SEPTEMBER OCTOBER, 1969

NORTH CAROLINA ARCHITECT

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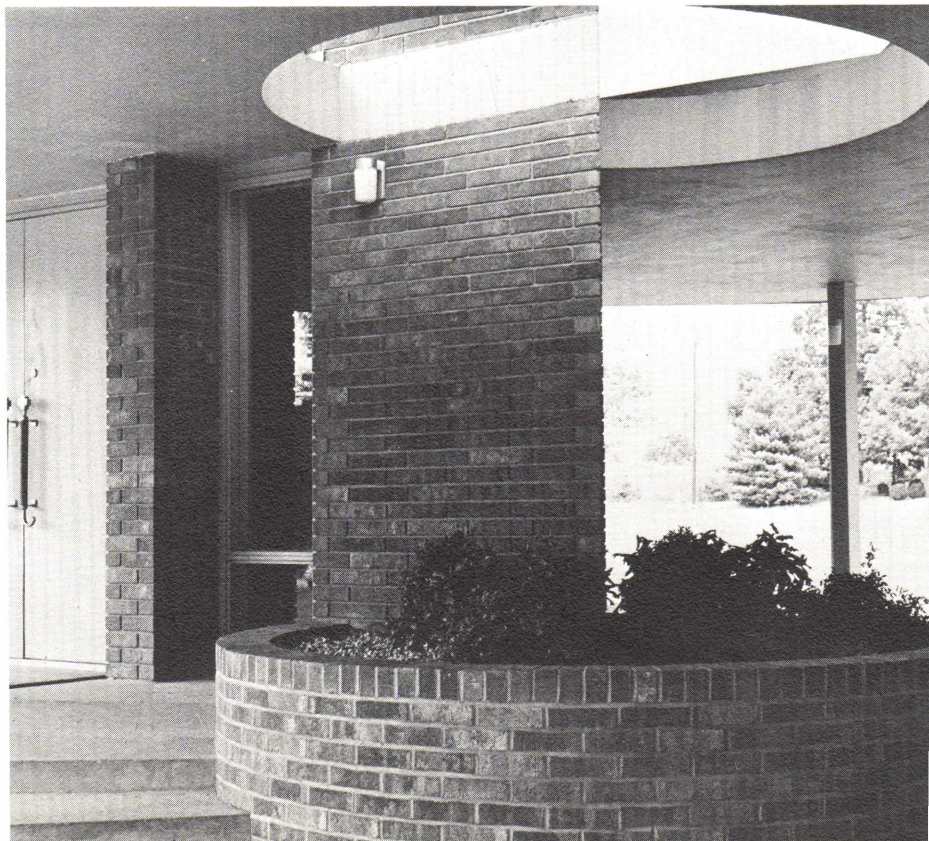

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SEPT./OCT. 1969, VOL. 16, NOS. 9 & 10

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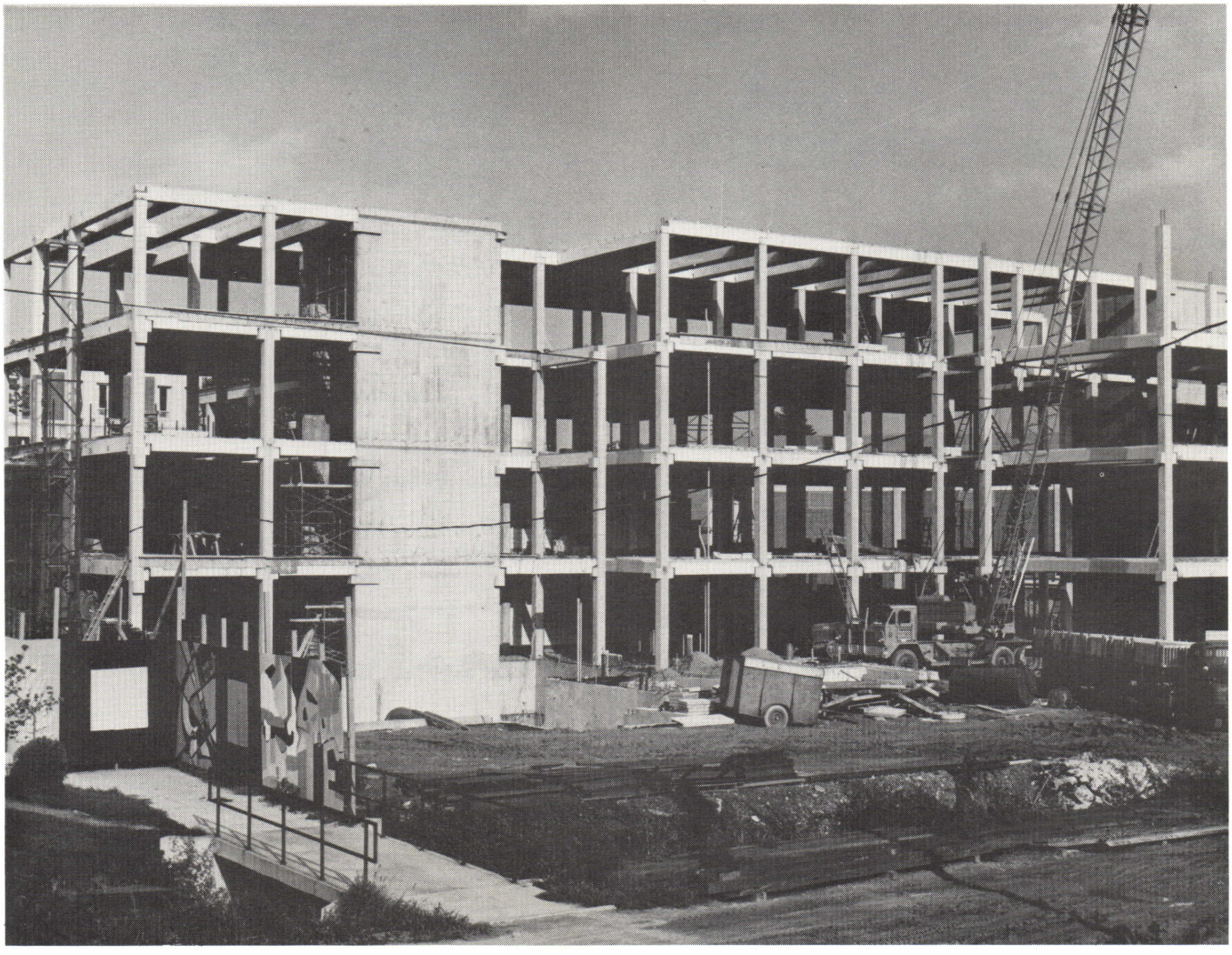

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DEVELOPMENT OF MEDICAL CENTER

ARTHUR N. TUTTLE, JR., AIA

The Division of Health Affairs of the University of North Carolina at Chapel Hill has been undergoing a remarkable physical transformation since construction was started on the major additions to North Carolina Memorial Hospital in 1966. Two additions to the hospital have just been finished and major new buildings for the Schools of Medicine, Dentistry and Nursing are under construction and nearing completion.

These new structures are elements of a general development plan designed to provide the additional space and facilities required to expand the teaching, patient care and research programs of all five of the University's health science schools and to permit the schools to provide a larger share of the professional people needed to supply health services to the citizens of North Carolina. The completion of the structures now underway and others recently authorized by the 1969 General Assembly and scheduled for construction during the next four years will permit a major increase in the size of first year Medical School classes from 75 to 100 students, and in the size of first year Dental School classes from 50 to 75 students. Other teaching programs will be enlarged. Total enrollments in the five schools of the Division of Health Affairs will grow from almost 1,600 students in 1963 to more than 2,800 students in 1973. The construction now underway, which will make this rapid growth possible, is the result of more than ten years of effort by teams of educators, planners and architects.

Following World War II plans were made for the construction of a major new health science training center in Chapel Hill. The structure later named North Carolina Memorial Hospital, a new clinic building, important additions to the building housing the Schools of Medicine and Public Health, and new structures for new schools of Dentistry and Nursing were completed in the early 1950's. By mid-1957 new buildings with a combined value of $14,000,000 had been completed, faculties of the schools in the Division of Health Affairs had been expanded to include more than 200 full-time and 200 part-time members, and the total student body had grown to 1200 members. At this time it was possible to record that four classes of physicians, a number of nationally recognized health [illegible] educators and administrators [illegible] tion; and that large scale programs of research [illegible] people of the state. They also agreed that a long-range [illegible] was needed. [illegible] was needed [illegible] research were under way. [illegible] plan for future development [illegible]

By 1957 it was clear that the Division of Health Affairs would be able to meet almost all of the goals set in 1949 and 1950 on or ahead of schedule. It was also becoming clear that the population of the State of North Carolina was growing more rapidly than had been projected in the late 1940's and that demands for all types of health services were on the rise. These needs, growing out of dramatic post World War II social and economic changes, demanded a reconsideration of the role of the Division of Health Affairs. With these changing conditions in mind, the administration of the Division of Health Affairs began to take stock of the new trends and events, and to take steps to establish new goals in keeping with the evolving needs of the people of the State of North Carolina.

As a result of this initial decision to re-examine the role of the medical center, sixteen faculty and administrative staff committees were established to consider current and future problems and opportunities and to chart a new course of action for the Division of Health Affairs. A long-range planning committee was formed by each of the five schools to set new objectives and develop plans for future teaching programs. Other long-range planning committees were established to consider paramedical programs, services to patients (patient care), rehabilitation, personnel health service, basic science teaching, research activities, student services, library resources, public relations and development, and extension and continuation education. Each committee was asked to examine three areas of concern: (1) philosophy and objectives of the school, unit or activity; (2) current problems and conditions including an examination of programs, space and facility needs, deficiencies, and future priorities; and (3) future programs and proposed development in the next two decades including estimates of financial, staff and space requirements.

In the early spring of 1958 all of the long-range program planning studies were brought together to form a single document. This document was reviewed by an advisory committee composed of [illegible]

INITIAL BUILDING DEVELOPMENT PLAN AND LONG RANGE PLANNING

In the fall of 1960 Mr James J. Souder, a partner in the firm of Kiff, Colean, Voss and Souder, Architects, was retained by the University to serve as consulting architect on overall health science center planning. The consultants were asked to review the faculty planning studies, to aid in the refinement of estimates of future space needs, to prepare alternate plans for future physical growth of the Division, to recommend solutions to both immediate and long-range building problems, and to develop an orderly plan for future physical expansion. The consultant planners were also asked to assist in determining the location, content, functional arrangements, and general configuration of the Ambulatory Patient Care Unit, the first major building project.

In responding to this charge, Mr. Souder and an outstanding team of architects and health science facility planners worked with representatives of the University, the hospital and [illegible]

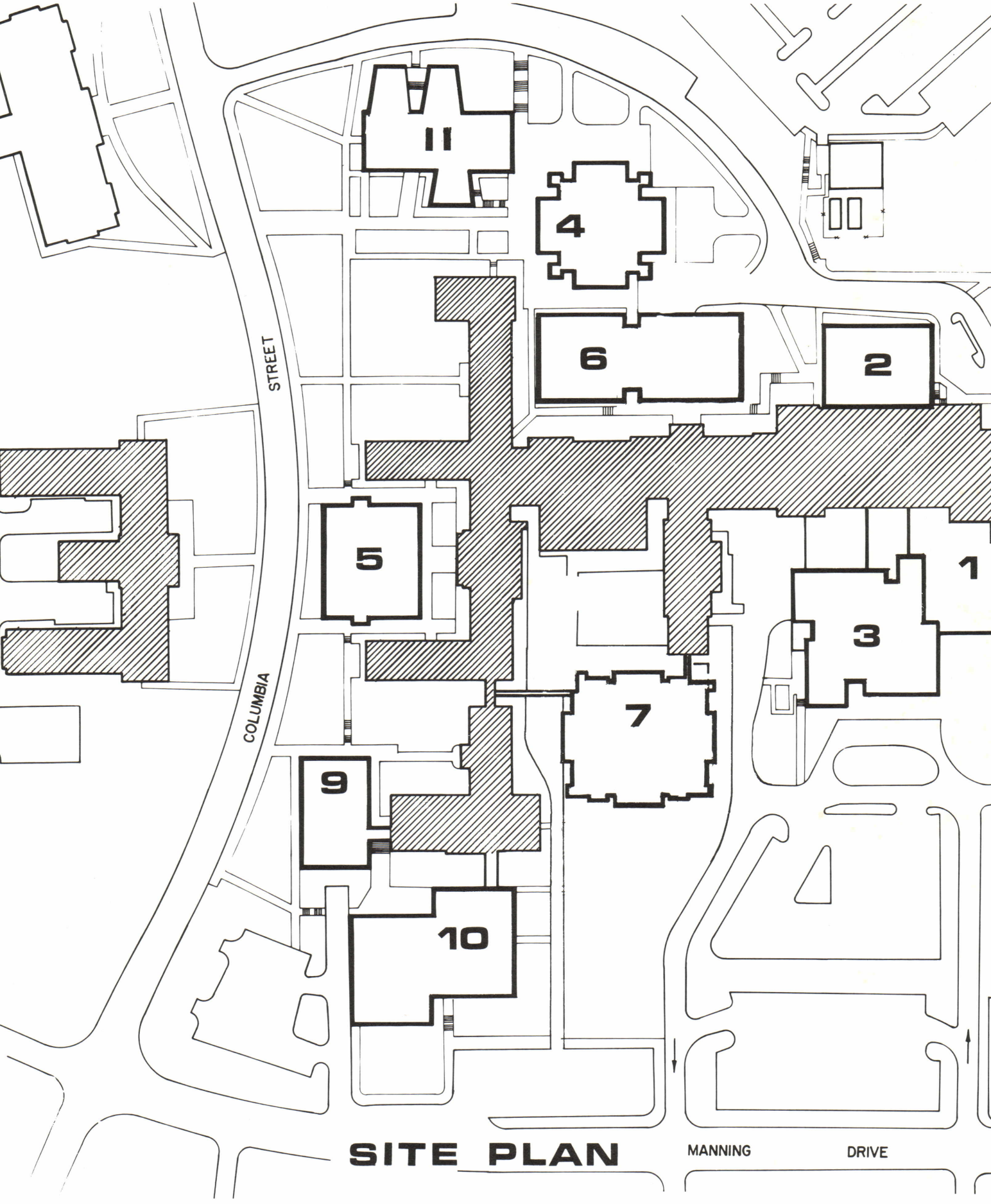
facilities should be orientated toward Manning Drive by the creation of new entrance drives and parking areas south of the hospital.

(2) New instructional laboratories, animal quarters and faculty office and laboratory spaces for the Basic Science Departments of the School of Medicine should be provided in a new building located north of the present clinic building interconnected with the existing buildings scheduled for future use by the basic science departments.

(3) A new Health Science Library and a student commons facility should be located in a central place accessible to all health science students and faculty groups.

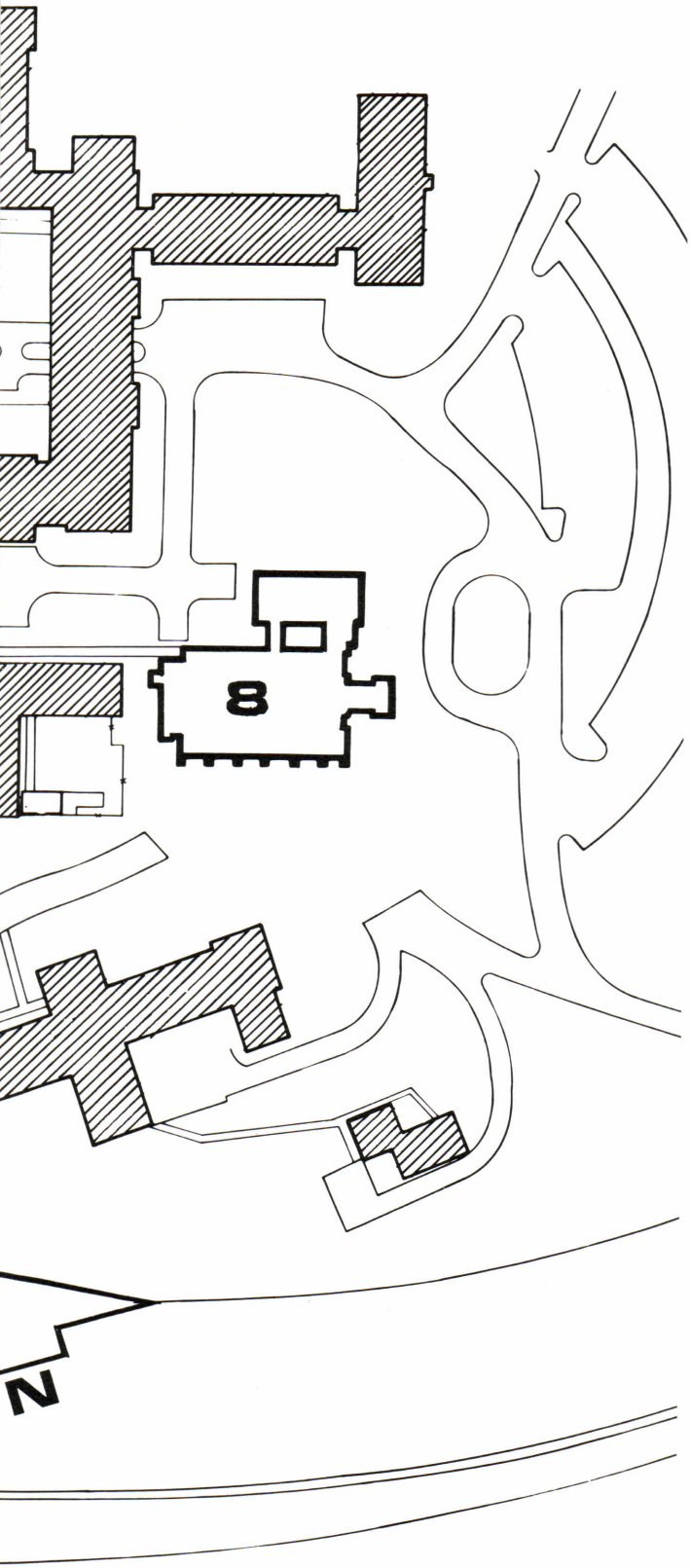
(4) The facilities of the Dental School should be expanded by constructing a new dental research building in a position west of the existing main building and a new dental clinic and education building to the south of the main [illegible]

[illegible] building. Future space needs of the School of [illegible] Division of Health Affairs to identify the major [illegible] Dentistry should be met by reserving an area [illegible]



SITE PLAN

1 *Ambulatory Patient Care Unit*
2 *Ambulatory Patient Care Unit — North Unit*
3 *Hospital Bed Tower*
4 *Basic Science Education Building*
5 *Division of Health Affairs Library*
6 *Preclinical Education Facilities Building*
7 *Clinical Sciences Building*
8 *Child Development Center*



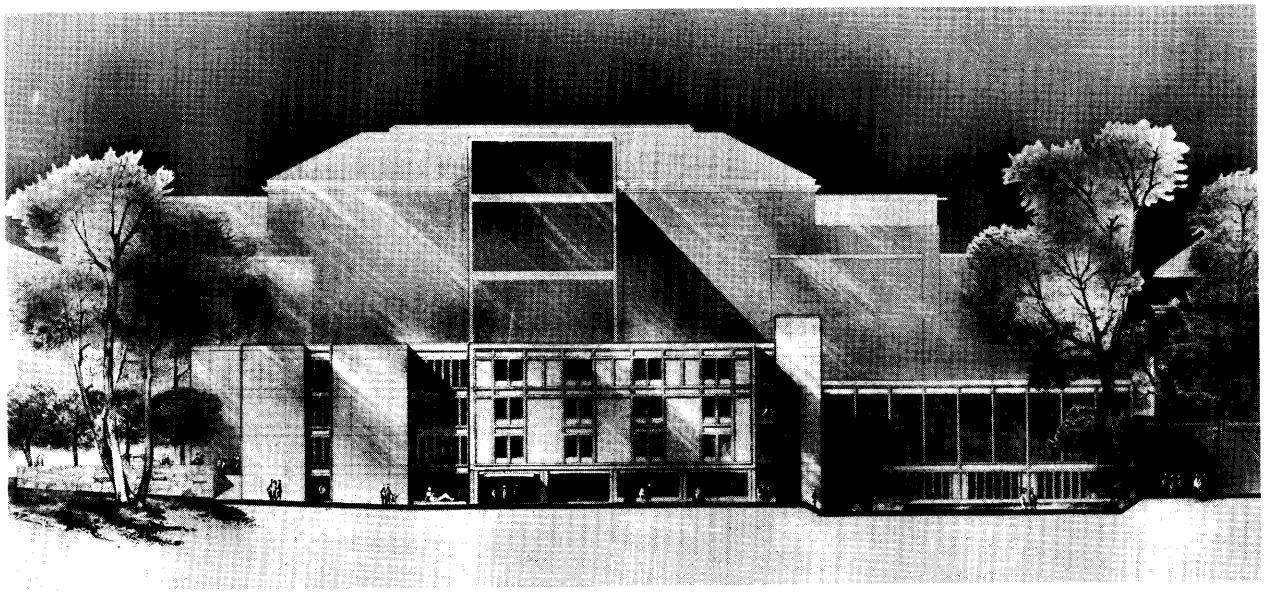
Following the completion of the building development plan, work was started on the refinement of design programs and plans for a number of high priority health science projects and on the development of long-range plans for the two largest elements of the Division of Health Affairs: North Carolina Memorial Hospital and the School of Medicine. E. Todd Wheeler and The Perkins and Will Partnership were first commissioned to prepare an overall plan for patient care facilities and plans for the Ambulatory Patient Care Unit, the first construction project. Ultimately, two major long-range planning studies and a series of special reports were completed.

The first long-range study was completed in May, 1964. It examined the future role of North Carolina Memorial Hospital and presented a plan for the future enlargement of both inpatient and outpatient services and facilities. This plan envisioned four stages of future growth. Stage I consists of the Ambulatory Patient Care Unit, a project which contains 250,000 square feet of space needed to relocate and enlarge the hospital's outpatient care facilities and to expand almost all of the hospital's supporting departments. Stage II provides 200 additional hospital beds in a five-story tower located above the Ambulatory Patient Care Unit. Stage III involves the construction of 200 hospital beds as a second element of the bed tower. Stage IV indicates ways to enlarge Memorial Hospital beyond the limits now envisioned.

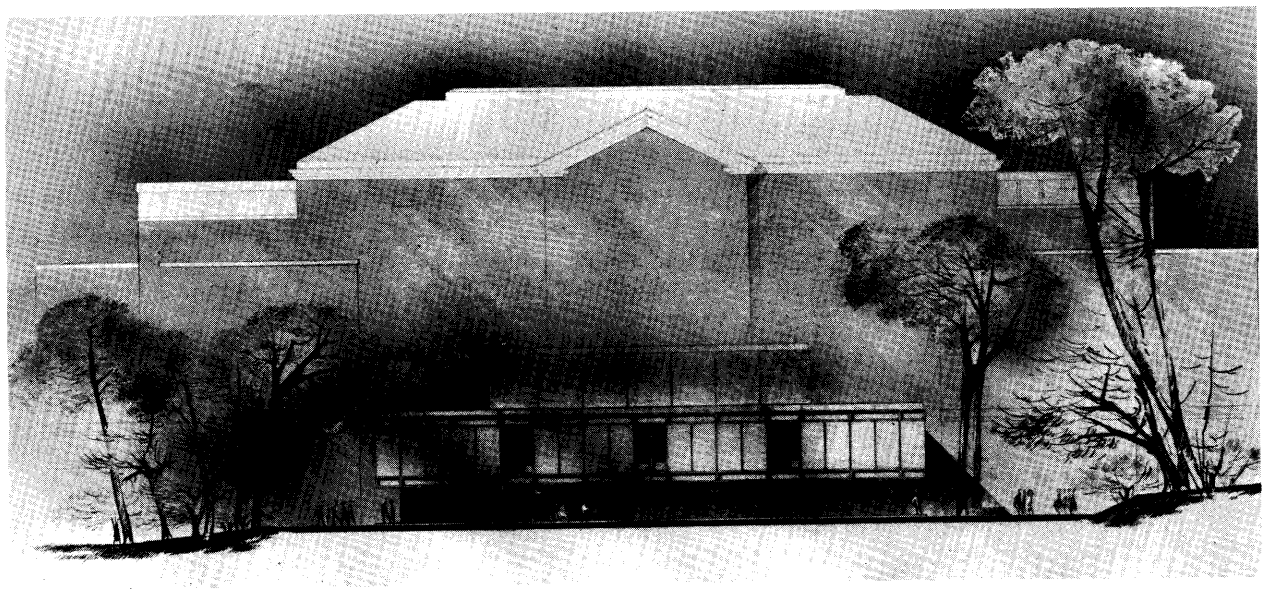
The long-range plan for the hospital provides for the orderly expansion of patient care facilities during a twenty year period and permits the development of construction plans for a series of individual projects.

The second major long-range planning study undertaken by E. Todd Wheeler and The Perkins and Will Partnership had two principal objectives: to develop a program for the future growth of all elements of the Medical School not included in previous studies of the hospital; and to prepare and present a series of plans showing the way future space needs could be met at each stage of growth. This study completed in the fall of 1965 had the effect of bringing together all previous physical planning studies for the School of Medicine to form one coordinated development plan. This plan projected growth through the year 1990 and provided a sound basis for subsequent work on individual projects. Thus far the plan has served to guide growth "in a manner that will encourage optimal functional relationships and retain a desirable campus environment."

9 *Dental Research Center*
10 *Dental Education Building*
11 *Elizabeth Scott Carrington Hall School of Nursing*



Ambulatory Patient Care Unit **1** *— South Elevation showing first stage.*



North Elevation of North Unit **2**.

AMBULATORY PATIENT CARE UNIT AND BED TOWER

The recently completed Ambulatory Patient Care Unit **1,2** is the first major enlargement of North Carolina Memorial Hospital since its construction almost twenty years ago. This project is a key element of the long-range plan for the expansion of both inpatient and outpatient care facilities in Chapel Hill.

The original concept of developing outpatient clinics, diagnostic and treatment facilities, and future bed space in a single structure was one of the major solutions included in the **Building Development Plan for the Division of Health Affairs.** Working with this accepted concept the staff of E. Todd Wheeler and The Perkins and Will Partnership programmed and designed the Ambulatory Patient Care Facility **1,2** and set the stage for future growth of all major patient care facilities by providing for a bed tower to be constructed in stages over the Ambulatory Patient Care Unit **1,2** and for future expansion of the center's diagnostic and treatment facilities. In discussing their design for the project the architects explain:

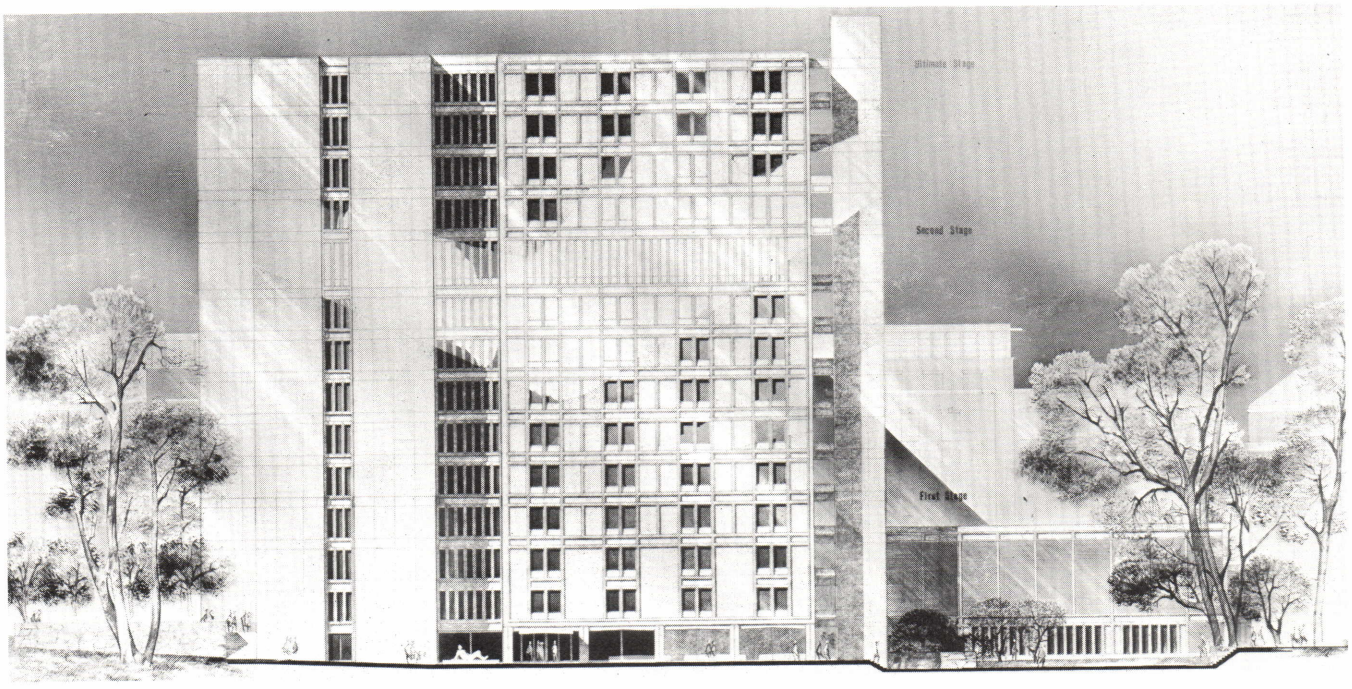
> In function, the Ambulatory Patient Care Unit with subsequent additions was an umbrella project that was to provide over three stages of growth, additional hospital beds and outpatient clinics and the concommitant growth of all of the supporting departments. The hospital was scheduled to grow from 400 to 800 beds. The hospital is not only the largest element of the existing health sciences campus, but its additions were to be the largest new elements on the campus. In giving form to the additions, the architects rejected the low sprawling plan of the existing hospital. This pattern is not only functionally inadequate, but aesthetically unsatisfying as it has no focus and has used up the land without taking advantage of the opportunity to create pleasant exterior spaces. The new addition was conceived as the dominant element of the new campus both in height and mass. Symbolically this focus was suitable. The new addition will be the public's gateway to the hospital as it contains the new main entrance, clinics and emergency department. Aesthetically, the focus would be suitable and would simplify and modulate the complex by making the new construction the center of interest against the backdrop of the existing buildings. Stage One, which is now complete, establishes the base for this concept with a four-story building which will be extended to a ten-story tower in the near future, and will rise ultimately to fourteen stories.
>
> In addition to establishing a new scale and focus, the Ambulatory Patient Care Unit establishes the new aesthetic for the Health Affairs campus. The existing buildings are predominately red brick with limestone trim and slate roofs. Their design is simple, with flat walls and repetitive design elements. The construction on the main campus for the preceding decades was similar in material and design, but with more embellishments. The original buildings on the main University campus had greater variety of material and color, using many warm earth tones. In selecting the palette of materials for the Ambulatory Patient Care Unit, a new material, precast concrete, was introduced. The concrete panels selected for the tower were a light buff color with exposed aggregate reminiscent of the warm tones of the earliest University buildings. Brick with concrete trim was used for the subordinate elements which linked the tower to the existing buildings. To reduce the bulk of the typical tower floor, which contained a half acre of space, and to create a more human scale and greater interest, the wall planes were broken into smaller units of dimension. The resultant wall planes were then further articulated and fenestrated in a manner that created neither solid nor void, but a pattern and scale harmonious with the adjacent structures. The building became dominant by location, size and color, rather than by sharply contrasting design.
>
> The Ambulatory Patient Care Unit set the aesthetic that strongly affected future projects on the Health Affairs campus. While each project was to have different functional criteria and site locations which would affect their design, they would be linked by a common aesthetic philosophy.

The Bed Tower Addition **3,** for North Carolina Memorial Hospital, authorized by the 1969 General Assembly, will provide a part of the space needed to train additional medical students, interns and residents. Space and facilities in the tower will also be used in training nurses and students in other allied health sciences. The tower will provide space for more than 200 beds. Final plans for this project are the work of J. N. Pease Associates, Architects and Engineers, who state:

The Bed Tower Addition to North Carolina Memorial Hospital will be a six-story addition of patient bed floors rising out of and forming a tower above the existing four-story Ambulatory Patient Care Unit. Providing an additional 196 beds and 30 intensive care beds, this addition is the second phase of a three-phase program, having begun with the Ambulatory Patient Care Unit, and which will be completed with four additional bed floors in the third phase. Since clinical instruction of medical and nursing students is an essential function of the hospital, student space is a prime consideration.

This addition is designed to include five bed floors capped by a mechanical level. Each floor contains 19,480 gross square feet and is planned as a pin-wheel with four projecting units around an area for central services and student facilities. This allows all patient rooms to be located on an exterior wall. One of the five bed floors is a Pediatrics floor, where interchangeable rooms have been designed for the use of 44 beds.

This building will be a poured-in-place concrete frame structure with a flat slab floor system. The exterior will be clad with precast aggregate panels, designed to match those of the existing Ambulatory Patient Care Unit.



Bed Tower Addition **3** *— South Elevation showing the three stages of construction.*

BASIC SCIENCE EDUCATION BUILDING, DIVISION OF HEALTH AFFAIRS LIBRARY AND PRECLINICAL EDUCATION FACILITIES BUILDING

The original concept for the design and construction of additional shelter for the six basic science departments of the School of Medicine, a new library for the Division of Health Affairs, and a new student commons was a product of the long-range program studies for the **Building Development Plan for the Division of Health Affairs.** First planned as elements of a single large structure, these facilities with later additions now have been arranged in three buildings. Two of the three structures, the Basic Science Education Building **4,** and the Division of Health Affairs Library, **5,** are now under construction. A third, the Preclinical Education Facilities Building, **6,** containing faculty offices and laboratories, the student commons, and space for the state medical examiner, has been designed and should be under construction within a year.

During the preparation of the **Building Development Plan for the Division of Health Affairs**, Mr. Souder and his associates, in consultation with several faculty committees, programmed teaching facilities, faculty offices, and research laboratories for the Basic Science Departments; a major increase in space for the Division of Health Affairs Library **5;** and a bookstore and dining facility for students and staff of the Division. Initial circulation and site studies indicated the desirability of keeping these units together. As a result, the first approved site plan placed all of these elements — student laboratories, faculty research and office areas, library space and student commons — in a single structure north of the existing clinic building.

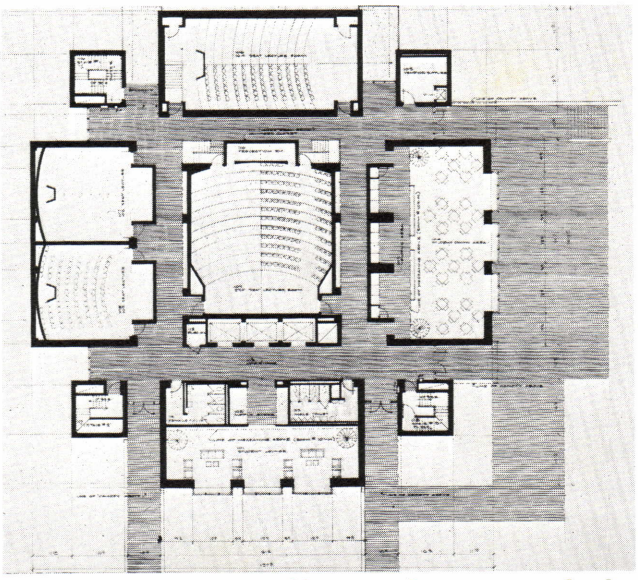
Consideration of the space needs of the Medical School, the availability of funds, and subsequent examination of various alternate site plans led to the decisions to construct the Library as a separate structure; to concentrate all student laboratories in the Basic Science Education Building **4;** and to house the faculty office and research laboratory space and student commons in a third structure later designed the Preclinical Education Facilities **6.** Although these facilities are now sheltered in three structures, they were all programmed at one time by E. Todd Wheeler and The Perkins and Will Partnership, Architects, and are basic elements of a carefully considered overall plan for the enlargement of the School of Medicine and closely related research and education programs of other schools in the Division of Health Affairs.

The Basic Science Education Building **4,** now underway, was programmed and designed to permit an increase from 70 to 120 students in the entering class of medical students, an increase from 50 to 75 in the entering class of dental students, and important increases in the size of other Basic Science teaching programs. The final design program for this and the other two Basic Science projects is the work of Mr. Robert Malcolm of E. Todd Wheeler and The Perkins and Will Partnership who played a major role in the development of both the long-range plans for the School of Medicine and the plans for a number of individual buildings. In commenting on the design of the new structure he observes:

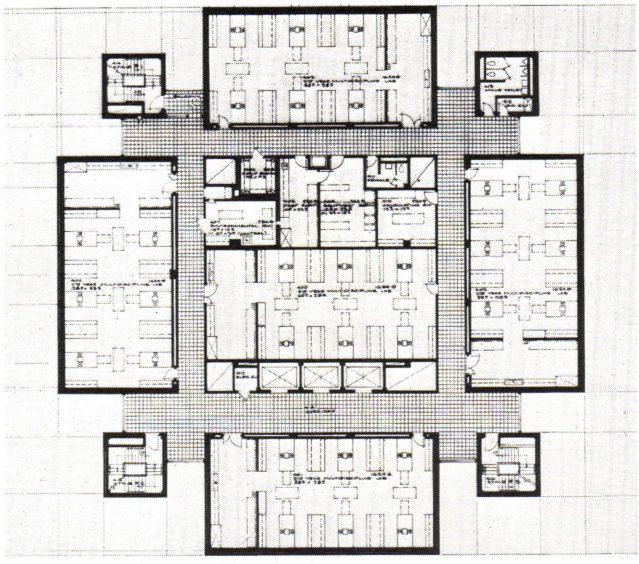
> The Basic Science Education Building continues the design philosophy developed in the Long-Range Plan and expressed in the Ambulatory Patient Care Facility and Library. It is the first project to deal with the problem of increased bulk and height dictated by function and increased building density that will be typical of new projects on the health science campus.
>
> The Education Building is a 130,000 square foot building designed to expand horizontally. It houses the School of Medicine education facilities which are utilized by all students of the Division of Health Affairs. Located north of MacNider Hall, it shares with the School of Nursing the last large "close in" site on the health campus. The design for the two buildings were coordinated to form a

sub-campus of the health sciences area. The Education Building becomes the terminus of a mall which is flanked by the new School of Nursing and the Research Wing.

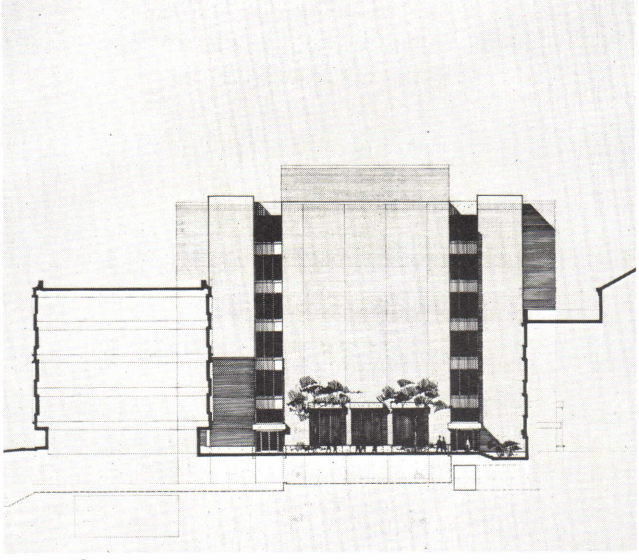
The Basic Science Education Building achieves its visual identity and prominence through its form, location and size. The building is restrained in design, but sculptured in form. Windowless except for floor to ceiling glass at the ends of corridors, the building is predominately red brick with precast concrete accents. The solid wall surfaces are broken into a series of planes to reduce the visual impact of the bulk on the environment. The strongest design elements are situated at the ground or pedestrian level which contains the recreational and large group instructional elements. The architects, through simplification of design and attention to site planning, attempted to make a tall bulky building an enhancement to the existing campus environment.



Basic Science Education Building **4** *— Plan at entrance level.*



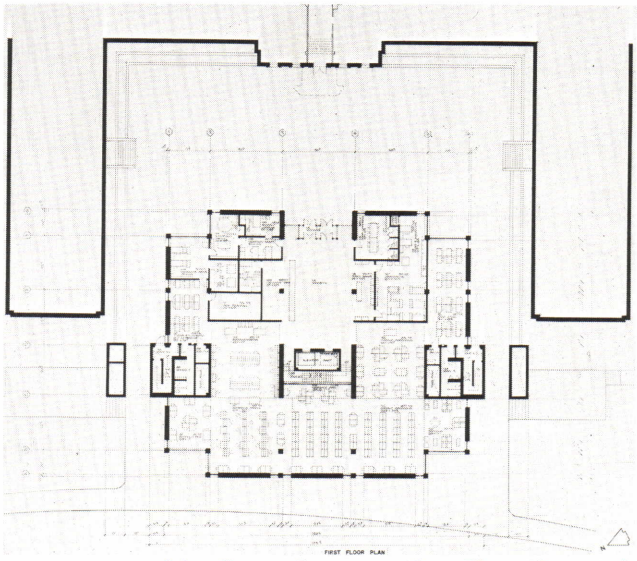
Typical Laboratory Floor Plan.



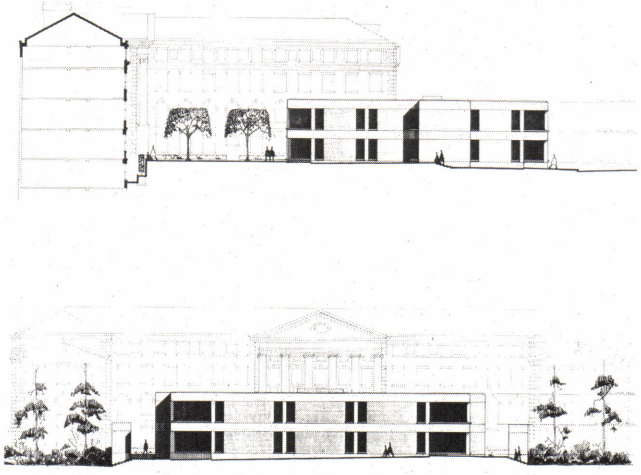
West Elevation to entrance court.

The Division of Health Affairs Library **5,** the second element of the first phase of construction for the health science teaching programs, is near the geographical center of the area allocated in the long-range plans for the teaching activities of the health science schools and reasonably near both the University's biological science departments and to the proposed Clinical Science Building **7.**

Architects and engineers for both the Health Affairs Library **5,** and the Basic Science Education Building **4,** are E. Todd Wheeler and The Perkins and Will Partnership and J. N. Pease Associates. The program and architectural designs were prepared by E. Todd Wheeler and The Perkins and Will Partnership. In discussing the library project, the architects state that:



Division of Health Affairs Library **5** *– First Floor Plan, Medical School entrance level.*

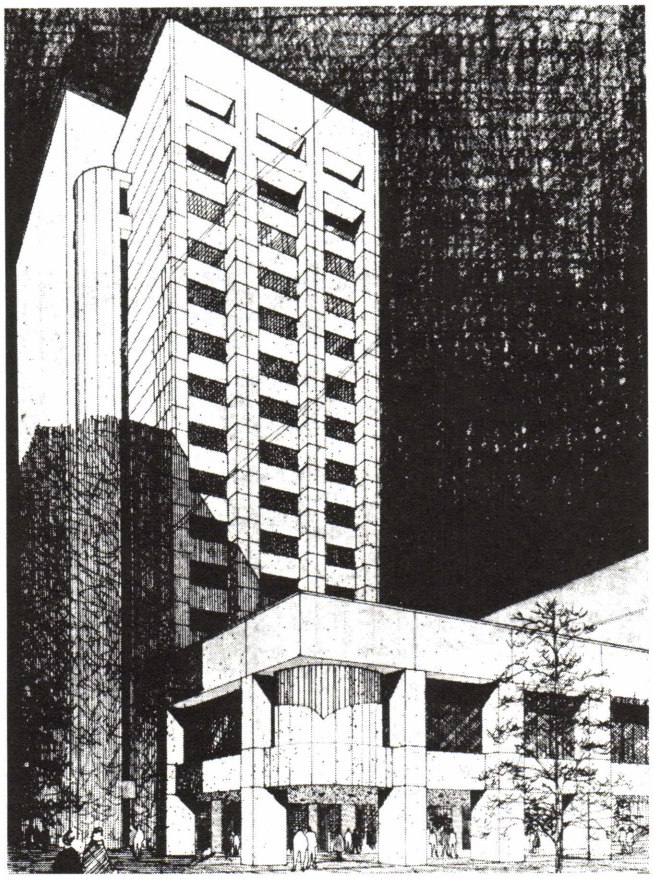


Elevations showing court formed by Medical School and elevation to street.

The Division of Health Affairs Library exhibits a new concept for growth on the health sciences campus and focuses on the design of exterior space as the most significant visual aspect of campus environment. The design concept first outlined in the Long-Range Plan suggested that growth be achieved by the construction of individual buildings, rather than by additions, with subterranean connections to existing buildings where required. Separate identities for each structure were proposed as a means of improving pedestrian circulation, creating a more humane environment and establishing new nuclei of growth.

The design creates a semi-enclosed courtyard between the library and MacNider Hall. The courtyard is a new kind of space for the campus, reflecting a strategy of creating a variety and hierarchy of exterior space. It will be completely paved except for planting areas for trees and shrubs, creating a formal character befitting its location at the center of the campus and providing contrast with the more open natural areas of the campus. Its generous expanse and complete development facilitates its use as the entrance plaza to the library and MacNider Hall and a place for relaxation and social interaction.

The concept of the library as a separate building provided freedom in its design and retained the integrity and identity of MacNider Hall by leaving its facade intact. The library is restrained in design, receiving its prominence through location and relying on a spacial rather than a visual focus. The upper floor, which will be repeated in the expansion, is relatively solid in appearance while the lower floor at courtyard and pedestrian level is more open and differentiated in design to relate to the pedestrian. The symmetry of the plan and facade is generated from the axis of MacNider Hall and the two buildings are related by floor levels, proportion and material, rather than by style. The library adopts the new aesthetic and material palette first used in the design of the Ambulatory Patient Care Facility as the means of unifying the campus design.



Preclinical Education Facilities Building **6** *— General view.*

The Preclinical Education Facilities Building **6,** is the third structure in the group of new buildings programmed and planned to permit the enlargement of the basic science teaching and research programs. Funded in part by the 1969 General Assembly and in part with matching funds from the U. S. Public Health Service, this new structure is the final element in the current plan for the immediate expansion of the basic science departments of the School of Medicine.

The current design program for the Preclinical Education Facilities Building **6,** contains three major blocks of space. The largest block is allocated to faculty offices, laboratories and departmental administrative space. A second element of the program lists the spaces included in the student commons portion of the structure and the third element gives the requirements of the North Carolina State Medical Examiner. J. N. Pease Associates, Architects, Engineers and Planners, explain their concept of the structure in the following statement:

> This high rise research laboratory and student commons building has been designed to fulfill a longstanding need for space at a central location for the Department of Pathology, the State Medical Examiner, and a student commons facility. One of the prime considerations was to create a design that would be a focal point for these activities on the health science subcampus and one that could lend order to a campus constantly increasing its enrollment. Because of the requirements for these facilities to be closely related to existing buildings, it was necessary to design the building as a twelve-story structure

600 square

laboratories

The upper laboratory floors each contain 8

y laboratory units

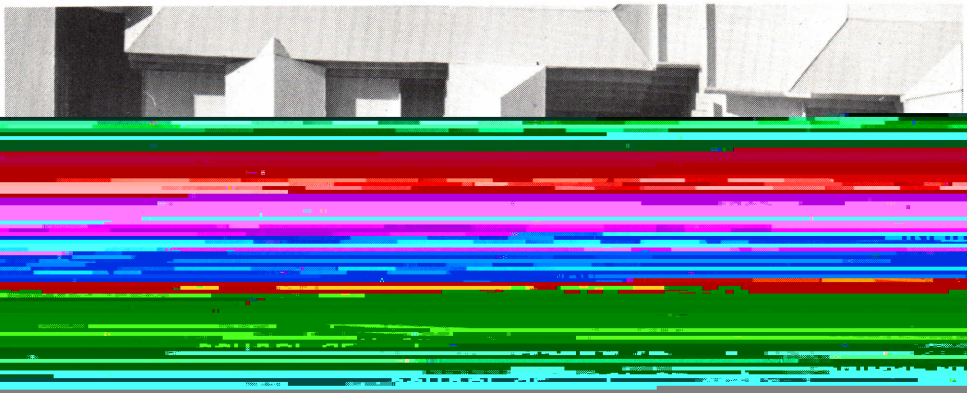
ridors connect with the major heavy-dut

CLINICAL SCIENCES BUILDING

In a sub-section of the report on the long-range plan for the Medical School, E. Todd Wheeler and The Perkins and Will Partnership, Architects observed that "The Clinical Departments (of the School of Medicine) currently occupy grossly inadequate space in six different buildings and several trailers. New facilities for the clinical departments should be a first priority of consideration following those buildings which are already funded." In this same planning report the consultants recommended that more than two hundred thousand square feet of new building be constructed to provide the space required by the Clinical Sciences departments. The proposed Clinical Sciences Building **7,** has been designed to meet this need through a two-stage construction program. The first stage will contain more than 160,000 square feet of total building area. A second stage will provide an opportunity to increase the enclosed area through both vertical and horizontal expansion.

In many ways this structure designed by Brian Shawcroft, Consulting Architect, with Holloway-Reeves, Architects, can be considered as an annex to the patient care facilities for it provides the office and research laboratory space required by the Clinical faculty of the School of Medicine. In describing the nature of this project and basis for its design, Brian Shawcroft stated that:

> The location of this facility was determined by the need for physicians from both the Medical School and the Hospital Bed Tower to reach the research laboratories quickly and easily. Connections have been made with bridges to existing buildings to meet this need.
>
> The building consists of seven typical floors of laboratories located adjacent to service corridors to permit flexibility in laboratory planning and accessibility to services. The majority of the laboratories are interior spaces. Daylight is introduced at the ends of corridors and stairs. All offices are in groups on the exterior with natural lighting. Expansion up to 85 percent is possible by horizontal growth of the structure southwards and by the addition of two stories. Vertical duct shafts have been provided around the perimeter to ventilate the lower floor to the roof and to allow for the possibility of the conversion of office space to prime laboratory space in the future. A long span structural system designed to eliminate columns in the laboratory areas affords more flexibility in planning and permits the movement of interior walls. Services will be available throughout the building on a ten foot module. The height of this large building has been kept to a minimum to avoid competing with the bed tower for dominance of the health sciences complex.
>
> Due to the very great proportion of mechanical space, an attempt has been made to express this as a "working building." The stair towers and vertical exhaust shafts from the animal quarters in lowest floor carried up beyond roof are contrasted to horizontal bands of laboratories and offices.
>
> The functional necessity of wall space and sun control in the external laboratories dictates that the building would be essentially "solid" in appearance with the large areas of wall articulated by narrow bands of windows and concrete. The walls will be of brick to relate to existing buildings. To further reduce the mass, the building has been broken in plan by separating the stairs and grouping the offices into blocks, creating a fairly complex profile. A horizontal setback creating a deep shadow at the fourth floor helps to modulate the mass vertically. Large fresh air intakes set back at the first floor on the east and west separate the upper laboratory and office floors from the base formed by the animal quarters.



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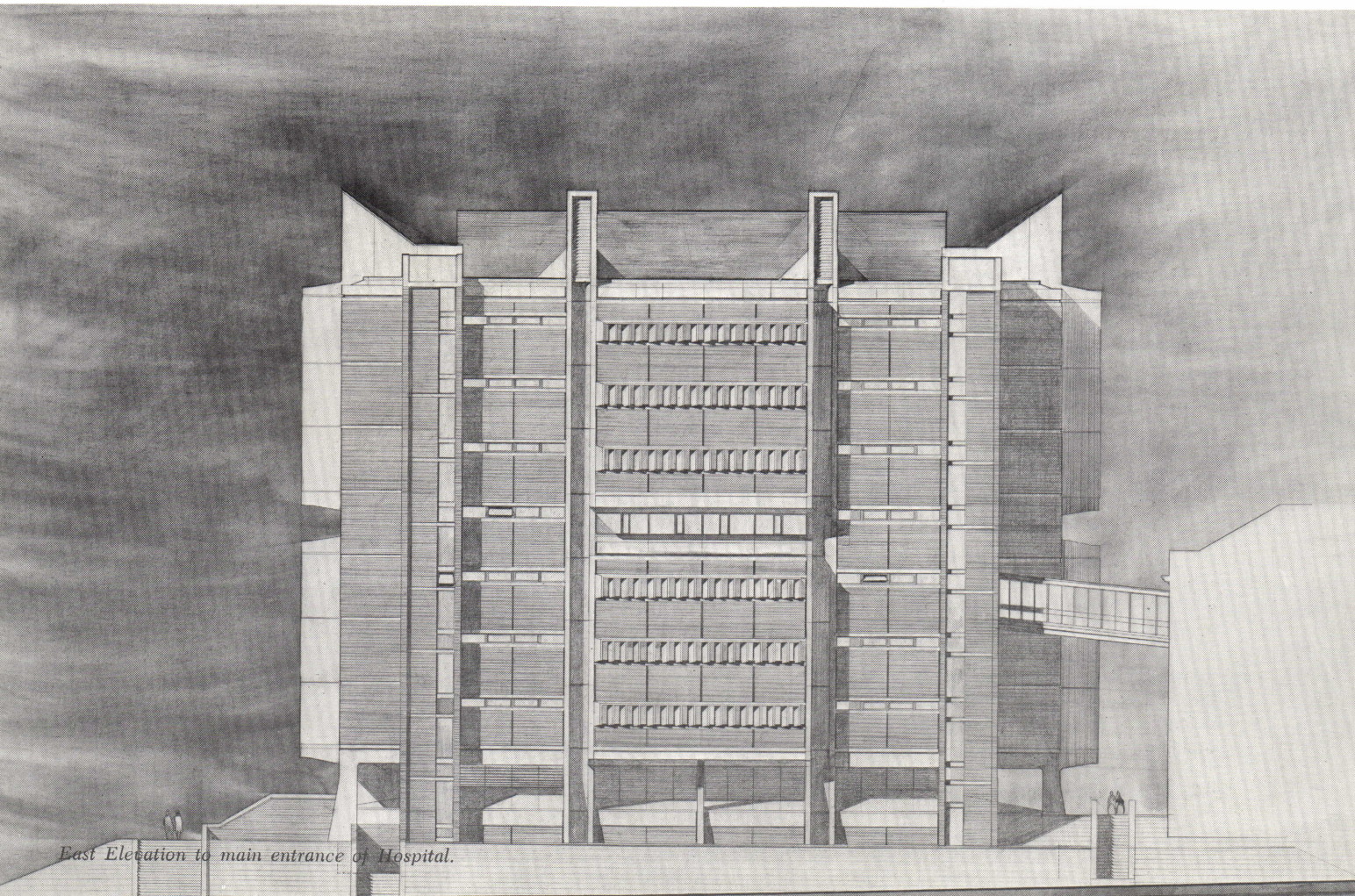
Isometric of Typical Laboratory Floor showing structural and mechanical systems.



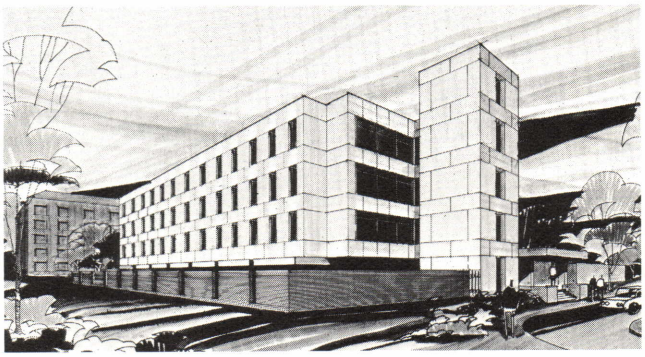
East Elevation to main entrance of Hospital.

CHILD DEVELOPMENT CENTER

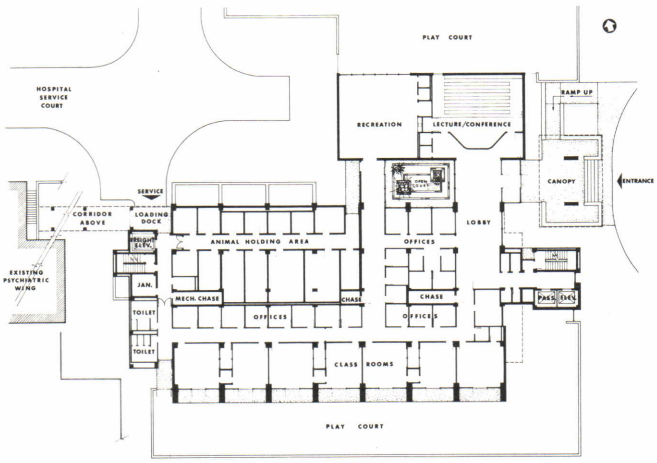
The Child Development Center **8,** project now under construction adjacent to the Psychiatry Center at the eastern end of the Division of Health Affairs area will shelter a series of closely interrelated teaching, research and patient care programs undertaken by the School of Medicine in an effort to gain a further understanding of "mental retardation" and other child development problems. The new structure to be known as the Biological Sciences Research Center was planned and designed as a special purpose facility.

Initial programming and preliminary design studies for this unusual project were undertaken by E. Todd Wheeler and The Perkins and Will Partnership, Architects. The actual design for the building is the work of A. G. Odell, Jr. and Associates, Architects. In commenting on their design for the project, the architects note that:

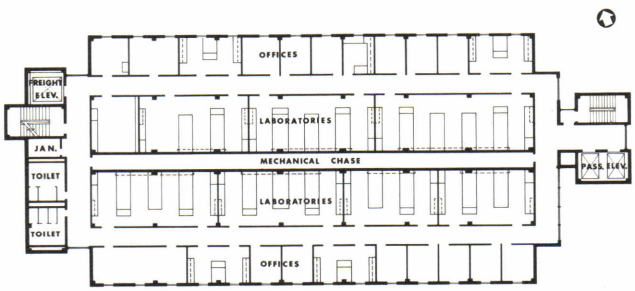
> The design program for this center required clinical and research facilities for multi-disciplined study of child development — to widen the knowledge of, and the study of the causes of retardation, and to train others in working with mental retardation. In the final design clinical areas were located on the two lower levels. Children from ages 2 through 14, both normal and mentally retarded, will participate in a school oriented curriculum.
>
> Research facilities are located on the two upper floors. Here experiments in the areas of reproductive physiology, embryology, neophysiology, neuro-chemistry and experimental psychology will be performed. An isolated animal holding facility is located on the ground floor directly accessible to a loading dock and a freight elevator which will transport animals to the research areas.
>
> The exposed structure is of modular reinforced concrete to provide flexibility in the interior. Foundations are designed to permit the construction of four additional floors in the future. Fixed elements including stairs, elevators and toilets have been grouped into towers and placed at the ends of the laboratory floors. The mechanical system is designed so that heating and cooling can be provided simultaneously at all times in each part of the building.



General view from South East.

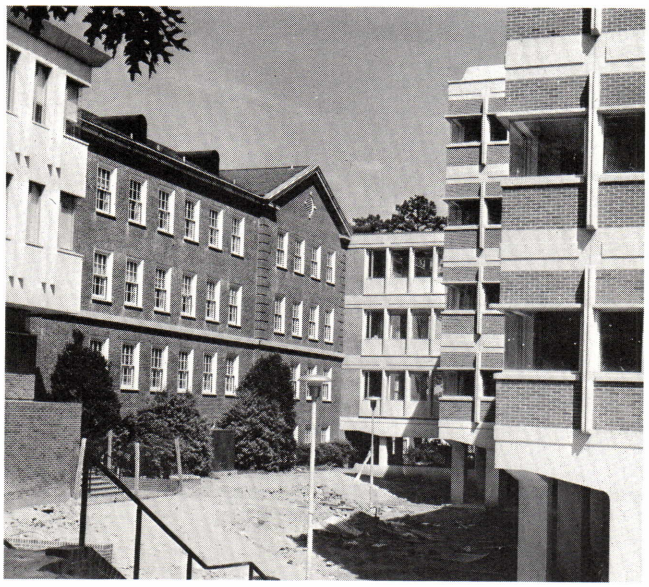


Entrance Floor Plan.



Typical Laboratory Floor.

DENTAL SCHOOL FACILITIES



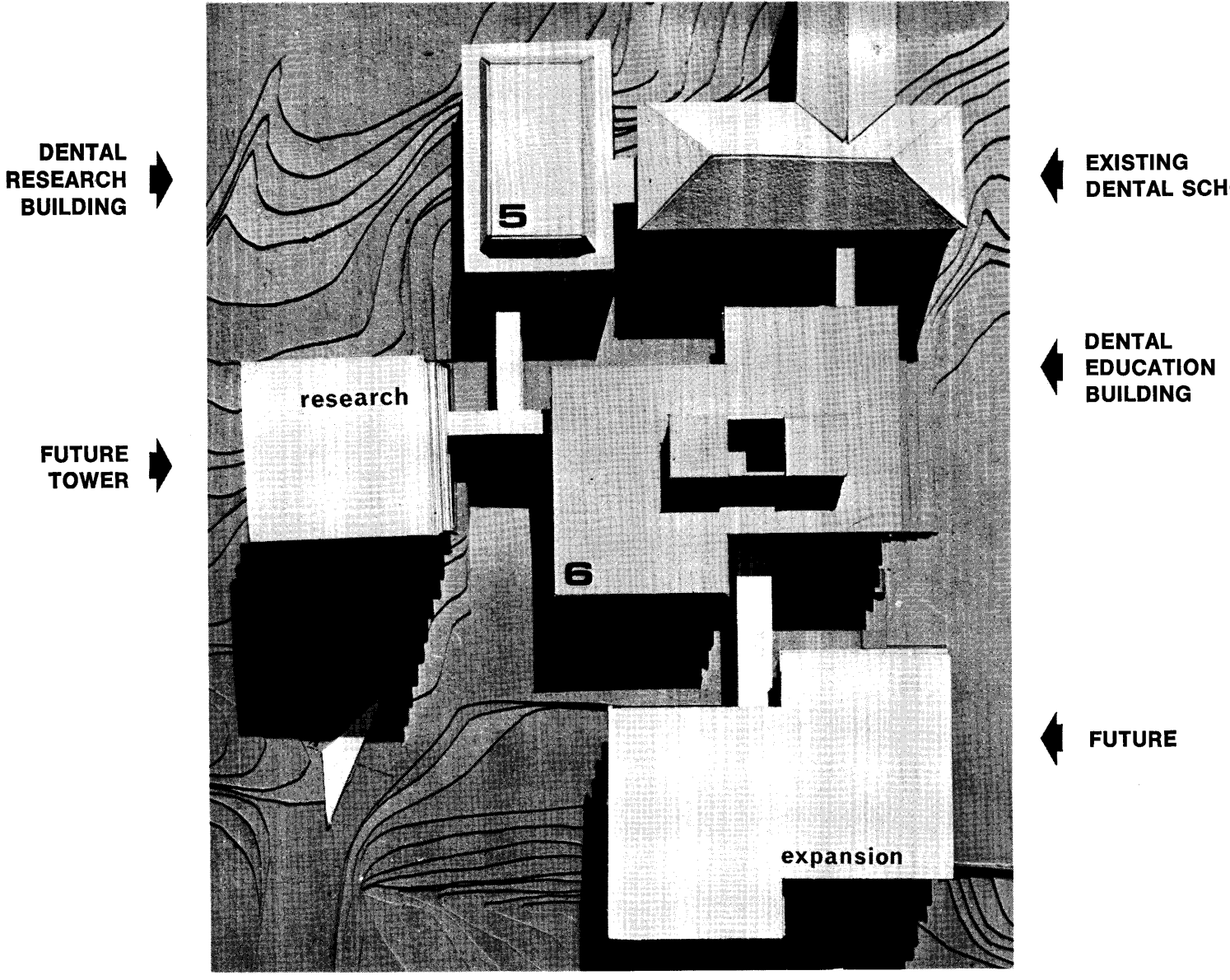
View from street showing relationship between original School of Dentistry, Dental Research Center and the new Dental Education Building.

Dental Education Building and Dental Research Center from the street.

Estimates of the amount of space needed to permit logical and orderly growth of the School of Dentistry were prepared during work on the **Building Development Plan for the Division of Health Affairs.** Mr. James Souder and his associates worked with former Dean John Brauer and a faculty group in charting a plan to enlarge the programs and to expand the physical facilities of the School of Dentistry. Preliminary building design programs for the two structures required before 1970 to provide new space for the enlargement of the school's research and educational activities evolved during almost two years of study.

Although the original Dental School Building was relatively new in 1961, it had already proved inadequate in several respects and unable to house teaching and research programs of the size required to meet the increasing dental care needs of the people of the State of North Carolina. As a result, two new buildings were conceived. The Dental Research Center **9,** was the first structure to be completed. Occupied in the spring of 1967, "this 44,000 square foot building provides the School of Dentistry with the finest facilities for dental research available on any campus in the United States." Unique in many respects, the building designed by Holloway-Reeves, Architects, contains a number of general purpose dental research suites, a series of special purpose laboratories and laboratory support areas. While it has been in operation only two years, the users of the center have already had an opportunity to test and prove the soundness of the original planning concepts.

Clad in off-white exposed aggregate, precast concrete panels and red brick, the structure reflects the overall design scheme for the Division of Health Affairs.



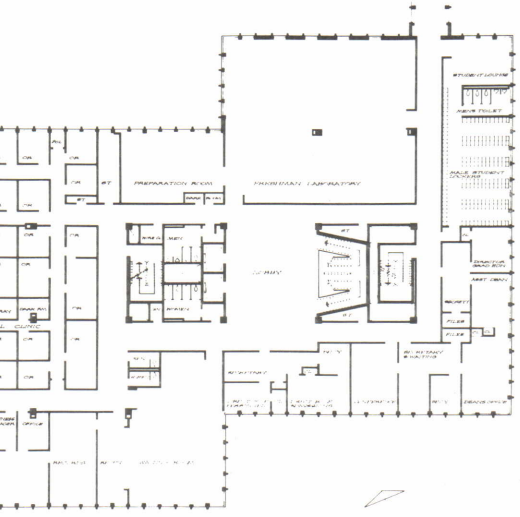
Site Model for dental complex.

The Dental Education Building **10,** the second building required to increase the size of the School of Dentistry contains more than 110,000 square feet of space needed by the faculty and staff to instruct additional undergraduate, graduate, post-graduate and continuation education students in a wide variety of dental science programs. For example, the additional teaching and patient care space and equipment needed to train 25 additional students in each class of the basic professional program in dentistry is included. The new structure also provides facilities for the instruction of additional dental hygienists, dental assistants and other auxiliary personnel able to extend dental care to a greater number of people.

Brian Shawcroft, Consulting Architect to Holloway-Reeves Architects and designer of the project, undertook a series of studies to determine the best way to relate the new building to the original building, to the Dental Research Center **9,** to other buildings on the campus and to future buildings in this zone of the Health Affairs area. A general plan for the long-range development of the Dental School area was prepared and accepted prior to the design of the Dental Education Building **10.** In describing the configuration of the new structure for detail education Brian Shawcroft states:

> It is a large, simple, rectangular mass shifted in plan and separated at the ground floor by a covered walkway affording shelter for pedestrian movement around the building. Connections to the existing School of Dentistry building are made through a bridge link at each floor; future connections to other structures in the complex will be made in a similar manner.
>
> Internally, the building is planned with large bays around two central "cores" thus affording some flexibility in space planning and allowing change, but due to the large amount of services required for dental suites, certain areas are relatively fixed. The lower two and the upper two floors are opened centrally to add a variety of light and space in the central circulation area.

Dental Research Center **9** *— General view from the street.*



First Floor Plan — Intramural Clinic Floor.

Dental Education Building **10** *— View from South East.*

ELIZABETH SCOTT CARRINGTON HALL SCHOOL OF NURSING

The new building was designed to eliminate current space problems and to permit enlargement of the teaching, research and public service programs of the School of Nursing. The original design program or statement of requirements for the School of Nursing Building **11,** was the result of many months of careful study on the part of a planning team composed of members of the faculty of the School and Mr. James Souder, the consulting planner. This design program established the content, size, general functional scheme and location of the new structure. Sketch plans were prepared to test the design program and to aid in the development of an overall site plan. Final refinement of the design program, and the design of the new building is the work of Brian Shawcroft, Consulting Architect, and John Holloway of Holloway-Reeves, Architects.

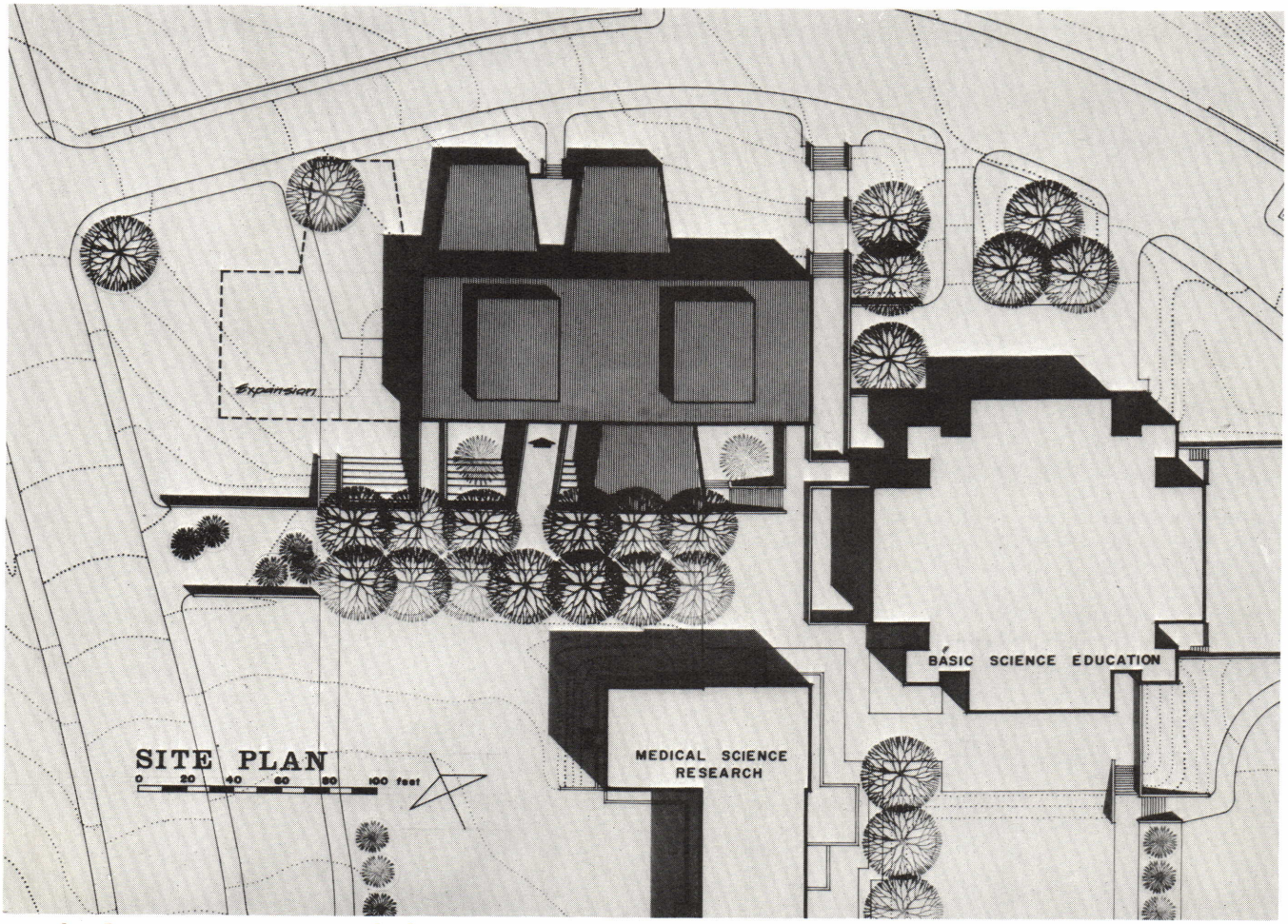
Located at the northwest corner of the health sciences sub-campus adjacent to the new Basic Science Education Building **4,** and near both the health science library facilities and the departments of Zoology and Botany, the new building is ideally placed from the students' point of view. The structure, named in honor of Mrs. Elizabeth Scott Carrington, contains lecture halls; classrooms; seminar rooms; faculty, staff and administrative offices; research and special project rooms; and the other general and special purpose rooms.

The space requirements, identified during the preliminary programming phase, led to the early development of a design concept based upon the idea of placing all large lecture halls and related teaching support spaces at ground level, administrative functions and classrooms on intermediate levels and faculty offices and special student and faculty work areas on the upper levels. This general concept was refined by Brian Shawcroft who notes that:

> The lower floor containing the auditoria forms a podium for the building. As a result of engineering analysis, three auditoria were removed from the volume of the main mass of the structure and now form partially enclosed courts and establish an undulating wall on both sides of the building at ground level. The administration areas, entered by bridges over the courts, separate the lower level with projecting auditoria from the upper block which contains faculty offices, and classrooms and related study areas.

The simple main block of the building rises at the north end of the health science complex establishing a strong relationship architectually between structures farther to the north in the Wilson Hall area, and the new library and Dental Education Building **10,** to the south.

In an effort to achieve a high degree of unity with other structures elsewhere on the University campus and buildings now under construction in the health sciences area, the exterior design of this new structure is based in part on a careful selection and use of a limited number of constrution materials. A combination of red-brown brick and off-white precast concrete elements are used to achieve a degree of unity with similar materials found in the other buildings throughout the center. A special effort was made to recall the design elements of the Dental Education Building **10,** and the new Health Affairs Library **5,** also located along Pittsboro Road.



Site Plan showing entrance court to School of Nursing and Basic Science Education Building.

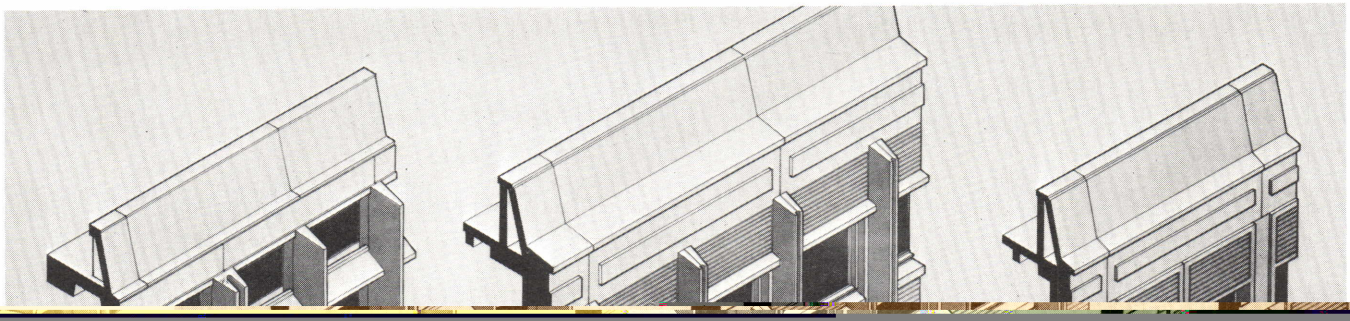
School of Nursing from South East.

AESTHETICS

In discussing the aesthetics of his design approach for the new buildings for the Division of Health Affairs, Brian Shawcroft states that:

> In order to maintain a unity of approach, agreement was reached among the various architects working on the health sciences complex to limit the range of materials. An attempt to create a transition from the existing buildings both in material, form, and proportions was made in the treatment of various new buildings. Brick, poured-in-place concrete and precast concrete are used in various combinations, from predominantly solid brick to predominantly precast concrete light in color.

One of the illustrations shows a variation on this theme in the School of Nursing and the School of Dentistry, both of which have been developed from the approach used in designing new Davie Hall. This forms a subtle link to the old part of the Chapel Hill campus. In the School of Nursing, the structural columns have been expressed on the surface, whereas in the Dental Education Building, they are incorporated in the fenestration to maintain a continuous horizontal rhythm around the entire building. This building is treated as a background foil for the more complex and important facilities. The same approach to design and the same materials are being continued in the Clinical Sciences Building. Here there will be a solid dominance and change in proportions allowing changes in future buildings.



CONCLUSION

It is now possible to assess the results of more than a decade of planning, designing and construction. Teams composed of educators, scientists, planners, architects and engineers have examined the future role and responsibilities of the Division of Health Affairs and charted a course of action. The responsibilities and opportunities are well documented. The Division of Health Affairs now has a carefully considered general plan for future growth. Objectives are well established.

All of the Schools of the Division of Health Affairs can look forward to expanding enrollments and to an increasingly significant role in meeting the health manpower needs of North Carolina.

Long Range Development Plan Model.

CREDITS:

Building Development Plan for the Division of Health Affairs
Consultants: York and Sawyer, Kiff, Colean, Voss and Souder, Architects.

Long Range Plan, North Carolina Memorial Hospital
Consultants: E. Todd Wheeler and Perkins and Will Partnership.

Long Range Plan, School of Medicine
Consultants: E. Todd Wheeler and Perkins and Will Partnership.

Ambulatory Patient Care Unit
Architects: E. Todd Wheeler and Perkins and Will Partnership.

Bed Tower Addition for North Carolina Memorial Hospital
Architects and Engineers: J. N. Pease Associates.

Basic Science Education Building
Architects: E. Todd Wheeler and Perkins and Will Partnership and J. N. Pease, Associates.

Preclinical Education Facilities
Program Consultants: E. Todd Wheeler and Perkins and Will Partnership.
Architects and Engineers: J. N. Pease Associates.

Clinical Sciences Building
Architects: Holloway-Reeves Architects
Consulting Architect: Brian Shawcroft

Child Development Center
Architects and Engineers: A. G. Odell and Associates.

Dental Research Building
Architects: Holloway-Reeves Architects

Dental Education Building
Architects: Holloway-Reeves Architects
Consulting Architect: Brian Shawcroft

Elizabeth Scott Carrington Hall School of Nursing
Architects: Holloway-Reeves Architects
Consulting Architect: Brian Shawcroft

INCIDENTALLY . . .

Fred K. Garvey, Jr., AIA, announces the opening of an office for practice of architecture. His office is located at 2123 Bethabara Rd., Winston-Salem, N. C. 27106 . . . Jeffrey A. Huberman, Associate Member NCAIA, held a two-man exhibition of his paintings with R. Eric Anderson at the Mint Museum of Art in Charlotte, from July 20 through August 31 . . . Austin-Faulk Associates, Architects, announce the dissolution of partnership. Mr. Austin will engage in the practice of architecture under the firm name Austin Associates, AIA, 180 E. Connecticut Ave., Southern Pines, N. C. 28387. Mr. Faulk will remain at 225 N. Bennett St., Southern Pines, N. C. 28387 and will engage in the practice of architecture under the name John Foster Faulk, AIA . . . Raleigh Council of Architects elected new officers for '69-'70. Bob Rogers, AIA, as President; Gene Jones, AIA, as Vice President; Gene Rairden, AIA, as Secretary and Bos Beckwith, AIA, as Treasurer . . . Colvin, Hammill and Walter, Assoc. announce the new location of their offices — Suite 333, First Union National Bank Building, Winston-Salem, N. C. 27101 . . . C. L. "Chet" Helt, AIA, opened an office for the practice of architecture under the firm name of C. L. Helt and Associates, Architects/Planners. His office is located at 1722 East Seventh Street, Charlotte, N. C. . . . The Fall Meeting of the N. C. Chapter AIA will be held in Raleigh on Saturday, 15 November.

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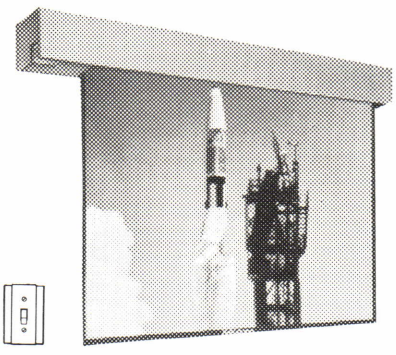

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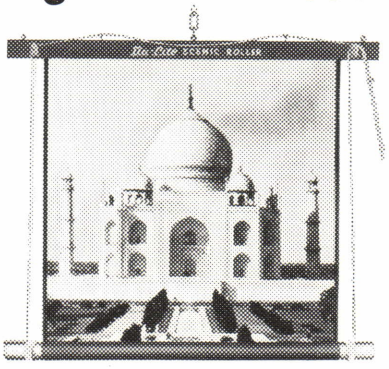

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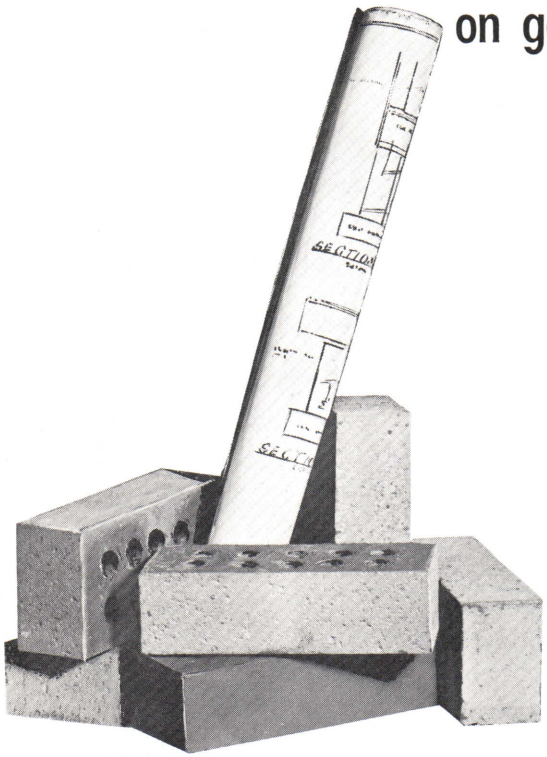

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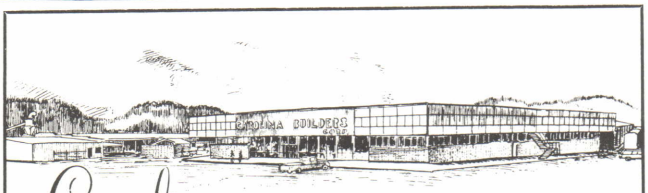

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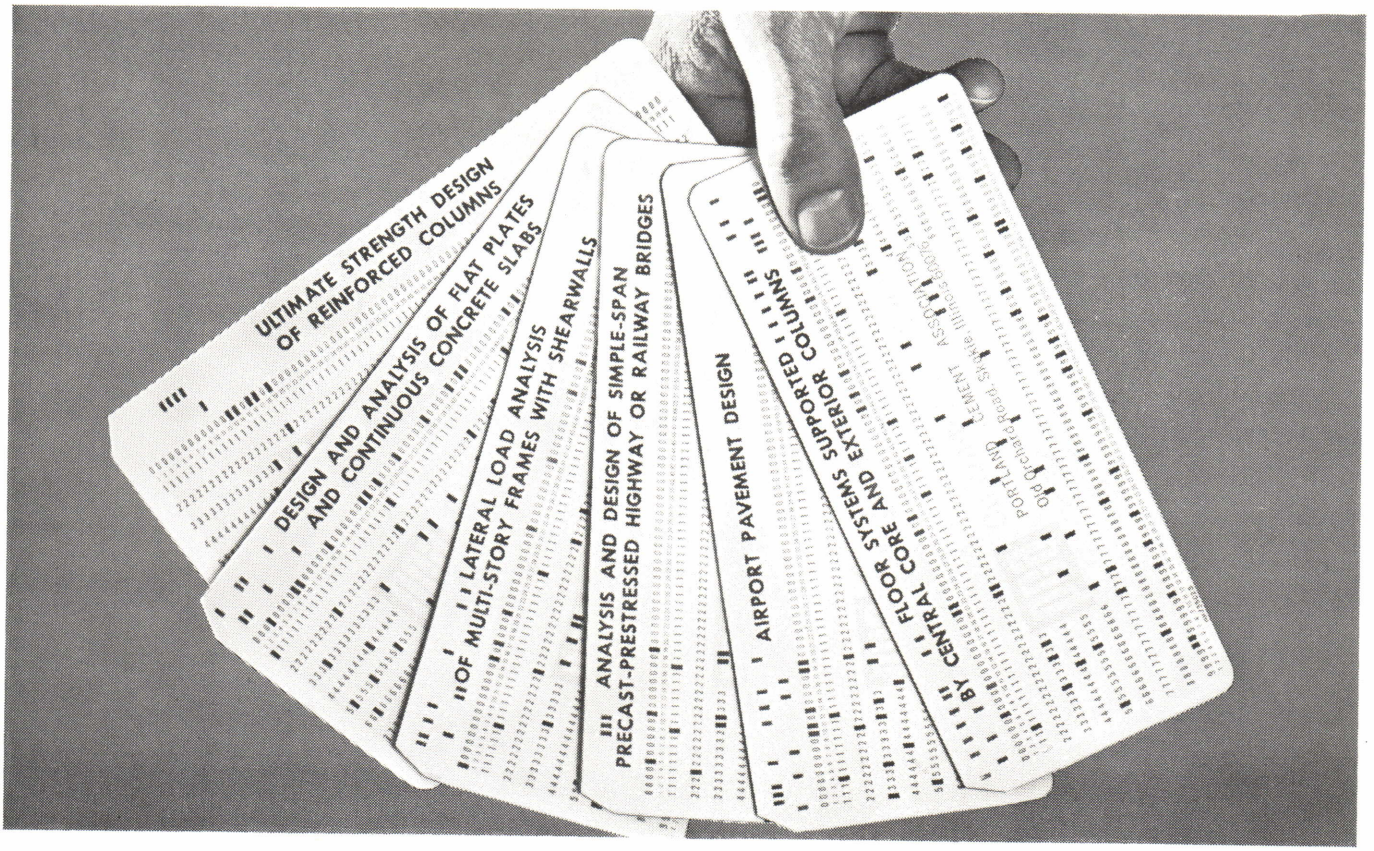

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LEON McMINN, AIA, member of the firm of McMinn, Norfleet & Wicker, of Greensboro, died August 21, after a short illness.

Mr. McMinn was a member of the American Institute of Architects, a vice-president of N. C. Board of Architecture; a member of the Greensboro Rotary Club, the Chamber of Commerce, the Engineers Club and the Columbia Alumni Association.

Survivors include his widow, the former Frances Cozart, a daughter, Mrs. A. J. Hennessey of Chapel Hill, a stepdaughter, Judy King of Alexandria, Va., his parents, Mr. & Mrs. James H. McMinn of Jacksonville, Tex., and and also a brother and two sisters.

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