

# T e c h n i c a l   M e m o r a n d u m

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Project Tennessee State University Campus Master Plan

Subject 4. Future Campus Requirements  
4.1 Executive Space Summary

From Paulien & Associates, Inc

To Tennessee State University

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## 1. EXECUTIVE SPACE SUMMARY

The space needs analysis found Tennessee State to have an existing space deficit of 11% or approximately 118,000 assignable square feet (ASF) when comparing guidelines to actual space, excluding housing, farm buildings, and McMinnville. The targeted enrollment level at TSU is 12,000 headcount. Because the 33% enrollment increase is aggressive a more moderate growth was studied of 10,500 students. When the existing assignable square footage is compared to target guidelines, the deficit is projected to increase to 235,000 ASF or a 22% space shortage at the moderate growth scenario and 381,000 ASF or a 35% space deficit at the aggressive growth scenario.

While the Space Needs Analysis does not take into consideration quality or age of facilities, TSU has some unique challenges concerning these issues. Many of its facilities are aging and are being renovated for functions never intended in the space (i.e., renovated dormitories).

## 2. FALL 2006 BASE YEAR (refer to Table 1)

- At current enrollment and staffing levels TSU shows an 11% deficit of non-residential space (118,100 ASF). Assignable square footage is defined as the usable space inside classrooms, laboratories, offices, etc. It does not include circulation and building service space or the thickness of walls. For most types of space, gross square footage is 30% to 40% more than assignable square feet.
- The Academic space categories show a slight surplus of 13,000 ASF over existing space. Academic Support space categories show a space shortage of 38,000 ASF. Auxiliary space excluding residential space, has the largest deficit of 93,000 ASF.
- The space categories with the greatest space needs include:

*Athletics with a deficit of 83,800 ASF*

*Library space with a 31,200 ASF deficit*

*Open Laboratories with a 9,800 ASF deficit*

*Other Academic Department space and*

*Student Center space with a deficit of 8,000 ASF each*

- While there is a current space shortage, the majority of the shortage is in athletics and auxiliary space types and the Library. When these areas are subtracted from the overall shortage, TSU shows that it is in relative balance.
- On the average, the Main campus' 119 classrooms have scheduled use of 28 hours per week with a 64% student station occupancy rate while the Avon Williams campus' 26 classrooms have scheduled use of 17 hours per week at 57% student station occupancy. The classrooms in the Clay Education building are scheduled the most on average at 43 hours per week with a 69% student station occupancy.
- The target utilization rate employed in this study is 32 hours per week at 67% student station occupancy. TSU's average scheduled classroom use is lower than these utilization expectations.

**Table 1: Space Needs Analysis by Space Type**

		FALL 2006		MODERATE GROWTH		AGGRESSIVE GROWTH	
		Student Headcount = 9,038 Student FTE = 7,464		Student Headcount = 10,500 Student FTE = 8,671		Student Headcount = 12,000 Student FTE = 9,910	
SPACE CATEGORY	Existing ASF	Guideline ASF	Surplus/ (Deficit)	Guideline ASF	Surplus/ (Deficit)	Guideline ASF	Surplus/ (Deficit)
Academic Space							
Classroom & Service	105,868	105,717	151	119,392	(13,524)	137,821	(31,953)
Teaching Laboratories & Service	89,730	78,927	10,803	88,285	1,445	101,526	(11,796)
Open Laboratories & Service	57,339	67,181	(9,842)	78,040	(20,701)	89,763	(32,424)
Research Laboratories & Service	32,816	39,365	(6,549)	45,525	(12,709)	52,135	(19,319)
Academic Offices & Service	174,191	162,075	12,116	176,465	(2,274)	195,910	(21,719)
Physical Education & Recreation	76,194	61,820	14,374	67,856	8,338	74,051	2,143
Other Academic Department Space	96,423	104,494	(8,071)	112,725	(16,302)	118,924	(22,501)
Academic Space Subtotal	632,561	619,579	12,982	688,288	(55,727)	770,130	(137,569)
Academic Support Space							
Administrative Offices & Service	69,541	67,280	2,261	69,695	(154)	74,990	(5,449)
Library	83,021	114,177	(31,156)	128,761	(45,740)	138,681	(55,660)
Assembly & Exhibit	45,179	42,234	2,945	49,476	(4,297)	56,910	(11,731)
Physical Plant	57,220	64,683	(7,463)	73,179	(15,959)	80,876	(23,656)
Other Administrative Department Space	17,778	22,392	(4,614)	26,013	(8,235)	29,729	(11,951)
Academic Support Space Subtotal	272,739	310,766	(38,027)	347,124	(74,385)	381,186	(108,447)
Auxiliary Space							
Athletics	116,158	200,000	(83,842)	200,000	(83,842)	200,000	(83,842)
Student Center	59,151	67,175	(8,024)	78,039	(18,888)	108,000	(48,849)
Health Care Facilities	2,568	3,732	(1,164)	4,336	(1,768)	4,955	(2,387)
Auxiliary Space Subtotal	177,877	270,907	(93,030)	282,375	(104,498)	312,955	(135,078)
CAMPUS TOTAL	1,083,177	1,201,252	(118,075)	1,317,787	(234,610)	1,464,271	(381,094)
Day Care	4,507						
Inactive/Conversion Space	17,365						
Residence Life	752,677						
Farm Buildings	50,040						
McMinnville Buildings	28,060						

ASF = Assignable Square Feet

**3. PLANNING SCENARIOS – Moderate and Aggressive Growth (refer to Table 1)**

- Beyond the need for library and auxiliary space, including athletics, TSU shows a need for instructional (teaching and open labs) and research laboratory space. The need for more classroom space becomes more apparent at the aggressive growth scenario.
- The colleges and schools with the greatest space needs include:

*College of Arts & Sciences*  
*College of Health Sciences*  
*College of Education*  
*College of Engineering*

**Table 2: Space Needs Analysis by College/School and Administrative Unit**

Space Category	Fall 2006 Student Headcount = 9,038 Student FTE = 7,464			Moderate Growth Student Headcount = 10,500 Student FTE = 8,671		Aggressive Growth Student Headcount = 12,000 Student FTE = 9,910	
	Existing ASF	Guideline ASF	Surplus/ (Deficit)	Guideline ASF	Surplus/ (Deficit)	Guideline ASF	Surplus/ (Deficit)
<b>Academic Units</b>							
College of Arts & Sciences	141,460	141,400	60	164,191	(22,731)	189,664	(48,204)
College of Business	49,681	51,538	(1,857)	52,865	(3,184)	54,945	(5,264)
College of Education	57,239	60,482	(3,243)	67,034	(9,795)	74,613	(17,374)
College of Engineering & Technology	41,433	42,668	(1,235)	49,202	(7,769)	56,354	(14,921)
College of Health Sciences	43,186	47,818	(4,632)	53,928	(10,742)	61,326	(18,140)
College of Public Service & Urban Affairs	9,221	4,817	4,404	5,361	3,860	5,890	3,331
School of Agriculture & Consumer Sciences	32,859	19,521	13,338	20,502	12,357	21,656	11,203
School of Graduate Studies	1,154	2,900	(1,746)	3,100	(1,946)	3,570	(2,416)
School of Nursing	10,358	15,978	(5,620)	17,773	(7,415)	19,880	(9,522)
Division of Academic Affairs	90,501	97,473	(6,972)	105,878	(15,377)	115,112	(24,611)
Division of Research & Sponsored Programs	24,718	18,026	6,692	19,263	5,455	20,405	4,313
Classroom Space	105,868	105,717	151	119,392	(13,524)	137,821	(31,953)
Library	83,021	114,177	(31,156)	128,761	(45,740)	138,681	(55,660)
Avon Williams - Department Not Assigned	17,952	9,305	8,647	9,305	8,647	9,878	8,074
<b>Subtotal</b>	<b>708,651</b>	<b>731,820</b>	<b>(23,169)</b>	<b>816,555</b>	<b>(107,904)</b>	<b>909,795</b>	<b>(201,144)</b>
<b>Administrative Units</b>							
Office of the President	3,775	3,090	685	3,090	685	3,570	205
Athletics (Offices)	0	8,575	(8,575)	8,955	(8,955)	9,905	(9,905)
Division of Business & Finance	86,443	94,860	(8,417)	106,043	(19,600)	117,502	(31,059)
Division of Student Affairs	88,399	74,302	14,097	80,973	7,426	89,096	(697)
Division of Technology	11,298	13,730	(2,432)	16,432	(5,134)	18,113	(6,815)
Division of University Relations & Development	3,700	6,765	(3,065)	6,765	(3,065)	7,355	(3,655)
Student Center	59,151	67,175	(8,024)	78,039	(18,888)	108,000	(48,849)
Athletic Space	116,158	200,000	(83,842)	200,000	(83,842)	200,000	(83,842)
Undefined Space	5,602	935	4,667	935	4,667	935	4,667
<b>Subtotal</b>	<b>374,526</b>	<b>469,432</b>	<b>(94,906)</b>	<b>501,232</b>	<b>(126,706)</b>	<b>554,476</b>	<b>(179,950)</b>
<b>TENNESSEE STATE UNIVERSITY TOTAL</b>	<b>1,083,177</b>	<b>1,201,252</b>	<b>(118,075)</b>	<b>1,317,787</b>	<b>(234,610)</b>	<b>1,464,271</b>	<b>(381,094)</b>
Day Care	4,507						
Residence Life	752,677						
Farm Buildings	50,040						
McMinnville Bldgs	28,060						
Inactive/Conversion Space	17,365						

ASF = Assignable Square Feet

**4. OBSERVATIONS AND ISSUES FOR CONSIDERATION**

The following are observations the consultants made during their time on campus. These items are in no particular order or priority.

- Course scheduling occurs in a decentralized manner. Not all regularly scheduled use is being reported back to the University Registrar. Departments have a sense of ownership with freedom to schedule “their” spaces as they see fit. As a consequence not all scheduled instruction may be reflected in the classroom utilization study. Furthermore, a significant portion of the regularly scheduled laboratory instruction was missing. This created an incomplete picture of the teaching laboratory utilization.
- A more centralized scheduling process would yield higher utilization in classrooms as well as teaching laboratories.
- Much of the classroom space was not conducive to collaborative learning pedagogies. Many rooms had low end technology, poor sightlines & aspect ratios, and inappropriate furnishings.
- The amount and quality of research space for the sciences and engineering are inadequate for given funding levels.
- There are programs on campus with a disproportionate amount of space. Once academic priorities have been established, a space reallocation plan can be developed that would increase usage, productivity, and support the strategic plan initiatives.
- Many rooms are filled with discarded computer equipment or unused furnishings. Space can be reclaimed for productive uses if this equipment is disposed of in a timely efficient manner.
- Consideration should be given to re-evaluating capital priorities so that TSU can optimize capital resource allocations.
- The Division of Technology does not have adequate support space to meet current and future technology demands.

## 5. INTRODUCTION

Paulien & Associates, Inc. was contracted to examine the space needs at Tennessee State University. The major responsibility of Paulien & Associates, Inc. is to:

- apply appropriate space guidelines to determine current and future space needs; and
- compare projected space needs to the existing and projected existing facilities.

The operating assumption is to provide TSU with a reasonable amount of space to conduct its current and projected activities. The study was conducted on a campuswide basis. The base year is Fall 2006 and the one planning target for which this analysis was conducted is 12,000 Student Headcount. Paulien & Associates was provided detailed data files containing the facilities inventory, course, and staffing data by TSU representatives. Meetings were held with the deans and vice presidents on the campus to become familiar with the unique

needs of the colleges and administrative units. In addition, visits were made to various spaces throughout the campus to gain familiarity with campus facilities.

The facilities inventory provided by TSU did not have a departmental coding for every room. Some of the room use coding did not accurately reflect the usage of the space. Where possible, the consultants made adjustments to the inventory. The facilities inventory provides building, square footage, room use, and some program information on a room-by-room basis.

The course data contains the course number and description, enrollment, start and stop times, meeting location, and program on a section-by-section basis. The course data was used to study current classroom and teaching laboratory utilization. It was also used to project classroom and teaching laboratory space needs. The enrollment projections were applied on a course by course basis to the weekly student contact hours.

The staffing data contains the headcount, employee title, and EEO and IPEDS job category on a departmental basis. The detailed staffing file was used to project existing and future office needs. Growth percentages were applied by program to the subtotaled headcounts of each job category in order to project faculty and staff for the target planning scenarios.

### *Space Categories Used in the Analysis*

The space categories used in this analysis are not based solely on room use codes but on functional as well as departmental assignments. Furthermore, space guidelines are not applied purely by room use code but are sometimes based on multiple room use codes and by intended functions. Some examples are (numbers in parentheses refer to room use codes):

- **Library Space** – Library guidelines encompass the 400 series room use codes as well as office space (300's), lounge space (650), and sometimes classrooms (110) and open computer laboratories (220). Most library guidelines do not apply to departmental libraries, unless the library is a professional library (i.e., like music, law, and medical libraries) that is staffed on a full-time basis. Library office space is included in the service space portion of the library guideline; and therefore, library staff headcounts or ftes are not used to generate library office space and are omitted in the office guideline analysis. Small departmental libraries are included in "Other Academic or Administrative Department Space" and not in the "Library" category and are not used to offset the library guideline space needs.
- **Lounge spaces** (650) used for the student body at-large are typically included in the student center/union guideline along with food facilities (630's), meeting room space (680's), merchandising (660's), recreational rooms (670's), and student activity/government offices (300's). But not all facilities with the above room use codes should be used to offset the student center/union guideline. Lounge spaces used for faculty, administrative personnel, or specific student groups are counted in "Other Academic or Administrative Department Space". Food facilities used for closed faculty dining should not be counted towards student center/union space.
- **Classrooms** (100's) and teaching laboratories (210's) used for regular instruction but not for instruction that is traceable through the registrar's course database or other specific records should not be counted with classroom and teaching laboratory space. The reason is that the justification for these rooms cannot be measured through

weekly student contact hours or student credit hours. One could argue that these rooms should then be recoded as another room use.

To the degree possible, each space category definition is provided in Sections 4B3 along with a description of the guideline used. The primary source of the guidelines applied in this analysis is the Council of Educational Facility Planners, International, July 1985, Space Planning Guidelines (CEFPI). For some space categories, CEFPI does not have appropriate guidelines and the consultants used other methods for determining the space needs for that category.

### ***Limitations of Analysis***

The consultants analyzed campus data provided by Tennessee State University for staffing, course, and facilities information. The data provides a “snapshot in time” of staff, course enrollments, and facilities at the University. As with other large institutions that the consultants have studied, many changes are occurring simultaneously on a continuous basis. Of necessity, all these analyses are “snapshots in time,” but nevertheless, are consistently used as valuable tools for institutional planning.

The Space Needs Analysis is a quantitative analysis only. All permanent existing space is counted regardless of its quality or suitability. Estimated square footages are used for buildings currently under construction or renovation. Because several rooms in the facilities inventory have multiple functions (i.e., one room containing a reception space, clerical workstation, storage, and filing), it is impossible to accurately distribute the existing space among the appropriate room use and functional categories. However, the proposed area calculations are distributed among the room use and functional categories. Therefore, the relationship between existing space and proposed guideline space for individual categories should be considered as rough comparisons. The only true comparison is between a unit's total existing space and proposed guideline space.

Space needs analysis for the purpose of master planning is a process that estimates space amounts likely to be needed by various units of an institution at current and projected enrollment, staffing, and activity levels. ***Reliability of the findings of any space needs study depends on several factors including the quality of the data, the appropriateness of the space standards used, and the validity of the projections.*** The findings and recommendations of this study may be considered reliable and may be used with confidence by the University for its campus master planning effort. Throughout this study, space amounts are rounded for reading ease.

The study was conducted at a campuswide level and was intended for use within the context of master planning. This study was not intended to replace program plan level analysis.

Unless otherwise noted, all findings are in assignable square feet (ASF). ASF is defined as the area measured within the interior walls of a room that can be assigned to a program. It does not include circulation, mechanical, or building service spaces. Converting assignable space to gross square feet usually adds about 35% to 40% to the assignable space.