

Contact: Sheila Doyle

**REGISTER OF IOWA STATE UNIVERSITY CAPITAL IMPROVEMENT  
BUSINESS TRANSACTIONS AND BUILDING NAMING**

**Actions Requested:** Consider approval of:

1. Schematic design for the **Biorenewables Complex**, a major capital project as defined by Board policy, and project description and budget (\$32,000,000) for the **Biorenewables Research Laboratory** component of the project.
  - a. Acknowledge receipt of the University's final submission of information for the **Biorenewables Research Laboratory** to address the Board's capital project evaluation criteria (see Attachment A);
  - b. Accept the Board Office recommendation that the **Biorenewables Research Laboratory** project meets the necessary criteria for Board consideration; and
  - c. Approve the schematic design for the **Biorenewables Complex**, and project description and budget (\$32,000,000) for the **Biorenewables Research Laboratory** project, with the understanding that this approval will constitute final Board approval for the **Biorenewables Research Laboratory** and authorization to proceed with construction.
2. The naming of the **Biorenewables Complex** Agricultural and Biosystems Engineering office wing as "Virgil B. Elings Hall," subject to Board approval of the schematic design for the Complex.
3. Revised project budget (\$22,123,000) for the **Memorial Union Renovation** project.

**Executive Summary:** The **Biorenewables Complex** project (formerly named Agricultural and Biosystems Engineering) would construct a 123,805 net square feet (218,441 gross square feet) building complex which would house the University's biorenewable research initiatives by consolidating the Department of Agricultural and Biosystems Engineering and the Office of Biorenewable Programs. The Complex would consist of three building components: the **Biorenewables Research Laboratory** (35,522 net square feet, 60,403 gross square feet), the Agricultural and Biosystems Engineering office wing, and the Agricultural and Biosystems Engineering research and teaching laboratory wing (the latter two components would total 88,283 net square feet, 158,038 gross square feet). In addition, a separate parking structure would be constructed adjacent to the Complex.

Funding has been secured for the **Biorenewables Research Laboratory**; the 2007 General Assembly authorized \$32 million for the construction project. The Agricultural and Biosystems Engineering components of the project, which are anticipated to cost \$66.5 million, would be financed by future capital appropriations/academic building revenue bonding authorization and private giving. The parking structure, at an estimated cost of up to \$22 million, would be funded by parking system reserves and/or the sale of Parking System Revenue Bonds.

The Complex has been designed so that each wing can be constructed and operated independently. Since funding has been authorized for the **Biorenewables Research Laboratory**, the University wishes to proceed with construction of this wing, subject to Board approval of the schematic design. The project budgets for the remaining building components will be forwarded for Board approval at future dates, with evaluation criteria, subject to funding availability.

The Complex would be constructed on the vacant land located immediately south of the College of Design and north of Howe Hall on the University's west campus. (A map is included as Attachment B.)

Subject to Board approval of the schematic design for the **Biorenewables Complex**, the University also requests approval to name the Agricultural and Biosystems Engineering office wing after Virgil B. Elings of Santa Barbara, California, in recognition of his generous gift to the construction project.

The revised budget for the **Memorial Union Renovation** project (\$22,123,000) would expand the project scope to incorporate development of a new Admission's Visitor Center, which will serve as the main point of destination to campus for visitors and guests of the Office of Admissions; the purchase and installation of food service and merchandise display equipment for the new MU Market and Café, and design revisions to improve the store's operation and function; and the extension of fire sprinkler coverage to those areas of the Union currently without fire sprinklers.

The budget increase of \$1,265,000 would be funded by ISU Dining, private giving, Facilities Overhead Use Allowance, Student Affairs, and Income from Treasurer's Temporary Investments.

**Detail of Projects:**

**Biorenewables Complex**

Project Summary

	Amount	Date	Board Action
Permission to Proceed		Sept. 2006	Approved
Initial Review and Consideration of Capital Project Evaluation Criteria		Sept. 2006	Received Report
ISU Bioeconomy Proposal		Feb. 2007	Approved
Report on University's FY 2008 Capital Plan		Aug. 2007	Approved
Use of Construction Manager Program Statement		Aug. 2007 Jan. 2008	Approved Not Required
Schematic Design		Feb. 2008	Requested
<u>Biorenewables Research Laboratory</u>			
Project Description and Total Budget	\$ 32,000,000	Feb. 2008	Requested
Final Review and Consideration of Capital Project Evaluation Criteria		Feb. 2008	Requested

The design booklet is included with the Board's meeting materials.

Each of the three wings of the Biorenewables Complex would consist of a basement level and four stories above grade. In the **Biorenewables Research Laboratory**, the basement level would house mechanical, electrical, storage, and support space; the main level would house offices and teaching and research labs; and levels two through four would house research labs, classrooms, and offices.

The Agricultural and Biosystems Engineering laboratory wing would house laboratory space on all levels for teaching, research, and these combined functions. The Agricultural and Biosystems Engineering office wing would house an auditorium, classroom, and mechanical and storage areas on the basement level, and offices, student support areas, and an additional classroom on the remaining levels.

The three wings would be connected by an 8,000 square foot atrium space that would provide shared display and multi-purpose space at the first level.

Each of the three wings would be constructed of brick veneer with aluminum window systems; the Biorenewables Research Laboratory would feature brick of a lighter color than that used for the Agricultural and Biosystems Engineering wings. The atrium would feature glass and aluminum curtain wall systems.

The parking structure would be located immediately to the west of the Biorenewables Complex. The structure has a projected capacity of 600 vehicles; however, the University is evaluating the option of including offices for the Police Division of the ISU Department of Public Safety within the proposed parking structure, which would reduce the total vehicle capacity to 450. The parking structure would be constructed of pre-cast concrete with brick masonry.

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

Detailed Building Program

Agricultural and Biosystems Engineering

Specialized Research/Teaching Labs	42,290	
Offices	16,840	
General Teaching Labs	14,883	
Administration	6,650	
Classrooms	6,000	
Support Space	<u>1,620</u>	
Total Net Assignable Space		88,283 nsf
Anticipated Gross Square Feet		158,038 gsf
Anticipated Net-to-Gross Ratio = 56 percent		

Biorenewables Research Laboratory

Research/Teaching Labs	23,777	
Office Space	10,125	
Support Space	<u>1,620</u>	
Total Net Assignable Space		35,522 nsf
Anticipated Gross Square Feet		60,403 gsf
Anticipated Net-to-Gross Ratio = 59 percent		

West Campus Parking Structure<sup>1</sup>

Police Division Office (under evaluation)

Support	5,702	
Administration	2,670	
Meeting Space	2,280	
Storage	<u>1,628</u>	
Total Net Assignable Space		12,280 nsf
Anticipated Gross Square Feet		21,037 gsf
Anticipated Net-to-Gross Ratio = 58 percent		

Parking Division Office

Support	1,520	
Administration	1,300	
Storage	775	
Meeting Space	<u>240</u>	
Total Net Assignable Space		3,835 nsf
Anticipated Gross Square Feet		6,792 gsf
Anticipated Net-to-Gross Ratio = 56 percent		

<sup>1</sup>The size of the parking area, without the Police Division office, would total 207,700 gsf (600 vehicles); with inclusion of the Police Division office, the size of the parking area would be reduced to 155,769 gsf (450 vehicles).

The University anticipates bidding the **Biorenewables Research Laboratory** in September 2008 for completion by January 2010. (Design services for the two Agricultural and Biosystems Engineering wings, and the parking structure, will not proceed further until funding for the projects is obtained.)

Project Budget

Construction	\$ 26,100,000
Professional Fees	4,350,000
Movable Equipment	900,000
Relocation	140,000
Contingencies	<u>510,000</u>
TOTAL	<u>\$ 32,000,000</u>
Source of Funds:	
Capital Appropriations	<u>\$ 32,000,000</u>

Subject to Board approval of the schematic design for the **Biorenewables Complex**, the University requests Board approval to name the Agricultural and Biosystems Engineering office wing as "Virgil B. Elings Hall." Mr. Elings, of Santa Barbara, California, has pledged a \$5 million major leadership gift to the University in support of the Biorenewables Complex. This generous contribution reflects Mr. Elings' regard for philanthropy and the impact of Iowa State University on his career.

Mr. Elings received a B.S. in mechanical engineering from Iowa State University in 1961, and a Ph.D. in physics from MIT. He was a faculty member at the University of California-Santa Barbara where he taught physics for 25 years. In 1987, he founded Digital Instruments, a firm specializing in the development of tunneling microscopes.

Mr. Elings has been a very generous contributor to a variety of non-profit organizations, including projects at Grand View College in Des Moines. He has high regard for the concepts of inventing and creativity, and he particularly values education that emphasizes the creativity of young people.

In recognition of his contributions to technology and education, Iowa State University wishes to name the Agricultural and Biosystems Engineering office wing for Mr. Elings.

**Memorial Union Renovation**

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		Jan. 2002	Approved
Architectural Agreement—Pre-Design Services (Herbert Lewis Kruse Blunck, Des Moines, IA)	\$ 116,400	April 2002	Approved
Architectural Amendment #1	18,200		Not Required*
Architectural Amendment #2	51,500	June 2003	Not Required**
Initial Review and Consideration of Capital Project Evaluation Criteria		July 2003	Received
Program Statement—Phase 1		July 2003	Approved
Architectural Agreement—Phase 1 Schematic Through Construction Phase Design Services (Herbert Lewis Kruse Blunck, Des Moines, IA)	1,276,585	July 2003	Approved
Architectural Amendment #1 (Herbert Lewis Kruse Blunck, Des Moines, IA)	81,800	Nov. 2003	Not Required**
Final Review and Consideration of Capital Project Evaluation Criteria		April 2004	Received Report
Schematic Design—Phase 1		April 2004	Approved
Project Description and Total Budget—Phase 1	17,000,000	April 2004	Approved
Architectural Amendment #2 (Herbert Lewis Kruse Blunck, Des Moines, IA)	169,600	Dec. 2004	Not Required**
Construction Contract—Phase 1 – Bids Rejected		April 2005	Not Required**
Revised Project Budget	19,900,000	June 2005	Approved
Revised Project Budget	20,858,000	Nov. 2005	Approved
Revised Project Budget	22,123,000	Feb. 2008	Requested

\* Approved by University in accordance with Board procedures.

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

Project Budget

	Revised Budget <u>Nov. 2005</u>	Revised Budget <u>Feb. 2008</u>
Construction	\$ 17,032,160	\$ 17,698,179
Professional Fees	3,129,840	3,570,821
Movable Equipment	436,530	594,530
Relocation	23,500	23,500
Project Contingency	<u>235,970</u>	<u>235,970</u>
TOTAL	<u>\$ 20,858,000</u>	<u>\$ 22,123,000</u>
Source of Funds:		
Memorial Union Revenue Bonds	\$ 14,600,000	\$ 14,600,000
Student Fee Revenue	2,300,000	2,300,000
Private Giving	1,000,000	1,400,000
University Book Store Improvement Funds	1,000,000	1,000,000
Memorial Union System Fund	1,000,000	1,000,000
Telecommunications Improvement and Extension Fund	480,000	480,000
ISU Dining	338,000	458,000
Facilities Overhead Use Allowance	0	345,000
Student Affairs	0	200,000
Income from Treasurer's Temporary Investments	0	200,000
Printing Services	100,000	100,000
Memorial Union	<u>40,000</u>	<u>40,000</u>
TOTAL	<u>\$ 20,858,000</u>	<u>\$ 22,123,000</u>

Biorenewables Complex

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 Iowa State University Strategic Plan has an overall goal to "Create, Share and Apply Knowledge to Make Iowa and the World a Better Place". This project will help to achieve that goal. Universities are rated on the basis of departmental strengths. BRL and ABE are closely aligned with the university's biorenewable initiatives and have the potential to be rated as the top departments of their kind in the nation.

BRL builds on Iowa State University's goal to be a key resource supporting the state of Iowa's efforts to become a world leader in the development of biofuels and other products from renewable resources. The highly collaborative nature of the research, the opportunity to design new and innovative curricula, the opportunity to support the agriculture industry in Iowa and the world, and the establishment of a sustainable bioeconomy, all support the mission of Iowa State University.

ABE has been a leader in the field for many years and is currently ranked in the top two agricultural engineering departments in the country. Graduates of ABE have excelled in leadership roles nationally and internationally. Graduates of the program help supply the rising demand for technically trained people to serve the agri-business industries and expanding bioeconomy.

Global events are revolutionizing the agricultural and pharmaceutical industries and have led to the urgent need for a facility to house BRL and ABE. With a new facility, and future funding, the department can be a national leader in developing engineering skills to support the rapidly growing biotechnology industry and to support the bioeconomy initiative on the Iowa State University campus.

Other Alternatives Explored: BRL and ABE are located in numerous buildings around campus and adequate space does not exist for biorenewables to be housed in one building. The amount of space needed is significant, and the type of space required has highly specialized infrastructure needs. Building a new space designed for scientific research and instruction is the only reasonable option.

Impact on Other Facilities and Square Footage: To meet the needs of both BRL and ABE a complex of 123,805 nsf is being proposed. This is broken down to 35,522 nsf for BRL and 88,283 nsf for ABE. The complex will allow both BRL and ABE to function in one complex and Because the funding is not available to construct the entire Biorenewables Complex at this time, each project will be treated separately and have individual budgets. The Biorenewables Research Laboratory will be constructed first. Only the BRL budget is included at this time for approval. Project funding of \$32.0 million for BRL will be provided by capital appropriation.

Existing spaces scattered across campus will be freed-up for other research within those departments. Davidson Hall (40,000 GSF) will be razed. The department will vacate about 20,000 GSF in the National Swine Research and Information Center, and about 30,000 GSF in Industrial Education II. They will also vacate approximately 5,000 GSF in the Old Library Storage Building

Financial Resources for Construction Project: Project funding of \$66.5 million for ABE will be provided by capital appropriation of \$53,900,000 and private funds, university or college resources of \$12,600,000.

Project funding of \$16.55 million for the 600 stall parking ramp will be provided by parking system reserves/parking system bonds.

Project funding of \$22.0 million for the 450 stall parking ramp and offices will be provided by parking system reserves/parking system bonds. not be scattered in numerous buildings across campus. The new space being proposed will support research laboratories and associated support space, instructional teaching laboratories, computer laboratories, classrooms, as well as administrative spaces, and display spaces. The new space will allow existing research and bring new research in the biorenewables field to be achieved in one complex.

Financial Resources for Operations and Maintenance: The estimated operations and maintenance costs of the complex are:

BRL: Funded through the general fund.  
Operations and Maintenance - \$126,000  
Utilities - \$242,000  
Repair and Replacement - \$211,000  
Other (Grounds/Mail/EHS/DPS) - \$53,000

ABE: Funded through the general fund  
Operations and Maintenance - \$378,000  
Utilities - \$724,000  
Repair and Replacement - \$633,000  
Other (Grounds/Mail/EHS/DPS) - \$160,000

External Forces: The success of the Biorenewables Complex partners has created a need.

BRL: Goal to be a key resource in the state of Iowa's efforts to become a world leader in biofuels and other products from renewable sources.  
Support the agriculture industry in Iowa by creating, sharing, and applying knowledge.  
Support the establishment of a sustainable bio-economy.

ABE: Currently one of the top two agricultural engineering departments in the country.  
Graduates supply the demand for technically trained people serving the agri-business industries.

To continue achieving these goals, the Biorenewables Complex will need to retain and recruit the very best faculty and graduate students. The interdisciplinary association amongst BRL, ABE, other university, and Federal programs is critical to the university's goals to "Become the Best".

