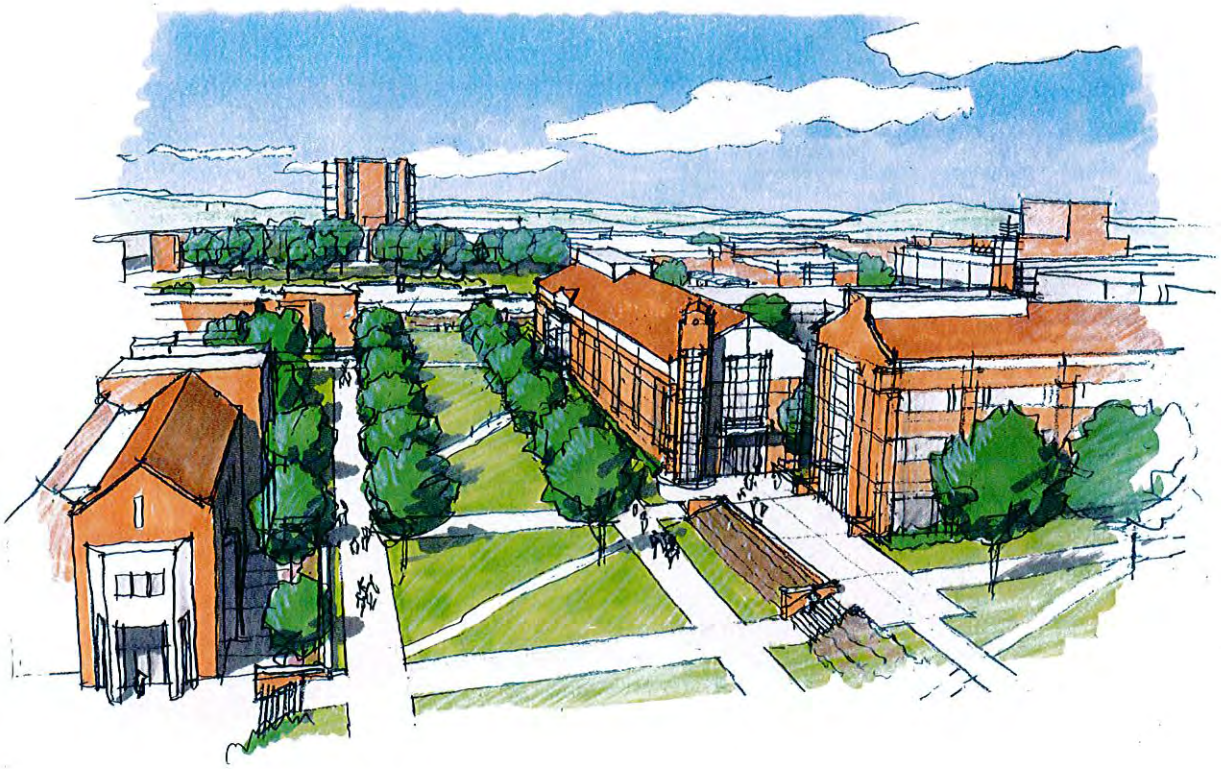
University of Tennessee, Knoxville

Capital Outlay & Maintenance

FY13 Special Assessment



UNIVERSITY OF TENNESSEE, KNOXVILLE

PROGRAM AND SPACE OVERVIEW

(as published in the 2011 Master Plan)

Program and Space Plan

The University of Tennessee, Knoxville (UTK) combines the roles of State University and Land Grant institution. The primary mission of the institution is to move forward the frontiers of human knowledge and enrich and elevate the citizens of the state of Tennessee, the nation, and the world.

The UTK Carnegie Classification is: Research University (very high research activity). Most undergraduates are full-time and admission is selective with a fairly low transfer-in rate. Admission to graduate programs is also competitive. Graduate offerings range from professional master's to doctoral programs focused both on research and on practice. Nationally ranked graduate programs combined with partnerships at Oak Ridge National laboratories are among unique characteristics of graduate study at UTK.

The Center for Measuring University Performance at Arizona State University 2009 report ranked UTK as the 27th highest ranked public research university in the country, and UTK has embarked upon a strategic planning process to place itself firmly among the top 25 public research universities by 2015.

Five strategic priorities have been institutionally adopted as necessary for inclusion in the top 25 group of public research universities:

- Retain and graduate a diverse body of well-educated undergraduate students
- Produce increasing numbers of diverse graduate students
- Strengthen capacity and productivity in research, scholarship and creative activity
- Attract and retain stellar faculty and staff
- Continually improve the resource base

Having sufficient and appropriate facilities is an absolute prerequisite for increased actual and perceived quality, and is a base element within each of the strategic priorities. This Master Plan sets forth the immediate and long-range needs of the institution within a planning framework that insists upon universal design; application of requirements for sustainability; commitment to preservation of the culture and history of the institution in its built environment; superior land-use planning; and, through careful planning, results in a better organized campus that provides significant green spaces and emphasizes pedestrian and bicycle movement throughout.

The University of Tennessee Institute of Agriculture (UTIA) includes the College of Agricultural Sciences and Natural Resources (CASNR), the College of Veterinary Medicine (CVM), UT AgResearch (formerly the Agricultural Experiment Station) and UT Extension (formerly the Agricultural Extension Service). The instructional programs of the two colleges within the Institute are also part of the UT Knoxville academic enterprise. Integral to the university's land-grant mission, the Institute contributes to improving the quality of life, increasing agricultural productivity

and income, protecting the environment, promoting the economic well-being of families, and conserving natural resources for all Tennesseans. The clientele served includes students, farmers, families, homeowners, 4-H and other youth, agribusinesses, state and federal governmental agencies, consumers and the general public.

UT AgResearch administers ten Research and Education Centers located throughout the state, including Jackson, Milan, Grand Junction, Spring Hill, Lewisburg, Springfield, Crossville, Oak Ridge, Knoxville and Greeneville.

UT Extension has agents and offices in all 95 counties in the state. Extension also operates three 4-H centers, located in Greeneville, Crossville and Columbia, and three regional offices in Jackson, Nashville, and Knoxville. In addition, Extension faculty (specialists) located in Knoxville, Nashville and Jackson provide expertise and support the transfer of knowledge to field staff (agents) throughout the state.

Having sufficient and appropriate facilities is essential for the UTIA, both for the units with on-campus instructional responsibilities (College of Agricultural Sciences and Natural Resources and College of Veterinary Medicine) and those (UT Extension and UT AgResearch) with direct responsibility for the continuation and growth of the land-grant mission of the institution.
UTIA has immediate need for building renovations, expanded and new facilities, and greenhouse upgrading or replacement, and for additional parking facilities.

Existing Conditions:

UTK currently operates its programs and services in on campus buildings which total 13,133,549 square feet, ranging in age from 1872 to five buildings with completion dates from 2011 to 2013. 7,138,269 gross square feet of institutional facilities are auxiliary ones—intercollegiate athletics (1,691,069), fraternity (194,711), housing (2,589,957), panhellenic (54,384), and parking (2,608,148). Five buildings totaling 485,136 square feet are exclusively dedicated to student activities and services. 266,622 square feet are in former residences purchased for land acquisition but in use because of lack of other space. Of the 12,906,927 square feet of space in permanent buildings, 55% is auxiliary space, and 3.7% (473,755 square feet) consists of former residence halls and buildings intended to be temporary which have been pressed into service for academic programs. An additional 60,000 square feet of space in Neyland Stadium's former dormitory areas are being used for academic purposes.

External research funding grew by $70,000,000 between FY 2006 and FY 2010, and significant, sustained increases are anticipated as the Governor's Chair program (joint with Oak Ridge National Laboratory) matures, the joint degree program with Oak Ridge National Laboratory begins and moves toward its goal of increasing doctoral level enrollment by 400, and faculty and students in disciplines across the institution investigate problems and make vitally important discoveries, many of which will have economic impact ancillary results. It is this area of involvement of students—undergraduate through post-doctoral—in original inquiry that distinguishes UTK among Tennessee's public universities, and it is this which attracts increasing numbers of Tennessee's and the nation's best students to UTK. This places a special responsibility upon UTK to provide

both its beginning and most advanced students with adequate facilities for intellectual and professional growth.

Academic Space Needs:

In 2009, THEC issued new "space guidelines" designed to compare academic space needs among Tennessee public universities. The guidelines project only square feet needed, failing to take account of the quality and inefficiency of space (former residences, former dormitories and the like) totally inappropriate for their current use. The guidelines also fail to allow for a qualitative deflator for space unrenovated to meet current pedagogical needs, and do not recognize the need for dedicated classrooms in some disciplines such as Law and Business. Institutional data problems, in addition, appear to prevent showing the full extent of the deficit. The institutional data problem is particularly acute in the area of research space. Although THEC provides alternative methods of calculating research space needs, UTK is able only to utilize the research expenditures method, which provides an outdated need and cannot account for some types of research. Even with all the problems, however, UTK needs additional classrooms, class laboratories, open laboratories, research space, and service space in academic areas.

UTK also, being the State's oldest public university, has the greatest complement of older buildings-- buildings not up to current codes, and whose infrastructure does not support today's pedagogy, equipment, or inquiry.

Table 2- 1 Application of the THEC Space Standards to UTK and College of Agriculture Space

	2010			
Space Type	Available (NASF)	Justified by THEC Formula (NASF)	(Deficit) or Excess (NASF)	(Deficit) or Excess (GSF)*
Classroom/Service	283,945	343,248	(59,303)	(118,606)
Class Lab/Service	213,113	401,875	(188,762)	(377,524)
Open Lab	87,450	121,070	(33,620)	(67,240)
Research Lab/ Service	357,058	511,778	(154,720)	(309,440)

* Assumes an efficiency factor of 0.50 for planning purposes

The issue is not need, but priority. The needs are critical throughout the institution, but of the needs, science facilities and protection of its major institutional assets must head the list. UTK is in a unique position to attract top science and engineering students and faculty because of its participation in the management of Oak Ridge National Laboratory, long-term relationships with TVA, and proximity to the Great Smoky Mountains National Park.

- Its 1929 Earth and Planetary Science Building, opened in 1929, has had only an interior 1963 "facelift," does not have central HVAC, and cannot support the research of the department, which must carried on in the 1994 Science/Engineering Building.
- The 1963 Nielsen Physics Building has not been systematically renovated since it opened, and is far too small for the numbers of Physics students at both the undergraduate and graduate levels. It has infrastructure that well supported 1960's experimentation and is totally inadequate for today's work in this discipline.
- The Walters Life Sciences Building was badly designed in 1977 and the deficiencies in infrastructure and configuration seriously impede both instruction and research in the Life Sciences. Moreover, there are simply not enough laboratories in this 33-year old facility.
- The Dabney/Buehler Chemistry facilities were renovated in a 7-year phased renovation completed in 1994, meaning that some parts have not been renovated in 23 years. The infrastructure of 1994—and certainly not that of 1987—does not support the laboratory needs of the discipline today. Again, there are too few laboratories for the instruction and research of the institution in the discipline.
- The Hesler Biology Building completed a two-phase, multi-year renovation in 2009, but the increase in demand for upper division and graduate courses and their attendant research requirements made it necessary to house the entire freshman biology program in what was built as a "temporary" facility in 2001. In the "temporary" facility, there is insufficient space to allow for the number of laboratories required and infrastructure only to allow for demonstration laboratories rather than intensive hands-on experience.
- The Science/Engineering Research Building, completed in 1994, is out of capacity to install additional fume hoods, and various other infrastructure issues make this a costly building to retrofit for new research initiatives which are critical for the advanced graduate education which UTK must offer.
- The nationally-known nutrition department, which is doing extremely important research, is housed in a facility that has not been systemically renovated since 1954.
- The nationally-acclaimed anthropology department is entirely housed in former dormitory rooms in Neyland Stadium—in which fume hoods cannot be installed.

Were it not for generous donations, the College of Engineering would be in a similar plight. Two major new engineering buildings funded partially with State money and partially by private donations are currently under construction and will add 294,871 square feet of Engineering space for Electrical and Computer Engineering (the Min Kao Building) and Civil/Environmental Engineering and Industrial Engineering (the John Tickle Building). These facilities will alleviate some of the qualitative and quantitative space problems of the College, but renovation of existing engineering facilities will be required to make them directly useful for the programs which they will house.

Some of the major research initiatives of the institution are carried on either at the four (155,392 gross square feet) UTK-owned facilities on the Oak Ridge National Laboratory "campus" which house UTK/Oak Ridge National Laboratory Joint Institutes (Joint Institute for Heavy Ion Research, Joint Institute for Computational Sciences, Joint Institute for Biological Sciences, Joint Institute for Neutron Sciences) or at other facilities at Oak Ridge. While such arrangements are extremely beneficial, they do not incorporate instructional aspects of the research programs. In addition, research conducted at ORNL is tied to ORNL and DOE priorities, thus failing to provide comprehensive opportunities which support graduate programs across the disciplines. The cross-fertilization of disciplines available in a University setting— e.g, the sciences, engineering, agriculture, social sciences, communication, humanities, education, and the fine arts is the precious prerogative of a major comprehensive research university.

Clearly, new science facilities and renovation of existing facilities must be top UTK priorities. The ultimate goal must be to have at least 15% of first-rate science space that can be used as "surge" or "swing" space for start-up and seed inquiries by faculty and students and sufficient surge or swing space to relocate faculty and programs in non-science areas to allow for renovation of facilities.
The age (1968) of the institution's major classroom building and its principal office area for faculty in the Humanities and Social Sciences points to a critical need to upgrade facilities in the social sciences and humanities, as well, and the fact that major departments (for example, History) cannot be housed in the facility due to lack of space underscores the need. There is, additionally, only a former dormitory to serve as "surge" space when buildings just as Jessie Harris are taken offline for renovation.

The institutional performing arts facilities date from 1952 and 1968. They are in serious need of modification to bring them to modern performance hall and instructional standards. The Theatre Department, a League of Resident Theatres member, is nationally known for its graduates, but certainly not for its facilities. The Music Department's new 123,000 facility (replacing the existing facility) will significantly enhance the instructional and creative capacity in the various areas of music, but that building will not, because of financial constraints, include a hall suitable for opera or major musical theatre performances.

The College of Nursing Building, completed in the 1970's, was built to house a baccalaureate program in nursing. Today, baccalaureate through doctoral programs are offered, and new discoveries are made in spite of the lack of space.

UTK has never had sufficient space for its academic programs. It has gladly accepted and "made do" with space abandoned by the auxiliary functions of athletics and housing, and has used former residences and other properties acquired within its "institutional zone" for academic purposes because of lack of alternatives. In the facilities it does have, aging and astounding changes in equipment and requirements within disciplines make facilities an absolutely critical issue for this institution. In buildings which have been renovated (Ayres, Haslam, Claxton, Alumni Memorial, Hesler) use of modern building techniques have resulted in greatly improved academic usefulness of the building and have resulted in significant energy efficiencies. New buildings and major renovations will comply with LEED Certification requirements, thus decreasing the operational cost of buildings, going forward.

Academic buildings included in the near-term and mid-term phased capital plan are:

- Strong Hall Renovation and expansion
- Class Lab Building I (Cumberland and 13th Street)
- Academic Building I (Melrose Site)
- Walters Life sciences Renovation and Expansion
- Jessie Harris building and Child Development Center Renovations
- Hoskins Library Restoration
- College of Nursing Renovation and Expansion
- Academic Building (Silverstein-Luper Building Site)
- EPS/Nielsen Complex Renovation and Expansion

- Clarence Brown Theatre/Ula Love Doughty Carousel Theatre Renovation and Expansion
- Academic Building II (Stokely Athletics Site)
- Perkins Hall Renovation and expansion
- Class Lab Building II (Cumberland and James Agee Site)
- Ferris Hall renovation and Expansion
- Art/Architecture Renovation and Art/Architecture/Humanities Addition (HSS)
- Academic Building III – Phase I (HSS Quadrangle)
- Austin Peay Renovation
- Dougherty Renovation
- Dabney-Buehler Renovation and Reconfiguration

The University of Tennessee, Knoxville
Capital Outlay Priorities
State Appropriation
Fiscal Year 2012-13

Priority Number	Project Description	Estimated Project Costs
1	Strong Hall Renovation and Expansion	$94,000,000
2	Class Lab Building 1 (Cumberland and 13th Street)	90,000,000
3	UTK Steam Plant Conversion to Natural Gas	25,000,000
4	Academic Building 1 (Melrose Hall Site)	54,000,000
5	Walter Life Sciences Renovation and Expansion	100,000,000
6	Jessie Harris Building and Early Learning Center Renovation	30,000,000
7	Hoskins Library Restoration	32,000,000
8	College of Nursing Renovation and Expansion	37,500,000

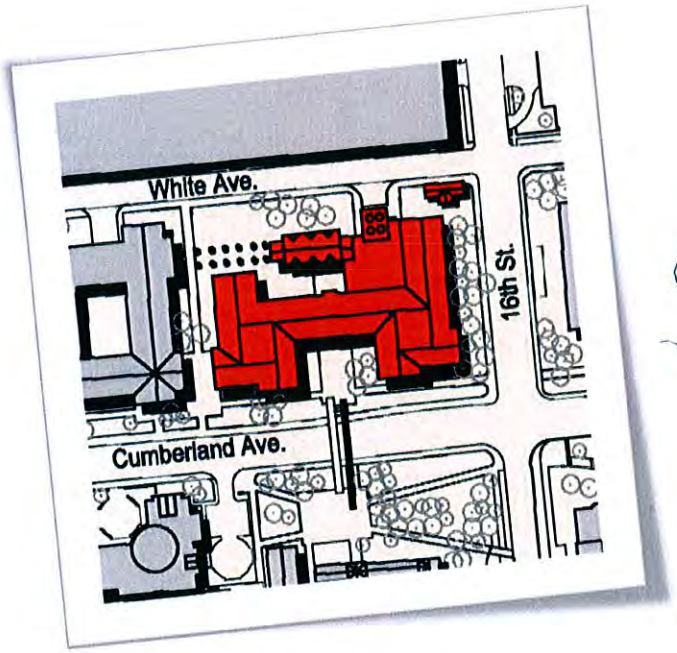
The University of Tennessee, Knoxville
Capital Maintenance
Fiscal Year 2012-13

Priority Number	Project Description	Estimated Project Costs
1	Roof Repair and Replacement (2012-13)	$6,500,000
2	Electrical Distribution Improvements (Main Campus) - Phase V	4,000,000
3	UTSI – Upgrade Water Distribution and Waste Water System	350,000
4	Masonry Repairs - Phase V	3,000,000
5	Sidewalk Repairs and Upgrades	2,000,000
6	College of Nursing Systems Upgrade - Phase I	3,000,000
7	Dabney/Buehler - Systems Upgrade - Phase I	3,000,000
8	HVAC Controls Systems - Phase I	2,000,000
9	Roof Repair and Replacement (2013-14)	3,000,000
10	Electrical Distribution Improvements (Main Campus) - Phase VI	3,500,000
11	College of Nursing Systems Upgrade - Phase II	3,000,000
12	Dabney/Buehler - Systems Upgrade - Phase II	3,000,000
13	High Pressure Chiller Replacement - Phase IX	1,500,000
14	Alumni Memorial Building - Systems Upgrade - Phase I Chill Water Plan – Tie to Hesler	3,000,000
15	Andy Holt Tower - Systems Upgrade - Phase I	3,000,000
16	Electrical Distribution Improvements (Main Campus) - Phase VII	3,500,000
17	Roof Repair and Replacement (2014-15)	3,000,000
18	Improvements to Campus Exterior Lighting Systems, Main Campus - Phase II	2,000,000
19	Andy Holt Tower - Systems Upgrade - Phase II	3,000,000
20	Communications - Systems Upgrade - Phase I	3,000,000
21	Student Services - Systems Upgrade - Phase I	3,000,000
22	Conference Center - Systems Upgrade - Phase I	3,000,000
23	Electrical Distribution Improvements (Main Campus) - Phase VIII	3,500,000
24	Roof Repair and Replacement (2015-16)	3,000,000
25	Communications - Systems Upgrade - Phase II	3,000,000
26	Student Services - Systems Upgrade - Phase II	3,000,000
27	Conference Center - Systems Upgrade - Phase II	3,000,000
28	Science Engineering System Improvements - Phase I	3,000,000
29	Elevator Upgrades - Phase III	2,000,000

Note:

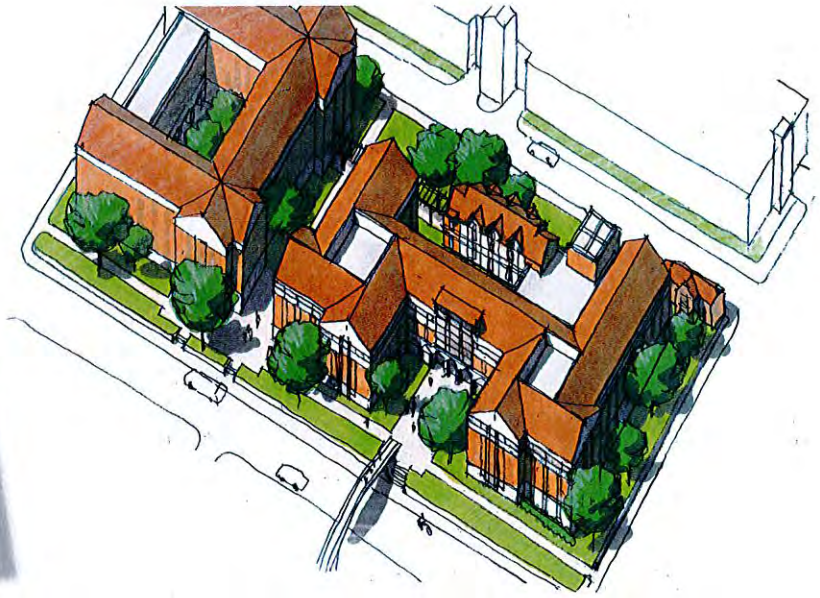
1. UTSI – Waste Water System: the campus must decide whether to refurbish or replace existing system.

UNIVERSITY OF TENNESSEE, KNOXVILLE
PRIORITY #1 – SCIENCE LABORATORY FACILTY
(Strong Hall site)



Strong Hall Renovation and Expansion

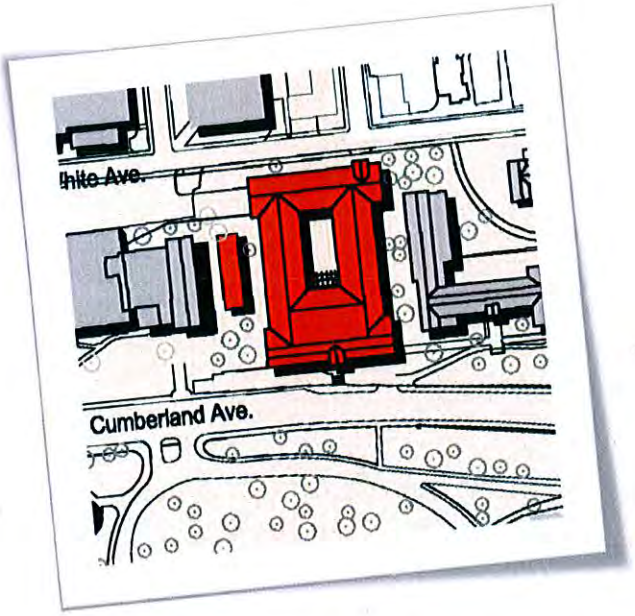
230,000 GSF (115,000 NASF), five/four-story class lab building. The first phase of a regional chiller plant is proposed as part of this project.



View of Strong Hall from Southeast

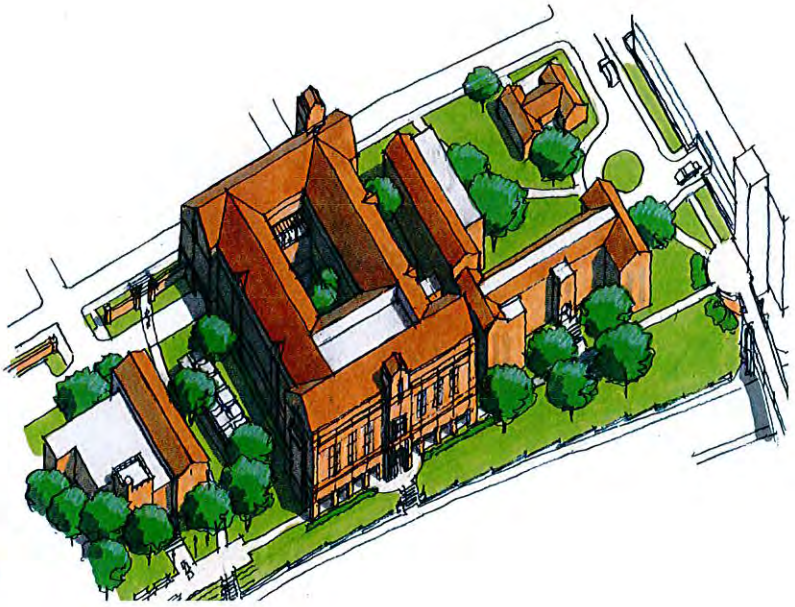
This project will provide a new, approximately 230,000 GSF, multidisciplinary science laboratory facility at the site of Strong Hall. This facility will house research and teaching laboratories, associated support spaces, as well as faculty and departmental offices. It will meet Complete College Act objectives by providing modernized instructional and research space, which in turn will lead to more timely degree production by addressing capacity and bottleneck course offerings.

UNIVERSITY OF TENNESSEE, KNOXVILLE
PRIORITY #2 – SCIENCE LABORATORY FACILTY
(Cumberland and 13th St. site)



Class Lab Building I (Cumberland and 13th Street)

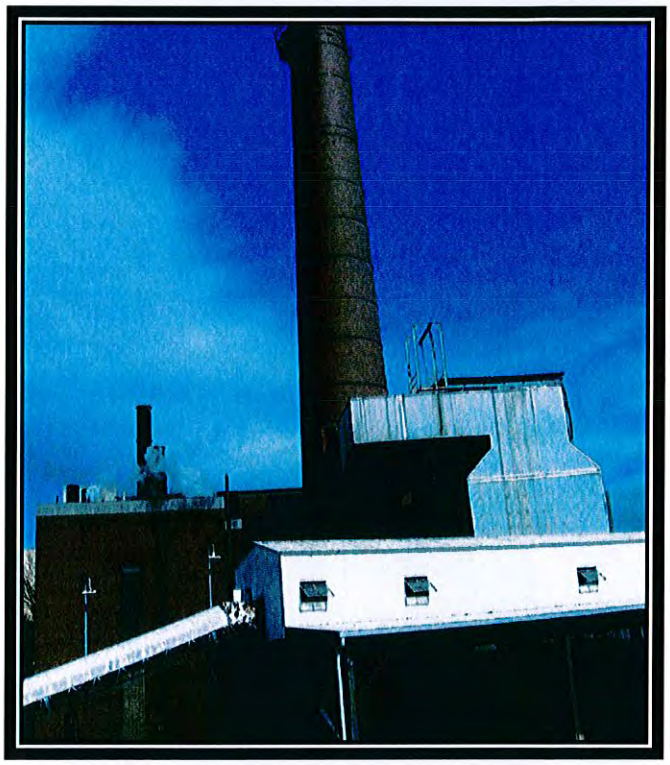
200,000 GSF (100,000 NASF), five/four-story class lab building



View of Class Lab Building I from Southwest

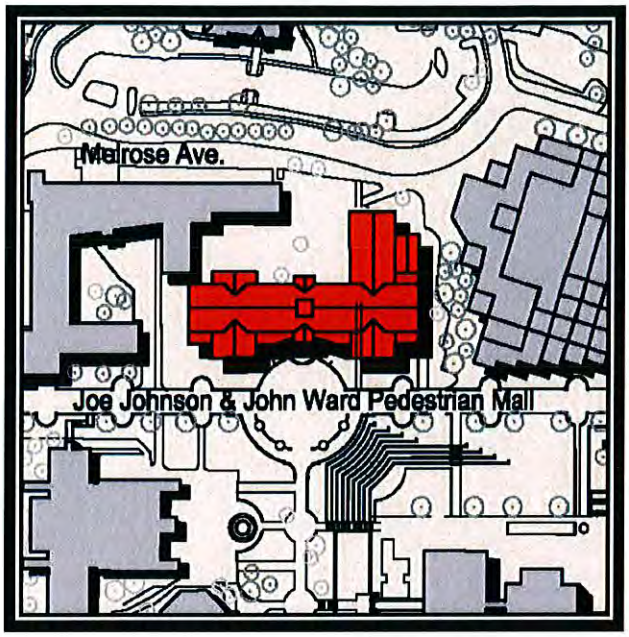
This project will provide a new, approximately 200,000 GSF, multidisciplinary science laboratory facility at Cumberland Ave. and 13th St. This facility will house research and teaching laboratories, associated support spaces, faculty and departmental offices, and a vivarium. The project includes acquisition of three contiguous land parcels. It will meet Complete College Act objectives by providing modernized instructional and research space, which in turn will lead to more timely degree production by addressing capacity and bottleneck course offerings.

UNIVERSITY OF TENNESSEE, KNOXVILLE
PRIORITY #3 – STEAM PLANT CONVERSION



Due to new EPA regulations the University needs to convert to natural gas in lieu of making significant investments in emission controls for its coal-fired plant. It is essential an essential component to meeting the Complete College Act objectives by providing adequate infrastructure to all of our facilities in the most effective manner. Modernization of this plant will support all of our academic, research, and support services.

UNIVERSITY OF TENNESSEE, KNOXVILLE
PRIORITY #4 – MELROSE ACADEMIC BUILDING

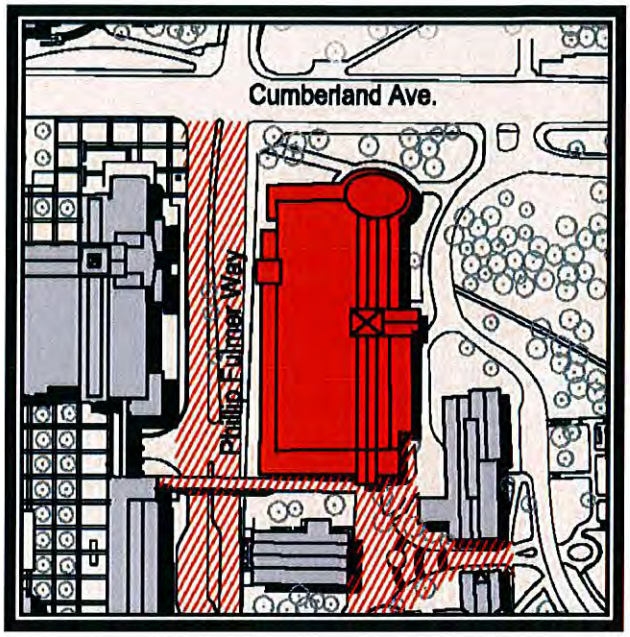


Academic Building I (Melrose Site)

130,000 GSF (65,000 NASF), five/four-story classroom building

This project will provide for a new, approximately 130,000 GSF facility which will house the Student Success Program, the Writing Laboratory, the Center for International Education, and state-of-the-art instructional facilities. The existing Melrose Hall, which was constructed as a dormitory in1946 will be demolished to facilitate construction of this facility. This project will also provide work in Dunford Hall to prepare space for new occupants after existing occupants move to the new Melrose facility. This facility will meet Complete College Act objectives by providing critical space for academic support programs such as student success which are necessary for improving retention and graduation rates.

UNIVERSITY OF TENNESSEE, KNOXVILLE
PRIORITY #5 – WALTERS LIFE SCIENCES RENOVTION AND EXPANSION

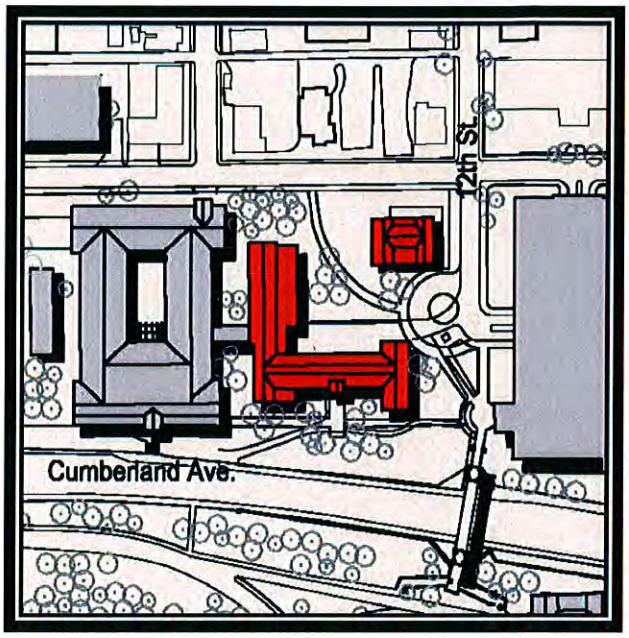


Walters Life Sciences Renovation and Expansion

250,000 GSF (125,000 NASF), four-story class lab building

This project will provide approximately 47,000 gross square feet of new laboratory space to be constructed on the north end of the existing building. Renovations to common spaces in the existing building is also to be completed with this project. The addition is necessary to provide new laboratory space and some surge space for use as other spaces in the building are upgraded. Existing laboratory spaces and common spaces such as the main entry atrium, restrooms, and department offices are original to the building and are in dire need of upgrading in order for researchers to keep pace. It will meet Complete College Act objectives by providing modernized instructional and research space, which in turn will lead to more timely degree production by addressing capacity and bottleneck course offerings.

UNIVERSITY OF TENNESSEE, KNOXVILLE
PRIORITY #6 – JESSIE HARRIS AND EARLY LEARNING RENOVATIONS

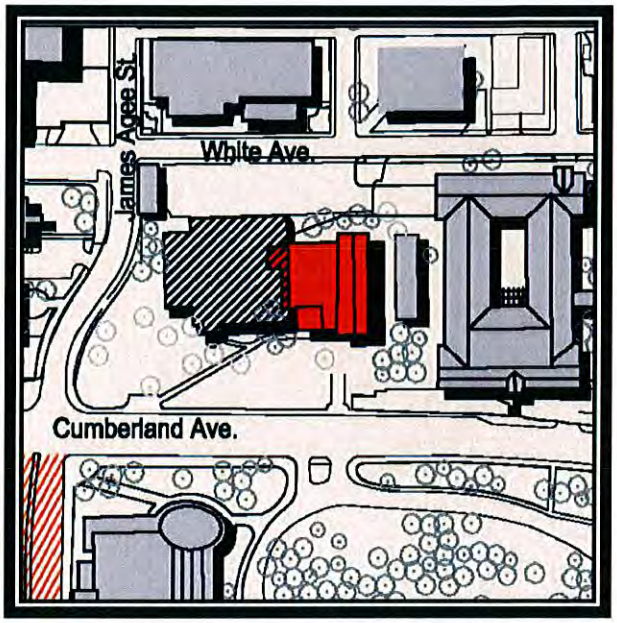


Jessie Harris Building and Early Learning Center Renovations

93,200 GSF (46,600 NASF), three/two-story and one-story class lab buildings

This project is a two-phase project. Phase I will provide an approximately 60,000 GSF addition to the existing Jessie Harris Building. Phase II will renovate the existing building. The Jessie Harris Building is occupied by units of the College of Education, Health, and Human Sciences. A substantial part of the instructional programs, led by the needs of the Department of Nutrition, need cutting edge scientific laboratories and teaching facilities, as well as an AAALAC-accredited animal facility. The existing building is in need of renovation and cannot meet the current needs. Current configurations do not meet modern standards. The floors and trim are original wooden construction, it is not centrally air-conditioned, and the plumbing and electrical systems, as well as the elevators, need to be brought up to modern standards. The building is expensive to maintain and operate because of the condition of its mechanical, plumbing, and electrical systems. It will meet Complete College Act objectives by providing modernized instructional and research space, which in turn will lead to more timely degree production by addressing capacity and bottleneck course offerings.

UNIVERSITY OF TENNESSEE, KNOXVILLE
PRIORITY #7 – HOSKINS LIBRARY RESTORATION

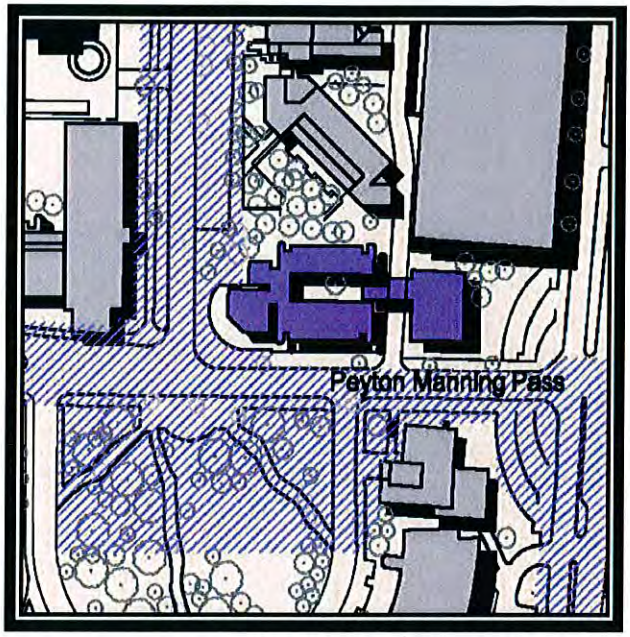


Hoskins Library Restoration

This significant structure will be restored to its original grandeur and later additions will be removed. The resulting space will have approximately 55,000 GSF (27,500 NASF.)

This project will provide a complete renovation for Hoskins Library. Relocations of critical functions will also be provided by this project. This project will raze the 1950s addition. Hoskins Library was constructed in 1930 and has not had a comprehensive renovation since that time. It has had several partial renovations to accommodate functions not originally intended for the spaces they are in. Functions currently in Hoskins include offices for the Office of Information Technology, herbarium, map library, and historical collections of papers from several presidents and senators. Further addresses space deficits as defined by the UTK master plan and THEC's standards by providing additional instructional space. It will meet Complete College Act objectives by providing academic support space.

UNIVERSITY OF TENNESSEE, KNOXVILLE
PRIORITY #8 – NURSING



College of Nursing Renovation and Expansion

81,800 GSF (40,900 NASF), four/three-story class lab building including a new 40,000 GSF (20,000 NASF) addition

The College of Nursing Building was constructed in 1973. This addition is intended to specifically meet the needs of the College by providing a modern learning facility with increased capacity for expanded enrollment and offerings. It supports academic growth in a high-demand area, addressing bottleneck and capacity issues, an objective of the Complete College Act.

THE UNIVERSITY OF TENNESSEE
CAPITAL OUTLAY PRIORITIES
STATE APPROPRIATIONS

Priority	Projects	FY 12-13	% matching	FY 13-14	% matching	FY 14-15	% matching	FY 15-16	% matching	FY 16-17
1	UTK - Strong Hall Addition & Renovation	$94,000,000	25%							
2	UTK - Class Lab Building (Cumberland 13th Street)	90,000,000	25%							
3	UTHSC - Humphreys GEB Annex	21,100,000								
4	UTK - Steam Plant Conversion to Natural Gas	25,000,000	25%							
5	UTIA - Ellington Hall Renovation	45,450,000								
	TOTAL	**$275,550,000**								
6	UTC - Lab Sciences Building			59,500,000						
7	UTM - Fine Arts Renovation & Additon - Phase II			11,800,000						
8	UTK - New Academic Facility (Melrose Site)			54,000,000	25%					
9	UTK - Walters Life Sciences Renovations and Expansion			100,000,000	25%					
	TOTAL			**$225,300,000**						
10	UTIA - Greenhouse 10 and 13					4,000,000				
11	UTHSC - Crowe Building Renovation					20,000,000				
12	UTC - Fine Arts/Lupton Building Renovation					31,500,000				
13	UTM - Classroom Building					44,600,000				
	TOTAL					**$ 100,100,000**				
14	UTC - Health Science Building							$ 49,100,000		
15	UTK - Jessie Harris Bldg. and Early Learning Center Ren.							30,000,000	25%	
16	UTHSC - Mooney Bldg. Renovation							7,500,000		
	TOTAL							**$ 86,600,000**		
17	UTM - Joseph E. Johnson EPS Addition & Renovation									$ 32,200,000
18	UTK - Hoskins Library Restoration									32,000,000
19	UTK - College of Nursing Renovation & Addition									37,500,000
	TOTAL									**$ 101,700,000**
	GRAND TOTAL									**$789,250,000**