

AN ANALYSIS AND SCHEMATIC REVIEW
OF CIRCULATION AND OPEN SPACE
ON CENTRAL KANSAS STATE
UNIVERSITY CAMPUS

by

SEUNG-KOO JO

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Approved by:

Ray B. Weisenburger
Major Professor

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1991

Table of Contents

	Page
Table of Contents	i
Acknowledgements	iii
List of Tables	iv
List of Figures	v
I. INTRODUCTION	1
1.1 Introduction	1
1.2 Objectives and issues of the study	3
1.2.1 Planning Issues	3
1.3 Issues concerning the study and relevance of study	5
1.3.1 Principles of design proposals	6
1.3.2 Contribution	7
II. HISTORICAL BACKGROUND	10
2.1 History of Physical Planning	10
2.2 Formal Characteristics and Visual Coherence	25
2.2.1 Context	26
2.2.2 Circulation and Open Space	27
2.2.3 Architectural Style	33
III. CAMPUS ELEMENTS - CIRCULATION AND OPEN SPACE	39
3.1. Circulation	40
3.1.1. Literature Review	40
3.1.2. University Streets	44
3.1.2.1 Kansas State University Context	45
3.1.2.2 Accessibility	57

Table of Contents-cont.

	Page
3.1.3. Activity Nodes	60
3.1.4. Parking Spaces	68
3.1.4.1 Present Parking System	70
3.1.4.2 Parking Issues	71
3.2 Open Space	75
3.2.1. Literature Review	75
3.2.2. Accessible Green	78
3.2.3. Positive Outdoor Space	92
IV. PROPOSALS AND CONCLUSIONS	98
4.1. Framework Proposal	101
4.2. A Proposal for Seaton Hall - Student Union Space	112
4.2.1. Development Concept	113
4.3. Conclusion	120
References	123

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List of Tables

Table	Page
1. All Scheduled Class & Sections For Fall 1990	52
2. 1990 Parking Lot Count on the Main Campus	72
3. Parking Space Distribution on the Main Campus	73

List of Figures

Figure	Page
1. Henry Worall, Plan of Grounds, Kansas State College, 1872	12
2. Maximilian Kern, Plan of Grounds, Kansas State Agricultural College, 1885	15
3. Paul Weigel and others, architect, Proposed Campus Plan, Kansas State Agricultural College, 1935	18
4. The Hare and Hare Plan, Kansas State College, 1952	21
5. Growth of the Campus	29
6. Existing Campus-1990	30
7. Existing Green Space	32
8. Anderson Hall	34
9. Dickens Hall	34
10. Chemistry-Biochemistry Building	35
11. Existing Pedestrian Circulation System	47
12. Relationship between path and place	48
13. Path System	48
14. Path 1	49
15. Path 2	50
16. Path 3	51
17. Path 4	51
18. Existing Density In Class & Lab. Student Stations	53
19. Existing Vehicular Circulation system	56
20. Campus Entrance	58
21. Node area	62
22. Core campus	64

List of Figures-cont.

Figure	Page
23. Node 1	66
24. Node 2	67
25. Node 3	67
26. Existing Parking Areas	72
27. Relationship between building and open space	80
28. Existing Building Height	81
29. Existing Open Spaces	83
30. Holtz Hall Space	86
31. Seaton Hall-Student Union Space	89
32. Proposal for Farrell Library Space	99
33. Existing Central Campus	102
34. Proposal For Central Campus	103
35. Pathway along Seaton Hall	106
36. Proposal for Holtz Hall Space	110
37. Existing Seaton Hall-Student Union Space	114
38. Analysis Diagram of the Existing Space	115
39. Concept Diagram	115

I. INTRODUCTION

1.1 Introduction

A remarkable trend has been developing during the last 50 years: society has become more and more committed to education regionally, nationally, and universally. The issues vary according to circumstances, but every community is concerned more than ever with the quality and quantity of its schools and colleges. As a city should reflect the aspirations of its citizens, and as a house helps decide the pattern of life for a family and consequently helps form the personality of its residents, so the physical plants of colleges and universities help form the quality and pattern of higher education.

After a short period of limited interest, campus planning has once again become one of the major challenges of architects and planners. The final outcome of physical layout seems to be very simple, but the procedures involved are exceedingly complicated. In order to deal with focused problems in higher education and in guiding gradual or evolutionary changes, Marvin Peterson (1986) suggested that we need to know a great deal about institutional planning--its structure, processes, and techniques. Furthermore, he pointed out that:

It would seem that institutional planning in the view of the future should be coordinated at the highest level and be well integrated. Also the analytic elements of such planning will need to make use of more sophisticated decision - support systems developments including access to information networks that provide important comparative information on higher education and

information on critical environmental features.

Every project of university planning, whether it is large or small, must be approached and solved by a group of experienced professionals and non-professionals with deliberation, money resources, time and experience.

Campus planning differs according to various factors. It involves the type of institution itself, the society to which it belongs, and the geographical location. When we think of a college, we think of a place. We immediately associate the pursuit of knowledge and a geographic setting for that activity. In the case of higher education, we call the geographic setting a "campus". All who have studied in a campus environment recall vividly the characteristics of the place, as well as the experiences that they had there. The geographic setting, then, the place, becomes inextricably pronounced in the minds of its users as an element in their educational background.

The particular characteristics of a place--its image, its organization, its efficiency--can enhance or detract from its purpose. In the present milieu of sophisticated techniques and an astonishing rate of growth of knowledge, it has become necessary to provide specialized facilities and programs for a career in most fields. The increased sophistication of teaching methods and facilities creates a parallel increase in the need for intelligent planning for the design and development of a college campus. There is no absolute way of solving the problem with a general rule.

1.2 Objectives and Issues of the Study

Womack and Podemski (1985) emphasize the importance of setting goals to be used as criteria for decisions throughout the planning process. They also suggest that these goals must show that the system has incorporated carefully the requests of each campus element and activity and has made decisions which present a realistic picture of what can and will be accomplished by these units individually and by the system as a whole.

The proposed plan will incorporate concepts related to the character and context of Kansas State University. These proposals are designed to ensure a future which responds to present constraints and to 127 years of tradition at Kansas State University. The objective of this study is to identify the elements which have lasted and those which should be modified in order to provide for the future needs in a orderly, formal, and functional pattern of growth that will represent the image and quality of the university.

Unplanned growth can easily lead to a loss of coordination between parts, and chaos in the whole. In today's fragmented scene we can no longer rely on unplanned piecemeal construction to create organic order. The master plan attempts to set down enough guidelines to provide for coherence in the environment as a whole--and still leave freedom for individual buildings and open spaces to adapt to local needs. Nearly every large campus has adopted some form of master plan. (Alexander, 1975)

1.2.1 Planning Issues

The schematic proposals chart a future course which is sympathetic to the past and present. There are four primary

issues: preservation, integration, regeneration, and adaptation.

Preservation: Preservation of the land-grant dream, the quad concept, the major open space, and the unique architectural and spatial qualities of the campus is imperative if meaningful continuity is to be ensured. This study focuses on physical direction and the opportunities to intensify the physical development in the central campus without destroying the character. Womack and Podemski (1985) pointed out that in identifying the individuality of each campus, a plan helps communicate that uniqueness to other campuses and demonstrates how the needs of the entire system are being met by cooperation among the campuses or campus elements. By clarifying the campus background and formal characteristics, the plan identifies the dominant order and force of the campus.

Integration: Functional and aesthetic integration of new construction into the existing campus fabric presents the challenge of the proposed master plan--a plan based on a campus analysis which expands the criteria for development beyond narrow questions of programmatic need. Integration of new construction can be achieved by first analyzing existing campus elements in terms of circulation and open space. Thus design criteria will encompass broader qualitative and quantitative planning issues for the proposed master plan.

Regeneration: Regeneration reflects a commitment to the

vitality of the existing campus. New campus structures are often planned at the expense of existing open space. However, this plan will avoid such problems while the developing and placing increments of construction which address existing building deficiencies. The study is to develop a conceptual master plan to meet the existing demand and the future growth of the campus.

Adaptation: Finally, the proposed master plan should be adaptable. New facilities should accommodate programmatic expansion and contraction, technological innovation, and constantly evolving teaching and research methods.

The plan is not a statement of a preconceived, idealized future. Rather, it reflects a methodology for working the whole canvas, building to reinforce and complement what exists. Preventing construction of ill-conceived buildings, justified on the basis of expedient solutions to immediate problems, is critical to the quality of the university environment and its future.

1.3 Issues concerning the study and relevance of study

Generally, the master plan articulates university concerns and criteria in terms of generic issues. Its purpose is to provide a basis for evaluating the many alternatives which will surface throughout its implementation. Since a master plan is intended to create a global order, a drawn, physical plan

illustrating what a campus would become is traditionally the result of a campus planning process. By using the conventional master plan, this study will identify, evaluate and plan the organizational, spatial, and environmental characteristics on the central campus critical to the Kansas State University's identity while increasing the intensity of development and solving circulation and open space problems.

1.3.1 Principles of design proposals

There are three principles to develop a plan in this study:

First is the retention of the character and context of the campus. Throughout the history of Kansas State University, the university has maintained its unique bucolic characteristics of physical development. By describing its background and formal characteristics, the plan identifies the dominant order and force of the campus.

Second is the accommodation of circulation. The conceptual goal of the plan is applied specifically to the areas of circulation and open space on campus. Regarding the circulation, the goal is to provide a safe and convenient circulation network which, by virtue of its design and integration with the main campus fabric, complements and enhances the visual and perceptual experiences of its users. The integration of circulation systems, as well as the resolution of conflicts between them, recognizes safety as a primary and uncompromised objective.

Third is illustrating how building and research space may be added according to the university's demand. The implementation of the plan assumes the preservation of positive space and upgrading of negative space. Where possible, increments of construction will be sited in negative areas and serve as the catalyst for their upgrading.

1.3.2 Contribution

A master plan is intended to create an order. Since a master plan illustrates what a campus would become, this study will have two main contributions to the master plan.

First, the author expects to present at least one plan solution which incorporates a response to the planning issues(p.3) and the principles(p.6). Although the plan is merely a framework around which the university can continue to grow in an orderly manner, the conceptual plan may represent the maximum desirable development which can carry out the goals, and maintain and enhance the environment with imageability. The central campus analysis and planning procedures should be able to be integrated into the overall campus development plans.

Second, the author expects to show schematically how the campus may be modified. The schematic plan will incorporate concepts designed to ensure a dynamic future which responds to present constraints and 127 years of tradition at Kansas State University. The plan's objectives are to define a development pattern which, over time, will guide an incremental response to

the university's changing needs. Therefore, the plan can show the elements which should be modified to provide for future needs in an orderly, formal, and functional pattern of growth representing the image and quality of the university.

By analyzing the circulation and open space of the campus, it is possible to look at the central campus and mark the places where the elements have been broken. The analysis takes the form of a single map, supplemented by separate maps for each adopted element. Adopting campus elements in campus planning is important because the result provides a comprehensive campus information and orientation system which ensures safety, provides clarity and understanding, and enriches the experience of the campus community and its guests. The strength of this analysis is to show what is desirable for the future.

Finally, the objective of this study is to produce a conceptual master plan by documenting the evaluation of the central campus in terms of the circulation and open space; and to recommend improvements for the campus. By following the recommendations, the university may retain much of the quality of its traditional campus environment. The existing circulation and open space system for the central campus area will be described in order to develop a detailed schematic study for a small specific area. The purpose of the study is to show how a segment of the large system can be developed to promote functional goals; social goals (interaction among users);

aesthetic goals (a pleasant and enjoyable environment); and design and context goals. If the hierarchy of campus planning is clarified through analysis and diagnosis, the master plan can be developed in effective ways.

II. HISTORICAL BACKGROUND

It is one of the aims of any campus plan to inject the ideals of the university as an academic, social and cultural organization, into the proposal for its physical organization. Like so many of the nation's other land-grant universities, Kansas State University was in the position in the mid-19th century to create a new campus, specially designed for its educational and research mandates. Thus the planners had a clean slate on which to draw a vision for the future that would make as much sense in the 21st century as it did in the early 20th. Currently, a campus master plan and design guidelines must be prepared to preserve the campus, and to guide future developments so that the academic, functional and social ideals can be accomplished in a successful and flexible manner. Therefore the historical background is valuable in understanding the basic structural and physical framework of Kansas State University.

2.1 History of Physical Planning

Until the late 1960's, Kansas State University had not developed a long-range plan. However, there always have been people concerned with campus development and planning. The university 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 21,137 students in

1990. In addition, physical facilities have increased from one building in 1863 to ninety-six in 1990. Kansas State University has grown and expanded in many ways and for many reasons. The growth is obvious in that the size of the campus has increased from 100 acres in 1863 to about 668 acres in 1990. There is no doubt that Kansas State University needs a comprehensive plan to provide coherence and continuity while directing growth within an imageable and understandable campus environment. It must be emphasized that the image and quality of the university should be part of the function of a comprehensive plan.

There have been several campus plans in the history of the university. In 1859, Bluemont Central College, which was the precursor of Kansas State Agricultural College, was established. The College erected a three story classroom building, which was located about 1 1/2 miles west of the present campus at the corner of Claflin Road and College Heights. Although the 100 acre site might have been considered large at that time, no campus plan was carried out. The Kansas State Agricultural College which was later to be named the Kansas State University of Agriculture and Applied Science was founded on February 16, 1863, under the Morrill Act, by which land grant colleges were established. In 1871, President Denison moved the campus to the present location from the original Bluemont Central college site. With this move, the campus was located on better soils to conduct agricultural research experiments; apparently the

move was made for this purpose only. With the aid of Manhattan township whose citizens voted \$12,000 in bonds for the purchase of the new campus site, the university was moved to a site close to city rather than to the land-grant lands. As a result,

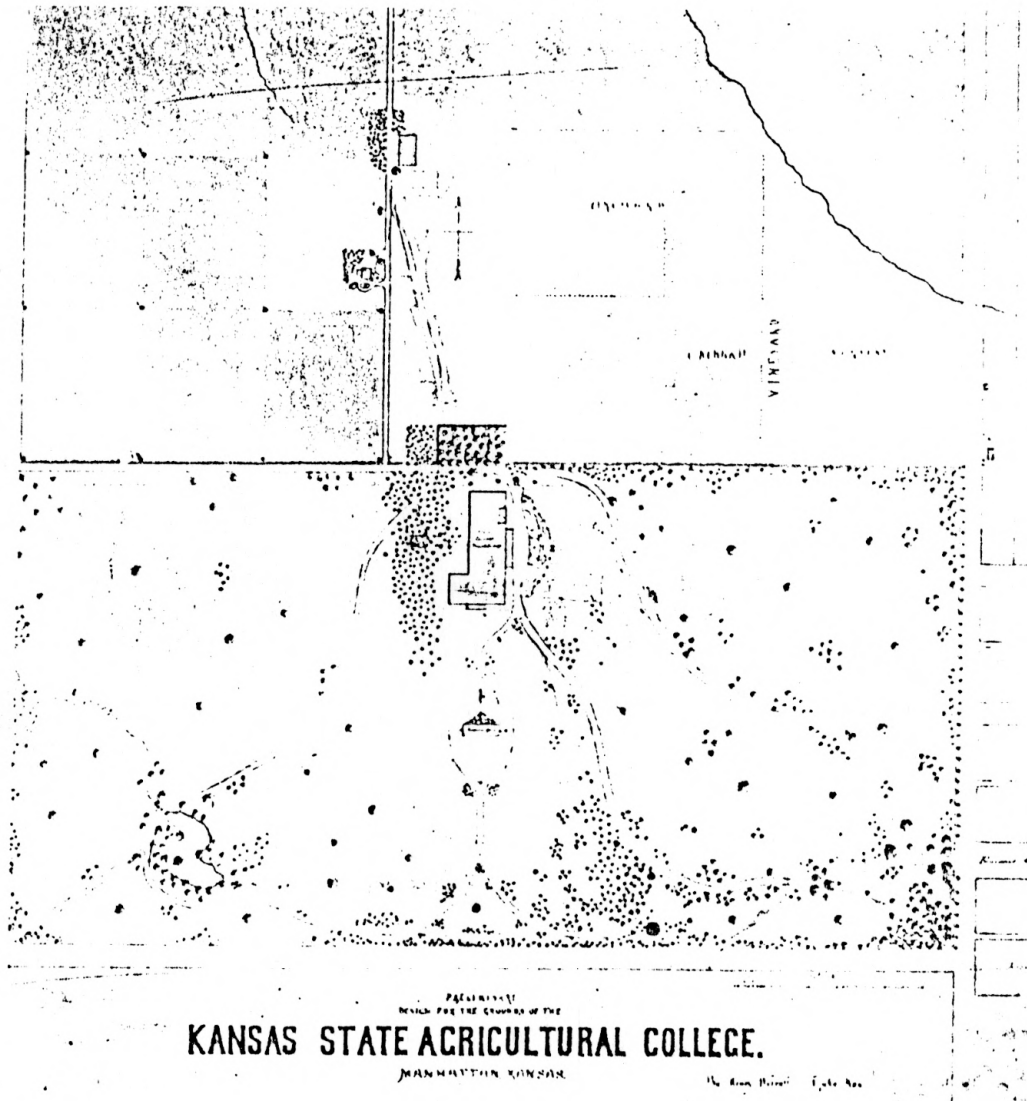


Figure.1 Henry Worrall, Plan of the grounds, Kansas State College, 1872. (Source: Office of Planning and Architectural Services, Kansas State University)

although vacant land still remained between the two entities, the university could easily make contact with the city of Manhattan.¹

In 1872, the first campus plan for the development of the new site was designed by Henry Worrall, a Topeka artist and devotee of horticulture. The need for some organization of buildings, paths, roads and planting was recognized when he submitted a design for the campus. He laid out the original grounds and planned an extensive, naturalistic landscape scheme with the outlines of a large academic building as its centerpiece(Fig.1). He simply divided the site experiments, and emphasized border plantings to shield the upper section from view.² The plan emphasizes both functional and visual concerns. As would benefit an agricultural college according to Worrall's plan, the first structure erected on the new site was a barn. The barn, which was later known as both Farm Machinery Hall and Farm Mechanics Hall, was "a broad-corniced, massive looking stone structure, with numerous wings, towers, stairways, elevators, and offices."³ The barn was never used for this

¹ John D. Walters, History of the Kansas State Agricultural College, Manhattan, Kansas: Printing department of the Kansas State Agricultural College, 1909, p.17-19

² Richard Longstreth, From farm to campus: Planning, Politics, and the Agricultural College Idea in Kansas, Winterthur Portfolio, 1985 Summer-Autumn, Vol.20 no.2-3, p.153

³ Walters, op. cit., p.37

purpose because it was needed for classroom space.

In 1877, Professor John D. Walters, who originated the Architecture Department at Kansas State, joined the faculty to organize a formal course in architecture.⁴ Although there is no record of his activities in campus development, he influenced campus development by encouraging the development of a plan. He was active in university administration and supervised the location of buildings and their construction during the administration of President Nichols(1899-1909).

In 1884, The committee President George Fairchild formed to choose a designer for a master landscape plan, chose Maximilian Kern, one of the best landscape architects of his time. His scheme was officially approved "as a general guide for planting and development" in March 1885 (Fig.2).⁵ Since President Fairchild emphasized that the agricultural college "must be a farm in so far as growing farm crops, orchards, vineyards and gardens make prominent part of surroundings,"⁶ Kern was concerned with both functional and visual planning for

⁴ Julius T. Willard, History of the Kansas State College of Agriculture and Applied Science, Manhattan, Kansas: The Kansas State College Press, 1940, p.24

⁵ Kansas State Agricultural College, Fifth Biennial Report (1885-1886), Kansas Board of Regents; Topeka, Kansas: 1885, p.5

⁶ Walters, op. cit., p.68

the agricultural college.

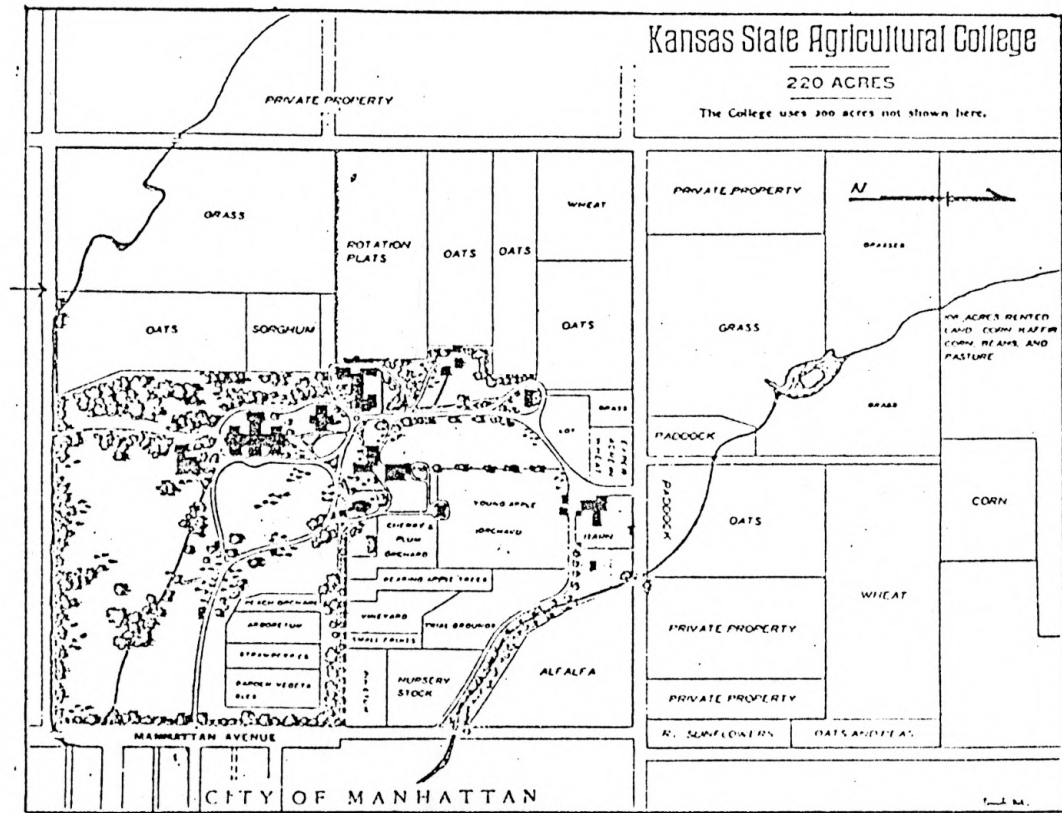


Figure.2 Maximilian Kern, Plan of grounds, Kansas State Agricultural College, 1885. (Howes, Kansas State University: A Pictorial History 1863-1963, p.18)

Although the location of roads and paths has changed several times during the past 105 years, several of the trees planted and the green belt in the southern part of the campus have survived. Longstreth evaluated Kern's plan as follows:

The plan enriched the established duality of building forms: the collective image represented an institution, but the components marked it as one with a special purpose. While this was no more a

place of beauty, it was no less apparent as a place of work. Farm and campus were initiated to express the agricultural idea.⁷

In the absence of a master plan for physical facilities, building location was determined piecemeal, and the buildings themselves were designed by a succession of State Architects.⁸

Although the buildings were designed by different architects, they have an element of continuity in architectural style and building materials. The turn of century brought a period of intensive growth.

During the administration of President Ernest Nichols (1899-1909), the number of new buildings initiated was the largest undertaken by any administration until Dr. James McCain became president in 1950. With appropriations, President Nichols accomplished the construction of seven new buildings, two major building additions, and one extensive remodeling (Holtz Hall). Fortunately, these new buildings were harmonious with existing buildings, resulting in a continuing coherence of the campus.

During the Waters administration (1909-1917), construction of Agricultural Hall (Waters Hall) began in 1912. The east wing of the Agricultural building was added in 1913. This was the only major building constructed during the Waters

⁷ Longstreth, op. cit., p.170

⁸ Ibid. p.174

administration.⁹

In 1934, the council of deans instituted a study that was to lead to a twenty year plan for Kansas State College of Agriculture and Applied Science. In 1934 and 1935, a twenty year program for the College was drawn up by the divisional facilities and various committees. In fact, it was prepared by the faculty, with the assistance of alumni, students and others. In its preparation, three basic principles held sway:

- 1.continued fidelity to the basic ideals of the College;
- 2.increased concentration of resources to avoid offering excessive courses or attempting research where the result might be quantity rather than quality;
- 3.increased liberalization of its education.¹⁰

Part of the program was a list of recommendations made by the committee for the long-range campus development (Fig.3). The following is a list of recommendations of the proposed plan.

- 1.Rigid adherence to the policy of constructing college buildings of native limestone.
- 2.The preservation 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.
- 3.Development of both sides of Denison Avenue as a western terminus of the campus.
- 4.Continued development of the campus as an arboretum.

⁹ Willard, op. cit., p.236

¹⁰ Kansas State College Bulletin, A Twenty-Year Program for Kansas State College of Agriculture and Applied Science, 1936, Jan.15, Vol.20, no.2, p.6-7

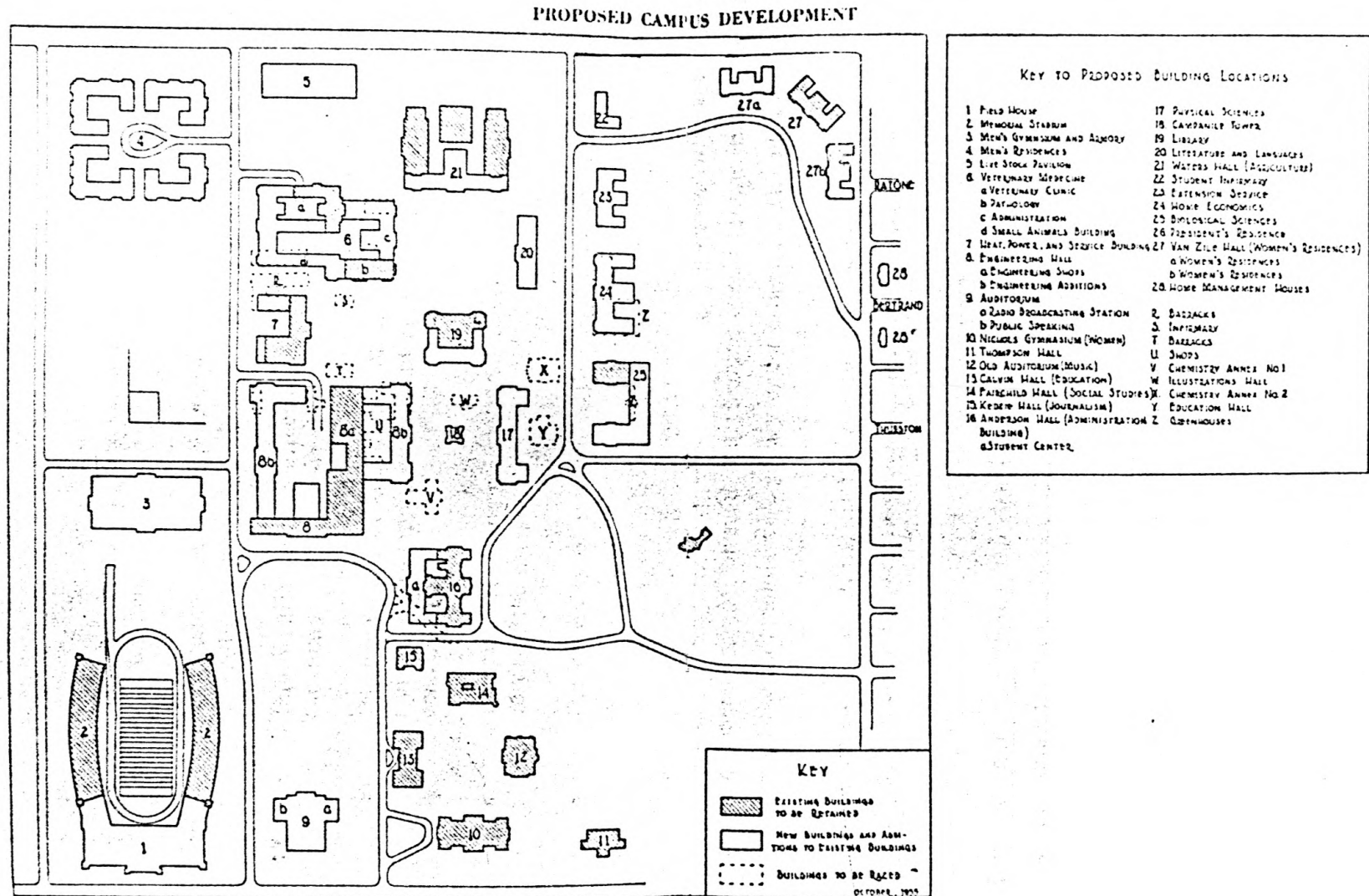


Figure.3 Paul Weigel and others, architects, Proposed campus plan, Kansas State Agricultural College, 1935. (Kansas State College Bulletin, 1936, p.24)

- 5.Exclusion of all incidental decoration from the campus that does not contribute meaningfully to a unified campus development plan.
- 6.Strict adherence in the future to a uniform architectural style for college buildings.
- 7.Provision as rapidly as practicable of some of buildings on campus.
- 8.The making of a large model of the proposed campus development.
- 9.The installation, when practicable, of an irrigation system for the entire campus.
- 10.Improvement in the effectiveness of the campus as a bird sanctuary.
- 11.Encouragement of alumni and other friends of the college to make gifts of appropriate statuary for purpose of campus decoration.
- 12.The removal of the college radio towers to a site on the hills north of the campus.
- 13.The providing of roofs of some pleasing uniform color for all college buildings.¹¹

The plan showed some major expansion in buildings. In addition, the loose, open quadrangular pattern, softened by naturalistic plant arrangements, remained the model. Ways to maintain the coherence, the mass, materials (native limestone), arrangement of buildings, and the campus landscape as an arboretum were described. Today, it is obvious that many of their recommendations have been observed, an example being the preservation of the oval in front of Anderson Hall.

Due to the great economic depression of the 1930's and

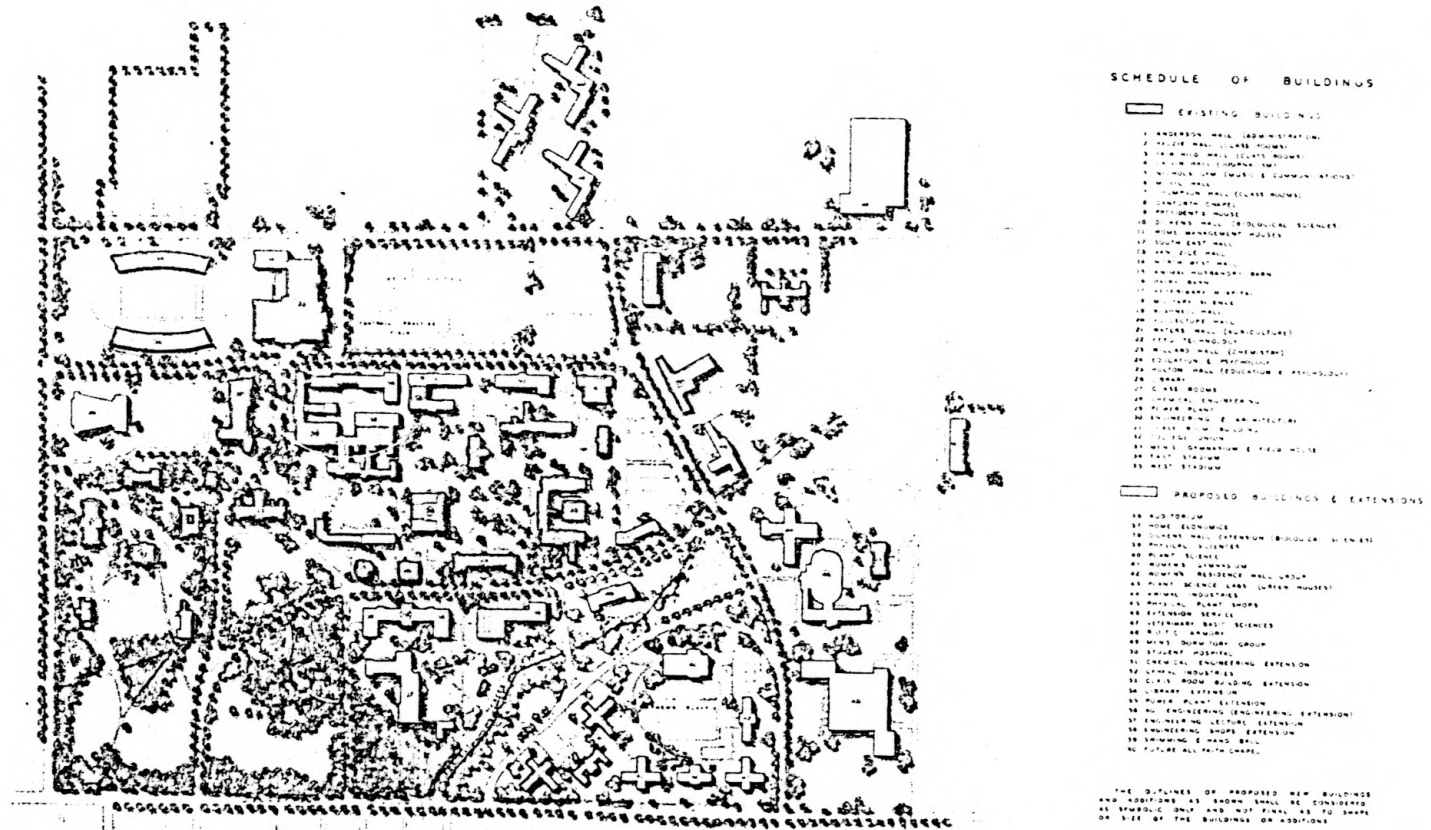
¹¹ Ibid, p.22-23

World War II of the early 1940's, only one building for classrooms was built on campus from 1925 to 1949. During this time, enrollment rose from 4,031 to 8,366. After World War II, more Army barracks were built, primarily on the southeast corner of campus, which came to be called "Splinterville," near Aggeville. By 1950, forty percent of the classes were held in these structures, giving the university more the appearance of a military post than a university.

In 1952, the Hare and Hare plan was developed by the Kansas City landscape architecture and planning firm. They proposed a campus plan for an enrollment of 10,000 to 12,000 students (Fig.4). Although the architectural department faculty prepared a new forty year plan in 1951, the Hare and Hare plan was officially adopted.¹² There was no process to implement it. Since in the 1950's the campus developed rapidly and any other statement of policy was not available, implementation was achieved by faith in the physical plan rather than by policy making. Although it was nothing more than a physical plan, the site plan prepared by the Hare and Hare proposal did guide campus development for a number of years.

In 1968, the office for university planning and Capital Construction was established and was directed by the Assistant Vice President for Planning. At the same year, Caudill Rowlett

¹² Longstreth, op. cit., p.179



PROPOSED CAMPUS PLAN
FOR AN ENROLLMENT OF
10,000 TO 12,000 STUDENTS

KANSAS STATE COLLEGE
MANHATTAN · KANSAS

Figure.4 The Hare and Hare plan, Kansas State College, 1952
(Kansas State University, Archives)

Scott Architects, Planners, and Engineers in Houston, Texas, proposed the physical planning process for the Kansas Board of Regents institutions of higher education (six institutions). As a working tool, the physical development planning manual contained guidelines both for the initial planning endeavor and for the process. The information in the manual related directly to the activities and responsibilities of all individuals and offices involved with planning. In the late 60s, the university was involved with a struggle of trying to catch up with its needs and its fast growing student body. In 1969, Professor Ray Weisenburger, a faculty member in Regional and Community Planning, in collaboration with university planner Vincent Cool, proposed a campus plan for the Veterinary Medicine Complex. The plan was supported by the Veterinary Medicine Fund.

By 1970, Kansas State University had become a major university with 13,149 enrollment. Many new buildings were connected to the main complex, and some were built at the edge of the existing campus. With the rapid increase of the campus in size, complete centralization has proven to be difficult.

In 1972, the long range planning committee was composed of four students, including the student body president and senate chairman; the president of the Faculty Senate; and nine other faculty and administration members. The university's long range

planning committee was responsible for appraising all long range building and all aspects of physical planning for the university. The long range planning committee's Executive committee was working toward continuity in building sites and architectural styles, while the guidelines subcommittee had prepared an eight-page report consisting of a set of policies for future campus projects in 1973. The list of guidelines is divided into eight categories: land use, circulation, landscape, construction, sound, service, athletic facilities and housing. The environmental task force set up the frame work in which all building, planning and landscaping developments would take place. In 1977, in order to increase efficiency in physical plant operation, that area was divided into seven units: security and traffic; architectural services; building and grounds; landscape and campus planning; space allocation; utilities systems; and support systems. In 1979, establishment of the office of Provost gave new dimension to the university's academic efforts. It offered new opportunities for involvement by administrators, faculty and students in the process of long-range planning and academic decision-making.

A ten year capital improvements plan is filed annually with the Kansas Board of Regents. The Ten-Year Capital Improvements Program for 1992-2001 in 1991 contained a prioritized plan for meeting physical facilities needs of the University. Among the projects in high priority for the current ten-year program are the Plant Sciences II Building addition, Seaton Hall East Wing

renovation, Calvin Hall renovation & addition, Animal Research Center, and Farrell Library addition.¹³

At present, a comprehensive plan for future development does not exist. Where is the university's long range plan, and furthermore, the long range planning process? There have been far too many fragmented decisions and hasty reactions to foreseeable change in the recent past. Without the benefit of sound planning and a willingness to respect the recommendations outlined in a long range plan for the campus, the university will continue to witness negative impacts on the overall quality of the university, and nearby neighborhoods. An essential feature of an effective master plan is its flexibility to changing situations and needs.

The long range plans for the development of physical facilities at Kansas state University should be kept under continuing review by the university to assure that the most urgent needs of the university are met. The university should turn its attention to efforts to build a constituency for comprehensive planning and good design, or it will face the consequences of aimless drifting.

¹³ Kansas State University, Proposed Long Range building Requests: Fiscal Years 1992-2001, Facilities Planning Office, 1990

2.2 Formal Characteristics and Visual Coherence

The word "campus," which means "field" in Latin, sums up not only the unique physical qualities of the American college, but also its characteristics as a self-contained or self-sufficient community and its architectural expression of educational and social ideals. Shapes of campuses have been influenced as much by the social and educational ideals of the time as the actual physical planning itself.

In campus planning, not only the functions of a specific building but the way the building fits into the overall design of campus functions and growth should be considered.

Longstreth comments on this interrelationship:

THE GRAND DESIGN—a master plan that is large in its scope, complex in its parts, and usually the product of a nationally prominent architectural firm—has been the most studied aspect of American Collegiate planning. As innovative and influential as some designs of this order have been, they afford only one perspective on the complex history of campus development.¹⁴

Basic elements within such a building complex are organized to relate efficiently to each other. These elements are related to a larger framework of campus circulation systems.

It is widely accepted that the university's landscape design and building design should express or reinforce its academic values. A campus' physical character - its forms,

¹⁴ Longstreth. op. cit., p.149

spaces, styles, visual messages - provide the most tangible, direct, and unsuppressible expression of the university's mission. Most of the other ways of experiencing the institution are much less tangible than the individual's perception of the university's built form and visual character.

2.2.1 Context-Kansas State University

Originally, Kansas State University was founded with an informal, bucolic character along meandering roads. The spaciousness of the area and the generally rural character of the campus were appropriately expressed by the term "campus." The most remarkable thing was the conception of the college not as a separate entity, but as an integral part of a large community whose special physical character would promote a beneficial environment for the students.

Unlike other colleges which are organized in a formal, hierarchial, often symmetrical manner, the buildings at Kansas State were informally scattered in a park-like campus, at a land grant institution made possible by the Morrill Act and expressing modest rural values.¹⁵ Next to the rural character of the campus, its most significant physical quality is an impressive aesthetic and spatial cohesiveness. This strong and easily perceived campus organization resulted from the visual interconnection of discrete, well-defined spaces.

¹⁵ Paul Turner, Campus: An American Planning Tradition, The Architectural History Foundation New York, The M.I.T Press, Cambridge, 1987, p.146-156.

An informal design was appropriate to a land grant institution. The idea of the campus as an informal group of buildings in a park-like setting gave the flexibility needed for future development. It also made it possible to accommodate the unforeseeable future needs of the university. Thus, the campus and buildings are a physical expression of the land-grant idea.

The campus represents an unusual example of 19th century collegiate planning. Under the direction of John Anderson, second President of the University, the campus was developed, not as an formal imposing institution, but as a small artisan's village.¹⁶ President Anderson hoped the college would appear like a prosperous Kansas farm. This is perhaps the only case during the 19th century when a state college or university sought to embody regional conditions rather than a national ideal.¹⁷

2.2.2 Circulation and Open Space

In 1871, a bond issue for \$12,000 was voted by the citizens of Manhattan that allowed the college to purchase approximately 160 acres of land adjacent to the city. The boundaries of this 160-acre tract of land were Anderson Avenue, Old Claflin Road to the north, Manhattan Avenue to the east and Denison Avenue to the west.¹⁸ This site now represents the main campus of Kansas

¹⁶ Turner, op. cit., p.150

¹⁷ Longstreth, op. cit., p.159

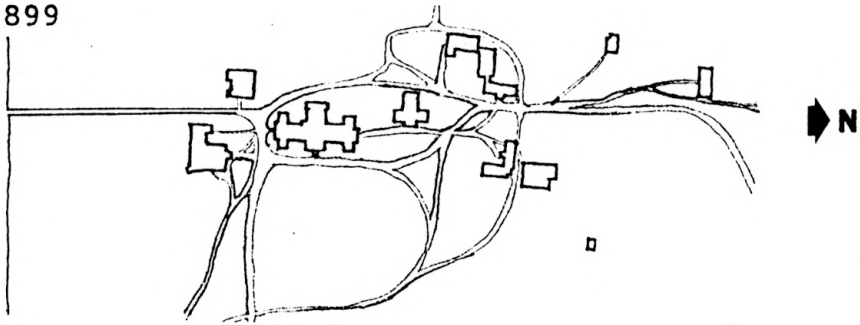
¹⁸ Willard, op. cit., p. 405-406.

State University.

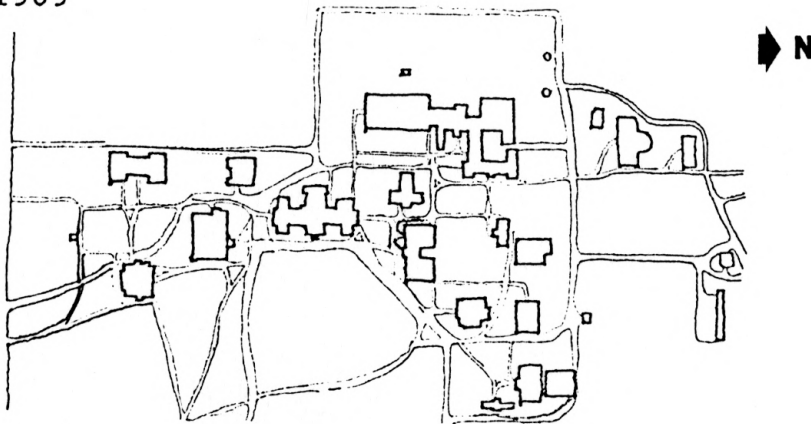
The pattern of the old campus was a loop system (Fig.5). As shown in the 1899 and 1909 maps of the campus (Fig.5), several of the roads or streets served a dual purpose as a corridor for pedestrian movement and activity, as well as for vehicular movement. As the campus expanded, both vehicular and pedestrian conflicts grew disproportionately to enrollment: Pedestrians made more external trips (around Anderson Hall), and vehicular traffic increased in speed (horse vs. car). The evolution of the present systems of circulation on the main campus is shown in Figure 5, Growth of the campus, and Figure 6, Existing campus. The circulation systems paralleled the new buildings on the campus for its first 50 years. However, from 1939 to the present, vehicular and pedestrian paths have undergone little change even though an enormous building program has been undertaken to accommodate increased enrollments. Other strong characteristics are the narrowness of the interior streets and the meandering path system in a park-like setting. These patterns might be implemented for functional and aesthetic reasons: the land grant institution concept and bucolic campus.

Also, the city arterial street system serves the campus as a distributor loop around the main and north campus areas. Complementing this loop system is Claflin, which provides cross-

1863 - 1899



1900 - 1909



1910 - 1939

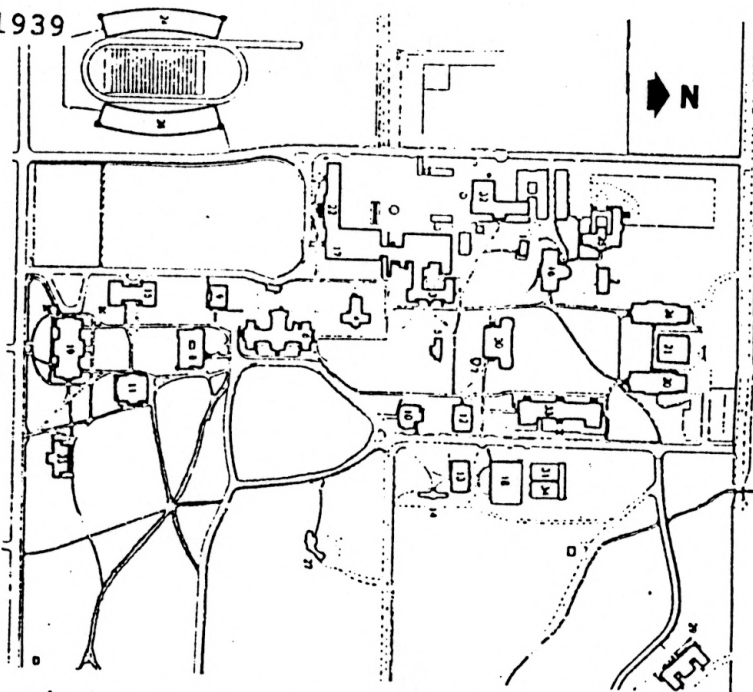


Figure 5. Growth of the campus

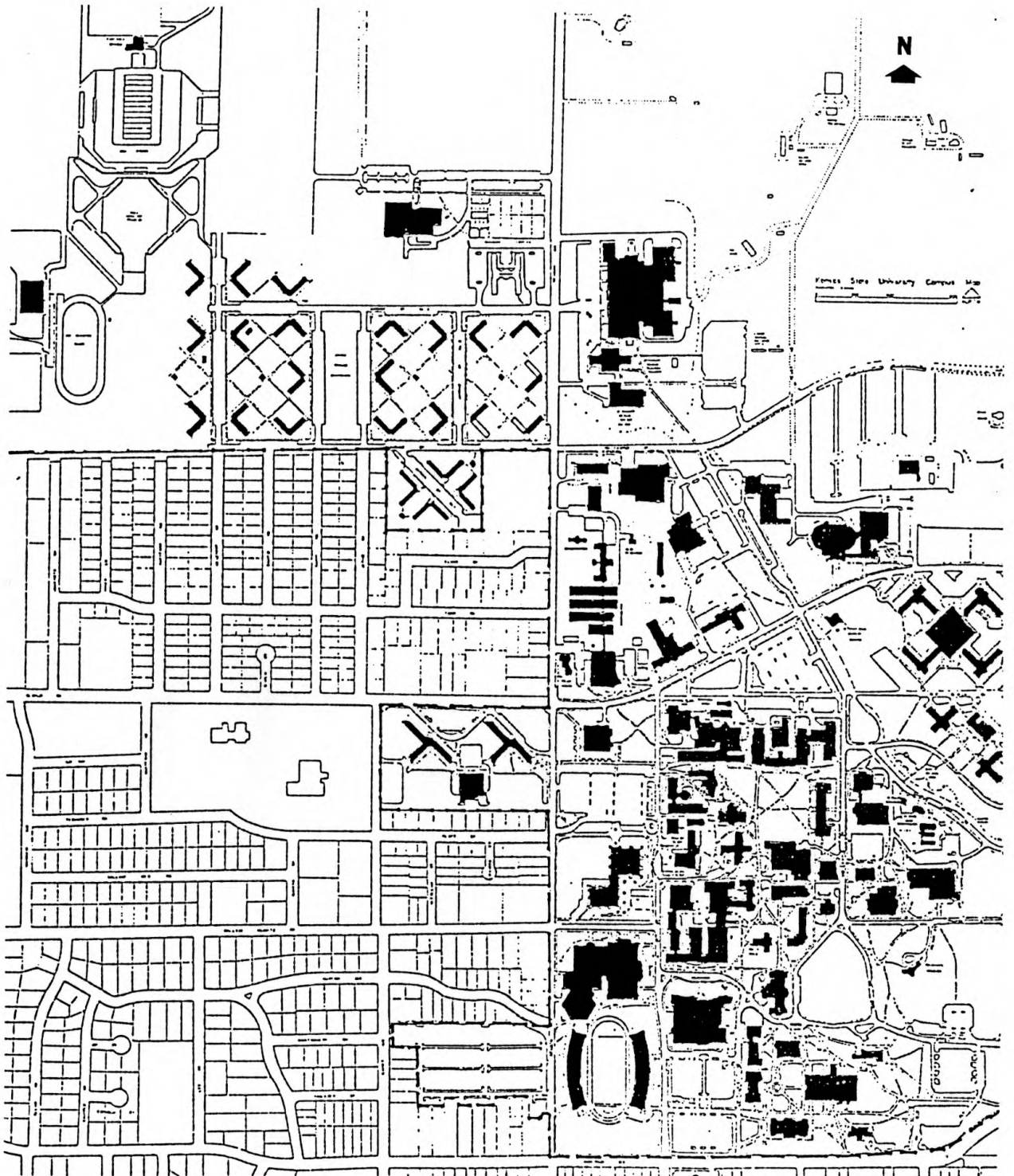


Figure 6. Existing Campus-1990

campus circulation midway between the north and south campuses and thereby creates secondary loops. Moreover, the pattern of the circulation system is based on a grid system, following the city grid system. Since the street system was designed for 1920's traffic, the streets no longer have the capacity to handle both circulation and parking. As a result, they have become virtual through streets. Today, the city arterial system which surrounds the campus, consisting of Denison on the west, Kimball on the north, North Manhattan on the east, and Anderson on the south, provides good intra-city and regional connections to the campus even though needed improvements remain in streets such as Claflin and Denison.

Building masses, scales, heights, roof shape, and setbacks has been designed to be generally compatible with the surrounding structure. Therefore, open spaces tied these buildings together and blended them with each other to produce the bucolic image of the campus. Throughout the history of the university, the original idea of the campus as an irregular and picturesque arrangement of buildings in a natural setting has been followed. Thus the continuous green space became the single most common denominator on campus.

The university has expanded in many ways and for many reasons. Many new buildings were connected to the main campus, and some were built at the edge of the existing campus. However, there have been three remarkable green spaces (Fig.7)

among the campus' original sites: Anderson green space, South Quadrangle, and Main Quadrangle.

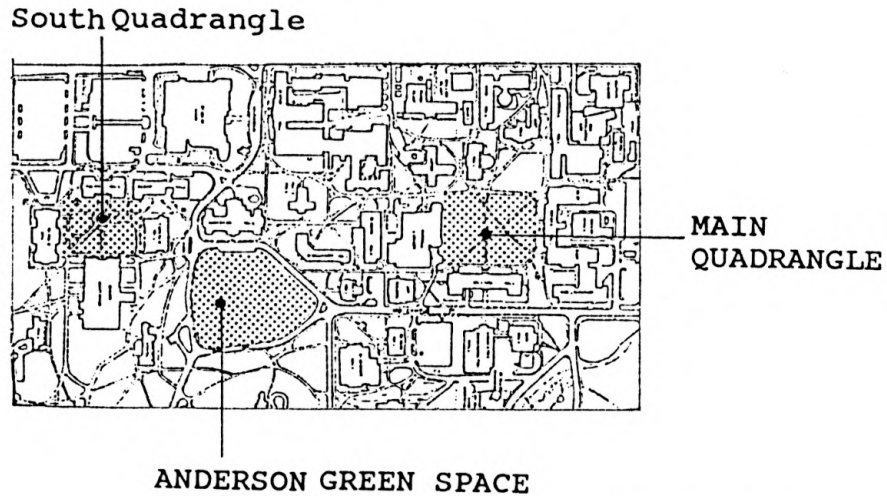


Figure 7. Existing Green Space

The Anderson green space is a historic and landmark space. Anderson Hall, which was built in the mid 1870s, reflected the bucolic vision: it was small, modest, and placed informally next to a kind of village green. The space has maintained the original oval shape since Anderson Hall was established in 1879 (Fig.5). This space has a memorable, dominant quality. Today, it is the focal point of the campus visually and symbolically.

The half oval of buildings formed by Nichols, Calvin, Fairchild, Kedzie Halls, and McCain Auditorium form the South Quadrangle. Those buildings overlooking grassy slopes define the edges of a picturesque rather than formal quadrangle. With establishment of Nichols Hall in 1911, the enclosed quadrangular form made sense simply in terms of planning and land use.

Main Quadrangle is a landmark. The space was formed with the establishment of Willard Hall in 1939. The quadrangle is a collection of buildings by diverse architects constructed over many years, enclosing a large rectangular space through adherence to the campus plan. It is clear that the quadrangle was clearly defined by the linear concentration of all academic and service functions with direct connection to the rest of the campus. The quadrangle was functional when placing the different buildings, but at the same time it has aspects of aesthetics, representation, and symbolism.

In addition, there is a remarkable green belt in the southern east part of the campus. Although the system of roads and paths has changed several times, the trees and green space have survived and currently are flourishing.

2.2.3 Architectural Style

Although many of the buildings house similar functions, their exteriors present quite a variety of contrasting forms. The architectural character of campus buildings are constantly changing according to the time period. Many of not most buildings deny pure stylistic labels. They may represent transitional periods when one style was blending into another. All of these buildings are reflections of the social, cultural, economic and technical characteristics of the age that designed them. Thus the campus is a physical translation of the land-grant idea.

With the symmetrical arrangement of the architectural elements to provide the proper correctness and elegance, French renaissance style was introduced

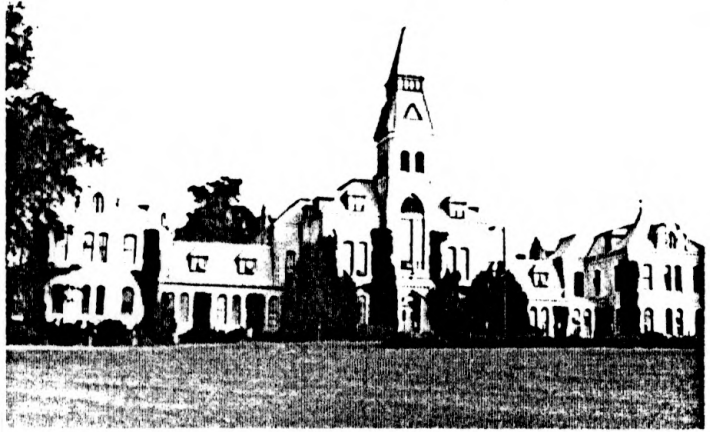


Figure.8 Anderson Hall

to Anderson Hall(Fig.8). Anderson Hall has architectural elements in a picturesque format - tall narrow windows and main entrance, a tower with a large Gothic window over the doorway.

From the early 1900s, Fairchild, Kedzie, Calvin, and Dickens Halls(Fig.9) are Romanesque style which was so popular in the eastern half

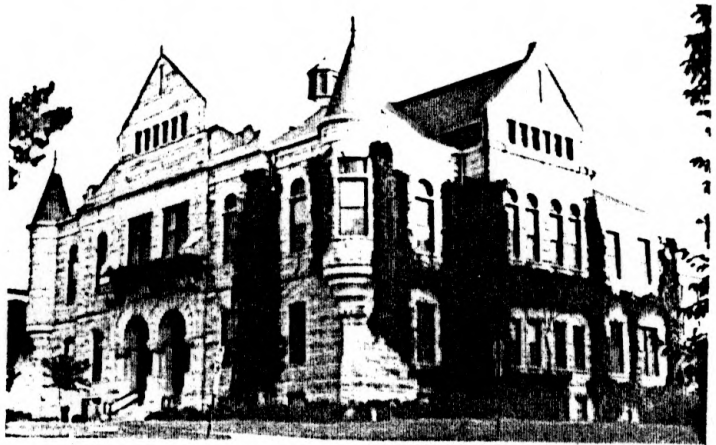


Figure.9 Dickens Hall

of the United States during the second half of the 19th century. The characteristics of this style were a natural picturesque scene with heavy semicircular arches, turrets and rugged stonework. Dickens Hall has a detail of stone capital, which is a stylized version of the classical Corinthian order with abstracted acanthus leaves. The central entrance hall has its Ionic capitals of carved oak and the classic detail of the

substantial oak newel posts on the stairway.

After the neo Gothic-style building era represented by Farrell Library and Willard Hall, a regional variation of the international style of building emerged on the campus. Many international style buildings were attempted to free stylistic inhibitions. With Ackert, Dykstra, Cardwell, Justin, King, Umberger, Call, K-State Union, and the Veterinary Medicine Complex, the university obtained a continuation of the limestone (solids) tradition with the International Style addition of glass (voids) in either horizontal or vertical bands. In particular, Durland Hall focused on the rhythmic pattern of voids and solids.

There are more various and individual interpretations in the use of materials and manipulation of architectural forms on other buildings. Although it is very difficult to maintain any continuity in the design of individual buildings, visual coherence may be achieved through a well conceived arrangement of materials and of building form and scale.

In the case of Chemistry-Biochemistry Building (Fig.10), it maintained and retained the distinctiveness of the physical identification associated with the geographical area and

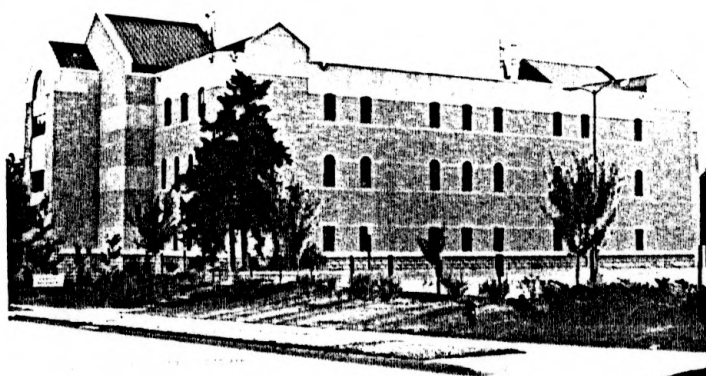


Fig.10 Chemistry-Biochemistry Bldg.

university. The architectural style--windows and peaked roof--of surrounding buildings were reflected in the design of the Chemistry-Biochemistry Building. The Gothic and Romanesque style from Willard and Dickens halls, and the modern influence, from King Hall, are symbolically mixed.

Clarity in organization is especially required in the case of gradually-grown environments. The main campus of Kansas State University has been constructed on empty lots by attaching new buildings to old ones, molding and transforming outdoor spaces in the process. Since people tend to interpret individually the use of materials and manipulation of architectural forms, it is impossible to expect any continuity in the style of individual buildings on campus. Coherence of the campus design cannot be easily achieved through the repetition of the architectural style. Coherence can be achieved, however, through a well conceived arrangement of buildings recognizing proper spatial relationships and areas between buildings. If a well articulated arrangement of buildings is connected by a functional road and path circulation, the campus can be maintained with unity throughout history.

Kansas State University, now in its second century, continues to develop curricula, research programs, and state-wide extension education opportunities to serve all citizens. Moreover, the university is preserving the spirit that prompted

the land-grant idea. As mentioned above, the university's characteristics in context, circulation and open space, and architectural style should be preserved for the development of a bucolic campus development scheme. The university has maintained a continuity in its limestone exterior construction on the central campus. Over the years this has contributed so much to a natural and pleasing environment for all scholarly activity. However, strategic development plans could transform the campus into a better environment with a conceivable organizational order. Improvement of environmental quality on the campus can be achieved by the provision of systematic frameworks of campus layout and by a proper amendment of properly-defined spaces on the campus.

A university's very existence depends on physical accessibility and expansion possibilities. If we are to continue to develop in the spirit of earlier planning efforts, the visual coherence by materials, design order, streetscape, and landscape character will help form the university's image.

In other words, it is recognized that environmental guidelines should be developed within which specific plans for campus development could be formulated. They can be used as guides for decision making in short and long-range campus planning processes. In 1934, long range development already recommended using native limestone, landscape, uniform architectural style, and uniform color of roofs for visual coherence. Since too

much emphasis on continuity can result in monotony, the factors of the visual coherence should be properly adjusted for the future development. In the future, new buildings added to the existing setting should reflect the spirit of the university, and should be of the time and place. They should not stand alone as an isolated monument, but should contribute to, and become part of a total environment.

III. CAMPUS ELEMENTS - CIRCULATION AND OPEN SPACE

The history of Kansas State University campus reveals some serious organizational problems in the campus framework. Kansas State University has grown from one building in 1863 to ninety-six in 1990. The university, however, had not prepared for growth except for adopting a master plan during the last twenty years. In this regard, a campus master plan and guidelines should be provided for the future needs in a orderly, formal, any functional pattern of growth representing the image and quality of the university.

In this chapter, in order to improve the quality of the Kansas State University campus, five organizational issues regarding circulation and open space are discussed. They are considered critical and appropriate options in determining the circulation and open space of the future main campus.

The characteristics of potential solutions for each issue are described one at a time, without combining them with other solutions under the other organizational issues. It is worthwhile to mention that the evaluation of each element is to be made on the basis of two criteria: clarity in organization and encouragement of interaction. Then these elements are tested in the context of the University. Chapter IV will present the actual synthesis procedure and proposal.

3.1 Circulation

3.1.1 Literature Review

Circulation goals within the campus differ at each of nation's 2,000 college and university sites; but the principles of convenience, safety and aesthetics are common to all (Dober, 1960). The study of circulation includes a close look at the street and road characteristics within topics such as: quality of maintenance, spaciousness, order, monotony, clarity of routes, orientation, destinations, safety and ease of movement, and accessibility of parking. Circulation may be clarified as the key to settlement structure by making understandable street patterns, heightening the identity of streets and destinations, making intersections intelligible, or creating vivid spatial sequences along some important path (Lynch, 1981).

The proper arrangements of paths are one with of the intermediate goals to make circulation system workable. The dominance of sequential circulation system confirms the importance of the path system as a structural organizer of the campus, perhaps more because the paths are lines of personal movement than because they are physical channels. A highly patterned city in which associational structuring is easy will be differentiated by parts in some systematic way (Appleyard, 1976). Appleyard states (1976) that these parts may be sequential or spatial elements, and differentiation can be by physical character and functional type. By maintaining the

continuity in character, nodal points, and boundaries, junctions between elements may be well connected, allowing good continuity through them along major paths. In campus planning, circulation becomes an important criteria.

Lynch (1960) was interested in how people use and understand open spaces. He studied what people knew of their physical/spatial environment. He analyzed data in terms of the presence or absence of five types of elements: paths, edges, districts, nodes, and landmarks as the kinds of elements that constitute a person's cognitive map.

Paths are channels of movement such as alleys, streets, highways, bicycle paths, and walkways. Many people include them as the most important features in their image of the city. Edges are linear elements not used or considered as paths, such as barriers, walls, the waterfront and edges of development. Districts are areas identified by a common characteristic, such as ethnicity, religion, activity patterns, or wealth. Nodes are focal points where paths meet such as a crossing or convergence of paths, street corner hangouts or an enclosed square or interior court yard. In contrast to nodes, which can be entered, landmarks are points of references which most people experience from outside: generally buildings, signs, stores or mountains.

The five categories that Lynch identified are explicitly discrete. Lynch's position provides a useful comparison to the network point of view. According to Lynch's theory of physical

setting, there are two clear elements on a main campus: districts and landmarks.

When Kansas State University is classified according to its organization, four districts emerge: main campus, north campus, veterinary medicine complex, and the athletic campus. Thus the main campus which includes the land area of this study is one of the districts of the university. Landmarks, such as Anderson Hall and Main Quadrangle, provide both points of orientation and exclamation marks on the campus. They must be used creatively in campus design.

However, three elements--paths, edges, and nodes--are somewhat stronger factors in developing the circulation and open space on the main campus. In organizing the campus framework, movement hierarchy and its relationship to places are emphasized as critical determinants with landmarks proving orientation points.

There are two remarkable advantages to using Lynch's elements. First, although the elements are themselves abstractions rather than concrete forms, recognizing their importance helps to focus a typology of physical forms. Secondly, adopting these elements to the project helps in the analysis of the key image-forming features--both "actual" and "potential." Thus the designer can predict with some accuracy the features of place. In addition, this kind of study is very useful for analyzing a city or campus where various activities occur.

Generally, the goals for developing campus circulation are:

1. Provide clear access to an identifiable segment of the campus;
2. Provide simple, clear, direct access extending from and returning to the perimeter circulation route;
3. Provide adequate emergency, maintenance, and handicapped access.

The central campus will be analyzed according to Lynch terminology with design proposals for circulation and open space based upon the analysis and the suggested considerations of William Whyte. By applying the Lynch elements to circulation and open space, it is possible to look at the central campus and mark the places where the elements have been broken.

The analysis takes the form of a single map, supplemented by separate maps for each adopted element. The map allows the central campus environment in the circulation to be described. Adopting Lynch's elements in campus planning is important because the result provides a comprehensive campus information and orientation system which ensures safety, provides clarity and understanding, and enriches the experience of the campus community and its guests. From the analysis of the campus, the campus plan may generate the global order which university environments need. The strength of this analysis is to show what is desirable for the future. Each of the circulation systems on campus is analyzed according to these three principles. These are: (1) university streets, (2) activity

nodes, and (3) parking spaces.

3.1.2 University Streets

A Path or channel of movement, according to Lynch (1960), might seem to translate directly into what we have called a connection or an association, but there are several important differences (Kaplan, 1982). Lynch's paths are channels of activity. They are rich in content. If "path" is used in the special sense of a link between distinctive places, people would be expected to have little information about portions of the environment coded in their maps as paths (Kaplan, 1982). It is possible that paths serve as the groundwork, or the initial superstructure, and are punctuated by landmarks at various intersections and nodes. Steele (1981) states that strong images can be established as a result of the richness or quality of place.

Pedestrians encounter conflict when anything makes their movement difficult or unpleasant; thus the movement of both pedestrians and vehicles within the campus is of primary importance. Information necessary to make decisions regarding this movement comes essentially from two sources--a survey of pedestrian and vehicular capacity at the campus planning office, and an examination of the various modes of internal movement. One assumption is made that a driver will follow the minimum time path from origin (home) to destination (point on campus). The traffic assignment network for a college campus should

include all major traffic arteries through the campus, all arterial streets leading to the campus, most collector streets and some local streets.

3.1.2.1 Kansas State University Context

The traffic pattern of Kansas State University is interwoven with the pattern of the city. The network of streets on campus is not a network of its own, but a continuation of the surrounding street system. The northern section of the city is divided by the campus. The desired traffic route around the campus has created heavy traffic in the surrounding residential areas and the business districts of the city. The main campus is clearly defined by the major circulation routes -Anderson Avenue on the south, Denison Avenue on the west, Claflin road to the north, and Manhattan Avenue on the east.

A perimeter road system is provided which encircles main campus and feeds peripheral parking lots. Campus circulation forms a vital support service area. The circulation systems available on campus are: pedestrian, bicycle, and vehicular (auto, truck, bus). To better understand the circulation on the main campus, the existing campus circulation forms are as follows:

A. Pedestrian Circulation system

Although the pedestrian system reflects the linear

character of the campus, it lacks clarity and is devoid of larger spaces where pathways cross and people gather. There are two characteristics of campus pathways according to the volume and function of pedestrian traffic: primary pedestrian way and secondary pedestrian way (Fig.11). The grain of streets is defined as the degree of fitness or coarseness. Large blocks with buildings of varying size are undesirable as having a coarse and an uneven texture. The main campus pedestrian way reflects the influence of Mid-Campus Drive, 17th Street, and the central walkway.

Conflicts between pedestrians and bicycles tend to occur where bicyclists ride on pedestrian routes, and where vehicles and pedestrians share an entry point to a campus. Areas without designated sidewalks, where sidewalks are too narrow to accommodate peak pedestrian flows, and where sidewalks empty into or cross roadways without a clearly marked crossing also cause conflicts. In addition, there is a lack of adequate and secure bicycle parking. Therefore conflicts between vehicles and pedestrians affect the use and enjoyment of outdoor space on campus.

The concept of movement is intimately related to "places." (Fig.12) Open spaces, "places," are connected by movement "paths," and the degree of utilization of those paths corresponds to the importance of connecting places. In other words, major places are connected by major paths, and minor places are linked by less utilized paths.

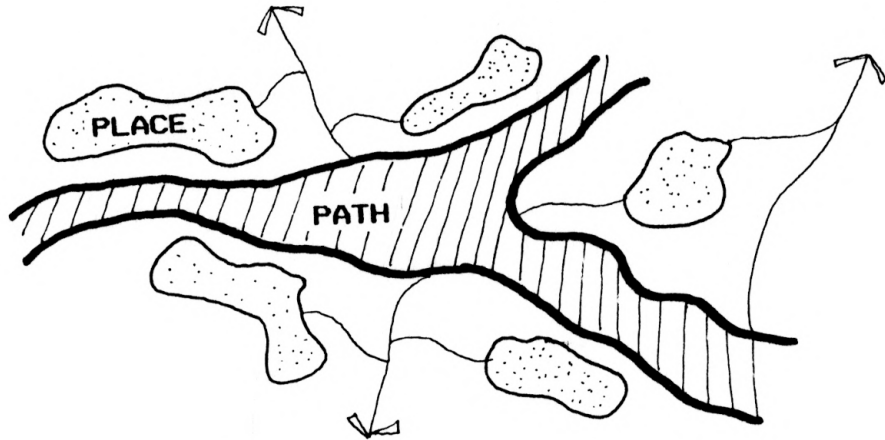


Figure 12 Relationship between path and place

Open spaces are connected to each other by means of pedestrian paths, and they are expected to function as activity places. By giving each path a strong and clear character and bringing out the relative importance of each path, the place can achieve the clarity of its organization.

The pattern of movement is characterized as a network pattern (Fig.13). The primary path runs through the main campus, and connecting paths are linked to it at right angles or diagonally. Those connectors collected by secondary paths of a lesser hierarchy, are

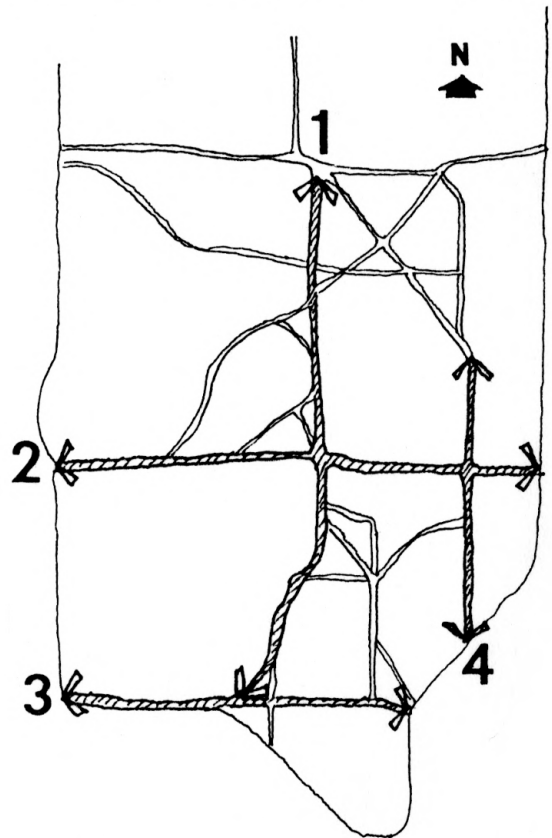


Figure 13. Path System

usually parallel to the main path. Since movement hierarchy and its relationship to places are emphasized as critical determinants, some major paths can be defined and characterized as follows:

Path 1

The primary path runs through the campus in a south-north direction, connecting the three major open spaces (Fig.14). Since a major path is differentiated according to the intensity and character of usage, it is important to note that this path has one of the heaviest pedestrian flows on campus. This path functions as an "infinite corridor." Except for the dormitory halls, the Student Union and Farrell Library are the places most frequently used when subjects were not in class (Friedman, 1982). At the center of the central pathway, an activity node exists in front of Farrell library. As this path is pretty obvious in the existing campus organization, it can be

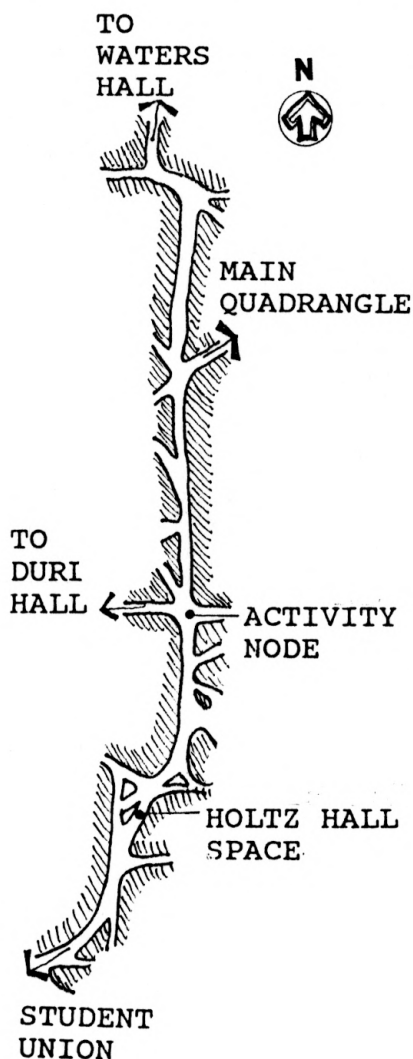


Figure 14. Path 1

developed by adding more activity places, and stretching it out further. In other words, the monotonous environment of the existing linear movement pattern can be overcome by locating activity spaces along the movement and magnets at destinations (Bentley, 1985). This "magnet concept" can be applied in arranging places and paths by connecting major places with an active path.

Path 2

Another primary path runs through the campus in an east-west direction, connecting the primary north path and secondary paths (Fig.15). This path is a major pedestrian entry to the campus core. Since the walkways are not wide enough to

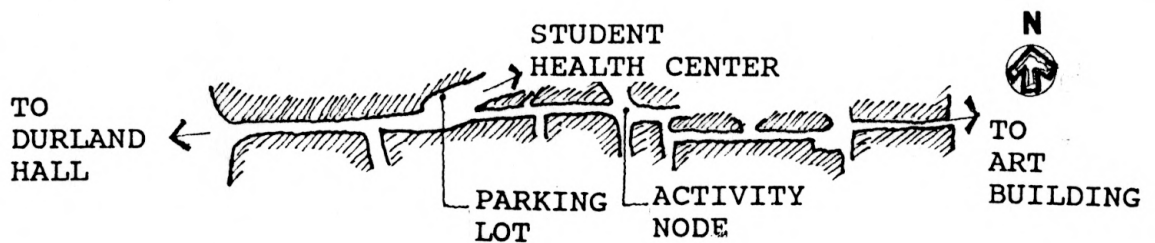


Fig.15 Path 2

carry the pedestrian traffic, vehicles to the Student Health Center and service cars cause a hazardous condition for the pedestrian. By either removing or remodeling some portions of existing office spaces or other spaces along the path, this path can be widened to adequate and comfortable dimensions. At the center of this pathway, an activity node exists.

Path 3

Although this path (Fig.16) is located on the edge of the central campus, heavy pedestrian flows occur in all directions through this area and the sidewalks are inadequate to handle the demand. This path stems from the primary path, and continues to secondary paths and places. Since it is located on a major pedestrian route into the campus, this path is functionally close to the major plaza space rather than the path itself.

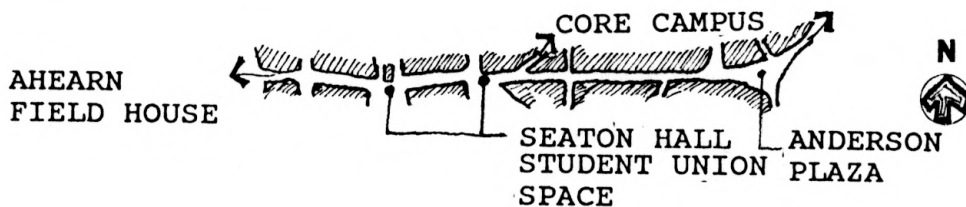


Fig.16 Path 3

Path 4

Many connecting paths stem from the primary path, and continue to secondary paths and places. It appears that the grain of paths runs north-south in keeping with the primary path (Fig.17). Since the existing paths and places are located and linked in a linear or a diagonal pattern, hierarchy of movement is used on the principle of "axis" representing "movement and places," not the arrangement of buildings.

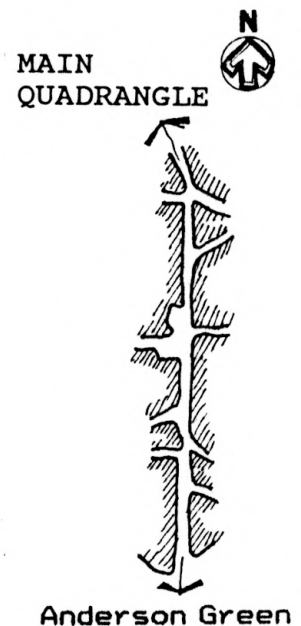


Fig.17 Path 4

Pedestrian volume and capacity depend on the density of student stations in classes and laboratories at each building (Fig.18). Table 1 shows the number of sections and students scheduled in all classes and laboratories by time each day. The

TABLE 1. ALL SCHEDULED CLASS & SECTIONS FOR FALL 1990

TIME	STUDENTS SCHEDULED IN CLASS						SCHEDULED SECTIONS					
	M	T	W	T	F	S	M	T	W	T	F	S
730	1644	854	1700	903	1497		43	22	45	23	39	
800	2064	4329	2101	4334	1523		54	92	55	92	40	
830	6664	6250	6635	6217	5452		195	192	193	185	152	
900	6808	6381	6779	6332	5452		198	193	196	185	152	
930	7912	7592	7863	7248	6721		211	230	212	218	172	
1000	7912	7677	7863	7345	6721		211	230	212	219	172	
1030	7758	7348	7678	7718	6248		215	222	211	218	170	
1100	7360	3965	7273	4317	6241		201	145	196	140	169	
1130	6392	5638	6518	5569	5132		174	154	180	151	129	
1200	6416	5582	6514	5503	5132		182	156	181	151	129	
1230	5559	5287	5913	5198	4738		169	148	181	149	121	
1300	5884	5481	6257	5414	4836		169	152	186	155	122	
1330	6447	5750	6463	6004	4860		194	178	202	181	129	
1400	6447	5722	6463	5967	4860		194	178	202	180	129	
1430	4832	4700	5262	4335	2590		208	214	226	204	110	
1500	4771	4715	5201	4363	2536		204	213	222	203	107	
1530	3695	4461	4018	4429	1643		175	195	191	192	73	
1600	3091	2996	3392	2955	1621		150	147	163	146	71	
1630	1665	2280	2055	2134	1362		96	102	108	93	41	
1700	1513	2050	1812	1910	1331		87	92	88	83	38	
1730	97	354	205	450			11	15	11	16		
1800	1064	359	711	843			41	15	13	15		
1830	1070	484	767	782			41	23	17	16		
1900	2199	1231	1302	638			42	46	32	22		
1930	2283	1441	1302	840			46	49	32	25		
2000	2138	1411	1281	1022			36	48	30	27		
2030	1942	1028	1179	763			30	41	25	20		
2100	725	876	626	593			21	36	17	15		
2130	35	262	212	383			3	15	6	8		

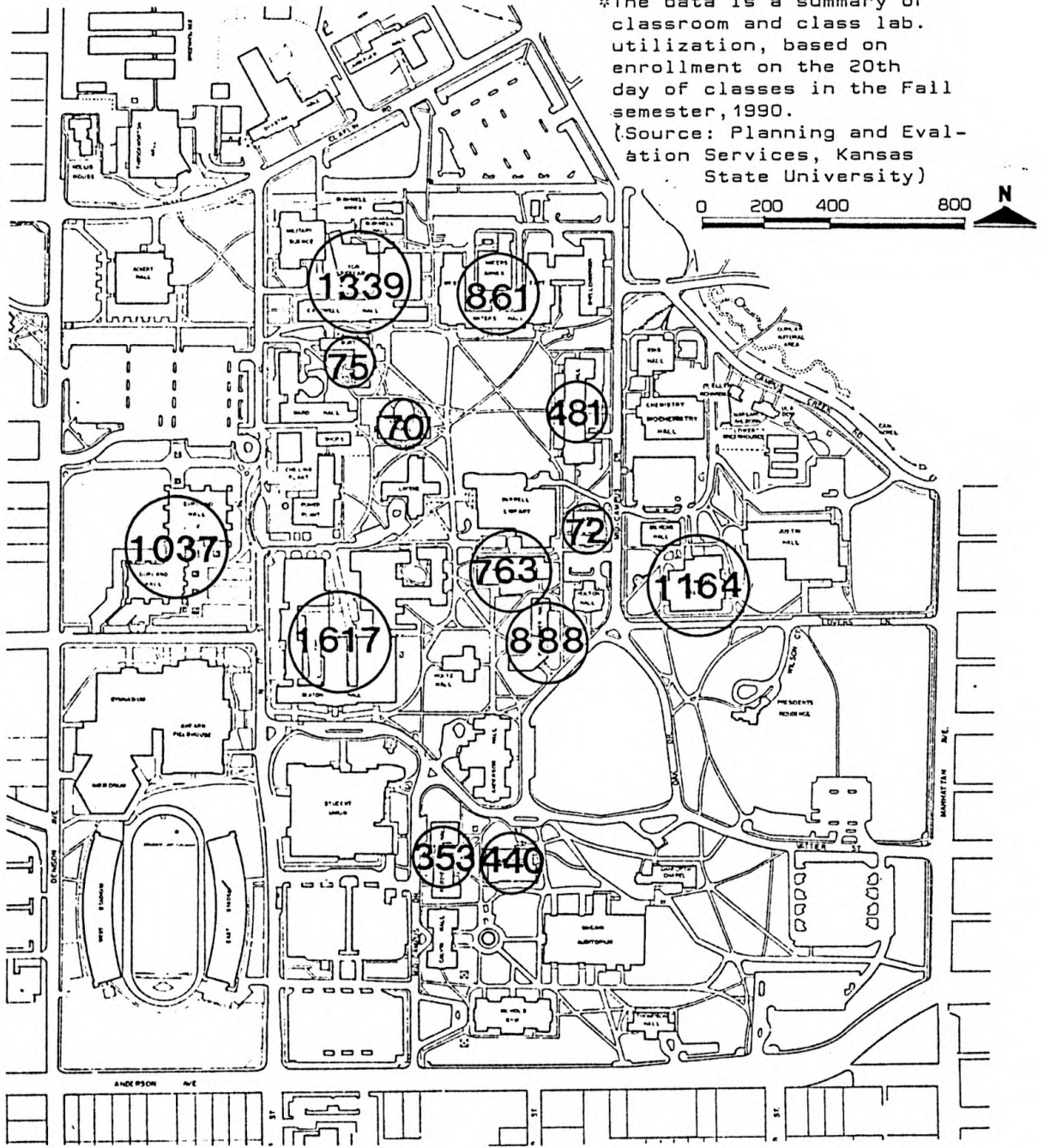
*Source: Division of Facilities, Kansas State University

largest number of students in class at one time (7912) is on Monday at 9:30-10:30 a.m. The largest number of sections scheduled (230) is on Tuesday at 9:30 a.m. This means that one of the heaviest pedestrian flows on campus occurs just before

FIG.18 EXISTING DENSITY IN CLASS & LAB. STUDENT STATIONS

*The data is a summary of classroom and class lab. utilization, based on enrollment on the 20th day of classes in the Fall semester, 1990.

(Source: Planning and Evaluation Services, Kansas State University)



9:30 and after 10:30 a.m. This type of density analysis can be used to understand both the pathways that now exist and the implications of planning decisions.

Through the use of such graphic tools, information can be easily understood and the implications of decisions can be seen by even non-professional planners. This study leads to more detailed and inclusive graphic tools which would include issues of physical proximity, possible travel paths and desired lines of travel according to the density in classroom and laboratory.

B. Bicycle circulation system

The most frequent form of access to the campus other than pedestrian and vehicular modes is the bicycle. Bicycle usage reduces vehicular traffic volume, pollution, and parking problems. Bicycles are now part of the university vehicular and pedestrian circulation system. The bike is not quite a motor vehicle, nor is the rider a pedestrian. A long range goal should be to develop a network of bicycle paths which are separate and safe rights of way for cyclists. To avoid the danger of automobiles when a bicycle shares streets with automobiles, cyclists often ride in pedestrian areas. This habit create hazards for pedestrians.

At the present time, it is estimated that there are over 3,000 bicycles used by K-State students, staff and faculty on a basis ranging from intermittent to regular use. Environmental concerns have probably had as much to do with the increased

usage of the bicycle in recent years as has its convenience, safety or comfort. However, several streets carry bicycle traffic without providing proper bike lanes for safety. A comprehensive path system needs to be designed and integrated with the current pedestrian and vehicular routes. Some sort of bicycle control is necessary to contribute to the order and efficiency of the core campus. Since there are increasing students using bike from and to classrooms, there is an increase in bicycle traffic. In order to prevent congestion of pedestrian and bicycle traffic, sufficient bike paths and racks should be provided.

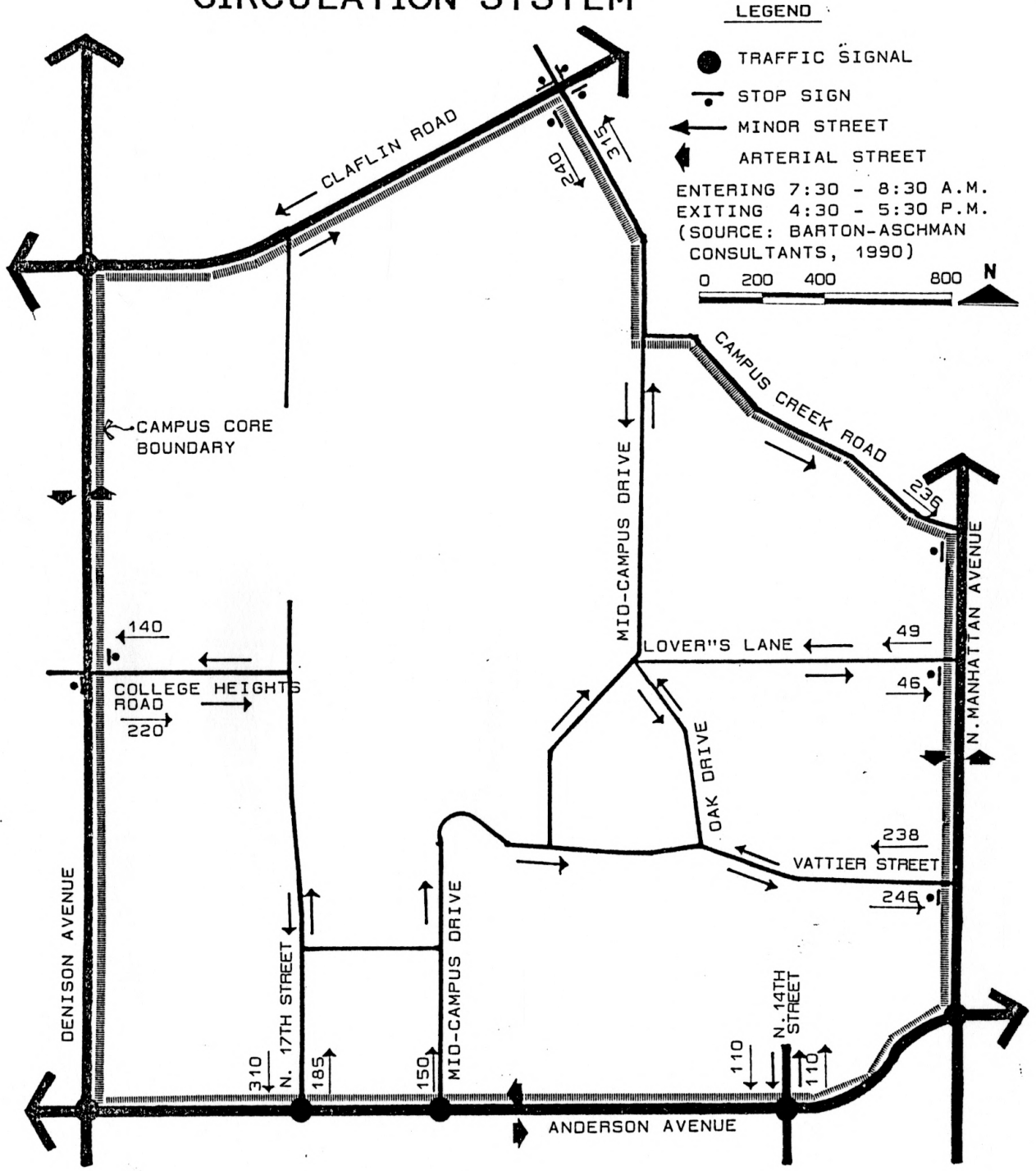
C. Vehicular circulation system

This system encompasses all vehicular traffic generated by students, faculty, staff, and visitors plus service deliveries and emergencies. The circumferential streets serve three different traffic components: arterial, collector, and local streets as follows (Fig.19, Source Barton-Aschman consultants, 1990).

*Manhattan Avenue is a four lane, north-south major arterial street that carries an average daily traffic volume of about 15,000 vehicles at the intersection with Anderson Avenue. Free-flow traffic conditions are experienced during both the A.M. and P.M. peak hours of adjacent street traffic.

*Anderson Avenue is a four lane, east-west major arterial street that carries an average daily traffic volume between 14,000 and 19,000 vehicles between 17th street and Manhattan Avenue. Heavy pedestrian traffic crosses Anderson Avenue daily, particularly at the North 17th Street and Mid-Campus Drive intersections.

FIG.19 EXISTING VEHICULAR CIRCULATION SYSTEM



*Denison Avenue is a two lane, north-south minor arterial street that carries an average daily traffic volume of 15,000 vehicles. Pedestrian traffic is fairly heavy across Denison Avenue south of Claflin Road as students go from the residence halls on the west to the campus on the east side of Denison.

*Claflin Road is a two lane, east-west collector roadway that serves both university and through traffic. An average of 6,000 vehicles per day use this roadway. Long queues are experienced at its intersection with Mid-Campus Drive during the P.M. peak hour.

*Mid Campus Drive is a two lane, north-south local collector street that serves university traffic.

*Petticoat Lane and Campus Creek Road function as a pair serving local traffic, Petticoat Lane running west and Campus Creek Road running east. Both streets provide one travel lane and on- street parallel parking at designated locations.

*College Heights Road is an east-west local roadway that is under top sign control at its intersection with Denison Avenue.

*Vattier Street and Lover's Lane are both local east-west roadways serving the university.

*North 17th Street is a north-south collector roadway that is signalized at its intersection with Anderson Avenue. North of Anderson Avenue, this street directly serves the university campus.

3.1.2.2 Accessibility

The territory should be accessible within a reasonable time and without damage, discomfort, or sense of exclusion (Lynch,1981). Ideally, the university should be easily accessible from the surrounding street system and urban environment and there should be ease of movement for both pedestrian and vehicular traffic. At the same time, the internal circulation network of the campus should provide access

to major service facilities and key process of the university.

Since the campus' social interaction to the outside usually occurs at access points, it is desirable that the pedestrian circulation structure of the campus should afford a setting for casual as well as organized social interactions. Therefore, a campus entrance which handles a large percentage of the people entering and leaving the university should be placed at important circulation points (Fig.19).

The formal entrance to the whole campus is obviously the one at the corner of North Manhattan Avenue and Anderson Avenue, but it is rather commercial and symbolic (Fig.20). Although the

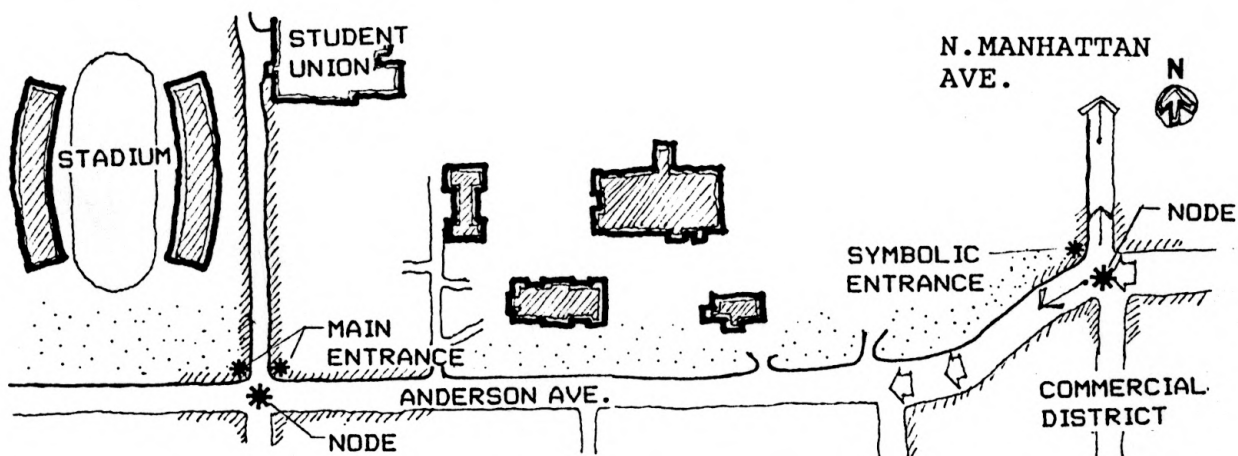


Fig.20 Campus entrance

gate gives a lasting and positive impression for first time campus visitors arriving from the east, the gate itself is only for pedestrians. In addition, although a west main campus identification is situated at the 17th Street and Anderson Avenue intersection, any work for upgrading the high traffic and

pedestrian entrances of campus has not been done. In order to provide a pleasant environment and to encourage interaction between outside communities and the Kansas State University community, public accessibility to the campus from the street can be strengthened by establishing entry forms. Since the existing major entries lack clarity, both visually and spatially, access points need to be clear to perceive and to use, especially for those who are not familiar with the campus.

Although campus streets are vital to the community circulation system through streets, the streets are congested by drivers and pedestrians during school hours. Vehicular problems exist at some intersections. Generally by installing a traffic signal, we can solve them physically, or we can formulate policies to control them.

The principal spinal corridor, which consists of internal loop of main campus, is a strong organizing element, but it is not clearly differentiated from its secondary connectors. In addition, the experience of moving along the internal pedestrian system within the loop system is neither pleasant nor interesting, because it lacks spatial hierarchy and visual connection to the outside. A spatial or physical hierarchy can be given to the corridor system and loop system to enhance clarity and social interaction. The internal circulation system is to be connected to major entry points of the campus, equipped with transitional spaces for a sequential movement flow.

The use of the car has the overall effect of spreading people out and keeping them apart. The effect of this particular feature of the car on the university's social fabric is clear. People are drawn from each other, densities and corresponding frequencies of interaction decrease substantially, and the identity of the campus is weakened. Thus the network of university streets on campus is not a network of its own, but a continuation of the surrounding street system.

3.1.3 Activity Nodes

A simple relationship exists between served functions and serving functions of architectural elements. This notion assumes an ideal mixture of functions on campus. Various campus functions should be mixed in such a manner that undesirable discomforts, inconveniences, or malfunctions can be avoided.

In campus planning, it will be necessary to consider the movement of traffic on campus. This may be pedestrian only or a combination of vehicular and pedestrian traffic. Studies of this element should consider the characteristics of the internal traffic and the street system to accommodate vehicular movement. The characteristics studies should examine the movement of staff and students on campus, and the movement of goods and services and of emergency vehicles. The analysis of internal campus traffic is not an easy task.

In Lynch's (1960) terminology, nodes are focal points where paths meet. Lynch distinguishes between nodes, which he sees as

junctions or concentrations of function, and landmarks, which he describes as physical objects seen more from the outside (often at a distance) than entered into. However, both notions involve things or places. Focal points can help to define a place. People like to gather in well-defined places such as near focal points (Whyte, 1980). They can become common meeting grounds (Ramati, 1981). Alexander (1975) defines an activity node in his book Oregon Experiment:

When locating buildings, place them in conjunction with other buildings to form small nodes of public life. Create a series of these nodes throughout the university, in contrast to the quiet, private outdoor spaces between them, and knit these nodes together with a network of pedestrian nodes.

The buildings on a campus can be designated as the nodes of a traffic network. The demand made on the street network system by students, faculty, and staff is not a steady, uniform demand throughout the day. It tends to pulsate, having definite peak and off peak periods. These pulses affect the entire street network, and are the most pronounced at points near the campus perimeter. During class breaks, many centers of congestion are visible. Notably this is so at intersections along narrow walks and whenever buildings empty students into major arteries. Some of the more widely used intersections (nodes) occur where vehicular traffic is allowed to circulate, causing inconveniences and creating potential hazards to pedestrians.

When the size of campus is too large and buildings are scattered all over, one service core is not sufficient to support all the other functions of the campus. In this case

the campus needs several service nodes at different locations. Thus a series of nodes (plazas), each with a few service functions, can be arranged throughout the campus, and the whole campus organized by means of these node areas. Although each node is dispersed, clarity in campus organization may be achieved by characterizing the nodes with different features and connecting them by a proper design.

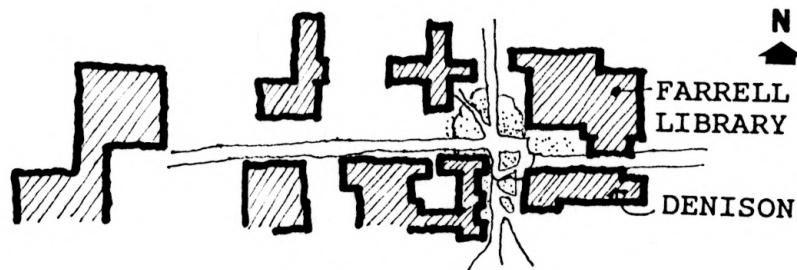


Figure 21 Node area

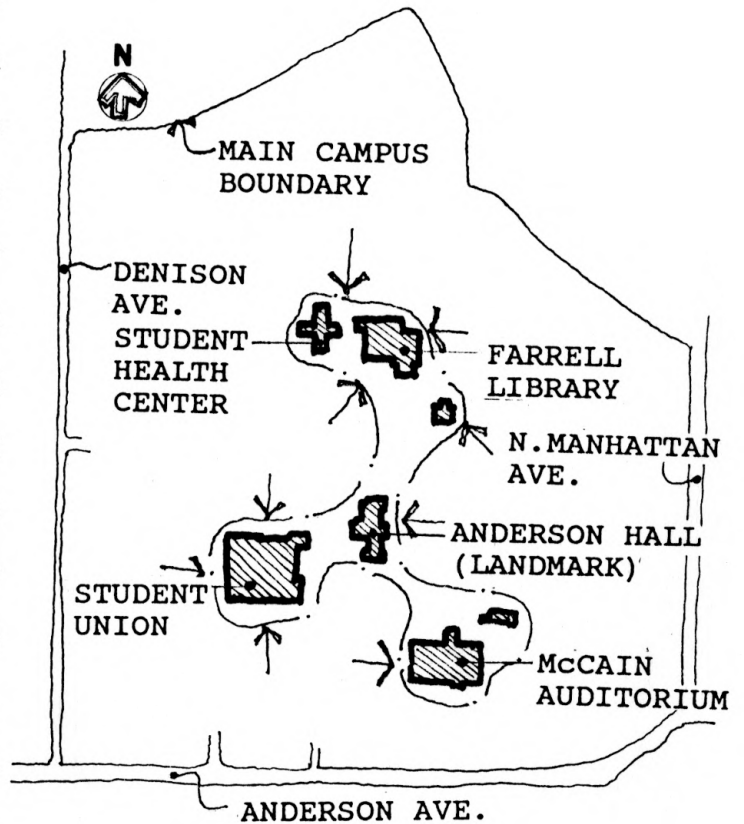
For clarity and interaction, the intersection points where two or more paths meet generally become special places. The flow of pedestrian traffic is obviously increased at those points, and well defined spatial forms with a pleasant environment should be provided there to become activity nodes. Pedestrian movements are more difficult to analyze than automobile movements because pedestrians are not restricted to a limited street system, since they have the capacity to move freely around the campus. It is usually necessary to consider only pedestrian movement because that movement represents a major point of the total on-campus pedestrian circulation.

The life, spirit, and vitality of Kansas State University is made up of people whose movement along the connecting paths expresses that spirit. Their activity contrasts with the dignity of the physical structures and lends interest and purpose to the campus scene. The success of the walkway patterns in carrying people is accomplished by carefully averaging all walkway needs to determine the predominant volume and direction of the traffic flow. Realistically, walkways cannot satisfy every directional desire nor adequately accommodate the surge caused by special events.

At certain points straight walkways turn into gentle curves with broad intersections. These intersections can form small plazas (for example, Student Union-Seaton Hall Space). The flexibility of this walk system allows for obstacles to be bypassed. A street intersection might not, for example, create a place that is important if there is nothing to remember. It can adjust to changing ideas for future building locations without detrimental effects on the layout pattern. In order to create effective nodes on campus, the walkways should be allowed to meander from one space to another. Courts or plazas could break up these walkways where congestion occurs at the building entrances or walk intersections.

The original Kansas State University campus had its service core at Anderson Hall, containing classrooms and offices. More service facilities have been constructed near the original

service core over the year, including a library, student union, student health center, a chapel, and an auditorium (Fig. 22). At present, since the university community needs a center for its public life existing the strongest character on campus, this area has become a major service core with a high density of pedestrians using it. Since this core (except the library and student health center), is concentrated on the southern edge of campus, this core is near and convenient for users from main campus and for off campus users. There is the K-State Union itself with the cafeteria, the main eating



the main eating place on campus, recreation facilities, and bookstore; Farrell Library which is considered to be main intellectual center on campus; Anderson Hall, which houses the main administration; Lafene Student Health Center, which provides services to students and faculty; and McCain auditorium, which provides a variety of cultural activity not only to students and faculty, but also to the residents of the

Figure 22. Core Campus

community. Therefore, there are numerous reasons for people to come to this place.

In order to increase the activity in this place, it must be possible to make provisions for people to stay: widening pedestrian paths, planting trees, placing benches for sitting, displaying of activities, and adding traffic control to this area. However, it is too far to reach from veterinary medicine complex and north campus, because of the long shape of the campus. Also, existing facilities of the core are not extensive enough to serve all the social and cultural facilities of students, faculty and other users.

Although the system of the paths reflects the linear character of the campus, it is inadequate, lacks clarity and is devoid of larger spaces where paths cross and people gather. The main campus pathway system is basically a grid system reflecting the influence of Mid-Campus Drive, 17th Street, and the central walkway. Based on discussions with university officials and observations by the author, detailed descriptions of the activity nodes on the main campus are as follows:

Node 1.

The central campus path carries a high volume of pedestrian traffic between the Student Union and Waters Hall. At the center of the central pathway, an activity node exists (Fig.23). It serves as a central corridor which connects the Main

Quadrangle and Denison Hall space. Although this node is located where major pedestrian flows pass by, many people do not recognize its function. Thus this place only accommodates one basic activity - passing through rather than stationary behavior (sitting, studying, waiting, eating, watching). In order to give interaction and improve the quality of environment, this place should be considered in a functional and visual way.

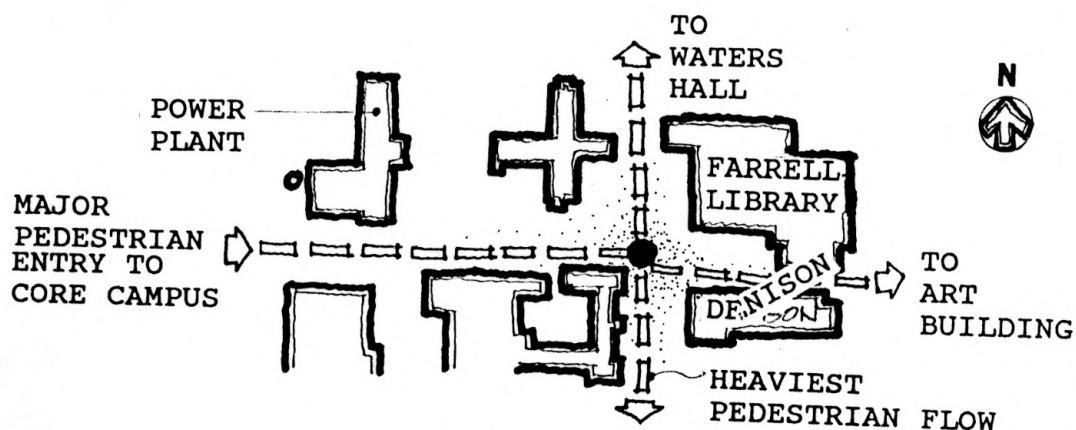


Fig.23 Node 1

Node 2.

At the southern end of the central pathway, heavy concentrations of pedestrian activity exist (Fig.24). Since the major pathway of the central campus focuses on this space, this is a focal space for student activity. This node as a central plaza has become an important socio-psychological and perceptual orienting device. Hence the pathway from its initial point (Waters Hall) naturally focuses on this place, bringing many people to it.

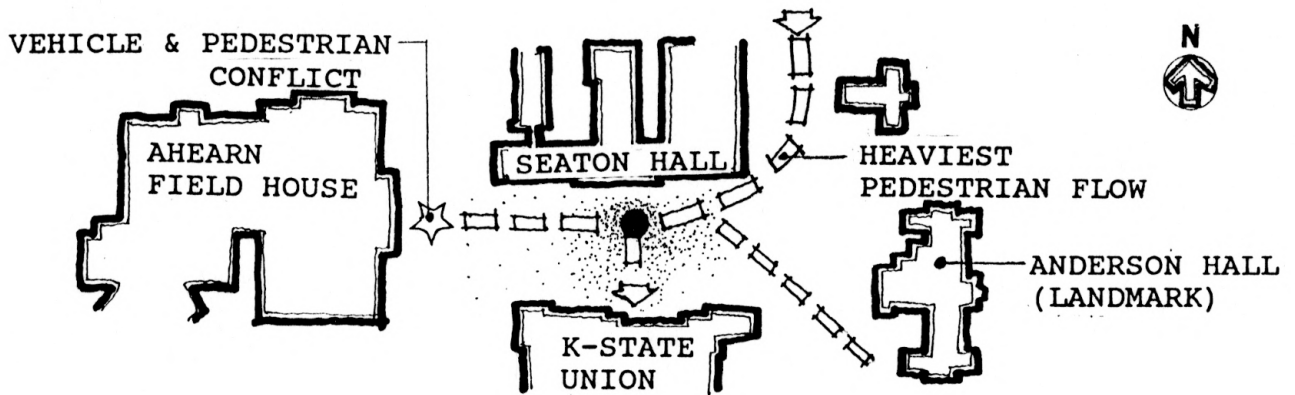


Fig.24 Node 2

Generally, the successful plaza accommodates two basic activities--passing through and stationary behavior. However, this place only functions as a passing through. Redesigning the space can create an activity node and central focal point with Anderson Hall tower.

Node 3.

At the right edge of the central campus, there is a heavy pedestrian flow and a dangerous intersection across Mid-Campus Drive (Fig.25). Between-class break hours, pedestrians are

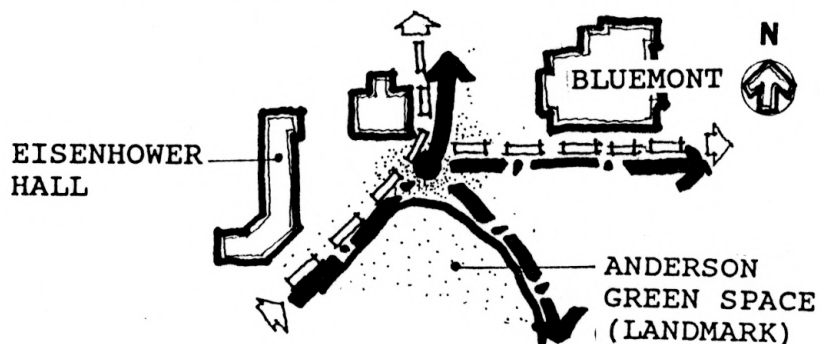


Fig.25 Node 3

are passing through a narrow sidewalk with no parkway buffer. In addition, vehicular movement on the intersection is not properly controlled, and is confusing to motorists. This is the major conflict between pedestrians and vehicles on the central campus. Thus vehicular traffic should be controlled to give pedestrians safe feeling.

An addition of a few more service nodes or buildings could rearrange the framework of campus into a better organizational system. Ahearn Field House is especially attractive as recreational, social and cultural facility. These activities can be accommodated to provide services for users from the campus or from outside. The idea of an activity node in this area would increase and encourage the social contacts of the Kansas State University community with the outside, by using its locational merit and its transportational advantage.

3.1.4 Parking Spaces

The automobile is part of the American way of life and very much a part of the student environment. However, the space required to accommodate parking and vehicle circulation typically absorbs a high percentage of premium interior space on a college or university campus (Kirkpatrick, 1988). With increasing enrollments and number of vehicles, the automobile has penetrated into the very heart of the academic close. Where

once a pleasant student-faculty gathering place might have existed, the forum is now occupied by the dubiously attractive parking lots.

Creating a pedestrian-oriented campus and updating parking needs are costly projects for any university, typically involving reduction of the traffic volume through the campus by eliminating interior streets and interior parking. A circulation pattern can be developed by joining parking lots on the perimeter of the campus. Providing parking space is one of the most troublesome problems associated with traffic planning. Intuitive decision-making concerning additional parking is not satisfactory from an economic point of view; quantifiable facts are needed. Every effort should be made to preserve the main campus for pedestrian use and automotive traffic should be excluded within the peripheral circulation pattern.

Since World War II, the campus has seen rapid expansion and the walking distances between classrooms, dormitories and auxiliary facilities has become excessive. The recent higher level of vehicular movement has too often resulted in a gradual but progressive deterioration in both the movement systems and the adjacent environments. A major problem on campus is the volume of general vehicular traffic which is allowed on the interior system. Thus the arterial streets forming the boundaries of the main campus can be thought of as loops for campus access.

3.1.4.1 Present Parking System

At present, parking areas on the main campus are mainly distributed at three concentric areas:

A. Academic core: The demand for parking is relatively high on the main campus. Conflict is great between the vehicular circulation and other circulation systems. The parking areas in the academic core are used primarily for the reserved, handicapped, service, and government vehicles. Since the demand for the parking is increasing for people's convenience, underground parking facilities may be considered adjacent to Farrell Library.

B. Core's Peripheral: This area occurs within a five minute walking radius from the center of the campus (Farrell Library). Land value and intensity, and parking demand are as high here as in the academic core area. Since students, visitors, faculty and staff can park as long as the parking spaces are permitted, the demand for parking is much higher than any other area on the main campus. Underground or multi-level parking facilities may be considered in this area.

C. Campus fringe: Walking distance here to the core campus is within the ten minute range. Land value as well as parking demand are the lowest except Union parking lot. Since many visitors enter the campus near the Student Union for meetings, seminar attendances, and other activities, underground or multi-level parking facilities can be considered.

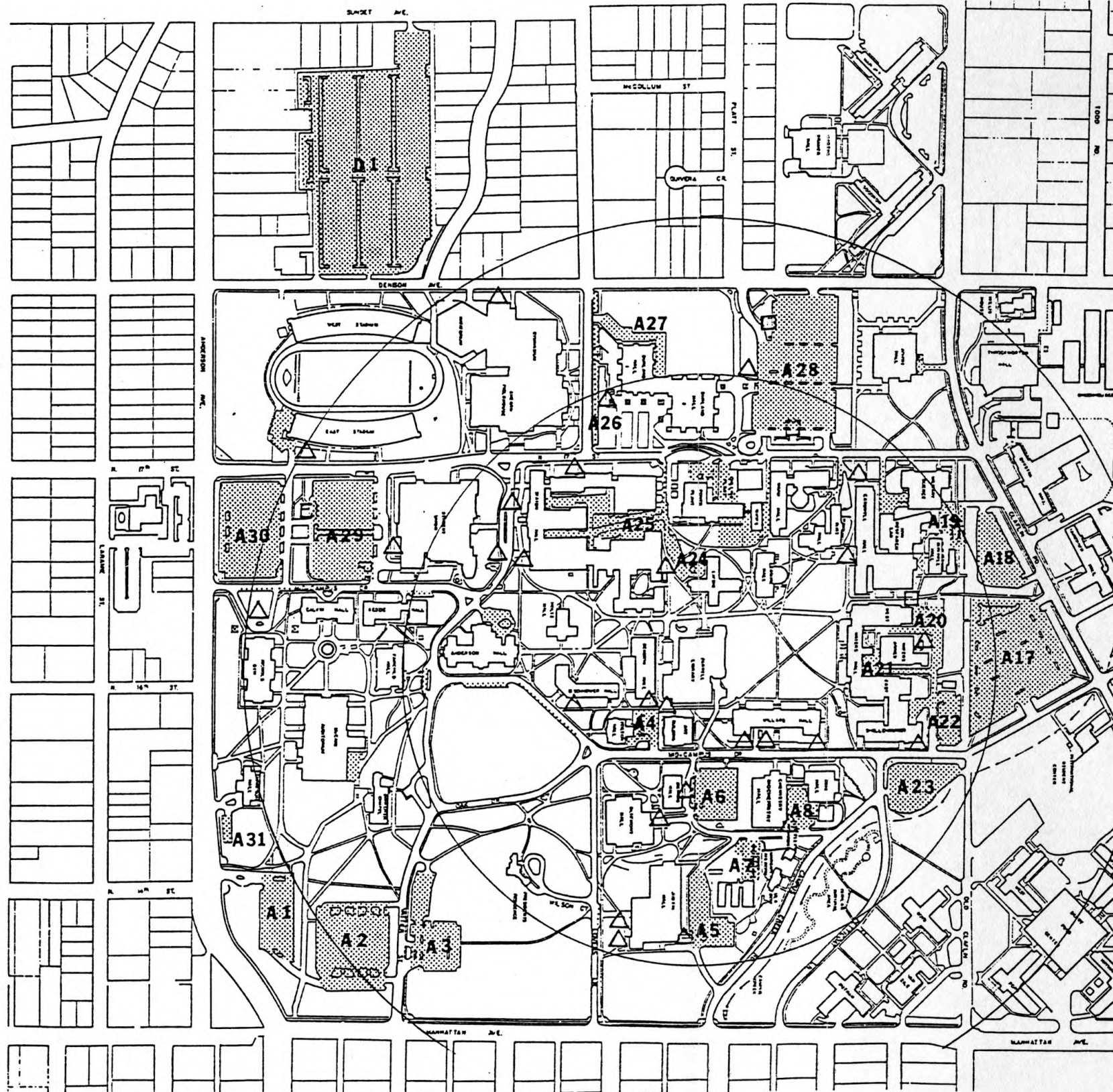
3.1.4.2 Parking Issues

The parking problems which exist on the main campus are basically the same problems that exist in many high density center-city areas. It is very difficult to occupy a parking space at the front door in high density building zone. This is especially true on a university campus where pedestrian interchanges between buildings is highly desirable and necessary. The geographic relationship of parking resources to the five, ten and fifteen minute walking radii from the center of the campus (Farrell Library) is shown in Figure 26 .

During 1990-1991, there were 6,234 parking spaces which served the main and north campuses. Fig.26 and Table 2 show that of the 6,234 spaces some 650 are within primary pedestrian core of the campus. Since this area includes buildings which accommodate approximately 60 percent of all contact hours and also includes major non-instructional buildings such as the library and the union, it is estimated that at the peak hour there may be as many as five to six thousand students within this portion of the campus. Parking usage of this valuable land cannot be justified for the storage of automobiles.

As a matter of fact, it is virtually evident that all parking in the core and near core campus areas have almost 100 percent occupancy. Since parking space is designated according to user groups, it is important to look at the distribution and amount of parking in terms of assigned, jointly used and total spaces on main campus.

FIG.26 EXISTING PARKING AREAS



LEGEND

- ▨ VEHICLE PARKING LOT
- MOTORCYCLE PARKING LOT
- △ BICYCLE PARKING LOT

TABLE.2 1990 PARKING LOT COUNT ON THE MAIN CAMPUS

Lot No.	Pkg. Spaces	Lot No.	Pkg. Spaces
A-1	119	A-21	5
A-2	166	A-22	37
A-3	111	A-23	87
A-4	15	A-24	13
A-5	79	A-25	53
A-6	74	A-26	47
A-7	20	A-27	24
A-8	17	A-28	393
A-17	362	A-29	245
A-18	121	A-30	206
A-19	18	A-31	10
A-20	37	D-1	946

Total 3,313

Lot Name	Pkg. Spaces	Lot Name	Pkg. Spaces
Natatorium	2	Ward-Burt	7
N. Dickens	1	Nichols	11
N. Bluemont	2	Kedzie	8
N. Art Bldg.	1	W. Anderson	15
E. Stadium	25	Chapel	2
N. Fairchild	3	E. Anderson	14
Mid-Campus		McCain	
Eisenhower	11	Loading Dock	6

* Source: Campus Parking Lots, Department of Police Station, Kansas State University, 1990

Table 3
PARKING SPACE DISTRIBUTION ON THE MAIN CAMPUS

	Spaces	Percentage (%)
Student, Faculty, and Staff	1,101	33.2 %
Faculty and Staff	903	27.3 %
Student	453	13.7 %
Parking Meter (30 min. 2 hr)	264	8.0 %
Reserved (Handicapped, Service, and Government Vehicle)	226	6.8 %
Reserved (8-hr, 24-hr Stall)	366	11.0 %
Total	3,313	100 %

*Excluding residence hall Parking

The numerical distribution of the 3,313 spaces on the main campus is as follows (Table 3): students, visitors, faculty and staff on a joint use basis, 1,101 (33.2%); faculty and staff only (assigned spaces), 903 (27.3%); students only, 453 (13.7%); restricted for 24 hour reserved and reserved (24-hour and 8-hour stall), 692 (17.8%) and parking meter, 264 (8.0%). Restricted spaces are used primarily for the reserved, handicapped, service, and Government vehicles. Thus students have access to a total of 453 spaces which are assigned to this group's exclusive use only. Another 1,101 spaces are jointly used. For these spaces, 7,268 permits were purchased in 1990-1991. In comparison, faculty and staff with access to a combined total of

2,004 purchased 2,704 permits. Of these 903 are assigned to this group's exclusive use and the other 1,101 spaces are jointly-used with students.

In the Environmental Guidelines for Kansas State University campus dated January 29, 1989, it is stated that a safe and orderly campus can best be achieved by keeping vehicular traffic at a minimum during the hours of greatest concentration of pedestrians and vehicles on the main campus except the following special needs:

- 1) Emergency and police vehicles;
- 2) Service vehicles;
- 3) Vehicles used by the handicapped; and
- 4) Loading and unloading areas.

The "Walking Campus" concept is emphasized in the Guidelines as the adopted concept within the main core of the campus. But from in-depth study, site visits, visual analysis, police reports, and an overlay of classroom schedule and student movement from the central campus to other parts of the campus, we can clearly see the confusion and conflict between the vehicle movement, pedestrians and parking within this place.

Changes in the parking facilities of the university should be made on a project-by-project basis, in consultation with interested faculty and staff and other interest groups as opportunities for change occur. Parking garages above ground level are the most efficient way to conserve land and to save money. However, although cost of car spaces in underground garages is often three times as expensive, underground garages

can be considered to preserve open spaces and campus entry-ways which are attractive assets the university.

3.2 Open Space

3.2.1 Literature Review

An important criterion for evaluating campus plans would be to ask whether the campus plan encourages the maximum number of impromptu encounters with other students, with other faculty members, with visitors, with works of art, with works of books, and with activities with which one is not himself a regular part... The efficiency of a campus plan is not merely to provide the physical setting in which the formal activities of the university are to take place. Much of the education of anybody occurs outside and separate from the formal courses in which he is registered, and only if the plan has the kind of qualities which will stimulate curiosity, prompt casual encounters and conversation... will the atmosphere which it produces be truly educational in the broadest sense. (Keast 1967, p.13)

Almost every campus includes some kind of central plaza or gathering place, and the campus environment remains one of the few North American urban precincts where pedestrians predominate (Marcus, 1987). Marcus (1987) observes that the character of open spaces varies from the grand central mall of grass and trees to the large plaza at the university. Open spaces are the single most important common denominator in a campus. In addition, open space has a strong relationship to pedestrian circulation. In other words, open spaces are connected to each

other by means of pedestrian paths, and they are expected to function as activity places.

Beyond creating a positive image of a place in order to attract people, the physical design of an open space must be accomplished with people's needs in mind. People generally like to be with, near, and among other people (Whyte, 1980). In Whyte's study of small urban spaces in New York, the best used plazas are social places and people gather there by choice. Similarly, Seymour (1969) suggests that the primary social function of urban spaces in the city is to bring people in contact with one another. Whyte states that what attracts people to a place is usually other people.

Once people are attracted to a place, basic provisions must be offered: there must be food (Whyte, 1980); there must be comfortable places to sit, and to watch other people (Whyte, 1980); there must be logical, accessible ingress, egress, and barrier-free circulation within the site (Whyte, 1980); and there must be ornament, interest, and focal points (Ramati, 1981). Whyte emphasizes the importance of food, water, and trees in the design of urban spaces. Whyte (1980) suggests that "if you want to seed a place with activity, put out food." In addition, the presence of food attracts people who attract people (Whyte, 1980). Having provided a place for gathering, one must then consider the provision of food for the site. There are lessons to be learned from Whyte's study which apply to urban plazas in a city.

When thinking about campus outdoor space use, it is helpful to start with the notion that each student, employee, and faculty member probably has a work or home base around which his or her daily campus activities circulate (Marcus, 1987). Friedman (1982) shows the many regularities among individuals in the perception of buildings. He mentions places to socialize, relax and study such as the K-State Union, Farrell Library and the Student Recreation Center. In addition, the students' major classroom building was used as home base when they were not in class (Friedman, 1982). For example, Justin Hall is used by Home Economic students, Ackert Hall is used by Biology students, Seaton Hall is used by Architecture students, etc.

Open space is crucial because of its direct bearing on the outdoor life on campus and the pedestrian circulation. It would enhance the building and provide a setting which would allow for good visual and functional relationships between buildings. To modulate these spaces and link them together both visually and spatially should be recognized as critical in campus planning. The role of open space in the relationship of human, built and natural elements--as well as its significance as a generator of environmental quality and student contact--warrants emphasis.

Many people find the natural open space of Kansas State University as one of its strongest attributes. These elements describe that open space--its characteristics and the policies required to preserve it even as new physical development

proceeds. Each of the open spaces on campus is analyzed according to these two elements: (1) accessible green, and (2) positive outdoor space.

3.2.2 Accessible Green

Green space is a design factor that requires considerable attention. Moreover, it is the single most common denominator on campus. It may be regarded as a "reserve" for future expansion needs or it may be "preserved" as an integral factor of campus structure. In many cases, these distinctions have not been made and expansion programs frequently utilize seemingly random locations. Green space reservation and preservation are essential design factors that effect the sequential and ultimate composition of the campus. Although the Kansas State University campus tradition is somewhat different from most college campuses, open spaces that recall American college campus tradition will be this master plan's framework.

Today, green space is eroding considerably as vehicular traffic increases, and buildings and campus parking expands. As more and larger buildings find their place on the campus, it is inevitable that the open aspects of the campus will be modified. As this happens, more attention must be given to the relationship of buildings one to another, and particularly to the spaces between buildings. This can be done by removing cars to the perimeter and preserving of existing green spaces,

providing amenities for students, and giving visual breathing space between buildings. An improvement in the visual image of the university is one result of this design activity.

It is not unusual today for buildings to dominate their surroundings without forming clear relationships with adjacent open space, for green spaces to be subject to vandalism (as a result of a user's frustration or physical traces), and for buildings to interrupt visual and pedestrian flow. This is the case at Kansas State University. The campus has lost its open space for sitting, studying, eating and socializing. In addition, the axes of the campus have been interrupted. Roads and parking facilities have taken an equally great toll on campus pedestrian spaces and interrupted the cohesiveness of open space places. The quality of open space plays a key role in the overall design success of a master plan, while open spaces linked together in designed sequences impart order and add vitality to the campus scene. Since there is little relationship between the open and enclosed spaces on campus, more consideration should be taken for the future development.

Open spaces on campus can be classified as man-made open spaces and natural open spaces. When we look at Kansas State University (Fig. 27), the campus is close to the horizontal campus model, one which is covered by low rise buildings with minimum provisions for outdoor space. This choice excludes

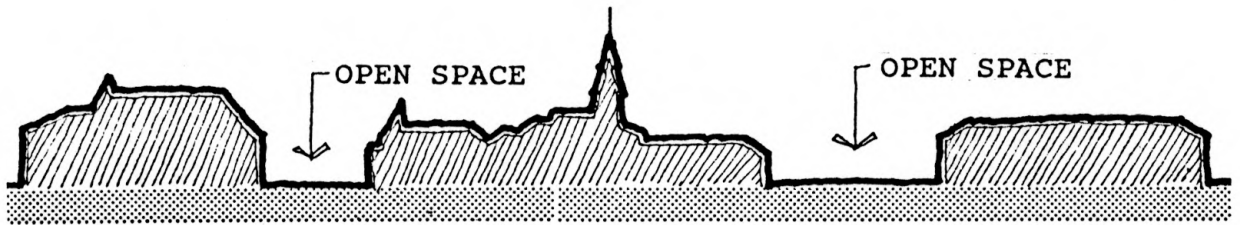


Figure 27 Relationship between building and open space

unnecessary vertical circulation so that the horizontal spatial flow is strengthened. It may be more comfortable in the human scale environments mainly because of the height of buildings (Fig.28). We know about the two dimensional proportions, and the actual heights. Also the character of open spaces is very much dependent on the heights and widths of the building which stand together shoulder to shoulder facing open spaces. Thus buildings are placed in such a way as to create pleasant space by giving it a sense of enclosure. However, that benefit is somewhat offset by reduced open space.

At Kansas State University, the flowers, grasses, trees, and shrubs, are all part of the campus beauty and green space (Fig.29). Moreover, groves of mature trees form canopies over walkways. The quadrangle green space is one of the single most important and strongest characteristics which can help impart Kansas State University's identity. The green space serves the entire university. It is symbolically and physically the place where people think of first for a land grant university. The green space is the main outdoor space for the university. The

existing green spaces and major urban open spaces on campus are as follows:

.Anderson Green - This space is a historical and landmark space adjacent to Anderson Hall, reflecting the early vision of small, modest structures placed informally around a kind of village green. The design of Anderson Hall helps to explain the saliency of its image as a landmark. It is centrally located and clearly visible from more directions on campus than any other structure, except the Power Plant smoke stack. This space, combined with Anderson Hall, is the visual focal point of the campus. This is thus an important open space on campus, and a great deal of time and effort has been spent to keep it unspoiled since Anderson Hall was established in 1879 (Fig.5, p.29). However, this space is the physical element of the campus most infrequently recalled by all the respondents (Friedman's study, 1982). This natural, park-like setting surrounded by trees is a symbolic open green space rather than public space for sitting, studying, socializing, eating lunch, or taking a rest between classes. The pathways are the only hard surfaces visible; the green setting is a pleasing contrast with the surrounding buildings.

Desirable features

- .Oval-shaped setting
- .Open grassy slope
- .Surrounded by trees at the edge of Oak Drive
- .Sun reaching space all day

Undesirable features

- .No benches or tables for those who do not want to sit on grass
- .Intensity of traffic, including bicycles, sometimes feels hazardous.

.The South Quadrangle - The half-oval of buildings formed by Nichols, Calvin, Fairchild and McCain Auditorium form the south quadrangle. The space is a quiet space with little activity or movement through the space as compared to other green spaces.

Desirable features

- .Major building entries, where between classes or at lunch time, students can study close to their home base.
- .Open lawn areas, for those who prefer to study close to their home bases or in a more public place, with lots of space around them.
- .Places away from vehicular traffic or parking areas where the noise can be distracting.

Undesirable features

- .Trees are deciduous; hence greenery is present for only part of the year.
- .Not enough places for studying and taking a rest under a tree.

.The Holtz Hall Space - The Holtz Hall space is located on the south side of the main campus along the primary pathway (Fig.30). It is the major entry point to the core campus and is a long, rectangular tree-lined plaza. The space is enclosed by Seaton Hall, Denison Hall, Eisenhower, and Anderson Hall. This space is the most active space on campus. During class breaks, people come to this space to and from the Union or other

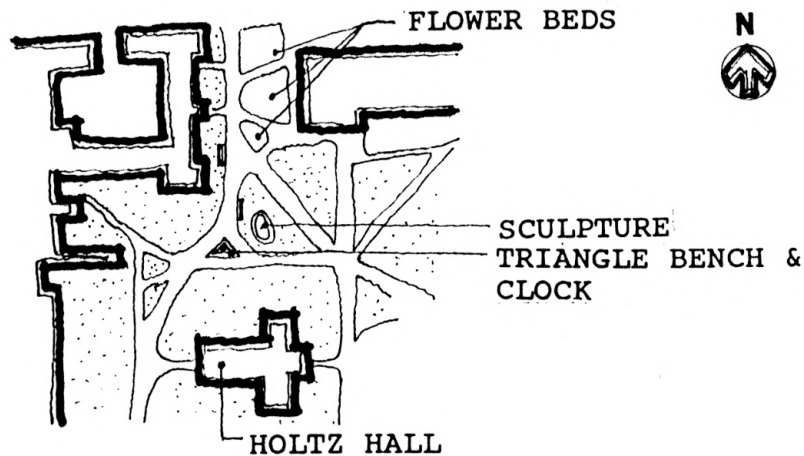


Figure 30 Holtz Hall Space

destinations. It is a large and busy green space, formed by buildings that contain important common functions. Trees on both side of the path create a virtual canopy above pedestrians, thus defining an intimate outdoor space of very special beauty.

Since this space is in a linear shape, it creates a promenade for thousands of students, faculty and staff, who enter each day from the south side of campus (where the Student Union, parking lot, and off campus housing are located) and head for the Farrell Library and classroom buildings in the heart of campus. Although the space fulfills the requirements for a plaza in size and location, it does not fully function as a plaza.

Desirable features

.Building enclose space and funnel pedestrian traffic.

.Distance between buildings allows for wide pedestrian flows plus seating on edges.

Undesirable features

.Only two benches and one triangle bench for those who do not want to sit on grass.

.Pathways predominate.

.No facilities for pedestrian mall such as kiosks, steps, and benches.

.Main Quadrangle - This space was formed with the establishment of Willard Hall in 1939. In 1935, a twenty year program for the college proposed this space as a main quadrangle in its proposed campus development. Thus this space is "historic ground" and "landmark." This is one of the great symbols of the university. The space functions only as a visual setting and not a place where people can gather and become active participants in the setting. The quadrangle connects Willard Hall with Power Plant, under the concept of "collegiate gothic." The quadrangle has as its central space, a pleasant green that is partly enclosed by the buildings of quadrangle: Farrell Library, Willard Hall, and Waters Hall. It is continuous with the green areas of the rest of the campus. The quadrangular form made sense simply in terms of planning and land use. In the high density zone of campus, the university made the best use of small lots by building around its perimeters, thus getting the maximum building space for the acreage.

.The Student Union-Seaton Hall Space - This is a focal space for

student activity, and is one of the most visible places on campus. This space serves a multiplicity of users and activities and seems to serve them all well. The formally designated main entry is the main gathering place and the principal entry point for students, faculty and staff, and visitors approaching on foot or by car from the campus' southside. In addition, this space creates a plaza for thousands of people who head for the library and classroom buildings in the heart of campus. All of these features, plus lack of a vehicular entry here, combine to create a highly used and highly imageable "accessibility" to the central campus.

However, as long as the Union has been in existence, the area's appearance has remained essentially the same, except now there are barricades "to keep cars out" (K-State Collegian, 1987). It is symbolically the place where people think of first and go to first when dealing with the campus. Heavy pedestrian flow in all directions through this area is not handled by the sidewalks. This area is bounded by places that generate a high degree of use throughout the day and into the evening: administration building, bookstore, cafeteria, recreation center, and theater. Thus this space is already some kind of a central plaza or gathering place.

The plaza, when successful, should attract large number of people (Whyte, 1980). Depending upon the physical elements such as access to the street, sitability, space, sun, capacity, etc., small urban spaces work or don't work, according to Whyte.

Kevin Lynch (1981) states:

"The plaza is intended as an activity focus, at the heart of some intensive urban area. Typically, such a plaza will be paved, enclosed by high density structures, and surrounded by streets, or in contact with them. It contains features meant to attract groups of people and to facilitate meetings."

In addition, he proposed that dimensions up to 40 feet appear intimate in scale; up to 80 feet is still pleasant human scale; and that most of the successful enclosed squares of the past have not exceeded 450 feet in the smaller dimension. Although the Student Union-Seaton Hall space is the relatively high dimension of 400 feet by 150 feet, this might be a successful plaza in size according to Lynch.

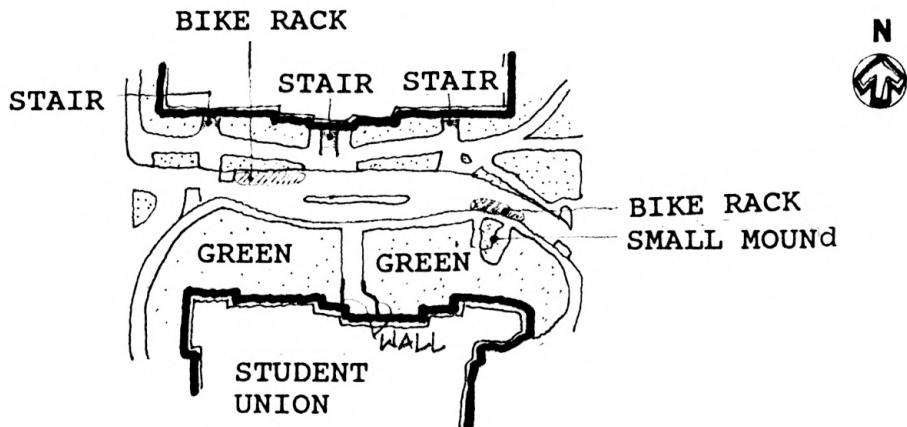


Figure 31. Seaton Hall-Student Union Space

Since the Student Union-Seaton Hall space is located where major pedestrian flows pass, many students, faculty and staff become familiar with the place. One of the most important characteristics of a successful plaza is a high density of pedestrians using it (Fig. 11). Therefore this might be the place where friends meet, bands play, displays are placed,

rallies are staged, and people may come to watch other people or just to relax between classes. In addition, it can be an important socio-psychological and perceptual orienting device with the remarkable landmark Anderson Hall nearby.

In its present design, this open space is weak in functional performance. The space offers little in the form of amenities other than aesthetics. The space contributes a grassy green space to the core campus but nothing else. The latency of the space in performing any useful functions does nothing to improve the image of the surrounding buildings. Potentially, the space could contribute in meaningful ways.

According to the author's observation, two main types of users's behavior can be described: all walking behavior (walking through, walking and watching, and walking and talking), and standing (stand and watch, and stand and talk). Because the space does not provide any formal space to sit, sitting behavior was only seen at the Seaton Hall stairs and the walls in front of the Student Union. Although a minimum standard for seating space can be attained by providing one linear foot of sitting space for every thirty square feet of plaza (Whyte, 1980), there are no walls to lean against, stairs and benches and niches for sitting, or the display of activities where people might like to linger. People do not use the grass on the space for sitting or gathering. Therefore, this space does not serve as a plaza.

Desirable features

- .Buildings enclose space.
- .Center of plaza creates wider space for rallies, speeches, and performances.
- .Food is available from student union.
- .Sun reaching space all day.
- .Places away from vehicular traffic or parking lots.

Undesirable features

- .No benches for those who do not want to sit on grass.
- .No places for stationery behavior-sitting, studying, waiting, eating, and watching.
- .Hazardous conflict between pedestrian and bicycle.

.Durland, Ackert Green - These spaces are reserved for future building expansion.

Throughout the history of the Kansas State University, a system was established of three story buildings creating a continuous visual link. This design concept, together with limited amount of available open land for building, has resulted in the campus becoming a dense physical arrangement, with a small number of rather large open spaces. Therefore, social interactions tend to occur mostly inside the building.

Although at least some new buildings need to be built, open spaces should be preserved. Great consideration should be taken to maintain the very park-like campus. Also, any potential quadrangle system or green space must not be changed to parking lots as has been done in the past, and must be well utilized as outdoor open spaces. Redesigning the existing yards occupied by cars is also desirable. It would be one way of improving the

Kansas State University's physical appearance and encouraging outdoor activities.

3.2.3 Positive Outdoor Space

Outdoor space includes all spaces not occupied by a building on properties owned by the university. Outdoor policies will improve the physical environment. The open spaces enhance to the campus atmosphere. The natural elements of plant materials and water may be pivotal in the role which the open space plays in enhancing the physical setting.

The scale, function and utilization of outdoor space in the final analysis, determine campus structure. The provision of well designed, carefully selected, intelligently placed site fixtures and furniture can make an outdoor space not only more comfortable for people but can create a special meaning for users. Contrasts in scale and materials enhance the interest, pleasure and sense of well being which people feel. However, outdoor space elements should be consistent throughout the university to control design quality and capital and maintenance costs and to improve management.

Generally, the campus is a mixture of building styles and a prime example of discontinuity. Even in the longest term of the master plan, rebuilding of the campus would never proceed to the extent that harmony and continuity could be achieved by the

use of building elements. Therefore, by using landscaping elements and campus furniture, the campus may achieve its continuity.

.Plant Materials - Plant materials are used to contribute to the character of the campus, provide continuity and are used to define spaces, serve as visual, acoustical, sun and wind screens and to improve the air (Environmental Guidelines, 1989). Plant materials can be described as trees, shrubs, ground-covers, and turf.

By virtue of their size and impact, trees tend to be the most important of the greenery features. Trees have a very measurable effect within the campus: they not only add a great deal of green to the space, but provide cooling temperatures, shade, and a park-like atmosphere. The trees along the pedestrian path are a part of the streetscape improvements. A tree-lined path in the heart of summer reduces solar radiation and can significantly reduce the ambient temperature of the area. Whyte (1980) suggests that for climatic reasons alone we should plant many more trees, including large ones along streets and walks, in the open spaces of the city, and as a protective canopy under which people can view the passing scene. However, trees planted to create shade should not have any unpleasant characteristics likely to inhibit people from sitting or napping under them.

Other elements such as barriers, screen and baffle can be

used to define an edge through which movement is restricted and where vision is often controlled. A barrier will restrict movement through a space but often allows vision over the top.

Screening usually restricts not only movement through a space but vision as well. A baffle will often restrict movement through, but allows some vision to penetrate beyond the plant materials.

Vines are an relatively important plant material on campus, especially against the natural limestone buildings. Several varieties of climbing vines have been planted and are being trained to climb the wall (Student Union, Seaton Hall, Anderson Hall, Holtz Hall, ...).

It is particularly difficult to establish standards for plant materials since 225 different species of woody plants and trees are found on campus. There are oceans of petals on the main campus, most conspicuously placed in beds along the most frequently traveled byways: a large one at the walkway near Denison Hall and the library, another outside Holtz Hall, another between the Union and Anderson Hall. Many of the plant beds on the central campus create places where people walking past might be pleasantly surprised and delighted by the splash of colors.

Groves of mature trees form canopies over pathways. Greenways like the canopied walk leading to the ivy assuming possession of any dozen of the native limestone buildings. Among the various design elements, canopy seems to be the one

universally apparent on campus. The plantings at the Holtz Hall space provide canopy to pathway pedestrians. Because large numbers of old trees are nearing the end of their life cycles, it is essential and urgent for the university to invest in the replacement and revitalization of the campus arboretum in order to restore and enrich the legacy of K-State's beautiful campus. The greenery spaces make it possible to affirm that the place really belong to the natural environment.

Deliberate policy is needed to utilize both native and introduced species. The deciduous trees are most suitable for avenue planting along walkways and roads, particularly where crowded conditions exist near taller buildings. Deciduous trees, of course, allow maximum light in winter and give maximum shade in summer. The plant material program should be implemented using the following concepts: plant replacement, relocation, variety, identification, nursery and maintenance.

.Lighting - Selection and installation of several lighting standards has improved outdoor lighting. Site lighting for new construction should be designed as a continuation of existing lighting on adjacent sites and should conform to the university standard. In order to increase campus safety and visibility at night, the lighting of parking lots and walkways should be provided. The improved lighting will reduce the amount of vandalism to vehicles in remote parking lots as well as the personal crime rate. Lighting poles should be added to various

areas of campus. Installation of temporary lighting should be avoided.

.Furniture - Many attempts have been made in the past to achieve campus furniture designs; as with buildings, the grounds have many examples of past attempts at rubbish receptacles, benches, signs, and lights. Because of cost, these cannot be replaced immediately and will be absorbed into the overall furniture scheme as finances permit.

Foremost among these site fixtures and furniture is seating (Whyte, 1980). After extensive analysis of what attracted people to one New York City plaza, Whyte concluded that the key factor was availability of sittable space. To provide a minimum standard for seating, Whyte (1980) suggests a 1:30 ratio of linear feet of sitting space to square feet of plaza, not including steps. Another observation made by Whyte is that choices in seating are more amenable to users than forced choice where single chairs are prearranged and immovable. The best seating tends to be any kind of sitting ledge, movable chairs, and benches which face the action, usually the paths and sidewalks. Some benches may be designed for one or two people to use comfortably and with some privacy; other arrangements may permit three or four to meet and talk as a group.

In order to improve the quality of an outdoor space and draw people to the place, water features can be used for focal

points. Generally, focal points which relate to open spaces would include such things as a central plot of flowers upon which pathways coverage, a significant piece of sculpture or artwork, a pool or fountain, a clock tower, and a flagpole or group of flagpoles. Simonds (1983) states that the city appears to be a desert of pavement and masonry. Urban design professionals can modify some of these discomforting climatological effects through the introduction of greenery and water. In addition, Simonds (1983) suggests that planners "design an oasis; make maximum use of breeze, shade, shadow patterns, sunscreens, and the refreshing qualities of water in fountain, pool, or jet spray" (p.113). Therefore these focal points would be any tangible feature which draws interest and punctuates the open space. Some eye-catching features such as a fountain or sculpture would provide a visual focal point and an easily recognized meeting place.

In addition to above mentioned items, telephones, fences, screens, and barriers should be considered the development of landscape for the university. Since the basic principles of the master plan are established to achieve a design continuity, the application of these principles will produce a dramatic improvement in the environment of the campus.

IV. PROPOSALS AND CONCLUSIONS

Based on the analysis of the central campus in chapter III, the main proposal embodied in this chapter, with particular emphasis on circulation and open space, is intended to give directions for the future of Kansas State University. The coordinated proposal will incorporate concepts related to the character and context of the university. Thus these proposals are designed to ensure a future which responds to present constraints and to 127 years of tradition at Kansas State University.

The proposal is based on three principles:

First is the retention of the character and context of the campus. Throughout the history of Kansas State University, the university grounds have maintained their unique bucolic characteristics. By describing its background and formal characteristics, the plan identifies the dominant order and force of the campus.

Second is the accommodation of circulation. The conceptual goal of the master plan is applied specifically to the areas of circulation and open space on campus. Regarding the circulation, the intent is to provide a safe and convenient circulation network which, by virtue of its design and integration with the main campus fabric, complements and enhances the visual and perceptual experiences of its users.

The integration of circulation systems, as well as the resolution of conflicts between them, recognizes safety as a primary and uncompromised objective.

Third is the adding of building and research space according to the university's demand. An example of how this may be done follows using the Seaton Hall, Farrell Library, Lafene Health Center and Denison Hall area where two pedestrian paths cross as an example. Seaton Hall East Wing renovation and Farrell Library and Computer Center will be added according to the projects in high priority on the current ten-year program. In order to retain the hierarchy of circulation and open space, Farrell Library addition will be added over Denison Hall (Fig.32). Using the existing space between Farrell Library and

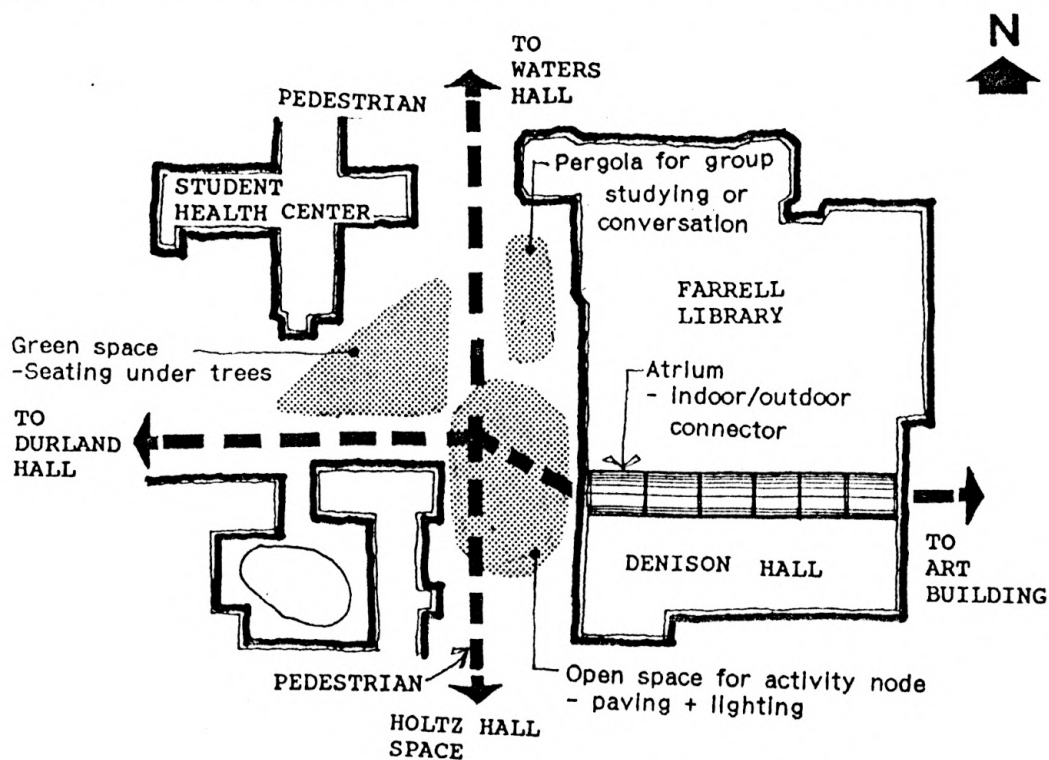


Figure 32. Proposal for Farrell Library Space

Denison Hall as an atrium, the existing pathway will be preserved as an indoor/outdoor connector. In addition, Seaton Hall East Wing will be renovated, preserving the facades of the building.

Since principal activities of the Computer Center are presently housed in three scattered buildings with ancillary facilities in two others, the proposed facility can be located on the Lafene site for more effective use of personnel in their interactions with campus academic and administrative users. The implementation of the master plan assumes the preservation of positive space and upgrading of negative space. Where possible, increments of construction will be sited in negative areas and serve as the catalyst for their upgrading.

If a scholarly interactive campus relationship is to be maintained and enhanced at Kansas State University, the tendency to allow campus development to sprawl, and sometimes approach a linear form of development, should be reversed. In addition to the collegial interests of university development, it appears that basic functional issues concerning such facets as infrastructure are better addressed with a more compact campus arrangement. A series of diagrams are presented to show a systematic approach of integrating conceptual planning ideas with the existing physical concepts of the central campus. However, it must be pointed out that this design framework only makes suggestions on locations and character of proposed

developments, and on rough form and massing of new/renovated buildings. Finally, a detailed schematic study for Seaton Hall-Student Union area is presented, which illustrates the location of functional elements, paths and places, landscaping and ground surface treatment, and activities while enhancing the image of the area.

4.1 Framework proposal

Environmental quality of the campus is expected to improve for the Kansas State University community and adjacent community from an academic, social, and cultural standpoint. The physical structure of the university is accordingly and basically a facilitating framework for the distinctive human activity patterns relating to the campus. The form and physical attributes of a campus environment, however, do bear upon the quality of life experienced by the university community and, indeed, upon the image and identity of the university.

Spatial organization shown in the framework of the campus is a result of a systematic process, obtained by combining five organizational issues described in chapter III. An appropriate choice of options for each issue is selected to best fit the future needs of the university, and they are combined into the proposal shown in Figure 34. Existing conditions are shown in Figure 33. The numbers noted on both Figures 33 and 34 identify the areas where major changes have been proposed. The changes are summarized as follows.

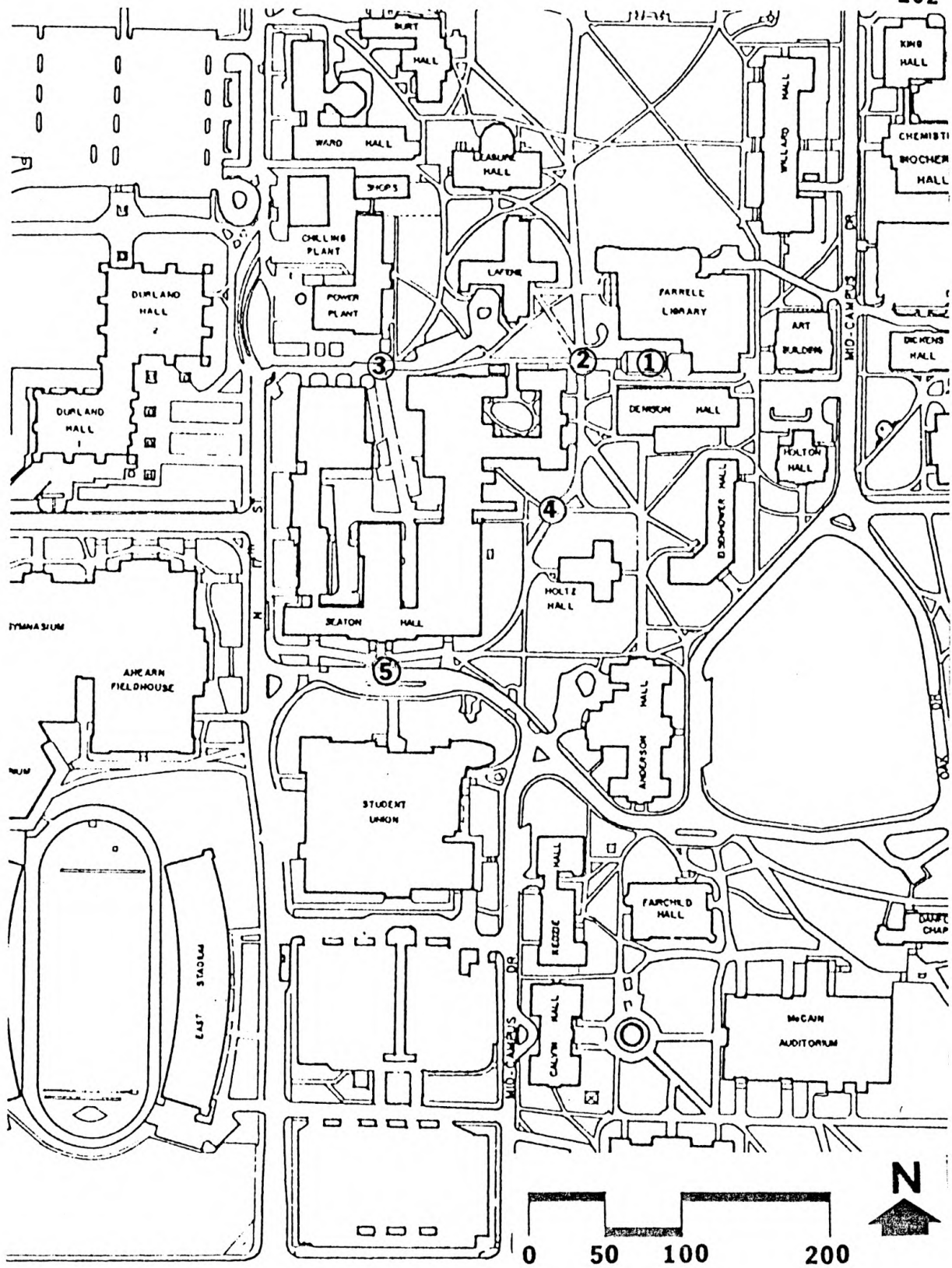


Fig.33 EXISTING CENTRAL CAMPUS PLAN

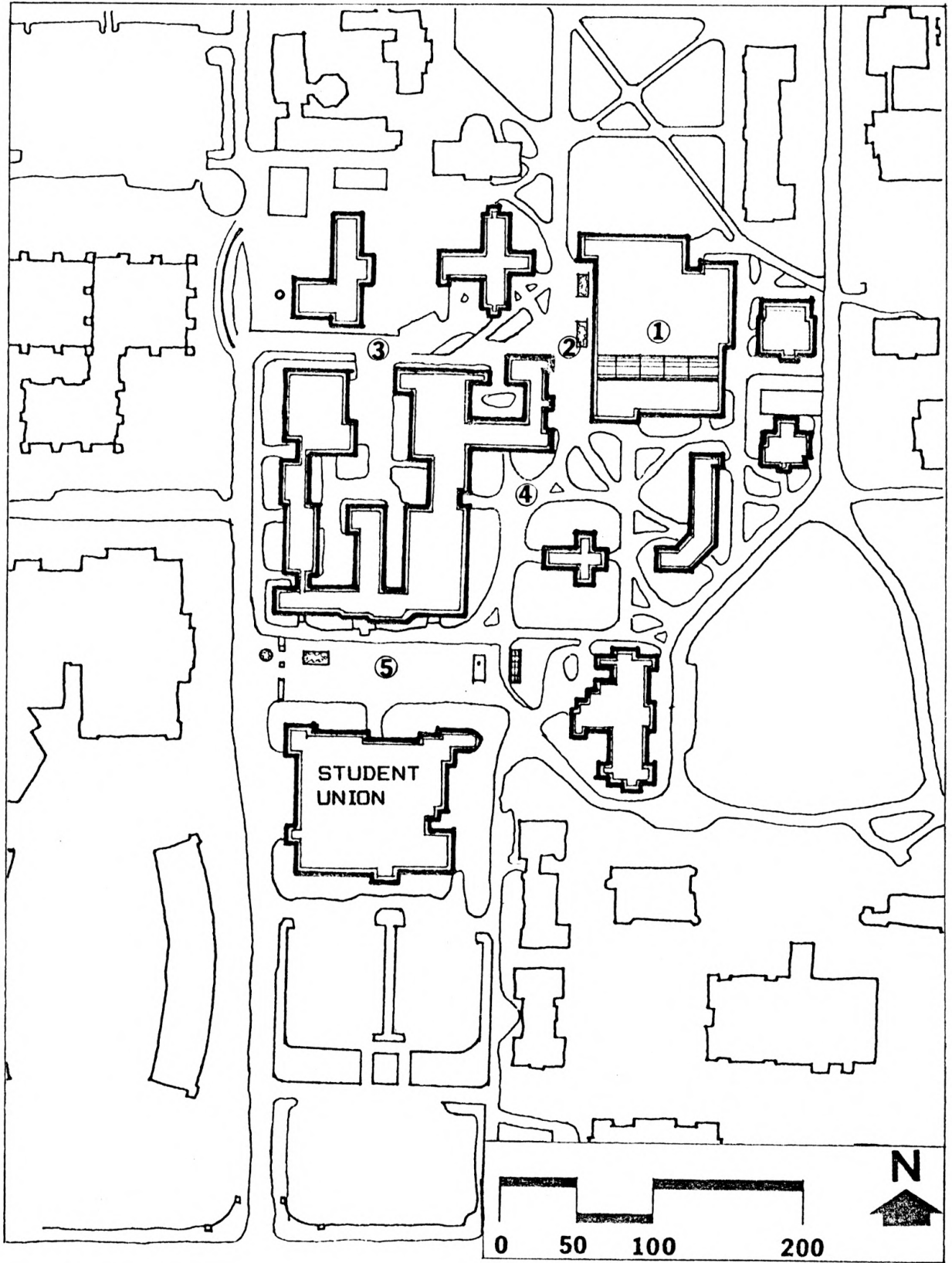


Fig.34 PROPOSAL FOR CENTRAL CAMPUS PLAN

#1. Farrell Library.

Addition extends over and includes Denison Hall. For greater detail refer to page 99 (Fig.32).

#2. Intersection of Farrell Library.

An activity node and wide open space are provided for easy pedestrian movements. For greater detail refer to page 99 (Fig.32) and page 107.

#3. Pathway along Seaton Hall and Seaton Court.

The pathway widens to minimize the conflict between pedestrians and vehicles. For greater detail refer to page 106 (Fig.35).

#4. Holtz Hall space.

The space provides more seating space. For greater detail refer to page 110 (Fig.36).

#5. Seaton Hall-Student Union space.

The space provides pleasant and comfortable features to attract more people. For greater detail refer to page 111 and section 4.2.

.University paths:

In the campus framework, the hierarchy of movements and their relationships to places are emphasized as critical determinants. Several principles and concepts are applied to this issue.

1. Existing path systems are kept and improved, sustaining the on-going system and improving its order. Major paths are

differentiated according to the intensity and character of usage.

2. The proposal follows the rule of movement hierarchy, rather than using curved or winding paths since the existing paths are located and linked in linear and/or diagonal patterns.
3. For clarity and interaction, the intersection points where two or more paths meet are to become activity places. The pedestrian travel is obviously increased at those points, and well-defined spatial forms with a pleasant environment should be provided there to become activity nodes.
4. Pedestrian, bicycle, and vehicular conflicts are minimized in order to give a safe and pleasant environment to the campus.

By providing and maintaining the sidewalks properly, the campus appears as a cohesive unit. Sidewalks are to be provided on all parts of the campus for easy pedestrian access to all buildings and wherever possible, be separated from and have a level junction with roads. For example, the pathway which is located along the north of Seaton Hall shall have enough sidewalks for pedestrians entering the central campus (Fig.35). Thus pedestrians will be safe from vehicles entering Lafene Health Center as well as from service vehicles that center on the Power Plant Shops. Since the Agricultural Engineering Department is using more vehicles for equipment than any other department in this area, the Agricultural Engineering Department

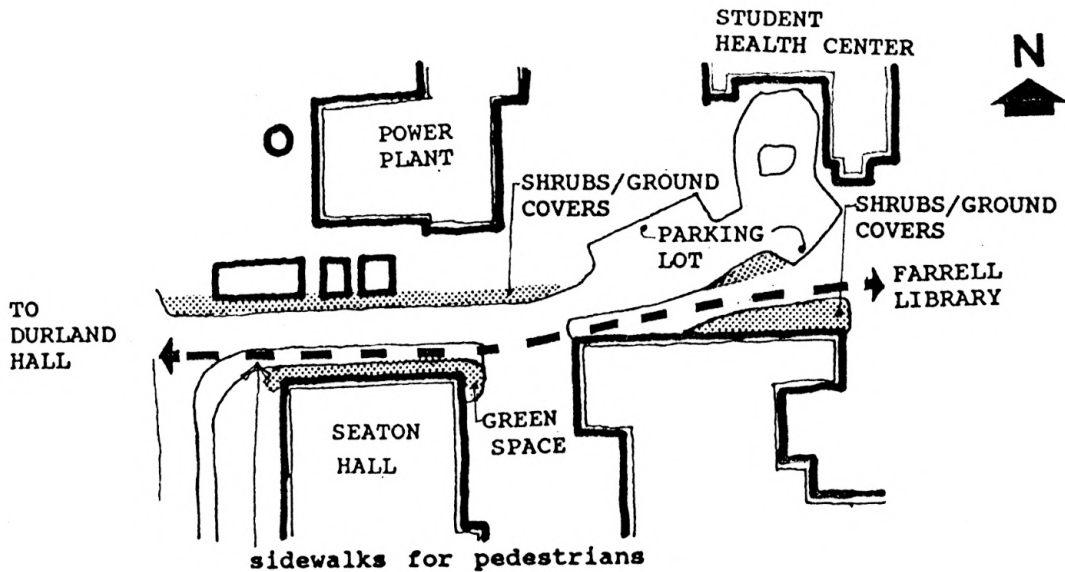


Figure 35. Pathway along Seaton Hall

should be moved from central campus to minimize the conflict between vehicles and pedestrians along this important pathway.

Pedestrian circulation is compatible along the paths and should be made as convenient as possible, physically and aesthetically. Planting along the paths is a valuable measure to improve the conditions for pedestrians, scale down the profiles visually, add variety, but also give unity to the whole pathway. Paths are the most dominant element of urban open area. It is an essential part of an active campus.

Although the present pathways are dominated by characterless concrete, adding some detail, such as new paving patterns, sculptures, and walls and benches, would add variety and make it more enjoyable to walk down the paths from one building to another. This is a very important aspect not only

for people who go to school there, but also for visitors. Moreover, it could help to solve parts of the parking problems by encouraging people to walk between parking lots and destinations, because of the opportunities for "people watching and other visual pleasures".

Activity nodes:

As reviewed earlier, there are three activity nodes (Fig.23, 24, and 25) on the central campus. In order to provide clarity and interaction, and improve the quality of the environment, the proposal would develop the interesting and pleasant potential of these nodes for students, faculty and staff, and visitors, making the area visually and functionally accessible. This maximum interaction of people along the activity node is to be achieved at such communal spaces as the service nodes, open spaces, and corridors.

Since there is a need to establish a pedestrian movement, Farrell Library expansion will help increase a well-defined spatial form at this point and convert to it into an activity node. To establish clarity and interaction, a wider open space instead of the existing narrow pathway will be provided for easy pedestrian movements. Another activity node will be provided at the Seaton Hall-Student Union space. The idea is to encourage outdoor activities in the open space with a functional connection to inside, and to increase a sense of place by using

tree groves, pavement, and space markers. This open space is recommended to continue functioning as a primary plaza for informal and extracurricular activities.

The nodes which connect pedestrian walkways to office and classroom buildings should have certain desirable characteristics:

1. Flow smoothly without automobile conflicts or abrupt changes in direction;
2. Lead directly from origin to destination points;
3. Be broad enough to accommodate occasional surges of high volume traffic;
4. Form a clear and recognizable system throughout the campus using economical materials while maintaining campus unity; and
5. Accommodate bicycles on certain portions as well as provide bicycle storage areas.

Parking Spaces:

Parking is one of the major problems and major uses of outdoor space on the central campus. The difficulty with parking is that everybody wants to park as close to his destination as possible. Although parking demand on the central campus is higher than at any other place, parking lots should yield to other facilities since land value and intensity is high.

Shuttle bus connections to major places and points of the campus are recommended. Parking space development is incompatible with aesthetic quality on the main campus. It is impossible to have both. Some parking is possible, however, not in the amounts that can meet identified demand. Any recommendation to provide parking in distant lots with a convenient shuttle bus system is looked upon by many organizations as an attempt to avoid reality. The reality of the situation, however, is that edge of campus or remote parking lots with shuttle bus service provides the only solution to campus users who are interested in an adequate parking supply while retaining the aesthetic quality of the campus. The use of a shuttle parking can be effective if the shuttle schedule can meet peak demand with frequent service and reasonable service at off peak times. In order to minimize pedestrian-vehicle conflicts in the central campus for the safe well-being of campus users, main campus vehicular parking should be kept on periphery.

Open space:

The open spaces are only part of the organism woven into all the others. The fabric for open spaces is woven in as many directions and as many levels as possible. Since it connects the interest of recreation, pedestrian circulation, visitors (tourism), historic preservation, aesthetics, and safety, it would be much harder to eliminate single elements. The

necessity of each piece as a part of much larger system would become more obvious and increase chances for psychological, political and financial support.

In the proposal, existing underutilized open space is reorganized so that the characteristics of major open spaces can be defined clearly. Open spaces are connected to each other by pedestrian paths, and they are expected to function as activity places or plazas. The following is a list of open space changes:

The Holtz Hall space: Since this space is a linear open space, pathways predominate (Fig.36). In order to give pedestrians the intimate feeling of this space, seating will be provided at the edge of the space to invite people to enter and enjoy the area while walking this path. Thus

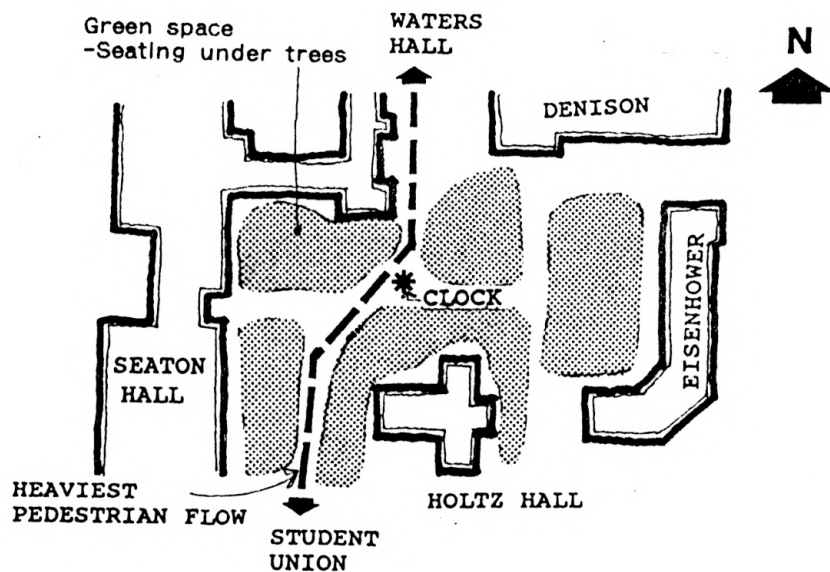


Figure 36. Proposal for Holtz Hall Space

the edge of the space is reasonably articulated, providing seating and anchor spots where people might wait, study, converse with friends, and so on.

The Seaton Hall-Student Union space: The Seaton Hall-Student Union space has been conceptually redesigned so as to provide a major space for get-togethers and outdoor activities and to serve as an example of what could be done in other spaces. This space is redesigned to help improve the existing poor environmental quality of the area and to increase the degree of utilization. In addition, in order to attract more people to the place, pleasant, comfortable features will be added to this space. More detailed study for this space will be mentioned in section 4.2.

.Positive outdoor space:

Outdoor space elements should be consistent throughout the university to control design quality as well as capital and maintenance costs and to improve management. Manuals should be developed for each program containing detailed physical design specifications, cost estimates, and management procedures. The elements to be used to achieve continuity and harmony are as follows: paving, planting, lighting, directional signs, seating, receptacles, information kiosks, and other landscaping elements. Those following the pathways would see continuous

concrete paving, and pleasant trees, supplemented by beds of native planting amid broad grass, light fittings, signs, receptacles, benches, and other elements of a coherent and consistent nature. It follows that furniture tends to be situated close to pathways, and then spread out into other areas.

.Maintenance:

The importance of a good maintenance program which succeeds in visible ways must be of the utmost concern not only to insure the popularity of the space but also to maintain the image of the campus. If user perception of the space falters because of unkempt appearance, a crucial element of the campus image is lost.

4.2. A Proposal for Seaton Hall-Student Union Space

Within the framework of the future Kansas State University campus, described in Section 4.1, a development alternative has been selected from several ideas representing a comprehensive range of feasible options. The development concepts and proposal in this section attempt to establish a focus and a hierarchial organization for Seaton Hall-Student Union space, providing an orientation to the rest of Kansas State University's campus. Thus this study is to show how a segment of the large system can be developed to promote functional

goals; social goals; aesthetic goals (a pleasant and enjoyable environment); and design and context goals.

4.2.1. Development concept

Planning concepts for the master plan are based on a desire to provide a campus environment of perceptual and architectural integrity; a campus rich in visual experiences supportive of its history and future; a campus compatible with its macro-environment; and a campus which, in terms of space, mass, and function, reinforces the educational mission of the university. Based upon the analysis of the Seaton Hall-Student Union space in chapter three and Diagram Figures 37 and 38, Analysis of the Existing Space, A Development Concept (Fig.39) was developed to organize a proposal. To provide a perceptual framework that facilitates realization of these generic planning goals, the four key strategies used to study the Seaton Hall-Student Union space are:

1. To create specific conditions of arrival and entry to the central campus that conform to issues of what is seen and when and how it is seen;
2. To attract more people, and create a diverse and active environment, with multiple opportunities for social, functional, aesthetic, and design and context goals;
3. To develop the components of the campus as an integral, experimental whole consisting of open space, physical elements, and functional systems; and

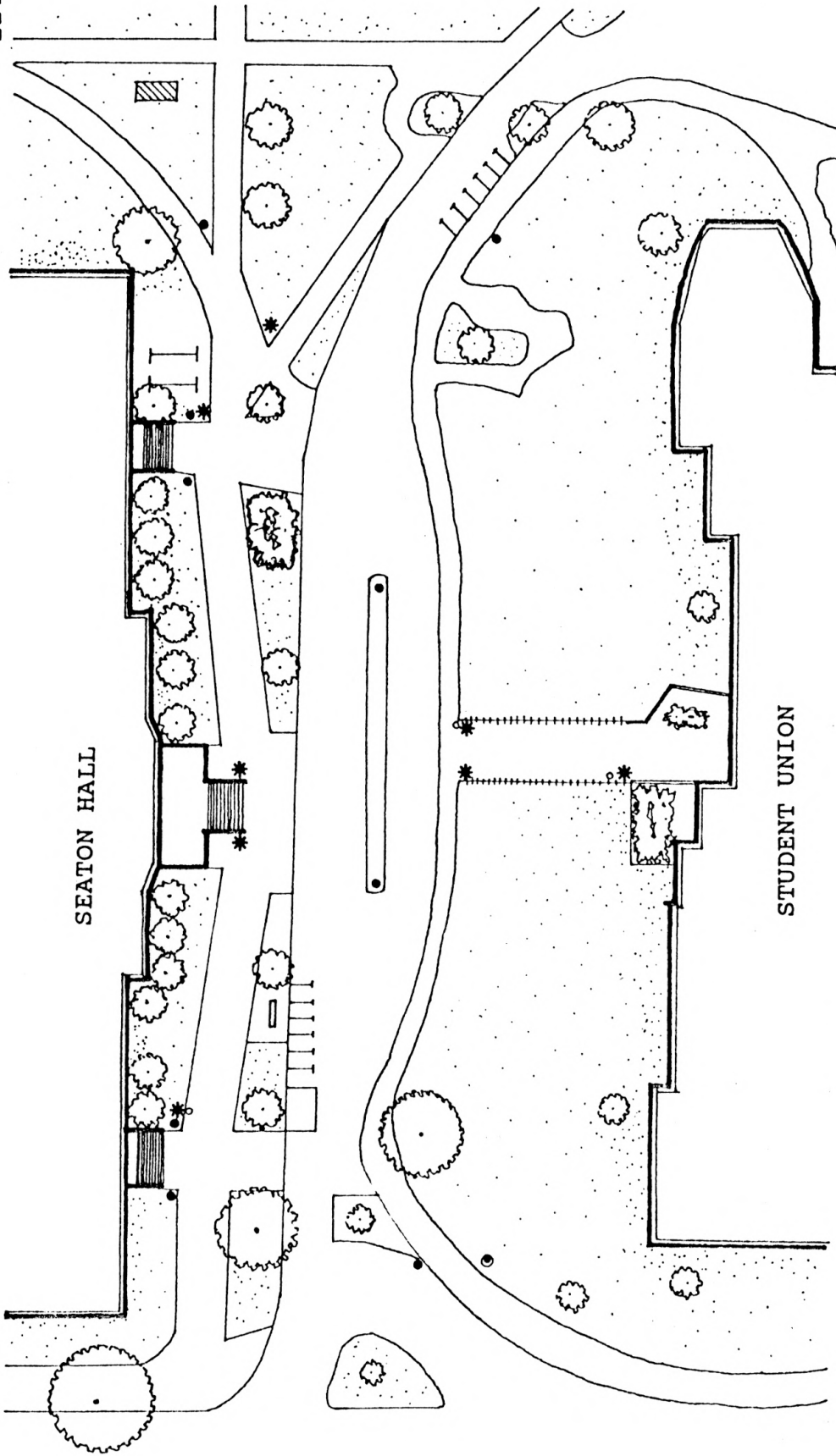


Figure 37.

Existing Seaton Hall-Student Union Space

LEGEND

- TREES
- SHRUBS/GROUND COVERS
- RECEPTACLES
- ASH URNS
- LIGHT FIXTURES
- BICYCLE RACK
- HYDRANT
- SCULPTURE
- SIGNAGE FOR SEATON HALL
- CHAIN WITH POLE



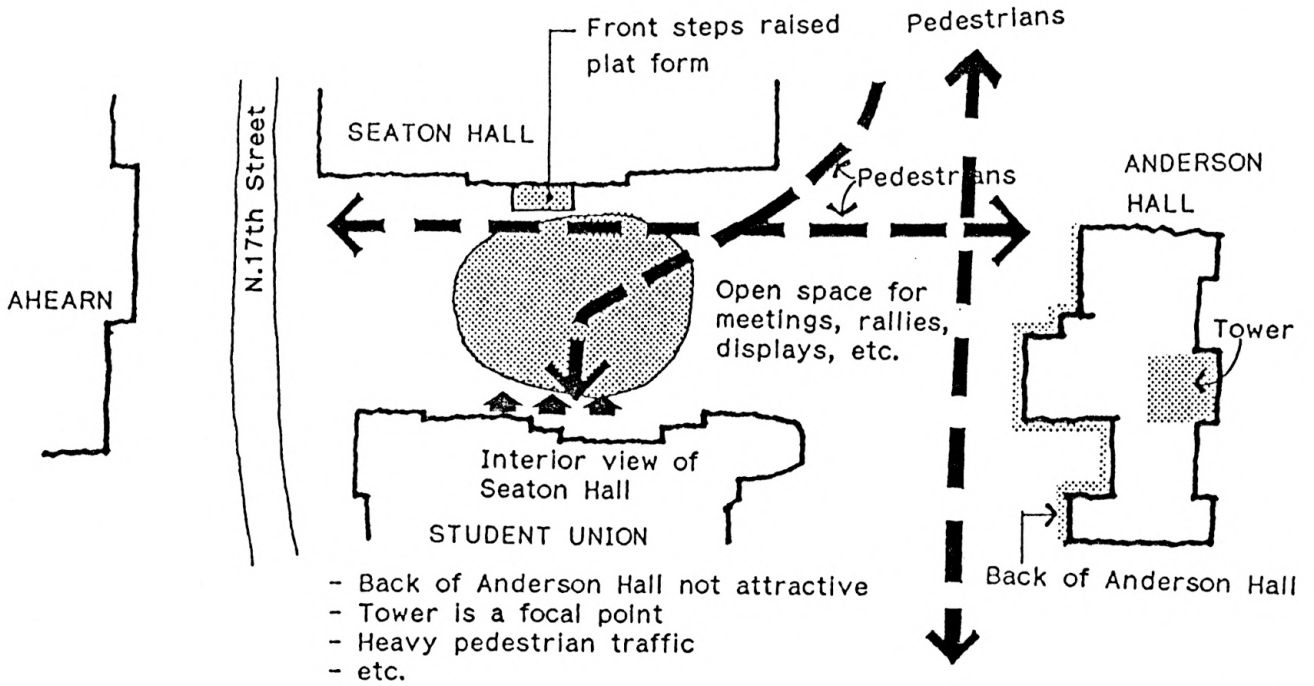


FIG.38. Analysis diagram of the existing space

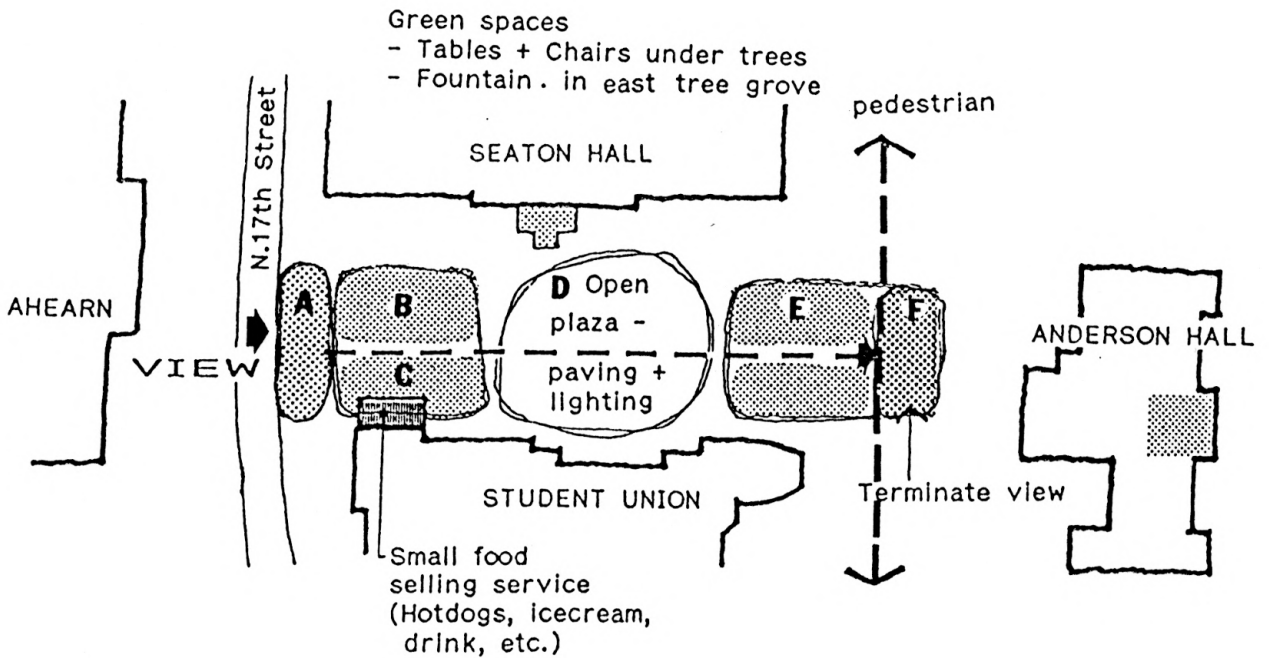


FIG. 39 Concept diagram

4. To give the space an identity as a gathering place or plaza.

The Seaton Hall-Student Union space is located on the south side of Kansas State University campus. It is the major pedestrian entry point to the central campus and is a rectangular space bounded by the Student Union, Seaton Hall, Ahearn Field House, and Anderson Hall. It is about 400 feet by 150 feet in size. The space has great potential as a plaza or gathering place to attract people to the central campus area.

A matter of great importance in this proposal is to show the relationship of open space relative to the circulation pattern. This open space may serve as a activity node, bolstered by pedestrian movement, becoming a pleasant and comfortable environment with positive outdoor space elements. In order to improve the quality of the Kansas State University central campus, five organizational issues regarding circulation and open space are described in Chapter Three. Those analyses and appropriate choices of options for each issue were combined into the framework for the central campus, resulting in the following proposals:

1. Movement hierarchy and its relationship to places are emphasized.
2. To provide clarity and interaction, an activity node develops the interesting and pleasant potential for pedestrians.

3. The area is intended as the principal open-air gathering space on campus.

4. The space contains some eye-catching features to provide a visual focal point and an easily recognized meeting place.

The space is functionally divided into several areas which are described below and located, in plan, in Figure 39.

- A. Plaza Entrance Nodal Space: In this space the occupant of a vehicle is dropped off and becomes a pedestrian. Pedestrians from the west side of campus and the west Stadium parking lot also prepare to enter the plaza and the central campus at this point.
- B. Plaza Welcome Space: This area is the space which says to the pedestrian, "welcome to central campus." Since it is located at a major entry point from north Seventeenth Street, a clearly defined path should be provided. To emphasize the entrance function, the path here may be wider than in other areas on campus. The entrance spirit of the space may be intensified through the use of sculptural space markers which both identify the entrance point and define the boundaries of the space. This would be an excellent place to locate a carefully manicured and colorful flower garden raised above the sidewalk level with walls which are wide enough to sit upon.
- C. Plaza Green-West (Dining and Gathering Space): Plantings

in this area shall be of a type and a location which will not compete with other structures. Trees define edges to the path and open space. They not only add a great deal of green to the space, but provide cooling temperatures, shade, and a park-like atmosphere. This area has a bosque of trees or a grove which says Kansas State University is a green space. With benches and tables, tree groves would provide people a place for sitting, talking, eating, and studying. Fine compacted gravel may be used as the plaza floor for the area under trees where the tables and chairs are located. In order to make pathways smooth and protect trees from pedestrian's harm, circular open metal grills around the trees would be used. Since this area is closer to the Union preparation areas, an outdoor food selling structure may be considered for dispensing food and drink and hence, attracting more people to the area. Thus tables and seating will be provided for consumers of foods as well as for those who merely want to rest.

- D. Forum Space: This area is the open plaza and public forum space which is generally located in the center of the larger space. Following the tradition of Kansas State University, this space will be designed to be used for public interactions such as rallies, meetings, debates, displays, and so on. The front steps of Seaton Hall are an important element in this area; they form, variously, a stage, a background, a place for seating, standing,

informal gathering and as a functional entrance to Seaton Hall. Since there is an interior view of Seaton Hall from inside the Union, this space will be widely open for view. A change in pavement surface that is apparent to the feet and eyes, such as transition from the pathway paving of concrete to brick, can define a plaza as a separate place without discouraging entry. In order to emphasize this wide open space, pavement will be specifically designed. The forum space as well as the paving for the space must be designed with the recognition that the entrances to Seaton Hall and the Kansas State Union are not on axis but are slightly offset.

- E. Plaza Green-East (Informal Gathering Space): This area is the eastern zone of the space. There is a heavy pedestrian traffic entering the Union and walking along Mid-Campus Drive pathway. Since the major pathway of the central campus and other minor paths focus on this space, it is an important perceptual area which serves as a primary activity node. An eye-catching sculpture fountain may be provided to create an aesthetic focal point and an imageable symbol of the area with Anderson Hall tower. Trees would be planted in a bosque or grove, with benches and seating. For interaction, tables and benches shall be provided in this area in such a way as to invite people to enter and enjoy the space. Users may bring food to the space. Informal (round) and formal (linear shape) seating

areas may be able to accommodate a great variety of needs. The ratio of linear feet of sitting space to square feet of plaza not including steps would follow or exceed Whyte's (1980) suggestion (1 foot per 30 square feet area).

- F. **View Termination Space:** This space is located at the far Eastern edge of the Seaton Hall-Union plaza and should be designed to terminate the view. This termination may be accomplished with the planting of a dense grove of trees. A stately pergola with vines may be placed in the grove on a viewing axis to emphasize the view termination. The pergola, if used, should be designed to be adjacent to a North-south sidewalk and should provide a place for group conversation or studying. It could also be designed as a food selling structure if that facility is not located in the Plaza Green-West.

4.3 Conclusion

This thesis has evaluated the central campus of Kansas State University in terms of the circulation and open space in order to develop a detailed schematic study for the Seaton Hall-Student Union space. The objective of this study was to produce a conceptual master plan from the documenting evaluation; and recommendations were made for the improvement of the campus. In addition, a major aim was to show how a segment of the large system can be developed to promote functional goals; social

goals (interaction among users); aesthetic goals (a pleasant and enjoyable environment); and design and context goals.

A review of the historical background revealed that the existing campus could be understood through the basic structural and physical framework of Kansas State University. Thus the university's characteristics in context, circulation and open space, and architectural style were identified for the development of a bucolic campus development scheme in Chapter Two.

After reviewing the historical background, the central campus was analyzed according to five categories: (1) university streets; (2) activity nodes; (3) parking spaces; (4) accessible green; and (5) positive outdoor space. Using the form of a single map was instrumental in analyzing five major themes of evaluation and identifying the issues for the conceptual master plan.

After analyzing the central campus, the framework of the central campus was developed from a systematic process, obtained by combining five organizational issues described in Chapter Three. In addition, the study was done retaining the character of the existing campus. The plan represented the maximum desirable development which can maintain and enhance the environment with imageability. And then, a proposal for Seaton Hall-Student Union space showed how the space should be modified. The schematic study was to incorporate concepts to improve the image and quality of Kansas State University. The

plan was designed to meet the needs identified in this study within the guidelines and physical framework of the central campus. The plan will be implemented in a continuous process within the funding established by Kansas State of University and the Kansas Board of Regents, or from private donors.

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AN ANALYSIS AND SCHEMATIC REVIEW
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ON CENTRAL KANSAS STATE
UNIVERSITY CAMPUS

by

SEUNG-KOO JO

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ABSTRACT

Generally, the master plan articulates university concerns and criteria in terms of generic issues. Its purpose is to provide a basis for evaluating the many alternatives which will surface throughout its implementation. Throughout the history of Kansas State University, the university has maintained the unique bucolic characteristics of the campus physical environment. By using the analysis and schematic review, this study is to identify, evaluate, and plan the organizational, spatial, and environmental characteristics on the central campus critical to the Kansas State University's identity while increasing the intensity of development and solving circulation and open space problems.

The purpose of this study is to produce a conceptual master plan for central campus by evaluating of the central campus in terms of the circulation and open space. The central campus was analyzed according to five categories: (1) university streets; (2) activity nodes; (3) parking spaces; (4) accessible green; and (5) positive outdoor space. From these categories, relevant issues were established to develop a proposal for the central campus; and recommendations were made for the improvement of the central campus. Therefore, the schematic proposal showed the elements which should be modified in order to provide for the future needs in an orderly, formal, and functional pattern of growth representing the image and quality of the university.

The primary objective of this thesis is to develop a schematic study for the Seaton Hall-Student Union space. It shows how a segment of the large system can be developed to promote functional goals; social goals (interaction among users); aesthetic goals (a pleasant and enjoyable environment); and design and context goals. It represents how this space should be modified in order to attract people and enhance the place, retaining the character of the existing campus.