August 17, 1957

To the Graduate Council:

I am submitting herewith a thesis written by William Elmer Raper entitled "A Study of Physical Plants and Their Utilization in Tennessee State-Supported Institutions of Higher Education." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Educational Administration and Supervision.

John W. Gilliland
Major Professor

We have read this thesis and recommend its acceptance:

E. S. Armstrong

Galen M. Downey

Ben B. Graff

John W. Robertson

Accepted for the Council:

Dale Vanatta
Dean of the Graduate School

33-A

A STUDY OF PHYSICAL PLANTS AND THEIR UTILIZATION IN TENNESSEE STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

A THESIS

Submitted to
The Graduate Council
of
The University of Tennessee
in
Partial Fulfillment of the Requirements
for the degree of
Doctor of Education

---

by

William Elmer Raper

August 1957

ACKNOWLEDGEMENT

In the preparation of this study the writer is indebted to many individuals for assistance and encouragement. It would be an impossibility to make specific mention of all individuals to whom gratitude is due.

The writer is especially grateful to members of his sponsoring committee: Dr. John W. Gilliland, Chairman, Dr. Orin B. Graff, Dr. Galen N. Drewry, Dr. Edward S. Christenbury, and Dr. John W. Robertson.

Particular thanks is extended to Dr. John W. Gilliland, whose leadership and guidance have been a constant source of inspiration.

Special acknowledgement is made to Dr. Truman Pierce, Dr. A. D. Albright, Dr. Ormond Corry, and the Tennessee Legislative Council on Higher Education in Tennessee. The writer is thankful to the institutional leaders who furnished the data for this study.

Finally, the writer is also deeply indebted to his wife, Jeane, for her patience and assistance in all preliminary work leading to the final typing of this study.

382676

TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION	1
	The problem	3
	Basic assumptions	4
	Delimitations	4
	Definitions	5
	Significance of the study	8
	Procedures and sub-problems	10
	Related studies	15
	Summary	23
II.	PRESENT FACILITIES FOR STATE-SUPPORTED HIGHER EDUCATION IN TENNESSEE	24
	Austin Peay State College	24
	Tennessee Polytechnic Institute	29
	East Tennessee State College	35
	Middle Tennessee State College	38
	Tennessee Agricultural and Industrial State University	43
	University of Tennessee	48

CHAPTER PAGE

II. (continued)

University of Tennessee, Martin Branch 52

University of Tennessee, Memphis Branch 54

University of Tennessee School of Social Work 58

Memphis State College. 60

Summary 67

III. EXPENDITURES FOR PLANT FACILITIES IN STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION . . . 68

Present value of buildings 70

Replacement value of buildings 70

Replacement value of buildings by periods of remaining useful life 74

Insurable value of buildings. 78

Obsolescent buildings 82

Institutional per cent of obsolescent space 84

Replacement of space 86

Present and replacement value of obsolescent buildings 90

Present and replacement values of buildings depreciated 50 per cent or more 92

CHAPTER PAGE

III. (continued)

Value of land holdings 94

Summary 96

IV. UTILIZATION OF LAND HOLDINGS, CLASSROOMS, AND STUDENT STATIONS IN STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION 97

Campus area per full time equivalent student 98

Acres for all purposes 100

Acres in field plots and gardens 103

Acres in parks and landscaped areas 103

Acres for playing and practice fields 106

Area covered by buildings, walks, and drives 108

Parking spaces 110

Land for other purposes 112

Utilization of space 113

Per cent of student station utilization 120

Per cent of room utilization 123

Laboratory and office research 125

Usable area in square feet per full time equivalent student 126

CHAPTER PAGE

IV. (continued)

Comparison of number in classes 130

Hours lecture rooms in use by days of week 133

Hours laboratory rooms in use by days of week. 133

Summary 135

V. PREDICTED ENROLLMENTS AND SPACE REQUIREMENTS FOR TENNESSEE STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION 138

Projected enrollments through 1961, 1966, and 1971 138

Space projections through 1961, 1966, and 1971. 148

Summary 161

VI. SUMMARY AND CONCLUSIONS 163

Summary 163

Conclusions 166

BIBLIOGRAPHY 174

LIST OF TABLES

TABLE		PAGE
I.	Origin of Each Institution	25
II.	Value of Buildings Owned by Tennessee State-Supported Institutions of Higher Learning	71
III.	Replacement Value of Buildings Owned by Tennessee State-Supported Institutions of Higher Learning	72
IV.	Replacement Value of Buildings Owned by Tennessee State-Supported Institutions of Higher Learning by Periods of Remaining Useful Life	75
V.	Replacement Value of Buildings Owned by Tennessee State-Supported Institutions of Higher Learning One to Thirty Years	77
VI.	Insurable Value of Buildings Owned by Tennessee State-Supported Institutions of Higher Learning	79
VII.	Per Cent of Present Value of State-Supported Institutions of Higher Learning Covered by Insurance	81
VIII.	Total and Obsolescent Area in Square Feet of State-Supported Institutions of Higher Learning	83

TABLE PAGE

IX. Per Cent of Obsolescent Space of Buildings Owned by Tennessee State-Supported Institutions of Higher Learning 85

X. Area in Square Feet of Tennessee State-Supported Institutions of Higher Learning That Needs Replacing Within a Period of Six to Fifteen Years 87

XI. Area in Square Feet of Tennessee State-Supported Institutions of Higher Learning That Needs Replacing Within a Period of Sixteen to Thirty Years 89

XII. Present and Replacement Value of Obsolescent Buildings Owned by Tennessee State-Supported Institutions of Higher Learning 91

XIII. Buildings Owned by Tennessee State-Supported Institutions of Higher Learning Depreciated 50 Per Cent or More 93

XIV. Present Value of Land Holdings of State-Supported Institutions of Higher Education 95

XV. Enrollment in State-Supported Institutions of Higher Education . . 99

XVI. Campus Area for Full Time Equivalent Student in State-Supported Institutions of Higher Education 101

XVII. Total Acres for State-Supported Institutions of Higher Education 102

TABLE PAGE

XVIII. Acres in Agricultural Field Plots and Gardens for State-Supported Institutions of Higher Education 104

XIX. Parks and Landscaped Areas of State-Supported Institutions of Higher Education 105

XX. Area of Playing and Practice Fields in State-Supported Institutions of Higher Education 107

XXI. Area Covered by Buildings, Walks, and Driveways for State-Supported Institutions of Higher Education. 109

XXII. Parking Spaces for State-Supported Institutions of Higher Education 111

XXIII. Square Feet Per Lecture, Laboratory, and Lecture-Laboratory Room for State-Supported Institutions of Higher Education 116

XXIV. Square Feet Per Student Station in State-Supported Institutions of Higher Education 119

XXV. Per Cent Utilization of Student Stations in State-Supported Institutions of Higher Education 121

XXVI. Per Cent of Room Utilization in State-Supported Institutions of Higher Education 124

XXVII. Area in Square Feet Per Full Time Equivalent Student in State-Supported Institutions of Higher Education. 127

TABLE PAGE

XXVIII. Average Number in Class in State-Supported Institutions of Higher Education 131

XXIX. Average Hours Lecture Rooms in Use by Days in State-Supported Institutions of Higher Education 134

XXX. Average Hours Laboratory Rooms in Use by Days in State-Supported Institutions of Higher Education 136

XXXI. Enrollment Projection for the Fall of 1961 for State-Supported Institutions of Higher Education 141

XXXII. Enrollment Projection for the Fall of 1966 for State-Supported Institutions of Higher Education 144

XXXIII. Enrollment Projection for the Fall of 1971 for State-Supported Institutions of Higher Education 146

CHAPTER I

INTRODUCTION

One of the most important characteristics of higher education in Tennessee is the emphasis which the State has placed upon making public higher educational facilities available in all parts of the State. Seven public institutions of higher education are supported by the State of Tennessee. The University of Tennessee maintains a main campus in Knoxville, branches in Martin, Memphis, and Nashville, and six agricultural stations located throughout the State. The other State-supported institutions of public higher education are: Austin Peay State College, located in Clarksville; East Tennessee State College, located in Johnson City; Memphis State College, located in Memphis; Middle Tennessee State College, located in Murfreesboro; Tennessee Agricultural and Industrial University, located in Nashville; and Tennessee Polytechnic Institute, located in Cookeville.

Changes are constantly taking place in the social and economic life of the people of the State. When changes occur at a very rapid rate, great difficulty is experienced in making adjustments to them. The changes of the present era are becoming more accelerated, and the difficulties experienced in making adjustments are therefore increased. The judgment of the Legislative Council is that if the Tennessee educational system is to be maintained

at a high level of efficiency, recognition must be taken of these changes and plans for alleviation of problems which they bring must be formulated.

Tennessee public higher education faces a crisis. A steadily increasing percentage of the population is enrolling in colleges, and a rapidly growing population in the State is providing a greater number of college-bound students. These factors mean that existing facilities will have to be more fully utilized and additional facilities must be added.

The General Assembly of Tennessee recognized this responsibility and in 1956 provided for a thorough survey of public higher education in the State to be carried forward under the direction of the Legislative Council. Thus, through constituted authority, the survey can furnish the basis for effective planning for higher education in Tennessee. The writer has analyzed and interpreted the survey data of the study which pertain to the college and university physical plants and their utilization.

The data in this study were collected with instruments prepared by the Tennessee Legislative Council Committee on Higher Education in Tennessee. These data have been checked by the Legislative Council and the administrative representative from each institution.

The Problem

The purpose of this study was to determine the status and utilization of the physical facilities of Tennessee state-supported institutions of higher education and to advance recommendations for improving these facilities and their utilization.

Sub-Problems

To achieve the purpose of this investigation it has been necessary to collect and analyze data concerning each institution of higher learning in Tennessee. The specific purposes of this study are treated under the following sub-problems:

1. To trace the development of physical facilities of each institution of higher education in Tennessee.

2. To determine the expenditures in Tennessee in regard to the cost of buildings, land holdings, and rehabilitation.

3. To appraise the utilization of classrooms and student stations in relation to their full potential.

4. To analyze physical plant needs based upon present and future enrollments through 1961, 1966, and 1971.

5. To summarize the findings in this survey and make recommendations in the light of the findings.

Basic Assumptions

1. College and university leaders need accurate knowledge in order to utilize present facilities and to chart plans for future building expansion.

2. There is a need for an understanding of the principal uses of college land and buildings so that service may be expanded through more careful utilization of physical facilities.

3. A survey of school plants and analysis of their utilization serve as a basis for appraising the present facilities.

4. An inventory of buildings is necessary to determine the obsolescence, remaining useful life, and replacement or rehabilitation cost.

5. Adequate housing for increased enrollment of colleges is a persistent problem in education today.

6. Maintenance and operational services can be improved through efficient planning.

7. There is an urgent need for an analysis of many facets of higher education.

Delimitations

1. This study does not attempt to report an over-all picture of

higher education; rather it reflects only aspects of plant and land holdings and their utilization.

Definitions

1. Maintenance may be defined as those activities which are concerned with keeping the grounds, buildings, and equipment at their original condition of efficiency, either through repair or by replacement with property of equal value or efficiency. This function of the school system is provided for in the annual budget.

2. Operation may be defined as those activities which are concerned with housekeeping in nature and are involved in keeping the physical plant open and in use. These items would be included in the annual budget.

3. Capital outlay represents an expenditure which results in the acquisition of fixed assets and which increases the holdings or total worth of the school. It includes the purchase of land, equipment, major improvements to grounds or buildings, and new construction. The items would normally be placed in the annual school budget but would be provided for in bond issues or by other means of financing.

4. A full-time equivalent student is a student carrying a full,

normal academic load.[1]

5. Student station is a place or seat at which a student may be located, such as a classroom seat, laboratory seat, bench, table, or lecture room chair.[2]

6. Utilization space is the degree of use of a room or building, the actual amount of use compared with the total possible amount of use of such a unit.[3]

7. Utilization student station is the ratio of the number of student stations used for all class periods to the number provided for all class periods of all days of a week.[4]

8. Utilization of classrooms is the percent of the ratio of the number of students occupying classrooms of a building or buildings for all class periods of all the days of a week to the total number of seats in classrooms for all class periods of all days of a week.[5]

---

[1]Carter V. Good, Dictionary of Education (1st ed.; New York: McGraw Hill Book Company, Inc., 1945), p. 179.

[2]Ibid., p. 392.

[3]Ibid., p. 440.

[4]Ibid., p. 440.

[5]Ibid., p. 440.

9. Rehabilitation is the process of remodeling or restoring to a previous state.

10. Physical plant is the land, buildings, and other plots used for university of college activities. This includes buildings for instruction and administration, libraries, gymnasiums, dormitories, power plant, and other buildings; also the equipment and furniture of such buildings.

11. Campus is the grounds of a university or college on which the buildings are situated.

12. Immediate campus is the grounds on which the buildings are situated including the grounds around the institution but not those situated at a distance; most often limited to those landscaped.

13. Campus care concerns the work of keeping the campus in an orderly and beautiful condition.

14. State institution is any institution controlled and supported by the state and serving all or a part of the state.

15. Private institution is an institution governed by a board independent of public governmental agencies except for charter and statutory limitations.

16. Foot candle is the amount of light falling on an object one foot from a standard candle.

17. Central heating plant is one used to furnish heat to a large number of buildings of a college or university.

18. Heating plant-separate is a heating plant used to heat a single building, separate from the central plant.

19. Instrument is a form or outline used as a guide in gathering data.

20. Ventilation means the process of supplying and removing air by natural or mechanical means from any space or room.

21. Obsolescence is the term used to designate buildings that structurally are in such condition that they would stand for many years of use, but from the point of view of housing an educational program are generally unsatisfactory.[6]

Significance of the Study

The State institutions of higher education in Tennessee are vitally concerned about how to better utilize their present facilities in meeting the demands made upon them by increased enrollments and expanding course offerings.

A comprehensive analysis of existing facilities is fundamentally important in understanding and interpreting various needs, changes, and trends

---

[6] American Association of School Administrators, Twenty-Seventh Yearbook, American School Buildings. (Washington, D. C., 1949.)

that have occurred in higher education. It is through the understanding of the past and present conditions and the proper utilization of physical facilities that school administrators and interested persons may be better prepared to make adequate provision for the future development of higher education in Tennessee. The information gathered and interpreted in this study should be of value in planning and developing facilities for the future.

The increased number of students enrolling in college have brought unprecedented changes upon higher education as well as our public secondary schools. These changes have brought upon us many complex problems that must be faced realistically, and intelligent decisions regarding them must be based upon concrete knowledge of what present facilities are and what the future needs will be. This study should be a source of material for persons charged with making decisions in the light of future needs.

The fact that this study is one of several studies which is a part of a broader or more extensive study of public higher education in Tennessee increases its importance in relation to the total program. The interest shown in the data on the entire series of studies indicates the information will be widely distributed and used in making decisions pertaining to school plants and their utilization. Considerations of other facets of the program are important in the total program of improving education in Tennessee. The other facets of the program are:

1. A description of the role, purpose, functions, and needs of higher

education in Tennessee.

2. An analysis and interpretation of existing programs and services of higher education within each institution.

3. An analysis of the social and economic conditions and outlook in our State.

4. A description of steps to improve present programs and services and steps recommended for the continued improvement of higher education in Tennessee. Each study is complete in itself but together they form a more complete picture or pattern of the total situation.

The process of collecting data should have implications for state departments of education, colleges, universities, and other personnel involved in gathering large samples of data or information. The whole program suggests that research would be more intensive and comprehensive if gathered by groups rather than by individuals. Through the group process the time for collecting data would be shortened and processing and interpreting would be more efficient.

Procedures and Sub-Problems

The purpose of the survey will be to point up possible improvements in current programs of higher education in Tennessee with present available resources and to provide a design for intelligent planning to meet the

future needs.

The improvements in public higher education may not be altogether dependent upon an increase in resources. Positively, some aspects of the programs, services, and utilization can become more effective within the present means and facilities. To keep abreast of the rapid social and economic changes and the increased enrollments, Tennessee, no doubt, will have to extend its programs and services and furnish a design by which judicious consideration can be given to steps that must be taken to further the advancement of higher education in Tennessee.

The survey of higher education should be carried forward by procedures that will improve higher education as the survey moves forward. The mere formality of gathering facts will not insure the improvement of higher education. Its improvement is primarily dependent upon what is done by the General Assembly, the policy-making boards for institutions of higher education, and the personnel of the colleges and universities in Tennessee. It is the responsibility of the General Assembly to set the over-all framework and to provide the financial support for carrying on the programs.

Within the framework and financial support furnished by the General Assembly, the State Board of Education for the State colleges and Tennessee Agricultural and Industrial State University and the Board of Trustees of the University of Tennessee establish policies, rules, and regulations governing

the institutions of higher education. The data gathered and interpreted should prove useful to the above-mentioned groups as guide lines in an effort to examine present policies and to formulate policies for the future.

To further prepare for the study the writer has taken courses in: Maintenance of School Plants, Problems in Educational Administration and Supervision, Surveys in Education, School Finance, Personnel Problems, and preparatory and advanced courses in school buildings, as well as participating in field surveys in the University of Tennessee program.

The survey committee prepared the instruments through which data were collected for this study. The instruments for this phase of the study are: 1. Inventory of building forms, 2. Instructional area forms, 3. Utilization of instructional space, and 4. Land holding forms. Other data were taken from the literature of each institution and related studies from other states. It has been the task of the writer to tabulate, examine, and analyze the data collected through the instruments previously mentioned in the above paragraphs.

Sub-Problem I

Development of Higher Education Physical Facilities in Tennessee.

The data regarding the history and facilities of higher education in Tennessee were collected from the survey instruments, records and bulletins from each institution, and other available literature. From the data collected a chart

was constructed which contains the following information: The name of each institution, the original name of each institution, the present name, dates the institutions were established, the date each institution was acquired by the State of Tennessee, and the age of each institution through 1956. The data also include a historical sketch and facilities of each institution.

Sub-Problem II

Expenditures for Higher Education in Tennessee. Data on expenditures were obtained from the survey instruments on inventory of buildings. Presented are cost analyses regarding the following: Present value of buildings, replacement value of buildings, insurable value of buildings, obsolescent buildings, per cent of space obsolescent, present and replacement value of obsolescent buildings, replacement of space by periods, and replacement value of buildings 50 per cent or more depreciated. Also treated are the replacement value of buildings by years of remaining useful life and the value of land holdings for each institution of higher education in Tennessee. An analysis of these data was used as a basis for determining the expenditures for present facilities and future needs of each institution.

Sub-Problem III

An Appraisal of Land Holdings, Classrooms, and Student Stations. Statistics show that enrollments in the State institutions of higher education have increased tremendously over a period of years. There is a need for

information that will help to alleviate the situation until facilities can be expanded or other adjustments can be made. These data were analyzed to point up utilization in the following manner: Campus area per full time equivalent student; the uses of land for agriculture, parks, landscaping, athletic fields, parking and other uses. The data include the utilization of classrooms and student stations and the usable space per full time equivalent student. Also included was a comparison of hourly room use during the days of the week. The degrees of utilization of higher education facilities in Tennessee were shown by use of these data.

Sub-Problem IV

An Analysis of Physical Plant Needs Based Upon Present and Future Enrollments Through 1961, 1966, and 1971. The physical plant of an educational institution is a tool to facilitate an educational program. It has been said that a workman cannot do good work without good tools. This applies to a college faculty as well as to mechanical craftsmen.

Since the acquisition of the University of Tennessee in 1807, Tennessee has made remarkable progress in the expansion and improvement of the physical facilities of its institutions of higher learning. Many factors must be considered in determining the facilities that will be needed in the future. The data in Chapter IV were used to point up the physical facilities

needed by each institution to carry on an adequate educational program. This chapter also contains the projected enrollments through 1961, 1966, and 1971 for each institution of higher education. The institutional needs were projected from data on enrollment increases and existing facilities. Data in this chapter show the geographical areas in the State from which each institution draws its major portion of enrollment. This information affords some basis upon which to predict future building needs in State-supported institutions of higher education in Tennessee.

Sub-Problem V

To Summarize the Findings and Make Recommendations in the Light of Such Findings. This sub-problem, treated in Chapter V, is concerned with the summary, conclusions, and recommendations of this study. Data from all survey instruments, information from related literature, related courses, and actual experiences were used to formulate the conclusions and recommendations which may be used by the Legislative Council, the State Board of Education, the Board of Trustees of the University of Tennessee, and other planning personnel of the State of Tennessee to improve the physical facilities at Tennessee institutions of higher education.

Related Studies

The Arkansas Study was to analyze the educational program of State

public schools. This study seeks to promote constructive action. Its threefold purpose was to diagnose the problem, to prescribe a cure, and to bring about cooperation of business men and educators for the purpose of effectively administering the treatment.

Among Arkansas' educational needs as revealed by the survey were:

1. The development of an organization which will provide an economical and efficient administrative school unit.

2. A financial program which will provide increased salaries for teachers.

3. Equality of educational opportunity which will bring educational benefits to all the children throughout the State.

4. Hundreds of small school units are allowed to exist.

5. A need for reorganization of the local administrative structures.

6. Inability of many local units to give their children adequate schooling.[7]

The Florida Study was a survey made on higher education and Florida's future. The first part of the study treats the Legal Foundations for Higher Education in Florida. An attempt was made to outline the most

---

[7] Public Education in Arkansas (Little Rock: Arkansas Public Expenditure Council, December 1954).

important constitutional and statutory provisions relating to the Board of Control, the State Board of Education, and the establishment of public and private institutions of learning in the State of Florida. The prime purpose of this portion of the study is to find exactly what legal provisions are now made for higher education rather than to present a detailed study of the actual functioning of the Board of Control and the State Board of Education.

The second portion of the volume is "A Limited Study of the Governing of Public Universities." However limited, the study revealed the following analysis:

1. Florida's system of governing of public universities appears to be complicated and of such a nature that it is difficult to place responsibility for their control.

2. The committee system of the Board of Control apparently does not operate in the way in which the Board has said it would.

3. The lines of responsibility of the architect do not appear to be clear.

4. The Minutes of the Board of Control seem well kept but do not give a complete account of all the Board's transactions.

5. The Board of Control has functions which are unrelated to higher education.

6. The Board of Control considers some items which are not

administrative in character.

7. In general, the Minutes of the Board meetings do not indicate that it conceived of its role as concerned with all public higher education in Florida as a unified system.

8. The role of the Executive Secretary of the Board of Control seems to have changed in the last several years.

9. It seems that the presidents of the three universities do not have delegated to them the authority commensurate with their responsibility or that the presidents do not exercise their authority but in self-defense refer matters to the Board.

10. The reason for the Board of Control engaging in so much administrative activity may lie with one of the following: the Legislature, the Board of Control itself, the nature of the relationship with the Board of Education, or the university presidents.

The third part of the study, "The Business and Financial Procedures of Higher Education in Florida," pertains to procedures designed to assure regard for those provisions of the Constitution and the Statutes as to safeguarding the expenditures of public funds and property and to secure the fullest possible value for every dollar of such funds expended. Also reviewed were the procedures for requesting appropriations, procedures for receipts and deposits of revenue, and the disbursement of funds.

The fourth part of the study treats the costs of higher education in Florida in regard to Florida's position among other states in expenditures for higher education. Also treated in this portion of the study are the expenditures of the various higher education institutions of the State.[8]

The purpose of the Indiana Study was to determine the status of Indiana to neighboring states in the following categories:

1. Does Indiana provide financial support to its State schools to a degree comparable to that provided by similar institutions in neighboring states?

2. Are the budgetary methods such as to enable the State's higher educational institutions to secure legislative attention to their needs for funds not only for continuing maintenance, but also for reasonable capital development?

3. Are the present facilities in the form of lands, buildings, service utilities, scientific and industrial equipment, and libraries adequate to permit these institutions of higher learning effectively and economically to carry on their work?

4. What provision, if any, should be made for enlarged facilities on account of unmet needs or obsolescence or of natural expected expansion?

5. Are the salaries paid and the conditions and facilities of service such as to enable these institutions to secure and retain teaching and scientific

staff professionally comparable to those institutions of other states?

6. To what extent are funds wasted as a result of (a) faulty institutional organization or administration, (b) needless duplication in the offerings of departments or colleges within the institution?

7. How does the service load of members of the teaching staff compare with that of similar institutions in neighboring states?

8. To what extent may increased funds for the support of institutions of higher learning be obtained from student fees?[9]

The Mississippi Study of Higher Education was an attempt to gather data and counsel from the State Department of Education, the State Board of Health, other state departments, the Legislature and members of business, professional, agricultural, civic, and industrial groups, and citizens in general to advocate what they felt they had a right to expect of the State's institutions of higher education. Letters were sent out asking for expressions in answer to such questions as the following:

1. What are the needs of the people of Mississippi for higher education?

2. To what extent do the offerings of our institutions meet these needs?

---

[9] A Survey of the State Institutions of Higher Learning in Indiana (Indianapolis: Board of Public Printing, December 1926).

3. How can provisions be made to extend services in higher education?

4. What is the relationship of each institution to a total program of higher education?

5. What are the barriers, if any, to the most constructive service by the State institutions of higher education?

The replies to the letters were classified and filed according to subject and made available in the Board's office to consultants. Members of the Board, the various consultant groups and committees read these reports, discussed them, and eliminated overlapping of materials.

The principal purpose of this study was to point up weaknesses and to recommend remedies for correction in the higher institutions of learning in the State of Mississippi. The study staff frequently commended the professional personnel for the high character of work they were doing in higher education in Mississippi.[10]

The Louisiana Study comprises five volumes which constitute a report to the Governor, the Legislature, the respective boards of institutions of

---

[10] Mississippi Study of Higher Education (Jackson, Mississippi: Board of Trustees, 1945).

higher education supported by the State, to the State Superintendent of Education and his staff, and to the People of Louisiana from the Louisiana Commission on Higher Education.

Volume I summarizes the demands and resources for higher education in Louisiana through 1970. The second volume presents a proposed long-range plan for higher education, the third deals with organization and financial management for this plan, the fourth develops an educational program to best serve the needs from publicly supported higher education in the State, and the fifth volume contains observations and suggestions for improvements in plant and business management for State-supported institutions of higher education. Volume V also develops auxiliary enterprises, purchasing and stores, plant and physical services, availability and utilization of space, and projection of plant requirements.[11]

Summary

This chapter has stated the purpose of this study, namely, to analyze and appraise the physical facilities of higher education in Tennessee and to advance recommendations for improving these facilities and their utilization.

---

[11] Plant and Business Management for Higher Education in Louisiana (Baton Rouge: Louisiana Commission on Higher Education, undated).

The sub-problems and procedures for their study have been outlined. Basic assumptions, delimitations, and definitions have been set forth. The significance of and need for the study have been pointed up and the related literature has been reviewed.

In Chapter II a brief history and sketch of physical facilities are presented.

CHAPTER II

PRESENT FACILITIES FOR STATE-SUPPORTED HIGHER EDUCATION IN TENNESSEE

Data presented in Chapter II were based entirely upon descriptions of facilities as treated in literature from State-supported institutions of higher education. Treated in Table I, page 25, are the present name, the original name, the date established, the date State-acquired, and the age of each State-supported institution of higher education through 1956.

Austin Peay State College

Austin Peay State College was chartered under the name of Montgomery Masonic College in 1848. The institution is one hundred and eight years of age and was acquired by the State of Tennessee in 1927. Austin Peay State College is a multi-purpose, State-supported senior college under the control of the State Board of Education, located in Clarksville, Tennessee. It was established as a normal school under the control of the State Board of Education, as a junior college for the special purpose of training teachers for the elementary schools of Tennessee. The city of Clarksville donated to the State the campus and buildings of Southwestern Presbyterian University, formerly Montgomery Masonic College. The

TABLE I

ORIGIN OF EACH INSTITUTION

Institution	Original Name	Date Established	Date State Acquired	Age in 1956
Austin Peay State College	Montgomery Masonic College	1848	1927	108
Tennessee Polytechnic Institute	Dixie College	1911	1915	45
East Tennessee State College	East Tennessee State Normal School	1909	1909	47
Middle Tennessee State College	Middle Tennessee State Normal School	1909	1909	47
Tennessee Agricultural and Industrial University	Agricultural and Industrial State Normal School	1909	1909	47
University of Tennessee (Knoxville)	Blount College	1794	1807	162
University of Tennessee (Martin Branch)	University of Tennessee (Martin Branch)	1927	1927	29

TABLE I (continued)

ORIGIN OF EACH INSTITUTION

Institution	Original Name	Date Established	Date State Acquired	Age in 1956
University of Tennessee (Memphis Branch)	Medical Department, University of Nashville	1850	1909	106
University of Tennessee (School of Social Work)	Nashville School of Social Work	1942	1951	9
Memphis State College	West Tennessee State Normal School	1909	1909	47

appropriation for the biennium, 1927-1929, was used to repair and remodel the buildings, to erect a general heating plant, to install water and electricity, and to purchase equipment. The school was opened for students on September 23, 1929, with J. S. Ziegler as President. In the spring of 1930, the Diploma of Graduation from the Normal School was awarded the first graduating class. President Zeigler died in office in May the following year and was succeeded in the fall of 1930 by Dr. Philander P. Claxton, former United States Commissioner of Education. During President Claxton's administration the school was authorized by Act of the General Assembly of 1939 to add a third year of work in the spring of 1939 and a fourth year of work in the fall of 1941. During this time the school began the work of preparing teachers for the secondary as well as for the elementary schools of the State. In addition, the school expanded its offerings in general, pre-professional, and vocational education. In the spring of 1942 the Bachelor of Science degree was conferred on the first graduating class. By Act of the General Assembly, February 4, 1943, the name of the school was changed to Austin Peay State College. In July 1946, Dr. Claxton was retired by the State Board of Education with the title of President Emeritus, without portfolio, and Herbert Harvill, long-time Dean-Registrar of the College, was elected President of the College in August 1946. In 1951 the college was authorized to offer a curriculum leading to the Bachelor of Arts degree, and in 1952 was

authorized to establish a fifth year of advanced professional work leading to the Master of Arts degree in Education.

Austin Peay's chief purpose and highest service to the State is the education of teachers and school administrators on both the undergraduate and graduate level. The college accepts its responsibility to promote, carry out, and help improve the program of public education in Tennessee through the pre-service and in-service education of teachers through an exercise of educational leadership in the State and especially within its natural geographical service area. The college obligates itself to offer an expanded program, consistent with financial support, instructional personnel, and physical facilities, to meet the educational needs of youth of college age in the State. The college accepts the obligation of establishing and operating an educational program based upon the democratic ideal so that the institution becomes a place of democratic living and learning. Austin Peay State College is a "peoples' college" in that it does not practice selective admission, it is not interested in recruiting only the intellectually elite, is responsive to the needs of students as it finds them, and is interested in all-round development of its students to the end that they become worthy and useful citizens.

The college plant is valued at approximately four million dollars. The campus of the college, situated about a half mile from the business

district of the city, consists of forty acres, much of which is attractively landscaped. Facing south on College Street, the buildings are as follows: in the center, the Administration Library Building; to the east, Robb Hall for men, the President's home, and the Stewart Building, containing assembly hall, recreation hall, and classrooms; to the west, the Science - Classroom Building and the Men's Residence Hall. In the middle campus are found Calvin Hall (apartments), the cafeteria, and a number of temporary buildings, constructed by the Federal Government. In the rear campus, Myra McKay Harned Hall for women, the shop, additional temporary buildings, and the athletic field house and practice grounds are located. On the far west campus are the Memorial Health and Physical Education Building and housing facilities. In addition, the college maintains, in conjunction with the county, a Demonstration Practice School at New Providence, located at the outskirts of the city.[1]

Tennessee Polytechnic Institute

The Tennessee Polytechnic Institute was established in 1915 by an Act of the General Assembly, and its doors were opened to students on September 14, 1916. The grounds and buildings were those which had belonged to

---

[1] Austin Peay State College Bulletin, Clarksville, Tennessee, May 1955.

Dixie College, a private institution founded in 1911. Putnam County and the city of Clarksville appropriated seventy-five thousand dollars for the purchase of the Dixie College property and for the erection of two dormitories.

From 1916 to 1924, the Tennessee Polytechnic Institute offered work on high school and junior college levels only. In 1924, certain departments began offering third-year college work. In 1928-29, the State Board of Education authorized the offering of a complete four-year college course, granting the degree of Bachelor of Science, and the discontinuation of all high school work.

In 1917 the General Assembly appropriated one hundred thousand dollars for buildings, but the funds were not made available until 1921, at which time a dormitory for women was constructed and the Administration Building was enlarged by the addition of an auditorium and two wings for classrooms.

In 1927 a further appropriation of one hundred and fifty thousand dollars for buildings was made by the General Assembly. The Science Building, Gymnasium, and Central Heating Plant were erected. An appropriation of two hundred and twenty-five thousand dollars was made in 1929 for the construction of the Engineering and Home Economics buildings, which were completed in 1931. Since 1941, an Industrial Arts Building, a foundry, and a hospital-infirmary have been constructed at an approximate cost of

one hundred and fifteen thousand dollars. Since 1943, extensive repairs and additions have modernized all the dormitories and the heating plant.

The General Assemblies of 1945 and 1947 appropriated a total of approximately one million dollars in bond funds and emergency funds for a Library Building, a new women's gymnasium, an addition to the heating plant, a wing for a Mechanical Engineering Laboratory, and major repairs of facilities used in the Veterans Training Program.

The General Assembly of 1949 appropriated and/or authorized one million, one hundred and fifty thousand dollars in bonds for additional expansion. The following units have been completed: a new Health and Physical Education Building, two dormitories for men, one dormitory for women, Tech Training School, and a new field house.

In 1951 an additional appropriation of five hundred thousand dollars was made for the expansion and remodeling of the cafeteria and for a campus improvement project. In 1953 an appropriation of three hundred thousand dollars was authorized to complete the Tech Union and to begin the remodeling of West Hall for a biology building. In 1955 an appropriation of five hundred thousand dollars was authorized to build a series of dormitories for women.

The campus consists of a tract of thirty acres made attractive by shrubbery, native trees, and a system of driveways and walks; the buildings

are so arranged so as to make a compact and convenient school plant.

The college operates a farm of two hundred and one acres adjacent to the campus. It serves as a demonstration farm for students of agriculture and for farmers.

The football stadium has a seating capacity of eight thousand and has modern lighting facilities. Adjoining the stadium is a large baseball and intramural field and an excellent quarter-mile track.

The Administration Building, erected in 1912, contains offices, an auditorium, and classrooms for the School of Business Administration. In 1921 the present auditorium and the east and west wings were added.

The Engineering Building, located northwest of the Administration Building, was completed in 1931 and accommodates the departments of Engineering and Mathematics. The Engineering and Industrial Art Shops, which contain offices and instructional facilities for industrial arts, were completed in 1942.

The Field House, completed in 1950, provides locker rooms, training rooms, and offices for the coaching staff and the business offices of the Tennessee Tech Athletic Association.

The Foundry, completed in 1942, is located immediately behind the Industrial Arts Building and is equipped with a modern forge and foundry shop.

The Memorial Health and Physical Education Building was constructed in 1948-49. In February 1951 the new front units were completed. This new construction provides Tech with one of the outstanding health and physical education plants in the South.

A modern Home Management Residence was constructed in 1952. It contains equipment and facilities for eight students and a faculty supervisor in the actual operation and management of a home.

The Library was completed during the summer of 1949. The reading rooms are acoustically treated to reduce noise. Also located in the building are: a small auditorium with a seating capacity of three hundred, offices, a faculty reading room, a curriculum laboratory, a bindery, two seminar rooms, and an exhibit room.

The Nursery School was constructed in 1953. It is operated by the School of Home Economics in the area of Child Development.

The Science Building, located west of the Administration Building, was completed in 1929 and the Science Annex in 1947.

In September 1950 a new building for Tech's teacher-training program was provided by an addition to the Seventh Street Elementary School, which was deeded to the college by Putnam County.

The Tech Union Building, completed in 1954, provides facilities for a cafeteria, a student bookstore, a recreation room, a post office, and offices

for student activities and publications.

The West Annex, completed in 1947, has been remodeled as an instructional building with classrooms and offices. The West Hall, erected in 1916 as a dormitory, was remodeled in 1955 for use as a biology and physics building.

The Men's Dormitories are designed in a quadrangle intended eventually to comprise a group of six dormitory units. One half of the project, now containing three hundred men, was completed in 1951. A separate study room is provided for each bedroom, and each dormitory unit contains lounges, recreational rooms, a laundry, and supervisor's quarters.

East Hall, a women's dormitory, accommodates eighty women. It was erected in 1916 and is located in the central part of the campus. South Hall, erected in 1921 to accommodate ninety women, is located at the south end of the campus. In 1951 a new wing was added which was designed to accommodate one hundred and twenty women.

The Tech Apartment Colony contains eight apartments and accommodates sixty-four families. In 1951 four apartment buildings were completely remodeled for use by the ROTC. Nearby is a new drill field.

The Hospital-Infirmary, completed in 1944, is a modern fireproof building. It has accommodations for twenty beds, a dispensary, storage rooms, examination and treatment rooms, nurses' quarters, a diet kitchen,

guest and reception rooms, and two isolation wards.

The Heating Plant and Steam Laboratory were erected in 1929. In 1944 the plant was modernized, in 1948 a new wing was added, and in 1949 an additional wing was added which made facilities available for a modern laboratory in mechanical engineering. Classrooms and office space also are available in this unit.

The Dairy Plant, constructed in 1948, provides facilities for a milking barn and a breeding and feeding barn.

The Maintenance Building was completed in 1948. In this building are complete shop facilities and storage space for the general operation and maintenance of the college's physical plant.[2]

East Tennessee State College

East Tennessee State College, formerly East Tennessee State Normal School, was chartered by the State of Tennessee in 1909 and is forty-seven years of age. The East Tennessee State College is located on one hundred and seventy-seven acres of land within the corporate limits of Johnson City, Tennessee.

---

[2] Tennessee Polytechnic Institute Bulletin, 1956-57. Cookeville, Tennessee.

Mr. Sidney G. Gilbreath, Johnson City, Tennessee, was the first President of East Tennessee State Normal School and served from 1910 until 1925. Following the resignation of Mr. Gilbreath, Dean D. S. Burleson became acting president on March 15, 1925, and served in this capacity until August 31, 1925. Dean Burleson was succeeded by Dr. Charles C. Sherrod, who was President of East Tennessee State Teachers College from 1925 until 1949. Following the resignation of President Sherrod, Mr. Burgin E. Dossett, former State Commissioner of Education, was elevated to the Presidency of East Tennessee State College by the State Board of Education.

With the donations from Washington County and Johnson City plus State appropriations, the plant was built and the school was opened to students October 2, 1911. In 1919 the curriculum was increased from two to three years in length. In 1924 the Board authorized a change from the three-year curriculum to a four-year curriculum and the name was changed from East Tennessee State Normal School to East Tennessee State Teachers College. The General Assembly in 1925 empowered the college to grant the degree of Bachelor of Science. In February 1930, the State Board of Education again changed the name to State Teachers College, Johnson City. In February 1943, the General Assembly changed the name to the East Tennessee State College. The Board of Education in 1949 authorized the college to

grant a Master of Arts degree and in 1951 to grant the Bachelor of Arts degree.[3]

The Administration Building was erected in 1910. In this building are the offices of the President, the Dean, the Registrar, the Business Manager, and the Dean of Women, as well as the post office, the bookstore, recitation rooms, and the auditorium.

The May Etta Carter Hall was erected in 1910. It is a women's dormitory set apart for first-year college girls. Ritter Hall, which accommodates one hundred and fifty men was established in 1922. In 1944 the State purchased for the College the George L. Carter residence and approximately twenty acres of land adjoining the campus. The building was remodeled and converted into a residence hall for upper-class girls. Stone Hall, erected in 1950, is a three-story building of colonial architecture and has twenty-two four-student units, a main lounge, and hostesses' quarters. Browning Hall, located on Lake Street, is a brick residence purchased by the College which accommodates approximately sixty men students. The Carter property on Lake Street was converted into a residence hall which accommodates approximately twenty students.

In 1954 the Music Building was completely renovated and equipped to

---

[3] History of the East Tennessee State College (Johnson City, 1947).

meet the needs of the ROTC military unit. It has seven offices, a shooting gallery, two classrooms, storage space, and a large workroom.

The Health and Physical Education Building contains the main gymnasium, the girls' gymnasium, the swimming pool, shower and locker rooms, a health education wing with offices for the college physician and nurse, eight classrooms, a laundry, offices for the directors of health and physical education, and adequate space for intramural sports.

The College Stadium has ample seating space, a press box, a scoreboard, and other necessary equipment.

The Industrial Arts Department is located on the west side of the campus. This building accommodates the woodworking and metal working courses, the building and trades courses, the drafting courses, and the auto services.[4]

Middle Tennessee State College

Middle Tennessee State College, formerly Middle Tennessee State Normal School, was chartered in 1909 and is forty-seven years of age. It is located one mile from the public square of Murfreesboro, Tennessee.

---

[4] East Tennessee State College Bulletin, 1955-56 (Johnson City, Tennessee).

In 1925 the General Assembly authorized the maintenance of a state teachers college in each Grand Division of Tennessee. In accordance with this authorization, the Middle Tennessee State Normal School became the Middle Tennessee State Teachers College. The institution was given power to grant the degree of Bachelor of Science. In 1931 the name was changed to State Teachers College, Murfreesboro, Tennessee. In February 1943 an Act of the Legislature gave the college the official name, Middle Tennessee State College.

The Administration Building was erected in 1911. It includes offices of the administration, department offices, approximately fifty classrooms, and an auditorium which has a seating capacity of over one thousand.

The Science Hall was erected in 1932. The first floor is used for chemistry and physics, the second floor is used for home economics, and the third floor is used for biology.

The Library Building was erected in 1925. It has more than thirty thousand volumes and several thousand pamphlets. New books are purchased annually.

The Women's Gymnasium was built in 1950 and is used for physical education for women. It also contains playing courts, apparatus rooms, directors' rooms, and dressing and locker rooms for physical education

classes. The Health and Physical Education Memorial Building was completed in 1949. It is located on North Tennessee Boulevard in the recreational area. It is equipped with a spectator gymnasium which seats approximately five thousand. It has accommodations for offices, classrooms, and other facilities for men and women in courses in physical education, health, recreation, and indoor sports.

The Industrial Arts Building was erected in 1940. Additions were made in 1944 and 1949. It contains thirty thousand square feet of floor space and provides for woodworking, sheet metal and other industrial art courses.

The Training School was erected in 1927. It has space for a cafeteria and laboratories for home economics, industrial arts, and science. A large combination auditorium-gymnasium provides facilities for public gatherings and physical education. Showers and locker rooms are furnished for both boys and girls.

Rutledge Hall, a dormitory for women, was built in 1911. Lyon Hall, erected in 1927, also is a dormitory for women and will accommodate one hundred and twenty occupants. Jones Hall, built in 1921, was later named for R. L. Jones, the first President of the institution. It is a fireproof structure and has space for one hundred and twenty occupants.

The Union Building, erected in 1951, provides modern equipment for

faculty and students. The Union Building is located on the west side of the quadrangle between Lyon Hall and Rutledge Hall. Facilities are provided for a cafeteria, a lunch room, a banquet hall, a bookstore, a post office, personnel offices, and recreation rooms.

The Moffit House, erected in 1916, is a three-story residence for faculty and students. It was remodeled in 1955. The President's Home was built in 1911 and is located on the southwest corner of the campus.

The Heating Plant was remodeled in 1931. It is provided with equipment sufficient for heating all the buildings on the campus. A new heating plant, including building and equipment, was completed in 1949.

The College Farm is operated chiefly to furnish the cafeteria with milk, eggs, meat, fruits, and vegetables. It is also used for laboratory and demonstration purposes and to give a limited number of students work to help defray expenses.

The College Airport, located on the campus, was closed in 1952. The flight program is now conducted at the Murfreesboro Municipal Airport on Lebanon Road.

The Veterans Housing Program contains fifty standard trailers and fifty-seven family housing apartments. These are rented to veterans at a reasonable rate.

The Infirmary will accommodate twenty students. It is located in

the building formerly used for the student center. The College maintains two student centers. One is located in Veterans Village and provides recreational facilities for the families of veterans. The other is located in the Union Building and has facilities to accommodate the student body.

The Agriculture Center is a group of three buildings: a classroom building, a maintenance shop, a farm shop and equipment building. These buildings are used for class work, library work, and laboratory and shop work.

The new Men's Dormitory is located on the southeast corner of the quadrangle south of the Science Building. The Maintenance Building provides facilities for the carpenters, the painters, the plumbers, the electricians, and offices for the maintenance program.

The Natorium, which is separated from the gymnasium, contains a pool equipped with diving boards, spectator seats, and special shower and dressing rooms.

There are twelve village apartments for men, which accommodate six students each.

The Music Building, formerly the cafeteria, has been remodeled. It contains a rehearsal hall, three classrooms, five studios, offices, twelve

practice rooms, and a reception room.[5]

Tennessee Agricultural and Industrial State University

The Tennessee Agricultural and Industrial State University was chartered under the name of Agricultural and Industrial State Normal School in 1909. It is forty-seven years of age. On June 19, 1912, the college first opened its doors to admit two hundred and forty-seven students. The staff consisted of fifteen instructors, headed by President W. J. Hale, former Principal of St. Elmo High School, Chattanooga, Tennessee.

The first four-year college class entered the institution in 1922 and was graduated with the Bachelor of Arts degree in June 1924. The official name of the institution was changed in 1925 from Agricultural and Industrial State Normal to Agricultural and Industrial State College.

In 1943 the institution was recognized as a university system with seven major divisions: liberal arts, agriculture, home economics, education, engineering, business, and graduate studies. In 1943 the institution was completely reorganized and renovated in keeping with the needs of the war emergency and the post-war increase in enrollment. In 1946 the institution was accredited as class "A" by the Southern Association of Colleges

---

[5] Middle Tennessee State College Bulletin, 1956-57 (Murfreesboro, Tennessee).

and Secondary Schools.[6]

The Administration Building is located on the south campus near Centennial Boulevard between Thirty-first and Thirty-sixth Avenues. It contains the chief administrative offices, instructional offices, classrooms, the general auditorium, the little theatre, the bookstore, a branch of the U. S. Post Office, a swimming pool, and a gymnasium.

The Martha M. Brown Memorial Library, erected in 1927 and enlarged in 1950, is located near the center of the main campus. It contains stack rooms, special rooms and facilities for undergraduate and graduate studies, conference and seminar rooms, lounges, and other accommodations for the faculty and students.

The Harned Hall of Science is located on the north campus. It provides classrooms, lecture auditorium, laboratories, staff offices, and also facilities for instruction and research in biology, chemistry, physics, mathematics, and the general science studies.

The Engineering Building, completed in 1950, is located on the south side of the campus at Centennial Boulevard and Thirty-fifth Avenue. It contains equipment for instruction and research in mechanics, combustion,

---

[6]Negro College Quarterly (Wilberforce, Ohio: Wilberforce University, 1947).

electronics, foundry, hydraulics, building and construction, and civil engineering. Other accommodations include a lecture auditorium, classrooms, and offices.

The Industrial Building is located on the south side of the campus at Centennial Boulevard and Thirty-first Avenue. It contains laboratories, shops, classrooms for agriculture, metal work, plumbing, welding, shoe repairing, radio, electricity, woodwork, and business.

The Mechanical Engineering Building, completed in 1950, is located on the northwest campus. It contains a modern heating plant, laboratories and offices for instruction in stationary engineering.

The vocational shop buildings, located on the north side of the campus, contain shops for auto and aerial mechanics and facilities for flight instruction.

The Jane E. Elliott Building is located west of the University Library on the north campus. The building contains laboratories, lecture rooms, workrooms and studios for the fine arts and crafts, home economics, business education, administration, music, nursery school, and the offices of the Bureau of Public Relations.

The Agriculture Laboratories and Experimental Units include a dairy barn, bio-chemistry laboratories, stock pavilions, farm shops, poultry plant, walking horse barn, agronomy experiment plots, and a greenhouse.

The Frank A. Young Poultry Plant, completed in 1951, is located on the southwest side of the main campus. The plant has equipment for teaching and experimental work in incubation, brooding, laying, nutrition, genetics, disease diagnosis and control, and poultry grading and marketing.

The Health and Physical Education and Recreational Building was completed in 1951 and is located on the south side of the campus at Centennial Boulevard and Thirty-third Avenue. It contains a gymnasium, health and physical education classrooms and laboratories, staff offices, and facilities for indoor intramural sports, staff and student recreation, and physical therapy.

The William J. Hale Field House and Stadium are located on the northeast campus. The Field House contains accommodations for visiting athletes and offices and classrooms for the Air Force ROTC unit. The stadium furnishes accommodations for several kinds of athletic events including football, baseball, and major and minor track sports.

The temporary general classroom buildings were constructed to accommodate the increased student class loads during and immediately following the war years. They also contain instructional staff offices.

The Cafeteria is an annex to the Jane E. Elliott Building. It has been enlarged to accommodate two thousand persons each meal.

The Student Health Service Building located west of the dormitories

has facilities for complete examination and limited treatment for students. It contains two lying-in wards for the accommodation of six women and six men students respectively.

Hale Hall, which is located west of the University Library, is a modern three-story fireproof residence hall for upper-class women. The Wilson Hall is a modern resident dormitory for freshman and sophomore women. East Dormitory, located on the northeast part of the campus, accommodates men students. Veterans dormitories consist of two units of temporary buildings to accommodate male veteran students.

The President's Home is a modern colonial-type residence located north of Harned Hall. The Alumni Building, located on the southeast campus, contains accommodations for faculty families and guest rooms for alumni and official visitors to the University. The Veteran Teachers Apartments are located on the south side of the campus for temporary accommodations of faculty families. The Faculty Women's Residence Hall, located on the north campus, accommodates single faculty women. The Faculty Cottages include four modern homes on the north side of the campus and several homes adjacent to the central campus on Twenty-eighth Avenue, North.

The Recreation Hall, located on the northwest side of the campus, contains second-floor apartments for faculty families and a recreation

center for students and faculty on the first floor.[7]

University of Tennessee

The University of Tennessee, under its maiden name of Blount College, was chartered by the Legislature of the "Territory South of the River Ohio" on September 10, 1794. It was acquired by the State of Tennessee in 1807. The University of Tennessee is one hundred and sixty-two years of age. It received its name from William Blount, Governor of the Territory, and was located near the present center of the city of Knoxville. Its first President was Reverend Samuel Carrick. Under his management the college struggled on without adequate funds until, in 1807, it transferred its corporate funds, property, and effects to the "East Tennessee College," just chartered by the State of Tennessee, Reverend Carrick being retained as President under the new organization. The intent of the General Assembly in incorporating the proceeds of the sale of land appropriated by an act of Congress to support two colleges, one in East Tennessee and one in what is now Middle Tennessee. There was great difficulty attending the sale of lands and realization of an adequate endowment for the new college, so that it was not able, for lack of funds, to open

---

[7] Tennessee Agricultural and Industrial State University Bulletin, 1956-57 (Nashville, Tennessee).

its doors until 1820. In 1826 the present site of the University was purchased and, immediately thereafter, Old College was erected on the summit of the hill. In 1940 the name of the college was changed by the Legislature to "East Tennessee University."

In 1879 the name of the University was changed from "East Tennessee University" to the "University of Tennessee." The University became pledged, in all of its departments, to the service and interest of the State. It became, too, the head and an integral part of the public education system.

The central campus comprises about forty acres, on which are grouped the following permanent buildings: Austin Peay Memorial Administration Building, Ayres Hall, Dabney Hall, Ferris Hall, Perkins Hall, Physics and Geology Building, Biology Building, Alumni Memorial Auditorium and Gymnasium, South College, Science Hall, Estabrook Hall, Blount Hall (girls' dormitory), Dormitory Stadium, University Heating Plant, Armory Hall, Berry Hall (Engineering Experiment Station), and a stadium with a capacity of fifty-two thousand.

The University Hospital is located on Temple Avenue, one block from "The Hill." The Law Building is located in the fifteen-hundred block of Cumberland Avenue. The Music Building and the Art Building are located on Cumberland Avenue. The Art Education Building is located on Temple Avenue. The office of Public Relations and the Tennessee Press Association are located in the College of Business Administration on Temple

Avenue. The Home Economics Building is located on Cumberland Avenue, the Crafts Building is located on the Library campus, and the Nursery School and Home Management House are in the same block with the Home Economics Building, but face White Avenue. Two other Home Management Houses are located on Temple Avenue, and another is located on Cumberland Avenue.

The Division of University Extension Building is located at the corner of Temple and Melrose Avenues. The General University Publications Office and the University of Tennessee Press are also located in this building.

The women's dormitories are located one block from the main campus on Cumberland Avenue. Located at the corner of Temple and Cumberland Avenues are the Sophronia Strong Hall dormitories, comprising the Barbara Blount, Polly McClung, Jennie Armstrong, Kittie Kain, and Mattie Kain units. At the southwest corner of this intersection is Henson Hall. West Hall, a new dormitory, is adjacent to Henson Hall. Temple Court is located on Temple Avenue near the University Hospital.

Melrose Hall, a men's dormitory, is located on Melrose Avenue. The Stadium also houses a men's dormitory. The University Center is located on the south side of West Cumberland Avenue. It has cafeteria and other facilities. The University Cafeteria is located in Sophronia Strong

Hall on West Cumberland Avenue.

The University Library Building is located directly across Cumberland Avenue from the northwest section of the main campus. The Psychological Service Center is located at 1303 West Cumberland Avenue. The Faculty Club is located on Temple Avenue. The Business Administration Building is located on Temple Avenue.

The Agriculture campus of one hundred and forty-five acres is located one mile west of the main campus on Kingston Pike. On this campus are located Morgan Hall, McCord Hall, Oliver Perry Temple Pavilion, and the Agricultural Engineering Building. The Cherokee Farm property is located across the Tennessee River from the University Farm. The University has five hundred and ten acres of farm land located eight miles beyond the University Farm on Alcoa Highway.

The University has five experimental sub-stations and farms. The Middle Tennessee Experimental Station is located at Columbia. The West Tennessee Experimental Station is located at Jackson. The tobacco substation, consisting of five hundred and eighteen acres, is located near Greeneville in East Tennessee.

The Cumberland Plateau Experimental Station is located near Crossville, Tennessee. It consists of six hundred acres. An additional tract of one thousand, nine hundred and eighty-eight acres is located in

Cumberland County. It was acquired through a Federal land grant to the University in October 1947. This land has been added to the Cumberland Plateau Station for use in agricultural experimentation.

The Highland Rim Experiment Station consists of four hundred and twenty-nine acres. It is located near Springfield in Robertson County. The University cooperated with the United States Department of Agriculture in the operation of the Dairy Experiment Station at Lewisburg.

The Division of University Extension has extension centers at Knoxville, Nashville, Oak Ridge, and Memphis.

The College of Education Building, scheduled for occupancy in the spring of 1957, is located on Temple Avenue.[8]

University of Tennessee, Martin Branch

The University of Tennessee, Martin Branch, was established as an Agriculture, Industrial Arts, and Home Economics Junior College in 1927. Today the institution is an accredited four-year college. It is twenty-nine years of age.

The University of Tennessee, Martin Branch, was established by House Bill No. 264, passed February 13, 1951, and approved February 15,

---

[8]The University of Tennessee Record, May 1956 (Knoxville).

1951:

> An act to create and establish a Branch of the University of Tennessee at Martin, Tennessee, which is authorized and empowered to offer full four-year curricula in Agriculture and Home Economics, which courses shall be prescribed by the Trustees of the University of Tennessee and meet the requirements for Bachelor of Science Degrees.

This Bill further provides for all supporting work and activities necessary to the degree program as well as courses already prescribed.

The campus consists of seventy acres. The buildings are arranged in an open quadrangle. The demonstration farm consists of two hundred and thirty-five acres adjacent to the campus. The inter-collegiate and intramural athletic fields are adjacent to the campus.

The Agriculture-Biology-Library Building was completed in 1951. It is located on the northwest corner of the quadrangle. The Home Economics Building was erected in 1929. The Administration Building was constructed in 1900. The Physical Sciences Building was erected in 1929. The Engineering Building was constructed in 1941. The Physical Education Building was erected in 1930. The Student Activities Building was obtained through a Federal Aid fund in 1947. The Music Building was erected in 1947 and is located west of the old Student Activities Building.

The Residence Hall for Men was erected in 1952. It is located on the east end of the quadrangle. Two resident halls for women were built

in 1921. Two temporary resident halls for women were built in 1954. The Cafeteria was erected in 1935; a new wing was added in 1947. A new housing unit, located north of the athletic field on Moody Avenue, was erected in 1955. The Central Heating Plant was built in 1930 and enlarged in 1947. The Greenhouse is located near the garden area. The Martin Weather Station is located on the campus.[9]

University of Tennessee, Memphis Branch

The University of Tennessee Medical College originated in Nashville in 1850 as the Medical Department of the University of Nashville. It later was operated jointly by the University of Nashville and the University of Tennessee. It was acquired by the State of Tennessee in 1909 and is one hundred and six years of age. The University of Tennessee Medical Unit Division is composed of the School of Biological Sciences, the College of Medicine, the College of Dentistry, the School of Pharmacy, the School of Nursing, and the Graduate School. The direction of the units is in the hands of the Board of Trustees of the University, by whom all officers and members of the faculty are appointed.

---

[9] The University of Tennessee, Martin Branch, 1956-57. (Martin, Tennessee).

The library was established in 1913 with a collection of four hundred medical books. Originally housed in Lindsley Hall, the collection was transferred to the Mooney Memorial Library Building in 1928. The Pediatric Branch of the library, sponsored by the Faculty Women's Club of the University, is housed in Le Bonheur Children's Hospital.

The Wittenberg Building is located on Monroe Avenue, connecting to the north end of the Mooney Memorial Library. It provides over fifty thousand square feet of space. The Pharmacy Building is located at 874 Union Avenue. In this building are housed the divisions of pharmacology, pharmacognosy, and pharmacy. The Dental Building, completed in February 1949, is located at 847 Monroe Avenue, adjacent to the other buildings of the University of Tennessee Medical Units.

The University Center, formerly the Rex Club, was acquired in 1933. It is the student union building for the Medical Units and is adjacent to other University buildings. The Center contains a swimming pool, bowling alleys, handball courts, lounging rooms, reading rooms, cafeteria, billiard rooms, game rooms, and a large assembly room appropriate for banquets, concerts, dances, and formal exercises.

In 1939 a dormitory to house sixty-five students was erected. In 1943 the University acquired a building at 20 South Dunlap for use as a dormitory. In 1946 a building at 23 South Manassas was acquired by the

University and converted into a temporary dormitory. This dormitory is located one block from the University Center. In 1955 the University converted the entire second floor of the Goodman House at 777 Court Avenue into a dormitory for women. In 1948 the University acquired the Forrest Park Apartments, where a large number of apartments and rooms are available to students and their families.

The Institute of Clinical Investigation is housed in a three and one-half story brick building adjacent to the John Gaston Hospital. The first floor houses facilities for experimental surgery. The second floor houses the section of Clinical Chemistry and the third floor the Section of Clinical Physiology of the Department of Medical Laboratories of the Division of Medicine.

The Thomas F. Gailor Psychiatric Hospital and Diagnostic Clinic was completed and turned over to the University on November 1, 1942. The first three floors house the departments of the out-patient services. The basement and the top three and one-half floors of the clinic house the psychiatric hospital in-patient and out-patient services.

Eve Hall houses the venereal disease division and the tuberculosis division of the Memphis and Shelby County Health Departments, the local unit of the State Department of Health's Crippled Children's Service and the Speech and Hearing Center.

Lindsey Hall is named in honor of Dr. J. Berrien Lindsey, organizer and first Dean of the Medical Department of the University of Nashville. It is used for instructional purposes.

The Institute of Pathology Building was completed in the Fall of 1951 and is located on Madison Avenue. It houses the Division of Pathology and Microbiology. One floor is given over to the Divisions of Medicine and Surgery for office and laboratory work. This building includes student laboratory spaces for classes in Microbiology and Pathology for all branches of the Medical Units.

A cancer research laboratory building on the northwest corner of Dunlap and Madison was completed in the summer of 1951 and is used for cancer research. It provides facilities for members of the various divisions of the University who are working in this field.

A five-story Chemistry-Physiology Building was completed in 1955. It is on Union Avenue east of the Pharmacy Building. The first three floors provide facilities for teaching and research by members of the Division of Chemistry. The fourth and fifth floors are occupied by the Division of Physiology. A full basement provides extensive storage space for equipment and supplies.

An Administration-Postgraduate Building on the northeast corner of Dunlap and Union was completed in the Fall of 1955. The five-story

building houses the administrative staff of the University and provides rooms for the Postgraduate Department.

A Medical-Surgical Building on Dunlap, south of Gailor Psychiatric Hospital and Diagnostic Clinic, was completed in the summer of 1955. The building is occupied by the Family General Practice Clinic of the College of Medicine, medicine and pediatrics, out-patient departments, cardiology research laboratory, obstetrics and gynecology, psychiatry, neurology, orthopedics, radioactive isotope, and other special clinics. The sixth and seventh floors are occupied by the bacteriological laboratories of the Memphis and Shelby County Health Departments and the Memphis Branch of the Tennessee State Health Department.[10]

University of Tennessee, School of Social Work

The University of Tennessee, Nashville Branch, was established in 1942 under the name of Nashville School of Social Work. It was acquired by the State of Tennessee and made a branch of the University of Tennessee in 1951. It is fourteen years of age. The University of Tennessee School of Social Work is a fully accredited two-year graduate professional school located in Nashville, Tennessee, with a branch program in Memphis.

---

[10]The University of Tennessee Bulletin, Medical Unit, 1956-57 (Memphis Tennessee).

The school is a chartered member of the Council on Social Work Education and has been fully accredited since 1945.

Of the school's full-time faculty, ten are in Nashville, two in Memphis, and one on the Knoxville campus of the University. The faculty in Nashville and Memphis is augmented by a number of outstanding individuals who lecture on a part-time basis. Included are social workers, physicians, psychiatrists, psychologists, cultural anthropologists, sociologists, economists, and political scientists, some of whom teach complete courses and others who participate as lecturers on special topics.

The two-year graduate program leading to the Master of Science in Social Work degree qualifies students for positions in public and voluntary service agencies, including family and child welfare, medical and psychiatric social work, social group work, social welfare administration and community organization. The specializations in medical social work, psychiatric social work, and social group work are fully accredited and for a number of years have been recognized as meeting membership requirements for the respective professional organizations.

The Nashville campus is in the University Center adjacent to Vanderbilt, Scarritt, and Peabody College. Members of all three faculties participate in the school's teaching program, and the school has arrangements with these institutions for cross registration on the part of students.

Students use the joint University Library and have full graduate privileges there.

The Memphis School is a part of the University campus and members of the various colleges on the campus participate in the Memphis teaching program.

The School of Social Work lists one room with eight hundred square feet of floor area with a maximum of thirty-two student stations. Other classes are held in the hallways, instructors' offices, the joint University Library, Scarritt College, and Vanderbilt University Hospital.[11]

Memphis State College

Memphis State College, formerly West Tennessee State Normal School, was chartered by the State of Tennessee in 1909 and is forty-seven years of age. That Act is popularly known as the General Education Bill and it included appropriations for all public school agencies of the State. It provided that 13 percent of the State School Fund (which was 33 1/3 percent of the gross revenues of the State) should be used for the establishment and maintenance of normal schools.

---

[11]The University of Tennessee School of Social Work Bulletin, 1956-57 (Nashville, Tennessee).

The law vested the location and control of the normal schools in the State Board of Education. Acting under this authority, the State Board of Education received proposals from various cities and counties in the State for the location of the normal schools and finally decided upon the location of three schools for the training of white teachers, as follows: West Tennessee State Normal School at Memphis, Shelby County; Middle Tennessee State Normal School at Murfreesboro, Rutherford County; and East Tennessee State Normal School at Johnson City, Washington County. These cities and counties made most generous appropriations in consideration of the location of the schools. Memphis and Shelby County issued bonds for the West Tennessee State Normal School to the amount of three hundred and fifty thousand (350, 000) dollars and donated a site of approximately fifty acres, to which was added thirty acres, the whole forming a beautiful campus now within the corporate limits of the city of Memphis.

The school appropriations and the accumulation from the State School Fund for three years were invested in a magnificent main building and dormitory, and the institution was formally opened on September 15, 1912. The West Tennessee School, like the other State institutions, which were opened the previous year, had a most gratifying attendance from the start; and the succeeding years have been even more successful.

The General Education Law of 1909, which created State normal

schools, declared their purpose to be "the education and professional training of teachers for the elementary schools of the State." The Act of 1925 provided for teachers colleges and declared that the function of such colleges should be to prepare teachers for the public schools of the State. In accordance with these laws, Memphis State College is preparing elementary and high school teachers, instructors and supervisors in special subjects, and principals and superintendents of county and city schools.

In order to meet more adequately the educational needs of this section of the State, the name of the college was changed by the State Legislature in 1941 from "State Teachers College" to "Memphis State College," and the College began to offer subjects generally included in a general liberal arts curriculum and, in addition, many other subjects which are demanded by the public school systems of the State. By 1950 Memphis State College had grown to such an extent that it was felt to be necessary to reorganize the College in order to serve more effectively the students of West Tennessee and the surrounding areas. By permission of the State Board of Education and by faculty action, the general College was divided into the following schools: Arts and Sciences, which offers pre-professional training and basic liberal arts work; Business Administration, which provides a program of professional training at the college level for those who wish business training; Education, which provides a program of teacher education which would

promote the growth and development necessary for successful teaching; and a Graduate School, which offers a program leading to the Master of Arts degree with a major in education and with minors in various areas. In 1954 the Graduate School increased its program by offering majors in English, geography, and history, in addition to the major in education.

The Administration Building, erected in 1912, contains the offices of the President, Dean, Registrar, Bursar, and the directors of the several schools. The Dean of Women's office and the Alumni Office are also located in this building. In addition to classrooms for the departments of art, business administration, classical and modern languages, education, English, history, mathematics, music, philosophy and psychology, and the social sciences, the Administration Building contains individual office space for the instructors in these departments.

Manning Hall, the science building, was erected in 1930. The Department of Chemistry occupies the first floor and the basement level. In addition to modern laboratories and classrooms, the first floor contains the science auditorium, which is equipped for visual aids and is available for scientific lectures and demonstrations. The laboratories and the classrooms of the physics and biology departments are located on the second floor. The Department of Home Economics occupies the entire third floor of Manning Hall, which includes a demonstration apartment consisting of a

living room, dining room, bedrooms, kitchen, closets, and storerooms.

The Library Building was erected in 1927 and is named for former President John Willard Brister. It was remodeled and expanded and has a capacity of one hundred and fifty thousand volumes.

Mynders Hall, erected in 1912, is a fireproof building offering modern, attractive quarters to one hundred and sixty girls. Dormitory facilities include attractive parlors, sound-proof music rooms, a laundry equipped with automatic washers, dryers, and ironers for the use of the students, a kitchen for use in entertaining, and a sun deck. Rooms are arranged in suites of two bedrooms with connecting bath. Most suites accommodate three girls; a few accommodate four. Each room has a closet for each occupant, single beds with innerspring mattresses, chest, desk, desk chairs, and easy chairs. Floors are covered with asphalt tile.

Scates Hall, erected in 1922, is a three-story structure with a capacity of one hundred and thirty-six men students. This building has a three-room apartment for the manager and his family. Each room is equipped with furniture for from one to three occupants.

Hayden Hall was completed in the summer of 1952 and is named in honor of the late Professor Grover H. Hayden, Professor since 1918. It is a two-story, three-unit building designed to house seventy-two men students.

The Training School Building, which was completed in 1924, is designed to accommodate the elementary school and the junior high school. It has twenty-four classrooms, an auditorium, a library, and a cafeteria. The school has a normal enrollment of over seven hundred and furnishes facilities for training student teachers and opportunities for observing good teaching procedures.

There are two gymnasiums on the campus. One, erected in 1928, has offices for the teaching staff, two classrooms, and space for corrective exercises and recreational activities. This building is used for physical education classes for men. The new building with a seating capacity of four thousand for basketball games was completed in 1951. It has shower and dressing facilities for the varsity athletic teams and shower and locker rooms for women's physical education classes.

The Student Center adjoins the Cafeteria and maintains a soda fountain, snack bar, and facilities for games, dancing, and group meetings. The second floor of the Student Center has sorority and fraternity rooms and quarters for the Pan-Hellenic hostess. The Cafeteria, erected in 1950, is located at the east end of the Student Center. It has a seating capacity of five hundred.

The AF-ROTC Building, erected in 1922, contains classrooms and offices for the AF-ROTC staff.

The Power Plant, completed in 1922, contains a battery of boilers for the heating of all the buildings on the campus.

The Industrial Arts Building was constructed in 1941 for the use of the NYA. In 1946-47 it was remodeled and modernized at a cost of sixty-four thousand dollars. It provides facilities for woodwork, drafting, metal work, electricity, ceramics, photography, and general shop practices.

The Veterans Buildings, erected in 1940, provide housing facilities for seventy-five families. The buildings were erected by the FPHA to relieve the housing shortage for married veterans.

The College Auditorium seats approximately twelve hundred persons and is used for college assemblies. The stage has been modernized to provide more adequately for the dramatic and musical productions that are sponsored by these departments.

In the Health Center services of a physician and a registered nurse are provided for minor treatment and consultation in the College Health Service, which is located on the first floor of the Administration Building.

The College Bookstore is located on the first floor of the Administration Building. Here the students may purchase their textbooks and other supplies.[12]

---

[12] Memphis State College Bulletin, 1955-56 (Memphis, Tennessee).

Summary

This chapter has presented a brief history and sketch of the physical facilities of each institution of higher education in Tennessee.

The chapter has pointed up the original name, the present name, the date each institution was established, the date each institution became a part of the Tennessee system of higher education, and the present age of each institution through 1956. Also set forth in this chapter is a short description of the physical facilities of each institution.

The next chapter will discuss the expenditures for higher education in Tennessee.

CHAPTER III

EXPENDITURES FOR PLANT FACILITIES IN STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Data in this chapter show the present value of buildings, the insurable value of buildings, and the replacement value of buildings. Also this chapter presents the per cent of present value of buildings covered by insurance. The present value of obsolescent space and the per cent of obsolescent space of each institution are shown. The per cent of replacement space is presented as follows: square feet of space that needs to be replaced within the second period of six to fifteen years. The value of buildings was determined by subtracting the estimated dollar depreciation from the original cost.[1]

The insurable value is the replacement cost at the time of loss, less depreciation and less the noninsurable items at their present value. Some noninsurable items are: building foundations, piers, excavations, sidewalks, yard paving, retaining walls, buried underground utilities, and

---

[1]Carter V. Good, Dictionary of Education (New York: McGraw-Hill Book Company, Inc., 1945), p. 442.

buried tanks.[2]

The replacement value of buildings refers to the cost of replacing a building as of the date of appraisal. Obsolescence, as used in this study, refers to the condition of the building in terms of structure and adequacy for housing an educational program.[3] The nature of the data collected made it necessary to project the replacement cost in terms of three periods. The first period covered the replacement cost over the period from 1956 to 1961, the second period covered the period 1962 to 1977, and the third period covered the period from 1977 to 1993. Also contained in this chapter were the present value and replacement value of buildings that are depreciated 50 percent or more.

The data contained in the tables in this chapter and other chapters in the study were collected through instruments prepared by the Tennessee Legislative Council Committee. The data were recorded by persons from the respective State institutions of higher education.

---

[2]Twenty-seventh Yearbook, American School Buildings, American Association of School Administrators (Washington, D. C.: National Education Association, 1949), p. 285.

[3]Ibid., p. 266.

Present Value of Buildings

The data presented in Table II (page 71) indicate that the value of all State-supported institutions of higher education in Tennessee was $69,132,774.

The institution with the highest valuation is the University of Tennessee at $24,318,000. The Martin Branch is the lowest valued institution at $2,448,000. Memphis State College, valued at $6,774,200, has the second highest valuation in the State. The difference between the University of Tennessee and the Martin Branch is $21,870,000. The difference between Memphis State College and Austin Peay State College is $2,980,700. The University of Tennessee Agricultural Stations, which are distributed throughout the State, have a valuation of $549,398. The University of Tennessee School of Social Work in Nashville did not present data for the study. Therefore, the school was not represented in the tables but is treated in the chapter on conclusions.

Replacement Value of Buildings by Periods

The replacement value of a building is the amount of funds necessary to furnish new facilities of the same kind or performing the same functions as the original building. Data presented in Table III (page 72) show the

TABLE II

VALUE OF BUILDINGS OWNED BY TENNESSEE STATE-SUPPORTED INSTITUTIONS OF HIGHER LEARNING

Institution	Estimated Present Value (1956)
Austin Peay State College	$3,793,500
East Tennessee State College	5,980,750
Memphis State College	6,744,200
Middle Tennessee State College	5,372,200
Tennessee Agricultural & Industrial State University	5,382,942
Tennessee Polytechnic Institute	5,186,300
University of Tennessee (Knoxville)	24,318,000
University of Tennessee (Martin Branch)	2,448,000
University of Tennessee (Memphis Branch)	9,699,000
University of Tennessee (Agricultural Stations)	549,398

TABLE III

REPLACEMENT VALUE OF BUILDINGS OWNED BY TENNESSEE STATE-SUPPORTED INSTITUTIONS OF HIGHER LEARNING

Institution	Replacement Value
Austin Peay State College	$4,599,600
East Tennessee State College	7,498,820
Memphis State College	7,975,000
Middle Tennessee State College	7,301,877
Tennessee Agricultural and Industrial State University	6,601,992
Tennessee Polytechnic Institute	6,201,900
University of Tennessee (Knoxville)	31,026,000
University of Tennessee (Martin Branch)	3,113,000
University of Tennessee (Memphis Branch)	11,557,000

replacement value of buildings of each State-supported institution of higher education in Tennessee. The total value of buildings of State-supported institutions of higher education in Tennessee is $69,132,774. The replacement value of buildings of State-supported institutions of higher education in Tennessee is $85,875,189. There is a difference between present value and replacement value of buildings of $16,742,415. The present value of buildings is 80 per cent of the replacement value.

The University of Tennessee, presently valued at $24,318,000, requires $31,026,000 for replacement. There is a difference between the replacement value and present value at the University of Tennessee of $6,708,000. The Martin Branch of the University of Tennessee has the lowest present valuation of State-supported institutions at $2,448,000. It requires $3,113,000 to replace the Martin Branch buildings. The difference between the present and replacement value of the University of Tennessee, Martin Branch, is $665,000. Table II (page 71) and Table III (page 72) show the present and replacement value of each State-supported institution of higher education in Tennessee.

Replacement Value of Buildings by Periods of Remaining Useful Life

This section treats the replacement value of buildings by periods of remaining useful life. Over the first five-year period, the total replacement value of buildings in Tennessee State-supported institutions of higher education was $2,294,470. Table IV (page 75) shows the different periods and funds needed for replacement for each State-supported institution.

Austin Peay State College needs for the first period $376,500. East Tennessee State College needs $78,670; Memphis State College $400,000; Middle Tennessee State College $4,500; Tennessee Agricultural and Industrial State University did not need any building replaced for the first period. Tennessee polytechnic Institute needs $591,800; the University of Tennessee needs $503,000; and the Martin Branch needs $340,000. The Memphis Medical Branch does not need any replacements the first five years.

The total amount of funds that are needed to replace buildings during the second period of six to fifteen years is $3,719,983. Of this total, Austin Peay State College needs $321,000; East Tennessee State College needs $55,250; Memphis State College needs $6,500; Middle Tennessee State College needs $219,553; Tennessee Agricultural and Industrial State University needs $199,200; Tennessee Polytechnic Institute needs $175,400;

TABLE IV

REPLACEMENT VALUE OF BUILDINGS OWNED BY TENNESSEE STATE-SUPPORTED INSTITUTIONS OF HIGHER LEARNING BY PERIODS OF REMAINING USEFUL LIFE

Institution	Years		
	One to Five	Six to Fifteen	Sixteen to Thirty
Austin Peay State College	$376,500	$321,000	$ 852,300
East Tennessee State College	78,670	55,250	4,242,250
Memphis State College	400,000	6,500	166,500
Middle Tennessee State College	4,500	219,533	3,122,910
Tennessee Agricultural and Industrial State University	-0-	199,200	1,752,192
Tennessee Polytechnic Institute	591,800	175,400	1,307,400
University of Tennessee (Knoxville)	503,000	2,195,000	1,070,000
University of Tennessee (Martin Branch)	340,000	323,000	468,000
University of Tennessee (Memphis Branch)	-0-	225,000	1,150,000

the University of Tennessee needs $2,195,000; the Martin Branch needs $323,000; and the Medical Branch at Memphis needs $225,000.

The third period of sixteen to thirty years shows that a total of $14,131,543 is needed for replacement of buildings in State institutions and the amount for each is as follows: Austin Peay State College, $852,300; East Tennessee State College, $4,242,250; Memphis State College, $166,500; Middle Tennessee State College, $3,122,910; Tennessee Agricultural and Industrial State University, $1,752,192; Tennessee Polytechnic Institute, $1,307,400; the University of Tennessee, $1,070,000; the Martin Branch, $468,000; and the Memphis Medical Branch, $1,150,000.

The amount of funds needed to replace buildings over the thirty-year period is $20,145,996. Of the total amount needed to replace buildings over the thirty-year period, 11 percent was needed the first period and 19 percent for the second period. The data show that the per cent of the total amount for building replacement varies from 11 per cent for the first period to 70 per cent for the third period. From these data is shown that almost two-thirds of the funds will be needed in the latter stages of the replacement program.

Data from Table V (page 77) show that a total of $20,145,996 was needed for the long-range plan. East Tennessee State College has the greatest need of replacement of buildings over the thirty-year period; the

TABLE V

REPLACEMENT VALUE OF BUILDINGS OWNED BY TENNESSEE STATE-SUPPORTED INSTITUTIONS OF HIGHER LEARNING ONE TO THIRTY YEARS

Institution	Replacement Value
Austin Peay State College	$1,549,900
East Tennessee State College	4,376,170
Memphis State College	573,000
Middle Tennessee State College	3,346,934
Tennessee Agricultural and Industrial State University	1,951,392
Tennessee Polytechnic Institute	2,074,600
University of Tennessee (Knoxville)	3,768,000
University of Tennessee (Martin Branch)	1,131,000
University of Tennessee (Memphis Branch)	1,375,000

amount needed is $4,376,170. Memphis State College needs only $573,000 for building replacements over the same period. The difference in replacement needs of East Tennessee State College and Memphis State College is $3,803,170. Some explanation for the difference shown can be found in the amount and condition of property belonging to the respective State-supported institutions in question. For the totals on replacement value for the individual State-supported institutions, refer to Table V (page 77).

Insurable Value of Buildings

The insurable value treated in Table VI (page 79) is based on the replacement value of buildings, minus noninsurable items and depreciation. As shown in the survey (Table II, page 71), the present value of all buildings of Tennessee State-supported higher education is $69,132,774. The total insurable value of all buildings is $56,042,600, or 81 percent of the present cost of all buildings. The Martin Branch has the lowest insurable value at $1,959,000 and the University of Tennessee has an insurable value of $19,462,000.

Information from Southern Fire Insurance Company, State Farm Insurance Company, and the Tennessee Inspection Bureau indicated that buildings can be insured to full value. However, all companies interviewed

TABLE VI

INSURABLE VALUE OF BUILDINGS OWNED BY TENNESSEE STATE-SUPPORTED INSTITUTIONS OF HIGHER LEARNING

Institution	Insurable Value
Austin Peay State College	$ 2,392,480
East Tennessee State College	4,947,300
Memphis State College	5,681,300
Middle Tennessee State College	4,304,560
Tennessee Agricultural and Industrial State University	5,455,960
Tennessee Polytechnic Institute	4,133,000
University of Tennessee (Knoxville)	19,462,000
University of Tennessee (Martin Branch)	1,959,000
University of Tennessee (Memphis Branch)	7,707,000

stated that 80 per cent is average coverage for school plants and that they prefer to insure plants from 80 to 90 per cent. Table VII (page 81) indicates that three institutions, Tennessee Agricultural and Industrial State University, Memphis State College, and East Tennessee State College, were insured above the average. Middle Tennessee State College, the University of Tennessee, and the Martin Branch were insured at the national average. Three institutions, Memphis Branch, Tennessee Polytechnic Institute, and Austin Peay State College, were insured below the average coverage for school buildings in Tennessee State-supported institutions of higher education. The lowest insured institution was Austin Peay State College at 63 per cent, which is 17 per cent below the average for other institutions in Tennessee. Tennessee Agricultural and Industrial State University had the highest insurable coverage at 101 per cent, which was 19 per cent above the average for other Tennessee State-supported institutions of higher education.

A partial explanation for the high per cent of coverage for Tennessee Agricultural and Industrial State University was that twenty-one buildings showed a present value of $2,454,595 and an insurable value of $2,861,760. The difference between the present value and insurable value of the twenty-one buildings at Tennessee Agricultural and Industrial State University is $407,165.

TABLE VII

THE PER CENT OF PRESENT VALUE OF STATE-SUPPORTED INSTITUTIONS OF HIGHER LEARNING COVERED BY INSURANCE

Institution	Per Cent
Austin Peay State College	63
East Tennessee State College	82
Memphis State College	84
Middle Tennessee State College	80
Tennessee Agricultural and Industrial State University	101
Tennessee Polytechnic Institute	79
University of Tennessee (Knoxville)	80
University of Tennessee (Martin Branch)	80
University of Tennessee (Memphis Branch)	79

Obsolescent Buildings

The term "obsolescence" is used to designate buildings that structurally are in such condition that they would probably stand for many years of use but, from the point of view of housing an education program, are generally unsatisfactory. Another criterion to determine obsolescence is as follows: If the cost of repairs amounts to 50 per cent of the value and if the building is in a hazardous condition, it may be considered obsolescent. Buildings may have good foundations, walls, and roofs but are lacking from the point of view of meeting requirements for accommodating a modern educational program. Most obsolescent educational buildings are of non-fireproof construction, their lighting is poor, and no special rooms such as art, music, and other specialized programs are provided. Also, these buildings are usually poorly heated, have inadequate toilet facilities, and provide very little natural light.

Table VIII (page 83) shows the total area and the amount of obsolescent space for each State-supported institution of higher education in Tennessee. The obsolescent space should be replaced as soon as possible because it is not adequate to house an educational program. Therefore, the obsolescent space shown in Table VIII represents the amount of space at each State-supported institution that needs replacing within the next five years.

TABLE VIII

TOTAL AND OBSOLESCENT AREA IN SQUARE FEET OF STATE-SUPPORTED INSTITUTIONS OF HIGHER LEARNING

Institution	Square Feet	
	Total Area	Obsolescent Area
Austin Peay State College	318,516	46,880
East Tennessee State College	520,451	22,571
Memphis State College	597,617	41,992
Middle Tennessee State College	627,867	4,676
Tennessee Agricultural and Industrial State University	636,948	36,742
Tennessee Polytechnic Institute	543,927	98,717
University of Tennessee (Knoxville)	822,449	267,139
University of Tennessee (Martin Branch)	276,382	73,010
University of Tennessee (Memphis Branch)	113,430	5,500

The University of Tennessee had the largest area: 822,449 square feet of building space, of which 267,139 square feet is obsolescent. The University of Tennessee, Memphis Branch, had 113,430 square feet of building space, of which 5,500 square feet was obsolescent. The difference in the total area of the University of Tennessee and the Memphis Branch was 709,019 square feet, and the difference in obsolescent space for the same institutions was 261,639 square feet. The major portion of the obsolescent space in Tennessee State-supported institutions of higher education is concentrated in Tennessee Polytechnic Institute, the Martin Branch, and the University of Tennessee.

Institutional Per Cent of Obsolescent Space

Table IX (page 85) shows the per cent of space of each State-supported institution that is obsolescent and, therefore, should be replaced within the 1956-1961 period. Table VIII (page 83) shows that 597,227 square feet of space needs to be replaced in Tennessee State-supported institutions of higher education within the next five years. Of the 21,036 students enrolled in State-supported institutions of higher education, 9,356 of these students are enrolled in the State-supported institutions with the greatest per cent of obsolescence.

The University of Tennessee had the greatest per cent (32 per cent)

TABLE IX

PER CENT OF OBSOLESCENT SPACE OF BUILDINGS OWNED BY TENNESSEE STATE-SUPPORTED INSTITUTIONS OF HIGHER LEARNING

Institution	Per Cent
Austin Peay State College	15
East Tennessee State College	4
Memphis State College	7
Middle Tennessee State College	1
Tennessee Agricultural and Industrial State University	6
Tennessee Polytechnic Institute	18
University of Tennessee (Knoxville)	32
University of Tennessee (Martin Branch)	26
University of Tennessee (Memphis Branch)	5

of obsolescent space. Middle Tennessee State College had the least per cent (1 per cent) of obsolescent space. The difference in obsolescent space between the University of Tennessee, Knoxville, and the Middle Tennessee State College was 31 per cent.

Replacement of Space

Six to Fifteen Year Period

For specific amounts and per cent of space that each institution needs to replace within the six to fifteen year period, refer to Table X (page 87). Table X shows that a total of 339,395 square feet of building space needs replacing within the period of six to fifteen years. It also shows the institutional per cent of the total space that needs replacing within the same period. The University of Tennessee, Knoxville, has the greatest amount of building space that needs replacing in the six to fifteen year period (153,831 square feet). This represents 45 per cent of the total which needs to be replaced during this period. Memphis State College has the least amount needing replacing for the period (1 percent). The difference between the highest and the lowest per cent of property needing replacing among the State-supported institutions during the six to fifteen year period is 44 per cent. The University of Tennessee, Tennessee

TABLE X

AREA IN SQUARE FEET OF TENNESSEE STATE-SUPPORTED INSTITUTIONS OF HIGHER LEARNING THAT NEEDS REPLACING WITHIN A PERIOD OF SIX TO FIFTEEN YEARS

Institution	Amount of Space	Per Cent
Austin Peay State College	28,191	8
East Tennessee State College	12,716	4
Memphis State College	1,142	1
Middle Tennessee State College	25,740	8
Tennessee Agricturaland Industrial State University	53,234	16
Tennessee Polytechnic Institute	17,553	5
University of Tennessee (Knoxville)	153,831	45
University of Tennessee (Martin Branch)	37,488	11
University of Tennessee (Memphis Branch)	9,500	3

Agricultural and Industrial State University, and the Martin Branch comprise 72 per cent of the space that needs replacing within the six to fifteen year period.

Three institutions of higher education in Tennessee listed building space that was classified as temporary but not considered obsolescent. East Tennessee State College has 4,050 square feet; Middle Tennessee State College, 35,061 square feet; and Austin Peay State College, 23,320 square feet of temporary but not obsolescent building space.

Sixteen to Thirty Year Period

Table XI (page 89) shows the amount of space in square feet and the per cent of the total space of each State-supported institution of higher education in Tennessee that needs replacing in the sixteen to thirty year period. The total amount of space that needs replacing within the period of sixteen to thirty years is 14,131,543 square feet. East Tennessee State College had 30 per cent of the space and Middle Tennessee State College had 22 per cent of the space that needs to be replaced in the last period treated in this study. Memphis State College with 1 per cent had the lowest amount of space that needs replacing in this period.

TABLE XI

AREA IN SQUARE FEET OF TENNESSEE STATE-SUPPORTED INSTITUTIONS OF HIGHER LEARNING THAT NEEDS REPLACING WITHIN A PERIOD OF SIXTEEN TO THIRTY YEARS

Institution	Amount of Space	Per Cent of Space
Austin Peay State College	853,300	6
East Tennessee State College	4,242,250	30
Memphis State College	166,500	1
Middle Tennessee State College	3,122,901	22
Tennessee Agricultural and Industrial State University	1,752,192	12
Tennessee Polytechnic Institute	1,307,400	9
University of Tennessee (Knoxville)	1,070,000	8
University of Tennessee (Martin Branch)	468,000	3
University of Tennessee (Memphis Branch)	1,150,000	8

Present and Replacement Value of Obsolescent Buildings

As shown in Table XII (page 91), the present value of obsolescent buildings of State-supported higher education in Tennessee is $1,461,050. The University of Tennessee, Martin Branch, has the highest present value of obsolescent buildings ($403,000). The institution with the lowest value is Middle Tennessee State College ($800). The present value of obsolescent buildings varies from a high of $403,000 to a low of $800, a difference of $402,200. The University of Tennessee, Martin Branch, has 28 per cent of the total obsolescent present value of all institutions of higher education in Tennessee. Middle Tennessee State College has less than 1 percent of the total present value of obsolescent buildings.

Also shown in Table XII (page 91) is the total replacement value of obsolescent buildings of all State-supported institutions of higher education in Tennessee. This total is $5,207,470. The University of Tennessee, Knoxville, has the largest replacement value of $2,763,000, or 53 per cent of the total. Middle Tennessee State College has the lowest replacement value of $4,500, or 1 per cent. The difference between the highest and lowest replacement values of obsolescent buildings is $2,757,500.

TABLE XII

PRESENT AND REPLACEMENT VALUE OF OBSOLESCENT BUILDINGS OWNED BY TENNESSEE STATE-SUPPORTED INSTITUTIONS OF HIGHER LEARNING

Institution	Present Value	Replacement Value
Austin Peay State College	$114,900	$ 376,500
East Tennessee State College	61,250	92,670
Memphis State College	97,500	390,000
Middle Tennessee State College	800	4,500
Tennessee Agricultural and Industrial State University	115,200	135,000
Tennessee Polytechnic Institute	296,400	591,800
University of Tennessee (Knoxville)	296,000	2,763,000
University of Tennessee (Martin Branch)	403,000	699,000
University of Tennessee (Memphis Branch)	76,000	185,000

Present and Replacement Values of Buildings Depreciated 50 Per Cent or More

Table XIII, page 93, shows the gross area, the present value, and the replacement value of buildings depreciated 50 per cent or more at each State-supported institution of higher education in Tennessee.

As shown by data in this table, the State-supported institutions of higher education have a total of 1,029,726 square feet of building space considered 50 per cent or more depreciated.

The University of Tennessee, Knoxville, has 288,342 square feet of this total. The present value of property depreciated 50 per cent at the University of Tennessee is $1,118,000. It will require $2,976,000 to replace these buildings. The Memphis Branch of the University of Tennessee has the lowest amount of space (17,000 square feet) depreciated 50 per cent or more. The present value of this property is $556,000. It will require $1,375,000 to replace this property.

The gross area of 50 per cent depreciated space varies from 288,342 square feet at the University of Tennessee, Knoxville, to 17,000 square feet at the Memphis Medical Branch of the University of Tennessee. The difference is 271,342 square feet. The present value of 50 per cent depreciated space varies from $1,118,000 at the University of Tennessee, Knoxville, to $97,500 at Memphis State College. The difference between

TABLE XIII

BUILDINGS OWNED BY TENNESSEE STATE-SUPPORTED INSTITUTIONS OF HIGHER LEARNING DEPRECIATED 50 PER CENT OR MORE

Institution	Gross Area	Present Value	Replacement Value
Austin Peay State College	74,963	$ 227,000	$ 625,200
East Tennessee State College	35,759	183,250	204,000
Memphis State College	41,992	97,500	380,000
Middle Tennessee State College	180,074	1,001,400	2,005,700
Tennessee Agricultural and Industrial State University	224,927	823,496	1,334,880
Tennessee Polytechnic Institute	103,048	307,900	614,800
University of Tennessee (Knoxville)	288,342	1,118,000	2,976,000
University of Tennessee (Martin Branch)	63,621	282,000	704,000
University of Tennessee (Memphis Branch)	17,000	556,000	1,375,000

the highest and lowest present value of 50 per cent depreciated space is $1,020,500. The University of Tennessee has the highest replacement value of 50 per cent depreciated space at $2,976,000 and the lowest is East Tennessee State College at $204,000. The difference between the highest and the lowest in 50 per cent depreciated space value is $2,772,000.

Value of Land Holdings of State-Supported Institutions of Higher Education

In Table XIV (page 95) is outlined the present value of land holdings for each State-owned institution of higher education. This table shows the total present value of land holdings of State-supported institutions of higher education in Tennessee to be $7,837,908. The value of land holdings plus the value of buildings ($69,132,744, shown in Table II, page 71) gives a total value of $76,970,652 for Tennessee higher educational facilities. The total value represents $3,658 per full time student enrolled in higher education in Tennessee.

TABLE XIV

PRESENT VALUE OF LAND HOLDINGS OF STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Present Value
Austin Peay State College	$ 710,625
East Tennessee State College	396,000
Memphis State College	943,000
Middle Tennessee State College	146,920
Tennessee Agricultural and Industrial State University	1,250,000
Tennessee Polytechnic Institute	400,000
University of Tennessee (Knoxville)	3,037,524
University of Tennessee (Martin Branch)	73,062
University of Tennessee (Memphis Branch)	880,776

Summary

This chapter has presented the expenditures for higher education in State-owned institutions. Treated were the present, replacement, and insurable value of physical facilities of each institution. Also presented in this chapter were the per cent of obsolescent space and the replacement of obsolescent space of each institution.

This study pointed up, also, the institutional facilities that need replacing over periods of one to five years, six to fifteen years, and sixteen to thirty years. Also treated was the total value of each State-supported institution of higher education in Tennessee.

This chapter also showed the present value of land holdings and total value representing each full time equivalent student in State-supported institutions of higher education in Tennessee.

Chapter IV will treat the utilization of physical facilities of each institution.

CHAPTER IV

UTILIZATION OF LAND HOLDINGS, CLASSROOMS, AND STUDENT STATIONS IN STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

An appraisal of the effectiveness of the utilization of land holdings, classrooms, and student stations of State-supported institutions of higher education is made in this chapter. With the gradual rate of growth in enrollments, little attention has been given to the effectiveness with which space is used or to the development of measures which would assure fuller utilization for rooms or student stations. Without a set of standards, construction programs have proceeded without long-term planning, resulting in an unbalanced type of facilities and overcrowded conditions in State-supported institutions of higher education.

As a basis for the analyses in this chapter, a complete inventory was made of land and buildings of each institution. These data were reviewed by a special committee for accuracy. For purposes of this study the land areas were divided as follows: (a) the area covered by buildings, walks, and drives; (b) the area designated as playing and practice fields; (c) the area used for parks and beautification of site; (d) the area set

aside for agricultural purposes; (e) the area used for parking spaces; (f) the area suitable for development; and (g) the area not suitable for development.

The enrollment of each institution for the fall term of 1956 is presented in Table XV (page 99). The total enrollment in State-supported institutions of higher education in Tennessee for the fall term of 1956 was 21,036. This enrollment varied from 631 students at Austin Peay State College to 5,672 at the University of Tennessee. The per cent of the total enrollment for 1956 for each State-supported institution of higher education is as follows: Austin Peay State College, 2 per cent; East Tennessee State College, 13 per cent; Memphis State College, 16 per cent; Middle Tennessee State College, 7 per cent; Tennessee Agricultural and Industrial State University, 11 per cent; Tennessee Polytechnic Institute, 11 per cent; the University of Tennessee, 27 per cent; Memphis Medical Branch, 9 per cent; and the Martin Branch, 4 per cent. The per cent of enrollment varies from a high of 27 per cent for the University of Tennessee to a low of 3 per cent for Austin Peay State College.

Campus Area Per Full Time Equivalent Student

The campus area in acres was converted into square feet for purposes

TABLE XV

ENROLLMENT IN STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Full Time Equivalent Enrollment
Austin Peay State College	631
East Tennessee State College	2,737
Memphis State College	3,328
Middle Tennessee State College	1,480
Tennessee Agricultural and Industrial State University	2,244
Tennessee Polytechnic Institute	2,302
University of Tennessee (Knoxville)	5,672
University of Tennessee (Martin Branch)	751
University of Tennessee (Memphis Branch)	1,891

of determining the number of square feet per full time equivalent student. The campus area does not include the area for parking as this category was evaluated in terms of parking spaces instead of acres or square feet.

Table XVI, (page 101) shows the campus area per full time equivalent student varied from 479 square feet at Memphis Medical Branch to 4,027 square feet at the Martin Branch of the University of Tennessee. The 479 acres at Memphis Medical Branch is significant because of the large present enrollment and the steady increase predicted for the future.

Acres for All Purposes

Table XVII (page 102) shows the total acres for all purposes at State-supported institutions of higher education in Tennessee. The University of Tennessee, Knoxville, has 1,313 acres. University of Tennessee Agricultural Stations have 14,315 acres of land. Of the 17,758 acres owned by the State, the University of Tennessee, including agricultural stations, has 15,628 acres. Memphis State College, with the second highest enrollment of the State-supported institutions of higher education, has 79 acres of campus area. The University of Tennessee Medical Branch has an enrollment of 1,891 students with 20 acres of campus.

TABLE XVI

CAMPUS AREA FOR FULL TIME EQUIVALENT STUDENT FOR STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Square Feet
Austin Peay State College	3,010
East Tennessee State College	2,340
Memphis State College	920
Middle Tennessee State College	3,452
Tennessee Agricultural and Industrial State University	2,038
Tennessee Polytechnic Institute	1,730
University of Tennessee (Knoxville)	1,779
University of Tennessee (Martin Branch)	4,027
University of Tennessee (Memphis Branch)	479

TABLE XVII

TOTAL ACRES FOR STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Acres
Austin Peay State College	520
East Tennessee State College	117
Memphis State College	79
Middle Tennessee State College	367
Tennessee Agricultural and Industrial State University	450
Tennessee Polytechnic Institute	229
University of Tennessee (Knoxville)	1,313
University of Tennessee (Martin Branch)	368
University of Tennessee (Memphis Branch)	20
University of Tennessee (Agricultural Stations)	14,315

Acres in Field Plots and Gardens

Table XVIII (page 104) shows that Tennessee institutions of higher education own 2,473 acres of land for field plots and gardens. The University of Tennessee owns one-third of the total area designated for field plots and gardens, while East Tennessee State College has only 30 acres. The Memphis Medical School has no land for plots and gardens; nor does the Memphis State College, which has an enrollment of 3,328 students, have any area for agricultural field plots and gardens.

Parks and Landscaped Areas

Only seven of the nine State-supported institutions of higher education reported acreage for parks and landscaped areas. Table XIX (page 105) shows that 247 acres are used for parks and landscaping. The University of Tennessee, with 75 acres, has the most land for parks and landscaping. Tennessee Polytechnic Institute and the Memphis Medical Branch reported no land for parks and landscaping. Tennessee Agricultural and Industrial University had only 5 acres for such purposes.

TABLE XVIII

ACRES IN AGRICULTURAL FIELD PLOTS AND GARDENS FOR STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Acres
Austin Peay State College	475
East Tennessee State College	30
Memphis State College	-0-
Middle Tennessee State College	250
Tennessee Agricultural and Industrial State University	345
Tennessee Polytechnic Institute	168
University of Tennessee (Knoxville)	911
University of Tennessee (Martin Branch)	295
University of Tennessee (Memphis Branch)	-0-

TABLE XIX

PARKS AND LANDSCAPED AREAS OF STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Acres
Austin Peay State College	22
East Tennessee State College	30
Memphis State College	10
Middle Tennessee State College	53
Tennessee Agricultural and Industrial State University	5
Tennessee Polytechnic Institute	-0-
University of Tennessee (Knoxville)	75
University of Tennessee (Martin Branch)	52
University of Tennessee (Memphis Branch)	-0-

Acres for Playing and Practice Fields

Table XX (page 107) shows that the playing and practice fields of State-supported institutions of higher education comprise 104 acres. The two institutions with the largest area for playing and practice fields are Middle Tennessee State College with 24 acres and Memphis State College with 23 acres. The two schools reporting the least space for playing and practice fields are Austin Peay State College with six acres and East Tennessee State College with five acres. Memphis State College uses almost one-third of its land area for playing and practice fields. East Tennessee State College, with a total of 177 acres, uses only five acres for playing and practice fields. Although Memphis State College has a much larger enrollment, it allows 306 square feet of playing and practice space per full time equivalent student, compared with 79 square feet for East Tennessee State College.

The University of Tennessee, with an enrollment of 5,672 students, has thirteen acres for playing and practice fields. This does not include one acre used for tennis courts. The thirteen acres at the University of Tennessee provide 94 square feet per full time equivalent student for playing and practice fields.

The areas for the other State-supported institutions of higher

TABLE XX

AREA OF PLAYING AND PRACTICE FIELDS IN STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Acres
Austin Peay State College	6
East Tennessee State College	5
Memphis State College	23
Middle Tennessee State College	24
Tennessee Agricultural and Industrial State University	10
Tennessee Polytechnic Institute	13
University of Tennessee (Knoxville)	13
University of Tennessee (Martin Branch)	10
University of Tennessee (Memphis Branch)	-0-

education per full time equivalent student for playing and practice fields are as follows: Austin Peay State College, 414 square feet; Middle Tennessee State College, 688 square feet; Tennessee Agricultural and Industrial State University, 194 square feet; Tennessee Polytechnic Institute, 249 square feet; and the Martin Branch, 580 square feet. The variable in square feet per full time equivalent student is from 688 square feet at Middle Tennessee State College to 94 square feet at the University of Tennessee. The Memphis Medical Branch does not have any playing and practice fields.

Area Covered by Buildings, Walks, and Drives

As indicated in Table XXI (page 109), there is a total of 243 acres of land used by State-supported institutions of higher education in Tennessee for buildings, walks, and drives. The University of Tennessee, Knoxville, has 143 acres of land for the above-mentioned purposes. Memphis Medical Branch of the University, with an enrollment of 1,891 students, has four acres. The University of Tennessee, Martin Branch, with an enrollment of 751 students, has eight acres and East Tennessee State College, with an enrollment of 2,737, has ten acres for buildings, walks, and drives. East Tennessee State College, with 1,986 more students than Martin Branch, uses only two more acres for buildings, walks, and drives.

TABLE XXI

AREA COVERED BY BUILDINGS, WALKS, AND DRIVEWAYS FOR STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Number of Acres
Austin Peay State College	11
East Tennessee State College	10
Memphis State College	37
Middle Tennessee State College	26
Tennessee Agricultural and Industrial State University	75
Tennessee Polytechnic Institute	30
University of Tennessee (Knoxville)	143
University of Tennessee (Martin Branch)	8
University of Tennessee (Memphis Branch)	4

Parking Spaces

In any medium of transportation three elements are necessary for effective operation, namely, the vehicle, the right-of-way, and the terminal. Automobile transportation involves the three elements already mentioned. The increase in the number of students and faculty members operating vehicles has brought upon the State-supported institutions of higher education in Tennessee the problem of supplying parking facilities. Traffic hazards are increasing as the number of cars are greater than the number of parking spaces. Students, in an effort to meet classes on time, create traffic hazards and violate traffic rules and regulations set up by the institution. The magnitude of the parking problem indicates a need for better utilization of present facilities as well as better designed facilities to meet the needs of the present enrollment.

Data in Table XXII (page 111) show that there are 7,601 parking spaces at the State-supported institutions of higher education in Tennessee. East Tennessee State College, with an enrollment of 2,737 for the fall term of 1956, has the highest number of parking spaces with 1700; there is, excluding the faculty, only 0.6 of a parking space per full time equivalent student at East Tennessee State College. Tennessee Agricultural and Industrial State University, with an enrollment of 2,244 students, has the

TABLE XXII

PARKING SPACES FOR STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Number of Parking Spaces
Austin Peay State College	393
East Tennessee State College	1,700
Memphis State College	1,143
Middle Tennessee State College	1,113
Tennessee Agricultural and Industrial State University	200
Tennessee Polytechnic Institute	1,000
University of Tennessee (Knoxville)	1,558
University of Tennessee (Martin Branch)	230
University of Tennessee (Memphis Branch)	264

lowest number of parking spaces with 200, which provides .09 of a parking space per student (excluding the faculty). The University of Tennessee, Knoxville, has an enrollment of 5,672 students and provides 1,558 parking spaces. There were 4,883 vehicles registered with the Physical Plant at the University of Tennessee for the period of September 1956 to May 1957. The same source lists 3,010 vehicles registered by students at the University of Tennessee, Knoxville. The University of Tennessee has 0.5 of a parking space per full time equivalent student.

Land for Other Purposes

Austin Peay State College, Memphis State College, Tennessee Agricultural and Industrial State University, and the Martin Branch of the University of Tennessee did not list any land for other purposes. The Tennessee Polytechnic Institute listed four acres for apartments, four acres for the President's home, and five acres for the Training School. Middle Tennessee State College listed fifteen acres for the Training School. The University of Tennessee indicated use of one acre for tennis courts and 178 acres for farm forest purposes. The agricultural stations of the University of Tennessee listed fifty-five acres for ponds and creek beds and 10,800 acres taken up in woodland. East Tennessee State College uses one

acre for an amphitheater. The University of Tennessee, Memphis Medical Branch, uses two acres for a parking lot, two acres of rental property for parking lots, and one acre of rental property for lawns and landscaping. The institutions of State-supported higher education in Tennessee have a total of 11,254 acres of land for other purposes.

Utilization of Space

This section of the study treats the utilization of facilities at the State-supported institutions of higher education in Tennessee. If a uniform standard is to be established for the State-supported institutions of higher education for unit space utilization and needs, a second controlling factor in developing a standard for planning purposes is the per cent of utilization of teaching facilities that should be expected. On the basis of per cent utilization indicated by studies made of similar institutions elsewhere and the need to minimize future building requirements, it was decided that the following standards of utilization would be adopted for this study: Classroom utilization, 70 per cent; laboratory room utilization, 50 per cent; classroom student-station utilization, 70 per cent; and

laboratory student-station utilization, 80 per cent.[1]

For purposes of this study, utilization of instructional space is measured on two bases: room use and student station use. For example, a room with a seating capacity of fifty used by a class of twenty-five would be fully occupied or have a room utilization of 100 per cent for that period. From the standpoint of student station utilization, however, it is only 50 per cent utilized for that period. In the determination of utilization, an attainable weekly maximum of thirty-six hours was used for State-supported institutions of higher education. Thus, a room that is used thirty hours per week would show a utilization of 83 per cent, and a room being used forty hours per week would show 111 per cent utilization. These criteria were established by the legislative committee to be used for this study. In determining the per cent of room utilization, the total number of hours the room is in use during the week is divided by thirty-six, which represents the maximum number of hours a room is to be used during the week. For purposes of this study, when a room is used over the maximum number of hours established by the survey committee, it is possible to have over 100 per cent utilization. To compute the per cent of student station utilization

---

[1]Higher Education in Louisiana, Plant and Business Management for Higher Education in Louisiana (Baton Rouge: Louisiana Commission on Higher Education, no date), p. V-16.

the total number of hours the room is in use during the week is divided by the maximum possible number of student stations times the maximum hours (thirty-six) which the room may be used during the week. The above procedure is set forth on the survey instrument drawn up by the Legislative Council on Higher Education in Tennessee.

Table XXIII (page 116) shows the square feet of floor area used for lecture rooms, laboratory rooms, and rooms that are used as a combination lecture-laboratory. The total area in square feet for all State-supported instruction of higher education is 22,870. The University of Tennessee, Martin Branch, has the lowest total area in square feet (1,885) of instructional space. Austin Peay State College has the largest area, 3,566 square feet in instructional space. The difference between Austin Peay State College and the University of Tennessee, Martin Branch, for total instructional space is 1,681 square feet.

There is a total of 7,757 square feet of lecture room space in the State-supported institutions of higher education. East Tennessee State College, with an enrollment of 2,737 students, has 1,207 square feet of lecture room space. Tennessee Agricultural and Industrial State University, with an enrollment of 2,244 students, has the lowest amount, 655 square feet of lecture room space. East Tennessee State College, with

TABLE XXIII

SQUARE FEET PER LECTURE, LABORATORY, AND LECTURE - LABORATORY ROOM FOR STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Lecture	Laboratory	Lecture-Laboratory
Austin Peay State College	814	1,937	815
East Tennessee State College	1,207	729	
Memphis State College	797	1,109	1,040
Middle Tennessee State College	819	1,039	1,287
Tennessee Agricultural and Industrial State University	655	846	1,097
Tennessee Polytechnic Institute	815	1,224	
University of Tennessee (Knoxville)	764	1,159	1,250
University of Tennessee (Martin Branch)	929	956	
University of Tennessee (Memphis Branch)	957	625	
Totals	7,757	9,624	5,489

493 more students than Tennessee Agricultural and Industrial State University, has 552 square feet more lecture space.

The total area in square feet for laboratory rooms of higher education is 9,624 square feet. Austin Peay State College, with an enrollment of 631 students, has 1,937 square feet of laboratory instruction space. East Tennessee State College, which had the largest amount of lecture room space, has the lowest amount of laboratory space (729 square feet). The variable in laboratory space is 1,208 square feet. East Tennessee State College, with 1,208 square feet less for laboratory purposes than Austin Peay State College, has 2,106 more students enrolled. Each institution is below the twenty-five square feet per student enrolled.

Five institutions listed space used for combination lecture-laboratory rooms. Middle Tennessee State College, with an enrollment of 1,480 students, has an average 1,287 square feet for laboratory-lecture rooms; Austin Peay State College, with 631 students, has an average of 815 square feet of laboratory-lecture room space. The variable in laboratory-lecture space is 472 square feet. The survey instruments did not provide space for recording combination lecture-laboratory information. The recording of combination lecture-laboratory information may alter the room and student utilization per cents. This also is a possible explanation as to why East Tennessee State College, Tennessee Polytechnic

Institute, the University of Tennessee Martin Branch, and the University of Tennessee Memphis Branch did not list information on combination lecture-laboratory utilization.

There are many factors to be considered in analyzing the space or the student-station area or the capacity of the physical facilities of a given institution. Institutions with larger enrollments usually get a higher per cent of utilization of space than institutions with smaller enrollments.[2]

The standard criterion of twenty-five square feet per student station is the figure used for computing the number of student stations in the room. This figure was established by the Legislative Council Committee.

Table XXIV (page 119) shows square feet per student station in State-supported institutions of higher education. Tennessee Polytechnic Institute has a high of fifty square feet per student station for lectures, compared to Austin Peay State College with sixteen square feet. Two institutions, East Tennessee State College and Austin Peay State College, reported less than the standard of twenty-five square feet per student station. East Tennessee State College, Tennessee Polytechnic Institute, and the University of Tennessee Martin Branch did not show facilities used for both laboratory

---

[2]Mississippi Study Committee on Higher Learning, Higher Education in Mississippi (Jackson: Institutions of Higher Learning, 1954), p. 252.

TABLE XXIV

SQUARE FEET PER STUDENT STATION IN STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Lecture	Laboratory	Lecture-Laboratory
Austin Peay State College	16	104	40
East Tennessee State College	19	65	*
Memphis State College	32	53	24
Middle Tennessee State College	34	46	35
Tennessee Agricultural and Industrial State University	26	25	44
Tennessee Polytechnic Institute	50	54	*
University of Tennessee (Knoxville)	35	32	51
University of Tennessee (Martin Branch)	36	40	*
University of Tennessee (Memphis Branch)	29	70	*

* Reported no lecture-laboratory combination rooms.

and lecture purposes.

Austin Peay State College, with an enrollment of 631 students, has the highest number, 104 square feet per student station, for laboratory purposes. This is seventy-nine square feet per student station over the standard of twenty-five square feet per student station. All other institutions are well above the standard of twenty-five square feet per student station. The variable in laboratory space per student is seventy-nine square feet.

There were only five institutions that reported having combination lecture-laboratory rooms. The University of Tennessee with fifty-one square feet per student station is the highest, and the lowest is Memphis State College with twenty-four square feet per student station. Memphis State College is only one square foot below the standard of twenty-five square feet.

Per Cent Student Station Utilization

Table XXV (page 121) shows the per cent student station utilization for each State-supported institution of higher education in Tennessee. Indicated in this table are the percentages for lecture rooms, laboratory rooms, and combination lecture-laboratory rooms.

TABLE XXV

PER CENT UTILIZATION OF STUDENT STATIONS
IN STATE-SUPPORTED INSTITUTIONS
OF HIGHER EDUCATION

Institution	Lecture	Laboratory	Lecture-Laboratory
Austin Peay State College	60	31	31
East Tennessee State College	44	31	*
Memphis State College	79	37	37
Middle Tennessee State College	50	27	57
Tennessee Agricultural and Industrial State University	80	72	27
Tennessee Polytechnic Institute	53	27	*
University of Tennessee (Knoxville)	72	23	24
University of Tennessee (Martin Branch)	51	25	*
University of Tennessee (Memphis Branch)	63	63	*

*Did not use combination classroom-laboratory.

Tennessee Agricultural State University has a lecture room student station utilization of 80 per cent. The Martin Branch of the University of Tennessee has a lecture room student station utilization of 51 per cent. There is a difference in utilization of student stations of 29 per cent. Tennessee Agricultural and Industrial State University is 10 per cent above the standard of 70 per cent used in this study. Memphis State College, Tennessee Agricultural and Industrial State University, and the University of Tennessee are above the standard. Austin Peay State College, East Tennessee State College, Middle Tennessee State College, Tennessee Polytechnic Institution, the Martin Branch of the University of Tennessee, and the Memphis Branch of the University of Tennessee are below the standard.

Tennessee Agricultural and Industrial State University has 72 per cent student station utilization for laboratory rooms. This is only 8 per cent below the standard of 80 per cent used in this study. The University of Tennessee, Knoxville, has the lowest, 23 per cent, laboratory student station utilization. The difference between the standard of 80 per cent used in the study and the low of 23 per cent at the University of Tennessee is 57 per cent for laboratory student station utilization.

Five institutions reported lecture-laboratory room student station utilization. No standard was used for the combination rooms. Middle

Tennessee State College has a student station utilization for the combination room of 57 per cent. The University of Tennessee has for the same purpose a student station utilization of 24 per cent. Three institutions do not have lecture-laboratory rooms.

Per Cent of Room Utilization

Table XXVI (page 124) shows per cent of room utilization in State-supported institutions of higher education in Tennessee. For purposes of this study the standard for lecture room utilization is 70 per cent and for laboratory room utilization is 50 per cent. The per cent of room utilization did not vary as widely as did the student station utilization.

Tennessee Agricultural and Industrial State University had a lecture room utilization of 80 per cent, which is 10 per cent above the standard. The Martin Branch had 50 per cent lecture room utilization, which is 20 per cent below the standard. All other institutions were below the standard of 80 per cent utilization for lecture rooms.

Tennessee Polytechnic Institute with 30 per cent, the Martin Branch of the University of Tennessee with 34 per cent, and East Tennessee State College with 47 per cent were the only institutions below the standard of 50 per cent laboratory room utilization.

TABLE XXVI

PER CENT OF ROOM UTILIZATION IN STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Lecture	Laboratory	Lecture-Laboratory
Austin Peay State College	58	52	55
East Tennessee State College	68	47	*
Memphis State College	77	60	58
Middle Tennessee State College	56	69	65
Tennessee Agricultural and Industrial State University	80	79	35
Tennessee Polytechnic Institute	53	30	*
University of Tennessee (Knoxville)	72	55	71
University of Tennessee (Martin Branch)	50	34	*
University of Tennessee (Memphis Branch)	64	65	*

*Did not use combination lecture-laboratory rooms

Five of the nine institutions reported combination lecture-laboratory room utilization. The highest was the University of Tennessee with 71 per cent. The lowest was Tennessee Agricultural and Industrial State University with 35 per cent lecture-laboratory room utilization. East Tennessee State College, Tennessee Polytechnic Institute, and the Martin and Memphis branches of the University of Tennessee did not list combination lecture-laboratory rooms.

Laboratory and Office Research

In the Tennessee State-supported institutions of higher education there are virtually no research facilities, except at the University of Tennessee, Knoxville. The University of Tennessee, with an enrollment of 5,672 students, had 44,880 square feet of research space. The research space per full time equivalent student at the University of Tennessee was eight square feet. There were 25,569 square feet of space being used for laboratory research at the University of Tennessee. Also, the University had 19,311 square feet of space used as office research. Using the method for computing utilization on page 114, the University of Tennessee had 142 per cent for laboratory research utilization and 133 per cent for office research utilization. Since the University of Tennessee, Knoxville, was

the only institution reporting research facilities, no comparisons were made.

Usable Area in Square Feet Per Full Time Equivalent Student

The purpose of this section was to show space in square feet per full time equivalent student not treated elsewhere in the study except the space used for classrooms, laboratory rooms, and lecture-laboratory combination rooms. The number of square feet was obtained by dividing the total space of the various categories by the full time equivalent enrollment.

Table XXVII (page 127) shows a comparison of usable area in square feet per full time equivalent student in the various categories listed for each institution. As stated elsewhere in this study, the enrollments varied from 5,672 students at the University of Tennessee to 631 students at Austin Peay State College.

The University of Tennessee, Memphis Branch, had forty square feet per full time equivalent student for administration. The University of Tennessee, Martin Branch, had six square feet and Tennessee Polytechnic Institute had four square feet per full time equivalent student in administrative space. There was a difference of thirty-six square feet between the

TABLE XXVII

AREA IN SQUARE FEET PER FULL TIME EQUIVALENT STUDENT IN STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

	Austin Peay State College	East Tenn. State College	Memphis State College	Middle Tenn. State College	Tenn. A & I State Univ.	TPI	University of Tennessee			Average
							Knoxville	Martin Branch	Memphis Branch	
Administration	12	12	12	16	32	4	21	6	40	17
Instruction	117	45	7	153	53	67	12	131	270	102
Gymnasium and Auditorium	65	16	13	21	29	23	11	11		21
Domiciliary	190	32	5	63	71	57	93	103	30	77
Field House			16			3				
Student Union	4	1	6	18	5	16	17	5	15	10
Cafeteria	18	4	5	8		1	3	8		7
Library	13	9	13	5	10	9	8	17	17	11
Maintenance and Operation	20	20	3	6	6	16	6	10	7	10
Service Area	84	43		86	71	42				65
Unclassified		8	6	12	7		24	1		10

Memphis Branch of the University of Tennessee and Tennessee Polytechnic Institute in square feet per full time equivalent student in providing administrative space.

The University of Tennessee, Memphis Branch, had 270 square feet per full time equivalent student for instructional purposes. Memphis State College had seven square feet per full time equivalent student for instructional space. There was a difference between the University of Tennessee, Memphis Branch, and the Memphis State College of 263 square feet in providing instructional space per full time equivalent student.

Austin Peay State College provided sixty-five square feet per full time equivalent student for gymnasium and auditorium space, whereas the University of Tennessee, Knoxville, and the Martin Branch of the University of Tennessee provided eleven square feet per full time equivalent student. The difference in providing gymnasium and auditorium space was fifty-four square feet per full time equivalent student.

Austin Peay State College provided 190 square feet of domiciliary space per full time equivalent student. Memphis State College provided five square feet; the University of Tennessee, Memphis Branch, provided thirty square feet; and East Tennessee State College provided thirty-two square feet per full time equivalent student for domiciliary purposes. There was a difference between Austin Peay State College and Memphis

State College of 185 square feet per full time equivalent student for domiciliary purposes.

Two institutions reported field house facilities. Memphis State College provided sixteen square feet and Tennessee Polytechnic Institute provided three square feet per full time equivalent student for field house purposes.

Middle Tennessee State College provided eighteen square feet per full time equivalent student and East Tennessee State College provided one foot per full time equivalent student for student union facilities. The difference in providing student union space was seventeen square feet.

Cafeteria space varied from eighteen square feet per full time equivalent student at Austin Peay State College to one square foot at the Tennessee Polytechnic Institute. Tennessee Agricultural and Industrial State University and the University of Tennessee, Memphis Branch, did not report cafeteria space.

The University of Tennessee branches at Martin and Memphis each reported seventeen square feet per full time equivalent student for library space. Middle Tennessee State College had only five square feet per full time equivalent student for library space. All institutions were below the standard of twenty-five square feet per student for library space.

Memphis State College had three square feet per full time equivalent

student for maintenance and operational space. Austin Peay State College and East Tennessee State College each provided twenty square feet per full time equivalent student for maintenance and operational space.

Five schools reported service areas. The institutions and square feet per full time equivalent student were as follows: (a) Austin Peay State College, eighty-four square feet; (b) East Tennessee State College, forty-three square feet; (c) Middle Tennessee State College, eighty-six square feet; (d) Tennessee Agricultural and Industrial State University, seventy-one square feet; and (e) Tennessee Polytechnic Institute, forty-two square feet.

Unclassified areas ranged from one square foot per full time equivalent student at the University of Tennessee, Martin Branch, to twenty-four square feet per full time equivalent student at the University of Tennessee, Knoxville. Austin Peay State College, Tennessee Polytechnic Institute, and the Memphis Branch of the University of Tennessee did not report unclassified space.

Comparison of Number in Classes

This section will point up the number in classes at State-supported institutions of higher education in Tennessee. Table XXVII (page 131)

TABLE XXVIII

AVERAGE NUMBER IN CLASS IN STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Lecture	Laboratory
Austin Peay State College	19	11
East Tennessee State College	26	13
Memphis State College	28	17
Middle Tennessee State College	25	8
Tennessee Agricultural and Industrial State University	40	21
Tennessee Polytechnic Institute	25	12
University of Tennessee (Knoxville)	21	13
University of Tennessee (Martin Branch)	19	16
University of Tennessee (Memphis Branch)	44	11

shows the average number of students in lecture and laboratory classes in State-supported institutions of higher education in Tennessee. The standard of twenty-five pupils per class was used in this section for comparison purposes. Austin Peay State College with nineteen students per class, the Martin Branch of the University of Tennessee with nineteen students per class, and the University of Tennessee with twenty-one students per class were below the standard of twenty-five per class. The institution with the largest average number in class was the Memphis Branch of the University of Tennessee with forty-four students per class. The difference in the lecture class average in State-supported higher education in Tennessee was twenty-five students per class.

Tennessee Agricultural and Industrial State University had the largest average number in laboratory class with twenty-one students. This was four below the standard of twenty-five for each class. Austin Peay State College had eleven students per laboratory class. This was thirteen students below the standard of twenty-five. There was a difference of nine students per class between the institution with the largest average and the institution with the lowest average per laboratory class.

For institutions using combination lecture-laboratory rooms, the average size classes were: Austin Peay State College with ten pupils per class; the University of Tennessee, Knoxville, with twelve pupils per class;

Tennessee Agricultural and Industrial State University with thirteen pupils per class; Middle Tennessee State College with fourteen pupils per class; and Memphis State College with fifteen pupils per class.

Hours Lecture Rooms in Use by Days of Week

For purposes of lecture room use, the standard of thirty-six hours per week, set up by the Legislative Committee, was used. Table XXIX (page 134) shows the average total number of hours lecture rooms were in use by days of the week. The difference in total hours used per week was eleven hours. The University of Tennessee, Martin Branch, had the lowest use in hours with seventeen, whereas Tennessee Agricultural and Industrial State University had twenty-nine hours per week of lecture room use. There was very little difference in the average use per hours by days of the week of individual institutions. The total hours of room use per week for Saturday varied from four hours at Middle Tennessee State College to one hour listed by several institutions. All institutions were below the maximum of thirty-six hours per week.

Hours Laboratory Rooms in Use by Days of Week

For purposes of this study an attainable maximum of thirty-six

TABLE XXIX

AVERAGE HOURS LECTURE ROOMS IN USE BY DAYS IN STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	M	Tu	W	Th	F	S	Total
Austin Peay State College	4	4	4	4	4	2	22
East Tennessee State College	4	3	4	3	4	2	20
Memphis State College	5	5	5	5	5	1	26
Middle Tennessee State College	4	3	4	3	3	1	18
Tennessee Agricultural and Industrial State University	6	4	6	4	6	3	29
Tennessee Polytechnic Institute	4	3	4	3	4	2	20
University of Tennessee (Knoxville)	5	4	5	4	5	2	25
University of Tennessee (Martin Branch)	3	3	3	3	4	1	17
University of Tennessee (Memphis Branch)	4	4	3	4	4	2	21

hours per week was used. Table XXX (page 136) shows the institutions, laboratory days of the week, and the average number of hours rooms were in use each day and the total hours of use per week for each institution.

For laboratory use the range in total hours per week was from ten for Tennessee Polytechnic Institute to twenty-seven hours for Tennessee Agricultural and Industrial State University. There was very little difference in the total hours per week for each institution. All institutions were low for Saturday use except Middle Tennessee State College, which had a Saturday use of four hours. All institutions fell below the maximum of thirty-six hours per week set up by the Legislative Committee on Higher Education.

Summary

Chapter IV has analyzed the effectiveness of the utilization of physical facilities of each institution of public higher education in Tennessee. Treated specifically were the campus areas per full time equivalent student; the total acres for all purposes; the acres used for field plots, gardens, parks, landscaped area; and playing and practice fields. The shortage of parking facilities was also discussed in this chapter.

TABLE XXX

AVERAGE HOURS LABORATORY ROOMS IN USE BY DAYS IN STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	M	Tu	W	Th	F	S	Total
Austin Peay State College	4	3	3	3	3	1	17
East Tennessee State College	2	2	2	2	2	1	11
Memphis State College	3	4	3	4	2	1	17
Middle Tennessee State College	4	5	5	2	5	4	25
Tennessee Agricultural and Industrial State University	5	5	5	5	5	2	27
Tennessee Polytechnic Institute	2	2	2	2	1	1	10
University of Tennessee (Knoxville)	4	3	4	3	4	1	19
University of Tennessee (Martin Branch)	2	2	2	2	2	1	11
University of Tennessee (Memphis Branch)	4	4	4	4	4	2	22

The utilization of classrooms from the point of view of per cent of room and student station utilization was shown. Only one institution, the University of Tennessee, reported space used for research. Pointed up also in the latter part of the chapter was the usable area in square feet per full time equivalent student for the following: administration, gymnasium and auditorium, dormitories, student union buildings, cafeterias, libraries, and maintenance and operational space. Also analyzed was the average total number of hours rooms were used each day of the week for lecture and laboratory purposes.

The projected enrollments and facilities that will be needed through 1971 are presented in the following chapter.

CHAPTER V

PREDICTED ENROLLMENTS AND SPACE REQUIREMENTS FOR TENNESSEE STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Projected Enrollments Through 1961, 1966, and 1971

This section points up the enrollment projections for each public institution of higher education in Tennessee over three periods through 1961, 1966, and 1971. The ratio method was used in the projection of college enrollments.

> The ratio method consists of (1) extrapolating the ratio of (a) the population of the area for which a projection is required to (b) the population of a larger area which includes the first area and for which acceptable population projections are already available; and (2) applying the extrapolated ratios to the population projections for the larger area to obtain projections for the smaller area.[1]

The college enrollment projections include totals to 1971 for State-supported institutions of higher education in Tennessee. The population in the age group now eighteen to twenty-four years is approximately

---

[1]United States Department of Commerce, Current Population Reports, Series P-25, No. 110 (Washington: Government Printing Office, 1955), p. 25.

fifteen million. These people were born during the low birth rate period of the 1930s. The national total in this college-age group is to be one million greater in 1961, nearly five million greater in 1965, and nine and one-half million greater in 1971. These are the estimated survivors of children already born.[2]

Much of the analysis and speculation about college enrollment increases has been based upon this type of data. Our tradition, however, is one of each state providing educational facilities for its own citizens. Numerous states have expanded to meet the needs of higher education and are now studying and planning for expansion.[3] It is primarily on the state-supported institutions that an obligation rests for creating an opportunity for all qualified youth to attain a college education. The big enrollment increases resulting from the increased number of births will actually start in college after the 1960 population census is reported.

---

[2]Meyer Zitter, Illustrative Projections of the Population by States, Current Population Reports, Series P-25, No. 110 (Washington: Government Printing Office, February 1955), pp. 1-3.

[3]A. J. Brumbaugh and Redding S. Sugg, Jr., Recent Developments in State and Regional Planning of Higher Education, (The Annals of the American Academy of Political and Social Science, September 1955), pp. 32-40.

However, projections should be made on the most reliable data available. The task of providing facilities and educational programs is a continuous process based on present and future needs.

Projected Enrollment Through 1961

Table XXXI (page 141) shows the enrollment for the fall term of 1956 and the projected enrollment for the fall term of 1961 for each State-supported institution of higher education in Tennessee.

According to this projection, Austin Peay State College, with an enrollment for the fall of 1956 of 631 students, will increase to one thousand students in the fall of 1961; this is a gain of 369 students (or 58 per cent) over the first five-year period. East Tennessee State College, with an enrollment for the fall term of 1956 of 2,737 students, will increase to 4,800 students in the fall term of 1961; this is a gain of 2,063 students (or 75 per cent) over the 1956 enrollment. Memphis State College had an enrollment in the fall of 1956 of 3,328 students and will increase to 5,400 students in 1961. This is a gain of 2,072 students (or 62 per cent) over the 1956 enrollment.

Middle Tennessee State College, with an enrollment of 1,480 students for the fall term of 1956, will have in the fall of 1961 a total of 2,500 students, a gain of 1,024 students (or 69 per cent) over 1956 figures.

TABLE XXXI

ENROLLMENT PROJECTION FOR THE FALL OF 1961 FOR STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Enrollment		Gain over 1956	Per cent gain over 1956
	Actual 1956	Predicted 1961		
Austin Peay State College	631	1,000	369	58%
East Tennessee State College	2,737	4,800	2,063	75%
Memphis State College	3,328	5,400	2,072	62%
Middle Tennessee State College	1,480	2,500	1,024	69%
Tennessee A & I State University	2,244	3,500	1,256	56%
Tennessee Polytechnic Institute	2,302	3,700	1,398	61%
University of Tennessee, Knoxville	5,672	9,800	4,128	73%
University of Tennessee, Martin Branch	751	1,400	649	86%
University of Tennessee, Memphis Branch	1,891	2,400	509	27%

Tennessee Agricultural and Industrial State University, with an enrollment of 2,244 for the fall of 1956, will increase to 3,500 students in 1961; this is a gain over the 1956 enrollment of 1,256 students (or 56 per cent). Tennessee Polytechnic Institute had an enrollment of 2,302 students in the fall of 1956 and will increase to 3,700 students in 1961; this is a gain of 1,398 (or 61 per cent) over 1956 enrollments.

The University of Tennessee, Knoxville, with an enrollment in the fall of 1956 of 5,672 students, will increase to 9,800 students in 1961; this represents a gain of 4,128 students (or 73 per cent) over the 1956 enrollment. The Martin Branch had an enrollment of 751 students in 1956 and will increase to 1,400 students in 1961; this represents a gain of 649 students (or 86 per cent) over the 1956 enrollment. The Memphis Branch, with an enrollment in 1956 of 1,891 students, will increase to 2,400 students in 1961; this represents a gain of 509 students (or 27 per cent) over the 1956 enrollment.

The total enrollment for State-supported institutions of higher education in the fall of 1956 was 21,036. For the same institutions, enrollments will reach a total of 34,500 students in 1961. This represents a gain of 13,464 students over 1956 enrollments.

Projected Enrollments Through 1966

Table XXXII (page 144) shows the enrollment projections for each State-supported institution of higher education through 1966. Austin Peay State College, with an enrollment of 631 students in 1956, will have an enrollment in 1966 of 1,500 students, which represents a gain of 869 students (or 137 per cent) over the 1956 enrollment. East Tennessee State College, with an enrollment of 2,737 students in 1956, will increase to 6,800 students in 1966; this represents a gain of 4,063 students (or 148 per cent) over the 1956 enrollment. Memphis State College had an enrollment in 1956 of 3,328 students and will increase to 8,400 students in 1966, a gain of 5,072 (or 152 per cent) over the 1956 enrollment.

Middle Tennessee State College, with an enrollment in 1956 of 1,480 students, will have in 1966 an enrollment of 3,500 students; this is a gain of 2,020 students (or 136 per cent) over the 1956 enrollment. Tennessee Agricultural and Industrial State University in 1956 had an enrollment of 2,244 students and will enroll in 1966 a total of 4,900 students; this represents a gain of 2,656 students (or 118 per cent) over the enrollment in 1956. Tennessee Polytechnic Institute, with an enrollment of 2,302 students in 1956, will have 5,100 students in 1966; this represents a gain of 2,798 students (or 122 per cent) over the 1956 enrollment.

TABLE XXXII

ENROLLMENT PROJECTION FOR THE FALL OF 1966 FOR STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Enrollment		Gain over 1956	Per cent gain over 1956
	Actual 1956	Predicted 1966		
Austin Peay State College	631	1,500	869	137%
East Tennessee State College	2,737	6,800	4,063	148%
Memphis State College	3,328	8,400	5,072	152%
Middle Tennessee State College	1,480	3,500	2,020	136%
Tennessee A & I State University	2,244	4,900	2,656	118%
Tennessee Polytechnic Institute	2,302	5,100	2,798	122%
University of Tennessee, Knoxville	5,672	13,900	8,228	145%
University of Tennessee, Martin Branch	751	1,900	1,149	192%
University of Tennessee, Memphis Branch	1,891	3,400	1,509	80%

The University of Tennessee, with an enrollment in the fall of 1956 of 5,672 students, will have 13,900 students in 1966; this is a gain of 8,228 students (or 145 per cent) over the 1956 enrollment. The Martin Branch of the University of Tennessee had an enrollment of 751 students in 1956 and will have 1,900 students in 1966, which represents a gain of 1,149 students (or 192 per cent) over the 1956 enrollment. The Memphis Branch of the University of Tennessee had an enrollment of 1,891 students in 1956 and will have 3,400 students in 1966; this represents a gain of 1,509 students (or 80 per cent) over the 1956 enrollment.

The total enrollment in 1956 of all institutions of public higher education in Tennessee was 21,036 students. The enrollment for 1966 will be 49,400 students. This represents a gain of 28,364 students over 1956 enrollments.

Projected Enrollment Through 1971

Table XXXIII (page 146) shows enrollment projections through 1971 for institutions of public higher education in Tennessee. Austin Peay State College, with an enrollment of 631 students in 1956, will have in 1971 an enrollment of 2,000 students; this is a gain of 1,369 students (or 217 per cent) over the enrollment in 1956. East Tennessee State College had an enrollment in 1956 of 2,737 students and will have an enrollment in 1971

TABLE XXXIII

ENROLLMENT PROJECTION FOR THE FALL OF 1971 FOR STATE-SUPPORTED INSTITUTIONS OF HIGHER EDUCATION

Institution	Enrollment		Gain over 1956	Per cent gain over 1956
	Actual 1956	Predicted 1971		
Austin Peay State College	631	2,000	1,369	217%
East Tennessee State College	2,737	9,300	6,563	240%
Memphis State College	3,328	12,500	9,172	276%
Middle Tennessee State College	1,480	4,700	3,220	218%
Tennessee A & I State University	2,244	7,200	4,956	221%
Tennessee Polytechnic Institute	2,302	6,800	4,498	195%
University of Tennessee, Knoxville	5,672	18,700	13,028	230%
University of Tennessee, Martin Branch	751	2,600	1,849	246%
University of Tennessee, Memphis Branch	1,891	4,700	2,809	149%

of 9,300 students; the gain over 1956 is 6,563 students (or 240 per cent). Memphis State College, with an enrollment of 3,328 students in 1956, will have in 1971 an enrollment of 12,500 students; this is a gain of 9,172 students (or 276 per cent) over the 1956 enrollment.

Middle Tennessee State College, with an enrollment of 1,480 students in 1956, will have in 1971 an enrollment of 4,700 students; this is a gain of 3,220 students (or 218 per cent) over 1956. Tennessee Agricultural and Industrial State University, with an enrollment in 1956 of 2,244 students, will have in 1971 an enrollment of 7,200 students, a gain of 4,956 students (or 221 per cent) over the 1956 enrollment. Tennessee Polytechnic Institute, with an enrollment in 1956 of 2,302 students, will have in 1971 an enrollment of 6,800 students; this is a gain of 4,498 students (or 195 per cent) over the 1956 enrollment.

The University of Tennessee, with an enrollment of 5,672 in 1956, will have in 1971 an enrollment of 18,700 students; this represents a gain of 13,028 students (or 230 per cent) over the enrollment in 1956. The Martin Branch of the University of Tennessee, with an enrollment in 1956 of 751 students, will increase to 2,600 students in 1971; this is a gain of 1,849 students (or 246 per cent) over the 1956 enrollment. The Memphis Branch, with an enrollment of 1,891 students in 1956, will have in 1971 an enrollment of 4,700 students, a gain of 2,809 students (or 149

per cent) over the 1956 enrollment.

The State-supported institutions of higher education had a total of 21,036 students in the fall of 1956. The enrollments for the same institutions will increase to a total of 68,500 students in 1971. This represents an increase over the 1956 enrollment of 47,464 students.

Space Projection Through 1961, 1966, and 1971

This section of Chapter V will point up space needs for institutions of public higher education in Tennessee. In making the projection, obsolescent building space that needs replacing was given consideration in determining space needs. Specific projections were made for those spaces where standard space requirements were available. The classroom and laboratory projections were made on twenty-five square feet per student station, as established by the Legislative Committee on Higher Education. The following standards for space requirements were obtained from the University of Tennessee Architect: (a) domiciliary space requirements, 240 square feet per student; (b) cafeteria space requirements, fifteen square feet per student; and (c) library space requirements, twenty-five square feet per student. Where space requirements were not available, the obsolescent space needs were pointed up for replacement within the

period in which their remaining life is no longer adequate to house a school program.

In projecting space needs, the following formula was used:

(a) for the first period projections, the enrollment times the standard space requirement equals the space needs for a stated enrollment;

(b) for the second period projections, the present space minus the space to be replaced equals present space available;

(c) for the third period projections, space needed for present enrollments minus the space available equals projected space needed for the third period.

In projecting space needs for the second and third periods, the increased enrollment over the previous period is multiplied by the standard for the category being projected plus the space that needs replacing for the period projected.

Austin Peay State College

By 1961 the following space is needed to accommodate the predicted increased enrollment at Austin Peay State College:

Instruction	- 18, 794 square feet
Domiciliary	-157, 011 square feet
Cafeteria	- 5, 404 square feet

Library - 19,289 square feet

Auditorium - 4,345 square feet

By 1966 the following space is needed to accommodate the predicted increased enrollments at Austin Peay State College:

Instruction - 14,855 square feet

Domiciliary -102,703 square feet

Cafeteria - 10,548 square feet

Library - 10,000 square feet

By 1971 the following space is needed to accommodate the predicted increased enrollments at Austin Peay State College:

Instruction - 17,355 square feet

Domiciliary -126,703 square feet

Cafeteria - 13,048 square feet

Library - 12,500 square feet

East Tennessee State College

By 1961 the following space is needed to accommodate the predicted increased enrollments at East Tennessee State College:

Instruction - 60,174 square feet

Domiciliary -1,064,426 square feet

Cafeteria - 709,146 square feet

Library	-	94,697 square feet
Administration	-	5,534 square feet
Maintenance and Operational Services	-	5,534 square feet

By 1966 the following space is needed to accommodate the predicted increased enrollments at East Tennessee State College:

Instruction	-	50,000 square feet
Domiciliary	-	480,000 square feet
Cafeteria	-	30,000 square feet
Library	-	50,000 square feet
Maintenance and Operational Services	-	2,353 square feet

By 1971 the following space is needed to accommodate the predicted increased enrollments at East Tennessee State College:

Instruction	-	62,500 square feet
Domiciliary	-	600,000 square feet
Cafeteria	-	37,500 square feet
Library	-	62,500 square feet
Maintenance and Operational Services	-	2,353 square feet

Memphis State College

By 1961 the following space is needed to accommodate the predicted

increased enrollments at Memphis State College:

Instruction	- 74,163 square feet
Domiciliary	-1,129,709 square feet
Cafeteria	- 65,422 square feet
Library	- 91,700 square feet
Administration	- 1,640 square feet
Maintenance and Operational Services	- 1,767 square feet

By 1966 the following space is needed to accommodate the predicted increased enrollment at Memphis State College:

Instruction	- 75,000 square feet
Domiciliary	-720,000 square feet
Cafeteria	- 45,000 square feet
Library	- 75,000 square feet
Maintenance and Operational Services	- 571 square feet

By 1971 the following space is needed to accommodate the predicted increased enrollment at Memphis State College:

Instruction	-102,500 square feet
Domiciliary	-984,000 square feet
Cafeteria	- 61,500 square feet
Library	-102,500 square feet

Maintenance and Operational Services	-	571 square feet

Middle Tennessee State College

By 1961 the following space is needed to accommodate the predicted increased enrollment at Middle Tennessee State College:

Domiciliary	-529,621 square feet
Cafeteria	- 25,012 square feet
Library	- 55,292 square feet
Administration	- 4,121 square feet
Maintenance and Operational Services	- 1,999 square feet

By 1966 the following space is needed to accommodate the predicted increased enrollment at Middle Tennessee State College:

Instruction	- 22,239 square feet
Domiciliary	-259,025 square feet
Cafeteria	- 15,000 square feet
Library	- 25,000 square feet
Administration	- 3,442 square feet
Maintenance and Operational Services	- 19,305 square feet
Auxiliary Space	- 24,682 square feet

By 1971 the following space is needed to accommodate the predicted

increased enrollment at Middle Tennessee State College:

Instruction	- 60,136 square feet
Domiciliary	-268,875 square feet
Cafeteria	- 18,000 square feet
Library	- 30,000 square feet
Administration	- 3,442 square feet
Maintenance and Operational Services	- 19,305 square feet
Auxiliary Space	- 24,682 square feet

Tennessee Agricultural and Industrial State University'

By 1961 the following space is needed to accommodate the predicted increased enrollment at Tennessee Agricultural and Industrial State University:

Instruction	- 67,866 square feet
Domiciliary	-1,069,663 square feet
Cafeteria	- 43,500 square feet
Library	- 101,053 square feet
Administration	- 3,311 square feet
Maintenance and Operational Services	- 16,184 square feet
Auxiliary Space	- 9,777 square feet

By 1966 the following space is needed to accommodate the predicted increased enrollment at Tennessee Agricultural and Industrial State University:

Instruction	- 57,702 square feet
Domiciliary	-572,786 square feet
Cafeteria	- 34,500 square feet
Library	- 57,500 square feet
Administration	- 576 square feet
Maintenance and Operational Services	- 2,674 square feet

By 1971 the following space is needed to accommodate the predicted increased enrollment at Tennessee Agricultural and Industrial State University:

Instruction	- 27,500 square feet
Domiciliary	-284,786 square feet
Cafeteria	- 16,500 square feet
Library	- 27,500 square feet
Administration	- 576 square feet
Maintenance and Operational Services	- 2,674 square feet

Tennessee Polytechnic Institute

By 1961 the following space is needed to accommodate the predicted increased enrollment at Tennessee Polytechnic Institute:

Instruction	- 284 square feet
Domiciliary	-51,436 square feet
Maintenance and Operational Services	- 5,256 square feet
Service Area	- 6,769 square feet

By 1966 the following space is needed to accommodate the predicted increased enrollment at Tennessee Polytechnic Institute:

Instruction	- 440 square feet
Domiciliary	-2,201 square feet
Maintenance and Operational Services	-3,222 square feet
Service Area	-2,067 square feet

By 1971 the following space is needed to accommodate the predicted increased enrollment at Tennessee Polytechnic Institute:

Instruction	- 440 square feet
Domiciliary	-2,201 square feet
Maintenance and Operational Services	-3,222 square feet
Service Area	-2,067 square feet

The University of Tennessee, Knoxville

By 1961 the following space is needed to accommodate the predicted increased enrollment at the University of Tennessee, Knoxville:

Instruction	-	11,962 square feet
Domiciliary	-	1,927,071 square feet
Cafeteria	-	130,792 square feet
Library	-	201,563 square feet
Research Space	-	2,000 square feet

By 1966 the following space is needed to accommodate the predicted increased enrollment at the University of Tennessee, Knoxville:

Instruction	-	102,500 square feet
Domiciliary	-	1,012,425 square feet
Cafeteria	-	61,500 square feet
Library	-	102,500 square feet
Maintenance and Operational Services	-	1,586 square feet
Research Space	-	3,642 square feet
Auxiliary Space	-	1,233 square feet
Unclassified Space	-	10,836 square feet
Extension Service	-	11,558 square feet

By 1971 the following space is needed to accommodate the predicted

increased enrollment at the University of Tennessee, Knoxville:

Instruction	-	120,000 square feet
Domiciliary	-	1,180,425 square feet
Cafeteria	-	72,000 square feet
Library	-	120,000 square feet
Maintenance and Operational Services	-	1,586 square feet
Research Space	-	3,643 square feet
Auxiliary Space	-	1,233 square feet
Unclassified Space	-	10,836 square feet

The University of Tennessee, Martin Branch

By 1961 the following space is needed to accommodate the predicted increased enrollment at the Martin Branch of the University of Tennessee:

Instruction	-	13,541 square feet
Domiciliary	-	417,510 square feet
Cafeteria	-	22,400 square feet
Library	-	34,776 square feet
Maintenance and Operational Services	-	2,080 square feet
Auxiliary Space	-	500 square feet

By 1966 the following space is needed to accommodate the predicted

increased enrollment at the Martin Branch of the University of Tennessee:

Instruction	- 17,500 square feet
Domiciliary	-178,076 square feet
Cafeteria	- 10,500 square feet
Library	- 17,500 square feet
Maintenance and Operational Services	- 2,267 square feet

By 1971 the following space is needed to accommodate the predicted increased enrollment at the Martin Branch of the University of Tennessee:

Instruction	- 5,000 square feet
Domiciliary	-58,076 square feet
Cafeteria	- 3,000 square feet
Library	- 5,000 square feet
Maintenance and Operational Services	- 2,267 square feet

The University of Tennessee, Memphis Medical Branch

By 1961 the following space is needed to accommodate the predicted increased enrollment at the Memphis Medical Branch of the University of Tennessee:

Domiciliary	-519,100 square feet
Library	- 35,000 square feet

By 1966 the following space is needed to accommodate the predicted increased enrollment at the Memphis Medical Branch of the University of Tennessee:

Domiciliary	- 6,000 square feet
Administration	- 1,500 square feet
Library	-25,000 square feet

By 1971 the following space is needed to accommodate the predicted increased enrollment at the Memphis Medical Branch of the University of Tennessee:

Instruction	- 5,653 square feet
Domiciliary	-318,000 square feet
Library	- 32,500 square feet
Administration	- 1,500 square feet

Agricultural Stations

There were no enrollment figures available for the Agricultural Stations. Therefore, only space replacements were treated.

By 1961, the needs for the Agricultural Stations are:

Instruction	-11,004 square feet
Domiciliary	- 2,100 square feet
Maintenance and Operational Services	- 3,600 square feet

By 1966 the following space is needed by the Agricultural Stations:

Instruction - 432 square feet

By 1971 the following space is needed by the Agricultural Stations:

Instruction - 432 square feet

Summary

In Chapter V were presented the projected enrollments for each institution of public higher education in Tennessee. These projections were made over periods of years ending in 1961, 1966, and 1971. It was found that the total gain in 1961 over 1956 was 13,464 students. The total projected enrollment for 1966 was 49,400 students, representing a gain in 1966 over 1956 of 28,364 students. The total projected enrollment for 1971 was 68,500 students, representing a gain in 1971 over 1956 of 47,464 students.

Building projections were presented in the second part of this chapter for the years ending in 1961, 1966, and 1971. It was found that to accommodate the increased enrollments and to replace facilities that were obsolete or expected to become obsolete during the periods of projection, Tennessee must enter into an intensified building program. The projected facilities treated in this chapter were: (1) instructional space;

(2) cafeteria space, (3) domiciliary space, and (4) library space. Also, this chapter reported the need for space replacements for administrative purposes, maintenance and operational services, research facilities, auditorium space, service areas, auxiliary space, and unclassified space. The replacement of space was indicated for the periods in which their remaining useful life for their designated purposes was expected to terminate.

The following chapter reports the summary and conclusions.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The purpose of this study was to analyze and appraise the physical facilities of State-supported institutions of higher education in Tennessee and to draw conclusions regarding the utilization of present facilities and the improvement of these facilities. The major problem was divided into five sub-problems, as follows:

(1) To trace the development of physical facilities of each State-supported institution of higher education in Tennessee;

(2) To determine the expenditures of State-supported institutions in Tennessee in regard to cost of buildings, land holdings, and rehabilitation or replacement;

(3) To appraise the utilization of classrooms and student stations in relation to their full potential;

(4) To analyze physical plant needs based upon present and future enrollments through the years 1961, 1966, and 1971;

(5) To summarize the findings in this study and to make proposals for improvement in the light of the findings.

A statement of the historical development of each institution of public higher education in Tennessee was presented in Chapter II. Also treated in

this chapter were the original name of each institution, the present name, the original date established, the date acquired by the State, and the age of each institution through 1956. Only one institution, the Martin Branch of the University of Tennessee, bears its original name today. The State-supported institutions vary in age from twenty-nine years for the Martin Branch of the University of Tennessee to 162 years for the University of Tennessee, Knoxville. State-supported institutions of higher education are located in each grand division of the State with enrollments in 1956 varying from 631 students at Austin Peay State College to 5,672 students at the University of Tennessee, Knoxville. Also set forth in this chapter was a brief sketch of the physical facilities of each institution.

A description of the expenditures for institutional plant facilities in public higher education in Tennessee was presented in Chapter III. The data were collected and analyzed on the basis of the following:

(1) The total present and replacement value of buildings;

(2) The replacement value of buildings by periods of remaining useful life;

(3) The insurable value and per cent of present value covered by insurance;

(4) The obsolescent buildings and their present and replacement value;

(5) The value of land holdings.

Presented in Chapter IV was an analysis of the effectiveness of the utilization of land holdings, classrooms, student stations, and other facilities of State-supported institutions of higher education. Treated specifically were the following:

(1) The campus area per full time equivalent student;

(2) The total acres for all purposes;

(3) The acres used for field plots, gardens, parks, landscaping, playing and practice fields, and parking spaces;

(4) The utilization of lecture and laboratory classrooms and student stations and the per cent of room utilization;

(5) The usable area in square feet per full time equivalent student for administrative space, gymnasiums and auditoriums, dormitories, student union buildings, cafeterias, libraries, and maintenance and operational space;

(6) The average total number of hours laboratory and lecture rooms were in use by days of the week.

The projected enrollments for each State-supported institution of higher education in Tennessee were presented in Chapter V. These projections were made over periods of years ending in 1961, 1966, and 1971. The total gain for all institutions of higher education in 1961 over 1956 was 13,464

students. The total projected enrollment for 1966 was 49,400 students, which represented a gain of 28,364 students. The total projected enrollment for 1971 was 68,500 students, a gain in 1971 over 1956 of 47,464 students.

Presented in the second part of Chapter V were the building projections for the years ending in 1961, 1966, and 1971. It was found that to accommodate the increased enrollments and to replace facilities that were obsolete or expected to become obsolete in the periods of projection, Tennessee must enter into an intensified building program. The projected facilities treated in this chapter were: (1) instructional space; (2) cafeteria space; (3) domiciliary space; and (4) library space. Also treated were the needs for space replacements for administrative purposes, maintenance and operational services, research facilities, auditorium space, service areas, and auxiliary space. The replacement of obsolete space was treated for the various periods.

Conclusions

Conclusions in this study were based upon a re-examination of the data collected with the survey instruments and analyzed in previous chapters of this study.

(1) Additional facilities are needed for predicted enrollment increases at State-supported institutions of higher education in Tennessee.

By 1961 the following space is needed to accommodate the predicted increases in enrollment at the different State-supported institutions of higher education in Tennessee:

Austin Peay State College	- 204,843 square feet
East Tennessee State College	-1,934,680 square feet
Memphis State College	-1,364,401 square feet
Middle Tennessee State College	- 616,045 square feet
Tennessee Agricultural and Industrial State University	-1,311,354 square feet
Tennessee Polytechnic Institute	- 12,309 square feet
University of Tennessee, Knoxville	-2,273,388 square feet
University of Tennessee, Martin Branch	- 490,807 square feet
University of Tennessee, Memphis Branch	- 554,100 square feet

By 1966 the following space is needed to accommodate the predicted increases in enrollment at the different State-supported institutions of higher education in Tennessee:

Austin Peay State College	- 138,106 square feet

East Tennessee State College	-	612,353 square feet
Memphis State College	-	915,571 square feet
Middle Tennessee State College	-	368,693 square feet
Tennessee Agricultural and Industrial State University	-	725,738 square feet
Tennessee Polytechnic Institute	-	7,930 square feet
University of Tennessee, Knoxville	-	1,320,901 square feet
University of Tennessee, Martin Branch	-	208,343 square feet
University of Tennessee, Memphis Branch	-	357,653 square feet

By 1971 the following space is needed to accommodate the predicted increases in enrollment at the different State-supported institutions of higher education in Tennessee:

Austin Peay State College	-	169,606 square feet
East Tennessee State College	-	764,853 square feet
Memphis State College	-	1,251,071 square feet
Middle Tennessee State College	-	423,440 square feet
Tennessee Agricultural and Industrial State University	-	359,811 square feet
Tennessee Polytechnic Institute	-	7,930 square feet

University of Tennessee, Knoxville	-1,509,723 square feet
University of Tennessee, Martin Branch	- 73,343 square feet
University of Tennessee, Memphis Branch	- 357,653 square feet

(2) Research facilities are presently inadequate and will need expansion. As graduate enrollments increase, research demands will increase and additional research facilities will be required.

(3) A large amount of obsolescent building space exists on campuses of Tennessee public institutions of higher education. There is a total of 597,227 square feet of obsolescent building space in public higher education institutions of Tennessee. Obsolescence is a condition of being inadequate according to present standards. To provide better facilities, all obsolescent building space should be replaced within the period ending in 1961.

(4) Temporary building space exists at some institutions. For purposes of this study, temporary space is space used until adequate permanent space is available. Three institutions listed temporary space not considered obsolescent. It appears that temporary building space should be removed from institutional campuses.

(5) Planning is needed in determining student station space. Two institutions, Austin Peay State College and East Tennessee State College,

were below the standard requirement for lecture student-station space and were above the requirement for laboratory space. Available space at these two institutions should be examined in an attempt to bring lecture and laboratory student-stations nearer the standard requirements.

(6) A shortage of parking space exists at Tennessee State-supported institutions of higher education. Survey data reveals that institutions of higher education supported by the State do not have adequate parking facilities. Additional land for parking should be acquired. Each institution should study its present facilities in the light of designing for better utilization of existing facilities.

(7) A shortage of usable area per full time equivalent student exists in domiciliary space, cafeteria space, and library space. Only one institution meets the standard requirements for cafeteria space. Six institutions were below the standard requirements for library space. All institutions were below the standard requirements for domiciliary space. Additional space should be provided for these areas.

(8) Facilities should be more efficiently utilized. Data revealed that two institutions, Tennessee Agricultural and Industrial State University and the University of Tennessee, Knoxville, were above 70 per cent utilization for lecture student-station space and all institutions were below 80 per cent utilization of laboratory student-station space. Six institutions were

below 70 per cent pecture room utilization and three institutions, East Tennessee State College, Tennessee Polytechnic Institute, and the Martin Branch of the University of Tennessee, were below 50 per cent laboratory room utilization. There was very little difference in the average number of hours rooms were in use each day by the various institutions. All institutions fell below the total of thirty-six hours set up by the Legislative Council and used for purposes of this study. Institutions should make a study of existing facilities in planning schedules of classroom activities in an attempt to increase the utilization of present facilities.

(9) Tennessee State-supported institutions need adequate insurance coverage. Data indicated that there was a wide difference in per cent of insurance coverage among the institutions of public higher education in Tennessee. One institution had 63 per cent coverage, whereas another institution had 101 per cent coverage. The average coverage was 81 per cent of the replacement value. It seems advisable that institutions review their policies in order to make possible adjustments.

(10) Unused land exists on campuses of State-supported institutions of higher education. A total of eighty acres of unused land suitable for development was found on campuses of State-supported institutions of higher education. The acres of unused land suitable for development were located

as follows:

Austin Peay State College	-	five acres
East Tennessee State College	-	fifty-one acres
Tennessee Agricultural and Industrial State University	-	fifteen acres
Tennessee Polytechnic Institute	-	three acres
University of Tennessee, Memphis Medical Branch	-	five acres

Two institutions had land that was not suitable for development. They were as follows:

Austin Peay State College	-	five acres
East Tennessee State College	-	fifty acres

(11) Land holdings vary among Tennessee State-supported institutions of higher education. The land holdings of Tennessee State-supported institutions of higher education varied from seventy-nine acres at Memphis State College to 1,313 acres at the University of Tennessee, Knoxville. The campus area in square feet per full time equivalent student at the various State-supported institutions were as follows:

Austin Peay State College	-3,010 square feet
East Tennessee State College	-2,340 square feet
Memphis State College	- 920 square feet

Middle Tennessee State College	-3, 452 square feet
Tennessee Agricultural and Industrial State University	-2, 038 square feet
Tennessee Polytechnic Institute	-1, 730 square feet
University of Tennessee, Knoxville	-1, 779 square feet
University of Tennessee, Martin Branch	-4, 026 square feet
University of Tennessee, Memphis Branch	- 479 square feet

(12) Sufficient data were not available to draw conclusions on the School of Social Work in Nashville. A comprehensive study should be made to determine the facilities needed for the School of Social Work.

(13) Comprehensive self-evaluation needed. It appears that each State-supported institution of higher education should make a comprehensive study of its facilities and programs in order to better utilize present facilities and to determine facility needs and program changes to accommodate the predicted enrollment increases.

BIBLIOGRAPHY

BIBLIOGRAPHY

American Association of School Administrators. American School and University, Eighteenth Yearbook. New York: American School Publishing Corporation, 1948.

_____, American School and University, School Plant Reference, Vol. X. New York: American School Publishing Corporation, 1956-57.

_____, American School and University, Vol. XIV. New York: American School Publishing Corporation, 1952-53.

_____, American School and University, Vol. XXV. New York: American School Publishing Corporation, 1953-54.

_____, American School and University, Vol. XXVI. New York: American School Publishing Corporation, 1954-55.

_____, American School and University, Vol. XXVII. New York: American School Publishing Corporation, 1955-56.

A Survey of the State Institutions of Higher Learning in Indiana. Indianapolis: Board of Public Printing, 1926.

Austin Peay State College Bulletin, 1955-56. Clarksville, Tennessee.

Brumbaugh, A. J. and Sugg, Redding S., Jr. Recent Developments in State and Regional Planning of Higher Education. Washington: American Academy of Political and Social Science, September 1955. pp. 32-40.

Burleson, David Sinclair. History of the East Tennessee State College. Johnson City: East Tennessee State College, 1947.

Caudill, William A. Toward Better School Design. New York: F. W. Dodge Corporation, 1954.

East Tennessee State College Bulletin, 1955-56. Johnson City.

Englehardt, N. L. and N. L., Jr., and Leggett, Stanton. Planning Secondary School Buildings. New York: Reinhold Publishing Company, Inc., 1945.

Engelhardt, N. L. and N. L., Jr., and Leggett, Stanton. School Planning and Building Handbook. New York: F. W. Dodge Corporation, 1956.

Good, Carter V. Dictionary of Education. First Edition. New York: McGraw-Hill Book Company, Inc., 1945.

Herrick, John H., McLeary, Ralph D., Claff, Wilfred F., and Bogner, Walter F. From School Program to School Plant. New York: Henry Holt and Company, 1956.

Higher Education and Florida's Future. Tallahassee: Board of Control, Florida Institute of Higher Learning, 1956.

MacConnell, James D. Planning for School Buildings. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1957.

Memphis State College Bulletin, 1955-56. Memphis, Tennessee.

Middle Tennessee State College Bulletin, 1956-57. Murfreesboro, Tennessee.

Mississippi Study of Higher Education. Jackson: Board of Trustees, 1945.

Mort, Paul R. and Reusser, Walter C. Public School Finance. Second Edition. New York: McGraw-Hill Book Company, Inc., 1951.

National Council on Schoolhouse Construction. Guide for Planning School Plants. Nashville: The Council, 1955.

Negro College Quarterly. Wilberforce, Ohio: Wilberforce University, 1947.

Perkins, Lawrence B. and Cocking, Walter D. Schools. New York: Reinhold Publishing Company, 1951.

Plant and Business Management for Higher Education in Louisiana, Vol. V. Baton Rouge: Louisiana Commission on Higher Education, undated.

Public Education in Arkansas. Little Rock: Arkansas Public Expenditure Council, 1954.

Reid, Kenneth. School Planning. New York: F. W. Dodge Corporation, 1951.

Schools for the New Needs. New York: F. W. Dodge Corporation, 1956.

Stanley, Elmer W. School Insurance Economies. Olympia: Washington State School Directors Association, 1950.

Sumption, Merle R. and Landes, Jack L. Planning Functional School Buildings. New York: Harper and Brothers, Publishers, 1957.

Tennessee Agricultural and Industrial State University Bulletin, 1956-57. Nashville, Tennessee.

Tennessee Polytechnic Institute Bulletin, 1956-57. Cookeville, Tennessee.

The University of Tennessee Record, 1956-57. Knoxville, Tennessee.

The University of Tennessee, Martin Branch, Register, 1955-56. Martin, Tennessee.

The University of Tennessee Medical Unit Bulletin, 1956-57. Memphis, Tennessee.

The University of Tennessee School of Social Work Bulletin, 1956-57. Nashville, Tennessee.

U. S. Department of Commerce. Current Population Reports--Population Estimates, Series P-25, No. 110. Washington: Government Printing Office, 1955.

Zitter, Meyer. Illustrative Projections of the Population by States, Current Population Reports, Series P-25, N. 110. Washington: Government Printing Office, February 1955.