

Contact: Joan Racki

REGISTER OF IOWA STATE UNIVERSITY
CAPITAL IMPROVEMENT BUSINESS TRANSACTIONS

Action Requested: Consider recommending approval of:

1. The following actions for the **Biosciences Facilities – Bessey Hall Addition** and **Biosciences Facilities – Advanced Teaching and Research Building** projects, major capital projects 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 A for Bessey and Attachment B for Advanced Teaching and Research);
 - b. Accept the Board Office recommendation that the projects meet the necessary criteria for Board consideration;
 - c. Approve the demolition of the Industrial Education II Building, the site for the new Advanced Teaching and Research Building; and
 - d. Approve the schematic designs, and project descriptions and budgets for the facilities (Bessey Hall Addition - \$28,000,000 and Advanced Teaching and Research - \$52,000,000).

Executive Summary:

The University requests approval of the schematic designs and project descriptions and budgets for the **Biosciences Facilities: Bessey Hall Addition** and **Advanced Teaching and Research Building**; the projects are part of a holistic, comprehensive plan to address the programmatic space needs of the biosciences programs. The **Bessey Hall Addition** project would construct a 12,611 gross square foot addition to the east side of Bessey Hall and renovate space within the building to house teaching and research laboratories and support spaces, as well as classrooms and informal collaboration space for the Departments of Ecology, Evolution, and Organismal Biology (EEOB) and Genetics, Development and Cell Biology (GDCB). The location of Bessey Hall at the corner of Osborn Drive and Farmhouse Lane is shown in the schematic design booklet included with the Board's agenda materials. The project budget of \$28,000,000 would be funded by state appropriations.

The **Advanced Teaching and Research Building** would be constructed at the corner of Stange Road and Pammel Drive, on the existing Industrial Education II building site. (The location is shown in the schematic design booklet included with the Board's agenda materials.) The University is requesting permission to demolish the Industrial Education II facility. The new facility of approximately 121,600 gross square feet would house portions of the Entomology, Genetics, Development and Cell Biology, and Plant Pathology and Microbiology (PLPM) Departments. Included would be spaces for research and related support, offices, advanced teaching, formal and informal collaboration spaces, PLPM administrative spaces, plant diagnostic clinic and a general university lecture hall. The hall would be used for instruction, symposia, and outreach activities. The project budget of \$52,000,000 would be funded by state appropriations, University funds and private giving.

Details of the Projects:

Biosciences Facilities: Bessey Hall Addition and Advanced Teaching and Research Building

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
<u>Both Components: Bessey Hall Addition and Advanced Teaching and Research Building</u>			
Selection of The S/L/A/M Collaborative (Glastonbury, CT) for Planning Study		Feb. 2013	Not Required*
Facilities Planning Study Project Description and Budget	\$591,500	May 2013	Not Required*
Professional Services Agreement with The S/L/A/M Collaborative	552,718	July 2013	Not Required*
Board of Regents FY 2015 Capital Request		Sept. 2013	Approved
Permission to Proceed with Project Planning		Feb. 2014	Approved
Initial Review and Consideration of Capital Project Evaluation Criteria		Feb. 2014	Received Report
Selection of The S/L/A/M Collaborative for Programming		Feb. 2014	Approved
Consideration of Use of Alternative Delivery Method		Feb. 2014	Approved
Program Statement		Oct. 2014	Not Required*
<u>Bessey Hall Addition</u>			
Authorization to Use Construction Manager – Agent		Dec. 2014	Not Required*
Design Professional Agreement (Rohrbach Associates; Iowa City)	\$ 2,043,185	Feb. 2015	Not Required*
Selection of Construction Manager – Agent (The Weitz Co; Des Moines)		May 2015	Not Required*
Schematic Design		June 2015	Requested
Project Description and Budget	28,000,000	June 2015	Requested
Final Review and Consideration of Capital Project Evaluation Criteria		June 2015	Requested

Project Summary (continued)

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
<u>Advanced Teaching and Research Building (ATRB)</u>			
Authorization to Use Construction Manager at Risk		Feb. 2015	Not Required*
Design Professional Agreement (OPN Architects; Des Moines)	\$ 4,389,915	Mar. 2015	Not Required*
Selection of Construction Manager at Risk (McGough Construction Co; Cedar Rapids)	2,570,564**	May 2015	Not Required*
Demolition of Industrial Education II (site for ATRB)		June 2015	Requested
Schematic Design		June 2015	Requested
Project Description and Budget	52,000,000	June 2015	Requested
Final Review and Consideration of Capital Project Evaluation Criteria		June 2015	Receive Report

*Approved by Executive Director, consistent with Board policies

**Anticipated fee and reimbursables

Bessey Hall Addition

To serve increased student enrollment in the biosciences, the Bessey Hall Addition would house expanded undergraduate teaching labs, as well as two general university classrooms on the first two levels. The third level will be reserved for flexible research laboratories and support space. The fourth level would be shelled for future research laboratories.

The Bessey Hall Addition, a four-story structure, overlooks Farmhouse Lane to the east; it is orientated north and south and is aligned with adjacent facades. The exterior skin would be a combination of glass and opaque materials, compatible with the surrounding facilities.

Other design aspects include:

- Aligning all floors of the new addition with those of Bessey Hall, allowing for a seamless, lateral flow of research and teaching functions between the existing facility and the new addition;
- Building a four-story atrium between Bessey Hall and the new addition to allow natural daylight to reach all four floors;
- Maximizing the efficiency of research and teaching by locating support spaces within close proximity; and
- Implementing sustainable building design practices and specifying energy efficient building systems.

The following table summarizes the changes between the approved program and the schematic design:

<u>Function</u>	<u>Program Net Assignable Square Feet</u>	<u>Schematic Design Net Assignable Square Feet</u>
<u>Bessey Addition</u>		
Teaching Labs and Support	12,000	12,000
Research Labs and Support	9,000	9,000
Classrooms	4,000	4,000
Informal Collaboration Space	<u>900</u>	<u>6,170</u>
Total	25,900	31,170
Shell Space (4 th floor)	12,800 gsf*	12,611 gsf*
<u>Bessey Renovation</u>		
Research Labs and Support	3,090	3,090
Office and Support	2,390	2,390
Core Facilities and Specialized Support	<u>2,400</u>	<u>2,400</u>
Total	7,880	7,880

gsf – gross square feet

Project Budget

Construction	\$23,247,950
Planning, Design, and Management	4,019,550
Furniture & Equipment	232,500
Contingency	<u>500,000</u>
TOTAL	<u>\$28,000,000</u>
Source of Funds:	
State Appropriations	<u>\$28,000,000</u>

It is anticipated that the design development and construction document phases will be completed by winter 2015; the project will bid in early 2016; and construction will be substantially complete by summer 2017.

Advanced Teaching and Research Building

The Industrial Education Building II, located at the corner of Stange Road and Pammel Drive and built in 1926, was evaluated as part of the Biosciences Planning Study. The building systems are past their useful life and there is extensive deferred maintenance. The majority of the functions previously housed in the building were relocated to the Biorenewables Complex. The University requests approval to demolish the facility; it would become the site for the new

Advanced Teaching and Research Building. The estimated cost of the demolition is \$500,000, which would be funded by the Advanced Teaching and Research Building project budget. The demolition would eliminate more than \$3 million in deferred maintenance.

Research space is at the heart of the building design, with supporting spaces in a radial array around the research area to maximize the efficiency of the research enterprise. The more public functions, such as collaboration areas, teaching labs, the lecture hall, building commons, and receiving are located on the first floor of the building. Research support spaces are located on each floor, as well as in the basement. Faculty and graduate offices, as well as informal and formal collaboration spaces, are located on each of the three research floors to support critical functional adjacencies. The fifth floor would be built as shell space, to be fit-out at a later date. The roof would house a greenhouse complex, along with the necessary mechanical space to serve the building.

The new building has been designed with a five story façade facing Pammel Drive and will respond to the broader contextual attributes of this zone of campus. This facade features a four story masonry element to reduce the scale of the south façade to better relate to its surrounding context along Pammel Drive. The entrance is marked by a four story cantilevered metal panel glass object that contains offices and collaboration spaces. This object floats over the first floor glass form that defines the entrance lobby. This architectural form will address the major views of campus from the eastern approach. The penthouse would be clad in mostly brick and held back from Pammel Drive to reduce the impact of shadows and provide room for the greenhouses.

The following table summarizes the changes between the approved program and the schematic design:

<u>Function</u>	<u>Program Net Assignable Square Feet</u>	<u>Schematic Design Net Assignable Square Feet</u>
<u>Advanced Teaching and Research</u>		
Research Labs and Support	30,060	29,866
Offices and Support	10,260	12,161
Greenhouse and Support	9,470	8,432
Teaching Labs and Support	3,600	3,483
Classroom and Outreach	3,150	3,288
Formal Collaboration Space	2,700	3,125
Core Facilities and Support	1,500	1,476
Departmental and Building Support	1,360	1,157
Informal Collaboration Space	<u>1,200</u>	<u>3,254</u>
 Total	 63,300	 66,242
Shell Space (5 th floor)	20,000 gsf*	19,141 gsf
gsf – gross square feet		

Project Budget

Construction	\$43,801,000
Planning, Design, and Management	7,165,680
Furniture & Equipment	650,000
Contingency	<u>383,320</u>
TOTAL	<u>\$52,000,000</u>

Source of Funds:	
State Appropriations	\$22,000,000
University Funds	20,000,000
Private Giving	<u>10,000,000</u>
TOTAL	<u>\$52,000,000</u>

It is anticipated that the design development and construction document phases will be completed by winter 2015; the project bid in early 2016, and construction substantially complete by spring 2018.

**Bessey Hall Addition
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 state of Iowa and Iowa State University are home to the nation's largest biotechnology enterprise. The Biosciences are a central core to the mission of Iowa State University and play an important part in helping the university achieve its mission and strategic plan. These nationally and internationally recognized departments support the university's goals of learning, discovery and engagement. Nearly every student at Iowa State University has experiences in science laboratories in support of the learning goal of the strategic plan. These students participate in the "Science with Practice" that is an important part of the university's land-grant heritage. Creating an undergraduate biology teaching hub within the academic core of campus by enhancing and expanding teaching space in Bessey Hall directly supports the vision and values of the institution. The departments also excel in the discovery goal by supporting visionary faculty and graduate students with programs in basic and applied science.

Other Alternatives Explored: A comprehensive planning study completed in 2014, identified long-term programmatic space needs for the biosciences and recommended construction of an addition to Bessey Hall to provide needed space for teaching and research labs to support the departments of: Ecology, Evolution, and Organismal Biology (EEOB) and Genetics, Development and Cell Biology (GDCB). Space vacated in Bessey by the move of Plant Pathology to the new Advanced Teaching and Research Building will allow essential functions to be relocated from Science II and the Molecular Biology Building. EEOB will be able to consolidate their departmental activities to one location, GDCB will be able to achieve discipline-based consolidations.

Adequate space to meet the needs of the biosciences departments is not currently available in the existing spaces. There is no vacant space available in adjacent buildings, the amount of space needed is significant, and the type of space required has highly specialized infrastructure needs. The schedule for teaching labs has been extended to accommodate enrollment; labs are scheduled from 7:00 AM to 10:00 PM most days. Building new space designed for scientific instruction and research is the only reasonable option available.

To assist in meeting current and future needs there will be 7,880 gsf that will be renovated and modernized within the existing space of Bessey Hall.

Impact on Other Facilities and Square Footage: To meet current and future program needs, an additional 31,170 net assignable square feet is required. Significant additional space is being proposed to expand teaching labs, replace general university classrooms lost when Industrial Education II is demolished, research lab expansion is a critical component as well. All support the current and future programmatic space needs of the biosciences.

Financial Resources for Construction Project: Project funding of \$80 million will be provided by state appropriations of \$50,000,000 and the remaining \$30,000,000 will be provided through private giving and university funds for the two Biosciences projects; Bessey Hall Addition and Advanced Teaching and Research Building.

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

Operations and Maintenance - \$95,000; Utilities - \$280,000

Methods used to determine the costs: Estimates of the Operating Budget Impact are based on actual costs and metered utilities for existing space and correlation with similar building types.

Operation and maintenance funding will be by Colleges of Agriculture and Life Sciences and Liberal Arts and Sciences.

External Forces Justifying Approval: Bioscience-related businesses and industries represent an important component to Iowa's economy and are projected to be a major factor in the state's continued economic growth. The vision of the Biosciences is to:

- Increase the capacity and enhance the capabilities to support multi-disciplinary and applied research across multiple departments and colleges;
- Create critical capabilities for high-quality, experiential learning environments;
- Create facilities for Extension and Outreach; and
- Focus on the new and advanced STEM opportunities.

Retaining and recruiting the very best faculty, graduate and undergraduate students is critical to achieving these goals. The interdisciplinary association that these departments have with other university and federal programs is a critical part of the university's goals and aspirations to "Become the Best".

Advanced Teaching and Research Building
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 state of Iowa and Iowa State University are home to the nation's largest biotechnology enterprise. The Biosciences are a central core to the mission of Iowa State University and play an important part in helping the university achieve its mission and strategic plan. These nationally and internationally recognized departments support the university's goals of learning, discovery and engagement. Nearly every student at Iowa State University has experiences in science laboratories in support of the learning goal of the strategic plan. These students participate in the "Science with Practice" that is an important part of the university's land-grant heritage. The departments also excel in the discovery goal by supporting visionary faculty and graduate students with programs in basic and applied science.

Other Alternatives Explored: A comprehensive planning study completed in 2014, identified long-term programmatic space needs for the biosciences and it was determined that adequate space to meet the needs of the biosciences departments is not currently available in the existing spaces occupied by the departments. There is no vacant space available in the adjacent buildings, the amount of space needed is significant, and the type of space required has highly specialized infrastructure needs. Building new space designed for scientific research and instruction is the only reasonable option available.

Impact on Other Facilities and Square Footage: To meet current and future program needs, an additional 66,000 net assignable square feet is required. Significant additional space is being proposed to support research activities with additional research labs and associated support space, and instructional activities with teaching labs and classrooms. All are critical to supporting the current and future programmatic space needs of the biosciences.

As an outcome of a comprehensive planning study, space vacated in Bessey Hall and Science II due to the moves into the Advanced Teaching and Research Building (ATRB) will be reallocated to the departments of: Ecology, Evolution, and Organismal Biology, Genetics, Development and Cell Biology, Entomology, and Natural Resource Ecology and Management at the conclusion of the project. This will support departmental and discipline-based consolidations, expand capabilities and capacities for teaching and research, and allow the demolition of antiquated, obsolete structures.

Financial Resources for Construction Project: Project funding of \$80 million will be provided by state appropriations of \$50,000,000 and the remaining \$30,000,000 will be provided through private giving and university funds for the two Biosciences projects; Bessey Hall Addition and Advanced Teaching and Research Building.

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

Operations and Maintenance - \$433,000; Utilities - \$570,000

Methods used to determine the costs: Estimates of the Operating Budget Impact are based on actual costs and metered utilities for existing space and correlation with similar building types.

Operation and maintenance funding will be by Colleges of Agriculture and Life Sciences and Liberal Arts and Sciences.

External Forces Justifying Approval: Bioscience-related businesses and industries represent an important component to Iowa's economy and are projected to be a major factor in the state's continued economic growth. The vision of the Biosciences is to:

- Increase the capacity and enhance the capabilities to support multi-disciplinary and applied research across multiple departments and colleges;
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