, offer an effective correlating medium.

Form consideration, too, is instrumental as a geometric device in helping to achieve harmony in building relationships. The form of a contemporary building must employ contemporary ideals in its development, yet must cooperate intuitively with existing building forms.

The surrounding countryside at Foxcroft is stimulating to the physical senses and imposes an emotional consideration on any proposed product of man's inventiveness. The following discussion on site selection fully considers this environmental aspect.

THE SITE

Making the choice of a chapel site for Foxcroft invokes emotional as well as practical considerations. The character of the land surrounding the campus is gently rolling, unmarred by commercial brutality. The Blue Ridge Mountain Range to the west is a soft but majestic reflection of the subtle values that characterize this country.

The campus itself creates a pleasant feeling of being contained within boundaries that actually do not exist; an emotional response that results from a close relationship of buildings, walks, terracing, and planting. The addition of a new major structure within this area would involve locational problems that could easily resist the present campus form. If a new building were placed outside of the campus pattern, it would have to warp the emotional boundaries of the original campus to include itself, or it would become an unfortunate annex to the main campus group.

THE SITE

The addition of an imitation Georgian style building would numerate these locational problems; the addition of a contemporary structure would magnify these site difficulties because of the different form expression resulting from evolutionary development.

The contemporary building should be placed, therefore, in close relationship to the present building arrangement in order to most easily relate its character with existing buildings.

Two conditioning factors conveniently limit the choice for a chapel site. The first factor of religious worship which suggests locating the chapel in an academic sector of the campus. The second factor for site limitation recognizes the desirable facilities existing in the recently constructed Music House, where space for instrumental and choir practice as well as space for robing would be readily available.

The garden area in front of the Music House is immediately controversial concerning its merits in fulfilling site requirements. The location is

THE SITE

favorable because it offers close association with the Music House; affords a pleasing environmental enclosure and gives a useful arrangement of levels that may be put to esthetic advantage. But the garden is subject to strong nostalgic sentiment in favor of retaining its present form. It is used annually for commencement ceremonies and serves as an important intuitive stimulus in creating the campus environmental character. In answer to the well founded arguments for retaining the garden's present form is the author's sincere belief in the ability of intelligent planning to enrich the garden's organic beauty and greatly enhance its future usefulness.

The Site



SOUTH EAST VIEW



NORTH WEST VIEW



LOOKING SOUTH
INTO GARDEN

INTRODUCTION

The design of the Foxcroft Chapel proceeds from an intellectual and intuitive consideration of the factors discussed in the two preceding sections.

PROGRAM ANALYSIS

Although Foxcroft School is non-sectarian, the number of Episcopal students is highly predominant. Morning services accompanied by a choir are held daily in the schoolhouse auditorium and are normally presided over by the school's headmaster. On the first and third Sunday of each month, the students are accustomed to attending neighborhood churches. The remaining Sunday services are held at Foxcroft. The same schedule of worship would continue after the addition of a campus chapel. Special services conducted by visiting ministers however, would possibly become more frequent.

Statistical requirements for a chapel design requires seating for a limited number of visitors in addition to one hundred and twenty students. A total seating of two hundred is used in designing the chapel nave. The normal choir includes twenty students, but consideration for possible enlargement suggests designing for the temporary or permanent addition of five to ten seats.

PROGRAM ANALYSIS

Adequate room for rehearsal and for choir robing is available in the present Music House. The minister requires a robing room and toilet facilities which are provided in the basement of the chapel. A storage area for articles to be used in the services should be easily accessible to the chancel and is also located in the chapel basement.

LITURGICAL REQUIREMENTS

Today the church must accept a subordinate position in the overall picture of construction demands. This is not true of architectural expression, however, for this age is capable of creating a contemporary religious architecture that transcends eclecticism as notable churches of the Medieval Age transcended secular aspects of feudalism. The contemporary ecclesiastical form must be sensitively comprehended from a contemporary religious interpretation.

The liturgical requirements for the Episcopal Church will vary regarding the interpretation of traditional habits of worship. The most sensible and liturgically proper design approach today requires only that the service shall proceed decently and in order.

The service procedure in the Episcopal Church emphasizes a dramatic stage setting, focusing special attention on the altar, the pulpit and the lectern. The altar's form requires a

LITURGICAL REQUIREMENTS

horizontal surface reminiscent of the communion table from Christ's Last Supper, and should represent the strongest single article of symbolism in the church. The communion rail has become a convenient leaning support for those receiving the holy sacraments, and aids in creating a transitional barrier between the sanctuary and the nave. A credence shelf is necessary as a support for communion vessels and for collection containers. It is located to the right of the altar. A rostrum or pulpit for ministerial oration is located within sight of all seats and to one side of the altar. An optional second rostrum or lectern from which church lessons are read is subordinate to both the altar and the pulpit. The baptismal font strongly represents certain aspects of the Christian faith and should be present as a symbol, even if it is not used frequently.

Correlating the discussion on architectural expression with that on the peculiarities of the

LITURGICAL REQUIREMENTS

Episcopal service, three words may be sounded: sense, proportion, and beauty. In scope these words are singularly directed toward uniting into harmony the sum complexity of the Episcopal service.⁷

7. From a discussion with Rev. R. L. Thomas, Rector of Christ Episcopal Church, Blacksburg, Virginia.

THE CONCEPT

The concept of the chapel design does not result from any one source of influence. Intuitive considerations for a desirable basic form result from viewing the building site from all imaginable locations: from the Music House, from the formal garden, from approaching and by-passing walks, and even from the air. Ideas will evolve forms that must be considered, often rejected, and sometimes reconsidered. The function of the building will first be idealized, and then either improved upon or compromised with in the subsequent process of overall designing. The function and the form will finally evolve into one part intuitively expressed sculpture and one part intellectually discerned adaptation of technical necessities.

The circle form evolved as the embodiment of design expression through a consideration of its relationship to the garden setting, to the Georgian Music House, and to the resulting space enclosed in the chapel. In relation to the garden setting the

THE CONCEPT

chapel must absorb the influence of the garden by creating in the nave a subtle awareness of the immediate surrounding environmental beauty. This indoor-outdoor relationship is achieved by the use of semi-translucent glass offering to the congregation a blurred awareness of surrounding scenery but not a distracting clarity of details. The circle form enclosing the nave creates an emotionally intimate feeling regardless of the number of students attending services. By emphasizing a low silhouette the chapel becomes intuitively associated with the garden and does not compete with the nearby Music House. The materials used to express the exterior esthetics and to subtly relate the chapel with surrounding buildings and site include the warmth of copper roofing, of salmon brick, of beige semi-translucent glass, and of natural wood louvers.

A physical connecting link between the chapel and the Music House must exist for the convenience

THE CONCEPT

of the choir and the minister. The choir must be able to assemble in the rear of the chapel before the congregation at his own discrimination. To best facilitate these arrangements of position, an underground passageway from the Music House to the chapel is deemed an important element for functional flexibility. The exterior appearance must not emphasize a physical link between the two buildings. The visual connection must be respectful to both independent elements of design. The most satisfactory way to provide a mutual entrance expressing a relationship between the two buildings and yet not abutting either one is to employ terracing which will provide neutral design support. With this solution, a well used path crossing in front of the Music House will be essentially undisturbed in function though somewhat altered in character.

The location of the choir in the nave is on the three rows of seats near the organist. This position establishes a close relationship between

THE CONCEPT

choir and congregation, especially desirable in unifying student participation in services.

A school chapel does not have to call attention to itself. It should be a spiritual retreat accepted as a building entity by those who live in its surroundings and by those who visit its surroundings. Any exterior symbolism suggesting the chapel's function would therefore be an unnecessary distraction from the subtle relationship between the chapel and the buildings which function along with it in creating a harmonious campus atmosphere.

TECHNICAL CONSIDERATIONS

The four brick fins serve the design purpose of emphasizing space planning and of supporting the cone shaped roof. The roof structure is framed by arches springing from one brick fin to the other, producing in plan a rectangular structure with struts forming the cone shape while resting on the arch girders and extending from the crown of the cone to a perimeter ring. Ceilings are hung at different heights from the roof structure to emphasize the interior spacial assignment.

The climatic design data for the Washington, D. C. region indicates a wide range of weather conditions that seldom reach unpredictable extremes. Building design is influenced, therefore, by the general weather expectancy. Year-round insulation is needed. On hot days, either air conditioning or natural cross-ventilation is necessary.⁸

8. Regional Climate Analysis and Design Data, Washington, D. C. Area, (Bulletin of the American Institute of Architects, January 1951) p. 9.

TECHNICAL CONSIDERATIONS

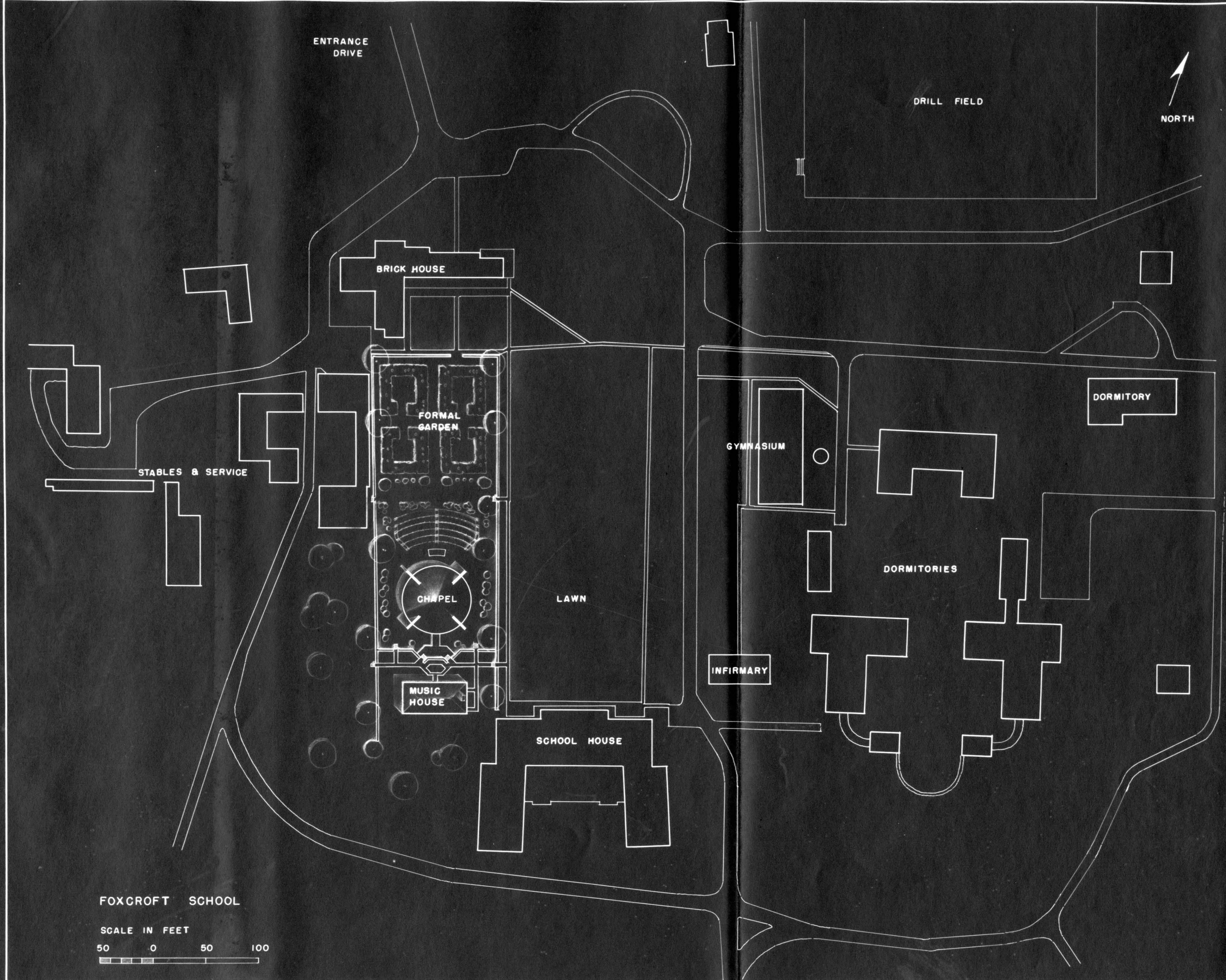
The chapel is heated by forced air supplied through ducts feeding from the base of the nave windows and from the perimeter floor level in the vestibule and chancel area. All return air is handled through ducts leading from floor registers located ten feet from the front and rear of the nave seating area. Steam piped from the Music House will supply the initial heat, and a fan located in the chapel basement will circulate the hot air. Natural ventilation is achieved by controlled openings in the louver walls. The prevailing movement of air from the northwest will cause a natural flow of air through the chapel from chancel to vestibule. Forced air ventilation is achieved by operating the heating system for air circulation only.

A discussion of the chapel's acoustical considerations involves three sources of sound and one shape to contain and to reflect sound. The speaker, the organ, and the choir each have their own particular problems

TECHNICAL CONSIDERATIONS

of function and of sound projection. All three must perform, however, in the same circular space which would offer acoustical difficulties were it not for the small size of the chapel and the splayed angle of the nave windows. The speaker is at all times ideally located with no acoustical obstruction. The organ is located in a position to project sound either out to the amphitheater or in to the chapel nave. Louvers are placed on each side of the organ chamber which may be open for sound emission or closed to act as a soundboard. The location of the choir in the nave offers an acoustical problem due to the choir's orientation for voice projection, but the small size of the nave diminishes the significance of this fault. The desirable aspects of the choir's position in the chapel is deemed of such importance as to offset any acoustical qualms.

Presentation



ENTRANCE
DRIVE

DRILL FIELD

NORTH

BRICK HOUSE

FORMAL
GARDEN

STABLES & SERVICE

CHAPEL

LAWN

GYMNASIUM

DORMITORY

MUSIC
HOUSE

DORMITORIES

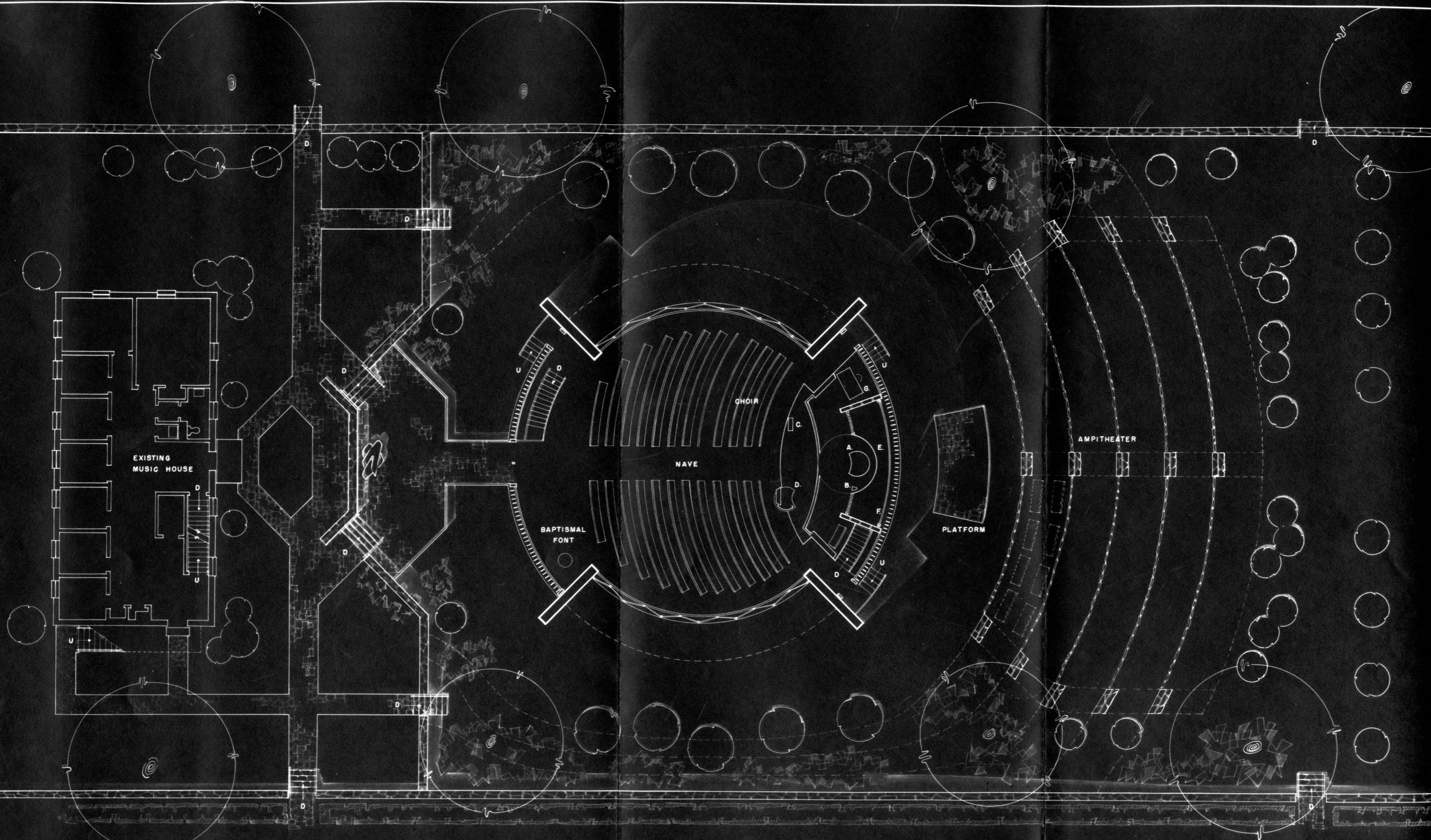
INFIRMARY

SCHOOL HOUSE

FOXCROFT SCHOOL

SCALE IN FEET





EXISTING
MUSIC HOUSE

BAPTISMAL
FONT

NAVE

CHOIR

PLATFORM

AMPHITHEATER

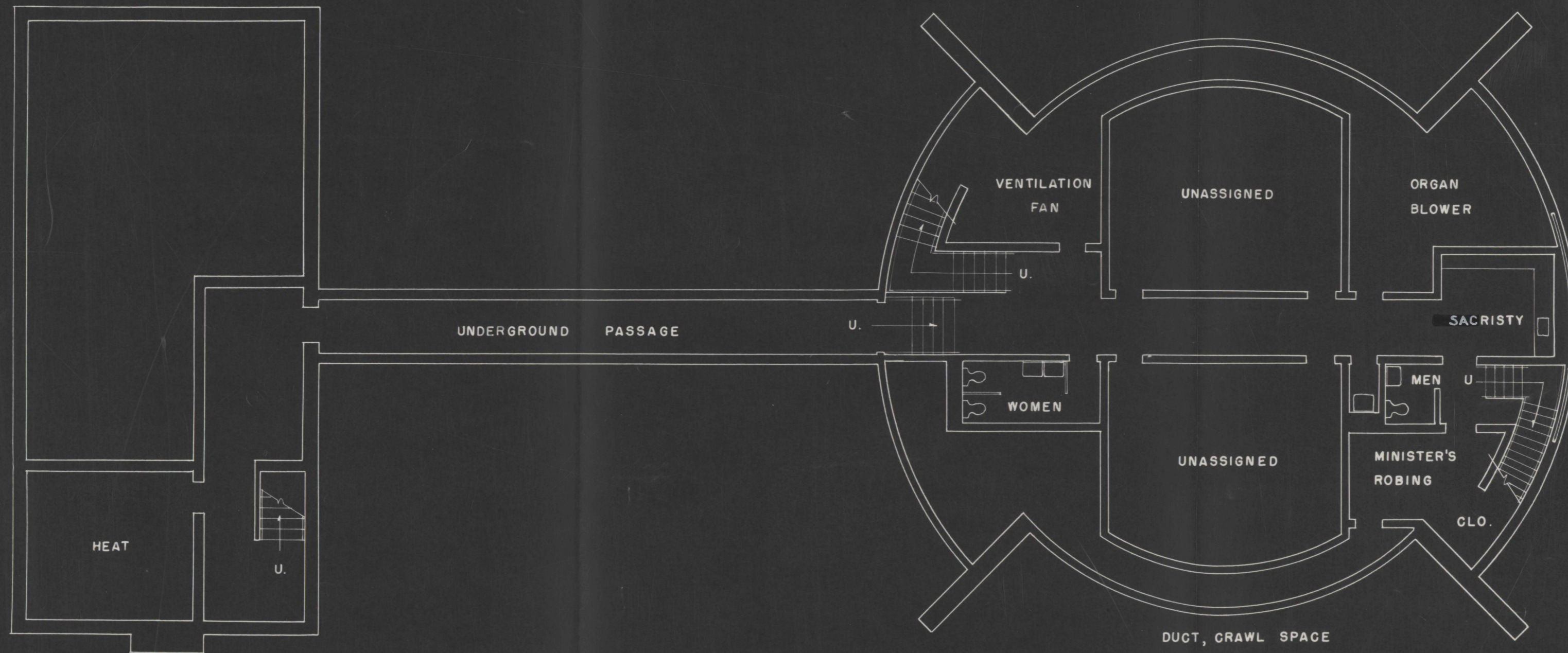
CHANCEL KEY

- | | |
|-------------------|---|
| A. ALTAR | F. SLIDING ORGAN-PROTECTING WEATHER PANEL |
| B. CREDENCE SHELF | G. ORGAN CONSOLE |
| C. LECTERN | |
| D. PULPIT | |
| E. ORGAN SPACE | |

PLAN

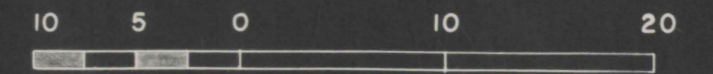
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10 5 0 10 20

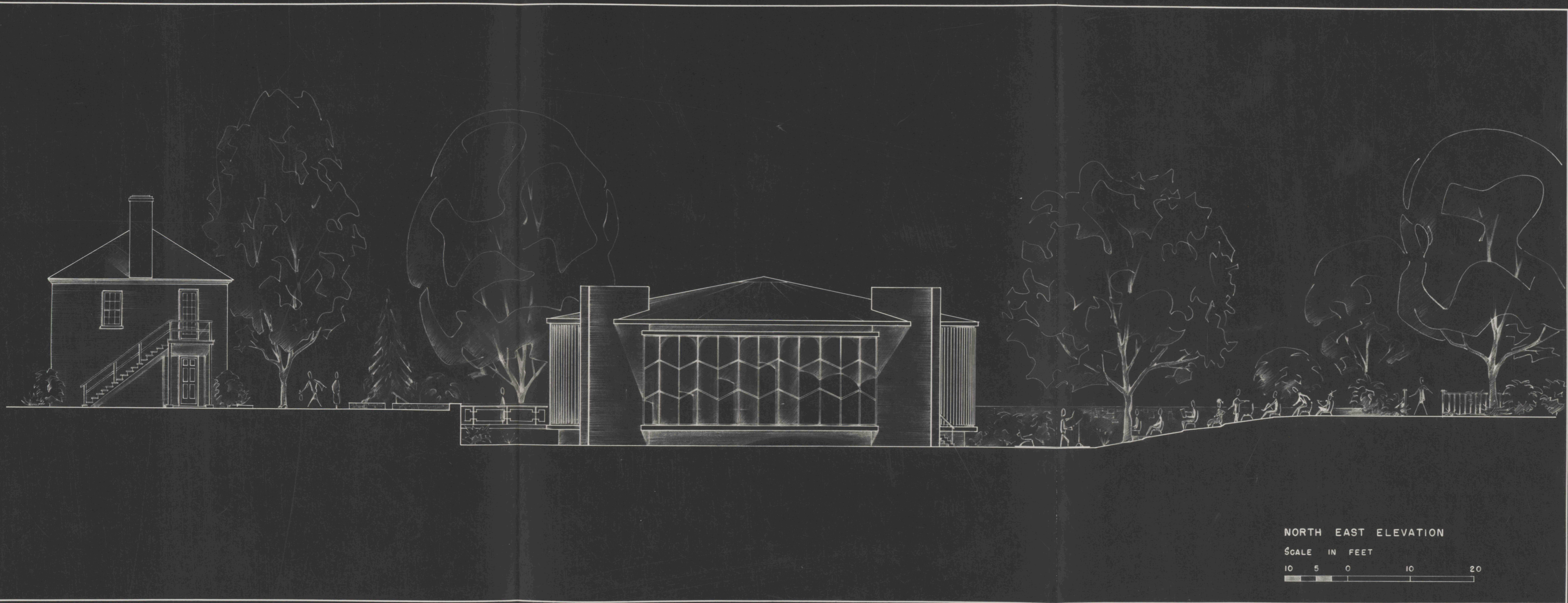




BASEMENT PLAN

SCALE IN FEET





NORTH EAST ELEVATION

SCALE IN FEET

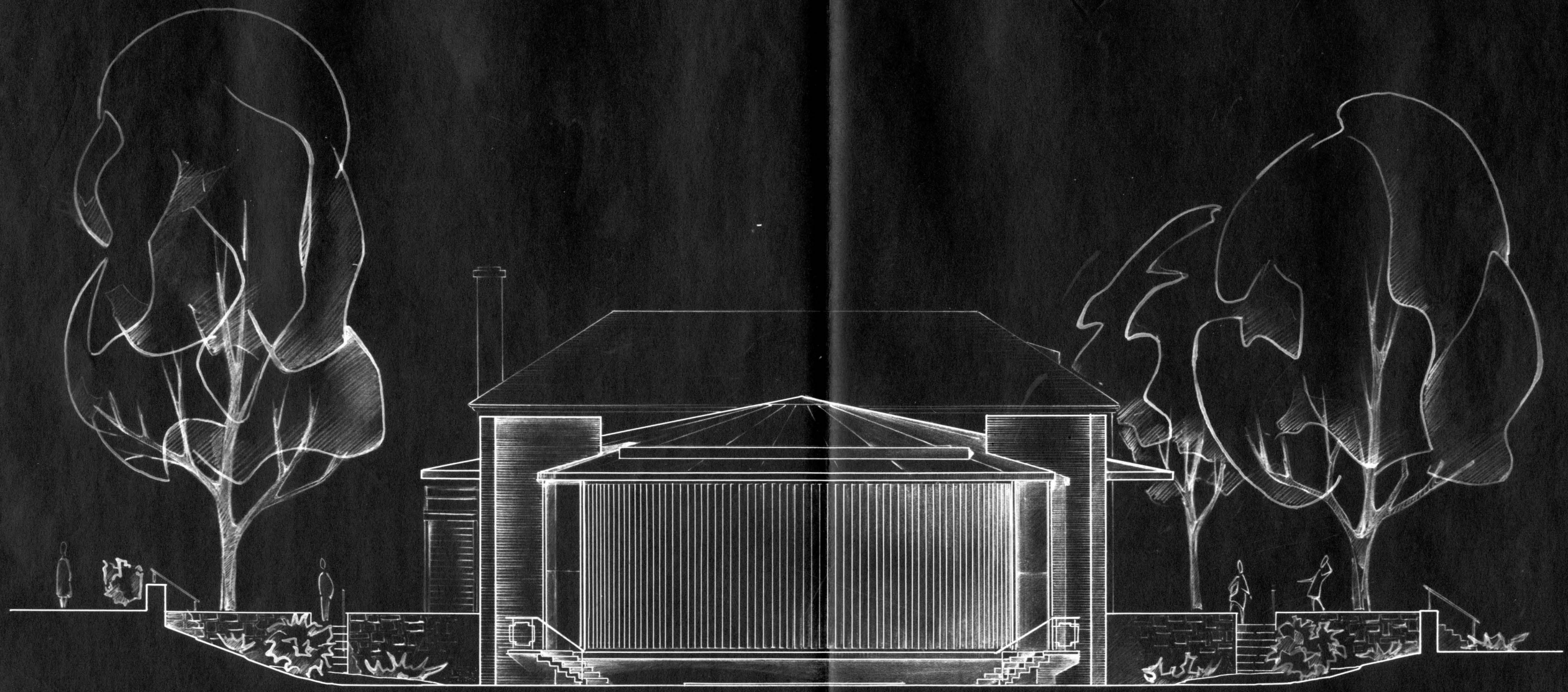




LONGITUDINAL SECTION

SCALE IN FEET

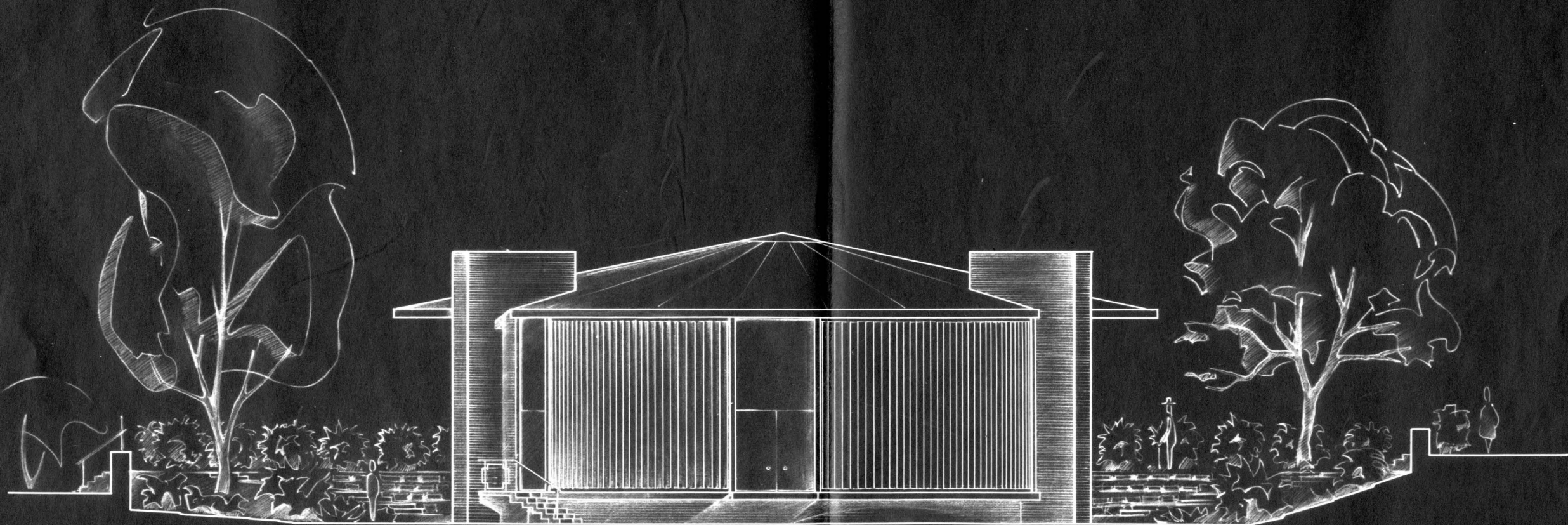
10 5 0 10 20



NORTH WEST ELEVATION

SCALE IN FEET

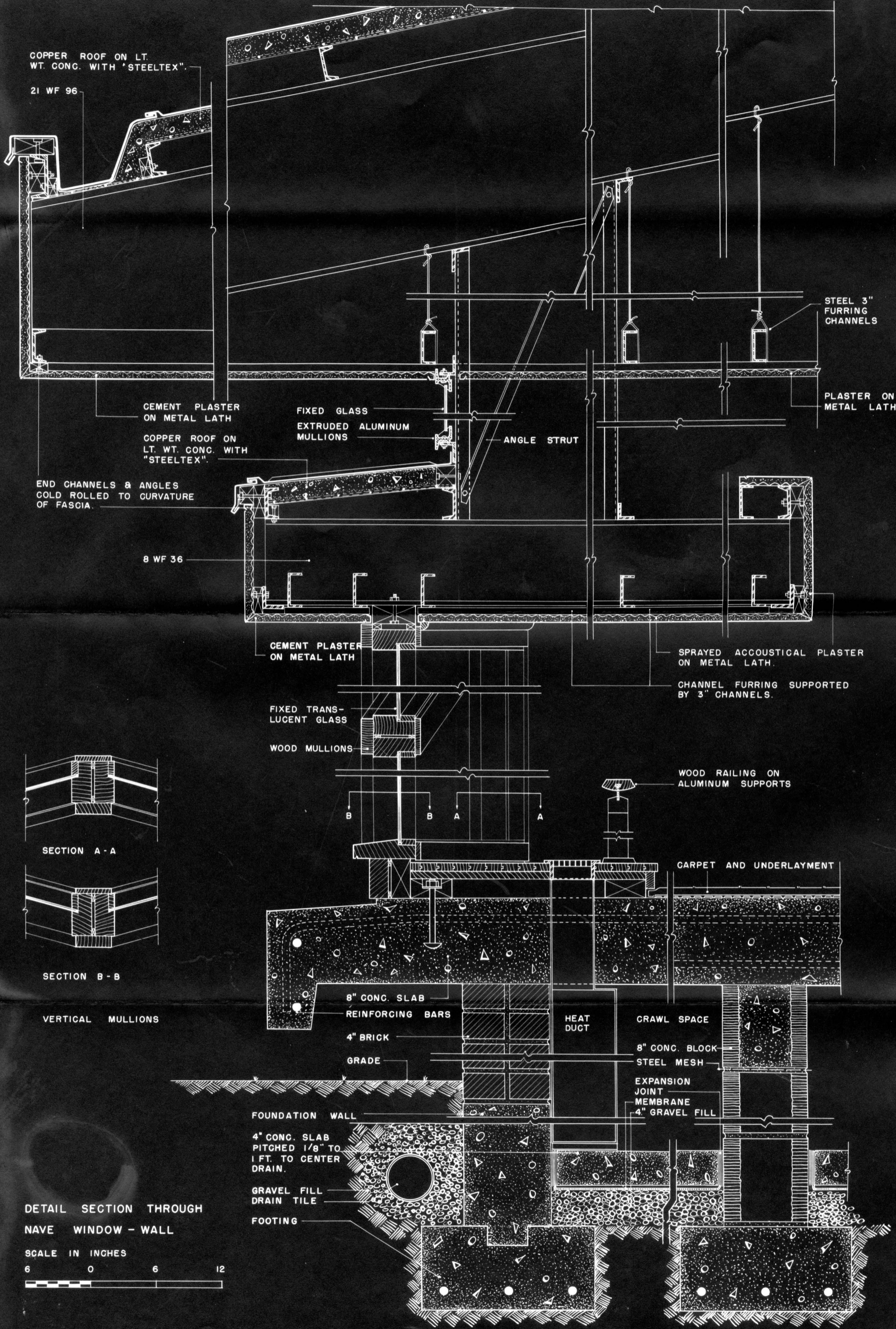




SOUTH EAST ELEVATION

SCALE IN FEET

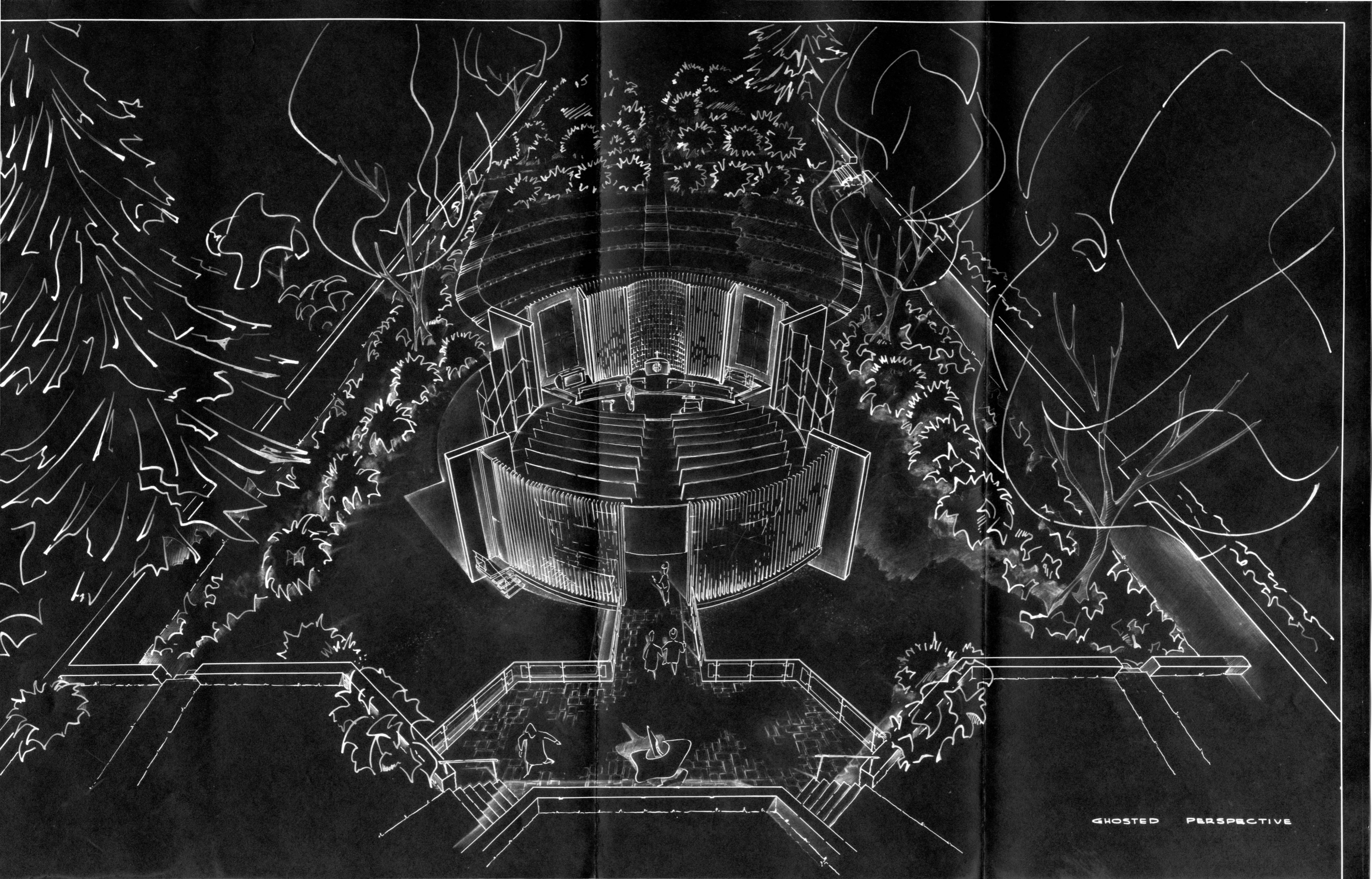




DETAIL SECTION THROUGH NAVE WINDOW - WALL

SCALE IN INCHES

6 0 6 12

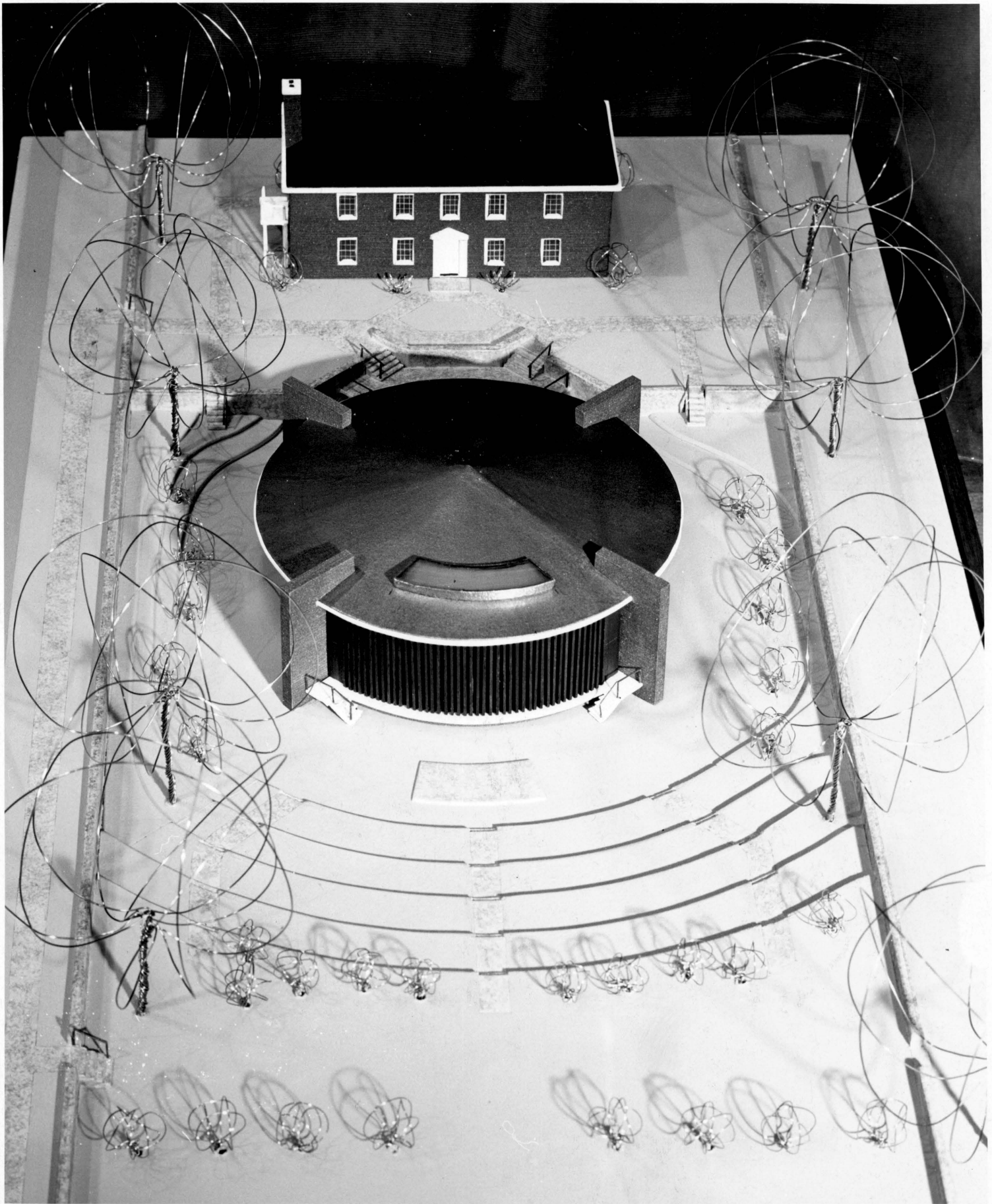


GHOSTED PERSPECTIVE

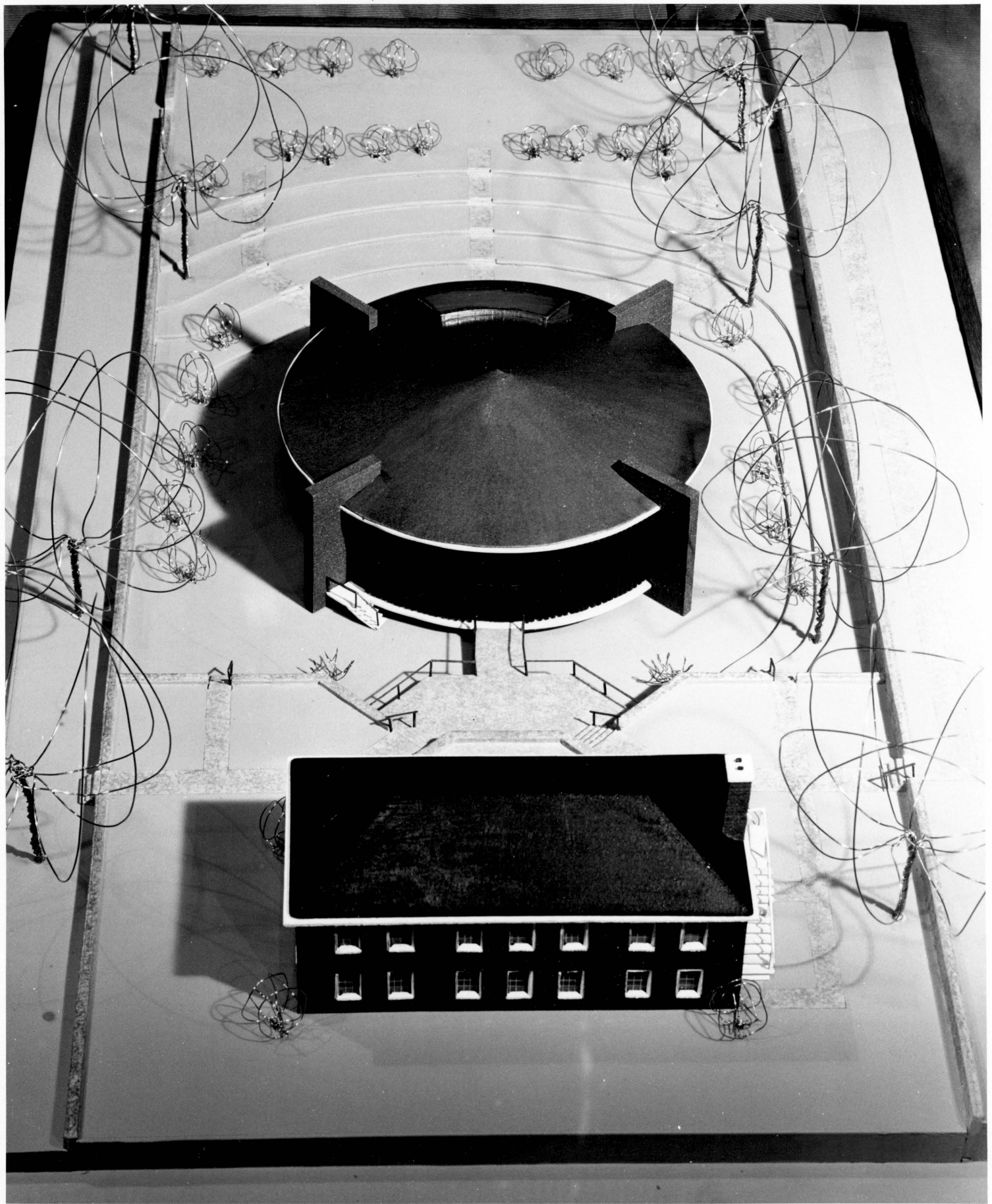
View from the West (Model)



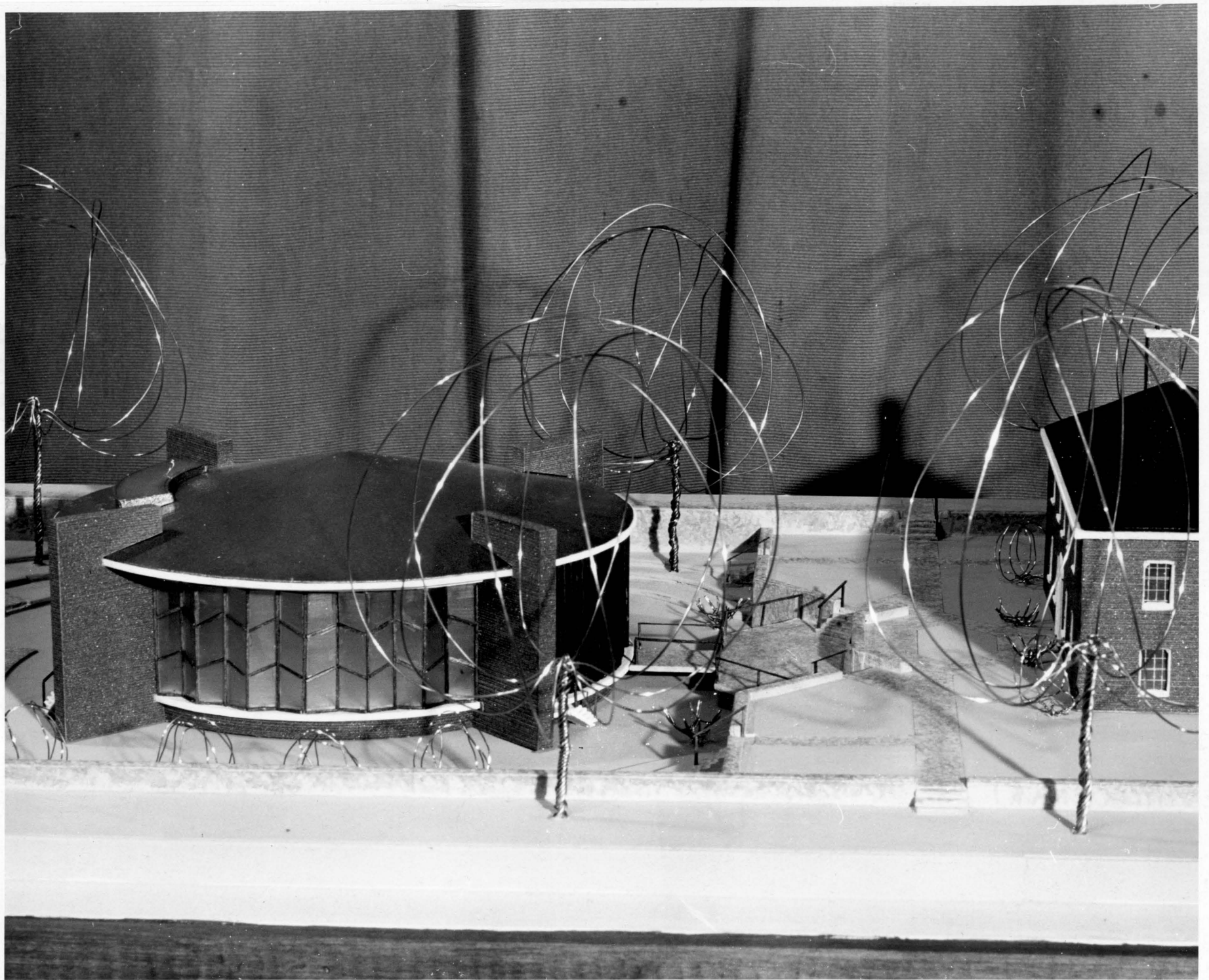
View from the North West (Model)

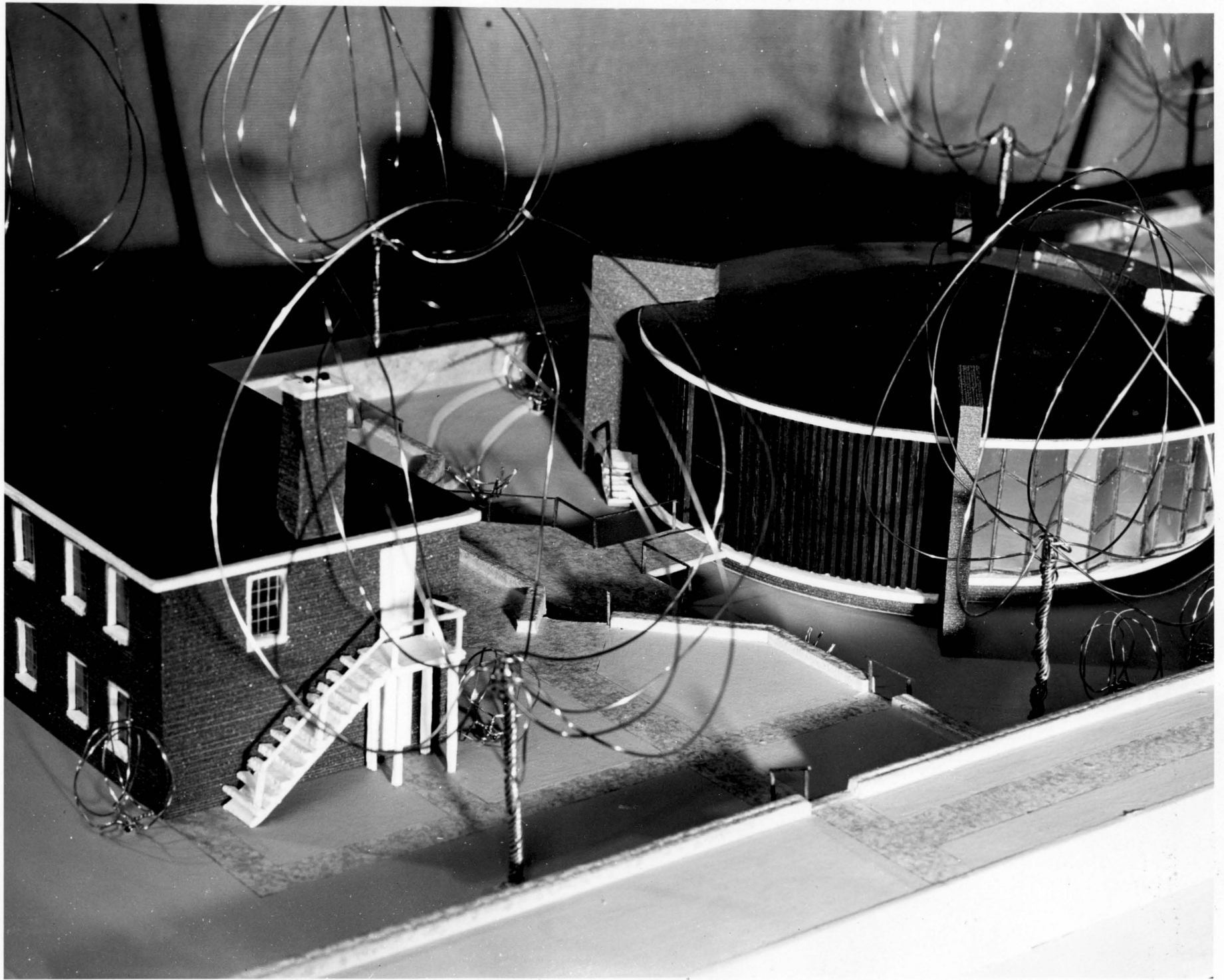


View from the South East (Model)



View from the South West, Detail (Model)





View from the East, Detail (Model)

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