

**A PRESENTATION OF THE SCHEMATIC DESIGN FOR HOOVER HALL OF THE ENGINEERING TEACHING AND RESEARCH COMPLEX WILL TAKE PLACE AT THE NOVEMBER MEETING**

ISU B-1

**MEMORANDUM**

**To:** Board of Regents

**From:** Board Office

**Subject:** Register of Iowa State University Capital Improvement Business Transactions for Period of October 20, 2000 through November 16, 2000

**Date:** November 6, 2000

**Recommended Action:**

Approve the Register of Capital Improvement Business Transactions for Iowa State University.

**Executive Summary:**

Iowa State University requests approval of the Hoover Hall schematic design and revised project budget (\$63,660,000) for the **Engineering Teaching and Research Complex** project. The schematic design and revised budget reflect the restoration of approximately 7,000 net square feet of space to the Hoover Hall project resulting from efficiencies in the building design. Representatives of the University and the project architects, Brooks Borg and Skiles, will attend the Board meeting to present the design for the project. A booklet outlining the design is included with the Board's docket materials.

The University requests permission to proceed with project planning and approval of the project description and budget (\$1,750,000) for the **Utilities—Power Plant—Ash Silo Replacement** project which will construct a new stoker bottom ash silo at the Power Plant to replace the existing ash silo which has exceeded its useful life and is undersized for current Power Plant operations.

The University requests permission to proceed with project planning for the **Hamilton Hall Renovation** project which will provide various improvements to the facility to support the program needs of the Greenlee School of Journalism and Communication.

The University requests approval of the project description and budget for the **MacKay Hall—Tearoom Improvements** project (\$300,000) which will upgrade the dining area and replace the kitchen equipment to accommodate modern instructional programs of the Department of Hotel, Restaurant, and Institution Management of the College of Family and Consumer Sciences.

The University requests approval of a revised project budget (\$423,400) and Amendment #1 (\$6,744) to the engineering agreement with Snyder and Associates for the **Institutional Roads 2000—Reconstruct Stange Road** project. Both the revised budget and the amendment reflect an expanded project scope; the revised budget also includes inflationary adjustments for the project.

The University requests approval of the following amendments to architectural/engineering agreements:

Amendment #2 (\$31,469) to the agreement with Rietz Consultants for the **Maple Hall Remodeling and Flood Mitigation** project for additional consulting services to facilitate completion of the project and the testing of building emergency systems;

Amendment #3 (\$5,160) to the agreement with Stott and Associates for the **College of Veterinary Medicine—Biomedical Sciences Laboratories Remodeling** project for additional design services to incorporate revisions into the laboratory areas; and

Amendment #1 (\$9,000) to the agreement with Brooks Borg and Skiles for the **Bessey Hall—Growth Chambers** project for additional design services, in response to program revisions, and increased reimbursable expenses.

**Background and Analysis:**

Engineering Teaching and Research Complex

<u>Project Summary</u>			
	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		May 1993	Approved
Planning Funds	\$ 2,190,700	July 1996	Approved
Program Statement—Phases 1 & 2 Architectural Agreements		June 1994	Approved
Schematic Design for Phases 1 & 2 and Design Development for Phase 1 (Brooks Borg and Skiles)	1,600,000	June 1994	Approved
Phase 1 Construction Services (Brooks Borg and Skiles)	748,000	Nov. 1996	Approved
Phase 2 Design Development Through Construction Services (Brooks Borg and Skiles)	1,325,000	Sept. 1997	Approved
Schematic Design—Phases 1 & 2		May 1995	Approved
Phase 1 Revised Project Budget	33,763,869	July 1996	Approved
Phase 2 Revised Project Budget	25,066,393	July 1996	Approved
Total Revised Project Budget	61,020,962	Sept. 1997	Approved
Hoover Hall Revised Program Statement		July 2000	Approved
Hoover Hall Architectural Agreement— Schematic Design through Construction (Brooks Borg and Skiles)	1,240,000	July 2000	Approved
Total Revised Project Budget	63,400,000	July 2000	Approved
Schematic Design		Nov. 2000	Requested
Total Revised Project Budget	63,660,000	Nov. 2000	Requested

The Hoover Hall revised building program approved by the Board in July 2000 reflected a reduction in square footage from the original building program of 109,145 gross square feet to 66,527 gross square feet, a decrease of approximately 39 percent. The project scope and program spaces were reduced in response to budgetary constraints due to additional costs for the construction of Howe Hall, which is now complete.

Development of the schematic design based upon the approved July 2000 program included the simplification of the building construction systems and other details which provided lower construction cost estimates. As a result, the University re-evaluated the program spaces which were previously removed from the project and determined that a number of these areas could be reincorporated

into the project design with a relatively small increase in the project budget. Therefore, approximately 7,000 net square feet of space, an increase of 17.4 percent, have been added back to the facility from the initially revised design. The total building area of 46,855 net square feet (78,500 gross square feet) is reflected in the schematic design. Increases are provided for most areas of the building program, with the addition of 509 net square feet of general faculty and staff office areas for the College. However, classroom space for Engineering Computer Support Services will decrease by 1,378 net square feet, or approximately 34.5 percent; the University has decided to leave one of the existing classrooms for this function in Marston Hall rather than relocating all of the areas to Hoover Hall.

The University has determined that the additional space can be incorporated into the project at an additional cost of \$260,000. Therefore, the University also requests approval of a revised project budget in the amount of \$63,660,000; the additional funds will be provided by the ISU Foundation.

The following table compares the July 2000 and the revised (November 2000) space summaries for Hoover Hall:

	<u>Square Footage</u>			
	<u>July 2000</u>	<u>Nov. 2000</u>	<u>Change</u>	
<b>Materials Science and Engineering</b>				
Faculty/Staff Offices	6,540	6,917	377	
Research Laboratories	5,000	6,406	1,406	
Teaching Laboratories	<u>3,635</u>	<u>4,650</u>	<u>1,015</u>	
TOTAL	15,175	17,973	2,798	
<b>University General Classrooms</b>	8,800	8,959	159	
<b>Mechanical Engineering/Industrial and Manufacturing Systems Engineering</b>				
Faculty/Staff Offices	6,746	6,909	163	
<b>Miscellaneous Areas</b>	5,060	6,832	1,772	
<b>Engineering Computer Support Services</b>				
Classrooms	4,000	2,622	(1,378)	
Faculty/Staff Offices	<u>135</u>	<u>3,051</u>	<u>2,916</u>	
TOTAL	4,135	5,673	1,538	
<b>College of Engineering Faculty/Staff Offices</b>	<u>0</u>	<u>509</u>	<u>509</u>	
<b>Total Net Assignable Space</b>	39,916	46,855	6,939	nsf
<b>Total Gross Square Feet</b>	66,527	78,500	11,973	gsf
Net-to-Gross Ratio	60%	60%		

### Site and Building Exterior

Hoover Hall will be constructed on the site directly to the east of Howe Hall and Bissell Road. This is the former site of Exhibit Hall, the Engineering Research Institute, and the Engineering Annex, all of which were razed to provide the site for Hoover Hall. (This action was approved by the Board in February 2000.) Site boundaries include Marston Hall to the east, the Black Engineering Building and Beyer Hall to the south, and the Nuclear Engineering Laboratory to the north. A map indicating the proposed location for the building is included as Attachment A.

The architectural character of Hoover Hall will relate to Howe Hall to the west so that the Engineering Teaching and Research Complex will possess a distinctive identity as the core of the engineering campus. A skywalk will extend from the second level of Hoover Hall to connect with Howe Hall. The exterior materials will consist primarily of masonry with some limestone, and glass curtainwall systems and ribbon windows. This will echo the materials of Howe Hall and the adjacent engineering buildings.

### Building Interior

Hoover Hall will consist of three stories. The first level will provide laboratory space for the Department of Mechanical Engineering/Industrial Manufacturing, an auditorium with seating for 425 students for general assignment classroom use, and building support spaces including a receiving area, mechanical and electrical space, storage and janitorial areas. The second level will house instructional, administrative and faculty office areas for the Department of Material Science and Engineering, laboratory and administrative space for Engineering Computer Support Services, College of Engineering general faculty office space, and the second level of the auditorium. The majority of the third level will house laboratory and graduate office areas for the Department of Material Science and Engineering.

The primary entrance to the building will be at the northeast corner of the building, adjacent to Marston Hall. This lobby area, which will focus on the historical Marston Water Tower, will provide a glass space that will separate the main classroom and laboratory areas from the auditorium at the east end of the building.

A second main entry will be located on the northwest corner across from the main entrance to Howe Hall. This area will provide a three-story glass tower which will relate directly to the large curtain wall of Howe Hall and provide the connection point for the skywalk that will link the two buildings.

### Restrooms

The building will include a total of 12 fully-accessible restroom areas (six male and six female) located on all floors. The restrooms will provide a total of 24 female toilet fixtures, 12 male toilet fixtures, 12 urinals, and 12 male and 12 female lavatories. The University has indicated that the number of restroom fixtures is consistent with the State Building Code based on total occupancy of the building.

Roof

The roof for the majority of the building would consist of a low-slope roofing system which would be constructed of a single-ply rubber membrane roofing material over a metal roof deck. The sloped roof area over the auditorium would consist of either a standing-seam metal roof or a single-ply rubber membrane roof.

The University has indicated that the roof areas were designed with consideration for the architectural character of the facility relative to other academic buildings in this area of campus, as well as the building's requirements for mechanical and drainage systems. The selection of the rubber membrane and metal roofing materials was made after considering the life-cycle costs, performance, and maintenance requirements of the roofing materials.

The University anticipates that the earliest bid date for the construction contract would be May 2001. The project has an estimated completion date of December 2002.

Project Budget

	Revised Budget <u>July 2000</u>	Revised Budget <u>Nov. 2000</u>
Construction Costs	\$ 49,648,100	\$ 49,908,900
Professional Fees	7,367,000	7,367,000
Movable Equipment	6,233,700	6,233,700
Relocation	48,500	48,500
Contingency	<u>102,700</u>	<u>101,900</u>
TOTAL	<u>\$ 63,400,000</u>	<u>\$ 63,660,000</u>
Source of Funds:		
Federal Aviation Administration Grant	\$ 1,500,000	\$ 1,500,000
Capital Appropriations	31,900,000	31,900,000
ISU Foundation	<u>30,000,000</u>	<u>30,260,000</u>
TOTAL	<u>\$ 63,400,000</u>	<u>\$ 63,660,000</u>

Utilities—Power Plant—Ash Silo Replacement

Source of Funds: Utility Repairs

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		Nov. 2000	Requested
Project Description and Total Budget	\$ 1,750,000	Nov. 2000	Requested
Engineer Selection (Black and Veatch)		Nov. 2000	Requested

The Power Plant stoker bottom ash silo contains equipment to load the ash, which is stored in the silo, into trucks for disposal or reuse. The existing silo, which was installed in 1948 and no longer has sufficient storage capacity, is constructed of clay tile, which is deteriorating and is beyond its useful life. This project will provide for replacement of the silo.

As the Power Plant has been expanded to accommodate the University load growth, truck access has become very limited, causing all ash to be handled twice. This has increased operational costs and created environmental problems since the additional handling results in an increase in ash dust. The new silo will be located in a more accessible location, allowing ash to be loaded directly into trucks for disposal or reuse, minimizing dust. Once the new silo is operational, the existing silo will be demolished.

Replacement of the silo was recommended in the 1999 Material Handling Master Plan for the Power Plant. The Master Plan was completed by the engineering firm of Black and Veatch, an international firm engaged in power plant design. This firm was selected for the Master Plan study based on proposals submitted from six engineering firms experienced in power plant and material handling system design. The recommendation to replace the ash silo is consistent with the goals of the Master Plan, which includes improving the operational efficiency, environmental impact, and the aesthetics of the material handling operations.

The University requests approval of the selection of Black and Veatch to provide engineering services for the project. The University will return to the Board for approval of the negotiated agreement.

Project Budget

Construction Costs	\$ 1,460,900
Professional Fees	234,000
Project Contingency	<u>55,100</u>
TOTAL	<u>\$ 1,750,000</u>

Hamilton Hall Renovation

Proposed Source of Funds: Private Funds

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		Nov. 2000	Requested

This project will provide various improvements to Hamilton Hall which houses the Greenlee School of Journalism and Communication. The facility, which was constructed in four phases from 1940 to 1966 and consists of a total of approximately 39,000 gross square feet, is located north of the Food Sciences Building and south of Agronomy Hall in the east central area of campus. A map indicating the location of the building is included as Attachment B.

The renovation project will support the program needs of the Greenlee School of Journalism and Communication. The proposed improvements for the facility are based upon the recommendations of a recent feasibility study and master plan which were undertaken to identify alternatives for improved student access to faculty and staff, teaching labs and student services.

In accordance with the recommendations of the master plan, the project will refurbish and reallocate existing space within the building. The project will also replace the roof, restore windows, and provide improvements to the exterior masonry.

The University will return to the Board for approval of the project budget, which is estimated at \$2 million.

MacKay Hall—Tearoom Improvements

Source of Funds: ISU Foundation

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Project Description and Total Budget	\$ 300,000	Nov. 2000	Requested

The mission of the Department of Hotel, Restaurant, and Institution Management is to prepare professionals to manage foodservice and lodging operations. The University is committed to this effort by being responsive to clients and providing quality education. Students must have experience in actual foodservice operations management. The Tearoom has existed as a component of the Department's program since its inception in 1925 and has provided an excellent supervised student learning environment.

The Tearoom facility, which consists of 2,500 square feet of space, is in major need of updating. Some of the kitchen equipment is more than 40 years old and must be replaced so that students can use equipment that is consistent with current foodservice operations.

The Tearoom renovation was strongly recommended following an external review of the Department's academic programs undertaken during the 1999-2000 school year. This report indicated that the Tearoom is woefully outdated compared to the hospitality industry and in serious need of renovation. The renovation of the Tearoom is expected to help increase enrollment in the Department's programs.

Permission to proceed with the project was not required since the project budget does not exceed \$1,000,000.

Project Budget

Construction Costs	\$ 194,500
Professional Fees	46,000
Movable Equipment	31,500
Project Contingency	<u>28,000</u>
TOTAL	<u>\$ 300,000</u>

Institutional Roads 2000—Reconstruct Stange Road  
Source of Funds: Institutional Roads Program

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Project Description and Total Budget Engineering Agreement	\$ 169,400	Oct. 1999	Not Required*
(Snyder and Associates)	30,706	Nov. 1999	Not Required*
Revised Total Project Budget	249,400	Dec. 1999	Not Required*
Revised Total Project Budget	423,400	Nov. 2000	Requested
Engineering Amendment #1	6,744	Nov. 2000	Requested

\* Approved by the University in accordance with Board procedures

This project will reconstruct Stange Road in the vicinity of the Union Pacific Railroad overpass in the north area of campus to correct the cracking and shifting of concrete at this location. The original project scope included pavement reconstruction, retaining wall and storm sewer repairs, and sidewalk replacements.

The University requests approval of a revised project budget in the amount of \$423,400, an increase of \$174,000, which reflects an expanded project scope to include reconstruction of the walkways to comply with the Americans with Disabilities Act. This will include reconstruction of the walkways at a higher elevation to reduce the degree of longitudinal slope, and the installation of safety barriers with railings to protect pedestrians from vehicle traffic. The revised budget also reflects increased construction costs due to inflation. The additional funding for the project will be provided by the Institutional Roads program.

The University requests approval of Amendment #1 in the amount of \$6,744 to the engineering agreement with Snyder and Associates. The amendment will provide compensation for the additional design services associated with the expanded project scope.

Project Budget

	<u>Revised Budget Dec. 1999</u>	<u>Revised Budget Nov. 2000</u>
Construction Costs	\$ 210,100	\$ 370,000
Professional Fees	36,000	48,500
Contingency	<u>3,300</u>	<u>4,900</u>
TOTAL	<u>\$ 249,400</u>	<u>\$ 423,400</u>

Maple Hall Remodeling and Flood Mitigation

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Project Description and Total Budget	\$ 13,900,000	Nov. 1997	Approved
Engineering Agreement (Rietz Consultants)	1,054,000	Dec. 1997	Approved
Phase 1 Construction Contract (Stanley Design-Build)	10,166,600	June 1998	Ratified*
Phase 2 Construction Contract— Flood Mitigation (Manatt's, Inc.)	1,171,535	April 2000	Ratified*
Revised Total Project Budget	14,905,180	July 1999	Approved
Engineering Amendment #1	48,860	June 1999	Ratified**
Engineering Amendment #2	31,469	Nov. 2000	Requested

\* Awarded by Executive Director in accordance with Board procedures.

\*\* Approved by University in accordance with Board procedures.

This project has provided structural repairs, building upgrades and site improvements at the Maple Hall residence facility, and flood mitigation work for the Maple-Willow-Larch residence complex.

The University requests approval of Amendment #2 in the amount of \$31,469 to the engineering agreement with Rietz Consultants. The amendment will provide compensation for additional services provided by Rietz Consultants due to the inability of the Phase 1 construction contractor to complete the contract in accordance with the established time schedule. These services included attendance at additional meetings, site observation services, and other duties.

Additional services were also provided, at the request of the Residence Department, to evaluate and test the fire pump, emergency generator and emergency power transfer switches.

College of Veterinary Medicine—Biomedical Sciences Laboratories Remodeling  
Source of Funds: General University Funds

<u>Project Summary</u>			
	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Project Description and Total Budget	\$ 263,500	May 2000	Approved
Architectural Agreement (Stott and Associates)	27,640	May 2000	Approved
Architectural Amendment #1	4,660	Sept. 2000	Ratified*
Revised Project Budget	443,685	Oct. 2000	Approved
Construction Contract Award (R. H. Grabau Construction)	291,262	Oct. 2000	Approved
Architectural Amendment #2	7,280	Oct. 2000	Approved
Architectural Amendment #3	5,160	Nov. 2000	Requested

\* Approved by University in accordance with Board procedures.

This project will provide upgraded laboratory space for use by the research programs of the Department of Biomedical Sciences in the College of Veterinary Medicine.

The University requests approval of Amendment #3 in the amount of \$5,160 to the design agreement with Stott and Associates. The amendment will provide compensation for additional design services for revisions to the ceilings, lighting, and mechanical control systems. The laboratory users requested these changes to provide greater environmental control of the laboratory spaces.

Bessey Hall—Growth Chambers

Source of Funds: General University Funds

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Project Description and Total Budget	\$ 300,000	Dec. 1999	Approved
Architectural Agreement (Brooks Borg and Skiles)	16,000	March 2000	Approved
Architectural Amendment #1	9,000	Nov. 2000	Requested

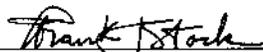
This project will remodel approximately 1,200 square feet of space in the basement of Bessey Hall to develop reach-in and walk-in growth chambers for use by the Departments of Plant Pathology, Botany and Forestry, and the Plant Sciences Institute.

The University requests approval of Amendment #1 in the amount of \$9,000 to the design agreement with Brooks Borg and Skiles. The amendment will provide compensation for additional design services to reflect program changes to the space. The amendment will also provide additional reimbursement for the printing of bid documents, since the actual costs have exceeded the original estimate.

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Included in the University's capital register for Board ratification are seven project budgets under \$250,000, one construction contract awarded by the Executive Director, the acceptance of three completed construction contracts, and one final report. These items are listed in the register prepared by the University and are included in the Regent Exhibit Book.

  
Sheila Lodge

Approved:   
Frank J. Stork

