

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

Date October, 2008

Project Tennessee State University Campus Master Plan

Subject Executive Summary

From BKV Group, Inc

To Tennessee State University

The objective of this summary is to present the primary existing conditions information, projected campus needs, goals and issues, and key aspects of the campus mater plan.

INTRODUCTION

The master planning process at TSU has been focused on the Main and Avon Williams campuses only. The BKV Group's planning team including Paulien and Associates, IC Thomasson and Barge Cauthen started this project in July of 2007. At that time, the academic master planning consultant selection process was complete and contract negotiation had begun with the Pappas Group. We were hopeful that the academic master plan and campus master plan could develop simultaneously with substantial collaboration. Unfortunately it was impossible to coordinate the schedules so these two projects ran in parallel throughout the summer of 2007 and winter of 2008. In mid February, the Pappas Group delivered, to TSU, a summary of their conclusions. We will not reproduce these conclusions in this planning document, but it is important to note that we agree with the fundamental thesis of the Pappas Group report. In brief, we believe this thesis to be:

TSU is, from an academic point of view, too broad and shallow in academic programs; supporting curriculum where relatively few students participate and not having enough resource to grow the curriculum where student demand is high. In order to maintain credibility and relevance, TSU must determine which academic programs (no more than 6 according to Pappas) will become the primary focus of campus-wide development efforts. Other, less essential programs should be pruned so that TSU's financial and human resources can be focused on achieving a new, leaner mission.

From a purely facilities oriented viewpoint, the summary conclusion (too broad and unfocused) of the Pappas report is applicable to TSU's campus plan and building utilization. From our collective point of view, the planning team believes that:

TSU's facilities are more than sufficient to accommodate the current and future enrollment if they are used to a much greater extent during the full teaching day which spans from 8:00 AM to 10:00 PM. This is not to say that TSU does not require substantial existing facility renovation as well as the construction of new facilities. We are saying that the general square footage of existing facilities is appropriate to satisfying the current and projected facility needs well into the future.

Although TSU has not completed its academic master plan, it has the Pappas curriculum critique to guide them. As such, our master planning work is not completely integrated with future curriculum and program needs. Though regrettable, this situation is somewhat common in the higher education facility planning. As such, we have developed the TSU campus master plan to demonstrate the preferred location of buildings and landscape spaces such that when the construction of a new building is funded, TSU administrators and facility management know where it should be sited on the campus and what infrastructure and landscape needs accompany the project.

PRELIMINARY PLANNING MODEL:

We scheduled a kick-off meeting for July of 2007. The agenda for this meeting was straight forward but comprehensive. Our goals were to:

- Introduce our consultant team to the Master Planning committee and develop a schedule for the master planning process.
- Document a set of assumptions upon which this campus master plan would be developed.
- Create a “back-of-the-envelope” master plan as a means of engaging the Planning Committee in defining the projects scope and possible costs.

When we began the process, our team of consultants and members of the Master Planning Committee determined a number of baseline parameters, both current and future, which will need to be addressed in the final master plan. They were:

- Evaluate campus needs within a 5-year planning window from 2007 to 2012.
- Base all planning recommendations on a target headcount enrollment goal of 12,000 students; approximately 9,910 full-time-equivalent (FTE) students. TSU’s current headcount enrollment is 9,038 students or approximately 7,464 FTE. Growth from 9,910 to 12,000 students represents a 33% increase over today’s enrollment.
- Plan for growth primarily in the graduate division with modest growth in undergraduate body.
- Estimate faculty growth to parallel student growth using a similar number; 33%.
- Estimate staff growth to be roughly half the student and faculty growth, 16%.
- Provide for an increase in student housing to maintain approximately 30-35% of the total campus headcount. Most of these new students will be interested in apartment or suite-style housing. Many will require family housing.
- Determine where the front door to campus is and develop facilities around it that reflect a positive and attractive image for first time visitors. Identify, enhance and locate secondary entries as well.
- Increase parking spaces on campus at a similar rate, 42% of total headcount, from today’s 3,800 parking spaces. A net increase of 1240 parking spaces.
- Plan for a new football stadium and bringing football back to campus.
- Evaluate the need for additional land acquisition.
- Analyze all buildings with respect to functional and physical condition.
- Complete a full utilization analysis of classrooms and teaching laboratories.
- Interview department heads and key faculty regarding individual programmatic needs.

During the kick-off meeting, we interviewed the TSU Master Planning committee. Based on their input and our experience, we developed and presented a preliminary master plan model. We assumed no change in the current curriculum delivery system (i.e. no significant growth in eLearning or direct education) and a similar ASF/FTE formula. Our goal in developing this model was to test the expectations of the Master Planning Committee members with respect to financing new facilities. I believe this exercise proved highly useful in quickly defining the scale and scope of the facility needs at TSU.

The major findings of this “napkin” model were:

- Total current enrollment is 9,038 Headcount or 7,464 Full Time Equivalent (FTE) students. Growth to 12,000 headcount students would result in approximately 9,910 FTE students. TSU will have to recruit 2,962 new headcount students or approximately 2,447 FTE to reach its enrollment goal.
- Currently, TSU maintains approximately 156 ASF/FTE. Multiplying the additional 2,447 FTE by 156 ASF/FTE produces a need for approximately 381,732 ASF of new facility or a total building requirement of 587,280 GSF. Assuming an average construction cost of \$180/SF, this new construction would require from \$106,000,000 to \$120,000,000 in state provided capital.
- TSU’s existing facilities will also require renovation and state financial support beyond the annual maintenance and repair budgets. For the purposes of this “napkin” model, we assumed that renovating existing buildings would require an additional \$25,000,000 to \$30,000,000 of state supported capital investment in facilities.
- TSU’s new 2,962 headcount students will require additional housing beds if Residential Life is to serve the same 30-35% of headcount as it does today. TSU’s current housing capacity is approximately 3,000 beds. TSU’s Residential Life program currently serves approximately 2,500 students. 30% of the additional 2,962 headcount students is 830 new beds, bringing the campus-wide total to 3,330 beds. The vast majority of new beds will serve upper division students, graduate students and students with families. New construction for suite or apartment style units will range from 325-400 SF/student resulting in a total square footage range of 270,000 to 332,000. Assuming an average construction cost of \$150/SF to \$180/SF, the 888 new beds would cost between \$43,000,000 and \$64,000,000.
- TSU’s existing housing units will also need renovation. The current 2,500 beds require approximately 562,500 and 625,000 gross square feet. The cost of renovating all 2,500 of TSU’s existing housing units could be \$60 to \$90/SF resulting in a total of \$34,000,000 to \$56,000,000.
- As the university grows, it will need additional parking spaces. Currently, TSU provides 4,445 parking spaces, which is 42% of the total student body and 1600 faculty, staff and administrators. Assuming a similar ratio of spaces to students, the campus will need to add 1,435 parking spaces. The cost of providing these additional spaces depends on the nature of the construction. If new spaces are surface lots, the cost of 1,435 spaces would be approximately \$2,000 per space or \$2,900,000. If new spaces are located in structured parking ramps, the cost would be significantly greater, perhaps \$12,000/space or \$17,000,000.
- The \$17,000,000 library project is already approved by the TBR for funding. However, the legislature has not yet released these funds. The library project is the only project approved by the TBR and on the “list”. Additional projects, if they are to be funded by the legislature, may take 10 years or more to be approved and funded resulting in no

funds being available to construct facilities for a period of time well past the planning horizon of this document.

- General landscaping, road repair, sidewalks and other exterior features could range in cost from \$1,000,000 to \$5,000,000.
- The athletic department needs to build a new stadium if it is to bring football back to campus. A 25,000 seat arena, field-house and practice field could range from \$25,000,000 to \$75,000,000.
- In addition, the athletic/recreational sports department will need additional space to serve growing numbers of students. Current deficits are 83,000 SF which, if constructed new, would cost an additional \$15,000,000 to \$20,000,000.

These budgets, when aggregated, yield a need for approximately \$275,000,000 to \$405,000,000 of new construction and renovation money. This number does not include soft costs which could easily be an additional 15-25%. Using 20% soft costs, the total budget for the above projects could range from \$335,000,000 to \$486,000,000. The following designations indicate the source of funds, T=State of Tennessee and F=students. Other assumptions built into these costs are that TSU not change the manner in which it delivers the curriculum, i.e. no increase in utilization or change in the hours classes are scheduled, class sizes, eLearning applications, the distribution of classes between campus locations, etc.

Facility description	Low range	High range	Source
• new educational facilities	\$106,000,000	\$120,000,000	T
• renovation of academic facilities	\$25,000,000	\$30,000,000	T
• additional new housing	\$43,000,000	\$64,000,000	F
• renovation of existing housing facilities	\$34,000,000	\$56,000,000	F
• general landscape	\$1,000,000	\$5,000,000	T
• new parking spaces	\$3,000,000	\$17,000,000	F
• renovated library	\$17,000,000	\$17,000,000	T
• new football stadium	\$25,000,000	\$75,000,000	F
• <u>additional athletic facilities</u>	<u>\$15,000,000</u>	<u>\$20,000,000</u>	<u>F</u>
• Subtotal	\$268,900,000	\$404,000,000	
• <u>Soft costs</u>	<u>\$54,000,000</u>	<u>\$81,000,000</u>	
• Total all costs	\$323,000,000	\$485,000,000	
• Total state funded projects	\$179,000,000	\$207,000,000	
• Total student fee projects	\$144,000,000	\$278,000,000	

Funding for higher education facilities comes from three sources; the state, student fees and private sector gifts. In addition, there are governmental funds available for research as well but these dollars rarely produce any substantial change in physical facilities. Private donors can make substantial investments when they are properly motivated. Of the roughly \$323,000,000 to \$485,000,000 required to construct new or renovate existing facilities, only \$179,000,000 to \$207,000,000 is state-supported, the remaining \$144,000,000 to \$278,000,000 would be supported by student and user fees and donations. Because these financial resources are independent of one another, construction of student-funded projects could take place even though there may not be state money available for classroom and laboratory-specific projects.

We believe this quick but useful analysis is accurate and illustrates the need for TSU to raise substantial sums of money in order to support growth to 12,000 students. As a “reality check”,

however, it seems highly unlikely that TSU will receive \$179,000,000 from the state to construct new educational buildings or \$144,000,000 to support residential life and athletic/recreational facilities. The construction completion period for this work would likely be at least 10 years in length and probably more. Given the substantial sums of money required to satisfy all of TSU's facility needs, we asked the planning committee if it was their preference to plan growth within a context of financial reality or to develop an ideal plan and work toward a reasonable implementation schedule. They determined it was important to evaluate actual need first and to then explore options.

So, although unlikely to happen in its entirety, this master plan was developed based on an analysis of need based on today's educational delivery system. Throughout the process, we have encouraged planning committee members to comment on the entire scope of the master plan, but not lose site of the very difficult financial reality which governs TSU.

There are proven methods for changing the scenario such that TSU'S enrollment growth can be accommodated largely by the facilities already standing at the Main and Avon Williams locations.

NEW STRATEGIES WORKSHOP:

With that conclusion in mind, we suggested that TSU seriously investigate how other campuses with similar missions are dealing with the same lack of funding, out of date buildings and relatively fixed faculty teaching patterns. Sally Johnstone and Steve Tilson facilitated a day-long workshop on how to integrate new technology-rich teaching models. A number of peer institutions were evaluated for their ability to serve students better while also reducing the cost per student. This information was energetically discussed. Evidence of success in other institutions was presented. The major focus of these discussions was to assist TSU in developing a more efficient curriculum delivery model. There were two major aspects in the workshop.

The first discussion focused on the length of teaching day and use of eLearning programs. Sally Johnstone surveyed the institutions which are successful at lengthening the day or changing the curriculum delivery model to a less time-dependent learning model. Many institutions are modifying their teaching schedule so that more students can be accommodated with current facilities made possible by extending the teaching day to late afternoons, evenings and weekends. The most highly utilized portion of the day is between the morning hours of 9:00 AM to 12:00 PM with a lull over the lunch hour and a spike of activity between 1:00 PM and 3:00 PM. During these blocks of time, most (but not all) classrooms are in use ranging from 70-90% in the morning and 50-70% in the early afternoon. After 5:00 PM, some classrooms are in use but an insignificant number. As a general summary, at the TSU Main campus, the 119 classrooms are used an average of 28 hours per week and with an average efficiency of 64% (how many seats are occupied per class). At Avon Williams, the 26 classrooms are used an average of 17 hours per week at a 57% efficiency. This summary suggests that TSU's classrooms can work a good deal harder, serving more students if a longer teaching day is implemented.

TSU has an average of 156 AF/FTE. We have studied institutions with as little as 46 ASF/FTE as well as institutions that have over 200 ASF/FTE. The efficient campuses teach an 18 hour day, are busy on evenings and have full weekend programs as well. In addition to getting more use from the same facility, programs taught in the late afternoon, evenings and weekends are generally highly profitable because the basic operating costs of the building (heating and cooling)

have been covered by the day classes leaving only the variable costs of lighting and staff to pay for out of the increased student credit hour revenues.

As a measure of the abundance of space available to TSU, it would be possible (from purely a facilities point of view) to eliminate the Avon Williams campus and successfully teach its entire curriculum on the TSU Main campus since there is virtually no overlap in their respective schedules. Though we are not recommending that TSU close the Avon William campus, we are suggesting that TSU take a very hard look at how future enrollment growth, even to 12,000 headcount, can be accommodated by better spreading the class schedule over the two campuses as opposed to running them as independent entities.

The second aspect of the Johnstone workshop included discussion of the re-design of the curriculum including using eLearning as a means of accommodating growth without adding seats in classrooms. Many institutions are finding that eLearning in its many forms is a highly useful tool in better educating students; using the online model to allow students to choose when they want to take the course. Increases in the number of online students, in many cases, has resulted in better retention of the information learned, higher enrollment retention, happier students and faculty and lower costs of delivery. It also reduces the ASF/FTE student.

When Phoenix, Capella and other online institutions are taken out of the numbers of students taking on-line courses, most institutions find that the vast majority of on-line credits are taken by their current students, clearly indicating a need for more flexibility in the class schedule. eLearning is not the solution to all higher education problems, but it does provide a means of reaching students with high-quality education while maintaining or reducing the cost and dependence on physical facilities. Of course an on-line student does not benefit TSU if his/her classroom seat is not filled by another student.

In addition to traditional eLearning courses, there is research which suggests that some courses can be more effectively presented in a re-designed format. These models provide an exciting opportunity, not to reduce the ASF/FTE student but to achieve higher levels of knowledge retention and greater progression from lower division to upper division courses while also lowering the cost of delivery. Virginia Tech's Math Mall is an example of this new strategy.

Although this workshop produced a lively discussion, it was determined by TSU administrators that none of the methods suggested could be implemented during the 5-year planning horizon. The planning team was directed to maintain the traditional facilities model, i.e. use 156 ASF/FTE as a metric for new space development. Predictably, this led to a space needs analysis finding that was not far from the first day's prediction of approximately \$300 Million.

FACILITY CONDITIONS ANALYSIS

With respect to the condition of physical facilities, our analysis found that, like most publicly supported campuses; TSU's facilities are in generally good condition, well maintained and capable of providing a relatively high level of service to the teaching/learning experience. There are, however, a number of buildings that do not meet acceptable standards including Elliott, Humphries, Torrence, Clement and Hale Stadium. These buildings should be considered for substantial renovation or replacement in the future. In the intervening years between now and funding of these projects, these buildings must still provide service to the students, faculty and staff of the university. As such, they will require the expenditure of some funds to repair them. State-provided RR funds are apportioned on a square footage basis; typically \$2.00 to \$2.50/SF.

It is important to note that although the RR funds are not specifically dedicated to a specific building project by the legislature, which allows TSU to prioritize their use locally, if a building (such as Elliott Hall) is taken off-line, the RR funds associated with that building are eliminated from the state formula. This reality makes it difficult for any campus to become more efficient by using fewer facilities more intensely. Therefore, funding of buildings which are no longer physically or functionally appropriate should be limited to as little as is possible to maintain a weather tight enclosure, assuring that no irreversible damage occurs. A more detailed analysis can be found in the appendix of this master planning document.

QUALITY

Throughout the year-long planning process, our planning team has evaluated TSU from the macro campus point of view as well as the micro scale of individual buildings. During this time, It has become apparent that TSU delivers a high quality learning experience; to students regardless of the condition of its facilities. Students, faculty and staff make positive comment about the TSU experience; that it is generally positive, often in spite the condition of campus buildings. To produce good teaching and learning, facilities must maintain a minimum quality standard. With much of the liberal Arts curriculum this standard need be little more than providing a clean, well lit room with chairs, decent acoustics, a marker board and minimal technology. As faculty become more techno-savvy, this minimum standard will often include a projector, web access, a sound system and smart board technology. With respect to the sciences, minimum standards tend to be less flexible and generally include all of the above minimum standards plus highly specific mechanical systems and fully equipped research and/or teaching laboratories.

Although there is a direct link between the quality of physical facility and student achievement, in most cases, the student benefits most from the knowledge, energy and engagement of the faculty member teaching the class. A great professor will achieve high-quality educational results in poor facilities whereas a poor instructor will likely not achieve the same outcomes when supported by the best of facilities. In other words, if a faculty member is qualified, engaging and present, the students alert, inquisitive and ready to learn, and the classroom or laboratory reasonably appropriate, high-quality outcomes can be achieved.

GROWTH

As a summary statement, TSU is well positioned to grow, having sufficient space, in most cases, on either the Main or Avon Williams campuses to accommodate several thousand new students without the addition of new facilities. Given the state's decision not to fund capital expenses for renovated or new construction in 2008, this should be good news. Having said this, enrollment growth will not come to TSU easily. In an environment where new facilities are not available, TSU will find it difficult to accommodate new programs and increased numbers of students, either undergraduate or graduate, unless the faculty choose to become part of the solution which will be to open the daily schedule to all hours of the day.

OPTIONAL SOLUTIONS AND RECOMMENDATIONS

Here are a few options that TSU can exercise in order to accommodate growth:

- Investigate, purchase and implement a centralized, software-based class and resource scheduling system. All facilities (classrooms, conference rooms, laboratories, etc.) must be included in this system if it is to be operationally effective. This will introduce

discipline to the process of scheduling facilities effectively and reduce, or eliminate, departmental control of campus resources.

- Extend the teaching day into the afternoon, evening and weekends. This will substantially increase the number of classrooms and laboratories available at no additional cost for facilities. As noted above, the daytime use of Avon Williams is minor as is the night time use of the Main campus. Transportation to and from these locations will have to be resolved so that students can use both campuses efficiently. This will require an efficient shuttle service between the Main campus and Avon Williams as well as the relocation of some departments and educational programs. Scheduling of Avon Williams and Main campus classes will have to consider the commute time between them.
- “De-fragment” campus facilities by studying the current locations of all departments and staff and moving programs and individuals as necessary to more efficiently locate like-minded activities. Careful thought should be given to creating stronger academic and athletic/recreation precincts. This is not an expensive process, yet it will produce a more manageable arrangement of departments and resources.
- Motivate faculty to teach during the afternoon, evening and weekend hours. Perhaps the largest obstacle in using the campus more efficiently is the faculty reluctance to change traditional teaching patterns.
- Carefully evaluate new course delivery systems including eLearning/online (either 100% web-based or through hybrid systems), evening and weekend cohort program development and re-designed course delivery (using the Virginia Tech “Math Mall” as an example).
- Evaluate investing in “simulation” software programs rather than in physical facilities. Many institutions are using computer-based simulation programs to complete entire course requirements (online and in computer labs) or better prepare students for in-laboratory experiences.
- Focus facilities management budgets on the improvement of buildings that have a long-term future on campus and are in reasonable condition today. This effort would limit continuing investment in Elliott, Clement, Humphries and Torrence Halls because they have been determined to be unsatisfactory, both physically and functionally.
- Improve the quality of residential life facilities. There are over 3,000 beds in the residential life system, only 2,500 which serve students. The general condition of these facilities is deteriorating, which materially affects TSU’s ability to attract new students and retain existing students.
- Identify potential profit or non-profit developers who are willing to invest in the immediately surrounding Jefferson Street (JUMP) revitalization projects. The common interests of both (TSU and developer) lie in each agency’s desire to improve the physical and economic environment around the campus entry gateways. Common facilities could include improved retail and entertainment functions, student housing and a hotel (perhaps owned privately but managed by TSU as a part of their hospitality program).

GENERAL CHANGES IN EDUCATIONAL DELIVERY

As was discussed with the planning team members, if TSU is to maintain its relevance in the higher education community it must face a number of important issues head on. These include:

- Declining state aid for higher education; a reality that is affecting not only TSU but colleges and universities on a national basis.

- A corresponding increase in tuition, a condition which affects “access” institutions like TSU much more than it does institutions which have a lesser requirement for the support of low-income students.
- Relatively flat faculty and staff salaries and benefit packages, making it increasingly difficult to attract high-quality candidates to fill open positions.
- Highly competitive educational market place for students.
- Growing competition among “non-traditional” providers of higher education (Phoenix, DeVry, Capella, etc.) for students who want to study when it suits their schedules.

Although TSU is not alone in dealing with these issues, TSU, as an “access” institution located in a relatively low-budget state, has to deal with every one of these issues. In addition, though underfunding higher education is a national condition, there does not appear to be a ‘silver bullet’ that all public institutions of higher learning can use to become financially sustainable in the largest sense of the word, making it all the more important that TSU grapple with improving the productivity of its educational delivery model. If TSU is successful in this effort, it will become a leader in the industry; a champion in the “retooling” of higher education.

That said, the consequences should TSU fail in adapting to the new higher education delivery system, are considerable. If TSU is unable to become significantly more productive in the delivery of curriculum, the manner in which it houses students and pays faculty and staff, the institution will slowly, but steadily, lose its relevance in the higher education marketplace. In addition, if TSU is not able to reduce the cost of curriculum delivery, it will not be able to maintain its core mission; serving minority students who do not possess the wealth necessary to pay for a college education. Finally, if TSU fails to serve the needs of faculty and staff who expect reasonable compensation and benefits, TSU will find it increasingly difficult to attract new employees to campus and keep those currently in its employ.

While this analysis does not paint a positive image of TSU’s future from the “If TSU fails...” point of view, the reverse argument “If TSU succeeds...” is equally important. If TSU succeeds in grappling with the changing collegiate curriculum delivery system, it will be considered by students, faculty and community members as a highly innovative, contemporary institution, one that clearly understands its purpose and relationship to the community it serves. If TSU succeeds in reducing the cost of curriculum delivery, it will become a model institution within the TBR system as well as being recognized on a national scale. If TSU succeeds in providing access to state-of-the-art facilities, both teaching and residential, TSU will be sought after by students and educators because of the positive impact that well designed and well-maintained facilities have on prospective candidates. Finally, if TSU succeeds in focusing its mission, eliminating programs with small attendance and high cost per credit hour, it will demonstrate to the private sector, TBR, governor and legislature a willingness to run the institution as a business, without posing a threat to academic freedom or tenure. As testimony to the above statements, consider the following:

- Given the low state aid provided to colleges and universities in the TBR system, TSU’s current economic model, like that of many other public colleges and universities, is financially unsustainable. This is not meant to imply that TSU will soon fail, only that without an increase in capital or a decrease in cost, TSU will continue to fall behind its peer institutions with respect to maintaining high-quality facilities, providing contemporary equipment for teaching and research, attracting the best faculty and serving its mission as an “access” institution within Tennessee.

- TSU's academic master plan analysis (the Pappas study) suggested that the curriculum is too broad and shallow to be effective. The Pappas report suggested that TSU streamline its program offerings to no more than 6 primary silos. This slimmer, more agile academic framework should, in Pappas' judgment, allow TSU to become more regionally and nationally recognized as an institution of high quality and focus. As a result, TSU will be more successful in attracting motivated faculty and students, making it that much easier to finance growth from internal funds (student tuition and fees).
- The vehicular arrival sequence does not reflect well on the campus because of the poor aesthetic and social condition of the commercial properties located on 28th at John Merritt and at the north entrance along Walter Davis Drive. Both entries to campus are visually compromised because of the generally run down appearance of these commercial properties located immediately adjacent to TSU. Both are "quick stop" retail venues which present a poor impression to campus visitors. They also contribute to a perceived and real concern for personal safety. In their present condition and location, these retail facilities limit TSU's use of the land campus property immediately opposite.
- Some of the important buildings on campus are in relatively poor physical condition. Elliott, Torrence, Clement and Humphries, to name a few, are in such a state of disrepair that they should be seriously considered for demolition or substantial renovation. These buildings still support education, but are lacking in contemporary technology and teaching systems, further demonstrating their inadequacy to support current curriculum.
- The visual condition of many buildings, both inside and out, makes it difficult to recruit students, faculty and staff. It is perhaps arguable that student housing facilities are in the worst condition of all campus buildings when environmental conditions are considered. Many of the residence halls show signs of mold, decayed mechanical systems and insufficient electrical support. Conditions are such that TSU has nearly 3,000 beds of student housing but is only able to place students in approximately 2,500. In addition, the residence halls are designed for the typical freshmen experience; two beds per room with centrally located gang toilets. This state of unattractiveness and disrepair is most damaging to enrollment management. Few would argue with the notion that from the general student's point of view, the positive "feel" of a campus is most likely to be conveyed to students by the outdoor green spaces, the residence halls and student union. Although freshmen are generally willing to live in dormitory-style housing for their first year of college, upper division students want suite or apartment style housing alternatives or they will move off campus. The apartment complex across Ed Temple Boulevard provides adequate apartment facilities in this regard to upper classmen, but the off-campus location inhibits development of campus community.
- The football program is not on campus. The condition of the "Hole" makes it impossible to bring football back to TSU's campus. Hale Stadium is in a state of advanced disrepair. It is highly unlikely it could be affordably retrofitted to serve the teams "home" games. This condition not only affects alumni engagement with the main campus, it is also a negative with respect to engaging the greater TSU and surrounding neighborhoods in campus activity.

TSU HAS CHOICES TO MAKE. THEY CAN:

- "stay the course", continuing to provide curriculum and services based on the existing model, essentially doing nothing differently than in the past; hoping that the economic conditions will change in the near future and that state investment in higher education will increase. This approach, in part at least, is based on the administration and faculty

being committed to direct education; predominantly classroom based. Acknowledging the current economic climate, given the low level of state support for TSU, it is unlikely that TSU will be able to afford radical alteration of facilities or curriculum delivery.

- Subscribe to a “High tuition/High aid” formula. This model assumes that new money is necessary to improve the quality of education. Given the lack of state funds, understanding that increases in state aid will not be available for the near term and possibly for some time to come, it is essential to generate more revenue from students, reduce the cost of delivering a quality education, raise money from alumni and other sources (including the state and federal government) or all of these options. In order to accomplish this transition from a low tuition model, TSU will have to raise academic standards in order to justify raising the cost of tuition. In order to serve TSU’s HBCU mission, a portion of the increased income provided by higher tuition will have to support students who lack the ability to pay.
- Change the curriculum delivery model. An alternative model is to maintain TSU’s “Low tuition/Low aid approach, which serves TSU’s “access” mission, but implements a cost-cutting program which relies on eLearning and greater use of facilities during the “non-traditional” hours in the afternoons, evenings and weekends.

Specifically, with respect to TSU campus facilities, the current allocation made by the Tennessee Board of Regents is not sufficient to support its buildings and grounds, much less the construction of new facilities or a substantial change in the curriculum delivery system. As a result, faculty and students, in many cases, do not have access to state-of-the-art facilities. As an example of this, the list of deferred maintenance at TSU is substantially greater than the funds made available for this purpose. Some deferred maintenance is normal, even desirable, in fact but not at the levels present on the TSU campus.

TSU is not the only institution within its peer group, in-state and out, with respect to lack of adequate funding, but it this condition is made more serious by Tennessee’s relatively low level of financial support to higher education when compared to other state systems. With respect to the construction of new facilities, there is only one project on the governor’s list of projects identified for capital funds. This project is for the library renovation and addition, a project which has been on the list for 8 years and may not be funded for years several more years to come. Although the state provides operational dollars for repair and replacement, these funds are insufficient to resolve the deferred maintenance. To further complicate TSU’s financial situation, the governor proposed spending no money on capital improvements in 2008, there is little possibility that TSU will be able to improve its campus facilities enough to satisfy its needs.

That TSU is financially unsustainable is not meant as a pejorative statement implying that administration and staff are somehow failing to serve the best interests of the institution and its students. The gap between facilities need and available capital is getting wider across the nation in public institutions. Although inadequate funding affects most colleges and universities, it is most present in the public system and especially so in the state’s where financial support for higher education is low. Tennessee is one of those states.

PLANNING OUTCOMES

The planning process was designed to answer the following question “What facilities does TSU need to provide in order to serve a future campus enrollment of 12,000 students headcount? This

led us to ask a series of additional sub-questions, which are provided below along with my suggestions. Our master plan finding is that:

- No further acquisition of large tracts of land –either developed or undeveloped – are necessary to serve today’s campus needs or those of the future well beyond the planning horizon of 12,000 headcount. That said, the campus may wish to continue expanding its land holdings in order to further protect its perimeter, consolidate neighborhoods or provide for additional parking. At the present, TSU is negotiating the purchase of land to the northeast of the apartment complex and beyond the maintenance facility. This land will be used for Building Services and, eventually, the location of the facilities group, if and when the current Facility Management building is demolished in order to construct an additional football practice field. Our recommendation is that further purchases of land should be limited to “opportunistic” purchases, i.e. those which do not require competitive bidding or use condemnation procedures. Having said that no new land is required to meet future need, there are a few possible purchases that warrant further discussion. They are:
 - The residential neighborhood south of John Merritt Boulevard, north of Albion Street and east of 33rd Avenue North is a good location for the development of a TSU “village”, a community development project that would support faculty and staff who wish to live close to the University. All property owners in this neighborhood should be informed that TSU is interested in purchasing homes, not through the condemnation process, but through the open market. Individual homes in this neighborhood can be purchased when available and leased or sold to faculty, staff or the Greek system.
 - The neighborhood to the west and northwest of the campus east of Walter Davis Boulevard and both north and south of Tigerbelle Drive should be acquired if/when they become available to support the development of additional parking structures needed to support the west side of campus. In addition, this land will allow greater aesthetic control of the west campus boundaries.
 - The triangular lot located at the intersection of Walter Davis Drive, Centennial Boulevard and 39th Avenue North which houses the commercial trailer should be acquired whenever possible. The “quick stop” retail use of this property is not compatible with TSU’s desire to present a reasonable aesthetic to the visiting community.
 - The commercial property located at the south east corner of 28th Avenue North and John Merritt Boulevard, like its partner property to the west, makes it difficult to present a positive first impression of the campus entry. The presence of these commercial venues near campus is of benefit to some students who shop there, since little commercial business is in the area. However, this corner is also the site of many disturbances some of which require police action. This condition adds to the perception that the corner of 28th Avenue and John Merritt is unsafe, making it difficult to use the site just north on John Merritt for housing functions.
 - Any and all additional land purchases should be viewed as “opportunistic” purchases, i.e. that such parcel(s):
 - represents real estate “deals” (transactions probably not subject to competitive bid pressure),
 - fulfills an immediate need no other campus site can satisfy or

- represents a long-term investment opportunity which will yield advantageous financial returns.
- **It is desirable to continue to organize the campus around clearly designated “precincts” such as the academic core, housing, recreation/athletics, arts/community, etc.** Our finding is that:
 - the campus has well-established “precincts” which generally organize the location of the academic core, athletics/recreation, student services, housing, agriculture and administration. The campus will benefit from increasing the “density” of these precincts by planning future building projects within these existing “precincts”. Specific projects include:
 - The renovation of and addition to the library. This is the only building on the “list” to be funded. There is substantial evidence that the library is not able to serve students and faculty as well as it could if additional classrooms could be available for teaching. It is common that the purpose of libraries is growing past the storage and retrieval of books. The new addition and remodeling, if completed, would support students far better than it does today, but it may not be the wisest investment of money on campus. However, given that Elliott, Humphries, Torrence, Clement, Love and Davis are buildings which are in need of renovation or replacement, it might be in TSU’s best interests to support an educational facility with the library funds.
 - An addition to Floyd Payne would serve student’s recreational use. Although Floyd Payne is dedicated to student functions, it has been also programmed to support a number of administrative functions. Floyd Payne should be reprogrammed such that these non-student functions can be located elsewhere on campus; perhaps in the administration building.
 - The demolition of the ROTC building and Hale Stadium will serve to create a site for the reconstruction of Hale Stadium and construction of a building that will serve Alumni, Foundation and Welcome Center, Faculty Club and Woman’s Center functions. During game days, this building would serve as the gathering point for pre-game functions. During the week, all of these departments have outreach activities which could be held in this new building. To support this goal, a catering kitchen and dining space for 700 will be part of the program. Working together with the Floyd Payne Center, the library and the Administration building, these facilities form a very dynamic student/visitors precinct. Below grade parking for 400 will provide easy access to all student/visitor functions.
 - Additional new building sites within the existing Academic Core will strengthen the academic precinct; increasing the number of students who populate this area of campus and reinforcing the edges of the quadrangles that form the major landscape spaces on campus. New buildings within the academic precinct will require the relocation of some of the parking in this area. New parking decks and surface lots are indicated on the master plan document.
 - Constructing new apartment style housing facilities within the current apartment complex across Ed Temple Boulevard will further strengthen the existing housing precinct. These housing projects would likely serve

upper division students seeking a less traditional “residence hall” experience.

- Additional new housing facilities could, if needed, be built to the south of Hale Hall. There are several good sites for new housing east and west of the performing arts center. Also, the current housing facilities are in much need of repair and updating if they are to become competitive with housing facilities on other campuses. New housing construction should be either suite or apartment style. It would be logical to develop additional housing for visiting professors, international student, graduate students and families. The current TSU housing program has a capacity of roughly 3,000 beds, though they are only using roughly 2,500 beds for students. Additional space will be needed to house incoming students. For planning purposes, TSU should consider providing housing for an additional 800-900 beds bringing the on campus total to 3,300 – 3,400.
 - Supporting the redevelopment of the residential neighborhoods to the south of John Merritt and west of campus could serve faculty and students who wish to live closer to campus in a “University Village” environment. This project would not require financial support by TSU but would require substantial political and possibly technical support. It would serve three purposes; rebuild poorly maintained housing stock which will likely continue to decline in condition, provide attractive housing within easy walking distance to the campus for students, faculty or staff who desire a live/work environment and serve as a TSU showcase for energy-efficient, sustainable design practices
- **A new planning parameter should be used in order to predict the square footage of new facility that will be required to satisfy future enrollment of 12,000 headcount.**
Our finding is that:
 - TSU will have to develop a new metric for facilities utilization, one that is based on its own analysis and development rather than on the nationally recognized planning measure of 150-250 Assignable Square Feet/Full Time Equivalent student (ASF/FTE). The CEFPI standards will continue to be a useful tool in comparing institutions within and around Tennessee but do not adequately serve TSU’s interests given the lack of funding for capital improvements or new projects. If ASF/FTE is used as a basis for predicting the need for future facilities, it is likely to result in creating an unachievable goal, i.e. faculty and administrators depending on new construction to solve scheduling conflicts rather than higher utilization of existing facilities as the long-term solution to scheduling conflicts. While still being cognizant of comparative measures of ASF/FTE, we suggest that TSU focus on the development of a master facility plan that reduces the ASF/FTE to less than 100 ASF/FTE by increasing the length of teaching day. This reduction will have to be coordinated with the increase in student enrollments. Lengthening the teaching day, including evening hours and weekends will help to increase campus utilization. Centralized classroom and resource scheduling will also improve the productivity of campus faculty and facilities.

- **TSU should develop a parking plan that will better serve students, faculty, staff and visitors while also allowing the campus core to become more pedestrian friendly.**

Our finding is that:

- The current 4,445 parking spaces is adequate to serve the campus for the near term, but will have to grow somewhat in order to accommodate the 12,000 headcount enrollment target. The current parking space to student ratio is 42% which represents a high level of accommodation to the driving public. A similar ratio using 12,000 students yields a need for an additional 1,292 parking spaces on campus. The location of current parking facilities at the campus perimeter is consistent with the desire to keep the center of campus pedestrian focused. Of course, there is never enough parking on campus to serve students, faculty, staff and visitors. In the deployment of parking around the campus, we have created an expansion plan that puts underground parking in the area of the new Alumni/Foundation Center at the head of the reconstructed Hale Stadium. This parking will serve visitors and administrators during the course of daily activities as well as supporting VIP parking on game days. In addition, we have located sites for additional surface parking throughout the campus as well as structured parking decks in key locations west of campus in the residential neighborhood where the topography can support a multi-level parking facility. Most institutions similar to TSU are trying to relocate surface parking lots from the academic core to the periphery of campus, thereby increasing the pedestrian nature of the campus and eliminating many of the pedestrian/vehicular conflicts. In addition, satellite parking promotes a more health-oriented walking community on campus. However, many faculty, staff and students will complain that the satellite locations are inconvenient. The byproduct of this outward migration of vehicles away from the campus' academic core is that walking distances will increase. There are other ways to solve parking issues. Charging a graduated fee for spaces located closer to the academic core is one such option. Restricting freshman use of parking to specific lots is another. Underground parking is more expensive than surface so these facilities are likely to require charging a fee. There are several lots which are under-utilized during the school day such as those to the north of Hale Stadium. These lots will be fully utilized during games. Effort should be made to provide students, faculty and staff with an incentive to park in these outlying lots during the typical teaching day.

- **The TSU campus should become more unified as a pedestrian environment and reduce the traffic safety issues along 28th Street and Ed Temple Boulevard** Our finding is that:

- TSU should continue to work closely with the city of Nashville to calm traffic along 28th Street and Ed Temple Boulevard, possibly through the construction of a new landscaped median separating opposing lanes of traffic, hopefully reducing vehicular speed along these streets and providing a safer crossing at Heimann Street.

- **TSU should enhance the pedestrian experience on the campus; especially within the Academic Precinct.** Our finding is that:

- The current Academic Precinct area which runs from the Hankel Hall to Hale Hall should be further enhanced with additional academic buildings, increasing the number of students and faculty in the academic precinct area.
 - The Academic Precinct should be free of vehicular traffic except that of TSU service vehicles. Additional parking lots and ramps will provide much needed parking on the west side of campus.
 - The new Academic Precinct should include the implementation of the “TSU Walk”; a new way-finding and heritage display program with physical elements (including honors/awards given to the institution or its faculty, educational displays, historical artifacts and art) distributed throughout campus. These heritage/way-finding displays would serve as physical reminders of TSU’s past achievements, thereby helping to educate visitors, students, faculty and staff about the significant events and discoveries that have contributed to TSU’s culture of greatness.
- **TSU should not make a substantial effort to better connect the main campus to the Cumberland River land** Our finding is that:
 - The main campus north of Walter Davis Boulevard is quite distant from the Cumberland River. Getting to this land, which is in the Cumberland River flood plane, would require crossing Walter Davis Boulevard. Although Walter Davis Boulevard does not support substantial vehicular traffic, it is a major thoroughfare which presents safety concerns for pedestrians. Also, given the distance from the center of the main campus, travel time to the Cumberland River would be lengthy. Finally, no useful purpose has been suggested for the use of this land beyond a potential hotel and conference center which, although on the river, would be quite distant from any source of clientele. One possible use for this land is in the development of walking and biking trails that could be used by Nashville as well as TSU.
- **TSU should better serve the needs of the Floyd Payne Center with respect to community access, parking and visual amenities.** Our finding is that:
 - To the extent possible, more parking should be constructed in the immediate area surrounding the Floyd Payne Center. Visitors are not accustomed to walking great distances when attending public venue including arts performances, dinners and other activities. It is important that arrival to these venues be clearly marked with way-finding signage that communicates where the entry is, where suitable parking facilities are located, where guests with disabilities can be accommodated, etc. A structured parking ramp located beneath the Alumni Center would provide additional parking in the vicinity.

We believe the conclusions presented in this master plan, as summarized above, anticipate potential solutions to the primary issues TSU will face during the next decade. We believe these solutions will stand the test of implementation, are realistic and cost-effective and, when completed, the TSU campus and community will be closer to achieving its vision. That said, there are other important changes taking place in higher education that will affect TSU and influence the decisions it makes with respect to facilities, staffing, curriculum, course delivery and service offerings. We would like to summarize my understanding of these issues briefly.

COMMENTS REGARDING THE FUTURE OF HIGHER EDUCATION & PUBLIC INSTITUTIONS:

We believe that all post-secondary educational institutions are in the early stages of a dramatic shift in the way curricula is financed, delivered and supported. We believe that this shift will affect institutions that serve both non-traditional students and traditional students alike whether they are seeking training, certification or degrees so they can enter the workplace or continue with graduate study.

We believe that when this restructuring of the post-secondary enterprise is complete there will be fewer, more highly specialized institutions within a substantially more consolidated industry composed of larger, more affiliated systems. Although we believe all institutions will become more specialized, in order to successfully differentiate their mission from that of their competitors, it is unclear to us if the “core” courses required by all institutions will be available on every campus, as is currently the case, or available through primarily two-year and online providers.

Phoenix, Capella and others in the eLearning business have grown dramatically in recent years. It is clear that these private sector institutions are cutting into the traditional student market, offering many of the least expensive and most accessible courses to the general public. Whether these institutions become the providers of general education courses and the more specialized institutions remain the stewards of the more expensive, more rigorous curriculum is yet to be seen. It does appear clear, however, that the private colleges and universities are not finished transitioning typical classroom-based curricula to an online format even in the areas of hard science where simulation is costly and in the very early stages of development. Also, despite the high per-credit cost of Phoenix, Capella and others, it does not appear that high tuition is an insurmountable obstacle for students. A quick look at the value of publicly held stock in Phoenix, Capella and Kaplan will indicate that these for-profit, non-traditional colleges and universities are growing quickly; Kaplan grew 22% during 2007/08, and very profitable. Whatever the reason, for-profit eLearning institutions are successful and it is obvious that the online providers are “market driven” and responsive to customer demands for course, program and degree offerings.

If TSU, and other publicly supported institutions, do not become equally “market driven”, committing much of their resources to develop a defensible niche market in which they excel, TSU and its fellow public institutions may find it difficult or impossible to contend with the emerging for-profit curriculum delivery model, thus finding their target market audience has diminished. To date, there is no single public institution that has seized the “online” mission, although most, if not all, provide some degree of online course experience. There is a tremendous opportunity for TSU to take a lead position in this market segment, without abandoning or reducing the quality of their onsite delivery curriculum. Although the presence of substantial numbers of state-owned and supported institutions make the higher education industry different from other businesses, we believe that what is taking place within the corridors of academia is not terribly dissimilar from the recent consolidation of the financial resources industry and the globalization of manufacturing. In order to continue to succeed in a substantially more competitive marketplace TSU will have to continue to change its culture and educational delivery system.

With that premise in mind, we suggest that TSU seriously consider addressing the following question:

How can the TSU administration, faculty and staff prepare the campus curriculum, facilities and service offering such that it will successfully defend itself from greater competition?

Our answer to this question is not simple nor will the solution be easily achieved. We believe that TSU must: improve the quality and productivity of its educational enterprise, while also increasing the customer experience and pursuing educational goals. To accomplish this will require that TSU:

- Create a highly recognizable market niche in which it is acknowledged by peers to be a national leader. TSU must rank within the top performers in its fields of expertise. Whether TSU is first, tenth, or twentieth in the rankings is a matter for debate...that it will need to rank highly is not.
- Further develop and refine the course delivery system to accommodate all teaching/learning modalities, including onsite, online, hybrid, strategic partnerships with industry delivered at industry locations, remote research locations, etc.
- Reduce the cost of facilities by increasing the number of hours that classrooms and laboratories are scheduled on a daily basis initially by extending the teaching/learning day into the afternoons, evenings and weekends.
- Reduce the cost of curriculum and service delivery by vigorously increasing the efficiency of student service activities including admission activities, registration, financial aid, bursar, transcript, etc. As these easy “low-hanging-fruit” productivity increases are achieved, TSU will have to seriously consider additional changes in order to bring the cost of education down.
- Seek ways to attract key new faculty to Nashville while also accepting that some, perhaps many, in the coming years will be attracted to the TSU mission and vision but not want to relocate to Tennessee, preferring to complete research and teaching assignments from a distant location where they live year-round, making only occasional trips to campus.

HOW WILL THE TRANSFORMATION OF HIGHER EDUCATION AFFECT TSU?

Most higher education institutions are engaged in the transformation of current curriculum, predominantly delivered via site-based traditional classroom format, to one which will serve them for the next twenty years. TSU’s administrative team will, as will its competitive peers, have to educate more students with less money in order to survive, much less flourish. This does not mean that there will be no new money for capital improvements/expansions to the campus; only that those funds will be harder to acquire than in the past. Thus, administrators will have to manage facilities more efficiently than they have, design new facilities that are truly state-of-the art research, teaching and residential life buildings and use these amenities to attract future students, faculty and staff in an ever more competitive marketplace. It is our belief that trying to satisfy future customer needs with traditional services and products will simply not be sufficient to distinguish TSU from the other educational alternatives that “consumer-based” future students will consider.

To manage the financial condition caused by the nation-wide downward trend in state funding is a significant challenge. To solve for all the variables in this complicated marketing and educational delivery equation, using only the tools of the traditional classroom-based, low facility utilization, high labor cost delivery system, will be, in our judgment, impossible. As we mentioned, TSU is not alone in facing this reality. As testimony to this belief, all of the institutions we have worked with or are currently working for, also face similar pressures from

students, legislatures, governors, the private sector and faculty. All are considering changes similar to the ones we are suggesting, many of which you are either contemplating or implementing. These changes are:

GRAPPLE WITH THE PRODUCTIVITY OF CAMPUS FACILITIES AND COURSE DELIVERY:

Due to declining state revenues and increased demand for accountability, governors, legislatures and taxpayers will continue to require higher educational facilities to be more productive. Higher education is an “intensely local” enterprise, requiring land, facilities, staff, etc. in order to deliver its product. Although there are increasingly more opportunities to study and earn degrees online or using other “Distance Ed” delivery models, higher education is still modeled on direct teacher/student interaction models and methods. Unlike the manufacturing market, which has become global and can move production to the cheapest labor markets as they emerge, higher education must continue to invest locally; its major expense being the cost of its faculty and staff (typically 90-94% of annual budgets) and not its facilities (6-10%).

Whereas the manufacturing industry was able to improve productivity by, first, working multiple shifts (paying only the additional cost of labor and energy) and then industrializing the process, educational delivery has remained remarkably “guild” like in its tradition of passing on knowledge from one generation to the next in small group format. Productivity has, therefore, remained stagnant in the educational business.

A CONTEMPORARY CASE STUDY.

Kennesaw State University, a mid-Georgia 4-year institution for which we completed a master plan (enrollment growth from 20,000 to 30,000 students) has made substantial progress in reducing the ASF/FTE while growing and maintaining a high level of quality instruction. In 2006, KSU had 46 ASF/FTE, Georgia funding for new facilities was extremely tight. In response to the state’s challenge to the 4-year state college community to accommodate growth while recognizing that funding for facilities was not available, KSU implemented a strategy of extending the teaching/learning day to nearly 18 hours, 6 days a week. In addition, they augmented the main campus facilities with leased facilities, negotiated off-site contracts with local businesses using the business site for classes and added to faculty largely by hiring adjuncts. One advantage that KSU enjoys, which TSU does not, is its campus location; being just north of Atlanta where there is a large pool of traditional and non-traditional students many of whom are willing to attend classes at night and on weekends. However, KSU was, and continues to be, very aggressive in scheduling classes for their traditional 18-21 year old population during non-traditional evening and weekend hours. Also, once an exclusively commuter campus, KSU recently added 3,500 beds in apartment-style residence halls which substantially increases the number of students who are on campus during non-traditional hours of the day and weekend.

A NEW FOCUS ON EDUCATION SPECIALTY

Institutions, especially those which are a part of state-funded systems like TSU, will, in order to differentiate themselves, have to become more regional and national (even international) in their focus; developing unique programs which easily distinguish one from another thereby making the underlying funding rational and defensible for legislatures and boards. In the future, it will become less likely that governors and legislatures will fund students (unfortunately but especially in the liberal arts) solely as a “public good” preferring to emphasize Workforce Development or

“Centers of Excellence” which have a more direct cost benefit relationship to the state economy. We are experiencing this in Minnesota where the Governor and Legislature have reduced the “base” while increasing funds for a highly competitive, multi-institutional Centers of Excellence which promote cooperation and collaboration between and among public agencies and private sector companies. Typical examples of these programs include nursing and allied health programs, law enforcement, nano-technology, bio fuels research, high-tech manufacturing, etc.

To accomplish this restructuring at TSU will certainly require the development and implementation of a highly structured, strategic academic plan from which a very specialized master facilities plan will be derived. TSU’s education, nursing and engineering focus will likely form the core of this curriculum. The development of highly specialized “Centers of Excellence” will, over time dilute, but not eliminate, TSU’s mandate to serve the State of Tennessee by providing a full spectrum of engineering and liberal arts coursework and degree programs to the “place bound” student body it currently serves.

There are a number of physical facility implications that are likely to result, including a trend towards funding specialized laboratory and research facilities which serve the primary interests of the faculty and administration coupled with a decreasing financial commitment to the core curriculum; those facilities which serve the core curriculum being utilized at the highest levels.

TSU should reverse the focus of its attitude toward facilities. Currently, facilities are servants to the educational and social curriculum. That makes intuitive sense. But TSU’s facilities could become the primary research laboratories used to determine how buildings are best designed, how building systems can be most effective and economical and how building management and utilization can further reduce the cost of facility while improving the quality of educational outcome. If TSU did this, it would be “walking the walk”.

A NEW CENTER OF EXCELLENCE IN FACILITIES DESIGN AND OPERATION.

To accomplish this, TSU should seriously consider creating a new “Center of Excellence”. Research and funding could be dedicated to making TSU’s campus, and its individual facilities, the most sustainable, green and responsible in the country. No other campus to our knowledge is attempting this effort with the energy and commitment that could be brought to bear by TSU. What would this “Center” look like?

- It would be committed to doing research on new product and systems technologies such as Structural Insulated Panels which reduce the need for operational energy by 30-50%.
- It would include developing retrofits for mechanical systems that reduce the energy use of current buildings.
- It would include research on the various exterior system products that can be applied to an existing building which would result in its substantial improvement in insulating and outside air-infiltration (the reason most heating/cooling plants are oversized) performance.
- It would include development of new materials and systems that reduce the reliance on natural resources in preference for renewable or sustainable resources like sun, wind, water and collaboration with agriculture and manufacturing processes to develop high-efficiency recycling of waste products.

- It would include developing long-term research and financial relationships with private sector businesses and other public sector agencies including local/regional power producers, state and federal governments.
- It would include the creation of entrepreneurial “skunk-works” focused on the development and marketability of these new products and services.
- It would include construction of new buildings utilizing these products and systems as well as the renovation of older facilities.
- It would include developing a system of measurement and display of all the pertinent data regarding these “living laboratory” experiments such that the scholarly research community as well as the casual observer (student, faculty, staff or visitor) would be aware of the integrated nature of TSU’s facility development and monitoring research.
- It would include organizing student learning around simulated and applied management of the facilities that they live, work, learn and play in. TSU would be truly “walking the walk” of being a technologically superior, environmentally conscious campus.

The Administration and Faculty will need to address the opportunities presented by 21st Century advances in technology; principally on-line or eLearning and distance education in the various forms it presents (pod-casting, Interactive Video, etc.). Not only will TSU need to serve “place bound” traditional and non-traditional learners, it will also have to accommodate those “virtual” students who will seek out TSU because of its specialized coursework and degree programs; those “Centers of Excellence” for which it has developed a regional, national or international reputation. TSU will have to serve incoming students in a manner which they expect (and will want to see demonstrated when they visit campus) which include campus-wide wireless access, eLearning, higher levels of personal comfort and programs tailored to their unique learning goals.

These are pressing issues and their resolution will require substantial commitment of human and financial resources. Having said this, I also believe that the TSU community is well-prepared to respond to these issues in both short-term “reactionary” ways as well as with long-term program development and systemic change.

Finally, we would begin to create a new legacy of buildings that strive to dramatically (by 30-50% reductions in fossil fuel requirements) lessen TSU’s dependence on non-renewable, non-sustainable natural resources. We would challenge the Board of Regents and Administration to develop a policy that makes it a top priority for TSU to create a sustainable framework for providing service to the community, region, nation and world; one that would prioritize the specific areas of research and product development that will assure future generations that TSU has more than done its part in protecting the environment; it has taken a lead role in the world-wide struggle to reduce our dependence on carbon-based, non renewable resources.

In order to accomplish this, we would set a goal that includes:

- Creation of a new Sustainability department that would provide the focused effort to acquire the funds, faculty, research associates, equipment and facilities that will be necessary to develop a world-class Institute of Sustainable Facilities Design and Management (something I see from your web site has begun with the funding of three positions in Sustainable fields)
- Utilize the resources of the new ISFDM to create a “living laboratory” on the TSU campus and in its satellite research centers by which all aspects of existing facilities operation and system management will be documented, studied and researched such that

they become the basis for future building materials, systems and facilities design experimentation.

- Couple the work of the ISFDM with the appropriate public and private sector institutions and corporations such that public/private partnerships become responsible for the development of new products, operational and systems and services. As 3M does with its research focus, set a target of some figure (let's say 10% of TSU's annual operating budget) to be resultant from these public/private ventures on an annual basis; new products to account for 10% of that total each year, also. Use the work of the ISFDM as a means of developing sustainable (in the environmental and financial sense) business models and "spinning" off those businesses as they develop and begin to mature.