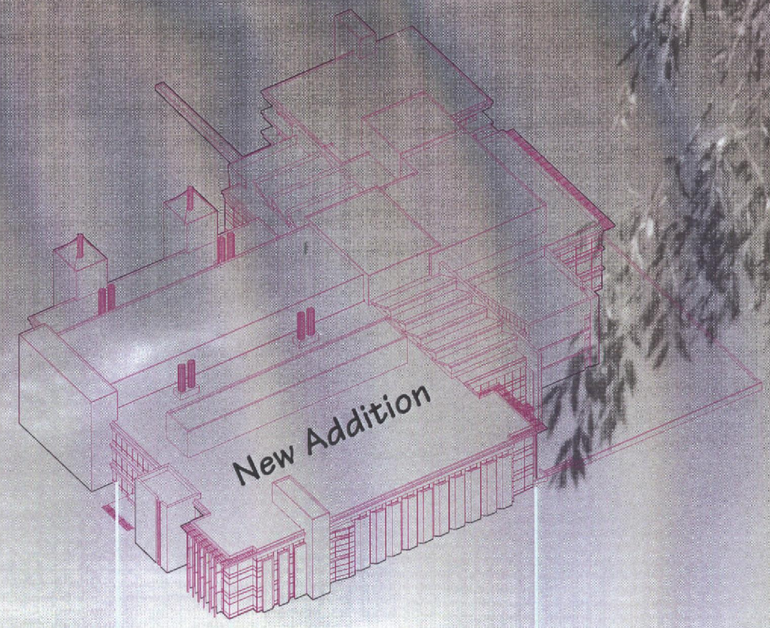
SIU

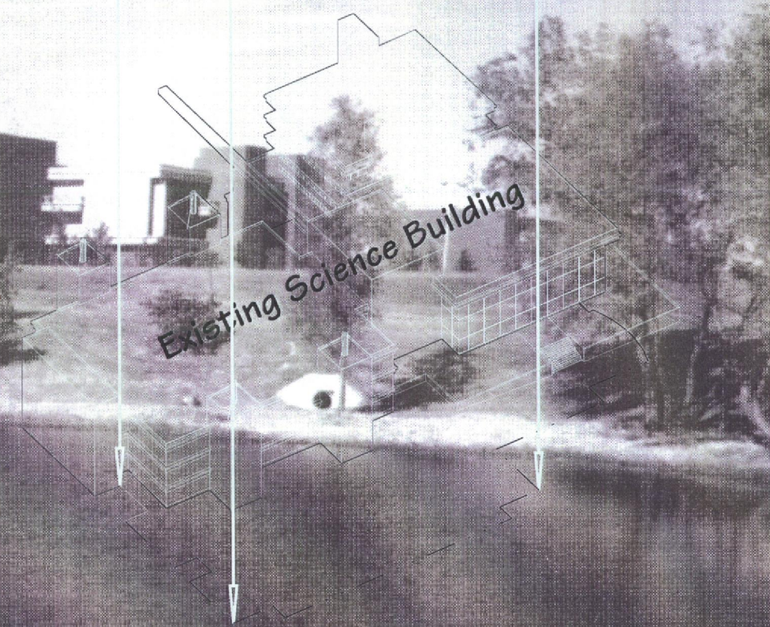
Southern Illinois University Edwardsville

Science Building Renovation

Programming & Concept Phase

September 1999





Hellmuth, Obata & Kassabaum, Inc.
KJWW Engineering Consultants

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St. Louis
Chicago

September 1999

Overview

The US economy is the strongest and the most productive in history. It is in the midst of the longest period of peacetime growth in history. This growth has been fueled by what can only be described as an explosion of scientific discovery and technological innovation. The demand for scientific talent at all levels is high and rising. To meet this need is critical to the success of the economies of the nation and of Illinois. This rising demand for more educational opportunities in science and technology has been felt at SIUE as it has elsewhere. Unfortunately, the existing building falls far short of meeting either the existing or anticipated needs for the University to fulfill its mission of providing the quality of scientific education necessary in today's world.

The Renewed Science Building for the University of Southern Illinois at Edwardsville will have a major and long lasting impact on the future of the University. When completed, it will house all of the science programs of the University and represent science and technology at SIUE to prospective students, to prospective faculty and staff, to potential employers of graduates, to the surrounding community and to potential donors to the University and its research efforts.

The SIUE Mission Statement for the Science Building

"To provide a facility to house outstanding academic programs in the physical, biological and mathematical sciences which effectively foster the desired characteristics and capabilities of graduates of the College of Arts and Sciences."

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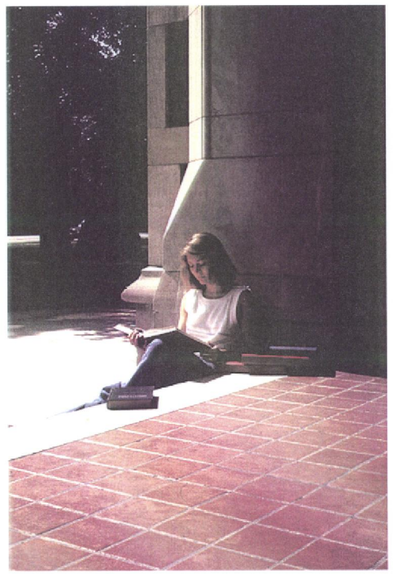
Several factors are expected to result in increased enrollment pressure for science and mathematics at SIUE.

- The University is planning for 13500 students in 2005. It now has about 11,500 headcount and 9,000 full time equivalents.
- The University expects to continue the trend of increasing the fraction of students who are residential and the fraction who are full time. Such students would take their basic science, mathematics and General Education courses here. Transfer students generally do not.
- With the completion of the new engineering building we expect a significant increase in the number of engineering and pre-engineering students. This would result in more demand for math and basic science courses.
- The University would like to require that all students take at least one laboratory based science course. Full participation in the Illinois Articulation Initiative would require such a course for all students. Presently we have neither the space, the equipment, nor the staff needed to do this.
- The job market for science and technology graduates is expected to continue to be strong.
- The demand for science teachers is very strong and getting stronger.

We also must recognize that implementing appropriate modern teaching methods will require not only more space per student served, but also a different more expensive kind of space. Current trends in science education include smaller class sizes, more interactive learning, more opportunity to work in groups, more instructional technology, more computer access, more lab experiences, and student involvement in research.

Couple the above with the current overcrowding in the Science Building, the need for more general classroom space, the desire to bring many OSME, ENVS, and Mathematics activities "home", and the "draw of a new, well done facility", and our plan may be too conservative.



Educational Mission for Science and Mathematics at SIUE

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The sciences at SIUE encompass diverse disciplines which are interdependent and founded on the principle of scientific discovery. The mission of the sciences is to create, conserve, disseminate, and apply, for human good, knowledge of the natural universe. This is accomplished through:

- undergraduate programs which provide
- experiences that ensure that all students develop a solid understanding and appreciation of the natural sciences and mathematics;
- the intellectual development that will empower our graduates to function as professionals in their respective scientific fields as well as to pursue advanced degrees;
- graduate programs which provide advanced courses, research experiences, and applied studies leading to masters degrees;
- instilling in all of our majors the highest principles of the scientific culture, ethical behavior, love of life-long learning and collegiality.
- focusing faculty instructional and research efforts in student-centered ways;
- engaging in scholarship, research, and innovative leadership which serve as a community, regional, and national resource.

Natural Sciences & Mathematics Mission Statement

Report Summary

1. Provide excellent curricular programs and instruction which employ a rich variety of approaches to teaching and learning.
2. Recruit, develop, and support faculty committed to the mission: Faculty, who will provide outstanding instruction, including persons with an interdisciplinary dimension; who will engage in research appropriate to the mission, and who will engage in service activities which contribute to the mission.
3. Provide a physical environment conducive to active learning activities including laboratory experiences for all students, and including safe facilities, policies, and practices.
4. Establish a collegial atmosphere in which all employees are encouraged to grow and strive to achieve their true potential, and are acculturated to the value of providing service to our students.
5. Establish an atmosphere and provide resources at a level which allows and encourages research and scholarly activity to flourish and permits students to have greater opportunities for engaging in research activities.
6. Establish an atmosphere and provide appropriate resources to allow expanded programs and activities in the area of science and mathematics teacher education, at the K-12 in-service and pre-service levels.
7. Develop and implement a strong program of public relations and public service which provides opportunities for positive interactions between the University and the greater community, offers life-long learning and enrichment programs, and enhances the University's ability to attract high quality students.

Natural Sciences & Mathematics Objectives Statement

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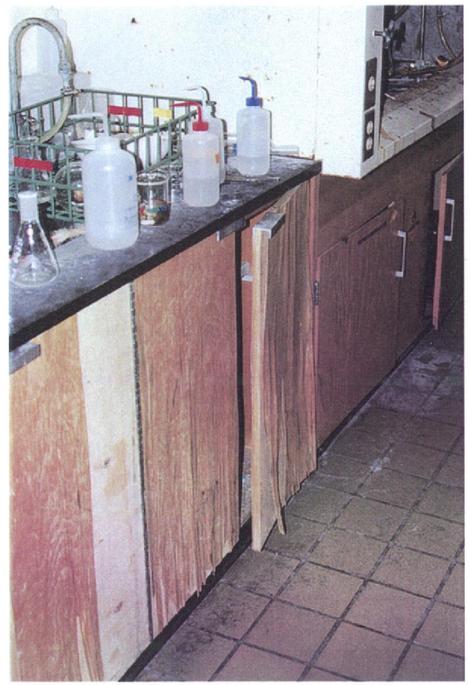
Purpose
The purpose for this study was to evaluate the existing building, teaching programs and future needs to determine the best way to renovate, expand or replace the existing science facilities at SIUE. This report summarizes the existing conditions of the building, the existing problems that the faculty face in meeting their teaching and research needs, the building program that will address these needs, the selected concept for implementing the program and the projected cost of the program.

Building Organization
The existing building is a three story concrete structure with a full basement. It is organized in three connected wings. The three wings house faculty, large lecture halls and the laboratories. The separation of these components has served to make interaction and communication difficult. The low floor to floor height makes it difficult to make changes to the mechanical systems to bring many of the laboratories up to standard.

Existing Building Condition
The existing science building has not had a significant renovation or updating since it was constructed in 1966. Many systems, finish materials, casework and pieces of laboratory equipment have simply outlived their usefulness. Many laboratories are used only partially due to these conditions. The curriculum is, to a great extent, being shaped by the limits of the existing building. Many instructors are forced to alter curriculums because the existing building does not support contemporary teaching needs. Group work, interdisciplinary and collaborative work, graduate and undergraduate research work are limited due to the poor conditions of the labs. The building is long overdue for a major renovation.

Building codes and lab safety standards have rendered portions of the building no longer as safe as one would expect in a modern science facility. The mechanical, electrical and plumbing systems of the building are seriously deteriorated, somewhat dangerous and highly inefficient.

Impact on Curriculum
The science programs have grown substantially at SIUE as have the research efforts in all departments. The existing science and mathematics programs are now housed in several different buildings, which makes interaction and collaboration difficult. Many teaching and research programs are not possible in the existing building because of code limitations. The shape, mechanical systems and equipment prevent many classes from meeting contemporary curriculum demands.



Purpose

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Programming and Design Process
The study was done by a team led by the HOK Science and Technology Group and included KJWW engineering. The University was represented by the Building Steering committee chaired by Dr. James Eilers that included the heads of each department, Dean Sharon Hahs of the College of Arts and Sciences, Mr. Tom Cahoon and Mr. Bob Washburn.

The programming and conceptual design were done through a series of workshops which took place in the existing Science Building. Virtually the entire faculty took part in the programming and conceptual planning for the project. A project workroom was established on the first floor of the building to insure easy access for the faculty and staff both for and between meetings. The most recent information was on display for faculty, staff and students. In addition, four public forums were held for the SIUE community to give their comments.

Program
The renovation and expansion program calls for a total of 245,000GSF of space to house teaching, research laboratories, faculty offices and all support spaces. The program reflects a projected need through the year 2005.The total gross area needed to meet these needs exceeds the area available in the existing building. This is a result of decompression of the programs already housed in the building, consolidation of functions now housed in other buildings and meeting standards for contemporary teaching and research facilities. This program will bring together all of the facilities for the biology, environmental studies, chemistry, physics, mathematics and statistics as well as those of the Office of Science and Mathematics Education. It does not include space for any new science programs.

Program Goals
In addition to the quantitative goals for the science building renovation, a series of qualitative goals were also defined. These were:
1. to promote student / faculty interaction
2. to encourage interdisciplinary interaction and collaboration
3. to increase the use of computers in labs
4. to incorporate technology into classrooms
5. to create student friendly study areas
6. to provide a safe, healthy, efficient and environmentally friendly building
7. to provide flexible spaces for unknown technology
8. to provide an attractive, open and light filled building
9. to have a building that looks like science, a place to student and faculty work and to share the excitement of science
10. to consolidate all science and mathematics activities in one location
11. to modernize and expand research space for faculty and students
12. to reflect energy efficient scientific principles in the new building

Strategic Alternatives Considered
Three alternatives were considered to meet the program for the Science Building. These included a pure renovation of the existing building, a replacement for the existing building and a partial expansion.

A pure renovation was not feasible because the existing structure did not have enough area to accommodate the required program. The layout of the existing buildings also made it difficult for the qualitative goals to be achieved. Simple renovation of the existing building would not allow phasing of the work without shutting down major portions of the academic program for one or more semesters.
Although attractive from a functional and phasing point of view, the new structure option was also quickly eliminated. It was cost prohibitive and there was a lack of other uses for the existing building once it was abandoned.
The most feasible and cost effective solution was a modest expansion. A modest expansion would provide the necessary gross area for the building program while also providing a way to phase the total project without shutting down part of the existing academic programs.

Program

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Design Challenges
The existing building presents significant design challenges even with a modest expansion. The most important of these were:

· Floor to Floor Dimension - The low floor to floor dimension makes it extremely difficult to introduce new ductwork and other infrastructure to support modern laboratory and teaching needs.
· Component Design - The separation of the faculty, laboratories and classrooms into separate but connected structures makes it difficult to provide the interactions and proximity between faculty, students, staff and the various functional areas of the building.
· Mechanical Systems - The mechanical systems were more than adequate for the science practices 35 years ago but are no longer adequate, safe, flexible or efficient to operate.
· Deterioration - Most aspects of the building are simply beyond their useful life. This includes systems, finishes and equipment.
· Safety - The building is far behind contemporary lab safety standards.
· Energy Efficiency - The building is highly inefficient by contemporary standards. The exterior is single glazed glass, there is little insulation in the exterior wall and no energy conservation systems in the mechanical systems.
· Handicapped accessibility - The building provides barriers for the handicapped.

Decision Criteria
A decision matrix was developed to evaluate alternative conceptual designs. The key elements were:
· Cost
· Realistic Phasing - It was critical that the renovation be able to take place without disrupting the ongoing science and math programs.
· Ability to bring faculty and labs closer together - It was important to be able to locate the faculty research labs and lab technicians in close proximity to the faculty.
· Ability to bring faculty and students together. The faculty are now isolated on the separate wing.
· Departmental interaction - As science and the teaching of science moves toward more and more interdisciplinary efforts and as boundaries diminish between departments, it is important to provide opportunities for faculty to interact and communicate.
· Ability to display science
· Ability to provide sufficient lab support space
· Ability to provide sufficient infrastructure to labs within tight floor to floor dimension

Alternative Concepts Considered
A series of alternative concepts were developed to address these criteria. These included modest additions to the north, south and west as well as combinations that added to each building component. Four concepts were developed through a basic concept level and evaluated. The most feasible concept was a modest addition to the north face of the building with only a small addition to the south entry to improve the entry and internal circulation. It was the lowest cost, the easiest to phase and resulted in a design that came closest to the "ideal" relationship between program elements.

Design Challenges

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Concept Design
The selected concept places an addition to the north face of the laboratory and classroom blocks. The addition encloses internal space which is used for vertical and horizontal circulation, common functions and scientific display. All spaces in the building including classrooms and laboratories will be accessible to the handicapped.

The lower level will be taken over completely when engineering moves out and will be used for functions that do not need daylight. A new and expanded mechanical area will be created in the basement as well as on the roof to accommodate a completely new mechanical system.

Laboratories
The new addition houses the most mechanically intense laboratories and faculty offices. A new mechanical service corridor is provided to allow the adjacent laboratories to be supplied with mechanical services within the tight floor to floor dimension of the building. The less mechanically intense laboratories are located in the south half of the existing building.

The teaching laboratories are designed to accommodate a more interactive teaching environment. Dedicated research laboratories are provided for faculty, graduated and undergraduate students. All laboratories are designed to be as flexible as possible. All typical laboratories were developed in detail.

Faculty Offices
The majority of faculty offices are located in a common suite on the north face of the building. The open plan of the offices places common administrative and seminar / conference rooms spaces in the center or the faculty area. An open stair connects the three levels of offices. The plan will help interdisciplinary interactions and make faculty more accessible to students. By locating the majority of faculty research labs immediately to the south of the offices, this location also insures a close relationship between faculty, their labs and their laboratory technicians.

Classrooms
One of the existing large lecture halls is eliminated and converted into several more flexible classrooms. A new classroom module is also added to meet the total need and help connect the classroom and lab wings of the building.

Commons
The space between the additions to the building and the existing building are enclosed to provide connectivity to the entire complex. To the north, the space between the existing / new lab wing and the existing / new classroom wing is enclosed to serve common functions of the building and serve as a "heart" to the new building. It contains common seminar / conference rooms, display areas, student areas and the major circulation spaces of the building. This common space is also the new main entry to the building from the parking lot to the north.
To the south, the existing entry is enclosed to connect the faculty and lab wings of the building and to provide a better entry to the heart of the campus.
The two common spaces serve as the focus to the building design. The common organizes all circulation spaces in a direct and clear way. It's design will encourage interaction and communication between faculty, students and staff. The space will be daylighted from above. It will serve as the main space to display science in the building and will become the central image for the new community of science at SIUE.

Mechanical Systems
All of the mechanical systems are to be replaced. A detailed description of these systems is included in the mechanical section of this report.

Phasing
The existing building will be renovated in stages so that the existing teaching programs can continue to operate. The new laboratory addition and related mechanical areas will be built first. Once these are done, some of the functions in the existing building will be relocated and others moved temporarily in order to allow part of the building to be renovated. When this portion is completed, another move will free up an additional area to be renovated. This pattern will be continued until the overall project is complete.

Design Concept

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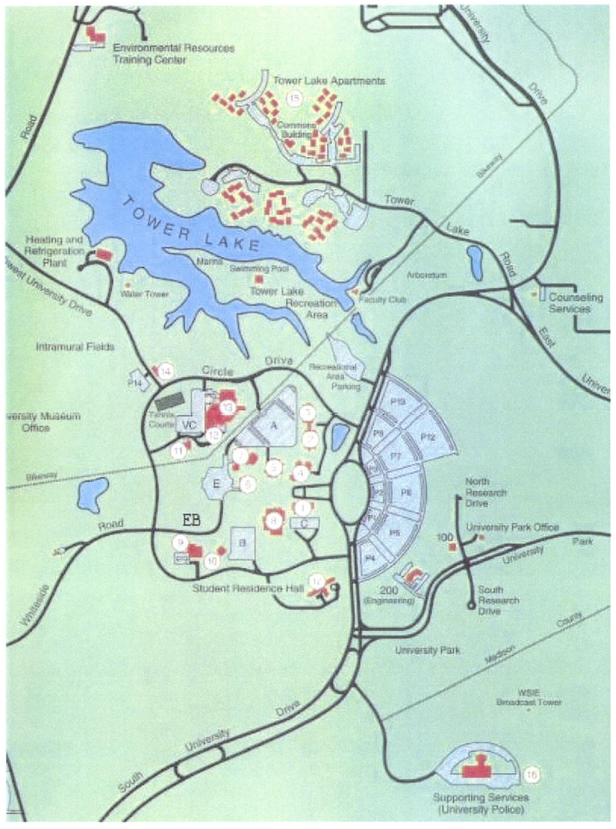

The Science Building represents one of the designs of the original master plan for the campus of SIU-Edwardsville. Located to the northwest of the major campus quadrangle, the building is bounded by Lovejoy Library to the east and Dunham Hall to the south. These three buildings form a pedestrian cluster of paths which lead to the Student Center to the southeast and the new Engineering Building to the southwest. Parking for the facility is to the north with vehicular service access along the west face of the building.

Utility routes are on the north, south and east of the building. Summer winds tend to come from the southwest with winter winds coming from the northwest.

Site Analysis

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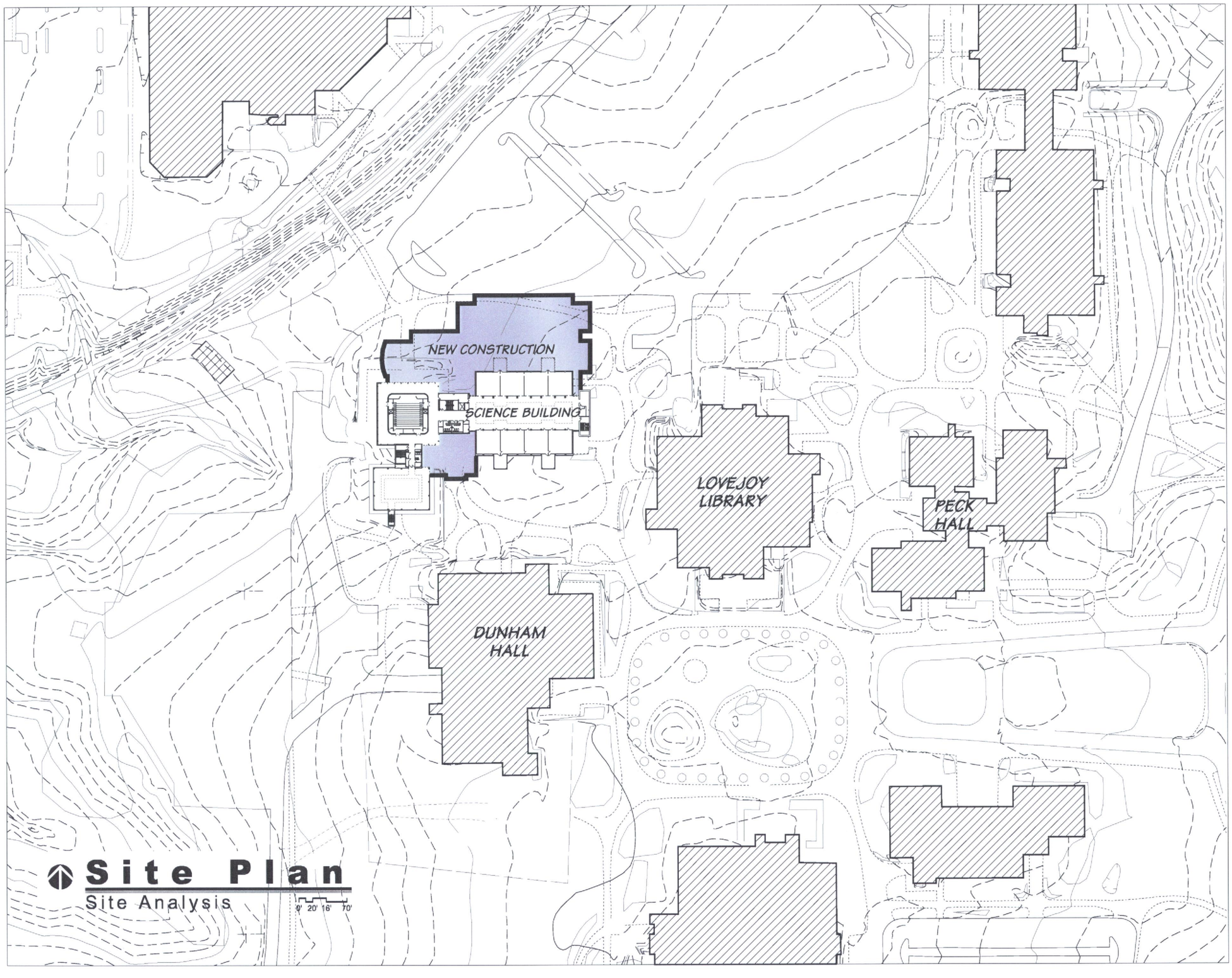

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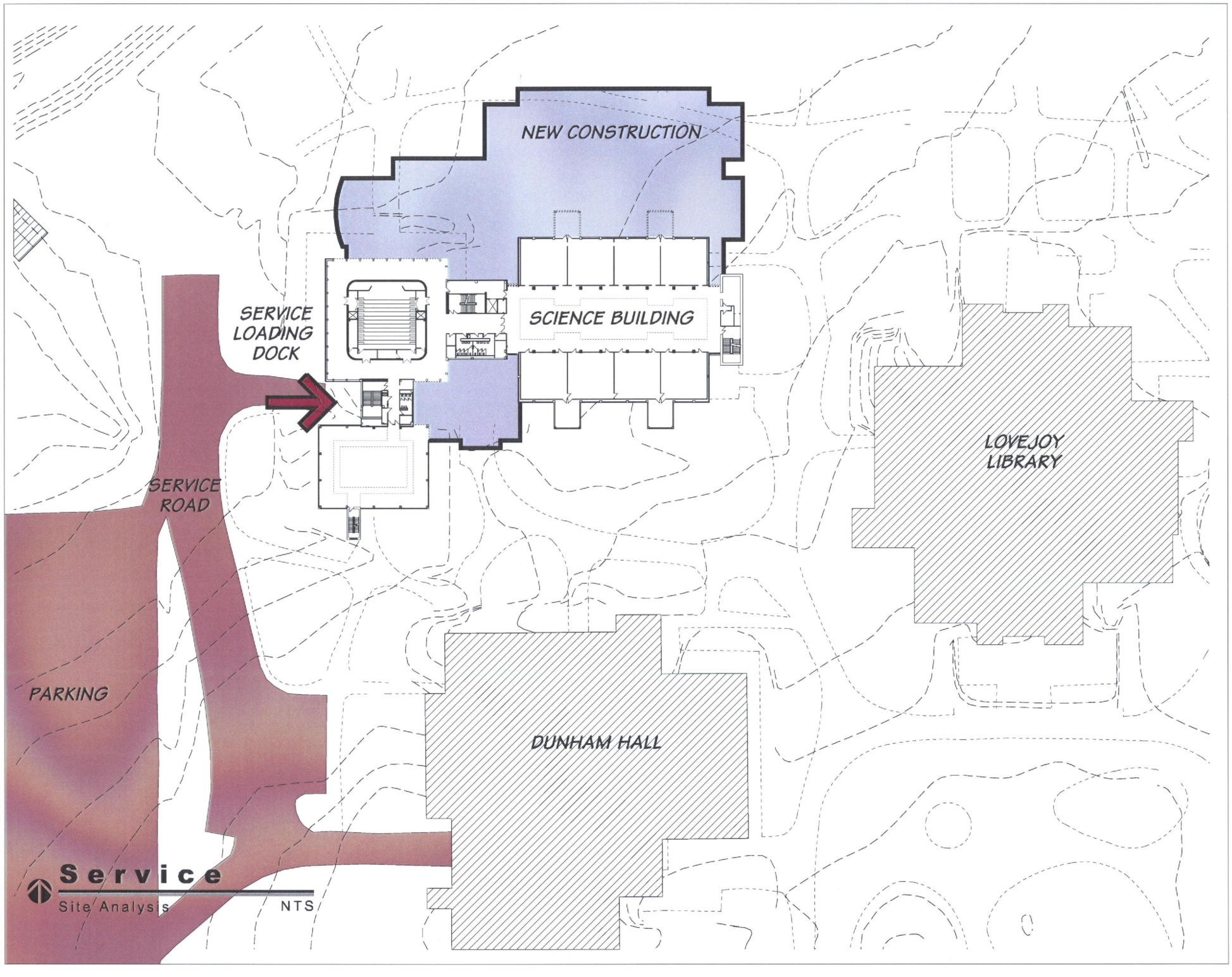

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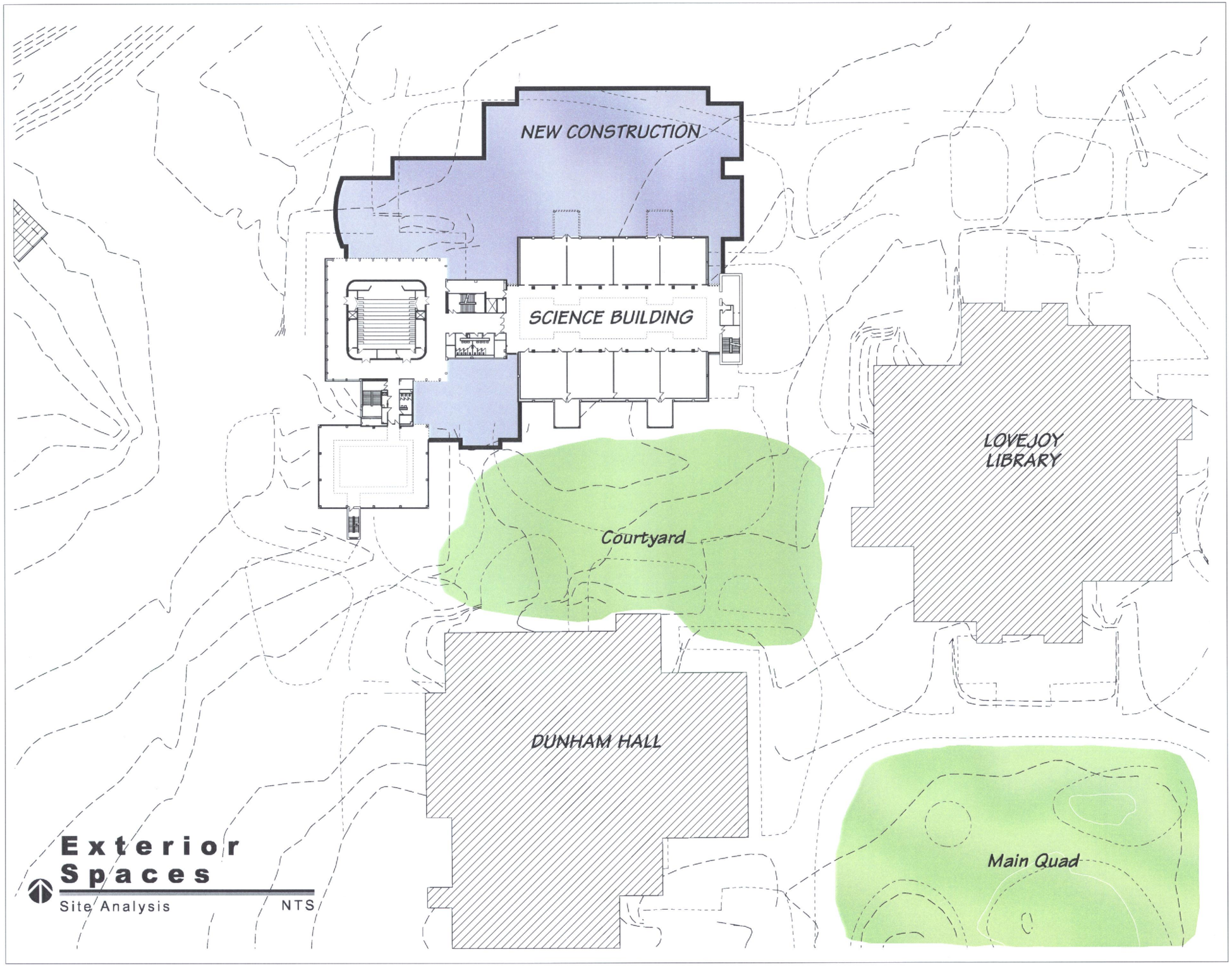

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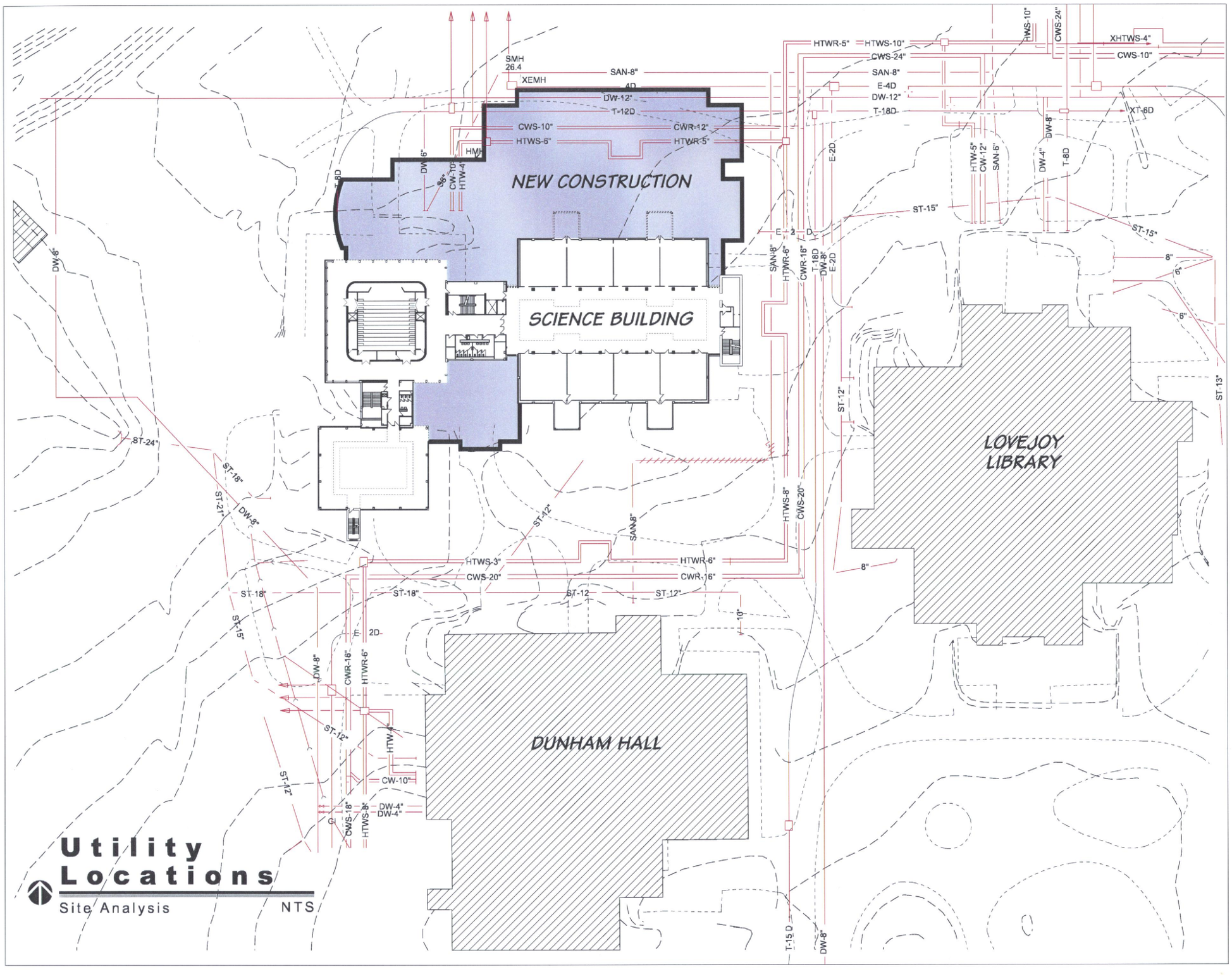

Utility Locations

Site Analysis NTS

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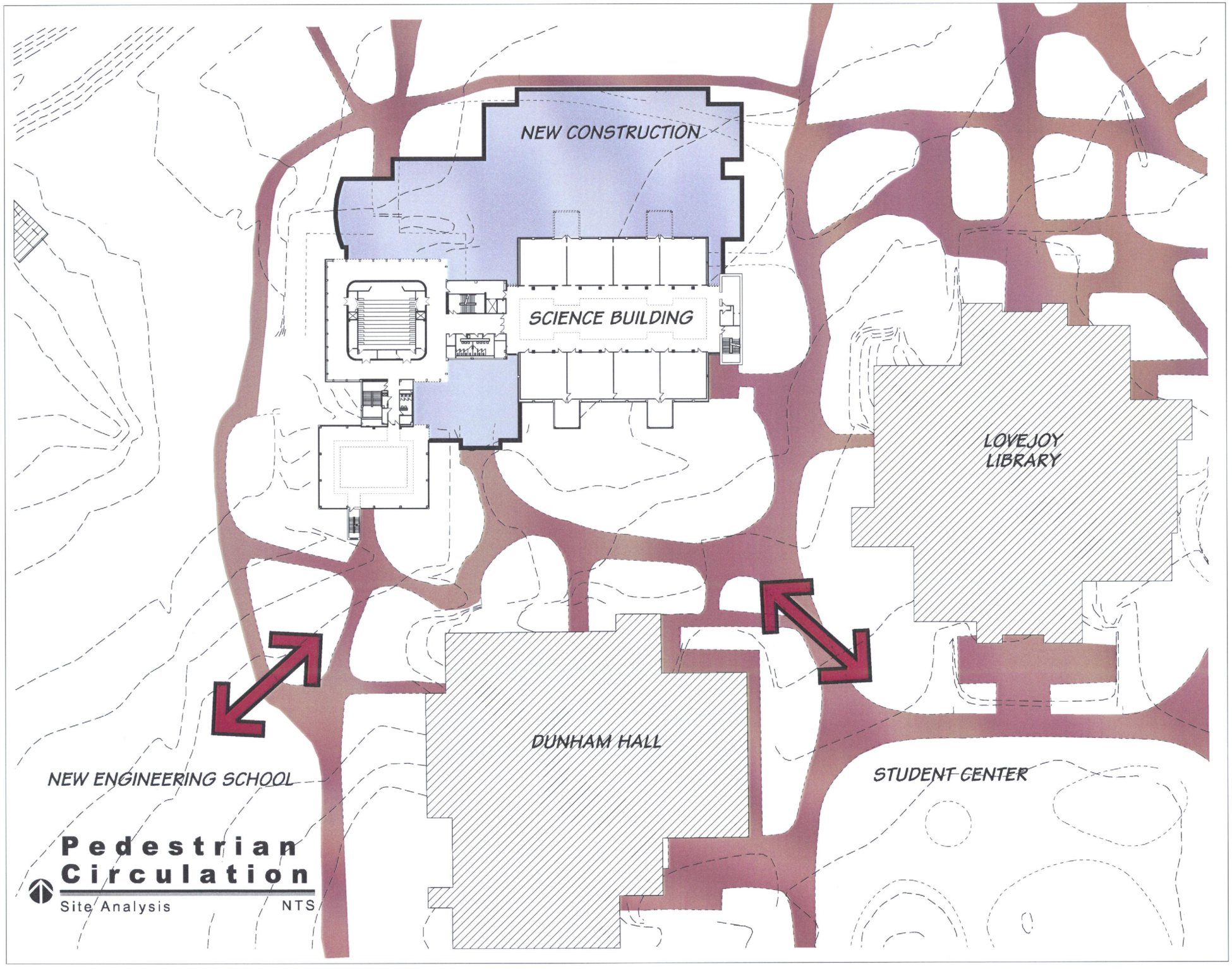

Pedestrian Circulation

Site Analysis NTS

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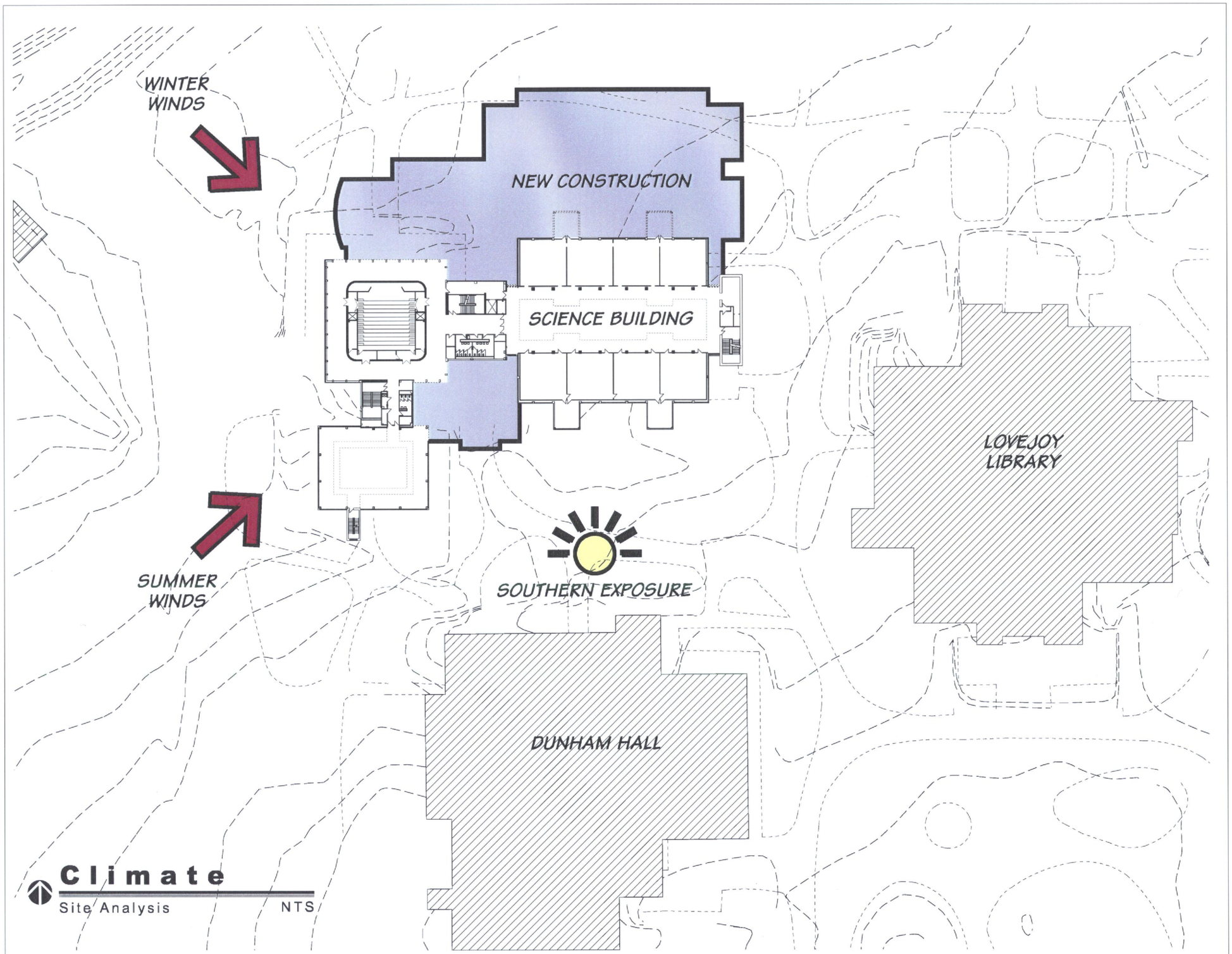

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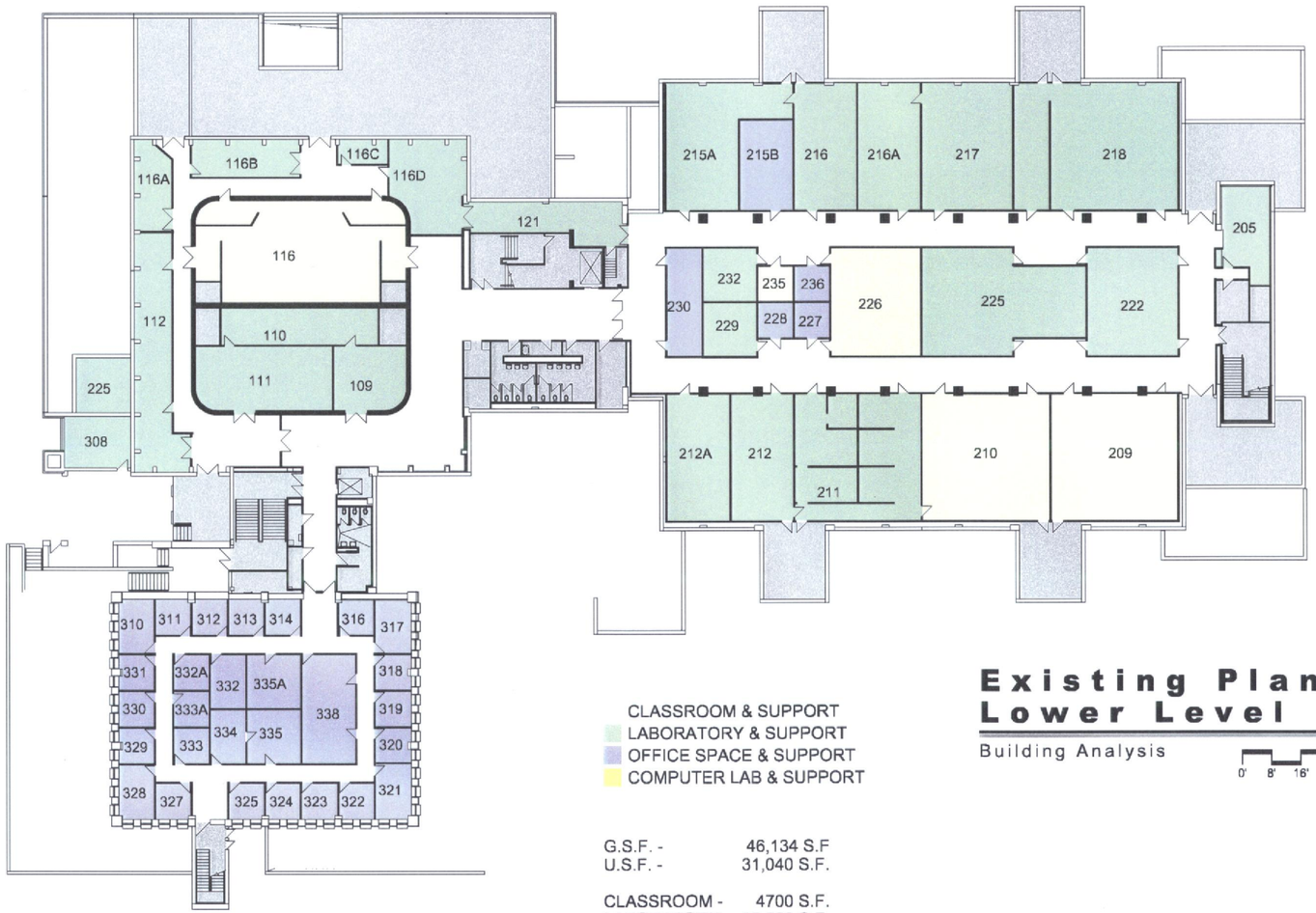

CLASSROOM & SUPPORT
LABORATORY & SUPPORT
OFFICE SPACE & SUPPORT
COMPUTER LAB & SUPPORT

G.S.F. - 46,134 S.F
U.S.F. - 31,040 S.F.

CLASSROOM - 4700 S.F.
LABORATORY - 13,300 S.F.
OFFICE SPACE - 4430 S.F.

Existing Plan
Lower Level

Building Analysis

0' 8' 16' 32'

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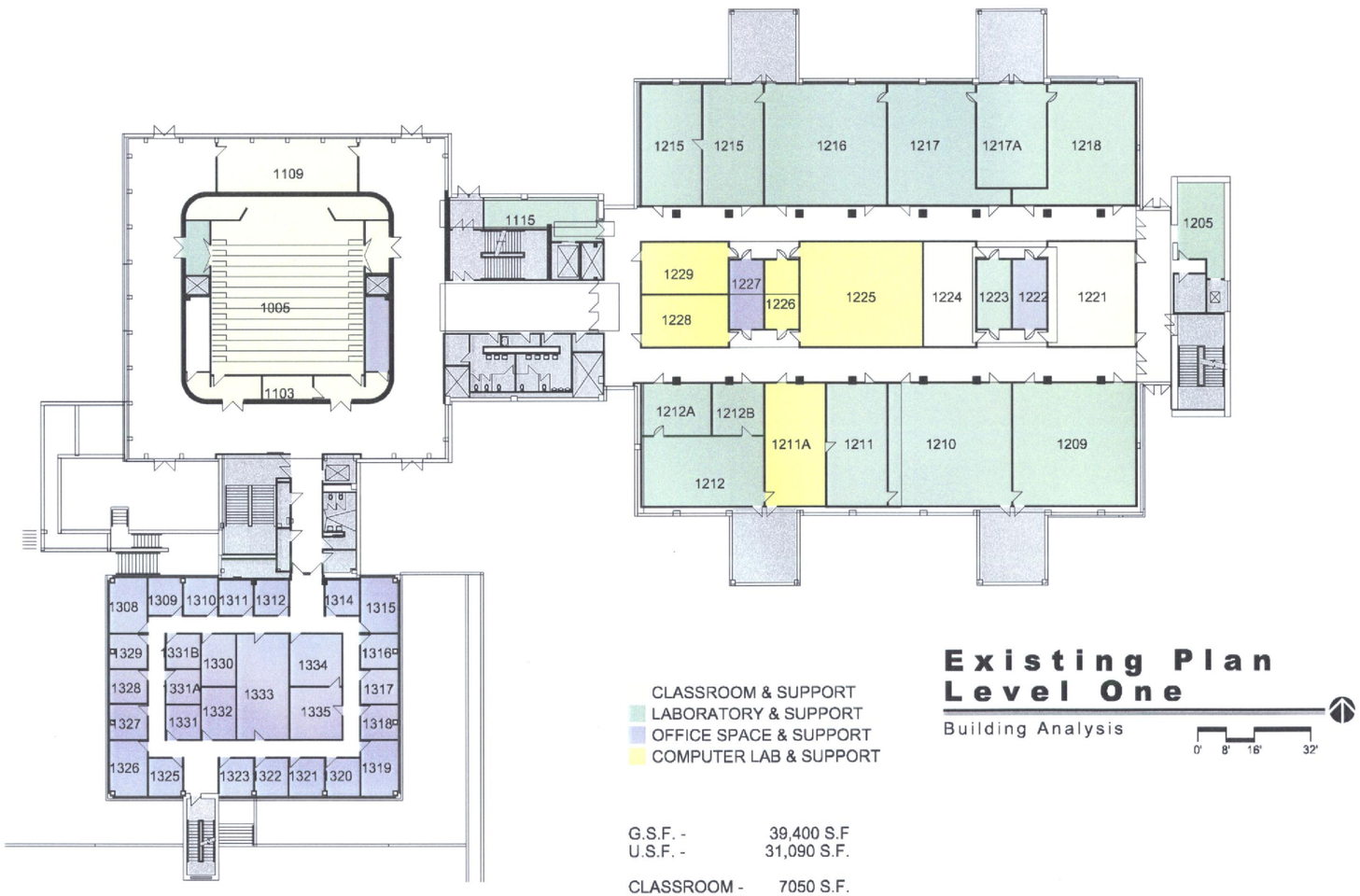

CLASSROOM & SUPPORT
LABORATORY & SUPPORT
OFFICE SPACE & SUPPORT
COMPUTER LAB & SUPPORT

G.S.F. - 39,400 S.F
U.S.F. - 31,090 S.F.

CLASSROOM - 7050 S.F.
LABORATORY - 9850 S.F.
OFFICE SPACE - 4190 S.F.

Existing Plan
Level One

Building Analysis

0' 8' 16' 32'

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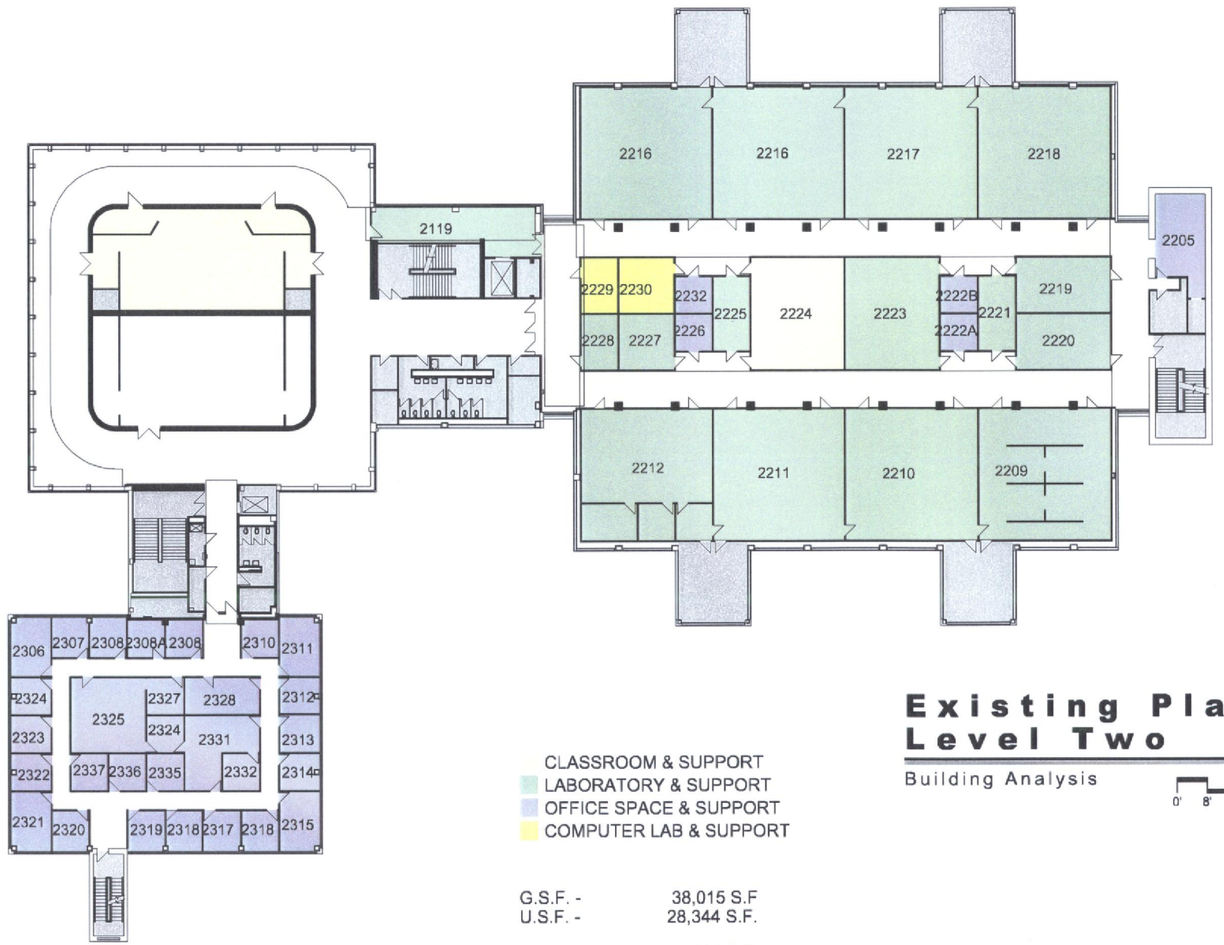

CLASSROOM & SUPPORT
LABORATORY & SUPPORT
OFFICE SPACE & SUPPORT
COMPUTER LAB & SUPPORT

G.S.F. - 38,015 S.F
U.S.F. - 28,344 S.F.

CLASSROOM - 1815 S.F.
LABORATORY - 11,840 S.F.
OFFICE SPACE - 3980 S.F.

Existing Plan
Level Two

Building Analysis

0' 8' 16' 32'

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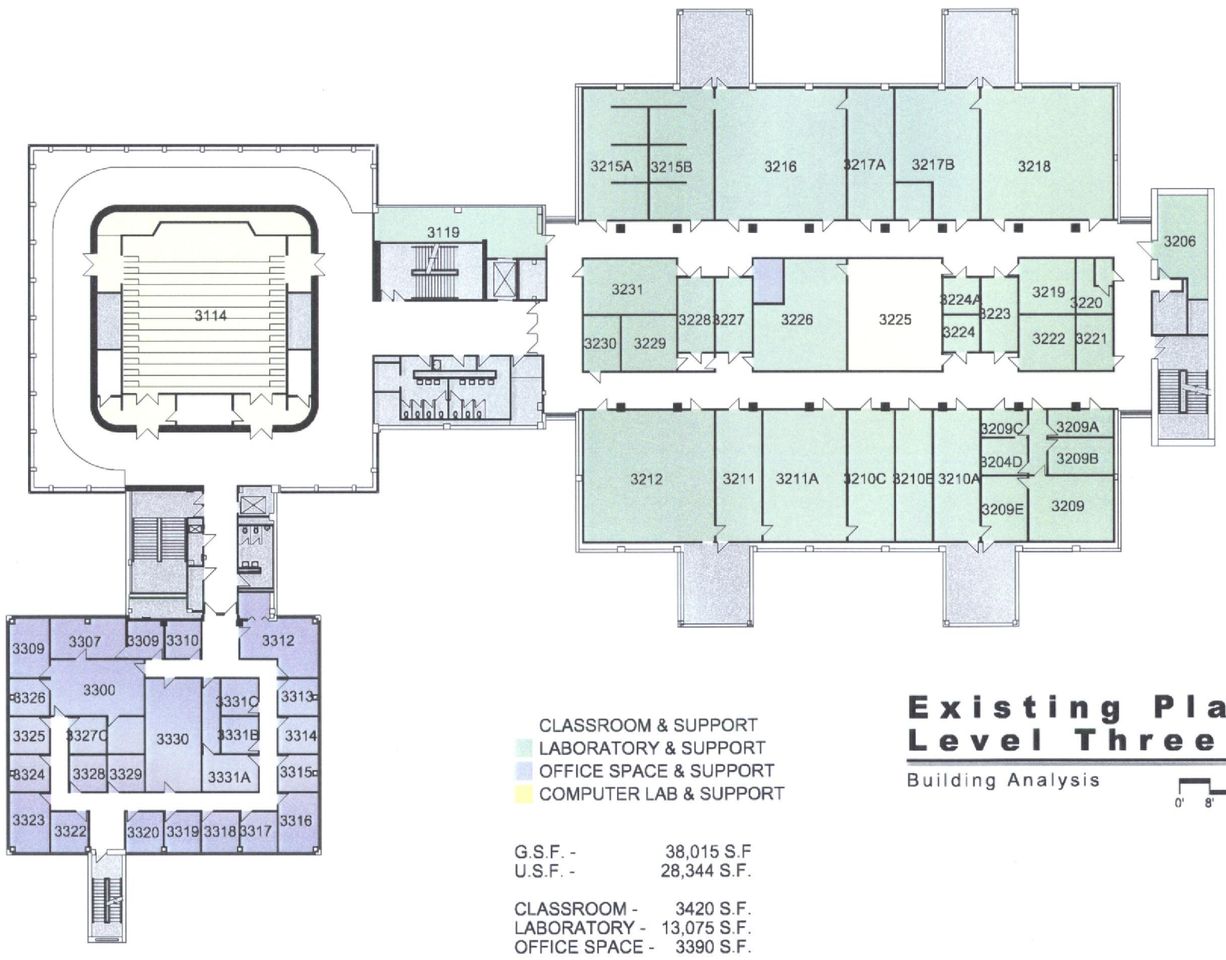

CLASSROOM & SUPPORT
LABORATORY & SUPPORT
OFFICE SPACE & SUPPORT
COMPUTER LAB & SUPPORT

G.S.F. - 38,015 S.F
U.S.F. - 28,344 S.F.

CLASSROOM - 3420 S.F.
LABORATORY - 13,075 S.F.
OFFICE SPACE - 3390 S.F.

Existing Plan
Level Three

Building Analysis

0' 8' 16' 32'

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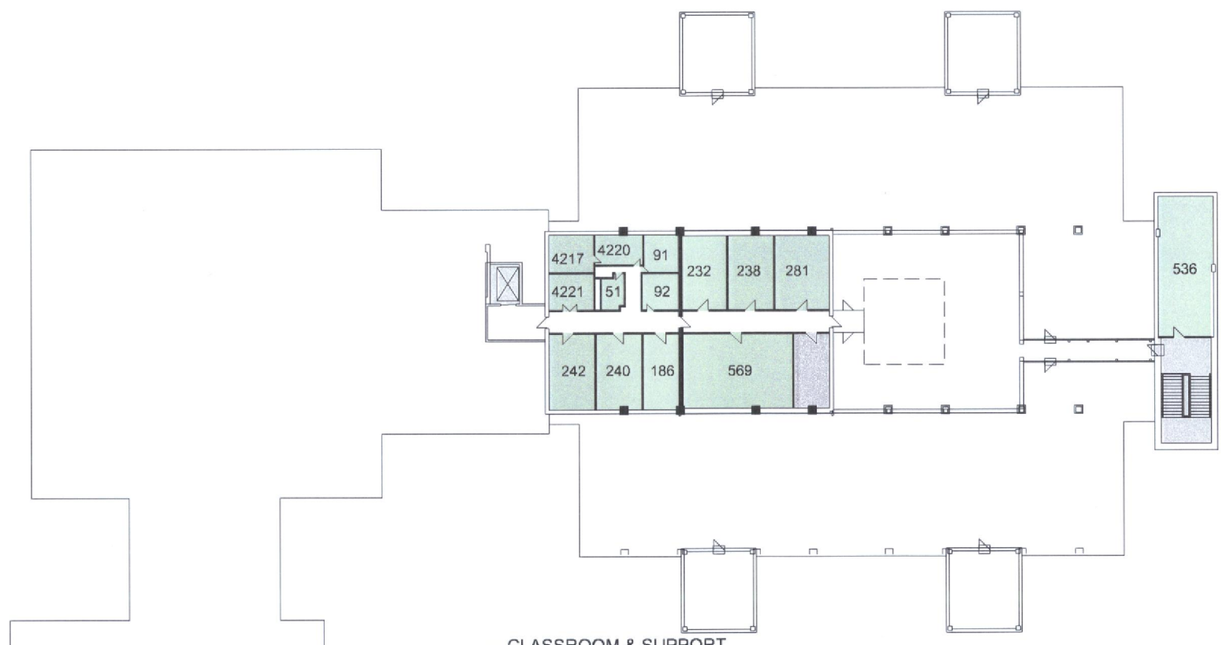

CLASSROOM & SUPPORT
LABORATORY & SUPPORT
OFFICE SPACE & SUPPORT
COMPUTER LAB & SUPPORT

G.S.F. - 5140 S.F
U.S.F. - 3762 S.F.

LABORATORY - 3090 S.F.

Existing Plan
Level Four

Building Analysis

0' 8' 16' 32'

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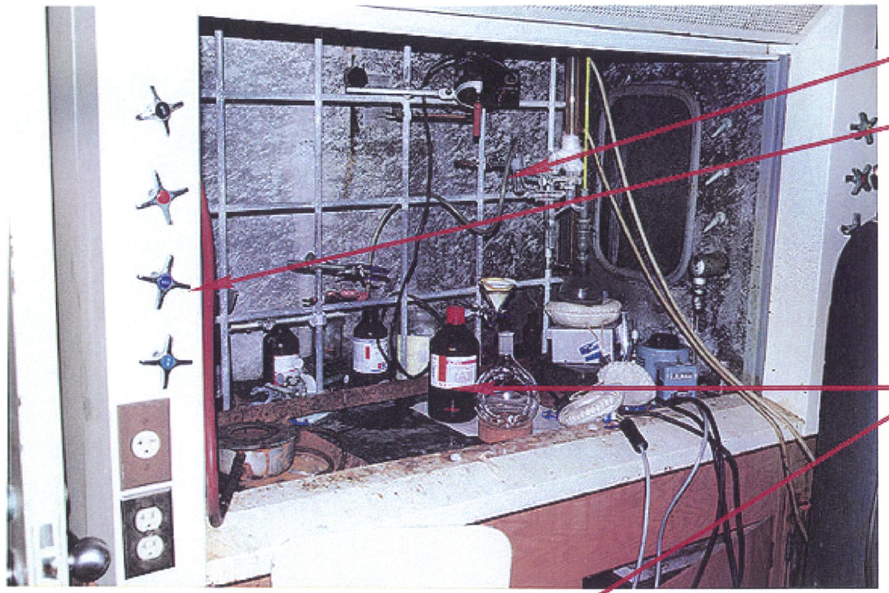

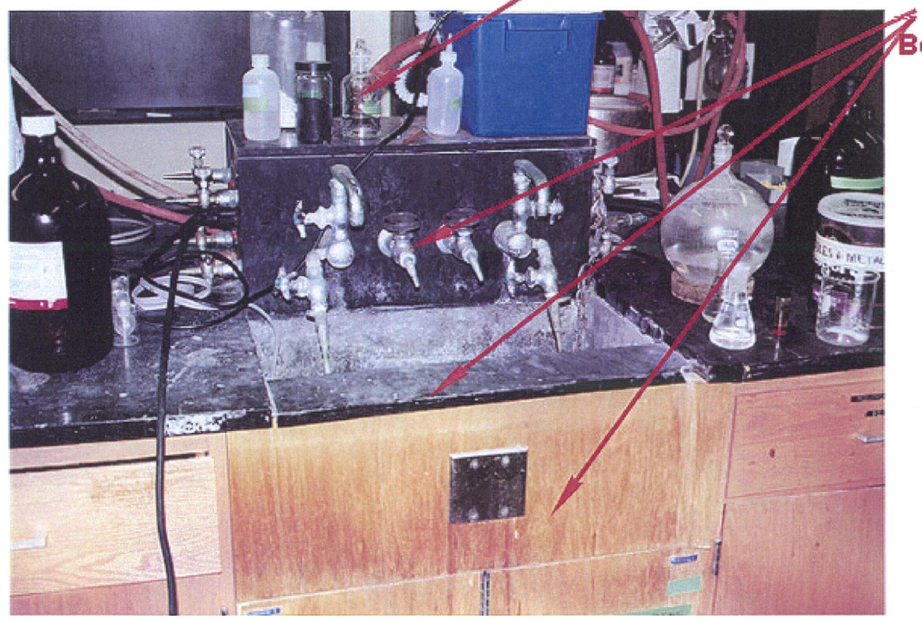

Dated Fumehoods

Aged Service Fittings

Congested Work Spaces

Deteriorating Casework, Fittings, Bench Tops

Damaged Flooring

Existing Conditions

Building Analysis

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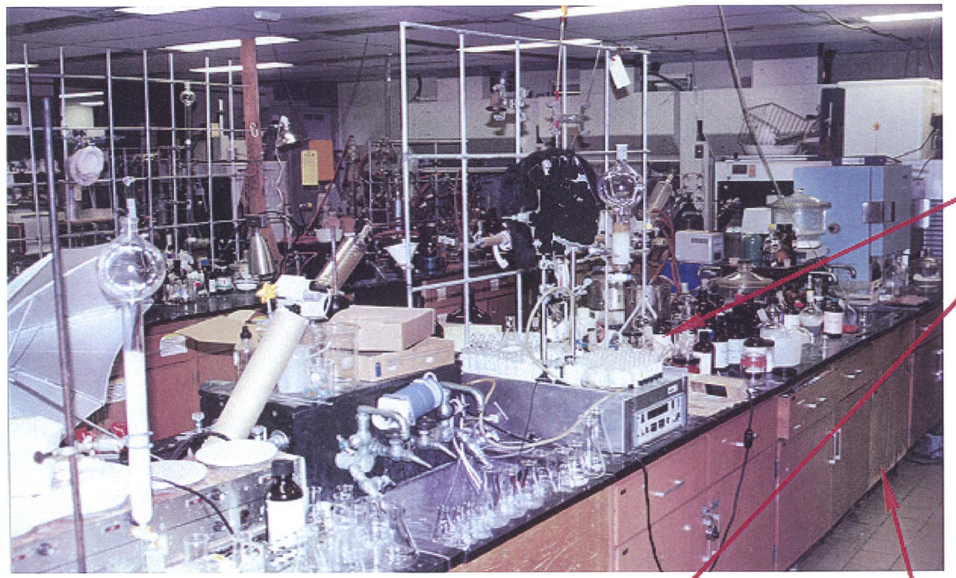

Congested Teaching and Research Laboratories

Unfriendly Student Study Areas

Deterioating Casework and finishes

Antiquated Furniture

Inadequate Storage

Existing Conditions

Building Analysis

Southern Illinois University Edwardsville

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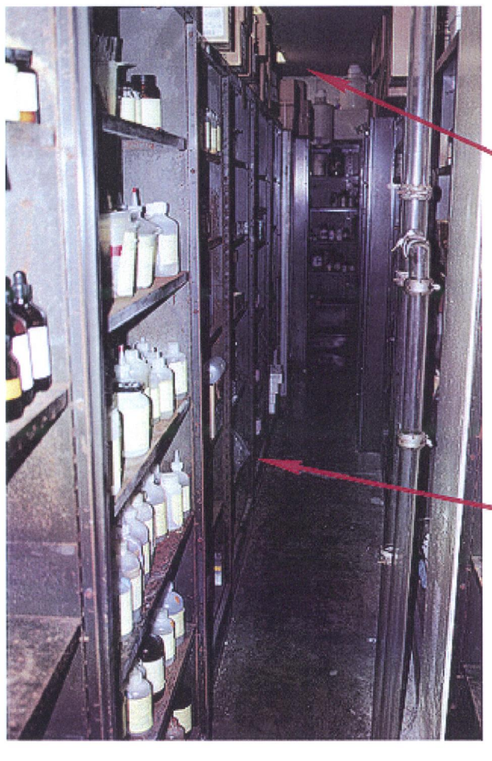
Water Damage to Finishes, Equipment and Furniture



Low Light Levels

Cramped Storage Spaces

Existing Conditions

Building Analysis

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Building Program

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SPACE MEASUREMENT DEFINITIONS

NET SQUARE FEET (NSF)
Actual area of a specific function (e.g. workstation, lab bench, office)
Measured from outside edge to outside edge or centerline of partitons.

USABLE SQUARE FEET (USF)
Net area plus required circulation.
Measured from inside face of the predominant building exterior surface to the face of the office side of the building corridor or other permanent walls.

GROSS SQUARE FEET (GSF)
Total enclosed building area. Sum of all enclosed floors of a building.
Measured from the outside face of permanent outer building walls.

Existing Building Usage

Building Program

U.S.F.

Basement	31,040 s.f.
First Floor	31,090 s.f.
Second Floor	28,344 s.f.
Third Floor	28,344 s.f.
Fourth Floor	3,762 s.f.
TOTAL	122,580 s.f.

Classroom Space

Basement	4,700 s.f.
First Floor	7,050 s.f.
Second Floor	1,815 s.f.
Third Floor	3,420 s.f.
Fourth Floor	0 s.f.
TOTAL	16,985 s.f.

Laboratory Space

Basement	13,300 s.f.
First Floor	9,850 s.f.
Second Floor	11,840 s.f.
Third Floor	13,075 s.f.
Fourth Floor	3,090 s.f.
TOTAL	51,155 s.f.

Office Space

Basement	4,430 s.f.
First Floor	4,910 s.f.
Second Floor	3,980 s.f.
Third Floor	3,390 s.f.
Fourth Floor	0 s.f.
TOTAL	16,710 s.f.

Existing Building Usage (G.S.F.)

Basement	46,134 s.f.
First Floor	39,400 s.f.
Second Floor	38,015 s.f.
Third Floor	38,015 s.f.
Fourth Floor	5140 s.f.
TOTAL	166,704 s.f.

Usage by Department

Academic Computing	3,675 s.f.
Biology	31,380 s.f.
Chemistry	25,903 s.f.
Engineering	30,325 s.f.
Environmental Studies	8,027 s.f.
Math	5,571 s.f.
O.S.M.E.	8,414 s.f.
Physics	13,342 s.f.

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NET AREA SUMMARY - BY DEPARTMENT AND FUNCTION

DEPARTMENT	OFFICE	CLASSROOM	LAB	OTHER	TOTAL	Remarks
Chemistry	5,703		20,200		25,903	
Biology	5,355		26,025		31,380	
Physics	3,817		9,525		13,342	
Math	5,571				5,571	
Environmental Sciences	2,177		5,850		8,027	
OSME	1,889		6,525		8,414	
Academic Computing	675	3,000			3,675	
Common Areas	2,200	22,050		6,075	30,325	
TOTAL	27,387	25,050	68,125	6,075	126,637	
Percentage	22%	20%	54%	5%	100%	

CLASSROOM DEMAND SUMMARY

DEPARTMENT	Room Size 180	90	70	50	ILC (30)	Remarks
Chemistry	0.50	0.66		0.50	0.83	ILC incl. 20 person room demand
Biology	0.50			1.25	0.33	
Physics		0.50		1.00		
Math		1.00		4.00		
Environmental Sciences				0.50		
OSME					0.33	
	1.00	2.16		7.25	1.49	

POPULATION AND AREA SUMMARY - BY DEPARTMENT

DEPARTMENT	POPULATION 1999 SIUE	1999 OTHER	1999 TOTAL	2005 SIUE	2005 OTHER	2005 TOTAL	AREA (USF) 2005	REMARKS
Chemistry	23	58	81	22	77	99	32,224	
Biology	28	20	48	29	65	94	38,727	
Physics	17	30	47	15	36	51	16,774	
Math	40	36	76	43	40	83	7,799	
Environmental Sciences	15		15	61		61	10,068	
OSME	11	3	14	11	3	14	10,475	
Academic Computing	1		1	1		1	4,845	
SUB TOTAL	135	147	**282**	182	221	**403**	**120,912**	
					COMMON AREAS		38,315	
					TOTAL USF		**159,227**	

AREA SUMMARY - BY DEPARTMENT AND FUNCTION

DEPARTMENT	OFFICE	CLASSROOM	LAB	OTHER	TOTAL	REMARKS
Chemistry	7,984		24,240		32,224	
Biology	7,497		31,230		38,727	
Physics	5,344		11,430		16,774	
Math	7,799				7,799	
Environmental Sciences	3,048		7,020		10,068	
OSME	2,645		7,830		10,475	
Academic Computing	945	3,900			4,845	
Common Areas	3,080	28,665		6,570	38,315	
TOTAL USF	38,342	32,565	81,750	6,570	**159,227**	
Percentage	24%	20%	51%	4%	100%	
Deduct for 2 Existing Auditoriums		8,775				
Total USF	38,342	**23,790**	81,750	6,570	**150,452**	
Deduct for 1 Existing Auditorium		4,388				
Total USF	38,342	**28,178**	81,750	6,570	**154,839**	

Population & Area Summary

Building Program

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Departmental Space List - Physics

Building Program

Department:	Physics									
	Staffing				Area (NSF)					
Office & Support	1999		2005		2005					
	SIUE	Other	SIUE	Other	Space	Type	Unit	Area	Remarks	
Chairperson	1		1		1	A1	225	225		
Faculty	10		8		8	A	150	1,200	2 in OSME	
Secretary	1		1		1	C	64	64		
Call Staff	4		4		2	A	150	300		
Lab Manager	1		1						Locate in Lab Space	
Teaching Assist		12		12	12	D	36	432	Enclosed Room	
Undergrad Students		18		24	11	D	36	396	1 per faculty	
Tutor Room					1		300	300		
Computer Room					1		300	300	Possibly reduce size	
Filing					1		150	150		
Office Storage					1		150	150		
Staff/Faculty Lounge					1		300	300		
	17	30	15	36						
Sub Total		47		51	40			3,817		
Circulation 1.4								1,527		
Total Office USF								5,344		
Classrooms & Suppor	Qty		Area		Qty		Unit	Area		
Classroom (50)	1		750		1				Moved to Common Areas	
Classroom (70)	1		1,200							
Classsroom (90)					1				Moved to Common Areas	
Sub Total										
Circulation 1.3										
Total Classroom USF										
Labs & Support	Qty		Area		Qty		Unit	Area		
General Teaching Lab	2		900		3		900	2,700		
Lab/Seminar Room					1		600	600		
Research Labs	2		600		5		600	3,000		
Equipment Storage	1		600		2		600	1,200	Teaching Labs	
Equipment Storage	1		600		1		600	600	Research Labs	
Fabrication Room	1		600		1		900	900		
Maintenance Shop	1		100		1		225	225		
Lab/Seminar Rm Stora	1		300		1		300	300		
Sub Total								9,525		
Circulation 1.2								1,905		
Total Lab USF								11,430		
Total Department USF								16,774		

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Departmental Space List - Chemistry

Building Program

Department	Chemistry								
	Staffing				Area (NSF)				
Office & Support	1999		2005		2005				
	SIUE	Other	SIUE	Other	Space	Type	Unit	Area	Remarks
Chairperson	1		1		1	A1	225	225	
Faculty	15		13		13	A	150	1,950	2 in ENVS, 2 in OSME
Secretary	1		2		2	C	64	128	
Call Staff	4		4		1	A	150	150	
Lab Manager	1		1						In Office/Storage Room
Instr. Specialist	1		1		1	B	100	100	
Student Assist.		2		2	2	D	36	72	
Grad. Students		20		30	30	D	36	1,080	
Undergrad Students		36		45	18	D	36	648	Near Labs, 1 per faculty
Filing					1		150	150	
Storage					1		150	150	
Staff Faculty Lounge					1		300	300	
Library Comp Commons					1		600	600	
Tutor Room					1		150	150	
	23	58	22	77					
Sub Total		81		99	73			5,703	
Circulation 1.4								2,281	
Total Office USF								7,984	
Classrooms & Suppor	Qty		Area		Qty		Unit	Area	
Classroom (50)	1		750						
Classroom (180)	1		3,375		1				Moved to Common Areas
Interactive Learning Cntr					1				Moved to Common Areas
Classroom (90)					1				Moved to Common Areas
Prep/AV Room									
Sub Total									
Circulation 1.3									
Total Classroom USF									
Labs & Support	Qty		Area		Qty		Unit	Area	
Organic Lab	1		1,200		1		1,200	1,200	
P-Chem/Analytical Lal	1		1,200		1		1,200	1,200	
Instrument Lab	1		1,200		1		1,200	1,200	
Adv. Inorganic Lab					1		1,200	1,200	
Adv. Instrument Lab	1		750		1		900	900	
General Chem Ed Lab					3		1,200	3,600	
Research Lab	9				13		600	7,800	Exist size varies
Lab Support Space	1		200		4		300	1,200	1 per 2 Teaching Labs
Stock Room	1		475		1		600	600	
Solvent Room	1		540		1		600	600	
Office/Storage	1		200		1		500	500	**Lab Manager**
Cylinder Storage	1		75						Exist w/Dock
Prep Space					1		200	200	Adj to Stock Room
Sub Total								20,200	
Circulation 1.2								4,040	
Total Lab USF								24,240	
Total Department USF								32,224	

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Departmental Space List - Biology

Building Program

Department	Biology								
	Staffing				Area (NSF)				
Office & Support	1999		2005		2005				
	SIUE	Other	SIUE	Other	Space	Type	Unit	Area	Remarks
Chairperson	1		1		1	A1	225	225	
Faculty	16		19		19	A	150	2,850	3 in ENVS
Secretary	2		2		2	C	64	128	
Call Staff	6		4		1	A	150	150	
Lab Manager	1		1						Locate w/Labs
Equip. Repair	1		1						Located in Shop
SEM Operator	1		1						Located in Lab
Teaching Assist		20		20	20	D	36	720	1 desk per student
Grad Assist				25	12	D	36	432	2 students per desk
Undergrad				20					Locker Only
Computer Room					1		250	250	
Filing					1		150	150	
Storage					1		150	150	
Staff/Faculty Lounge					1		300	300	
	28	20	29	65					
Sub Total		48		94	59			5,355	
Circulation 1.4								2,142	
Total Office USF								7,497	
Classrooms & Suppor	Qty		Area		Qty		Unit	Area	
Classroom (50)	1		750		1				Moved to Common Areas
Classroom (180)	1		3,375		1				Moved to Common Areas
Sub Total									
Circulation 1.3									
Total Classroom USF									
Labs & Support	Qty		Area		Qty		Unit	Area	
Anatomy/Physiology L	1		1,200		1		1,200	1,200	
Zoology Lab	1		1,200		1		1,200	1,200	
Upper Division Lab					1		1,200	1,200	
Cell Biology Lab	1		1,200		1		1,200	1,200	
MicroBiology Lab	1		1,200		1		1,200	1,200	
Genetics Lab	1		1,200		1		1,200	1,200	
Lower Division Lab					1		1,200	1,200	
General Education Lab					1		1,200	1,200	
Lab Prep Rooms					2		300	600	
Microbiology Prep					1		300	300	
Research Labs	18				19		600	11,400	
Walk In Cold Room	1		150		2		150	300	
Walk In Warm Room	1		450		1		450	450	
Growth Chamber	1		325		1		900	900	
Autoclave	1		150		1		225	225	
Dark Room	1		150		1		150	150	
SEM Lab	1		225		1		225	225	
SEM Prep	1		225		1		225	225	
BIO/ENVS Computer I	1		150		1		600	600	
Greenhouse Storage									
Lab Equipment	1		400		1		450	450	
Field Equipment Storage					1		450	450	Locate w/Dock
Lab Manager					1		150	150	
Sub Total								26,025	
Circulation 1.2								5,205	
Total Lab USF								31,230	
Total Department USF								38,727	

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Department:	Math								
	Staffing				Area (NSF)				
Office & Support	1999		2005		2005				
	SIUE	Other	SIUE	Other	Space	Type	Unit	Area	Remarks
Chairperson	1		1		1	A1	225	225	
Faculty	17		20		20	A	150	3,000	
Secretary	2		2		2	C	64	128	
Call Staff	8		8		2	A	150	300	
Teaching Assist	12		12		12	D	36	432	Secured
Undergrad TA		3		7	3	D	36	108	3 students per desk
Grad Student		30		30					Locker only
Student Office Assist		3		3	2	C	64	128	
Filing					1		150	150	
Office Storage					1		150	150	
Staff/Faculty Lounge					1		300	300	
Tutor Room					1		450	450	
Computer Room					1		200	200	
	40	36	43	40					
Sub Total		76		83	47			5,571	
Circulation 1.4								2,228	
Total Office USF								7,799	
Classrooms & Suppor	Qty		Area		Qty		Unit	Area	
Classroom (40)	1		750		2				Moved to Common Areas
Classroom (60)	2				2				Moved to Common Areas
Classroom (70)	1				1				Moved to Common Areas
Sub Total									
Circulation 1.3									
Total Classroom USF									
Labs & Support	Qty		Area		Qty		Unit	Area	
Sub Total									
Circulation 1.2									
Total Lab USF									
Total Department USF								7,799	

Departmental Space List - Environmental Sciences

Building Program

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Departmental Space List - OSME

Building Program

Department: OSME

Office & Support	Staffing 1999 SIUE	1999 Other	Staffing 2005 SIUE	2005 Other	Area (NSF) 2005 Space	Type	Unit	Area	Remarks
Director	1		1		1	A1	225	225	
Chem Faculty	2		2		2	A	150	300	From Chem Dept
Biology Faculty	2		2		2	A	150	300	From Biology Dept
Call Staff	3		3		1	A	150	150	
Secretary	1		1		1	C	64	64	
Student Office Assist		1		1	1	C	64	64	
Teach Assist		2		2	1	D	36	36	
Physics Faculty	2		2		2	A	150	300	
Filing					1		150	150	
Storage					1		150	150	
Library/Conf Room					1		150	150	
	11	3	11	3					
Sub Total		14		14	14			1,889	
Circulation 1.4								756	
Total Office USF								2,645	

Classrooms & Suppor	Qty	Area	Qty	Unit	Area
Sub Total					
Circulation 1.3					
Total Classroom USF					

Labs & Support	Qty	Area	Qty	Unit	Area	
Interactive Learning Center			1	600	600	Shared
Teaching Lab			1	1,200	1,200	
Prep Room			1	225	225	
Research Lab			2	1,200	2,400	1 Bio, 1 Chem
Material Storage			1	600	600	
Resource Center			1	300	300	Near Labs
Physics Research Labs			2	600	1,200	Fred & Kim
Sub Total					6,525	
Circulation 1.2					1,305	
Total Lab USF					7,830	
Total Department USF					10,475	

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Department: Math										
	Staffing				Area (NSF)					
Office & Support	1999		2005		2005					
	SIUE	Other	SIUE	Other	Space	Type	Unit	Area	Remarks	
Chairperson	1		1		1	A1	225	225		
Faculty	17		20		20	A	150	3,000		
Secretary	2		2		2	C	64	128		
Call Staff	8		8		2	A	150	300		
Teaching Assist	12		12		12	D	36	432	Secured	
Undergrad TA		3		7	3	D	36	108	3 students per desk	
Grad Student		30		30					Locker only	
Student Office Assist		3		3	2	C	64	128		
Filing					1		150	150		
Office Storage					1		150	150		
Staff/Faculty Lounge					1		300	300		
Tutor Room					1		450	450		
Computer Room					1		200	200		
	40	36	43	40						
Sub Total		76		83	47			5,571		
Circulation 1.4								2,228		
Total Office USF								7,799		
Classrooms & Suppor	Qty		Area		Qty		Unit	Area		
Classroom (40)	1		750		2				Moved to Common Areas	
Classroom (60)	2				2				Moved to Common Areas	
Classroom (70)	1				1				Moved to Common Areas	
Sub Total										
Circulation 1.3										
Total Classroom USF										
Labs & Support	Qty		Area		Qty		Unit	Area		
Sub Total										
Circulation 1.2										
Total Lab USF										
Total Department USF								7,799		

Departmental Space List - Math

Building Program

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Departmental Space List - Academic Computing

Building Program

Department: Academic Computing

Office & Support	Staffing 1999 SIUE	Staffing 1999 Other	Staffing 2005 SIUE	Staffing 2005 Other	Area (NSF) 2005 Space	Type	Unit	Area	Remarks
Office	1		1		1	A	150	150	
Storage					1		150	150	
Network Equipment					1		375	375	
	1		1						
Sub Total		1		1	3			675	
Circulation 1.4								270	
Total Office USF								945	

Classrooms & Suppor	Qty	Area	Qty	Unit	Area	
Computer Lab (30)	1	1,000	1	1,000	1,000	
Computer Lab (10)	1	200	1	200	200	Open Access
Computer Lab (20)	1	600	2	900	1,800	W/Projector
Sub Total			6		3,000	
Circulation 1.3					900	
Total Classroom USF					3,900	

Labs & Support	Qty	Area	Qty	Unit	Area
Sub Total					
Circulation 1.2					
Total Lab USF					
Total Department USF					4,845

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Departmental Space List - Common Areas

Building Program

Common Areas

Office & Support	Staffing 1999 SIUE	Staffing 1999 Other	Staffing 2005 SIUE	Staffing 2005 Other	Area (NSF) 2005 Space	Type	Unit	Area	Remarks
Conference Room (6)									
Conference Room (12)					2		300	600	Shared
Conference Room (20)					2		500	1,000	Shared
Copy					4		75	300	1 Per Floor
Mail Drop					4		75	300	1 Per Floor
Sub Total					12			2,200	
Circulation 1.4								880	
Total Office USF								3,080	

Classrooms	Qty	Area	Qty	Unit	Area	
Auditorium (180)	2	3,375	2	3,375	6,750	Exist only 1 Reqrd
Interactive Learn Cntr (30)			2	900	1,800	Shared
Classroom (50)	4	750	7	1,000	7,000	Shared
Classroom (70)	2	1,200	1	1,400	1,400	Shared
Classroom (90)			2	2,250	4,500	Shared
Physics Class Prep	1	600	1	600	600	Shared
Sub Total					22,050	
Circulation 1.3					6,615	
Total Classroom USF					28,665	

	Qty	Area	Qty	Unit	Area	
Machine Shop	1	1,750	1	1,750	1,750	Includes Elec. Shop
Hazardous Waste	1	225	1	225	225	
Undergrad Student Lockers			100	5	500	
Lobby			1	2000	2,000	NSF=USF
Display Area			1	1000	1,000	NSF=USF
Vending/Lounge			1	600	600	NSF=USF
Sub Total					6,075	
Circulation 1.2					495	
Total Lab USF					6,570	
Total Department USF					38,315	

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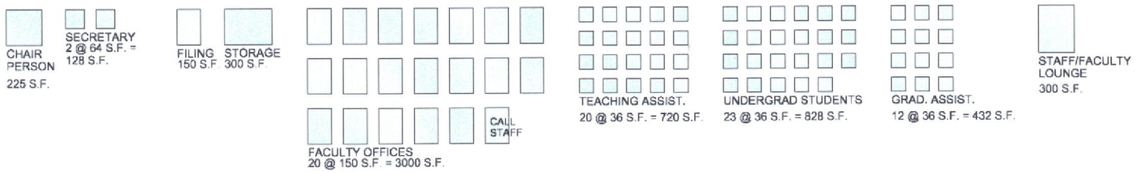
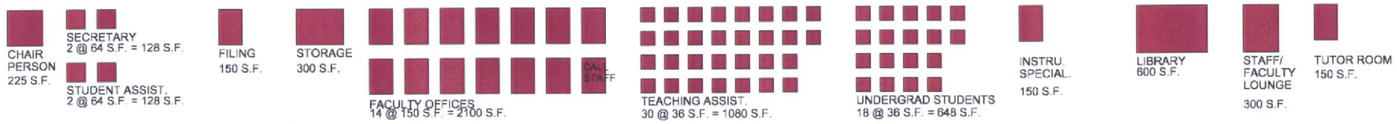
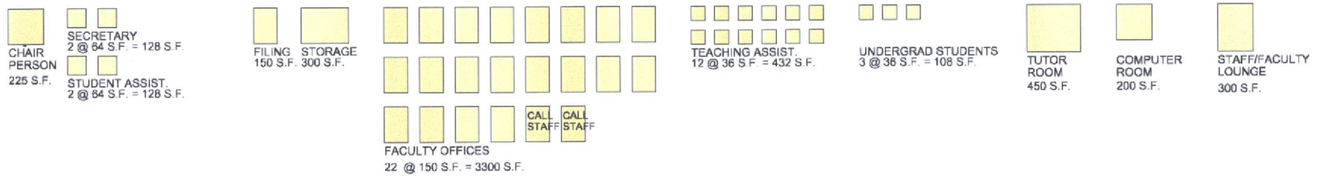
BIOLOGY



CHEMISTRY

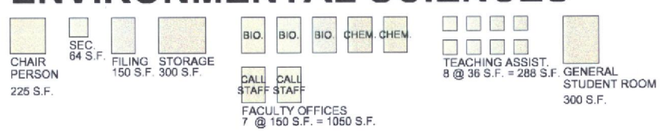


MATH



PHYSICS

ENVIRONMENTAL SCIENCES



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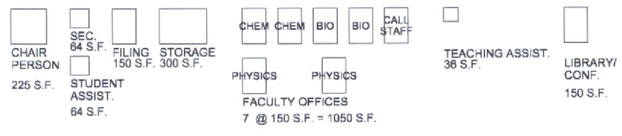


OFFICE/ SUPPORT

Building Program

Southern Illinois University Edwardsville

Science Building Renovation

PROGRAMMING & CONCEPT PHASE

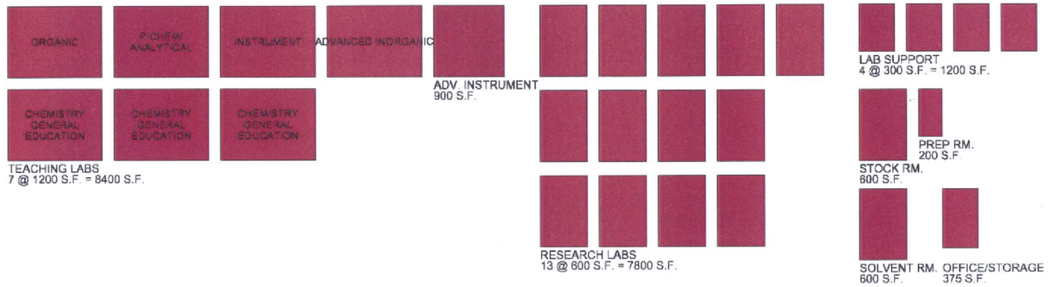
Hellmuth, Obata + Kassabaum

St. Louis
Chicago

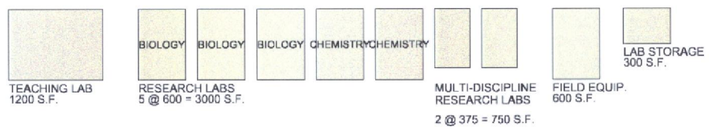
September 1999

BIOLOGY

CHEMISTRY



ENVIRONMENTAL SCIENCES



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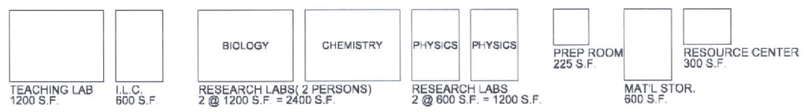
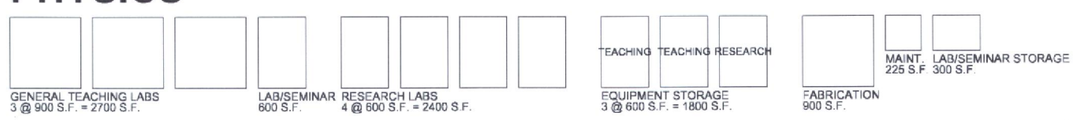


PHYSICS



LABS/ SUPPORT

Building Program

Southern Illinois University Edwardsville

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PROGRAMMING & CONCEPT PHASE

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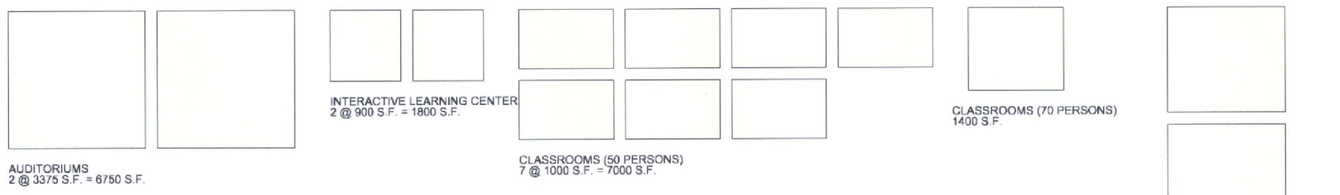
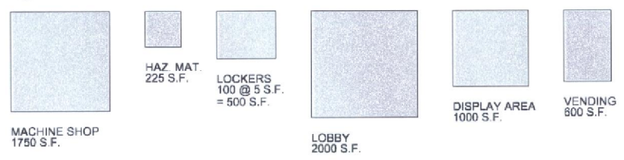
OFFICE/ SUPPORT

CLASSROOMS



ACADEMIC COMPUTING

OTHER



COMMON AREAS

Building Program

Southern Illinois University Edwardsville

Science Building Renovation

PROGRAMMING & CONCEPT PHASE

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Kassabaum

St. Louis
Chicago

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Planning Guidelines

The programming for the facility produced a series of guidelines, constituting general concepts and considerations which served as principles for the concept design. These began as a series of ideas communicated on "snowcards" during the departmental interviews. Many represent standard tenets of building and laboratory design, while others were specific to the SIU-E Science Facility. Relationship diagrams were constructed for all of the departments which show proximities between laboratories (both teaching and research), lab support rooms and ancillary spaces. These are used as planning mechanisms for the concept designs.

SIU

Southern Illinois University Edwardsville

Science Building Renovation

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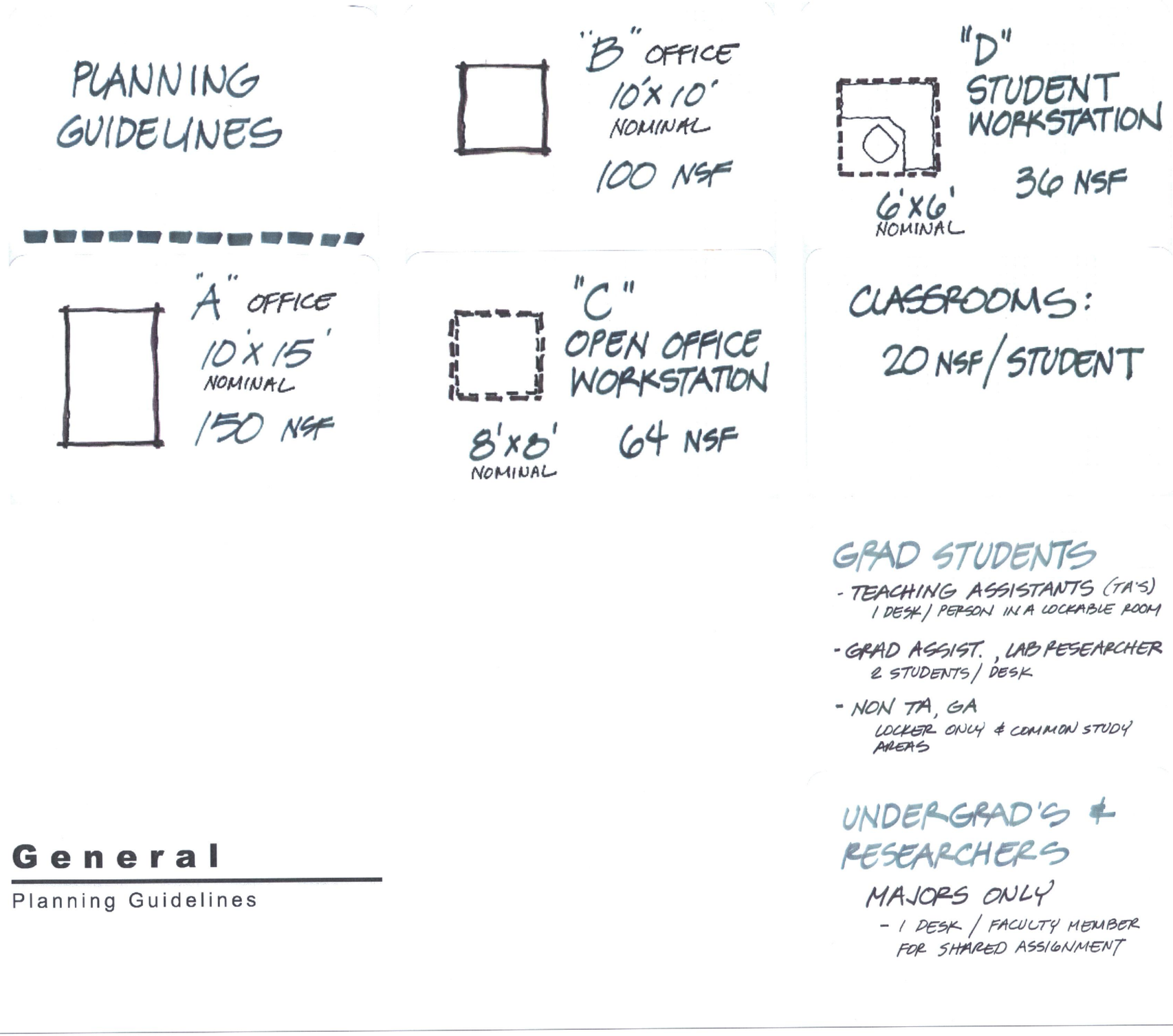

General

Planning Guidelines

Southern Illinois University Edwardsville

Science Building Renovation

PROGRAMMING & CONCEPT PHASE

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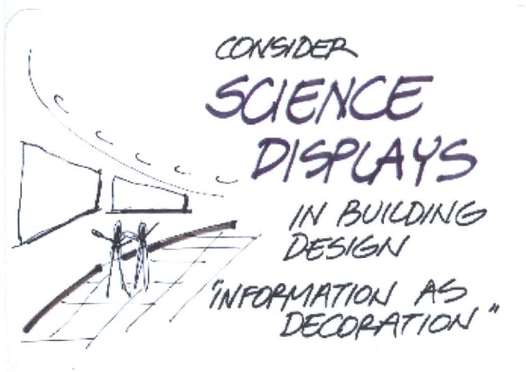
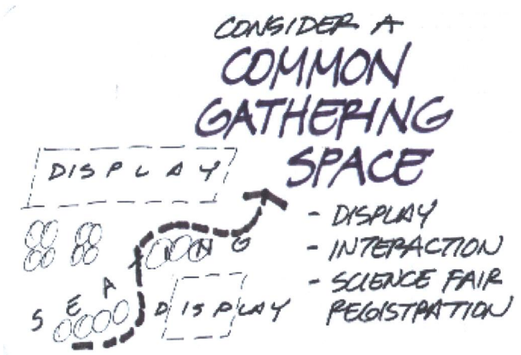
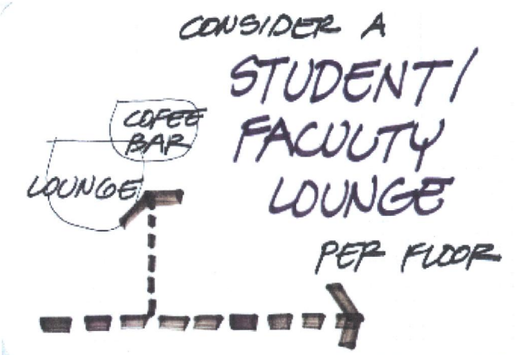
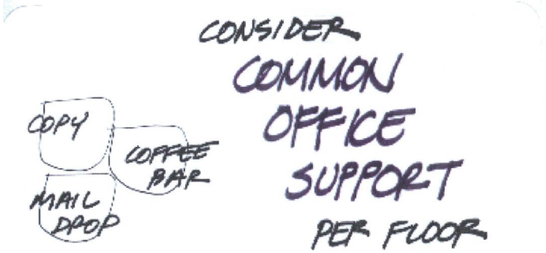
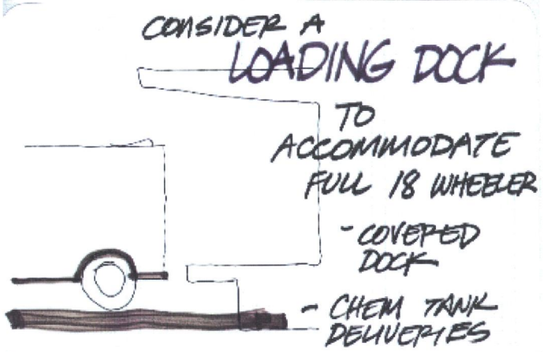
GENERAL

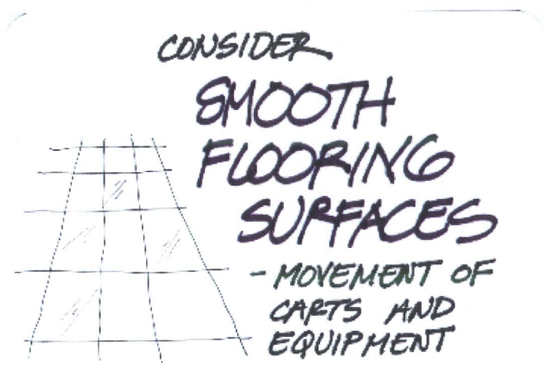


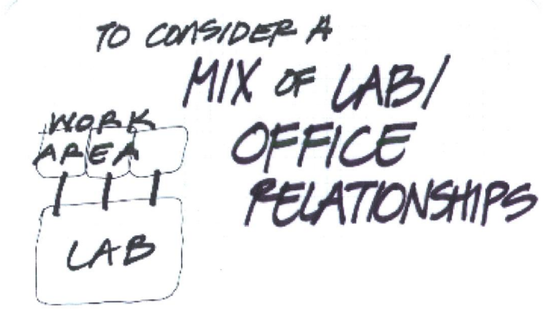


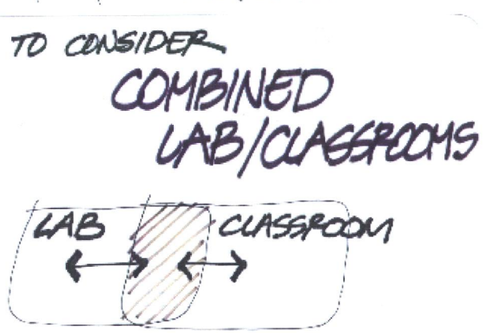












General

Planning Guidelines

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Science Building Renovation

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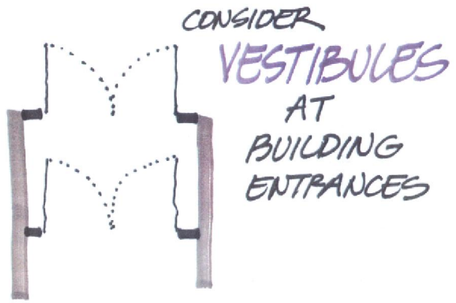
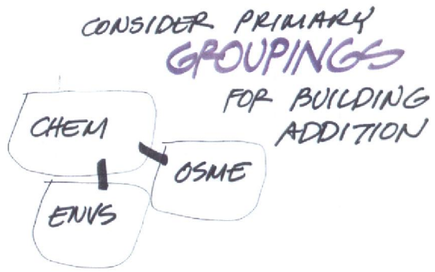
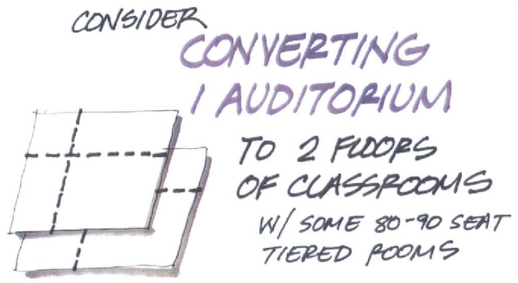
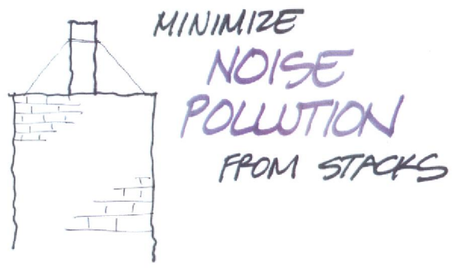
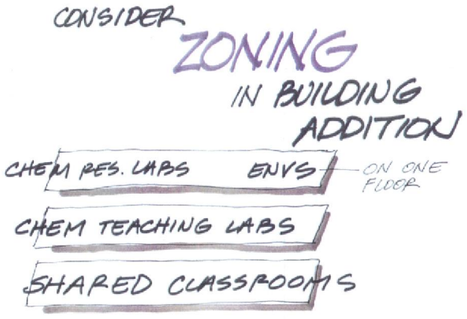
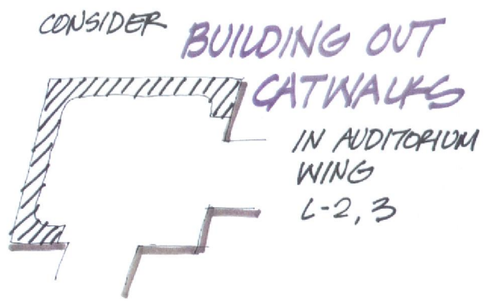


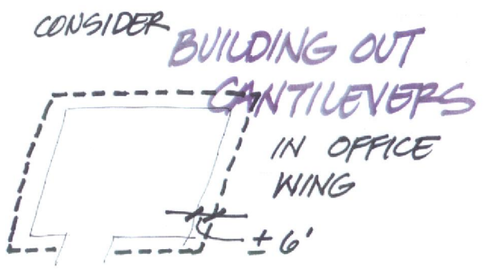


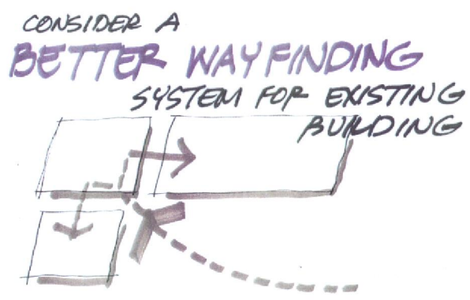


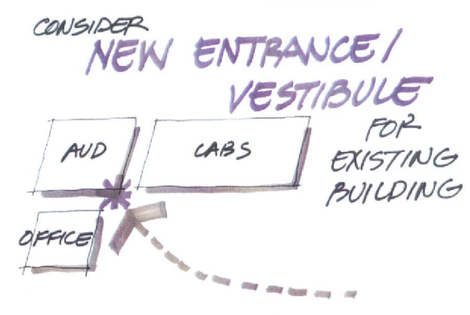












General

Planning Guidelines

Southern Illinois University Edwardsville

Science Building Renovation

PROGRAMMING & CONCEPT PHASE

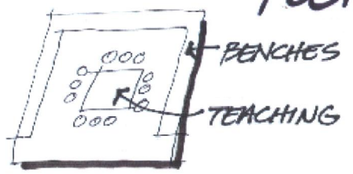
Hellmuth,
Obata +
Kassabaum

St. Louis
Chicago

September 1999

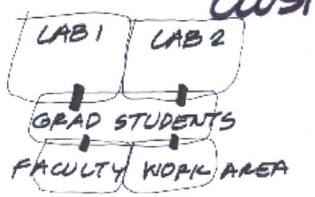
PHYSICS

CONSIDER A
LAB/SEMINAR
ROOM

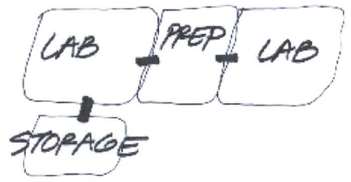


CONSIDER A
PROMINENT
LOCATION
FOR THE
COMPUTER
LAB

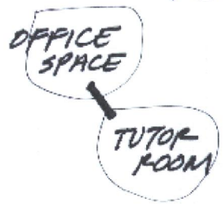
CONSIDER
RESEARCH LAB
CLUSTERS



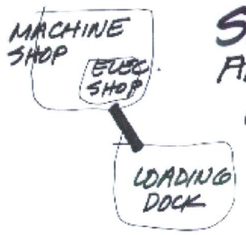
CONSIDER
TEACHING LAB
ADJACENCIES



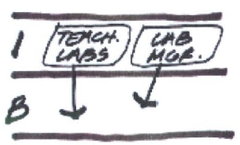
CONSIDER
ADJACENCY
FOR TUTOR
ROOM



LOCATE THE
MACHINE
SHOP
ADJACENT TO
LOADING DOCK

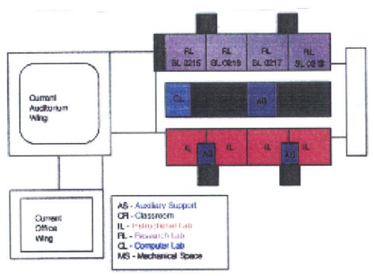


CONSIDER
RELOCATING
PHYSICS LABS



CONSIDER
BUILDING OUT
FUTURE PHYSICS
REQUIREMENTS
ON BASEMENT LEVEL
IN VACATED ENG. SPACE

PHYSICS PLAN FOR B



Physics

Planning Guidelines

Southern Illinois University Edwardsville

Science Building Renovation

PROGRAMMING & CONCEPT PHASE

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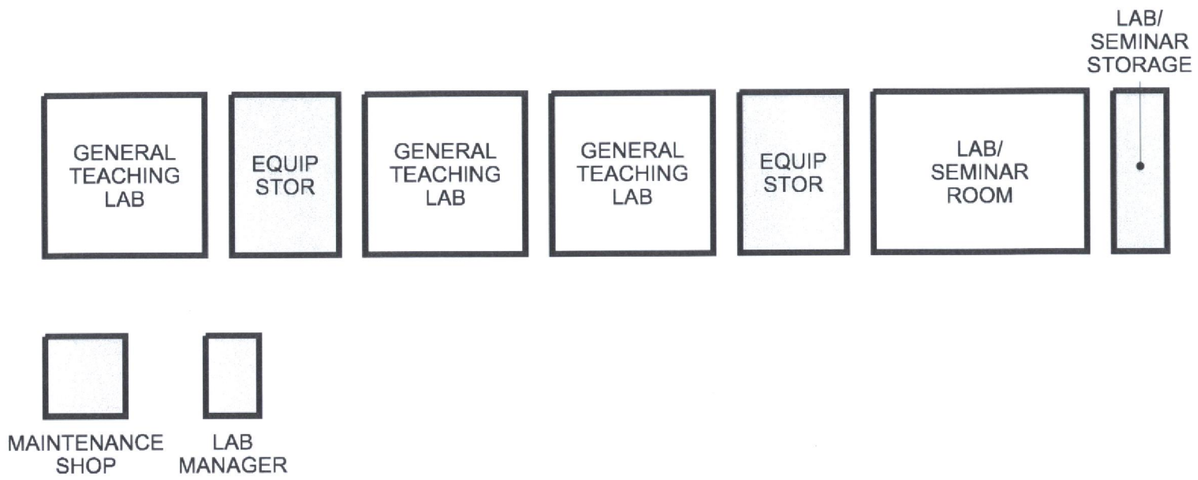
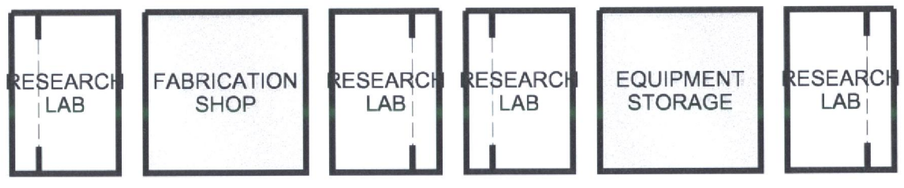
PHYSICS TEACHING LABS



PHYSICS RESEARCH LABS



Physics Space Relationship Diagrams

Planning Guidelines

Southern Illinois University Edwardsville

Science Building Renovation

PROGRAMMING & CONCEPT PHASE

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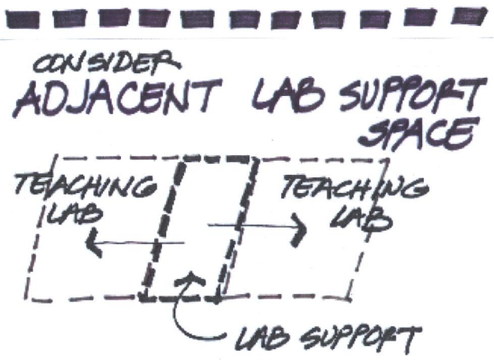
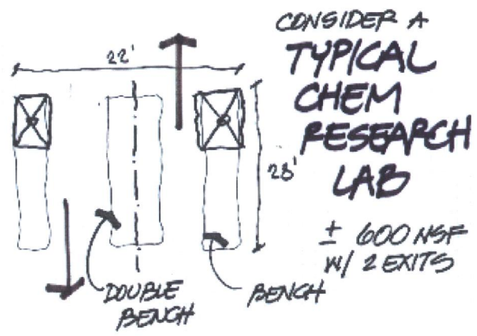
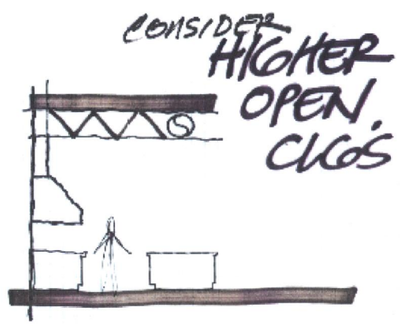
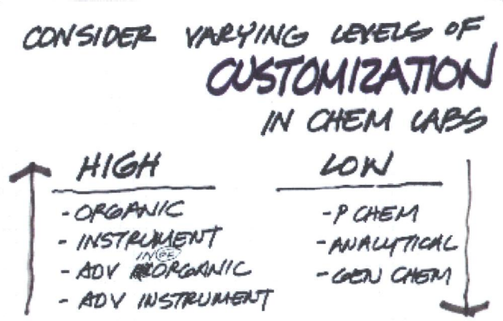
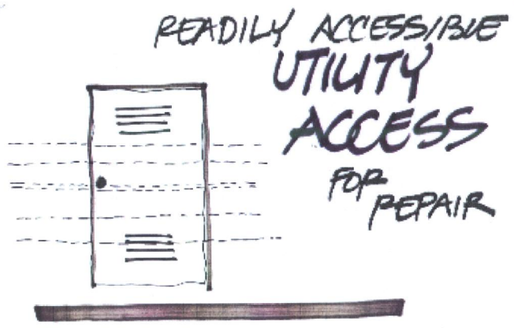
CHEMISTRY

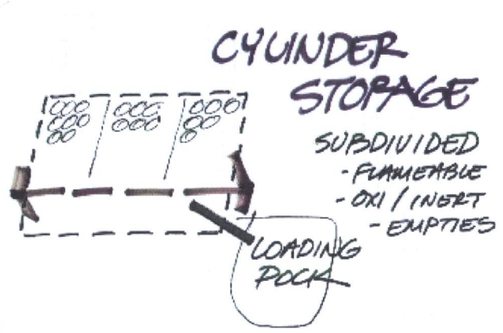


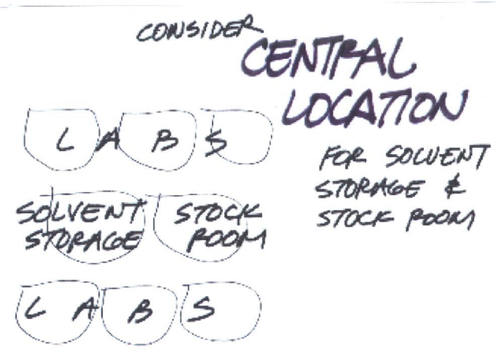


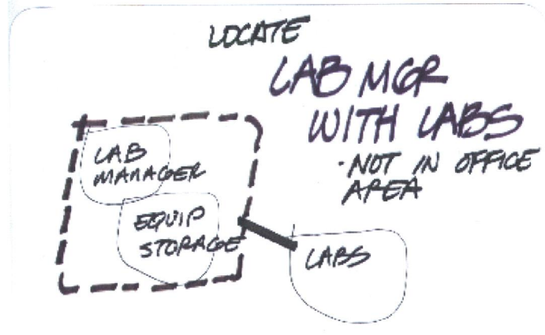












Chemistry

Planning Guidelines

Southern Illinois University Edwardsville

Science Building Renovation

PROGRAMMING & CONCEPT PHASE

Hellmuth, Obata + Kassabaum

St. Louis
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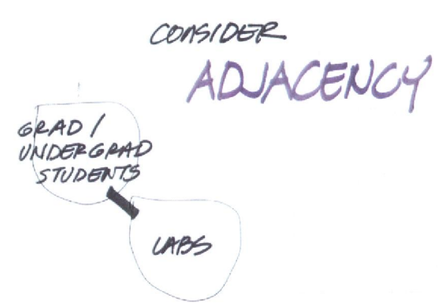

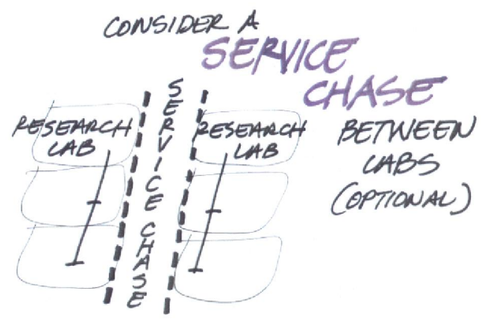

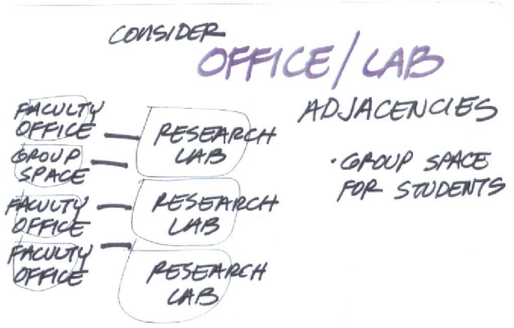

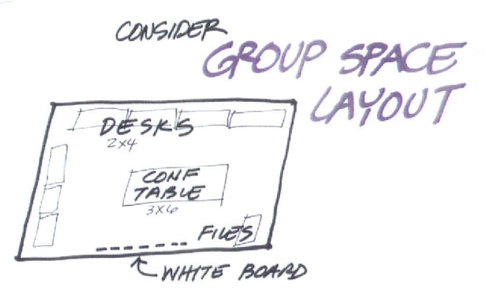

Chemistry

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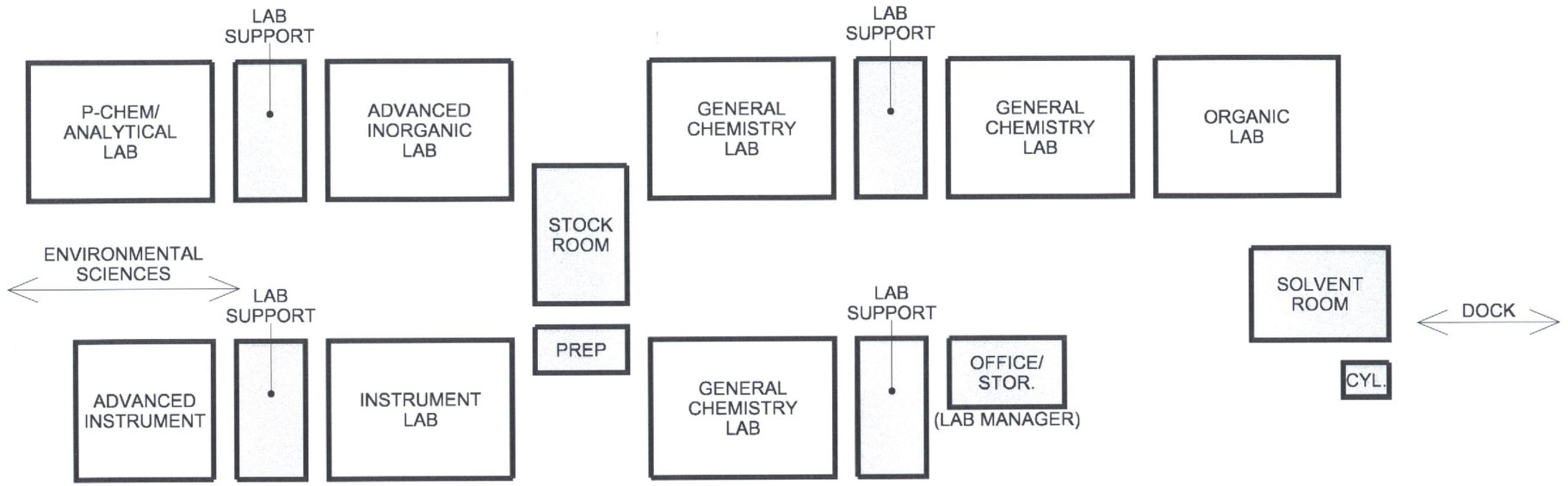
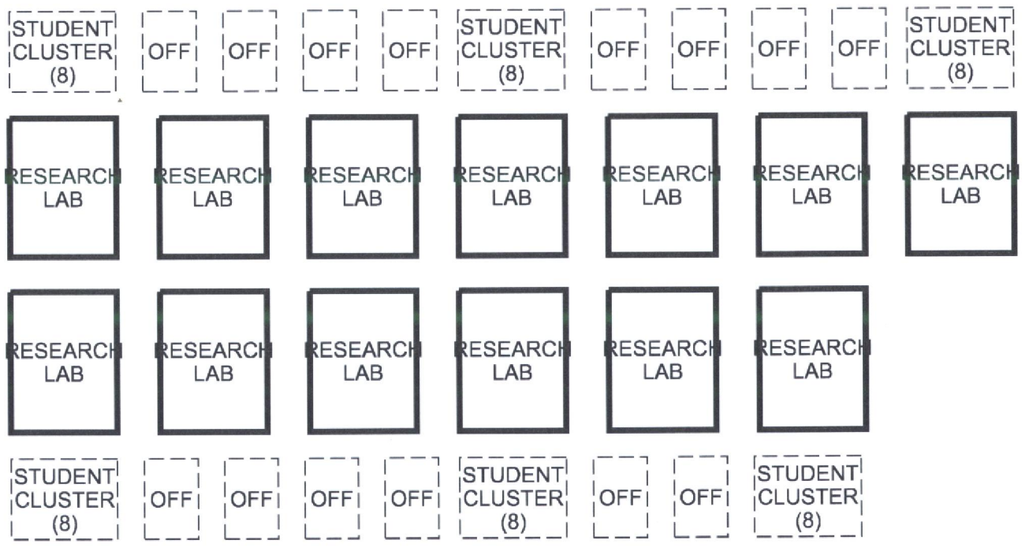
TEACHING LABS



RESEARCH LABS



Chemistry Space Relationship Diagrams

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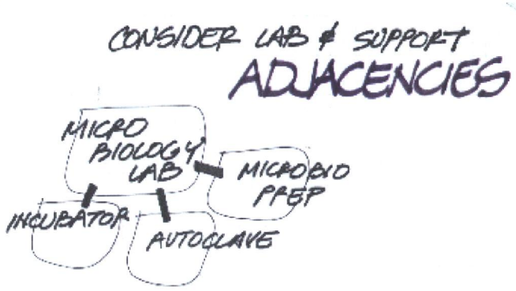

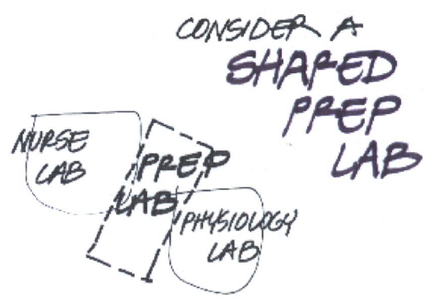

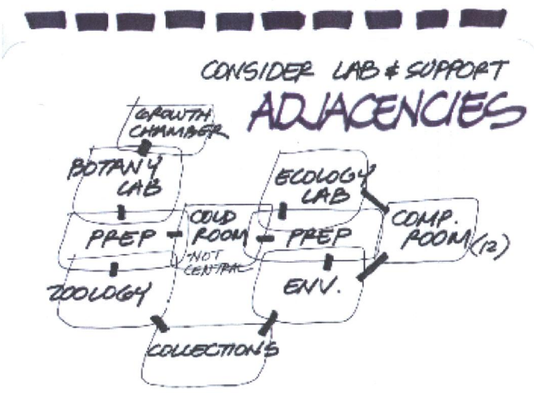

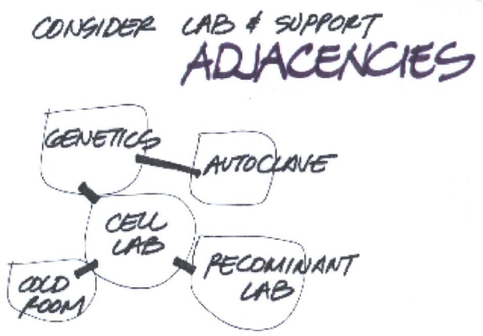

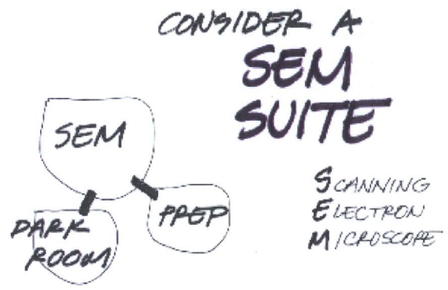

CONSIDER
NEW VENTILATION SYSTEM
FOR ANIMAL CARE FACILITY

Biology

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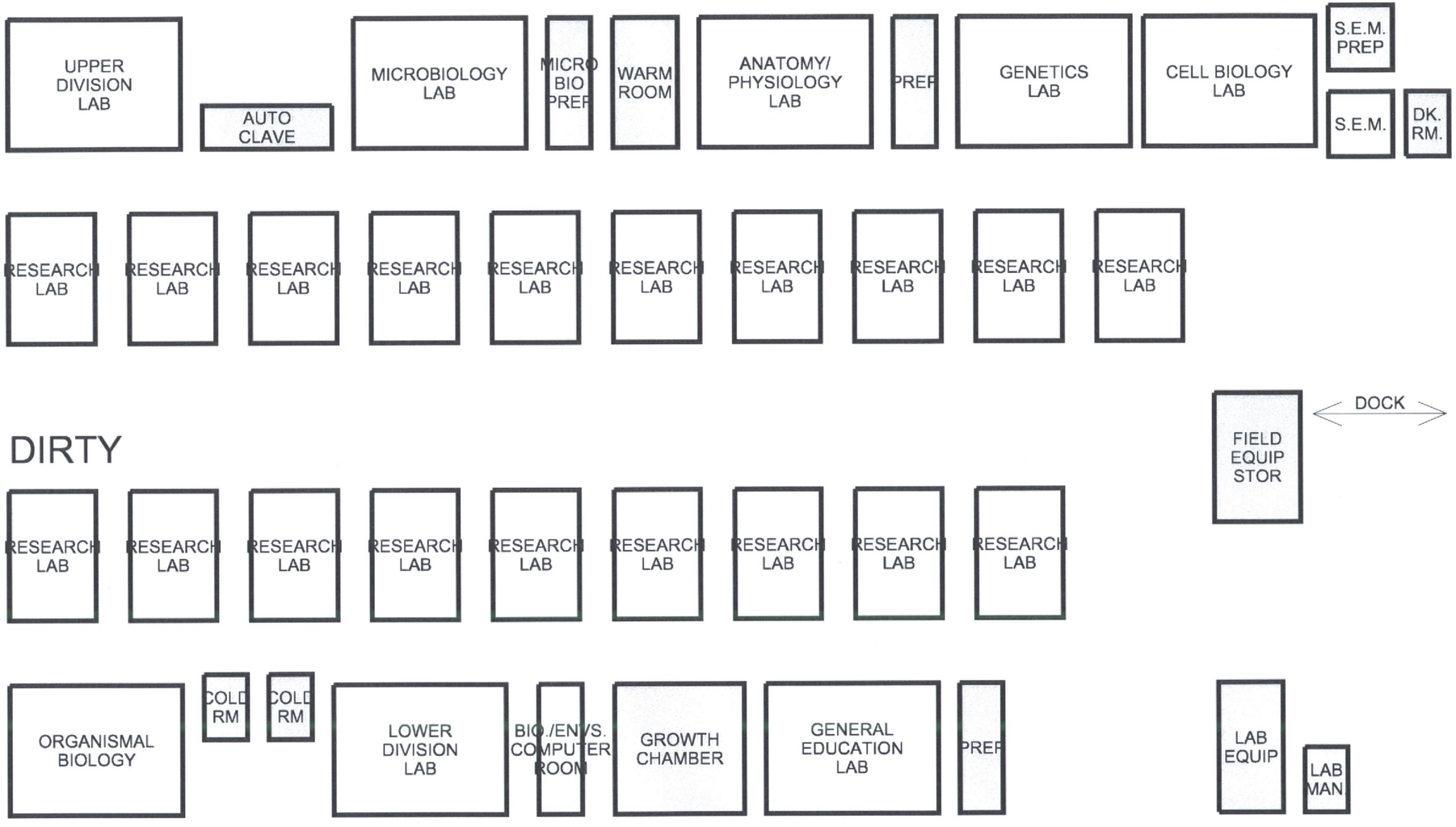

Biology Space Relationship Diagrams

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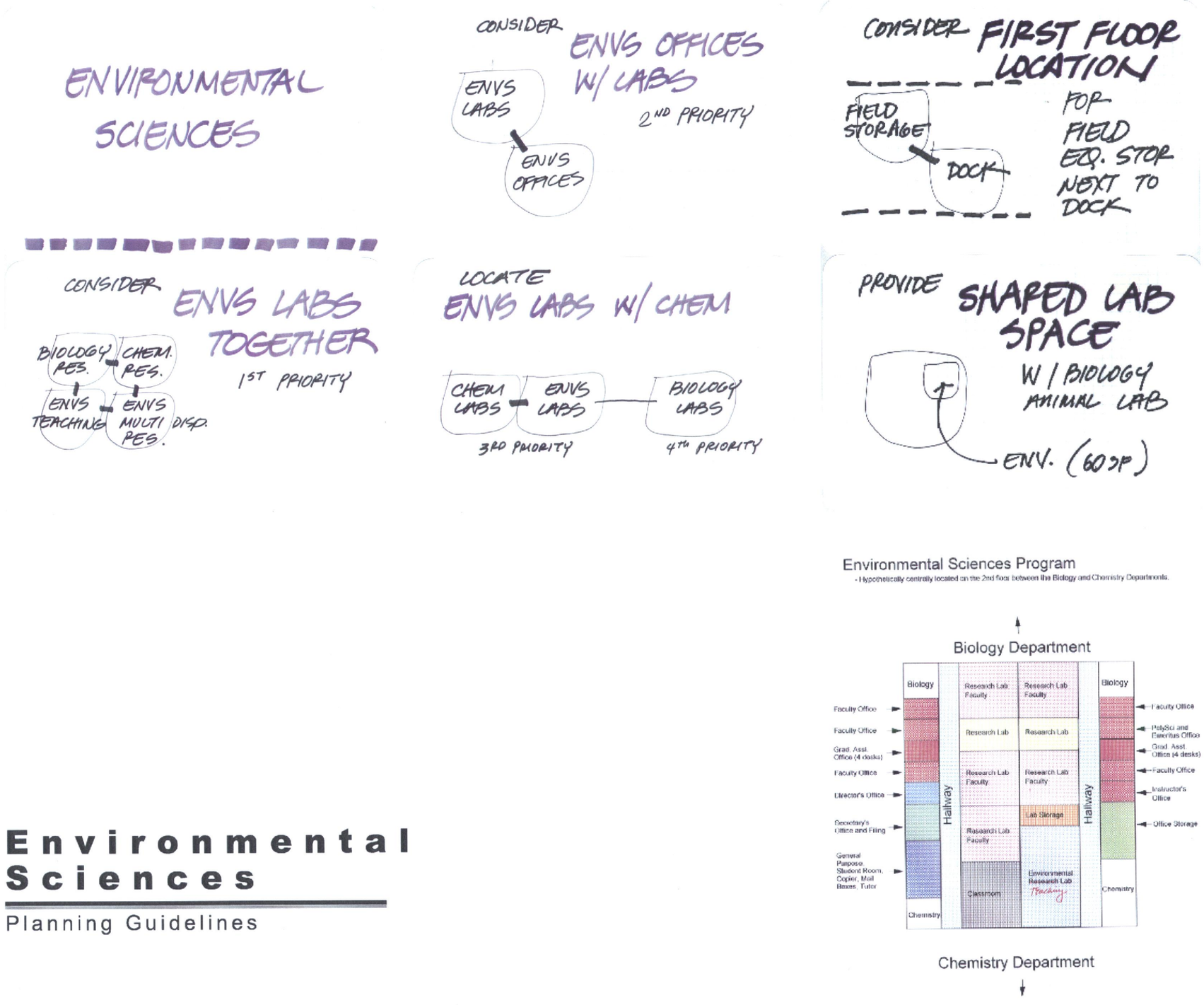

Environmental Sciences

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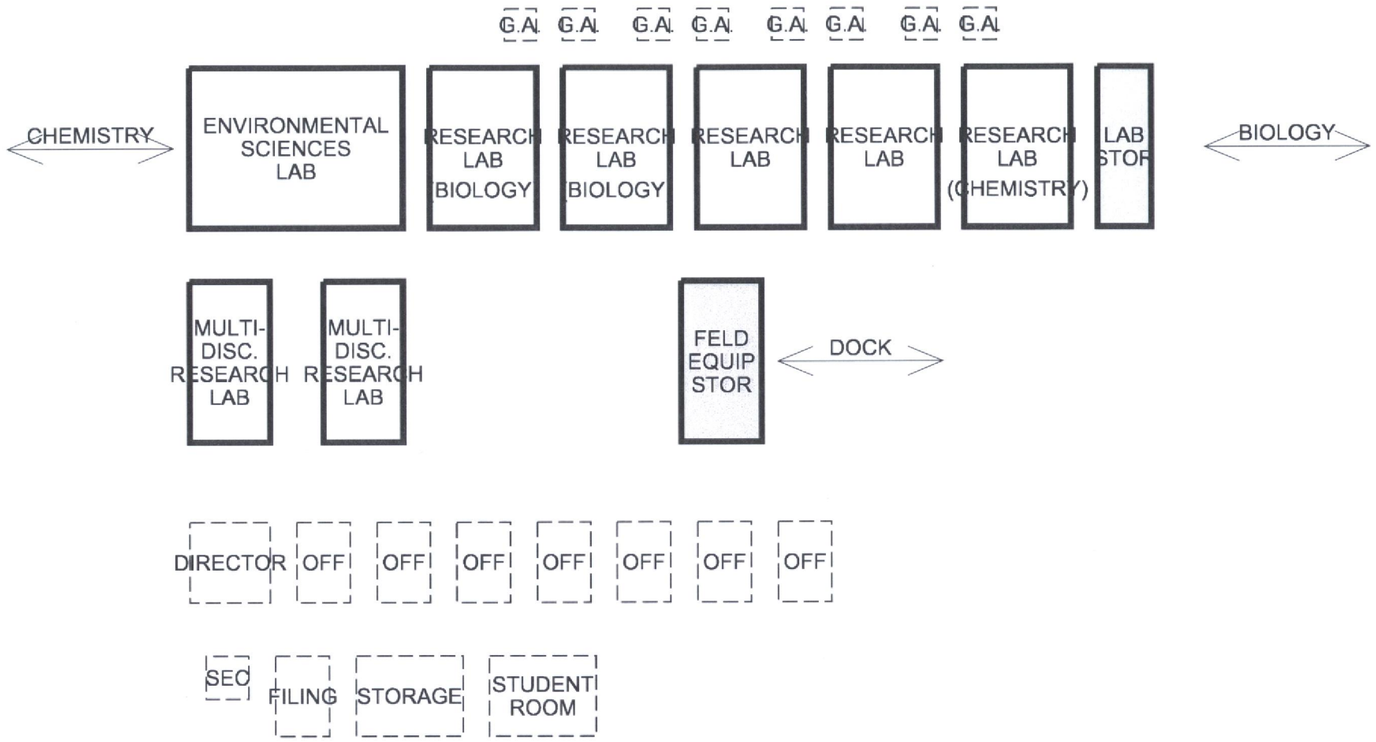

Environmental Science Space Relationship Diagrams

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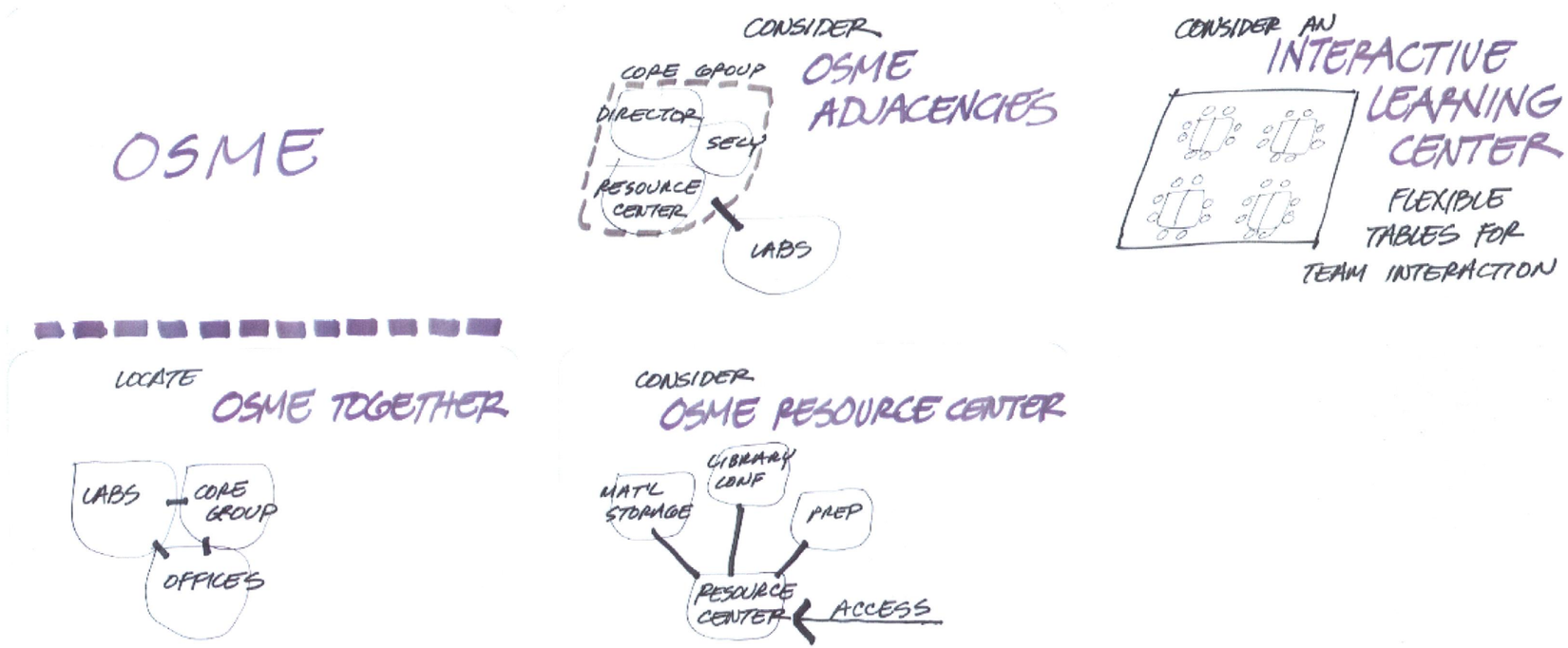

OSME

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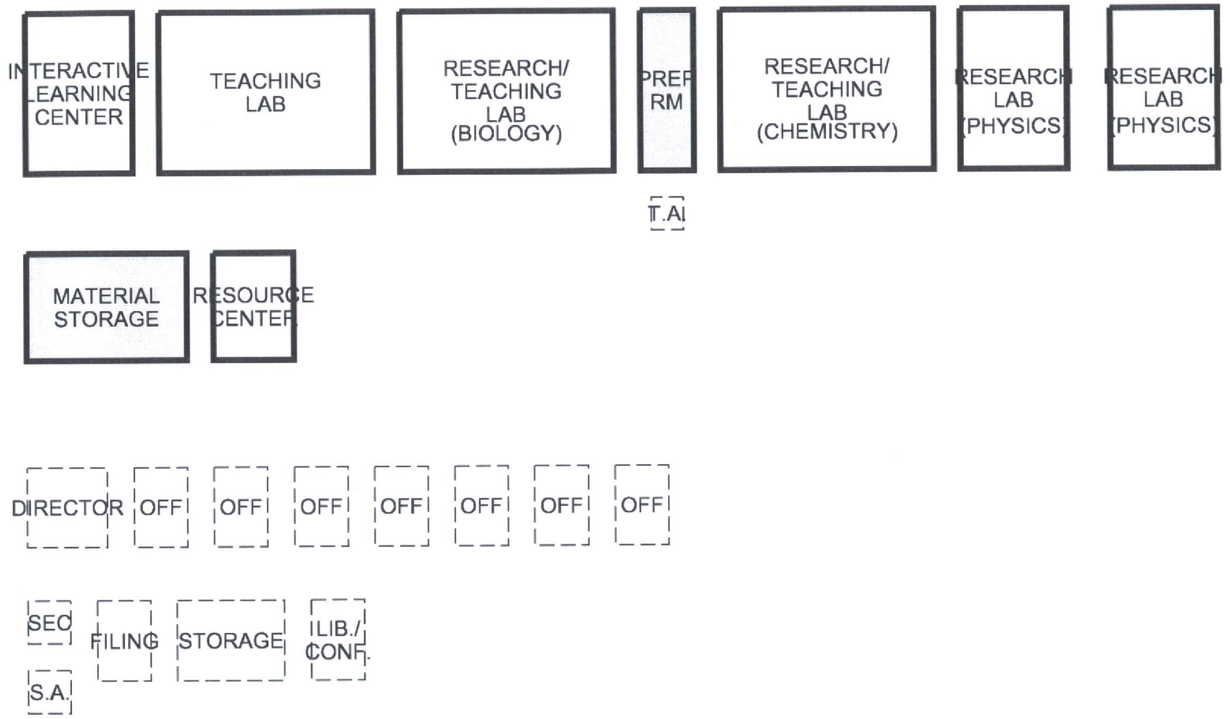

O.S.M.E. Space Relationship Diagrams

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Academic Computing

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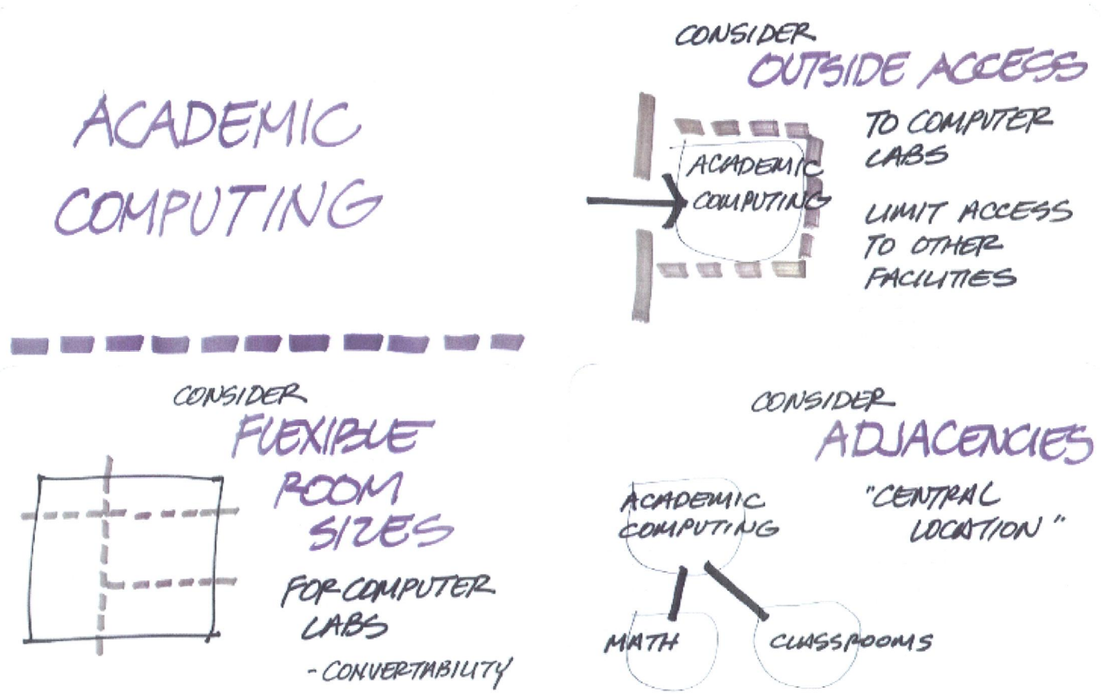
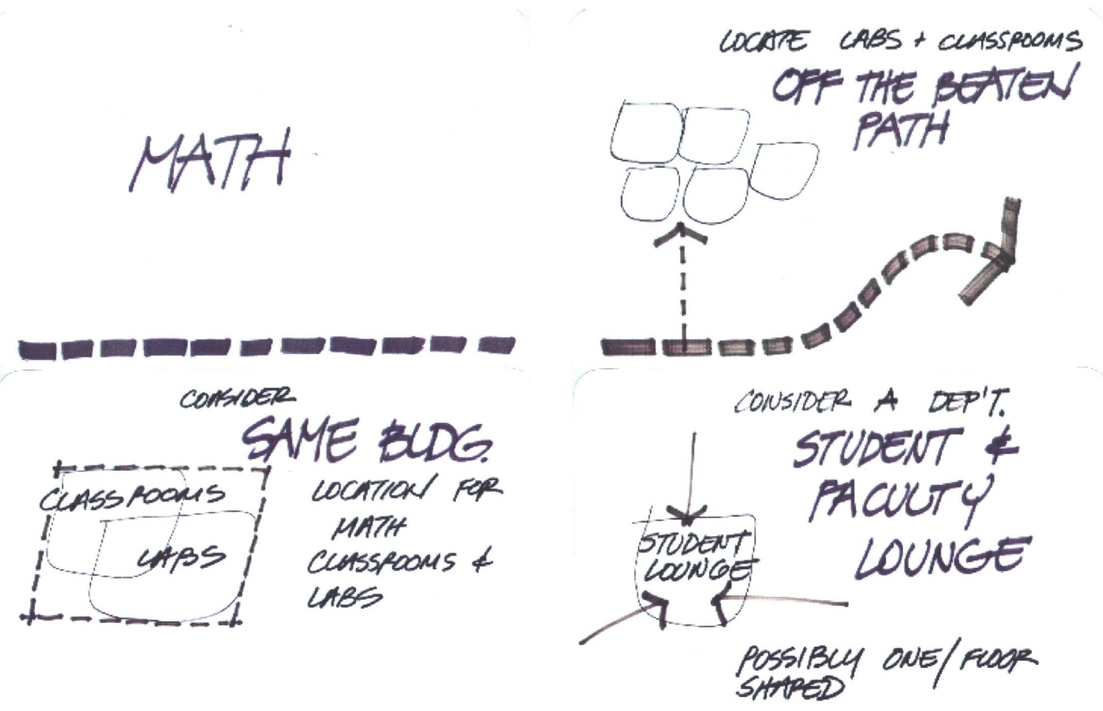


Math

Planning Guidelines



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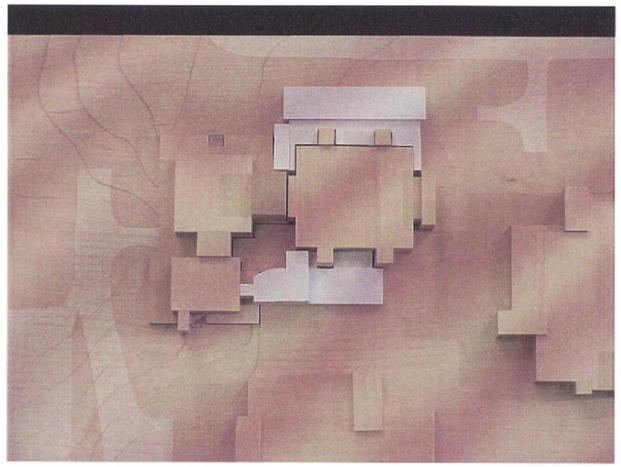
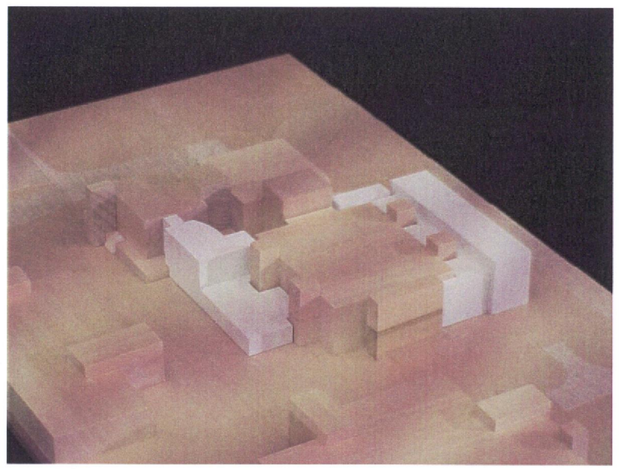
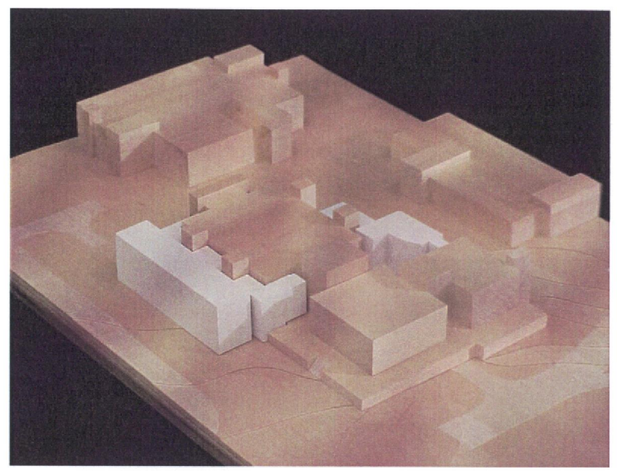


Plan



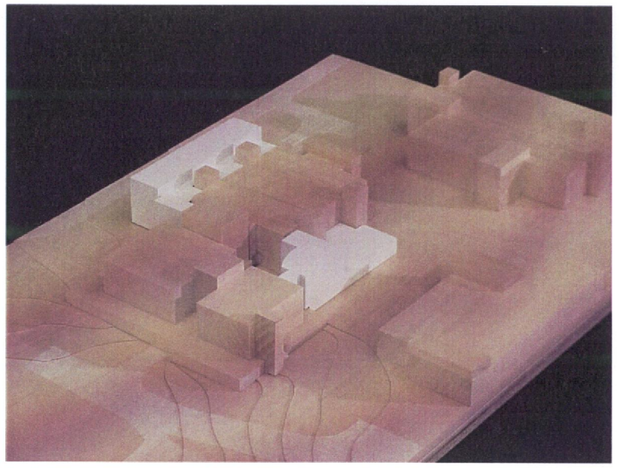
View Looking Northwest



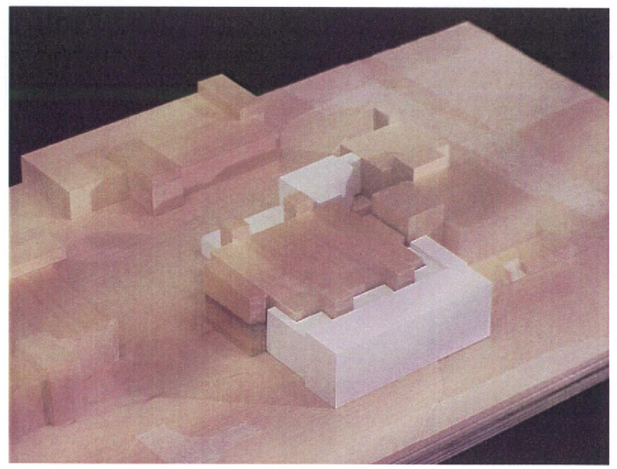
View Looking Southwest

Scheme 1 Model Photos

Building Concepts



View Looking Northeast



View Looking Southeast

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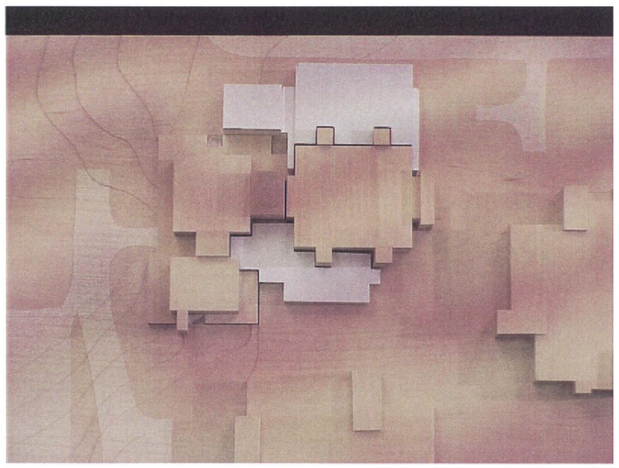

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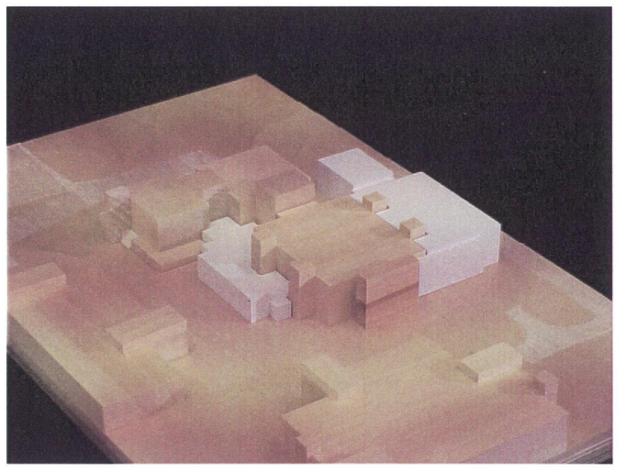
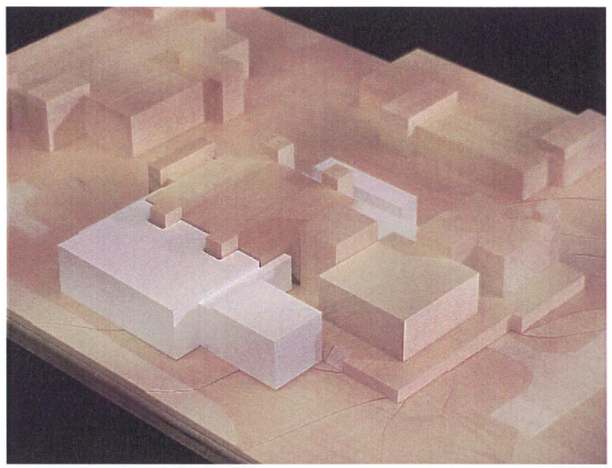


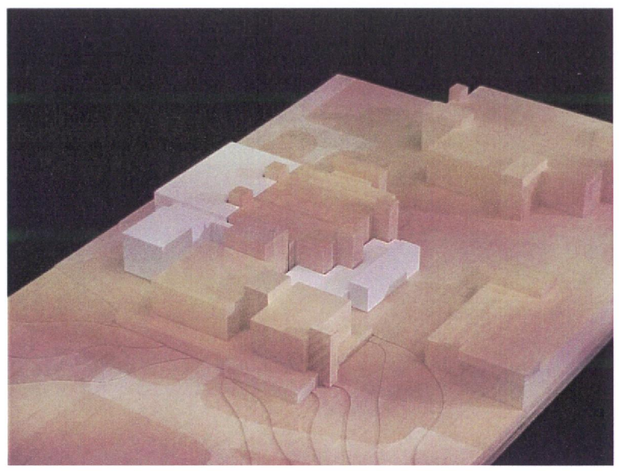
View Looking Northwest



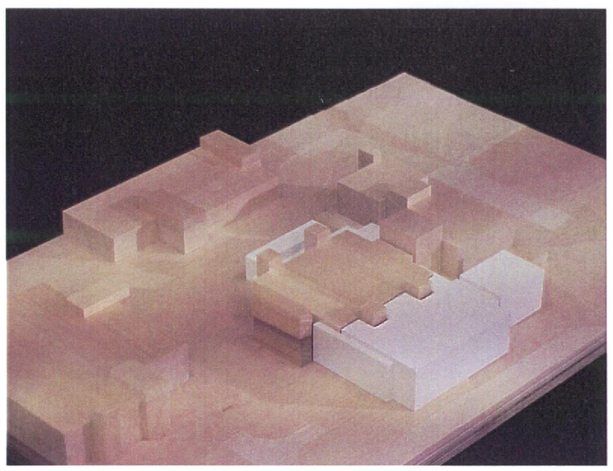
View Looking Southwest

Scheme 2 Model Photos

Building Concepts



View Looking Northeast



View Looking Southeast

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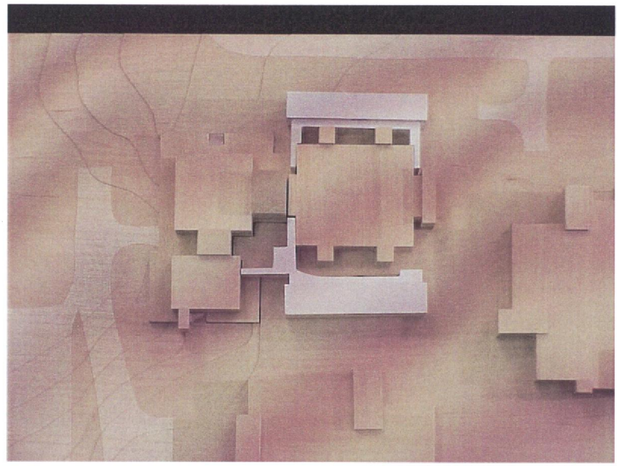
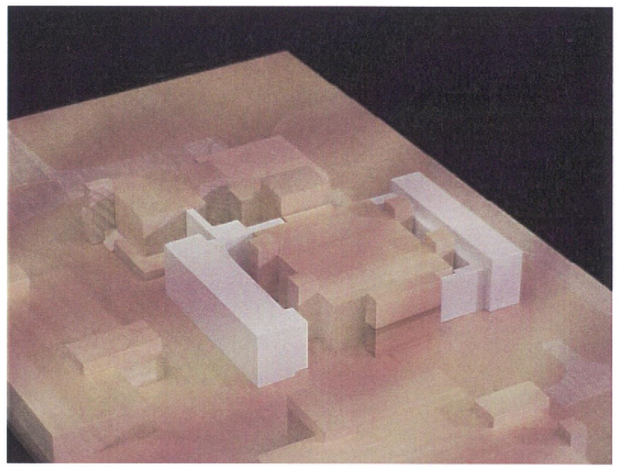
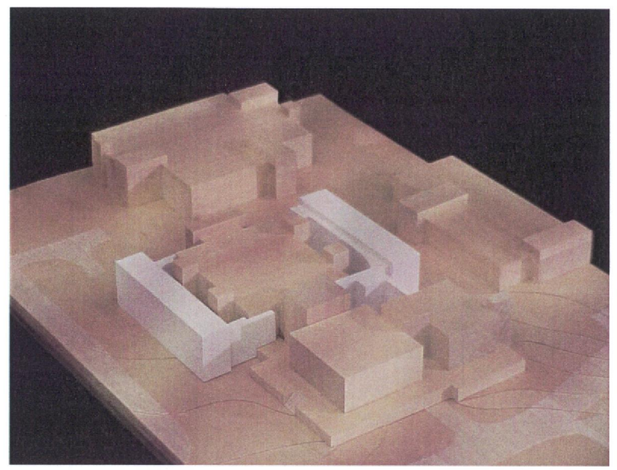


Plan



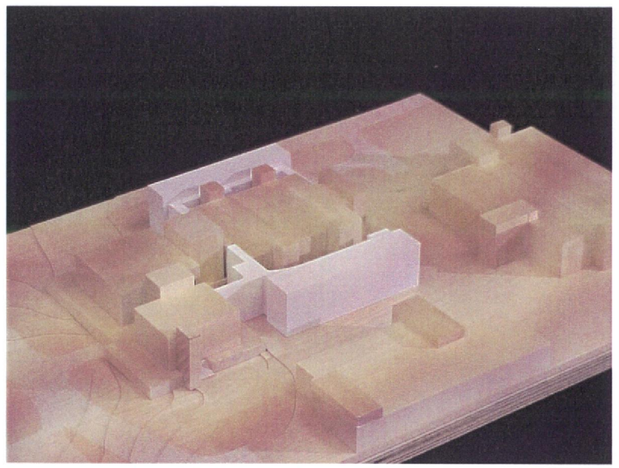
View Looking Northwest



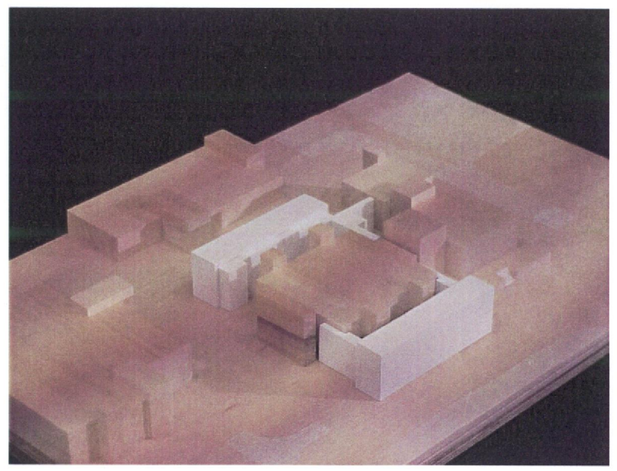
View Looking Southwest

Scheme 3 Model Photos

Building Concepts



View Looking Northeast



View Looking Southeast

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Science Building Renovation

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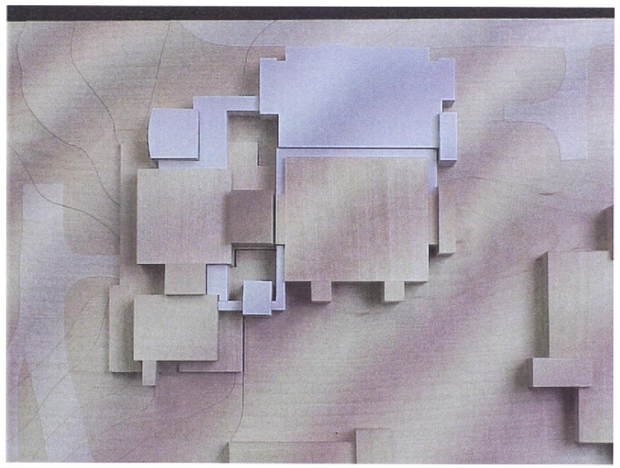
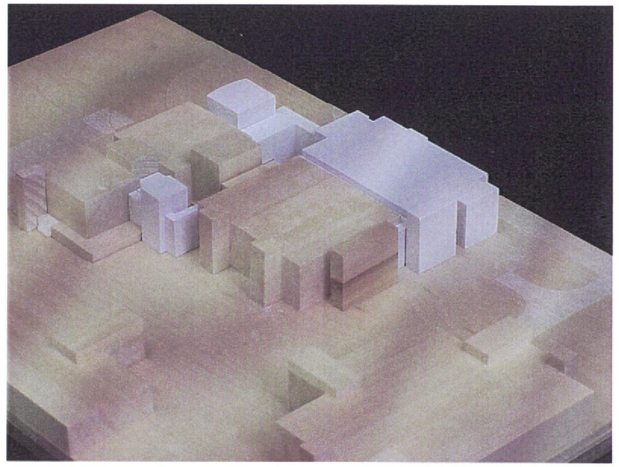
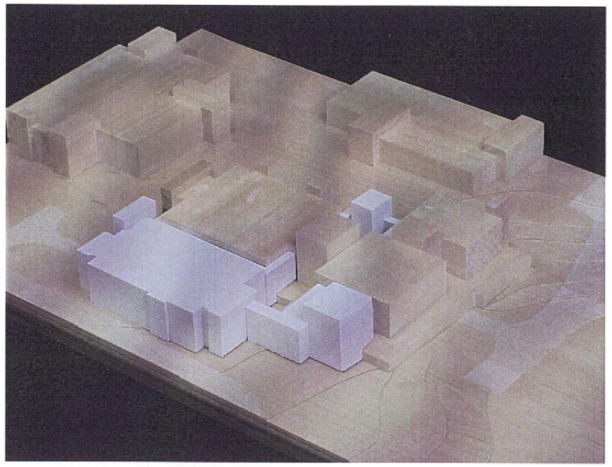


Plan



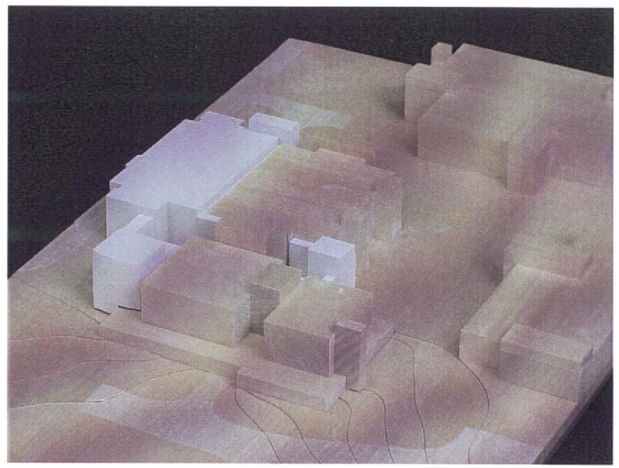
View Looking Northwest



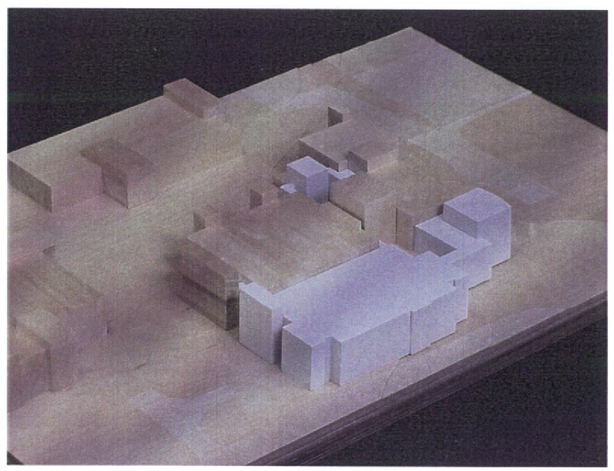
View Looking Southwest

Scheme 4 Model Photos

Building Concepts



View Looking Northeast



View Looking Southeast

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Science Building Renovation

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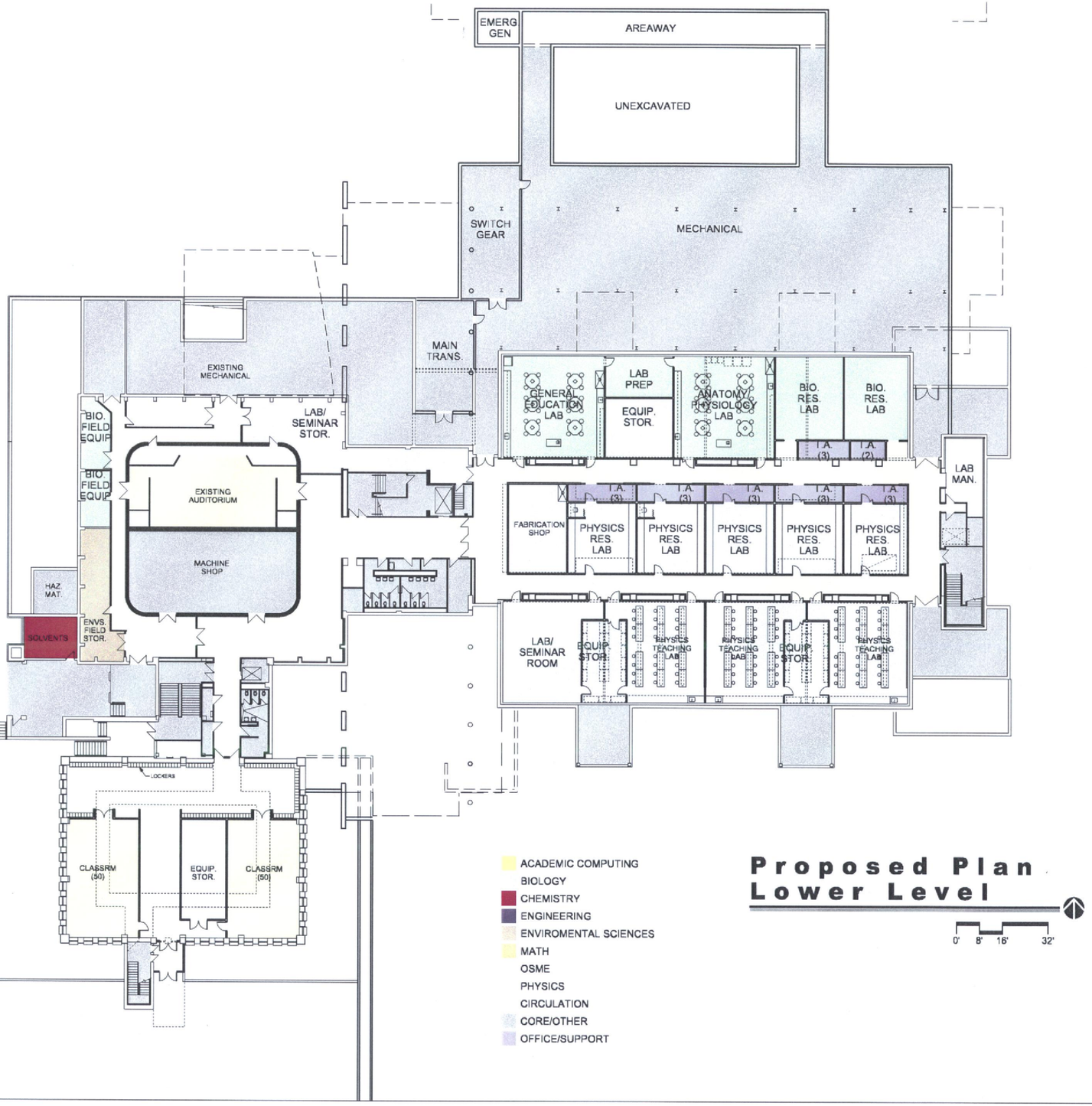

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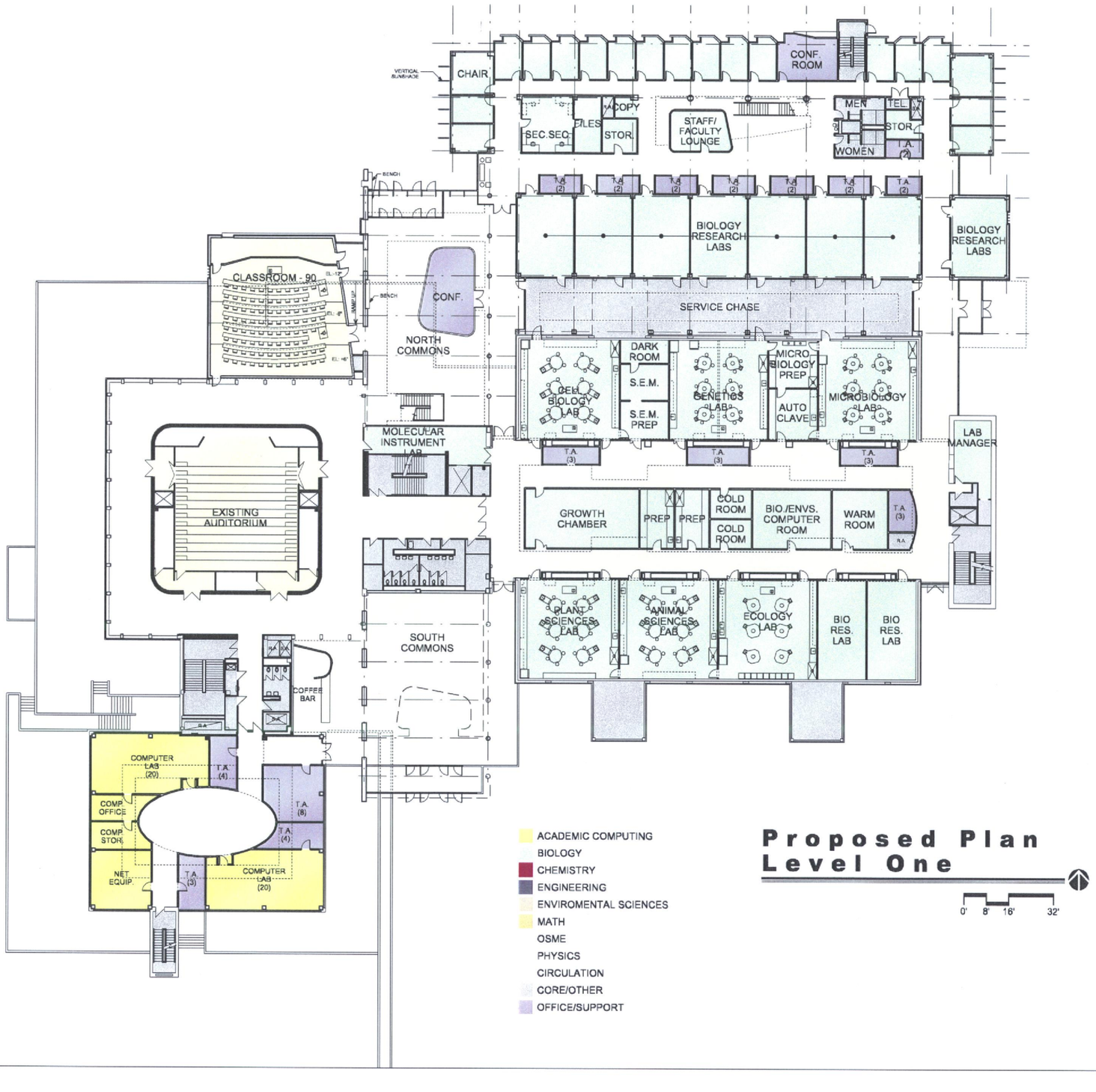

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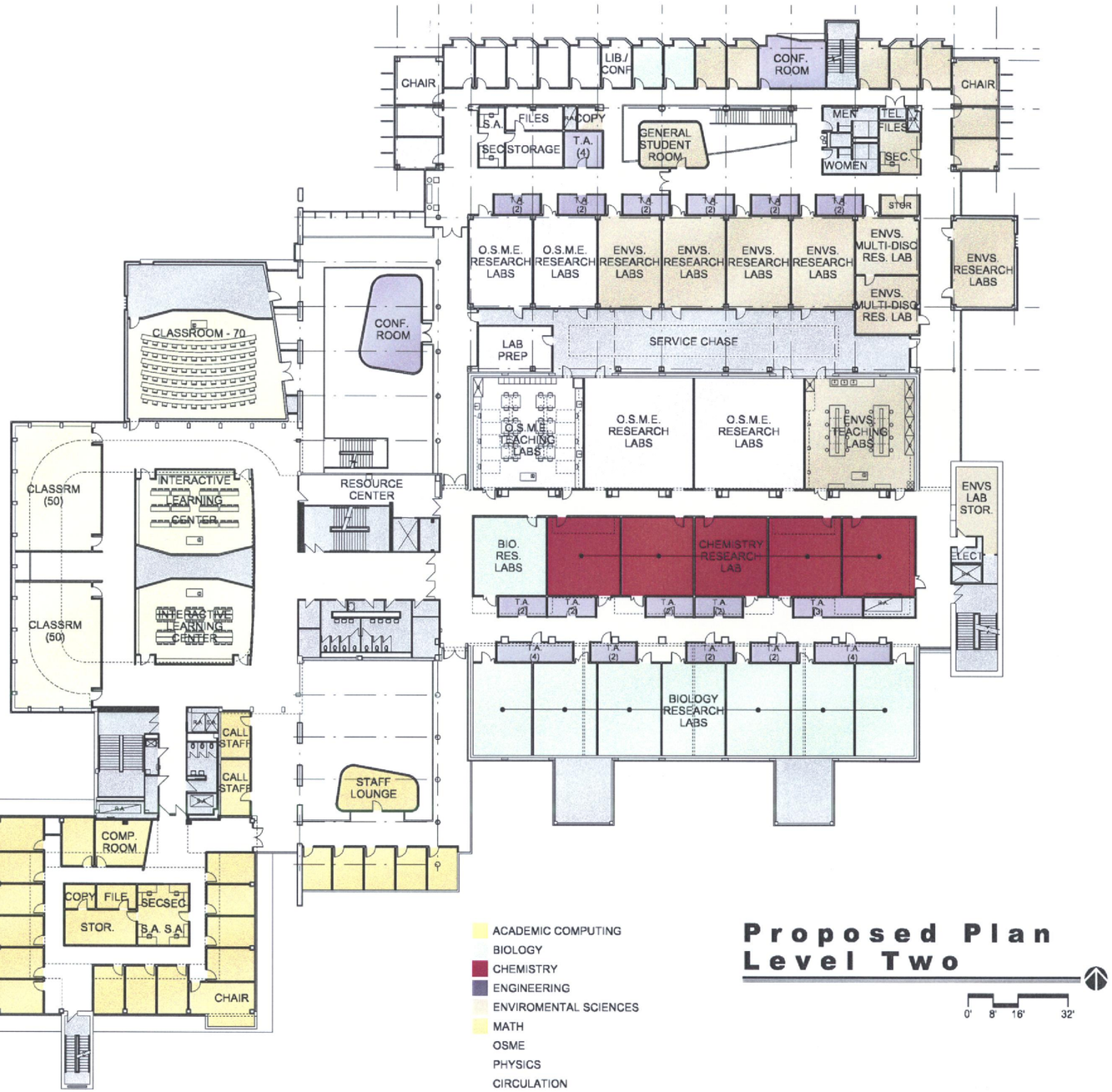

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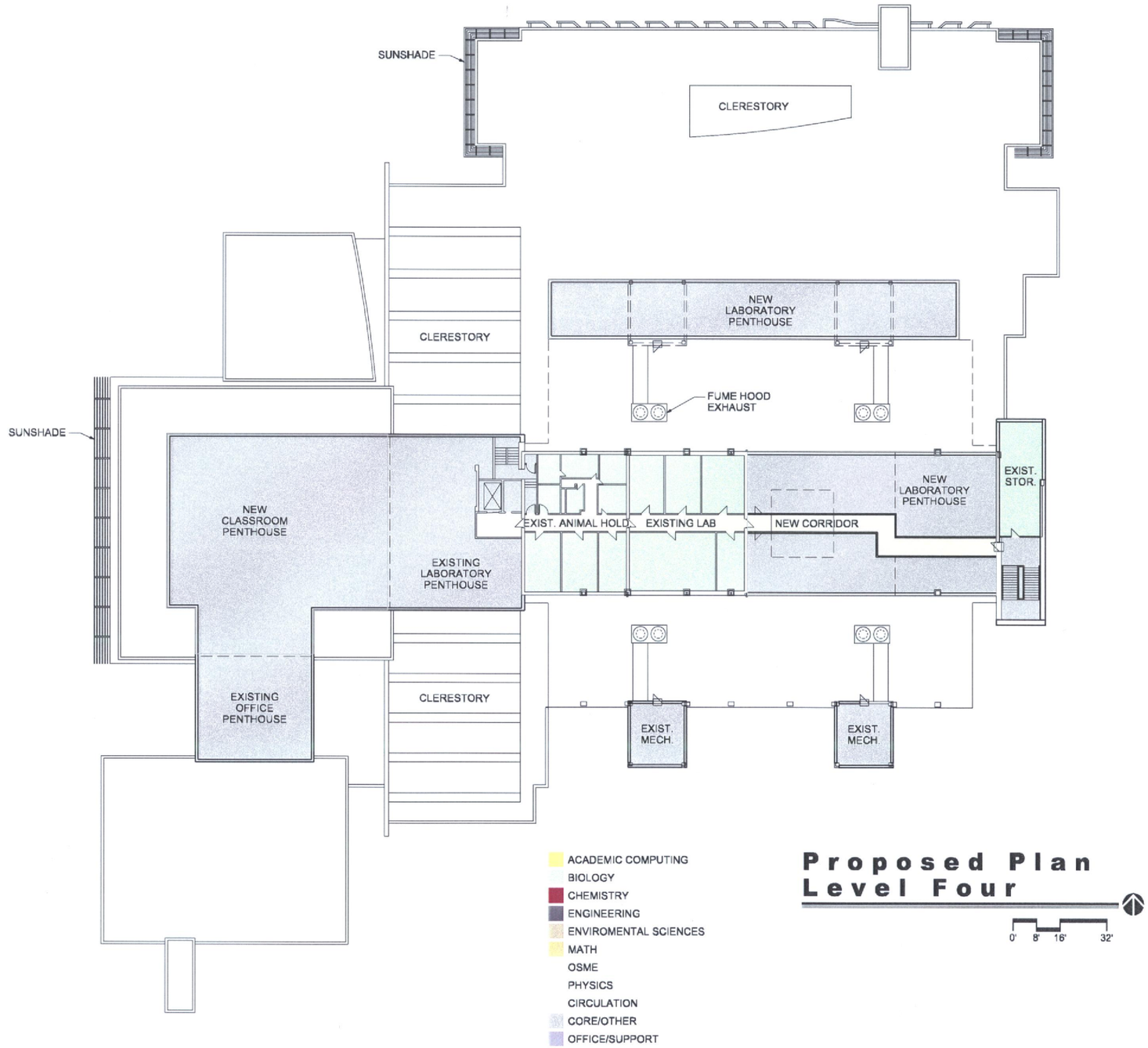

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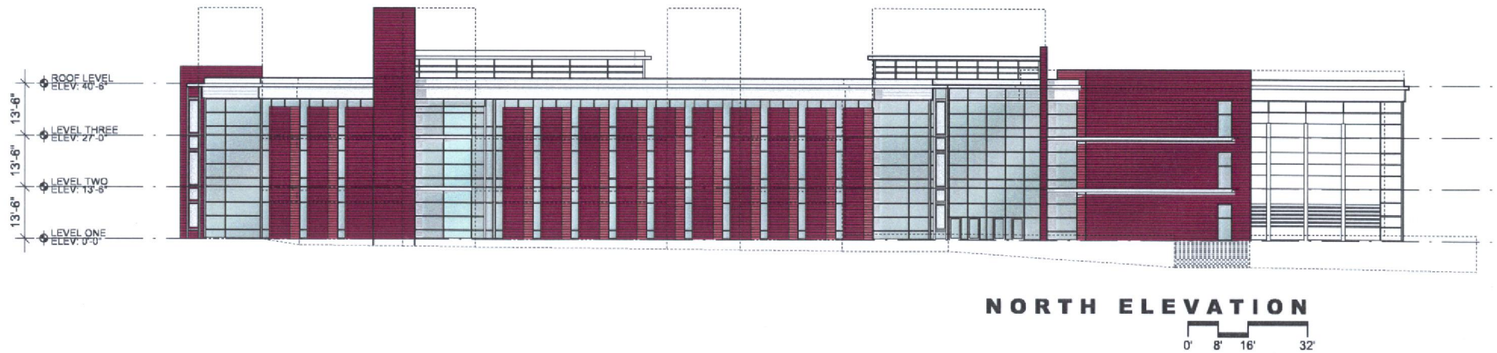
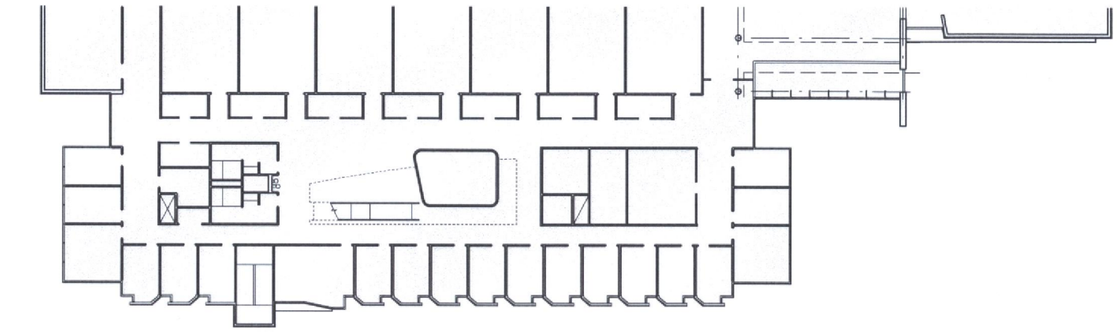
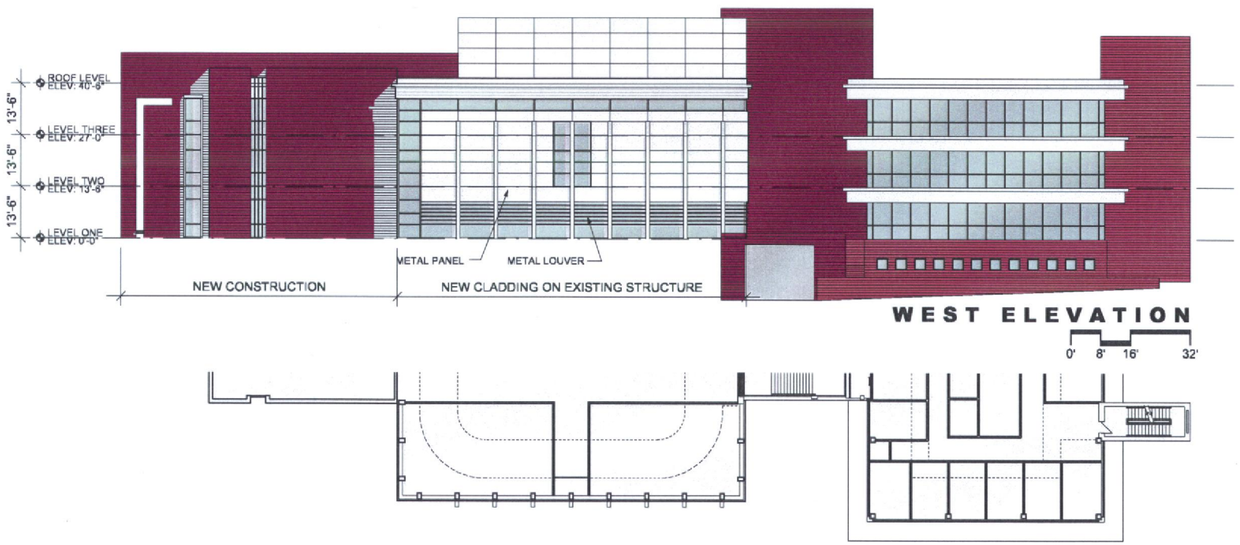


NORTH ELEVATION

0' 8' 16' 32'





WEST ELEVATION

0' 8' 16' 32'

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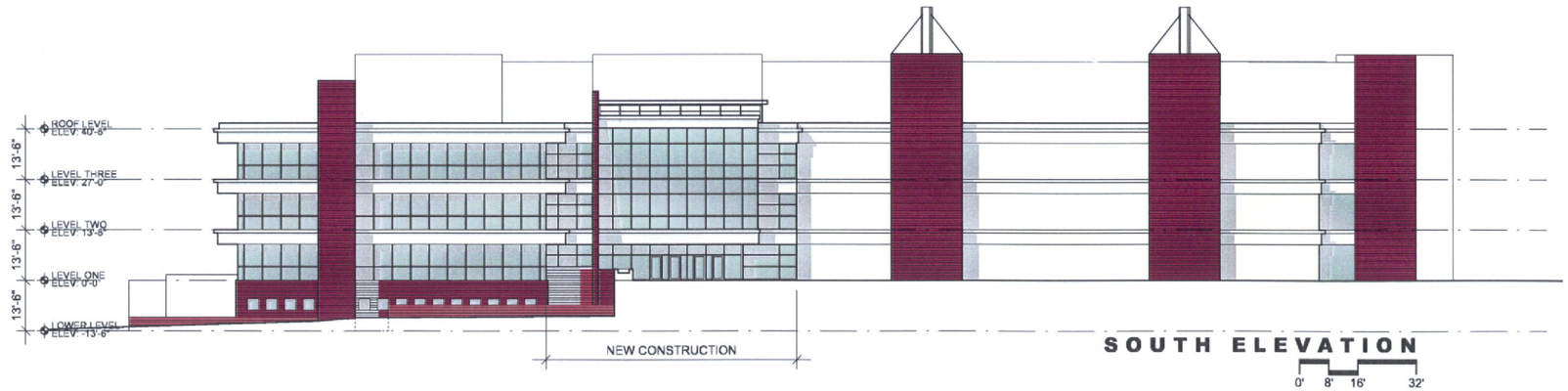

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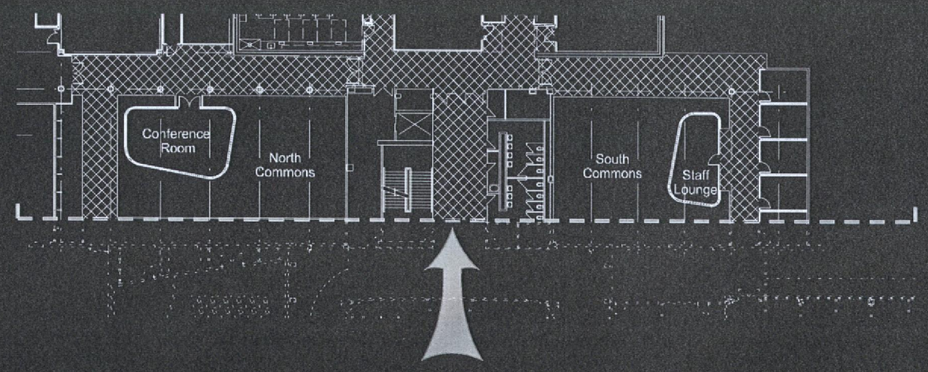

Section thru Commons

Building Concepts

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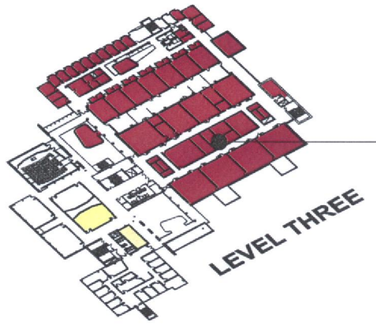

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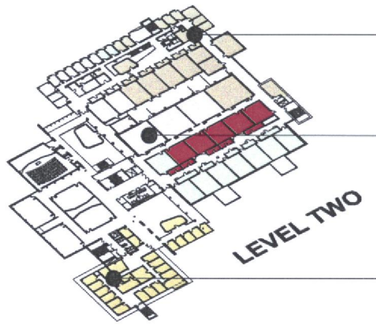
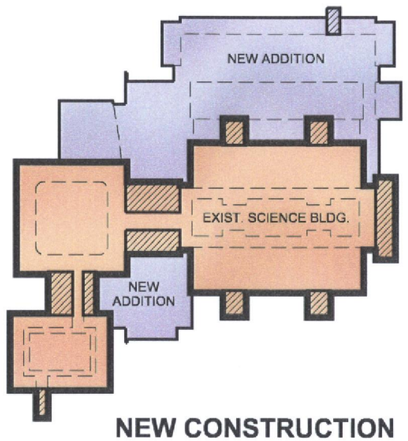


ENV. SCIENCES

O.SM.E.

MATH



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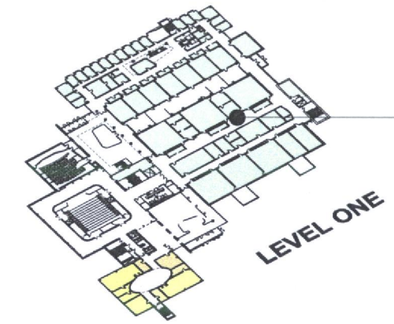
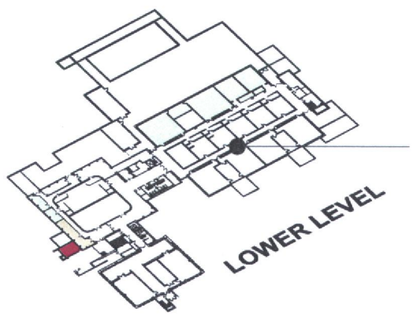
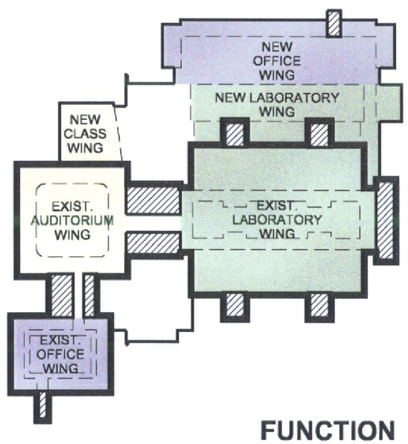


BIOLOGY

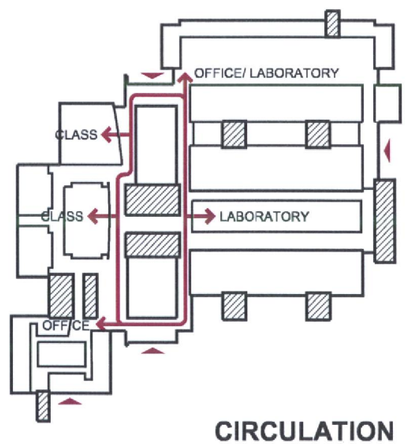


PHYSICS

DEPARTMENT STACKING



FUNCTION



CIRCULATION

Concept Diagrams

Building Concepts

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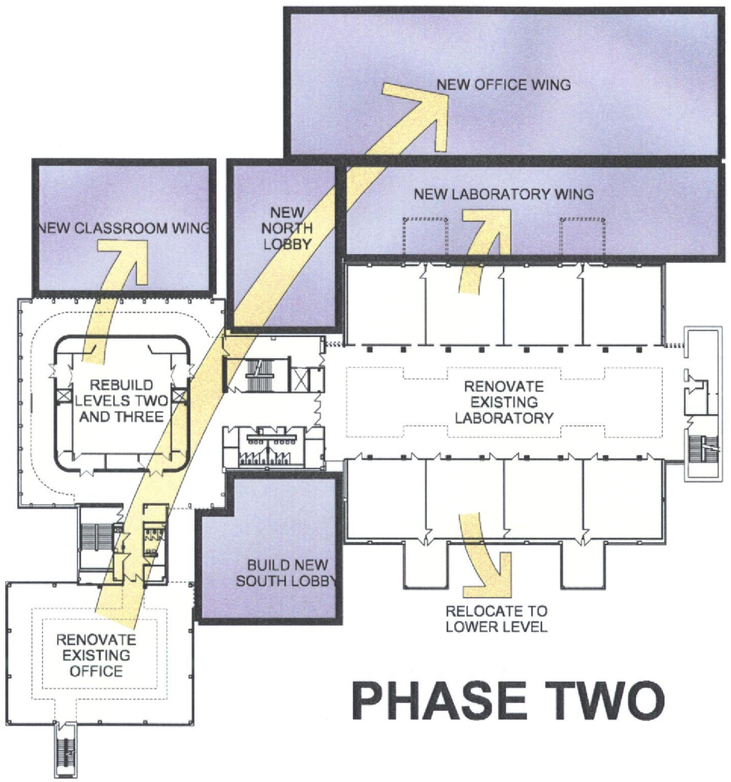
PHASE ONE



PHASE TWO

Construction Phase Diagrams

Building Concepts

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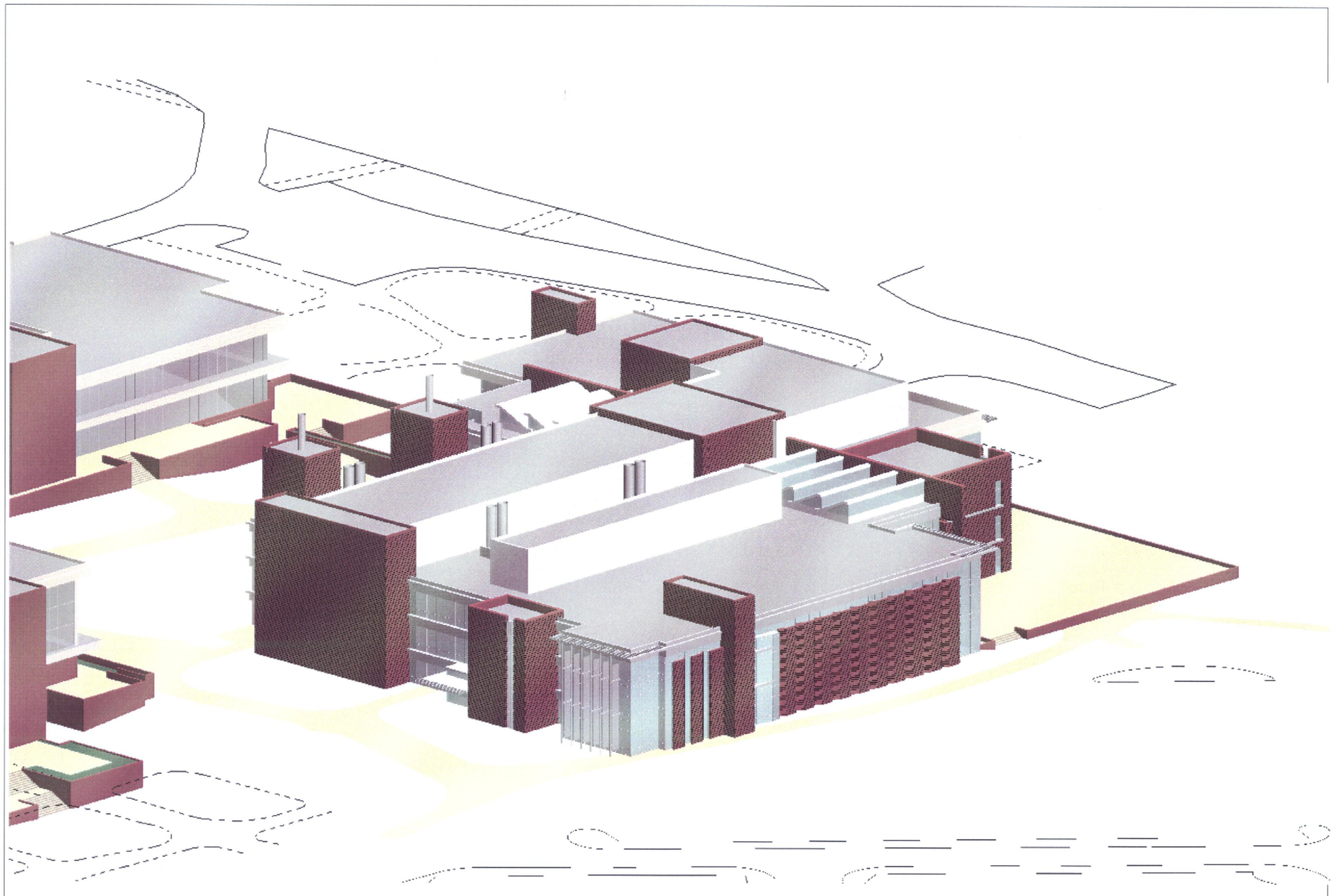

View from the Northeast

Building Concept

Southern Illinois University Edwardsville

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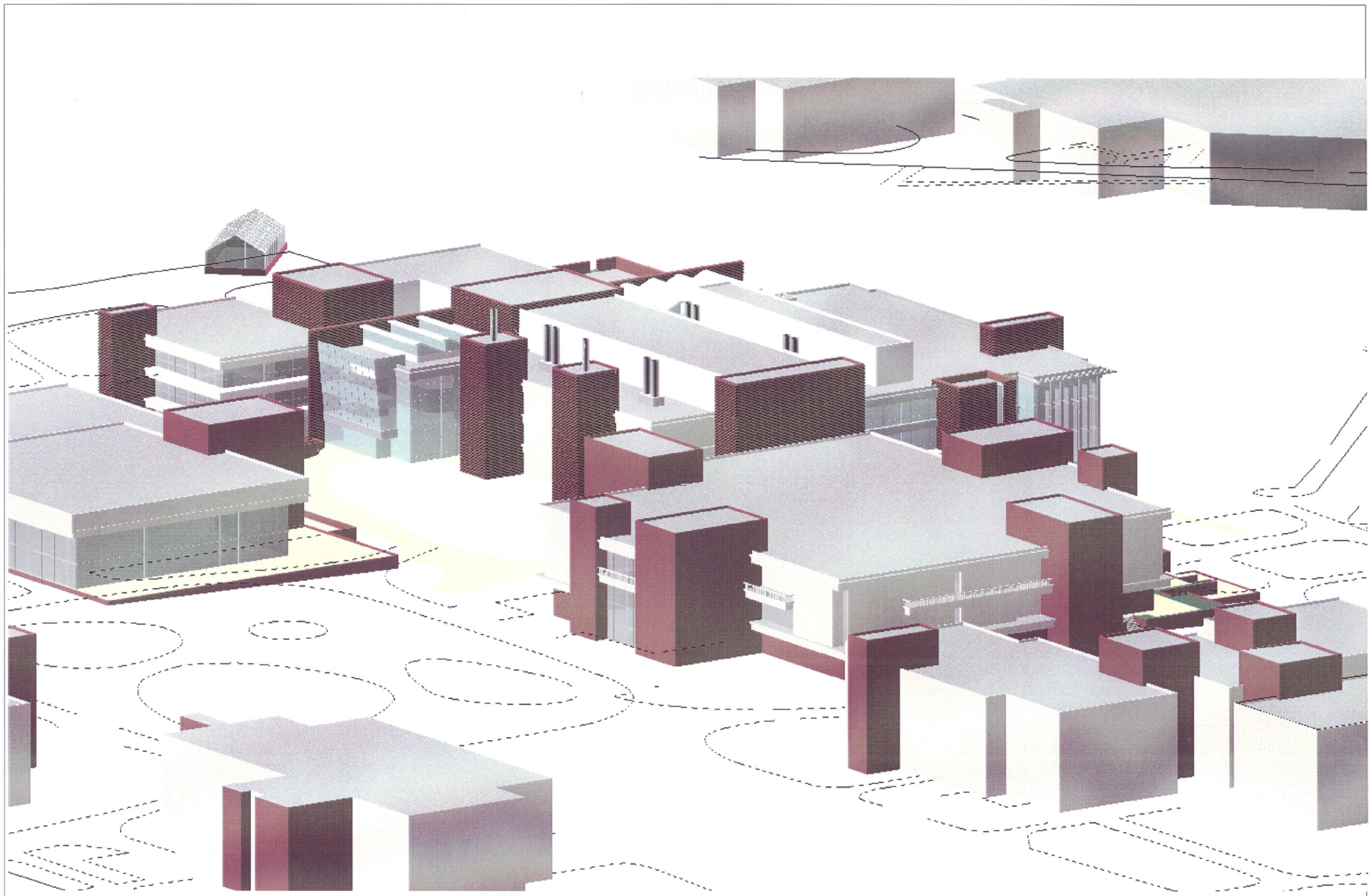

View from the Southeast

Building Concept

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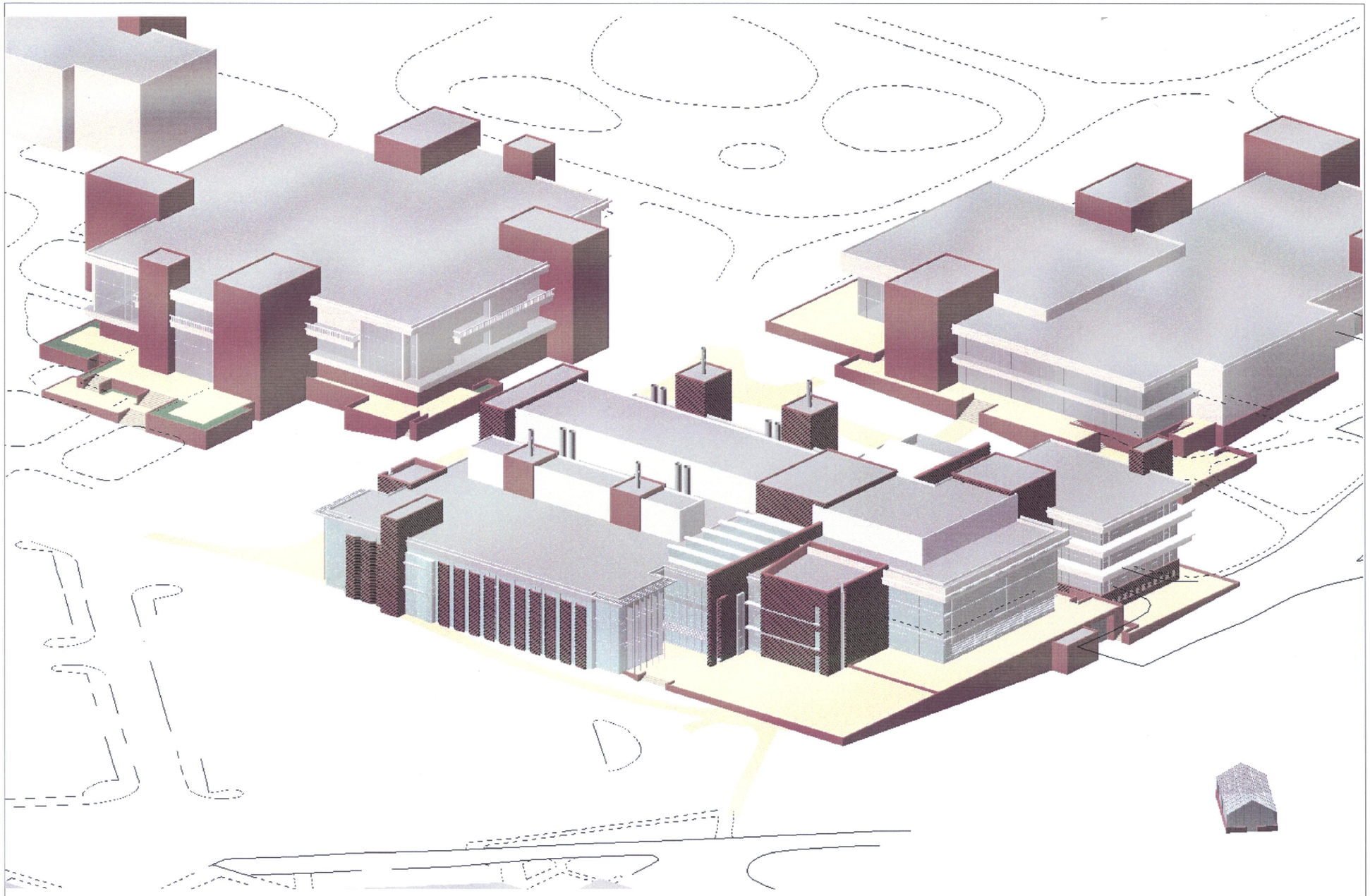


View from the Northwest

Building Concept

Southern Illinois University Edwardsville

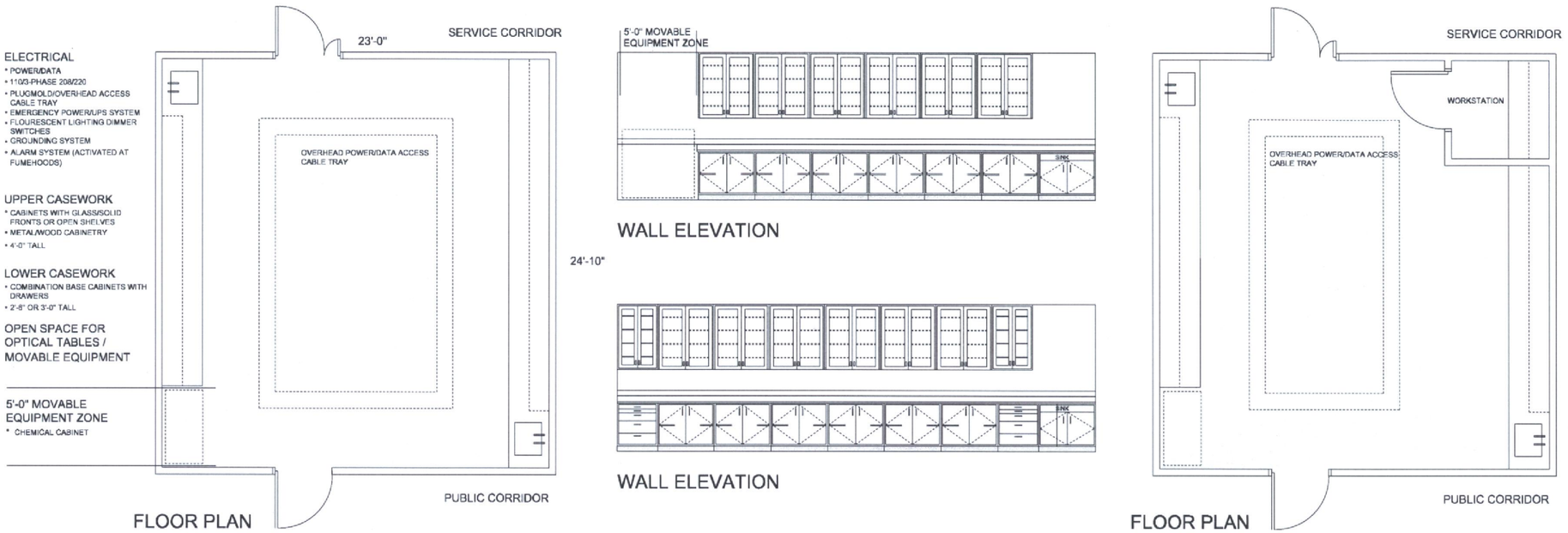
Science Building Renovation

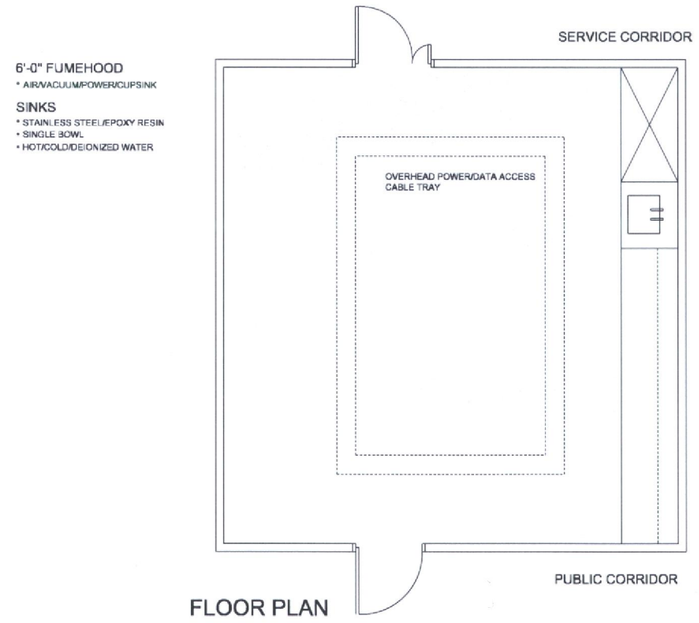
PROGRAMMING & CONCEPT PHASE

Hellmuth,
Obata +
Kassabaum

St. Louis
Chicago

September 1999





Physics Research Laboratories

Laboratory Planning Concepts

Southern Illinois University Edwardsville

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Chicago

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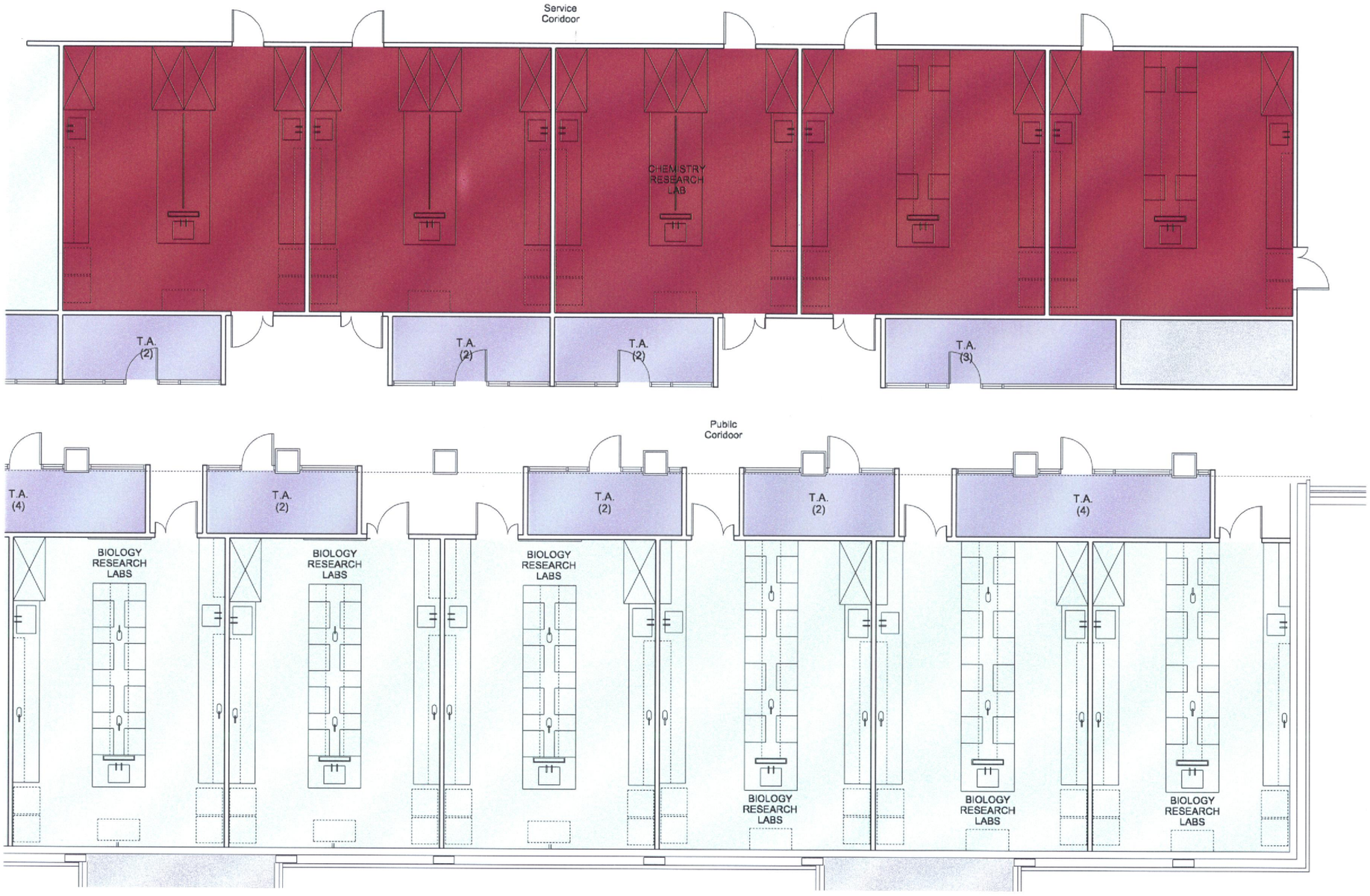

Chemistry / Biology Lab Relationships Level Two

Laboratory Planning Concepts

0' 8' 16'

SIU

Southern Illinois University Edwardsville

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Chicago

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