

A PRESENTATION OF THE SCHEMATIC DESIGN FOR THE REIMAN GARDENS—CONSERVATORY PROJECT WILL TAKE PLACE AT THE JUNE BOARD 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 May 19, 2000 through June 15, 2000

Date: June 5, 2000

Recommended Action:

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

Executive Summary:

Iowa State University requests approval of the schematic design, revised project budget (\$9,624,300), and amendment to the design agreement with Architects Smith Metzger (\$97,790) for the **Reiman Gardens—Conservatory** project which will construct a Conservatory complex including a conservatory area for plant displays, greenhouse facilities, a butterfly flight house, and other areas for educational and outreach activities of the College of Agriculture and the Departments of Horticulture and Entomology.

Representatives of the University and the project architects, Architects Smith Metzger, 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, approval of the project description and budget (\$11,000,000), and selection of KJWW Engineering Consultants to complete design services for the **Gilman Hall Systems Upgrade** project which will replace the aging heating, ventilating and air conditioning and fume hood exhaust systems in the 1965 addition to Gilman Hall. The 2000 General Assembly appropriated a total of \$11,000,000 for the project for FY 2001 and FY 2002; the project was the University's top priority in the Board's FY 2001 capital improvement request. The capital appropriations bill was signed by the Governor on May 11, 2000.

The University requests permission to proceed with project planning, approval of a project description and budget (\$1,500,000), and engineering agreement with Construction Technology Laboratories (\$213,000) for the **Knapp/Storms/Wallace/Wilson Pre-Cast Concrete Façade Panel Maintenance** project, which will provide various repairs to the exterior pre-cast concrete façade systems of these residence facilities.

The University also requests approval of the following project descriptions and budgets:

Hilton Coliseum—Interior Handrails project (\$300,000) which will install handrails in 68 aisles in the parquet and mezzanine sections of Hilton Coliseum; and

Veterinary Medical Research Institute (VMRI)—Building 29 Interior Repairs project (\$263,000) which will provide repairs to interior finishes and replacement of other building components.

The University requests approval of a revised project budget (\$9,200,000) and amendment to the design agreement with Brooks Borg and Skiles (\$48,000) for the **Carver Co-Laboratory** project. The increased budget provides additional space to support the research efforts of the Plant Sciences Institute.

The University also requests approval of the following revised project budgets:

Institutional Roads—Iowa State Center Parking Lots Rehabilitation project (\$1,591,200) which will provide the necessary funds for the construction contract; and

MacKay Hall—Food Science and Human Nutrition Laboratory Renovation project (\$755,000) which includes additional funds to permit the upgrade of an additional area of the laboratory.

The University requests approval to enter into an agreement with Wells Woodburn O'Neil (\$64,600) for the **Buchanan Hall Suite Renovation—Feasibility Study** which will survey and review the condition of the structure and building systems of this residence facility to determine work needed to modernize the facility which was constructed in 1964.

Background and Analysis:

Reiman Gardens—Conservatory
Source of Funds: ISU Foundation

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		March 1999	Approved
Project Description and Total Budget	\$ 7,835,300	July 1999	Approved
Architectural Agreement through Schematic Design (Architects Smith Metzger)	739,740	July 1999	Approved
Program Statement		Nov. 1999	Approved
Schematic Design		June 2000	Requested
Revised Project Budget	9,624,300	June 2000	Requested
Architectural Amendment #1 (Architects Smith Metzger)	97,790	June 2000	Requested

This project will construct a conservatory facility at the Reiman Gardens to support the University's multi-disciplinary academic programs and extension activities at the Gardens, particularly those activities of the Department of Horticulture. The primary features of the facility will include a glass structure garden conservatory area which will be used for permanent and rotating plant displays, growing greenhouses for plant production, a head house for preparation of plants for production and display, and a butterfly flight house and laboratory. The facility will also include an auditorium and multi-purpose room for educational and outreach activities consisting of demonstrations, classes and seminars, and a café/kitchen area and gift shop to serve visitors. The schematic design has been developed with input from potential users and University personnel including those from the College of Agriculture, Department of Horticulture, Department of Entomology, Department of Landscape Architecture, and Facilities Planning and Management.

The Conservatory complex will be constructed north and west of the existing Reiman Garden areas and adjacent to the Mahlstedde Building which houses University extension offices and multi-purpose space for educational and other activities at the Gardens. The entry to the Conservatory complex at the north will be flanked by the Butterfly Flight House and the Auditorium which will be

located adjacent to the lobby and reception area. The Butterfly Flight House will consist of an all-glass conservatory structure which will display native and exotic butterflies, tropical plants and a water feature. The building will include pedestrian circulation paths which will provide ample space for viewing the butterflies. The glass enclosure will also permit the butterflies to be viewed from the surrounding outdoor terrace area.

The remaining public functions within the complex, with the exception of the multi-purpose room, will be arranged around a central pedestrian circulation spine. This area is designed to accommodate the large crowds that are anticipated for the facility. From the lobby area, the circulation spine will serve as a corridor to the visitor areas which will include restrooms, a gift shop, café, and finally the conservatory. The circulation spine will also connect to the Mahlstedde Building and to the Butterfly Flight House. The non-public butterfly laboratory, which will be used to grow the butterflies, will also be located along this corridor directly across from the Butterfly Flight House. The multi-purpose room will be located away from the circulation spine but will be accessible from the conservatory area.

The remaining non-public areas of the complex, which include the greenhouses, the head house, kitchen and building mechanical areas, will be served by a secondary corridor. The greenhouses and head house will be available to visitors on a limited basis, primarily through scheduled tours. A service drive will be developed in the central open area located adjacent to the greenhouses.

The schematic design reflects a total building area of approximately 30,700 gross square feet (20,945 net square feet), for a net-to-gross ratio of 68 percent. The following is the space summary for the various components of the Conservatory complex:

	<u>Net Square Feet</u>
Growing Greenhouses (including Head House)	8,048
Garden Conservatory	5,270
Butterfly Flight House and Laboratory	3,059
Café/Kitchen	2,025
Gift Shop	851
Auditorium	953
Multi-Purpose Room	<u>739</u>
 Total Net Assignable Space	 20,945
 Total Non-Assignable Space (Maintenance, Mechanical/Electrical, Restrooms, Circulation)	 <u>9,755</u>
 Total Gross Square Feet	 <u>30,700</u>
 Net-to-Gross Ratio	 68 percent

Since presentation of the building program in November 1999, the size of the conservatory complex has increased to accommodate a larger Butterfly Flight House which has increased approximately three-fold to 3,059 net square feet. It is anticipated that this larger area will increase visitor attendance significantly; therefore, the public spaces and circulation areas have also been increased in size. While annual attendance at the Conservatory complex is difficult to predict at this time, it is currently estimated at up to 250,000 visitors per year.

Due to the increased size of the project, the University also requests approval of a revised project budget in the amount of \$9,624,300, an increase of \$1,789,000. The additional funds will be provided by the ISU Foundation.

Construction of the Conservatory complex is anticipated to commence in April 2001 for completion in August 2002. Construction of a new maintenance facility for the Reiman Gardens, which will replace an existing facility that will be removed from the site to accommodate construction of the Conservatory complex, is expected to begin this October.

The University also requests approval of Amendment #1 in the amount of \$97,790 to the agreement with Architects Smith Metzger. The amendment will provide compensation for the additional design services for the expanded project scope.

Project Budget

	Initial Budget <u>July 1999</u>	Revised Budget <u>June 2000</u>
Construction Costs	\$ 6,133,000	\$ 7,624,500
Professional Fees	1,221,500	1,479,800
Movable Equipment	315,000	315,000
Project Contingency	<u>165,800</u>	<u>205,000</u>
TOTAL	<u>\$ 7,835,300</u>	<u>\$ 9,624,300</u>

Gilman Hall Systems Upgrade

Source of Funds: Capital Appropriations

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
<u>Prior Board Approvals</u>			
Permission to Proceed		May 1992	Approved
Engineering Agreement (KJWW Engineering Consultants)	\$ 100,000	March 1993	Approved
<u>Current Approval Requests</u>			
Permission to Proceed		June 2000	Requested
Project Description and Total Budget	11,000,000	June 2000	Requested
Engineer Selection to Complete Design Services (KJWW Engineering Consultants)		June 2000	Requested

Various mechanical systems which serve the 1965 addition to Gilman Hall are in danger of complete failure. The air handling systems are at maximum capacity which allows little room for replacement air. In addition, the deteriorated fume hood exhaust ducts do not adequately disperse fumes high above the building roof. The current activities of the Gilman Hall occupants, which include the Departments of Chemistry, Chemistry Stores and Shops, Material Science and Engineering, and the Ames Laboratory, require much more intensive fume hood exhaust than was designed into the original building.

In addition to replacement of the air handling systems in the 1965 addition, the project will replace the penthouse air handlers in the original 1914 sections of Gilman Hall which will provide additional make-up air for the entire building. The project will also include exterior masonry repairs including chip repair, tuckpointing, and caulking to reduce water infiltration.

The majority of planning and design services for the project were completed in anticipation of funding for the project prior to July 1993. However, the remaining design services were put on hold at that time pending future State funding for the project. Because of the critical need for this work to proceed as quickly as possible, and the fact that the project design is 90 percent complete, the University recommends the selection of the original project engineer, KJWW Engineering Consultants, to complete design services for the project. The firm also provided engineering services for previous remodeling projects in Gilman Hall and therefore is very familiar with the Gilman Hall building systems. The University will return to the Board for approval of the negotiated agreement.

Project Budget

Construction Costs	\$ 8,952,500
Professional Fees	1,409,600
Relocation	100,000
Project Contingency	<u>537,900</u>
TOTAL	<u>\$ 11,000,000</u>

Knapp/Storms/Wallace/Wilson Pre-Cast Concrete Façade Panel Maintenance
Source of Funds: Dormitory System Surplus Funds

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		June 2000	Requested
Project Description and Total Budget	\$ 1,500,000	June 2000	Requested
Engineering Agreement (Construction Technology Laboratories)	213,000	June 2000	Requested

This project will be undertaken in response to a study completed by Construction Technology Laboratories, of Skokie, Illinois, to determine the cause and extent of deterioration of the concrete façade panels at the four residence halls, which were constructed between 1965 and 1967. (A map showing their location is included as an attachment on page 20.) The study determined that the pre-cast panels at the Knapp and Storms residence halls exhibit significant distress, including cracked delaminated and spalled concrete due to the embedment of reinforcing steel and the poor quality of concrete used to manufacture the pre-cast panels. In addition, the structural connections that were used to attach the pre-cast panels to the concrete structure exhibit moderate corrosion in all four facilities. The study determined that 16 percent of the connection straps have failed, resulting in offsets to the pre-cast panels of approximately one-quarter inch or more. The sealant joints are hard and brittle with no flexibility, resulting in a lack of weather tightness to the façade system.

The University proposes to undertake temporary structural anchoring repairs to the pre-cast panels of the Knapp and Storms facilities to extend the useful life of each for three years. The University hopes to demolish these two facilities, consistent with the Residence System Master Plan, as it proceeds with the additional projects planned for the residence system. It does not wish to spend significant amounts of money on repairs to the exterior of buildings which will ultimately be demolished.

The University proposes long-term structural repairs and sealant joint replacement to the façade systems of the Wallace and Wilson facilities. These repairs are expected to extend the life cycle of each façade system by approximately 15 years.

The project will complete all exterior work of the facilities prior to December 2000. All interior work will be completed during the summer of 2000. The interior work will address primarily the panel anchorage systems for Wallace and Wilson halls. This will include cutting and patching of drywall, painting, and some asbestos abatement.

The University requests Board approval of a new agreement with Construction Technology Laboratories to provide engineering services for the recommended repairs. The firm was selected by the University due to its extensive expertise in the field of forensic engineering, its knowledge of the specific situation resulting from completion of the feasibility study, and the urgency of completing the interior portion of the work prior to the fall 2000 semester. The University has indicated that Construction Technology Laboratories specializes in this specific engineering field, and that the same level of expertise is not available from an Iowa firm.

The agreement will provide full engineering services for the project for a fee of \$123,000, including reimbursables.

Project Budget

Construction Costs	\$ 1,195,600
Professional Fees	<u>304,400</u>
TOTAL	<u>\$ 1,500,000</u>

Hilton Coliseum—Interior Handrails

Source of Funds: Hilton Coliseum Surplus Funds

Project Summary

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

The handrails will be installed to improve safety and accessibility in the parquet and mezzanine areas which currently do not have handrails. With completion of this project, handrails will be provided for all permanent seating areas in Hilton Coliseum.

The University anticipates commencing the work in September of this year with completion in October. This schedule would allow the work to be completed prior to beginning construction on the Hilton Coliseum Improvements project, which is currently scheduled to commence in November 2000.

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

Project Budget

Construction Costs	\$ 218,000
Professional Fees	54,500
Project Contingency	<u>27,500</u>
TOTAL	<u>\$ 300,000</u>

Veterinary Medical Research Institute (VMRI)—Building 29 Interior Repairs

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Project Description and Total Budget	\$ 263,000	June 2000	Requested

The project will include interior epoxy finishes for the walls, ceiling and floor, and replacement of a plumbing fixture and door in compliance with current National Institutes of Health standards.

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

Project Budget

Construction Costs	\$ 217,500
Professional Fees	41,100
Project Contingency	<u>4,400</u>
TOTAL	<u>\$ 263,000</u>
Source of Funds:	
General University Funds	\$ 200,000
Building Repair Funds	<u>63,000</u>
TOTAL	<u>\$ 263,000</u>

Carver Co-Laboratory

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		Dec. 1999	Approved
Project Description and Total Budget	\$ 7,000,000	Dec. 1999	Approved
Architectural/Engineering Agreement— Schematic Design & Site Planning (Brooks Borg and Skiles)	150,000	March 2000	Approved
Revised Project Budget	9,200,000	June 2000	Requested
Architectural Amendment #1 (Brooks Borg and Skiles)	48,000	June 2000	Requested

This project will construct a facility which will function as the center of research activities for the Plant Sciences Institute, which was established by the Board in September 1999. The co-laboratory will provide a facility where scientists from Iowa State University, private industry, and the world can meet in a collaborative and interactive environment to conduct state-of-the-art plant research and address critical issues in plant science. The co-laboratory will emphasize and promote interdisciplinary collaboration within the plant sciences and other core areas of the University, such as molecular biology, plant physiology, and classical plant breeding, molecular genetics, physics, and mathematics.

The revised budget of \$9,200,000 reflects an increase of \$2,200,000 for an expanded project scope to provide additional space to support interdisciplinary collaboration with biochemical research and to accommodate a major researcher in the facility. As a result, the building size will increase by approximately 4,400 net square feet to accommodate additional laboratory, office and support staff space. The additional funding for the revised budget will be provided by General University funds and the ISU Foundation.

The University also requests approval of Amendment #1 in the amount of \$48,000 to the agreement with Brooks Borg and Skiles. The amendment will provide compensation for the additional design services for the expanded project scope.

Project Budget

	Initial Budget <u>Dec. 1999</u>	Revised Budget <u>June 2000</u>
Construction Costs	\$ 5,283,700	\$ 7,204,000
Professional Fees	1,010,100	1,262,000
Movable Equipment	223,200	230,000
Relocation	21,300	26,500
Contingency	<u>461,700</u>	<u>477,500</u>
TOTAL	<u>\$ 7,000,000</u>	<u>\$ 9,200,000</u>
Source of Funds:		
General University Funds	\$ 1,600,000	\$ 2,575,000
Agriculture Experiment Station	250,000	250,000
Restricted Funds	750,000	750,000
ISU Foundation	<u>4,400,000</u>	<u>5,625,000</u>
TOTAL	<u>\$ 7,000,000</u>	<u>\$ 9,200,000</u>

Institutional Roads—Iowa State Center Parking Lots Rehabilitation

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		Nov. 1999	Approved
Project Description and Total Budget	\$ 1,529,200	Nov. 1999	Approved
Engineering Agreement (Snyder and Associates)	125,068	Nov. 1999	Approved
Revised Project Budget	1,591,200	June 2000	Requested

This project will reconstruct, repair and resurface various deteriorated areas of the parking lots which serve the Iowa State Center, and the north/south drives through the parking areas. The revised budget of \$1,591,200, an increase of \$62,000, will allow award of the construction contract for the project by the Iowa Department of Transportation. One bid was received for the project in the amount of \$1,689,086 which exceeded the total project budget. In order to facilitate award of the construction contract, the bid was negotiated down to \$1,312,272, which reflects the removal of two parking areas from the construction contract and a reduced scope for the pavement overlay for one of the drives. However, the negotiated award still requires a revised project budget in order to provide sufficient construction funds for the contract.

Project Budget

	<u>Initial Budget Nov. 1999</u>	<u>Revised Budget June 2000</u>
Construction Costs	\$ 1,302,700	\$ 1,374,000
Professional Fees	207,000	201,400
Project Contingency	<u>19,500</u>	<u>15,800</u>
TOTAL	<u>\$ 1,529,200</u>	<u>\$ 1,591,200</u>
Source of Funds:		
Institutional Roads Funds	\$ 531,200	\$ 663,200
Parking Systems	450,000	338,000
Federal Transportation Grant (City of Ames)	420,000	432,000
Iowa State Center	<u>128,000</u>	<u>158,000</u>
TOTAL	<u>\$ 1,529,200</u>	<u>\$ 1,591,200</u>

MacKay Hall—Food Science and Human Nutrition Laboratory Renovation

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Project Description and Total Budget	\$ 150,000	May 1998	Exec. Dir. *
Revised Total Project Budget	455,000	May 1999	Approved
Architectural Agreement (RDG Bussard Dikis)	51,000	June 1999	Approved
Revised Total Project Budget	755,000	June 2000	Requested

* Approved by the Executive Director in accordance with Board procedures for projects under \$250,000.

This project will remodel space in the Food Science and Human Nutrition Laboratory in MacKay Hall and will include the installation of new heating, ventilating and air conditioning systems, and kitchen and telecommunications equipment. The improvements are based on a feasibility study undertaken for the laboratory area which indicated the need to renovate the space to provide modern, safe teaching facilities, utilizing state-of-the-art equipment and teaching technologies.

The University is proceeding with the improvements in accordance with available funding for the project. The current project, based on the revised budget approved in May 1999, includes renovation of approximately 1,560 gross square feet, or approximately one-fourth of the total laboratory area. The proposed revised budget of \$755,000, an increase of \$300,000, will allow the project to include an additional 1,200 gross square feet of space for a total project area of 2,760 gross square feet (approximately one-half of the total laboratory area). The University will proceed with additional renovation work as funding is available.

The additional funding for the revised budget will be provided by General University funds and the ISU Foundation.

	<u>Revised Budget May 1999</u>	<u>Revised Budget June 2000</u>
Construction Costs	\$ 304,000	\$ 509,300
Professional Fees	75,000	142,800
Movable Equipment	30,500	70,000
Contingency	<u>45,500</u>	<u>32,900</u>
TOTAL	<u>\$ 455,000</u>	<u>\$ 755,000</u>
Source of Funds:		
General University Funds	\$ 425,000	\$ 650,000
Agriculture Experiment Station	30,000	30,000
ISU Foundation	<u>0</u>	<u>75,000</u>
TOTAL	<u>\$ 455,000</u>	<u>\$ 755,000</u>

Buchanan Hall Suite Renovation—Feasibility Study
Source of Funds: Dormitory System Surplus Funds

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Agreement for Feasibility Study (Wells Woodburn O'Neil)	\$ 64,600	June 2000	Requested

The feasibility study will identify building deficiencies and recommend upgrades, and provide schematic design services, construction cost estimates, and life-cycle cost analysis for the recommended upgrades. The results of the feasibility study will be used by the University to guide future renovation work for the residence facility.

Board approval of the feasibility study is required in accordance with Procedural Guide §9.05, which requires Board approval of feasibility studies for which the fee exceeds \$50,000.

Engineering Teaching and Research Complex

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		May 1993	Approved
Planning Funds	\$ 2,190,700	July 1996	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
Architectural Agreement—Phase 1 (Brooks Borg and Skiles)	748,000	Nov. 1996	Approved
Architectural Amendments #1 - #6	304,985		Approved
Architectural Amendment #7	17,800	June 2000	Requested

The installation of the audio/visual equipment includes construction of a metal frame to house the projection screen and the associated mechanical/electrical work.

Included in the University's capital register for Board ratification are six project budgets under \$250,000, two amendments which were approved by the University in accordance with Board procedures, four construction contracts awarded by the Executive Director, the acceptance of seven 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

