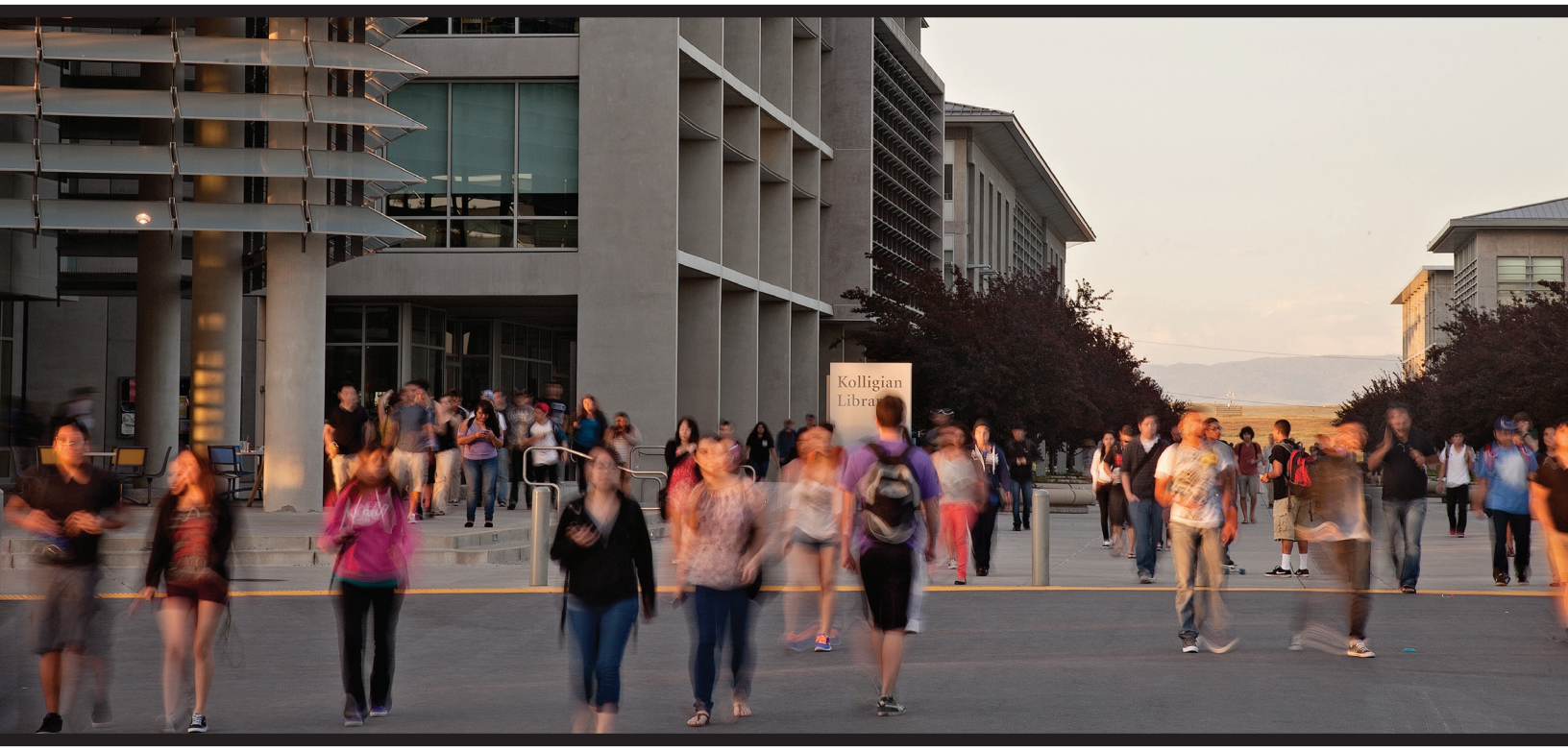
UCMERCED

DETAILED PROGRAM

University of California, Merced | 2020 Project

An overview of the development program for the 2020 Project and its methodology



University of California, Merced
5200 N. Lake Road
Merced, CA 95343

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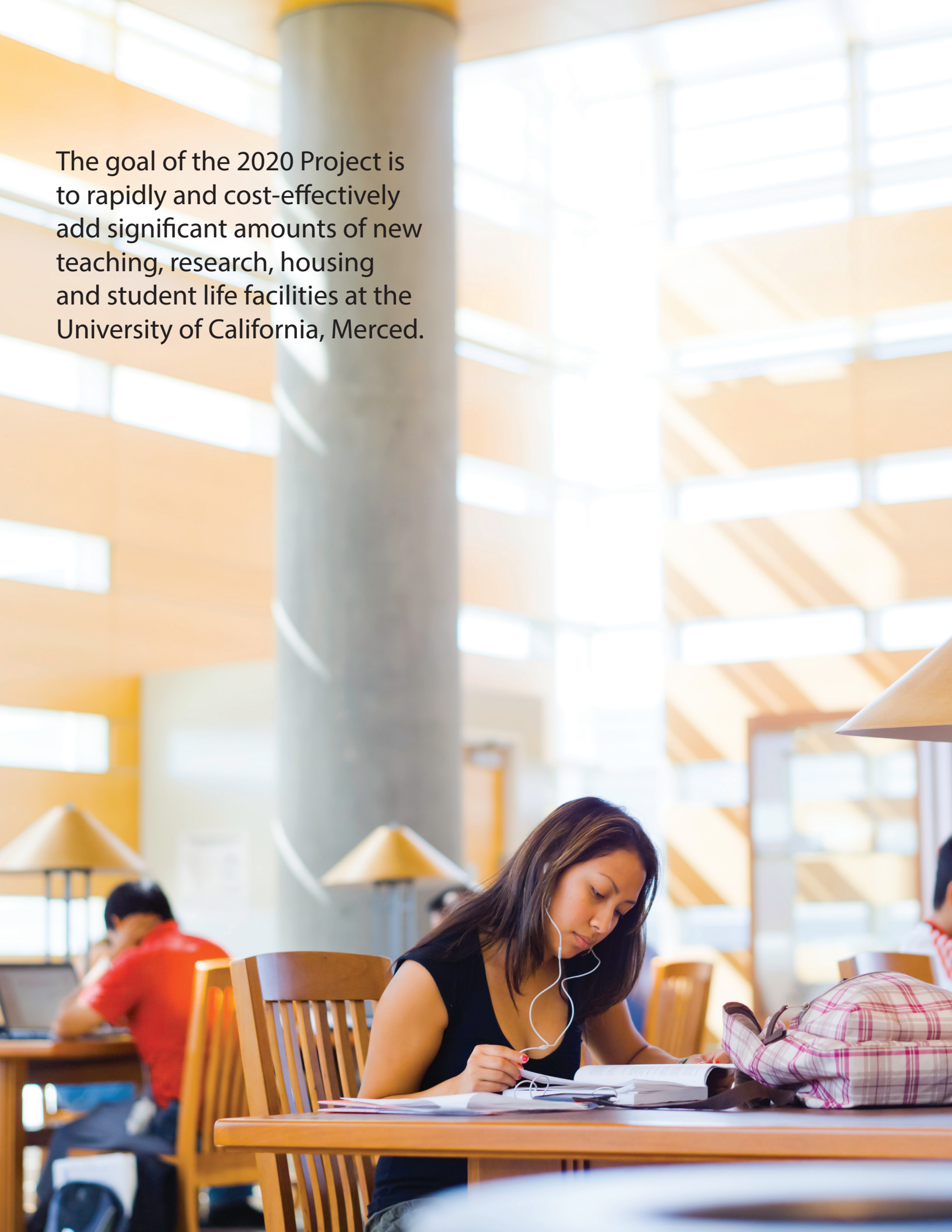

The goal of the 2020 Project is to rapidly and cost-effectively add significant amounts of new teaching, research, housing and student life facilities at the University of California, Merced.

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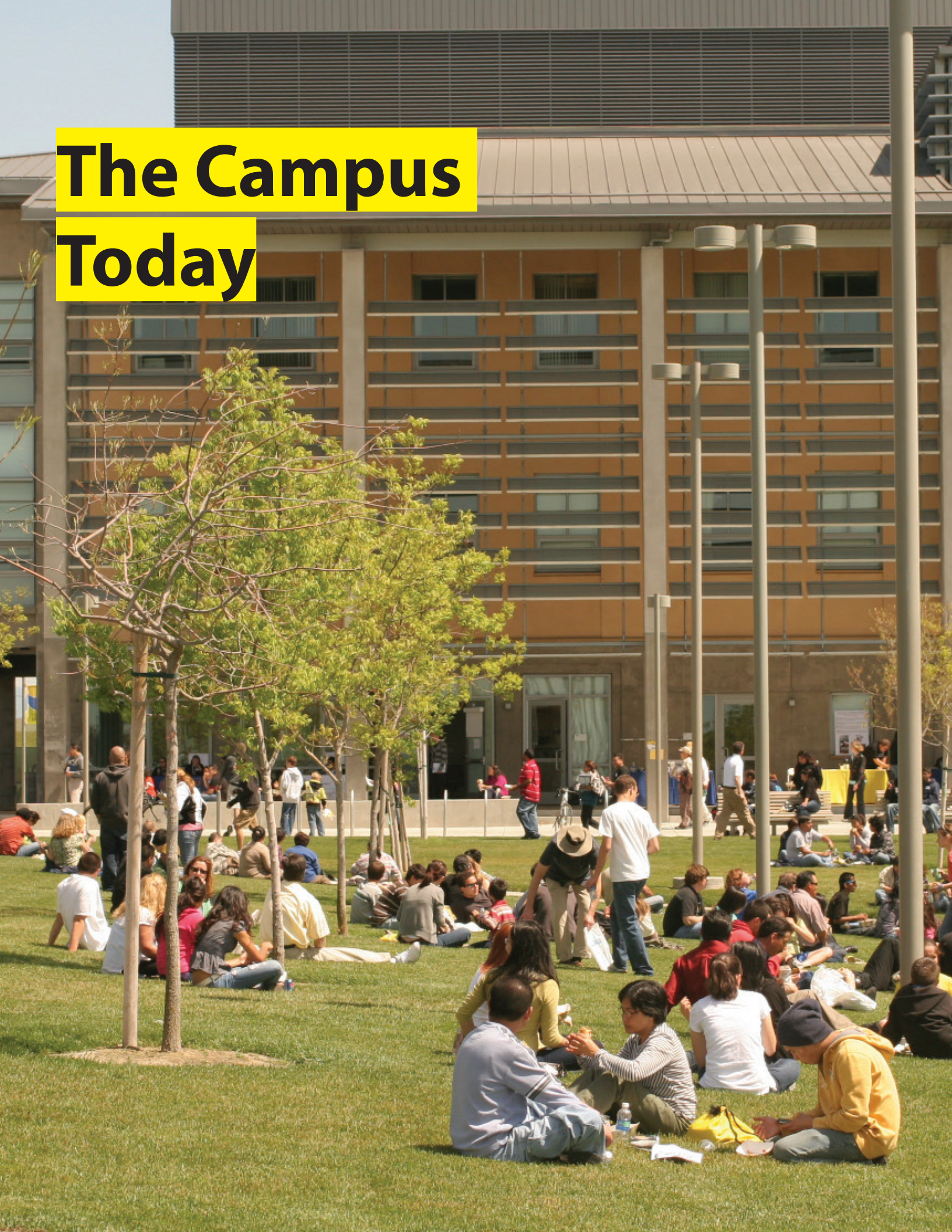
UC Merced

The Campus Today



In May 1995, the Regents of the University of California selected a site located in the San Joaquin Valley for its tenth campus.

The campus' purpose was to expand the UC system's teaching, research and public service presence in one of California's fastest growing and least served regions.

Groundbreaking occurred in 2002.

The initial development of the UC Merced campus was focused on a 104-acre portion of the site and the campus welcomed its first class of 875 students, 251 staff and 61 faculty in September 2005.

By Fall 2014, the campus had grown to 6,200 students, 317 faculty and close to 1,000 staff.

Upon the completion of Classroom and Office Building 2 in June 2016, campus activities will be housed in just over 1 million assignable square feet in 30 on-campus buildings. and 10 buildings leased by the University within the city of Merced.

Current Space Utilization

The campus is operating at more than capacity and further enrollment growth is severely constrained by lack of space. Through optimization of space and time the campus has achieved high rates of space utilization in its existing facilities. Classroom utilization, expressed as hours per week per room, is significantly higher than the standards established by the California Postsecondary Education Commission (CPEC), which are used by the State of California in approving State funding for academic buildings.

The campus is supplying limited office space for approximately 100 lecturers and graduate students office space in trailers on campus (the Academic Office Annex or "AOA"). Common areas originally designed as areas to encourage interaction among faculty and students have been colonized by large clusters of graduate cubicles.

Campus residence halls, which contain 1,896 designed beds, are currently housing 2,138 students through tripling of double rooms, enabling the campus to house all first year students and 23% of the sophomore class. The dining facility is serving 4750 meals per day out of 21,500 asf and revenue is constrained by the inability to serve more meals per day.

In the meantime, applications for admission rose 14% in the 2014-15 academic year.

Classroom Utilization

Room Type	Capacity	Total Hours	Number of Rooms	UCM Weekly Room Hours
Seminar/Small Class	< 30 seats	895	20	44.7
Classroom	30 > 75 seats	952	18	52.9
Lecture Hall	> 75 seats	405	9	45.0
Dry Teaching Lab	Dry	607	17	35.7
Wet Teaching Lab	Wet	380	13	29.2

Existing Space on Campus

	Academic	Student Life	Campus Operations	Admin	Grand Total
On Campus					
Calaveras Hall		13,420			13,420
Central Plant			1,779	718	2,497
Fresno Hall		6,719			6,719
Housing 3: East/Tenaya	2,448	24,689		741	27,878
Housing 3: West/Cathedral	1,661	26,750		199	28,610
Housing 4: Summits - Half Dome	2,955	61,463		2,325	66,743
Kern Hall		13,420			13,420
Kings Hall		13,416			13,416
Madera Hall		13,414			13,414
Merced Hall		13,414			13,414
Public Safety Trailer			188	3,671	3,859
Recreation & Wellness Ctr		23,818		5,539	29,357
San Joaquin Hall		6,719			6,719
Sierra Terrraces - Mariposa	509	29,122			29,631
Sierra Terrraces - Tuolomne	509	29,179			29,688
Stanislaus Hall		13,420			13,420
Telecomm Bldg				882	882
Terrace Center	182	6,215		4,119	10,516
Tulare Hall		13,414			13,414
Valley Terraces Dining		19,387		328	19,715
Science & Engineering 1	104,507		2,544	4,619	111,670
Kolligian Library	77,626	8,820		46,474	132,920
Classroom & Office Building 1	49,185		679	4,241	54,105
Academic Office Annex Trailers	6,949			2,407	9,356
Facilities Support Trailer			10,880	7,783	18,663
Early Childhood Education Center		6,128			6,128
Social Sciences & Management	57,639		490	4,129	62,258
Student Services Building	14,384	883		4,876	20,143
Student Activities & Athletics Center		10,182	362	4,314	14,858
Science & Engineering 2	50,008		1,735	6,789	58,532
Classroom & Office Building 2	46,324			3,805	50,129
Off Campus					
Castle 1200	25,765		20,613	14,115	60,493
Castle 1201	8,943		116		9,059
Castle Academic Annex Trailer				2,629	2,629
Chancellor's Residence		3,565			3,565
Mondo Building			122	10,510	10,632
Promenade - Bldg B (Suites C & E)				10,388	10,388
Promenade - Bldg C (Suites C,K & M)				3,927	3,927
Tri-College Trailer 1				2,003	2,003
Tri-College Trailer 2			353	995	1,348
Tri-College Trailer 3	414			206	620
Tri-College Trailer 4	1,835			747	2,582
Grand Total	**451,843**	**357,557**	**39,861**	**153,479**	**1,002,740**
On-Campus					**895,494**
Off-Campus					**107,246**

Campus Demographics

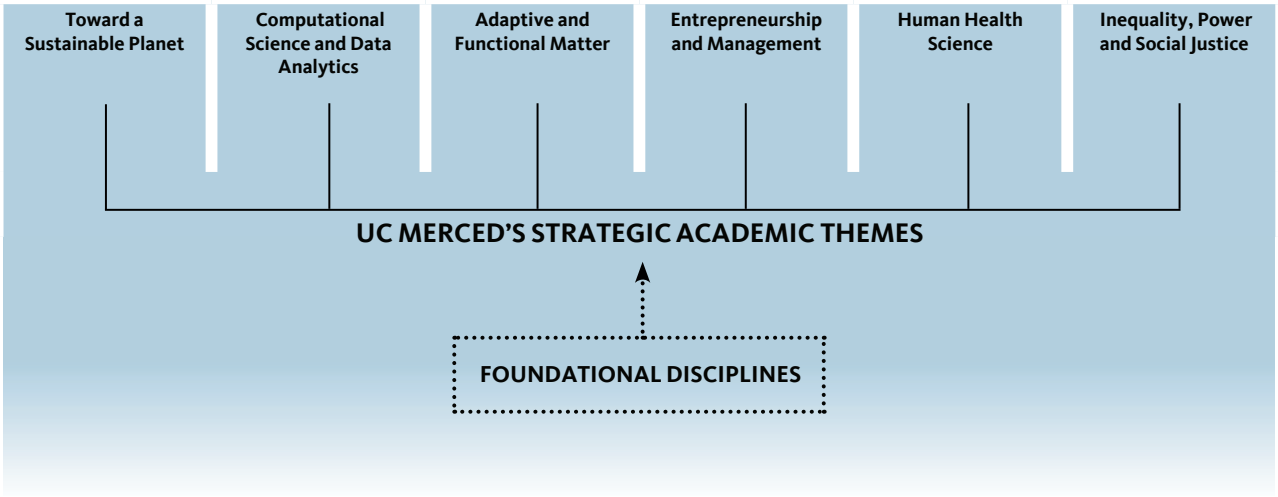
The projected space needs of the campus are driven by the Long Range Enrollment Plan, which lays out the demographics of the planned growth of the student body and the Strategic Academic Focusing Initiative, which lays out target distribution of ladder-rank faculty among the Schools of Engineering, Natural Sciences and Social Sciences and Humanities and the Arts.

Strategic Academic Focusing Initiative

In 2013, the campus commenced a Strategic Academic Focusing Initiative (SAF) to define the broad areas of focus for academic expansion at UC Merced for the next 6-8 years. The SAF identified interdisciplinary theme areas as well as the foundational disciplines which will inform faculty hiring in the years ahead. This has enabled the campus to accurately estimate the type and quantity of teaching and research space needed to accommodate expansion in these areas of academic endeavor.

From the SAF initiatives, specific estimates of lab space needs (wet, dry, computational, performance and studio) were calculated on a per-faculty-hired basis. If absolutely necessary, the relative space needs (wet lab vs. dry lab, etc.) can be staged throughout the period of the 2020 project by relatively higher recruitments in one or more areas in a given year, to be balanced in subsequent years by higher recruitments in other areas.

The SAF concluded that the planned growth of ladder rank faculty (LRF) at UC Merced in areas the campus defines as strategic, to an overall faculty size of about 350 LRF members, will place about 40% of our faculty in wet labs, 25% in dry labs, 25% in computational labs and 10% in performance spaces.



UC Merced's Strategic Academic Focusing Initiative has developed six thematic areas that will guide UC Merced's academic trajectory.

Workforce Planning

As a result of the Strategic Academic Focusing Initiative and as part of the preparation for the 2020 Project, the campus has undertaken a workforce planning exercise to streamline its non-academic workforce, align skills with needs, transition its workforce from transaction processing to strategic thinking, and provide proactive professional development and career opportunities to its employees.

Non-academic administration which does not interact frequently with the faculty and students will be located primarily in the planned Downtown Campus Center (DCC).

Important principles of activity-based programming, where space is assigned based on function and collaborative adjacencies rather than on organization charts or positions, have been incorporated into the programming of the DCC.

Universities require a great deal of physical space; however as digital technology replaces print and complex academic and administrative initiatives demand teamwork and collaboration, Campus leadership wishes to ensure that activity-based programming principles are also incorporated into the entire 2020 Project.

Site of the planned Downtown Administrative Center located in Downtown Merced.

The campus is gradually relocating 'non-student facing' administrative staff from Kolligian Library to off-campus sites.

2020 Project Program Development

In 2012, UC Merced launched the "2020 Project", an initiative to add a significant amount of new teaching, research, housing, recreation and support facilities to the campus.

In Fall 2013, campus wide focus groups were led by UC Merced advisors Jones Lang LaSalle (JLL), AECOM, and Solomon Cordwell Buenz (SCB) (together, the "Technical Advisors") to elicit initial thoughts on campus needs.

The exercise elicited a surprisingly uniform list, across stakeholder groups, of desiderata for the physical campus which together with the Strategic Academic Focusing Initiative goals are embodied in the goals for the Project.

The Process

Traditionally, space at institutions of higher education has segregated space uses by building: a chemistry building, a social sciences classroom building, a student union, a residence hall. At public institutions, this has been largely an artifact of the different kinds of funding available for different space uses: thus tax-exempt bonds are tied to a particular building which has a space use appropriate for funding with tax-exempt debt, while revenue-producing buildings such as housing are financed with taxable debt and student activities buildings are funded with student fees.

Important principles of *activity-based programming,* where space is assigned based on function and collaborative adjacencies rather than on organization charts or positions, have been incorporated into the programming of the 2020 Project. However, any adjacencies that are essential to the University and that can only be achieved through the design of the Facilities (as opposed to through allocation of spaces by the University in its management and operation of the Facilities) will be included in the Technical Requirements.

A living-learning campus

Universities require a great deal of physical space; however the university is evolving as digital technology replaces print and complex academic and administrative initiatives demand teamwork and collaboration. The 2020 Project Program seeks to break down silos to create a more holistic campus where living and learning occur 24 hours a day regardless of where students are at any given time and where student-faculty interactions and faculty interdisciplinary interactions occur spontaneously. As part of its goal to encourage interdisciplinary research, UC Merced intentionally does not have traditional by-law departments, and therefore does not need – or want – any buildings assigned or identified with a particular department. Even UC Merced's three Schools – Engineering, Natural Sciences and Social Sciences and Humanities and Arts - are only loosely associated with particular buildings, more as a result of the type of research activities their faculty engage in than a desire to formally allocate space to particular Schools.

A program of spaces not buildings

The program is not composed of buildings but of *spaces* that the campus will need to carry out its mission and growth plan. Rather than prescribe the space desired based on traditional higher education approaches to space assignments, adjacencies, and groupings, Campus leadership seeks to design a 21st century university campus informed by contemporary thought from other public and private universities and commercial developments around design, urban fabric, collaborative living and working, and facility operations.

2020 Project Goals

- Completion of the type and quantities of space required to support a campus population of 10,000 students by the year 2020;
- Cost-effective development that takes advantage of exisiting investments in campus infrastructure and provides best overall value for the lifecycle of faciliites;
- Creative mixed-use facilities in a compact fabric that supports a pedestrian friendly environment and results in an unique, dynamic , and inspiring environment for students, staff and faculty;
- Facilities that support an inspiring and dynamic living and learning environment , providing opportunities for interdisciplinary scholarly activities;
- A welcoming "front door to the campus" that captures the spirit of UC Merced's teaching and research mission.
- Expanded open space network and public realm that enhances the campus environment;
- Sustainable , environmentally appropriate facilities that are consistent with UC Merced's goal of achieving Triple Net Zero status;
- Incorporation of private sector innovation and efficiencies with respect to design, management, and financing solutions;
- An aggressive development schedule that results in substantial completion of the First Delivery Facilities by the summer of 2018 and other required improvements by the summer of 2020;
- Built-in flexibility and adaptability in the plan to accommodate future needs.

The 2020 Project Program

The 2020 Program includes two broad categories: space to address critical existing needs and space needed to accommodate growth to 10,000 students.

In broad terms, the 2020 Project anticipates:

- The centralization on campus of all academic activities other than those that have a need for frequent community interaction
- Continuing growth of interdisciplinary and transdisciplinary research and teaching
- Creation of a dynamic 24x7 environment in which to learn, live, work and play
- The creation of student residential facilities sufficient to house about 35% of the 10,000 students expected to be enrolled at the end of the Project
- The provision of appropriate and sufficient space for student life such as student activities, a wellness center, and a student-centric business center where all of students' business with the University can be conducted
- Sufficient athletic and recreational facilities for a campus of UC Merced's post-2020 size
- Adequate space for campus operations

Overview

The 2020 Program includes two broad categories of space:

- "Catch-up" space, which is space that a campus of 6200 students would normally possess, but which has not yet been provided on the UC Merced campus, such as space for student life and recreational facilities
- Growth space, which is space needed proportionate to the 4,800-student increase in the student body and the concomitant increase in faculty, research facilities, classrooms, student life facilities and campus operations capacity.

The Four Space Categories

Campus use of space falls into four major categories, and the 2020 Program has been structured accordingly:

1. Academic
2. Student Housing
3. Student Life and Athletics
4. Campus Operations

The 2020 Project Program is additive to, and approximately the same size as, the existing campus of 1 million asf. In all cases, the added program was calculated by developing the total need, based on the Long Range Enrollment Plan projected enrollment, and deducting existing space. In this respect it re-baselines the existing campus space and ensures that the total built space will match the total program need. The campus plans to use the space vacated by groups moving to the new space built in the 2020 Project to house specialized or unforeseen uses that have not been addressed in the 2020 Program. In these Program Notes, the various program subcategories and program units are identified as either additive to existing space or replacing existing space (i.e. where an entire operation will relocate to the new space).

The need was calculated taking into account:

- The delivery in Fall 2016 of Classroom and Office Building 2 (COB2)
- The replacement of the research space currently housed at Castle Airforce Base
- The replacement of the Academic Office Annex trailers on campus

Future administrative space off-campus

Going forward, the campus intends to house administrative functions which do not involve day to day interaction with students and faculty in an administrative center, currently in the design phase, in Downtown Merced in order to support the campus mission of engaging with the community and contributing to the economic well-being of the surrounding area.

Together with administrative functions already located Downtown in leased space, the staff working in this new location will contribute to the animation and economic prosperity of Downtown. For this reason, the program for the 2020 Project does not contemplate the construction of additional material "central" administrative space on campus.

Area Data Sheets

Traditionally, room data sheets (ADSs) contain the precise specifications (inputs) for each room in a building program. In a typical room data sheet one finds required finishes ("Sherwin-Williams Emerald Low VOC Latex Paint"), lighting fixtures ("TCP WL8WA654UNIV Wet Location Fluorescent Fixture - 6 Lamp - F54T5/HO - 120/277 Volt"), hardware ("Schlage AL53PDSAT626 Satin Chrome Saturn Keyed Entrance/Office Door Lever Set"), and so forth.

However, in an Availability Payment DBFOM structure, the Developer is contracting to maintain and repair the property for a fixed price for many years after it is delivered to the owner and is therefore bearing the risk that the components that they have chosen will not perform adequately over time and will need to be replaced.

Thus the owner is less concerned with what the inputs, except in special cases, and and more focused on outputs – whether the space meets its operational performance requirements or not.

The Area Data Sheet

This shifting of the performance risk to the developer alters the content of a room data sheet – called an Area Data Sheet for the 2020 Program - from a list of specifications to a list of performance requirements.

Many different uses occupy relatively standard sorts of spaces. Therefore, for the purpose of specifying design performance requirements and operations performance requirements, Area Data Sheets were developed for each type of space. Although there are many specialized spaces, if differing sizes of the same type of space are not counted as different space types, there are only 112 "room types" in the 2020 Program. If specialized uses such as the Wellness Center and the Early Childhood Education Center are not considered, the number of space types falls.

Thus Area Data Sheets specify the performance requirements, both in terms of design and operation, for each type of space contained in the program. The performance requirements are specified in two ways:

1. Design Requirements: These specify the way the space must perform when built and in operation but directly influence design. For example, the space may have an acoustic performance requirement such as:

> Vehicular traffic noise into occupied interior spaces shall not exceed the following maximum levels during peak hours:
>
> 1. Private Offices, 40 dBA
> 2. Conference Rooms, 35 dBA
> 3. Open plan office areas and like spaces, 45 dBA
> 4. Assembly Room, 25 dBA

2. Operations Performance Standards: These specify the times that the space must be available for use. "Available" in this context is defined however the operations performance standards define it.

In general, "available" means:

- The intended occupants are able to use the space for the intended purpose during the times the contract specifies it must be available
- The space is performing in accordance with the design performance standards, e.g. the space is within the specified acceptable temperature band, the space is not noisier than the acoustic performance standards permit, light is available at the specified level, the roof is not leaking, etc.

- All repairs required for the space to be considered available have been made; for example, graffiti can make a space unavailable if not removed within the specified cure period
- For specialized spaces such as the cold room of a laboratory building, the permissible variations in temperature or interruption of power are virtually zero and the cure period may be as short as 5 minutes (What this does is induce the developer to construct the space with an uninterruptible power supply). A sample Area Data Sheet follows.

Sample Area Data Sheet

Area Datasheets

UC Merced 2020 Area Datasheet

GENERAL	
Unique ID:	CL-01
Area Type:	Classroom Laboratory 1: Wet
Minimum Assignable Area (ASF):	990
Function:	Room adaptable for biology, molecular biology, biochemistry
Min Ceiling Height:	10'-0"
Daylighting / Views:	D2
Visual Privacy:	
Interior glazing	RL1
Occupancy (Code):	B
FINISHES / TREATMENT	
Floor / Base:	F5
Ceiling:	C1
Walls:	W3
Partition point load capacity:	PL3
Window shading (exterior):	S2
Interior Doors:	ID03
Hardware:	H1
SYSTEMS	
Acoustics:	AC5
Vibration Criteria:	V3
Additional Security Features:	
Fire protection:	FP1
HVAC	
Temperature range:	TR1
Air changes/ventilation:	VR2
Recirculation:	HV-R2
Thermostatic control:	HV-T3
Positive/negative pressure:	HV-P1
Plumbing:	
Fixture Type:	Lab sinks along wet wall, Eyewash / safety shower (EWSS)
Piped services:	LV, LA, industrial & hot & cold water, PW, potable cold water
Special drains:	Acid waste drain at lab sinks and fume hood cup sinks
Power	
User Convenience (excludes outlets for AV, security, etc.):	Duplex at counters at max 2' on center, on walls at max 6' on center
Specialty outlets:	
Power density:	PW4
Power conditioning:	
Standby power:	PE1
UPS:	No
Energy Use Category	EU3
Lighting level	L1
Lighting control	LC2

Sample Area Data Sheet, continued

Area Datasheets

UC Merced 2020 Area Datasheet

Clock System	Yes
Telecommunications	
Outlet (excludes outlets for AV, security, etc.):	Data port at counters at max 2' on center, on walls at max 6' on center; two (2) data ports at instructor desk.
Special system:	Assistive listening system
Wireless Requirements:	TW2
CATV/SMATV Connections:	
Video Surveillance:	
Shielding:	
EQUIPMENT	
Built-in features:	2 Each 6' Chemical Fume hoods with decommissioning option and shut-off valve, visible to instructor. 45' Built in base cabinets with epoxy counter top and lockable cupboard/drawer units at perimeter 30' Wall mounted cabinet over base cabinets 1 vented, lockable full height chemical storage cabinet 3 Each Epoxy lab sinks in perimeter cabinetry, paper towel holder, soap dispenser Sink pedestal at instructor workstation, with epoxy sink and top and base cabinets Teaching wall with built in cabinets and AV storage. Rolling white boards; 4' high wall mounted whiteboards on front and side walls at 60% of wall length not occupied by cabinetry
ADDITIONAL REQUIREMENTS	

UC Merced's Approach to Furniture, Fittings and Equipment (FF&E)

Specifying performance requirements for each type of desk, chair, lab bench, etc. would be a massive enterprise and since the campus has through experience identified a set of furnishings that serve their intended purposes very well, the campus has elected to specify specific lines of furnishings for which the University has excellent preferred vendor contracts.

The campus will specify "this item or better" in the FF&E packages designed for each space type, leaving the developer the option of proposing an alternate solution, to be accepted by the campus in its sole discretion, if the developer believes it will suit the purpose better or perform better.

The developer will be responsible for delivering each facility with the required FF&E in it, but the campus will assume the performance and replacement risk for the furniture going forward, thus eliminating a potential source of change orders in future as Campus furniture standards change or room uses are modified. Both circumstances are considered very likely to occur.

UC Merced's Approach to Information Technology (IT)

Because most electronic equipment becomes obsolete in approximately three years, it was considered impractical and counterproductive to specify precisely in 2014 what AV equipment a particular room will need in 2018. However, sample IT packages were creating for pricing purposes. The IT requirements for the project specify the connectivity to the spaces in terms of "the size of the pipes": power requirements, Ethernet capacity, Wi-Fi density, location of the outlets in the space, etc. The AV equipment that will use those pipes and connectivity will be purchased and installed by the Developer.

In the sections that follow, we explain the methodology used to project the space need for each type of space; describe the programmatic intent for that type of space; and set forth the actual program, in assignable square feet, for that program element.

The Program Summary

2020 PROJECT PROGRAM		1st Delivery Facilities	2nd Delivery Facilities	3rd Delivery Facilities	2020 Project	Master Plan Only	Total Master Plan
ACADEMIC		ASF	ASF	ASF	ASF	ASF	ASF
	Research						
	Wet		24,750	51,480	76,230		76,230
	Dry		20,460	32,340	52,800		52,800
	Computational		9,240	9,240	18,480		18,480
	Performance		3,300	660	3,960		3,960
	Lab Support and Maintenance		8,705	5,335	14,040		14,040
	Core Lab		1,025	15,000	16,025	17,500	33,525
	Office						
	Academic Office		62,355	50,395	112,750		112,750
	Academic Leadership Office			9,099	9,099		9,099
	Classroom						
	Classroom	14,600		18,960	33,560	11,000	44,560
	Class Laboratory		15,885	10,560	26,445		26,445
	Black Box Theater					4,500	4,500
	Colloquy Spaces		5,100	4,900	10,000		10,000
	Total SF	**14,600**	**150,820**	**207,969**	**373,389**	**33,000**	**406,389**
HOUSING							
	Residence Hall	98,947		137,303	236,250	22,230	258,480
	Apartments						
	Graduate					65,700	65,700
	Staff/Faculty in Residence			20,400	20,400		20,400
	Chancellor's residence					6,500	6,500
	Admin/Community	15,338		11,760	27,098		27,098
	Support & Maintenance	4,165		1,665	5,830		5,830
	Total SF	**118,450**		**171,128**	**289,578**	**94,430**	**384,008**
STUDENT LIFE							
	Central Dining	27,985			27,985		27,985
	Student Activity			50,950	50,950	4,240	55,190
	Wellness Center			7,780	7,780		7,780
	Enrollment Center			18,425	18,425	7,960	26,385
	Welcome Center					12,070	12,070
	Early Childhood			3,080	3,080		3,080
	Arena					85,020	85,020
	Athletics: Aquatic Center			4,580	4,580	7,070	11,650
	Athletic: Fields			2,720	2,720	3,270	5,990
	Total SF	**27,985**		**87,535**	**115,520**	**119,630**	**235,150**
CAMPUS OPERATIONS							
	Fire Operations Facility					9,400	9,400
	Public Safety			8,980	8,980	6,645	15,625
	Environmental Health & Safety*			2,425	2,425	950	3,375
	Total SF			**11,405**	**11,405**	**16,995**	**28,400**
TOTAL PROGRAM		**161,035**	**150,820**	**478,037**	**789,892**	**264,055**	**1,053,947**

Site Facilities							
Site Areas (in Site SF)		SF	SF	SF	SF	SF	SF
	Early Childhood Outdoor Play Area			3,000	3,000		3,000
	Fields: Competition		100,000		100,000		100,000
	Aquatic Center: Competition Pool			11,500	11,500		11,500
	Fields: Recreation			250,000	250,000		250,000
	Courts: Volleyball					16,000	16,000
	Courts: Basketball			33,264	33,264	17,136	50,400
	Courts: Tennis			22,800	22,800	7,600	30,400
Counts (Each)		EA EA	EA		EA	EA	EA
	Undergraduate Beds	712		988	1,700	117	1,817
	Graduate Student Beds					200	200
	Fields: Competition		1		1		1
	Athletic Field Bleachers						
	Competition pool			1	1		1
	Pool Bleachers			500	500		500
	Fields: Recreation (Full Size)			2	2		2
	Courts: Volleyball					2	2
	Courts: Basketball			4	4	2	6
	Courts: Tennis			3	3	1	4
PARKING - Counts							
	Parking (net new)	940		630	1,570		1,570
	Parking: Bus					10	10
	Parking: Secure					50	50

Academic Space

Academic space in the 2020 Project Program is divided into three areas: research space, instructional space, and academic office space.

Academic Program Overview

The 2020 Program was developed around projected numbers of ladder rank faculty ("LRF") and ratios of graduate students ("GS") and research staff ("RS") to ladder rank faculty. These ratios cannot be applied universally across the program, however, because in addition to ladder rank (research) faculty the campus has Lecturers with Potential Security of Employment ("LPSOEs") and Lecturers with Security of Employment (LSOEs). These individuals are accorded an office and other privileges generally extended to ladder rank faculty. The lecturer offices do not need to be located close to laboratories as lecturers do not in general conduct research on campus, but they are intended be distributed across the program such that lecturers can be located near other faculty in their respective Schools.

In addition, the 2020 Project will enable the University to vacate certain space that is considered suboptimal, including the Academic Office Annex, which is composed of trailers, and portions of laboratory and office space located at Castle Airport. Thus there are spaces beyond those suggested by the ratios of LRF:GS:RS used to develop the projections of the space required.

Distribution of Area Types by delivery

The amounts of laboratory and office space to be provided in each delivery were arrived at based on the projected campus demographics at each delivery. An underlying assumption is that in the Second Delivery some newly hired LRF will temporarily occupy office space eventually intended for lecturers and will ultimately move to offices near their laboratories as these are delivered at Substantial Completion.

Academic Space Type Distribution by Delivery

Below are the assumptions used to determine the amount of space to be delivered in the Second Delivery and at Substantial Completion.

Lab Count			75			116			191		
Office		EA	Delivery 2			Delivery 3			Total		
			Count	ASF	Ratio: Lab	Count	ASF	Ratio: Lab	Count	ASF	Ratio: Lab
Office 04: Faculty	LRF	130	138	17,940	1.84	53	6,890	0.46	191	24,830	1.00
Office 04: Faculty	LPSOE, LSOE	130	20	2,600	N/A	20	2,600	N/A	40	5,200	N/A
Work Station 02	Lecturers	65	17	1,105	N/A	20	1,300	N/A	37	2,405	N/A
Office 03: Research Staff	2 per office	130	46	5,980	0.61	50	6,500	0.43	96	12,480	0.50
Work Station 02	Grad Students	65	350	22,750	4.67	365	23,725	3.15	715	46,475	3.74
			571	50,375		508	41,015		1,079	91,390	
Total enclosed offices			204	26,520		123	15,990		327	42,510	
Total workstation			367	23,855		385	25,025		752	48,880	
			571	50,375		508	41,015		1,079	91,390	

Research Space Methodology

The amount and types of research laboratory space required are a direct result of the anticipated distribution of the faculty among disciplines. In accordance with the Strategic Academic Focusing Initiative, UC Merced is and will continue to be a STEM campus. The ladder rank faculty of UC Merced will upon completion of the Project be distributed among Natural Sciences, Social Sciences and Humanities and Engineering as follows:

Natural Sciences	40%
Social Sciences and Humanities	35%
Engineering	25%

This distribution is a primary driver of the research space requirements of the campus. The amount of wet, dry, computational and performance/studio laboratory space needed was projected by applying the current distribution of the disciplines comprised by these Schools to the projected numbers of future faculty and students that will be in the Schools at the end of the project.

Traditionally research labs have been sized by allocating a fixed number of square feet to each ladder rank faculty member, including office space for graduate students within the laboratories. The current University of California standard, California Postsecondary Education Commission (CPEC), most recently published in 1990, takes this approach. In the CPEC model, graduate students are allocated office space in the research labs:

"Graduate students in various disciplines may or may not require office space, but since virtually all such students are involved in research activities they undoubtedly do require research space in which to do their work….its seems prudent to assign the graduate student standard to the area of greatest activity or emphasis, and that area is clearly research. Accordingly, it is proposed that the office allowance for graduate students be incorporated into the research laboratory standard, with the stipulation that the space allowance generated by the standard cover whatever graduate student office space may be required in conjunction with research activities."

CPEC – A Capacity for Learning, p. 126

CPEC Approach for Allocating Space for Research Laboratories

				Faculty	Grad	Postdoc	Scholarly Act	
				Research Lab	Research Lab	Research Lab	CPEC Category	
	Programs	OP Discipline:						CPEC Manual (page 109)
ENG								
	Bioengineering	Engineering Sciences		500	250	250	F	1 (or I)
	Computer Science & Engineering	Engineering Sciences		350	175	175	D	2 (or II)
	Environmental Engineering	Engineering Sciences		350	175	175	D	2 (or II)
	Materials Science & Engineering	Engineering Sciences		350	175	175	D	2 (or II)
	Mechanical Engineering	Engineering Sciences		350	175	175	D	2 (or II)
	Undeclared	Undeclared		350	175	175	D	2 (or II)
			avg	*375*	*187.5*	*187.5*	D	2 (or II)
NS								
	Applied Mathematical Sciences	Mathematical Science		50	50	50	A	6 (or VI)
	Biological Sciences	Biological Sciences		500	250	250	F	1 (or I)
	Chemical Sciences	Physical Sciences		500	250	250	F	1 (or I)
	Earth Systems Science	Physical Sciences		500	250	250	F	1 (or I)
	Physics	Physical Sciences		500	250	250	F	1 (or I)
	Undeclared	Undeclared		500	250	250	F	1 (or I)
			avg		*216.7*	*216.7*	F	1 (or I)
SHHA								
	Anthropology	Anthropology		350	175	175	D	2 (or II)
	Cognitive Science	Studies, Interdisciplinary		350	175	175	D	2 (or II)
	Management	Studies, Interdisciplinary		350	175	175	D	2 (or II)
	Economics	Social Sciences, General		50	50	50	A	6 (or VI)
	Political Science	Social Sciences, General		50	50	50	A	6 (or VI)
	Public Health	Social Sciences, General		50	50	50	A	6 (or VI)
	Social and Cognitive Sciences	Social Sciences, General		50	50	50	A	6 (or VI)
	Sociology	Social Sciences, General		50	50	50	A	6 (or VI)
	English	Letters		50	50	50	A	6 (or VI)
	History	Letters		50	50	50	A	6 (or VI)
	Literatures and Cultures	Letters		50	50	50	A	6 (or VI)
	World Cultures	Letters		50	50	50	A	6 (or VI)
	Psychology	Psychology		350	175	175	D	2 (or II)
	Spanish	Foreign Language		50	50	50	A	6 (or VI)
	Undeclared	Undeclared		50	50	50	A	6 (or VI)

However, modern safety best practices and UC policy dictate that graduate student office space be located outside the laboratory. In addition, major research institutions no longer grant research space in perpetuity to faculty members or their affiliated researchers, but size the allocation in accordance with the funding the faculty member has obtained to support his or her research and hence the number of researchers the Principal Investigator ("PI") can support. The productivity of this funding can be expressed as a ratio of graduate students per Principal Investigator ("GS:PI"), and in many established research universities this ratio can rise to as high as 10:1.

2020 Research Program

The research lab program for the 2020 Project was based on assigning lab arrays or suites which include both laboratory and lab support space to Ladder Rank Faculty as Principle Investigators (PIs), and an allowance for graduate student research bench space (55 linear feet of bench space each) at a fixed ratio of 5 graduate students to one Principle Investigator. UC Merced's ratio GS:PI ratio was 2.5:1 in Fall 2014 and is anticipated to rise to 3:1 by the completion of the 2020 Project. However, it is critical to provide additional space to enable PI productivity to continue to rise after the completion of the Project, so the 2020 Program provides for an end state GS:PI ratio of 5:1 in the laboratories.

The research facilities program outlines the general space requirements for the 2020 Project and is categrorized according to six general types - wet labs, dry labs, computational labs, studio labs, core labs and laboratory support space. The ration of laboratory space to support space varies according to the type. A building or facility-wide category of space, entitled "Support and Maintenance" includes research spaces accessible to the entire research facility but that are not specifically "Core Labs". These spaces include central MRI and imaging rooms, chemical storage rooms, academic machine shop and general laboratory storage.

The arrays are based on multiples of a 110 SF 'module'. The characteristics of laboratory buildings naturally lead to standard dimensions of both the laboratory and the furniture, fixtures, and equipment that go in them. A standard 10x11 foot (110 asf) module is an optimal size for laboratory uses as it permits buildings with large, open floorplates and accommodates the dimensions of standard lab fittings designed to go in them.

Space allocation (ASF) variation based on disciplines

	PI	GS	Support	Total
Complex Wet or Dry Laboratories (CPEC Category I)	330	275	275	880
Wet or Dry Laboratories requiring fewer serviced (CPEC Category II)	220	275	220	715
Computational Lab (CPEC Category V)	165	275	0	440
Performance Space/Studio (CPEC Category III)	330	0	0	330

Distribution of labs by faculty

	Percent of Faculty receiving lab type		
	Natural Sciences	SSHA	Engineering
Wet Lab	50%	15%	40%
Dry Lab	30%	15%	35%
Computational Lab	20%	60%	25%
Performance Space/Studio		10%	

Space allocations for labs, using modular method

	Research Team Approach	CPEC		
		LRF	*PD*	*GS*
Science: ENG/NS	880	500	250	250
Science: SSHA	715	350	175	175
Humanities: Large	440	150	100	100
Humanities: Small	220	50	100	100

Note that in the CPEC version, the space allocated for post-docs and graduate students is also their office space. In the approach taken by UC Merced, office work space is calculated separately at 65 asf per student and is included in the Academic Office section of the program.

Research Program Intent

The research facilities program is categorized according to six general types - wet labs, dry labs, computational labs, studio labs, core labs and laboratory support space. The ratio of laboratory space to support space varies according to the type. One category of space, entitled "Support and Maintenance", includes research spaces accessible to the entire research facility but that are not specifically "Core Labs". These spaces include shared MRI and imaging rooms, chemical storage rooms, engineering machine shop and general laboratory storage.

The characteristics most desired in the laboratory space are:

Flexibility – Laboratory spaces need to be as flexible as possible to permit allocation of additional space to growing research programs without major renovations, and coHlocation or relocation of similar laboratory programs as they arise to encourage collaboration and interdisciplinary research. "Flexibility" in this context is the ability to be used for more than one purpose today with minimal adjustment.

Modularity – Due to the rapidly changing nature of research methods and techniques, the laboratories need to be as modular as possible, particularly in terms of HVAC design, piped services, specialized systems and structural loading to make reconfiguration and adaptation of lab space easy and (relatively) inexpensive. Lab organization is by similar research methods and techniques rather than by discipline.

Adaptability – It is impossible to foresee how research will evolve in the years ahead. Thus research space needs to be able to be adapted to changing needs with a minimum of structural involvement or costly renovations. "Adaptability" in this context is the ability to be changed quickly and inexpensively to accommodate future, as yet unknown, uses.

Interdisciplinarity – GroundHbreaking research is increasingly accomplished through teamwork among researchers in different foundational disciplines and casual interaction among faculty and students that sparks new ideas for research. Research space needs to facilitate that interaction and transdisciplinary thought.

Shared Services – Services which can be shared centrally, such as autoclaves, vivaria, and other facilities should be organized in such a way that they are accessible to all researchers who need to use them.

Due to the unique structural and safety requirements of research laboratories, certain mixed uses may not be appropriate. However, some types may make sense: classroom labs and research labs might be located in different wings or on different floors of the same building; and researchers prefer that their offices be located as close as possibly to their laboratories, indicating a possible building-pair approach.

Brief definitions of the laboratory types are as follows:

Wet Laboratories - Spaces intended to support the use of chemical or other biological material and equipped with the full complement of lab bench space and piped services from various qualities of water to compressed air and gases.

Dry Laboratories - Spaces intended for work with dry stored materials, electronics, and large instruments and provided with bench space similar to wet labs but without the need for piped services.

Laboratory Support Space - Wet or dry spaces adjacent to and contiguous with the research space intended to house equipment such as microscopes and imaging instruments, refrigerators and freezers, and special operations such as cell culture and environmental rooms.

Computational Laboratories - Spaces intended to support electronic computing and data manipulation and provided with office type ergonomic workstations and widely distributed broadband high speed data transmission capabilities.

Studio Laboratories - Flexible space for the work of anthropologists, sociologists, performance and visual artists and equipped with a range of technical support features similar to dance or theatrical spaces.

Core Laboratories - Wet, dry or specialized spaces intended to be available to the entire research community and generally requiring staffing by specially trained technicians for particular pieces of equipment or operations. The Core Lab spaces planned for the 2020 Project include a vivarium, biosafety Level 3 laboratory, clean rooms and a greenhouse.

Shared Equipment Rooms – Rooms which are used to house equipment that may be shared by various researchers for specific research projects.

For space efficiency, a planning module of 10'-6" by 31'-6" (1 module by 3 modules) has been utilized in the program allotments for the research area of the laboratories. This module is reflected in the program allotments for laboratory support space as well as graduate students and academic offices.

(Note that there are no graduate student or research staff workstations within the laboratories, only bench space for these individuals. For safety reasons, all writing is to be done in the offices or workstations outside the laboratories.) Standard practice in research facility design then results in. a structural bay of 21'-0" by 31'6" in the long span areas of the lab where vibration sensitivity is low and a shorter span area corresponding to lab support space where vibration sensitive equipment and operations can be located.

Shared Research Support, which include:

- Shared equipment room
- Glass and autoclave room
- Chemical storage
- Chemical stockroom
- Temperature controlled storage rooms • General storage
- Academic Machine Shop
- Trash and recycling
- Staging

Occupancy Classification of Laboratories

The University has elected to classify all classroom laboratories and research laboratories as B-occupancy at a minimum and program ample H-2 occupancy chemical storage rooms in numbers and locations for convenient servicing of the laboratories. In addition, one H-2 chemical storage room is provided at the primary loading dock to service an entire building or group of buildings.

The standard approach to the occupancy classification of a laboratory space is to examine the code-categorized hazardous materials inventory provided for a space by the researchers and the EH&S department and assign the occupancy accordingly. While a known hazardous materials inventory can be utilized to determine the required occupancy classification, creating a program for research facilities and estimating the construction cost of such facilities in the absence of a specific hazardous materials inventory requires the planners to choose an occupancy classification and plan for the code required limits and construction types. The materials storage and use limits required to conform to the code must be communicated to the building operations administrators and subsequently the occupants.

Most university research facilities in the US are currently planned this way. With the trend toward self-contained research apparatus and the miniaturization of samples and processes, the need for storage of larger chemical quantities has been reduced. B-occupancy is suited to the low rise anticipated building forms for the 2020 Project. L-occupancy is both more costly than B occupancy and less advantageous for low-rise buildings.

Combining B-occupancy laboratories with ample H-2 chemical storage areas distributed throughout the facility is a cost effective solution that allows reasonably simple construction yet serves the needs of researchers through distributed storage rooms.

Chemical Stockroom and Decentralized H-2 Occupancy Secondary Storage Room Requirements

In order to support the safe and convenient delivery, sorting and storage of the chemicals and materials required for the research and teaching laboratories the program includes a centralized group of stockrooms as well as secondary chemical storage rooms distributed among the laboratory floor plates.

As is recommended by laboratory safety specialists, the research laboratories should store only limited quantities of chemicals and materials required on an immediate basis, commensurate with the maximum allowable quantities for B-Occupancy. Larger quantities of materials needed to replenish laboratory supplies on a daily or weekly basis are then intended to be conveniently and safely stored on each laboratory floor in one or two programmed H-2 Occupancy storage rooms. These H-2 rated storage rooms encourage laboratory personnel to take advantage of their convenient location for safety, while enabling the laboratories to be classified as B-Occupancy.

The intentionally limited size of the distributed H-2 storage rooms cannot accommodate periodic deliveries of bulk chemicals and materials or storage of larger quantities of materials to supplies for the research community. The centralized Chemical Stockroom, intended to be located in the building containing the preponderance of wet laboratories and the first level of the research facility adjacent to or near a delivery loading dock, permit storage of larger quantities of chemical and the management of materials by professional supply staff.

The Chemical Stockroom area is programmed with four separate storage rooms as follows:

1. Organic Chemical Storage
2. Inorganic Chemical Storage
3. Solvent Storage
4. Gas Storage

Additionally, an office or area for management staff is to be provided. Materials Management staff will coordinate the purchasing, ordering, receiving, and delivery of materials to the laboratory managers.

Laboratory Gases
The program envisions gas closets within service or exit corridors to allow the delivery and replacement of gas cylinders without requiring entry into the lab itself. This arrangement avoids a centralized whole building manifold system and allows variability in the type of gas serving each lab.

Master Plan Only Elements - The Program envisions the addition of 17,500 asf of Core Lab space for future expansion of the Greenhouse as well as a location for a future nitrogen gas storage facility.

PROGRAM SUMMARY | Research Labs

Research Lab Detailed Program	**Intended Use**	No.	Size (ASF)	Total ASF
Research Laboratory 01: Wet		71	660	46,860
Research Laboratory 01A: Synthetic Chemistry		6	660	3,960
Research Laboratory 02: Wet Support		77	330	25,410
Research Laboratory 03: Dry		50	440	22,000
Research Laboratory 03A: Dry - Dark		10	440	4,400
Research Laboratory 03B: Dry - Flex		20	440	8,800
Research Laboratory 04: Dry Support		80	220	17,600
Research Laboratory 05: Computational, Large		28	440	12,320
Research Laboratory 06: Computational, Small		28	220	6,160
Research Laboratory 07: Studio		6	440	2,640
Research Laboratory 08: Studio Support		6	220	1,320
		Total ASF		**151,470**

Support & Maintenance		No.	Size (ASF)	Total ASF
Research Laboratory 02: Wet Support	Shared Equipment room	3	1,000	3000
Storage: Temp Controlled		3	120	360
Research Laboratory 10: Glasswash and autoclave room		6	165	990
Research Laboratory 12: Academic Machine Shop		2	1,500	3000
Central Supplies Handling/Chemical Stockroom				
Chemical Stockroom: Organic Chemical Storage		1	330	330
Chemical Stockroom: Inorganic Chemical Storage		1	330	330
Chemical Stockroom: Solvent Storage		1	220	220
Chemical Stockroom: Gas Storage		1	420	420
Chemical Stockroom: Office / Workroom		1	200	200
Storage: General	Equipment & general storage	1	1,000	1,000
Distributed Storage				
Storage: Chemical		6	220	1,320
Storage: General		6	220	1,320
Trash/Recycling		4	300	1,200
Staging: Research		1	350	350
			Subtotal	14,040
		Total ASF		**14,040**

Core Labs		No.	Size (ASF)	Total ASF
Research Laboratory 13: Shared Instrument Room		1	3,824	3824
Research Laboratory 14: Vivarium		1	6,176	6,176
Research Laboratory 15: Greenhouse		1	2,500	2,500
Research Laboratory 16: BSL3		1	2,500	2,500
Research Server Facility		1	1,025	1,025
			Subtotal	16,025
		Total ASF		**16,025**

Instructional Space

Instructional Space Methodology

Classrooms and Class Laboratories

Classroom and class laboratory demand was calculated based on classroom and laboratory utilization for the Fall 2014 semester. The Fall 2014 room class and room data was broken down by room size, class type and utilization to establish number of rooms of each size and typical hours of utilization for the student population. This yielded the following data for Fall 2014.

Room Type	Capacity	Total Hours	Number of Rooms	UCM Weekly Room Hours	CPEC Weekly Room Hours
Seminar/Small Class	< 30 seats	895	20	44.7	42.0
Classroom	30 > 75 seats	952	18	52.9	42.0
Lecture Hall	> 75 seats	405	9	45.0	42.0
Dry Teaching Lab	Dry	607	17	35.7	25.0
Wet Teaching Lab	Wet	380	13	29.2	25.0

Many traditional space analysis methods, including CPEC, assign an area (asf) per student contact hour in order to generate a total classroom space demand, without regard to room count. However, this approach in effect assumes that it is possible to have five different classes going on in a single large lecture hall, when in point of fact the need is by room count. For this analysis, the number of students per class was not considered, since the analysis was to identify demand for rooms, based on classes taught, regardless of size.

The existing classroom distribution/utilization was analyzed by size, producing data showing classroom utilization by size. That was extrapolated to derive a forecast of classroom need by size, which was validated by the Campus registrar. Although there is a trend, particularly as a result of the financial stresses experienced by public institutions of higher education since the financial crisis of 2008, for universities to build more large lecture halls in order to increase the number of students served with less space, the UC Merced instructional model is that of a small, intimate research university. In addition, the demographics of the UC Merced student body necessitate smaller classes than are traditionally found at many publicly funded universities: 62% of the student body are the first member of their family to attend college, and they require more assistance and direct professorial contact than the Lower Division students of other campuses in the UC system and in the California State University system. Thus the greatest need on the UC Merced campus is for seminar rooms and 30-seat classrooms.

These data were extrapolated using the enrollment projections with one adjustment to reduce weekly hours of use. The adjustment brings the utilization down closer to established CPEC classroom availability hours per week, and provides a degree of flexibility for future growth.

Utilization Rates in the Model

Room Type		Average Hour per week	
		Current	Planned
Seminar Room	< 30 seats	44.73	45
Classroom	30 > 75 seats	52.91	45
Lecture Space	> 75 seats	45.00	45
Dry Teaching Lab	Dry	35.69	30
Wet Teaching Lab	Wet	29.23	30

Using this approach of linear extrapolation includes an implicit assumption that class sizes do not change as the student population grows, and a 50% increase in students leads to a 50% increase in classes, and hence room demand. It also contains the assumption that the class and laboratory mix remains largely unchanged. This assumption was reviewed with the [Provost and the] registrar for confirmation.

7% of total classroom space and 10% of class laboratory space is assigned to storage and service space. The service space includes classroom and laboratory preparation workspace.

Colloquy Spaces

Colloquy Spaces represent the heart of the collaborative experience that UC Merced seeks to create. The term refers not to a particular configuration of space but rather to the spontaneous result that the space should facilitate.

These spaces are intended to enable spontaneous interactions amongst the research and academic populations and should be distributed throughout the campus. The design of the Colloquy Space can take a variety of forms, from nodes along a circulation path to enclosed rooms, but should always be inviting, accessible and available to all without association with any specific department or school.

Observations from campus architectural advisors about what creates a successful interactive space include:

- Any food product will attract people to the space, especially coffee and soda. Food service should be able to be provided by either the University or a third-party vendor.

- Bar stools are always more popular than sofas and chairs because they better accommodate use of tablets and laptops and allow those conversing to lean on the barHheight table. BarH height tables need bar hooks for computer bags. Some soft seating is needed for social conversation and more relaxed interaction.

- Students like to be somewhere where they can watch but aren't on the stage. They like to sit close to one another while working independently.

- If a whiteboard is cleaned with cleaning fluid, it begins to hold colors. Tempered or laminated glass panels that are the standard size for sliding glass doors are inexpensive, because they are manufactured in large quantities, and can be put up with mirror clips.

Classroom Program Intent

7% of total classroom space and 10% of class laboratory space is assigned to storage and service space. The service space includes classroom and laboratory preparation workspace. The most important qualities sought in instructional space are:

Flexibility - Classrooms should be designed to facilitate mixed use (academic/student life/community) throughout the day and evening. Flexibility in use should not adversely affect the utility and performance of the space for teaching.

Adaptability - Classrooms should be easily reconfigured to adapt to everHchanging pedagogical methods and techniques, themselves often occasioned by changes in technology.

Living/Learning – The vision for the campus is to be a place where students live where they learn and learn where they live. The Living/Learning concept seeks to blur the line between living and learning by holding classes, tutorial sessions, and student-led learning activities within the realm of student living spaces. The distribution of classroom space should reflect this goal.

Master Plan Only Elements - The Program envisions the addition of 11,000 asf of Living/Learning space for future classroom or other flexible space in or adjacent to the residence areas. This additional Living/Learning space will not be constructed as part of the 2020 Project.

PROGRAM | Classroom

Classroom Detailed Program	**Intended Use**	No.	Size (ASF)	Total ASF
Classrooms				
Classroom 1: 299 Seat, Stepped Seating		1	6,250	6,250
Classroom 2: 90 Seat (TEAL), Flat Floor		2	2,250	4,500
Classroom 3: 90 Seat, Flat Floor		1	1,800	1,800
Classroom 4: 30 seat		16	660	10,560
Classroom 5: 24 seat Seminar Room		16	500	8,000
			Subtotal	**31,110**
Classroom Support Spaces				
Storage: General	Classroom Service	2	500	1,000
Storage: General	Supply	5	250	1,250
Storage: General Wet	Accessed from Lecturer side of Classroom 1: 299 Seat	1	200	200
			Subtotal	**2,450**
		Total ASF		**33,560**
Colloquy Space				
Colloquy Space / Interaction 1: Large		5	1,000	5,000
Colloquy Space / Interaction 2: Medium		8	500	4,000
Colloquy Space / Interaction 3: Small		5	200	1,000
			Subtotal	**5,000**
		Total ASF		**10,000**

PROGRAM SUMMARY | Housing

Student Housing	**Intended Use**	No.	Size (ASF)	Total ASF
Residence Hall Community		1700	143	243,250
Graduate Apartments		200	329	65,700
Resident Staff		24	850	20,400
Subtotal		1,924		**329,350**

Housing Administration/Community	**Intended Use**	No.	Size (ASF)	Total ASF
Resident Staff				
Work Station 01	Front Desk Support	8	50	400
Lobby		2	185	370
Office 02: Administrator		1	120	120
Work Station 02		7	65	455
Work Room		1	250	250
Mail/Receiving		1	1,993	1,993
			Subtotal	**3,588**
Laundry				
Laundry: Housing		4	600	2,400
Community				
Lounge, Social (Students)		16	725	11600
Multi-Purpose: Housing		16	750	12,000
Study Room		20	250	5,000
Recreation/Gaming		15	625	9,375
			Subtotal	**40,375**
	Total ASF			**43,963**

Housing Support & Maintenance	**Intended Use**	No.	Size (ASF)	Total ASF
Storage: Bike/Gear		4	625	2,500
Trash/Recycling		4	300	1,200
Shop, Maintenance		1	2,000	2,000
Storage: General	Maintenance	1	500	500
Storage: Custodial		4	120	480
Closet: Custodial		4	100	400
			Subtotal	**7,080**

Academic Office Space

Academic Office Methodology

Academic office space was projected based on a modular approach to academic office space needs similar to that used in CPEC:

Offices for Ladder Rank Faculty, Post-Doctoral Fellows, Lecturers with Security of Employment (LSOE's) and Lecturers with Potential Security of Employment (LPSOE's) are calculated as a module containing space as follows:

Faculty Office:	140 asf
Support Staff:	40 asf
Service & Storage:	10 asf
	195 asf

Office Space Allocation

Ladder Rank Faculty	195
Lecturers	91
Post-Doctoral Fellows	195
Teaching Assistants/Research Assistants	195
Graduate Students	65

Note that the CPEC allowance for ladder rank faculty is also 195 asf. "Other lecturers" are allocated a 91 asf workstation. This is the result of the assumption that of future lecturers, 20% will be LPSOEs or LSOEs and therefore members of the Academic Senate and eligible for a standard faculty office; the remaining 80% of lecturers will be eligible for a 65 asf workstation. The figure of 91 asf is the average that results for all lecturers.

Conference room and support needs are calculated based on the following:

	ASF/Enclosed Office
Enclosed Office	130.00
Reception	6.00
Conference Room	27.50
Admin Office	7.25
Copy room	12.50
Storage/Filing	7.75
Break room	4.00
TOTAL	**195.00**

Graduate students are separately allocated a 65 asf workstation. Note that under CPEC, graduate students are allocated lab space which is intended to be inclusive of any office space they may need.

Academic Office Program Intent

The academic office program is additive to the existing.

Interdisciplinarity - Academic office space and support areas should be designed to support the campus's goal of promoting interdisciplinary exploration and research, the intimate learning experience resulting from close collaboration among faculty and students that is a hallmark of a UC Merced education, and a 24x7 learning environment.

Adjacency - The program intent is to place faculty offices as near as practicable to their research laboratories/studios without compromising the modularity and flexibility of the laboratory space (see research space, above) and to encourage faculty/student interaction. Adjacencies are intended to encourage interdisciplinary interaction and spontaneous intellectual exchanges.

Adaptability - One thing that is constant in higher education is continuous reconfiguration of the physical space in which the institution operates. This "churn" is both time consuming and expensive. Academic office space is intended, like commercial office space, to be easily reconfigured and adapted without requiring structural changes or major reconfiguration of utilities or the building core.

Shared Spaces - In the academic office program, conference rooms, break rooms, and other similar spaces are expected to be arranged and configured so that they can be shared. No conference rooms will be set aside for the exclusive use of one work group or academic area

			Subtotal	**91,390**
Academic Office Support Space				
Lobby		8	185	1,480
Work Station 02: Reception		8	65	520
Work Station 02	Administrative	24	65	1,560
Office 01: Administrator	Huddle Room	8	100	800
Printer/Copy Room		14	300	4,200
Conference Room 02: 10-12 seats		12	350	4,200
Conference Room 01: 8 seats		24	200	4,800
Storage: General	Filing	13	200	2,600
Breakroom / Kitchenette		8	150	1,200
			Subtotal	**21,360**
Academic Leadership				
Kitchen: Serving/Prep - Small		1	195	195
Lobby		1	223	223
Work Station 02: Reception		1	65	65
Office 05: Chancellor		1	275	275
Conference Room 02: 10-12 seats		1	350	350
Office 06: Provost		1	250	250
Office 07: Vice Chancellor		6	200	1,200
Office 02: Administrator		3	120	360
Work Station 02	Administrative Assistants	8	65	520
Conference Room 01: 8 seats	Unallocated	1	240	240
Breakroom / Kitchenette		1	150	150
Storage: General	File Room	1	135	135
Printer/Copy Room		1	176	176
Multi-Purpose	Board Room	1	3,000	3,000
Conference Room 03: 24+ seats		1	500	500
Conference Room 01: 8 seats		4	200	800
Office 02: Administrator	Hotel Space	3	120	360
Work Station 02		16	65	1,040
Restroom: Gender Inclusive w/shower	For Chancellor's office	1	50	50
			Subtotal	**9,889**
		Total ASF		**122,639**

Housing

Research shows that, particularly in the case of students who have no family tradition of attending college, students who live on campus for their first year perform much better than those who do not.

As a new and growing campus, UC Merced is open to a variety of student housing styles, but key to the program is the ability to build doubles which can be tripled in order to maintain sufficient housing on campus, and house approximately one-third of students on campus, including 100% of freshmen.

The program is intended to house approximately 35-37% of the student body upon completion of the 2020 Project.

Move-in day

Student Housing

Student Housing Methodology

There are many styles of student housing across the country. As a new and growing campus, UC Merced is open to a variety of student housing styles, but key to the program is the ability to build doubles, which can be tripled in order to maintain sufficient housing on campus, including 100% of freshmen. Research shows that, particularly in the case of students who have no family tradition of attending college, students who live on campus for their first year perform much better than those who do not. The entire master-planned program is intended to enable the campus to house 50% of the student body in accordance with the Long Range Development Plan.

Until such time as all housing has been delivered, Student Life anticipates providing additional needed housing through tripling of double rooms. For this reason, ceiling heights are 10 feet to permit the installation of bunk beds. The undergraduate housing was assumed for the purpose of sizing to be designed in "pods" of 40 rooms, and common and administrative space was assumed to be shared between two units of 400 beds each.

A portion of the campus's graduate students will be accommodated in onHcampus apartments; it is anticipated that the balance will live off campus in market housing, as will most upper division undergraduates.

The student housing program is additive.

Student Housing Program Intent

Living/Learning - Learning should not stop when the student leaves the classroom and classrooms should not necessarily be separate from living quarters. The British residential college system is an example of a model where classes occur in the residences as well as in traditional classroom buildings. Residences should encourage social and intellectual interaction among students, faculty, and resident advisors.

Community - Because the Campus wishes to create flexible, multiHuse space, as much of the ground-level community space of the residences as feasible (consistent with resident safety) should be accessible not only to residents of those facilities but also to the rest of the campus community. Thus these spaces are envisioned as having two points of access: one from the exterior of the space which can be controlled as to hours of access, and one from the interior, specific to the residence, which is limited to building residents and which may have up to 24-hour access.

Activation – Residences should be integrated into the campus fabric in a way that contributes to the vibrancy and animation of the campus at all hours.

The University provides Resident Advisors, upper division students who provide support to residence hall residents, in a ratio of at least 1 RA per residence hall floor or every 60 residents, whichever is greater. RAs are housed in single rooms which are centrally located on the floors of the residence halls. These singles are included in the total number of single rooms set forth in the Program. The University also provides Residence Life Coordinators and Faculty-in-Residence who live in apartments adjacent to the residence halls.

Master Plan Only Elements – Housing

The Program contains 22,230 asf of future residential space (which will not be constructed as part of the 2020 Project), which needs to be assigned a location in the Master Plan.

Chancellor's residence – The Program calls for the location of a 6,500 asf Chancellor's residence to be included in the Master Plan. Designers should exercise their creativity in terms of where it should be located and the format it might take given the stated goals of the 2020 Project. The Chancellor's residence will not be constructed as part of the 2020 Project.

Housing Administration/Community	**Intended Use**		No.	Size (ASF)	Total ASF
Resident Staff					
Work Station 01	Front Desk Support		8	50	400
Lobby			2	185	370
Office 02: Administrator			1	120	120
Work Station 02			7	65	455
Work Room			1	250	250
Mail/Receiving			1	1,993	1,993
				Subtotal	**3,588**
Laundry					
Laundry: Housing			4	600	2,400
Community					
Lounge, Social (Students)			16	725	11600
Multi-Purpose: Housing			16	750	12,000
Study Room			20	250	5,000
Recreation/Gaming			15	625	9,375
				Subtotal	**40,375**
		Total ASF			**43,963**
Housing Support & Maintenance	**Intended Use**		No.	Size (ASF)	Total ASF
Storage: Bike/Gear			4	625	2,500
Trash/Recycling			4	300	1,200
Shop, Maintenance			1	2,000	2,000
Storage: General	Maintenance		1	500	500
Storage: Custodial			4	120	480
Closet: Custodial			4	100	400
				Subtotal	**7,080**

Student Life and Athletics

The overall intent of the student life and athletics program is to integrate living, learning, and playing into a unified whole.

"Student Life" is a term that has grown out of the need to separate, for funding purposes, activities that are eligible to be financed by State funds and those that are not.

UC Merced does not view these activities as somehow separate from the mission of the institution or believe that they should be physically segregated from the other activities of the living-learning enterprise.

The overall intent of the student life and athletics program is to integrate living, learning, and playing into a unified whole where all of those activities occur simultaneously and in every and any kind of campus space.

Thus although the Student Life program is broken down into discrete segments for the purpose of determining the overall space needs for these uses, campus leadership anticipates that proposers will embed these uses in the fabric of the campus in a way that encourages a vibrant 24/7 community which uses space efficiently and creatively.

Dining

Dining Methodology

The campus currently has one dining hall with a capacity of 600 seats.

Dining Program Intent

Dining facilities are specialized facilities. We expect that Proposers will engage the services of a dining hall design specialist firm to incorporate the following metrics and features into a state-of-the-art, sustainable dining center. The current dining center, Yablokoff-Wallace Dining Center, with an area of 21,500 asf, serves about 4750 meals per day, 12% at breakfast, 36% for lunch, 41% for dinner, and 11% late night. 90% of dining center revenue is from resident meal plans. 100% of residents are on a meal plan.

Fall 2014 meal plan take rates were:

- C Plan – 9%
- A Plan – 50%
- T Plan – 11%

Less than 2% of off-campus students are on a meal plan.

Hours of Operation

- Breakfast: 7 – 9 am
- Lunch: 11 – 2 pm
- Extended Service: 2 pm – 4 pm
- Dinner: 5 – 9 pm

Peak serving capacity is 500 meals per hour.

Dining Program

- 5000+ meals minimum per day (total capacity on campus of 11,600 meals per day)
- Feeding 3600 residents, 6400 off-campus students, conference guests, faculty, staff and visitors
- Peak throughput of 550 meals per hour
- Average seating duration: 35 minutes
- Seating for 600-650, with no fewer than 100 seats outside

Seating

- Seating for 600 with a combination of 4 seat and traditional 8 seat tables
- Outdoor (enclosed) patio seating
- Ability to separate facility into separate program areas (separated by doors)
- 75ppl+ banquet room and 20ppl+ meeting room, both on perimeter of building with windows with kitchen to room access

Front of the House

- Double glass doors that lead into an open foyer area. Two lobby checker stations similar in size to the existing point-of-sale stations at the existing Dining Center
- Customer interaction with Cashiers at the point of entry
- Open floor plan with a seamless transition from servery to seating
- A design that encourages customers to flow from station to station
- Trayless facility
- Nine food preparation stations which can be easily adapted to new and emerging food trends over time
- Payment Method:
  At Peak Times:
  - Swipe meal card at entry
  - Flat rate for faculty, staff, off-campus students, visitors,
  - No food may be taken from facility

  At Off-Peak Times:
  - Ability to convert to pay a la carte
  - Swipe at exit – declining balance
  - May take food out

Back of the House

- Well defined "areas" - hot foods, pantry, bakery, warewashing, etc.
- Adequate refrigeration and freezers NOT ALL ON THE SAME COMPRESSOR.
- Centralized production zone for servicing satellite facilities
- Dedicated production for Lakeside Catering (can be dedicated via walls or divided by eqpt)
- Walk-up take out window (brownbag lunches, late night dining, etc.)

Dish Room / Pot Room

- Three compartment sink in back of the house near or in dishroom for pot washing.
- Dish room should be part of the back of the house
- Privacy wall between dish return and dining room. Compost/recycle/trash bins on privacy wall across from return.

- Pupler for more efficient composting and waste stream diverting
- Receiving / Waste Management
- A two bay, properly graded receiving dock capable of handling a 60' tractor trailer rig
- Space and utility hookup for trash and recycling compactors
- Space and utility hookup for cardboard bailer
- Space and utility hookup for electric carts
- Receiving areas area an eye sore and concealment is important.

Restroom and Lockers

- Customer M/F dedicated restrooms
- Back of the House employee M/F restooom / locker rooms adjacent to a small break room when Union information can be displayed. (required per Union contract)
- Adequate wall space for lockers

Office Space

- Production Office - (to fit three desk + file cabinets) Desk for Production Mgr, Executive Chef Storekeeper. Preferably in back of building near receiving.
- Managers Office - Same needs as production office
- Student Managers - Small office with room for two desks and filing cabinets.

Dining Expansion

UC Merced's Lessons Learned regarding dining

- Existing Dining Services loading dock is unusable because it is too steep. Recommend flush dock to drive up to.
- Refrigerators and freezers should not be run on the same compressor as is the case with the original Dining building.
- Ansel gas resets should not be in the ceiling as in the case with the existing Dining building.
- Existing electrical panels are in enclosed areas where it is nearly impossible to maintain 3 ft clearance as required by OSHA.
- Drains in waste management area need to be plumbed to sanitary sewer.
- Consider electrical runs in roof/lid instead of under slab
- Better distribution of windows/solid wall space. Existing Dining Center has climate balance issues.

<u>Interiors</u>

- Front of the House floors: Painted or ground concrete or durable VCT. Consider introducing color into facility via flooring.
- Front of the House walls must not be flat paint.
- Back of the House floors: Medium grit non-slip epoxy or Altro Stronghold 30?
- Back of the House walls: FRP paneling a minimum of 6' up all walls. Stainless backdrops behind equipment.
- No round cabinetry / custom mill work. It makes stations less flexible and more difficult for Dining to modify concepts.
- Corner guards to prevent premature deterioration of walls.

Student Activity

Student Activity Methodology

The space required for Student Activities was determined by interviewing Student Affairs staff, Athletics staff, and graduate and undergraduate students. In general, the space needs reflect requirements for a student body of 10,000 students and space for staff proportionately increased from Fall 2014 to cover the 2020 Project student population. In addition, Student Life and Athletics are a portion of the program where "catch-up" space is a significant portion of the program because student activity and athletic facilities have lagged the growth of the campus since its inception.

In several instances, conference rooms are shown within the space needs of a particular part of the Student Activities program (Student First, Enrollment, etc.) however this is to denote that the staff needs the use of conference rooms, not that they need a dedicated conference room.

This is a portion of the program where mixed use and flexible space can be used to effectively create more space than can be achieved with space dedicated to a single use.

Student Activity Program Intent

Shared Spaces - In the Student Activities program, conference rooms, break rooms, and other similar spaces are expected to be arranged and configured so that they can be shared.

Food and Retail – In keeping with the campus desire for a denser campus with a more urban feel, the program contains five retail shells of 2000 asf which are intended to be distributed across the campus and which may be operated by students, by dining services, or by third-party tenants. In addition, there a 4000 asf space for the campus bookstore and a 2000 asf space for a gallery. These retail spaces should be finished to a "retail vanilla box" condition with stubbed out plumbing and interior restrooms appropriately sized for food service in the space.

Conference Center – Although shown in the Student Activities program, this conference center, which has a ballroom, several large meeting rooms, and seminar rooms, is intended to serve the whole campus: for scholarly conferences and seminars; for meetings with trustees, alumni and donors; for student dances, concerts and events; for community engagement events; and for administrative conferences and meetings.

Social and Entertainment – This space is designed to serve as a gathering space for students in addition to the residence halls and will house such uses as a game room, movies, and other social activities.

PROGRAM SUMMARY | Student Activity

Student Activity	Intended Use	No.	Size (ASF)	Total ASF
Food and Retail				
Retail Shell		5	2,000	10,000
Gallery		1	2,000	2,000
Campus Store		1	4,000	4,000
Conference and Meeting Rooms				
Ballroom		1	7,000	7,000
Lobby		1	750	750
Storage: General		1	200	200
Kitchen: Serving/Prep - Large		1	500	500
Conference Room 03: 24+ seats	Meeting Room	3	1,500	4,500
Classroom 5: 24 seat Seminar Room		4	500	2,000
Storage: General		1	350	350
Clubs and Organizations				
Office 01: Administrator	Huddle Room	1	100	100
Work Station 02	Student Activity Director	10	65	650
Work Station 01	Student Government office	10	50	500
Work Room		1	750	750
Ticket Office		1	60	60
Conference Room 03: 24+ seats	Conference / Multipurpose	2	500	1,000
Conference Room 02: 10-12 seats	Conference / Multipurpose	2	350	700
Conference Room 01: 8 seats	Conference / Multipurpose	4	200	800
Work Station 02: Reception	Veteran's Center	1	65	65
Lobby	Veteran's Center	1	85	85
Work Station 02	Veterans' Center	3	65	195
ATM Alcove		2	60	120
Work Room	Unallocated	1	980	980
Administrative Offices				
Lobby		1	185	185
Work Station 02: Reception		1	65	65
Work Station 02	Director	1	65	65
Work Station 02		6	65	390
Printer/Copy Room		1	300	300
Conference Room 01: 8 seats		2	250	500
Social and Entertainment				
Lobby / Queuing		1	1,000	1,000
Information Desk		1	290	290
Lounge, Social & Entertainment		1	1,000	1,000
Recreation/Gaming		1	2,000	2,000
Conference Room 03: 24+ seats	Multipurpose	2	500	1,000
Storage: General		1	250	250
Support & Maintenance				
Storage: General		1	2,000	2,000
Trash/Recycling		1	300	300
Staging		1	350	350
Restroom: Men		4	400	1,600
Restroom: Women		4	400	1,600
Storage: Custodial		1	350	350
Closet: Custodial		4	100	400
			Subtotal	**50,950**

Wellness Center

Wellness Center Methodology

The Wellness Center space requirement was calculated by determining the number of physicians and counselors need to serve a campus of 10,000 students.

Wellness Center Program Intent

Shared spaces - In the Wellness Center program, conference rooms, break rooms and other similar spaces are to be arranged and configured so that they can be shared.

Privacy – Privacy is a key concern in any wellness center. The space must be arranged to protect the privacy of those checking in to see a doctor. Patients' financial privacy must also be protected. Health records must be protected. Finally, patients' conversations with doctors and other medical staff must be acoustically protected.

Air quality – In any medical center, potential contagion must be addressed and contained to the extent possible. Air circulation must be appropriate to the facility.

Patient Flow – In order to optimize treatment and enable the staff to efficiently serve the campus community, the Wellness Center must be designed to accommodate a smooth flow of patients from reception, to intake, to the exam room, to billing and follow-up appointments. Exiting patients should have easy access to the pharmacy.

Counseling and Psychological Services Program Intent

Privacy – There must be separate waiting areas for undergraduate and graduate students. Exits for undergraduates and graduate students must be separate as well. Graduate students do not wish to meet undergraduates they are teaching in Counseling Services. Room acoustics must prevent audibility of conversations outside the room. For safety purposes, shouting should be audible. Occupants of the rooms should not be identifiable from outside the rooms.

Safety – There must be a separate exit for staff for security purposes.

Flow - Exiting patients should have easy access to the pharmacy.

Disability Services Program Intent

Acoustics - A large portion of the services this unit provides are special testing facilities. Acoustic isolation is important when students need to work with an assistant or need voice recognition software to "read" their exams, since this would be an obvious disruption to others.

PROGRAM SUMMARY | Student Life

Wellness Center	Intended Use	No.	Size (ASF)	Total ASF
Wellness Building				
Waiting Room	Wellness (1 well; 1 sick)	2	250	500
Intake: Confidential		4	80	320
Triage		3	120	360
Exam Room / Treatment Room		21	100	2,100
Procedure/Casting		2	150	300
Nursing Area		1	250	250
Sterile supplies/autoclave/glasswash		1	100	100
Exam Room, Telemedicine (Patient exam and video presentation)		2	100	200
Phlebotomy		2	100	200
Laboratory: Medical		1	350	350
Radiology		1	200	200
Office 01: Administrator		16	100	1,600
Office 01: Administrator	Huddle Room	1	100	100
Conference Room 02: 10-12 seats		1	350	350
Conference Room 01: 8 seats		1	180	180
Breakroom / Kitchenette		1	250	250
Storage: General		2	100	200
Pharmacy (dispensing)		1	840	840
Counseling and Psychological Services (CAPS)				
Waiting Room	Undergraduate	1	250	250
Waiting Room	Postgraduate	1	150	150
Intake: Confidential		1	120	120
Office 02: Counseling (CAPS)		10	120	1,200
Group Therapy	CAPS	2	300	600
Group Therapy	Other	1	300	300
Conference Room 01: 8 seats		1	250	250
Storage: General		1	100	100
Disability Services				
Work Station 02: Reception		1	65	65
Lobby		1	185	185
Intake: Confidential		1	120	120
Office 02: Administrator		1	120	120
Work Station 02		9	65	585
Testing Center				
Office 08: Testing Room		15	100	1,500
Work Station 01	Testing stations	34	50	1,700
Conference Room 01: 8 seats		2	250	500
		145	Subtotal	**16,145**

Enrollment Center

Enrollment Center Methodology

The Enrollment Center space requirement was developed based on current throughput of students who are seeking to enroll and projecting it based on a student population of 10,000.

Enrollment Center Program Intent

Admissions **–** The first impression a potential student receives of the campus is at the Admissions Office. The office should be welcoming, expressive of the mission and values of the campus, easy to find and easy to access. There should be visitor parking in close proximity. Office acoustics should protect the privacy of interviews and conversations.

One-stop, customer-centric service - The Student First Center is intended to be a facility where students can transact all of their business with the University – enrollment, registration, financial aid, billing, IDs, etc - in a one-stop, retail-inspired congenial, efficient environment using 21st century technology to speedily and easily accomplish these tasks, while students with confidential financial or other matters to discuss can be referred to the appropriate personnel. The cashier's office should be adjacent to, but not in the Student First Center.

Confidentiality - Students' confidential academic records and financial information must be protected. Private space must be available for confidential conversations about academic and financial matters.

Adaptability - The enrollment center has its own "scanning rooms" to turn paper into electronic documents, but documents are increasingly being originated as electronic documents without passing through a "paper stage." These scanning rooms are often windowless, interior space. The program must be adaptable enough so that as technology and processing changes, the campus does not wind up with this sort of stranded enclosed space that is difficult to put to another use without a major space reconfiguration.

Expandability – Summer Session and the Concurrent Enrollment Program (Extension), although not included in the 2020 Program, must be master planned and able to be co-located with the Enrollment Center in future.

PROGRAM SUMMARY | Student Life

Enrollment Center	Intended Use	No.	Size (ASF)	Total ASF
Students First Center				
Office 02: Administrator	Huddle Room	1	120	120
Work Station 02		13	65	845
Work Station 01		3	50	150
Work Room		1	200	200
Storage: General		1	100	100
Lobby / Queuing		1	1,500	1,500
Lounge: Digital Interface		1	400	400
Student Business Services				
Cashier		1	500	500
Work Station 02		7	65	455
Financial Aid				
Office 02: Administrator	Huddle Room	10	120	1,200
Work Station 02		23	65	1,495
Work Station 01		8	50	400
Printer/Copy Room		1	800	800
Storage: General		1	400	400
Registrar				
Office 02: Administrator	Huddle Room	1	120	120
Work Station 02		15	65	975
Work Station 01		6	50	300
Work Room		1	120	120
Storage: General		1	120	120
SHARED Space btwn Students First Center, Financial Aid & Registrar				
Breakroom / Kitchenette		1	250	250
Lactation Room		1	100	100
Conference Room 03: 24+ seats		1	500	500
Conference Room 02: 10-12 seats		3	350	1,050
Media Cats				
Office 02: Administrator	Huddle Room	1	120	120
Work Station 02		9	65	585
Work Room		1	300	300
Admissions				
Work Station 02: Reception		1	65	65
Lobby		1	335	335
Break Room/Kitchenette/Vending		1	500	500
Conference Room 03: 24+ seats		1	600	600
Conference Room 02: 10-12 seats		2	350	700
Office 02: Administrator	Huddle Room	1	120	120
Office 02: Administrator	Director	1	120	120
Work Station 02		34	65	2,210
Work Station 01		8	50	400
Work Room		1	500	500
Storage: General		1	2,500	2,500
Office 01: Administrator	Huddle Room	9	100	900
Staging		1	350	350
			Subtotal	**22,405**

Early Childhood Education Center Expansion

Early Childhood Education Center Methodology

This program is intended to be a replacement of the existing modular facility which houses the Early Childhood Education Center. The ECEC is located on a parcel which is adjacent to a County-owned road on which the University has an easement for expansion of the roadway, but on which the University may not build (see Ranchers Road County Easement at Project Agreement Volume III, Other Mandatory Standards)

The current facility, a LEED Gold modular facility, was made possible in part by donations. These gifts permit the relocation or replacement of the current facility, but naming rights and recognition must be preserved in the new facility.

ECEC is open year round except for major holidays. Therefore, any work affecting the facility must either be able to proceed without interrupting Center activities with noise, dust, construction debris, physical breach of the facility, etc.

The Center has no closure longer than three days other than Winter Recess (approximately 14 days including weekends between Christmas and New Year's Day).

Early Childhood Education Center

PROGRAM SUMMARY | Student Life & Athletics

Early Childhood	**Intended Use**	No.	Size (ASF)	Total ASF
Classroom 8: Child		4	1,100	4,400
Restroom: Child		2	140	280
ECEC Support space	Toddler	1	205	205
ECEC Support space	Preschool	2	205	410
ECEC Support space	Infant	1	205	205
Observation Room		1	50	50
Restroom: Gender Inclusive	Adult	3	50	150
Storage: General	Central	1	150	150
Closet: Custodial		1	80	80
Laundry: Athletics		1	120	120
Shared Soft Play		1	230	230
Classroom 8: Child	Toddler	2	570	1,140
Classroom 8: Child	Infant Room	2	470	940
Breakroom / Kitchenette		1	200	200
Restroom: Child with Changing Area		2	140	280
Lactation Room		1	60	60
Office 02: Administrator	Huddle Room	1	120	120
Office 01: Administrator	Huddle Room	1	100	100
Conference Room 03: 24+ seats		1	500	500
Storage: General	Copy/File	1	100	100
Office 02: Administrator	Faculty / Research	1	120	120
Work Station 02		3	65	195
Work Station 02: Reception		1	65	65
Lobby		1	85	85
			Subtotal	**10,185**
Programmed Site				
ECEC Outdoor Play Area		1	9,525	9,525

Athletics

Aquatic Center

Aquatic Center Methodology

The Aquatic Center is a competition swimming facility which meets NCAA Division II standards. Lockers rooms and other facilities are sized to serve both competition and recreational use needs. The Program requires the master planning of a diving pool adjacent to the swimming pool within the Aquatic Center.

Aquatic Center Program Intent

Use - The Aquatic Center is intended to serve both as a competition aquatic center which meets NCAA Division II standards and as a recreational resource for the campus community when not in use for collegiate competition. Although an outdoor facility, it needs an enclosure so that admission can be charged for competitive events.

Dropoff and Parking – The Aquatic Center needs a dropoff area with good circulation and a small number of dedicated parking spaces, but needs to be located near a large parking area to enable spectators and community users of the recreational facilities to access the Center within a five minute walk.

Athletics Fields

Athletic Fields Methodology

The Competition Field is a competition soccer field. Lockers rooms and other facilities are sized to serve both competition and recreational use needs. The gates are intended to permit entry of up to 3000 people for a single event. This field has a concession stand. This field is intended to be served by the restrooms included in the public locker rooms.

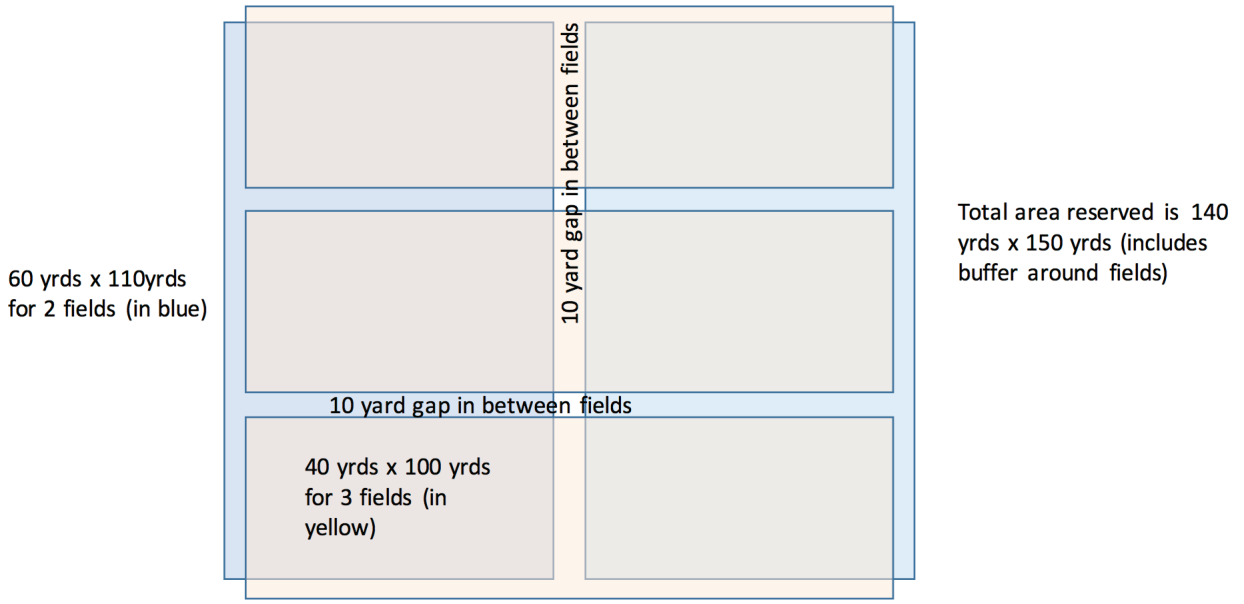
The Competition Field will also serve as the venue for Commencement and other campus-wide ceremonies. Sun, wind, visibility and sound projection should be kept in mind in the design of this field.

Athletic Fields Program Intent

Multi-Use - The athletic fields are intended to provide both a competition-level field for soccer and also to provide two recreational fields where the campus community can engage in intramural sports, performances, and other campus activities. The recreation fields should be located on a shared uninterrupted "podium" or surface such that they can restriped in various ways to accommodate multiple games of various sports. See exhibit bleo for an example of how two fields can be split to host multiple games.

Dropoff and Parking - The Athletic Fields need a dropoff area with good circulation and a small number of dedicated parking spaces, but needs to be located near a large parking area to enable spectators and community users of the recreational facilities to access the Center within a five minute walk. A Shared Plaza is intended to serve both the and Competition field.

Recreation Fields Layout



Drawing is not to scale and for informational purposes only

PROGRAM SUMMARY | Student Life & Athletics

Aquatic Center	**Intended Use**	No.	Size (ASF)	Total ASF
Team & Locker Rooms				
Lockers 02: Public	Men (Public)	1	1,650	1,650
Lockers 01: Athletics	Men (Team)	1	700	700
Lockers 01: Athletics	Women (Team)	1	700	700
Lockers 02: Public	Women (Public)	1	1,650	1,650
Locker: Gender Inclusive		1	200	200
Lockers 03: Coach		2	250	500
Offices and Training				
Work Station 02		8	65	520
Office 02: Administrator	Senior Administrator	2	120	240
Team Meeting Room		1	1,000	1,000
Training Room, Athletics		1	500	500
Office 01: Administrator	Huddle Room	4	100	400
Support & Maintenance				
Storage: General		1	1,500	1,500
Laundry: Athletics		1	240	240
Pool Pump/Filtration Room		1	750	750
Restroom: Men		1	350	350
Restroom: Women		1	350	350
Storage: Custodial		1	200	200
Tech/Control		1	200	200
Subtotal			Subtotal	**11,650**

Outdoor Athletics	**Intended Use**	No.	Size (ASF)	Total ASF
Team & Locker Rooms				
Lockers 01: Athletics	Men (Team)	1	950	950
Lockers 01: Athletics	Women (Team)	1	950	950
Locker: Gender Inclusive		1	200	200
Lockers 03: Coach		2	250	500
Support & Maintenance				
Storage: General		1	1,500	1,500
Concessions		1	500	500
Restroom: Men		1	350	350
Restroom: Women		1	350	350
Ticket Office		1	240	240
Storage: Custodial		1	200	200
Tech/Control		1	250	250
Subtotal			Subtotal	**5,990**

Arena

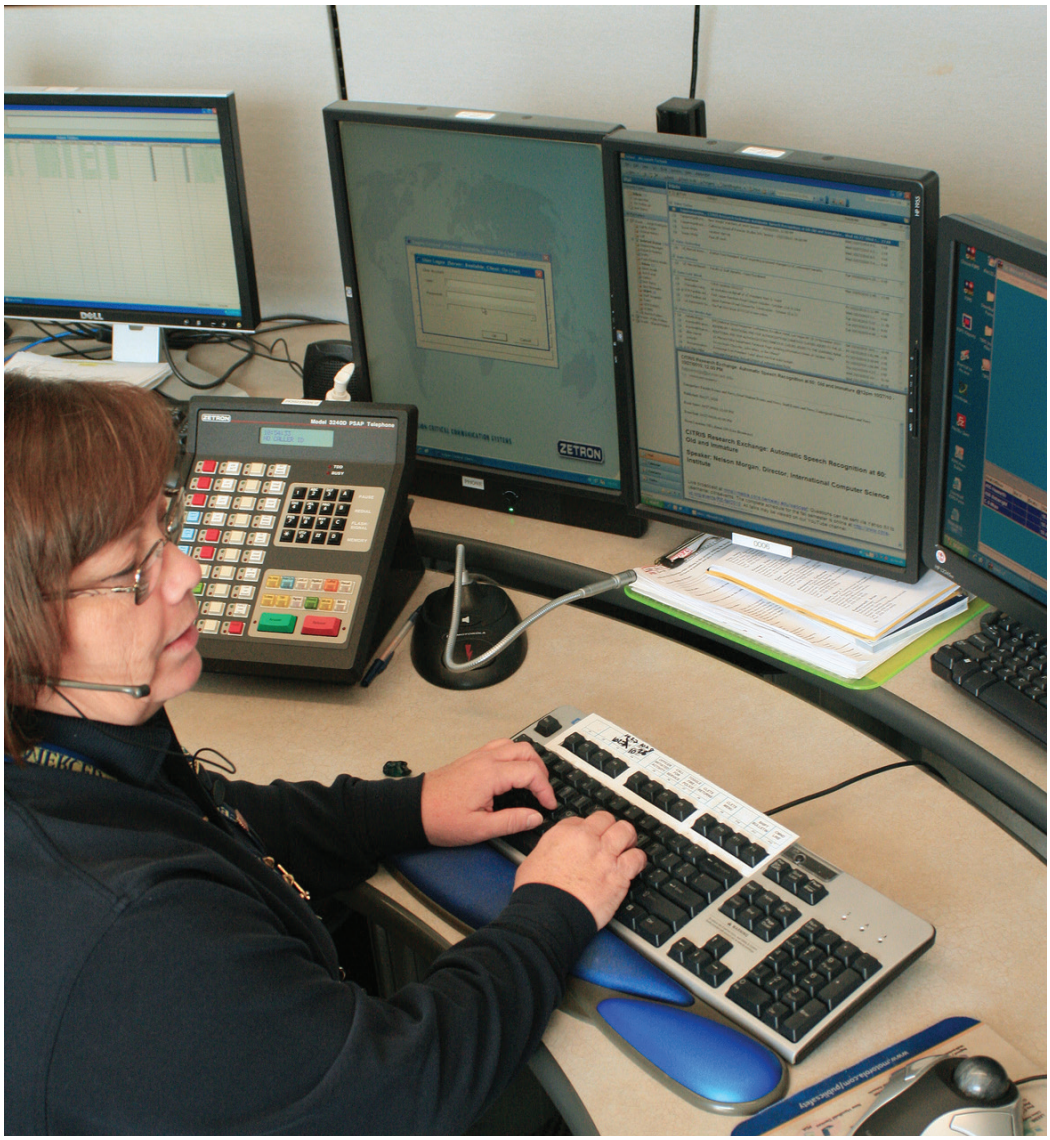
Although it will not be constructed as part of the 2020 Project, the intended program for the Arena, which is to be included in the Master Plan is for a multipurpose gymnasium sports court of approximately 26,000 sf; with a single event seating capacity of 5,000 spectators (all achieved via telescoping seating for flexibility). A concourse level is envisioned accommodating half that seating, as well as fitness space when not in use for events.

The envisioned program is set forth below:

	No.	Size (ASF)	Total ASF	No.	Size (ASF)	Total ASF		Comments
Gymnasium Sports Court	1	26000	26,000	1	26000	26,000	0.3058104	(4) 50x84 Recreation Courts, 2500 seats (telescoping seating)
Concourse/Track/Spectat	1	15000	15,000	1	15000	15,000	0.1764231	2500 seats (telescoping seating); otherwise recreation space
Team & Locker Rooms								
Recreation	2	3000	6,000	2	3000	6,000		500 Lockers each
Men's Soccer	1	1000	1,000	1	1000	1,000		28 Lockers
Women's Soccer	1	1000	1,000	1	1000	1,000		28 Lockers
Men's Basketball	1	1500	1,500	1	1500	1,500		18 Lockers
Women's Basketball	1	1500	1,500	1	1500	1,500		18 Lockers
Men's CC	1	1000	1,000	1	1000	1,000		40 Lockers
Women's CC	1	1000	1,000	1	1000	1,000		40 Lockers
Men's Volleyball	1	1500	1,500	1	1500	1,500		18 Lockers
Women's Volleyball	1	1500	1,500	1	1500	1,500		18 Lockers
Coach's/Staff/Officials	2	750	1,500	2	750	1,500		
		Subtotal	**17,500**		Subtotal	**17,500**	20.6%	
Offices and Administration								
Reception	1	250	250	1	250	250		
Administrative Offices	20	120	2,400	20	120	2,400		
Director's Office	1	200	200	1	200	200		
Head Coaches Offices	10	150	1,500	10	150	1,500		
Assistant Coaches Offices	5	120	600	5	120	600		
Copy/Work Room	1	1000	1,000	1	1000	1,000		
Large Meeting Room	1	1000	1,000	1	1000	1,000		
Conference Rooms	3	500	1,500	3	500	1,500		
		Subtotal	**8,450**		Subtotal	**8,450**	9.9%	
Strength and Conditioning								
Group Exercise	2	1500	3,000	2	1500	3,000		
Cardio/Weight Training	1	6000	6,000	1	6000	6,000		
Athletic Training	1	2000	2,000	1	2000	2,000		
Assessment	1	250	250	1	250	250		
Storage	1	500	500	1	500	500		
		Subtotal	**11,750**		Subtotal	**11,750**	13.8%	
Support & Maintenance								
Storage	1	1000	1,000	1	1000	1,000		
Equipment Services	1	500	500	1	500	500		
Concessions	2	350	700	2	350	700		
Men's Restrooms	4	400	1,600	4	400	1,600		
Women's Restrooms	4	400	1,600	4	400	1,600		
Custodial Storage	1	200	200	1	200	200		
Custodial Closets	6	120	720	6	120	720		
		Subtotal	**6,320**		Subtotal	**6,320**	7.4%	
	Total ASF		**85,020**	**Total ASF**		**85,020**	100.0%	

Campus Operations

Campus Operations includes the public safety, warehousing and fire protection components necessary to support the University's teaching, research and public service mission.



Campus Dispatcher

Public Safety and Environmental Health & Safety Facility

Public Safety and Environmental Health & Safety Facility Methodology

The Public Safety and Environmental Health and Safety (EH&S) Programs were developed by enumeration from the Workforce Plan developed for the function in the 2014-15 academic year, which determined the size of Public Safety and EHS staff. The rest of the program was sized based on the projected staff size for a campus of 10,000 students. Per the Project Agreement, the layout and program of this facility must comply with all applicable statutes, regulations, and UC policies.

Public Safety and EHS Program Intent

The Program envisions that Public Safety and Environmental Health and Safety ("EH&S") will be housed together for synergy and optimal space utilization. The secured parking area is intended to be used primarily by Public Safety but will also be used to store UC Merced's Facilities work vans and trucks.

Hazmat Facility - EH&S requires a separate Waste Storage Facility for chemical and other potentially hazardous materials. This facility should not be located on a main campus circulation route and traffic to and from this facility should not need to travel through the center of campus.

The Hazmat building is intended to be used to store hazardous waste temporarily before it is picked up in the chemical storage areas. The rest of the building will be used for general storage.

It should be located near the research laboratories. It must be outfitted with a hard-wired alarm connected to the campus central alarm system. This facility requires a secure loading area sized to accommodate a semi-trailer rig (18 wheels) and connectivity for at least two video cameras focused on the loading area and entrance. The layout and program of the Waste Handling Facility must comply with all applicable statutes, regulations, and UC policies.

Parking for the Public Safety and EHS Facility must co-located with the facility, with a suitable number of visitor spaces, and a fenced yard for storage of up to 50 vehicles, including Public Safety vehicles, University vehicles and those belonging to Public Safety employees, who come and go around the clock.

Future Fire Operations Facility Considerations

The Campus Safety facility must be expandable to incorporate a future Fire Operations Facility with a footprint of up to 9400 ASF and including such elements as those shown in the proof of concept, with the provison that the actual design of the facility is heavily regulated and may vary significantly from the program shown here. The Fire Operations Facility will not be constructed as part of the 2020 Project. The purpose of showing it here is to provide enough information to permit the

	No.	Size (ASF)	Total ASF
Fire Operations Center			
Apparatus Bay	4	1100	4,400
Safety Gear Lockers	1	550	550
SCBA Storage	1	100	100
Work Shop	1	80	80
Bedroom 1	1	250	250
Bedroom 2	4	495	1,980
Day Room	1	480	480
Kitchen	1	480	480
Shower/Restroom	5	80	400
Fitness Room	1	240	240
General Office	1	200	200
Battalion Chief's Office	1	120	120
Fire Captain's Office	1	120	120
		Subtotal	**9,400**

PROGRAM SUMMARY | Campus Operations

Campus Operations
Fire Operations Facility
Campus Warehouse

Public Safety & EHS Facility	**Intended Use**	No.	Size (ASF)	Total ASF	ADS ID	FF&E ID	IT Equp ID
Public Safety							
Conference Room 01: 8 seats		1	250	250	GN-07	013 - Conference Room 01: 8 seats	AV03 - Conference Rooms
Conference Room 04: Emergency Power		1	700	700	GN-09	011 - Conference Room 03: 24 seats	AV03 - Conference Rooms
Storage: EOC		1	150	150	GN-31	089 - Storage: EOC	
Office 02: Administrator		1	120	120	GN-01	045 - Office: Private	
Office 01: Administrator	Investigation Room	1	100	100	GN-02	045 - Office: Private	
Office 01: Administrator	Huddle Room	1	100	100	GN-02	099 - Office: Huddle Room	AV04 - Huddle Room
Printer/Copy Room		1	300	300	GN-17	999 - No FF&E	
Interview Room		3	100	300	CO-32	023 - Interview Room	
Work Station 02		52	65	3,380	GN-04	069 - Workstation	
Work Room: Secure		1	300	300	CO-12	068 - Workroom	
Work Room		1	300	300	GN-12	068 - Workroom	
Storage: General		1	200	200	GN-22	058 - Storage: General	
Storage: Secure		2	200	400	CO-52	058 - Storage: General	
Breakroom / Kitchenette		1	250	250	GN-11	006 - Break Room / Kitchenette	
Closet: Custodial		1	100	100	GN-28	058 - Storage: General	
Restroom: Gender Inclusive		3	120	360	GN-20	999 - No FF&E	
Lactation Room		1	100	100	GN-16	028 - Lactation Room	
Lobby		1	300	300	GN-19	034 - Lobby	AV06 - Public Space (lobbies, etc.)
Intake: Secure		1	200	200	CO-34	036 - Intake: Secure	
Evidence Room (Secure)		1	950	950	CO-22	016 - Evidence Room (Secure)	
Storage: Campus Lost & Found		1	350	350	GN-40	058 - Storage: General	
Lockers 04: Police		2	400	800	CO-51	038 - Lockers 04: Police	
Locker: Gender Inclusive		1	200	200	GN-26	038 - Lockers 04: Police	
Police Armory		1	600	600	CO-23	002 - Police Armory	
Emergency Communications Center		1	600	600	CO-13	015 - Emergency communications center	
Fitness Center		1	1,000	1,000	CO-14	066 - Fitness Center	AV09 - Recreation / Gaming Room
Work Room	Unallocated	1	810	810	GN-12	068 - Workroom	
Environmental Health & Safety							
Office 01: Administrator	Huddle	1	100	100	GN-02	099 - Office: Huddle Room	AV04 - Huddle Room
Work Station 02		17	65	1,105	GN-04	069 - Workstation	
Office 02: Administrator	Plan Check	1	120	120	GN-01	068 - Workroom	
Training Room, EH&S		1	240	240	CO-50	091 - Training Room, EH&S	
Office 02: Administrator	'Ergo' Room	1	120	120	GN-01	999 - No FF&E	
Office 02: Administrator	PPE Room	1	120	120	GN-01	058 - Storage: General	
Storage: General	Industrial hygiene	1	120	120	GN-22	058 - Storage: General	
Storage: General		1	500	500	GN-22	058 - Storage: General	
			Subtotal	**15,645**			

Environmental Health & Safety	No.	Size (ASF)	Total ASF
HazMat Building			
Storage: Rad Storage	1	400	400
Storage: Biohazardous waste	1	400	400
Storage: Chemical Hazmat	1	785	785
Storage: Drum Storage	1	240	240
Storage: General	1	1,300	1,300
Staging: Hazmat	1	250	250
	Subtotal		**3,375**

Campus Operations Summary				
Fire Operations Facility				0
Campus Warehouse				0
Public Safety & EHS Facility				15,645
HazMat Handling Building				3,375
			Subtotal	**19,020**

The goal of the 2020 Project is to rapidly and cost-effectively add significant amounts of new teaching, research, housing and student life facilities at the University of California, Merced.



http://2020project.ucmerced.edu