

Architectural Program

Kansas State University

College of Engineering Phase IV Expansion



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Prepared by:

BG Architecture

a division of BG Consultants, Inc.

4806 Vue Du Lac Place
Manhattan KS 66503

Programming Committee

John English
Dean, College of Engineering

Gary Clark
Associate Dean for Academics and Administration,
College of Engineering

Noel Schulz
Associate Dean for Research and Graduate
Programs, College of Engineering

David Fritchen
Department Head, Architectural Engineering and
Construction Science; College of Engineering Project
Coordinator

Joseph P. Harner
Department Head, Biological and Agricultural
Engineering

James H. Edgar
Department Head, Chemical Engineering

Alok Bhandari
Department Head, Civil Engineering

Robert J. Peterman
Professor, Civil Engineering

Gurdip Singh
Department Head, Computing and Information
Sciences

Don Gruenbacher
Department Head, Electrical and Computer
Engineering

Bradley A. Kramer
Department Head, Industrial and Manufacturing
Systems Engineering

Don Fenton
Department Head, Mechanical and Nuclear
Engineering

A. Abe Fattaey
Director of Campus Planning and Facility
Management, Division of Facilities

David McMullen
Assistant University Architect, Division of Facilities

Annette Rohde
Project Coordinator, Division of Facilities

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Introduction

1.1 Project Overview and Objectives

Kansas State University engaged BG Architecture a division of BG Consultants to conduct existing conditions analysis and programming for building expansion to meet the growing needs of the College of Engineering. This work for programming and space needs assessment is the initial stage of the College of Engineering Phase IV Expansion. Together with College of Engineering Dean John English, Engineering Department Heads, and the Facilities Planning Group, BG developed this program with written description of key considerations, numeric and written space program, conceptual expansion plans, cost estimate, and supporting data.

This program is an evolution of an initial programming effort which evaluated the eight departments within the College of Engineering for current space usage and for projected future space requirements to meet the projected growth. At the time of the initial general programming effort, it was unknown which department or departments within the College would occupy the new space. Computing and Information Sciences, Electrical and Computer Engineering, and Civil Engineering departments are designated to occupy the new space. In addition, space has been provided to support team instruction, space for student competition teams, and opportunity to showcase both instructional and research areas.

Some of the key objectives that were identified over the course of the study included sighting of the expansion, connectivity of the expansion for continuity of building circulation and accesses, appropriate allocation of spaces for each department, daylighting, designing space for collaboration and integrated culture. Other major drivers of the program solution were the limitations of the site including limited buildable space, existing site utilities, access requirements, universal accessibility, and campus planning objectives.

This report includes a description of the need for additional space for the College of Engineering, the basis of the architectural program spaces, numeric program, allocated budget, and facility design criteria.

1.2 Keeping Kansas Competitive Engineering Initiative

In the spring of 2011, the State of Kansas passed the ‘Keeping Kansas Competitive Engineering Initiative’ that will provide \$3.5 million per year in state funds to each of the state’s professional engineering programs, with a dollar-for-dollar match provided by the universities to ensure Kansas businesses have access to the engineering talent they need to fuel economic growth. The colleges will use this investment to implement plans to increase engineering graduates to 1,365 by 2021.

Kansas State University will meet the challenges of this initiative by expanding its current engineering facility to meet the demand of an additional 750 students over ten years. To accommodate these additional students, the College of Engineering will increase its educational capability by adding to the existing College of Engineering complex.

1.3 Current Conditions and Pressing Demand

The current College of Engineering complex is made up of three major buildings or wings: Durland Hall (originally constructed in 1976), Rathbone Hall (originally constructed in 1982), and Fiedler Hall (originally constructed in 2000) and currently contains 267,040 square feet.

Durland and Rathbone Hall were the first two phases of the Durland-Rathbone-Fiedler engineering complex extending over the old football practice field. Together they house the Dean's Office for the College of Engineering and the Departments of Electrical and Computer Engineering, Industrial and Manufacturing Systems Engineering, Mechanical and Nuclear Engineering, Chemical Engineering, and Civil Engineering.

Fiedler Hall is the third phase of the engineering complex and houses the Department of Civil Engineering, engineering library and auditoriums, meeting rooms and computer labs for the College of Engineering (COE).

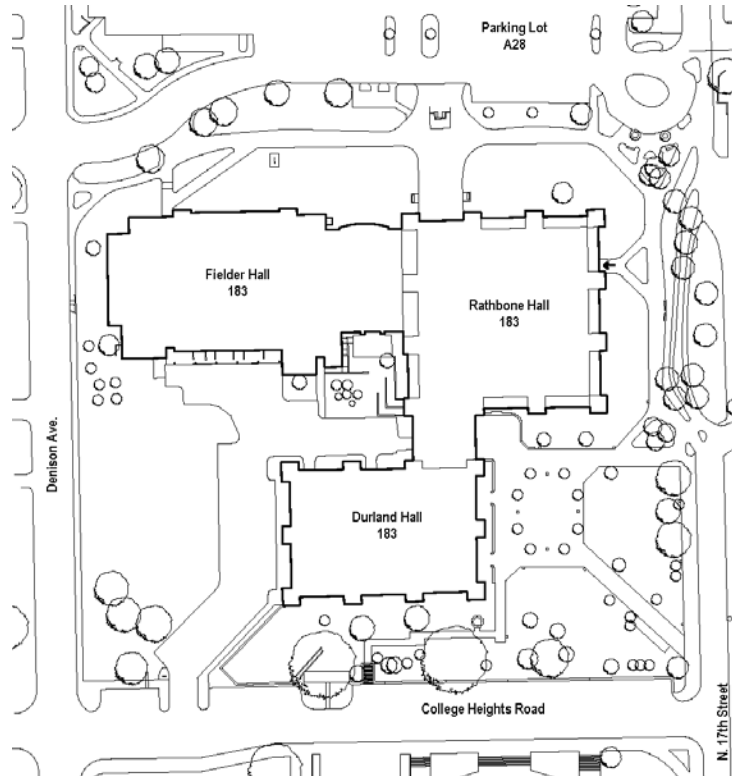


Figure 1 - College of Engineering Complex

The COE is at capacity in view of its facilities. Phase IV Expansion will require additional building area to supplement the existing infrastructure and meet the growth of an additional 750 students over ten years. Additionally, support for increased student populations will necessitate an increase in faculty and staff to retain current undergraduate student-to-faculty ratios of 25:1. Need for an increase of 30 tenure-track faculty is anticipated. In light of increases in student body and faculty, additional staff support will be required.

Organizing principles guiding the infrastructure growth should address the following needs as priorities: educational space for COE prominent design teams (identified in this program as Space for Competition), working/teaching laboratory environments facilitating team instruction, collaborative research space, and dedicated space for college-level student organizations and student recruitment and retention activities.

Additional factors should consider vehicular and pedestrian circulation from main campus and Denison Avenue.

1.4 Site Map

The College of Engineering Complex is located on the southwest edge of the campus on the corner of College Heights Road and Denison Avenue. Located adjacent to Denison Avenue, the complex is highly visible and as such opportunity for addressing the issue of public front exists. Additional considerations should be given to storm water drainage, utilities and public safety.

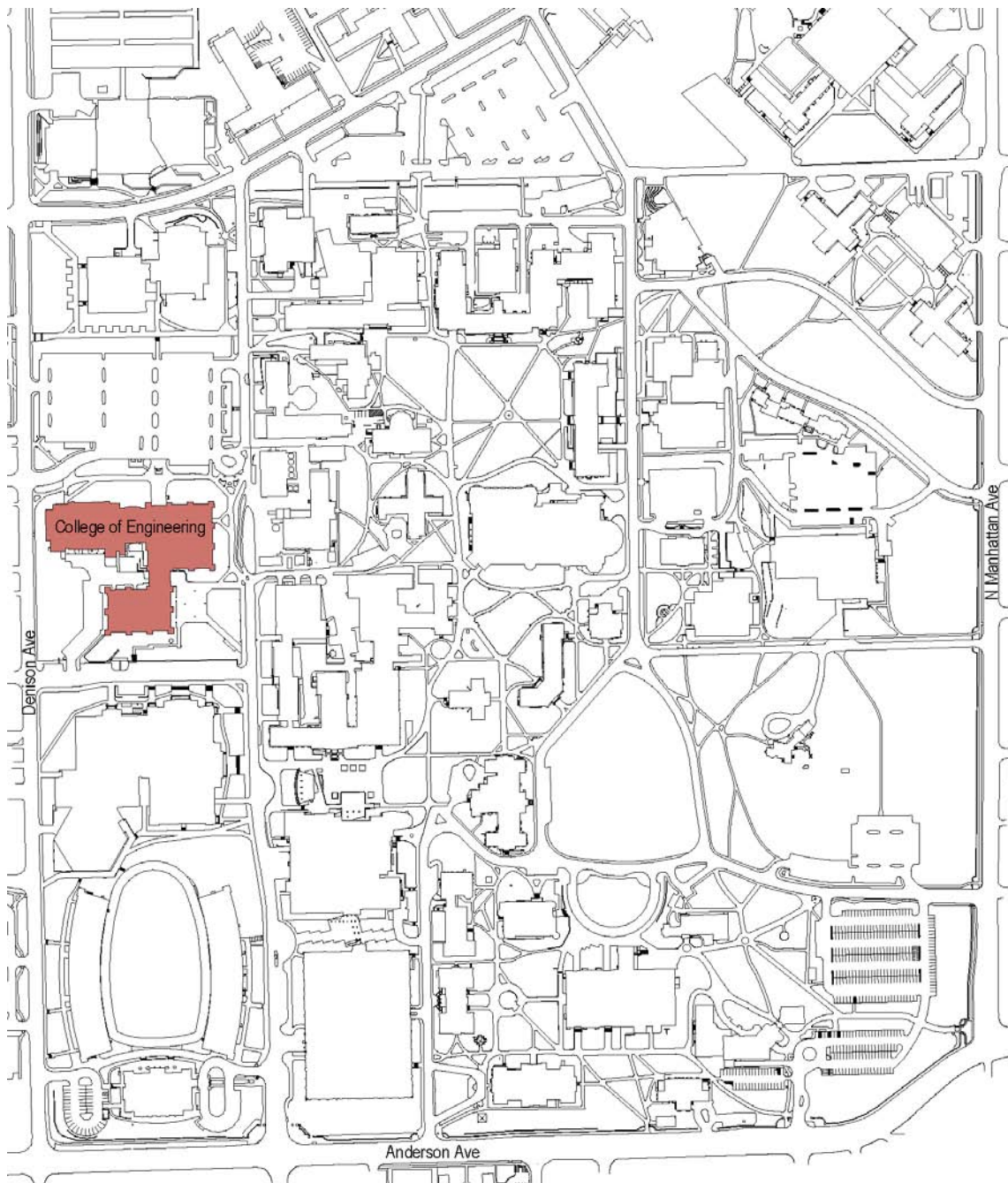


Figure 2 – Site Context Map

Considerations

2.1 Principle Considerations

The College of Engineering serves demand for engineers and computer scientists. These professionals contribute to employment in a broad skilled workforce contributing to the diversity and vitality of Kansas and industries nationally and internationally.

Space for Team Instruction

New teaching facilities are needed to accommodate the expected increased enrollment and to maintain the level of student involvement.

Space for Student Competition Teams

In addition to classroom instruction, the ability to put into practice the concepts learned in the classroom is the prime goal of the competition space. Students gain knowledge of engineered solutions, processes and products by direct application. This “hands on” process gives the students the technical and practical experience needed to be competitive in their future professions

In addition to the tangible benefits, the competition/team spaces are a benefit to the college and help promote its culture and, as a result, its ability to attract potential students. Therefore, the competition spaces should be both accessible and visible to the engineering college community as well as the university as a whole.

Space for Collaboration

Much like the ability to work in teams in the classroom environment, the ability for both students and professionals to work in collaborative environments, specifically research areas, is a very important component of the current engineering college leadership. The opportunity to pool resources as well as expertise helps take the research to the next level and enables the college of engineering to stay a premiere institution in the Midwest and the country. By providing the college with extra lab/collaborative research rooms, the college will be in an excellent position to attract both students and educators over the next decade.

Integrated Culture

All three of the items described above: Space for Team Instruction, Space for Student Competition Teams, and Space for Collaboration contribute to enhancing the “Integrated Culture” of the College of Engineering. The architecture of the spaces listed above, in addition to the rest of the building, must encourage interaction among students, staff and educators. Such spaces should be interwoven within the new construction to create opportunities for impromptu and spontaneous discussion between students and faculty.

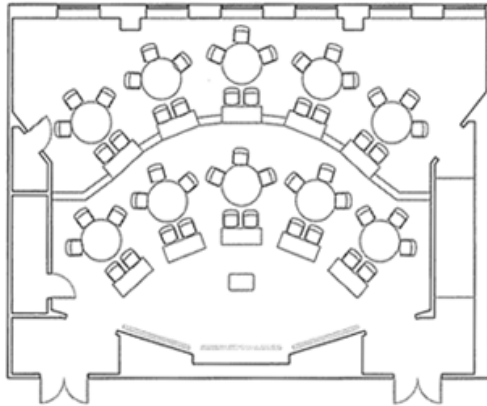
2.2 College of Engineering General Expansion Needs

As the College of Engineering meets projected growth space will be required to meet general college instruction, as well as dedicated space for student competition team work, student alumni and visitor welcome and other areas for college-level student organizations and student recruitment and retention activities. Areas affected by the inclusion of new space will be relocated and incorporated into the project. One space anticipated for relocation is the existing Serpan Lobby. Considerations for relocation should

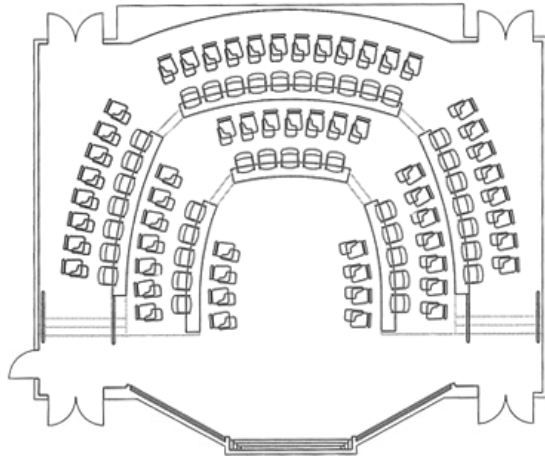
take into account existing square footage, use, and accessibility so that when relocated the space is equally celebrated.

General Academic Spaces

New teaching facilities are needed to accommodate the expected increased enrollment and to maintain the current level of student involvement. Currently, most of the existing classrooms are based on a flat floor/individual instruction model. These types of classrooms, although providing flexible seating arrangements, are not able to accommodate larger class sizes or various teaching methods.



(a) Cluster Style Classroom



(b) Harvard Style Classroom

Figure 3 – Classroom Styles

The engineering professions demand that students get experience with working in teams and new team-focused classrooms are needed to maintain and improve the level of student participation and integration. These new types of classrooms require a different floor plan configuration and are difficult to achieve in the current building footprints. In addition, increasing demand for Distance Education is required to be integrated as a central part of at least one classroom cluster. This serves as a basis for extending the quality of education provided by the College of Engineering beyond Campus boundaries.

One example is the Cluster Style Classroom. The Cluster Style Classroom serves a dual purpose: allowing both lecture style instruction while allowing a class to break into smaller discussion groups within the same room. The Cluster Style Classroom gives the instructor advantages in teaching styles.

Another example is the Harvard Style Classroom. The Harvard Style Classroom is a tiered or sloped floor room and is generally used when class sizes are large and exceed the point where all class participants can see each other clearly. Due to excellent sight and acoustic lines and the horseshoe arrangement, Harvard Style Classrooms in excess of 100 seats can still feel intimate and allow a level of interaction within a class not possible in a flat-floor room.

General Academic Support

New facilities are needed to successfully mitigate dedicated space for college-level student organizations and student recruitment and retention activities. Also,

trends towards enhanced casual discussions and small group collaboration require thoughtful consideration of various sizes of spaces. Space for informal gatherings should be encouraged throughout the expansion. Gathering space for team, instructor, or faculty work sessions should be distributed throughout the new construction providing optimum access for scheduled events. Support spaces for these areas should be conveniently located.

General Support

New project facilities for the colleges prominent design teams (such as SAE Formula car, mini baja car, quarter-scale tractor, chemical engineering car, concrete canoe, steel bridge, etc) are needed. These spaces should be community celebrated and opportunity for showcasing them is to be explored. Additionally, these areas should be organized to permit the greatest flexibility to meet ever changing project needs. Supporting spaces for these areas should be conveniently located.

Facility Support

In addition to dedicated space for instruction and research, required allocation for physical access to floors and areas that support the buildings cleaning and public hygiene functions are to be organized logistically to support the building program. Additionally, space to house mechanical equipment, utility services, and shaft areas are to be located with considerations for flexibility and future building adaptability to changing demands in use and infrastructure.

2.3 Department Specific Needs

The following departments are allocated space within the new expansion: Civil Engineering, Computer and Information Sciences, and Electrical and Computer Engineering. Additional research space for Civil Engineering is programmed, as well as complete re-location of Computer and Information Sciences and Electrical and Computer Engineering. Existing space will be vacated by Electrical and Computer Engineer in Rathbone. Evaluation and re-assignment of this vacated area will not be a part of this project.

Departmental Suite

New space for department administration is required. Serving as the head of the department this space is intended to provide a sense of identity for each department and to support discipline recruitment, retention, and staff support. Successful designs of these spaces will accommodate the frequency of alumni, student, staff and other professionals which visit the Department Head and other administrators.

Academic Support

New facilities are required to meet the growth of faculty. Such spaces should reflect adjacencies of like functions and uses. Support spaces for faculty will be needed to compliment their activities. These areas support the academic functions of the College.

System Administration

Space for system administrators and support areas for department computer information and telecommunications systems are needed. These areas should be located near auxiliary support systems and services to help keep all department systems activities operational.

Instructional Spaces

Teaching facilities are needed. Such spaces should be designed around contemporary models for instruction and should not only maintain but improve the level of student engagement. These spaces should facilitate interactive discussion and permit collaborative project development. Traditional classrooms are long, flat and narrow. Current trends incorporate spaces that are wider and more adaptable. Considerations should be given for integrated technology.

Research Spaces

Research facilities are needed. Used for laboratory experimentation, research and training in research methods, these spaces are to be configured to support the limits of instructional and research activities performed for each. To the extent possible, these spaces should be reconfigurable to meet ever changing demands for programs.

Flex and Facility Support

New facilities are needed to house department support space in addition, to space adaptable to future department needs. Flex space is unassigned space dedicated for growing demand and may be assigned use not currently allocated. Additionally, this includes support space auxiliary to department uses.

Program Space

The following spaces are to be integrated in the design of the new facility and in light of the design considerations established in this document. Spaces dedicated to each department will be indicated as follows: Civil Engineering (CE), Computer and Information Sciences (CIS), and Electrical and Computer Engineering (ECE). All other spaces not otherwise indicated are intended for general College of Engineering use and assignment.

The proposed addition to the Engineering complex will be composed of the following spaces:

3.1 Numeric Program

	Qty	Capacity	SF per space	TOTAL NASF	SF per occupant	Gross Factor	TOTAL GSF	TOTALS
GENERAL COLLEGE OF ENGINEERING ALLOCATED SPACE								
GENERAL ACADEMIC SPACES								12,773
Large College Classroom [110]	1	75	1800	1800	24	1.5	2700	
Large Lecture Hall [110]	1	250	4475	4475	18	1.5	6713	
Distance Learning Recording Room (VE) [530]	1	4	350	350	100	1.5	525	
College Classroom [110]	2	30	945	1890	31	1.5	2835	
GENERAL ACADEMIC SUPPORT								10,898
Hospitality Center								
Reception Area/Lounge [650]	1	47	700	700	15	1.5	1050	
Meeting Room [680]	1	50	750	750	15	1.5	1125	
Large Conference Room [680]	1	60	1850	1850	31	1.5	2775	
Medium Conference Room [350]	1	40	1240	1240	31	1.5	1860	
Small Conference Room [350]	1	20	620	620	31	1.5	930	
Catering Kitchen [685]	1	2	315	315	200	1.5	473	
Seminar [410]	2	15	530	1060	35	1.5	1590	
Common Lounge (C L) [410]	2	24	365	730	15	1.5	1095	
GENERAL SUPPORT								12750
Competition Spaces [250]	5	24	1200	6000	50	1.75	10,500	
Student Shop [250]	1	15	750	750	50	1.5	1125	
Central Support Space [755]	1	4	750	750	200	1.5	1125	

	Qty	Capacity	SF per space	TOTAL NASF	SF per occupant	Gross Factor	TOTAL GSF	TOTALS
FACILITY SUPPORT	<i>The following areas are ancillary and included in the Total GSF</i>							
IT Support Room (IT) [036]	Provide (1) 25 square foot room per floor							
Departmental IT Support (IT Supp) [036]	Provide (1) 100 square foot room per department							
Lactation Room (Lac) [590]	Provide (1) 115 square foot room per facility. May be multiple spaces							
Custodial Rooms (JC) [021]	Provide a minimum of (1) per floor							
Restrooms (R) [023]	Provide as per Code Requirements							
Elevator (E) [012]	Provide (1) elevator accessible to all floors and roof. Elevator shall be oversized to serve both service and passengers							
Exterior Loading Dock	Provide (1) ramped loading dock to accommodate delivery by trailers, trucks and vans							
CIVIL ENGINEERING ALLOCATED SPACE								
ACADEMIC SUPPORT (CE)								630
Faculty Office (FO) [310]	3	1	140	420	100	1.5	630	
RESEARCH SPACES (CE)								7936
Structures Lab [250]	1	80	4000	4000	50	1.6	6400	
Insulated Pump Room [255]	1	1	240	240	300	1.6	384	
Instrumentation and Calibration Room [255]	1	10	480	480	50	1.6	768	
Control Room [255]	1	12	240	240	20	1.6	384	
FLEX AND FACILITY SUPPORT (CE)	<i>The following areas are exterior and not included in the Total GSF</i>							
Exterior Wash Pit	Provide (1) 100 square foot outdoor area for cleaning equipment							
COMPUTER AND INFORMATION SCIENCES ALLOCATED SPACE								
DEPARTMENTAL SUITE (CIS)								2220
Reception Office/Waiting [310]	1	4	440	440	100	1.5	660	
Department Head Office [310]	1	3	260	260	100	1.5	390	
Staff Office [310]	3	1	140	420	100	1.5	630	
Meeting Area [350]	1	8	120	120	15	1.5	180	
Copy Area / Break Room [315]	1	2	160	160	100	1.5	240	
Storage (S) [315]	1	1	80	80	100	1.5	120	

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	Qty	Capacity	SF per space	TOTAL NASF	SF per occupant	Gross Factor	TOTAL GSF	TOTALS
ACADEMIC SUPPORT (CIS)								5850
Department Lounge [315]	1	27	400	400	15	1.5	600	
Faculty Office (FO) [310]	25	1	140	3500	100	1.5	5250	
SYSTEM ADMINISTRATION (CIS)								1005
System Administrator Office (SAO) [310]	2	1	140	280	100	1.5	420	
Technician Office (Tech) [310]	1	1	140	140	100	1.5	210	
Storage/Hardware [715]	1	1	250	250	300	1.5	375	
INSTRUCTIONAL SPACES (CIS)								5706
General Teaching Lab [210]	1	39	1200	1200	31	1.5	1800	
Specialized Teaching Lab [210]	1	32	1004	1004	31	1.5	1506	
Teaching Labs [210]	2	26	800	1600	31	1.5	2400	
RESEARCH SPACES (CIS)								8480
Robotics Lab [250]	1	16	500	500	31	1.6	800	
Security Lab [250]	1	16	500	500	31	1.6	800	
KDD Lab [250]	1	10	300	300	31	1.6	480	
High Assurance Lab [250]	1	32	1000	1000	31	1.6	1600	
Kedzie Mutli_Agent Robotics Lab [250]	1	26	800	800	31	1.6	1280	
GK-12/Embedded Systems Lab [250]	1	19	600	600	31	1.6	960	
Bioinformatics Lab [250]	1	13	400	400	31	1.6	640	
Cyber Defense Lab [250]	1	39	1200	1200	31	1.6	1920	
FLEX AND FACILITY SUPPORT								4500
Data Center [710]	1	5	1500	1500	300	1.5	2250	
Program Adaptable [070]	1	48	1500	1500	31	1.5	2250	
ELECTRICAL AND COMPUTER ENGINEERING ALLOCATED SPACE								
DEPARTMENTAL SUITE (ECE)								2730
Reception Office/Waiting [310]	1	4	440	440	100	1.5	660	
Department Head Office [310]	1	3	260	260	100	1.5	390	

Architectural Program | College of Engineering Phase IV Expansion

	Qty	Capacity	SF per space	TOTAL NASF	SF per occupant	Gross Factor	TOTAL GSF	TOTALS
Project Coordinator Office [310]	1	2	160	160	100	1.5	240	
Staff Office [310]	3	1	140	420	100	1.5	630	
Advisors Office [310]	1	2	160	160	100	1.5	240	
Copy Area / Break Room [315]	1	2	180	180	100	1.5	270	
Storage (S) [315]	1	1	80	80	100	1.5	120	
Meeting Area [350]	1	8	120	120	15	1.5	180	
ACADEMIC SUPPORT (ECE)								5640
Department Lounge [315]	1	27	400	400	15	1.5	600	
Faculty Office (FO) [310]	24	1	140	3360	100	1.5	5040	
SYSTEM ADMINISTRATION (ECE)								675
System Administrator / Student Administrator Office [310]	1	3	250	250	100	1.5	375	
Storage/Hardware [315]	1	1	200	200	300	1.5	300	
INSTRUCTIONAL SPACES (ECE)								6660
Computer Lab [210]	1	24	740	740	31	1.5	1110	
Digital Systems Lab [210]	1	24	740	740	31	1.5	1110	
Microcontrollers Lab [210]	1	24	740	740	31	1.5	1110	
Microprocessor Lab [210]	1	24	740	740	31	1.5	1110	
Intro to Computer Engineering Lab [210]	1	24	740	740	31	1.5	1110	
Communication Circuits Lab [210]	1	24	740	740	31	1.5	1110	
RESEARCH SPACES (ECE)								10,356
Graduate Research (R) Offices [310]	10	2	140	140	80	1.5	2100	
Graduate Research Area (GRA) [250]	4	15	300	1200	20	1.6	1920	
Wireless Hardware Lab (W H L) [250]	1	6	300	300	50	1.6	480	
Power Electronics Lab [250]	1	15	740	740	50	1.6	1184	
NASA / Sandia Lab [250]	1	14	700	700	50	1.6	1120	
Biomed Research Labs [250]								
Bioinstrumentation Lab [250]	1	15	740	740	50	1.6	1184	

	Qty	Capacity	SF per space	TOTAL NASF	SF per occupant	Gross Factor	TOTAL GSF	TOTALS
Medical Devices Lab [250]	1	15	740	740	50	1.6	1184	
Bio-Prep Lab [250]	1	Net Square Footage of common wet-lab/prep area is included in Bioinstrumentation and Medical Devices Labs						
Smart Grid Lab [250]	1	24	740	740	50	1.6	1184	
FLEX / FACILITY SUPPORT (ECE)								390
Program Adaptable [070]	1	13	260	260	20	1.5	390	
Roof Lab Area		Provide (1) accessible rooftop area for research support						

Numeric Program Summary

General College of Engineering Gross Square Footage	36,420
Total Gross Square Footage by Department	
Civil Engineering (CE)	8566
Computer and Information Sciences (CIS)	27,761
Electrical and Computer Engineering (ECE)	26,451
Cumulative Departmental Gross Square Footage	62,778
Total College of Engineering Phase IV Expansion GSF	99,198
Total College of Engineering Phase IV Expansion NASF	64,104
Total Building Efficiency Ratio (Percentage of Net Assignable Building Space or NASF/GSF)	64.62%
Average Building Efficiency Ratio of this Building Type	54%-67%

3.2 Allocated Budget

It shall be observed that total project costs have been established not to exceed \$40,000,000. The following items reflect anticipated costs based on projected market conditions and current trends in higher education and research facility design and construction:

Kansas State University
College of Engineering Phase IV

Project Costs Summary

Item	Cost
A. Construction	\$ 30,768,611.00
B. Furniture and equipment (2.5% of A)	\$ 769,215.28
C. Design Fees (7.5% of A)	\$ 2,307,645.83
D. Contingency (20% of A)	\$ 6,153,722.20
E. Total Project Cost	\$ 39,999,194.30

Type of Construction	Gross Sq Ft	Building Costs/Sq Ft
F. Expansion Construction	86,944	\$310.00
G. Infill Construction	10,429	\$ 324.00
H. Renovation	1825	\$ 225.00
Total GSF	99,198	

Facility Design

4.1 Architectural Design

The existing College of Engineering Complex is of a strong architectural language. A successful design will respect the existing architectural language while providing a modern facility that address the public front of the intersection at Denison Avenue and College Heights Road. Construction materials should be chosen which conform with University standards and that simultaneously compliment the entire facility. All new construction should be sensitive to existing adjacent spaces. For example, offices currently receiving natural daylighting should be given priority, so that such lighting is maintained. Additionally, with the exception of the Serpan Lobby, existing spaces should generally not be considered for reconfiguration and relocation.

It is anticipated that the Architect/Engineer will validate required non-assignable space such as circulation corridors, mechanical, and storage spaces. Collaborative spaces are to be interwoven within the facility to support opportunities for impromptu interactions between students and faculty. In addition, the design should explore daylighting possibilities within the expansion.

Site considerations will account for drainage, utilities new and existing, as well as pedestrian and vehicular circulation. Landscaping beyond finish grading and seeding is separate from this Scope of Work. It is anticipated that site landscaping will be performed concurrent with the construction of the College of Engineering Phase IV Expansion.

Building Elements Criteria

It is anticipated that the expansion will be of a conventional structural system, likely steel frame/metal deck or concrete frame and slab. Minimum floor load capacity shall be dead load plus 100 pounds per square foot.

An elevator is to be provided. The elevator will have a 5000 pound capacity, electric traction passenger/freight service elevator, service connection between all floors, and entrance level, if separate, (roof access may be required), and ADA compliant.

Integrated within the design solution should be vertical and horizontal chase systems to permit future flexibility and adaptability of systems.

Applicable Codes and Regulations

The new construction will meet all applicable codes and standards as currently adopted. These include the following:

- International Building Codes
- Kansas Fire Prevention Code, or NFPA 101, 2000 Addition
- Americans with Disabilities Act (ADA) and ADAAG / Uniform Federal Accessibility Standards
- Kansas Statutes and Regulations for Office of Facilities and Property Management (OFPM) and Kansas State Fire Marshal (KSFM)
- Kansas State Boiler Code KSA 44-913
- ANSI / ASME A17.1 Elevator Code
- ASHRAE 90.1

Other Applicable Codes, Standards and References

- 2002 NFPA 10 Portable Fire Extinguishers
- 2002 NFPA 13 Installation of Sprinkler Systems
- 2002 NFPA 30 Flammable and Combustible Liquids Code
- 2004 NFPA 45 Fire Protection of Laboratories Using Chemicals
- ANSI Z358.1 Emergency Shower and Eye Wash Equipment
- Code of Federal Regulations 29 CFR 1910 Occupational Safety and Health Standards
- State of Kansas, Office of Facilities and Property Management (OFPM) Building Design and Construction Manual

Building Code Highlights

General Building Requirements are indicated as follows:

- Occupancy Classifications
 - Non-Separated Occupancies
 - Type B Business (primary), with accessory support spaces of other occupancies such as storage and assembly.
- Hazardous Materials and resultant Hazardous Use Groups or use of Control Areas
 - A thorough review of the hazardous materials currently being used and stored, as well as anticipated future use will be performed. Any resultant required control areas or hazardous use groups will be addressed and incorporated into the layout as required. Horizontal and vertical control areas will be considered.
- Construction Type
 - Type I construction is anticipated.
- Sprinkler Requirements: Required.
- Number of exits required based on Use Group Classification B
- Maximum Dead-End Corridor Distance: 50 feet
- Minimum Corridor Width: Not less than 44 inch; actual: 7 foot minimum.
- Travel Distances / Common Path of Travel (in fully sprinklered building)
 - Travel Distance: 200 ft. max.
 - Common Path of Travel: 75 ft. max.
- Minimum Plumbing Fixture Required based on Use Group Classification B
- Accessibility
 - An accessible route is required throughout the entire building except in mechanical spaces.
- Emergency Egress Lighting
 - Emergency lighting is required at one (1) footcandle along the exit path, minimum, extending to the public way.
- Fire Extinguishers
 - Fire Extinguishers are required per Section 906 of the International Fire Code. Fire extinguishers will be located so that the maximum travel distance does not exceed 75 feet. Fire extinguishers will be provided by owner.
- Biosafety Cabinets and Fume Hoods
 - Biosafety cabinets will be provided in tissue culture areas with appropriate exhaust as required. Chemical fume hoods will be provided where chemicals are used, and meet SEFA 7 requirements.

4.2 Mechanical and Systems Design

Mechanical

It is currently anticipated that the heating and cooling source for the proposed addition to the College of Engineering will be provided by the Kansas State University central power plant. The Consultant will be required, as a part of this work, to perform a cost value analysis to determine whether to connect to the

existing University plant or if a stand-alone plant will be appropriate. Capacity of the existing central power plant to meet the needs of the building expansion in relation to the entire campus will be performed by others and is not a part of the Work. Temperature controls shall be in accordance to university standards. Heat exchangers and air handling equipment are to be located in designated mechanical rooms.

Provide ventilation as required for the use of the individual spaces. Fresh air requirements are to meet the International Mechanical Code.

Electrical

The electrical distribution system shall provide for branch panelboards located throughout the building. Voltage requirements for each space will be determined by the proposed space requirement. Panelboard sizes will be determined according to the power requirements of the space being served. General purpose receptacles and other loads will be fed via the *208/120* volt distribution.

The building will be provided with a *480/277* volt electrical service. There will be a main distribution panel that will feed several *480/277* volt branch distribution panels. At each branch panel location, there will be a transformer to feed a *208/120* volt branch panelboard. The building lighting, and large motorized equipment will be fed via the *480/277* volt distribution.

There will be a standby power generator with an automatic transfer switch to automatically provide power to critical loads in the event of a power outage. The generator will be either natural gas or diesel fuel engine driven. The emergency power distribution system will be similar to the normal power distribution. Loads served by the generator will include selected lighting circuits, security systems, life safety systems, heating systems, and other loads as directed by the Owner

Proposed Conceptual Plans

The following diagrams and conceptual plans have been developed as a possible design solution. Some program requirements may have changed

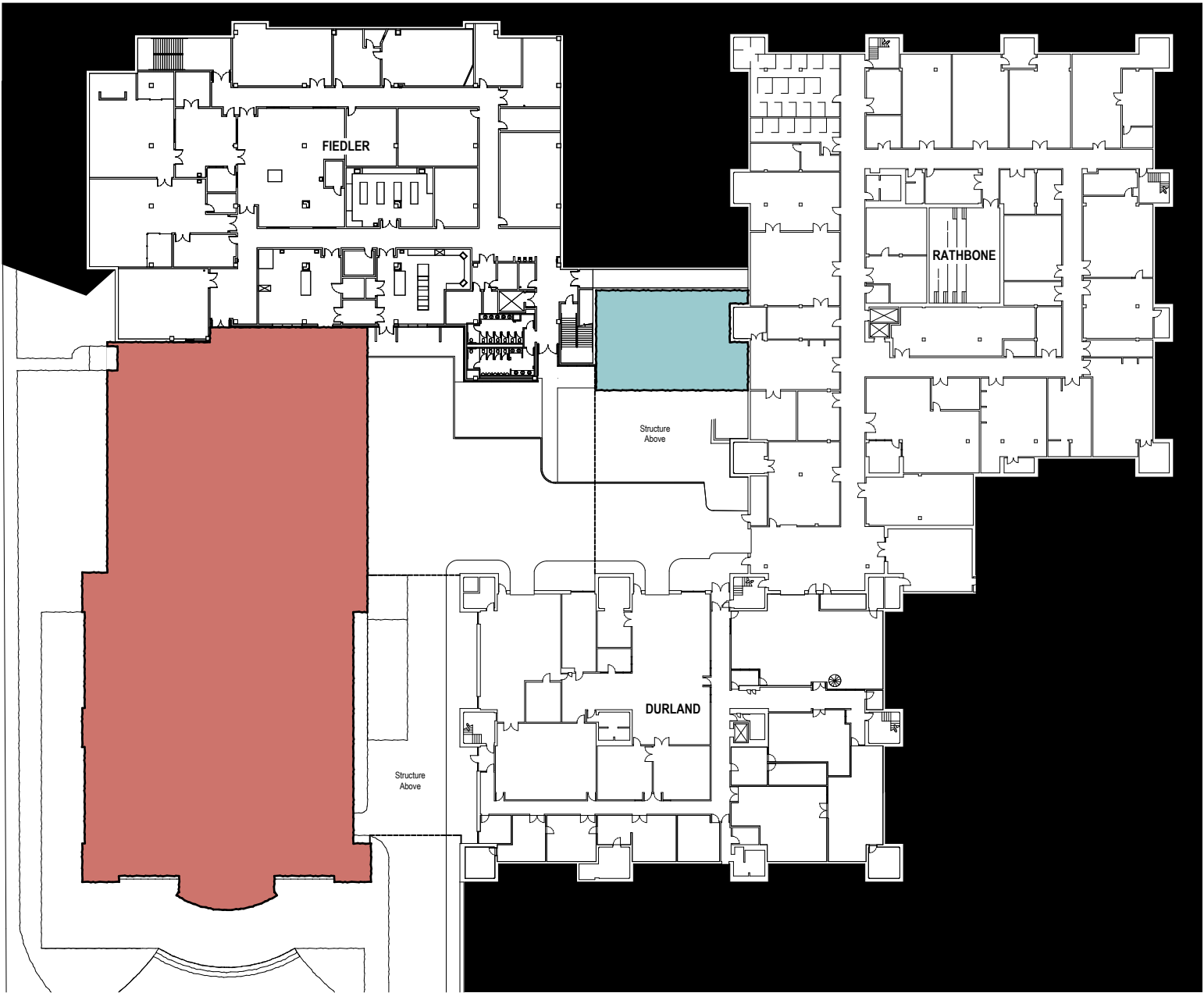


Diagram Key

- Expansion Construction
- Infill Construction
- Renovation Construction
- Space Vacated by Electrical and Computer Engineering
- Structure or Below Grade as Applicable

Plan Data

25,531 GSF Expansion Construction
 2,495 GSF Infill Construction

Lower Floor Plan Expansion Diagram

0 8' 16' 32'



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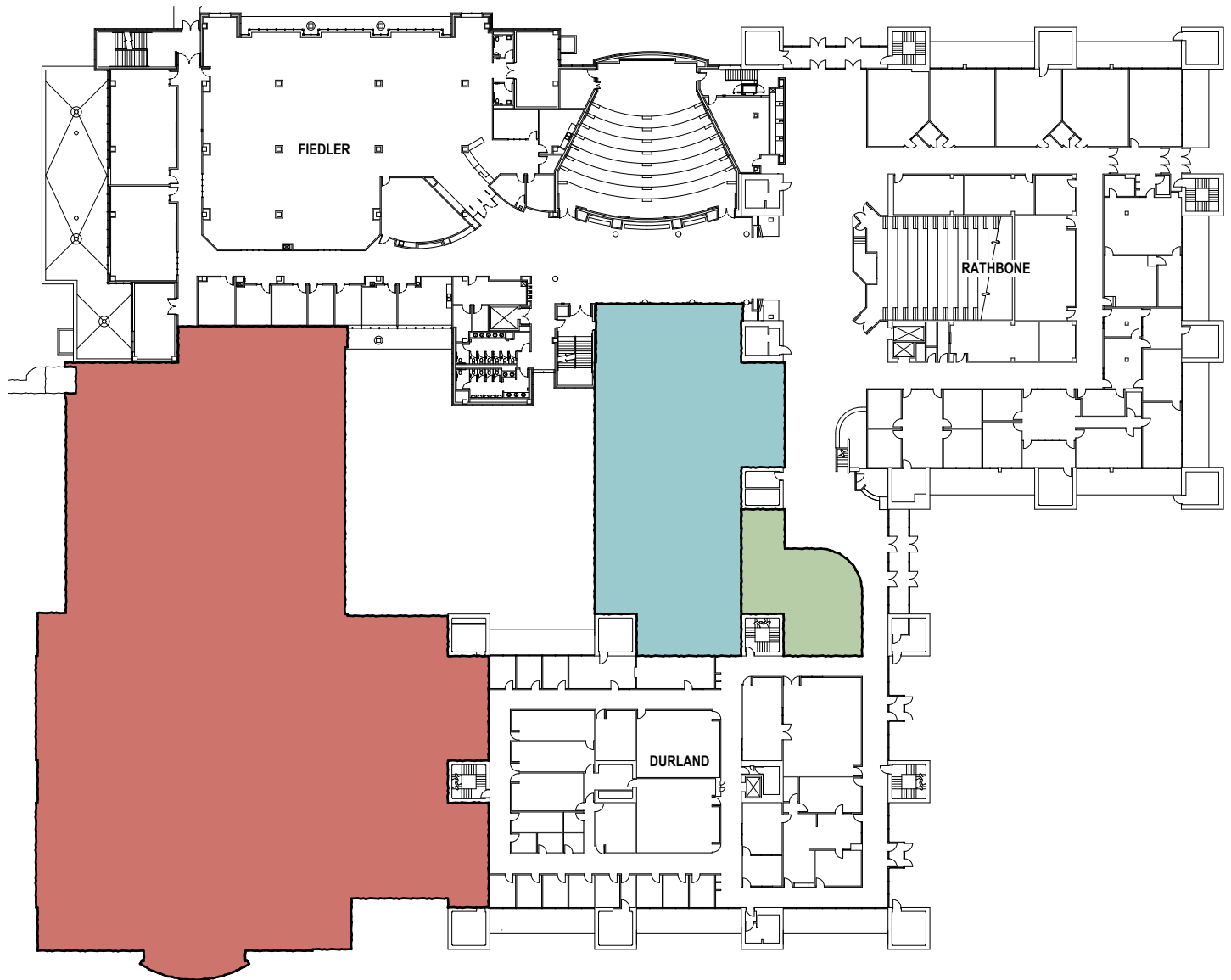


Diagram Key

- Expansion Construction
- Infill Construction
- Renovation Construction
- Space Vacated by Electrical and Computer Engineering
- Structure or Below Grade as Applicable

Plan Data

32,120 GSF Expansion Construction
 7,934 GSF Infill Construction
 1,825 GSF Renovation Construction



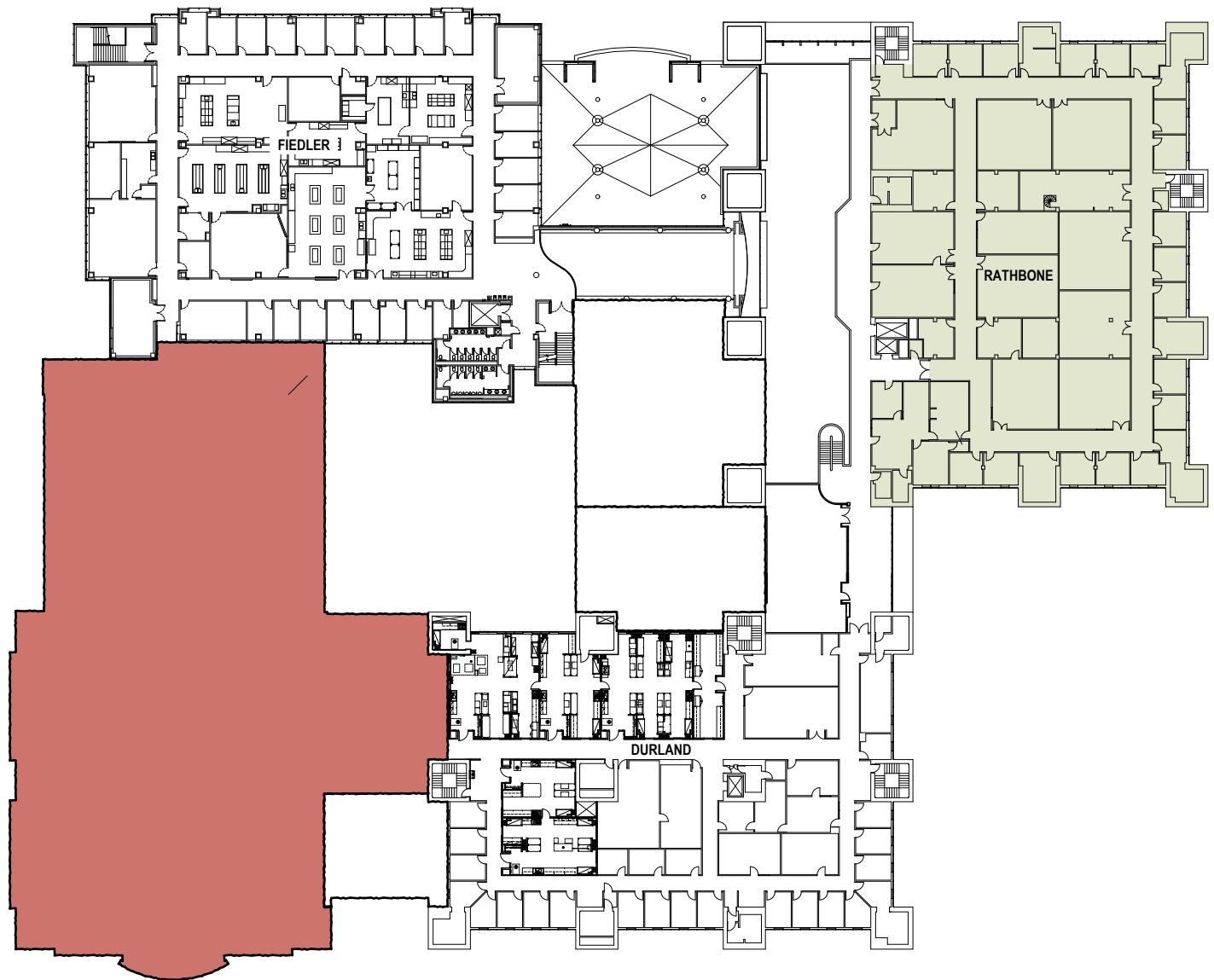


Diagram Key

- Expansion Construction
- Infill Construction
- Renovation Construction
- Space Vacated by Electrical and Computer Engineering
- Structure or Below Grade as Applicable

Plan Data

29,293 GSF Expansion Construction

20,623 GSF Vacated by Electrical and Computer Engineering (for reference only)

Upper Floor Plan Expansion Diagram

0 8' 16' 32'



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Plan Data

25,531 GSF Expansion Construction

Existing Finish Floor:
1075.00' (85' Architectural Datum)

Diagram Key

- College of Engineering
- Civil Engineering
- Computer and Information Sciences
- Electrical and Computer Engineering
- Facility and Maintenance
- Spot Elevation Relative to Finish Floor
- Structure or Below Grade as Applicable
- Non-Paved Area

Lower Floor Plan Expansion Construction

0 8' 16' 32'



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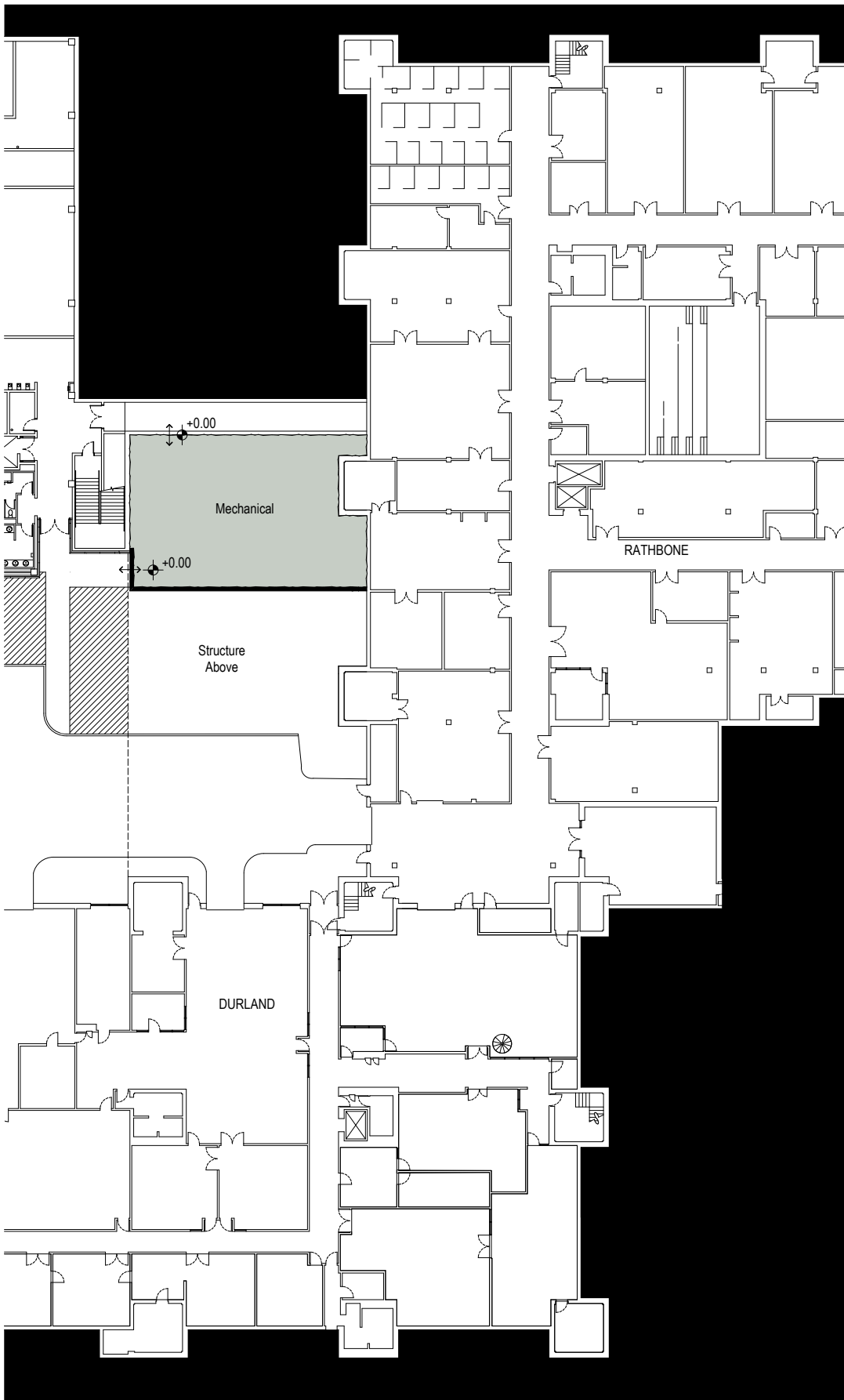
Plan Data

2,495 GSF Infill Construction

Existing Finish Floor:
1075.00' (85' Architectural Datum)

Diagram Key

- College of Engineering
 - Civil Engineering
 - Computer and Information Sciences
 - Electrical and Computer Engineering
 - Facility and Maintenance
 - Structure or Below Grade as Applicable
 - Non-Paved Area
- +
 Spot Elevation Relative to Finish Floor



Lower Floor Plan Infill Construction

0 8' 16' 32'



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Plan Data

32,120 GSF Expansion Construction

Existing Finish Floor:
1090.00' (100' Architectural Datum)

Diagram Key

- College of Engineering
- Civil Engineering
- Computer and Information Sciences
- Electrical and Computer Engineering
- Facility and Maintenance
- Spot Elevation Relative to Finish Floor
- Structure or Below Grade as Applicable
- Non-Paved Area



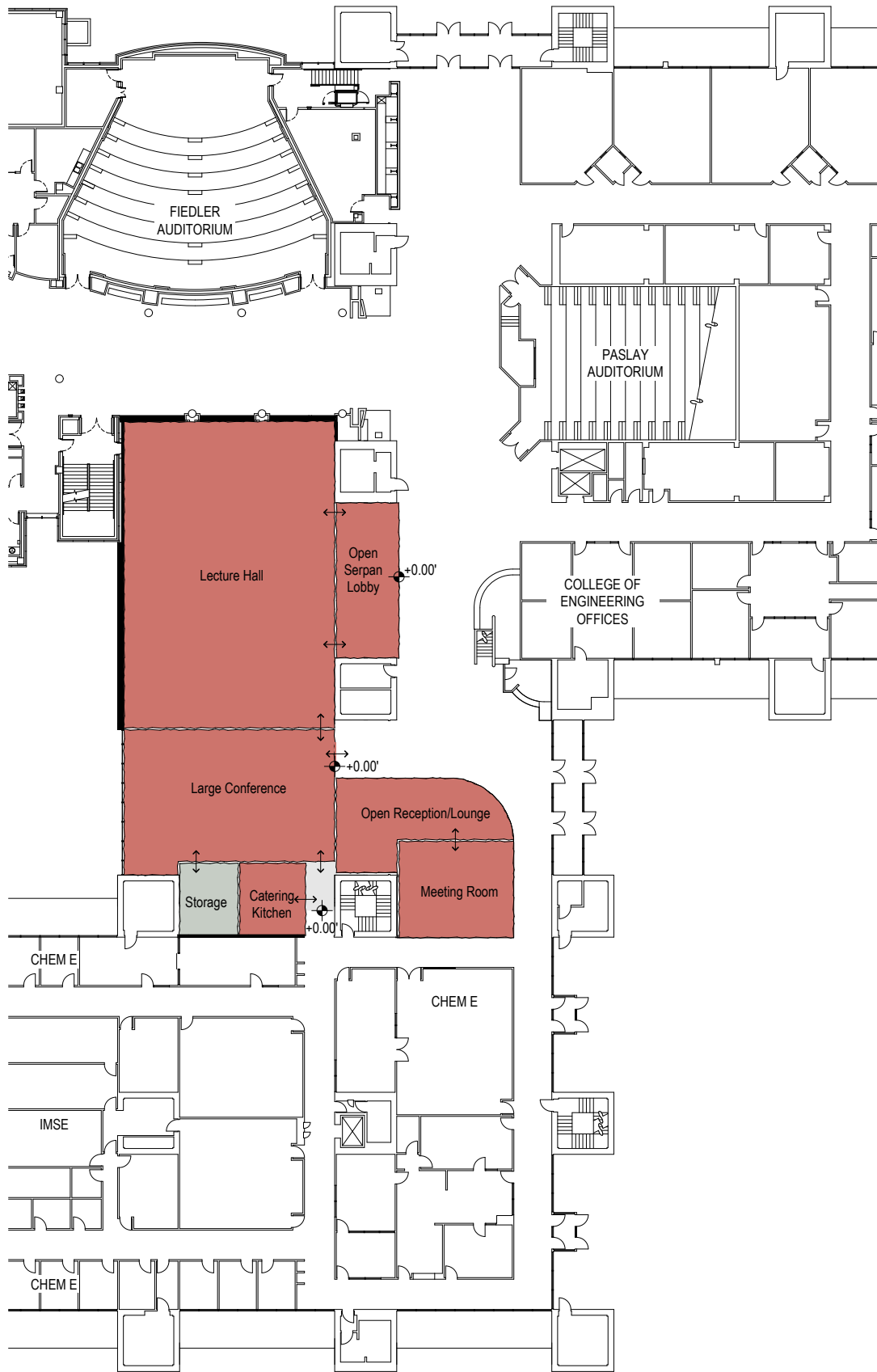
Main Floor Plan Expansion Construction

0 8' 16' 32'



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Plan Data

7,934 GSF Infill Construction
 1,825 GSF Renovation Construction
 Existing Finish Floor:
 1090.00' (100' Architectural Datum)

Diagram Key

- College of Engineering
- Civil Engineering
- Computer and Information Sciences
- Electrical and Computer Engineering
- Facility and Maintenance
- Spot Elevation Relative to Finish Floor
- Structure or Below Grade as Applicable
- Non-Paved Area

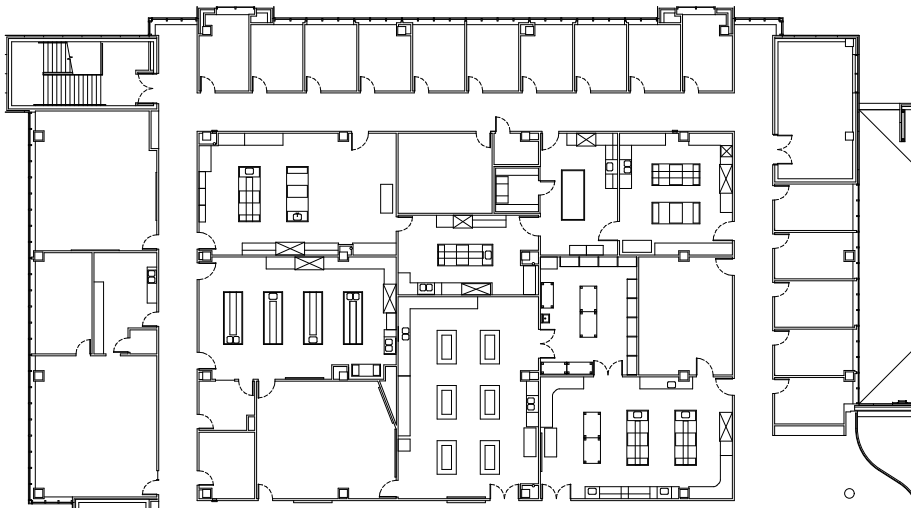
Main Floor Plan Infill Construction

0 8' 16' 32'



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Plan Data

29,293 GSF Expansion Construction

Existing Finish Floor:
1104.00' (114' Architectural Datum)

Diagram Key

- College of Engineering
- Civil Engineering
- Computer and Information Sciences
- Electrical and Computer Engineering
- Facility and Maintenance
- Structure or Below Grade as Applicable
- Non-Paved Area



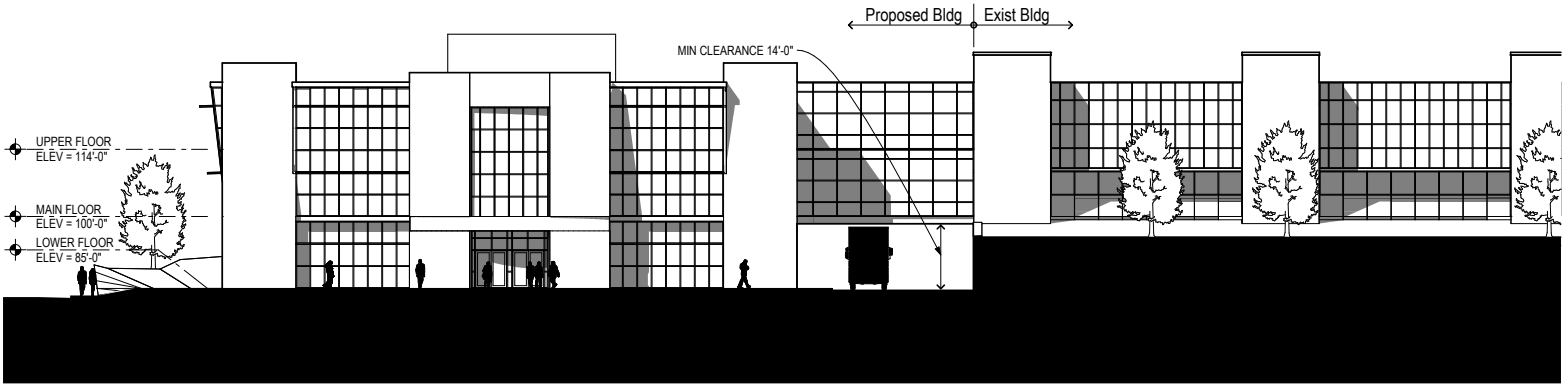
Upper Floor Plan Expansion Construction

0 8' 16' 32'



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Elevations shown are relative to existing floors.

College Heights Road Elevation



Elevations shown are relative to existing floors.

Denison Avenue Elevation





Appendix A

College of Engineering Phase IV Expansion summary.

Figure A-1. Phase IV Expansion summary, by space use category.

Gross Sq. Ft. (GSF)		99,198		100%	
Net Usable Sq. Ft. (NUSF)		89,278		*90%	
Net Assignable Sq. Ft. (NASF)		64.62%		Total Non-Assignable 35.38%	
Space Use Category Usable space based upon its primary use (See Appendix D)				Non-Assignable (NSF) *25.38%	
Instructional Space 18%	Research Space 25%	Lecture Hall 7%	Hospitality Center 2%	Office 14%	Dept. Suite 5%
			Conference Space 6%	Competition 11%	Lounge/Seminar 4%
					Other 8%
Program Defined Spaces Types of spaces as organized in the numeric program (See Numeric Program)					
G. Academic Space 13%	G. Academic Support 11%	G. Support 13%	Departmental Suite 5%	Academic Support 12%	System Administration 2%
			Instructional Spaces 12%	Research Spaces 27%	Flex and Facility Sup. 5%
				Building Services Space used to support building cleaning and public hygiene functions	Circulation Spaces required for physical access to floors or subdivisions of space within the building, whether partitioned or not
				Mechanical Spaces of a building designed to house mechanical equipment and utility services, and shaft areas	Structural Includes walls, floor structure and other building components

*Anticipated values reflect common percentages for the building type and construction developed during the programming phase.

Figure A-2. Engineering Space Categories.

Space Type	Associated NASF	Percent of Total NASF
Space Committed to Engineering Classrooms	16,409	24%
Space Committed to Engineering Labs	15,420	23%

Figure A-3. Phase IV Expansion Levels of Construction.

Represented Levels of Construction	Associated Sq. Ft.	Relative Cost per Sq. Ft.
Infill Construction	10,429	*\$324
Expansion Construction	86,944	*\$310
Renovation Construction	1825	*\$225

*Relative Cost per Sq. Ft. values are based upon the anticipated Scope of Work associated with each level of Construction and as based upon the general concept developed during the programming phase.

Appendix B

The following section defines detailed space requirements for programmed areas as determined by evaluation of existing and proposed conditions for each space. This information is provided as a means to guide the success of the College of Engineering Phase IV Expansion. Listed requirements are minimums and establish a base standard for each space and some items suggest that code requirements may not be sufficient for the space. Further discussion with Department and Faculty is anticipated for clarification.

General Building Requirements

General Criteria: All spaces should be designed for adaptability to technology, comfort, safety and energy efficiency.

Accessibility: All floors and spaces shall accommodate wheelchair users according to ADA guidelines.

Wall Construction, Interior: Interior walls will be designed to be scuff and impact resistant. Surfaces will be easily cleanable. Wall bumpers and or corner guards will be provided where appropriate to accommodate the anticipated traffic flow.

Floors: Interior floors shall be smooth, non-slip. Floor finish will be appropriate to use and as approved by Kansas State University Standards. All teaching areas shall be flat-floored unless otherwise noted.

Ceilings: Ceiling heights shall be established during design with a minimum 10'-0" height at instructional and research spaces.

Doors and Hardware: Doors shall be 36" wide clear opening by 84" high. Minimum 60" wide clear opening (36" leaf and 24" leaf minimum) by 84" high at research labs. Other storage and support spaces are to have 42" or 48" doors. Doors and door hardware will be heavy-duty grade. Doors shall be full flush with vision panels where appropriate, with fire rated doors and glass where required. Wood doors or metal are equally suited for Engineering labs. All hardware shall be ADA compliant.

Air Conditioning: All spaces are to be conditioned.

Convenience Outlets: Due to the growing trend towards personal laptops and other handheld electronic devices, all spaces shall be evaluated for relative need for additional power outlets for user access. These are to be generously provided.

Lighting: Lighting should be designed appropriate to space activities and needs.

Daylighting: Where possible, natural daylight is to be integrated as an important element within the building design. Light wells, atriums, skylights, perimeter circulation paths with interior spaces receiving "borrowed" light are a few opportunities that may be explored.

Mechanical Systems: Provide all spaces with appropriate air change and ventilation.

Finish Criteria: In general, all finishes shall be durable, smooth and cleanable to the greatest extent possible. Considerations should be made for activities and amount of use anticipated. All architectural finishes for service areas such as restrooms, mechanical, electrical, and storage rooms shall be durable and damage resistant as appropriate for their intended use.

PROGRAM | DETAILED SPACE REQUIREMENTS

GENERAL COLLEGE OF ENGINEERING ALLOCATED SPACE

LARGE COLLEGE CLASSROOM

This is general academic space. These classrooms are intended to serve a capacity of 75 students each. Such spaces may lend themselves to a Harvard Style or Cluster Style Classroom arrangement, permitting general instruction and the flexibility of collaborative team work.

SQUARE FOOTAGE REQUIREMENT - 1800 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Design space so that the length is approximately one and one-half times the width of the room.
- Recommended ceiling height is 12 feet.
- Natural daylighting is not recommended.
- Dimmable light.
- Flat or sloped/tiered floor as determined with discussion with Faculty and Staff.
- Voice, data, and power to accommodate a variety of multimedia presentations and tele- and videoconferences.
- Coordinate design of front of room with technology requirements to promote effective technology use; in all cases, the front of room design must consider the need to use projection and marking surfaces simultaneously; select equipment needed at teaching station as part of this process.
- Install unistrut at appropriate ceiling or booth location for installation of projector(s)
- White boards.
- Provide acceptable acoustics.
- For Distance Learning the following are to be provide:
 - Minimum of (2) mounted camera locations and (2) auxiliary camera locations.
 - Designated location for audience participation.
 - Neutral colors for walls.
 - Acoustic wall panels to improve sound quality.
 - Solid, neutral colors for table surfaces and tablet arms. Do not use white and wood grain.
 - Non-reflective, uniform texture, non-pattern backdrops.

- Fixed and movable seating should be cushioned.
- Equipment and system requirements as established by Consultant.

PROXIMITY SUGGESTIONS

- (1) Distance Learning Recording Room (VE)

LARGE LECTURE HALL

This is general academic space. The lecture hall is intended to serve a capacity of 250 occupants. Direct access should be provided between this space and the Large Conference Room. Optional controlled visibility between the rooms may be considered. The Consultant should study the form, purpose, aisle ways and occupancy of this space to address all life safety issues.

SQUARE FOOTAGE REQUIREMENT - 4475 NASF

OCCUPANCY CLASS

A-3 Assembly Space

REQUIREMENTS

- Design shall take into account flow of students both in and out of the space as well as need for instructor to move around in front of the room.
- Evaluate width/length proportions of room.
- Coordinate design of front of room with technology requirements to promote effective technology use; in all cases, the front of room design must consider the need to use projection and marking surfaces simultaneously; select equipment needed at teaching station as part of this process.
- Minimum front of room height: 12' minimum, rear height: 8' (higher preferred).
- Stepped or sloped floor
- Construct securable Media Equipment Closet (3'w x 4'd x 8' h) or Media Equipment Cabinet at front of room for equipment control rack. Locate near instructor station.
- Coordinate seating arrangement with technology requirements; distance from the first row of seating to the screen shall be 1.5 to 2 times projected image width.
- Evaluate need for projection booth; if one is constructed, it shall meet the following requirements:

- 42 sf minimum size
- Angled projection window 4' above floor
- Dimmable light.
- Low voltage connection to teaching station.
- Install unistrut at appropriate ceiling or booth location for installation of projector(s)
- Provided complete blackout capability.
- Provide acceptable acoustics.
- Anti-static finishes (floor and upholstery)
- Natural daylighting is not desirable.
- Choose all seating with consideration of ergonomic principles.
- White boards.

PROXIMITY SUGGESTIONS

- Large Conference Room
- Existing lecture halls
- Restrooms

DISTANCE LEARNING RECORDING ROOM (VE)

This is general academic space. This support space serves to house the audio and visual control systems and technology to facilitate academic delivery for Distance Learning curriculum. Incorporates videoconferencing for teaching and learning. Room systems produce origination of audio and video for two-way communication. Control systems permit manipulation by instructor. Cameras capture live video of the teaching area and audience, with at least one area for audience feedback. It is desired that this space have direct visibility into at least (2) classrooms, although remote monitoring is acceptable.

SQUARE FOOTAGE REQUIREMENT - 350 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Natural daylighting is not recommended.
- Dimmable light.
- Provide acceptable acoustics.

PROXIMITY SUGGESTIONS

- Large Departmental Classroom
- Departmental Classroom
- Small Conference Room

COLLEGE CLASSROOM

This is general academic space. These classrooms are intended to serve a capacity of 30 students. Such

spaces may lend themselves to a traditional classroom arrangement, permitting general instruction and adaptation.

SQUARE FOOTAGE REQUIREMENT - 945 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Recommended ceiling height is 12 feet.
- Natural daylighting is not recommended.
- Dimmable light.
- Provide acceptable acoustics.
- Glare from windows controlled.
- Voice, data, and power to accommodate a variety of multimedia presentations and tele- and videoconferences.
- Provide acceptable acoustics.
- Coordinate design of front of room with technology requirements to promote effective technology use; in all cases, the front of room design much consider the need to use projection and marking surfaces simultaneously; select equipment needed at teaching station as part of this process.
- Install unistrut at appropriate ceiling or booth location for installation of projector(s)
- White boards.
- For Distance Learning the following are to be provide:
 - Minimum of (2) mounted camera locations and (2) auxiliary camera locations.
 - Designated location for audience participation.
 - Neutral colors for walls.
 - Acoustic wall panels to improve sound quality.
 - Solid, neutral colors for table surfaces and tablet arms. Do not use white and wood grain.
 - Non-reflective, uniform texture, non-pattern backdrops.
 - Carpet floor throughout when possible.
 - Fixed and movable seating should be cushioned.
 - Equipment and system requirements as established by Consultant.

PROXIMITY SUGGESTIONS

- Distance Learning Recording Room (VE)

[HOSPITALITY CENTER] RECEPTION AREA / LOUNGE

This is general academic support space. Hospitality space for prospective students, parents, faculty, and alumni should be located near the primary entry of the building. This space should be designed to represent the College of Engineering and serve as a welcome area designed for comfort and interaction.

SQUARE FOOTAGE REQUIREMENT - 700 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Reception desk for (2) desk stations.
- Casual seating/lounge area.
- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.

PROXIMITY SUGGESTIONS

- Entry

[HOSPITALITY CENTER] MEETING ROOM

This is general academic support space. Orientation room for prospective students and student organization meetings.

SQUARE FOOTAGE REQUIREMENT - 750 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Design for flexibility.
- Recommended ceiling height is 12'-0".
- Natural daylighting is optional.
- Controlled views into space are recommended.
- Requires acoustic separation.
- Black-out ability.
- Voice, data, and power to accommodate a variety of multimedia presentations and tele- and videoconferences.
- Dimmable lighting.
- White boards and projection screens.
- Acoustical separation from surrounding spaces, is recommended.

PROXIMITY SUGGESTIONS

- Entry
- Reception Area/Lounge

LARGE CONFERENCE ROOM

This is general academic support space. Large meeting room for up to 60 occupants. This space should include an area with small kitchenette for hospitality. Direct access should be provided from this room into the Large Lecture Hall, with optional controlled visibility.

SQUARE FOOTAGE REQUIREMENT - 1850 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Design for flexibility.
- Recommended ceiling height is 12'-0".
- Natural daylighting is optional.
- Controlled views into space are recommended.
- Voice, data, and power to accommodate a variety of multimedia presentations and tele- and videoconferences.
- Dimmable lighting.
- Coordinate design of front of room with technology requirements to promote effective technology use; in all cases, the front of room design must consider the need to use projection and marking surfaces simultaneously; select equipment needed at teaching station as part of this process.
- Install unistrut at appropriate ceiling or booth location for installation of projector(s)
- White boards and projection screens.
- Acoustical separation from surrounding spaces.
- Provide counter and cabinet millwork to support food serving and storage requirements.

PROXIMITY SUGGESTIONS

- Entry
- Reception Area/Lounge
- Catering Kitchen
- Large Lecture Hall

MEDIUM CONFERENCE ROOM

This is general academic support space. Mid-sized meeting room for up to 40 occupants. Used for formal meeting, training, and teleconference activities. This space may be designed for temporary partitioning into smaller spaces and should include an area with small kitchenette, counter and cabinet millwork to support food serving and storage requirements for hospitality.

SQUARE FOOTAGE REQUIREMENT - 1240 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Design for flexibility.
- Recommended ceiling height is 12'-0".
- Natural daylighting is optional.
- Controlled views into space are recommended.
- Voice, data, and power to accommodate a variety of multimedia presentations and tele- and videoconferences.
- Coordinate design of front of room with technology requirements to promote effective technology use; in all cases, the front of room design must consider the need to use projection and marking surfaces simultaneously; select equipment needed at teaching station as part of this process.
- Install unistrut at appropriate ceiling or booth location for installation of projector(s)
- Dimmable lighting.
- White boards and projection screens.
- Acoustical separation from surrounding spaces.

PROXIMITY SUGGESTIONS

- None

SMALL CONFERENCE ROOM

This is general academic support space. Small meeting room for up to 20 occupants. Used for formal meeting, training, and teleconference activities.

SQUARE FOOTAGE REQUIREMENT - 620 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Design for flexibility.
- Recommended ceiling height is 12'-0".
- Natural daylighting is optional.
- Controlled views into space are recommended.
- Voice, data, and power to accommodate a variety of multimedia presentations and tele- and videoconferences.
- Dimmable lighting.
- White boards and projection screens.
- Acoustical separation from surrounding spaces.

PROXIMITY SUGGESTIONS

- None

CATERING KITCHEN

This is general academic support space. This space serves as a support area for catering the Large Conference Room. All food will be prepared off-site and delivered to this room for warming, cooling, and assembly.

SQUARE FOOTAGE REQUIREMENT - 315 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Acoustical separation from surrounding spaces.
- 3-compartment sink and hand washing sink.
- Provide counter and cabinet millwork to support food serving and storage requirements.

PROXIMITY SUGGESTIONS

- Large Conference Room

SEMINAR

This is general academic support space. Room for up to 15 occupants. Used for formal meetings, and group and personal study. These spaces should be flexible to meet a variety of uses and needs for one group to a few small groups.

SQUARE FOOTAGE REQUIREMENT – 530 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Design for flexibility.
- Recommended ceiling height is 10'-0"-12'-0".
- Natural daylighting is optional.
- Views into space are recommended.
- Voice, data, and power to accommodate a variety of multimedia presentations and tele- and videoconferences.
- Integration of wall monitors with user mobile workstations for collaborative work.
- Generous convenience outlets.
- Dimmable lighting.
- White boards and projection screens.
- Acoustical separation from surrounding spaces.

PROXIMITY SUGGESTIONS

- Provide (1) per floor.

COMMON LOUNGE (CL)

This is general academic support space. Dedicated open lounges for up to 24 users. This area may be concentrated into one area or distributed among floors. These spaces should be flexible permitting small group sessions and individual study. Lounges and work areas should be readily visible and centrally located where possible.

SQUARE FOOTAGE REQUIREMENT - 365 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Design for flexibility.
- Recommended ceiling height is 10'-0"-12'-0".
- Natural daylighting is optional.
- Integration of wall monitors with user mobile workstations for collaborative work, is optional.
- Generous convenience outlets.

PROXIMITY SUGGESTIONS

- Separation from faculty offices.

COMPETITION SPACES

This is general support space. Dedicated area of up to 6000 total NASF for collaborative and independent competition project development. Organization of space should permit greatest amount of flexibility possible to adapt to size and need of each application. These areas are to be showcased and, as such, permit greatest amount of visibility possible. Ability to control visibility for creative rights is also required.

SQUARE FOOTAGE REQUIREMENT – 6000 Total NASF [5 SPACES ANTICIPATED]

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Design for flexibility.
- Natural daylighting is recommended.
- Dust control.
- Gas/Utility Services including vacuum, pneumatic supply, natural gas, oxygen, carbon dioxide and distilled water.

- Reliable and easy access to power, voice data and HVAC.
- Exposed ceiling is recommended.
- Eyewash and deluge stations.

PROXIMITY SUGGESTIONS

- Student Shop

STUDENT SHOP

This is general support space. Area dedicated for product fabrication. Space will accommodate equipment area and materials storage area.

SQUARE FOOTAGE REQUIREMENT - 750 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Design for flexibility.
- Exposed ceiling is recommended
- Natural daylighting is optional.
- Air conditioning is optional. Heating is required.

PROXIMITY SUGGESTIONS

- Central Service Support
- Loading Dock
- Competition Spaces

CENTRAL SERVICE SUPPORT

This is general support space. This area serves as the central support space of the College of Engineering. Utilized for storage, equipment, and equipment repair. May include selective storage of hazardous materials such as fuels.

SQUARE FOOTAGE REQUIREMENT - 750 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Exposed ceiling is recommended
- Air conditioned is optional. Heating is required.

PROXIMITY SUGGESTIONS

- Student Shop
- Competition Spaces
- Loading Dock
- Elevator

IT SUPPORT ROOM

This is facility support space. Dedicated rooms for university data and communication systems. Provide one per floor. Such spaces should be stacked from floor to floor.

SQUARE FOOTAGE REQUIREMENT - 25 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Exposed ceiling is recommended
- Physical separation from Departmental IT Support.
- Direct access to common circulation space.
- Must satisfy University IT support infrastructure requirements.

PROXIMITY SUGGESTIONS

- Departmental IT Support

DEPARTMENTAL IT SUPPORT ROOM

This is facility support space. Department dedicated data and communication systems rooms. Provide one per department. Such spaces should be stacked from floor to floor.

SQUARE FOOTAGE REQUIREMENT - 100 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Exposed ceiling is recommended

PROXIMITY SUGGESTIONS

- IT Support Room
- Data Center

LACTATION ROOM

This is facility support space. Dedicated room where a breastfeeding woman can use a breast pump in private one or more times a day. May be designed as one generous space or as a few smaller spaces and equally dispensed throughout the facility. Such spaces will include a table and chair for single user.

SQUARE FOOTAGE REQUIREMENT - 110 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Recommended ceiling height of 9'-0"-10'-0".
- Stainless steel sink.
- Space for small refrigerator.
- Privacy lockset.

PROXIMITY SUGGESTIONS

- None

CUSTODIAL ROOM

This is facility support space. Small spaces strategically located within the building area for custodial sinks, equipment and supplies.

RESTROOMS

This is facility support space. Restrooms should be located on each floor and the capacity of restrooms calculated according to the number of students in the area. These spaces are derived from within the 1.45 Gross Factor and are considered non-assignable square footage.

REQUIREMENTS

- Shall not have common walls or ceilings to any classroom or lecture hall.
- Washable surfaces.
- Ceramic

PROXIMITY SUGGESTIONS

- None

ELEVATOR

This is facility support space. An elevator to accommodate passengers and freight. The elevator shall access all floors, with the possibility of a roof stop.

PROXIMITY SUGGESTIONS

- Centrally located

EXTERIOR LOADING DOCK

This is facility support space. Serving as an arrival and departure point for large shipments brought to or taken from the building, this area is to serve trucks, vans, and semi-trailer type vehicles. As a utilitarian space this area should be designed for function and durability. The design should ensure the safety and security of users and non-users. Additionally, the

space should accommodate large vehicles, forklifts, and pedestrian traffic.

REQUIREMENTS

- A ramp of maximum 1:12 slope shall be provided for vehicle access to the dock. A four foot high dock is anticipated.
- A dock leveler may be needed.
- Adequate lighting.
- The loading dock should be protected with edge guards and dock bumpers.
- Storm water management should be addressed to prevent collection of storm water near or in the dock ramp area.
- Washable surfaces.
- Provide railings to protect against fall and vehicle separation at loading dock ramp areas.
- Consideration should be given for an outdoor radiant heat system.

PROXIMITY SUGGESTIONS

- None

HALLWAYS AND CORRIDORS

This is facility support space. Pedestrian circulation spaces provide opportunities for impromptu meetings and informal discussion. These spaces should be

regarded as opportune for social, academic, and research interactions. These spaces are derived from within the 1.45 Gross Factor and are considered non-assignable square footage.

REQUIREMENTS

- Designed to provide opportunities for impromptu discussions and casual interactions.
- Sound-absorbent materials may be applied to the upper portion of walls for sound control.
- Lower portions of walls should be of durable and impact resistant finishes.
- Floors of hallways should be smooth to minimize noise and to aid the movement of equipment carts and wheelchairs.
- Floors should have a non-skid surface, especially near exterior entrances.

PROXIMITY SUGGESTIONS

- None

CIVIL ENGINEERING ALLOCATED SPACE

FACULTY OFFICE

This is academic support space. Offices should be organized to facilitate a conversation zone at the door, a collaborative space for 2-3 people and a concentrated work area.

SQUARE FOOTAGE REQUIREMENT - 140 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Natural daylighting is recommended.
- White board.
- Acoustical separation from surrounding spaces.

PROXIMITY SUGGESTIONS

- None.

STRUCTURES LAB

This is a research space. Special conditions require volume to permit movement of ceiling crane for structural experiments and wall construction for structural tests. Additional spaces which support this lab are Insulated Pump Room, Control Room, and Instrumentation Room.

SQUARE FOOTAGE REQUIREMENT - 4000 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- 5-ton overhead crane covering strong floor and halfway over main level apron. (2 separate 5-ton bridges allow for installation of specimens in loading frames.)
- Strong Floor system with 100 kip rated anchor points integrated within 3'-0" thick concrete slab at 3'-0" o.c. each way.

- 14'-6" clear span between Strong Floor and Hoist Pick Point.
 - Strong floor should be recessed as required for clearances.
- 14'-0" Strong Wall system with 70 kip rated anchor points integrated within 3'-0" thick concrete wall on a 3'-0" o.c. square grid.
 - Shall be 60 linear feet in total length and be constructed with (2) perpendicular walls with one length 20 ft and the other 40ft.
 - Wall will allow for a two simultaneous 70 kip horizontal point loads at 3'-0" apart, at a vertical location of 12'-0" above finished floor height.
- 400 Amp electrical service: 440V, 3-phase; 220V, 3-phase
- Ceiling may be exposed.
- Access to concrete delivery.
- Dust control.
- Double-door air lock for outdoor receiving area to minimize climate disturbance
- Trenches 18" wide x 12" deep x 120'-0" long for hydraulic and signal lines with ¾" top plates and thickened slab below.
- (1) 16'-0" wide 12'-0" tall roll-up door on east wall of recessed area
- Utility sink and chilled drinking fountain.
- Strip windows above 10'-0" elevation from floor for natural lighting.

PROXIMITY SUGGESTIONS

- Concrete lab
- Shipping/Receiving Area

INSULATED PUMP ROOM

This is a research support space.

SQUARE FOOTAGE REQUIREMENT - 240 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Ceiling may be exposed.
- Temperature Control.
- 200 amp service.
- 60 gpm pump connection to central campus chilling system.
- Acoustical separation from surrounding spaces.
- Interconnecting trenches with structures lab and control room
- 6'-0" wide double door.

PROXIMITY SUGGESTIONS

- Structures Lab

CONTROL ROOM

This is a research support space. Contains testing equipment and systems as a support to the Structures Lab. This space is used for informal instructions. Requires direct visibility and access to Structures Lab.

SQUARE FOOTAGE REQUIREMENT - 240 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Recommended ceiling height of 10'-0".
- Impact-resistant windows between this room and structures lab.
- Provide acceptable acoustics.
- Interconnecting trench to pump room and structures lab.

PROXIMITY SUGGESTIONS

- Insulated Pump Room
- Instrumentation Room

INSTRUMENTATION AND CALIBRATION ROOM

This is a research support space. Contains various equipment. This space is used as storage for equipment setup.

SQUARE FOOTAGE REQUIREMENT - 480 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Recommended ceiling height of 12'-0".
- Provide acceptable acoustics.
- Full-height double doors (to ceiling) at one end, single man door at other end.
- Dust control.
- 50 kip tie downs at 3'-0" o.c. each way.
- Independent temperature and humidity control to maintain 72°F, 50% relative humidity.
- 100 amp 220V-3 phase and single phase.
- Interconnecting trenches to pump room and control room.
- Sink and drain.

PROXIMITY SUGGESTIONS

- Structures Lab

- Insulated Pump Room
- Control Room

EXTERIOR WASH PIT

This is area for cleaning equipment used for mixing heavy duty concrete and like materials.

SQUARE FOOTAGE REQUIREMENT - 100 NSF

REQUIREMENTS

- Reinforced concrete floors
- Reinforced concrete walls

- Isolate from surrounding concrete slabs.
- Accessible by bobcat type loaders.
- Hot and cold water supply.
- Removable metal grating on entire top surface.
- Top surface flush with surrounding area.
- Stock/tank heaters to prevent freezing during winter months.
- Drainage.

PROXIMITY SUGGESTIONS

- Structures Lab

COMPUTER AND INFORMATION SCIENCES ALLOCATED SPACE

RECEPTION OFFICE / WAITING

This is departmental suite space.

SQUARE FOOTAGE REQUIREMENT - 440 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Reception desk for (2) desk stations.
- Casual seating/lounge area.
- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.
- Power: 6 dual-gang duplex receptacle distributed on walls (in proximity to desk stations), should be fed by conditioned power.
- Network: 8 Ethernet jacks for physical network connectivity, 2 in proximity to each desk stations, the other four distributed on walls in pairs.

PROXIMITY SUGGESTIONS

- Departmental Suite Entry

DEPARTMENT HEAD OFFICE

This is departmental suite space. Offices should be organized to facilitate a collaborative/discussion space for 6-8 people and a concentrated work area.

SQUARE FOOTAGE REQUIREMENT - 260 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.
- White board.
- Acoustical separation from surrounding spaces.
- Power: 4 dual-gang duplex receptacles, 1 on each wall, which should be fed by conditioned power.
- Network: 6 Ethernet jacks for physical network connectivity.

PROXIMITY SUGGESTIONS

- Within Departmental Suite.
- Meeting Area

STAFF OFFICE

This is departmental suite space. Such spaces should be organized for flexibility and productivity. The area is an open office.

SQUARE FOOTAGE REQUIREMENT - 140 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.
- White board.
- Power: 4 dual-gang duplex receptacles, 1 on each wall, which should be fed by conditioned power.

- Network: 6 Ethernet jacks for physical network connectivity.

PROXIMITY SUGGESTIONS

- Within Departmental Suite.

MEETING AREA

This is departmental suite space. Small meeting room for up to 8 occupants. Used for formal meeting, training, and teleconference activities. This space may include an area with small kitchenette for hospitality.

SQUARE FOOTAGE REQUIREMENT - 120 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Design for flexibility.
- Recommended ceiling height is 10'-0".
- Natural daylighting is optional.
- Controlled views into space are recommended.
- Voice, data, and power to accommodate a variety of multimedia presentations and tele- and videoconferences.
- Dimmable lighting.
- White boards and projection screens.
- Acoustical separation from surrounding spaces.
- Power: 4 dual-gang duplex receptacles, 1 on each wall, which should be fed by conditioned power.
- Network: 8 Ethernet jacks for physical network connectivity.

PROXIMITY SUGGESTIONS

- Within Departmental Suite.
- Department Head Office

COPY AREA / BREAK ROOM

This is departmental suite space.

SQUARE FOOTAGE REQUIREMENT - 160 NASF

PROXIMITY SUGGESTIONS

- Within Departmental Suite.
- Staff Office
- Reception Office / Waiting

REQUIREMENTS

- Power: 3 dual-gang duplex receptacles, which should be fed by conditioned power.
- Network: 6 Ethernet jacks for physical network connectivity.

PROXIMITY SUGGESTIONS

- Within Departmental Suite.

STORAGE

This is departmental suite space. Dedicated storage for department supplies and equipment.

SQUARE FOOTAGE REQUIREMENT - 80 NASF

PROXIMITY SUGGESTIONS

- Within Departmental Suite.
- Copy Area / Break Room

DEPARTMENT LOUNGE

This is academic support space. Intended for faculty and staff this area is not intended for students. A small kitchenette should be incorporated strategically into this space.

SQUARE FOOTAGE REQUIREMENT - 400 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Casual seating/lounge area.
- Natural daylighting is optional.
- Acoustical separation from surrounding spaces.
- Odor separation from surrounding spaces.

PROXIMITY SUGGESTIONS

- Departmental Suite Entry
- Staff/Faculty Offices

FACULTY OFFICE

This is academic support space. Offices should be organized to facilitate a conversation zone at the door, a collaborative space for 2-3 people and a concentrated work area.

SQUARE FOOTAGE REQUIREMENT - 140 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.
- White board.
- Acoustical separation from surrounding spaces.
- Power: 4 dual-gang duplex receptacles, 1 on each wall, which should be fed by conditioned power.
- Network: 8 Ethernet jacks for physical network connectivity.

PROXIMITY SUGGESTIONS

- None.

SYSTEM ADMINISTRATOR OFFICE

This is system administration space.

SQUARE FOOTAGE REQUIREMENT - 140 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.
- Acoustical separation from surrounding spaces.
- Power: 4 dual-gang duplex receptacles, 1 on each wall, which should be fed by conditioned power.
- Network: 8 Ethernet jacks for physical network connectivity.

PROXIMITY SUGGESTIONS

- Data Center.
- Technician Office.
- Storage/Hardware.

TECHNICIAN OFFICE

This is system administration space.

SQUARE FOOTAGE REQUIREMENT - 140 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.
- Acoustical separation from surrounding spaces.

- Power: 4 dual-gang duplex receptacles, 1 on each wall, which should be fed by conditioned power.
- Network: 8 Ethernet jacks for physical network connectivity.

PROXIMITY SUGGESTIONS

- Data Center.
- System Administrator Office.
- Storage/Hardware.

STORAGE / HARDWARE

This is system administration space. Desk and workbenches should be provided for IT hardware support personnel. Requires additional power and network connectivity in proximity to workbench space.

SQUARE FOOTAGE REQUIREMENT - 250 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Acoustical separation from surrounding spaces.
- Natural daylighting is recommended.
- Power: 8 dual-gang duplex receptacles, which should be fed by conditioned power.
- Network: 16 Ethernet jacks for physical network connectivity.

PROXIMITY SUGGESTIONS

- Data Center.
- System Administrator Office.
- Technician Office.

GENERAL TEACHING LAB

This is instructional space. This classroom is intended to serve a capacity of 40 workstations. High usage space. Houses high end graphics/games programming workstations. Houses thin client desktops for high density with lower power and heat requirements.

SQUARE FOOTAGE REQUIREMENT - 1200 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Natural daylighting is not recommended.
- Dimmable light.

- Voice, data, and power to accommodate a variety of multimedia presentations.
- White boards and projection screens.
- Acoustical separation from surrounding spaces is recommended.
- Security monitoring.
- HVAC: independent from building environment
- Power: multiple circuits in proximity to workstations, fed by conditioned power, dual-gang duplex receptacle at front for instructor, receptacles distributed in room for student use.

PROXIMITY SUGGESTIONS

- Specialized Classroom/Teaching Lab.

SPECIALIZED TEACHING LAB

This is instructional space. Room arrangement places instructor at room end with evenly distributed circle tables in middle. Twenty high end graphics/games programming workstations are placed at the room perimeter. High usage space.

SQUARE FOOTAGE REQUIREMENT - 1004 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Natural daylighting is not recommended.
- Dimmable light.
- Flat floor, easily cleaned.
- Voice, data, and power to accommodate a variety of multimedia presentations.
- White boards and projection screens.
- Acoustical separation from surrounding spaces is recommended.
- Security monitoring.
- HVAC: independent from building environment.
- Power: multiple circuits in proximity to workstations, fed by conditioned power, dual-gang duplex receptacle at front for instructor, receptacles distributed in room for student use.
- Network: multiple Ethernet jacks in proximity to workstations, 2 Ethernet jacks at front of room for instructor.

PROXIMITY SUGGESTIONS

- General Teaching Lab.

TEACHING LABS

This is instructional space. Spaces serve as computer labs dedicated to Windows or Linux. Arranged for instructor at one end with up to 24 workstations.

SQUARE FOOTAGE REQUIREMENT - 800 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Natural daylighting is not recommended.
- Dimmable light.
- Voice, data, and power to accommodate a variety of multimedia presentations.
- White boards and projection screens.
- Acoustical separation from surrounding spaces, is recommended.
- Security monitoring.
- HVAC: independent from building environment.
- Power: multiple circuits in proximity to workstations, fed by conditioned power, dual-gang duplex receptacle at front for instructor, receptacles distributed in room for student use.
- Network: multiple Ethernet jacks in proximity to workstations, 2 Ethernet jacks at front of room for instructor.

PROXIMITY SUGGESTIONS

- None.

ROBOTICS LAB

This is research space. Space should be provided for workstations and collaborative work sessions with dedicated area for robot testing and manipulation.

SQUARE FOOTAGE REQUIREMENT - 500 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Natural daylighting is optional.
- White boards.
- Acoustical separation from surrounding spaces, is recommended.
- Security monitoring.
- HVAC: independent from building environment.
- Power: multiple circuits in proximity to workstations, fed by conditioned power,

dual-gang duplex receptacle at front for instructor, receptacles distributed in room for student use.

- Network: multiple Ethernet jacks in proximity to workstations.

PROXIMITY SUGGESTIONS

- None.

SECURITY LAB

This is research space. Space should be provided for workstations and collaborative work sessions and instruction. Area for (3) GRA workstations with furniture partitions is to be allocated.

SQUARE FOOTAGE REQUIREMENT - 500 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- White boards.
- Acoustical separation from surrounding spaces, is recommended.
- Security monitoring.
- HVAC: independent from building environment.
- Power: multiple circuits in proximity to workstations, fed by conditioned power, receptacles distributed in room for student use.
- Network: multiple Ethernet jacks in proximity to workstations.

PROXIMITY SUGGESTIONS

- Cyber Defense Lab.

KDD LAB

This is research space. Space should be provided for workstations and collaborative work sessions with dedicated area for robot testing and manipulation.

SQUARE FOOTAGE REQUIREMENT - 300 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- White boards.
- Acoustical separation from surrounding spaces, is recommended.
- Security monitoring.

PROXIMITY SUGGESTIONS

- None.

HIGH ASSURANCE LAB

This is research space, a combination of GRA spaces, meeting area and workstation tables.

SQUARE FOOTAGE REQUIREMENT - 1000 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- White boards.
- Acoustical separation from surrounding spaces, is recommended.
- Security monitoring.
- HVAC: independent from building environment.
- Power: multiple circuits in proximity to workstations, fed by conditioned power, receptacles distributed in room for student use.
- Network: multiple Ethernet jacks in proximity to workstations.
- Hallway windows or windows storefront to showcase lab.

PROXIMITY SUGGESTIONS

- None.

KEDZIE MULTI_AGENT ROBOTICS LAB

This is research space. The space should be provided with 10 workstations and collaborative work sessions with a dedicated area for robot testing and manipulation.

SQUARE FOOTAGE REQUIREMENT - 800 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- White boards.
- Acoustical separation from surrounding spaces, is recommended.
- Security monitoring.
- HVAC: independent from building environment.
- Power: multiple circuits in proximity to workstations, fed by conditioned power, receptacles distributed in room for student use.

- Network: multiple Ethernet jacks in proximity to workstations.
- Hallway windows or windows storefront to showcase lab.

PROXIMITY SUGGESTIONS

- Cyber Defense Lab.

GK-12 / EMBEDDED SYSTEMS LAB

This is research space, a combination of GRA spaces, meeting area and workstation tables.

SQUARE FOOTAGE REQUIREMENT - 600 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- White boards.
- Acoustical separation from surrounding spaces, is recommended.
- Security monitoring.
- HVAC: independent from building environment.
- Power: multiple circuits in proximity to workstations, fed by conditioned power, receptacles distributed in room for student use.
- Network: multiple Ethernet jacks in proximity to workstations.
- Hallway windows or windows storefront to showcase lab.

PROXIMITY SUGGESTIONS

- None.

BIOINFORMATICS LAB

This is research space.

SQUARE FOOTAGE REQUIREMENT - 400 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- White boards.
- Acoustical separation from surrounding spaces, is recommended.
- Security monitoring.

PROXIMITY SUGGESTIONS

- None.

CYBER DEFENSE LAB

This is research space. Houses 25-30 workstations for desktop security research which can be stacked densely to conserve space. Space should be provided for up to 2 GRA workstations with furniture partitions to be allocated.

SQUARE FOOTAGE REQUIREMENT - 1200 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- White boards.
- Acoustical separation from surrounding spaces, is recommended.
- Security monitoring.
- HVAC: independent from building environment.
- Power: multiple circuits in proximity to workstations, fed by conditioned power, circuits in proximity to GRA workstations.
- Network: multiple Ethernet jacks in proximity to GRA workstations.
- Hallway windows or windows storefront to showcase lab.

PROXIMITY SUGGESTIONS

- Data Center
- Kedzie Multi_Agent Lab.
- Security Lab

DATA CENTER

This is flex and facility support space. A facility for vertical stacked data processing equipment, including dense frame and rack-mounted processing systems. Showcase space.

SQUARE FOOTAGE REQUIREMENT - 1500 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Raised access floor.
- Durable anti-static surfaces.
- Technological connectivity.
 - Fiber-optic
 - 10GB connectivity to campus network
- Dual path service lines for power. Up to 600 kVA combined available.
- Uninterruptible power supply (UPS). 30 minute battery runtime.

- HVAC with redundant components. Up to 170 tons (600kW) cooling capacity independent from building environment.
- Acoustical separation from surrounding spaces, is recommended.
- Security monitoring.
- Backup generator to provide up to 600 kVA of power in case of extended power outages or emergency.
- Electronic access door locks, keypad/swipe/RFDI.
- Hallway windows or windows storefront to showcase lab.

PROXIMITY SUGGESTIONS

- Vertical service core.
- CIS System Administrator
- CIS Technician
- ECE System Administrator

PROGRAM ADAPTABLE

This is flex and facility support space. To meet the future needs of the department, un-assigned space has been allocated. This area may be one large area or divisible into several.

SQUARE FOOTAGE REQUIREMENT - 1500 NASF

OCCUPANCY CLASS
B Business Space

REQUIREMENTS

- To be determined.

PROXIMITY SUGGESTIONS

- None.

ELECTRICAL AND COMPUTER ENGINEERING ALLOCATED SPACE

RECEPTION OFFICE / WAITING

This is departmental suite space.

SQUARE FOOTAGE REQUIREMENT - 440 NASF

OCCUPANCY CLASS
B Business Space

REQUIREMENTS

- Reception desk for (2) desk stations.
- Casual seating/lounge area.
- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.

PROXIMITY SUGGESTIONS

- Departmental Suite Entry

- Natural daylighting is recommended.
- White board.
- Acoustical separation from surrounding spaces.

PROXIMITY SUGGESTIONS

- Within Departmental Suite.
- Project Coordinator.
- Meeting Area

DEPARTMENT HEAD OFFICE

This is departmental suite space. Offices could be organized to facilitate a collaborative/discussion space for 6-8 people and a concentrated work area.

SQUARE FOOTAGE REQUIREMENT - 260 NASF

OCCUPANCY CLASS
B Business Space

REQUIREMENTS

- Soft flooring for comfort and acoustics.

PROJECT COORDINATOR OFFICE

This is departmental suite space. The office should be organized to facilitate a conversation zone at the door, a discussion space for 2-4 people and a concentrated work area.

SQUARE FOOTAGE REQUIREMENT - 160 NASF

OCCUPANCY CLASS
B Business Space

REQUIREMENTS

- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.
- White board.
- Acoustical separation from surrounding spaces.

PROXIMITY SUGGESTIONS

- Within Departmental Suite.

- Department Head Office.

STAFF OFFICE

This is departmental suite space. Such spaces should be organized for flexibility and productivity. The area may be a part of an open office.

SQUARE FOOTAGE REQUIREMENT - 140 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.
- White board.

PROXIMITY SUGGESTIONS

- Within Departmental Suite.

ADVISORS OFFICE

This is departmental suite space. The office should be organized to facilitate a conversation zone at the door, a discussion space for 2-4 people and a concentrated work area. This space is not required to be part of the Departmental Suite.

SQUARE FOOTAGE REQUIREMENT - 160 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.
- White board.
- Acoustical separation from surrounding spaces.

PROXIMITY SUGGESTIONS

- None.

COPY AREA / BREAK ROOM

This is departmental suite space. This is a work area for faculty and staff. Adequate room for paper handling accessories including workspace, paper cutters, fax machine, and printers is required. Space should be adequate to facilitate 3 faculty members utilizing the space at once.

SQUARE FOOTAGE REQUIREMENT - 180 NASF

PROXIMITY SUGGESTIONS

- Within Departmental Suite.
- Staff Office
- Reception Office / Waiting

STORAGE

This is departmental suite space. Dedicated storage for department supplies and equipment.

SQUARE FOOTAGE REQUIREMENT - 80 NASF

PROXIMITY SUGGESTIONS

- Within Departmental Suite.
- Copy Area / Break Room

MEETING AREA

This is departmental suite space. Small meeting room for up to 8 occupants. Used for formal meeting, training, and teleconference activities. This space may include an area with small kitchenette for hospitality.

SQUARE FOOTAGE REQUIREMENT - 120 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Design for flexibility.
- Recommended ceiling height is 10'-0".
- Natural daylighting is optional.
- Controlled views into space are recommended.
- Voice, data, and power to accommodate a variety of multimedia presentations and tele- and videoconferences.
- Generous convenience outlets.
- Dimmable lighting.
- White boards and projection screens.
- Acoustical separation from surrounding spaces.

PROXIMITY SUGGESTIONS

- Within Departmental Suite.
- Department Head Office.

DEPARTMENT LOUNGE

This is academic support space. Intended for faculty and staff this area is not intended for students. A

small kitchenette should be incorporated strategically into this space.

SQUARE FOOTAGE REQUIREMENT - 400 NASF

OCCUPANCY CLASS
B Business Space

REQUIREMENTS

- Casual seating/lounge area.
- Natural daylighting is optional.
- Acoustical separation from surrounding spaces.
- Odor separation from surrounding spaces.

PROXIMITY SUGGESTIONS

- Departmental Suite Entry
- Staff/Faculty Offices

FACULTY OFFICE

This is academic support space. Offices should be organized to facilitate a conversation zone at the door, a collaborative space for 2-3 people and a concentrated work area.

SQUARE FOOTAGE REQUIREMENT - 140 NASF

OCCUPANCY CLASS
B Business Space

REQUIREMENTS

- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.
- White board.
- Acoustical separation from surrounding spaces.
- Operable windows when available.
- Ability to place two 5-foot work stations along the same wall.

PROXIMITY SUGGESTIONS

- Graduate research offices.

SYSTEM ADMINISTRATOR / STUDENT ADMINISTRATOR

This is system administration space. The space should be organized to provide space for 2-3 people and associated workstations, and an additional small area where computers being services can be held.

SQUARE FOOTAGE REQUIREMENT - 250 NASF

OCCUPANCY CLASS
B Business Space

REQUIREMENTS

- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.
- Acoustical separation from surrounding spaces.

PROXIMITY SUGGESTIONS

- Data Center.
- Storage/Hardware.

STORAGE / HARDWARE

This is system administration space for temporary storage of computers and related equipment.

SQUARE FOOTAGE REQUIREMENT - 200 NASF

OCCUPANCY CLASS
B Business Space

REQUIREMENTS

- Acoustical separation from surrounding spaces.

PROXIMITY SUGGESTIONS

- System Administrator Office.

COMPUTER LAB

This is instructional space. This classroom is intended to serve a capacity of 20 workstations. High usage space. Supports ECE undergraduate and graduate students. Serves as a computer lab.

SQUARE FOOTAGE REQUIREMENT - 740 NASF

OCCUPANCY CLASS
B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Data and power to accommodate a variety of multimedia presentations, including power and networking access from floor or ceiling.
- White boards and projection screens.
- Acoustical separation from surrounding spaces, is recommended.
- Security monitoring.
- Windows to provide visibility into the room.

PROXIMITY SUGGESTIONS

- None.

DIGITAL SYSTEMS LAB

This is instructional space. The space is used as a digital hardware and DSP lab. Room supports (4) courses. Moderately heavy scheduled usage, with 14 students per laboratory section. This lab utilizes equipment benches that are 8'x4', each accommodating 2 students.

SQUARE FOOTAGE REQUIREMENT - 740 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Data and power to accommodate a variety of multimedia presentations.
- White boards and projection screens.
- Acoustical separation from surrounding spaces, is recommended.
- Hallway widows which begin at 5' above floor are recommended.

PROXIMITY SUGGESTIONS

- Microcontrollers Lab.
- Microprocessor Lab.
- Intro to Computer Engineering Lab.

MICROCONTROLLERS LAB

This is instructional space. Services approximately 70 students per semester, with 14 students per laboratory section. This lab utilizes equipment benches that are 8'x4', each accommodating 2 students.

SQUARE FOOTAGE REQUIREMENT - 740 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Data and power to accommodate a variety of multimedia presentations.
- White boards and projection screens.
- Acoustical separation from surrounding spaces, is recommended.
- Hallway widows which begin at 5' above floor are recommended.

PROXIMITY SUGGESTIONS

- Digital Systems Lab.
- Microprocessor Lab.
- Intro to Computer Engineering Lab.

MICROPROCESSOR LAB

This is instructional space. Used for processor and real time classes and is a senior level embedded systems lab. Minimum student capacity is 20 occupants, but with 16 students per laboratory section. This lab utilizes equipment benches that are 8'x4', each accommodating 2 students. Light scheduled usage.

SQUARE FOOTAGE REQUIREMENT - 740 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Data and power to accommodate a variety of multimedia presentations.
- White boards and projection screens.
- Acoustical separation from surrounding spaces, is recommended.
- Hallway windows which begin at 5' above floor are recommended.

PROXIMITY SUGGESTIONS

- Digital Systems Lab.
- Intro to Computer Engineering Lab.
- Microcontrollers Lab.
- Hallway widows which begin at 5' above floor are recommended.

INTRO TO COMPUTER ENGINEERING LAB

This is instructional space. Services approximately 140 students per semester, with 14 students per laboratory section. This lab utilizes tables each accommodating 2 students. One table is required for the instructor use. Heavy scheduled usage.

SQUARE FOOTAGE REQUIREMENT - 740 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Data and power to accommodate a variety of multimedia presentations.
- White boards and projection screens.
- Acoustical separation from surrounding spaces, is recommended.
- Security monitoring.
- Hallway widows which begin at 4'-5' above floor are recommended.

PROXIMITY SUGGESTIONS

- Digital Systems Lab.
- Microcontrollers Lab.
- Microprocessor Lab.

COMMUNICATION CIRCUITS LAB

This is instructional space. Traditional instructional layout with perimeter work benches, with the ability of 16 to work at benches. This lab utilizes equipment benches that are 8'x4', each accommodating 2 students.

SQUARE FOOTAGE REQUIREMENT - 740 NASF

OCCUPANCY CLASS
B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Data and power to accommodate a variety of multimedia presentations.
- White boards and projection screens.
- Acoustical separation from surrounding spaces, is recommended.
- Hallway windows which begin at 5' above floor are recommended.

PROXIMITY SUGGESTIONS

- Communications Research.

GRADUATE RESEARCH OFFICE

This is academic support space. GRA Offices should be organized to provide a collaborative space for 2-3 people and associated workstations.

SQUARE FOOTAGE REQUIREMENT - 140 NASF

OCCUPANCY CLASS
B Business Space

REQUIREMENTS

- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.
- White board.
- Acoustical separation from surrounding spaces.

PROXIMITY SUGGESTIONS

- Research spaces.

GRADUATE RESEARCH AREA

This is academic support space. GRA Offices should be organized to provide a collaborative space for 4-5 people and associated workstations.

SQUARE FOOTAGE REQUIREMENT - 300 NASF

OCCUPANCY CLASS
B Business Space

REQUIREMENTS

- Soft flooring for comfort and acoustics.
- Natural daylighting is recommended.
- White board.
- Acoustical separation from surrounding spaces.

PROXIMITY SUGGESTIONS

- Research spaces.

WIRELESS HARDWARE LAB

This is research space consisting of 2-3 equipment benches and 2-3 desks.

SQUARE FOOTAGE REQUIREMENT - 300 NASF

OCCUPANCY CLASS
B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Data and power to accommodate a variety of multimedia presentations.
- White boards and projection screens.
- Acoustical separation from surrounding spaces, is recommended.

PROXIMITY SUGGESTIONS

- NASA / Sandia
- WiComm Group

POWER ELECTRONICS LAB

This is research space. That will consist of both general work area and 6 benches that are 8'x4', each accommodating 2 students, as well as a collaborative area for a meeting table and individual workstation area.

SQUARE FOOTAGE REQUIREMENT - 740 NASF

OCCUPANCY CLASS
B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Data and power to accommodate a variety of multimedia presentations.
- White boards and projection screens.
- Acoustical separation from surrounding spaces, is recommended.
- Electrical power availability in 120V, 240V and 3-phase distributed around the room perimeter.
- Hallway widows which begin at 4'-5' above floor are recommended.

PROXIMITY SUGGESTIONS

- Smart Grid Lab.

NASA / SANDIA LAB

This is research space. Perimeter benches with desks at center for GRAs performing computational work.

SQUARE FOOTAGE REQUIREMENT - 700 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Data and power to accommodate a variety of multimedia presentations.
- White boards and projection screens.
- Acoustical separation from surrounding spaces, is recommended.
- Hallway widows which begin at 5' above floor are recommended.

PROXIMITY SUGGESTIONS

- Wireless Hardware Lab.

[BIOMED RESEARCH LABS] BIOINSTRUMENTATION LAB

This is research space which will house equipment benches, a small meeting area, and a desk area for graduate students. Showcase space.

SQUARE FOOTAGE REQUIREMENT - 740 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Data and power to accommodate a variety of multimedia presentations.

- White boards and projection screens.
- Acoustical separation from surrounding spaces, is recommended.
- Hallway widows which begin at 5' above floor are recommended.
- Significant amount of cabinet storage

PROXIMITY SUGGESTIONS

- Bio-Prep Lab.

[BIOMED RESEARCH LABS] MEDICAL DEVICES LAB

This is research space which will house equipment benches, a small meeting area, and a desk area for graduate students. Showcase space.

SQUARE FOOTAGE REQUIREMENT - 740 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Data and power to accommodate a variety of multimedia presentations.
- White boards and projection screens.
- Acoustical separation from surrounding spaces, is recommended.
- Hallway widows which begin at 5' above floor are recommended.
- Significant amount of cabinet storage.

PROXIMITY SUGGESTIONS

- Bio-Prep Lab.

[BIOMED RESEARCH LABS] BIO-PREP LAB

This is research space. Intended to serve as the common wet lab between Bioinstrumentation and Medical Devices Labs, this space will house fume hoods, sinks, casework and associated medical fridges and freezers and supplemental equipment.

SQUARE FOOTAGE REQUIREMENT – included in total as a part of both Bioinstrumentation and Medical Devices Labs.

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Constant and reliable HVAC
- Dust control
- Gas/Utility services

- Vacuum
- Pneumatic supply
- Natural gas
- Oxygen
- Carbon Dioxide
- Distilled water
- Fume hood
- White boards.
- Acoustical separation from surrounding spaces, is recommended.

PROXIMITY SUGGESTIONS

- Bioinstrumentation Lab
- Medical Devices Lab

WIRELESS HARDWARE LAB

This is research space consisting of 2-3 equipment benches and 2-3 desks.

SQUARE FOOTAGE REQUIREMENT - 300 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Data and power to accommodate a variety of multimedia presentations.
- White boards and projection screens.
- Acoustical separation from surrounding spaces, is recommended.

PROXIMITY SUGGESTIONS

- NASA / Sandia

SMART GRID LAB

This is research space consisting of: an equipment area for 6 standard 19" racks; a workstation area which houses 6-8 computers for conducting tests; an open area where visiting groups can watch demonstrations of the lab capabilities. This is a showcase lab.

SQUARE FOOTAGE REQUIREMENT - 740 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- Length-to-width ratio should be 3:2.
- Data and power to accommodate a variety of multimedia presentations.
- White boards and projection screens.

- Acoustical separation from surrounding spaces, is recommended.

PROXIMITY SUGGESTIONS

- Data Center

PROGRAM ADAPTABLE

This is flex and facility support space. To meet the future needs of the department, un-assigned space has been allocated. This area may be one area or divisible into few.

SQUARE FOOTAGE REQUIREMENT - 260 NASF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- To be determined.

PROXIMITY SUGGESTIONS

- None.

ROOF LAB AREA

This is a flex and facility support space.

SQUARE FOOTAGE REQUIREMENT – 1500 - 2000 NSF

OCCUPANCY CLASS

B Business Space

REQUIREMENTS

- 500 SF dedicated to equipment.
- 1000 SF dedicated to collaborative work activities, including a surface where human exercise experiments can be conducted.
- Data and power to accommodate equipment necessary to conduct experiments.
- Perimeter railing for safety.
- Elevator access for transporting equipment.

PROXIMITY SUGGESTIONS

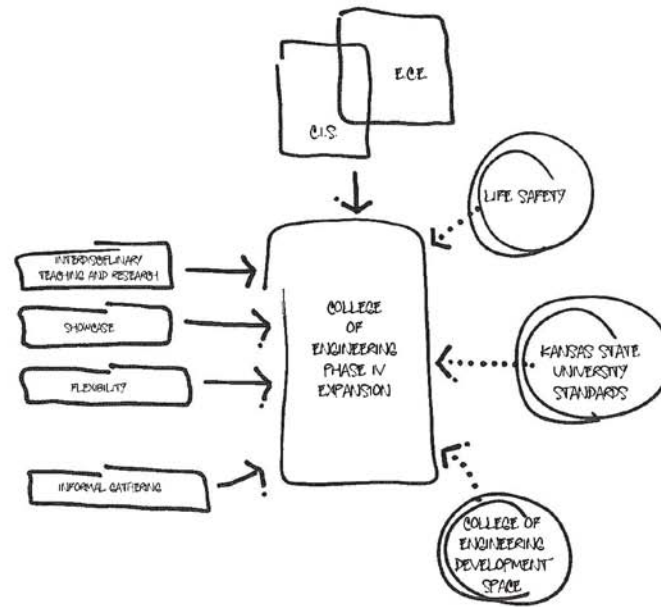
- None

Appendix C

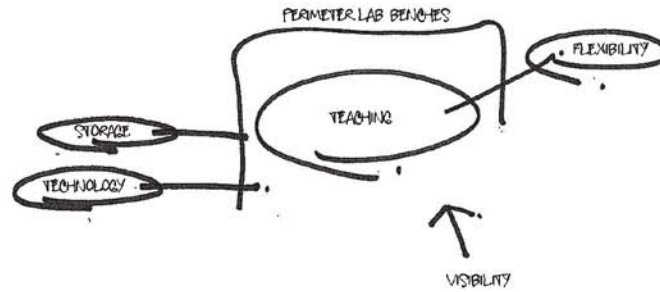
The following section provides bubble relationship diagrams for various departments, spaces, areas, and uses as examined through analysis of existing facilities and trends in collegiate spaces. This is not exhaustive of all spaces or possibilities and was used during programming to prioritize needs. These diagrams are provided as a visual tool for guiding the designer in understanding the global organizing principles as well as needs, within individual spaces, that drove the program.

SPACE BUBBLE DIAGRAMS

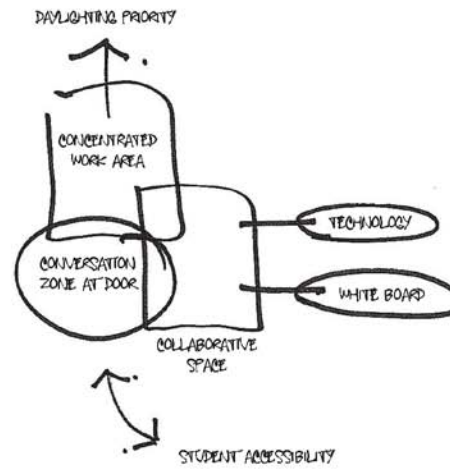
1. College of Engineering Phase IV Expansion Diagram



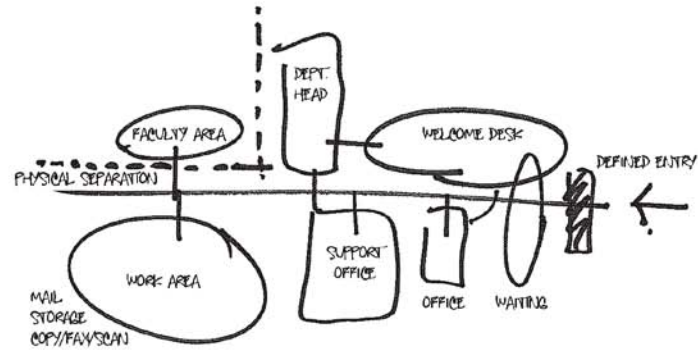
2. Typical ECE Teaching Lab Organization Diagram



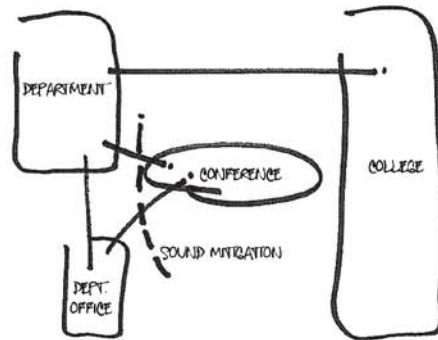
3. Typical Faculty / Staff Office Organization Diagram



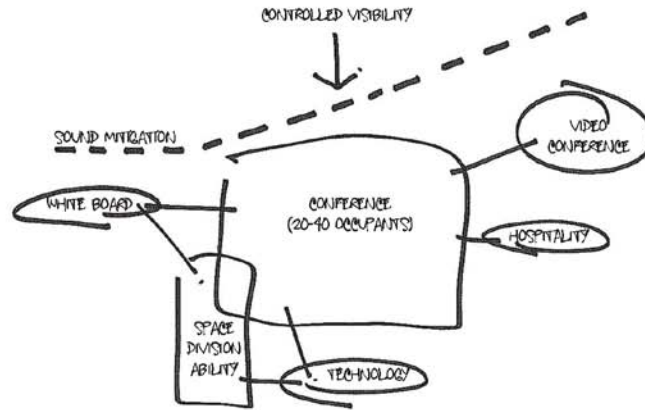
4. Typical Departmental Suite Organization Diagram



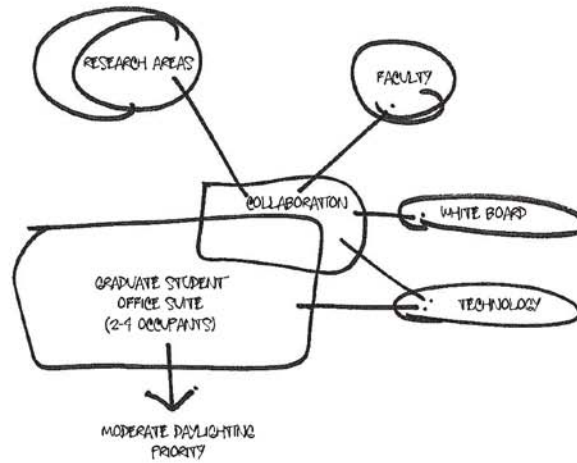
5. Conference Room Relationship Diagram



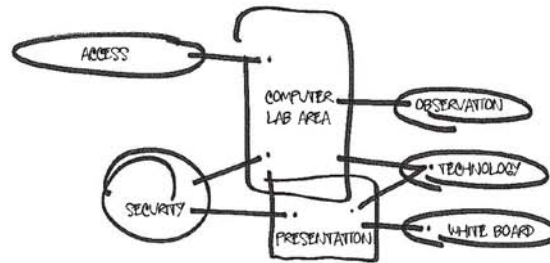
6. Typical Conference Room Organization Diagram



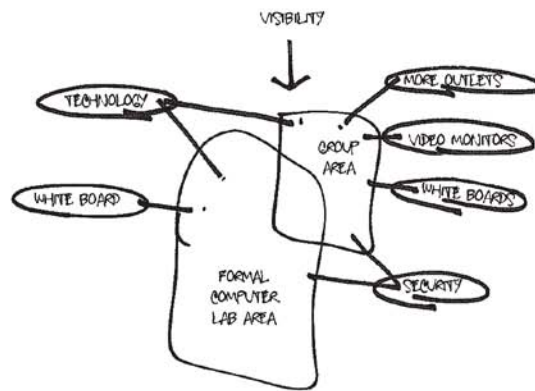
7. Typical Graduate Research Office Organization Diagram



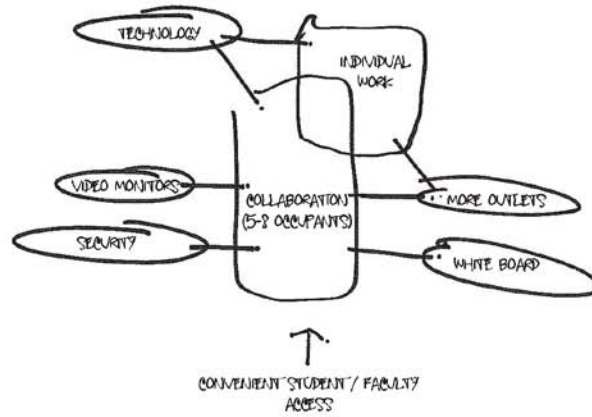
8. Typical Computer Lab Organization Diagram



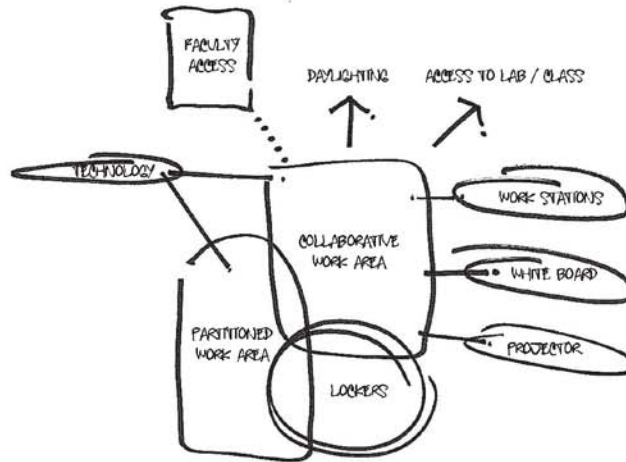
9. Alternative Computer Lab Organization Diagram



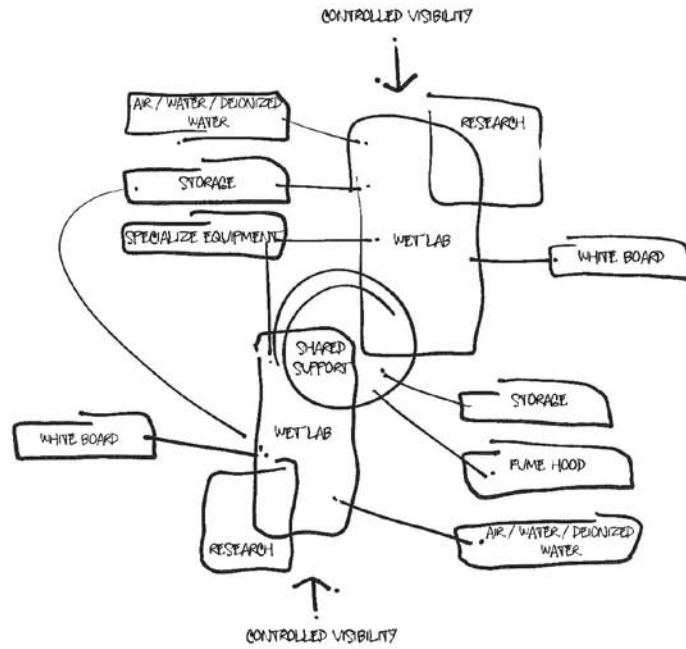
10. Typical Lounge/Work Area Organization Diagram



11. Teachers Assistant Area Organization Diagram

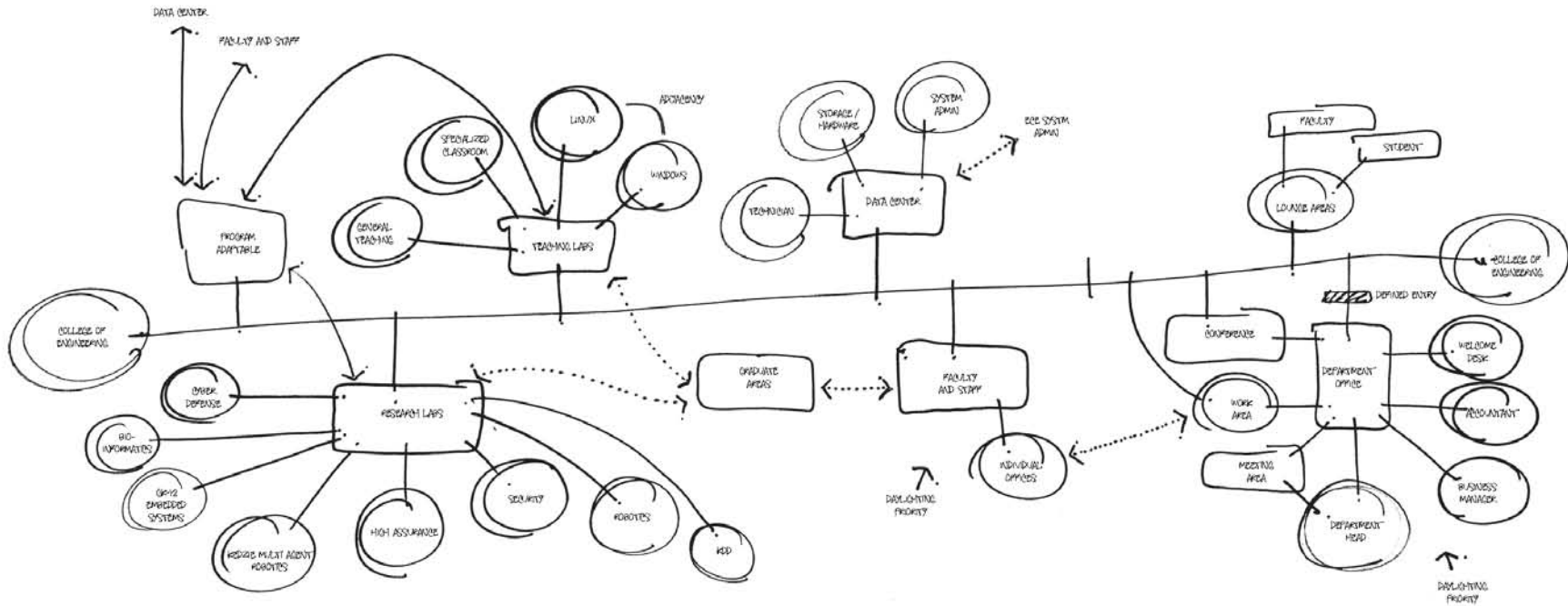


12. Biomed Research Labs Organization Diagram

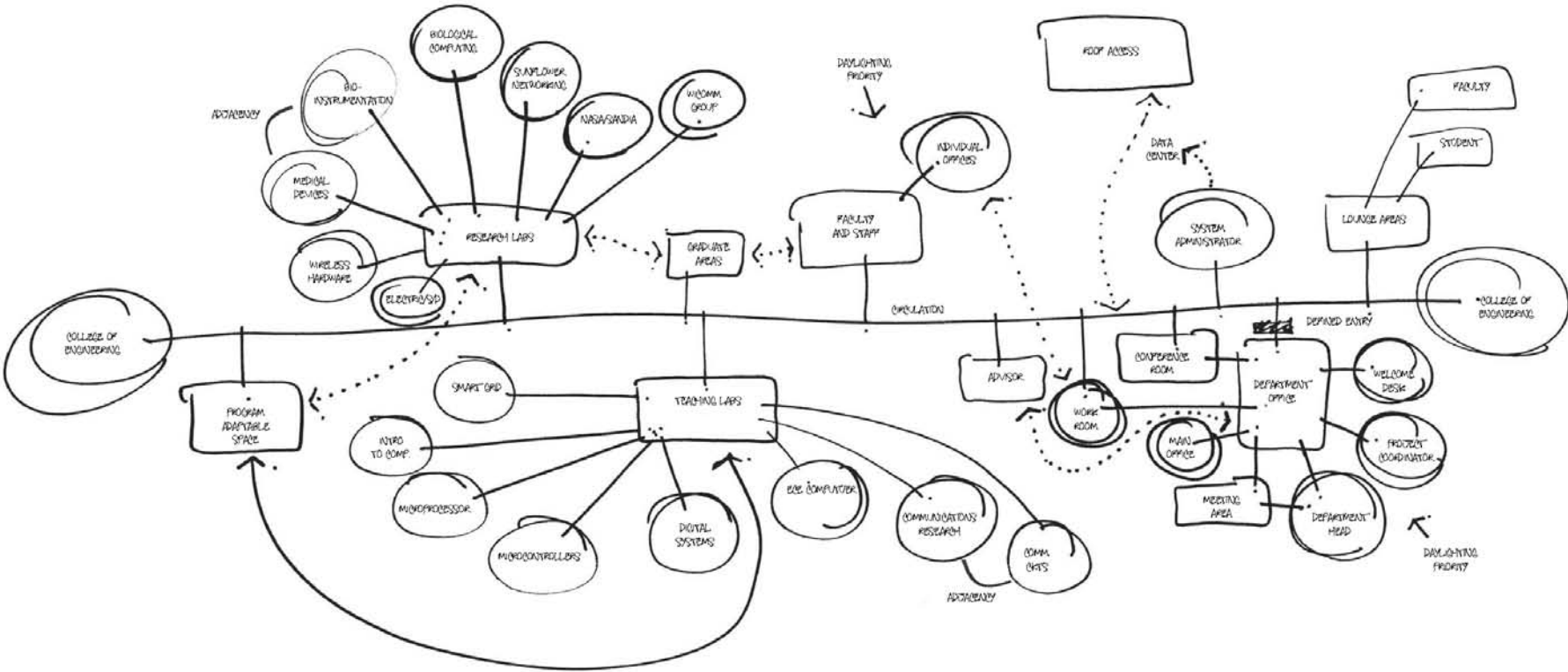


DEPARTMENT BUBBLE DIAGRAMS

1. Computer and Information Sciences Space Relationship Diagram



2. Electrical and Computer Engineering Space Relationship Diagram



Appendix D

The following section provides definitions of building area and definitions of space use codes. This appendix references the Postsecondary Education Facilities Inventory and Classification Manual (FICM) 2006.

The following terms are defined and acronyms associated as used in the preceding text:

Gross Area (GSF)

Gross area is the sum of all areas on all floors of a building included within the outside faces of its exterior walls, including all vertical penetration areas, for circulation and shaft areas that connect one floor to another. This area is computed by physically measuring or scaling measurements from the outside faces of exterior walls, disregarding cornices, pilasters, buttresses, etc., that extend beyond the wall faces. Such area excludes light wells, or portions of upper floors eliminated by spaces or lobbies that rise above single-floor ceiling height.

$GSF = \text{Net Usable Area} + \text{Structural Space}$

Structural Area

Structural area is the difference between the exterior or Gross Area and the interior or Net Usable Area, the floor area upon which the exterior and interior walls sit and the unusable areas in attics and excavated basements.

$\text{Structural Area} = \text{Gross Area} - \text{Net Usable Area}$

Net Usable Area

Net usable area is defined as the aggregate interior area of a building and is the sum of the Assignable Area and Non-assignable area.

$\text{Net Usable Area} = \text{Net Assignable Square Footage} + \text{Non-assignable Area}$

Net Assignable Square Footage (NASF)

Net assignable square feet (NASF) is the sum of floor space within interior walls of rooms that is assigned to, or available for assignment to, occupants for use, excluding non-assignable spaces defined as building service, circulation, mechanical, and structural areas. NASF is determined by Space Use Codes and Functional Category Code data fields. All rooms not specifically excluded are assignable and must be measured and coded according to academic discipline or administrative assignment (CIP), Space Use Codes, and Functional Category Codes. Rooms that are specifically excluded are Non-Assignable Areas. The 10 Major Assignable Space Use Categories are as follows: classrooms, laboratories, offices, study areas, special use space, general use areas, support rooms, health care, residential, and unclassified space.

$\text{Net Assignable Square Footage} = \text{Sum of the 10 major Space Use Categories of Assignable Space}$

Non-Assignable Areas

This space is not assigned directly to support programs but is essential to the operation of the building and not assigned directly to people or programs. The three major space use categories are building service, circulation and mechanical.

Building Service: This includes rooms used for building protection, care, and maintenance, such as custodial closets, trash rooms, guardrooms, custodial locker rooms, and custodial storage/supply rooms. Equipment storage areas are Assignable Areas.

Circulation: This is space that provides physical access to assignable rooms. Included are corridors, public stairways, elevators, escalators, loading platforms, tunnels, bridges, fire towers, etc. Walls do not always bound circulation areas. Exceptions are halls in office suites and similar settings that are used to circulate from room to room and are not general access space. This space is part of the Assignable area.

Mechanical – This includes areas that house mechanical equipment, utility services, and shaft areas. Examples are mechanical service shafts, air ducts, IT closets, mechanical rooms, etc.

Non-assignable Area = Sum of the Three Major Space Use Categories of Non-assignable Space

Space Use Codes

All usable space is designated as assignable or non-assignable and is labeled according to its primary use. These space use codes encompass 13 categories. All assignable space is classified into 1 of the 10 major assignable use categories and all non-assignable space is classified into 1 of the 3 major non-assignable use categories.

Classrooms (100 series): General purpose classrooms, lecture halls, recitation rooms, seminar rooms, and other spaces used primarily for scheduled non-laboratory instruction.

- 110 Classroom
- 115 Classroom Service

Laboratory Facilities (200 series): Rooms or spaces characterized by special purpose equipment or a specific configuration that ties instructional or research activities to a particular discipline or a closely related group of disciplines.

- 210 Class Laboratory
- 215 Class Laboratory Service
- 220 Open Laboratory
- 225 Open Laboratory Service
- 250 Research/Non-class Laboratory
- 255 Research/Non-class Laboratory Service

Office Facilities (300 series): Offices and conference rooms specifically assigned to each of the various academic, administrative, and service functions.

- 310 Office
- 315 Office Service
- 350 Conference
- 355 Conference Room Service

Study Facilities (400 series): Study rooms, stacks, open-stack reading rooms, and library processing spaces.

400 Study Room

Special Use Facilities (500 series): Military training rooms, athletic and physical education spaces, media production rooms, clinics, demonstration areas, field buildings, animal quarters, greenhouses, and other room categories that are sufficiently specialized in their primary activity or function to merit a unique room code.

530 Media Production
535 Media Production Service
590 Other (All Purpose)

General Use Facilities (600 series): Assembly rooms, exhibition space, food facilities, lounges, merchandise facilities, recreational facilities, meeting rooms, child and adult care rooms, and other facilities that are characterized by a broader availability to faculty, students, staff, or the public than are special use areas.

630 Food Service
635 Food Facility Service
650 Lounge
680 Meeting Room
685 Meeting Room Service

Support Facilities (700 series): Computing facilities, shops, central storage areas, vehicle storage areas, and central service space that provide centralized support for the facility.

710 Central Computer or Telecomm
715 Central Computer or Telecomm Serv
720 Shop
725 Shop Service
730 Central Storage
735 Central Storage Service
740 Vehicle Storage
745 Vehicle Storage Service
750 Central Service
755 Central Service Support
760 Hazardous Materials Storage
770 Hazardous Waste Storage
775 Hazardous Waste Service
780 Unit Storage

Health Care Facilities (800 series): Not Used.

Residential Facilities (900 series): Not Used.

Non-assignable (000 series): Non-assignable spaces such as elevator, stairway, lobby, loading dock and other such space.

011 Bridge / Tunnel
012 Elevator

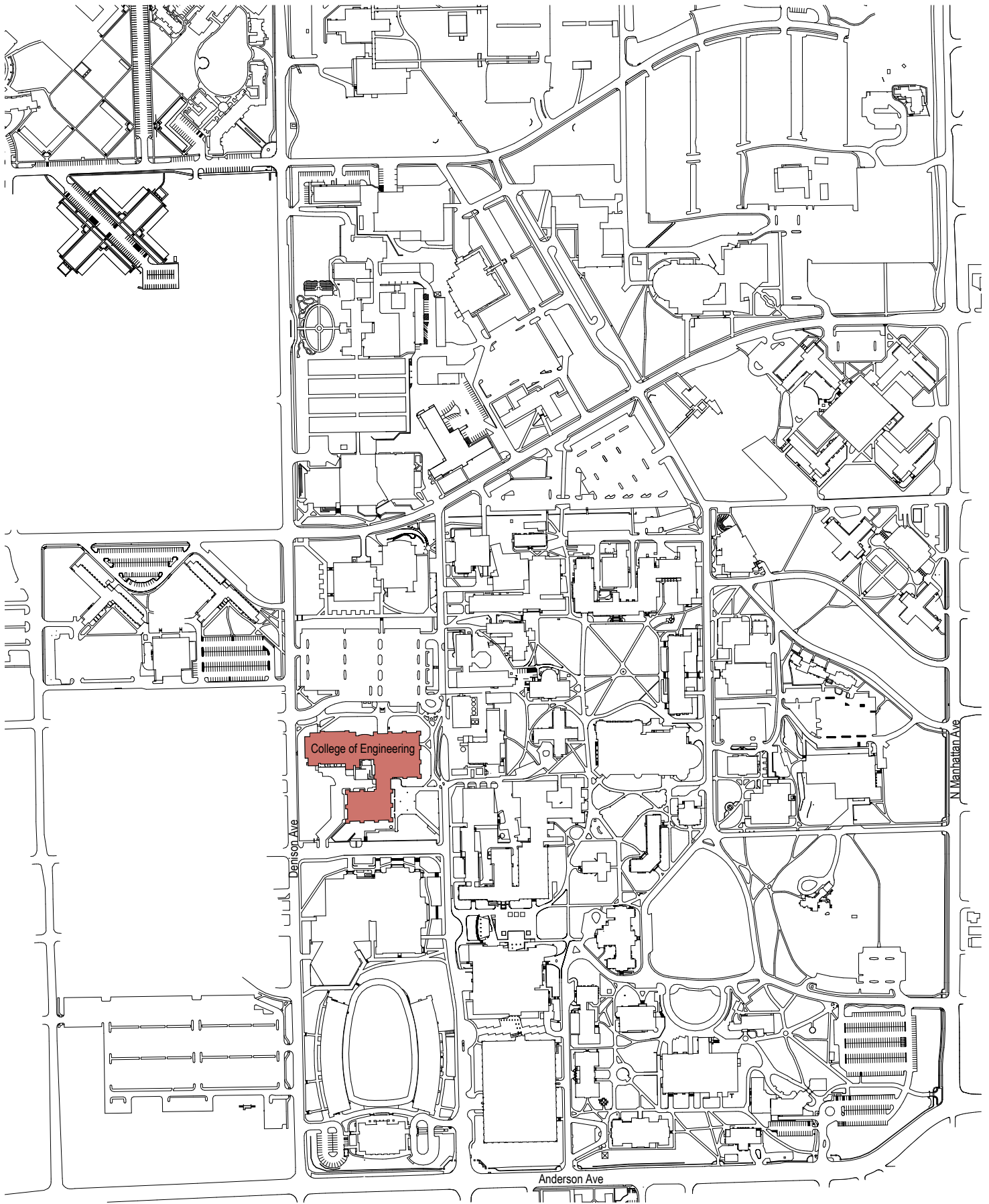
- 013 Escalator
- 014 Loading Dock
- 015 Lobby
- 016 Public Corridor
- 017 Stairway
- 021 Custodial Supply Closet
- 022 Janitor Room
- 023 Public Rest Room
- 024 Trash Room
- 031 Central Utility Plant
- 032 Fuel Room
- 033 Shaft
- 034 Utility/Mechanical Space
- 036 Telecomm Closet

Unclassified (000 series): Spaces available for assignment, temporarily out of use due to remodeling, or potentially assignable such as in new buildings or shell space

- 050 Inactive Area
- 060 Alteration or Conversion Area
 - 70 Unfinished Area

Appendix E

As pressing demands for growth continue to impact the University, campus wide master planning will continue to organize future construction. Areas for circulation, parking, utilities infrastructure, and university buildings will continue to play an important dialogue in this planning effort. The areas proposed in the concept design are sensitive to University master planning issues and have been generally approved through consensus as appropriate for the College of Engineering Phase IV Expansion. Early evaluations of the site have revealed limitations in placement of the building expansion massing. The following diagrams serve as a graphic means to communicate the observations made at the time this program was developed and are intended to portray site limitations, opportunities, and constraints relevant to this project.

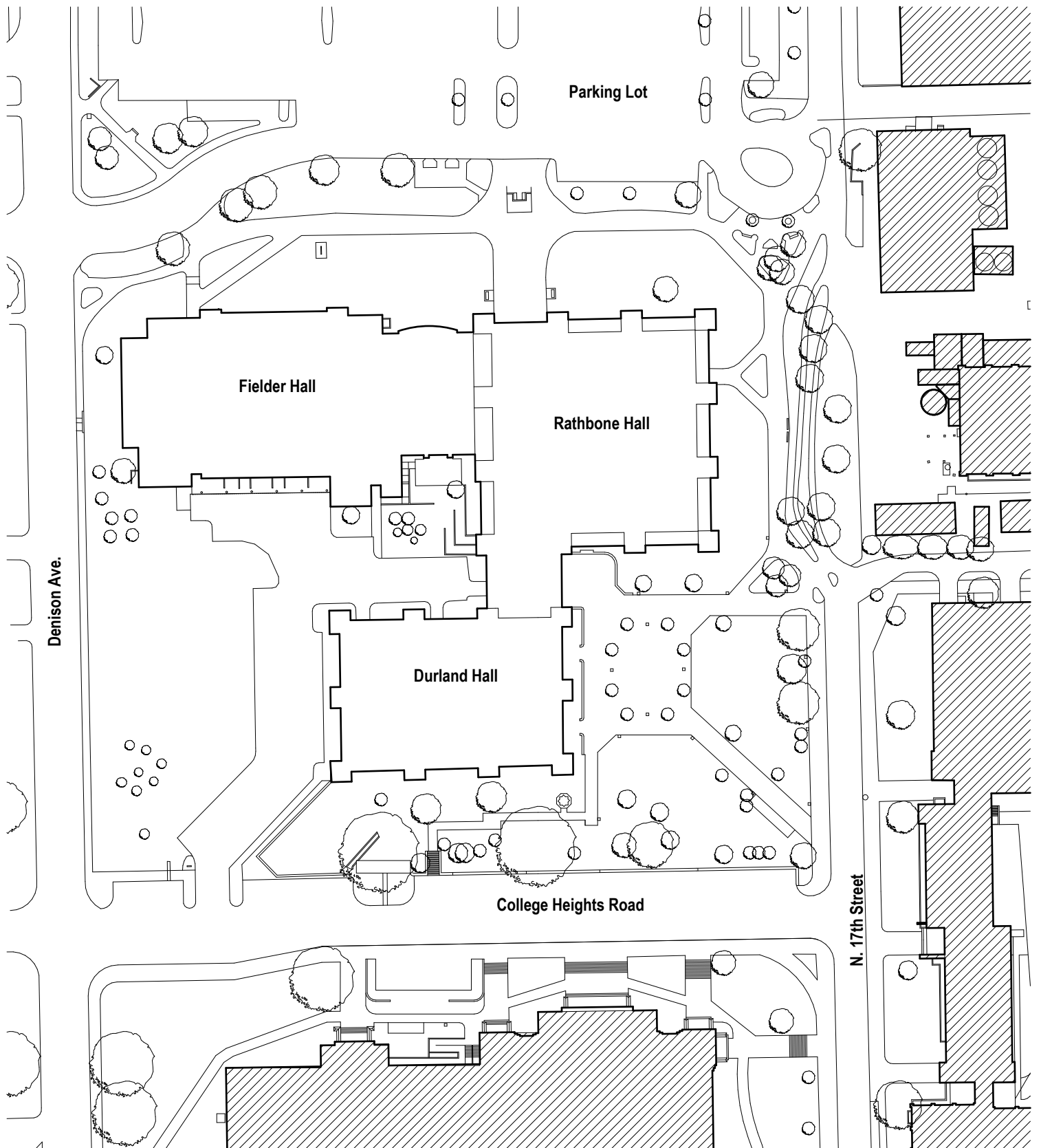


Campus Location Diagram



KANSAS STATE
UNIVERSITY

BG Architecture
a division of
BG Consultants, Inc.



Existing Site Diagram

0 8' 16' 32'



KANSAS STATE
UNIVERSITY

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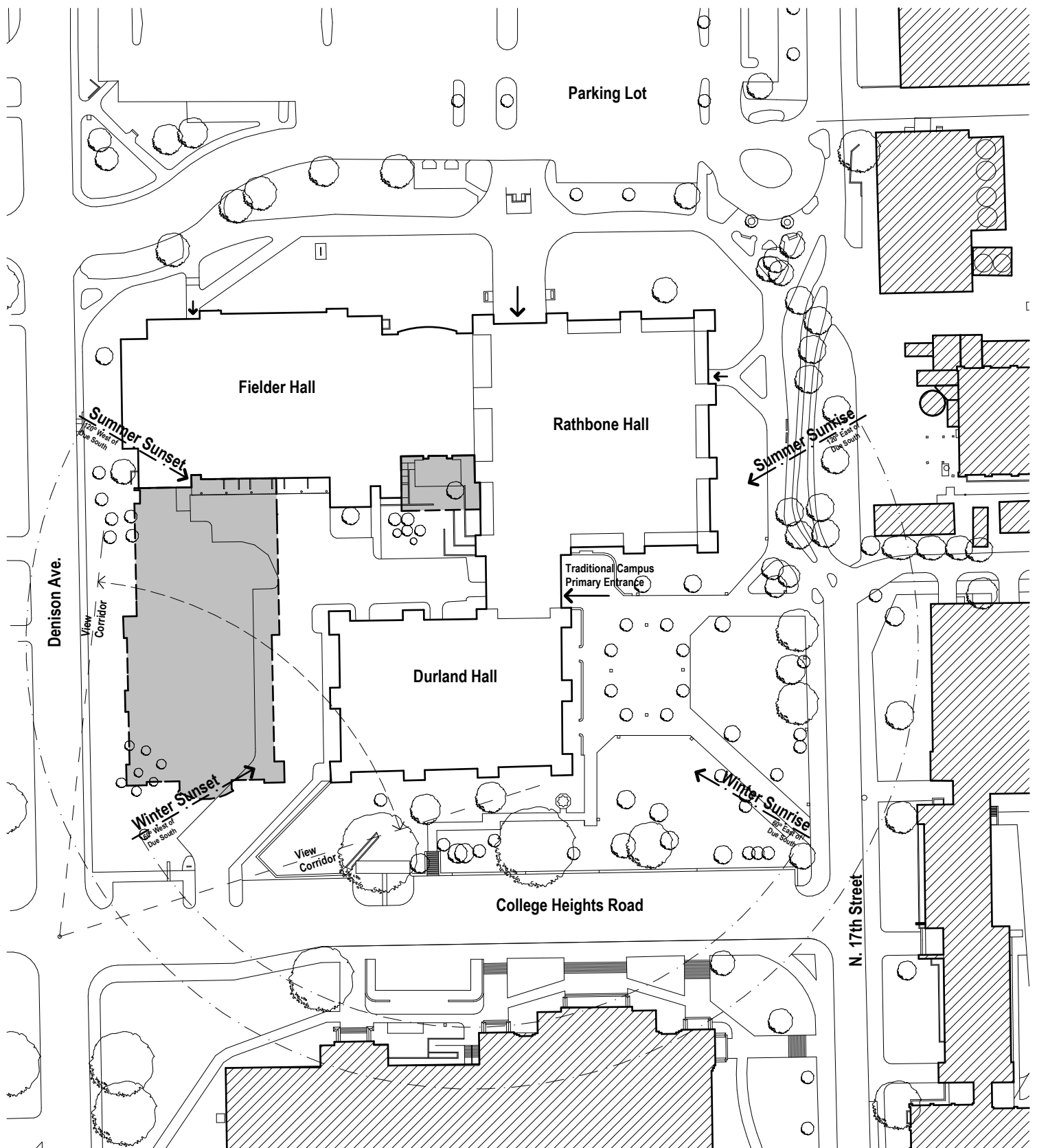


Diagram Key

- Tree
- Primary Entrance
- Existing Buildings
- Sun Altitude Calculation
- Sun Path
- Secondary Entrance
- June 21st = 73°
- December 21st = 28°

Site Analysis Diagram

0 8' 16' 32'



KANSAS STATE
UNIVERSITY

BG Architecture
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BG Consultants, Inc.

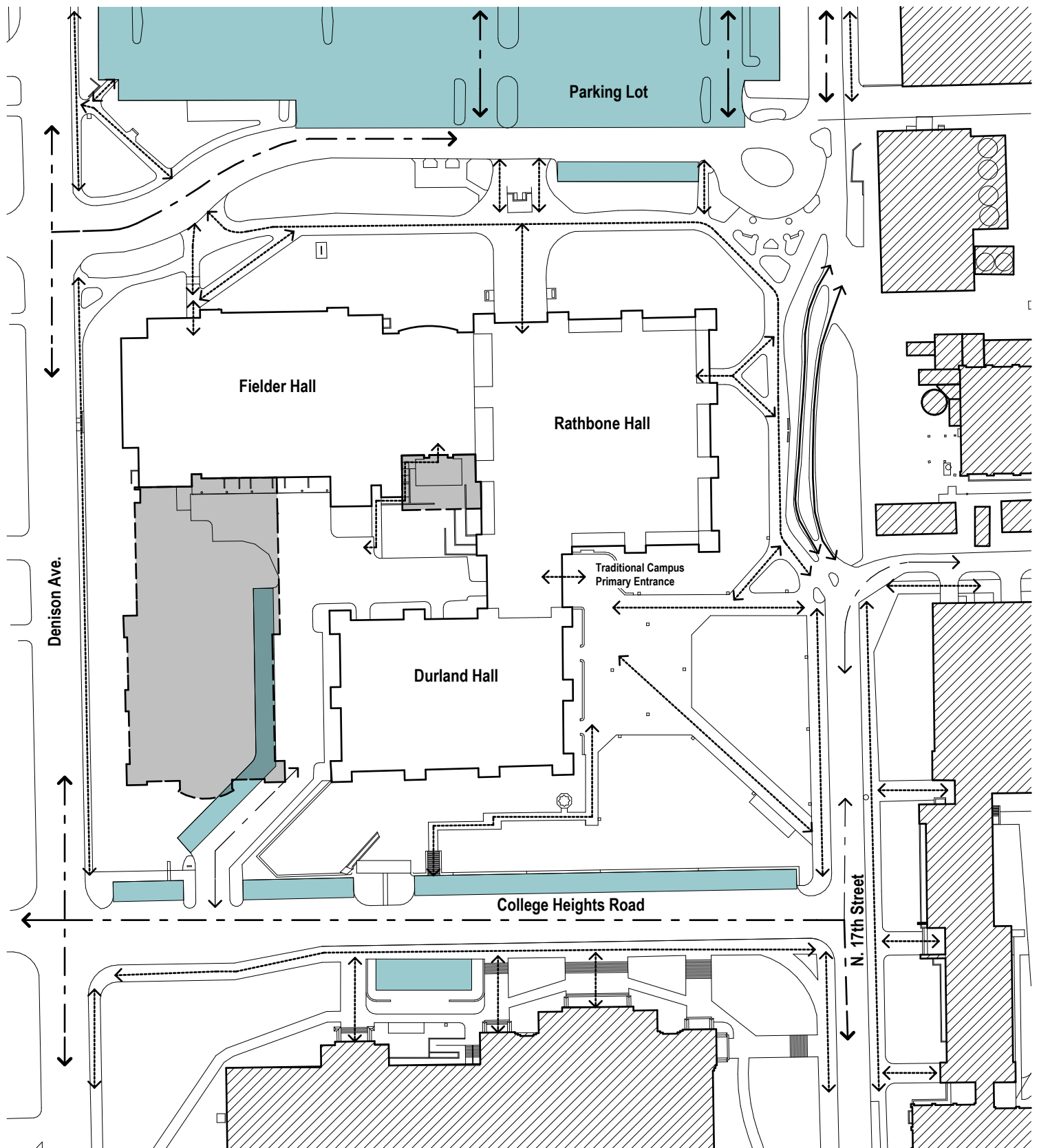


Diagram Key

- | | | | | | | | |
|-------------|-----------------------|-----------------------------------|--------------------|---|--------------------|---|-------------------|
| — — — — — → | Light Vehicle Traffic | — · — · — · — · — · — · — · — · → | Pedestrian Traffic | ■ | Parking | ■ | Proposed Building |
| — — — — — → | Vehicle Traffic | — — — — — → | Bicycle Path | ▨ | Existing Buildings | | |

Site Circulation Diagram

0 8' 16' 32'



KANSAS STATE
UNIVERSITY

BG Architecture
a division of
BG Consultants, Inc.

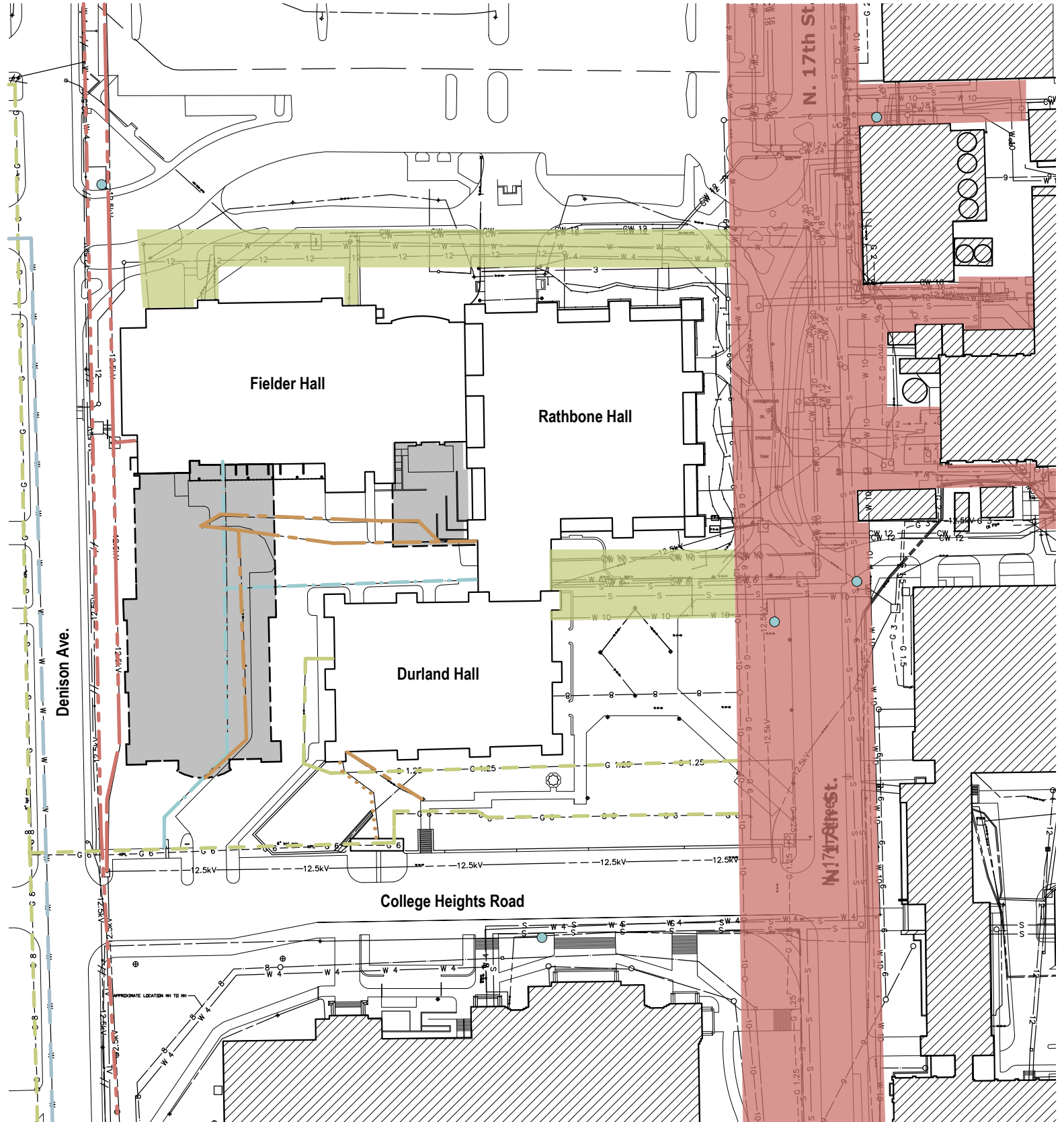


Diagram Key

- High Voltage Electrical
- Overhead Power Lines
- Street Light Power Lines
- Storm Water
- City Water
- Gas
- Data and Communications
- Major Utility Corridor
- Engineering Building Complex Utility Corridor
- Fire Hydrant

Site Circulation Diagram



KANSAS STATE UNIVERSITY

BG Architecture
a division of BG Consultants, Inc.

Appendix F

The development of this program for the College of Engineering Phase IV Expansion has involved the collaboration of various people, representations and interests. Records of the meetings which established the cadence, requirements, and expectations for the expansion follow and are intended to serve as a basis for decisions made which have shaped the outcome of the programming initiative. All supporting documentation referenced in the meeting minutes and not included as a part of this document may be obtained from the Owner upon request.

Meeting Minutes

Project: College of Engineering Phase IV Expansion Architects Project #: 121217M

Meeting Date: September 5, 2012 Location: 201 Dykstra

Attendees: **KSU Planning:** David McMullen
College of Engineering: Dave Fritchen
BG Architecture: Tom Arpin, Clint Hibbs

CC:

The following summarizes key information provided and decisions made by the attendees listed above.

TOPICS

- A. Purpose of Contract was defined: Re-Visit College of Engineering Phase IV Expansion Architectural Program submitted on April 6, 2012. Validate existing spaces to remain and prioritize space for Electrical and Computer Engineering and Computer and Information Sciences.
 - i. David McMullen explained the role of Bubble Diagrams as a tool in organizing the program spaces, adjacencies and relationships. These diagrams were to be used as a medium for communication and discussion in the development of the program.
 - ii. Discussion ensued about referencing building codes and standards, egress and accessibility as integral within the final program.
 - 1. David mentioned that consideration should be given for life safety and describing it in the program.
- B. Need for defining site limitations was discussed as a narrative, with supporting graphics.
- C. It was noted that the project delivery method may be Construction Manager at Risk.
- D. Part of the process of deliverables would be as follows:
 - i. (3) preliminary concept alternative solutions.
 - ii. Then refining into (1) concept with images, floor plans, and numeric program.
- E. It was stated that the architecture program would not require University dedicated instruction space.
- F. The question was raised on how to address the vacated space currently housing ECE in Rathbone. Dave Fritchen clarified that that space would be noted only as vacated and re-allocation of those spaces would not be included as part of the Scope of Work for this project.
- G. The budget was established at \$40 million

- i. Building occupancy is projected for 2015 and budget considerations should include escalation factor, as well as contingency for bidding and construction.
 - ii. Building will have a Honeywell Monitoring System/Controls.
- H. The program narrative should include a description of intent to tie into or be independent of the existing university plant.
 - i. Narrative should address systems.
 - ii. No moneys should be invested in an MEP consultant at this stage for consultation.
 - iii. BG Architecture should identify various problems, constraints and considerations.
- I. Narrative should include general description of potential building structure.
- J. The next meeting was scheduled for October 5th at Seaton.

Clint Hibbs, AIA

NOTE: If the above information needs elaboration or clarification, please contact me within five (5) working days.

Meeting Minutes

Project: College of Engineering Phase IV Expansion Architects Project #: 121217M

Meeting Date: September 7, 2012 Location: BG Architecture
4806 Vue Du Lac Pl
Manhattan, Kansas 66503

Attendees: **KSU Planning:** David McMullen, Annette Rhode
College of Engineering: Dave Fritchen, Don Gruenbacher, Gurdip Singh
BG Architecture: Tom Arpin, Clint Hibbs

CC:

The following summarizes key information provided and decisions made by the attendees listed above.

This meeting served as a platform for discussion to establish the starting point for redevelopment of an existing program from April 2012 and to define Department needs and intents.

TOPICS

- A. The original numeric program, Option A was provided to all parties for discussion. Due to the amount of research and study previously done, the Design Team intended to break the program back to its simplest form and define which, if any, spaces would be part of the new program and which were no longer relevant. The following question was posed: What portions of the original program are relevant and intended to remain as part of the total program which includes ECE and CIS departments as dominant parts?
 - i. Dave Fritchen stated that the intent would be to keep as much of the original program as possible.
 - ii. ECE and CIS Department space would have priority in the program. Remaining area, if any, would be dedicated to General College of Engineering space, such as the Lecture Hall, Classrooms, Distance Education space, Welcome Center and Competition Space.
- B. Discussion then turned towards the projected space needs defined in pre-programming meetings for each department.
 - i. Both ECE and CIS department needs were discussed. Each department head covered the spaces they had listed, general assumptions and adjacency relationships.
 - ii. Discussion was raised about the integration of 2025 university standards and square feet per student.
- C. The next meeting was scheduled for September 18th with site visit and tours of each department scheduled for the week of September 10th.

Clint Hibbs, AIA

NOTE: If the above information needs elaboration or clarification, please contact me within five (5) working days.

Meeting Minutes

Project: College of Engineering Phase IV Expansion Project Number: 121217M

Meeting Date: September 18, 2012 Location: Seaton 224 Conf. Rm.

Attendees: **KSU Planning:** David McMullen, Annette Rohde
College of Engineering: Dave Fritchen, Gurdip Singh, Don Gruenbacher Robert Peterman
BG Architecture: Tom Arpin, Clint Hibbs

CC:

The following summarizes key information provided and decisions made by the attendees listed above.

TOPICS

1. Clint provided an updated version of the numeric.
 - A. General Academic Spaces
 - i. Clint will provide better clarification of the program headings for the next meeting. He will begin to generate a symbol and acronym table.
 - ii. Seminar space for CIS will require 24/7 access for students.
 - iii. The competition space will be reduced to 7 spaces. The garage space can also be reduced to allow the addition of a 3,000 Structural Lab in the lower level of the new addition.
 - iv. IT support space will be split into two areas. One area is for university use (25 sq. ft. each) and one for department use (100 sq. ft. per floor). It preferable to have these spaces stacked with corridor access.
 - v. Provide only one elevator to serve as both the public access and service access. Access to the roof may be required, but should have controlled access.
 - B. CIS Department Spaces
 - i. The department head office should be 260 sf
 - ii. The conference room may be combined with the dept. of ECE. Requiring only one.
 - C. ECE Department Spaces
 - i. The System Administrator/Student Administrator space could be on a separate floor.
 - D. David McMullen requested that all documents presented be dated and saved as an appendix to the program.
 - E. David McMullen requested that the proposed wall layouts from the original program and indicate only the available space for the engineering departments. Only show the shell of the new space.

- F. The College of Engineering wants to provide a structural lab in the lower level of the new addition.
 - i. New space to contain a 3,000 sq. ft. structural lab.
 - ii. Lab is to have concrete truck access.
 - iii. The lab requires a minimum ceiling clearance of 12 feet. To achieve ceiling clearance, the floor may be recessed.
 - iv. The lab needs to have sound isolation.
 - v. A control room is required for the lab. This room should be dust resistant.
 - vi. The structural lab can share staging and loading areas with other departments and labs.
 - vii. The structural floor is to have built in tie downs in sleeves.
 - viii. 3 faculty offices are required for this space.
- G. The propose Welcome Center needs a name that does not conflict with the new university welcome center. It should address the identity of the College of Engineering.
- H. The next meeting will be held at Dykstra 201.

Tom Arpin AIA,

NOTE: If the above information needs elaboration or clarification, please contact me within five (5) working days.

Meeting Minutes

Project: College of Engineering Phase IV Expansion Project Number: 121217M

Meeting Date: September 25, 2012 Issue Date: September 26, 2012

Attendees: **KSU Planning:** Abe Fattaey, David McMullen, Annette Rohde
College of Engineering: Dave Fritchen, Gurdip Singh, Don Gruenbacher Robert Peterman
BG Architecture: Tom Arpin, Clint Hibbs

CC:

The following summarizes key information provided and decisions made by the attendees listed above.

TOPICS

1. Clint discussed the updated numeric program along with the description and explanation for the headings used in the various tables and charts
 - A. The "Garage" space is to be renamed "Central Support Space" (755).
 - B. The square feet noted for the Lactation Room is to stay the same. The number of rooms may fluctuate. The Lactation Room is to be private and lockable. It could possibly have multiple uses.
 - C. The "Clean Room" in the CE research spaces is to be renamed "Instrumentation Room".
 - D. The dept. head office for CIS is to be 260 square feet with the GSF changed to 377.
 - E. A common conference space is desired between the lab spaces in CIS
 - F. The staff offices in ECE are to have a wall 10.5 to 11 lineal feet to locate desk and work stations on a single wall.
 - G. The Bio-Prep lab is to be a common area for both the Medical Devices Lab and the Bioinstrumentation Lab.
 - H. Some labs require 240 volt three phase power.
 - I. Appendix B (summary of space use category)
 - i. The categories are to be modified to reflect actual spaces in the program. i.e.: Conference Rooms, Competition Space, etc.
 - ii. Identify some of the spaces in the Non-Assignable space. i.e.: IT Rooms
 - J. Abe indicated that the "Level of Construction" section needs to reflect complexity that will result in higher construction costs for the infill space that affects multiple existing exterior surfaces. Provide a construction square foot cost for each "Level of Construction" item.
2. Clint presented options for space utilization for each floor.

- A. The lower level containing Competition Space, Civil Engineering Structures Lab, storage, shop and mechanical space was presented.
 - i. One of the Competition Spaces will be for metal project and will require welding capabilities.
 - ii. It appears that there will be anywhere from 5 to 7 Competition Spaces.
 - iii. Natural lighting need to be introduces wherever possible. Could be light well on the west side of the proposed building.
 - iv. IT Room needs to appear in conceptual drawings.
 - v. The structural lab needs 40 lin. ft. of Strong Wall. It is preferred that this wall is located along two adjacent walls both 20 feet long creating a corner condition. The Strong Wall will be approximately 3 feet thick designed to withstand extreme horizontal forces. Abe commented that this type of requirement will affect the sq. ft. cost of the Structural Lab. The structural lab also needs access to concrete delivery. Possibly an opening in the exterior wall to allow direct delivery of concrete.
 - vi. An exterior pit approx. 10 feet by 10 feet with a sloped floor from 0 to 24 inches deep needs to be provided to clean out concrete equipment.
 - B. The first floor level containing the dept. of CIS was discussed.
 - i. Discussion of the new connecting space between the existing spaces of Durland hall and the new first floor space centered around having general academic spaces as a transition area or locating the department admin. suite in this space. One point brought up was general academic space in this area may lessen the student traffic thru the CIS department. This discussion also reflected the thoughts of the ECE department.
 - ii. The identity of the Department Administration Entrance needs a strong identity.
 - iii. Faculty offices need to be located on the perimeter of the space to allow for natural lighting.
3. Due to time constraints, the meeting needed to be concluded.
- A. David McMullen commented during the presentation that all documents need to be dated and north arrows need to be added where applicable.
 - B. The time limit for future meetings is to be increased to 2 hours.
 - C. The next meeting should have budget information available.
 - D. The CIS and ECE department heads are to review the layouts provided by Clint and make notes of characteristics that are acceptable or unacceptable for their departments.

Tom Arpin AIA,

NOTE: If the above information needs elaboration or clarification, please contact me within five (5) working days.

Meeting Minutes

Project: College of Engineering Phase IV Expansion Architects Project #: 121217M

Meeting Date: Tuesday, October 2, 2012 Issue Date: Thursday, November 01, 2012

Location: 201 Dykstra Hall

Attendees: **KSU Planning:** David McMullen, Annette Rohde
College of Engineering: Dave Fritchen, Ryan Benteman, Don Gruenbacher, Gurdip Singh
BG Architecture: Tom Arpin, Clint Hibbs

CC: All parties.

This meeting was a regularly scheduled Programming work session meeting with the Architect, KSU Planning and College of Engineering.

Topics:

1. Annette road stated that the current University SF/person for instructional spaces was 22 SF/Person
 - a. BG requested that Planning resend University Standards for continuity and inclusion of values in program.
 - b. Dave McMullen stated that KSU Planning will evaluate the SF/person separate from this phase of programming and, as such, to help the College of Engineering and Departments assess the allocated SF/person. Such discussion can help guide the development of the expansion during the design and construction phase.
2. BG Architecture submitted past meeting minutes. It was requested that the minutes be provided to all participants via email in word format for editing as warranted. Future meeting notes were requested before each meeting for review.
3. Clint reviewed the updated numeric program.
4. Tom Arpin presented the initial budget for the building program. Discussion items were as follows:
 - a. At this stage of programming, items B and C in addition to F and G are to be combined within item A. Construction.
 - b. The Design fee associated with item H is to be set at this time to 7.5%. This value was agreed upon following a discussion about potential delivery methods.
 - c. The Contingency in item K is to be increased from 10% to 20%.
 - d. Cost per square foot figures in items P-R are to be clarified. A square foot cost of \$310 could be anticipated. The level of exterior finish will be affected if the estimated cost per square foot is not adequate.

5. Clint presented draft diagrams indicating construction types, and other graphic information to be included as part of the building program submission.
 - a. It was recommended that a diagram indicate areas allocated for CIS, ECE, CE, and general College of Engineering areas, in addition to the hard-lined drawings which will be prepared to show concept building layout.
6. Appendixes were discussed and reviewed:
 - a. The Phase IV Expansion Summary, by space use category was discussed and relative percentages considered. Itemization of a few items under various categories was recommended to be included.
 - b. The written program was introduced and each department asked to review and delete, mark, and modify each space and its requirements as appropriate.
 - a. David McMullen requested that a general statement be included to address common and global considerations such as air conditioning, accessibility, and so forth.
 - b. It was agreed that the written program would be forwarded to each department for review and revision in word format.
 - c. Don Gruenbacher initiated discussion about how to best define graduate research areas in lieu of currently assigned research. For example, the Sunflower Networking space will not always be used as it is currently designated and needs to be flexible to meet future graduate research needs. BG invited Don to review the spaces which and help clarify the program to represent the spaces for future use and not specifically defined per their current application.
 - d. David McMullen requested that the meeting notes be compiled within the appendixes.
7. BG led a brief discussion over the general organizational parti which will be used as a basis for the graphic layout of the program.
 - a. The arrangement of the lower level was reviewed. It was noted that the competition spaces were an important part of the building program and that on the same level would be placed the structures lab and support spaces.
 - b. The main level would house CIS and the layout diagram prepared by Gurdip Singh and his department was reviewed, with College of Engineering general instructional spaces to the north.
 - c. The upper level would house ECE and the layout diagram was to be based upon option 1 presented during the previous meeting with College of Engineering general instructional spaces in the east expansion area.
 - d. It was requested that some offices be organized so that they would receive "borrowed" light from corridors along the exterior and that others be organized fully extended to the exterior wall.
 - e. Finally, discussion regarding the potential roof area needed for equipment and work area was defined as requiring 1000-2000 sf. Approximately 500 sf dedicated to equipment and 1000 sf to work activities.
8. The next meeting was scheduled for October 9th. Deliverables anticipated are a complete draft of the written program, floor layout plans, and renderings.

Issued: BG Consultants, Inc.

By: Clint Hibbs AIA

Note: If the above information needs elaboration or clarification, please contact me within five (5) working days.

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Meeting Minutes

Project: College of Engineering Phase IV Expansion Architects Project #: 121217M

Meeting Date: Tuesday, October 9, 2012 Issue Date: Friday October 12, 2012

Location: 201 Dykstra Hall

Attendees: **KSU Planning:** David McMullen, Annette Rohde
College of Engineering: Dave Fritchen, Bob Peterman, Jim Edgar, Brad Kramer, Don Gruenbacher, Gurdip Singh
BG Architecture: Tom Arpin, Clint Hibbs

CC: All parties.

This meeting was a regularly scheduled Programming work session meeting with the Architect, KSU Planning and College of Engineering.

Topics:

1. Clint presented two options for concept layouts for each of the three floors outlining the College of Engineering Departments space and general College of Engineering space. The space allocations represent a graphic representation of the written and numeric program.
 - a. The Lower Floor Plan was reviewed. Option 1 was the preferred concept with the following modifications.
 - i. The Student Shop and Central Support Space should be located adjacent to the Competition Space.
 - ii. The Program Adaptable Space for CIS should be located adjacent to the CIS labs.
 - iii. The CE Structural Lab needs physical access to the corridor and loading area north of the lab. The corridor needs to have direct access to the lab to allow the overhead crane the ability to move equipment and samples from the corridor level to the lower level of the lab. A removable safety rail will separate the corridor from the lab.
 - iv. Provide a platform lift from the corridor level to the Structural Lab floor. This lift could possibly be used for ADA access to the lab floor.
 - v. Move door access to east end of proposed building to allow full access between the corridor and Structural Lab. Provide an overhead door at this location.
 - b. David McMullen suggested the name of the engineering department should appear on the floor it is occupying. The Main Floor Plan will house CIS.
 - c. The Main Floor Plan concept options were presented.
 - d. Gurdip preferred concept layout 2 with the following modifications.
 - i. The High Assurance Lab needs to be on this level.

- ii. It would be preferred to have the Departmental Suite located over the main south entry of the new phase four addition.
- e. The 2nd Floor Plan concept options were presented. It was agreed that this floor will be referred to as the upper floor.
- f. Don said he preferred option no. 2 for further development. The following modifications will be incorporated into this concept.
 - i. The three offices for CE that will lose windows are to be located on this floor near the CE Department.
 - ii. Faculty offices should have exterior windows when possible.
 - iii. The Chemical Engineering offices losing windows need to be located in the new space or leave daylight access to the window.
 - iv. The Departmental Suite for ECE should be located in the same area of the Upper Floor as the CIS Departmental Suite on the Main Floor.
- 2. Clint presented exterior rendering options depicting the massing of the exterior west and south elevations and the vertical scale of the south entry element.
- 3. With the short time frame for developing the written and graphic program, the group decided to meet on Friday October 12th at 8:30 am. at Dykstra 201.

By: Tom Arpin AIA

Note: If the above information needs elaboration or clarification, please contact me within five (5) working days.

Meeting Minutes

Project: College of Engineering Phase IV Expansion Architects Project #: 121217M

Meeting Date: Friday, October 12, 2012 Issue Date: Tuesday, October 16, 2012

Location: 201 Dykstra Hall

Attendees: **KSU Planning:** David McMullen, Annette Rohde
College of Engineering: Dave Fritchen, Brad Kramer, Don Gruenbacher, Gurdip Singh
BG Architecture: Tom Arpin, Clint Hibbs

CC: All parties.

This special meeting was scheduled so supplement the regularly scheduled Programming work session meetings with the Architect, KSU Planning and College of Engineering.

Topics:

1. Clint presented the latest concept layouts for each of the three floors outlining the College of Engineering Departments space and general College of Engineering space. The space allocations represent a graphic representation of the written and numeric program.
 - a. David McMullen suggested the exterior opening and floors have an elevation reference to illustrate the vertical differences on these levels.
 - b. Mechanical and storage space will be evaluated and determined during the program validation task of the next architectural design team.
 - c. The Lower Floor Plan was reviewed. The following areas were discussed.
 - i. The loading dock should be located on the east side of the lower level floor with access to the center corridor. Trucks would be able to back into the dock from the College Heights.
 - ii. The remainder of the lower level plan was in conformance with the written program and was acceptable to the group.
 - d. On future drawing, the college departments in Fiedler and Durland Halls will be noted in the spaces they occupy adjacent to the Phase IV addition. Also note landmark spaces ie: Fiedler Auditorium, College of Engineering Offices, etc.
 - e. The Main Floor Plan was reviewed. The following areas were discussed.
 - i. Gurdip suggested flipping the college program spaces north to south. He also suggested flipping the general college spaces with the CIS space to the west.
 - ii. Gurdip also requested offices with exterior window.
 - iii. Move the Security Lab, Teaching Lab and KDD Lab to the northeast against the north and east wall of the addition creating a corridor.
 - iv. Provide a north south corridor through the main area of CIS labs. This corridor will provide access from the north general college spaces and the Departmental Offices.

- v. The Serpan Lobby should be relocated to the east entry of the new Lecture Hall.
 - f. Clint advised the group that he would add the access arrow designation to the Floor Plan Key.
 - g. The Upper Floor Plan was reviewed. The following areas were discussed.
 - i. Don said he needs 10 2-person offices and 4 4-person offices for grad assistants.
 - ii. The Department Lounge for ECE needs to be adjacent to the Departmental Suite. If possible, stack with CIS Department Lounge
 - iii. Correct spelling for Communications Circuits Lab.
 - iv. Provide a Wireless Hardware Lab.
 - h. The 2nd Floor Plan concept options were presented. It was agreed that this floor will be referred to as the upper floor.
 - i. Don said he preferred option no. 2 for further development. The following modifications will be incorporated into this concept.
 - i. The three offices for CE that will lose windows are to be located on this floor near the CE Department.
 - ii. Faculty offices should have exterior windows when possible.
 - iii. The Chemical Engineering offices losing windows need to be located in the new space or leave daylight access to the window.
 - iv. The Departmental Suite for ECE should be located in the same area of the Upper Floor as the CIS Departmental Suite on the Main Floor.
 - j. Clint presented the west (Denison Avenue) and south (College Heights Road) elevations.
 - i. Add the stair and elevator penthouse to the elevations.
 - ii. Show the floor vertical elevations in relation to the ground level.
 - iii. The bridge section of the link between Phase VI and Durland Hall shall have 14 feet of vertical clearance.
 - iv. Designate new construction from existing construction.
2. The group reviewed the latest exterior rendering and is in agreement with the current appearance.

By: Tom Arpin AIA

Note: If the above information needs elaboration or clarification, please contact me within five (5) working days.

Meeting Minutes

Project: College of Engineering Phase IV Expansion Architects Project #: 121217M

Meeting Date: Tuesday, October 16, 2012 Issue Date: Friday, October 19, 2012

Location: 201 Dykstra Hall

Attendees: **KSU Planning:** David McMullen,
College of Engineering: Dave Fritchen,
BG Architecture: Tom Arpin, Clint Hibbs

CC: All parties.

This meeting was a regularly scheduled Programming work session meeting with the Architect, KSU Planning and College of Engineering.

Topics:

1. Clint presented the Expansion Diagrams illustrating the new construction, infill construction and Renovation Construction for each of the three floors of the Phase IV expansion to the College of Engineering. The bottom of each sheet is to read "some program requirements may change".
2. David McMullen commented that this building will be type 1 fully sprinkled. He also said that the 2010 ADA requirements will govern this project.
3. The Upper Floor Expansion Diagram shall show the GSF of the vacated ECE space is "For Reference Information Only". Align the 20,623 GSF number with the Space Vacated line.
4. Clint reviewed the latest concept layouts of each floor.
 - a. The Lower Floor Plan review comments are as follows:
 - i. The floor of the Structures Lab will be 4 to 6 feet below the floor level of the lower floor. This is to allow a 14'-6" clearance from the floor to the crane pick point.
 - ii. Robert Peterman from the Dept. of Civil Engineering oversees the current structural labs and presented an email to Clint detailing programming requirements for the CE space in the lower level. These requirements will be incorporated into the written program.
 - iii. Show the floor elevation difference between the three CE rooms adjacent to the Structural Lab and the Structural Lab Floor.
 - iv. Label the structure limit for the overhead structure of the Main Floor structure.
 - v. Drainage of the pavement in the enclosed center area of the engineering complex is an issue that needs strong attention in the program validation phase of the design contract.
 - vi. It will be important to assess the material deposited in the concrete wash pit to determine the drainage system.
 - b. The Main Floor Plan was reviewed. The following areas were discussed.

- i. Provide the north/south corridor adjacent to Cyber Defense.
 - ii. Move the College Classroom to the south to eliminate the “dead-end corridor”.
 - iii. The west wall adjacent to the General College Space can be moved a few to the west in order to accommodate a more efficient space layout.
 - iv. Correct the spelling for Paslay Auditorium.
- c. There were no exceptions to the Upper Floor Plan as presented.
- d. Clint reviewed the latest building elevations.
 - i. David McMullen does not want pine trees to be illustrated on the elevations.
 - ii. The floor elevations shown are in relation to the elevation of the floors of the existing buildings.
5. The group reviewed the latest exterior rendering and is in agreement with the current appearance.
6. The group decided a special meeting needs to take place Friday afternoon October 19th at 1:30 pm.

By: Tom Arpin AIA

Note: If the above information needs elaboration or clarification, please contact me within five (5) working days.

Meeting Minutes

Project: College of Engineering Phase IV Expansion Architects Project #: 121217M

Meeting Date: Friday, October 19, 2012 Issue Date: Tuesday, October 23, 2012

Location: 201 Dykstra Hall

Attendees: **KSU Planning:** David McMullen,
College of Engineering: Dave Fritchen, Jim Edgar, Brad Kramer, Don Fenton, Don Gruenbacher, Gurdip Singh
BG Architecture: Tom Arpin, Clint Hibbs

CC: All parties.

This special meeting was scheduled so supplement the regularly scheduled Programming work session meetings with the Architect, KSU Planning and College of Engineering.

Topics:

1. Clint provided Dave Fritchen and David McMullen hard copies and a cd with the latest concept drawings. Dave Fritchen indicated the material presented is adequate for his upcoming presentation to the College of Engineering Advisory Board.
2. Dave Fritchen and David McMullen agreed that the cost of landscaping is not a part of this programming effort.
3. Review of the presented concept drawings produced the following comments:
 - a. David McMullen suggested moving the spot elevation designations closer to the building openings.
 - b. Label the reaction wall in the Structural Lab.
 - c. Include a requirement for a "Glycol" System for the loading dock ramp in the written program.
 - d. Correct the spelling of Maintenance in the Diagram Key.
 - e. Provide physical and visual access between the Lecture Hall and Large Conference Room.
 - f. Incorporate the dead end corridor space at the north end of the Upper floor to the north office space.
2. System analysis of the existing utilities will be part of the program validation phase.
3. The group approved the exterior rendering and building elevations.
4. Changes to the drawing will be completed and submitted early next week.

By: Tom Arpin AIA

Note: If the above information needs elaboration or clarification, please contact me within five (5) working days.