

THE BLACKSBURG COMMONS

by

John Frederick Olson

Thesis submitted to the Graduate Faculty of the  
Virginia Polytechnic Institute and State University  
in partial fulfillment of the requirements for the degree of

MASTER OF ARCHITECTURE

in

ARCHITECTURE

APPROVED:

---

Dennis Kilper

---

Robert Dunay

---

Harold Hill

---

Jaan Holt

February, 1979  
Blacksburg, Virginia

## THE BLACKSBURG COMMONS

The Town of Blacksburg, Virginia has outgrown its present recreation building and is planning the construction of a new Community Recreation Center. The program includes a gymnasium for basketball, tennis, and volleyball, exercise facilities, a swimming pool, locker rooms, offices for the Parks and Recreation Department, community multipurpose rooms, and the Town library.

The proposed facility will be located at the intersection of Giles Road and Patrick Henry Drive, adjacent to the existing Municipal Park. The diverse indoor and outdoor recreation needs of all ages will be accommodated at one location after the building is completed. The site will be called The Blacksburg Commons and the proposed recreation building will be the object of this design investigation.

Design is the basis of all architectural activity. Any individual exerting an influence upon the planning, design, or construction of buildings or site improvements should understand the design process and be capable of recognizing and appreciating good design.

A building which can be called architecture represents the richness of life itself: a level of sensitivity and accomplishment communicating a joy of life through a unique collaboration of man and nature.

The Blacksburg Commons will serve as the vehicle for what is an investigation into the basis of architectural relationships and the design process. This thesis is a documentation of that effort and will attempt to summarize the beginnings of an understanding of architecture.

The approach to any human endeavor involves an understanding of the fundamental issues involved and a determination of the knowledge and resources required to take appropriate action.

In architecture, objects and materials combine to form relationships which communicate with the observer. The nature of that communication determines the quality of the architecture.

This design investigation accepts as the fundamental issue of architecture the communication of the richness of life and the corresponding necessary control of all decisions in the design and building processes.

One must understand what makes good architecture before he can design good architecture, or even fully recognize and appreciate good architecture. Function, technology and economy are all vital aspects of truly good architecture, but they do not constitute good architecture either alone or collectively. A degree of sensitivity is necessary to control and balance those other aspects and make the result responsive to the human observer. If that sensitivity is achieved, by comparison the rest is easy. If it is not achieved then architecture is impossible.

## RECREATION

"Function is an excuse for architecture." <sup>1</sup>.

Form does not follow function. Form and function proceed together. Function suggests and form responds. Function adapts and form modifies. When form transcends function, then architecture is possible. Form remains when function changes. Architecture is greater than function. Function is an excuse for architecture.

The function of the Blacksburg Commons is to provide recreation opportunities for the town residents. The participants may choose activities which are either active or passive, group or individual, specific or non-specific, indoor or outdoor, and large or small scale. <sup>2</sup>. The building must provide recreation opportunities in a variety of ways: it must itself be an event rather than merely a container for events.

Some forms of recreation have rather specific spatial requirements: basketball, tennis, swimming, and diving. Other activities can more easily adapt to a variety of indoor spaces: crafts, games, meetings, talking, sitting, or reading. Still other activities must find a niche in which they can support without interfering, and remain harmonious with the larger spaces: stairs, toilets, offices, coatrooms, and mechanical

spaces. Circulation spaces tie the various activities together with the appropriate degree of interaction. Central to all is a control room from which an employee can maintain visual contact with a large part of the building.

The larger spaces suggest the building form. The smaller spaces develop and relate to the larger. The functions in the smaller spaces adapt to the harmonious plan. The in-between spaces suggest circulation and services. Form and function interact and compromise to the ultimate benefit of both.

## SURROUNDINGS

The Town of Blacksburg has purchased land at the intersection of Giles Road and Patrick Henry Drive as the future site of the recreation building. Locating the facility away from the center of the town has precedent in the practice of the ancient Greeks. The word "gymnasium" meant "an exercise for which you strip," and the essential part was not a building but an athletic ground. As such it was generally outside the city and was a public institution open to all.<sup>3</sup> In today's automobile oriented society the location away from the town center is no inconvenience, and the juxtaposition with the Municipal Park allows the building to more fully respond to the recreation needs of the entire community.

The site itself slopes down from east to west, with a total elevation change of about forty feet. It is bordered by an open field on the south, by a corner of the park on the southwest, and by private residences on the west, north, and east. The site has numerous mature trees along its north edge bordering Giles Road.

Site is a determinant of building form. The above suggests a building which follows the slope of the land and maintains a low profile for the sake of the neighboring residences. The

building should also be oriented to preserve and exploit the existing trees and to shield the parking lots from the neighbors as much as possible. The library and multipurpose area can avoid afternoon sun by being located on the east side of the building, with the physical activities and their greater height requirements positioned down the slope. The building and paved areas must relate to the existing park so that pedestrian movement is encouraged between indoor and outdoor activities.

## INVESTIGATION

The building plan was initially patterned after a pinwheel, with the four sections housing the multipurpose area, the library, the gymnasium, and the swimming pool. The locker rooms and support facilities were located beneath the multipurpose area, adjacent to the swimming pool.

The structural system emerged as the primary focus of the early design. The system was a series of parallel bearing walls spanned by beams to define the building spaces. With little emphasis on function, the system was manipulated to develop its ability to allow various conditions: Flat roofs, pitched roofs, level changes, column support, and bearing wall-beam connections. The relationships of the structural components were investigated, and the structure manipulated to create and emphasize different spaces.

Kahn's concepts of physical and psychological validity were helpful here. The former deals with the laws of nature, and the latter with the reality of the mind.<sup>4</sup> The physical validity suggested structural concrete as the material for the bearing walls. The psychological validity suggested that the walls be differentiated as columns where the load was greater due to long spans and greater ceiling heights, and to allow the walls to be penetrated for human and visual circulation.

A more detailed consideration of the site allowed the building to be properly oriented on the available land and precipitated the design of other site improvements: parking, pedestrian circulation, outdoor spaces, entrances, and vegetation. Considering the building at the present level of structure and floor plan rather than as a block diagram gave considerable direction to the way that the site improvements should relate to it. The struggle was to recognize the scale change necessary in the parking area and to avoid too literal a relationship of the outside areas to the building.

A shift was made to the functional aspects of the building in order to produce an appropriate floor plan. Through many attempts this led to the generation of a general condition which could apply to all four major portions of the building. This condition placed the major area along the central circulation corridor with smaller support spaces surrounding it. The four central spaces rise above the others and have roofs which slope outward from the corridor toward the lower flat roofs of the support areas. The locker rooms were moved to the west side of the swimming pool to balance the plan.

The general condition still offered no solution to the following: ending the building on the north and south, parallel to the beam direction; introducing vertical circulation between the upper and lower building levels; providing for mechanical circulation; and locating some of the smaller service areas. The introduction of another level of structural member, a series of large vertical elements running east to west across the building between the major spaces, resolved all of the above. These elements allow the large spaces to end and join the ground, and supply smaller scale spaces to house the stairs, ramps, coatroom, kitchen, and small library spaces, with mechanical spaces above. The floor plan allows all spaces to connect with a mechanical space, with the gaps between the vertical elements available for ducts and utilities.

The resulting plan is a series of parallel walls running along the contours of the site. The library and multipurpose area are on the east side of the building, with the pool, lockers, and parking entrance eight feet lower, and the gymnasium sixteen feet lower on the west side. Windows in the bearing walls at the beam line allow light to enter. The major areas rise up to introduce light to their interiors.

A return to the site plan generated the present design, in which the main access road passes through a paved central square which defines the entrance, relates the road to the building, and signals the driver to exercise caution in this pedestrian area. The parking adheres to the same grid as the building, but expresses the larger scale of the automobile. The parking changes levels where appropriate to follow the contours of the site. A paved pedestrian circulation route connects the two building entrances to both streets, and provides a route through the parking area to the athletic fields.

## DISCOVERY

Those who relish life are constantly engaged in the process of learning. Learning comes about through discovery, not through imitation of memorization. True learning can be applied to new situations and generate new discoveries.

Design is a process of discovery. Meaning comes about only through relationships. The discovery of the appropriate relationships leads to good architecture.

There is a hierarchy of decisions which controls design. Function, technology, or economy cannot be allowed to assume control over the design. Technology can offer solutions but not understand problems. An underlying sensitivity must offer possibilities and produce a set of relationships which is architecture. Within that set, manipulations and modifications can be made to accommodate the practical aspects of architecture.

Architecture has to work to be successful, but there is usually more than one way in which a building can work. The function can more easily adapt to a work of architecture than can a work of architecture be a literal interpretation of function.

Form does not equal shape. Form is intangible; a set of relationships which defines and permits the basic intent of the building.

There is a hierarchy of order in architecture. Structure and form must express that hierarchy for the building to have interest and differentiation. All spaces will be equal if all defining elements are equal.

Size and scale are different things. Size relates to the dimensions and the function. Scale relates to reference objects and ultimately to the human being.

Building structure is dynamic and wants to express the flow of the load to the footings and to the ground. Building systems are in motion, producing constant flow and change. Nothing is static.

Failure to resolve a design problem is often an indication that the wrong problem is being addressed. If the problem is understood, then the solution will be discovered. The impact of decisions at the larger and smaller scale must be considered throughout the process.

Discovery takes time. Design is a series of corrections which must be made over time, through personal involvement and impersonal criteria. Full use must be made of what has gone before for the design to proceed smoothly.

Good architecture is easier than bad architecture. The introduction of a different hierarchy, order, or element which completes a visual harmony will also facilitate the accommodation of practical requirements. The building is not just an organization, it is an organism and must be complete in every respect.

## MANIFESTO

The study of architecture involves a visual awareness, a knowledge of the technology of building construction, and a synthesis of the two in the discovery of architectural relationships. The student is ready to leave school when he begins to have an understanding of architecture and can continue its study on his own.

The most difficult part comes after graduation: the first hand study of architectural spaces and their relationships to and impacts upon man. Much of modern architecture lacks humanity. The results are of academic interest, but not responsive to the users.

The thrusts toward industrialization, technology, and post-modernism must be tempered and controlled by human interests. Industrialism has nothing to do with factories per se, but concerns the control of the total building process from start to finish, and must be considered in terms of humanity. It is ironic that many other products mass produced in factories show greater concern for the human race than the buildings in which we live.

Decisions regarding the planning, design, and construction of buildings must be made in a spirit of learning about the larger

concern of human well-being. The architect and his ego must part company.

FOOTNOTES:

<sup>1</sup> "Art in Architecture: An Artist's Point of View," Architectural Record, December 1978, p. 69.

<sup>2</sup> R. S. Wurman, A. Levy, and J. Katz, The Nature of Recreation (Cambridge, Mass., 1972), p. 19.

<sup>3</sup> E. Norman Gardiner, Athletics of the Ancient World (London, 1930), p. 72.

<sup>4</sup> Romaldo Guingola and Jaimini Mehta, Louis I. Kahn (Boulder, 1975), p. 35.

## APPENDIX

### List of Illustrations:

Figure 1	Study Model #1	p.19
Figure 2	Study Model #2	p.20
Figure 3	Study Model #3	p.21
Figure 4	Study Model #3	p.22
Figure 5	Study Model #3	p.23
Figure 6	Study Model #3	p.24
Figure 7	Site Plan	p.25
Figure 8	Floor Plan	p.26
Figure 9	Sections	p.27

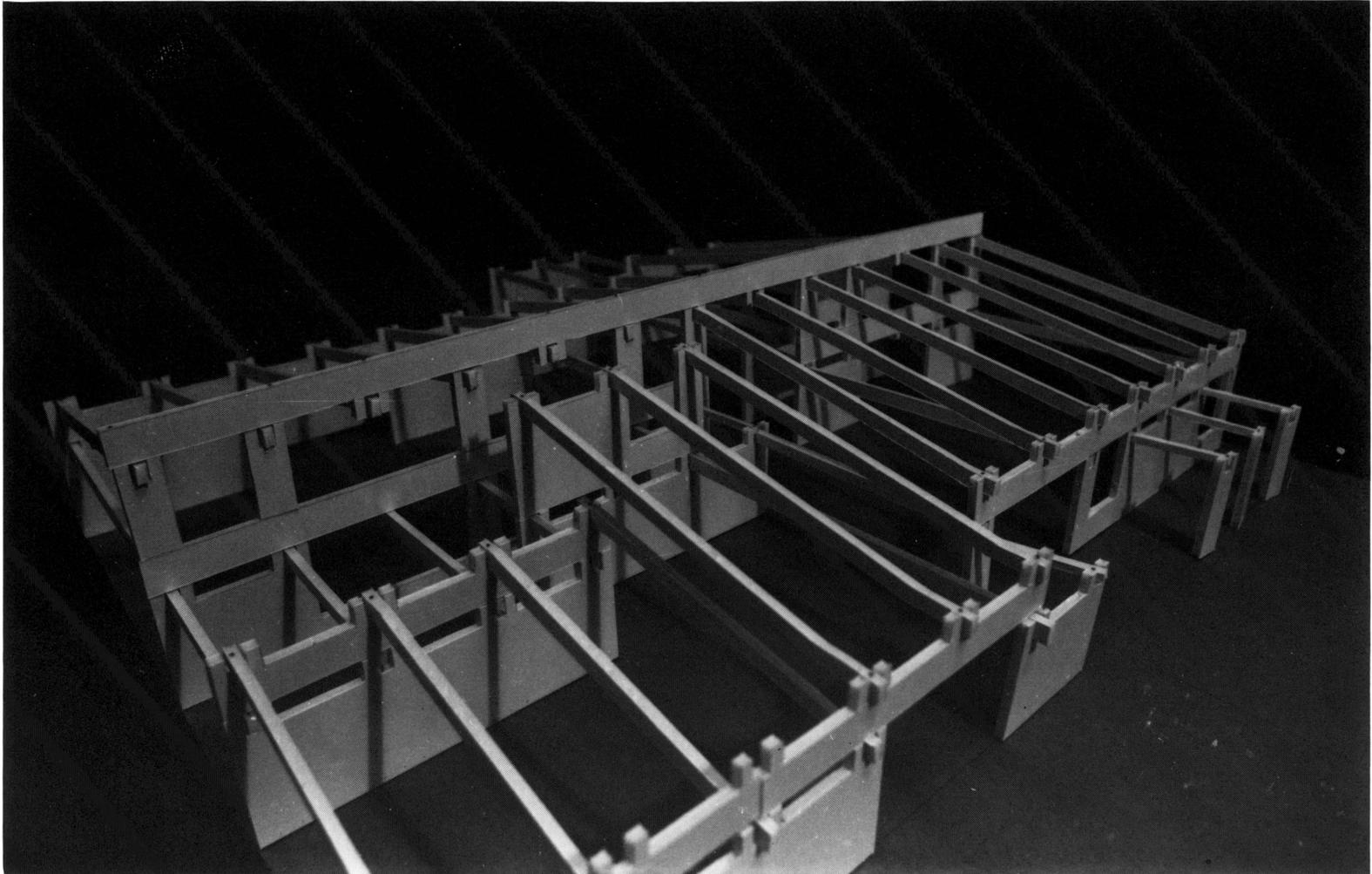


Figure 1

Study Model #1

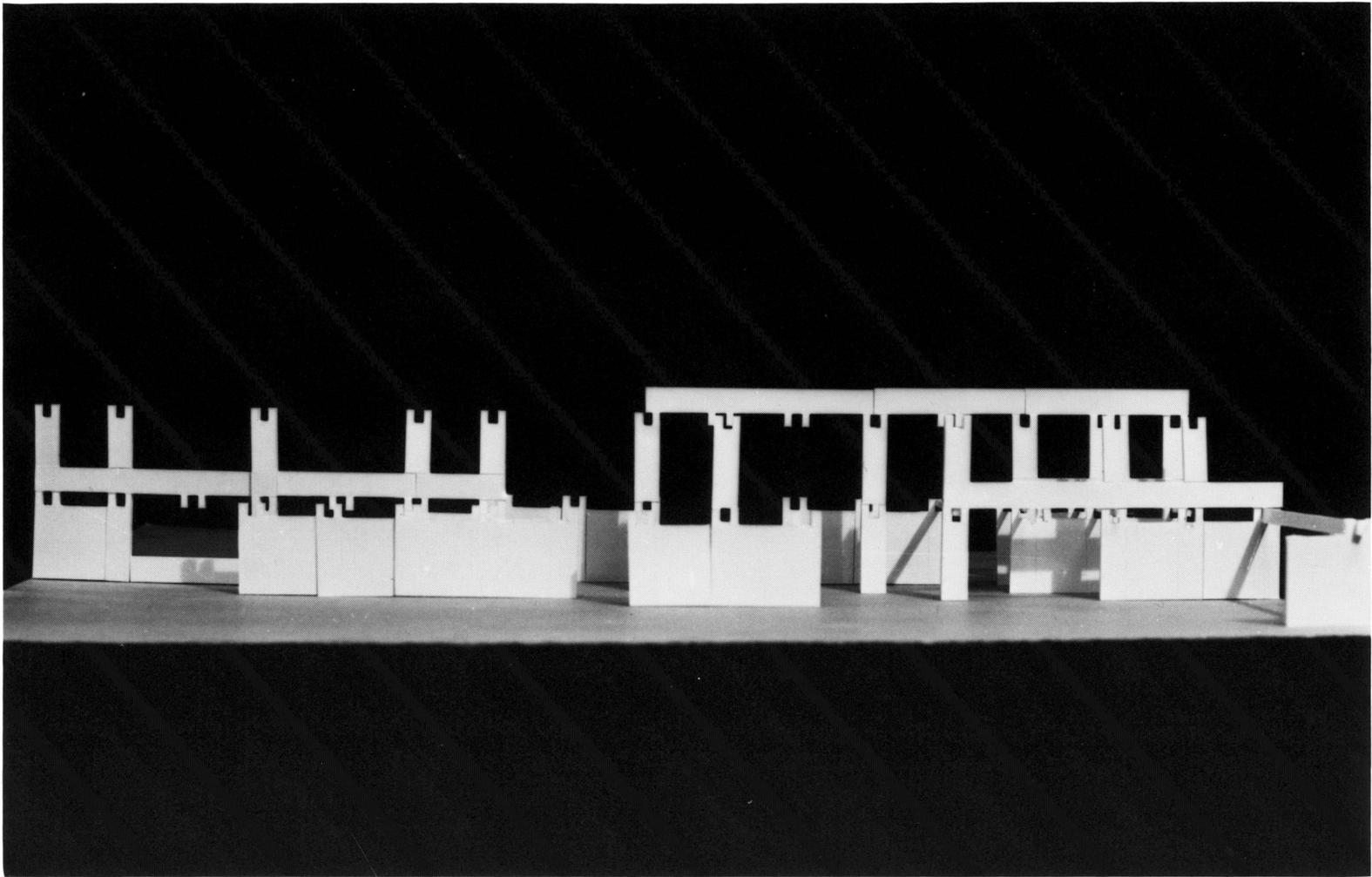


Figure 2

Study Model #2

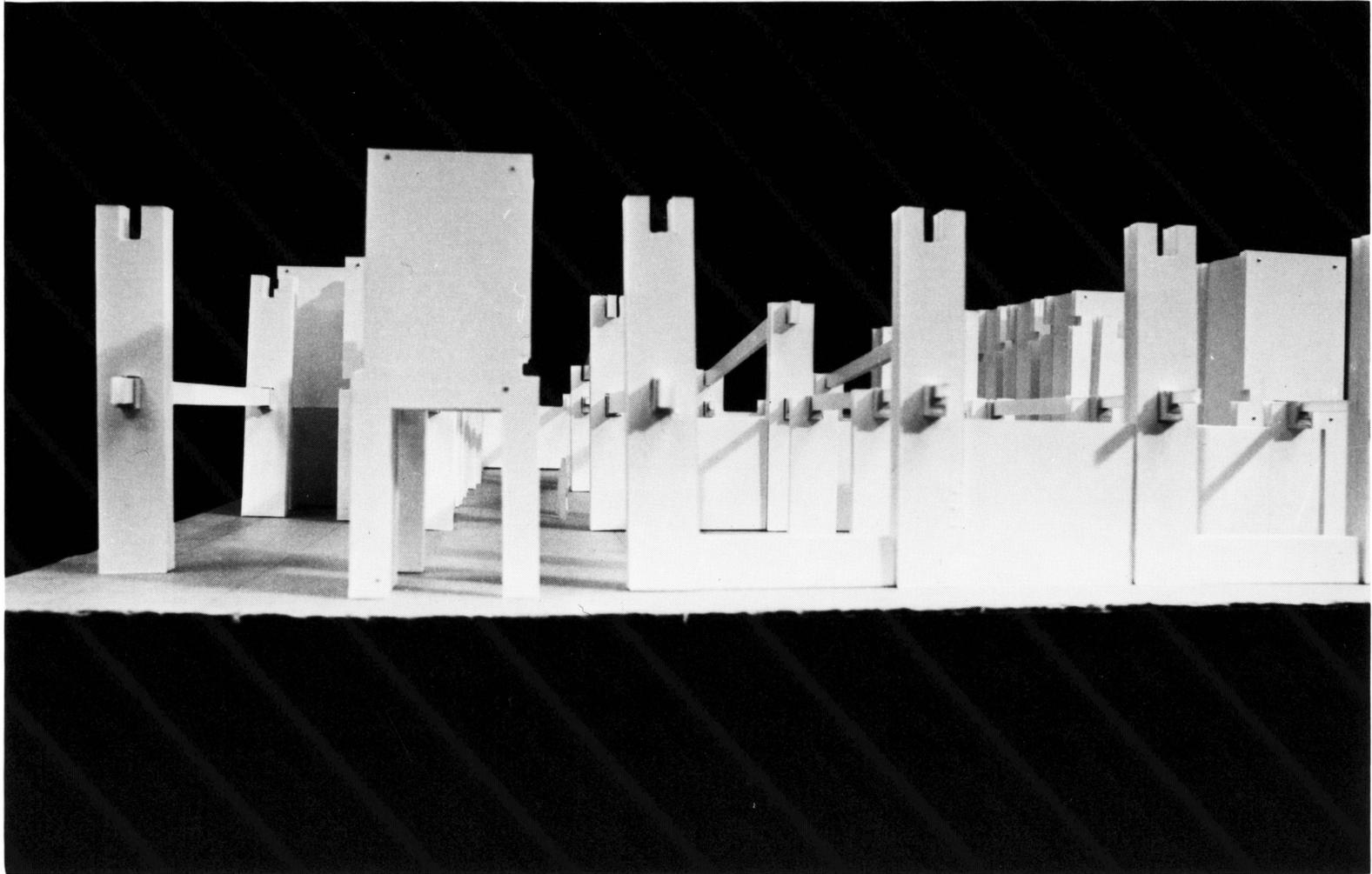


Figure 3

Study Model #3

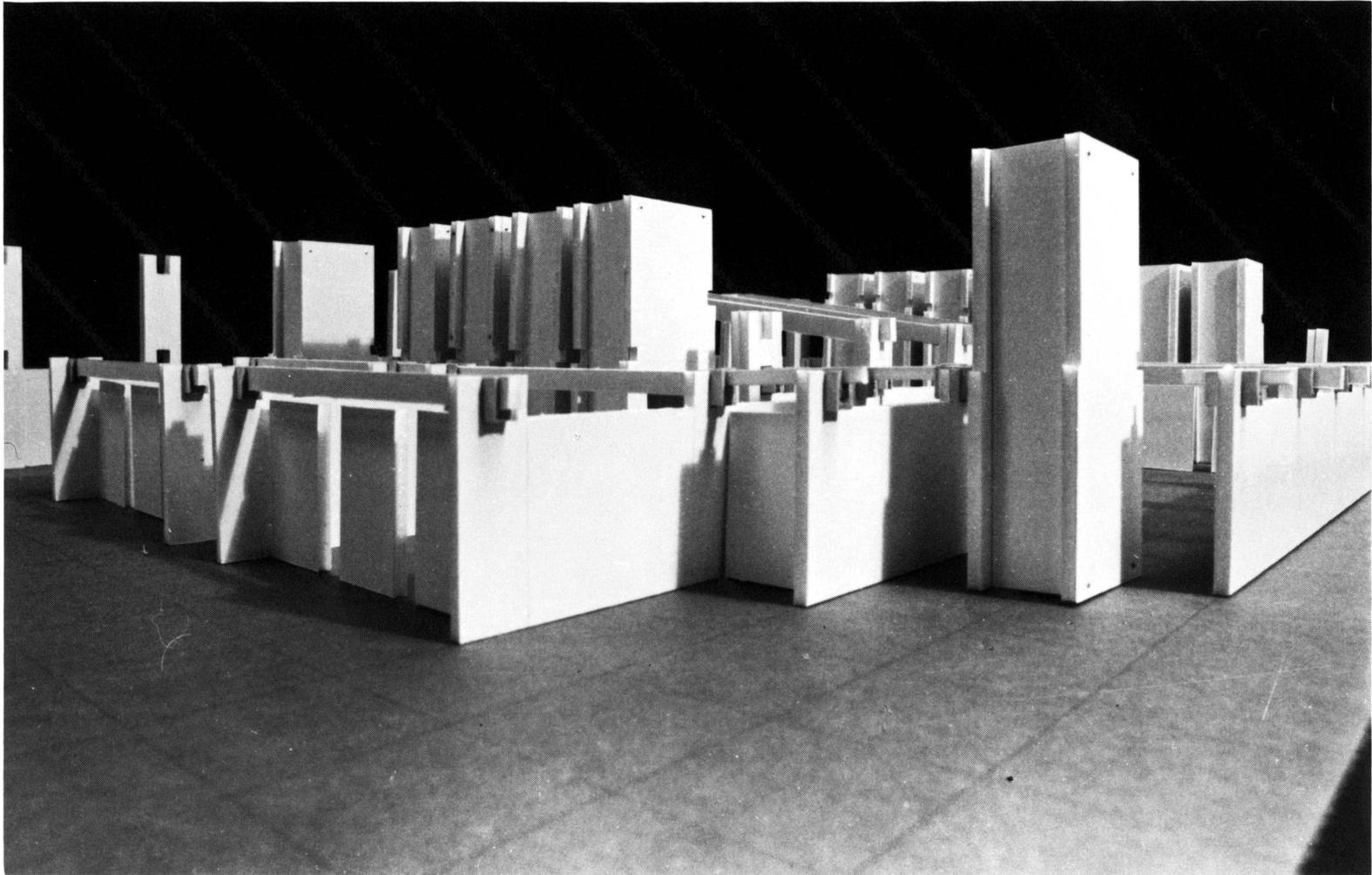


Figure 4

Study Model #3

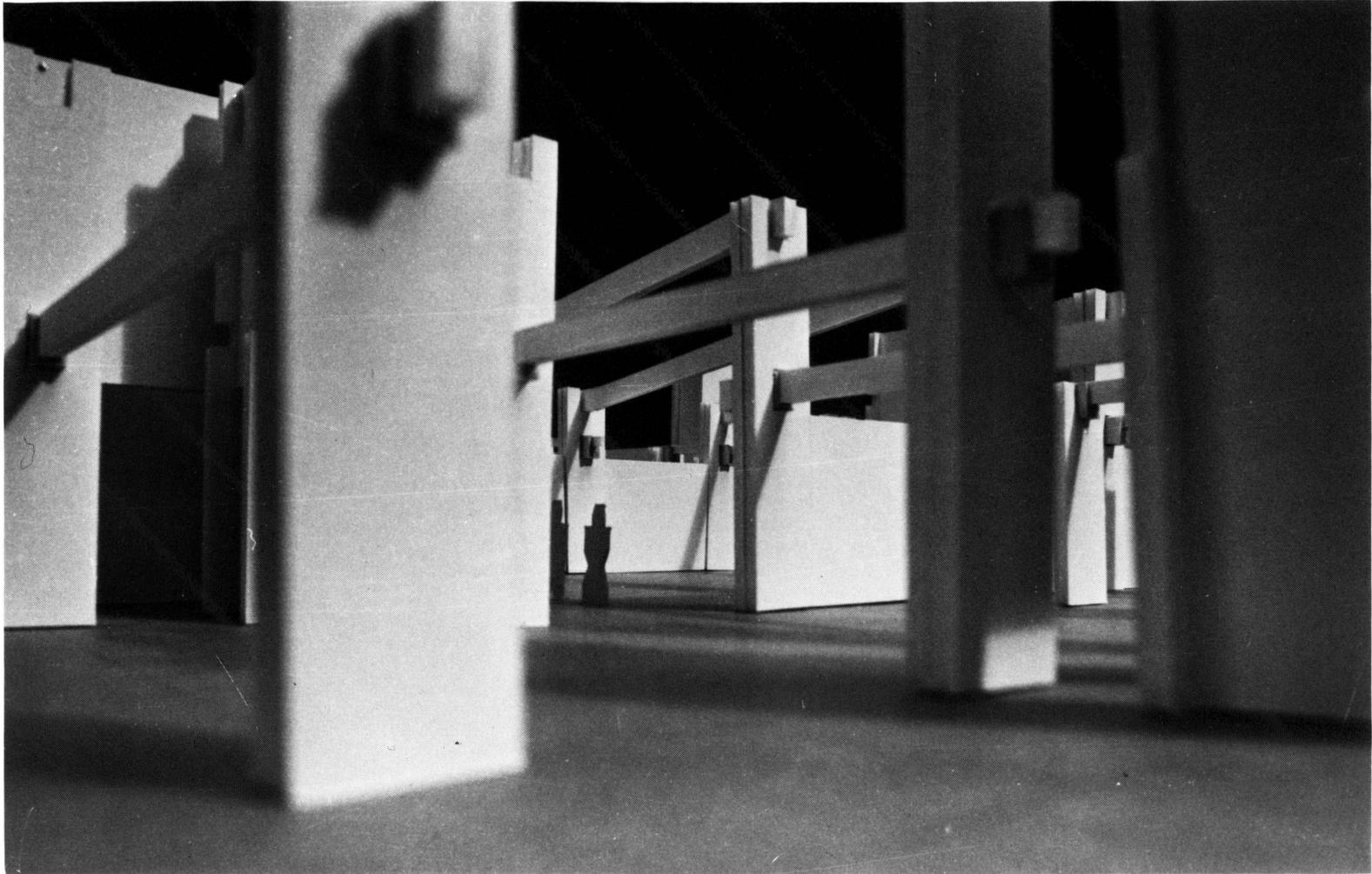


Figure 5

Study Model #3

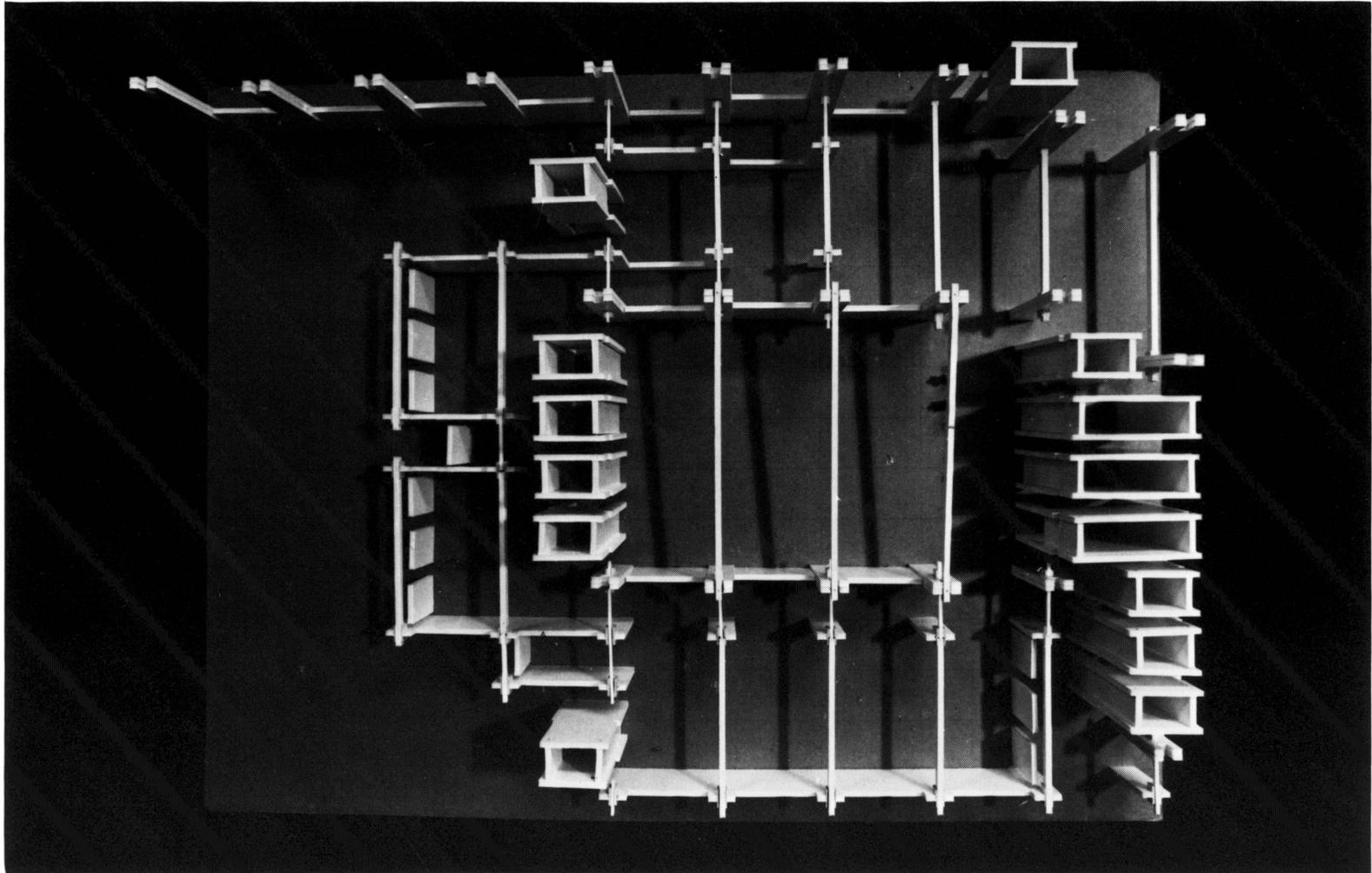


Figure 6

Study Model #3

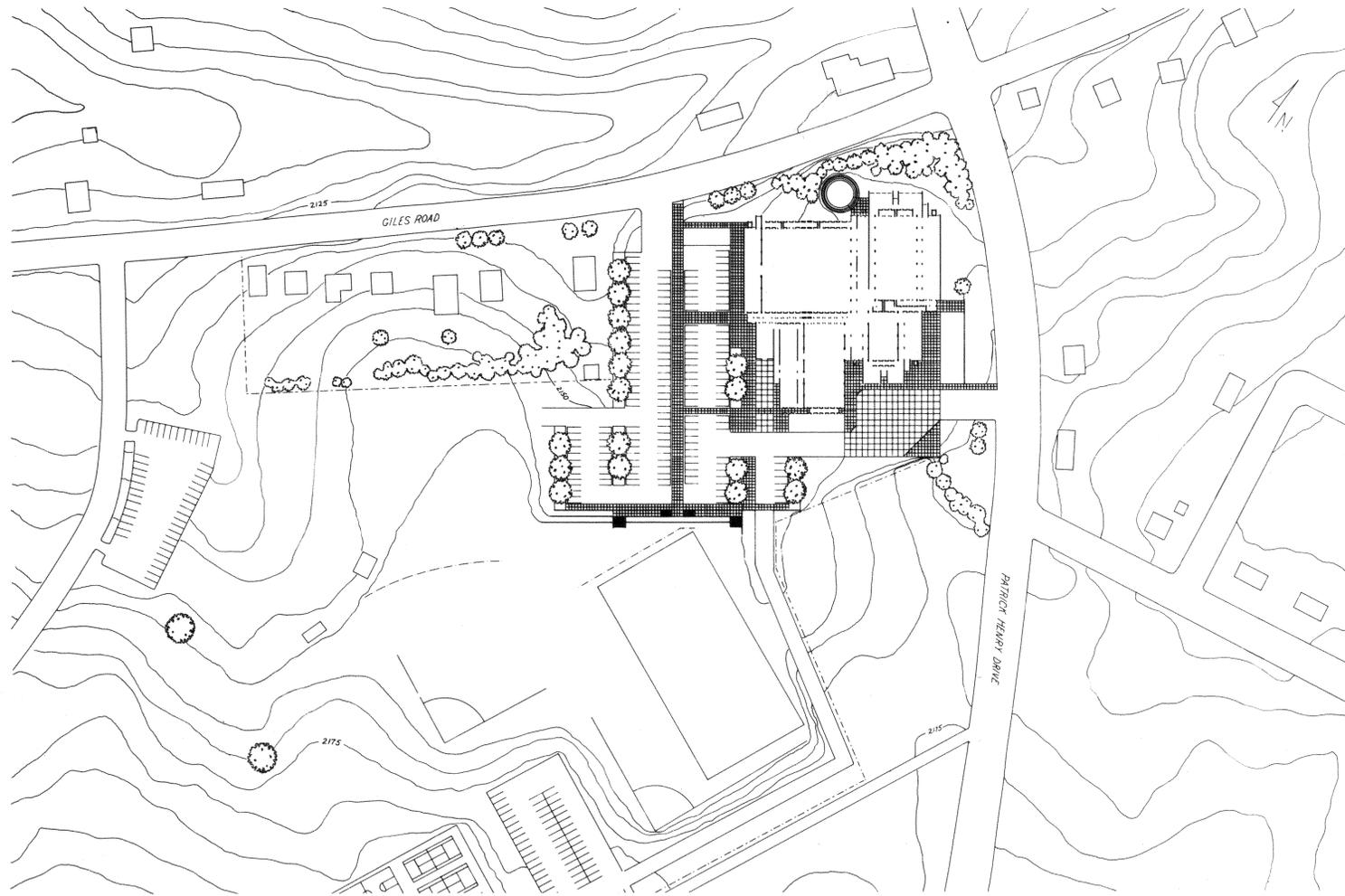


Figure 7

Site Plan

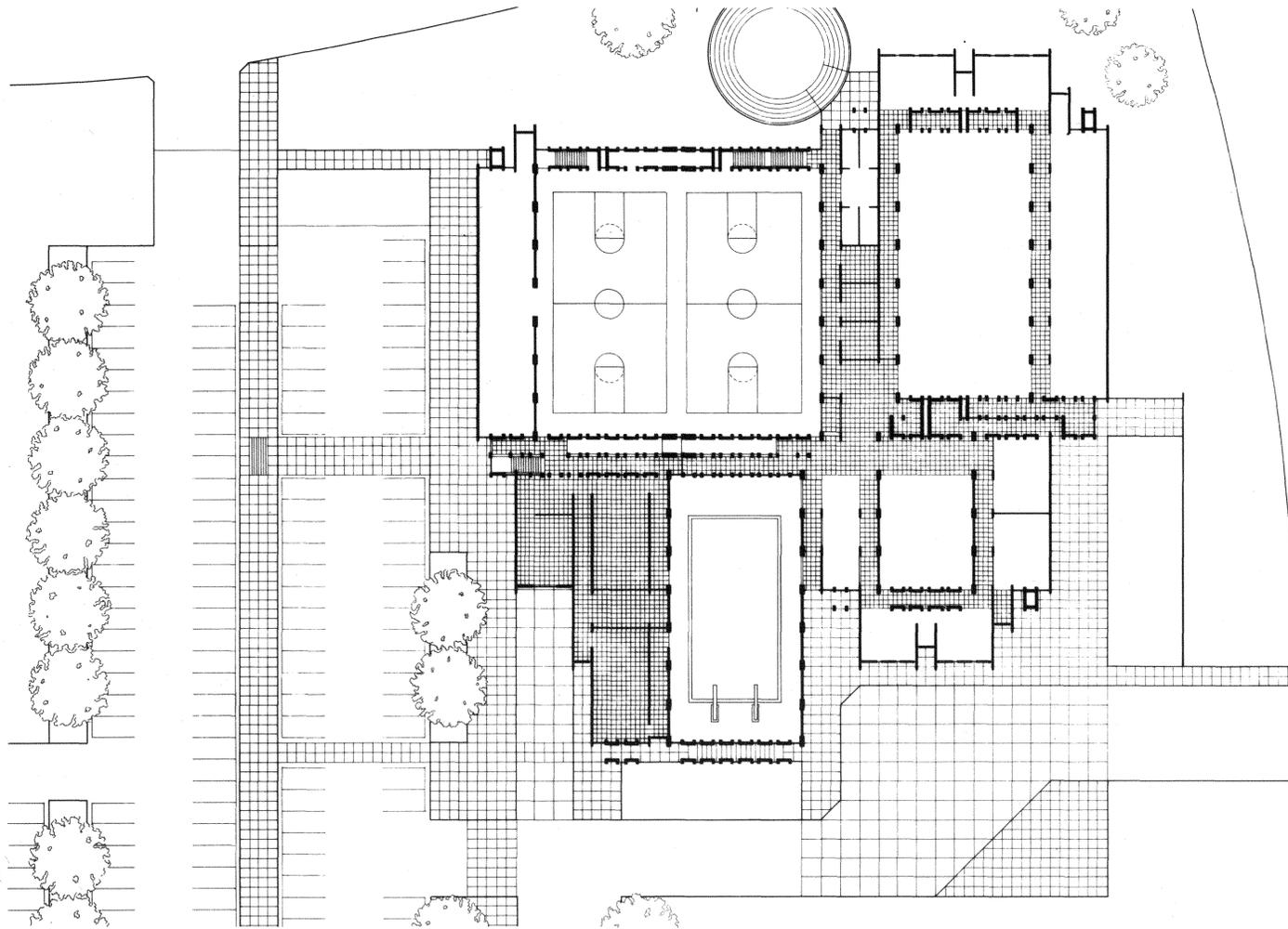


Figure 8

Floor Plan

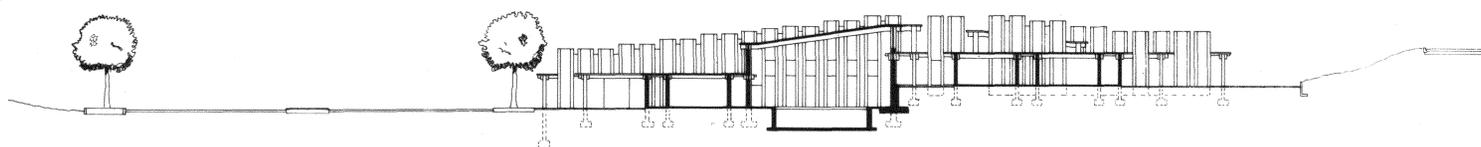
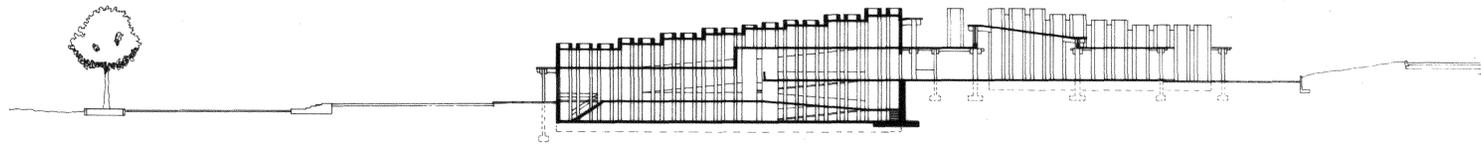
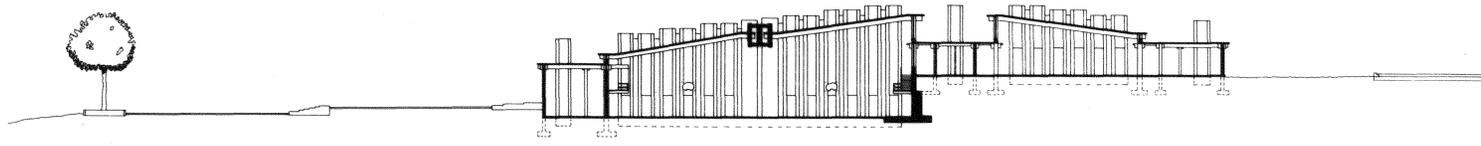


Figure 9

Sections

**The vita has been removed from  
the scanned document**

# THE BLACKSBURG COMMONS

by

John Frederick Olson

(ABSTRACT)

The town of Blacksburg, Virginia is planning the construction of a new Community Recreation Center. The proposed facility will be located adjacent to the existing Municipal Park, and the site will be called the Blacksburg Commons. The recreation building will serve as the vehicle for an investigation into the basis of architecture and the design process. This thesis is a documentation of that investigation.