MEMORANDUM

To: Board of Regents

From: Board Office

Subject: Register of University of Iowa Capital Improvement Business Transactions for Period of August 21, 2003, Through September 17, 2003

Date: October 6, 2003

Recommended Actions:

1. Approve the following items for the major capital projects, as defined by Board policy adopted in June 2003, included on the Register of Capital Improvement Business Transactions for the University of Iowa.

    a. **Medical Laboratories—Biological Safety Level 3 Facility** project (see pages 4 and 5).

        1. Approve the program statement for the project.

    b. **University Hospitals and Clinics—Magnetic Resonance Imaging (MRI) Systems Installation** project (see pages 6 through 10);

        1. Acknowledge receipt of the University's final submission of information to address the Board's capital project evaluation criteria (pages 9 and 10);

        2. Accept the Board Office recommendation that the project meets the necessary criteria for Board consideration; and

        3. Approve the program statement, schematic design, and project description and budget ($2,131,000), with the understanding that this approval will constitute final Board approval and authorization to proceed with construction.

c. **University Hospitals and Clinics—Positron Emission Tomography Imaging Center Expansion** project (see pages 11 through 15);

1. Acknowledge receipt of the University's final submission of information to address the Board's capital project evaluation criteria (pages 14 and 15);

2. Accept the Board Office recommendation that the project meets the necessary criteria for Board consideration; and

3. Approve the schematic design and project description and budget ($2,460,000), with the understanding that this approval will constitute final Board approval and authorization to proceed with construction.

d. **West Campus Chilled Water Plant Development/Expansion** project (see pages 16 through 19).

1. Acknowledge receipt of the University's final submission of information to address the Board's capital project evaluation criteria (pages 18 and 19);

2. Accept the Board Office recommendation that the project meets the necessary criteria for Board consideration; and

3. Approve the project description and budget ($39,400,000), with the understanding that this approval will constitute final Board approval and authorization to proceed with construction.

e. **University Hospitals and Clinics—Institute of Neurological Disease Development** project (see pages 21 and 22).

1. Approve the architectural agreement with Shiffler and Associates, Des Moines, Iowa ($74,000).

2. Approve the remainder of the items on the Register of Capital Improvement Business Transactions for the University of Iowa.

Executive Summary:

Requested Approvals

Program statement for the **Medical Laboratories–Biological Safety Level 3 Facility** project which would construct a Biosafety Level 3 (BSL-3) facility on the roof of the Medical Laboratories building on the Health Sciences Campus to support anticipated biodefense-related research initiatives (see page 4).

The following major capital projects were initiated prior to the Board's adoption of the policy for major capital projects in June 2003. The University submitted information that the Board Office believes meets the Board's evaluation criteria for major capital projects. The recommended Board actions would authorize the University to proceed with construction for each project.

- Program statement, schematic design, and project description and budget ($2,131,000) for the **University Hospitals and Clinics—Magnetic Resonance Imaging (MRI) Systems Installation** project which would replace one of three existing MRI units and develop a fourth MRI procedure suite to meet current and future demand for MRI services (see page 6).
    - The schematic design is included as Attachment A to this docket memorandum.
- Schematic design and project description and budget ($2,460,000) for the **University Hospitals and Clinics—Positron Emission Tomography Imaging Center Expansion** project which would expand the Center to accommodate the installation of a replacement PET scanner and a new PET/CT scanner to provide state-of-the-art patient diagnostic imaging services (see page 11).
    - The schematic design is included as Attachment B to this docket memorandum.
- Project description and budget for the **West Campus Chilled Water Plant Development/Expansion** project ($39,400,000) which would construct an addition to the existing plant to increase its chilled water capacity to serve the expanding needs of the west campus and Arts Campus (see page 16).
    - The schematic design was approved by the Board in June 2003.

Project description and budget for the **University Hospitals and Clinics—UI Heart Care Electrophysiology Laboratory Renovation** project ($625,000) which would renovate space for the installation of a state-of-the-art biplane angiographic imaging system (see page 19).

Architectural agreement with Shiffler and Associates, Des Moines, Iowa ($74,000) for the **University Hospitals and Clinics—Institute of Neurological Disease Development** project which would renovate space in the General Hospital to support the collaborative needs of the Carver College of Medicine Department of Neurology (see page 21).

Amendment #2 ($71,942) to the engineering agreement with Shive-Hattery for the **Parking Ramp Maintenance 2003** project for additional design services related to the emergency repairs to Hospital Parking Ramp #1 (see page 22).

Background and Analysis:

Medical Laboratories–Biological Safety Level 3 Facility

Project Summary

	Amount	Date	Board Action
Permission to Proceed with Project Planning		July 2003	Approved
Architectural Selection (Rohrbach Carlson, Iowa City, IA)		July 2003	Approved
Initial Review and Consideration of Capital Project Evaluation Criteria		July 2003	Received Report
Architectural Agreement (Rohrbach Carlson, Iowa City, IA)	$ 120,000	Sept. 2003	Approved
Program Statement		Oct. 2003	Requested

Background

The National Institutes of Health have indicated plans to invest $1.7 billion to $1.8 billion per year over the next three years in biodefense-related research grants and contracts.

The Carver College of Medicine anticipates securing a portion of this funding for three major new research initiatives in microbiology and infectious diseases specifically relating to biodefense pathogens and Severe Acute Respiratory Syndrome (SARS).

The three programs would require development of a Biological Safety Level 3 (BSL-3) containment facility on the Health Sciences Campus to work with these very contagious microbial pathogens; such a facility is necessary for the Carver College of Medicine to remain competitive for these programs.

Project Scope

The project would construct a BSL-3 facility as a penthouse on the northeast roof area of the Medical Laboratories building on the Health Sciences Campus.

Anticipated Cost/Funding

Estimated at $1.1 million, to be funded by Carver College of Medicine Gifts and Earnings.

Program Statement

The BSL-3 project would provide a containment facility for scientists to work with agents that may cause serious or potentially lethal disease in the event of exposure and inhalation.

- The facility would be designed to prevent exposure to these agents for the individuals within the facility and to prevent the escape of these agents to the outside environment; the facility would include a dedicated mechanical system and emergency generator to ensure containment.

The facility would include four tissue culture rooms, an equipment room, laboratory support areas (sterilizers, dedicated toilet/shower room, locker room, and tank room), animal housing and microscopy areas, and an office.

The facility would be used for research work by graduate students, postdoctoral fellows, and occasionally undergraduate students.

Square Footage Table

The following table provides the detailed square footages for the BSL-3 Facility.

Detailed Building Program

Tissue Culture (4)	716		
Equipment Room	473		
Laboratory Support	320		
Animal Housing and Procedure	131		
Microscopy Area	104		
Office	95		
Total Net Assignable Space		1,839	nsf
Total Gross Square Feet		3,108	gsf

Net-to-Gross Ratio = 59 percent

University Hospitals and Clinics—Magnetic Resonance Imaging (MRI) Systems Installation

Project Summary

	Amount	Date	Board Action
Master Plan Study—Feasibility Study Agreement (HDR, Architects, Des Moines, IA)	$ 99,310	Nov. 2002	Approved
Permission to Proceed with Project Planning		June 2003	Approved
Architectural Agreement—Design Development Through Construction Phase Services (HDR, Architects, Des Moines, IA)	92,530	June 2003	Approved
Final Review and Consideration of Capital Project Evaluation Criteria		Oct. 2003	Requested
Program Statement		Oct. 2003	Requested
Schematic Design		Oct. 2003	Requested
Project Description and Total Budget	2,131,000	Oct. 2003	Requested

Background

The current patient volume of the UIHC Magnetic Resonance Imaging (MRI) Suite, located in the lower level of Colloton Pavilion, exceeds its capacity; over the past two decades, the growth in patient volume has exceeded 700 percent.

The increasing demand for MRI services has created significant scheduling backlogs, which delays the receipt of diagnostic information for patient treatment and disrupts research studies.

The UIHC MRI Suite currently houses three MRI units which were installed in 1988, 1993 and 1998; the oldest unit was upgraded in 1995.

The 1993 unit is technologically obsolete and lacks the image quality of newer generation systems; it can no longer be upgraded which precludes its use for a number of state-of-the-art procedures.

The University has undertaken a feasibility study for the renovation of the MRI Suite to accommodate current and future patient volume.

- The feasibility study, conducted by HDR, Architects, addressed expansion options, reviewed existing equipment and state-of-the-art MRI technology, and developed phasing plans, schedules and cost estimates.

Project Scope

The project would renovate space in the MRI Suite to accommodate two new MRI units; one would replace the existing obsolete 1993 unit, and the other would provide a fourth unit for the MRI Suite.

The project will also renovate adjacent areas including three offices, patient preparation and holding facilities, a staff locker room and lounge and restroom, a research workroom and conference room, and telecommunications and electrical closets.

Program Statement

The replacement MRI unit would provide a state-of-the-art MRI system of equal strength to the existing 1993 unit.

- Installation of the unit would require renovation of an existing procedure room and the adjoining control and equipment areas to accommodate the new system, and installation of a dedicated exhaust system for the equipment.

The new MRI procedure area would house a more powerful MRI system which would provide improved anatomic detail with shorter scan times; this would be the first system of this type in Iowa.

- Installation of this unit would require construction of an additional MRI procedure room, with magnetic and radio frequency shielding, and adjoining control and equipment areas, installation of a dedicated exhaust system, and other associated building modifications.

Schematic Design

The following are highlights of the schematic design for the project, which is included as Attachment A.

The project would renovate the south half of the existing MRI Suite.

- The replacement MRI unit would be installed in the renovated MRI procedure room located along the west wall (identified as MRI #1).

- The new MRI unit would be installed in an MRI procedure room to be developed in the southeast corner (identified as MRI #5).

- Control rooms and computer rooms would be located immediately adjacent to each of the two procedure rooms; a shared patient staging area would be centrally located between the two procedure rooms.

- The conference room, research workroom, three faculty/staff offices, and locker rooms would be located in the southwest corner; a fourth faculty/staff office would be located directly north of MRI procedure room #5.

A new entrance to the MRI Suite would be developed from the Colloton Pavilion corridor to the east.

The following table shows the square footage of the functions within the MRI Suite.

Detailed Building Program

MRI Procedure Rooms (2)	1,062	
Computer/Equipment Rooms (2)	610	
Conference Room and Research Workroom	505	
Faculty and Staff Offices (4)	474	
Control Rooms (2)	363	
Patient Staging Area	318	
Staff Lockers, Lounge and Restroom	239	
Total Net Assignable Space		3,571 nsf

Schedule — The University plans to begin construction in January 2004, with an anticipated completion date of March 2005.

Additional Information — The project would be phased to ensure that the MRI Center remains operational during construction. MRI Center staff with offices affected by the renovation project will be temporarily relocated to other offices

Funding — University Hospitals Building Usage Funds, Carver College of Medicine, Institute of Neurological Diseases, and Department of Radiology.

Project Budget

Construction	$ 1,678,000
Professional Fees	167,000
Planning and Supervision	117,000
Contingencies	169,000
TOTAL	$ 2,131,000

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	Completion of this project will provide expanded, state-of-the-art magnetic resonance imaging (MRI) services that are essential for the UIHC to fulfill its comprehensive patient care mission. It will enable the UIHC to provide greater numbers of clinical and research procedures through development of additional MRI procedure and associated control and computer equipment rooms, as well as to expand existing patient preparation rooms and staff support rooms. The UIHC's educational and research missions will also be enhanced by making available the most up-to-date imaging technology for training radiology residents, fellows and technologists in the application and use of MRI. The project further supports several of the UIHC's Strategic Plan goals, most notably by enabling the UIHC to excel in all aspects of service to our patients and their families and referring providers, by differentiating the UIHC clinically, by facilitating opportunities for operational and clinical efficiencies, by making possible incremental growth in service volume and revenue, and by implementing or enhancing interdisciplinary interaction and collaboration to enrich the patient care, teaching and research missions of the UIHC.
Other Alternatives Explored	The project is required to provide the necessary space and facilities to accommodate the growth in MRI services. The project does not involve expansion of the existing space, only reconfiguring it. The MRI Center was opened 20 years ago and has not undergone any significant renovation for over 12 years. Over the past two decades the majority of MRI Center diagnostic services have shifted from inpatient procedures to those now provided outpatients, although the MRI Center was not designed to accommodate a large outpatient mix or to efficiently handle the large volume of patients currently requiring MRI scans. Almost 4,000 procedures are performed per year on each of three machines, or 12,000 procedures annually. Most market projections predict requests for MRI services will increase by a minimum of 5% per year for the next five years. There are no viable alternatives available to accommodate the growth in services and to make MRI imaging services available to our patients and their physicians. Without upgrades to the space and equipment, it will not be possible for the UIHC to accommodate the clinical and research demand for this technology.
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 through University Hospitals Building Usage Funds acquired from depreciation allowances of third parties underwriting the cost of patient care plus hospital net earnings from paying patients, as well as funds provided by the Roy J. and Lucille A. Carver College of Medicine, the Institute of Neurological Diseases, and Department of Radiology. No state capital appropriated dollars will be involved. The estimated internal rate of return over the life of this project is 14.6%.
Financial Resources for Operations and Maintenance	The source of funds to cover the associated operating and maintenance costs will be hospital operating revenues derived from providing patient care services and indirect cost revenues from research grants.
External Forces	The ability to perform state-of-the-art MRI procedures is critical in meeting the complex diagnostic needs of our patients and their referring physicians. As noted previously, the growth in clinical demand for these services is expected to continue. The MRI Center is already operating second shifts and weekend hours in order to accommodate requests for patient exams, yet there is currently a 5-week scheduling backlog. In addition, many researchers require the latest MRI technology to conduct their research and remain competitive for NIH research funding. This renovation project will ensure that the latest MRI technology will be available to them.

University of Iowa Hospitals and Clinics—Positron Emission Tomography Imaging Center
Expansion

Project Summary

	Amount	Date	Board Action
Permission to Proceed		Sept. 2002	Approved
Architectural Agreement—Schematic Design Services (HDR Architecture, Clive, IA)	$ 40,000	April 2003	Approved
Initial Review and Consideration of Capital Project Evaluation Criteria		July 2003	Received Report
Program Statement		July 2003	Approved
Architectural Agreement—Design Development Through Construction Phase Services (HDR Architecture, Clive, IA)	164,296	Sept. 2003	Approved
Final Review and Consideration of Capital Project Evaluation Criteria		Oct. 2003	Requested
Schematic Design		Oct. 2003	Requested
Project Description and Total Budget	2,460,000	Oct. 2003	Requested

Background

The UIHC Positron Emission Tomography (PET) Imaging Center is located in 5,854 net square feet on the lower level of the John Pappajohn Pavilion.

UIHC reports that the existing PET Imaging Center suffers from a number of deficiencies.

- The Center is operating at maximum capacity, the age of the existing PET scanner cannot provide the desired imaging performance nor accommodate a higher patient volume, and the scanner's localization capabilities are not as accurate as those provided by a combination of PET and CT scanner technologies.

UIHC wishes to renovate and expand the existing PET Imaging Center and install a replacement PET scanner and a new PET/CT scanner.

Project Scope

The project would include the following:

- Expansion of the PET Imaging Center on the lower level of the Pappajohn Pavilion to provide two imaging rooms to accommodate the two new scanners.

- Enclosure and renovation of the lower level of the Pavilion's central atrium, which is located immediately adjacent to the PET Center, to provide the necessary expansion space.

- Renovation and upgrade of a portion of the Center's existing space to house patient and staff support areas and laboratories.

Schematic Design

The following are highlights of the schematic design for the project, which is included as Attachment B.

The southern half of the PET Center would house the two PET scanners and patient support areas.

- The two PET imaging rooms would be located in the atrium expansion space.
- The PET control room, patient consultant room, and staff work area would be located immediately adjacent to the east of the PET imaging rooms.
- Six patient preparation rooms, a changing room and restroom would be located along the corridor immediately adjacent to the west of the PET imaging rooms.
- Additional restrooms, which would be accessible from the pavilion corridor to the east, would be located south of the imaging rooms.

A new centrally-located entrance to the PET Center would be developed from the pavilion corridor to the east; this entrance would be served by a corridor to the Center's patient reception and waiting areas.

The northern half of the PET Center would house staff areas including the research PET imaging and control area (which is proposed to house a future PET unit dedicated for research), laboratories, offices, locker room and restrooms, machine shop, and radiopharmaceutical dispensary.

Square Footage Table

The following table compares the detailed square footages for the schematic design with the square footages in the approved building program.

Detailed Building Program

	Building Program		Schematic Design		
Atrium Expansion Space					
First Level					
Atrium Enclosure Floor Space	1,260		1,260		
Lower Level					
PET Imaging Rooms (2)	1,011		1,011		
Control Room/Technologist Work Area	413	2,684	413	2,684	nsf
Existing Lower Level Space					
Patient Preparation and Holding Rooms (6)	383		558		
Research PET Imaging Area	510		510		
Radiochemistry Laboratory	404		404		
Physics and Electronics Laboratory			281		
Patient Waiting and Reception Area	143		277		
Research Control Room			225		
Staff Offices (2)	351		195		
Staff Locker and Restrooms	121		156		
Machine Shop	156		156		
Patient Restroom/Dressing Room	107		131		
Storage/Linen/Crash Cart	82		92		
Nurse Station			80		
Radiopharmaceutical Dispensary	124		64		
Consultation Area	57	2,438	57	3,186	nsf
Total Net Assignable Space		5,122		5,870	nsf

Program/ Schematic Comparison

The schematic design reflects an increase of 748 net square feet from the approved building program.

The increase is primarily the result of the inclusion in the design of two additional patient preparation rooms (for a total of six rooms) and the associated expansion of patient support areas. The schematic design also incorporates the renovation of space for the Physics and Electronics Laboratory and Research Control Room.

Schedule

The University plans to begin construction in April 2004, with an anticipated completion date of June 2005.

Additional Information

The project would be phased to ensure the PET Imaging Center remains operational at all times.

Funding — University Hospitals Building Usage Funds.

Project Budget

Construction	$ 1,968,000
Professional Fees	196,800
Planning and Supervision	98,400
Contingencies	196,800
TOTAL	$ 2,460,000

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 — Completion of this project will provide the PET Imaging Center with the facilities and imaging technology required for it to meet its mission of providing state-of-the-art diagnostic services to all patients cared for within the UIHC. The UIHC's educational and research missions will also be enhanced by making available the most up-to-date imaging technology for training radiology residents and fellows in the application and use of both conventional PET and PET/CT and to provide physicians and research scientists in the disciplines of Nuclear Medicine, Radiology, Oncology, Radiation Oncology, Otolaryngology, Thoracic Surgery, Urology, Psychiatry and Neurology with the imaging technology required for them to remain competitive in obtaining federal funding for clinical research studies. The project also supports several of the UIHC's current Strategic Plan goals and objectives, most notably by differentiating the UIHC clinically, by enabling the UIHC to excel in all aspects of service to our patients and their families and referring providers, by facilitating opportunities for operational and clinical efficiencies, and by making possible incremental growth in service volume and revenue, and by implementing or enhancing interdisciplinary interaction and collaboration to enrich the patient care, teaching and research missions of the UIHC.

Other Alternatives Explored — The project is required to provide the necessary level of space and facilities to accommodate the growth in PET diagnostic and clinical research volume and to accommodate the installation of a PET/CT scanner. PET/CT represents an entirely new technology that melds the two existing imaging approaches of PET and computed tomography (CT) into a single instrument that superimposes the functional images provided by PET with the anatomical images provide by CT. This information has been shown to be of substantial value in the diagnosis of cancer and assessment of therapeutic interventions. There are no viable alternatives available other than to expand the PET Imaging Center to accommodate this needed growth in diagnostic imaging technology and to make these imaging services available to our patients, their physicians and the researchers for which PET and PET/CT technology is of absolute necessity when conducting research studies.

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 estimated project cost is $2.5 million. The estimated internal rate of return over the life of the project is 11.9%. The project will be funded through University Hospitals Building Usage Funds acquired from depreciation allowances of third parties underwriting the cost of patient care plus hospital net earnings from paying patients. No state capital appropriated dollars will be involved.
Financial Resources for Operations and Maintenance	The sources of funds to cover the associated operating and maintenance costs will be hospital operating revenues.
External Forces	As previously noted, the offering of conventional PET and PET/CT services is vital in enabling the UIHC to meet all elements of its tri-partite mission. Beyond this, the availability of PET and PET/CT imaging technology is required for conducting a number of National Institutes of Health funded clinical research studies. In the aggregate these studies provide several million dollars of funding to University researchers each year. With the absence of space for the additional PET scanning system there is a high probability that future research funding support will be diminished.

West Campus Chilled Water Plant Development/Expansion

Project Summary

	Amount	Date	Board Action
Permission to Proceed		Oct. 2002	Approved
Engineer Selection (Stanley Consultants, Muscatine, IA)		Jan. 2003	Approved
Executive Director Authorization to Approve Schematic Design Agreement		Jan. 2003	Approved
Negotiated Pre-Design and Schematic Design Agreement (Stanley Consultants, Muscatine, IA)	$ 316,900	April 2003	Ratified*
Program Statement		June 2003	Approved
Schematic Design		June 2003	Approved
Initial Review and Consideration of Capital Project Evaluation Criteria		July 2003	Received Report
Engineering Agreement—Design Development and Construction Phase Design Services (Stanley Consultants, Muscatine, IA)	2,159,900	July 2003	Approved
Final Review and Consideration of Capital Project Evaluation Criteria		Oct. 2003	Requested
Project Description and Total Budget	39,400,000	Oct. 2003	Requested

* Approved by Executive Director as authorized by Board in January 2003.

Background

The West Campus Chilled Water Plant provides chilled water service for the academic and medical facilities on the west campus; the plant has a current capacity of 16,000 tons.

- The chilled water plant is located within Hospital Parking Ramp #3, which is located north of Kinnick Stadium.

The plant was constructed in 1970 and the equipment was installed in phases, with the last 3,000 tons of cooling capacity installed in 1988.

The continuing expansion of the west campus and the growth of the Arts Campus will require an increase in the capacity of the West Campus Chilled Water Plant.

In addition, the existing chilled water equipment is beyond or nearing the end of its useful life, increasing the amount of required maintenance.

Project Scope

To address the expanding chilled water needs, the University proposes to construct an addition to the West Campus Chilled Water Plant.

- The proposed addition would increase the chilled water capacity by 12,000 tons, and would provide for future expansion by an additional 4,000 tons; this represents the University's current estimate of future west campus and Arts Campus cooling requirements.

- The building would house three 4,000 ton capacity chillers and mechanical and electrical equipment necessary to support and maintain the chilled water plant operation.

- The University would construct the addition on the site immediately to the north of the West Campus Chilled Water Plant; this is the former site of the outdoor Football Practice Facility.

- The project would also replace the existing equipment in the chilled water plant in a subsequent phase following construction of the addition.

Parking

With the presentation of the program statement and schematic design at the June Board meeting, the University indicated that it would review the economic feasibility of including a parking deck on the top level of the chilled water plant addition and report to the Board whether this option would be pursued.

At this time, the project does not include development of a parking deck; the University wishes to preserve its options for the future addition of either three levels of office space, or one level of parking with two levels of office space.

- The University has indicated that committing to the development of a parking deck at this time would require specific improvements that would then need to be removed if the decision were made to construct the three levels of office space.

The University reports that the chilled water plant has been designed to accommodate either option.

Project Schedule

The University plans to begin the utility relocation work in January 2004 and the building construction in July 2004. The University anticipates that this would allow start-up of the first chiller in August 2005, and full operation of the facility in December 2005.

Funding — Future sale of Utility System Revenue Bonds.

Project Budget	
Construction	$ 31,900,000
Design, Inspection, and Administration	
Consultants	3,200,000
Design and Construction Services	1,300,000
Contingencies	3,000,000
TOTAL	$ 39,400,000

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 supports the institution's mission and strategic plan by supporting all facilities on the West Campus of the University with an efficient and adequate source of chilled water. Centralized chilled water systems are substantially more efficient than smaller, building-specific cooling equipment. The central chilled water facility will replace less efficient cooling equipment and serve increased demand on the west campus.

Other Alternatives Explored — The University uses a central chilled water system to cool campus facilities. Centralized chilled water systems are substantially more efficient than smaller, building specific cooling equipment. The West Campus Chilled Water Plant was initially constructed in the early 1970's to serve the University of Iowa Hospitals and Clinics (UIHC) as well as the west campus Health Sciences. The plant has been upgraded incrementally to keep pace with UIHC and Health Sciences growth. Projected short-term growth in chilled water loads will exceed the existing Plant's capacity by 2005. In addition, the majority of the existing plant equipment is obsolete and has outlived its expected life. This equipment must be upgraded to continue to serve the University's cooling needs -- a future project phase.

The University examined options for meeting the cooling loads in three engineering studies beginning in August 2000. Expanding the current Plant and then following the expansion with a Phase II upgrade of existing Plant equipment is the recommended solution. Failure to increase chilled water production capacity will result in the University not being able to cool classroom, research, and patient care areas.

Impact on Other Facilities and Square Footage — When this project is complete, no facilities will be abandoned, transferred or demolished. However, the overall reliance on central cooling systems will increase and will continue to replace smaller building-based air conditioning.

Financial Resources for Construction Project	The project will be funded by University of Iowa utility revenue bonds. Debt service for the bonds will be funded through the sale of chilled water units (MMBTU's) to the customers of the utility. The University distributes approximately 1.05 MMBTU of cooling and charges its users $ 12.2 million.
Financial Resources for Operations and Maintenance	Operations and maintenance costs are funded from fees charged to the various customers of the chilled water utility in accordance with their chilled water usage. The customers include the UIHC, general fund buildings, athletics, Residence Services and others.
External Forces	Peak loads on the central chilled water system have reached the limit of system capacity and will continue to increase. Further, many of the existing chilled water production units are near the end of their useful lives and need to be replaced. The new chiller units will significantly improve energy efficiency and will reduce unit operations and maintenance costs.

University Hospitals and Clinics—UI Heart Care Electrophysiology Laboratory Renovation

Project Summary

	Amount	Date	Board Action
Project Description and Total Budget	$ 625,000	Oct. 2003	Requested

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Background

The University Hospitals Heart Care electrophysiology laboratory is located in approximately 800 square feet of space in the Carver Pavilion.

The existing electrophysiology imaging unit is nine years old, provides poor image quality and is unreliable.

The University wishes to install a state-of-the-art biplane angiographic imaging system to replace the existing electrophysiology imaging unit.

- The angiographic imaging system features a revolutionary stereotactic positioning and magnetically controlled catheter guidance system which integrates advanced computer programming, state-of-the-art fluoroscopic imaging, and robotically-controlled magnetic guidance.

- In addition to performing current electrophysiologic studies, this imaging system would permit the precise positioning of catheters in blood vessels that are exceedingly difficult or impossible to access with conventional methods, thereby allowing treatment of patients with complex arrhythmias.

The new stereotactic system would significantly improve the scope of the laboratory's cardiac catheterization services with the ability to accommodate more complex cardiac cases with greater reliability and improved imaging quality.

Project Scope

The project would renovate the Cardiac Electrophysiology Laboratory and adjoining rooms to allow installation of a state-of-the-art biplane angiographic imaging system.

- Due to the complexity of the system and the construction requirements associated with the installation, the University plans to undertake the project as a turnkey installation.
    - This installation method would provide a sole source responsibility to minimize coordination complexities and ensure that the new equipment is fully operational as soon as possible.

Funding

University Hospitals Building Usage Funds.

Project Budget

Construction	$ 500,000
Professional Fees	50,000
Planning and Supervision	25,000
Contingencies	50,000
TOTAL	$ 625,000

University Hospitals and Clinics—Institute of Neurological Disease Development

Project Summary

	Amount	Date	Board Action
Feasibility Study (Shiffler and Associates, Des Moines, IA)			Not Required*
Permission to Proceed with Project Planning		July 2003	Approved
Initial Review and Consideration of Capital Project Evaluation Criteria		July 2003	Received Report
Architectural/Engineering Agreement (Shiffler and Associates, Des Moines, IA)	$ 74,000	Oct. 2003	Requested

* Approved by University in accordance with Board procedures.

Background

The University wishes to develop conferencing space to support the collaborative needs of the Department of Neurology of the Carver College of Medicine.

The project would provide a location for University neuroscientists to meet with their national and international colleagues to discuss common areas of interest and collaborate on scientific pursuits.

Project Scope

The project would provide office areas for visiting faculty and fellows and Department of Neurology faculty and staff, and a library and conference room.

The project would renovate approximately 7,000 gross square feet of space currently occupied by the Department of Neurology on the seventh level of the South Wing of the General Hospital.

Anticipated Cost/Funding

Estimated at $1.2 million, to be funded by the Carver College of Medicine and University Hospitals Building Usage Funds.

Design Services

Expressions of interest to provide design services for the project were received from 17 firms. Three firms were selected for interviews with an institutional Architectural Selection Committee, in accordance with Board procedures for projects of $1 million or more.

Based on the Committee's recommendation, the University requests approval of the selection of Shiffler and Asscoiates, Des Moines, Iowa, to provide design services for the project.

- The firm was selected based on its professional qualifications, the quality of its previous work at UIHC, and its overall presentation.

The agreement with Shiffler and Associates would provide design development and construction phase design services for a fee of $74,000, including reimbursables.

- The schematic design services were provided for the project with the feasibility study.

Parking Ramp Maintenance 2003

Project Summary

	Amount		Date	Board Action
Project Description and Total Budget	$ 581,000.00		April 2003	Approved
Engineering Agreement (Shive-Hattery, Iowa City, IA)	58,221.00		April 2003	Approved
Construction Contract Award (Western Waterproofing Company)	351,876.77		June 2003	Ratified
Engineering Amendment #1 (Shive-Hattery, Iowa City, IA)	11,092.00			Not Required*
Construction Contract Award—Roof Replacements (Interstate Roofing and WTP)	42,716.00		Sept. 2003	Ratification**
Revised Project Budget	1,981,000.00		Sept. 2003	Ratification**
Construction Change Order #1 (Western Waterproofing Company)	1,300,000.00	(est.)	Sept. 2003	Ratification**
Engineering Amendment #2 (Shive-Hattery, Iowa City, IA)	71,942.00		Oct. 2003	Requested

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

Background

The project is providing scheduled repairs and maintenance to six campus parking ramps, as recommended by a five-year preventative maintenance study undertaken by the University of its campus parking structures.

- The structures being addressed include the Iowa Memorial Union Parking Ramp, the North Campus Parking Ramp, and four UIHC parking ramps.

Hospital Parking Ramp #1 Emergency Repairs

After discovering serious structural deficiencies in Hospital Parking Ramp #1, the University closed the parking ramp in early August.

A further study of the deficiencies indicated that they are the result of corrosion of the post-tensioning cables used to reinforce the concrete throughout the structure.

- The University reports that the ramp is not in danger of failure with the vehicle load removed.

The University has proceeded with emergency repairs to the parking ramp to repair the structural cables and replace concrete throughout the entire parking structure.

The project engineering firm, Shive-Hattery, consulted with the University on the selected repair method and is providing oversight for the repairs.

Based on its successful assessment of a trial series of repairs, Shive-Hattery recommended repair of the entire parking ramp utilizing the same repair method, which has been used successfully on other parking ramps throughout the country.

The University estimates completion of the work in November 2003.

Engineering Amendment

Amendment #2 ($71,942) to the engineering agreement with Shive-Hattery would provide compensation for the additional design services related to the emergency repairs to Hospital Parking Ramp #1.

This includes the development, evaluation, and analysis of the selected repair method, negotiation of repair costs with the contractor, and expanded construction observation services.

Also presented for Board ratification are two project budgets under $250,000, two construction contracts awarded by the Executive Director, and the acceptance of three completed construction contracts. The register prepared by the University is included in the Regent Exhibit Book.

Sheila Doyle

Approved: Gregory S. Nichols

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