FEBRUARY 11, 2022

Channel Islands
CALIFORNIA STATE UNIVERSITY

GATEWAY HALL PROJECT

PROGRAM VERIFICATION REPORT

ACMARTIN

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EXECUTIVE SUMMARY

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PROJECT INTRODUCTION

California State University, Channel Islands (CSUCI) formally opened as a University in 2002, welcoming 1,320 full-time transfer students in its first year. In the decades since, CSU Channel Islands has seen a large increase in enrollment rates - a growth reflected in the physical needs of the campus. CSUCI seeks to provide spaces that will satisfy evolving school needs.

To accommodate the growth of the campus, Channel Islands began the initial programming process for Gateway Hall in 2017. At the time, the project developed a two-phase plan to consolidate several academic and administrative components to create an inviting, prominent, and beautiful new entrance to the campus. The programming of Gateway Hall was set aside until 2021; despite the delay in the project process, many of CSUCI's initial project goals and visions have remained prevalent in current programming and design efforts.

As a student-centered University, Channel Islands is committed to facilitating access to educational opportunities and to advance a culture of learning through programming centered on accessibility, collaboration, and hybrid spaces. In this way, Gateway Hall is envisioned as a transformative opportunity for CSUCI students, the region, CSU, and nation.

In support of this work, CSUCI has worked with AC Martin in the programming process to develop a new Gateway Hall - envisioning future growth and the evolving nature of learning and work environments as a response to advancing technology and a global pandemic. As the project scope experienced a refinement due to costs and budgets, Gateway Hall has been able to prioritize campus, student, and faculty needs through these lenses - detailed further in this report.

GATEWAY HALL PROJECT VISION

Gateway Hall shall provide California State University, Channel Islands with a new “front door” that is a beautiful and welcoming space for both campus and the surrounding community. These spaces will provide innovative environments for learning, interaction, and collaboration.

The project will consolidate several departments and spaces into a centralized hub -- providing a new building and renovated buildings that are intuitive, user-friendly, and easy to navigate.

CSUCI also identified the following vision concepts for the project:

Gateway Front Door
Create a new “gateway” to welcome the outside community into campus; create a beautiful and welcoming space with a “wow” factor.

Innovative Spaces
Serve students with innovative teaching and learning environments. Embrace hybrid work environments in the faculty and staff workspaces. Maintain flexibility to meet evolving campus needs.

Collaborative Environments
Establish a central space to invite people from different departments to interact, collaborate, and socialize.

Services & Community Oriented
Be a “One-Stop Shop” for students, faculty, and the outside community.

Iconic, Mission-style Design
Develop an iconic design that reflects the historic “mission style” architectural language of the campus; honor the past, honor the future of the campus.

Sustainable
Utilize sustainable strategies to enhance the user experience and raise awareness of green design. Create beautiful outdoor spaces that will be heavily utilized hubs of interaction; ones that can host events and gatherings.

PROJECT GOALS

Throughout the programming process, university stakeholders provided input and feedback on the project vision and goals. Summarizied below are the results of these various voting sessions:

Highest Hopes for the Project to Achieve (Top Responses)

- Meets needs 5-10 years post-construction
- Spaces that embrace the “hybrid” environment
- Places where students want to be
- Nonacademic amenities (coffee)
- Address commuter student needs (beyond study space)
- Accessibility
- Prominent “gateway”
- Be a physical embodiment of University’s core values

Most Important for the Project to Accomplish (Top Responses)

- Hybrid-ready
- Important campus destination
- Easy navigation
- Anchor for campus
- On time; on budget
- Enough space for all staff (plan for next decade)

One Word to Describe the Project (Top Responses)

- Welcoming
- Iconic
- Future-proof
- Belonging
- Energy
- Accessible
- Flexible
- Contextual
- Collaborative
- Innovative
- Visionary
- Exciting

For the complete Visioning Session results, see Appendix Section 6.

BUILDING PROGRAM SUMMARY

The final program for the new Gateway Hall provides roughly 80,000 sf. of renovated existing facilities and new construction.

The project will house Student Services, University Instructional Space, Departmental Labs, Academic Workplace, Gathering Spaces, and Extended University. Along with Student Services and Extended University, the program also includes Mathematics and Computer Science / Mechatronics.

A summary of spaces are as follows:

- Student Services 13,235 ASF
- University Classroom Space 8,328 ASF
- Departmental Labs 7,184 ASF
- Academic Workplace 6,057 ASF
- Gathering Space 3,050 ASF
- Extended University 4,200 ASF

STUDENT SERVICES

The project will house the One-Stop Shop Student Services and a designated Welcome Center. The One-Stop Shop will co-locate Financial Aid, Registrar, Student Systems, Student Business Services, satellite Academic Advising offices, and general office spaces. Additionally, a designated Welcome Center grouped with admissions in the new building will act as a front door for outside communities and prospective students.

UNIVERSITY CLASSROOM SPACE

New university classrooms will be used by various disciplines and programs from across the campus. As general teaching spaces, these learning environments will be flexible and reconfigurable to meet the needs of various programs and their pedagogies. Spaces will have flexible furniture, ample writable surface, and advanced technology for hybrid learning environments.

DEPARTMENTAL LABS

New teaching and fabrication labs and supplemental spaces for Computer Science / Mechatronics and Mathematics departments will provide flexible, hands-on labs, designed to accommodate current and evolving needs. Each lab is sized and planned to accommodate department-specific uses.

ACADEMIC WORKPLACE

Offices spaces for full-time and part-time faculty will be grouped and organized to facilitate more interaction between faculty and students. To support future program growth, opportunities for additional office spaces have been identified in adjacent buildings.

GATHERING SPACE

The new Gateway Hall will afford the expansion of student gathering and study spaces dispersed throughout new and renovated buildings. The collaborative nature of Gateway Hall provides students access to open and semi-enclosed booths, small group tutoring rooms, a convenience store with coffee, and a variety of other support spaces geared to meet the needs of the students.

EXTENDED UNIVERSITY

The project will co-locate Extended University office spaces and a new 50-person conference / classroom. Along with providing private and shared workspaces, students, faculty, and staff will have access to a variety of common spaces such as a large kitchenette, lounge, and huddle rooms.

See Section 3.0 for additional space program information.

BLOCKING & STACKING OVERVIEW

The following diagrams illustrate three conceptual planning scenarios where the desired relationships between the various program elements are explored.

All spaces that have the greatest need for easy navigation and accessibility with required adjacency - such as the Welcome Center, the One-Stop Shop, and Extended University - have been located on the ground floor of renovation and new construction. Faculty offices along with some student study space are located on the second level in renovation; the remaining classroom and lab spaces are assumed to be located on the second and third level of new construction.

With many programmatic elements fixed in their general locations due to program needs, planning adjacencies or site constraints, the major planning elements for consideration and explored between the three conceptual blocking and stacking studies are:

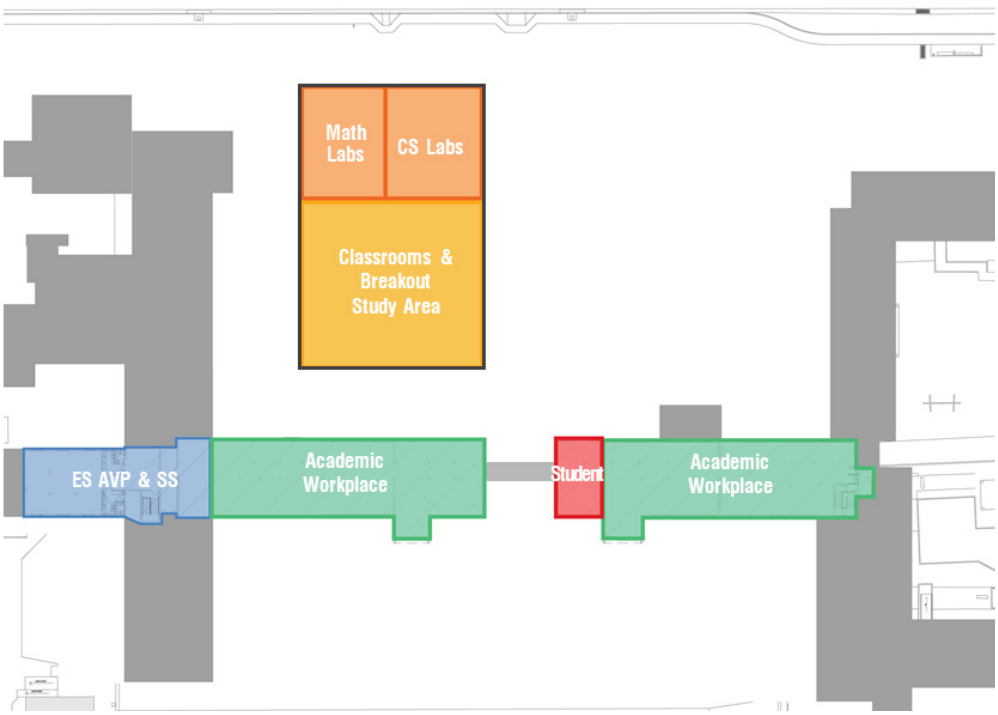
- Location of the Mechatronics Fabrication Lab
- Location of Extended University in renovation
- Ability to co-locate One-Stop Shop Student Services required area

Ongoing discussions around these conceptual planning studies indicate a preference for the co-location of One-Stop Shop Student Services, and for Extended University to have a separate “font door” and presence.

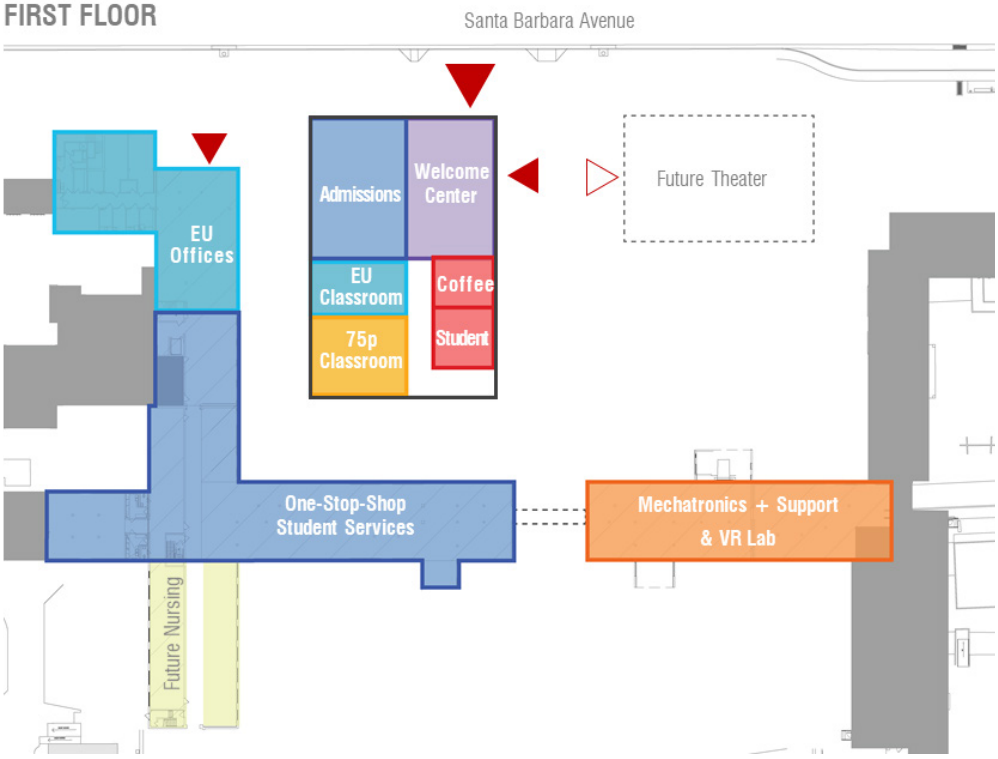
As design and discussions progress, additional consideration shall be given to the courtyard and surrounding outdoor space of the project site.

SCENARIO STUDY A:

SECOND FLOOR



FIRST FLOOR



SCENARIO STUDY B:

SCENARIO STUDY C:

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EXISTING BUILDING & CODE ANALYSIS

02

- Existing Building Anaylsis
  - Scoping Diagrans
- Code Analysis
  - Existing Building Code Analysis
  - Site Fire Safety Analysis
  - Exiting Analysis

INTRODUCTION

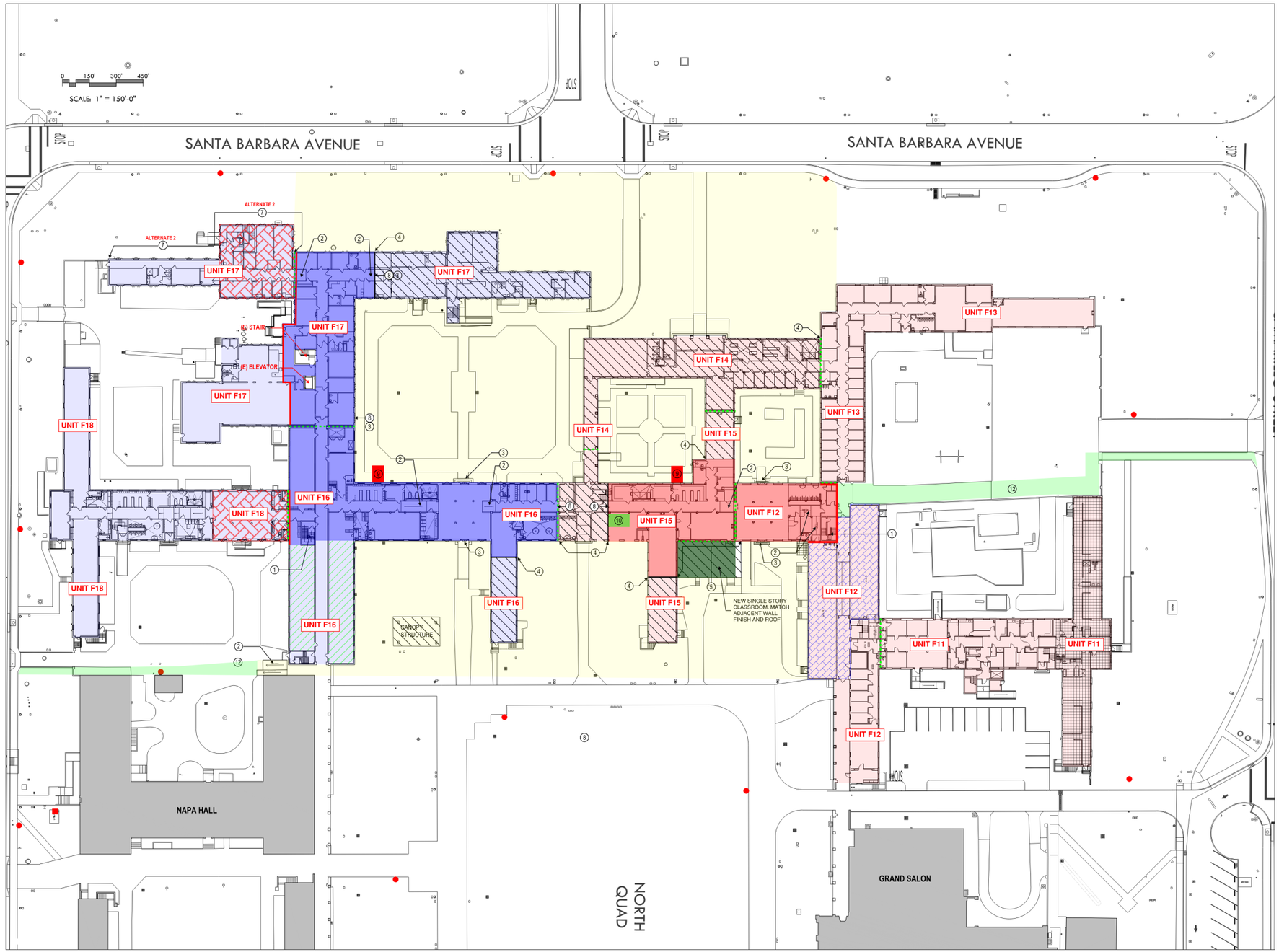
The Gateway Hall project involves the demolition and renovation of an existing mission style (tile roof/plaster finish), concrete segmented hospital building. The existing building consists of smaller building units separated by a seismic joint, built in 1941 and 1950. The building units constructed in 1941 are colored RED (east), while the building units constructed in 1950 are colored BLUE(west) in the following diagrams.

A new 2-hour fire resistive construction will separate the building renovation from the existing non-renovated/non-sprinklered building areas. A new enclosed bridge will connect the two existing building groups (1941 and 1950) together at the center of the project. The Gateway Hall project will also include a new 2 or 3 story building and a future theater adjacent to the renovated building.

The code approach is to regard the existing building units as a single building (1941/1950 building group), rather than multiple buildings, as Type IIB construction, single occupancy / multistory. The new 3 story building will also be Type IIB construction, to match the existing building renovation construction type. Existing fire lanes, fire hydrants and fire department connection provide sufficient hose pull access to the building, but a new proposed fire lane with hammerhead turning radius off of Santa Barbara Avenue, is required to provide access to the new 3 story building and portions of the renovated buildings. Two additional fire lanes may be required, located off of Ventura and Camarillo street to provide building access. In regards to existing building exits at the 1st floor, 10 exits have been identified. On the 2nd floor, one new stair is required to comply with exit travel distance per CBC 1017.2.

The scope of work of the existing building consists of constructing new end walls and repairing existing roof at the building demolition line, patch / repair existing exterior wall finish/paint, replace existing windows and tile roof, new elevators, new sprinklers, site work, and a new building. Modernizing non-compliant building components, such as stairs, handrails/ guardrails, interior and exterior ramps, site improvements to comply with code accessibility requirements and new doors for exit egress, will also be included in the scope of work.

FIRST FLOOR SCOPING DIAGRAM



LEGEND

- EXISTING FIRE HYDRANT
- EXISTING FIRE DEPARTMENT CONNECTION
- EXISTING SEISMIC JOINT
- PROPOSED 2 HOUR FIRE BARRIER
- EXISTING BUILDING TO BE DEMOLISHED. REFER TO RFP 3.04 FOR REUSE/RECYCLING OF MATERIALS
- EXISTING BUILDING BUILT IN 1941. UNOCCUPIED SPACE
- EXISTING BUILDING BUILT IN 1950. UNOCCUPIED SPACE
- EXISTING OCCUPIED SPACE
- RENOVATION IN 1941 BUILDING. REPLACE EXISTING EXTERIOR WINDOWS. ASSUMPTIONS WOULD BE TO PATCH AND REPAIR / PAINT EXTERIOR WALLS, WHERE NECESSARY
- RENOVATION IN 1950 BUILDING, REPLACE EXISTING EXTERIOR WINDOWS AT 1ST FLOOR ONLY. ASSUMPTIONS WOULD BE TO PATCH AND REPAIR / PAINT EXTERIOR WALLS, WHERE NECESSARY
- FUTURE RENOVATION, INTERIOR DEMOLITION AT NURSING SPACE, PROVIDE NEW FIRE SPRINKLERS
- DEMOLISH ALL ELEMENTS ABOVE AND UNDERGROUND INCLUDING ALL UTILITIES. EXISTING PERIMETER SIDEWALKS, CURBS AND ASSOCIATED STORM DRAINAGE SYSTEM, STREET LIGHTING AND ASSOCIATED ELECTRICAL TO BE PROTECTED AND REMAIN IN PLACE, UNLESS NOTED OTHERWISE. EXISTING UTILITIES MUST REMAIN IN PLACE FOR THE FUNCTIONALITY OF OTHER BUILDINGS OR OUTDOOR SPACES

  PROVIDE NEW HARDSCAPE, LANDSCAPE AND UNDERGROUND WORK
- REFER TO "STUDY A", BLOCK & STACK DIAGRAMS IN THE PROGRAM REPORT
- REFER TO "STUDY C", BLOCK & STACK DIAGRAMS IN THE PROGRAM REPORT
- INTERIOR DEMOLITION AND NEW FIRE SPRINKLERS. EXISTING STAIRS, EXISTING ELEVATOR/MACHINE ROOM AND THEIR ENCLOSURE, AND UTILITES ASSOCIATED WITH THE ELEVATOR SHALL BE PROTECTED AND REMAIN IN PLACE

NOTES

1. EXISTING STAIRS, STAIR HANDRAILS AND GUARDRAILS TO BE MODERNIZED PER CSU STANDARDS. CURRENT CONDITION IS NON-COMPLIANT.
2. EXISTING RAMP DOES NOT COMPLY WITH CODE, MODIFY PER CSU STANDARDS
3. NEW RAMP/GUARDRAILS FOR EXIT EGRESS
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6. REPLACE DECAYED WOOD, RESTORE ROOF TILES. INSTALL FIRE SPRINKLERS OVER PORTION OF WALKWAY AREA
7. REPLACE EXISTING BROKEN GLASS IN WINDOWS. PAINT WINDOW FRAMES, DOORS AND DOOR FRAMES AND EXTERIOR WALL. REPLACE EXISTING BROKEN ROOF TILE VISIBLE FROM STREET VIEW
8. NEW EXIT EGRESS DOOR
9. NEW EXTERIOR ELEVATOR, WALL FINISH/ROOF TO MATCH ADJACENT
10. NEW STAIRS TO COMPLY WITH REQUIRED QUANTITY OF EXITS PER CODE
11. NEW ENCLOSED BRIDGE WITH MISSION STYLE FENESTRATIONS, WALL FINISH/ROOF TO MATCH ADJACENT
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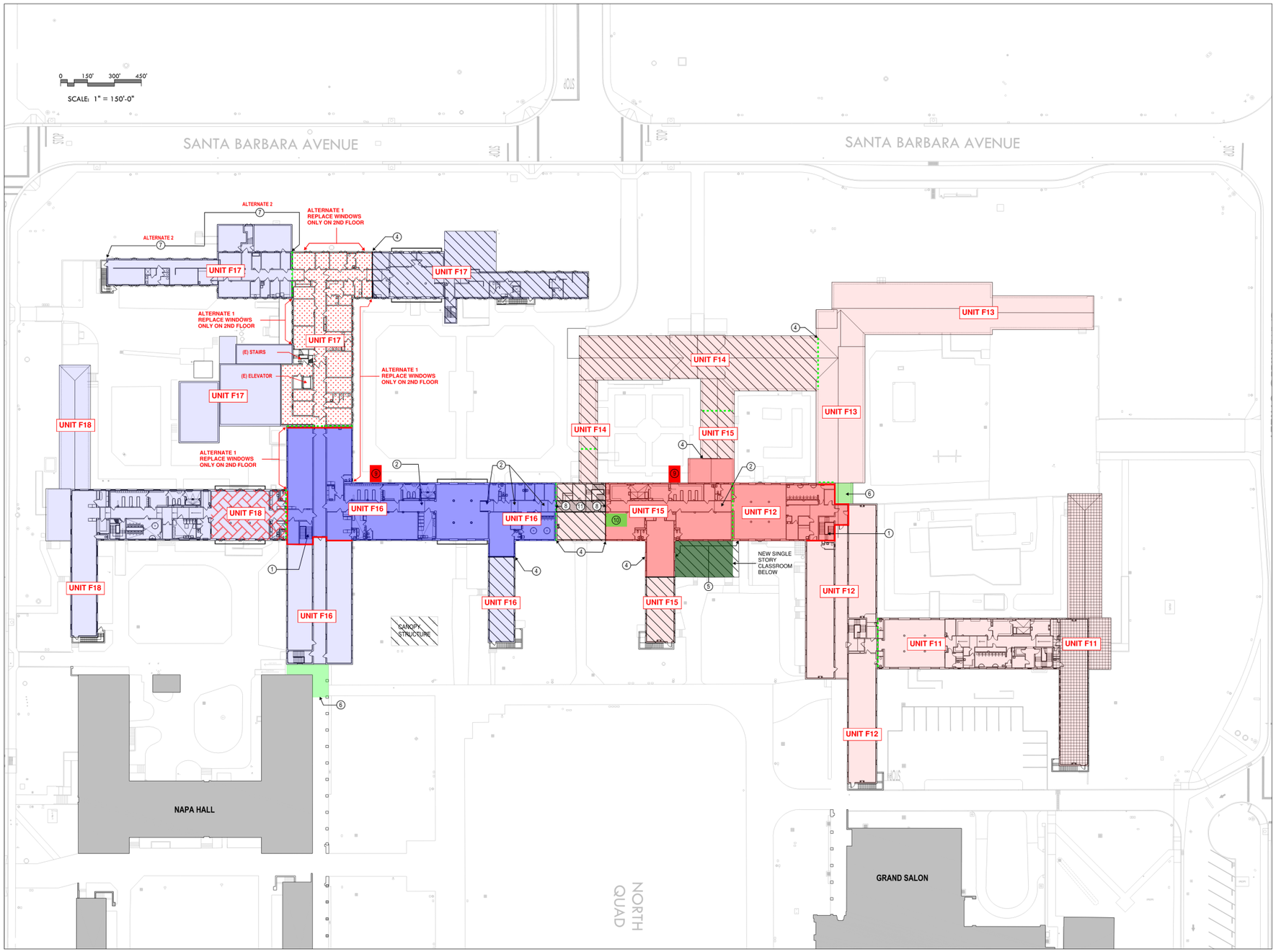
SECOND FLOOR SCOPING DIAGRAM



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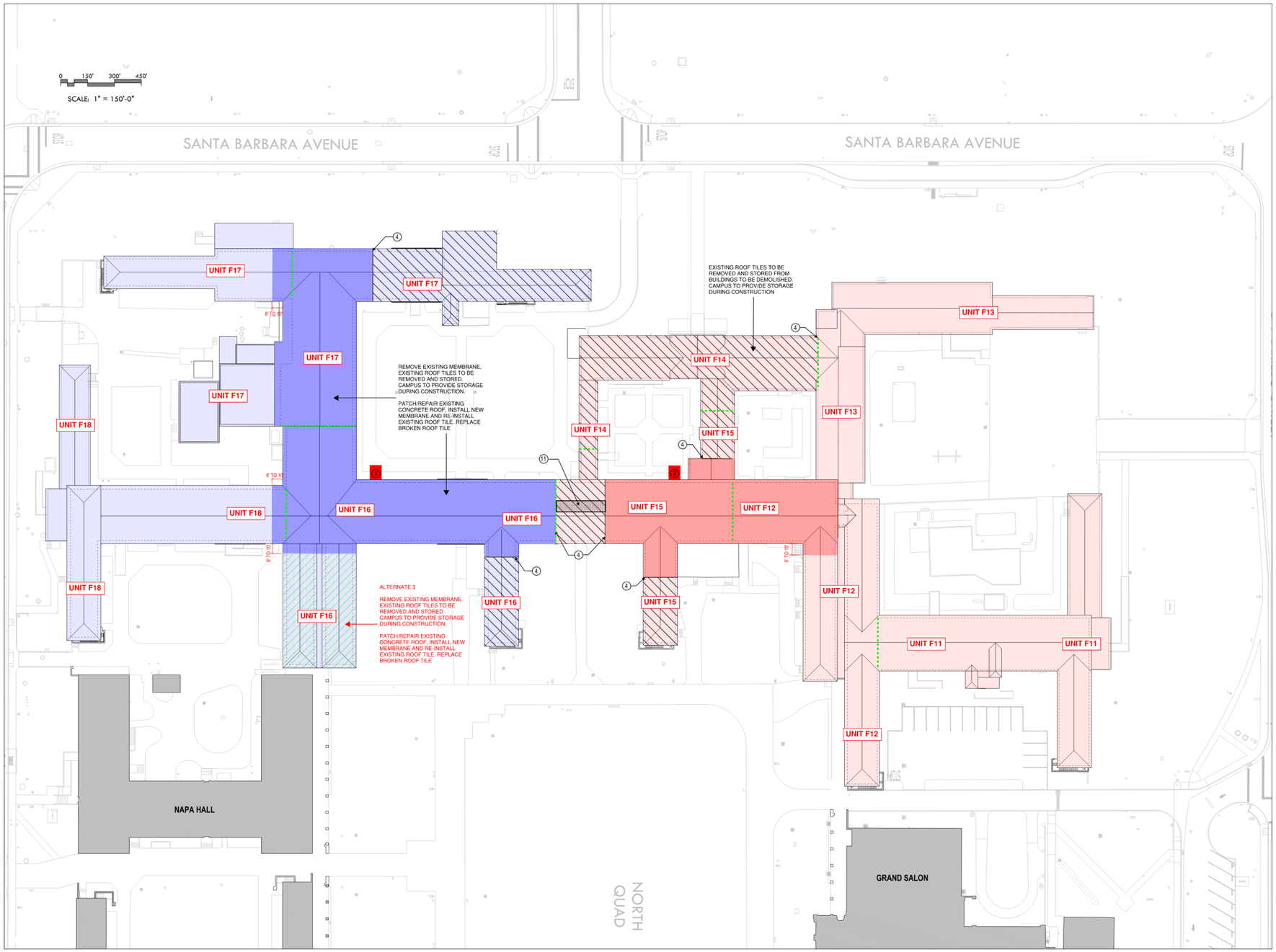
ROOF SCOPING DIAGRAM



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CODE APPROACH

The Gateway Hall project consists of demolishing and renovating an existing 2 story building and adding a new 2 or 3 story building next to it. The new building and renovation will be Type IIB construction, single occupancy, multistory buildings.

Applicable Codes

2022 CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE, C.C.R. TITLE 24, PART 1
2022 CALIFORNIA BUILDING CODE (CBC), C.C.R. TITLE 24, PART 2, VOL. 1 & 2
(2021 INTERNATIONAL BUILDING CODE)
2022 CALIFORNIA ELECTRICAL CODE (CEC), C.C.R. TITLE 24, PART 3
(2020 NATIONAL ELECTRICAL CODE)
2022 CALIFORNIA MECHANICAL CODE (CMC), C.C.R. TITLE 24, PART 4
(2021 UNIFORM MECHANICAL CODE)
2022 CALIFORNIA PLUMBING CODE (CPC), C.C.R. TITLE 24, PART 5
(2021 UNIFORM PLUMBING CODE)
2022 CALIFORNIA ENERGY CODE, C.C.R. TITLE 24, PART 6
2022 CALIFORNIA FIRE CODE, C.C.R. TITLE 24, PART 9
(2021 INTERNATIONAL FIRE CODE)
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), C.C.R. TITLE 24, PART 11
2022 CALIFORNIA REFERENCED STANDARDS, C.C.R. TITLE 24, PART 12
PUBLIC SAFETY, REGULATIONS OF THE STATE FIRE MARSHAL, C.C.R. TITLE 19
2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), C.C.R. TITLE 24, PART 10 (2021 INTERNATIONAL BUILDING CODE AND CALIFORNIA AMENDMENTS)
2010 ADA STANDARDS FOR ACCESSIBLE DESIGN
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS; AS REFERENCED BY THE CBC AND CFC, WITH CALIFORNIA AMENDMENTS PER CBC CHAPTER 35
TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

Applicable Standards

NFPA 10-18 PORTABLE FIRE EXTINGUISHERS
NFPA 13-16 AUTOMATIC SPRINKLER SYSTEMS
NFPA 14-16 STANDPIPE SYSTEMS
NFPA 17-17 STANDARD FOR DRY CHEMICAL EXTINGUISHING SYSTEMS
NFPA 17A-17 STANDARD FOR WET CHEMICAL EXTINGUISHING SYSTEMS
NFPA 20-16, STANDARD FOR THE INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION

NFPA 24-16 PRIVATE FIRE MAINS
NFPA 25-13CA TESTING AND MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS
NFPA 70-17 NATIONAL ELECTRICAL CODE

NFPA 72-16 NATIONAL FIRE ALARM CODE
NFPA 80-16 FIRE DOOR AND OTHER OPENING PROTECTION
NFPA 253-15 CRITICAL RADIANT FLUX OF FLOOR COVERING SYSTEMS

NFPA 285 STANDARD FIRE TEST METHOD FOR EVALUATION OF FIRE PROPAGATION CHARACTERISTICS OF EXTERIOR NON-LOAD BEARING WALL ASSEMBLIES CONTAINING COMBUSTIBLE COMPONENTS

NFPA 2001 CLEAN AGENT FIRE EXTINGUISHING SYSTEMS
REFERENCED CODE SECTIONS FOR NFPA STANDARDS - 2016 CBC VOL. 2, CHAPTER 35

1999 UL 521, STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS

2002 UL 1971, STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED
2003 UL 464, AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES

Building Type & Occupancy

- Type of Construction: IIB
  - Building renovation, 2 story, 39,671 GSF: The existing building was constructed as segmented concrete buildings in 1941 and 1950. A single building group (1941 & 1950) approach will be implemented, rather than multiple building approach. Refer to Existing Building Code Analysis diagram.
  - 2 or 3 story building, 38,788 GSF: Type IIB was chosen to match the building renovation construction type of IIB. Sprinklers have been used for area increases in new construction.
- Occupancy Classification (CBC Chapter 3): A3, B, and S2, Non-Separated Occupancies
  - Non-separated occupancies are allowed due to the Building Construction Type selected.

Allowable Building Height & Stories

Allowable Building Height: 75 feet, per Table 504.3 (based on Group B occupancy)
Allowable Stories: 4, per Table 504.4 (based on Group B occupancy)

Allowable Building Area

Allowable Building Area: 69,000 sf (no frontage) per Table 506.2. Frontage increase is approximately
0.25 x 23,000 or 5,750 sf. Therefore, total allowable area is 74,750 sf per floor and 149,500 sf for each Building Group (1941 & 1950). Refer to Existing Building Code Analysis diagram.

Building Information

- Fully Sprinklered (except portions of existing buildings that will be non-used and separated by 2 hour fire-resistance rated construction).
- Building in a Very High Fire-Hazard Severity zone
- To be equipped with Fire Alarm System w/ Audible and Visual Notification
- To be equipped with Emergency Responder Radio Coverage (Backbone to be provided. Field testing will be sought to waive after completion of construction)

Required Ratings (CBC Table 601)

CONSTRUCTION TYPE		IIB
SPRINKLER SYSTEM		FULL SPRINKLER SYSTEM PER NFPA 13-2016
STRUCTURAL FRAME		0
BEARING WALLS (EXTERIOR)		0
BEARING WALLS (INTERIOR)		0
NONBEARING WALLS & PARTITIONS (EXTERIOR)		0 IF X IS ≥ 10, MORE THAN 30, PER CBC TABLE 602
NONBEARING WALLS & PARTITIONS (INTERIOR)		0
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS & JOISTS		0
ROOF CONSTRUCTION INCLUDING SUPPORTING BEAMS & JOISTS		0
PARAPETS (SEC 705.11)		NONE : EXCEPTION 1
FIRE WALLS		NOT APPLICABLE
FIRE BARRIERS	SHAFT ENCLOSURES (SEC 707.3.1) FIRE RESISTANCE RATING	1
	STAIRWAY CONSTRUCTION (SEC 1022.1) FIRE RESISTANCE RATING	1
FIRE PARTITIONS	CORRIDOR WALLS (TABLE 1020.1)	0
	HORIZONTAL SEPARATIONS (SEC 712.3)	N/A

Required Ratings at Exterior Wall

1-hr, if Fire Separation Distance is less than 30' per Table 602. Per footnote G, exterior walls can be unrated where unlimited, unprotected openings are allowed, which occurs at 20' for sprinklered building

Means of Egress

OCCUPANCT LOAD – CBC CHAPTER CBC CHAPTER 10, TABLE 1004.5 – MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300 GROSS
ASSEMBLY WITHOUT FIXED SEATS	SECTION 1004.6
CONCENTRATED (CHAIRS ONLY-NOT FIXED)	7 NET
STANDING SPACE	5 NET
UNCONCENTRATED (TABLES AND CHAIRS)	15 NET
BUSINESS AREAS	150 GROSS
EDUCATIONAL	
CLASSROOM AREAS	20 NET
SHOPS AND OTHER VOCATIONAL ROOMS AREAS	50 NET
LABORATORY	
LABORATORIES, NON-EDUCATIONAL	50 NET
LABORATORY SUITE	200 GROSS

- MINIMUM NUMBER OF EXITS ON UPPER FLOORS: 2 PER TABLE 1006.3.2
- CBC 1005.3.1 - STAIRWAY EGRESS CAPACITY FACTOR - 0.3
- CBC 1005.3.2 - MEANS OF EGRESS CAPACITY FACTOR - 0.2
- TABLE 1006.2.1 - MAX. COMMON PATH OF EGRESS TRAVEL (FOR SPRINKLERED BUILDING) - 75 FEET FOR A-OCCUPANCIES AND 100 FEET FOR B-OCCUPANCIES.
- TABLE 1017.2 - EXIT ACCESS TRAVEL DISTANCE (FOR SPRINKLERED BUILDING) - 250 FEET FOR A-OCCUPANCIES AND 300 FEET FOR B-OCCUPANCIES.
- TABLE 1020.1 - CORRIDOR FIRE-RESISTANCE RATING (FOR SPRINKLERED BUILDING) - 0 HOURS, A & B OCCUPANCIES. FOR ASSEMBLY SPACES WITH MORE THAN 100 BUT FEWER THAN 300 OCCUPANTS, SEE CBC 1029.3.1
- TABLE 1020.2 - MINIMUM CORRIDOR WIDTH - 44 INCHES OR 36 INCHES WITH AN OCCUPANT LOAD LESS THAN 50
- CBC 1020.4, EXCEPTION 2 - DEAD END CORRIDOR SHALL NOT EXCEED 20 FEET (A OCCUPANCY, SPRINKLERED)

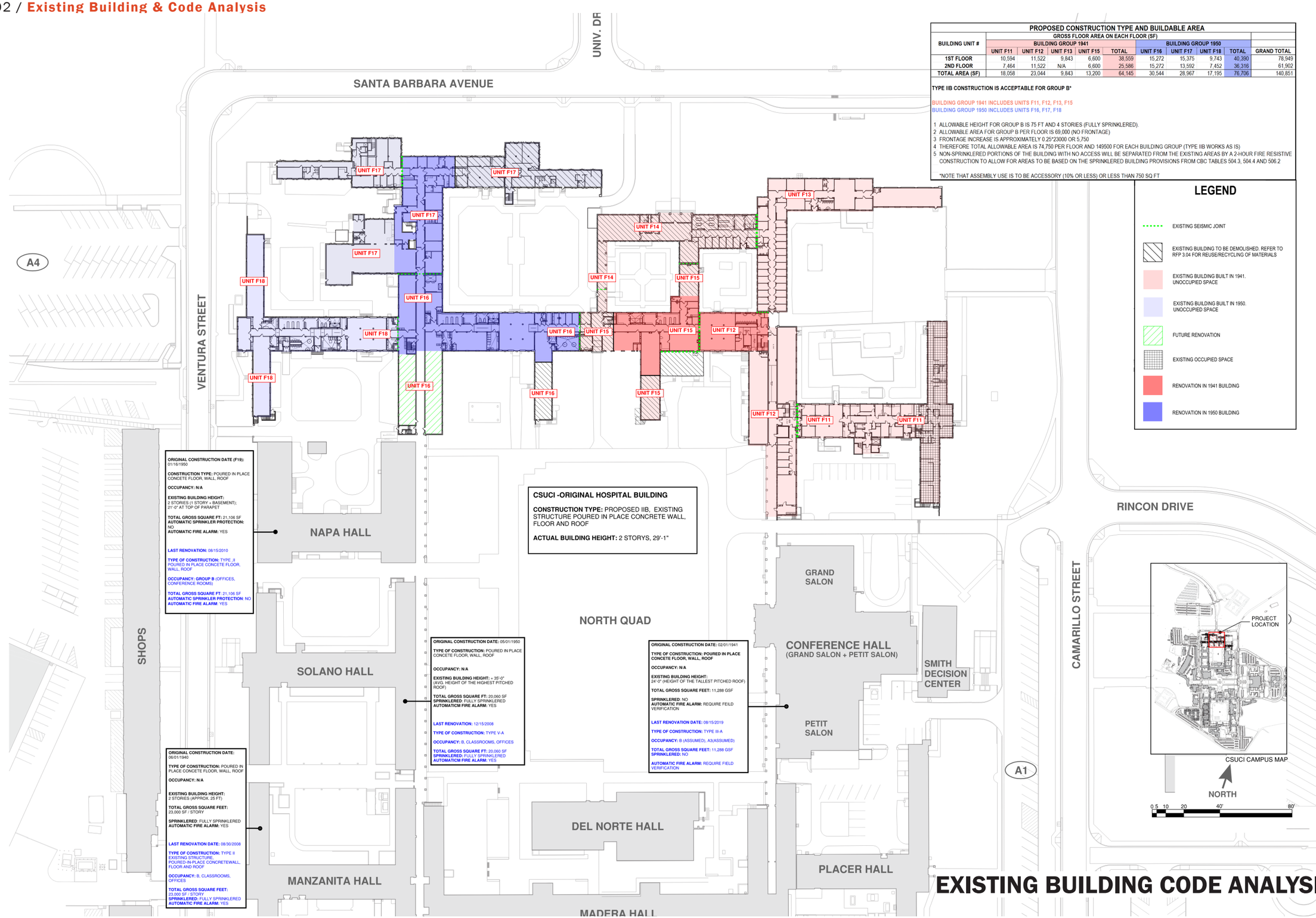
Exit Discharge

1028.1 At least 50% of exits shall discharge directly to the exterior of the building as allowed by exception to 1028.1. The exit discharge shall be at grade or shall provide a direct path of egress travel to grade. The exit discharge shall not reenter a building.

Fire Access Roads & Fire Apparatus Access

The existing fire access roads will need to be reviewed with the Ventura County Fire Department and the Office of the State Fire Marshal. Refer to Fire Lane Diagram.

Existing fire access roads cover the north, south, east and west sides of the building. New proposed fire lane with hammerhead turning radius to be located off of Santa Barbara Avenue / University Drive intersection. Two additional new fire lanes may be required off of Ventura Street and Camarillo Street. All fire lanes shall comply with CFC 503.1, and figure D103.1 (where applicable). Refer to Site Fire Safety Analysis Diagram.



PROPOSED CONSTRUCTION TYPE AND BUILDABLE AREA

BUILDING UNIT #	GROSS FLOOR AREA ON EACH FLOOR (SF)									
	BUILDING GROUP 1941					BUILDING GROUP 1950				
	UNIT F11	UNIT F12	UNIT F13	UNIT F15	TOTAL	UNIT F16	UNIT F17	UNIT F18	TOTAL	GRAND TOTAL
1ST FLOOR	10,594	11,522	9,843	6,600	38,559	15,272	15,375	9,743	40,390	78,949
2ND FLOOR	7,464	11,522	N/A	6,600	25,586	15,272	13,592	7,452	36,316	61,902
TOTAL AREA (SF)	18,058	23,044	9,843	13,200	64,145	30,544	28,967	17,195	76,706	140,851

TYPE IIB CONSTRUCTION IS ACCEPTABLE FOR GROUP B*

BUILDING GROUP 1941 INCLUDES UNITS F11, F12, F13, F15
BUILDING GROUP 1950 INCLUDES UNITS F16, F17, F18

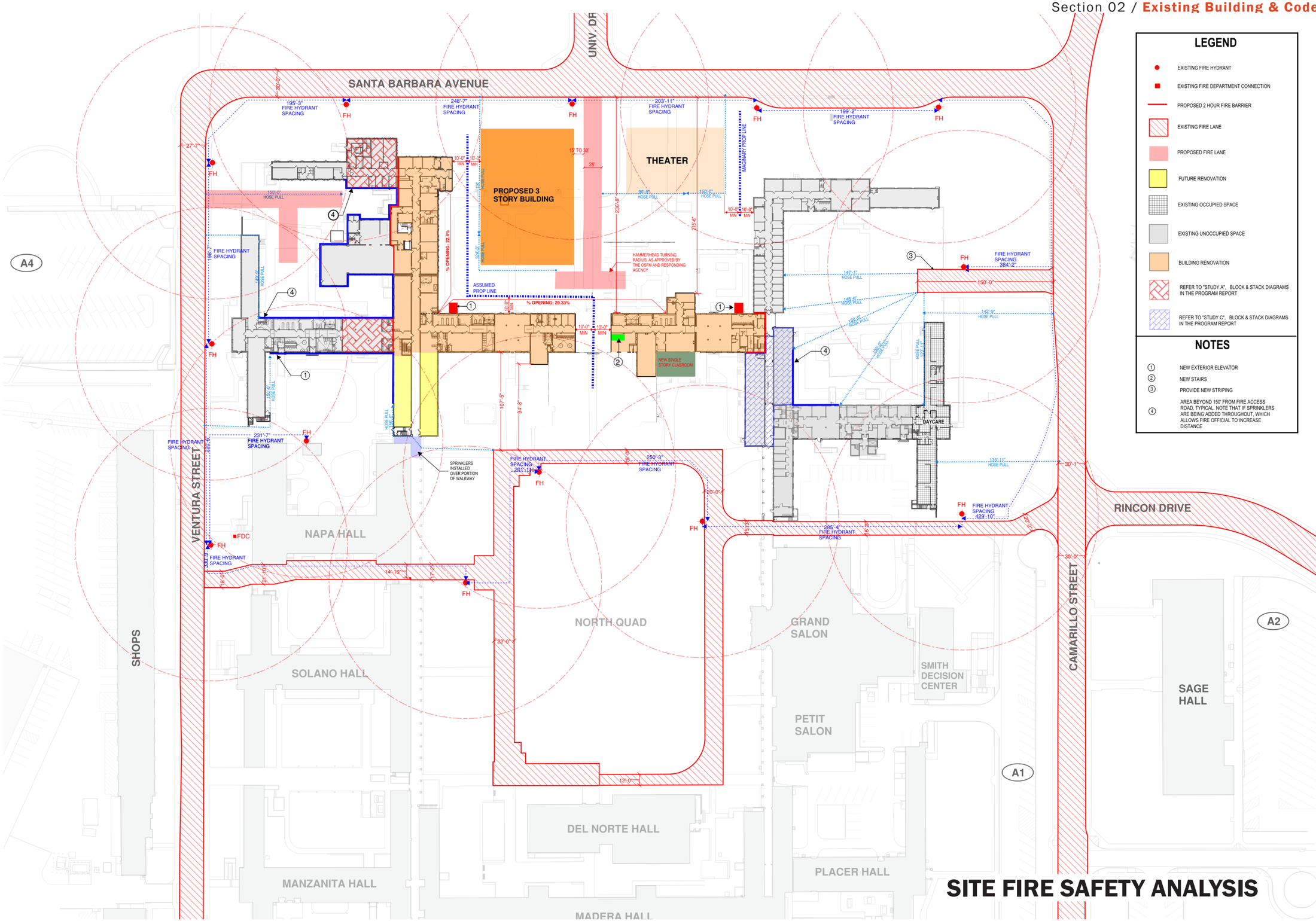
1 ALLOWABLE HEIGHT FOR GROUP B IS 75 FT AND 4 STORIES (FULLY SPRINKLERED).
2 ALLOWABLE AREA FOR GROUP B PER FLOOR IS 69,000 (NO FRONTAGE)
3 FRONTAGE INCREASE IS APPROXIMATELY 0.25*23000 OR 5,750
4 THEREFORE TOTAL ALLOWABLE AREA IS 74,750 PER FLOOR AND 149500 FOR EACH BUILDING GROUP (TYPE IIB WORKS AS IS)
5 NON-SPRINKLERED PORTIONS OF THE BUILDING WITH NO ACCESS WILL BE SEPARATED FROM THE EXISTING AREAS BY A 2-HOUR FIRE RESISTIVE CONSTRUCTION TO ALLOW FOR AREAS TO BE BASED ON THE SPRINKLERED BUILDING PROVISIONS FROM CBC TABLES 504.3, 504.4 AND 506.2

*NOTE THAT ASSEMBLY USE IS TO BE ACCESSORY (10% OR LESS) OR LESS THAN 750 SQ FT

LEGEND

- EXISTING SEISMIC JOINT
- EXISTING BUILDING TO BE DEMOLISHED. REFER TO RFP 3.04 FOR REUSE/RECYCLING OF MATERIALS
- EXISTING BUILDING BUILT IN 1941. UNOCCUPIED SPACE
- EXISTING BUILDING BUILT IN 1950. UNOCCUPIED SPACE
- FUTURE RENOVATION
- EXISTING OCCUPIED SPACE
- RENOVATION IN 1941 BUILDING
- RENOVATION IN 1950 BUILDING

EXISTING BUILDING CODE ANALYSIS



LEGEND

- EXISTING FIRE HYDRANT
- EXISTING FIRE DEPARTMENT CONNECTION
- PROPOSED 2 HOUR FIRE BARRIER
- EXISTING FIRE LANE
- PROPOSED FIRE LANE
- FUTURE RENOVATION
- EXISTING OCCUPIED SPACE
- EXISTING UNOCCUPIED SPACE
- BUILDING RENOVATION
- REFER TO "STUDY A", BLOCK & STACK DIAGRAMS IN THE PROGRAM REPORT
- REFER TO "STUDY C", BLOCK & STACK DIAGRAMS IN THE PROGRAM REPORT

NOTES

1. NEW EXTERIOR ELEVATOR
2. NEW STAIRS
3. PROVIDE NEW STRIPING
4. AREA BEYOND 150' FROM FIRE ACCESS ROAD, TYPICAL. NOTE THAT IF SPRINKLERS ARE BEING ADDED THROUGHOUT, WHICH ALLOWS FIRE OFFICIAL TO INCREASE DISTANCE

SITE FIRE SAFETY ANALYSIS

FIRST FLOOR EXITING

0 150' 300' 450'

SCALE: 1" = 150'-0"

UNIVERSITY DRIVE

SANTA BARBARA AVENUE

SANTA BARBARA AVENUE

PROPOSED 3 STORY BUILDING, TYPE IIB 38,788 GSF

THEATER

NEW SINGLE STORY CLASSROOM

DAYCARE

NAPA HALL

GRAND SALON

PROPOSED NON-SPRINKLERED AREA

(E) STAIRS

(E)ELEVATOR

(E) STAIRS

(E) STAIRS

ASSUMED PROP. LINE

MAXIMUM PROP LINE

10' MIN

EXIT

140'-2" EXIT TRAVEL DISTANCE

LEGEND

- EXIT EGRESS PATH OF TRAVEL
- EXISTING SEISMIC JOINT
- PROPOSED 2 HOUR FIRE BARRIER
- EXISTING OCCUPIED SPACE
- EXISTING UNOCCUPIED SPACE
- BUILDING RENOVATION
- FUTURE RENOVATION
- REFER TO "STUDY A", BLOCK & STACK DIAGRAMS IN THE PROGRAM REPORT
- REFER TO "STUDY C", BLOCK & STACK DIAGRAMS IN THE PROGRAM REPORT
- INTERIOR DEMOLITION AND NEW FIRE SPRINKLERS. EXISTING STAIRS, EXISTING ELEVATOR/MACHINE ROOM AND THEIR ENCLOSURE, AND UTILITES ASSOCIATED WITH THE ELEVATOR SHALL BE PROTECTED AND REMAIN IN PLACE

NOTES

1. NEW EXTERIOR ELEVATOR
2. NEW STAIRS

EXIT ACCESS TRAVEL DISTANCE CBC 1017.2

A, E, F-1, M, S-1 OCCUPANCY
W/O SPRINKLER = 200'
W/ SPRINKLER = 250'

B OCCUPANCY
W/O SPRINKLER = 200'
W/ SPRINKLER = 300'

CSUCI - GATEWAY HALL

CONSTRUCTION TYPE: TYPE II-B, EXISTING STRUCTURE POURED IN PLACE CONCRETE WALL, FLOOR AND ROOF

BUILDING OCCUPANCY TYPE: GROUP B, OFFICES AND CONFERENCE ROOMS

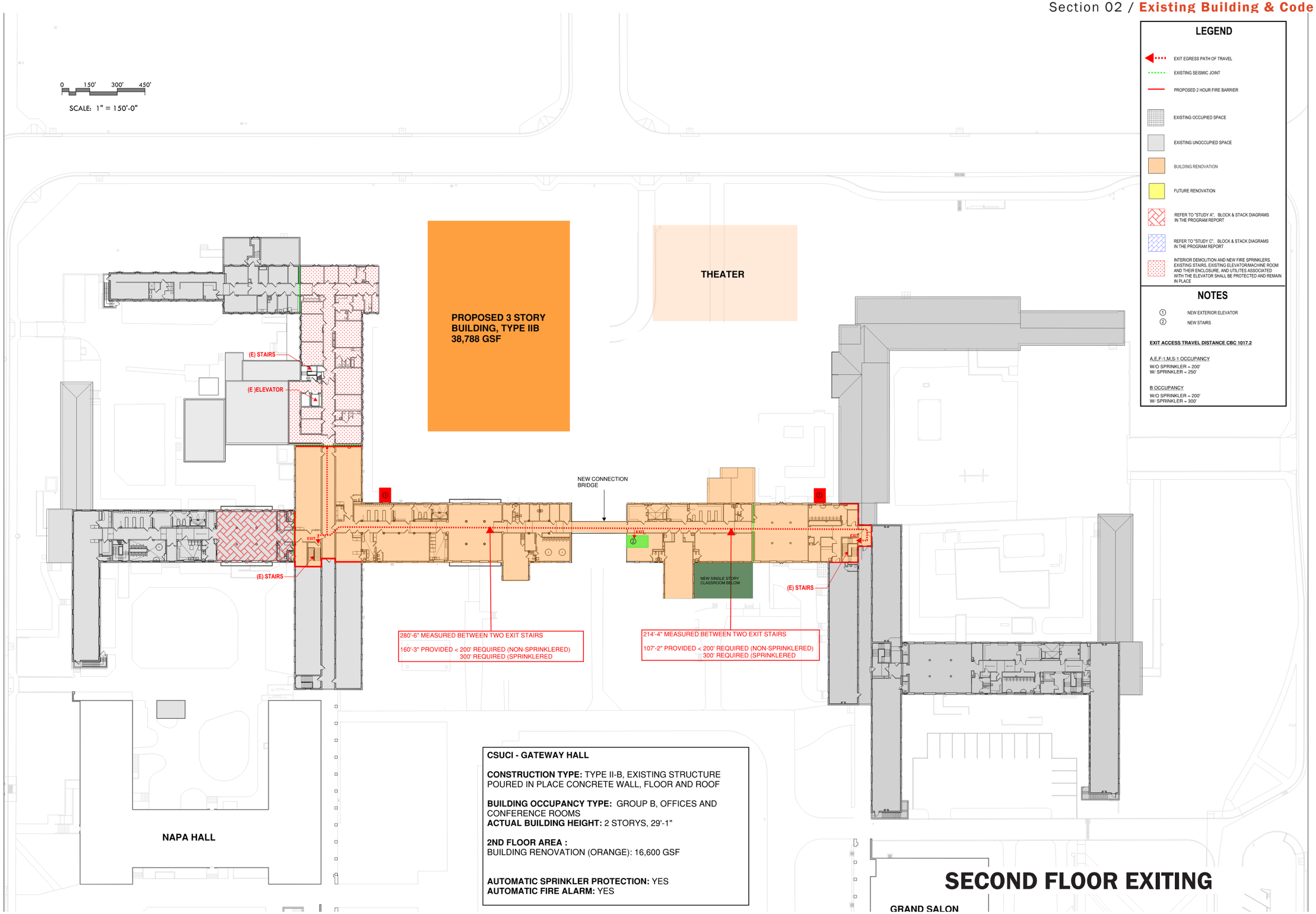
RENOVATION ACTUAL BUILDING HEIGHT: 2 STORYS, 29'-1"

TOTAL RENOVATION AREA IS 39,671 GSF, INCLUDES 1ST AND 2ND FLOOR AND 1ST FLOOR OF EXTENDED UNIVERSITY

AUTOMATIC SPRINKLER PROTECTION: YES
AUTOMATIC FIRE ALARM: YES

0 150' 300' 450'

SCALE: 1" = 150'-0"



LEGEND

- EXIT EGRESS PATH OF TRAVEL
- EXISTING SEISMIC JOINT
- PROPOSED 2 HOUR FIRE BARRIER
- EXISTING OCCUPIED SPACE
- EXISTING UNOCCUPIED SPACE
- BUILDING RENOVATION
- FUTURE RENOVATION
- REFER TO "STUDY A", BLOCK & STACK DIAGRAMS IN THE PROGRAM REPORT
- REFER TO "STUDY C", BLOCK & STACK DIAGRAMS IN THE PROGRAM REPORT
- INTERIOR DEMOLITION AND NEW FIRE SPRINKLERS. EXISTING STAIRS, EXISTING ELEVATOR/MACHINE ROOM AND THEIR ENCLOSURE, AND UTILITES ASSOCIATED WITH THE ELEVATOR SHALL BE PROTECTED AND REMAIN IN PLACE

NOTES

1. NEW EXTERIOR ELEVATOR
2. NEW STAIRS

EXIT ACCESS TRAVEL DISTANCE CBC 1017.2

A, E, F-1, M, S-1 OCCUPANCY
W/O SPRINKLER = 200'
W/ SPRINKLER = 250'

B OCCUPANCY
W/O SPRINKLER = 200'
W/ SPRINKLER = 300'

CSUCI - GATEWAY HALL

CONSTRUCTION TYPE: TYPE II-B, EXISTING STRUCTURE POURED IN PLACE CONCRETE WALL, FLOOR AND ROOF

BUILDING OCCUPANCY TYPE: GROUP B, OFFICES AND CONFERENCE ROOMS
ACTUAL BUILDING HEIGHT: 2 STORYS, 29'-1"

2ND FLOOR AREA :
BUILDING RENOVATION (ORANGE): 16,600 GSF

AUTOMATIC SPRINKLER PROTECTION: YES
AUTOMATIC FIRE ALARM: YES

SECOND FLOOR EXITING

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PROGRAM REQUIREMENTS

03

- Building Program
- Space Matrix
- Visual Program Summary
- Adjacency Diagrams
- Selected Room Diagrams
- Conceptual Blocking & Stacking

BUILDING PROGRAM

The final program for the new Gateway Hall provides roughly 80,000 sf. of renovated existing facilities and new construction

DESCRIPTION

STUDENT SERVICES

The project will house the One-Stop Shop Student Services and a designated Welcome Center. The One-Stop Shop will co-locate Financial Aid, Registrar, Student Systems, Student Business Services, satellite Academic Advising offices, and general office spaces. Additionally, a designated Welcome Center grouped with admissions in the new building will act as a front door for the surrounding community and prospective students.

UNIVERSITY CLASSROOM SPACE

New university classrooms will be used by various disciplines and programs from across the campus. As general teaching spaces, these learning environments will be flexible and reconfigurable to meet the needs of various programs and their pedagogies. Spaces will have flexible furniture, ample writable surface, and advanced technology for hybrid learning environments.

DEPARTMENTAL LABS

New teaching and fabrication labs and supplemental spaces for Computer Science / Mechatronics and Mathematics departments will provide flexible, hands-on labs, designed to accommodate current and evolving needs. Each lab is sized and planned to accommodate department-specific uses.

ACADEMIC WORKPLACE

Offices spaces for full-time and part-time faculty will be grouped and organized to facilitate more interaction between faculty and students. To support future program growth, opportunities for additional office spaces have been identified in adjacent buildings.

GATHERING SPACE

The new Gateway Hall will afford the expansion of student gathering and study spaces dispersed throughout new and renovated buildings. The collaborative nature of Gateway Hall provides students access to open and semi-enclosed booths, small group study / collaboration rooms, a convenience store with coffee, and a variety of other support spaces geared to meet the needs of the students.

EXTENDED UNIVERSITY

The project will co-locate Extended University office spaces and a new 50-person conference / classroom. Along with providing private and shared workspaces, students, faculty, and staff will have access to a variety of common spaces such as a large kitchenette, lounge, and huddle rooms.

TERMINOLOGY

In compiling a space matrix, a number of terms are used to identify the appropriate area for the building. The subsequent sheets use the following terminology to generate the building's space needs.

Capacity*: the number of seats and/or occupants per room

ASF/Unit*: the assigned square footage of a space per occupant

Assignable Square Feet (ASF): the assigned square footage of space (equal to capacity times ASF/unit); typically described as "wall-to-wall" or "usable area"

Quantity: the number of rooms

Total ASF: equal to the assignable square feet (ASF) times the number of rooms

Suite Circulation: area for hallways/corridors within a department or cluster of spaces off of the main building circulation

Net to Gross Efficiency: ratio of assignable square feet to nonassignable square feet within the building

Non-assignable Square Feet: the area in a building not accounted for in assigned square footage; includes area for wall thickness, structure, circulation, restrooms, etc.

Gross Square Feet: total square footage of the building measured from the outside walls

*Number of stations and ASF/stations are used to derive the size of many types of spaces, including classrooms and labs. In these cases, the number of occupants and size per occupant are the driving factor behind room size. Where spaces do not have the number of occupants listed, the room size is based on a different factor (e.g. functional size requirements, industry standards, etc.).

SPACE MATRIX SUMMARY

1.0 Student Services:	**13,235**	**ASF**
Shared Spaces	4,520	ASF
Enrollment Services	6,920	ASF
Student Business Services	1,525	ASF
Academic Advising	270	ASF
2.0 University Instructional Space:	**8,328**	**ASF**
Classrooms	8,328	ASF
3.0 Departmental Labs:	**7,184**	**ASF**
Computer Science / Mechatronics	5,384	ASF
Math	1,800	ASF
4.0 Academic Workplace:	**6,057**	**ASF**
Office Space	4,605	ASF
Meeting & Support Space	1,452	ASF
5.0 Gathering Space:	**3,050**	**ASF**
Food Service	450	ASF
Student Spaces	2,600	ASF
6.0 Extended University	**4,200**	**ASF**
Total Assignable Square Feet:	**42,054**	**ASF**

Detailed Spaces

		Capacity	ASF/ Unit	ASF	Quantity	Total ASF	Comments
1.0 Student Services							
Shared Spaces							
Welcome Center							
1.01	Welcome Center Lobby			700	1	700	
	General Seating / Waiting	*20*	*15*	*300*			
	Pre-function Space	*23*	*10*	*250*			*Can include wall displays / showcasing services / University*
	Reception Desk / Conceirge Desk			*100*			
	Self-Kiosks	*2*	*25*	*50*			
1.02	Welcome Center Meeting Room	100	12	1,200	1	1,200	100 person presentation in theater style layout; 50 to 60 people in Workshop / Lecture Style
1.03	Meeting Room Furniture Storage			160	1	160	
				Subtotal:	**3**	**2,060**	
One-Stop-Shop Services							
1.04	Lobby / Waiting			700	1	700	reception-type area; waiting room
1.05	Satellite Offices			90	2	180	Advising, counseling, Basic Needs, Parent & Family
1.06	"Pop-Up" Services			200	1	200	Pop-up pantry
1.07	Consult Room			90	2	180	work with satellite offices; records
				Subtotal:	**3**	**1,260**	
Shared Meeting Rooms							
1.08	30p Conference Room	30	20	600	1	600	staff meetings / trainings
1.09	12p Conference Room	12	20	240	1	240	staff / family / university meetings
				Subtotal:	**2**	**840**	
Shared Meeting Rooms Staff Space							
1.10	Break Room			200	1	200	
1.11	Staff Restrooms			80	2	160	One located at one-stop shop and one at welcome center
				Subtotal:	**3**	**360**	
				Shared Spaces Subtotal:		**4,520**	

		Capacity	ASF/ Unit	ASF	Quantity	Total ASF	Comments
Enrollment Services							
Admissions							
1.12	Director's Office			135	1	135	
1.13	Associate Director's Office			90	1	90	
1.14	Senior Coordinator			90	1	90	
1.15	Administrative Assistant Wkstn / Front Counte	2		110	1	110	at Front Counter
1.16	Recruitment Counselor's Office			90	8	720	recruitment season = july-dec (out or virtual); one-on-ones + presentations
1.17	Operations Staff Workstations			50	9	450	includes 3 Coordinators; Staff Workstations: minimal, standing desk, not a lot of storage, not attached
1.18	Student Ambassadors Workstation			50	8	400	15 total; 8-10 in one location; phones/office/inward facing; split into 2 groups of 4
1.19	Workroom / Breakroom			200	1	200	
1.20	Storage			300	1	300	
				Subtotal:	**31**	**2,495**	
Financial Aid							
1.21	Director's Office			135	1	135	
1.22	Associate Director's Office			90	2	180	
1.23	Administrative Assistant's Office			90	1	90	
1.24	Counselor's Office			90	10	900	
1.25	Shared Office for Systems	2		90	1	90	added
1.26	Student Assistant Workstations			60	4	240	reduced from 5 to 4
1.27	Customer Support Workstation / Front Counte	2		110	1	110	ticketing system
1.28	Storage			110	1	110	
				Subtotal:	**21**	**1,855**	
Registrar							
1.29	Registrar's Office			90	1	90	
1.30	Associate Registrar's Office			90	2	180	
1.31	Adminstrative Assistant's Wkstn / Front Cntr	2		110	1	110	
1.32	Records / Eval. & Registration Services Wkstn			70	10	700	Records/Evaluations = 2 SAs (1 front; 1 back); Records/Evaluations = 9 / Reg Services = 5; reduced from 14 to 10 per Building Committee direction
1.33	Student Assistants Desks			25	2	50	Added
1.34	Consult Room			-	0	-	See shared spaces
1.35	Storage			-	0	-	See General, shared storage space
				Subtotal:	**16**	**1,130**	
Student Systems							
1.36	Systems Director Office			90	1	90	
1.37	Associate Director Office			90	1	90	
1.38	System Analyst Workstation			70	4	280	Data System Support = 8; Deg Audit Asst = 1; reduced from 9 to 4, per email
1.39	Electronic Document Manager Workstation			80	4	320	scanning
				Subtotal:	**10**	**780**	
General							
1.40	Associate VP Office			150	1	150	
1.41	Administrative Assistant Office			90	1	90	
1.42	Analysist Office			90	1	90	
1.43	Work Room / Mail Room			220	1	220	
1.44	Storage			110	1	110	Shared for enrollment services (FA, Registrar, SS)
				Subtotal:	**5**	**660**	
				Subtotal:	**166**	**6,920**	

		Capacity	ASF/ Unit	ASF	Quantity	Total ASF	Comments
Student Business Service							
1.45	Director's Office			135	1	135	
1.46	Assistant Director's Office			90	1	90	
1.47	Collection Specialist Workstation			70	2	140	confidential call, sensitive in nature (info shared by both specialists)
1.48	SF Account / Student Account Specialist Wkstn			70	5	350	
1.49	Cashier Stations / Front Counter / Staff Wkstn			70	4	280	one with privacy for interviews
1.50	ID Picture Station			60	1	60	
1.51	Vault			210	1	210	includes workstation
1.52	Work Room			150	1	150	includes workstation - marked up to 150, no mention in email
1.53	Storage			110	1	110	
1.54	Drop Box			-			
				Subtotal:	**17**	**1,525**	
Academic Advising							
1.55	Academic Advisor Satellite Office			90	3	270	
				Subtotal:	**3**	**270**	
					Student Services Subtotal:	**13,235**	

		Capacity	ASF/ Unit	ASF	Quantity	Total ASF	Comments
2.0	**University Instructional Space**						
Classrooms							
2.01	Classroom - MTAC	36	22	792	2	1,584	
2.02	Classroom - T&C w/Wall Technology	36	27	972	2	1,944	
2.03	Classroom - Perimeter / Group Tech	36	25	900	2	1,800	
2.04	Large Classroom - T&C w/ Wall Technology	48	25	1,200	1	1,200	
2.05	X-Large Classroom - T & C w/ Wall Technology	75	24	1,800	1	1,800	
		339					
				Subtotal:	**8**	**8,328**	
				University Instr. Space Subtotal:		**8,328**	

		Capacity	ASF/ Unit	ASF	Quantity	Total ASF	Comments
3.0	**Departmental Labs**						
Computer Science / Mechatronics							
3.01	General Purpose Mechatronics / Computer Science Teaching Space	24	50	1,000	1	1,000	state-of-the-art stations; Imacs, General Purpose Labs, whiteboards on all walls; students - sightlines to whiteboards and projection. projected need; computer station + hardware station per student (3'x5' Total)
3.02	Mechatronics Lab	40	50	2,000	1	2,000	hardware+software based projects; for capstone / fab lab / mobile robots / storage; open space - able to 3d print, soder, assembly, fume hoods / exhaust
3.03	Mechatronics Lab Support Room			600	1	600	Technician / Lab Tech; current prep rm: sierra hall
3.04	Cybersecurity Instructional Space	24		720	1	720	projected need - Industrial control, systems layout; program controllers, robot arms; using technology to defend equipment; 30'x24'
3.05	Cybersecurity Equipment Workspace			474	1	474	With Cybersecurity Instructional Space; 30'x16'
3.06	Game Design / VR	6	50	500	1	500	expanding prgrm: game design/interdisciplinary art; currently in sierra hall with 5 gaming stns/large VR; current room size: 229
3.07	Lab Technician Office			90	1	90	
		94					
				Subtotal:	**7**	**5,384**	
Math							
3.08	Instructional Lab	24	40	900	2	1,800	Group Technology (optimal 24 / flex 30) - groups of 4 but can accommodate 5; in-classroom storage for materials/tools (larger cabinets); house laptop cart w/ storage above;
		48					
				Subtotal:	**2**	**1,800**	
				Departmental Labs Subtotal:		**7,184**	

		Capacity	ASF/ Unit	ASF	Quantity	Total ASF	Comments
4.0 Academic Workplace							
Faculty / Department Resources							
Faculty & Full-Time Lecturer							
4.01	Chair Office			140	2	280	
4.02	Faculty Offices - Current			110	18	1,980	CS: 9 + Math: 11 = 20
4.03	FT Lecturer Office - Current			110	10	1,100	CS: 5 + Math: 5 = 10
4.04	Single Office Growth			110	2	220	
				Subtotal:	**30**	**3,580**	
Part-Time Lecturer Space & Graduate Student							
4.05	Shared Offices for Part-Time Lecturers	2	36	110	5	550	For ~2/3's time part-time lecturer's
4.06	"Pod" Workspace	5	29	145	1	145	Hoteling Stations for PT Lectuers' - teach one class
4.07	X-Small Meeting Room			80	1	80	
4.08	Graduate Student Space	10	25	250	1	250	
				Subtotal:	**8**	**1,025**	
Shared Meeting Space							
4.09	Huddle Room	6	23.5	141	2	282	
4.10	Meeting Room	15	20	300	1	300	
4.11	Transitory Collabration / Work Space	8	25	200	1	200	installed white boards/screencast outside office for students to demonstrate work
				Subtotal:	**4**	**782**	
Shared Departmental Space							
4.12	Front Desk & Waiting Area			100	1	100	Assume Student Assistant at Front Desk
4.13	Staff Office - Current			90	2	180	CS: 1 + Math: 1
4.14	Staff Office - Growth			90	1	90	
4.15	Copy / Work Room / Files			100	1	100	
4.16	Kitchenette / Break Room			200	1	200	
				Subtotal:	**6**	**670**	
				Category Subtotal:		**6,057**	

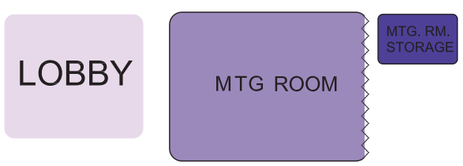
		Capacity	ASF/ Unit	ASF	Quantity	Total ASF	Comments
5.0 Gathering Places							
Food Services							
5.01	Conveince Store			450	1	450	Small C-Store with coffee/espresso
				Food Services Subtotal:	1	**450**	
Student Spaces							
5.02	Open Student Study / Collab Space	8	25	200	6	1,200	Disperse throughout academic space; some enclosed/semi-enclosed
5.03	Semi-Enclosed Private Booths	4	12.5	50	6	300	
5.04	Small Group Study / Collaboration Rooms	4	22	90	6	540	
5.05	Zoom Room	1	60	60	3	180	Place for students to attend on-line courses
5.06	Kitchenette			200	1	200	
5.07	Quiet Room / Space			90	1	90	
5.08	Lactation Room			90	1	90	
		99		**Student Spaces Subtotal:**	24	**2,600**	
				Gathering Spaces Subtotal:		**3,050**	

		Capacity	ASF/ Unit	ASF	Quantity	Total ASF	Comments
6.0 Extended University							
Dean's Office							
6.01	Dean's Office			135	1	135	
6.02	Assistant / Associate Dean			135	1	135	Future
6.03	Administrative Assistant to Dean			90	1	90	
				Subtotal:	**3**	**360**	
Finance and Administration							
6.04	Director			90	1	90	
6.05	Support Staff Shared Space	6	80	90	3	270	Student Finance Specialist, MS Biology Support Technician, Operations Support Analyst, Digital Analyst CRM Administrator, Admin Analyst
				Subtotal:	**4**	**360**	
Enrollment Management, Outreach and Student Affairs							
6.06	Director of Enrollment Mgmt, Outreach & Student Affairs/OLLI Direct			90	1	90	
6.07	Director of Operations			90	1	90	currently vacant
6.08	Shared Staff Offices			90	6	540	
6.09	Student Assistant Workspace	2	50	100	1	100	
				Subtotal:	**9**	**820**	
Additional Offices							
6.10	Additional Offices			90	5	450	
				Subtotal:	**5**	**450**	
Common Space							
6.11	Receptaion / Lounge for EU			170	1	170	locate next to open staff lounge space
6.12	Huddle / Small Meeting Rm			90	3	270	tech-enabled spaces for small mtgs/virtual connections
6.13	Copy / Work Room / Files			50	1	50	counter space
6.14	Storage Room			70	1	70	
6.15	Kitchenette / Break Room			400	1	400	open work; attach to staff lounge
6.16	Classroom / Conference Room	50	25	1,250	1	1,250	
				Subtotal:	**8**	**2,210**	
					Category Subtotal:	**4,200**	

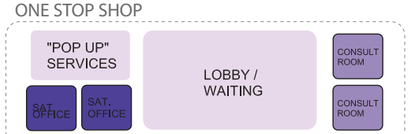
VISUAL PROGRAM SUMMARY

STUDENT SERVICES

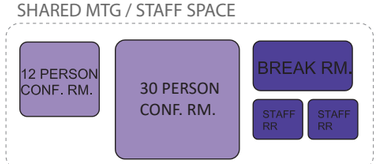
WELCOME CENTER



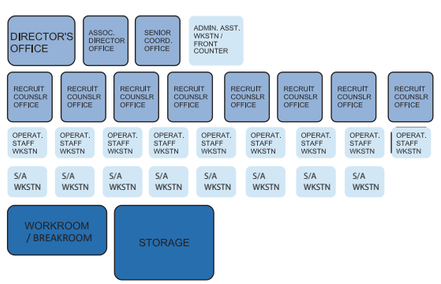
ONE STOP SHOP



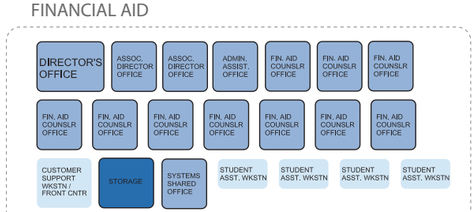
SHARED MTG / STAFF SPACE



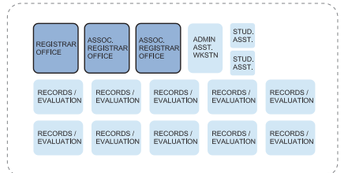
ADMISSIONS



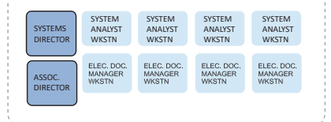
FINANCIAL AID



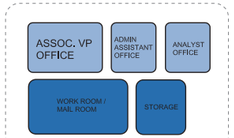
REGISTRAR



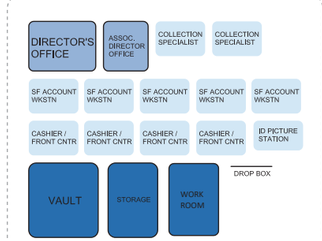
STUDENT SYSTEMS



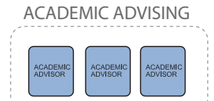
GENERAL



STUDENT BUSINESS

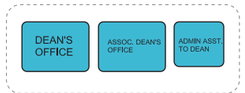


ACADEMIC ADVISING

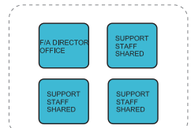


EXTENDED UNIVERSITY

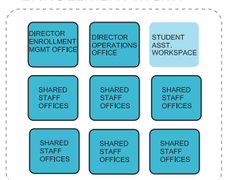
DEAN'S OFFICE



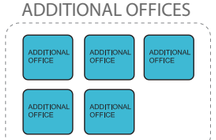
FINANCE / ADMIN



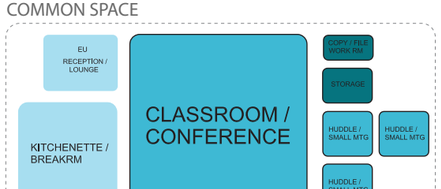
ENROLLMENT MGMT



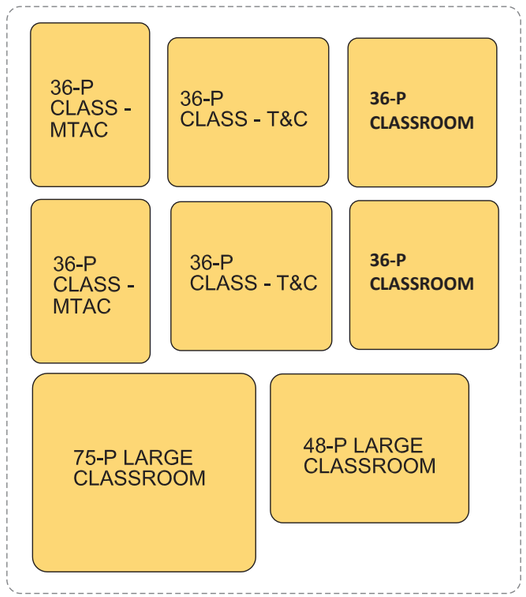
ADDITIONAL OFFICES



COMMON SPACE

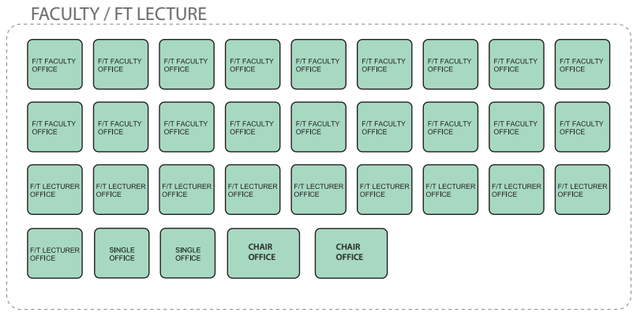


CLASSROOMS

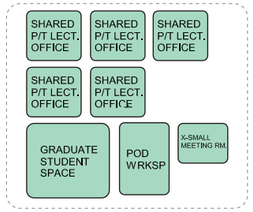


ACADEMIC WORKPLACE

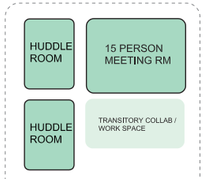
FACULTY / FT LECTURE



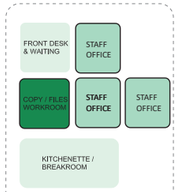
PT LECTURE / GRADUATE



SHARED MTG

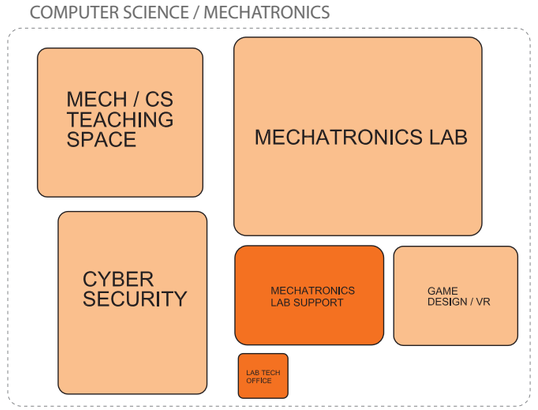


SHARED DEPT.SPACE

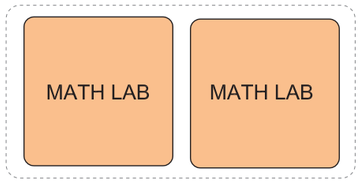


DEPARTMENTAL LABS

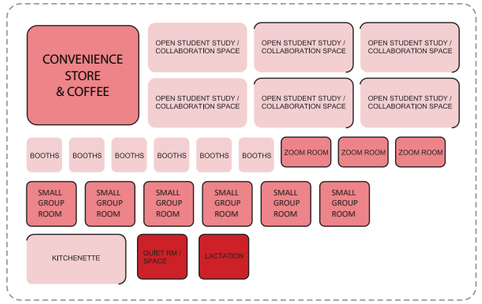
COMPUTER SCIENCE / MECHATRONICS



MATH



GATHERING SPACES



SPACE ADJACENCIES

Adjacency Diagrams describe space/room groupings and their spatial relationships to each other. Support spaces (such as building restrooms) and program pieces with no critical adjacencies are not illustrated.

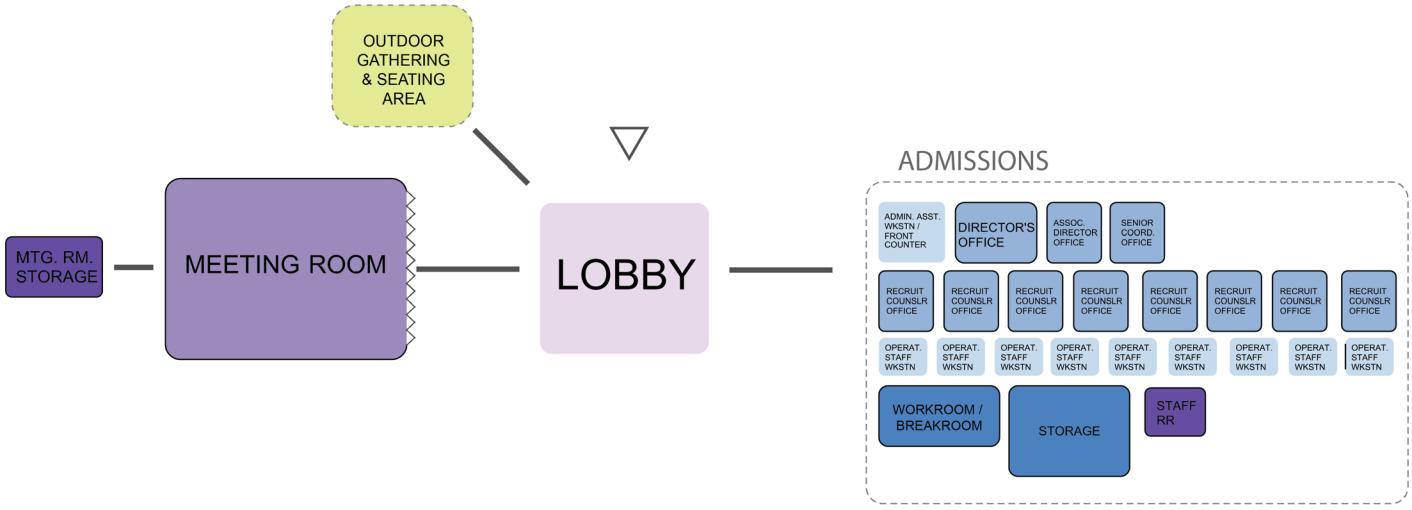
Within each adjacency diagram, a room or space is represented by a colored block. This block shows the scaled size of the room/space in comparison to the other spaces.

A graphic item (example: dotted line) between spaces or around spaces delineates different types of relationships. A legend for these graphic items appears on each page.

Terminology

Immediate Adjacency	A physical connection between two spaces allowing for direct access from one space to another.
Close Proximity	Located within the same general area where physical connection is desired but not required.
Grouped Program	Room or spaces of similar type/function which shall be clustered together in a location.

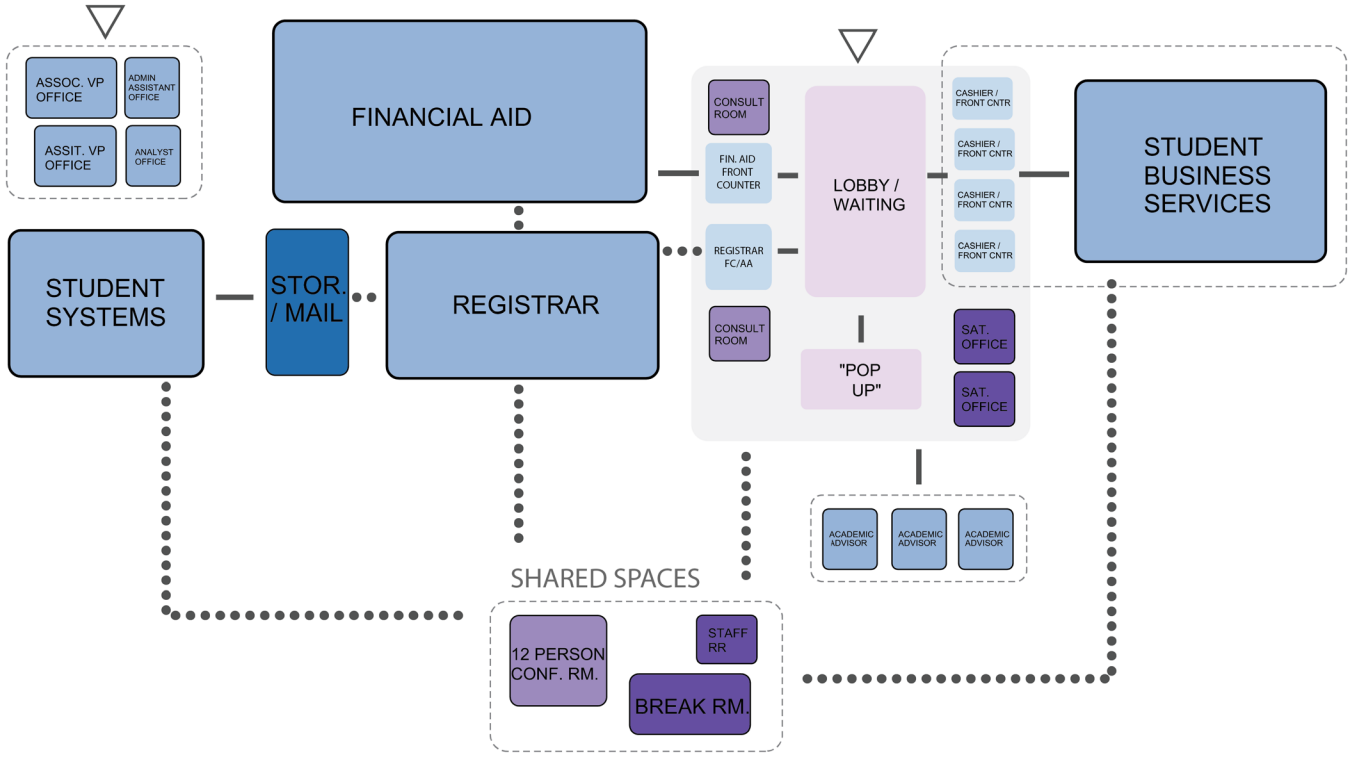
Welcome Center



LEGEND

- Immediate Adjacency
- Close Proximity
- Operable Partition
- Grouped Program
- Entry

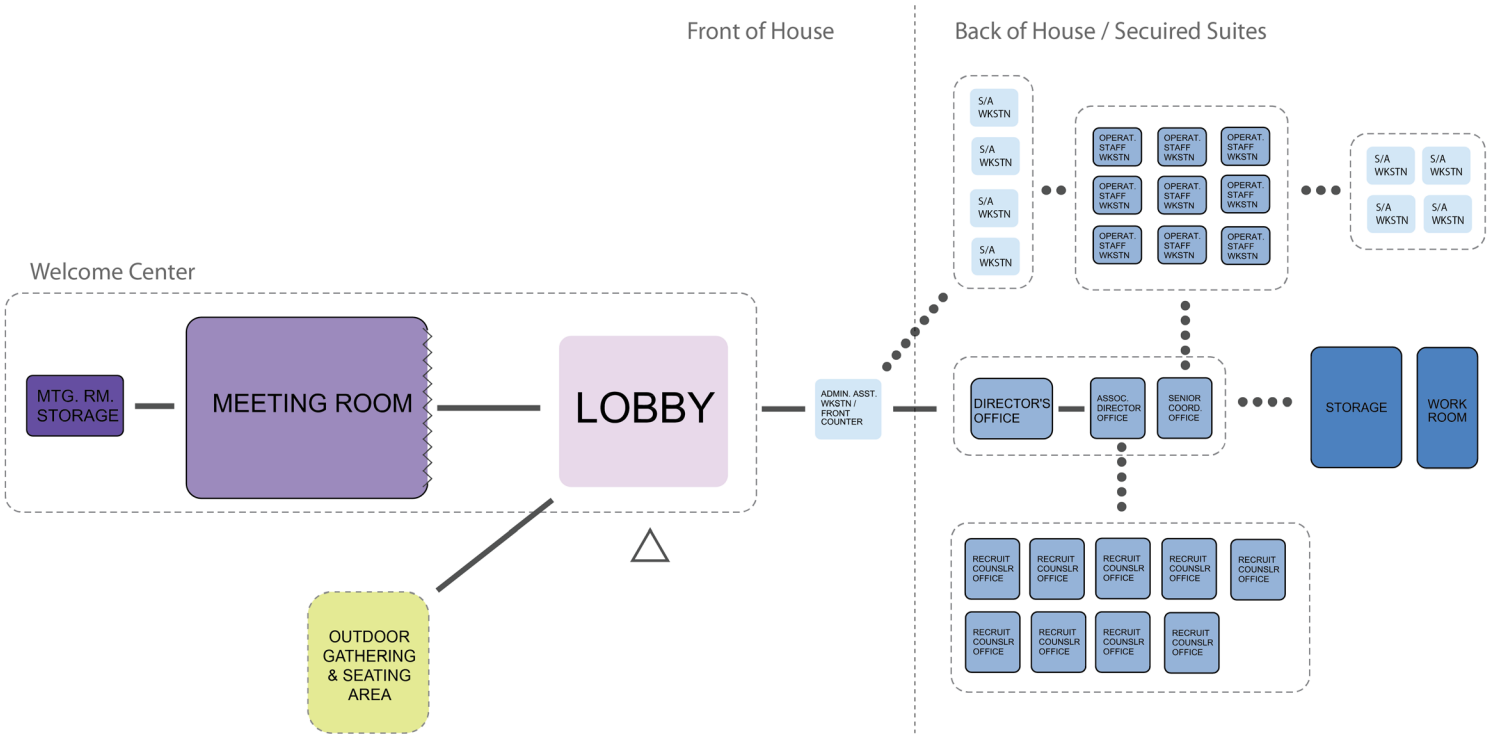
One-Stop Shop



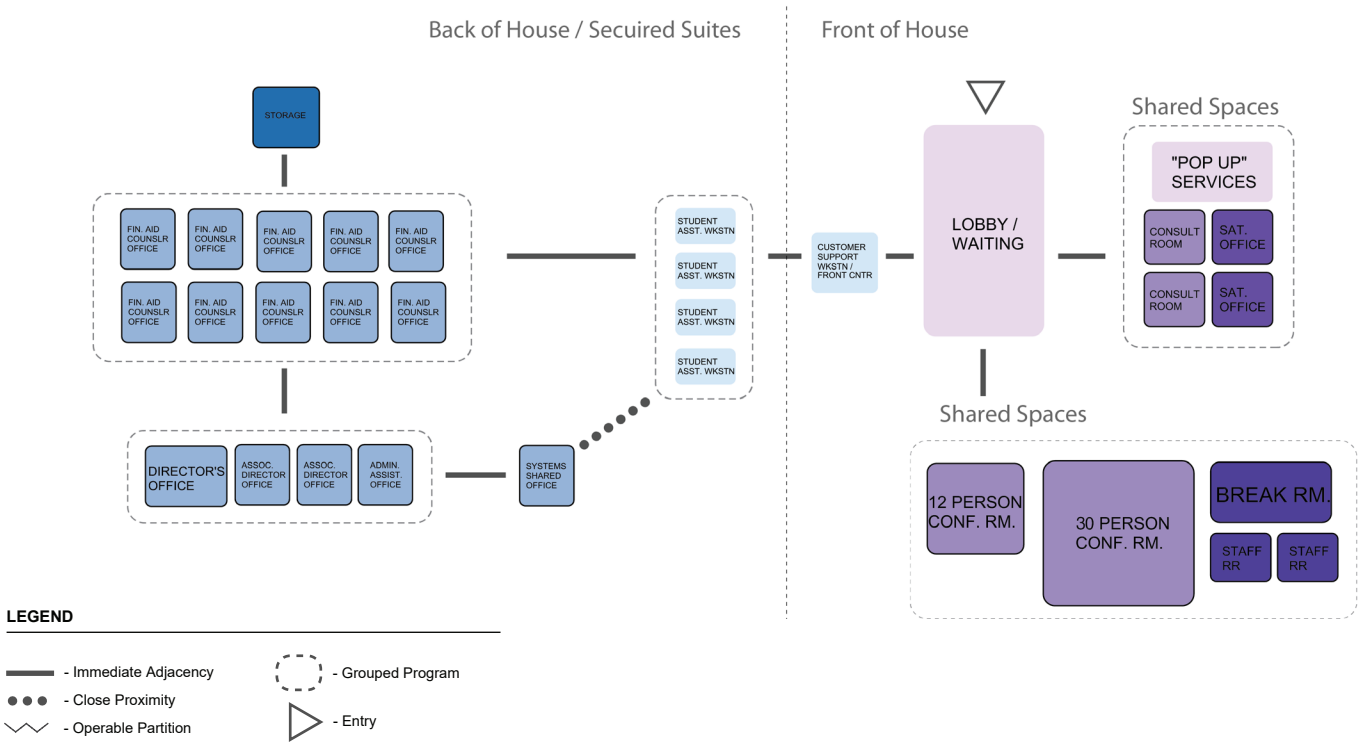
LEGEND

- Immediate Adjacency
- Close Proximity
- Operable Partition
- Grouped Program
- Entry

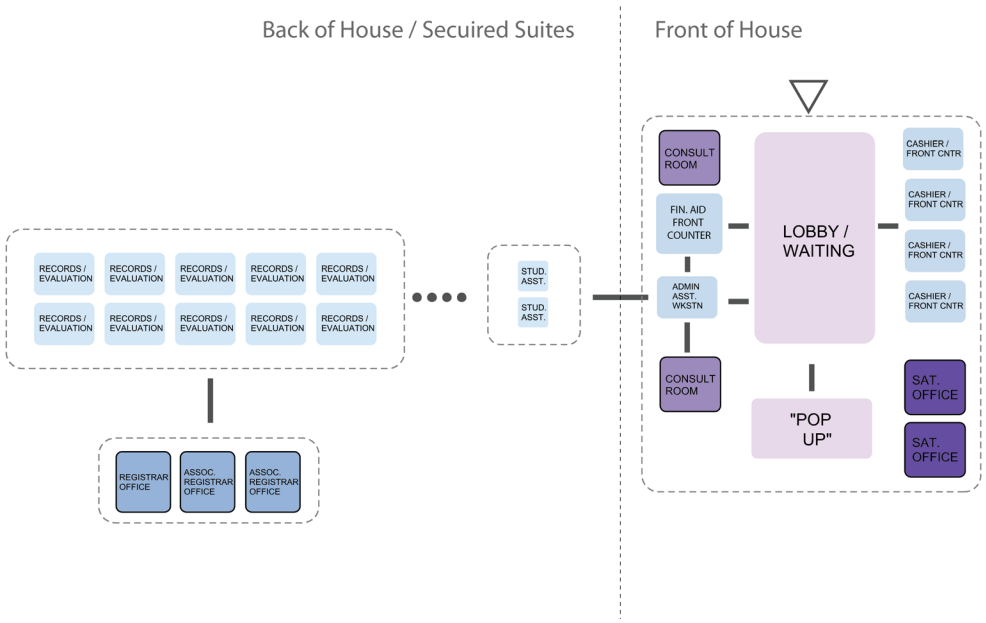
Admissions



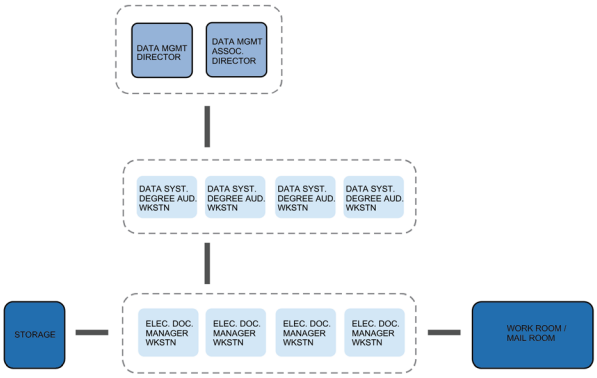
Financial Aid



Registrar



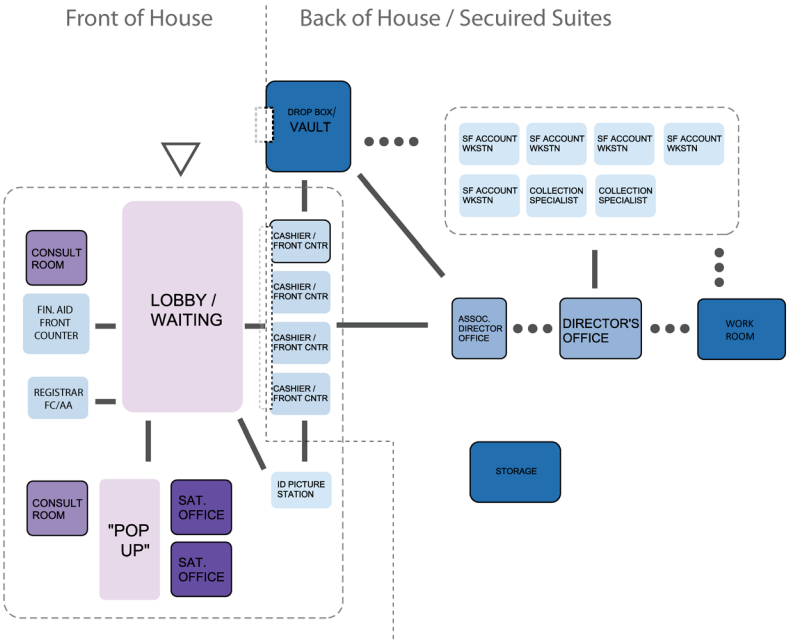
Student Systems



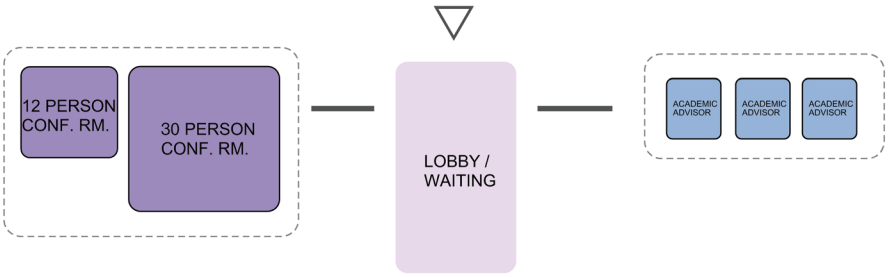
LEGEND

- Immediate Adjacency
- Close Proximity
- Operable Partition
- Grouped Program
- Entry

Student Business Services



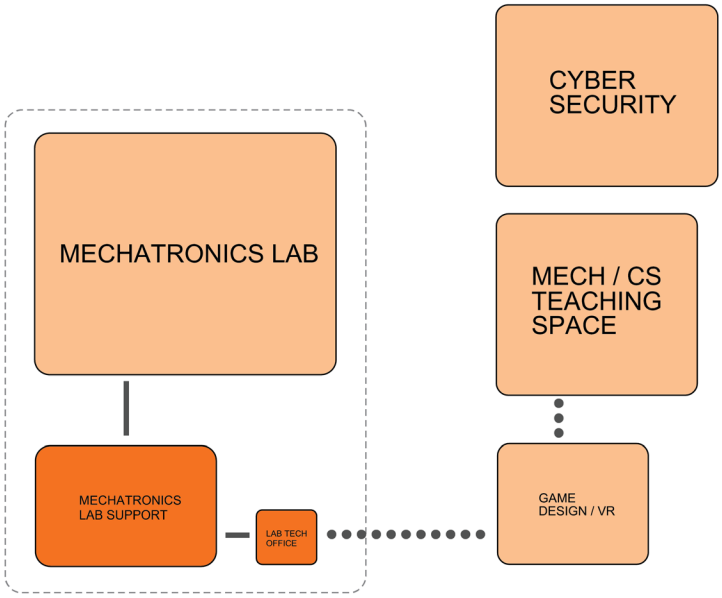
Academic Advising



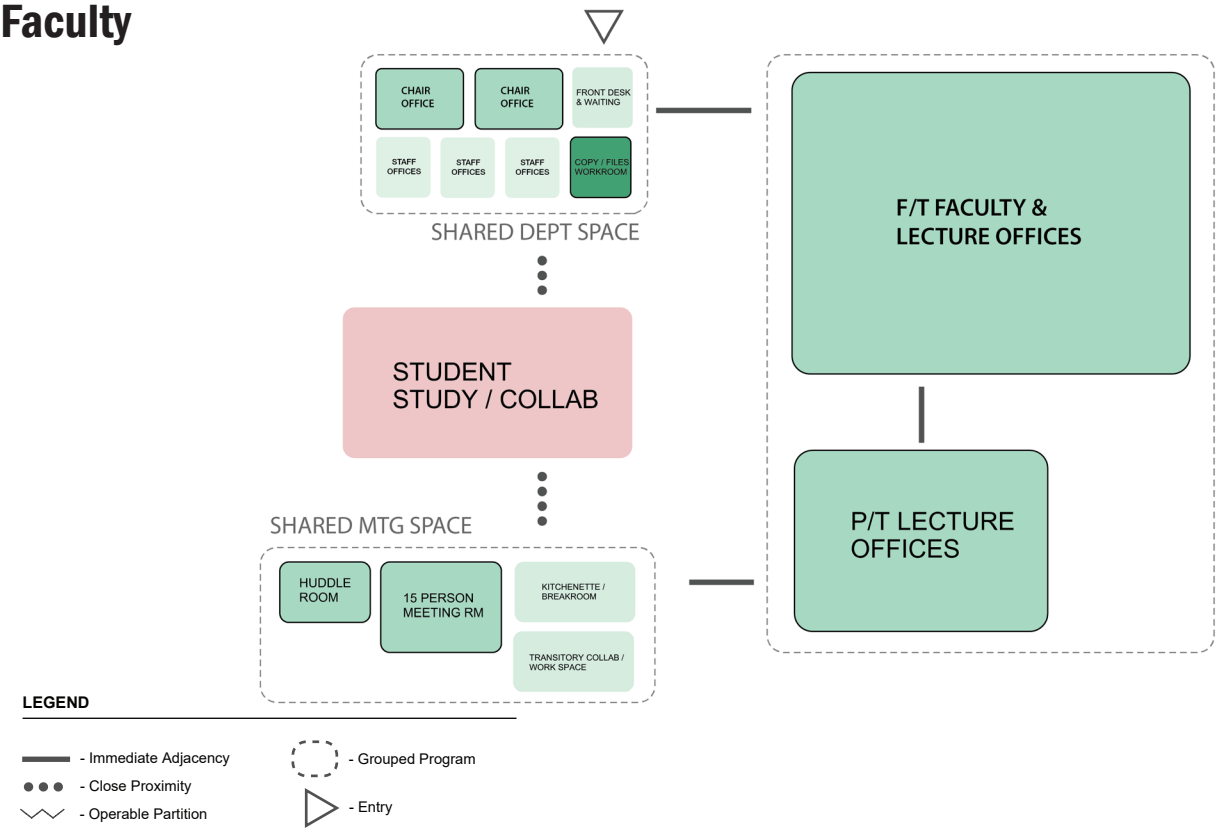
LEGEND

- Immediate Adjacency
- Close Proximity
- Operable Partition
- Grouped Program
- Entry

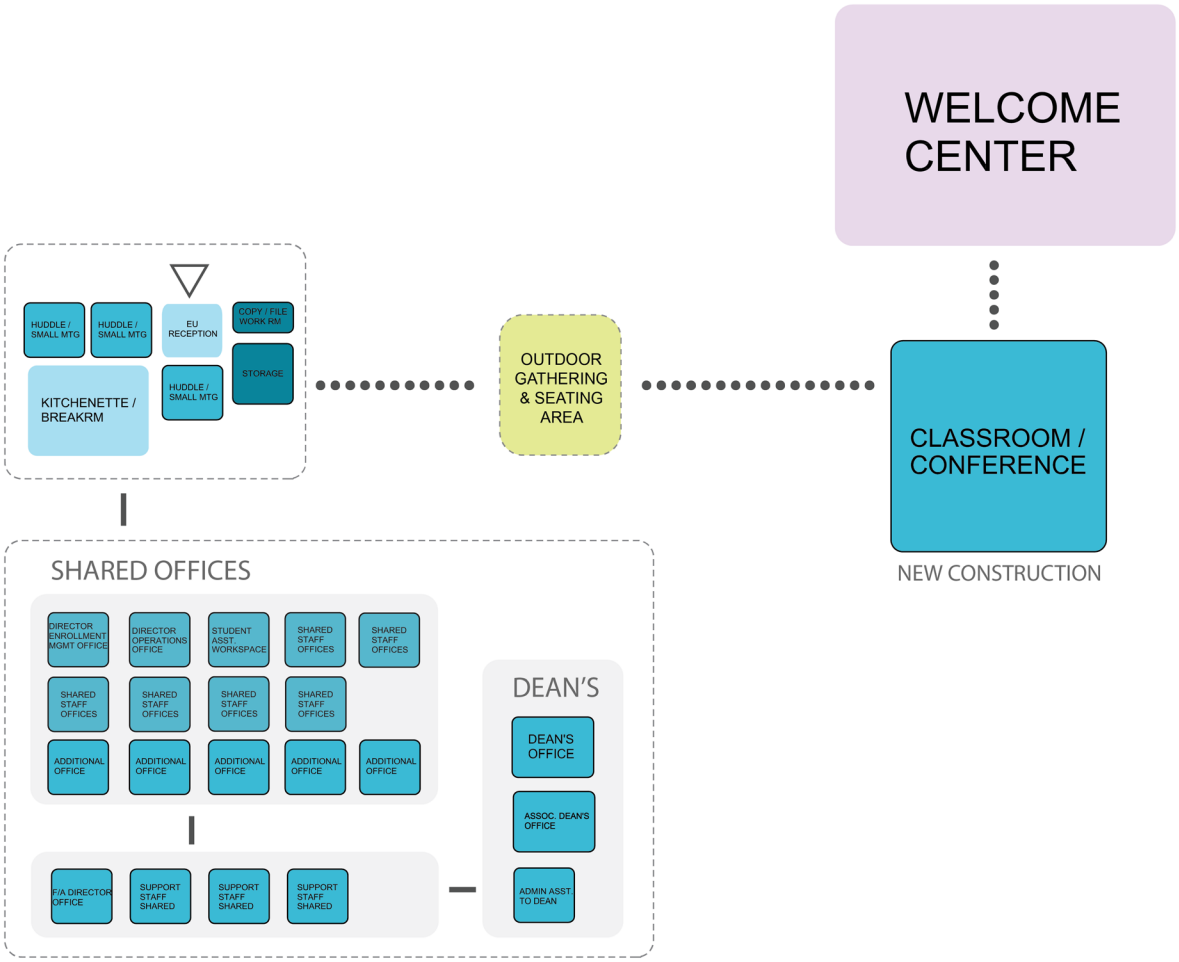
Departmental Labs



Faculty



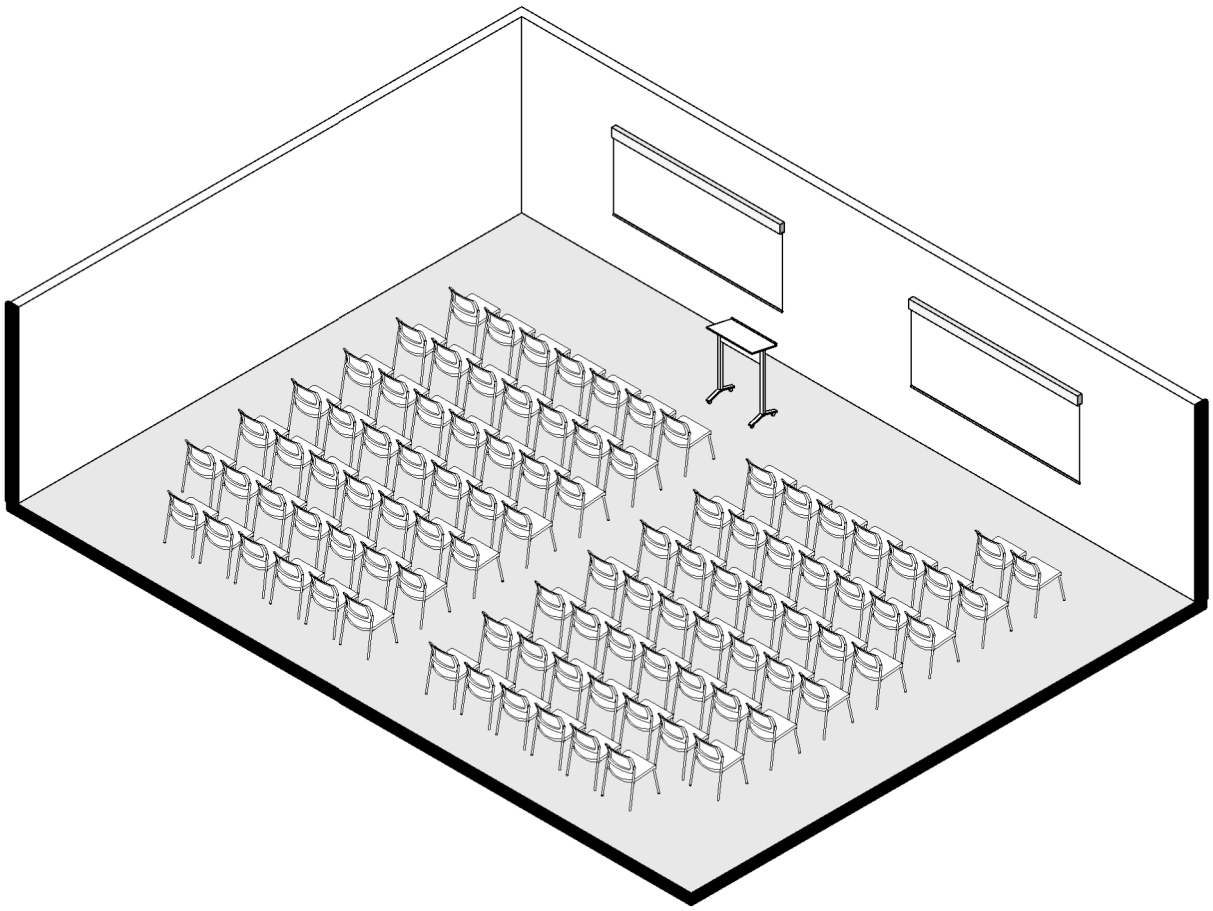
Extended University



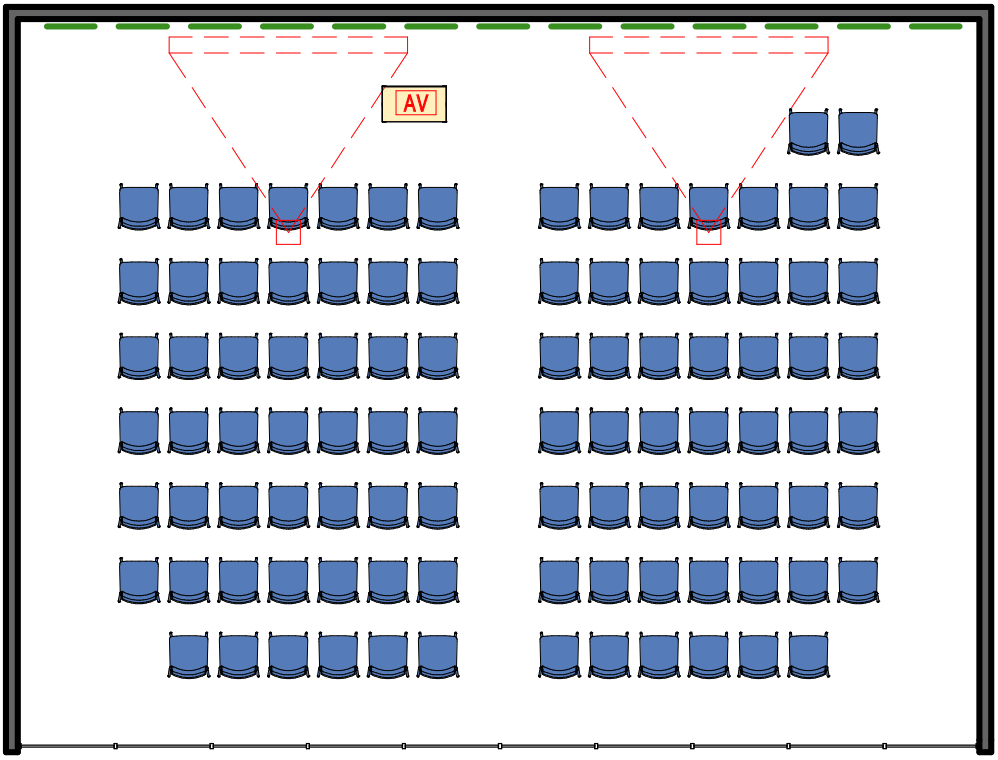
LEGEND

- Immediate Adjacency
- Close Proximity
- Operable Partition
- Grouped Program
- Entry

1.02 WELCOME CENTER 100-PERSON MEETING ROOM



1.02 WELCOME CENTER 100-PERSON MEETING ROOM



LEGEND

TV

AV — FLUSH FLOOR OR CABINET DATA / POWER / AV CONNECTION

CEILING MOUNTED PROJECTOR WITH POWER DATA, AND AV

RS — ROOM SCHEDULING DEVICE

WRITABLE SURFACE

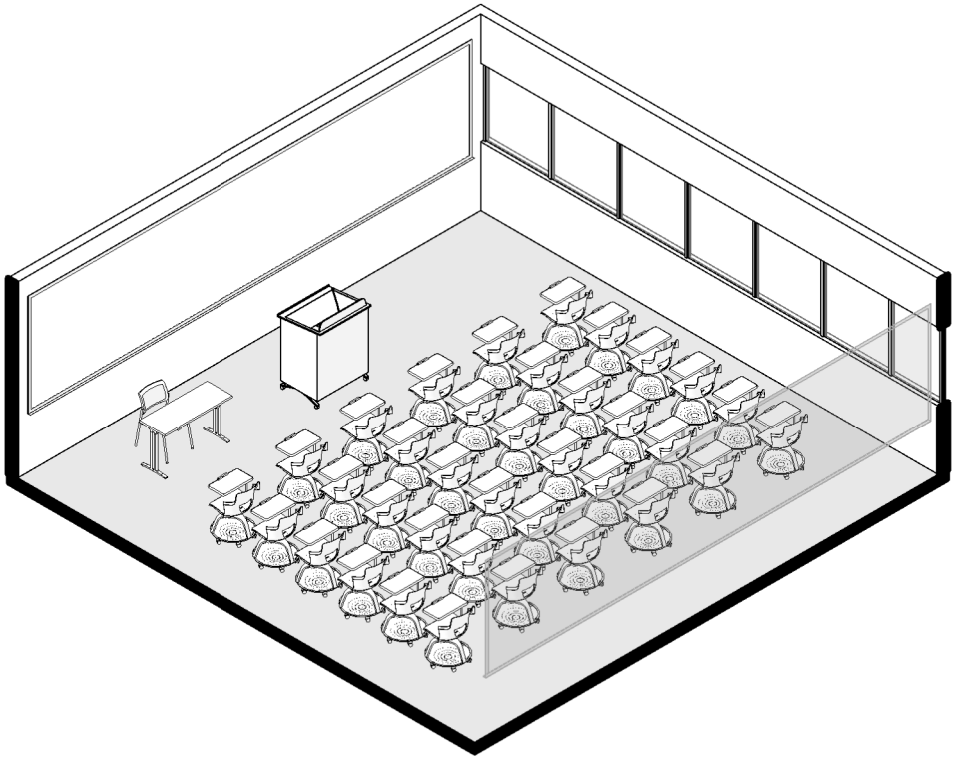
MOBILE TABLE

FIXED SURFACE

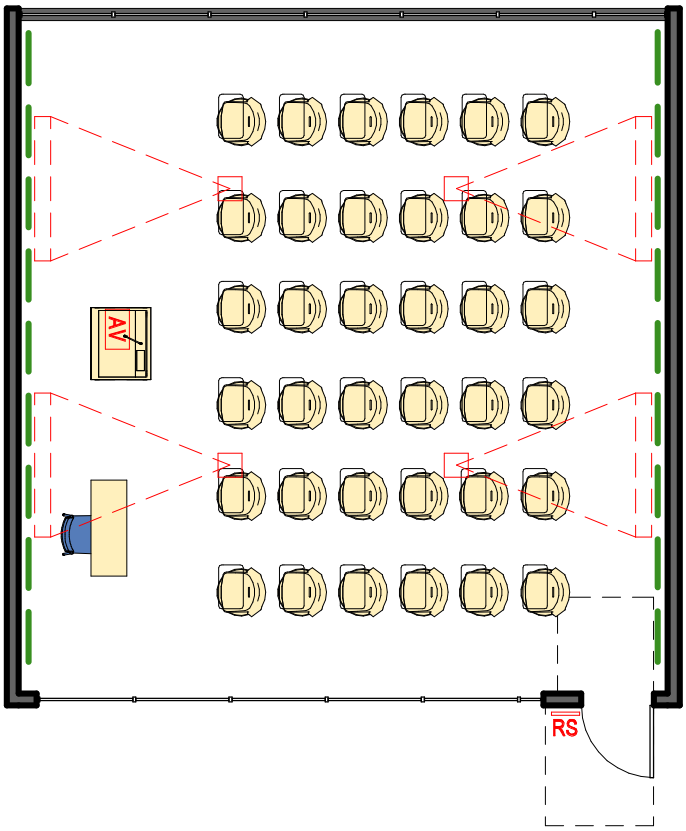
MOBILE SEATING

0' 2' 4' 8'

2.01 CLASSROOM (MOBILE TABLET ARM CHAIRS)



2.01 CLASSROOM (MOBILE TABLES & CHAIRS)



LEGEND

TV

AV — FLUSH FLOOR OR CABINET DATA / POWER / AV CONNECTION

CEILING MOUNTED PROJECTOR WITH POWER DATA, AND AV

RS — ROOM SCHEDULING DEVICE

WRITABLE SURFACE

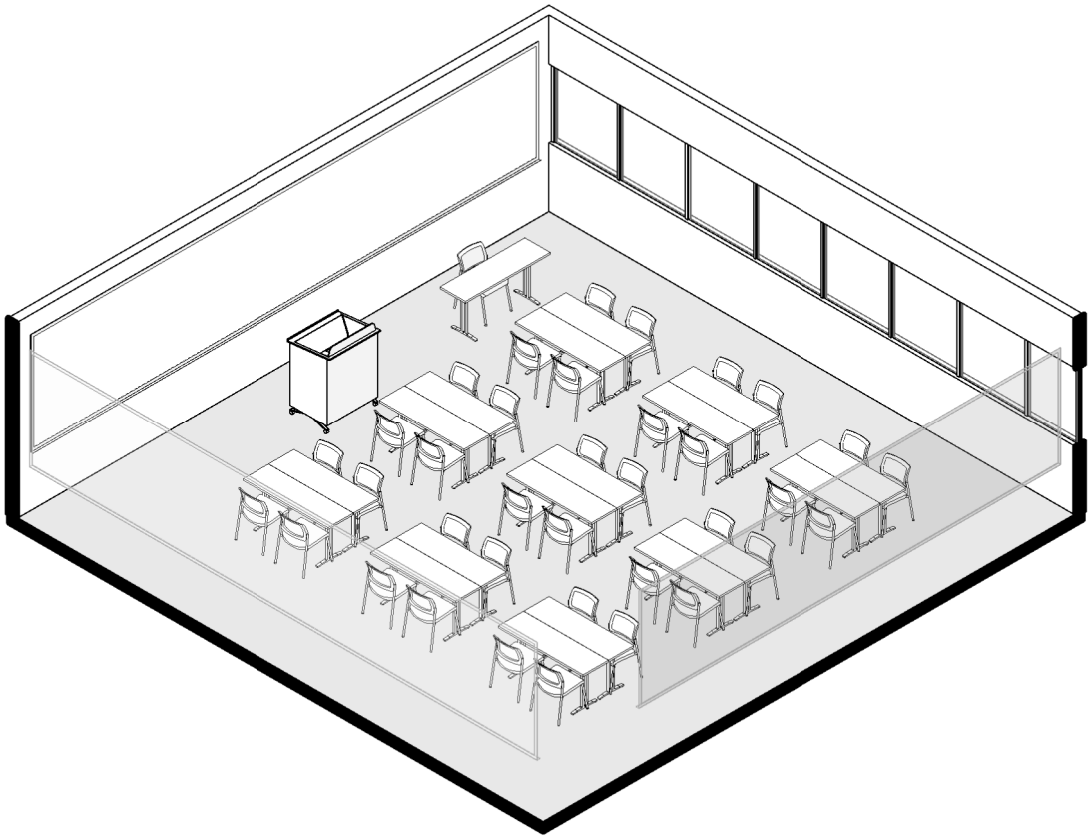
MOBILE TABLE

FIXED SURFACE

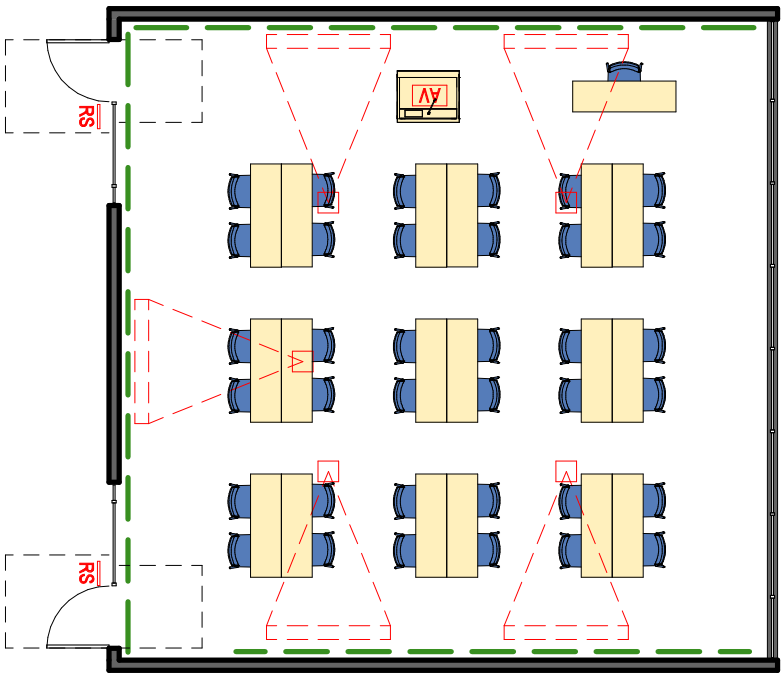
MOBILE SEATING

0' 2' 4' 8'

2.02 CLASSROOM (TABLES & CHAIRS)



2.02 CLASSROOM (TABLES & CHAIRS)



LEGEND

TV

AV — FLUSH FLOOR OR CABINET DATA / POWER / AV CONNECTION

CEILING MOUNTED PROJECTOR WITH POWER DATA, AND AV

RS — ROOM SCHEDULING DEVICE

WRITABLE SURFACE

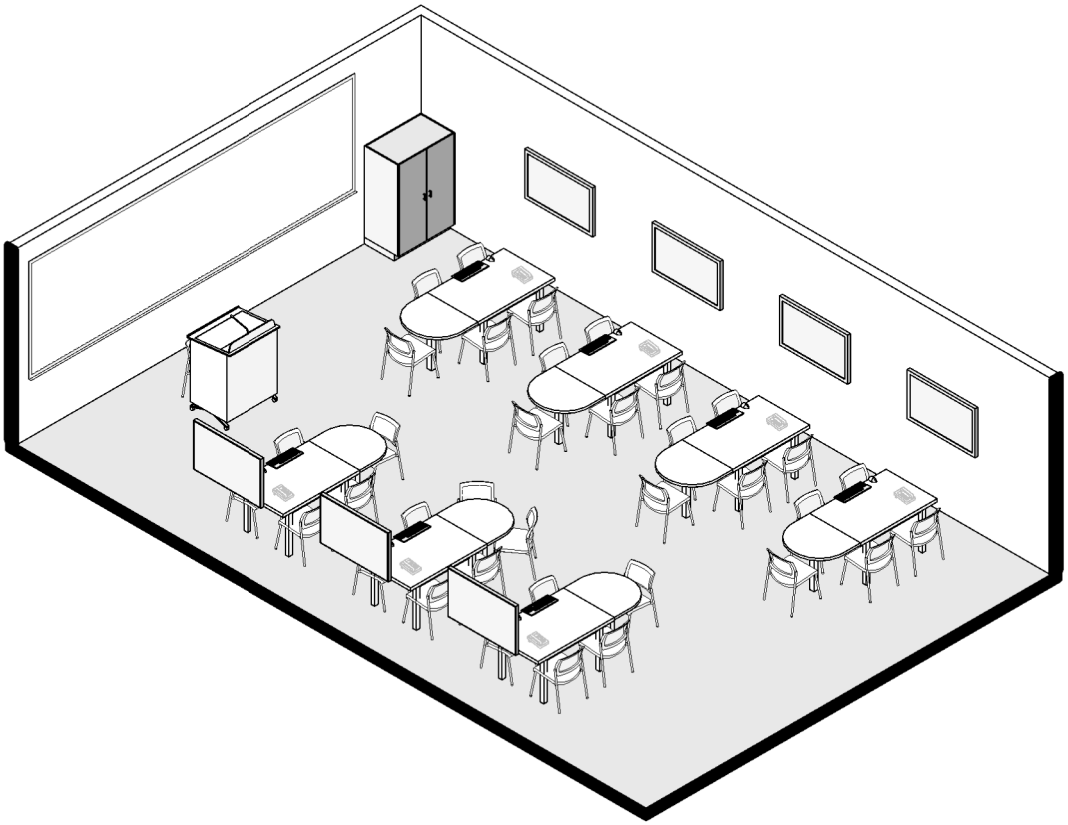
MOBILE TABLE

FIXED SURFACE

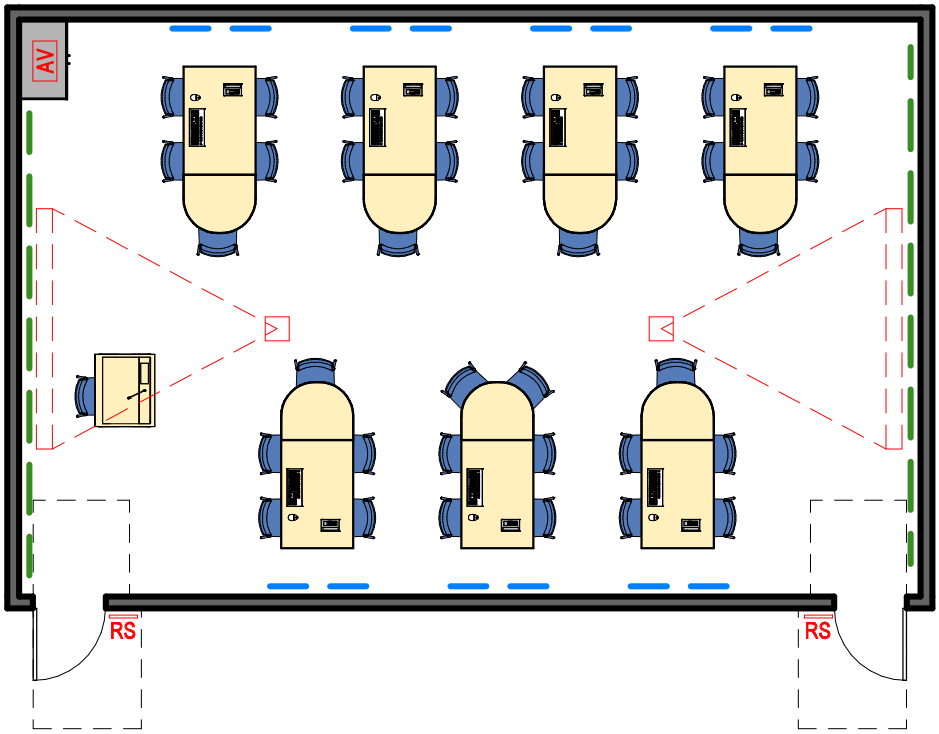
MOBILE SEATING

0' 2' 4' 8'

2.03 CLASSROOM (PERIMETER / GROUP TECH)



2.03 CLASSROOM (PERIMETER / GROUP TECH)



LEGEND

TV

AV — FLUSH FLOOR OR CABINET DATA / POWER / AV CONNECTION

CEILING MOUNTED PROJECTOR WITH POWER DATA, AND AV

RS — ROOM SCHEDULING DEVICE

WRITABLE SURFACE

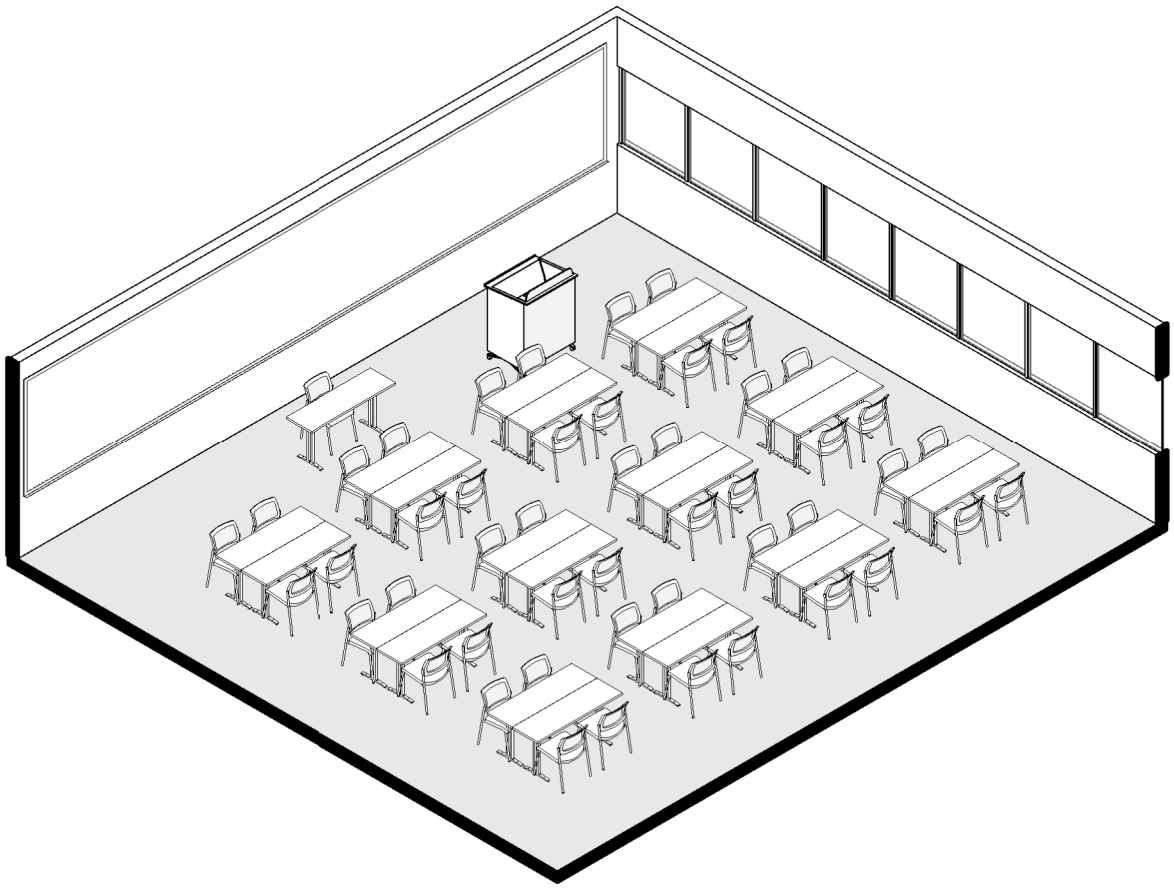
MOBILE TABLE

FIXED SURFACE

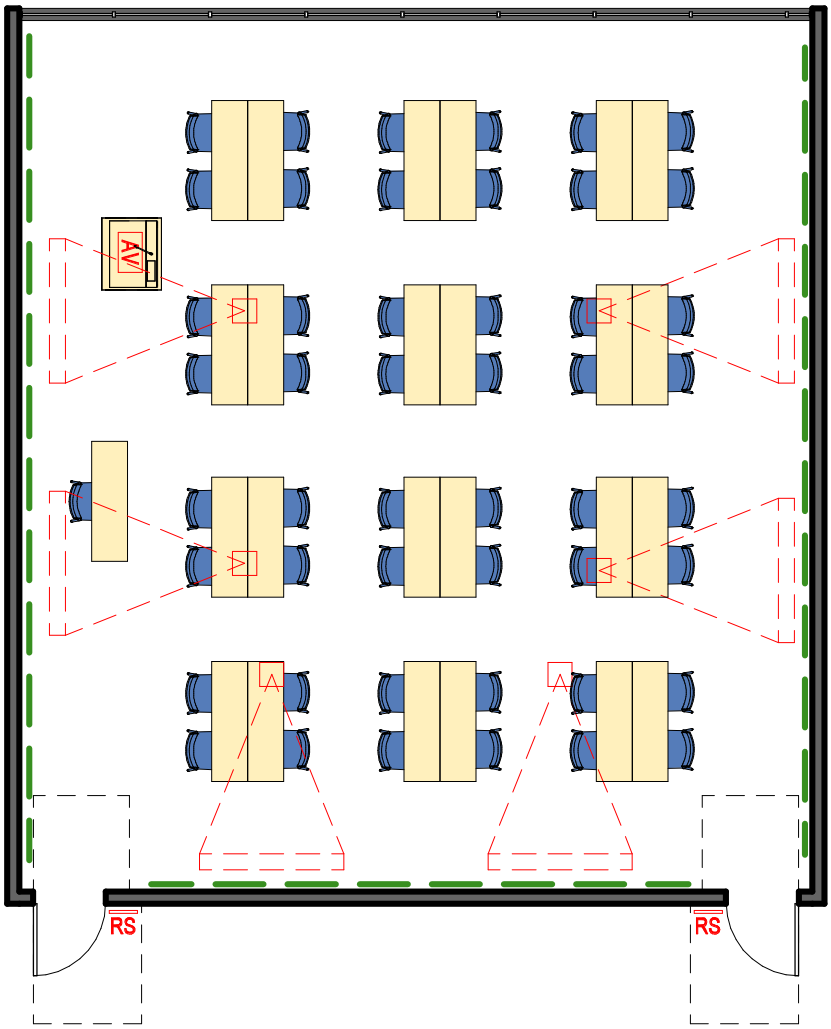
MOBILE SEATING

0' 2' 4' 8'

2.04 LARGE CLASSROOM (TABLES & CHAIRS)



2.04 LARGE CLASSROOM (TABLES & CHAIRS)



LEGEND

TV

AV — FLUSH FLOOR OR CABINET DATA / POWER / AV CONNECTION

CEILING MOUNTED PROJECTOR WITH POWER DATA, AND AV

RS — ROOM SCHEDULING DEVICE

WRITABLE SURFACE

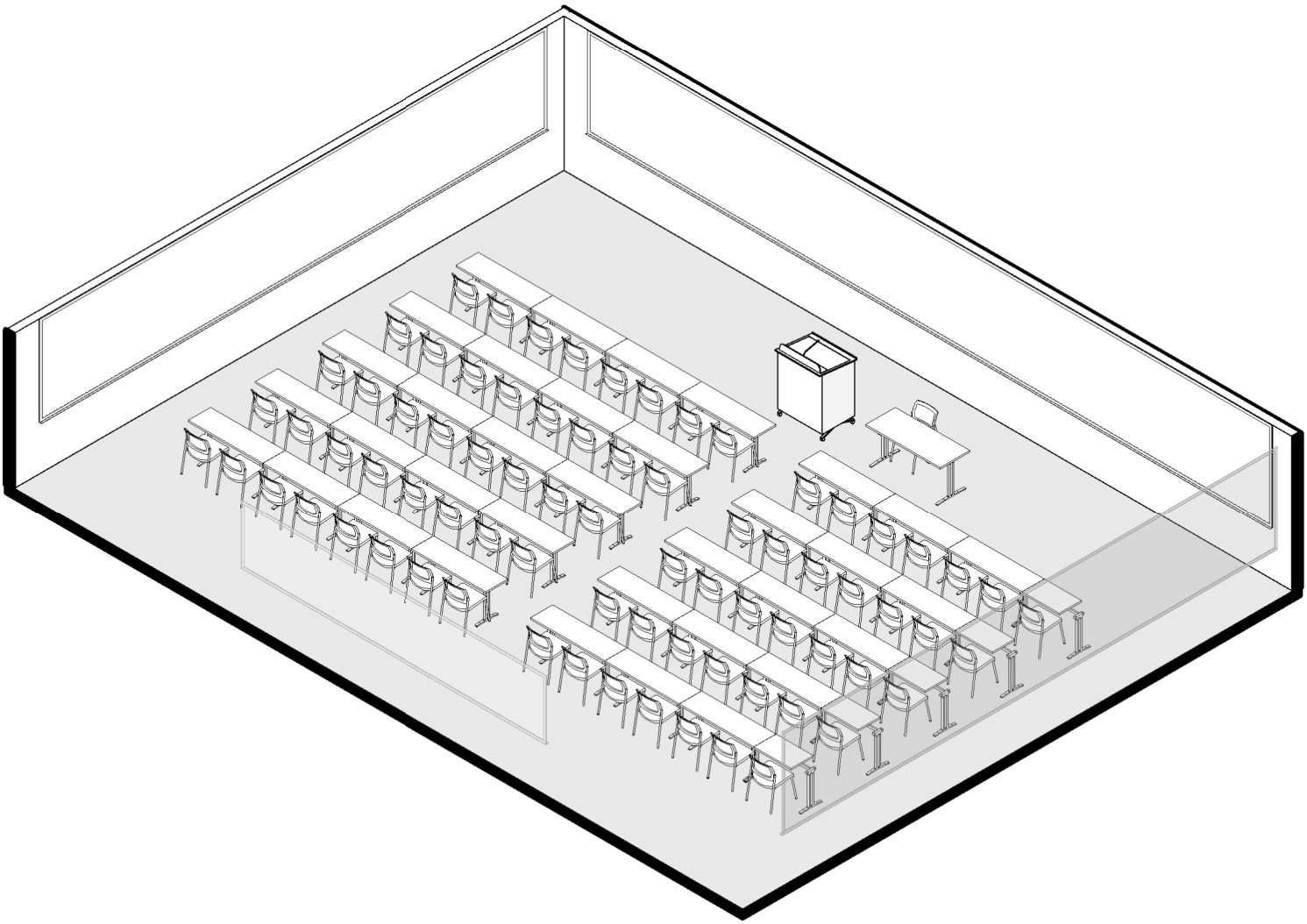
MOBILE TABLE

FIXED SURFACE

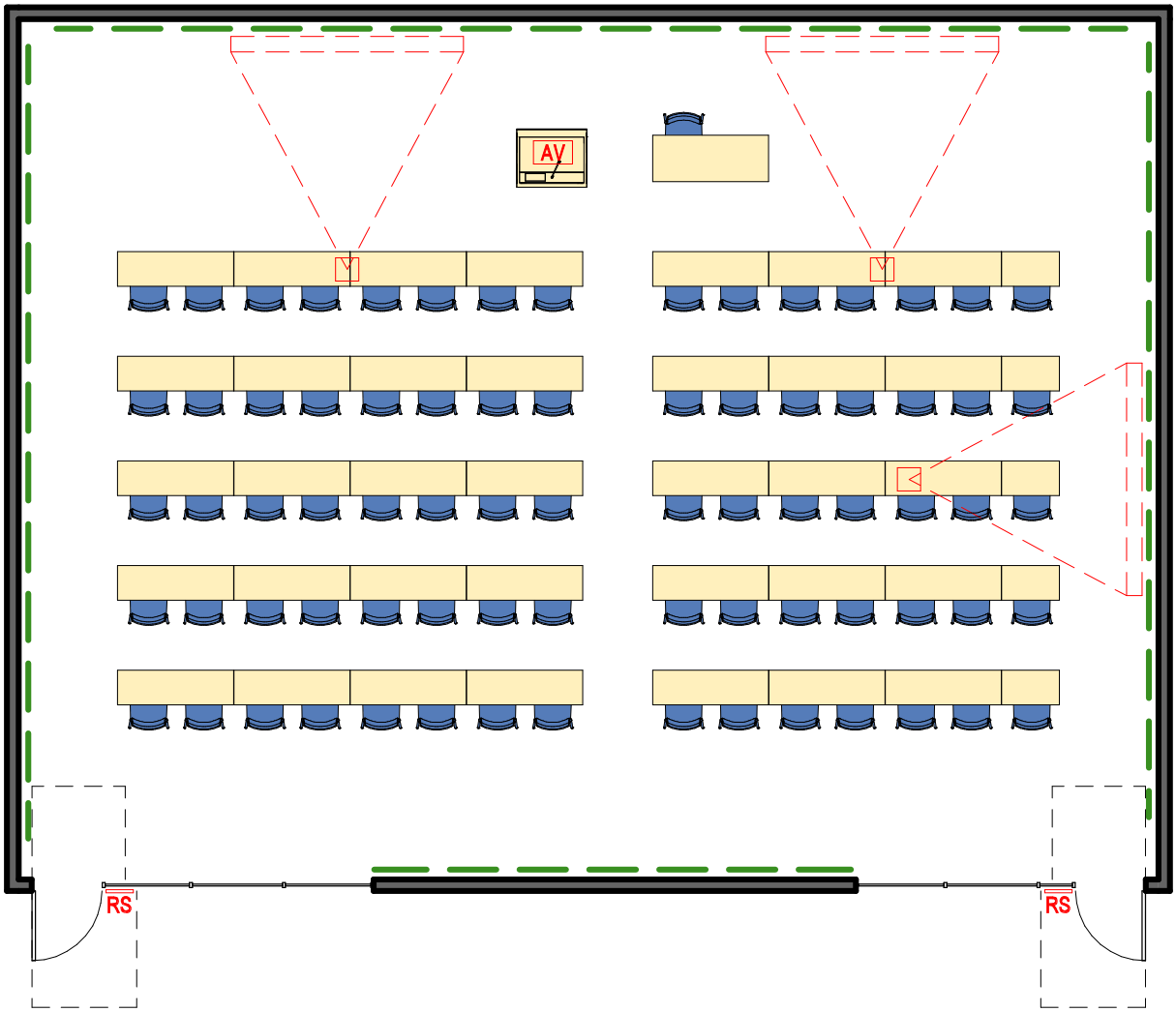
MOBILE SEATING

0' 2' 4' 8'

2.05 X-LARGE CLASSROOM (TABLES & CHAIRS)



2.05 X-LARGE CLASSROOM (TABLES & CHAIRS)



LEGEND

TV

AV — FLUSH FLOOR OR CABINET DATA / POWER / AV CONNECTION

CEILING MOUNTED PROJECTOR WITH POWER DATA, AND AV

RS — ROOM SCHEDULING DEVICE

WRITABLE SURFACE

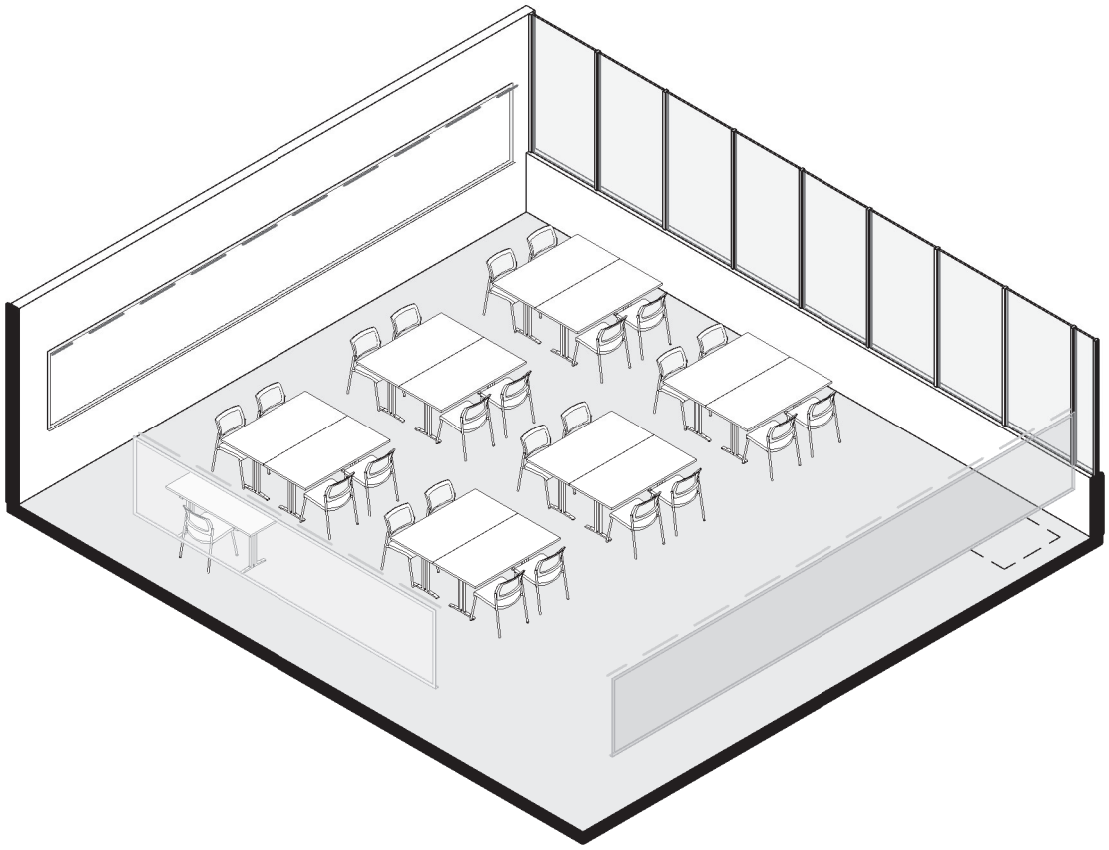
MOBILE TABLE

FIXED SURFACE

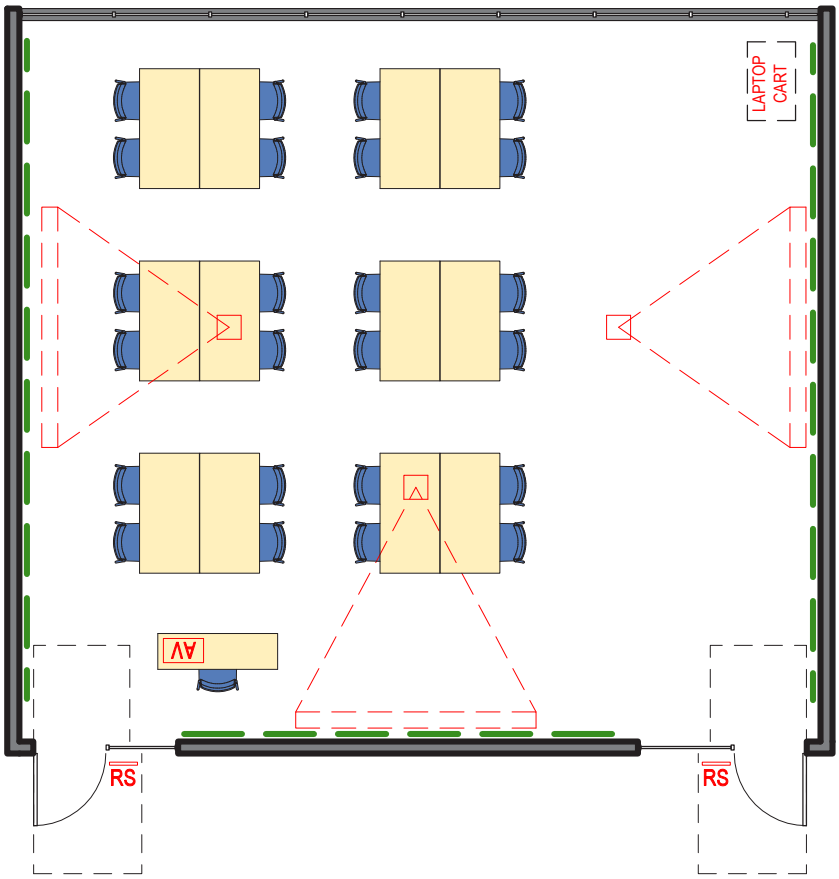
MOBILE SEATING

0' 2' 4' 8'

3.01 GENERAL MECHATRONICS / CS TEACHING SPACE



3.01 GENERAL MECHATRONICS / CS TEACHING SPACE



LEGEND

TV

AV — FLUSH FLOOR OR CABINET DATA / POWER / AV CONNECTION

CEILING MOUNTED PROJECTOR WITH POWER DATA, AND AV

RS — ROOM SCHEDULING DEVICE

WRITABLE SURFACE

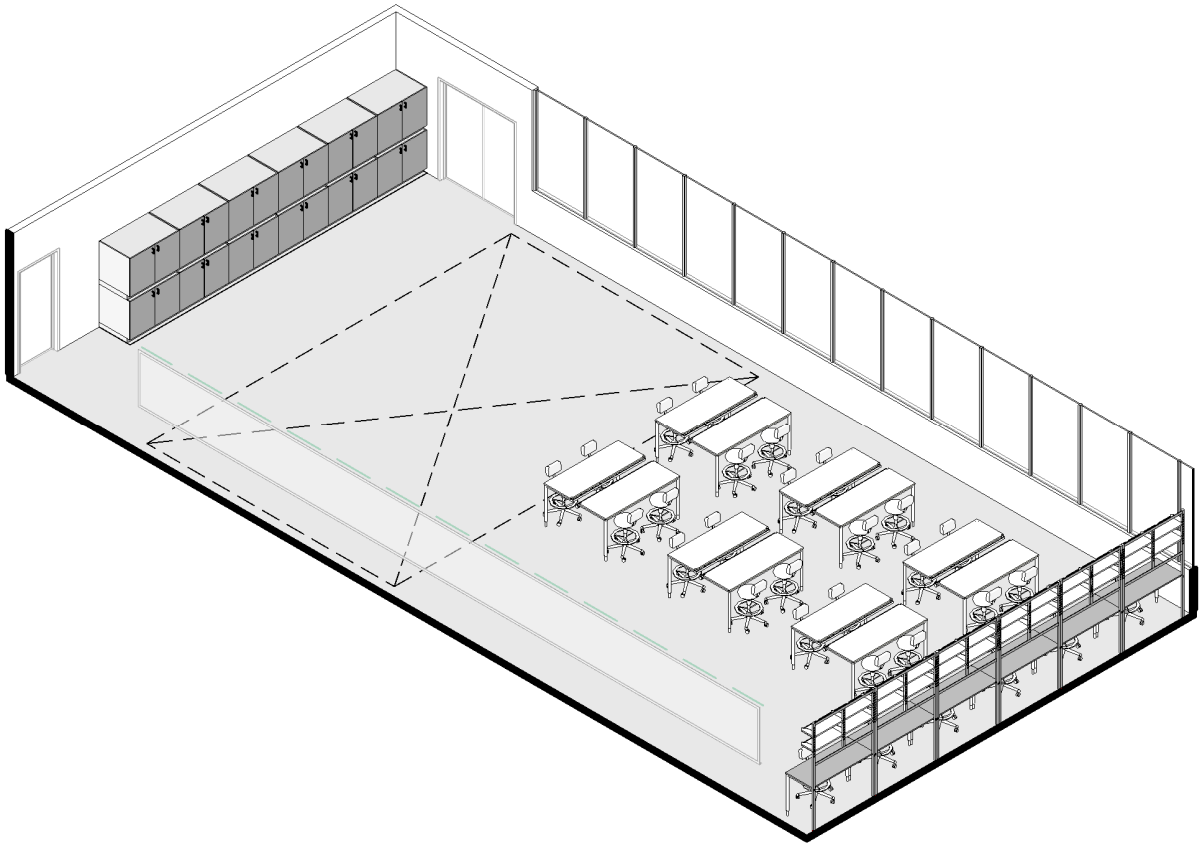
MOBILE TABLE

FIXED SURFACE

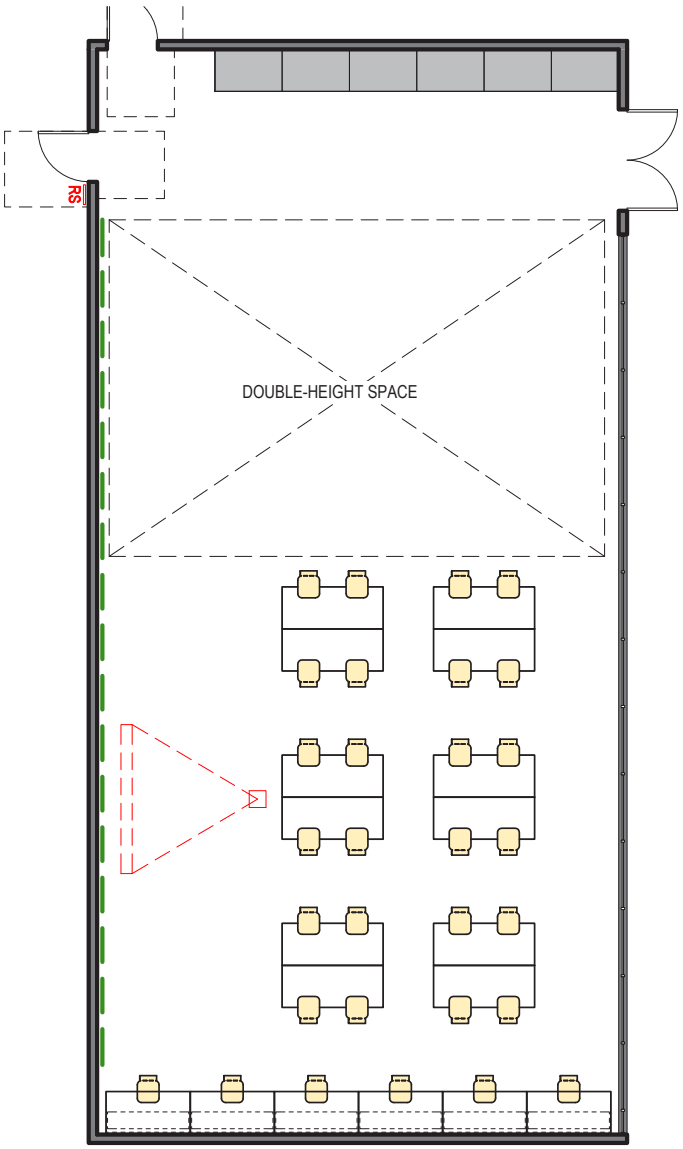
MOBILE SEATING

0' 2' 4' 8'

3.02 MECHATRONICS LAB



3.02 MECHATRONICS LAB



LEGEND

TV

AV — FLUSH FLOOR OR CABINET DATA / POWER / AV CONNECTION

CEILING MOUNTED PROJECTOR WITH POWER DATA, AND AV

RS — ROOM SCHEDULING DEVICE

WRITABLE SURFACE

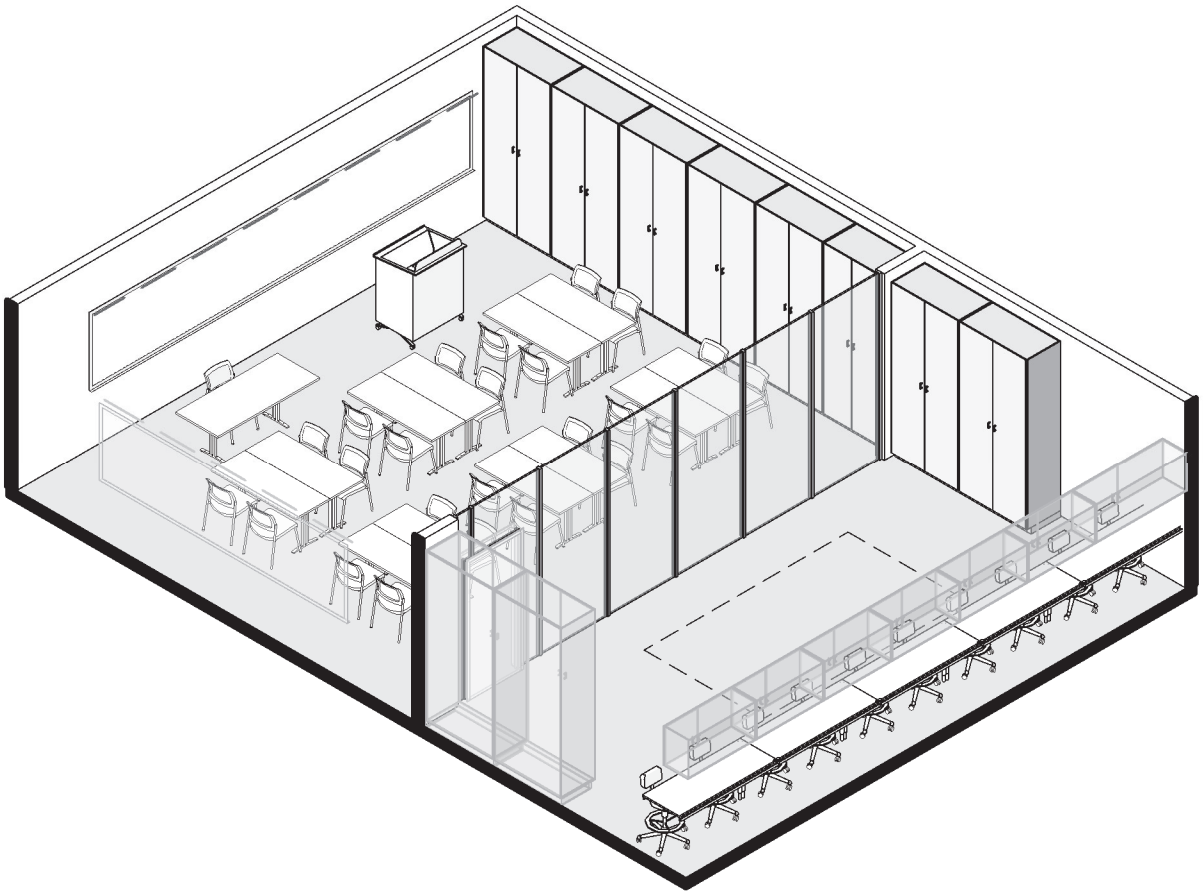
MOBILE TABLE

FIXED SURFACE

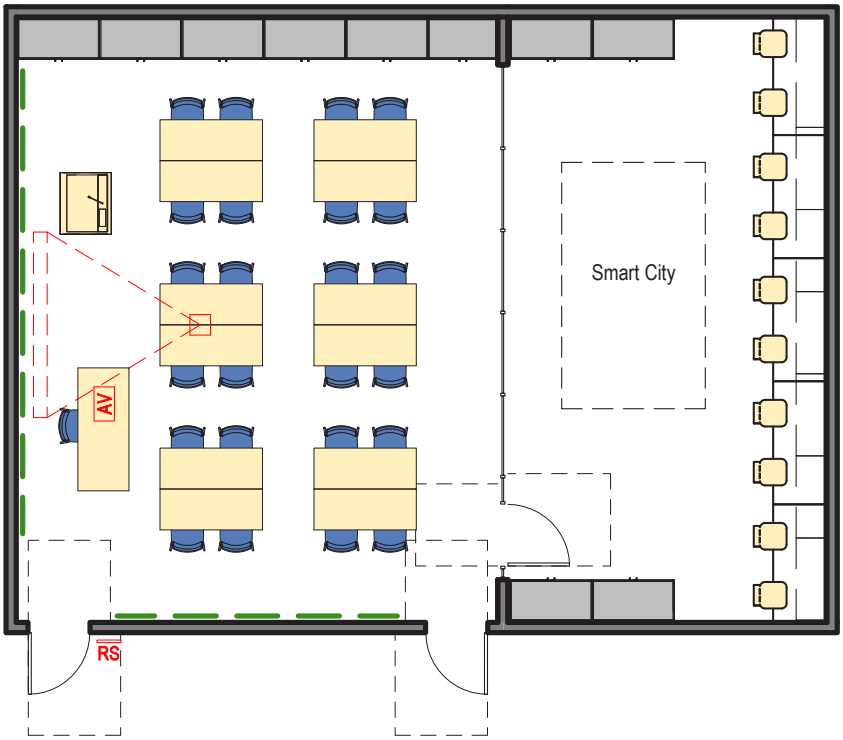
MOBILE SEATING

0' 2' 4' 8'

3.04 CYBER SECURITY LAB



3.04 CYBER SECURITY LAB



LEGEND

TV

AV — FLUSH FLOOR OR CABINET DATA / POWER / AV CONNECTION

CEILING MOUNTED PROJECTOR WITH POWER DATA, AND AV

RS — ROOM SCHEDULING DEVICE

WRITABLE SURFACE

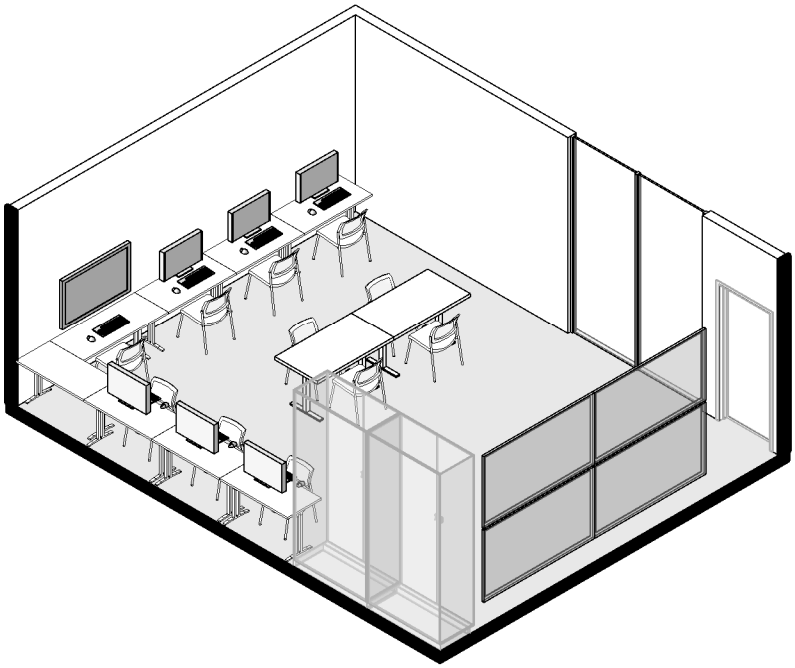
MOBILE TABLE

FIXED SURFACE

MOBILE SEATING

0' 2' 4' 8'

3.06 GAME DESIGN / VR



3.06 GAME DESIGN / VR

LEGEND

TV

AV — FLUSH FLOOR OR CABINET DATA / POWER / AV CONNECTION

CEILING MOUNTED PROJECTOR WITH POWER DATA, AND AV

RS — ROOM SCHEDULING DEVICE

WRITABLE SURFACE

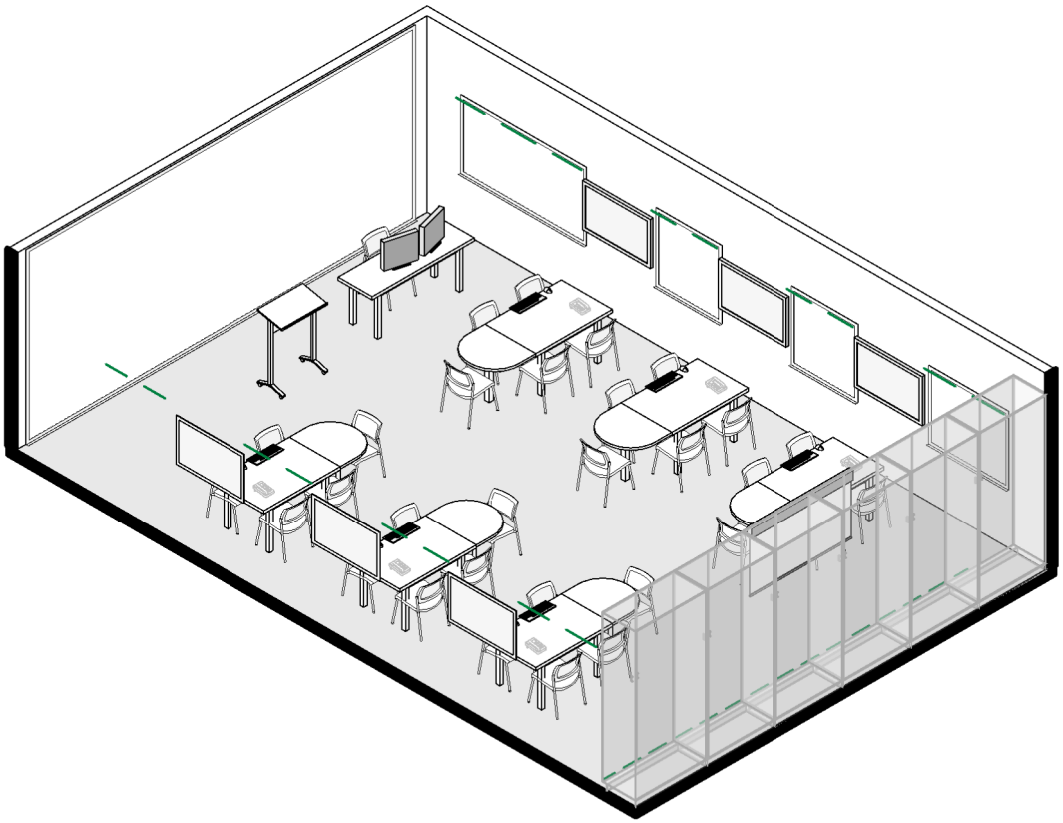
MOBILE TABLE

FIXED SURFACE

MOBILE SEATING

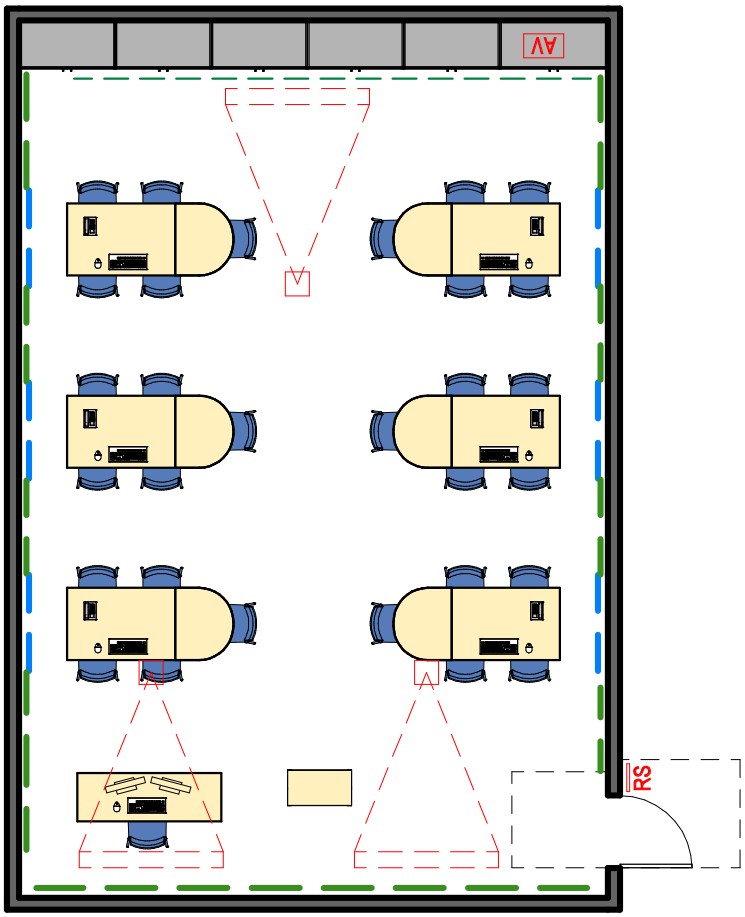
0' 2' 4' 8'

3.08 INSTRUCTIONAL MATH LAB

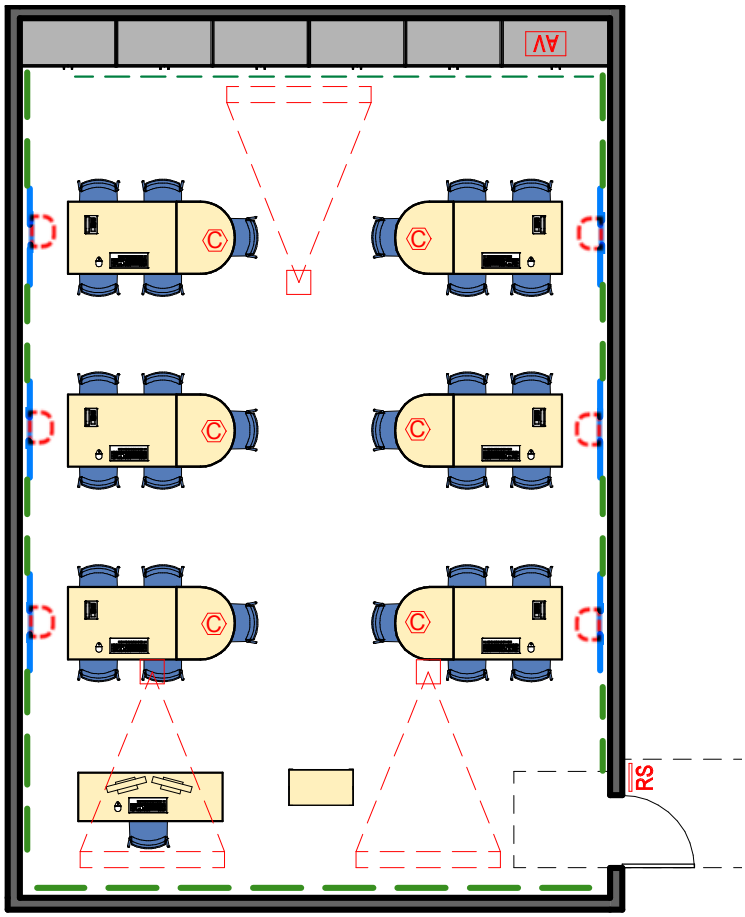


3.08 INSTRUCTIONAL MATH LAB

MATH LAB 1



MATH LAB 2 - ENHANCED RECORDING TECHNOLOGY



LEGEND

TV

AV — FLUSH FLOOR OR CABINET DATA / POWER / AV CONNECTION

CEILING MOUNTED PROJECTOR WITH POWER DATA, AND AV

RS — ROOM SCHEDULING DEVICE

WRITABLE SURFACE

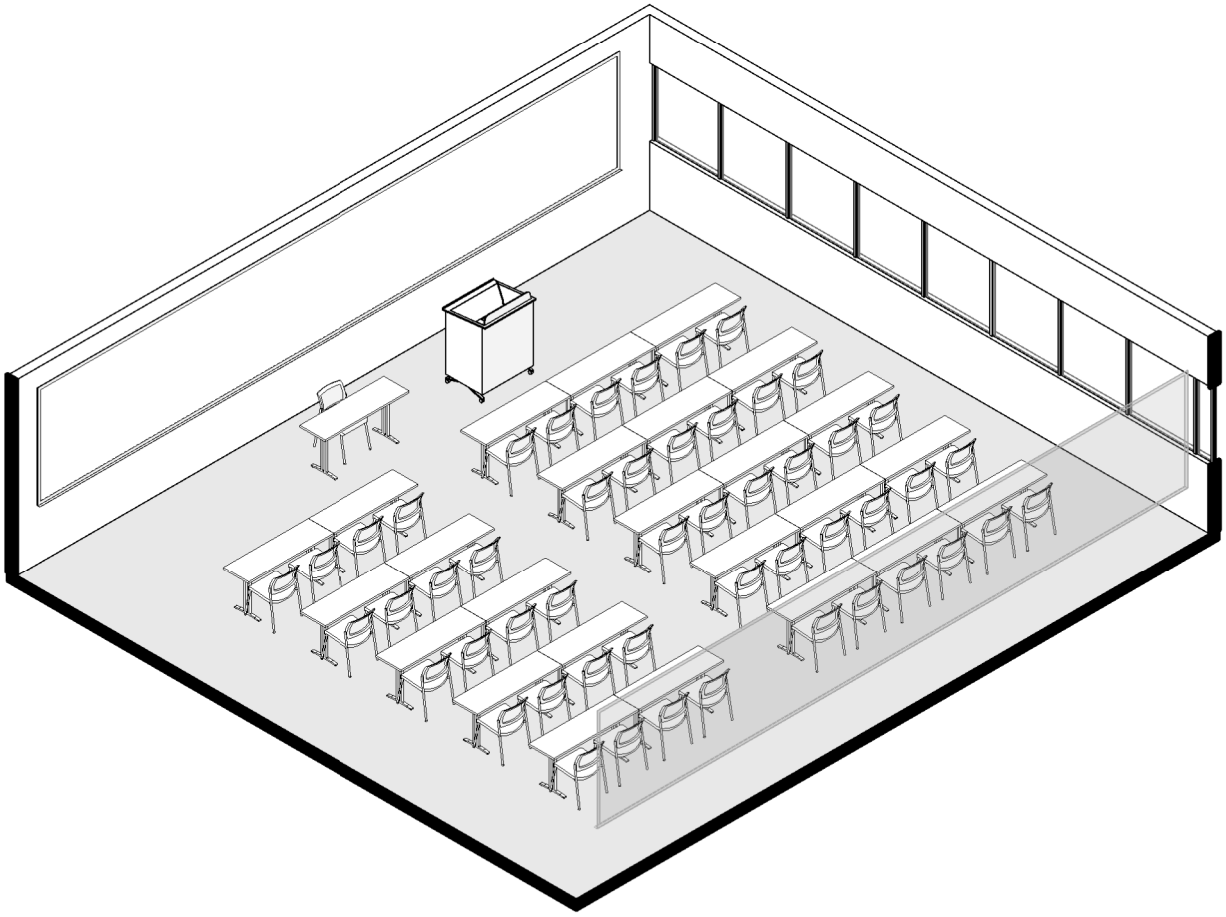
MOBILE TABLE

FIXED SURFACE

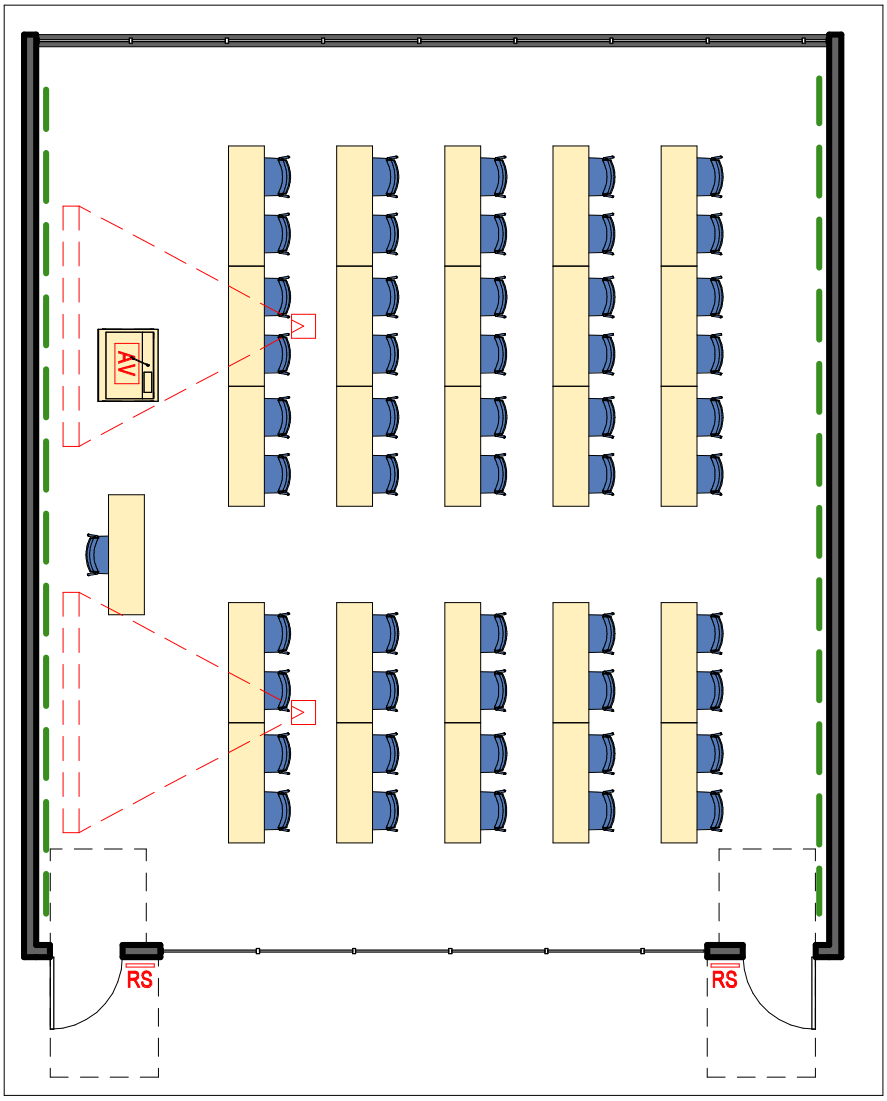
MOBILE SEATING

0' 2' 4' 8'

6.16 EXTENDED UNIVERSITY CONFERENCE / CLASSROOM



6.16 EXTENDED UNIVERSITY CONFERENCE / CLASSROOM



LEGEND

TV

AV — FLUSH FLOOR OR CABINET DATA / POWER / AV CONNECTION

CEILING MOUNTED PROJECTOR WITH POWER DATA, AND AV

RS — ROOM SCHEDULING DEVICE

WRITABLE SURFACE

MOBILE TABLE

FIXED SURFACE

MOBILE SEATING

0' 2' 4' 8'

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BLOCKING & STACKING OVERVIEW

The following diagrams illustrate three conceptual planning scenarios where the desired relationships between the various program elements are explored.

All spaces that have the greatest need for easy navigation and accessibility with required adjacency - such as the Welcome Center, the One-Stop Shop, and Extended University - have been located on the ground floor of renovation and new construction. Faculty offices along with some student study space are located on the second level in renovation; the remaining classroom and lab spaces are assumed to be located on the second and third level of new construction.

With many programmatic elements fixed in their general locations due to program needs, planning adjacencies or site constraints, the major planning elements for consideration and explored between the three conceptual blocking and stacking studies are:

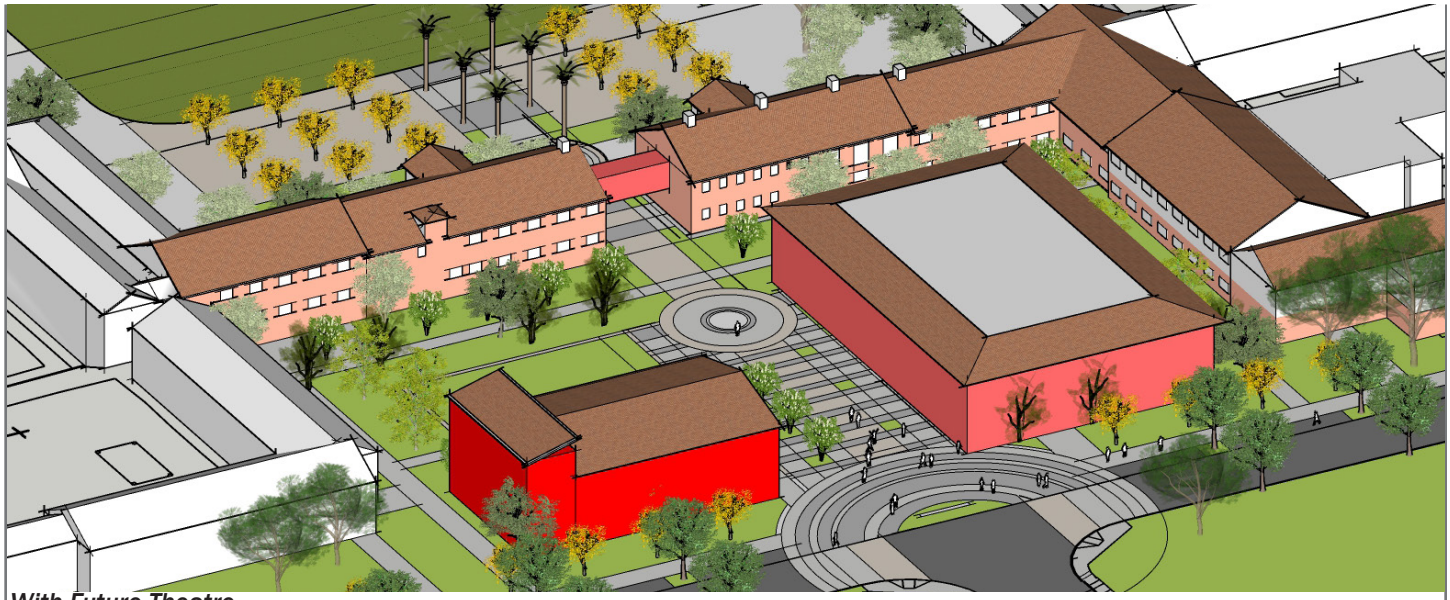
- Location of the Mechatronics Fabrication Lab
- Location of Extended University in renovation
- Ability to co-locate One-Stop Shop Student Services required area

Ongoing discussions around these conceptual planning studies indicate a preference for the co-location of One-Stop Shop Student Services, and for Extended University to have a separate “front door” and presence.

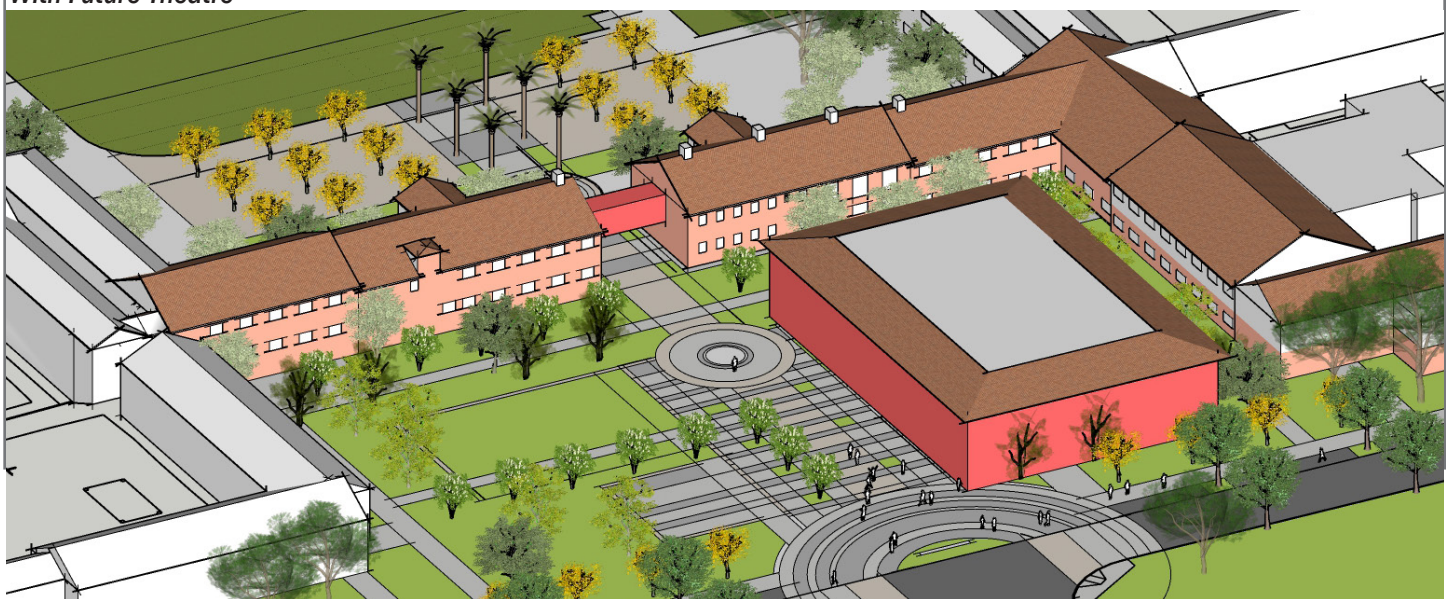
As design and discussions progress, additional consideration shall be given to the courtyard and surrounding outdoor space of the project site.

Scenario Study A

Axonometric Massing View



With Future Theatre



Without Future Theatre

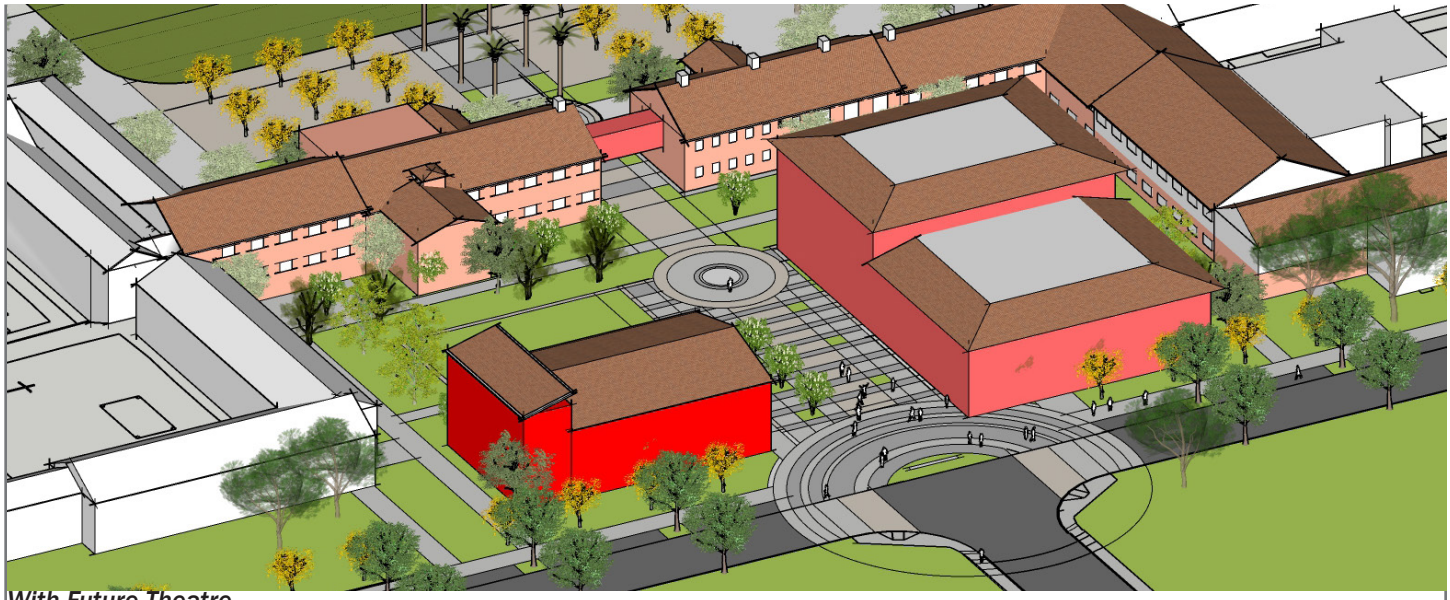
New Building: 33,125 GSF
Renovation: 48,660 GSF

- Extended University located directly off of Santa Barbara Ave.
- Co-locates One-Stop Shop Student Services
- Mechatronics Lab in renovation
- More renovation than ideal program
- Smallest amount of New Construction

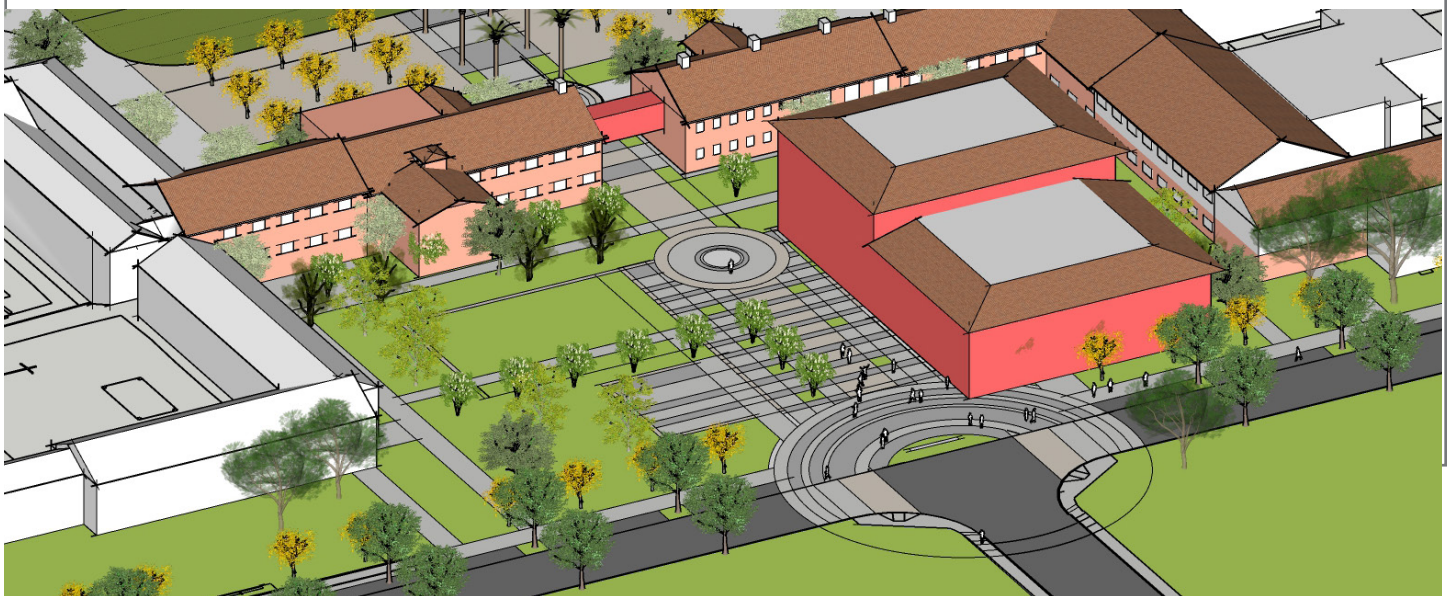
Renovation
New Building
Future Theater

Scenario Study B

Axonometric Massing View



With Future Theatre



Without Future Theatre

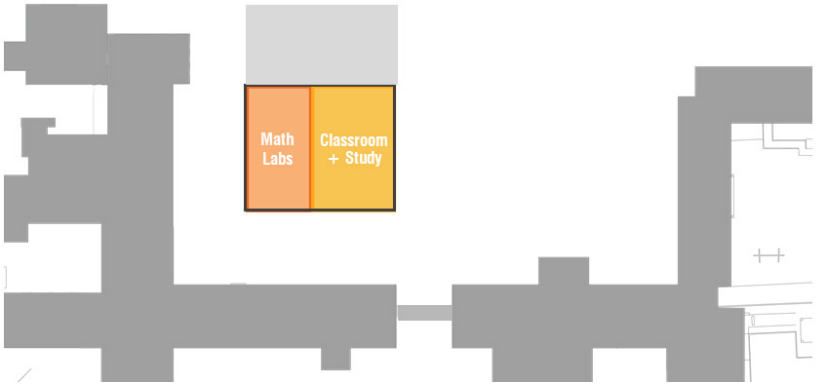
New Building: 36,362 GSF
Renovation: 43,050 GSF
Addition: 1,300 GSF

Renovation
New Building
Future Theater

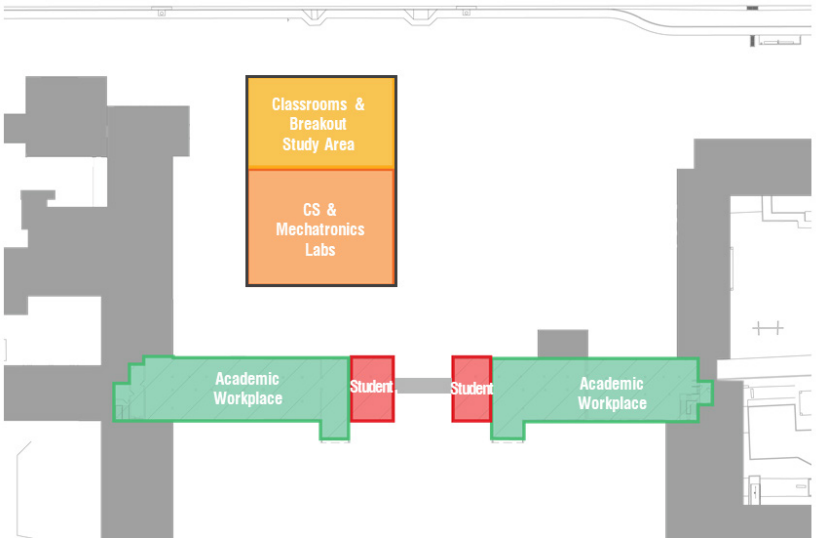
- Co-locates One-Stop_Shop Services
- Mechatronics Lab located on ground floor at new construction
- Extended University located along campus promenade

Scenario Study C

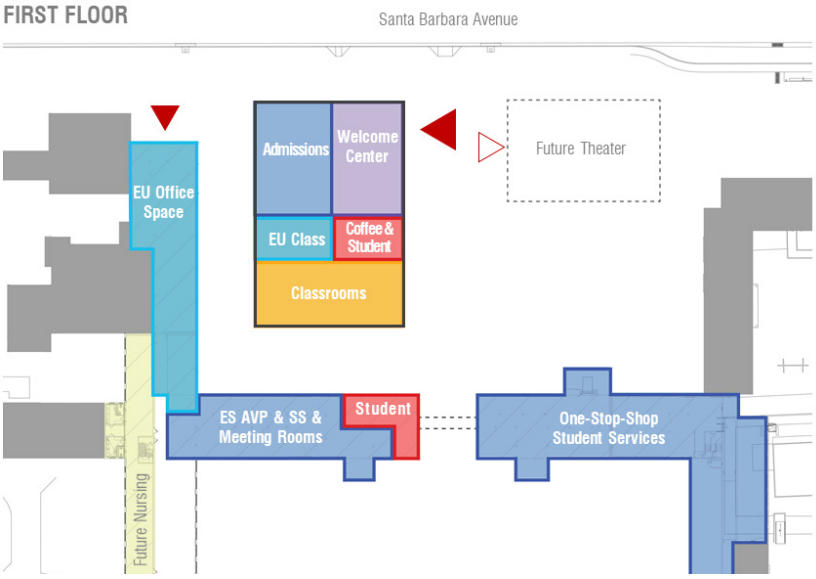
THIRD FLOOR



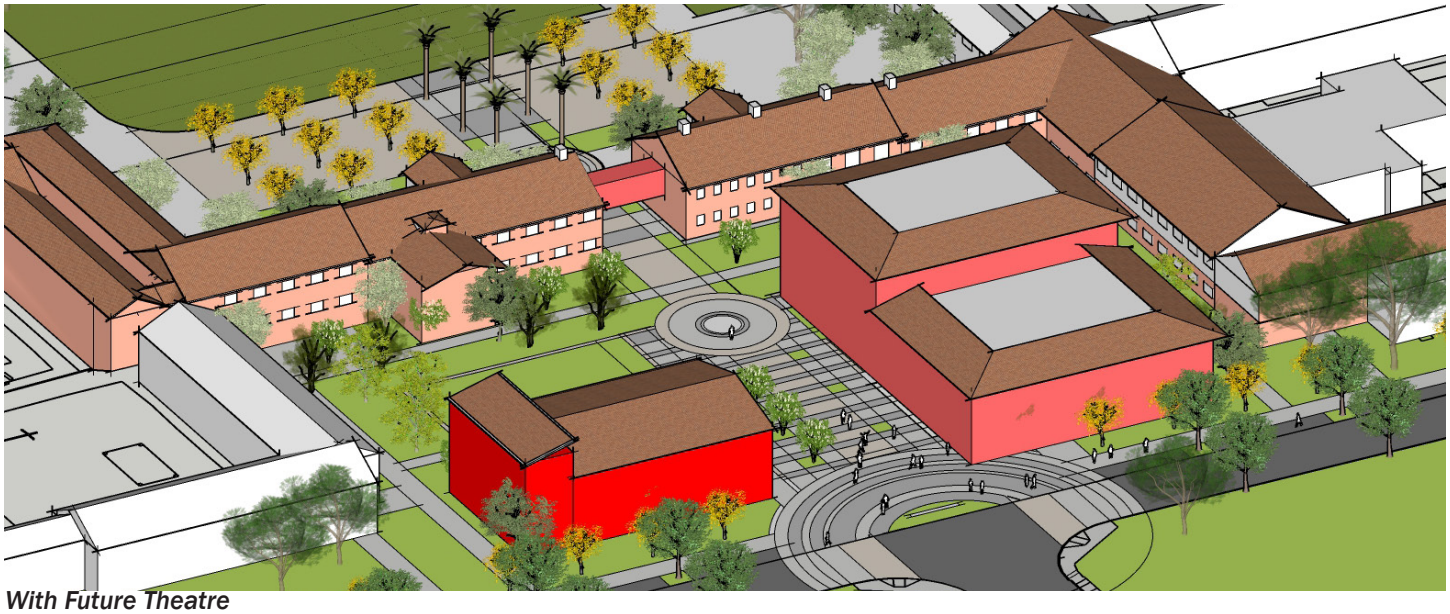
THIRD FLOOR



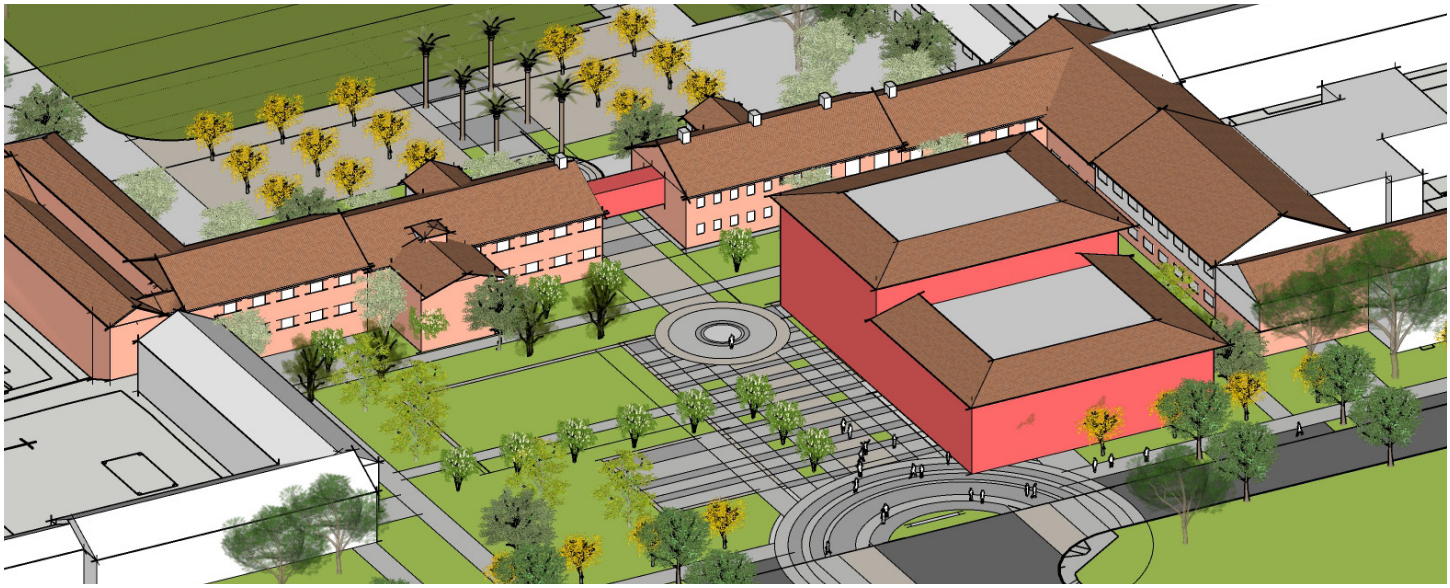
FIRST FLOOR



Axonometric Massing View



With Future Theatre



Without Future Theatre

New Building: 37,800 GSF
Renovation: 42,500 GSF

- Extended University located directly off of Santa Barbara Ave.
- All classrooms and labs are in new construction
- One-Stop-Shop Services split in renovation
- Slightly more renovation than ideal program

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DESIGN NARRATIVES

04

- Architecture
- Structural
- Mechanical, Electrical, Plumbing
- Civil
- Technology

ARCHITECTURAL DESIGN NARRATIVE

The following design narrative represents important design considerations that should be addressed in the design of Gateway Hall, and should be taken into consideration jointly with the subsequent narratives in the section.

Design of this project will follow careful analysis of building program, design narratives, campus context, relationship to exterior open space, aesthetic considerations, and sustainability goals.

Architectural Design Guidelines

A number of principles from CSUCI's Architectural Design Guidelines - specified in the Campus's Master Plan - emerged as important considerations and drivers regarding the Project's impact to the campus and its surrounding context. These principles are intended to serve as guidelines and provide a design framework for the Design Team. Below are relevant excerpts from the 2014 Campus Master Plan on Architectural Composition that the Design Team will consider as design progresses.

- Maintain simple, connected forms.
- Courtyards on campus, created where buildings connect, are partially or entirely enclosed.
- Campus buildings have simple, pitched roofs of red clay tile.
- Simple patterns of recessed windows and doors compose most of the campus building facades.
- Most buildings are one or two stories in height, with window openings on each level.
- Architectural embellishments, such as Spanish tiles, exposed wood beams, elaborated window and door openings, window grilles, decorative vents, metalwork and small balconies, are used selectively to denote building significance.
- Encourage greater connections between inside and outside spaces.
- Daylighting should be a notable attribute of new buildings.
- Chance and casual interactions need to be supported with seating tables, lawn, and other amenities for gathering at a variety of scales.
- The height of buildings vary within campus but all remain with in the 60' height limit.
- In the campus core, especially around the quads, the height should be limited to the existing fabric of one-, two-, and three-level buildings.

Overall Design Approach

CAMPUS PEDESTRIAN CIRCULATION
Recognition of the pedestrian experience is a strong desire for the CSUCI campus. Primary entries may be placed on the northern facade to best accommodate existing traffic patterns and create visible connections to the campus fabric.

WELCOMING & INCLUSIVE SPACES
Gateway Hall should promote a welcoming and inclusive environment for all CSUCI visitors, students, faculty, and staff. During a priority-setting exercise, stakeholders identified the following words to best describe the ideal character and quality of the space.

- Welcoming
- Iconic
- Future-proof
- Belonging
- Energy
- Accessible
- Flexible
- Contextual
- Collaborative
- Innovative
- Visionary
- Exciting

ENVIRONMENTAL COMFORT
Detailed punched openings and other creative solutions to prevent heat gain and glare within spaces are encouraged. Comfortable environments must be an important consideration in designing indoor and outdoor spaces. Natural systems such as daylighting shall be given high priority in any design solution. Every effort must be made to increase occupant comfort.

FUTURE CONSIDERATIONS
The Project shall incorporate design solutions that are adaptable to changing occupancies, which, over time, may require adjustments in space needs. Consideration shall be given to how spaces may evolve.

ADAPTABILITY/FLEXIBILITY/MULTI-FUNCTIONALITY OF SPACE
Flexibility and adaptability shall be planned into the building design and shall be carefully studied and discussed in conjunction with the current and projected needs of the Campus. Strategies for flexible space shall be individually tailored to the function of the building. Multi-functional spaces shall encourage chance-encounters between faculty and students.

Building Interiors

LOBBIES

The main-entry space shall be designed as a welcoming place for user orientation, study and informal gathering. Lobbies shall be easily identifiable nodes between interior and exterior circulation patterns, and have a positive and memorable first impression on visitors and students alike. Flat panel displays shall be provided in the main lobby for wayfinding purposes.

TRANSITION SPACES/CORRIDORS

A rich network of spatial movement contributes to the level of social and creative interaction. Interior circulation and transition spaces shall therefore be exploited for social gatherings, communication, and display areas. Design of transition spaces and corridors shall take into consideration the large numbers of visitors entering and exiting simultaneously during events.

Vertical Circulation shall be designed to reinforce visual and functional connections between floors. To the extent permitted by code, major stairs shall be open between levels and central to the circulation pattern.

Corridors shall be designed with visual interest, views to the outside, and good natural and artificial lighting. Long, uninterrupted corridors without break-out spaces shall be avoided. Sufficient acoustic treatment shall be provided in corridors to keep noise from spilling into offices and meeting rooms. The manipulation and choreography of light, color, material, and form shall serve to enhance the experience of the building interiors.

INTERIOR MATERIALS AND COLORS

The interior selection of colors and materials can affect the performance and health of students, faculty, and administrators. Interior finishes and furnishings shall be of natural, zero/low toxicity, zero/low VOC, and allergy-free materials to maintain a healthy interior environment. All materials shall be abuse resistant and low in maintenance.

In and where employed as a design solution, color shall be used at materials that can easily be replaced, such as paint, carpet and fabric. Distinctive colors shall be avoided in long-term materials, such as metal panel or glass.

Sustainability

The project shall be LEED Gold Equivalent, and the University shall establish a minimum Energy Intensity (EUI) metric when the project is further along in the design process.

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Structural Design Criteria

General Design Criteria

1. Codes and Standards:

   The governing building code will be the 2022 California Building Code and the California State University *CSU Seismic Requirements* dated March 5, 2020. Key reference standards used for the design include:

   - *Specification for Structural Steel Buildings* (ANSI/AISC 360-10)
   - *Seismic Provisions for Structural Steel Buildings* (ANSI/AISC 341-10)
   - *ACI Building Code and Commentary* (ACI 318-14)
   - *Structural Welding Code* (ANSI/AWS D1.1-2010)
   - *Minimum Design Loads for Buildings and Other Structures* (ASCE 7-16)
   - *Seismic Evaluation and Retrofit of Existing Buildings* (ASCE 41-17)
   - *Building Code for Masonry Structures* (TMS 402-16)
   - *Specification for Masonry Structures (*TMS 602-16)
   - *National Design Specifications (NDS) for Wood Construction (ANSI/AWC NDS 2018)*

Design Loads:

The building shall be designed to support the following minimum design loads in addition to other design loads required by the governing building code:

- Live Loads:

Roof (not occupiable)	20 psf
Communal Spaces	100 psf
Exit Corridors, Stairs, Terraces	100 psf
Storage Rooms	125 psf
Classrooms	40 psf
Offices	50 psf
Labs	50 psf
Partitions	15 psf

- Dead Loads:

Typical Ceiling and Finishes:	5 psf (maximum)
Typical Mechanical, Electrical & Plumbing	5 psf (maximum)
Typical Sprinklers	2 psf
Roof (clay tile)	26 psf
MEP @ Roof:	TBD (100 psf min.)

Seismic and Wind Criteria

Seismic Design Criteria

Risk Category III
Soil Factor Site Class D
Mapped Parameters (from geotechnical report for Gateway Hall)
S_S = 1.492g
S_1 = 0.546g
F_a = 1.2
S_{MS} = 1.492g
S_{DS} = 1.194g,
Spectral Acceleration Parameters (from CSU Seismic Requirements for existing buildings)
(BSE-C)
S_{C0} = 1.47g
S_{CS} = 1.181g
S_{C1} = 0.76g
(BSE-R)
S_{R0} = 0.30g
S_{RS} = 0.74g
S_{R1} = 0.42g
Design Parameters
Seismic Design Category D
Occupancy Importance Factor I_e = 1.25

The seismic design for new buildings will be based on an equivalent lateral force method analysis.

Wind Design Criteria

The proposed site does not appear to be in a special wind region or a wind-borne debris region.

Basic Wind Speed	V = 115 mph
Surface Roughness Category	C
Exposure Category	C
Risk Category	III

Exterior cladding design will be based on the requirements of ASCE 7 Chapter 30.

Geotecnical Criteria

Foundation Design Parameters

A preliminary geotechnical report was prepared by CTE South Inc. (CTE Job No. 30-1495G). The following preliminary recommendations are provided:

1. The new building will be supported on conventionally reinforced continuous and isolated spread footings. Foundations will have a minimum allowable soil bearing pressure of 2000 psf for a minimum 15” wide footing embedded 30” below the lowest exterior rough grade elevation. Increases allowed for both footing width and embedment depth with a maximum allowable soil bearing pressure of 3000 psf.
2. Seismic and wind loads will be resisted by the spread footings. A 1/3 increase in the allowable soil bearing pressure is allowed for this short duration loading.
3. For lateral resistance, an allowable coefficient of friction of 0.30 is recommended. Passive soil resistance value is 200 psf with a maximum of 1400 psf.

Structural Materials

Structural Materials

Material strengths of structural members are assumed to as described below. Materials strengths greater than those listed may be required in some locations.

Concrete

f'_c = 5 ksi	Concrete Structural Slabs
f'_c = 5 ksi	Concrete Columns
f'_c = 5 ksi	Concrete Shearwalls
f'_c = 3 ksi	Concrete Foundations
f'_c = 3 ksi	Concrete Slab-on-Grade
f'_c = 3 ksi	Ltwt. Concrete on Metal Deck
f'c = 4 ksi	Shotcrete Walls
f'c = 4 ksi	Precast hollow core concrete planks
f'c = 4 ksi	Topping slabs on precast concrete

Reinforcing Steel

ASTM A615, Gr 60 Typical reinforcing steel
ASTM A706 Welded reinforcing bars only

Structural Steel

ASTM A992 Structural shapes
ASTM A500, Gr 46 Structural tubes
ASTM F1554, Gr 55 Anchor rods (gravity columns)
ASTM F1554, Gr 105 Anchor rods (SFRS braced frame columns)
ASTM A325 High strength bolts
ASTM A36 Miscellaneous shapes and plates

Light Gauge Framing

ASTMA1003
33 ksi for 18 gauge and lighter
50 ksi for 16 gauge and heavier

Concrete Masonry Units

f'm = 1500 psi ASTM C90 Medium weight

Structural Framing Options (All Architectural Schemes)- Gateway Hall

Concrete

- 12” cast-in-place concrete slab based on a typical concrete column spacing of 30’ o.c.
- Conventionally reinforced concrete columns.
- Studrails over all columns. Drop panels are not anticipated.
- Reinforced concrete shearwalls for lateral resistance.
- Conventional reinforced concrete spread and continuous footings. All footings will have a minimum (2) #5 top and bottom per the geotechnical report.
- Shearwalls will be supported by large, conventionally reinforced mat foundations.
- Slab-on-grade will be 5” thick with #4@16” o.c. per the geotechnical report.

Structural Steel

- 3-1/4” lightweight reinforced concrete fill with 3” steel deck spanning to structural steel beams, girders, and columns.
- Buckling-restrained brace frames for lateral resistance. If alignment of interior partitions with braced frames is problematic, then special moment resisting frames are recommended as an alternate.
- Conventional reinforced concrete spread and continuous footings. Foundations under braced frames will be large conventionally reinforced concrete spread footings. If special moment resisting frames are used, then the frame column spread footings will be interconnected with a reinforced concrete grade beam. All footings will have a minimum (2) #5 top and bottom per the geotechnical report.
- Slab-on-grade will be 5” thick with #4@16” o.c. per the geotechnical report.

Precast Concrete/ Concrete Masonry Unit

- 8” or 10” precast concrete hollow core slabs with a 4” reinforced concrete topping slab supported by precast or cast-in-place beams or bearing cmu walls. Beams to be supported by reinforced precast or cast-in-place concrete columns.
- Special reinforced cmu shearwalls for lateral resistance.
- Conventional reinforced concrete spread and continuous footings. Shearwalls will be supported by large, conventionally reinforced mat foundations. All footings will have a minimum (2)#5 top and bottom per the geotechnical report.

ConXtech Pre-fabricated Steel Framing

- 3-1/4” lightweight concrete fill with 3” steel deck spanning to structural steel beams, girders, and columns.
- Columns are typically HSS sections with proprietary beam hangers shop welded to the columns to accept beams/girders.
- Conventional reinforced concrete spread and continuous footings. Foundations under the frame columns will be large conventionally reinforced concrete spread footings interconnected with a reinforced concrete grade beam. All footings will have a minimum (2) #5 top and bottom per the geotechnical report.
- Slab-on-grade will be 5” thick with #4@16” o.c. per the geotechnical report.

Structural Framing - Seismic Upgrade (All Architectural Schemes)

Building F12

- Use of FRP (fiber reinforced polymer) to strengthen the connection of the floor and roof diaphragms to the perimeter and interior concrete shearwalls.
- Use FRP or reinforced shotcrete to strengthen the wall segments over doors and windows.
- Use FRP or reinforced shotcrete to enhance the shear capacity of the existing concrete shearwalls.
- Widening of existing 2” joint between F12 and the adjacent Buildings F11 and F13.
- Strengthen the existing wood canopy roofs for resistance to seismic forces.
- Strengthen/add connection of wood canopy back to the building structure.
- Repair/replace deteriorating canopy rafters.
- Repair the south end of Building F12 where it was previously cut to create a new entry point into the courtyard.
- Existing ADA ramps to be retrofitted as needed through the use of concrete overlays to bring them into compliance.

Building F15

- Use of FRP (fiber reinforced polymer) to strengthen the connection of the floor and roof diaphragms to the perimeter and interior concrete shearwalls.
- Use FRP or reinforced shotcrete to strengthen the wall segments over doors and windows.
- Use FRP or reinforced shotcrete to enhance the shear capacity of the existing concrete shearwalls.
- Widening of existing 2” joint between F15 and Building F12.
- Strengthen the existing wood canopy roofs for resistance to seismic forces.
- Strengthen/add connection of wood canopy back to the building structure.
- Furnish new reinforced concrete shearwalls at the building west and south ends that are being cut and demolished.
- Strengthen/add new foundations for the new shearwalls at the building cut ends.
- Existing ADA ramps to be retrofitted as needed through the use of concrete overlays to bring them into compliance.

Building F16

- Use of FRP (fiber reinforced polymer) to strengthen the connection of the floor and roof diaphragms to the perimeter and interior concrete shearwalls.
- Use FRP or reinforced shotcrete to strengthen the wall segments over doors and windows.
- Use FRP or reinforced shotcrete to enhance the shear capacity of the existing concrete shearwalls.

Building F17

- Widen of existing 2” joint between F16 and buildings F17 and F18.
- Strengthen the existing wood canopy roofs for resistance to seismic forces.
- Strengthen/add connection of wood canopy back to the building structure.
- Furnish new reinforced concrete shearwalls at the building ends that are being cut and demolished.
- Strengthen/add new foundations for the new shearwalls at the cut ends.
- Existing ADA ramps to be retrofitted as needed through the use of concrete overlays to bring them into compliance.
- Use of FRP (fiber reinforced polymer) to strengthen the connection of the floor and roof diaphragms to the perimeter and interior concrete shearwalls.
- Use FRP or shotcrete to strengthen the wall segments over doors and windows.
- Use FRP or shotcrete to enhance the shear capacity of the existing concrete shearwalls.
- Widen of existing 2” joint between building units.
- Furnish new reinforced concrete shearwalls at the building ends that are being cut and demolished.
- Strengthen/add new foundations for the new shearwalls at the cut ends.
- Existing ADA ramps to be retrofitted as needed through the use of concrete overlays to bring them into compliance.

Building F18

- A Tier 1 Evaluation based on ASCE41-17 has not been performed yet. If this building is a part of the scope of work (based on architectural Study Scenario A or C), a Tier 1 evaluation is needed. The following comments are based on the Tier 1 evaluations for Buildings F11 to F17.
- Use of FRP (fiber reinforced polymer) to strengthen the connection of the floor and roof diaphragms to the perimeter and interior concrete shearwalls.
- Use FRP or shotcrete to strengthen the wall segments over doors and windows.
- Use FRP or shotcrete to enhance the shear capacity of the existing concrete shearwalls.
- Widen of existing 2” joint between building units.
- Furnish new reinforced concrete shearwalls at the building ends that are being cut and demolished.
- Strengthen/add new foundations for the new shearwalls at the cut ends.
- Existing ADA ramps to be retrofitted as needed through the use of concrete overlays to bring them into compliance.

MECHANICAL BASIS OF DESIGN

OVERVIEW

The Gateway Hall project scope includes renovation of existing building with an approximate total gross area of 41,571 GSF and a new building addition with an approximate total gross area of 38,445 GSF.

The existing building currently do not have any HVAC installed. The building renovation program will consist of the following rooms: faculty offices, enrollment services, academic advising, and student business services.

The new building program will consist of the following rooms: interdisciplinary instruction classrooms, welcome center, computer labs, mechanical labs, food service, and student gathering spaces.

Chilled water and heating water point of connection will be in the vault north of the project site. The vault is part of the north hydronic loop project with CSUCI.

RENOVATED BUILDING AIR HANDLING

Ducted fan coil units (4 pipe) with heating water coil, chilled water coil, filter box with MERV 13 filters.

Active chilled beam option for tight ceiling spaces. Dedicated air handling unit to provide primary air.

Centralize dedicated outside air fan system with MERV-13 filter and air flow monitoring station. Constant air spring damper regulators will be used for each fan coil unit outside air connection.

NEW BUILDING AIR HANDLING

The building will be served by variable air volume custom built air handling units. The air handling unit shall have chilled water coil, pre-heating water coil, direct drive supply and return fans with variable frequency drives (VFDs), MERV-13 filter, economizer section, outside air flow monitoring station, acoustical roof curb and internal vibration spring isolators.
Chilled water coil shall be selected to 44°F supply and 64°F return. Heating water coils shall be selected to 125°F supply and 105°F return.

Each thermal zone will be provided with a dedicated variable air volume (VAV) terminal unit with hydronic reheat. The hydronic reheat will be provided with heating water from campus central

plant.

AIR DISTRIBUTION

Supply air distribution will be fully ducted and distributed via medium pressure ductwork. The return air ductwork is fully ducted and/or utilizes the ceiling space as a return air plenum. Air distribution will be sized at low velocity to meet the sound criteria requirements by acoustical consultant.

HEATING

Heating water will be tied into a vault connected to existing campus heating water loop from central plant. Heating water will be distributed to air handling unit and fan coil unit heating coils.

Booster pump with variable frequency drives (VFD) will be provided for each building.

Heating water thermostatic mixing valve will be utilized to reduce central plant heating water temperature to achieve air handling unit and reheat hot water coil design temperature.

COOLING

Chilled water will be tied into a vault connected to existing campus chilled water loop from central plant. Chilled water will be distributed to air handling unit and fan coil unit cooling coils. Booster pump with variable frequency drives (VFD) will be provided for each building.

BUILDING AUTOMATION

Provide new direct digital building automation system (BAS) to operate all system functions and schedules. Controls shall be Automated Logic Controls (ALC) per CSUCI standard. All controls shall be connected to, communicate with, and be controlled from the existing campus BAS. Ensure that all necessary control points are provided for commissioning, retro-commissioning, and troubleshooting. Ensure all necessary duct smoke detectors are provided where required and coordinate with fire alarm contractor for proper connection to fire alarm system. Provide animated graphical displays of equipment and systems viewable with monitored point information accessible from the campus building automation system.

The BAS shall have the ability to monitor/set the temperature setpoint, read/set setback temperature setpoint, and monitor any alarms. Controls will consider ASHRAE 36 guidelines as per the CSU Chancellor's Office Mechanical Review Board recommendations and will use the guidelines as applicable.

CODES AND STANDARDS

- 2022 California Mechanical Code (CMC), California Code of

Regulations, Title-24, Part 4 (2021 Uniform Mechanical Code (UMC) with State and Local Amendments).
- 2022 California Building Code (CBC), California Code of Regulations, Title-24, Part 2 (2021 International Building Code with State and Local Amendments).
- 2022 California Plumbing Code (CPC), California Code of Regulations, Title-24, Part 5 (2021 Uniform Plumbing Code (UPC) with State and Local Amendments).
- 2022 California Fire Code (CFC), California Code of Regulations, Title-24, Part 9 (2021 International Fire Code with State and Local Amendments).
- 2022 California Electric Code (CEC) (2020 National Electrical
- Code with State and Local Amendments).
- 2022 California Building Energy Efficiency Standard for Residential and Nonresidential Buildings, California Code of Regulations, Title-24, Part 6.
- 2022 California Green Building Standards Code, California Code of Regulations, Title-24, Part 11.
- Americans with Disabilities Act (ADA).
- ASHRAE 2021 Handbook, Fundamentals.
- ASHRAE 2020 Handbook, HVAC Systems and Equipment.
- ASHRAE 2019 Handbook, HVAC Applications.
- ASHRAE 2018 Handbook, Refrigeration.
- ASHRAE 55-2017 Thermal Environmental Conditions for Human Occupancy.
- ASHRAE 62.1-2016 Ventilation for Acceptable Indoor Air Quality.
- ASHRAE 90.1-2016 Energy Standard for Buildings except Low-Rise Residential Buildings.
- NFPA 90A: Standard for the Installation of Air-Conditioning and Ventilating Systems.
- NFPA 90B: Standard for the Installation of Warm Air Heating and Air-Conditioning Systems.
- NFPA 101: Life Safety Code.
- CSUCI Mechanical Design Standards (June 2012)

OUTDOOR DESIGN CRITERIA

Outdoor design conditions (2019 Title 24, Part 6, Joint Appendix JA2):
Location: Camarillo, California
- Summer: 84°F DB/68°F MCWB (0.50%)
- Winter: 32°F (0.2%)
- Elevation: 147 feet above sea level.
- Climate Zone: 6

INDOOR DESIGN CRITERIA

Indoor design conditions: Based on +/-2°F control accuracy from setpoints.

All conditioned areas:
- Cooling: 75°F
- Heating: 70°F

Office areas:
- Cooling: 75°F
- Heating: 70°F

Classrooms:
- Cooling: 75°F
- Heating: 70°F

Exceptions:
- Electrical equipment rooms: 85°F (maximum)
- Data/IDF/MDF/telecom rooms: cooling only, 85°F (maximum)
- Elevator control/equipment/machine rooms: cooling only, 85°F (maximum)

Humidity control:
- All areas, unless otherwise noted: None. No active humidification systems.
- Data/IT/telecom rooms: No active humidification or dehumidification.

VENTILATION DESIGN CRITERIA

All areas: 15 cfm/person or 0.15 cfm/sq.ft., whichever is greater. Comply with California Building Energy Efficiency Standard. Comply with Chapter 4 of CMC, Chapter 12 of CBC and ASHRAE 62.1.

Exhaust to Outdoors (Minimum Rates):
- Toilet rooms: 12 air changes per hour or 75 cfm/fixture, whichever is greater. One exhaust grille spaced every three to five fixtures, maximum. (Note to Editor: Decrease spacing as necessary to accommodate infection control requirement between adjacent fixtures. A best practice solution is to provide a continuous sheet metal slot in ceiling above restroom fixtures, but requires close coordination with Architect and sometimes not practical.)
- Janitor closet: 100 cfm or 10 air changes per hour, whichever is greater.
- Break room: 100 cfm, minimum (pending appliances).
- Copier/printer rooms: 2 air changes per hour.
- Mechatronics Lab: 0.5 CFM/SF min. Hood exhaust system for 3D printers, local fume extraction system and corresponding for soldering station.

INTERNAL HEAT GAINS

Lighting:
- Office: 0.75 w/sq.ft.
- Conference Room: 1.0 w/sq.ft.
- Lobby: 1.0 w/sq.ft.
- Corridor: 0.5 w/sq.ft.
- Restroom: 0.5 w/sq.ft.

Receptacle power in offices areas: 1.2 w/sq.ft.
- Electrical transformers: 2% loss, TBD (kVA)
- Elevator machine rooms: TBD
- IDF equipment rooms: TBD
- MDF equipment rooms: TBD

Occupancy Criteria:

- Office occupant: 245 Btuh sensible/205 Btuh latent
- Shared office: 1 person/80 sq.ft.
- Enclosed office: 1 person
- Conference room: 1 person/15 sq.ft.
- Classroom: 1 person/20 sq.ft.

Zoning criteria:

- Private offices: one zone (temperature sensor) per four (maximum) private offices and one per each corner/executive office.
- Open office spaces: one zone (temperature sensor) per 1,000 square feet.
- Conference rooms: one zone (temperature sensor) per room
- Lobby: one zone (temperature sensor)
- Data/telecom: one zone (temperature sensor) per room
- Classroom: one zone (temperature sensors) per room

DUCTWORK DESIGN CRITERIA

Design ductwork to provide high efficiency operation with minimal acoustical noise. Duct static pressure friction loss shall not exceed 0.2" per 100 feet in mechanical rooms and shafts. Low pressure supply duct static pressure friction loss based on a maximum of 0.08" per 100 feet. Low pressure return and exhaust duct static pressure friction loss based on a maximum of 0.06" per 100 feet. Medium pressure ductwork shall not exceed a duct static pressure friction loss based on a maximum of 0.1" per 100 feet.

Maximum supply, return and exhaust duct air flow velocities, regardless of pressure drop, shall not exceed the following criteria:

- Mains above ceiling: 1750 fpm
- Mains above open occupied spaces: 1450 fpm
- Branches above ceiling: 1400 fpm
- Branches above open occupied spaces: 1150 fpm
- Run-outs to diffusers: 725 fpm
- In shafts: 2500 fpm
- In mechanical rooms: 3000 fpm

ACOUSTICAL

The following noise NC/RC criteria levels will be achieved and as defined in the ASHRAE HVAC Applications Handbook. These levels address the mechanical systems only. Actual sound performance requirements for each space must be verified with acoustical consultant.

- Open offices: 40
- Conference rooms: 30
- Private offices: 30
- Corridors: 40
- Lobbies: 35
- Classrooms: 30

COILS IN AIR HANDLING UNITS

- Maximum face velocity: 450 fpm
- Maximum fins per inch: 12
- Maximum air pressure drop-cooling coil: 0.75” w.c. (wet coil)
- Maximum air pressure drop–heating coil: 0.25” w.c.
- Maximum tube pressure drop: 10 ft. w.g.
- Minimum tube pressure drop: 2 ft. w.g.
- Minimum tube rows – cooling coil: 4
- Minimum tube rows – heating coil: 1

HEATING COILS IN TERMINAL UNITS

- Maximum air pressure drop: 0.50” w.c.
- Minimum tube rows – reheat coil in VAV terminal unit: 2

AIR FILTERS

- Outside air pre-filters: MERV-8 (minimum)
- Final filters: MERV-13 (minimum)

HYDRONIC PIPING DESIGN CRITERIA

- Maximum water pressure drop: 4 ft. w.g./100 ft.
- Maximum water velocity for mains, risers and branch piping: 6 fps up to 5” pipe, 7 fps for 6” to 12” pipe, 8 fps for 14” and larger pipe sizes.
- Maximum water velocity in mechanical rooms: 10 fps
- Provide shut off valve for isolation of major areas, at each piece of equipment, and each air handling system.
- CHW and HHW pumps will be provided for both the new building and the renovated building. Each pump skid will be provided with a check valve bypass to allow for the central plant pressures to drive the hydronics when adequate campus pressure is available.

SEISMIC

Anchorage and restraints must be coordinated with structural engineer and authority having jurisdiction.

CENTRAL PLANT TEMPERATURES

Central plant systems temperatures serving this building:

Chilled water

- Entering water temperature (EWT): 64°F
- Leaving water temperature (LWT): 44°F

Heating water

- Entering water temperature (EWT): 180°F
- Leaving water temperature (LWT): 140°F

Heating water design condition for building coils, pumps, and piping:

- Entering water temperature (EWT): 125°F

REDUNDANCY ASSUMPTIONS

Chiller water booster pumps: provide N+1 pump redundancy
Heating water booster pumps: provide N+1 pump redundancy
Fans: provide for duct leakage and 10% additional air capacity for future expansion

FUTURE CAPACITY

Systems sized for 10 % spare cooling/heating/chilled water/heating water capacity on the following systems:

- Air handling units
- Fan coil units
- Exhaust fans
- Chilled beams
- Booster pumps
- Supply and return ductwork – risers and mains
- Chilled/heating water hydronic service piping – risers and mains

SUSTAINABLE DESIGN FEATURES

The HVAC system includes the following sustainable design features:

- Demonstrate a 10% improvement in the proposed building performance rating compared to California Building Energy Efficiency Standards per CSU requirements.
- No CFC based refrigerants are used in the building HVAC systems.
- Select refrigerants and HVAC equipment that minimize and eliminate the emission of compounds that contribute to ozone depletion.
- Install the necessary metering and sub metering equipment to measure energy use.
- Provide indoor air quantities to meet minimum requirements of sections 4 through 7 of ASHRAE standard 62.1-2010.
- Install permanent carbon dioxide monitoring systems to ensure that ventilation systems maintain design minimum requirements.
- Use variable frequency drives to operate fans and pumps.
- All ductwork is sealed per SMACNA seal class a with maximum 5% leakage rate at 1.5x the operating pressure of the supply fans.
- Natural ventilation is provided with window micro switches interlocked with VAV terminal units.

HVAC COMMISSIONING

CSUCI will engage an Independent Consultant to perform the role of a Commissioning Agent.
During the Design Development the design team shall coordinate with the Commissioning Agent to develop criteria for test protocols

PLUMBING BASIS OF DESIGN

OVERVIEW

The Gateway Hall project scope includes renovation of existing building with an approximate total gross area of 41,571 GSF and a new building addition with an approximate total gross area of 38,445 GSF.

The existing building currently is currently supplied with existing services including domestic cold-water supply, central hot water supply and return systems, sanitary waste and vent systems and existing storm water collection system. The building renovation program will consist of the following rooms: faculty offices, enrollment services, academic advising, and student business services.

The new building program will consist of the following rooms: interdisciplinary instruction classrooms, welcome center, computer labs, mechanical labs, food service, and student gathering space. The design includes the following notable features but is not limited to this scope. Contractor is responsible for reviewing all contract documents and coordinating with all disciplines.

Domestic hot water distribution: recirculation pumps are used to maintain a minimum water temperature of 140 degrees F in the main piping loop. Piping will be located to expedite hot water service to any fixture within 10 seconds. Domestic hot water is connected to a time clock in series with a return water temperature controller and available from 6 am to 6 pm, Monday through Friday.

CODES AND STANDARDS

California Building Codes enforced by the Authority Having Jurisdiction (AHJ):

- 2022 California Building Code (CBC), California Code of Regulations, Title-24, Part 2 (2021 International Building Code with State and Local Amendments)
- 2022 California Plumbing Code (CPC), California Code of Regulations, Title-24, Part 5 (2021 Uniform Plumbing Code with State and Local Amendments)
- 2022 California Building Energy Efficiency Standard for Nonresidential Compliance, California Code of Regulations, Title-24, Part 6
- 2022 California Green Building Standards Code, California Code of Regulations, Title-24, Part 11

- Americans with Disabilities Act (ADA)

Outdoor design conditions (for insulation criteria):

- Location: Camarillo, California
- Winter: 32°F (ASHRAE 0.2% or median of extremes) (0.2%)
- Elevation: 147 feet above sea level.

WATER SUPPLY

Renovated Building:

- Minimum available water pressure (static): 95 psi available from municipal water service. PRV is required.
- Cold water pipe size: existing 6" inches (minimum).
- Cold water meter size: Maintain existing meter.
- Cold water demand: calculations to determine new gpm flow is in progress and will be completed following updated programming. Proposed fixtures for the TI are 10 water closets, 6 lavatories, 4 drinking fountains and 2 service sinks.

New Building:

- Minimum available water pressure: 86 psi (static) and 80 PSI flowing 1300 GPM is available from municipal water service. A pressure reducing valve (PRV) is required.
- Cold water pipe size: 4 inches (minimum) calculations based on new programming are being performed.
- Cold water meter size: 3 inches (minimum).
- Cold water demand: Proposed fixtures for the TI are 16 water closets, 8 lavatories, 4 drinking fountains and 2 service sinks.

DOMESTIC HOT WATER

Renovated Building:

- The existing hot water systems will be demolished.
- A new electric, storage tank type water heater shall be designed and specified to meet the new hot water demand loads required for the new programming.
- The new domestic water heating system shall be designed in accordance with the facility standards and based upon the criteria below.
- Domestic hot water supply temperature: 110°F (public areas).
- Domestic hot water supply temperature: 140°F (non-public areas).
- Domestic hot water recirculation temperature: 95°F to 105°F as allowed by local energy code. Above this temperature the recirculating pump will be off.
- Domestic incoming cold-water temperature: 50°F (used for water heater sizing).
- The maximum allowable piping length for domestic hot water from the nearest source of heated water to the termination of the fixture supply pipe shall not exceed three feet for public lavatories and hand washing sinks. For other fixtures, such as showers, and kitchen sinks, the maximum piping length shall not exceed ten feet.

New Building

- A central system shall be provided. A new electric, storage tank

type water heater shall be designed and specified to meet the new hot water demand loads required for the new programming.

- The domestic hot water system shall be designed in accordance with the facility standards and based upon the criteria below. The building addition shall Domestic hot water heater setpoint temperature: 140°F. The water heating system should supply domestic hot water at a minimum of 140°F to minimize biological growth and use thermostatic mixing valves upstream of remote fixtures to supply reduced hot water temperatures as required by local code requirements and OSHA.
- Domestic hot water supply temperature: 110°F (public areas).
- Domestic hot water supply temperature: 140°F (non-public areas).
- Domestic hot water recirculation temperature: 95°F to 105°F as allowed by local energy code. Above this temperature the recirculating pump will be off.
- Domestic incoming cold-water temperature: 50°F (used for water heater sizing).
- The maximum allowable piping length for domestic hot water from the nearest source of heated water to the termination of the fixture supply pipe shall not exceed three feet for public lavatories and hand washing sinks. For other fixtures, such as showers, and kitchen sinks, the maximum piping length shall not exceed ten feet.
- Backflow preventers are to be provided by Glumac or civil based on coordination with the architect.

SANITARY SEWER

Renovated Building

- The existing sanitary waste and vent system shall be modified to provide all new fixtures with a complete system of cast iron waste and vent piping to drain all new plumbing fixtures based upon the new architectural programming to the existing sanitary waste and vent system.
- Contractor to perform camera tests on all existing sanitary piping to determine condition and life expectancy.
- Based on the existing conditions, the buildings existing sanitary house sewer pipe size is 6 inches in size. There will be a total reduction in fixture quantities and the existing is adequate for the new programming.
- Connected load drainage fixture units are to be calculated based upon new programming.

New Building

- A complete system of cast iron waste and vent piping to drain all new plumbing fixtures will be provided based on new architectural programming.
- Building sewer size is 6 inches.
- Connected load drainage fixture units are to be calculated based upon new programming.

STORM DRAIN

Renovated Building

- Rainfall intensity 3 inches/hour (per local ordinance).
- The existing storm drainage system will disconnect all existing downspouts and run surface to MS4 compliant system 85% 24hour storm within the project boundary. Refer to the new civil design for the use a combination of surface, pervious pavers with gravel storage under, piping storage underground, bioswales, planters, etc. to manage stormwater with overflow running to existing storm water main. Refer to the Architectural for new downspout locations and the Civil design for new site storm water drainage systems.

New Building

- Rainfall intensity 3 inches/hour (per local ordinance).
- The new storm drainage system will be comprised of exterior gutter and exterior downspouts which shall run surface to MS4 compliant system 85% 24hour storm within the project boundary. Refer to the new civil design for the use a combination of surface, pervious pavers with gravel storage under, piping storage underground, bioswales, planters, etc. to manage stormwater with overflow running to existing storm water main. Refer to the Architectural for new downspout locations and the Civil design for new site storm water drainage systems.

SEISMIC

- Anchorage and restraints must be coordinated with structural engineer and authority having jurisdiction.

SUSTAINABLE DESIGN FEATURES

- Waterless urinals per Campus Standard, also consider the HYBRID type urinals with an automatic rinse cycle at each urinal.
- Low-flow water usage of 1.28 gallons per flush at each toilet.
- High efficiency electric, domestic hot water heaters.
- Electronic sensor type lavatory faucets for reduced water flow.

ELECTRICAL BASIS OF DESIGN

OVERVIEW

The Gateway Hall project scope includes renovation of existing building with an approximate total gross area of 41,571 GSF and a new building addition with an approximate total gross area of 38,445 GSF.

It is anticipated that the 41,571 GSF renovated building will be fully gutted and reconstructed electrically. The demolition will include all electrical distribution equipment, including the existing

medium voltage transformers and feeders. The reconstruction will consist of new lighting, power, data, HVAC, and fire alarm systems.

It is anticipated that the 38,445 GSF new building will consist of offices, support spaces, classrooms, light instruction labs (no wet labs), small and large conference rooms, food service, and student gathering spaces. This new building will be a complete and functional build out including new lighting, power, data, HVAC, and fire alarm systems.

All work shall conform to the CSU Channel Island campus standards.

CODES AND STANDARDS

Codes:

- American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)
- Americans with Disabilities Act, (ADA)
- 2022 California Green Building Standards Code, California Code of Regulations, Title-24, Part 11.
- 2022 California Building Code (CBC), California Code of Regulations, Title-24, Part 2 (based on the 2021 International Building Code with State and Local Amendments).
- 2022 California Fire Code (CFC), California Code of Regulations, Title-24, Part 9 (based on 2021 International Fire Code with State and Local Amendments).
- 2022 California Electric Code (CEC), based on the 2020 National Electrical Code with State and Local Amendments
- California Building Codes enforced by the Authority Having Jurisdiction (AHJ):
- 2022 California Building Energy Efficiency Standard for Nonresidential Compliance, California Code of Regulations, Title-24, Part 6.

Standards:

- American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)
- NFPA 75: Standard for the Protection of Information Technology Equipment
- NFPA 101: Life Safety Code
- NFPA 110: Standard for Emergency and Standby Power Systems

ELECTRICAL SERVICE AND DISTRIBUTION

Existing and demolition:

Existing 500kVA, 4160-208Y/120V transformer ‘T15’ is located outside of existing west gateway building and feeds the west gateway area. ‘T15’ is fed from medium voltage switch ‘SF6-03’. ‘T15’ and associated secondary feeders and service entrance equipment to be demolished. Pull and demolish primary conductors to ‘SF6-03’. Demolish primary feeder conduit from ‘T15’ to manhole ‘EMH-05’. Conduit routed

beneath building to be abandoned in place. Conduit routed between 'SF6-03' and 'EMH-05' to be abandoned in place.

Existing 300kVA, 4160-208Y/120V transformer 'T16' is in the basement of existing east gateway building and feeds the east gateway area. 'T16' is fed from medium voltage switch 'SF6-02'. 'T16' and associated secondary feeders and service entrance equipment to be demolished. Pull and demolish primary conductors to 'SF6-02'. Demolish primary feeder conduit from 'T16' to manhole 'EMH4'. Conduit routed beneath building to be abandoned in place. Conduit routed between 'SF6-02' and 'EMH4' to be abandoned in place.

It is assumed gateway building areas indicated as existing to remain will be designed and built out in future phases. Existing to remain buildings and distribution equipment fed from demolished 'T15' and 'T16' will not be powered during this phase. Where upstream distribution equipment is demolished, pull and demolish all associated electrical distribution feeder conductors. Abandon conduit in place in existing to remain areas. Demolish conduit in renovation and demo areas.

The renovated building demolition is to include removal of all electrical distribution equipment. New distribution equipment will be provided inclusive of new pad mounted transformers and service entrance switchgear.

New Construction:

New 12.47kV-480Y/120V, 3 phase, 3 wire, exterior pad mounted transformer rated to be located outside new construction gateway building in fenced in gated enclosure. Transformer to be fed with 12.47kV primary feeder from switch 'SDS-32'. The pad mounted transformer shall utilize FR3 non-hazardous fluid and the installation shall be equipped with fluid containment. Medium voltage design by others. The transformer secondary will feed new 600A to 1000A, 480/277V, 3 phase, 4 wire, exterior switchboard. Switchboard to feed proposed new 2-story building and proposed new theater.

Renovation:

Gateway areas indicated as renovated are to be fully gutted and reconstructed. Reconstruction will consist of new lighting, power, data, and fire alarm systems. New electrical service and distribution equipment to be provided.

Gateway areas indicated as existing to remain will be designed and built-out in future phases. These areas will require new electrical service.

Option 1 considers electrical distribution for gateway renovations in existing design phase scope. This option

provides a single medium voltage transformer and distribution system for east and west reconstruction areas. This option will require new medium voltage transformer and service switchgear installation for future gateway renovation build-out.

Option 2 provides design provisions for gateway renovations in existing design phase scope as well as anticipated future renovations. This option provides (2) medium voltage transformers and splits the electrical distribution into east and west. Provide add alternate pricing for Option 2.

Option 1:

New 12.47kV-480Y/120V, 3 phase, 3 wire, exterior pad mounted transformer, 'T1' to be located outside existing west gateway building in fenced in gated enclosure. Transformer to be fed with 12.47kV primary feeder from switch 'SDS-32'. The pad mounted transformer shall utilize FR3 non-hazardous fluid and the installation shall be equipped with fluid containment. Medium voltage design by others. The transformer secondary will feed new 800A to 1000A, 480/277V, 3 phase, 4 wire, interior service-rated switchboard. Switchboard to feed renovation area. Switchboard to feed east and west gateway renovation areas.

Option 1 transformer to feed all renovation spaces. Transformer size estimated based on Functional Area Load Density. Analysis below:

OPTION 1 – 'T1' DESIGN LOAD SUMMARY	
kVA	720
VA/SF	12

Option 2:

New 12.47kV-480Y/120V, 3 phase, 3 wire, exterior pad mounted transformer, 'T1', to be located outside existing west gateway building in fenced in gated enclosure. Transformer to be fed with 12.47kV primary feeder from switch 'SDS-32'. The pad mounted transformer shall utilize FR3 non-hazardous fluid and the installation shall be equipped with fluid containment. Medium voltage design by others. Transformer secondary will feed new 1200A to 2000A, 480/277V, 3 phase, 4 wire, exterior pad-mounted switchboard. Switchboard to feed west gateway renovation and future building renovations. Provide (6) spare 600A/3P circuit breakers on switchboard to account for future build outs. West renovation to be fed from new 400A to 600A, 480/277V, 3 phase, 4 wire, distribution board located in electrical room in west renovation space electrical room.

New 12.47kV-480Y/120V, 3 phase, 3 wire, exterior pad

mounted transformer, 'T2', to be located outside existing east gateway building in fenced in gated enclosure. Transformer to be fed with 12.47kV primary feeder from switch 'SDS-42'. The pad mounted transformer shall utilize FR3 non-hazardous fluid and the installation shall be equipped with fluid containment. Medium voltage design by others. Transformer secondary will feed new 1200A to 2000A, 480/277V, 3 phase, 4 wire, exterior pad-mounted switchboard. Switchboard to feed east gateway renovation and future building renovations. Provide (6) spare 600A/3P circuit breakers on switchboard to account for future build outs. East renovation to be fed from new 400A to 600A, 480/277V, 3 phase, 4 wire, distribution board located in electrical room in east renovation space electrical room

Option 2 transformers designed with flexibility to feed all renovation spaces as well as provide enough spare capacity to handle future renovation space build outs. Option 2 'T1' to serve west gateway buildings. Option 2 'T2' to serve east gateway buildings. Transformer size estimated based on Functional Area Load Density. Analysis below:

OPTION 2 – 'T1' DESIGN LOAD SUMMARY	
kVA	1300
VA/SF	12

OPTION 2 – 'T2' DESIGN LOAD SUMMARY	
kVA	1300
VA/SF	12

BASE DESIGN CRITERIA

Power distribution equipment will be sized to support 20% spare capacity (amperes) as well as 20% spare circuit breaker spaces to accommodate functional changes over the life of the building.

Building distribution design voltages are as follows:

SPACE TYPE	DESIGN VOLTAGE
Campus Distribution	12.47kV, 3 phase, 3 wire + ground
Motors, ½ HP and larger	480V, 3 phase, 3 wire
Motors, less than ½ HP	120V or 208V, 1 phase, 2 wire + ground
Lighting	277V, 1 phase, 2 wire + ground
Receptacles	120V, 1 phase, 2 wire + ground

Demand Factors to comply with 2017 NEC requirements as follows:

TYPE	LCL
Lighting (Continuous Load)	125% of installed VA
General Receptacles	100% of first 10kVA installed plus 50% of VA of remainder
Motors	125% of VA of largest motor plus 100% of VA of all other motors
Fixed Equipment	100% of total installed VA
Lighting (Continuous Load)	125% of installed VA

Service Load Calc based Functional Area Load Density:

SPACE TYPE	SERVICE LOAD DENSITY
Office Receptacle	7 VA/SF
Lighting	1 VA/SF
Conference Rooms	2 VA/SF
Corridor	1 VA/SF
Public Space	3 VA/SF
Building Support	2 VA/SF
HVAC Systems (utilizing campus chilled water and steam)	5 VA/SF

ELECTRICAL LOAD ANALYSIS

Service Load Calc based Functional Area Load Density:

SPACE TYPE	SERVICE LOAD DENSITY
Office Receptacle	7 VA/SF
Lighting	1 VA/SF
Conference Rooms	2 VA/SF
Corridor	1 VA/SF
Public Space	3 VA/SF
Building Support	2 VA/SF
HVAC Systems (utilizing campus chilled water and steam)	5 VA/SF

New construction electrical distribution based on Functional Area Load Density. Anticipated electrical load for new construction areas are as follows:

NEW CONSTRUCTION – DESIGN LOAD SUMMARY	
kVA	430
VA/SF	10

Renovation electrical distribution based on Functional Area Load Density. Anticipated electrical load for new construction areas are as follows:

RENOVATION – DESIGN LOAD SUMMARY	
kVA	720
VA/SF	12

DISTRIBUTION – RENOVATION

Renovation space to be fed from new 480Y/277V distribution.

Each level in renovation space to have the following:

- 100A, 480Y/277V, 3 phase, 4 wire, lighting panelboard
- 480-120/208V, 112.5kVA distribution transformer
- 600A, 120/208V, 3 phase, 4 wire distribution panel

Outside every lab provide 100A, 120/208V, 3 phase, 4 wire panel.

Power distribution equipment will be sized to support 20% spare capacity (amperes) as well as 20% spare circuit breaker spaces to accommodate functional changes over the life of the building.

DISTRIBUTION – NEW CONSTRUCTION

New construction spaces to be fed from new 480Y/277V distribution.

Each new construction building and floor to have the following:

- 100A, 480Y/277V, 3 phase, 4 wire, lighting panelboard
- 480-120/208V, 112.5kVA distribution transformer
- 600A, 120/208V, 3 phase, 4 wire distribution panel

Outside every lab provide 100A, 120/208V, 3 phase, 4 wire panel.

Power distribution equipment will be sized to support 20% spare capacity (amperes) as well as 20% spare circuit breaker spaces to accommodate functional changes over the life of the building.

EMERGENCY POWER SYSTEM

Centralized lighting inverters will be utilized for egress lighting to provide back-up power in the incidence of a loss of normal power. A single inverter shall be used per building. Inverter shall be sized to provide back-up power for a minimum of a 90-minute run time.

Fire alarm panels shall be equipped with integral battery back-ups in both the renovation and new construction spaces.

No emergency generator will be provided.

ELEVATORS

All elevator motor circuit feeders and overcurrent protection shall be sized based on the manufacturer's requirements. All equipment shall be fully rated for the available fault current. Automatic sprinklers shall not be installed in elevator machine

rooms, control rooms or elevator hoistways, where elevators are used for Fire Service Access Elevators (FSAE), per CBC 3007.2. Therefore a means for elevator shutdown (shunt trip) shall not be installed on the elevator systems used for the FSAE, per CBC 3007.3.

GROUNDING SYSTEM

A low-impedance grounding electrode system to be provided and designed in accordance with NEC article 250. Grounding electrode system to include the main water service line, structural steel, (if any), and a ground triad. A separate equipment insulate ground wire will be run in each feeder conduit and each branch circuit conduit.

LIGHTNING PROTECTION SYSTEM

A lightning protection system will not be provided.

CONDUIT

Conduit types shall be as follows:

- Above ground inside: Rigid conduit, IMC, and EMT. MC and/or flexible conduit are permitted for final connections to light fixtures and final drops in walls to electrical devices. Homeruns shall not be permitted to be MC and/or flexible conduit.
- Outdoor locations: Rigid Galvanized Conduit
- Exposed to physical damage: Rigid Conduit
- Rigid non-metallic conduit and electrical non-metallic tubing are unacceptable.

Provide all steel compression fitting on EMT.

Minimum conduit size for branch circuiting and feeders is 3/4". Minimum conduit size for controls is 1/2". Minimum underground conduit size will be 2" for feeders. Minimum underground conduit size will be 1" for branch circuiting. Increase conduit size as required per code.

Support all conduits per current CEC requirements.

Allowed length of flex conduit will be limited to 6 feet or less for connection to equipment subject to vibration, noise or movement, transformers, and motors.

Surface mounted conduit is acceptable only in locations where exposed structure is the finished surface and in mechanical and electrical rooms. In public areas, locate conduit for minimum visual impact.

Run all cables and/or conduits parallel and perpendicular to the structure. Cables and/or conduits run diagonally to the structure are unacceptable.

CONDUCTORS

All conductors and buss shall be copper.

Provide all feeders and branch circuiting with a separate green equipment ground conductor.
Conductors shall be sized to maintain 2% voltage drop on the feeder section and 3% voltage drop on the branch circuit section. The following guidelines will be used for sizing branch circuit conductors due to voltage drop:

		Maximum Allowed Run Length (FT)				
Volt	Amp	#12	#10	#8	#6	#4
120	2	500	800	1200	2000	3250
	4	250	400	600	1000	1625
	6	175	250	400	650	1100
	8	125	200	325	500	800
	10	100	150	250	400	650
	12	85	125	200	350	550
	14	75	110	175	300	450
	16	65	100	150	250	400
277	2	1100	1800	2750		
	4	550	900	1375		
	6	350	600	950		
	8	275	450	700		
	10	225	350	550		
	12	175	300	475		
	14	150	250	400		
	16	140	225	360		

Note: For general use receptacles a load of 16A is to be assumed on the furthest device from the panel.

WIRING DEVICES

Provide no more than (6) duplex receptacles on one 20A/1-Pole branch circuit. Receptacles at restroom counters will be limited to a maximum of (2) per 20A/1-Pole circuit.

In all Offices, Reception, Lobby, Conference, Break and Copy rooms, at least one occupancy sensor controlled receptacle is required to be installed within 6 feet of an uncontrolled receptacle. Provide a double duplex receptacle at each desired receptacle location. One of the duplex receptacles will be controlled, and one duplex receptacle will be a standard uncontrolled receptacle. Provide an additional control module that is connected to the lighting control system in the area for the controlled receptacle. The controlled receptacle shall have a permanent marking to differentiate it from a standard receptacle.

Provide one double duplex receptacle per each communications outlet location including those equipped with cable and jacks, or conduits and boxes placed for future.

Provide 120V and 208V outlets as required for each space. All necessary power to audio visual equipment computers will be provided based on the power requirements of the equipment and will be provided through an isolated ground power system.

Provide a 120V, 20 Amp, GFCI receptacle in a “weatherproof-while-in-use” enclosure near each entry/exit to the facility. Provide 20A, 120V GFI duplex receptacles in “weatherproof-while-in-use” enclosures adjacent to the seating benches in all courtyard areas. These are to be utilized for laptop computer connections.

All circuits for audio visual equipment loads will be provided with dedicated neutrals. No sharing of neutrals will be permitted.

MECHANICAL & PLUMBING CONNECTIONS

Connections will be made for all mechanical equipment. All motors 1/2 HP and larger will be wired for 480V, 3-Phase power where available or 208V, 3-Phase where not. Motors less than 1/2 HP will be wired for 120V, 1-Phase power.

All wiring below 120V will be considered as part of other trades such as mechanical systems.

Review the Mechanical Criteria for HVAC systems.

All motor starters will have integral solid-state relays.

MDF/IDF ROOM ELECTRICAL REQUIREMENTS

The MDF/IDF Rooms will be equipped to provide adequate electrical power.

Where MDF or IDF rooms are required, provide the following: a dedicated 60 Amp, 208/120 volt, 3 phase, 4 wire electrical panel. The MDF will be provided with a minimum of (2) ceiling mounted 208 Volt, 1 phase, 30 amp receptacles located above the racks. Provide additional receptacles as needed if more than two racks are provided. Provide a minimum of (1) dedicated 120V, 20 Amp receptacle on each wall.

Provide separate duplex 120V AC convenience outlets (NEMA 5-20R) for tools, test sets, etc., located at least 18 in. above the finished floor, placed at approximately 6 ft. intervals around perimeter walls and identified and marked as such. All outlets must be on non-switched circuits.

Each MDF or IDF will be provided with Ground Bus Bars

mounted at 15" above finished floor. Grounding will be done per EIA/TIA 607.

LIGHTING

Luminaires and systems will be selected to accentuate the area architecture as well as for efficiency, durability, and maintenance ease. Indoor lighting will be tailored to building's needs and theme.

The illumination levels will conform to the latest edition of Illuminating Engineering Society (IES) Guidelines and user requirements.

The lighting power densities will exceed current requirements California Energy Code, Title 24, Part 6 where applicable.

Correlated Color Temperature (CCT) of luminaire shall be uniform throughout the area. Color Rendering Index (CRI) shall be no less than 80.

All spaces will be illuminated with efficient luminaires (a minimum efficiency of 85%) equipped with efficient lamps and dimming drivers.

LED luminaires with dimming drivers may be considered to meet efficiencies requirement. All LED luminaires must be presented to the Owner with full documentation of fixture construction, lamp life, actual installation locations, maintenance, and warranties for approval.

LIGHT FIXTURE LAYOUT BY SPACE	
SPACE	**FIXTURE TYPE DESCRIPTIONS**
Public Spaces	• Recessed, dimmable LED downlights for general lighting. • Recessed, dimmable LED accent lights for art wall illumination • Recessed, linear LED perimeter wall washer for vertical illuminance and to highlight wall surfaces. • Decorative LED pendant fixtures over reception and grand lobby spaces.
Offices	• Pendant mounted, direct/indirect linear LED dimmable fixtures or recessed direct/indirect LED fixture dependant on ceiling height.
Classrooms	• Pendant mounted, direct/indirect linear LED dimmable fixtures or recessed direct/indirect LED fixture dependant on ceiling height.

LIGHT FIXTURE LAYOUT BY SPACE	
SPACE	**FIXTURE TYPE DESCRIPTIONS**
Conference Rooms	• Recessed, dimmable LED downlights for general lighting. • Recessed, linear LED perimeter wall washer for vertical illuminance and to highlight wall surfaces.
Auditoriums	• Recessed, dimmable LED downlights for general lighting. • Recessed, linear LED perimeter wall washer for vertical illuminance and to highlight wall surfaces.
Corridor	• Recessed, dimmable LED downlights for general lighting.
Service Rooms	• Industrial LED strip lights.

Lighting Levels:

SPACE	LIGHTING LEVEL
Main Lobby	15-20 FC (200~300Lux)
Offices	50 FC (300Lux)
Meeting / Conference Rooms	50 FC (500Lux)
Restrooms	20 FC (200 Lux)
Storage	20 FC (300 Lux)
Corridor	15 FC (150 Lux)
Lobby	20 FC (200 Lux)
Service Rooms	30 FC (300 Lux)

LIGHTING CONTROLS

In renovated and new construction areas, the lighting control system shall be Lutron for both interior and exterior lighting. All lighting controls to be compliant with CA Green Code, Tier 2, and Title 24 Energy Code requirements.

Interior lighting control devices shall include digitally-addressable photo-sensors for daylighting control, digitally-addressable wall switches, and digitally-addressable

occupancy and vacancy sensors as required. Wall switches shall be labeled describing its use for ease of user interface. All lighting control devices shall be individually addressable and shall communicate with and be controlled by the centralized system.

Exterior lighting controls shall include motion sensors, photo-sensors, and programmable time schedules.

Fixtures in area of egress, both indoors and outdoors, shall have UL924 rated devices as required to provide 100% light output override upon loss of normal power.

New construction lighting control system shall be an integral part of the building automation system (BAS). All lighting control panels shall reside on the BAS communication network. The lighting control system shall be Lutron for both interior and exterior fixtures.

Emergency egress lighting and illuminated exit signs will be provided with unswitched branch circuits fed from the centralized lighting inverter.

SPACE	CONTROL
Private Offices <250SF	Dual technology ceiling mounted occupancy sensors with local override dimmers. Sensors will be set to vacancy mode and will be programmed to manual on via wall station control and automatic full off after 20 minutes of unoccupied space. Within daylight zone provide automatic continuous dimming via photocell controller. Provide four (4) button switch station with on, off, and up and down dimming buttons.
Meeting / Conference Rooms	Dual technology ceiling mounted occupancy sensors with local override dimmers or wall mounted multifunctional control stations. Sensors will be set to vacancy mode and will be programmed to manual on via wall station control and automatic full off after 20 minutes of unoccupied space. Within daylight zone provide automatic continuous dimming via photocell controller.
Restrooms	Dual technology ceiling mounted occupancy sensors with keyed override dimmers. Sensors shall automatically turn the lights off after 15 minutes maximum.
Corridor/Lobby	Dual technology ceiling mounted

SPACE	CONTROL
	occupancy sensors with local override dimmers. Sensors will be programmed to reduce 50% output automatically when the area is vacated. After hours mode will be programmed to begin at specific timed as per client requirement. Within daylight zones provide automatic continuous dimming via photocell controller.
Storage / Utility Spaces <100SF	Wall mounted infrared occupancy sensor with integral override switch. Sensor to be programmed to 0% output automatic and 100% manual.
Storage / Utility Spaces >100SF	Dual technology ceiling mounted occupancy sensors with local override dimmers. Sensor to be programmed to 0% output automatic and 100% manual.
Task Lights	Luminaire to be fed from circuits controlled by the lighting control system so they turn off after space is vacated.
Open Office >250SF	Preprogrammed lighting control scenes via lighting control system with local 2-hour by-pass scene selection via wall keypad. Local dimmers with control zoning in compliance with minimum Title 24 requirements. Within daylight zone provide automatic continuous dimming via photocell controller. Task lighting shall be provided to allow individual users to have control of their personal light levels.
Classrooms	Dual technology ceiling mounted occupancy sensors with local override dimmers or wall mounted multifunctional control stations. Sensors will be programmed to 0% output automatic and 100% as manual. Within daylight zone provide automatic continuous dimming via photocell controller.
Exterior light fixtures	Daylighting controls: • Automatic continuous dimming via photocell controller. Additional Controls:

SPACE	CONTROL
	• After-hours mode will be programmed to begin at specific time, as per client requirement. • Motion sensors and time clock control in compliance with Title-24 minimum without compromising required light level. All luminaires are set at 20% lumen output during after-hours mode, except fixtures should be designed to minimize lighting emissions for Cal Green compliance. All lights should be full cut off, and energy efficient design.
Electrical/MDF/IDF Rooms	Provide manual line voltage switch.
Stairs	Dual tech occupancy sensors with automatic dimming shall be provided in stairs. Unoccupied statis shall dim lighting down to code minimum. Occupied status shall light stairwells to full on.

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Civil Design Narrative

The project site to be developed is located on the California State University, Channel Islands (CSUCI) campus in southern Ventura County at the eastern edge of the Oxnard Plain and at the western flank of the Santa Monica Mountains.

The California State University, Channel Island's (CSUCI) Gateway project consists of renovating existing buildings and adding new buildings to the North side of the campus.

Codes & Standards

The project shall comply with applicable sections of national, state and local codes, laws, ordinances, rules and regulations of authorities having jurisdiction, including:

1. The California Building Code
2. California Green Building Code (CalGreen)
3. The California Environmental Quality Act
4. Requirements of the Regional Water Quality Control Board
5. State/local health departments
6. Americans with Disabilities Act (ADA), Title II, ADAAG
7. State of California Fire Code, current edition
8. CSU Energy & Utility Systems Requirements
9. CSU Program for Environmental Responsibility
10. The California State University Office of the Chancellor - Access Compliance Design Guideline
11. CSU Guidance Document Post Construction BMPs Municipal Separate Storm Sewer Systems (MS4s) Phase II Permit
12. State of California Fire Code, current edition
13. Standard Specifications for Public Works Construction (SSPWC)
14. National Fire Protection Association (NFPA), current edition
15. American Water Works Association (AWWA)
16. Uniform Plumbing Code, current edition
17. National Sanitation Foundation (NSF)
18. CSU Telecommunications Infrastructure Planning Guidelines
19. CSU Computer Aided Design Standards
20. CSU Channel Islands Master Plan Documents

Civil Design Considerations

Site Demolition

Demolition activities will include selective demolition of the existing building. Existing utilities in conflict with the proposed Gateway Hall shall be relocated and/or demolished, as needed. These utilities include sanitary sewer, storm drain, heating hot water, irrigation, gas, electrical, telecommunications, and domestic water. Demolition activities shall be phased and coordinated with the university as to minimize impacts to existing facilities.

Storm Water Pollution Prevention Plan (SWPPP) And MS4 Phase II Code Analysis

CSUCI is considered to be a Non-Traditional municipal separate storm sewer systems (MS4) permittee, which would need to comply with the State of California National Pollutant Discharge Elimination System (NPDES) Permit requirements as noted in Order No 2013-0001-DWQ. When one acre or more is disturbed, a Stormwater Pollution Prevention Plan (SWPPP) is required to be filed and approved by the State of California. At this planning stage, it is anticipated that more than one acre will be disturbed, so a SWPPP is required for the proposed project. The SWPPP is a document that outlines how a construction project will minimize stormwater pollution rising from construction activities. Construction sites are a well-known source of sediment and other pollutants which can cause significant harm to rivers, lakes, coastal waters, and flood control facilities. The SWPPP describes the contractor's activity to prevent pollution for the specific project. The SWPPP document should be kept on the construction site and updated frequently to reflect changes at the site. The SWPPP regulations are noted below:

1. Projects will be categorized into risk levels 1 to 3 based upon anticipated sediment load and the receiving water. Higher risk levels will have greater impacts on construction best management practices (BMPs), including but not limited to, site discharge monitoring and reporting and/or receiving water monitoring and reporting.

2. Project registration documents (PRD) including the Site Map and SWPPP Manual will be submitted to the SWRCB for review and approval. Under the previous permit, only the Notice of Intent (NOI) and Notice of Termination (NOT) were filed with the State.

3. In the state of California, SWPPPs are required to be prepared by a Qualified SWPPP Developer (QSD) and implemented by a Qualified SWPPP Practitioner (QSP).

4. The landowner will function as the Legally Responsible Person (LRP).

Storm Water Pollution Prevention Plan (SWPPP) And MS4 Phase II Code Analysis Continued

5. Under the Construction General Permit, dischargers are also required to replicate the pre-project runoff water balance (defined as the amount of rainfall that ends up as runoff) for the smallest storms up to the 85th percentile storm event, or the smallest storm event that generates runoff, whichever is larger. The permit emphasizes runoff reduction through on-site storm water reuse, interception, evapotranspiration and infiltration through non-structural controls and conservation design measures (e.g. downspout disconnection, soil quality preservation/enhancement, interceptor trees etc.).

In addition, CSUCI requires a Low Impact Design (LID) Plan for projects that result in the creation, addition, or replacement of at least 5,000 square feet or more of impervious surface area. Phase II of the MS4 Permit provides a list of new development and redevelopment projects and/or activities requiring the incorporation of Best Management Practices (BMPs) into the project plans. LID should be taken into consideration early in the design due to schedule and cost impact.

Per Section E.12.e of the Phase II General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s), in conjunction with, "CSU Guidance Document for Phase II of the MS4s", the permit allows four specific numeric sizing criteria for projects that create or replace 5,000 square feet or more of impervious surface. They are as follows:

1. Volumetric Criteria
    - The maximized capture stormwater volume for the tributary area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87 (1998) pages 175-178 (that is, approximately the 85th percentile 24-hour storm runoff event); or
    - The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology in Section 5 of CASQA's Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.
2. Flow-based Criteria
    - The flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity; or
    - The flow of runoff produced from a rain event equal to at least 2 times the 85th percentile hourly rainfall intensity as determined from local rainfall records.

Due to the overall disturbed area, the project is expected to require LID treatment. The proposed LID treatment system will likely include biofiltration planters. Stormwater infiltration and permeable pavers may be considered as an alternative or to supplement the Biofiltration Planters as a LID treatment method if percolation test results from the Geotechnical Engineer permit infiltration in the site. The proposed LID BMP stormwater treatment will be sized to included required volume from the future Theater.

Grading/Drainage and Accessibility

Based on site exploration and record document research, the elevations of the overall site tend to decrease in the north direction along Camarillo Street, in the west direction along Santa Barbara Avenue, and in the south direction along Ventura Street. It appears that the localized low point is an existing grate drain that is located near the centerline of Ventura Street, just North of Napa Hall. It appears that the localized high point is located near the intersection of Camarillo Street and Rincon Drive, northeast of the Smith Decision Center. Courtyards enclosed by building wings generally tend to grade from east to west. Elevations throughout the project site range from approximately 65 to 40 feet above mean sea level. At the northeast corner of the site, there is an eight-foot change in grade which may make ADA accessibility a challenge.

Per the Vision Plan, the campus was previously located in the flood zone prior to the creation of the flood control channel north of Santa Barbara Avenue. Per the FEMA flood zone map, CSUCI is located adjacent to a flood zone, thus the finish floor elevations of the existing Gateway building were elevated to mitigate any flooding that may have previously occurred. It is anticipated that the proposed finish floor for the new building will match the existing finish floor elevation of the existing buildings to be renovated.

Proposed grading design will attempt to minimize earthwork while providing adequate drainage for new facilities and accessible paths throughout the site. Additionally, grading will be designed such that any surface storm water flows away from the buildings to be collected by a variety of inlets before being introduced into the storm drain system. Design slopes for the accessible paths will follow the “CSU Access Compliance Design Guidelines”.

-	Ramps:	Design (to max)	7.1%
-	Cross Slopes:	Design (to max)	1.5%
-	Apron Side Slopes:	Design (to max)	8.33%
-	Building Entry:	Design (to max)	level and clear

Storm Drain

The site has an existing storm drain network which consists of a series of catch basins and three storm drain lines running parallel to the centerlines of Santa Barbara Street, Camarillo Street, and Ventura Street. Based on site utility maps, there appears to be

a storm drain line running parallel to and south of Santa Barbara Avenue. Additionally, there appears to be a storm drain line running parallel to Santa Barbara Avenue, located south of the project site and north of the North Quad. The existing storm drain network for the campus is a gravity flow system flowing primarily to the west.

The existing building downspouts and proposed roof downspouts will be disconnected and discharge via surface runoff into proposed nearby catch basins and discharge into the LID BMP stormwater system. Similarly, in the proposed condition, storm water run-off will be conveyed via underground pipes, catch basins, area drains, or other forms of drain inlets (i.e. planter area drain, catch basins, etc.) and discharged into the LID BMP storm water treatment system prior to discharging into a campus storm drain line. A stub out will be provided for the future Theater drainage to tie into the same LID BMP stormwater system.

Drainage structures and piping systems shall be designed to transport a minimum flow velocity of 3 feet per second, based upon the 25-year storm event. Landscape and sidewalks adjacent to the building will be graded away from the building to prevent water from gathering next to the building walls.

Sanitary Sewer

Based on site utility maps, there appears to be an 8” sanitary sewer line running parallel to and north of Santa Barbara Avenue. Additionally, there appears to be an 8” sanitary sewer line running parallel to Santa Barbara Avenue, located south of the project site and north of the North Quad.

The proposed sanitary sewer system will include at least one connection to the campus sanitary sewer line north of Santa Barbara Avenue. The proposed sewer lateral will be designed for the Gateway Hall and the future theater sewer generation. The proposed sanitary sewer lines shall be designed to maintain a minimum scouring velocity of 3-feet/sec with a minimum size of 6”. Proposed sanitary sewer connections to the CSUCI campus sanitary sewer main will be coordinated with CSUCI facility staff and the project plumbing engineer.

Water System

Based on record drawings, there appears to be a 6” water line running east-west, located on the north edge of the North Quad, just south of the proposed project site. Additionally, there appears to be a water line running parallel to the centerline of Santa Barbara Avenue with laterals that connect to existing fire hydrants throughout the site. CSUCI water network appears to be a combined domestic and fire water system.

The proposed points of connections for domestic and fire water will likely be made to the water line running parallel to Santa Barbra Ave. Water submeter, backflow preventer device, post indicator

valve, and fire department connection will be provided for water laterals servicing the new buildings. Proposed domestic and fire water connection and appurtenances to the CSUCI campus water main will be coordinated with CSUCI facility staff, the project fire consultant, and the state Fire Marshal. A current fire flow test, no more than 6 months, will be required to confirm water pressure within the project vicinity and for submittal to State Fire Marshal review.

Fire Access and Hydrants

There are four existing campus fire hydrants located along the southern edge of Santa Barbara Ave, four along the eastern edge of Ventura Street, and three along the western edge of Camarillo Street. It is anticipated that these existing fire hydrants can be used to serve portions of the new buildings. Possible need for additional fire hydrants and other fire appurtenances will be determined through review and discussions with the Fire Marshal.

It appears that there is a fire access lane connecting Ventura Street, the North Quad, and Camarillo Street. This lane appears to be located south of the Solano Hall and north of the Grand Salon. Proposed fire access for the project site is governed by existing and proposed fire hydrant locations. Proposed fire access will be coordinated with CSUCI facility staff, the project fire consultant, and the state Fire Marshal.

Reclaimed Water

Per the Vision Plan, the campus goal is to use at least 95% reclaimed water. Based on the site utilities map, it appears as though the majority of the irrigation lines are reclaimed water, with the exception of two lines along the northern grassy area south of Santa Barbara Avenue. It is likely that the project's irrigation water will be provided from th reclaimed water system.

Other Systems Considered

The design, points of connection, and required capacities for chilled water, hot water, electrical, communications, fuel, oil, natural gas, and other utilities are to be determined by the project MEP consultant. Civil will provide coordination assistance for horizontal and vertical alignment.

Materials

Concrete	Pedestrian concrete, as recommended by the Geotechnical Engineer.
Storm Drain	4" - 21" PVC SDR 35 15"-42" Corrugated HDPE 48" and up Galvanized Corrugated Metal Pipe (CMP)
Sanitary Sewer	PVC SDR 35
Domestic Water Service	3" – 6": ASTM D2241. PVC SCH 40
Fire Water Service	4" – 8": ASTM D2241. PVC AWWA C900 Class 200 DR14
Asphalt Concrete Pavement	C2 AR4000: SSPWC SEC. 203-6. As recommended by the Geotechnical Engineer.

TECHNOLOGY BASIS OF DESIGN

AUDIOVISUAL SYSTEMS

The following is a breakdown of the various audiovisual spaces and their respective technology functionality found within each area. Each space is provisioned to accommodate the deployment of digital based High Definition (HD) technology including, at minimum, widescreen HD format display equipment and basic HD resolution for display devices. All systems will be based on a digital platform that will be provisioned to receive and support materials via HDMI, etc. and will manage protected content such as streamed content from the internet and encrypted web-based or computer presentation materials. All classroom spaces that include multiple primary displays will have the presentation matrixing capability to permit disparate source materials to be shown on the screens to support the instructor in having dual, etc., content elements displayed for the students to reference.

Note that support for Assistive Listening System (ALS) equipment is to be provided in the classroom spaces with amplified audio.
Note that all Audiovisual spaces covered in this document shall be provisioned to accommodate ADA access for student use. All surface mounted equipment shall conform to ADA guidelines for protrusion and shall be under 4” from wall surface. Equipment may be located in niches to minimize protrusion. All hanging Audiovisual equipment shall be no lower than 7’-6” for clearance per ADA guidelines. All wall controls shall be no higher than 48” AFF to the top of the device. All surface controls and inputs located at the instructor desk shall be within accessible reach per ADA guidelines and District Standards.

Small Classroom (Mobile Tablet Arm Chairs & Tables & Chairs)

In order to facilitate instruction in the 36-seat Small Classroom, a media presentation system will be provided comprising of comprising of a total of four ceiling-mounted video projectors casting dual images on the whiteboard surfaces at both the front and rear of the room to facilitate the video display of disparate materials and content as well as standard whiteboard annotation. These displays (two per wall on opposing walls) will support student viewing with a variety of seating layouts.
Ceiling-mounted loudspeakers are provided to reproduce media audio.

A small form factor computer with wireless keyboard, mouse and input interface will be provided in the instructor lectern. Additional input interfaces facilitate connection of portable devices such as laptop computers and to provide convenient control of the audiovisual switcher/controller. A wireless presentation gateway shall be provided for wireless presentations.

Support for hybrid learning shall be included comprising of a USB media hub to interface with the room computer, a room camera and ceiling microphone to capture both the instructor and students.

Primary control of the audiovisual system for the room will be provided via a touch control panel located at the instructor station.
A portable desktop color document camera located in the instructor station shall be included and will connect to the system for image magnification.

A mono RCA output connection for portable RF based assistive listening system shall be provided to accommodate ADA requirements and support all voice and program audio for the space.
Audiovisual equipment shall be housed in an equipment rack within the instructor station and shall house presentation source devices and other audiovisual processing and control equipment.

System Summary

- Digital video projectors
  - WUXGA native resolution (1920 x 1200 pixels)
  - High light output (min. 5,000 ANSI lumens)
- Widescreen matte whiteboard surface
- Ceiling recessed loudspeakers
- Ceiling (or wall) mounted camera for web-conferencing
- Ceiling microphone array
- Small form factor computer
- Wireless presentation gateway
- Document camera
- AV system presentation switcher (controller, switcher, amplifier)
- Input for portable ALS transmitter
- Instructor station with preview monitor
- Auxiliary AV input panel

Large Classroom

In order to facilitate instruction in the 48-seat Large Classroom a media presentation system will be provided comprising of a total of six ceiling-mounted video projectors casting dual images on the whiteboard surfaces at the front and both sides of the room to facilitate the video display of disparate materials and content as well as standard whiteboard annotation. . The other four displays (two per wall on two adjacent walls) will support student viewing with a variety of seating layouts.

Ceiling-mounted loudspeakers are provided to reproduce media audio and also voice-lift to support audibility throughout the larger classroom.

A small form factor computer with wireless keyboard, mouse and input interface will be

provided in the instructor lectern. Additional input interfaces facilitate connection of portable devices such as laptop computers and to provide convenient control of the audiovisual switcher/controller. A wireless presentation gateway shall be provided for wireless presentations.

Support for hybrid learning shall be included comprising of a USB media hub to interface with the room computer, a room camera and ceiling microphones to capture both the instructor and students.

Primary control of the audiovisual system for the room will be provided via a touch control panel located at the instructor station.

A portable desktop color document camera located in the instructor station shall be included and will connect to the system for image magnification.

A fixed RF based assistive listening system shall be provided to accommodate ADA requirements and support all voice and program audio for the space.

Audiovisual equipment shall be housed in an equipment rack within the instructor station and shall house presentation source devices and other audiovisual processing and control equipment.

System Summary

- Digital video projectors
  - WUXGA native resolution (1920 x 1200 pixels)
  - High light output (min. 6,000 ANSI lumens)
- Widescreen matte whiteboard surface
- Ceiling recessed loudspeakers
- Ceiling (or wall) mounted camera for web-conferencing
- Wireless instructor microphone
- Ceiling microphone array
- Small form factor computer
- Wireless presentation gateway
- Document camera
- AV system presentation switcher (controller, switcher, amplifier)
- Assistive Listening System transmitter and RF receiver units
- Instructor station with preview monitor
- Auxiliary AV input panel

75-Seat Classroom

In order to facilitate instruction in the 75-Seat Classroom a media presentation system will be provided comprising of two ceiling-mounted video projectors and ceiling recessed projection screens in the front and one additional ceiling-mounted video projector casting images on whiteboard surfaces on the adjacent wall to facilitate the video display of disparate materials and content as well as standard whiteboard annotation.

Ceiling-mounted loudspeakers are provided to reproduce media audio and also voice-lift to support audibility throughout the larger classroom along with a wireless handheld & lapel microphone.

A small form factor computer with wireless keyboard, mouse and input interface will be provided in the instructor lectern. Additional input interfaces facilitate connection of portable devices such as laptop computers and to provide convenient control of the audiovisual switcher/controller. A wireless presentation gateway shall be provided for wireless presentations.

Support for hybrid learning shall be included comprising of a USB media hub to interface with the room computer, a room camera and ceiling microphones to capture both the instructor and students.

Primary control of the audiovisual system for the room will be provided via a touch control panel located at the instructor station.
A portable desktop color document camera located in the instructor station shall be included and will connect to the system for image magnification.

A fixed RF based assistive listening system shall be provided to accommodate ADA requirements and support all voice and program audio for the space.

Audiovisual equipment shall be housed in an equipment rack within the instructor station and shall house presentation source devices and other audiovisual processing and control equipment.

System Summary

- Digital video projectors
  - WUXGA native resolution (1920 x 1200 pixels)
  - High light output (min. 7,500 ANSI lumens)
- Ceiling recessed projection screens
- Widescreen matte whiteboard surface
- Ceiling recessed loudspeakers
- Ceiling (or wall) mounted camera for web-conferencing
- Wireless instructor microphone

- Ceiling microphone arrays
- Small form factor computer
- Wireless presentation gateway
- Document camera
- AV system presentation switcher (controller, switcher, amplifier)
- Assistive Listening System transmitter and RF receiver units
- Instructor station with preview monitor
- Auxiliary AV input panel

36-Seat Active Learning Classroom

In order to facilitate instruction in the 36-Seat Active Learning Classroom a media presentation system will be provided comprising of two ceiling-mounted video projectors casting images on a whiteboard surface at the front of the room to facilitate the video display of disparate materials and content as well as standard whiteboard. These displays (on opposing walls) will support student viewing with a variety of seating layouts. Also included shall be nine wall mounted flat panel monitors to support student team stations around the room and provide options for future digital content annotation. The individual team stations shall have the ability to have their content routed and shared with the other stations as well as with the main instructor's displays and the main presentation content can be pushed to the individual team stations to supplement the instructor presented materials.

Ceiling-mounted loudspeakers are provided to reproduce media audio and also voice-lift to support audibility throughout the larger classroom.

A small form factor computer with wireless keyboard, mouse and input interface will be provided in the instructor lectern. Additional input interfaces facilitate connection of portable devices such as laptop computers and to provide convenient control of the audiovisual switcher/controller. A wireless presentation gateway shall be provided for wireless presentations.

Support for hybrid learning shall be included comprising of a USB media hub to interface with the room computer, room cameras and ceiling microphones to capture both the instructor and students.

Primary control of the audiovisual system for the room will be provided via a touch control panel located at the instructor station.

A portable desktop color document camera located in the instructor station shall be included and will connect to the system for image magnification.

A mono RCA output connection for portable RF based assistive listening system shall be provided to accommodate ADA requirements and support all voice and program audio for the space.

Audiovisual equipment shall be housed in a large free-standing equipment rack within the room and shall house presentation source devices and other audiovisual processing and control equipment.

System Summary

- Digital video projectors
  - WUXGA native resolution (1920 x 1200 pixels)
  - High light output (min. 6,000 ANSI lumens)
- Widescreen matte whiteboard surfaces
- Wall monitors for team stations
- Ceiling recessed loudspeakers
- Ceiling (or wall) mounted cameras for web-conferencing
- Wireless instructor microphone
- Ceiling microphone arrays
- Small form factor computer
- Wireless presentation gateway
- Document camera
- AV system presentation equipment including video matrix switcher, audio processor, controller, audio amplifier
- Input for portable ALS transmitter
- Instructor station with preview monitor
- Auxiliary AV input panel

Math Lab 1

In order to facilitate instruction in Math Lab #1, a media presentation system will be provided comprising of two ceiling-mounted video projectors casting images on a whiteboard surface at the front and one ceiling projector casting images to a projection screen at the rear of the room to facilitate the video display of disparate materials and content on opposing walls as well as standard whiteboard annotation. Also included shall be six wall mounted flat panel monitors to support student team stations around the room (three per side) and provide options for future digital content annotation. The individual team stations shall have the ability to have their content routed and shared with the other stations as well as with the main instructor's displays and the main presentation content can be pushed to the individual team stations to supplement the instructor presented materials. Ceiling-mounted loudspeakers are provided to reproduce media audio.

A small form factor computer with wireless keyboard, mouse and input interface will be provided in the instructor lectern. Additional input interfaces facilitate connection of portable devices such as laptop computers and to provide convenient control of the audiovisual switcher/controller. A wireless presentation gateway shall be provided for wireless presentations.

Support for hybrid learning within the lab spaces shall be included comprising of a USB media hub to interface with the room computer, room cameras and ceiling microphones to capture both the instructor and students.

Primary control of the audiovisual system for the room will be provided via a touch control panel located on the instructor station.
A portable desktop color document camera located in the instructor station shall be included and will connect to the system for image magnification.

A mono RCA output connection for portable RF based assistive listening system shall be provided to accommodate ADA requirements and support all voice and program audio for the space.
Audiovisual equipment shall be housed in a free-standing equipment rack within the room and shall house presentation source devices and other audiovisual processing and control equipment.

System Summary

- Digital video projectors
  - WUXGA native resolution (1920 x 1200 pixels)
  - High light output (min. 5,000 ANSI lumens)
- Widescreen matte whiteboard surface
- Projection Screen
- Ceiling recessed loudspeakers
- Ceiling (or wall) mounted camera for web-conferencing
- Ceiling microphone array
- Small form factor computer
- Wireless presentation gateway
- Document camera
- AV system presentation switcher (controller, switcher, amplifier)
- Input for portable ALS transmitter
- Instructor station with preview monitor
- Auxiliary AV input panel

Math Lab 2

In order to facilitate instruction in Math Lab #2, a media presentation system will be provided comprising of two ceiling-mounted video projectors casting images on a whiteboard surface at the front and one ceiling-mounted video projector casing images on a projection screen at rear of the room to facilitate the video display of disparate materials and content on opposing walls as well as standard whiteboard annotation. Also included shall be six wall mounted flat panel monitors to support student team stations around the room (three per side) and provide options for future digital content annotation.

The individual team stations shall have the ability to have their content routed and shared with the other stations as well as with the main instructor's displays and the main presentation content can be pushed to the individual team stations to supplement the instructor presented materials. Each team station has a camera and microphone at the display that can be used to capture and record collaboration sessions to the cloud or local instructional PC locally supporting each team cluster.

Ceiling-mounted loudspeakers are provided to reproduce media audio.

A small form factor computer with wireless keyboard, mouse and input interface will be provided in the instructor lectern. Each team station shall be outfitted with a local ultra small form factor PC mounted behind the display at each location. Additional input interfaces facilitate connection of portable devices such as laptop computers and to provide convenient control of the audiovisual switcher/controller. A wireless presentation gateway shall be provided for wireless presentations.

Support for hybrid learning within the lab spaces shall be included comprising of a USB media hub to interface with the room computer, room cameras and ceiling microphones to capture both the instructor and students. Each team station shall have local capture capability to record and interface back with the main room system. A separate yet parallel recording appliance will be included to support recording of activities within the Math Lab for research and analytic purposes. The intent on capturing not only the students at their stations but also the whiteboarding occurring during team collaboration.

Primary control of the audiovisual system for the room will be provided via a touch control panel located on the instructor station.
A portable desktop color document camera located in the instructor station shall be included and will connect to the system for image magnification.

A mono RCA output connection for portable RF based assistive listening system shall be provided to accommodate ADA requirements and support all voice and program audio for the space.
Audiovisual equipment shall be housed in a free-standing equipment rack within the room and shall house presentation source devices and other audiovisual processing and control equipment.

System Summary

- Digital video projectors
  - WUXGA native resolution (1920 x 1200 pixels)
  - High light output (min. 5,000 ANSI lumens)
- Widescreen matte whiteboard surface
- Projection Screen
- Wall monitors for team stations

- Ceiling recessed loudspeakers
- Ceiling (or wall) mounted cameras for web-conferencing and recording
- Individual team station cameras for recording
- Ceiling microphone array
- Small form factor computer
- Recording appliance
- Wireless presentation gateway
- Document camera
- AV system presentation switcher (controller, switcher, amplifier)
- Input for portable ALS transmitter
- Instructor station with preview monitor
- Auxiliary AV input panel

Mechatronics Lab

In order to facilitate presentations in the Mechatronics Lab, a media presentation system will be provided comprising of a two ceiling-mounted video projector casting images on a whiteboard surface at the front of the room to facilitate the display of materials and content as well as standard whiteboard annotation.
Ceiling-mounted loudspeakers are provided to reproduce media audio.

A small form factor computer with wireless keyboard, mouse and input interface will be provided in the instructor lectern. Additional input interfaces facilitate connection of portable devices such as laptop computers and to provide convenient control of the audiovisual switcher/controller. A wireless presentation gateway shall be provided for wireless presentations.

Primary control of the audiovisual system for the room will be provided via a touch control panel located on the wall.
A portable desktop color document camera located in the instructor station shall be included and will connect to the system for image magnification.

A mono RCA output connection for portable RF based assistive listening system shall be provided to accommodate ADA requirements and support all voice and program audio for the space.
Audiovisual equipment shall be housed in an equipment rack within the room and shall house presentation source devices and other audiovisual processing and control equipment.

System Summary

- Digital video projectors
  - WUXGA native resolution (1920 x 1200 pixels)
  - High light output (min. 5,000 ANSI lumens)

- Widescreen matte whiteboard surface
- Ceiling recessed loudspeakers
- Small form factor computer
- Wireless presentation gateway
- Document camera
- AV system presentation switcher (controller, switcher, amplifier)
- Input for portable ALS transmitter
- Auxiliary AV input panel

Mechatronics / CS Teaching Space

In order to facilitate instruction in the Mechatronics / Computer Science Teaching Space, a media presentation system will be provided comprising of a total of three ceiling-mounted video projectors casting images on the whiteboard surfaces at both the front of the room and on both adjacent side walls to facilitate the video display of disparate materials and content as well as standard whiteboard annotation (one projector each wall).
Ceiling-mounted loudspeakers are provided to reproduce media audio.

A small form factor computer with wireless keyboard, mouse and input interface will be provided in the instructor lectern. Additional input interfaces facilitate connection of portable devices such as laptop computers and to provide convenient control of the audiovisual switcher/controller. A wireless presentation gateway shall be provided for wireless presentations.

Support for Virtual Reality (VR) and Augmented Reality (AR) connected devices shall be provided for including infrastructure for position-sensing cameras in a designated area within the instructional space.

Primary control of the audiovisual system for the room will be provided via a touch control panel located on front wall.

A mono RCA output connection for portable RF based assistive listening system shall be provided to accommodate ADA requirements and support all voice and program audio for the space.
Audiovisual equipment shall be housed in an equipment rack within the instructor station and shall house presentation source devices and other audiovisual processing and control equipment.

System Summary

- Digital video projectors
  - WUXGA native resolution (1920 x 1200 pixels)
  - High light output (min. 5,000 ANSI lumens)
- Widescreen matte whiteboard surface
- Ceiling recessed loudspeakers

- Ceiling (or wall) mounted camera for web-conferencing
- Ceiling microphone array
- Small form factor computer
- Wireless presentation gateway
- AV system presentation switcher (controller, switcher, amplifier)
- Input for portable ALS transmitter
- Instructor station with preview monitor
- Auxiliary AV input panel

Cyber Security Lab

In order to facilitate instruction in the Cyber Security Lab, a media presentation system will be provided comprising of a ceiling-mounted video projector casting images on a whiteboard surface at the front of the room to facilitate the video display of materials and content as well as standard whiteboard annotation.
Ceiling-mounted loudspeakers are provided to reproduce media audio.

A small form factor computer with wireless keyboard, mouse and input interface will be provided in the instructor lectern. Additional input interfaces facilitate connection of portable devices such as laptop computers and to provide convenient control of the audiovisual switcher/controller. A wireless presentation gateway shall be provided for wireless presentations.

Optional support for hybrid learning within the lab spaces shall be included comprising of a USB media hub to interface with the room computer, a room camera and ceiling microphone to capture both the instructor and students.

Primary control of the audiovisual system for the room will be provided via a touch control panel located on the instructor station.
A portable desktop color document camera located in the instructor station shall be included and will connect to the system for image magnification. Provisions for a ceiling-mounted document camera or visualizer shall be included for viewing over the rear presentation table area (to support smart city topographical plan or other larger materials).

A mono RCA output connection for portable RF based assistive listening system shall be provided to accommodate ADA requirements and support all voice and program audio for the space.
Audiovisual equipment shall be housed in an equipment rack within the instructor station and shall house presentation source devices and other audiovisual processing and control equipment.

System Summary

- Digital video projectors
  - WUXGA native resolution (1920 x 1200 pixels)
  - High light output (min. 5,000 ANSI lumens)
- Widescreen matte whiteboard surface
- Ceiling recessed loudspeakers
- Optional ceiling (or wall) mounted camera for web-conferencing
- Optional ceiling microphone array
- Small form factor computer
- Wireless presentation gateway
- Document camera
- Optional ceiling-mounted document camera
- AV system presentation switcher (controller, switcher, amplifier)
- Input for portable ALS transmitter
- Instructor station with preview monitor
- Auxiliary AV input panel

Game Design / Virtual Reality Space

The Game Design / Virtual Reality Space, shall include a media presentation system to support and facilitate presentation and development of content. This shall include a 2 tall by 2 wide display wall of 4 seamless or narrow bezel video monitors to display video materials. Wall mounted speakers shall be included to support a 5.1 surround audio experience for content playback.

A desktop gaming computer with keyboard, mouse and input interface will be provided at each development station. Additional input interfaces facilitate connection of portable or other devices such as laptop and Virtual Reality computers as well as gaming consoles.

Support for Virtual Reality (VR) and Augmented Reality (AR) connected devices shall be provided for including infrastructure for position-sensing cameras in a designated area within the instructional space.

Primary control of the audiovisual system for the room will be provided via a touch control panel located on the wall.

A mono RCA output connection for portable RF based assistive listening system shall be provided to accommodate ADA requirements and support all voice and program audio for the space.

Audiovisual equipment shall be housed in an equipment rack within a separate enclosure and shall house presentation source devices and other audiovisual processing and control equipment.

System Summary

- Four (4) digital video wall monitors
  - 4K resolution+
  - Minimum of 300 NIT brightness
  - Consumer-grade displays
- Wall mounted or recessed loudspeakers and subwoofer
- Desktop computer
- AV system presentation switcher (controller, switcher, amplifier)
- Input for portable ALS transmitter
- Control console with dual monitors
- Auxiliary AV input panel

Extended University Classroom

In order to facilitate instruction in the Extended University Classroom a media presentation system will be provided comprising of two ceiling-mounted video projectors casting images on a whiteboard surface at the front of the room to facilitate the video display of disparate materials and content as well as standard whiteboard annotation. Ceiling-mounted loudspeakers are provided to reproduce media audio.

A small form factor computer with wireless keyboard, mouse and input interface will be provided in the instructor lectern. Additional input interfaces facilitate connection of portable devices such as laptop computers and to provide convenient control of the audiovisual switcher/controller. A wireless presentation gateway shall be provided for wireless presentations.

Support for hybrid learning shall be included comprising of a USB media hub to interface with the room computer, a room camera and ceiling microphone to capture both the instructor and students.

Primary control of the audiovisual system for the room will be provided via a touch control panel located at the instructor station.
A portable desktop color document camera located in the instructor station shall be included and will connect to the system for image magnification.

A fixed RF based assistive listening system shall be provided to accommodate ADA requirements and support all voice and program audio for the space.

Audiovisual equipment shall be housed in an equipment rack within the instructor station and shall house presentation source devices and other audiovisual processing and control equipment.

System Summary

- Digital video projectors
  - WUXGA native resolution (1920 x 1200 pixels)
  - High light output (min. 5,000 ANSI lumens)
- Widescreen matte whiteboard surface
- Ceiling recessed loudspeakers
- Ceiling (or wall) mounted camera for web-conferencing
- Ceiling microphone array
- Small form factor computer

- Wireless presentation gateway
- Document camera
- AV system presentation switcher (controller, switcher, amplifier)
- Assistive Listening System transmitter and RF receiver units
- Instructor station with preview monitor
- Auxiliary AV input panel

Welcome Center Meeting Room

In order to facilitate presentation in the Welcome Center Meeting Room, a media presentation system will be provided comprising of a ceiling-mounted video projector and ceiling recessed projection screen to facilitate video display.
Ceiling-mounted loudspeakers are provided to reproduce media audio and also voice-lift to support audibility throughout the larger space along with a wireless handheld & lapel microphone.

A small form factor computer with wireless keyboard, mouse and input interface will be provided in the equipment rack for the use of playback of orientation materials, etc. Additional input interfaces facilitate connection of portable devices such as laptop computers microphones and to provide convenient control of the audiovisual switcher/controller. A wireless presentation gateway shall be provided for wireless presentations.

Primary control of the audiovisual system for the room will be provided via a wall mounted touch control panel located at the front of the room.

A fixed RF based assistive listening system shall be provided to accommodate ADA requirements and support all voice and program audio for the space.

Audiovisual equipment shall be housed in an equipment rack located in a dedicated closet and shall house presentation source devices and other audiovisual processing and control equipment.

System Summary

- Digital video projector
  - WUXGA native resolution (1920 x 1200 pixels)
  - High light output (min. 7,500 ANSI lumens)
- Ceiling recessed projection screen
- Ceiling recessed loudspeakers
- Wireless instructor microphone
- Small form factor computer
- Wireless presentation gateway
- AV system presentation switcher (controller, switcher, amplifier)
- Assistive Listening System transmitter and RF receiver units
- Auxiliary AV input panel

Large Conference Room

The Large Conference Room will comprise of a large wall mounted flat panel HD TV as the main video display.
A floor box will be located under the table to accommodate table surface AV input, power and data connections in a flip-up well.
A wall mounted touch-control panel will select the source and control system functions.

A front camera and room microphone system will facilitate web-conferencing through the dedicated room computer.
The system will be equipped with a wireless presentation gateway mounted behind the display.

System Summary

- Large format 1920x1080, 90” display
- Ceiling speakers
- Wall touch control panel
- Wireless presentation gateway
- Ceiling microphone array
- Front wall HD camera
- Media-to-USB converter appliance
- Equipment Rack
- Dedicated computer

Medium Conference Room

The Medium Conference Room will comprise of a large wall mounted flat panel HD TV as the main video display.
A floor box will be located under the table to accommodate table surface AV input, power and data connections in a flip-up well.
A wall mounted touch-control panel will select the source and control

microphone system will facilitate web-conferencing through the dedicated room computer.
The system will be equipped with a wireless presentation gateway mounted behind the display.
System Summary

- Large format 1920x1080, 75”-85” display
- Ceiling speakers
- Wall touch control panel
- Wireless presentation gateway
- Table (or ceiling) microphone
- Front wall HD camera
- Media-to-USB converter appliance
- Equipment Rack
- Dedicated computer

Small and Extra Small Conference Rooms

The Small Conference Rooms will comprise of a wall mounted flat panel HD TV as the main video display.
A floor box will be located under the table to accommodate table surface AV input, power and data connections in a flip-up well.
A wall mounted touch-control panel will select the source and control system functions.
A front camera and room microphone system will facilitate web-conferencing through the dedicated room computer.
The system will be equipped with a wireless presentation gateway mounted behind the display.

System Summary

- Medium format 1920x1080, 65-75” display
- Ceiling speakers (or display speakers)
- Wall touch control panel
- Wireless presentation gateway
- Table (or ceiling) microphone
- Front wall HD camera
- Media-to-USB converter appliance
- Equipment Rack
- Dedicated computer

system functions.
A front camera and room

Collaboration Areas

These areas shall comprise of a wall mounted flat panel HD TV as the main video display.

System Summary

- Small-medium format 1920x1080, 55”-65” display
- Wireless presentation gateway

Room Scheduling & Signage System

Each instructional space (classrooms and labs) and conference or meeting space include shall include support for a 10” landscape monitor (non-interactive) that is used for the display of room information and availability status via side red/green indicator lights. The monitor will be connected via the data network connection at operator height.

The system will tie back into the CSUCI Microsoft Exchange ™ system for calendar linking and room booking.

Digital Signage

These areas shall comprise of a wall mounted flat panel HD TV as the main video display.

The digital signage source will activate the display during normal building hours. A digital signage appliance will be located behind the display for program or department content playback.

System Summary

- Flat panel display, 1920x1080 resolution, sized for the viewing area
- Networked digital Signage appliance

Remote Network Management Software

Remote network management system software is required to control, manage and support all attached AV control systems and their related networked AV peripheral devices. This will tie into any University building management systems that may be required.
This system can be configured to monitor and manage (but not limited to):

- System or individual peripheral status including power on/off state, network status (disconnected)
- Projector total operating. Must be configured to notify by email the appropriate CSUCI staff or service technician when to clean any projector filters (if required).
- System or peripheral temperature. An email notification will also be sent to the appropriate Campus staff or service technician when critical limits are triggered.

- Archival server capacity status (if applicable).
- Room scheduling and helpdesk support.
- Projector or device operating / usage hours (for service tracking)
- Online status. If a device included within the AV system is taken offline (disconnected from the system or network), a notification will be issued to the appropriate Campus staff to verify that a theft has not taken place.
- Other key elements included within each room that are tied to the AV system and can be controlled or monitored.

Equipment Standards

For consistency purposes, the building project will match (based on specific room requirements) the campus standards for manufacturers for all equipment in order to maintain a level of consistency in stocking of consumables (e.g. lamps-if applicable, filters, etc.) and spare units. This may be changed based on specific programmatic requirements for special room features such as display brightness and distance education / recording.

Control Equipment

For consistency purposes, the building project will match (based on specific room requirements) the campus standards for all AV control systems and user control panels and devices. The current campus standard is Extron flip-up 7" control panels for the typical classroom spaces and a larger desktop touch control screen (10"-15") in larger spaces requiring more functionality. Extron flip-up 4" control panels shall be used in conference and meeting spaces. The systems will tie into the existing Extron Global Viewer Enterprise™ remote control network-based application that has previously been deployed on the campus to support the central AV/IT helpdesk in servicing the staff support requests.

AV Switching, Matrixing and Interfacing Equipment

For consistency purposes, the building project will match (based on specific room requirements) the campus standards for all video and high-resolution graphics matrixing and switching equipment. The standard for all user interfacing and processing equipment will be Extron with a touch control panel configured for a standard "look and feel" to operate the spaces.

All base signal switching equipment will accommodate a digital platform utilizing a single shielded CAT6 cable and will bring in al analog and digital signals into a common platform. A scaling receiver will be used at display devices to accommodate disparate signal resolutions to match each display parameters for all images show properly.

Projection Equipment

CSUCI has standardized on using Panasonic for all projection equipment to maintain a level of consistency. All projectors shall use laser light engines with 20,000 hours of "lamp" life and operation. The minimum brightness for projectors for the campus will be 5,000 ANSI lumens for typical classroom and lab projectors working in concert with light control shades to help minimize projector screen image washout but will use higher lumen projectors (6,500+) as required based on room photometrics and screen size. A base native resolution of 1920 x 1200 (WUXGA) will be used. Projectors shall have both Ethernet and serial RS232 ports for control.

Da-lite ceiling-mounted and ceiling recessed projection screens shall be used. All screens shall be be motorized type with a quiet motor with wall switch and parallel low voltage control in the rack for AV

system operation. Any screens larger than 200" diagonal shall be tab-tensioned while all screens under 200" diagonal shall not have tab-tensioning.

Wireless Presentation / Portable Device Mirroring

CSUCI has standardized on using Extron ShareLink to support device mirroring and content sharing for iOS, Android, MAC OS, and Windows platforms. This will be connected to the Ethernet network.

Assistive Listening System (ALS) Equipment

All classrooms and AV spaces with occupancy levels of 50 seats or greater shall include fixed RF (72 MHz) ALS transmitters as well as portable RF receivers (no less than 2) to accommodate 4% of the occupancy level. All AV enabled spaces under 50 seat occupancy (including all conference and meeting rooms) will be outfitted with a monaural RCA output to accommodate the connection of a portable ALS kit that can be checked out as needed. A minimum of one portable kit per floor shall be allocated unless directed otherwise by CSUCI. All AV enabled spaces shall be outfitted with proper ALS signage. Note: All signs must conform to campus signage standards.

Audio Support

In larger spaces, Extron Digital Audio Signal Processors (DSP) with Dante™ capability shall be used to better accommodate multiple microphones and speaker zones for digital audio signal processing and audio matrixing as well as Shure ULX-D wireless microphones and extension antenna(s) as required for signal distribution.

Shure multi-element microphone array ceiling units shall also be used for room voice capture.

Room Scheduling System

Extron room 7” and 10” (depending on type of space) scheduling panels deployed outside of each main audiovisual and conference space.

This system shall be connected to the data network via PoE cabling and mounted at +42” for ADA compatibility for easy height access. The system shall be interfaced to the existing Microsoft Exchange™ system for schedule and calendar interface.

Web-Conferencing Support

To support web-based conferencing and collaboration, the Extron MediaPort system shall be used to accommodate the conversion of AV signals to a USB format for connection and use with the room’s dedicated PC in larger spaces. In the Medium Meeting Rooms and typical Large Meeting Rooms, table or ceiling microphones shall be used. This unit has built-in audio echo cancellation for use in spaces that do not include audio DSP support.

Logitech Pro HD USB cameras shall be used and connected to the system along with the microphone and program audio in the medium and larger spaces and the Logitech BC9000 series desktop cameras will be used in smaller meeting spaces.

Web collaboration software (WebEx, Skype, Zoom, etc.) shall be installed on the room PC for conferencing and distance education support but may connect via portable laptop PC via USB but shall support other similar competing platforms that may be needed to connect with as well as conference bridging services like BlueJeans.

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PROJECT COSTS 05

Project Cost

At the outset of this Program Verification phase, CSUCI identified a Budgeted Gross Maximum Price (GMP) for the project of $59,210,000. This GMP cost includes: demolition of existing buildings; renovation of existing buildings; new building construction; associated site development, including utilities and site work; procurement / delivery costs; escalation costs; and design and construction contingency. CSUCI directed AC Martin, the design team, to design to 95% of the identified budget, resulting in a Design-To GMP of approximately $51.7 million.

Through the course of this program verification process, the University identified a need for more space than the identified budget could provide. Therefore, the University has committed to increasing the GMP per the following:

- Additional 3 million dollars for additional instructional space, faculty office space, and gathering space
- Additional 5 million dollars for inclusion of Extended University in the project

With these additions, the Gateway Hall Project Budget Gross Maximum Price is now $62,492,000. The directive of designing to 95% of the GMP remains, resulting in a Design-To GMP of $59,367,400.

The design team, including Capital Projects Group (cost estimator), has completed a conceptual cost estimate based on the updated program and program information from this program verification phase. The following is an overall summary of the project GMP costs. The conceptual cost estimate anticipates a GMP of $59,210,000—coming in just under the Design-To GMP of $59,367,400.

For the detailed conceptual cost estimate, see Section 6.0 Appendix.

Overall Summary

	Construction Costs Baseline			Escalate to Future Date		
	Area (GSF)	$/GSF	Total ('000s)	Midpoint	Esc.	Total ('000s)
BUILDING DEMOLITION						
Building Demolition (Existing Buildings Being Torn Down)			544	7/8/2024	13.80%	619
TOTAL BUILDING DEMOLITION			**544**			**619**
RENOVATION						
Renovation	42,500	460.00	19,636	7/8/2024	13.80%	22,345
Site Utilities - Renovation			737	7/8/2024	13.80%	839
TOTAL RENOVATION			**20,373**			**23,184**
NEW CONSTRUCTION						
New Construction - 3 Story	38,445	630.00	24,286	7/8/2024	13.80%	27,637
Site Utilities - New Construction			1,126	7/8/2024	13.80%	1,281
TOTAL NEW CONSTRUCTION			**25,412**			**28,918**
SITE CONSTRUCTION						
Site Development (Total Renovation and New Construction)			5,774	7/8/2024	13.80%	6,571
TOTAL NEW CONSTRUCTION			**5,774**			**6,571**
TOTAL			**52,102**			**59,291**

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APPENDIX 06

- Visioning Session Results
- Room Criteria Discussion Notes
- Conceptual Cost Estimate

WHAT WE HEARD

VISIONING & GOALS

HIGHEST HOPES

Needs for 5-10 years post-construction

Spaces that embrace the "hybrid" environment

Modern labs / flexible spaces / writable surfaces

Faculty offices with daylight / quiet space / privacy

Seminar rooms (student & outside communities)

Address commuter student needs (beyond study space)

Accessibility

Small spaces where students can sit and study

Place where students want to be

Nonacademic amenities (coffee)

Outside classroom

Community engages with the campus for the first time

Prominent "gateway"

Be a physical embodiment of University's core values

Beautiful and recognized

WHAT WE HEARD

VISIONING & GOALS

ONE THING / MOST IMPORTANT

Hybrid-ready

Easy navigation

On time; on budget

Enough space for all staff (plan for next decade)

Collaboration / synergy between various groups

Accessibility

Functional

21st century building

Forward Thinking (Planning for next 20 years)

One Stop Shop

Important campus destination

Anchor for campus

Great working and learning environment

Collaboration / synergy between various groups

Indoor-outdoor connectivity

Natural flow of spaces

Students see themselves as part of their campus

Be a leader that other schools look up to

Both collaboration and quiet spaces

Built to meet the needs of the University

WHAT WE HEARD

VISIONING & GOALS

GREATEST FEARS

Nostalgia for "picturesque" overrides real / desired student experience

Building size reduction won't allow for active learning

Project reinforces nature of 20th century university

Spaces are not located based on functionality

Won't be a forward-thinking / progressive view of students

Lack of privacy / FERPA in staff workplaces

Negative publicity

WHAT WE HEARD

VISIONING & GOALS

ONE WORD

WELCOMING

BELONGING

CONTEXTUAL

COLLABORATIVE

ICONIC

ENERGY

DOABLE

MAGNIFICENT

PRIDE

EXCITING

FUTURE-PROOF

ACCESSIBLE

FLEXIBLE

INNOVATIVE

VISIONARY

ROOM CRITERIA DISCUSSION

GENERAL CLASSROOMS

ELECTRICAL

- Separate lighting zone at projection area/ writable surfaces
- Simple lighting controls / switches (not what's in Del Norte)
- Power:
  - Charging Solution for students
  - Laptop classrooms – more power
  - Requests for 50% of student seats

TECHNOLOGY

- Instructor Content:
  - Dual Content
  - Or on writable surfaces (same as for student use)
- Projection onto writable surfaces around the room for student group work
- Request: Highly virtualized; full-wall displays
  - In a smaller classroom still of interest
  - At least, provide design for it with infrastructure to add a future date

ANY OTHER CONSIDERATIONS

- Cell Phone signal
- FEC (flush / recessed)
- Acoustic treatment
  - Do a lot of tele-programs – better audio qualities
  - Students are most appreciative of recordings (audio & projected materials)

ROOM CRITERIA DISCUSSION

GENERAL CLASSROOMS

CHARACTER

- As much natural light as possible
- Transparency between classrooms and building interior to promote student exposure and engagement
- Low stimulus environment (soothing color, no carpet patterns)?

SURFACES

- Ample writable surfaces around the room

FURNITURE & EQUIPMENT

- Mobile chairs, stacking
- Mobile, nesting tables with locking casters
- Mobile demonstration table with locking casters
- Mobile lectern (seating and standing height)

ACCESSORIES

- Dual-shades at exterior windows) (sun & black-out shades)
- Single privacy shade at interior windows for general shooter / security concern
- Chair rail

ROOM CRITERIA: OUTREACH SPACES

MECHATRONICS FABRICATION LAB

CHARACTER / FINISHES

TECHNOLOGY

FURNITURE & EQUIPMENT

ACCESSORIES

MECHANICAL

- Soldering
- 3d printing
- Laser cutting
- Welding – nice to have

ELECTRICAL

- PCB design – ovens
- power

PLUMBING

- Sink – in fab or adjacent support room
- Safety shower

OTHER CONSIDERATIONS

ROOM CRITERIA: OUTREACH SPACES

MATH LAB

CHARACTER / FINISHES

- Full writable wall surface at “front” of room
- Writable surface at side walls (between displays)

TECHNOLOGY

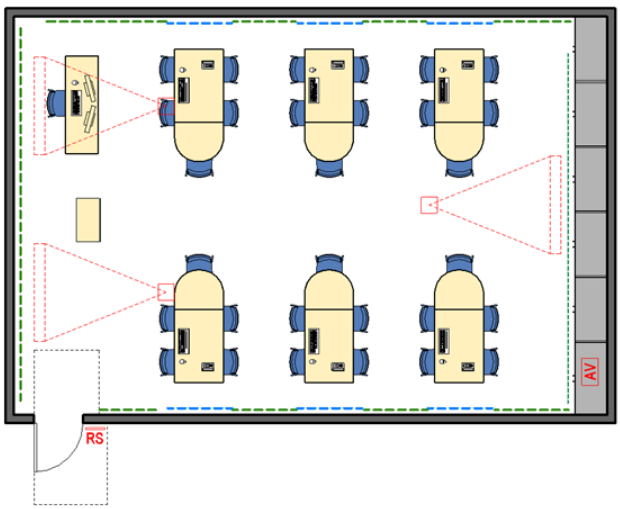
- (2) Short-throw projectors on one wall
- (1) Projection screen on second wall
- Student displays
- Recording / Capture

FURNITURE & EQUIPMENT

- Chairs w/ storage beneath
- Writable table surface

OTHER

- Adequate charging (at floor boxes)



CSU Channel Islands

Gateway Hall

Camarillo, CA

PROGRAM VALIDATION

COST MODEL V4

CPG | THE CAPITAL PROJECTS GROUP

February 11, 2022

PROGRAM VALIDATION COST MODEL V4

CSU Channel Islands
Gateway Hall
Camarillo, CA

AC Martin
Los Angeles, California

CPG | THE CAPITAL PROJECTS GROUP

February 11, 2022

BASIS OF COST MODEL V4

Cost Model V4 Prepared From:	Dated	Received
Program and Feasibility Study Draft Report provided by AC Martin	Ongoing	Ongoing
Discussions with the Project Architect and Engineers		Ongoing

Construction Schedule

Construction Start Date of July 2023

Construction Period of 23 months

Project Delivery

For the purposes of this cost model, the general contract is understood to be CM @ Risk delivery. Should the contract proceed under a traditional design-bid-build project delivery format, the cost model will need to be modified to account for the difference in bid-day costs resulting from the different project delivery approach.

There will not be small business set aside requirements.

The contractor will not be required to pay prevailing wages, but may find that it needs to pay what is effectively a union wage depending on the quality and productivity requirements, or their obligations as signatory to union agreements.

This contract will be an effective sequential tender.

Site Access

The general contractor will have full access to the site during normal business hours.

Pricing and Cost Escalation

This cost model includes unit rates that are based on bid data and therefore include escalation from start date to the point in the construction schedule when each trade's work will be performed. Escalation from the estimate date to the anticipated start of construction is carried as a escalation contingency calculated on the direct costs and design contingency.

Escalation contingency is calculated on a compounding basis according to the following chart:

2022 - 6%
2023 - 5%
2024 - 4.5%
Beyond 2024 - 4%

BUDGET ALLOCATION

	Budget Category	Const. Budget	Proj. Budget	Excluded	N/A	Comments
1	PROPERTY ACQUISITION					
	Property acquisition			■		
2	PROFESSIONAL SERVICES					
	Design fees		■			
4.	PROJECT DELIVERY					
i)	ENABLING					
	Demolition and removal of existing development	■				
	Utility relocation and/or removal - on-site	■				
	Utility relocation and/or removal - off-site		■			
	Connection to utilities (fees)		■			
	Moving and/or relocation expense		■			
	Haz-mat abatement	■				Incidental as part of glazing demolition
	Environmental clean up			■		
I)	SYSTEMS					
	UPS			■		
	Emergency generator			■		
	Low Voltage					
	Security conduit, wire, contacts, and equipment	■				
	Tele/Data conduit and cabling	■				
	Tele/Data network, routers, switches	■				
	Tele/Data servers, computers, etc.		■			
	Master clock			■		
	Fire alarm is addressable	■				
	PA			■		
	AV infrastructure	■				
	AV equipment		■			
	Screens	■				
II)	FURNITURE					
	Fixed furniture	■				
	Loose furniture		■			
III)	FURNISHINGS					
	Window treatment	■				
	Movable interior furnishings		■			
	Movable exterior furnishings		■			
IV)	FIXED EQUIPMENT					
	Building maintenance / window washing equipment	■				
	Loading dock equipment			■		
	Institutional equipment (TBD)			■		
	Kitchen equipment			■		
	Toilet accessories	■				

BUDGET ALLOCATION

	Budget Category	Const. Budget	Proj. Budget	Excluded	N/A	Comments
V)	SIGNAGE					
	Interior Signage					
	Wayfinding	■				
	Room identification	■				
	Donor		■			
	Exterior signage					
	Building	■				
	Site	■				
VI)	PROCUREMENT / DELIVERY					
	Preconstruction services	■				
	General requirements	■				
	General conditions	■				
	Bonds	■				
	Insurance	■				
VII)	CONTINGENCIES					
	Design contingency	■				
	Escalation contingency	■				
	Construction contingency	■				
	Bidding contingency			■		
	Project contingency		■			

BIDDING

This report is based on the measurement and pricing of quantities where possible, informed assumptions where information is limited or non-existent, and captures our expectation of the construction cost on bid day.

The unit rates used were obtained from historical data and/or discussion with the local contracting community. The unit rates used in this report reflect the current bidding environment in the area. All unit rates relating to subcontractor work include all subcontractor mark ups, which cover field overhead, home office overhead and profit and range from 15% to 25% of the cost for a particular trade.

Pricing reflects likely construction costs on the bid-day noted in this report. This cost plan is not a prediction of low bid. Pricing assumes a negotiated bid with one pre-selected contractor for the general contract, and competitive bidding with a minimum of 3 bidders for all subcontracted work. History has shown that bid results are tied to the number of bidders, with fewer bidders resulting in less competitive bids and a greater number of bidders resulting in more competitive bids.

The Capital Projects Group has no control over the costs of labor, material, equipment, or the contractor's means and methods or bidding strategy, or prevailing market conditions on bid day. This cost plan is based on industry practice, professional experience and qualifications, and represents our best judgment as professional consultants familiar with the construction industry. However, The Capital Projects Group cannot and does not guarantee that the proposals, bids, or the construction cost will not vary from this cost plan.

The accuracy of these costs is understood to be +/- 5%, and the possible range is understood to be +/- 15%. This range increases as the start date moves out in the future given the uncertainty regarding long-term cost escalation beyond 3 years out.

EXCLUSIONS

Owner supplied and installed furniture, fixtures and equipment

Loose furniture and equipment except as specifically identified

Compression of schedule, premium or shift work, and restrictions on the contractor's working hours

Testing and inspection fees

Architectural, design and construction management preconstruction fees

Scope change and post contract contingencies

Assessments, taxes, finance, legal and development charges

Environmental impact mitigation

Builder's risk, project wrap-up and other owner provided insurance program

Land and easement acquisition

Cost escalation beyond a midpoint of July 2024

Public address

Utility connection charges and fees

Independent 3rd party MEP commissioning (including LEED)

Tele/data - equipment - including hubs, routers, LAN, servers, switches, PBX

AV equipment

Renewables - such as PV panels etc. - Below the line

Sub-metering

Emergency generator

OVERALL SUMMARY

	Construction Costs Baseline			Escalate to Future Date		
	Area (GSF)	$/GSF	Total ('000s)	Midpoint	Esc.	Total ('000s)
BUILDING DEMOLITION						
Building Demolition (Existing Buildings Being Torn Down)			544	7/8/2024	13.80%	619
TOTAL BUILDING DEMOLITION			**544**			**619**
RENOVATION						
Renovation	42,500	460.00	19,636	7/8/2024	13.80%	22,345
Site Utilities - Renovation			737	7/8/2024	13.80%	839
TOTAL RENOVATION			**20,373**			**23,184**
NEW CONSTRUCTION						
New Construction - 3 Story	38,445	630.00	24,286	7/8/2024	13.80%	27,637
Site Utilities - New Construction			1,126	7/8/2024	13.80%	1,281
TOTAL NEW CONSTRUCTION			**25,412**			**28,918**
SITE CONSTRUCTION						
Site Development (Total Renovation and New Construction)			5,774	7/8/2024	13.80%	6,571
TOTAL NEW CONSTRUCTION			**5,774**			**6,571**
TOTAL			**52,102**			**59,291**
AV BUDGET - ALLOW						**1,500**

CSU Channel Islands
Gateway Hall
Camarillo, CA

Program Validation Cost Model V4
February 11, 2022
01-0340.120

ELEMENTAL SUMMARY		Demolition		Renovation		Renovation			New Construction		New Construction			Site			
		Demo	Total	Renovation		Site Utilities		Total	New Construction		Site Utilities		Total	Site Development		Total		Total
				42,500 SF		70,000 SF		42,500 SF	38,445 SF		64,000 SF		38,445 SF	134,000 SF		134,000 SF		$x1,000
		$x1,000	$x1,000	$/SF	$x1,000	$/SF	$x1,000	$/SF $x1,000	$/SF	$x1,000	$/SF	$x1,000	$/SF $x1,000	$/SF	$x1,000	$/SF	$x1,000	$x1,000
A SUBSTRUCTURE																		
A10 Foundations		-	-	12.08	513	-	-	12.08 513	14.38	553	-	-	14.38 553	-	-	-	-	1,066
A20 Basement Construction		-	-	-	-	-	-	- -	-	-	-	-	- -	-	-	-	-	-
Subtotal		-	-	12.08	513	-	-	12.08 513	14.38	553	-	-	14.38 553	-	-	-	-	1,066
B SHELL																		
B10 Superstructure		-	-	21.29	905	-	-	21.29 905	60.99	2,345	-	-	60.99 2,345	-	-	-	-	3,250
B20 Exterior Enclosure		-	-	21.36	908	-	-	21.36 908	80.61	3,099	-	-	80.61 3,099	-	-	-	-	4,007
B30 Roofing		-	-	10.58	450	-	-	10.58 450	14.47	556	-	-	14.47 556	-	-	-	-	1,006
Subtotal		-	-	53.24	2,263	-	-	53.24 2,263	156.06	6,000	-	-	156.06 6,000	-	-	-	-	8,262
C INTERIORS																		
C10 Interior Construction		-	-	31.86	1,354	-	-	31.86 1,354	48.93	1,881	-	-	48.93 1,881	-	-	-	-	3,235
C20 Stairs		-	-	3.51	149	-	-	3.51 149	9.62	370	-	-	9.62 370	-	-	-	-	519
C30 Interior Finishes		-	-	28.05	1,192	-	-	28.05 1,192	38.25	1,471	-	-	38.25 1,471	-	-	-	-	2,663
Subtotal		-	-	63.42	2,695	-	-	63.42 2,695	96.80	3,721	-	-	96.80 3,721	-	-	-	-	6,416
D SERVICES																		
D10 Conveying		-	-	10.50	446	-	-	10.50 446	10.94	421	-	-	10.94 421	-	-	-	-	867
D20 Plumbing		-	-	18.49	786	-	-	18.49 786	17.85	686	-	-	17.85 686	-	-	-	-	1,472
D30 HVAC		-	-	71.08	3,021	-	-	71.08 3,021	72.04	2,769	-	-	72.04 2,769	-	-	-	-	5,790
D40 Fire Protection		-	-	9.68	411	-	-	9.68 411	7.65	294	-	-	7.65 294	-	-	-	-	705
D50 Electrical		-	-	68.85	2,926	-	-	68.85 2,926	70.13	2,696	-	-	70.13 2,696	-	-	-	-	5,622
Subtotal		-	-	178.60	7,590	-	-	178.60 7,590	178.61	6,867	-	-	178.61 6,867	-	-	-	-	14,457
E EQUIPMENT AND FURNISHINGS																		
E10 Equipment		-	-	1.28	54	-	-	1.28 54	6.38	245	-	-	6.38 245	-	-	-	-	299
E20 Furnishings		-	-	3.19	135	-	-	3.19 135	12.75	490	-	-	12.75 490	-	-	-	-	626
Subtotal		-	-	4.46	190	-	-	4.46 190	19.13	735	-	-	19.13 735	-	-	-	-	925
F SPECIAL CONSTRUCTION & DEMOLITION																		
F10 Special Construction		-	-	-	-	-	-	- -	-	-	-	-	- -	-	-	-	-	-
F20 Selective Building Demolition		400	400	28.28	1,202	-	-	28.28 1,202	-	-	-	-	- -	-	-	-	-	1,602
Subtotal		400	400	28.28	1,202	-	-	28.28 1,202	-	-	-	-	- -	-	-	-	-	1,602
G BUILDING SITEWORK																		
G10 Site Preparation		-	-	-	-	-	-	- -	-	-	-	-	- -	6.38	854	6.38	854	854
G20 Site Improvements		-	-	-	-	-	-	- -	-	-	-	-	- -	18.97	2,541	18.97	2,541	2,541
G30 Site Mechanical Utilities		-	-	-	-	4.55	319	7.50 319	-	-	7.97	510	13.27 510	3.83	513	3.83	513	1,341
G40 Site Electrical Utilities		-	-	-	-	3.19	223	5.25 223	-	-	4.98	319	8.29 319	2.55	342	2.55	342	884
G50 Other Site Construction		-	-	-	-	-	-	- -	-	-	-	-	- -	-	-	-	-	-
Subtotal		-	-	-	-	7.74	542	12.75 542	-	-	12.95	829	21.56 829	31.72	4,250	31.72	4,250	5,621
Subtotal Direct Cost		**400**	**400**	**340.06**	**14,453**	**7.74**	**542**	**352.81 14,995**	**464.97**	**17,876**	**12.95**	**829**	**486.53 18,705**	**31.72**	**4,250**	**31.72**	**4,250**	**38,349**
Contingency for Development of Design	12.00%	48	48	40.80	1,734	0.93	65	42.33 1,799	55.79	2,145	1.55	99	58.37 2,244	3.81	510	3.81	510	4,601
Construction Contingency	2.00%	9	9	7.62	324	0.17	12	7.91 336	10.40	400	0.30	19	10.90 419	0.71	95	0.71	95	859
Subtotal Direct Cost + Design Contingency		**457**	**457**	**388.49**	**16,511**	**8.84**	**619**	**403.05 17,130**	**531.17**	**20,421**	**14.79**	**947**	**555.80 21,368**	**36.23**	**4,855**	**36.23**	**4,855**	**43,809**
Precon, General Conditions, General Requirement	9.46%	43	43	36.75	1,562	0.84	59	38.14 1,621	50.25	1,932	1.41	90	52.59 2,022	3.43	459	3.43	459	4,145
Subguard	1.30%	7	7	5.53	235	0.13	9	5.74 244	7.57	291	0.20	13	7.91 304	0.51	69	0.51	69	624
Bond	1.70%	9	9	7.32	311	0.17	12	7.60 323	10.01	385	0.28	18	10.48 403	0.69	92	0.69	92	827
Contractor's Overhead & Profit or Fee	5.46%	28	28	23.93	1,017	0.54	38	24.82 1,055	32.70	1,257	0.91	58	34.20 1,315	2.23	299	2.23	299	2,697
Total Construction Cost	**January 2022**	**544**	**544**	**462.02**	**19,636**	**10.53**	**737**	**479.35 20,373**	**631.70**	**24,286**	**17.59**	**1,126**	**660.99 25,412**	**43.09**	**5,774**	**43.09**	**5,774**	**52,102**

AREAS - RENOVATION

Enclosed Areas	Areas
Level 1	21,250
Level 2	21,250
TOTAL GROSS FLOOR AREA	**42,500**

ELEMENTAL SUMMARY - RENOVATION

	Gross Area:	42,500 SF	$/SF	$x1,000
A SUBSTRUCTURE				
A10 Foundations			12.08	513
A20 Basement Construction			-	-
Subtotal			12.08	513
B SHELL				
B10 Superstructure			21.29	905
B20 Exterior Enclosure			21.36	908
B30 Roofing			10.58	450
Subtotal			53.24	2,263
C INTERIORS				
C10 Interior Construction			31.86	1,354
C20 Stairs			3.51	149
C30 Interior Finishes			28.05	1,192
Subtotal			63.42	2,695
D SERVICES				
D10 Conveying			10.50	446
D20 Plumbing			18.49	786
D30 HVAC			71.08	3,021
D40 Fire Protection			9.68	411
D50 Electrical			68.85	2,926
Subtotal			178.60	7,590
E EQUIPMENT AND FURNISHINGS				
E10 Equipment			1.28	54
E20 Furnishings			3.19	135
Subtotal			4.46	190
F SPECIAL CONSTRUCTION & DEMOLITION				
F10 Special Construction			-	-
F20 Selective Building Demolition			28.28	1,202
Subtotal			28.28	1,202
G BUILDING SITEWORK				
G10 Site Preparation			-	-
G20 Site Improvements			-	-
G30 Site Mechanical Utilities			-	-
G40 Site Electrical Utilities			-	-
G50 Other Site Construction			-	-
Subtotal			-	-
Subtotal Direct Cost			**340.06**	**14,453**
Contingency for Development of Design		12.00%	40.80	1,734
Construction Contingency		2.00%	7.62	324
Subtotal Direct Cost + Design and Escalation Contingency			**388.49**	**16,511**
General Conditions		9.46%	36.75	1,562
Subguard		1.30%	5.53	235
Bond		1.70%	7.32	311
Contractor's Overhead & Profit or Fee		5.46%	23.93	1,017
Total Construction Cost	**January 2022**		**462.02**	**19,636**

Element	Quantity	Unit	Rate	Total
A10 Foundations				
A1010 Foundations				
Foundations - make good existing foundations	21,250	SF	12.75	270,938
A1030 Slab on Grade				
Slabs on grade - make good existing	21,250	SF	10.20	216,750
Pits	2	EA	12,750.00	25,500
				513,188
A20 Basement Construction				
				N/A
				0
B10 Superstructure				
B1010 Floor Construction				
Floor construction - make good existing	21,250	SF	12.75	270,938
Add shear walls required due to demolition of existing wings	42,500	SF	9.56	406,406
B1020 Roof Construction				
Roof construction - make good existing	22,313	SF	10.20	227,588
				904,931
B20 Exterior Enclosure				
B2010 Exterior Walls				
Exterior walls - make good existing façade, new facaded to small classroom addition	19,109	SF	19.76	377,643
B2020 Exterior Windows				
Exterior windows - new glazing, , new glazing to small classroom addition	3,914	SF	121.13	474,072
B2030 Exterior Doors				
Exterior doors - replace existing with new	20	EA	2,805.00	56,100
				907,816

Element	Quantity	Unit	Rate	Total
B30 Roofing				
B3010 Roof Coverings				
Roof coverings - make good existing roofing, and new roofing to small classroom building addition - salvage and reuse exisiting roof tile and repair roofing substrate	22,313	SF	19.13	426,727
B3020 Canopy				
Wood and clay tile canopy (eave overhang at roof areas)	500	SF	38.25	19,125
B3030 Soffits				
Roof Soffit - make good existing soffits	1,063	SF	2.55	2,709
Canopy soffit - make good existing soffits	500	SF	2.55	1,275
				449,836
C10 Interior Construction				
C1010 Partitions				
Partitions	35,700	SF	21.04	751,039
Interior glazing	2,125	SF	70.13	149,016
C1020 Interior Doors				
Interior doors	106	EA	2,486.25	264,164
C1030 Fittings				
Fittings	42,500	SF	4.46	189,656
				1,353,875
C20 Stairs				
C2010 Stairs and Ramps				
Stairs - repair existing	6	EA	9,562.50	57,375
Stairs - new	1	EA	38,250.00	38,250
Replace existing ramps	12	EA	4,462.50	53,550
				149,175
C30 Interior Finishes				
C3010 Wall Finishes				
Wall finishes	42,500	SF	6.38	270,938
C3020 Floor Finishes, Base				
Floor finishes, base	42,500	SF	8.93	379,313

Element	Quantity	Unit	Rate	Total
C3030 Ceiling Finishes				
Ceiling finishes	42,500	SF	12.75	541,875
				1,192,125
D10 Conveying				
D1010 Elevator Lifts				
New elevators at building exterior (2-stop)	2	EA	223,125.00	446,250
				446,250
D20 Plumbing				
D2010 Plumbing Fixtures				
Plumbing fixtures	42,500	SF	5.10	216,750
D2020 Domestic Water Distribution				
Domestic water distribution	42,500	SF	5.74	243,844
D2030 Sanitary Waste				
Sanitary waste	42,500	SF	5.10	216,750
D2040 Rainwater Drainage				
Rainwater drainage	42,500	SF	1.28	54,188
D2090 Other Plumbing				
Other plumbing	42,500	SF	1.28	54,188
				785,719
D30 HVAC				
D3010 Energy Supply				
Hot and chilled water supply	42,500	SF	6.38	270,938
D3040 HVAC Distribution				
Air distribution System	42,500	SF	38.25	1,625,625
D3050 Terminal Units				
Terminal units	42,500	SF	15.94	677,344
D3060 HVAC Instrumentation and Controls				
Instruments and controls	42,500	SF	8.29	352,219

Element	Quantity	Unit	Rate	Total
D3070 Testing, Adjusting and Balancing				
Air systems testing, adjusting and balancing	42,500	SF	2.23	94,828
				3,020,953
D40 Fire Protection				
D4010 Sprinklers				
Wet pipe - renovation	42,500	SF	8.29	352,219
Wet pipe - miscellaneous second floor	13,250	SF	4.46	59,128
D4020 Standpipe				
Fire protection standpipe				*N/A*
				411,347
D50 Electrical				
D5010 Service and Distribution				
Service and distribution	42,500	SF	19.13	812,813
Power Outlets & Connections				
Power outlets & connections	42,500	SF	6.38	270,938
D5020 Lighting and Branch Wiring				
Lighting, branch wiring, control	42,500	SF	25.50	1,083,750
D5030 Communication and Security				
Communication and security	42,500	SF	15.94	677,344
D5090 Other Electrical Systems				
Other electrical systems	42,500	SF	1.91	81,281
				2,926,125
E10 Equipment				
E1020 Building Maintenance Equipment				
Building Maintenance Equipment	42,500	SF	1.28	54,188
				54,188

Element	Quantity	Unit	Rate	Total
E20 Furnishings				
E2010 Fixed Furnishings				
Fixed Furnishings	42,500	SF	3.19	135,469
				135,469
F10 Special Construction				
				N/A
				0
F20 Selective Building Demolition				
F2010 Building Elements Demolition				
Building elements demolition - interior	42,500	SF	15.94	677,344
Building elements demolition - miscellaneous second floor demoltion	13,250	SF	12.75	168,938
F2020 Hazardous Components Abatement				
Hazardous components abatement	42,500	SF	6.38	270,938
Hazardous components abatement	13,250	SF	6.38	84,469
				1,201,688
G10 Site Preparation				
				N/A
				0
G20 Site Improvements				
				N/A
				0
G30 Site Mechanical Utilities				
				N/A
				0

Element	Quantity	Unit	Rate	Total
G40 Site Electrical Utilities				
				N/A
				0
G50 Other Site Construction				
				N/A
				0

ELEMENTAL SUMMARY - SITE UTILITIES - RENOVATION

	Gross Area:	70,000 SF	$/SF	$x1,000
G BUILDING SITEWORK				
G10 Site Preparation			-	-
G20 Site Improvements			-	-
G30 Site Mechanical Utilities			4.55	319
G40 Site Electrical Utilities			3.19	223
G50 Other Site Construction			-	-
Subtotal			7.74	542
Subtotal Direct Cost			**7.74**	**542**
Contingency for Development of Design		12.00%	0.93	65
Construction Contingency		2.00%	0.17	12
Subtotal Direct Cost + Design and Escalation Contingency			**8.84**	**619**
General Conditions		9.46%	0.84	59
Subguard		1.30%	0.13	9
Bond		1.70%	0.17	12
Contractor's Overhead & Profit or Fee		5.46%	0.54	38
Total Construction Cost	**January 2022**		**10.53**	**737**

Element	Quantity	Unit	Rate	Total
G10 Site Preparation				
				N/A
				0
G20 Site Improvements				
				N/A
				0
G30 Site Mechanical Utilities				
G3010 Site Mechanical Utilities				
Site mechanical utilities	1	LS	318,750.00	318,750
				318,750
G40 Site Electrical Utilities				
G4010 Site Electrical Utilities				
Site electrical utilities	1	LS	223,125.00	223,125
				223,125
G50 Other Site Construction				
				N/A
				0

AREAS - NEW CONSTRUCTION

Enclosed Areas	Areas
Level 1	12,815
Level 2	12,815
Level 3	12,815
TOTAL GROSS FLOOR AREA	**38,445**

ELEMENTAL SUMMARY - NEW CONSTRUCTION

	Gross Area:	38,445 SF	$/SF	$x1,000
A SUBSTRUCTURE				
A10 Foundations			14.38	553
A20 Basement Construction			-	-
Subtotal			14.38	553
B SHELL				
B10 Superstructure			60.99	2,345
B20 Exterior Enclosure			80.61	3,099
B30 Roofing			14.47	556
Subtotal			156.06	6,000
C INTERIORS				
C10 Interior Construction			48.93	1,881
C20 Stairs			9.62	370
C30 Interior Finishes			38.25	1,471
Subtotal			96.80	3,721
D SERVICES				
D10 Conveying			10.94	421
D20 Plumbing			17.85	686
D30 HVAC			72.04	2,769
D40 Fire Protection			7.65	294
D50 Electrical			70.13	2,696
Subtotal			178.61	6,867
E EQUIPMENT AND FURNISHINGS				
E10 Equipment			6.38	245
E20 Furnishings			12.75	490
Subtotal			19.13	735
F SPECIAL CONSTRUCTION & DEMOLITION				
F10 Special Construction			-	-
F20 Selective Building Demolition			-	-
Subtotal			-	-
G BUILDING SITEWORK				
G10 Site Preparation			-	-
G20 Site Improvements			-	-
G30 Site Mechanical Utilities			-	-
G40 Site Electrical Utilities			-	-
G50 Other Site Construction			-	-
Subtotal			-	-
Subtotal Direct Cost			**464.97**	**17,876**
Contingency for Development of Design		12.00%	55.79	2,145
Construction Contingency		2.00%	10.40	400
Subtotal Direct Cost + Design and Escalation Contingency			**531.17**	**20,421**
General Conditions		9.46%	50.25	1,932
Subguard		1.30%	7.57	291
Bond		1.70%	10.01	385
Contractor's Overhead & Profit or Fee		5.46%	32.70	1,257
Total Construction Cost	**January 2022**		**631.70**	**24,286**

Element	Quantity	Unit	Rate	Total
A10 Foundations				
A1010 Foundations				
Foundations	12,815	SF	19.13	245,087
A1030 Slab on Grade				
Slabs on grade, subgrade, vapor barrier	12,815	SF	21.04	269,596
Pits	2	EA	19,125.00	38,250
				552,932
A20 Basement Construction				
				N/A
				0
B10 Superstructure				
B1010 Floor Construction				
Floor construction	25,630	SF	63.75	1,633,913
B1020 Roof Construction				
Roof construction	13,115	SF	54.19	710,669
				2,344,582
B20 Exterior Enclosure				
B2010 Exterior Walls				
Exterior walls	17,092	SF	105.19	1,797,907
B2020 Exterior Windows				
Exterior windows	9,204	SF	133.88	1,232,132
B2030 Exterior Doors				
Exterior doors	24	EA	2,868.75	68,850
				3,098,889
B30 Roofing				
B3010 Roof Coverings				
Roof coverings - skylight	300	SF	223.13	66,938
Roof coverings - clay tile	12,815	SF	31.88	408,478

Element	Quantity	Unit	Rate	Total
B3020 Canopy				
Wood and clay tile canopy	1,000	SF	47.81	47,813
B3030 Soffits				
Roof soffits	1,300	SF	25.50	33,150
				556,378
C10 Interior Construction				
C1010 Partitions				
Partitions	34,985	SF	22.31	780,602
Interior glazing	9,611	SF	70.13	673,989
C1020 Interior Doors				
Interior doors	103	EA	2,486.25	254,890
C1030 Fittings				
Fittings	38,445	SF	4.46	171,561
				1,881,042
C20 Stairs				
C2010 Stair Construction				
Stairs - egress	4	EA	44,625.00	178,500
Stairs - communicating	2	EA	95,625.00	191,250
				369,750
C30 Interior Finishes				
C3010 Wall Finishes				
Wall finishes	38,445	SF	7.65	294,104
C3020 Floor Finishes, Base				
Floor finishes, base	38,445	SF	11.48	441,156
C3030 Ceiling Finishes				
Ceiling finishes	38,445	SF	19.13	735,261
				1,470,521

Element	Quantity	Unit	Rate	Total
D10 Conveying				
D1010 Elevator Lifts				
Elevators - 3 stops	2	EA	210,375.00	420,750
				420,750
D20 Plumbing				
D2010 Plumbing Fixtures				
Plumbing fixtures	38,445	SF	5.10	196,070
D2020 Domestic Water Distribution				
Domestic water distribution	38,445	SF	5.10	196,070
D2030 Sanitary Waste				
Sanitary waste	38,445	SF	4.46	171,561
D2040 Rainwater Drainage				
Rainwater drainage	38,445	SF	1.91	73,526
D2090 Other Plumbing				
Other plumbing	38,445	SF	1.28	49,017
				686,243
D30 HVAC				
D3010 Energy Supply				
Hot and chilled water supply	38,445	SF	6.38	245,087
D3040 HVAC Distribution				
Air distribution system	38,445	SF	38.25	1,470,521
D3050 Terminal Units				
Terminal units	38,445	SF	15.94	612,717
D3060 HVAC Instrumentation and Controls				
Instruments and controls	38,445	SF	8.29	318,613
D3070 Testing, Adjusting and Balancing				
Air systems testing, adjusting and balancing	38,445	SF	3.19	122,543
				2,769,482

Element	Quantity	Unit	Rate	Total
D40 Fire Protection				
D4010 Sprinklers				
Wet pipe	38,445	SF	7.65	294,104
D4020 Standpipe				
Fire protection standpipe				*N/A*
				294,104
D50 Electrical				
D5010 Service and Distribution				
Service and distribution	38,445	SF	17.21	661,735
Power Outlets & Connections				
Power outlets & connections	38,445	SF	6.38	245,087
D5020 Lighting and Branch Wiring				
Lighting, branch wiring, control	38,445	SF	25.50	980,348
D5030 Communication and Security				
Communication and security	38,445	SF	19.13	735,261
D5090 Other Electrical Systems				
Other electrical systems	38,445	SF	1.91	73,526
				2,695,956
E10 Equipment				
E1020 Building Maintenance Equipment				
Building Maintenance Equipment	38,445	SF	6.38	245,087
				245,087
E20 Furnishings				
E2010 Fixed Furnishings				
Fixed Furnishings	38,445	SF	12.75	490,174
				490,174

Element	Quantity	Unit	Rate	Total
F10 Special Construction				
				N/A
				0
F20 Selective Building Demolition				
				N/A
				0
G10 Site Preparation				
				N/A
				0
G20 Site Improvements				
				N/A
				0
G30 Site Mechanical Utilities				
				N/A
				0
G40 Site Electrical Utilities				
				N/A
				0
G50 Other Site Construction				
				N/A
				0

ELEMENTAL SUMMARY - SITE UTILITIES - NEW CONSTRUCTION - 2 STORY

		Gross Area: 64,000 SF	$/SF	$x1,000
G BUILDING SITEWORK				
G10 Site Preparation			-	-
G20 Site Improvements			-	-
G30 Site Mechanical Utilities			7.97	510
G40 Site Electrical Utilities			4.98	319
G50 Other Site Construction			-	-
Subtotal			12.95	829
Subtotal Direct Cost			**12.95**	**829**
Contingency for Development of Design		12.00%	1.55	99
Construction Contingency		2.00%	0.30	19
Subtotal Direct Cost + Design and Escalation Contingency			**14.79**	**947**
General Conditions		9.46%	1.41	90
Subguard		1.30%	0.20	13
Bond		1.70%	0.28	18
Contractor's Overhead & Profit or Fee		5.46%	0.91	58
Total Construction Cost	**January 2022**		**17.59**	**1,126**

Element	Quantity	Unit	Rate	Total
G10 Site Preparation				
				N/A
				0
G20 Site Improvements				
				N/A
				0
G30 Site Mechanical Utilities				
G3010 Site Mechanical Utilities				
Site mechanical utilities	1	LS	510,000.00	510,000
				510,000
G40 Site Electrical Utilities				
G4010 Site Electrical Utilities				
Site electrical utilities	1	LS	318,750.00	318,750
				318,750
G50 Other Site Construction				
				N/A
				0

AREAS - SITE DEVELOPMENT

Site Areas	**Areas**
Site Area	134,000
TOTAL SITE AREA	**134,000**

				Ratios
Gross Site Area		134,000	SF	1.000
Developed Site Area		134,000	SF	1.000
Hardscape	25%	33,500	SF	0.250
Softscape	75%	100,500	SF	0.750

ELEMENTAL SUMMARY - SITE DEVELOPMENT

		Gross Area:	134,000 SF	$/SF	$x1,000
G BUILDING SITEWORK					
G10 Site Preparation				6.38	854
G20 Site Improvements				18.97	2,541
G30 Site Mechanical Utilities				3.83	513
G40 Site Electrical Utilities				2.55	342
G50 Other Site Construction				-	-
Subtotal				31.72	4,250
Subtotal Direct Cost				**31.72**	**4,250**
Contingency for Development of Design			12.00%	3.81	510
Construction Contingency			2.00%	0.71	95
Subtotal Direct Cost + Design and Escalation Contingency				**36.23**	**4,855**
General Conditions			9.46%	3.43	459
Subguard			1.30%	0.51	69
Bond			1.70%	0.69	92
Contractor's Overhead & Profit or Fee			5.46%	2.23	299
Total Construction Cost	**January 2022**			**43.09**	**5,774**

Element	Quantity	Unit	Rate	Total
G10 Site Preparation				
G1010 Site Clearing				
Site clearing and preparation	134,000	SF	1.28	170,850
Rough grading	134,000	SF	1.28	170,850
Fine grading	134,000	SF	0.64	85,425
G1020 Site Demolition and Relocations				
Site demolition	134,000	SF	3.19	427,125
				854,250
G20 Site Improvements				
G2030 Vehicular paving				
Vehicular paving	13,400	SF	15.94	213,563
G2030 Pedestrian paving				
Pedestrian paving	20,100	SF	22.31	448,481
G2040 Site Development				
Site development, including 5 new ramps	134,000	SF	4.46	597,975
G2050 Landscaping				
Landscaping and irrigation	100,500	SF	12.75	1,281,375
				2,541,394
G30 Site Mechanical Utilities				
G3010 Site Mechanical Utilities				
Site storm drainage	134,000	SF	3.83	512,550
				512,550
G40 Site Electrical Utilities				
G4010 Site Electrical Utilities				
Site lighting	134,000	SF	2.55	341,700
				341,700
G50 Other Site Construction				
				N/A
				0