

Contact: Sheila Doyle

REGISTER OF IOWA STATE UNIVERSITY
CAPITAL IMPROVEMENT BUSINESS TRANSACTIONS

Actions Requested: Consider approval of:

1. Permission to proceed with project planning for the **Geomechanics Research Laboratory** project and **Friley Hall – Fire Safety Improvements** project, both major capital projects as defined by Board policy.
 - a. Acknowledge receipt of the University's initial submission of information to address the Board's capital project evaluation criteria (see Attachments A and B);
 - b. Accept the Board Office recommendation that the projects meet the necessary criteria for Board consideration;
 - c. Authorize permission to proceed with project planning, including fund raising for the Geomechanics Research Laboratory; and
 - d. For the **Friley Hall – Fire Safety Improvements** project, authorize waiver of Policy Manual 9.10.B.3.a., which requires an institutional committee to select an engineering firm for projects over \$1 million.
2. Schematic design and project description and budget (\$9 million) for the **Snedecor Hall Renovation – 2006** project, a major capital project as defined by Board policy.
 - a. Acknowledge receipt of the University's final submission of information to address the Board's capital project evaluation criteria (see Attachment C);
 - b. Accept the Board Office recommendation that the project meets the necessary criteria for Board consideration; and
 - c. Approve the schematic design and project description and budget, with the understanding that this approval will constitute final Board approval and authorization to proceed with construction.

Executive Summary: The **Geomechanics Research Laboratory** project would construct a state-of-the-art geomechanical research laboratory that would focus on earth mechanics and intelligent construction sensor technology as they relate to geotechnical and construction engineering, a field in which Iowa State University is a recognized leader. The laboratory would be of particular benefit to construction equipment manufacturers and contractors involved in foundation engineering, earthwork, and underground construction activities. The laboratory is envisioned to provide research, educational, and outreach opportunities that would draw on a wide variety of disciplines to provide practical knowledge, solutions, and implementation tools ranging from the nanoscale to the global scale. The potential benefits to the construction industry include the identification of significant construction cost savings and greater partnering opportunities. The laboratory would consist of approximately 87,500 gross square feet of exhibition, classroom, office, and laboratory space, and would be constructed at a site yet to be determined.

The estimated project cost of \$20 million would be funded by federal grants and/or private fund raising. The University will proceed further with the project only if the federal and private fund raising efforts are successful.

The **Friley Hall – Fire Safety Improvements** project would provide a number of fire safety improvements in Friley Residence Hall, which currently houses approximately 1,200 students. Friley Hall was originally constructed in 1927 and has received numerous additions and major renovations over the past 70 years. As a result, only limited portions of the building are protected by a fire sprinkler system, and the building has received citations from the State Fire Marshal's office for various fire protection issues.

The fire safety improvements to Friley Hall would consist of the installation of heat/smoke detection devices, fire alarm and sprinkler systems, and associated utility infrastructure support improvements. The initial phase would consist of a feasibility study, project scheduling, and design services to define the full scope of work. Installation of the new systems is expected to be phased over several years (primarily during the summer months) to minimize the impact on the building's operations and manage the project costs, consistent with available funding.

The University reports that the engineering firm of Howard R. Green, Cedar Rapids, Iowa, currently provides engineering services under an existing University contract. Accordingly, the University requests a waiver of the Policy Manual requirement for the selection of an engineering firm, and utilization of Howard R. Green to complete the feasibility study and design services for the project.

The University reports that the estimated project cost will be developed during the feasibility study and schematic design phase of the project. The project would be funded by Dormitory System Improvement Funds.

The proposed **Snedecor Hall Renovation – 2006** project would renovate approximately 39,000 gross square feet of space in Snedecor Hall, which houses the Department of Statistics. The facility, which was constructed in 1939, does not provide modern classroom and computer laboratory space or adequate consulting areas for the Department. In addition, the building is in need of circulation improvements, infrastructure upgrades, new restrooms, exterior masonry restoration, and window replacements. The renovation project is vital to the Department and its ability to attract and retain top faculty and students.

The project budget of \$9 million would be funded by Facilities Overhead Use Allowance.

Details of Projects:

Geomechanics Research Laboratory

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		June 2007	Requested
Initial Review and Consideration of Capital Project Evaluation Criteria		June 2007	Receive Report

Friley Hall – Fire Safety Improvements

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		June 2007	Requested
Initial Review and Consideration of Capital Project Evaluation Criteria		June 2007	Receive Report

Snedecor Hall Renovation – 2006

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		June 2006	Approved
Initial Review and Consideration of Capital Project Evaluation Criteria		June 2006	Received Report
Program Statement		April 2007	Not Required
Final Review and Consideration of Capital Project Evaluation Criteria		June 2007	Receive Report
Schematic Design		June 2007	Requested
Project Description and Total Budget	\$ 9,000,000	June 2007	Requested

The schematic drawings for the project are included as Attachments D, E, and F. Each of the three levels would feature centrally-located graduate student offices, with faculty and staff offices, administrative support areas, and conference rooms along the exterior walls. In addition, the first and third floors would house computer laboratories in the northeast and northwest corners, respectively, and the third floor would house classrooms in the northeast portion of this level.

The square footages in the schematic design are identical to those in the approved building program.

Detailed Building Program

	<u>Program</u>	<u>Schematic</u>	
Faculty Offices	7,437	7,437	
Graduate Student Offices	6,560	6,560	
Computer Laboratories	3,149	3,149	
Administrative Support	2,033	2,033	
Conference Rooms	1,745	1,745	
Classrooms	1,665	1,665	
Staff Offices	<u>1,074</u>	<u>1,074</u>	
Total Net Assignable Space	23,663	23,663	nsf
Anticipated Gross Square Feet	39,000	39,000	gsf

Anticipated Net-to-Gross Ratio = 61 Percent

Project Budget

Construction	\$ 6,602,500
Professional Fees	1,612,500
Movable Equipment	275,000
Relocation	197,500
Contingencies	<u>312,500</u>
TOTAL	<u>\$ 9,000,000</u>
Source of Funds:	
Facilities Overhead Use Allowance	<u>\$ 9,000,000</u>

The University anticipates bidding the project in March 2008 and completion by April 2009.

**Geomechanics Research Laboratory
Evaluation Criteria**

Since the project meets the Board's definition of a major capital project, the University has provided the following information in response to the Board's evaluation criteria.

Institutional Mission/Strategic Plan: The laboratory will develop innovative solutions to problems through interdisciplinary collaboration. Potential research topics that will emerge from the focus areas include intelligent geo-construction systems, rapid construction quality control, statistical data analysis and 3D visualization, advanced material characterization, machine to ground interaction, numerical modeling, and Virtual real-time simulation.

The laboratory will provide an avenue for making progress toward research goals, developing new technology and equipment and educating future leaders in geo-construction engineering.

Expanded research and education at the university will lead to close associations among faculty, students, industry and contractors. This program will offer tremendous benefits and opportunities for those in the construction industry. As part of the development of this program, the College of Engineering will offer a new Geo-Construction Engineering (Geo-ConE) graduate program.

The university will provide both technical expertise and human capital needed by way of a new faculty position and graduates with geo-construction engineering experience. The university has had a longstanding national reputation in both geotechnical and construction engineering, which positions it as the best institution to offer the nation's first graduate program in geo-construction engineering. The program is anticipated to start in 2008. The potential for rapid development of this program is unlimited. It will not only provide graduates unique and practical education, but will also provide a service to the engineering and construction industry. Graduate students, as research assistants and through independent thesis work, will begin to evaluate these important subjects such as geotechnical engineering, advanced technology training, equipment systems and business skills in construction.

Impact on Other Facilities and Square Footage: The new building is approximately 87,500 gross square feet.

Financial Resources for Construction Project: Estimated project cost is \$20 Million.

Financial Resources for Operations and Maintenance:

Operation and maintenance	\$ 142,000
Utilities	\$ 143,000
Repair and Replacement	\$ 300,000
Other (Grounds/Mail/EHS/DPS)	\$ 0
Total	\$ 585,000

External Forces: The laboratory's outreach efforts will ensure that stake holders benefit from new knowledge, and that improvements are efficiently and effectively integrated into specifications and practice. The laboratory has the potential for new partnerships because of the interdisciplinary nature and national scope of the research programs. The laboratory will partner across many university colleges, departments and centers.

A wealth of opportunities exists for the lab to pursue related research with public agencies:

- Federal Highway Administration
- U.S. Department of Energy
- U.S. Department of Defense
- National Aeronautics and Space Administration
- State Department of Transportation
- National Science Foundation

**Friley Hall – Fire Safety Improvements
Evaluation Criteria**

Since the project meets the Board's definition of a major capital project, the University has provided the following information in response to the Board's evaluation criteria.

Institutional Mission/Strategic Plan: The mission of the Department of Residence is to advance the academic mission of Iowa State University by providing quality service and promoting living/learning communities that stimulate, enhance, and extend the total learning experience. Friley Hall is a very large part of the Department of Residence, providing more than 15% of the living space for the department. The building has a very large number of learning communities providing opportunities for students to have a successful university experience in academics, community service and extracurricular activities. The Department of Residence is very popular with first year students with almost 90% choosing on-campus living and Friley Hall is among the favorites because of its proximity to central campus.

Other Alternatives Explored: Friley Hall is a very valuable component of the residence system. The improvements are being made related to the citations issued by the State Fire Marshal's Office.

Impact on Other Facilities and Square Footage: The project is a multi-phased project to make fire safety improvements to 363,963 GSF of space. The phases will be timed to match the available financial resources to make improvements and the scheduling opportunities to accomplish the work when students are not in the facility.

Financial Resources for Construction Project: The Dormitory System Improvement Fund is the anticipated fund source. The cash flow and phasing schedule will be developed as part of the feasibility study.

Financial Resources for Operations and Maintenance: No additional operating or maintenance expenses are anticipated because of this project.

External Forces: The State Fire Marshal's office has issued citations that require the university to address identified fire safety deficiencies.

Snedecor Hall Renovation – 2006
Evaluation Criteria

Since the project meets the Board's definition of a major capital project, the University has provided the following information in response to the Board's evaluation criteria.

Institutional Mission/Strategic Plan: The mission of the Department of Statistics is to conduct research and to provide teaching and consulting services for the entire campus community. The department's mission is fulfilled by taking advantage of the many opportunities for interdisciplinary research and collaboration; the department is one of the best applied statistics departments in the world.

The Department teaches introductory statistics courses to over 3,000 undergraduate and graduate students a year, and the graduate program has consistently ranked among the best in the nation, both in the quality of its program faculty and in the effectiveness of educating research scholars and scientists.

The Survey Section is nationally recognized as one of the best survey groups in the country, from both academic and operational aspects. The section is funded through contracts and grants; the most significant being a long-standing agreement with the USDA which provides funding of over \$1,000,000 per year.

The Department's Strategic Plan identifies three areas in which national prominence is sought: Environmental Statistics, Engineering Statistics, and Survey Sampling. The Department was recently awarded an NSF grant for Statistics for Engineering and Physical Sciences. Research and consulting opportunities continue to grow, putting additional strain on the available space and the building systems.

Other Alternatives Explored: Several studies by professional consultants have been conducted in the past to address deficiencies and develop specific solutions to address additional space requirements identified for faculty and staff, academic programs and building infrastructure improvements.

These studies also identified fire safety issues and inadequate restroom facilities, as well as renovation of heating, ventilation and air conditioning, electrical and telecommunications infrastructure as high priority needs.

Due to the number of students that utilize the computer labs and the number of consulting clients the Department serves, a location easily accessible to students and clients is crucial. There is no other central campus space available that could accommodate the Department. Renovating the existing building at this time is the most feasible approach. There is site available to expand the building when funds are available.

Impact on Other Facilities and Square Footage: This project will renovate the approximately 39,000 gross square feet in Snedecor Hall to provide improved student access to faculty and staff, teaching labs and student services through refurbishment and reallocation of space.

Financial Resources for Construction Project: The university has established a project budget of \$9 million. Funding will be provided from Facilities Overhead Use Allowance.

Financial Resources for Operations and Maintenance: Operating and maintenance costs are not expected to increase because of the project. These costs may actually decrease because new mechanical/electrical systems will reduce the need for extensive maintenance and reduce energy consumption.

External Forces: Facilities are an important component of a department's resources, and the existing building has not kept pace with the growth and reputation of the Statistics Department. To attract the best faculty members and students, to remain strong and competitive as a department, and to support the University's Strategic Plan, the facilities the Statistics Department occupies need to be improved.

Upgrading and expanding the current facilities will support and enhance undergraduate education, by upgrades to instructional space, computer and teaching labs. This will affect thousands of students each academic year from many academic disciplines.

The graduate program will be enhanced, funded research opportunities expanded, and support provided to the distance education program.





