

Contact: Sheila Doyle

REGISTER OF IOWA STATE UNIVERSITY
CAPITAL IMPROVEMENT BUSINESS TRANSACTIONS

Actions Requested: Consider approval of:

1. Schematic design and project description and budget (\$74,500,000) for the **Chemistry Facilities** project, a major capital project 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);
 - b. Accept the Board Office recommendation that the project meets the necessary criteria for Board consideration; and
 - c. Approve the schematic design and project description and budget, with the understanding that this approval will constitute final Board approval and authorization to proceed with construction.
2. Project description and budget (\$4,355,870) for the **Friley Hall – Fire Safety Improvements** project, a major capital project 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 B);
 - b. Accept the Board Office recommendation that the project meets the necessary criteria for Board consideration; and
 - c. Approve the project description and budget, with the understanding that this approval will constitute final Board approval and authorization to proceed with construction.

Executive Summary: The **Chemistry Facilities** project would construct an 82,000 net square foot (135,000 gross square feet) chemical sciences building that would house state-of-the-art classrooms, laboratories and equipment to support modern instruction and research by the Department of Chemistry. The building would provide the additional and upgraded space necessary to support the Department's teaching and research initiatives; this includes attracting and retaining the highest caliber faculty and graduate students, providing exceptional training for students, and accommodating new or increased research initiatives. These needs cannot be met in Gilman Hall, the Department's current home, which was originally constructed in 1913. Despite several renovations, the building is not functional for modern instruction and research and does not meet current health and safety codes.

The **Chemistry Facilities** building would be constructed directly north of Davidson Hall at the current site of the Agricultural Engineering Shed and the Industrial Education 1 building. (A site map is included as Attachment C.)

The project budget of \$74.5 million would be funded by the sale of Academic Building Revenue Bonds and capital appropriations (\$58.9 million) and private giving and University/College resources (\$15.6 million).

The **Friley Hall – Fire Safety Improvements** project would provide a number of fire safety improvements in Friley Residence Hall, which currently houses approximately 1,200 students. The original portion of Friley Hall was constructed in 1927; there have been numerous additions and major renovations over the past 70 years. Only limited portions of the building are protected by a fire sprinkler system, and the building has received citations from the State Fire Marshal's office for various fire protection issues.

The fire safety improvements to Friley Hall would consist of the installation of heat/smoke detection devices, fire alarm and sprinkler systems, and associated utility infrastructure support. Installation of the new systems would be completed in four phases to manage project costs consistent with available funding and to minimize the impact on the building's operations.

The project phases have been designed to minimize disruption to the student residential areas. Since the Phase 1 project is scheduled for January 2008 through July 2008, it will address staff areas throughout the building and a small portion of the student rooms. Phases 2 through 4, scheduled for October through July of the next three years, would address the student rooms. This would begin with the installation of infrastructure to serve the residential areas, followed by the installation of the devices in the individual rooms once they are vacated in the spring. The University will consider completing an additional portion of the Phase 2 work with the Phase 1 project, subject to the project schedule and available funding.

The project budget of \$4,355,870 would be funded by Dormitory System Improvement Funds.

Detail of Projects:

Chemistry Facilities

| <u>Project Summary</u> | | | |
|---|---------------|-----------|-----------------|
| | Amount | Date | Board Action |
| Report on University's Capital Request | | Nov. 2005 | Received Report |
| Initial Review and Consideration of Capital Capital Project Evaluation Criteria | | May 2006 | Received Report |
| Permission to Proceed | | May 2006 | Approved |
| Program Statement | | May 2007 | Not Required |
| Initial Review and Consideration of Capital Capital Project Evaluation Criteria | | Oct. 2007 | Requested |
| Schematic Design | | Oct. 2007 | Requested |
| Project Description and Total Budget | \$ 74,500,000 | Oct. 2007 | Requested |

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

The Chemistry Facilities building would consist of a basement level and three stories above grade. The basement level would house research laboratories that are sensitive to vibration and light. The laboratories would occupy the majority of this level, along with their associated office areas and conference/meeting rooms.

The more public functions would be located on the first floor of the building. These would include the main building entrance and commons/lobby areas along the west wall, and teaching laboratories and pre-laboratory classrooms throughout the majority of this level.

The second and third floors, which are nearly identical, would house synthetic research laboratories and their associated office areas, with faculty offices and conference/meeting areas along the west wall.

The majority of the building would be constructed of brick and zinc panels. The curved west wall, which marks the location of the main entrance/commons (first floor) and faculty offices (second and third floors), would be constructed of aluminum panels and glass.

The schematic design reflects an increase of 2,440 net square feet of space over the approved building program, largely due to an increase in student support areas (commons and study alcoves).

Detailed Building Program

| | <u>Program</u> | <u>Schematic</u> | |
|---|----------------|------------------|-----|
| Research Laboratories and Support | 56,100 | 56,020 | |
| Teaching Laboratories and Support | 11,940 | 12,640 | |
| Instrument Services | 7,110 | 6,410 | |
| Office and Administration | 2,600 | 3,190 | |
| Building Support | 1,120 | 1,100 | |
| Student Support | <u>690</u> | <u>2,640</u> | |
| | | | |
| Total Net Assignable Space | 79,560 | 82,000 | nsf |
| Anticipated Gross Square Feet | 140,000 | 135,000 | nsf |
| Anticipated Net-to-Gross Ratio (schematic) = 60 percent | | | |

The University anticipates bidding the project in July 2008 and substantial completion by August 2010.

Project Budget

| | |
|---|-----------------------------|
| Construction | \$ 60,152,720 |
| Professional Fees | 9,049,350 |
| Movable Equipment | 1,985,970 |
| Relocation | 1,904,010 |
| Contingencies | <u>1,407,950</u> |
| TOTAL | <u>\$ 74,500,000</u> |
| Source of Funds: | |
| Academic Building Revenue Bonds | \$ 53,900,000 |
| Private Giving and University/College Resources | 15,600,000 |
| Capital Appropriations | <u>5,000,000</u> |
| TOTAL | <u>\$ 74,500,000</u> |

Friley Hall – Fire Safety Improvements

Project Summary

| | <u>Amount</u> | <u>Date</u> | <u>Board Action</u> |
|--|---------------|-------------|---------------------|
| Permission to Proceed | | June 2007 | Approved |
| Initial Review and Consideration of Capital Project Evaluation Criteria | | June 2007 | Received Report |
| Selection of Howard R. Green, Cedar Rapids, IA | | June 2007 | Approved |
| Final Review and Consideration of Capital Project Evaluation Criteria | | Oct. 2007 | Requested |
| Project Description and Total Budget | \$ 4,355,870 | Oct. 2007 | Requested |

Project Budget

| | |
|-------------------|---------------------|
| Construction | \$ 3,366,070 |
| Professional Fees | 849,240 |
| Contingencies | <u>140,560</u> |
| TOTAL | <u>\$ 4,355,870</u> |

Source of Funds: Dormitory System Improvement
Funds

Chemistry Facilities

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 Department of Chemistry plays an important part in helping the university achieve its mission and strategic plan. This nationally and internationally recognized department supports the university's goals of learning, discovery and engagement. Nearly every student at Iowa State University has experiences in chemistry 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 department also excels in the Discovery goal by supporting visionary faculty and graduate students with programs in basic and applied science. The Engagement goal strategy is illustrated by the department's long-time association with the Ames Laboratory of the Department of Energy, as well as interactions with community colleges and high schools in the state of Iowa.

The Department of Chemistry is one of the strongest departments on campus, has a national and international reputation. It is currently ranked 26th by the National Research Council. The current state of the space that houses this renowned department (including one member of the National Academy of Sciences) has undergone a series of renovations to improve the infrastructure and the functionality of the space. However, much remains to be done in order to meet health and safety codes and to allow the department to continue to attract the highest caliber faculty and graduate students. In addition, the quantity of space is insufficient to support the department's teaching and research initiatives.

The vision of the Chemistry Department is to:

- Be among the top 5 departments nationally at public universities (the short-term goal is to be in the top 10).
- Raise the stature of Iowa State University through interdisciplinary efforts.
- Achieve the rank of #1 in analytical chemistry for graduate schools in the United States.

To accomplish this vision, the Chemistry Department plans to recruit the best young faculty in the field, make key hires in senior-level positions, retain established faculty, and provide exceptional training for students. The other issue that needs to be considered is providing space for new research initiatives and collaborative efforts. New or increased research initiatives are expected in the areas of polymers and new materials, combinatorial chemistry, forensics, biorenewable and green chemistry. These areas represent directions for growth and development of the Chemistry Department that build on current strengths.

Chemistry facility needs as they relate to program goals:

- Research in chemical synthesis: State-of-the-art air/gas handling facilities, chemical storage, electrical and plumbing systems that are required for equipment for combinatorial chemistry and chemical analysis.
- Analytical instrumentation: Electron microscopes and laser spectroscopic instrumentation demand rigid environmental standards.
- Electronic modernization: On-line libraries and computer-based resource areas for graduate and undergraduate students for data analysis, literature accessibility and contemporary course design are needed to support educational activities.

- Education: Electronically connected classrooms and student help areas are a critical need; the opportunity to connect lab and lecture spaces is important.
- Networking and outreach activities: The Chemistry Department would like to be able to host workshops and conferences for industrial concerns, regional and small national meetings in the chemical sciences, as well as forensic workshops close to the Keck labs.

Other Alternatives Explored: Adequate space to meet the department of Chemistry needs is not currently available in existing Gilman Hall. 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 future program needs, the department needs an additional 100,000 net assignable square feet. Significant additional space is being proposed to support research activities, additional research labs and associated support space, and instructional activities with teaching labs, computer labs, and classrooms, as well as additional space for common instrumentation and shop functions are all critical needs to supporting the department and its vision. The new space will be an addition to Gilman Hall, or directly adjacent, to allow frequent circulation of faculty/staff/students and equipment between new space and existing research laboratories and instrumentation centers in Gilman Hall.

Nearly all of the existing space will be retained by the department at the conclusion of the project. Teaching laboratories in Gilman Hall will be expanded to use vacated research laboratories that move to the new space. Other vacated space will be used to supplement the currently crowded conditions of the chemistry related support centers now located in the building.

Gilman Hall has been through a number of major and minor remodeling projects since a master plan for improvements was developed in 1981. There is still a section of the building that has not been remodeled and the relocation of other parts of the building when the department expands into additional space will allow completion of the original master plan and conversion of some of the vacated space to other users. The Gilman Hall Phase IV project will combine the unfinished part of the master plan with new project scope that converts old Chemistry department space for use by other departments. The conversion goal is to remodel wet chemistry laboratories into spaces that don't require the utility infrastructure that is no longer sufficient in Gilman to support these high demand spaces.

Financial Resources for Construction Project: Project funding of \$74.5 million will be provided by state appropriations of \$58,900,000 and private funds, university or college resources \$15,600,000.

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

- Operations and Maintenance - \$420,000
- Utilities - \$695,000
- Repair and Replacement - \$872,000
- Other (Grounds/Mail/EHS/DPS) - \$182,000

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.

Proposed source of funds: General Fund

External Forces: The vision of the Chemistry Department is to:

- Be among the top 5 departments nationally at public universities (the short-term goal is to be in the top 10).
- Raise the stature of Iowa State University through interdisciplinary efforts.
- Achieve the rank of #1 in analytical chemistry for graduate schools in the United States.

To achieve these goals the department will need to retain and recruit the very best faculty and graduate students. The interdisciplinary association that the department has with other university and federal programs is a critical part of the university's goals and aspirations to "Become the Best".

Friley Hall – Fire Safety Improvements

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 mission of the Department of Residence is to advance the academic mission of Iowa State University by providing quality service and promoting living/learning communities that stimulate, enhance, and extend the total learning experience. Friley Hall is a very large part of the Department of Residence, providing more than 15% of the living space for the department. The building has a very large number of learning communities providing opportunities for students to have a successful university experience in academics, community service and extracurricular activities. The Department of Residence is very popular with first year students with almost 90% choosing on-campus living and Friley Hall is among the favorites because of its proximity to central campus.

Other Alternatives Explored: Friley Hall is a very valuable component of the residence system. The improvements are being made related to the citations issued by the State Fire Marshal's Office.

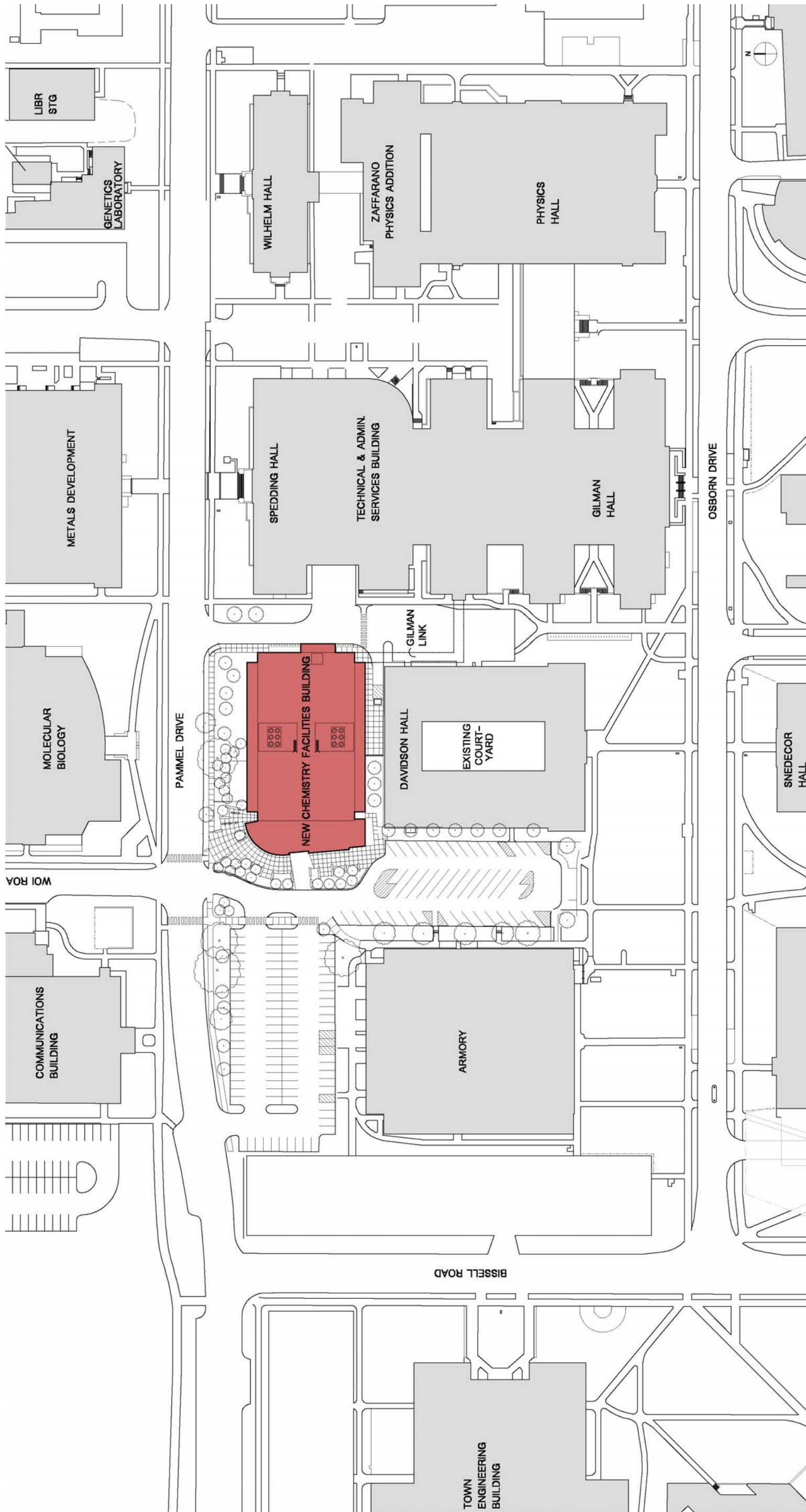
Impact on Other Facilities and Square Footage: The project is a multi-phased project to make fire safety improvements to 363,963 GSF of space. The phases will be timed to match the available financial resources to make improvements and the scheduling opportunities to accomplish the work when students are not in the facility.

Financial Resources for Construction Project: Dormitory System Improvement Fund.

Financial Resources for Operations and Maintenance: No additional operating or maintenance expenses are anticipated because of this project.

External Forces: The State Fire Marshal's office has issued citations that require the university to address identified fire safety deficiencies.

SCHEMATIC DESIGN DRAWINGS



Site Plan