

II. E. Facilities

University Integrity and Heritage

The University seeks to promote a sense of integrity including a physical integrity in the campus environment that builds upon and preserves the University's traditions and heritage, where buildings and landscapes are accessible, functional, and beautiful; an aesthetic integrity among our structures, based on shared values and shared deliberations; and a social integrity, reflecting a spirit of community, tolerance, and mutual respect.

Well-designed, constructed, maintained, and operated buildings are an essential tool for accomplishing the University's teaching, research and outreach mission. Sound facilities not only play an important role in the university's ability to deliver quality programs, they are a key element in the University's ability to compete with other universities for talent and sponsored research funds.

The University of Minnesota is responsible for more than 700 buildings spread over its four campuses, six research and outreach centers, three field stations, and its collaborative center in Rochester. With more than 25 million square feet of space within the system, one of the country's largest libraries, and some of the world's most sophisticated research laboratories, the sound stewardship of the University's facilities is essential to achieving excellence in its mission.

The 1998 bonding package was the first installment in then-President Yudof's "Capital Plan for the Support of Academic Programs in the 21st Century." This plan called for investing nearly \$760 million over four years to preserve historic areas of the University's campuses and to modernize classroom and lab space in support of academic initiatives. The University has now successfully implemented this four-year capital plan.

The new goals established for facilities are:

- 1) Investing strategically in our existing buildings to preserve their rich heritage and to enhance their programmatic effectiveness.
- 2) Investing in the physical environment to foster aesthetic integrity and formal and informal human interaction.
- 3) Matching facilities to programmatic need.
- 4) Managing our physical assets efficiently and in accordance with regulatory requirements and well-accepted industry standards for preventative maintenance and productivity.

This section focuses on the Twin Cities campus. See the appendix for this section for an overview of investments and examples of their impact on the University's physical heritage and integrity. See Section III for additional information on the coordinate campuses' physical heritage and investments.

Invest strategically in our existing buildings to preserve their rich heritage and to enhance their programmatic effectiveness.

Indicators: classrooms meeting quality/utilization standards; technology upgrades in classrooms; facilities condition needs index

- Northrop Mall has been designated as a University Historic District. Capital investments in Mall facilities since 1998 have been targeted strategically to preserve and enhance programmatic effectiveness in five major buildings on Northrop Mall.
- Three historic Knoll buildings, the basis for the new Humanities District, are in the design planning or awaiting funding stage.
- The \$21 million renovation of Jackson hall has been completed. This renovation project paved the way for the demolition of the Owre-Millard-Lyon complex (fall 1999) and the construction of the Molecular and Cellular Biology Building (\$70M), which was completed in spring 2002.
- Renovation of Walter Digital Technology Center (\$55.9M) was completed.
- Under the new media initiative, Ford Hall and Murphy Hall were renovated (\$20M combined).
 - Amundson Hall, \$4.6 million
 - Architecture, \$28.1 million
 - Hockey and tennis facility, \$20 million
 - Mechanical Engineering, \$23.8 million
 - “Roof, Windows, and Walls” initiative, \$35 million
- Other investments in facilities in the past four years include:
 - Plant Growth Facilities in St. Paul is under construction.
 - Arts on the River, a replacement facility for the Studio Arts program, is under construction.

Classrooms

Classroom Quality /Utilization.

- The Twin Cities campus has a total of 303 centrally managed, general purpose classrooms, with over 23,000 student seats, comprising approximately 300,000 square feet in 63 buildings.
- Another 224 classrooms and 360 labs and studios are under college/departmental management.
- Demand for central classrooms has increased significantly since semester conversion, from 10,200 sections per quarter under the old system to 14,000 sections per semester. On the Twin Cities campus, 57 percent of classes are held in general purpose classrooms.
- High demand and turbulence in the supply of classrooms due to construction and a large number of classes taught at non-standard times have necessitated the use of temporary central classrooms to house classes at the beginning of each semester since conversion in fall 1999.
- Utilization of central classrooms is 61 percent over the class day. During the period of peak demand from 9 a.m. to 2 p.m., utilization is 68 percent. A major effort has been initiated with departments and colleges to improve utilization.

- The Custodial Performance Improvement Initiative has been started to address the need for improved custodial service in classrooms and public spaces.
- The Twin Cities campus continues to realize dividends from the policy of focusing on upgrades to classroom facilities, furnishings, and technology during renovation or construction projects. The Ford, Murphy, Architecture, and Molecular & Cellular Biology Building projects have combined to bring 28 properly equipped, remodeled, and refurbished classrooms into the central classroom inventory.
- However, 73 percent of central classrooms are not accessible by ADA standards.

Technology Upgrades.

- Upgrading classrooms is a priority for all campuses.
- Implementation of the General Purpose Classroom Technology Upgrade Plan continues in the Twin Cities. While the rate of progress is significant, faculty demand for technology-equipped classrooms outpaces availability. The planned completion is the end of FY 2004, but this deadline might need to be extended due to likely funding shortfalls.
- Three phase plan:

Chart A

Classroom Technology Upgrade Plan	
Initiative	Status
1. Raise baseline technology in all central classrooms to "projection-capable" rooms (includes data projector, Internet, laptop plug-in, smart interface/control, hotline, VCR, and other I/O capability).	<ul style="list-style-type: none"> ▪ Started 2001; completion targeted for 2004. ▪ Installations behind schedule due to funding ▪ 108 central classrooms fully upgraded to "projection capable" standard by fall 2002. ▪ Another 46 central classrooms contain some, but not all, projection capabilities. ▪ 100 Twin Cities central classrooms have fully operational wireless capability in place.
2. Student connectivity in 60 percent of central rooms	<ul style="list-style-type: none"> ▪ Planned start in FY 2005. ▪ Wireless classroom pilot fall 2001.
3. Provide "low-end" asynchronous video streaming in a number of central classrooms	<ul style="list-style-type: none"> ▪ In development. ▪ Estimated start FY 2006. ▪ Pilot room in spring 2002.

- The Twin Cities campus began the fall 2002 semester with 51 percent of general purpose classrooms projection capable and internet connected. This represents a 114 percent improvement since the tech upgrade program began in the summer of 2000.
- Tech upgrade installations significantly increased in 2002 because of a partnership initiative between colleges/departments and the Office of Classroom Management to leverage resources. Under this initiative, 27 classrooms containing 2,431 student seats were upgraded and 15 departments established priority scheduling arrangements in these rooms. In addition, four underused departmental classrooms were converted to high-utilization, technology-equipped central classrooms.

Facilities Condition Needs Index

The Facilities Condition Needs Index (FCNI) is a new measure created as a result of the University's Facilities Condition Analysis (FCA), scheduled for completion in spring 2003. The FCA is a physical inspection of facilities and supporting systems which notes the existing condition of the building, identifies maintenance and renewal needs over a period of 10 years, and establishes budget level cost estimates for correcting identified deficiencies. The FCNI is an industry standard that will be benchmarked to other higher education institutions. It will be used to prioritize capital budget requests.

Invest in the physical environment to foster aesthetic integrity and formal and informal human interaction.

Indicators: Specific indicators and data will be developed for the 2004 report.

The University's primary mission of creating and exchanging knowledge requires a physical environment that fosters formal and informal human interaction. A strong sense of community is essential if the necessary interaction is to occur among the diverse groups of people who come to the University's campuses. At the University of Minnesota, that demand for personal interaction and a sense of community continues to grow.

- Riverbend Commons Development, fully implemented in 2002, reconnects the University to the Mississippi River and improves the quality of the student experience. The development encompassed the renovation of Coffman Union, construction of additional student housing, replacement of parking along East River Road with a below-grade parking garage, creation of a landscaped mall from Coffman to the East River Road over the parking garage, and improvement of vehicular and pedestrian circulation along Washington Avenue and East River Road.
- The University continues to add housing capacity for its students. The recently completed Riverbend Commons housing facility has added 425 beds. Additions to Frontier Hall and Middlebrook Hall have been completed, adding 150 beds and 200 beds, respectively.

Match facilities to programmatic need.

Indicators: faculty/staff facility satisfaction, student satisfaction

Trends.

Faculty/Staff Facility Satisfaction

Data on Twin Cities facility-related issues is gathered on an annual basis through a facilities management survey of faculty and staff to measure the overall suitability of the University's research, administration, and operations facilities. Customer satisfaction is measured on a 5.0 scale. The chart below shows survey results from 1998, 1999, and 2000. Results are not shown

for 2001 because point-of-service surveys instead of overall customer satisfaction surveys were conducted that year. Customer satisfaction surveys will be completed in 2002.

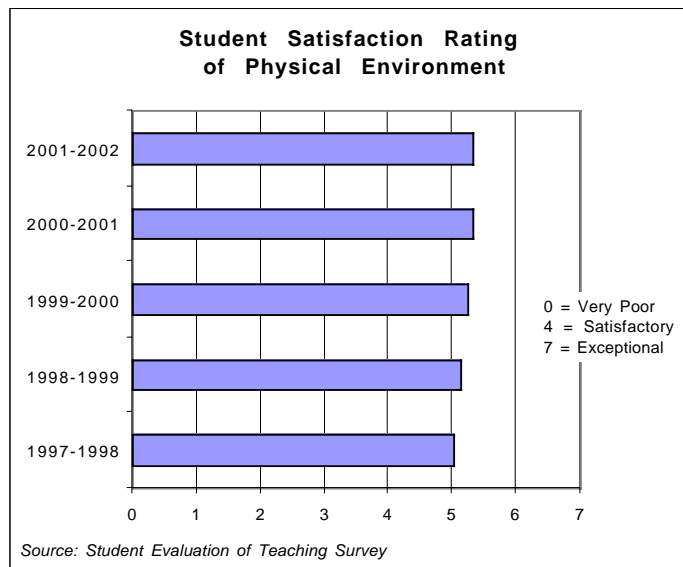
Chart B



Student Satisfaction.

- Data on the suitability of classroom space is gathered on the standard course evaluation form completed by students at the end of each semester. This information is used to measure the overall suitability of the University's teaching facilities.

Chart C



- Student satisfaction with the classroom physical environment has increased modestly each year over the past six years. The highest rate of increase (2.02 and 2.23 percent) occurred between 1998 and 1999, and 1999 and 2000.
- In the 2001 Student Experiences survey, the evaluation of the quality of Twin Cities classrooms showed a slight increase from 1999, from 3.66 to 3.77.
- Satisfaction with Crookston's classrooms was highest, at 4.35.

Chart D
Student Satisfaction with Classrooms
1997-2001

(6-point scale)	Crookston	Duluth	Morris	Twin Cities
2001	4.35	3.90	3.46	3.77
1999	3.60	4.80	3.35	3.66
1997	4.15	4.40	3.50	3.98

Source: Institutional Research and Reporting

Manage our physical assets efficiently and in accordance with regulatory requirements, and well-accepted industry standards for preventative maintenance and productivity.

Indicators: energy conservation; renewal/new facility ratio; facilities stewardship proficiency; capital project oversight

Efficiency

Trends.

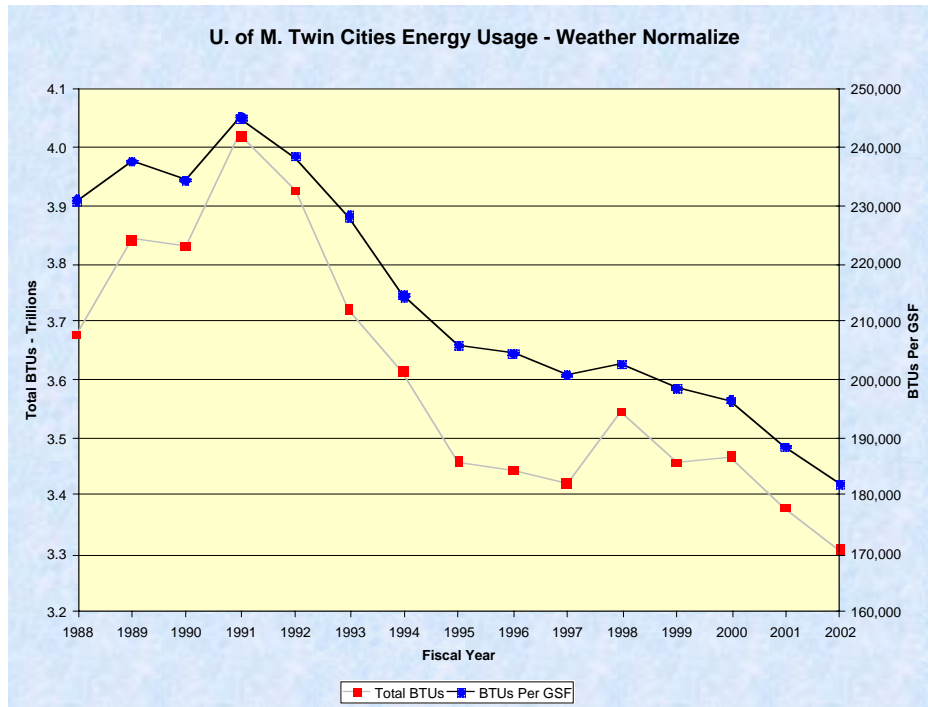
Energy Conservation

Conservation has allowed total energy production (MMBTU's per square foot) to decline roughly 5 percent from a FY91 baseline despite:

- Overall net increase in space
- New space being more sophisticated and having higher energy consumption than decommissioned space
- Significant growth in computers and associated equipment

As indicated on the energy chart below, emphasis on efficient energy use has resulted in a continual decrease of our energy usage.

Chart E

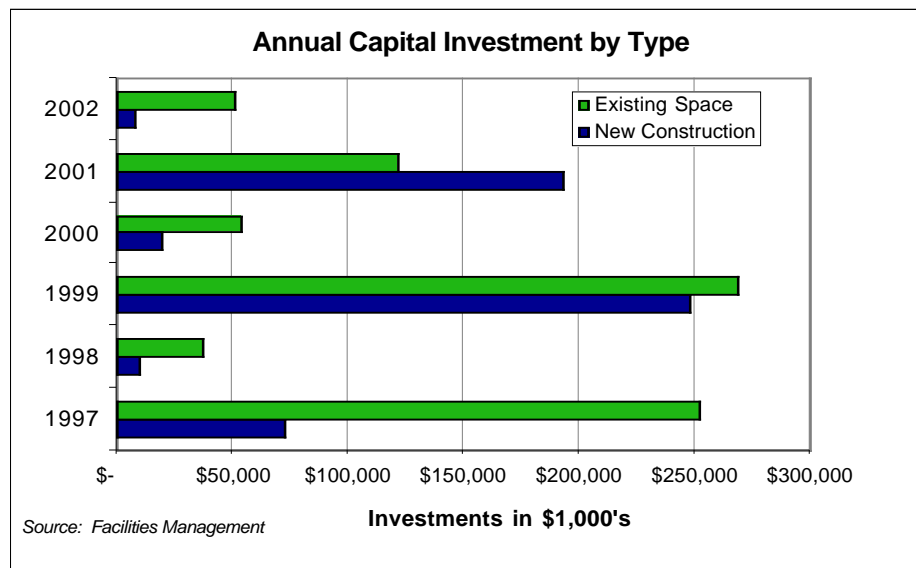


Source: University Services

Renewal/New Facility Ratio

- Since 1997, in every year except 2001, capital budget funds for renovation of existing space have exceeded funds for new construction.
- On average, between 1997 and 2002, investment in new construction has been one-third the investment in existing space.

Chart F



Source: Facilities Management

Facilities Stewardship Proficiency

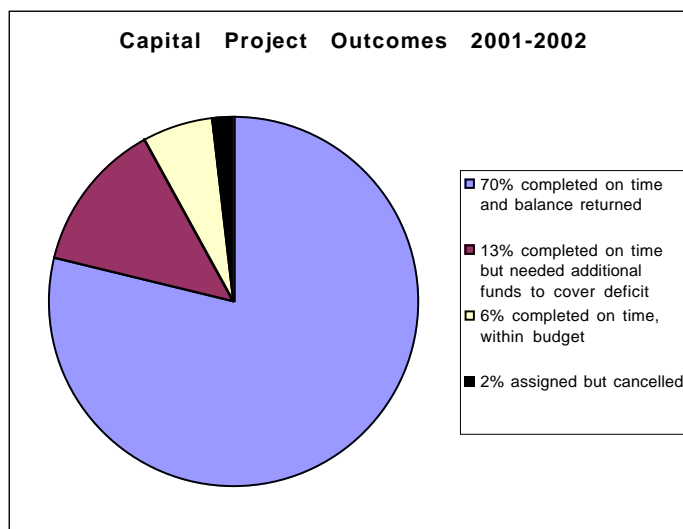
Data gathered from Twin Cities Facilities Management's externally benchmarked job standards and work order records will be used to develop an overall productivity measure for both maintenance and repair operations. This information will be used to compare efficiency and performance against nationally recognized standards.

Capital Project Oversight

Capital project outcomes are monitored to determine if work is progressing and completed according to plan.

- Review of the 370 capital projects completed in the past year shows that 292 were completed on time and with a balance returned.
- 48 projects were completed on time but needed additional funds to cover a deficit.
- 23 projects were completed on time and within budget.
- 7 projects were cancelled.

Chart G



Source: University Services

Implications for Planning and Initiatives for 2003-2004

The past five years have been a period of unprecedented investment in the University's physical environment. In FY 2001 alone, there were 376 approved projects valued at \$962 million. The number of projects completed over the past three years has increased significantly: 131 in 1999; 115 in 2000, and 181 in 2001. A total of 190 projects remain in process, with a value of \$730 million.

The University is responsible for operating and maintaining more than 350 major buildings (among 1,000 total buildings and other structures across all of its campuses). The University will need

continued investments to pay utility inflation costs, operate and maintain new buildings, renew aging building systems, and meet the increased costs of University debt payments.

There is a growing realization that a classroom is a teaching and learning system. It is technology-intensive and requires planning, management attention, and recurring funding for life-cycle maintenance, equipment replacement costs, and faculty support staffing. The University will need to consider the kind of infrastructure it needs to build today to meet the teaching and learning needs of the future.

Appendix: Investments in Facilities
(See Section III for Coordinate Campuses)

<p>Renewing the campus</p>	<ul style="list-style-type: none"> ▪ Northrop Mall has been designated as a University Historic District. Capital investments in Mall facilities since 1998 have strategically been targeted to preserve and enhance programmatic effectiveness in five major buildings on Northrop Mall. ▪ Three historic Knoll buildings, the basis for the new Humanities District, are in the pre-design or design planning stage. ▪ Criteria established for investments in extraordinary maintenance include safety/liability/risk, programmatic needs of building occupants, human comfort, building use and intensity, and long-range plans for buildings. Using this criterion, the extraordinary maintenance program targets roof replacement, interior cooling systems, interior painting, water infiltration, and emergency repairs and system replacement. ▪ The University is near completion of a \$35 million “Roof, Windows, and Walls” initiative. The program goal is to replace or restore the windows in 11 buildings, the masonry on 12 buildings, and the roofs on 26 buildings. The majority of the work, representing \$26 million, was completed in the first 30 months of the comprehensive program. ▪ The University has undertaken a comprehensive public art development strategy for the 34 pieces of public art on Twin Cities campus. Significant new, exterior sculptures include: the Platonic Figure outside the Mechanical Engineering building; the Wolves and Moose outside the Bell Museum; Stepped Tower outside the Anderson Library; and Bulls, installed outside Haeker Hall on the St. Paul campus.
<p>Investing for the future</p>	<ul style="list-style-type: none"> ▪ Molecular and Cellular Biology: The \$21 million renovation of Jackson Hall has been completed. This renovation project paved the way for the demolition of OML complex (fall, 1999) and the construction of the Molecular and Cellular Biology Building (spring, 2002). ▪ Digital Technology: Renovation of Walter Digital Technology Center is in final stages ▪ New Media Initiative: Using a design/build approach, the renovation of Ford Hall and Murphy Hall was completed in January of 2000, and available for use by students one semester earlier than anticipated. ▪ Agricultural Research: The Research and Outreach centers have numerous innovative projects underway. The Plant Growth Facilities (St. Paul) is currently in the design stage. ▪ Arts on the River: A replacement facility for the Art program is currently being built in the Arts Quarter on the West Bank. ▪ Other major renovations include Mondale Hall and the Architecture building. ▪ Morris Science and Mathematics: An addition to accommodate chemistry and biology laboratories and classrooms has recently been completed. ▪ Duluth Initiatives: A new library for the Duluth Campus was completed in time for the start of fall semester 2001.

<p>Enhancing the undergraduate experience and building community</p>	<p>Students, as consumers of an increasingly expensive product, demand smaller classes, state of the art teaching laboratories, and access to cutting-edge computer technology. High quality facilities play a major role in the University's attempts to recruit the highest possible caliber of undergraduate students. Yet, the facilities currently being used by undergraduate programs are some of the University's oldest buildings. On the Twin Cities campus:</p> <ul style="list-style-type: none"> ▪ Physical improvements: Classroom improvements are being addressed in several major capital projects. A special fund to improve the teaching environment for heavily utilized classrooms has been used to paint, carpet, and improve furnishings in 161 classrooms containing nearly 12,000 classroom seats. ▪ Classroom technology: Numerous studies and reports document that general-purpose classroom technology does not adequately support teaching and learning. Current supply does not meet today's demand. The University has developed a long-range plan to make significant classroom physical improvements and has undertaken implementation of this plan. (See Section II.F., Institutional Efficiency and Effectiveness.) ▪ Riverbend Commons development: This multifaceted development project is designed to reconnect the University to the Mississippi River and to improve the quality of the student experience. The development encompasses the 1) renovation of Coffman, 2) construction of additional student housing, 3) replacement of parking along East River Road with a below-grade parking garage, 4) creation of a landscaped "mall" from Coffman to the East River Road over the parking garage, and 5) improvement of vehicular and pedestrian circulation along Washington Avenue and East River Road. ▪ New and updated residence halls: The University continues to add housing capacity for its students. In the fall of 1999, an addition to Territorial Hall became home to 140 new students and a leasing arrangement with University Village provided apartment style housing for an additional 410 students. The new housing units at Riverbend Commons are home to 425 additional students. Additions to Frontier Hall and Middlebrook Hall I added 150 beds and 200 beds, respectively. Total residential hall spaces available in 1999-2000 was 5,459 (capacity), plus 276 in expanded housing; and 5,627 (capacity) plus 242 in expanded housing in 2000-01. In 2002-03 total capacity for student housing, including residence halls, apartments, and co-ops, is 7,126. ▪ Renovation of Coffman Union to better serve students and faculty.
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<p>Academic Health Center</p>	<ul style="list-style-type: none"> ▪ Investing in new facilities and remodeling of existing space, including completing the BSBE building, renovation of 10 classrooms, constructing a new Molecular and Cellular Biology building, renovating Jackson Hall, working with Fairview to upgrade clinical spaces, building a new Magnetic Resonance Imaging building to support research, remodeling student study space, and remodeling numerous research laboratories to recruit and retain faculty to remain competitive internationally. ▪ Completing a strategic facilities plan for the AHC in 1998 that identifies facilities needs for five to seven years. The plan defines programmatic needs, marries it to space requirements, and prioritizes the various projects in the AHC. AHC facilities staff and faculty/staff committees prepared the plan (rather than engaging outside consultants). Estimated cost of using outside consultants would have been \$500,000 to \$750,000. The plan includes over 100 projects with an estimated cost of at least \$250 million. The plan is updated annually and used as the basis for capital budget planning. ▪ Developing a district facilities plan for the AHC campus based on the 1998 strategic facilities plan. The district plan was developed jointly by the AHC Facilities Office, the central planning office, and an outside consultant. The plan provides the framework, schedule, and locations for facilities projects for the next 20 years. It proposes replacing one million square feet of obsolete and inefficient structures with 1.3 million square feet of new construction. ▪ The AHC is facing a critical shortage of research and education space that is seriously affecting faculty recruitment. With the opening of the Molecular and Cellular Biology Building (a replacement facility), the AHC is more than 250,000 square feet short of academic space. To help address the shortage, the AHC is renting an off-campus office building, moving some programs to the Fairview Riverside campus, developing a system to assign research space based on productivity, converting and renovating 22,500 square feet of shop, office, bookstore, and underutilized library space for AHC education programs, proceeding with design for the translational research facility, conducting a pre-design study for a new off-campus clinic building, and studying the highest use of the resulting release space.
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<p>Managing our physical assets efficiently</p>	<ul style="list-style-type: none"> ▪ Conform to regulatory requirements and well-accepted industry standards for preventative maintenance and productivity. ▪ Energy conservation – Conservation has limited the increase in total energy production (MMBTU’s per square foot) to roughly 5 percent from a FY 91 baseline despite: overall net increase in space; new space being more sophisticated and having higher energy consumption than decommissioned space; significant growth in computers and associated equipment. ▪ Capital project delivery – initiatives to improve outcomes on capital project delivery: <ul style="list-style-type: none"> ▪ Where non-state monies are involved, the design/build delivery process is being used as a means of mitigating the over-budget bidding outcomes that have occurred in the current market. ▪ Facilities has influenced legislative action to allow more University participation in the selections of design professionals. The University now selects the design professional of record from semi-finalists identified by the State Designer Selection Board. ▪ Design and public art standards have been established for external spaces with the intent of creating a more uniform-appearing campus. ▪ Emphasis in the management of projects is placed on managing the fundamentals of risk allocation between the owner, design professional, and contractor.
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