

Contact: Sheila Doyle

REGISTER OF UNIVERSITY OF IOWA
CAPITAL IMPROVEMENT BUSINESS TRANSACTIONS

Actions Requested: Consider approval of:

1. Permission to proceed with project planning for the **Dental Science Building – Construct Addition – Phase 1** project, and **Lindquist Center – Upgrade Utility Support Systems for Room 14** project; both are 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; and
 - c. Authorize permission to proceed with project planning, including the architectural selection process for the **Dental Science Building – Construct Addition – Phase 1** project, and the selection of Stanley Consultants for the **Lindquist Center – Upgrade Utility Support Systems for Room 14** project.
2. Permission to proceed with project planning, and the selection of Stanley Consultants, Muscatine, Iowa, for the **Oakdale Renewable Energy Plant – Central Chilled Water Production** project.
3. Permission to proceed with project planning, and the selection of Shive-Hattery, Cedar Rapids, Iowa, for the **Oakdale Renewable Energy Plant – Mechanical Distribution** project.

Executive Summary: The **Dental Science Building – Construct Addition – Phase 1** project was outlined with the University's presentation of the College of Dentistry Master Plan at the October 2007 meeting. The Master Plan identifies the need for substantial renovation and expansion of the Dental Science Building to more efficiently respond to the requirements of modern dental patient care (including patient accessibility and changing patient populations); medical technology and research; and the need for additional instructional space to accommodate enrollment growth.

The College of Dentistry has graduated approximately 80 percent of Iowa's dentists and receives approximately 125,000 annual patient visits. The Dental Science Building, and its fixtures and equipment, have had few improvements since completion of construction in 1973. The development of modern, efficient, and convenient facilities is necessary for the College to continue to attract outstanding students to meet the growing need for dentists across Iowa and the nation, and to continue to attract patients to support the College's clinical operations.

The University has proposed a two-phase project which includes construction of a clinic addition (Phase 1) at a cost of approximately \$17 million, and renovation of existing clinic and research areas, including improvements to correct deferred maintenance (Phase 2), at a cost of approximately \$20 million. As currently envisioned, the Phase 1 project would construct an addition of approximately 33,000 gross square feet at the west end of the south wing of the existing Dental Science Building. (See Attachment C for map.) The addition would feature an accessible clinic entrance and 48 dental operatories of expanded size to provide additional space

for clinical education and faculty practice. The new operatories would be available for use during the Phase 2 renovation project to allow the College to continue its clinical operations.

The estimated Phase 1 project cost of \$17 million would be funded by a combination of College of Dentistry gifts and clinical earnings, and Income from Treasurer's Temporary Investments.

To assure design coordination between the two project phases, the selected design consultant would provide design services for the Phase 1 construction project, and preliminary planning and programming for the Phase 2 renovation project.

Oakdale Renewable Energy Plant Projects

In August 2007, the University presented its Power Plant Systems Improvements Master Plan which addressed the possible development of an Oakdale Renewable Energy Plant. The proposed plant would use alternative and renewable energy sources to serve the existing and proposed buildings on the Oakdale Campus. The plant would be developed by converting the existing utility infrastructure at the Oakdale Campus through the upgrade of utility production and distribution systems.

In December 2007, the Board approved two projects to upgrade the Oakdale electrical generation and distribution systems (at estimated costs of \$6 million and \$7 million, respectively). The electrical generation project would install two new generators to allow the Oakdale Power Plant to provide centralized electrical power generation using either natural gas (for back-up electrical power) or renewable biogas (for primary power). The University reports that the resulting cogeneration opportunities (the use of waste heat from electric power production) will significantly lower heating and cooling costs when compared to decentralized systems.

The proposed **Oakdale Renewable Energy Plant – Central Chilled Water Production** project would install chilled water production equipment with cogeneration capabilities. The chillers would utilize several technologies to maximize the flexibility, reliability and efficiency of the equipment. The anticipated project cost is \$5 million.

The University wishes to retain the firm of Stanley Consultants, Muscatine, Iowa, to provide engineering services for the project. Stanley Consultants is the project engineer for the electrical generation upgrade at the Oakdale Power Plant; the University reports that the efficiency of the chilled water project would be optimized when designed in conjunction with the electrical generation system.

The **Oakdale Renewable Energy Plant – Mechanical Distribution** project would install mechanical distribution piping to provide heating and cooling from the Oakdale Power Plant to the new buildings proposed for the Oakdale Campus. The anticipated project cost is \$3 million.

The University wishes to retain the firm of Shive-Hattery, Cedar Rapids, Iowa, to provide engineering services for the project. Shive-Hattery is the project engineer for the upgrade of the electrical distribution system on the Oakdale Campus; the University reports that efficiencies and cost savings may be realized through the use of the same engineering firm for both the mechanical and electrical distribution systems.

Both projects would be funded by the sale of Utility System Revenue Bonds, Utility System user charges, and capital assessments to the new projects planned for the Oakdale Campus. The University also will be seeking federal and state grant support for developing renewable energy sources.

The **Lindquist Center – Upgrade Utility Support Systems for Room 14** project would upgrade this communications and data hub to provide the necessary cooling, power, security, and fire safety systems for its current functions. Room 14, which was originally designed to house a mainframe computer, now serves as a secondary data center for campus-wide academic and administrative information technology services. The room’s current and future usage necessitates the upgrade of cooling and power systems to accommodate modern communications and data equipment. The University plans to operate Room 14 as a primary communications hub and secondary data center following completion of the proposed University Data Center on the Oakdale Campus. (The Board granted permission to proceed with the Data Center project in August 2007.)

The project would install an additional chiller and upgrade the existing generator to provide back-up cooling and power systems for Room 14. The project would also update fire wall separations in accordance with current building codes, and install a smoke detection/fire suppression system.

The estimated project cost of \$2,978,000 would be funded by a combination of Information Technology Services earnings and Income from Treasurer’s Temporary Investments.

The University reports that the project cost was initially estimated at less than \$1 million; therefore, the University proceeded with the selection of the engineering consultant, Stanley Consultants of Muscatine, Iowa, in accordance with Board procedures. The firm was selected due to its technical engineering expertise and knowledge of the specific project requirements. Now that the estimated project cost exceeds \$2 million, which requires the convening of an institutional committee to select the engineering consultant, the University wishes to waive this requirement and continue to use the services of Stanley Consultants for the project.

Details of Projects:

Dental Science Building – Construct Addition – Phase 1

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
College of Dentistry Master Plan Report		Oct. 2007	Received
Permission to Proceed		Feb. 2008	Requested
Initial Review and Consideration of Capital Project Evaluation Criteria		Feb. 2008	Requested

Oakdale Renewable Energy Plant – Central Chilled Water Production

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		Feb. 2008	Requested
Selection of Stanley Consultants, Muscatine, IA		Feb. 2008	Requested

Oakdale Renewable Energy Plant – Mechanical Distribution

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		Feb. 2008	Requested
Selection of Shive-Hattery, Cedar Rapids, IA		Feb. 2008	Requested

Lindquist Center – Upgrade Utility Support Systems for Room 14

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed		Feb. 2008	Requested
Initial Review and Consideration of Capital Project Evaluation Criteria		Feb. 2008	Requested

Dental Science Building – Construct Addition – Phase 1

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: This project addresses the University’s strategic goal of “cultivation of excellent graduate and professional programs, and to advance the research and scholarly enterprise”.

The College of Dentistry’s mission and strategic plan are based on three components: 1) the education of students as dentists and dental specialists, 2) conducting research into aspects of oral diseases and the delivery of oral health care, and, 3) service to the community, state and the profession.

Completion of this project will provide the College of Dentistry with modern clinical education and treatment facilities to attract both students and patients. The best students use facilities as a major criterion when considering which dental school to attend. The College of Dentistry facilities will soon be 40 years old.

Patients have many choices for the source of their dental care. Modern and convenient facilities are essential to attract sufficient patients to provide an adequate quantity of clinical experiences for the education of dental students. In addition, with the growing disparity between the salaries of dental faculty and private practitioners, there is an increased reliance on clinical income as a funding source. As such, modern, attractive, and efficient clinical facilities are also necessary to attract the best faculty and patients who contribute to clinical revenue.

The University of Iowa College of Dentistry enjoys a national reputation as a leader in the care of geriatric and special needs patients. The College does not have an appropriately accessible entrance serving its clinical patient population. Given that it is a healthcare facility, it is necessary to provide appropriate entry accommodations.

Cutting edge research requires contemporary facilities to compete for external funding. The proposed addition will allow some student functions to vacate existing space that can then be reprogrammed as research space.

Other Alternatives Explored: An analysis, conducted by an external consultant and the College, determined that the current building footprint was insufficient to accommodate the educational, clinical treatment and research needs of the College. Additional space is required to provide dental operatories, research facilities and instructional spaces that meet current standards.

Impact on Other Facilities and Square Footage: This project will not result in the abandonment, transfer or demolition of existing facilities.

Financial Resources for Construction Project: The project will be funded by a combination of College of Dentistry gifts and clinical earnings, and University allocations from Treasurer’s Temporary Investment income.

Financial Resources for Operations and Maintenance: The source of funds to cover the operating and maintenance requirements will be Operations & Maintenance funds, indirect costs and collegiate overhead.

External Forces: In order to attract outstanding students to meet the growing needs for dentists in Iowa and the nation, the College needs modern and efficient facilities.

The College's increased reliance on clinical revenue for the College operational expenses requires facilities that are modern, accessible, attractive and convenient to patients.

Lindquist Center – Upgrade Utility Support Systems for Room 14

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 communications facility located in Room 14 of the Lindquist Center (LC) is a major campus communications infrastructure hub. Room 14 is in the basement of the south building. Room 14 (LC-14) also serves as a secondary or augmented data center for academic and administrative systems used in providing information technology (IT) services campus wide.

Key existing systems housed in the LC-14 facility include:

- Campus network traffic routing and primary internet connections
- Qwest Communications point of presence for off-campus calling including local, long distance and 911 calls
- Iowa Communications Network (ICN) point of presence for the main campus services and UIHC
- Main network hub facilities for the regional optical network interconnecting other in-state and Big Ten Universities
- Primary and secondary back-up for various administrative and academic computing systems and applications
- Back-up storage area for network systems
- Telephone switch for a major portion of campus
- Fiber and copper cable plants that support various information technology services (ITS) systems

The primary objective of the proposed project is to correct problems related to environment conditioning, capacity and reliability. The proposed improvements would allow for the efficient use of the space and to accommodate the addition of significantly more computer systems. Meeting these objectives requires:

- Addressing inadequate cooling and electrical power needs
- Providing back-up for the existing and proposed power loads
- Improving security
- Installing fire detection and suppression systems consistent with the function of the space
- Correction of code deficiencies

As a result of these inadequacies, ITS is unable to fully utilize this space. Deploying additional equipment in LC-14 in its present state only increases risk of losing these critical computing services.

Other Alternatives Explored: Leased data center space was explored as an alternative to these project upgrades. A consultant was commissioned to evaluate space in the City of Iowa City's communications facility to house a portion of the University's server operations. The recommended modifications necessary to meet University requirements did not produce a favorable financial option. An on-campus facility also allows the University to take advantage of lower campus-generated utility rates. The project as planned for the Lindquist Center will be highly complementary with the University's proposed new data center on the Oakdale Campus.

Impact on Other Facilities and Square Footage: There will be no change in square footage as the project involves the upgrading of an existing data center.

Financial Resources for Construction Project: The project will be funded through a combination of ITS earnings and Treasurer's Temporary Investment earnings.

Financial Resources for Operations and Maintenance: The space is currently maintained by University of Iowa Facilities Management and will continue to be upon completion of this project. Additional annual operating costs will be borne by Information Technology Services. Additional costs of O&M are allocated to users of ITS services.

External Forces: LC-14 is currently conditioned using the original building mechanical equipment which does not offer reliable year-round cooling. During unseasonably warm winter days, this system is unable to adequately cool the room, thereby jeopardizing communications equipment and computer servers housed within the room. An outage of any of the services provided via the IT equipment in LC-14 would adversely impact the ability of the University to conduct routine business.

A recent audit of the UI primary data center noted that the University has inadequate secondary facilities. Renovating LC-14 would allow the UI to provide an acceptable secondary facility.

