ADDENDUM NO. 3

EXHIBIT C

PROGRAM

REQUEST FOR QUALIFICATIONS

PART A: PRE-CONSTRUCTION SERVICES (Design-Assist) and
PART B: CONSTRUCTION SERVICES (Construction Management at Risk)

Construction Management & Engineering Sciences Building
Louisiana State University
Baton Rouge, Louisiana
Project No. 19-601-24-01, F.19002626

October 7, 2025

LSU

Program Verification

College of Engineering

Construction and Advanced Manufacturing Building (CAAM)

Volume 1

August 11, 2025

Grace Design Studios

Acknowledgement

The verification of program need for the College of Engineering's new Construction and Advanced Manufacturing Building (CAAM) incorporates input from campus Administrators, Faculty, and Staff. The team of Grace Design Studio and HERA Laboratory Planners appreciates the thoughtful input and recommendations made by all stakeholders, especially those named below who provided the leadership necessary to move the project forward into schematic design.

- - - - -

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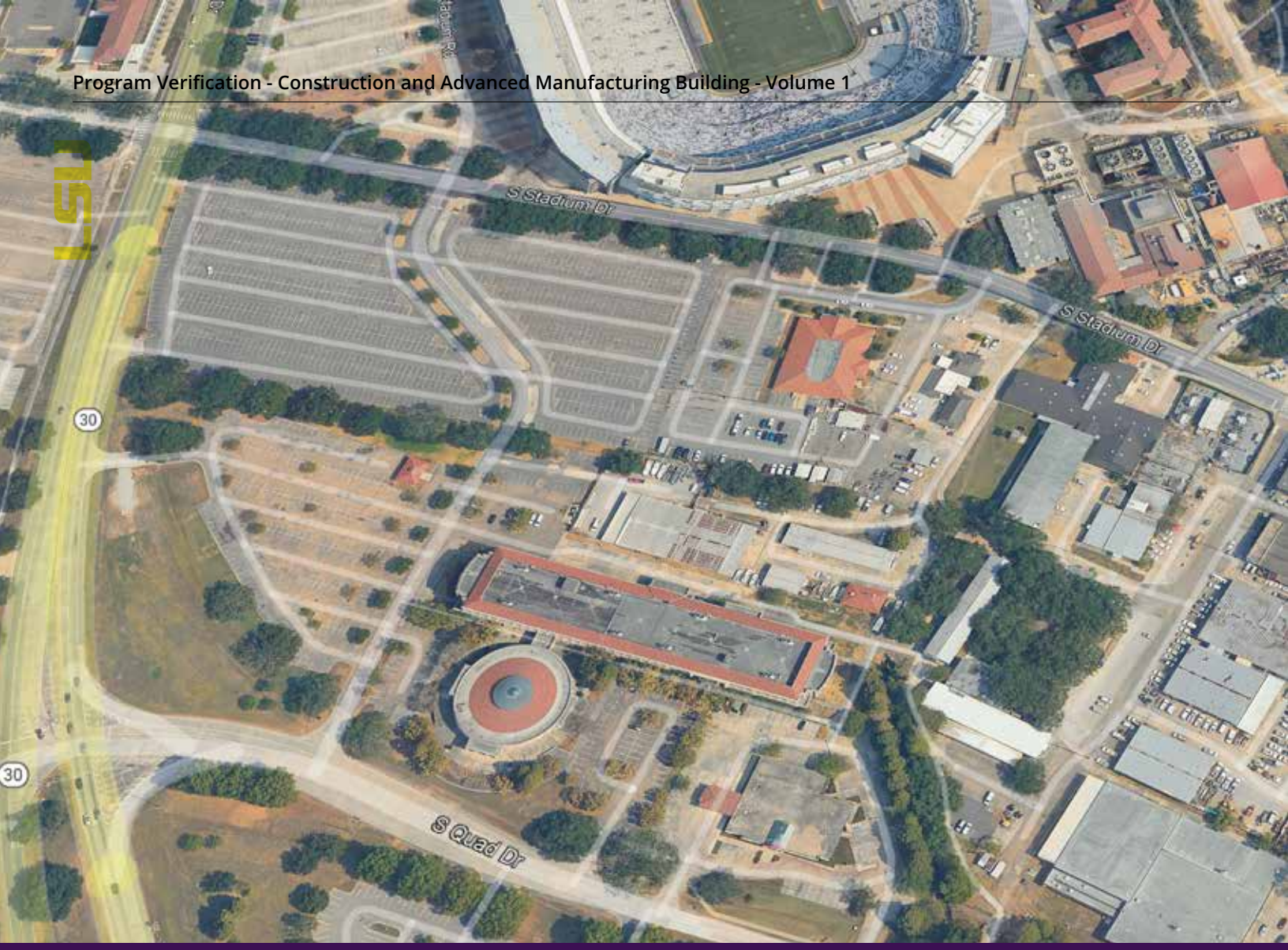
S Stadium Dr
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S Quad Dr

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1 Executive Summary

INTRODUCTION

Project Background

To address growth in Construction Management and Engineering Programs, and Research, Louisiana State University (LSU) engaged outside consultants to perform a Programming Study for a new building. The Study was completed in July 2024 and culminated with an estimated square foot area and cost that was presented to the Board of Regents (BOR) for approval; the study included the following scope of work:

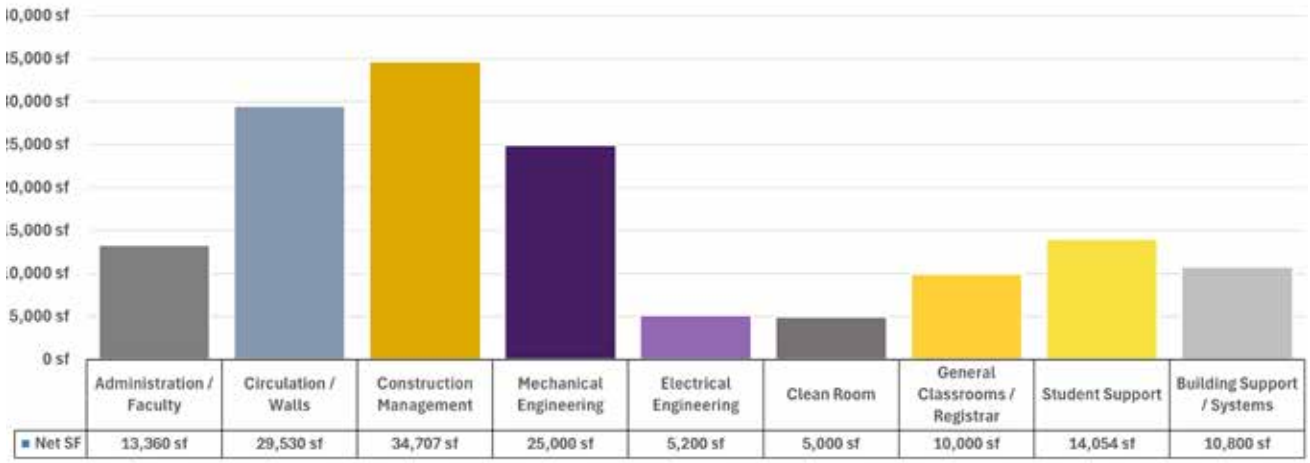
- Project vision and design priorities
- Cursory assessment of existing facilities
- Peer benchmarking for laboratory typologies
- Program statement of square foot need by space type
- Building siting and master plan compliance
- Conceptual design and building massing diagrams

Following approval by the BOR, Facilities Planning and Control issued an RFP (Request for Proposal) for the new building. Through a competitive process, the consulting team of Grace Design Studios and HERA Lab Planners were selected to perform a Program Verification of need, and Basic Design Services for a new Construction and Advanced Manufacturing Building (CAAM).

Starting Point for Program Verification

Between completion of the Study and award of the CAAM project, the University appointed a new Dean to the College of Engineering. A major goal of the Program Verification is to ensure that the space program from the original Study aligns with the new Dean's long-term aspirations for the College. The Study projected a need for 147,651 GSF (charted below) to support Construction Management, Electrical and Mechanical Engineering, and General Instruction scheduled by the Registrar. The building was envisioned as a student-centered academic facility that also supported faculty research.

Charted Breakdown of Proposed Building Areas (147,651 GSF)



On April 15, 2025, the program verification kicked-off with a series of workshops with key stakeholders. From the outset, participants expressed an interest in moving from a student-centered building concept with departmentally allocated space to an interdisciplinary model that is research-centered. To address this goal, the intended building occupants were reorganized into four groups:

1. Construction and Advanced Materials
2. Cyber Physical Infrastructure and Robotics
3. Digital Construction
4. Research and Advanced Manufacturing

After gathering the space needs for all four groups, the revised program exceeded the approved budget. Additionally, the design team noted that the net to gross ratio in the original study was below that of comparable projects. The design team recommends a 65-67% Net:Gross ratio to calculate support and circulation/walls. The net assignable SF in the study, excluding support, was 107,321 SF; using a 65% N:G ratio suggests a total area of 165,109 GSF. To bring the project within budget, refinements were made like decreasing offices from 140 SF to 120 SF and reducing the number of general purpose classrooms.

Throughout the verification phase, stakeholders worked diligently to bring the program within budget. The final Program Statement of 151,877 GSF is in budget and provides future capacity for Construction Management enrollment growth and for new faculty that are actively engaged in research. A diagram of program space by group is provided below.

Group	Activities & Functions
Construction and Advanced Materials	• Materials research, development and testing • Materials fabrication, curing and testing • Environmental chamber
Cyber Physical Infrastructure and Robotics	• Living lab to monitor building systems • Large-scale robotics and automation testing • Cyber systems • Radio frequency testing • Software and sensor development
Digital Construction	• Motion capture • Industrial assessment (DOE funding) • Construction simulation • BIM Cave
Research and Advanced Manufacturing	• High Bay Lab with Strong Wall & Strong Floor • Graduate Research Space • Construction Equipment Simulation • Additive and subtractive manufacturing

Proposed Building Site

The 2017 Master Plan proposes a new South Academic and Research District that will eventually replace several existing structures. The faculty and staff moving into the CAAM currently occupy space in Patrick F. Taylor Hall, the Engineering Annex and the Sea Grant Building. A strategy for re-purposing vacated space when the CAAM is completed is not a part of this study.

The CAAM will be the first structure to be built in the new South District, however the site identified in the original program study was moved to the east during Program Verification (see diagram below). The new site is closer to the existing Power Plant and studies regarding electromagnetic interference have not been completed, thus a final determination about the site will be resolved during Schematic Design.

Master Plan for South Academic and Research District

The CAAM will be the first building in the master planned South Academic and Research District. It is proposed for construction on the site of the existing Military Science and Aerospace Studies Building that will be demolished. The CAAM fronts S. Stadium Drive which will be the primary point of vehicular access. Pedestrian access will be north from S. Stadium Drive and south from S. Quad Drive. A parking garage is proposed for the District, but will not be completed until some time in the future.

Currently, the area between Patrick F. Taylor Hall and the CAAM is occupied by a group of maintenance and facility service buildings. As the District is developed over time and the service buildings are replaced, a quad will be formed with a visual and walkable connection between the District and Patrick F. Taylor Hall.

Site conditions that may pose design and operational challenges include a Power Substation on the east side of the proposed CAAM site. The overhead power lines limit building height and may require added shielding from radio frequency interference to protect sensitive equipment and processes in some portions of the building. A large outdoor materials yard with direct access to the High Bay and Advanced Materials labs is required; maintaining delivery access and shielding the yard from public view is a key design objective.

Design opportunities include donor interest in engaging alumni and campus visitors with the CAAM building during campus events because of its proximity to Tiger Stadium. Creating a welcoming front entry and an overlook or balcony on axis with the Stadium is highly desirable.

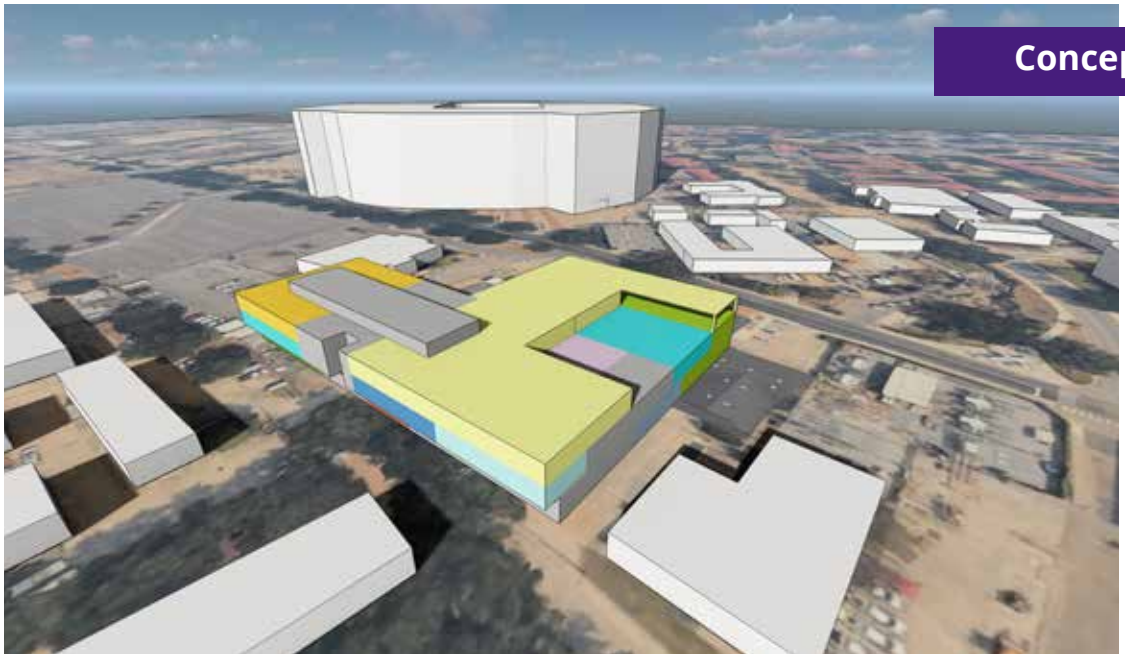
Proposed Master Plan Update

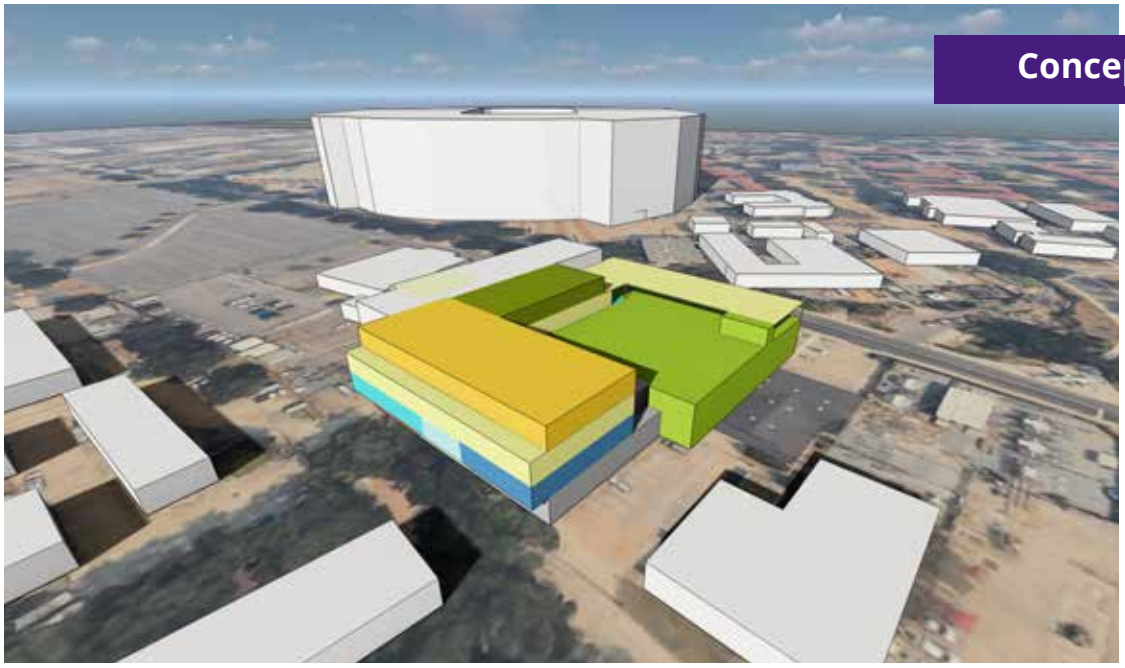
Existing Conditions

Sub-Station

Building Massing

The CAAM requires a large amount of ground-level space for movement of materials and heavy equipment, and to accommodate functional adjacencies for sequences of lab work that go between fabrication and testing. During Program Validation, no Preferred Concept was identified, but two options are being considered (Concept D & E). To analyze the future building's layout, form, height, and connection to the site, massing studies for each option were developed; both Concepts are discussed in greater detail in Section 5.





2 Program Statement

ASSESSMENT OF NEED

Program Summary

The program area of 151,877 GSF is summarized below with program detail shown on the following pages. The program meets the CM academic program needs, provide additional research capacity for future hires, and allows for sufficient safety perimeters for new and existing equipment that will be relocated from the Annex or Patrick F. Taylor Hall.

SPACE TYPE	SF AREA
Public Space	6,420 sf
Student Space	9,600 sf
Construction & Advanced Materials	8,800 sf
Cyber Physical Infrastructure & Robotics	8,000 sf
Digital Construction	9,280 sf
Research & Advanced Manufacturing	17,349 sf
Core Office Space	19,107 sf
Core Academic Space	23,460 sf
Building Support	6,368 sf
Mechanical	7,587 sf
Subtotal	**115,971 sf**
Circulation/Walls	35,906 sf
Gross Building Area	**151,877 sf**

Existing College of Engineering Equipment

Program Detail

Lab Module 30.00 x 10.67 320 sf

Prog. No.	Space Type	Occ	Lab Mods.	Lab SF	SF/ Person	NASF	Qty.	Totals
	PUBLIC SUPPORT							
A.01	Entry Vestibule					300 sf	2	600 sf
A.02	Lobby/ Industry Showcase - WOW SPACE					2,000 sf	1	2,000 sf
A.03	Student Lounge/Collaboration/Study							
A.04	Women's Restroom					275 sf	4	1,100 sf
A.05	Men's Restroom					275 sf	4	1,100 sf
A.06	Gender Neutral Restroom					80 sf	4	320 sf
A.07	Staff Restrooms					200 sf	1	200 sf
A.08	Vending					150 sf	1	150 sf
A.09	Café / Grab n' Go					500 sf	1	600 sf
A.10	Café Prep Area					200 sf	1	200 sf
A.11	Café Food Storage					150 sf	1	150 sf
	TOTAL - PUBLIC SUPPORT							6,420 sf
	STUDENT SUPPORT							
B.01	Commons - First Floor					2,000 sf	1	2,000 sf
B.02	Commons - Second Floor					1,500 sf	1	1,500 sf
B.03	Commons - Third Floor					1,000 sf	1	1,000 sf
B.04	Commons - Fourth Floor					1,000 sf	1	1,000 sf
B.05	Workforce Leadership Dev. Center					600 sf	1	600 sf
B.06	Student Associations					300 sf	1	300 sf
B.10	Info/Hub Service/Printing					200 sf	1	200 sf
B.11	GA Area/Coffee/Storage					3,000 sf	1	3,000 sf
	TOTAL - STUDENT SUPPORT							9,600 sf
	CONSTRUCTION AND ADVANCED MATERIALS							
1.00	Materials Storage		1.00	320 sf			1	320 sf
1.01	Materials Prep		1.00	320 sf			1	320 sf
1.02	Materials Fabrication		1.50	480 sf			1	480 sf
1.03	Materials Curing - Dry		0.50	160 sf			1	160 sf
1.04	Materials Curing - High Humidity		0.50	160 sf			1	160 sf
1.05	Material Diagnostics/Testing		3.00	960 sf			1	960 sf
1.06	Sample Prep & Cleanup Area		0.50	160 sf			1	160 sf
1.07	Drying / Asphalt Ovens		1.00	320 sf			1	320 sf
1.08	Material Research Lab		2.00	640 sf			1	640 sf
1.09	Dean's Research Space		3.00	960 sf			3	2,880 sf
1.10	Material Research Lab - Future Faculty		2.00	640 sf			1	640 sf
1.11	Environmental Chamber		1.00	320 sf			1	320 sf
1.12	Tools Storage CM		0.50	160 sf			1	160 sf
1.13	Concrete 3-D Printing		4.00	1,280 sf			1	1,280 sf
	TOTAL - CONSTRUCTION & ADVANCED MATERIALS							8,800 sf

Prog. No.	Space Type	Occ	Lab Mods.	Lab SF	SF/ Person	NASF	Qty.	Totals
	CYBER PHYSICAL INFRASTRUCTURE & ROBOTICS							
2.00	Living Lab for Building and Systems		3.00	960 sf			1	960 sf
2.01	Dean's Research Space		3.00	960 sf			3	2,880 sf
2.02	Robotics & Automation Test Suite		4.00	1,280 sf			1	1,280 sf
2.03	Cyber-Physical Systems		2.00	640 sf			1	640 sf
2.04	Radio Frequency Testing Lab		1.00	320 sf			1	320 sf
2.05	Software and Sensor Development		2.00	640 sf			1	640 sf
2.06	Drone Lab		4.00	1,280 sf			1	1,280 sf
	TOTAL - CYBER PHYSICAL INFRASTRUCTURE & ROBOTICS							8,000 sf
	DIGITAL CONSTRUCTION							
3.00	Motion Capture Lab		3.00	960 sf			1	960 sf
3.01	Dean's Research Space		3.00	960 sf			3	2,880 sf
3.02	Research Lab		3.00	960 sf			1	960 sf
3.03	DOE- Industrial Assessment Center		3.00	960 sf			1	960 sf
3.04	VR Simulation		3.00	960 sf			1	960 sf
3.05	Construction Equipment Simulation		3.00	960 sf			1	960 sf
3.06	BIM Cave Storage/ Grad Space		2.00	640 sf			1	640 sf
3.07	BIM Cave		3.00	960 sf			1	960 sf
	TOTAL - DIGITAL CONSTRUCTION							9,280 sf
	ADVANCED MANUFACTURING & FACILITIES SPACE							
4.00	Construction Indoor Testing Lab 2/3 in high bay, 1/3 in lower height.		28.00	8,960 sf			1	8,960 sf
4.01	In-ground/Geotech / Resiliency Testing							Outdoors
4.02	Materials Storage		4.00	1,280 sf			1	1,280 sf
4.03	Layout/Workspace		0.50	160 sf			1	160 sf
4.04	Additive Bay - Regular Scale (ABR)							3,136 sf
4.05	Additive Bay - Large Scale (ABLS)							1,313 sf
4.06	Subtractive Bay - Enclosed (SBE)							0 sf
4.07	Subtractive & Auxiliary Bay (SAB)							0 sf
4.08	Workforce Bay (WFB)							2,500 sf
	TOTAL - ADVANCED MANUFACTURING & FACILITIES SPACE							17,349 sf

Prog. No.	Space Type	Occ	Lab Mods.	Lab SF	SF/ Person	NASF	Qty.	Totals
	CORE OFFICE SPACE							
5.00	Entry/Reception					1,000 sf	1	1,000 sf
5.01	CM Staff Offices	1				100 sf	16	1,600 sf
5.02	Student Workers					48 sf	4	192 sf
5.03	Director's Office	1				450 sf	2	900 sf
5.04	Department Chairs	1				120 sf	3	360 sf
5.05	Faculty Office	1				120 sf	18	2,160 sf
5.06	Future Faculty Office	1				120 sf	25	3,000 sf
5.07	Adjunct/Visiting	Shared				48 sf	5	240 sf
5.08	Post-Doctoral Workstations	Shared				48 sf	12	576 sf
5.09	Hoteling Modules					0 sf		0 sf
5.10	Small Conference Room	20				600 sf	1	600 sf
5.11	Social/Prep Area/Break Room/ Faculty Lounge					600 sf	1	600 sf
5.12	Copier Room					100 sf	1	100 sf
5.13	Workroom / Mail					200 sf	1	200 sf
5.14	Storage Room					150 sf	1	150 sf
5.15	IT Office	1				100 sf	3	300 sf
5.16	IT Support	3				200 sf	1	200 sf
5.17	IT Server Room	1				400 sf	0	0 sf
5.18	IT Workspace	1				200 sf	1	200 sf
5.19	IT Storage Room	1				200 sf	1	200 sf
5.20	***Industry Partner Suite:***							
5.21	Industry Partner Conference Rm.	60			32 sf/per	1,920 sf	1	1,920 sf
5.22	Industry Partner Hoteling Stations					100 sf	2	200 sf
5.23	Circulation					30%		4,409 sf
	TOTAL - CORE OFFICE SPACE							19,107 sf

Prog. No.	Space Type	Occ	Lab Mods.	Lab SF	SF/ Person	NASF	Qty.	Totals
	CORE ACADEMIC SPACE							
6.00	Classroom	180			25 sf/per	4,500 sf	2	9,000 sf
6.01	Auditorium	300			25 sf/per	7,500 sf	1	7,500 sf
6.02	Open Student Computer Lab	30			30 sf/per	900 sf	1	900 sf
6.03	Lecture Hall	450			25 sf/per	11,250 sf	0	0 sf
6.04	Classroom Service/Closets					100 sf	1	100 sf
6.05	Classroom Media Storage					100 sf	1	100 sf
6.06	Classroom Equipment Storage					100 sf	1	100 sf
6.07	CM Senior Project Lab	34	7.00	2,240 sf	65 sf/per		1	2,240 sf
6.08	Computer Lab/ CAD Stations		3.00	960 sf			1	960 sf
6.09	Scheduling /Cost Estimating/ BIM Lab	75	7.00	2,240 sf	30 sf/per		1	2,240 sf
6.10	Online Learning Media Green Screen Room		1.00	320 sf		320 sf	1	320 sf
	TOTAL - CORE ACADEMIC SPACE							23,460 sf
	BUILDING SUPPORT							
C.01	General Storage		2.00	640 sf			1	640 sf
C.02	Bulk Chemical Storage		0.50	160 sf			1	160 sf
C.03	Hazardous Material Storage		0.50	160 sf			1	160 sf
C.04	Lab Waste Storage		0.25	80 sf			1	80 sf
C.05	Custodial Equipment / Building Storage		2.00	640 sf			1	640 sf
C.06	Cylinder Storage		0.50	160 sf			1	160 sf
C.07	Data Entrance Room		0.50	160 sf			1	160 sf
C.08	Data Distribution Closets		0.25	80 sf			3	240 sf
C.09	Electrical Entrance Room		1.00	320 sf			1	320 sf
C.10	Electrical Distribution Closets		0.25	80 sf			3	240 sf
C.11	Communication Entry Room		0.50	160 sf			1	160 sf
C.12	Communication Distribution Closets		0.25	80 sf			3	240 sf
C.13	Elevator - Freight		0.40	128 sf			1	128 sf
C.14	Elevator - Passenger		0.30	96 sf			1	96 sf
C.15	Elevator Equipment		0.25	80 sf			1	80 sf
C.16	Janitor's Closet		0.20	64 sf			4	256 sf
C.17	Marshalling / Receiving / Dock		1.50	480 sf			1	480 sf

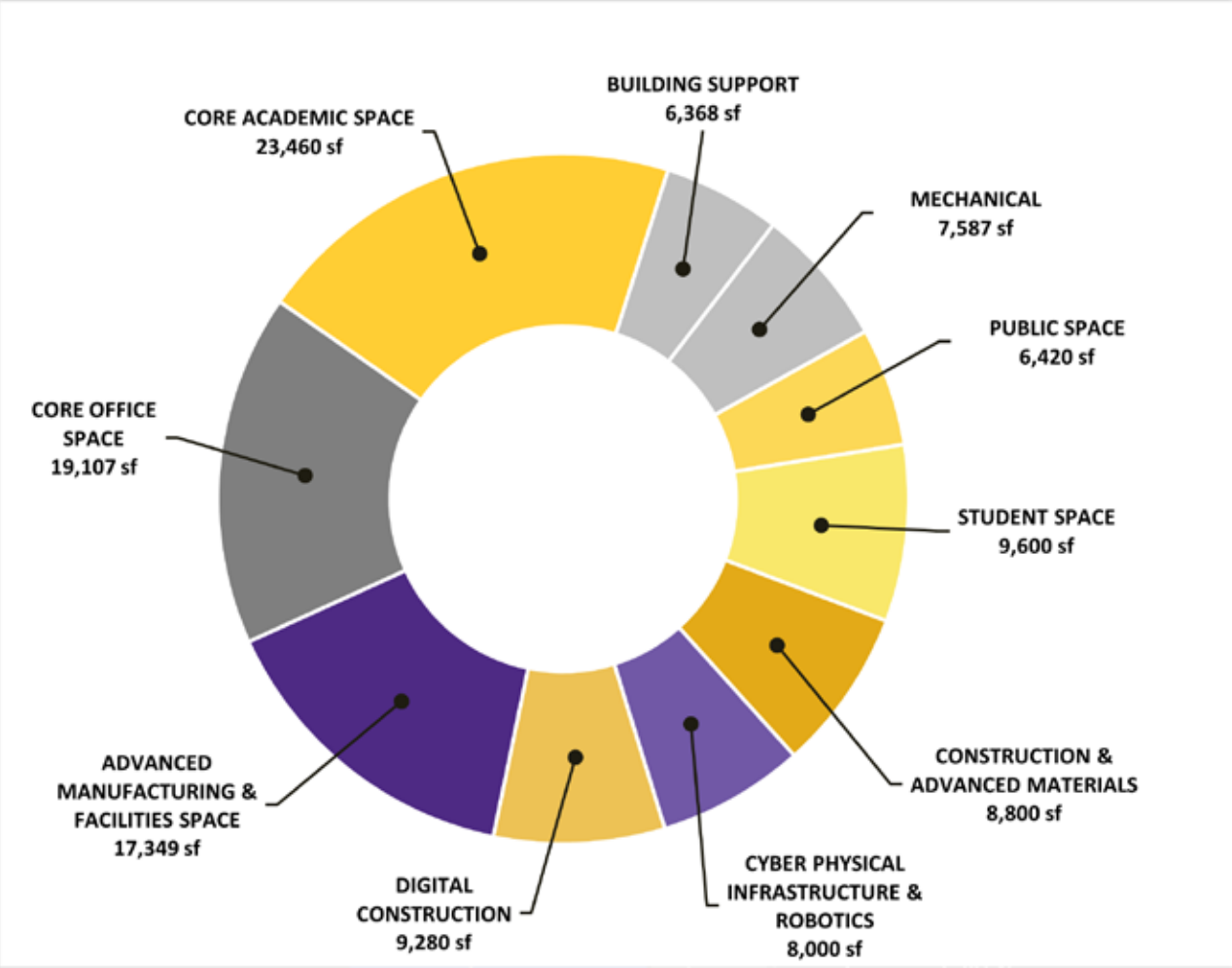
Prog. No.	Space Type	Occ	Lab Mods.	Lab SF	SF/ Person	NASF	Qty.	Totals
	BUILDING SUPPORT (continued)							
C.18	Temporary Staging		2.00	640 sf			1	640 sf
C.19	Fire Pump		0.40	128 sf			1	128 sf
C.20	Backflow Preventer		1.00	320 sf			1	320 sf
C.21	Air Compressors, Vacuum		1.00	320 sf			1	320 sf
C.22	DI House Water System		1.00	320 sf			1	320 sf
C.23	Generator - Backup Power		1.00	320 sf			1	320 sf
C.24	Recycling Room		0.25	80 sf			1	80 sf
C.25	Penthouse		0.00	0 sf				0 sf
	TOTAL - BUILDING SUPPORT							6,368 sf
	BUILDING MECHANICAL							
D.01	Mechanical Systems						7%	7,587 sf
	TOTAL - BUILDING MECHANICAL							7,587 sf

SUBTOTAL OF ASSIGNABLE PROGRAM SPACE	67%	98,139 sf
BUILDING SUPPORT & MECHANICAL	9%	13,684 sf
BUILDING WALLS/CIRCULATION	24%	39,161 sf
GROSS BUILDING AREA	100%	150,983 sf

Existing BIM Cave

LSU Materials Testing

Breakdown of Net SF Area by Type



Patrick F. Taylor Hall Capstone Gallery

Patrick F. Taylor Hall Cambre Atrium

3 Building Organization

PROJECT GOALS AND ORGANIZATION

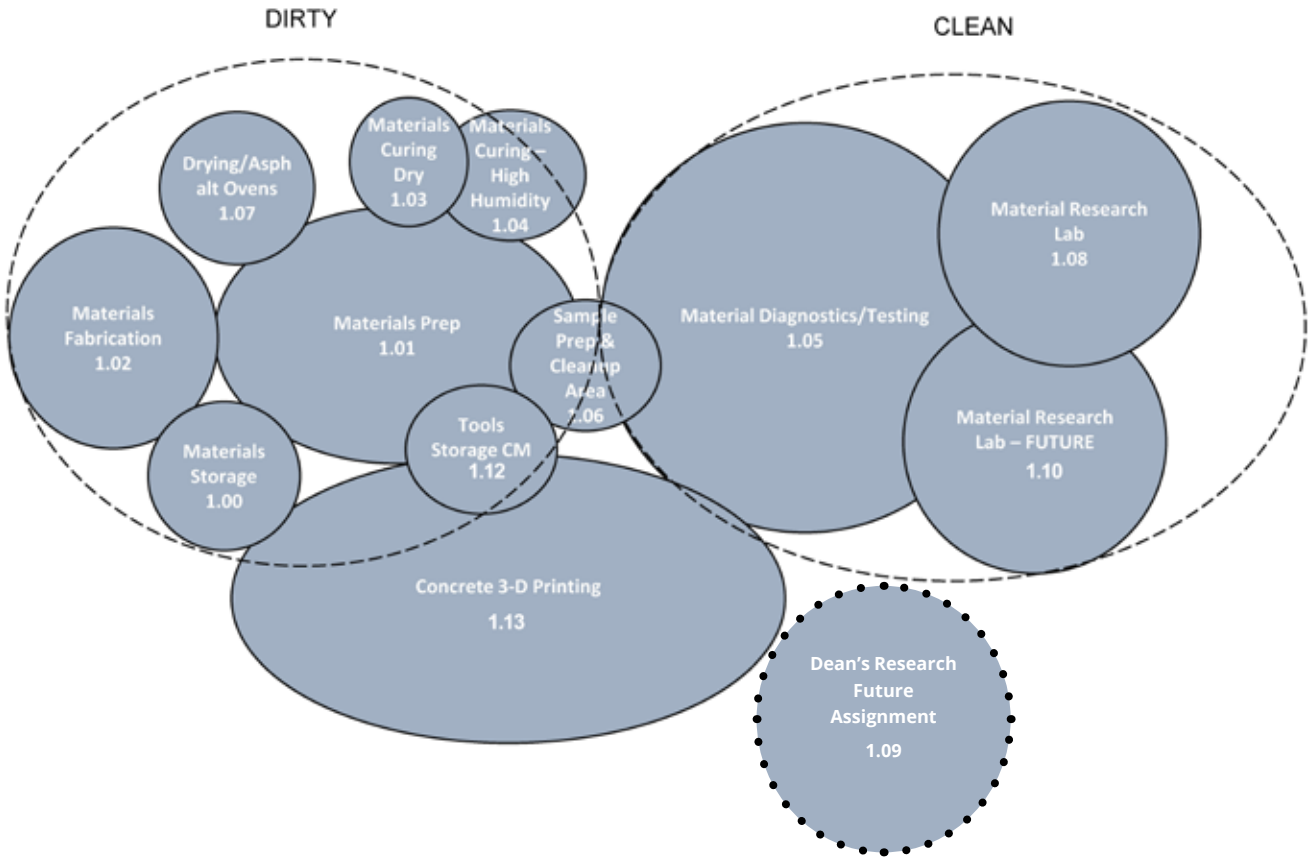
Goal-Setting

The Dean and Steering Committee have established a set of goals and objectives for the project that will define its success. The goals, listed below, provide a framework for the allocation of space and the building's organizational structure that is diagramed on the following pages.

Project Goals

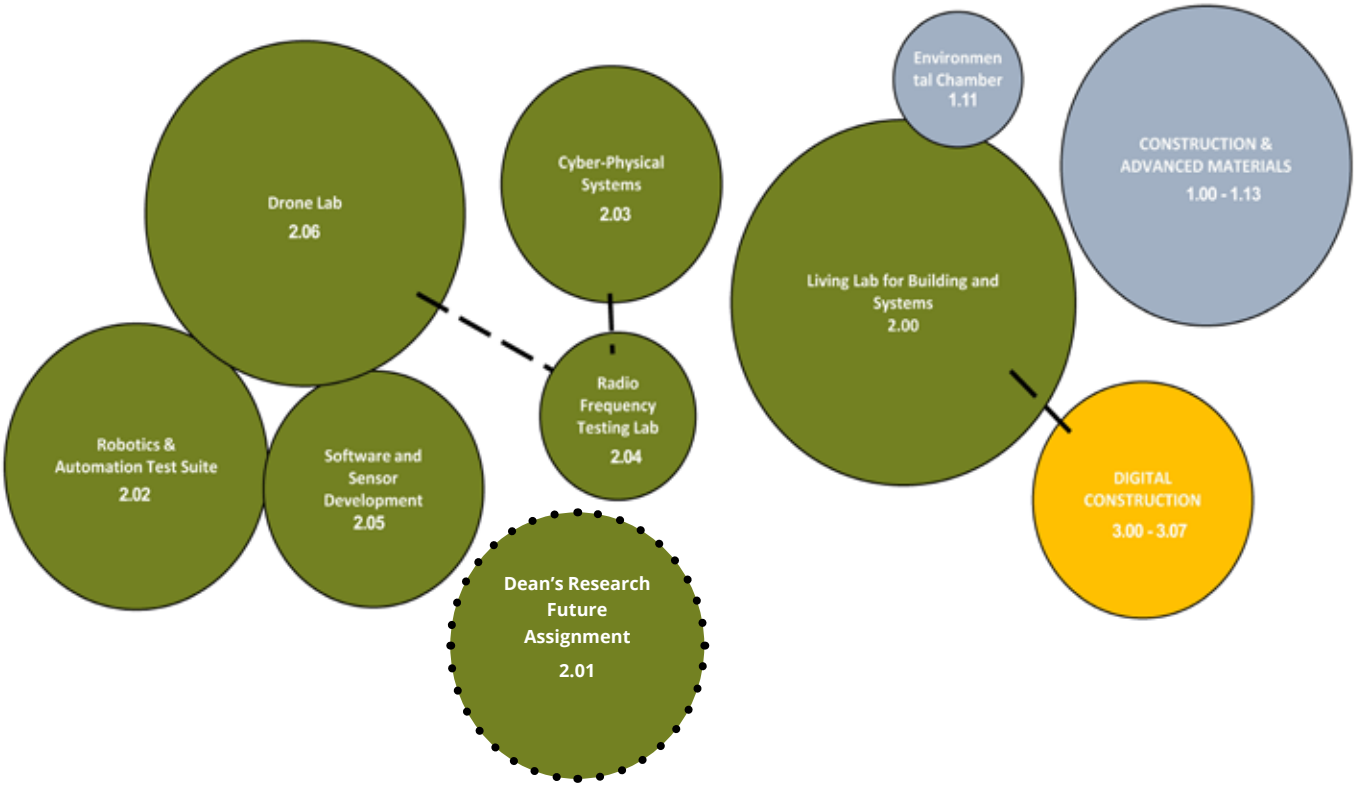
- Facilitate LSU Becoming a Magnet for CM & Advanced Manufacturing Education and Research
- Create a Building that is Interdisciplinary
- Consolidate Construction Management
- Accommodate Capstone Student Project Space
- Provide Office/Meeting Space for Industry Partners
- Provide Advanced Manufacturing Facilities that are Globally-Focused
- Facilitate VR Technology Research for Workforce Development
- Design Facilities that Consider Alumni and Donor Interest:
  - Exterior & Interior Game Day Experience
  - Pathways to Construction Industry Employment
  - New Certifications that Raise LSU's Institutional Profile

Construction and Advanced Materials Organization



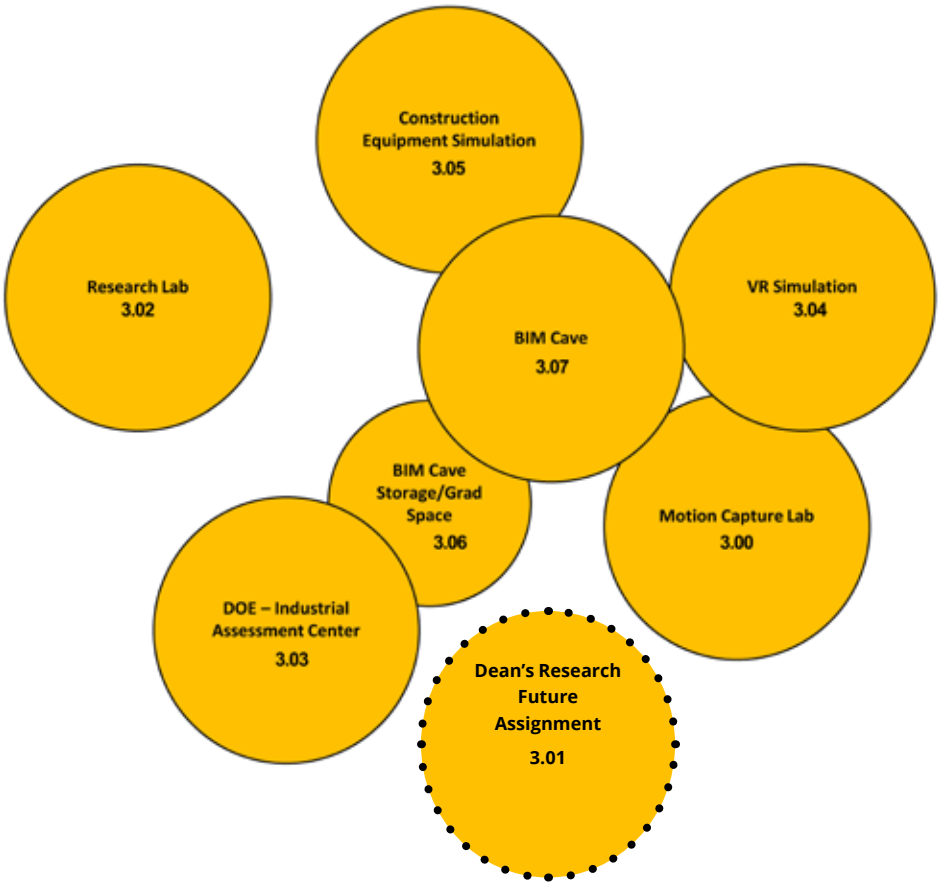
NO.	PROGRAM SPACE	REQUIREMENTS
1.00	Materials Storage	Dirty Process; Shared with Asphalt
1.01	Materials Prep	Dirty Process
1.02	Materials Fabrication	Dirty Process
1.03	Materials Curing - Dry	Dirty Process, shared with Advanced Materials
1.04	Materials Curing - High Humidity	Dirty Process, shared with Advanced Materials
1.05	Material Diagnostics/Testing	Clean Process, 6 to 10 grad students
1.06	Sample Prep & Cleanup Area	Shared with Concrete, Asphalt and Advanced Materials
1.07	Drying / Asphalt Ovens	Dirty Process, odor and ventilation control
1.08	Material Research Lab	Clean Process
1.09	**Dean's Research Space**	**9 Lab Modules for Future Assignment**
1.10	Material Rsch. Lab for Future Faculty	Clean Process
1.11	Environmental Chamber	Moved to Construction and Adv. Materials from Shared Research; file server, data collection and workstations
1.12	Tools Storage CM	Adjacent to 3-D printing
1.13	Concrete 3-D Printing	Engineering Lab Annex Building (ELAB) 161

Cyber Physical Infrastructure & Robotics Organization



NO.	PROGRAM SPACE	REQUIREMENTS
2.00	Living Lab for Building and Systems	Data collection, workstations, monitoring of other building spaces, specific areas in building monitored.
2.01	**Dean's Research Space**	**9 Lab Modules for Future Assignment**
2.02	Robotics & Automation Test Suite	Small group cognitive testing; oversized doors for large robots; close to material production
2.03	Cyber-Physical Systems	Assembly of systems, closed loops, feedback loop
2.04	Radio Frequency Testing Lab	Radiation Shielded boxes only - entire room doesn't need shielding; not needed, not moving to Coates Hall per Medhi; need clarification from Dean
2.05	Software and Sensor Development	Should be close to robotics and automation lab
2.06	Drone Lab	Need lockable storage for drones, lockers around perimeter. Lockable cabinets for components

Digital Construction Organization



NO.	PROGRAM SPACE	REQUIREMENTS
3.00	Motion Capture Lab	Human & robotic motion capture, inside space
3.01	**Dean's Research Space**	**9 Lab Modules for Future Assignment**
3.02	Research Lab	Placeholder for new faculty hire
3.03	DOE- Industrial Assessment Center	Funded by DOE; team of 25- 8 grad students train undergrads. Should have storage space associated with it.
3.04	VR Simulation	Locate close to Motion Capture Lab and BIM Cave. Treadmill, driving simulator and computer stations. 5 to 6 people at once.
3.05	Construction Equipment Simulation	Equipment simulation in 3130; add 2 more stations in future. Popular stop for student tours. Moved from Academic Space, near 3.06 BIM cave
3.06	BIM Cave Storage/ Grad Space	Adjacent to BIM Cave
3.07	BIM Cave	Inside space, dark ceiling, lighting concerns; near equipment simulators

Advanced Manufacturing & Facilities Space Organization

NO.	PROGRAM SPACE	REQUIREMENTS
4.00	Construction Indoor Testing Lab 2/3 in high bay, 1/3 in lower height.	High Bay Lab - strong wall and floor, mezzanine above; adjacent to this space would accommodate environmental chambers. 10 feet x 16 feet exterior door. Overhead crane
4.01	In-ground/Geotech / Resiliency Testing	15’ x 15’ x 5’ D - Verify if feasible with high water table
4.02	Materials Storage	Shared with various departments, potentially outdoor space
4.03	Layout/Workspace	
4.04	Additive Bay - Regular Scale (ABR)	Access to OH Crane
4.05	Additive Bay - Large Scale (ABLS)	High-Bay, OH Crane
4.06	~~Subtractive Bay - Enclosed (SBE)~~	To remain in existing location
4.07	~~Subtractive & Auxiliary Bay (SAB)~~	To remain in existing location
4.08	Workforce Bay (WFB)	Overhead Crane + Stations

4 Building Concept

DESIGN PRINCIPLES

Project Intent

LSU aspires to elevate its Construction Management Program (CM) from that of national leader to global leader. Currently, CM is housed in separate areas in three separate buildings. Consolidating Construction Management in a single hub with Advanced Manufacturing, will lay the groundwork for multi-discipline innovations and increased capacity for growth.

The CAAM will provide research and teaching environments that range from "dirty" spaces for asphalt and concrete work, to clean spaces for development in data-centric fields, sensing technologies, visual enhancement, and AI. The CAAM extends the significant investment previously made in Patrick F. Taylor Hall by providing high- and mid-bay space for large-scale equipment and heavy materials that require an overhead crane and direct access to a storage yard for over-the-road deliveries.

Building Layouts - Concepts D & E

Proposed Concepts D & E provide a test fit of the program and site capacity. Concept D is three stories + Penthouse with a net:gross ratio of 67%; Concept E is four stories + Penthouse and requires a lower net:gross ratio to account for increased walls and circulation. If a four-story concept is preferred, it may necessitate additional program cuts to meet budget.

CAAM Building Architectural Style

Stakeholders have expressed a desire for the architecture of the CAAM to be open, transparent and to symbolize the innovations and technological advancements occurring within the building. Benchmarking of Carnegie R-1 Research Peers has shown that recently-constructed engineering buildings, even those on campuses with exacting contexts like Gothic, have a more modern interpretation of their historic styles. While no preferred concept was identified during program verification, there is a desire for a contemporary approach to the use of stucco walls, arches, and tile roofs. The 2017 Campus Master Plan provides the following Guiding Principles for celebrating the LSU Campus and Context:

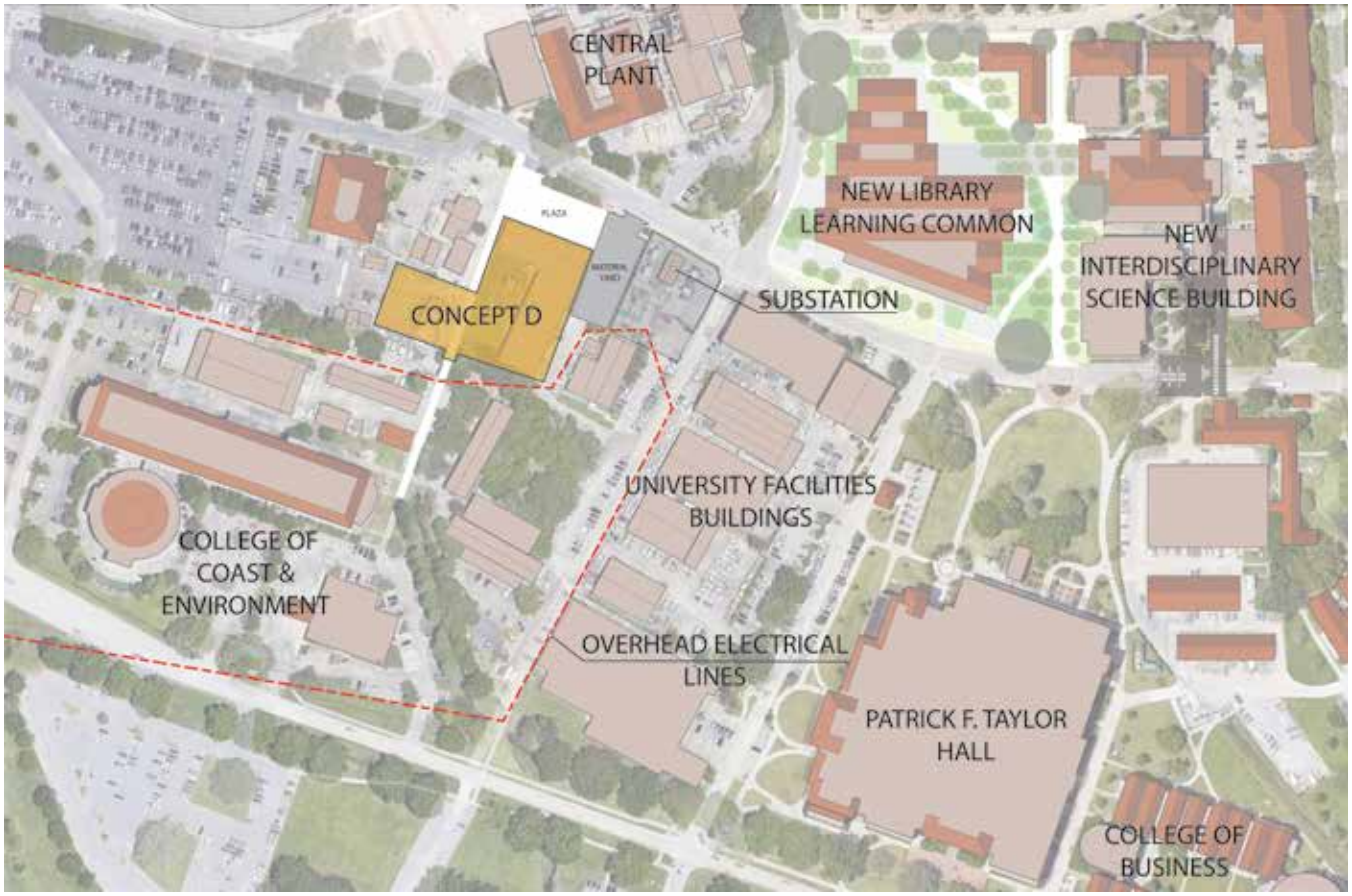
- **Integrate the historic fabric while designing for the future**
- Respect the lowland and celebrate the bluff
- **Celebrate the iconic landscape**
- Utilize a diverse palette of plants that is responsive to underlying site characteristics of topography, hydrology, soil, and exposure
- **Reflect the efficiency and economy of the historic character of architectural & landscape.**
- Preserve LSU history and the culture of Athletics

Master Plan Guidance for South Academic and Research District Development

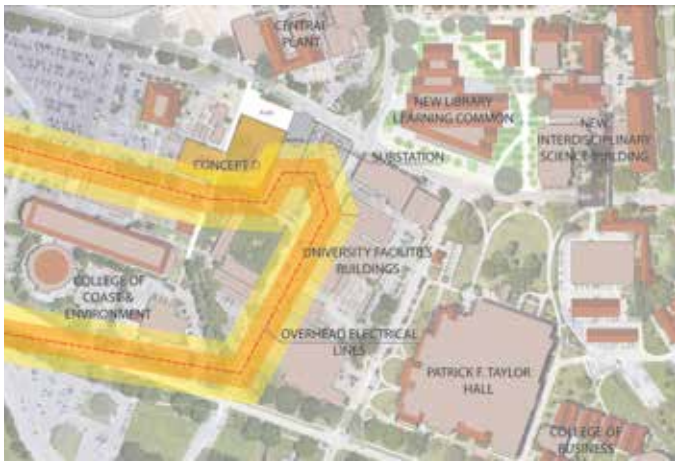
New Master plan diagrams for the South District have not been finalized. The 2017 Master Plan envisions that the first building in the District would "wrap around the existing main sub-station to potentially accommodate several research and academic functions and graduate studios." However, the feasibility of complying with the master planned location of the first building is currently under review because of possible electromagnetic interference from the power plant and overhead power lines.

In August, FMS Consultants performed an Electromagnetic Field Site Survey (Appendix-Volume II). Because the consultants were not given user-defined EMI criterion, they were unable to determine if the recorded EMI exceeds the manufacturer's recommendation of scientific equipment that will be used in the building. During Schematic Design the study findings will be discussed with faculty and Principal Investigators to determine if building shielding, localized room shielding, or a new building location is warranted.

CONCEPT D - SITE PLAN

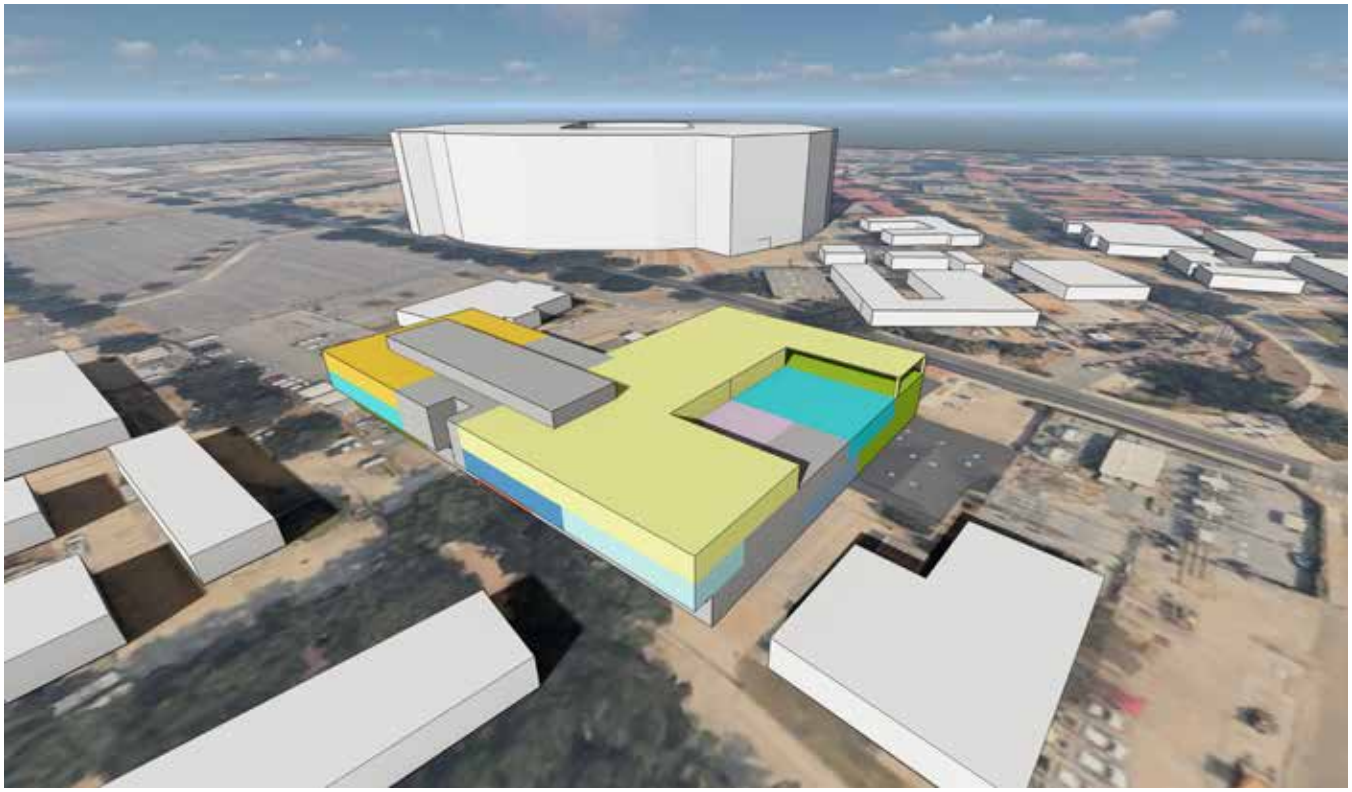


CONCEPT D - OVERHEAD ELECTRICAL LINES



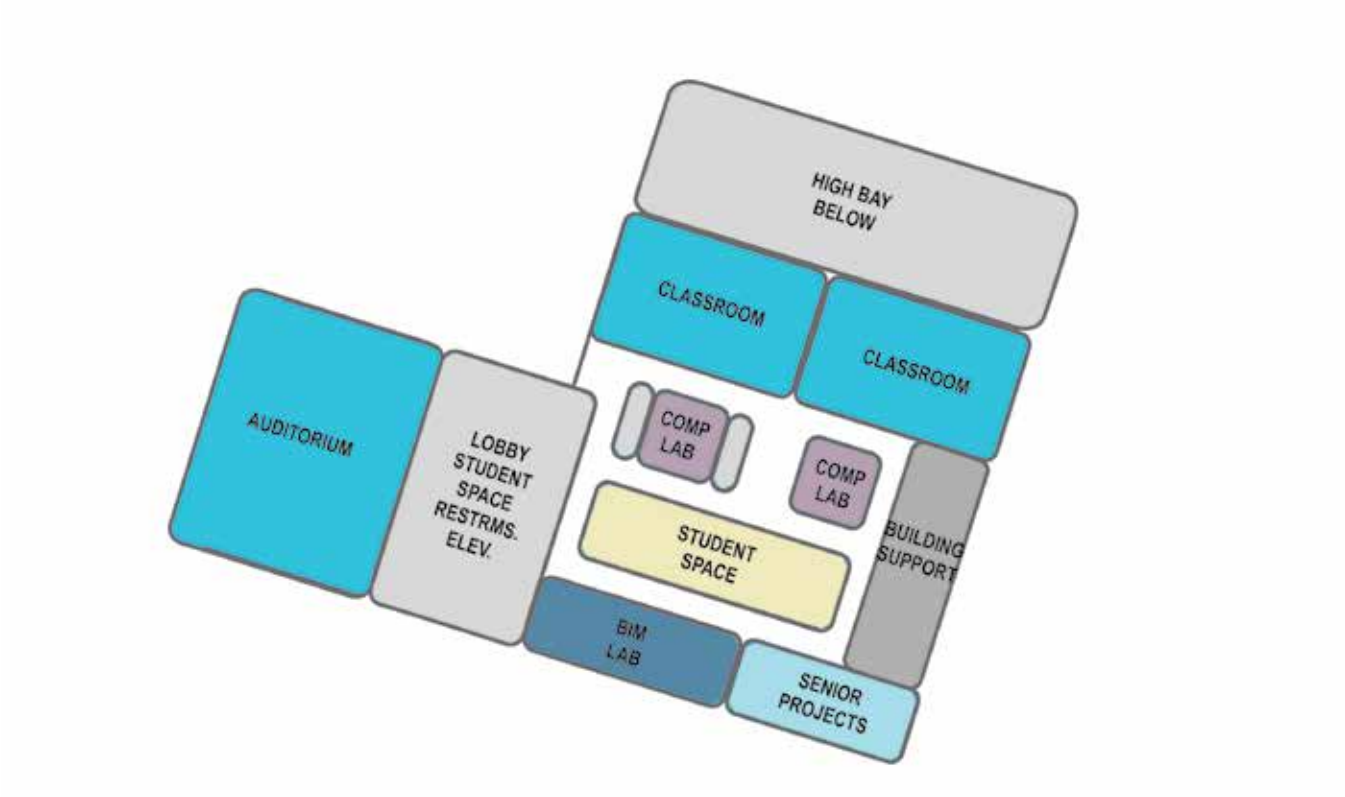
CONCEPT D - FUTURE DEVELOPMENT

CONCEPT D - MASSING MODEL VIEW 1

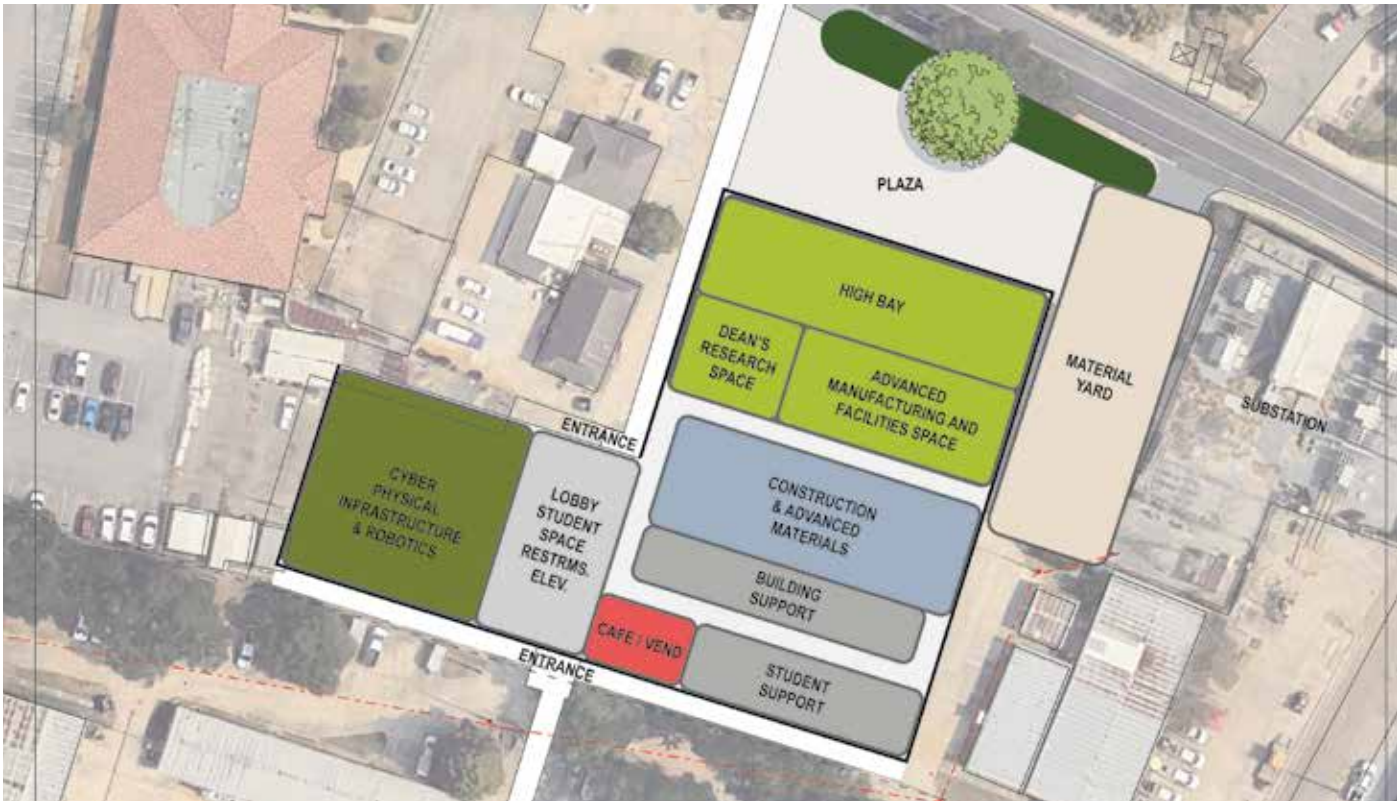


CONCEPT D - MASSING MODEL VIEW 2

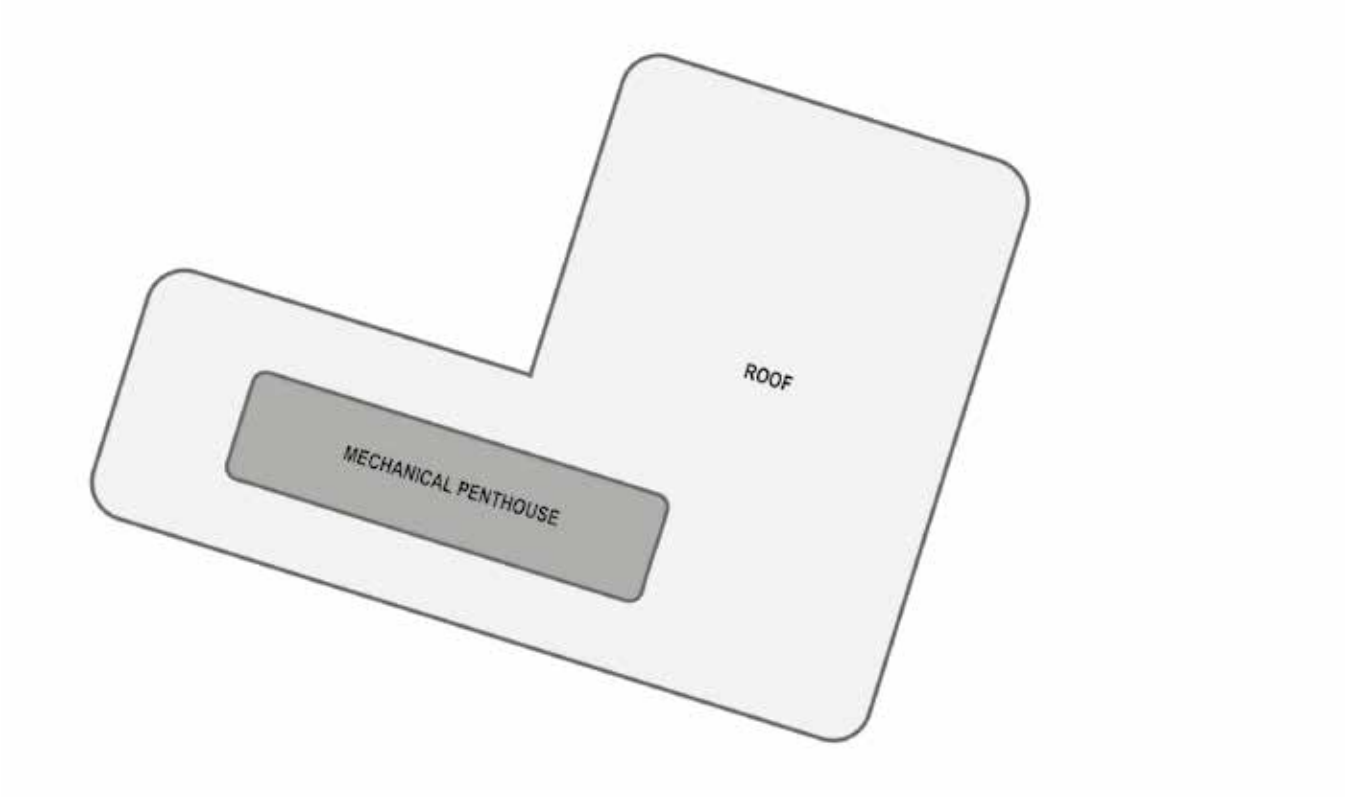
CONCEPT D - LEVEL TWO



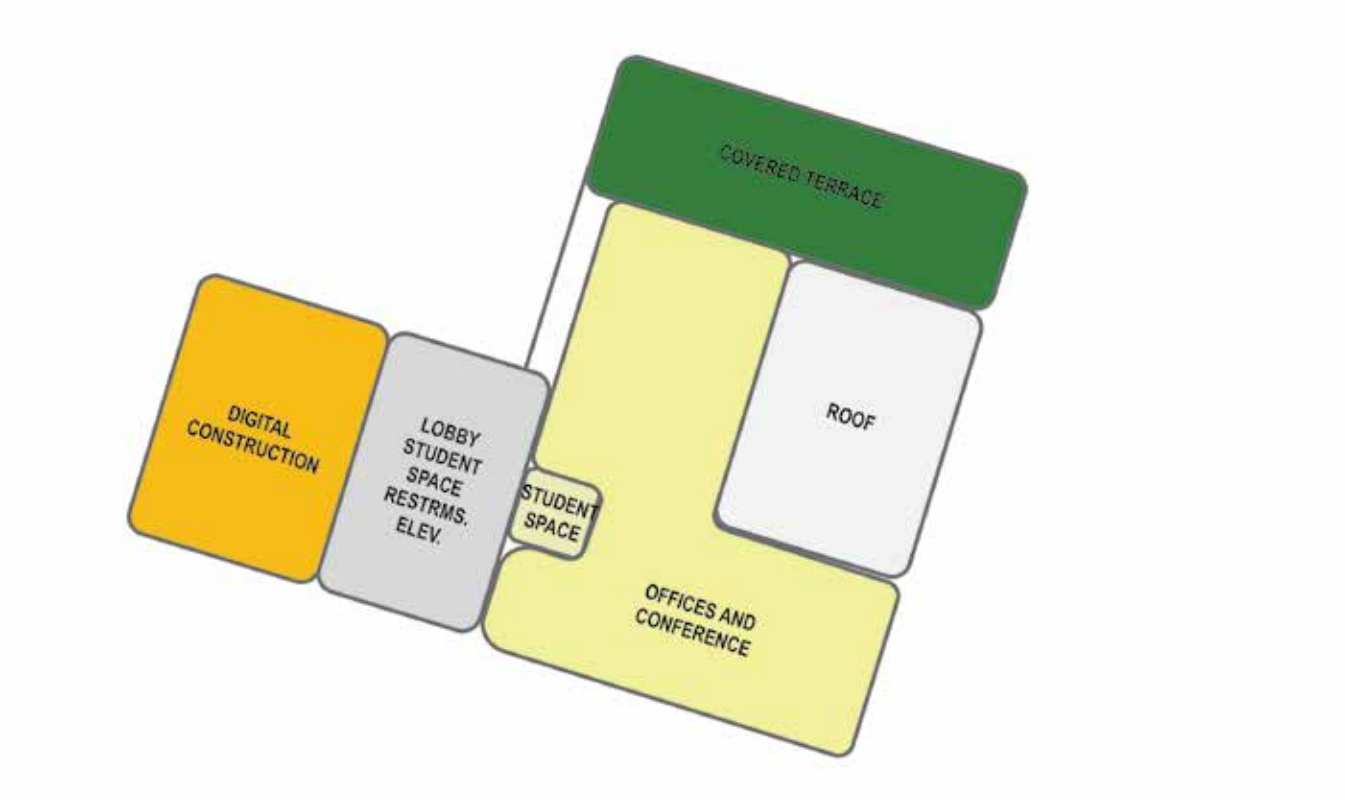
CONCEPT D - LEVEL ONE



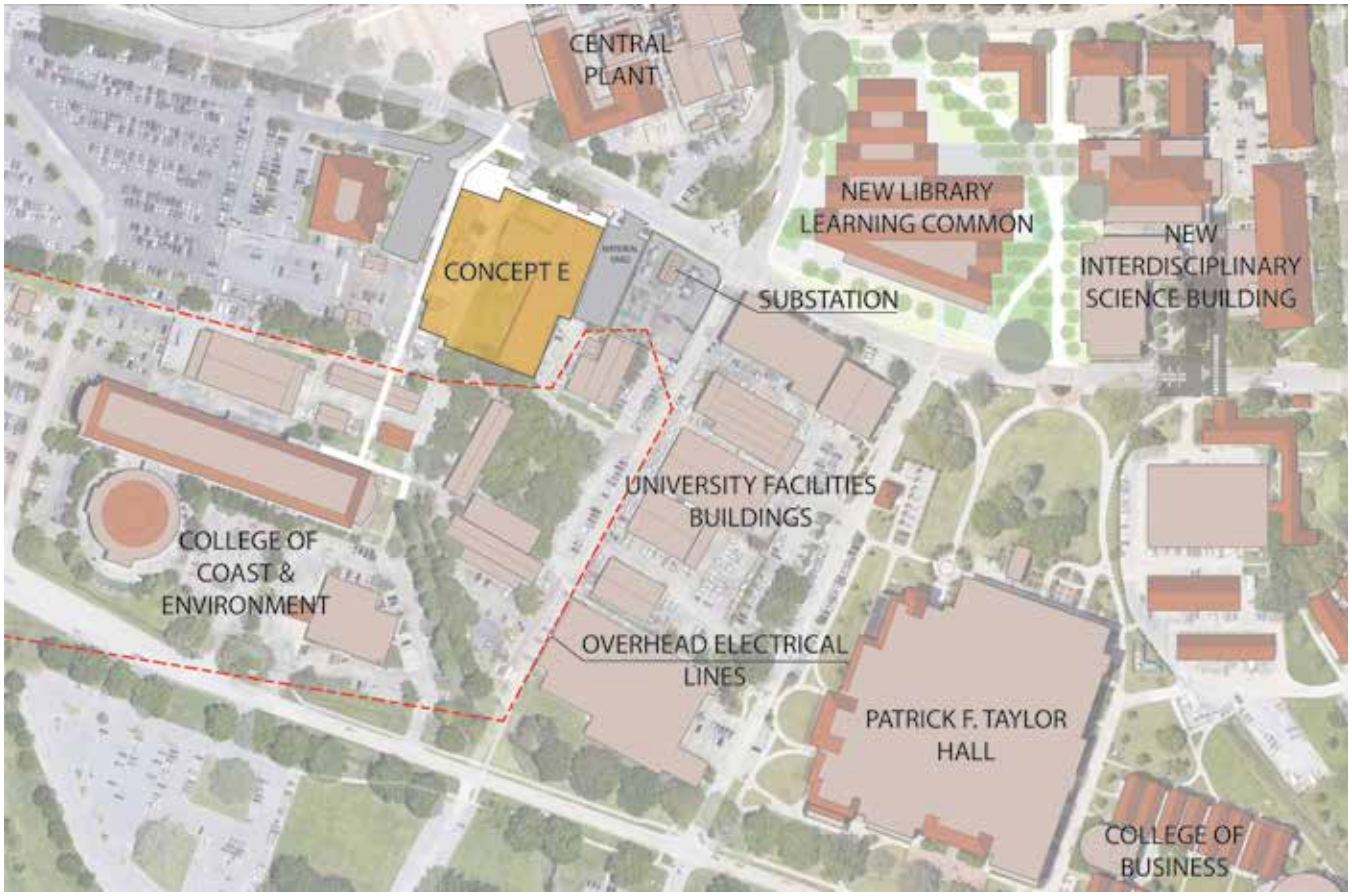
CONCEPT D - LEVEL FOUR - PENTHOUSE



CONCEPT D - LEVEL THREE



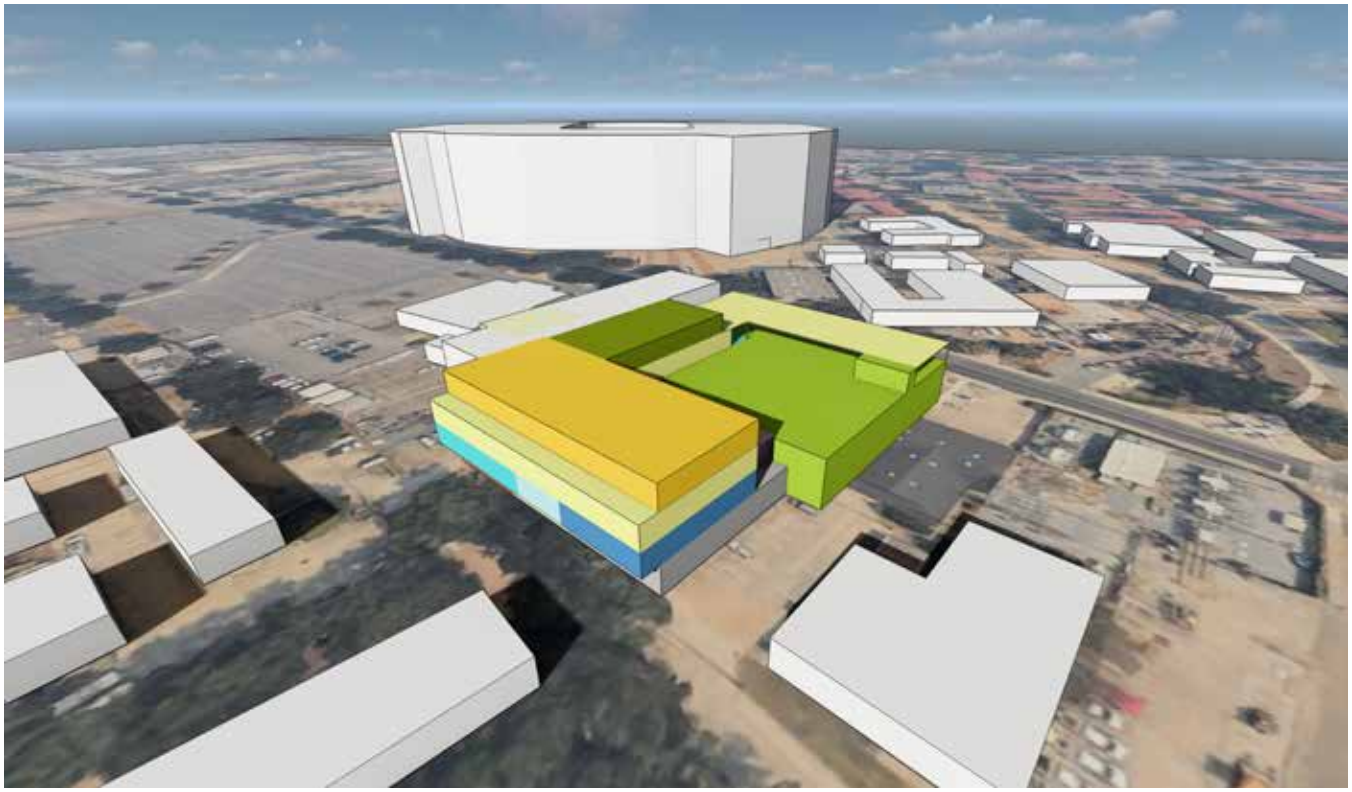
CONCEPT E - SITE PLAN



CONCEPT E - OVERHEAD ELECTRICAL LINES

CONCEPT E - FUTURE DEVELOPMENT

CONCEPT E - MASSING MODEL VIEW 1



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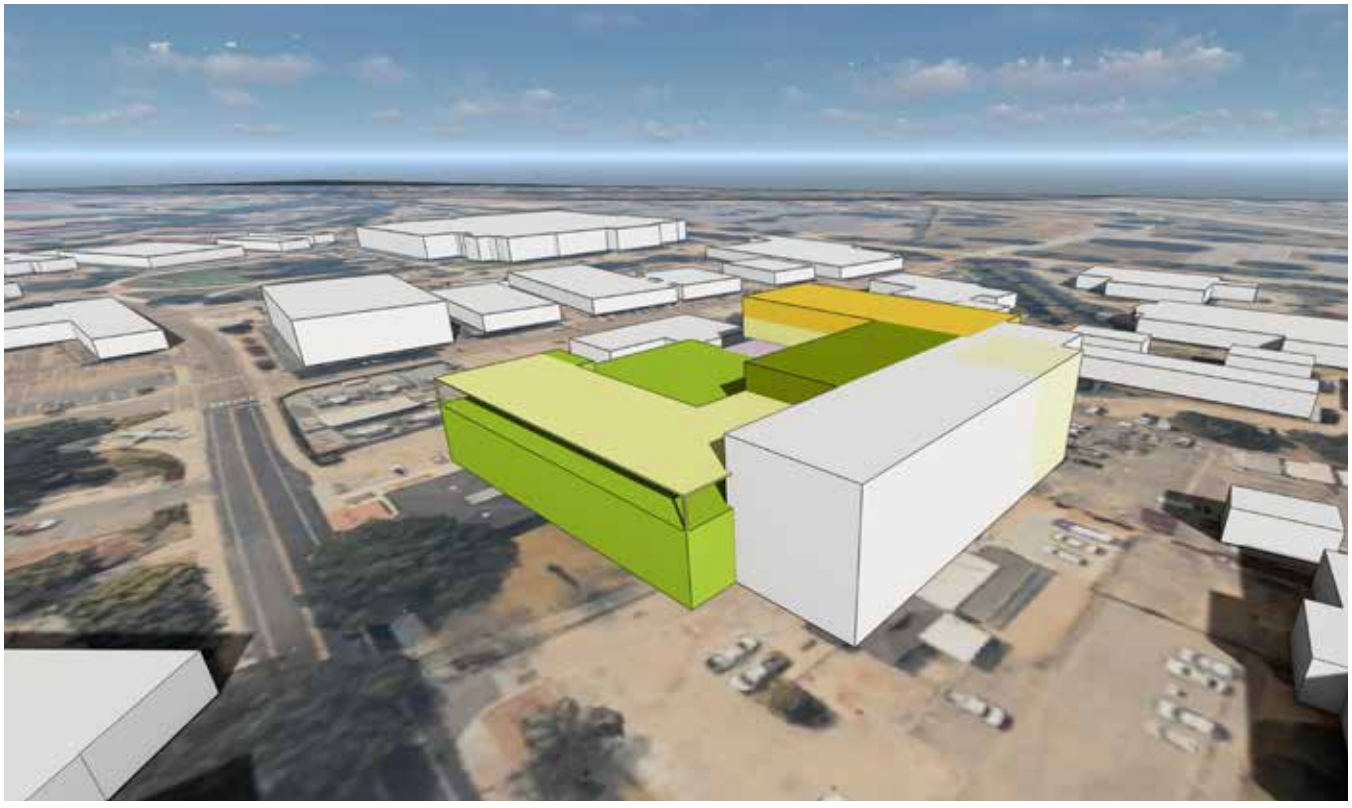
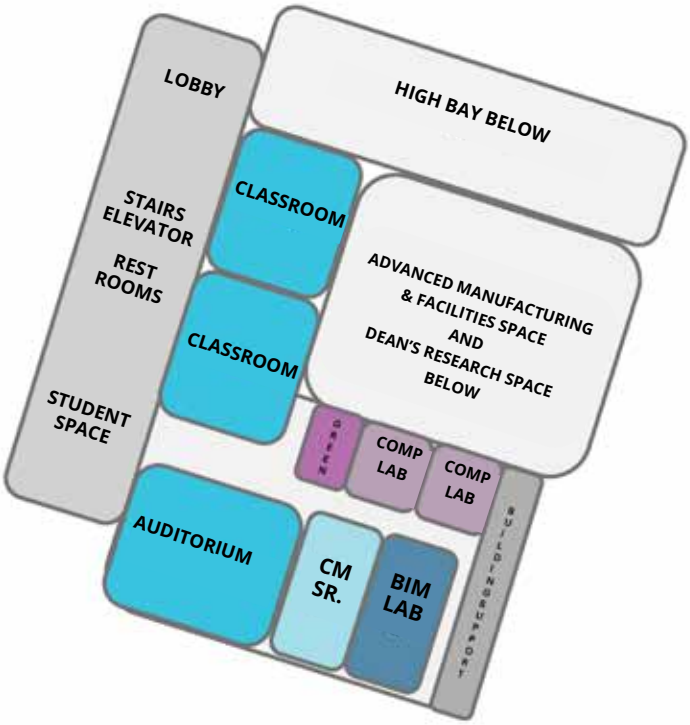
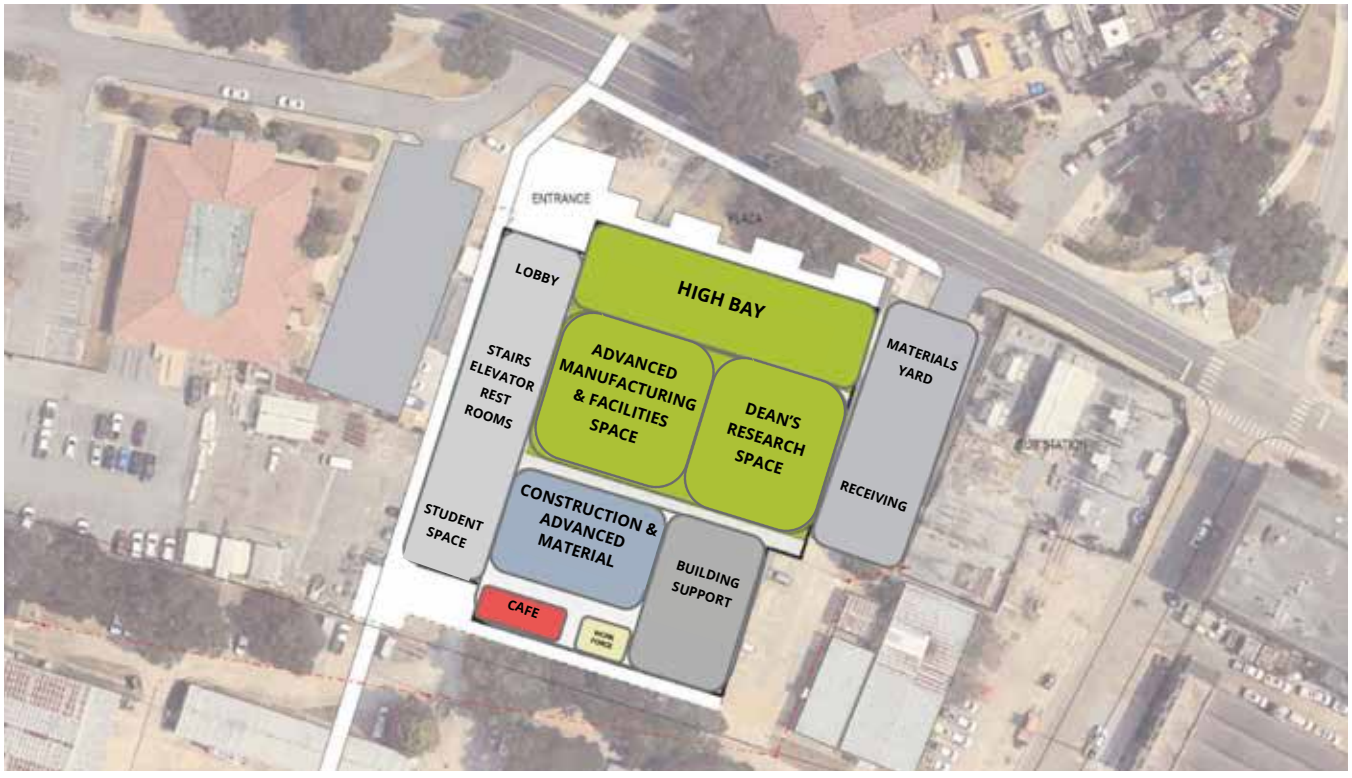


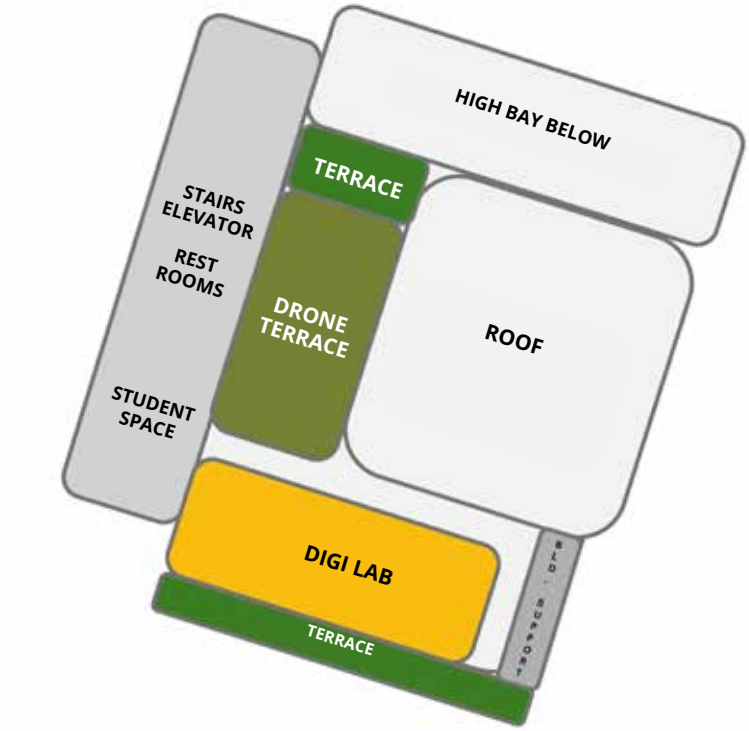
CONCEPT E - LEVEL TWO



CONCEPT E - LEVEL ONE

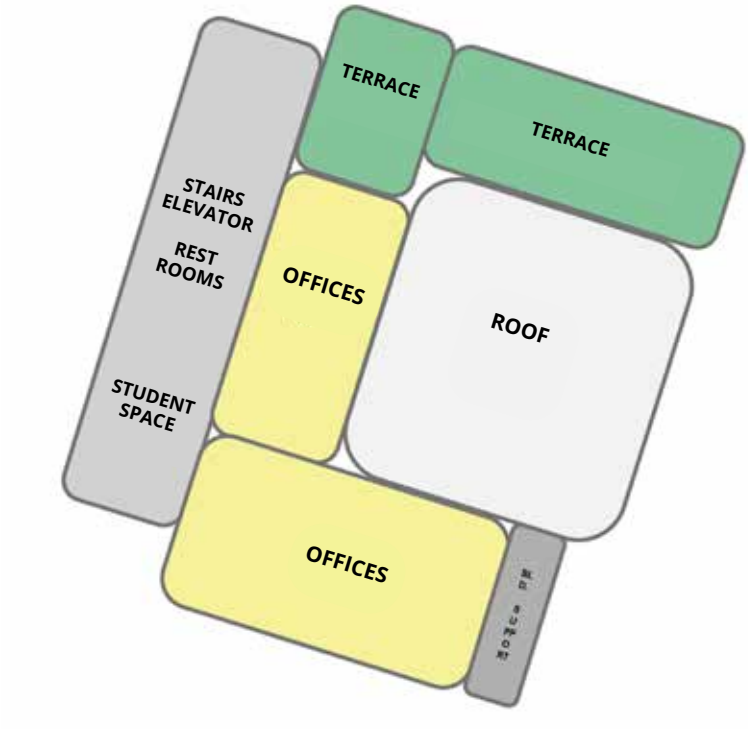


CONCEPT E - LEVEL FOUR



CONCEPT E - LEVEL FIVE

CONCEPT E - LEVEL THREE



Comparison Matrix

CONCEPT D - PROS	CONCEPT E - PROS
• 4-Story with Penthouse	• 5-Story with Penthouse (unless on lower floor which could be challenging)
• Keeps pedestrian walk that aligns with proposed master plan	• High visibility of high bay
• Connects construction and Advanced Materials directly to Material Yard	
• Allows Digital Construction and Cyber Physical Infrastructure / Robotics on ground floor	

CONCEPT D - CONS	CONCEPT E - CONS
• Affects future building to the West	• Construction and Advanced Materials removed from Material Yard
• Limited visibility to the High Bay	• Extra-large terrace (could be a Pro)
• Has a higher percentage of expensive exterior skin	• More circulation space which is less efficient
	• Cyber Physical Infrastructure and Robotics on upper floor

Photos of Existing Conditions

5 Cost Model

Cost Model Methodology

The cost model used to determine if the CAAM Program Statement is within budget relies on the principle that different types of spaces have distinct cost implications per square foot due to variations in materials, finishes, complexity, and other requirements. Instead of using an average cost per square foot for the entire project, the Cost Model breaks down the project into five (5) space types with different historically derived costs per square foot. The matrix of space types and associated cost is provided below.

Space Type Matrix

	$450 / sf	$550 / sf	$600 / sf	$800 / sf	$1000 / sf	Notes
Space Criteria	**Type 1 ($) Low Intensity**	**Type 2 ($$) Medium Intensity**	**Type 3 ($$$) High Intensity**	**Type 4 ($$$) Specialty Mid/ High Bays (Clean)**	**Type 5 ($$$) Specialty Mid/ High Bays (Dirty)**	
Architectural						
Space Type Examples	Office, Conf., Break Room, Storage, Classroom, Dry Lab	Robotics, Control Rooms, Hardware Makerspace, AR/ VR, Rest Rooms	Wet Labs with Fume Hoods, Robotics, Drone Labs	Advanced Manufacturing, 3D Printing	Fabrication, Machine-Shop, Construction	
Occupancy	Business	Business	Business	Business	Business	Per Chapter 3 - IBC or equivalent
Finishes	Carpet, latex paint, ceiling tile/ no tile	ESD Carpet/ Tile, latex paint, ceiling tile/ no tile	ESD Tile, Latex Paint, scrubable ceiling tile/ no tile	Specialty/Raised Flooring, latex paint, ceiling tile	Special finishes depending on type of lab	
Ceiling/ Height	Normal Ceiling Height (9- to 10')	Normal Ceiling Height (9' to 10')	Normal Ceiling Height (9' to 10')	17' to 35' open to structure	17' to 35' open to structure	
Shielding	N/A	TBD	N/A	N/A	N/A	

Space Type Matrix (continued)

	$450 / sf	$550 / sf	$600 / sf	$800 / sf	$1000 / sf	Notes
Space Criteria	**Type 1 ($) Low Intensity**	**Type 2 ($$) Medium Intensity**	**Type 3 ($$$) High Intensity**	Type 4 ($$$) Specialty Mid/ High Bays (Clean)	Type 5 ($$$) Specialty Mid/ High Bays (Dirty)	
Structural						
Live Floor Load	standard office requirements	Standard office requirements	? kPa	? kPa	7 kPa? (for labs requiring vehicle access or with heavy equipment loads)	General guidelines - confirm with Structural engineer.
Vibration Attenuation (VC Criteria)	200 micrometers / second or less (VC-Residential Day)	100 micrometers / second or less (VC-Op. Theater)	25-50 micrometers/ second or less (VC-A or B)	100 micrometers / second or less (VC-Op. Theater)	25-50 micrometers/ second or less (VC-A or B). Need to confirm	
Acoustics						
Noise						
Mechanical						
Temperature	Summer 72° F (+/- 2°), Winter 68° F	Summer 72° F (+/- 2°), Winter 68° F	Summer 72° F (+/- 2°), Winter 68° F	Summer 72 (+/- 10°), Winder 68° F	Unconditioned air, but forced	
Relative Humidity	65% or less, no humidification	65% or less, no humidification	65% or less, no humidification	65% or less, no humidification	TBD	If lower humidity is required, provide local dehumidifi-cation.
100% Exhaust For Room Air?	No	No. Some local task exhaust as needed	Strongly recommended, or adequate filtration. 100% exhaust required in rooms with chemicals.	No. Some local task exhaust as needed	No	Single-pass air recommended for any areas with potential chemical or biohazards.
24/7 Mechanical Ventilation	No	yes	Yes	Yes	Yes	
Ceiling Fans	No	No	No	Yes	Yes	
Specialty Exhaust	None	Fume Extraction Arms	Fume extraction arms/ Fume Hoods/ canopy hoods	Fume extraction arms/ canopy hoods	Fume extraction arms/ Fume Hoods/ canopy hoods	

Space Type Matrix (continued)

	$450 / sf	$550 / sf	$600 / sf	$800 / sf	$1000 / sf	Notes
Space Criteria	**Type 1 ($) Low Intensity**	**Type 2 ($$) Medium Intensity**	**Type 3 ($$$) High Intensity**	Type 4 ($$$) Specialty Mid/ High Bays (Clean)	Type 5 ($$$) Specialty Mid/ High Bays (Dirty)	
Plumbing						
Lab Sinks (Cold water & Drain)	No	No	As needed	As needed	As needed	
Safety Showers & Eye Washes	No	No	As needed to meet safety requirements.	As needed to meet safety requirements.	As needed to meet safety requirements.	Provide per ANSI Z358.1 guidelines
House Lab Gases	No	No	TBD	TBD	TBD	
Local Specialty Gases	No	No	In addition to standard lab gases, specialty gases or gas mixes may be required.	TBD	No	
Electrical						
Power	Low Intensity 120V ~20 W/sm	High Intensity 120V, 208V ~? W/SM	Medium Intensity 120V, 208V ~? W/SM	High Intensity 120V, 208V, 480V ~? W/SM	Medium Intensity 120V, 208V, 480V ~? W/SM	Higher voltage may be required for specific pieces of equipment.

Photos of Existing Patrick Taylor Hall 1325 - Concrete Lab

Cost Model Summary

The projected Construction Cost for the Construction and Advanced Manufacturing Building is $81,631,049. The Project Budget is $81,900,000.

PROGRAM SPACE TYPE		
Public Space	6,420 sf	$3,161,000
Student Space	9,600 sf	$4,320,000
Construction and Advanced Materials	8,800 sf	$5,280,000
Cyber Physical Infrastructure and Robotics	8,000 sf	$4,800,000
Digital Construction	9,280 sf	$5,104,000
Advanced Manufacturing & Facilities Space	17,349 sf	$14,972,600
Core Office Space	19,107 sf	$8,598,330
Core Academic Space	23,460 sf	$10,813,000
Building Support	6,368 sf	$3,214,800
Mechanical	7,587 sf	$3,414,096
Subtotal	115,971 sf	$63,677,826
Circulation / Walls	35,906 sf	$17,953,223
Grand Total	151,877 sf	$81,631,049
Cost / SF		$537.48/SF

Cost Model Detail

Individual Space Types and their associated Unit Costs are itemized below; any row highlighted in light gold indicates a revision that was made in consultation with the Dean and the Leadership Group at a virtual workshop on August 1, 2025. Modifications are highlighted in light yellow.

				August 1, 2025 Program		
PROG. NO	PROGRAM SPACE TYPE	QTY.	TOTALS	SPACE TYPE	UNIT COST	TOTAL COST
A.01	Entry Vestibule	2	600 sf	Type 1	$450 /sf	$270,000
A.02	Lobby/ Industry Showcase - WOW SPACE	1	2,000 sf	Type 1	$450 /sf	$900,000
A.03	Student Lounge/Collaboration/Study	see 3.01		Type 1	$450 /sf	$0
A.04	Women's Restroom	4	1,100 sf	Type 2	$550 /sf	$605,000
A.05	Men's Restroom	4	1,100 sf	Type 2	$550 /sf	$605,000
A.06	Gender Neutral Restroom	4	320 sf	Type 2	$550 /sf	$176,000
A.07	Staff Restrooms	1	200 sf	Type 2	$550 /sf	$110,000
A.08	Vending	1	150 sf	Type 1	$450 /sf	$67,500
A.09	Café / Grab n' Go	1	600 sf	Type 1	$450 /sf	$270,000
A.10	Café Prep Area	1	200 sf	Type 1	$450 /sf	$90,000
A.11	Café Food Storage	1	150 sf	Type 1	$450 /sf	$67,500
TOTAL	PUBLIC SPACE		6,420 sf			$3,161,000
B.01	Commons - First Floor	1	2,000 sf	Type 1	$450 /sf	$900,000
B.02	Commons - Second Floor	1	1,500 sf	Type 1	$450 /sf	$675,000
B.03	Commons - Third Floor	1	1,000 sf	Type 1	$450 /sf	$450,000
B.04	Commons - Fourth Floor	1	1,000 sf	Type 1	$450 /sf	$450,000
B.05	Workforce Leadership Dev. Center	1	600 sf	Type 1	$450 /sf	$270,000
B.06	Student Associations	1	300 sf	Type 1	$450 /sf	$135,000
B.10	Info/Hub Service/Printing	1	200 sf	Type 1	$450 /sf	$90,000
B.11	GA Area/Coffee/Storage	1	3,000 sf	Type 1	$450 /sf	$1,350,000
TOTAL	STUDENT SPACE		9,600 sf			$4,320,000
1.00	Materials Storage	1	320 sf	Type 3	$600 /sf	$192,000
1.01	Materials Prep	1	320 sf	Type 3	$600 /sf	$192,000
1.02	Materials Fabrication	1	480 sf	Type 3	$600 /sf	$288,000
1.03	Materials Curing - Dry	1	160 sf	Type 3	$600 /sf	$96,000
1.04	Materials Curing - High Humidity	1	160 sf	Type 3	$600 /sf	$96,000
1.05	Material Diagnostics/Testing	1	960 sf	Type 3	$600 /sf	$576,000
1.06	Sample Prep & Cleanup Area	1	160 sf	Type 3	$600 /sf	$96,000
1.07	Drying / Asphalt Ovens	1	320 sf	Type 3	$600 /sf	$192,000
1.08	Material Research Lab	1	640 sf	Type 3	$600 /sf	$384,000
1.09	Dean's Research Space	3	2,880 sf	Type 3	$600 /sf	$1,728,000
1.10	Material Research Lab for Future Faculty	1	640 sf	Type 3	$600 /sf	$384,000
1.11	Environmental Chamber	1	320 sf	Type 3	$600 /sf	$192,000
1.12	Tools Storage CM	1	160 sf	Type 3	$600 /sf	$96,000
1.13	Concrete 3-D Printing	1	1,280 sf	Type 3	$600 /sf	$768,000
TOTAL	CONSTRUCTION & ADVANCED MATERIALS		8,800 sf			$5,280,000

				August 1, 2025 Program		
PROG. NO	PROGRAM SPACE TYPE	QTY.	TOTALS	SPACE TYPE	UNIT COST	TOTAL COST
2.00	Living Lab for Building and Systems	1	960 sf	Type 3	$600 /sf	$576,000
2.01	Dean's Research Space	3	2,880 sf	Type 3	$600 /sf	$1,728,000
2.02	Robotics & Automation Test Suite	1	1,280 sf	Type 3	$600 /sf	$768,000
2.03	Cyber-Physical Systems	1	640 sf	Type 3	$600 /sf	$384,000
2.04	Radio Frequency Testing Lab	1	320 sf	Type 3	$600 /sf	$192,000
2.05	Software and Sensor Development	1	640 sf	Type 3	$600 /sf	$384,000
2.06	Drone Lab	1	1,280 sf	Type 3	$600 /sf	$768,000
TOTAL	CYBER PHYSICAL INFRASTRUCTURE & ROBOTICS		8,000 sf			$4,800,000
3.00	Motion Capture Lab	1	960 sf	Type 2	$550 /sf	$528,000
3.01	Dean's Research Space	3	2,880 sf	Type 2	$550 /sf	$1,584,000
3.02	Research Lab	1	960 sf	Type 2	$550 /sf	$528,000
3.03	DOE- Industrial Assessment Center	1	960 sf	Type 2	$550 /sf	$528,000
3.04	VR Simulation	1	960 sf	Type 2	$550 /sf	$528,000
3.05	Construction Equipment Simulation	1	960 sf	Type 2	$550 /sf	$528,000
3.06	BIM Cave Storage/ Grad Space	1	640 sf	Type 2	$550 /sf	$352,000
3.07	BIM Cave	1	960 sf	Type 2	$550 /sf	$528,000
TOTAL	DIGITAL CONSTRUCTION		9,280 sf			$5,104,000
4.00	Construction Indoor Testing Lab 2/3 in high bay, 1/3 in lower height.	1	8,960 sf	Type 4	$800 /sf	$7,168,000
4.01	In-ground/Geotech / Resiliency Testing	Outdoors				
4.02	Materials Storage	1	1,280 sf	Type 3	$600 /sf	$768,000
4.03	Layout/Workspace	1	160 sf	Type 2	$550 /sf	$88,000
4.04	Additive Bay - Regular Scale (ABR)		3,136 sf	Type 5	$1,000 /sf	$3,135,600
4.05	Additive Bay - Large Scale (ABLS)		1,313 sf	Type 5	$1,000 /sf	$1,313,000
4.06	Subtractive Bay - Enclosed (SBE)		0 sf	Type 5	$1,000 /sf	$0
4.07	Subtractive & Auxiliary Bay (SAB)		0 sf	Type 5	$1,000 /sf	$0
4.08	Workforce Bay (WFB)		2,500 sf	Type 5	$1,000 /sf	$2,500,000
TOTAL	ADVANCED MANUFACTURING & FACILITIES SPACE		17,349 sf			$14,972,600

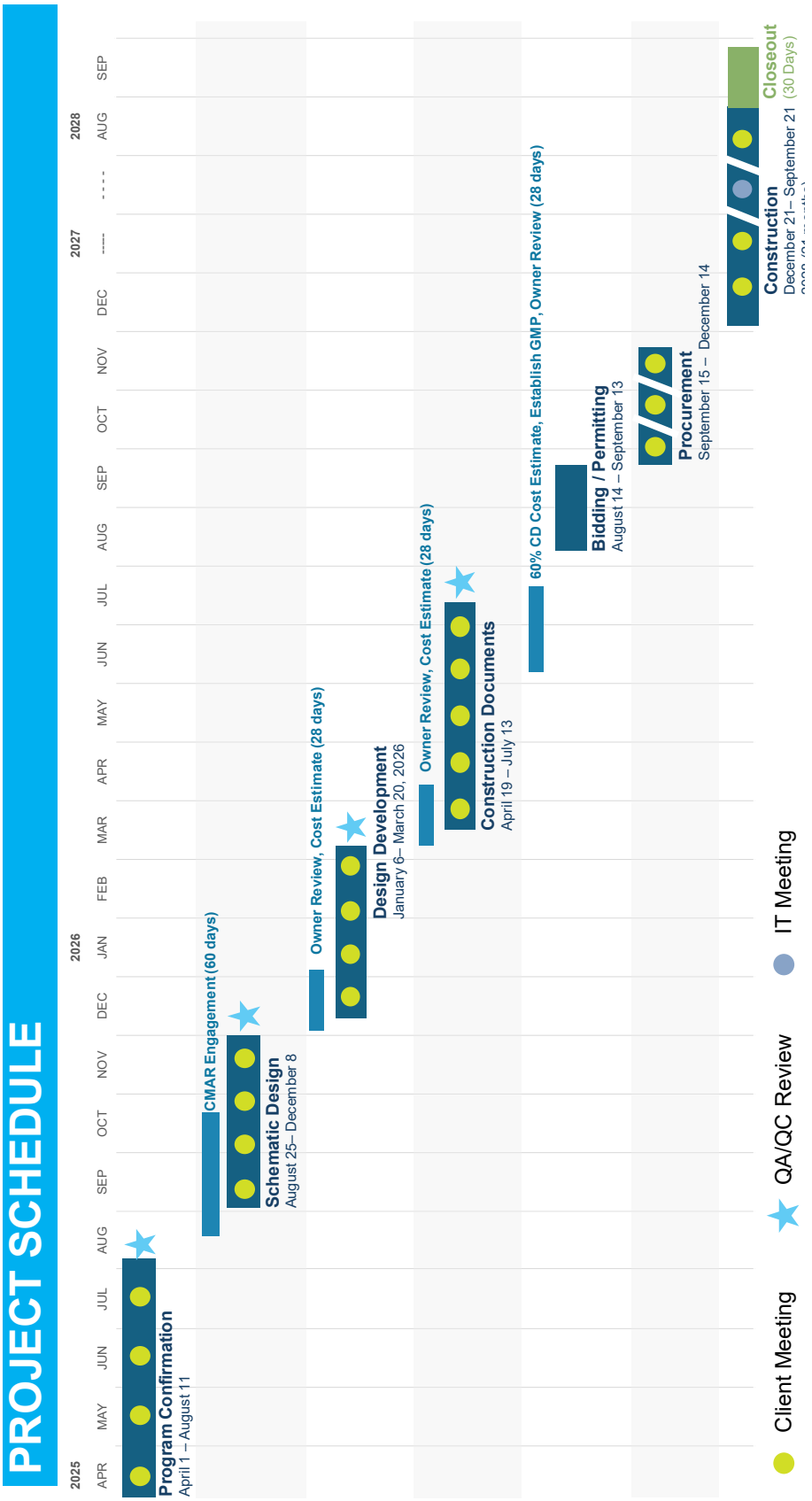
				August 1, 2025 Program		
PROG. NO	PROGRAM SPACE TYPE	QTY.	TOTALS	SPACE TYPE	UNIT COST	TOTAL COST
5.00	Entry/Reception	1	1,000 sf	Type 1	$450 /sf	$450,000
5.01	CM Staff Offices	16	1,600 sf	Type 1	$450 /sf	$720,000
5.02	Student Workers	4	192 sf	Type 1	$450 /sf	$86,400
5.03	Director's Office	2	900 sf	Type 1	$450 /sf	$405,000
5.04	Department Chairs	3	360 sf	Type 1	$450 /sf	$162,000
5.05	Faculty Office	18	2,160 sf	Type 1	$450 /sf	$972,000
5.06	Future Faculty Office	25	3,000 sf	Type 1	$450 /sf	$1,350,000
5.07	Adjunct/Visiting	5	240 sf	Type 1	$450 /sf	$108,000
5.08	Post-Doctoral Workstations	12	576 sf	Type 1	$450 /sf	$259,200
5.09	Hoteling Modules		0 sf		$450 /sf	$0
5.10	Small Conference Room	1	600 sf	Type 1	$450 /sf	$270,000
5.11	Social/Prep Area/Break Room/ Faculty Lounge	1	600 sf	Type 1	$450 /sf	$270,000
5.12	Copier Room	1	100 sf	Type 1	$450 /sf	$45,000
5.13	Workroom / Mail	1	200 sf	Type 1	$450 /sf	$90,000
5.14	Storage Room	1	150 sf	Type 1	$450 /sf	$67,500
5.15	IT Office	3	300 sf	Type 1	$450 /sf	$135,000
5.16	IT Support	1	200 sf	Type 1	$450 /sf	$90,000
5.17	IT Server Room	0	0 sf	Type 1	$450 /sf	$0
5.18	IT Workspace	1	200 sf	Type 1	$450 /sf	$90,000
5.19	IT Storage Room	1	200 sf	Type 1	$450 /sf	$90,000
5.20	*Industry Partner Suite:*					
5.21	Industry Partner Conference Room	1	1,920 sf	Type 1	$450 /sf	$864,000
5.22	Industry Partner Hoteling Stations	2	200 sf	Type 1	$450 /sf	$90,000
5.23	Circulation		4,409 sf	Type 1	$450 /sf	$1,984,230
TOTAL	CORE OFFICE SPACE		19,107 sf			$8,598,330
6.00	Classroom	2	9,000 sf	Type 1	$450 /sf	$4,050,000
6.01	Auditorium	1	7,500 sf	Type 1	$450 /sf	$3,375,000
6.02	Open Student Computer Lab	1	900 sf	Type 1	$450 /sf	$405,000
6.03	Lecture Hall	0	0 sf		$450 /sf	$0
6.04	Classroom Service/Closets	1	100 sf	Type 1	$450 /sf	$45,000
6.05	Classroom Media Storage	1	100 sf	Type 1	$450 /sf	$45,000
6.06	Classroom Equipment Storage	1	100 sf	Type 1	$450 /sf	$45,000
6.07	CM Senior Project Lab	1	2,240 sf	Type 1	$450 /sf	$1,008,000
6.08	Computer Lab/ CAD Stations	1	960 sf	Type 1	$450 /sf	$432,000
6.09	Scheduling /Cost Estimating/ BIM Lab	1	2,240 sf	Type 2	$550 /sf	$1,232,000
6.10	Online Learning Media Green Screen Rm.	1	320 sf	Type 2	$550 /sf	$176,000
TOTAL	CORE ACADEMIC SPACE		23,460 sf			$10,813,000

				August 1, 2025 Program		
PROG. NO	PROGRAM SPACE TYPE	QTY.	TOTALS	SPACE TYPE	UNIT COST	TOTAL COST
C.01	General Storage	1	640 sf	Type 1	$450 /sf	$288,000
C.02	Bulk Chemical Storage	1	160 sf	Type 1	$450 /sf	$72,000
C.03	Hazardous Material Storage	1	160 sf	Type 1	$450 /sf	$72,000
C.04	Lab Waste Storage	1	80 sf	Type 1	$450 /sf	$36,000
C.05	Custodial Equipment / Building Storage	1	640 sf	Type 1	$450 /sf	$288,000
C.06	Cylinder Storage	1	160 sf	Type 1	$450 /sf	$72,000
C.07	Data Entrance Room	1	160 sf	Type 1	$450 /sf	$72,000
C.08	Data Distribution Closets	3	240 sf	Type 1	$450 /sf	$108,000
C.09	Electrical Entrance Room	1	320 sf	Type 1	$450 /sf	$144,000
C.10	Electrical Distribution Closets	3	240 sf	Type 1	$450 /sf	$108,000
C.11	Communication Entry Room	1	160 sf	Type 1	$450 /sf	$72,000
C.12	Communication Distribution Closets	3	240 sf	Type 1	$450 /sf	$108,000
C.13	Elevator - Freight	1	128 sf		Unit Cost	$250,000
C.14	Elevator - Passenger	1	96 sf		Unit Cost	$200,000
C.15	Elevator Equipment	1	80 sf	Type 1	$450 /sf	$36,000
C.16	Janitor's Closet	4	256 sf	Type 1	$450 /sf	$115,200
C.17	Marshalling / Receiving / Dock	1	480 sf	Type 1	$450 /sf	$216,000
C.18	Temporary Staging	1	640 sf	Type 1	$450 /sf	$288,000
C.19	Fire Pump	1	128 sf	Type 1	$450 /sf	$57,600
C.20	Backflow Preventer	1	320 sf	Type 1	$450 /sf	$144,000
C.21	Air Compressors, Vacuum	1	320 sf	Type 1	$450 /sf	$144,000
C.22	DI House Water System	1	320 sf	Type 1	$450 /sf	$144,000
C.23	Generator - Backup Power	1	320 sf	Type 1	$450 /sf	$144,000
C.24	Recycling Room	1	80 sf	Type 1	$450 /sf	$36,000
C.25	Penthouse		0 sf	Type 1	$450 /sf	$0
TOTAL	BUILDING SUPPORT		6,368 sf			$3,214,800
D.01	Mechanical Systems	7%	7,587 sf	Type 1	$450 /sf	$3,414,096
TOTAL	MECHANICAL		7,587 sf			$3,414,096

SUBTOTAL OF ASSIGNABLE SF	67%	102,016 sf			$57,048,930
BUILDING SUPPORT & MECHANICAL	9%	13,955 sf			$6,628,896
BUILDING WALLS/CIRCULATION	24%	35,906 sf		$500 /sf	$17,953,223
GROSS BUILDING AREA - CONCEPT D	100%	151,877 sf			$81,631,049
				Budget	$81,900,000
				Delta	$268,951

6 Project Schedule

Project Schedule




Grace
Design Studios

LSU

Program Verification

College of Engineering

Construction and Advanced Manufacturing Building (CAAM)

Volume 2 - Appendix

August 11, 2025

Grace Design Studios

Acknowledgement

The verification of program need for the College of Engineering's new Construction and Advanced Manufacturing Building (CAAM) incorporates input from campus Administrators, Faculty, and Staff. The team of Grace Design Studio and HERA Laboratory Planners appreciates the thoughtful input and recommendations made by all stakeholders, especially those named below who provided the leadership necessary to move the project forward into schematic design.

- - - - -

Matthew R. Lee, Interim President
Jordan Joplin, LSU Foundation
Vicki Colvin, Dean of the College of Engineering
Charles Berryman, Department Chair of Construction Management
Dimitris Nikitopoulos, Department Chair of Mechanical & Industrial Engineering
George Z. Vouiadjis, Department Chair of Civil and Environmental Engineering
Scott Couper, College of Engineering Representative

Anzilla R Gilmore, Associate Vice President, Facility and Property Oversight
Danny Mahaffey, Assistant Vice President and University Architect
Paul Favaloro, Executive Director Planning, Design and Construction
Greg LaCour, Director of Campus Planning
Dennis Mitchell, Assistant Director, Landscape Architect
Robert Mayard, Facilities Planning & Control Project Manager
James Pugh, Facilities, Planning and Control Project Manager
Michael Johnson, Facilities, Planning and Control Project Manager

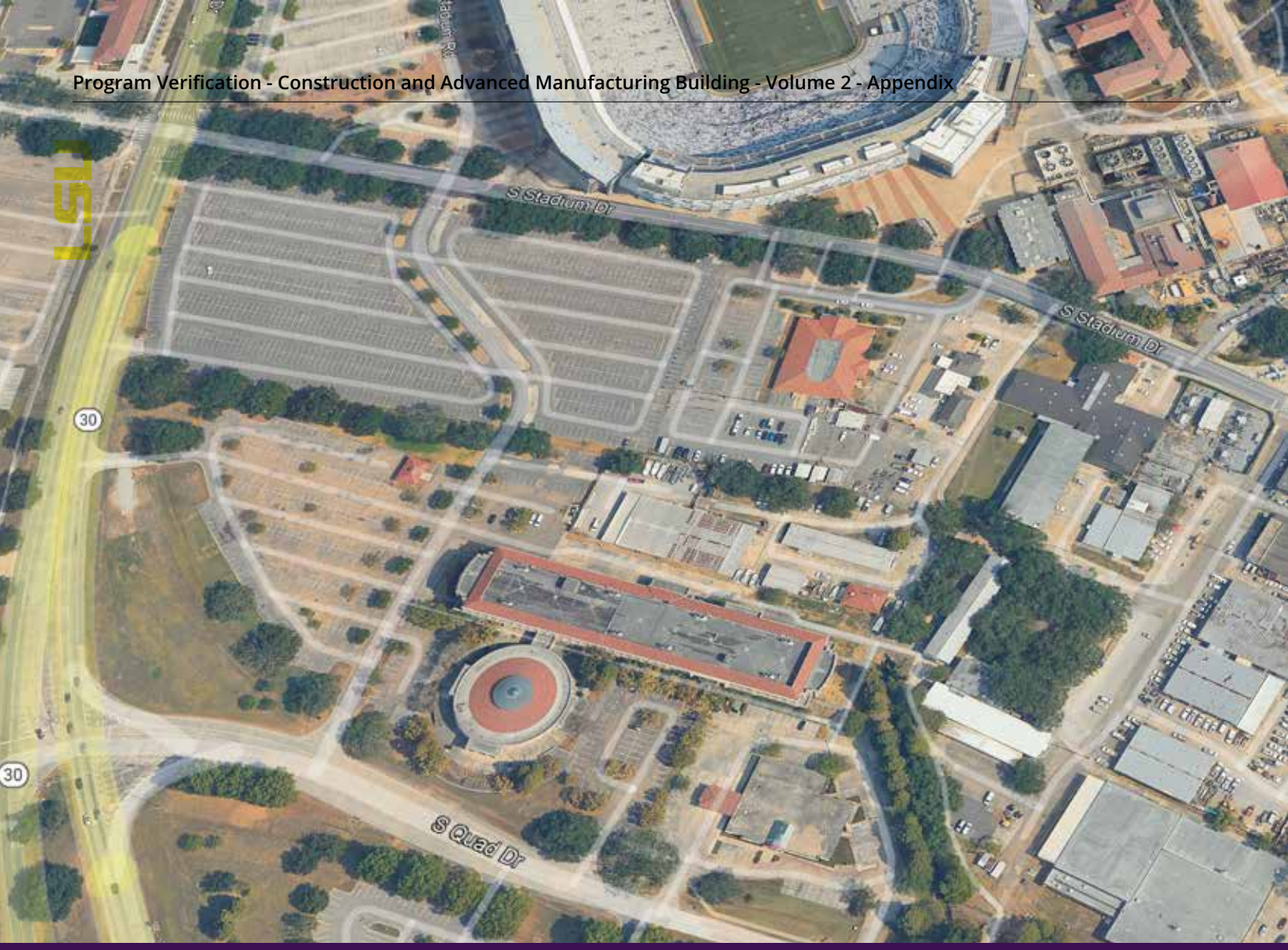

S Stadium Dr
S Stadium Dr
30
30
S Quad Dr

TABLE OF CONTENTS

1 Appendix 1

Grace Design Studio

Electromagnetic Field (EMF) Site Survey Report

LSU – Military Science Bldg. - Revision 0

10 August 2025

www.fms-corp.com

Document Information:

Project	LSU	
Client	Grace Design Studio	
Report title	Electromagnetic Field (EMF) Site Survey Report	
Project Number	Grace Design Studio - LSU	
Author	JB Kollar -Senior Project Manager jbkollar@fms-corp.com	
Reviewed by	James Tidwell	

Revision Table

Report revision	Date	Comments
0	10 August 2025	For client review

Glossary

EMI	Electromagnetic Interference
EMC	Electromagnetic Compatibility
EMF	Electromagnetic Field
RF	Radio Frequency
RFI	Radio Frequency Interference
AC	Alternating Current
DC	Direct Current
Quasi-DC	Quasi-DC (Variable Frequency – Alternating Current)
Tesla (T)	Unit of measure for magnetic fields (metric)
Gauss (G)	Unit of measure for magnetic fields (imperial)

Table of Contents

Summary

Field Management Services (hereafter FMS) was contacted by John Streva from Grace Design Studios for EMF/EMI Consultant Services to support a new 4-story Construction Management Building at Louisiana State University (LSU).

The new facility will be built adjacent to an existing campus electrical substation. It is understood that the new facility may house equipment sensitive to electromagnetic interference (EMI). Therefore, Grace Design Studios requested that FMS perform an EMI site survey to document ambient magnetic field levels.

Ambient magnetic field measurements were documented in various forms (e.g., spot, lateral distance, and timed) inside the Military Sciences Building, gymnasium, and surrounding parking and pedestrian areas.

The purpose of the survey was to document the existing EMI environmental conditions and, if necessary, recommend relocating or mitigating any laboratory area(s) or EMI-sensitive equipment that may be affected by electromagnetic interference.

1 Introduction

Most commercial, medical, and research facilities have instrumentation and equipment susceptible to environmental influences, including vibration, acoustic, and electromagnetic interference.

Electromagnetic Interference (EMI), in the context of the measured area, is caused by electromagnetic energy from internal or external sources that impacts the reception of intended signals or impedes the operation of equipment that receives, processes, and stores signals of research interest.

Electromagnetic fields have two components:

- Electric Fields are proportional to voltage – the higher the voltage, the higher the electric field.
- Magnetic Fields are proportional to current – the higher the current, the higher the magnetic field component.

Electric and Magnetic fields have distinct individual characteristics that affect EMI mitigation:

- Electric field mitigation at the frequencies of interest generally only requires a highly conductive surface to be effective. Mitigation of electric fields is often accomplished through a six-sided box comprised of a highly conductive material, and is commonly referred to as an RF shielding or Faraday cage.
- Magnetic field mitigation, depending on the frequencies of interest, may require thick, highly conductive material and highly permeable ferromagnetic material to be effective. However, in specific categories and research, mitigation may only need a thin, highly conductive surface.

Electronic equipment may be susceptible to EMI, which can be attributed to various electrical sources, including transformers, switchgear, electrical wiring, lighting, and wireless transmissions.

1.1 AC Magnetic Fields:

Current-carrying electrical conductors and devices naturally emit AC magnetic fields. The AC magnetic field strength emitted by electrical circuits is directly proportional to the magnitude of the electrical current. However, multiple-conductor cables carrying balanced currents have a low net emission, resulting from the natural cancellation of magnetic fields between opposing conductors. A rigid metallic conduit generally provides sound magnetic field reduction, provided that the feed and return currents are equal in magnitude and direction. If the electrical current from a circuit returns via an alternate path, then magnetic field levels emitted from such a circuit can increase significantly. This condition usually occurs if neutral circuits are "cross-connected" or illicit connections are made between a neutral and ground in a building's electrical distribution system. These are often referred to as "stray," "ground," or "net-current" conditions.

AC magnetic fields decrease naturally in intensity as a function of distance (d) from the source. The rate of decrease, however, can vary dramatically depending on the source. For example, magnetic fields from motors, transformers, and other sources decrease very quickly (1/d^3), while circuits in a typical conduit decay more slowly (1/d^2). Magnetic fields from "stray" currents on water pipes, building steel, etc., tend to decay much slower (1/d). Simply increasing the distance from the source(s) of an area with elevated magnetic field strengths can often reduce magnetic fields to an acceptable level.

Unlike electric fields that are relatively easily shielded by common materials used in commercial construction, magnetic fields can penetrate all but a very few specially manufactured and installed materials. AC magnetic fields will pass undiminished through the earth, concrete, and most metals, including lead. The actual AC magnetic field strengths within a given commercial building typically range from under 0.2 µT in open areas to several hundred µT near electrical equipment. Still, an ambient range of 0.2 to 4 µT can be considered typical for practical purposes.

Unfortunately, the effects of AC magnetic field levels on sensitive computer and telecommunications equipment are not well documented. Few such equipment or systems manufacturers provide meaningful sensitivity specifications or guidelines. Several major investment banking and e-commerce companies have established internal guidelines recommending that computer equipment, including cabling, data–hubs, network controllers, servers, etc., should not be operated in environments where AC magnetic field levels exceed 2 to 3 µT.

Medical equipment manufacturers report that equipment utilizing bioelectric sensors may experience interference when used in environments with moderately elevated ELF magnetic field conditions. ECG and EKG measurement equipment manufacturers often specify that AC magnetic field levels near their equipment should not exceed 0.2 µT.

1.2 DC/Quasi-DC Magnetic Fields:

Interference risks associated with AC magnetic fields are relatively well-documented in the literature. That is partly because electricity and the fields that emanate from power sources are ubiquitous. Interference issues related to DC or slowly varying (quasi-DC) fields are less well understood, although some principles are identical to those associated with AC magnetic field interference. DC fields are not fields but rather lines of flux. These flux lines emanate from the Earth and provide a compass that can indicate "Magnetic North."

The "field strength" of the Earth's magnetic field varies from place to place on the globe, but can be thought of as around 50 microTesla (µT). Through the characteristic of permeability, all magnetic fields, including the Earth's magnetic field, accumulate in iron or steel rather than air (air has a permeability of 1, and steel has a permeability of 1,000). Much as a conductive rod will attract an electric field (e.g., "lightning"), DC magnetic lines of flux will accumulate near the steel structure of a building, and field levels will be elevated, perhaps 100 µT or more. As the measurement instrument is moved away from the concentration of fields in the steel structures, the field levels will decrease, approaching approximately 30 µT.

Another way for elevated DC fields to occur is by the building steel becoming magnetized (welding during construction can cause magnetization, or a high field source like an MRI can permanently magnetize the steel around it). This can create areas of a building with fields in the range of 200 µT or more.

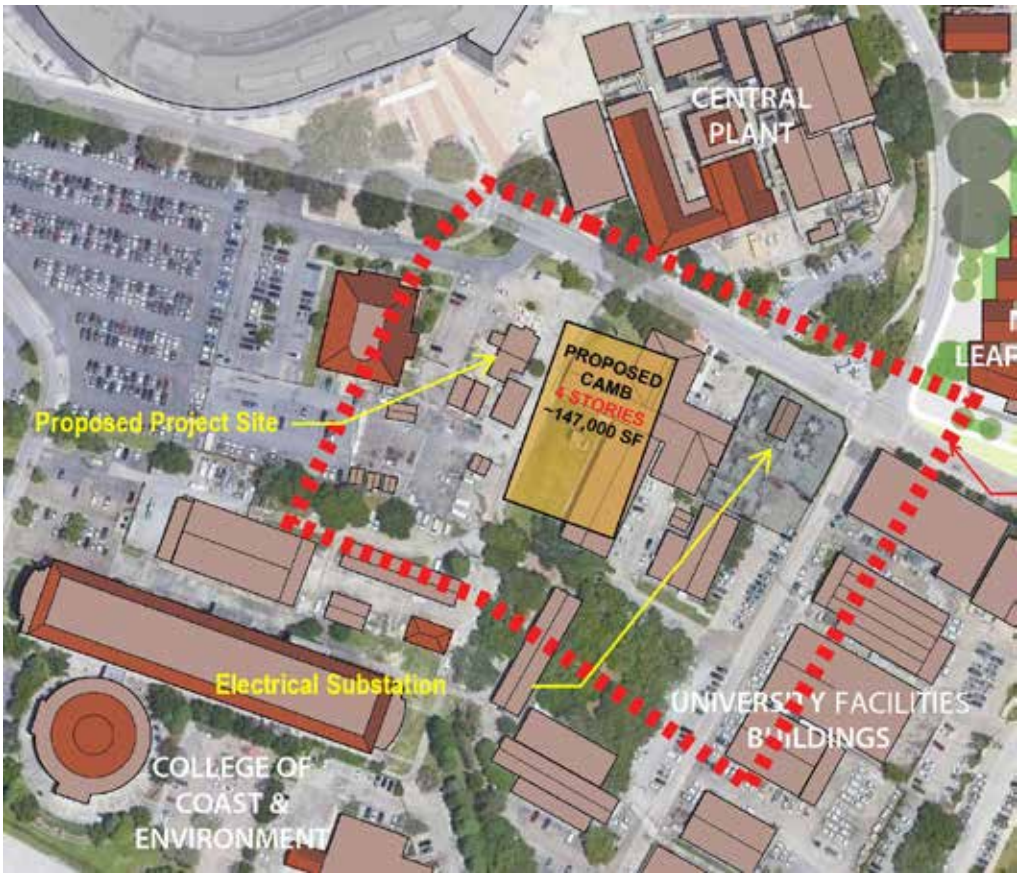
In most circumstances, even equipment “sensitive” to elevated AC magnetic fields is unaffected by elevated DC fields. Since they are, for most purposes, considered static, they do not move or increase/decrease in field strength, and they do not induce changes in the electronics. However, these DC fields can act like an AC field under certain circumstances. Their ability to interfere with electronics is then correspondingly increased.

Since magnetic fields prefer to travel inside iron or steel, a large mass of steel (a train, automobile, truck, or elevator) moving through a DC field temporarily distorts the flux lines. When the iron mass is outside the influence of the flux lines, it will return to its original position. Technically and effectively, this movement will resemble a slowly oscillating AC field.

2 Project Description

Field Management Services (hereafter FMS) was contacted by John Streva from Grace Design Studios for EMF/EMI Consultant Services to support a new 4-story Construction Management Building at Louisiana State University (LSU). The new facility will be built adjacent to an existing campus electrical substation. It is understood that the new facility may house equipment sensitive to electromagnetic interference (EMI). Therefore, Grace Design Studios requested that FMS perform an EMI site survey to document ambient magnetic field levels.

Ambient magnetic field measurements were documented in various forms (e.g., spot, lateral distance, and timed) inside the Military Sciences Building, gymnasium, and surrounding parking and pedestrian areas. The picture below illustrates the proposed location of the new facility.



3 Equipment Criteria

This EMI analysis aimed to document the existing "ambient" or background EMI conditions and compare them to the published manufacturer's EMI or user-defined criterion. FMS has not been provided with a manufacturer or user-defined EMI criterion.

FMS utilized industry-specific electromagnetic compatibility (EMC) standards and guidelines to evaluate the magnetic field conditions. The standards below apply to most electronics and instruments used in the Commercial/Light Industrial/Scientific/Medical (ISM) facility-type program environment.

Relative Standards	EMI/EMF Specification		
	AC Magnetic Fields (50-60 Hz) Power Frequency	DC Magnetic Fields	Electric Fields
EN 55024 (EMC - IT Equipment)	1 A/m (12.56 mG) (1.25 uT)	N/A	1 A/m (12.56 mG) (1.25 uT)
ISM-EMC Compliance (IEC 61000-4-8)	3 A/m (37.68 mG) (3.76 uT)	N/A	3 A/m (37.68 mG) (3.76 uT)

Note: The above-noted EMC standards apply to the immunity requirements of electrical and electronic equipment to radiate and conduct electromagnetic energy. Should any of the above-noted standards be found to be in error, the analysis results are subject to change.

4 Measurement Equipment

The following test equipment was utilized to document the ambient Broadband AC magnetic field levels during the on-site survey. A brief description of each measurement system is provided below.

4.1 DC/QUASI-DC (0 - 10 HZ) Measurements:

The DC measurement data were taken with a MEDA FVM-400 Vector Fluxgate Magnetometer, accompanied by a matching three-axis base probe. The FVM-400 is a precision instrument for measuring magnetic field vectors with a resolution of 1 nT (0.01 mG) and an accuracy of ± 0.25%.

The instrument configured for these measurements has a 0 – 10 Hz bandwidth. Using non-metallic support, measurements were taken at a standard elevation of 1 meter above grade. The FVM-400 can be configured to record either “Rectangular” data in the three orthogonal planes (x, y, & z) or “Polar” in which the instrument records R, D & I, the Resultant value, and the two angles, Declination (D, ±180º) and Inclination (I, ±90º).

DC Magnetic Field (0-10 Hz) Meter/Probe System

	Manufacturer	Model	Serial No.
	MEDA	FVM-4000	6880

The instrument can record data using one of three pre-programmed sample modes.

1. 7.5 seconds – 525 data points are recorded during a 7.5-second interval. This provides a very high-resolution view of the field changes; data is taken at intervals of 0.01439 seconds (67.5 samples/sec).

2. 30 seconds – 525 data points are recorded during a 30-second interval. This provides a high-resolution view of the field changes, though not as high as the 7.5-second mode. Data is taken at 0.05747 seconds (17.4 samples/sec).

3. Timed data – data is recorded at a sample rate of 3 seconds. This mode will not capture short-term events, such as the 7.5 or 30-second tests; however, over a considerable time, as in this study, it will capture virtually all of the longer-term, major shifts in field strength at a site.

For this analysis, FMS used a user-defined sampling rate of 0.5 seconds. After a measurement session, a file name is assigned that describes the test location's conditions, and the data is uploaded to a laptop computer equipped with interface software. This system provides an accurate view of changes in the DC and near-DC levels (Quasi-DC) as a function of the instantaneous field values between 0 and 10 Hz.

4.2 Broadband (5 Hz – 1 kHz) Magnetic Field Measurements:

Broadband magnetic field measurements were taken using a NARDA EHP-50C electric/magnetic field analyser and a fiber-optic cable to a laptop computer running proprietary EHP-TS software. The EHP-50C is a low-frequency electric and magnetic field isotropic probe analyzer providing field measurements from 0.1 Hz to 100 kHz.

The sensitivity range of the EHP-50C is 0.01 V/m for electric fields and 1.0 nT (0.01 mG) for magnetic fields. The NARDA EHP-50C equipment is shown below. For this analysis, FMS used the bandwidth of 5 Hz to 1 kHz.

Magnetic Field Strength Probe

Manufacturer		Model Number	Serial Number
	**NARDA**	**EHP-50C**	**510WY91153**

4.3 AC (60 Hz) Magnetic Field Measurements:

To provide magnetic field level measurements over a larger distance and to determine the lateral decay rate from the substation (source), FMS measured the magnetic fields along a straight pathway (or lateral) at multiple locations (see Exhibits 1A-1B).

At each location, the AC (60 Hz) magnetic field measurements were recorded using a calibrated Dexsil FieldStar 1000 Gauss meter. The Field Star 1000/4000 gaussmeters are computer-controlled, three-axis magnetic field exposure meters. Each of the three-axis sensors measures the magnetic field, and the onboard computer uses the individual vectors to calculate a resultant field value (Brms).

The resultant is comparable to a maximum field value and is calculated as the square root of the sum of the squares for all three orthogonal axes, $Br = \sqrt{(Bx^2 + By^2 + Bz^2)}$. The magnetic field measurements (specifically for this piece of equipment, as reported in this document) are presented as RMS (root mean square) values.

Manufacturer		Model No.	Serial No.
	**DEXSIL**	**FS-1000** **FS-4000**	**31400299** **31400288**

5 Measurement Analysis

5.1 Measurement Procedures:

As noted in Section 2, Ambient magnetic field measurements were documented in various forms (e.g., spot, lateral distance, and timed) inside the Military Sciences Building, gymnasium, and surrounding parking and pedestrian areas.

Exhibit 1A illustrates where quasi-DC spot measurements, broadband magnetic and electric fields, and AC (60 Hz) lateral measurements were documented. Note: all measurements were recorded at 1 meter above ground/floor level.

- Location #1 quasi-DC spot measurements (ground floor)
- Location #2 quasi-DC spot measurements (ground floor)
- Laterals 5-8 AC (60 Hz) spot measurements recorded at 2-foot intervals

Exhibit 1A

Note: The red arrow depicts the direction of the lateral (starting as close to the substation as possible).

Exhibit 1B illustrates where AC (60 Hz) lateral measurements were documented. Note: all measurements were recorded at 1 meter above ground/floor level.

- Laterals 1-4 AC (60 Hz) spot measurements recorded at 2-foot intervals (MSB)

Exhibit 1B

Note: Lateral #1 started at the entrance to the MSB and traversed to the main junction in the center of the building and made a loop (or square) around the intersection. All other laterals were a single, straight line.

Exhibit 1C illustrates where quasi-DC spot measurements, broadband magnetic and electric fields, and AC (60 Hz) lateral measurements were documented. Note: all measurements were recorded at 1 meter above ground/floor level.

- Locations #11-14 AC Broadband measurements (ground floor)
- Locations #15-16 AC Broadband measurements (2nd Level)

Exhibit 1C

5.2 Measurement Results:

Ambient quasi-DC magnetic field measurements were recorded at Locations #1 and #2 on 25 July 2025 with the following results:

Quasi-DC (0-10 Hz) Magnetic Field Measurements:

Figures 1A-2A illustrate the quasi-DC (0 Hz – 10 Hz) magnetic field strength measurements recorded at Locations #1 and #2 at an elevation of 1 meter above the floor (see Exhibit 1A). Each figure illustrates the quasi-DC perturbation in each axis (peak-to-peak) caused mainly by the nearby vehicular traffic. A summary of the quasi-DC measurements is described below. Appendix A contains individual graphics for each location.

Quasi-DC Magnetic Field Summary (p-p)						
	Location #1			Location #2		
	X	Y	Z	X	Y	Z
Minimum	-217.62	52.35	374.30	-182.33	36.23	427.10
Maximum	-216.56	52.82	375.80	-181.74	36.90	427.96
1-Second Delta	0.69	0.21	0.86	0.36	0.31	0.53
Total Delta	1.06	0.47	1.50	0.59	0.67	0.86
"X" & "Y" axis' are Horizontal, while "Z" axis is Vertical						

Broadband AC (5 Hz – 10 kHz) Magnetic/Electric Field Measurements:

Broadband AC measurements were recorded at six (6) locations, four (4) locations on the ground level, and two (2) on Level 2, as illustrated on Exhibit 1B. The frequency bandwidth measured was 5 Hz to 1 kHz, capturing magnetic and electric field strength levels.

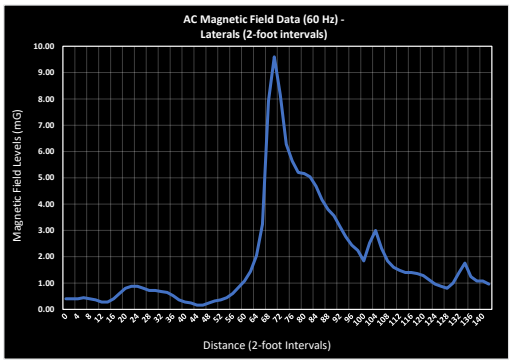
The 60 Hz magnetic field ranges from 0.243 mG to 1.294 mG, and the electric field values range from 0.031 V/m to 258 V/m, as illustrated in the chart below.

AC Broadband Magnetic Field Summary			
Location	Level (elevation)	Magnetic Field (peak)	Electric Field (peak)
Location #1	Ground	0.387 mG @ 60 Hz	0.032 V/m @ 60 Hz
Location #2	Ground	0.384 mG @ 60 Hz	0.041 V/m @ 60 Hz
Location #3	Ground	0.956 mG @ 60 Hz	0.199 V/m @ 60 Hz
Location #4	Ground	0.243 mG @ 60 Hz	0.258 V/m @ 60 Hz
Location #5	Level 2	0.578 mG @ 60 Hz	0.031 V.m @ 60 Hz
Location #6	Level 2	1.294 mG @ 60 Hz	0.124 V/m @ 60 Hz

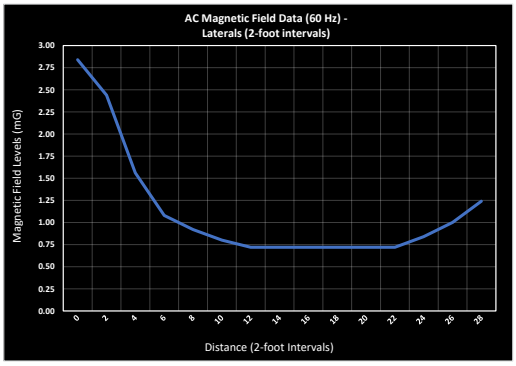
AC (60 Hz) Magnetic Field Spot Measurements (Laterals):

AC (60 Hz) magnetic field spot measurements (in the form of lateral distances) were recorded in eight (8) locations. Laterals 1 to 4 (see Exhibit 1A) were recorded inside the Military Sciences Building (MSB), while Laterals 5 to 8 (see Exhibit 1B) were recorded outside the facility (starting as close to the substation as possible). A summary of the measurements is described below.

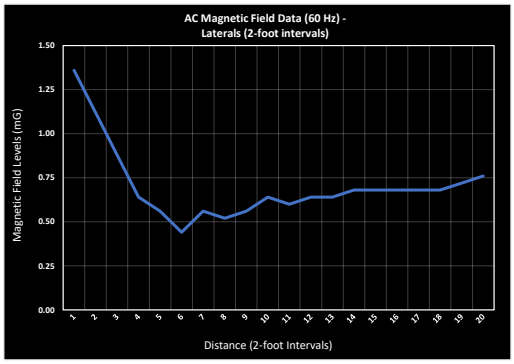
AC (60 Hz) Magnetif Field Spot Measurement (Laterals) Summary								
	Lateral 1	Lateral 2	Lateral 3	Lateral 4	Lateral 5	Lateral 6	Lateral 7	Lateral 8
Minimum	0.16	0.72	0.44	0.16	0.24	0.72	2.16	0.80
Maximum	9.60	2.84	1.36	2.52	1.16	4.56	5.24	2.96



Lateral #1



Lateral #



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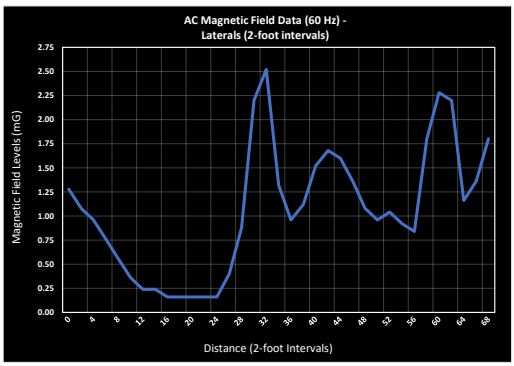

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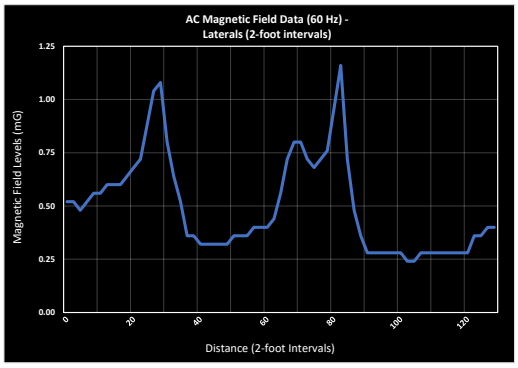

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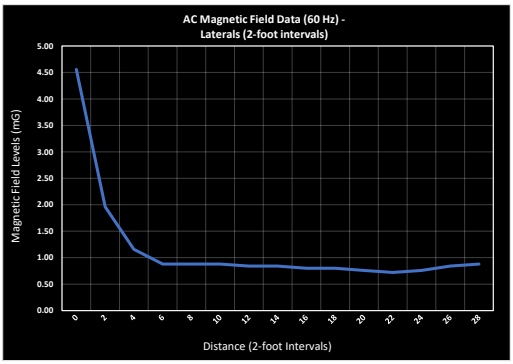

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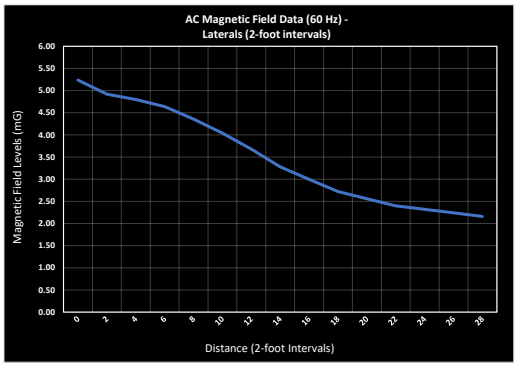
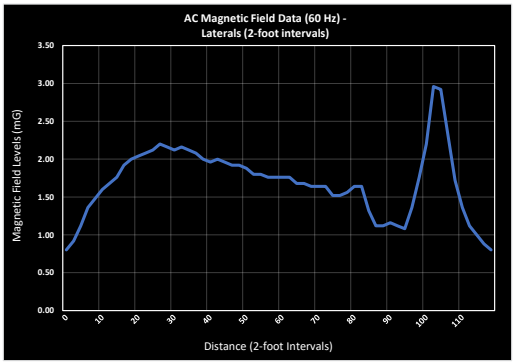


Lateral #7



Lateral #8

6 Conclusions

As discussed in Chapter 3, FMS has not been provided with a manufacturer or user-defined EMI criterion, and no other details concerning the research have been provided. However, regarding the collected ambient EMI data, the AC broadband magnetic and electric field measurements fell within the 12.56 mG industry-specific electromagnetic compatibility (EMC) criteria (see Section 3).

The highest AC (60 Hz) magnetic field peak was 9.6 mG (Lateral #1 – see Exhibit 1B), and it was next to a distribution panel in the hallway on the ground level of the MSB. Since the MSB and the adjacent building will be demolished for the new facility, these sources will not exist.

Regarding the substation, the magnetic field levels decay rapidly from the source. For example, Lateral #6 starts off with a magnetic field level of 4.56 mG (next to the substation), but quickly decays as you move away from the substation, and by the time you're at the edge of the MSB, the levels have dropped to 0.72 mG.

The measurements presented in the report represent the EMF levels documented during the survey. Environmental changes impact EMF levels and may affect the results of this survey and/or recommendations. Should any of these conditions or specifications change in the future, the conclusions in this report are subject to change.

FMS suggests sharing this report with design team personnel as soon as time permits. If the design team has any questions, please don't hesitate to contact us.

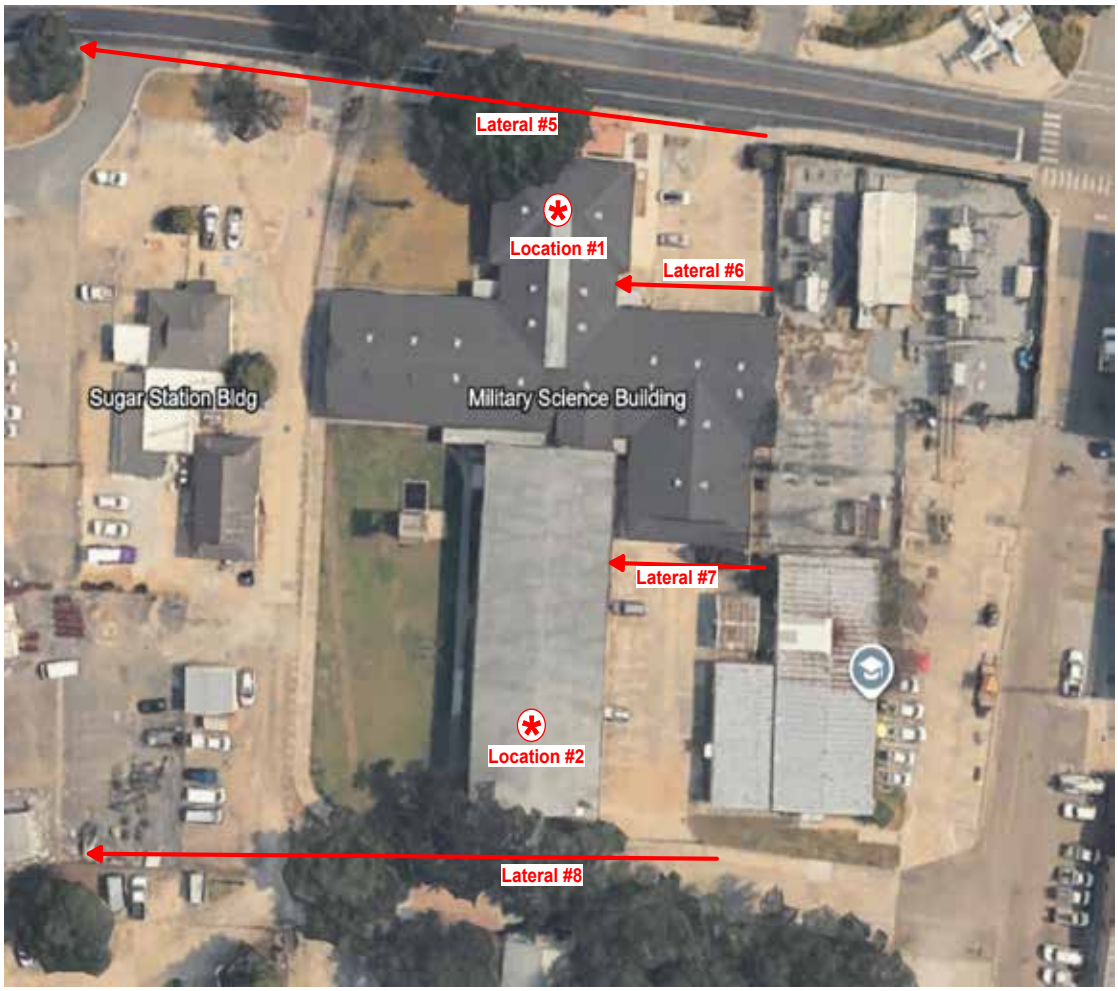
7 Appendix

Grace Design Studio
Recording Locations

Exhibit 1A

DC Magnetic Field Testing Locations Ground Floor

AC (60 Hz) Magnetic Field - Lateral Locations



Field Management Services
New York - Los Angeles - Metro DC

Grace Design Studio
Recording Locations

Exhibit 1B

AC (60 Hz) Magnetic Field - Lateral Locations Ground Floor

FMS
Field Management Services
New York - Los Angeles - Metro DC

Grace Design Studio
Recording Locations

Exhibit 1C

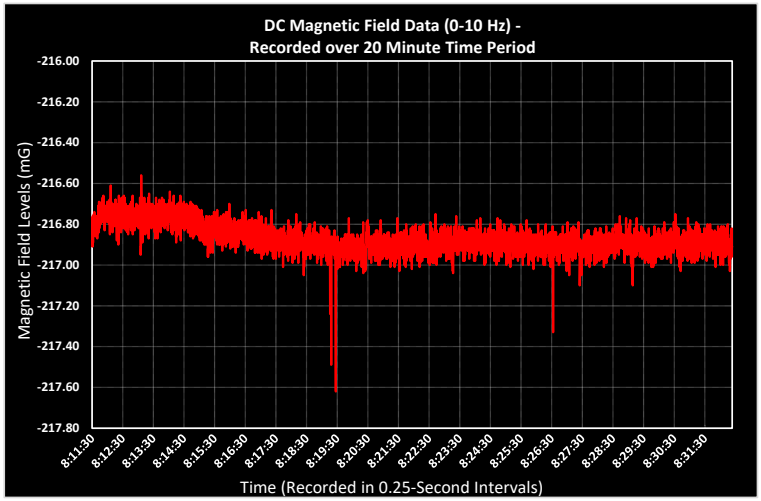
AC Broadband Testing Locations Ground Floor

AC Broadband Testing Locations Level 2

FMS
Field Management Services
New York - Los Angeles - Metro DC

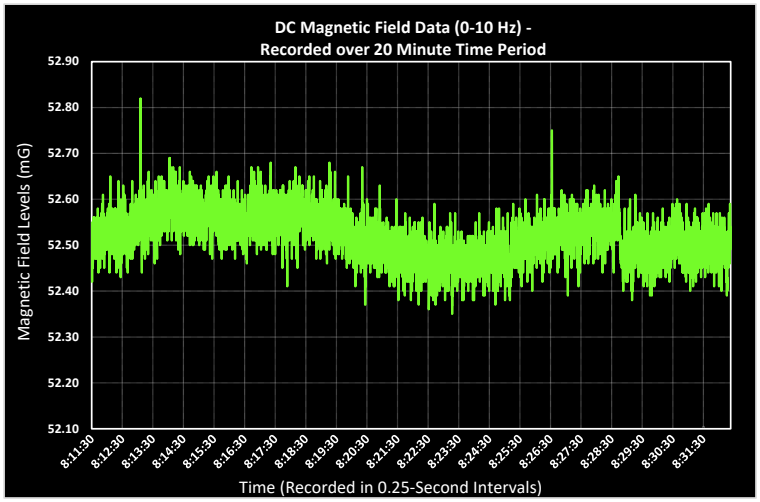
Grace Design Studio
Location 1
EMI Analysis - DC (0 Hz -10 Hz) Magnetic Field Strength
Measurements - Data Recorded 1 Meter A.F.F.

Figure 1A



X-Axis (Horizontal)

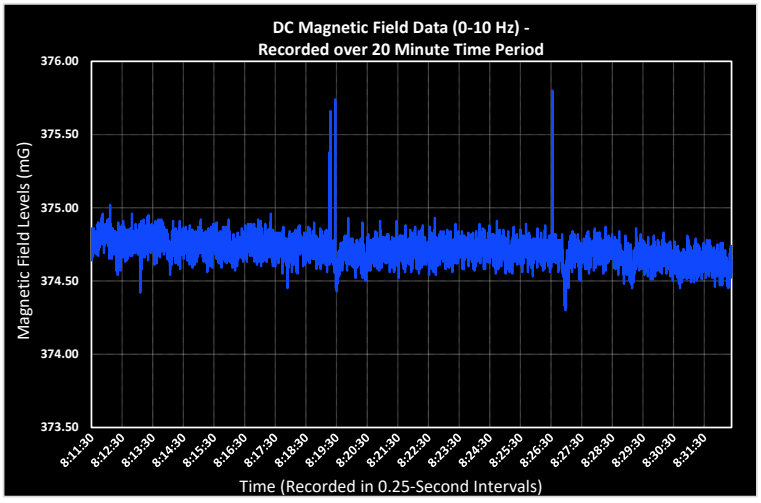
Magnetic Field Levels	
Minimum	-217.62
Maximum	-216.56
1 Sec. Delta	0.69
Total Delta	1.06



nT to mG Conversion
10 nT = 0.1 mG

Y-Axis (Horizontal)

Magnetic Field Levels	
Minimum	52.35
Maximum	52.82
1 Sec. Delta	0.21
Total Delta	0.47

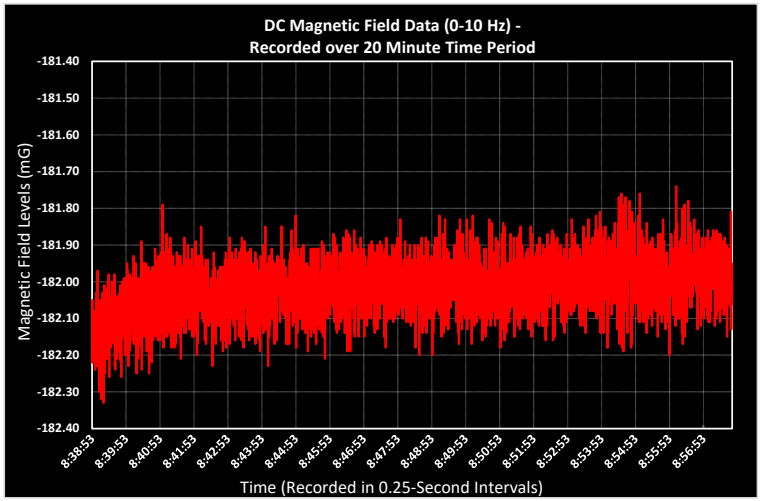


Z-Axis (Vertical)

Magnetic Field Levels	
Minimum	374.30
Maximum	375.80
1 Sec. Delta	0.86
Total Delta	1.50

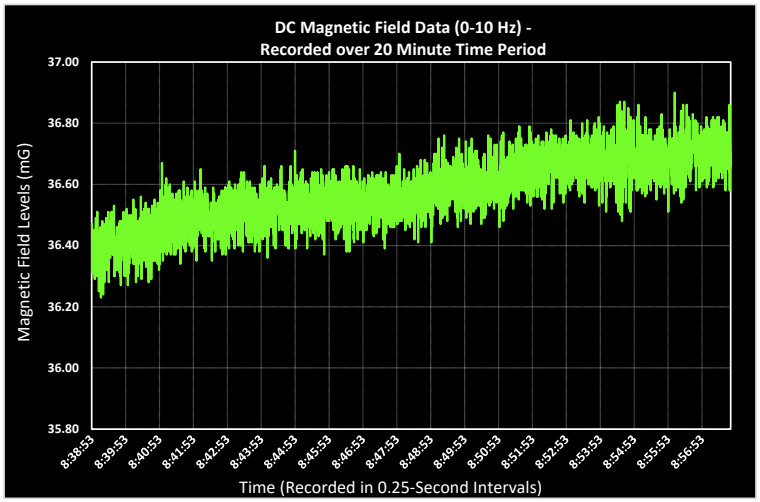
Grace Design Studio
Location 2
EMI Analysis - DC (0 Hz -10 Hz) Magnetic Field Strength
Measurements - Data Recorded 1 Meter A.F.F.

Figure 2A



X-Axis (Horizontal)

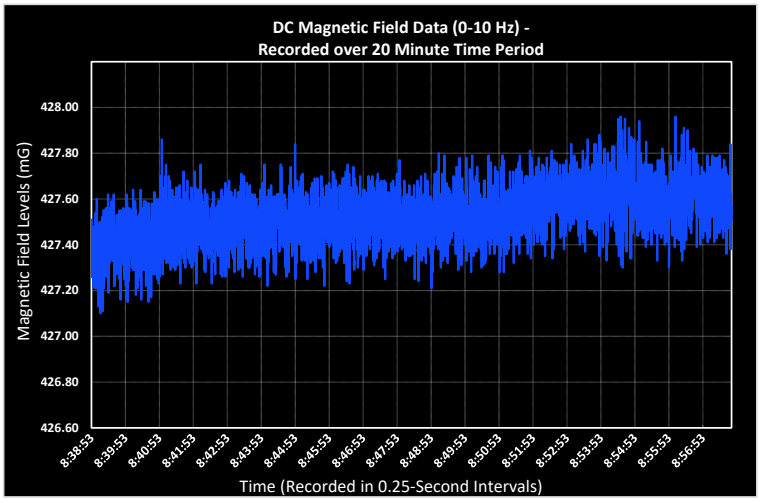
Magnetic Field Levels	
Minimum	-182.33
Maximum	-181.74
1 Sec. Delta	0.36
Total Delta	0.59



nT to mG Conversion
10 nT = 0.1 mG

Y-Axis (Horizontal)

Magnetic Field Levels	
Minimum	36.23
Maximum	36.90
1 Sec. Delta	0.31
Total Delta	0.67



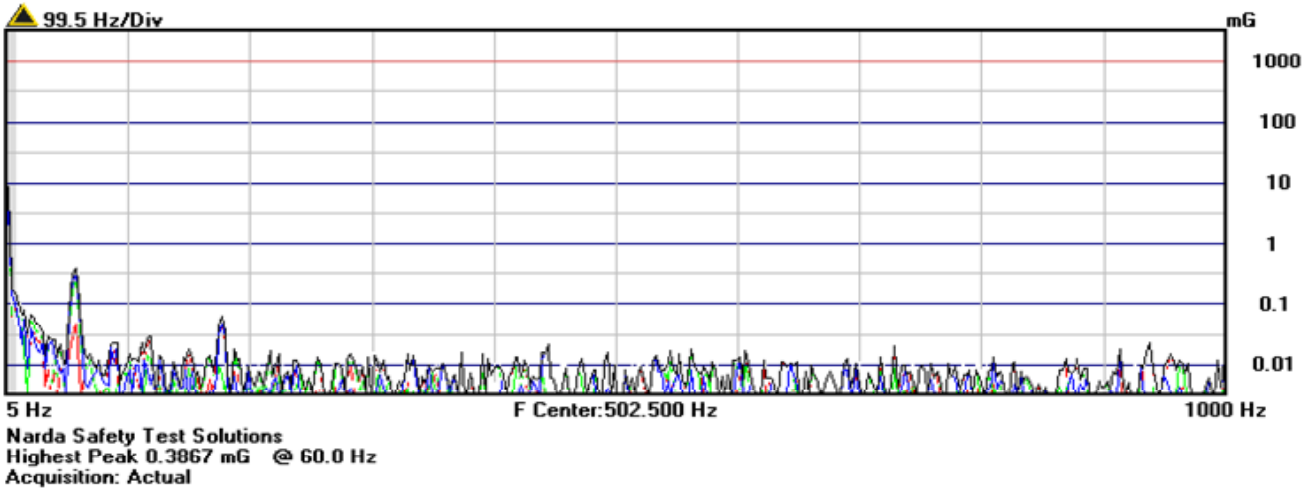
Z-Axis (Vertical)

Magnetic Field Levels	
Minimum	427.10
Maximum	427.96
1 Sec. Delta	0.53
Total Delta	0.86

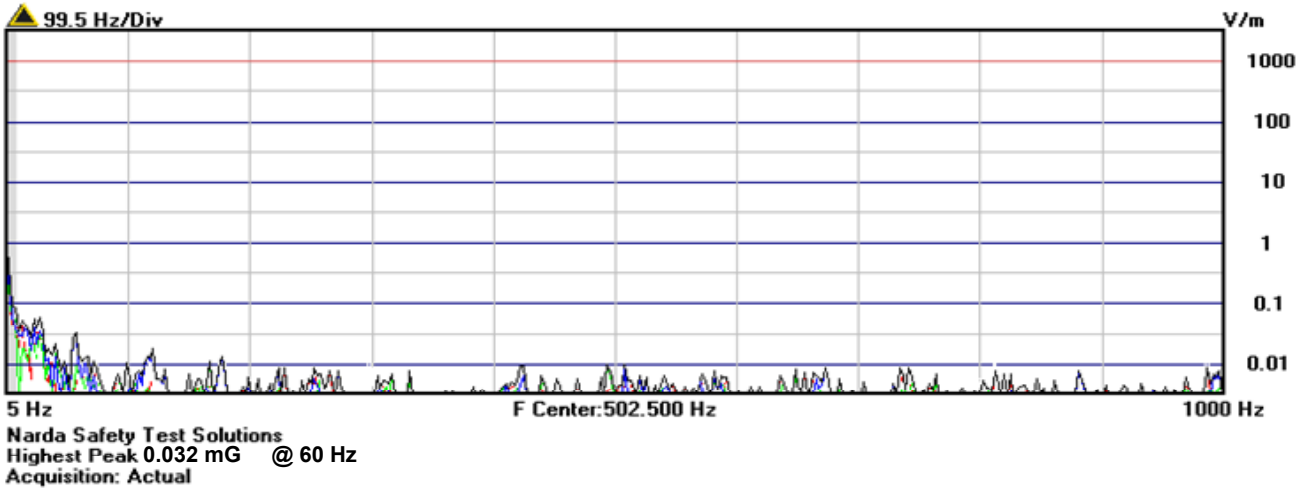
Grace Design Studios - LSU
Location 11
EMI Analysis - Broadband (5 Hz - 1 kHz)
AC Magnetic & Electric Field Levels
Data Recorded 1 Meter A.F.F.

Figure 3A

Magnetic Field Strength Measurements



Electric Field Strength Measurements

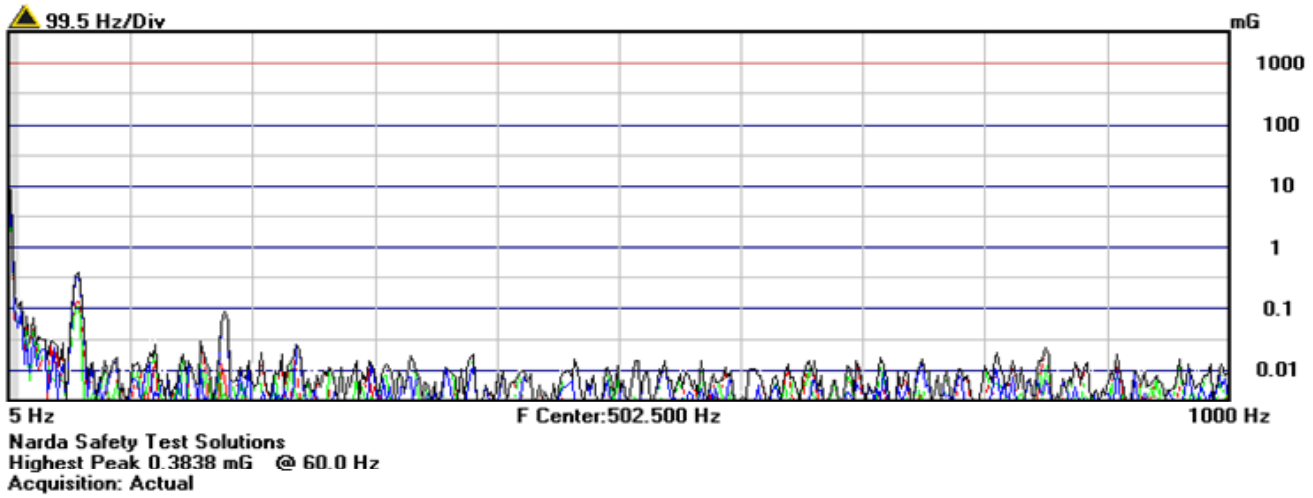


Field Management Services
New York - Los Angeles - Metro DC

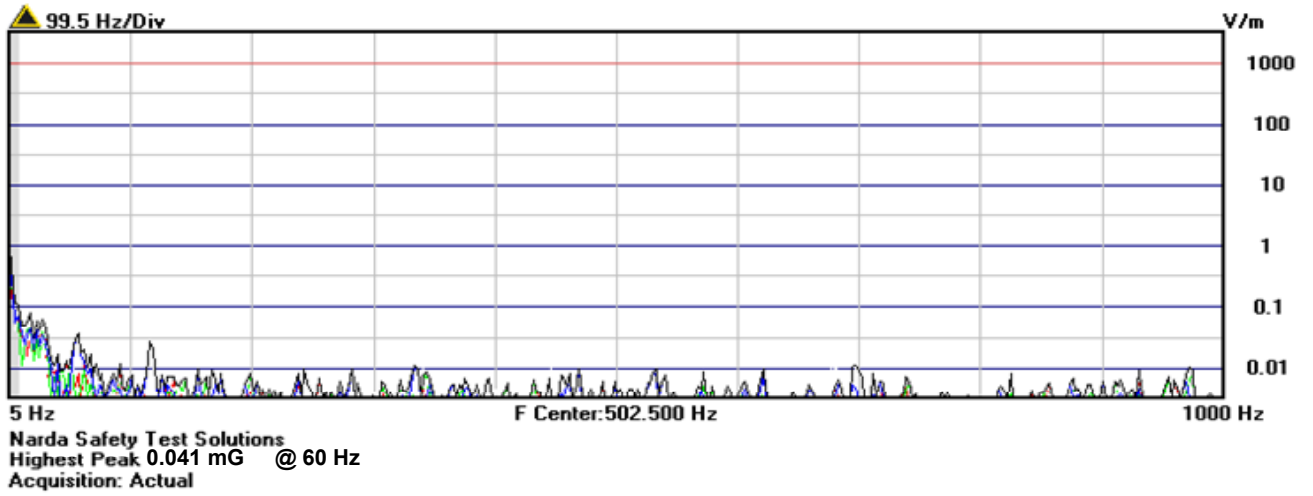
Grace Design Studios - LSU
Location 12
EMI Analysis - Broadband (5 Hz - 1 kHz)
AC Magnetic & Electric Field Levels
Data Recorded 1 Meter A.F.F.

Figure 3B

Magnetic Field Strength Measurements



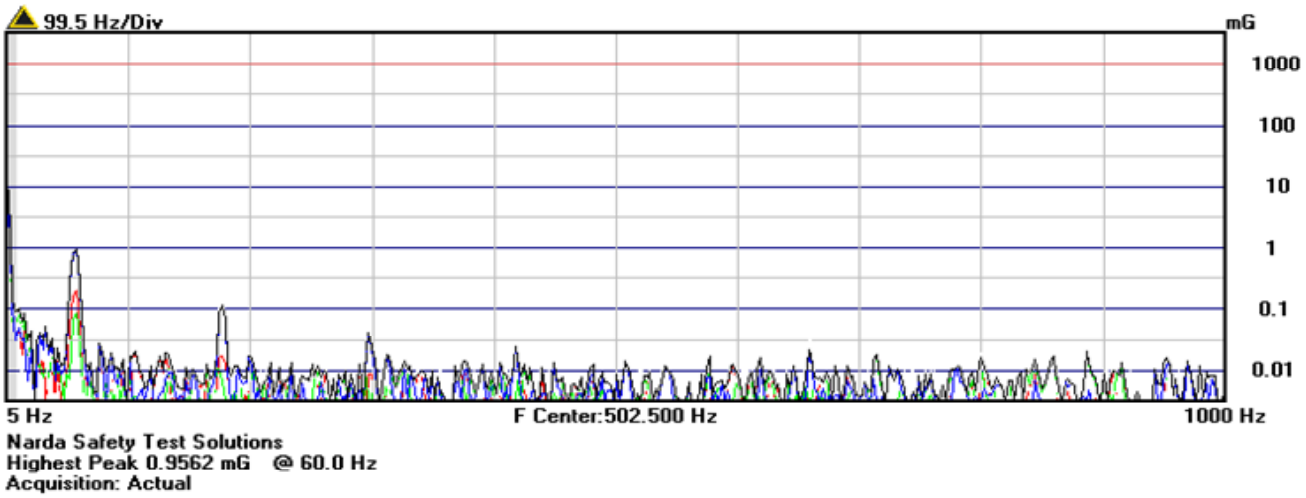
Electric Field Strength Measurements



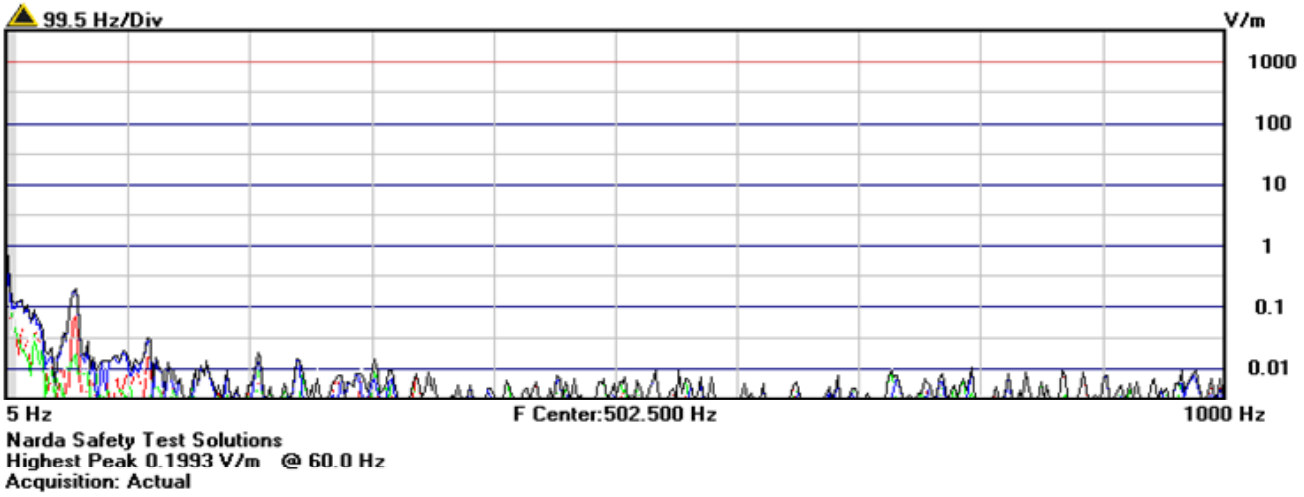
Grace Design Studios - LSU
Location 13
EMI Analysis - Broadband (5 Hz - 1 kHz)
AC Magnetic & Electric Field Levels
Data Recorded 1 Meter A.F.F.

Figure 3C

Magnetic Field Strength Measurements



Electric Field Strength Measurements

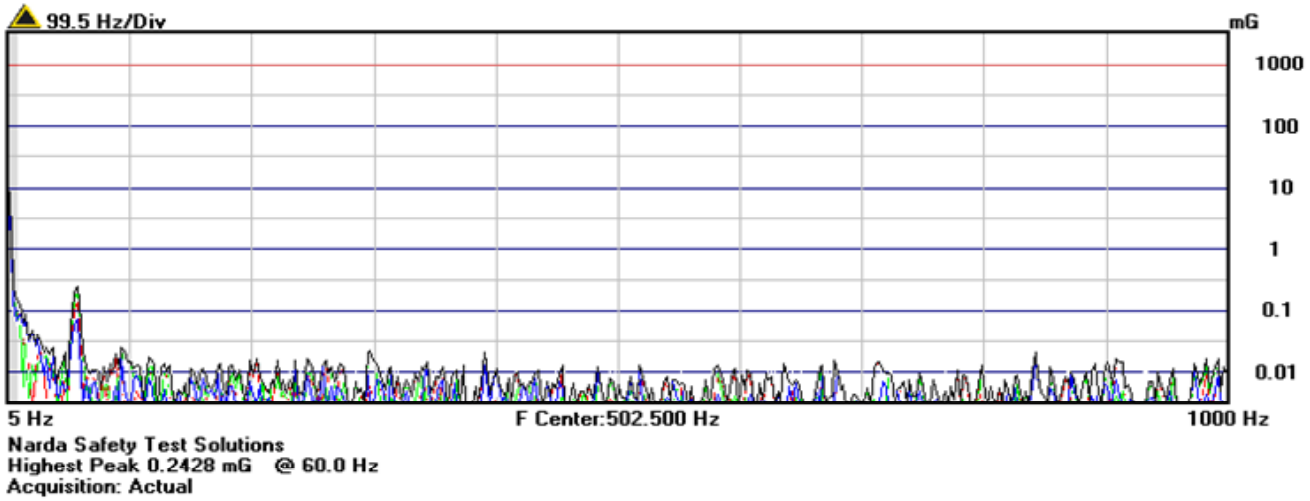


FMS
Field Management Services
New York - Los Angeles - Metro DC

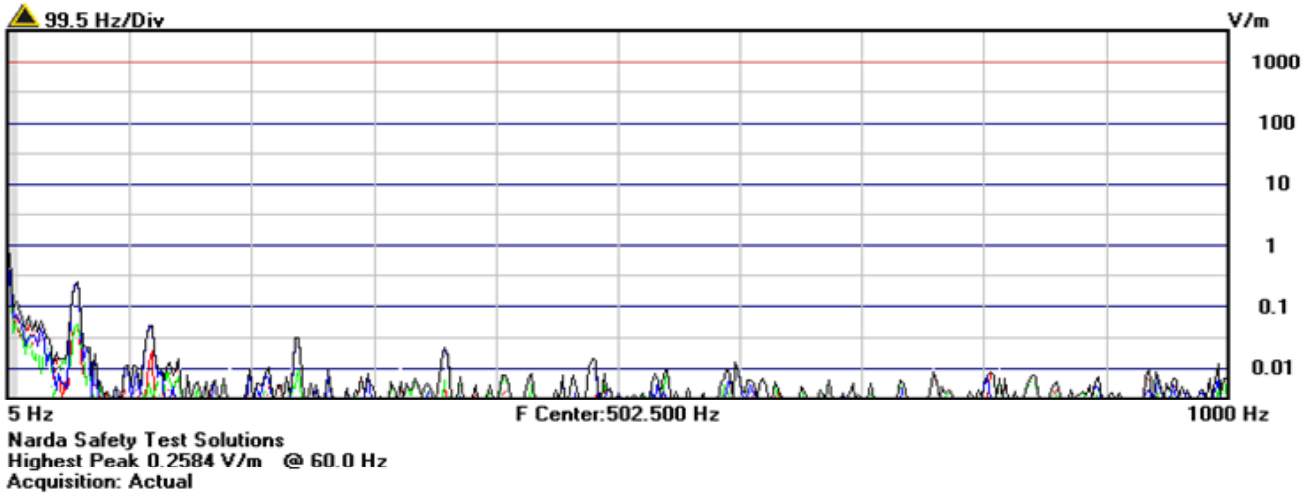
Grace Design Studios - LSU
Location 14
EMI Analysis - Broadband (5 Hz - 1 kHz)
AC Magnetic & Electric Field Levels
Data Recorded 1 Meter A.F.F.

Figure 3D

Magnetic Field Strength Measurements



Electric Field Strength Measurements



FMS
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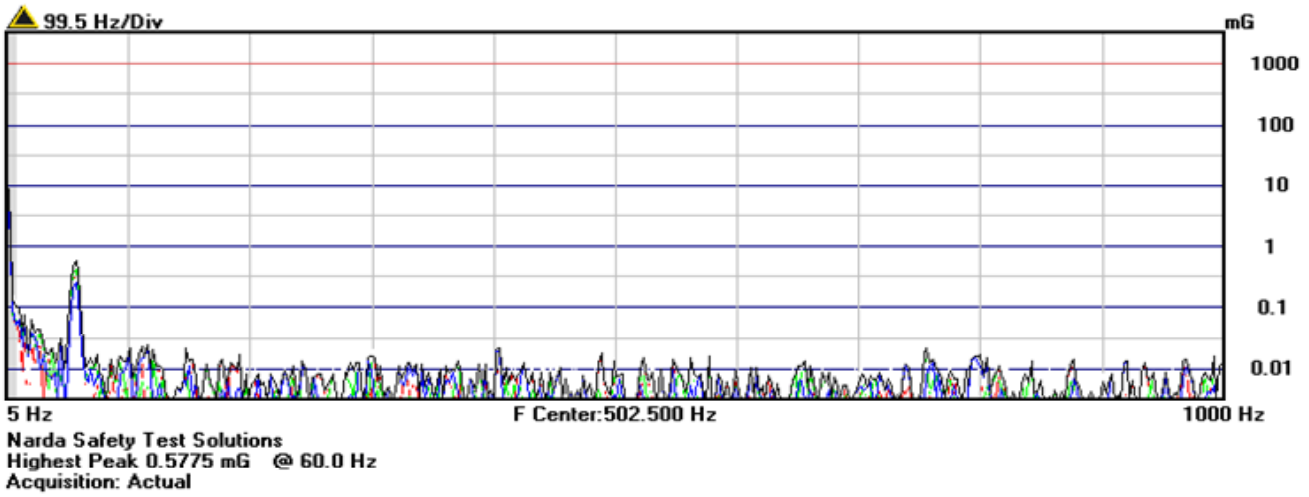
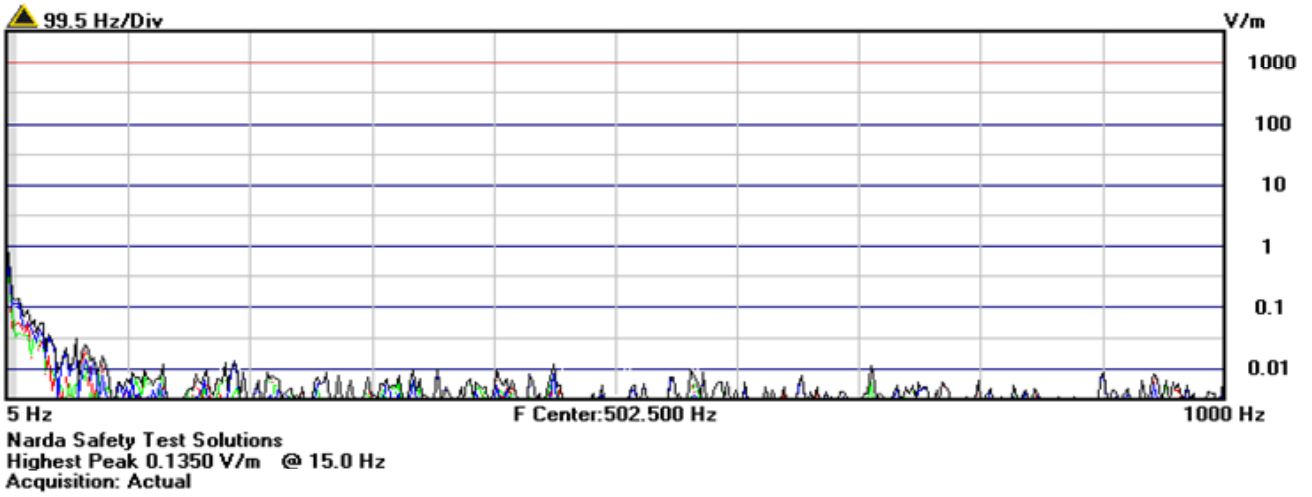
Grace Design Studios - LSU
Location 15
EMI Analysis - Broadband (5 Hz - 1 kHz)
AC Magnetic & Electric Field Levels
Data Recorded 1 Meter A.F.F.

Figure 3E

Magnetic Field Strength Measurements



Electric Field Strength Measurements



FMS
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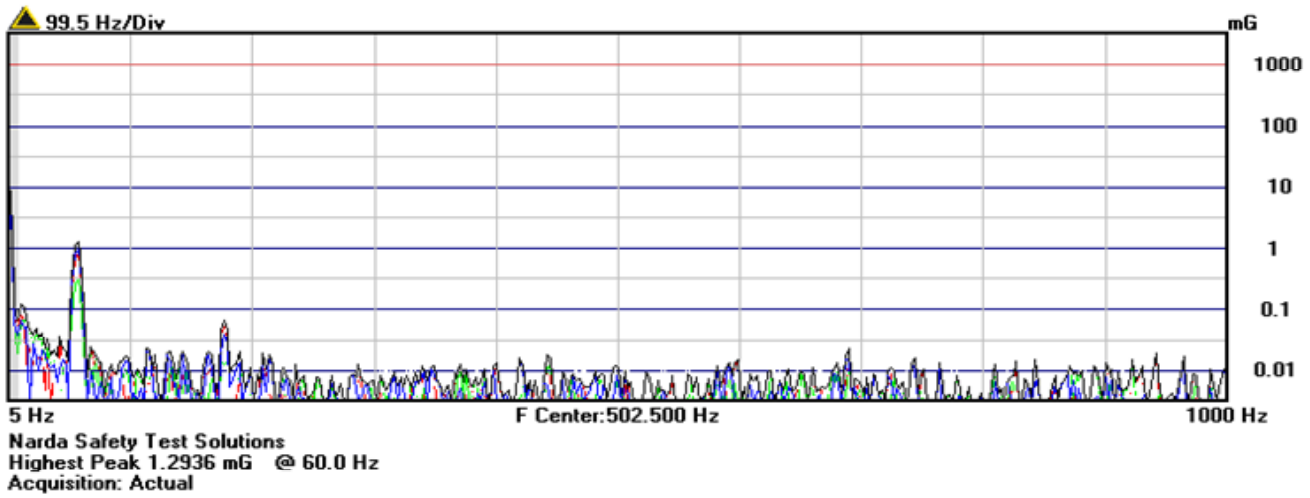
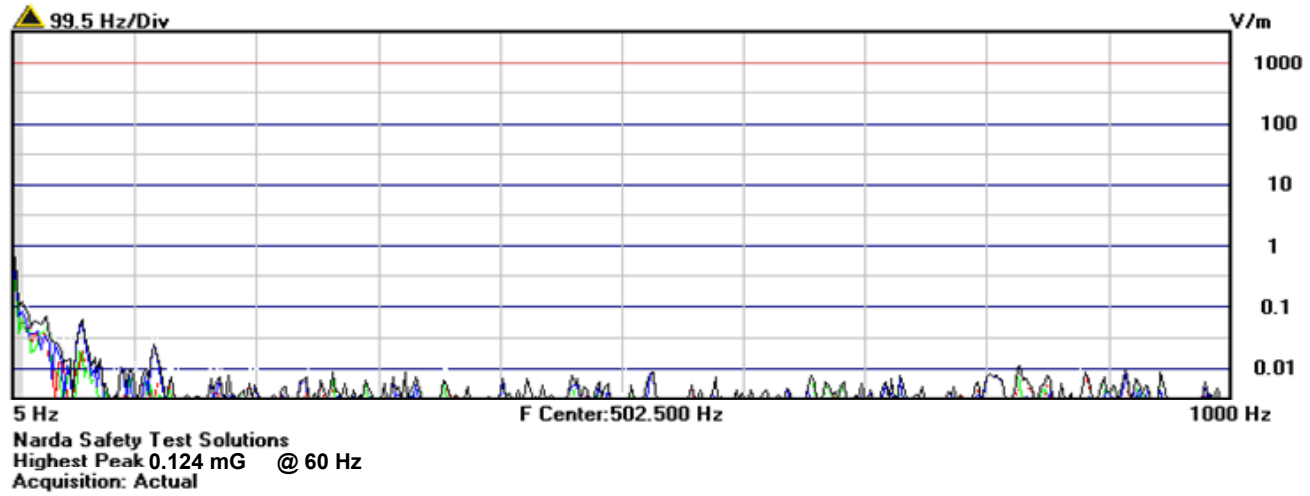
Grace Design Studios - LSU
Location 16
EMI Analysis - Broadband (5 Hz - 1 kHz)
AC Magnetic & Electric Field Levels
Data Recorded 1 Meter A.F.F.

Figure 3F

Magnetic Field Strength Measurements



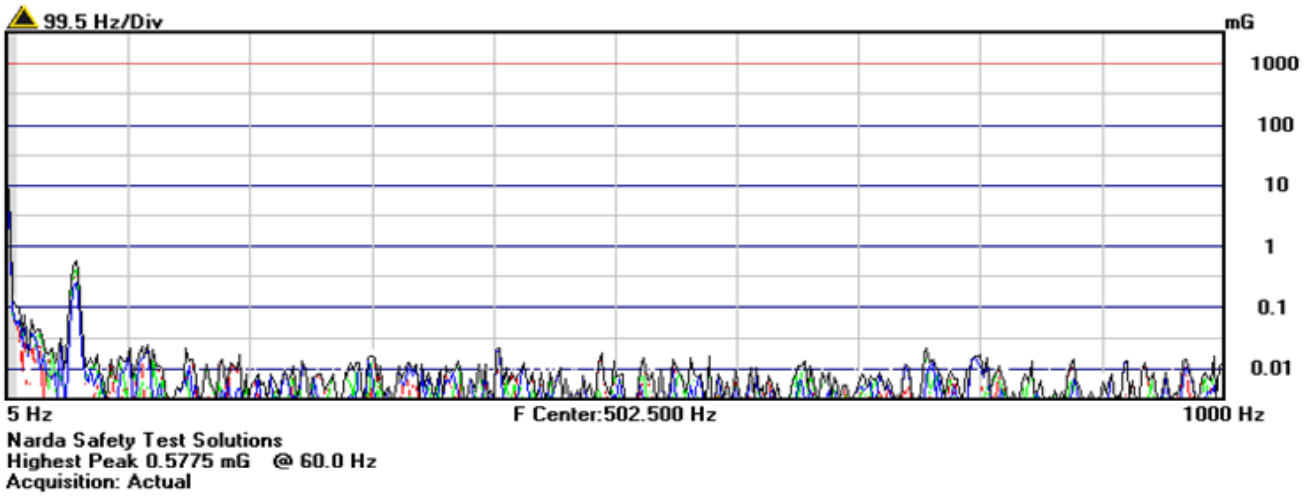
Electric Field Strength Measurements



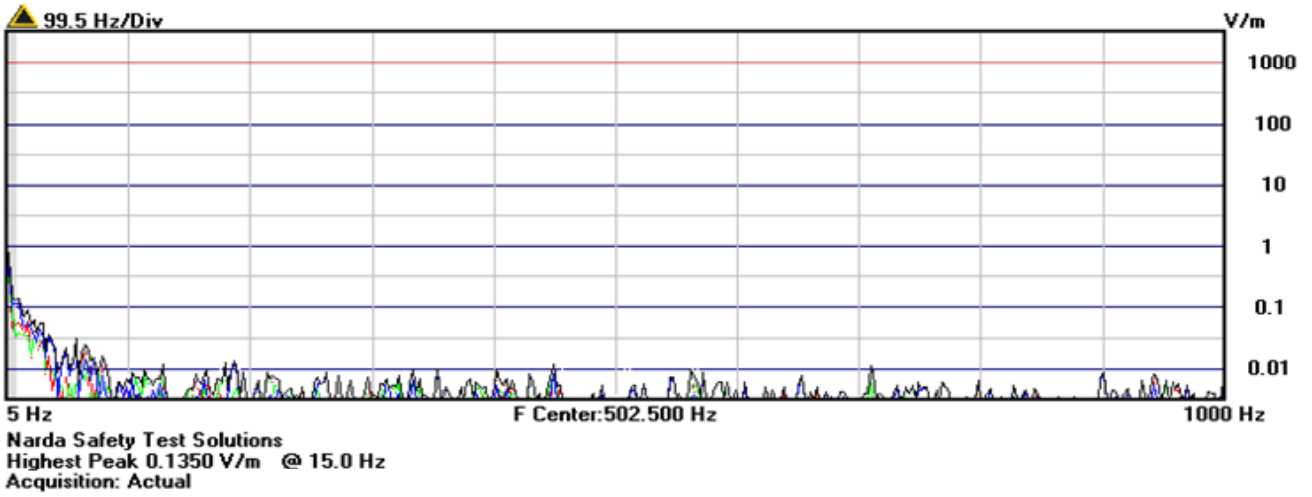
Grace Design Studios - LSU
Location 15
EMI Analysis - Broadband (5 Hz - 1 kHz)
AC Magnetic & Electric Field Levels
Data Recorded 1 Meter A.F.F.

Figure 3E

Magnetic Field Strength Measurements



Electric Field Strength Measurements



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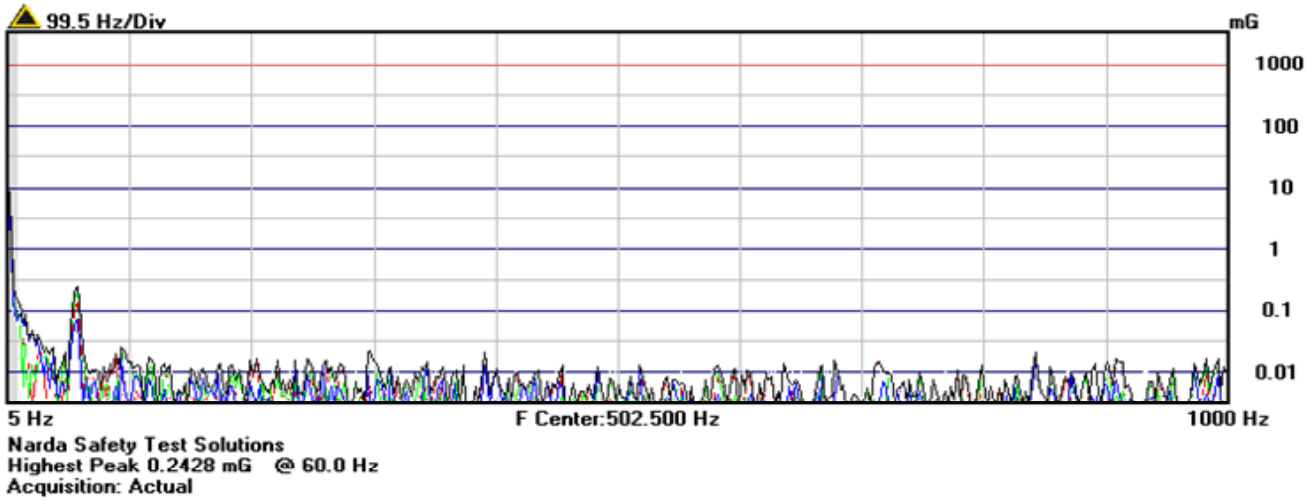
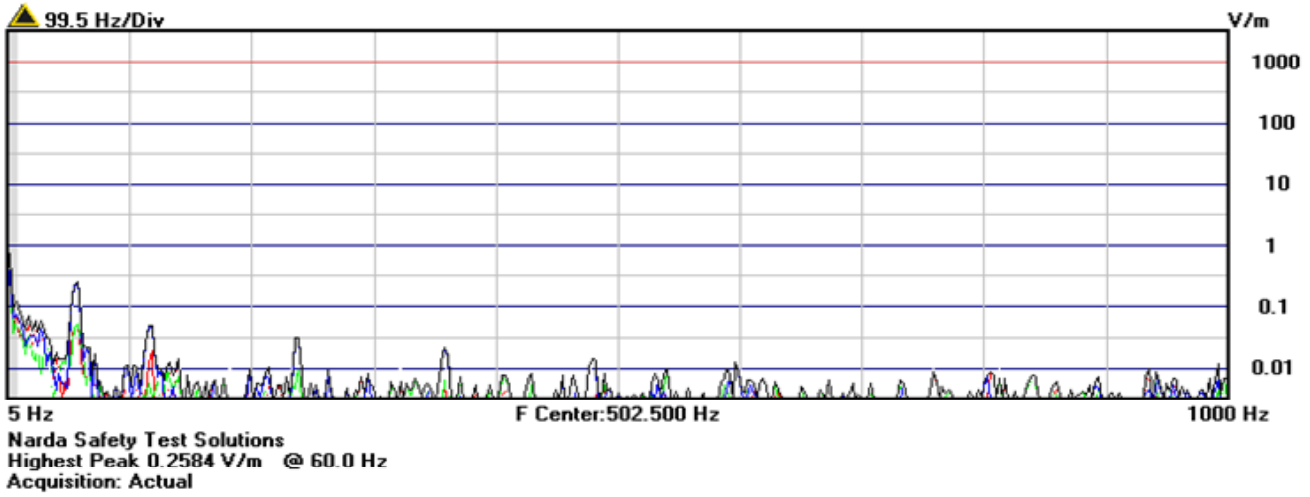
Grace Design Studios - LSU
Location 14
EMI Analysis - Broadband (5 Hz - 1 kHz)
AC Magnetic & Electric Field Levels
Data Recorded 1 Meter A.F.F.

Figure 3D

Magnetic Field Strength Measurements



Electric Field Strength Measurements



FMS
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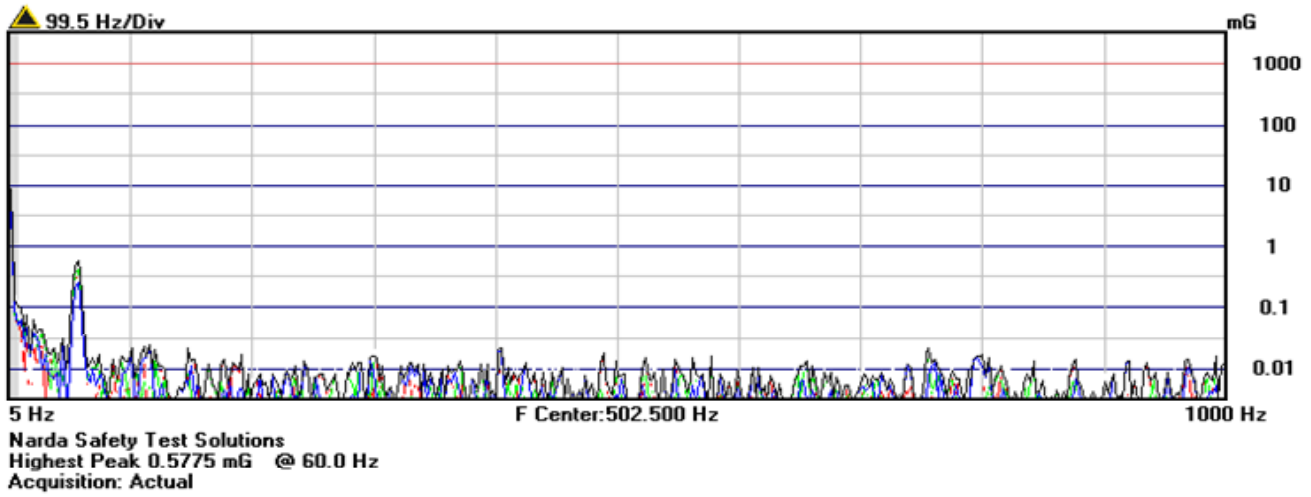
New York - Los Angeles - Metro DC

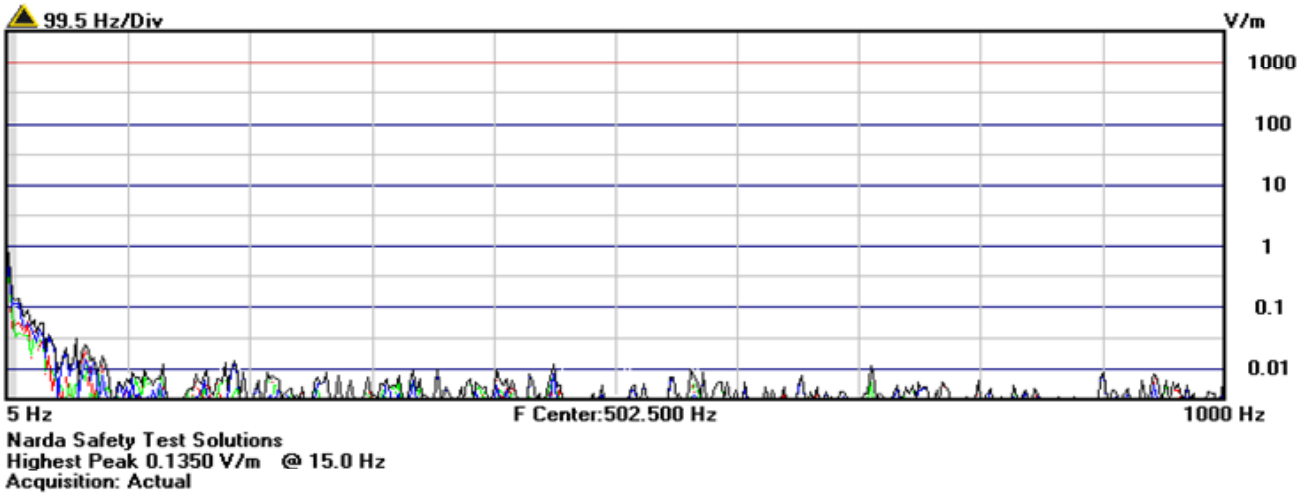
Grace Design Studios - LSU
Location 15
EMI Analysis - Broadband (5 Hz - 1 kHz)
AC Magnetic & Electric Field Levels
Data Recorded 1 Meter A.F.F.

Figure 3E

Magnetic Field Strength Measurements



Electric Field Strength Measurements

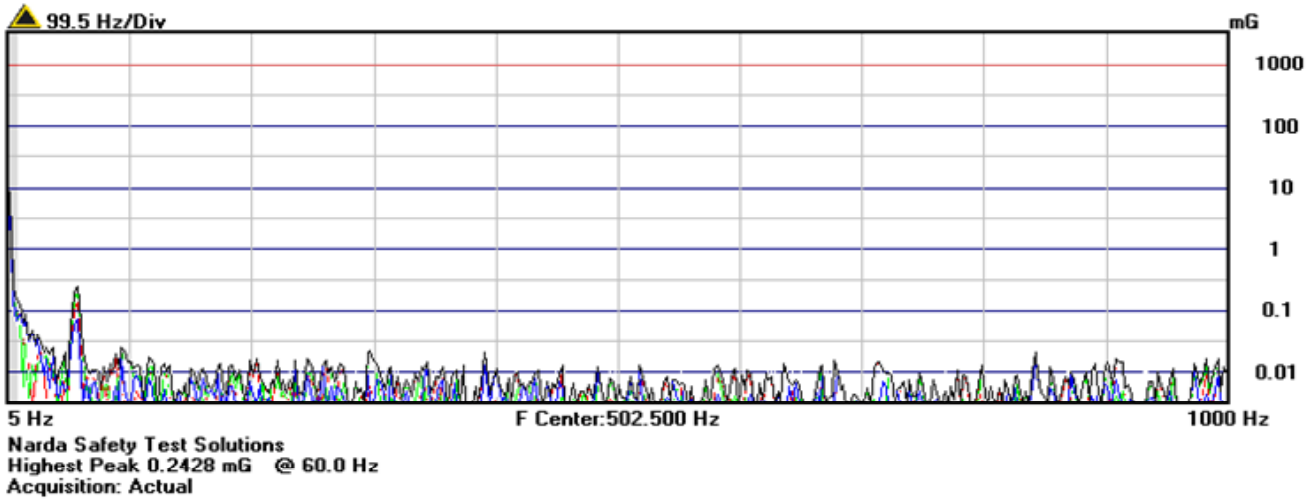


FMS
Field Management Services
New York - Los Angeles - Metro DC

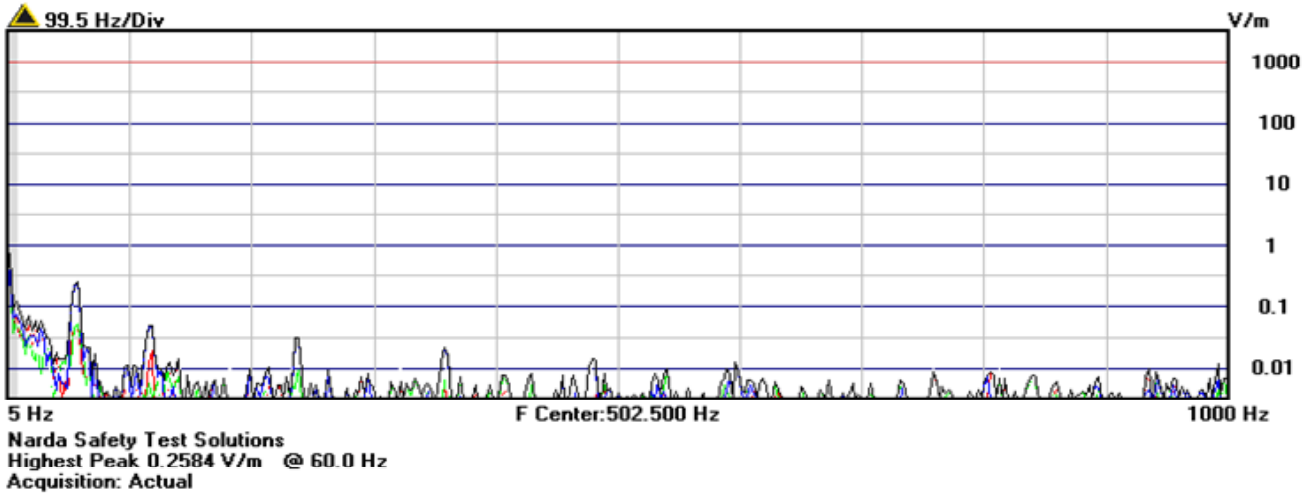
Grace Design Studios - LSU
Location 14
EMI Analysis - Broadband (5 Hz - 1 kHz)
AC Magnetic & Electric Field Levels
Data Recorded 1 Meter A.F.F.

Figure 3D

Magnetic Field Strength Measurements



Electric Field Strength Measurements



FMS
Field Management Services
New York - Los Angeles - Metro DC

2 Appendix 2

MEETING MINUTES

LOCATION:	Rm 2214A – Conference Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	April 4, 2025 @ 1:00 pm – 3:00 pm

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
Jerry Hebert	GHC Architects- Principal-In-Charge	225.338.5569	jhebert@ghc-arch.com
Jim Gabel	GHC Architects-Project Manager	314.529.4025	jgabel@ghc-arch.com
John Streva	GHC Architects	225.338.5569	jstreva@ghc-arch.com
Kriste Rigby	GHC Architects	225.338.5569	krigby@ghc-arch.com
Jeremy Graffagnino	GHC Architects	214.378.9810	jgraffignino@ghc-arch.com
Robert Mayard	FP &C- Project Manager	225.219.2118	robert.mayard@la.gov
Danny Mahaffey	LSU- University Architect	225.578.2264	dmahaf1@lsu.edu
Greg LaCour	LSU- Director of Campus Planning	225.578.1295	gplacour@lsu.edu
Vicki Colvin	LSU- Dean of College of Engineering	225.578.4630	vcolvin@lsu.edu
Chuck Berryman	LSU- Department Chair- Construction Management	225.578.6986	cberryman@lsu.edu
Dimitris Nikitopoulos	LSU- Department Chair- Mech and Industrial Engineering	225.578.5903	medimi@lsu.edu
Shuangqing Wei	LSU- Division Chair- Electrical Engineering and Computer Science	225.578.5536	swei@lsu.edu
Ami McGucken	LSU- Asst. Dean of Administration	225.578.5255	amcgucken@lsu.edu
Jordon Joplin	LSU- Foundation	225.578.3456	jjopling@lsufoundation.org
George Z. Voyiadjis	LSU - Department of Civil & Environmental Engineering	225.578.8668	voyiadjis@eng.lsu.edu

DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	Sign In Sheet was passed around.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.2	FP&C stated that all correspondence should include the project numbers, FP &C # 19-601-24-01, F.19002626			
1.3	**FP &C** should be included on any correspondence between **LSU** and the design team.			
1.4	For the user agency **LSU** stated that Paul Favaloro will be the Project Manager and point of contact.			
1.5	**FP&C** should be notified of all meetings.			
1.6	**FP&C** stated that Anzie Gilmore will be the umbrella agency.			
1.7	**FP&C** reviewed the CMAR Pre-Design conference Agenda in detail. Agenda is attached to these minutes.			
1.8	**FP&C** stated that a cost estimate from the design team will be required at each phase.			
1.9	The Programming Schedule was discussed and the following dates established as on campus workshops. • **Workshop No. 1**: Tuesday April 15th – stop at 2pm and Wednesday April 16th • **Workshop No. 2**: Tuesday May 6th and Wednesday May 7th • **Workshop No. 3**: Wednesday May 21st and Thursday May 22nd			
1.10	The site of the new building may be moving from what was documented in the programming document last July. More discussion will occur during programming to determine the site. A survey and geotechnical investigation will have to wait until then.			
1.10	**LSU** then went through a description of their vision for the project. • This project will focus on research and technology • The Preliminary Programming document completed last July will probably be deviated from given the new focus on research. • Automation and robotics will be emphasized. • More classroom space will not be the driver for this project. As space is freed up in PFT Hall, those spaces may be re-purposed as larger classroom space. • Showcasing research activities, much like the petrochemical plant in PFT Hall, will be desired for this project.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
	• Private offices versus hoteling stations will be a topic of conversation during programming. • Growth of the program will need to be considered whether it be leaving a room for an addition or a separate building. • **LSU** mentioned Virginia Tech's newest School of Construction building as one to reference. • A terrace for special events was shown in the **GHC** interview and will probably be a key feature for the project.			
1.11	**LSU** requested that they be given information prior to the workshops and "homework" to complete.			
1.12	**LSU** mentioned that a significant portion of the project will be funded by private donors so they will need to be involved, or at least informed, of the design progress.			
1.13	End of Meeting			

END OF MINUTES

Attachments:

The preceding represents the author's understanding of the principal matters discussed. These notes will stand as a record of the above dated conference unless corrections are received within ten (10) days of issuance.

MEETING MINUTES

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	April 15, 2025 @ 8:30 am – 9:30 am

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
Jerry Hebert	GHC Architects- Principal-In-Charge	225.338.5569	jhebert@ghc-arch.com
Jim Gabel	GHC Architects-Project Manager	314.529.4025	jgabel@ghc-arch.com
Chris Chivetta	GHC Architects- Programmer	314.863.5717	cchivetta@ghc-arch.com
John Streva	GHC Architects	225.338.5569	jstreva@ghc-arch.com
Kriste Rigby	GHC Architects	225.338.5569	krigby@ghc-arch.com
Robert Mayard	FP &C- Project Manager	225.219.2118	robert.mayard@la.gov
Greg LaCour	LSU- Director of Campus Planning	225.578.1296	gplacour@lsu.edu
Vicki Colvin	LSU- Dean of College of Engineering	225.578.4630	vcolvin@lsu.edu
Chuck Berryman	LSU- Department Chair- Construction Management	225.578.6986	cberryman@lsu.edu
Paul Favaloro	LSU- Executive Director Planning, Design and Construction	225.578.5591	pfavaloro@lsu.edu
Dimitris Nikitopoulos	LSU- Department Chair- Mech and Industrial Engineering	225.578.5903	medimi@lsu.edu
Carlos Rubio-Perez	Hera Lab Planners- Lab Planner	678.591.1257	carlosp@herainc.com
Jeff Owens	Hera Lab Planners- Lab Planner	404.275.3511	jeffo@herainc.com
George Z. Voyiadjis	LSU - Department of Civil & Environmental Engineering	225.578.8668	voyiadjis@eng.lsu.edu

DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the Dean and Foundation regarding overall goals and objectives for the project.			
1.2	The Dean stated that this project will promote interdisciplinary use among departments. They should not be departmental spaces.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.3	The user group meetings moving forward should be structured according to the various lab uses so departments will be combined.			
1.4	Major goals and objectives outlined were as follows: - LSU should become a magnet for construction management and advanced manufacturing - Cornerstone (freshmen and sophomores) and Capstone (juniors and seniors) project spaces should be accommodated. These areas could be part of research labs - Ability for workforce development curriculum will be important - Consolidation of construction management - VR technology research as workforce development - Provide a suite of offices and a conference room for industry partners so they have a presence in the building			
1.5	A clean room will not be part of the program.			
1.6	Digital twinning will be a research focus.			
1.7	Labs and spaces on the First floor will prime spaces and visibility into those spaces will be important.			
1.8	Technology is constantly changing so lab spaces will need to accommodate change and be flexible.			
1.9	The degree of transparency in Patrick Taylor Hall is a good design feature for some spaces, but in others it is too much. There will need to be a balance of transparency in the new building.			
1.10	Other peer institutions mentioned for reference were as follows: - Virginia Tech. - Syracuse Univ. - Georgia Tech.			
1.10	Electrical engineering will have a research need for power and automation in the building.			
1.12	The Programming Schedule was discussed and the following dates established as on campus workshops. • **Workshop No. 1**: Tuesday April 15th – stop at 2pm and Wednesday April 16th • **Workshop No**. **2**: Tuesday May 6th and Wednesday May 7th • **Workshop No**. **3**: Wednesday May 21st and Thursday May 22nd			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.13	End of Meeting			

END OF MINUTES

MEETING MINUTES

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	April 15, 2025 @ 9:45 pm – 10:45 pm

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
Jerry Hebert	GHC Architects- Principal-In-Charge	225.338.5569	jhebert@ghc-arch.com
Jim Gabel	GHC Architects-Project Manager	314.529.4025	jgabel@ghc-arch.com
Chris Chivetta	GHC Architects- Programmer	314.863.5717	cchivetta@ghc-arch.com
John Streva	GHC Architects	225.338.5569	jstreva@ghc-arch.com
Kriste Rigby	GHC Architects	225.338.5569	krigby@ghc-arch.com
Robert Mayard	FP &C- Project Manager	225.219.2118	robert.mayard@la.gov
Greg LaCour	LSU- Director of Campus Planning	225.578.1296	gplacour@lsu.edu
Vicki Colvin	LSU- Dean of College of Engineering	225.578.4630	vcolvin@lsu.edu
Chuck Berryman	LSU- Department Chair- Construction Management	225.578.6986	cberryman@lsu.edu
Dimitris Nikitopoulos	LSU- Department Chair- Mech and Industrial Engineering	225.578.5903	medimi@lsu.edu
Carlos Rubio-Perez	Hera Lab Planners- Lab Planner	678.591.1257	carlosp@herainc.com
Jeff Owens	Hera Lab Planners- Lab Planner	404.275.3511	jeffo@herainc.com
George Z. Voyiadjis	LSU - Department of Civil & Environmental Engineering	225.578.8668	voyiadjis@eng.lsu.edu

DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the Steering Committee regarding overall goals and objectives for the project.			
1.2	The design team shared precedent imagery for spaces that will be similar to the ones for the new building.			
1.3	A high bay lab with a strong floor and strong wall will be a part of the project.			
1.4	There was additional discussion on the transparency of the labs. Some labs will be transparent, but other others should not be.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
	There will be no biology labs in the building.			
1.5	Some lab spaces will be designed for future construction management faculty.			
1.6	There will probably not be many undergraduates in the building so the focus will be research and graduate student focused.			
1.7	There was discussion for the need of a 400 to 500 person lecture hall in the new building. PFT has a large lecture hall that accommodates 280 students. This is a large footprint, upwards of 10,000 sf, and will take up a large portion of the ground floor. There was discussion as to whether the room could be dividable into 2 spaces with a moveable partition. Other buildings referenced included: - Rice University Physics and Astronomy - Brown University			
1.8	Faculty offices were discussed and the need for large private offices versus smaller offices or groups of hoteling stations will need further discussion.			
1.9	The Dean stated that classroom space will account for 10% to 30% of the total area. The focus will be lab space.			
1.10	The computer studio will need to be sized to accommodate 120 students.			
1.10	Student spaces will need to be spread throughout the building. Providing power in those spaces will be important to make sure students use those spaces.			
1.12	Computer labs will be laptop based with docking stations and monitors as opposed to fixed CPUs.			
1.13	End of Meeting			

END OF MINUTES

Attachments:

The preceding represents the author's understanding of the principal matters discussed. These notes will stand as a record of the above dated conference unless corrections are received within ten (10) days of issuance.

MEETING MINUTES

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	April 15, 2025 @ 11:00 am – 12:00 pm

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
Jerry Hebert	GHC Architects- Principal-In-Charge	225.338.5569	jhebert@ghc-arch.com
Jim Gabel	GHC Architects-Project Manager	314.529.4025	jgabel@ghc-arch.com
Chris Chivetta	GHC Architects- Programmer	314.863.5717	cchivetta@ghc-arch.com
John Streva	GHC Architects	225.338.5569	jstreva@ghc-arch.com
Kriste Rigby	GHC Architects	225.338.5569	krigby@ghc-arch.com
Jordan Joplin	LSU- Foundation	225.578.3456	jjopling@lsufoundation.org
Greg LaCour	LSU- Director of Campus Planning	225.578.1296	gplacour@lsu.edu
Chuck Berryman	LSU- Department Chair- Construction Management	225.578.6986	cberryman@lsu.edu
Carlos Rubio-Perez	Hera Lab Planners- Lab Planner	678.591.1257	carlosp@herainc.com
Jeff Owens	Hera Lab Planners- Lab Planner	404.275.3511	jeffo@herainc.com

DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with Facilities and Planning regarding overall goals and objectives for the project.			
1.2	The design team shared precedent imagery for spaces that will be similar to the ones for the new building.			
1.43	The design team stated that the existing program is way too efficient for this type of building. It's currently around 70 / 30. A more standard type of efficiency is 60 / 40 percent.			
1.4	The current program does not have area assigned for the penthouse but it will need to have that area included.			
1.5	Some existing industry partners mentioned were the following: - Cajun Industries - MMR Group - Lemoine			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
	- MJ Womak - MAPP - DSLD - Turner - Performance Contractors			
1.6	Since the foundation was represented at this meeting, donor opportunities were discussed. Various levels of recognition for the various space sizes were discussed. The donor recognition in Patrick F Taylor was noted as a good example.			
1.7	There will be an interest from donors that some tailgating opportunities for both inside and outside the building be explored. The open space around the building as well as the terrace that was presented as part of the interview should be explored.			
1.8	Donors see this project as promotion of the construction industry and security of their business since many graduates will be recruited heavily from local businesses.			
1.9	NCCER (National Center for Construction Education and Research) certification was discussed and there may be an opportunity to provide assistance with writing curriculum for that program because of this project.			
1.10	The Advanced Manufacturing program will be globally focused, not just construction.			
1.10	The Construction management faculty count is approximately 17 to 18 currently but could grow by another 20.			
1.12	Facilities stated that intermediate Teams meetings will be needed to further discussions in between the on campus meetings. The following dates were determined: - Wednesday April 30th - Wednesday May 14th			
1.13	End of Meeting			

END OF MINUTES

The preceding represents the author's understanding of the principal matters discussed. These notes will stand as a record of the above dated conference unless corrections are received within ten (10) days of issuance.

MEETING MINUTES

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	April 16, 2025 @ 1:45 pm – 2:45 pm

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
Jim Gabel	GHC Architects-Project Manager	314.529.4025	jgabel@ghc-arch.com
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Jeff Owens	Hera Lab Planners- Lab Planner	404.275.3511	jeffo@herainc.com

DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the Dean and the Foundation to review what the design team heard meeting with the various groups the last day and a half.			
1.2	The Construction Management faculty will all be moving over the new building with rare exceptions. Chuck will need to produce a list of facility moving over as well as anticipated new faculty.			
1.3	The Dean mentioned that large, open space labs should be planned introducing walls only when necessary.			
1.4	The design team asked for existing drawings of the CM spaces so a tabulation of existing area can be determined.			
1.5	The design team asked for the number of grad students and funding for those students currently.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.6	For the future faculty, generic lab space will have to be planned until those faculty are hired.			
1.7	The current program allocates approximately 34,000 square feet for construction management.			
1.8	The Dean mentioned that for future meetings the groups not be split up by department but by lab use. - The following were the groups: o Advanced Manufacturing ▪ Clean Workshop ▪ Dirty Workshop ▪ Material Storage o Construction Test Bed ▪ Indoor Testing ▪ Outdoor Testing/ boneyard ▪ In-ground/ geo-tech ▪ Material Storage ▪ Layout/ workspace ▪ Resilient design facilities o Material/ Wet Labs ▪ Material development • Scaling – bench to pilot • fabrication ▪ Tool development ▪ Testing/ diagnostics • Stress tests/cycling/ curing/ ▪ Material storage o Digital Construction ▪ Cost Estimating ▪ Human Training o Robotics /AR/ VR/ Software ▪ Simulation ▪ Software Development ▪ Dirty Labs ▪ Clean Labs o Power/ Sensing ▪ Cyber-Physical Infrastructure o Industry Showcase ▪ Wow Space			
1.9	Faculty offices were discussed again and there will be a deviation from the original program that had each office at 140 square feet. There may be a mix of hoteling stations, smaller offices (80-90 sf), and flexible			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
	offices with moveable walls.			
1.10	Construction Management needs approximately 50% of the overall area of the new building. The current program has CM being short of 50%.			
1.11	For Advanced Manufacturing, a large portion of the program should be lab space.			
1.12	Advanced Manufacturing may get some of the space vacated in PFT for equipment that undergraduates use. Space in the new building will be for more graduate work. Upwards of 3,000 square feet may be freed up in PFT.			
1.13	Once the ELab gets vacated, it may go to Civil Engineering.			
1.14	A suite for architects and industry partners was discussed. A connection between the School of Architecture and the Construction Management department should be explored.			
1.15	The industry partner suite could consist of a conference room and 2 hoteling stations.			
1.16	A School of construction office suite could consist of an office, a conference room and 2 to 4 hoteling stations.			
1.16	End of Meeting			

END OF MINUTES

Attachments:

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MEETING MINUTES

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	April 16, 2025 @ 9:45 am – 10:45 am

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
Jim Gabel	GHC Architects-Project Manager	314.529.4025	jgabel@ghc-arch.com
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Jeff Owens	Hera Lab Planners- Lab Planner	404.275.3511	jeffo@herainc.com

DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the Mechanical Engineering department regarding overall goals and objectives for the project.			
1.2	The design team reviewed the programming process.			
1.3	Integration of departments will be a key to this project. Spaces should be designed for collaborative use and not assigned to specific departments.			
1.4	Robotics/animation is a prime example of inter-department collaboration between mechanical, electrical engineering and computer science.			
1.5	Dimitris shared some images from relevant institutions: - Carnegie Mellon - Auburn University - Arizona state - University of TX El Paso			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.6	There are 19 to 20 sections taught with 6 students per section per semester currently.			
1.7	There is currently 1 supervisor per 8 students. There is both teaching and research that occurs in many lab spaces.			
1.8	Materials are generally developed next to labs that are then using them.			
1.9	Dimitris mentioned that wide open lab spaces with moveable industrial partitions should be investigated.			
1.10	There were lots of robots that were shown during the facility tour. Some of the robots could be moved around for teaching and research.			
1.11	Corporate partners could end up providing materials and equipment for the labs.			
1.12	Electric power flexibility will be an important consideration for many lab spaces.			
1.13	Student projects will need support whether they are academic teaching or research in nature.			
1.14	The sea car building space may not be moving over to the new building.			
1.13	End of Meeting			

END OF MINUTES

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MEETING MINUTES

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	April 16, 2025 @ 9:45 am – 10:45 am

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
Jim Gabel	GHC Architects-Project Manager	314.529.4025	jgabel@ghc-arch.com
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Jeff Owens	Hera Lab Planners- Lab Planner	404.275.3511	jeffo@herainc.com

DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the Mechanical Engineering department regarding overall goals and objectives for the project.			
1.2	The design team reviewed the programming process.			
1.3	Integration of departments will be a key to this project. Spaces should be designed for collaborative use and not assigned to specific departments.			
1.4	Robotics/animation is a prime example of inter-department collaboration between mechanical, electrical engineering and computer science.			
1.5	Dimitris shared some images from relevant institutions: - Carnegie Mellon - Auburn University - Arizona state - University of TX El Paso			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.6	There are 19 to 20 sections taught with 6 students per section per semester currently.			
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1.8	Materials are generally developed next to labs that are then using them.			
1.9	Dimitris mentioned that wide open lab spaces with moveable industrial partitions should be investigated.			
1.10	There were lots of robots that were shown during the facility tour. Some of the robots could be moved around for teaching and research.			
1.11	Corporate partners could end up providing materials and equipment for the labs.			
1.12	Electric power flexibility will be an important consideration for many lab spaces.			
1.13	Student projects will need support whether they are academic teaching or research in nature.			
1.14	The sea car building space may not be moving over to the new building.			
1.13	End of Meeting			

END OF MINUTES

Attachments:

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MEETING MINUTES

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	April 16, 2025 @ 11:00 am – 12:00 pm

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
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Yen-Fang Su	LSU- Civil and Environmental		ysu@lsu.edu
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Jeff Owens	Hera Lab Planners- Lab Planner	404.275.3511	jeffo@herainc.com

DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the Civil and Environmental Engineering department regarding overall goals and objectives for the project.			
1.2	The design team reviewed the programming process.			
1.3	The department reviewed their current strong floor space in the E Lab building. The existing strong floor is 4 feet thick with no basement due to the high water table. Each connection point is designed to handle 50 kips.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.4	Civil engineering and construction management both have a need for a high bay lab space with a strong floor and strong wall.			
1.5	Currently there is no certified testing. The Dept. of Transportation does deliver structural members for testing in the current facility.			
1.6	The department currently uses a ½ million pound testing machine.			
1.7	The Geotech group reviewed their requirement for a construction test pit. Due to the high water table in the area, providing a deep pit in the ground may be unfeasible. A 5' x 15' x 15' size test pit was discussed constructed out of concrete or steel. The location could be outside the building.			
1.8	Advanced materials was discussed and the following spaces will be required: - Sample Storage - A high humidity concrete curing room - A dry concrete curing room - Small and Large Fabrication room - Robot Operation area o Rails above floor and possibly on the wall o 2000 sf needed - Testing Area o Small area similar to the existing CM concrete and asphalt lab o Large area that could be part of the high bay space - Electrical design and fabrication space o This needs to be a clean space - The CM department has many similar space needs so there may be some spaces designed for dual purpose.			
1.9	There is an MTS machine that tests 10mm x 10mm x 10mm parts that will stay in the existing building.			
1.10	The department doesn't think they need separate faculty offices but rather have office space within the labs themselves.			
1.11	Graduate students per department are as follows: - 7 for civil - 7 for Geotech			
1.12	There is a need to hire 4 technical staff.			
1.13	End of Meeting			

END OF MINUTES

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MEETING MINUTES

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	April 16, 2025 @ 12:45 pm – 1:45 pm

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
Jim Gabel	GHC Architects-Project Manager	314.529.4025	jgabel@ghc-arch.com
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Jeff Owens	Hera Lab Planners- Lab Planner	404.275.3511	jeffo@herainc.com

DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the Electrical and Computer Engineering department regarding overall goals and objectives for the project.			
1.2	The design team reviewed the programming process.			
1.3	The department discussed the need for sizing the electrical and data loads appropriately for robots, drones, sensors etc...Wireless charging of drones and robots are anticipated.			
1.4	Department of Defense projects may be a potential for research.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.5	Currently most research done by the department is done virtually, but with the new building, there may be an opportunity to create real world applications.			
1.6	The building server capacity was discussed and there could be a potential for data research and monitoring.			
1.7	Drones and sensors are purchased, not built from scratch.			
1.8	The ECE department is housed in Coates Hall currently and it is being renovated.			
1.9	A building sensor development lab should be a part of the program. Sensors are designed and built in the department. Benches for electronic fabrication will be important.			
1.10	A Power electronics lab should be a part of the program. This lab would test different voltage levels.			
1.11	A radio frequency signal testing lab will also need to be a part of the program. This space will require radiation shielding.			
1.12	A Printed Circuit Board (PCB) Lab will be needed in the new building.			
1.13	End of Meeting			

END OF MINUTES

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MEETING MINUTES- Stakeholder Group 8:30am

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	May 6, 2025 @ 8:30 am – 10:00 am

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
Jerry Hebert	GHC Architects- Principal-In-Charge	225.338.5569	jhebert@ghc-arch.com
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DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the Stakeholder Group to discuss the program for the project.			
1.2	Review of project goals from Workshop No. 1 to confirm design team understands the major goals and objectives.			
1.3	The new building will be research focused with some undergraduate components. Research should take precedence. Undergraduate demand should not impede research.			
1.4	Advanced manufacturing needs to have both undergraduate and graduate programs that may need to be separate and therefore staffing needs will increase.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.5	There was concern with noise control. The design team has an acoustic consultant on the team and will evaluate wall types further into design.			
1.6	The design team presented a summary of spaces from the draft program to give an idea of area allocation.			
1.7	In the Construction & Advanced Materials labs review LSU indicated that material storage needs to be stored inside and outside the building. The outside material storage won't be counted in building area tabulation. University of FL was referenced as a program that has a separate building for material storage.			
1.8	Cycling for asphalt and concrete are very different procedures. They need to be separated.			
1.9	One lab has testing that generates a strong sulfur smell that will require additional point exhaust, fume hoods, or increased air changes per hour.			
1.10	Construction and Advanced Materials are the most difficult spaces to program due to the technical requirements of the individual spaces.			
1.11	Organizing the building into a clean wing and dirty wing such as the L shape is a good starting point.			
1.12	Cyber Physical Infrastructure and Robotics Review			
1.13	VLSI lab and Printed Circuit Board (PCB) lab could go away. BioMEMS and DOT Center could go away as well. ECE Hybrid could go away.			
1.14	Senior Project Lab space could go to CM program space, but could be minimized. This space is currently at 3rd floor of ERAD and will stay there.			
1.15	LSU would like to know more about where information comes from for the individual spaces.			
1.16	Drone space on the roof was discussed and it was noted that flying drones on campus is difficult to get approval. A terrace could be used for this and the roof could be accessible for students.			
1.17	Digital Construction is both teaching and research focused. A quick review from LSU indicated it may be undersized.			
1.18	Shared Research and Advanced Manufacturing review revealed that item 4.10 is not needed.			
1.19	LSU asked that label spaces by department use. Label by dirty and clean.			
1.20	Asphalt labs in PFT will be backfilled with maker space and other areas that could use some of the older Advanced Manufacturing equipment.			
1.21	ELAB and ERAD facilities will eventually go away but some program will remain in place since it can not be moved.			
1.22	Administrative and Core Space review.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.23	Offices are shown as 100 sf and campus standard is that size. Hoteling stations will be discussed with the individual groups. A study of hoteling and huddle rooms versus individual offices will need to be shared with LSU to indicate the different area implications.			
1.24	Classroom occupancy sizes seemed low to the Stakeholder Group. They will be Construction focused so that group will need to comment on it. The large lecture hall partitioned into 3 spaces would be preferred.			
1.25	The Programming upcoming Schedule is as follows: • **On-Line Meeting**: Wednesday May 14th from 9:30am – 11:30am. • **Workshop No**. **3**: Wednesday May 21st and Thursday May 22nd			
1.24	End of Meeting			

END OF MINUTES

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MEETING MINUTES- User Group 1: Construction Management and Advanced Materials 10:15am

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	May 6, 2025 @ 10:15 am – 11:45 am

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
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Arup Bhattacharya	LSU- Construction Management		arupb@lsu.edu
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George Z. Voyiadjis	LSU - Department of Civil & Environmental Engineering	225.578.8668	voyiadjis@eng.lsu.edu

DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the User Group 1: Construction and Advanced Materials to discuss the program for the project.			
1.2	The design team reviewed the overall program as a general overview.			
1.3	The Concrete and Asphalt labs need to be on the First Floor and close to high bay lab ideally. Storage for these materials will need to be separate from other materials. Easy access for truck deliveries will also be necessary. Bins are preferred over chutes; asphalt uses many			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
	different aggregates; up to 10 different aggregates in some mixes.			
1.4	MMR Advanced Material Lab 3112 is 1,698 sf currently and needs to be slightly larger. The ELAB concrete space needs to be much larger.			
1.5	There was concern with noise control in the asphalt and concrete labs. The design team has an acoustic consultant on the team and will evaluate wall types further into design.			
1.6	A separate cutting area for asphalt and concrete is needed. Floor trench drain for easy clean-up was requested.			
1.7	Existing labs in PFT don't have adequate air pressure.			
1.8	Asphalt and concrete aggregate storage area and cutting area can be shared between the 2.			
1.9	Cycling for asphalt and concrete are very different procedures. They need to be separated.			
1.10	3 material focused areas: Asphalt, concrete and additive manufacturing (3D concrete printing)			
1.11	Environmental Chamber 4.20 needs to be 2 modules not 1 with a computational area associated with it. A temperature range of 60 degrees Celsius to -5 degrees Celsius was discussed.			
1.12	Monitoring of individual spaces for occupancy will be done throughout the building.			
1.13	Currently 53 graduate students in CM. Goal would be to grow to 100+ grad students.			
1.14	The 3D Concrete Printing Lab in 3125 is not moving over into the new building.			
1.15	The Programming Schedule was discussed and the following dates established as on campus workshops. • **On-Line Meeting**: Wednesday May 14th from 9:30am – 11:30am. • **Workshop No**. **3**: Wednesday May 21st and Thursday May 22nd			
1.16	End of Meeting			

END OF MINUTES

Attachments:

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MEETING MINUTES- User Group 2: Cyber Physical Infrastructure and Robotics 12:45pm

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	May 6, 2025 @ 12:45 pm – 2:15 pm

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
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DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the User Group 2: Cyber physical Infrastructure and Robotics to discuss the program for the project.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.2	The design team reviewed the overall program as a general overview.			
1.3	Difficulty with testing of drones currently due to airspace regulations on campus.			
1.4	There should be no dedicated Civil Engineering in the new building.			
1.5	There was concern with large open labs and the partitions that will define those spaces.			
1.6	Combine Cyber Physical Infrastructure with Digital Construction and Automation and Robotics together.			
1.7	There are currently 5 people doing robotics research and working with virtual reality.			
1.8	See attached Program section for further revisions and notes.			
1.9	The Programming Schedule upcoming is as follows: • **On-Line Meeting**: Wednesday May 14th from 9:30am – 11:30am. • **Workshop No**. **3**: Wednesday May 21st and Thursday May 22nd			
1.10	End of Meeting			

END OF MINUTES

Attachments:
Cyber Physical Infrastructure and Robotics Program Section

The preceding represents the author's understanding of the principal matters discussed. These notes will stand as a record of the above dated conference unless corrections are received within ten (10) days of issuance.

2.00	Cyber Physical Infrastructure & Robotics	Robotics & Automation Test Suite		5.00	1,600 sf			1	1,600 sf		small group cognitive testing; oversized doors for large robots; close to material production
2.01	Cyber Physical Infrastructure & Robotics	Cyber-Physical Infrastructure		2.00	640 sf			1	640 sf		
2.02	Cyber Physical Infrastructure & Robotics	Radio Frequency Testing Lab		1.00	320 sf			1	320 sf		Radiation Shielded boxes only- room doesn't need shielding; not needed, not moving to Coates per Medhi- need clarification from Dean
2.03	Cyber Physical Infrastructure & Robotics	~~Power Electronics Lab~~		~~0.00~~	~~0 sf~~			~~1~~	~~0 sf~~		Voltage Testing; flexible energy supply; testing energy efficiency; sensors to monitor whole building, rooms or areas for energy; moved to 1.22
2.04	Cyber Physical Infrastructure & Robotics	Software and Sensor Development		2.00	640 sf			1	640 sf		should be close to robotics and automation lab
2.05	Cyber Physical Infrastructure & Robotics	Drone Lab		4.00	1,280 sf			1	1,280 sf		
2.06	Cyber Physical Infrastructure & Robotics	~~Sensor Development Lab~~		~~0.00~~	~~0 sf~~			~~1~~	~~0 sf~~		Benchtop electronics fabrication
2.07	Cyber Physical Infrastructure & Robotics	~~ECE Hybrid Electronic Materials Lab~~		~~0.00~~	~~0 sf~~			~~1~~	~~0 sf~~		not needed, moving to Coates
2.08	Cyber Physical Infrastructure & Robotics	~~Nanoscale Circuit Design Lab~~		~~0.00~~	~~0 sf~~			~~1~~	~~0 sf~~		not needed
2.09	Cyber Physical Infrastructure & Robotics	Printed Circuit Board Lab		3.00	960 sf			1	960 sf		needed per cyber physical infrastructure group- Medhi; it would be preferred to be in PFT Hall in backfilled space
2.10	Cyber Physical Infrastructure & Robotics	~~BioMEMS and Bioelectronics Lab~~		~~0.00~~	~~0 sf~~			~~1~~	~~0 sf~~		not needed
2.11	Cyber Physical Infrastructure & Robotics	~~VLSI Lab~~		~~0.00~~	~~0 sf~~			~~1~~	~~0 sf~~		not needed
2.12	Cyber Physical Infrastructure & Robotics	~~DOT Center~~		~~0.00~~	~~0 sf~~			~~1~~	~~0 sf~~		not needed
2.13	Cyber Physical Infrastructure & Robotics	Automotive & Aero Clubs		0.00	0 sf			1	0 sf		
2.14	Cyber Physical Infrastructure & Robotics	CAD Stations & Offices		0.00	0 sf			1	0 sf		combined with 2.14
Total	Cyber Physical Infrastructure & Robotics									5,440 sf	

MEETING MINUTES- User Group 3: Digital Construction

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	May 6, 2025 @ 2:30 pm – 4:00 pm

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
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DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the User Group 3: Digital Construction to discuss the program for the project.			
1.2	The design team reviewed the overall program as a general overview.			
1.3	Item 3.06 and 3.07 needed to be switched.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.4	There should be no dedicated Civil Engineering in the new building.			
1.5	There was concern with large open labs and the partitions that will define those spaces.			
1.6	A high bay space is needed in the building but a strong floor and strong wall would be part of the Civil department and may not be necessary.			
1.7	See attached Program section for further revisions and notes.			
1.23	The Programming Schedule was discussed and the following dates established as on campus workshops. • **On-Line Meeting**: Wednesday May 14th from 9:30am – 11:30am. • **Workshop No**. **3**: Wednesday May 21st and Thursday May 22nd			
1.24	End of Meeting			

END OF MINUTES

Attachments:
See Digital Construction Program section attached.

The preceding represents the author's understanding of the principal matters discussed. These notes will stand as a record of the above dated conference unless corrections are received within ten (10) days of issuance.

3.00	Digital Construction	Motion Capture Lab		4.00	1,280 sf			1	1,280 sf		human motion capture
3.01	Digital Construction	Research Lab		3.00	960 sf			1	960 sf		placeholder for future research faculty
3.02	Digital Construction	Computer Lab		0.00	0 sf			1	0 sf		moved to 2.14
3.03	Digital Construction	Energy Analytics Lab		3.00	960 sf			1	960 sf		funded by DOE; team of 25- 8 grad students train undergrads. Should have storage space associated with it.
3.04	Digital Construction	DOE- Industrial Assessment Center		3.00	960 sf			1	960 sf		
3.05	Digital Construction	VR Simulation		3.00	960 sf			1	960 sf		should be close to Motion Capture Lab and Bim Cave. Treadmill, driving simulator and computer stations. 5 to 6 people at one time.
3.06	Digital Construction	BIM Cave Storage/ Grad Space		2.00	640 sf			1	640 sf		
3.07	Digital Construction	BIM Cave		5.00	1,600 sf			1	1,600 sf		
Total	Digital Construction									7,360 sf	

MEETING MINUTES- User Group 4: Shared Research and Advanced Manufacturing

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	May 7, 2025 @ 8:30 am – 10:00 am

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
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Marwa Hassan	LSU- Construction Management		
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DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the User Group 4: Shared Research Facilities and Advanced Materials to discuss the program for the project.			
1.2	The design team reviewed the Shared Research and Advanced Manufacturing.			
1.3	Construction Simulation became Construction Mockup Testing since it is testing of samples and not simulation.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.4	Advanced Materials/Manufacturing needs to provide a document of what the needs are for the new building. - Traditional manufacturing - Additive Manufacturing- material related o Metals and alloy storage for 3D printing o Clean environment and climate control - Robotics cells - Prototyping: 3D printing - Hybrid systems o Additive o Subtractive - Welding Technologies - Post Production o Furnaces o Chemical			
1.5	Advanced Manufacturing needs traditional machines as well as the cutting edge machines for both academics and research.			
1.6	Operational costs over time need to be accounted for, in particular staffing.			
1.7	Workshop currently has everything, what does the new building contain? ELAB is still going to remain in the near future but will eventually come down. Two more engineering buildings are planned for the future.			
1.8	Fabrication - Robotics - Advanced CNC - 3D Printing - Welding Manufacturing - Specialized Manufacturing - Robotics - Specialized Welding			
1.9	Advanced Manufacturing examples cited were EWI facility in Columbus, OH has a facility of note. Another location is Buffalo Machine Works.			
1.10	Hera referenced a gothic church as a reference for laying out the Advanced Manufacturing program. Niches surrounding a central nave. The niches would have moveable walls in lieu of fixed walls.			
1.11	A compressed air system and a central chilled water supply for equipment will be needed for this building.			
1.12	Utility trenches on the First Floor and overhead power and data will be utilized for many labs.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.13	Point exhaust for various pieces of equipment will need to be considered especially welding areas.			
1.23	The Programming Schedule was discussed and the following dates established as on campus workshops. • **On-Line Meeting**: Wednesday May 14th from 9:30am – 11:30am. • **Workshop No**. **3**: Wednesday May 21st and Thursday May 22nd			
1.24	End of Meeting			

END OF MINUTES

Attachments:

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MEETING MINUTES- User Group 5: Administrative and Core Spaces

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	May 7, 2025 @ 10:15 am – 11:45 am

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DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the User Group 5: Administrative and Core Spaces to discuss the program for the project.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.2	The design team reviewed the overall program for each of the user group areas.			
1.3	IT needs a Server Room, Storage Closet and 3 offices for IT staff.			
1.4	IT needs for data servers for Digital Construction will be in a central server room and not in individual labs.			
1.5	Office sizes were discussed as they have been reduced to 100 sf from the original 140 sf. The new LSU Nursing school is being designed with 6' x 6' hoteling stations with some faculty offices. CM staff did not want to consider hoteling stations. The 10' x 10' offices were perceived as tight.			
1.6	Post-Doctoral space would be workstations shared with Adjunct faculty.			
1.7	GA space was discussed and it is assumed that (1) 1,000 sf room per floor with 25 to 30 workstations per room. They may want further delineation; (6) 500 sf in order to spread out GAs.			
1.8	Staff and Faculty Offices would like to be consolidated and on top floor if possible.			
1.9	There was discussion that there will be 3 Department Chairs. **LSU** to confirm.			
1.10	Classroom requirements: - Rm 3125 is 1,200 sf and would have an occupancy of 60 - Rm 1200 is 2,500 sf and would have an occupancy of 160. Needs 2 of these - Rm 1100 is 3,400 sf and would have an occupancy of 250.			
1.11	B.12, B13 and 4.18 are ME space requirements and may stay in PFT.			
1.12	Currently there is a bout 1,300 sf of space for TA's on the 2nd floor of Patrick Taylor Hall.			
1.23	The Programming Schedule was discussed and the following dates established as on campus workshops. • **On-Line Meeting**: Wednesday May 14th from 9:30am – 11:30am. • **Workshop No**. **3**: Wednesday May 21st and Thursday May 22nd			
1.24	End of Meeting			

END OF MINUTES

Attachments:

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MEETING MINUTES- Stakeholder Group

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	May 7, 2025 @ 2:00 pm – 3:00 pm

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DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the Stakeholder Group to discuss the results of the last day and a half meetings.			
1.2	Opportunities for reduction: - Material Science area - Digital area - High bay space could be combined with others - Advanced Manufacturing o Base - Academic Spaces			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
	○ Sizes of spaces will be the focus of the Registrar - Student Spaces may be trimmed slightly.			
1.3	Track space by user/focus area/department in the program. LSU input is needed for this exercise.			
1.4	Move 2.13 CM Senior Project Lab to Classroom and Computer Lab down to Classroom.			
1.5	Closed door offices should be looked at for staff and faculty. A variety of offices sizes should be looked at.			
1.6	Senior hires are going to be want to be close to their labs. There are many other organizations especially if the new staff are bringing research money in.			
1.7	Classroom sizes and number are slightly higher than originally anticipated. Senior Project Space and Computer Labs need to go down into Core Academic Spaces.			
1.8	Comparison of new spaces versus spaces in Patrick F Taylor Hall would be helpful.			
1.9	For new hires, expectation is a 2,000 to 3,000 sf lab space per senior faculty. Junior hire space expectation would be 500 to 1,000 sf. The anticipation is 20 to 22 new hires.			
1.10	Aspirant peers are University of Florida, MIT.			
1.11	Get information on PFT to LSU regarding existing space allocation.			
1.12	Cost per square foot was discussed and what may have to happen is that some spaces get shelled out and an alternate of finishing out the space will be looked at.			
1.13	The Programming Schedule was discussed and the following dates established as on campus workshops. • **On-Line Meeting**: Wednesday May 14th from 9:30am – 11:30am. • **Workshop No**. **3**: Wednesday May 21st and Thursday May 22nd			
1.14	End of Meeting			

END OF MINUTES

Attachments:

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MEETING MINUTES- Stakeholder Group 8:30am

LOCATION:	Online Teams Meeting
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	May 15, 2025 @ 8:30 am – 10:00 am

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
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ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the Stakeholder Group to discuss the program for the project as well as the agenda for Workshop No. 3 on Wednesday 5/21 and Thursday 5/22.			
1.2	The design team showed the agenda for 5/21/ and 5/22. Ami has issued invites for the sessions to the **LSU** staff. **GHC** will send out invites for the design team.			
1.3	A review meeting has been scheduled for 2pm on Monday 5/19 to review the presentation material for the 2:30pm meeting on 5/21 the President and Cabinet.			
1.4	**GHC** presented the slide from the last week's meeting showing the overall building area and the current overage of 27,903 sf from the original program: From 193,557 SF (Total from Workshop No. 1) To 174,903 SF Reduction (18,654 SF) (-9.6% at the end of Workshop No. 2) Goal 147,000 SF Cut Needed (27,903 SF)			
1.45	The Dean expressed concern that there is currently not enough space allocated to research in the current program.			
1.6	The Jesse Coates building renovation lab plans were shown as an example of flexible lab spaces with adjacent offices.			
1.7	The Dean noted that up to 22 new faculty will be hired in the future with 1/3 of them being focused on research.			
1.8	Some specific program areas were reviewed. Item 5.29 is currently in room 3133 not 3122. Item 5.27 is room 3122.			
1.9	**LSU** is working on compiling space program allocation for PFT and ELAB.			
1.10	Advanced Manufacturing has more than 14,000 sf currently and the new program only has approximately 14,000 sf.			
1.11	The current program has a surplus of approximately 28,000 sf over the original approved gross area. The Dean would prefer not to omit any of the current groups, but rather adjust spaces internally.			
1.12	The 250 person and 450 person lecture spaces account for 16,250 sf. There will need to be input from the Registrar to determine if these 2spaces will be heavily utilized.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.13	The overall project cost and construction costs were discussed.			
1.14	**LSU** stated that given donor expectations, Advanced Manufacturing needs to be in the new CAMB.			
1.15	There will be no maker space in CAMB but a backfilled space in Patrick Taylor could become maker space.			
1.16	The Programming upcoming Schedule is as follows: • **Workshop No**. **3**: Wednesday May 21st and Thursday May 22nd			
1.17	End of Meeting			

END OF MINUTES

Attachments:

The preceding represents the author's understanding of the principal matters discussed. These notes will stand as a record of the above dated conference unless corrections are received within ten (10) days of issuance.

MEETING MINUTES- User Group 3: Digital Construction

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	May 22, 2025 @ 8:30am – 10:00am

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
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DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the User Group 3: Digital Construction to discuss the program for the project.			
1.2	Cyber Physical Infrastructure uses data only but needs a server room. The server room is not access by faculty, they are only concerned with the data. Any server racks that they need for storage/ processing can go into an common IT closet/ server room			
1.3	Motion Capture will be its own space but other Digital areas can be open to each other.			
1.4	Motion Capture Lab o Discussion related to size and location. Chuck suggested reducing to 3 modules, but wants to hold confirmation until it is laid out o Needs to be high visibility. ▪ Consider on the first floor (want) ▪ Consider on an easily visible area (need)			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
	○ Equipment Simulation is similar in nature and also high visibility ▪ Can be collocated with Motion Capture			
1.5	3.07 BIM Cave and 5.30 Construction Simulators should be visible and on display. Ideally on 2nd Floor. Storage could be between spaces			
1.6	Moveable benches on casters that have partitions on them with utility connections above may be a solution for creating a sense of separation and flexibility. Mott Optima 2550 was an example shown.			
1.7	Researchers are anticipated to be cycling out every 12 to 24 months.			
1.8	Partitions could be hung from a ceiling grid system to make it flexible to reconfigure space.			
1.9	2.00 Cyber physical Infrastructure lab is referred to as Living Lab.			
1.10	Exposed structure and sealed concrete floors in labs will make the space loud so K13 or other acoustic spray should be explored.			
1.11	Acoustic ceilings should be used selectively as well as tectum panels.			
1.12	Overall approximately 15% of Digital Construction has been reduced.			
1.13	5.30 Construction Simulation should be moved back up to Digital Construction, not in Core Academic Spaces.			
1.14	**Side-Discussion related to casework and partitions** • What ways to create partitions ○ Dry wall – (Least expensive), but not movable. Harder to remove and add ○ Mobile partitions (DIRTT) – (Expensive) easier to move, requires facility folks to adjust. Can be done over a weekend ○ Room Dividers – can be moved by users, Takes up space in room when not in use ○ Attaching panels to back of casework (Grainger, Mott, Kewaunee). Attaches to the casework, moves with casework.			
1.15	A Programming de-brief with the Stakeholder Group had to be rescheduled to this time: • **On-Line Meeting**: Wednesday May 28th from 10:30am – 11:30am.			
1.16	End of Meeting			

END OF MINUTES

Attachments: Digital Construction Program

Lab Module 30.00 x 10.67 320 sf 5/25/2025

Prog. #	Space Category	FICM	Space Type	Occ	Lab Mods.	Lab SF	SF/Person	NASF	Qty.	Totals	Totals	Notes	Department	Exist Room	Exist Area
3.00	Digital Construction		Motion Capture Lab		3.00	960 sf			1	960 sf		human & robotic motion capture, inside space			
3.01	Digital Construction		Research Lab		3.00	960 sf			1	960 sf		placeholder for future research faculty			
3.02	Digital Construction	250	DOE-Industrial Assessment Center		3.00	960 sf			1	960 sf		funded by DOE; team of 25- 8 grad students train undergrads. Should have storage space associated with it.	CM	3131	959
3.03	Digital Construction		VR Simulation		3.00	960 sf			1	960 sf		should be close to Motion Capture Lab and Bim Cave. Treadmill, driving simulator and computer stations. 5 to 6 people at one time.			
3.04	Core Academic Space		Construction Equipment Simulation		3.00	960 sf			1	960 sf		equipment simulation in 3130; add 2 more stations in future. Popular stop for student tours. Moved from Academic Space, near 3.07 BIM cave	CM	3130	748
3.05	Digital Construction		BIM Cave Storage/ Grad Space		2.00	640 sf			1	640 sf		Adjacent to BIM Cave			
3.06	Digital Construction		BIM Cave		3.00	960 sf			1	960 sf		inside space, dark ceiling, lighting concerns; near equipment simulators	CM	2348	1220
Total	Digital Construction										6,400 sf				

MEETING MINUTES- User Group 4: Shared Research and Advanced Manufacturing
AMENDED 6/4/25

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	May 22, 2025 @ 10:15 am – 11:45 am

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
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DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the User Group 4: Shared Research Facilities and Advanced Materials to discuss the program for the project.			
1.2	4.05 Tools Storage needs to move to Construction and Advanced Materials. Needs to be adjacent to 3D printing.			
1.3	High Bay space for Construction and the high bay space for Advanced Manufacturing will be separate spaces but there are synergies between both departments. A 50' x 180' area may be better than 60' x 180' dimension. Anticipated floor to floor heights are 18' for first floor and 14'-8" for other floors.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.4	High bay truck access could be from the north side off South Stadium Drive. The turning radius may be too tight so the building may need to move back to the South.			
1.5	Advanced Manufacturing needs traditional machines as well as the cutting-edge machines for both academics and research.			
1.6	For equipment areas on the Advanced Manufacturing spreadsheet, Dimitris added 3 feet to each dimension and 50sf/person depending on occupancy. This is a grossing up factor that can be reduced slightly based on the equipment layout in the space.			
1.7	Advanced Manufacturing total area is totaling 20,999 sf. Offices for Advanced Manufacturing need to be in the lab space or immediately adjacent. The offices and conference room at 2,280 sf is already accounted for in the program.			
1.8	Dimitris will add heights to the equipment list. Everything on the equipment list will be new.			
1.9	Advanced Manufacturing spaces, for the most part, can be open unless they are listed as climate controlled.			
1.10	Micromills will need tight temperature and humidity controls.			
1.11	~~Advanced Manufacturing is not research and should not be labeled as such. Use Dimitris' spreadsheet for space program allocation.~~ Advanced Manufacturing in the CAMB is a facility and not research laboratory space. As a facility, Advanced Manufacturing in the CAMB provides services and resources necessary for both Research and Education. **REVISION 6/4/25**			
1.12	Separating research and Education is not feasible.			
1.13	Teaching currently is 19 sections of 6 students.			
1.14	A Programming de-brief with the Stakeholder Group had to be rescheduled to this time: • **On-Line Meeting**: Wednesday May 28th from 10:30am – 11:30am.			
1.15	End of Meeting			

END OF MINUTES

Attachments:

Research and Advanced Manufacturing Program

The preceding represents the author's understanding of the principal matters discussed. These notes will stand as a record of the above dated conference unless corrections are received within ten (10) days of issuance.

				Lab Module	30.00	x	10.67	320 sf				5/25/2025			
Prog. #	Space Category	FICM	Space Type	Occ	Lab Mods.	Lab SF	SF/Person	NASF	Qty.	Totals	Totals	Notes	Department	Exist Room	Exist Area
4.00	Research & Advanced Manufacturing	250	Construction Indoor Testing Lab 2/3 in high bay, 1/3 in lower height.		28.00	8,960 sf			1	8,960 sf		High Bay Lab - strong wall and floor, mezzanine above; adjacent to this space would accommodate environmental chambers. 10 feet x 16 feet exterior door. Overhead crane			
4.01	Research & Advanced Manufacturing		In-ground/Geotech / Resiliency Testing							Outdoors		15' x 15' x 5' D - see if feasible with high water table			
4.02	Research & Advanced Manufacturing	255	Materials Storage		4.00	1,280 sf			1	1,280 sf		shared with various departments, potentially outdoor space			
4.03	Research & Advanced	255	Layout/Workspace		0.50	160 sf			1	160 sf					
4.04	Research & Advanced Manufacturing		Additive Bay - Regular Scale (ABR)							3136		Per Tab on Manufacturing Updated 5-22-25			
4.05	Research & Advanced Manufacturing		Additive Bay - Large Scale (ABLS)							1313		Per Tab on Manufacturing Updated 5-22-25			
4.06	Research & Advanced Manufacturing		Subtractive Bay - Enclosed (SBE)							392		Per Tab on Manufacturing Updated 5-22-25			
4.07	Research & Advanced Manufacturing		Subtractive & Auxiliary Bay (SAB)							6982		Per Tab on Manufacturing Updated 5-22-25			
4.08	Research & Advanced Manufacturing		Workforce Bay (WFB)							5797		Per Tab on Manufacturing Updated 5-22-25, reduced to 6 stations			
Total	Research & Advanced Manufacturing										28,020 sf				

MEETING MINUTES- User Group 5: Administrative and Core Spaces

LOCATION:	Rm 3107 – Dean's Seminar Room Patrick F Taylor Hall
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	May 22, 2025 @ 12:45 pm – 2:15 pm

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ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the User Group 5: Administrative and Core Spaces to discuss the program for the project.			
1.2	The design team reviewed Chuck's spreadsheet and compared it to the overall program.			
1.3	Office needs are as follows for existing and future: - 8 more CM staff in cubicles - 14 total CM staff; not faculty with 2 future - 3 to 4 future technicians for equipment - 18 current faculty; with 18 new faculty anticipated - 3 department chairs and 1 director anticipated - 5 adjunct faculty that will be in 6'x8' cubicles - 12 Post doc workstations will be in 6'x8' cubicles			
1.4	5.08 Large conference of 50 can be eliminated but Industry Partner Conference room enlarges to 60 person from 50.			
1.5	Eliminate Quiet room and Team Rooms from program.			
1.6	GA growth to 90 is anticipated.			
1.7	Each researcher will have 5 to 7 PhD students per researcher.			
1.8	Mail currently gets delivered to the Dean's office suite. Workroom/ Copy room needs to have Mail added; and access directly from public corridor.			
1.9	Remove Student Work Space			
1.10	Remove the File room.			
1.11	IT needs 900 to 1,300 sf of space.			
1.12	IT requirements are 1% to 1.4% of the overall building area. Revisions to program include 1,300 sf of IT space which is sufficient.			
1.13	CM requested that the design team remove the 60 person classroom.			
1.10	Another environmental chamber was requested to test air quality in lieu of temperature and humidity.			
1.11	B.12, B13 and 4.18 are ME space requirements and may stay in PFT.			
1.12	A Programming de-brief with the Stakeholder Group had to be rescheduled to this time: • **On-Line Meeting**: Wednesday May 28th from 10:30am – 11:30am.			
ITEM #	**ITEM DISCUSSED**	**ACTION REQUIRED**	**DUE DATE**	**BALL IN COURT**
1.13	End of Meeting			

END OF MINUTES

Attachments:

Core Office Space Program

Prog. #	Space Category	FICM	Space Type	Occ	Lab Mods.	Lab SF	SF/Person	NASF	Qty.	Totals	Totals	Notes	Department	Exist Room	Exist Area
			Lab Module	3000	x	10.67	320 sf					3/13/2023			
S.00	Core Office Space		Entry/Reception					1,000 sf	1	1,000 sf		One work station for student worker,4 staff stations			
S.01	Core Office Space		CM Staff Offices	1				100 sf	16	1,600 sf		Decreased SF Area from 140 to 100; does not include IT staff, 14 currently, add 3-4 future hires.	CM		
S.02	Core Office Space		Student Workers					48 sf	4	192 sf		Include in workroom space			
S.03	Core Office Space		Director's Office	1				450 sf	2	900 sf		Added one director per WS No. 3			
S.04	Core Office Space		Department Chairs	1				120 sf	3	360 sf		WS No. 3 RequestsCM, Con E, Construction Technology			
S.05	Core Office Space		Faculty Office	1				100 sf	18	1,800 sf		Current Fac. Size			
S.06	Core Office Space		Future Faculty Office	1				100 sf	18	1,800 sf		Decreased SF Area, CM could grow from 17 - 20,			
S.07	Core Office Space		Adjunct/Visiting	shared				48 sf	5	240 sf		Workstation, flex spaces			
S.08	Core Office Space		Post-Doctoral Workstations	shared				48 sf	12	576 sf		10 or 12 workstations	CM	3320	1808
S.09	Core Office Space		Hoteling Modules					0 sf		0 sf					
S.10	Core Office Space		Small Conference Room	20				600 sf	1	600 sf		student defence space happens weekly; near admin suite			
S.11	Core Office Space		Social/Prep Area/Break Room/ Faculty Lounge					600 sf	1	600 sf		this includes Faculty and Staff Break Room and kitchenette			
S.12	Core Office Space		Copier Room					100 sf	1	100 sf		Copier with separate access from Hallway also connect to suite			
S.13	Core Office Space		Workroom / Mail					200 sf	1	200 sf		Copier with separate access from Hallway			
S.14	Core Office Space		Storage Room					150 sf	1	150 sf		Needs to be locked storage for supplies			
S.15	Core Office Space		IT Office	1				100 sf	3	300 sf		added space			
S.16	Core Office Space		IT Support	1				200 sf	1	200 sf		1 staff members			
S.17	Core Office Space		IT Server Room	1				400 sf	1	400 sf		CM - 6 Racks, coolers?,			
S.18	Core Office Space		IT Workspace	1				200 sf	1	200 sf		Work on servers and laptops			
S.19	Core Office Space		IT Storage Room	1				200 sf	1	200 sf		Storage of new and to be disposed equipment			
S.20	Core Office Space		*Industry Partner Suite:*												
S.21	Core Office Space		Industry Partner Conference Room:	60			32 sf/per	1,920 sf	1	1,920 sf		Combined with S.08			
S.22	Core Office Space		Industry Partner Hoteling Stations					100 sf	2	200 sf					
S.23	Core Office Space		Circulation					30%		4,061 sf					
Total	Core Office Space										17,599 sf 17,072 sf				

MEETING MINUTES- Stakeholder Group 10:30am

LOCATION:	Online Teams Meeting
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	May 28, 2025 @ 10:30 am – 11:30 am

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
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DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to meet with the Stakeholder Group to discuss the program revisions and summary from last week's workshop.			
1.2	A summary of the program was shared showing the difference between Workshop no. 2 program and the current program with and without the large 450 person Lecture Hall.			
1.3	A subtotal will be added for Advanced Manufacturing and Research.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.4	Item 1.10 and 2.00 should be combined into one 4 module space.			
1.5	The Dean expressed concern that there is currently not enough space allocated to research in the current program. Also, new research hires will tend to want their own research space and not share it.			
1.6	An accounting of what is being vacated in Patrick Taylor needs to be completed.			
1.7	There was discussion regarding the size of Item 4.00 Construction Indoor Testing Lab and whether it could be reduced to 6,000 sf in in lieu of the 8,960 currently shown.			
1.8	The Dean would like to see Program areas assigned to Research to be specifically indicated in the program document.			
1.9	**LSU** recommended elongating the programming schedule for completion at the end of July to ensure that the program, site analysis and stacking diagrams can be completed.			
1.10	A meeting with the Registrar will be scheduled for 6/9 between 10am – 11am.			
1.11	End of Meeting			

END OF MINUTES

Attachments:

The preceding represents the author's understanding of the principal matters discussed. These notes will stand as a record of the above dated conference unless corrections are received within ten (10) days of issuance.

MEETING MINUTES- Concept D and E Review 8:30am

LOCATION:	Online Teams Meeting
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	July 10, 2025 @ 8:30 am – 10:00 am

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
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DISCUSSION ITEMS

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to review the current Program Statement, Cost Models and proposed Design Concepts D and E.			
1.2	The meeting opened with a discussion about the rationale for developing the Cost Models that is based on complexity of space, room finishes, fixed equipment requirements, and other factors influencing cost.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.3	Five Unit Costs were discussed ranging from $450/SF to $1000/SF; a Matrix of Cost by type is included in the attached Programs.			
1.4	Based on the design team's experience with similar buildings, unit costs were applied to each program space resulting in Cost Models for two concepts; both concepts exceed the project budget of $81.9M			
1.5	One issue that could negatively impact cost is the need to shield sensitive equipment from Electro Magnetic Frequency (EMF) interference caused by overhead power lines. An EMF study has been requested but not yet performed.			
1.6	It was noted that the site was selected by the previous President and EMF interference could require moving the building farther to the west.			
1.7	Diagrams with power lines and possible ranges of interference are included in the attachments to these minutes.			
1.8	Two Concepts were discussed: Concept D (L-shaped) and Concept E (rectangular). Concept E is preferred but has more floor levels, building circulation, and a higher cost.			
1.9	Concept Plan comments included the following: a) The Auditorium occupancy is 250, the Lecture Hall of 450 was removed at the last discussion. b) Add "Workforce Development" label to Concept D c) Pedestrian pathways through the building are acceptable for day to day use, but pathways around the building should be provided for game-day traffic. d) Concepts are too literal and appear as plans, the linework should be softened to be more diagrammatic. They are meant to be refined bubble diagrams with many spaces flexible to be interchanged. e) Strategies to reduce cost and building area will be explored by the design team such as shared equipment corridors and reduced travel paths of the overhead crane.			
1.10	Concept D - Construction Cost Model is $85,883,359 (147,401 GSF) Concept E - Construction Cost Model is $89,182,858 (154,000 GSF) The Concepts are over budget by $3,983,358 & $7,282,858 respectively.			
1.11	Benchmarking costs for similar projects and a discussion about the potential for price increases from tariffs were discussed.			
1.12	There was a discussion about the possibility of using money recently appropriated by the state for this project, but it was also noted that fundraising goals had not yet been met. Opportunities to increase project funds will be discussed with the Dean.			
1.13	The EMF Study is critical to siting the building. If the study is not performed on July 17th, it will be delayed another month. The cost is $12,750. Michael Johnson will work to expedite approval of the funds			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
	which could come from the donor funds being used for current work.			
1.14	The state will not allow the Project to move forward into Basic Services unless it is in budget.			
1.15	The design team has constructed a list of possible program cuts to bring the project into budget; additional opportunities for refinement will be explored for discussion next week.			
1.16	The 180-person classroom and 250-person Auditorium were sized using 20sf/person. The design team thought that this factor should be increased to 25sf/person based on similar type spaces.			
1.17	Participants agreed to schedule a meeting for Thursday, July 17th at 8:30am- Jim Gabel has sent a meeting invite.			
1.18	End of Meeting			

END OF MINUTES

Attachments:

The preceding represents the author's understanding of the principal matters discussed. These notes will stand as a record of the above dated conference unless corrections are received within ten (10) days of issuance.

MEETING MINUTES- Concept D and E Review 8:30am

LOCATION:	Online Teams Meeting
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	July 17, 2025 @ 8:30 am – 10:00 am

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
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ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The subject of the meeting is the Construction & Advanced Manufacturing Building (CAAM). The current phase of work is Program Verification, which is scheduled for completion on July 21, 2025.			
1.2	Events included a review of the Program Statement, two design concepts, cost models, and refinements to bring the project into budget.			
1.3	The meeting opened with an explanation of the unit costs that were used for budgeting. Costs range from $450/SF to $1000/SF depending on interior finishes, complexity, and infrastructure needs. For example, although there are limited interior finishes in the High Bay, the tall space requires more building skin, has a partial strong floor and overhead crane, and may require some specialized ventilation.			
1.4	Unit costs are based on benchmarking and the design team's experience with similar projects. Currently there is no approved design that could be used for SF takeoffs or to describe the architectural detail.			
1.5	There was a discussion about adherence to campus context and the use of slopped roofs with tile.			
1.6	There is a desire to provide a modern architectural expression for the CAAM that is indicative of the innovative activities occurring within. It was noted that project success will be getting the Board to agree on a departure from campus conventions.			
1.7	LSU intends to engage a Construction Manager at Risk (CMR) who will provide cost estimates during Schematic Design. The proposal for CMR is due August 6th; selection of the CMR will occur in late September or October.			
1.8	Some spaces may have higher unit costs than LSU believe is required; feedback will be provided.			
1.9	Classrooms have been increased from 20SF/person to 25SF/person to accommodate active learning environments. The Dean wants maximum flexibility with flat floors where feasible.			
1.10	Construction Costs for Concept D and E were presented as follows: • Concept D is 150,664 SF with an estimated cost of $87,351,933 • Concept E is 154,000 SF with an estimated cost of $89,019,805 • The project budget is $81,900,000 * * The project cannot move forward until it is within budget.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.11	**Concept D** was presented to illustrate its relationship to future buildings within the quad, and its proximity to overhead power lines that may interfere with sensitive electronics and processes in some parts of the building. A study of potential electromagnetic interference has been approved and will take place soon. The results of the study could impact the siting or cost of the CAAM. 			
1.12	**Concept E** shares the same siting and cost impact issues as D. 			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.13	It was noted that benchmarks for cost were constructed at institutions that are not all R1. The Dean will provide examples of completed projects in addition to those noted below: 1. University of Texas El Paso - Advanced Manufacturing & Aerospace Center 2. Rice University (O'Connor Building for Engineering and Science and the Physics Building) 3. Brown University - Engineering Research Center			
1.14	The design team will develop benchmarking data for R1 campuses.			
1.15	The state legislature has approved an additional $10M for the CAAM, however fundraising is ongoing, and it is unknown if those funds will be additive or required to meet funding goals.			
1.16	No selection of a preferred Concept was made; both concepts were noted as having desirable components			
1.17	Program cuts were discussed, including classrooms. To verify the extent of CM curriculum, LSU will provide registration records so the design team can perform utilization analysis.			
1.18	Internal LSU meetings will be held to identify program cuts.			
1.19	A meeting for Friday, August 1st was scheduled to review cuts and any preliminary findings of the EMF Study			
1.20	Michael Johnson agreed that an extension of the project is required. The design team will file for an extension.			
1.21	End of Meeting			

END OF MINUTES

Attachments:

1. PPT Presentation
2. Program Statement in Excel format

The preceding represents the author's understanding of the principal matters discussed. These notes will stand as a record of the above dated conference unless corrections are received within ten (10) days of issuance.


Grace
Design Studios
HERA laboratory planners
Teams Meeting- Update
Construction & Advanced
Manufacturing Building


AGENDA
• Program Statement & Unit Costs
• Concept D:
• Design Concept
• Opportunities for Cost Modification
• Concept E:
• Design Concept
• Opportunities for Cost Modification
• Next Steps

SPACE TYPES IN COST MODEL

	$450 / sf	$550 / sf	$600 / sf	$800 / sf	$1000 / sf	
Space Criteria	**Type 1 ($) Low Intensity**	**Type 2 ($$) Medium Intensity**	**Type 3 ($$$) High Intensity**	**Type 4 ($$$) Specialty Mid/ High Bays (Clean)**	**Type 5 ($$$) Specialty Mid/ High Bays (Dirty)**	**Notes**
			Architectural			
Space Type Examples	Office, Conference Room, Breakroom, Storage, Classroom, Dry Lab	Robotics, Drones, Control Rooms, Hardware Makerspace, AR/ VR, Rest Rooms	Wet Labs, Robotics, Drone Labs	Advanced Manufacturing, 3D Printing	Fabrication, Machine-Shop, Construction	-
Occupancy	Business	Business	Business	Business	Business	Per Chapter 3 - IBC or equivalent
Finishes	Carpet, latex paint, ceiling tile/ no tile	ESD Carpet/ Tile, latex paint, ceiling tile/ no tile	ESD Tile, Latex Paint, scrubable ceiling tile/ no tile	Specialty/Raised Flooring, latex paint, ceiling tile	Special finishes depending on type of lab	
Ceiling/Height	Normal Ceiling Height (9- to 10')	Normal Ceiling Height (9' to 10')	Normal Ceiling Height (9' to 10')	17' to 35' open to structure	17' to 35' open to structure	
Shielding	N/A	TBD	N/A	N/A	N/A	
			Structural			
Live Floor Load	standard office requirements	Standard office requirements	? kPa	? kPa	7 kPa? (for labs requiring vehicle access or with heavy equipment loads)	General guidelines - confirm with Structural engineer.
Vibration Attenuation (VC Criteria)	200 micrometers / second or less (VC-Residential Day)	100 micrometers / second or less (VC-Op. Theater)	25-50 micrometers/ second or less (VC-A or B)	100 micrometers / second or less (VC-Op. Theater)	25-50 micrometers/ second or less (VC-A or B). Need to confirm	
Noise						-
Acoustics	-		-	-		-
			Mechanical			
Temperature	Summer 72° F (+/- 2°), Winter 68° F	Summer 72° F (+/- 2°), Winter 68° F	Summer 72° F (+/- 2°), Winter 68° F	Summer 72 (+/- 10°), Winder 68° F	Unconditioned air, but forced	-
Relative Humidity	65% or less, no humidification	65% or less, no humidification	65% or less, no humidification	65% or less, no humidification	TBD	If lower humidity is required, recommendation is to provide local dehumidification
100% Exhaust For Room Air?	No	No. Some local task exhaust as needed	(strongly recommended, or adequate filtration) 100% exhaust required in rooms with chemicals.	No. Some local task exhaust as needed	No	Single-pass air recommended for any areas with potential chemical or biohazards.
24/7 Mechanical Ventilation	No	yes	Yes	Yes	Yes	
Ceiling Fans	No	No	No	Yes	Yes	
Specialty Exhaust	none	Fume Extraction Arms	Fume extraction arms/ Fume Hoods/ canopy hoods	Fume extraction arms/ canopy hoods	Fume extraction arms/ Fume Hoods/ canopy hoods	-

SPACE TYPES IN COST MODEL

	$450 / sf	$550 / sf	$600 / sf	$800 / sf	$1000 / sf	
Space Criteria	**Type 1 ($) Low Intensity**	**Type 2 ($$) Medium Intensity**	**Type 3 ($$$) High Intensity**	**Type 4 ($$$) Specialty Mid/ High Bays (Clean)**	**Type 5 ($$$) Specialty Mid/ High Bays (Dirty)**	**Notes**
			Architectural			
Space Type Examples	Office, Conference Room, Breakroom, Storage, Classroom, Dry Lab	Robotics, Drones, Control Rooms, Hardware Makerspace, AR/ VR, Rest Rooms	Wet Labs, Robotics, Drone Labs	Advanced Manufacturing, 3D Printing	Fabrication, Machine-Shop, Construction	-
Occupancy	Business	Business	Business	Business	Business	Per Chapter 3 - IBC or equivalent
Finishes	Carpet, latex paint, ceiling tile/ no tile	ESD Carpet/ Tile, latex paint, ceiling tile/ no tile	ESD Tile, Latex Paint, scrubable ceiling tile/ no tile	Specialty/Raised Flooring, latex paint, ceiling tile	Special finishes depending on type of lab	
Ceiling/Height	Normal Ceiling Height (9- to 10')	Normal Ceiling Height (9' to 10')	Normal Ceiling Height (9' to 10')	17' to 35' open to structure	17' to 35' open to structure	
Shielding	N/A	TBD	N/A	N/A	N/A	
			Plumbing			
Lab Sinks (Cold water & Drain)	No	No	As needed	As needed	As needed	-
Safety Showers & Eye Washes	No	No	As needed to meet safety requirements.	As needed to meet safety requirements.	As needed to meet safety requirements.	PRovide per ANSI Z358.1 guidelines
House Lab Gases	No	No	TBD	TBD	TBD	-
Local Specialty Gases	No	No	In addition to standard lab gases, specialty gases or gas mixes may be required.	TBD	No	-
			Electrical			
Power	Low Intensity 120V ~20 W/sm	High Intensity 120V, 208V ~? W/SM	Medium Intensity 120V, 208V ~? W/SM	High Intensity 120V, 208V, 480V ~? W/SM	Medium Intensity 120V, 208V, 480V ~? W/SM	Higher voltage may sometimes be required for specific pieces of equipment.

PUBLIC & STUDENT SPACE

Prog. #	Space Type	Occ	Lab Mods.	Lab SF	SF/ Person	NASF	Qty.	Totals	Totals	Space Classification	Cost
A.01	Entry Vestibule					300 sf	2	600 sf		Type 1	$ 270,000
A.02	Lobby/ Industry Showcase - WOW SPACE					2,000 sf	1	2,000 sf		Type 1	$ 900,000
A.03	Student Lounge/Collaboration/Study					see 3.01				Type 1	$ -
A.04	Women's Restroom					275 sf	4	1,100 sf		Type 2	$ 605,000
A.05	Men's Restroom					275 sf	4	1,100 sf		Type 2	$ 605,000
A.06	Gender Neutral Restroom					80 sf	4	320 sf		Type 2	$ 176,000
A.07	Staff Restrooms					200 sf	1	200 sf		Type 2	$ 110,000
A.08	Vending					150 sf	1	150 sf		Type 1	$ 67,500
A.09	Café / Grab n' Go					500 sf	1	500 sf		Type 1	$ 225,000
A.10	Café Prep Area					200 sf	1	200 sf		Type 1	$ 90,000
A.11	Café Food Storage					150 sf	1	150 sf		Type 1	$ 67,500
A.12											
Total	PUBLIC SPACE								6,320 sf		
B.01	Commons - First Floor					2,000 sf	1	2,000 sf		Type 1	$ 900,000
B.02	Commons - Second Floor					1,500 sf	1	1,500 sf		Type 1	$ 675,000
B.03	Commons - Third Floor					1,000 sf	1	1,000 sf		Type 1	$ 450,000
B.04	Commons - Fourth Floor					1,000 sf	1	1,000 sf		Type 1	$ 450,000
B.05	Workforce Leadership Dev. Center					600 sf	1	600 sf		Type 1	$ 270,000
B.06	Student Associations					300 sf	1	300 sf		Type 1	$ 135,000
B.10	Info/Hub Service/Printing					200 sf	1	200 sf		Type 1	$ 90,000
B.11	GA Area/Coffee/Storage					3,000 sf	1	3,000 sf		Type 1	$ 1,350,000
Total	STUDENT SPACE								9,600 sf		

CONSTRUCTION & ADVANCED MATERIALS AND CYBER PHYSICAL INFRASTRUCTURE &

Prog. #	Space Type	Occ	Lab Mods.	Lab SF	SF/ Person	NASF	Qty.	Totals	Totals	Space Classification	Cost
1.00	Materials Storage		1.00	320 sf			1	320 sf		Type 3	$ 192,000
1.01	Materials Prep		1.00	320 sf			1	320 sf		Type 3	$ 192,000
1.02	Materials Fabrication		1.50	480 sf			1	480 sf		Type 3	$ 288,000
1.03	Materials Curing - Dry		0.50	160 sf			1	160 sf		Type 3	$ 96,000
1.04	Materials Curing - High Humidity		0.50	160 sf			1	160 sf		Type 3	$ 96,000
1.05	Material Diagnostics/Testing		3.00	960 sf			1	960 sf		Type 3	$ 576,000
1.06	Sample Prep & Cleanup Area		0.50	160 sf			1	160 sf		Type 3	$ 96,000
1.07	Drying / Asphalt Ovens		1.00	320 sf			1	320 sf		Type 3	$ 192,000
1.08	Material Research Lab		2.00	640 sf			1	640 sf		Type 3	$ 384,000
1.09	Material Research Lab for Future Faculty		2.00	640 sf			1	640 sf		Type 3	$ 384,000
1.10	Environmental Chamber		1.00	320 sf			1	320 sf		Type 3	$ 192,000
1.11	Tools Storage CM		0.50	160 sf			1	160 sf		Type 3	$ 96,000
1.12	Concrete 3-D Printing		4.00	1,280 sf			1	1,280 sf		Type 3	$ 768,000
Total	CONSTRUCTION & ADVANCED MATERIALS								5,920 sf		
2.00	Living Lab for Building and Systems		3.00	960 sf			1	960 sf		Type 3	$ 576,000
2.01	Robotics & Automation Test Suite		4.00	1,280 sf			1	1,280 sf		Type 3	$ 768,000
2.02	Cyber-Physical Systems		2.00	640 sf			1	640 sf		Type 3	$ 384,000
2.03	Radio Frequency Testing Lab		1.00	320 sf			1	320 sf		Type 3	$ 192,000
2.04	Software and Sensor Development		2.00	640 sf			1	640 sf		Type 3	$ 384,000
2.05	Drone Lab		4.00	1,280 sf			1	1,280 sf		Type 3	$ 768,000
Total	CYBER PHYSICAL INFRASTRUCTURE & ROBOTICS								5,120 sf		

DIGITAL CONSTRUCTION AND RESEARCH & ADVANCED MANUFACTURING

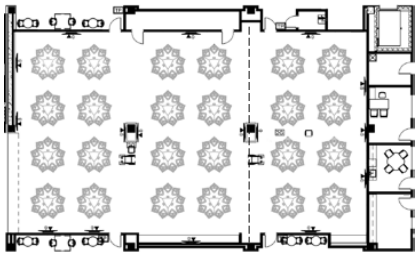
Prog. #	Space Type	Occ	Lab Mods.	Lab SF	SF/ Person	NASF	Qty.	Totals	Totals	Space Classification	Cost
3.00	Motion Capture Lab		3.00	960 sf			1	960 sf		Type 2	$ 528,000
3.01	Research Lab		3.00	960 sf			1	960 sf		Type 2	$ 528,000
3.02	DOE- Industrial Assessment Center		3.00	960 sf			1	960 sf		Type 2	$ 528,000
3.03	VR Simulation		3.00	960 sf			1	960 sf		Type 2	$ 528,000
3.04	Construction Equipment Simulation		3.00	960 sf			1	960 sf		Type 2	$ 528,000
3.05	BIM Cave Storage/ Grad Space		2.00	640 sf			1	640 sf		Type 2	$ 352,000
3.06	BIM Cave		3.00	960 sf			1	960 sf		Type 2	$ 528,000
Total	DIGITAL CONSTRUCTION								6,400 sf		
4.00	Construction Indoor Testing Lab 2/3 in high bay, 1/3 in lower height.		28.00	8,960 sf			1	8,960 sf		Type 5	$ 8,960,000
4.01	In-ground/Geotech / Resiliency Testing					Outdoors					$ -
4.02	Materials Storage		4.00	1,280 sf			1	1,280 sf		Type 3	$ 768,000
4.03	Layout/Workspace		0.50	160 sf			1	160 sf		Type 2	$ 88,000
4.04	Additive Bay - Regular Scale (ABR)			-	-	-	-	3,136 sf		Type 5	$ 3,135,600
4.05	Additive Bay - Large Scale (ABLS)			-	-	-	-	1,313 sf		Type 5	$ 1,313,000
4.06	Subtractive Bay - Enclosed (SBE)			-	-	-	-	392 sf		Type 5	$ 392,000
4.07	Subtractive & Auxiliary Bay (SAB)			-	-	-	-	6,982 sf		Type 5	$ 6,982,250
4.08	Workforce Bay (WFB)			-	-	-	-	5,797 sf		Type 5	$ 5,797,000
Total	RESEARCH & ADVANCED MANUFACTURING								28,020 sf		

CORE OFFICE SPACE

Prog. #	Space Type	Occ	Lab Mods.	Lab SF	SF/ Person	NASF	Qty.	Totals	Totals	Space Classification	Cost
5.00	Entry/Reception					1,000 sf	1	1,000 sf		Type 1	$ 450,000
5.01	CM Staff Offices	1				100 sf	16	1,600 sf		Type 1	$ 720,000
5.02	Student Workers					48 sf	4	192 sf		Type 1	$ 86,400
5.03	Director's Office	1				450 sf	2	900 sf		Type 1	$ 405,000
5.04	Department Chairs	1				120 sf	3	360 sf		Type 1	$ 162,000
5.05	Faculty Office	1				100 sf	18	1,800 sf		Type 1	$ 810,000
5.06	Future Faculty Office	1				100 sf	18	1,800 sf		Type 1	$ 810,000
5.07	Adjunct/Visiting	shared				48 sf	5	240 sf		Type 1	$ 108,000
5.08	Post-Doctoral Workstations	shared				48 sf	12	576 sf		Type 1	$ 259,200
5.09	Hoteling Modules					0 sf		0 sf			$ -
5.10	Small Conference Room	20				600 sf	1	600 sf		Type 1	$ 270,000
5.11	Social/Prep Area/Break Room/ Faculty Lounge					600 sf	1	600 sf		Type 1	$ 270,000
5.12	Copier Room					100 sf	1	100 sf		Type 1	$ 45,000
5.13	Workroom / Mail					200 sf	1	200 sf		Type 1	$ 90,000
5.14	Storage Room					150 sf	1	150 sf		Type 1	$ 67,500
5.15	IT Office	1				100 sf	3	300 sf		Type 1	$ 135,000
5.16	IT Support	3				200 sf	1	200 sf		Type 1	$ 90,000
5.17	IT Server Room	1				400 sf	1	400 sf		Type 1	$ 180,000
5.18	IT Workspace	1				200 sf	1	200 sf		Type 1	$ 90,000
5.19	IT Storage Room	1				200 sf	1	200 sf		Type 1	$ 90,000
5.20	*Industry Partner Suite:*										
5.21	Industry Partner Conference Room:	60			32 sf/per	1,920 sf	1	1,920 sf		Type 1	$ 864,000
5.22	Industry Partner Hoteling Stations					100 sf	2	200 sf		Type 1	$ 90,000
6.23	Circulation					30%		4,061 sf		Type 1	$ 1,827,630
Total	CORE OFFICE SPACE								17,599 SF		

CORE ACADEMIC SPACE

Prog. #	Space Type	Occ	Lab Mods.	Lab SF	SF/ Person	NASF	Qty.	Totals	Totals	Space Classification	Cost
6.00	Classroom	180			25 sf/per	4,500 sf	2	9,000 sf		Type 1	$ 4,050,000
6.01	Auditorium	250			25 sf/per	6,250 sf	1	6,250 sf		Type 1	$ 2,812,500
6.02	Open Student Computer Lab	30			30 sf/per	900 sf	1	900 sf		Type 1	$ 405,000
6.03	Lecture Hall	450			25 sf/per	11,250 sf	0	0 sf			$ -
6.04	Classroom Service/Closets					100 sf	1	100 sf		Type 1	$ 45,000
6.05	Classroom Media Storage					100 sf	1	100 sf		Type 1	$ 45,000
6.06	Classroom Equipment Storage					100 sf	1	100 sf		Type 1	$ 45,000
6.07	CM Senior Project Lab	34	7.00	2,240 sf	65 sf/per		1	2,240 sf		Type 1	$ 1,008,000
6.08	Computer Lab/ CAD Stations		3.00	960 sf			1	960 sf		Type 1	$ 432,000
6.09	Scheduling /Cost Estimating/ BIM Lab	75	7.00	2,240 sf	30 sf/per		1	2,240 sf		Type 2	$ 1,232,000
6.10	Online Learning Media Green Screen Room		1.00	320 sf		320 sf	1	320 sf		Type 2	$ 176,000
Total	CORE ACADEMIC SPACE								22,210 SF		



216 Seats at 23.5 SF/Person
at Tables with 9 chairs
2 Microphones per Table,
2 Podiums in Room,
16 Wall Monitors
Divisible into 1/3 – 2/3

BUILDING SUPPORT

Prog. #	Space Type	Occ	Lab Mods.	Lab SF	SF/ Person	NASF	Qty.	Totals	Totals	Space Classification	Cost
C.01	General Storage		2.00	640 sf			1	640 sf		Type 1	$ 288,000
C.02	Bulk Chemical Storage		0.50	160 sf			1	160 sf		Type 1	$ 72,000
C.03	Hazardous Material Storage		0.50	160 sf			1	160 sf		Type 1	$ 72,000
C.04	Lab Waste Storage		0.25	80 sf			1	80 sf		Type 1	$ 36,000
C.05	Custodial Equipment / Building Storage		2.00	640 sf			1	640 sf		Type 1	$ 288,000
C.06	Cylinder Storage		0.50	160 sf			1	160 sf		Type 1	$ 72,000
C.07	Data Entrance Room		0.50	160 sf			1	160 sf		Type 1	$ 72,000
C.08	Data Distribution Closets		0.25	80 sf			3	240 sf		Type 1	$ 108,000
C.09	Electrical Entrance Room		1.00	320 sf			1	320 sf		Type 1	$ 144,000
C.10	Electrical Distribution Closets		0.25	80 sf			3	240 sf		Type 1	$ 108,000
C.11	Communication Entry Room		0.50	160 sf			1	160 sf		Type 1	$ 72,000
C.12	Communication Distribution Closets		0.25	80 sf			3	240 sf		Type 1	$ 108,000
C.13	Elevator - Freight		0.40	128 sf			1	128 sf		Type 5	$ 128,000
C.14	Elevator - Passenger		0.30	96 sf			1	96 sf		Type 5	$ 96,000
C.15	Elevator Equipment		0.25	80 sf			1	80 sf		Type 1	$ 36,000
C.16	Janitor's Closet		0.20	64 sf			4	256 sf		Type 1	$ 115,200
C.17	Marshalling / Receiving / Dock		1.50	480 sf			1	480 sf		Type 1	$ 216,000
C.18	Temporary Staging		2.00	640 sf			1	640 sf		Type 1	$ 288,000
C.19	Fire Pump		0.40	128 sf			1	128 sf		Type 1	$ 57,600
C.20	Backflow Preventer		1.00	320 sf			1	320 sf		Type 1	$ 144,000
C.21	Air Compressors, Vacuum		1.00	320 sf			1	320 sf		Type 1	$ 144,000
C.22	DI House Water System		1.00	320 sf			1	320 sf		Type 1	$ 144,000
C.23	Generator - Backup Power		1.00	320 sf			1	320 sf		Type 1	$ 144,000
C.24	Recycling Room		0.25	80 sf			1	80 sf		Type 1	$ 36,000
C.25	Penthouse		0.00	0 sf				0 sf		Type 1	$ -
Total	BUILDING SUPPORT								6,368 sf		
D.01	Mechanical Systems						7%	7,529 sf		Type 1	$ 3,388,053
Total	MECHANICAL SYSTEMS								7,529 sf		

CONCEPT TOTAL

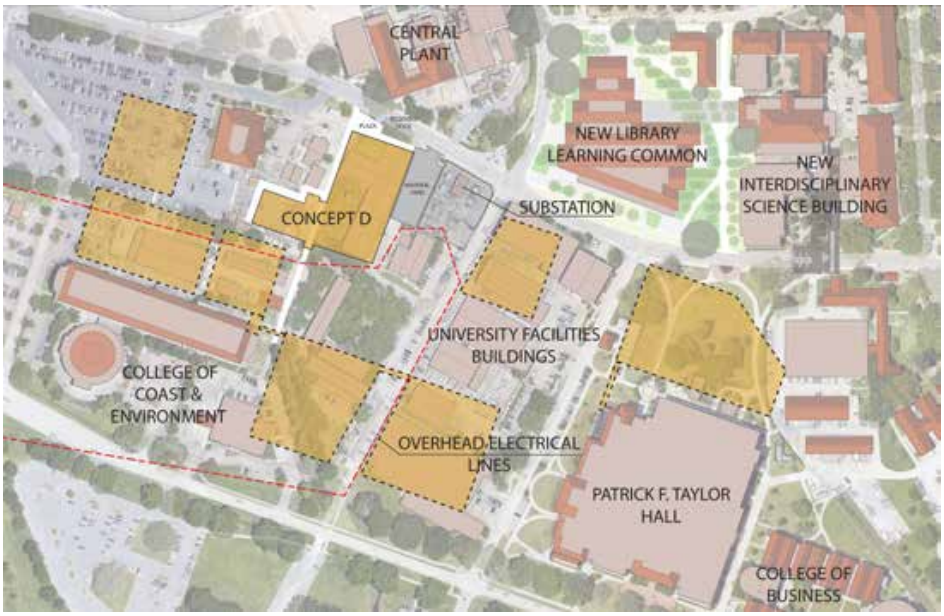
CONCEPT D

SUBTOTAL OF ASSIGNABLE SF AREA	67%	101,189 sf			
BUILDING SUPPORT & MECHANICAL	9%	13,897 sf			
BUILDING WALLS/CIRCULATION	24%	35,578 sf	$500/SF	$ 17,789,000	
GROSS BUILDING AREA	100%	150,664 sf		$ 87,351,933	$579.78/SF

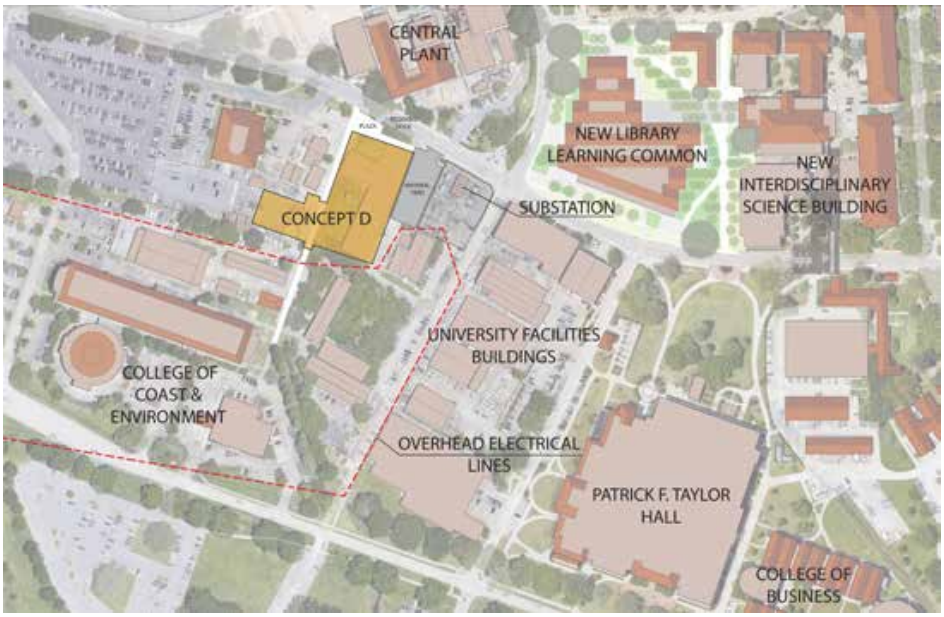
CONCEPT E

SUBTOTAL OF ASSIGNABLE SF AREA	66%	101,189 sf			
BUILDING SUPPORT & MECHANICAL	9%	13,897 sf			
BUILDING WALLS/CIRCULATION	25%	38,914 sf	$500/SF	$ 19,456,871	
GROSS BUILDING AREA	100%	154,000 sf		$ 89,019,805	$578.05/SF

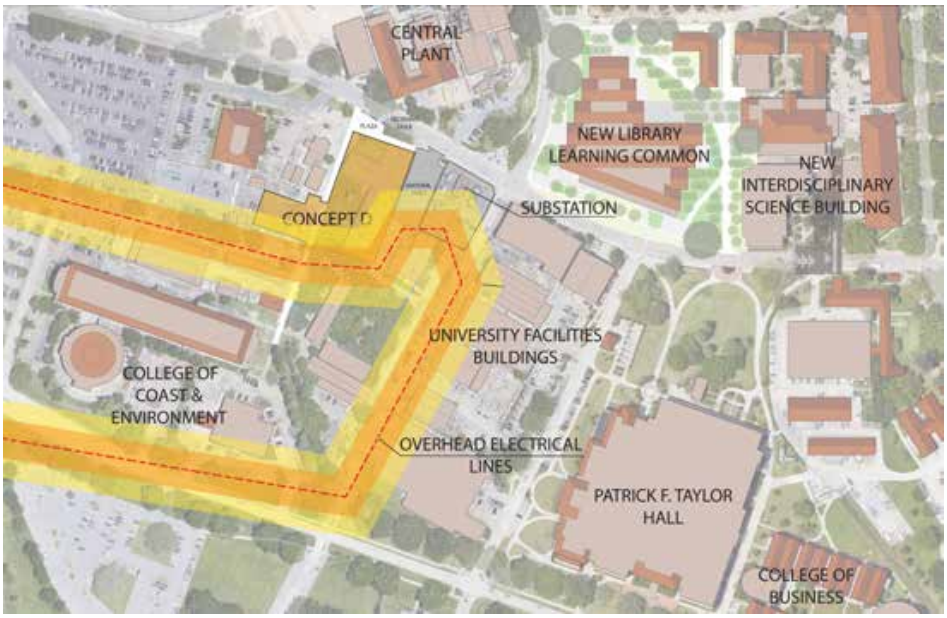
PROPOSED MASTER PLAN SITE



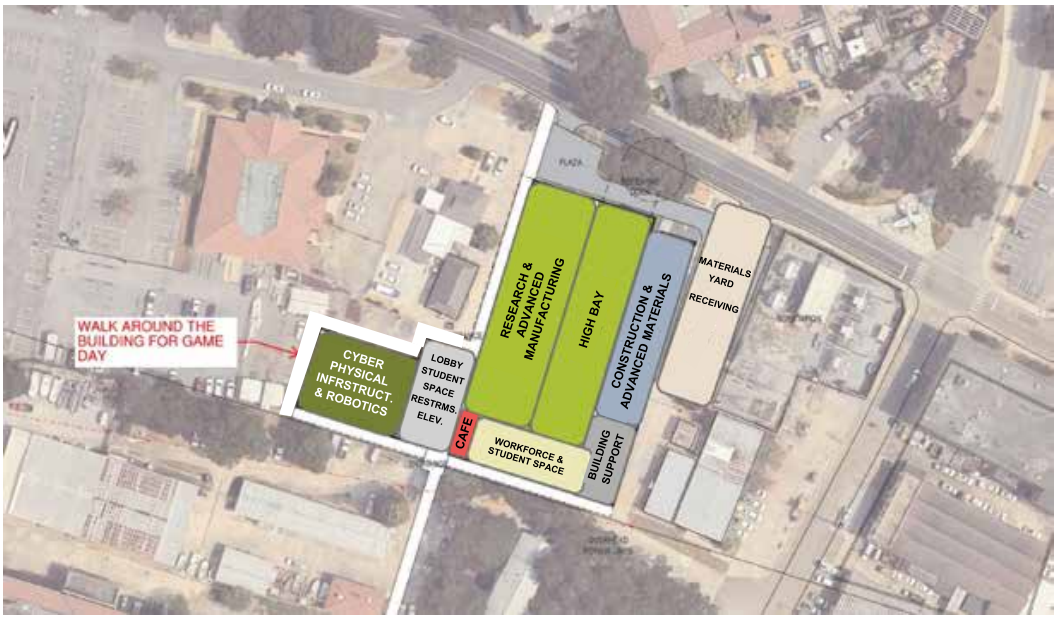
SITE PLAN



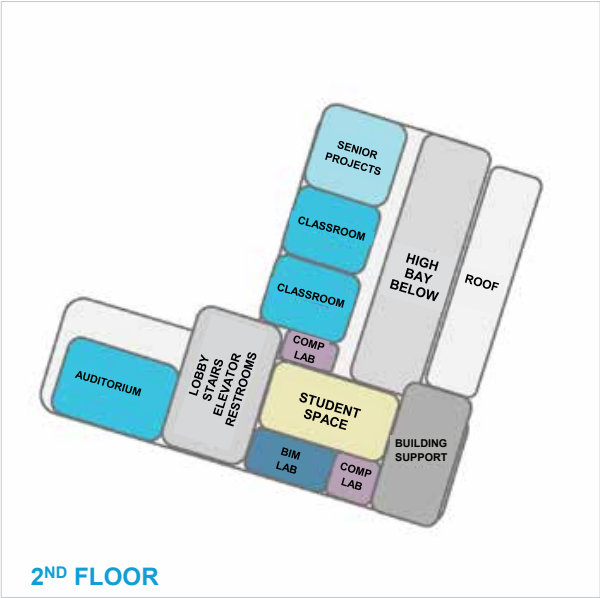
POWER LINES



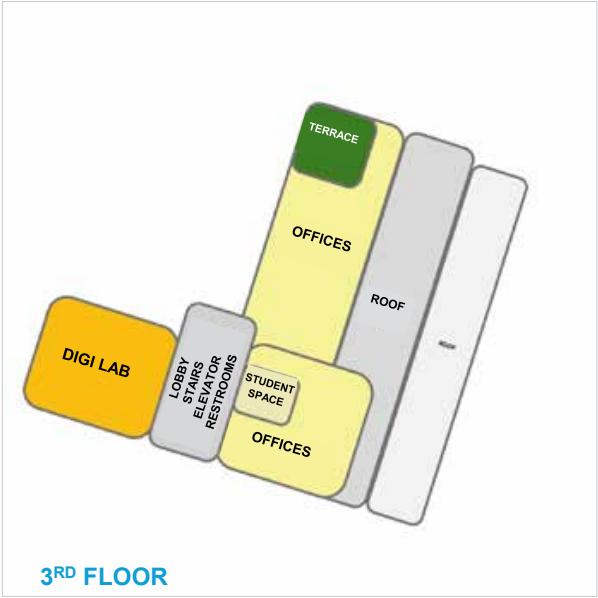
DESIGN CONCEPT D – ENTRY LEVEL



DESIGN CONCEPT D



2ND FLOOR



3RD FLOOR

DESIGN CONCEPT D

PENTHOUSE

MASSING DIAGRAM 1

MASSING DIAGRAM 2

BUDGET ANALYSIS

CONCEPT D					
NASF	67%	101,189 sf			
SUPPORT & MECH.	9%	13,897 sf			
WALLS/CIRC.	24%	35,578 sf	$500 / SF	$17,789,000	
GROSS SF	100%	150,646 sf		$87,351,933	$579.85 /sf

Budget	$81,900,000
Concept D	$87,351,933
Over Budget	$(5,451,933)



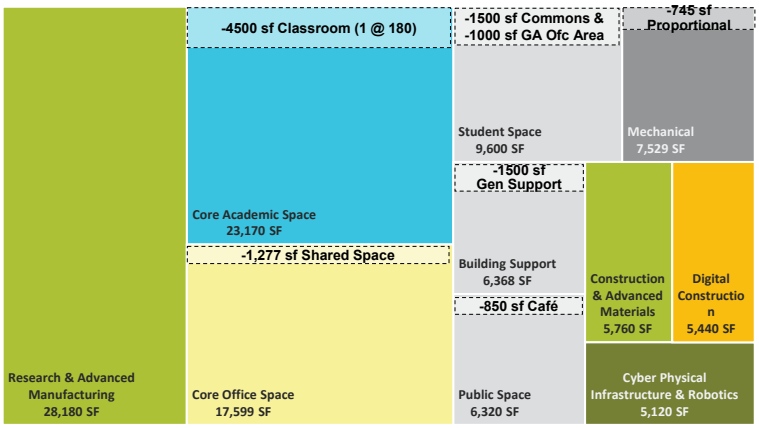
COST MODEL - BENCHMARKING

OWNER/CLIENT	PROJECT NAME	OPEN	NEW	TOTAL SF	INFLATED COST	BATON ROUGE COST/SF	BATON ROUGE COST
Marshall University	Weisberg Applied Engineering Complex	2015	145,463 sf	145,463 sf	$82,757,131	$533 /sf	$77,530,365
Middle Tennessee State University	School of Concrete & Construction Mngmt.	2022	54,000 sf	54,000 sf	$46,277,651	$887 /sf	$47,891,988
Morehead State University	Science and Engineering Building	2028	123,000 sf	123,000 sf	$71,153,846	$578 /sf	$71,153,846
Saint Louis University	Interdisciplinary Science & Engineering Bldg.	2020	89,007 sf	89,007 sf	$71,101,326	$711 /sf	$63,280,180
SIU-Edwardsville	Engineering Building Addition	2013	37,036 sf	37,036 sf	$18,738,307	$441 /sf	$16,350,091
Texas A&M U - Texarkana	Academic Building	2026	61,896 sf	61,896 sf	$24,910,000	$412 /sf	$25,482,644
Virginia Western Community College	STEM Building	2019	72,000 sf	72,000 sf	$41,954,094	$589 /sf	$42,430,845
Average						**$593 /sf**	

LSU Health Interdisciplinary Science Building – Construction Start March 2024 - $618/sf

PROPOSED COST MODIFICATIONS

CAAM PROGRAM + PROPOSED REFINEMENTS



SPACE CATEGORY	PROG SF	CUTS	NEW SF
Public Space	6,320 sf	-850 sf	5,470 sf
Student Space	9,600 sf	-2,500 sf	7,100 sf
Construction & Advanced Materials	5,920 sf	0 sf	5,760 sf
Cyber Physical Infrastr. & Robotics	5,120 sf	0 sf	5,120 sf
Digital Construction	6,400 sf	0 sf	5,440 sf
Core Academic	22,210 sf	-4,500 sf	18,670 sf
Research & Adv. Manufacturing	28,020 sf	0 sf	28,180 sf
Core Office Space	17,599 sf	-1,277 sf	16,322 sf
Building Support	6,368 sf	-1,520 sf	4,848 sf
Mechanical	7,529 sf	-745 sf	6,784 sf
Total Net Area	115,086 sf	-11,392 sf	103,694 sf
Circulation/Walls	35,578 sf	-2,214 sf	33,365 sf
Gross SF Area	**150,644 sf**	**13,606 sf**	**137,059 sf**

BUDGET ANALYSIS

CONCEPT D					
NASF	67%	101,189 sf			
SUPPORT & MECH.	9%	13,897 sf			
WALLS/CIRC.	24%	35,578 sf	$500 / SF	$17,789,000	
GROSS SF	100%	150,646 sf		$87,351,933	$579.85 /sf

Budget	$81,900,000
Concept D	$87,351,933
Over Budget	$(5,451,933)

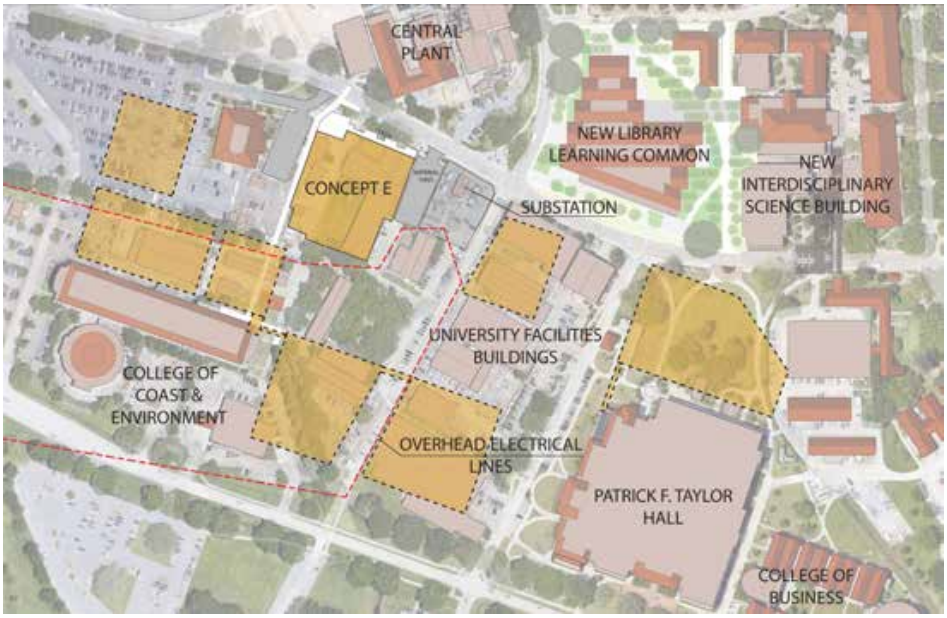
PROPOSED REFINEMENTS					
NASF	67.1%	92,062 sf			
SUPPORT & MECH.	8.5%	11,632 sf			
WALLS/CIRC.	24.4%	33,365 sf	$500 / SF	$16,682,308	
GROSS SF	100.0%	137,059 sf		$81,118,711	$591.85 /sf

Budget	$81,900,000
Proposed	$81,118,711
	$ 781,289

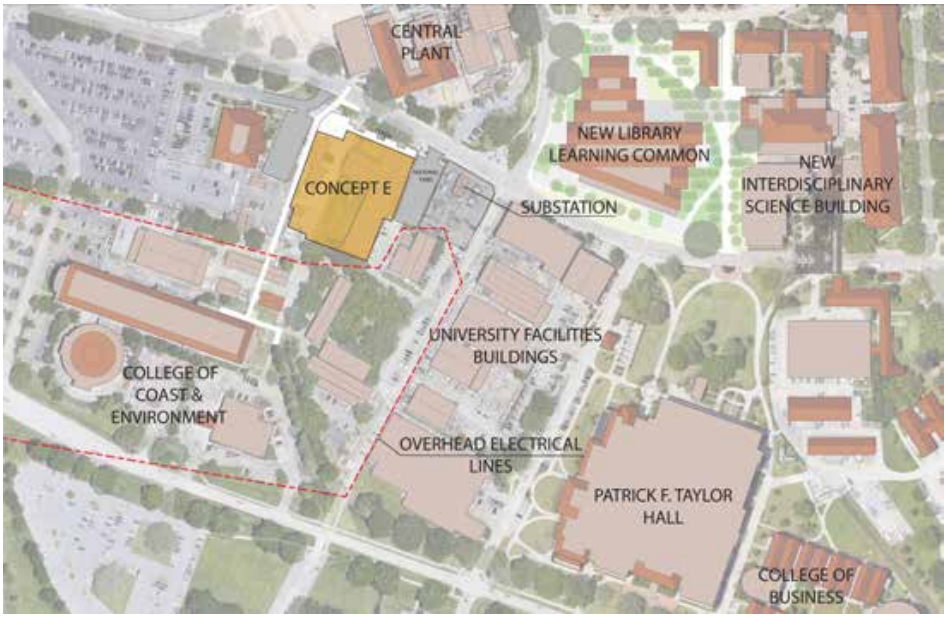
AGENDA

- Program Statement & Unit Costs
- Concept D:
  - Design Concept
  - Opportunities for Cost Modification
- **Concept E:**
  - Design Concept
  - Opportunities for Cost Modification
- Next Steps

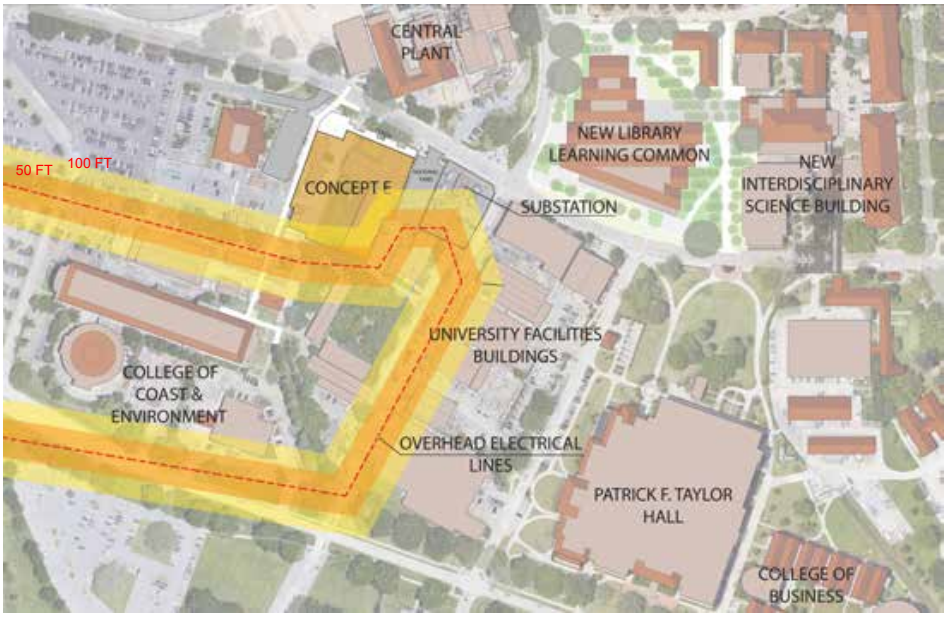
PROPOSED MP SITE PLAN



SITE PLAN

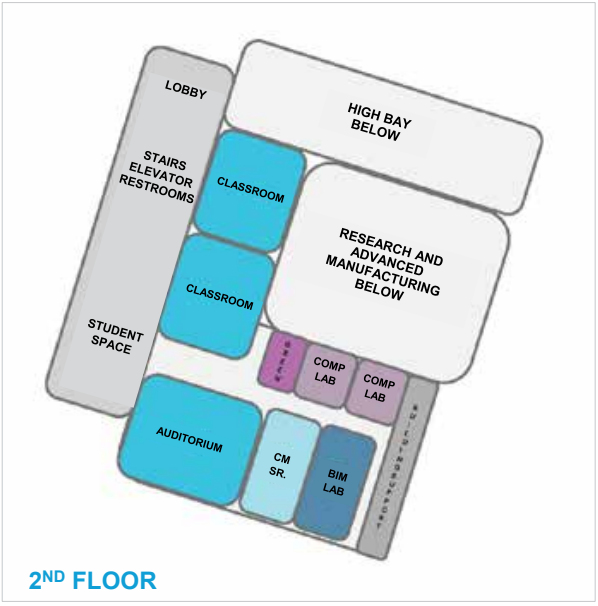


POWER LINES

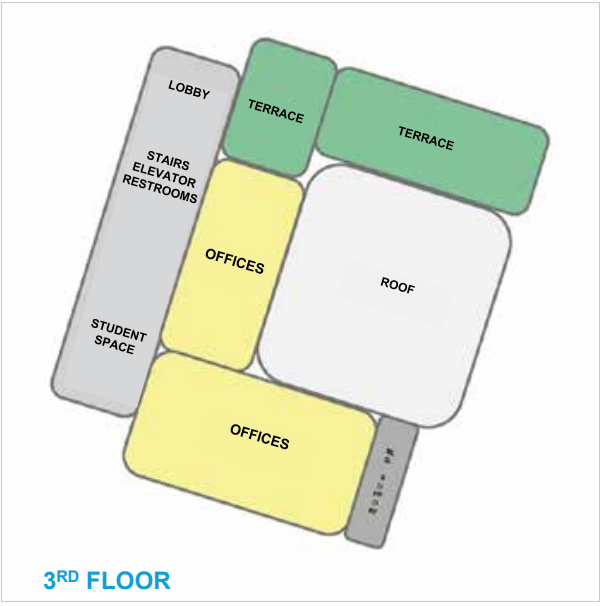


DESIGN CONCEPT E – ENTRY LEVEL

DESIGN CONCEPT E

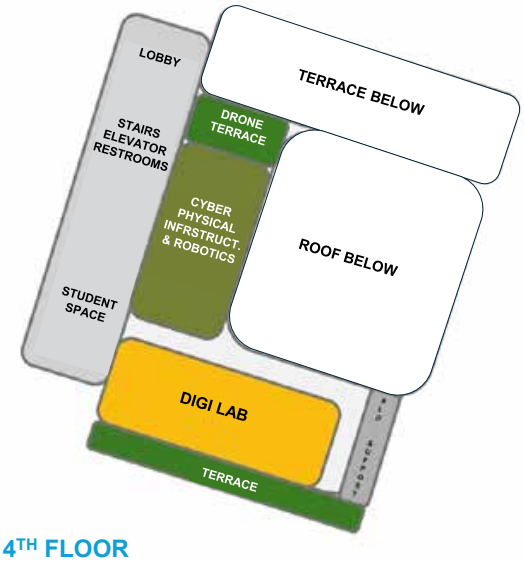


2ND FLOOR



3RD FLOOR

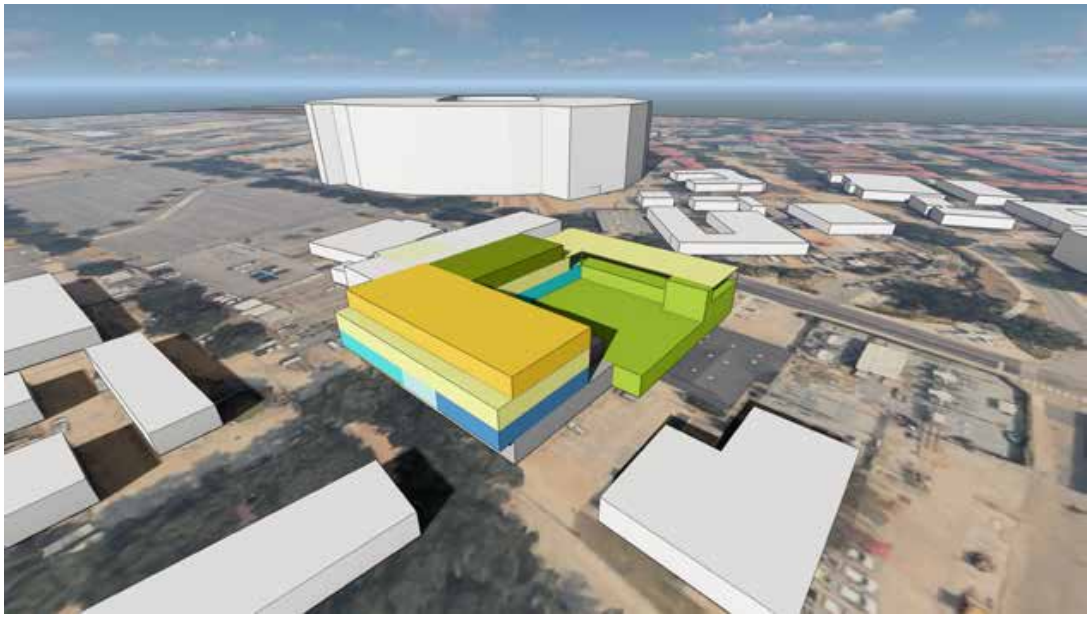
DESIGN CONCEPT E



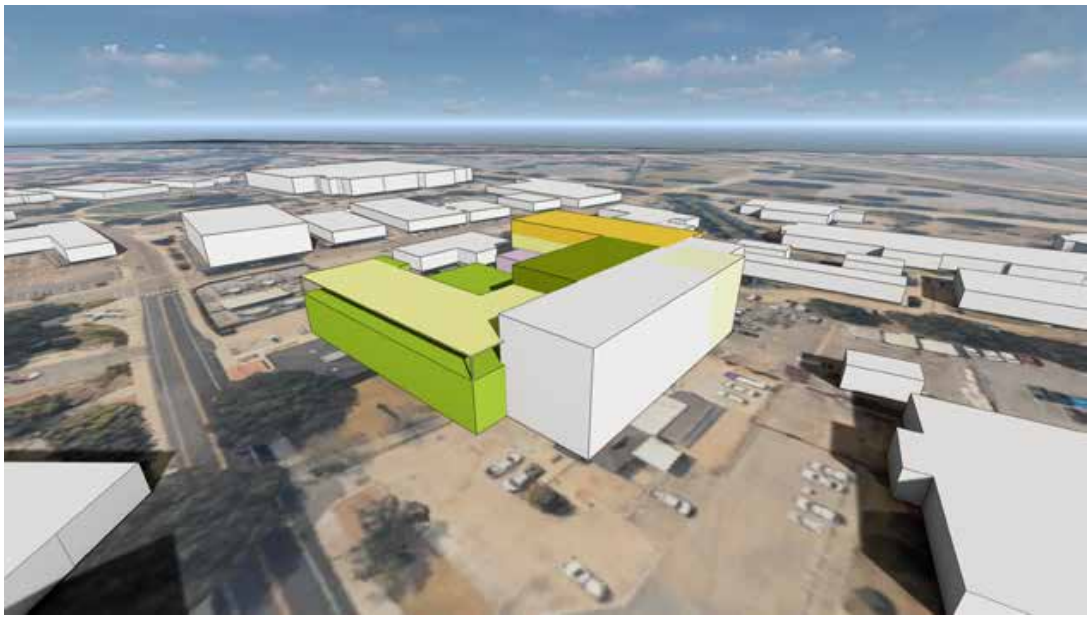
4TH FLOOR

PENTHOUSE

MASSING DIAGRAM 1



MASSING DIAGRAM 2



BUDGET ANALYSIS

CONCEPT E					
NASF	66%	101,189 sf			
SUPPORT & MECH.	9%	13,897 sf			
WALLS/CIRC.	24%	38,914 sf	$500 / SF	$19,456,871	
GROSS SF	100%	154,000 sf		$89,019,805	$578.05 /sf

Budget	$81,900,000
Concept D	$89,019,805
Over Budget	$(7,119,805)

COST MODEL - BENCHMARKING

OWNER/CLIENT	PROJECT NAME	OPEN	NEW	TOTAL SF	INFLATED COST	BATON ROUGE COST/SF	BATON ROUGE COST
Marshall University	Weisberg Applied Engineering Complex	2015	145,463 sf	145,463 sf	$82,757,131	$533 /sf	$77,530,365
Middle Tennessee State University	School of Concrete & Construction Mngmt.	2022	54,000 sf	54,000 sf	$46,277,651	$887 /sf	$47,891,988
Morehead State University	Science and Engineering Building	2028	123,000 sf	123,000 sf	$71,153,846	$578 /sf	$71,153,846
Saint Louis University	Interdisciplinary Science & Engineering Bldg.	2020	89,007 sf	89,007 sf	$71,101,326	$711 /sf	$63,280,180
SIU-Edwardsville	Engineering Building Addition	2013	37,036 sf	37,036 sf	$18,738,307	$441 /sf	$16,350,091
Texas A&M U - Texarkana	Academic Building	2026	61,896 sf	61,896 sf	$24,910,000	$412 /sf	$25,482,644
Virginia Western Community College	STEM Building	2019	72,000 sf	72,000 sf	$41,954,094	$589 /sf	$42,430,845
Average						**$593 /sf**	

LSU Health Interdisciplinary Science Building – Construction Start March 2024 - $618/sf

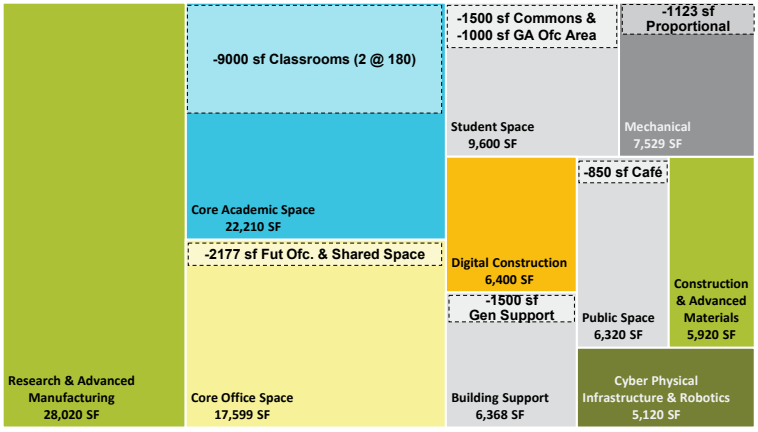
BUDGET ANALYSIS

CONCEPT E					
NASF	66%	101,189 sf			
SUPPORT & MECH.	9%	13,897 sf			
WALLS/CIRC.	24%	38,914 sf	$500 / SF	$ 19,456,871	
GROSS SF	100%	154,000 sf		$ 89,019,805	$578.05 /sf
			Budget	$ 81,900,000	
			Concept E	$ 89,019,805	
			Over Budget	$ (7,119,805)	

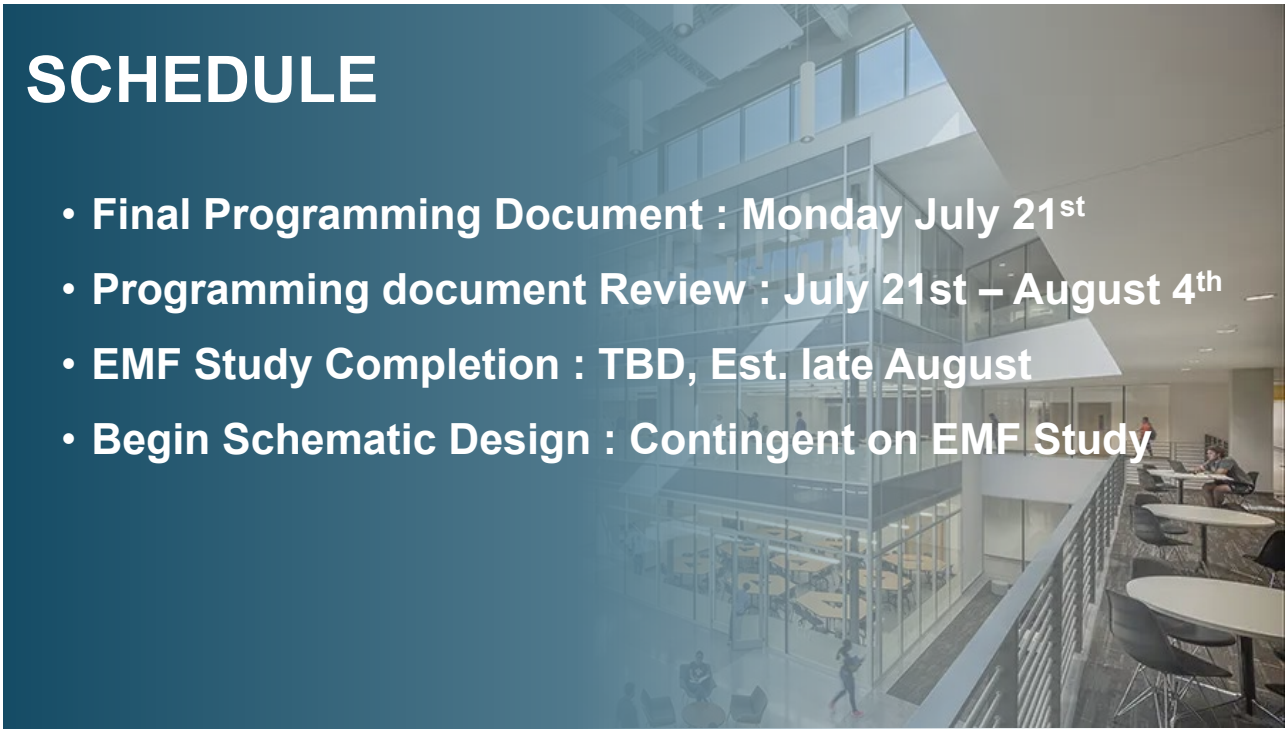
PROPOSED REFINEMENTS					
NASF	64%	86,662 sf		$ 56,648,930	
SUPPORT & MECH.	8%	11,254 sf		$ 5,187,373	
WALLS/CIRC.	28%	37,494 sf	$500 / SF	$ 18,746,899	
GROSS SF	100%	135,410 sf		$ 80,583,202	$595.11/sf
			Budget	$ 81,900,000	
			Proposed	$ 80,583,202	
				$ 1,316,798	

OPPORTUNITIES FOR COST MODIFICATION

CAAM Existing Program Areas + Refinements



SPACE CATEGORY	PROG SF	CUTS	NEW SF
Public Space	6,320 sf	-850 sf	5,470 sf
Student Space	9,600 sf	-2,500 sf	7,100 sf
Construction & Advanced Materials	5,920 sf	0 sf	5,920 sf
Cyber Physical Infrastr. & Robotics	5,120 sf	0 sf	5,120 sf
Digital Construction	6,400 sf	0 sf	6,400 sf
Core Academic	22,210 sf	-9,000 sf	13,210 sf
Research & Adv. Manufacturing	28,020 sf	0 sf	28,020 sf
Core Office Space	17,599 sf	-2,177 sf	15,422 sf
Building Support	6,368 sf	-1,520 sf	4,848 sf
Mechanical	7,529 sf	-1,123 sf	5,960 sf
Total Net Area	115,086 sf	-17,170 sf	97,916 sf
Circulation/Walls	38,914 sf	-1,420 sf	37,494 sf
Gross SF Area	154,000 sf	18,590 sf	135,410 sf


SCHEDULE
• Final Programming Document : Monday July 21st
• Programming document Review : July 21st – August 4th
• EMF Study Completion : TBD, Est. late August
• Begin Schematic Design : Contingent on EMF Study

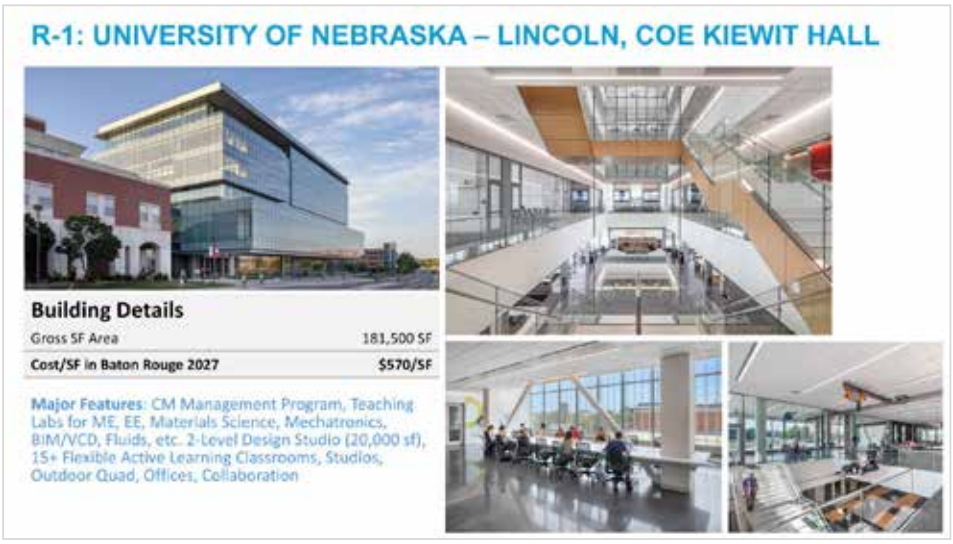

Grace
Design Studios
HERA laboratory planners
Teams Meeting- Update
Construction & Advanced
Manufacturing Building

MEETING MINUTES- Program Refinements – 9:00am

LOCATION:	Online Teams Meeting
PROJECT NUMBER:	FP &C # 19-601-24-01, F.19002626 & GHC 3125105
DATE/TIME:	August 01, 2025 @ 9:00 am – 11:00 am

PARTIES PRESENT	ORGANIZATION	PHONE NUMBER	EMAIL
Jim Gabel	Grace Design Studio-Project Manager	314.529.4025	jgabel@grace-design.com
Chris Chivetta	Grace Design Studio-Designer	314.863.5717	cchivetta@grace-design.com
Jerry Hebert	Grace Design Studio-Principal	314.863.5717	jhebert@grace-design.com
John Streva	Grace Design Studio-Construction Administrator	225.338.5569	jstreva@ grace-design.com
Nancy Sopuch	Grace Design Studio-Programmer	314.863.5717	nsopuch@grace-design.com
Sean Johnson	Grace Design Studio-Architect	225.338.5569	sjohnson@grace-design.com
Elise Medlin	Grace Design Studio		emedlin@grace-design.com
Carlos Rubio-Perez	HERA Lab Planners-Lab Planner	678.591.1257	carlosp@herainc.com
Natalie Szymanski	HERA Lab Planners-Project Manager		natalies@herainc.com
Vicki Colvin	LSU-Dean of the College of Engineering		vcolin@lsu.edu
Chuck Berryman	LSU- Department Chair- Construction Management	225.578.6986	cberryman@lsu.edu
Paul Favaloro	LSU-Executive Director Planning Design and Construction	225-578-5591	pfavalo@lsu.edu
Danny Mahaffey	LSU-Asst. Vice President & Campus Architect	225-578-2264	dmahaf1@lsu.edu
Dennis Mitchell	LSU-Assistant Director of Physical Plant / Facility Services	225-578-5682	dmitch@lsu.edu
Scott Couper	LSU-College of Engineering Rep		scottalancouper@gmail.com
Michael Johnson	Louisiana Office of Facility Planning and Control – Project Manager	225-342-0962	michael.johnson@la.gov
Ami McGucken	LSU-Sr. Assistant to the Dean	225.578.5255	amcgucken@lsu.edu

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.1	The purpose of this meeting was to review project costs for recently constructed engineering buildings at Carnegie R-1 Peer Institutions, and to make program refinements that bring the Construction & Advanced Manufacturing Building (CAAM) within budget. The Program Verification phase of work is scheduled for completion on July 21, 2025.			
1.2	The meeting opened with a brief review of the agenda and an explanation of how peer institution construction costs were inflated forward to 2027 and indexed to the City of Baton Rouge using historic cost information from R. S. Means.			
1.3	The seven R-1 Peer Institutions presented include the following: 1. U of Nebraska – Kiewit Hall 2. U of Louisville – Engineering Education & Research Building 3. Rice University – O'Connor Engineering Building 4. Virginia Polytechnic Institute – School of Engineering 5. University of Florida – Wertheim Building 6. Brown University – School of Engineering 7. University of Illinois-Chicago – High Bay Research Lab A summary of each project is provided below.			



R-1: U OF LOUISVILLE – ENGINEERING EDUCATION & RESEARCH

Building Details

Gross SF Area	114,000 SF
Cost/SF in Baton Rouge 2027	**$665/SF**

Major Features: Large Active Learning Classrooms, Makerspace, High-Tech Labs, Engineering Garage and Innovation Studio, Collaboration Hub, Presentation Rooms, Offices, Café and Dining Area

R-1: RICE UNIVERSITY – O'CONNOR ENGINEERING BUILDING

Significant Sustainable Architectural Elements

Building Details

Gross SF Area	266,000 SF
Cost/SF in Baton Rouge 2027	**$680/SF**

Major Features: Advanced Materials Research, Engineering Research Labs for Electrical, Computer, Nano, Energy, etc. Other space includes Collaboration, Outdoor Terrace, Offices, Café, Study Rooms, and Two 108-P Classrooms.

R-1: VIRGINIA TECH – SCHOOL OF ENGINEERING

Building Details

Gross SF Area	101,000 SF
Cost/SF in Baton Rouge 2027	**$724/SF**

Major Features: 30,000 SF of Food Service, CM Program Space with High-Bay Innovation Lab, Digital Lab, Mock-up Areas, and 100-P Flexible Classroom (33,000 SF), "Provost" Classrooms (20,000 SF), Admin. Suite, Collaboration Areas, Offices, Studios for Graduate and UG Students, Smart Systems Lab, etc. 40,000 SF Available for Research.

R-1: UNIVERSITY OF FLORIDA – WERTHEIM BUILDING




Building Details

Gross SF Area	84,000 SF
Cost/SF in Baton Rouge 2027	**$960/SF**

Major Features: Research & Education, Biotech Labs, Prototyping Labs, Offices, Collaboration, Design Studios, Large Grad Student Bullpen, Innovation Studios, Computation Labs.
Connects to existing building.

R-1: BROWN UNIVERSITY – SCHOOL OF ENGINEERING




Building Details

Gross SF Area	80,000 SF
Cost/SF in Baton Rouge 2027	**$1,389/SF**

Major Features: Nanoscale & Biomedical Engineering Research Labs, Cleanrooms, Offices, Open-plan Labs, Collaboration Areas, 116 Grad Workstations + 20 Lab Modules, and Food Service.

R-1: U OF ILLINOIS-CHICAGO HIGH BAY RESEARCH LAB



Building Details

Gross SF Area	6,000 SF
Cost/SF in Baton Rouge 2027	**$1,642/SF**

Major Features: High Bay Laboratory for large scale research projects. Ceiling Height of 45', Strong Floor and 30'H Strong Wall, Overhead Crane, Skylights, Large Overhead Doors. Testing for Infrastructure Lifespan, Resiliency, & Innovative Materials.

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.4	Although inflation since the pandemic has been at historic highs, the Grace Design team noted they are seeing some softening in market conditions as evidenced by contractors calling to inquire about future projects. Some contractors noted that backlogged work is on hold or is diminishing.			
1.5	Following a discussion of construction costs, the meeting progressed to real-time revisions of the CAAM Program. The Base Program is the same for Concept D and E, the difference is that Concept E has one additional floor level which requires a lower net to gross ratio for more circulation and building walls.			
1.6	Program reductions were led by Dean Colvin who began with a significant reduction in Advanced Manufacturing which had a high construction cost when compared with academic, administrative, and social spaces like the Café and Student Commons.			
1.7	Major program revisions to Concept D are as follows: ▪ 4.0 Research and Advanced Manufacturing space is renamed as “Advanced Manufacturing & Facilities Space” ▪ The Base Program for Advanced Manufacturing & Facilities is reduced from **28,020 Net SF to 17,349 Net SF**. Reductions include eliminating Subtractive Bay and Subtractive & Auxiliary Bay space and reducing the Workforce Bay area. ▪ The program category of “Dean’s Research Space” was added to Construction and Advanced Materials, Cyber Physical Infrastructure and Robotics and Digital Construction. This future research space will be allocated by the Dean as necessary for growth and to attract new hires. The total area of new Dean’s Research is 27 Lab Modules at 320 SF each = **8,640 Net SF**. ▪ The Auditorium is increased from 250 seats to 300. ▪ The IT Server Room in Core Office Space is cut from the program and will be outsourced. ▪ The Café has increased from 500 to 600 Net SF. ▪ The number of Future Faculty Offices has increased from 18 to 25 ▪ All Faculty Offices have increased from 100 to 120 SF. ▪ The Total Program has increased from 101,189 SF to 102,016 SF because higher cost space has been replaced with lower cost space which allows the increase.			
1.8	There was a discussion about funding sources and funding splits with the state; it was noted that the CAAM project differs in that funding by LSU is 70% versus a normal 50:50 split with the state. Inquiries about this circumstance and future funding will be made.			

ITEM #	ITEM DISCUSSED	ACTION REQUIRED	DUE DATE	BALL IN COURT
1.9	Funding requirements to add a 450-seat Auditorium and restoring the program cuts to Advanced Manufacturing were discussed. The cost reduction to Advanced Manufacturing space is $10.7M. Funding requirements to add back the reduced space are as follows: ▪ **10,671 SF + 747 SF Mechanical + 4,469 SF of Walls & Circulation = 15,887 GSF at $13,241,740 Construction Cost** The funding need for a 450-Seat Auditorium + gathering space outside the venue of approximately 7SF/patron would be as follows: ▪ **12,400 SF + 868 SF Mechanical + 5,193 SF of Walls & Circulation = 18,461 GSF at $8,566,911 Construction Cost** The calculation for the Auditorium assumes the Lobby area of 2,000 SF will meet a portion of the code requirement for gathering space. The Auditorium is currently sized at 25 SF/person to accommodate turn to learn with fixed tables. Depending on preference, this area could be reduced.			
1.10	The meeting concluded with the following results: 1. Total Program is 151,877 SF (see below) 2. LSU will pursue additional funding; the added capacity for future research assignment is a goal of the Dean. 3. The Construction Cost Model totals $81,631,049 4. The Project Budget is $81,900,000 5. The design team is awaiting the results of the EMF Impact Study; if preliminary results are available, the team will assess the impact on the budget and the building site prior to the FPNC submission. 6. The final EMF Study will be ready on August 11, 2025.			
1.11	No preferred design concept was selected; but there is a request to rotate Concept D, so the High Bay runs parallel with Stadium Drive. Concepts are not required for the FPNC submission but will be included in a Programming Study Report by the design team.			
1.12	End of Meeting			

END OF MINUTES

Attachment: Program Statement & Cost Model
The preceding represents the author's understanding of the principal matters discussed. These notes will stand as a record of the above dated conference unless corrections are received within ten (10) days of issuance.

Construction and Advanced Manufacturing Building - Base Program & Budget Refinements

Lab Module 30.00 x 10.67 320 sf

PROG. NO	SPACE TYPE	OCC	LAB MODS.	LAB SF	SF/ PERSON	NASF	QTY.	TOTALS	August 1, 2025 Program CONSTR. TYPE	UNIT COST	TOTAL COST
A.01	Entry Vestibule					300 sf	2	600 sf	Type 1	$450 /sf	$270,000
A.02	Lobby/ Industry Showcase - WOW SPACE					2,000 sf	1	2,000 sf	Type 1	$450 /sf	$900,000
A.03	Student Lounge/Collaboration/Study						see 3.01		Type 1	$450 /sf	$0
A.04	Women's Restroom					275 sf	4	1,100 sf	Type 2	$550 /sf	$605,000
A.05	Men's Restroom					275 sf	4	1,100 sf	Type 2	$550 /sf	$605,000
A.06	Gender Neutral Restroom					80 sf	4	320 sf	Type 2	$550 /sf	$176,000
A.07	Staff Restrooms					200 sf	1	200 sf	Type 2	$550 /sf	$110,000
A.08	Vending					150 sf	1	150 sf	Type 1	$450 /sf	$67,500
A.09	Café / Grab n' Go					600 sf	1	600 sf	Type 1	$450 /sf	$270,000
A.10	Café Prep Area					200 sf	1	200 sf	Type 1	$450 /sf	$90,000
A.11	Café Food Storage					150 sf	1	150 sf	Type 1	$450 /sf	$67,500
TOTAL PUBLIC SPACE								6,420 sf			$3,161,000
B.01	Commons - First Floor					2,000 sf	1	2,000 sf	Type 1	$450 /sf	$900,000
B.02	Commons - Second Floor					1,500 sf	1	1,500 sf	Type 1	$450 /sf	$675,000
B.03	Commons - Third Floor					1,000 sf	1	1,000 sf	Type 1	$450 /sf	$450,000
B.04	Commons - Fourth Floor					1,000 sf	1	1,000 sf	Type 1	$450 /sf	$450,000
B.05	Workforce Leadership Dev. Center					600 sf	1	600 sf	Type 1	$450 /sf	$270,000
B.06	Student Associations					300 sf	1	300 sf	Type 1	$450 /sf	$135,000
B.10	Info/Hub Service/Printing					200 sf	1	200 sf	Type 1	$450 /sf	$90,000
B.11	GA Area/Coffee/Storage					3,000 sf	1	3,000 sf	Type 1	$450 /sf	$1,350,000
TOTAL STUDENT SPACE								9,600 sf			$4,320,000
1.00	Materials Storage		1.00	320 sf			1	320 sf	Type 3	$600 /sf	$192,000
1.01	Materials Prep		1.00	320 sf			1	320 sf	Type 3	$600 /sf	$192,000
1.02	Materials Fabrication		1.50	480 sf			1	480 sf	Type 3	$600 /sf	$288,000
1.03	Materials Curing - Dry		0.50	160 sf			1	160 sf	Type 3	$600 /sf	$96,000
1.04	Materials Curing - High Humidity		0.50	160 sf			1	160 sf	Type 3	$600 /sf	$96,000
1.05	Material Diagnostics/Testing		3.00	960 sf			1	960 sf	Type 3	$600 /sf	$576,000
1.06	Sample Prep & Cleanup Area		0.50	160 sf			1	160 sf	Type 3	$600 /sf	$96,000
1.07	Drying / Asphalt Ovens		1.00	320 sf			1	320 sf	Type 3	$600 /sf	$192,000
1.08	Material Research Lab		2.00	640 sf			1	640 sf	Type 3	$600 /sf	$384,000
1.09	Dean's Research Space		3.00	960 sf			3	2,880 sf	Type 3	$600 /sf	$1,728,000
1.10	Material Research Lab for Future Faculty		2.00	640 sf			1	640 sf	Type 3	$600 /sf	$384,000
1.11	Environmental Chamber		1.00	320 sf			1	320 sf	Type 3	$600 /sf	$192,000
1.12	Tools Storage CM		0.50	160 sf			1	160 sf	Type 3	$600 /sf	$96,000
1.13	Concrete 3-D Printing		4.00	1,280 sf			1	1,280 sf	Type 3	$600 /sf	$768,000
TOTAL CONSTRUCTION & ADVANCED MATERIALS								8,800 sf			$5,280,000
2.00	Living Lab for Building and Systems		3.00	960 sf			1	960 sf	Type 3	$600 /sf	$576,000
2.01	Dean's Research Space		3.00	960 sf			3	2,880 sf	Type 3	$600 /sf	$1,728,000
2.02	Robotics & Automation Test Suite		4.00	1,280 sf			1	1,280 sf	Type 3	$600 /sf	$768,000
2.03	Cyber-Physical Systems		2.00	640 sf			1	640 sf	Type 3	$600 /sf	$384,000
2.04	Radio Frequency Testing Lab		1.00	320 sf			1	320 sf	Type 3	$600 /sf	$192,000
2.05	Software and Sensor Development		2.00	640 sf			1	640 sf	Type 3	$600 /sf	$384,000
2.06	Drone Lab		4.00	1,280 sf			1	1,280 sf	Type 3	$600 /sf	$768,000
TOTAL CYBER PHYSICAL INFRASTRUCTURE & ROBOTICS								8,000 sf			$4,800,000
3.00	Motion Capture Lab		3.00	960 sf			1	960 sf	Type 2	$550 /sf	$528,000
3.01	Dean's Research Space		3.00	960 sf			3	2,880 sf	Type 2	$550 /sf	$1,584,000
3.02	Research Lab		3.00	960 sf			1	960 sf	Type 2	$550 /sf	$528,000
3.03	DOE- Industrial Assessment Center		3.00	960 sf			1	960 sf	Type 2	$550 /sf	$528,000
3.04	VR Simulation		3.00	960 sf			1	960 sf	Type 2	$550 /sf	$528,000
3.05	Construction Equipment Simulation		3.00	960 sf			1	960 sf	Type 2	$550 /sf	$528,000
3.06	BIM Cave Storage/ Grad Space		2.00	640 sf			1	640 sf	Type 2	$550 /sf	$352,000
3.07	BIM Cave		3.00	960 sf			1	960 sf	Type 2	$550 /sf	$528,000
TOTAL DIGITAL CONSTRUCTION								9,280 sf			$5,104,000

		Lab Module	30.00	x	10.67	320 sf				August 1, 2025 Program		
PROG. NO	SPACE TYPE	OCC	LAB MODS.	LAB SF	SF/ PERSON	NASF	QTY.	TOTALS	CONSTR. TYPE	UNIT COST	TOTAL COST
4.00	Construction Indoor Testing Lab 2/3 in high bay, 1/3 in lower height.		28.00	8,960 sf			1	8,960 sf	Type 4	$800 /sf	$7,168,000
4.01	In-ground/Geotech / Resiliency Testing						Outdoors				
4.02	Materials Storage		4.00	1,280 sf			1	1,280 sf	Type 3	$600 /sf	$768,000
4.03	Layout/Workspace		0.50	160 sf			1	160 sf	Type 2	$550 /sf	$88,000
4.04	Additive Bay - Regular Scale (ABR)							3,136 sf	Type 5	$1,000 /sf	$3,135,600
4.05	Additive Bay - Large Scale (ABLS)							1,313 sf	Type 5	$1,000 /sf	$1,313,000
4.06	Subtractive Bay - Enclosed (SBE)							0 sf	Type 5	$1,000 /sf	$0
4.07	Subtractive & Auxiliary Bay (SAB)							0 sf	Type 5	$1,000 /sf	$0
4.08	Workforce Bay (WFB)							2,500 sf	Type 5	$1,000 /sf	$2,500,000
TOTAL ADVANCED MANUFACTURING & FACILITIES SPACE								17,349 sf			$14,972,600
5.00	Entry/Reception					1,000 sf	1	1,000 sf	Type 1	$450 /sf	$450,000
5.01	CM Staff Offices	1				100 sf	16	1,600 sf	Type 1	$450 /sf	$720,000
5.02	Student Workers					48 sf	4	192 sf	Type 1	$450 /sf	$86,400
5.03	Director's Office	1				450 sf	2	900 sf	Type 1	$450 /sf	$405,000
5.04	Department Chairs	1				120 sf	3	360 sf	Type 1	$450 /sf	$162,000
5.05	Faculty Office	1				120 sf	18	2,160 sf	Type 1	$450 /sf	$972,000
5.06	Future Faculty Office	1				120 sf	25	3,000 sf	Type 1	$450 /sf	$1,350,000
5.07	Adjunct/Visiting	shared				48 sf	5	240 sf	Type 1	$450 /sf	$108,000
5.08	Post-Doctoral Workstations	shared				48 sf	12	576 sf	Type 1	$450 /sf	$259,200
5.09	Hoteling Modules					0 sf		0 sf		$450 /sf	$0
5.10	Small Conference Room	20				600 sf	1	600 sf	Type 1	$450 /sf	$270,000
5.11	Social/Prep Area/Break Room/ Faculty Lounge					600 sf	1	600 sf	Type 1	$450 /sf	$270,000
5.12	Copier Room					100 sf	1	100 sf	Type 1	$450 /sf	$45,000
5.13	Workroom / Mail					200 sf	1	200 sf	Type 1	$450 /sf	$90,000
5.14	Storage Room					150 sf	1	150 sf	Type 1	$450 /sf	$67,500
5.15	IT Office	1				100 sf	3	300 sf	Type 1	$450 /sf	$135,000
5.16	IT Support	3				200 sf	1	200 sf	Type 1	$450 /sf	$90,000
5.17	IT Server Room	1				400 sf	0	0 sf	Type 1	$450 /sf	$0
5.18	IT Workspace	1				200 sf	1	200 sf	Type 1	$450 /sf	$90,000
5.19	IT Storage Room	1				200 sf	1	200 sf	Type 1	$450 /sf	$90,000
5.20	*Industry Partner Suite:*										
5.21	Industry Partner Conference Room:	60			32 sf/per	1,920 sf	1	1,920 sf	Type 1	$450 /sf	$864,000
5.22	Industry Partner Hoteling Stations					100 sf	2	200 sf	Type 1	$450 /sf	$90,000
5.23	Circulation					30%		4,409 sf	Type 1	$450 /sf	$1,984,230
TOTAL CORE OFFICE SPACE								19,107 sf			$8,598,330
6.00	Classroom	180			25 sf/per	4,500 sf	2	9,000 sf	Type 1	$450 /sf	$4,050,000
6.01	Auditorium	300			25 sf/per	7,500 sf	1	7,500 sf	Type 1	$450 /sf	$3,375,000
6.02	Open Student Computer Lab	30			30 sf/per	900 sf	1	900 sf	Type 1	$450 /sf	$405,000
6.03	Lecture Hall	450			25 sf/per	11,250 sf	0	0 sf		$450 /sf	$0
6.04	Classroom Service/Closets					100 sf	1	100 sf	Type 1	$450 /sf	$45,000
6.05	Classroom Media Storage					100 sf	1	100 sf	Type 1	$450 /sf	$45,000
6.06	Classroom Equipment Storage					100 sf	1	100 sf	Type 1	$450 /sf	$45,000
6.07	CM Senior Project Lab	34	7.00	2,240 sf	65 sf/per		1	2,240 sf	Type 1	$450 /sf	$1,008,000
6.08	Computer Lab/ CAD Stations		3.00	960 sf			1	960 sf	Type 1	$450 /sf	$432,000
6.09	Scheduling /Cost Estimating/ BIM Lab	75	7.00	2,240 sf	30 sf/per		1	2,240 sf	Type 2	$550 /sf	$1,232,000
6.10	Online Learning Media Green Screen Room		1.00	320 sf		320 sf	1	320 sf	Type 2	$550 /sf	$176,000
TOTAL CORE ACADEMIC SPACE								23,460 sf			$10,813,000

		Lab Module	30.00	x	10.67	320 sf				August 1, 2025 Program		
PROG. NO	SPACE TYPE	OCC	LAB MODS.	LAB SF	SF/ PERSON	NASF	QTY.	TOTALS	CONSTR. TYPE	UNIT COST	TOTAL COST
C.01	General Storage		2.00	640 sf			1	640 sf	Type 1	$450 /sf	$288,000
C.02	Bulk Chemical Storage		0.50	160 sf			1	160 sf	Type 1	$450 /sf	$72,000
C.03	Hazardous Material Storage		0.50	160 sf			1	160 sf	Type 1	$450 /sf	$72,000
C.04	Lab Waste Storage		0.25	80 sf			1	80 sf	Type 1	$450 /sf	$36,000
C.05	Custodial Equipment / Building Storage		2.00	640 sf			1	640 sf	Type 1	$450 /sf	$288,000
C.06	Cylinder Storage		0.50	160 sf			1	160 sf	Type 1	$450 /sf	$72,000
C.07	Data Entrance Room		0.50	160 sf			1	160 sf	Type 1	$450 /sf	$72,000
C.08	Data Distribution Closets		0.25	80 sf			3	240 sf	Type 1	$450 /sf	$108,000
C.09	Electrical Entrance Room		1.00	320 sf			1	320 sf	Type 1	$450 /sf	$144,000
C.10	Electrical Distribution Closets		0.25	80 sf			3	240 sf	Type 1	$450 /sf	$108,000
C.11	Communication Entry Room		0.50	160 sf			1	160 sf	Type 1	$450 /sf	$72,000
C.12	Communication Distribution Closets		0.25	80 sf			3	240 sf	Type 1	$450 /sf	$108,000
C.13	Elevator - Freight		0.40	128 sf			1	128 sf			$250,000
C.14	Elevator - Passenger		0.30	96 sf			1	96 sf			$200,000
C.15	Elevator Equipment		0.25	80 sf			1	80 sf	Type 1	$450 /sf	$36,000
C.16	Janitor's Closet		0.20	64 sf			4	256 sf	Type 1	$450 /sf	$115,200
C.17	Marshalling / Receiving / Dock		1.50	480 sf			1	480 sf	Type 1	$450 /sf	$216,000
C.18	Temporary Staging		2.00	640 sf			1	640 sf	Type 1	$450 /sf	$288,000
C.19	Fire Pump		0.40	128 sf			1	128 sf	Type 1	$450 /sf	$57,600
C.20	Backflow Preventer		1.00	320 sf			1	320 sf	Type 1	$450 /sf	$144,000
C.21	Air Compressors, Vacuum		1.00	320 sf			1	320 sf	Type 1	$450 /sf	$144,000
C.22	DI House Water System		1.00	320 sf			1	320 sf	Type 1	$450 /sf	$144,000
C.23	Generator - Backup Power		1.00	320 sf			1	320 sf	Type 1	$450 /sf	$144,000
C.24	Recycling Room		0.25	80 sf			1	80 sf	Type 1	$450 /sf	$36,000
C.25	Penthouse		0.00	0 sf				0 sf	Type 1	$450 /sf	$0
TOTAL BUILDING SUPPORT								6,368 sf			$3,214,800
D.01	Mechanical Systems						7%	7,587 sf	Type 1	$450 /sf	$3,414,096
TOTAL MECHANICAL								7,587 sf			$3,414,096

SUBTOTAL OF ASSIGNABLE PROGRAM SPACE	67%	102,016 sf		$57,048,930
BUILDING SUPPORT & MECHANICAL	9%	13,955 sf		$6,628,896
BUILDING WALLS/CIRCULATION	24%	35,906 sf	$500 /sf	$17,953,223
GROSS BUILDING AREA - D	100%	151,877 sf		$81,631,049
			Budget	$81,900,000
			Delta	$268,951


Grace
Design Studios