

Office of the President

TO MEMBERS OF THE FINANCE AND CAPITAL STRATEGIES COMMITTEE:

ACTION ITEM

For Meeting of May 12, 2021

BUDGET, SCOPE, EXTERNAL FINANCING, AND DESIGN FOLLOWING ACTION PURSUANT TO THE CALIFORNIA ENVIRONMENTAL QUALITY ACT, AGGIE SQUARE PHASE 1 SCIENCE AND TECHNOLOGY EAST AND LIFELONG LEARNING TENANT IMPROVEMENTS, UC DAVIS SACRAMENTO CAMPUS

EXECUTIVE SUMMARY

At the November 18, 2020 meeting, the Regents approved the business terms and design following action pursuant to the California Environmental Quality Act (CEQA) of the building core and shell of Aggie Square Phase 1, an innovation center to be built on the Sacramento campus of UC Davis.

All components of Aggie Square Phase 1 are being pursued through a public-private partnership in which the site will be ground leased to and developed by affiliates of Wexford Science + Technology, an experienced developer of innovation centers across the country. The campus indicated in the November Regents item that it would return to request approval for the Aggie Square Phase 1 Tenant Improvements for campus-occupied space in the Phase 1 buildings.

The campus proposes to complete tenant improvements for approximately 340,500 to 370,500 gross square feet in the Science and Technology Building East (the first of two science and technology buildings) and the Lifelong Learning Building. The proposed Aggie Square Phase 1 Science and Technology East and Lifelong Learning Tenant Improvements Project (Tenant Improvements Project) is needed to satisfy the programmatic needs of the future campus occupants and provide critical research and academic expansion space for the campus' needs. In addition to the urgency of addressing the campus' space needs, it is important to proceed with the project now in order to lock in construction costs prior to further cost escalations as well as to take advantage of the financial contributions from the City of Sacramento, as described further in this item.

The table below summarizes past related actions and three action items that the Regents are being asked to consider at the May Regents meeting:

Mixed Use Project* - The Mixed Use Residential and the Alice Waters Institute buildings	
Ground Lease/Space Lease	May 2021
Design/CEQA Budget (Campus Program Space tenant improvements only)	May 2021 (combined item)
Science & Technology East/West and Lifelong Learning buildings and associated parking (Phase 1) - Up to 1 million square feet across 3 buildings and parking	
Ground Lease	November 2020
Design/CEQA	November 2020
Budget/Design/CEQA of interior tenant improvements only (Science & Technology East and Lifelong Learning Building only)	May 2021

See Attachment 1 for further information on the three Aggie Square items.

* Regents requested that housing initially slated for Phase 1B is advanced to Phase 1A

The Regents are being asked to: (1) approve the Tenant Improvements Project budget of \$307,778,000 to be funded from external financing (\$257,778,000) and campus funds (\$50 million), (2) approve the Tenant Improvements Project scope, (3) approve external financing for \$257,778,000, (4) adopt CEQA Findings, and (5) approve the Tenant Improvements Project's tenant improvement design.

RECOMMENDATION

The President of the University recommends that the Finance and Capital Strategies Committee recommend to the Regents that:

- A. The 2020-21 Budget for Capital Improvements and the Capital Improvement Program be amended to include the following project:

Davis: Aggie Square Phase 1 Science and Technology East and Lifelong Learning Tenant Improvements Project – preliminary plans, working drawings, construction, and equipment – \$307,778,000 to be funded by external financing (\$257,778,000) and campus funds (\$50 million).
- B. The scope of the Aggie Square Phase 1 Science and Technology East and Lifelong Learning Tenant Improvements Project shall provide a total of approximately 340,500 gross square feet (GSF) to 370,500 GSF in the Lifelong Learning Building and Science and Technology Building East. The Lifelong Learning Building shall consist of classrooms, research, co-working, and administrative space and the Science and Technology Building East shall consist of laboratory space, research, and core facilities.
- C. The President be authorized to obtain external financing in an amount not to exceed \$257,778,000 plus additional related financing costs. The President shall require that:
 - (1) Interest only, based on the amount drawn, shall be paid on the outstanding balance during the construction period.
 - (2) As long as the debt is outstanding, the general revenues of the Davis campus shall

be maintained in amounts sufficient to pay the debt service and to meet the requirements of the authorized financing.

- (3) The general credit of the Regents shall not be pledged.
- D. Following review and consideration of the environmental consequences of the proposed Aggie Square Phase 1 Science and Technology Building and Lifelong Learning Tenant Improvements Project, as required by the California Environmental Quality Act (CEQA), including any written information addressing this item received by the Office of the Secretary and Chief of Staff no less than 48 hours in advance of the beginning of this Regents meeting, testimony or written materials presented to the Regents during the scheduled public comment period, and the item presentation, the Regents:
- (1) Following review and consideration of previously certified UC Davis Sacramento Campus 2020 Long Range Development Plan Update (2020 LRDP Update) Supplemental Environmental Impact Report (EIR) of which the Aggie Square Phase 1 Science and Technology East and Lifelong Learning Tenant Improvements Project is a part, determine that no further environmental analysis pursuant to CEQA is required and adopt CEQA Findings for the Aggie Square Phase 1 Tenant Improvements program.
 - (2) Make a condition of approval the implementation of applicable mitigation measures within the responsibility and jurisdiction of UC Davis as identified in the Mitigation Monitoring and Reporting Program adopted in connection with the 2020 LRDP Update Supplemental EIR.
 - (3) Approve the design of the Aggie Square Phase 1 Science and Technology East and Lifelong Learning Tenant Improvements Project.
- E. The President be authorized, in consultation with the General Counsel, to execute all documents necessary with the above.

BACKGROUND

Aggie Square's vision is incorporated in all of the overarching goals identified in Chancellor May's 2018 "To Boldly Go" ten-year Strategic Plan for UC Davis. As a new public face of the Sacramento campus, Aggie Square will present many opportunities for mutually beneficial interactions between the faculty, staff, and students of UC Davis and the public. UC Davis has been a high-impact, highly visible partner with the City of Sacramento for many years, and Aggie Square will add a new dimension to this relationship.

Aggie Square's planning efforts have extended over more than three years and have involved dozens of meetings with community groups. Aggie Square is anticipated to create a number of opportunities for the community to share in its success, including new jobs and skill development not only for college-educated scientists, researchers, and entrepreneurs but also for

Sacramento residents without college degrees who can participate in shorter-term training and certification programs offered through UC Davis Continuing and Professional Education.

Aggie Square's transformational impact will have an extended reach – a third-party consultant has estimated that Phase 1 alone will lead to \$3 billion in ongoing economic benefits and 16,000 ongoing jobs for the six-county Sacramento region. In April 2021, the Sacramento City Council formally adopted an Enhanced Infrastructure Financing District (EIFD) at Aggie Square.¹ This EIFD will direct property tax increment from the private investment at Aggie Square to fund critical infrastructure serving the project and an affordable housing trust fund. The affordable housing trust fund will generate investment funds to benefit affordable housing assistance programs and affordable housing development in the distressed neighborhoods near Aggie Square. The EIFD is anticipated to generate at least \$30 million for public infrastructure and \$29 million for affordable housing,

Aggie Square Phase 1 – comprised of two science and technology laboratory buildings (Science and Technology Buildings East and West), a Lifelong Learning Building, a Mixed Use Residential building, and a parking garage (see Attachment 6) – is designed to promote a culture of innovation and entrepreneurship across the Sacramento and Davis campuses. Phase 1 will serve as an important laboratory for further developing this culture, offering learning environments for students at various stages throughout the educational experience and building bridges between the research programs in Davis and Sacramento and the regional, national, and international business communities. In November 2020, the Regents approved the business terms and design of the core and shell following an action pursuant to the California Environmental Quality Act (CEQA) of the non-residential components of Aggie Square Phase 1.

PROJECT DESCRIPTION

The research environment at Aggie Square Phase 1 will promote cross-disciplinary research and attract industry partners who want to leverage proximity to UC research. For example, in regenerative medicine, Aggie Square provides an opportunity for startups and established industries to amplify the discovery and development of new technology, treatments, and therapies. Space in the buildings is also identified for core facilities (cores) and shared services that support UC and industry research. Cores range from shared use of specialized and expensive equipment up to major facilities. Some of the shared services at Aggie Square will be relocated and scaled expansions of existing functions are being moved to Aggie Square in order to take advantage of the project's location, which includes private industry partners. Others have been identified that are required to be near the research laboratories due to time sensitivity. Space is also needed for some services not yet in existence on the Sacramento campus.

The campus is proposing to construct improvements of approximately 340,500 gross square feet (GSF) to 370,500 GSF in the Science and Technology Building East and Lifelong Learning buildings. The buildings' campus uses can be categorized into four thematic anchors, which are

¹ http://sacramento.granicus.com/GeneratedAgendaViewer.php?view_id=21&event_id=3960

further described in Attachment 7, Building Use Themes.

- Theme 1: Translational Medicine
- Theme 2: Medical Device Development
- Theme 3: Digital Health
- Theme 4: Community-Facing Programs

The proposed UC Davis uses in the two buildings are comprised of a combination of new programs, reshaped programs, and location of existing programs together. Locating complementary programs together results in the consolidation of resources while also improving the production capabilities. Many of the office-based programs, such as Continuing and Professional Education, Public Scholarship and Engagement, and the School of Medicine community, health, and policy-based research, are currently in short-term leased facilities spread across the Sacramento region. For the laboratory-based programs, faculty are being identified from medicine and other UC Davis schools and colleges whose research interest aligns with Aggie Square's specific themes. Table 1 below summarizes the programmatic and budget information for each of the three buildings.

Table 1: Program and Budget by Building

Science and Technology East	
Gross Square Feet	199,800 GSF
Budget ¹	\$198,174,000
Themes	Translational Medicine, Medical Device Development, Digital Health
Program Types	<ul style="list-style-type: none"> • Cell and Gene Therapy • Regenerative Medicine • Cancer • Neuroscience • Medical Device Development • Anatomy-based Surgical Training Center • Service-based Cores • Technology and the Future of Health Care • Digital Health Innovations • Health Informatics and Big Data • Telemedicine to Support Patient Care and Industry-Sponsored Trials
Lifelong Learning Building	
Gross Square Feet	170,700 GSF
Budget ¹	\$109,604,000
Themes	Community-Facing Programs
Program Types	<ul style="list-style-type: none"> • Public Health Policy • Lifelong Learning
¹ Additional information on the budget may be found in Attachment 2, Project Sources and Uses.	

DESIGN AND SCHEDULE

Design

The design and layout of the campus leased spaces in the Aggie Square Phase 1 Science and Technology East and Lifelong Learning Tenant Improvements Project (Tenant Improvements Project) are tailored to meet the specific programmatic needs of the campus users while at the same time incorporating flexibility to accommodate potential future changes. The current space design meets contemporary standards for the proposed uses and provides for improved functionality and efficiency over older spaces that the programs are currently occupying. Fixtures, furniture, and equipment will be of high quality and durable while staying within budget parameters for the overall project. Proposed building sections are included in Attachment 8 and floor plans are included in Attachment 9.

Sustainable Practices

The Tenant Improvements Project will comply with the University of California Sustainable Practices Policy. The Sustainable Practices Policy establishes goals for green building, clean energy, transportation, climate protection, facilities operations, zero waste, procurement, food service, and water systems. A full range of sustainability practices for building design and operations is included in the budgeting, programming, and design effort for the Tenant Improvements Project.

Project Schedule

Construction is scheduled to begin in the third quarter of 2022, with completion anticipated in the second quarter of 2024.

CEQA COMPLIANCE

Pursuant to the California Environmental Quality Act (CEQA), the Regents certified the UC Davis Sacramento Campus 2020 LRDP Supplemental Environmental Impact Report (EIR) (SCH#2020020161) in November 2020. Environmental review of the Aggie Square Phase 1 project, of which the Aggie Square Phase 1 Science and Technology East and Lifelong Learning Tenant Improvements Project is a part, is included as a project-specific component in Volume 2 of the 2020 LRDP Supplemental EIR. None of the circumstances that would trigger subsequent or supplemental environmental review under Public Resources Code Section 21166 and CEQA Guidelines Sections 15162 or 15163 have occurred or are present. Findings have been prepared to support the University's determination that the proposed project would not require major revisions of the 2020 LRDP Supplemental EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects (Attachment 10).

FINANCIAL FEASIBILITY

The total project cost of \$307,778,000, including \$9,551,000 of capitalized interest incurred during construction, would be funded with \$257,778,000 of external financing and \$50 million of campus funds.

Cost estimates have been provided by the general contractor (Whiting-Turner Contracting Company), the executive architect (ZGF), and the campus, based on experience with other tenant improvement projects.

The estimated average annual debt service for the Tenant Improvements Project, at a planning rate of 4.5 percent, is \$15,825,389 including principal and interest, over a 30-year term. Over a ten-year period, the campus is projected to have a modified cash flow margin of 5.3 percent and a maximum debt service to operations coverage of 1.3, which meet the requirements of the University's Debt Policy.

The Summary of Financial Feasibility is provided in Attachment 4.

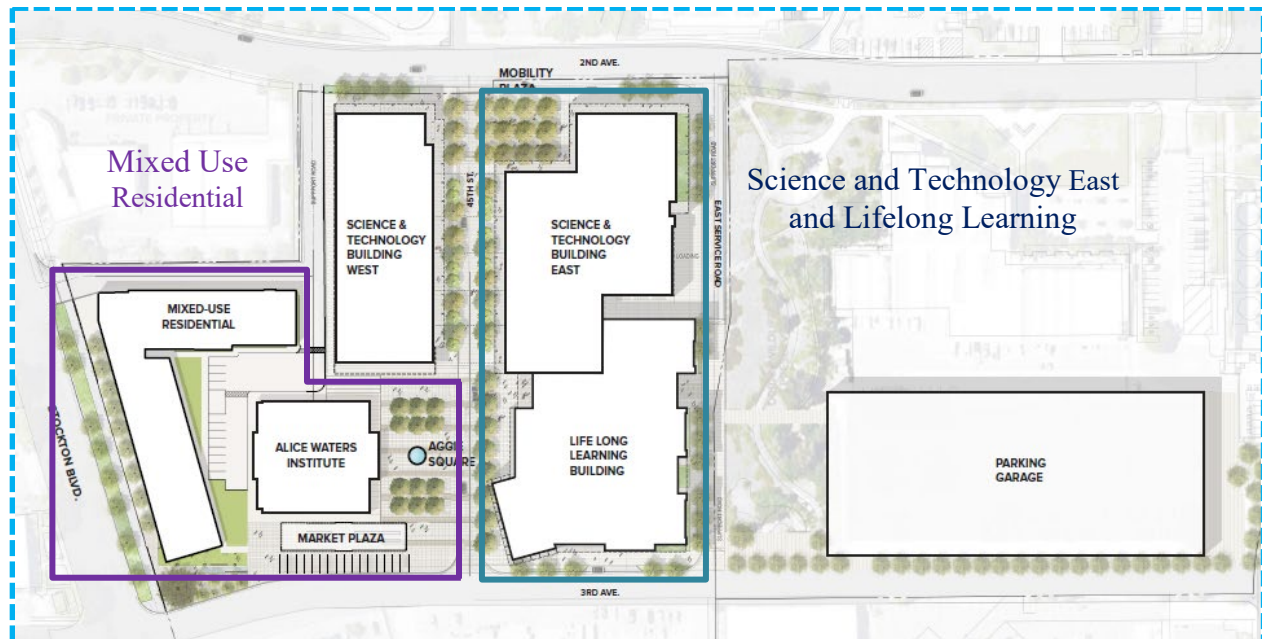
KEY TO ACRONYMS AND DEFINITIONS:

2020 LRDP	2020 Long Range Development Plan
CEQA	California Environmental Quality Act
Core Facilities	Cores
EIFD	Enhanced Infrastructure Financing District
EIR	Environmental Impact Report
GSF	Gross Square Feet
Tenant Improvements Project	Aggie Square Phase 1 Science and Technology East and Lifelong Learning Tenant Improvements Project

ATTACHMENTS:

Attachment 1	Summary of May 2021 Action Items
Attachment 2	Project Sources and Uses
Attachment 3	Comparable Project Information
Attachment 4	Summary of Financial Feasibility
Attachment 5	Project Location
Attachment 6	Site Plan
Attachment 7	Building Use Themes
Attachment 8	Building Sections
Attachment 9	Floor Plans
Attachment 10	2020 Long Range Development Plan Update Supplemental Environmental Impact Report and Mitigation Monitoring and Reporting Program: https://environmentalplanning.ucdavis.edu/2020-lrdp-update-final-supplemental-eir
Attachment 11	CEQA Findings

SUMMARY OF MAY 2021 ACTION ITEMS



Regents are being asked to consider three action items at the May Regents. Two items involve the Mixed Use Residential and Alice Waters Institute for Edible Education Project (Mixed Use Project):

- Ground Lease and Space Lease Business Terms for the Aggie Square Phase 1 Mixed Use Residential, Campus Program Space, and Alice Waters Institute for Edible Education Project, UC Davis Sacramento Campus
- Design Following Action Pursuant to the California Environmental Quality Act, Aggie Square Phase 1 Mixed Use Residential and Alice Waters Institute for Edible Education Project; and Budget, Scope, and External Financing, Campus Program Space Tenant Improvements; UC Davis Sacramento Campus

The third action involves the Science & Technology East and Lifelong Learning Tenant Improvements Project (Tenant Improvements Project):

- Budget, Scope, External Financing, and Design Following Action Pursuant to the California Environmental Quality Act, Aggie Square Phase 1 Science & Technology East and Lifelong Learning Tenant Improvements, UC Davis Sacramento Campus

At the November 18, 2020 meeting, the Regents approved the business terms and design following action pursuant to the California Environmental Quality Act of the non-residential component of Aggie Square Phase 1.² With the approval of the three proposed May actions and the November 2020 action, Aggie Square Phase 1 will be able to proceed with the initial phase of development.

² The non-residential component of Phase 1 consists of: two laboratory facilities (Science and Technology Buildings, East and West), Lifelong Learning Building, parking garage, public plaza, and outdoor common areas.

ATTACHMENT 2

PROJECT SOURCES AND USES

**AGGIE SQUARE PHASE 1 TENANT IMPROVEMENTS –
SCIENCE AND TECHNOLOGY BUILDING EAST AND LIFELONG LEARNING BUILDING**

SOURCES	Science & Technology East		Lifelong Learning		Total Project	
	Total	% Total	Total	% Total	Total	% Total
External Financing	\$158,174,000	79.8	\$99,604,000	90.9	\$257,778,000	83.8
Campus Funds	\$40,000,000	20.2	\$10,000,000	9.1	\$50,000,000	16.2
Total Sources	\$198,174,000	100.0	\$109,604,000	100.0	\$307,778,000	100.0

USES	Science & Technology East		Lifelong Learning		Total Project	
	Total	% Total	Total	% Total	Total	% Total
Site Clearance						
Building	\$133,727,000	81.0	\$54,663,000	80.3	\$188,390,000	80.8
Exterior Utilities	\$84,000	0.1	\$87,000	0.1	\$171,000	0.1
Site Development						
A/E Fees ³	\$14,710,000	8.9	\$5,271,000	7.7	\$19,981,000	8.6
Campus Administration	\$6,302,000	3.8	\$3,554,000	5.2	\$9,856,000	4.2
Surveys, Tests, Plans	\$1,520,000	0.9	\$465,000	0.7	\$1,985,000	0.9
Special Items	\$1,096,000	0.7	\$548,000	0.8	\$1,644,000	0.7
Contingency	\$7,740,000	4.7	\$3,500,000	5.1	\$11,240,000	4.8
Subtotal	\$165,179,000	100.0	\$68,088,000	100.0	\$233,267,000	100.0
Group 2 & 3 Equipment	\$26,760,000		\$38,200,000		\$64,960,000	
Project Total Uses	\$191,939,000		\$106,288,000		\$298,227,000	
Interest During Construction	\$6,235,000		\$3,316,000		\$9,551,000	
Grand Total	\$198,174,000		\$109,604,000		\$307,778,000	

PROJECT STATISTICS	Science & Technology East	Lifelong Learning	Total Project
Gross-Square Feet (GSF)	199,800	170,751	370,551
Assignable-Square-Feet (ASF)	161,742	130,730	292,472
Efficiency	81%	77%	79%
Building Cost per GSF	\$669	\$320	\$508

³ A&E fees on similar projects range between 5.8% and 10.9%

COMPARABLE PROJECT COST INFORMATION

The proposed tenant improvements are of a highly specialized nature and have been tailored to meet the applicable UC Davis programs' specific needs. Therefore, construction cost data of direct comparability to the proposed project is not available. However, the full building costs (core and shell plus tenant improvements) of the Aggie Square Phase 1 buildings compare favorably to other similar buildings recently built in the UC system.

		GSF	Mid Point Const Year	Adjusted Construction Cost / GSF
CLASSROOM & ADMINISTRATIVE BUILDINGS				
1	UCDH - Medical Center North Tower Office Addition	130,000	2018	\$488
2	UCSD - Ridge Walk Academic Complex	195,000	2019	\$510
3	UCB - Tolman Hall Seismic Replacement	325,000	2014	\$514
4	UCM - Downtown Center	67,400	2016	\$570
5	UCD - Teaching and Learning Complex	100,000	2021	\$608
6	UCD - Aggie Square - Lifelong Learning Building	330,000	2023	\$643
7	UCSD - Design and Innovation Building	71,000	2020	\$683
8	UCI - Sue and Bill Gross Nursing and Health Sciences Hall	71,500	2021	\$742
9	UCI - Susan and Henry Samueli College of Health Sciences Building	108,200	2021	\$754
10	UCR - Student Success Center	57,000	2020	\$806
11	UCLA - Teaching and Learning Center for Health Sciences	110,000	2015	\$839
12	UCSB - Classroom Building	95,048	2022	\$840
13	UCLA - Anderson School of Management Addition	63,750	2018	\$927
14	UCSC - Kresge College Academic	36,000	2020	\$978

¹ All comparable projects have been adjusted to the project city and year using a combined factor of RS Means City Cost Index (to account for location) and RLB Construction Cost Index (to account for prior years).

² For purposes of this comparison, tenant improvement costs for the private uses of Aggie Square are assumed to be similar to the UC Davis uses.

		GSF	Mid Point Const Year	Adjusted Construction Cost / GSF
LAB & RESEARCH BUILDINGS				
1	UCSD - Franklin Antonio Hall	188,500	2020	\$730
2	UCSD - Clinical and Translational Research Institute Building	358,400	2014	\$752
3	UCR - Multidisciplinary Research Building 1	179,100	2017	\$779
4	UCSD - Biological and Physical Sciences Building	126,000	2017	\$819
5	UCSB - Jeff and Judy Henley Hall (Institute for Energy Efficiency)	49,296	2019	\$874
6	UCD - Aggie Square - Science & Technology Building East	340,000	2023	\$876
7	LBNL - Computational Research and Theory (CRT) Building	134,249	2015	\$924
8	UCSF - Research and Academic Building at Zuckerberg SF General	175,000	2021	\$928
9	UCSC - Coastal Biology Building	48,839	2016	\$948
10	UCSD - Health Sciences Biomedical Research Facility 2	195,975	2013	\$993
11	UCSB - Bioengineering Building	89,060	2013	\$1,002
12	UCSD - Health Sciences Biomedical Research Facility 2	195,975	2012	\$1,066
13	LBNL - Solar Energy Research Center	39,221	2014	\$1,353

¹ All comparable projects have been adjusted to the project city and year using a combined factor of RS Means City Cost Index (to account for location) and RLB Construction Cost Index (to account for prior years).

² Of the \$191.9 million of total tenant improvement costs for the Science and Technology Building East (excluding interest during construction), \$65.5 million is allocated to the vivarium. The Aggie Square vivarium cost incorporates extensive fixed equipment such as racks, cages, and tanks. The cost comparison of \$876/GSF excludes the vivarium, which is not common to all the comparable projects. Otherwise for purposes of this comparison, tenant improvement costs for the private uses of Aggie Square are assumed to be similar to the UC Davis uses.

SUMMARY OF FINANCIAL FEASIBILITY

DAVIS CAMPUS	
Project Name	Aggie Square Phase 1 Science and Technology East And Lifelong Learning Tenant Improvements Project
Project ID	
Total Estimated Project Costs	\$307,778,000
Anticipated Interest During Construction	\$9,551,000

Fund sources for external financing shall adhere to University policy on repayment for capital projects.

Externally Financed Projects

Long-term external financing assumptions are listed below.

PROPOSED SOURCES OF FUNDING	
External Financing	\$257,778,000
Campus Funds	\$50,000,000
Total	\$307,778,000

FINANCING ASSUMPTIONS	
Anticipated Repayment Source	General Revenues of the Davis Campus
Anticipated Fund Source	Campus Funds
Financial Feasibility Rate	4.5%
First Year of Principal	2025
Final Maturity	2054
Term	30 years
Estimated Average Annual Debt Service	\$15,825,389 (full principal & interest)

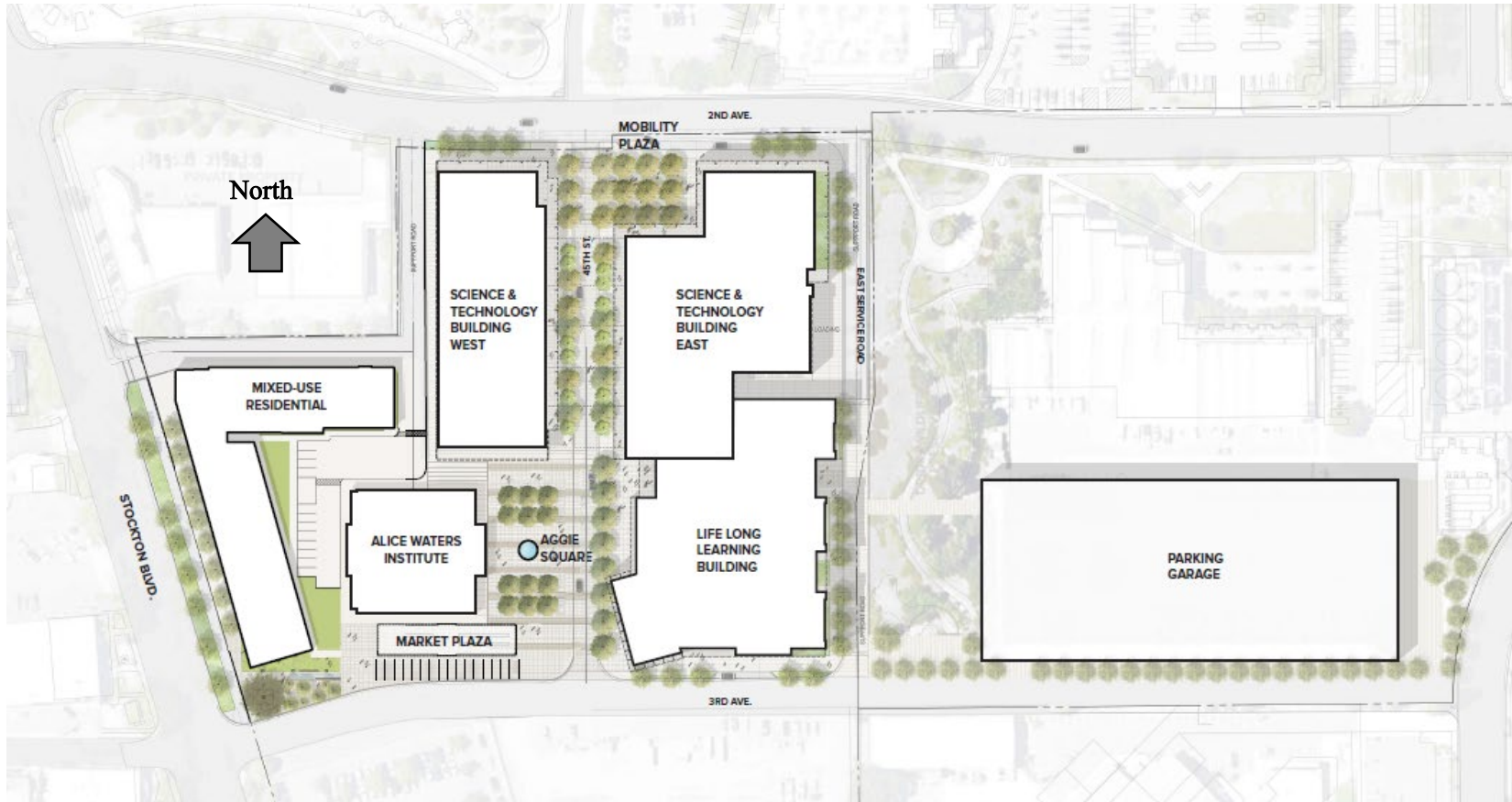
Below are the results of the financial feasibility analysis for the proposed project using the campus' Debt Affordability Model. The model includes projections of the campus' operations and planned financings.

Campus Debt Metrics			
Measure	Value	Period	Approval Threshold
General Campus Requirements			
<i>Modified Cash Flow Margin (Minimum)</i>	5.3%	2022	≥ 0%
<i>Debt Service Coverage (Minimum)</i>	1.3	2025	≥ 1.1x
<i>Monthly Liquidity in STIP</i>	62 Days	02/28/2021	≥ 60
Auxiliary System Requirements			
<i>Auxiliary Debt Service Coverage (Minimum)</i>	1.21	2026	≥ 1.1x
<i>Project Debt Service Coverage (Minimum)</i>	1.13	2025	≥ 1.0x

PROJECT LOCATION



SITE PLAN



BUILDING USE THEMES

Theme 1: Translational Medicine

The translational medicine theme consists of cutting-edge research programs focused on cell and gene therapy, regenerative medicine, cancer, and neuroscience and provides space for research expansion in these areas.

Cell and Gene Therapy

In 2017, after decades of effort, the first gene therapy products were approved by the U.S. Food and Drug Administration. Since then, the cell and gene therapy market has undergone a sea change, with many companies showing clinical efficacy in immunotherapy, gene editing, and gene therapy. These successes have created a demand for cell and gene therapy process development, manufacturing equipment, reagents, built space environments for producing cell and gene therapy products, and training and education programs for this newly launched biotech industry vertical.

Regenerative Medicine

Delivering cells as “living medicines” has been made possible by recent advances in regenerative medicine that provide the basis to cure, rather than treat, chronic diseases. A major theme for Aggie Square will be to provide a central location for interdisciplinary scientists to work collaboratively to overcome the current limitations in cell and gene therapy, including accessibility, logistical challenges, training and education, and long-term patient monitoring. Aggie Square will be represented by supply chain experts, Good Manufacturing Practice personnel, educators and trainers, clinical trials staff, physicians practicing precision medicine, and most importantly, patients seeking new cures.

Cancer

In October 2009, leaders at the National Institutes of Health National Cancer Institute launched a campaign for interdisciplinary research to draw more scientists, engineers, and thinkers outside the field into the cancer research sphere. The hope is that collaboration between traditionally disparate fields will produce new cancer treatment tools and get biologists and doctors thinking more like engineers. In the past ten years, the trend towards interdisciplinary cancer research has grown, and Aggie Square will facilitate collaboration between UC Davis and industry scientists in the same location.

Neuroscience

UC Davis Health (UCDH) is pioneering a new approach to organizing clinical departments that treat neurological disorders. The strategic synergy between the Departments of Neurology and Neurological Surgery offers a view into UCDH’s efforts to leverage interdisciplinary research, training, and care delivery to improve patients’ lives. Aggie Square provides an environment that will connect these two departments in new ways and provide space for other disciplines, including Neurobiology, Biochemistry, Pathology, Biomedical Engineering, and Physical Medicine and Rehabilitation – all scientific areas with different perspectives on neuroscience.

Theme 2: Medical Device Development

The medical device development theme focuses on creating an optimal environment for rapid and efficient development of a variety of medical devices.

Medical Device Development

Medical device development must work through unique challenges, including variations in design complexity as devices often have multiple constituent parts; the need for a diverse array of experts (e.g., biomedical engineers, physicians, basic scientists, and software programmers); variations in purpose (e.g., diagnostic, therapeutic, monitoring, supportive, surgical); and much longer timelines for testing, as implanted devices may undergo dynamic changes in function and safety over years or even decades.

The most compelling way to control for the high level of variation inherent in medical device development is to create a single location for medical device research and development, where members from the many different disciplines involved can meet and exchange ideas and observations on a regular and in-person basis. Aggie Square will serve as a single site where faculty and students from the UC Davis School of Medicine, College of Engineering, and School of Veterinary Medicine will work with key industry partners and faculty and students from the Graduate School of Management to guide medical devices through the phases of development, preclinical research, clinical research, pilot studies, regulatory review, and post-market studies.

Anatomy-Based Surgical Training Center

Aggie Square provides an opportunity to locate the University's gross anatomy teaching programs and all of the cadaver-based surgical skills training programs together in cutting-edge facilities with resources that will draw in medical device partners from industry as well as providing first-rate educational opportunities. UC Davis has the experience and increasing demand for in-person training space, including cadaveric, as a result of expanding resource requirements of physician training and serving an increased number of trainees ranging from undergraduates to residents. Aggie Square creates an opportunity to locate the University-run programs adjacent to surgical skill training space that can be leased to medical device companies. This strategy draws upon the highly successful experience at the Center for the Future of Surgery at UC San Diego.

Service-Based Cores

Service-based cores address the complexity of medical device development and the diversity of technologies necessary to provide an optimal backdrop for locating core facilities within Aggie Square. Cores make complex technologies accessible and biologically interpretable for clinical and basic research scientists and industry partners. From a practical perspective, cores and core activities serve as catalysts for discussion between and among scientists and clinicians that would not normally interact. Thus, Aggie Square's service-based cores will play a key role in encouraging discussions between the interdisciplinary disciplines located in Aggie Square.

Theme 3: Digital Health

The digital health theme focuses on developing and harnessing digital technology to improve health care, an area in rapid expansion.

Technology and the Future of Health Care

In the last year, UC Davis has created multiple partnerships with health systems and Sacramento County, all aimed at making health care more responsive to patients' needs. This partnership philosophy is extending to existing and potential digital health partners of UC Davis. UCDH is making wellness and health a 24/7 effort, with internet-enabled connections shifting the focus from sickness treatment to well-care. By monitoring technologies that stream data continuously, the future of medicine will be connected and always on, working in collaboration with patients and using real-time data to inform when and how care is needed.

Sacramento as a Testing Ground for Digital Health Innovations

The recently launched Digital Health Resource Center (DHRC) offers a testing environment for digital health startups to validate software on anonymized, curated health data that exists in a safe environment. DHRC leverages resources within the UCDH, UC Davis College of Engineering, and CITRIS (Center for Information Technology Research in the Interest of Society) to develop, test, and validate digital innovations that improve health care—with an emphasis on remote monitoring and patient engagement. DHRC provides both a physical and digital environment for health and technology companies, regional startups, and entrepreneurs to receive input, guidance, and mentorship from experts in healthcare delivery and population health.

Leveraging UC Davis' Expertise in Health Informatics and Big Data

The UC Davis Data Lab and Big Data Initiative facilitate the application of Data Science and Informatics methods and best practices to enhance research and learning in all domains across UC Davis. Working across the entirety of the research data pipeline, the Data Lab provides support and training from method and algorithm development to analysis and visualization of translational, high-impact data-driven research.

Telemedicine to Support Patient Care and Industry-Sponsored Trials

The UCDH clinical telehealth program connects patients and their physicians with UCDH specialists. Since its inception, the program has provided real-time consultation services in nearly 50 specialties. More than 200 clinics and hospitals, typically located in rural areas, have benefitted from the program.

Theme 4: Community-Facing Programs

The community-facing programs theme consists of (1) public and population health research programs on topics that affect the community surrounding Aggie Square, including health disparities and violence prevention, and (2) services that engage and benefit community neighborhoods in the area surrounding Aggie Square through education, nutrition, and food for health programs. Placing these programs within Aggie Square allows for expansion in this area of UC Davis' strategic investment.

Public Health Policy

UC Davis, UCDH, and the UC Davis Schools of Medicine and Nursing have demonstrated a commitment to improving local communities through public health programs. However, because of the disparate nature of these activities and the faculty who oversee them, in many cases, the community is unaware of UC Davis programs, and UC Davis faculty may be unaware of opportunities for community engagement. Aggie Square offers the opportunity to provide a single location where different programs with the common theme of community engagement and health equity can exist and grow.

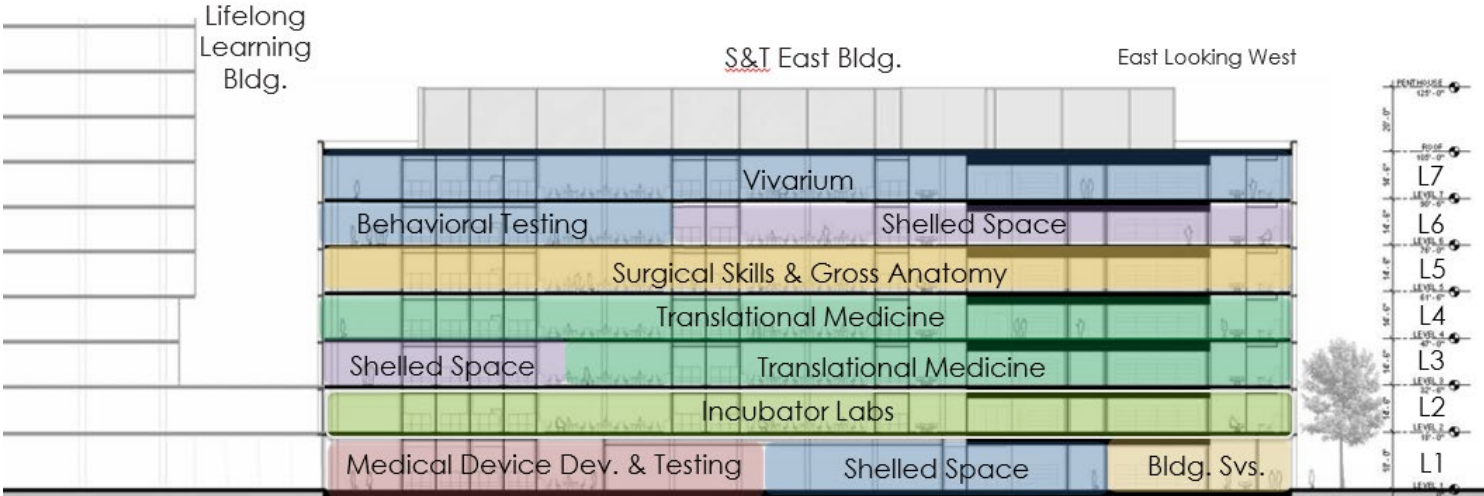
Food Services

Recent advances in nutrition sciences and agriculture are causing physicians and medical institutions to make food a formal part of treatment rather than relying solely on medications. By prescribing nutritional changes, health systems are adopting new strategies to prevent, limit, or even reverse disease by changing what patients eat. Aggie Square offers an opportunity to engage with community neighborhoods and provide a potential venue for new programs aimed at enhancing the health and safety of Sacramento citizens. Support and continued expansion of programs in Aggie Square that focus on the regional supply of food sources, food education, and healthy menus will provide the community with access to high-quality food and will also offer opportunities for collaboration between UC Davis Health Food Services and community programs working to enhance food safety and food literacy for local neighborhoods.

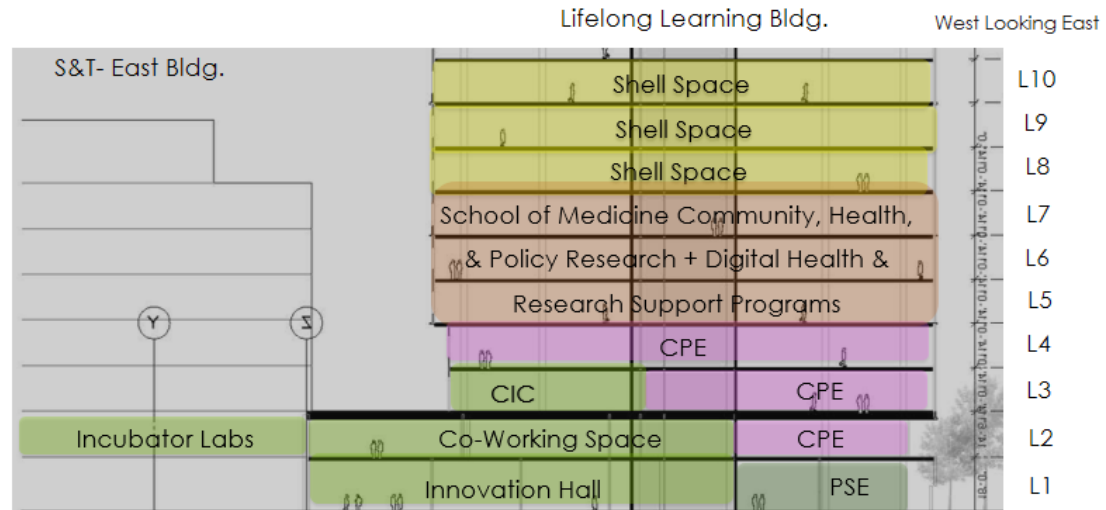
Lifelong Learning

A key theme of Aggie Square will be providing a full range of educational and community engagement opportunities for UC Davis students and faculty that also welcome residents from surrounding neighborhoods onto the innovation campus. Education in the Teaching Center (on the first two floors of the Lifelong Learning Building) will span the entire arc of a lifetime – from grade school to senior citizen – promoting a theme of lifelong learning and the belief that all citizens can achieve new goals for their own good and that of the community. The campus is planning for instruction in a variety of areas, from immersive experiential learning for undergraduates under the mantle of the Quarter at Aggie Square program to graduate training in biomedical engineering, business, and education, to all of the workforce development, certificate, and degree programs offered by the School of Continuing and Professional Education (CPE), which is an anchor tenant in this building. To facilitate community engagement, UC Davis Public Scholarship and Engagement (PSE) will serve as host for a wide variety of new and ongoing projects involving UC faculty.

BUILDING SECTION – SCIENCE AND TECHNOLOGY BUILDING EAST



BUILDING SECTION – LIFELONG LEARNING (LLL) BUILDING

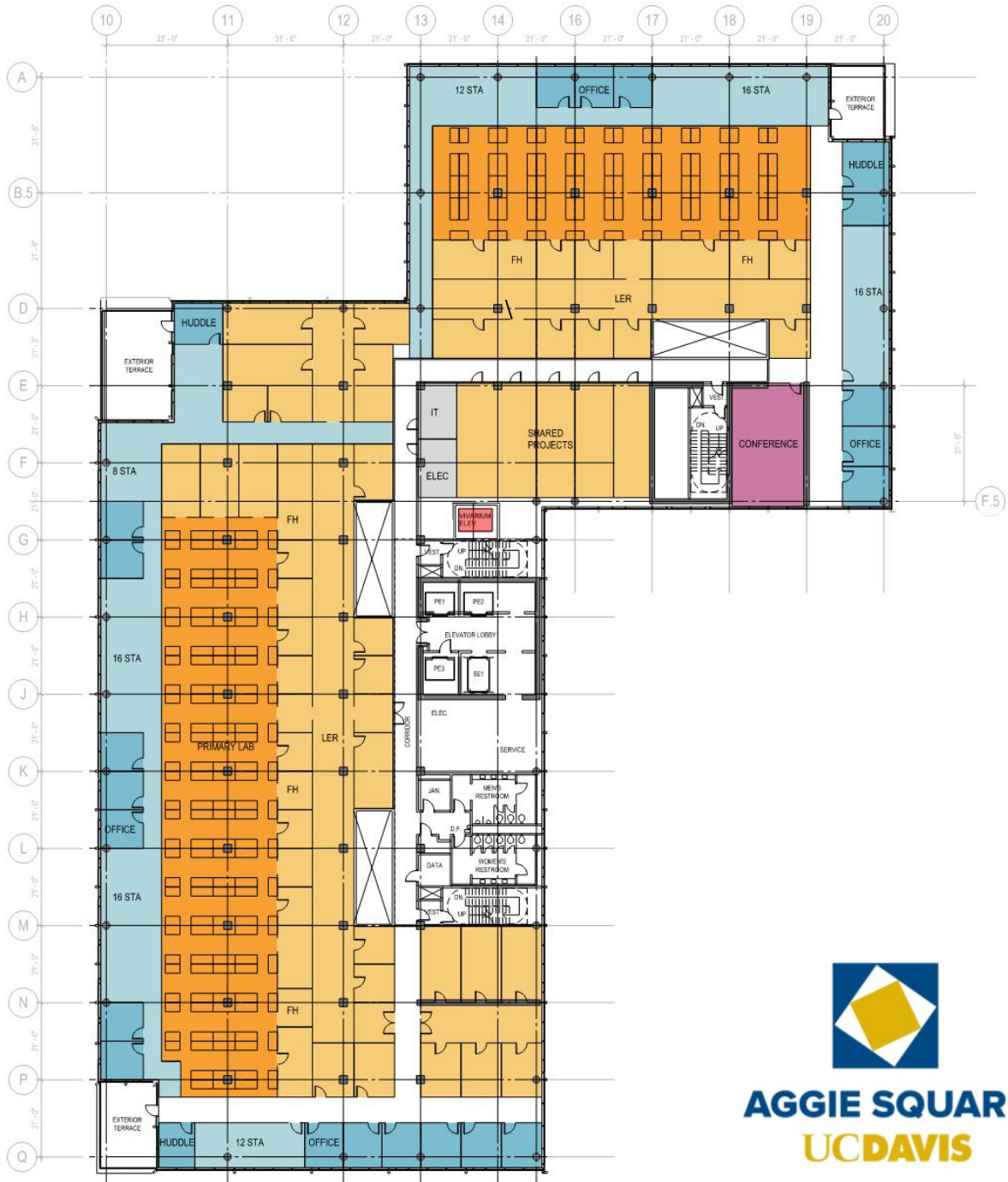


Southwest Looking Northeast

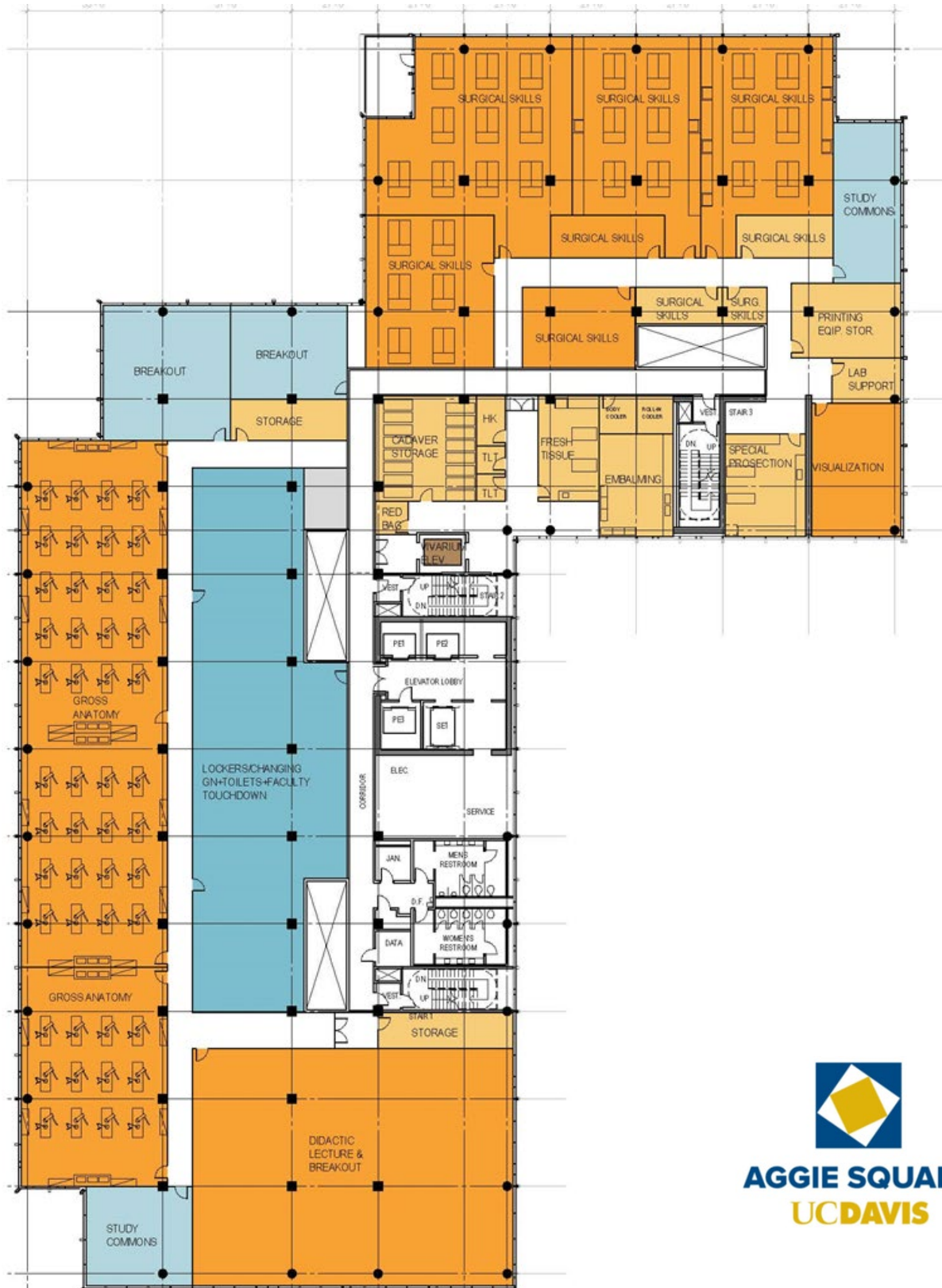


FLOOR PLANS

SCIENCE & TECHNOLOGY BUILDING EAST
TRANSLATIONAL MEDICINE
LEVELS 3 - 4



SCIENCE & TECHNOLOGY BUILDING EAST SURGICAL SKILLS AND GROSS ANATOMY LEVEL 5

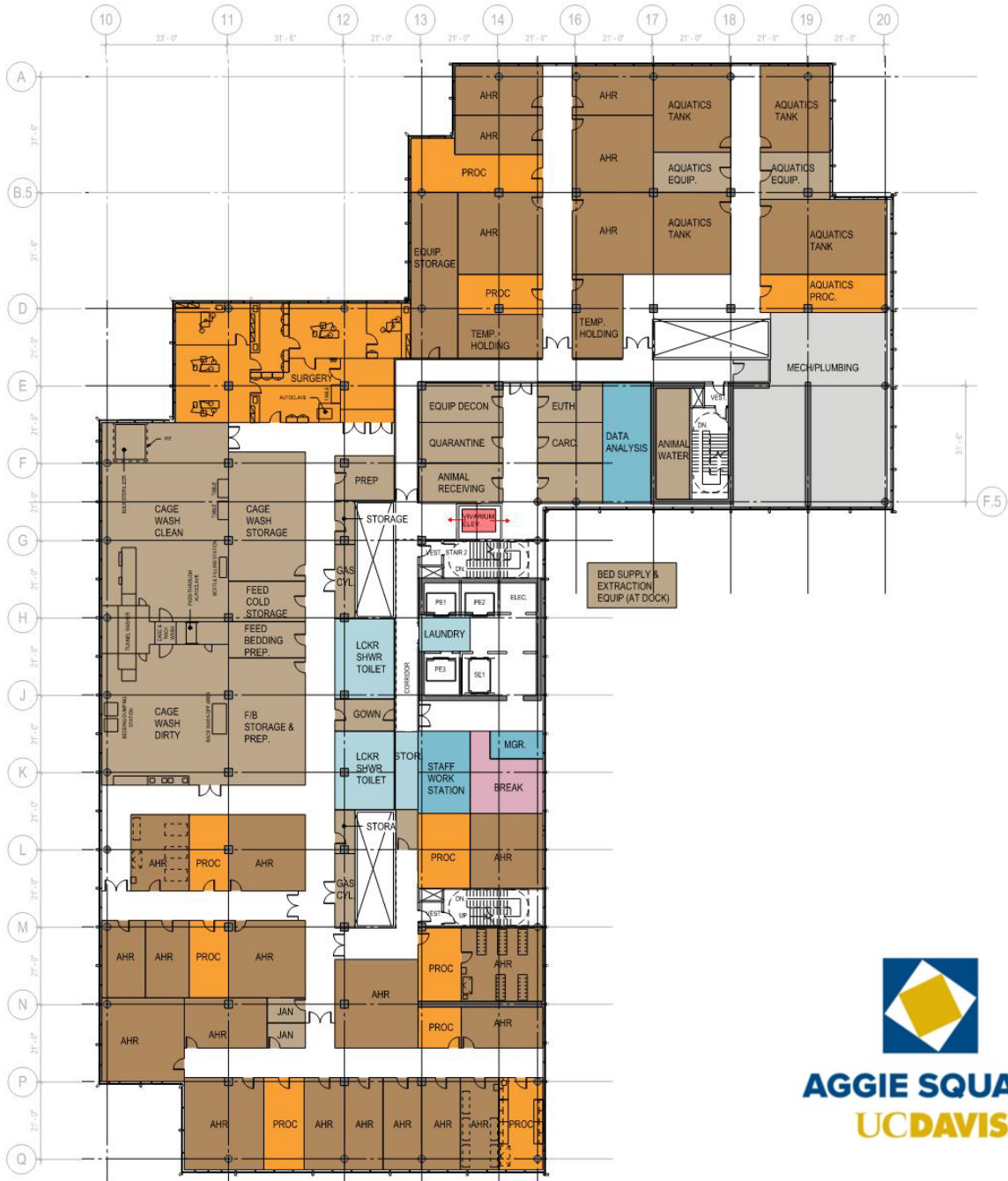


AGGIE SQUARE
UC DAVIS

SCIENCE & TECHNOLOGY BUILDING EAST
BEHAVIORAL TESTING
LEVEL 6

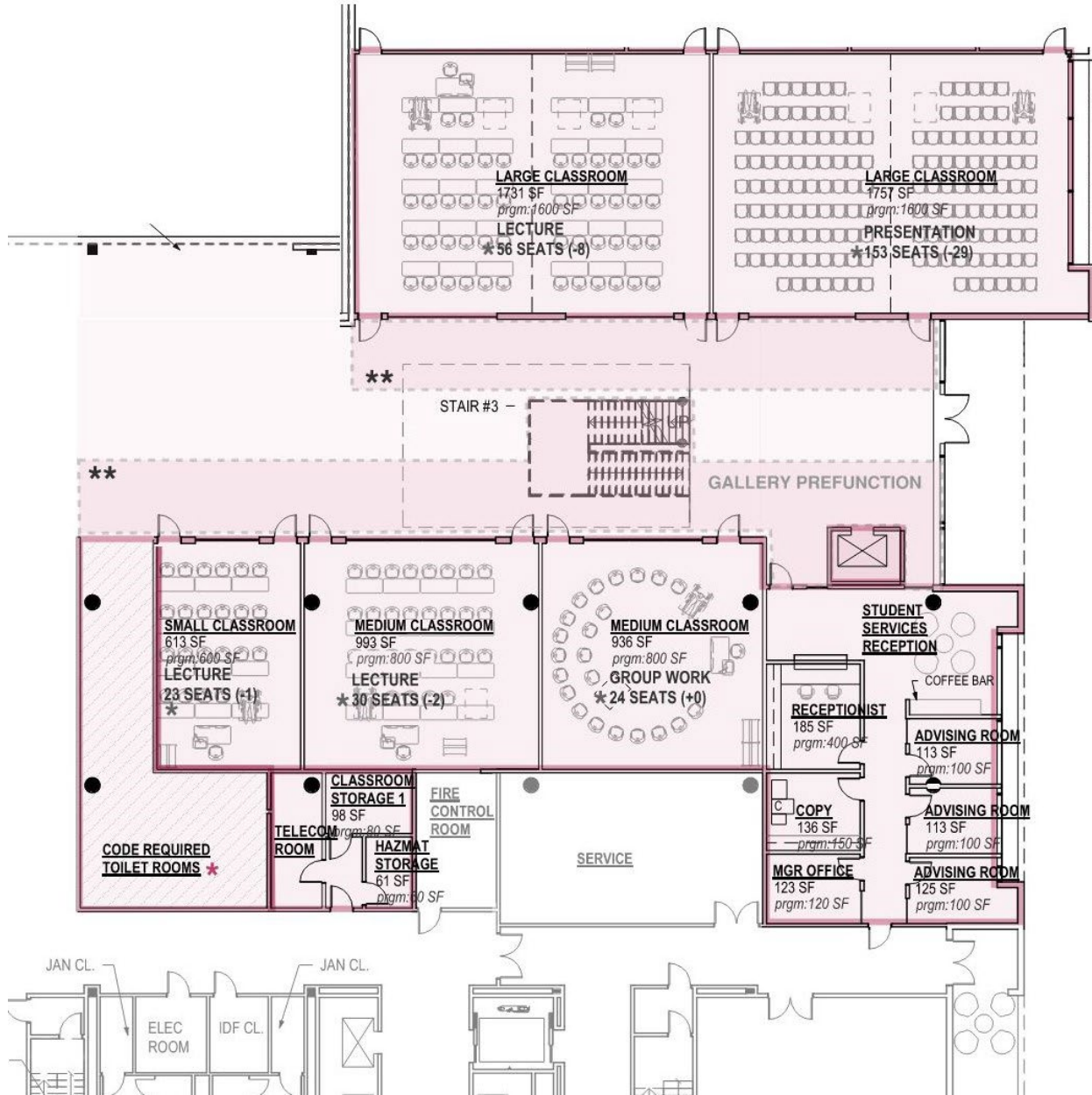


SCIENCE & TECHNOLOGY BUILDING EAST CORE LABORATORY LEVEL 7

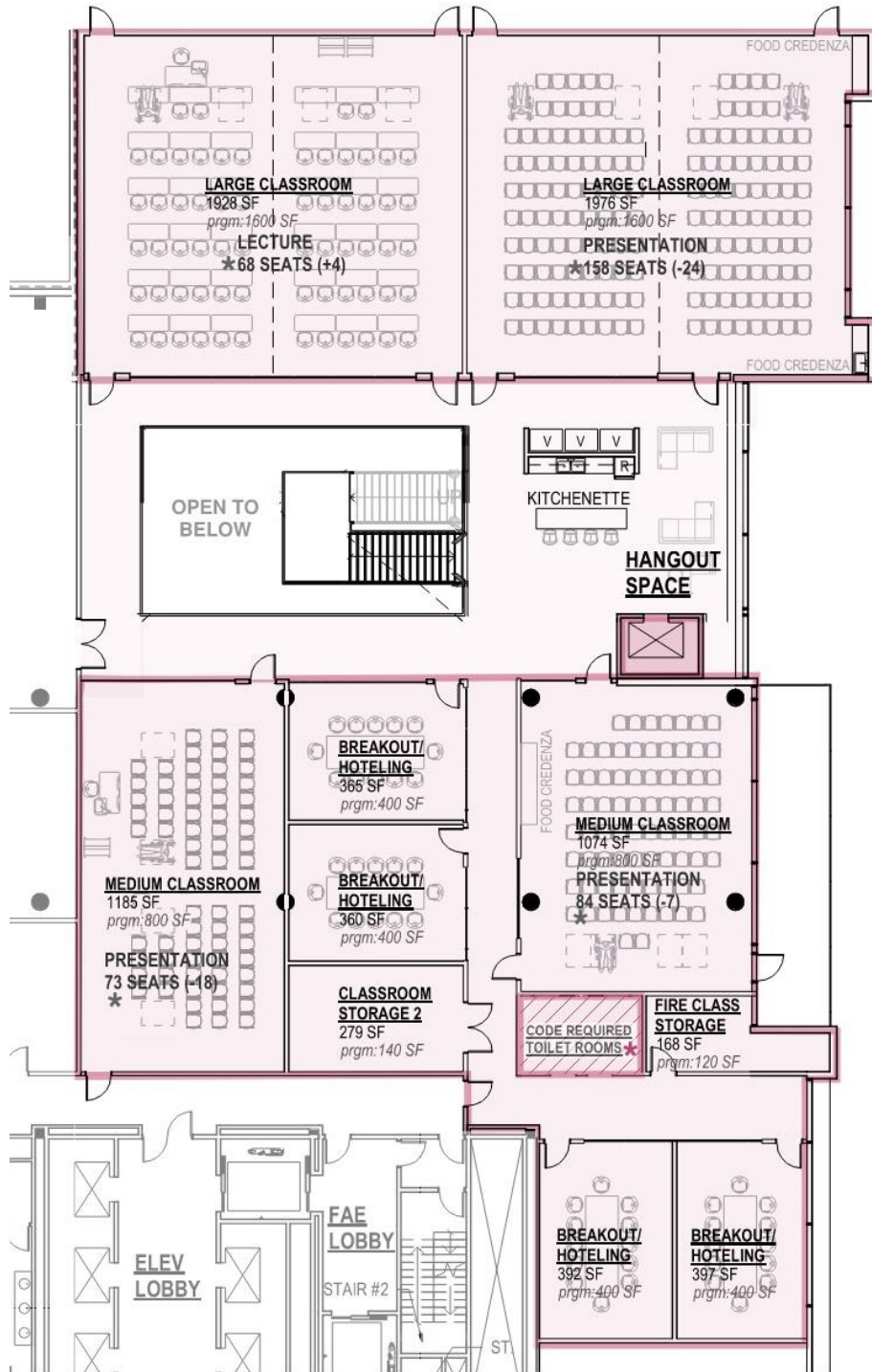


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UCDAVIS

**LIFE LONG LEARNING BUILDING
CONTINUING & PROFESSIONAL EDUCATION (CPE)
LEVEL 1**



**LIFE LONG LEARNING BUILDING
CONTINUING & PROFESSIONAL EDUCATION (CPE)
LEVEL 2**



LIFE LONG LEARNING BUILDING
UC DAVIS HEALTH (UCDH) ADMINISTRATION
LEVELS 5 - 7



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