

**CAMPUS PLANNING
A CASE STUDY OF KANSAS STATE UNIVERSITY**

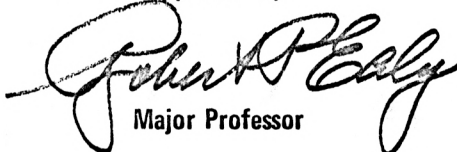
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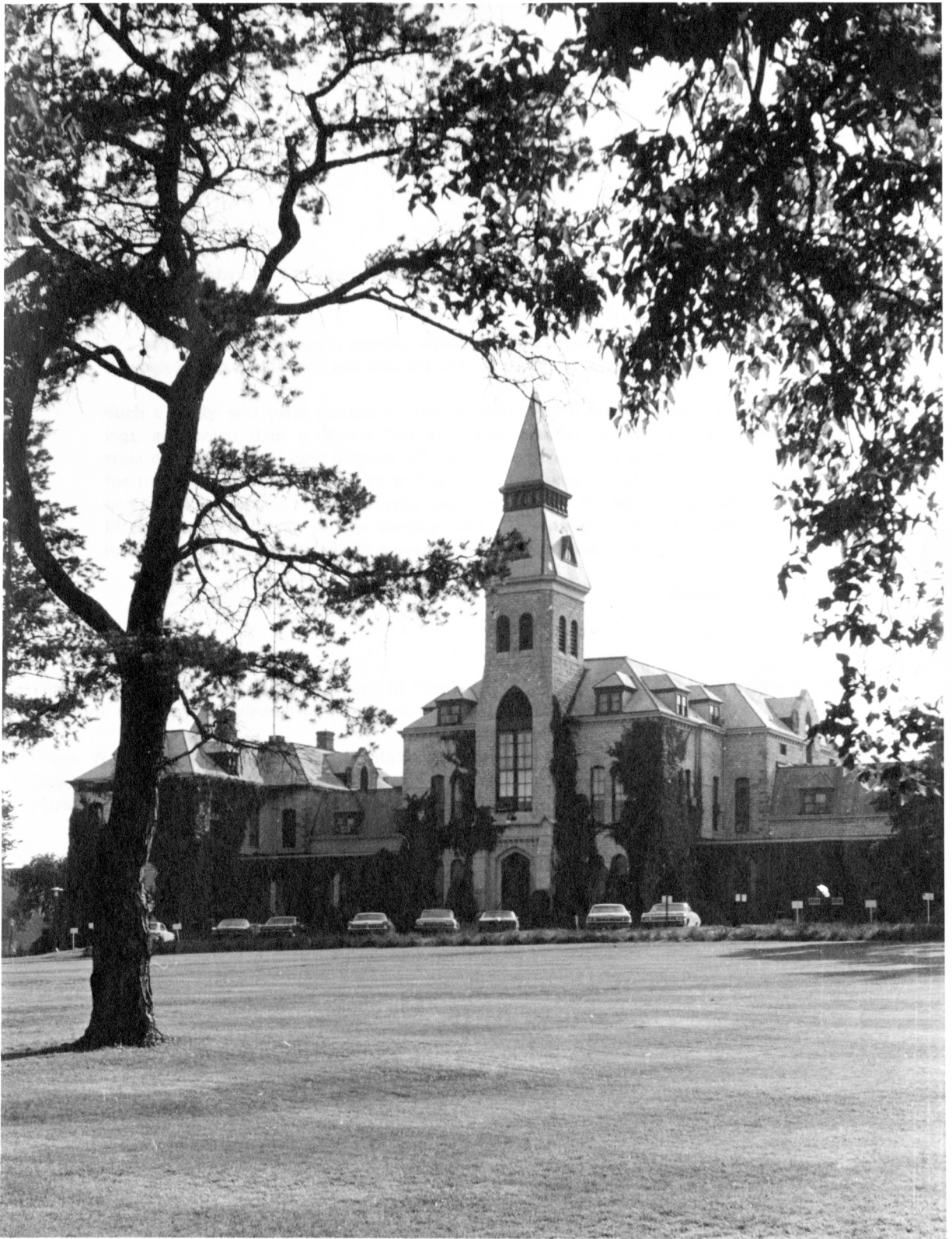
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B.S. Oklahoma State University, 1961
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**A MASTER'S THESIS
Submitted in partial fulfillment of the
requirements for the degree
Master of Landscape Architecture**

**College of Architecture and Design
Department of Landscape Architecture
Kansas State University
Manhattan, Kansas
1970**

Approved by:


Major Professor



"The most obvious and ghostly mistakes in most colleges are advertised in brick and mortar.

. . . any institution which is running without such a plan should proceed forthwith, through prayer and fasting and months of hard study, to supply the lack.

Such a study will yield, amongst other benefits; (a) a proper grouping of buildings, enhancing their artistic effect and their practical utility; (b) a consistent style of architecture, now disgracefully lacking on many campuses; (c) a provision for the convenient circulation of traffic; (d) the reservation of open spaces which, in the lack of a plan, are continually sacrificed for the expedient location of some ill considered building; (e) the development of a sense of unity; (f) substantial financial economies, especially in preventing sad and expensive mistakes."

Frank A. Waugh

The quotation above was taken from one of Frank Waugh's many books, "The Agricultural College". The book dealt with his views on the place of the Agricultural College in society.

Frank Waugh graduated from Kansas State University in 1891 and continued on for his Masters Degree. He took Landscape Design under J. D. Walters and later institutionalized the University of Massachusetts landscape architecture curriculum.

FOREWORD

Certainly no one would deny the significant role education plays in progress and the future aspirations of the world society. In fact, education is a prerequisite to realization of the goals of mankind. No longer can man afford the time it requires to educate himself outside a formal education atmosphere. Sophisticated educational systems and an accelerated accumulation of knowledge have helped establish colleges and universities as the institutions charged with preparing man to improve the quality of life on earth, as well as to probe deeper into the mysteries of the universe and his own being.

Obviously the mechanics of attending college will not make a man educated, although his life should be enriched by the experience. Education requires desire on the part of the individual; a desire to learn, to experience new dimensions, both in the technical and human realms.

If desire is so necessary for education, what is the prime ingredient of motivation. Certainly, the immediate environment is not the primary element of motivation. Conversely, it would be foolhardy to say that the educational environment neither gives sustenance to the drive and desire to learn nor erodes this desire. The author feels the best possible environment should be provided for the learning process.

It is toward this end as a study in educational planning research and physical design that this study is directed, utilizing Kansas State University campus as a case study.

The author wishes to acknowledge his indebtedness to Dr. Robert P. Ealy for his guidance in the preparation of this thesis. The author also wishes to express his appreciation to Professor Dennis Day for his tutelage in analysis techniques. Appreciation is also extended to the Kansas State University Physical Plant staff for information relating to campus studies, and to the Landscape Architectural firm of Oblinger - Smith for technical assistance in production of the thesis.

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CHAPTER I
PROLOGUE

Section 1
INTRODUCTION

Section 2
EDUCATION AND THE ROLE OF A UNIVERSITY

Section 3
GROWTH FACTORS

Section 4
CONCLUSIONS

INTRODUCTION

STATEMENT OF PURPOSE

Kansas State University is the product of many forces which have acted upon it and the environs since the college was moved to its present location in September, 1875. The University has experienced unprecedented growth in curriculum and enrollment during the last twenty-five years. Unfortunately, the University was not prepared for this growth and was forced to provide needed space in a crash building program during the early fifties. It is sad to note that with the extensive building program, increased enrollment and accommodation of the automobile, there has been a deterioration of campus environment.

Although many facilities have been built in recent years, there is still a need for academic space. Many old structures are now outdated, inefficient and unsafe. Some of them will no doubt be razed in the future to make way for modern facilities.

As the forces of growth intensify, the campus will be largely restructured. There will be a chance to rectify some of the mistakes of the past, and magnify some of the desirable elements of the environment. However, this cannot be done without first recognizing these elements and proceeding to plan for orderly growth. Planning for today -- today, often destroys desirable relationships, fails to recognize potential relationships, and creates undesirable situations.

Considering the magnitude of the building program which must certainly be undertaken in the future, it is inconceivable that the University and the State will proceed much farther without a comprehensive Master Plan for development, and a planning staff to update and implement the plan. Kansas State will no doubt continue to exist and grow without a comprehensive plan; but will the image and the quality of the University be worthy of the function it performs and the state it represents?

This is not to say that a comprehensive plan will be a panacea for all of the problems which face the University. It is merely a framework around which the University can continue to grow in an orderly manner. This framework must necessarily be flexible, but it should not be bent to suit the whims of individuals.

The purpose of this study is to identify the elements of the environment which should be perpetuated and those which should be changed in order to provide for future needs in a more orderly, functional pattern of growth which will improve the quality of the University and provide an environment conducive to the educational process.

GOALS

- To study the academic direction of Universities, their objectives and functions and the forces which shape their growth.
- To study the history of Kansas State University development and educational aims in order to understand existing patterns of development and project future growth.
- To identify and evaluate the existing campus patterns in terms of campus organization, landscape, circulation, open space, and existing buildings, determining which patterns should be preserved and enlarged upon in planning for future need.
- To establish design criteria and policy for campus growth and organization.
- To develop a conceptual master plan.
- To make recommendations for implementation.

LIMITATIONS

The policy and design criteria established in this study do not necessarily reflect policy which has been adopted by the University. Available information concerning existing space, projected need, future enrollment and curriculum growth, has been utilized. I have made no attempt to determine space need by specific curriculums.

EDUCATION AND THE ROLE OF A UNIVERSITY

Understanding the basic nature of a function is necessary before planning considerations can be intelligently weighed. Although Universities may differ a great deal in quality and curriculum there are several elements which influence the direction and growth of all institutions of higher learning. These common elements are educational objectives and functions, administrative decisions, population increase, and various other forces which shape the university.

EDUCATIONAL OBJECTIVES

Basically, there are four primary educational objectives. These objectives are all interrelated, hinging around the individual, the key element of an educational system. They are:

- To perpetuate the intellectual and cultural heritage of a society.
- The advancement of National Goals.
- Service to society.
- Total development of the individual.¹

Cultural Heritage Perpetuation

Before the invention of the printed word, cultural traditions and history were passed from generation to generation in the form of folklore, usually communicated by word of mouth. Much of the time this storytelling, or "education", took place in the form of a ceremonial with dancing, singing and other symbolic language utilized to help communicate and perpetuate significant history, myths, and legends, as a part of the culture.

As civilization progressed, word symbols and alphabets were developed, making possible a new dimension in the perpetuation of culture and history. A few select people known as scholars usually recorded current events and interpreted recorded history.

The development of the printing press further revolutionized the concept of cultural heritage perpetuation. Mass production of manuscripts enabled a larger percentage of the population to become exposed to recorded knowledge and history. Formal schools were established to insure a consistent dissemination of knowledge and culture.

National Goals

National Goals are subject to change. During the fifties and sixties, two primary goals of the United States were economic growth and technological advancement; both necessary ingredients of prosperity and power. John F. Kennedy said, "This Nation is committed to

greater advancement in economic growth, and recent research has shown that one of the most beneficial of all such investments is education, accounting for some forty percent of the nations growth and productivity in recent years. In the new age of science and space, improved education is essential to give meaning to our national purpose and power. It requires skilled manpower and brain power to match the power of totalitarian discipline. It requires a scientific effort which demonstrates the superiority of freedom.”²

Emphasis on technological advancement has produced a “gross national product” higher than has been achieved by any other nation in the history of the world. In fact, our technological advancement has far outstripped our ability to solve problems related to human interaction and environmental quality. America may find it necessary to place increased emphasis on finding solutions to these and other problems in the future.

Service to Society

Educational institutions can be of specific service to society, whether it be in developing programs for the social and economic rehabilitation of the unemployed, discovering new ways of dealing with health hazards, or becoming actively involved in the continued education of the adult society.

Universities can also serve society by constructively criticising those things which should be changed thereby effecting a change in attitudes, a prerequisite for social progress. In order to be credible in its criticism, a university must serve as a symbol; a symbol of excellence, a symbol of principle, a symbol of compassion and concern for the human condition.

Individual Development

The total development of the individual in mind, body, and spirit, should be the ultimate goal of any educational system. The traditional qualities universities have been hopeful of instilling in students are the ability to think rationally, render critical judgment, and perform a service for society.³ To be truly educated, an individual must obtain more from a university than an accepted proficiency level in a certain subject matter. He must understand himself, have an appreciation for individual differences, and be able to communicate with others. Total communication covers the whole range of feeling, perception and expression.

THE FUNCTION OF THE UNIVERSITY

The University’s role in meeting these educational objectives involves functioning in three interrelated capacities.

- Teaching - Teaching is not merely dispensing stores of knowledge. It is helping students to analyze the truth of information, stimulating thought and reason, and providing opportunities which assist the individual in developing himself.
- Research - The University must carry on research in order to discover new knowledge relevant to the needs of today's society, and to prove or disprove old theories.
- Public Service - Traditionally this service has been performed through extension and continuing education. For example, the Cooperative Extension service of Kansas State University has helped to revolutionize farming methods through experimental research and carrying the results to the people.

As the intensity of the Urbanization Process increases, the University could become involved in solving urban problems. These efforts might help affect an economic, spiritual and environmental transformation of urban areas, just as similar efforts contributed to change in the rural life of America.

At any rate, the University is no longer an entity unto itself which can "shut the public out with its walls and lead a leisurely life in ivory towers." The University is a part of the total community; and as such is responsible to the community. Conversely, the community is a part of the total learning environment and is responsible to the University.

GROWTH FACTORS -- FORCES WHICH SHAPE A UNIVERSITY

The fluid forces which shape a university range from world events to the individual needs and actions of students and faculty.

WORLD EVENTS

World events directly affect trends in population, economy, enrollment and expenditure priorities. During World War I and World War II, including the Great Depression years, there was very little enrollment growth or campus development at Kansas State University.

Trends in Population and Economy

Population growth is increasing at a phenomenal rate. In 1965 there were approximately 194 million people in the United States. A population of 322 million is projected for the year 2000, an increase of 66 percent. The world population is expected to almost double in this period, rising from 3.2 billion to 6.1 billion.⁴

Although these are only two of many variables, population increase and economic growth directly affect university enrollment growth. The influence of population growth on enrollment increase is obvious although it is not a simple extrapolation. The percentage of the high school age population enrolled in school has risen from fourteen percent in 1900 to 95 percent in 1968. Just before World War II, fourteen percent of the college age group was enrolled in colleges. By 1964 almost forty percent of the college age group was enrolled. Although "college age group" is an ambiguous classification, it gives an indication of increase. In 1964, fifty-eight percent of students graduating from high school enrolled in institutions of higher learning.

As technology advances and the knowledge explosion continues, it will become increasingly important for high school graduates to obtain a college education and specialize in graduate study. Employment studies have indicated that within a decade more than eighty percent of all employment will be held by semi-skilled, technical, and professional workers requiring some post-secondary education. World events and economic trends might reverse this trend for a period of time. However, it is very unlikely that this would be a permanent reversal since our recent economic growth has been an expression of increased educational opportunities. Increased economic growth and a rise in the standard of living will tend to make leisure time more plentiful. This will influence some of the older generations to continue their education for recreational value as well as practical reasons.

Technological Innovations

Kansas State University has undergone many changes in the past as a result of technological growth. The most notable change has been expressed in a negative way. The automobile did not begin to influence the physical shape of the University until after her fiftieth birthday. In the early days, people and carriages moved about the campus along common pathways.

As the automobile became more sophisticated, heavier, and more numerous, it required wider, more permanent roads and increased storage space near the destination. After the end of World War II a larger percentage of the people began to own automobiles as a result of economic growth. Today, almost 75 percent of the students own cars. The resulting circulation friction and storage problems have had a marked effect on the campus environment. It has become apparent that we must find other solutions to the problem of automobile accommodation. We can no longer let the car dictate the physical form of the university.



The car will no doubt be a part of our culture in one form or another for some time. However, it is not inconceivable that another mode of transportation will become popular in the future. Individual rocket belts and other means of individual transportation are already in

the experimental state. In any case, circumstances may force us to turn to other less space consuming transportation systems on campus.

Innovations in methods of supplying electricity, heat and air conditioning could also affect the physical form of the campus in the future. Generators may become small enough that each building can contain its own source of power supply. Steam heat is one of the most inefficient and unsatisfactory sources of heat known today. Hopefully, technology will provide us with more efficient, less costly heating and cooling systems in the future.

POLICY DECISIONS

Many different government agencies and individuals make decisions concerning national goals and educational objectives. The percentage of high school graduates enrolling in college could increase dramatically if the recommended national goal of two additional years of free educational opportunities is ever realized.⁵

As a result of international competition for superiority in the "Space Age", the United States Government made increased emphasis on education a national goal. The National Defense Education Act of 1959 made federal loans available to assist students otherwise unable to finance the high cost of a college education.

This allowed a larger percentage of the college age population to enroll in institutions of higher learning.

Government aid to service men for education has also stimulated enrollment growth in the last two decades.

Government research grants have influenced university growth by making new space and research faculty necessary.

State Government and Administration

Legislators, taxpayers, university regents, and administrators determine policies directly affecting university growth. They determine how much state money will be available for what educational programs and facilities. Indirectly, they determine the educational objectives the university will pursue, and the relative role of the university in the educational system of the State.

TRENDS IN CURRICULUM

The established universities obviously can not continue to absorb all of the growth pressures exerted upon them. In an effort to cope with the forces and maintain the identity of the university, many innovations will be tried. Some universities no longer admit the first two undergraduate classes. Other new universities are being built around the concept of programmed courses and individual study stations.

The Role of Junior Colleges

As enrollment pressures mount, most state educational systems are placing increased emphasis on the utilization of Community Colleges for lower level academic work. The State of Kansas is planning and constructing Junior Colleges at an unprecedented rate. Presently there are nineteen community colleges either in operation or under construction. Community colleges are designed to help the student achieve a satisfactory transition from the high school to the university. Lower enrollment standards give students who performed poorly in high school a further chance to prove themselves. The lower costs should also influence students to utilize the community college facilities.⁶

Entrance Requirements

As a result of the rising cost of higher education and increased demands for academic space, entrance requirements will probably be raised in the future. Presently all in-state students graduating from an accredited high school or junior college with a "C" average or better are admitted to Kansas State University. Out-of-state students from the upper one-half of their Senior Class are admitted if they show promise on A.C.T. Tests. This standard could be raised to admit only the upper one-fourth.

Educational Programs

There is no doubt that with the increasing complexity of the socio-economic system and continued scientific discoveries, universities must continue helping people learn to perform a useful function for society. There will be a trend toward a more generalized education leading to specialization in post graduate studies. This will be necessary in order to keep up with the rapidly changing technology and obviate an obsolete education.⁷

The professions and the social services should receive increased emphasis in the future. Students in all curriculums should receive more "liberal art" oriented education in order to expand their ability to think, perceive, and express themselves more effectively in communications with the human environment. Graduate study will also become more prevalent in the future. These trends will necessitate an expanded academic plan. Further,

there will undoubtedly be curriculums in the future which are unheard of today.

Teaching Methods and Innovations

We are on the threshold of a technological revolution in education. Such innovations as programmed courses, educational television, microfilmed libraries with dispersed command consoles, and individual study stations, could change our present concepts of space utilization and space relationships.⁸

In 1967 Germany instituted a preparatory college or high school course of study which runs for three years. The classroom is the individual home with television console as the instructor. The student must motivate himself for three years at the end of which he takes a comprehensive exam. Passing the test qualifies him for a National Secondary Schools Certificate and opens the doors to specialized colleges and academies.⁹

Teacher shortages due to salary differentials will undoubtedly necessitate the use of educational television and other audio-visual aids in the future. However, it is generally agreed by education experts that "teaching machines" cannot completely replace classroom contact with the professor and other students. There must be personal interaction with input and feedback, in order to develop the thought process effectively. Nevertheless, teaching machines which "dispense information" would free the professor of his bookkeeping tasks and allow him to spend his time in more fruitful contact with the student.¹⁰

Before a university can prepare a valid plan for development, it must determine what part audio-visual aids will play in the future concept of the university.

Teaching - Learning Environments

Other educational innovations are being explored by various universities today. One of these innovations is the living-learning environment. Michigan University utilizes this concept in its Law School. Students live in the same complex where the major courses are taught. Social clubs are a part of the living-learning environment in order to stimulate interaction and further development of professional skills outside the classroom. The University of California at Santa Cruz is another example of the educational experiment which clusters curriculum with the living environment. There is an emphasis on instruction and scholarly discussion within the residence.

"Educational segregation" may not prove to be desirable in all curriculums since exposure to people of different backgrounds and interests is a part of education. However, this approach

may be valid in professional curriculums where intensified knowledge and skills in certain areas are necessary. This is not to say that a learning environment cannot be designed into living facilities. Some learning takes place in all dormitory environments. However, the quality of the environment will influence the degree of learning which takes place.

A Shift in Emphasis

The university has traditionally been the "finishing out" school of the educational system. In addition to being the training ground for a career, it has been the place where social skills are developed and educational deficiencies are remedied. There are some educators who visualize a vastly different approach to education within the next twenty-five years. They see classical educational efforts concentrated in the early school years where programs and computers would assist the student in learning commonly agreed upon knowledge and skills, such as spelling, reading, math, science, etc., in one-third the traditional time. The remaining years of youth would be spent in personal development and human interaction. The student might then be better prepared for the specialized training and experimentation at the university level.¹¹

This approach might be "placing the cart before the horse." There would have to be extensive psychological research to prove the validity of this approach before it could be institutionalized. Psychologists agree there seems to be an age in early childhood when the brain is most impressionable and learning is most efficient. Environment, human attitudes and responses, create impressions and form patterns which influence development in later years.¹² Chemical and biological changes in the body and resulting changes in the role of the individual would seem to indicate that "learning" and "personal development" should be a conjunctive process and an integral part of life in order to maintain a well rounded personality during all stages of development.

CONCLUSIONS

The nature and complexity of technological advances and a changing world, our abysmal failures in human relations, and a greatly accelerating growth rate in stores of knowledge, will necessitate growth and change in University systems.

The rate of change which will undoubtedly take place, demands growth of a physical nature and a high degree of flexibility both in educational programs and space utilization. At the same time, the human element - the individual, must retain his central importance in the educational system and the environment of the University.

CHAPTER II
BACKGROUND

Section 1

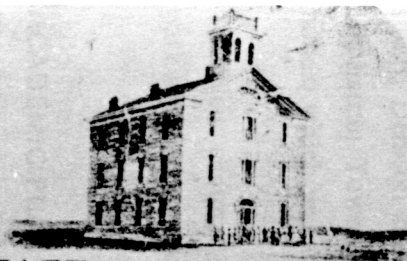
HISTORICAL SKETCH OF KANSAS STATE UNIVERSITY

Section 2

SUMMATION OF GROWTH AND PROJECTION FOR THE FUTURE

FACULTY.

DR. BENSON, D.D., President.
 Professor, R. F. MUDGE, A. M.
 J. D. LEE, A. M.
 J. K. PLATT
 Vice, L. C. LEE
 Ten vacancies to be filled



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 3d. Mechanical Arts.
 4th. Military Department.

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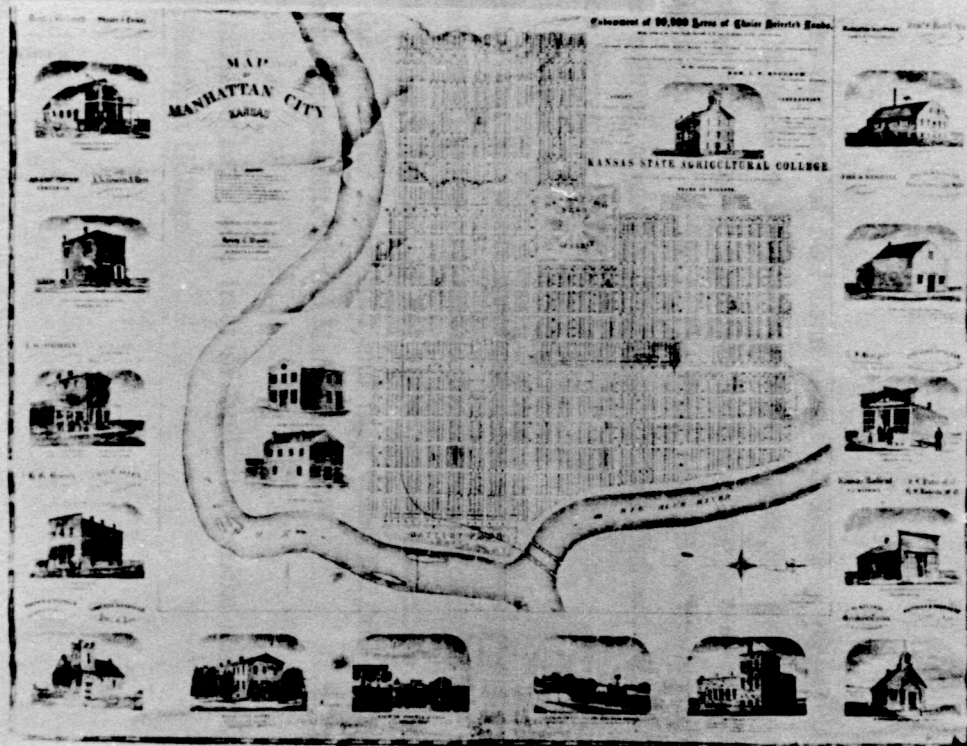
KANSAS STATE AGRICULTURAL COLLEGE.

LOCATED IN 1862
 SITUATED 8 MILES NORTH-WEST FROM MANHATTAN

BOARD OF REGENTS.

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July



HISTORICAL SKETCH OF KANSAS STATE UNIVERSITY

Kansas State University, situated in the Flint Hills at Manhattan, Kansas, has grown from an unpretentious beginning in 1863 when it enrolled fifty-two students, to its present status as an accredited university with an enrollment of 12,560 students in 1968. Physical facilities have increased from one building in 1873 to fifty-two in 1968.

INTRODUCTION

Kansas State Agricultural College was the first of 68 "Land Grant" colleges in the nation.¹³ The Morrill Act, which donated public lands to the States and Territories for the support of Land Grant Colleges was designed to make higher education available to the masses. It was signed into law by President Lincoln on July 2, 1862. The State established the College at Manhattan in February, 1863. The college, originally Bluemont Central College, enrolled its first students under its new name on September 2, 1863.¹⁴

In 1871, President Denison determined that a new site was needed for agricultural experiments and a new campus. The city of Manhattan wanted to donate a forty-five acre park for the new site.¹⁵ Denison must have realized the park site would not allow for expansion. He sold the Manhattan Township citizens on the need for more land and they voted \$12,000 dollars in bonds, which was used to purchase the present site of the Main Campus.¹⁶

The New campus site was a one hundred sixty acre tract of land, two blocks north of the park site and one mile east of old Bluemont College.

ACADEMIC PLAN EVOLUTION

The objectives outlined in the Morrill Act were as follows: "... without excluding other scientific and classical studies and including military tactics, to teach branches of learning related to agriculture and the mechanic arts . . . in order to promote the liberal and practical education of the industrial classes."¹⁷ The Academic Plan of Kansas State University has undergone many changes since the first curriculum as a result of technological advancement and economic growth.

The First Curriculum

President Denison made an honest effort to incorporate in the curriculum the programs suggested by the Morrill Act. Botany, general and agricultural chemistry, zoology and other

natural sciences, together with Liebig's Husbandry, were included in the first years course of study along with courses of a liberal nature. A separate three year agricultural course was outlined in 1864.

From Liberal Education to Practical Training

The college was still in the process of moving to the new campus when the Board of Regents called for the resignation of all faculty members by June 27, 1873. They felt too much emphasis was being placed on liberal education in relation to the practical or applied training.

John Alexander Anderson, a Presbyterian Minister, was elected the second President of Kansas State Agricultural College. When interviewed by the board, Anderson referred to the curriculum and proposed to "bust it from stem to gudgeon." He intimated that the college would graduate capable farmers and housewives, rather than agricultural experts, experimenters, professors and editors.¹⁸

Expanding the Educational Program

The bane of the college is its conservatism. Inertia is a universal property of matter; similarly it seems to be a property of man, and especially of men grouped together in organizations and institutions.

President Thomas Elmer Will

President Thomas Elmer Will, the fourth president of Kansas State Agricultural College, came into office shortly after the Populist victory in the State elections of 1896, and departed with the Populist defeat in 1898. His was the shortest tenure of any Kansas State president, yet he made a lasting contribution to the history of the University.

Will hired several teachers who held the Doctor of Philosophy Degree; the first in the history of the college. He also revamped the curriculum, which had consisted of only one course of study under Presidents Anderson and Fairchild, to recognize four separate courses: Agriculture, Engineering, Home Economics, and General Science. In another progressive step he created a college book store and cafeteria for students.

Creation of Divisions. As a step toward accreditation, admission requirements were raised and the fields of study concentration were designated Divisions to be headed by deans.

The six divisions created during the Nichols Administration were: The Divisions of Agriculture; General Science; Mechanic Arts; Economics; Extension; and the College. The Division of Veterinary Medicine was divorced from Agriculture in 1919.²⁰

From Divisions to Schools. In 1943, the last year of Farrell's administration, the Divisions were designated as Schools. The school of Graduate Study was added to the previous list of Divisions. The Division of General Science was named the School of Arts and Sciences. This was followed by the establishment of comprehensive courses in the four major areas of human knowledge, Biological Science, Physical Science, Social Science, and the Humanities. The Arts degrees were reinstated and the first four Bachelor of Arts degrees were granted in January, 1957.²¹

Schools to Colleges. On July 1, 1963,^{*} as a part of the Centennial Celebration, the six fields of study previously known as schools were designated as Colleges. The school of Architecture and Design, which was divorced from Engineering, also attained College status. It included Architecture, Architectural Engineering and Planning from the College of Engineering, and Landscape Architecture from the College of Agriculture.

At the same time, the Departments of Commerce and Education were officially named Schools. "Commerce" and "Education" have since been designated Colleges, which makes a total of eight colleges and an Extension Division.²² Kansas State achieved University status in 1959.

CAMPUS DEVELOPMENT -- THE HISTORY OF PHYSICAL PLANNING

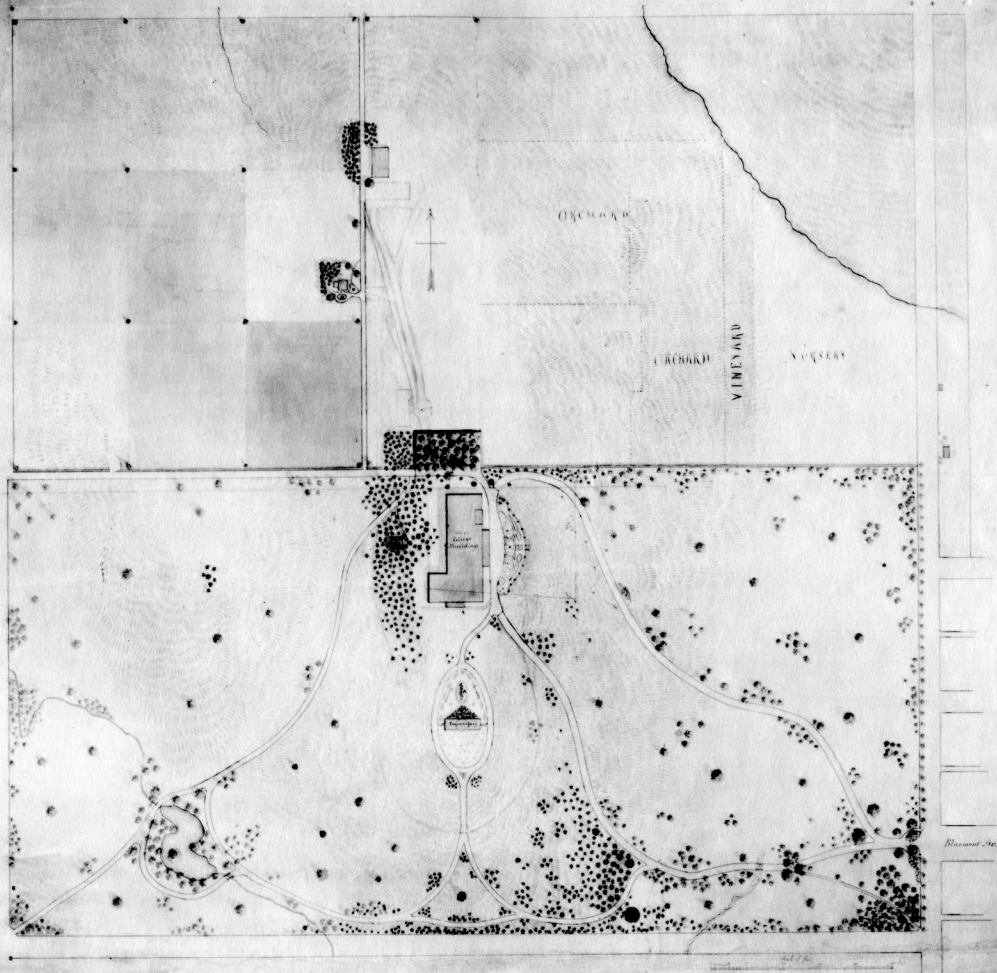
Although there is presently an urgent need for a comprehensive master plan, there have been several "campus plans" in the history of the University. Some aspects of these plans have been meritorious. However, none have expressed an adequate visualization of the future and the University's role in society. As Santayana has said, "To be ignorant of history is to repeat its mistakes."

Hopefully we can learn from the "mistakes" of previous plans and capitalize on their virtues.

The First Campus Plan

The landscape character of the new campus site was essentially a treeless plateau with drainage areas on the southwest and northeast corners. In the early days, the site afforded a commanding view of the city, across the Kansas River Valley to what is now "K-Hill" and the hills beyond.

The first campus plan was designed by the landscape gardener, Professor Worall of Topeka. He laid out the original grounds and selected the site for Anderson Hall.²³ The site commanded a grand view of the structure from the environs.

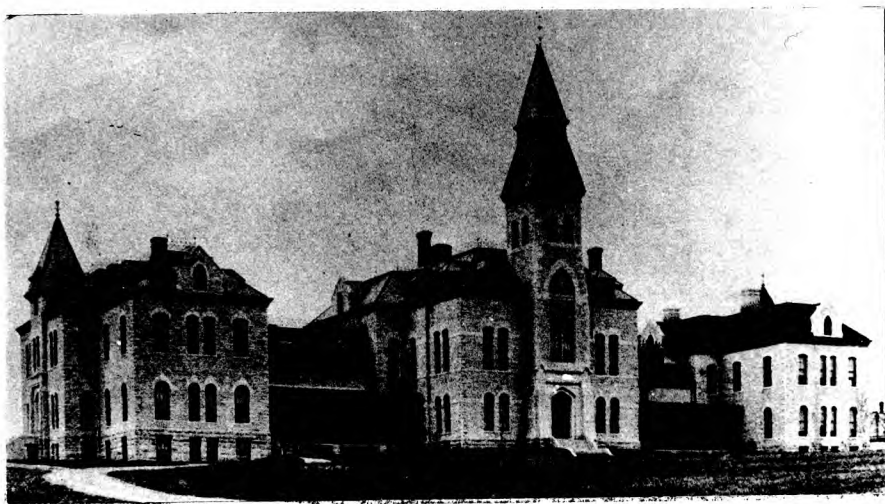


PRELIMINARY
DESIGN FOR THE GROUNDS OF THE
KANSAS STATE AGRICULTURAL COLLEGE.
MANHATTAN, KANSAS.

By Harry Merrill, Topeka, Kan.

Early Buildings. The first building on campus was Farm Machinery Hall, or the Armory, constructed in 1873. It stood on the western side of what is now the Main Quadrangle. The building was torn down in 1963 to make way for the new physical science structure.²⁴

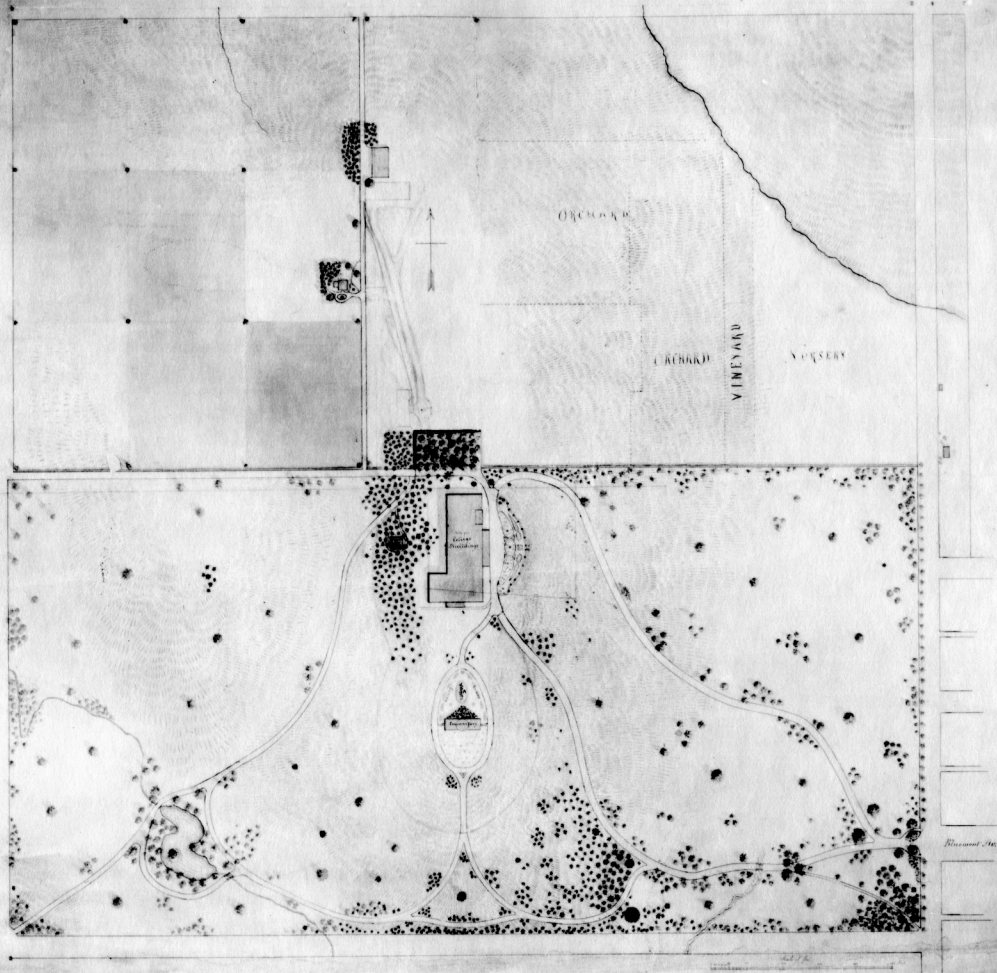
The first wing of the main college building, now Anderson Hall, was constructed in 1879. The building, designed by E. T. Carr, Architect, from Leavenworth, Kansas, was completed in 1884.²⁵ The total estimated cost of the building was \$50,000.



The Early Landscape Environment. Although the Main Campus site was originally barren, the landscape environment is now the major asset or symbol of the University. Landscape has been ignored on the western side of the campus, and some of the original “front door”, or carriage entrance open space envisioned by the early planners has been negated. The remaining open space on the eastern edge of campus is a result of the concern and devoted work of many different individuals.

The grounds were traditionally the responsibility of the Horticulture Department. Horticulture and Landscape Architecture Professors served as Grounds Superintendent and were assisted by students working part time.

Some of the early gentlemen responsible for our heritage were Professors Gale, Van DeMann, E. A. Popenoe, and S. C. Mason. Professor Gale set out a nursery and plantation on part of the “Old College Farm”, bordering Manhattan Avenue, in 1873-74. The large conifers north of Lovers Lane and east of Justin Hall are the remains of the “pineatarium.”²⁶



PRELIMINARY
DESIGN FOR THE GROUNDS OF THE
KANSAS STATE AGRICULTURAL COLLEGE.
MANHATTAN, KANSAS.

By Henry Merrill, Epoka, Kan.

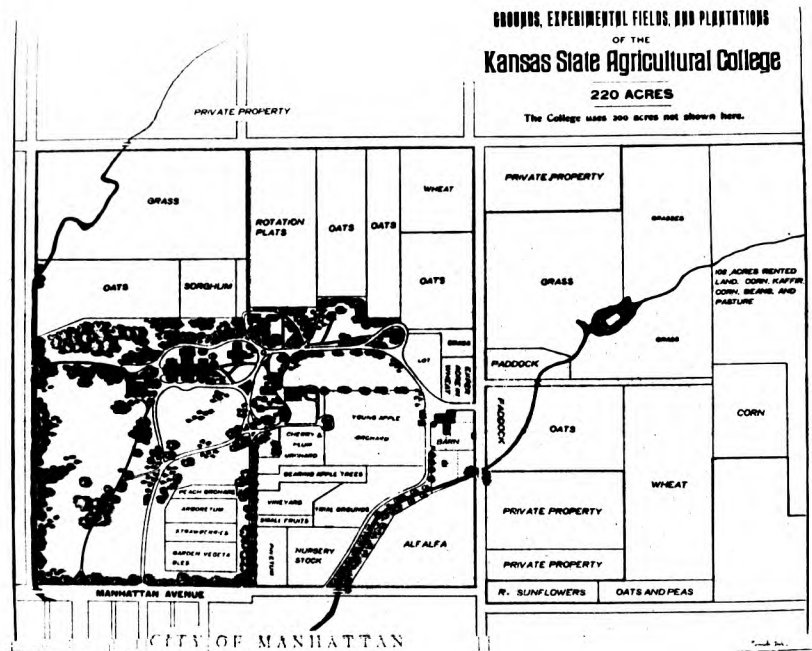
Professor Van DeMann, superintendent of grounds in 1879, was reluctant to plant many permanent trees without a plan of the grounds and agitated for a professional landscape plan.²⁷



Professor Popenoe and his assistant, S. C. Mason, were responsible for planting many of the older trees on campus. Many of the old pines in the center of campus were transplanted from Bluemont College.

Landscape Plan by Maximillian Kern

Maximillian Kern of Columbia and St. Louis, one of the best landscape gardeners of his time, was commissioned by President Fairchild in 1885 to plan the campus grounds.²⁸



Kern has his own philosophy on the landscape development of college grounds. He believed that the grounds should be tastefully designed to serve both as a foreground for the college and as a learning laboratory. Further, he believed the exterior environment students were exposed to would affect their state of mind and stimulate their receptiveness to education.²⁹

Evolution of Campus Development

Around the turn of the century, with the expansion of the Academic Program, the Campus as we know it today, began to take shape. Nine major buildings (three of which have since burned) were added to the Campus during the ten year period of the Nichol's administration.

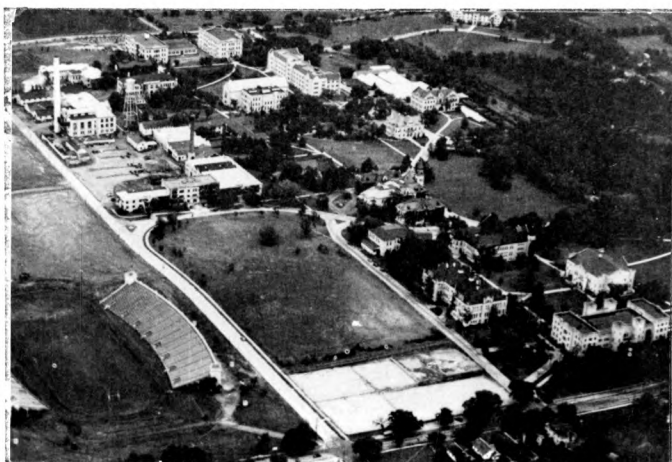
John D. Walters' Influence on Campus Development. The first major urban space defined on campus was the space now referred to as the "Anderson Green." The concept was established in Kern's Landscape Plan. The drives in front of Anderson and the open space enclosed within them, formed the framework for future building locations.

Not all of these buildings were located in the original plan, yet someone was concerned with planned relationships. Although the buildings were all designed by different architects, they had an element of continuity in architectural style and building materials.



ABOVE — ANDERSON GREEN SPACE DEFINED BY DENISON HALL AND AGRICULTURAL HALL. THIS WAS PART OF THE GRAND FORECOURT ENVISIONED BY J.D. WALTERS DURING THE TIME HE WAS PLANNER IN RESIDENCE. DENISON HALL BURNED IN 1934.

RIGHT — THE AERIAL PHOTO SHOWN HERE GRAPHICALLY ILLUSTRATES THE FRONT DOOR --- BACK DOOR APPROACH TO PLANNING DURING THE EARLY PERIOD. UNFORTUNATELY THIS TREND HAS NOT BEEN CORRECTED IN RECENT HISTORY.



In the *Industrialist*, June 8, 1901, we see this article relative to the location of old Denison Hall (burned in 1934).

Its main entrance will face south directly opposite the main entrance of Library Hall ("Fairchild") so the students will not have to walk through the already crowded corridors of Anderson Hall.

It will be located about midway between the main college building and the new Agricultural Hall so as to form a grand court of stately structures situated in a large semi-circle.

This was written by J. D. Walters, the gentleman who originated the Architecture Department at Kansas State. Mr. Walters was born and educated in Switzerland. He was active in matters concerning campus development and supervised the construction and location of all the buildings constructed during the Nichol's administration. During his tenure at the college, he gave many lectures and demonstrations throughout the state on the subject of Home Grounds Arrangement.

A precursory investigation of the "Letters From Alumni of Kansas State Agricultural College," presented to Walters in 1927 in commemoration of fifty years of service to the University, reveals the impact he had on the development of the University and on the lives of students.

S. C. Mason mentions the close relationship he had as a student, Professor of Horticulture, and Superintendent of Grounds, with both Walters and President Fairchild. (Fairchild's memoirs were presented to Mason after the President's death).

Frank Waugh and his sister "Fannie Elizabeth, both prolific authors, expressed their regard for Walters. Frank, graduate of 1891, became professor of Horticulture at Massachusetts University and subsequently developed the second accredited undergraduate curriculum of Landscape Architecture in the United States. Two of his many books were "Town and Country Planning," and "The Agricultural College." In the latter, he expounded on his educational philosophies and the relationship of the college to society. It would be interesting to know whether or not Walters was a major inspirational force in Waugh's life.

Earl Springer reminisced about the class of Landscape Architecture taught by Walters in 1913. (Further investigation proved that "Landscape Architecture" had been a sister to Architecture under Walters' direction in the Division of Engineering. Beginning in 1924, two complementary courses of study in Landscape Architecture were offered by the University; one in the Department of Architecture, and the other in the Horticulture department. After Walters' departure and L. R. Quinlan's arrival in 1927, the Landscape Architecture curriculum in the Department of Architecture was discontinued.)

Glick Fockele, class of 1902 and editor of the "Leroy (Kansas) Reporter" in 1927, commented on Walters' involvement with campus development; ". . . I am not acquainted with all the details of the planning which has made the College Campus one of the most beautiful in the country, I do know that it has been largely through your interests and efforts that the many buildings have been so placed as to avoid an effect of Architectural monstrosity so common among institutions of the kind."

Other major campus spaces developed under the direction of Walters, were the South Quadrangle and the Main Quadrangle. The Old Auditorium (burned in 1964), Nichol's Gym (burned in 1968), Calvin Hall, Kedzie, and Fairchild Hall, defined the South Quadrangle.

The largest urban space on Campus is the Main Quadrangle. This was originally the old parade ground due to its location near the Old Armory.

The construction of Willard Hall, Farrell Library and West Waters Hall during the Farrell Administration gives the space its present identity.

Services: The Back Door Syndrome. Just as some of the spaces and environment conceived in the earlier days are the greatest image assets of the University, so did some of the decisions of the earlier day contribute to its greatest liabilities.

The original layout of the campus was developed around the concept of a "front door" or Grand Forecourt overlooking the city, and a "back door" or service area.

This may have been logical in the infancy of the University. Since that time, the city has grown around the University, enrollment has increased dramatically, the automobile has appeared on the scene, and circulation patterns have changed.

There can no longer be any back door to the campus. The University presents its image to the public on all sides. The fact that services are still treated as a "back door" function has created an untenable situation for an institution of higher learning.

The location of the original power plant in the center of campus and the continued addition and expansion of service facilities adjacent to it, set patterns which are still followed today. The original plant started operation in 1882.

The present power plant was erected in 1928. There was some controversy over the location of

the plant.³⁰ In any case, the power plant, along with the water tower erected in 1904, now occupies the center of the campus and the high point on the hill.

L. R. Quinlan Influence. L. R. Quinlan, professor of Landscape Architecture and superintendent of grounds from 1927 to 1952, was responsible for the design of grounds and many additional plantings not included in the original plan. These recent additions to the Landscape were in keeping with the general concept of the original plan. The result is a credit to the University and the State. The landscape concept, established by Kern and improved upon by Quinlan, should be maintained and further expanded to include future developments.

Professor Quinlan also served on the Campus Planning and Development Committee for 25 years. Recognizing the difficulty of planning by committee and the lack of professional training, he counseled against the practice of determining campus environment by university personnel.

During his 25 years as Superintendent of Grounds he was instrumental in removing several roads from the center of campus. He also kept a growth and drought record on campus trees for 35 years.

In Professor Emeritus Quinlan's opinion, the campus grounds represent the largest botanical garden in the region, next to the St. Louis Gardens.

The 1924 Plan. A plan or "bird's eye" view of the campus was drawn up by physical plant personnel and widely circulated in 1924.

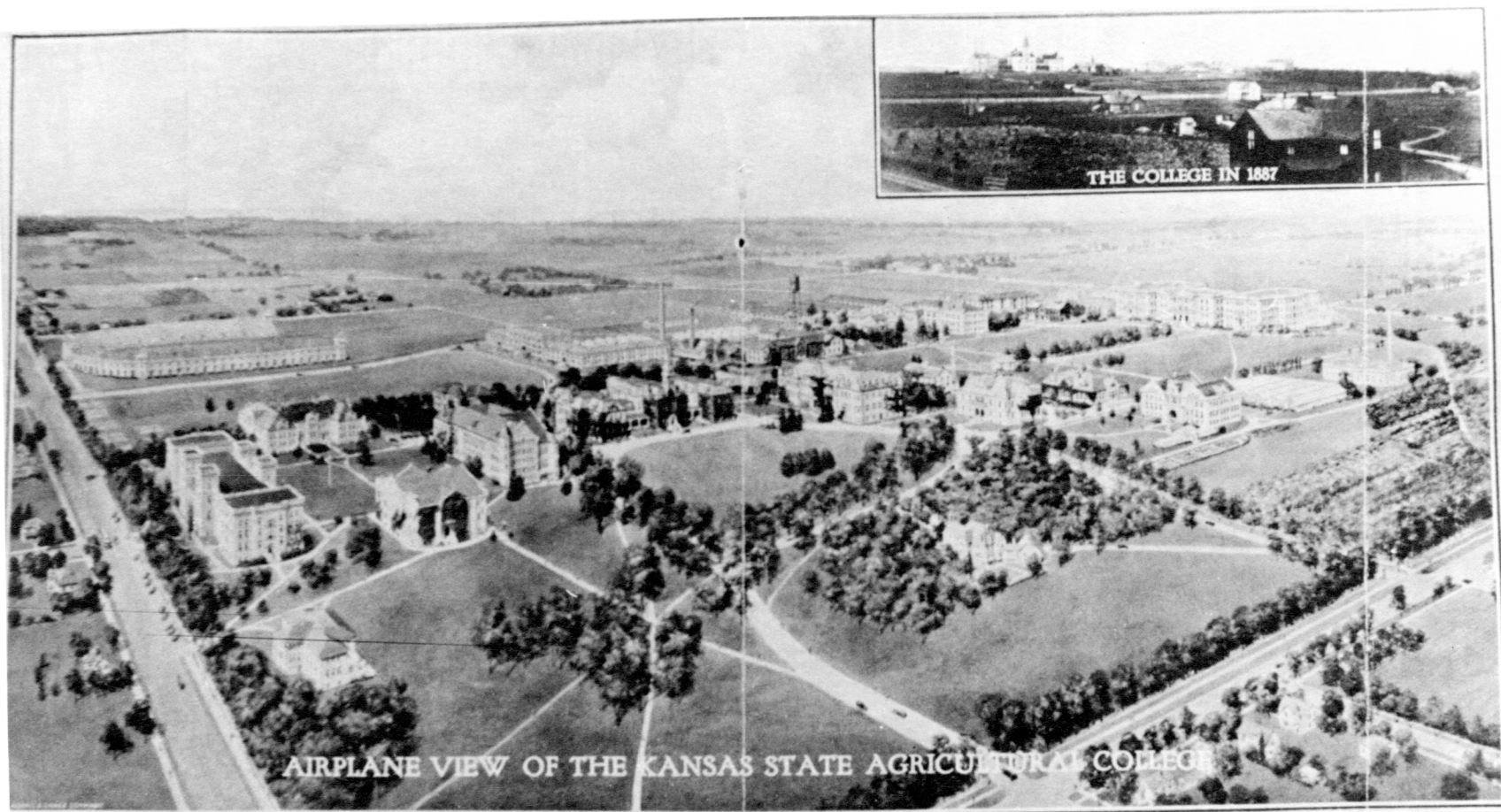
The plan shows a proposed power plant located in the low lying areas east of Waters Hall. This plan was abandoned and the power plant was erected in its present location.

Historical Poster. A poster drawing of the campus, copyrighted by Margaret Justin in 1928, is of historical significance since it depicts campus life and activities associated with the various campus areas.

Plans for Campus Development Since 1885

There has been two formal proposals for campus development since Maximillian Kern's plan in 1885; the faculty plan by the Council of Deans, and the Hare and Hare Plan.

Twenty Year Program. In 1934, the Council of Deans instituted a study, which was to lead to

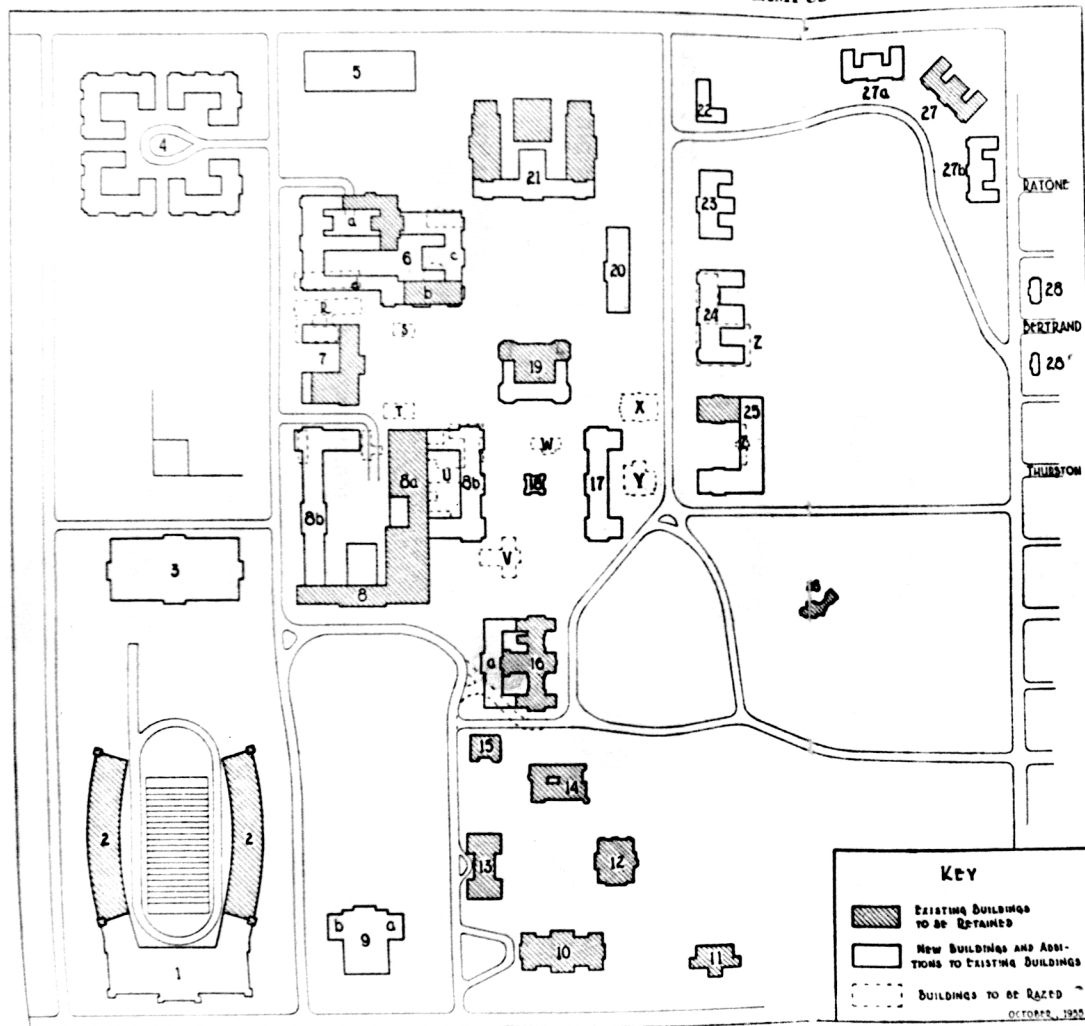


a 20 year program for Kansas State. Part of the program was a proposed plan for campus development and a list of recommendations and objectives.

Following is a list of those recommendations of the proposed Plan:

- Rigid adherence to the present policy of constructing college buildings of native limestone.
- The presentation of the crescent of buildings extending from Thompson Hall to Dickens Hall and the exclusion from the east campus of buildings east of the line established by the crescent.
- The development of both sides of Denison Avenue as a western terminus of the campus.
- Continued development of the campus as an arboretum.
- Exclusion of all incidental decoration from the campus that does not contribute meaningfully to a unified campus development plan.
- Strict adherence in the future to a uniform architectural style for college buildings.
- Provision as rapidly as practicable of the following buildings:
- A physical science building to replace Denison Hall; an agriculture engineering building; two home economics practice houses; a new home economics hall; a student infirmary; completion of Waters Hall; a live stock pavilion; a new and greatly enlarged group of greenhouses to be situated off the campus; an extension service building; a biological science hall; a new gymnasium and armory for men; a remodeling of Nichol's Gymnasium as a gymnasium for women; a field house; remodeling of Thompson Hall; additions to the engineering unit for the Departments of Applied Mechanics, Machine Design, Civil Engineering Shop Practice, and an auditorium; conversion of the present auditorium into a music hall; enlargement of Anderson Hall to include more administrative offices and a greatly enlarged student center; a campanile; completion of the library; addition to the veterinary unit, including the completion of the veterinary hospital, the addition of a veterinary administration unit and a unit for experiments with small animals by the various departments of the college; two new residence halls for women; four residence halls for men; improved quarters for the social studies group; a new building for laboratories and offices for scientists stationed at the college by the Federal

PROPOSED CAMPUS DEVELOPMENT



KEY TO PROPOSED BUILDING LOCATIONS

- | | |
|--|---------------------------------------|
| 1 FIELD HOUSE | 17 PHYSICAL SCIENCES |
| 2 MEMORIAL STADIUM | 18 CAMPANILE TOWER |
| 3 MEN'S GYMNASIUM AND ARMORY | 19 LIBRARY |
| 4 MEN'S RESIDENCES | 20 LITERATURE AND LANGUAGES |
| 5 LIVE STOCK PAVILION | 21 WATERS HALL (AGRICULTURE) |
| 6 VETERINARY MEDICINE | 22 STUDENT INFIRMARY |
| a VETERINARY CLINIC | 23 EXTENSION SERVICE |
| b PATHOLOGY | 24 HOME ECONOMICS |
| c ADMINISTRATION | 25 BIOLOGICAL SCIENCES |
| d SMALL ANIMALS BUILDING | 26 PRESIDENT'S RESIDENCE |
| 7 HEAT, POWER, AND SERVICE BUILDING | 27 VAN ZILE HALL (WOMEN'S RESIDENCES) |
| 8 ENGINEERING HALL | a WOMEN'S RESIDENCES |
| g ENGINEERING SHOPS | d WOMEN'S RESIDENCES |
| h ENGINEERING ADDITIONS | 28 HOME MANAGEMENT HOUSES |
| 9 AUDITORIUM | |
| a RADIO BROADCASTING STATION | 2. BARRACKS |
| b PUBLIC SPEAKING | 3. INFIRMARY |
| 10 NICHOLS GYMNASIUM (WOMEN) | T. BARRACKS |
| 11 THOMPSON HALL | U. SHOPS |
| 12 OLD AUDITORIUM (MUSIC) | V. CHEMISTRY ANNEX NO. 1 |
| 13 CALVIN HALL (EDUCATION) | W. ILLUSTRATIONS HALL |
| 14 FAIRCHILD HALL (SOCIAL STUDIES) | X. CHEMISTRY ANNEX NO. 2 |
| 15 KEDDEW HALL (JOURNALISM) | Y. EDUCATION HALL |
| 16 ANDERSON HALL (ADMINISTRATION BUILDING) | Z. GREENHOUSES |
| a STUDENT CENTER | |

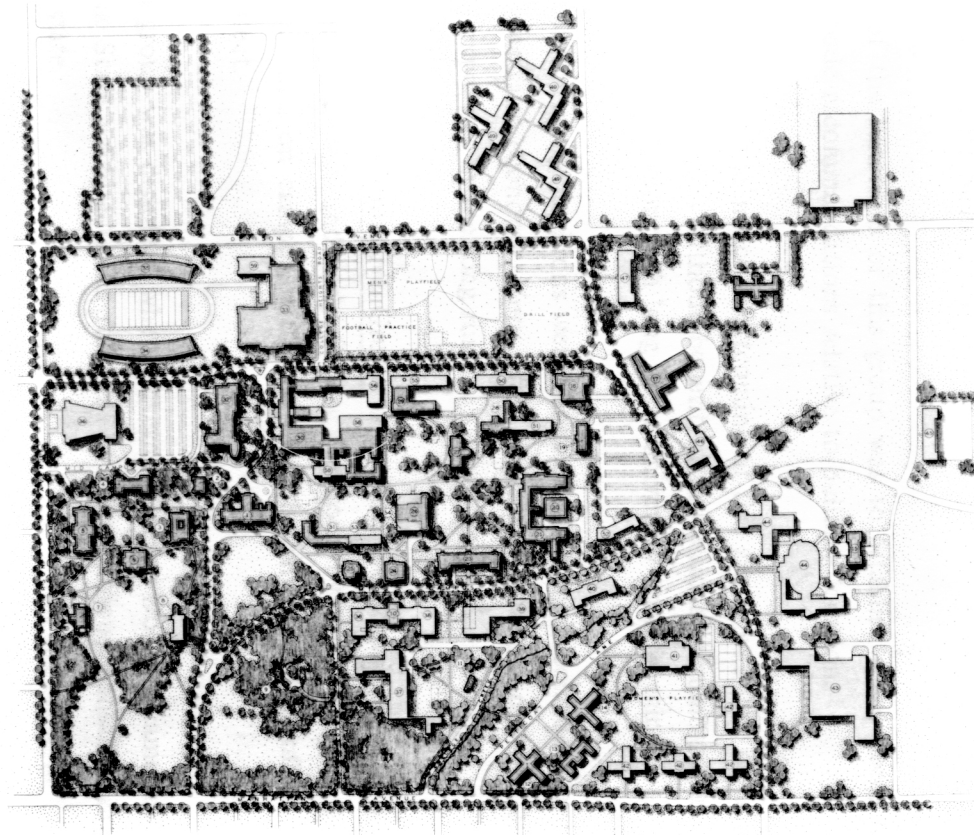
- Government; adequate provision for fire protection. No attempt has been made to list these building needs in order of their urgency.
- The making of a large model of the proposed campus development.
- The installation, when practicable, of an irrigation system for the entire campus.
- Improvement in the effectiveness of the campus as a bird sanctuary.
- Encouragement of alumni and other friends of the college to make gifts of appropriate statuary for purposes of campus decoration.
- The removal of the college radio towers to a site on the hills north of the campus.
- The providing of roofs of some pleasing uniform color for all college buildings.³¹

Although the plan was an honest attempt and some of the proposals have since been followed, it shows a general lack of foresight and planning considerations. Enrollment growth and the importance of the automobile were grossly under estimated. This plan was not used as a guide for any significant period of time. If a reputable professional planning consultant had been employed to guide the efforts of the faculty, perhaps the resulting plan could have been utilized as a guide, with periodic restudy. Some of the mistakes in recent years might then have been avoided.

Hare and Hare Plan. During the eighteen year period of the Farrell administration, only four academic buildings were erected. Consequently, there was not enough academic space to accommodate the influx of students following World War II.

The University was faced with a prodigious building task. It took almost six years of planning before the first permanent building was erected. A majority of the buildings of this era had been planned and the location decided on before outside professional planning services were employed.

In 1954, Hare and Hare, a Landscape Architectural firm was contracted to prepare a plan for campus development. In the author's opinion this was not a visionary master plan. It followed too closely the proposals and building suggested by the physical plant staff, and did not



SCHEDULE OF BUILDINGS

EXISTING BUILDINGS

- 1 ANDERSON HALL (ADMINISTRATION)
- 2 HEDZIE HALL (CLASS ROOMS)
- 3 FAIRCHILD HALL (CLASS ROOMS)
- 4 CALVIN HALL (JOURNALISM)
- 5 NICHOLS GYM (MUSIC & COMMUNICATIONS)
- 6 MUSIC HALL
- 7 THOMPSON HALL (CLASS ROOMS)
- 8 DANFORTH CHAPEL
- 9 PRESIDENTS HOUSE
- 10 DICKENS HALL (BIOLOGICAL SCIENCES)
- 11 HOME MANAGEMENT HOUSES
- 12 SOUTH EAST HALL
- 13 VAN ZILE HALL
- 14 NORTH WEST HALL
- 15 ANIMAL HUSBANDRY BARN
- 16 DAIRY BARN
- 17 VETERINARY HOSPITAL
- 18 MILITARY SCIENCE
- 19 BUSHNELL HALL
- 20 A. LECTURE HALL
- 21 WATERS HALL (AGRICULTURE)
- 22 FEED TECHNOLOGY
- 23 WILLARD HALL (CHEMISTRY)
- 24 EDUCATION & PSYCHOLOGY
- 25 HOLTON HALL (EDUCATION & PSYCHOLOGY)
- 26 LIBRARY
- 27 CLASS ROOMS
- 28 CHEMICAL ENGINEERING
- 29 POWER PLANT
- 30 ENGINEERING & ARCHITECTURE
- 31 CLASS ROOM BUILDING
- 32 COLLEGE UNION
- 33 MEN'S GYMNASIUM & FIELD HOUSE
- 34 EAST STADIUM
- 35 WEST STADIUM

PROPOSED BUILDINGS & EXTENSIONS

- 36 AUDITORIUM
- 37 HOME ECONOMICS
- 38 DICKENS HALL EXTENSION (BIOLOGICAL SCIENCES)
- 39 PHYSICAL SCIENCES
- 40 PLANT SCIENCE
- 41 WOMEN'S GYMNASIUM
- 42 WOMEN'S RESIDENCE HALL GROUP
- 43 PLANT SCIENCE LABS (GREEN HOUSES)
- 44 ANIMAL INDUSTRIES
- 45 PHYSICAL PLANT SHOPS
- 46 EXTENSION SERVICE
- 47 VETERINARY BASIC SCIENCES
- 48 P. O. T. C. ANAWARE
- 49 MEN'S DORMITORY GROUP
- 50 STUDENT HOSPITAL
- 51 CHEMICAL ENGINEERING EXTENSION
- 52 CEREAL INDUSTRIES
- 53 CLASS ROOM BUILDING EXTENSION
- 54 LIBRARY EXTENSION
- 55 POWER PLANT EXTENSION
- 56 AG ENGINEERING (ENGINEERING EXTENSION)
- 57 ENGINEERING LECTURE EXTENSION
- 58 ENGINEERING SHOPS EXTENSION
- 59 SWIMMING & HANO BALL
- 60 FUTURE ALL-FAITH CHAPEL

THE OUTLINES OF PROPOSED NEW BUILDINGS AND ADDITIONS AS SHOWN SHALL BE CONSIDERED AS SYMBOLIC ONLY AND NOT FINAL AS TO SHAPE OR SIZE OF THE BUILDINGS OR ADDITIONS

PROPOSED CAMPUS PLAN

FOR AN ENROLLMENT OF
10,000 TO 12,000 STUDENTS

KANSAS STATE COLLEGE
MANHATTAN · KANSAS



HARE & HARE
LANDSCAPE ARCHITECTS · CITY PLANNERS
KANSAS CITY · MISSOURI

provide for any significant enrollment increase. The end result was a glorified site plan rather than a master plan.

The plan was never updated, consequently, it was obsolete by the time another building program was undertaken.

Planning and Campus Development (1945-69)

Campus Planning and Development Committee. The campus planning machinery has changed several times in the last quarter century. There has been one element of continuity, however; an advisory committee, appointed by, and responsible to the President, has been in effect since 1944. It was originally known as the Campus Planning and Development Committee and chaired by Dean Seaton.

One of the functions of this group was to establish space needs by priority. The committee also made recommendations relative to building location.

In all candor, the major shortcoming of this group was that it had too much power and made too many decisions without benefit of professional planning opinions, and an overall study of the campus situation with long range university goals in mind.

Of course, many decisions were based on "economic considerations". However, there is such a thing as false economy. Very often those things which cost the least money initially, are the most expensive in the long run.

Paul Weigle Collaborative Group. Much of the actual physical planning and building design during the forties and early fifties, was done by a collaborative group of architects and other professionals on campus, affiliated with the physical plant office and headed by Paul Weigle, architect.

The group was dissolved when Governor George Docking came into office and appointed John Brink State Architect. His role was to select various Kansas architects to design buildings for the state.

Randolph Gingrich – Physical Plant Administrator. During this era, campus planning and development operated on a strict budget. Under the guidance of Mr. Randolph Gingrich, the University managed to continue the established practice of servicing campus facilities with underground utilities. In order to get needed facilities built, many decisions were made on the

basis of cost and Federal controls. The use of red brick in the men's dormitory complex was a departure from the unity of limestone and has resulted in much controversy. The use of brick was determined strictly by cost. Controls on the Federal loan utilized in building the dormitories did not permit the higher cost of limestone.

After the dissolution of the design team, the physical plant office was responsible for preliminary project planning. The buildings since then have been designed by various architects across the state.

Mr. Gingrich's assistant, Vincent Cool, was responsible for the construction of a campus model to aid in planning. In planning efforts an attempt was made to group academic facilities by curriculum and within one half mile radius from the library.³²

Long Range Planning Committee. The Long Range Planning Committee replaced the Campus Planning and Development Committee as an advisory body to the President in 1964. The committee is composed mainly of faculty members in planning oriented disciplines.

This committee, like the one which preceded it, is not an action group with authority to act, but is an advisory body.

It came into being as a result of counsel between the President and three or four individuals concerned with the lack of planning considerations in campus development. An ad hoc committee was established to set up a plan for the new committee.

There have been many disagreements and frustrations in the history of the committee. As an example, the location of the new Veterinary Medicine Complex is not the location recommended by the Committee. The committee members have been very vociferous in their recommendation that "Professional" planning services be obtained.

Recent Planning Efforts and Contributions. Mr. Ray Weisenberger of the Regional and Community Planning Faculty has been assisting the physical plant office with planning studies on a part time basis since the fall of 1967. Mr. Weisenberger was responsible for the initial planning of the Veterinary Medicine Complex after the site location was decided.

This position is not funded by the State. The Veterinary Medicine Fund paid for the planning services on the new complex. Another source of salary for this position has been the Traffic Control Board.

This position is not vested with any significant decision making powers, nor is it locked into the decision making process.

Mr. Dennis Day of the Landscape Architecture Faculty was engaged in the summer of 1968 to evaluate the campus environment. He also contributed the Anderson Plaza design to the Senior Class of 1969. Professor Day's salary was paid by the Traffic Control Board fund.

Mr. James Miller of the Architecture Faculty has also been involved in the Campus situation with his design class planning project.

Numerous other interested parties have offered suggestions and voiced the opinion that a full time planning staff is needed.

CONCLUSIONS

The University was fortunate in obtaining a site which has a great deal of potential and lends itself to conceptual design. Although there have been several "Landscape Master Plans" in the history of the University, there has never been a Long Range Master Plan for campus development. The University is lucky that so many talented and dedicated individuals were concerned with campus development in its early history.

During his fifty years with the University, Mr. J. D. Walters served as a planner in residence. In matters of campus development, he was probably the most influential member of a triumvirate; the College President, the Landscape Gardener and himself.

After Walters' retirement, there was no single individual in the University Family with the power and design training necessary to perform his function; those with power did not have the design background and those with design background did not have the power. Unfortunately, "planning" by committee became the accepted practice. During this period, however, the Landscape Environment of "East Campus" was steadily improved under the direction of Professor Quinlan, Superintendent of Grounds for thirty-five years.

It is sad to note that the crash building program of the early fifties and the influence of the automobile, have contributed to a deterioration in the quality of the Campus environment. The architectural monstrosities Glick Fockele spoke of in the letter to Walters, have become realities in recent years.

A Campus Plan completed during the crash building program was too little, too late, to

influence campus development in any significant way. The University is again facing a crash building program without benefit of an unbiased Comprehensive Master Plan. The State has not seen fit to advance the resources necessary for such a study and continuing operation.

Hopefully, the State's decision to employ professional planning and design services in conjunction with the Capitol Plaza project in Topeka, is indicative of an awakened awareness in the value of competent planning. Certainly the University image reflects on the State, as does that of the State Capitol. Competent planning will also save the State money in the long run.

SUMMATION OF GROWTH AND PROJECTION FOR THE FUTURE

Kansas State has experienced a great deal of growth during her one hundred plus years. Today physical facilities total fifty two structures compared to one in 1873. The Academic Plan has grown from one field of study to eight major colleges and the Cooperative Extension Service.

ENROLLMENT GROWTH

Enrollment at Kansas State has grown from 52 students who enrolled for the first year in 1863 to 12,560 in 1968. By the end of the first fifty years, enrollment had grown to approximately 3,000 students.

Growth was somewhat erratic during the thirty-one years between 1913 and the end of World War II. The highest enrollment during this period was 4,910. The 1944 enrollment was 1,515 students.

After the end of the war, the returning service men flooded universities all over the country. The peak enrollment during this period was reached in 1948 with 7,386 students. The enrollment in 1958 was 6,700.

During the past decade, student enrollment at Kansas State University has nearly doubled. The head count enrollment in 1968 was 12,560 students.

An enrollment projection study for Kansas State University indicates enrollment could almost double again by 1985 if the present rate of growth continues.

The Long Range Planning Committee has recommended a policy limiting enrollment to 30,000 students.³³ If this policy is honored, the University can expect maximum enrollment between 1985 and 2000.

PHYSICAL EXPANSION

The land area occupied by Main Campus remains virtually unchanged from the original site acquired for the University in 1871. Physical expansion has been essentially of a linear nature.

The spine of the hill between Claflin Road and Anderson Avenue was developed first. The development during the 1950's extended the academic function north of Claflin Road into the

KANSAS STATE UNIVERSITY

2000

ENROLLMENT PROJECTION

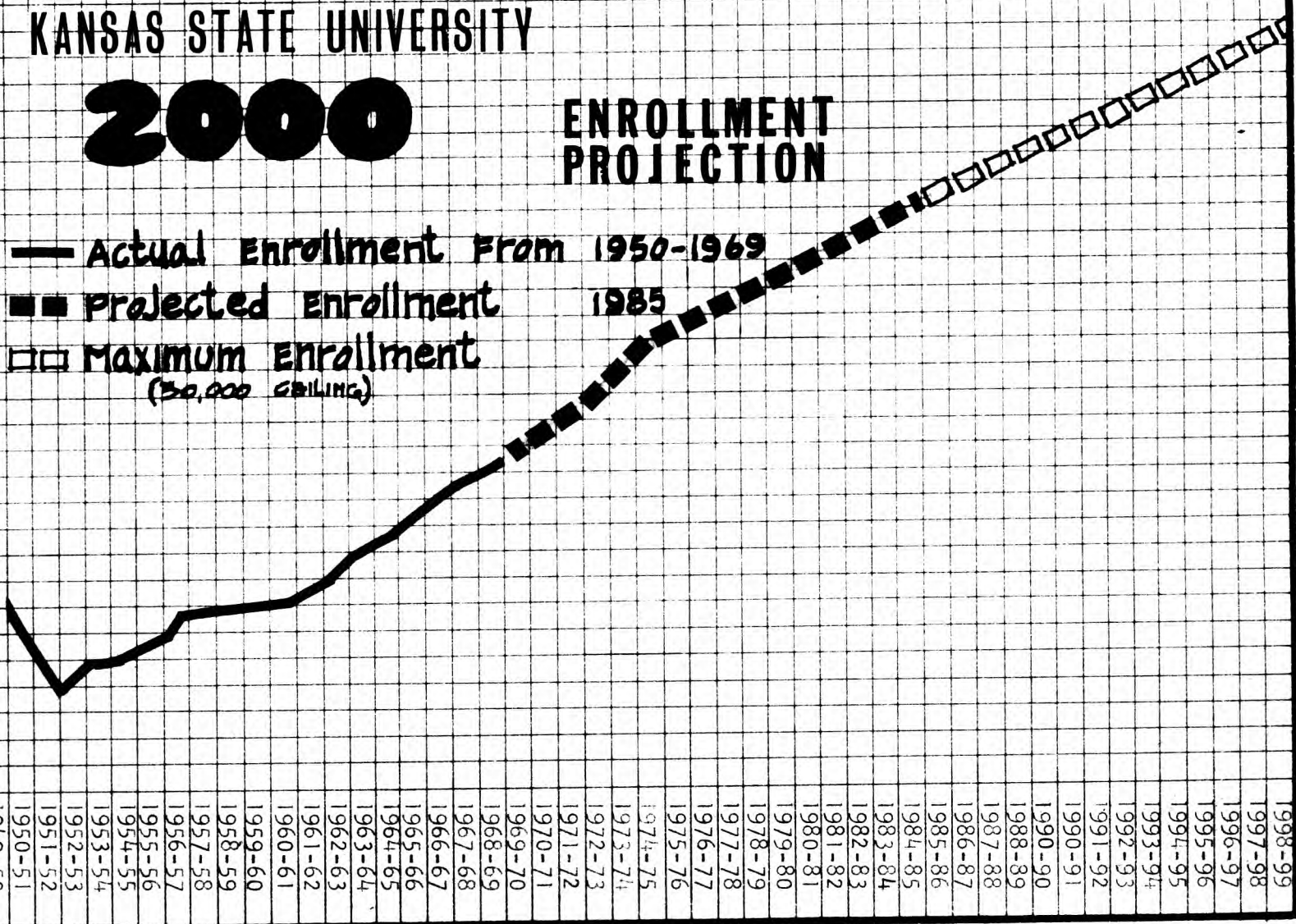
— Actual Enrollment From 1950-1969

■ ■ Projected Enrollment 1985

□ □ Maximum Enrollment
(30,000 ceiling)

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old North Campus area, which formerly served as a part of the Agriculture Experiment Station. At the same time Main Campus development has been expanding laterally into the open space of "East Campus" and the old experimental plots between 17th Street and Denison Avenue.

LIMITATIONS OF GROWTH

Growth in enrollment and an expanding curriculum demands an increase in available academic space. The University's environs and class schedules limit the physical capacity for expansion in a horizontal dimension. Failure to acquire land surrounding Main Campus is the major growth limiting factor. Considering the location of the Library, major classrooms, and student services on campus, time-distance relationships will become undesirable if academic functions are expanded much past their present northern limits.

This indicates there is a maximum enrollment past which the University would cease to function efficiently. A Comprehensive Master Plan would determine the physical limitations of growth. At this point we can only assume what the limits are. A drastically changed parking policy and transportation system together with a much higher floor area density in the center of campus, obtained by building multi-story buildings, would allow a somewhat larger enrollment than will be possible if present concepts are continued.

In order to even "accommodate" the 30,000 student maximum enrollment recommended by the Long Range Planning Committee, both land area and floor area space must be utilized more efficiently. Such a policy must also be linked with a Long Range Educational Plan for the State of Kansas.

CHAPTER III

THE CAMPUS TODAY

Section 1

REGIONAL AND COMMUNITY RELATIONSHIPS

Section 2

CAMPUS ORGANIZATION AND ENVIRONMENT

REGIONAL AND COMMUNITY RELATIONSHIPS

Every function in society is only a part of the whole. As such it influences other functions and reacts to pressures and influences from the conglomerate society. Each is situated in a continuous landscape and tied one to another by various lines of communications.

In view of the central role the University plays in society, it is exceedingly important that its physical relationship to the people and the land be given consideration in planning for future growth.

REGIONAL SETTING

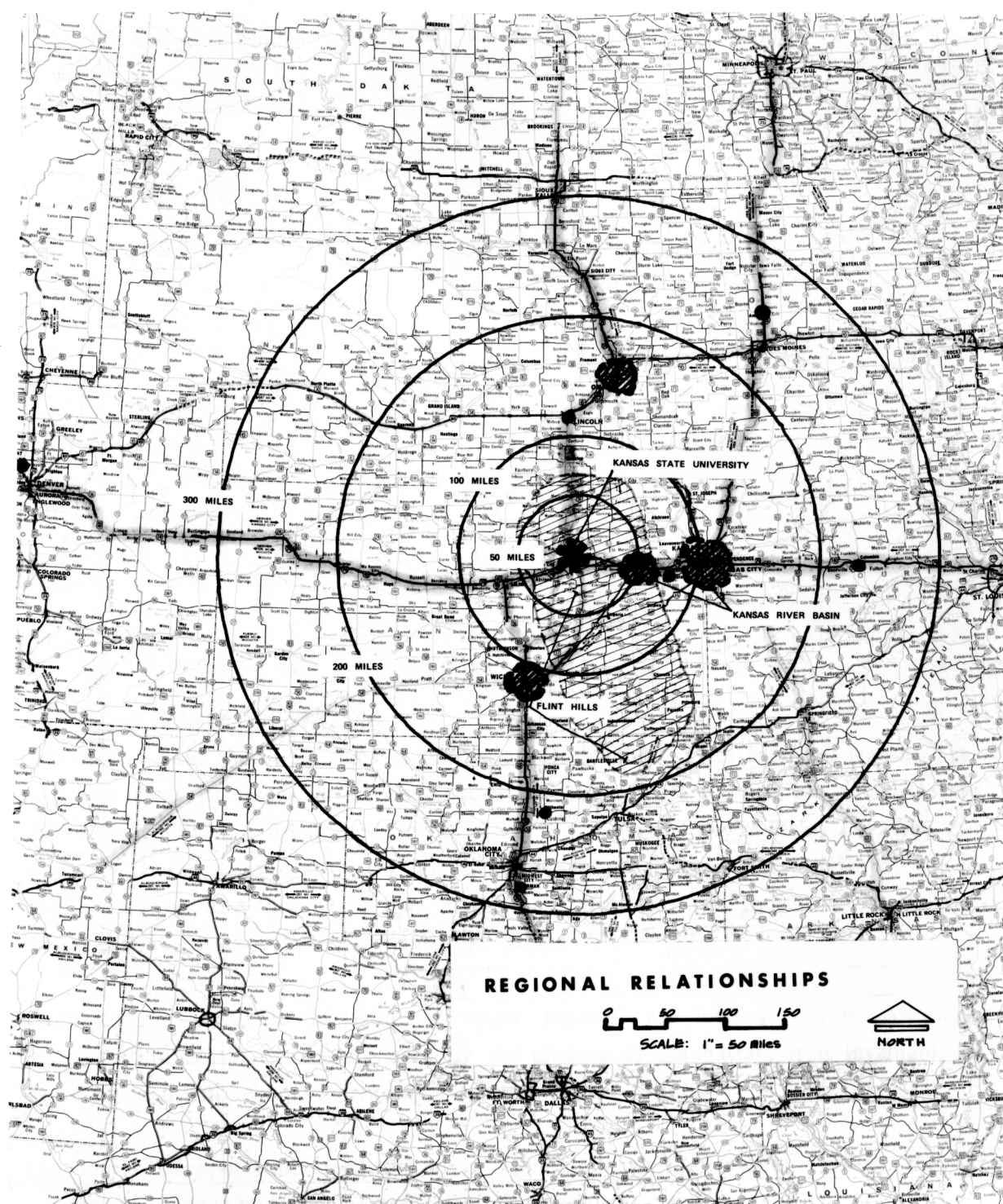
Manhattan is strategically located in the Flint Hills region of Kansas, widely known for its beauty of landscape, grazing lands, and recreation potential. The Flint Hills region is a topographical expression of a limestone escarpment, which traverses the State of Kansas from Nebraska to Oklahoma. It is a major beef producing region of the United States. The contrasting beauty of the rolling hills and prairie plateaus, the wooded hillsides and fertile flood plains, characterizes the changing landscape, which enhances the living environment of the region.

The Kansas River Basin is the major tributary which cuts across the Flint Hills draining the northern reaches and the high plains area west of the region. Manhattan overlooks the confluence of the Kansas and Blue Rivers at the western terminus of the Kaw River Valley.

The River Valley is showing signs of becoming an urbanized corridor extending westward from Kansas City. If the river is developed as an open space corridor, the beauty of the region and its environmental potential can be preserved and enhanced. In any case, urbanization will increase the University's opportunities for research and community service as one of the focal points of this urbanization process.

There are five major population centers within a one-hundred fifty mile radius of Manhattan. The combined population of Kansas City, Missouri, Kansas City, Kansas, and Topeka, all to the east of Manhattan, is 717,000. Wichita, to the south, has a population of 255,000. Lincoln and Omaha-Council Bluffs, to the north, have a population of 465,000.

Kansas State University does not directly serve the total population of this region since many have an allegiance to other Universities. Seven of the eight state schools in the Big Eight



Athletic Conference fall within a three hundred mile radius of Manhattan. Colorado University at Boulder is the most distant, being four hundred miles from Manhattan.

REGIONAL TRANSPORTATION

One of the main transit facilities in the history of Manhattan has been rail transit. The city enjoyed railway passenger service on the Union Pacific lines and street car service within the city. At one time the street car carried coal to the University Power Plant. The street car has long since been removed from the streets of Manhattan and passenger service on the Union Pacific may be discontinued in the near future. However, rail transit could assume new importance as a transportation system in the future.

Manhattan is fortunate in being a major regional air loading center. Although air transportation is not extensively used by the citizens of Manhattan, it is invaluable to the University and will become increasingly important in the future.

The major transportation facility serving Manhattan at the present time is the private automobile. A large and growing percentage of students at Kansas State own cars.

The major expressway serving Manhattan is Interstate 70. It collects the majority of east west traffic. North-south traffic is handled by highways 81, 77, 177, and 75. There are no plans at present for a major north-south expressway which will affect the city of Manhattan.

THE COMMUNITY

Major Approach Routes

There are four major entrances to the city of Manhattan. K-113, which bypasses the city on the west and links K-18 with 177, is the beginning of an eventual loop system around the city of Manhattan.

The majority of traffic originating in Kansas City and other points east, southeast and northeast, enters the city on highway 177 and arrives in the Central Business District after crossing the Kansas River. The contrast between the Flint Hills, the river valley, and the city's sudden explosion into view, constitute a potentially dramatic entry into the city. The present entry, which is congested and visually polluted, leaves the visitor with an unfavorable image of the city. People entering the city from this direction may approach the University from three points: Bluemont Avenue on the east, 14th and 17th Streets on the south. There is a possibility this pattern could change, depending on how the bypass interchange is handled. Traffic from the south could conceivably approach the University from the north on Manhattan or Denison Avenue.

The Oblinger-Smith Plan for the city recommends a four lane connector spur from Interstate 70 to Manhattan, with interchange facilities east of the Central Business District, and a four-lane bypass around the southern edge of the city.

Land Use Relationships

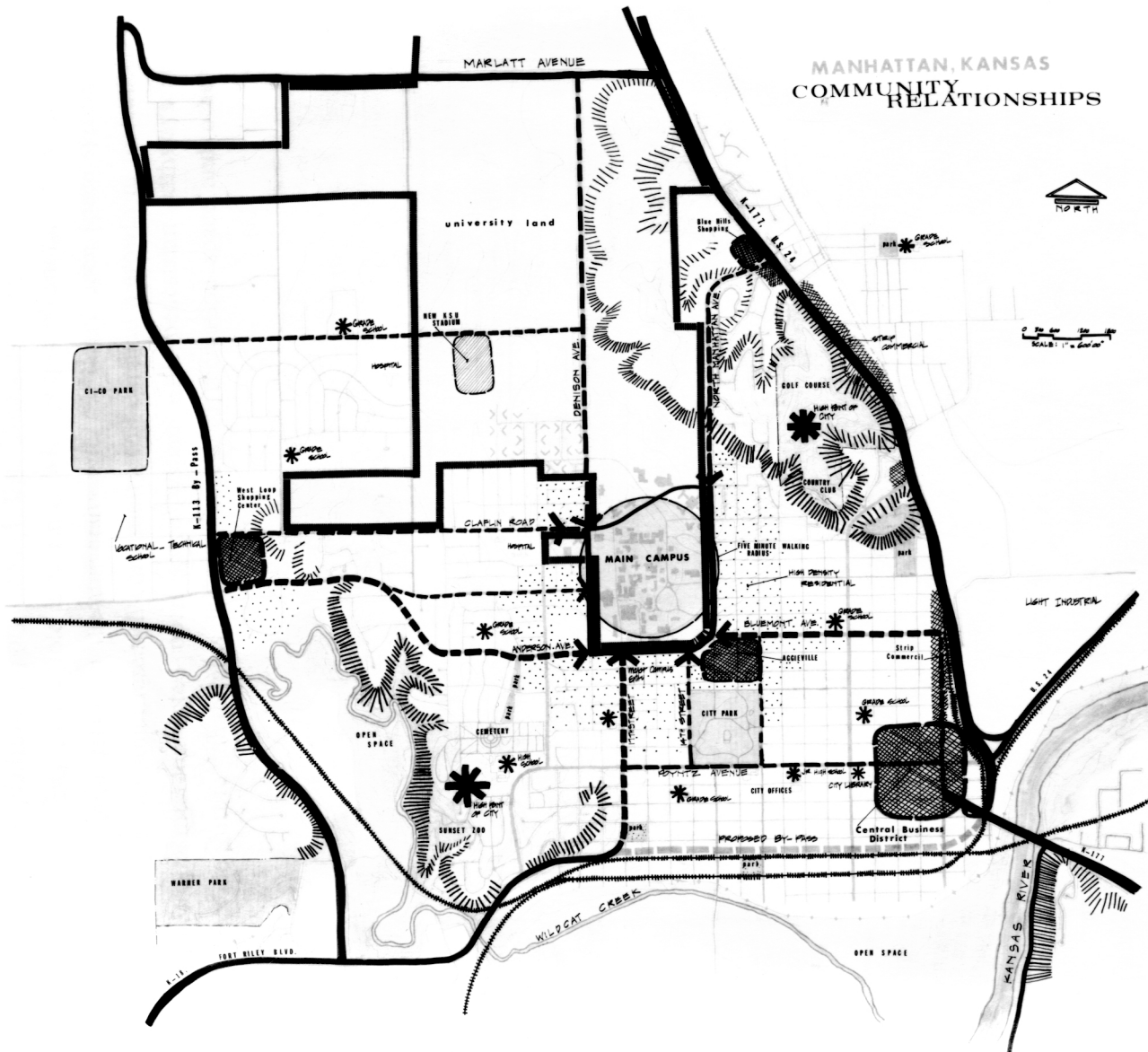
Manhattan's basic form is derived from the city's origin at the confluence of the Big Blue and Kansas Rivers. Flood plains and other natural barriers to growth have dictated a fan shaped pattern of expansion to the west and northwest.

The economic base for Manhattan is provided by three "industries"; Kansas State University, Fort Riley and Agri-business. Retail commercial and service oriented businesses complete the economic base.

Manhattan's land use pattern follows that established in most university towns. There is very little industry, occupying not more than five percent of the total city land area.

Commercial centers include the Central Business District and Aggieville, a campus-student oriented shopping center. West Loop and Blue Hills are the suburban shopping centers. Strip commercial development along major arterials completes the picture.

MANHATTAN, KANSAS COMMUNITY RELATIONSHIPS



The residential area of the city is growing in a northwesterly direction from the Central Business District. The area immediately surrounding the University is, for the most part, in transition from rooming houses and private residences to multiple family housing.

Open space is in plentiful supply around the fringes of the city. However, clarity of its relationship to the city as a whole is missing. With proper planning, a network of open space within the city could relate to the university and the larger open space systems outside the city. A growing educational research community will demand a growth in recreational facilities and space. An interconnected open space system with pedestrian pathways and bikeways would provide future inhabitants leisurely access to recreation space and other community facilities.

CAMPUS ORGANIZATION AND ENVIRONMENT

Kansas State University today is an expression of many physical patterns and forces which have shaped it. These force patterns include land use organization, curriculum organization, pedestrian and vehicular circulation, parking, services, and campus open spaces.

These same forces along with other elements will strongly influence the shape of tomorrow's campus. Before we can plan the best possible learning environment for future generations, we must understand these forces and their relationships.

CAMPUS ORGANIZATION

Although the identity of the University is associated with Main Campus, other segments of the University are beginning to identify themselves as satellite functions. In addition to Main Campus, North campus, Veterinary Medicine Campus, and the Athletic Campus comprise the body of the University.

Main Campus

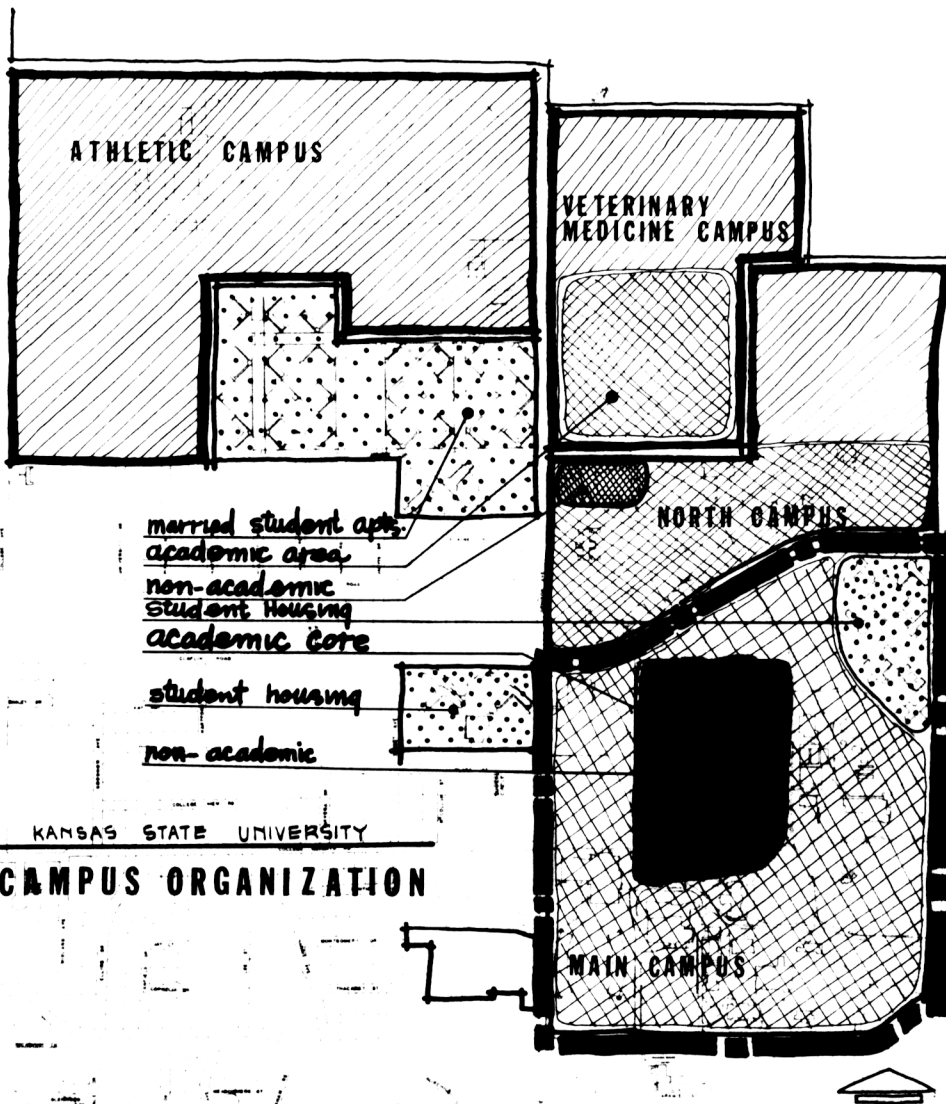
The Main Campus area is largely devoted to academic use, student services, student housing, utilities and services, parking and open space.

Academic Core. The existing academic core of the campus is roughly defined by Seaton Hall, Eisenhower Hall, Waters Hall, and Cardwell Hall. It is within this area that a large percentage of the student class hours are taught.

Student Services include the library, auditorium, student union, student health, the gymnasium and outdoor recreation areas. These along with administration, chapel, police, fire protection, and other services may be considered "core functions". This does not necessarily mean they should be located in the center of the campus; rather, it means they all relate to student and campus needs and should be accessible.

At the present time, most of the student services are concentrated on the southern edge of campus. The exceptions are the library and student health.

Student health occupies a central space, which in theory generates more use. Nevertheless, it is incompatible with the academic function. Parking is inadequate in the present location, which means some students who should not be exposed to the elements must park elsewhere and



ATHLETIC CAMPUS

VETERINARY
MEDICINE CAMPUS

NORTH CAMPUS

MAIN CAMPUS

married student apts.
academic area
non-academic
student housing
academic core

student housing
non-academic

KANSAS STATE UNIVERSITY

CAMPUS ORGANIZATION

walk. Vehicular circulation also conflicts with the heavy volume of pedestrian traffic in the area. Further, it occupies space which could be utilized more efficiently for the academic function.

The Library is almost ideally located in the center of Main Campus. Unfortunately it is approaching the physical limits of expansion above ground. The Main Quadrangle blocks growth to the north; Denison Hall and Student Health block growth to the south and west. It appears the only direction open for growth is east of the newest addition. To keep the function in a central location, perhaps expansion could take place underground. The adjacent structure, Denison Hall, might also be incorporated into the Library function.

Time-Distance Relationships. Contrary to popular belief, the University does not have an unlimited supply of land on which to expand the academic function in a horizontal dimension. At the present time most of the academic functions fall within a zone of desirable time-distance relationships using the Library as the approximate center of Campus.

The distance an average pedestrian can walk comfortably in five minutes is 1320 feet or approximately one-quarter mile. This allows adequate time for movement in and out of buildings during the ten minutes class break. The five minute radius represents the maximum distance which can be covered by those who must travel across campus between classes.

Academic Core Densities. If a desirable relationship is to be maintained, the tendency toward a linear campus development must be reversed. In future developments, we must make maximum use of central space and consider vertical expansion, in order to avoid over extending the various circulation systems and lines of communication. Developing land which is better suited to another function, or is invaluable to the University image, should also be avoided.

Following is an analysis of the present academic floor area density within the academic core in terms of Ground Area Coverage, and Floor Area Ratio.

Total Land Area in Sq. Ft.		2,129,000
Building Ground Coverage in Sq. Ft.		500,000
Existing	480,000	
Under construction	20,000	
Gross Floor Area in Sq. Ft.		1,030,000
Existing	940,000	
Under construction	90,000	

G.A.C. = .23

F.A.R. = .48

F.A.R. The Floor Area Ratio is the ratio of total floor area (on all floors of all buildings) to the total ground area.

G.A.C. The Ground Area Coverage is the ratio of the ground area covered by structures to the total ground area.

A Ground Area Coverage of approximately .35 and a Floor Area Ratio approximately four times the G.A.C. would be desirable densities to strive for in the academic core. Adjacent academic areas could be developed at a lower density in the neighborhood of .25 G.A.C. and 1.00 F.A.R.

Curriculum Organization. To operate efficiently with a minimum of duplication, wasted time and friction of pedestrian circulation, related curriculums should be located in close proximity to each other.

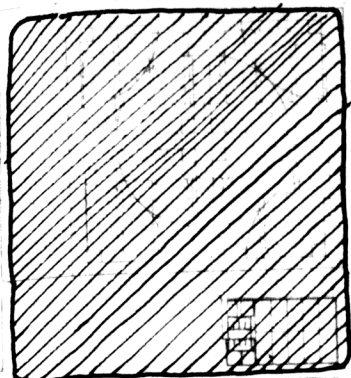
There has been an attempt in recent years to relate curriculums, but the functional organization of the campus is still far from desirable.

For example, classes in the College of Arts and Sciences are located in practically every building on campus. Further, some departments are located in various buildings. Naturally a college as complex as this one cannot and should not have all departments contiguous to one another. Nevertheless, the core or liberal arts curriculum of the college should be somewhat centrally located, with the various other curriculums clustering around it, relating to each other on a basis of mutual interests, joint use of facilities and the number of trips generated. Another approach would be to schedule the courses common to all curriculums throughout the campus, giving the student a chance to select the one nearest his base of operations. Classrooms are a common facility of all curriculums and should be provided at key points.

North Campus

North Campus, the area north of Claflin Road, is trending toward becoming an agricultural campus. Service functions are also beginning to cluster here, which is unfortunate since this

Stadium

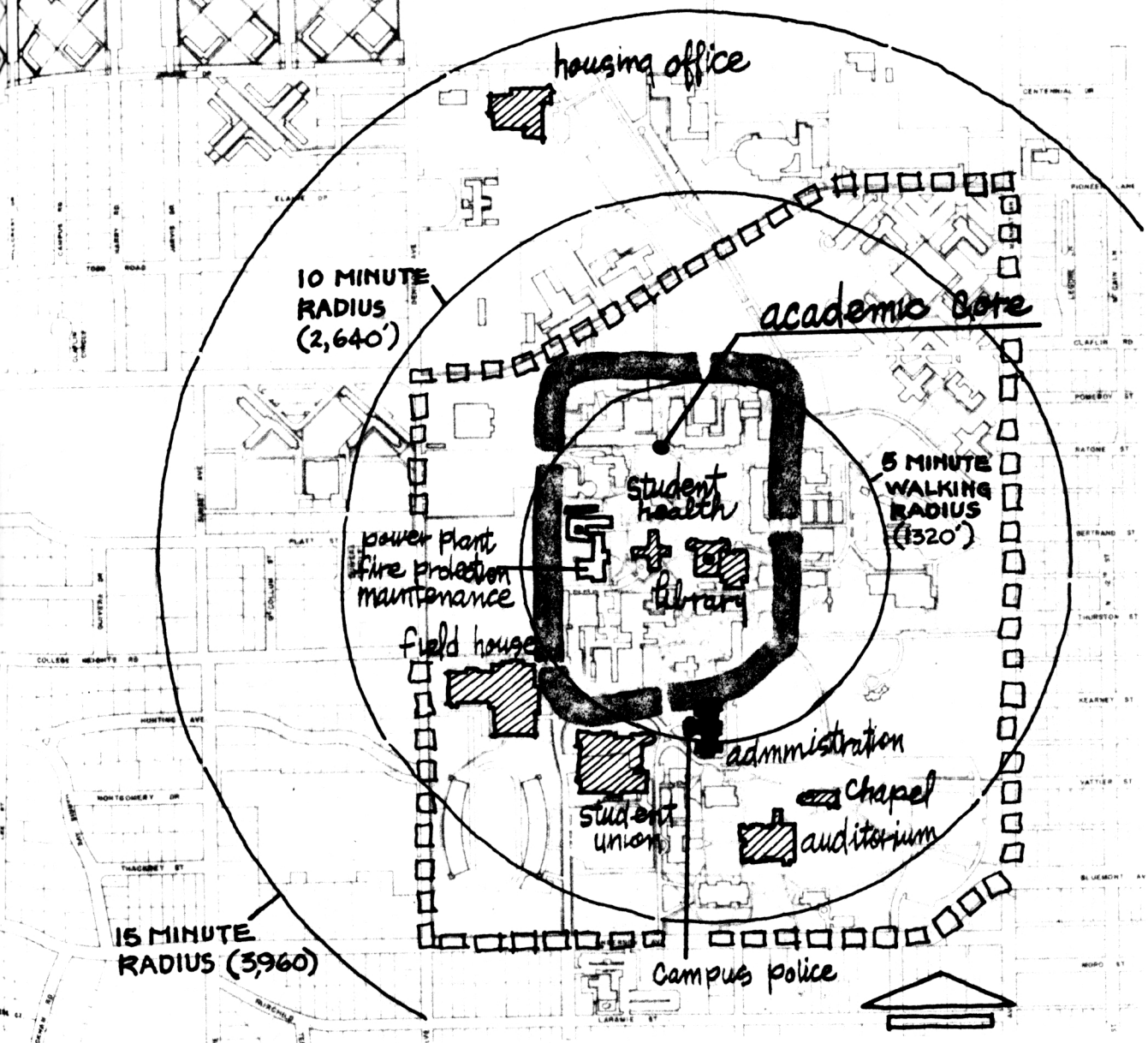
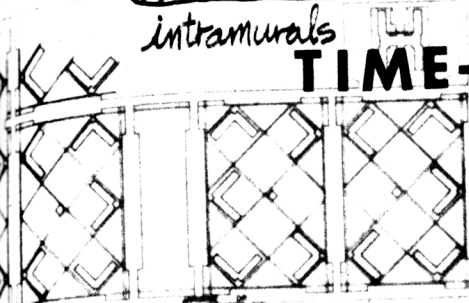


intramurals

KANSAS STATE UNIVERSITY

TIME-DISTANCE RELATIONSHIPS

student services ----- 
non academic core functions -- 



ACADEMIC CORE DENSITIES

3 or More stories above ground .. 
2 stories above ground 
1 story above ground 

G.A.C. = ratio of ground
area covered by
structures to total
ground area

F.A.R. = ratio of total
floor area to total
ground area

G.A.C. = .23

F.A.R. = .48

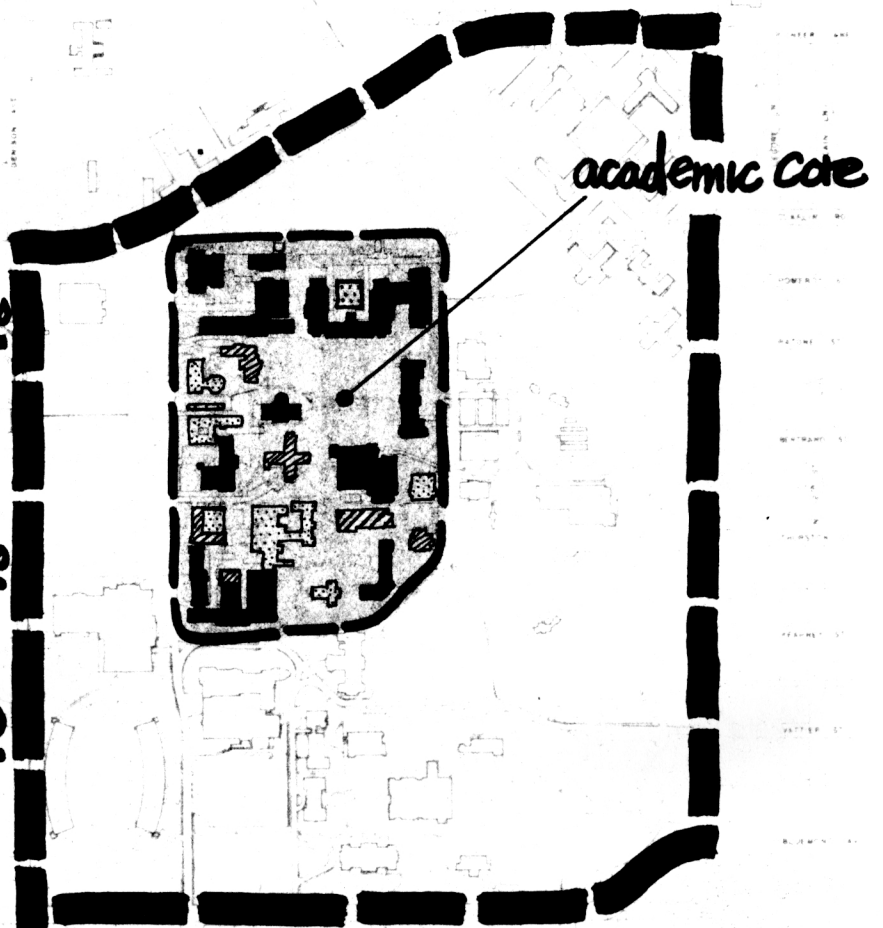
total land area
in sq. ft. 2,129,000

ground area
covered by
buildings 500,000

gross floor area
in sq. ft. 1,030,000

NOTE:

Should strive for a
G.A.C. of .35 or more
and an F.A.R. of 1.5 within academic core

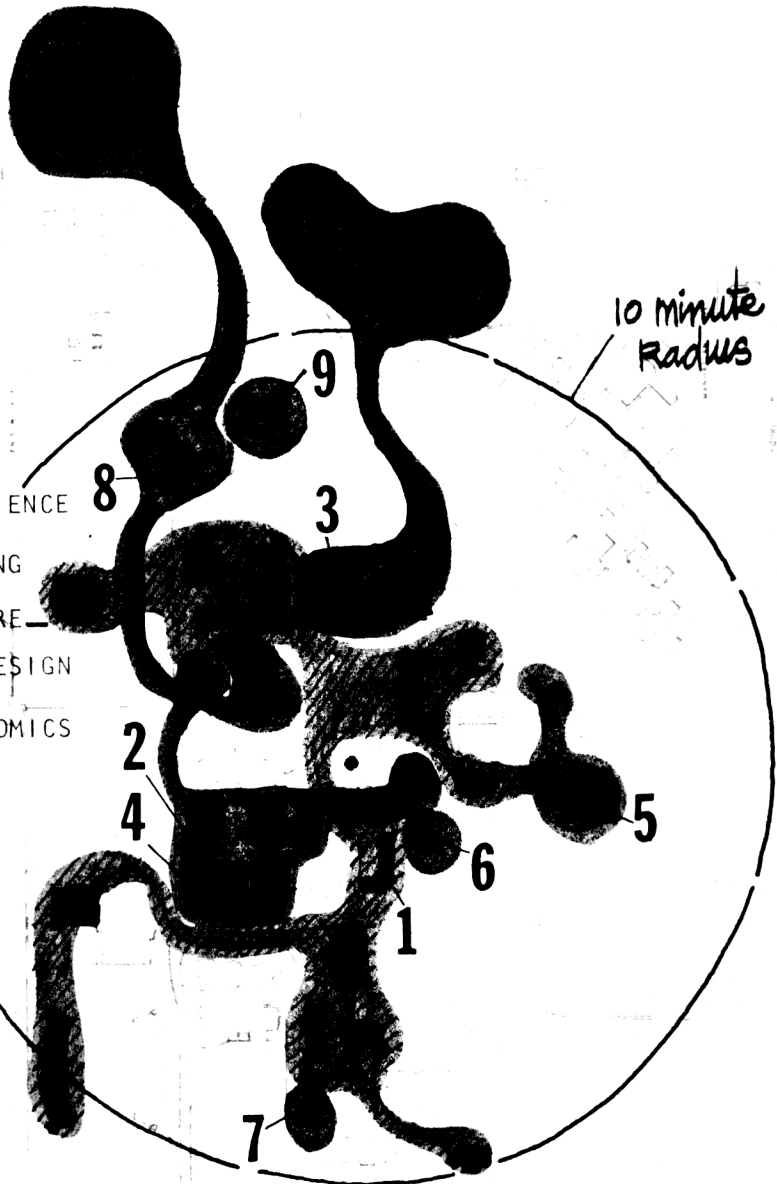


KANSAS STATE UNIVERSITY

CURRICULUM ORGANIZATION

—BY COLLEGES—

- 1 COLLEGE OF ARTS & SCIENCE
- 2 COLLEGE OF ENGINEERING
- 3 COLLEGE OF AGRICULTURE
- 4 COLLEGE OF ARCH. & DESIGN
- 5 COLLEGE OF HOME ECONOMICS
- 6 COLLEGE OF EDUCATION
- 7 COLLEGE OF BUSINESS
- 8 COLLEGE OF VET. MED.
- 9 EXTENSION DIVISION



area marks the northern limits of academic expansion and related functions. Functions incompatible with the academic function should be located north of the Veterinary Medicine Campus.

North Campus must also accommodate an expanded Extension and Continuing Education function. This expanded function should be developed around the existing facility, which is well located in relation to the academic core.

Veterinary Medicine Campus

The new Veterinary Medicine complex represents the third location for this function. Inadequate space for expansion of related facilities has forced the college to move each time. The nature of the facilities planned for the new location seems to dictate some degree of permanence.

Athletic Campus

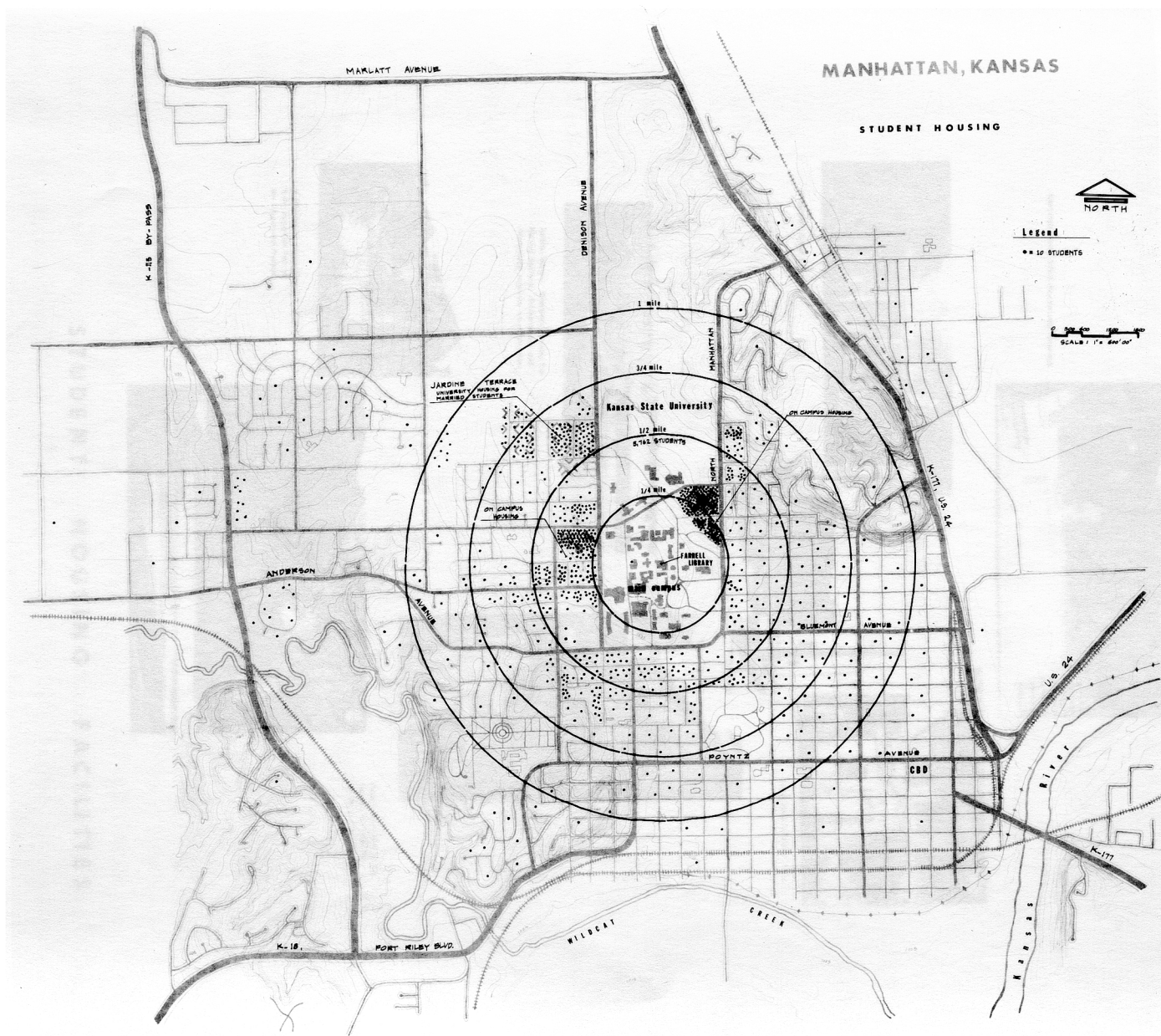
The athletic campus is located west of the proposed Veterinary Medicine Campus. All varsity sports and intramural facilities will be located here according to present plans. Considering the distance which separates the gymnasium from the outdoor facilities, it seems logical to preserve some open space adjacent to the gymnasium for the benefit of physical education classes. Otherwise, it will be necessary to provide transportation to the intramural area for field sport classes.

Student Housing

The largest single concentration of students is housed in two University Dormitory complexes on the northeast and northwest corners of Main Campus. The total number of students living in the two complexes is 3,907. Freshmen students compose the majority of the total since they are required to live in University Housing. An additional 1,212 students live in the married student apartments and other university facilities. On-campus living facilities are relatively new in the history of the University. In the early days, a boarding house was run by the College for students from out of town. Since then, private residences, rooming houses and apartments have provided most of the student living space.

A four to five block area surrounding the Campus on the east, south and west, contains the majority of off-campus living facilities for single students.

Group living facilities provided by Greek and scholarship houses complement the private and semi-private living space represented by individual rooms and apartments.



Apartment Living Offers Recreational Amenities.



Organized Group Living



University Housing



Living Units in Private Homes



Jardine Terrace, University Housing For Married Students. Environmental and Recreational amenities are missing here.



Close-in Apartment Living Reduces the Need for On Campus Parking Space.



A Community Atmosphere is An Important Part of the Educational Process.



STUDENT HOUSING FACILITIES

In recent years, most new living accommodations have been designed to provide a variety of one, two, and four man apartments. This richly varied range of off-campus housing types, together with the on-campus dormitory facilities, allows the student to make a choice of living accommodations which satisfies his personal background and financial-social needs. Freshman students are, of course, an exception since they do not have a choice. Any future University Housing should provide a variety of living concepts in order to avoid occupancy problems and mandatory dormitory living.

Recreation Space

Recreation is an integral part of the living-learning experience. It provides an outlet for physical and emotional energies, and conditions the body which contributes to efficient mental functioning.³⁴ Recreation is also a social function. It provides opportunities for involvement and interaction.

There is a difference between programmed intramural sports and spontaneous recreation. Unfortunately, the need for outdoor recreation space adjacent to the dormitories, where spontaneous activities such as touch football or other lawn games can occur, has been ignored. Storage space for student cars next to the dormitories has been considered more important than recreation space. Recreation facilities and environmental considerations have also been sadly neglected in the Jardine Terrace student housing complex. The recreation needs of children as well as adults must be provided for here.

The lack of consideration for recreational needs in the University environment is amplified when the sensory-mental, or passive aspects of recreation are considered. Recreation can be the spiritual enjoyment of the environment; the sound of gurgling or splashing water, the movement and sounds of people, quietude, the play of light and shadow in foliage, the coolness of shade and the warmth of sun. It can be many things and should be provided for consciously.

Utilities

The major steam tunnels radiating from the physical plan are physical barriers, which should be considered when locating new buildings. Minor steam tunnels and utility networks which criss-cross the campus need to be reorganized with all utilities occurring in common tunnels where possible. This would improve efficiency and ease of maintenance. Placing the major steam tunnels under major pedestrian walkways would serve the purpose of snow removal.

The present power plant, as was its predecessor, is centrally located on the western edge of campus. Future academic growth between Seventeenth Street and Denison Avenue will

surround the present site, making it the center of campus. Enrollment growth and an increase in academic floor space will necessitate an expanded physical plant if present concepts of power and steam heat production are continued. Since this expanding function will become increasingly incompatible with the center of campus, a study determining the feasibility of not relocating the power plant should be undertaken by the University.

Service and Maintenance

Service is a function relating to every major building. Some require access for larger vehicles and equipment than others. This does not mean a street must be built to each service area. Service is a function which can be controlled and programmed from a central receiving station. Service and maintenance vehicles could travel on campus during class hours and remain stationary during class changes, making it possible to service the campus on major pedestrian ways. This would eliminate unsightly service areas and duplication of circulation systems.

LANDSCAPE CHARACTER

Traditionally, Kansas State University has been a pastoral campus in contrast to urban, where a campus blends and merges with the urban surroundings. The landscape character of the campus is one of the major image assets and organizing elements of the campus. The distinct contrast between east and west campus points up the value of "landscape".

Landform

One of the foremost elements of landscape character is land form. The major campus development occupies the plateau or spine of a hill, which originates near the old Bluemont College site, enters Main Campus near the intersection of Claflin and Seventeenth Street and runs the length of Main Campus in a north-south direction. The hill form terminates several blocks south of Anderson Avenue. The soil on the plateau is deep and well drained. The hill is the remains of a loess deposit in an old valley.

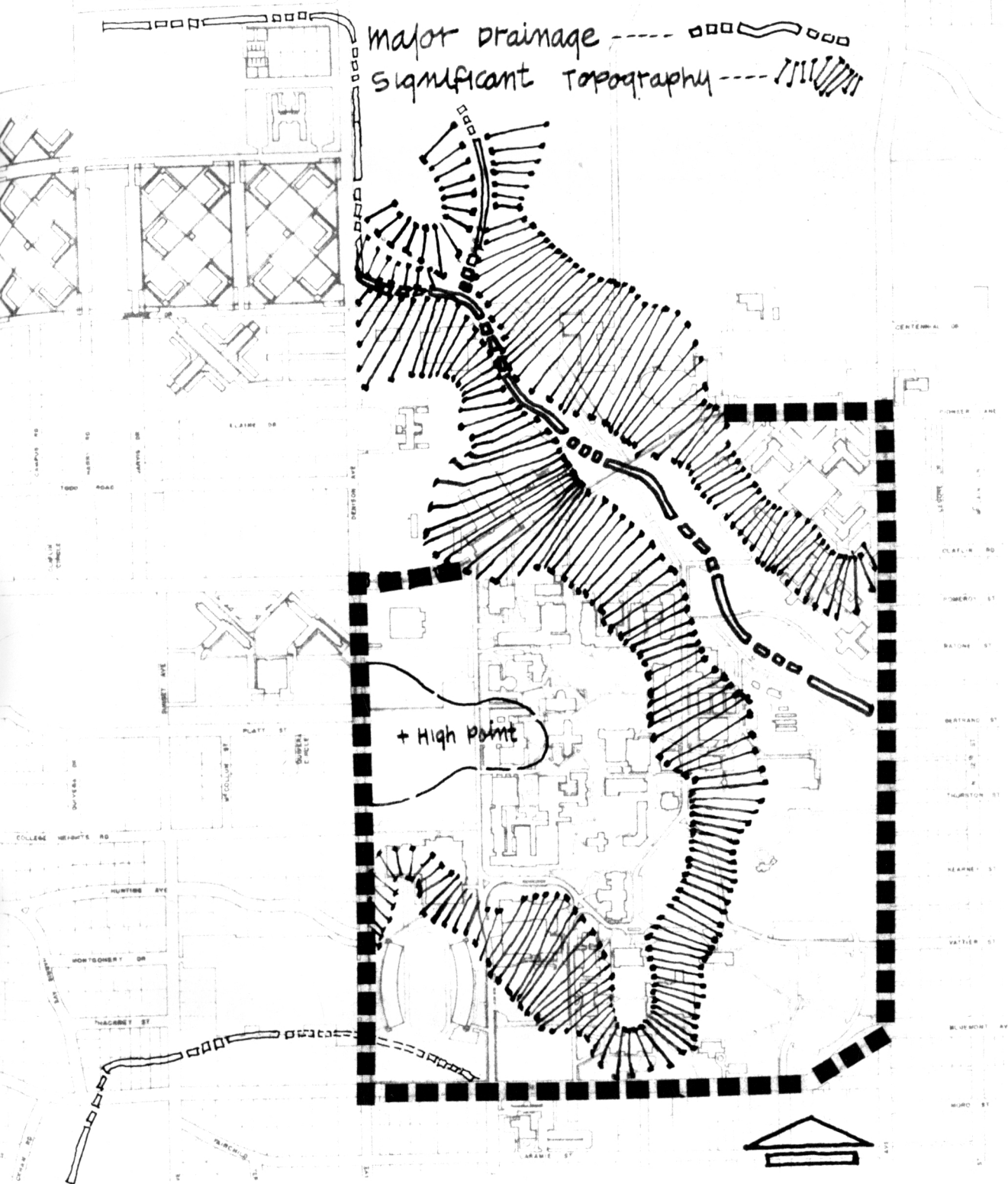
Drainage Areas

The campus hill is drained on the east by a channel which runs from the Athletic Campus across North Campus and the northeastern corner of Main Campus. Another drainage area runs across the southwestern corner of campus. This is presently an underground storm sewer system while the drainage area on the northeast edge of campus is an open channel known as Campus Creek.

Vegetation

The major characteristic of the many plantings is that of natural groupings which define a

LANDFORM AND DRAINAGE



variety of space types. In some natural plantings, eye level shrubs lend an additional element of enclosure, or "confinement and release". The total effect is a park-like character.

Tree forms and varieties on campus are many and varied. Some are the remains of plantations and arboretums. Many are donations from nurseries in distant places. It was of scientific interest to see if they would survive in Kansas.

VEHICULAR CIRCULATION AND PARKING

Main Campus is in effect, defined by the major circulation routes which allow traffic to circulate around, to and from the campus. Anderson Avenue on the south, Denison Avenue on the west, Claflin Road to the north, and North Manhattan Avenue on the east, are vital to the community circulation system as through streets in addition to serving campus oriented traffic.

Campus Entries

From the peripheral route, various streets penetrate the campus. Three of these entry points are directly related to streets which connect the campus with the larger community and regional circulation system. Seventeenth and Anderson is the major campus entry for visitors. Denison - Claflin, and North Manhattan - Claflin are also major arrival points where the campus is penetrated for access to parking. Another major campus entry is North Manhattan and Vattier. This street provides access to a major parking lot and the Administration building.

In addition to these major entries, there are several other key points which provide the visitor his initial visual contact with the campus. The corner of campus adjacent to the intersection of Bluemont-North Manhattan Avenue and 14th and Anderson is such a point. Anderson-Denison intersection is another image area. These areas along with all major entrances should be developed as image areas since first impressions are often the most lasting. The value of University image can not be measured in dollars and cents. To visitors it reflects the quality of the education provided by the University. It also reflects favorably or unfavorably on the image of the State.

Visitor Orientation

Visitors who are unfamiliar with the campus generally arrive at one of the five major points and should be intercepted, oriented, and directed to their desired destination and related parking. At the present time there is no campus directory nor information center for visitors. Highway information centers could give the visitor his initial orientation to the campus, helping to eliminate indecision and friction on campus.

VEHICULAR CIRCULATION & PARKING

campus entries

Legend

Major Approaches

Campus Penetration

Visual Impact Areas

Campus Streets

image could be improved by attention to commercial area and overhead utilities

this approach has potential which is negated by monotonous architecture

Parking

Major visitor approach and visual impact area projects unfavorable image of campus

completely without regard for human feeling

this entrance projects the most obnoxious image of entrances - disastrous and mass parking

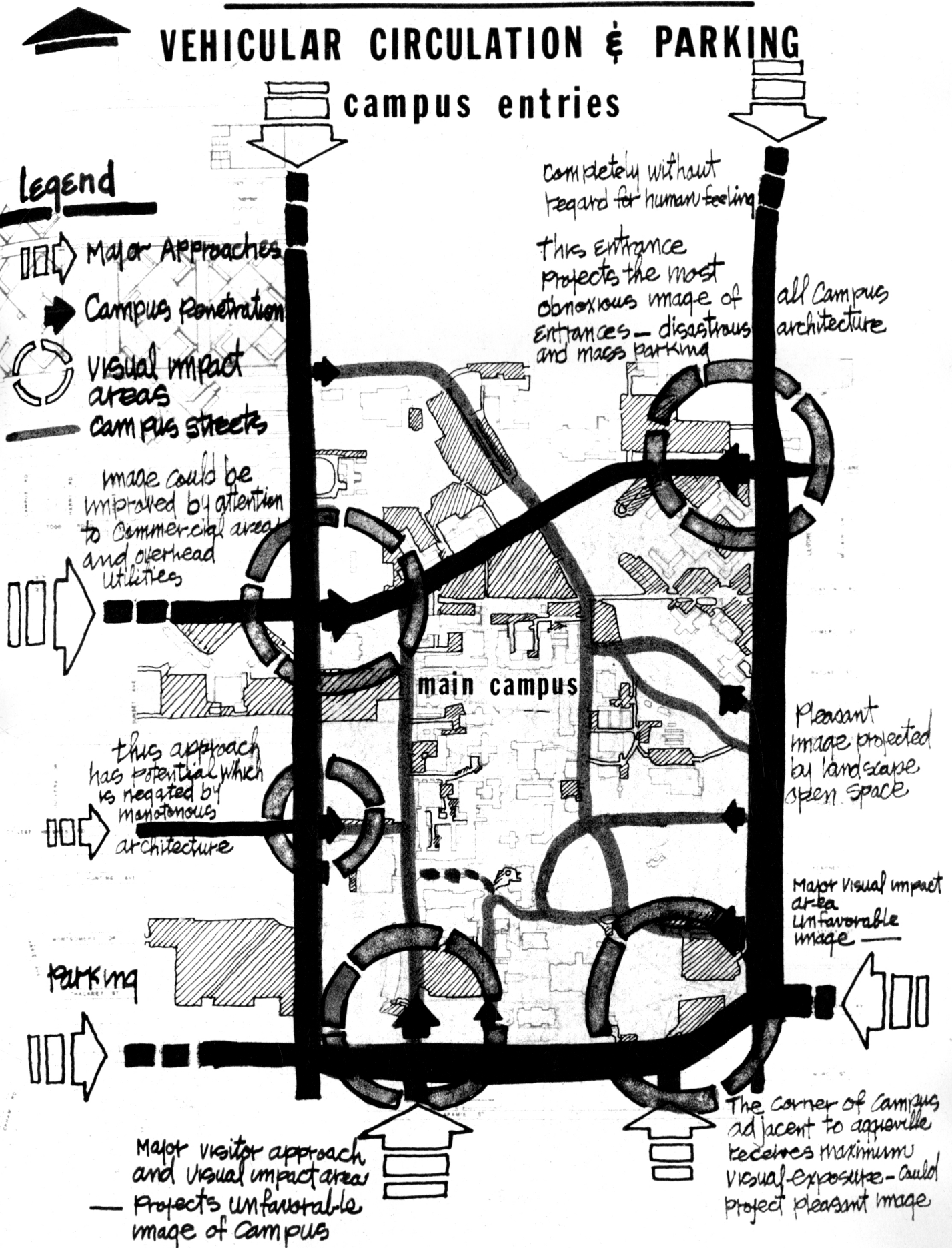
all campus architecture

main campus

Pleasant image projected by landscape open space

Major visual impact area unfavorable image

The corner of campus adjacent to agriculture receives maximum visual exposure - could project pleasant image





North Manhattan Approach.

2



North Manhattan Avenue,
Clafin Road Entrance.

3



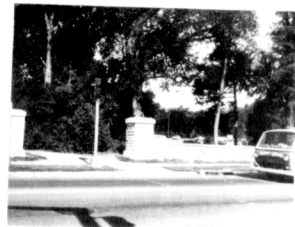
1

Clafin Road, Denison Avenue Approach.
Overhead Wires, Utility Poles, and Barren
Service Commercial Area Detract From
The Campus Image.



4

Lovers Lane Entrance Area.



5

Visual Access To Campus
From Bluemont Approach.



9

Visual Impact From Anderson, Denison
Approach: A Potential Image Area.



6

Seventeenth Street Entrance
Penetrates Campus as a
Thoroughfare. Contributes
Significantly to Pedestrian,
Vehicular conflict. Area
Should Be Developed As An
Image Area.



8



7

Fourteenth Street Approach.

CAMPUS ENTRANCES

Information areas relating to major entries would also help to orient visitors to the campus.

Campus Streets

Campus streets as they exist today are a relic of the University's past. The streets were functional in the days when cars were not as numerous, and it was common practice for visitors to park at the streets' edge, adjacent to whatever building was their destination.

The streets no longer have the capacity to handle both circulation and parking. As a result they have become virtual through streets, congested by people driving around trying to find a parking space, or possibly just looking at people.

The increasing enrollment and congestion of campus streets indicates that a different solution to circulation and parking must be found which will give Main Campus back to the pedestrian. Pedestrian and vehicular conflict is unsafe and disagreeable to pedestrian and driver alike. A street system designed for the 1920's and an enrollment of 4,000 cannot function in the 70's and 80's with 20,000 students.

Parking

"Inadequate parking" seems to be a subject which is near and dear to the heart of everyone at Kansas State. Students may be seen waiting perhaps thirty minutes for a parking space behind the Union; yet only a short two blocks away, a parking lot is only half full.

It is obvious there is no simple solution to the parking problem. It is not a matter of providing a parking space for everyone who might desire one.

Simple arithmetic demonstrates that in a few short years, parking in surface lots would be the major function of Main Campus.

Presently unsightly parking lots are major features at all but three of the campus entrances. If the educational process is to be nurtured in an optimum environment, attitudes must be realigned, policy which identifies priorities must be established, and imaginative solutions to real need must be initiated.

PEDESTRIAN CORRIDORS

Walkways can be one of the strongest cohesive elements which tie the campus together and unite it with the community. Walkways are more than a convenience to assist in moving people from one point to another. They are experiences in vision, sound, and motion, with

MAIN CAMPUS
KANSAS STATE UNIVERSITY

PARKING SPACE NEED

Surface space required to park
80% of faculty-staff cars and
50% of student cars in 1985
(ESTIMATED DESIRE FOR PARKING)

16,875 STUDENT CARS

**2,812 FACULTY
CARS**

surface parking for
10,687 cars-1985
3,740,000 sq. ft.



constantly changing patterns of movement, color, and people types. They are rapidly moving streams, along which quiet eddies may form and people stop to talk or look and listen. They are places of learning. They are ribbons of communications which may move from student residence to classroom, from classroom to Student Union, or from parking lot to office.

Walkways

The organizing potential of campus walkways has not been realized at Kansas State University. Although the system reflects the linear character of the campus, it is inadequate, lacks clarity and is devoid of larger spaces where pathways cross and people gather.

In places, traffic generators or desire lines have been ignored or are tenuously provided for. Conflict between pedestrian and automobile traffic is a common characteristic of campus walkways, with one exception. The central campus walkway, which carries a high volume of pedestrian traffic between the Student Union and Waters Hall, fortunately, is uninterrupted by vehicular traffic.

The Main Campus walkway system is basically a grid system reflecting the influence of Mid-Campus Drive, 17th Street, and the central walkway, which was originally the connection between the old Armory and Anderson Hall.

Pedestrians have a common characteristic in relation to circulation patterns. They tend to seek out the shortest distance between the point of origin and destination, and can only be deterred by physical barriers or experiential controls. Pedestrians penetrate the campus at many points, reflecting the concentration of student living quarters around the University. There are, however, several major pedestrian corridors, which merge and flow together on Main Campus. Any future pedestrian circulation system should reflect these major flow patterns.

Campus Green Space

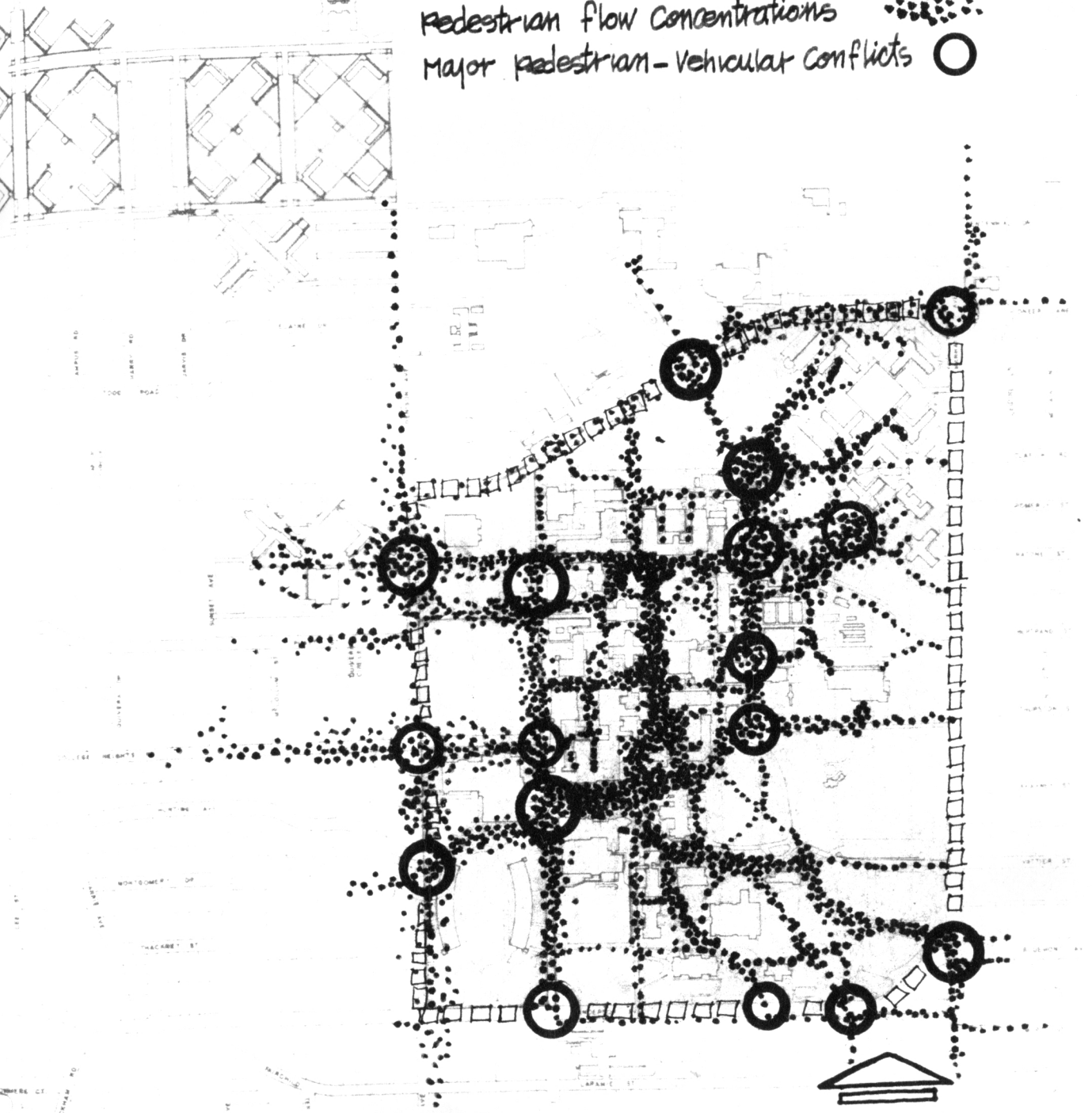
Open space has a strong relationship to pedestrian circulation. Space is perceived as an ever changing phenomenon. It changes with movement through space, with the seasons as trees change color and drop their leaves, and with the time of day as shadows lengthen and light quality changes. College campus spaces have an added dimension of contrast in the quietude during classes and the changing patterns of movement, sound, and color between classes.

Space provides a frame of reference, within which the individual can relate to his environment. It is psychological in impact and influences social involvement and interaction.

MAIN CAMPUS
KANSAS STATE UNIVERSITY

PEDESTRIAN CIRCULATION

pedestrian flow concentrations 
major pedestrian-vehicular conflicts 



The character of a space may encourage either privacy or encounter, repose or action, or a multiplicity of activities.³⁵ Natural open space provides an opportunity for "communion with nature". Some speculate that it is necessary for man to get away from it all periodically and recreate himself spiritually if he is to remain mentally healthy.³⁶



Landscape Open Space. Open space may be either natural or urban in character. The natural open space on campus is a reflection of Campus Creek and the low lands surrounding the hill. This reflection of the natural landscape and its development in the spirit of Maximillian Kern's original Landscape Plan by L. R. Quinlan, has made the open space on the eastern edge of campus the major unifying element of campus, and one of the most valuable assets of the University. The natural environment and pleasant spaces, which have been created through the use of trees and other plant material, create a much different mood or mental attitude for the human element than does the "visual pollution" on the western edge of campus. A multitude of squirrels and birds living in the natural environment add a great deal to the image of campus green space.

Unfortunately, the natural open space has recently suffered from encroachment. The corner of Campus adjacent to Aggieville, which receives maximum visual exposure, and is a potential recreation space, has been given over to parking lots.

The potential of Campus Creek as a part of the landscape environment has been realized along only a short span of its total length in the Quinlan Garden area. On North Campus, it has become practically an open sewer which is flanked and covered over by parking lots. Pollution from cattle lots adjacent to the dairy barn contributes to the total picture of destruction. In short, Campus Creek on North Campus has become a veritable desert, rather than the pleasant environment and strong unifying element it could be. This situation must be rectified in the future for clarification of campus form and improvement of the environmental quality.

Major Urban Open Spaces. The natural open space feeds into the urban spaces on campus at several points. This visual and physical relationship should be reinforced for increased variety and contrast in spatial experiences.

The existing urban spaces on campus which may be considered significant are as follows:

- Anderson Green - This is a landmark space and must be preserved for campus identity.
- The Student Union-Seaton Hall space - This is a focal space for student activity and should be developed to reflect its function.
- The South Quadrangle - A function which generates activity and movement through the space needs to be placed on the Nichols Gym site in order to make it a vital part of the campus scene.
- The Holtz Hall Space - Although Holtz Hall has been recommended for removal by the long range planning committee, this space needs to be articulated in its present identity. If Holtz is removed it should be replaced by a building in sympathy with the space and Anderson Hall.
- The Main Quadrangle - This space was originally the old parade ground and should be retained as a campus landmark.
- The pedestrian corridor which connects the Main Quadrangle and Denison Hall Space - This constricted passageway serves as a beautiful transition between the two spaces and should be maintained and reinforced in future development.

The most obvious inadequacies of campus spaces is the lack of spatial variety and intensively developed spaces with human scale, in which people can relate to the environment and interact with the human element. Only two "people spaces" are in existence on the campus

KANSAS STATE UNIVERSITY MAIN CAMPUS GREEN SPACE

Major Urban Spaces

Natural open space

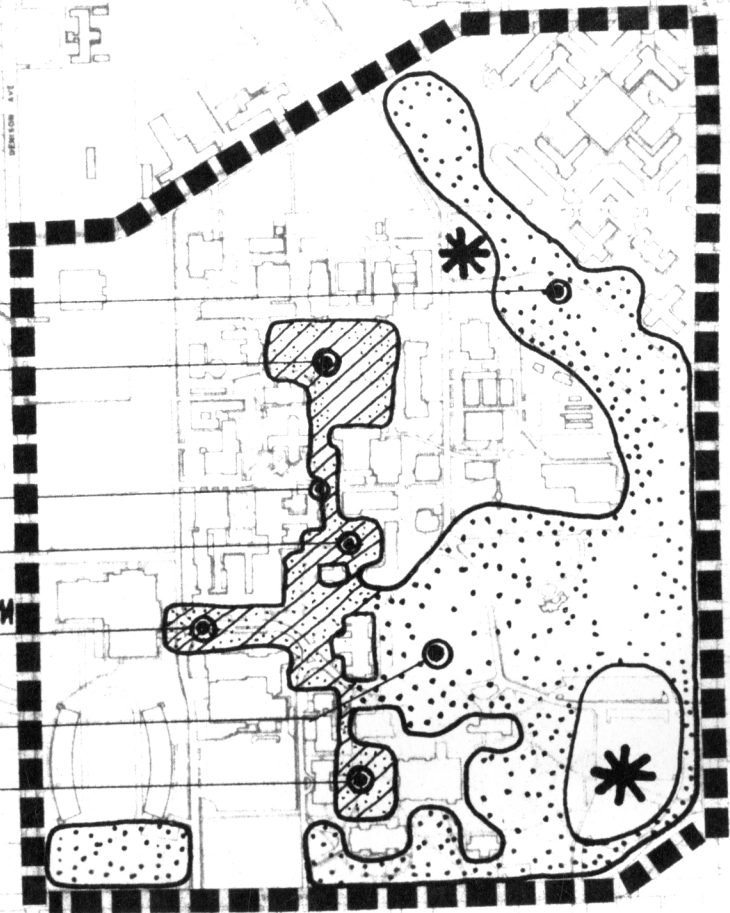
Encroachment

*Campus Creek
main quadrangle*

*Central Corridor
Hobby Hall Space*

Student Union - Seaton

*Anderson Green
South Quadrangle*



today. The Anderson Plaza, which has just recently been added to the campus scene, is a legacy of the Senior Class of 1969, and was designed by Dennis Day, Landscape Architecture professor. The other such space on Campus is south of Cardwell Hall and was designed by Herrick Smith, also a Landscape Architecture professor.

There is a need for many more such spaces on Campus. Presently there are no exterior spaces on campus which are developed for night time use as a living environment. The campus tends to take on a commuter campus feeling at night since students find other meeting places and activities to fill the gap. Indeed, this is a daytime phenomenon as well. Students frequently return to their living quarters between classes rather than remain on campus.

Spatial Quality. If we consider the variety of people types and psychological makeup, the effect space has on mental attitudes, and the basic function of the University, which is learning, the task of providing meaningful spaces might appear impossible. Yet, within this complexity lies the key to quality. Clarity of form and relationships, variety of space sizes and treatment (simplicity-complexity, unity-balance-contrast), hierarchy, continuity, and flexibility of space function are guidelines which can influence development of meaningful spaces for human use.³⁷

CAMPUS CONTINUITY AND VISUAL QUALITIES

Continuity is that quality which ties the many parts into a distinguishable whole. Too much emphasis on continuity can result in monotony. No one will deny that the sameness of American towns and suburbs qualify them for the catch-phrase, "Anywhere, U.S.A." On the other hand, complete disregard for continuity in the elements which compose the "whole" can result in chaos.

Street furniture and other parameters which relate most readily with the human element can contribute a great deal to continuity. Basically, there are two elements of continuity existing on the Kansas State Campus today.

The most widely touted element of continuity is the limestone building materials. Unfortunately, this commendable effort to maintain continuity in building materials has not contributed as much to a favorable campus image as it might have. A complete lack of sensitivity and regard of the human element in many buildings of recent design has contributed to the visual pollution on campus.

Many have remarked that, viewed from a distance, the campus could as well be a factory or

penitentiary. This is a far from commendable impression of an institution of higher learning.

Monotonous building facades, lack of order and human scale, are only the visual manifestations of political and economic expediency. The long range effects of the spiritually stultifying environment are impossible to measure.

The Landscape Character, which is the other element of continuity, is perhaps more successful in welding the campus together into a distinguishable whole. This "fabric of the campus" could be improved by an element of continuity without monotony in such parameters as lighting, signing, kiosks, and paving.

Perhaps the most successful way to avoid monotony in these elements is to classify their use by functions, scale and spatial character. For example, a high speed, high volume, pedestrian walkway through a natural setting might differ in character from a walkway in an urban setting.



Potential of Campus Creek as an element of Campus Structure is not realized on North Campus. Mass parking lots and disastrous architecture add visual insult to injury.

1



Encroachment on Campus Creek disrupts a natural organizing unit.

2



Space adjacent to student dormitories, which is valuable for recreation needs has been usurped by the automobile.

9



Potential of Campus Creek as a unifying element of campus structure is realized in the Quinlan Garden area.

3



8



The image projected by the Landscape Open Space of East Campus contrasts sharply with that projected by the western edge of campus



4



5

Open Space is valuable for both Spiritual and Physical recreation.



7

Overhead utilities and chain-link fences greet arrival



6

ENCROACHMENT. The corner of East Campus adjacent to Aggieville has been given over to parking. This area receives maximum visual exposure and should be retained as an image area.

CONTRAST in CAMPUS ENVIRONMENT

A major pedestrian corridor linking the Academic Core with a student housing complex. Monotonous Architecture detracts from the environment.

Encroachment reflects campus politics and priorities.



1

Ugly, inefficient use of Main Campus space contributes to campus sprawl and destruction of the natural open space, an invaluable image asset.



10



9

A major pedestrian corridor which exhibits complete disregard for the human sensibility.



8

Student health, an ill conceived low density building, occupies central space which could be better utilized for the academic function.

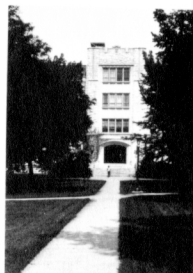
A major entrance area projects a poor image of campus.



7



2



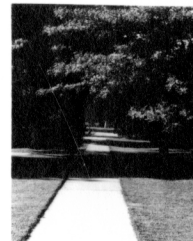
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A view of Willard Hall across the Main Quadrangle. The contrast provided by the large open space is significant.



4

Decoration which does not relate to the space it occupies does not improve the campus environment.



5

A pleasant shaded walkway contrasts sharply with many seen on campus.



6

Anderson Plaza, a new addition to the Campus scene, was dedicated to the senior class of 1969. Professor Day of the Landscape Architecture faculty contributed the design. It is hoped the Plaza will be a catalyst for others on Campus.

CAMPUS ENVIRONMENT

CHAPTER IV
UNIVERSITY SPACE NEEDS

Section 1
ACADEMIC SPACE NEEDS

Section 2
PARKING PRIORITIES AND NEED

UNIVERSITY SPACE NEEDS

An expanding enrollment and academic plan will necessitate an increase in space of an academic nature. Since the nature of future educational programs is uncertain, space must be flexible and capable of being utilized by various disciplines with minor modifications.

Demands for parking space and inadequate surface space in which to provide for these demands will become a more vexing problem in the future. The problem must be resolved with firmness, fairness, and imagination, recognizing the limitations of surface space.

Certain economic guidelines suggest that "when the value of campus land reaches \$3.50 to \$4.50 a square foot, it becomes advisable to consider construction of multi-level facilities rather than additional parking lots."³⁸

It is impossible to place a monetary value on Main Campus land. We would not, of course, sell it at any price. It is invaluable for expansion of the academic functions, university image, and "recreation". Once it is gone it can never be replaced, or at best, only at great cost. Now is the time to initiate adequate solutions to the parking problem, before the natural open space is denuded, before land values adjacent to campus go up, and before other patterns become entrenched.

ACADEMIC SPACE NEEDS

Space planning for universities is an imperfect science at best. All pressures, ambiguities, and uncertainties, which are a part of university life, affect the results and applicability of space planning studies.

The multiplicity and complexity of the various changing educational programs, philosophies, instructional methods, and university functions along with difficulties in interpreting data complicate the issue.

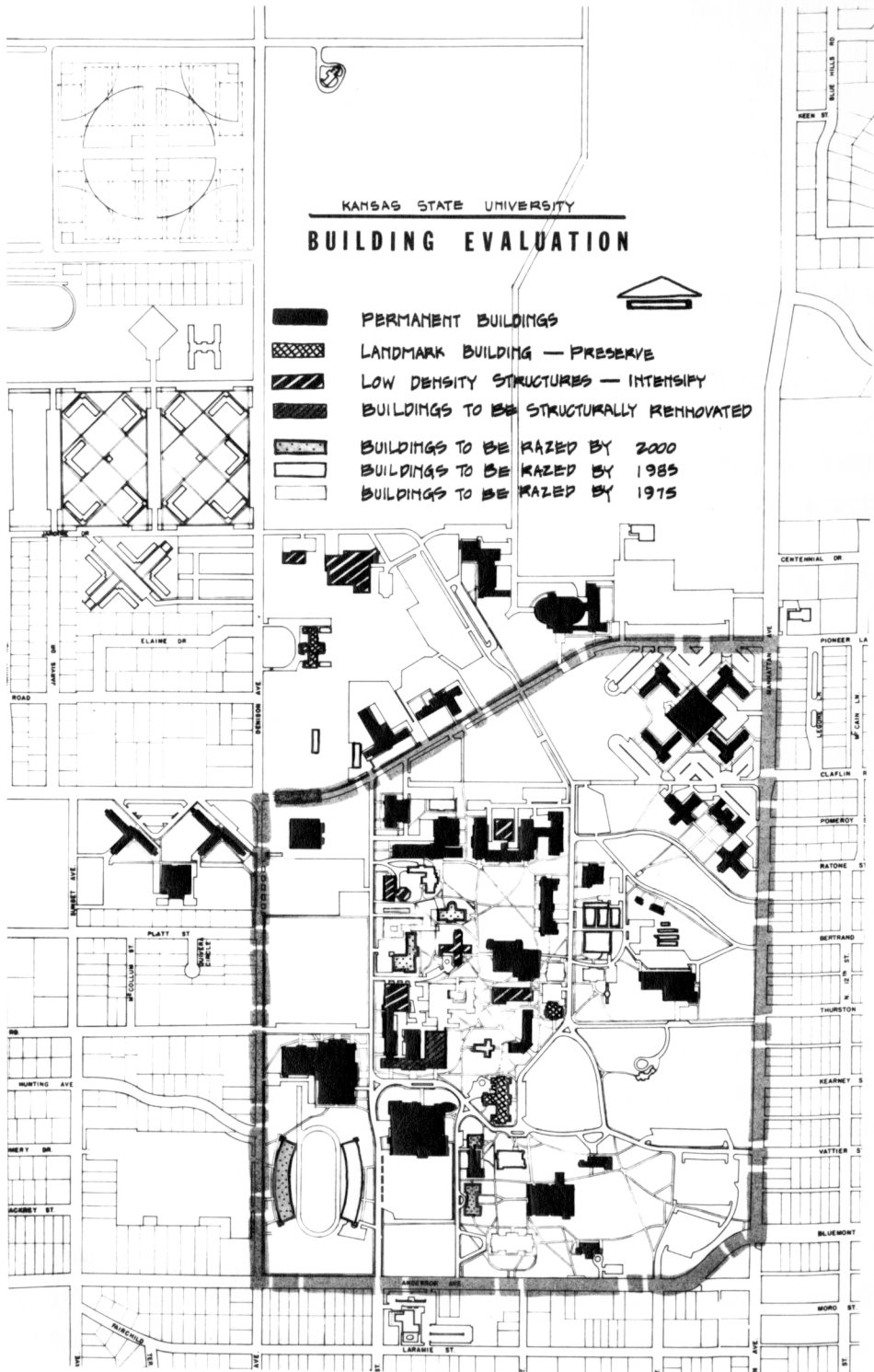
A university cannot be run on an industrial, or production basis, with a team of efficiency experts dictating university policy; yet space must be used with some efficiency in order to equate the public purse, or ability to pay, with university need.

Building Evaluation

A projection of space need must consider buildings which are obsolete and should be razed or renovated to maintain efficiency and safety.

KANSAS STATE UNIVERSITY BUILDING EVALUATION

-  PERMANENT BUILDINGS
-  LANDMARK BUILDING — PRESERVE
-  LOW DENSITY STRUCTURES — INTENSIFY
-  BUILDINGS TO BE STRUCTURALLY RENNOVATED
-  BUILDINGS TO BE RAZED BY 2000
-  BUILDINGS TO BE RAZED BY 1985
-  BUILDINGS TO BE RAZED BY 1975



Although the age of a building is not a true measure of its efficiency, it should be considered in Long Range Planning.

The building evaluation diagram includes:

- Permanent buildings — structurally sound.
- Landmark buildings which should be maintained for image and historical significance.
- Buildings which should be renovated for continued effective utilization.
- Low density buildings which are structurally capable of supporting additional floors or may be built around or over and incorporated within a higher density structure.
- Buildings judged to be inefficiently utilizing space or ugly and unworthy of renovation, recommended for removal within the next 30 years.

Acknowledgements

Mr. Harlan O. Bareither, University Office of Space Programming at the University of Illinois, has made a detailed study of the various space planning criteria, their correlation and significance.

Some of the studies outlined in his "State-Wide Space Survey" for the state of Illinois have been utilized as a model.

Mr. Randolph Gingrich of the Kansas State University Physical Plant Office, who is currently engaged in a series of space surveys, has been gracious in supplying information on existing space. Without his information this section would not have been possible. The inferences and projections of need, based on this information, are entirely my own.

Definitions of Terminology

The complexity of interpreting space study data demands a clear understanding of terminology. The following is a list of terms which are used in this report.

- General Academic Space - All university space of a non-residential nature, including field-house, power plant, maintenance, student services, etc.
- Gross Area - Gross area or "square feet" should be interpreted to mean the sum of the

floor areas included within the outside faces of the exterior walls for each story of area.

- Net Assignable Area - "Net assignable square feet" should be interpreted as the sum of all floor areas of a building including every type of functional space, corridors and walls excluded.
- Classroom - A room used by classes which do not require special purpose equipment for student use.
- Instructional Laboratories - Rooms used by regularly scheduled classes which require special purpose equipment for student participation, experimentation, observation or practice in a field of study.

Research Laboratories - Rooms used for laboratory applications research and/or training in research methodology which requires special purpose equipment for staff and/or student experimentation and observation.

- Office - A room used by faculty, staff, or students working at a desk or table.
- Other Space - All other university academic space not classified in one of the above categories. Student services, etc.
- FTE Occupant - Full time equivalent, i.e., two one-half load students make one FTE.³⁹

Gross General Academic Space

The Department of Health, Education and Welfare sets forth a standard of 200 gross square foot per student in public universities. This is a rough standard and its applicability varies with university type, educational program, instructional methods and characteristics of the student body. Since it is an ambiguous standard, it should be used with caution. It can be used as a long range planning guideline in land acquisition and land use designation. Actual building programs should be tied to more refined planning studies, especially for mature universities with established programs.

Theoretically, as student enrollment increases, space utilization efficiency should increase. To compensate for this increased efficiency, a standard of 175 gross square feet per student as a minimum desirable standard will be utilized.

Net Assignable General Academic Space

Although the net assignable space is a measure of the total nonresidential space per student as is gross space, it is a more accurate and comparable standard since it eliminates the added variable of corridors and walls.

Existing Space by Function

Classrooms, instructional laboratories, research laboratories, offices, libraries, and other space (other refers to space allocated to Student Union, auditorium, Field House, Health Service, etc.) are the functional categories for which data is available. A projection of total need cannot be made on the basis of this information. An extensive survey would have to be made for each field of study considering the different educational philosophies, methods, size of classes, and space utilization efficiency.

However, a comparison of space allocated to various functions on a per student basis with that allocated by other similar universities can help to identify the general areas of real need.

TABLE 1
PROJECTION OF GROSS SPACE NEED
STANDARD 175 SQ. FT./STUDENT

Existing Gross Sq. Ft. General Academic Space	1,941,108
Student Enrollment (head count) 1968 - 12,560	
Gross Sq. Ft. of Space/Student 1,941,108 - 12,560	
Shortage of space/student	154
Space currently under construction Biological Sciences, Auditorium, Library Student Union	500,000
Total estimated space available, Fall, 1971	2,441,108
Projected enrollment, Fall, 1971 - 14,980	
Total projected space/student, 1971 (2,441,108 - 14,980)	162
Shortage of space/student	13
Projected gross square feet available in 1975 (1971 total 2,441,108 - space recommended for razing by 1975 139,415) Does not include new space which may be built between 1971-75. (Power Plant Shops, Art Studio, Holton, Dickens, Chemical Engineering, Engineering Shops)	2,302,693

TABLE 1 (continued)

Projected Enrollment - Fall, 1975 - 18,515	
Projected gross square feet of space/student without new construction	129
Total projected space need, 1975 175 x 18,515	3,240,125
Total gross sq. ft. of general academic space which must be constructed between 1971-75 to meet standard of 175 sq. ft./student	937,432
Total which must be built to maintain status quo (18,515 x 154 sq. ft.) 2,851,310 - 2,302,693	549,617
1985	
Projected Student Enrollment, 1985 - 22,500	
Total projected space need by 1985 (22,500 x 175 sq. ft./student)	3,937,000
Estimated 1971 space existing in 1985	2,162,624
1975 total - 2,302,693; space to be razed between 1975-85 - 140,069 (Fairchild, Burt Hall, Holtz Hall, Greenhouses & Head house)	
New space which needs to be constructed between 1971-85 to maintain standard	1,774,876
New space needed to maintain status quo 3,465,000 - 2,162,624	1,302,376
Projected Space Need (2000) (30,000 maximum student enrollment x 175 sq. ft./student)	5,150,000
Estimated 1971 space existing in 2000 1985 - 2,162,624; space razed between 1985-2000 - 158,479 (Calvin, Old Kedzie, Power Plant, Bushnell, Vet Medical Hall)	2,014,145
Total space which must be built by 2000 to maintain 175 gross sq. ft./student standard	3,235,855
Total space which must be built by 2000 to maintain status quo	2,605,855

KANSAS STATE UNIVERSITY

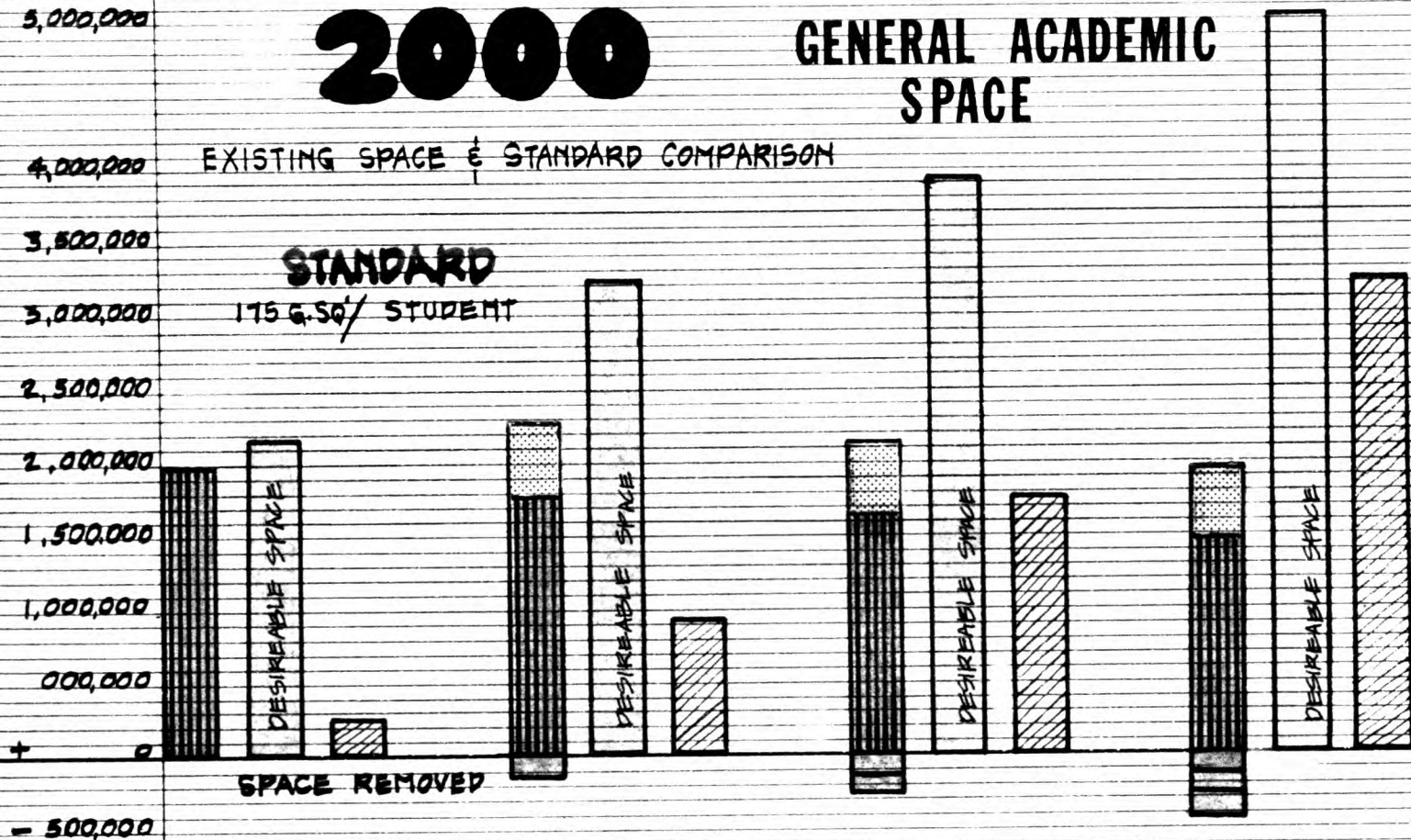
2000

GENERAL ACADEMIC SPACE

EXISTING SPACE & STANDARD COMPARISON

STANDARD

175 G.SQ/ STUDENT

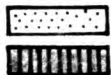


ENROLLMENT 12,560
YEAR 1969

18,515
1975

22,500
1985

30,000
2000



NEW BUILDING SPACE PRESENTLY UNDER CONSTRUCTION
EXISTING SPACE



NEW SPACE NEEDED TO MAINTAIN STANDARD

TABLE 2
PROJECTION OF NET ASSIGNABLE SPACE NEED
STANDARD 115 SQ. FT. (66% GROSS STANDARD)

Standard 115 sq. ft./student (66% Gross Standard)	
Existing net assignable sq. ft.	1,434,571
Enrollment, Fall, 1968 - 12,450	
Net assignable sq. ft./student 1,434,571 - 12,450	114
Comparisons	
University of Illinois	163.40
Kansas University	101.84
Net assignable ft. under construction	3,300±
Approximate net assignable sq. ft. to be razed by 1985	185,700
Estimated net assignable space presently existing and under construction available in 1985 = existing - 1,434,571 + under construction - 297,000 = 1,731,574 - razed 185,000	1,546,574
Projected student enrollment, 1985 - 22,500	
Total net assignable space need, 1985 22,500 x 115 sq. ft./student standard = 2,587,500	
Net assignable space in new construction needed by 1985 = 2,587,500 - 1,546,574 =	1,040,926
Projected student enrollment, 2000 - 30,000	
Total net assignable sq. ft. space need (30,000 x 115 sq. ft./student)	3,450,000

TABLE 3
AVAILABLE SPACE BY FUNCTIONAL CATEGORY

UNIVERSITY	Net available square ft. allocated to classroom	Percentage of space allocated to classroom	Net available square ft. per station	Net available square ft. per FTE student	Average class size	Average hour/week used	Space factor
CLASSROOMS							
Kansas State University	129,486	8.5	14.0	10.2	34.1	29.39	0.82
Kansas University	141,938	8.0	14.53	8.5		36.60	0.68
University of Illinois	306,314	9.3	13.4	10.1			
INSTRUCTIONAL LABORATORIES							
Kansas State University	385,384	23.9	51.60	30.4	18	17.35	3.91
Kansas University	172,757	10.3	37.20	10.4	- -	27.14	1.85
University of Illinois	490,809	12.7	72.60	16.1			
RESEARCH LABORATORIES							
Kansas State University	313,749	19.5	24.7				
Kansas University	229,110	13.7	13.8				
University of Illinois	1,174,502						
OFFICE SPACE							
Kansas State University	338,186	21.0	26.7	155			
Kansas University	380,559	22.7	22.9	140			
University of Illinois	1,134,769	20.2		139.3			

TABLE 4
CLASSROOM DATA SHEET
No. Classrooms & Capacity Range (1967 Study)

STATIONS	NO. ROOMS
0 - 9	0
10 - 19	4
20 - 29	26
30 - 39	41
40 - 49	40
50 - 59	19
60 - 69	11
70 - 79	1
80 - 89	2
90 - 99	10
100 - 199	12
Over 200	8
	147

Peak Class Attendance. 5,000+ for each hour of a three hour period - Monday, Wednesday, Friday, 8:30 - 11:30.

Specific Space Need

Recognizing the inherent danger in general comparisons, I will make some observations based on the "functional category available space" data.

Classrooms

The net assignable square feet per full time equivalent student compares favorably with that of other universities.

The average hours used per week/classroom (29.39) compares favorably with a desirable minimum of 6 hours a day, 5 days a week, or 30 hours/week. Forty hours per week would of course be ideal if somewhat hard to obtain.

The space utilization factor (0.82), which is NASF for 100 hours of student occupancy divided by 100, is somewhat higher than desirable.

A comparison of two classrooms, one 40 station capacity and one 60 station capacity, scheduled 30 hours/week with an average class size of 34 students demonstrates the significance of the space factor.

Space Factor Formula:

$$\frac{\text{ROOM AREA}}{\# \text{ STA} \times \% \text{ STATIONS UTILIZED} \times \text{hrs/wk.}} \times 100 =$$

$$\frac{\text{NASF PER 100 STUDENT OCCUPANCY hrs.}}{100} = \text{space factor}$$

(A) Classroom 1

Classroom size - 400 students @ 14 sq. ft./station = 560 sq. ft.

Average class size - 34 students

Scheduled use - 30 hours/week

Percent of stations utilized - 81%

$$\frac{560 \text{ sq. ft.}}{(40 \times 81) \times 30 \text{ hour/week}} \times 100 = 35.0 \text{ sq. ft./100 student hours}$$

$$\text{Space Factor} = 0.35$$

(B) Classroom 2

Classroom size - 60 stations @ 14 sq. ft./station = 840 sq. ft.

Average class size - 34 students

Scheduled use - 30 hours/week

Percent of stations utilized - 57%

$$\frac{840 \text{ sq. ft.}}{(60 \times .57) \times 30 \text{ hour/week}} \times 100 = 81.8 \text{ sq. ft./100 student hours}$$

$$\text{Space Factor} = 0.82$$

Space factor comparison

Classroom 1 - 0.35

Classroom 2 - 0.82

Classroom 1 - most efficient in terms of space utilization⁴⁰

From the high value of the space factor at Kansas State we can draw three conclusions:

- Scheduling is inefficient or a majority of student occupancy hours are crowded into the peak hours of the day. (The new 10 hour day schedule should alleviate this tendency).
- The size of classrooms available does not allow maximum station utilization, i.e., class sizes from 60-90 must be scheduled in larger classrooms due to the scarcity of intermediate size classrooms. (Officials at Kansas State have recognized this general deficiency.)
- A combination of the above factors contributes to the "high" space efficiency factor.

Instructional Laboratories. A word of caution is in order regarding classroom laboratory space. Even though the space so classified is a relatively high percentage of total space, and the NASF per student is high, the figures should not be interpreted to mean there is an overage of space available in this category.

Some areas of the curriculum utilize laboratory space for storage of equipment which requires a great deal of room. A survey of the various areas of the curriculum would be necessary in order to identify real need.

Office Space. Here again, the survey results indicate there is no shortage of office space; yet, there are reportedly faculty members and graduate assistants on campus who do not have adequate office space. Considering the part government programs play in the life of the university, a study defining academic office space should be undertaken.

PARKING PRIORITIES AND NEED

A projection of parking need depends on parking policy established by the University. No policy establishing parking priority is presently in effect. For the purpose of this study, several broad assumptions will be made:

- Faculty-Staff is first priority and adequate parking will be provided for their needs within the Main Campus boundaries or in proximity to their place of work if possible. Handicapped students would be provided for here. Eventually, parking will have to occur in structures to accommodate the need.

- Parking may be either an amenity, or a substantial fee may be assessed, whichever the University determines.
- Space will be provided for visitors in proximity to key functions where possible.
- Space for students will be provided on the periphery or outside the Main Campus boundaries, either in surface lots or in parking structures. "Need" may be determined by distance from the campus, or by an economic determinant where anyone who wishes to park pays a substantial fee. Naturally, distance from the campus will affect willingness to pay a fee.

Faculty Staff Need Today

Presently, there are 1,602 faculty and staff, including graduate teaching assistants. A total of 3,468 registration permits were issued to this group in 1968, indicating some register as many as three cars.

Assuming a maximum eighty percent of faculty and staff desire parking space at one time, 1,282 parking spaces should be available for this group.

There are approximately 4,000 parking spaces on campus. This would leave 2,718 spaces for students and visitors, or a Parking:Student Ratio of 1:4.6 (discounting visitor parking).

Student Need

There are 12,560 students on campus with approximately 75 per cent owning cars. 9,385 registration permits were issued in 1968.

The differential between available parking spaces and student cars becomes more realistic if we consider the percentage of students who commute and those who live within walking distance. In 1968, a total of 585, or 4.7 per cent of the student body commuted to campus from outside the city limits of Manhattan. Although no survey has been run on the number of people arriving per car, it is common knowledge commuters from distant points tend to pool cars for economic reasons.

A study of student concentration shows that 5,762 or 46.9 per cent of the students live within one-half mile radius, which might be considered walking distance for those physically able. Some will walk farther or find other means of transportation if available parking is inadequate or if economic controls are applied.

Student classroom attendance during three peak hours, Monday, Wednesday and Friday morning, averages an estimated maximum 5,900 students in class per hour. This is approximately 50 per cent of the total enrollment. It does not take into account students remaining on campus between classes, or attending two or more consecutive hours during the peak load. The problem is determining how many students are on campus at one time. The true figure lies between 50 percent and 100 percent. A middle figure of 75 percent will be utilized for the purpose of projection. Seventy-five percent of the student body is 9,430. If the 55 percent living beyond the one-half mile radius drives, 2,535 student parking spaces would need to be provided, assuming two arrivals per car. This is an average of one parking space for every five students of the total enrollment.

Projection of future student parking needs would depend on the pattern of student housing concentration at that time. Obviously, the pattern will not remain the same, since the University houses approximately 40 percent of the student body at the present time. No new University housing is anticipated in the near future.

Other Parking Needs

Other parking needs are related to specific functions such as the Student Union, Auditorium, Administration and Field House. Visitor parking equivalent to approximately one percent of the student body should be provided at various points around the campus.

TABLE 5
PARKING NEED DATA
FACULTY AND STAFF

Existing	
Total on campus parking spaces available (student and faculty combined)	4,000
Total Faculty and Staff (Fall, 1968)	1,600
Student:Faculty-Staff Ratio	8:1
Maximum number Faculty and Staff desiring parking (80% of total assumed)	1,282
1975 Projection	
Projected Faculty-Staff (14,980/8)	1,873
Projected Faculty Staff Parking Need (1,873 x .80)	1,500

TABLE 5 (Continued)

1985 Projection

Projected Faculty-Staff (22,500/8)	2,812
Projected Faculty-Staff Parking Need (2,812 x .80)	2,250

2000 Projection

Projected Faculty Staff (30,000/8)*	3,750
Projected Faculty-Staff Parking Need (3,750 x .80)	3,000

*(Maximum enrollment allowed/present student/faculty staff ratio). The ratio is subject to change with policy, which is a reflection of educational philosophy, economic factors, and technological innovations.

TABLE 6
PARKING NEED DATA
STUDENTS

Present

Student enrollment	12,560
Students living in dormitories	3,907
Students living in all University housing	5,119
Students living in organized houses	1,943
Total students living within one-half mile radius	5,763
Percentage of students living beyond the one-half mile radius	54%
Students living beyond a three-quarter mile radius	3,894
Percentage of students living beyond three-quarter mile radius	31%
Students commuting from outside Manhattan (4.7% - Fall, 1968)	585
Average percentage of student enrollment on campus during peak class hours (M-W-F, 8-9-10) (5,000+ or approximately 50% of student body in each one hour period of peak class attendance hours)	75%
To account for one student attending 2 or more consecutive hours -- I have estimated a maximum 75% of student body on campus at one time.	
Maximum number of students on campus at one time	9,220

TABLE 6 (Continued)

Percentage of peak class attendance load living beyond one-half mile radius	55%
Total number of students on campus during peak load hours, living beyond one-half mile radius	5,071
Percentage of peak class attendance load living beyond the three-quarter mile radius	31%
Total number of students on campus during peak load hours, living beyond the three-quarter mile radius	3,894
Need based on one half mile radius and peak load	
Commuters (585 @ 2 arrivals/car)	292
Students living beyond one-half mile radius 5,071 @ 2 arrivals/car (Ratio = 1:3.7)	3,380
Students living beyond three-quarter mile radius - 3,894 @ 5 arrivals/car (Ratio = 1:5)	2,566
(Peak load figures) Slight discrepancy in projection study and actual situation. All of 4,000 parking spaces are not utilized. However, it is impossible to compute the number of students parking on city streets adjacent to campus.	

FUTURE

This planning model does not lend itself to projection into the future since so many variables are inherent in it. Student concentration patterns can and will change. Class scheduling and peak class attendance load patterns can also change.

Recognizing these limitations I have selected a modification of the above Parking:Student Ratios to project possible demands for parking space in the future.

1975	
Student Parking Need (14,980 students @ 1:4.5 Ratio)	3,303
1985	
Student Parking Need (22,500 students @ 1:4 Ratio)	5,625
2000	
Student Parking Need (30,000 students @ 1:4 Ratio)	7,500
Parking structure floor space required for 7,500 cars @ 400 sq. ft./car	3,000,000 sq. ft.
Ground Area required @ 4 story structures	750,000 sq. ft.
TOTAL NEED (Student plus faculty plus 1% of student body for visitor parking (Not including special function parking)	10,800 spaces

CHAPTER V

THE CAMPUS TOMORROW

Section 1

CONCEPT FORMATION

Section 2

CONCEPT PLAN

Section 3

PHASING AND IMPLEMENTATION

Section 4

CONCLUSIONS

CONCEPT FORMATION

GOALS

To provide for an orderly manner of growth which will satisfy physical needs and result in a flexible, imageable environment conducive to the educational growth process and total individual development.

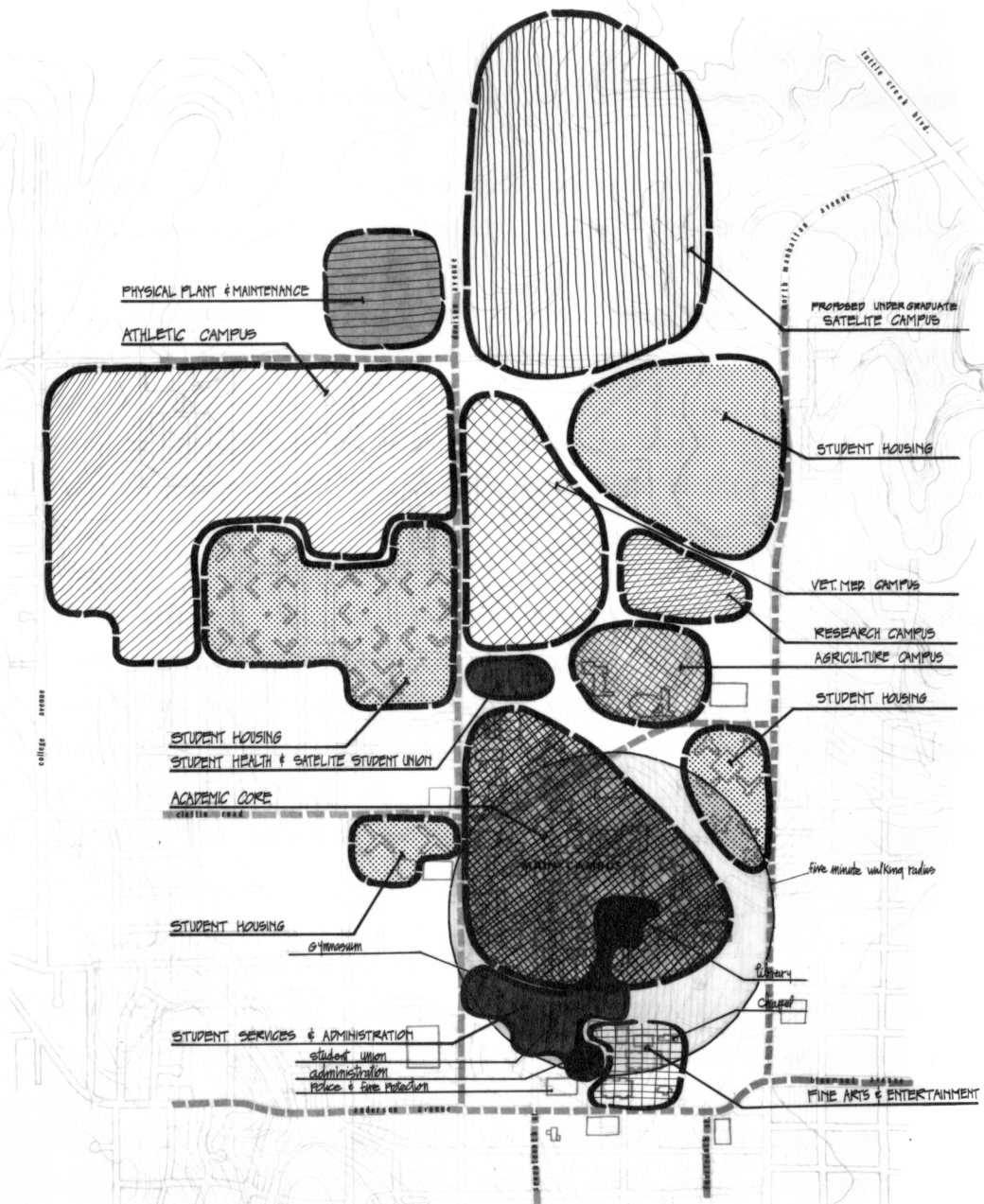
DESIGN OBJECTIVES AND CRITERIA

Land Use and Campus Organization

- Provide a campus structure and organization which will allow for future modification and change without destroying the identity or sense of place and space, by:
 - a. Utilizing landform, pedestrian corridors, and open space as major elements of campus structure.
- Provide a campus structure which allows for undetermined growth by:
 - a. Dispersal and intensification of the various functions, which will allow room for growth without interrupting other functions.
- Increase the academic floor area density of Main Campus in order to provide for space needs and maintain a pedestrian campus by:
 - a. Removing obsolete, low density structures occupying central space.
 - b. Incorporating newer low density structures within higher density buildings.
 - c. Building additional floors on buildings structurally capable of supporting them.
 - d. Maintaining a minimum acceptable floor area ratio of 1.00 and a ground area coverage of .25 in future developments on Main Campus.

Open Space and Pedestrian Corridors

- Preserve and improve upon existing landscape open space as an imageable campus symbol or landmark, and as an environmental-recreational asset by:
 - a. Increasing the floor area density in the academic core.
 - b. Limiting enrollment on Main Campus.
 - c. Initiating new solutions to parking other than surface parking.
 - d. Building at higher elevations and utilizing natural drainage areas as elements of campus structure and as pedestrian links.



CONCEPT FORMATION

PROPOSED

CAMPUS ORGANIZATION

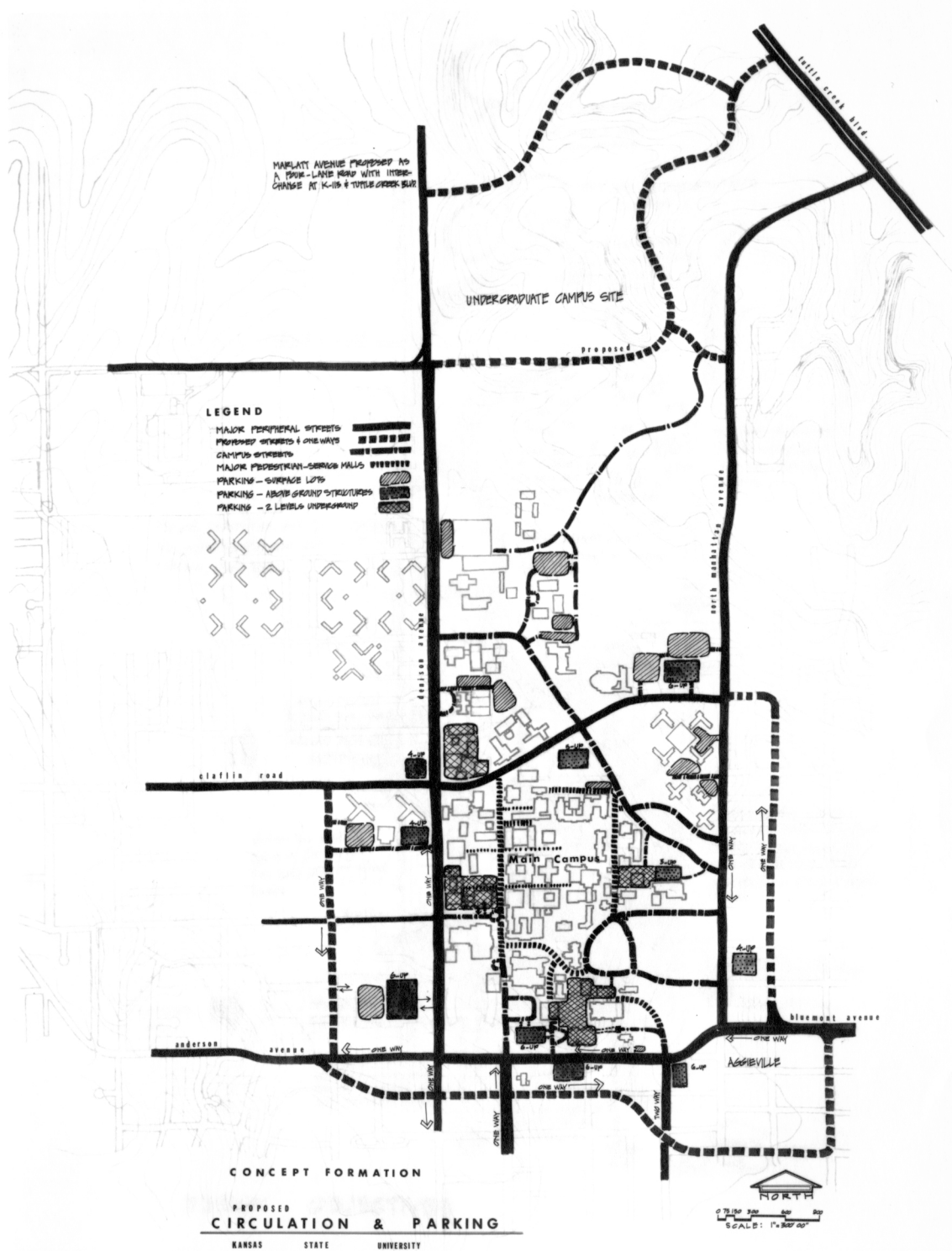
KANSAS STATE UNIVERSITY

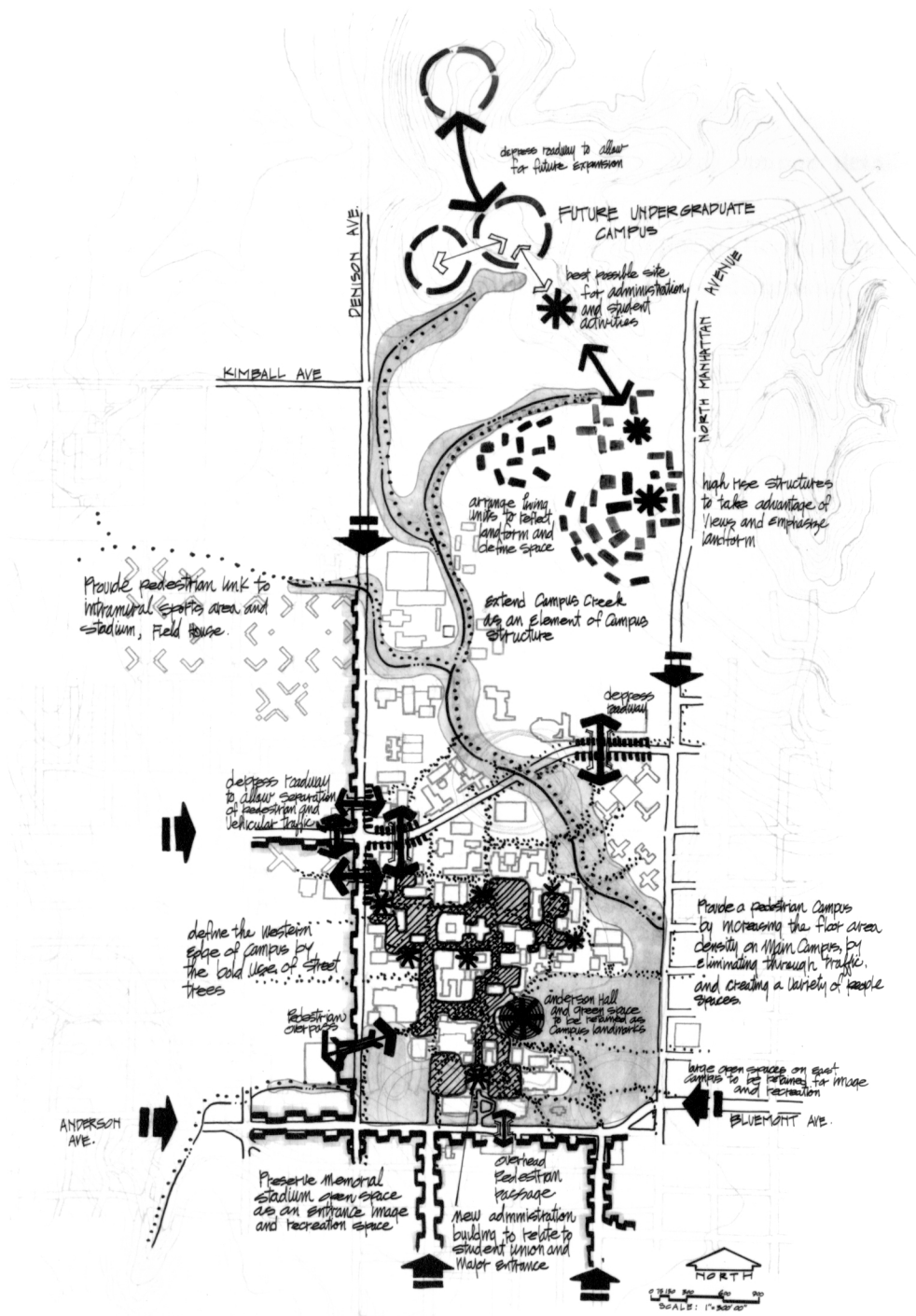


- Provide a variety of urban spaces for a variety of human needs and activities by:
 - a. Creating a series of larger open spaces with alcove spaces, connected by pedestrian corridors.
 - b. Piercing building masses for passage and visual access from one open space to another.
 - c. Providing a series of interior, or secluded courtyards.
 - d. Utilizing roof space for outdoor study, informal class sessions and recreation.
- Create a pedestrian oriented environment on Main Campus by:
 - a. Eliminating through traffic and resulting vehicular-pedestrian conflict on Main Campus.
 - b. Providing pleasant campus walkways and spatial variety.
 - c. Maintaining an academic core within a ten minute walking distance.

Vehicular Circulation and Parking

- Promote an efficient vehicular circulation system, which is adequate for campus and community needs, by:
 - a. Maintaining North Manhattan Avenue, Anderson Avenue, Denison Avenue, and Claflin Road as community thoroughfares and also as a peripheral circulation system serving Main Campus.
 - b. Improving and enlarging major streets, which connect the campus with the community.
- Provide adequate parking by:
 - a. Establishing a realistic parking policy which considers the needs of all users in context with available space which may be sanely allocated to parking.
 - b. Providing other alternatives to driving for those who live too far away to walk, i.e., shuttle bus service, city bus service, car pool organization service, etc.
 - c. Institutionalizing class scheduling practices which would more evenly distribute class attendance loads throughout the day and week. This would serve the dual function of increasing classroom utilization efficiency and minimizing the number of parking spaces needed during peak load class attendance hours.
 - d. Utilizing above ground parking structures and below ground parking where the land form permits such use.
 - e. Encouraging city land use practices which could make a larger number of living units available within walking distance of campus.





DESIGN OBJECTIVES

Image Quality

- Improve the image quality of campus by:
 - a. Utilizing open space as an entrance image.
 - b. Providing elements of continuity in green space and campus details - lighting, signing, kiosks, waste containers and materials.
 - c. Improving the quality of architectural design on campus in future developments
 - d. Placing overhead utilities on the periphery of campus underground, as well as those in the interior of campus.
 - e. Removing junk and outdoor storage areas from Main Campus.

CONCEPT PLAN

The concept plan represents the maximum desirable development which could be obtained and still maintain an environment with imaginability. The primary structural elements of the plan are natural open space and drainage channels, pedestrian corridors and urban open space, and vehicular circulation.

The parklike character of "East Campus" has been wrapped around the southern edge of Main Campus and extended into North Campus along the Campus Creek drainage channel. It serves the dual function of physically and visually unifying the various campuses of the University. The western edge of the Campus—Denison Avenue, is defined as a seam between the University and the city by the bold use of street trees. The natural open space feeds into urban spaces at strategic points.

Pedestrian corridors link the urban open spaces together. "People spaces" are proposed where there is a natural tendency for people to stop or congregate. Nodes, where corridors cross, and entries to major buildings are two typical places where this phenomenon occurs.

Vehicular traffic circulates around the Campus. Claflin Road has been left in the existing location. It has been depressed or cut through the high points near Denison Avenue and Weber Hall to allow pedestrian movement between Main Campus and North Campus without vehicular conflict.

North Manhattan Avenue has a potential for being depressed near the intersection of Pomeroy Street. Underground pedestrian passageways are proposed at the intersections of Anderson - Seventeenth Street, and Anderson - Denison. Parking structures outside the perimeter circulation system would also provide conflict free pedestrian access to campus, either by overhead walkways, where appropriate, or by underground passageways.

Campus streets, with one exception, are not allowed to cross the Campus. Both the cul-de-sac and loop systems are used to limit pedestrian and vehicular conflict on Main Campus.

The drive along Campus Creek has been left as a scenic drive to be open only after class hours. Seventeenth Street has been developed as a major entry.

Campus directories and visitor information are provided here. Administration and the Student Union facilities have been grouped to relate to arrival, parking, and the Ramada Inn convention facilities.

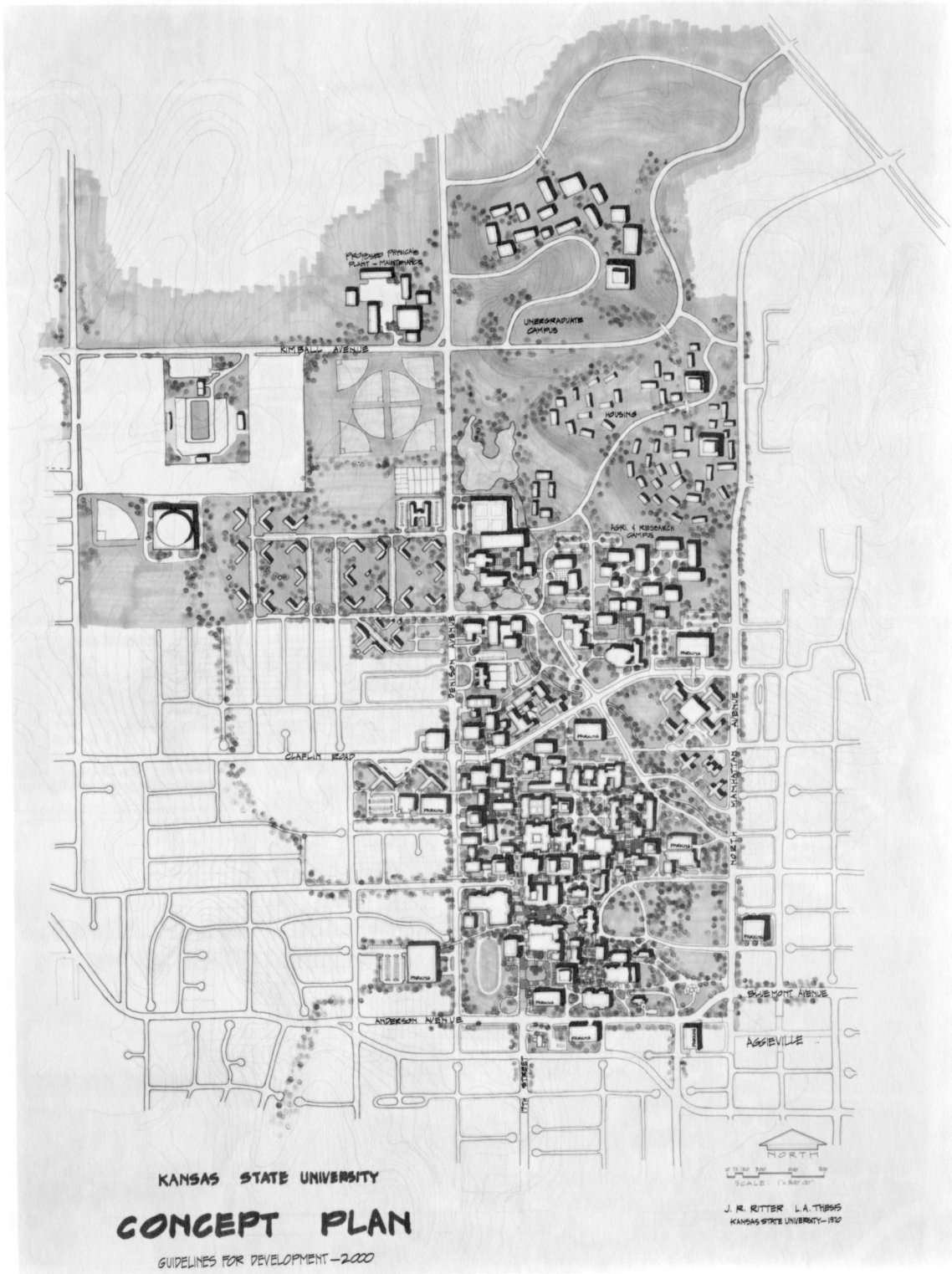
Most of the parking space will have to be provided in multi-level facilities when the enrollment approaches 30,000 students. An outer ring of parking structures is proposed in the dock surrounding Main Campus. Parking structures and below ground facilities should also be provided inside the Main Campus boundaries. No mass surface parking should occur here. Surface lots have been retained east of Weber Hall and on the west side of the stadium parking lot.

A major student housing complex is proposed to be located on the hill north of the Campus. The site affords striking views and could serve as a focal element of campus structure.

Tastefully designed high rise structures accent the hill form. Cluster groupings of intimate, humane structures highlight social interaction. Organically designed chalet structures hug the brow of the hill, emphasizing its form.

These living facilities could serve both the Main Campus and the proposed undergraduate campus to the north.

The physical plant and maintenance facilities occur at the intersection of Kimball Avenue and Denison Avenue. Food service warehousing and maintenance are also located here.



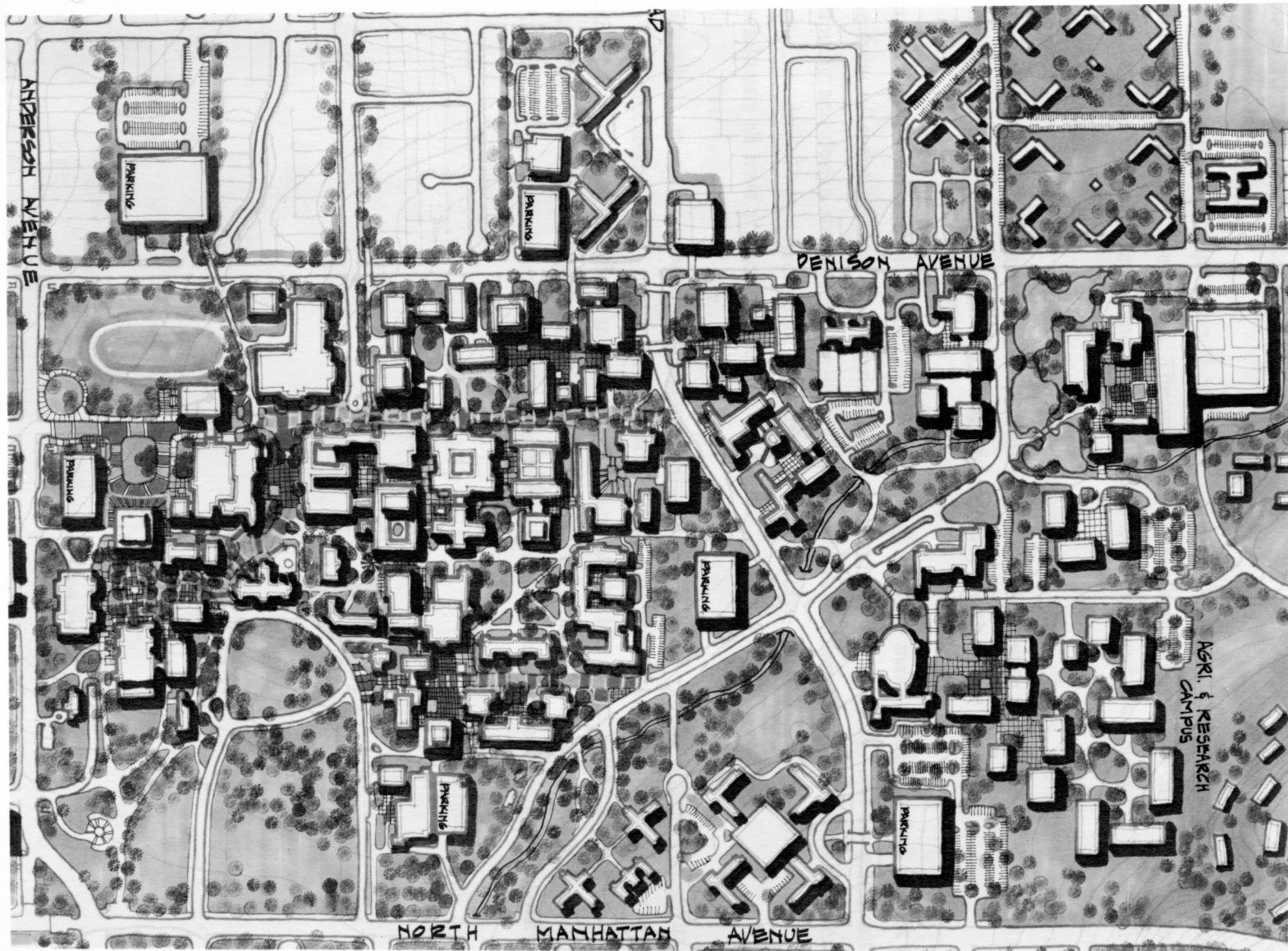
KANSAS STATE UNIVERSITY

CONCEPT PLAN

GUIDELINES FOR DEVELOPMENT - 2000



J. R. RITTER L. A. THOMAS
KANSAS STATE UNIVERSITY - KSU



PHASING AND IMPLEMENTATION

Phasing of any building program should be broken into planning increments which will satisfy immediate need and future need. The number of years a phase covers is immaterial as long as a target date, or goal is set. Immediate and future need are the basic phases.

The thirty year planning period has been broken into three phases. Immediate need, a five year program to be realized in 1975, an intermediate phase with a target date of 1985, and a long range phase, which would look to the year 2000, are the three phases.

Implementation of the plan will require a planning staff to make more detailed studies as to the type of space needed, to set priorities, procure funds for building, and to make detailed planning and design studies. Such a staff should be a team composed of the various design and planning disciplines. Architects, Landscape Architects, Planners, Engineers, Artists and Sociologists all have a place on such a staff.

Naturally a continuous building program of this magnitude will require a great deal of money. It is inconceivable that the State can accomplish the task ahead without massive Federal assistance. The general public must become aware of the impact education has on their social and economic status, even though some individuals may never set foot in a college classroom. The advancement of education at all levels should become a number one national priority.

CONCLUSIONS

The future form of the university suggested by the conceptual plan for the year 2000 has been based on the author's belief that the approach to Higher Education in the foreseeable futures will be similar in many ways to the present approach, despite a multitude of changes in methodology, subject matter and emphasis.

Forces for change will increase significantly in tempo. At the same time resistance to change, which is built into our governmental and administrative systems, will continue.

Junior Colleges will increase in popularity, thus lessening the geometric rate of enrollment increase at larger institutions. Never the less, students will continue to seek the academic atmosphere and excitement generated by the large residential institutions.

Within this context the trend in educational methods will be toward the use of audiovisual aids, mass media, self teaching, and more student involvement in the teaching-learning process. Classrooms will take many different forms, reflecting educational philosophy and methods. Ideally, the community and society in general will serve as laboratories of learning. This will not eliminate the necessity for traditional classroom facilities, rather it will be a supplemental classroom. Work-study programs will become more prevalent in the future, both in the professional and technical skills areas of education. Year round study and increased length of class days, plus the use of computers in classroom scheduling, will increase the efficiency of space utilization. Other innovations, such as lectures and discussion groups in student residences and community facilities, will make present academic space standards inaccurate in the future. However, increased space requirements of other university functions, such as research, will offset the trend toward less space required per student.

It is entirely possible an enrollment of thirty thousand students could be handled in the future with the same amount of contiguous classroom space as is necessary for fifteen thousand students today. Efficient use of available space, technological innovations, and a change in educational methods could make this possible. The type of space required will no doubt be different tomorrow than it is today. Whether there will be a necessity for more auditorium sized classrooms for large groups and mass media teaching, or for more dispersed small group spaces and individual study stations, will depend on the direction established by those responsible for educational planning. Change will take place and further study will be necessary in order to establish the best direction. In the process of change, the quality of the end product, the individual, should be kept in mind at all times.

Educators, administrators, psychologists, sociologists, educational planners, laymen and government officials should get together and plan the university organization of the future. Such planning will require a great deal of study and thought. [In the meantime, a framework for university growth should be established which will allow inordinate growth of a nature favorable to the educational process.]

FOOTNOTES

¹Charles G. Dobbins and Calvin Lee (eds.), *Whose Goals for American Higher Education* (Washington, D. C., 1968), p. 31.

²William R. Ewald, Jr. (ed.), *Environment and Policy*, American Institute of Planners, Fiftieth Year Consultation (Bloomington, Indiana: Indiana University Press, 1968), p. 39.

³Paul R. Hanna (ed.), *Education: An Instrument of National Goals* (New York: McGraw-Hill Book Co., 1962), p. 68.

⁴Richard N. Farmer (ed.), *World Population--The View Ahead*, Bureau of Business Research, Graduate School of Business, (Indiana University, 1968), p. 32.

⁵Educational Policies Commission, *Universal Opportunities for Education Beyond High School* (Washington, D. C.: National Education Assoc., 1964), p. 6.

⁶B. Lamar Johnson, "Preview of Change and the Junior College," *School and Society*, vol. 97, no. 2317 (April, 1969), pp. 248-259.

⁷Hanna, *op. cit.*, p. 85.

⁸Bricks and Mortarboards (New York: Educational Facilities Laboratories, Inc., 1964), p. 166.

⁹Gisela Mahlmann, "The Idea of Germany's Telekolleg," *School and Society*, vol. 97, no. 2315 (February, 1969), p. 106.

¹⁰Dobbins and Lee, *op. cit.*, p. 66.

¹¹Ewald, *op. cit.*, p. 55.

¹²John Paul Scott, "A Time to Learn," *Psychology Today*, vol. 2, no. 10 (March, 1969), pp. 47-48, 66-67.

¹³Charles C. Howes, Kansas State University, *A Pictorial History* (Manhattan: Kansas State University Press, 1963).

(Continuation of Footnotes)

¹⁴Ibid., p. 13.

¹⁵Ibid., p. 7.

¹⁶Junction City Union, April 9, 1870.

¹⁷Howes, op. cit., p. 17.

¹⁸Ibid., p. 24.

¹⁹Ibid., p. 59.

²⁰Ibid., p. 101.

²¹Ibid., p. 146.

²²Ibid., p. 172.

²³Annual Report of Kansas State Agricultural College, 1873 (Topeka: State Printer), p. 17.

²⁴Howes, op. cit., p. 17.

²⁵J. D. Walters, M.S., Columbian History of the Kansas State Agricultural College (Topeka: State Printer), p. 44.

²⁶Kansas State Agricultural College, The Industrialist (May 27, 1920), p. 5.

²⁷Kansas State Agricultural College, Second Biennial Report, Kansas Board of Regents (Topeka: State Printer, 1880), p. 23.

²⁸Kansas State Agricultural College, Fifth Biennial Report, Kansas Board of Regents (Topeka: State Printer, 1885), p. 5.

²⁹Maximillian Kern, Rural Taste (Columbia, Missouri: Harold Printing House, 1884), pp. 118-128.

(Continuation of Footnotes)

³⁰Dr. Julius Terrance Willard, *History of Kansas State College of Agriculture and Applied Science* (Manhatta, Kansas: Kansas State College Press, 1940), p. 350.

³¹Kansas State College Bulletin, *A Twenty Year Program for Kansas State College of Agriculture and Applied Science*, vol. XX, no. 2 (January 15, 1936), pp. 22-24.

³²Interview with Mr. Randolph Gingrich, April 15, 1969.

³³Minutes of Long Range Planning Committee, November 29, 1967, Kansas State University.

³⁴Edward Highbee, *The Squeeze--Cities Without Space* (New York: William Morrow and Company, 1960), pp. 1-11.

³⁵Edward T. Hall, *The Hidden Dimension* (Garden City, New York: Doubleday and Company, Inc., 1966), pp. 96-122.

³⁶Highbee, *op. cit.*, pp. 26-56.

³⁷Amos Rapoport and Robert E. Kantor, "Complexity and Ambiguity in Environmental Design," *American Institute of Planners Journal*, Vol. 33, no. 4, (July, 1967), pp. 86-89.

³⁸James J. Morisseau, "Campus", *Bricks and Mortarboards*, New York: Educational Facilities Testing Laboratories, Inc., (1964), pp. 133-161.

³⁹*Higher Education Facilities Classification and Inventory Procedures Manual*. U. S. Department of Health, Education and Welfare, Office of Education (Washington, D. C., 1968), pp. 10-13.

⁴⁰Harlan D. Bareither (ed.), *State Wide Space Survey*, State of Illinois Board of Education (August, 1968), p. 38.

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**CAMPUS PLANNING
A CASE STUDY OF KANSAS STATE UNIVERSITY**

by

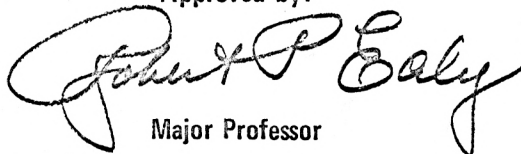
John R. Ritter
B.S. Oklahoma State University, 1961
B.L.A. Kansas State University, 1967

AN ABSTRACT OF A MASTER'S THESIS

**Submitted in partial fulfillment of the
requirements for the degree
Master of Landscape Architecture**

**College of Architecture and Design
Department of Landscape Architecture
Kansas State University
Manhattan, Kansas
1970**

Approved by:


Major Professor

ABSTRACT OF THESIS

The purpose of this thesis was to develop concepts as a guide to future University development.

The design approach was based on an investigation and analysis of the forces which shape University development in general, the history of Kansas State University development and physical planning, and the existing conditions of the University today.

It is common knowledge that the University plays a central role in society, functioning in teaching, research and extension. The total development of the individual in mind, body, and spirit should be the ultimate goal of any educational system.

A rapidly accelerating explosion in world population and in stores of knowledge, technological advancements and changing curriculums will demand growth in academic space, and a high degree of flexibility both in educational programs and space utilization.

Kansas State University has grown from fifty-two students in 1863 to its present status as an accredited University with an enrollment of 12,560 students in 1969. Physical facilities have increased from one building in 1873 to fifty-two in 1968.

Although there have been several "landscape plans" in the history of the

University, there has never been a Long Range Master Plan for campus development.

The image areas of the campus can be largely attributed to a strong concept established by Maximillian Kern's landscape plans and the devoted work of several individuals. Two of the most notable individuals who contributed their talents to campus development were Professors John W. Walters and L. R. Quinlan. Walters was planner in residence for almost fifty years before his retirement in 1927. L. R. Quinlan, Professor of Landscape Architecture and Superintendent of Grounds from 1927 to 1952, also contributed significantly to the campus environment.

Due to inadequate visualization of future needs and failure to acquire land adjacent to Main Campus, the University is faced with inadequate land area on which to expand the academic function and provide adequate parking while maintaining a desirable time-distance relationship and an environment conducive to the educational process.

In an effort to provide adequate parking in surface lots, the University has encroached on the green space of East Campus. The green space is invaluable as an image asset and as recreation space, active and passive.

The University may blindly destroy its heritage to satisfy immediate need and still be faced at some future date with inadequate surface space to supply the need for expansion of parking and academic functions.

The central space of Main Campus is being inefficiently utilized with low density, outmoded and inefficient structures occupying the center of campus. Service functions, which could as well occur outside the academic core, are also occupying valuable space. The existing floor space must be almost tripled in the next thirty years in order to meet the need of an expanded enrollment. Much of this growth must take place on Main Campus. The primary structural elements of the concept plan are natural open space and drainage channels, pedestrian corridors and urban open space, and vehicular circulation.

Natural open space wraps around the southern edge of campus and extends into North Campus via the Campus Creek drainage channel. Through traffic has been eliminated on Main Campus to allow pedestrian movement free from vehicular conflict. The floor area ratio has been increased by utilizing teaching towers and moderate rise structures. This was necessary in order to maintain a desirable time-distance relationship and to avoid destroying the natural open space on campus.

Implementation will be a continuous process. A planning staff will be needed to implement the plan.